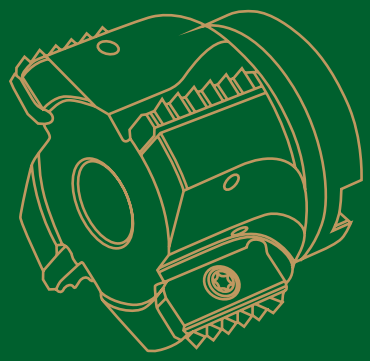
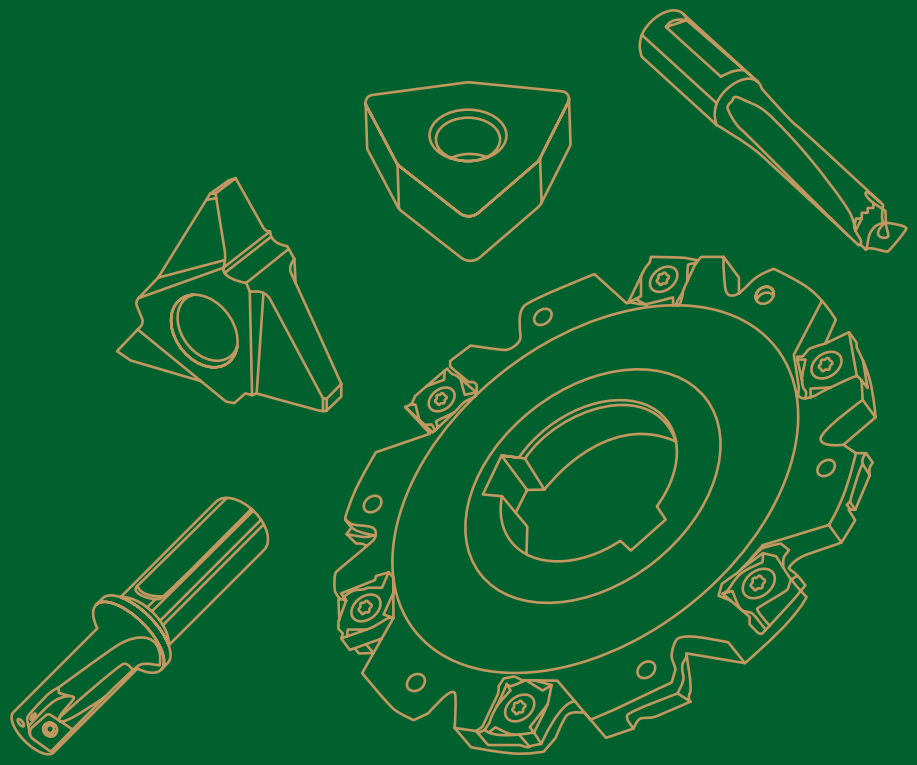


TOOTOOL®



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General Catalogue 2024

METOMET®

TOOTOOL®

CREATES AND EXCEEDS

Team Cutting Tools of the TOOTOOL machinery

The development of today's machining industry is extremely diverse and is becoming increasingly complex. Trends and innovations are changing every day, bringing more possibilities and endless choices.

The TOOTOOL Machinery team has been researching and developing a series of products suitable for today's machining development requirements. Not only that, but with our rich industry cooperation resources and team extensive machining experience, we advise customers to find the perfect processing solution.

"Creating customer value, exceeding customer expectations" is the basic philosophy that our team has always followed, and we have been working hard to provide you with the excellent processing solutions.

Welcome to our website

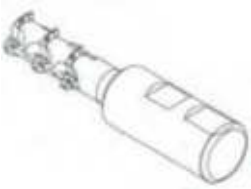
www.ttooltec.com

TOOTOOL®

FULL RANGE PRODUCT PORTFOLIO

COMPREHENSIVE RANGE OF STANDARD-TOOLS

With a selection of cutting tools exclusively for machining applications, TOOTOOL MACHINERY has the comprehensive product range. Be it turning, drilling, milling, grooving and threading, we offer a broad selection of innovative, state-of-the-art product for every application.



SPECIAL CUSTOM TOOLS & INDUSTRY-SPECIFIC TOOLS

We develop optimal tool concepts for you and develop sepcial tools that are based on the most important success factory such as processing requirements, efficiency and quality

CUSTOM ADAPTATIONS TO THE STANDARD TOOL RANGE

A range of regrindable inserts enables you to adapt your "standard inserts" to meet your machining requirements-easily and quickly

Turning	1. Auto tools
	2. Auto tools for mini-system
	3. Mini carbide boring tools
	4. Turning inserts
	5. Turning tool holders
Threading	6. Thread turning
	7. Thread milling
	8. Taps
Grooving	9. Groove turning
	10. Groove milling
Milling	11. Milling inserts
	12. Milling cutters
	13. Solid carbide endmills
Drilling	14. Indexable insert drilling
	15. Solid carbide drilling
	16. Burr off tools
	17. Adaptors and accoessiers

ALL FOR QUALITY GUARANTEE

Fusing Humans and Machines

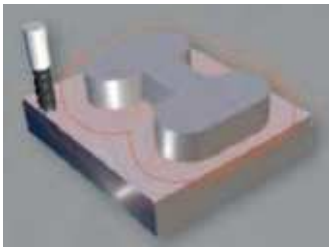
By fusing the automated machining processes and by hand processes at a hight level, we are aiming to produce even higher quality products.

Fast and Efficient Availablity

A big warehouse center can meet all requirements, capacity for fast delivery, no minimum order quantity, Customized logistics solutions for major customers.

First-rate Service & Advice

- ▲ 24 hours quick reply
- ▲ Fast order, fast delivery with tracking
- ▲ Get the latest product data at any time
- ▲ Downloads of forms, brochures and catalogues.
- ▲ Personalized customer account policies and price discounts



Tool Data

Cutting data and CAD models to assist you with your tools useing efficiently and rationally

A NEW CHALLENGE

By making the most of our accumulated knowledge and experience, TOOTOOL is striving to grow intro a first-class comprehensive cutting tool service provider, advancing customer productivity with innovative products.

CBN And PCD

- Large depth of cut, heavy cutting

- The new chip breaker design shows good chip control

Small Parts Machining

- Easy adjustment and high precision
- Prevent deviation with hight-rigidity clamping
- Wide range of items applicable to various applications

Mini Groove

High precision Small Dia. Internal Grooving

- Strong clamping system and specially designed insert are suitable for small diameter machining
- High accuracy ground insert ensures high precision machining
- Minimum Cutting Diameter ⌀5.5mm

Small Face Groove

High precision Small Dia. Internal Grooving

- This line represents the largest variety of small diameter holders and inserts. The 6 8 9 & 15 insert line can cover minimum diameters from 6 mm up to 60 mm and in some cases, with no diameter limit.

Thread Milling for Deep Holes

A multi-flute, highly productive and economical solution for milling threads in deep holes

- Multi-flute tools for fast machining
- Specially suited for deep holes
- Reduced load on cutting edges due to single point insert design

Narrow Slot Milling

- 2 options, shared by left and right hand inserts;
- It is used in three-sided edge groove milling in automobile, aviation and other industries.

High Feed Face Milling

- High Feed Milling Cutter for high metal removal rates when face milling.
- The insert geometry and approach angle reduces power requirements

New Inexable Insert Drilling

- High Efficiency Modular Drill
- Three design to choose
- High Precision Insert for Steel Machining

Contact Us

It couldn't be easiler

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Fax: 008657489075917

E-mail: jarvistools@ttooltec.com
E-mail: xindy_dong@ttooltec.com

"Manufacturing consulting and process optimization on site"

YOUR PERSONAL APPLICATION DISTRBUTORS

The catalogue for cutting tools

This catalog contains our variety of unique tools. We have put together numerous innovations as well as optimised and expanded tools range for you, with the aim of solving all your machining problems with the appropriate tool. If you wish to get the most from your machining process, please contact us

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TOOTOOL TECHNOLOGY is continuously trying to developsafer and higher quality products Please be aware of the safety guidelines below prior to using METOMET tools.

It is generally accepted that the proper handling of cemented carbide tools requires awareness of safety as noted above. For more information. Please contact us.
TOOTOOL TECHNOLOGY does not accept any responsibility for any accident caused by inappropriate use, about of tools, or changes to the products.

1. PL (Product Liability)

In accordance with the PL (Product Liability) law, we have attached a WARNING label on the case of METOMET products. There isno warning on the surface of the tools. Please read thissafety guidelines before using carbide tools and provide safety education to all users.

2. Basic characteristics of CEMENTED CARBIDE tools

Cemented carbide tools are made of carbides, nitrides, carbonitrides, oxides of W, Ti, Al, Si, Ta, B etc and metal component like CO, Ni, Cr, Mo as binder. Cemented carbides tools have high hardness and sepcific gravity. Generally there's no smell but according to usage and treatment, apprence and color could be changed.

3. Precaution for CEMENTED CARBIDE tools

1) Cemented carbides are extremely hard and brittle at the same time.Impact shock or excessive clamping power could cause fracture orbreaking of the tool.
2) Cemented carbides have large specific gravity, thus they require special attention as a heavy material when you handle big size or large quantities.
3) Cemented carbides have different thermal expansion coefficient with steel and ferrous materials. Shrink fit or swell fit products may cause trouble if they are used at undesirable conditions like extremly high or low temperatures.
4) There are several cemented carbide products having sharp cutting edges.Be careful not to handle the tools with bare hands whic may cause cuts or injury, especially when removing the tools from the case, do not touch the cutting edge and be careful not to drop it.
5) Storing carbide tools in a corrosive atmosphere may cause erosion which can reducetoughness.
6) Please refer to the catalogue safety guidance prior to handling the tools.
7) Do not absue tools under inappropriate conditions.

4. Precaution for machining (grinding, welding, EDM) of CEMENTED CARBIDE tools

1) Surface condition can affect the toughness of the tool, so it is recommended to use a diamond grinding wheel.
2) Grinding of cemented carbide creates mist and dust. It contains harmful compositions like Co,thus it is recommended to use a mask, mist collection, and other protective facilities. If the dust gets in your skin or eye, rinse immeditely with continously running water.
3) In case of grinding with coolant, coolant contains harmful metal components which case environmental problems. Handle the coolant according to the manufacturer's recommendations.
4) Check for cracks after re-grinding carbide tool and reuse.
5) Marking with laser or electric pen may cause cracks on the carbide tool. The crack can shortened tool life.
6) EDM of carbide may cause residual cracks on the carbide tool, so if necessary, remove the crack with a grinding process.
7) Brazing of carbide tools at extremly high or low temperatures compare with the melting point of brazing materials may cause loosening or breakage.
8) Overheating a oil base coolant may cause a fire or flames, thus be prepared for fire prevention.

5. METALCUTTING SAFETY

	DANGEROUS FACTOR	SAFETY COUNTERPLAN
Cutting Tools	Sharp cutting edge of cutting tools may cut your bare-hand	Use gloves when pulling out the insert from the case or mounting it on the machine
	Inappropriate conditions or usage may case fragmentation and expel parts of tools which may cause injury	Use glasses or safety cover for safety
		Use the tools within the recommended range
		Please refer to catalogue and safety guidelines first.
	Severe load on tool and premature wear of cutting edge may bring excessive cutting force on tools, causing fracutre of the tool and may cause injury	Use glasses or safety cover for your safety
		Change the tool as required before excessive wear or fracutre
	Chips evacuated during cutting are hot and sharp and may cause burns and cuts	Use glasses or safety cover for your safety
		Stop machining and put safety glove on and use a hook tool to remove chips
	Touching the workpiece immediately after cutting may cause burns	Use gloves or safety cover for your safety
	Be aware of sparks, fire, or explosion of hot chips generated during the cutting operation.	Do not use at the place where having explosive materials
		Prepare for fire extinguishments
	In case of high RPM machining, vibration and chattering may occur due to the improper balance of the machine	Use glasses or safety cover for your safety
		Check first if there's any chattering, vibration or strange noises prior to your main cutting operation
	Touching a burr remaining on the workpiece with a bare-hand may cause a cut	Do not touch the burr with bare-hand
		Use gloves or safety cover for your safety
	Loose clamping of the workpiece may cause the tool to fracture and result in damage to the cutter body and possible injury	Clamp the workpiece tightly
	Tools are operated to right-hand direction normally. Left-hand direction operation can cause fracture of tool and body damage	Do not use left-hand direction without notice
		Check the package of product to check the availability of left-hand operation
	Loose clamping of inserts and parts may result in ejection of the tool during cutting and may case serious injury	Check the clamping of inserts and parts prior to machining, and use original partsonly
	Over loaded clamping of inserts by a lever (such as a pipe) may cause dangerous fracturing of parts and inserts	Do not use lever inappropriately
	In case of high speed machining, parts and inserts can be forced out by centrifugal force	Use within recommended condition
		Use glasses or safety cover for your safety
Rotating Tools	Since cutter has sharp cutting edges touching with a bare-hand may case a cut	Use gloves or safety cover for your safety
	It is dangerous to use glove with rotating machine	Do not wear gloves when you work with rotating machine
	Contact with body or clothes is dangerous with rotating parts	Keep your body and clothes away from rotating machine
	Vibration generated by balancing trouble may case a fracture and ejection of the tool which may cuase serious injury	RPM should be controled within recommended condition
		Check the balance of rotating part periodically
	In case of drilling, the uncut bottom core can fly out of the part with high speed and cause serious injury	Use gloves or safety cover for your safety
	The deges of small diameter drill are sharp and easy to break	Use gloves or safety cover for your safe
Brazed tools	Fragmentation and ejection of brazed carbide tip may cause injury	Check the brazed tip before using
		Do not use at high temperature cutting condition
ETC	There's a possibility of breaking the carbide tip after several brazing	Do not use brazing a tip that has been brazed several times
	Abusing may cause fragmentation of tool and is very dangerous	Stick to safety regulations and guidelines

Turning

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FOCUS PRODUCTS

MINI CARBIDE BORING TOOLS

Features Overview

- ▲ from Ø 5.5 mm
- ▲ stable three-rib interface
- ▲ easy handling
- ▲ coolant supply to the cutting edge
- ▲ precise cutting edge position

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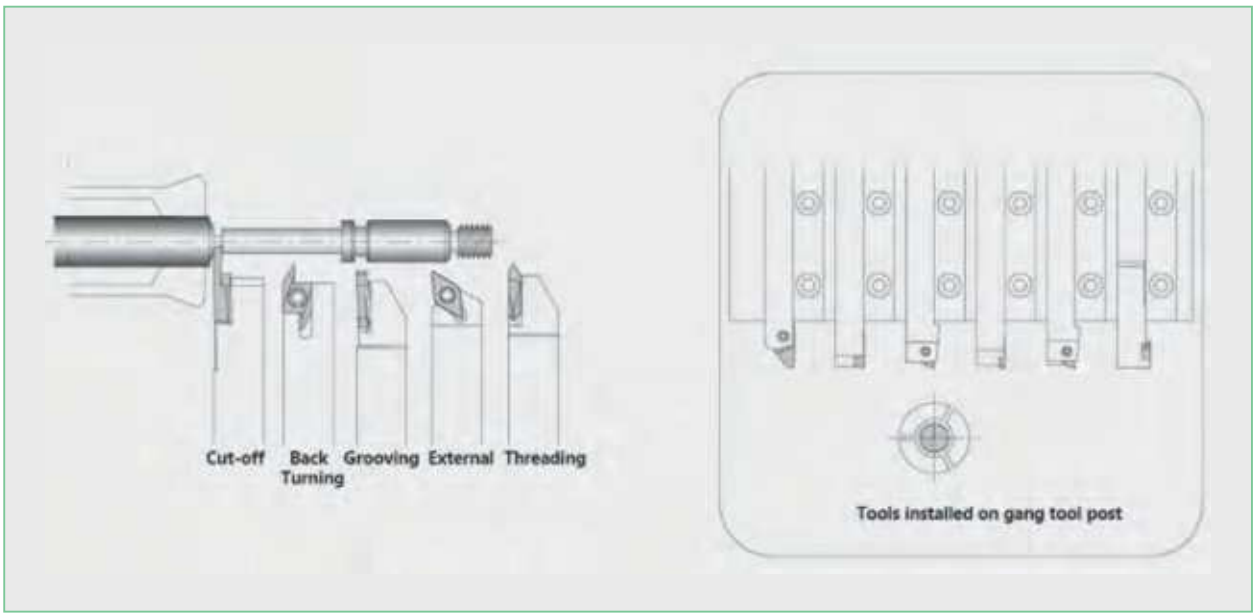
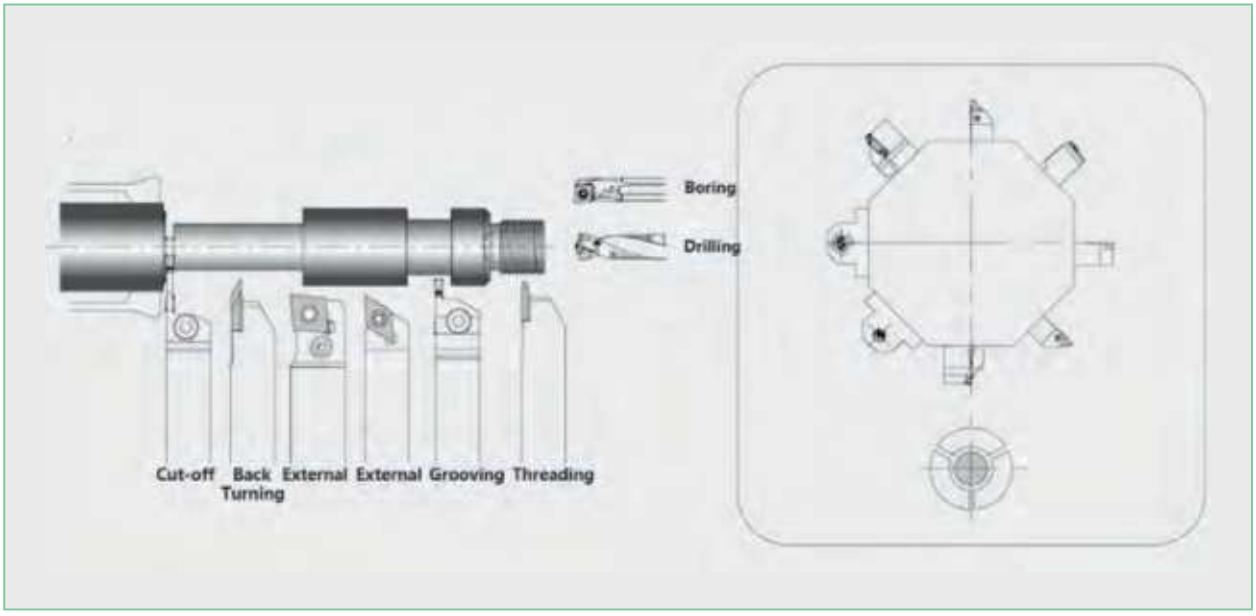
Tooling example for a small CNC automatic Lathe (gang type)

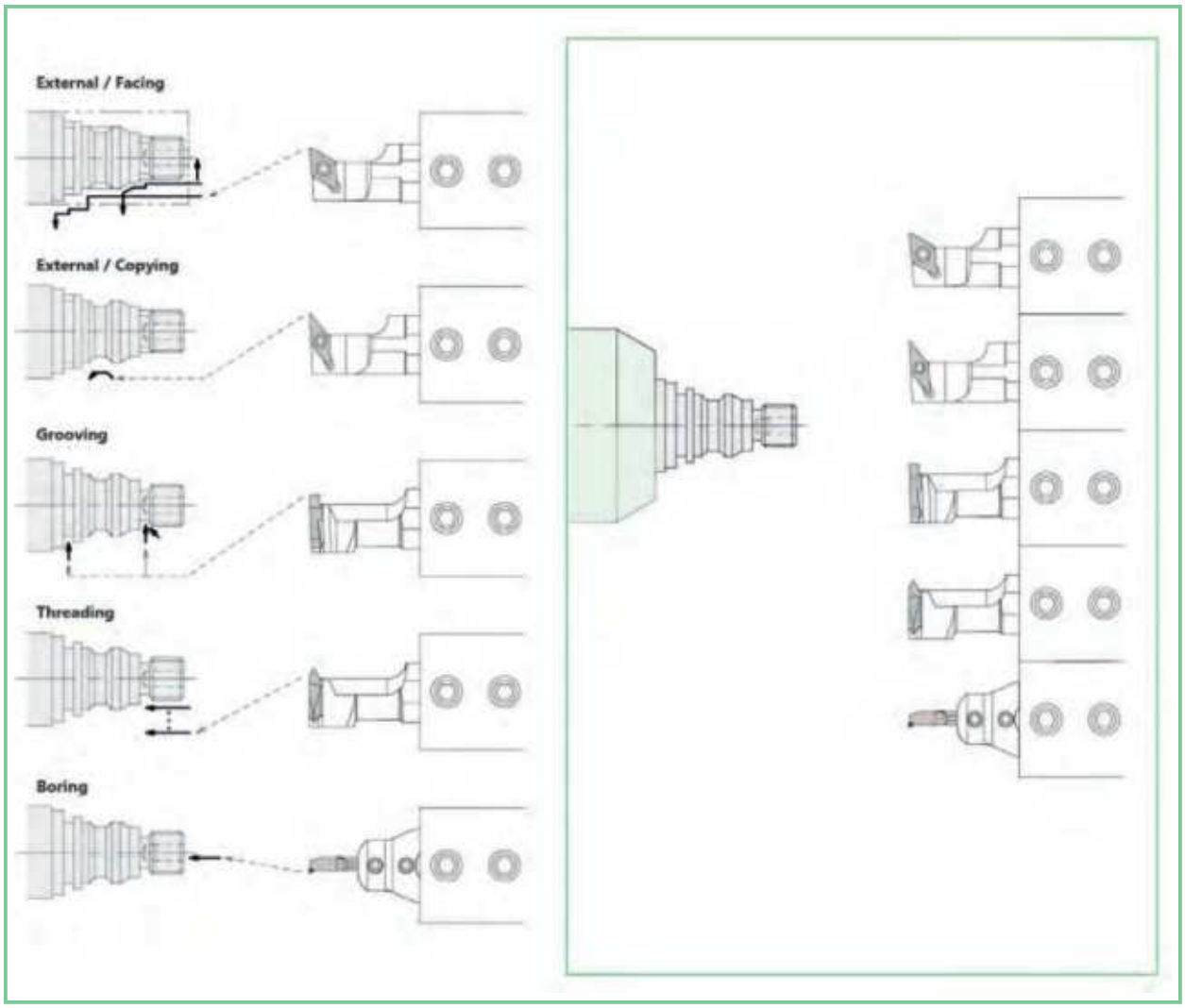


Tooling example for a small CNC automatic Lathe (turret type)



Technical Information for Auto Tools

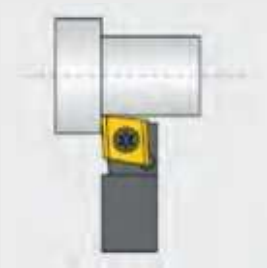
Recommendation for Auto Tooling



General Turning Inserts Explained

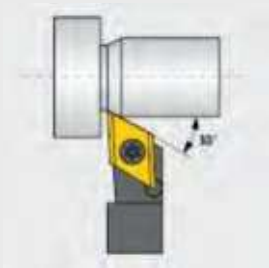
Advantage for each geometry

CC.. Style (80°)



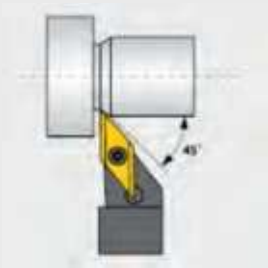
Increased toughness. Cutting edge is close to insert pocket. Not applicable to undercut

DC.. Style (55°)



Versatile geometry. Toughness of CC.. with flexibility of VC.. Up to 30 deg. undercuts

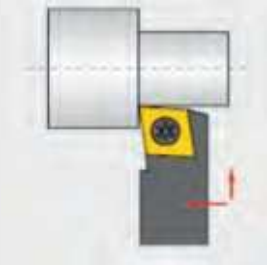
VB / VC / VP Style (35°)



Wide coverage in work geometry. Up to 45 deg. undercuts

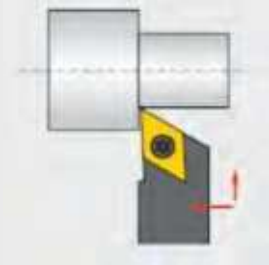
Chip Control and Finish

SCLCR



Rigid clamping
High dimensional repeatability

SDJCR

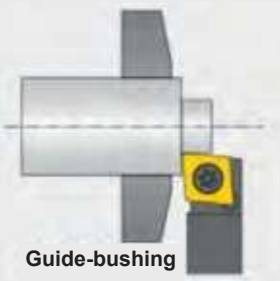


Increased room for chip evacuation creates better surface finish

SDNCN

Ships flow away from the work

Roughing and Finishing Long Work on Swiss Lathes



Single pass machining is common in Swiss front turning operations.

Conventional toolholders are not suitable for roughing or finishing of long parts. The guide-bushing cannot hold machined bar stock.

Shifted Holders

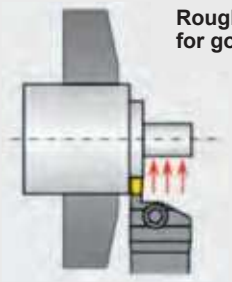
SCLC-N-F

SDJC-N-F

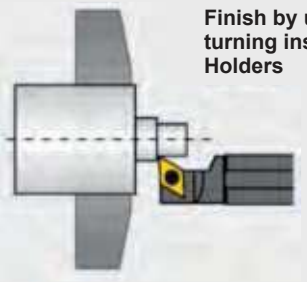
SVJC-N-F

Shifted Holders make a finishing process possible without worrying about the bar stock coming out of the guide-bushing.
Coolant flows effectively which improves ship control thanks to the increased room between the tools and guide-bushing.

Combination of Grooving Tool and DS Holders



Rough with grooving tool for good chip control



Finish by using general turning inserts with DS Holders

SCACR/L-FF

Without setoff, External / Facing

Designation	Stock		Dimensions(mm)						Insert	Spare parts	
	R	L	H	W	h	ℓ	L	S		Screw	Wrench
SCACR/L 0808-X06FF			8	8	8	10	120	8	CC□T0602□□	M2.5x6	T-8
SCACR/L 1010-X06FF			10	10	10	10	120	10			
SCACR/L 1010-X09FF			10	10	10	13	120	10	CC□T09T3□□	M3.5x9	T-15
SCACR/L 1212-X09FF			12	12	12	16	120	12			
SCACR/L 1616-X09FF			16	16	16	16	120	16			

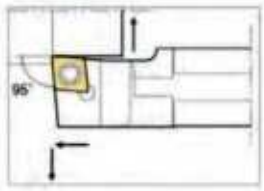
SCLCR/L-FF

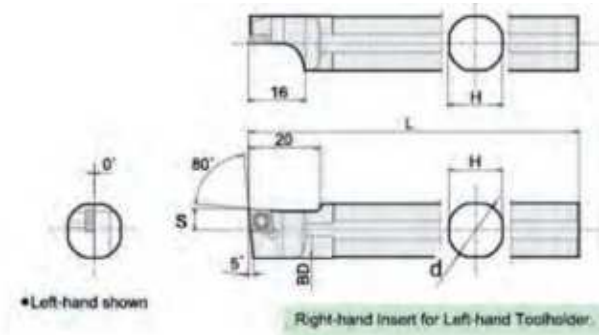
Without setoff, External / Facing

Designation	Stock		Dimensions(mm)						Insert	Spare parts	
	R	L	H	W	h	ℓ	L	S		Screw	Wrench
SCLCR/L 0808-X06FF			8	8	8	10	120	8	CC□T0602□□	M2.5x6	T-8
SCLCR/L 1010-X06FF			10	10	10	10	120	10			
SCLCR/L 1010-X09FF			10	10	10	13	120	10	CC□T09T3□□	M3.5x9	T-15
SCLCR/L 1212-X09FF			12	12	12	16	120	12			
SCLCR/L 1616-X09FF			16	16	16	16	120	16			

S-SCLCL

External Sleeve Holder (External / Facing)

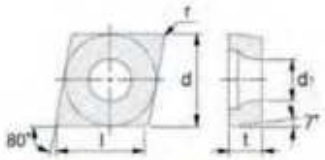




Designation	Stock		Dimensions(mm)					Insert	Spare parts	
	R	L	d	H	L	S	BD		Screw	Wrench
S12F-SCLCL06			12.000	11	80	6	13.4	CC□T0602□□	M2.5x6	T-8
S14H-SCLCL06			14.000	13	100	6	13.4			
S15F-SCLCL06			15.875	15	85	6	15.4			
S16F-SCLCL06			16.000	15	85	6	15.4			
S19G-SCLCL06			19.050	17	90	6	18.4			
S19K-SCLCL06			19.050	17	120	6	18.4			
S20G-SCLCL06			20.000	18	90	6	19.4			
S20K-SCLCL06			20.000	18	120	6	19.4			
S19G-SCLCL09			19.050	17	90	10	18.4	CC□T09T3□□	M3.5x9	T-15
S19K-SCLCL09			19.050	17	120	10	18.4			
S20G-SCLCL09			20.000	18	90	10	19.4			
S20K-SCLCL09			20.000	18	120	10	19.4			
S25H-SCLCL09			25.000	23	100	10	24.4			
S25K-SCLCL09			25.400	23	120	10	24.8			

Inserts

CCGT



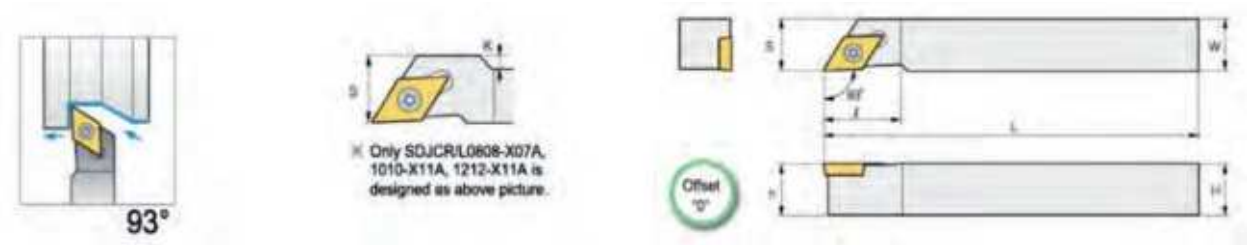
Workpiece			Machining Type	TPM8020	TPU15B	TPM8115S	TPM8125	TPM8225	TPM8135	TPM930	TPK01	TTIN30	TTIN3025
	Steel	P		⧗	⧗		⧗					⧗	⧗
	Stainless steel	M		⧗	⧗	⧗	⧗	⧗	✱	⧗			
	Cast iron	K			⧗						●	⧗	⧗
	Non-ferrous metal	N	● Continuous cutting								●		
	Heat resistant alloy, Titanium alloy	S	⧗ General cutting		⧗	⧗	⧗	⧗	✱		●		
	Hardened steel	H	✱ Interrupted cutting			✱					●		

Designation		Dimensions(mm)					Coated							Uncoated	Cermet	
		l	d	t	r	d1	TPM8020	TPU15B	TPM8115S	TPM8125	TPM8225	TPM8135	TPM930	TPK01	TTIN30	TTIN3025
CCGT	030102R-F	4.0	3.500	1.39	0.2	1.9		○		○						
	030104R-F	4.0	3.500	1.39	0.4	1.9		○		○						
	030102L-F	4.0	3.500	1.39	0.2	1.9	●	●		○				●	●	●
	030104L-F	4.0	3.500	1.39	0.4	1.9	●	●		○				●	●	●
	040102R-F	4.8	4.300	1.79	0.2	2.3		○		○						
	040104R-F	4.8	4.300	1.79	0.4	2.3		○		○						
	040102L-F	4.8	4.300	1.79	0.2	2.3	●	●		○				●	●	●
	040104L-F	4.8	4.300	1.79	0.4	2.3	●	●		○				●	●	●
CCGT	060202ER-U	6.5	6.350	2.38	0.2	2.8	●	●		○					●	●
	060204ER-U	6.5	6.350	2.38	0.4	2.8	●	●		○					●	●
	060202EL-U	6.5	6.350	2.38	0.2	2.8		●		○					●	●
	060204EL-U	6.5	6.350	2.38	0.4	2.8		●		○					●	●
	09T302ER-U	9.7	9.525	3.97	0.2	4.4	●	●		○					●	●
	09T304ER-U	9.7	9.525	3.97	0.4	4.4	●	●		○					●	●
	09T302EL-U	9.7	9.525	3.97	0.2	4.4		●		○					●	
	09T304EL-U	9.7	9.525	3.97	0.4	4.4		●		○					●	
CCGT	060202R-W15	6.5	6.350	2.38	0.2	2.8	●	●		○					●	●
	060204R-W15	6.5	6.350	2.38	0.4	2.8	●	●		○					●	●
	060202L-W15	6.5	6.350	2.38	0.2	2.8		●		○					●	●
	060204L-W15	6.5	6.350	2.38	0.4	2.8		●		○					●	●
	09T302R-W20	9.7	9.525	3.97	0.2	4.4	●	●		○					●	●
	09T304R-W20	9.7	9.525	3.97	0.4	4.4	●	●		○					●	●
	09T302L-W20	9.7	9.525	3.97	0.2	4.4		●		○					●	●
	09T304L-W20	9.7	9.525	3.97	0.4	4.4		●		○					●	●

Auto Tools (ISO Type)

SDJCR/L-FF

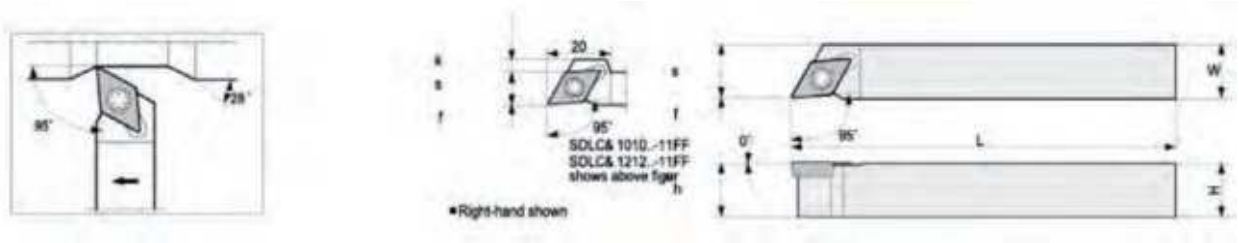
Without setoff, External / Copying



Designation	Stock		Dimensions(mm)							Insert	Spare parts	
	R	L	H	W	h	ℓ	L	S	K		Screw	Wrench
SDJCR/L 0808-X07FF			8	8	8	18	120	8	2	DC□T0702□□	M2.5x7	T-8
SDJCR/L 1010-X07FF			10	10	10	15	120	12	-			
SDJCR/L 1010-X11FF			10	10	10	18	120	10	4	DC□T11T3□□	M4.0x10	T-15
SDJCR/L 1212-X11FF			12	12	12	18	120	10	2			
SDJCR/L 1616-X11FF			16	16	16	22	120	12	-			

SDLCR/L-FF

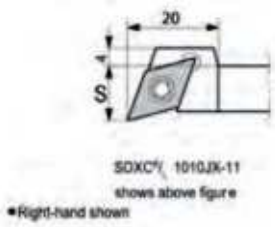
Without setoff, External / Copying

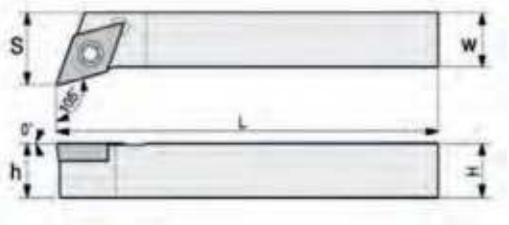


Designation	Stock		Dimensions(mm)							Insert	Spare parts	
	R	L	H	W	h	L	S	K	f		Screw	Wrench
SDLCR/L 1010-X07FF			10	10	10	120	10	-	0	DC□T0702□□	M2.5x6	T-8
SDLCR/L 1212-X07FF			12	12	12	120	12	-	0			
SDLCR/L 1616-X07FF			16	16	16	120	16	-	0			
SDLCR/L 1010-X11FF			10	10	10	120	10	4	0	DC□T11T3□□	M3.5x9	T-15
SDLCR/L 1212-X11FF			12	12	12	120	12	2	0			
SDLCR/L 1616-X11FF			16	16	16	120	16	-	0			
SDLCR/L 1212-F07FF			12	12	12	80	12	-	0	DC□T0702□□	M2.5x6	T-8
SDLCR/L 1010-F11FF			10	10	10	80	10	4	0	DC□T11T3□□	M3.5x9	T-15
SDLCR/L 1212-F11FF			12	12	12	80	12	2	0			
SDLCR/L 1616-H11FF			16	16	16	100	16	-	0			

SDXCR/L

External / Facing / Copying

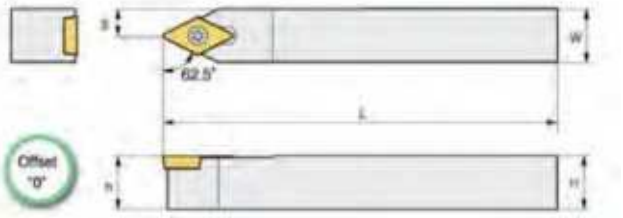




Designation	Stock		Dimensions(mm)					Insert	Spare parts	
	R	L	H	W	h	L	S		Screw	Wrench
SDXCR/L 1010-X07			10	10	10	120	12	DC□T0702□□	M2.5x6	T-8
SDXCR/L 1010-X11			10	10	10	120	12	DC□T11T3□□	M3.5x9	T-15
SDXCR/L 1212-X11			12	12	12	120	16			
SDXCR/L 1616-X11			16	16	16	120	20			

SDNCN-FF

Without setoff, External / Copying

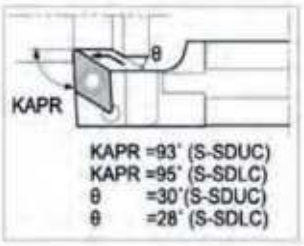


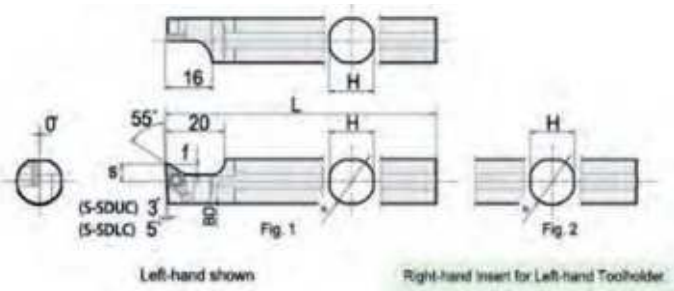
Designation	Stock		Dimensions(mm)					Insert	Spare parts	
	R	L	H	W	h	L	S		Screw	Wrench
SDNCN 0808-X07FF			8	8	8	120	4	DC□T0702□□	M2.5x6	T-8
SDNCN 1010-X07FF			12	12	12	120	5			
SDNCN 1010-X11FF			10	10	10	120	7	DC□T11T3□□	M3.5x9	T-15
SDNCN 1212-X11FF			12	12	12	120	6			
SDNCN 1616-X11FF			16	16	16	120	8			

Auto Tools (ISO Type)

S-SDUCL / S-SDLCL

External Sleeve Holder (External / Facing)

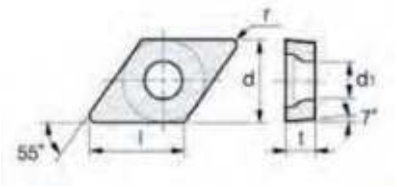




Designation	Stock		Dimensions(mm)					Insert	Spare parts		Fig
	R	L	d	H	L	S	f		Screw	Wrench	
S14H-SDUCL07			14.000	13	100	6	3.8	DC□T0702□□	M2.5x6	T-8	1
S15F-SDUCL07			15.875	15	85	6	3.8				1
S19G-SDUCL07			19.050	17	90	6	3.8				1
S19K-SDUCL07			19.050	17	120	6	3.8				1
S20G-SDUCL07			20.000	18	90	6	3.8				1
S20K-SDUCL07			20.000	18	120	6	3.8				1
S19G-SDUCL11			19.050	17	90	10	5.8	DC□T11T3□□	M3.5x9	T-15	1
S19K-SDUCL11			19.050	17	120	10	5.8				1
S20G-SDUCL11			20.000	18	90	10	5.8				1
S20K-SDUCL11			20.000	18	120	10	5.8				1
S22K-SDUCL11			22.000	20	120	10	5.8				1
S22H-SDUCL11			25.000	23	100	10	5.8				1
S25K-SDUCL11			25.400	23	120	10	5.8				1
S12F-SDLCL07			12.000	11	80	6	3.8	DC□T0702□□	M2.5x6	T-8	2
S14H-SDLCL07			14.000	13	100	6	3.8				2
S15F-SDLCL07			15.875	15	85	6	3.8				2
S16F-SDLCL07			16.000	15	85	6	3.8				2
S19G-SDLCL07			19.050	17	90	6	3.8				2
S19K-SDLCL07			19.050	17	120	6	3.8				2
S20G-SDLCL07			20.000	18	90	6	3.8				2
S20K-SDLCL07			20.000	18	120	6	3.8				2
S19G-SDLCL11			19.050	17	90	10	5.8	DC□T11T3□□	M3.5x9	T-15	2
S19K-SDLCL11			19.050	17	120	10	5.8				2
S20G-SDLCL11			20.000	18	90	10	5.8				2
S20K-SDLCL11			20.000	18	120	10	5.8				2
S22K-SDLCL11			22.000	20	120	10	5.8				2
S25H-SDLCL11			25.000	23	100	10	5.8				2
S25K-SDLCL11			25.400	23	120	10	5.8				2

Inserts

DCGT



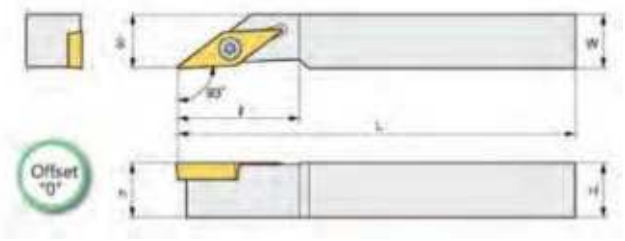
Workpiece			Machining Type	TPM8020	TPU15B	TPM8115S	TPM8125	TPM8225	TPM8135	TPM930	TPK01	TTIN30	TTIN3025
Steel	P			⚙	⚙		⚙					⚙	⚙
Stainless Steel	M			⚙	⚙	⚙	⚙	⚙	✱	⚙			
Cast iron	K				⚙						●	⚙	⚙
Non-ferrous metal	N		● Continuous cutting								●		
Heat resistant alloy, Titanium alloy	S		⚙ General cutting		⚙	⚙	⚙	⚙	✱		●		
Hardened steel	H		✱ Interrupted cutting			✱					●		

Designation		Dimensions(mm)					Coated							Uncoated	Cermet	
		l	d	t	r	d1	TPM8020	TPU15B	TPM8115S	TPM8125	TPM8225	TPM8135	TPM930	TPK01	TTIN30	TTIN3025
DCGT	070202R-F	7.8	6.350	2.38	0.2	2.8		○		○						
	070204R-F	7.8	6.350	2.38	0.4	2.8		○		○						
	070202L-F	7.8	6.350	2.38	0.2	2.8		○		○						
	070204L-F	7.8	6.350	2.38	0.4	2.8		○		○						
	11T302R-F	11.6	9.525	3.97	0.2	4.4		○		○						
	11T304R-F	11.6	9.525	3.97	0.4	4.4		○		○						
	11T302L-F	11.6	9.525	3.97	0.2	4.4		○		○						
	11T304L-F	11.6	9.525	3.97	0.4	4.4		○		○						
DCGT	070202ER-U	7.8	6.350	2.38	0.2	2.8		○		○						
	070204ER-U	7.8	6.350	2.38	0.4	2.8		○		○						
	070202EL-U	7.8	6.350	2.38	0.2	2.8				○						
	070204EL-U	7.8	6.350	2.38	0.4	2.8				○						
	11T302ER-U	11.6	9.525	3.97	0.2	4.4	●	●		○					●	●
	11T304ER-U	11.6	9.525	3.97	0.4	4.4	●	●		○					●	●
	11T302EL-U	11.6	9.525	3.97	0.2	4.4		●		○					●	●
	11T304EL-U	11.6	9.525	3.97	0.4	4.4		●		○					●	●

Auto Tools (ISO Type)

SVJBR/L-FF

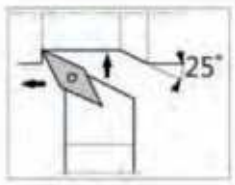
Without setoff, External / Copying

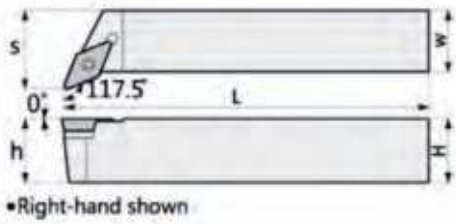


Designation	Stock		Dimensions(mm)						Insert	Spare parts	
	R	L	H	W	h	ℓ	L	S		Screw	Wrench
SVJBR/L 1010-X11FF			10	10	10	22	120	10	VB□T1103□□	M2.5x6	T-8
SVJBR/L 1212-X11FF			12	12	12	22	120	12			
SVJBR/L 1616-X11FF			16	16	16	24	120	16			
SVJBR/L 2020-X11FF			20	20	20	30	120	20			

SVPBR/L

External / Facing / Copying / Undercutting



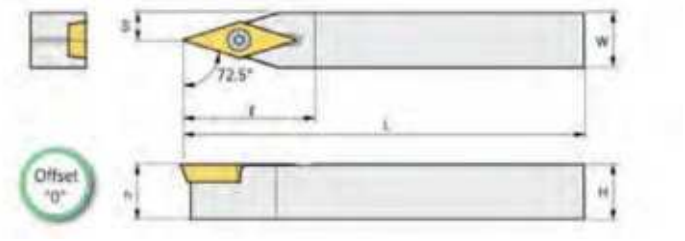


Corner (RE)	ap (mm)	DCN (MIN.)
0.4	0.5	ø25
	1	ø30
0.8	0.5	ø45
	1	ø55

Designation	Stock		Dimensions(mm)						Insert	Spare parts	
	R	L	H	W	h	L	S	RE		Screw	Wrench
SVPBR/L 1010-X11			10	10	10	120	14.5	0.4	VB□T1103□□	M2.5x6	T-8
SVPBR/L 1212-X11			12	12	12	120	16.5	0.4			
SVPBR/L 1616-X11			16	16	16	120	20.5	0.4			
SVPBR/L 2020-K11			20	20	20	125	25.0	0.4			
SVPBR/L 2525-M11			25	25	25	150	32.0	0.4			
SVPBR/L 2020-K16			20	20	20	125	25.0	0.8	VB□T1604□□	M3.5x9	T-15
SVPBR/L 2525-M16			25	25	25	150	32.0	0.8			

SVVBN

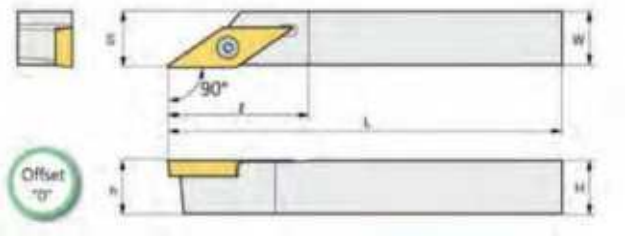
Without setoff, External / Copying



Designation	Stock		Dimensions(mm)						Insert	Spare parts	
	R	L	H	W	h	ℓ	L	S		Screw	Wrench
SVVBN 1010-X11FF			10	12	12	24	120	5	VB□T1103□□	M2.5x6	T-8
SVVBN 1212-X11FF			12	16	16	24	120	6			
SVVBN 1616-X11FF			16	20	20	30	120	8			

SVACR/L

Without setoff, External / Copying

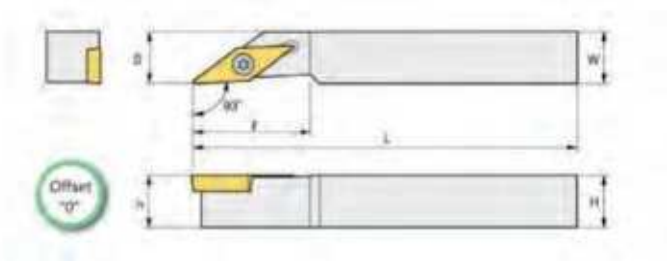


Designation	Stock		Dimensions(mm)						Insert	Spare parts	
	R	L	H	W	h	ℓ	L	S		Screw	Wrench
SVACR/L 0808-X11FF			8	8	8	26	120	8.5	VC□T1103□□	M2.5x6	T-8
SVACR/L 1010-X11FF			10	10	10	26	120	10.5			
SVACR/L 1212-X11FF			12	12	12	26	120	12.5			
SVACR/L 1616-X11FF			16	16	16	26	120	16.5			

Auto Tools (ISO Type)

SVJCR/L-FF

Without setoff, External / Copying



Designation	Stock		Dimensions(mm)						Insert	Spare parts	
	R	L	H	W	h	ℓ	L	S		Screw	Wrench
SVJCR/L 1010-X11FF			10	10	10	22	120	10	VC□T1103□□	M2.5x6	T-8
SVJCR/L 1212-X11FF			12	12	12	22	120	12			
SVJCR/L 1616-X11FF			16	16	16	24	120	16			
SVJCR/L 2020-X11FF			20	20	20	30	120	20			

SVLCR/L-FF

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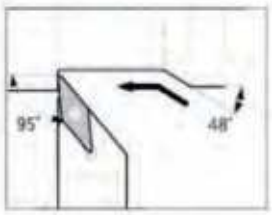
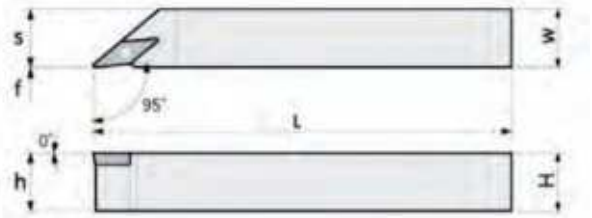
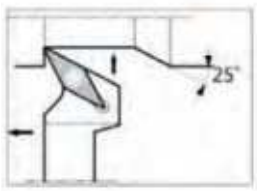


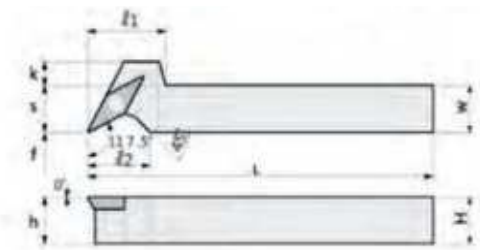


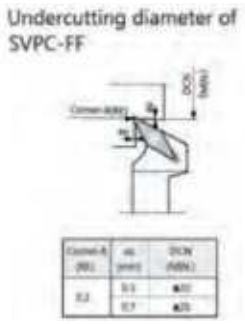
Designation	Stock		Dimensions(mm)						Insert	Spare parts	
	R	L	H	W	h	L	S	f		Screw	Wrench
SVLCR/L 1010-X11FF			10	10	10	120	10	0	VC□T1103□□	M2.5x6	T-8
SVLCR/L 1212-X11FF			12	12	12	120	12	0			
SVLCR/L 1616-X11FF			16	16	16	120	16	0			
SVLCR/L 2020-X11FF			20	20	20	120	20	0			

SVPCR/L-FF

Without setoff, External / Copying



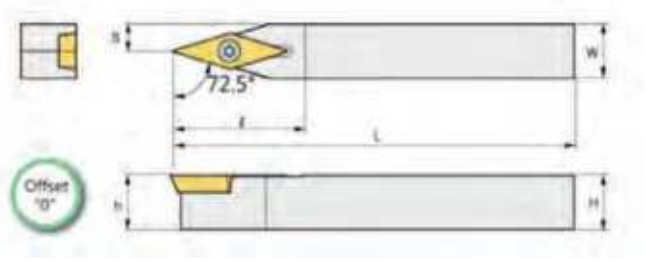




Designation	Stock		Dimensions(mm)									Insert	Spare parts	
	R	L	H	W	h	ℓ1	ℓ2	L	S	K	f		Screw	Wrench
SVPCR/L 1010-X11FF			10	10	10	20	16	120	10	8	0	VC□T1103□□	M2.5x6	T-8
SVPCR/L 1212-F11FF			12	12	12	20	16	80	12	6	0			
SVPCR/L 1212-X11FF			12	12	12	20	16	120	16	6	0			
SVPCR/L 1616-X11FF			16	16	16	20	20	120	20	2	0			

SVVCN

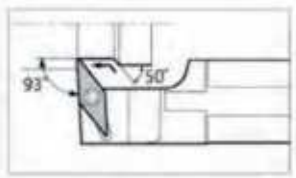
Without setoff, External / Copying

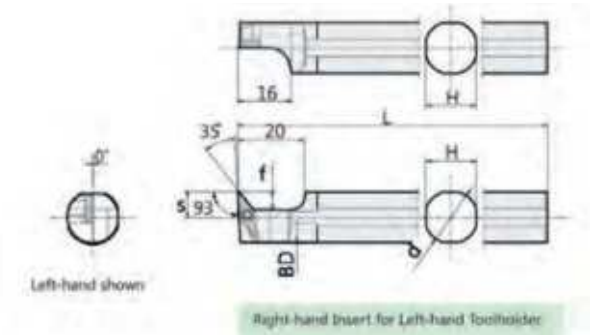


Designation	Stock		Dimensions(mm)						Insert	Spare parts	
	R	L	H	W	h	ℓ	L	S		Screw	Wrench
SVVCN 1010-X11FF			10	10	10	24	120	5	VC□T1103□□	M2.5x6	T-8
SVVCN 1212-X11FF			12	12	12	24	120	6			
SVVCN 1616-X11FF			16	16	16	28	120	8			

S-SVUBL / SVUCL

External Sleeve Holder (External / Facing)

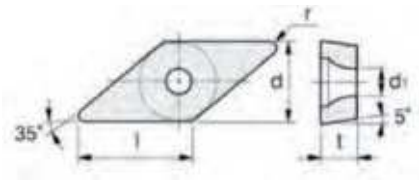




Designation	Stock		Dimensions(mm)						Insert	Spare parts	
	R	L	d	H	L	S	f	BD		Screw	Wrench
S19G-SVUBL11			19.05	17	90	10.5	8	18.4	VB□T1103□□	M2.5x6	T-8
S19K-SVUBL11			19.05	17	125	10.5	8	18.4			
S20G-SVUBL11			20.00	18	90	10.5	8	19.4			
S20K-SVUBL11			20.00	18	125	10.5	8	19.4			
S25H-SVUBL11			25.00	23	100	10.5	8	24.4			
S25K-SVUBL11			25.40	23	125	10.5	8	24.8			
S19G-SVUCL11			19.05	17	90	10.5	8	18.4	VC□T1103□□	M2.5x6	T-8
S19K-SVUCL11			19.05	17	125	10.5	8	18.4			
S20G--SVUCL11			20.00	18	90	10.5	8	19.4			
S20K-SVUCL11			20.00	18	125	10.5	8	19.4			
S25H-SVUCL11			25.00	23	100	10.5	8	24.4			
S25K-SVUCL11			25.40	23	125	10.5	8	24.8			

Inserts

VBGT



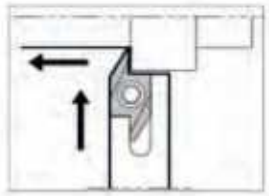
Workpiece			Machining Type	TPM8020	TPU15B	TPM8115S	TPM8125	TPM8225	TPM8135	TPM930	TPK01	TTIN30	TTIN3025
Steel	P			⧗	⧗		⧗					⧗	⧗
Stainless Steel	M			⧗	⧗	⧗	⧗	⧗	✱	⧗			
Cast iron	K				⧗						●	⧗	⧗
Non-ferrous metal	N		● Continuous cutting								●		
Heat resistant alloy, Titanium alloy	S		⧗ General cutting		⧗	⧗	⧗	⧗	✱		●		
Hardened steel	H		✱ Interrupted cutting			✱					●		

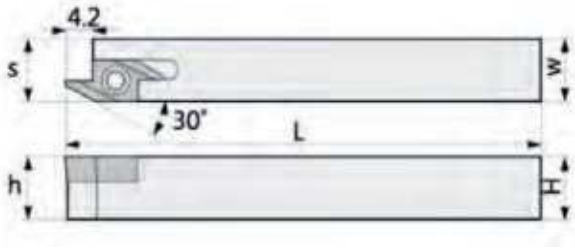
Designation		Dimensions(mm)					Coated							Uncoated	Cermet	
		l	d	t	r	d1	TPM8020	TPU15B	TPM8115S	TPM8125	TPM8225	TPM8135	TPM930	TPK01	TTIN30	TTIN3025
VBGT	110301R-F	11.2	6.350	3.18	0.1	2.8		○	○				○			
	110302R-F	11.2	6.350	3.18	0.2	2.8		○	○				○			
	110301L-F	11.2	6.350	3.18	0.1	2.8		○	○				○			
	110302L-F	11.2	6.350	3.18	0.2	2.8		○	○				○			
VBGT	110301R-Y	11.2	6.350	3.18	0.1	2.8		○	○				○		●	●
	110302R-Y	11.2	6.350	3.18	0.2	2.8	●	●	○				○		●	●
	110304R-Y	11.2	6.350	3.18	0.4	2.8	●	●	○				○		●	●
	110301L-Y	11.2	6.350	3.18	0.1	2.8		●	○				○		○	○
	110302L-Y	11.2	6.350	3.18	0.2	2.8	●	●	○				○		●	●
	110304L-Y	11.2	6.350	3.18	0.4	2.8	●	●	○				○		●	●
	160402R-Y	16.6	9.525	4.76	0.2	4.4		○	○				○			
	160404R-Y	16.6	9.525	4.76	0.4	4.4		○	○				○			
	160402L-Y	16.6	9.525	4.76	0.2	4.4		○	○				○			
	160404L-Y	16.6	9.525	4.76	0.4	4.4		○	○				○			

Auto Tools for Back Turning

SABS-40F

Edge Width: 2.8mm, MAX. Depth: 4mm

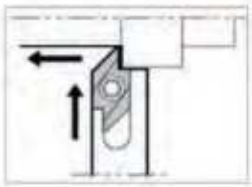


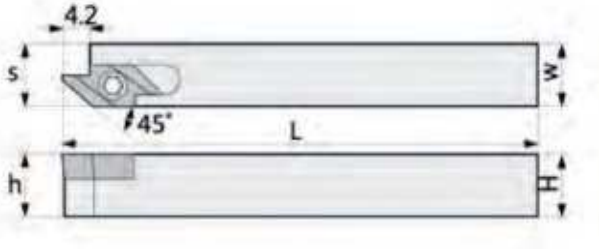


Designation	Stock		Dimensions(mm)					Insert	Spare parts	
	R	L	H	W	h	L	S		Screw	Wrench
SABSR 1010-X40F			10	10	10	120	10.2	ABS15R	M3.0x8	T-10
SABSR 1212-X40F			12	12	12	120	12.2			
SABSR 1616-X40F			16	16	16	120	16.2			
SABSR 1212-F40F			12	12	12	80	12.2			
SABSR 2020-K40F			20	20	20	125	20.2			

SABW-40F

Edge Width: 4.7mm, MAX. Depth: 4mm

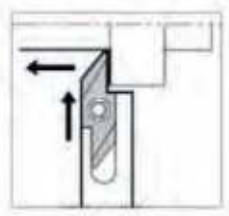


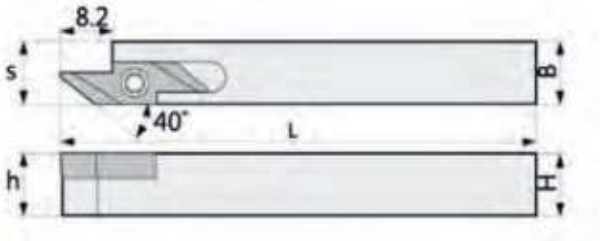


Designation	Stock		Dimensions(mm)					Insert	Spare parts	
	R	L	H	W	h	L	S		Screw	Wrench
SABWR 1010-X40F			10	10	10	120	10.2	ABW15R	M3.0x8	T-10
SABWR 1212-X40F			12	12	12	120	12.2			
SABWR 1616-X40F			16	16	16	120	16.2			
SABWR 2020-K40F			20	20	20	125	20.2			

SABW-50F

Edge Width: 4.7mm, MAX. Depth: 5mm



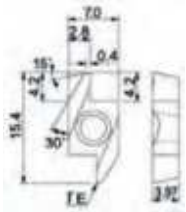
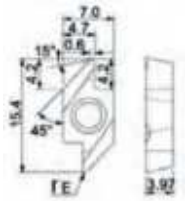
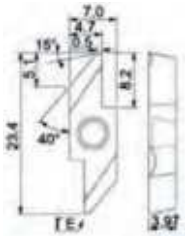


Designation	Stock		Dimensions(mm)					Insert	Spare parts	
	R	L	H	W	h	L	S		Screw	Wrench
SABWR 1010-X50F			10	10	10	120	10.2	ABW23R	M3.0x8	T-10
SABWR 1212-X50F			12	12	12	120	12.2			
SABWR 1616-X50F			16	16	16	120	16.2			
SABWR 2020-K50F			20	20	20	125	20.2			

Auto Tools for Back Turning

Workpiece			Machining Type	TPM8020	TPU15B	TPM8115S	TPM8125	TPM8225	TPM8135	TPM930	TPK01	TTIN30	TTIN3025
Steel	P			⚙	⚙		⚙					⚙	⚙
Stainless Steel	M			⚙	⚙	⚙	⚙	⚙	✖	⚙			
Cast iron	K				⚙						●	⚙	⚙
Non-ferrous metal	N										●		
Heat resistant alloy, Titanium alloy	S				⚙	⚙	⚙	⚙	✖		●		
Hardened steel	H					✖					●		

● Continuous cutting
⚙ General cutting
✖ Interrupted cutting

Picture		Dimensions(mm) Designations		r	Coated TPM8020	TPU15B	TPM8115S	TPM8125	TPM8225	TPM8135	TPM930	Uncoated TPK01	Cermet TTIN30	TTIN3025
		ABS	15R4005	0.05		●	●							
			15R4015	0.15		●	●							
		ABW	15R4005	0.05		●	●							
			15R4015	0.15		●	●							
		ABW	23R5005	0.05		●	●							
			23R5015	0.15		●	●							

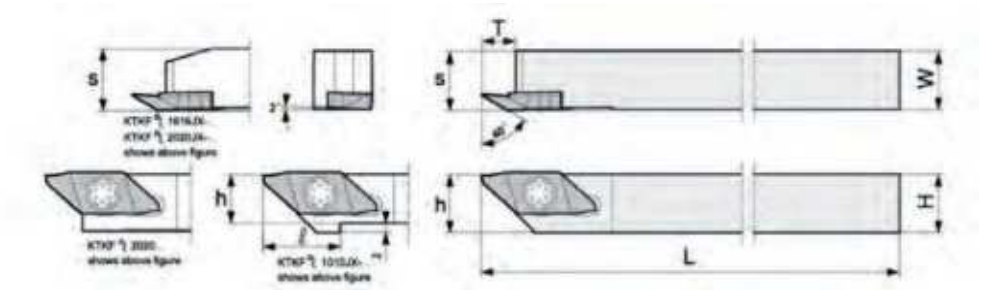
KTKFR/L

For Small Diameter Cut-off, Turning & Threading

Cut-off

Back turning

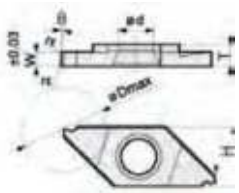
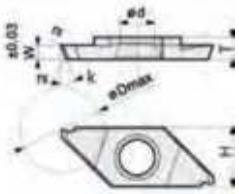
Threading

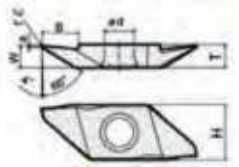


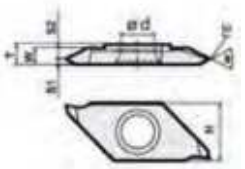
Designation	Stock		Dimensions(mm)							Insert	Spare parts	
	R	L	H	W	h	ℓ	T	L	S		Screw	Wrench
KTKFR/L 1010JX-12	●		10	10	10	15	6	120	10	TKF□12R/L	M4.5x9	T-15
KTKFR/L 1212JX-12	●		12	12	12	-	6	120	12			
KTKFR/L 1616JX-12	●		16	16	16	-	6	120	16			
KTKFR/L 2020JX-12	●		20	20	20	-	6	120	20			
KTKFR/L 1010JX-16	●		10	10	10	20	8	120	10	TKF□16R/L	M4.5x9	T-15
KTKFR/L 1212JX-16	●		12	12	12	-	8	120	12			
KTKFR/L 1616JX-16	●		16	16	16	-	8	120	16			
KTKFR/L 2020JX-16	●		20	20	20	-	8	120	20			

Auto Tools for Multi Utility

Inserts

Shape	Designation	Size							Coated		Configuration
		W±0.03	Dmax	rε	H	T	d	θ*	TPM8115S	TPM8125	
	TKFC12R/L 050-S	0.50	5	0.03	8.7	3	5	0*		●	
	TKFC12R/L 070-S	0.70	8	0.03	8.7	3	5	0*		●	
	TKFC12R/L 100-S	1.00	12	0.03	8.7	3	5	0*		●	
	TKFC12R/L 125-S	1.25	12	0.03	8.7	3	5	0*		●	
	TKFC12R/L 150-S	1.50	12	0.03	8.7	3	5	0*		●	
	TKFC12R/L 200-S	2.00	12	0.03	8.7	3	5	0*		●	
	TKFC16R/L 150-S	1.50	16	0.05	9.5	4	5	0*		●	
	TKFC16R/L 200-S	2.00	16	0.05	9.5	4	5	0*		●	
	TKFC12R/L 050-S-16DR	0.50	5	0.03	8.7	3	5	16*		●	
	TKFC12R/L 070-S-16DR	0.70	8	0.03	8.7	3	5	16*		●	
	TKFC12R/L 100-S-16DR	1.00	12	0.03	8.7	3	5	16*		●	
	TKFC12R/L 125-S-16DR	1.25	12	0.03	8.7	3	5	16*		●	
	TKFC12R/L 150-S-16DR	1.50	12	0.03	8.7	3	5	16*		●	
	TKFC12R/L 200-S-16DR	2.00	12	0.03	8.7	3	5	16*		●	
	TKFC16R/L 150-S-16DR	1.50	16	0.05	9.5	4	5	16*		●	
	TKFC16R/L 200-S-16DR	2.00	16	0.05	9.5	4	5	16*		●	

Shape	Designation	Size							Coated		Configuration
		W	α	rε	H	T	d	B	TPM8115S	TPM8125	
	TKFB12R/L 15-005-M	1.50	0.25	<0.05	8.7	3	5.2	2.6		●	
	TKFB12R/L 28-005-M	2.80	0.30	<0.05	8.7	3	5.2	4.6		●	
	TKFB12R/L 28-010-M	2.80	0.30	<0.10	8.7	3	5.2	4.6		●	
	TKFB16R/L 38-005-M	3.80	0.30	<0.05	9.5	4	5.2	6.3		●	
	TKFB16R/L 38-010-M	3.80	0.30	<0.10	9.5	4	5.2	6.3		●	

Shape	Designation	Pitch		Size								Coated		Uncoated	Configuration
		mm	TPI	T	W	H	S1	S2	rε	d	θ*	TPM8115S	TPM8125	TPK01	
TKFT12R/L	A60-000	0.20-0.60	64-48	3	2.5	9	0.40	2.10	max 0.05	5.2	60°	●	●	○	
	B60-000	0.20-0.60	64-48	3	2.5	9	2.10	0.40	Flat	5.2		●	●	○	
	A60-005	0.50-1.25	48-24	3	2.5	9	0.80	1.70	0.05	5.2		●	●	○	
	B60-005	0.50-1.25	48-24	3	2.5	9	1.70	0.80		5.2		●	●	○	
	N60-010	1.00-1.50	24-18	3	2.5	9	1.25	1.25	0.1	5.2		●	●	○	
	A55-005	-	40-16	3	2.5	9	0.80	1.70	0.05	5.2	55°	○	●	○	
	B55-005	-	40-16	3	2.5	9	1.70	0.80		5.2		○	●	○	

Lead angle(θ) indicates the angle when installed in toolholder.

Insert Cutting Diameter Dmax

When Using Main Spindle Only

Workpiece max, D1 = Dmax. Even if the cutting edge runs beyond the center line, the insert does not contact the workpiece, since the workpiece falls off. (The clearance between the insert and the work is 0.2mm)

Fig.1

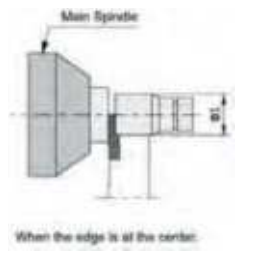
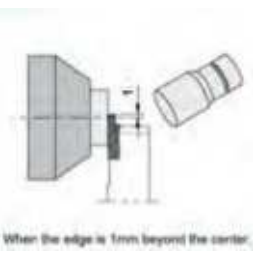


Fig.2



When Using Both Main and Sub Spindle

Workpiece max, D2 = Dmax-(Programmed distance beyond the center)x2 In this case, when the cutting dege runs beyond the center line, the insert will contact the workpiece, since the workpiece does not fall off. Therefore the programmed distance beyond the center must be considered.
When the cutting edge is programmed to run 1mm beyond the center, [D2=Dmax-1mmx2] (Max. clearance between insert and workpiece is 0.2mm in radius)

Fig.3

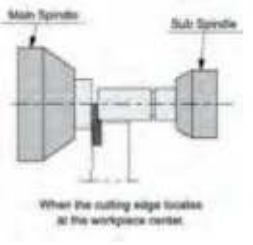
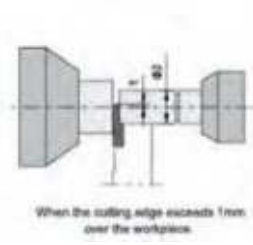


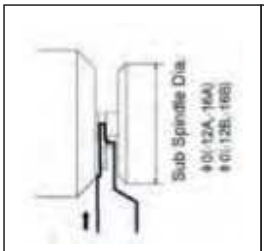
Fig.4

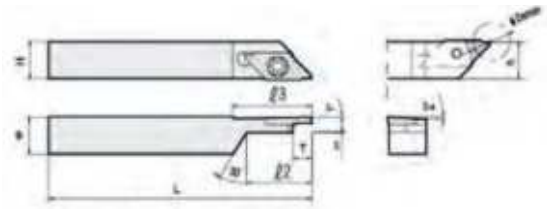


Auto Tools for Multi Utility

KTKFSR/L

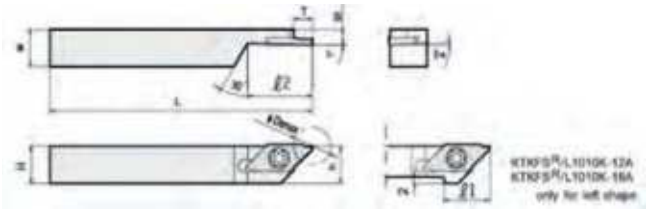
For Micro Diameter Cutt-off at Sub Spindle





Right-hand Shown

R-hand Insert for R-hand Toolholder.



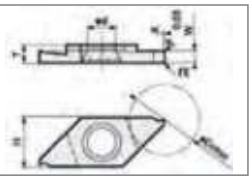
Left-hand Shown

L-hand Insert for L-hand Toolholder.

Designation	ΦD max*	Dimensions(mm)									Insert	Spare parts	
		H	W	h	ℓ1	ℓ2	ℓ3	L	S	T		Screw	Wrench
KTKFSR/L 1010-K12A	6-12	10	10	10	15	22	26	125	5	6	TKFS12R/L	M4.5x9	T-15
KTKFSR/L 1212-F12A	6-12	12	12	12	-	22	26	85	5	6			
KTKFSR/L 1212-K12B	6-12	12	12	12	-	26	26	125	5	6			
KTKFSR/L 1010-K16A	14-16	10	10	10	20	22	30	125	5	6	TKFS16R/L	M4.5x9	T-15
KTKFSR/L 1212-F16A	14-16	12	12	12	-	22	30	85	5	6			
KTKFSR/L 1212-K16B	14-16	12	12	12	-	26	30	125	5	6			

※ Dimension T shows the distance from the Toolholder to the cutting edge.
Cutting diameter (φ Dsmax) depends on the insert grooving width.
Only Right-hand is available for ℓ3 dimension.

Inserts

Shape	Designation	Size							Coated		Configuration
		W±0.03	Dmax	rε	H	T	d	θ*	TPM8115S	TPM8125	
	TKFS12R/L 100-S	1.00	6	0.05	8.7	2.2	4.4	0°	●	●	
	TKFS12R/L 150-S	1.50	9	0.05	8.7	2.2	4.4	0°	●	●	
	TKFS12R/L 200-S	2.00	12	0.05	8.7	2.2	4.4	0°	●	●	
	TKFS16R/L 150-S	1.50	14	0.05	9.5	2.2	4.4	0°	●	●	
	TKFS16R/L 200-S	2.00	16	0.05	9.5	2.2	4.4	0°	●	●	

※ As Fig. 1 shows, cutting diameter of Insert indicates the cutting diameter when the top of the cutting edge is programmed ti run 1mm beyond center. Lead angle (θ) shows the angle when installed in toolholder.

As Fig.1 shows, KTKFS is applicable when minimal clearance exists between the main spindle and sub spindle.

As Fig.2 shows, please use KTKFL when additional clearance is available. This will offer improve rigidity.

Fig.1

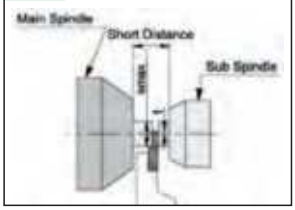
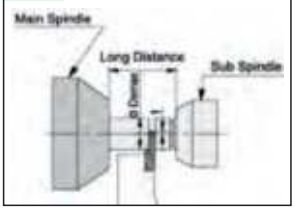


Fig.2



Techical Information for Tiny Tools

Turning tiny tool code system

TT	060	T	R	15	-	150	ISO	-	2	TTIM45
1	2	3	4	5		6	7		8	9
Main code	Insert size	Type of operation	Hand of Insert	Max. Depth		Process Figure	Thread Profile		Cutting edge	Carbide Grades

1 Main Code

TT 060 T R 15 150 ISO 2 TTIP30

TT = Tiny Tool

2 Insert Size

TT 060 T R 15 150 ISO 2 TTIP30

010: 1.0mm **015**: 1.5mm **020**: 2.0mm
030: 3.0mm **040**: 4.0mm **050**: 5.0mm
060: 6.0mm **070**: 7.0mm **080**: 8.0mm
100: 10.0mm **0XX**: Special Size

3 Type of operation

TT 060 T R 15 150 ISO 2 TTIP30

B = Borning **BP** = Profiling & Borning
BB = Back Borning **BF** = Chamfering
BU = Face Cutting **BC** = Copyring
BW = Chamfering & Profiling **G** = Square Grooving
GR = Round Grooving **GF** = Face Grooving
GRF = Round Face Grooving **T** = Threading
TD = Threading Relief **GV** = Deep Face Grooving

4 Hand of Insert

TT 060 T R 15 150 ISO 2 TTIP30

R = Right hand style
L = Left hand style

5 Max. Depth

TT 060 T R 15 150 ISO 2 TTIP30

05: 5.0mm **10**: 10.0mm **15**: 15.0mm
20: 20.0mm **25**: 25.0mm **30**: 30.0mm
35: 35.0mm

6 Process Figure

TT 060 T R 15 150 ISO 2 TTIP30

Borning: Nose radius Grooving: Grooving widt
Threading: Partial profile: F60
A60 or A55
AG60 or AG55
Full profile: ISO Metric
American UN
Tarpez DIN 103
ACME

7 Thread Profile

TT 060 T R 15 150 ISO 2 TTIP30

ISO - ISO Metric
Un - American UN (UNC, UNF, UNEF, UNS)
ACME - ACME
TR -Tarpez DIN 103

8 Cutting Edge

TT 060 T R 15 150 ISO 2 TTIP30

None: Single ended **2**: Double ended

9 Carbide Grades

TT 060 T R 15 150 ISO 2 TTIP30

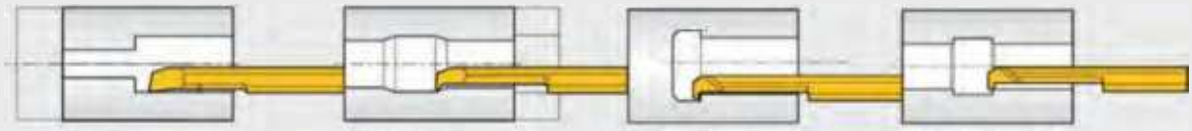
TTIP30 TTIM45 TTIS30
N400

Recommended Grade & Their Applications

Grade	Application Type	Sample
TTIM45	P20-P30 K20-K30, general use carbide grade for tiny tool medium to low cutting speed, TiALN coated	
TTIS30	K10-K20, premium multipurpose submicron grade for stronger wear resistance and improved productivity, AlTiN alloyed PVD coated. Ideal for steel and stainless steel in unstable cutting conditions.	
N400	K10-K20, Sub-micron grade with advanced PVD triple coating. Extremely high heat resistant and smooth cutting operation, for high performance, and normal machining conditions. General purpose for all materials.	

Types

Boring



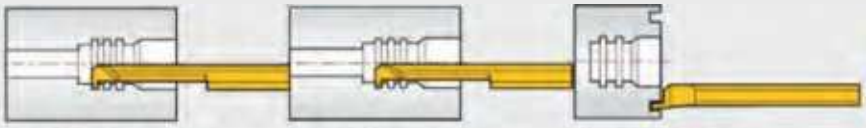
Boring
Min. dia. of machining : Ø3.2

Copying
Min. dia. of machining : Ø4.2

Back Boring
Min. dia. of machining : Ø3.2

Chamfering
Min. dia. of machining : Ø4.2

Grooving

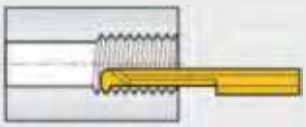


Square Grooving
Min. dia. of machining : Ø3.2

Round Grooving
Min. dia. of machining : Ø3.2

Face Grooving
Min. dia. of machining : Ø6.0

Threading



Threading
Min. dia. of machining : Ø3.3

Technical Information for Tiny Tools

Recommended Grades, Cutting Speeds Vc [m/min]

Material Group	Material		Hardness Brinell HB	Vc [m/min]		
				TTIM45	TTIS30	N400
P Steel	Unalloyed Steel	Low Carbon (C=0.1-0.25%)	125	50-120	140-200	30-80
		Medium Carbon (C=0.25-0.55%)	150	40-100	120-180	
		High Carbon (C=0.55-0.85%)	170	30-80	110-180	
	Low Alloy Steel (alloying elements≤5%)	Non Hardened	180	50-70	100-155	25-50
		Hardened	275	40-60	90-145	
		Hardened	350	30-50	80-135	
	Cast Steel	Annealed	200	30-50	65-115	25-50
		Hardened	325	25-40	50-100	
		Low Alloy (alloying elements <5%)	200	30-50	30-50	
		High Alloy (alloying elements >5%)	225	25-40	25-40	
M Stainless steel	Stainless Steel Ferritic	Non Hardened	200	60-100	60-120	30-60
		Hardened	330	40-60	55-95	
	Stainless Steel Austenitic	Austenitic	180	50-90	60-100	
		Super Austenitic	200	40-60	50-90	
	Stainless Steel Cast Ferritic	Non Hardened	200	40-60	60-80	
		Hardened	330	30-50	30-50	
	Stainless Steel Cast Austenitic	Austenitic	200	40-60	45-65	
		Hardened	330	30-50	30-50	
K Cast iron	Malleable Cast Iron	Ferritic (short chips)	130	50-70	50-70	20-50
		Pearlitic (long chips)	230	50-70	40-60	
	Grey Cast Iron	Low Tensile Strenght	180	50-70	60-80	30-80
		High Tensile Strenght	260	40-60	60-80	
	Nodular Sg Iron	Ferritic	160	50-70	60-80	30-80
		Pearlitic	260	60-80	70-90	
N (K) Non-Ferrous material	Aluminum Alloys Wrought	Non Aging	60	100-300	80-240	60-120
		Aged	100	100-150	100-170	
	Aluminum Alloys	Cast	75	100-150	100-150	50-90
		Cast & Aged	90	60-100	60-100	
		Cast Si 13-22%	130	100-150	100-150	
	Copper and Copper Alloys	Brass	90	60-100	80-200	30-70
		Bronze and Non Leaded Copper	100	60-100	80-200	
S Heat Resistant material	High Temperature Alloys	Annealed (iron based)	200	25-45	25-45	15-40
		Aged (iron based)	280	20-30	20-30	
		Annealed (nickel or cobalt based)	250	15-20	15-20	
		Aged (nickel or cobalt based)	350	10-15	10-15	
	Titanium Alloys	Pure 99.5 Ti	400Rm	60-100	60-100	10-30
			1050Rm	40-50	40-50	
H Hardened Material	Extra Hard Steel	Hardened & Tempered	45-50HRC	20-45	20-40	15-40
			51-55HRC	20-40	20-40	15-40

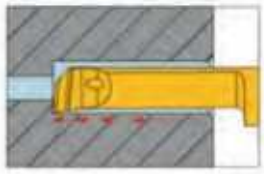
Recommended Feed f [mm/rev] and Max Depth [mm]

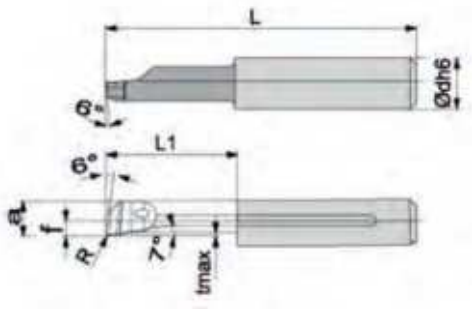
Material Group	Material		Hardness Brinell HB	Vc [m/min]		Max Depth [mm/rev]
						Boring
P Steel	Unalloyed Steel	Low Carbon (C=0.1-0.25%)	125	0.05	0.03	0.40
		Medium Carbon (C=0.25-0.55%)	150	0.04	0.02	0.40
		High Carbon (C=0.55-0.85%)	170	0.03	0.01	0.40
	Low Alloy Steel (alloying elements≤5%)	Non Hardened	180	0.04	0.02	0.30
		Hardened	275	0.04	0.01	0.30
		Hardened	350	0.03	0.0	0.30
	High Alloy Steel (alloying elements>5%)	Annealed	200	0.04	0.02	0.15
		Hardened	325	0.03	0.01	0.15
	Cast Steel	Low Alloy (alloying elements <5%)	200	0.04	0.02	0.15
		High Alloy (alloying elements >5%)	225	0.04	0.02	0.15
M Stainless steel	Stainless Steel Ferritic	Non Hardened	200	0.04	0.01	0.20
		Hardened	330	0.03	0.01	0.15
	Stainless Steel Austenitic	Austenitic	180	0.04	0.01	0.20
		Super Austenitic	200	0.04	0.01	0.15
	Stainless Steel Cast Ferritic	Non Hardened	200	0.04	0.02	0.20
		Hardened	330	0.03	0.01	0.15
	Stainless Steel Cast Austenitic	Austenitic	200	0.04	0.02	0.20
		Hardened	330	0.03	0.01	0.15
K Cast iron	Malleable Cast Iron	Ferritic (short chips)	130	0.02	0.02	0.25
		Pearlitic (long chips)	230	0.01	0.01	0.25
	Grey Cast Iron	Low Tensile Strenght	180	0.02	0.02	0.40
		High Tensile Strenght	260	0.01	0.01	0.40
	Nodular Sg Iron	Ferritic	160	0.02	0.02	0.40
		Pearlitic	260	0.01	0.01	0.40
N (K) Non-Ferrous material	Aluminum Alloys Wrought	Non Aging	60	0.03	0.03	0.50
		Aged	100	0.03	0.03	0.50
	Aluminum Alloys	Cast	75	0.03	0.03	0.50
		Cast & Aged	90	0.03	0.03	0.50
		Cast Si 13-22%	130	0.02	0.02	0.50
	Copper and Copper Alloys	Brass	90	0.03	0.03	0.50
		Bronze and Non Leaded Copper	100	0.03	0.03	0.50
S Heat Resistant material	High Temperature Alloys	Annealed (iron based)	200	0.04	0.01	0.20
		Aged (iron based)	280	0.03	0.01	0.15
		Annealed (nickel or cobalt based)	250	0.01	0.01	0.15
		Aged (nickel or cobalt based)	350	0.01	0.01	0.15
	Titanium Alloys	Pure 99.5 Ti	400Rm	0.02	0.02	0.15
		α+β alloys	1050Rm	0.02	0.02	0.15
H Hardened Material	Extra Hard Steel	Hardened & Tempered	45-50HRC	0.01	0.01	0.05
			51-55HRC	0.01	0.01	0.05

Auto Tools for Mini-system

TT□BR/L

For Micro Diameter Boring



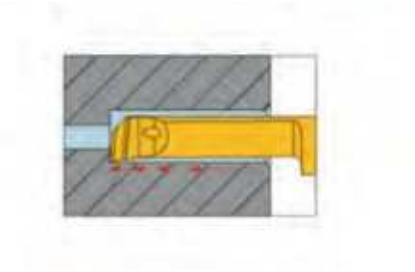


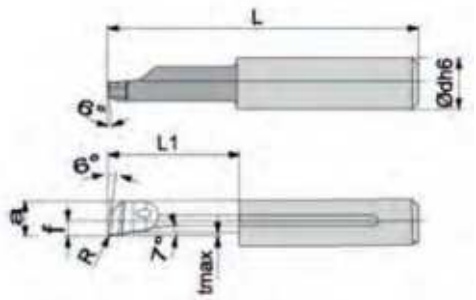
Designation	a	d	f	L1	L	tmax	R	Dmin
TT006BR/L03-R0.03	0.50	3	0.25	3	40	0.01	0.03	0.7
TT008BR/L04-R0.05	0.70	3	0.35	4	40	0.02	0.05	0.9
TT010BR/L04-R0.05	0.90	3	0.45	4	40	0.03	0.05	1.1
TT015BR/L06-R0.15	1.35	3	0.75	6	40	0.05	0.15	1.6
TT015BR/L09-R0.15	1.35	3	0.75	9	40	0.05	0.15	1.6
TT020BR/L06-R0.05	1.80	3	0.90	6	40	0.10	0.05	2.1
TT020BR/L10-R0.05	1.80	3	0.90	10	40	0.10	0.05	2.1
TT020BR/L10-R0.10	1.80	3	0.90	10	40	0.10	0.10	2.1
TT020BR/L15-R0.10	1.80	3	0.90	15	40	0.10	0.10	2.1
TT020BR/L06-R0.15	1.80	3	0.90	6	40	0.10	0.15	2.1
TT020BR/L10-R0.15	1.80	3	0.90	10	40	0.10	0.15	2.1
TT020BR/L15-R0.15	1.80	3	0.90	15	40	0.10	0.15	2.1
TT025BR/L10-R0.15	2.30	3	1.15	10	40	0.12	0.15	2.6
TT025BR/L15-R0.15	2.30	3	1.15	15	40	0.12	0.15	2.6
TT030BR/L10-R0.05	2.70	3	1.40	10	40	0.15	0.05	3.1
TT030BR/L15-R0.05	2.70	3	1.40	15	40	0.15	0.05	3.1
TT030BR/L10-R0.10	2.70	3	1.40	10	40	0.15	0.10	3.1
TT030BR/L15-R0.10	2.70	3	1.40	15	40	0.15	0.10	3.1
TT030BR/L10-R0.20	2.70	3	1.40	10	40	0.15	0.20	3.1
TT030BR/L15-R0.20	2.70	3	1.40	15	40	0.15	0.20	3.1
TT035BR/L10-R0.05	3.10	4	1.65	10	50	0.18	0.05	3.6
TT035BR/L22-R0.05	3.10	4	1.65	22	50	0.18	0.05	3.6
TT035BR/L10-R0.20	3.10	4	1.65	10	50	0.18	0.20	3.6
TT035BR/L15-R0.20	3.10	4	1.65	15	50	0.18	0.20	3.6
TT035BR/L22-R0.20	3.10	4	1.65	22	50	0.18	0.20	3.6
TT040BR/L10-R0.05	3.60	4	1.90	10	50	0.20	0.05	4.1
TT040BR/L15-R0.05	3.60	4	1.90	15	50	0.20	0.05	4.1
TT040BR/L22-R0.05	3.60	4	1.90	22	50	0.20	0.05	4.1
TT040BR/L10-R0.10	3.60	4	1.90	10	50	0.20	0.10	4.1
TT040BR/L15-R0.10	3.60	4	1.90	15	50	0.20	0.10	4.1
TT040BR/L22-R0.10	3.60	4	1.90	22	50	0.20	0.10	4.1
TT040BR/L10-R0.20	3.60	4	1.90	10	50	0.20	0.20	4.1

※ Ordering code example: TT060BR22-R0.20 TTIM45 for without coolant style TT060BR22-R0.20-C TTIM45 for coolant style
Additional sizes available by request.

TT□BR/L

For Micro Diameter Boring





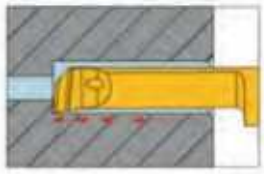
Designation	a	d	f	L1	L	tmax	R	Dmin
TT040BR/L15-R0.20	3.60	4	1.90	15	50	0.20	0.20	4.1
TT040BR/L22-R0.20	3.60	4	1.90	22	50	0.20	0.20	4.1
TT040BR/L30-R0.20	3.60	4	1.90	30	65	0.20	0.20	4.1
TT050BR/L15-R0.05	4.60	5	2.40	15	50	0.30	0.05	5.1
TT050BR/L22-R0.05	4.60	5	2.40	22	50	0.30	0.05	5.1
TT050BR/L15-R0.10	4.60	5	2.40	15	50	0.30	0.10	5.1
TT050BR/L22-R0.10	4.60	5	2.40	22	50	0.30	0.10	5.1
TT050BR/L30-R0.10	4.60	5	2.40	30	65	0.30	0.10	5.1
TT050BR/L15-R0.20	4.60	5	2.40	15	50	0.30	0.20	5.1
TT050BR/L22-R0.20	4.60	5	2.40	22	50	0.30	0.20	5.1
TT050BR/L30-R0.20	4.60	5	2.40	30	65	0.30	0.20	5.1
TT050BR/L35-R0.20	4.60	5	2.40	35	65	0.30	0.20	5.1
TT050BR/L15-R0.40	4.60	5	2.40	15	50	0.30	0.40	5.1
TT050BR/L22-R0.40	4.60	5	2.40	22	50	0.30	0.40	5.1
TT050BR/L30-R0.40	4.60	5	2.40	30	65	0.30	0.40	5.1
TT060BR/L15-R0.05	5.50	6	2.90	15	50	0.40	0.05	6.1
TT060BR/L22-R0.05	5.50	6	2.90	22	50	0.40	0.05	6.1
TT060BR/L15-R0.10	5.50	6	2.90	15	50	0.40	0.10	6.1
TT060BR/L22-R0.10	5.50	6	2.90	22	50	0.40	0.10	6.1
TT060BR/L15-R0.20	5.50	6	2.90	15	50	0.40	0.10	6.1
TT060BR/L22-R0.20	5.50	6	2.90	22	50	0.40	0.20	6.1
TT060BR/L30-R0.20	5.50	6	2.90	30	65	0.40	0.20	6.1
TT060BR/L35-R0.20	5.50	6	2.90	35	65	0.40	0.20	6.1
TT060BR/L40-R0.20	5.50	6	2.90	40	65	0.40	0.20	6.1
TT060BR/L15-R0.40	5.50	6	2.90	15	50	0.40	0.40	6.1
TT060BR/L22-R0.40	5.50	6	2.90	22	50	0.40	0.40	6.1
TT060BR/L30-R0.40	5.50	6	2.90	30	65	0.40	0.40	6.1
TT070BR/L15-R0.20	6.50	7	3.40	15	50	0.50	0.20	7.1
TT070BR/L22-R0.20	6.50	7	3.40	22	50	0.50	0.20	7.1
TT070BR/L30-R0.20	6.50	7	3.40	30	65	0.50	0.20	7.1
TT070BR/L35-R0.20	6.50	7	3.40	35	65	0.50	0.20	7.1
TT070BR/L42-R0.20	6.50	7	3.40	42	80	0.50	0.20	7.1

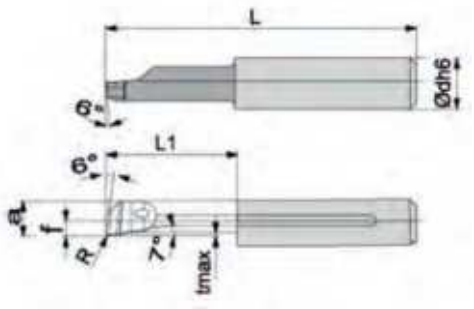
※ Ordering code example: TT060BR22-R0.20 TTIM45 for without coolant style TT060BR22-R0.20-C TTIM45 for coolant style
Additional sizes available by request.

Auto Tools for Mini-system

TT□BR/L

For Micro Diameter Boring



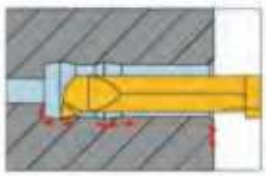


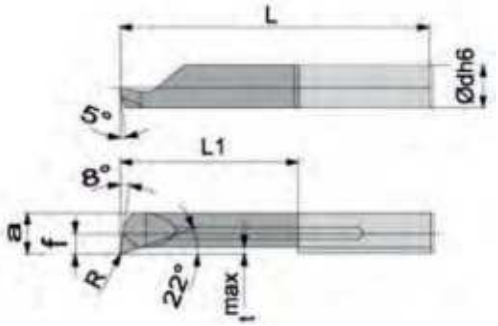
Designation	a	d	f	L1	L	tmax	R	Dmin
TT070BR/L50-R0.20	6.50	7	3.40	50	80	0.50	0.20	7.1
TT070BR/L22-R0.40	6.50	7	3.40	22	50	0.50	0.40	7.1
TT070BR/L30-R0.40	6.50	7	3.40	30	65	0.50	0.40	7.1
TT080BR/L22-R0.20	7.50	8	3.90	22	50	0.60	0.20	8.1
TT080BR/L30-R0.20	7.50	8	3.90	30	65	0.60	0.20	8.1
TT080BR/L40-R0.20	7.50	8	3.90	40	80	0.60	0.20	8.1
TT080BR/L55-R0.20	7.50	8	3.90	55	80	0.60	0.20	8.1
TT080BR/L22-R0.40	7.50	8	3.90	22	50	0.60	0.40	8.1
TT080BR/L30-R0.40	7.50	8	3.90	30	65	0.60	0.40	8.1
TT100BR/L35-R0.20	9.50	10	4.90	35	65	0.80	0.20	10.1
TT100BR/L50-R0.20	9.50	10	4.90	50	80	0.80	0.20	10.1
TT100BR/L35-R0.40	9.50	10	4.90	35	65	0.80	0.40	10.1
TT100BR/L50-R0.40	9.50	10	4.90	50	80	0.80	0.40	10.1

※ Ordering code example: TT060BR22-R0.20 TTIM45 for without coolant style TT060BR22-R0.20-C TTIM45 for coolant style
Additional sizes available by request.

TT□BPR/L

For Micro Diameter Boring & Profiling





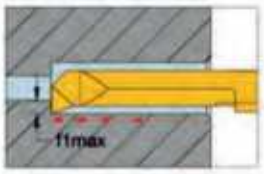
Designation	a	d	f	L1	L	tmax	R	Dmin
TT010BPR/L04-R0.05	0.90	3	0.45	4	40	0.20	0.05	1.1
TT015BPR/L06-R0.10	1.30	3	0.75	6	40	0.30	0.10	1.6
TT020BPR/L05-R0.15	1.70	3	0.90	5	40	0.50	0.15	2.1
TT020BPR/L10-R0.15	1.70	3	0.90	10	40	0.50	0.15	2.1
TT030BPR/L10-R0.05	2.60	3	1.40	10	40	0.70	0.05	3.1
TT030BPR/L15-R0.05	2.60	3	1.40	15	40	0.70	0.05	3.1
TT030BPR/L10-R0.10	2.60	3	1.40	10	40	0.70	0.10	3.1
TT030BPR/L15-R0.10	2.60	3	1.40	15	40	0.70	0.10	3.1
TT030BPR/L10-R0.20	2.60	3	1.40	10	40	0.70	0.20	3.1
TT030BPR/L15-R0.20	2.60	3	1.40	15	40	0.70	0.20	3.1
TT040BPR/L10-R0.10	3.50	4	1.90	10	50	0.80	0.10	4.1
TT040BPR/L15-R0.10	3.50	4	1.90	15	50	0.80	0.10	4.1
TT040BPR/L22-R0.10	3.50	4	1.90	22	50	0.80	0.10	4.1
TT040BPR/L10-R0.20	3.50	4	1.90	10	50	0.80	0.20	4.1
TT040BPR/L15-R0.20	3.50	5	1.90	15	50	0.80	0.20	4.1
TT040BPR/L22-R0.20	3.50	5	1.90	22	50	0.80	0.20	4.1
TT050BPR/L15-R0.10	4.40	5	2.40	15	50	1.20	0.10	5.1
TT050BPR/L22-R0.10	4.40	5	2.40	22	50	1.20	0.10	5.1
TT050BPR/L30-R0.10	4.40	5	2.40	30	65	1.20	0.10	5.1
TT050BPR/L15-R0.20	4.40	5	2.40	15	50	1.20	0.20	5.1
TT050BPR/L22-R0.20	4.40	5	2.40	22	50	1.20	0.20	5.1
TT050BPR/L30-R0.20	4.40	5	2.40	30	65	1.20	0.20	5.1
TT060BPR/L15-R0.20	5.30	6	2.90	15	50	1.40	0.20	6.1
TT060BPR/L22-R0.20	5.30	6	2.90	22	50	1.40	0.20	6.1
TT060BPR/L30-R0.20	5.30	6	2.90	30	65	1.40	0.20	6.1
TT070BPR/L22-R0.20	6.30	7	3.40	22	50	1.50	0.20	7.1
TT070BPR/L30-R0.20	6.30	7	3.40	30	65	1.50	0.20	7.1
TT080BPR/L22-R0.20	7.30	8	3.90	22	50	1.60	0.20	8.1
TT080BPR/L35-R0.20	7.30	8	3.90	35	65	1.60	0.20	8.1
TT100BPR/L35-R0.20	9.20	10	4.90	35	65	2.00	0.20	10.1

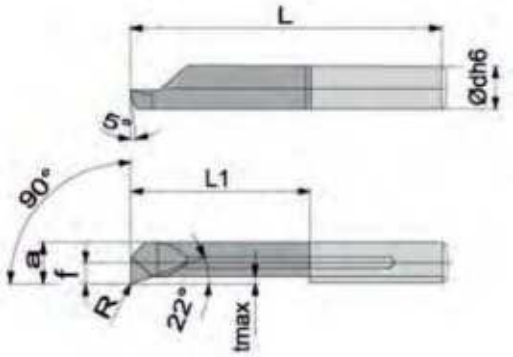
※ Ordering code example: TT040BR22-R0.10 TTIM45 for without coolant style TT040BR22-R0.10-C TTIM45 for coolant style
Additional sizes available by request.

Auto Tools for Mini-system

TT□BUR/L

For Micro Diameter Boring & Profiling with geometry 90°



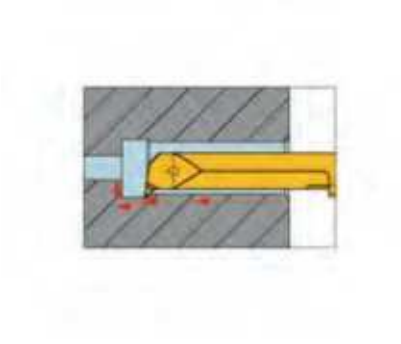


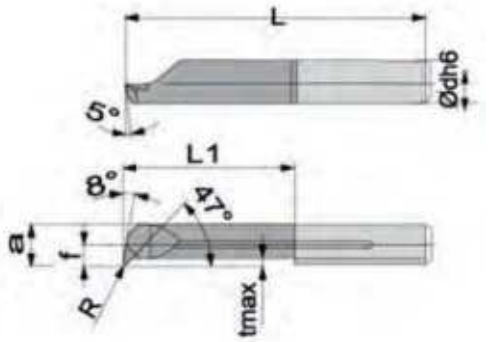
Designation	a	d	f	f1max	L1	L	tmax	R	Dmin
TT030BUR/L10-R0.05	2.60	3	1.40	1.40	10	40	0.40	0.05	3.1
TT030BUR/L15-R0.05	2.60	3	1.40	1.40	15	40	0.40	0.05	3.1
TT040BUR/L10-R0.10	3.50	4	1.90	1.90	10	50	0.50	0.10	4.1
TT040BUR/L15-R0.10	3.50	4	1.90	1.90	15	50	0.50	0.10	4.1
TT050BUR/L15-R0.15	4.40	5	2.40	2.30	15	50	0.70	0.15	5.1
TT050BUR/L22-R0.15	4.40	5	2.40	2.30	22	50	0.70	0.15	5.1
TT060BUR/L15-R0.15	5.30	6	2.90	2.80	15	50	0.90	0.15	6.1
TT060BUR/L22-R0.15	5.30	6	2.90	2.80	22	50	0.90	0.15	6.1
TT080BUR/L22-R0.20	7.30	8	3.90	3.80	22	50	1.10	0.20	8.1

※ Ordering code example: TT040BUR15-R0.10 TTIM45 for without coolant style TT040BUR15-R0.10-C TTIM45 for coolant style
Additional sizes available by request.

TT□BCR/L

For Micro Diameter Copying & Boring with geometry 47°



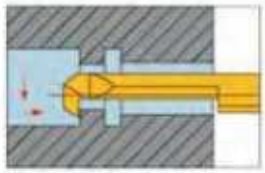


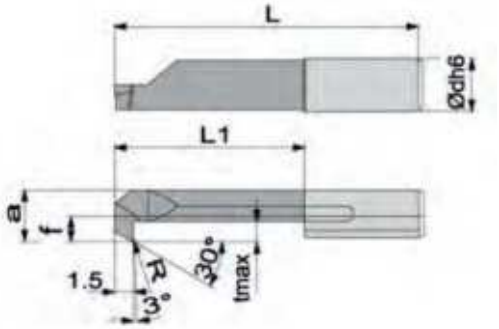
Designation	a	d	f	L1	L	tmax	R	Dmin
TT020BCR/L10-R0.05	1.70	3	0.90	10	40	0.50	0.05	2.1
TT030BCR/L10-R0.10	2.60	3	1.40	10	40	0.70	0.10	3.1
TT030BCR/L15-R0.10	2.60	3	1.40	15	40	0.70	0.10	3.1
TT030BCR/L10-R0.20	2.60	3	1.40	10	40	0.70	0.20	3.1
TT030BCR/L15-R0.20	2.60	3	1.40	15	40	0.70	0.20	3.1
TT040BCR/L10-R0.20	3.50	4	1.90	10	50	0.80	0.20	4.1
TT040BCR/L15-R0.20	3.50	4	1.90	15	50	0.80	0.20	4.1
TT040BCR/L22-R0.20	3.50	4	1.90	22	50	0.80	0.20	4.1
TT050BCR/L15-R0.20	4.40	5	2.40	15	50	1.00	0.20	5.1
TT050BCR/L22-R0.20	4.40	5	2.40	22	50	1.00	0.20	5.1
TT060BCR/L15-R0.20	5.30	6	2.90	15	50	1.40	0.20	6.1
TT060BCR/L22-R0.20	5.30	6	2.90	22	50	1.40	0.20	6.1
TT080BCR/L22-R0.20	5.30	8	3.90	22	50	1.80	0.20	8.1
TT080BCR/L27-R0.20	7.30	8	3.90	27	65	2.00	0.20	8.1

※ Ordering code example: TT040BCR15-R0.20 TTIM45 for without coolant style TT040BCR15-R0.20-C TTIM45 for coolant style
Additional sizes available by request.

TT□BBR/L

For Micro Diameter Back Boring



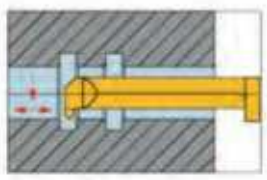


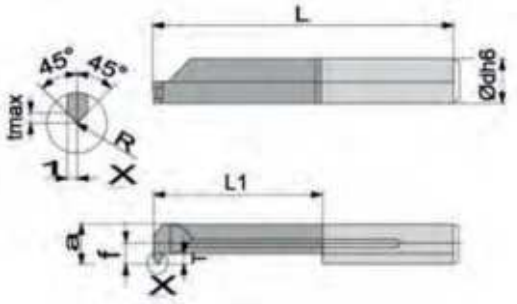
Designation	a	d	f	L1	L	tmax	R	Dmin
TT030BBR/L10-R0.10	2.60	3	1.40	10	40	0.50	0.10	3.1
TT040BBR/L10-R0.15	3.50	4	1.90	10	50	0.80	0.15	4.1
TT040BBR/L15-R0.15	3.50	4	1.90	15	50	0.80	0.15	4.1
TT050BBR/L15-R0.20	4.40	5	2,40	15	50	1.00	0.20	5.1
TT050BBR/L22-R0.20	4.40	5	2.40	22	50	1.00	0.20	5.1
TT060BBR/L15-R0.20	5.30	6	2.90	15	50	1.80	0.20	6.1
TT060BBR/L22-R0.20	5.30	6	2.90	22	50	1.80	0.20	6.1
TT070BBR/L22-R0.20	6.30	7	3.40	22	50	2.50	0.20	7.1
TT070BBR/L30-R0.20	6.30	7	3.40	30	65	2.50	0.20	7.1

※ Ordering code example: TT040BBR15-R0.15 TTIM45 for without coolant style TT040BBR15-R0.15-C TTIM45 for coolant style
Additional sizes available by request.

TT□BFR/L

For Micro Diameter Chamfering & Boring



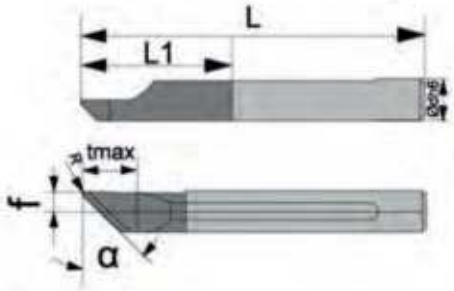


Designation	a	d	f	L1	L	tmax	T	R	Dmin
TT030BFR/L10-R0.20	2.70	3	1.40	10	40	0.30	0.70	0.20	3.1
TT040BFR/L15-R0.20	3.50	4	1.90	15	50	0.40	0.80	0.20	4.1
TT050BFR/L15-R0.20	4.40	5	2.40	15	50	0.70	1.20	0.20	5.1
TT060BFR/L15-R0.20	5.30	6	2.90	15	50	0.70	1.40	0.20	6.1

※ Ordering code example: TT040BFR15-R0.20 TTIM45 for without coolant style TT040BFR15-R0.20-C TTIM45 for coolant style
Additional sizes available by request.

TT□BWR/L

For Micro Diameter Chamfering & Profiling



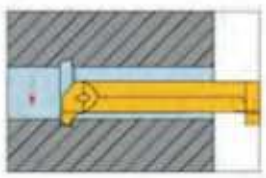
Designation	α	β	d	f	L1	L	tmax	R	Dmin
TT060BWR/L15-R0.20-A45	45°	45°	6	2.3	15	50	3.50	0.20	1.0
TT060BWR/L15-R0.20-A60	60°	30°	6	2.3	15	50	4.00	0.20	1.0
TT060BWR/L22-R0.20-A45	45°	45°	6	2.3	22	50	3.50	0.20	6.0
TT060BWR/L22-R0.20-A60	60°	30°	6	2.3	22	50	4.00	0.20	6.0

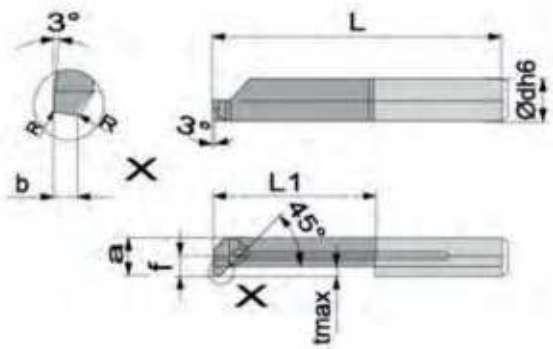
※ Ordering code example: TT060BWR15-R0.20 TTIM45 for without coolant style TT060BWR15-R0.20-C TTIM45 for coolant style
Additional sizes available by request.

Auto Tools for Mini-system

TT□TDR/L

For Thread Relief, Chamfering and Grooving



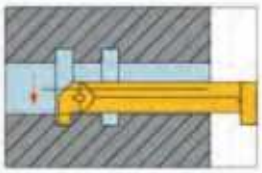


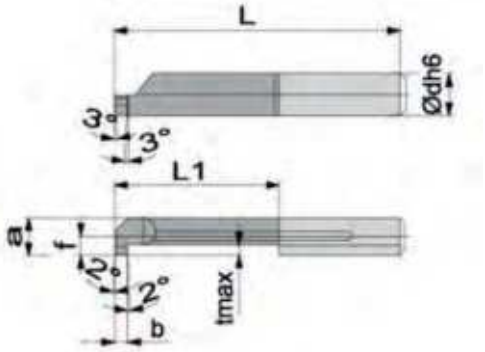
Designation	b	a	d	L1	L	f	tmax	R	Dmin
TT040TDR/L16-B100	1.0	3.50	4	16	50	1.9	0.8	0.50	4.1
TT040TDR/L18-B150	1.5	3.50	4	18	50	1.9	0.8	0.50	4.1
TT050TDR/L20-B100	1.0	4.40	5	20	50	2.4	1.0	0.50	5.1
TT050TDR/L24-B150	1.5	4.40	5	24	50	2.4	1.2	0.50	5.1
TT060TDR/L30-B100	1.0	5.30	6	30	50	2.9	1.0	0.50	6.1
TT060TDR/L27-B150	1.5	5.30	6	27	50	2.9	1.4	0.50	6.1

※ Ordering code example: TT060TDR27-B150 TTIM45 for without coolant style TT060TDR27-B150-C TTIM45 for coolant style
Additional sizes available by request.

TT□GR/L

For Micro Diameter Grooving





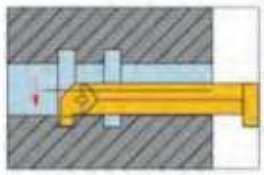
Designation	b	a	d	f	L1	L	tmax	Dmin
TT010GR/L04-B030	0.3	0.9	3	0.45	4	40	0.2	1.1
TT010GR/L07-B030	0.3	0.9	3	0.45	7	40	0.2	1.1
TT015GR/L05-B040	0.4	1.4	3	0.75	5	40	0.4	1.6
TT015GR/L10-B040	0.4	1.4	3	0.75	10	40	0.4	1.6
TT015GR/L12-B040	0.4	1.4	3	0.75	12	40	0.4	1.6
TT020GR/L06-B050	0.5	1.8	3	0.95	6	40	0.4	2.1
TT020GR/L10-B050	0.5	1.8	3	0.95	10	40	0.4	2.1
TT020GR/L15-B050	0.5	1.8	3	0.95	15	40	0.4	2.1
TT030GR/L10-B070	0.7	2.7	3	1.40	10	40	0.6	3.1
TT030GR/L15-B070	0.7	2.7	3	1.40	15	40	0.6	3.1
TT040GR/L10-B100	1.0	3.5	4	1.90	10	50	1.0	4.1
TT040GR/L10-B150	1.5	3.5	4	1.90	10	50	1.0	4.1
TT040GR/L15-B100	1.0	3.5	4	1.90	15	50	1.0	4.1
TT040GR/L15-B150	1.5	3.5	4	1.90	15	50	1.0	4.1
TT040GR/L22-B100	1.0	3.5	4	1.90	22	50	1.0	4.1
TT040GR/L22-B150	1.5	3.5	4	1.90	22	50	1.0	4.1
TT050GR/L10-B100	1.0	4.4	5	2.40	10	50	1.2	5.1
TT050GR/L10-B150	1.5	4.4	5	2.40	10	50	1.2	5.1
TT050GR/L10-B200	2.0	4.4	5	2.40	10	50	1.2	5.1
TT050GR/L15-B100	1.0	4.4	5	2.40	15	50	1.2	5.1
TT050GR/L15-B150	1.5	4.4	5	2.40	15	50	1.2	5.1
TT050GR/L15-B200	2.0	4.4	5	2.40	15	50	1.2	5.1
TT050GR/L22-B100	1.0	4.4	5	2.40	22	50	1.2	5.1
TT050GR/L22-B150	1.5	4.4	5	2.40	22	50	1.2	5.1
TT050GR/L22-B200	2.0	4.4	5	2.40	22	50	1.2	5.1
TT050GR/L30-B100	1.0	4.4	5	2.40	30	65	1.2	5.1
TT050GR/L30-B150	1.5	4.4	5	2.40	30	65	1.2	5.1
TT050GR/L30-B200	2.0	4.4	5	2.40	30	65	1.2	5.1
TT050GR/L35-B100	1.0	4.4	5	2.40	35	65	1.2	5.1
TT050GR/L35-B150	1.5	4.4	5	2.40	35	65	1.2	5.1

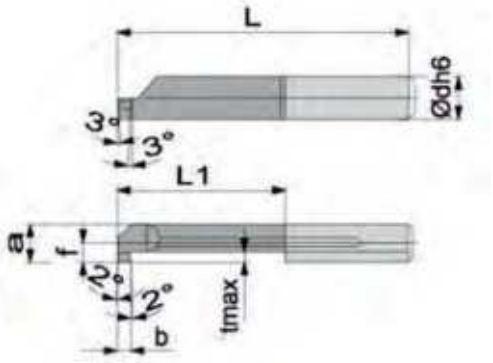
※ Ordering code example: TT060GR22-B100 TTIM45 for without coolant style TT060GR22-B100-C TTIM45 for coolant style
Additional sizes available by request.

Auto Tools for Mini-system

TT□GR/L

For Micro Diameter Grooving

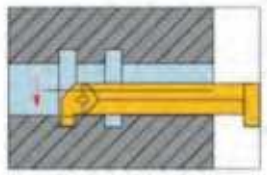


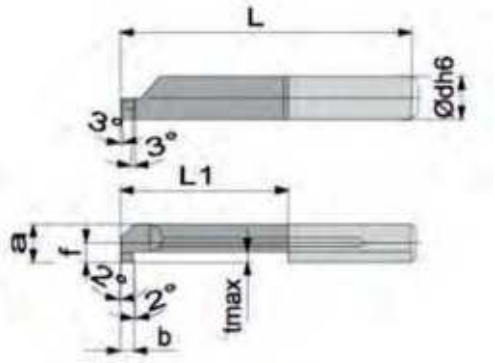


Designation	b	a	d	f	L1	L	tmax	Dmin
TT050GR/L35-B200	2.0	4.4	5	2.40	35	65	1.2	5.1
TT060GR/L10-B100	1.0	5.3	6	2.90	10	50	1.8	6.1
TT060GR/L10-B150	1.5	5.3	6	2.90	10	50	1.8	6.1
TT060GR/L10-B200	2.0	5.3	6	2.90	10	50	1.8	6.1
TT060GR/L15-B100	1.0	5.3	6	2.90	15	50	1.8	6.1
TT060GR/L15-B150	1.5	5.3	6	2.90	15	50	1.8	6.1
TT060GR/L15-B200	2.0	5.3	6	2.90	15	50	1.8	6.1
TT060GR/L22-B100	1.0	5.3	6	2.90	22	50	1.8	6.1
TT060GR/L22-B150	1.5	5.3	6	2.90	22	50	1.8	6.1
TT060GR/L22-B200	2.0	5.3	6	2.90	22	50	1.8	6.1
TT060GR/L30-B100	1.0	5.3	6	2.90	30	65	1.8	6.1
TT060GR/L30-B150	1.5	5.3	6	2.90	30	65	1.8	6.1
TT060GR/L30-B200	2.0	5.3	6	2.90	30	65	1.8	6.1
TT060GR/L35-B100	1.0	5.3	6	2.90	35	65	1.8	6.1
TT060GR/L35-B150	1.5	5.3	6	2.90	35	65	1.8	6.1
TT060GR/L35-B200	2.0	5.3	6	2.90	35	65	1.8	6.1
TT070GR/L15-B100	1.0	6.3	7	3.40	15	50	2.5	7.1
TT070GR/L15-B150	1.5	6.3	7	3.40	15	50	2.5	7.1
TT070GR/L15-B200	2.0	6.3	7	3.40	15	50	2.5	7.1
TT070GR/L22-B100	1.0	6.3	7	3.40	22	50	2.5	7.1
TT070GR/L22-B150	1.5	6.3	7	3.40	22	50	2.5	7.1
TT070GR/L22-B200	2.0	6.3	7	3.40	22	50	2.5	7.1
TT070GR/L30-B100	1.0	6.3	7	3.40	30	65	2.5	7.1
TT070GR/L30-B150	1.5	6.3	7	3.40	30	65	2.5	7.1
TT070GR/L30-B200	2.0	6.3	7	3.40	30	65	2.5	7.1
TT070GR/L40-B100	1.0	6.3	7	3.40	40	65	2.5	7.1
TT070GR/L40-B150	1.5	6.3	7	3.40	40	65	2.5	7.1
TT070GR/L40-B200	2.0	6.3	7	3.40	40	65	2.5	7.1
TT080GR/L22-B100	1.0	7.3	8	3.90	22	50	3.1	8.1
TT080GR/L22-B150	1.5	7.3	8	3.90	22	50	3.1	8.1

TT□GR/L

For Micro Diameter Grooving



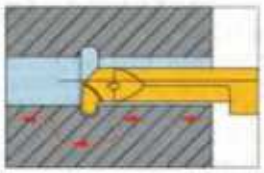


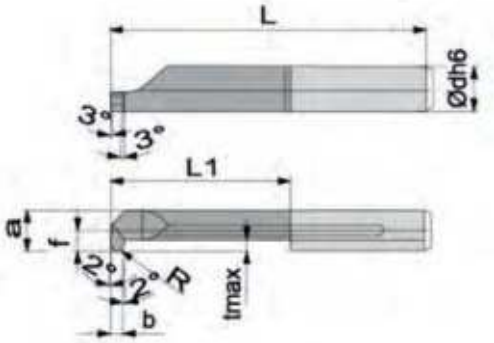
Designation	b	a	d	f	L1	L	tmax	Dmin
TT080GR/L22-B200	2.0	7.3	8	3.90	22	50	3.1	8.1
TT080GR/L30-B100	1.0	7.3	8	3.90	30	65	3.1	8.1
TT080GR/L30-B150	1.5	7.3	8	3.90	30	65	3.1	8.1
TT080GR/L30-B200	2.0	7.3	8	3.90	30	65	3.1	8.1
TT080GR/L40-B100	1.0	7.3	8	3.90	40	65	3.1	8.1
TT080GR/L40-B150	1.5	7.3	8	3.90	40	65	3.1	8.1
TT080GR/L40-B200	2.0	7.3	8	3.90	40	65	3.1	8.1
TT100GR/L30-B100	1.0	9.9	10	4.90	30	65	4.0	10.1
TT100GR/L30-B200	2.0	9.9	10	4.90	30	65	4.0	10.1
TT100GR/L30-B300	3.0	9.9	10	4.90	30	65	4.0	10.1
TT100GR/L50-B100	1.0	9.9	10	4.90	50	80	4.0	10.1
TT100GR/L50-B200	2.0	9.9	10	4.90	50	80	4.0	10.1
TT100GR/L50-B300	3.0	9.9	10	4.90	50	80	4.0	10.1

※ Ordering code example: TT060GR22-B100 TTIM45 for without coolant style TT060GR22-B100-C TTIM45 for coolant style
Additional sizes available by request.

TT□GRR/L

For Micro Diameter Grooving with Full Radius



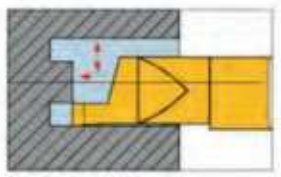


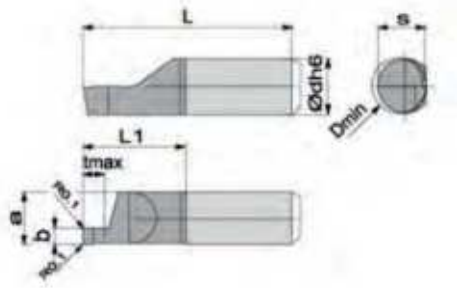
Designation	b	a	d	f	L1	L	tmax	Dmin	R
TT030GRR/L10-B100	1.00	2.70	3	1.40	10	50	0.60	3.1	0.50
TT040GRR/L10-B100	1.00	3.50	4	1.90	10	50	1.00	4.1	0.50
TT040GRR/L10-B150	1.50	3.50	4	1.90	10	50	1.00	4.1	0.75
TT050GRR/L15-B100	1.00	4.40	5	2.40	15	50	1.20	5.1	0.50
TT050GRR/L15-B150	1.50	4.40	5	2.40	15	50	1.20	5.1	0.75
TT050GRR/L15-B200	2.00	4.40	5	2.40	15	50	1.20	5.1	1.00
TT060GRR/L15-B100	1.00	5.30	6	2.90	15	50	1.60	6.1	0.50
TT060GRR/L15-B150	1.50	5.30	6	2.90	15	50	1.60	6.1	0.75
TT060GRR/L15-B200	2.00	5.30	6	2.90	15	50	1.60	6.1	1.00
TT070GRR/L22-B100	1.00	6.30	7	3.40	22	50	2.50	7.1	0.50
TT070GRR/L22-B150	1.50	6.30	7	3.40	22	50	2.50	7.1	0.75
TT070GRR/L22-B200	2.00	63.0	7	3.40	22	50	2.50	7.1	1.00

※ Ordering code example: TT060GRR15-B150 TTIM45 for without coolant style TT060GRR15-B150-C TTIM45 for coolant style
Additional sizes available by request.

TT□GFR

For Micro Diameter Face Grooving





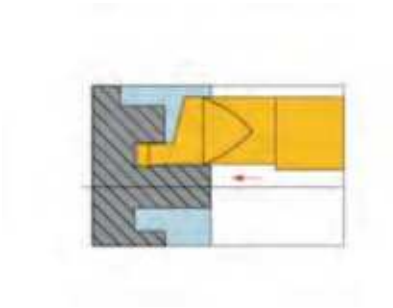
Designation	b	a	d	S	L1	L	tmax	Dmin
TT040GFR15-B075	0.75	3.50	4	3.3	15	50	1.20	5.0
TT040GFR15-B100	1.00	3.50	4	3.3	15	50	1.50	5.0
TT040GFR15-B150	1.50	3.50	4	3.3	15	50	2.80	5.0
TT050GFR22-B075	0.75	4.30	5	4.3	22	50	1.20	6.0
TT050GFR22-B100	1.00	4.30	5	4.3	22	50	1.50	6.0
TT050GFR22-B150	1.50	4.30	5	4.3	22	50	2.50	6.0
TT050GFR22-B200	2.00	4.30	5	4.3	22	50	3.80	6.0
TT060GFR22-B100	1.00	5.20	6	5.3	22	50	1.50	8.0
TT060GFR22-B150	1.50	5.20	6	5.3	22	50	2.50	8.0
TT060GFR22-B200	2.00	5.20	6	5.3	22	50	3.00	8.0
TT060GFR22-B250	2.50	5.20	6	5.3	22	50	4.80	8.0
TT060GFR30-B300	3.00	5.20	6	5.3	30	65	6.00	8.0
TT080GFR22-B250	2.50	6.90	8	6.3	22	50	3.50	10.0

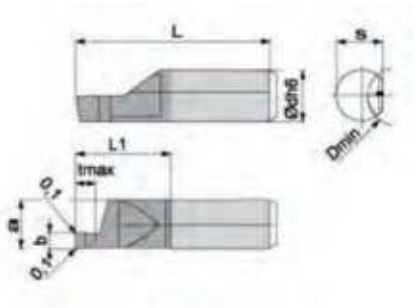
※ Ordering code example: TT040GFR15-B150 TTIM45 for without coolant style TT040GFR15-B150-C TTIM45 for coolant style
Additional sizes available by request.

Auto Tools for Mini-system

TT□GFL

For Micro Diameter Face Grooving in Pivots



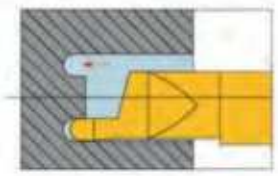


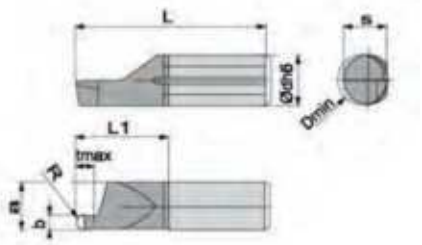
Designation	b	a	d	S	L1	L	tmax	Dmin
TT040GFL15-B075	0.75	3.50	4	4.3	15	50	1.20	5.0
TT040GFL15-B100	1.00	3.50	4	3.3	15	50	1.50	5.0
TT040GFL15-B150	1.50	3.50	4	3.3	15	50	2.80	5.0
TT050GFL22-B075	0.75	4.30	5	4.3	22	50	1.20	6.0
TT050GFL22-B100	1.00	4.30	5	4.3	22	50	1.50	6.0
TT050GFL22-B150	1.50	4.30	5	4.3	22	50	2.50	6.0
TT050GFL22-B200	2.00	4.30	5	4.3	22	50	3.80	6.0
TT060GFL22-B100	1.00	5.20	6	5.3	22	50	1.50	8.0
TT060GFL22-B150	1.50	5.20	6	5.3	22	50	2.50	8.0
TT060GFL22-B200	2.00	5.20	6	5.3	22	50	3.00	8.0
TT060GFL22-B250	2.50	5.20	6	5.3	22	50	4.80	8.0
TT060GFL30-B300	3.00	5.20	6	5.3	30	65	6.00	8.0
TT080GFL22-B250	2.50	6.90	8	7.0	22	50	3.50	10.0

※ Ordering code example: TT050GFL22-B150 TTIM45 for without coolant style TT050GFL22-B150-C TTIM45 for coolant style
Additional sizes available by request.

TT□GRFR

For Micro Diameter Face Grooving with Full Radius





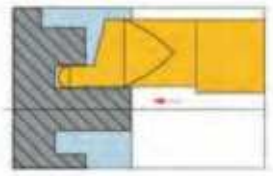
Designation	b	a	d	S	L1	L	tmax	Dmin	R
TT040GRFR15-B100	1.00	3.50	4	3.3	15	50	1.20	5.0	0.50
TT040GRFR15-B150	1.50	3.50	4	3.3	15	50	1.50	5.0	0.75
TT050GRFR22-B100	1.00	4.30	5	4.3	22	50	1.20	6.0	0.50
TT050GRFR22-B150	1.50	4.30	5	4.3	22	50	1.50	6.0	0.75
TT050GRFR22-B200	2.00	4.30	5	4.3	22	50	2.50	6.0	1.00
TT060GRFR22-B100	1.00	5.20	6	5.3	22	50	1.20	8.0	0.50
TT060GRFR22-B150	1.50	5.20	6	5.3	22	50	1.50	8.0	0.75
TT060GRFR22-B200	2.00	5.20	6	5.3	22	50	2.50	8.0	1.00

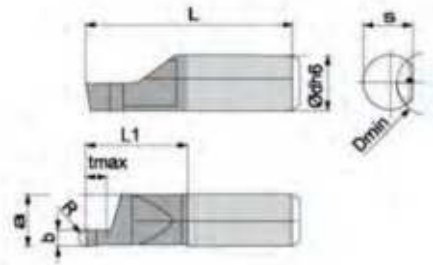
※ Ordering code example: TT040GRFR15-B100 TTIM45 for without coolant style TT040GRFR15-B100-C TTIM45 for coolant style
Additional sizes available by request.

Auto Tools for Mini-system

TT□GRFL

For Micro Diameter Face Grooving in Pivots with Full Radius



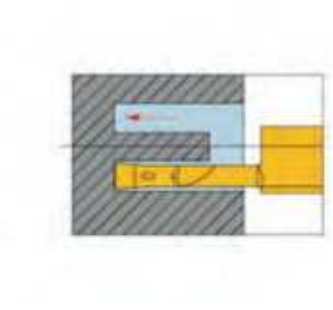


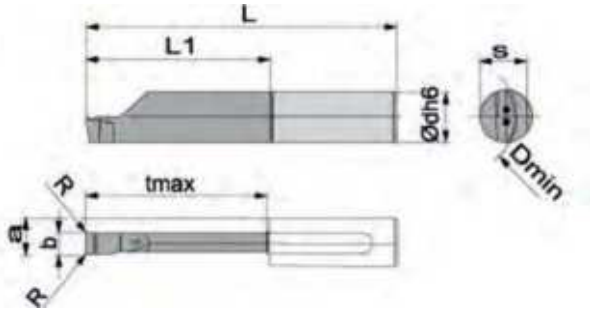
Designation	b	a	d	S	L1	L	tmax	R	Dmin
TT040GRFL15-B100	1.0	3.50	4	3.3	15	50	1.2	0.50	5.0
TT040GRFL15-B150	1.5	3.50	4	3.3	15	50	1.5	0.75	5.0
TT050GRFL22-B100	1.0	4.30	5	4.3	22	50	1.2	0.50	6.0
TT050GRFL22-B150	1.5	4.30	5	4.3	22	50	1.5	0.75	6.0
TT050GRFL22-B200	2.0	4.30	5	4.3	22	50	2.5	1.00	6.0
TT060GRFL22-B100	1.0	5.20	6	5.3	22	50	1.2	0.50	8.0
TT060GRFL22-B150	1.5	5.20	6	5.3	22	50	1.5	0.75	8.0
TT060GRFL22-B200	2.0	5.20	6	5.3	22	50	2.5	1.00	8.0

※ Ordering code example: TT060GRFL22-B100 TTIM45 for without coolant style TT060GRFL22-B100-C TTIM45 for coolant style
Additional sizes available by request.

TT□GVR/L

For deep face grooving





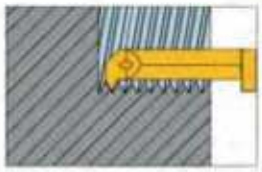
Designation	b	a	d	S	L1	L	tmax	Dmin	R
TT060GVR/L10-B200	2.0	4.00	6	5.3	10	50	10	10.0	0.20
TT060GVR/L15-B200	2.0	4.00	6	5.3	15	50	15	12.0	0.20
TT060GVR/L22-B200	2.0	4.00	6	5.3	22	50	22	12.0	0.20
TT060GVR/L15-B250	2.5	4.25	6	5.3	15	50	15	10.0	0.20
TT060GVR/L22-B250	2.5	4.25	6	5.3	22	50	22	12.0	0.20
TT060GVR/L22-B300	3.0	4.50	6	5.3	22	50	22	10.0	0.20
TT070GVR/L10-B150	1.5	5.90	7	6.3	10	50	10	8.0	0.20
TT070GVR/L15-B200	2.0	5.90	7	6.3	15	50	15	8.0	0.20
TT070GVR/L22-B300	3.0	5.90	7	6.3	22	50	22	8.0	0.20
TT080GVR/L10-B200	2.0	5.00	8	7.3	10	50	10	12.0	0.20
TT080GVR/L15-B200	2.0	5.00	8	7.3	15	50	15	12.0	0.20
TT080GVR/L10-B300	3.0	5.50	8	7.3	10	50	10	12.0	0.20
TT080GVR/L15-B300	3.0	5.50	8	7.3	15	50	15	12.0	0.20
TT080GVR/L27-B300	3.0	5.50	8	7.3	27	65	27	15.0	0.20
TT080GVR/L43-B300	3.0	5.50	8	7.3	43	80	43	15.0	0.20
TT080GVR/L25-B400	4.0	6.00	8	7.3	25	65	25	20.0	0.20
TT080GVR/L43-B400	4.0	6.00	8	7.3	43	80	43	20.0	0.20

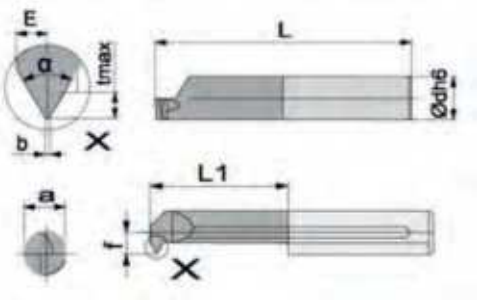
※ Ordering code example: TT060GVL22-B200 TTIM45 for without coolant style TT060GVL22-B200-C TTIM45 for coolant style
Additional sizes available by request.

Auto Tools for Mini-system

TT□TR/L

For Micro Diameter Threading - Partial Profile



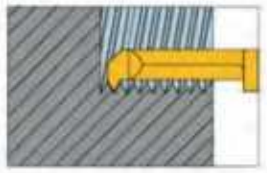


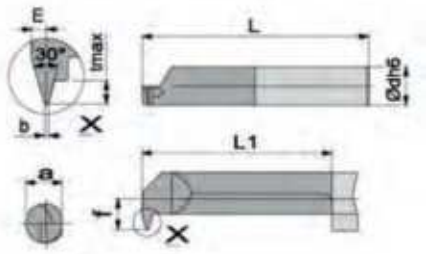
Designation	α	Pitch		a	d	f	L1	L	tmax	E	b	Dmin
		mm	TPI									
TT020TR/L08-A60	60°	0.45-0.70	56-32	1.45	3	0.90	8	40	0.24	0.22	0.06	2.1
TT030TR/L15-A55	55°	0.50-1.00	48-24	2.30	3	1.40	15	40	0.27	0.33	0.04	3.2
TT030TR/L15-A60	60°	0.70-1.00	32-24	2.30	3	1.40	15	40	0.27	0.33	0.04	3.2
TT040TR/L15-A55	55°	0.50-1.00	48-24	3.50	4	1.90	15	50	0.43	0.45	0.10	4.1
TT040TR/L15-A60	60°	0.80-1.00	32-24	3.50	4	1.90	15	50	0.43	0.45	0.10	4.1
TT050TR/L15-A55	55°	0.50-1.25	48-20	4.40	5	2.40	15	50	0.40	0.45	0.06	5.1
TT050TR/L22-A55	55°	0.50-1.25	48-20	4.40	5	2.40	22	50	0.40	0.45	0.06	5.1
TT050TR/L15-A60	60°	1.00-1.25	24-20	4.40	5	2.40	15	50	0.55	0.55	0.12	5.1
TT050TR/L22-A60	60°	1.00-1.25	24-20	4.40	5	2.40	22	50	0.55	0.55	0.12	5.1
TT060TR/L15-A55	55°	0.50-1.50	48-16	5.30	6	2.90	15	50	0.81	0.75	0.12	6.0
TT060TR/L22-A55	55°	0.50-1.50	48-16	5.30	6	2.90	22	50	0.81	0.75	0.12	6.0
TT060TR/L15-A60	60°	1.00-1.50	24-16	5.30	6	2.90	15	50	0.68	0.65	0.15	6.0
TT060TR/L22-A60	60°	1.00-1.50	24-16	5.30	6	2.90	22	50	0.68	0.65	0.15	6.0
TT080TR/L22-A60	60°	1.00-2.00	24-13	7.30	8	3.90	22	50	0.94	0.85	0.21	8.0

※ Ordering code example: TT050TR22-A60 TTIM45 for without coolant style TT050TR22-A60-C TTIM45 for coolant style
Additional sizes available by request.

TT□TR/L

For Micro Diameter Threading - Trapezoidal Thread





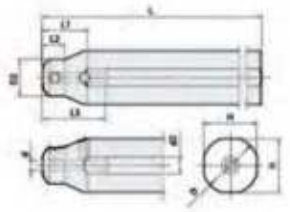
Designation	α	Pitch		a	d	f	L1	L	tmax	E	b	Dmin
		mm	TPI									
TT060TR/L22-150TR	30°	1.5	-	5.70	6	2.90	22	50	0.90	0.60	0.42	6.1
TT070TR/L25-200TR	30°	2.0	-	6.30	7	3.50	25	65	1.25	0.75	0.60	6.9
TT070TR/L22-300TR	30°	3.0	-	6.30	7	4.90	22	65	1.75	0.75	0.60	6.9
TT070TR/L35-300TR	30°	3.0	-	6.30	7	4.90	35	65	1.75	1.10	0.96	11.0
TT100TR/L35-200TR	30°	2.0	-	9.20	10	4.90	35	65	1.25	0.75	0.60	7.5
TT100TR/L35-300TR	30°	3.0	-	9.20	10	4.90	35	65	1.75	1.10	0.96	10.5

※ Ordering code example: TT070TR25-200TR TTIM45 for without coolant style TT070TR25-200TR-C TTIM45 for coolant style
Additional sizes available by request.

Auto Tools for Mini-system

Sleeve

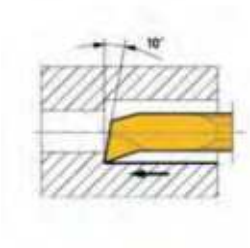
For Micro Diameter Tools

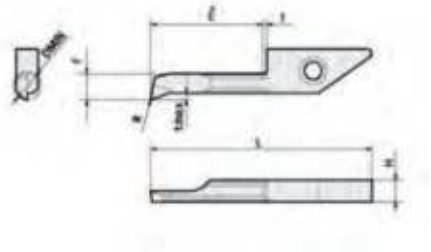


Designation	d	D	H	d2	D2	L1	L2	L3	L	Spare Parts	
										Screw	Wrench
TCL1203-100L-2N	3	12	11	6.0	12.0	16	8	21	100	HS3040P	HW15L
TCL1204-100L-2N	4	12	11	6.0	12.0	16	8	24	100	HS4040P	HW20L
TCL1205-100L-2N	5	12	11	8.0	12.0	-	-	29	100	HS4040P	HW20L
TCL1206-100L-2N	6	12	11	8.0	12.0	-	-	31	100	HS5050P	HW25L
TCL1603-100L-2N	3	16	15	6.0	12.0	16	8	21	100	HS3040P	HW15L
TCL1604-100L-2N	4	16	15	6.0	13.0	16	8	24	100	HS4040P	HW20L
TCL1605-100L-2N	5	16	15	8.0	14.7	-	-	29	100	HS4040P	HW20L
TCL1606-100L-2N	6	16	15	8.0	15.0	-	-	31	100	HS5050P	HW25L
TCL1607-100L-2N	7	16	15	8.0	15.7	-	-	33	100	HS6060P	HW30L
TCL1608-100L-2N	8	16	15	8.4	15.7	-	-	37	100	HS6060P	HW30L
TCL2003-100L-2N	3	20	19	6.0	13.0	16	8	21	100	HS4040P	HW20L
TCL2004-100L-2N	4	20	19	6.0	13.0	16	8	24	100	HS4040P	HW20L
TCL2005-100L-2N	5	20	19	8.0	15.0	-	-	29	100	HS4040P	HW20L
TCL2006-100L-2N	6	20	19	8.0	17.0	18	9	31	100	HS5050P	HW25L
TCL2007-100L-2N	7	20	19	8.0	17.5	18	9	33	100	HS6060P	HW30L
TCL2008-100L-2N	8	20	19	8.4	19.0	18	9	37	100	HS6060P	HW30L
TCL2010-100L-2N	10	20	19	8.4	19.7	-	10	45	100	HS6060P	HW30L
TCL2012-100L-2N	12	20	19	8.4	19.7	-	10	48	100	HS6060P	HW30L
TCL2504-100L-2N	4	25	23	6.0	13.0	16	8	24	100	HS4040P	HW20L
TCL2505-100L-2N	5	25	23	8.0	18.0	18	9	29	100	HS5050P	HW25L
TCL2506-100L-2N	6	25	23	8.0	18.0	18	9	31	100	HS5050P	HW25L
TCL2507-100L-2N	7	25	23	8.0	13.0	18	9	33	100	HS6060P	HW30L
TCL2508-100L-2N	8	25	23	8.4	13.0	18	9	37	100	HS6060P	HW30L
TCL2510-100L-2N	10	25	23	8.4	18.0	18	9	45	100	HS6060P	HW30L
TCL2512-100L-2N	12	25	23	8.4	18.0	20	10	48	100	HS6060P	HW30L

VN□BR

For Small Internal Boring & Profiling

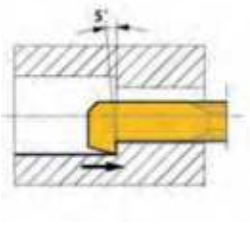


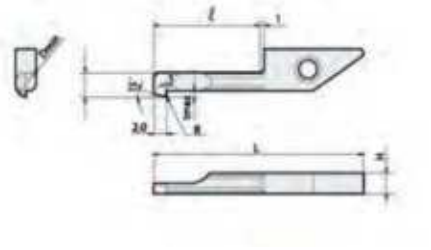


Designation	ℓ	L	H	f	tmax	Dmin	R
VN020BR06-R0.10	6	25.80	3.9	1.80	0.25	2.0	0.10-0.15
VN030BR11-R0.10	11	30.80	3.9	2.60	0.40	3.0	0.10-0.15
VN040BR11-R0.20	11	30.80	3.9	3.50	0.50	4.0	0.20
VN050BR11-R0.20	11	30.80	3.9	4.50	0.70	5.0	0.20
VN050BR20-R0.20	20	39.80	3.9	4.50	0.70	5.0	0.20
VN060BR20-R0.20	20	39.80	3.9	5.30	1.00	6.0	0.20
VN060BR30-R0.20	30	49.80	3.9	5.30	1.00	6.0	0.20
VN070BR30-R0.20	30	49.80	3.9	6.20	1.00	7.0	0.20

VN□BBR

For Small Internal Back Boring

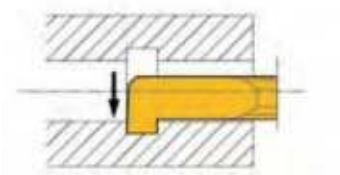


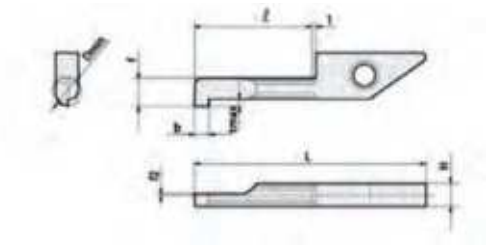


Designation	ℓ	L	H	f	tmax	Dmin	R
VN040BBR11-R0.15	11	30.80	3.9	3.60	1.00	4.0	0.15
VN050BBR11-R0.20	11	30.80	3.9	4.60	1.30	5.0	0.20
VN050BBR20-R0.20	20	39.80	3.9	4.60	1.30	5.0	0.20
VN060BBR11-R0.20	11	30.80	3.9	5.40	1.80	6.0	0.20
VN060BBR20-R0.20	20	39.80	3.9	5.40	1.80	6.0	0.20

VN□GR

For Small Internal Grooving

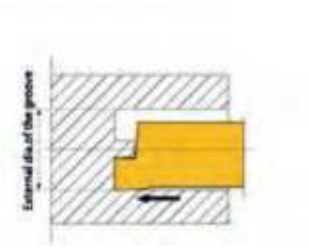


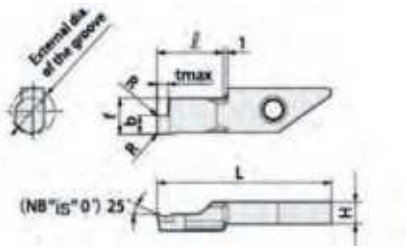


Designation	b	ℓ	L	H	f	f2	tmax	Dmin
VN040GR11-B100	1.00	11	30.8	3.9	3.50	0.1	1.00	4.0
VN040GR11-B150	1.50	11	30.8	3.9	3.50	0.1	1.00	4.0
VN050GR11-B100	1.00	11	30.8	3.9	4.40	0.1	1.20	5.0
VN050GR11-B150	1.50	11	30.8	3.9	4.40	0.1	1.20	5.0
VN050GR11-B200	2.00	11	30.8	3.9	4.40	0.1	1.20	5.0
VN060GR20-B100	1.00	20	39.8	3.9	5.20	0.3	1.40	6.0
VN060GR20-B150	1.50	20	39.8	3.9	5.20	0.3	1.40	6.0
VN060GR20-B200	2.00	20	39.8	3.9	5.20	0.3	1.40	6.0
VN070GR20-B100	1.00	20	39.8	3.9	6.20	0.3	2.00	7.0
VN070GR20-B150	1.50	20	39.8	3.9	6.20	0.3	2.00	7.0
VN070GR20-B200	2.00	20	39.8	3.9	6.20	0.3	2.00	7.0

VN□GFR

For Small Internal Face Grooving

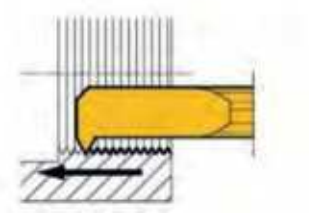


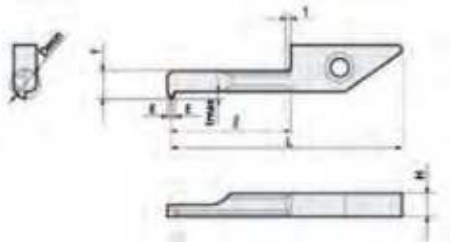


Designation	b	ℓ	L	H	f	tmax	Dmin	Dmax	R
VN050GFR11-B100	1.00	11	30.8	3.9	4.40	2.0	6.00	∞	0.03-0.05
VN050GFR11-B200	2.00	11	30.8	3.9	4.40	4.0	6.00	∞	0.03-0.05
VN050GFR11-B300	3.00	11	30.8	3.9	4.40	6.0	6.00	∞	0.03-0.05
VN060GFR20-B100	1.00	20	39.8	3.9	5.20	1.5	7.00	∞	0.03-0.05
VN060GFR20-B200	2.00	20	39.8	3.9	5.20	3.0	7.00	∞	0.03-0.05
VN060GFR20-B300	3.00	20	39.8	3.9	5.20	4.0	7.00	∞	0.03-0.05

VN□TR

For Small Internal Threading



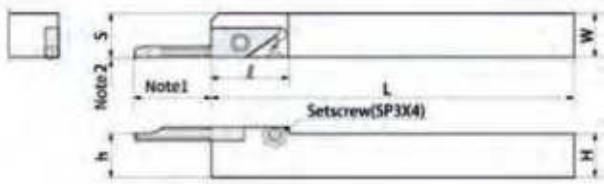


Designation	Pitch		ℓ	L	H	f	tmax	E	Dmin
	mm	TPI							
VN050TR11-A60	1.00-1.25	24-20	11	30.8	3.90	3.8	1.30	0.6	5.00
VN060TR11-A60	1.00-1.50	24-16	11	30.8	3.90	4.6	1.60	0.8	6.00
VN060TR20-A60	1.00-1.50	24-16	20	39.8	3.90	4.6	1.60	0.8	6.00
VN050TR11-A55	0.50-1.25	48-20	11	30.8	3.90	3.8	1.30	0.6	5.00
VN060TR11-A55	0.50-1.25	48-20	11	30.8	3.90	4.6	1.60	0.8	6.00
VN060TR20-A55	0.50-1.25	48-20	20	39.8	3.90	4.6	1.60	0.8	6.00

Auto Tools for Mini-system

SVNR-N

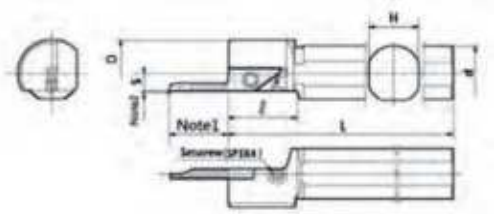
Without side stopper



Designation	H	W	L	S	h	ℓ	Spare Parts	
							Screw	Wrench
SVNR 1010-H12N	10	10	100	10	10	22	BFTX30080-Y50	TPF-08
SVNR 1212-X12N	12	12	120	12	12	22		
SVNR 1616-X12N	16	16	120	16	16	22		
SVNR 2020-X12N	20	20	120	20	20	22		
SVNR 2525-M12N	25	25	150	25	25	22		

S-SVNR-N

Without side stopper



Designation	D	d	L	S	H	ℓ	Spare Parts	
							Screw	Wrench
S12F-SVNR12N	20	12	80	4	11	23	BFTX30080-Y50	TPF-08
S14G-SVNR12N	20	14	90	4	13	23		
S16H-SVNR12N	24	16	100	6	15	23		
S20H-SVNR12N	24	20	100	6	18	24		
S25H-SVNR12N	30	25	100	6	23	24		

Mini Carbide Boring Tools Code System

05 G R - B100 - 1.5 D07 - R0.50 TTIM45B

1 2 3 4 5 6 7 8

1 Connector size

05 G R - B100 - 1.5 D07 R0.50 TTIM45B

2 Type of operation

05 G R - B100 - 1.5 D07 R0.50 TTIM45B

G: Grooving
Q: Copyring
I: Threading
F: Face cutting
P: Profiling & boring
X: Back boring
C: Chamfering

3 Hand

05 G R - B100 - 1.5 D07 R0.50 TTIM45B

R: right hand
L: Left hand

4 Width of cutting edge (Pitch of thread insert)

05 G R - B100 - 1.5 D07 R0.50 TTIM45B

B: Square groove
R: Round groove

5 Max. processing length

05 G R - B100 - 1.5 D07 R0.50 TTIM45B

6 Min. boring dia

05 G R - B100 - 1.5 D07 R0.50 TTIM45B

7 Radius

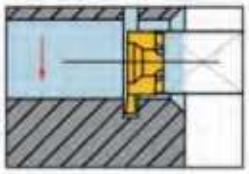
05 G R - B100 - 1.5 D07 R0.50 TTIM45B

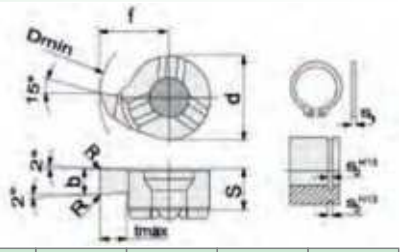
8 Grade

05 G R - B100 - 1.5 D07 R0.50 TTIM45B

Mini Carbide Boring Tools

Internal Grooving (Square)

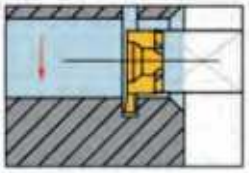


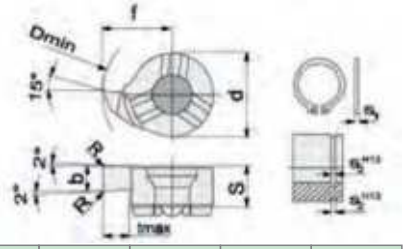


Designation	S1	S2	b	S	f	a	d	tmax	Dmin	R
MB04GR-B050-1.0D055			0.50	2.6	3.2	5.2	4	1.0	5.5	-
MB04GR-B070-1.0D055			0.70	2.6	3.2	5.2	4	1.0	5.5	-
MB04GR-B100-1.0D055			1.00	2.6	3.2	5.2	4	1.0	5.5	-
MB04GR-B150-1.0D055			1.50	2.6	3.2	5.2	4	1.0	5.5	-
MB04GR-B200-1.0D055			2.00	2.6	3.2	5.2	4	1.0	5.5	-
MB04GR-B100-1.4D06			1.00	2.6	3.7	5.7	4	1.4	6.0	-
MB04GR-B120-1.4D06	1.00	1.10	1.20	2.6	3.7	5.7	4	1.4	6.0	-
MB04GR-B150-1.4D06			1.50	2.6	3.7	5.7	4	1.4	6.0	-
MB04GR-B200-1.4D06			2.00	2.6	3.7	5.7	4	1.4	6.0	-
MB04GR-B100-2.3D07			1.00	2.6	4.7	6.7	4	2.3	6.0	-
MB04GR-B150-2.3D07			1.50	2.6	4.7	6.7	4	2.3	6.0	-
MB04GR-B200-2.3D07			2.00	2.6	4.7	6.7	4	2.3	6.0	-
MB05GR/L-B050-1.4D07			0.50	3.3	4.3	6.8	5	1.4	7.0	-
MB05GR/L-B075-1.4D07	0.60	0.70	0.75	3.3	4.3	6.8	5	1.4	7.0	-
MB05GR/L-B080-1.4D07	0.70	0.80	0.83	3.3	4.3	6.8	5	1.4	7.0	-
MB05GR/L-B090-1.4D07	0.80	0.90	0.93	3.3	4.3	6.8	5	1.4	7.0	-
MB05GR/L-B100-1.4D07			1.00	3.3	4.3	6.8	5	1.4	7.0	-
MB05GR/L-B120-1.4D07	1.00	1.10	1.20	3.3	4.3	6.8	5	1.4	7.0	-
MB05GR/L-B140-1.4D07	1.20	1.30	1.40	3.3	4.3	6.8	5	1.4	7.0	-
MB05GR/L-B150-1.4D07			1.50	3.3	4.3	6.8	4	1.4	7.0	-
MB05GR/L-B170-1.4D07	1.50	1.60	1.70	3.3	4.3	6.8	5	1.4	7.0	-
MB05GR/L-B200-1.4D07			2.00	3.3	4.3	6.8	5	1.4	7.0	-
MB05GR/L-B100-2.3D08			1.00	3.3	5.2	7.7	5	2.3	8.0	-
MB05GR/L-B150-2.3D08			1.50	3.3	5.2	7.7	5	2.3	8.0	-
MB05GR/L-B200-2.3D08			2.00	3.3	5.2	7.7	5	2.3	8.0	-
MB05GR/L-B100-2.8D09			1.00	3.3	5.8	8.3	5	2.8	9.0	-
MB05GR/L-B150-2.8D09			1.50	3.3	5.8	8.3	5	2.8	9.0	-
MB05GR/L-B200-2.8D09			2.00	3.3	5.8	8.3	5	2.8	9.0	-
MB05GR/L-B250-2.8D09			2.50	3.3	5.8	8.3	5	2.8	9.0	-
MB05GR/L-B300-2.8D09			3.00	3.3	5.8	8.3	5	2.8	9.0	-
MB07GR/L-B075-2.0D10	0.70	0.70	0.73	3.5	6.0	9.5	7	2.0	10.0	-
MB07GR/L-B080-2.0D10	0.80	0.80	0.83	3.5	6.0	9.5	7	2.0	10.0	-
MB07GR/L-B090-2.0D10	0.90	0.90	0.93	3.5	6.0	9.5	7	2.0	10.0	-
MB07GR/L-B100-2.0D10			1.00	3.5	6.0	9.5	7	2.0	10.0	-
MB07GR/L-B120-2.0D10			1.20	3.5	6.0	9.5	7	2.0	10.0	-
MB07GR/L-B140-2.0D10			1.40	3.5	6.0	9.5	7	2.0	10.0	-
MB07GR/L-B150-2.0D10			1.50	3.5	6.0	9.5	7	2.0	10.0	-
MB07GR/L-B170-2.0D10			1.70	3.5	6.0	9.5	7	2.0	10.0	-
MB07GR/L-B200-2.0D10			2.00	3.5	6.0	9.5	7	2.0	10.0	-
MB07GR/L-B250-2.0D10			2.50	3.5	6.0	9.5	7	2.0	10.0	-
MB07GR/L-B300-2.0D10			3.00	3.5	6.0	9.5	7	2.0	10.0	-
MB07GR/L-B100-3.0D11			1.00	3.5	7.0	10.5	7	3.0	11.0	-
MB07GR/L-B150-3.0D11			1.50	3.5	7.0	10.5	7	3.0	11.0	-
MB07GR/L-B200-3.0D11			2.00	3.5	7.0	10.5	7	3.0	11.0	-
MB07GR/L-B250-3.0D11			2.50	3.5	7.0	10.5	7	3.0	11.0	-
MB07GR/L-B300-3.0D11			3.00	3.5	7.0	10.5	7	3.0	11.0	-
MB07GR/L-B100-3.5D12			1.00	3.5	7.5	11.0	7	3.5	12.0	-
MB07GR/L-B150-3.5D12			1.50	3.5	7.5	11.0	7	3.5	12.0	-

※ Note: 1. 05GR type insert is not the standard inventory, for deeper and smaller sizes, please contact the supplier to ask whether can be grinded or not
2. 09 type insert can be drilled 16mm hole by grinding the insert and the holder, the cutting depth can reach 6.0mm, and 17mm hole can cut the depth up to 7.0mm. When using the insert, try to choose th holder with a short and thick overhang and the wider insert
3. You can contact the supplier if you have special requirements for the radius.

Internal Grooving (Square)



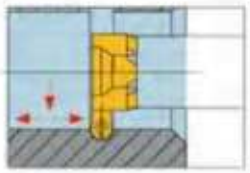


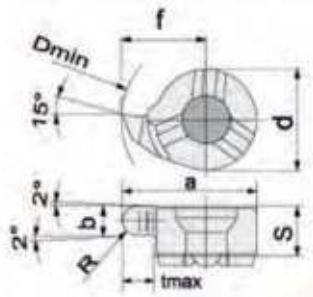
Designation	S1	S2	b	S	f	a	d	tmax	Dmin	R
MB07GR/L-B200-3.5D12			2.00	3.5	7.5	11.0	7	3.5	12.0	-
MB07GR/L-B250-3.5D12			2.50	3.5	7.5	11.0	7	3.5	12.0	-
MB07GR/L-B300-3.5D12			3.00	3.5	7.5	11.0	7	3.5	12.0	-
MB09GR/L-B100-4.0D14			1.00	4.7	9.0	13.5	9	4.0	14.0	-
MB09GR/L-B120-4.0D14			1.20	4.7	9.0	13.5	9	4.0	14.0	-
MB09GR/L-B140-4.0D14			1.40	4.7	9.0	13.5	9	4.0	14.0	-
MB09GR/L-B150-4.0D14			1.50	4.7	9.0	13.5	9	4.0	14.0	-
MB09GR/L-B170-4.0D14			1.70	4.7	9.0	13.5	9	4.0	14.0	-
MB09GR/L-B200-4.0D14			2.00	4.7	9.0	13.5	9	4.0	14.0	-
MB09GR/L-B250-4.0D14			2.50	4.7	9.0	13.5	9	4.0	14.0	-
MB09GR/L-B300-4.0D14			3.00	4.7	9.0	13.5	9	4.0	14.0	-
MB09GR/L-B200-4.0D14-R0.20			2.00	4.7	9.0	13.5	9	4.0	14.0	0.2
MB09GR/L-B150-5.5D16			1.50	4.7	10.5	15.0	9	5.5	16.0	-
MB09GR/L-B200-5.5D16			2.00	4.7	10.5	15.0	9	5.5	16.0	-
MB09GR/L-B250-5.5D16			2.50	4.7	10.5	15.0	9	5.5	16.0	-
MB09GR/L-B300-5.5D16			3.00	4.7	10.5	15.0	9	5.5	16.0	-
MB09GR/L-B150-5.5D16-R0.20			1.50	4.7	10.5	15.0	9	5.5	16.0	0.2
MB09GR/L-B200-5.5D16-R0.20			2.00	4.7	10.5	15.0	9	5.5	16.0	0.2
MB09GR/L-B250-5.5D16-R0.20			2.50	4.7	10.5	15.0	9	5.5	16.0	0.2
MB09GR/L-B300-5.5D16-R0.20			3.00	4.7	10.5	15.0	9	5.5	16.0	0.2
MB09GR/L-B150-6.5D17			1.50	4.7	11.5	16.0	9	6.5	17.0	-
MB09GR/L-B200-6.5D17			2.00	4.7	11.5	16.0	9	6.5	17.0	-
MB09GR/L-B250-6.5D17			2.50	4.7	11.5	16.0	9	6.5	17.0	-
MB09GR/L-B300-6.5D17			3.00	4.7	11.5	16.0	9	6.5	17.0	-
MB11GR/L-B120-4.3D16-R0.20	1.00	1.10	1.20	5.3	10.2	15.7	11	4.3	16.0	-
MB11GR/L-B140-4.3D16-R0.20	1.20	1.30	1.40	5.3	10.2	15.7	11	4.3	16.0	-
MB11GR/L-B150-4.3D16-R0.20			1.50	5.3	10.2	15.7	11	4.3	16.0	0.2
MB11GR/L-B170-4.3D16-R0.20	1.50	1.60	1.70	5.3	10.2	15.7	11	4.3	16.0	0.2
MB11GR/L-B200-4.3D16-R0.20			2.00	5.3	10.2	15.7	11	4.3	16.0	0.2
MB11GR/L-B250-4.3D16-R0.20			2.50	5.3	10.2	15.7	11	4.3	16.0	0.2
MB11GR/L-B300-4.3D16-R0.20			3.00	5.3	10.2	15.7	11	4.3	16.0	0.2
MB11GR/L-B400-4.3D16-R0.20			4.00	5.3	10.2	15.7	11	4.3	16.0	0.2
MB11GR/L-B150-6.0D18-R0.20			1.50	5.3	12.0	17.5	11	6.0	18.0	0.2
MB11GR/L-B200-6.0D18-R0.20			2.00	5.3	12.0	17.5	11	6.0	18.0	0.2
MB11GR/L-B250-6.0D18-R0.20			2.50	5.3	12.0	17.5	11	6.0	18.0	0.2
MB11GR/L-B300-6.0D18-R0.20			3.00	5.3	12.0	17.5	11	6.0	18.0	0.2
MB11GR/L-B400-6.0D18-R0.20			4.00	5.3	12.0	17.5	11	6.0	18.0	0.2
MB11GR/L-B150-8.0D20-R0.20			1.50	5.3	14.0	19.5	11	8.0	20.0	0.2
MB11GR/L-B200-8.0D20-R0.20			2.00	5.3	14.0	19.5	11	8.0	20.0	0.2
MB11GR/L-B250-8.0D20-R0.20			2.50	5.3	14.0	19.5	11	8.0	20.0	0.2
MB11GR/L-B300-8.0D20-R0.20			3.00	5.3	14.0	19.5	11	8.0	20.0	0.2
MB11GR/L-B400-8.0D20-R0.20			4.00	5.3	14.0	19.5	11	8.0	20.0	0.2

※ Note: 1. 05GR type insert is not the standard inventory, for deeper and smaller sizes, please contact the supplier to ask whether can be grinded or not
2. 09 type insert can be drilled 16mm hole by grinding the insert and the holder, the cutting depth can reach 6.0mm, and 17mm hole can cut the depth up to 7.0mm. When using the insert, try to choose th holder with a short and thick overhang and the wider insert
3. You can contact the supplier if you have special requirements for the radius.

Mini Carbide Boring Tools

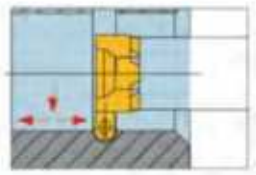
Internal Grooving (Round)

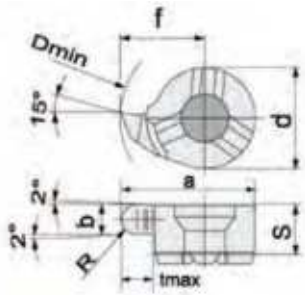




Designation	b	S	f	a	d	tmax	Dmin	R
MB04GR-B100-1.4D06-R0.50	1.00	2.6	3.7	5.7	4	1.4	6.0	0.50
MB04GR-B150-1.4D06-R0.75	1.50	2.6	3.7	5.7	4	1.4	6.0	0.75
MB04GR-B200-1.4D06-R1.00	2.00	2.6	3.7	5.7	4	1.4	6.0	1.00
MB04GR-B100-2.3D07-R0.50	1.00	2.6	4.7	6.7	4	2.3	7.0	0.50
MB04GR-B150-2.3D07-R0.75	1.50	2.6	4.7	6.7	4	2.3	7.0	0.75
MB04GR-B200-2.3D07-R1.00	2.00	2.6	4.7	6.7	4	2.3	7.0	1.00
MB05GR/L-B100-1.4D07-R0.50	1.00	3.3	4.3	6.8	5	1.4	7.0	0.50
MB05GR/L-B150-1.4D07-R0.75	1.50	3.3	4.3	6.8	5	1.4	7.0	0.75
MB05GR/L-B200-1.4D07-R1.00	2.00	3.3	4.3	6.8	5	1.4	7.0	1.00
MB05GR/L-B100-2.3D08-R0.50	1.00	3.3	5.2	7.7	5	2.3	8.0	0.50
MB05GR/L-B150-2.3D08-R0.75	1.50	3.3	5.2	7.7	5	2.3	8.0	0.75
MB05GR/L-B200-2.3D08-R1.00	2.00	3.3	5.2	7.7	5	2.3	8.0	1.00
MB05GR/L-B100-2.8D09-R0.50	1.00	3.3	5.8	8.3	5	2.8	9.0	0.50
MB05GR/L-B150-2.8D09-R0.75	1.50	3.3	5.8	8.3	5	2.8	9.0	0.75
MB05GR/L-B200-2.8D09-R1.00	2.00	3.3	5.8	8.3	5	2.8	9.0	1.00
MB07GR/L-B100-2.0D10-R0.50	1.00	3.5	6.0	9.5	7	2.0	10.0	0.50
MB07GR/L-B150-2.0D10-R0.75	1.50	3.5	6.0	9.5	7	2.0	10.0	0.75
MB07GR/L-B200-2.0D10-R1.00	2.00	3.5	6.0	9.5	7	2.0	10.0	1.00
MB07GR/L-B300-2.0D10-R1.50	3.00	3.5	6.0	9.5	7	2.0	10.0	1.50
MB07GR/L-B100-3.0D11-R0.50	1.00	3.5	7.0	10.5	7	3.0	11.0	0.50
MB07GR/L-B150-3.0D11-R0.75	1.50	3.5	7.0	10.5	7	3.0	11.0	0.75
MB07GR/L-B200-3.0D11-R1.00	2.00	3.5	7.0	10.5	7	3.0	11.0	1.00
MB07GR/L-B300-3.0D11-R1.50	3.00	3.5	7.0	10.5	7	3.0	11.0	1.50
MB07GR/L-B100-3.5D12-R0.50	1.00	3.5	7.5	11.0	7	3.5	12.0	0.50
MB07GR/L-B150-3.5D12-R0.75	1.50	3.5	7.5	11.0	7	3.5	12.0	0.75
MB07GR/L-B200-3.5D12-R1.00	2.00	3.5	7.5	11.0	7	3.5	12.0	1.00
MB07GR/L-B300-3.5D12-R1.50	3.00	3.5	7.5	11.0	7	3.5	12.0	1.50
MB09GR/L-B100-4.0D14-R0.50	1.00	4.7	9.0	13.5	9	4.0	14.0	0.50
MB09GR/L-B150-4.0D14-R0.75	1.50	4.7	9.0	13.5	9	4.0	14.0	0.75
MB09GR/L-B200-4.0D14-R1.00	2.00	4.7	9.0	13.5	9	4.0	14.0	1.00
MB09GR/L-B300-4.0D14-R1.50	3.00	4.7	9.0	13.5	9	4.0	14.0	1.50

Internal Grooving (Round)

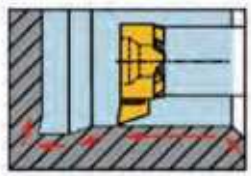


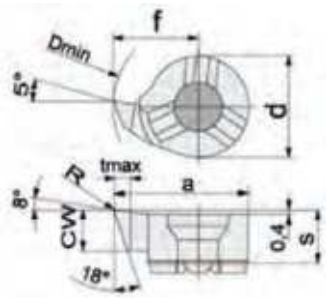


Designation	b	S	f	a	d	tmax	Dmin	R
MB09GR/L-B150-5.5D16-R0.75	1.50	4.7	10.5	15.0	9	5.5	16.0	0.75
MB09GR/L-B200-5.5D16-R1.00	2.00	4.7	10.5	15.0	9	5.5	16.0	1.00
MB09GR/L-B300-5.5D16-R1.50	3.00	4.7	10.5	15.0	9	5.5	16.0	1.50
MB09GR/L-B150-6.5D17-R0.75	1.50	4.7	11.5	16.0	9	6.5	17.0	0.75
MB09GR/L-B200-6.5D17-R1.00	2.00	4.7	11.5	16.0	9	6.5	17.0	1.00
MB09GR/L-B300-6.5D17-R1.50	3.00	4.7	11.5	16.0	9	6.5	17.0	1.50
MB11GR/L-B150-4.3D16-R0.75	1.50	5.3	10.2	15.7	11	4.3	16.0	0.75
MB11GR/L-B200-4.3D16-R1.00	2.00	5.3	10.2	15.7	11	4.3	16.0	1.00
MB11GR/L-B250-4.3D16-R1.25	2.50	5.3	10.2	15.7	11	4.3	16.0	1.25
MB11GR/L-B300-4.3D16-R1.50	3.00	5.3	10.2	15.7	11	4.3	16.0	1.50
MB11GR/L-B400-4.3D16-R2.00	4.00	5.3	10.2	15.7	11	4.3	16.0	2.00
MB11GR/L-B150-6.0D18-R0.75	1.50	5.3	12.0	17.5	11	6.0	18.0	0.75
MB11GR/L-B200-6.0D18-R1.00	2.00	5.3	12.0	17.5	11	6.0	18.0	1.00
MB11GR/L-B250-6.0D18-R1.25	2.50	5.3	12.0	17.5	11	6.0	18.0	1.25
MB11GR/L-B300-6.0D18-R1.50	3.00	5.3	12.0	17.5	11	6.0	18.0	1.50
MB11GR/L-B400-6.0D18-R2.00	4.00	5.3	12.0	17.5	11	6.0	18.0	2.00
MB11GR/L-B150-8.0D20-R0.75	1.50	5.3	14.0	19.5	11	8.0	20.0	0.75
MB11GR/L-B200-8.0D20-R1.00	2.00	5.3	14.0	19.5	11	8.0	20.0	1.00
MB11GR/L-B250-8.0D20-R1.25	2.50	5.3	14.0	19.5	11	8.0	20.0	1.25
MB11GR/L-B300-8.0D20-R1.50	3.00	5.3	14.0	19.5	11	8.0	20.0	1.50
MB11GR/L-B400-8.0D20-R2.00	4.00	5.3	14.0	19.5	11	8.0	20.0	2.00

Mini Carbide Boring Tools

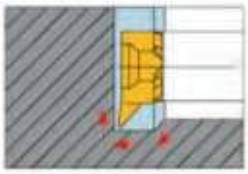
Boring and Profiling

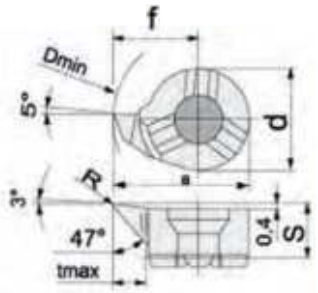




Designation	d	S	a	f	tmax	Dmin	R
MB04PR-D06-R0.20	4	2.6	5.0	3.0	0.8	5.5	0.2
MB05PR\L-D07-R0.20	5	3.3	6.1	3.6	1.0	6.5	0.2
MB07PR\L-D10-R0.20	7	3.5	9.5	6.0	2.0	10.0	0.2
MB09PR\L-D14-R0.20	9	4.7	13.2	8.7	4.0	13.8	0.2

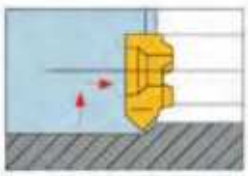
Copying

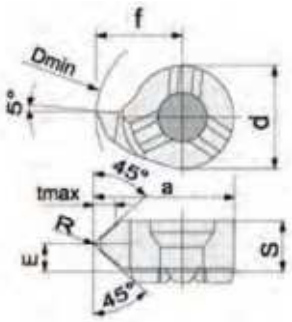




Designation	d	S	a	f	tmax	Dmin	R
MB04QR\L-1.4D06-R0.20	4	2.6	5.7	3.7	1.4	6.0	0.2
MB05QR/L-1.5D07-R0.20	5	3.3	6.8	4.3	1.5	7.0	0.2
MB05QR/L-2.5D09-R0.20	5	3.3	8.5	5.5	2.5	9.0	0.2
MB07QR/L-2.0D10-R0.20	7	3.5	9.5	6.0	2.0	10.0	0.2
MB07QR/L-3.5D12-R0.20	7	3.5	11.0	7.5	3.5	12.0	0.2
MB09QR/L-4.0D14-R0.20	9	4.7	13.5	9.0	4.0	14.0	0.2
MB09QR/L-6.0D16-R0.20	9	4.7	15.5	11.0	6.0	16.0	0.2
MB09QR/L-7.0D17-R0.20	9	4.7	16.5	12.0	7.0	17.0	0.2
MB11QR/L-4.0D16-R0.20	11	5.3	15.5	10.0	4.0	16.0	0.2
MB11QR/L-8.0D20-R0.20	11	5.3	19.5	14.0	8.0	20.0	0.2

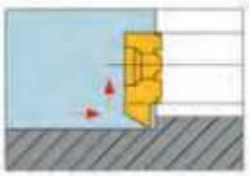
Internal Chamfering

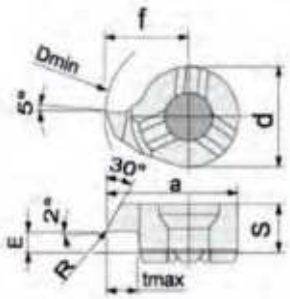




Designation	d	S	a	f	E	tmax	Dmin	R
MB04CR-0.8D06-R0.20	4	2.6	5.2	3.2	1.1	0.8	5.7	0.2
MB05CR-1.0D07-R0.20	5	3.3	6.5	3.7	1.4	1.0	7.0	0.2
MB07CR-2.0D09-R0.20	7	3.5	9.5	6.0	1.6	2.0	10.0	0.2

Back Boring

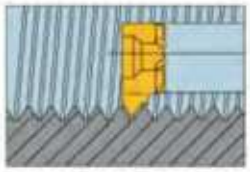


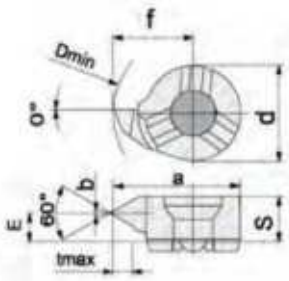


Designation	d	S	E	a	f	tmax	Dmin	R
MB04XR-1.4D06-R0.20	4	2.6	2.3	5.7	3.7	1.4	6.0	0.2
MB05XR\L-1.5D07-R0.20	5	3.3	2.3	6.8	4.3	1.5	7.0	0.2
MB05XR\L-2.5D09-R0.20	5	3.3	2.3	8.5	5.5	2.5	9.0	0.2
MB07XR\L-2.0D10-R0.20	7	3.5	2.6	9.5	6.0	2.0	10.0	0.2
MB07XR\L-3.5D12-R0.20	7	3.5	2.6	11.0	7.5	3.5	12.0	0.2
MB09XR\L-4.0D14-R0.20	9	4.7	3.0	13.5	9.0	4.0	14.0	0.2
MB09XR\L-6.0D16-R0.20	9	4.7	3.0	15.5	11.0	6.0	16.0	0.2
MB09XR\L-7.0D17-R0.20	9	4.7	3.0	16.5	12.0	7.0	17.0	0.2
MB11XR\L-4.0D16-R0.20	11	5.3	3.5	15.5	10.0	4.0	16.0	0.2
MB11XR\L-8.0D20-R0.20	11	5.3	3.5	19.5	14.0	8.0	20.0	0.2

Mini Carbide Boring Tools

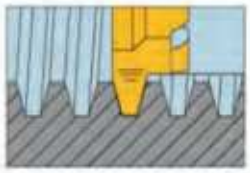
Internal Threading (Partial profile)

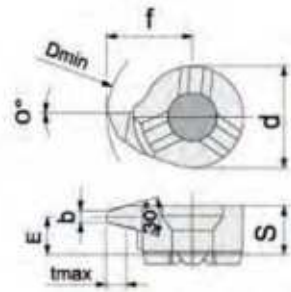




Designation	Pitch		d	S	a	f	Size	E	tmax
	mm	TPI							
MB04IR0.50-1.50-D07	0.50-1.50	48-16	4	2.6	5.0	3.0		2.8	0.81
MB05IR1.00-1.75-D07	1.00-1.75	24-14	5	3.3	6.1	3.6	M10x1.5, M12x1.5, M12x1.75	2.8	0.65
MB07IR1.00-2.00-D09	1.00-2.00	24-14	7	3.5	9.5	6.0	M12x1.75, M14x2	2.8	1.08
MB09IR1.50-3.00-D12	1.50-3.00	16-8	9	4.7	13.2	8.7	M20x2.5, M22x2.5, M24x3	3.55	1.35

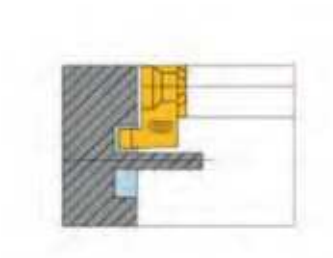
Internal Threading (Trapez DIN103)

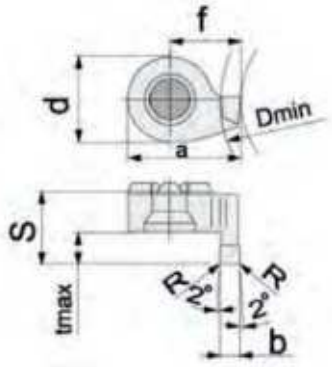




Designation	Pitch	b	d	S	a	f	tmax	Size	E
MB05IR/L-15TR-07R	1.5	0.47	5	3.3	6.8	4.3	0.90	Tr10x1.5	2.90
MB05IR/L-20TR-08R	2.0	0.60	5	3.3	7.2	4.7	1.25	Tr10x2, Tr11x2, Tr12x2	2.70
MB05IR/L-30TR-08R	3.0	0.96	5	3.3	7.5	5.0	1.75	Tr11x3, Tr12x3	2.40
MB07IR/L-30TR-10R	3.0	0.96	7	3.5	9.7	6.2	1.75	Tr14x3, Tr22x3, Tr26x3, Tr28x3	2.70
MB07IR/L-40TR-11R	4.0	1.33	7	3.5	10.2	6.7	2.25	Tr16x4, Tr18x4, Tr20x4	2.20
MB09IR/L-40TR-14R	4.0	1.33	9	4.7	12.5	8.0	2.25	Tr18x4, Tr20x4	2.20
MB09IR/L-50TR-14R	5.0	1.69	9	4.7	13.5	9.0	2.75	Tr22x5, Tr24x5, Tr26x5, Tr28x5	3.55
MB11IR/L-40TR-15R	4.0	1.33	11	5.3	14.5	9.0	2.25	Tr18x4, Tr20x4	4.00
MB11IR/L-50TR-16R	5.0	1.69	11	5.3	15.5	10.0	2.75	Tr22x5, Tr24x5, Tr26x5, Tr28x5	3.60
MB11IR/L-60TR-16R	6.0	1.92	11	5.3	15.7	10.2	3.50	Tr30x6, Tr36x6	3.30

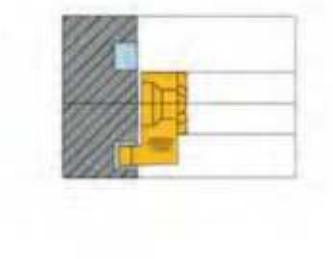
Face Grooving in Pivots (Square)

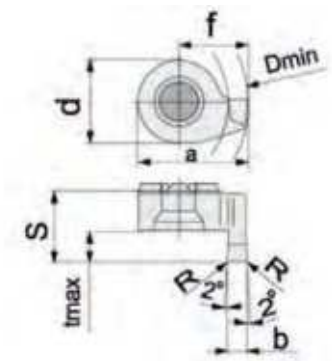




Designation	b	S	f	a	d	tmax	Dmin	r
MB09FER/L-B100-1.5D12	1.0	8.3	7.0	11.5	9	1.5	12	-
MB09FER/L-B150-2.5D12-R0.20	1.5	8.3	7.5	12.0	9	2.5	12	0.2
MB09FER/L-B200-3.0D12-R0.20	2.0	8.3	8.0	12.5	9	3.0	12	0.2
MB09FER/L-B300-3.0D12-R0.20	3.0	8.3	9.0	13.5	9	3.0	12	0.2
MB09FER/L-B200-5.0D12-R0.20	2.0	10.3	8.0	12.5	9	5.0	12	0.2
MB09FER/L-B300-5.0D12-R0.20	3.0	10.3	9.0	13.5	9	5.0	12	0.2
MB09FER/L-B300-6.0D12-R0.20	3.0	11.3	9.0	13.5	9	6.0	12	0.2

Face Grooving (Square)

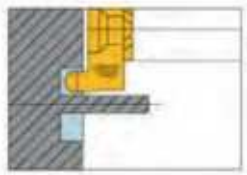


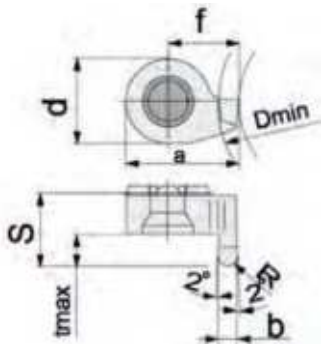


Designation	b	S	f	a	d	tmax	Dmin	r
MB09FNR/L-B100-3.0D14	1.0	8.2	7.0	11.5	9	3	14	-
MB09FNR/L-B150-3.0D14-R0.20	1.5	8.2	7.5	12.0	9	3	14	0.2
MB09FNR/L-B200-3.0D14-R0.20	2.0	8.2	8.0	12.5	9	3	14	0.2
MB09FNR/L-B300-3.0D14-R0.20	3.0	8.0	9.0	13.5	9	3	14	0.2
MB09FNR/L-B200-5.0D14-R0.20	2.0	10.2	8.0	12.5	9	5	14	0.2
MB09FNR/L-B300-5.0D14-R0.20	3.0	10.2	9.0	13.5	9	5	14	0.2
MB09FNR/L-B300-6.0D14-R0.20	3.0	11.2	9.0	13.5	9	6	14	0.2

Mini Carbide Boring Tools

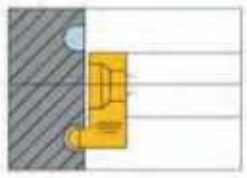
Face Grooving in Pivots (Round)

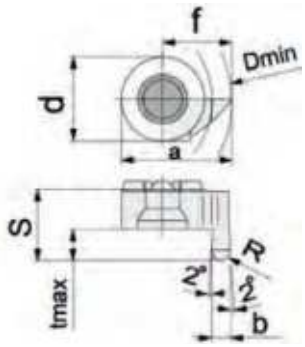




Designation	b	S	f	a	d	tmax	Dmin	r
MB09FER/L-R100-1.5D12	1.0	8.3	7.0	11.5	9	1.5	12	0.50
MB09FER/L-R150-2.0D12	1.5	8.3	7.5	12.0	9	2.5	12	0.75
MB09FER/L-R200-3.0D12	2.0	8.3	8.0	12.5	9	3.0	12	1.00
MB09FER/L-R300-3.0D12	3.0	8.3	9.0	13.5	9	3.0	12	1.50
MB09FER/L-R200-5.0D12	2.0	10.3	8.0	12.5	9	5.0	12	1.00
MB09FER/L-R300-5.0D12	3.0	10.3	9.0	13.5	9	5.0	12	1.50
MB09FER/L-R300-6.0D12	3.0	11.3	9.0	13.5	9	6.0	12	1.50

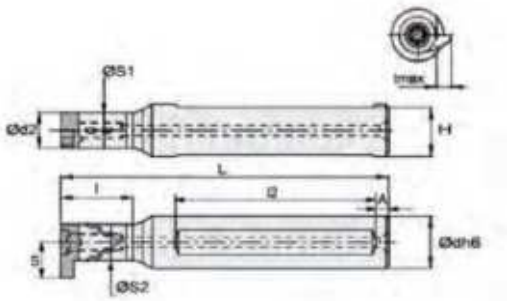
Face Grooving (Round)





Designation	b	S	f	a	d	tmax	Dmin	r
MB09FNR/L-R100-3.0D14	1.0	8.3	7.0	11.5	9	3	14	0.50
MB09FNR/L-R150-3.0D14	1.5	8.3	7.5	12.0	9	3	14	0.75
MB09FNR/L-R200-3.0D14	2.0	8.3	8.0	12.5	9	3	14	1.00
MB09FNR/L-R300-3.0D14	3.0	8.3	9.0	13.5	9	3	14	1.50
MB09FNR/L-R200-5.0D14	2.0	10.3	8.0	12.5	9	5	14	1.00
MB09FNR/L-R300-5.0D14	3.0	10.3	9.0	13.5	9	5	14	1.50
MB09FNR/L-R300-6.0D14	3.0	10.3	9.0	13.5	9	6	14	1.50

Mini Carbide Boring Holder

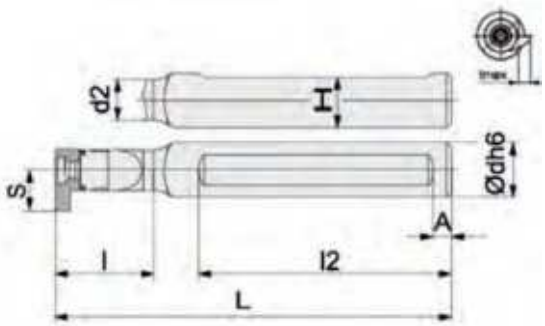


Internal grooving holder of steel shank

Designation	Stock		Dimensions(mm)										Insert	Spare parts	
	R	L	Dmin	d	d2-S1	S2	H	l	l2	L	S	A		Screw	Wrench
MG-H16-20-07R	●		10.0	16	7	7.0	15.0	20.0	50	120	6.0	5.0	MB-07	S30SS40L700	TPF-08
MG-H16-30-09R	●		14.0	16	9	9.0	15.0	30.0	50	120	9.0	5.0	MB-09	S40SS57L900	TPF-15
MG-H20-40-11R	●		18.0	20	11	11.0	19.0	40.0	50	130	12.0	5.0	MB-11	S50SS70L120	TPF-20
MG-H12-18-05ST	●		7.0	12	5	6.7	11.0	18.0	45	80	4.3	5.0	MB-05	S22SS30L755	TPF-06
MG-H16-20-07ST	●		10.0	16	7	8.5	15.0	20.0	50	120	6.0	5.0	MB-07	S30SS40L700	TPF-08
MG-H16-30-09ST	●		14.0	16	9	11.0	15.0	30.0	50	120	9.0	5.0	MB-09	S40SS57L900	TPF-15
MG-H20-40-11ST	●		18.0	20.0	11	13.5	19.0	40.0	50	130	12.0	5.0	MB-11	S50SS70L120	TPF-20
MG-H12-16-04ST-N	●		6.0	12.0	4	5.2	11.0	16.0	45	80	3.7	5.0	MB-04	S18SS25L365	TPF-06
MG-H12-18-05ST-N	●		7.0	12.0	5	6.7	11.0	18.0	45	80	4.3	5.0	MB-05	S22SS30L755	TPF-06
MG-H16-20-07ST-N	●		10.0	16.0	7	8.5	15.0	20.0	50	120	6.0	5.0	MB-07	S30SS40L700	TPF-08
MG-H16-30-09ST-N	●		14.0	16.0	9	11.0	15.0	30.0	50	120	9.0	5.0	MB-09	S40SS57L900	TPF-15
MG-H20-40-11ST-N	●		18.0	20.0	11	13.5	19.0	40.0	50	130	12.0	5.0	MB-11	S50SS70L120	TPF-20

Mini Carbide Boring Tools

Mini Carbide Boring Holder



Internal grooving holder of carbide shank

Designation	Stock		Dimensions(mm)								Insert	Spare parts	
	R	L	d	d2	H	l	l2	L	S	A		Screw	Wrench
MG-E12-28-05C	○		12	5	11	28	45	90	4.3	5.0	MB-05	S22SS30L755	TPF-06
MG-E12-36-05C	○		12	5	11	36	50	100	4.3	5.0	MB-05	S22SS30L755	TPF-06
MG-E12-33-07C	○		12	7	11	33	50	90	6.0	5.0	MB-07	S30SS40L700	TPF-08
MG-E12-49-07C	○		12	7	11	49	50	110	6.0	5.0	MB-07	S30SS40L700	TPF-08
MG-E12-45-09C	○		12	9	11	45	50	110	9.0	5.0	MB-09	S40SS57L900	TPF-15
MG-E12-56-09C	○		12	9	11	56	50	120	9.0	5.0	MB-09	S40SS57L900	TPF-15
MG-E12-50-11C	○		12	11	11	50	50	110	12.0	5.0	MB-11	S50SS70L120	TPF-20
MG-E12-80-11C	○		12	11	11	80	50	150	12.0	5.0	MB-11	S50SS70L120	TPF-20
MG-E04-00-04C	●		4	4	3.8	-	-	95	3.7	-	MB-04	S18SS25L365	TPF-06
MG-E05-00-05C	●		5	5	4.7	-	-	95	4.3	-	MB-05	S22SS30L755	TPF-06
MG-E07-00-07C	●		7	7	6.6	-	-	95	6.0	-	MB-07	S30SS40L700	TPF-08
MG-E09-00-09C	●		9	9	8.5	-	-	125	9.0	-	MB-09	S40SS57L900	TPF-15
MG-E11-00-11C	●		11	11	11.5	-	-	125	12.0	-	MB-11	S50SS70L120	TPF-20

TOOTOOL®

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Turning Grades

Grades System

Uncoated carbide	P	Steel	TP20
	M	Stainless steel	-
	K	Cast iron	TPK01
	N	Non-ferrous metal	TPK01
	S	Heat resistant alloy, Titanium alloy	TPK01
	H	Hardened steel	-

Coated carbide for turning	P	Steel	TCP 9305	TCP 9215	TCP 9120	TCP 9225	TCP 9325	TCP 9335	TCP 9345	TPM 8115	TPM 8125	TPM 8135
	M	Stainless steel	TPM 8115	TPM 8315	TPM 8125	TPM 8225	TPM 8135	TPM 930				
	K	Cast iron	TCK 5205	TCK 5305	TCK 5215	TCK 5315	TCK 5225	TCK 5325				
	N	Non-ferrous metal	TPDL 025									
	S	HRSA	TPM 8315	TPM 8125	TPM 8225	TPDL 025						
	H	Hardened steel	HX 200	HX 400								

Coated carbide for milling	P	Steel	TCP 9330	TCP 9340	TCP 9350	TPM 8115	TPM 8125	TPM 8135	TPG 4235	TPK 4235H
	M	Stainless steel	TPM 8115	TPM 8315	TPM 8125	TPM 8225	TPM 8135	TPG 4235	TPK 4235H	
	K	Cast iron	TCK 5205	TCK 5305	TCK 5215	TCK 5315	TCK 5225	TCK 5325	TPK 4235H	
	N	Non-ferrous metal	TPDL 025							
	S	HRSA	TPM 8315	TPM 8125	TPM 8225	TPDL 025				
	H	Hardened steel	HX 200	HX 400						

Turning cerment	P	Steel	TTIN 30	TTIN 3025
	K	Cast iron	TTIN 30	TTIN 3025

The features of CVD turning grades

CVD Coated grades	ISO	Color	Recommend for application
TCP9305	P05 (P01-P10)	Black/Yellow	· MT-TiCN+TiC+Al2O3+TiN · Stable conditions for steel finishing can obtain high metal removal rate. · Excellent resistance to crater wear and plastic deformation resistance. Recommended for stable conditions. Wet and dry processing
TCP9215	P15 (P05-P20)	Black	· MT-TiCN+Al2O3+TiN · Wear-resistance materials coated on the gradient sintered substrate which has both good hardness and toughness. Can bear high temperatures. · For steel and casting steel finishing to roughing processing. Continue cutting to light interrupted cutting.
TCP9225	P25 (P15-P35) M15 (M10-M20)	Black	· MT-TiCN+Al2O3+TiN · Combining excellent fracutre resistance substrate with chipping resistance and heat resistance Al2O3 increased stability, suitable for steel and cast steel continuous cutting and interrupted cutting finishing to roughing.
TCP9325	P25 (P15-P35) M15 (M10-M20)	Black/Yellow	· MT-TiCN+TiC+Al2O3+TiN · Universal grade combining substrate with wear resistance and toughness and Al2O3 coating with oxidation resistance and fracutre resistance , suitable for steel and cast steel continuous cutting and interrupted cutting finishing to roughing.
TCP9120	P20 (P15-P25)	Yellow	· MT-TiCN+TiC+Al2O3+TiN · Universal grade combining substrate with wear resistance and toughness and Al2O3 coating with oxidation resistance and fracture resistance. · Special treatment on the outermost layer. Suitable for steel and cast steel medium cutting to roughing.
TCP9235	P35 (P25-P40) M35 (M25-M40)	Black	· MT-TiCN+Al2O3+TiN High-strength alloy substrate with thick wear-resistant coating. · interrupted cutting and roughing operations in steel and cast steel. · Combining excellent fracture resistance substrate with chipping resistance and heat resistance Al2O3 increased stability in wide ranges of cutting conditions.
TCP9335	P35 (P25-P40) M35 (M25-M40)	Black/Yellow	· MT-TiCN+TiC+Al2O3+TiN High-strength alloy substrate with thick wear-resistant coating has good good toughness and plastic deformation. · Machining steel and cast steel in bad conditions, Edge line security for interrupted cutting and roughing operations high metal removal rate.
TCP9345	P45 (P30-P50) M45 (M30-M50)	Black/Yellow	· A tough carbide grade with a moderately thick TiN-MT-TiCN-Al2O3 coating for roughing operation of steel at lower cutting speed and unstable condition · The substrate-coating combination provides unbelievable toughness and operational security allowing high metal removal rates even in most demanding interrupted cuts.

Turning Grades

The features of CVD turning grades

CVD Coated grades	ISO	Color	Recommend for application
TCK5205	K10 (K05-K20)	Black	· MT-TiCN+Al2O3+TiN · CVD coated carbide combining extremely hard substrate can withstand high temperature without plastic deformation . · Recommended for ductile iron, high strength malleable cast iron and gray cast iron finish machining to semi finish machining.
TCK5305	K10 (K05-K20)	Black/Yellow	· MT-TiCN+Al2O3+TiN · CVD coated carbide combining extremely hard substrate can withstand high temperature without plastic deformation . · Recommended for ductile iron, high strength malleable cast iron and gray cast iron finish machining to semi finish machining.
TCK5215	K15 (K10-K25)	Black	· MT-TiCN+Al2O3+TiN · The excellent combination of high wear resistance substrate and MT-TiCN, thick Al2O3, TiN coating is the first choice of ductile iron and gray cast iron, which allows a higher cutting speed.
TCK5315	K15 (K10-K25)	Black/Yellow	· MT-TiCN+Al2O3+TiN · The excellent combination of high wear resistance substrate and MT-TiCN, thick Al2O3, TiN coating is the first choice of ductile iron and gray cast iron, which allows a higher cutting speed.
TCK5225	K25 (K20-35)	Black	· MT-TiCN+Al2O3+TiN · The excellent combination of good wear resistance and toughness substrate and MT-TiCN, thick Al2O3, TiN coating is the fisrt choice of ductile iron and gray cast iron for roughing cutting high metal remove rate.
TCK5325	K25 (K20-K35)	Black/Yellow	· MT-TiCN+Al2O3+TiN · The excellent combination of good wear resistance and toughness substrate and MT-TiCN, thick Al2O3, TiN coating is the fisrt choice of ductile iron and gray cast iron for roughing cutting high metal remove rate.

The features of PVD turning grades

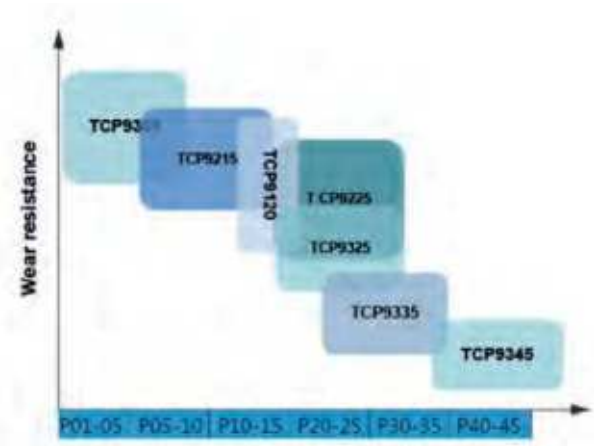
PVD Coated grades	ISO	Color	Recommend for application
TPM8115	P15 (P05-P25) M15 (M05-M25)	Gray dark	- 2-4μm TiAlN PVD coating combined with the submicron crystal matrix, it has excellent film-base adhesion, abrasion resistance and heat resistance. - Suitable for stainless steel, heat-resistant alloy and other materials under stable working conditions finishing.
TPM8315	P15 (P05-P25) M15 (M05-M25) S10 (S05-S25)	Brozen	- 3-5μm AlTiN PVD coating combined with ultra fine particles' substrates with high-toughness suitable for a variety of steel, stainless steel & supor alloy at high speed and continue machining. - Optimized coating stability for higher wear resistance and thermal stability in a wide application field.
TPM8125	P25 (P15-P35) M25 (M15-M35) K25 (K15-K35) S20 (S15-S30)	Gray dark	- 2-4μm TiALN PVD coating combined with ultra fine particles' substrates with high-toughness suitable for a variety of steel, stainless steel, cast iron & high temperature alloy in finishing to semi-finishing. - High thermal shock resistance is suitable for light interrupted cuts.
TPM8225	M20 (M15-M25) S15 (S10-S20) H10 (H05-H15)	Golden	- Universal grade for stainless, HRSA & high-temperature high hardness alloy machining. - High chipping and welding resistance for longer tool life. - 2-4μm AlCrN+AlCrSiN PVD coating combined with ultra fine particles' substrates with high-toughness suitable for stainless steel , high-temperature high hardness alloy & HRSA in finishing to semi-finishing.
TPM8135	P35 (P20-P40) M35 (M30-M40)	Gray dark	- PVD coating combined with high-resistant substrates, suitable for stainless steel & low carbon steel in roughing to semi-finishing. - Good wear resistance and toughness

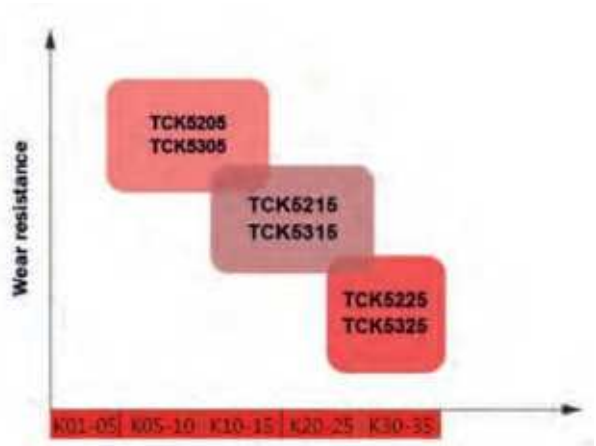
Turning Grades

General turning

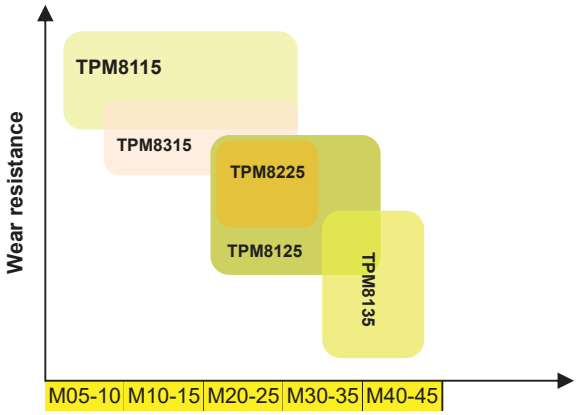
Application fields of grades

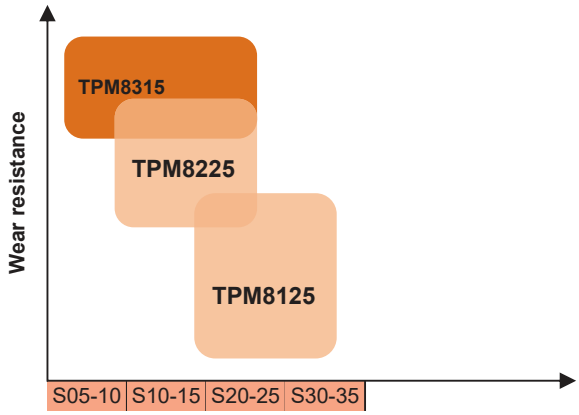
CVD grades for steel, stainless steel and cast iron





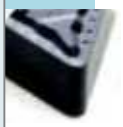
PVD grades for stainless steel and heat-resistant alloys





Description of Chipbreaker

Negative inserts

ISO	Geometry	Application range	Features
		feed rate (mm/rev): 0.04 0.063 0.1 0.16 0.25 0.40 0.63 1.00 1.60 2.50 4.00 6.30 depth of cut (mm): 0.10 0.16 0.25 0.40 0.63 1.00 1.60 2.50 4.00 6.30 10.00 11.6 13 15	
P	GF	0.05-0.3 0.05-1.0	For steel finishing turning • Stable chip control in high toughness material; low carbon steel, pipe steel & steel plates. • Imporved chip control for facing, copy machining and better surface finish.
P M K	GM 	0.15-0.5 1.5-5.0	For medium turning • With broad applied range. • High reliability and universality with fault-free cutting. This chipbreaker matches with wear-resisting grade will be better. • Strong cutting edge strength provide good performance at ntemittent and fast feed cutting.
P	HQ	0.15-0.3 0.5-2.0	For semi-finishing machining • The front angle and double point design can provide good sharpness and widely chip processing performance.
P	TM	0.2-0.5 1.0-5.0	For semi-finishing machining • High universality, easy chip-flow, special bulge close to the nose radiusand big rake angle generate the cutting ability and low cutting force of chip breaker.
P M	S	0.14-0.35 0.5-4.0	For Medium to Roughing of turning • The large front angle design greatly reduces the cutting resistance, and the special design can reduce the boundary wear.
P K	GR	0.3-0.8 3.0-12.0	For light load roughing • M class double chip breaker, metal removal rate and edge economy can have it all.
P K	ZR	0.3-1.0 5.0-15.0	For heavy load roughing • M class double chip breaker, tough edge, with a high security, strong ability to resist plastic deformation at high removal rate.

Chip Breakers

Description of Chipbreaker

Negative inserts

P K	Standard	0.2-0.5 5.0-15.0	For General cutting • With broad applied range for steel and cast iron. • High cutting edge hardness, low cutting resistance force, eay chip-flow. Combined with more abrasive grade can get better efficiency.
P K	GR	0.3-1.0 3.0-15.0	For Heavy duty cutting • Sutable for haevy duty cutting due to strong cutting edge. • Wide chip control range with low cutting force.
P M	MA	0.15-0.5 0.2-6.0	For semi-finishing machining • First recommendation for medium cutting of carbon steel and alloy steel • Alternative chipbreaker for finishing and light cutting of cast iron. • Suitable for feneral field. Positive edge shape of blade, performance of sharp cutting.
M S	BF	0.5-0.3 0.1-1.0	For stainless finishing turning • semi-finishing to finishing under with high efficiency high feed rate is adopted under the condition of small cutting depth. • Due to the latest chipbreaker design, it can obtain good chip control and good machining surface accuracy. • The extremely sharp edge and high rake angel design especially is suitable for stainless steel & softy steel.
M	BM	0.1-0.3 0.5-1.5	For semi-finishing machining • Has a wide range of applications for stainless steel. • Can effictively solve machining difficulties such as chip breaking and sticking phenomenon in the stainless steel processing, which can obtain higher machining efficency.
M S N	HA		For Light-alloy, Stainless-steel machining • Sharp cutting edge generates low cutting force. • Specially designed tough main cutting edge. • Sutable for cutting of low carbon steel, stainless steel, aluminum.
M	HS	0.1-0.4 1.0-4.0	For Medium cutting of stainless steel • Exclusive design for stainless steel cutting provide longer tool life. • Wear resistance have been reinforced through high rake angle of chip breaker land.
K	No slot	0.05-0.6 0.3-12.0	ForRoughing turning • For grey and nodular cast-iron. • Broad application range for roughing.

Description of Chipbreaker

Positive inserts

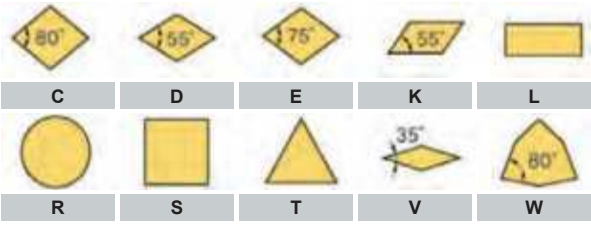
ISO	Geometry	Application range	Features
		feed rate (mm/rev): 0.04 0.063 0.1 0.16 0.25 0.40 0.63 1.00 1.60 2.50 4.00 6.30 depth of cut (mm): 0.10 0.16 0.25 0.40 0.63 1.00 1.60 2.50 4.00 6.30 10.00 11.6 13 15	
P M	HF 	0.05-0.3 0.1-2.0	For finishing turning • Excellent chip control in steel, stainless steel, grey and nodular cast-iron. • Suitable for both boring and outer diameter turning.
P M	HM 	0.2-0.5 1.0-4.0	For semi-finishing turning • Excellent chip control at wide range of cutting conditions • Suitable for stainless steel cutting.
P M K	HR 	0.3-0.7 3.0-7.0	For roughing turning • suitable for internal and external roughing of steel, stainless steel and cast iron material.
N	AL 	0.03-0.4 0.1-4.0	For Aluminum cutting • Wide available chip control range from medium-finishing to medium-roughing. • High speed of finishing operation.
S	IL 	0.03-0.3 0.06-1.7	For finishing turning • Suitable for finishing machining of heat resistance alloy, titanium alloy Tan oner aerosoace parts • Loght cutting chip breaker with low cutting force, high reliability and universality. Problem free cutting.

Turning Insert Code System (ISO)

C	N	M	G	12
1	2	3	4	5
Insert Shape	Relief Angle	Tolerance	Cross Section Type	Cutting Edge Lenght, Diameter of Inscribed Circle

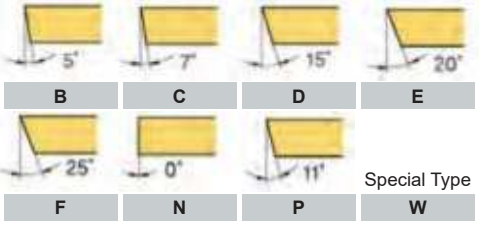
1 Insert Shape

C N M G 12 04 08 - GM



2 Relief Angle

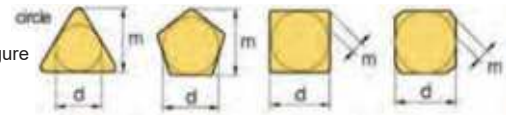
C N M G 12 04 08 - GM



3 Tolerance

C N M G 12 04 08 - GM

d: Inscribed
t: Thickness
m: Refer to figure



(mm)

Class			
A			
C			
H			
E			
G			
J*			
K*			
L*			
M*			
N*			
U*			

*Sides are based on unground insert

Toleran ce on C, E, H, M, O, P, R, S, T, W Insert Shape (Exceptional case)

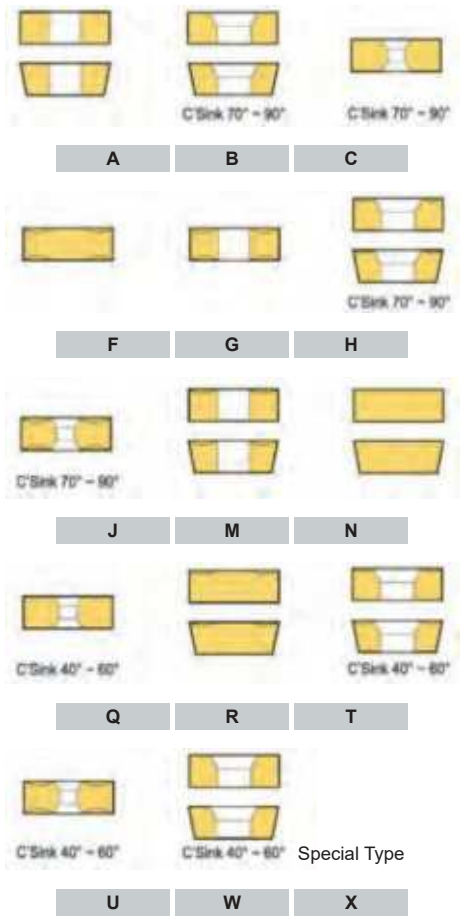
d	Toleran ce on d		Toleran ce on m	
	J,K,L,M,N	U	M, N	U
6.35	±0.05	±0.08	±0.08	±0.13
9.52 5	±0.05	±0.08	±0.08	±0.13
12.7	±0.08	±0.13	±0.13	±0.20
15. 87 5	±0.10	±0.18	±0.15	±0.27
19.05	±0.10	±0.18	±0.15	±0.27
25.4	±0.13	±0.25	±0.18	±0.38

Toleran ce on D Insert Shape (Exceptional case)

d	Toleran ce on d	Toleran ce on m
6.35	±0.05	±0.11
9.52 5	±0.05	±0.11
12.7	±0.08	±0.15
15. 87 5	±0.10	±0.18
19.05	±0.10	±0.18

4 Cross Section Type

C N M G 12 04 08 - GM



04	08	-	GM
6	7		8
Height of Cutting Edge	Nose Radius (Nose R)		Chip Breaker for Turning

5 Cutting Edge Lenght, Diameter of Inscribed Circle

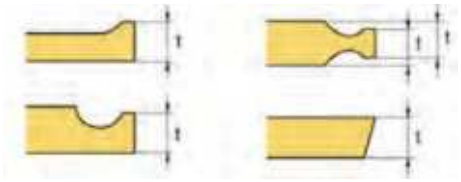
C N M G 12 04 08 - GM

Symbol								IC
							Inch	
Metric								d(mm)
03	04	03	06	03	-	02	1.2(5)	3.97
04	05	04	08	04	08	S3	1.5(6)	4.76
05	06	05	09	05	09	03	1.8(7)	5.56
-	-	-	-	06	-	-	-	6.00
06	07	06	11	06	11	04	2	6.35
08	09	07	13	07	13	05	2.5	7.94
-	-	-	-	08	-	-	-	8.00
09	11	09	16	09	16	06	3	9.52 5
-	-	-	-	10	-	-	-	10.00
11	13	11	19	11	19	07	3.5	11.11
-	-	-	-	12	+	-	-	12.00
12	15	12	22	12	22	08	4	12.70
14	-17	14	24	14	24	09	4.5	14.29
16	19	15	27	15	27	10	5	15.87 5
-	-	-	-	16	-	-	-	16.00
17	21	17	30	17	30	11	5.5	17.46
19	23	19	33	19	33	13	6	19.05
-	-	-	-	20	-	-	-	20.00
22	27	22	38	22	38	15	7	22.22 5
-	-	-	-	25	-	-	-	25.00
25	31	25	44	25	44	17	8	25.40
32	38	31	54	31	54	21	10	31.75
-	-	-	-	32	-	-	-	32.00

( ) Symbol for small size insert

6 Height of Cutting Edge

C N M G 12 04 08 - GM



Symbol		Corner Radius	
Metric	Inch	Metric	Inch
01	1 (2)	1.59	1/16
T0	1.125	1.79	9/12 8
T1	1.2	1.98	5/64
02	1.5 (3)	2.38	3/32
T2	1.75	2.78	7/64
03	2	3.18	1/8
T3	2.5	3.97	5/32
04	3	4.76	3/16
05	3.5	5.56	7/32
06	4	6.35	1/4
07	5	7.94	5/16
09	6	9.52	3/8
11	7	11.11	7/16
12	8	12.70	1/2

( ) Symbol for small size insert

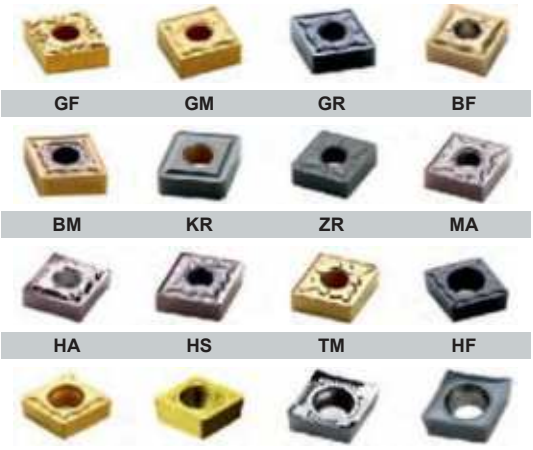
7 Nose Radius (Nose R)

C N M G 12 04 08 - GM

Symbol		Corner Radius	
Metric	Inch	Metric	Inch
01	0	0.1	0.004
02	0.5	0.2	0.008
04	1	0.4	1/64
08	2	0.8	1/32
12	3	1.2	3/64
16	4	1.6	1/16
20	5	2.0	5/64
24	6	2.4	3/32
28	7	2.8	7/64
32	8	3.2	1/8
00	-	Roundinsert (Inch)	
M0	-	Roundinsert (Metric)	

8 Chip Breaker for Turning

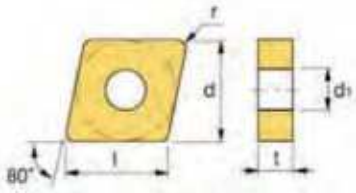
C N M G 12 04 08 - GM



Turning Insert (Negative)

CN ○○

Rhombic **80° Negative**



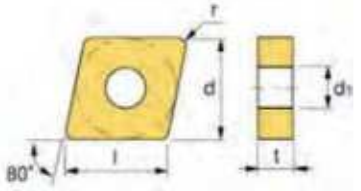
Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
CNMA	120404															●		●		●				12.4	12.7	4.76	5.16	0.4
	120408															●		●		●				12.0	12.7	4.76	5.16	0.8
	120412															●		●		●				11.6	12.7	4.76	5.16	1.2
	120416															●		●		●				11.2	12.7	4.76	5.16	1.6
	160608															●		●		●				15.3	15.875	6.35	6.35	0.8
	160612															●		●		●				14.8	15.875	6.35	6.35	1.2
	160616																	●						14.4	15.875	6.35	6.35	1.6
	190608																	●						18.5	19.05	6.35	7.93	0.8
Roughing	190612																	●						18.1	19.05	6.35	7.93	1.2
	190616																	●						17.7	19.05	6.35	7.93	1.6
CNMG	120404				●		●									●		●		●				12.4	12.7	4.76	5.16	0.4
	120408				●		●									●		●		●				12.0	12.7	4.76	5.16	0.8
	120412				●		●									●		●		●				11.6	12.7	4.76	5.16	1.2
	120416				●		●									●		●		●				11.2	12.7	4.76	5.16	1.6
	160608				●		●									●		●		●				15.3	15.875	6.35	6.35	0.8
	160612				●		●									●		●		●				14.8	15.875	6.35	6.35	1.2
	160616				●		●											●						14.4	15.875	6.35	6.35	1.6
	190608				●		●											●						18.5	19.05	6.35	7.93	0.8
Medium to Roughing	190612				●		●											●						18.1	19.05	6.35	7.93	1.2
	190616				●		●											●						17.7	19.05	6.35	7.93	1.6
CNMG-GF	090304-GF		●	●	●																			9.2	9.525	3.18	3.81	0.4
	090308-GF		●	●	●																			8.8	9.525	3.18	3.81	0.8
	120404-GF		●	●	●		●																	12.4	12.7	4.76	5.16	0.4
	120408-GF		●	●	●		●																	12.0	12.7	4.76	5.16	0.8
	120412-GF																							11.6	12.7	4.76	5.16	1.2
Finishing																												
CNMG-GM	090304-GM																							9.2	9.525	3.18	3.81	0.4
	090308-GM																	●		●				8.8	9.525	3.18	3.81	0.8
	120404-GM		●	●	●		●						●					●		●				12.4	12.7	4.76	5.16	0.4
	120408-GM		●	●	●		●						●					●		●				12.0	12.7	4.76	5.16	0.8
	120412-GM		●	●	●		●						●					●						11.6	12.7	4.76	5.16	1.2
	120416-GM		●	●	●		●											●						11.2	12.7	4.76	5.16	1.6
	160608-GM		●	●	●		●						●					●						15.3	15.875	6.35	6.35	0.8
	160612-GM		●	●	●		●						●					●						14.8	15.875	6.35	6.35	1.2
	160616-GM		●	●	●		●						●					●						14.4	15.875	6.35	6.35	1.6
	190608-GM		●	●	●		●						●					●						18.5	19.05	6.35	7.93	0.8
Medium	190612-GM		●	●	●		●						●					●						18.1	19.05	6.35	7.93	1.2
	190616-GM		●	●	●		●						●					●						17.7	19.05	6.35	7.93	1.6

CN ○○

Rhombic 80° Negative



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

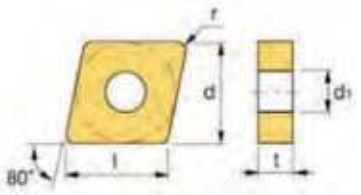
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
CNMG-GR	090308-GR																							8.8	9.525	3.18	3.81	0.8
	120404-GR																							12.4	12.7	4.76	5.16	0.4
	120408-GR				●		●											●						12.0	12.7	4.76	5.16	0.8
	120412-GR				●		●											●						11.6	12.7	4.76	5.16	1.2
	120416-GR				●		●											●						11.2	12.7	4.76	5.16	1.6
	160608-GR				●		●		●									●						15.3	15.875	6.35	6.35	0.8
	160612-GR				●		●		●									●						14.8	15.875	6.35	6.35	1.2
	160616-GR				●		●		●									●						14.4	15.875	6.35	6.35	1.6
	190608-GR				●		●		●									●						18.5	19.05	6.35	7.93	0.8
	190612-GR				●		●		●									●						18.1	19.05	6.35	7.93	1.2
	190616-GR				●		●		●									●						17.7	19.05	6.35	7.93	1.6
	190624-GR						●		●															16.8	19.05	6.35	7.93	2.4
Roughing	250724-GR						●		●															23.3	25.4	7.94	9.12	2.4
	250924-GR						●		●															23.3	25.4	9.52	9.12	2.4
CNMG-ZR	120408-ZR																							12.0	12.7	4.76	5.16	0.8
	120412-ZR				●		●											●						11.6	12.7	4.76	5.16	1.2
	120416-ZR				●		●											●						11.2	12.7	4.76	5.16	1.6
	160608-ZR				●		●											●						15.3	15.875	6.35	6.35	0.8
	160612-ZR				●		●											●						14.8	15.875	6.35	6.35	1.2
	160616-ZR				●		●											●						14.4	15.875	6.35	6.35	1.6
	190608-ZR				●		●											●						18.5	19.05	6.35	7.93	0.8
	190612-ZR				●		●											●						18.1	19.05	6.35	7.93	1.2
	190616-ZR																	●						17.7	19.05	6.35	7.93	1.6
	190624-ZR																							16.8	19.05	6.35	7.93	2.4
Roughing	250724-ZR																							23.3	25.4	7.94	9.12	2.4
	250924-ZR																							23.3	25.4	9.52	9.12	2.4
CNMG-HA	120404-HA														●								●	12.4	12.7	4.76	5.16	0.4
	120408-HA														●								●	12.0	12.7	4.76	5.16	0.8
	120412-HA																							11.6	12.7	4.76	5.16	1.2
Medium to Finishing																												

Turning Insert (Negative)

CN ○○

Rhombic **80° Negative**



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	General	General	General	Interrupted	Interrupted	Interrupted	●	●	General	General	Interrupted								General	
Stainless steel	M							Interrupted	Interrupted	●	●	General	General	Interrupted	Interrupted								
Cast iron	K															●	●	General	General	Interrupted	Interrupted		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	General	General	Interrupted									
Hardened steel	H																						

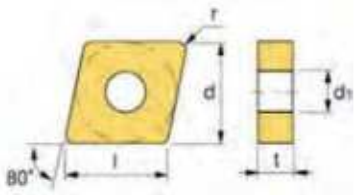
Machining types
- ● Continuos cutting
- General cutting
- Interrupted cutting

Inserts	Designation	TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
		Coated																				Uncoated		Dimensions(mm)				
CNMG-HS	120404-HS														●									12.4	12.7	4.76	5.16	0.4
	120408-HS														●									12.0	12.7	4.76	5.16	0.8
	120412-HS														●									11.6	12.7	4.76	5.16	1.2
CNMG-TM	120404-TM		●	●	●							●	●											12.4	12.7	4.76	5.16	0.4
	120408-TM		●	●	●							●	●											12.0	12.7	4.76	5.16	0.8
	120412-TM		●										●											11.6	12.7	4.76	5.16	1.2
CNMG-MA	120404-MA																							12.4	12.7	4.76	5.16	0.4
	120408-MA																							12.0	12.7	4.76	5.16	0.8
	120412-MA			●	●							●	●											11.6	12.7	4.76	5.16	1.2
	120416-MA			●	●							●	●											11.2	12.7	4.76	5.16	1.6
	160608-MA																							15.3	15.875	6.35	6.35	0.8
	160612-MA																							14.8	15.875	6.35	6.35	1.2
	160616-MA																							14.4	15.875	6.35	6.35	1.6
	190608-MA																							18.5	19.05	6.35	7.93	0.8
	190612-MA																							18.1	19.05	6.35	7.93	1.2
	190616-MA																							17.7	19.05	6.35	7.93	1.6

Medium

CN ○○

Rhombic 80° Negative



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
CNMG-BF	120404-BF									○		●	●											12.4	12.7	4.76	5.16	0.4
	120408-BF											●	●											12.0	12.7	4.76	5.16	0.8
	120412-BF																							11.6	12.7	4.76	5.16	1.2
	160608-BF																							15.3	15.875	6.35	6.35	0.8
	160612-BF																							14.8	15.875	6.35	6.35	1.2
CNMG-BM	090304-BM																							9.2	9.525	3.18	3.18	0.4
	090308-BM																							8.8	9.525	3.18	3.18	0.8
	120404-BM											●	●											12.4	12.7	4.76	5.16	0.4
	120408-BM											●	●											12.0	12.7	4.76	5.16	0.8
	120412-BM											●	●											11.6	12.7	4.76	5.16	1.2
	160608-BM											●	●											15.3	15.875	6.35	6.35	0.8
	160612-BM												●											14.8	15.875	6.35	6.35	1.2
	160616-BM																							14.4	15.875	6.35	6.35	1.6
CNMM-GR	160608-GR				●	●	●	●	●									●						15.3	15.875	6.35	6.35	0.8
	160612-GR				●	●	●	●	●									●						14.8	15.875	6.35	6.35	1.2
	160616-GR				●	●	●	●	●									●						14.4	15.875	6.35	6.35	1.6
	190608-GR				●	●	●	●	●									●						18.5	19.05	6.35	7.93	0.8
	190612-GR				●	●	●	●	●									●						18.1	19.05	6.35	7.93	1.2
	190616-GR				●	●	●	●	●									●						17.7	19.05	6.35	7.93	1.6
	190624-GR				●	●	●	●	●									●						16.8	19.05	6.35	7.93	2.4
	250724-GR				●	●	●	●	●									●						23.3	25.4	7.94	9.12	2.4
	250924-GR				●	●	●	●	●									●						23.3	25.4	9.52	9.12	2.4

Finishing

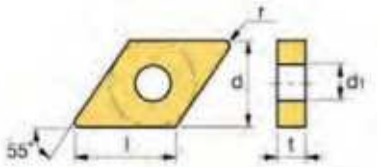
Medium

Roughing

Turning Insert (Negative)

DN ○○

Rhombic 55° Negative



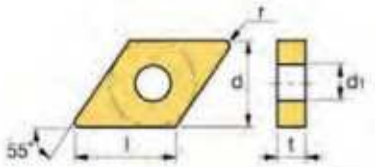
Workpiece																						
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱							⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱							
Cast iron	K															●	●	⬌	⬌	✱	✱	●
Non-ferrous metal	N																					●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱								
Hardened steel	H																					

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																			Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
DNMA Roughing	110408																		●					10.8	9.525	4.76	3.81	0.8
	150404																		●		●			15.1	12.7	4.76	5.16	0.4
	150408																		●		●			14.7	12.7	4.76	5.16	0.8
	150412																		●		●			14.4	12.7	4.76	5.16	1.2
	150604																		●		●			15.1	12.7	6.35	5.16	0.4
	150608																●		●		●			14.7	12.7	6.35	5.16	0.8
	150612																●		●		●			14.4	12.7	6.35	5.16	1.2
	150616																●		●		●			14.0	12.7	6.35	5.16	1.6
DNMG Medium to Roughing	150404				●		●												●		●			15.1	12.7	4.76	5.16	0.4
	150408				●		●												●		●			14.7	12.7	4.76	5.16	0.8
	150412				●		●												●		●			14.4	12.7	4.76	5.16	1.2
	150604				●		●										●		●		●			15.1	12.7	6.35	5.16	0.4
	150608				●		●										●		●		●			14.7	12.7	6.35	5.16	0.8
	150612				●		●										●		●		●			14.4	12.7	6.35	5.16	1.2
	150616																		●					14.0	12.7	6.35	5.16	1.6
DNMG-GF Finishing	110404-GF		●	●	●		●																	11.2	9.525	4.76	3.81	0.4
	110408-GF																							10.8	9.525	4.76	3.81	0.8
	150404-GF		●	●	●		●																	15.1	12.7	4.76	5.16	0.4
	150408-GF																							14.7	12.7	6.35	5.16	0.8
	150604-GF		●	●	●		●																	15.1	12.7	6.35	5.16	0.4
	150608-GF																							14.7	12.7	6.35	5.16	0.8
DNMG-GM Medium	110404-GM		●	●	●		●					●												11.2	9.525	4.76	3.81	0.4
	110408-GM				●							●												10.8	9.525	4.76	3.81	0.8
	110412-GM		●	●	●		●																	10.3	9.525	4.76	3.81	1.2
	150404-GM				●						●	●												15.1	12.7	4.76	5.16	0.4
	150408-GM		●	●	●		●				●	●												14.7	12.7	4.76	5.16	0.8
	150412-GM																							14.4	12.7	4.76	5.16	1.2
	150604-GM			●	●		●				●	●												15.1	12.7	6.35	5.16	0.4
	150608-GM			●	●		●				●	●						●		○	●			14.7	12.7	6.35	5.16	0.8
	150512-GM				●		●					●												14.4	12.7	6.35	5.16	1.2
																								14.0	12.7	6.35	5.16	1.6

DN ○○

Rhombic **55° Negative**



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

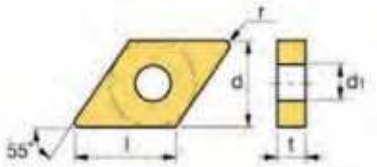
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
DNMG-GR	110404-GR		●		●		●											●						11.2	9.525	4.76	3.81	0.4
	110408-GR		●		●		●											●						10.8	9.525	4.76	3.81	0.8
	110412-GR																							10.3	9.525	4.76	3.81	1.2
	150404-GR																							15.1	12.7	4.76	5.16	0.4
	150408-GR		●		●		●											●						14.7	12.7	4.76	5.16	0.8
	150412-GR		●		●		●											●						14.4	12.7	4.76	5.16	1.2
	150604-GR																							15.1	12.7	6.35	5.16	0.4
	150608-GR		●		●		●				○	●						●		○				14.7	12.7	6.35	5.16	0.8
Roughing	150612-GR		●		●		●					●						●						14.4	12.7	6.35	5.16	1.2
	150616-GR		●		●		●											●	●					14.0	12.7	6.35	5.16	1.6
DNMG-ZR	110408-ZR				●		●											●						10.8	9.525	4.76	3.81	0.8
	110412-ZR				●		●											●						10.3	9.525	4.76	3.81	1.2
	150408-ZR				●		●											●						14.7	12.7	4.76	5.16	0.8
	150412-ZR				●		●											●						14.4	12.7	4.76	5.16	1.2
	150608-ZR				●		●											●						14.7	12.7	6.35	5.16	0.8
	150612-ZR				●		●											●						14.4	12.7	6.35	5.16	1.2
	150616-ZR				●		●											●						14.0	12.7	6.35	5.16	1.6
Roughing																												
DNMG-HA	150404-HA																						●	15.1	12.7	4.76	5.16	0.4
	150408-HA																						●	14.7	12.7	4.76	5.16	0.8
	150604-HA														●								●	15.1	12.7	6.35	5.16	0.4
	150608-HA														●								●	14.7	12.7	6.35	5.16	0.8
Roughing																												
DNMG-HS	150404-HS																							15.1	12.7	4.76	5.16	0.4
	150408-HS																							14.7	12.7	4.76	5.16	0.8
	150412-HS																							14.4	12.7	4.76	5.16	1.2
	150604-HS																							15.1	12.7	6.35	5.16	0.4
	150608-HS																							14.7	12.7	6.35	5.16	0.8
	150612-HS																							14.4	12.7	6.35	5.16	1.2
Roughing																												

Turning Insert (Negative)

DN ○○

Rhombic 55° Negative



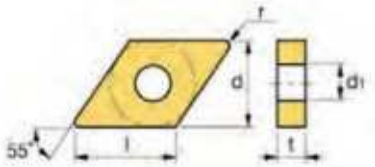
Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	◐	◐	◐	✱	✱	✱	●	●	◐	◐	✱								◐	
Stainless steel	M							✱	✱	●	●	◐	◐	✱	✱								
Cast iron	K															●	●	◐	◐	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	◐	◐	✱									
Hardened steel	H																						

Machining types
- ● Continuos cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
DNMG-S Medium	150404R-S																							15.1	12.7	4.76	5.16	0.4
	150404L-S																							15.1	12.7	4.76	5.16	0.4
	150408R-S																							14.7	12.7	4.76	5.16	0.8
	150408L-S																							14.7	12.7	4.76	5.16	0.8
	150604R-S																							15.1	12.7	6.35	5.16	0.4
	150604L-S																							15.1	12.7	6.35	5.16	0.4
	150608R-S																							14.7	12.7	6.35	5.16	0.8
	150608L-S																							14.7	12.7	6.35	5.16	0.8

DN ○○

Rhombic 55° Negative



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

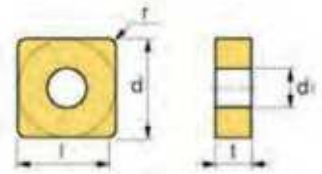
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
DNMG-TM Medium	110404-TM		●		●		●					●	●											11.2	9.525	4.76	3.81	0.4
	110408-TM		●		●		●					●	●											10.8	9.525	4.76	3.81	0.8
	150404-TM		●	●	●		●					●	●											15.1	12.7	4.76	5.16	0.4
	150408-TM		●	●	●		●					●	●											14.7	12.7	4.76	5.16	0.8
	150604-TM		●	●	●		●					●	●											15.1	12.7	6.35	5.16	0.4
	150608-TM		●	●	●		●																	14.7	12.7	6.35	5.16	0.8
	150612-TM		●		●																			14.4	12.7	6.35	5.16	1.2
DNMG-MA Medium	110404-MA				●							●	●											11.2	9.525	4.76	3.81	0.4
	110408-MA				●							●	●											10.8	9.525	4.76	3.81	0.8
	150404-MA			●	●							●	●											15.1	12.7	4.76	5.16	0.4
	150408-MA			●	●							●	●											14.7	12.7	4.76	5.16	0.8
	150604-MA			●	●							●	●											15.1	12.7	6.35	5.16	0.4
	150608-MA			●	●							●	●											14.7	12.7	6.35	5.16	0.8
	150612-MA											●	●											14.4	12.7	6.35	5.16	1.2
DNMG-BF Finishing	110404-BF																							11.2	9.525	4.76	3.81	0.4
	110408-BF																							10.8	9.525	4.76	3.81	0.8
	150404-BF																							15.1	12.7	4.76	5.16	0.4
	150408-BF																							14.7	12.7	4.76	5.16	0.8
	150604-BF																							15.1	12.7	6.35	5.16	0.4
	150608-BF																							14.7	12.7	6.35	5.16	0.8
	150612-BF																							14.4	12.7	6.35	5.16	1.2
DNMG-BM Medium	110404-BM											●	●											11.2	9.525	4.76	3.81	0.4
	110408-BM											●	●											10.8	9.525	4.76	3.81	0.8
	110412-BM																							10.3	9.525	4.76	3.81	1.2
	150404-BM											●	●											15.1	12.7	4.76	5.16	0.4
	150408-BM											●	●											14.7	12.7	4.76	5.16	0.8
	150412-BM																							14.4	12.7	4.76	5.16	1.2
	150604-BM											●	●											15.1	12.7	6.35	5.16	0.4
	150608-BM											●	●											14.7	12.7	6.35	5.16	0.8
	150612-BM											●	●											14.4	12.7	6.35	5.16	1.2
	150612-BM																							14.0	12.7	6.35	5.16	1.6

Turning Insert (Negative)

SN ○○

Square 90° Negative



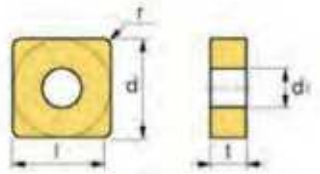
Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
SNMA	120404															●		●		●				12.2	12.7	4.76	5.16	0.4
	120408															●		●		●				11.9	12.7	4.76	5.16	0.8
	120412															●		●		●				11.5	12.7	4.76	5.16	1.2
	120416																	●		●				11.1	12.7	4.76	5.16	1.6
	150608															●		●		●				15.0	15.875	6.35	6.35	0.8
	150612															●		●		●				14.6	15.875	6.35	6.35	1.2
	150616																	●		●				14.2	15.875	6.35	6.35	1.6
	190608																	●						18.2	19.05	6.35	7.93	0.8
Roughing	190612																	●						17.8	19.05	6.35	7.93	1.2
	190616																	●						14.4	19.05	6.35	7.93	1.6
SNMG	120404				●		●									●		●		●				12.3	12.7	4.76	5.16	0.4
	120408				●		●									●		●		●				11.9	12.7	4.76	5.16	0.8
	120412				●		●									●		●		●				11.5	12.7	4.76	5.16	1.2
	120416				●		●											●						11.1	12.7	4.76	5.16	1.6
	150608				●		●									●		●		●				15.0	15.875	6.35	6.35	0.8
	150612				●		●									●		●		●				14.6	15.875	6.35	6.35	1.2
	150616				●		●											●						14.2	15.875	6.35	6.35	1.6
	190608				●		●											●						18.2	19.05	6.35	7.93	0.8
Medium to Roughing	190612				●		●											●						17.8	19.05	6.35	7.93	1.2
	190616				●		●											●						17.4	19.05	6.35	7.93	1.6
SNMG-GF	090304-GF																							9.1	9.525	3.81	3.81	0.4
	090308-GF																							8.7	9.525	3.81	3.81	0.8
	120404-GF		●	●	●																			12.3	12.7	4.76	5.16	0.4
	120408-GF		●	●	●																			11.9	12.7	4.76	5.16	0.8
Finishing																												
SNMG-GM	090304-GM																							9.1	9.525	3.81	3.81	0.4
	090308-GM																							8.7	9.525	3.81	3.81	0.8
	120404-GM		●	●	●		●					●						●						12.3	12.7	4.76	5.16	0.4
	120408-GM		●	●	●		●					●						●						11.9	12.7	4.76	5.16	0.8
	120412-GM		●	●	●		●					●						●						11.5	12.7	4.76	5.16	1.2
	120416-GM				●		●											●						11.1	12.7	4.76	5.16	1.6
	150608-GM		●	●	●		●					●						●						15.0	15.875	6.35	6.35	0.8
	150612-GM		●	●	●		●					●						●						14.6	15.875	6.35	6.35	1.2
	150616-GM				●		●					●						●						14.2	15.875	6.35	6.35	1.6
	190608-GM				●		●					●						●						18.2	19.05	6.35	7.93	0.8
Medium	190612-GM				●		●					●						●						17.8	19.05	6.35	7.93	1.2
	190616-GM				●		●					●						●						17.4	19.05	6.35	7.93	1.6

SN ○○

Square 90° Negative



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

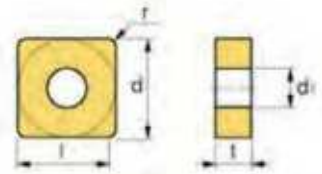
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
SNMG-GR	120404-GR																							12.3	12.7	4.76	5.16	0.4
	120408-GR			●	●		●	●	●			●	●					●						11.9	12.7	4.76	5.16	0.8
	120412-GR			●	●		●	●	●			●	●					●						11.5	12.7	4.76	5.16	1.2
	120416-GR			●	●		●	●	●			●	●					●						11.1	12.7	4.76	5.16	1.6
	150608-GR			●	●		●	●	●			●	●					●						15.0	15.875	6.35	6.35	0.8
	150612-GR			●	●		●	●	●			●	●					●						14.6	15.875	6.35	6.35	1.2
	150616-GR			●	●		●	●	●															14.2	15.875	6.35	6.35	1.6
	190608-GR				●		●	●	●															18.2	19.05	6.35	7.93	0.8
	190612-GR				●		●	●	●															17.8	19.05	6.35	7.93	1.2
	190616-GR				●		●	●	●															17.4	19.05	6.35	7.93	1.6
	190624-GR				●		●	●	●															16.6	19.05	6.35	7.93	2.4
Roughing	250724-GR				●		●	●	●															23.0	25.4	7.94	9.12	2.4
	250924-GR				●		●	●	●															23.0	25.4	9.52	9.12	2.4
SNMG-ZR	120404-ZR				●		●																	11.9	12.7	4.76	5.16	0.8
	120412-ZR				●		●																	11.5	12.7	4.76	5.16	1.2
	120416-ZR				●		●																	11.1	12.7	4.76	5.16	1.6
	150608-ZR				●		●																	15.0	15.875	6.35	6.35	0.8
	150612-ZR				●		●																	14.6	15.875	6.35	6.35	1.2
	150616-ZR				●		●																	14.2	15.875	6.35	6.35	1.6
	190608-ZR				●		●																	18.2	19.05	6.35	7.93	0.8
	190612-ZR				●		●																	17.8	19.05	6.35	7.93	1.2
	190616-ZR																							17.4	19.05	6.35	7.93	1.6
	190624-ZR																							16.6	19.05	6.35	7.93	2.4
	250724-ZR																							23.0	25.4	7.94	9.12	2.4
Roughing	250924-ZR																							23.0	25.4	9.52	9.12	2.4
SNMG-HA	120404-HA														●								●	12.3	12.7	4.76	5.16	0.4
	120408-HA														●								●	11.9	12.7	4.76	5.16	0.8
	120412-HA																							11.5	12.7	4.76	5.16	1.2
Medium to Finishing																												

Turning Insert (Negative)

SN ○○

Square 90° Negative



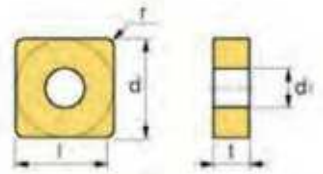
Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✖	✖	✖	●	●	⬌	⬌	✖								⬌	
Stainless steel	M							✖	✖	●	●	⬌	⬌	✖	✖								
Cast iron	K															●	●	⬌	⬌	✖	✖		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✖									
Hardened steel	H																						

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✖ Interrupted cutting

Inserts	Designation	TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
		Coated																				Uncoated		Dimensions(mm)				
SNMG-HS Medium	120404-HS														●									12.3	12.7	4.76	5.16	0.4
	120408-HS														●									11.9	12.7	4.76	5.16	0.8
	120412-HS																							11.5	12.7	4.76	5.16	1.2
SNMG-S	120404R-S			●																				12.3	12.7	4.76	5.16	0.4
	120404L-S																							12.3	12.7	4.76	5.16	0.4
	120408R-S			●																				11.9	12.7	4.76	5.16	0.8
	120408L-S																							11.9	12.7	4.76	5.16	0.8
SNMG-TM	120404-TM			●	●																			12.3	12.7	4.76	5.16	0.4
	120408-TM			●	●																			11.9	12.7	4.76	5.16	0.8
	120412-TM			●	●																			11.5	12.7	4.76	5.16	1.2

SN ○○

Square 90° Negative



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

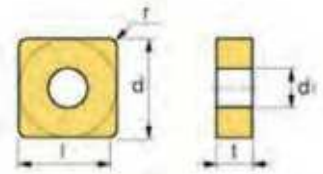
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
SNMG-MA	120404-MA		●	●	●							●	●											12.3	12.7	4.76	5.16	0.4
	120408-MA		●	●	●							●	●											11.9	12.7	4.76	5.16	0.8
	120412-MA				●																			11.5	12.7	4.76	5.16	1.2
	150608-MA																							15.0	15.875	6.35	6.35	0.8
	150612-MA																							14.6	15.875	6.35	6.35	1.2
Medium																												
SNMG-BF	120404-BF											●	●											12.3	12.7	4.76	5.16	0.4
	120408-BF											●	●											11.9	12.7	4.76	5.16	0.8
	120412-BF																							11.5	12.7	4.76	5.16	1.2
	150608-BF																							15.0	15.875	6.35	6.35	0.8
	150612-BF																							14.6	15.875	6.35	6.35	1.2
Finishing																												
SNMG-BM	090304-BM																							9.1	9.525	3.81	3.81	0.4
	090308-BM																							8.7	9.525	3.81	3.81	0.8
	120404-BM											●	●											12.3	12.7	4.76	5.16	0.4
	120408-BM											●	●											11.9	12.7	4.76	5.16	0.8
	120412-BM											●	●											11.5	12.7	4.76	5.16	1.2
	150608-BM																							15.0	15.875	6.35	6.35	0.8
	150612-BM																							14.6	15.875	6.35	6.35	1.2
	150616-BM																							14.2	15.875	6.35	6.35	1.6
Medium																												

Turning Insert (Negative)

SN ○○

Square 90° Negative



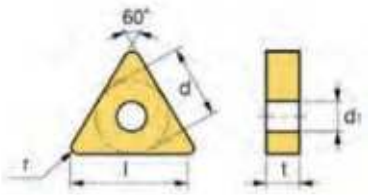
Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
SNMM-GR	150608-GR				●	●	●	●	●									●						15.0	15.875	6.35	6.35	0.8
	150612-GR				●	●	●	●	●									●						14.6	15.875	6.35	6.35	1.2
	150616-GR				●	●	●	●	●									●						14.2	15.875	6.35	6.35	1.6
	190608-GR				●	●	●	●	●									●						18.2	19.05	6.35	7.93	0.8
	190612-GR				●	●	●	●	●									●						17.8	19.05	6.35	7.93	1.2
	190616-GR				●	●	●	●	●									●						17.4	19.05	6.35	7.93	1.6
	190624-GR				●	●	●	●	●									●						16.6	19.05	6.35	7.93	2.4
	250724-GR				●	●	●	●	●									●						23.0	25.4	7.94	9.12	2.4
Roughing	250924-GR				●	●	●	●	●									●						23.0	25.4	9.52	9.12	2.4

TN ○○

Triangular **60° Negative**



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

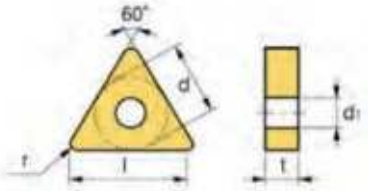
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
TNMA	160404															●		●		●				15.5	9.525	4.76	3.81	0.4
	160408															●		●		●				14.5	9.525	4.76	3.81	0.8
	160412															●		●		●				13.5	9.525	4.76	3.81	1.2
	160416																	●						12.5	9.525	4.76	3.81	1.6
	220404															●		●		●				21.0	12.7	4.76	5.16	0.4
	220408															●		●		●				20.0	12.7	4.76	5.16	0.8
	220412															●		●		●				19.0	12.7	4.76	5.16	1.2
	220416																	●						18.2	12.7	4.76	5.16	1.6
	270608																	●						25.4	15.875	6.35	6.35	0.8
	270612																	●						24.4	15.875	6.35	6.35	1.2
Roughing	270616																	●						23.3	15.875	6.35	6.35	1.6
	330924																	●						27.1	19.05	9.52	7.93	2.4
TNMG	160404				●		●											●		●				15.5	9.525	4.76	3.81	0.4
	160408				●		●									●		●		●				14.5	9.525	4.76	3.81	0.8
	160412				●		●									●		●		●				13.5	9.525	4.76	3.81	1.2
	160416				●		●											●						12.5	9.525	4.76	3.81	1.6
	220404				●		●											●		●				21.0	12.7	4.76	5.16	0.4
	220408				●		●											●		●				20.0	12.7	4.76	5.16	0.8
	220412				●		●											●		●				19.0	12.7	4.76	5.16	1.2
	220416				●		●											●						18.2	12.7	4.76	5.16	1.6
	270608																	●						25.4	15.875	6.35	6.35	0.8
	270612																	●						24.4	15.875	6.35	6.35	1.2
Medium to Roughing	270616																	●						23.3	15.875	6.35	6.35	1.6
	330924																	●						27.1	19.05	9.52	7.93	2.4
TNMG-GF	160404-GF		●	●	●	●	●																	15.5	9.525	4.76	3.81	0.4
	160408-GF		●	●	●	●	●																	14.5	9.525	4.76	3.81	0.8
	160412-GF																							13.5	9.525	4.76	3.81	1.2
	220404-GF		●	●	●	●	●																	21.0	12.7	4.76	5.16	0.4
	220408-GF		●	●	●	●	●																	20.0	12.7	4.76	5.16	0.8
	220412-GF																							19.0	12.7	4.76	5.16	1.2
Finishing																												

Turning Insert (Negative)

TN ○○

Triangular **60° Negative**



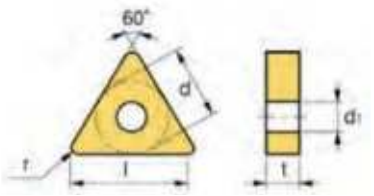
Workpiece																							
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																		Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
TNMG-GM	110304-GM																							10.0	6.35	3.81	2.4	0.4
	110308-GM																							9.0	6.35	3.81	2.4	0.8
	160404-GM		●	●	●	●	●	●				●	●					●						15.5	9.525	4.76	3.81	0.4
	160408-GM		●	●	●	●	●	●				●	●					●						14.5	9.525	4.76	3.81	0.8
	160412-GM		●	●	●	●	●	●				●	●					●						13.5	9.525	4.76	3.81	1.2
	160416-GM			●	●		●					●	●					●						12.5	9.525	4.76	3.81	1.6
	220404-GM		●	●	●	●	●	●				●	●					●						21.0	12.7	4.76	5.16	0.4
	220408-GM		●	●	●	●	●	●				●	●					●						20.0	12.7	4.76	5.16	0.8
	220412-GM		●	●	●	●	●	●										●						19.0	12.7	4.76	5.16	1.2
	220416-GM			●	●		●																	18.2	12.7	4.76	5.16	1.6
Medium	270608-GM				●	●	●	●																25.4	15.875	6.35	6.35	0.8
	270612-GM				●	●	●	●																24.4	19.05	6.35	6.35	1.2
TNMG-GR	160404-GR																							15.5	9.525	4.76	3.81	0.4
	160408-GR			●	●	●	●	●	●			●	●					●						14.5	9.525	4.76	3.81	0.8
	160412-GR			●	●	●	●	●	●			●	●					●						13.5	9.525	4.76	3.81	1.2
	160416-GR			●	●	●	●	●	●			●	●					●						12.5	9.525	4.76	3.81	1.6
	220404-GR																							21.0	12.7	4.76	3.81	0.4
	220408-GR																							20.0	12.7	4.76	5.16	0.8
	220412-GR			●	●	●	●	●	●			●	●					●						19.0	12.7	4.76	5.16	1.2
	220416-GR			●	●	●	●	●	●			●	●					●						18.2	12.7	4.76	5.16	1.6
	270608-GR			●	●	●	●	●	●			●	●					●						25.4	15.875	6.35	6.35	0.8
	270612-GR			●	●	●	●	●	●			●	●					●						24.4	15.875	6.35	6.35	1.2
Roughing	270616-GR			●	●	●	●	●	●			●	●					●						23.3	15.875	6.35	6.35	1.6
	330924-GR																							27.1	19.05	9.52	7.93	2.4
TNMG-ZR	160408-ZR				●		●																	14.5	9.525	4.76	3.81	0.8
	160412-ZR				●		●																	13.5	9.525	4.76	3.81	1.2
	160416-ZR				●		●																	12.5	9.525	4.76	3.81	1.6
	220408-ZR				●		●																	20.0	12.7	4.76	5.16	0.8
	220412-ZR				●		●																	19.0	12.7	4.76	5.16	1.2
	220416-ZR				●		●																	18.2	12.7	4.76	5.16	1.6
	270608-ZR																							25.4	15.875	6.35	6.35	0.8
	270612-ZR																							24.4	15.875	6.35	6.35	1.2
	270616-ZR																							23.3	15.875	6.35	6.35	1.6
	330924-GR																							27.1	19.05	9.52	7.93	2.4
Roughing																												

TN ○○

Triangular **60° Negative**



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱							⬌	
Stainless steel	M						✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K														●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																					●
Heat resistant alloy Titanium alloy	S								●	●	⬌	⬌	✱									
Hardened steel	H																					

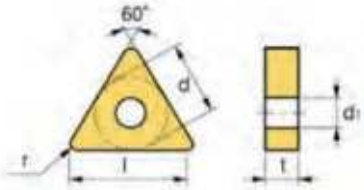
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																			Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
TNMG-HA	160404-HA													●								●	15.5	9.525	4.76	3.81	0.4
	160408-HA													●								●	14.5	9.525	4.76	3.81	0.8
	160412-HA																						13.5	9.525	4.76	3.81	1.2
Medium to Finishing																											
TNMG-HS	160404-HS													●									15.5	9.525	4.76	3.81	0.4
	160408-HS													●									14.5	9.525	4.76	3.81	0.8
	160412-HS																						13.5	9.525	4.76	3.81	1.2
TNMG-S	160404R-S			●	●						●	●											15.5	9.525	4.76	3.81	0.4
	160404L-S			●	●						●	●											15.5	9.525	4.76	3.81	0.4
	160408R-S			●	●						●	●											14.5	9.525	4.76	3.81	0.8
	160408L-S			●	●						●	●											14.5	9.525	4.76	3.81	0.8
	160412R-S																						13.5	9.525	4.76	3.81	1.2
Medium to Roughing	160412L-S																						13.5	9.525	4.76	3.81	1.2

Turning Insert (Negative)

TN ○○

Triangular **60° Negative**



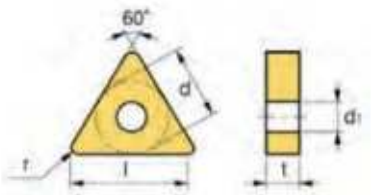
Workpiece																						
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱							⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱							
Cast iron	K															●	●	⬌	⬌	✱	✱	●
Non-ferrous metal	N																					●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱								
Hardened steel	H																					

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																			Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
TNMG-TM	160404-TM		●	●	●							●	●											15.5	9.525	4.76	3.81	0.4
	160408-TM		●	●	●							●	●											14.5	9.525	4.76	3.81	0.8
	160412-TM				●																			13.5	9.525	4.76	3.81	1.2
Medium																												
TNMG-MA	160404-MA		●	●	●							●	●											15.5	9.525	4.76	3.81	0.4
	160408-MA		●	●	●							●	●											14.5	9.525	4.76	3.81	0.8
	160412-MA				●							●	●											13.5	9.525	4.76	3.81	1.2
	220404-MA																							21.0	12.7	4.76	5.16	0.4
	220408-MA																							20.0	12.7	4.76	5.16	0.8
	220412-MA																							19.0	12.7	4.76	5.16	1.2
Medium																												
TNMG-BF	160404-MA											●	●											15.5	9.525	4.76	3.81	0.4
	160408-MA											●	●											14.5	9.525	4.76	3.81	0.8
	160412-MA																							13.5	9.525	4.76	3.81	1.2
	220404-MA																							21.0	12.7	4.76	5.16	0.4
	220408-MA																							20.0	12.7	4.76	5.16	0.8
	220412-MA																							19.0	12.7	4.76	5.16	1.2
Medium																												

TN ○○

Triangular **60° Negative**



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱							⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱							
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱								
Hardened steel	H																					

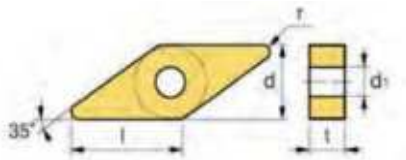
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																			Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
TNMG-BM	160404-BM										●	●											15.5	9.525	4.76	3.81	0.4
	160408-BM										●	●											14.5	9.525	4.76	3.81	0.8
	160412-BM										●	●											13.5	9.525	4.76	3.81	1.2
	220404-BM																						21.0	12.7	4.76	5.16	0.4
	220408-BM																						20.0	12.7	4.76	5.16	0.8
	220412-BM																						19.0	12.7	4.76	5.16	1.2
	220416-BM																						18.2	12.7	4.76	5.16	1.6
Medium																											
TNMM-GR	220408-GR			●	●	●	●	●			●	●											20.0	12.7	4.76	5.16	0.8
	220412-GR			●	●	●	●	●			●	●											19.0	12.7	4.76	5.16	1.2
	220416-GR			●	●	●	●	●			●	●											18.2	12.7	4.76	5.16	1.6
	270608-GR			●	●	●	●	●															25.4	15.875	6.35	6.35	0.8
	270612-GR			●	●	●	●	●															24.4	15.875	6.35	6.35	1.2
	270616-GR			●	●	●	●	●															23.3	15.875	6.35	6.35	1.6
	330924-GR			●	●	●	●	●															27.1	19.05	9.52	7.93	2.4
Roughing																											

Turning Insert (Negative)

VN ○○

Rhombic **35° Negative**



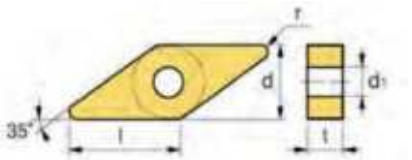
Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
		Coated																				Uncoated		Dimensions(mm)				
VNMG	160404			●												●		●		●				15.5	9.525	4.76	3.81	0.4
	160408			●												●		●		●				14.5	9.525	4.76	3.81	0.8
	160412			●												●		●		●				13.5	9.525	4.76	3.81	1.2
Medium to Roughing																												
VNMG-GF	160404-GF		●	●	●	●	●																	15.6	9.525	4.76	3.81	0.4
	160408-GF		●	●	●	●	●																	14.6	9.525	4.76	3.81	0.8
Finishing																												
VNMG-GM	160404-GM		●	●	●	●	●					●	●					●						15.6	9.525	4.76	3.81	0.4
	160408-GM		●	●	●	●	●					●	●					●						14.6	9.525	4.76	3.81	0.8
	160412-GM			●	●	●	●					●	●					●						13.6	9.525	4.76	3.81	1.2
Medium																												

VN ○○

Rhombic 35° Negative



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

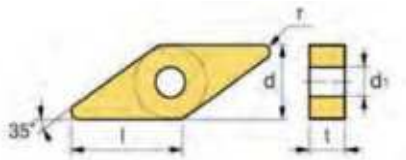
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
VNMG-HA	160404-HA														●								●	15.6	9.525	4.76	3.81	0.4
	160408-HA														●								●	14.6	9.525	4.76	3.81	0.8
Medium to Finishing																												
VNMG-HS	160404-HS														●									15.6	9.525	4.76	3.81	0.4
	160408-HS														●									14.6	9.525	4.76	3.81	0.8
	160412-HS																							13.6	9.525	4.76	3.81	1.2
VNMG-TM	160404-TM		●	●	●		●					●	●											15.6	9.525	4.76	3.81	0.4
	160408-TM		●	●	●		●					●	●											14.6	9.525	4.76	3.81	0.8
	160412-TM				●																			13.6	9.525	4.76	3.81	1.2
Medium																												

Turning Insert (Negative)

VN ○○

Rhombic **35° Negative**



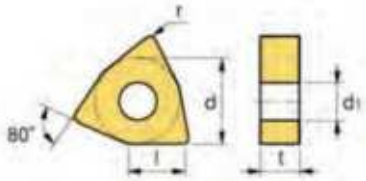
Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	◐	◐	◐	✱	✱	✱	●	●	◐	◐	✱								◐	
Stainless steel	M							✱	✱	●	●	◐	◐	✱	✱								
Cast iron	K															●	●	◐	◐	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	◐	◐	✱									
Hardened steel	H																						

Machining types
- ● Continuos cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
VNMG-MA	160404-MA		●	●	●	●	●	●				●	●											15.6	9.525	4.76	3.81	0.4
	160408-MA		●	●	●	●	●	●				●	●											14.6	9.525	4.76	3.81	0.8
	160412-MA																							13.6	9.525	4.76	3.81	1.2
Medium																												
VNMG-BF	160404-BF																							15.6	9.525	4.76	3.81	0.4
	160408-BF																							14.6	9.525	4.76	3.81	0.8
	160412-BF																							13.6	9.525	4.76	3.81	1.2
Finishing																												
VNMG-BM	160404-BM											●	●					●						15.6	9.525	4.76	3.81	0.4
	160408-BM											●	●					●						14.6	9.525	4.76	3.81	0.8
	160412-BM											●	●					●						13.6	9.525	4.76	3.81	1.2
Medium																												

WN○○

Trigon 80° Negative



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

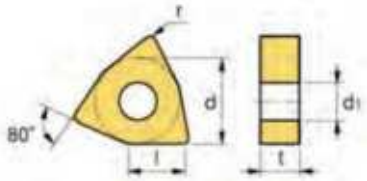
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
WNMA	060404																							6.2	9.525	4.76	3.81	0.4
	060408																							6.1	9.525	4.76	3.81	0.8
	060412															●		●	●	●	●			6.0	9.525	4.76	3.81	1.2
	080404															●		●	●	●	●			8.4	12.7	4.76	5.16	0.4
	080408															●		●	●	●	●			8.3	12.7	4.76	5.16	0.8
	080412																	●	●					8.2	12.7	4.76	5.16	1.2
	080416																							8.1	12.7	4.76	5.16	1.6
Roughing																												
WNMG	060404				●													●						6.2	9.525	4.76	3.81	0.4
	060408				●													●						6.1	9.525	4.76	3.81	0.8
	060412				●													●						6.0	9.525	4.76	3.81	1.2
	080404				●											●		●	●	●	●			8.4	12.7	4.76	5.16	0.4
	080408				●											●		●	●	●	●			8.3	12.7	4.76	5.16	0.8
	080412				●											●		●	●	●	●			8.2	12.7	4.76	5.16	1.2
	080416				●													●						8.1	12.7	4.76	5.16	1.6
Medium to Roughing																												
WNMG-GF	060404-GF		●	●	●	●	●																	6.2	9.525	4.76	3.81	0.4
	060408-GF		●	●	●	●	●																	6.1	9.525	4.76	3.81	0.8
	060412-GF																							6.0	9.525	4.76	3.81	1.2
	080404-GF		●	●	●	●	●																	8.4	12.7	4.76	5.16	0.4
	080408-GF		●	●	●	●	●																	8.3	12.7	4.76	5.16	0.8
	080412-GF																							8.2	12.7	4.76	5.16	1.2
Finishing																												

Turning Insert (Negative)

WN○○

Trigon **80° Negative**



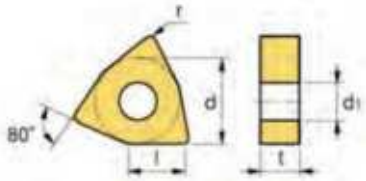
Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
		Coated																				Uncoated		Dimensions(mm)				
WNMG-GM	060404-GM		●	●	●		●					●	●					●	●	●	●			6.2	9.525	4.76	3.81	0.4
	060408-GM		●	●	●		●					●	●					●	●	●	●			6.1	9.525	4.76	3.81	0.8
	060412-GM			●	●																			6.0	9.525	4.76	3.81	1.2
	080404-GM		●	●	●	●	●	●				●	●					●	●	●	●			8.4	12.7	4.76	5.16	0.4
	080408-GM		●	●	●	●	●	●				●	●					●	●	●	●			8.3	12.7	4.76	5.16	0.8
	080412-GM		●	●	●	●	●	●				●	●					●	●	●	●			8.2	12.7	4.76	5.16	1.2
	080416-GM																							8.1	12.7	4.76	5.16	1.6
Medium																												
WNMG-GR	060404-GR																							6.2	9.525	4.76	3.81	0.4
	060408-GR			●	●	●	●	●				●	●					●	●					6.1	9.525	4.76	3.81	0.8
	060412-GR																							6.0	9.525	4.76	3.81	1.2
	080404-GR																							8.4	12.7	4.76	5.16	0.4
	080408-GR			●	●	●	●	●				●	●					●	●					8.3	12.7	4.76	5.16	0.8
	080412-GR			●	●	●	●	●				●	●					●	●					8.2	12.7	4.76	5.16	1.2
	080416-GR			●	●	●	●	●																8.1	12.7	4.76	5.16	1.6
Roughing																												
WNMG-ZR	060408-ZR																							6.1	9.525	4.76	3.81	0.8
	060412-ZR																							6.0	9.525	4.76	3.81	1.2
	080404-ZR				●		●																	8.4	12.7	4.76	5.16	0.4
	080408-ZR				●		●																	8.3	12.7	4.76	5.16	0.8
	080412-ZR				●		●																	8.2	12.7	4.76	5.16	1.2
	080416-ZR																							8.1	12.7	4.76	5.16	1.6
Roughing																												

WN○○

Trigon 80° Negative



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
WNMG-HA	060404-HA																						●	6.1	9.525	4.76	3.81	0.4
	060408-HA																						●	6.0	9.525	4.76	3.81	0.8
	080404-HA														●								●	8.4	12.7	4.76	5.16	0.4
	080408-HA														●								●	8.3	12.7	4.76	5.16	0.8
WNMG-HS	080404-HS														●									8.4	12.7	4.76	5.16	0.4
	080408-HS														●									8.3	12.7	4.76	5.16	0.8
WNMG-S	080404R-S			●																				8.4	12.7	4.76	5.16	0.4
	080404L-S																							8.4	12.7	4.76	5.16	0.4
	080408R-S			●																				8.3	12.7	4.76	5.16	0.8
	080408L-S			●																				8.3	12.7	4.76	5.16	0.8

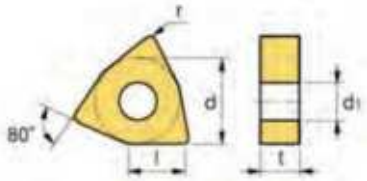
Medium to Finishing

Medium

Turning Insert (Negative)

WN○○

Trigon **80° Negative**



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

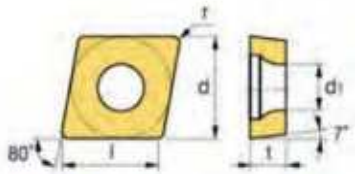
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
		Coated																				Uncoated		Dimensions(mm)				
WNMG-TM	080404-TM		●	●	●	●	●	●				●	●											8.4	12.7	4.76	5.16	0.4
	080408-TM		●	●	●	●	●	●				●	●											8.3	12.7	4.76	5.16	0.8
	080412-TM			●	●																			8.2	12.7	4.76	5.16	1.2
Medium																												
WNMG-MA	060404-MA																							6.2	9.525	4.76	3.81	0.4
	060408-MA																							6.1	9.525	4.76	3.81	0.8
	080404-MA		●	●	●	●	●	●				●	●											8.4	12.7	4.76	5.16	0.4
	080408-MA		●	●	●	●	●	●				●	●											8.3	12.7	4.76	5.16	0.8
	080412-MA		●	●	●	●	●	●					●											8.2	12.7	4.76	5.16	1.2
Medium																												
WNMG-BF	060404-BF																							6.2	9.525	4.76	3.81	0.4
	060408-BF																							6.1	9.525	4.76	3.81	0.8
	080404-BF											●	●											8.4	12.7	4.76	5.16	0.4
	080408-BF											●	●											8.3	12.7	4.76	5.16	0.8
	080412-BF																							8.2	12.7	4.76	5.16	1.2
Medium																												
WNMG-BM	060404-BM																							6.2	9.525	4.76	3.81	0.4
	060408-BM																							6.1	9.525	4.76	3.81	0.8
	080404-BM											●	●											8.4	12.7	4.76	5.16	0.4
	080408-BM											●	●											8.3	12.7	4.76	5.16	0.8
	080412-BM											●	●											8.2	12.7	4.76	5.16	1.2
Medium																												

CC ○○

Rhombic **80° Positive**

Relief Angle : 7°



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

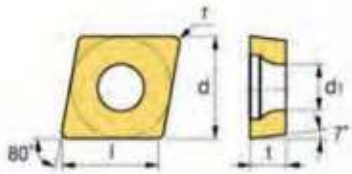
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
CCMW	60204																							6.0	6.35	2.38	2.8	0.4
	60208																							5.6	6.35	2.38	2.8	0.8
	09T304																	●	●	●	●			9.2	9.525	3.97	4.4	0.4
	09T308																	●	●	●	●			8.8	9.525	3.97	4.4	0.8
	120404																	●	●	●	●			12.4	12.7	4.76	5.5	0.4
	120408																	●	●	●	●			12.0	12.7	4.76	5.5	0.8
Roughing																												
CCIMT-HF	060202-HF		●	●	●	●	●					●	●											6.2	6.35	2.38	2.8	0.2
	060204-HF		●	●	●	●	●					●	●											6.0	6.35	2.38	2.8	0.4
	060208-HF																							5.6	6.35	2.38	2.8	0.8
	09T302-HF		●	●	●	●	●					●	●											9.4	9.525	3.97	4.4	0.2
	09T304-HF		●	●	●	●	●					●	●											9.2	9.525	3.97	4.4	0.4
	09T308-HF		●	●	●	●	●					●	●											8.8	9.525	3.97	4.4	0.8
	120404-HF		●	●	●	●	●					●	●											12.4	12.7	4.76	5.5	0.4
	120408-HF																							12.0	12.7	4.76	5.5	0.8
Finishing																												
CCMT-HM	060202-HM		●	●	●	●	●	●																6.2	6.35	2.38	2.8	0.2
	060204-HM		●	●	●	●	●	●		●		●	●		●	●		●	●	●	●			6.0	6.35	2.38	2.8	0.4
	060208-HM		●	●	●	●	●	●										●	●	●	●			5.6	6.35	2.38	2.8	0.8
	09T302-HM		●	●	●	●	●	●																9.4	9.525	3.97	4.4	0.2
	09T304-HM		●	●	●	●	●	●		●		●	●		●	●		●	●	●	●			9.2	9.525	3.97	4.4	0.4
	09T308-HM		●	●	●	●	●	●		●		●	●		●	●		●	●	●	●			8.8	9.525	3.97	4.4	0.8
	120404-HM		●	●	●	●	●	●		●		●	●		●	●		●	●	●	●			12.4	12.7	4.76	5.5	0.4
	120408-HM		●	●	●	●	●	●		●		●	●		●	●		●	●	●	●			12.0	12.7	4.76	5.5	0.8
Medium																												

Turning Insert (Positive)

CC ○○

Rhombic **80° Positive**
Relief Angle : 7°



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8105	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

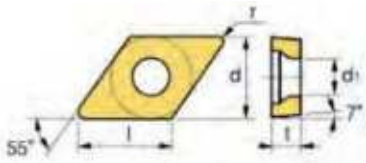
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8105	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
CCMT-HR	09T304-HR			●	●	●	●	●				●	●					●	●					9.2	9.525	3.97	4.4	0.4
	09T308-HR			●	●	●	●	●				●	●					●	●					8.8	9.525	3.97	4.4	0.8
	120404-HR																							12.4	12.7	4.76	5.5	0.4
	120408-HR			●	●	●	●	●				●	●					●	●					12.0	12.7	4.76	5.5	0.8
	120412-HR			●	●	●	●	●				●	●					●	●					11.6	12.7	4.76	5.5	1.2
Roughing																												
CCGT-AL	060202-AL																						●	6.2	6.35	2.38	2.8	0.2
	060204-AL																						●	6.0	6.35	2.38	2.8	0.4
	060208-AL																						●	5.6	6.35	2.38	2.8	0.8
	09T302-AL																						●	9.4	9.525	3.97	4.4	0.2
	09T304-AL																						●	9.2	9.525	3.97	4.4	0.4
	09T308-AL																						●	8.8	9.525	3.97	4.4	0.8
	120402-AL																						●	12.6	12.7	4.76	5.5	0.2
	120404-AL																						●	12.4	12.7	4.76	5.5	0.4
	120408-AL																						●	12.0	12.7	4.76	5.5	0.8
Aluminum																												
CCGT-1L	060201-1L									●														6.3	6.35	2.38	2.8	0.1
	060202-1L									●														6.2	6.35	2.38	2.8	0.2
	060204-1L									●														6.0	6.35	2.38	2.8	0.4
	060208-1L																							5.6	6.35	2.38	2.8	0.8
	09T302-1L									●														9.4	9.525	3.97	4.4	0.2
	09T301-1L									●														9.5	9.525	3.97	4.4	0.1
	09T304-1L									●														9.2	9.525	3.97	4.4	0.4
	09T308-1L									●														8.8	9.525	3.97	4.4	0.8
	120402-1L									●														12.6	12.7	4.76	5.5	0.2
	120404-1L									●														12.4	12.7	4.76	5.5	0.4
	120408-1L									●														12.0	12.7	4.76	5.5	0.8
Finishing																												

DC ○○

Rhombic **55° Positive**

Relief Angle : 7°



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

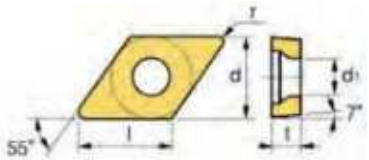
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
DCMW	70204																							7.3	6.35	2.38	2.8	0.4
	70208																							6.8	6.35	2.38	2.8	0.8
	11T304																	●	●	●	●			11.2	9.525	3.97	4.4	0.4
	11T308																	●	●	●	●			10.8	9.525	3.97	4.4	0.8
Roughing																												
DCMT-HF	070202-HF		●	●	●	●	●					●	●											7.5	6.35	2.38	2.8	0.2
	070204-HF		●	●	●	●	●					●	●											7.3	6.35	2.38	2.8	0.4
	070208-HF																							6.8	6.35	2.38	2.8	0.8
	11T302-HF											●	●											11.4	9.525	3.97	4.4	0.2
	11T304-HF		●	●	●	●	●																	11.2	9.525	3.97	4.4	0.4
	11T308-HF		●	●																				10.8	9.525	3.97	4.4	0.8
Finishing																												
DCMT-HM	070202-HM																							7.5	6.35	2.38	2.8	0.2
	070204-HM		●	●	●	●	●	●				●	●					●	●	●	●			7.3	6.35	2.38	2.8	0.4
	070208-HM		●	●	●	●	●	●				●	●					●	●	●	●			6.8	6.35	2.38	2.8	0.8
	11T302-HM		●	●	●	●	●	●																11.4	9.525	3.97	4.4	0.2
	11T304-HM		●	●	●	●	●	●				●	●					●	●	●	●			11.2	9.525	3.97	4.4	0.4
	11T308-HM		●	●	●	●	●	●				●	●					●	●	●	●			10.8	9.525	3.97	4.4	0.8
Medium																												

Turning Insert (Positive)

DC ○○

Rhombic **55° Positive**
Relief Angle : 7°



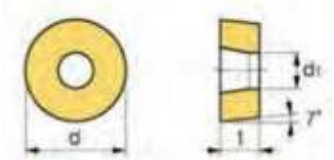
Workpiece																							
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																		Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8105	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
DCMT-HR	070208-HR					●																		6.8	6.35	2.38	2.8	0.8
	11T304-HR					●																		11.4	9.525	3.97	4.4	0.4
	11T308-HR					●																		11.2	9.525	3.97	4.4	0.8
	11T312-HR					●																		10.8	9.525	3.97	4.4	1.2
Roughing																												
DCGT-AL	070202-AL																						●	7.5	6.35	2.38	2.8	0.2
	070204-AL																						●	7.3	6.35	2.38	2.8	0.4
	070208-AL																						●	6.8	6.35	2.38	2.8	0.8
	11T302-AL																						●	11.4	9.525	3.97	4.4	0.2
	11T304-AL																						●	11.2	9.525	3.97	4.4	0.4
	11T308-AL																						●	10.8	9.525	3.97	4.4	0.8
	11T312-AL																						●	10.4	9.525	3.97	4.4	1.2
Aluminum																												
DCGT-1L	0702005-1L									●														7.65	6.35	2.38	2.8	0.05
	070201-1L									●														7.6	6.35	2.38	2.8	0.1
	070202-1L									●														7.5	6.35	2.38	2.8	0.2
	070204-1L									●														7.3	6.35	2.38	2.8	0.4
	11T301-1L									●														11.5	9.525	3.97	4.4	0.1
	11T302-1L									●														11.4	9.525	3.97	4.4	0.2
	11T304-1L									●														11.2	9.525	3.97	4.4	0.4
	11T308-1L									●														10.8	9.525	3.97	4.4	0.8
Finishing																												

RC ○○

Round R° Positive
Relief Angle : 7°



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

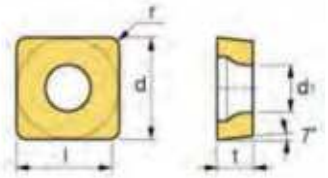
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
RCMX	1003MO				●																			--	10	3.18	3.6	--
	1204MO				●																			--	12	4.76	4.2	--
	1606MO		●	●	●		●	○												●				--	16	6.35	5.2	--
	2006MO		●	●	●		●													●				--	20	6.35	6.5	--
	2507MO		●	●	●		●													●				--	25	7.94	7.25	--
	3209MO		●	●	●		●													●				--	32	9.52	9.55	--
Medium																												
RCGT	0602MO																							--	6	2.38	2.8	--
	0803MO																							--	8	3.18	3.35	--
	1003MO																						●	--	10	3.18	4.0	--
	10T3MO																							--	10	3.97	4.4	--
	1204MO																						●	--	12	4.76	4.4	--
Medium																												

Turning Insert (Positive)

SC ○○

Square **90° Positive**
Relief Angle : 7°



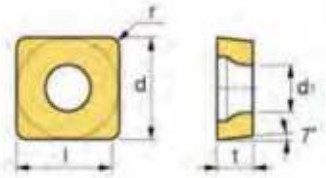
Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⇕	⇕	⇕	⇔	⇔	⇔	●	●	⇕	⇕	⇔								⇕	
Stainless steel	M							⇔	⇔	●	●	⇕	⇕	⇔	⇔								
Cast iron	K															●	●	⇕	⇕	⇔	⇔		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⇕	⇕	⇔									
Hardened steel	H																						

Machining types
- ● Continuos cutting
- ⇕ General cutting
- ⇔ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
SCMW	09T304																	●	●	●	●			9.1	9.525	3.97	4.4	0.4
	09T308																	●	●	●	●			8.7	9.525	3.97	4.4	0.8
	120404																							12.3	12.7	4.76	5.5	0.4
	120408																							11.9	12.7	4.76	5.5	0.8
Roughing																												
SCMT-HF	09T302-HF																							9.3	9.525	3.97	4.4	0.2
	09T304-HF		●	●	●		●					●	●											9.1	9.525	3.97	4.4	0.4
	09T308-HF																							8.7	9.525	3.97	4.4	0.8
	120404-HF																							12.3	12.7	4.76	5.5	0.4
	120408-HF																							11.9	12.7	4.76	5.5	0.8
Finishing																												
SCMT-HM	09T304-HM		●	●	●	●	●					●	●					●	●	●	●			9.1	9.525	3.97	4.4	0.4
	09T308-HM		●	●	●	●	●					●	●					●	●	●	●			8.7	9.525	3.97	4.4	0.8
	120404-HM		●	●	●	●	●					●	●					●	●	●	●			12.3	12.7	4.76	5.5	0.4
	120408-HM		●	●	●	●	●					●	●					●	●	●	●			11.9	12.7	4.76	5.5	0.8
Medium																												

SC ○○

Square **90° Positive**
Relief Angle : 7°



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
SCMT-HR	09T304-HR			●	●	●	●	●				●	●					●	●	●	●			9.2	9.525	3.97	4.4	0.4
	09T308-HR			●	●	●	●	●				●	●					●	●	●	●			8.8	9.525	3.97	4.4	0.8
	120404-HR			●	●	●	●	●				●	●					●	●	●	●			12.4	12.7	4.76	5.5	0.4
	120408-HR			●	●	●	●	●				●	●					●	●	●	●			12.0	12.7	4.76	5.5	0.8
	120412-HR			●	●	●	●	●				●	●					●	●	●	●			11.6	12.7	4.76	5.5	1.2
SCGT-AL	09T302-AL																						●	9.3	9.525	3.97	4.4	0.2
	09T304-AL																						●	9.1	9.525	3.97	4.4	0.4
	09T308-AL																						●	8.7	9.525	3.97	4.4	0.8
	120404-AL																						●	12.3	12.7	4.76	5.5	0.4
	120408-AL																						●	11.9	12.7	4.76	5.5	0.8
	120412-AL																						●	11.6	12.7	4.76	5.5	1.2
SCGT-1L	09T304-1L																							9.1	9.525	3.97	4.4	0.2
	09T308-1L																							8.7	9.525	3.97	4.4	0.4
	120404-1L																							12.3	12.7	4.76	5.5	0.2
	120408-1L																							11.9	12.7	4.76	5.5	0.4
	120412-1L																							11.6	12.7	4.76	5.5	0.8

Roughing

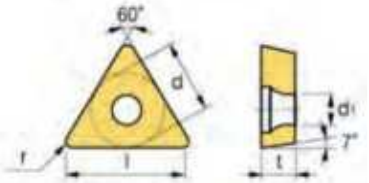
Aluminum

Finishing

Turning Insert (Positive)

TC ○○

Triangular **60° Positive**
Relief Angle : 7°



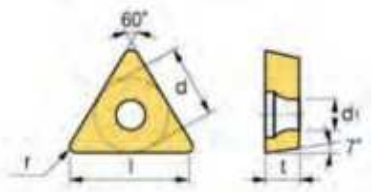
Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
		Coated																				Uncoated		Dimensions(mm)				
TCMW	110204																							10.0	6.35	2.38	2.8	0.4
	110208																							9.0	6.35	2.38	2.8	0.8
	16T304																	●	●	●	●			15.5	9.525	3.97	4.4	0.4
	16T308																	●	●	●	●			14.5	9.525	3.97	4.4	0.8
	16T312																	●	●	●	●			13.5	9.525	3.97	4.4	1.2
Roughing																												
TCMT-HF	090202-HF																							9.1	5.56	2.38	2.5	0.2
	090204-HF		●	●	●	●	●					●	●											8.6	5.56	2.38	2.5	0.4
	110202-HF		●	●	●	●	●					●	●											10.5	6.35	2.38	2.8	0.2
	110204-HF		●	●	●	●	●					●	●											10.0	6.35	2.38	2.8	0.4
	110208-HF																							9.0	6.35	2.38	2.8	0.8
	16T302-HF																							15.0	9.525	3.97	4.4	0.2
	16T304-HF		●	●	●	●	●					●	●											15.5	9.525	3.97	4.4	0.4
	16T308-HF																							14.5	9.525	3.97	4.4	0.8
Finishing																												
TCMT-HM	090204-HM		●	●	●	●	●					●	●											8.6	5.56	2.38	2.5	0.4
	110202-HM																							10.5	6.35	2.38	2.8	0.2
	110204-HM		●	●	●	●						●	●					●	●	●	●			10.0	6.35	2.38	2.8	0.4
	110208-HM		●	●	●	●						●	●					●	●	●	●			9.0	6.35	2.38	2.8	0.8
	16T304-HM		●	●	●	●	●	●				●	●					●	●	●	●			15.5	9.525	3.97	4.4	0.4
	16T308-HM		●	●	●	●	●	●				●	●					●	●	●	●			14.5	9.525	3.97	4.4	0.8
	16T312-HM			●	●	●	●	●										●	●	●	●			13.5	9.525	3.97	4.4	1.2
Medium																												

TC ○○

Triangular **60° Positive**
Relief Angle : 7°



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9235	TCP9335	TCP9345	TPM8105	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M						✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K														●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																					●
Heat resistant alloy Titanium alloy	S								●	●	⬌	⬌	✱									
Hardened steel	H																					

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

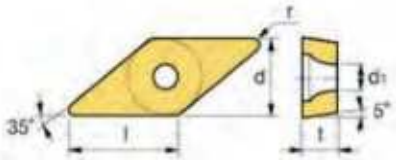
Inserts	Designation	Coated																			Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9235	TCP9335	TCP9345	TPM8105	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
TCMT-HR	090208-HR																						7.6	5.56	2.38	2.5	0.8
	110204-HR			●	●	●	●	●									●	●	●	●			10.0	6.35	2.38	2.8	0.4
	110208-HR			●	●	●	●	●									●	●	●	●			9.0	6.35	2.38	2.8	0.8
	16T304-HR			●	●	●	●	●									●	●	●	●			15.5	9.525	3.97	4.4	0.4
	16T308-HR			●	●	●	●	●									●	●	●	●			14.5	9.525	3.97	4.4	0.8
	16T312-HR																						13.5	9.525	3.97	4.4	1.2
Roughing																											
TCGT-AL	090202-AL																					●	9.1	5.56	2.38	2.5	0.2
	090204-AL																					●	8.6	5.56	2.38	2.5	0.4
	110202-AL																					●	10.5	6.35	2.38	2.8	0.2
	110204-AL																					●	10.0	6.35	2.38	2.8	0.4
	110208-AL																					●	9.0	6.35	2.38	2.8	0.8
	16T302-AL																					●	15.0	9.525	3.97	4.4	0.2
	16T304-AL																					●	15.5	9.525	3.97	4.4	0.4
	16T308-AL																					●	14.5	9.525	3.97	4.4	0.8
	16T312-AL																					●	13.5	9.525	3.97	4.4	1.2
Aluminum																											
TCGT-1L	090202-1L								●														9.1	5.56	2.38	2.5	0.2
	090204-1L								●														8.6	5.56	2.38	2.5	0.4
	110202-1L								●														10.5	6.35	2.38	2.8	0.2
	110204-1L								●														10.0	6.35	2.38	2.8	0.4
	110208-1L																						9.0	6.35	2.38	2.8	0.8
	16T304-1L								●														15.0	9.525	3.97	4.4	0.4
Finishing																											

Turning Insert (Positive)

VB ○○

Rhombic **35° Positive**

Relief Angle : 5°



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	◐	◐	◐	✱	✱	✱	●	●	◐	◐	◐								◐	
Stainless steel	M							✱	✱	●	●	◐	◐	◐	✱								
Cast iron	K															●	●	◐	◐	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	◐	◐	✱									
Hardened steel	H																						

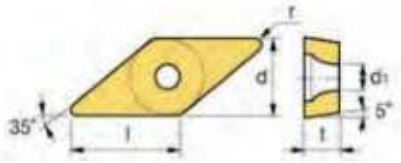
Machining types
- ● Continuos cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
VBMW	110304																							10.0	6.35	3.18	2.8	0.4
	110308																							9.0	6.35	3.18	2.8	0.8
	160404																	●						15.6	9.525	4.76	4.4	0.4
	160408																	●						14.6	9.525	4.76	4.4	0.8
	160412																	●						13.6	9.525	4.76	4.4	1.2
Roughing																												
VBMT	160404		●	●	●	●	●	●				●	●					●	●	●				15.6	9.525	4.76	4.4	0.4
	160408		●	●	●	●	●	●				●	●					●	●	●				14.6	9.525	4.76	4.4	0.8
	160412		●	●	●	●	●	●				●	●					●	●	●				13.6	9.525	4.76	4.4	1.2
Medium																												
VBGT-AL	110302-AL																						●	10.5	6.35	3.18	2.8	0.2
	110304-AL																						●	10.0	6.35	3.18	2.8	0.4
	110308-AL																						●	9.0	6.35	3.18	2.8	0.8
	160402-AL																						●	16.1	9.525	4.76	4.4	0.2
	160404-AL																						●	15.6	9.525	4.76	4.4	0.4
	160408-AL																						●	14.6	9.525	4.76	4.4	0.8
	160412-AL																							13.6	9.525	4.76	4.4	1.2
Aluminum																												

VB ○○

Rhombic **35° Positive**

Relief Angle : 5°



Workpiece			TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8105	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
	Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
	Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
	Cast iron	K															●	●	⬌	⬌	✱	✱		●
	Non-ferrous metal	N																						●
	Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
	Hardened steel	H																						

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8105	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
VBMT-HM	160404-HM			●	●	○	○	●				○	●	○				●	○	●	○			15.6	9.525	4.76	4.4	0.4
	160408-HM			●	●	○	○	●				○	●	○				●	○	●	○			14.6	9.525	4.76	4.4	0.8
	160412-HM																							13.6	9.525	4.76	4.4	1.2
VBMT-HR	160408-HR				●	●	●	●				●	●	○				●	●	●	●			14.6	9.525	4.76	4.4	0.8
	160412-HR				●	○	○	●				○	●	○				○	●	○	●			13.6	9.525	4.76	4.4	1.2
VBGT-1L	1103005-1L									●														10.9	6.35	3.18	2.8	0.05
	110301-1L									●														10.8	6.35	3.18	2.8	0.1
	110302-1L									●														10.5	6.35	3.18	2.8	0.2
	110304-1L									●														10.0	6.35	3.18	2.8	0.4
	110308-1L									●														9.0	6.35	3.18	2.8	0.8
	160402-1L									●														16.1	9.525	4.76	4.4	0.2
	160404-1L									●														15.6	9.525	4.76	4.4	0.4
	160408-1L									●														14.6	9.525	4.76	4.4	0.8

Medium

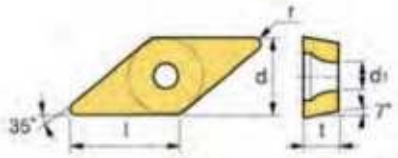
Roughing

Finishing

Turning Insert (Positive)

VC ○○

Rhombic **35° Positive**
Relief Angle : 7°



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✖	✖	✖	●	●	⬌	⬌	✖								⬌	
Stainless steel	M							✖	✖	●	●	⬌	⬌	✖	✖								
Cast iron	K															●	●	⬌	⬌	✖	✖		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✖									
Hardened steel	H																						

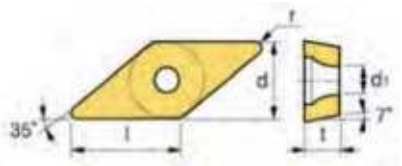
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✖ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8115	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
VCMW	110204																							10.0	6.35	3.18	2.8	0.4
	110208																							9.0	6.35	3.18	2.8	0.8
	16T304																	●						15.6	9.525	4.76	4.4	0.4
	16T308																	●						14.6	9.525	4.76	4.4	0.8
	16T312																	●						13.6	9.525	4.76	4.4	1.2
Roughing																												
VCMT	160404		●	●	●	●	●											●	●	●	●			15.6	9.525	4.76	44	0.4
	160408		●	●	●	●	●											●	●	●	●			14.6	9.525	4.76	44	0.8
	160412		●	●	●	●	●											●	●	●	●			13.6	9.525	4.76	44	1.2
Medium																												
VCGT-AL	110302-AL																						●	10.5	6.35	3.18	2.8	0.2
	110304-AL																						●	10.0	6.35	3.18	2.8	0.4
	110308-AL																						●	9.0	6.35	3.18	2.8	0.8
	160402-AL																						●	16.1	9.525	4.76	4.4	0.2
	160404-AL																						●	15.6	9.525	4.76	4.4	0.4
	160408-AL																						●	14.6	9.525	4.76	4.4	0.8
	160412-AL																						●	13.6	9.525	4.76	4.4	1.2
	220516-AL																						○	18.0	12.7	5.56	5.6	1.6
	220525-AL																							15.6	12.7	5.56	5.6	2.5
	220530-AL																						●	14.3	12.7	5.56	5.6	3.0
Aluminum																												

VC ○○

Rhombic **35° Positive**

Relief Angle : 7°



Workpiece		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8105	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01
Steel	P	●	●	⬌	⬌	⬌	✱	✱	✱	●	●	⬌	⬌	✱								⬌	
Stainless steel	M							✱	✱	●	●	⬌	⬌	✱	✱								
Cast iron	K															●	●	⬌	⬌	✱	✱		●
Non-ferrous metal	N																						●
Heat resistant alloy Titanium alloy	S									●	●	⬌	⬌	✱									
Hardened steel	H																						

Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated																				Uncoated		Dimensions(mm)				
		TCP9305	TCP9215	TCP9120	TCP9225	TCP9325	TCP9235	TCP9335	TCP9345	TPM8105	TPM8315	TPM8125	TPM8225	TPM8135	TPM930	TCK5205	TCK5305	TCK5215	TCK5315	TCK5225	TCK5325	TP20	TPK01	l	d	t	d1	r
VCGT-1L	110301-1L									●														10.8	6.35	3.18	2.8	0.1
	110302-1L									●														10.5	6.35	3.18	2.8	0.2
	110304-1L									●														10.0	6.35	3.18	2.8	0.4
	110308-1L									●														9.0	6.35	3.18	2.8	0.8
	160402-1L									●														16.1	9.525	4.76	4.4	0.2
	160404-1L									●														15.6	9.525	4.76	4.4	0.4
	160408-1L									●														14.6	9.525	4.76	4.4	0.8
Finishing																												

Ceramic Grades

Excellent wear resistance and good impact resistance.

Excellent heat resistance, hight oxidation resistance and high thermal shock resistance, so the cutting speed can generally be higher than carbide cutting tool 3-10 times, can realize high speed cutting and dry cutting to substantially improve production efficiency and reduce the cost of production.

Features of Ceramic

Classification	Symbol	Density (g/cm³)	Main Component	Hardness of Substrate (Gpa)	Fracture Toughness (MPa.m1/2)	Transverse Strenght (Mpa)	Advantages and Applications
H	TT01	4.40	Al_2O_3+TiCN	20.0	≥5.5	750-950	• Application: Semi-roughing to finishing turning and interrupted milling of high hardness steel and cast iron. It is most suitable for cutting mangnaness steel and high strength steel.
k	TT03	4.80	Al_2O_3+TiCN	19.0	≥6.0	700-900	• Application: It is most suitable for cutting all kinds of high hardness alloy steel and alloy cast iron, especially for cutting ductile cast iron and boron-containing cast iron. It can be used for semi-roughing to finishing turning and interrupted milling.
	TT03N	4.60	Al_2O_3+TiCN (Tin COAT)	20.1	≥6.0	800-1000	
k	TS01	3.40	Si_3N_4+TiCN	17.0	≥6.5	800-1000	• Application: Roughing and high speed machining of cast iron, especially the nickel-based heat-resistant alloy has a good effect in cutting and can be used for high-feed processing and intermittent milling.

Ceramic Inserts Indentification System

● Indentification System

C N G A 12 04 04 — S01525

"Turning Indexable Inserts Indentification System" See Page 077

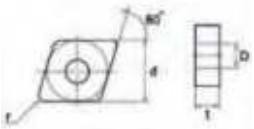
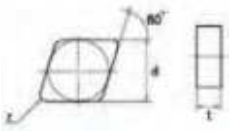
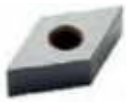
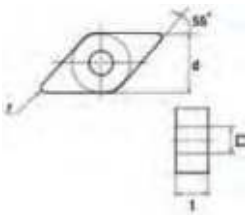
Edge Prep.
(Ref. to the Table 1)

● Edge Preparation Indentification System

Table 1

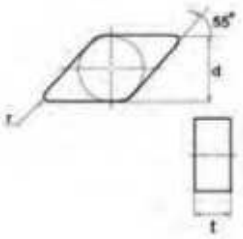
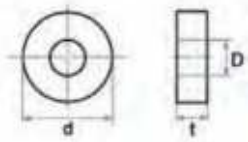
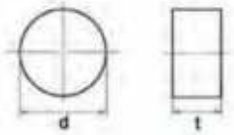
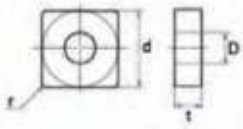
	Symbol	Cutting Edge Spec.	Example		Shape
Edge Prep.	S	Chamfered and Honed Cutting Edge	S01525	0.15mm x 25° Chamfered and Honed Cutting Edge	
	T	Chamfered Cutting Edge	T02025	0.20mm x 25° Chamfered CuttingEdge	

Ceramic Grades

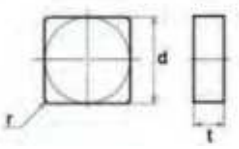
Inserts	Designation	Edge Prep	Aluminum Oxide		PVD Coated Ceramic	Silicon Nitide Ceramic	Dimensions(mm)				Geometries(mm)
			TT01	TT03	TT03N	TS01	d	t	r	D	
CNGA	120404	T02020	●	●			12.70	4.76	0.4	5.16	
	120408	T02020	●	●			12.70	4.76	0.8	5.16	
	120412	T02020	●	●			12.70	4.76	1.2	5.16	
	120416	T02020	●	●			12.70	4.76	1.6	5.16	
	160608	T02020					15.875	6.35	0.8	6.35	
	160612	T02020					15.875	6.35	1.2	6.35	
	160616	T02020					15.875	6.35	1.6	6.35	
	160708	T02020					15.875	7.94	0.8	6.35	
	160712	T02020					15.875	7.94	1.2	6.35	
	160716	T02020					15.875	7.94	1.6	6.35	
	190608	T02020					19.05	6.35	0.8	7.94	
	190612	T02020					19.05	6.35	1.2	7.94	
	190616	T02020					19.05	6.35	1.6	7.94	
CNGN	120404	T02020	●	●			12.70	4.76	0.4	-	
	120408	T02020	●	●			12.70	4.76	0.4	-	
	120412	T02020	●	●			12.70	4.76	0.4	-	
	120708	T02020	●	●			12.70	7.94	0.8	-	
	120712	T02020	●	●			12.70	7.94	0.8	-	
	120716	T02020	●	●			12.70	7.94	0.8	-	
	160708	T02020	●	●			15.875	7.94	0.8	-	
	160712	T02020	●	●			15.875	7.94	0.8	-	
	160716	T02020	●	●			15.875	7.94	0.8	-	
DNGA 	150404	T02020	●	●			12.70	4.76	0.4	5.16	
	150408	T02020	●	●			12.70	4.76	0.8	5.16	
	150412	T02020	●	●			12.70	4.76	1.2	5.16	
	150416	T02020	●	●			12.70	4.76	1.6	5.16	
	150604	T02020	●	●			12.70	6.35	0.4	5.16	
	150608	T02020	●	●			12.70	6.35	0.8	5.16	
	150612	T02020	●	●			12.70	6.35	1.2	5.16	
	150616	T02020	●	●			12.70	6.35	1.6	5.16	

Turning Insert (Negative)

Ceramic Grades

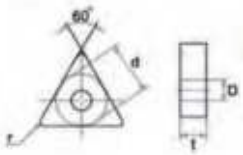
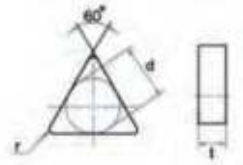
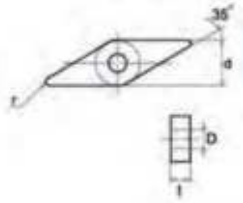
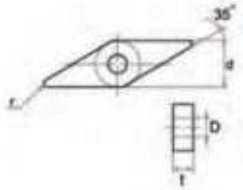
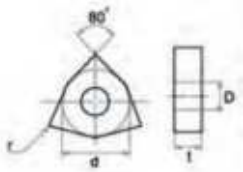
Inserts	Designation	Edge Prep	Aluminum Oxide		PVD Coated Ceramic	Silicon Nitide Ceramic	Dimensions(mm)				Geometries(mm)
			TT01	TT03	TT03N	TS01	d	t	r	D	
DNGN	150404	T02020	●	●			12.70	4.76	0.4	-	
	150408	T02020	●	●			12.70	4.76	0.8	-	
	150412	T02020	●	●			12.70	4.76	1.2	-	
	150416	T02020	●	●			12.70	4.76	1.6	-	
	150604	T02020	●	●			12.70	6.35	0.4	-	
	150608	T02020	●	●			12.70	6.35	0.8	-	
	150612	T02020	●	●			12.70	6.35	1.2	-	
	150616	T02020	●	●			12.70	6.35	1.6	-	
	150704	T02020	●	●			12.70	7.94	0.4	-	
	150708	T02020	●	●			12.70	7.94	0.8	-	
	150712	T02020	●	●			12.70	7.94	1.2	-	
	150716	T02020	●	●			12.70	7.94	1.6	-	
RNGA	090400	T02020					9.525	4.76	-	3.81	
	120400	T02020					12.70	4.76	-	5.16	
	120700	T02020					12.70	7.94	-	5.16	
RNGN	090400	T02020	●	●			9.525	4.76	-	-	
	120400	T02020	●	●			12.70	4.76	-	-	
	120700	T02020	●	●			12.70	7.94	-	-	
	150700	T02020	●	●			15.875	7.94	-	-	
	190700	T02020	●	●			19.05	7.94	-	-	
	201000	T02020	●	●			20.00	10.00	-	-	
	250700	T02020	●	●			25.40	7.94	-	-	
SNGA	090304	T02020					9.525	3.18	0.4	3.81	
	090308	T02020					9.525	3.18	0.8	3.81	
	120404	T02020	●	●			12.70	4.76	0.4	5.16	
	120408	T02020	●	●			12.70	4.76	0.8	5.16	
	120412	T02020	●	●			12.70	4.76	1.2	5.16	
	120416	T02020	●	●			12.70	4.76	1.6	5.16	
	150608	T02020					15.875	6.35	0.8	6.35	
	150612	T02020					15.875	6.35	1.2	6.35	
	150616	T02020					15.875	6.35	1.6	6.35	
	190608	T02020					19.05	6.35	0.8	7.94	
	190612	T02020					19.05	6.35	1.2	7.94	
	190616	T02020					19.05	6.35	1.6	7.94	

Ceramic Grades

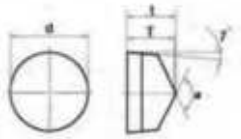
Inserts	Designation	Edge Prep	Aluminum Oxide		PVD Coated Ceramic	Silicon Nitide Ceramic	Dimensions(mm)				Geometries(mm)
			TT01	TT03	TT03N	TS01	d	t	r	D	
SNGN	090304	T02020	●	●			9.525	3.18	0.4	-	
	090308	T02020	●	●			9.525	3.18	0.8	-	
	090312	T02020	●	●			9.525	3.18	1.2	-	
	090404	T02020	●	●			9.525	4.76	0.4	-	
	090408	T02020					9.525	4.76	0.8	-	
	090412	T02020					9.525	4.76	1.2	-	
	120404	T02020					12.70	4.76	0.4	-	
	120408	T02020					12.70	4.76	0.8	-	
	120412	T02020					12.70	4.76	1.2	-	
	120416	T02020					12.70	4.76	2.0	-	
	120420	T02020					12.70	7.94	0.4	-	
	120708	T02020					12.70	7.94	0.8	-	
	120712	T02020					12.70	7.94	1.2	-	
	120716	T02020					12.70	7.94	1.6	-	
	120720	T02020					12.70	7.94	2.0	-	
	150708	T02020					15.875	7.94	0.8	-	
	150712	T02020					15.875	7.94	1.2	-	
	150716	T02020					15.875	7.94	1.6	-	
	190708	T02020					19.05	7.94	0.8	-	
	190712	T02020					19.05	7.94	1.2	-	
	190716	T02020					19.05	7.94	1.6	-	
	190720	T02020					19.05	7.94	2.0	-	
	250720	T02020					25.40	7.94	2.0	-	
	251012	T02020					25.40	10.00	1.2	-	

Turning Insert (Negative)

Ceramic Grades

Inserts	Designation	Edge Prep	Aluminum Oxide		PVD Coated Ceramic	Silicon Nitide Ceramic	Dimensions(mm)				Geometries(mm)
			TT01	TT03	TT03N	TS01	d	t	r	D	
TNGA	160404	T02020	●	●			9.525	4.76	0.4	3.81	
	160408	T02020	●	●			9.525	4.76	0.8	3.81	
	160412	T02020	●	●			9.525	4.76	1.2	3.81	
	160416	T02020	●	●			9.525	4.76	1.6	3.81	
	220404	T02020	●	●			12.70	4.76	0.4	5.16	
	220408	T02020	●	●			12.70	4.76	0.8	5.16	
	220412	T02020	●	●			12.70	4.76	1.2	5.16	
	220416	T02020	●	●			12.70	4.76	1.6	5.16	
TNGN	110304	T02020					6.35	3.18	0.4	-	
	110308	T02020					6.35	3.18	0.4	-	
	160404	T02020					9.525	4.76	0.4	-	
	160408	T02020					9.525	4.76	0.8	-	
	160412	T02020					9.525	4.76	1.2	-	
	220716	T02020					12.70	7.94	1.6	-	
VNGA	160402	T02020	●	●			9.525	4.76	0.2	3.81	
	160404	T02020	●	●			9.525	4.76	0.4	3.81	
	160408	T02020	●	●			9.525	4.76	0.8	3.81	
	160412	T02020	●	●			9.525	4.76	1.2	3.81	
	160416	T02020	●	●			9.525	4.76	1.6	3.81	
VNGN	160412	T02020	●	●			9.525	4.76	1.2	-	
	160704	T02020	●	●			9.525	7.94	0.4	-	
	160708	T02020	●	●			9.525	7.94	0.8	-	
	160712	T02020	●	●			9.525	7.94	1.2	-	
	160716	T02020	●	●			9.525	7.94	1.6	-	
WNGA	080404	T02020	●	●			12.70	4.76	0.4	5.16	
	080408	T02020	●	●			12.70	4.76	0.8	5.16	
	080412	T02020	●	●			12.70	4.76	1.2	5.16	
	080416	T02020	●	●			12.70	4.76	1.6	5.16	

Ceramic Grades

Inserts	Designation	Edge Prep	Aluminum Oxide		PVD Coated Ceramic	Silicon Nitide Ceramic	Dimensions(mm)				Geometries(mm)
			TT01	TT03	TT03N	TS01	d	t	T	α	
RCGX	060600	T02020	●	●			6.35	6.35	6.20	120°	
	090700	T02020	●	●			9.525	7.94	7.70	120°	
	120700	T02020	●	●			12.70	7.94	7.70	120°	
	151000	T02020	●	●			15.875	9.53	9.30	120°	
	191000	T02020	●	●			19.05	10.00	9.77	120°	
	251200	T15015	●	●			25.40	12.00	11.58	140°	

Cermet Grades

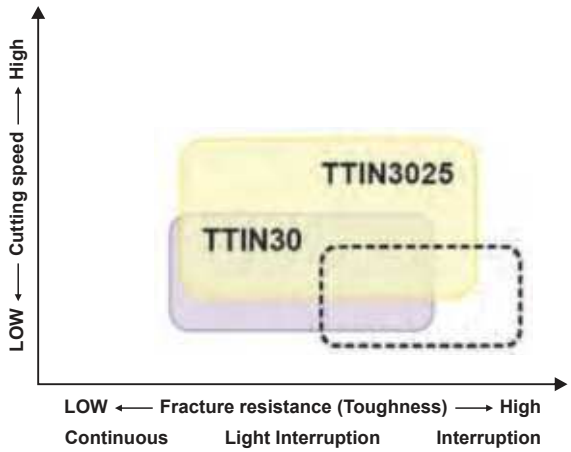
Cermet

Cermets combine toughness with superior wear resistance, and provide longer toollife and excellent surface finishes. Typical materials used in cermets are TiC, TiN, TiCN and NbC.

PVD Coated Cermet

PVD Coated Cermet is coated on cermet substrate with a thin layer of high wear resistance and high adhesion resistance by PVD (Physical Vapor Deposition) technology. Generally because of the low processing temperature of PVD compared with CVD, PVD coated cermet features less deterioration and more bending strength.

Features of Cermet and PVD Coated Cermet



■ TTIN30

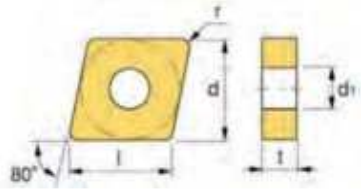
• Superior fracture resistance and wear resistance
• Application: Stable machining of steel

■ TTIN3025

• Superior wear and adhesion resistant TiCN coating on the special reinforcement cermet
•Application: The 1st choice PVD coated cermet for steel machining provides high efficient machining and high quality surface finish

CN ○○

Rhombic 80° Negative



Workpiece				
Steel	P	●	●
Stainless steel	M	◐	◐
Cast iron	K	●	◐
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

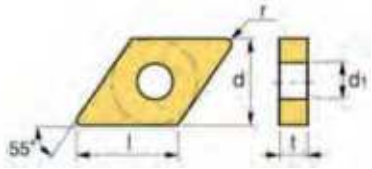
Machining types
- ● Continuos cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
CNMG-TS	120404-TS	●	●	12.4	12.7	4.76	5.16	0.4	0.03-0.15	0.20-1.80
	120408-TS	●	●	12.0	12.7	4.76	5.16	0.8	0.08-0.20	0.20-1.80
CNMG-HQ	120404-HQ	●	●	12.4	12.7	4.76	5.16	0.4	0.05-0.30	0.80-4.00
	120408-HQ	●	●	12.0	12.7	4.76	5.16	0.8	0.08-0.40	0.80-4.00
CNMG-MT	120404-MT	●		12.4	12.7	4.76	5.16	0.4	0.15-0.40	1.00-5.00
	120408-MT	●		12.0	12.7	4.76	5.16	0.8	0.17-0.55	1.20-5.00

Cermet Insert (Negative)

DN ○○

Rhombic **55° Negative**



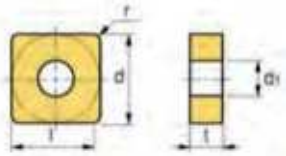
Workpiece			
Steel	P	●	●
Stainless steel	M	◐	◐
Cast iron	K	●	◐
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

Machining types
- ● Continuos cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
DNMG-TS	120404-TS	●	●	15.1	12.7	4.76	5.16	0.4	0.03-0.15	0.30-1.50
	120408-TS	○	○	14.7	12.7	4.76	5.16	0.8	0.08-0.20	0.50-1.50
DNMG-HQ	150404-HQ	●	●	15.1	12.7	4.76	5.16	0.4	0.05-0.30	0.80-3.50
	150408-HQ	●	●	14.7	12.7	4.76	5.16	0.8	0.08-0.40	0.80-4.00
	150604-HQ	●	●	15.1	12.7	6.35	5.16	0.4	0.05-0.30	0.80-3.50
	150608-HQ	●	●	14.7	12.7	6.35	5.16	0.8	0.08-0.40	0.80-4.00
DNMG-S	150404R-S	●	●	15.1	12.7	4.76	5.16	0.4	0.10-0.40	0.70-4.00
	150408R-S			14.7	12.7	4.76	5.16	0.8	0.12-0.45	1.00-4.50
	150404L-S			15.1	12.7	4.76	5.16	0.4	0.10-0.40	0.70-4.00
	150408L-S			14.7	12.7	4.76	5.16	0.8	0.12-0.45	1.00-4.50
DNMG-VF	150404R-VF	●	●	15.1	12.7	4.76	5.16	0.4	0.10-0.35	0.70-4.50
	150408R-VF			14.7	12.7	4.76	5.16	0.8	0.12-0.45	1.00-4.50
	150404L-VF			15.1	12.7	4.76	5.16	0.4	0.10-0.35	0.70-4.50
	150408L-VF			14.7	12.7	4.76	5.16	0.8	0.12-0.45	1.00-4.50

SN ○○

Square 90° Negative



Workpiece				
Steel	P	●	●
Stainless steel	M	◐	◐
Cast iron	K	●	◐
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

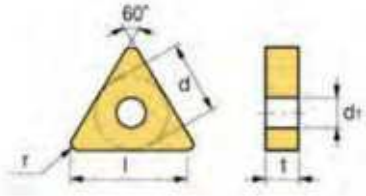
Machining types
- ● Continuos cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
SNMG-HQ	120404	●	●	12.3	12.7	4.76	5.16	0.4	0.05-0.30	0.80-4.00
	120408	●	●	11.9	12.7	4.76	5.16	0.8	0.08-0.40	0.80-4.00

Cermet Insert (Negative)

TN ○○

Triangular **60° Negative**



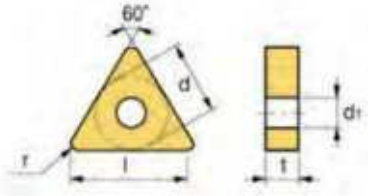
Workpiece			
Steel	P	●	●
Stainless steel	M	◐	◐
Cast iron	K	●	◐
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

Machining types
- ● Continuos cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
TNGG-S	160402R-S	●	●	16.0	9.525	4.76	3.81	0.2	0.03-0.20	0.10-1.50
	160404R-S	●	●	15.5	9.525	4.76	3.81	0.4	0.05-0.25	0.30-2.00
	160402L-S	●	●	16.0	9.525	4.76	3.81	0.2	0.03-0.20	0.10-1.50
	160404L-S	●	●	15.5	9.525	4.76	3.81	0.4	0.05-0.25	0.30-2.00
TNGG-C	160402R-C			16.0	9.525	4.76	3.81	0.2	0.08-0.30	0.50-3.50
	160404R-C			15.5	9.525	4.76	3.81	0.4	0.12-0.30	1.00-3.50
	160408R-C			14.5	9.525	4.76	3.81	0.8	0.15-0.35	1.30-3.50
	160402L-C			16.0	9.525	4.76	3.81	0.2	0.08-0.30	0.50-3.50
	160404L-C			15.5	9.525	4.76	3.81	0.4	0.12-0.30	1.00-3.50
	160408L-C			14.5	9.525	4.76	3.81	0.8	0.15-0.35	1.30-3.50
TNGG-P	160402R-P	●	●	16.0	9.525	4.76	3.81	0.2	0.10-0.30	0.50-3.50
	160404R-P			15.5	9.525	4.76	3.81	0.4	0.20-0.30	1.00-3.50
	160408R-P			14.5	9.525	4.76	3.81	0.8	0.20-0.50	1.30-3.50
	160402L-P			16.0	9.525	4.76	3.81	0.2	0.10-0.30	0.50-3.50
	160404L-P			15.5	9.525	4.76	3.81	0.4	0.20-0.30	1.00-3.50
	160408L-P			14.5	9.525	4.76	3.81	0.8	0.20-0.50	1.30-3.50
TNGG-TS	160404-TS	●	●	15.5	9.525	4.76	3.81	0.4	0.03-0.15	0.30-1.50
	160408-TS	●	●	14.5	9.525	4.76	3.81	0.8	0.08-0.20	0.50-1.50
TNGG-HQ	160404-HQ	●	●	15.5	9.525	4.76	3.81	0.4	0.05-0.35	0.50-3.50
	160408-HQ	●	●	14.5	9.525	4.76	3.81	0.8	0.08-0.40	0.80-4.00

TN ○○

Triangular **60° Negative**



Workpiece				
Steel	P	●	●
Stainless steel	M	◐	◐
Cast iron	K	●	◐
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

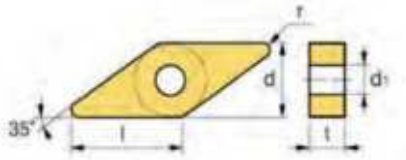
Machining types
- ● Continuos cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
TNMG-S	160404R-S	●	●	15.4	9.525	4.76	3.81	0.4	0.12-0.30	1.00-3.50
	160408R-S	●	●	14.5	9.525	4.76	3.81	0.8	0.15-0.35	1.30-3.40
	160404L-S	●	●	15.4	9.525	4.76	3.81	0.4	0.12-0.30	1.00-3.50
	160408L-S	●	●	14.5	9.525	4.76	3.81	0.8	0.15-0.35	1.30-3.40
TNMG-C	160404R-C	●	●	15.4	9.525	4.76	3.81	0.4	0.20-0.35	1.30-3.50
	160408R-C	●	●	14.5	9.525	4.76	3.81	0.8	0.25-0.40	1.20-4.00
	160404L-C	●	●	15.4	9.525	4.76	3.81	0.4	0.20-0.35	1.30-3.50
	160408L-C	●	●	14.5	9.525	4.76	3.81	0.8	0.25-0.40	1.20-4.00
TNMG-VF	160404R-VF	●	●	15.4	9.525	4.76	3.81	0.4	0.10-0.30	0.70-3.50
	160408R-VF	●		14.5	9.525	4.76	3.81	0.8	0.12-0.35	1.00-3.50
	160404L-VF	●	●	15.4	9.525	4.76	3.81	0.4	0.10-0.30	0.70-3.50
	160408L-VF	●		14.5	9.525	4.76	3.81	0.8	0.12-0.35	1.00-3.50
TNMG-MT	160404-MT	●		15.4	9.525	4.76	3.81	0.4	0.17-0.40	1.00-3.50
	160408-MT	●		14.5	9.525	4.76	3.81	0.8	0.17-0.50	1.20-3.50

Cermet Insert (Negative)

VN ○○

Rhombic **35° Negative**



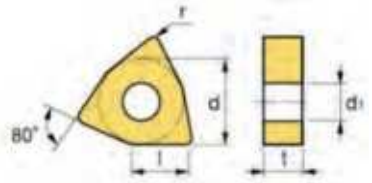
Workpiece				
Steel	P	●	●
Stainless steel	M	◐	◐
Cast iron	K	●	◐
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

Machining types
- ● Continuos cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
VNMG-TS	160404-TS	●	●	15.6	9.525	4.76	3.81	0.4	0.03-0.15	0.30-1.50
	160408-TS	○	○	14.6	9.525	4.76	3.81	0.8	0.08-0.20	0.50-1.50
VNMG-HQ	160404-HQ			15.6	9.525	4.76	3.81	0.4	0.10-0.40	0.50-3.50
	160408-HQ	●	●	14.6	9.525	4.76	3.81	0.8	0.12-0.45	0.50-3.50
VNMG-MT	160404-MT	●		15.6	9.525	4.76	3.81	0.4	0.15-0.36	0.80-3.00
	160408-MT	●		14.6	9.525	4.76	3.81	0.8	0.17-0.36	1.00-2.50

WN○○

Trigon 80° Negative



Workpiece				
Steel	P	●	●
Stainless steel	M	◐	◐
Cast iron	K	●	◐
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

Machining types
- ● Continuos cutting
- ◐ General cutting
- ✱ Interrupted cutting

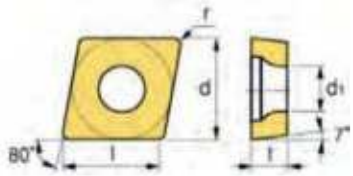
Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
WNMG-TS	080404-TS	●	●	8.4	12.7	4.76	5.16	0.4	0.03-0.15	0.20-1.80
	080408-TS	○	○	8.3	12.7	4.76	5.16	0.8	0.08-0.30	0.20-1.80
WNMG-HQ	080404-HQ	●	●	8.4	12.7	4.76	5.16	0.4	0.05-0.30	0.50-4.00
	080408-HQ	●	●	8.3	12.7	4.76	5.16	0.8	0.08-0.40	0.50-4.00
WNMG-S	080404R-S	●		8.4	12.7	4.76	5.16	0.4	0.10-0.35	0.70-3.00
	080408R-S	●		8.3	12.7	4.76	5.16	0.8	0.12-0.40	1.00-3.00
	080404L-S	●		8.4	12.7	4.76	5.16	0.4	0.10-0.35	0.70-3.00
	080408L-S	●		8.3	12.7	4.76	5.16	0.8	0.12-0.40	1.00-3.00
WNMG-MT	080404-MT	●		8.4	12.7	4.76	5.16	0.4	0.12-0.40	1.00-4.00
	080408-MT	●		8.3	12.7	4.76	5.16	0.8	0.17-0.55	1.20-4.00

Cermet Insert (Positive)

CC ○○

Rhombic **80° Positive**

Relief Angle : 7°



Workpiece				
Steel	P	●	●
Stainless steel	M	◐	◐
Cast iron	K	●	◐
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

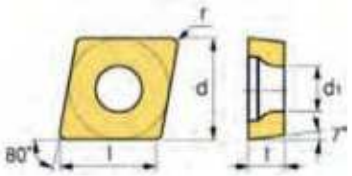
Machining types
- ● Continuos cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
CCGT-F	030102R-F			3.3	3.5	1.39	1.90	0.2	0.01-0.05	0.10-0.30
	030104R-F			3.1	3.5	1.39	1.90	0.4	0.01-0.05	0.10-0.30
	040102R-F			4.1	4.3	1.79	2.30	0.2	0.01-0.10	0.10-0.50
	040104R-F			3.9	4.3	1.79	2.30	0.4	0.01-0.10	0.10-0.50
	030102L-F	●	●	3.3	3.5	1.39	1.90	0.2	0.01-0.05	0.10-0.30
	030104L-F	●	●	3.1	3.5	1.39	1.90	0.4	0.01-0.05	0.10-0.30
	040102L-F	●	●	4.1	4.3	1.79	2.30	0.2	0.01-0.10	0.10-0.50
	040104L-F	●	●	3.9	4.3	1.79	2.30	0.4	0.01-0.10	0.10-0.50
CCGT-W15	060202R-W15			6.5	6.35	2.38	2.80	0.2	0.03-0.11	0.06-1.70
	060204R-W15			6.5	6.35	2.38	2.80	0.4	0.02-0.20	0.10-2.00
	060202L-W15			6.5	6.35	2.38	2.80	0.2	0.03-0.11	0.06-1.70
	060204L-W15	●	●	6.5	6.35	2.38	2.80	0.4	0.02-0.20	0.10-2.00
CCGT-W20	09T302R-W20			9.7	9.525	3.97	4.40	0.2	0.04-0.15	0.08-2.00
	09T304R-W20			9.7	9.525	3.97	4.40	0.4	0.05-0.20	0.10-2.00
	09T302L-W20	●	●	9.7	9.525	3.97	4.40	0.2	0.04-0.15	0.08-2.00
	09T304L-W20	●	●	9.7	9.525	3.97	4.40	0.4	0.05-0.20	0.10-2.00
CCGT-U	060202ER-U	●	○	6.5	6.35	2.38	2.80	0.2	0.03-0.11	0.06-1.70
	060204ER-U	●	○	6.5	6.35	2.38	2.80	0.4	0.05-0.20	0.06-1.70
	09T302ER-U	●	○	9.7	9.525	3.97	4.40	0.2	0.04-0.15	0.08-2.00
	09T304ER-U	●	○	9.7	9.525	3.97	4.40	0.4	0.05-0.20	0.10-2.00
	060202EL-U	●	○	6.5	6.35	2.38	2.80	0.2	0.03-0.11	0.06-1.70
	060204EL-U	●	○	6.5	6.35	2.38	2.80	0.4	0.05-0.20	0.06-1.70
	09T302EL-U	●	○	9.7	9.525	3.97	4.40	0.2	0.04-0.15	0.08-2.00
	09T304EL-U	●	○	9.7	9.525	3.97	4.40	0.4	0.05-0.20	0.10-2.00

CC ○○

Rhombic **80° Positive**

Relief Angle : 7°



Workpiece				
Steel	P	●	●
Stainless steel	M	◐	◐
Cast iron	K	●	◐
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

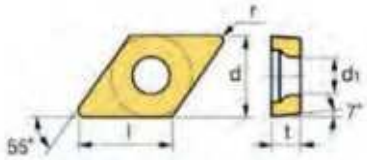
Machining types
- ● Continuos cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
CCMT-FG	060204-FG	●		6.0	6.35	2.38	2.80	0.4	0.05-0.15	0.30-1.50
	09T304-FG	●		9.2	9.525	3.97	4.40	0.4	0.07-0.20	0.40-2.00
	09T308-FG			8.8	9.525	3.97	4.40	0.8	0.10-0.25	0.60-2.00
CCMT-PS	060202-PS	●	●	6.2	6.35	2.38	2.80	0.2	0.05-0.20	0.30-1.00
	060204-PS	●	●	6.0	6.35	2.38	2.80	0.4	0.10-0.25	0.30-1.00
	060208-PS			5.6	6.35	2.38	2.80	0.8	0.10-0.25	0.30-1.00
	09T302-PS	●	●	9.4	9.525	3.97	4.40	0.2	0.04-0.16	0.80-1.50
	09T304-PS	●	●	9.2	9.525	3.97	4.40	0.4	0.05-0.20	0.30-1.50
	09T308-PS	●	●	8.8	9.525	3.97	4.40	0.8	0.10-0.25	0.30-1.50
CCMT-HQ	060202-HQ	●	●	6.2	6.35	2.38	2.80	0.2	0.04-0.14	0.50-1.50
	060204-HQ	●	●	6.0	6.35	2.38	2.80	0.4	0.10-0.20	0.50-2.00
	09T302-HQ	●	●	9.4	9.525	3.97	4.40	0.2	0.07-0.18	0.50-2.00
	09T304-HQ	●	●	9.2	9.525	3.97	4.40	0.4	0.08-0.20	0.50-2.00
	09T308-HQ	●	●	8.8	9.525	3.97	4.40	0.8	0.10-0.25	0.50-2.00
CCMT-MT	060204-MT			6.0	6.35	2.38	2.80	0.4	0.07-0.20	0.50-2.00
	09T304-MT	●		9.2	9.525	3.97	4.40	0.4	0.10-0.25	0.70-3.50
	09T308-MT			8.8	9.525	3.97	4.40	0.8	0.13-0.30	1.00-3.50

Cermet Insert (Positive)

DC ○○

Rhombic **55° Positive**
Relief Angle : 7°



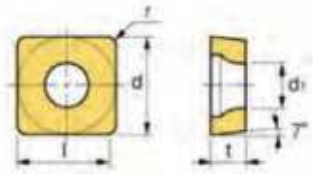
Workpiece			
Steel	P	●	●
Stainless steel	M	◐	◐
Cast iron	K	●	◐
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

Machining types
- ● Continuos cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
DCGT-F	070202R-F			7.8	6.35	2.38	2.80	0.2	0.03-0.11	0.06-1.70
	070204R-F			7.8	6.35	2.38	2.80	0.4	0.02-0.20	0.10-2.00
	070202L-F			7.8	6.35	2.38	2.80	0.2	0.03-0.11	0.06-1.70
	070204L-F			7.8	6.35	2.38	2.80	0.4	0.02-0.20	0.10-2.00
	11T302R-F			11.6	9.525	3.97	4.40	0.2	0.04-0.15	0.08-1.70
	11T304R-F			11.6	9.525	3.97	4.40	0.4	0.05-0.20	0.10-2.00
	11T302L-F			11.6	9.525	3.97	4.40	0.2	0.04-0.15	0.08-1.70
	11T304L-F			11.6	9.525	3.97	4.40	0.4	0.05-0.20	0.10-2.00
DCGT-U	11T302ER-U	●	●	11.6	9.525	3.97	4.40	0.2	0.04-0.15	0.08-2.00
	11T304ER-U	●	●	11.6	9.525	3.97	4.40	0.4	0.05-0.20	0.10-2.50
	11T302EL-U			11.6	9.525	3.97	4.40	0.2	0.04-0.15	0.08-2.00
	11T304EL-U	●	●	11.6	9.525	3.97	4.40	0.4	0.05-0.20	0.10-2.50
DCGT-FG	070204-FG	●	●	7.3	6.35	2.38	2.80	0.4	0.07-020	0.40-1.50
	11T304-FG	●	●	11.2	9.525	3.97	4.40	0.4	0.10-0.25	0.60-1.50
	11T308-FG	●	●	10.8	9.525	3.97	4.40	0.8	0.10-0.25	0.60-2.00
DCGT-PS	070202-PS			7.5	6.35	2.38	2.80	0.2	0.03-0.10	0.06-1.00
	070204-PS	●	●	7.3	6.35	2.38	2.80	0.4	0.05-0.20	0.30-1.20
	11T302-PS	●	●	11.4	9.525	3.97	4.40	0.2	0.04-0.15	0.08-1.50
	11T304-PS	●	●	11.2	9.525	3.97	4.40	0.4	0.05-0.20	0.30-1.20
	11T308-PS	●	●	10.8	9.525	3.97	4.40	0.8	0.10-0.25	0.30-1.20
DCGT-HQ	070202-HQ	●		7.5	6.35	2.38	2.80	0.2	0.07-0.14	0.50-2.00
	070204-HQ	●	●	7.3	6.35	2.38	2.80	0.4	0.08-0.16	0.50-2.00
	070208-HQ	●	●	6.8	6.35	2.38	2.80	0.2	0.10-0.20	0.50-2.00
	11T302-HQ	●	●	11.4	9.525	3.97	4.40	0.8	0.07-0.18	0.50-2.00
	11T304-HQ	●	●	11.2	9.525	3.97	4.40	0.4	0.08-0.20	0.50-2.00
	11T308-HQ	●		10.8	9.525	3.97	4.40	0.8	0.10-0.25	0.50-2.00
DCGT-MT	11T304-MT	●	●	11.2	9.525	3.97	4.40	0.4	0.10-0.25	0.70-3.00
	11T308-MT	●	●	10.8	9.525	3.97	4.40	0.8	0.13-0.30	1.00-3.00

SC ○○

Square 90° Positive
Relief Angle: 7°



Workpiece				
Steel	P	●	●
Stainless steel	M	◐	◐
Cast iron	K	●	◐
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

Machining types
● Continuos cutting
◐ General cutting
✱ Interrupted cutting

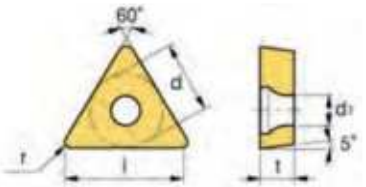
Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
SCMT-HQ	09T304-HQ	●	●	9.1	9.525	3.97	4.40	0.4	0.08-0.16	0.50-2.00
	09T308-HQ	●	●	8.7	9.525	3.97	4.40	0.8	0.10-0.20	0.50-2.00

Cermet Insert (Positive)

TB ○○

Triangular **60° Positive**

Relief Angle : 5°



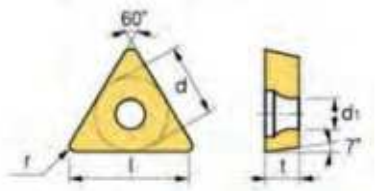
Workpiece				
Steel	P	●	●
Stainless steel	M	◐	◐
Cast iron	K	●	◐
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

Machining types
- ● Continuos cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
TBGT	060102L	●	●	6.4	3.97	1.59	2.16	0.2	0.05-0.20	0.10-1.30
	060104L	●	●	5.8	3.97	1.59	2.16	0.4	0.08-0.20	0.10-1.30

TC ○○

Triangular **60° Positive**
Relief Angle : 7°



Workpiece				
Steel	P	●	●
Stainless steel	M	⬌	⬌
Cast iron	K	●	⬌
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

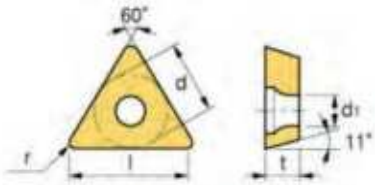
Machining types
● Continuos cutting
⬌ General cutting
✱ Interrupted cutting

Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
TCGT	060102L			6.4	3.97	1.59	2.16	0.2	0.05-0.20	0.10-1.30
	060104L			5.8	3.97	1.59	2.16	0.4	0.08-0.20	0.10-1.30
	080202R			7.7	4.76	2.38	2.30	0.2	0.03-0.11	0.06-1.70
	080204R			7.2	4.76	2.38	2.30	0.4	0.05-0.15	0.06-2.00
	080202L			7.7	4.76	2.38	2.30	0.2	0.03-0.11	0.06-1.70
	080204L			7.2	4.76	2.38	2.30	0.4	0.05-0.15	0.06-2.00
	110202R			10.5	6.35	2.38	2.80	0.2	0.01-0.12	0.06-2.00
	110204R			10.0	6.35	2.38	2.80	0.4	0.01-0.15	0.08-2.00
	110202L			10.5	6.35	2.38	2.80	0.2	0.01-0.12	0.06-2.00
	110204L			10.0	6.35	2.38	2.80	0.4	0.01-0.15	0.08-2.00
TCMT-PS	090204-PS			8.6	5.56	2.38	2.50	0.4	0.05-0.20	0.10-1.70
	110202-PS			10.5	6.35	2.38	2.80	0.2	0.03-0.13	0.06-1.70
	110204-PS			10.0	6.35	2.38	2.80	0.4	0.05-0.20	0.30-1.20
	16T304-PS			15.5	9.525	3.97	4.40	0.4	0.05-0.20	0.30-1.50
	16T308-PS			14.5	9.525	3.97	4.40	0.8	0.10-0.25	0.30-1.50
TCMT-HQ	090204-HQ	●	●	8.6	5.56	2.38	2.50	0.4	0.08-0.16	0.50-2.00
	110202-HQ	●	●	10.5	6.35	2.38	2.80	0.2	0.07-0.14	0.50-2.00
	110204-HQ	●	●	10.0	6.35	2.38	2.80	0.4	0.08-0.16	0.50-2.00
	110208-HQ	●	●	9.0	6.35	2.38	2.80	0.8	0.10-0.20	0.50-2.00
	16T304-HQ	●	●	15.5	9.525	3.97	4.40	0.4	0.08-0.20	0.50-2.00
	16T308-HQ	●	●	14.5	9.525	3.97	4.40	0.8	0.10-0.25	0.50-2.00

Cermet Insert (Positive)

TP ○○

Triangular **60° Positive**
Relief Angle : 11°



Workpiece			
Steel	P	●	●
Stainless steel	M	◐	◐
Cast iron	K	●	◐
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

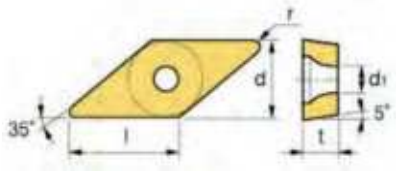
Machining types
● Continuos cutting
◐ General cutting
✱ Interrupted cutting

Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
TPGH	080202R			7.7	4.76	2.38	2.30	0.2	0.01-0.12	0.06-1.70
	080204R			7.2	4.76	2.38	2.30	0.4	0.01-0.15	0.08-1.70
	090202R			9.1	5.56	2.38	3.00	0.2	0.01-0.12	0.06-1.70
	090204R			8.6	5.56	2.38	3.00	0.4	0.01-0.15	0.08-1.70
	110302R			10.5	6.35	3.18	3.40	0.2	0.01-0.12	0.06-1.70
	110304R			10.0	6.35	3.18	3.40	0.4	0.01-0.15	0.08-1.70
	080202L	●	●	7.7	4.76	2.38	2.30	0.2	0.01-0.12	0.06-1.70
	080204L	●	●	7.2	4.76	2.38	2.30	0.4	0.01-0.15	0.08-1.70
	090202L	●	●	9.1	5.56	2.38	3.00	0.2	0.01-0.12	0.06-1.70
	090204L	●	●	8.6	5.56	2.38	3.00	0.4	0.01-0.15	0.08-1.70
	110302L	●	●	10.5	6.35	3.18	3.40	0.2	0.01-0.12	0.06-2.00
	110304L	●	●	10.0	6.35	3.18	3.40	0.4	0.01-0.15	0.08-2.00
TPMT-PS	110304-PS			10.0	6.35	3.18	3.40	0.4	0.05-0.20	0.30-1.50
	110308-PS			9.0	6.35	3.18	3.40	0.8	0.10-0.25	0.30-1.50

VB ○○

Rhombic **35° Positive**

Relief Angle : 5°



Workpiece				
Steel	P	●	●
Stainless steel	M	⬌	⬌
Cast iron	K	●	⬌
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

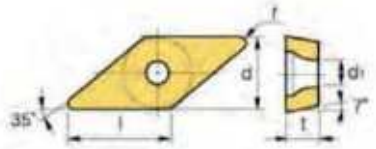
Machining types
- ● Continuos cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
VBGT-Y	110301R-Y	○	○	10.8	6.35	3.18	2.80	0.1	0.02-0.08	0.05-1.50
	110302R-Y	○	○	10.5	6.35	3.18	2.80	0.2	0.03-0.13	0.06-1.70
	110304R-Y	○	○	10.0	6.35	3.18	2.80	0.4	0.05-0.20	0.07-2.00
	110301L-Y	○	○	10.8	6.35	3.18	2.80	0.1	0.02-0.08	0.05-1.50
	110302L-Y	○	○	10.5	6.35	3.18	2.80	0.2	0.03-0.13	0.06-1.70
	110304L-Y	○	○	10.0	6.35	3.18	2.80	0.4	0.05-0.20	0.07-2.00
VBMT-PS	110302-PS	●	●	10.5	6.35	3.18	2.80	0.2	0.03-0.20	0.20-1.20
	110304-PS	●	●	10.0	6.35	3.18	2.80	0.4	0.04-0.20	0.20-1.20
	160404-PS			15.6	9.525	4.76	4.40	0.4	0.05-0.20	0.30-1.50
	160408-PS			14.6	9.525	4.76	4.40	0.8	0.10-0.20	0.30-1.50
VBMT-HQ	110302-HQ	●	●	10.5	6.35	3.18	2.80	0.2	0.07-0.14	0.50-1.50
	110304-HQ	●	●	10.0	6.35	3.18	2.80	0.4	0.08-0.16	0.50-1.50
	110308-HQ	●	●	9.0	6.35	3.18	2.80	0.8	0.10-0.20	0.50-1.50
	160404-HQ	●	●	15.6	9.525	4.76	4.40	0.4	0.08-0.16	0.50-2.00
	160408-HQ	●	●	14.6	9.525	4.76	4.40	0.8	0.10-0.20	0.50-2.00

Cermet Insert (Positive)

VC ○○

Rhombic 35° Positive
Relief Angle: 7°



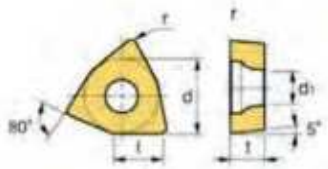
Workpiece				
Steel	P	●	●
Stainless steel	M	◐	◐
Cast iron	K	●	◐
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

Machining types
- ● Continuos cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
VCMT-PS	110302-PS	●	●	10.5	6.35	3.18	2.80	0.2	0.03-0.20	0.20-1.20
	110304-PS	●	●	10.0	6.35	3.18	2.80	0.4	0.04-0.20	0.20-1.20
	160404-PS			15.6	9.525	4.76	4.40	0.4	0.05-0.20	0.30-1.50
	160408-PS			14.6	9.525	4.76	4.40	0.8	0.10-0.20	0.30-1.50

WB○○

Trigon 80° Positive
Relief Angle: 5°



Workpiece			
Steel	P	●	●
Stainless steel	M	◐	◐
Cast iron	K	●	◐
Non-ferrous metal	N		
Heat resistant alloy Titanium alloy	S		
Hardened steel	H		

Machining types
● Continuos cutting
◐ General cutting
✱ Interrupted cutting

Inserts	Designation	Grades		Dimensions(mm)					Cutting Condition	
		TTIN30	TTIN3025	l	d	t	d1	r	fn (mm/rev)	ap (mm)
WBGT-F	060102L-F	●	●	2.6	3.97	1.59	2.30	0.2	0.01-0.05	0.10-0.30
	060104L-F	●	●	2.5	3.97	1.59	2.30	0.4	0.01-0.10	0.10-0.50
	080202L-F			3.1	4.76	2.38	2.30	0.2	0.01-0.08	0.10-0.40
	080204L-F			3.0	4.76	2.38	2.30	0.4	0.01-0.10	0.10-0.50

CBN Grades

Insert type

High presicion		Wear resistance		Productivity	
for regrinding type	One use type	Multi-corner type	Multi-corner type (coated)	Solid type	

Solid CBN grade

Grade	Coating	CBN Volume	Application					Purpose
			Cast iron	Ductile cast iron	Hardness Material	Mill Rolls	Powder metallurgy	
TB1000	-	90%	●		●	●		Continuous and light interrupted turning at high speed
TB3000	-	50%			●			Medium and heavy interrupted turning
TB5000	-	75%			●			Continuous and light interrupted turning
TBX200	-	85%	●					Light to medium interrupted milling
TBX300	-	95%	●					Medium and high interrupted turning
TBX500	-	85%	●				●	Continuous turning
TBC500	TiALN	75%			●			Continuous and light interrupted turning

CBN PCBN grade

Grade	Binding agent	CBN Volume	Application					Purpose
			Cast iron	Ductile cast iron	Hardness Material	Mill Rolls	Powder metallurgy	
TB100C	TiN	75%	●		●	●		Interrupted machining
TB300C	TiCN	60%			●			Continuous and medium interrupted machining
TB400C	TiCN	50%			●			Continuous machining at hight speed
TBX20C	New binder	90%	●					Interrupted machining for cast iron seat ring alloys
TBX30C	Metal	90%	●					Continuous machining at hight speed
TBX40C	TiN+Metal	85%	●				●	Continuous and light interrupted turning
TBX50C	TiN	65%			●			Continuos processing for powder metallurgy

CBN PCBN Coating grade

Grade	Binding agent	CBN Volume	Application					Purpose
			Cast iron	Ductile cast iron	Hardness Material	Mill Rolls	Powder metallurgy	
TBC10C	TiN	75%	●		●	●		Interrupted machining
TBC30C	TICN	60%			●			Continuous and medium interrupted machining
TBC40C	TICN	50%			●			Continuous machining at hight speed
TBXC2C	New binder	90%	●					Interrupted machining for cast iron seat ring alloys
TBXC3C	Metal	90%	●					Continuous machining at hight speed
TBXC4C	TiN+Metal	85%	●				●	Continuous and light interrupted turning
TBXC5C	TiN	65%			●			Continuos processing for powder metallurgy

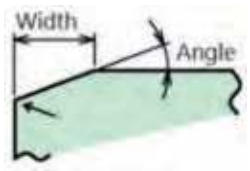
※ Order item

■ Identification System (Turning Insert)

C	N	G	A	12	04	04	-	2	N	S02020

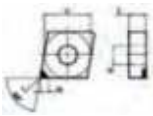
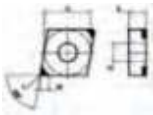
"Turning Indexable Inserts Indentification System" See Page → 077 | No. of Edges | Hand | Edge Prep. (Ref. To the Table 1)

Preparation Identification System

Symbol	Cutting Edge Spec.		Example	Shape
S	Chamfered and Honed Cutting Edge	S01020	0.10mm x 20° Chamfered and Honed Cutting Edge	
		S02020	0.20mm x 20° Chamfered and Honed Cutting Edge	
		S02030	0.20mm x 30° Chamfered and Honed Cutting Edge	
T	Chamfered Cutting Edge	T01020	0.10mm x 20° Chamfered and Cutting Edge	
		T02020	0.20mm x 20° Chamfered and Cutting Edge	
		T02025	0.20mm x 25° Chamfered and Cutting Edge	

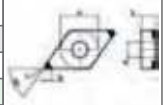
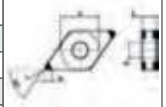
Turning Insert (Negative)

CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB100C	TB300C	TB400C	TBX20C	TBX30C	TBX40C	TBX50C	IC	d	s	r	la	
CNGA	120404-1N			●						12.7	5.16	4.76	0.4	2.5	
	120408-1N			●						12.7	5.16	4.76	0.8	2.5	
	120412-1N			●						12.7	5.16	4.76	1.2	2.5	
	120404-2N	T01020	●	●		●		●		12.7	5.16	4.76	0.4	2.5	
	120408-2N	T01025	●	●		●		●		12.7	5.16	4.76	0.8	2.5	
	120412-2N	T02020	●	●		●		●		12.7	5.16	4.76	1.2	2.5	
		S02025													
		S02030													
	120404-4N									12.7	5.16	4.76	0.4	2.5	
	120408-4N									12.7	5.16	4.76	0.8	2.5	
	120412-4N									12.7	5.16	4.76	1.2	2.5	

※ Coated grades can be requested

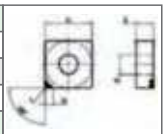
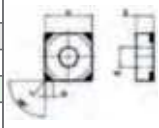
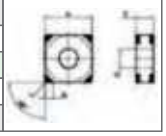
CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB100C	TB300C	TB400C	TBX20C	TBX30C	TBX40C	TBX50C	IC	d	s	r	la	
DNGA	110404-1N	T01020 T01025 T02020 S02025 S02030		●						9.525	3.81	4.76	0.4	2.5	
	110408-1N			●						9.525	3.81	4.76	0.8	2.5	
	110412-1N			●						9.525	3.81	4.76	1.2	2.5	
	150404-1N			●						12.7	5.16	4.76	0.4	2.5	
	150408-1N			●						12.7	5.16	4.76	0.8	2.5	
	150412-1N			●						12.7	5.16	4.76	1.2	2.5	
	150604-1N			●						12.7	5.16	6.35	0.4	2.5	
	150608-1N			●						12.7	5.16	6.35	0.8	2.5	
	150612-1N			●						12.7	5.16	6.35	1.2	2.5	
	110404-2N		●	●		●		●		9.525	3.81	4.76	0.4	2.5	
	110408-2N		●	●		●		●		9.525	3.81	4.76	0.8	2.5	
	110412-2N		●	●		●		●		9.525	3.81	4.76	1.2	2.5	
	150404-2N		●	●		●		●		12.7	5.16	4.76	0.4	2.5	
	150408-2N		●	●		●		●		12.7	5.16	4.76	0.8	2.5	
	150412-2N		●	●		●		●		12.7	5.16	4.76	1.2	2.5	
	150604-2N		●	●		●		●		12.7	5.16	6.35	0.4	2.5	
	150608-2N		●	●		●		●		12.7	5.16	6.35	0.8	2.5	
	150612-2N		●	●		●		●		12.7	5.16	6.35	1.2	2.5	
	110404-4N									9.525	3.81	4.76	0.4	2.5	
	110408-4N									9.525	3.81	4.76	0.8	2.5	
	110412-4N									9.525	3.81	4.76	1.2	2.5	
	150404-4N									12.7	5.16	4.76	0.4	2.5	
	150408-4N									12.7	5.16	4.76	0.8	2.5	
	150412-4N									12.7	5.16	4.76	1.2	2.5	
	150604-4N									12.7	5.16	6.35	0.4	2.5	
	150608-4N									12.7	5.16	6.35	0.8	2.5	
	150612-4N									12.7	5.16	6.35	1.2	2.5	

※ Coated grades can be requested

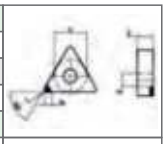
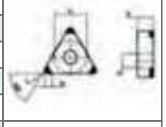
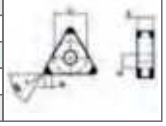
Turning Insert (Negative)

CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB100C	TB300C	TB400C	TBX20C	TBX30C	TBX40C	TBX50C	IC	d	s	r	la	
SNGA	120404-1N			●						12.7	5.16	4.76	0.4	2.5	
	120408-1N			●						12.7	5.16	4.76	0.8	2.5	
	120412-1N			●						12.7	5.16	4.76	1.2	2.5	
	120404-4N	T01020	●	●		●		●		12.7	5.16	4.76	0.4	2.5	
	120408-4N	T01025	●	●		●		●		12.7	5.16	4.76	0.8	2.5	
	120412-4N	T02020	●	●		●		●		12.7	5.16	4.76	1.2	2.5	
		S02025													
		S02030													
	120404-8N									12.7	5.16	4.76	0.4	2.5	
	120408-8N									12.7	5.16	4.76	0.8	2.5	
	120412-8N									12.7	5.16	4.76	1.2	2.5	

※ Coated grades can be requested

CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB100C	TB300C	TB400C	TBX20C	TBX30C	TBX40C	TBX50C	IC	d	s	r	la	
TNGA	160404-1N			●						9.525	3.81	4.76	0.4	2.5	
	160408-1N			●						9.525	3.81	4.76	0.8	2.5	
	160412-1N			●						9.525	3.81	4.76	1.2	2.5	
	160404-3N	T01020	●	●		●		●		9.525	3.81	4.76	0.4	2.5	
	160408-3N	T02020	●	●		●		●		9.525	3.81	4.76	0.8	2.5	
	160412-3N	S02025	●	●		●		●		9.525	3.81	4.76	1.2	2.5	
		S02030													
	160404-6N									9.525	3.81	4.76	0.4	2.5	
	160408-6N									9.525	3.81	4.76	0.8	2.5	
	160412-6N									9.525	3.81	4.76	1.2	2.5	

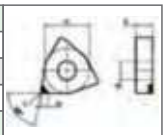
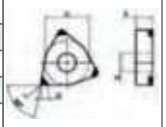
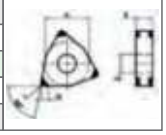
※ Coated grades can be requested

CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB100C	TB300C	TB400C	TBX20C	TBX30C	TBX40C	TBX50C	IC	d	s	r	la	
VNGA	160404-1N			●						9.525	3.81	4.76	0.4	2.5	
	160408-1N			●						9.525	3.81	4.76	0.8	2.5	
	160412-1N			●						9.525	3.81	4.76	1.2	2.5	
	160404-2N	T01020	●	●		●		●		9.525	3.81	4.76	0.4	2.5	
	160408-2N	T02020	●	●		●		●		9.525	3.81	4.76	0.8	2.5	
	160412-2N	S02025	●	●		●		●		9.525	3.81	4.76	1.2	2.5	
		S02030													
	160404-4N									9.525	3.81	4.76	0.4	2.5	
	160408-4N									9.525	3.81	4.76	0.8	2.5	
	160412-4N									9.525	3.81	4.76	1.2	2.5	

※ Coated grades can be requested

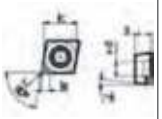
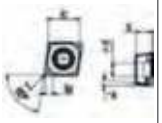
CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB100C	TB300C	TB400C	TBX20C	TBX30C	TBX40C	TBX50C	IC	d	s	r	la	
WNGA	080404-1N			●						12.7	5.16	4.76	0.4	2.5	
	080408-1N			●						12.7	5.16	4.76	0.8	2.5	
	080412-1N			●						12.7	5.16	4.76	1.2	2.5	
	080404-3N	T01020	●	●		●		●		12.7	5.16	4.76	0.4	2.5	
	080408-3N	T01025	●	●		●		●		12.7	5.16	4.76	0.8	2.5	
	080412-3N	T02020	●	●		●		●		12.7	5.16	4.76	1.2	2.5	
		S02025													
		S02030													
	080404-6N									12.7	5.16	4.76	0.4	2.5	
	080408-6N									12.7	5.16	4.76	0.8	2.5	
	080412-6N									12.7	5.16	4.76	1.2	2.5	

※ Coated grades can be requested

Turning Insert (Positive)

CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB100C	TB300C	TB400C	TBX20C	TBX30C	TBX40C	TBX50C	IC	d	s	r	la	
CCGW	060202-1N	T01020 T01025 T02020 S02025 S02030		●						6.35	2.80	2.38	0.2	2.5	
	060204-1N			●						6.35	2.80	2.38	0.4	2.5	
	09T302-1N			●						9.525	4.40	3.97	0.2	2.5	
	09T304-1N			●						9.525	4.40	3.97	0.4	2.5	
	09T308-1N			●						9.525	4.40	3.97	0.8	2.5	
	120402-1N			●						12.7	5.50	4.76	0.2	2.5	
	120404-1N			●						12.7	5.50	4.76	0.4	2.5	
	120408-1N			●						12.7	5.50	4.76	0.8	2.5	
	120412-1N									12.7	5.50	4.76	1.2	2.5	
	060202-2N			●		●		●		6.35	2.80	2.38	0.2	2.5	
	060204-2N		●	●		●		●		6.35	2.80	2.38	0.4	2.5	
	09T302-2N			●		●		●		9.525	4.40	3.97	0.2	2.5	
	09T304-2N		●	●		●		●		9.525	4.40	3.97	0.4	2.5	
	09T308-2N		●	●		●		●		9.525	4.40	3.97	0.8	2.5	
	120402-2N		●	●		●		●		12.7	5.50	4.76	0.2	2.5	
	120404-2N		●	●		●		●		12.7	5.50	4.76	0.4	2.5	
	120408-2N		●	●		●		●		12.7	5.50	4.76	0.8	2.5	
	120412-2N									12.7	5.50	4.76	1.2	2.5	

※ Coated grades can be requested

CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB100C	TB300C	TB400C	TBX20C	TBX30C	TBX40C	TBX50C	IC	d	s	r	la	
DCGW	070202-1N	T01020 T01025 T02020 S02025 S02030		●						6.35	2.80	2.38	0.2	2.5	
	070204-1N			●						6.35	2.80	2.38	0.4	2.5	
	070208-1N			●						6.35	2.80	2.38	0.8	2.5	
	11T302-1N			●						9.525	4.40	3.97	0.2	2.5	
	11T304-1N			●						9.525	4.40	3.97	0.4	2.5	
	11T308-1N			●						9.525	4.40	3.97	0.8	2.5	
	11T312-1N			●						9.525	4.40	3.97	1.2	2.5	
	070202-2N			●		●		●		6.35	2.80	2.38	0.2	2.5	
	070204-2N		●	●		●		●		6.35	2.80	2.38	0.4	2.5	
	070208-2N			●		●		●		6.35	2.80	2.38	0.8	2.5	
	11T302-2N		●	●		●		●		9.525	4.40	3.97	0.2	2.5	
	11T304-2N		●	●		●		●		9.525	4.40	3.97	0.4	2.5	
	11T308-2N		●	●		●		●		9.525	4.40	3.97	0.8	2.5	
	11T312-2N		●	●		●		●		9.525	4.40	3.97	1.2	2.5	

※ Coated grades can be requested

CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB100C	TB300C	TB400C	TBX20C	TBX30C	TBX40C	TBX50C	IC	d	s	r	la	
TCGW	110202-1N	T01020 T02020 S02025 S02030		●						6.35	2.80	2.38	0.2	2.5	
	110204-1N			●						6.35	2.80	2.38	0.4	2.5	
	110208-1N			●						6.35	2.80	2.38	0.8	2.5	
	16T302-1N			●						9.525	4.40	3.97	0.2	2.5	
	16T304-1N			●						9.525	4.40	3.97	0.4	2.5	
	16T308-1N			●						9.525	4.40	3.97	0.8	2.5	
	16T312-1N			●						9.525	4.40	3.97	1.2	2.5	
	110202-3N			●		●		●		6.35	2.80	2.38	0.2	2.5	
	110204-3N		●	●		●		●		6.35	2.80	2.38	0.4	2.5	
	110208-3N			●		●		●		6.35	2.80	2.38	0.8	2.5	
	16T302-3N		●	●		●		●		9.525	4.40	3.97	0.2	2.5	
	16T304-3N		●	●		●		●		9.525	4.40	3.97	0.4	2.5	
	16T308-3N		●	●		●		●		9.525	4.40	3.97	0.8	2.5	
	16T312-3N		●	●		●		●		9.525	4.40	3.97	1.2	2.5	

※ Coated grades can be requested

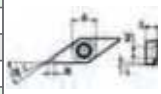
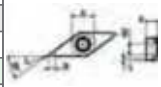
CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB100C	TB300C	TB400C	TBX20C	TBX30C	TBX40C	TBX50C	IC	d	s	r	la	
VBGW	110302-1N	T01020 T02020 S02025 S02030		●						6.35	2.80	3.18	0.2	2.5	
	110304-1N			●						6.35	2.80	3.18	0.4	2.5	
	110308-1N			●						6.35	2.80	3.18	0.8	2.5	
	160402-1N			●						9.525	4.40	4.76	0.2	2.5	
	160404-1N			●						9.525	4.40	4.76	0.4	2.5	
	160408-1N			●						9.525	4.40	4.76	0.8	2.5	
	160412-1N			●						9.525	4.40	4.76	1.2	2.5	
	110302-2N			●		●		●		6.35	2.80	3.18	0.2	2.5	
	110304-2N		●	●		●		●		6.35	2.80	3.18	0.4	2.5	
	110308-2N			●		●		●		6.35	2.80	3.18	0.8	2.5	
	160402-2N		●	●		●		●		9.525	4.40	4.76	0.2	2.5	
	160404-2N		●	●		●		●		9.525	4.40	4.76	0.4	2.5	
	160408-2N		●	●		●		●		9.525	4.40	4.76	0.8	2.5	
	160412-2N		●	●		●		●		9.525	4.40	4.76	1.2	2.5	

※ Coated grades can be requested

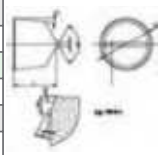
Turning Insert (Positive)

CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB100C	TB300C	TB400C	TBX20C	TBX30C	TBX40C	TBX50C	IC	d	s	r	la	
VCGW	160402-1N	T01020 T02020 S02025 S02030		●						9.525	4.40	4.76	0.2	2.5	
	160404-1N			●						9.525	4.40	4.76	0.4	2.5	
	160408-1N			●						9.525	4.40	4.76	0.8	2.5	
	160412-1N			●						9.525	4.40	4.76	1.2	2.5	
	160402-2N		●	●		●		●		9.525	4.40	4.76	0.2	2.5	
	160404-2N		●	●		●		●		9.525	4.40	4.76	0.4	2.5	
	160408-2N		●	●		●		●		9.525	4.40	4.76	0.8	2.5	
	160412-2N		●	●		●		●		9.525	4.40	4.76	1.2	2.5	

※ Coated grades can be requested

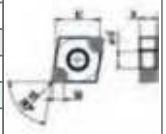
CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)				Geometries
			TB1000	TB3000	TB5000	TBX200	TBX300	TBX500	TBC500	IC	d	s	b	
RCGX Round	060400	E003 E005	●	●	●		●			6	6.35	4.76	0.8	
	006060	P07015 T01020								6	6.35	6.35	0.8	
	090700	P07015 P15015	●	●	●		●			9	9.525	7.94	1.0	
	120700	S01020 T01020 E003	●	●	●		●			12	12.7	7.94	2.0	
	151000	T01020 T01025	●	●	●		●			15	15.875	10.00	2.0	
	191000	T01030 S02020	●	●	●		●			19	19.05	10.00	2.0	
	251200	S02030 S05020	●	●	●		●			25	25.4	12.00	2.0	
		S10020 S20020												

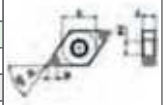
For cutting edge “E”, “K”, and “P” please refer to the table below

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R-honed Cutting Edge	E005	R0.05mm Honed
K	Double Chamfered Cutting Edge	K20003	2.00mm x 3° Chamfered Cutting Edge
P	Double Chamfered and Honed Cutting Edge	P07015	0.70mm x 15° Chamfered and Honed Cutting Edge
Note: Symbol “K” And “P” describe only the largest shamfer width and its angle.			

CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB1000	TB3000	TB5000	TBX200	TBX300	TBX500	TBC500	IC	d	s	r	la	
CNGA 80° Nega	120404-4S	T01020 T01025 T02020 S02025 S02030		●	●		●			12.7	5.16	4.76	0.4	2.5	
	120408-4S			●	●		●			12.7	5.16	4.76	0.8	2.5	
	120412-4S			●	●		●			12.7	5.16	4.76	1.2	2.5	

CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB1000	TB3000	TB5000	TBX200	TBX300	TBX500	TBC500	IC	d	s	r	la	
DNGA 55° Nega	150404-4S	T01020 T01025 T02020 S02025 S02030		●	●		●			12.7	5.16	4.76	0.4	2.5	
	150408-4S			●	●		●			12.7	5.16	4.76	0.8	2.5	
	150412-4S			●	●		●			12.7	5.16	4.76	1.2	2.5	
	150604-4S			●	●		●			12.7	5.16	6.35	0.4	2.5	
	150608-4S			●	●		●			12.7	5.16	6.35	0.8	2.5	
	150612-4S			●	●		●			12.7	5.16	6.35	1.2	2.5	

CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB1000	TB3000	TB5000	TBX200	TBX300	TBX500	TBC500	IC	d	s	r	la	
SNGA 90° Nega	120404-8S	T01020 T01025 T02020 S02025 S02030		●	●		●			12.7	5.16	4.76	0.4	2.5	
	120408-8S			●	●		●			12.7	5.16	4.76	0.8	2.5	
	120412-8S			●	●		●			12.7	5.16	4.76	1.2	2.5	

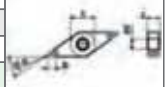
Turning Insert (Negative)

CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB1000	TB3000	TB5000	TBX200	TBX300	TBX500	TBC500	IC	d	s	r	la	
TNGA	160404-6S		●	●	●		●			9.525	3.81	4.76	0.4	2.5	
	160408-6S	T01020	●	●	●		●			9.525	3.81	4.76	0.8	2.5	
	160412-6S	T02020	●	●	●		●			9.525	3.81	4.76	1.2	2.5	
		S02025													
		S02030													

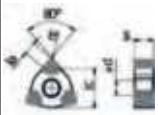
CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB1000	TB3000	TB5000	TBX200	TBX300	TBX500	TBC500	IC	d	s	r	la	
VNGA	160404-4S		●	●	●		●			9.525	3.81	4.76	0.4	2.5	
	160408-4S	T01020	●	●	●		●			9.525	3.81	4.76	0.8	2.5	
	160412-4S	T02020	●	●	●		●			9.525	3.81	4.76	1.2	2.5	
		S02025													
		S02030													

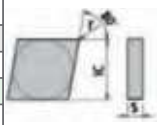


CBN Inserts

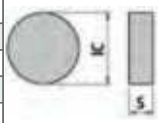
Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB1000	TB3000	TB5000	TBX200	TBX300	TBX500	TBC500	IC	d	s	r	la	
WNGA	080404-6S		●	●	●		●			12.7	5.16	4.76	0.4	2.5	
	080408-6S	T01020	●	●	●		●			12.7	5.16	4.76	0.8	2.5	
	080412-6S	T01025	●	●	●		●			12.7	5.16	4.76	1.2	2.5	
		T02020													
		S02025													
		S02030													



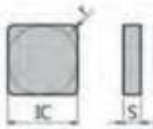
CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB1000	TB3000	TB5000	TBX200	TBX300	TBX500	TBC500	IC	d	s	r	la	
CNMN	090404		●	●	●		●			9.525	-	4.76	0.4	-	
	090408	T01020	●	●	●		●			9.525	-	4.76	0.8	-	
	090412	T01025	●	●	●		●			9.525	-	4.76	1.2	-	
	120404	T02020	●	●	●		●			12.7	-	4.76	0.4	-	
	120408	S02025	●	●	●		●			12.7	-	4.76	0.8	-	
	120412	S02030	●	●	●		●			12.7	-	4.76	1.2	-	

CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB1000	TB3000	TB5000	TBX200	TBX300	TBX500	TBC500	IC	d	s	r	la	
RNMN	090400		●	●	●		●			9.525	-	4.76	-	-	
	120400	T01020	●	●	●		●			12.7	-	4.76	-	-	
	120700	T01025	●	●	●		●			12.7	-	7.94	-	-	
	150700	T02020	●	●	●		●			15.875	-	7.94	-	-	
	200700	S02025	●	●	●		●			20.0	-	7.94	-	-	
	201000	S02030	●	●	●		●			20.0	-	10.00	-	-	

CBN Inserts

Designation		Edge Prep.	Uncoated							Dimensions(mm)					Geometries
			TB1000	TB3000	TB5000	TBX200	TBX300	TBX500	TBC500	IC	d	s	r	la	
SNMN	090400		●	●	●		●			9.525	-	4.76	0.4	-	
	090408		●	●	●		●			9.525	-	4.76	0.8	-	
	090412	T01020	●	●	●		●			9.525	-	4.76	1.2	-	
	120404	T01025	●	●	●		●			12.7	-	4.76	0.4	-	
	120408	T02020	●	●	●		●			12.7	-	4.76	0.8	-	
	120412	S01020	●	●	●		●			12.7	-	4.76	1.2	-	
	150712	S02020	●	●	●		●			15.875	-	7.94	1.2	-	
	150716	S05020	●	●	●		●			15.875	-	7.94	1.6	-	
	201020	S10020	●	●	●		●			20.0	-	10.0	2.0	-	
	201024		●	●	●		●			20.0	-	10.0	2.4	-	

PCD Technical Section

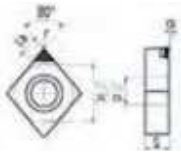
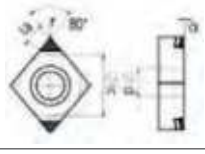
PCD grade

Grade	Features	Application	Grain size (μm)	Hardness (Hv)	TRS (kgf/mm²)
TDP10E	By use of the diamond grain having good bonding property. it is suitable for machining of non-ferrous metal, graphite	High Si aluminum alloy, Copper, Bronze alloy, Rubber, Wood, Carbon, Cemented carbide, ceramic semi-sintered products, FRP, graphite	10	10000~12000	200
TDP30E	Coarse diamond grain has been used to get excellent wear resistance enough to machine cemented-carbide, high Si aluminum alloy.	Cemented carbide, Ceramic roughing, High Si aluminum alloy, Rock, stone	2-30	10000~12000	110
TDP01E	By use of ultra fine diamond grain, it is possible to make sharp cutting edge,. Thus it is appropriate grade to machine non-ferrous material	Plastic, Wood, Precise finishing of aluminum	1	8000~10000	220

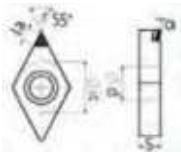
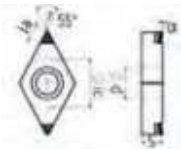
Recommended cutting condition

Workpiece	Cutting speed (m/min)	Feed (mm/rev)	Depth of cut (mm)	Recommended grade	
				1st	1nd
Aluminum alloy (4%-8% Si)	1000-3000	0.10-0.60	~3	TDP10E	TDP30E
Aluminum alloy (9%-14% Si)	600-2500	0.10-0.50	~3	TDP10E	TDP30E
Aluminum alloy (15%-18% Si)	300-700	0.10-0.40	~3	TDP10E	TDP30E
Cooper, Bronze alloy	~1000	0.05-0.20	~3	TDP10E	TDP01E
Reinforced plastic	~1000	0.10-0.30	~2	TDP10E	TDP01E
Wood	~4000	0.10-0.40	-	TDP10E	TDP01E
Cemented carbide	10~30	~0.20	~0.5	TDP30E	TDP10E

PCD Inserts

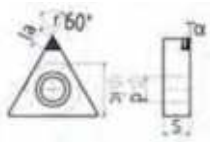
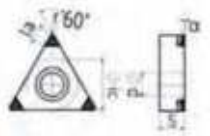
Designation			Uncoated			Dimensions(mm)						Geometries
			TDP01E	TDP10E	TDP30E	IC	d	s	r	la	α	
CN○○	CNGA	120404-1N		●	●	12.7	5.16	4.76	0.4	2.5	0°	
	CNGA	120408-1N		●	●	12.7	5.16	4.76	0.8	2.5	0°	
	CNGX	120404-1N		●	●	12.7	5.16	4.76	0.4	2.5	3°-5°	
	CNGX	120408-1N		●	●	12.7	5.16	4.76	0.8	2.5	3°-5°	
	CNGA	120404-2N				12.7	5.16	4.76	0.4	2.5	0°	
	CNGA	120408-2N				12.7	5.16	4.76	0.8	2.5	0°	
	CNGX	120404-2N				12.7	5.16	4.76	0.4	2.5	3°-5	
	CNGX	120408-2N				12.7	5.16	4.76	0.8	2.5	3°-5°	

PCD Inserts

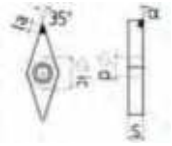
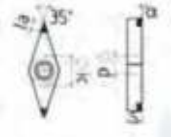
Designation			Uncoated			Dimensions(mm)						Geometries
			TDP01E	TDP10E	TDP30E	IC	d	s	r	la	α	
DN○○	DNGA	150404-1N		●	●	12.7	5.16	4.76	0.4	2.5	0°	
	DNGA	150408-1N		●	●	12.7	5.16	4.76	0.8	2.5	0°	
	DNGX	150404-1N		●	●	12.7	5.16	4.76	0.4	2.5	3°-5°	
	DNGX	150408-1N		●	●	12.7	5.16	4.76	0.8	2.5	3°-5°	
	DNGA	150404-2N				12.7	5.16	4.76	0.4	2.5	0°	
	DNGA	150408-2N				12.7	5.16	4.76	0.8	2.5	0°	
	DNGX	150404-2N				12.7	5.16	4.76	0.4	2.5	3°-5	
	DNGX	150408-2N				12.7	5.16	4.76	0.8	2.5	3°-5°	

Turning Insert (Negative)

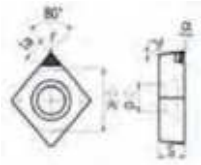
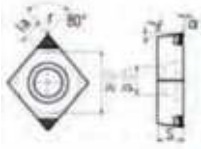
PCD Inserts

Designation			Uncoated			Dimensions(mm)						Geometries
			TDP01E	TDP10E	TDP30E	IC	d	s	r	la	α	
TN○○	TNGA	160404-1N		●	●	9.525	3.81	4.76	0.4	2.5	0°	
	TNGA	160408-1N		●	●	9.525	3.81	4.76	0.8	2.5	0°	
	TNGX	160404-1N		●	●	9.525	3.81	4.76	0.4	2.5	3°-5°	
	TNGX	160408-1N		●	●	9.525	3.81	4.76	0.8	2.5	3°-5°	
	TNGX	160404-3N				9.525	3.81	4.76	0.4	2.5	0°	
	TNGX	160408-3N				9.525	3.81	4.76	0.8	2.5	0°	
	TNGA	160404-3N				9.525	3.81	4.76	0.4	2.5	3°-5	
	TNGA	160408-3N				9.525	3.81	4.76	0.8	2.5	3°-5°	

PCD Inserts

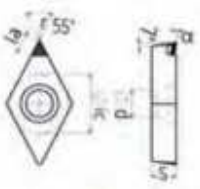
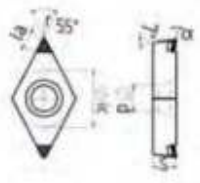
Designation			Uncoated			Dimensions(mm)						Geometries
			TDP01E	TDP10E	TDP30E	IC	d	s	r	la	α	
VN○○	VNGA	160404-1N		●	●	9.525	3.81	4.76	0.4	2.5	0°	
	VNGA	160408-1N		●	●	9.525	3.81	4.76	0.8	2.5	0°	
	VNGX	160404-1N		●	●	9.525	3.81	4.76	0.4	2.5	3°-5°	
	VNGX	160408-1N		●	●	9.525	3.81	4.76	0.8	2.5	3°-5°	
	VNGA	160404-2N				9.525	3.81	4.76	0.4	2.5	0°	
	VNGA	160408-2N				9.525	3.81	4.76	0.8	2.5	0°	
	VNGX	160404-2N				9.525	3.81	4.76	0.4	2.5	3°-5	
	VNGX	160408-2N				9.525	3.81	4.76	0.8	2.5	3°-5°	

PCD Inserts

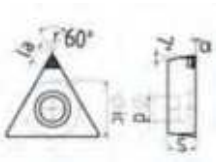
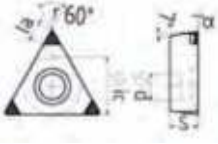
Designation			Uncoated			Dimensions(mm)						Geometries
			TDP01E	TDP10E	TDP30E	IC	d	s	r	la	α	
CC○○ 80° Posi	CCGW	060202-1N	○	●	●	6.35	2.80	2.38	0.2	2.5	0°	
	CCGW	060204-1N	○	●	●	6.35	2.80	2.38	0.4	2.5	0°	
	CCGW	09T302-1N	○	●	●	9.525	4.40	3.97	0.2	2.5	0°	
	CCGW	09T304-1N	○	●	●	9.525	4.40	3.97	0.4	2.5	0°	
	CCGW	09T308-1N	○	●	●	9.525	4.40	3.97	0.8	2.5	0°	
	CCGW	120404-1N	○	●	●	12.7	5.50	4.76	0.4	2.5	0°	
	CCGW	120408-1N	○	●	●	12.7	5.50	4.76	0.8	2.5	0°	
	CCGT	060202-1N	○	●	●	6.35	2.80	2.38	0.2	2.5	3°-5°	
	CCGT	060204-1N	○	●	●	6.35	2.80	2.38	0.4	2.5	3°-5°	
	CCGT	09T302-1N	○	●	●	9.525	4.40	3.97	0.2	2.5	3°-5°	
	CCGT	09T304-1N	○	●	●	9.525	4.40	3.97	0.4	2.5	3°-5°	
	CCGT	09T308-1N	○	●	●	9.525	4.40	3.97	0.8	2.5	3°-5°	
	CCGT	120404-1N	○	●	●	12.7	5.50	4.76	0.4	2.5	3°-5°	
	CCGT	120408-1N	○	●	●	12.7	5.50	4.76	0.8	2.5	3°-5°	
	CCGW	060202-2N	○	○	○	6.35	2.80	2.38	0.2	2.5	0°	
	CCGW	060204-2N	○	○	○	6.35	2.80	2.38	0.4	2.5	0°	
	CCGW	09T302-2N	○	○	○	9.525	4.40	3.97	0.2	2.5	0°	
	CCGW	09T304-2N	○	○	○	9.525	4.40	3.97	0.4	2.5	0°	
	CCGW	09T308-2N	○	○	○	9.525	4.40	3.97	0.8	2.5	0°	
	CCGW	120404-2N	○	○	○	12.7	5.50	4.76	0.4	2.5	0°	
	CCGW	120408-2N	○	○	○	12.7	5.50	4.76	0.8	2.5	0°	
	CCGT	060202-2N	○	○	○	6.35	2.80	2.38	0.2	2.5	3°-5°	
	CCGT	060204-2N	○	○	○	6.35	2.80	2.38	0.4	2.5	3°-5°	
	CCGT	09T302-2N	○	○	○	9.525	4.40	3.97	0.2	2.5	3°-5°	
	CCGT	09T304-2N	○	○	○	9.525	4.40	3.97	0.4	2.5	3°-5°	
	CCGT	09T308-2N	○	○	○	9.525	4.40	3.97	0.8	2.5	3°-5°	
	CCGT	120404-2N	○	○	○	12.7	5.50	4.76	0.4	2.5	3°-5°	
	CCGT	120408-2N	○	○	○	12.7	5.50	4.76	0.8	2.5	3°-5°	

Turning Insert (Positive)

PCD Inserts

Designation			Uncoated			Dimensions(mm)						Geometries
			TDP01E	TDP10E	TDP30E	IC	d	s	r	la	α	
DC○○	DCGW	070202-1N	○	●	●	6.35	2.80	2.38	0.2	2.5	0°	
	DCGW	070204-1N	○	●	●	6.35	2.80	2.38	0.4	2.5	0°	
	DCGW	070208-1N	○	●	●	6.35	2.80	2.38	0.8	2.5	0°	
	DCGW	11T302-1N	○	●	●	9.525	4.40	3.97	0.2	2.5	0°	
	DCGW	11T304-1N	○	●	●	9.525	4.40	3.97	0.4	2.5	0°	
	DCGW	11T308-1N	○	●	●	9.525	4.40	3.97	0.8	2.5	0°	
	DCGT	070202-1N	○	●	●	6.35	2.80	2.38	0.2	2.5	3°-5°	
	DCGT	070204-1N	○	●	●	6.35	2.80	2.38	0.4	2.5	3°-5°	
	DCGT	070208-1N	○	●	●	6.35	2.80	2.38	0.8	2.5	3°-5°	
	DCGT	11T302-1N	○	●	●	9.525	4.40	3.97	0.2	2.5	3°-5°	
	DCGT	11T304-1N	○	●	●	9.525	4.40	3.97	0.4	2.5	3°-5°	
	DCGT	11T308-1N	○	●	●	9.525	4.40	3.97	0.8	2.5	3°-5°	
	DCGW	070202-2N	○	○	○	6.35	2.80	2.38	0.2	2.5	0°	
	DCGW	070204-2N	○	○	○	6.35	2.80	2.38	0.4	2.5	0°	
	DCGW	070208-2N	○	○	○	6.35	2.80	2.38	0.8	2.5	0°	
	DCGW	11T302-2N	○	○	○	9.525	4.40	3.97	0.2	2.5	0°	
	DCGW	11T304-2N	○	○	○	9.525	4.40	3.97	0.4	2.5	0°	
	DCGW	11T308-2N	○	○	○	9.525	4.40	3.97	0.8	2.5	0°	
	DCGT	070202-2N	○	○	○	6.35	2.80	2.38	0.2	2.5	3°-5°	
	DCGT	070204-2N	○	○	○	6.35	2.80	2.38	0.4	2.5	3°-5°	
	DCGT	070208-2N	○	○	○	6.35	2.80	2.38	0.8	2.5	3°-5°	
	DCGT	11T302-2N	○	○	○	9.525	4.40	3.97	0.2	2.5	3°-5°	
	DCGT	11T304-2N	○	○	○	9.525	4.40	3.97	0.4	2.5	3°-5°	
	DCGT	11T308-2N	○	○	○	9.525	4.40	3.97	0.8	2.5	3°-5°	

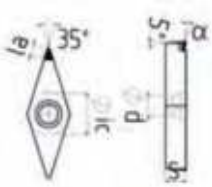
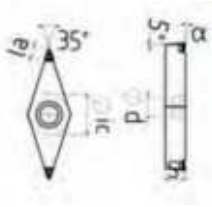
PCD Inserts

Designation			Uncoated			Dimensions(mm)						Geometries
			TDP01E	TDP10E	TDP30E	IC	d	s	r	la	α	
TC○○	TCGW	110202-1N	○	●	●	6.35	2.80	2.38	0.2	2.5	0°	
	TCGW	110204-1N	○	●	●	6.35	2.80	2.38	0.4	2.5	0°	
	TCGW	110208-1N	○	●	●	6.35	2.80	2.38	0.8	2.5	0°	
	TCGW	16T302-1N	○	●	●	9.525	4.40	3.97	0.2	2.5	0°	
	TCGW	16T304-1N	○	●	●	9.525	4.40	3.97	0.4	2.5	0°	
	TCGW	16T308-1N	○	●	●	9.525	4.40	3.97	0.8	2.5	0°	
	TCGT	110202-1N	○	●	●	6.35	2.80	2.38	0.2	2.5	3°-5°	
	TCGT	110204-1N	○	●	●	6.35	2.80	2.38	0.4	2.5	3°-5°	
	TCGT	110208-1N	○	●	●	6.35	2.80	2.38	0.8	2.5	3°-5°	
	TCGT	16T302-1N	○	●	●	9.525	4.40	3.97	0.2	2.5	3°-5°	
	TCGT	16T304-1N	○	●	●	9.525	4.40	3.97	0.4	2.5	3°-5°	
	TCGT	16T308-1N	○	●	●	9.525	4.40	3.97	0.8	2.5	3°-5°	
	TCGW	110202-3N	○	○	○	6.35	2.80	2.38	0.2	2.5	0°	
	TCGW	110204-3N	○	○	○	6.35	2.80	2.38	0.4	2.5	0°	
	TCGW	110208-3N	○	○	○	6.35	2.80	2.38	0.8	2.5	0°	
	TCGW	16T302-3N	○	○	○	9.525	4.40	3.97	0.2	2.5	0°	
	TCGW	16T304-3N	○	○	○	9.525	4.40	3.97	0.4	2.5	0°	
	TCGW	16T308-3N	○	○	○	9.525	4.40	3.97	0.8	2.5	0°	
	TCGT	110202-3N	○	○	○	6.35	2.80	2.38	0.2	2.5	3°-5°	
	TCGT	110204-3N	○	○	○	6.35	2.80	2.38	0.4	2.5	3°-5°	
	TCGT	110208-3N	○	○	○	6.35	2.80	2.38	0.8	2.5	3°-5°	
	TCGT	16T302-3N	○	○	○	9.525	4.40	3.97	0.2	2.5	3°-5°	
	TCGT	16T304-3N	○	○	○	9.525	4.40	3.97	0.4	2.5	3°-5°	
	TCGT	16T308-3N	○	○	○	9.525	4.40	3.97	0.8	2.5	3°-5°	

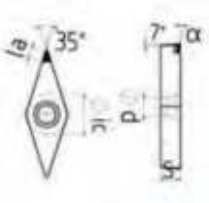
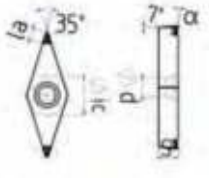
Turning Insert (Positive)

PCD Inserts

VB○○

Designation			Uncoated			Dimensions(mm)						Geometries
			TDP01E	TDP10E	TDP30E	IC	d	s	r	la	α	
	VBGW	110302-1N	○	●	●	6.35	2.80	3.18	0.2	2.5	0°	
	VBGW	110304-1N	○	●	●	6.35	2.80	3.18	0.4	2.5	0°	
	VBGW	110308-1N	○	●	●	6.35	2.80	3.18	0.8	2.5	0°	
	VBGW	160402-1N	○	●	●	9.525	4.40	4.76	0.2	2.5	0°	
	VBGW	160404-1N	○	●	●	9.525	4.40	4.76	0.4	2.5	0°	
	VBGW	160408-1N	○	●	●	9.525	4.40	4.76	0.8	2.5	0°	
	VBGT	110302-1N	○	●	●	6.35	2.80	3.18	0.2	2.5	3°-5°	
	VBGT	110304-1N	○	●	●	6.35	2.80	3.18	0.4	2.5	3°-5°	
	VBGT	110308-1N	○	●	●	6.35	2.80	3.18	0.8	2.5	3°-5°	
	VBGT	160402-1N	○	●	●	9.525	4.40	4.76	0.2	2.5	3°-5°	
	VBGT	160404-1N	○	●	●	9.525	4.40	4.76	0.4	2.5	3°-5°	
	VBGT	160408-1N	○	●	●	9.525	4.40	4.76	0.8	2.5	3°-5°	
	VBGW	110302-2N	○	○	○	6.35	2.80	3.18	0.2	2.5	0°	
	VBGW	110304-2N	○	○	○	6.35	2.80	3.18	0.4	2.5	0°	
	VBGW	110308-2N	○	○	○	6.35	2.80	3.18	0.8	2.5	0°	
	VBGW	160402-2N	○	○	○	9.525	4.40	4.76	0.2	2.5	0°	
	VBGW	160404-2N	○	○	○	9.525	4.40	4.76	0.4	2.5	0°	
	VBGW	160408-2N	○	○	○	9.525	4.40	4.76	0.8	2.5	0°	
	VBGT	110302-2N	○	○	○	6.35	2.80	3.18	0.2	2.5	3°-5°	
	VBGT	110304-2N	○	○	○	6.35	2.80	3.18	0.4	2.5	3°-5°	
	VBGT	110308-2N	○	○	○	6.35	2.80	3.18	0.8	2.5	3°-5°	
	VBGT	160402-2N	○	○	○	9.525	4.40	4.76	0.2	2.5	3°-5°	
	VBGT	160404-2N	○	○	○	9.525	4.40	4.76	0.4	2.5	3°-5°	
	VBGT	160408-2N	○	○	○	9.525	4.40	4.76	0.8	2.5	3°-5°	

PCD Inserts

Designation			Uncoated			Dimensions(mm)						Geometries
			TDP01E	TDP10E	TDP30E	IC	d	s	r	la	α	
VC○○	VCGW	110302-1N	○	●	●	6.35	2.80	3.18	0.2	2.5	0°	
	VCGW	110304-1N	○	●	●	6.35	2.80	3.18	0.4	2.5	0°	
	VCGW	110308-1N	○	●	●	6.35	2.80	3.18	0.8	2.5	0°	
	VCGW	160402-1N	○	●	●	9.525	4.40	4.76	0.2	2.5	0°	
	VCGW	160404-1N	○	●	●	9.525	4.40	4.76	0.4	2.5	0°	
35° Posi	VCGW	160408-1N	○	●	●	9.525	4.40	4.76	0.8	2.5	0°	
	VCGT	110302-1N	○	●	●	6.35	2.80	3.18	0.2	2.5	3°-5°	
	VCGT	110304-1N	○	●	●	6.35	2.80	3.18	0.4	2.5	3°-5°	
	VCGT	110308-1N	○	●	●	6.35	2.80	3.18	0.8	2.5	3°-5°	
	VCGT	160402-1N	○	●	●	9.525	4.40	4.76	0.2	2.5	3°-5°	
	VCGT	160404-1N	○	●	●	9.525	4.40	4.76	0.4	2.5	3°-5°	
	VCGT	160408-1N	○	●	●	9.525	4.40	4.76	0.8	2.5	3°-5°	
	VCGW	110302-2N	○	○	○	6.35	2.80	3.18	0.2	2.5	0°	
	VCGW	110304-2N	○	○	○	6.35	2.80	3.18	0.4	2.5	0°	
	VCGW	110308-2N	○	○	○	6.35	2.80	3.18	0.8	2.5	0°	
	VCGW	160402-2N	○	○	○	9.525	4.40	4.76	0.2	2.5	0°	
	VCGW	160404-2N	○	○	○	9.525	4.40	4.76	0.4	2.5	0°	
	VCGW	160408-2N	○	○	○	9.525	4.40	4.76	0.8	2.5	0°	
	VCGT	110302-2N	○	○	○	6.35	2.80	3.18	0.2	2.5	3°-5°	
	VCGT	110304-2N	○	○	○	6.35	2.80	3.18	0.4	2.5	3°-5°	
	VCGT	110308-2N	○	○	○	6.35	2.80	3.18	0.8	2.5	3°-5°	
	VCGT	160402-2N	○	○	○	9.525	4.40	4.76	0.2	2.5	3°-5°	
	VCGT	160404-2N	○	○	○	9.525	4.40	4.76	0.4	2.5	3°-5°	
	VCGT	160408-2N	○	○	○	9.525	4.40	4.76	0.8	2.5	3°-5°	

External tool Holder Code System (ISO)

P	S	K	N	R	25	25	-	M	12
1	2	3	4	5	6	7		8	9

1 Clamping Method of inserts

P S K N R 25 25 - M 12

Top Clamping Without Hole	Top and hole clamping (Multi clamp, pin and clamp)	Top and hole clamping (Wedge clamp, pin and clamp)	Top and hole clamping (Multi clamp, pin and clamp)	Hole clamping (Pin lock)	Hole clamping (Screw lock)	Top and hole clamping (Wedge clamp, pin and clamp)
C	D	B	M	P	S	W

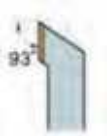
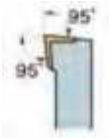
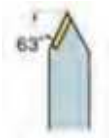
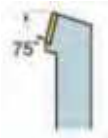
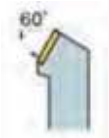
2 Inserts

P S K N R 25 25 - M 12

C	D	E	K	L	R	S	T	V	W

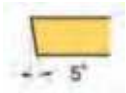
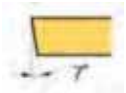
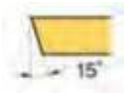
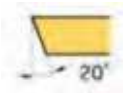
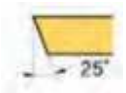
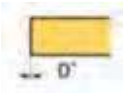
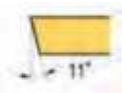
3 Holder Style

P S K N R 25 25 - M 12

						
B	D	E	F	G	J	K
						
L	N	R	S	T	V	Y

4 Relief Angle of Inserts

P S K **N** R 25 25 - M 12

						
B	C	D	E	F	N	P

5 Hand of tool

P S K N **R** 25 25 - M 12

L	N	R

6 Height of Shank

P S K N R **25** 25 - M 12

7 Width of Shank

P S K N R 25 **25** - M 12

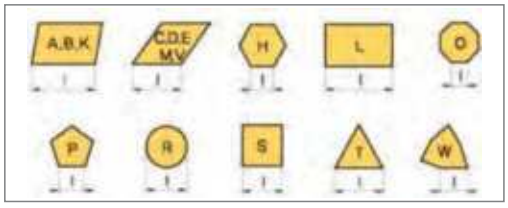
8 Lenght of Holder

P S K N R 25 25 - **M** 12

	A - 32 B - 40 C - 50 D - 60 E - 70 F - 80 G - 90	H - 100 J - 110 K - 125 L - 140 M - 150 N - 160 P - 170	Q - 180 R - 200 S - 250 T - 300 U - 350 V - 400 W - 450	X-Special item

9 Lenght of Insert Cutting Edge

P S K N R 25 25 - M **12**



Boring Bar Code System (ISO)

S	12	M	-	S	T	F	P	R	-	11
1	2	3		4	5	6	7	8		9

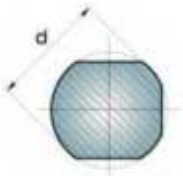
1 Type of Bar

S 12 M - S T F P R - 11

"A" Steel with coolant hole
"E" Carbide bar with fixed steel head and coolant hole
"C" Carbide shank
"S" Steel shank
"X" Special type

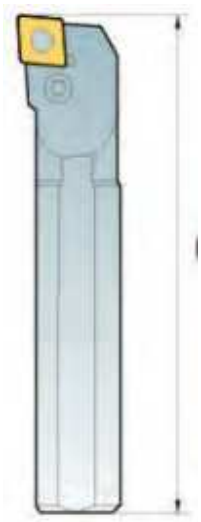
2 Bar Diameter

S 12 M - S T F P R - 11



3 Bar Lenght

S 12 M - S T F P R - 11



Length(L)	(mm)
H	100
J	110
K	125
M	150
N	160
Q	180
R	200
S	250
T	300
Y	350
V	400
W	450
Y	500

4 Method of Mounting Insert

S 12 M - S T F P R - 11

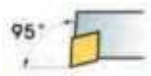
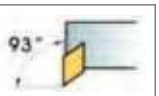
C	D
M	P
S	W

5 Insert Shape

S 12 M - S **T** F P R - 11

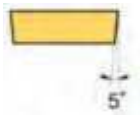
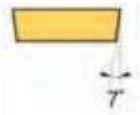
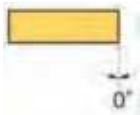
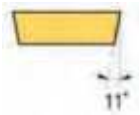
6 Lead Angle of Borning Bar

S 12 M - S T **F** P R - 11

		
L	F	U
K	Q	Z
J	W	

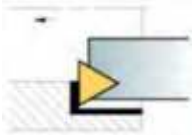
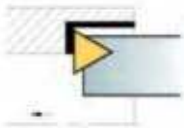
7 Relief Angle of Insert

S 12 M - S T F **P** R - 11

	
B	C
	
N	P

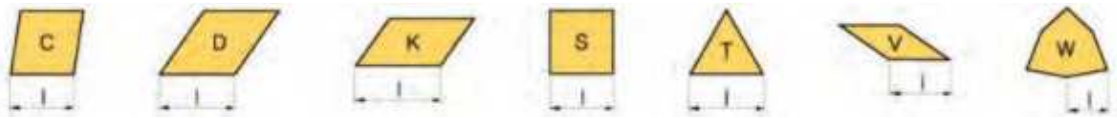
8 Hand of Bar

S 12 M - S T F P **R** - 11

	
R	L

9 Length of Cutting Edge

S 12 M - S T F P R - **11**



Cartridge Code System (ISO)

S	T	F	C	R	12	C	A	-	16
1	2	3	4	5	6	7	8		9

1 Method of Mounting Insert

S T F C R 12 C A - 16

TOP CLAMPING	HOLE CLAMPING	SCREW ON
C	P	S

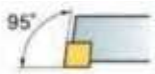
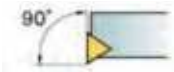
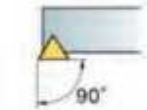
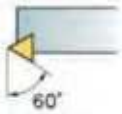
2 Insert Shape

S T F C R 12 C A - 16

C	S	T

3 Holder Style

S T F C R 12 C A - 16

			
L	S	F	R
			
K	G	W	T

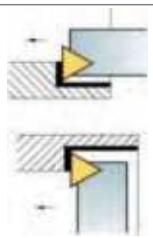
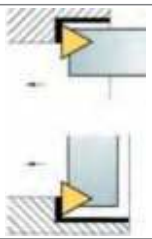
4 Relief Angle of Insert

S T F **C** R 12 C A - 16

C	P	N

5 Hand of tool

S T F C **R** 12 C A - 16

	
R	L

5 Height of Shank

S T F C R **12** C A - 16

7 Cartrige code

S T F C R 12 **C** A - 16

C
(cartridge)

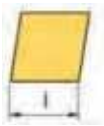
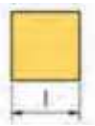
8 Type of cartridge

S T F C R 12 C **A** - 16

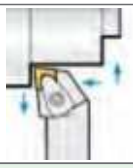
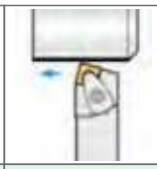
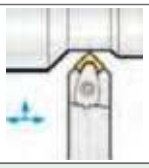
A
(ISO5611)

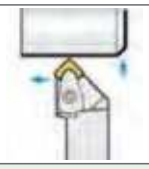
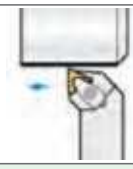
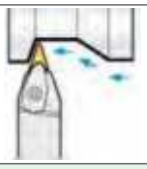
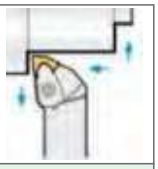
9 Length of Cutting Edge

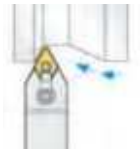
S T F C R 12 C A - **16**

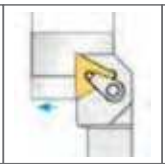
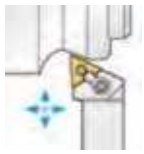
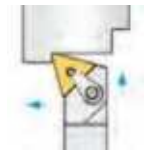
Index for Tool Holder

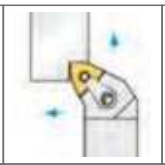
Cutting Shape							
Designation	DCBNR/L	DCKNR/L	DCLNR/L	DDJNR/L	DSBNR/L	DCDNN	DSKNR/L
Approach angle	45°	75°	95°	93°	75°	45°	75°
Page	177	177	178	178	179	179	180
Chamfering						●	
Back turning			●	●			
Turning	●		●	●	●	●	
Copying				●			
Facing		●	●				●

Cutting Shape							
Designation	DSSNR/L	DTFNR/L	DTGNR/L	DTJNR/L	DVJNR/L	DVVNN	DWLNR/L
Approach angle	45°	90°	90°	90°	93°	72.5°	95°
Page	180	181	181	182	182	183	183
Chamfering							
Back turning	●			●	●		●
Turning	●		●	●	●	●	●
Copying				●	●	●	
Facing	●	●					●

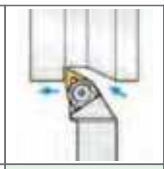
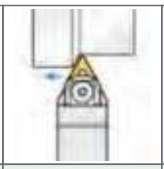
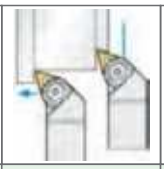
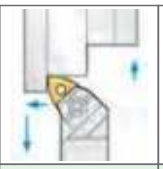
Cutting Shape							
Designation	MCBNR/L	MCKNR/L	MCLNR/L	MCMNN	MCMNN-100	MDJNR/L	MDPNN
Approach angle	75°	75°	95°	50°	40°	93°	62.5°
Page	184	184	185	185	186	186	187
Chamfering				●	●		
Back turning			●			●	
Turning	●		●	●	●	●	●
Copying						●	●
Facing		●	●		●		

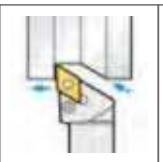
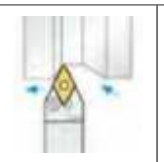
Cutting Shape							
Designation	MDQNR/L	MSBNR/L	MSDNN	MSKNR/L	MSSNR/L	MTENN	MTFNR/L
Approach angle	107.5°	75°	45°	75°	45°	60°	91°
Page	187	188	188	189	189	190	190
Chamfering			●		●	●	
Back turning	●						
Turning	●	●	●	●	●	●	●
Copying	●					●	
Facing				●	●		●

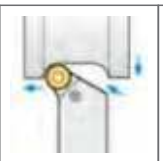
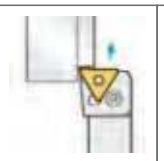
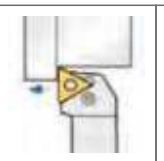
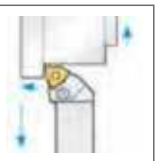
Cutting Shape							
Designation	MTGNR/L	MTJNR/L	MTQNR/L	MVJNR/L	MVQNR/L	MVUNR/L	MVVNN
Approach angle	91°	93°	105°	93°	117.5°	95°	72.5°
Page	191	191	192	192	193	193	194
Chamfering							
Back turning		●		●	●	●	
Turning	●	●	●	●	●	●	●
Copying		●	●	●	●	●	●
Facing	●	●	●				

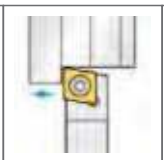
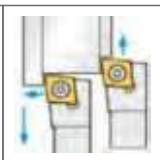
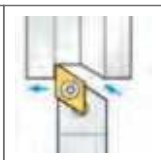
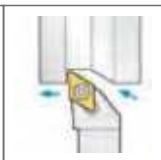
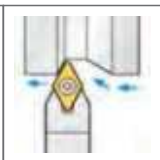
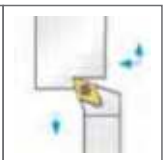
Cutting Shape							
Designation	MWLNR/L						
Approach angle	95°						
Page	194						
Chamfering							
Back turning							
Turning	●						
Copying							
Facing	●						

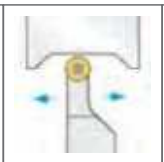
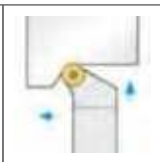
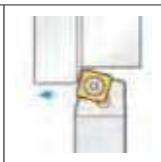
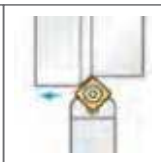
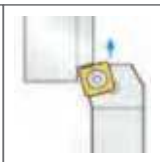
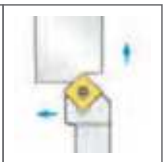
Index for Tool Holder

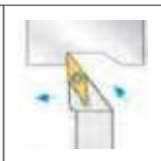
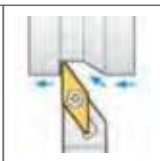
Cutting Shape							
Designation	WTJNR/L	WTENN	WTQNR/L	WWLNR/L			
Approach angle	93°	60°	105°	95°			
Page	195	195	196	196			
Chamfering		●					
Back turning	●		●	●			
Turning	●	●	●	●			
Copying	●	●	●				
Facing			●	●			

Cutting Shape							
Designation	PCKNR/L	PCLNR/L	PCBNR/L	PDJNR/L	PDNNR/L	PSBNR/L	PSDNN
Approach angle	75°	95°	75°	93°	62.5°	75°	45°
Page	197°	197	198	198	199	199	200
Chamfering					●		●
Back turning		●		●			
Turning	●	●	●	●	●	●	●
Copying				●	●		
Facing	●	●					

Cutting Shape							
Designation	PSKNR/L	PSSNR/L	PRDCN	PRGCR/L	PTFNR/L	PTG(J)NR/L	PWLNR/L
Approach angle	75°	45°	-	-	91°	90°	95°
Page	200	201	201	202	202	203	203
Chamfering		●					
Back turning							
Turning	●	●	●	●	●	●	●
Copying			●	●			
Facing	●				●		●

Cutting Shape							
Designation	SCACR/L	SCKCR/L	SCLCR/L	SDACR/L	SDJCR/L	SDNCN	SDQCR/L
Approach angle	90°	75°	95°	90°	93°	62.5°	107.5°
Page	204	204	205	205	203	206	207
Chamfering							
Back turning			●	●	●		●
Turning	●	●	●	●	●	●	●
Copying				●	●	●	●
Facing		●	●				●

Cutting Shape							
Designation	SRACR/L	SRDCN	SRGCR/L	SSBCR/L	SSDCN	SSKCR/L	SSSCR/L
Approach angle	-	-	-	75°	45°	75°	45°
Page	207	208	208	209	209	210	210
Chamfering					●		●
Back turning							
Turning	●	●	●	●	●	●	●
Copying	●	●	●				
Facing						●	●

Cutting Shape							
Designation	STACR/L	STGCR/L	STFCR/L	STWCR/L	SVJBR/L SVJCR/L	SVABR/L SVACR/L	SVQBR/L
Approach angle	90°	91°	91°	60°	93°	90°	117.5°
Page	211	211	212	212	213	214	215
Chamfering				●			
Back turning					●	●	●
Turning	●	●	●	●	●	●	●
Copying					●	●	●
Facing			●	●			

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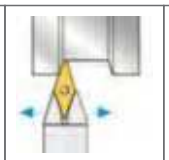
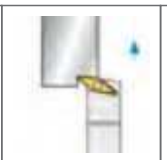
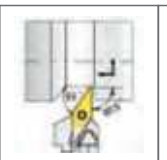
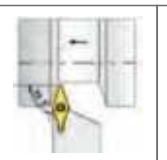
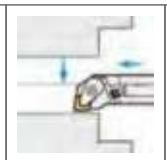
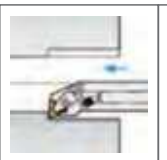
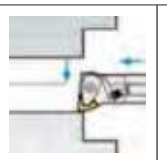
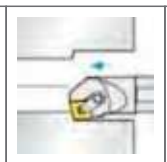
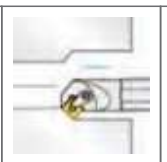
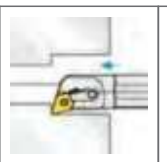
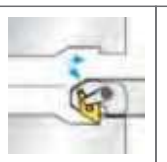
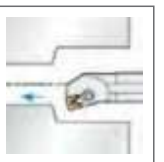
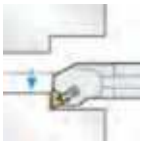
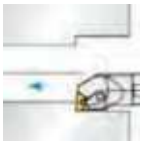
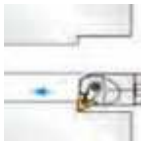
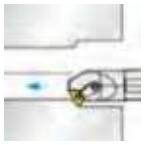
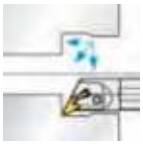
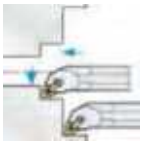
Cutting Shape							
Designation	SVHBR/L SVHCR/L	SVVBN SVVCN	SVUBR/L SVUCR/L	SVKCR	SVVCR/L		
Approach angle	107.5°	72.5°	95°	90.5°	92.5°		
Page	216	217	218	214	218		
Chamfering					●		
Back turning	●						
Turning	●	●	●	●	●		
Copying	●	●		●	●		
Facing			●	●			

Cutting Shape							
Designation	DCLNR/L	DDUNR/L	DSKNR/L	DTFNR/L	DWLNR/L		
Approach angle	95°	93°	75°	90°	95°		
Page	219	220	221	221	222		
Chamfering							
Back turning		●					
Turning	●	●	●	●	●		
Copying		●					
Facing	●				●		

Cutting Shape							
Designation	MCKNR/L	MCLNR/L	MCWNR/L	MDQNR/L	MDUNR/L	MDZNR/L	MSKNR/L
Approach angle	75°	95°	50°	107.5°	95°	93°	75°
Page	223	224	223	224	225	225	226
Chamfering			●				
Back turning				●	●	●	
Turning	●	●	●	●	●	●	●
Copying				●	●	●	
Facing		●					

Cutting Shape							
Designation	MTFNR/L	MTUNR/L	MTUNR/L-R	MTWNR/L	MTQNR/L	MVQNR/L	MVUNR/L
Approach angle	91°	95°	95°	60°	105°	117.5°	95°
Page	226	227	227	228	228	229	229
Chamfering				●			
Back turning						●	●
Turning	●	●	●	●	●	●	●
Copying						●	●
Facing	●		●				

Cutting Shape							
Designation	MVXNR/L	MWLNR/L					
Approach angle	139°	95°					
Page	230	230					
Chamfering							
Back turning							
Turning	●	●					
Copying	●						
Facing		●					

Cutting Shape							
Designation	WTQNR/L	WTUNR/L					
Approach angle	105°	95°					
Page	231	231					
Chamfering							
Back turning							
Turning	●	●					
Copying							
Facing							

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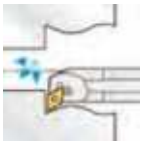
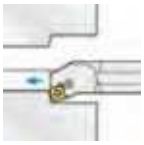
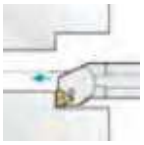
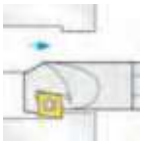
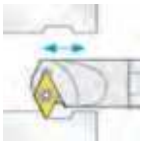
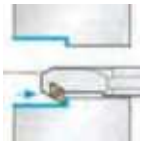
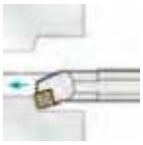
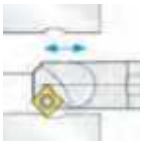
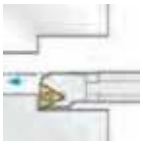
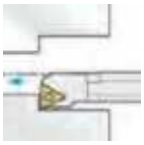
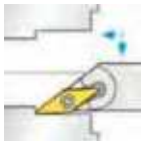
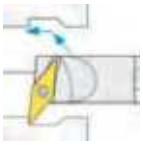
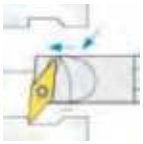
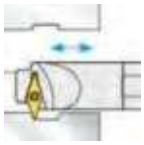
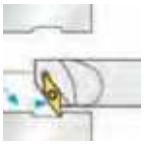
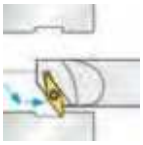
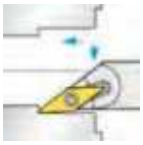
Cutting Shape							
Designation	PCLNR/L	PDUNR/L	PDSNR/L	PSKNR/L	PTFNR/L	PWLNR/L	
Approach angle	95°	93°	62.5°	75°	91°	95°	
Page	232	232	233	233	234	234	
Chamfering							
Back turning		●	●			●	
Turning	●	●	●	●	●	●	
Copying		●	●				
Facing	●			●		●	

Cutting Shape							
Designation	SCKCR/L	SCLCR/L	SCZCR/L	SDQCR/L	SDUCR/L	SDWCR/L	SDZCR/L
Approach angle	75°	95°	93°	107.5°	93°	62.5°	93°
Page	235	235-236	237	237	238	239	238
Chamfering						●	
Back turning			●	●	●	●	●
Turning	●	●	●	●	●	●	●
Copying				●	●	●	
Facing		●					

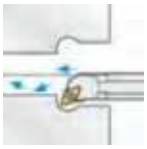
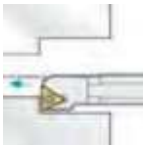
Cutting Shape							
Designation	SSKCR/L	SSSCR/L	STFCR/L	STFPR/L	STUCR/L	STUPR/L	STWCR/L
Approach angle	75°	45°	91°	91	93°	93°	60°
Page	239	240	241	240	242	243	244
Chamfering							●
Back turning		●					●
Turning	●	●	●	●	●	●	
Copying		●					●
Facing							

Cutting Shape							
Designation	STUBR/L	SVJBR/L	SVJCR/L	SVQBR/L	SVQCR/L	SVXBR/L	SVXCR/L
Approach angle	93°	93°	93°	117.5°	117.5°	96°	96°
Page	243	245	245	246	246	247	247
Chamfering							
Back turning				●	●		
Turning	●	●	●	●	●	●	●
Copying		●	●	●	●		
Facing						●	●

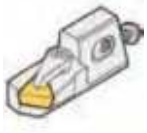
Cutting Shape							
Designation	SVUBR/L	SVUCR/L	SVWBR/L	SVWCR/L	SVZBR/L	SVZCR/L	SVJBR/L
Approach angle	93°	93°	72.5°	72.5°	93°	93°	93°
Page	248	248	249	249	250	250	251
Chamfering							
Back turning	●	●	●	●	●	●	
Turning	●	●	●	●	●	●	●
Copying	●	●			●	●	●
Facing							

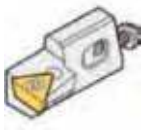
Cutting Shape							
Designation	SVJCR/L	SWLCR/L	SWUBR/L	SEXP			
Approach angle	93°	95°	93°	100°			
Page	251	251	252	252			
Chamfering							
Back turning		●					
Turning	●	●	●	●			
Copying	●						
Facing		●					

Index for Tool Holder

Cutting Shape							
Designation	SCLCR/L	SDQCR/L	SDUCR/L	STFPR/L	STFCR/L	STUPR/L	STUCR/L
Approach angle	95°	107.5°	93°	91°	91°	93°	93°
Page	253	254	254	255	255	256	256
Chamfering							
Back turning		●	●				
Turning	●	●	●	●	●	●	●
Copying		●					
Facing	●						

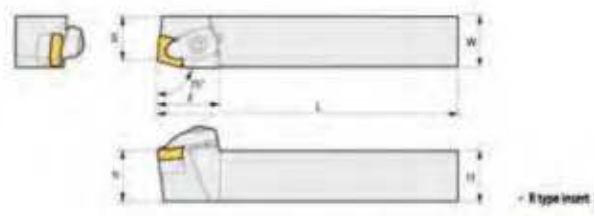
Cutting Shape							
Designation	SWUBR/L						
Approach angle	93°						
Page	257						
Chamfering							
Back turning							
Turning	●						
Copying							
Facing	●						

Cutting Shape							
Designation	CSKPR/L	CTFPR/L	CTSPR/L	CTTPR/L	CTWPR/L	STTCR/L	STWCR/L
Approach angle	75°	90°	45°	60°	60°	60°	60°
Page	261	261	262	262	263	264	264
Chamfering							
Back turning							
Turning	●	●	●	●	●	●	●
Copying							
Facing	●						

Cutting Shape							
Designation	SSKCR/L	SSSCR/L	STFCR/L				
Approach angle	75°	45°	90°				
Page	265	265	266				
Chamfering		●					
Back turning							
Turning	●	●	●				
Copying							
Facing	●						

Double Clamp System

DCBNR/L

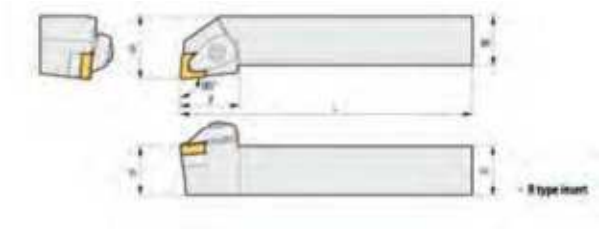


Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
	R	L	H	W	L	ℓ	h	S							
DCBNR/L 2020K12	●	●	20	20	125	31	20	17	CN□□1204□□	CVH54	CHX0518	MSC-432	DSP0611F	SPR0714	HW30L
DCBNR/L 2525M12	●	●	25	25	150	31	25	22							
DCBNR/L 3232P12			32	32	170	31	32	29							

DCKNR/L

Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
	R	L	H	W	L	ℓ	h	S							
DCKNR/L 2020K12	●	●	20	20	125	21	20	25	CN□□1204□□	CVH54	CHX0518	MSC-432	DSP0611F	SPR0714	HW30L
DCKNR/L 2525M12	●	●	25	25	150	21	25	32							
DCKNR/L 3225P12			32	25	170	21	32	32							
DCKNR/L 3232P12			32	32	170	21	32	32							

DCLNR/L



Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
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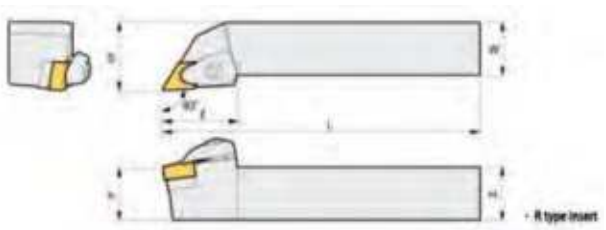
DCLNR/L 2020K09	●	●	20	20	125	24.5	20	25	CN□□0903□□	CVH43	CHX0415	MSC-322	DSP0408F	SPR0510	HW25L
DCLNR/L 2525M09	●	●	25	25	150	24.5	25	32							
DCLNR/L 2020K12	●	●	20	20	125	30	20	25	CN□□1204□□	CVH54	CHX0518	MSC-432	DSP0611F	SPR0714	HW30L
DCLNR/L 2525M12	●	●	25	25	150	30	25	32							
DCLNR/L 3225P12	●	●	32	25	170	30	32	32							
DCLNR/L 3232P12	●	●	32	32	170	30	32	40							

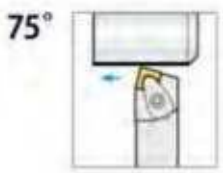
DDJNR/L

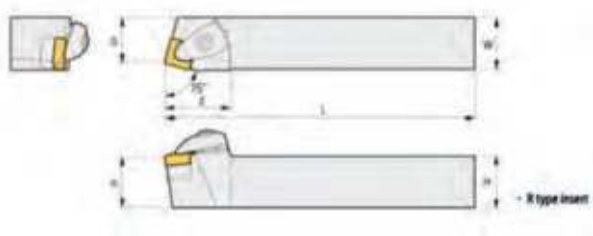


Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
	R	L	H	W	L	ℓ	h	S							
DDJNR/L 2020K11	●	●	20	20	125	30	20	25	DN□□1104□□	CVH43	CHX0415	MSD-322	DSP0408F	SPR0510	HW25L
DDJNR/L 2525M11	●	●	25	25	150	30	25	32							
DDJNR/L 3225P11			32	25	170	30	32	32							
DDJNR/L 3232P11			32	32	170	30	32	40							
DDJNR/L 2020K15	●	●	20	20	125	35	20	25	DN□□1504□□ DN□□1506□□	CVH54	CHX0518	MSC-432 MSD-442	DSP0611F	SPR0714	HW30L
DDJNR/L 2525M15	●	●	25	25	150	35	25	32							
DDJNR/L 3225P15			32	25	170	35	32	32							
DDJNR/L 3232P15	●	●	32	32	170	35	32	40							

Double Clamp System

DSBNR/L





Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
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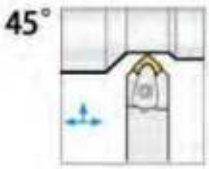
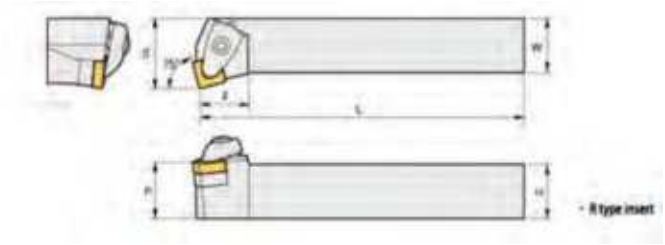
DSBNR/L 2020K12	●	●	20	20	125	32	20	17	SN□□1204□□	CVH54	CHX0518	MSS-432	DSP0611F	SPR0714	HW30L
DSBNR/L 2525M12	●	●	25	25	150	32	25	22							
DSBNR/L 3232P12			32	32	170	32	32	29							

DSDNN



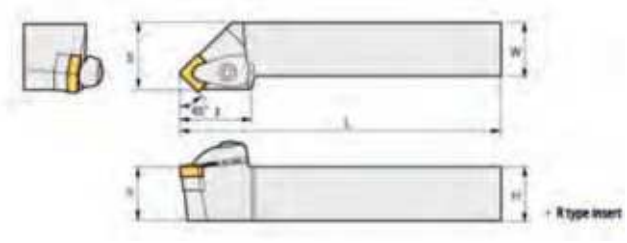
Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
	R	L	H	W	L	ℓ	h	S							
DSDNN 2020K09	●	●	20	20	125	26.5	20	10	SN□□0903□□	CVH43	CHX0415	MSS-322	DSP0408F	SPR0510	HW25L
DSDNN 2020K12	●	●	20	20	125	33	20	10	SN□□1204□□	CVH54	CHX0518	MSS-432	DSP0611F	SPR0714	HW30L
DSDNN 2525M12			25	25	150	33	25	12.5							
DSDNN 3225P12			32	25	170	33	32	12.5							
DSDNN 3232P12	●	●	32	32	170	33	32	16							

DSKNR/L



Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
	R	L	H	W	L	ℓ	h	S							
DSKNR/L 2020K09			20	20	125	20	20	25	SN□□0903□□	CVH43	CHX0415	MSS-322	DSP0408F	SPR0510	HW25L
DSKNR/L 2020K12	●	●	20	20	125	23	20	25	SN□□1204□□	CVH54	CHX0518	MSS-432	DSP0611F	SPR0714	HW30L
DSKNR/L 2525M12	●	●	25	25	150	23	25	32							
DSKNR/L 3232P12	●	●	32	32	170	23	32	40							

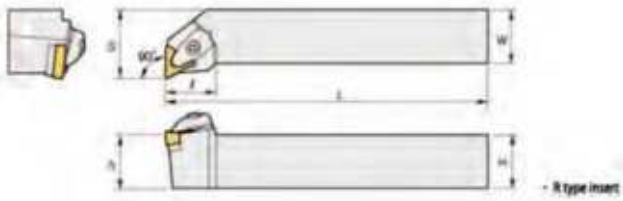
DSSNR/L



Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
	R	L	H	W	L	ℓ	h	S							
DSSNR/L 2020K09			20	20	125	28.5	20	25	SN□□0903□□	CVH43	CHX0415	MSS-322	DSP0408F	SPR0510	HW25L
DSSNR/L 2020K12	●	●	20	20	125	35	20	25	SN□□1204□□	CVH54	CHX0518	MSS-432	DSP0611F	SPR0714	HW30L
DSSNR/L 2525M12	●	●	25	25	150	35	25	32							
DSSNR/L 3225P12			32	25	170	35	32	32							
DSSNR/L 3232P12	●	●	32	32	170	35	32	40							

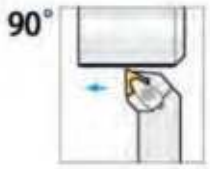
Double Clamp System

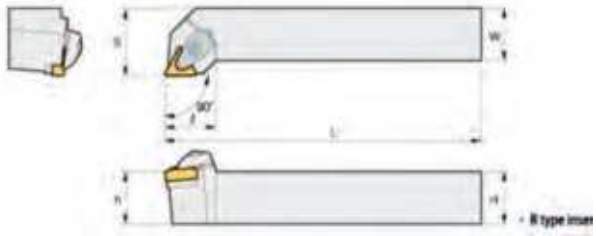
DTFNR/L



Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
	R	L	H	W	L	ℓ	h	S							
DTFNR/L 2020K16	●	●	20	20	125	24.5	20	25	TN□□1604□□	CVH43	CHX0415	MST-322	DSP0408F	SPR0510	HW25L
DTFNR/L 2525M16	●	●	25	25	150	24.5	25	32							
DTFNR/L 3232P16	●	●	32	32	170	23.5	32	40							
DTFNR/L 2525M22	●		25	25	150	33	25	32	TN□□2204□□	CVH54	CHX0518	MST-432	DSP0611F	SPR0714	HW30L
DTFNR/L 3225P22			32	25	170	33	32	32							
DTFNR/L 3232P22	●		32	32	170	33	32	40							

DTGNR/L





Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
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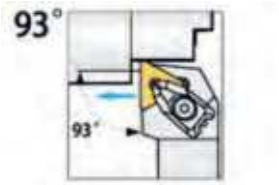
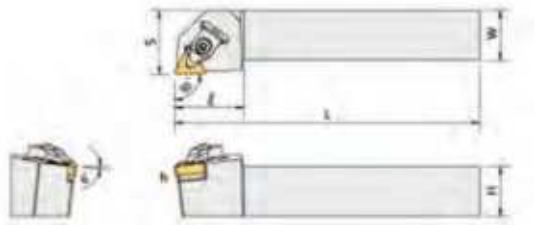
DTGNR/L 2020K16	●	●	20	20	125	24.5	20	25	TN□□1604□□	CVH43	CHX0415	MST-322	DSP0408F	SPR0510	HW25L
DTGNR/L 2525M16	●	●	25	25	150	24.5	25	32							
DTGNR/L 3232P16	●	●	32	32	170	24.5	32	40							
DTGNR/L 2525M22	●		25	25	150	32.6	25	32	TN□□2204□□	CVH54	CHX0518	MST-432	DSP0611F	SPR0714	HW30L
DTGNR/L 3225P22			32	25	170	32.6	32	32							
DTGNR/L 3232P22	●		32	32	170	32.6	32	40							

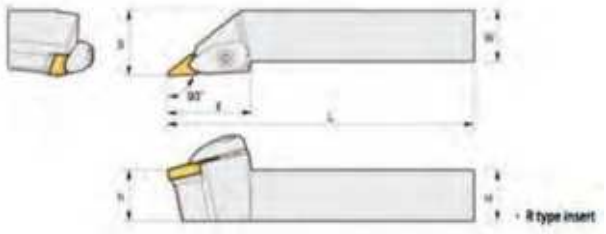
DTJNR/L





Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
	R	L	H	W	L	ℓ	h	S							
DTJNR/L 2020K16	●	●	20	20	125	24.5	20	25	TN□□1604□□	CVH43	CHX0415	MST-322	DSP0408F	SPR0510	HW25L
DTJNR/L 2525M16	●	●	25	25	150	24.5	25	32							
DTJNR/L 3232P16	●	●	32	32	170	23.5	32	40							
DTJNR/L 2525M22	●		25	25	150	32.6	25	32	TN□□2204□□	CVH54	CHX0518	MST-432	DSP0611F	SPR0714	HW30L
DTJNR/L 3225P22			32	25	170	32.6	32	32							
DTJNR/L 3232P22	●		32	32	170	32.6	32	40							

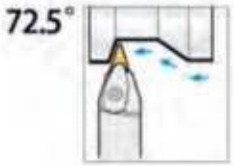
DVJNR/L

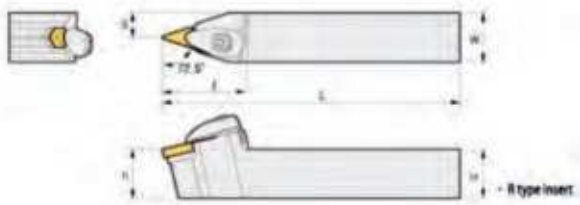


Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
	R	L	H	W	L	ℓ	h	S							
DVJNR/L 2020K16	●	●	20	20	125	41.5	20	25	VN□□1604□□	CVH63	CHX0625	MSV-322	DSP0508F	SPR0814	HW40L
DVJNR/L 2525M16	●	●	25	25	150	41.5	25	32							
DVJNR/L 3232P16	●	●	32	32	170	41.5	32	40							

Double Clamp System

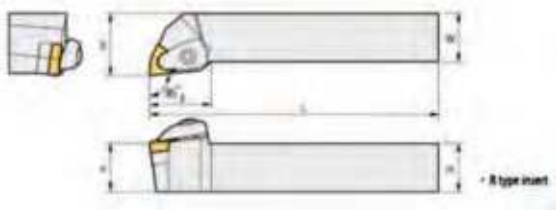
DVVNN





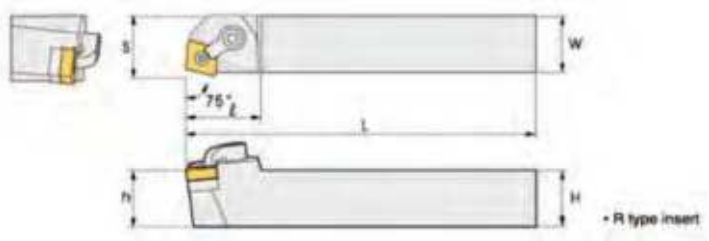
Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
	R	L	H	W	L	ℓ	h	S							
DVVNN 2020K16	●		20	20	125	40	20	10	VN□□1604□□	CVH63	CHX0625	MSV-322	DSP0408F	SPR0814	HW40L
DVVNN 2525M16	●		25	25	150	40	25	12.5							
DVVNN 3232P16	●		32	32	170	40	32	16							

DWLNR/L



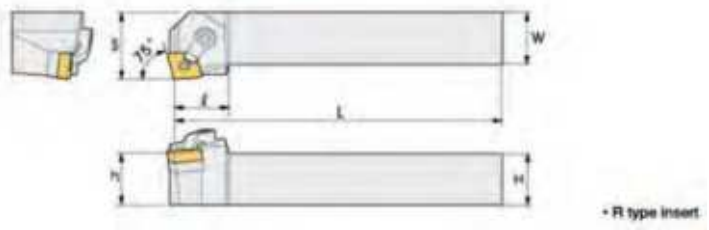
Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
	R	L	H	W	L	ℓ	h	S							
DWLNR/L 2020K06	●		20	20	125	26	20	25	WN□□0604□□	CVH43	CHX0415	MSW-322	DSP0408F	SPR0510	HW25L
DWLNR/L 2525M06	●		25	25	150	26	25	32							
DWLNR/L 2020K08	●	●	20	20	125	32	20	25	WN□□0804□□	CVH54	CHX0518	MSW-432	DSP0611F	SPR0714	HW30L
DWLNR/L 2525M08	●	●	25	25	150	32	25	32							
DWLNR/L 3225P08	●		32	25	170	32	32	32							
DWLNR/L 3232P08	●	●	32	32	170	32	32	40							

MCBNR/L



Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MCBNR/L 2020K12	●	●	20	20	125	32	20	20.7	CN□□1204□□	MSC-432	MLP406	MCP618	MCS625-3	HW25L HW30L
MCBNR/L 2525M12	●	●	25	25	150	32	25	25.2						
MCBNR/L 3232P12	●	●	32	32	170	32	32	30.8						
MCBNR/L 2525M16			25	25	150	36	25	22.0	CN□□1606□□	MSC-533	MLP508	MCP822	MCS830-4	HW30L HW40L
MCBNR/L 3232P16			32	32	170	40	32	31.9						
MCBNR/L 3232P19			32	32	170	40	32	32.7	CN□□1906□□	MSC-633	MLP610	MCP822	MCS830-4	HW40L

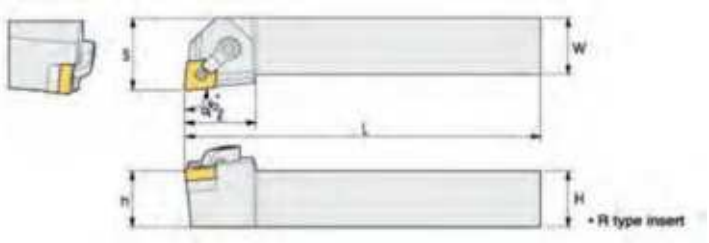
MCKNR/L



Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MCKNR/L 2020K12	●	●	20	20	125	28	20	25	CN□□1204□□	MSC-432	MLP406	MCP618	MCS625-3	HW25L HW30L
MCKNR/L 2525M12	●	●	25	25	150	28	25	32						
MCKNR/L 3232P12	●	●	32	32	170	35	32	40						
MCKNR/L 2525M16			25	25	150	32	25	32	CN□□1606□□	MSC-533	MLP508	MCP822	MCS830-4	HW30L HW40L
MCKNR/L 3232P16			32	32	170	35	32	40						
MCKNR/L 3232P19			32	32	170	38	32	40	CN□□1906□□	MSC-633	MLP610	MCP822	MCS830-4	HW40L

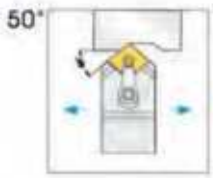
Multi Lock System

MCLNR/L



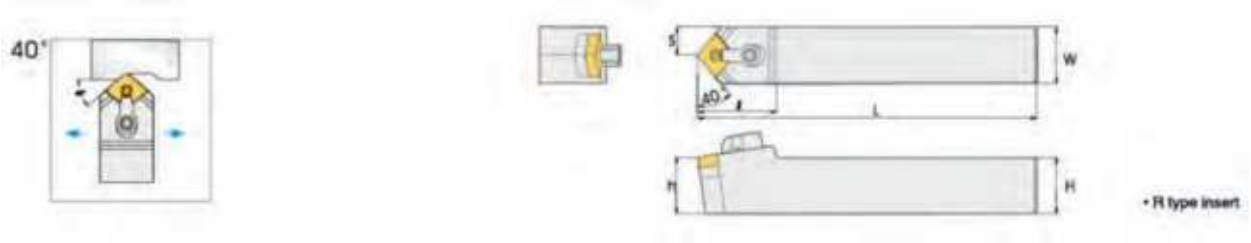
Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MCLNR/L 1616H09			16	16	100	25	16	20	CN□□0903□□	MSC-322	MLP305	MCP618	MCS625-3	HW20L HW30L
MCLNR/L 2020K09			20	20	125	25	20	20						
MCLNR/L 2020K12	●	●	20	20	125	32	20	25	CN□□1204□□	MSC-432	MLP406	MCP618	MCS625-3	HW25L HW30L
MCLNR/L 2525M12	●	●	25	25	150	32	25	32						
MCLNR/L 3232P12	●	●	32	32	170	32	32	40						
MCLNR/L 2525M16	●	●	25	25	150	34	25	32	CN□□1606□□	MSC-533	MLP508	MCP822	MCS830-4	HW30L HW40L
MCLNR/L 3225P16			32	25	170	35	32	32						
MCLNR/L 3232P16	●	●	32	32	170	34	32	40						
MCLNR/L 3232P19			32	32	170	38	32	40	CN□□1906□□	MSC-633	MLP610	MCP822	MCS830-4	HW40L
MCLNR/L 4040R19			40	40	200	38	40	50						
MCLNR/L 4040S25			40	40	250	38	40	50	CN□□2507□□ CN□□2509□□	MSC-844 MSC-854	MLP812	MCP1032	MCS1035-6	HW40L HW50L

MCMNN



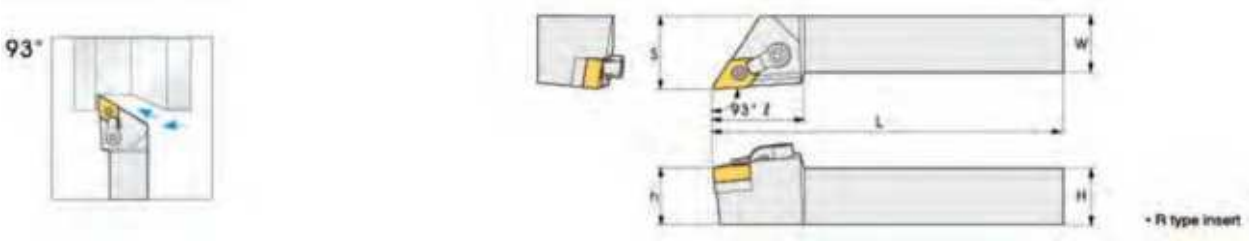
Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MCMNN 2020K12	●		20	20	125	35	20	10	CN□□1204□□	MSC-432	MLP406	MCP618	MCS625-3	HW25L HW30L
MCMNN 2525M12	●		25	25	150	35	25	12.5						
MCMNN 3232P12			32	32	170	38	32	16						
MCMNN 2525M16			25	25	150	43	25	12.5	CN□□1606□□	MSC-533	MLP508	MCP822	MCS830-4	HW30L HW40L
MCMNN 3232P16			32	32	170	42	32	16						

MCMNN-100



Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MCMNN 2020K12-100	●		20	20	125	35	20	10	CN□□1204□□	MSC-432	MLP406	MCP618	MCS625-3	HW25L HW30L
MCMNN 2525M12-100	●		25	25	150	35	25	12.5						
MCMNN 3232P12-100			32	32	170	35	32	16						
MCMNN 2525M16-100			25	25	150	43	25	12.5	CN□□1606□□	MSC-533	MLP508	MCP822	MCS830-4	HW30L HW40L
MCMNN 3232P16-100			32	32	170	45	32	16						

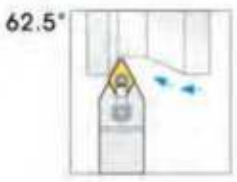
MDJNR/L

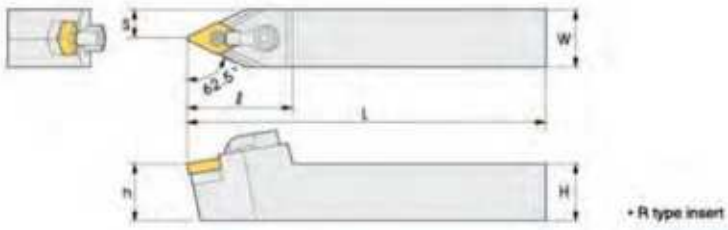


Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MDJNR/L 1616H11	●	●	16	16	100	34	16	20	DN□□1104□□	MSD-322	MLP305	MCP621	MCS625-3	HW20L HW30L
MDJNR/L 2020K11	●	●	20	20	125	34	20	25						
MDJNR/L 2525M11	●	●	25	25	150	34	25	32						
MDJNR/L 2020K15	●	●	20	20	125	38	20	25	DN□□1504□□ DN□□1506□□	MSD-432 MSD-442	MLP406L	MCP621	MCS625-3	HW25L HW35L
MDJNR/L 2525M15	●	●	25	25	150	38	25	32						
MDJNR/L 3232P15	●	●	32	32	170	40	32	40						
MDJNR/L 4040R15			40	40	200	40	40	48						

Multi Lock System

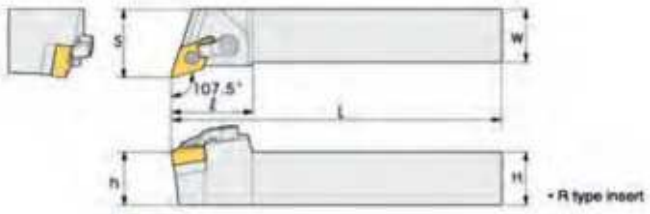
MDPNN





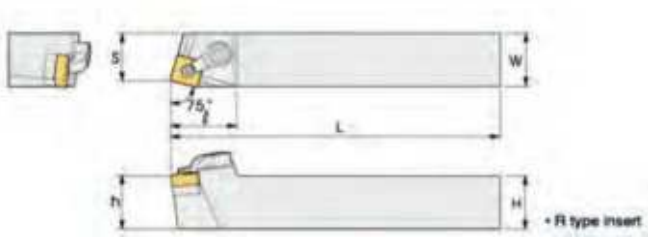
Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MDPNN 1616H11	●		16	16	100	38	16	8	DN□□1104□□	MSD-322	MLP305	MCP621	MCS625-3	HW20L HW30L
MDPNN 2020K11	●		20	20	125	38	20	10						
MDPNN 2525M11	●		25	25	150	37	25	12.5						
MDPNN 2020K15	●		20	20	125	43	20	10	DN□□1504□□ DN□□1506□□	MSD-432 MSD-442	MLP406L	MCP621	MCS625-3	HW25L HW35L
MDPNN 2525M15	●		25	25	150	43	25	12.5						
MDPNN 3232P15	●		32	32	170	44	32	16						

MDQNR/L



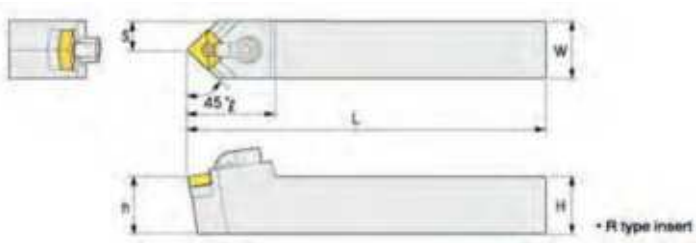
Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MDQNR/L 1616H11	●	●	16	16	100	31	16	20	DN□□1104□□	MSD-322	MLP305	MCP618	MCS625-3	HW20L HW30L
MDQNR/L 2020K11	●	●	20	20	125	31	20	25						
MDQNR/L 2525M11	●	●	25	25	150	34	25	32						
MDQNR/L 2020K15	●	●	20	20	125	37	20	25	DN□□1504□□ DN□□1506□□	MSD-432 MSD-442	MLP406L	MCP621	MCS625-3	HW25L HW35L
MDQNR/L 2525M15	●	●	25	25	150	34	25	32						
MDQNR/L 3232P15	●	●	32	32	170	37	32	40						

MSBNR/L



Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MSBNR/L 2020K12	●	●	20	20	125	32	20	17	SN□□1204□□	MSS-432	MLP406	MCP618	MCS625-3	HW25L HW30L
MSBNR/L 2525M12	●	●	25	25	150	32	25	22						
MSBNR/L 3232P12	●	●	32	32	170	35	32	29						
MSBNR/L 2525M15			25	25	150	35	25	22	SN□□1506□□	MSS-533	MLP508	MCP822	MCS830-4	HW30L HW40L
MSBNR/L 3232P15			32	32	170	35	32	27						
MSBNR/L 3232P19			32	32	170	42	32	27	SN□□1906□□	MSS-633	MLP610	MCP822	MCS830-4	HW40L
MSBNR/L 4040R19			40	40	200	42	40	35						

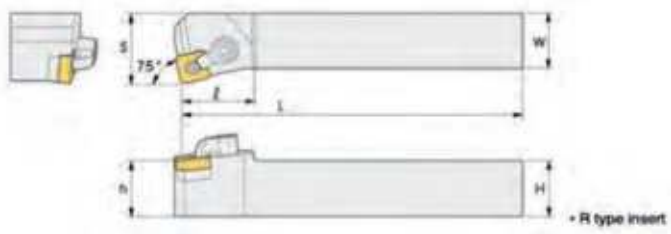
MSDNN



Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MSDNN 1616H12	●		16	16	100	35	16	8	SN□□1204□□	MSS-432	MLP406	MCP618	MCS625-3	HW25L HW30L
MSDNN 2020K12	●		20	20	125	35	20	10						
MSDNN 2525M12	●		25	25	150	35	25	12.5						
MSDNN 3232P12	●		32	32	170	38	32	16						
MSDNN 2525M15			25	25	150	43	25	12.5	SN□□1506□□	MSS-533	MLP508	MCP822	MCS830-4	HW30L HW40L
MSDNN 3232P15			32	32	170	45	32	16						
MSDNN 3232P19			32	32	170	47	32	16	SN□□1906□□	MSS-633	MLP610	MCP822	MCS830-4	HW40L
MSDNN 4040R19			40	40	200	47	40	20						
MSDNN 4040S25			40	40	250	60	40	20	SN□□2507□□ SN□□2509□□	MSS-844 MSS-854	MLP812	MCP1032	MCS1035-6	HW40L HW50L

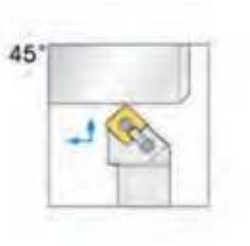
Multi Lock System

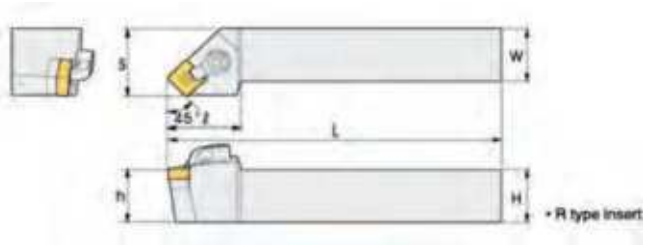
MSKNR/L



Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MSKNR/L 2020K12	●	●	20	20	125	29	20	25	SN□□1204□□	MSS-432	MLP406	MCP618	MCS625-3	HW25L HW30L
MSKNR/L 2525M12	●	●	25	25	150	29	25	32						
MSKNR/L 3232P12	●	●	32	32	170	32	32	40						
MSKNR/L 2525M15	●	●	25	25	150	33	25	32	SN□□1506□□	MSS-533	MLP508	MCP822	MCS830-4	HW30L HW40L
MSKNR/L 3232P15			32	32	170	35	32	40						
MSKNR/L 3232P19			32	32	170	35	32	40	SN□□1906□□	MSS-633	MLP610	MCP822	MCS830-4	HW40L
MSKNR/L 4040R19			40	40	200	38	40	50						

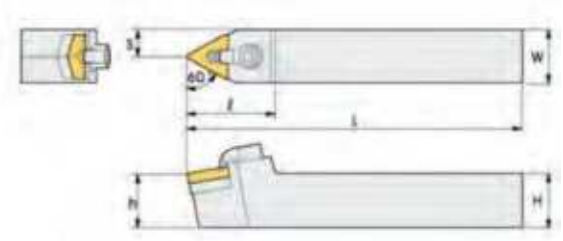
MSSNR/L





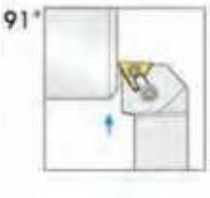
Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MSSNR/L 1616H12	●	●	16	16	100	34	16	20	SN□□1204□□	MSS-432	MLP406	MCP618	MCS625-3	HW25L HW30L
MSSNR/L 2020K12	●	●	20	20	125	33	20	25						
MSSNR/L 2525M12	●	●	25	25	150	35	25	32						
MSSNR/L 3232P12	●	●	32	32	170	35	32	40						
MSSNR/L 2525M15	●	●	25	25	150	41	25	32	SN□□1506□□	MSS-533	MLP508	MCP822	MCS830-4	HW30L HW40L
MSSNR/L 3232P15			32	32	170	42	32	40						
MSSNR/L 3232P19			32	32	170	45	32	40	SN□□1906□□	MSS-633	MLP610	MCP822	MCS830-4	HW40L
MSSNR/L 4040R19			40	40	200	45	40	50						
MSSNR/L 4040S25			40	40	250	60	40	50	SN□□2507□□ SN□□2509□□	MSS-844 MSS-854	MLP812	MCP1032	MCS1035-6	HW40L HW50L

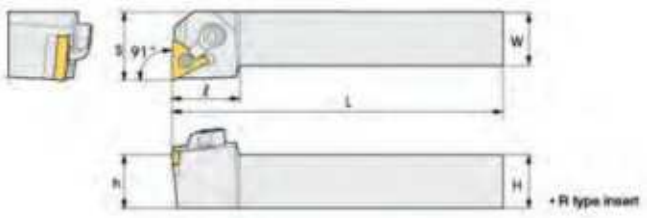
MTENN



Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MTENN 1616H16	●		16	16	100	34	16	8	TN□□1604□□	MST-322	MLP305	MCP618	MCS625-3	HW20L HW30L
MTENN 2020K16	●		20	20	125	34	20	10						
MTENN 2525M16	●		25	25	150	34	25	12.5						
MTENN 3232P16	●		32	32	170	34	32	16						
MTENN 4040R16			40	40	200	35	40	20						
MTENN 2525M22	●		25	25	150	38	25	12.5	TN□□2204□□	MST-422	MLP406	MCP819	MCS830-4	HW25L HW40L
MTENN 3232P22	●		32	32	170	40	32	16						
MTENN 4040R22			40	40	200	38	40	20						
MTENN 3232P27			32	32	170	40	32	16	TN□□2706□□	MST-533	MLP508	MCP822	MCS830-4	HW30L HW40L

MTFNR/L

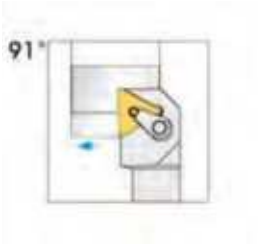


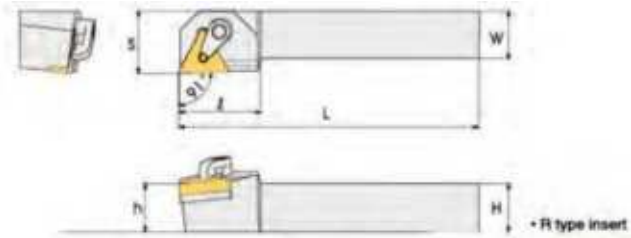


Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MTFNR/L 1616H16	●	●	16	16	100	29	16	20	TN□□1604□□	MST-322	MLP305	MCP618	MCS625-3	HW20L HW30L
MTFNR/L 2020K16	●	●	20	20	125	29	20	25						
MTFNR/L 2525M16	●	●	25	25	150	30	25	32						
MTFNR/L 3232P16			32	32	170	32	32	40						
MTFNR/L 2525M22			25	25	150	36	25	32	TN□□2204□□	MST-422	MLP406	MCP819	MCS830-4	HW25L HW40L
MTFNR/L 3232P22			32	32	170	36	32	40						

Multi Lock System

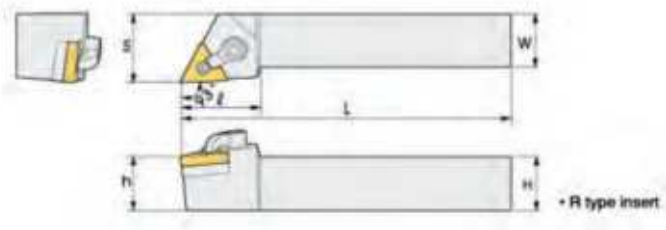
MTGNR/L





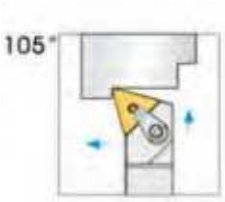
Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MTGNR/L 1616H16	●	●	16	16	100	29	16	20	TN□□1604□□	MST-322	MLP305	MCP618	MCS625-3	HW20L HW30L
MTGNR/L 2020K16	●	●	20	20	125	29	20	25						
MTGNR/L 2525M16	●	●	25	25	150	30	25	32						
MTGNR/L 3232P16			32	32	170	32	32	40						
MTGNR/L 2525M22			25	25	150	32	25	32	TN□□2204□□	MST-432	MLP406	MCP819	MCS830-4	HW25L HW40L
MTGNR/L 3232P22			32	32	170	32	32	40						

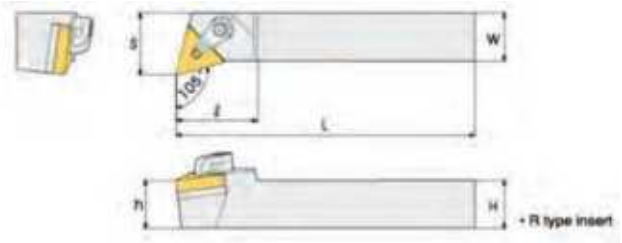
MTJNR/L



Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MTJNR/L 1616H16	●	●	16	16	100	30	16	20	TN□□1604□□	MST-322	MLP305	MCP618	MCS625-3	HW20L HW30L
MTJNR/L 2020K16	●	●	20	20	125	30	20	25						
MTJNR/L 2525M16	●	●	25	25	150	32	25	32						
MTJNR/L 3232P16	●		32	32	170	35	32	40						
MTJNR/L 4040R16			40	40	200	28	40	50						
MTJNR/L 2525M22	●		25	25	150	34	25	32	TN□□2204□□	MST-432	MLP406	MCP819	MCS830-4	HW25L HW40L
MTJNR/L 3232P22	●		32	32	170	35	32	40						
MTJNR/L 4040R22			40	40	200	38	40	50						
MTJNR/L 3232P27			32	32	170	35	32	40	TN□□2706□□	MST-533	MLP508	MCP822	MCS830-4	HW30L HW40L
MTJNR/L 4040S27			40	40	250	35	40	50						

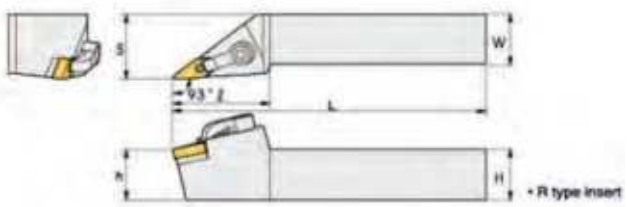
MTQNR/L





Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MTQNR/L 1616H16	●	●	16	16	100	30	16	20	TN□□1604□□	MST-322	MLP305	MCP618	MCS625-3	HW20L HW30L
MTQNR/L 2020K16	●	●	20	20	125	30	20	25						
MTQNR/L 2525M16	●	●	25	25	150	32	25	32						
MTQNR/L 3232P16	●		32	32	170	35	32	40						
MTQNR/L 2525M22	●	●	25	25	150	32	25	32	TN□□2204□□	MST-432	MLP406	MCP819	MCS830-4	HW25L HW40L
MTQNR/L 3232P22			32	32	170	35	32	40						

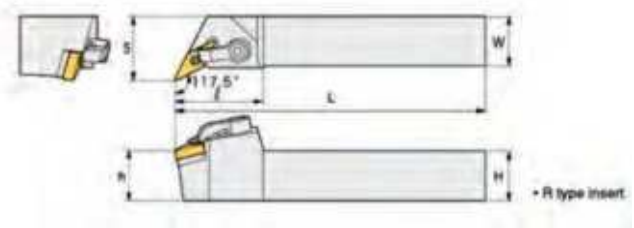
MVJNR/L



Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MVJNR/L 1616K16	●	●	16	16	125	44	16	20	VN□□1604□□	MSV-322	MLP305	MCP618	MCS625-3	HW20L HW30L
MVJNR/L 2020K16	●	●	20	20	125	44	20	25						
MVJNR/L 2525M16	●	●	25	25	150	44	25	32						
MVJNR/L 3232P16	●	●	32	32	170	46	32	40						

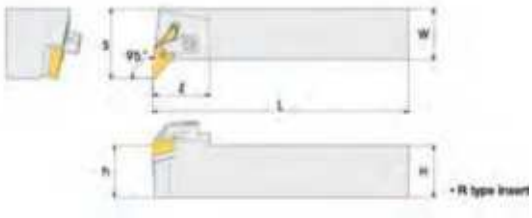
Multi Lock System

MVQNR/L



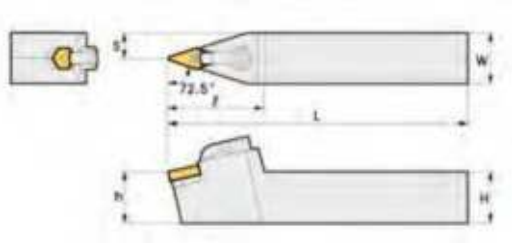
Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MVQNR/L 2020K16	●	●	20	20	125	40	20	25	VN□□1604□□	MSV-322	MLP305	MCP618	MCS625-3	HW20L HW30L
MVQNR/L 2525M16	●	●	25	25	150	40	25	32						
MVQNR/L 3232P16			32	32	170	40	32	40						

MVUNR/L



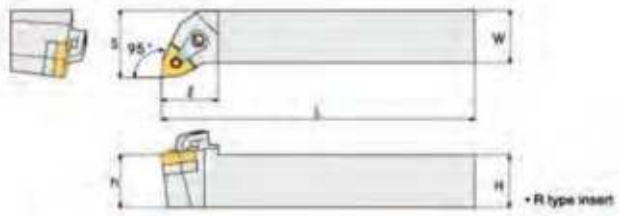
Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MVUNR/L 2020K16	●	●	20	20	125	30	20	29	VN□□1604□□	MSV-322	MLP305	MCP618	MCS625-3	HW20L HW30L
MVUNR/L 2525M16	●	●	25	25	150	30	25	34						

MVVNN



Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MVVNN 2020K16	●		20	20	125	25	20	10	VN□□1604□□	MSV-322	MLP305	MCP618	MCS625-3	HW20L HW30L
MVVNN 2525M16	●		25	25	150	32	25	12.5						
MVVNN 3232P16	●		32	32	170	42	32	16						

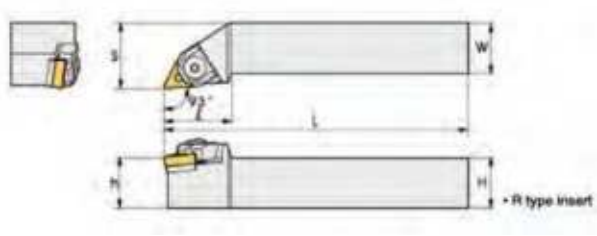
MWLNR/L



Designation	Stock		Size						Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	H	W	L	ℓ	h	S						
MWLNR/L 1616H06	●	●	16	16	100	27	16	20	WN□□0604□□	MSW-322	MLP305	MCP618	MCS625-3	HW20L HW30L
MWLNR/L 2020K06	●	●	20	20	125	27	20	25						
MWLNR/L 2525M06	●	●	25	25	150	27	25	32						
MWLNR/L 1616H08	●	●	16	16	100	27	16	20	WN□□0804□□	MSW-432	MLP406	MCP819	MCS830-4	HW25L HW40L
MWLNR/L 2020K08	●	●	20	20	125	28	20	25						
MWLNR/L 2525M08	●	●	25	25	150	30	25	32						
MWLNR/L 3232P08	●	●	32	32	170	30	32	40						
MWLNR/L 4040R08	●	●	40	40	200	38	40	50						

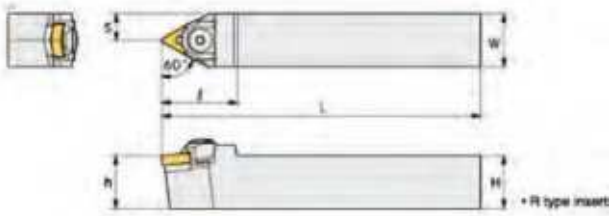
Multi Lock System

WTJNR/L



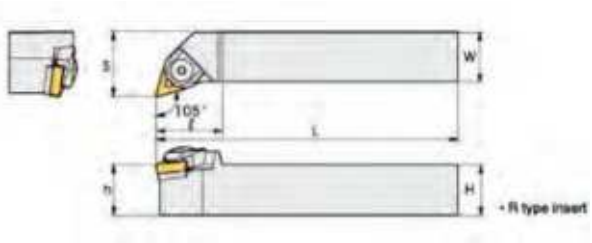
Designation	Stock		Size						Inserts	Wedge Clamp	Screw	Stopper ring	Shim	Pin	Wrench
	R	L	H	W	L	ℓ	h	S							
WTJNR/L 1616K16	●	●	16	16	125	32	16	21	TN□□1604□□	WCP16TL	WCS626	ER04	MST-32M	MLP305-S	HW25L HW40L
WTJNR/L 2020K16	●	●	20	20	125	32	20	25							
WTJNR/L 2525M16	●	●	25	25	150	35	25	32							
WTJNR/L 3232P16	●	●	32	32	170	36	32	40							
WTJNR/L 2525M22	●	●	25	25	150	36	25	32	TN□□2204□□	WCP22TL	WCS626	ER04	MST-432	MLP406-S	HW30L HW40L
WTJNR/L 3232P22	●	●	32	32	170	36	32	40							

WTENN



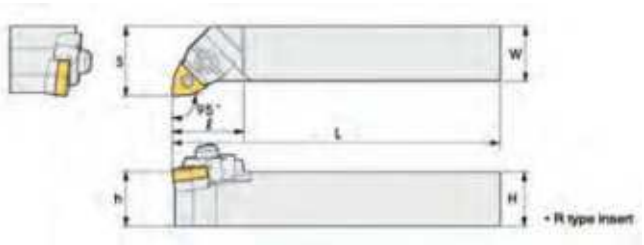
Designation	Stock		Size						Inserts	Wedge Clamp	Screw	Stopper ring	Shim	Pin	Wrench
	R	L	H	W	L	ℓ	h	S							
WTENN 2020K16	●		20	20	125	34	20	10	TN□□1604□□	WCP16TL	WCS626	ER04	MST-32M	MLP305-S	HW25L HW40L
WTENN 2525M16	●		25	25	150	35	25	12.5							
WTENN 2525M22	●		25	25	150	38	25	12.5	TN□□2204□□	WCP22TL	WCS626	ER04	MST-432	MLP406-S	HW30L HW40L
WTENN 3232P22	●		32	32	170	38	32	16							

WTQNR/L



Designation	Stock		Size						Inserts	Wedge Clamp	Screw	Stopper ring	Shim	Pin	Wrench
	R	L	H	W	L	ℓ	h	S							
WTQNR/L 1616K16	●	●	16	16	125	34	16	20	TN□□1604□□	WCP16TL	WCS626	ER04	MST-32M	MLP305-S	HW25L HW40L
WTQNR/L 2020K16	●	●	20	20	125	32	20	26							
WTQNR/L 2525M16			25	25	150	32	25	32							
WTQNR/L 3232P16			32	32	170	35	32	40							
WTQNR/L 2525M22			25	25	150	36	25	38	TN□□2204□□	WCP22TL	WCS626	ER04	MST-432	MLP406-S	HW30L HW40L
WTQNR/L 3232P22			32	32	170	36	32	50							

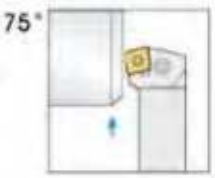
WWLNR/L



Designation	Stock		Size						Inserts	Wedge Clamp	Screw	Stopper ring	Shim	Pin	Wrench
	R	L	H	W	L	ℓ	h	S							
WWLNR/L 1616K08	●	●	16	16	125	32	16	22	WN□□0804□□	WCP08WL	WCS626	ER04	MSW-43M	MLP406-S	HW30L HW40L
WWLNR/L 2020K08	●	●	20	20	125	32	20	26							
WWLNR/L 2525M08	●	●	25	25	150	35	25	32							
WWLNR/L 3232P08	●	●	32	32	170	35	32	40							

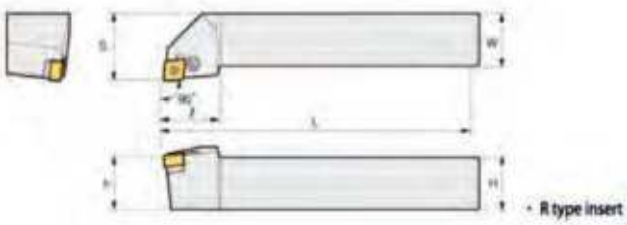
Lever Clamp System

PCKNR/L



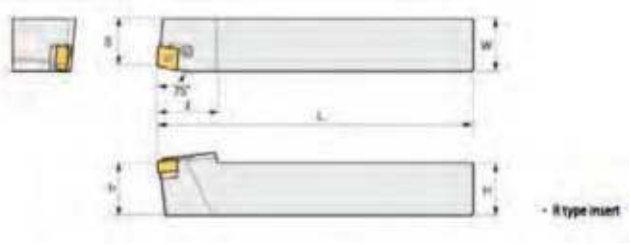
Designation	Stock		Size						Inserts	Shim	Lever	Screw	Shim pin	Wrench
	R	L	H	W	L	ℓ	h	S						
PCKNR/L 1616H12			16	16	100	27	16	20	CN□□1204□□	SC42	LV4	VHX0821	SP4	HW30L
PCKNR/L 2020K12	●		20	20	125	27	20	25						
PCKNR/L 2525M12	●		25	25	150	30	25	32						
PCKNR/L 2525M16			25	25	150	33	25	32	CN□□1606□□	SC53	LV5	VHX0825	SP5	HW30L
PCKNR/L 3232P16			32	32	170	33	32	40						
PCKNR/L 3232P19			32	32	170	38	32	32	CN□□1906□□	SC63N	LV6	VHX1027N	SP6N	HW40L

PCLNR/L



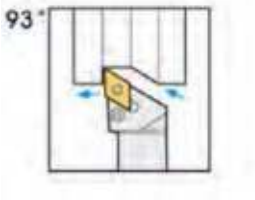
Designation	Stock		Size						Inserts	Shim	Lever	Screw	Shim pin	Wrench
	R	L	H	W	L	ℓ	h	S						
PCLNR/L 1616H09			16	16	100	22	16	20	CN□□0903□□	SC32	LV3	VHX0617	SP3	HW25L
PCLNR/L 2020K09			20	20	125	22	20	25						
PCLNR/L 2525M09			25	25	150	22	25	32						
PCLNR/L 1616H12	●	●	16	16	100	28	16	20	CN□□1204□□	SC42	LV4	VHX0821	SP4	HW30L
PCLNR/L 2020K12	●	●	20	20	125	28	20	25						
PCLNR/L 2525M12	●	●	25	25	150	28	25	32						
PCLNR/L 3232P12	●	●	32	32	170	30	32	40						
PCLNR/L 2525M16	●		25	25	150	34	25	32	CN□□1606□□	SC53	LV5	VHX0825	SP5	HW30L
PCLNR/L 3232P16	●		32	32	170	34	32	40						
PCLNR/L 3232P19	●		32	32	170	38	32	40	CN□□1906□□	SC63N	LV6	VHX1027N	SP6N	HW40L
PCLNR/L 4040S19			40	40	250	38	40	50						
PCLNR/L 4040S25			40	40	250	47	40	50	CN□□2507□□	SC84N	LV8N	VHX1236N	SP8N	HW50L
PCLNR/L 5050T25			50	50	300	47	50	60	CN□□2509□□					

PCBNR/L



Designation	Stock		Size						Inserts	Shim	Lever	Screw	Shim pin	Wrench
	R	L	H	W	L	ℓ	h	S						
PCBNR/L 2020K12	●	●	20	20	125	30	20	17	CN□□1204□□	SC42	LV4	VHX0821	SP4	HW30L
PCBNR/L 2525M12	●	●	25	25	150	26	25	22						
PCBNR/L 3232P12	●	●	32	32	170	27	32	29						
PCBNR/L 2525M16			25	25	150	32	25	22	CN□□1606□□	SC53	LV5	VHX0825	SP5	HW30L
PCBNR/L 3232P16			32	32	170	33	32	27						
PCBNR/L 3232P19			32	32	170	38	32	27	CN□□1906□□	SC63N	LV6	VHX1027N	SP6N	HW40L
PCBNR/L 4040S19			40	40	250	38	40	35						
PCBNR/L 4040S25			40	40	250	50	40	37	CN□□2507□□ CN□□2509□□	SC84N	LV8N	VHX1236N	SP8N	HW50L
PCBNR/L 5050T25			50	50	300	50	50	43						

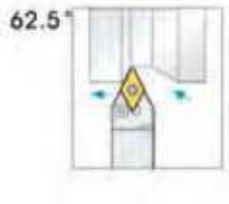
PDJNR/L

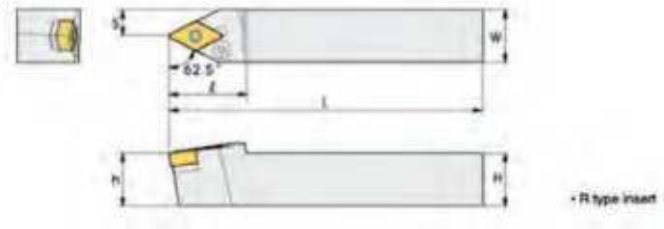


Designation	Stock		Size						Inserts	Shim	Lever	Screw	Shim pin	Wrench
	R	L	H	W	L	ℓ	h	S						
PDJNR/L 1616H11			16	16	100	26	16	20	DN□□1104□□	SD17	LV3	VHX0617	SP3	HW25L
PDJNR/L 2020K11			20	20	125	26	20	25						
PDJNR/L 2525M11			25	25	150	26	25	32						
PDJNR/L 2020K1504	●	●	20	20	125	36	20	25	DN□□1504□□	SD42	LV4	VHX0821	SP4	HW30L
PDJNR/L 2525M1504	●	●	25	25	150	36	25	32						
PDJNR/L 3232P1504			32	32	170	36	32	40						
PDJNR/L 2020K1506			20	20	125	36	20	25	DN□□1506□□	SD42	LV4B	VHX0821	SP4	HW30L
PDJNR/L 2525M1506	●	●	25	25	150	36	25	32						
PDJNR/L 3232P1506	●	●	32	32	170	36	32	40						

Lever Lock System

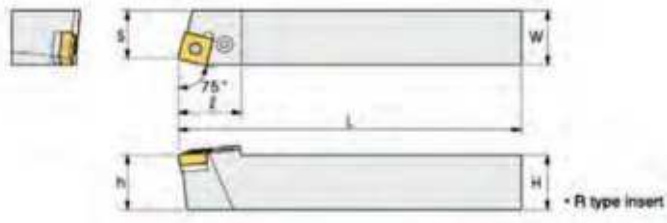
PDNNR/L





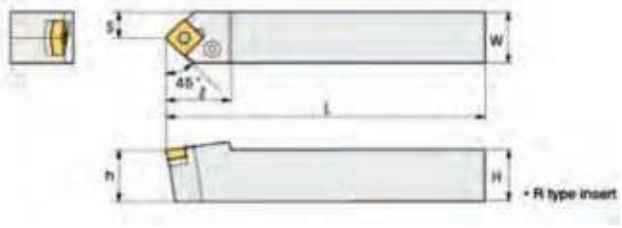
Designation	Stock		Size						Inserts	Shim	Lever	Screw	Shim pin	Wrench
	R	L	H	W	L	ℓ	h	S						
PDNNR/L 2020K1504			20	20	125	37	20	10	DN□□1504□□	SD42	LV4	VHX0821	SP4	HW30L
PDNNR/L 2525M1504	●		25	25	150	37	25	12.5						
PDNNR/L 3232P1504			32	32	170	37	32	16						
PDNNR/L 2020K1506			20	20	125	37	20	10	DN□□1506□□	SD42	LV4B	VHX0821	SP4	HW30L
PDNNR/L 2525M1506	●		25	25	150	37	25	12.5						
PDNNR/L 3232P1506			32	32	170	37	32	16						

PSBNR/L



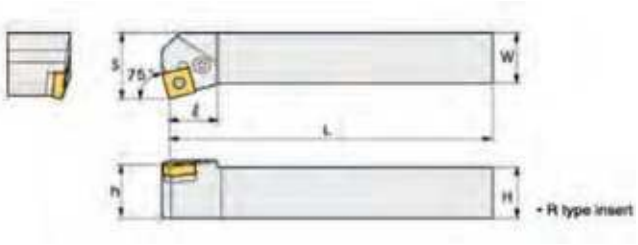
Designation	Stock		Size						Inserts	Shim	Lever	Screw	Shim pin	Wrench
	R	L	H	W	L	ℓ	h	S						
PSBNR/L 1616H09			16	16	100	21	16	13	SN□□0903□□	SS32	LV3	VHX0617	SP3	HW25L
PSBNR/L 2020K09			20	20	125	23	20	17						
PSBNR/L 2020K12	●		20	20	125	30	20	17	SN□□1204□□	SS42	LV4	VHX0821	SP4	HW30L
PSBNR/L 2525M12	●		25	25	150	30	25	22						
PSBNR/L 3232P12	●		32	32	170	42	32	27						
PSBNR/L 2525M15	●		25	25	150	35	25	22	SN□□1506□□	SS53	LV5	VHX0825	SP5	HW30L
PSBNR/L 3232P15	●		32	32	170	35	32	27						
PSBNR/L 3232P19	●		32	32	170	40	32	27	SN□□1906□□	SS63N	LV6	VHX1027	SP6	HW40L
PSBNR/L 4040S19			40	40	250	40	40	35						
PSBNR/L 4040S25			40	40	250	50	40	35	SN□□2507□□	SS84N	LV8N	VHX1236N	SP8N	HW50L
PSBNR/L 5050T25			50	50	300	50	50	43	SN□□2509□□					

PSDNN



Designation	Stock		Size						Inserts	Shim	Lever	Screw	Shim pin	Wrench
	R	L	H	W	L	ℓ	h	S						
PSDNN 2020K12	●		20	20	125	32	20	10	SN□□1204□□	SS42	LV4	VHX0821	SP4	HW30L
PSDNN 2525M12	●		25	25	150	32	25	12.5						
PSDNN 3232P12	●		32	32	170	35	32	16						
PSDNN 2525M15	●		25	25	150	40	25	12.5	SN□□1506□□	SS53	LV5	VHX0825	SP5	HW30L
PSDNN 3232P15	●		32	32	170	40	32	16						
PSDNN 3232P19			32	32	170	40	32	16	SN□□1906□□	SS63N	LV6	VHX1027	SP6	HW40L
PSDNN 4040S19			40	40	250	40	40	20						
PSDNN 4040S25			40	40	250	50	40	20	SN□□2507□□	SS84N	LV8N	VHX1236N	SP8N	HW50L
PSDNN 5050T25			50	50	300	50	50	25	SN□□2509□□					

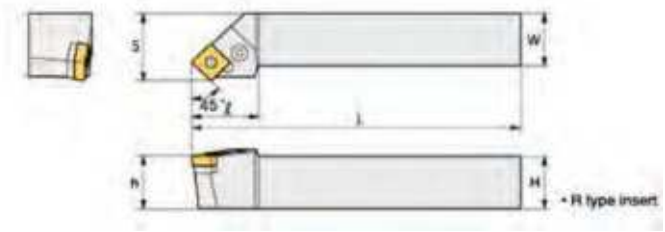
PSKNR/L



Designation	Stock		Size						Inserts	Shim	Lever	Screw	Shim pin	Wrench
	R	L	H	W	L	ℓ	h	S						
PSKNR/L 1616H09			16	16	100	17	16	20	SN□□0903□□	SS32	LV3	VHX0617	SP3	HW25L
PSKNR/L 2020K09			20	20	125	20	20	25						
PSKNR/L 2020K12	●	●	20	20	125	29	20	25	SN□□1204□□	SS42	LV4	VHX0821	SP4	HW30L
PSKNR/L 2525M12	●	●	25	25	150	29	25	32						
PSKNR/L 3232P12	●	●	32	32	170	29	32	40						
PSKNR/L 2525M15	●	●	25	25	150	28	25	32	SN□□1506□□	SS53	LV5	VHX0825	SP5	HW30L
PSKNR/L 3232P15	●	●	32	32	170	28	32	40						
PSKNR/L 3232P19	●		32	32	170	41.5	32	40	SN□□1906□□	SS63N	LV6	VHX1027	SP6	HW40L
PSKNR/L 4040S19			40	40	250	41.5	40	50						
PSKNR/L 4040S25			40	40	250	46	40	50	SN□□2507□□	SS84N	LV8N	VHX1236N	SP8N	HW50L
PSKNR/L 5050T25			50	50	300	37.5	50	60	SN□□2509□□					

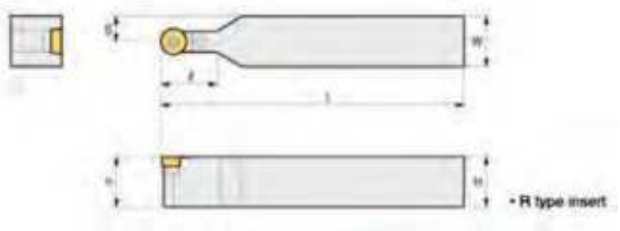
Lever Lock System

PSSNR/L



Designation	Stock		Size						Inserts	Shim	Lever	Screw	Shim pin	Wrench
	R	L	H	W	L	ℓ	h	S						
PSSNR/L 1616H09			16	16	100	25	16	20	SN□□0903□□	SS32	LV3	VHX0617	SP3	HW25L
PSSNR/L 2020K09			20	20	125	30	20	25						
PSSNR/L 2020K12	●	●	20	20	125	30	20	25	SN□□1204□□	SS42	LV4	VHX0821	SP4	HW30L
PSSNR/L 2525M12	●	●	25	25	150	36	25	32						
PSSNR/L 3232P12	●	●	32	32	170	40	32	40						
PSSNR/L 2525M15	●	●	25	25	150	36	25	32	SN□□1506□□	SS53	LV5	VHX0825	SP5	HW30L
PSSNR/L 3232P15	●	●	32	32	170	45	32	40						
PSSNR/L 3232P19	●		40	40	170	41.5	40	40	SN□□1906□□	SS63N	LV6	VHX1027	SP6	HW40L
PSSNR/L 4040S19			40	40	250	41.5	40	50						
PSSNR/L 4040S25			40	40	250	48	40	50	SN□□2507□□	SS84N	LV8N	VHX1236N	SP8N	HW50L
PSSNR/L 5050T25			50	50	300	37.5	50	60	SN□□2509□□					

PRDCN

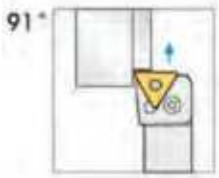


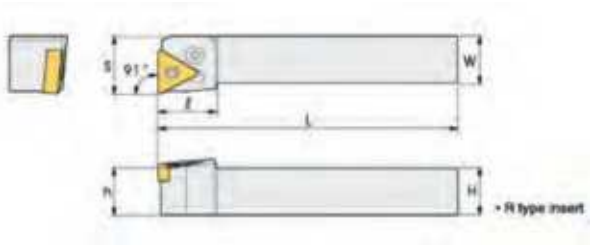
Designation	Stock		Size						Inserts	Shim	Lever	Screw	Shim pin	Wrench
	R	L	H	W	L	ℓ	h	S						
PRDCN 2020K12	●		20	20	125	25	20	10	RC□□1204□□	SR12	LR12	VHX0617	SP3	HW25L
PRDCN 2525M12	●		25	25	150	25	25	12.5						
PRDCN 2525M16	●		25	25	150	35	25	12.5	RC□□1604□□	SR16	LR16	VHX0621	SP4	HW25L
PRDCN 3232P16	●		32	32	170	32	32	16						
PRDCN 3232P20	●		32	32	170	40	32	16	RC□□2006□□	SR20	LR20	VHX0830	SP20	HW30L
PRDCN 4040T20			40	40	300	45	40	20						
PRDCN 3232P25			32	32	170	45	32	16	RC□□2507□□	SR25	LR25	VHX1030	SP6N	HW40L
PRDCN 4040T25			40	40	300	50	40	20						

PRGCR/L

Designation	Stock		Size					Inserts	Shim	Lever	Screw	Shim pin	Wrench
	R	L	H	W	L	h	S						
PRGCR/L 2020K12	●		20	20	125	20	25	RC□□1204□□	SR12	LR12	VHX0617	SP3	HW25L
PRGCR/L 2525M12	●		25	25	150	25	32						
PRGCR/L 2525M16	●		25	25	150	25	25	RC□□1604□□	SR16	LR16	VHX0621	SP4	HW25L
PRGCR/L 3232P16	●		32	32	170	32	42						
PRGCR/L 3232P20	●		32	32	170	32	40	RC□□2006□□	SR20	LR20	VHX0830	SP20	HW30L
PRGCR/L 4040T20			40	40	300	40	50						
PRGCR/L 3232P25			32	32	170	32	45	RC□□2507□□	SR25	LR25	VHX1030	SP6N	HW40L
PRGCR/L 4040T25			40	40	300	40	56						

PTFNR/L

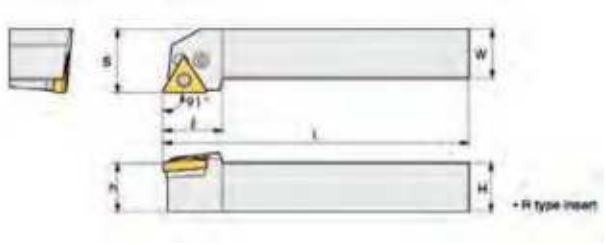




Designation	Stock		Size						Inserts	Shim	Lever	Screw	Shim pin	Wrench
	R	L	H	W	L	ℓ	h	S						
PTFNR/L 1616H16	●	●	16	16	100	20	16	20	TN□□1604□□	ST317	LV3	VHX0617	SP3	HW25L
PTFNR/L 2020K16	●	●	20	20	125	26	20	25						
PTFNR/L 2525M16	●	●	25	25	150	26	25	32						
PTFNR/L 2525M22			25	25	150	25	25	32	TN□□2204□□	ST42	LV4	VHX0821	SP4	HW30L
PTFNR/L 3232P22			32	32	170	30	32	40						
PTFNR/L 3232P27			32	32	170	35	32	40	TN□□2706□□	ST53	LV5	VHX0825	SP5	HW30L
PTFNR/L 4040S27			40	40	250	34	40	50						

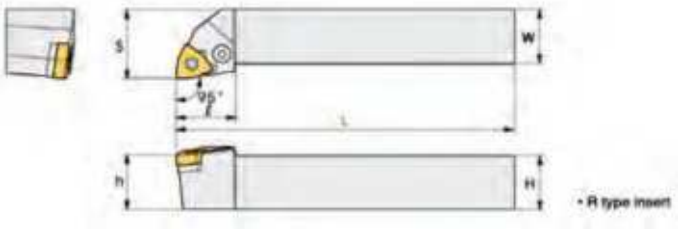
Lever Lock System

PTGNR/L



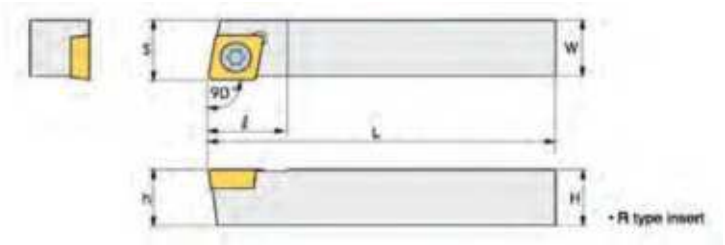
Designation	Stock		Size						Inserts	Shim	Lever	Screw	Shim pin	Wrench
	R	L	H	W	L	ℓ	h	S						
PTGNR/L 1616H11			16	16	100	18	16	20	TN□□1103□□	-	LV2	VHX0509B	-	HW20L
PTGNR/L 2020K11			20	20	125	19	20	25						
PTGNR/L 2525M11			25	25	150	20	25	32						
PTGNR/L 1616H16	●	●	16	16	100	26	16	20	TN□□1604□□	ST317	LV3	VHX0617	SP3	HW25L
PTGNR/L 2020K16	●	●	20	20	125	26	20	25						
PTGNR/L 2525M16	●	●	25	25	150	26	25	32						
PTGNR/L 3232P16			32	32	170	20	32	40						
PTGNR/L 2525M22			25	25	150	28	25	32	TN□□2204□□	ST42	LV4	VHX0821	SP4	HW30L
PTGNR/L 3232P22			32	32	170	30	32	40						
PTGNR/L 3232P27			32	32	170	33	32	40	TN□□2706□□	ST53	LV5	VHX0825	SP5	HW30L
PTGNR/L 4040S27			40	40	250	33	40	50						

PWLNR/L



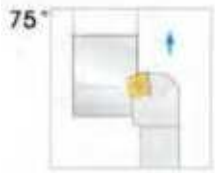
Designation	Stock		Size						Inserts	Shim	Lever	Screw	Shim pin	Wrench
	R	L	H	W	L	ℓ	h	S						
PWLNR/L 1616H06	●	●	16	16	100	20	16	20	WN□□0604□□	SW317	LV3	VHX0617	SP3	HW25L
PWLNR/L 2020K06	●	●	20	20	125	26	20	25						
PWLNR/L 2525M06	●	●	25	25	150	28	25	32						
PWLNR/L 1616H08	●	●	16	16	100	26	16	20	WN□□0804□□	SW42	LV4	VHX0821	SP4	HW30L
PWLNR/L 2020K08	●	●	20	20	125	28	20	25						
PWLNR/L 2525M08	●	●	25	25	150	27	25	32						
PWLNR/L 3232P08	●	●	32	32	170	26	32	37						

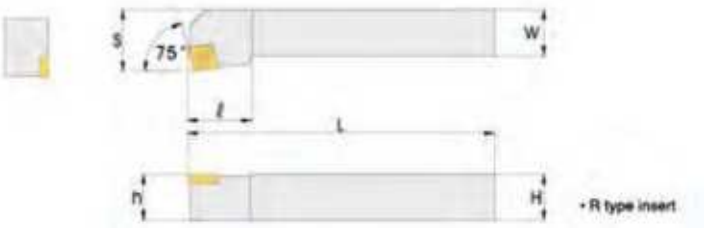
SCACR/L



Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	W	L	ℓ	h	S			
SCAR/L 0808F06	●		8	8	80	10	8	8	CC□□0602□□	M2.5X6	T-8
SCAR/L 1010H06	●		10	10	100	10	10	10			
SCAR/L 1212H06	●		12	12	100	13	12	12			
SCAR/L 1212H09	●		12	12	100	13	12	12	CC□□09T3□□	M3.5X9	T-15

SCKCR/L

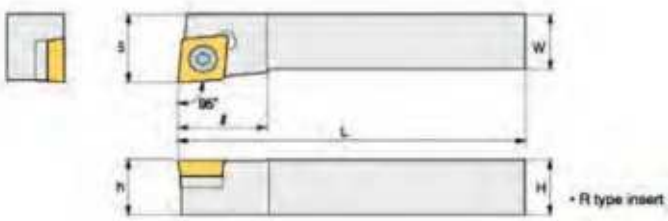




Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	W	L	ℓ	h	S			
SCKCR/L 2020K09	●		20	20	125	23	20	25	CC□□09T3□□	M3.5X9	T-15
SCKCR/L 2525M09	●		25	25	150	23	25	32			
SCKCR/L 2020K12	●		20	20	125	28	20	25	CC□□1204□□	M5.0X12	T-20
SCKCR/L 2525M12	●		25	25	150	28	25	32			

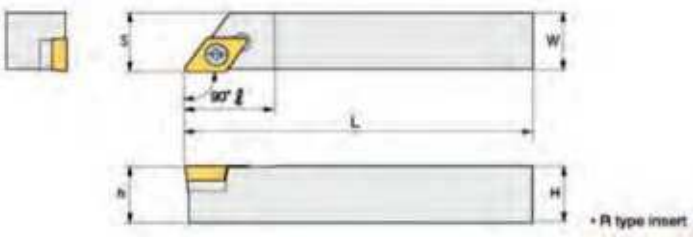
Screw On System

SCLCR/L



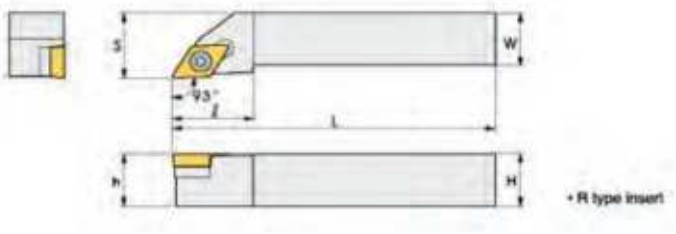
Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	W	L	ℓ	h	S			
SCLCR/L 0808D06	●	●	08	08	60	10	08	10	CC□□0602□□	M2.5X6.5	T-8
SCLCR/L 1010F06	●	●	10	10	80	12	10	12			
SCLCR/L 1212F09	●	●	12	12	80	16	12	16	CC□□09T3□□	M3.5X9	T-15
SCLCR/L 1616H09	●	●	16	16	100	16	16	20			
SCLCR/L 2020K09	●	●	20	20	125	16	20	25			
SCLCR/L 2525M09	●	●	25	25	150	16	25	32			
SCLCR/L 2020K12	●	●	20	20	125	20	20	25	CC□□1204□□	M5.0X12	T-20
SCLCR/L 2525M12	●	●	25	25	150	20	25	32			
SCLCR/L 3232P12	●	●	32	32	170	20	32	40			

SDACR/L



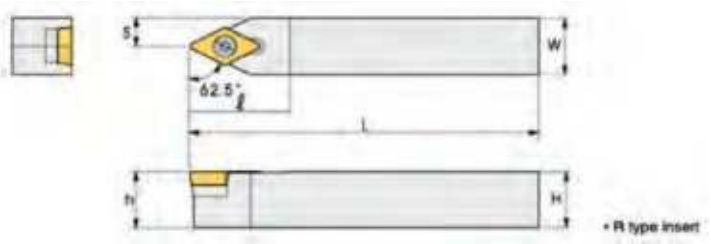
Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	W	L	ℓ	h	S			
SDACR/L 0808F07	●		08	08	80	15	08	08	DC□□0702□□	M2.5X8	T-8
SDACR/L 1010F07	●		10	10	80	15	10	10			
SDACR/L 1212F07	●		12	12	80	15	12	12			
SDACR/L 1212H11	●		12	12	100	22	12	12	DC□□11T3□□	M3.5X9	T-15
SDACR/L 1616H11	●	●	16	16	100	22	16	16			
SDACR/L 2020K11	●		20	20	125	22	20	20			
SDACR/L 2525M11	●		25	25	150	22	25	25			

SDJCR/L



Designation	Stock		Size						Inserts	Screw	Shim	Shim Screw	Wrench
	R	L	H	W	L	ℓ	h	S					
SDJCR/L 1010F07	●		10	10	80	14	10	12	DC□□0702□□	M2.5X6.5	-	-	T-8
SDJCR/L 1212F07	●		12	12	80	14	12	16					
SDJCR/L 1616H07	●	●	16	16	100	14	16	20					
SDJCR/L 2020K07	●	●	20	20	125	15	20	25					
SDJCR/L 1212F11	●		12	12	80	20	12	16	DC□□11T3□□	M3.5X9	-	-	T-15
SDJCR/L 1616H11	●	●	16	16	100	20	16	20					
SDJCR/L 2020K11			20	20	125	20	20	25		M3.5X12	SD32S	SHXN0509F	T-15 HW35L
SDJCR/L 2525M11			25	25	150	22	25	32					
SDJCR/L 3232P11			32	32	170	23	32	40					

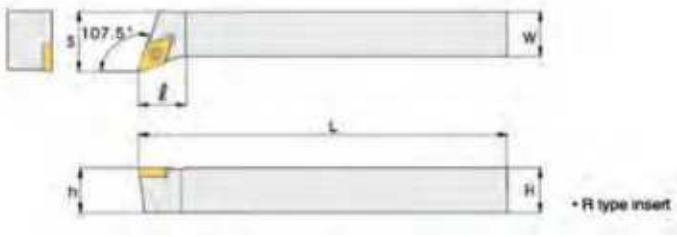
SDNCN



Designation	Stock		Size						Inserts	Screw	Shim	Shim Screw	Wrench
	R	L	H	W	L	ℓ	h	S					
SDNCN 0808F07	●		8	8	80	14	8	4	DC□□0702□□	M2.5X6.5	-	-	T-8
SDNCN 1010F07	●		10	10	80	14	10	5					
SDNCN 1212F07	●		12	12	80	14	12	6					
SDNCN 1212H11	●		12	12	100	21	12	6	DC□□11T3□□	M3.5X9	-	-	T-15
SDNCN 1616H11	●		16	16	100	21	16	8					
SDNCN 2020K11	●		20	20	125	21	20	10		M3.5X12	SD32S	SHXN0509F	T-15 HW35L
SDNCN 2525M11	●		25	25	150	21	25	12.5					

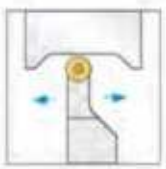
Screw On System

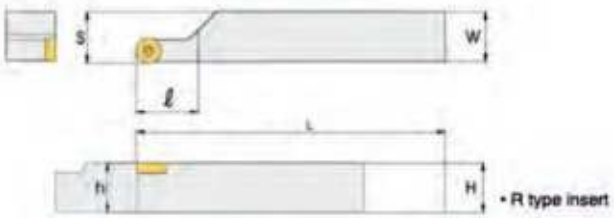
SDQCR/L



Designation	Stock		Size						Inserts	Screw	Shim	Shim Screw	Wrench
	R	L	H	W	L	ℓ	h	S					
SDQCR/L 1010F07	●	●	10	10	80	5	10	12	DC□□0702□□	M2.5X6.5	-	-	T-8
SDQCR/L 1212F07	●	●	12	12	80	13	12	16					
SDQCR/L 1212F11	●	●	12	12	80	14	12	16	DC□□11T3□□	M3.5X9	-	-	T-15
SDQCR/L 1616H11			16	16	100	14	16	20					
SDQCR/L 2020K11			20	20	125	16	20	25		M3.5X12	SD32S	SHXN0509F	T-15 HW35L
SDQCR/L 2525M11			25	25	150	22	25	32					

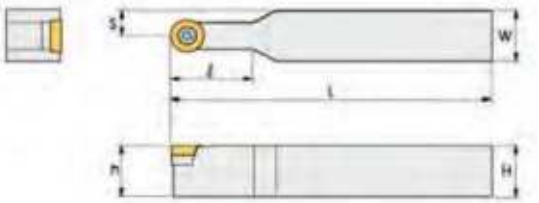
SRACR/L





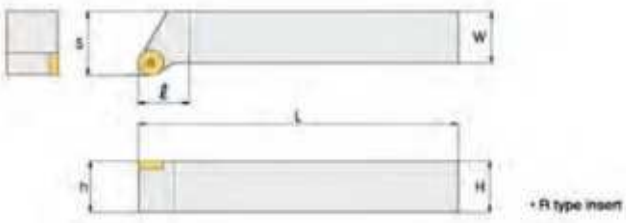
Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	W	L	ℓ	h	S			
SRACR/L 1616H08	●	●	16	16	100	16	16	16.5	RC□□0803□□	M3.0X8	T-8
SRACR/L 2020K08	●	●	20	20	125	16	20	20.5			
SRACR/L 2525M08	●	●	25	25	150	16	25	25.5			
SRACR/L 2020K10	●	●	20	20	125	20.3	20	20.4	RC□□1003□□	M3.5X9	T-15
SRACR/L 2525M10	●	●	25	25	150	20.3	25	25.4			
SRACR/L 2020K12	●	●	20	20	125	28	20	20.4	RC□□1204□□	M3.5X12	T-15
SRACR/L 2525M12	●	●	25	25	150	28	25	25.4			

SRDCN



Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	W	L	ℓ	h	S			
SRDCN 1616H08	●		16	16	100	16	16	8	RC□□0803□□	M3.0X8	T-8
SRDCN 2020K08	●		20	20	125	16	20	10			
SRDCN 2525M08	●		25	25	150	16	25	12.5			
SRDCN 1616H10	●		16	16	100	20.3	16	8	RC□□1003□□	M3.5X9	T-15
SRDCN 2020K10	●		20	20	125	20.3	20	10			
SRDCN 2525M10	●		25	25	150	20.3	25	12.5			
SRDCN 2020K12	●		20	20	125	28	20	10	RC□□1204□□	M3.5X12	T-15
SRDCN 2525M12	●		25	25	150	28	25	12.5			

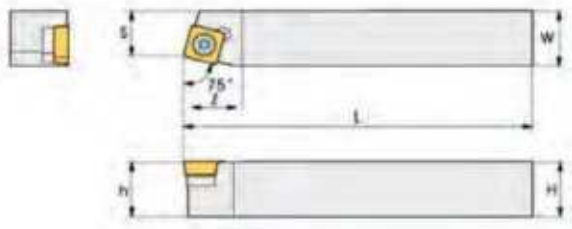
SRGCR/L



Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	W	L	ℓ	h	S			
SRGCR/L 1616H08	●	●	16	16	100	20	16	20	RC□□0803□□	M3.0X8	T-8
SRGCR/L 2020K08	●	●	20	20	125	20	20	25			
SRGCR/L 2525M08	●	●	25	25	150	20	25	32			
SRGCR/L 1616H10	●	●	16	16	100	20	16	20	RC□□1003□□	M3.5X9	T-15
SRGCR/L 2020K10	●	●	20	20	125	20	20	25			
SRGCR/L 2525M10	●	●	25	25	150	20	25	32			
SRGCR/L 2020K12	●	●	20	20	125	20	20	25	RC□□1204□□	M3.5X12	T-15
SRGCR/L 2525M12	●	●	25	25	150	20	25	32			

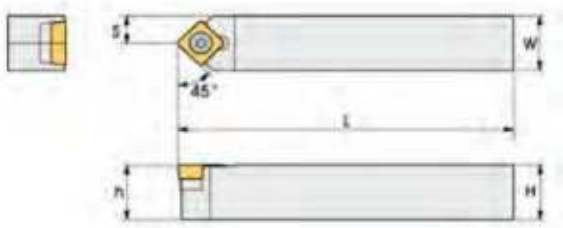
Screw On System

SSBCR/L



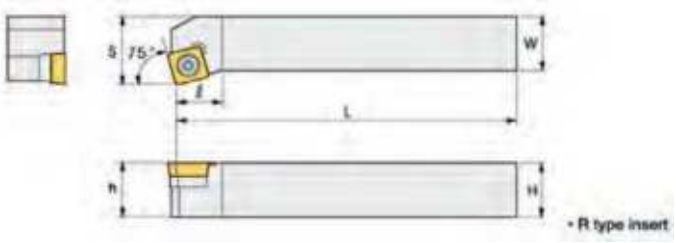
Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	W	L	ℓ	h	S			
SSBCR/L 1212F09	●	●	12	12	80	18	12	9.5	SC□□09T3□□	M3.5X9	T-15
SSBCR/L 1616H09	●	●	16	16	100	18	16	12			
SSBCR/L 2020K09	●	●	20	20	125	18	20	17			
SSBCR/L 2020K12	●	●	20	20	125	22	20	17	SC□□1204□□	M3.5X12	T-15
SSBCR/L 2525M12	●		25	25	150	22	25	22			

SSDCN



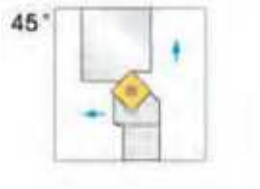
Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	W	L	ℓ	h	S			
SSDCN 1212F09	●		12	12	80	16	12	6	SC□□09T3□□	M3.5X9	T-15
SSDCN 1616H09	●		16	16	100	16	16	8			
SSDCN 2020K09	●		20	20	125	16	20	10			
SSDCN 2525M09	●		25	25	150	16	25	12.5	SC□□1204□□	M5.0X12	T-20
SSDCN 2020K12	●		20	20	125	25	20	10			
SSDCN 2525M12			25	25	150	25	25	12.5			

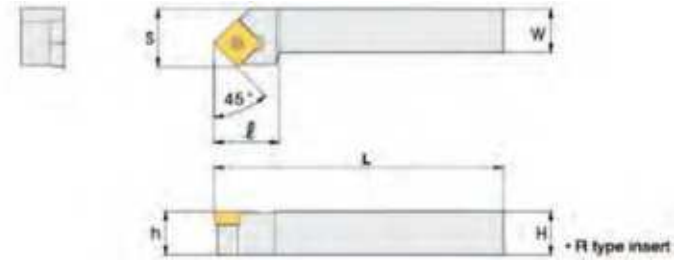
SSKCR/L



Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	W	L	ℓ	h	S			
SSKCR/L 1212F09	●		12	12	80	16	12	16	SC□□09T3□□	M3.5X9	T-15
SSKCR/L 1616H09	●		16	16	100	16	16	20			
SSKCR/L 2020K09	●		20	20	125	18	20	25			
SSKCR/L 2525M09	●		25	25	150	25	25	32			
SSKCR/L 2020K12	●		20	20	125	18	20	25	SC□□1204□□	M5.0X12	T-20
SSKCR/L 2525M12	●		25	25	150	22	25	32			

SSSCR/L

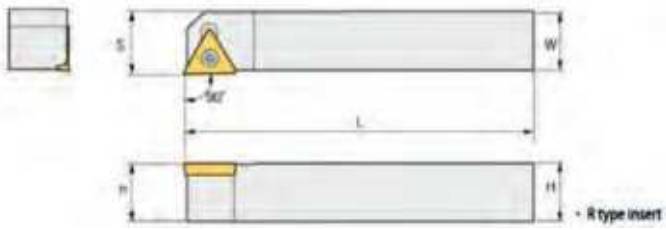




Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	W	L	ℓ	h	S			
SSSCR/L 1212F09	●	●	12	12	80	16	12	16	SC□□09T3□□	M3.5X9	T-15
SSSCR/L 1616H09	●	●	16	16	100	16	16	20			
SSSCR/L 2020K09	●	●	20	20	125	18	20	25			
SSSCR/L 2525M09	●	●	25	25	150	25	25	32			
SSSCR/L 2020K12	●		20	20	125	23	20	21	SC□□1204□□	M5.0X12	T-20
SSSCR/L 2525M12	●		25	25	150	25	25	26			

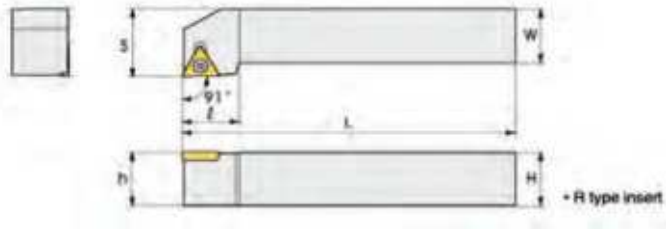
Screw On System

STACR/L



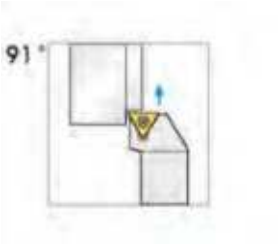
Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	W	L	ℓ	h	S			
STACR/L 1010E09	●		10	10	70	11	10	10.5	TC□□0902□□	M2.2X6	T-6
STACR/L 1212F11	●		12	12	80	14	12	12.5	TC□□1102□□	M2.5X6.5	T-8
STACR/L 1616H11	●		16	16	100	16	16	16.5			

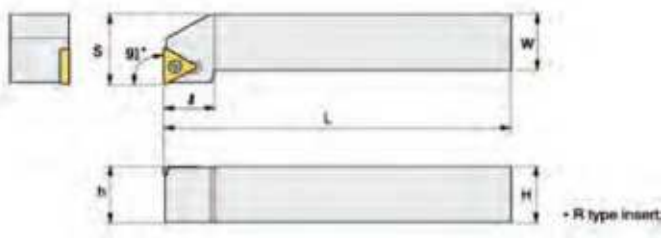
STGCR/L



Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	W	L	ℓ	h	S			
STGCR/L 0808D09	●	●	8	8	60	11	8	10	TC□□0902□□	M2.2X6	T-6
STGCR/L 1010E09	●	●	10	10	70	11	10	12			
STGCR/L 1212F11	●	●	12	12	80	14	12	16	TC□□1102□□	M2.5X6.5	T-8
STGCR/L 1616H11	●	●	16	16	100	14	16	20			
STGCR/L 1616H16	●		16	16	100	14	16	20	TC□□16T3□□	M3.5X9	T-15
STGCR/L 2020K16	●		20	20	125	20	20	25			
STGCR/L 2525M16			25	25	150	20	25	32			

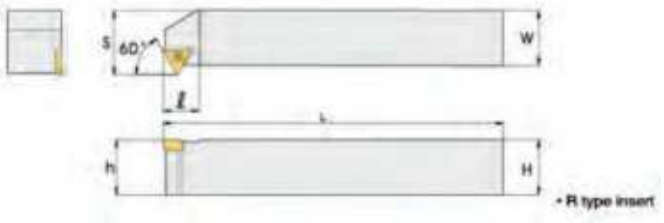
STFCR/L





Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	W	L	ℓ	h	S			
STFCR/L 1212F09	●	●	12	12	80	14	12	16	TC□□0902□□	M2.2X6	T-6
STFCR/L 1212F11	●	●	12	12	80	14	12	16	TC□□1102□□	M2.5X6.5	T-8
STFCR/L 1616H11	●	●	16	16	100	14	16	20			
STFCR/L 1616H16	●	●	16	16	100	22	16	20	TC□□16T3□□	M3.5X9	T-15
STFCR/L 2020K16	●		20	20	125	22	20	25			
STFCR/L 2525M16	●		25	25	150	22	25	32			
STFCR/L 3232P16			32	32	170	22	32	40			

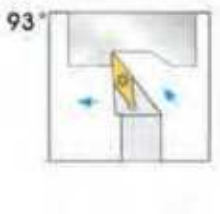
STWCR/L

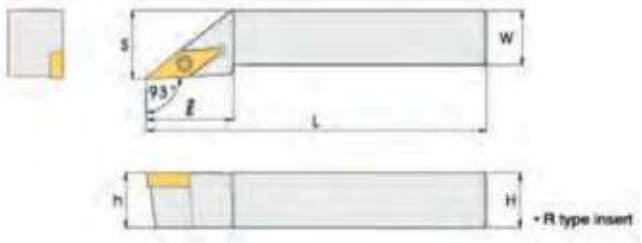


Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	W	L	ℓ	h	S			
STWCR/L 1616H11			16	16	100	8	16	19.3	TC□□1102□□	M2.5X8	T-8
STWCR/L 2020K11	●		20	20	125	8	20	23.3			
STWCR/L 2525M11			25	25	150	8	25	28.3			
STWCR/L 1616H16			16	16	100	12	16	21	TC□□16T3□□	M3.5X9	T-15
STWCR/L 2020K16			20	20	125	12	20	26			
STWCR/L 2525M16	●		25	25	150	12	25	31			
STWCR/L 3232P16	●		32	32	170	12	32	38			

Screw On System

SVJBR/L, SVJCR/L

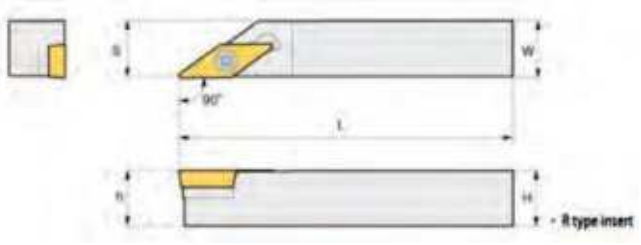




Designation	Stock		Size						Inserts	Screw	Shim	Shim Screw	Wrench
	R	L	H	W	L	ℓ	h	S					
SVJBR/L 1212F11	●	●	12	12	80	22	12	16	VB□□1103□□	M2.5X6.5	-	-	T-8
SVJBR/L 1616H11	●	●	16	16	100	25	16	20					
SVJBR/L 2020K11	●	●	20	20	125	32	20	25					
SVJBR/L 2525M11	●	●	25	25	150	38	25	32					
SVJBR/L 1616H16	●	●	16	16	100	30	16	20	VB□□1604□□	M3.5X9	-	-	T-15
SVJBR/L 2020K16			20	20	125	32	20	25		M3.5X12	SV32S	SHXN0509F	T-15 HW35L
SVJBR/L 2525M16			25	25	150	40	25	32					
SVJBR/L 3225P16			32	25	170	55	32	32					
SVJBR/L 3232P16			32	32	170	55	32	40					

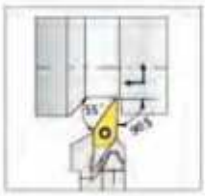
SVJCR/L 1212F11	●	●	12	12	80	22	12	16	VC□□1103□□	M2.5X6.5	-	-	T-8
SVJCR/L 1616H11	●	●	16	16	100	25	16	20					
SVJCR/L 2020K11	●	●	20	20	125	32	20	25					
SVJCR/L 1616H16	●	●	16	16	100	30	16	20					
SVJCR/L 2020K16			20	20	125	32	20	25	VC□□1604□□	M3.5X9	-	-	T-15
SVJCR/L 2525M16			25	25	150	40	25	32		M3.5X12	SV32S	SHXN0509F	T-15 HW35L
SVJCR/L 3225P16			32	25	170	55	32	32					
SVJCR/L 3232P16			32	32	170	55	32	40					

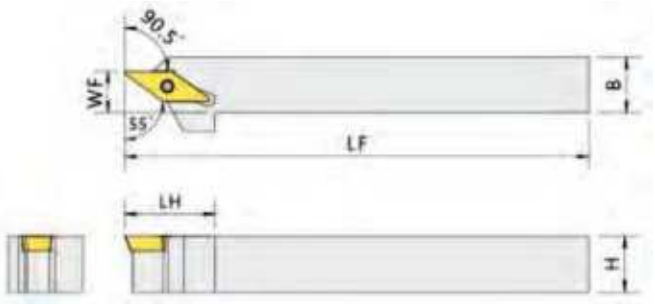
SVABR/L, SVACR/L



Designation	Stock		Size						Inserts	Screw	Shim	Shim Screw	Wrench
	R	L	H	W	L	ℓ	h	S					
SVABR/L 1616H16			16	16	100	32	16	16.5	VB□□1604□□	M3.5X9	-	-	T-15
SVABR/L 2020K16			20	20	125	32	20	20.5		M3.5X12	SV32S	SHXN0509F	T-15 HW35L
SVABR/L 2525M16			25	25	150	38	25	25.5					
SVACR/L 1616H16			16	16	100	32	16	16.5	VC□□1604□□	M3.5X9	-	-	T-15
SVACR/L 2020K16			20	20	125	32	20	20.5		M3.5X12	SV32S	SHXN0509F	T-15 HW35L
SVACR/L 2525 M16			25	25	150	38	25	25.5					

SVKCR





Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	B	LF	LH	h	WF			
SVKCR 1212H11			12	12	10	14	12	9	VC□□1103□□	M2.5X6.5	T-8

Screw On System

SVQBR/L

Designation	Stock		Size						Inserts	Screw	Shim	Shim Screw	Wrench
	R	L	H	W	L	ℓ	h	S					
SVQBR/L 1616H11	●	●	16	16	100	35	16	20	-	M2.5X6.5	-	-	T-8
SVQBR/L 2020K11			20	20	125	35	20	25					
SVQBR/L 2525M11			25	25	150	35	25	32					
SVQBR/L 1616H16			16	16	100	35	16	20	VB□□1604□□	M3.5X9	-	-	T-15
SVQBR/L 2020K16			20	20	125	35	20	25		M3.5X12	SV32S	SHXN0509F	T-15 HW35L
SVQBR/L 2525M16			25	25	150	35	25	32					
SVQBR/L 3232P16			32	32	170	35	32	40					

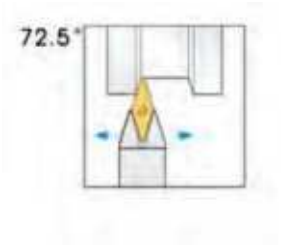
SVQCR/L 1616H11	●	●	16	16	100	35	16	20	-	M2.5X6.5	-	-	T-8
SVQCR/L 2020K11			20	20	125	35	20	25					
SVQCR/L 2525M11			25	25	150	35	25	32					
SVQCR/L 1616H16			16	16	100	35	16	20	VC□□1604□□	M3.5X9	-	-	T-15
SVQCR/L 2020K16			20	20	125	35	20	25		M3.5X12	SV32S	SHXN0509F	T-15 HW35L
SVQCR/L 2525M16			25	25	150	35	25	32					
SVQCR/L 3232P16			32	32	170	35	32	40					

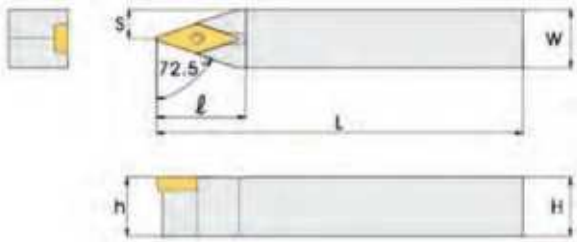
SVHBR/L, SVHCR/L

Designation	Stock		Size						Inserts	Screw	Shim	Shim Screw	Wrench
	R	L	H	W	L	ℓ	h	S					
SVHBR/L 1212F11			12	12	80	13	12	16	VB□□1103□□	M2.5X6.5	-	-	T-8
SVHBR/L 1616H11			16	16	100	13	16	20					
SVHBR/L 2020K11			20	20	125	16.5	20	25					
SVHBR/L 2020K16			20	20	125	17	20	25	VB□□1604□□	M3.5X12	SV32S	SHXN0509F	T-15
SVHBR/L 2525M16			25	25	150	23	25	32					
SVHBR/L 3232P16			32	32	170	26.5	32	40					
SVHCR/L 1212F11			12	12	80	13	12	16	VC□□1103□□	M2.5X6.5	-	-	T-8
SVHCR/L 1616H11			16	16	100	13	16	20					
SVHCR/L 2020K11			20	20	125	16.5	20	25					
SVHCR/L 2020K16			20	20	125	17	20	25	VC□□1604□□	M3.5X12	SV32S	SHXN0509F	T-15
SVHCR/L 2525M16			25	25	150	23	25	32					
SVHCR/L 3232P16			32	32	170	26.5	32	40					

Screw On System

SVVBN, SVVCN

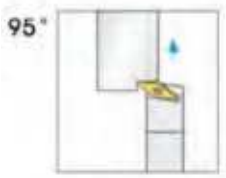


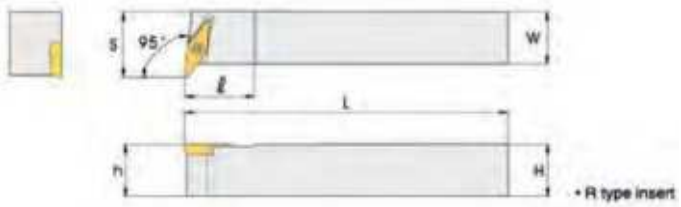


Designation	Stock		Size						Inserts	Screw	Shim	Shim Screw	Wrench
	R	L	H	W	L	ℓ	h	S					
SVVBN 1212F11	●		12	12	80	24	12	6	VB□□1103□□	M2.5X6.5	-	-	T-8
SVVBN 1616H11	●		16	16	100	24	16	8					
SVVBN 2020K11	●		20	20	125	24	20	10					
SVVBN 2525M11	●		25	25	150	24	25	12.5					
SVVBN 1616H16	●		16	16	100	34	16	8	VB□□1604□□	M3.5X9	-	-	T-25
SVVBN 2020K16			20	20	125	34	20	10		M3.5X12	SV32S	SHXN0509F	T-15
SVVBN 2525M16			25	25	150	34	25	12.5					
SVVBN 3232P16			32	32	170	34	32	16					

SVVCN 1212F11	●		12	12	80	24	12	6	VC□□1103□□	M2.5X6.5	-	-	T-8
SVVCN 1616H11	●		16	16	100	24	16	8					
SVVCN 2020K11	●		20	20	125	24	20	10					
SVVCN 2525M11	●		25	25	150	24	25	12.5					
SVVCN 1616H16	●		16	16	100	34	16	8	VC□□1604□□	M3.5X9	-	-	T-15
SVVCN 2020K16			20	20	125	34	20	10		M3.5X12	SV32S	SHXN0509F	T-15 HW35L
SVVCN 2525M16			25	25	150	34	25	12.5					
SVVCN 3232P16			32	32	170	34	32	16					

SVUBR/L, SVUCR/L

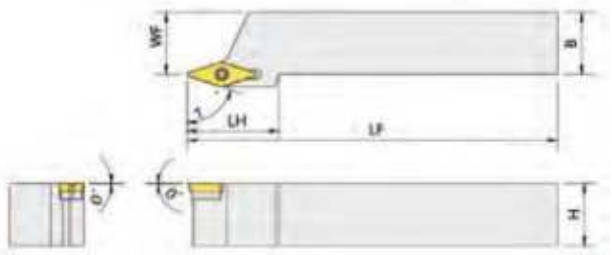




Designation	Stock		Size						Inserts	Screw	Shim	Shim Screw	Wrench
	R	L	H	W	L	ℓ	h	S					
SVUBR/L 1212H11	●	●	12	12	100	14	12	20	VB□□1103□□	M2.5X6.5	-	-	T-8
SVUBR/L 1616H11	●	●	16	16	100	14	16	20					
SVUBR/L 2020K16			20	20	125	18	20	30	VB□□1604□□	M3.5X12	SV32S	SHXN0509F	T-15 HW35L
SVUBR/L 2525M16			25	25	150	18	25	35					

SVUCR/L 1212H11	●	●	12	12	100	14	12	20	VC□□1103□□	M2.5X6.5	-	-	T-8
SVUCR/L 1616H11	●	●	16	16	100	14	16	20					
SVUCR/L 2020K16			20	20	125	18	20	30	VC□□1604□□	M3.5X12	SV32S	SHXN0509F	T-15 HW35L
SVUCR/L 2525M16			25	25	150	18	25	35					

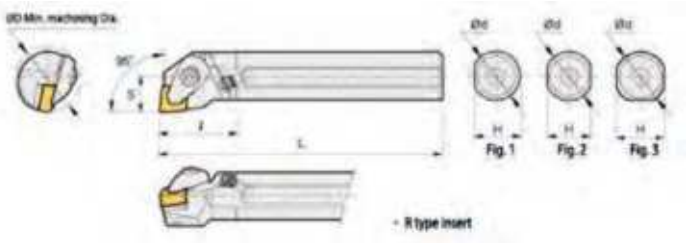
SVVCR/L



Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	H	B	LF	LH	h	WF			
SVVCR/L 2020K16			20	20	125	37	20	20	VC□□1604□□	M3.5X9	T-15
SVVCR/L 2525M16			25	25	150	37	25	25			

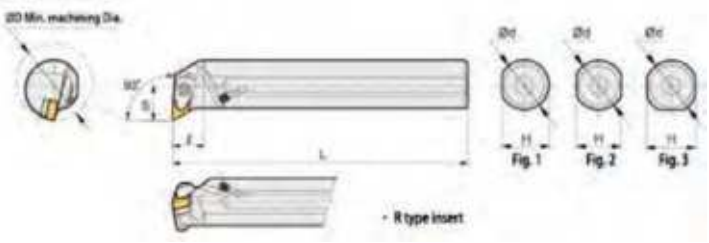
Double Clamp System

DCLNR/L



Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench	Fig.
	R	L	Dmin	d	H	L	ℓ	S								
S20Q-DCLNR/L09			25	20	18	180	40	14	CN□□0903□□	CVH43	CHX0415	-	-	SPR0510	HW25L	1
S25R-DCLNR/L09			32	25	24	200	40	17								1
S25R-DCLNR/L12	●	●	32	25	24	200	40	17	CN□□1204□□	CVH54	CHX0518	-	-	SPR0714	HW30L	1
S32S-DCLNR/L12	●	●	40	32	30	250	50	22				MSC-432	DSP0611F			3
S40T-DCLNR/L12	●	●	48	40	38	300	60	27								3
S50U-DCLNR/L12			58	50	48	350	70	35								3
A25R-DCLNR/L12			32	25	24	200	40	17				-	-			1
A32S-DCLNR/L12			40	32	30	250	50	22				MSC-432	DSP0611F			3
A40T-DCLNR/L12			48	40	38	300	60	27								3
A50U-DCLNR/L12			58	50	48	350	70	35								3

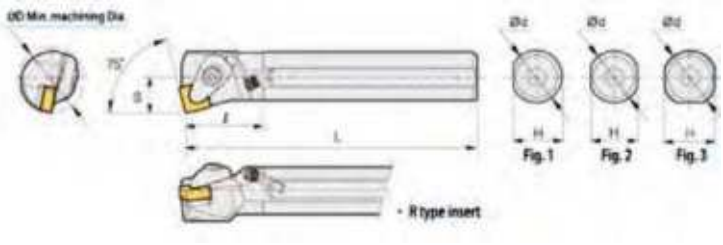
DDUNR/L



Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench	Fig.
	R	L	Dmin	d	H	L	ℓ	S								
S20Q-DDUNR/L11			25	20	18	180	40	14	DN□□1104□□	CVH43	CHX0415	-	-	SPR0510	HW25L	1
S25R-DDUNR/L11			32	25	24	200	40	17								1
S25R-DDUNR/L15	●	●	32	25	24	200	40	17	DN□□1504□□ DN□□1506□□	CVH54	CHX0518	-	-	SPR0714	HW30L	1
S32S-DDUNR/L15	●	●	40	30	30	250	50	22				MSD-432 MSD-442	DSP0611F			3
S40T-DDUNR/L15	●	●	50	40	38	300	60	27								3
S50U-DDUNR/L15			63	50	47	350	70	35								3
A25R-DDUNR/L15			32	25	24	200	40	17				-	-			1
A32S-DDUNR/L15			40	30	30	250	50	22				MSD-432 MSD-442	DSP0611F			3
A40T-DDUNR/L15			50	40	38	300	60	27								3
A50U-DDUNR/L15			63	50	47	350	70	35								3

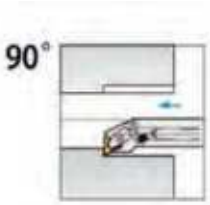
Double Clamp System

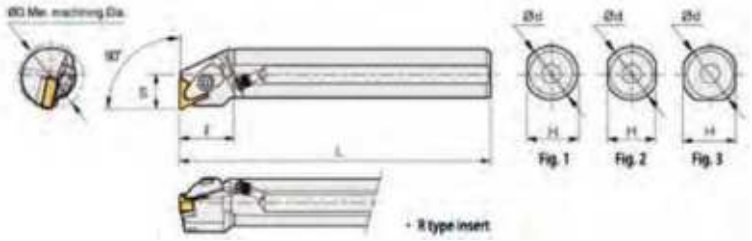
DSKNR/L



Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench	Fig.
	R	L	Dmin	d	H	L	ℓ	S								
S20Q-DSKNR/L09			25	20	18	180	40	14	SN□□0903□□	CVH43	CHX0415	-	-	SPR0510	HW25L	1
S25R-DSKNR/L09			32	25	24	200	40	17								1
S25R-DSKNR/L12	●	●	32	25	24	200	40	17	SN□□1204□□	CVH54	CHX0518	-	-	SPR0714	HW30L	1
S32S-DSKNR/L12	●	●	40	32	30	250	50	22				MSS-432	DSP0611F			3
S40T-DSKNR/L12	●	●	50	40	38	300	60	27								3
S50U-DSKNR/L12			63	50	48	350	70	35								3
A25R-DSKNR/L12			32	25	24	200	40	17				-	-			1
A32S-DSKNR/L12			40	32	30	250	50	22				MSS-432	DSP0611F			3
A40T-DSKNR/L12			50	40	38	300	60	27								3
A50U-DSKNR/L12			63	50	48	350	70	35								3

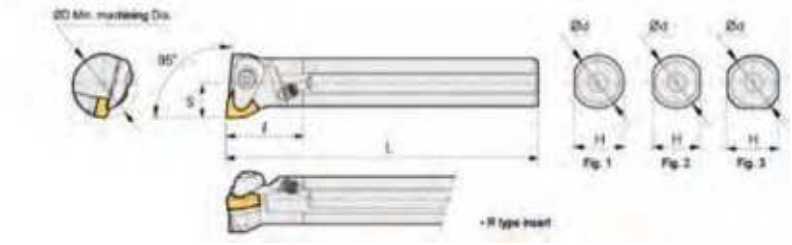
DTFNR/L





Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench	Fig.
	R	L	Dmin	d	H	L	ℓ	S								
S20Q-DTFNR/L16	●	●	28	20	18	180	40	14	TN□□1604□□	CVH43	CHX0415	-	-	SPR0510	HW25L	1
S25R-DTFNR/L16	●	●	32	25	24	200	40	17								1
S32S-DTFNR/L16	●	●	40	32	30	250	50	22				MST-322	DSP0408F			3
S40T-DTFNR/L16	●	●	50	40	38	300	60	27								3
A20Q-DTFNR/L16			28	20	18	180	40	14				-	-			1
A25R-DTFNR/L16			32	25	24	200	40	17								1
A32S-DTFNR/L16			40	32	30	250	50	22				MST-322	DSP0408F			3
A40T-DTFNR/L16			50	40	38	300	60	27								3

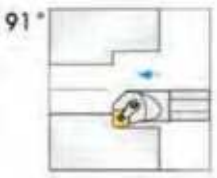
DWLNR/L

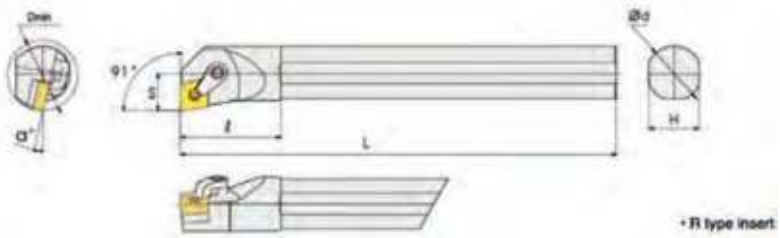


Designation	Stock		Size						Inserts	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench	Fig.
	R	L	Dmin	d	H	L	ℓ	S								
S20Q-DWLNR/L06			25	20	18	180	40	13	WN□□0603□□	CVH43	CHX0415	-	-	SPR0510	HW25L	1
S25R-DWLNR/L06			32	25	24	200	40	17								1
S25R-DWLNR/L08	●	●	32	25	24	200	40	17	WN□□0804□□	CVH54	CHX0518	-	-	SPR0714	HW30L	1
S32S-DWLNR/L08	●	●	40	32	30	250	50	22				MSW-432	DSP0611F			3
S40T-DWLNR/L08	●	●	50	40	38	300	60	27								3
S50U-DWLNR/L08			63	50	47	350	70	35								3
A25R-DWLNR/L08			32	25	24	200	40	17				-	-			1
A32S-DWLNR/L08			40	32	30	250	50	22				MSW-432	DSP0611F			3
A40T-DWLNR/L08			50	40	38	300	60	27								3
A50U-DWLNR/L08			63	50	47	350	70	35								3

Multi Lock System

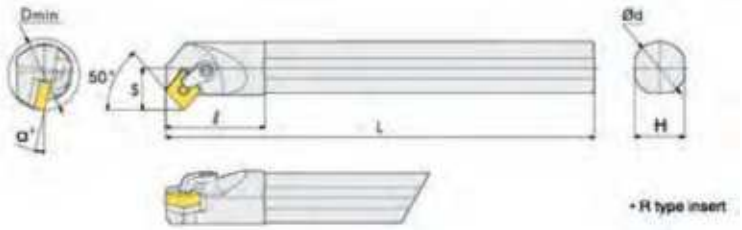
MCKNR/L





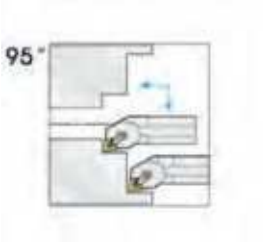
Designation	Stock		Size							Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S20Q-MCKNR/L12	●	●	24	20	18	180	45	14	15°	CN□□1204□□	-	MLP44A	MCP618-2	MCS622-3	HW25L
S25R-MCKNR/L12	●	●	30	25	23	200	45	17	13°				MCP618	MCS625-3	HW30L
S32S-MCKNR/L12	●	●	38	32	30	250	50	22.5	17°		MSC-432	MLP406	MCP618	MCS625-3	HW25L HW30L
S40T-MCKNR/L12			47	40	38	300	55	27	15°						
S50U-MCKNR/L12			60	50	48	350	70	35	12°						

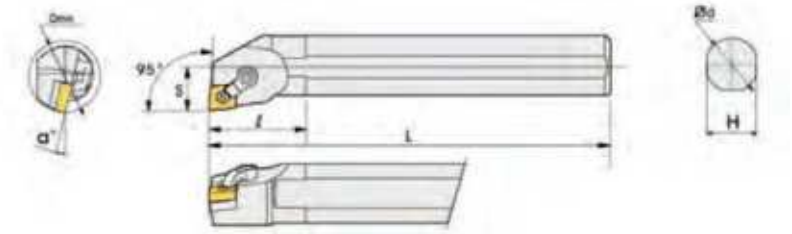
MCWNR/L



Designation	Stock		Size							Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S20Q-MCWNR/L12			27	20	18	180	40	14	15°	CN□□1204□□	-	MLP44A	MCS622-3	MCS622-3	HW25L
S25R-MCWNR/L12			31	25	23	200	45	17	12°				MCS625-3		HW30L
S32S-MCWNR/L12			39	32	30	250	50	22.5	17°		MSC-432	MLP406	MCP618	MCS625-3	HW25L HW30L
S40T-MCWNR/L12			47	40	38	300	55	27	15°						

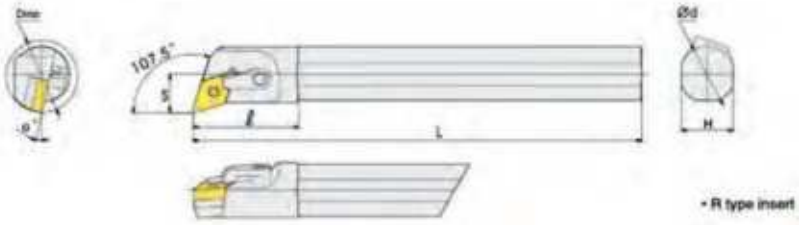
MCLNR/L





Designation	Stock		Size							Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S16Q-MCLNR/L09	●	●	22	16	11	180	35	15	17°	CN□□0903□□	-	MLP33A	MCP515	MCS519-2.5	HW20L HW25L
S20Q-MCLNR/L09	●	●	23	20	18	180	33	13	15°						
S20Q-MCLNR/L12	●	●	23	20	18	180	45	13	15°	CN□□1204□□	-	MLP44A	MCP618-2	MCS622-3	HW25L HW30L
S25R-MCLNR/L12	●	●	30	25	23	200	45	17	12°				MCP618	MCS625-3	
S32S-MCLNR/L12	●	●	38	32	30	250	50	22.5	17°		MSC-432	MLP406	MCP618	MCS625-3	HW25L HW30L
S40T-MCLNR/L12	●	●	47	40	38	300	55	27	15°						
S50U-MCLNR/L12			60	50	48	350	70	31	12°						
S32S-MCLNR/L16			38	32	30	250	50	22.5	17°	CN□□1606□□	MSC-533	MLP508	MCP822	MCS830-4	HW40L
S40T-MCLNR/L16			47	40	38	300	55	27	15°						
S50U-MCLNR/L16			60	50	48	350	75	31	12°						

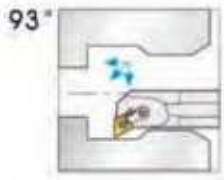
MDQNR/L

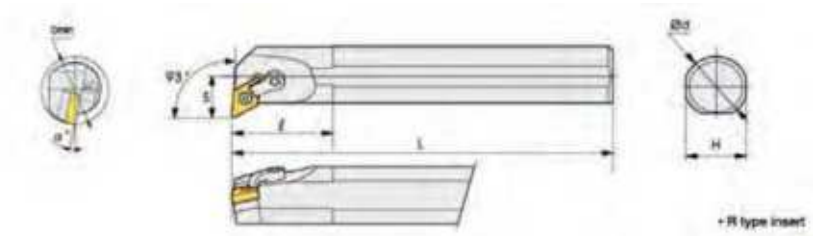


Designation	Stock		Size							Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S25R-MDQNR/L15	●	●	32	25	23	200	45	17	12°	DN□□1504□□	-	MLP44A	MCP621	MCS625-3	HW25L HW30L
S32S-MDQNR/L15	●	●	42	32	30	250	50	22.5	17°	DN□□1504□□ DN□□1506□□	MSD-432 MSD-442	MLP406			
S40T-MDQNR/L15	●		50	40	38	300	60	27	15°						
S50U-MDQNR/L15			63	50	48	350	70	33	12°						

Multi Lock System

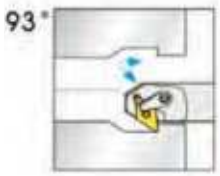
MDUNR/L

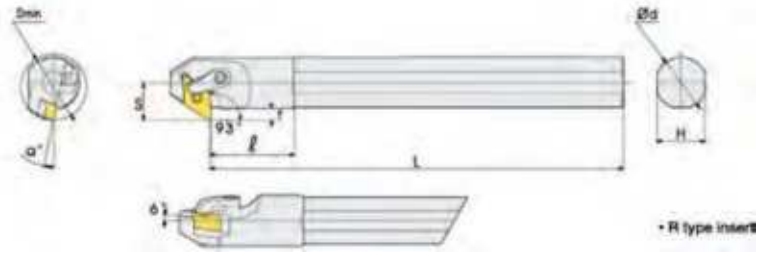




Designation	Stock		Size							Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S20Q-MDUNR/L11	●	●	26	20	18	180	33	13	15°	DN□□1104□□	-	MLP33A	MCP621	MCS625-3	HW25L HW30L
S25R-MDUNR/L11	●	●	30	25	23	180	45	17	12°						
S25R-MDUNR/L15	●	●	38	25	23	200	45	17	12°	DN□□1504□□	-	MLP44A			
S32S-MDUNR/L15	●	●	47	32	30	250	50	22	17°	DN□□1204□□ DN□□1206□□	MSD-432 MSD-442	MLP406			
S40T-MDUNR/L15	●		50	40	38	300	60	27	15°						
S50U-MDUNR/L15			60	50	48	350	70	32	12°						

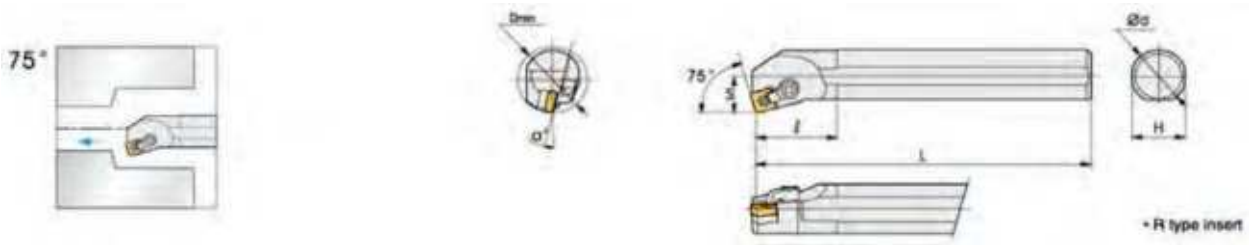
MDZNR/L





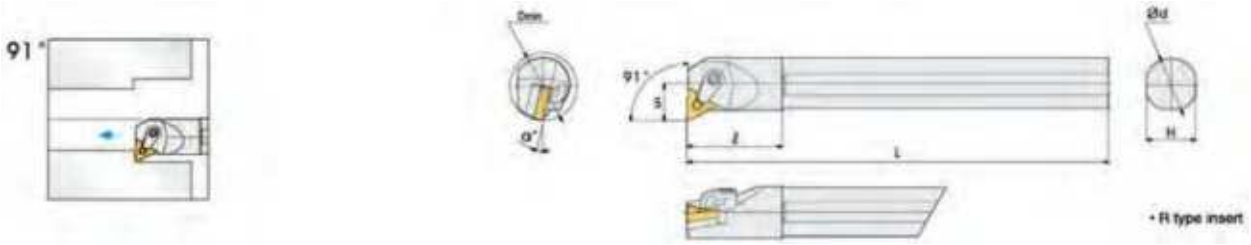
Designation	Stock		Size							Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S25R-MDNZR/L15	●	●	30	25	23	200	45	18	13°	DN□□1504□□	-	MLP44A	MCP621	MCS622-3	HW25L HW30L
S32S-MDNZR/L15	●		38	32	30	250	50	22	17°	DN□□1504□□ DN□□1506□□	MSD-432 MSD-442	MLP406		MCS625-3	
S40T-MDNZR/L15	●		47	40	38	300	55	27	13°						
S50U-MDNZR/L15			60	50	48	350	70	33	12°						

MSKNR/L



Designation	Stock		Size							Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S20Q-MSKNR/L12	●		25	20	18	180	45	13	15°	SN□□1204□□	-	MLP44A	MCP618-2	MCS622-3	HW25L HW30L
S25R-MSKNR/L12	●		30	25	23	200	45	17	12°				MCP618	MCS625-3	
S32S-MSKNR/L12	●		38	32	30	250	50	22	12°		MSS-432	MLP406	MCP618	MCS625-3	
S40T-MSKNR/L12			47	40	38	300	55	27	15°						
S50U-MSKNR/L12			60	50	48	350	70	34	12°						

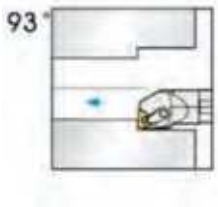
MTFNR/L

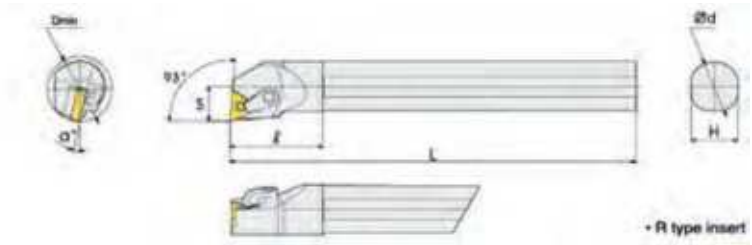


Designation	Stock		Size							Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S20Q-MTFNR/L16	●	●	25	20	18	180	40	13	15°	TN□□1604□□	-	MLP33A	MCP618-2	MCS622-3	HW20L HW30L
S25R-MTFNR/L16	●	●	30	25	23	200	45	17	12°				MCP618	MCS625-3	
S32S-MTFNR/L16	●	●	38	32	30	250	54	22	17°		MST-322	MLP305	MCP618	MCS625-3	
S40T-MTFNR/L16	●		47	40	38	300	60	27	15°						
S50U-MTFNR/L16			60	50	48	350	65	31	12°						
S40T-MTFNR/L22			50	40	38	300	55	27	15°	TN□□2204□□	MST-432	MLP406	MCP819	MCS830-4	HW25L HW40L
S50U-MTFNR/L22			60	50	48	350	70	31	12°						

Multi Lock System

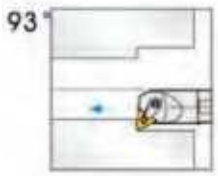
MTUNR/L

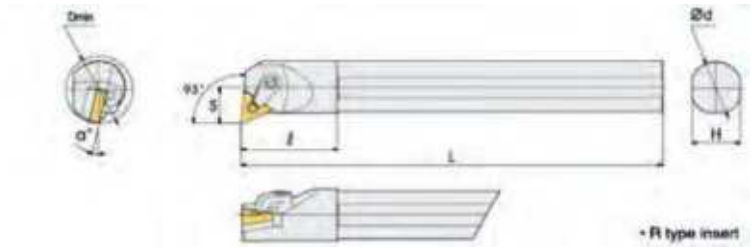




Designation	Stock		Size							Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S20Q-MTUNR/L16	●	●	25	20	18	180	42	13	15°	TN□□1604□□	-	MLP33A	MCP618-2	MCS622-3	HW20L HW30L
S25R-MTUNR/L16	●	●	30	25	23	200	45	17	12°				MCP618	MCS625-3	
S32S-MTUNR/L16	●	●	38	32	30	250	54	22	17°		MST-322	MLP305	MCP618	MCS625-3	
S40T-MTUNR/L16	●		47	40	38	300	60	27	15°						
S50U-MTUNR/L16			60	50	48	350	65	31	12°						
S40T-MTUNE/L22			47	40	38	300	55	27	15°	TN□□2204□□	MST-432	MLP406	MCP819	MCS830-4	HW25L HW40L
S50U-MTUNR/L22			60	50	48	350	70	31	12°						

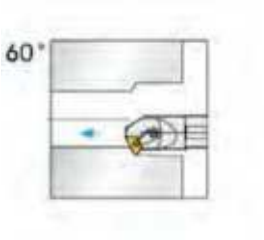
MTUNR/L-A

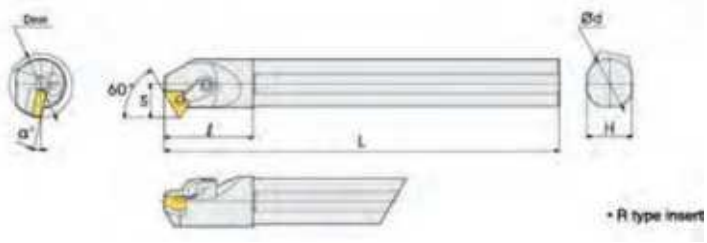




Designation	Stock		Size							Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S20Q-MTUNR/L16A	●	●	25	20	18	180	40	13	15°	TN□□1604□□	-	MLP33A	MCP618-2	MCS622-3	HW20L HW30L
S25R-MTUNR/L16A	●	●	30	25	23	200	45	17	12°				MCP618	MCS625-3	
S32S-MTUNR/L16A	●	●	38	32	30	250	54	22	17°		MST-322	MLP305	MCP618	MCS625-3	
S40T-MTUNR/L16A			47	40	38	300	60	27	15°						
S50U-MTUNR/L16A			60	50	48	350	65	31	12°						

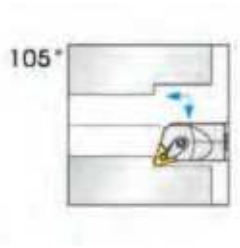
MTWNR/L

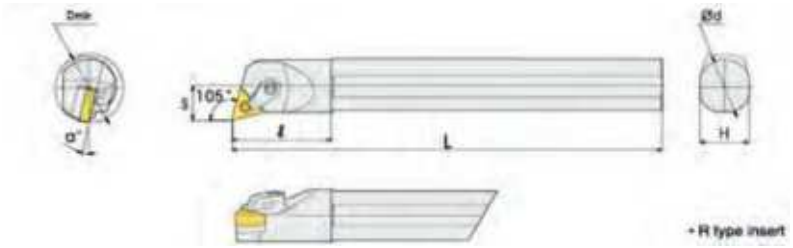




Designation	Stock		Size							Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S20Q-MTWNR/L16	●		25	20	18	180	40	14	15°	TN□□1604□□	-	MLP33A	MCP618-2	MCS622-3	HW20L HW30L
S25R-MTWNR/L16	●		30	25	23	200	45	17	12°				MCP618	MCS625-3	
S32S-MTWNR/L16	●		38	32	30	250	54	22	17°		MST-322	MLP305	MCP618	MCS625-3	
S40T-MTWNR/L16			47	40	38	300	60	27	15°						
S50U-MTWNR/L16			60	50	48	350	65	31	12°						

MTQNR/L

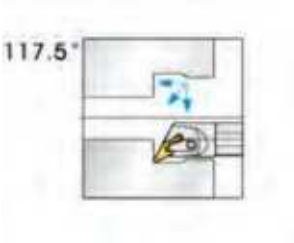


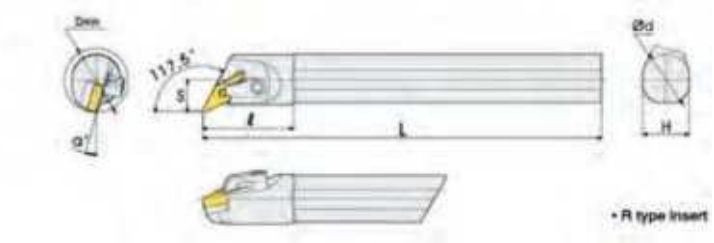


Designation	Stock		Size							Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S20Q-MTQNR/L16	●	●	25	20	18	180	42	13	15°	TN□□1604□□	-	MLP33A	MCP618-2	MCS622-3	HW20L HW30L
S25R-MTGNR/L16	●	●	30	25	23	200	45	17	12°				MCP618	MCS625-3	
S32S-MTQNR/L16	●	●	38	32	30	250	54	22	17°		MST-322	MLP305	MCP618	MCS625-3	
S40T-MTQNR/L16	●		47	40	38	300	60	27	15°						
S50U-MTQNR/L16			60	50	48	350	65	31	12°						

Multi Lock System

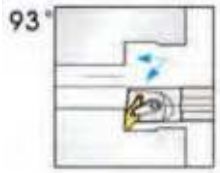
MVQNR/L

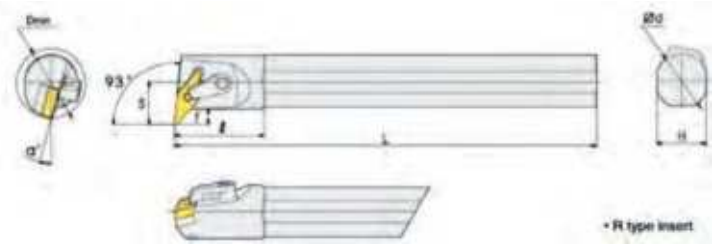




Designation	Stock		Size							Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S25R-MVQNR/L16	●	●	30	25	23	200	45	17	12°	VN□□1604□□	-	MLP33A	MCP824	MCS625-3	HW20L HW30L
S32S-MVQNR/L16	●	●	38	32	30	250	50	22	17°		MSV-322	MLP305			
S40T-MVQNR/L16			47	40	38	300	55	27	15°						
S50U-MVQNR/L16			60	50	48	350	70	31	12°						

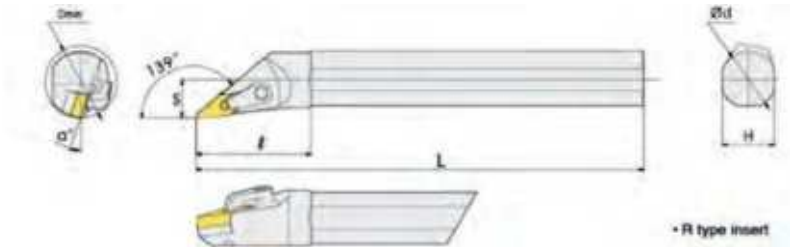
MVUNR/L





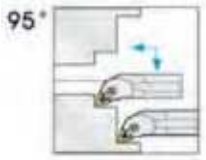
Designation	Stock		Size							Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S25R-MVUNR/L16	●	●	32	25	23	200	45	20	12°	VN□□1604□□	-	MLP33A	MCP721	MCS625-3	HW20L HW30L
S32S-MVUNR/L16	●	●	38	32	30	250	50	22	17°		MSV-322	MLP305			
S40T-MVUNR/L16			47	40	38	300	55	27	15°						
S50U-MVUNR/L16			60	50	48	350	70	31	12°						

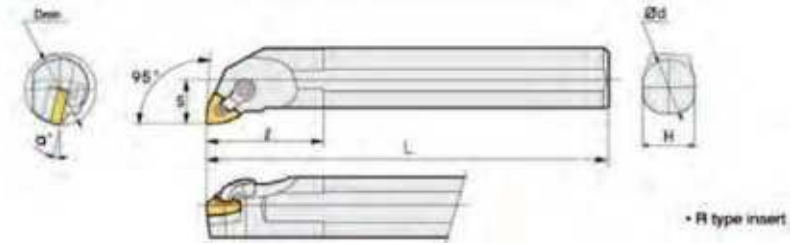
MVXNR/L



Designation	Stock		Size							Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S20Q-MVXNR/L16	●	●	24	20	18	180	45	14	15°	VN□□1604□□	-	MLP33A	MCP824-2	MCP622-3	HW20L HW30L
S25R-MVXNR/L16	●	●	30	25	23	200	50	17	12°				MCP824	MCS625-3	
S32S-MVXNR/L16	●	●	38	32	30	250	55	22	17°		MSV-322	MLP305			
S40T-MVXNR/L16			47	40	38	300	60	27	15°						
S50U-MVXNR/L16			60	50	48	350	65	31	12°						

MWLNR/L

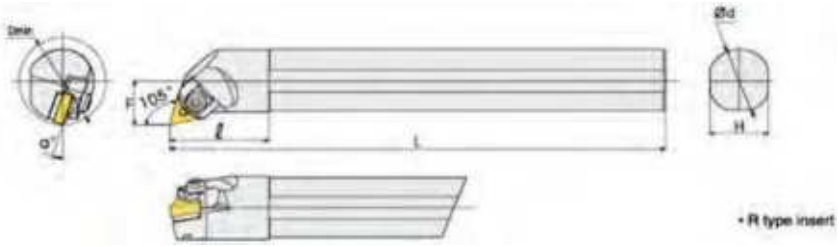




Designation	Stock		Size							Inserts	Shim	Pin	Clamp	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S16Q-MWLNR/L06	●	●	19	16	15	180	28	11	18°	WN□□0604□□	-	MLP33A	MCP515	MCS519-2.5	HW20L HW25L
S20Q-MWLNR/L06	●	●	23	20	18	180	42	13	15°						
S25R-MWLNR/L06	●	●	30	25	23	200	45	17	12°				MCP618	MCS625-3	HW25L HW30L
S20Q-MWLNR/L08	●	●	23	20	18	180	40	13	15°	WN□□0804□□	-	MLP44A	MCP618-2	MCS622-3	HW25L HW30L
S25R-MWLNR/L08	●	●	30	25	23	200	45	17	12°				MCP618	MCS625-3	
S32S-MWLNR/L08	●	●	38	32	30	250	50	22	17°		MSW-432	MLP406			
S40T-MWLNR/L08			47	40	38	300	55	27	15°						
S50U-MWLNR/L08			60	50	48	350	70	31	12°						

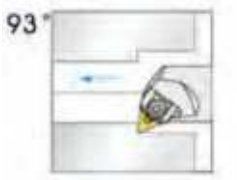
Multi Lock System

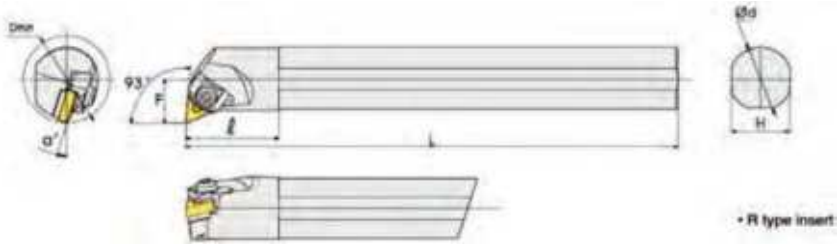
WTQNR/L



Designation	Stock		Size							Inserts	Shim	Pin	Wedge	Screw	Stopper ring	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α							
S25R-WTQNR/L16			32	25	23	200	47	17	13°	TN□□1604□□	-	SCP311	MCW3-P25N	WCS626-4	ER04	HW25L HW40L
S32S-WTQNR/L16			40	32	30	250	47	22	17°		MST-32M	SCP317	MCW3-P25			
S40T-WTQNR/L16			50	40	38	300	60	27	15°							
S32S-WTQNR/L22			44	32	30	250	47	22	17°	TN□□2204□□	MST-432	SCP418	MCW4-P30N			HW30L HW40L
S40T-WTQNR/L22			52	40	38	300	60	27	15°							

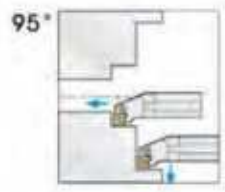
WTUNR/L

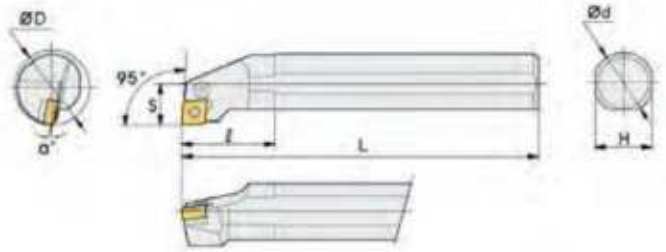




Designation	Stock		Size							Inserts	Shim	Pin	Wedge	Screw	Stopper ring	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α							
S20S-WTUNR/L16			32	20	18	250	47	16	17°	TN□□1604□□	-	SCP311	MCW3-P25N	WCS626-4	ER04	HW25L HW40L
S25T-WTUNR/L16			32	25	23	300	47	17	12°		MST-32M	SCP317	MCW3-P25			
S32U-WTUNR/L16			40	32	30	350	60	22	10°							
S40V-WTUNR/L16			50	40	38	400	47	27	10°							
S40V-WTUNR/L22			50	40	38	400	60	27	10°	TN□□2204□□	MST-432	SCP418	MCW4-P30N			HW30L HW40L
S50W-WTUNR/L22			63	50	48	450	60	35	8°							

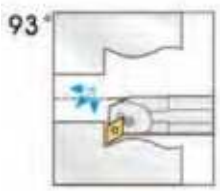
PCLNR/L

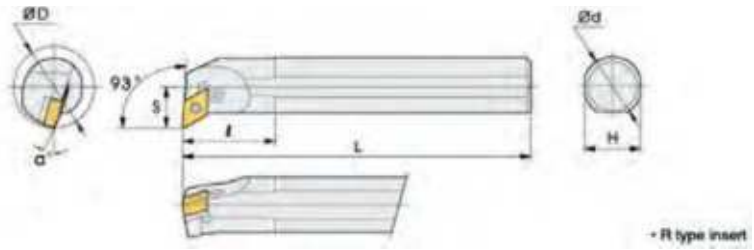




Designation	Stock		Size							Inserts	Lever	Screw	Shim	Shim Pin	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S16Q-PCLNR/L09			20	16	15	180	28	11	12°	CN□□0903□□	LV3C	VHX0509B	-	-	HW20L
S20Q-PCLNR/L09			25	20	18	180	32	13	11°						
S25R-PCLNR/L09			32	25	23	200	36	17	10°						
S25R-PCLNR/L12			32	25	23	200	40	17	12°	CN□□1204□□	LV4A	VHX0613A	-	-	HW25L
S32S-PCLNR/L12			40	32	30	250	50	22	11°		LV4	VHX0821	SC42B	SP4	HW30L
S40T-PCLNR/L12			50	40	37	300	55	27	10°						
S50U-PCLNR/L12			63	50	47	350	55	35	10°						
S50U-PCLNR/L19			70	50	47	350	63	35	10°	CN□□1906□□	LV6	VHX1207	SC63	SP6	HW40L

PDUNR/L

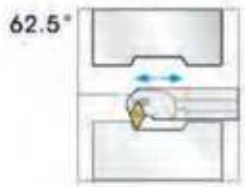


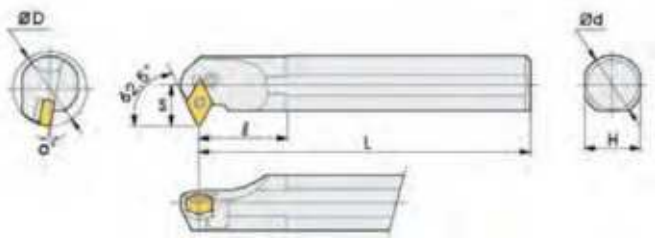


Designation	Stock		Size							Inserts	Lever	Screw	Shim	Shim Pin	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S20Q-PDUNR/L11			25	20	18	180	30	13	16°	DN□□1104□□	LV3D	VHX0509B	-	-	HW20L
S25R-PDUNR/L11			32	25	23	200	35	17	13°						
S32S-PDUNR/L11			40	32	30	250	40	22	16°		LV3	VHX0617	SD317	SP3	HW25L
S32S-PDUNR/L1506			40	32	30	250	50	22	16°	DN□□1506□□	LV4B	VHX0821	SD42	SP4	HW30L
S40T-PDUNR/L1506			50	40	37	300	50	27	11°						
S32S-PDUNR/L1504			40	32	30	250	50	22	16°	DN□□1504□□	LV4	VHX0821	SD42	SP4	HW30L
S40T-PDUNR/L1504			50	40	37	300	50	27	11°						

Lever Lock System

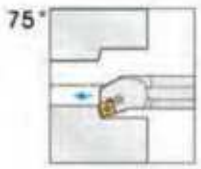
PDSNR/L

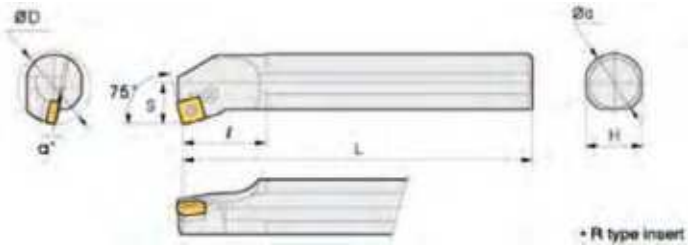




Designation	Stock		Size							Inserts	Lever	Screw	Shim	Shim Pin	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S32S-PDSNR/L1506	●		40	32	30	250	45	22	11°	DN□□1506□□	LV4B	VHX0821	SD42	SP4	HW30L
S40T-PDSNR/L1506	●		50	40	37	300	45	27	11°						
S32S-PDSNR/L1504	●		40	32	30	250	45	22	11°	DN□□1504□□	LV4	VHX0821	SD42	SP4	HW30L
S40T-PDSNR/L1504	●		50	40	37	300	45	27	11°						

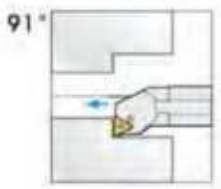
PSKNR/L

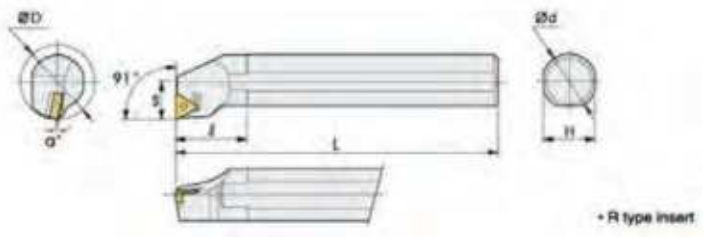




Designation	Stock		Size							Inserts	Lever	Screw	Shim	Shim Pin	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S25R-PSKNR/L12	●	●	32	25	23	200	42	17	12°	SN□□1204□□	LV4B	VHX0613A	-	-	HW25L
S32S-PSKNR/L12	●	●	40	32	30	250	45	22	12°		LV4	VHX0821	SD42	SP4	HW30L
S40T-PSKNR/L12	●	●	50	40	37	300	50	27	12°						

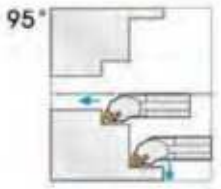
PTFNR/L

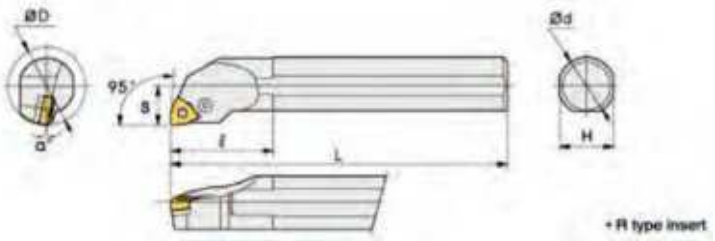




Designation	Stock		Size							Inserts	Lever	Screw	Shim	Shim Pin	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S16Q-PTFNR/L11			20	16	23	180	25	11	20°	TN□□1103□□	LV2	VHX0509B	-	-	HW25L
S20Q-PTFNR/L11			25	20	30	180	32	13	18°						
S25R-PTFNR/L11			32	25	38	200	40	17	15°						
S25R-PTFNR/L16	●	●	32	25	23	200	42	17	15°	TN□□1604□□	LV3B	VHX0512B	-	-	HW20L
S32S-PTFNR/L16	●	●	44	32	30	250	50	22	12°		LV3	VHX0617	ST317B	SP3	HW25L
S40T-PTFNR/L16	●	●	54	40	37	300	55	27	10°						

PWLNR/L

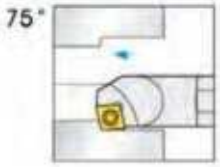


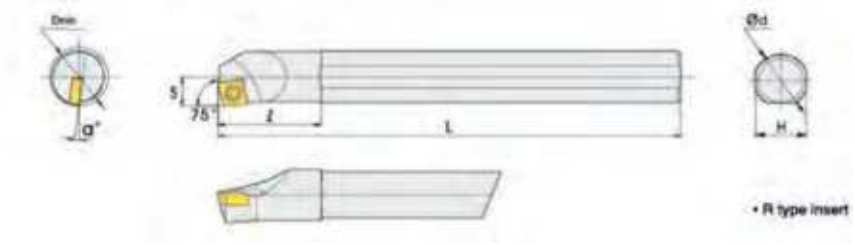


Designation	Stock		Size							Inserts	Lever	Screw	Shim	Shim Pin	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α						
S16Q-PWLNR/L06			20	16	15	180	25	11	13°	WN□□0604□□	LV3B	VHX0512B	-	-	HW20L
S20Q-PWLNR/L06			25	20	18	180	40	13	12°						
S25R-PWLNR/L06			32	25	23	200	40	17	12°						
S32S-PWLNR/L06	●	●	44	32	30	250	45	22	10°		LV3	VHX0617	SW317	SP3	HW25L
S20Q-PWLNR/L08	●	●	25	20	18	180	32	13	13°	WN□□0804□□	LV4A	VHX0613A	-	-	HW25L
S25R-PWLNR/L08	●	●	32	25	23	200	45	17	12°						
S32S-PWLNR/L08	●	●	44	32	30	250	50	22	10°		LV4	VHX0821	SW42	SP4	HW30L
S40T-PWLNR/L08	●	●	50	40	42	300	55	30	13°						

Screw On System

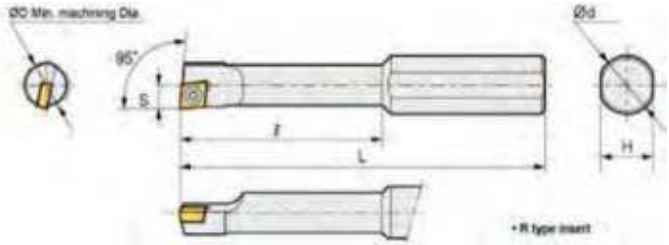
SCKCR/L





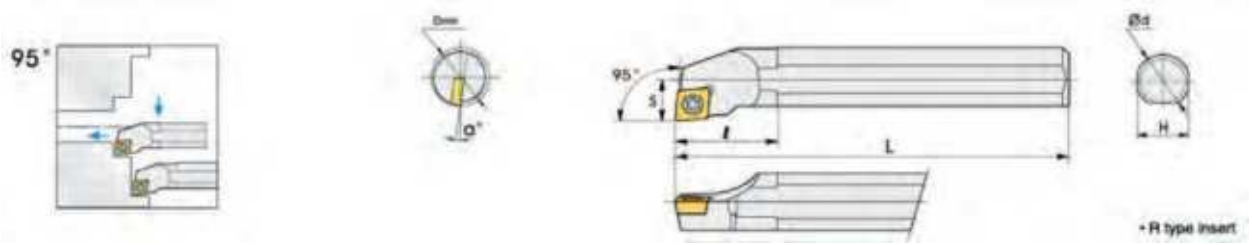
Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S08K-SCKCR/L06	●		10	8	7	125	21	5.5	13°	CC□□0602□□	M2.5X5	T-8
S10K-SCKCR/L06	●		11	10	9	125	25	6	12°		M2.5X6	
S12M-SCKCR/L06	●		13	12	11	150	25	7	10°			
S12M-SCKCR/L09	●		14	12	11	150	30	8	12°	CC□□09T3□□	M3.5X9	T-15
S16Q-SCKCR/L09	●		17	16	15	180	36	9.5	10°			
S20Q-SCKCR/L09	●		21	20	18	180	38	11.5	8°			
S25R-SCKCR/L12			27	25	23	200	42	15	8°	CC□□1204□□	M5X12	T-20

SCLCR/L



Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S0510J-SCLCR/L03			6	10	9	110	15	3	15°	CC□□0301□□	M1.6X3	T-6
S0610J-SCLCR/L03			7	10	9	110	15	3	15°			
S0610J-SCLCR/L04			7	10	9	110	15	3.5	13°	CC□□0401□□	M2.0X4	T-6
S0612K-SCLCR/L04	●	●	7	12	11	125	18	3.5	13°			
S0812K-SCLCR/L06	●	●	10	12	11	125	24	5	13°	CC□□0602□□	M2.5X6	T-8
S0616M-SCLCR/L06	●	●	7	16	11	150	18	3.5	12°			
S1016M-SCLCR/L06	●	●	13	16	15	150	30	6	12°			
S1216M-SCLCR/L06	●	●	16	16	15	150	36	7	10°			
S1020M-SCLCR/L06	●	●	13	20	18	150	30	6	8°			
S1220M-SCLCR/L06	●	●	16	20	18	150	36	7	8°			
S1220M-SCLCR/L09			16	20	18	150	36	7.5	8°	CC□□09T3□□	M3.5X9	T-15

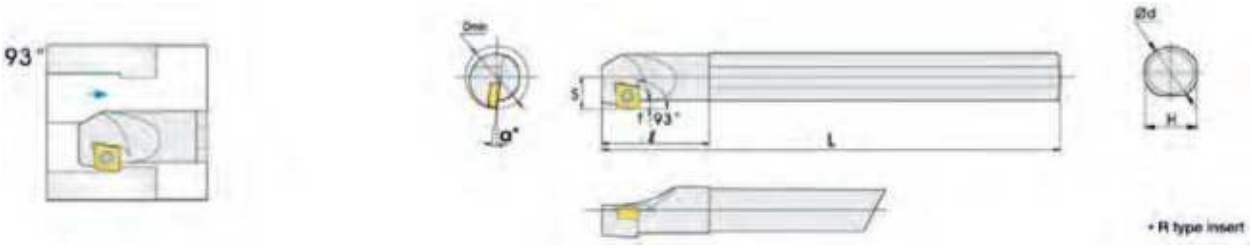
SCLCR/L



Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S07K-SCLCR/L06	●	●	8	8	7	125	18	5	15°	CC□□0602□□	M2.5X5	T-8
S08K-SCLCR/L06	●	●	9	8	7	125	18	5.5	13°			
S10K-SCLCR/L06	●	●	11	10	9	125	22	7	12°			
S12M-SCLCR/L06	●	●	13	12	11	150	25	8	10°		M2.5X6	
S12M-SCLCR/L09	●	●	16	12	11	150	27	8	10°	CC□□09T3□□	M3.5X9	T-15
S14Q-SCLCR/L09	●	●	15	14	13	180	27	8	10°			
S16Q-SCLCR/L09	●	●	17	16	15	180	34	11	10°			
S20Q-SCLCR/L09	●	●	21	20	18	180	38	13	8°			
S25R-SCLCR/L09	●	●	26	25	23	200	45	17	6°			
S32S-SCLCR/L09	●	●	33	32	30	250	45	22	4°			
S20Q-SCLCR/L12	●	●	21	20	18	180	42	13	8°	CC□□1204□□	M5.0X12	T-20
S25R-SCLCR/L12	●	●	26	25	23	200	45	17	8°			
S32S-SCLCR/L12	●	●	33	32	30	250	45	22	6°			
S40T-SCLCR/L12			41	40	38	300	48	27	4°			

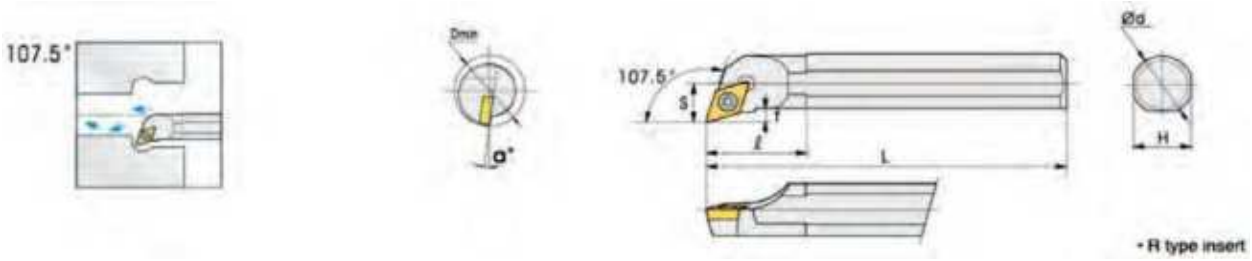
Screw On System

SCZCR/L



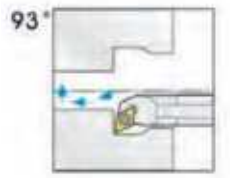
Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S08K-SCZCR/L06B	●		10	8	7	125	25	6.5	13°	CC□□0602□□	M2.5X5	T-8
S10K-SCZCR/L06B	●	●	12	10	9	125	27	7.5	12°		M2.5X6	
S12M-SCZCR/L06B	●	●	14	12	11	150	32	8.5	10°			
S16Q-SCZCR/L09	●	●	21	16	15	180	35	13	10°	CC□□09T3□□	M3.5X9	T-15
S20Q-SCZCR/L09			25	20	18	180	40	15	8°			
S25R-SCZCR/L09			32	25	23	200	42	18	6°			

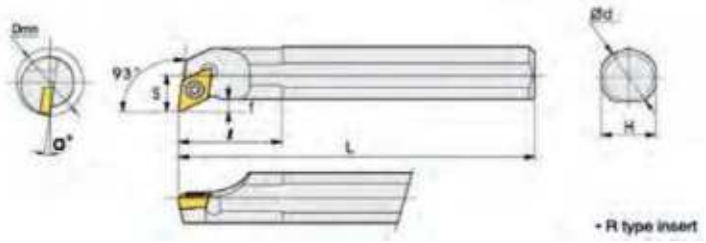
SDQCR/L



Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S08K-SDQCR/L07	●	●	10	7	7	125	18	6	12°	DC□□0702□□	M2.5X5	T-8
S10K-SDQCR/L07	●	●	11	10	9	125	24	7	10°			
S12M-SDQCR/L07	●	●	15	12	11	150	30	9	8°		M2.5X6	
S16Q-SDQCR/L07	●	●	17	16	15	180	30	11	6°			
S20Q-SDQCR/L07	●	●										
S16Q-SDQCR/L11	●	●								DC□□11T3□□	M3.5X9	T-15
S20Q-SDQCR/L11	●	●	23	20	18	180	42	13	5°			
S25R-SDQCR/L11	●	●	29	25	23	200	42.5	17	4°			
S32S-SDQCR/L11	●	●	40	32	30	250	45	22	4°			

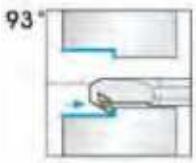
SDUCR/L

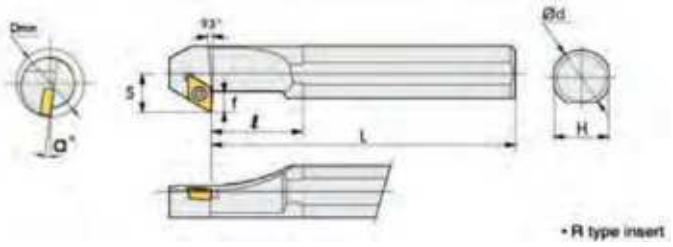




Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S08K-SDUCR/L07	●	●								DC□□0702□□	M2.5X5	T-8
S10K-SDUCR/L07	●	●	15	10	9	125	25	8	10°			
S12M-SDUCR/L07	●	●	17	12	11	150	25	9	8°		M2.5X6	
S16Q-SDUCR/L07	●	●	22	16	15	180	30	11	6°			
S16Q-SDUCR/L11	●	●	19	16	15	180	34	11	8°	DC□□11T3□□	M3.5X9	T-15
S20Q-SDUCR/L11	●	●	23	20	18	180	40	13	6°			
S25R-SDUCR/L11	●	●	29	25	23	200	42	17	5°			
S32S-SDUCR/L11	●	●	38	32	30	250	45	22	4°			
S40T-SDUCR/L11			45	40	38	300	50	25	4°			
S50U-SDUCR/L11			60	50	48	350	55	31	0°			

SDZCR/L

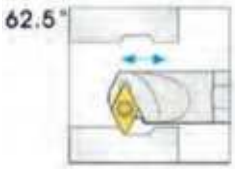


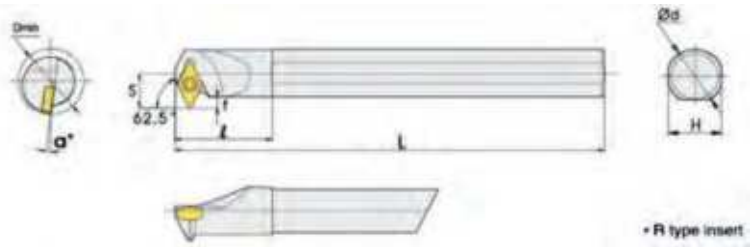


Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S10K-SDZCR/L07	●	●	13	10	9	125	22	8.5	12°	DC□□0702□□	M2.5X5	T-8
S12M-SDZCR/L07	●	●	16	12	11	150	31	10	10°			
S16Q-SDZCR/L07	●	●	21	16	15	180	37	13	6°		M2.5X8	
S20Q-SDZCR/L11	●	●	25	20	18	180	50	15	8°	DC□□11T3□□	M3.5X9	T-15
S25R-SDZCR/L11	●	●	29	25	23	200	45	17	6°			

Screw On System

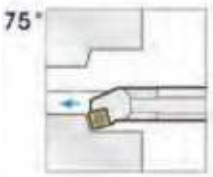
SDWCR/L

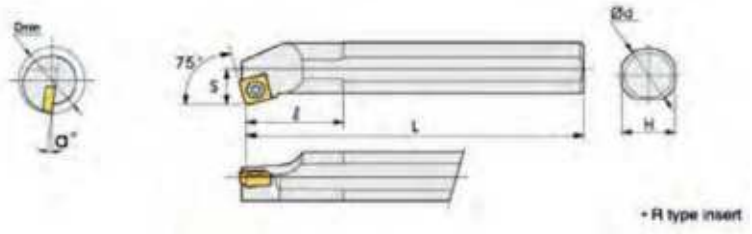




Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S10K-SDWCR/L07	●	●								DC□□0702□□	M2.5X5	T-8
S12M-SDWCR/L07	●	●	16	12	11	150	25	10.5	10°			
S16Q-SDWCR/L07	●	●	20	16	15	180	34.5	12.5	8°		M2.5X6	
S20Q-SDWCR/L07	●	●	27	20	18	180	30	14.5	6°			
S20Q-SDWCR/L11	●	●	24	20	18	180	40	14.5	6°	DCC□□11T3□□	M3.5X9	T-15
S25R-SDWCR/L11	●	●	29	25	23	200	45	17	5°			
S32S-SDWCR/L11	●	●	40	32	30	250	45	22	2°			

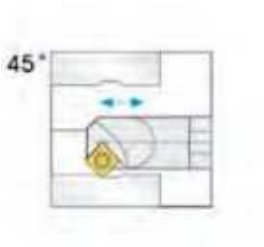
SSKCR/L

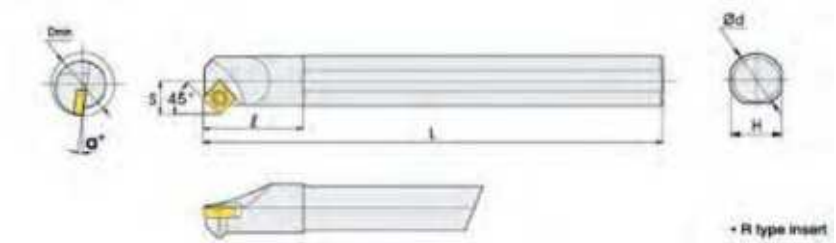




Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S12M-SSKCR/L09	●	●	16	12	11	150	30	8.5	12°	SC□□09T3□□	M3.5X9	T-15
S16Q-SSKCR/L09	●	●	18	16	15	180	32.6	11.5	10°			
S20Q-SSKCR/L09	●		23	20	16	180	40	13	8°			
S25R-SSKCR/L09	●		31	25	23	200	40	17	6°			

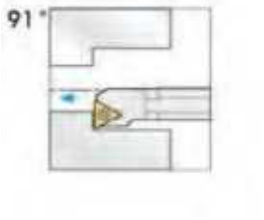
SSSCR/L

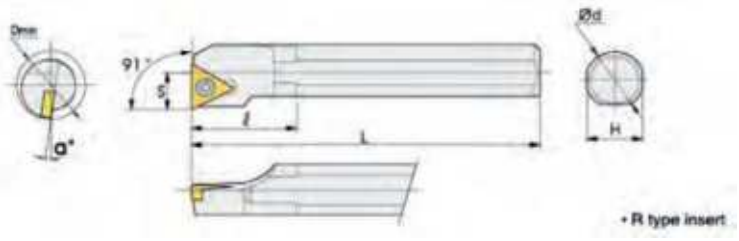




Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S12M-SSSCR/L09	●	●	15	12	11	150	32	9	12°	SC□□09T3□□	M3.5X9	T-15
S16Q-SSSCR/L09	●	●	19	16	15	180	32	11.5	10°			
S20Q-SSSCR/L09	●	●	27	20	18	180	40	13.5	8°			
S25R-SSSCR/L09	●		27	25	23	200	40	15	6°			
S32S-SSSCR/L09			38	32	30	250	46	22	6°			
S20Q-SSSCR/L12			20	20	18	180	42	13.5	8°	SC□□1204□□	M5.0X12	T-20
S25R-SSSCR/L12			25	25	25	200	40	17	6°			
S32S-SSSCR/L12			32	32	30	250	46	22	4°			

STFPR/L

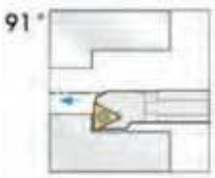


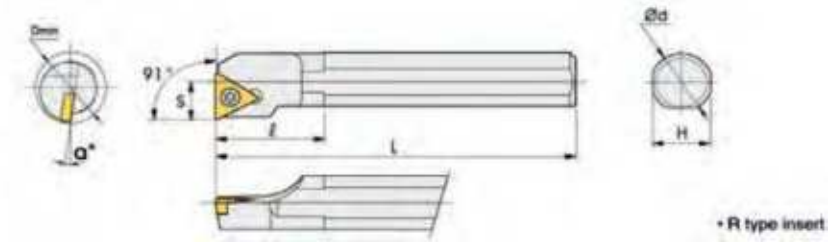


Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S08K-STFPR/L09	●	●	9	8	7	125	20	5	10°	TP□□0902□□	M2.5X6	T-8
S10K-STFPR/L09	●	●	11	10	9	125	22	6	13°			
S10K-STFPR/L11	●	●	11	10	9	125	22	6	12°	TP□□1103□□	M3.0X6	
S12M-STFPR/L11	●	●	12	12	11	150	24	7	10°		M3.0X8	
S16Q-STFPR/L11	●	●	17	16	15	180	30	9	8°			
S20Q-STFPR/L11	●	●	21	20	18	180	37	11	6°			

Screw On System

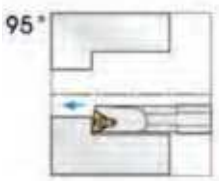
STFCR/L

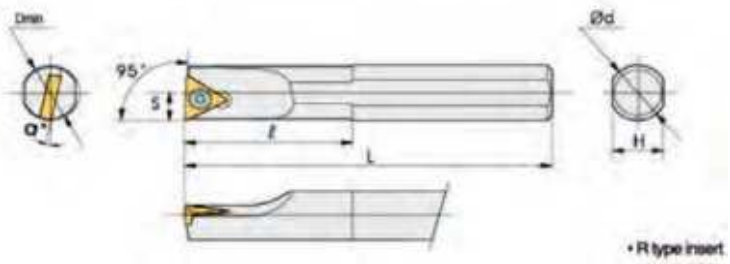




Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S08K-STFCR/L09	●	●	9	8	7	125	20	5.5	15°	TC□□0902□□	M2.2X5	T-6
S10K-STFCR/L09	●	●	11	10	9	125	24	6	13°			
S12M-STFCR/L09	●	●	13	12	11	150	27	7	10°			
S10K-STFCR/L11	●	●	11	10	9	125	24	6	12°	TC□□1102□□	M2.5X6	T-8
S12M-STFCR/L11	●	●	13	12	11	150	26	7	10°			
S16Q-STFCR/L11	●	●	17	16	15	180	32	9	8°		M2.5X8	
S20Q-STFCR/L11	●	●	21	20	18	180	40	11	6°			
S20Q-STFCR/L16	●	●	22	20	18	180	42	11.5	8°	TC□□16T3□□	M3.5X9	T-15
S25R-STFCR/L16	●	●	26	25	23	200	42	14	6°			
S32S-STFCR/L16	●	●	33	32	30	250	45	17.5	6°			
S40T-STFCR/L16			43	40	38	300	60	23.5	4°			
S50U-STFCR/L16			51	50	48	350	65	26.5	4°			

STUCR/L

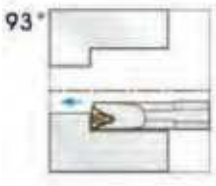


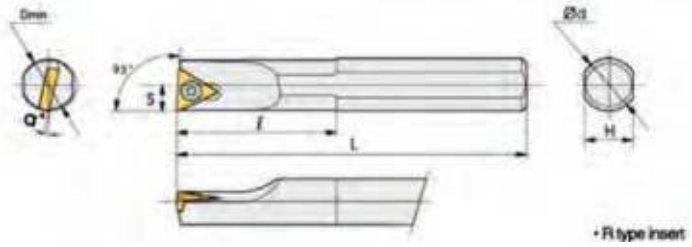


Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S08K-STUCR/L09	●	●	9	8	7	125	20	5.5	15°	TC□□0902□□	M2.2X5	T-6
S08K-STUCR/L09-A16	●	●	9	16	15	125	30	5.5	15°			
S10K-STUCR/L09	●	●	11	10	9	125	22	6.5	13°			
S10K-STUCR/L09-A16	●	●	11	16	15	125	30	6.5	13°			
S10K-STUCR/L11	●	●	11	10	9	125	24	6	12°	TC□□1102□□	M2.5X5	T-8
S10K-STUCR/L11-A16	●	●	11	16	15	125	30	6	12°			
S12M-STUCR/L11	●	●	13	12	11	150	27	7	10°		M2.5X6	
S12M-STUCR/L11-A16	●	●	13	16	15	150	30	7	10°			
S16Q-STUCR/L11	●	●	17	16	15	180	32	9	8°			
S20Q-STUCR/L11	●	●	21	20	18	180	37	11	6°		M2.5X8	
S25R-STUCR/L11	●	●	26	25	23	200	42	14	6°			
S20Q-STUCR/L16	●	●	23	20	18	180	42	13	7°	TC□□16T3□□	M3.5X9	T-15
S25R-STUCR/L16	●		26	25	23	200	45	14	6°			
S32S-STUCR/L16	●		33	32	30	250	47	17.5	4°			
S40T-STUCR/L16	●		42	40	38	300	55	22	4°			
S50U-STUCR/L16			51	50	48	350	65	26.5	4°			

Screw On System

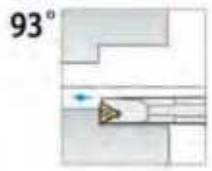
STUPR/L

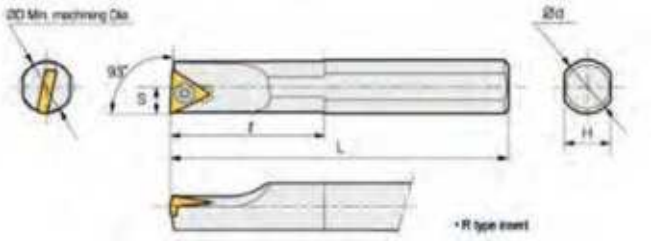




Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S08K-STUPR/L09	●	●	9	8	7	125	20	6	10°	TP□□0902□□	M2.5X5	T-8
S10K-STUPR/L09	●	●	11	10	9	125	22	7	13°			
S10K-STUPR/L11	●	●	11	10	9	125	22	6	12°	TP□□1103□□	M3.0X6	
S12M-STUPIR/L11	●	●	13	12	11	150	27	7	10°			
S16Q-STUPR/L11	●	●	17	16	15	180	32	9	8°		M3.0X8	
S20Q-STUPR/L11	●	●	21	20	18	180	37	11	6°			

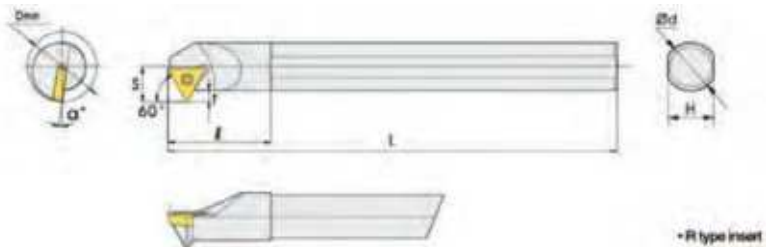
STUBR/L





Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S06H-STUBR/L06	●	●	7	6	5	100	30	3.4	12°	TB□□0601□□	M2.0X4	T-6
S07K-STUBR/L06	●	●	8	7	6	125	30	14	12°			
S08K-STUBR/L06	●	●	10	8	7	125	30	5	12°			
S0608J-STUBR/L06	●	●	7	8	7	110	20	3.5	12°			
S0610K-STUBR/L06	●	●	7	10	9	125	20	3.5	12°			
S0712K-STUBR/L06	●	●	8	12	11	125	20	4	12°			
S0616K-STUBR/L06	●	●	7	16	15	125	30	3.5	12°			
S0716M-STUBR/L06	●	●	8	16	15	150	30	4	12°			

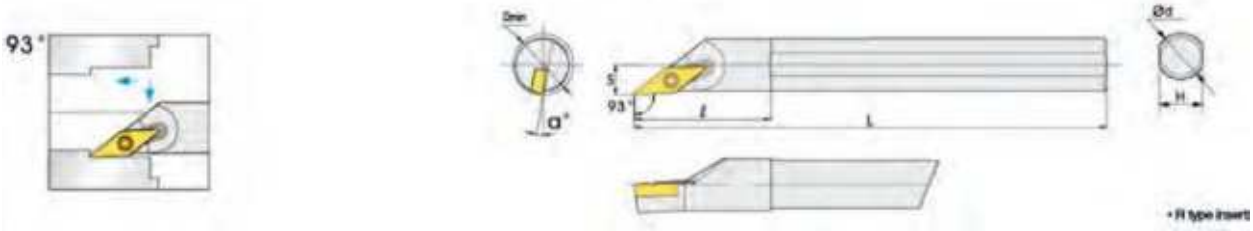
STWCR/L



Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S08K-STWCR/L09	●		11	8	7	125	25	6	12°	TC□□0902□□	M2.2X5	T-8
S10K-STWCR/L11	●		13	10	9	125	23	8	10°	TC□□1102□□	M2.5X6	
S12M-STWCR/L11	●		15	12	11	150	30	9	8°			
S16Q-STWCR/L11	●		19	16	15	180	35	11	6°		M2.5X8	
S20Q-STWCR/L11			23	20	18	180	35	13	4°			
S20Q-STWCR/L16			25	20	19	180	40	14.5	8°	TC□□16T3□□	M3.5X9	T-15
S25R-STWCR/L16			29	25	24	200	35	17	6°			
S32S-STWCR/L16			39	32	30	250	40	22	4°			
S40T-STWCR/L16			50	40	38	300	50	27	2°			
S50U-STWCR/L16			60	50	48	350	60	31	0°			

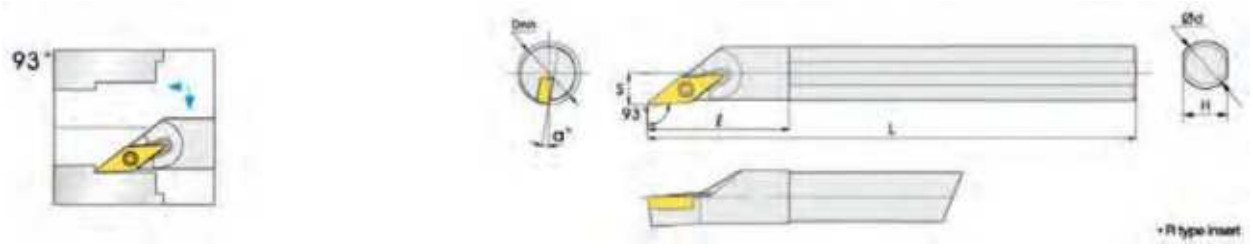
Screw On System

SVJBR/L



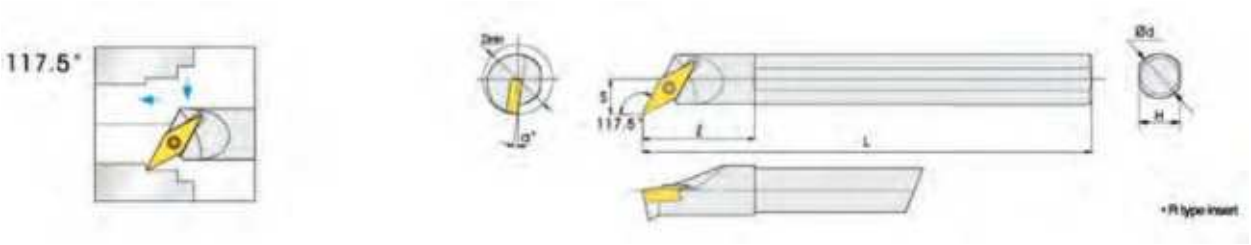
Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S10K-SVJBR/L11	●		11	10	9	125	28	6	13°	VB□□1103□□	M2.5X6	T-8
S12M-SVJBR/L11	●	●	13	12	11	150	35	7	10°			
S16Q-SVJBR/L11	●	●	17	16	15	180	40	9.5	10°			
S20Q-SVJBR/L11	●	●	21	20	18	180	45	11.5	8°		M2.5X8	
S16Q-SVJBR/L16	●		19	16	15	180	48	11.5	11°	VB□□1604□□	M3.5X9	T-15
S20Q-SVJBR/L16			21	20	18	180	52	11.5	11°			
S25R-SVJBR/L16			26	25	23	200	54	14	7°			

SVJCR/L



Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S10K-SVJCR/L11	●	●	11	10	9	125	28	6	13°	VC□□1103□□	M2.5X6	T-8
S12M-SVJCR/L11	●	●	13	12	11	150	35	7	10°			
S16Q-SVJCR/L11	●	●	17	16	15	180	40	9.5	10°			
S20Q-SVJCR/L11	●	●	21	20	18	180	45	11.5	8°		M2.5X8	
S16Q-SVJCR/L16	●	●	19	16	15	180	48	11.5	11°	VC□□1604□□	M3.5X9	T-15
S20Q-SVJCR/L16	●		21	20	18	180	52	14	11°			
S25R-SVJCR/L16	●		26	25	23	200	54	11.5	7°			

SVQBR/L



Designation	Stock		Size							Inserts	Screw	Wrench
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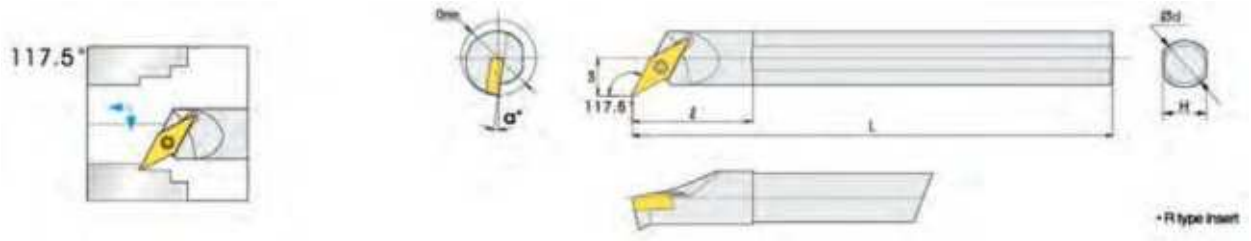
S12M-SVQBR/L11	●	●	16	12	11	150	30	10	10°	VB□□1103□□	M2.5X6	T-8
S16Q-SVQBR/L11	●	●	19	16	15	180	34	11.5	10°		M2.5X8	
S20Q-SVQBR/L11	●	●	24	20	18	180	45	14	8°			
S20Q-SVQBR/L16	●	●	24	20	18	180	50	14	8°	VB□□1604□□	M3.5X9	T-15
S25R-SVQBR/L16	●	●	29	25	23	200	50	17	6°			
S32S-SVQBR/L16	●	●	38	32	30	250	55	22.5	8°			
S40T-SVQBR/L16			47	40	38	300	55	27	6°			
S50U-SVQBR/L16			57	50	48	350	65	32	4°			

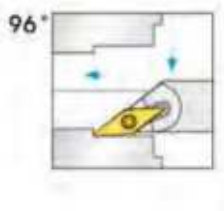
SVQCR/L

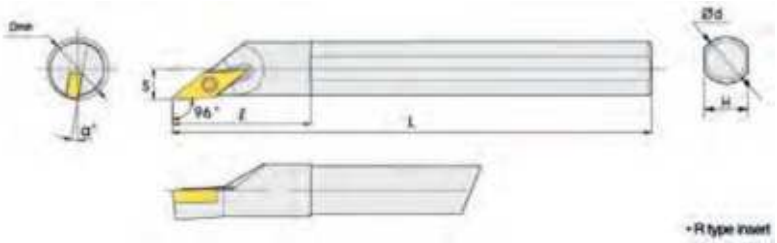


Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S12M-SVQCR/L11			16	12	11	150	30	10	10°	VC□□1103□□	M2.5X6	T-8
S16Q-SVQCR/L11	●	●	22	19	15	180	35	11.5	10°		M2.5X8	
S20Q-SVQCR/L11	●	●	27	24	18	180	34	14	8°			
S20Q-SVQCR/L16	●	●	27	24	18	180	45	14	8°	VC□□1604□□	M3.5X9	T-15
S25R-SVQCR/L16	●	●	32	29	23	200	50	17	6°			
S32S-SVQCR/L16	●	●	41	38	30	250	55	22.5	8°			
S40T-SVQCR/L16	●		50	47	38	300	55	27	6°			
S50U-SVQCR/L16			61	60	48	350	65	32	4°			

Screw On System

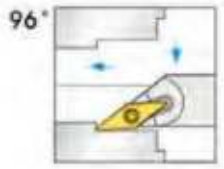
SVXBR/L

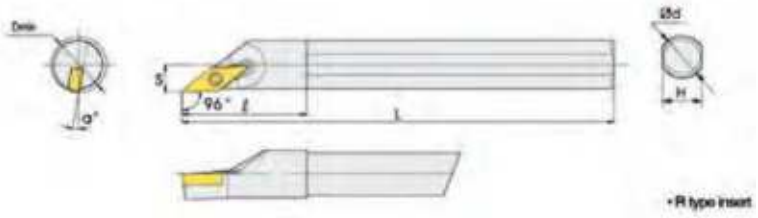




Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S16Q-SVXBR/L11			19	16	15	180	40	11	10°	VB□□1103□□	M2.5X8	T-8
S20Q-SVXBR/L11	●	●	23	20	18	180	45	13	8°			
S20Q-SVXBR/L16	●	●	23	20	18	180	45	13	8°	VB□□1604□□	M3.5X9	T-15
S25R-SVXBR/L16	●	●	30	25	23	200	50	17	6°			
S32S-SVXBR/L16	●	●	38	32	30	250	60	22	8°			
S40T-SVXBR/L16	●	●	47	40	38	300	65	27	6°			

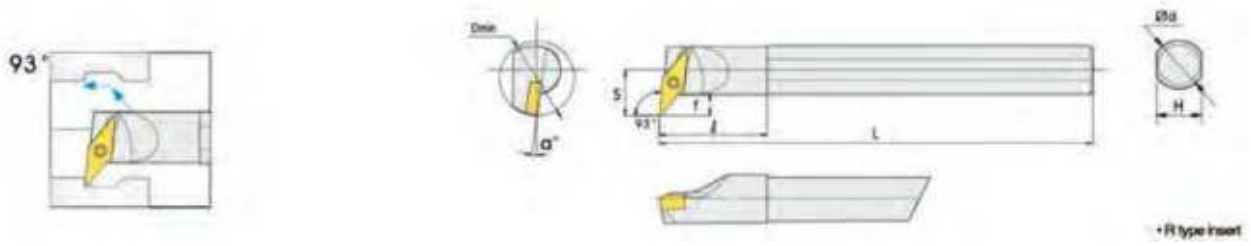
SVXCR/L





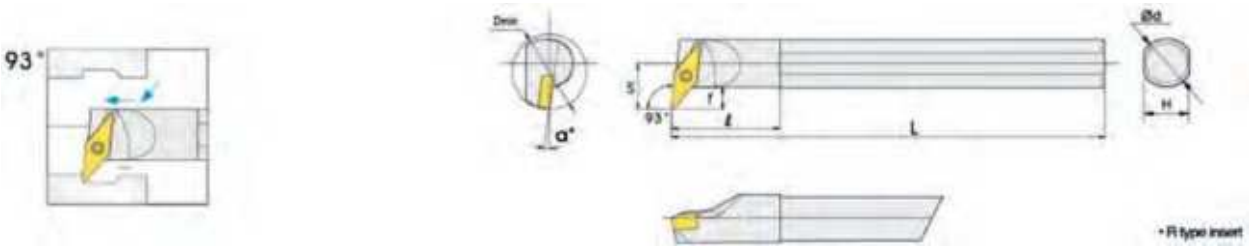
Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S16Q-SVXCR/L11	●	●	19	16	15	180	40	11	10°	VC□□1103□□	M2.5X8	T-8
S20Q-SVXCR/L11	●	●	23	20	18	180	45	13	8°			
S20Q-SVXCR/L16	●	●	23	20	18	180	50	13	8°	VC□□1604□□	M3.5X9	T-15
S25R-SVXCR/L16	●	●	30	25	23	200	50	17	6°			
S32S-SVXCR/L16	●		38	32	30	250	60	22	8°			
S40T-SVXCR/L16			47	40	38	300	65	27	6°			

SVUBR/L



Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S16Q-SVUBR/L11	●	●	20	16	15	180	30	11.5	10°	VB□□1103□□	M2.5X8	T-8
S20Q-SVUBR/L11	●	●	24	20	18	180	30	14	8°			
S20R-SVUBR/L16	●	●	29	20	18	200	45	19	8°	VB□□1604□□	M3.5X9	T-15
S25R-SVUBR/L16	●	●	32	25	23	200	50	20	6°			
S32S-SVUBR/L16	●	●	38	32	30	250	50	22	6°			
S40T-SVUBR/L16			47	40	38	300	55	27	4°			

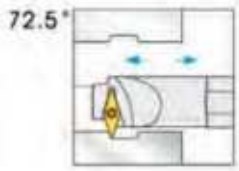
SVUCR/L

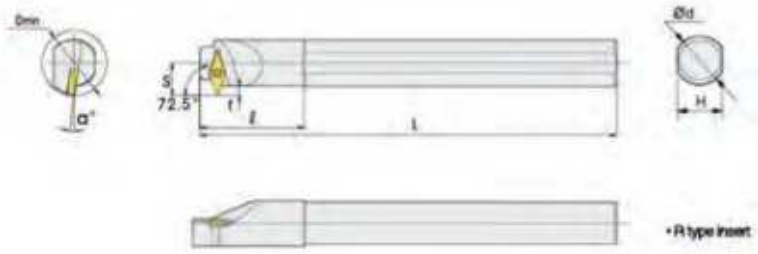


Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S16Q-SVUCR/L11	●	●	20	16	15	180	30	11.5	10°	VC□□1103□□	M2.5X8	T-8
S20Q-SVUCR/L11	●	●	24	20	18	180	30	14	8°			
S20R-SVUCR/L16	●	●	29	20	18	200	45	19	8°	VC□□1604□□	M3.5X9	T-15
S25R-SVUCR/L16	●	●	32	25	23	200	50	20	6°			
S32S-SVUCR/L16	●	●	38	32	30	250	50	22	6°			
S40T-SVUCR/L16			47	40	38	300	55	27	4°			

Screw On System

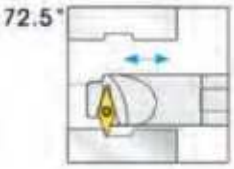
SVWBR/L

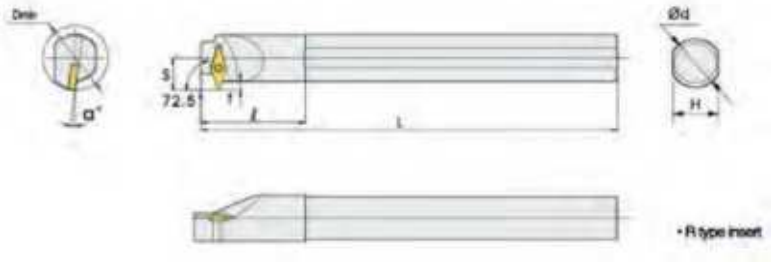




Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S20Q-SVWBR/L11	●		24	20	18	180	35	14	8°	VB□□1103□□	M2.5X8	T-8
S25R-SVWBR/L16	●	●	35	25	23	200	40	23	5°	VB□□1604□□	M3.5X9	T-15
S32S-SVWBR/L16	●	●	42	32	30	250	45	26	5°			

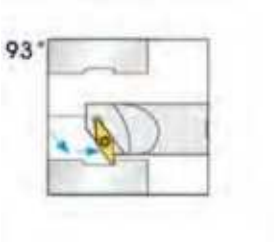
SVWCR/L

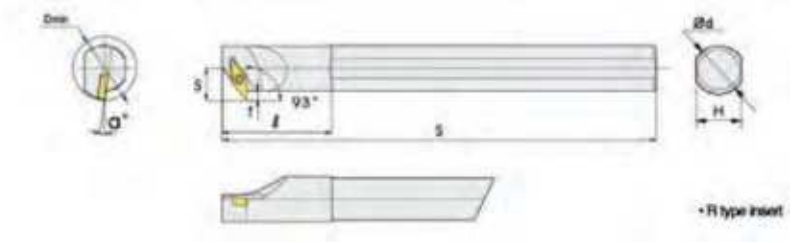




Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S20Q-SVWCR/L11	●		24	20	18	180	35	14	8°	VC□□1103□□	M2.5X8	T-8
S25R-SVWCR/L16	●	●	35	25	23	200	40	23	5°	VC□□1604□□	M3.5X9	T-15
S32S-SVWCR/L16	●	●	42	32	30	250	45	26	5°			

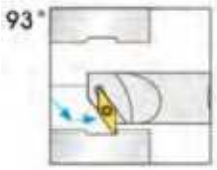
SVZBR/L

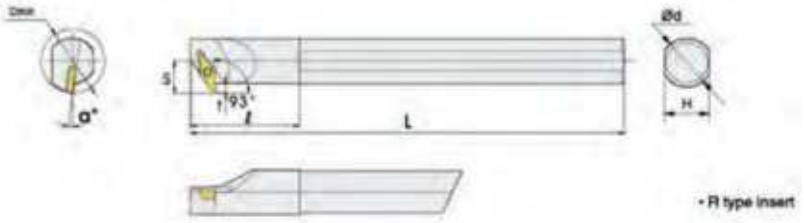




Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S16Q-SVZBR/L11	●		19	16	15	180	30	11.5	10°	VB□□1103□□	M2.5X8	T-8
S20Q-SVZBR/L11	●	●	24	20	18	180	35	14	8°			
S25R-SVZBR/L16	●	●	33	25	23	200	50	19.5	6°	VB□□1604□□	M3.5X9	T-15
S32S-SVZBR/L16			39	32	30	250	50	23.5	8°			
S40T-SVZBR/L16			47	40	38	300	60	27	6°			

SVZCR/L

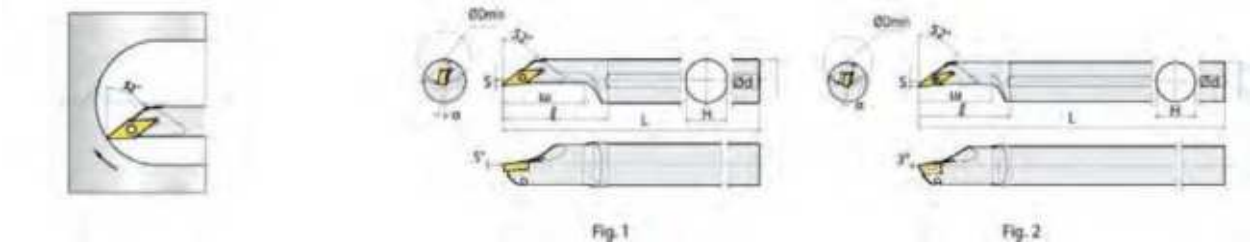




Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S16Q-SVZCR/L11	●		19	16	15	180	30	11.5	10°	VC□□1103□□	M2.5X8	T-8
S20Q-SVZCR/L11	●		24	20	18	180	35	14	8°			
S25R-SVZCR/L16	●		33	25	23	200	50	19.5	6°	VC□□1604□□	M3.5X9	T-15
S32S-SVZCR/L16			39	32	30	250	50	23.5	8°			
S40T-SVZCR/L16			47	40	38	300	60	27	6°			

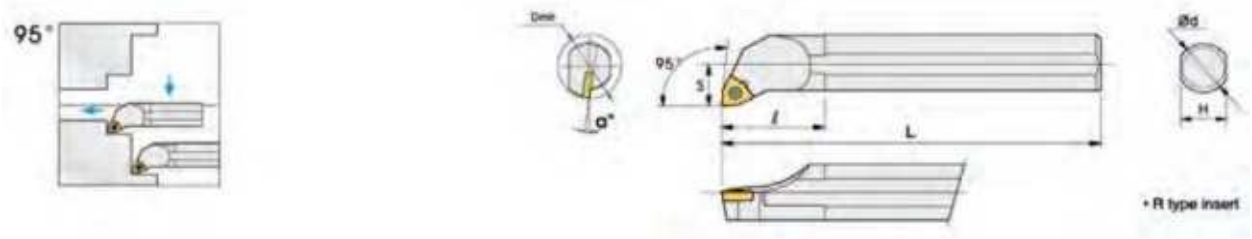
Screw On System

SVJBR/L, SVJCR/L



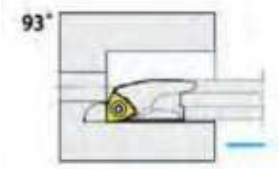
Designation	Stock		Size								Inserts	Screw	Wrench	Fig.
	R	L	Dmin	d	H	L	ℓ	LU	S	α				
S12M-SVJCR/L08-16A	●	●	16	12	11	150	33	26	2	5°	VC□□0802□□	M2.0X5	T-6	1
S16Q-SVJCR/L08-20A			20	16	15	180	43	36	2	5°				1
S20Q-SVJBR/L11-25A			25	20	19	180	48	37.5	2	5°	VB□□1103□□	M2.5X7	T-8	1
S25R-SVJBR/L11-30A			30	25	24	200	58	45	3.5	5°				1
S32S-SVJBR/L16-40A			40	32	31	250	74	60	3.5	8°	VB□□1604□□	M3.5X9	T-18	2
S40T-SVJBR/L16-50A			50	40	39	300	91	75	4.5	7°				2

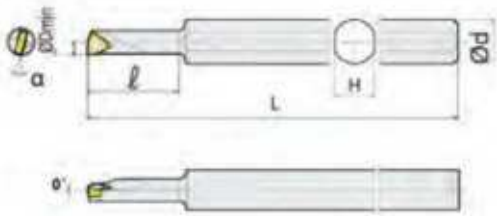
SWLCR/L



Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S12M-SWLCR/L06			14	12	11	150	37	8.5	13°	WC□□06T3□□	M3.5X9	T-15
S16Q-SWLCR/L06			19	16	15	180	40	11	10°			
S20Q-SWLCR/L06			23	20	18	180	40	13	8°			
S25R-SWLCR/L06			31	25	23	200	40	17	6°			

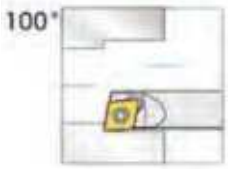
SWUBR/L





Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
S0507H-SWUBR/L06			5.5	7	6	100	18	3	15°	WB□□0601□□	M2.0X3	T-6
S0508H-SWUBR/L06			5.5	8	7	100	18	3	15°			
S0608J-SWUBR/L06			7	8	7	110	18	3.5	13°			
S0510K-SWUBR/L06	●	●	6	10	9	125	21	3	15°			
S0610K-SWUBR/L06	●	●	7	10	9	125	25	3.5	13°			
S0710K-SWUBR/L06	●	●	8	10	9	125	28	4	13°		M2.0X4	
S0810K-SWUBR/L06	●	●	10	10	9	125	-	5	13°			
S0512K-SWUBR/L06	●	●	6	12	11	125	15	3	12°		M2.0X3	
S0612K-SWUBR/L06			7	12	11	125	15	3.5	12°			
S0712K-SWUBR/L06			8	12	11	125	15	4	12°		M2.0X4	
S0812K-SWUBR/L06			10	12	11	125	15	5	12°			
S0716M-SWUBR/L06			8	16	15	150	15	4	12°			

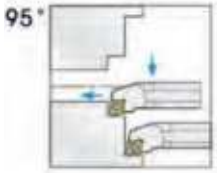
SEXP

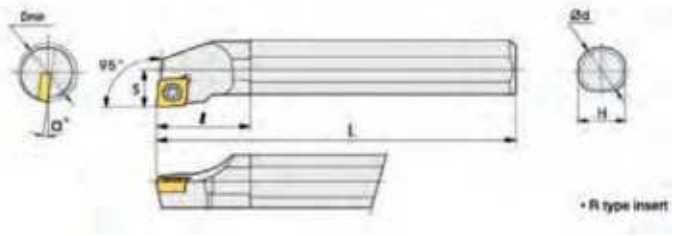


Designation	Stock		Size						Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S			
S08H-SEXPR045-A10			5.7	10	9	100	17	2.85	EPGT0401□□	M2.0X4	T-6
S08H-SEXPR047-A12			7.1	12	11	100	20	3.55			

Carbide Shank System

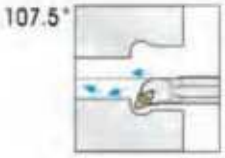
SCLCR/L

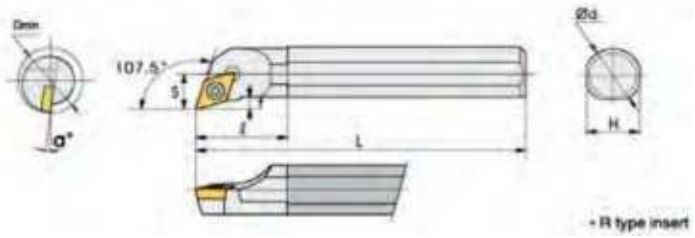




Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
C04G-SCLCR/L03	●		5	4	3.7	90	15	2.5	15°	CC□□0301□□	M1.6X3	T-6
C05H-SCLCR/L03	●		6	5	4.7	100	15	3	13°			
C05H-SCLCR/L04	●		6	5	4.7	100	15	3	13°	CC□□0401□□	M2.0X4	
C06J-SCLCR/L04	●		7	6	5.7	110	15	3.5	13°			
C07K-SCLCR/L06	●		8	7	6.7	125	18	5	15°	CC□□0602□□	M2.5X5	T-8
C08K-SCLCR/L06	●		9	8	7	125	18	5.5	13°			
C10M-SCLCR/L06	●		11	10	9	150	22	7	12°		M2.5X6	
C12Q-SCLCR/L06	●		13	12	11	180	25	8	10°			
C12Q-SCLCR/L09	●		16	14	13	180	27	5.5	10°	CC□□09T3□□	M3.5X9	T-15
C16R-SCLCR/L09	●		17	16	15	200	34	11	10°			
C20S-SCLCR/L09	●		21	20	18	250	38	13	8°			
C25T-SCLCR/L09	●		26	25	23	300	45	17	6°			

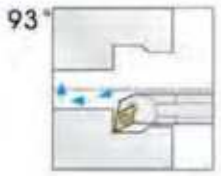
SDQCR/L

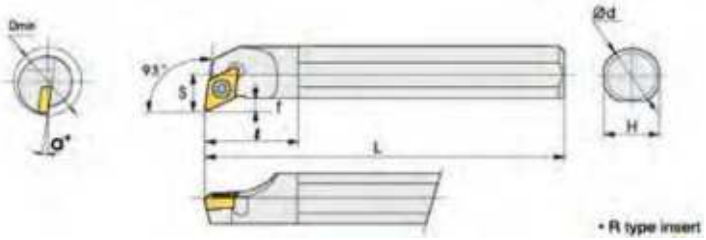




Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
C08K-SDQCR/L07	●		10	8	7	125	18	6	12°	DC□□0702□□	M2.5X5	T-8
C10M-SDQCR/L07	●		11	10	9	150	24	7	10°			
C12Q-SDQCR/L07	●		15	12	11	180	30	9	8°		M2.5X6	
C16R-SDQCR/L07	●		17	16	15	200	30	11	6°			
C20S-SDQCR/L11	●		23	20	18	250	42	13	5°	DC□□11T3□□	M3.5X9	T-15
C25T-SDQCR/L11	●		29	25	23	300	42.5	17	4°			

SDUCR/L

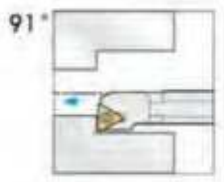


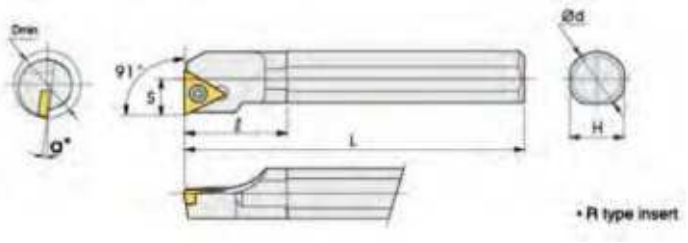


Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
C10M-SDUCR/L07	●		15	10	9	150	25	8	10°	DC□□0702□□	M2.5X5	T-8
C12Q-SDUCR/L07	●		17	12	11	180	25	9	8°		M2.5X6	
C16R-SDUCR/L07	●		22	16	15	200	30	11	6°			
C20S-SDUCR/L11	●		23	20	18	250	40	13	6°	DC□□11T3□□	M3.5X9	T-15
C25T-SDUCR/L11	●		29	25	23	300	42	17	5°			

Carbide Shank System

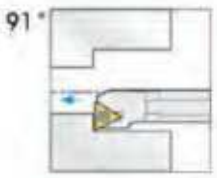
STFPR/L

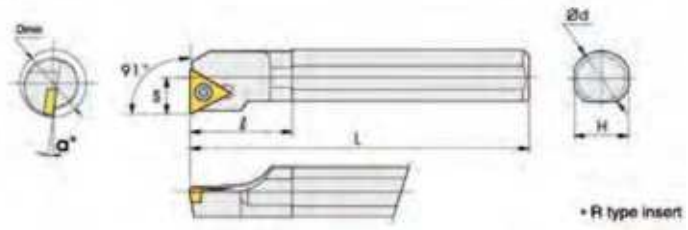




Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
C08K-STFPR/L09	●		9	8	7	125	20	5.5	15°	TP□□0902□□	M2.5X6	T-6
C10M-STFPR/L09	●		11	10	9	150	24	6	13°			
C12Q-STFPR/L09	●		13	12	11	180	27	7	10°			
C10M-STFPR/L11	●		11	10	9	150	24	6	12°	TP□□1103□□	M3.0X6	T-8
C12Q-STFPR/L11	●		13	12	11	180	26	7	10°			
C16R-STFPR/L11	●		17	16	15	200	32	9	8°		M3.0X8	
C20S-STFPR/L11	●		21	20	18	250	40	11	6°			

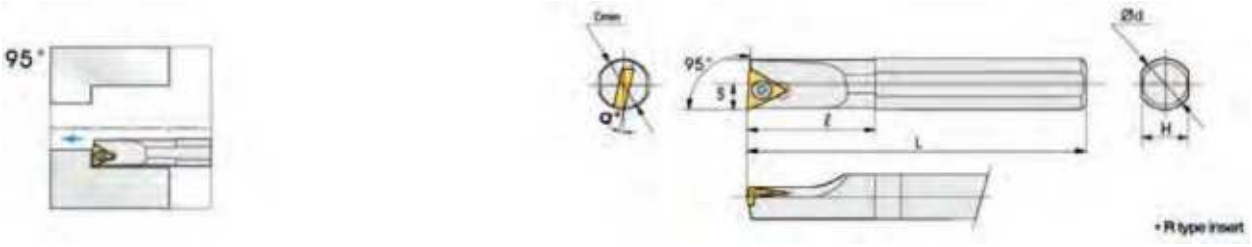
STFCR/L





Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
C08K-STFCR/L09	●		9	8	7	125	20	5.5	15°	TC□□0902□□	M2.2X5	T-6
C10M-STFCR/L09	●		11	10	9	150	24	6	13°			
C12Q-STFCR/L09	●		13	12	11	180	27	7	10°			
C10M-STFCR/L11	●		11	10	9	150	24	6	12°	TC□□1102□□	M2.5X6	T-8
C12Q-STFCR/L11	●		13	12	11	180	26	7	10°			
C16R-STFCR/L11	●		17	16	15	200	32	9	8°		M2.5X8	
C20S-STFCR/L11	●		21	20	18	250	40	11	6°			
C20S-STFCR/L16			22	20	18	250	42	11.5	8°	TC□□16T3□□	M3.5X9	T-15
C25T-STFCR/L16			26	25	23	300	42	14	6°			

STUPR/L



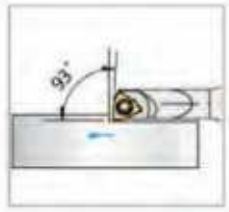
Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
C08K-STUPR/L09	●		9	8	7	125	20	5.5	15°	TP□□0902□□	M2.5X6	T-6
C10M-STUPR/L09	●		11	10	9	150	24	6	13°			
C12Q-STUPID/L09	●		13	12	11	180	27	7	10°			
C10M-STUPR/L11	●		11	10	9	150	24	6	12°	TP□□1103□□	M3.0X6	T-8
C12Q-STUPID/L11	●		13	12	11	180	26	7	10°			
C16R-STUPR/L11	●		17	16	15	200	32	9	8°		M3.0X8	
C20S-STUPID/L11	●		21	20	18	250	40	11	6°			

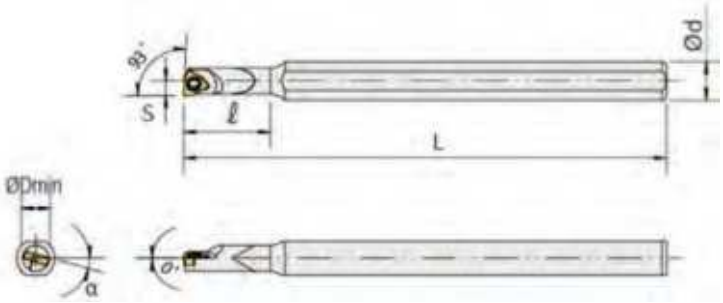
STUCR/L

Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
C08K-STUCR/L09	●		9	8	7	125	20	5.5	15°	TC□□0902□□	M2.2X5	T-6
C10M-STUCR/L09	●		11	10	9	150	24	6	13°			
C12Q-STUCR/L09	●		13	12	11	180	27	7	10°			
C10M-STUCR/L11	●		11	10	9	150	24	6	12°	TC□□1102□□	M2.5X6	T-8
C12Q-STUCK/L11	●		13	12	11	180	26	7	10°			
C16R-STUCR/L11	●		17	16	15	200	32	9	8°		M2.5X8	
C20S-STUCK/L11			21	20	18	250	40	11	6°			
C20S-STUCK/L16			22	20	18	250	42	11.5	8°	TC□□16T3□□	M3.5X9	T-15
C25T-STUCR/L16			26	25	23	300	42	14	6°			

Carbide Shank System

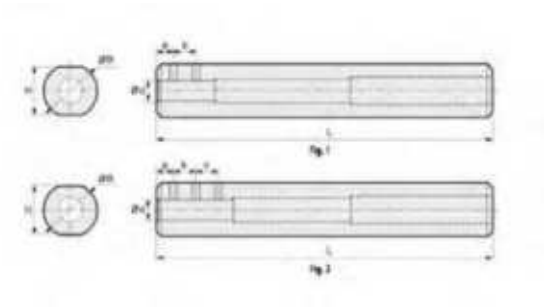
SWUBR/L





Designation	Stock		Size							Inserts	Screw	Wrench
	R	L	Dmin	d	H	L	ℓ	S	α			
C05H-SWUBR/L06	●		5.5	5	4.7	100	-	3	15°	WB□□0601□□	M2.0X4	T-6
C06J-SWUBR/L06	●		7	6	5.7	110	-	3.5	13°			
C07K-SWUBR/L06	●		8	7	6.7	125	-	4	13°			
C08K-SWUBR/L06	●		9	8	7	125	30	4.5	13°			

Mini Boring Bar Sleeve



Designation	Stock	Size							Screw	Wrench	Fig.
		D	d	L	H	a	b	c			
TSL 1603-100L	●	16	3	100	14	5	-	-	M3	HW15L	1
TSL 1604-100L	●	16	4	100	14	5	6	-	M4	HW20L	1
TSL 1605-100L	●	16	5	100	14	5	8	-	M4	HW20L	1
TSL 1606-100L	●	16	6	100	14	5	6	6	M4	HW20L	2
TSL 1607-100L	●	16	7	100	14	5	6	8	M4	HW20L	2
TSL 1608-100L	●	16	8	100	14	5	10	10	M4	HW20L	2
TSL 2003-100L	●	20	3	100	18	5	-	-	M3	HW15L	1
TSL 2004-100L	●	20	4	100	18	5	6	-	M4	HW20L	1
TSL 2005-100L	●	20	5	100	18	5	8	-	M4	HW20L	1
TSL 2006-100L	●	20	6	100	18	5	6	6	M4	HW20L	2
TSL 2007-100L	●	20	7	100	18	5	6	8	M4	HW20L	2
TSL 2008-100L	●	20	8	100	18	5	10	10	M4	HW20L	2
TSL 2010-100L	●	20	10	100	18	5	10	10	M5	HW20L	2

Sleeve

Sleeve for Borning Bars

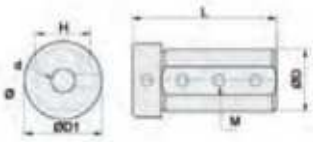


Fig.-1

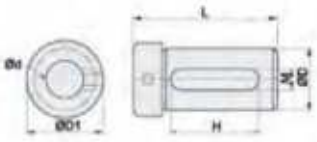


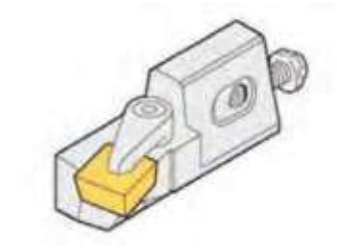
Fig.-2

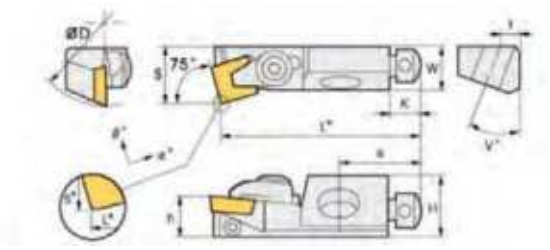
Designation	Stock	Size						Fig.
		D	d	L	H	D1	M	
NC 1603	●	16	3	62	14.5	19	M4	1
NC 1604	●	16	4	62	14.5	19	M5	1
NC 1605	●	16	5	62	14.5	19	M5	1
NC 1606	●	16	6	62	14.5	19	M5	1
NC 1607	●	16	7	62	14.5	19	M5	1
NC 1608	●	16	8	62	14.5	19	M5	1
NC 1609	●	16	9	62	14.5	19	M5	1
NC 1610	●	16	10	62	14.5	19	M5	1
NC 1612	●	16	12	62	49.0	19	11	2
NC 2004	●	20	4	65	17.5	26	M5	1
NC 2005	●	20	5	65	17.5	26	M5	1
NC 2006	●	20	6	65	17.5	26	M6	1
NC 2007	●	20	7	65	17.5	26	M6	1
NC 2008	●	20	8	65	17.5	26	M6	1
NC 2009	●	20	9	65	17.5	26	M6	1
NC 2010	●	20	10	65	17.5	26	M6	1
NC 2012	●	20	12	65	17.5	26	M6	1
NC 2014	●	20	14	65	54.0	26	13	2
NC 2016	●	20	16	65	54.0	26	13	2
NC 2506	●	25	6	70	23.5	30	M6	1
NC 2507	●	25	7	70	23.5	30	M6	1
NC 2508	●	25	8	70	23.5	30	M6	1
NC 2510	●	25	10	70	23.5	30	M6	1
NC 2512	●	25	12	70	23.5	30	M6	1
NC 2514	●	25	14	70	51.0	30	12	2
NC 2516	●	25	16	70	51.0	30	12	2
NC 2518	●	25	18	70	51.0	30	12	2
NC 2520	●	25	20	70	51.0	30	12	2
NC 3206	●	32	6	85	29.5	36	M6	1
NC 3207	●	32	7	85	29.5	36	M6	1
NC 3208	●	32	8	85	29.5	36	M8	1

Designation	Stock	Size						Fig.
		D	d	L	H	D1	M	
NC 3210	●	32	10	85	29.5	36	M8	1
NC 3212	●	32	12	85	29.5	36	M8	1
NC 3214	●	32	14	85	29.5	36	M8	1
NC 3216	●	32	16	85	29.5	36	M8	1
NC 3218	●	32	18	85	29.5	36	M8	1
NC 3220	●	32	20	85	77.0	36	14	2
NC 3222	●	32	22	85	77.0	36	14	2
NC 3225	●	32	25	85	77.0	36	14	2
NC 4006	●	40	6	100	38.0	46	M6	1
NC 4008	●	40	8	100	38.0	46	M8	1
NC 4010	●	40	10	100	38.0	46	M8	1
NC 4012	●	40	12	100	38.0	46	M8	1
NC 4014	●	40	14	100	38.0	46	M8	1
NC 4016	●	40	16	100	38.0	46	M8	1
NC 4018	●	40	18	100	38.0	46	M8	1
NC 4020	●	40	20	100	78.0	46	14	2
NC 4025	●	40	25	100	78.0	46	14	2
NC 4032	●	40	32	100	78.0	46	14	2
NC 5008	●	50	8	115	48.0	58	M8	1
NC 5010	●	50	10	115	48.0	58	M8	1
NC 5012	●	50	12	115	48.0	58	M8	1
NC 5014	●	50	14	115	48.0	58	M8	1
NC 5016	●	50	16	115	48.0	58	M8	1
NC 5018	●	50	18	115	48.0	58	M8	1
NC 5020	●	50	20	115	48.0	58	M8	1
NC 5022	●	50	22	115	48.0	58	M8	1
NC 5025	●	50	25	115	48.0	58	M8	1
NC 5032	●	50	32	115	77.0	58	14	2
NC 5040	●	50	40	115	77.0	58	14	2

Clamp on System

CSKPR/L

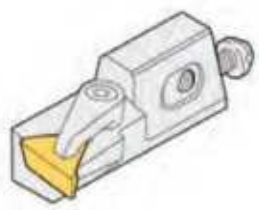


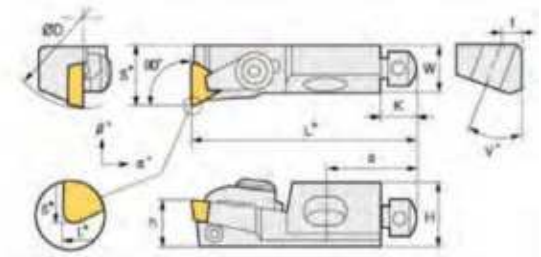


Designation	Stock		Size												Inserts
	R	L	Dmin	H	W	L	S	H	K	α	β	a	t	v	
CSKPR/L 10CA-09			40	15	11	50	14	10	8	6	0	20	5	20	SP□R0903□□
CSKPR/L 12CA-12			50	20	15	55	20	12	8	6	0	20	6	20	SP□R1203□□

Designation	Clamp	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Wrench
CSKPR/L 10CA-09	CS5R1	AS02508	KHA0304C	MCS511-2.5	HW15L HW25L
CSKPR/L 12CA-12	CS6R1	AS02508	KHA0306C	MCS616-3	HW15L HW30L

CTFPR/L

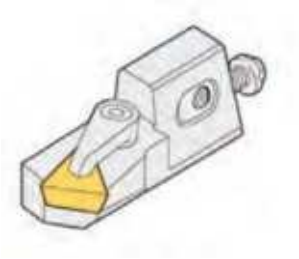


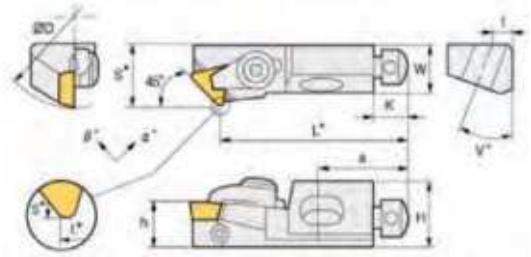


Designation	Stock		Size												Inserts
	R	L	Dmin	H	W	L	S	H	K	α	β	a	t	v	
CTFPR/L 10CA-11			40	15	11	50	14	10	8	6	0	20	5	20	TP□R1103□□
CTFPR/L 12CA-16			50	20	15	55	20	12	8	6	0	20	6	20	TP□R1603□□

Designation	Clamp	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Wrench
CTFPR/L 10CA-11	CS5R1	AS02508	KHA0304C	MCS511-2.5	HW15L HW25L
CTFPR/L 12CA-16	CS6R1	AS02508	KHA0306C	MCS616-3	HW15L HW30L

CTSPR/L

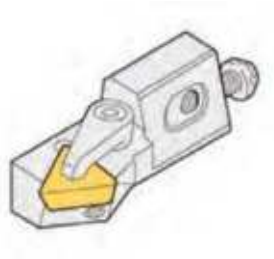


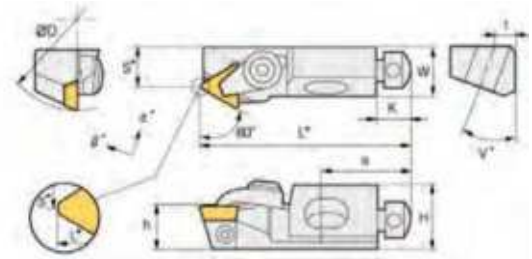


Designation	Stock		Size												Inserts
	R	L	Dmin	H	W	L	S	H	K	α	β	a	t	v	
CTSPR/L 10CA-11			40	15	11	44	14	10	8	4	0	20	5	20	SP□R0903□□
CTSPR/L 12CA-16			50	20	15	47	20	12	8	5	0	20	6	20	SP□R1203□□

Designation	Clamp	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Wrench
CTSPR/L 10CA-11	CS5R1	AS02508	KHA0304C	MCS511-2.5	HW15L HW25L
CTSPR/L 12CA-16	CS6R1	AS02508	KHA0306C	MCS616-3	HW15L HW30L

CTTPR/L



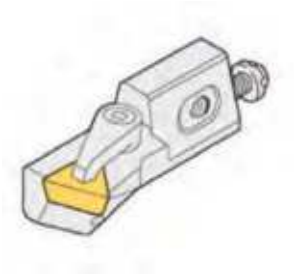


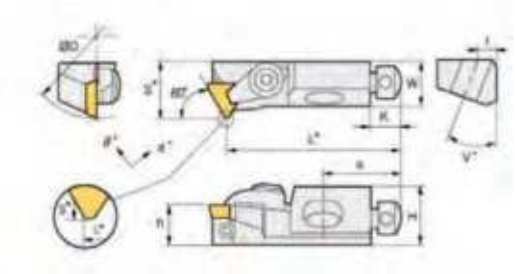
Designation	Stock		Size												Inserts
	R	L	Dmin	H	W	L	S	H	K	α	β	a	t	v	
CTTPR/L 10CA-11			40	15	11	50	9	10	8	5	0	20	5	20	TP□R1103□□
CTTPR/L 12CA-16			50	20	15	55	20	12	8	5	0	20	6	20	TP□R1603□□

Designation	Clamp	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Wrench
CTTPR/L 10CA-11	CS5R1	AS02508	KHA0304C	MCS511-2.5	HW15L HW25L
CTTPR/L 12CA-16	CS6R1	AS02508	KHA0306C	MCS616-3	HW15L HW30L

Clamp on System

CTWPR/L

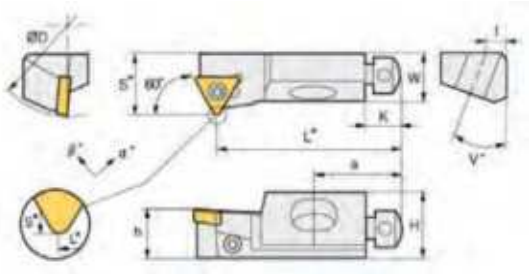




Designation	Stock		Size												Inserts
	R	L	Dmin	H	W	L	S	H	K	α	β	a	t	v	
CTWPR/L 10CA-11			40	15	11	44	14	10	8	5	0	20	5	20	TP□R1103□□
CTWPR/L 12CA-16			50	20	15	47	20	12	8	5	0	20	6	20	TP□R1603□□

Designation	Clamp	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Wrench
CTWPR/L 10CA-11	M3.5X9	AS02508	KHA0304C	MCS511-2.5	HW15L HW25L
CTWPR/L 12CA-16	M5X12	AS02508	KHA0306C	MCS616-3	HW15L HW30L

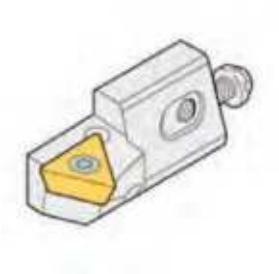
STTCR/L

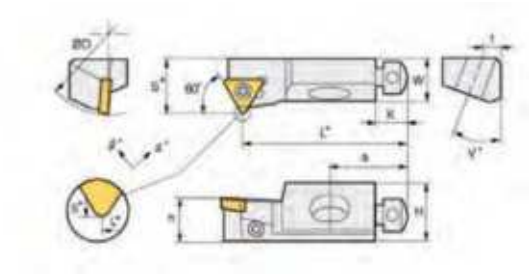


Designation	Stock		Size												Inserts
	R	L	Dmin	H	W	L	S	H	K	α	β	a	t	v	
STTCR/L 10CA-11			40	15	11	50	9	10	8	-5	0	20	5	20	TC□T1102□□
STTCR/L 12CA-16			50	20	15	47	20	12	8	-3	0	20	6	20	TC□T16T3□□

Designation	Insert Screw	Axial Adjust Screw	Radial Adjust Screw	Wrench	Wrench
STTCR/L 10CA-11	M2.5X6	AS02508	KHA0304C	T8	L1.5
STTCR/L 12CA-16	M3.5X9	AS02508	KHA0306C	T15	L1.5

STWCR/L



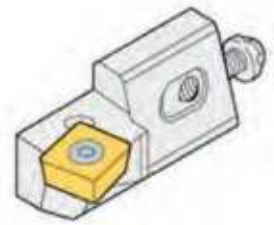


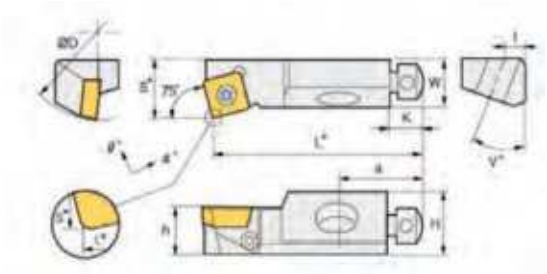
Designation	Stock		Size												Inserts
	R	L	Dmin	H	W	L	S	H	K	α	β	a	t	v	
STWCR/L 10CA-11			40	15	11	44	14	10	8	0	-4	20	5	20	TC□T1102□□
STWCR/L 10CA-11			50	20	15	47	20	12	8	-5	0	20	6	20	TC□T16T3□□

Designation	Insert Screw	Axial Adjust Screw	Radial Adjust Screw	Wrench	Wrench
STWCR/L 10CA-11	M2.5X6	AS02508	KHA0304C	T8	L1.5
STWCR/L 10CA-11	M3.5X9	AS02508	KHA0306C	T15	L1.5

Screw on System

SSKCR/L

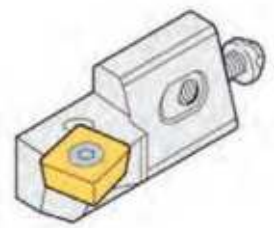


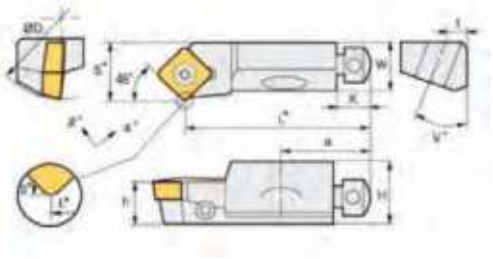


Designation	Stock		Size												Inserts
	R	L	Dmin	H	W	L	S	H	K	α	β	a	t	v	
SSKCR/L 10CA-09			40	15	11	50	14	10	8	0	-4	20	5	20	SC□T09T3□□
SSKCR/L 12CA-12			50	20	15	55	20	12	8	0	-4	20	6	20	SC□T1204□□

Designation	Insert Screw	Axial Adjust Screw	Radial Adjust Screw	Wrench	Wrench
SSKCR/L 10CA-09	M3.5X9	AS02508	KHA0304C	T15	L1.5
SSKCR/L 12CA-12	M5X12	AS02508	KHA0306C	T20	L1.5

SSSCR/L

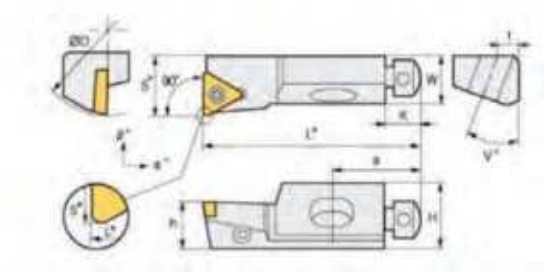




Designation	Stock		Size												Inserts
	R	L	Dmin	H	W	L	S	H	K	α	β	a	t	v	
SSSCR/L 10CA-09			40	15	11	44	14	10	8	-5	0	20	5	20	SC□T09T3□□
SSSCR/L 12CA-12			50	20	15	47	20	12	8	-5	0	20	6	20	SC□T1204□□

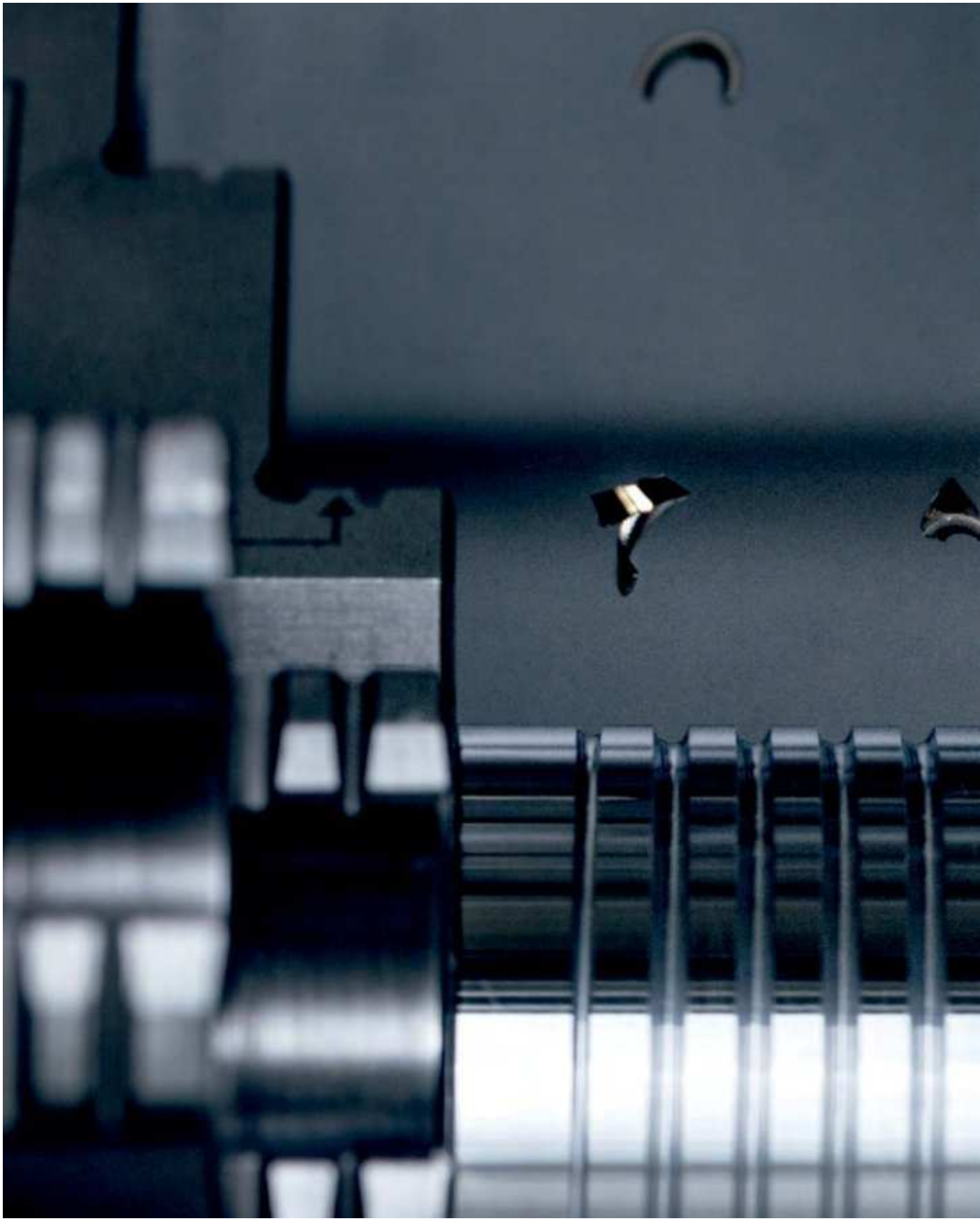
Designation	Insert Screw	Axial Adjust Screw	Radial Adjust Screw	Wrench	Wrench
SSSCR/L 10CA-09	M3.5X9	AS02508	KHA0307C	T15	L1.5
SSSCR/L 12CA-12	M5X12	AS02508	KHA0306C	T20	L1.5

STFCR/L



Designation	Stock		Size												Inserts
	R	L	Dmin	H	W	L	S	H	K	α	β	a	t	v	
STFCR/L 10CA-11			40	15	11	50	14	10	8	0	-3	20	5	20	TC□T1102□□
STFCR/L 12CA-16			50	20	15	55	20	12	8	0	-3	20	6	20	TC□T16T3□□

Designation	Insert Screw	Axial Adjust Screw	Radial Adjust Screw	Wrench	Wrench
STFCR/L 10CA-11	M2.5X6	AS02508	KHA0304C	T8	L1.5
STFCR/L 12CA-16	M3.5X9	AS02508	KHA0306C	T15	L1.5



Threading

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S	E	R	20	20	-	K	16	V
1	2	3	4	5		6	7	8
Clamping Method of Insert	Holder Type	Hand of holder	Height of shank	Width of shank		Lenght of Holder	Insert Size	Special features

1 Clamping System

S E R 20 20 - K 16 V

S: Screw on system
C: Clamp on system

2 Holder Type

S E R 20 20 - K 16 V

E: For External **N**: For Internal

3 Hand of holder

S E R 20 20 - K 16 V

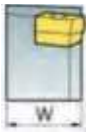
R: Right handed **L**: Left handed

4 Height of shank

S E R 20 20 - K 16 V

5 Width of shank Bar Diameter

S E R 20 20 - K 16 V



For External

For Internal

6 Lenght of Holder

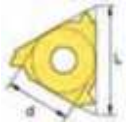
S E R 20 20 - K 16 V

A=32	H=100	Q=180	X-Special Item
B=40	J=110	R=200	
C=50	K=125	S=250	
D=60	L=140	T=300	
E=70	M=150	U=350	
F=80	N=160	V=400	
G=90	P=170	W=450	

7 Insert Size (mm)

S E R 20 20 - K 16 V

08: d=4.76
11: d=6.35
16: d=9.525
22: d=12.7
27: d=15.875



8 Special features

S E R 20 20 - K 16 V

B - Coolant Hole	None Code Standard
C - Carbide Shank	
CB - Carbide Shank with Coolant Hole	
A - Api (oil)	
U - U_Style insert	
V - Vertical Type Insert	
G - Gang Tool	
VS - Slim Throat	

Standard Style Insert and Toolholder Pocket

U-Style Insert and Toolholder Pocket

Threading Code System

16	□	E	R	□	1.50	ISO	□	□	TTIP30
1	2	3	4	5	6	7	8	9	10
Insert Size	Insert Style	Insert Type	Hand of Insert	Chip Breaker	Pitch	Standart	API Size	Multi-Tooth Style	Carbide Grade

1 Insert Size (mm)

16 □ E R □ 1.50 ISO □ □ TTIP30

08: d = 4.76
11: d = 6.35
16: d = 9.525
22: d = 12.7
27: d = 15.875

2 Insert Style

16 □ E R □ 1.50 ISO □ □ TTIP30

U

V

3 Insert Type

16 □ E R □ 1.50 ISO □ □ TTIP30

E: External thread I: Internal thread

4 Hand of Insert

16 □ E R □ 1.50 ISO □ □ TTIP30

R: Right handed L: Left handed

5 Chip Breaker

16 □ E R □ 1.50 ISO □ □ TTIP30

None Code: Regular Type

M: M type Chip Breaker

9 Pitch

16 □ E R □ 1.50 ISO □ □ TTIP30

Full profile		Partial profile	
mm	tpi	mm	tpi
0.35-6.0	72 - 3	A 0.5 - 1.5	48 - 16
		AG0.5 - 3.0	48 - 8
		G 1.75 - 3.0	14 - 8
		N 3.5 - 5.0	7 - 5
		Q 5.5 - 6.0	4.5 - 4

9 No. of Teeth

16 □ E R □ 1.50 ISO □ □ TTIP30

For Multi-Tooth Style 2 3 5 6 8

7 Standard

16 □ E R □ 1.50 ISO □ □ TTIP30

60° - Partial Profile 60°
55° - Partial Profile 55°
STACME - Stub ACME
UN - American UN
W - Whitworth for BSW, BSP
BSPT - Britsh Standard Pipe Thread
ABUT - American Butterss
BBUT - Britsh Butterss
SAGE - Metric Butterss DIN 513
RD - Round DIN 405
RD20400 - Round DIN 20400
BUT - API Butterss Casing
APIRD - API Round Casing & Tubing
EL - Extreme Line Casing
NPT - NPT
NPTF - NPTF
NPS - NPS
PG - Pg DIN 40430
API - API
VAM - VAM
H90 - H90
ISO - ISO Metric
UNJ - UNJ
MJ - ISO 5855
TR - Tarpez DIN 103
ACME - ACME

8 API Size & Taper

16 □ E R □ 1.50 ISO □ □ TTIP30

380.5 APIV-0..38R
382 APIV-0.038R1:6
383 APIV-0.038R1:4
403 APIV-0.040 1:4
502 APIV-0.050 1:6
503 APIV-0.050 1.4
551 APIV-0.055 1.8

10 Carbide Grade

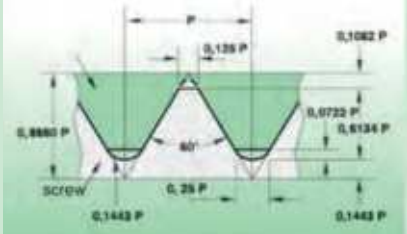
16 □ E R □ 1.50 ISO □ □ TTIP30

TTIP30 TTIM45 TTIG30 TTIN30

Common Thread Forms

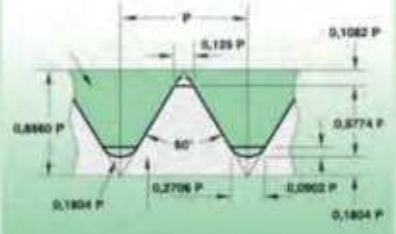
Common Thread Forms

ISO M (Metric) and UN (Unified National)



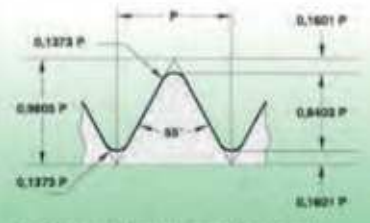
Use: All branches of mechanical industry.

UNJ (controlled root radius)



Use: Aircraft and space industry.

Whitworth (BSW)

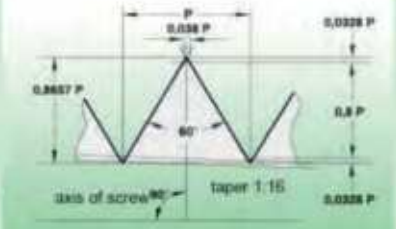


Use: Fittings and pipe couplings for gas, water, and sewer lines (replaced by ISO).

American Buttress

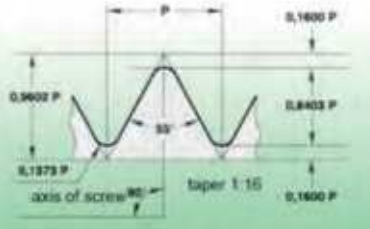
Use: Fittings and pipe couplings.

NPT (American National Pipe Thread)



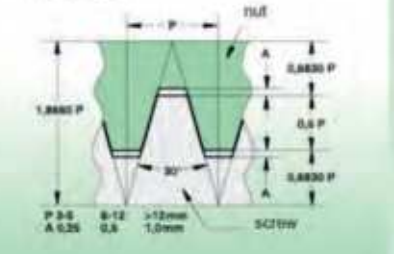
Use: Fittings and pipe couplings.

BSPT (British Standard Pipe Thread)



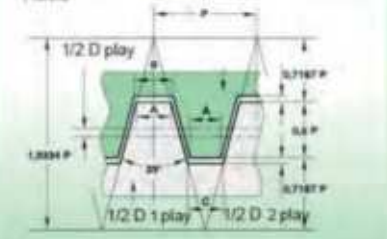
Use: Pipe thread for steam, gas, and water lines.

TR DIN 103



Use: Mechanical industry for motion transmission screws.

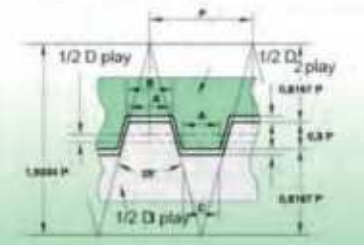
Acme



A = 0,0307 P
B = 0,3707 P—x D play
C = 0,3707 P—(D1 play—D2 play)

Use: Acme-General is used in mechanical industry for motion transmission screws.

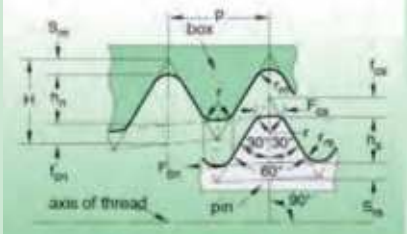
Acme, truncated (Stub)



A = 0,4224 P
B = 0,4224 P—x D play
C = 0,4224 P—(D1 play—D2 play)

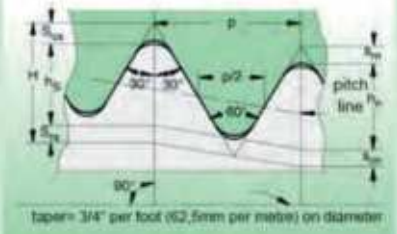
Use: Where normal Acme is too deep.

API Rotary Shoulder Connection



NOTE: Taper shown exaggerated.

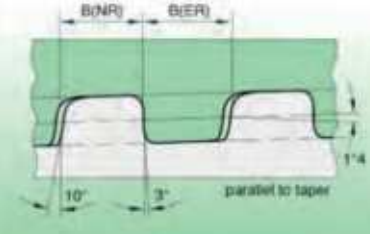
API Casing and Tubing Round Thread Form



taper= 3/4" per foot (62,5mm per metre) on diameter

NOTE: Taper shown exaggerated.

API Buttress



Technical Information for Threading

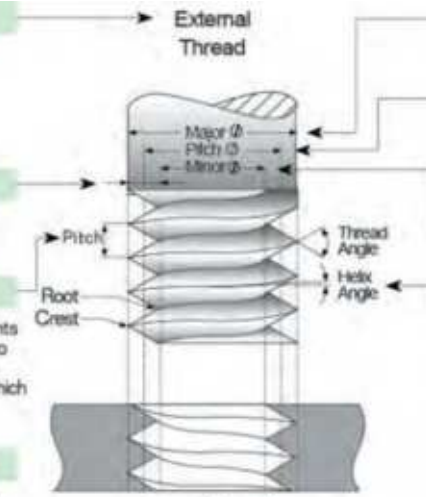
Special Features

External Thread
A thread on the external surface of a cylinder screw or cone

Depth of Thread
The distance between the crest and root measured from normal to the axis

Pitch
The distance between the corresponding points on adjacent thread forms measured parallel to the axis. This distance can be defined in millimeters or by the tpi (threads per inch), which is the reciprocal of the pitch

Nominal Diameter
The diameter of which the diameter limits are derived by the application of deviation allowances and tolerances



Major Diameter
The largest diameter of a screw thread

Pitch Diameter
On a straight thread, the diameter of an imaginary cylinder, the surface of which cuts the thread forms where the width of the thread and groove are equal

Minor Diameter
The smallest diameter of a screw thread

Helix Angle
For a straight thread, where the lead of the thread and the pitch diameter circle circumference form a right angled triangle, the helix angle is the angle opposite of the lead

Straight Thread
A thread formed on a cylinder

Taper Thread
A thread formed on a cone

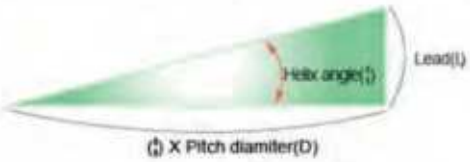
Left handed thread

A thread which, when viewed axially, winds in a counter clockwise and receding direction. All left handed threads are designated LH

Right handed thread

A thread which, when viewed axially, winds in a clockwise and receding direction. Threads are always right handed unless they are specified

The Helix Angle(↑)

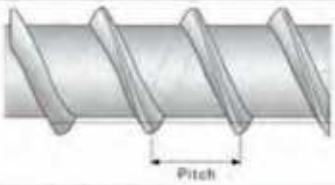


For a straight thread, where the lead of the thread and the pitch diameter circle circumference form a right angled triangle, the helix angle is the angle opposite of the lead

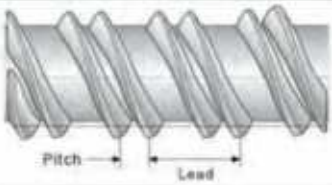
Machining a Multi-start Thread

▶ A thread in which the lead is an integral multiple, greater than one, of the pitch. A multi-start thread permits a more rapid advance without a coarser (larger) thread form

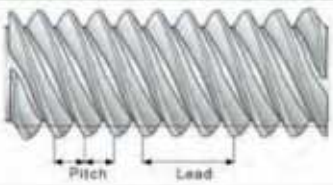
First Start Machined



Second Start Machined



Third Start Machined (Final, 3 Starts Thread)

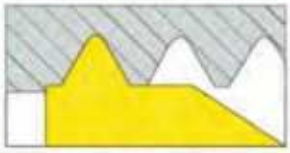


Insert Profile Style

Partial Profile

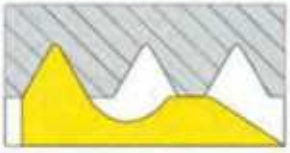
The V partial profile insert cuts without topping the outer diameter of the thread. The same insert can be used for a range of different thread pitches which have a common thread angle

Full Profile



The full profile insert will form a complete thread profile including the crest. For every thread pitch and standard, a separate insert is required

Full Profile for Fine Pitches



The full profile for Fine Pitches will form a complete thread
The topping of the outer diameter is generated by second tooth

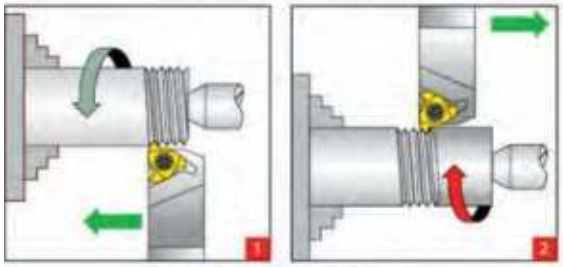
Semi Full

The Semi profile insert will form a complete thread including crest radius but without topping the outer diameter
Mainly used for trapezoidal profiles

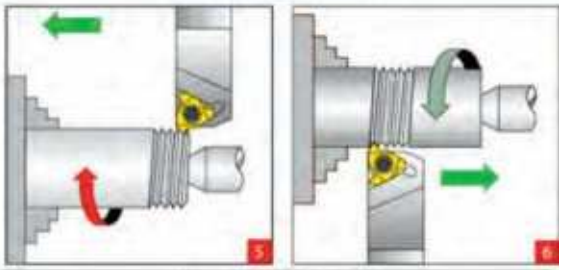
Thread Turning Method

Thread	Inserts & Tool holder	Rotation	Feed Direction	Helix Method	Drawing No.
Right Hand External	EX RH	Counter clockwise	Towards chuck	Regular	1
	EX LH	Clockwise	From chuck	Reversed	2
Right Hand Internal	IN RH	Counter clockwise	Towards chuck	Regular	3
	IN LH	Clockwise	From chuck	Reversed	4
Left Hand External	EX LH	Counter clockwise	Towards chuck	Regular	5
	EX RH	Clockwise	From chuck	Reversed	6
Left Hand Internal	IN LH	Counter clockwise	Towards chuck	Regular	7
	IN RH	Clockwise	From chuck	Reversed	8

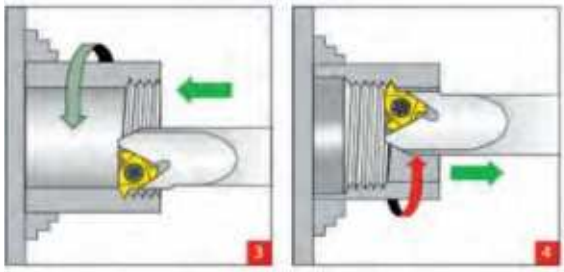
External RH Thread



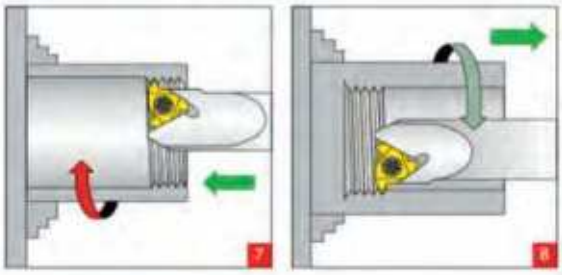
External LH Thread



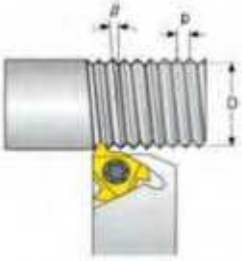
Internal RH Thread



Internal LH Thread



Calculating the Helix Angle(β)



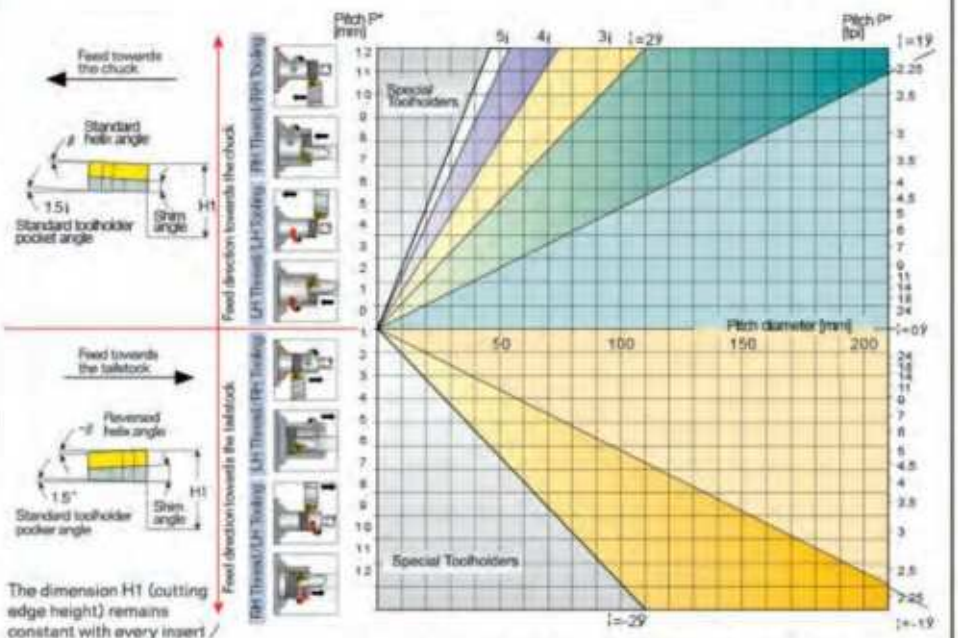
The helix angle is calculated by the following formula :

$$\beta = \tan^{-1}\frac{P \times N}{\pi \times D}$$

β - Helix angle()°
P - Pitch(mm)
N - No. of starts
D - Pitch diameter(mm)
Lead = P x N

e helix angle can also be found m the diagram below

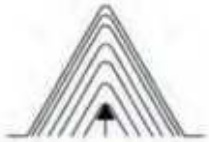
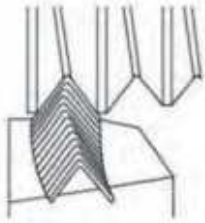
Helix Angle Diagram



* For Multi-start threads, use the lead value instead of the pitch

Technical Information for Threading

Infeed Angle Selection And Chip Formation Typical Chip Formation

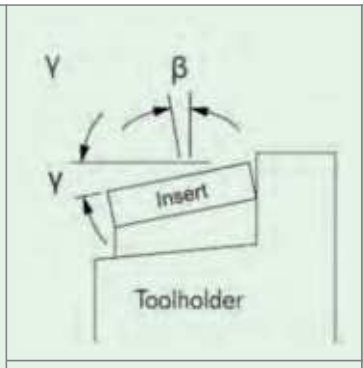
Infeed Angle 0° Benefit:Cutting edge is protected from chipping by both sides in cut. Problem :Both sides of insert are heated by the wokpiece. Produces " Vee " chips which can be very difficult to handle.			
Infeed Angle 30° Benefit :Chip is curled away from thread form. Problem: Trailing edge may drag rather than cut, which may cause chipping.			
Infeed Angle 29° Benefit: Cutting edge is protected from chipping by both sides in cut. Chip is curled away from thread from. Part of the heat generatedis dissipated to the trailing edge.Final pass infeed angle should be 0°			
Alternating Flank Infeed For very large thread forms Benefit: Increased tool life because both edges are used effectively. Final pass should be 0°			

The coolant Should provided

 Fast heat removal	 Good surface coverage	 Non-corrosiveness	 Homogeneity and stability	 Good lubricant qualities

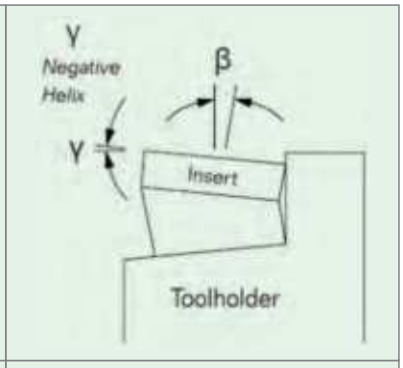
Standard and slanted Anvils

TOOTOOL toolholder and boring bar pockets have a built-in 1.5 helix compensation angle. This angle may be adjusted to match the helix angle of the thread being produced by replacing the anvil.



Positive Helix Angles

Applicable when turning RH thread with RH holder or LH thread with LH holder.



Negative Helix Angles

Applicable when turning RH thread with LH holder or LH thread with RH holder.

Anvils

Resultant Helix Angle		Holder	4.5 °	3.5 °	2.5 °	1.5 °	0.5 °	0 °	-0.5 °	-1.5 °
Insert Size			Ordering Code							
d	Lmm									
9.525	16	ER/NL	STM16R-3P	STM16R-2P	STM16R-1P	STM16R	STM16R-1N	STM16R-1.5N	STM16R-2N	STM16R-3N
		EL/NR	STM16L-3P	STM16L-2P	STM16L-1P	STM16L	STM16L-1N	STM16L-1.5N	STM16L-2N	STM16L-3N
12.7	22	ER/NR	STM22R-3P	STM22R-2P	STM22R-1P	STM22R	STM22R-1N	STM22R-1.5N	STM22R-2N	STM22R-3N
		ER/NL	STM22L-3P	STM22L-2P	STM22L-1P	STM22L	STM22L-1N	STM22L-1.5N	STM22L-2N	STM22L-3N
12.7	22	EL/NR	STM22UR-3P	STM22UR-2P	STM22UR-1P	STM22UR	STM22UR-1N	STM22UR-1.5N	STM22UR-2N	STM22UR-3N
		NR/EL	STM22UL-3P	STM22UL-2P	STM22UL-1P	STM22UL	STM22UL-1N	STM22UL-1.5N	STM22UL-2N	STM22UL-3N
15.875	27	ER/NL	STM27R-3P	STM27R-2P	STM27R-1P	STM27R	STM27R-1N	STM27R-1.5N	STM27R-2N	STM27R-3N
		EL/NR	STM27L-3P	STM27L-3P	STM27L-1P	STM27L	STM27L-1N	STM27L-1.5N	STM27L-2N	STM27L-3N
15.875	27	ER/NL	STM27UR-3P	STM27UR-2P	STM27UR-1P	STM27UR	STM27UR-1N	STM27UR-1.5N	STM27UR-2N	STM27UR-3N
		EL/NR	STM27UL-3P	STM27UL-2P	STM27UL-1P	STM27UL	STM27UL-1N	STM27UL-1.5N	STM27UL-2N	STM27UL-3N

Standard Shim

SMT-R STM-L

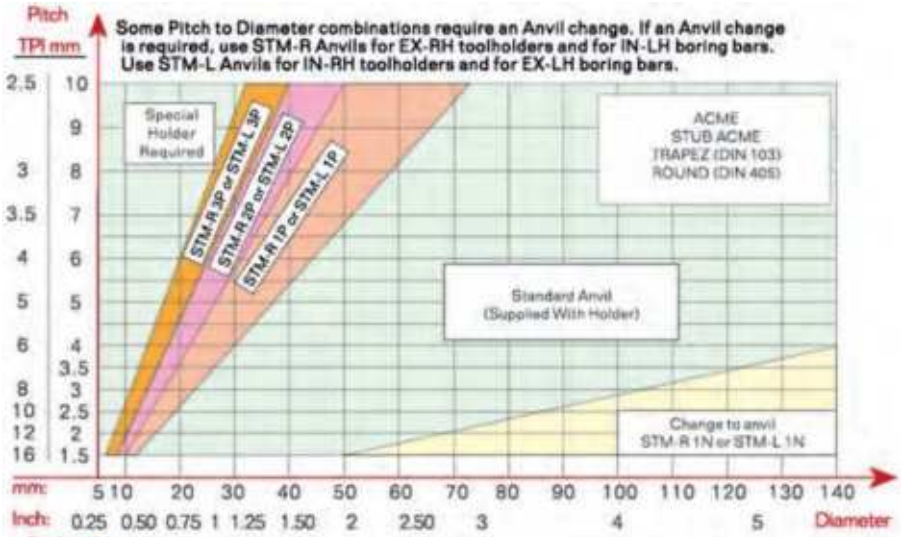
Helix angle 1.5°

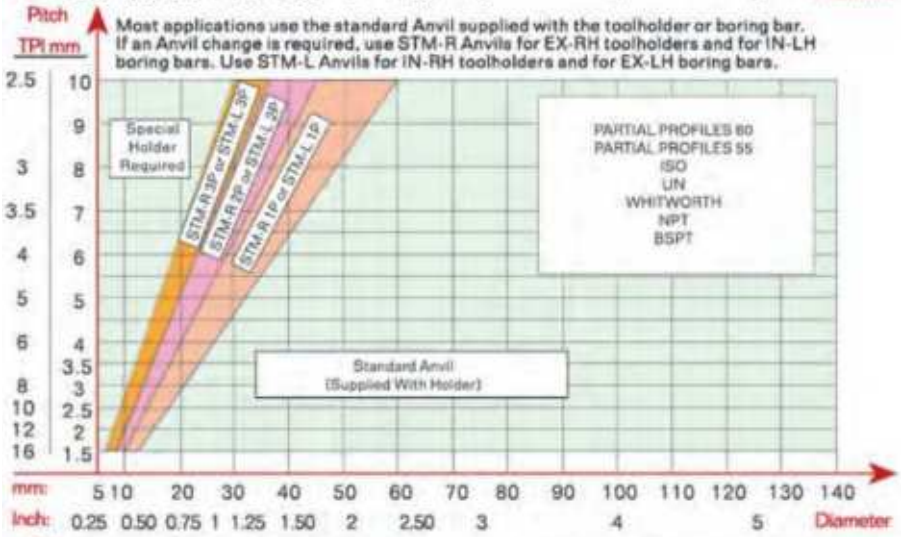
Insert Size	d	9.525		12.7		15.875	
	L	16		22		27	
Holder		ER/NL	EL/NR	ER/NL	EL/NR	ER/NL	EL/NR
Ordering Code		STM16R	STM16L	STM22R	STM22L	STM27R	STM27L

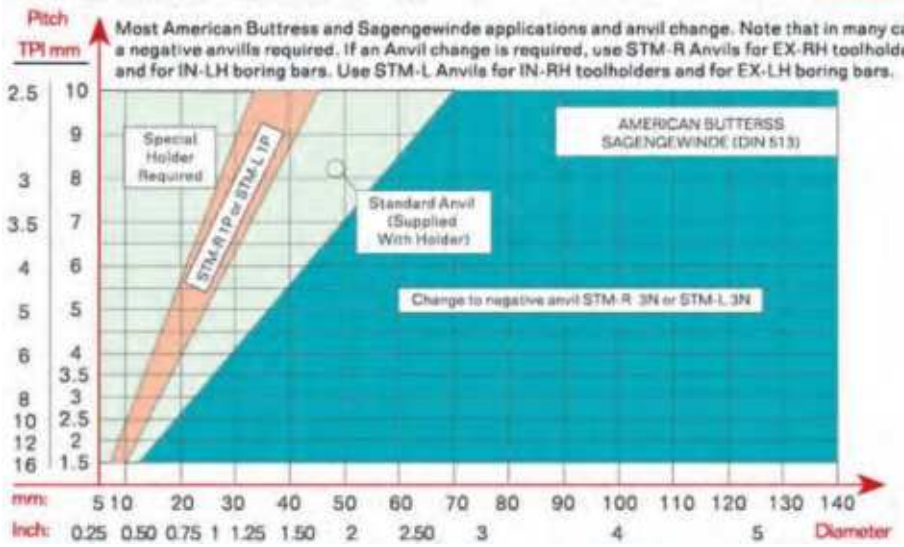
※ Stamdard anvil has lead angle 1.5°

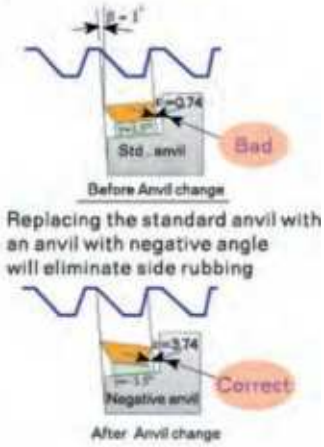
Technical Information for Threading

Anvil Change Recommendation









Grade Use

TTIP30	P10-P25, K10-K20	TiN coated, yellow color, the universal grade for general steel, recommended for rigid cutting condition.	
TTIM45	P20-P40, K20-K30	TiALN coated, black color, Multi-Layer PVD coated for stainless steel & steel medium machining	
TTIG30	P20-P30, K20-K30	TiALN coated, purple color, is a very high versatility coating with excellent toughness and chipping resistance, can play a high performance in a variety of processing.	
TTIS30	P10-P30, K10-K30	Sub-micro grade with AlTiN multy-layer coating, Brozen color, compatible with all series of stainless steel & steel < HRC50 high & medium machining	
TPK01	K10-K30	uncoated grade for non-ferrous, cast iron and titanium-alloy materials	

Recommended cutting speed as per workpiece

Workpiece		
P	Carbon steel, Alloy steel, Cast steel	TTIP30 TTIM45
M	Stainless steel, Heat resistant steel, Titanium alloy steel	TTIS30 TTIM45 TTIG30
K	Carbon Iron, Aluminum, Cast steel, Copper	TTIP30 TTIM45

Technical Information for Threading

Recommended Cutting Speed

Material		Hardness	Vc (m/min)				
			TTIP30	TTIM45	TTIG30	TTIS30	TPK01
P Steel	Low alloy steel (alloying elements < 5%)		100-180	80-130	60-140	70-140	
	Higt alloy steel (alloying elements > 5%), cast steel, and tool steel		50-70	60-80	60-80	50-100	
M Stainless steel	Stainless steel & Cast steel		60-90	90-130	40-120	90-140	
K Cast iron	Cast iron nodular (GGG)		80-110	100-130	60-120	90-120	
	Grey cast iron (GG)		90-100	120-130	80-120	60-130	
	Malleable cast iron		80-100	100-130	60-120	60-140	
N Non-ferrous alloy	Aluminum alloy		50-350	200-500		200-400	200-550
	Copper and cooper alloy		110-180	260-400		80-255	150-250
	Non metallic		150-210				100-200
S Heat resistant material	Higt Temperature Alloys, Super Alloys			25-60	20-40	30-50	
	Titanium Alloy			35-45	25-65	50-70	35-45
H Hardened material	Hardened steel	HRC45-55		35-45	20-60	40-60	

Calculation of N [RPM]

$$n = \frac{vc \times 1000}{\pi \times D} \qquad vc = \frac{\pi \times D \times n}{1000}$$

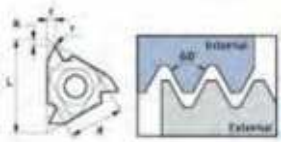
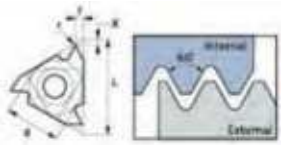
n - Revolution Per Minute [min-1]
vc - Cutting Speed [m/min]
D - Workpiece Diameter [mm]

Number of Passes

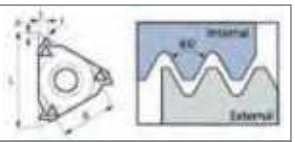
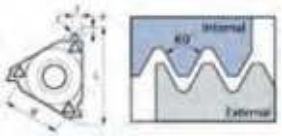
Pitch	mm	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00	8.00
	tpi	48	32	24	20	16	14	12	10	8	7	6	5.5	5	4.5	4	3
No. of passes		4~6	4~7	4~8	5~9	6~10	7~12	7~12	8~14	9~16	10~18	11~18	11~19	12~20	12~20	12~20	15~24

※ One cutting depth is calculated by total cutting depth divided into machining times
ex) 16ER-1.5ISO, hmin 0.92: If 10 times machining, one cutting depth is 0.092(0.92/10)

Partial Profile 60°

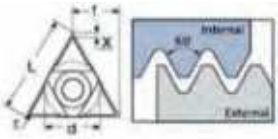
Type	Designation (Right)	Designation (Left)	Pitch		Dimensions					Picture
			mm	tpi	d	L	r	X	f	
External	11ER A60	11EL A60	0.5-1.5	48-16	6.35	11	0.05	0.8	0.9	
	16ER A60	16EL A60	0.5-1.5	48-16	9.525	16	0.05	0.8	0.9	
	16ER G60	16EL G60	1.75-3.0	14-8	9.525	16	0.27	1.2	1.7	
	16ER AG60	16EL AG60	0.5-3.0	48-8	9.525	16	0.08	1.2	1.7	
	22ER N60	22EL N60	3.5-5.0	7-5	12.7	22	0.53	1.7	2.5	
	27ER Q60	27EL Q60	5.5-6.0	4.5-4	15.875	27	0.64	2.1	3.1	
	27ER S60	27EL S60	5.5-8.0	4.5-4	15.875	27	0.39	2.5	4.0	
Internal	06IR A60	06IL A60	0.5-1.25	48-20	3.97	6	0.04	0.6	0.6	
	08IR A60	08IL A60	0.5-1.5	48-16	4.76	8	0.05	0.6	0.7	
	11IR A60	11IL A60	0.5-1.5	48-16	6.35	11	0.05	0.8	0.9	
	16IR A60	16IL A60	0.5-1.5	48-16	9.525	16	0.05	0.8	0.9	
	16IR G60	16IL G60	1.75-3.0	14-8	9.525	16	0.16	1.2	1.7	
	16IR AG60	16IL AG60	0.5-3.0	48-8	9.525	16	0.05	1.2	1.7	
	22IR N60	22IL N60	3.5-5.0	7-5	12.7	22	0.30	1.7	2.5	
	27IR Q60	27IL Q60	5.5-6.0	4.5-4	15.875	27	0.30	1.8	2.7	
	27IR S60	27IL S60	5.5-8.0	4.5-4	15.875	27	0.39	2.5	4.0	

Partial Profile 60° (M Chip Breaker)

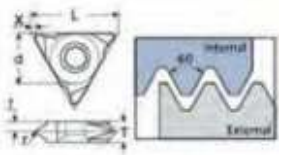
Type	Designation (Right)	Designation (Left)	Pitch		Dimensions					Picture
			mm	tpi	d	L	r	X	f	
External	16ERM A60	16ELM A60	0.5-1.5	48-16	9.525	16	0.08	0.8	0.9	
	16ERM G60	16ELM G60	1.75-3.0	14-8	9.525	16	0.08	1.2	1.7	
	16ERM AG60	16ELM AG60	0.5-3.0	48-8	9.525	16	0.25	1.1	1.5	
	22ERM N60	22ELM N60	3.5-5.0	7-5	12.7	22	0.51	1.7	2.5	
Internal	08IRM A60	08ILM A60	0.5-1.5	48-16	4.76	8	0.08	0.6	0.7	
	11IRM A60	11ILM A60	0.5-1.5	48-16	6.35	11	0.08	0.8	0.9	
	16IRM A60	16ILM A60	0.5-1.5	48-16	9.525	16	0.08	0.8	0.9	
	16IRM G60	16ILM G60	1.75-3.0	14-8	9.525	16	0.13	1.2	1.7	
	16IRM AG60	16ILM AG60	0.5-3.0	48-8	9.525	16	0.25	1.1	1.5	
	22IRM N60	22ILM N60	3.5-5.0	7-5	12.7	22	0.30	1.7	2.5	

Thread Insert

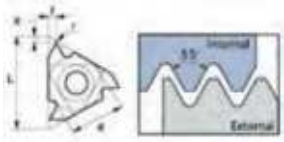
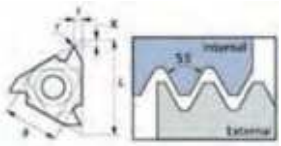
Partial profile 60° (U Style)

Type	Designation (Right + Left)	Pitch		Dimensions					Picture
		mm	tpi	d	L	r	X	f	
External Internal	08UEI U60	1.75-2.0	14-11	4.76U	8	0.15	0.8	4.0	
	11UEI U60	1.5-4.0	16-6	6.35U	11	0.10	0.8	5.5	
	16UEI U60	2.5-6.0	10-4	9.525U	16	0.20	1.2	8.2	
	22UEI U60	5.5-8.0	4.5-3.25	12.7U	22	0.30	0.6	11.0	
	27UEI U60	6.5-9.0	4-2.75	15.87U	27	0.37	1.0	13.7	

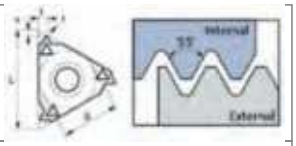
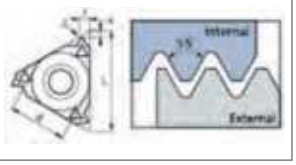
Partial profile 60° (V Style)

Type	Designation (Right)	Designation (Left)	Pitch		Dimensions					Picture
			mm	tpi	d	L	r	X	f	
External	11VER A60	11VEL A60	0.5-1.5	48-16	6.35V	11	0.05	0.69	3.2	
	16VER A60	16VEL A60	0.5-1.5	48-16	9.525V	16	0.05	1.1	3.5	
	16VER G60	16VEL G60	1.75-3.0	14-8	9.525V	16	0.27	1.1	3.5	
	16VER AG60	16VEL AG60	0.5-3.0	48-8	9.525V	16	0.08	1.1	3.5	
	22VER N60	22VEL N60	3.5-5.0	7-5	12.70V	22	0.53	1.1	4.8	
	27VER V60	27VEL V60	6.0-10.0	4-2.5	15.875V	27	0.75	5.2	10.2	

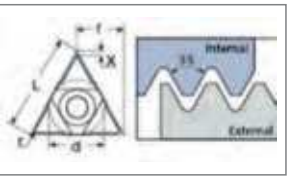
Partial profile 55°

Type	Designation (Right)	Designation (Left)	Pitch		Dimensions					Picture
			mm	tpi	d	L	r	X	f	
External	11ER A55	11EL A55	0.5-1.5	48-16	6.35	11	0.05	0.8	0.9	
	16ER A55	16EL A55	0.5-1.5	48-16	9.525	16	0.05	0.8	0.9	
	16ER G55	16EL G55	1.75-3.0	14-8	9.525	16	0.21	1.2	1.7	
	16ER AG55	16EL AG55	0.5-3.0	48-8	9.525	16	0.07	1.2	1.7	
	22ER N55	22EL N55	3.5-5.0	7-5	12.7	22	0.43	1.7	2.5	
	27ER Q55	27EL Q55	5.5-6.0	4.5-4	15.875	27	0.60	2.1	2.9	
	27ER S55	27EL S55	5.5-8.0	4.5-4	15.875	27	0.77	2.5	4.0	
Internal	06IR A55	06IL A55	0.5-1.25	48-20	3.97	6	0.07	0.6	0.6	
	11IR A55	11IL A55	0.5-1.5	48-16	6.35	11	0.05	0.8	0.9	
	16IR A55	16IL A55	0.5-1.5	48-16	9.525	16	0.05	0.8	0.9	
	16IR G55	16IL G55	1.75-3.0	14-8	9.525	16	0.21	1.2	1.7	
	16IR AG55	16IL AG55	0.5-3.0	48-8	9.525	16	0.07	1.2	1.7	
	22IR N55	22IL N55	3.5-5.0	7-5	12.7	22	0.43	1.7	2.5	
	27IR Q55	27IL Q55	5.5-6.0	4.5-4	15.875	27	0.60	2.0	2.9	
	27IR S55	27IL S55	5.5-8.0	4.5-4	15.875	27	0.77	2.5	4.0	

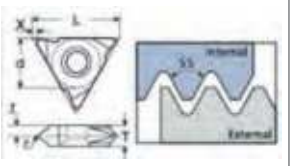
Partial profile 55° (M Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch		Dimensions					Picture
			mm	tpi	d	L	r	X	f	
External	16ERM A55		0.5-1.5	48-16	9.525	16	0.08	0.8	0.9	
	16ERM G55		1.75-3.0	14-8	9.525	16	0.21	1.2	1.7	
	16ERM AG55		0.5-3.0	48-8	9.525	16	0.08	1.2	1.5	
	22ERM N55		3.5-5.0	7-5	12.7	22	0.43	1.7	2.5	
Internal	11IRM A55		0.5-1.5	48-16	6.35	11	0.08	0.8	0.9	
	16IRM A55		0.5-1.5	48-16	9.525	16	0.05	0.8	0.9	
	16IRM G55		1.75-3.0	14-8	9.525	16	0.08	1.2	1.7	
	16IRM AG55		0.5-3.0	48-8	9.525	16	0.08	1.1	1.5	
	22IRM N55		3.5-5.0	7-5	12.7	22	0.43	1.7	2.5	

Partial profile 55° (U Style)

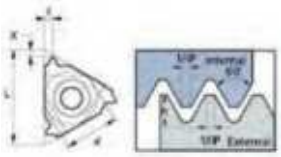
Type	Designation (Right+Left)	Pitch		Dimensions					Picture
		mm	tpi	d	L	r	X	f	
External Internal	08UEI U55	1.75-2.0	14-11	4.76U	8	0.25	0.8	4.0	
	11UEI U55	1.5-4.0	16-6	6.35U	11	0.10	0.8	5.5	
	16UEI U55	2.5-6.0	10-4	9.525U	16	0.20	1.2	8.2	
	22UEI U55	5.5-8.0	4.5-3.25	12.7U	22	0.60	0.9	11.0	
	27UEI U55	6.5-9.0	4-2.75	15.875U	27	0.80	1.2	13.7	

Partial profile 55° (V Style)

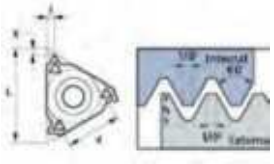
Type	Designation (Right)	Designation (Left)	Pitch		Dimensions						Picture
			mm	tpi	d	L	r	X	f	T	
External	11VER A55	11VEL A55	0.5-1.5	48-16	6.35V	11	0.05	0.8	2.7	3.2	
	16VER A55	16VEL A55	0.5-1.5	48-16	9.525V	16	0.05	1.0	0.9	3.6	
	16VER G55	16VEL G55	1.75-3.0	14-8	9.525V	16	0.21	1.0	1.7	3.6	
	16VER AG55	16VEL AG55	0.5-3.0	48-8	9.525V	16	0.07	1.0	1.8	3.6	
	22VER N55	22VEL N55	3.5-5.0	7-5	12.70V	22	0.43	1.2	2.5	4.8	
	27VER V55	27VEL V55	6.0-10.0	4-2.5	15.875V	27	0.70	1.8	5.2	8.7	

Thread Insert

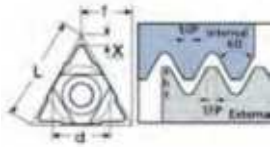
ISO Metric

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			mm	d	L	hmin	X	f	
External	11ER 0.40ISO	11EL 0.40ISO	0.4	6.35	11	0.25	0.7	0.4	
	11ER 0.45ISO	11EL 0.45ISO	0.45	6.35	11	0.28	0.7	0.4	
	11ER 0.50ISO	11EL 0.50ISO	0.5	6.35	11	0.31	0.6	0.4	
	11ER 0.60ISO	11EL 0.60ISO	0.6	6.35	11	0.37	0.6	0.6	
	11ER 0.70ISO	11EL 0.70ISO	0.7	6.35	11	0.43	0.6	0.6	
	11ER 0.75ISO	11EL 0.75ISO	0.75	6.35	11	0.46	0.6	0.6	
	11ER 0.80ISO	11EL 0.80ISO	0.8	6.35	11	0.49	0.6	0.6	
	11ER 1.00ISO	11EL 1.00ISO	1.0	6.35	11	0.61	0.7	0.7	
	11ER 1.25ISO	11EL 1.25ISO	1.25	6.35	11	0.77	0.8	0.9	
	11ER 1.50ISO	11EL 1.50ISO	1.5	6.35	11	0.92	0.8	1.0	
	11ER 1.75ISO	11EL 1.75ISO	1.75	6.35	11	1.07	0.8	1.1	
	11ER 2.00ISO	11EL 2.00ISO	2.0	6.35	11	1.23	0.8	1.1	
	16ER 0.40ISO	16EL 0.40ISO	0.4	9.525	16	0.25	0.7	0.4	
	16ER 0.45ISO	16EL 0.45ISO	0.45	9.525	16	0.28	0.7	0.4	
	16ER 0.50ISO	16EL 0.50ISO	0.5	9.525	16	0.31	0.6	0.4	
	16ER 0.60ISO	16EL 0.60ISO	0.6	9.525	16	0.37	0.6	0.6	
	16ER 0.70ISO	16EL 0.70ISO	0.7	9.525	16	0.43	0.6	0.6	
	16ER 0.75ISO	16EL 0.75ISO	0.75	9.525	16	0.46	0.6	0.6	
	16ER 0.80ISO	16EL 0.80ISO	0.8	9.525	16	0.49	0.6	0.6	
	16ER 1.00ISO	16EL 1.00ISO	1.0	9.525	16	0.61	0.7	0.7	
	16ER 1.25ISO	16EL 1.25ISO	1.25	9.525	16	0.77	0.8	0.9	
	16ER 1.50ISO	16EL 1.50ISO	1.5	9.525	16	0.92	0.8	1.0	
	16ER 1.75ISO	16EL 1.75ISO	1.75	9.525	16	1.07	0.9	1.2	
	16ER 2.00ISO	16EL 2.00ISO	2.0	9.525	16	1.23	1.0	1.3	
	16ER 2.50ISO	16EL 2.50ISO	2.5	9.525	16	1.53	1.1	1.5	
	16ER 3.00ISO	16EL 3.00ISO	3.0	9.525	16	1.84	1.2	1.6	
	16ER 3.50ISO	16EL 3.50ISO	3.5	9.525	16	2.15	1.6	1.9	
	22ER 3.50ISO	22EL 3.50ISO	3.5	12.70	22	2.15	1.6	2.3	
	22ER 4.00ISO	22EL 4.00ISO	4.0	12.70	22	2.45	1.6	2.3	
	22ER 4.50ISO	22EL 4.50ISO	4.5	12.70	22	2.78	1.7	2.4	
	22ER 5.00ISO	22EL 5.00ISO	5.0	12.70	22	3.07	1.7	2.5	
	22ER 5.50ISO	22EL 5.50ISO	5.5	12.70	22	3.37	1.9	2.7	
	22ER 6.00ISO	22EL 6.00ISO	6.0	12.70	22	3.68	1.8	2.7	
	27ER 5.50ISO	27EL 5.50ISO	5.5	15.875	27	3.37	1.9	2.7	
	27ER 6.00ISO	27EL 6.00ISO	6.0	15.875	27	3.68	2.0	2.9	
	27ER 7.00ISO	27EL 7.00ISO	7.0	15.875	27	4.30	2.4	3.3	
	27ER 8.00ISO	27EL 8.00ISO	8.0	15.875	27	4.91	2.2	3.2	

Partial profile 60° (M Chip Breaker)

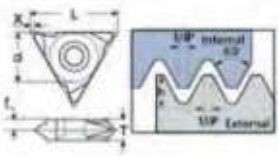
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			mm	d	L	hmin	X	f	
External	16ERM 1.00ISO		1.0	9.525	16	0.61	0.8	0.7	
	16ERM 1.25ISO		1.25	9.525	16	0.77	0.8	0.9	
	16ERM 1.50ISO		1.5	9.525	16	0.93	0.8	1.0	
	16ERM 1.75ISO		1.75	9.525	16	1.09	1.2	1.2	
	16ERM 2.00ISO		2.0	9.525	16	1.25	1.2	1.3	
	16ERM 2.50ISO		2.5	9.525	16	1.55	1.2	1.5	
	16ERM 3.00ISO		3.0	9.525	16	1.87	1.2	1.5	
	22ERM 3.50ISO		3.5	12.7	22	2.15	1.6	2.3	
	22ERM 4.00ISO		4.0	12.7	22	2.45	1.6	2.3	
	22ERM 4.50ISO		4.5	12.7	22	2.78	1.7	2.4	
	22ERM 5.00ISO		5.0	12.7	22	3.07	1.7	2.5	
	22ERM 5.50ISO		5.5	12.7	22	3.37	1.9	2.7	
	22ERM 6.00ISO		6.0	12.7	22	3.68	1.9	2.7	

ISO Metric (U Style)

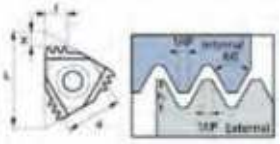
Type	Designation (Right+Left)	Pitch	Dimensions					Picture
		mm	d	L	hmin	X	f	
External	22UE 5.00ISO	5.0	4.76U	22	3.07	2.2	11.0	
	22UE 5.50ISO	5.5	6.35U	22	3.37	2.2	11.0	
	22UE 6.00ISO	6.0	12.70U	22	3.68	2.2	11.0	
	27UE 8.00ISO	8.08	15.875U	27	4.91	2.4	13.7	
	33UE 12.00ISO	12.0	19.05U	33	7.36	2.5	16.5	
Internal	08UI 2.00ISO	2.0	4.76U	8	1.15	0.9	4.0	
	22UI 5.00ISO	5.0	12.70U	22	2.89	2.4	11.0	
	22UI 5.50ISO	5.5	12.70U	22	3.17	2.4	11.0	
	22UI 6.00ISO	6.0	12.70U	22	3.46	2.1	11.0	
	27UI 8.00ISO	8.0	15.875U	27	4.26	2.4	13.7	
	33UI 12.00ISO	12.0	19.05U	33	7.36	3.5	16.9	

Thread Insert

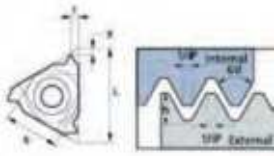
ISO Metric (V Style)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			mm	d	L	hmin	X	f	T	
External	11VER 0.75ISO	11VEL 0.75ISO	0.75	6.35V	11	0.46	0.7	2.6	3.20	
	11VER 1.00ISO	11VEL 1.00ISO	1.0	6.35V	11	0.61	0.7	2.5	3.20	
	11VER 1.25ISO	11VEL 1.25ISO	1.5	6.35V	11	0.92	0.7	2.2	3.20	
	11VER 1.50ISO	11VEL 1.50ISO	1.75	6.35V	11	1.07	0.7	2.1	3.20	
	11VER 1.75ISO	11VEL 1.75ISO	2.0	6.35V	11	1.23	0.7	1.9	3.20	
	11VER 2.00ISO	11VEL 2.00ISO	0.35	6.35V	16	0.20	1.1	3.25	3.60	
	16VER 0.40ISO	16VEL 0.40ISO	0.4	9.525V	16	0.25	1.1	3.2	3.60	
	16VER 0.45SO	16VEL 0.45SO	0.5	9.525V	16	0.31	1.1	3.0	3.60	
	16VER 0.75ISO	16VEL 0.75ISO	0.75	9.525V	16	0.46	1.1	3.0	3.60	
	16VER 0.80ISO	16VEL 0.80ISO	0.8	9.525V	16	0.49	1.1	3.0	3.60	
	16VER 1.00ISO	16VEL 1.00ISO	1.0	9.525V	16	0.61	1.1	2.9	3.60	
	16VER 1.25ISO	16VEL 1.25ISO	1.25	9.525V	16	0.77	1.1	2.7	3.60	
	16VER 1.50ISO	16VEL 1.50ISO	1.5	9.525V	16	0.92	1.1	2.6	3.60	
	16VER 1.75ISO	16VEL 1.75ISO	1.75	9.525V	16	1.07	1.1	2.45	3.60	
	16VER 2.00ISO	16VEL 2.00ISO	2.0	9.525V	16	1.23	1.1	2.3	3.60	
	16VER 2.50ISO	16VEL 2.50ISO	2.5	9.525V	16	1.53	1.1	2.1	3.60	
	16VER 3.00ISO	16VEL 3.00ISO	3.0	9.525V	16	1.84	1.1	2.0	3.60	
	27VER 5.50ISO	27VEL 5.50ISO	5.5	15.875V	27	3.37	1.0	3.3	6.35	
	27VER 6.00ISO	27VEL 6.00ISO	6.0	15.875V	27	3.68	1.0	3.3	6.35	
	27VER 8.00ISO	27VEL 8.00ISO	8.0	15.875V	27	4.91	1.8	5.2	8.70	
	27VER 10.00ISO	27VEL 10.00ISO	10.0	15.875V	27	6.13	1.8	5.2	10.2	

ISO Metric (M+ Style)

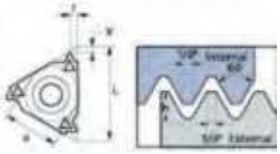
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			mm	d	L	hmin	X	f	T	
External	16ER 1.00ISO 3M		1.0	9.525	16	0.61	1.8	2.6	3	
	16ER 1.50ISO 2M		1.5	9.525	16	0.92	1.6	2.4	2	
	16ER 2.00ISO 3M		2.0	9.525	16	1.23	2.1	3.1	2	
	22ER 1.50ISO 3M		1.5	12.7	22	0.92	2.5	3.8	3	
	22ER 2.00ISO 2M		2.0	12.7	22	1.23	2.1	3.1	2	
	22ER 2.00ISO 3M		2.0	12.7	22	1.23	3.2	5.1	3	
	22ER 2.50ISO 2M		2.5	12.7	22	1.53	2.5	3.9	2	
	27ER 3.00ISO 3M		3.0	15.875	27	1.84	3.0	4.7	2	

ISO Metric

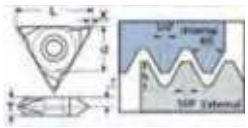
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			mm	d	L	hmin	X	f	
Internal	06IR 0.50ISO	06IL 0.50ISO	0.5	3.97	6	0.29	0.9	0.5	
	06IR 0.75ISO	06IL 0.75ISO	0.75	3.97	6	0.43	0.8	0.5	
	06IR 1.00ISO	06IL 1.00ISO	1.0	3.97	6	0.58	0.7	0.6	
	06IR 1.25ISO	06IL 1.25ISO	1.25	3.97	6	0.72	0.6	0.6	
	08IR 0.50ISO	08IL 0.50ISO	0.5	4.76	8	0.29	0.6	0.5	
	08IR 0.75ISO	08IL 0.75ISO	0.75	4.76	8	0.43	0.6	0.5	
	08IR 1.00ISO	08IL 1.00ISO	1.0	4.76	8	0.58	0.6	0.6	
	08IR 1.25ISO	08IL 1.25ISO	1.25	4.76	8	0.72	0.6	0.7	
	08IR 1.50ISO	08IL 1.50ISO	1.5	4.76	8	0.87	0.6	0.7	
	08IR 1.75ISO	08IL 1.75ISO	1.75	4.76	8	1.01	0.6	0.8	
	11IR 0.40ISO	11IL 0.40ISO	0.4	6.35	11	0.23	0.8	0.4	
	11IR 0.45ISO	11IL 0.45ISO	0.45	6.35	11	0.26	0.8	0.4	
	11IR 0.50ISO	11IL 0.50ISO	0.5	6.35	11	0.29	0.6	0.4	
	11IR 0.60ISO	11IL 0.60ISO	0.6	6.35	11	0.35	0.6	0.6	
	11IR 0.70ISO	11IL 0.70ISO	0.7	6.35	11	0.40	0.6	0.6	
	11IR 0.75ISO	11IL 0.75ISO	0.75	6.35	11	0.43	0.6	0.6	
	11IR 0.80ISO	11IL 0.80ISO	0.8	6.35	11	0.46	0.6	0.6	
	11IR 1.00ISO	11IL 1.00ISO	1.0	6.35	11	0.58	0.6	0.7	
	11IR 1.25ISO	11IL 1.25ISO	1.25	6.35	11	0.72	0.8	0.9	
	11IR 1.50ISO	11IL 1.50ISO	1.5	6.35	11	0.87	0.8	1.0	
	11IR 1.75ISO	11IL 1.75ISO	1.75	6.35	11	1.01	0.9	1.1	
	11IR 2.00ISO	11IL 2.00ISO	2.0	6.35	11	1.15	0.9	1.1	
	11IR 2.50ISO	11IL 2.50ISO	2.5	6.35	11	1.44	0.8	1.1	
	16IR 0.40ISO	16IL 0.40ISO	0.4	9.525	16	0.23	0.8	0.4	
	16IR 0.45ISO	16IL 0.45ISO	0.45	9.525	16	0.26	0.8	0.4	
	16IR 0.50ISO	16IL 0.50ISO	0.5	9.525	16	0.29	0.6	0.4	
	16IR 0.60ISO	16IL 0.60ISO	0.6	9.525	16	0.35	0.6	0.6	
	16IR 0.70ISO	16IL 0.70ISO	0.7	9.525	16	0.40	0.6	0.6	
	16IR 0.75ISO	16IL 0.75ISO	0.75	9.525	16	0.43	0.6	0.6	
	16IR 0.80ISO	16IL 0.80ISO	0.8	9.525	16	0.46	0.6	0.6	
	16IR 1.00ISO	16IL 1.00ISO	1.0	9.525	16	0.58	0.6	0.7	
	16IR 1.25ISO	16IL 1.25ISO	1.25	9.525	16	0.72	0.8	0.9	
	16IR 1.50ISO	16IL 1.50ISO	1.5	9.525	16	0.87	0.8	1.0	
	16IR 1.75ISO	16IL 1.75ISO	1.75	9.525	16	1.01	0.9	1.2	
	16IR 2.00ISO	16IL 2.00ISO	2.0	9.525	16	1.15	1.0	1.3	
	16IR 2.50ISO	16IL 2.50ISO	2.5	9.525	16	1.44	1.1	1.5	
	16IR 3.00ISO	16IL 3.00ISO	3.0	9.525	16	1.73	1.1	1.5	
	16IR 3.50ISO	16IL 3.50ISO	3.5	9.525	16	2.02	1.2	1.5	
	22IR 3.50ISO	22IL 3.50ISO	3.5	12.7	22	2.02	1.6	2.3	
	22IR 4.00ISO	22IL 4.00ISO	4.0	12.7	22	2.31	1.6	2.3	
	22IR 4.50ISO	22IL 4.50ISO	4.5	12.7	22	2.60	1.6	2.4	
	22IR 5.00ISO	22IL 5.00ISO	5.0	12.7	22	2.89	1.6	2.3	
	22IR 5.50ISO	22IL 5.50ISO	5.5	12.7	22	3.17	1.6	2.3	
	22IR 6.00ISO	22IL 6.00ISO	5.5	12.7	22	3.46	1.8	2.5	
	27IR 4.50ISO	27IL 4.50ISO	4.5	15.875	27	2.60	1.6	2.4	
	27IR 5.00ISO	27IL 5.00ISO	5.0	15.875	27	2.89	1.6	2.3	
	27IR 5.50ISO	27IL 5.50ISO	5.5	15.875	27	3.17	1.6	2.3	
	27IR 6.00ISO	27IL 6.00ISO	6.0	15.875	27	3.46	1.8	2.5	
	27IR 7.00ISO	27IL 7.00ISO	7.0	15.875	27	4.05	2.0	3.0	
	27IR 8.00ISO	27IL 8.00ISO	8.0	15.875	27	4.26	2.2	3.2	

Thread Insert

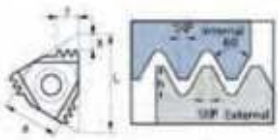
ISO Metric (M Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			mm	d	L	hmin	X	f	
Internal	11IRM 1.00ISO		1.0	6.35	11	0.58	0.8	0.7	
	11IRM 1.25ISO		1.25	6.35	11	0.72	0.8	0.9	
	11IRM 1.50ISO		1.5	6.35	11	0.87	0.8	1.0	
	11IRM 1.75ISO		1.75	6.35	11	1.01	0.9	1.1	
	16IRM 1.00ISO		1.0	9.525	16	0.58	0.8	0.7	
	16IRM 1.25ISO		1.25	9.525	16	0.72	0.8	0.9	
	16IRM 1.50ISO		1.5	9.525	16	0.85	0.8	1.0	
	16IRM 1.75ISO		1.75	9.525	16	1.01	1.2	1.2	
	16IRM 2.00ISO		2.0	9.525	16	1.12	1.2	1.3	
	16IRM -2.50ISO		2.5	9.525	16	1.44	1.2	1.5	
	16IRM 3.00ISO		3.0	9.525	16	1.69	1.2	1.5	
	22IRM 3.50ISO		3.5	12.7	22	2.02	1.6	2.3	
	22IRM 4.00ISO		4.0	12.7	22	2.31	1.6	2.3	
	22IRM 4.50ISO		4.5	12.7	22	2.60	1.7	2.4	
	22IRM 5.00ISO		5.0	12.7	22	2.89	1.7	2.5	
	22IRM 5.50ISO		5.5	12.7	22	3.17	1.9	2.7	
	22IRM 6.00ISO		6.0	12.7	22	3.46	1.9	2.7	

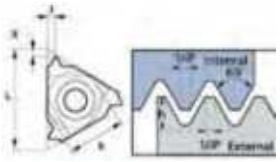
ISO Metric (V Style)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			mm	d	L	hmin	X	f	T	
Internal	27VIR 6.00ISO	27VIL 6.00ISO	6.0	15.875V	27	3.46	1.0	3.3	6.35	
	27VIR 8.00ISO	27VIL 8.00ISO	8.0	15.875V	27	4.65	1.8	5.5	8.70	
	27VIR 10.00ISO	27VIL 10.00ISO	10.0	15.875V	27	5.77	1.8	5.2	10.20	

ISO Metric (M+ Style)

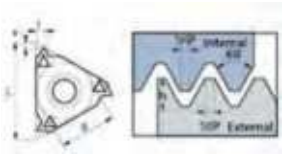
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			mm	d	L	hmin	X	f	Tooth	
Internal	16IR 1.00ISO 3M		1.0	9.525	16	0.58	1.7	2.6	3	
	16IR 1.50ISO 2M		1.5	9.525	16	0.87	1.6	2.4	2	
	16IR 2.00ISO 2M		2.0	9.525	16	1.15	2.0	3.1	2	
	22IR 1.50ISO 3M		1.5	12.7	22	0.87	2.5	3.8	3	
	22IR 2.00ISO 2M		2.0	12.7	22	1.15	2.0	3.1	2	
	22IR 2.00ISO 3M		2.0	12.7	22	1.15	3.2	5.1	3	
	27IR 3.00ISO 2M		3.0	15.875	27	1.73	3.0	4.7	2	

American Un (UN, UNC. UNF, ENEF, UNS)

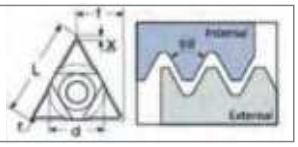
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	11ER 64UN	11ER 64UN	64	6.35	11	0.24	0.8	0.4	
	11ER 56UN	11EL 56UN	56	6.35	11	0.28	0.7	0.4	
	11ER 48UN	11EL 48UN	48	6.35	11	0.32	0.6	0.6	
	11ER 44UN	11EL 44UN	44	6.35	11	0.35	0.6	0.6	
	11ER 40UN	11EL 40UN	40	6.35	11	0.39	0.6	0.6	
	11ER 36UN	11EL 36UN	36	6.35	11	0.43	0.6	0.6	
	11ER 32UN	11EL 32UN	32	6.35	11	0.49	0.6	0.6	
	11ER 28UN	11EL 28UN	28	6.35	11	0.56	0.6	0.7	
	11ER 27UN	11EL 27UN	27	6.35	11	0.58	0.7	0.8	
	11ER 24UN	11EL 24UN	24	6.35	11	0.65	0.7	0.8	
	11ER 20UN	11EL 20UN	20	6.35	11	0.78	0.8	0.9	
	11ER 18UN	11EL 18UN	18	6.35	11	0.87	0.8	1.0	
	11ER 16UN	11EL 16UN	16	6.35	11	0.97	0.9	1.1	
	11ER 14UN	11EL 14UN	14	6.35	11	1.11	0.9	1.1	
	16ER 64UN	16EL 64UN	64	9.525	16	0.24	0.8	0.4	
	16ER 56UN	16EL 56UN	56	9.525	16	0.28	0.7	0.4	
	16ER 48UN	16EL 48UN	48	9.525	16	0.32	0.6	0.6	
	16ER 44UN	16EL 44UN	44	9.525	16	0.35	0.6	0.6	
	16ER 40UN	16EL 40UN	40	9.525	16	0.39	0.6	0.6	
	16ER 36UN	16EL 36UN	36	9.525	16	0.43	0.6	0.6	
	16ER 32UN	16EL 32UN	32	9.525	16	0.49	0.6	0.6	
	16ER 28UN	16EL 28UN	28	9.525	16	0.56	0.6	0.7	
	16ER 27UN	16EL 27UN	27	9.525	16	0.58	0.7	0.8	
	16ER 24UN	16EL 24UN	24	9.525	16	0.65	0.7	0.8	
	16ER 20UN	16EL 20UN	20	9.525	16	0.78	0.8	0.9	
	16ER 18UN	16EL 18UN	18	9.525	16	0.87	0.8	1.0	
	16ER 16UN	16EL 16UN	16	9.525	16	0.97	0.9	1.1	
	16ER 14UN	16EL 14UN	14	9.525	16	1.11	1.0	1.2	
	16ER 13UN	16EL 13UN	13	9.525	16	1.20	1.0	1.3	
	16ER 12UN	16EL 12UN	12	9.525	16	1.30	1.1	1.4	
	16ER 11.5UN	16EL 11.5UN	11.5	9.525	16	1.35	1.1	1.5	
	16ER 11UN	16EL 11UN	11	9.525	16	1.42	1.1	1.5	
	16ER 10UN	16EL 10UN	10	9.525	16	1.56	1.1	1.5	
	16ER 9UN	16EL 9UN	9	9.525	16	1.73	1.2	1.7	
	16ER 8UN	16EL 8UN	8	9.525	16	1.95	1.2	1.6	
	22ER 7UN	22EL 7UN	7	12.7	22	2.22	1.6	2.3	
	22ER 6UN	22EL 6UN	6	12.7	22	2.60	1.6	2.3	
	22ER 5UN	22EL 5UN	5	12.7	22	3.12	1.7	2.5	
	27ER 4.5UN	27EL 4.5UN	4.5	15.875	27	3.46	1.9	2.7	
	27ER 4UN	27EL 4UN	4	15.875	27	3.89	2.1	3.0	

Thread Insert

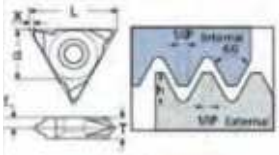
American UN (UN, UNC, UNF, UNEF, UNS) (M Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	16ERM 24UN		24	9.535	16	0.78	0.8	0.8	
	16ERM 20UN		20	9.525	16	0.78	0.8	0.9	
	16ERM 18UN		18	9.525	16	0.87	0.8	1.0	
	16ERM 16UN		16	9.525	16	0.97	0.9	1.1	
	16ERM 14UN		14	9.525	16	1.11	1.2	1.5	
	16ERM 12UN		12	9.525	16	1.30	1.2	1.5	
	16ERM 10UN		10	9.525	16	1.56	1.2	1.5	
	16ERM 8UN		8	9.525	16	1.95	1.3	1.7	

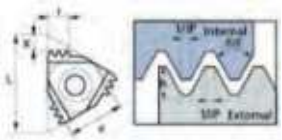
American UN (U Style)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	22UE 4.5UN		4.5	12.7U	22	3.46	2.2	11.0	
	22UE 4UN		4	12.7U	22	3.89	2.2	11.0	
	22UE 3UN		3	15.875U	27	5.19	2.5	13.7	
	22UE 2UN		2	19.05U	33	7.79	2.8	16.5	

American UN (V Style)

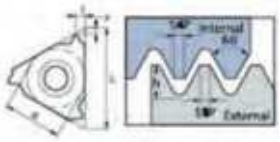
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			tpi	d	L	hmin	X	f	T	
External	11VER 20UN	11VEL 20UN	20	6.35V	11	0.78	0.69	2.3	3.20	
	11VER 18UN	11VEL 18UN	18	6.35V	11	0.87	0.69	2.2	3.20	
	11VER 16UN	11VEL 16UN	16	6.35V	11	0.97	0.69	2.2	3.20	
	11VER 14UN	11VEL 14UN	14	6.35V	11	1.11	0.69	2.0	3.20	
	11VER 12UN	11VEL 12UN	12	6.35V	11	1.30	0.69	1.8	3.20	
	16VER 32UN	16VEL 32UN	32	6.35V	16	0.48	1.1	3.0	3.60	
	16VER 28UN	16VEL 28UN	28	9.525V	16	0.56	1.1	3.0	3.60	
	16VER 24UN	16VEL 24UN	24	9.525V	16	0.65	1.1	2.9	3.60	
	16VER 20UN	16VEL 20UN	20	9.525V	16	0.78	1.1	2.7	3.60	
	16VER 18UN	16VEL 18UN	18	9.525V	16	0.87	1.1	2.6	3.60	
	16VER 16UN	16VEL 16UN	16	9.525V	16	0.97	1.1	2.55	3.60	
	16VER 14UN	16VEL 14UN	14	9.525V	16	1.11	1.1	2.5	3.60	
	16VER 12UN	16VEL 12UN	12	9.525V	16	1.30	1.1	2.2	3.60	
	16VER 10UN	16VEL 10UN	10	9.525V	16	1.56	1.1	2.1	3.60	
	16VER 8UN	16VEL 8UN	8	9.525V	16	1.95	1.1	2.0	3.60	
	22VER 7UN	22VEL 7UN	7	12.7V	22	2.22	1.2	2.3	4.80	
	22VER 4UN	22VEL 4UN	4	15.875V	27	3.89	1.0	3.3	6.35	
	22VER 3UN	22VEL 3UN	3	15.875V	27	5.19	1.8	5.2	8.70	

American UN (M+ Style)

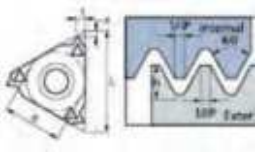
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			tpi	d	L	hmin	X	f	Tooth	
External	16ER 24UN 2M		24	9.525	16	0.65	1.1	1.7	2	
	16ER 20UN 3M		20	9.525	16	0.78	2.2	3.3	3	
	16ER 18UN 2M		18	9.525	16	0.87	1.5	2.2	2	
	16ER 18UN 3M		18	9.525	16	0.87	2.3	2.6	3	
	16ER 16UN 2M		16	9.525	16	0.97	1.7	2.5	2	
	16ER 14UN 2M		14	9.525	16	1.11	1.9	2.8	2	
	16ER 12UN 2M		12	9.525	16	1.30	2.2	3.3	2	
	22ER 16UN 3M		16	12.7	22	0.97	2.6	4.1	3	
	22ER 14UN 2M		14	12.7	22	1.33	1.9	2.8	2	
	22ER 13UN 3M		13	12.7	22	1.20	3.0	4.9	3	
	22ER 12UN 2M		12	12.7	22	1.30	2.2	3.3	2	
	22ER 12UN 3M		12	12.7	22	1.30	3.4	5.4	3	
	22ER 11UN 2M		11	12.7	22	1.42	2.3	3.6	2	
	22ER 10UN 2M		10	12.7	22	1.56	2.5	3.9	2	
	27ER 8UN 2M		8	15.875	27	1.95	3.1	4.9	2	

Thread Insert

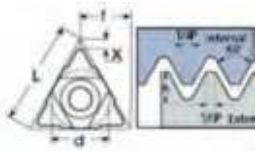
American UN (UN, UNC, UNF, UNEF, UNS)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
Internal	06IR 32UN	06IL 32UN	32	3.97	6	0.46	0.8	0.5	
	06IR 28UN	06IL 28UN	28	3.97	6	0.52	0.8	0.6	
	06IR 24UN	06IL 24UN	24	3.97	6	0.61	0.7	0.6	
	06IR 20UN	06IL 20UN	20	3.97	6	0.73	0.6	0.6	
	06IR 18UN	06IL 18UN	18	3.97	6	0.81	0.6	0.7	
	08IR 32UN	08IL 32UN	32	4.76	8	0.46	0.6	0.5	
	08IR 28UN	08IL 28UN	28	4.76	8	0.52	0.6	0.6	
	08IR 24UN	08IL 24UN	24	4.76	8	0.61	0.6	0.6	
	08IR 20UN	08IL 20UN	20	4.76	8	0.73	0.6	0.7	
	08IR 18UN	08IL 18UN	18	4.76	8	0.81	0.6	0.7	
	08IR 16UN	08IL 16UN	16	4.76	8	0.92	0.6	0.7	
	08IR 14UN	08IL 14UN	14	4.76	8	1.05	0.6	0.8	
	08IR 13UN	08IL 13UN	13	4.76	8	1.20	0.8	0.9	
	11IR 64UN	11IL 64UN	64	6.35	11	0.24	0.8	0.4	
	11IR 56UN	11IL 56UN	56	6.35	11	0.28	0.7	0.4	
	11IR 48UN	11IL 48UN	48	6.35	11	0.32	0.6	0.6	
	11IR 44UN	11IL 44UN	44	6.35	11	0.35	0.6	0.6	
	11IR 40UN	11IL 40UN	40	6.35	11	0.39	0.6	0.6	
	11IR 36UN	11IL 36UN	36	6.35	11	0.43	0.6	0.6	
	11IR 32UN	11IL 32UN	32	6.35	11	0.49	0.6	0.6	
	11IR 28UN	11IL 28UN	28	6.35	11	0.56	0.6	0.7	
	11IR 27UN	11IL 27UN	27	6.35	11	0.58	0.7	0.8	
	11IR 24UN	11IL 24UN	24	6.35	11	0.65	0.7	0.8	
	11IR 20UN	11IL 20UN	20	6.35	11	0.78	0.8	0.9	
	11IR 18UN	11IL 18UN	18	6.35	11	0.87	0.8	1.0	
	11IR 16UN	11IL 16UN	16	6.35	11	0.97	0.9	1.1	
	11IR 14UN	11IL 14UN	14	6.35	11	1.11	0.9	1.1	
	16IR 64UN	16IL 64UN	64	9.525	16	0.24	0.8	0.4	
	16IR 56UN	16IL 56UN	56	9.525	16	0.28	0.7	0.4	
	16IR 48UN	16IL 48UN	48	9.525	16	0.32	0.6	0.6	
	16IR 44UN	16IL 44UN	44	9.525	16	0.35	0.6	0.6	
	16IR 40UN	16IL 40UN	40	9.525	16	0.39	0.6	0.6	
	16IR 36UN	16IL 36UN	36	9.525	16	0.43	0.6	0.6	
	16IR 32UN	16IL 32UN	32	9.525	16	0.49	0.6	0.6	
	16IR 28UN	16IL 28UN	28	9.525	16	0.56	0.6	0.7	
	16IR 27UN	16IL 27UN	27	9.525	16	0.58	0.7	0.8	
	16IR 24UN	16IL 24UN	24	9.525	16	0.65	0.7	0.8	
	16IR 20UN	16IL 20UN	20	9.525	16	0.78	0.8	0.9	
	16IR 18UN	16IL 18UN	18	9.525	16	0.87	0.8	1.0	
	16IR 16UN	16IL 16UN	16	9.525	16	0.97	0.9	1.1	
	16IR 14UN	16IL 14UN	14	9.525	16	1.11	1.0	1.2	
	16IR 13UN	16IL 13UN	13	9.525	16	1.20	1.0	1.3	
	16IR 12UN	16IL 12UN	12	9.525	16	1.30	1.1	1.4	
	16IR 11.5UN	16IL 11.5UN	11.5	9.525	16	1.35	1.1	1.5	
	16IR 11UN	16IL 11UN	11	9.525	16	1.42	1.1	1.5	
	16IR 10UN	16IL 10UN	10	9.525	16	1.56	1.1	1.5	
	16IR 9UN	16IL 9UN	9	9.525	16	1.73	1.2	1.7	
	16IR 8UN	16IL 8UN	8	9.525	16	1.92	1.2	1.5	
	22IR 7UN	22IL 7UN	7	12.7	22	2.22	1.6	2.3	
	22IR 6UN	22IL 6UN	6	12.7	22	2.60	1.6	2.3	
	22IR 5UN	22IL 5UN	5	12.7	22	3.12	1.7	2.3	
	22IR 4.5UN	22IL 4.5UN	4.5	15.875	27	3.46	1.9	2.4	
	22IR 4UN	22IL 4UN	4	15.875	27	3.89	2.1	2.7	

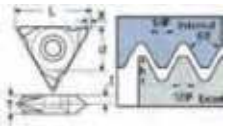
American UN (UN, UNC, UNF, UNEF, UNS) (M Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
Internal	11IRM 20UN		20	6.35	11	0.3	0.8	0.9	
	11IRM 18UN		18	6.35	11	0.81	0.8	1.0	
	16IRM 24UN		24	9.525	16	0.61	0.8	0.8	
	16IRM 20UN		20	9.525	16	0.73	0.8	0.9	
	16IRM 18UN		18	9.525	16	0.81	0.8	1.0	
	16IRM 16UN		16	9.525	16	0.92	0.9	1.1	
	16IRM 14UN		14	9.525	16	1.05	1.2	1.5	
	16IRM 12UN		12	9.525	16	1.22	1.2	1.5	
	16IRM 10UN		10	9.525	16	1.47	1.2	1.5	
	16IRM 8UN		8	9.525	16	1.83	1.2	1.7	

American UN (U Style)

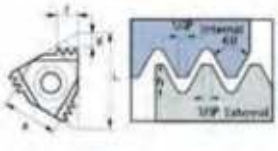
Type	Designation (Right+Left)	Pitch	Dimensions					Picture
		tpi	d	L	hmin	X	f	
Internal	08UI 13UN	13	4.76U	8	1.20	1.0	4.0	
	08UI 12UN	12	4.76U	8	1.30	0.9	4.0	
	08UI 11UN	11	4.76U	8	1.42	0.9	4.0	
	11UI 11UN	11	6.35U	11	1.33	1.2	5.5	
	22UI 4.5UN	4.5	12.7U	22	3.26	2.4	11.0	
	22UI 4UN	4	12.7U	22	3.57	2.4	11.0	
	27UI 3UN	3	15.875U	27	4.89	2.7	13.7	
	33UI 2UN	2	19.05U	33	7.79	3.6	16.9	

American UN (V Style)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
Internal	27VIR 4UN	27VIL 4UN	4	15.875V	27	3.67	1.0	6.35	
	27VIR 3UN	27VIL 3UN	3	15.875V	27	4.89	1.8	8.70	

Thread Insert

American UN (M+ Style)

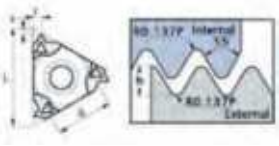
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			tpi	d	L	hmin	X	f	Tooth	
Internal	16IR 24UN 2M		24	9.525	16	0.61	1.1	1.7	2	
	16IR 20UN 3M		20	9.525	16	0.73	1.4	2.0	3	
	16IR 18UN 2M		18	9.525	16	0.81	1.5	2.2	2	
	16IR 16UN 2M		16	9.525	16	0.92	1.7	2.5	2	
	16IR 14UN 2M		14	9.525	16	1.05	1.9	2.8	2	
	16IR 12UN 2M		12	9.525	16	1.22	2.2	3.3	2	
	22IR 16UN 3M		16	12.7	22	0.92	2.6	4.1	3	
	22IR 14UN 3M		14	12.7	22	1.05	1.9	2.8	2	
	22IR 12UN 2M		12	12.7	22	1.22	2.2	3.3	2	
	22IR 12UN 3M		12	12.7	22	1.22	3.4	5.4	3	
	22IR 8UN 2M		8	15.875	27	1.83	3.1	4.9	2	

Whitworth (BSW, BSF, BSP, BSB)

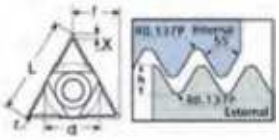
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	11ER 60W	11EL 60W	60	6.35	11	0.27	0.7	0.4	
	11ER 56W	11EL 56W	56	6.35	11	0.29	0.7	0.4	
	11ER 48W	11EL 48W	48	6.35	11	0.34	0.6	0.6	
	11ER 40W	11EL 40W	40	6.35	11	0.41	0.6	0.6	
	11ER 36W	11EL 36W	36	6.35	11	0.45	0.6	0.6	
	11ER 32W	11EL 32W	32	6.35	11	0.51	0.6	0.6	
	11ER 28W	11EL 28W	28	6.35	11	0.58	0.6	0.7	
	11ER 26W	11EL 26W	26	6.35	11	0.63	0.7	0.8	
	11ER 24W	11EL 24W	24	6.35	11	0.68	0.8	0.8	
	11ER 22W	11EL 22W	22	6.35	11	0.74	0.8	0.9	
	11ER 20W	11EL 20W	20	6.35	11	0.81	0.8	0.9	
	11ER 19W	11EL 19W	19	6.35	11	0.86	0.8	1.0	
	11ER 18W	11EL 18W	18	6.35	11	0.90	0.8	1.0	
	11ER 16W	11EL 16W	16	6.35	11	1.02	0.9	1.1	
	11ER 14W	11EL 14W	14	6.35	11	1.16	1.0	1.2	
	16ER 60W	16EL 60W	60	9.525	16	0.27	0.7	0.4	
	16ER 56W	16EL 56W	56	9.525	16	0.29	0.7	0.4	
	16ER 48W	16EL 48W	48	9.525	16	0.34	0.6	0.6	
	16ER 40W	16EL 40W	40	9.525	16	0.41	0.6	0.6	
	16ER 36W	16EL 36W	36	9.525	16	0.45	0.6	0.6	
	16ER 32W	16EL 32W	32	9.525	16	0.51	0.6	0.6	
	16ER 30W	16EL 30W	30	9.525	16	0.55	0.6	0.7	
	16ER 28W	16EL 28W	28	9.525	16	0.58	0.6	0.7	
	16ER 26W	16EL 26W	26	9.525	16	0.63	0.7	0.8	
	16ER 24W	16EL 24W	24	9.525	16	0.68	0.7	0.8	
	16ER 22W	16EL 22W	22	9.525	16	0.74	0.8	0.9	
	16ER 20W	16EL 20W	20	9.525	16	0.81	0.8	0.9	
	16ER 19W	16EL 19W	19	9.525	16	0.86	0.8	1.0	
	16ER 18W	16EL 18W	18	9.525	16	0.90	0.8	1.0	
	16ER 16W	16EL 16W	16	9.525	16	1.02	0.9	1.1	
	16ER 14W	16EL 14W	14	9.525	16	1.16	1.0	1.2	
	16ER 12W	16EL 12W	12	9.525	16	1.36	1.1	1.4	
	16ER 11W	16EL 11W	11	9.525	16	1.48	1.1	1.5	
	16ER 10W	16EL 10W	10	9.525	16	1.63	1.1	1.5	
	16ER 9W	16EL 9W	9	9.525	16	1.81	1.2	1.7	
	16ER 8W	16EL 8W	8	9.525	16	2.03	1.2	1.5	
	22ER 7W	22EL 7W	7	12.7	22	3.32	1.6	2.3	
	22ER 6W	22EL 6W	6	12.7	22	2.71	1.6	2.3	
	22ER 5W	22EL 5W	5	12.7	22	3.25	1.7	2.4	
	27ER 4.5W	27EL 4.5W	4.5	15.875	27	3.61	1.8	2.6	
	27ER 4W	27EL 4W	4	15.875	27	4.07	2.0	2.9	

Thread Insert

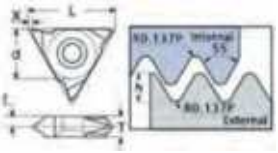
Whitworth (BSW, BSF, BSP, BSB) (M Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	16ERM 19W		19	9.525	16	0.86	0.8	1.0	
	16ERM 18W		18	9.525	16	0.90	0.8	1.0	
	16ERM 16W		16	9.525	16	1.02	0.9	1.1	
	16ERM 14W		14	9.525	16	1.16	1.2	1.5	
	16ERM 12W		12	9.525	16	1.36	1.2	1.5	
	16ERM 11W		11	9.525	16	1.48	1.2	1.5	
	16ERM 10W		10	9.525	16	1.63	1.1	1.5	

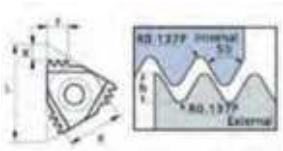
Whitworth (U Style)

Type	Designation (Right+Left)	Pitch	Dimensions					Picture
		tpi	d	L	hmin	X	f	
External Internal	22UEI 4.5W	4.5	12.7U	22	3.61	2.3	11.0	
	22UEI 4W	4	12.7U	22	4.07	1.8	11.0	
	22UEI 3.5W	3.5	12.7U	22	4.65	2.1	11.0	
	22UEI 3.25W	3.25	12.7U	22	5.00	2.0	11.0	
	27UEI 3.5W	3.5	15.875U	22	4.65	2.1	13.7	
	27UEI 3.25W	3.25	15.875U	22	5.00	2.0	13.7	
	27UEI 3W	3	15.875U	22	5.42	2.3	13.7	
	UEI27-2.75W	2.75	15.875U	22	5.94	2.4	13.7	

Whitworth (V Style)

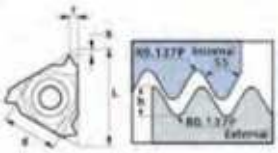
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			tpi	d	L	hmin	X	f	T	
External	11VER 19W	11VEL 19W	19	6.35V	11	0.86	0.69	2.3	3.20	
	11VER 14W	11VEL 14W	14	6.35V	11	1.16	0.69	2.0	3.20	
	11VER 11W	11VEL 11W	11	6.35V	11	1.48	0.69	1.7	3.20	
	11VER 20W	11VEL 20W	20	9.525V	16	0.81	1.0	0.9	3.60	
	16VER 19W	16VEL 19W	19	9.525V	16	0.86	1.1	2.7	3.60	
	16VER 18W	16VEL 18W	18	9.525V	16	0.90	1.31	2.6	3.60	
	16VER 16W	16VEL 16W	16	9.525V	16	1.02	1.1	2.6	3.60	
	16VER 14W	16VEL 14W	14	9.525V	16	1.16	1.1	2.4	3.60	
	16VER 12W	16VEL 12W	12	9.525V	16	1.36	1.1	2.2	3.60	
	16VER 11W	16VEL 11W	11	9.525V	16	1.48	1.1	2.1	3.60	
	27VER 4W	27VEL 4W	4	15.875V	27	4.07	1.0	3.3	6.35	
	27VER 3W	27VEL 3W	3	15.875V	27	5.42	1.0	4.3	8.70	
	27VER 2.5W	27VEL 2.5W	2.5	15.875V	27	6.51	1.0	5.2	10.20	

Whitworth (M+ Style)

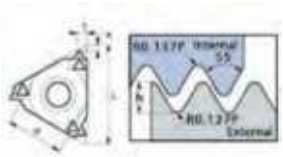
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			tpi	d	L	hmin	X	f	Tooth	
External	16ER 28W 2M		28	9.525	16	0.58	1.2	1.6	2	
	16ER 19W 2M		19	9.525	16	0.86	1.6	2.3	2	
	16ER 19W 3M		19	9.525	16	0.86	2.2	3.4	3	
	16ER 14W 2M		14	9.525	16	1.16	2.0	3.0	2	
	16ER 11W 2M		11	9.525	16	1.48	2.1	3.2	2	
	22ER 14W 2M		14	12.7	22	1.16	2.9	4.6	2	
	22ER 11W 2M		11	12.7	22	1.48	2.3	3.5	2	

Thread Insert

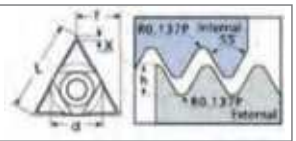
Whitworth (BSW, BSF, BSP, BSB)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
Internal	06IR 26W	06IL 26W	26	3.97	6	0.63	0.7	0.6	
	06IR 22W	06IL 22W	22	3.97	6	0.74	0.6	0.6	
	06IR 20W	06IL 20W	20	3.97	6	0.81	0.6	0.7	
	06IR 18W	06IL 18W	18	3.97	6	0.90	0.6	0.7	
	08IR 28W	08IL 28W	28	4.76	8	0.58	0.6	0.6	
	08IR 24W	08IL 24W	24	4.76	8	0.68	0.6	0.6	
	08IR 20W	08IL 20W	20	4.76	8	0.81	0.6	0.7	
	08IR 19W	08IL 19W	19	4.76	8	0.86	0.6	0.7	
	08IR 18W	08IL 18W	18	4.76	8	0.90	0.6	0.7	
	08IR 16W	08IL 16W	16	4.76	8	1.02	0.6	0.7	
	11IR 60W	11IL 60W	60	6.35	11	0.27	0.7	0.4	
	11IR 56W	11IL 56W	56	6.35	11	0.29	0.7	0.4	
	11IR 48W	11IL 48W	48	6.35	11	0.34	0.6	0.6	
	11IR 40W	11IL 40W	40	6.35	11	0.41	0.6	0.6	
	11IR 36W	11IL 36W	36	6.35	11	0.45	0.6	0.6	
	11IR 32W	11IL 32W	32	6.35	11	0.51	0.6	0.6	
	11IR 28W	11IL 28W	28	6.35	11	0.58	0.6	0.7	
	11IR 26W	11IL 26W	26	6.35	11	0.63	0.8	0.8	
	11IR 24W	11IL 24W	24	6.35	11	0.68	0.7	0.8	
	11IR 22W	11IL 22W	22	6.35	11	0.74	0.8	0.9	
	11IR 20W	11IL 20W	20	6.35	11	0.81	0.8	0.9	
	11IR 19W	11IL 19W	19	6.35	11	0.86	0.8	1.0	
	11IR 18W	11IL 18W	18	6.35	11	0.90	0.8	1.0	
	11IR 16W	11IL 16W	16	6.35	11	1.02	0.9	1.1	
	11IR 14W	11IL 14W	14	6.35	11	1.16	1.0	1.2	
	11IR 12W	11IL 12W	12	6.35	11	1.32	0.1	1.1	
	11IR 11W	11IL 11W	11	6.35	11	1.43	0.9	1.2	
	16IR 48W	16IL 48W	48	9.525	16	0.34	0.6	0.6	
	16IR 40W	16IL 40W	40	9.525	16	0.4	0.6	0.6	
	16IR 36W	16IL 36W	36	9.525	16	0.45	0.6	0.6	
	16IR 32W	16IL 32W	32	9.525	16	0.51	0.6	0.6	
	16IR 30W	16IL 30W	30	9.525	16	0.55	0.6	0.7	
	16IR 28W	16IL 28W	28	9.525	16	0.58	0.6	0.7	
	16IR 26W	16IL 26W	26	9.525	16	0.63	0.7	0.8	
	16IR 24W	16IL 24W	24	9.525	16	0.68	0.7	0.8	
	16IR 22W	16IL 22W	22	9.525	16	0.7	0.8	0.9	
	16IR 20W	16IL 20W	20	9.525	16	0.81	0.8	0.9	
	16IR 19W	16IL 19W	19	9.525	16	0.86	0.8	1.0	
	16IR 18W	16IL 18W	18	9.525	16	0.90	0.8	1.0	
	16IR 16W	16IL 16W	16	9.525	16	1.02	0.9	1.1	
	16IR 14W	16IL 14W	14	9.525	16	1.16	1.0	1.2	
	16IR 12W	16IL 12W	12	9.525	16	1.36	1.1	1.4	
	16IR 11W	16IL 11W	11	9.525	16	1.48	1.1	1.5	
	16IR 10W	16IL 10W	10	9.525	16	1.63	1.1	1.5	
	16IR 9W	16IL 9W	9	9.525	16	1.81	1.2	1.7	
	16IR 8W	16IL 8W	8	9.525	16	2.03	1.2	1.5	
	22IR 7W	22IL 7W	7	12.7	22	3.32	1.6	2.3	
	22IR 6W	22IL 6W	6	12.7	22	2.71	1.6	2.3	
	22IR 5W	22IL 5W	5	12.7	22	3.25	1.7	2.4	
	27IR 4.5W	27IL 4.5W	4.5	15.875	27	3.61	1.8	2.6	
	27IR 4W	27IL 4W	4	15.875	27	4.07	2.0	2.9	

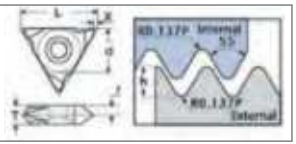
Whitworth (M Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
Internal	11IRM 19W		19	6.35	11	0.86	0.9	1.1	
	11IRM 14W		14	6.35	11	1.16	0.9	1.1	
	16IRM 19W		19	9.525	16	0.86	0.8	1.0	
	16IRM 18W		18	9.525	16	0.90	0.8	1.0	
	16IRM 16W		16	9.525	16	1.02	0.9	1.1	
	16IRM 14W		14	9.525	16	1.16	1.2	1.5	
	16IRM 12W		12	9.525	16	1.36	1.2	1.5	
	16IRM 11W		11	9.525	16	1.48	1.2	1.5	
	16IRM 8W		8	9.525	16	2.03	1.2	1.5	

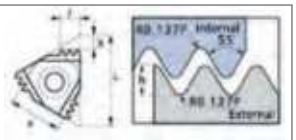
Whitworth (U Style)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
Internal	08UI 14W		14	4.76U	8	1.16	1.0	4.0	
	08UI 12W		12	4.76U	8	1.36	0.9	4.0	
	08UI 11W		11	4.76U	8	1.48	0.9	4.0	

Whitworth (V Style)

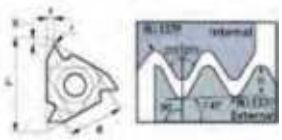
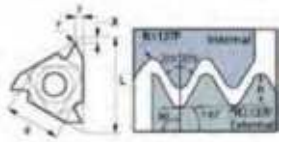
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			tpi	d	L	hmin	X	f	T	
Internal	27VIR 4W	27VIL 4W	4	15.875V	27	4.07	1.0	3.3	6.35	
	27VIR 3W	27VIL 3W	3	15.875V	27	5.42	1.0	4.3	8.70	
	27VIR 2.5W	27VIL 2.5W	2.5	15.875V	27	6.51	1.0	5.2	10.2	

Whitworth (M+ Style)

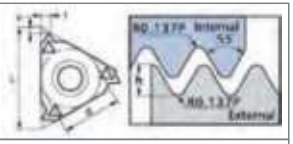
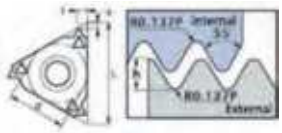
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			tpi	d	L	hmin	X	f	Tooth	
Internal	16IR 14W-2M		14	9.525	16	1.16	2.0	3.0	2	
	16IR 11W-2M		11	9.525	16	1.48	2.1	3.2	2	
	22IR 14W-3M		11	12.7	22	1.16	2.8	4.5	3	
	22IR 11W-2M		11	12.7	22	1.48	2.3	3.5	2	

Thread Insert

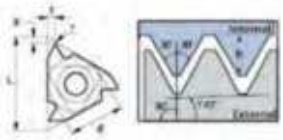
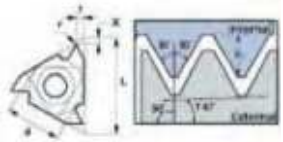
British Standart Pipe Thread (BSPT)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	11ER 28BSPT	11EL 28BSPT	28	6.35	11	0.58	0.6	0.6	
	11ER 19BSPT	11EL 19BSPT	19	6.35	11	0.86	0.8	0.9	
	11ER 14BSPT	11EL14BSPT	14	6.35	11	1.16	0.9	1.0	
	16ER 28BSPT	16EL 28BSPT	28	9.525	16	0.58	0.6	0.6	
	16ER 19BSPT	16EL 19BSPT	19	9.525	16	0.86	0.8	0.9	
	16ER 14BSPT	16EL 14BSPT	14	9.525	16	1.16	1.0	1.2	
	16ER 11BSPT	16EL 11BSPT	11	9.525	16	1.48	1.1	1.5	
Internal	06IR 28BSPT	06IL 28BSPT	28	3.97	6	0.58	0.7	0.6	
	08IR 28BSPT	08IL 28BSPT	28	4.76	8	0.58	0.6	0.6	
	08IR 19BSPT	08IL 19BSPT	19	4.76	8	0.58	0.6	0.6	
	11IR 28BSPT	11IL 28BSPT	28	6.35	11	0.58	0.6	0.6	
	11IR 19BSPT	11IL 19BSPT	19	6.35	11	0.86	0.8	0.9	
	11IR 14BSPT	11IL 14BSPT	14	6.35	11	1.16	0.9	1.0	
	16IR 28BSPT	16IL 28BSPT	28	9.525	16	0.58	0.6	0.6	
	16IR 19BSPT	16IL 19BSPT	19	9.525	16	0.86	0.8	0.9	
	16IR 14BSPT	16IL 14BSPT	14	9.525	16	1.16	1.0	1.2	
	16IR 11BSPT	16IL 11BSPT	11	9.525	16	1.48	1.1	1.5	

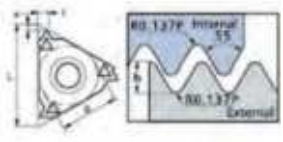
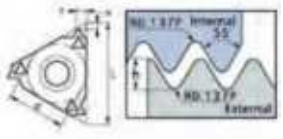
British Standart Pipe Thread (BSPT) (M Chip Breaker)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	16ERM 28BSPT		28	9.525	16	0.58	0.7	0.8	
	16ERM 19BSPT		19	9.525	16	0.86	0.8	1.0	
	16ERM 14BSPT		14	9.525	16	1.16	1.2	1.5	
	16ERM 11BSPT		11	9.525	16	1.48	1.2	1.5	
Internal	11IRM 19BSPT		19	6.35	11	0.86	0.8	1.0	
	11IRM 14BSPT		14	6.35	11	1.16	0.9	1.1	
	16IRM 28BSPT		28	9.525	16	0.58	0.7	0.	
	16IRM 19BSPT		19	9.525	16	0.86	0.8	1.0	
	16IRM 14BSPT		14	9.525	16	1.16	1.2	1.5	
	16IRM 11BSPT		11	9.525	16	1.48	1.2	1.5	

Nation Pipe Thread (NPT)

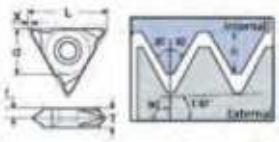
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	11ER 27NPT	11EL 27NPT	27	6.35	11	0.66	0.7	0.8	
	11ER 18NPT	11EL 18NPT	18	6.35	11	1.01	0.8	1.0	
	11ER 14NPT	11EL 14NPT	14	6.35	11	1.33	0.8	1.0	
	16ER 27NPT	16EL 27NPT	27	9.525	16	0.66	0.7	0.8	
	16ER 18NPT	16EL 18NPT	18	9.525	16	1.01	0.8	1.0	
	16ER 14NPT	16EL 14NPT	14	9.525	16	1.33	0.9	1.2	
	16ER 11.5NPT	16EL 11.5NPT	11.5	9.525	16	1.64	1.1	1.5	
	16ER 8NPT	16EL 8NPT	8	9.525	16	2.42	1.3	1.8	
Internal	06IR 27NPT	06IL 27NPT	27	3.97	6	0.66	0.6	0.6	
	08IR 27NPT	08IL 27NPT	27	4.76	8	0.66	0.6	0.6	
	08IR 18NPT	08IL 18NPT	18	4.76	8	1.01	0.6	0.6	
	11IR 27NPT	11IL 27NPT	27	6.35	11	0.66	0.7	0.8	
	11IR 18NPT	11IL 18NPT	18	6.35	11	1.01	0.8	1.0	
	11IR 14NPT	11IL 14NPT	14	6.35	11	1.33	0.8	1.0	
	16IR 27NPT	16IL 27NPT	27	9.525	16	0.66	0.7	0.8	
	16IR 18NPT	16IL 18NPT	18	9.525	16	1.01	0.8	1.0	
	16IR 14NPT	16IL 14NPT	14	9.525	16	1.33	0.9	1.2	
	16IR 11.5NPT	16IL 11.5NPT	11.5	9.525	16	1.64	1.1	1.5	
	16IR 8NPT	16IL 8NPT	8	9.525	16	2.42	1.3	1.8	

Nation Pipe Thread (NPT) (M Chip Breaker)

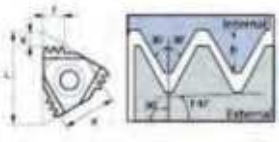
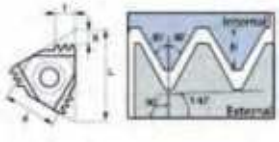
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	16ERM 27NPT		27	9.525	16	0.66	0.7	0.8	
	16ERM 18NPT		18	9.525	16	1.01	0.8	1.0	
	16ERM 14NPT		14	9.525	16	1.33	1.2	1.5	
	16ERM 11.5NPT		11.5	9.525	16	1.64	1.2	1.5	
	16ERM 16.8NPT		8	9.525	16	2.42	1.3	1.5	
Internal	11IRM 18NPT		18	6.35	16	1.01	0.8	1.0	
	16IRM 27NPT		27	9.525	16	0.66	0.7	0.8	
	16IRM 18NPT		18	9.525	16	1.01	0.8	1.0	
	16IRM 14NPT		14	9.525	16	1.33	1.2	1.5	
	16IRM 11.5NPT		11.5	9.525	16	1.64	1.2	1.5	
	16IRM 8NPT		8	9.525	16	2.42	1.3	1.5	

Thread Insert

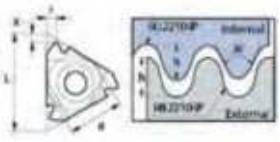
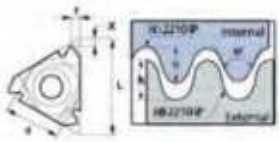
National Pipe Thread (V Style)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			tpi	d	L	hmin	X	f	T	
External	11VER 27NPT	11VEL 27NPT	27	6.35V	11	0.66	0.7	2.0	3.2	
	11VER 18NPT	11VEL 18NPT	18	6.35V	11	1.01	0.7	1.8	3.2	
	11VER 14NPT	11VEL 14NPT	14	6.35V	11	1.33	0.7	1.8	3.2	
	11VER 11.5NPT	11VEL 11.5NPT	11.5	6.35V	11	1.64	0.7	2.1	3.2	
	16VER 27NPT	16VEL 27NPT	27	9.525V	16	0.66	1.10	2.9	3.6	
	16VER 18NPT	16VEL 18NPT	18	9.525V	16	1.01	1.10	2.6	3.6	
	16VER 14NPT	16VEL 14NPT	14	9.525V	16	1.33	1.10	1.2	3.6	
	16VER 11.5NPT	16VEL 11.5NPT	11.5	9.525V	16	1.64	1.10	2.1	3.6	

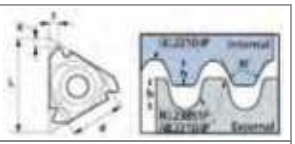
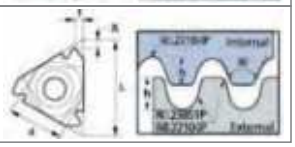
National Pipe Thread (M+ Style)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			tpi	d	L	hmin	X	f	Tooth	
External	16ER 18NPT-2M		18	9.525	16	1.01	1.4	2.1	2	
	16ER 11.5NPT-2M		11.5	9.525	16	1.64	2.0	3.2	2	
	16ER 14NPT-2M		14	9.525	16	1.33	2.0	3.0	2	
	22ER 11.5NPT-2M		11.5	12.7	22	1.64	2.2	3.4	2	
	22ER 11.5NPT-3M		11.5	15.875	27	1.64	3.5	5.6	2	
Internal	27IR 8NPT-2M		8	15.875	27	2.42	3.1	4.9	2	
	16IR 18NPT-2M		18	9.525	16	1.01	1.4	2.1	2	
	16IR 11.5NPT-2M		11.5	9.525	16	1.64	2.0	3.2	2	
	16IR 14NPT-2M		14	9.525	16	1.33	2.0	3.0	2	
	22IR 11.5NPT-2M		11.5	12.7	22	1.64	2.2	3.4	2	
	22IR 11.5NPT-3M		11.5	15.875	27	1.64	3.5	5.6	3	
	27IR 8NPT-2M		8	15.875	27	2.42	3.1	4.9	2	

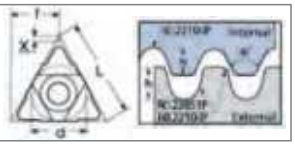
Round DIN 405

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	16ER 10RD	16EL 10RD	10	9.525	16	1.27	1.1	1.2	
	16ER 8RD	16EL 8RD	8	9.525	16	1.59	1.4	1.3	
	16ER 6RD	16EL 6RD	6	9.525	16	2.12	1.5	1.7	
	22ER 6RD	22EL 6RD	6	12.7	22	2.12	1.5	1.7	
	22ER 4RD	22EL 4RD	4	12.7	22	3.18	2.2	2.3	
	27ER 4RD	27EL 4RD	4	15.875	27	3.18	2.2	2.3	
Internal	16IR 10RD	16IL 10RD	10	9.525	16	1.27	1.1	1.2	
	16IR 8RD	16IL 8RD	8	9.525	16	1.59	1.4	1.3	
	16IR 6RD	16IL-6RD	6	9.525	16	2.12	1.5	1.7	
	22IR 6RD	22IL 6RD	6	12.7	22	2.12	1.5	1.7	
	22IR 4RD	22IL 4RD	4	12.7	22	3.18	2.2	2.3	
	27IR 4RD	27IL 4RD	4	15.875	27	3.18	2.2	2.3	

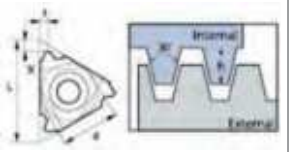
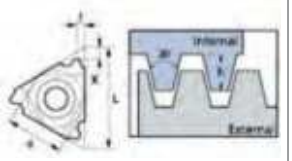
Round DIN 20400

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			mm	d	L	hmin	X	f	
External	22ER 3.0RD 20400	22EL 3.0RD 20400	3.0	12.7	22	1.65	1.3	1.7	
	22ER 4.0RD 20400	22EL 4.0RD 20400	4.0	12.7	22	2.20	1.6	2.2	
	22ER 5.0RD 20400	22EL 5.0RD 20400	5.0	12.7	22	2.75	1.4	1.7	
	22ER 6.0RD 20400	22EL 6.0RD 20400	6.0	12.7	22	3.30	1.7	2.1	
Internal	22IR 3.0RD 20400	22IL 3.0RD 20400	3.0	12.7	22	1.65	1.3	1.7	
	22IR 4.0RD 20400	22IL 4.0RD 20400	4.0	12.7	22	2.20	1.6	2.2	
	22IR 5.0RD 20400	22IL 5.0RD 20400	5.0	12.7	22	2.75	1.4	1.7	
	22IR 6.0RD 20400	22IL 6.0RD 20400	6.0	12.7	22	3.30	1.7	2.1	

Round DIN 20400 (U Style)

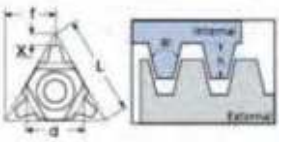
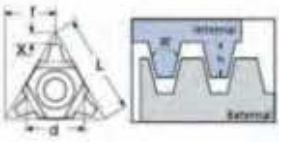
Type	Designation (Right+Left)	Pitch	Dimensions					Picture
		mm	d	L	hmin	X	f	
Internal	27UEI 8.0RD 20400	8.0	15.875U	27	4.40	3.0	13.7	
	27UEI 10.0RD 20400	10.0	15.875U	27	5.50	3.4	13.7	

Trapez DIN 103 (TR)

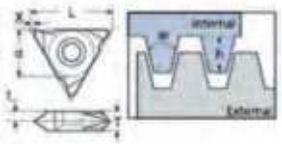
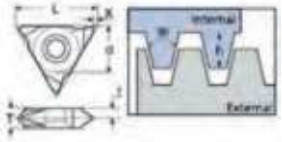
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			mm	d	L	hmin	X	f	
External	11ER 1.5TR	11EL 1.5TR	1.5	6.35	11	0.90	0.8	0.9	
	16ER 1.5TR	16EL 1.5TR	1.5	9.525	16	0.90	1.0	1.1	
	16ER 2.0TR	16EL 2.0TR	2.0	9.525	16	1.25	1.1	1.3	
	16ER 2.5TR	16EL 2.5TR	2.5	9.525	16	1.55	1.2	1.4	
	16ER 3.0TR	16EL 3.0TR	3.0	9.525	16	1.75	1.3	1.5	
	16ER 4.0TR	16EL 4.0TR	4.0	9.525	16	2.25	1.3	1.5	
	22ER 4.0TR	22EL 4.0TR	4.0	12.7	22	2.25	1.7	1.9	
	22ER 5.0TR	22EL 5.0TR	5.0	12.7	22	2.75	2.1	2.5	
	22ER 6.0TR	22EL 6.0TR	6.0	12.7	22	3.50	2.3	2.7	
	27ER 6.0TR	27EL 6.0TR	6.0	15.875	27	3.50	2.3	2.7	
	27ER 7.0TR	27EL 7.0TR	7.0	15.875	27	4.00	2.7	3.2	
Internal	08IR 1.5TR	08IL 1.5TR	1.5	4.76	8	0.85	0.6	0.6	
	11IR 1.5TR	11IL 1.5TR	1.5	6.35	11	0.90	0.8	0.9	
	16IR 1.5TR	16IL 1.5TR	1.5	9.525	16	0.90	1.0	1.1	
	16IR 2.0TR	16IL 2.0TR	2.0	9.525	16	1.25	1.1	1.3	
	16IR 2.5TR	16IL 2.5TR	2.5	9.525	16	1.53	1.2	1.4	
	16IR 3.0TR	16IL 3.0TR	3.0	9.525	16	1.75	1.3	1.5	
	16IR 4.0TR	16IL 4.0TR	4.0	9.525	16	2.25	1.5	1.5	
	22IR 4.0TR	22IL 4.0TR	4.0	12.7	22	2.25	1.7	1.9	
	22IR 5.0TR	22IL 5.0TR	5.0	12.7	22	2.75	2.1	2.5	
	22IR 6.0TR	22IL 6.0TR	6.0	12.7	22	3.50	2.3	2.7	
	27IR 6.0TR	27IL 6.0TR	6.0	15.875	27	3.50	2.3	2.7	
	27IR 7.0TR	27IL 7.0TR	7.0	15.875	27	4.00	2.7	3.2	

Thread Insert

Trapez DIN 103 (TR)

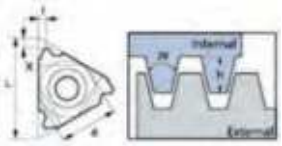
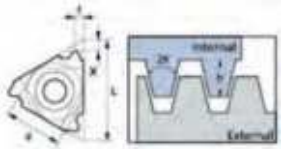
Type	Designation (Right+Left)	Pitch	Dimensions					Picture
		mm	d	L	hmin	X	f	
External	22UE 6.0TR	6.0	12.7U	22	3.5	2.0	11.0	
	22UE 7.0TR	7.0	12.7U	22	4.0	2.3	11.0	
	22UE 8.0TR	8.0	12.7U	22	4.5	2.6	11.0	
	27UE 8.0TR	8.0	12.7U	22	4.5	2.6	13.7	
	27UE 9.0TR	9.0	15.875U	27	5.0	3.0	13.7	
	27UE 10TR	10.0	15.875U	27	5.50	3.20	13.7	
	33UE 12.0TR	12.0	19.05U	33	6.50	3.90	16.9	
Internal	08UI 2.0TR	2.0	4.76U	8	1.25	0.9	4.0	
	16UI 4.0TR	4.0	9.525U	16	2.25	2.10	8.0	
	16UI 5.0TR	5.0	9.525U	16	2.76	1.56	8.0	
	22UI 6.0TR	6.0	12.7U	22	3.50	2.00	11.0	
	22UI 7.0TR	7.0	12.7U	22	4.00	2.30	11.0	
	22UI 7.0TR40	7.0	12.7U	22	4.00	2.60	11.0	
	22UI 8.0TR	8.0	12.7U	22	4.50	2.60	11.0	
	27UI 8.0TR	8.0	15.875U	27	4.50	2.60	13.7	
	27UI 9.0TR	9.0	15.875U	27	5.00	3.00	13.7	
	27UI 10.0TR	10.0	15.875U	27	5.50	3.20	13.7	
	33UI 12.0TR	12.0	19.05U	33	6.50	3.90	16.9	

Trapez DIN 103 (V Style)

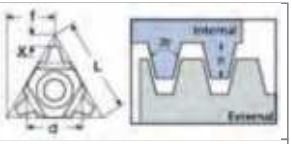
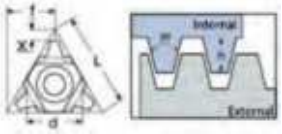
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			mm	d	L	hmin	X	f	T	
External	22VER 2.0TR	22VEL 2.0TR	2.0	12.7V	22	1.25	1.0	2.4	4.76	
	22VER 3.0TR	22VEL 3.0TR	3.0	12.7V	22	1.75	1.0	2.4	4.76	
	22VER 4.0TR	22VEL 4.0TR	4.0	12.7V	22	2.25	1.0	2.4	4.76	
	22VER 5.0TR	22VEL 5.0TR	5.0	12.7V	22	2.75	1.0	2.4	4.76	
	22VER 6.0TR	22VEL 6.0TR	6.0	12.7V	22	3.50	1.0	2.4	4.76	
	22VER 7.0TR	22VEL 7.0TR	7.0	12.7V	22	4.00	1.0	3.3	6.00	
	27VER 2.0TR	27VEL 2.0TR	2.0	15.875V	27	1.25	1.0	3.3	6.35	
	27VER 3.0TR	27VEL 3.0TR	3.0	15.875V	27	1.75	1.0	3.3	6.35	
	27VER 4.0TR	27VEL 4.0TR	4.0	15.875V	27	2.25	1.0	3.3	6.35	
	27VER 5.0TR	27VEL 5.0TR	5.0	15.875V	27	2.75	1.0	3.3	6.35	
	27VER 6.0TR	27VEL 6.0TR	6.0	15.875V	27	3.50	1.0	3.3	6.35	
	27VER 7.0TR	27VEL 7.0TR	7.0	15.875V	27	4.00	1.0	3.3	6.35	
	27VER 8.0TR	27VEL 8.0TR	8.0	15.875V	27	4.50	1.0	3.3	6.35	
	27VER 9.0TR	27VEL 9.0TR	9.0	15.875V	27	5.00	1.0	4.3	8.70	
	27VER 10.0TR	27VEL 10.0TR	10.0	15.875V	27	5.50	1.0	4.3	8.70	
	27VER 12.0TR	27VEL 12.0TR	12.0	15.875V	27	6.50	1.0	4.3	8.70	
	27VER 14.0TR	27VEL 14.0TR	14.0	15.875V	27	8.00	1.0	5.2	10.20	
	35VER 16.0TR	35VEL 16.0TR	16.0	20.0V	35	5.38	1.0	6.0	12.00	
	35VER 18.0TR	35VEL 18.0TR	18.0	20.0V	35	5.38	1.0	6.5	15.00	
	35VER 20.0TR	35VEL 20.0TR	20.0	20.0V	35	7.38	1.0	7.5	15.00	
Internal	22VIR 2.0TR	22VIL 2.0TR	2.0	12.7V	22	1.25	1.0	2.4	4.76	
	22VIR 3.0TR	22VIL 3.0TR	3.0	12.7V	22	1.75	1.0	2.4	4.76	
	22VIR 4.0TR	22VIL 4.0TR	4.0	12.7V	22	2.25	1.0	2.4	4.76	
	22VIR 5.0TR	22VIL 5.0TR	5.0	12.7V	22	2.75	1.0	2.4	4.76	
	22VIR 6.0TR	22VIL 6.0TR	6.0	12.7V	22	3.50	1.0	2.4	4.76	
	22VIR 7.0TR	22VIL 7.0TR	7.0	12.7V	22	4.00	1.0	3.3	6.00	
	27VIR 2.0TR	27VIL 2.0TR	2.0	15.875V	27	1.25	1.0	3.3	6.35	
	27VIR 3.0TR	27VIL 3.0TR	3.0	15.875V	27	1.75	1.0	3.3	6.35	
	27VIR 4.0TR	27VIL 4.0TR	4.0	15.875V	27	2.25	1.0	3.3	6.35	
	27VIR 5.0TR	27VIL 5.0TR	5.0	15.875V	27	2.75	1.0	3.3	6.35	
	27VIR 6.0TR	27VIL 6.0TR	6.0	15.875V	27	3.50	1.0	3.3	6.35	
	27VIR 7.0TR	27VIL 7.0TR	7.0	15.875V	27	4.00	1.0	3.3	6.35	
	27VIR 8.0TR	27VIL 8.0TR	8.0	15.875V	27	4.50	1.0	3.3	6.35	
	27VIR 9.0TR	27VIL 9.0TR	9.0	15.875V	27	5.00	1.0	4.3	8.70	
	27VIR 10.0TR	27VIL 10.0TR	10.0	15.875V	27	5.50	1.0	4.3	8.70	
	27VIR 12.0TR	27VIL 12.0TR	12.0	15.875V	27	6.50	1.0	4.3	8.70	
	27VIR 14.0TR	27VIL 14.0TR	14.0	15.875V	27	8.00	1.0	5.2	10.20	
	35VIR 16.0TR	35VIL 16.0TR	16.0	20.0V	35	5.38	1.0	6.0	12.00	
	35VIR 18.0TR	35VIL 18.0TR	18.0	20.0V	35	5.38	1.0	6.5	15.00	
	35VIR 20.0TR	35VIL 20.0TR	20.0	20.0V	35	7.38	1.0	7.5	15.00	

Thread Insert

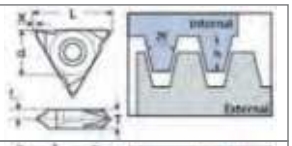
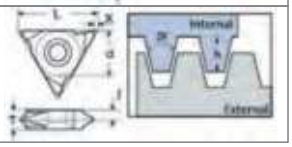
American ACME (ACME)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	11ER 16ACME	11ER 16ACME	16	6.35	11	0.92	1.0	1.1	
	16ER 16ACME	16EL 16ACME	16	9.525	16	0.92	1.0	1.1	
	16ER 14ACME	16EL 14ACME	14	9.525	16	1.03	1.0	1.2	
	16ER 12ACME	16EL 12ACME	12	9.525	16	1.19	1.1	1.2	
	16ER 10ACME	16EL 10ACME	10	9.525	16	1.52	1.3	1.4	
	16ER 8ACME	16EL 8ACME	8	9.525	16	1.84	1.4	1.5	
	16ER 6ACME	16EL 6ACME	6	9.525	16	2.37	1.7	1.9	
	22ER 6ACME	22EL 6ACME	6	12.7	22	2.37	1.8	2.1	
	22ER 5ACME	22EL 5ACME	5	12.7	22	2.79	2.0	2.3	
	22ER 4ACME	22EL 4ACME	4	12.7	27	3.43	2.1	2.2	
	27ER 4ACME	27EL 4ACME	4	15.875	27	3.43	2.4	2.7	
Internal	08IR 16ACME	08IL 16ACME	16	4.76	8	0.92	0.6	0.6	
	11IR 16ACME	11IL 16ACME	16	6.35	11	0.92	0.9	0.9	
	16IR 16ACME	16IL 16ACME	16	9.525	16	0.92	1.0	1.1	
	16IR 14ACME	16IL 14ACME	14	9.525	16	1.03	1.1	1.2	
	16IR 12ACME	16IL 12ACME	12	9.525	16	1.19	1.2	1.3	
	16IR 10ACME	16IL 10ACME	10	9.525	16	1.52	1.2	1.3	
	16IR 8ACME	16IL 8ACME	8	9.525	16	1.84	1.4	1.5	
	16IR 6ACME	16IL 6ACME	6	9.525	16	2.37	1.7	1.9	
	22IR 6ACME	22IL 6ACME	6	12.7	22	2.37	1.8	2.1	
	22IR 5ACME	22IL 5ACME	5	12.7	22	2.79	2.0	2.3	
	22IR 4ACME	22IL 4ACME	4	12.7	27	3.43	2.1	2.2	
	27IR 4ACME	27IL 4ACME	4	15.875	27	3.43	2.3	2.6	

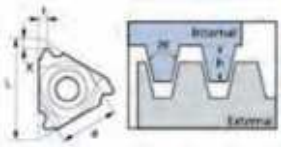
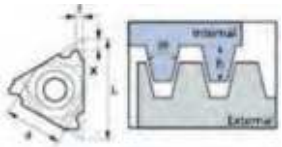
American ACME (U Style)

Type	Designation (Right+Left)	Pitch	Dimensions					Picture
		tpi	d	L	hmin	X	f	
External	22UE 4ACME	4	12.7U	22	3.43	2.3	11.0	
	22UE 3ACME	3	12.7U	22	4.49	2.9	11.0	
	27UE 3ACME	3	15.875U	27	4.49	2.9	13.7	
	33UE 2ACME	2	19.05U	33	6.54	4.3	16.9	
Internal	08UI 14ACME	14	4.76U	8	1.03	0.8	4.0	
	08UI 12ACME	12	4.76U	8	1.19	0.8	4.0	
	08UI 10ACME	10	4.76U	8	1.52	0.8	4.0	
	11UI 8ACME	8	6.35U	11	1.84	1.0	5.5	
	22UI 4ACME	4	12.7U	22	3.43	2.3	11.0	
	22UI 3ACME	3	12.7U	22	4.49	2.9	11.0	
	27UI 3ACME	3	15.875U	27	4.49	2.9	13.7	
	33UI 2ACME	2	19.05U	33	6.54	4.3	16.9	

American ACME (V Style)

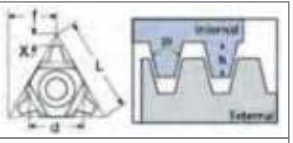
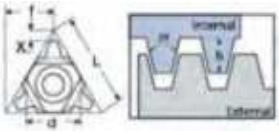
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			tpi	d	L	hmin	X	f	T	
External	27VER 4ACME	27VEL 4ACME	4	15.875V	27	3.43	1.0	3.3	6.35	
	27VER 3.5ACME	27VEL 3.5ACME	3.5	15.875V	27	3.85	1.8	4.0	6.35	
	27VER 3ACME	27VEL 3ACME	3	15.875V	27	4.49	1.8	4.6	6.35	
	27VER 2ACME	27VEL 2ACME	2	15.875V	27	6.60	1.8	5.0	8.70	
Internal	27VIR 4ACME	27VIL 4ACME	4	15.875V	27	3.43	1.0	3.3	6.35	
	27VIR 3.5ACME	27VIL 3.5ACME	3.5	15.875V	27	3.85	1.8	4.0	6.35	
	27VIR 3ACME	27VIL 3ACME	3	15.875V	27	4.49	1.8	4.6	6.35	
	27VIR 2ACME	27VIL 2ACME	2	15.875V	27	6.60	1.8	5.0	8.70	

Stub ACME (STACME)

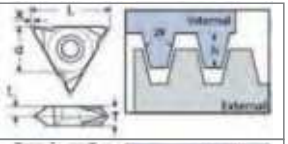
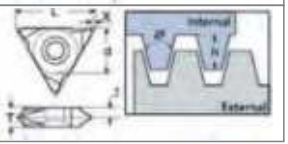
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	11ER 16STACME	11EL 16STACME	16	6.35	11	0.60	1.0	1.0	
	16ER 16STACME	16EL 16STACME	16	9.525	16	0.60	1.0	1.0	
	16ER 14STACME	16EL 14STACME	14	9.525	16	0.67	1.1	1.1	
	16ER 12STACME	16EL 12STACME	12	9.525	16	0.76	1.2	1.2	
	16ER 10STACME	16EL 10STACME	10	9.525	16	1.02	1.2	1.3	
	16ER 8STACME	16EL 8STACME	8	9.525	16	1.21	1.4	1.5	
	16ER 6STACME	16EL 6STACME	6	9.525	16	1.52	1.7	1.8	
	22ER 6STACME	22EL 6STACME	6	12.7	22	1.52	1.7	1.8	
	22ER 5STACME	22EL 5STACME	5	12.7	22	1.78	2.1	2.3	
	22ER 4STACME	22EL 4STACME	4	12.7	22	2.16	2.3	2.3	
	27ER 4STACME	27EL 4STACME	4	15.875	27	2.16	2.3	2.4	
	27ER 3STACME	27EL 3STACME	3	15.875	27	2.79	2.9	2.9	
Internal	08IR 16STACME	08IL 16STACME	16	4.76	8	0.60	0.6	0.6	
	11IR 16STACME	11IL 16STACME	16	6.35	11	0.60	1.0	1.0	
	16IR 16STACME	16IL 16STACME	16	9.525	16	0.60	1.0	1.0	
	16IR 14STACME	16IL 14STACME	14	9.525	16	0.67	1.1	1.1	
	16IR 12STACME	16IL 12STACME	12	9.525	16	0.76	1.2	1.2	
	16IR 10STACME	16IL 10STACME	10	9.525	16	1.02	1.2	1.3	
	16IR 8STACME	16IL 8STACME	8	9.525	16	1.21	1.4	1.5	
	16IR 6STACME	16IL 6STACME	6	9.525	16	1.52	1.7	1.8	
	22IR 6STACME	22IL 6STACME	6	12.7	22	1.52	1.7	1.8	
	22IR 5STACME	22IL 5STACME	5	12.7	22	1.78	2.1	2.3	
	22IR 4STACME	22IL 4STACME	4	12.7	22	2.16	2.3	2.3	
	27IR 4STACME	27IL 4STACME	4	15.875	27	2.16	2.3	2.4	
	27IR 3STACME	27IL 3STACME	3	15.875	27	2.79	2.9	2.9	

Thread Insert

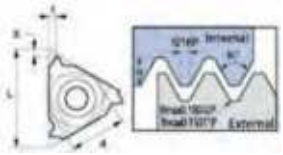
Stub ACME (U Style)

Type	Designation (Right+Left)	Pitch	Dimensions					Picture
		tpi	d	L	hmin	X	f	
External	22UE 4STACME	4	12.7U	22	2.16	2.5	11.0	
	22UE 35STACME	3	12.7U	22	2.79	3.4	11.0	
	33UE 2STACME	2	19.05U	33	4.06	5.0	16.9	
Internal	08UI 14STACME	14	4.76U	8	0.67	0.8	4.0	
	08UI 12STACME	12	4.76U	8	1.76	0.9	4.0	
	08UI 10STACME	10	4.76U	8	1.02	1.0	4.0	
	22UI 4STACME	4	12.7U	22	2.16	2.5	11.0	
	27UI 3STACME	3	15.875U	22	2.79	3.3	11.0	
	33UI 2STACME	2	19.05U	33	4.05	5.0	16.9	

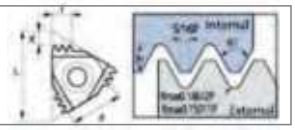
Stub ACME (V Style)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			tpi	d	L	hmin	X	f	f	
External	27VER 4STACME	27VEL 4STACME	4	15.875V	27	2.16	1.0	3,3	6.35	
	27VER 3STACME	27VEL 3STACME	3	15.875V	27	2.79	1.8	4,6	6.35	
	27VER 2STACME	27VEL 2STACME	2	15.875V	27	4.06	1.8	5,0	8.70	
Internal	27VIR 4STACME	27VIL 4STACME	4	15.875V	27	2.16	1.0	3,3	6.35	
	27VIR 3STACME	27VIL 3STACME	3	15.875V	27	2.79	1.8	4,6	6.35	
	27VIR 2STACME	27VIL 2STACME	2	15.875V	27	4.06	1.8	5,0	8.70	

UNJ (Unified Constant Thread)

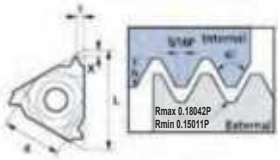
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	11ER 48UNJ	11EL 48UNJ	48	6.35	11	0.31	0.6	0.5	
	11ER 44UNJ	11EL 44UNJ	44	6.35	11	0.33	0.6	0.6	
	11ER 40UNJ	11EL 40UNJ	40	6.35	11	0.37	0.6	0..6	
	11ER 36UNJ	11EL 36UNJ	36	6.35	11	0.41	0.6	0.6	
	11ER 32UNJ	11EL 32UNJ	32	6.35	11	0.46	0.6	0.7	
	11ER 28UNJ	11EL 28UNJ	28	6.35	11	0.52	0.7	0.7	
	11ER 24UNJ	11EL 24UNJ	24	6.35	11	0.61	0.7	0.8	
	11ER 20UNJ	11EL 20UNJ	20	6.35	11	0.73	0.8	0.9	
	11ER 18UNJ	11EL 18UNJ	18	6.35	11	0.81	0.8	1.0	
	11ER 16UNJ	11EL 16UNJ	16	6.35	11	0.92	0.9	1.1	
	11ER 14UNJ	11EL 14UNJ	14	6.35	11	1.05	1.0	1.2	
	16ER 48UNJ	16EL 48UNJ	48	9.525	16	0.31	0.6	0.5	
	16ER 44UNJ	16EL 44UNJ	44	9.525	16	0.33	0.6	0.6	
	16ER 40UNJ	16EL 40UNJ	40	9.525	16	0.37	0.6	0.6	
	16ER 36UNJ	16EL 36UNJ	36	9.525	16	0.41	0.6	0.6	
	16ER 32UNJ	16EL 32UNJ	32	9.525	16	0.46	0.6	0.7	
	16ER 28UNJ	16EL 28UNJ	28	9.525	16	0.52	0.7	0.7	
	16ER 24UNJ	16EL 24UNJ	24	9.525	16	0.61	0.7	0.8	
	16ER 20UNJ	16EL 20UNJ	20	9.525	16	0.73	0.8	0.9	
	16ER 18UNJ	16EL 18UNJ	18	9.525	16	0.81	0.8	1.0	
	16ER 16UNJ	16EL 16UNJ	16	9.525	16	0.92	0.9	1.1	
	16ER 14UNJ	16EL 14UNJ	14	9.525	16	1.05	1.0	1.2	
	16ER 13UNJ	16EL 13UNJ	13	9.525	16	1.13	1.0	1.3	
	16ER 12UNJ	16EL 12UNJ	12	9.525	16	1.22	1.1	1.3	
	16ER 11UNJ	16EL 11UNJ	11	9.525	16	1.33	1.2	1.5	
	16ER 10UNJ	16EL 10UNJ	10	9.525	16	1.47	1.2	1.5	
	16ER 9UNJ	16EL 9UNJ	9	9.525	16	1.63	1.3	1.7	
	16ER 8UNJ	16EL 8UNJ	8	9.525	16	1.83	1.2	1.6	
	22ER 7UNJ	22EL 7UNJ	7	12.7	22	2.09	1.7	2.3	
	22ER 6UNJ	22EL 6UNJ	6	12.7	22	2.44	1.7	2.3	
	22ER 5UNJ	22EL 5UNJ	5	12.7	22	2.93	1.8	2.5	
	27ER 4.5UNJ	27EL 4.5UNJ	4.5	15.875	27	3.26	2.0	2.7	
	27ER 4UNJ	27EL 4UNJ	4	15.875	27	3.67	2.2	3.0	

UNJ (M+ Style)

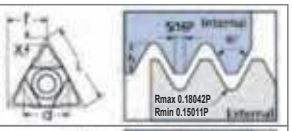
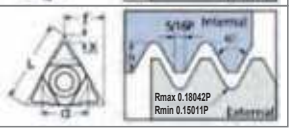
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			tpi	d	L	hmin	X	f	Tooth	
External	16ER 16UNJ 2M		16	9.525	16	0.92	1.6	2.4	2	
	22ER 16UNJ 2M		16	12.7	16	0.92	2.3	3.8	2	

Thread Insert

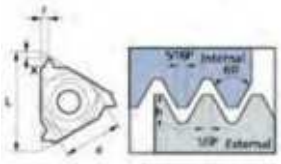
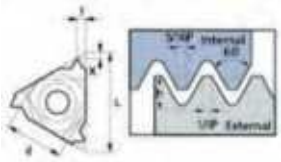
UNJ (Unified Constant Thread)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
Internal	11IR 48UNJ	11IL 48UNJ	48	6.35	11	0.28	0.6	0.5	
	11IR 44UNJ	11IL 44UNJ	44	6.35	11	0.30	0.6	0.6	
	11IR 40UNJ	11IL 40UNJ	40	6.35	11	0.33	0.6	0.6	
	11IR 36UNJ	11IL 36UNJ	36	6.35	11	0.37	0.6	0.6	
	11IR 32UNJ	11IL 32UNJ	32	6.35	11	0.42	0.6	0.7	
	11IR 28UNJ	11IL 28UNJ	28	6.35	11	0.47	0.7	0.7	
	11IR 24UNJ	11IL 24UNJ	24	6.35	11	0.55	0.7	0.8	
	11IR 20UNJ	11IL 20UNJ	20	6.35	11	0.66	0.8	0.9	
	11IR 18UNJ	11IL 18UNJ	18	6.35	11	0.74	0.8	1.0	
	11IR 16UNJ	11IL 16UNJ	16	6.35	11	0.83	0.9	1.1	
	11IR 14UNJ	11IL 14UNJ	14	6.35	11	0.95	1.0	1.2	
	16IR 48UNJ	16IL 48UNJ	48	9.525	16	0.28	0.6	0.5	
	16IR 44UNJ	16IL 44UNJ	44	9.525	16	0.30	0.6	0.6	
	16IR 40UNJ	16IL 40UNJ	40	9.525	16	0.33	0.6	0.6	
	16IR 36UNJ	16IL 36UNJ	36	9.525	16	0.37	0.6	0.6	
	16IR 32UNJ	16IL 32UNJ	32	9.525	16	0.42	0.6	0.7	
	16IR 28UNJ	16IL 28UNJ	28	9.525	16	0.47	0.7	0.7	
	16IR 24UNJ	16IL 24UNJ	24	9.525	16	0.55	0.7	0.8	
	16IR 20UNJ	16IL 20UNJ	20	9.525	16	0.66	0.8	0.9	
	16IR 18UNJ	16IL 18UNJ	18	9.525	16	0.74	0.8	1.0	
	16IR 16UNJ	16IL 16UNJ	16	9.525	16	0.83	0.9	1.1	
	16IR 14UNJ	16IL 14UNJ	14	9.525	16	0.95	1.0	1.2	
	16IR 13UNJ	16IL 13UNJ	13	9.525	16	1.02	1.0	1.3	
	16IR 12UNJ	16IL 12UNJ	12	9.525	16	1.11	1.1	1.3	
	16IR 11UNJ	16IL 11UNJ	11	9.525	16	1.21	1.2	1.5	
	16IR 10UNJ	16IL 10UNJ	10	9.525	16	1.33	1.2	1.5	
	16IR 9UNJ	16IL 9UNJ	9	9.525	16	1.48	1.3	1.7	
	16IR 8UNJ	16IL 8UNJ	8	9.525	16	1.66	1.2	1.6	
	22IR 7UNJ	22IL 7UNJ	7	12.7	22	1.90	1.7	2.3	
	22IR 6UNJ	22IL 6UNJ	6	12.7	22	2.21	1.7	2.3	
	22IR 5UNJ	22IL 5UNJ	5	12.7	22	2.66	1.8	2.5	
	27IR 4.5UNJ	27IL 4.5UNJ	4.5	15.875	27	2.95	2.0	2.7	
	27IR 4UNJ	27IL 4UNJ	4	15.875	27	3.32	2.2	3.0	

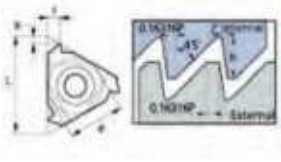
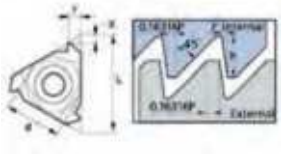
UNJ (U Style)

Type	Designation (Right+Left)	Pitch	Dimensions					Picture
		tpi	d	L	hmin	X	f	
External	22UE 4.5UNJ	4.5	12.7U	22	3.26	2.1	11.0	
	22UE 4UNJ	4	12.7U	22	3.67	2.1	11.0	
Internal	22UI 4.5UNJ	4.5	12.7U	22	3.26	2.1	11.0	
	22UI 4UNJ	4	12.7U	22	3.67	2.1	11.0	

MJ

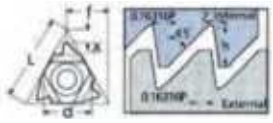
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			mm	d	L	hmin	X	f	
External	11ER 1.00MJ	11EL 1.00MJ	1.0	6.35	11	0.58	0.7	0.7	
	11ER 1.25MJ	11EL 1.25MJ	1.25	6.35	11	0.72	0.8	0.9	
	11ER 1.50MJ	11EL 1.50MJ	1.5	6.35	11	0.87	0.8	1.0	
	16ER 0.70MJ	16EL 0.70MJ	0.7	9.525	16	0.40	0.6	0.6	
	16ER 0.80MJ	16EL 0.80MJ	0.8	9.525	16	0.45	0.7	0.7	
	16ER 1.00MJ	16EL 1.00MJ	1.0	9.525	16	0.58	0.7	0.7	
	16ER 1.25MJ	16EL 1.25MJ	1.25	9.525	16	0.72	0.8	0.9	
	16ER 1.50MJ	16EL 1.50MJ	1.5	9.525	16	0.87	0.8	1.0	
	16ER 2.00MJ	16EL 2.00MJ	2.0	9.525	16	1.15	1.0	1.3	
	16ER 2.50MJ	16EL 2.50MJ	2.5	9.525	16	1.49	1.1	1.5	
	16ER 3.00MJ	16EL 3.00MJ	3.0	9.525	16	1.73	1.2	1.6	
Internal	11IR 1.00MJ	11IL 1.00MJ	1.0	6.35	11	0.49	0.6	0.7	
	11IR 1.25MJ	11IL 1.25MJ	1.25	6.35	11	0.51	0.8	0.9	
	11IR 1.50MJ	11IL 1.50MJ	1.5	6.35	11	0.73	0.8	1.0	
	11IR 2.00MJ	11IL 2.00MJ	2.0	9.525	11	0.97	0.8	1.0	
	16IR 0.75MJ	16IL 0.75MJ	0.75	9.525	16	0.37	0.6	0.6	
	16IR 0.80MJ	16IL 0.80MJ	0.8	9.525	16	0.44	0.7	0.7	
	16IR 1.00MJ	16IL 1.00MJ	1.0	9.525	16	0.49	0.6	0.7	
	16IR 1.25MJ	16IL 1.25MJ	1.25	9.525	16	0.61	0.8	0.9	
	16IR 1.50MJ	16IL 1.50MJ	1.5	9.525	16	0.73	0.8	1.0	
	16IR 2.00MJ	16IL 2.00MJ	2.0	9.525	16	0.97	0.8	1.3	
	16IR 2.50MJ	16IL 2.50MJ	2.5	9.525	16	1.23	1.1	1.5	
	16IR 3.00MJ	16IL 3.00MJ	3.0	9.525	16	1.46	1.2	1.6	

American Buttress (ABUT)

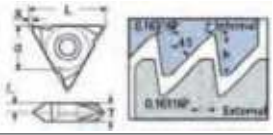
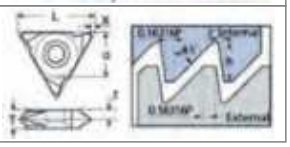
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	11ER 20ABUT	11EL 20ABUT	20	6.35	11	0.84	1.0	1.4	
	11ER 16ABUT	11EL 16ABUT	16	6.35	11	1.05	1.3	1.9	
	16ER 20ABUT	16EL 20ABUT	20	9.525	16	0.84	1.0	1.4	
	16ER 16ABUT	16EL 16ABUT	16	9.525	16	1.05	1.3	1.9	
	16ER 12ABUT	16EL 12ABUT	12	9.525	16	1.40	1.4	2.0	
	16ER 10ABUT	16EL 10ABUT	10	9.525	16	1.68	1.5	2.3	
	22ER 8ABUT	22EL 8ABUT	8	12.7	22	2.10	2.0	3.2	
	22ER 6ABUT	22EL 6ABUT	6	12.7	22	2.80	2.2	3.5	
Internal	11IR 20ABUT	11IL 20ABUT	20	6.35	11	0.84	1.0	1.4	
	11IR 16ABUT	11IL 16ABUT	16	6.35	11	1.05	1.3	1.9	
	16IR 20ABUT	16IL 20ABUT	20	9.525	16	0.84	1.0	1.4	
	16IR 16ABUT	16IL 16ABUT	16	9.525	16	1.05	1.3	1.9	
	16IR 12ABUT	16IL 12ABUT	12	9.525	16	1.40	1.4	2.0	
	16IR 10ABUT	16IL 10ABUT	10	9.525	16	1.68	1.5	2.3	
	22IR 8ABUT	22IL 8ABUT	8	12.7	22	2.10	2.0	3.2	
	22IR 6ABUT	22IL 6ABUT	6	12.7	22	2.80	2.2	3.5	

Thread Insert

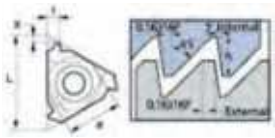
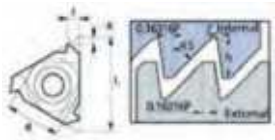
American Buttress (U Style)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	22UER 4ABUT	22UEL 4ABUT	4	12.7U	22	4.21	24	9.8	
	22UER 3ABUT	22UEL 3ABUT	3	12.7U	22	5.61	3.1	12.1	
Internal	22UIR 4ABUT	22UIL 4ABUT	4	12.7U	22	4.21	24	9.8	
	22UIR 3ABUT	22UIL 3ABUT	3	12.7U	22	5.61	3.1	12.1	

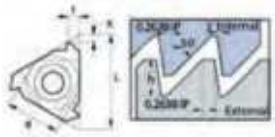
American Buttress (V Style)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions						Picture
			tpi	d	L	hmin	X	f	T	
External	22VER 4ABUT	22VEL 4ABUT	4	12.7V	22	4.21	0.6	1.8	6.35	
	22VER 3ABUT	22VEL 3ABUT	3	12.7V	22	5.61	0.6	2.2	6.35	
	22VER 2.5ABUT	22VEL 2.5ABUT	2.5	12.7V	22	6.73	0.6	2.7	8.70	
Internal	22VIR 4ABUT	22VIL 4ABUT	4	12.7V	22	4.21	0.6	1.8	6.35	
	22VIR 3ABUT	22VIL 3ABUT	3	12.7V	22	5.61	0.6	2.2	6.35	
	22VIR 2.5ABUT	22VIL 2.5ABUT	2.5	12.7V	22	6.73	0.6	2.7	8.70	

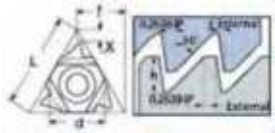
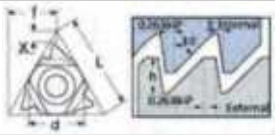
British Buttress (BBUT)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	16ER 16BBUT	16EL 16BBUT	16	9.525	16	0.80	1.1	1.6	
	16ER 12BBUT	16EL 12BBUT	12	9.525	16	1.07	1.4	2.1	
	16ER 10BBUT	16EL 10BBUT	10	9.525	16	1.28	1.4	2.2	
	16ER 8BBUT	16EL 8BBUT	8	9.525	16	1.61	1.6	2.5	
	22ER 6BBUT	22EL 6BBUT	8	12.7	22	1.61	1.6	2.5	
Internal	16IR 16BBUT	16IL 16BBUT	16	9.525	16	0.80	1.1	1.6	
	16IR 12BBUT	16IL 12BBUT	12	9.525	16	1.07	1.4	2.1	
	16IR 10BBUT	16IL 10BBUT	10	9.525	16	1.28	1.4	2.2	
	16IR 8BBUT	16IL 8BBUT	8	9.525	16	1.61	1.6	2.5	
	22IR 6BBUT	22IL 6BBUT	8	12.7	22	1.61	1.6	2.5	

Metric Buttress (SAGE)

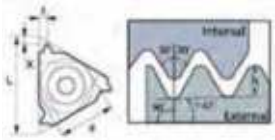
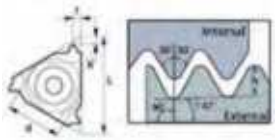
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			mm	d	L	hmin	X	f	
External	16ER 2.0SAGE	16EL 2.0SAGE	2.0	9.525	16	1.74	1.47	2.08	
	22ER 2.0SAGE	22EL 2.0SAGE	2.0	12.7	22	1.74	1.47	2.08	
	22ER 3.0SAGE	22EL 3.0SAGE	3.0	12.7	22	1.79	1.79	2.60	
	22ER 4.0SAGE	22EL 4.0SAGE	4.0	12.7	22	3.55	1.75	3.10	
	27ER 4.0SAGE	27EL 4.0SAGE	4.0	15.875	27	3.55	1.93	3.20	
Internal	16IR 2.0SAGE	16IL 2.0SAGE	2.0	9.525	16	1.50	1.52	2.2	
	22IR 3.0SAGE	22IL 3.0SAGE	3.0	12.7	22	2.25	1.66	2.9	
	22IR 4.0SAGE	22IL 4.0SAGE	4.0	12.7	22	3.09	2.03	3.25	
	27IR 4.0SAGE	27IL 4.0SAGE	4.0	15.875	27	3.09	2.12	3.2	

Metric Buttress (U Style)

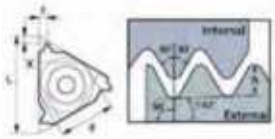
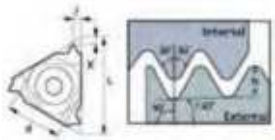
Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			mm	d	L	hmin	X	f	
External	22UER 5.0SAGE	22UEL 5.0SAGE	5.0	12.7U	22	4.41	1.27	10.35	
	22UER 6.0SAGE	22UEL 6.0SAGE	6.0	12.7U	22	5.29	1.25	10.28	
Internal	22UIR 5.0SAGE	22UIL 5.0SAGE	5.0	12.7U	22	4.41	1.27	10.35	
	22UIR 6.0SAGE	22UIL 6.0SAGE	6.0	12.7U	22	5.29	1.25	10.28	

Thread Insert

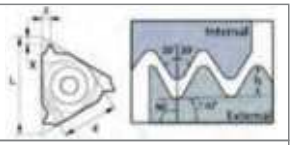
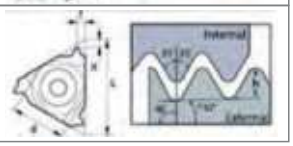
API V-0.038R (full form) API spec 7-2

Type	Designation	Size	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	22ER 4API382	NC23-NC50	4	12.7	22	3.09	2.1	2.8	
	22ER 4API383	NC56-NC77	4	12.7	22	3.08	2.1	2.8	
	27ER 4API382	NC23-NC50	4	15.875	27	3.09	2.1	2.8	
	27ER 4API383	NC56-NC77	4	15.875	27	3.08	2.1	2.8	
Internal	22IR 4API382	NC23-NC50	4	12.7	22	3.09	2.1	2.8	
	22IR 4API383	NC56-NC77	4	12.7	22	3.08	2.1	2.8	
	27IR 4API382	NC23-NC50	4	15.875	27	3.09	2.1	2.8	
	27IR 4API383	NC56-NC77	4	15.875	27	3.08	2.1	2.8	

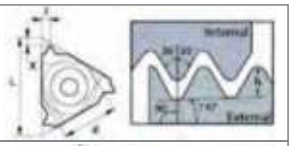
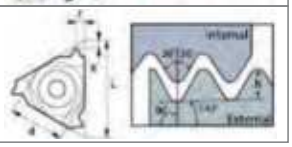
API V-0.040

Type	Designation	Size	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	22ER 5API403	2 3/8"-4.1/2"REG	5	12.7	222	2.99	1.8	2.6	
	27ER 5API403	2 3/8"-4.1/2"REG	5	15.875	27	2.99	1.9	2.7	
Internal	22IR 5API403	2 3/8"-4.1/2"REG	5	12.7	222	2.99	1.8	2.6	
	27IR 5API403	2 3/8"-4.1/2"REG	5	15.875	27	2.99	1.9	2.7	

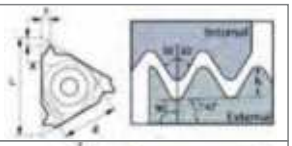
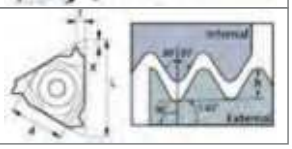
API V-0.050

Type	Designation	Size	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	22ER 4API502	6 5/8"REG	4	12.7	22	3.75	2.0	2.9	
	22ER 4API503	5 1/2", 7 5/8" 8 5/8"REG	4	12.7	22	3.74	2.0	2.9	
	27ER 4API502	6 5/8"REG	4	15.875	27	3.75	2.1	3.1	
	27ER 4API503	5 1/2", 7 5/8" 8 5/8"REG	4	15.875	27	3.74	2.1	3.1	
Internal	22IR 4API502	6 5/8"REG	4	12.7	22	3.75	2.1	3.1	
	22IR 4API503	5 1/2", 7 5/8" 8 5/8"REG	4	12.7	22	3.74	2.0	2.9	
	27IR 4API502	6 5/8"REG	4	15.875	27	3.75	2.1	3.1	
	27IR 4API503	5 1/2", 7 5/8" 8 5/8"REG	4	15.875	27	3.74	2.1	3.1	

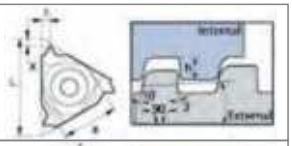
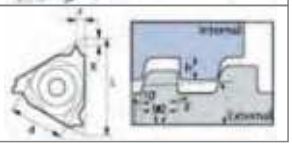
API V-0.055

Type	Designation	Size	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	22ER 6API551.5	NC10-NC16	6	12.7	22	1.41	2.6	2.0	
Internal	16IR 6API551.5	NC10-NC13	6	9.525	16	1.41	2.0	1.7	
	22IR 6API551.5	NC10-NC16	6	12.7	22	1.41	2.6	2.0	

API V-0.065

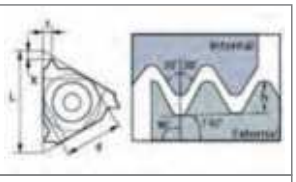
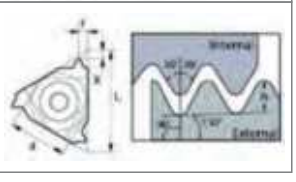
Type	Designation	Size	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	27ER 4API652	2 3/8"IF - 5 1/2"IF	4	15.875	27	2.81	2.3	2.8	
Internal	27IR 4API652	2 3/8"IF - 5 1/2"IF	4	15.875	27	2.81	2.3	2.8	

API Buttress Casing (BUT)

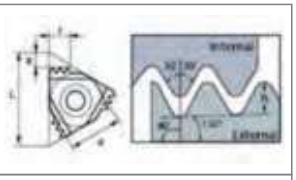
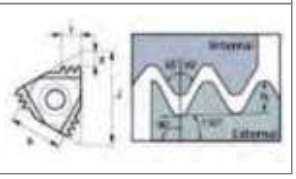
Type	Designation (Right)	Designation (Left)	Pitch	IPF	Dimensions					Picture
			tpi		d	L	hmin	X	f	
External	22ER 5BUT75	22EL 5BUT75	5	0.75	12.7	22	1.55	3.1	1.9	
	22ER 5BUT1	22EL 5BUT1	5	1	12.7	22	1.55	3.1	1.9	
Internal	22IL 5BUT75	22IL 5BUT75	5	0.75	12.7	22	1.55	3.1	1.9	
	22IL 5BUT1	22IL 5BUT1	5	1	12.7	22	1.55	3.1	1.9	

Thread Insert

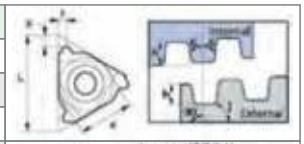
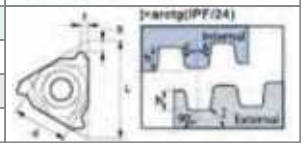
API Round Casing & Tubing (APIRD)

Type	Designation (Right)	Designation (Left)	Pitch	Dimensions					Picture
			tpi	d	L	hmin	X	f	
External	16ER 10APIRD		10	9.525	16	1.41	1.2	1.4	
	16ER 8APIRD		8	9.525	16	1.81	1.3	1.5	
	22ER 10APIRD		10	12.7	22	1.47	1.45	1.8	
	22ER 8APIRD		8	12.7	22	1.88	1.85	2.0	
Internal	16IR 10APIRD		10	9.525	16	1.41	1.2	1.4	
	16IR 8APIRD		8	9.525	16	1.81	1.3	1.5	
	22IR 10APIRD		10	12.7	22	1.47	1.45	1.8	
	22IR 8APIRD		8	12.7	22	1.88	1.85	2.0	

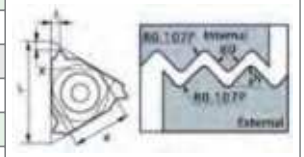
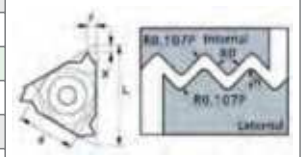
API Round Casing & Tubing (APIRD)

Type	Designation (Right+Left)	Pitch	Dimensions					Picture
		tpi	d	L	hmin	X	f	
External	22ER 10APIRD-2M	10	12.7	22	1.41	2.3	3.8	
	27ER 10APIRD-3M	10	15.875	27	1.41	2.3	3.8	
	27ER 8APIRD-2M	8	15.875	27	1.81	2.9	4.5	
Internal	22IR 10APIRD-2M	10	12.7	22	1.41	2.3	3.8	
	27IR 10APIRD-3M	10	15.875	27	1.41	2.3	3.8	
	27IR 8APIRD-2M	8	15.875	27	1.81	2.9	4.5	

Extreme Line Casing (EL)

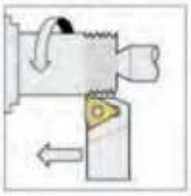
Type	Designation (Right)	Designation (Left)	Pitch	Taper	Dimensions					Picture
			tpi	IPF	d	L	hmin	X	f	
External	22ER 6EL15		6	1.5	12.7	22	1.21	1.9	1.9	
	22ER 5EL125		5	1.25	12.7	22	1.71	2.3	2.4	
Internal	22IR 6EL15		6	1.5	12.7	22	1.21	1.9	1.9	
	22IR 5EL125		5	1.25	12.7	22	1.71	2.3	2.4	

PG

Type	Designation (Right)	Designation (Left)	Pitch	Thread	Dimensions					Picture
			tpi		d	L	hmin	X	f	
External	11ER 20Pg	11EL 20Pg	20	Pg7	6.35	11	0.61	0.8	0.9	
	11ER 18Pg	11EL 18Pg	18	Pg9/11/13.5/16	6.35	11	0.67	0.8	1.0	
	11ER 16Pg	11EL 16Pg	16	Pg21/29/36/42/48	6.35	11	0.76	0.9	1.1	
	16ER 20Pg	16EL 20Pg	20	Pg7	9.525	16	0.61	0.8	0.9	
	16ER 18Pg	16EL 18Pg	18	Pg9/11/13.5/16	9.525	16	0.67	0.8	1.0	
	16ER 16Pg	16EL 16Pg	16	Pg21/29/36/42/48	9.525	16	0.76	0.9	1.1	
Internal	11IR 20Pg	11IL 20Pg	20	Pg7	6.35	11	0.61	0.8	0.9	
	11IR 18Pg	11IL 18Pg	18	Pg9/11/13.5/16	6.35	11	0.67	0.8	1.0	
	11IR 16Pg	11IL 16Pg	16	Pg21/29/36/42/48	6.35	11	0.76	0.9	1.1	
	16IR 20Pg	16IL 20Pg	20	Pg7	9.525	16	0.61	0.8	0.9	
	16IR 18Pg	16IL 18Pg	18	Pg9/11/13.5/16	9.525	16	0.67	0.8	1.0	
	16IR 16Pg	16IL 16Pg	16	Pg21/29/36/42/48	9.525	16	0.76	0.9	1.1	

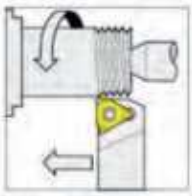
External Holder

SER/L



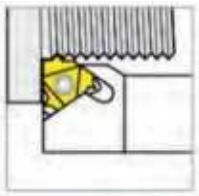
Designation	Stock		Dimensions(mm)						Application Insert	Spare parts			
	R	L	H	W	L	S	h	l		Shim	Screw	Shim screw	Wrench
SER/L 0808-H11			8	8	100	11	8	17.5	11ER/EL	X	M2.5X8	X	T-8
SER/L 1010-F11	●	●	10	10	80	11	10	17.5					
SER/L 1212-F11	●	●	12	12	80	12	12	17.5					
SER/L 1212-F16	●	●	12	12	80	16	12	22	16ER/EL	STM16R STM16L	M3.5X9	M3X6N	T-15
SER/L 1616-H16	●	●	16	16	100	20	16	20.5			M3.5X12		T-15
SER/L 2020-K16	●	●	20	20	125	25	20	30					
SER/L 2525M16	●	●	25	25	150	32	25	30					
SER/L 3232-P16	●	●	32	32	170	40	32	30	22ER/EL	STM22R STM22L	M4.5X11.5	M4X6N	T-20
SER/L 2525-M22	●	●	25	25	150	32	25	36					
SER/L 3232-P22	●	●	32	32	170	40	32	36					
SER/L 4040-R22	●	●	40	40	200	50	40	36					
SER/L 2525-M27	●	●	25	25	150	32	25	35					
SER/L 3232-P27	●	●	32	32	170	40	32	40	27ER/EL	STM27R STM27L	M5.0X20	M4X6N	T-20
SER/L 4040-R27			40	40	200	50	40	40					
SER/L 5050-T27			50	50	300	60	50	40					

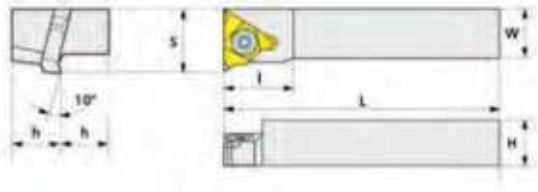
SER/L (With out setoff)



Designation	Stock		Dimensions(mm)						Application Insert	Spare parts	
	R	L	H	W	L	S	h	l		Insert screw	Wrench
SER/L 1216-K16			12	16	125	16	12	-	16ER/EL	M3.5X9	T-15
SER/L 1010-K16H			10	10	125	10	10	-			
SER/L 1212-K16H			12	12	125	12	12	-			
SER/L 1616-K16H			16	16	125	16	16	-			

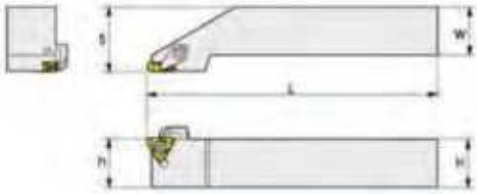
SER/L-G





Designation	Stock		Dimensions(mm)						Application Insert	Spare parts			
	R	L	H	W	L	S	h	l		Shim	Screw	Shim screw	Wrench
SER/L 0808-H11G			8	8	16	100	12	8	11ER/EL	X	M2.5X8	X	T-8
SER/L 1010-H11G			10	10	16	100	16	10					
SER/L 1010-H16G	●	○	10	10	16	100	16	12	16ER/EL		M3.5X9		T-15
SER/L 1212-H16G	●	○	12	12	17.8	100	17.2	12					
SER/L 1414-H16G			14	14	17.8	100	17.2	14					
SER/L 1616-H16G	●	○	16	16	23	100	20	16		STM16R STM16L	M3.5X12	M3X6N	T-15
SER/L 2020-H16G	●	○	20	20	23	100	25	20					

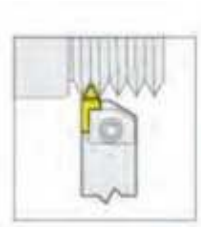
CER/L-V

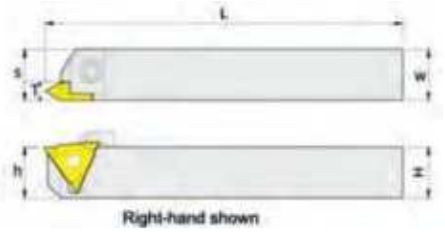


Designation	Stock		Dimensions(mm)					Application Insert	Spare parts			
	R	L	H	W	L	S	h		Clamp	Clamp screw	Screw	Wrench
CER/L1212-H16V	●	○	12	12	100	17	12	16VER/VEL	JTY16	JTS06	M3.5X9	T-15 HW30L
CER/L1616-H16V	●	○	16	16	100	20	16					
CER/L2020-K16V	●	○	20	20	125	25	20					
CER/L2525-M16V	●	○	25	25	150	30	25					
CER/L3232-P16V	●	○	32	32	170	40	32					

External Holder

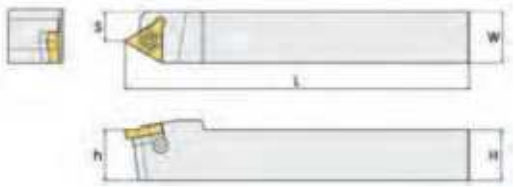
MTR/L(CVER/L)





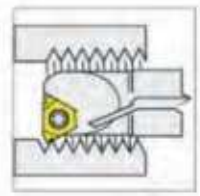
Designation	Stock		Dimensions(mm)						Application Insert	Spare parts				
	R	L	H	W	T	L	S	h		Clamp Bridge	Clamp screw	Spring	Wrench	Insert screw
MTR/L 2020-K16	●	○	20	20	4.80	125	25	20	22VER/VEL	YBG22R/L	DSPM6	GTS06	HW30L T-20	M5.0X12
MTR/L 2525-M22	●	○	25	25	4.80	150	30	25						
MTR/L 3232-P22	●	○	32	32	4.80	170	40	32						
MTR/L 2525-M22-6	●	○	25	25	6.35	150	32	25						
MTR/L 3232-P22-6	●	○	32	32	6.35	170	40	32						
MTR/L 2525-M27-6	●	○	25	25	6.35	150	32	25	27VER/VEL	YBG22R/L	DSPM6	GTS06	HW30L T-20	M6.0X18
MTR/L 2525-M27-8	●	○	25	25	8.70	150	32	25						
MTR/L 3232-P27-6	●	○	32	32	6.35	170	40	32						
MTR/L 3232-P27-8	●	○	32	32	8.70	170	40	32						
MTR/L 2532-P27-10	●	○	25	25	10.20	170	40	25						
MTR/L 3232-P27-10	●	○	32	32	10.20	170	40	32						
MTR/L 4040-R27-6	●	○	40	40	6.35	200	50	40						
MTR/L 4040-R27-8	●	○	40	40	8.70	200	50	40						
MTR/L 4040-R27-10	●	○	40	40	10.20	200	50	40						
MTR/L 3232-R35-12	●	○	32	32	12.00	200	40	32	35VER/VEL	YBG22R/L	DSPM6	GTS06	HW30L T-20	M6.0X18
MTR/L 3232-R35-15	●	○	32	32	15.00	200	40	32						
MTR/L 4040-S35-12	●	○	40	40	12.00	250	50	40						
MTR/L 4040-S35-15	●	○	40	40	15.00	250	50	40						

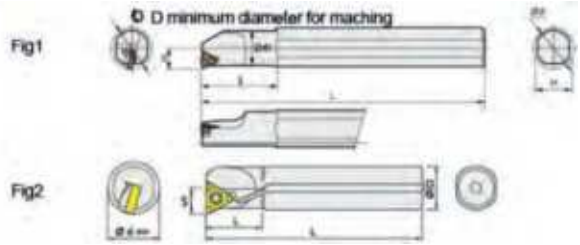
SER/L-U



Designation	Stock		Dimensions(mm)						Application Insert	Spare parts	
	R	L	H	W	T	L	S	h		Screw	Wrench
SER/L 2525-M22U			25	25	38	150	14	25	22UEI	M4.5X11.5	T-20
SER/L 3232-P22U			32	32	38	170	21.5	32			
SER/L 4040-R22U			40	40	38	200	29	40			
SER/L 2525-M27U			25	25	40	150	14	25	27UEI	M5.0X12	T-20
SER/L 3232-P27U			32	32	40	170	21.5	32			
SER/L 4040-R27U			40	40	40	200	29	40			
SER/L 5050-T27U			50	50	40	300	39	50			

SNR/L





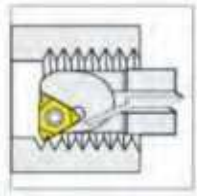
Designation	Stock		Dimensions(mm)							Application Insert	Spare parts				Flg.
			dmin	d	d1	H	L	s	l		Shim	Screw	Shim screw	Wrench	
SNR/L 0616-K06			8	16	6.0	15	125	4.0	18	06IR/IL	X	M2.0X6	X	T-6	1
SNR/L 0712-K08			10	12	7.0	11	125	4.0	18	08IR/IL		M2.2X5		T-6	
SNR/L 0716-K08			10	16	7.0	15	125	5.0	18						
SNR/L 0008-K08	●	●	11	8	8.0	7	125	5.0	21						
SNR/L 0810-K08	●	●	11	10	8.0	9	125	5.0	24						
SNR/L 0816-K11	●	●	13	16	8.0	15	125	5.0	24	11IR/IL		M2.5X8		T-8	
SNR/L 1016-K11	●	●	13	16	10.0	15	125	7.3	30						
SNR/L 0010-K11	●	●	13	10	10.0	9	125	7.3	30						
SNR/L 0012-K11	●	●	15	12	12.0	11	125	8.4	28						
SNR/L 1216-K11	●	●	15	16	12.0	15	125	8.4	36						
SNR/L 0013-M16	●	●	17	13	12.7	15	150	10.3	32	16IR/IL		M3.5X9		T-15	
SNR/L 0016-Q16	●	●	20	16	16.0	15	180	11.5	40						
SNR/L 0020-Q16	●	●	24	20	20.0	18	180	13.4	40	16IR/IL	STM16R STM16L	M3.5X12	M3X6N	T-15	
SNR/L 0025-R16	●	●	29	25	24.5	23	200	16.3	45						
SNR/L 0032-S16	●	●	36	32	32.0	29	250	19.6	50						
SNR/L 0040-T16	●	●	44	40	40.0	36	300	23.8	55						
SNR/L 0050-T16	●	●	56	50	50.0	48	350	28.7	60						
SNR/L 0020-Q22	●	●	27	20	20.0	18	180	14.9	40	22IR/IL	STM22R STM22L	M4.5X16	M4X6N	T-20	
SNR/L 0025-R22	●	●	32	25	24.6	23	200	18.1	45						
SNR/L 0032-S22	●	●	39	32	32.0	29	250	21.5	50						
SNR/L 0040-T22	●	●	47	40	40.0	36	300	25.8	55						
SNR/L 0050-U22			57	50	50.0	48	350	30.6	70						
SNR/L 0032-S27	●	●	40	32	32.0	29	250	22.4	60	27IR/IL	STM27R STM27L	M5.0X20	M5X8N		
SNR/L 0040-T27	●	●	48	40	40.0	36	300	26.4	60						
SNR/L 0050-U27			58	50	50.0	45	350	31.4	75						

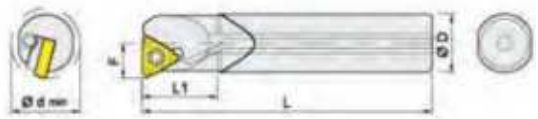
Standard With Coolant Hole

Designation	Stock		Dimensions(mm)							Application Insert	Spare parts				Flg.
	R	L	dmin	d	d1	H	L	s	l		Shim	Screw	Shim screw	Wrench	
SNR/L 0010-K11B			13	10	10.0	9	125	7.3	25	11IR/IL	X	M2.5X8	X	T-8	2
SNR/L 0012-K11B			15	12	12.0	11	125	8.4	28						
SNR/L 0013-M16B			17	16	12.7	15	150	10.3	32	16IR/IL	X	M3.5X9	X	T-15	
SNR/L 0016-Q16B			20	16	16.0	15	180	11.5	40						
SNR/L 0020-Q16B			24	20	20.0	18	180	13.4	40		STM16R STM16L	M3.5X12	M3X6	T-15	
SNR/L 0025-R16B			29	25	24.5	23	200	16.3	45						
SNR/L 0020-Q22B			27	20	20.0	18	180	14.9	40	22IR/IL	STM22R STM22L	M4.5X11.5	M4.5X16	T-20	
SNR/L 0025-R22B			32	25	24.6	23	200	18.1	45						

Internal Holder

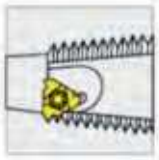
SNR/L-C With Carbide Shank





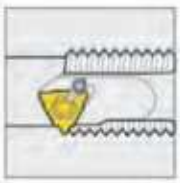
Designation	Stock		Dimensions(mm)							Application Insert	Spare parts			
	R	L	dmin	d	d1	H	L	S	l		Shim	Screw	Shim screw	Wrench
SNR/L 0005-H06C			7	5	5	4.7	100	3.6	12	06IR/IL	X	M2.0X5	X	T-6
SNR/L 0006-K06C			8	6	6	5.7	125	4.1	15					
SNR/L 0006-K08C			8	6	6	5.7	125	4.1	15	08IR/IL	X	M2.2X5	X	T-6
SNR/L 0007-K08C			9	7	7	6.7	125	4.5	18					
SNR/L 0008-K08C			11	8	8	7.4	125	5.5	20					
SNR/L 0010-P11C			13	10	10	9.4	170	6.5	22	11IR/IL	X	M2.5X8	X	T-8
SNR/L 0012-Q11C			16	12	12	11.4	180	8.0	26					
SNR/L 0014-Q16C			17	14	14	13.2	180	9.0	28	16IR/IL	X	M3.5X9	X	T-15
SNR/L 0016-R16C			19	16	16	15.0	200	10.0	36					
SNR/L 0020-S16C			24	20	20	19.0	250	12.0	40		STM16R STM16L	M3.5X12	M3X5N	T-15
SNR/L 0025-T16C			29	25	25	24.0	300	14.5	45					
SNR/L 0032-T16C			36	32	32	29.0	300	18.5	50					

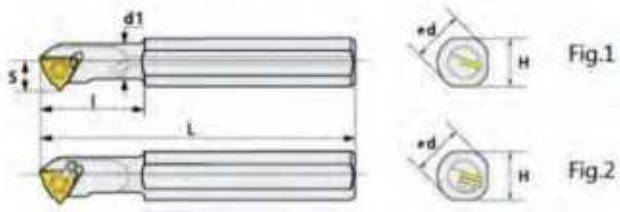
SNR/L for Oil & Gas



Designation	Stock		Thread form	Connection No or size	Dimensions(mm)				Helix Angle Deg.	Spare parts	
	R	L			d	H	L	S		Insert screw	Wrench
SNR/L 0025-S16-APIRD			8APIRD, 10APIRD	2.75"-20"; 1.315"-3.5"	25	29	250	14.5	1.0	M3.5X9	T-15
SNR/L 0032-S16-APIRD			8APIRD, 10APIRD	2.375-20"; 1.66"-3.5"	32	29	250	19.6	1.0		
SNR/L 0040-T16-APIRD			8APIRD, 10APIRD	2.375-20"; 1.9"-3.5"	40	36	300	22.0	1.0		
SNR/L 0040-T22-API			5BUT, V.038R V.050, V.040, V.055	4 - 1/2"-20" NC10 - NC77	40	36	300	24.2	0.0	M4.5X11.5	T-20
SNR/L 0050-T27-V38			V.038R	NC23 - NC38	50	45	300	22.6	1.5	M5.0X12	T-20
SNR/L 0080-V27-V50			V.050R	NC10 - NC77	80	72	400	39.7	1.5		

SNR/L-UB





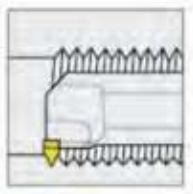
Designation	Stock		Dimensions(mm)							Application Insert	Spare parts		Flg.
	R	L	dmin	d	d1	H	L	S	l		Insert screw	Wrench	
SNR/L 1020-K08UB			13	20	8.0	18	125	5.86	20	08UEI	M2.2X5	T-6	1
SNR/L 1020-K11UB			13	20	10.0	18	125	7.40	25	11UEI	M2.5X8	T-15	
SNR/L 1220-K11UB			15	20	12.0	18	125	7.40	30				
SNR/L 0020-Q22UB			27	20	19.2	18	180	13.68	40	22UI	M4.5X11.5	T-20	
SNR/L 0025-R22UB			32	25	24.6	23	200	17.63	45				
SNR/L 0032-S22UB			39	32	29.7	29	250	18.75	50				
SNR/L 0032-S27UB			39	32	31.6	29	250	20.96	60	27UI	M5X12	T-20	

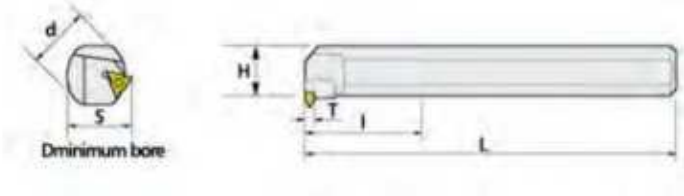
CNR/L-U

Designation	Stock		Dimensions(mm)							Application Insert	Spare parts					Flg.
	R	L	dmin	d	d1	H	L	s	l		Shim	Clamp	Screw	Shim screw	Wrench	
CNR/L 0032-S22U			39	32	32.0	29	250	25.5	60	22UI	STM22UL STM22UR	CH6R3	CHX0621	CTS-6	HW30L	2
CNR/L 0040-T22U			47	40	40.0	36	300	29.5	60							
CNR/L 0040-T27U			48	40	40.0	36	300	29.4	60	27UI	STM27UL STM27UR	CH8R3	CHX0822	CTS-8	HW40L	
CNR/L 0050-U27U			58	50	50.0	45	350	34.4	75							
CNR/L 0060-V27U			69	60	60.0	54	400	39.3	75							

Vertical Type Holder

CNR/L-V(CVNR/L)





Designation	Stock		Dimensions(mm)							Application Insert	Spare parts			
	R	L	dmin	d	H	lmax	L	s	T		Clamp	Clamp Screw	Screw	Wrench
CNR/L 0025-R22-6V	●	○	35	25	23	100	200	17.5	6.35	22VIR 22VIL	-	-	M5.0X12	HW40L T-20
CNR/L 0032-S22-6V	●	○	41	32	29	128	250	22.5	6.35		JTY16	JTS06		
CNR/L 0032-S27-6V	●	○	41	32	29	128	250	22.5	6.35	27VIR 27VIL			M6.0X18	
CNR/L 0032-S27-8V	●	○	41	32	29	128	250	22.5	8.70					
CNR/L 0032-S27-10V	●	○	50	32	29	128	250	22.5	6.35					
CNR/L 0040-T27-6V	●	○	50	40	36	160	300	28.4	8.70					
CNR/L 0040-T27-8V	●	○	50	40	36	160	300	28.4	10.20					
CNR/L 0040-T27-10V	●	○	50	40	36	160	300	28.4	10.20					
CNR/L 0050-U27-6V	●	○	60	50	48	200	350	33.4	6.35					
CNR/L 0050-U27-8V			60	50	48	200	350	33.4	8.70					
CNR/L 0050-U27-10V			60	50	48	200	350	33.4	10.20					
CNR/L 0040-U35-12V	●		50	40	36	160	350	28.4	12.00	35VIR 35VIL	JTY16	JTS06	M6.0X18	HW40L T-20
CNR/L 0040-U35-15V	●		50	40	36	160	350	28.4	15.00					
CNR/L 0050-U35-12V	●		60	50	48	200	350	33.4	12.00					
CNR/L 0050-U35-15V	●		60	50	48	200	350	33.4	15.00					

TOOTOOL®

www.ttooltec.com

Mill-Thread Technical Section

Thread Milling Holders Code System

S	R	0025	-	K	21	C	2
1	2	3		4	5	6	7
Clamping Method	Hand	Cutting Dia.		Lenght of Holder	Cutting edge Lenght	Shank Type	Number of Inserts

1 Clamping Method
S R 0025 - K 21 C - 2

S: Screw only

2 Hand
S R 0025 - K 21 C - 2

R: right hand
L: Left hand

3 Cutting Diametr
S R 0025 - K 21 C - 2

0025=25mm

4 Lenght of Holder
S R 0025 - K 21 C - 2

F H J K M S R

5 Cutting edge Lenght
S R 0025 - K 21 C - 2

12 12.0mm 14 14.0mm 21 21.0mm
30 30.0mm 40 40.0mm

6 Shank Type
S R 0025 - K 21 C - 2

Non: steel shank
C: carbide shank

7 Number of Insert
S R 0025 - K 21 C - 2

Non: 1 insert
2: 2 inserts

Thread Milling Holders Code System

S	R	0063	C	21	-	5	-	22
1	2	3	4	5		6		7
Clamping Method	Hand	Cutting Dia.	Tool Lenght	Cutting edge Lenght		Number of Inserts		Bore Dia.

1 Clamping Method
S R 0063 C 21 - 5 - 22

S: Screw only

2 Hand
S R 0063 C 21 - 5 - 22

R: right hand
L: Left hand

3 Cutting Diametr
S R 0063 C 21 - 5 - 22

0063=63mm

4 Tool Lenght
S R 0063 C 21 - 5 - 22

C D E

5 Cutting edge Lenght
S R 0063 C 21 - 5 - 22

12 12.0mm 14 14.0mm 21 21.0mm
30 30.0mm 40 40.0mm

6 Number of Insert
S R 0063 C 21 - 5 - 22

3: 3 Inserts 4: 4 Inserts
5: 5 Inserts

7 Bore Diameter
S R 0063 C 21 - 5 - 22

22=22.0mm 27=27.0mm
32=32.0mm

Thread Milling Inserts Code System

30	E	1.50	ISO	TTIM45
1	2	3	4	5
Clamping Method	Hand	Cutting Dia.	Lenght of Holder	Cutting edge Lenght

1 Cutting edge Lenght

30 E 1.50 ISO TTIM45

12 12.0mm 14 14.0mm 21 21.0mm
30 30.0mm 40 40.0mm

2 Type of Insert

30 E 1.50 ISO TTIM45

E: External N: Internal
EI: External & Internal

3 Pitch

30 E 1.50 ISO TTIM45

mm: 0.5-6.0 TPI 48-6

4 Standard

30 E 1.50 ISO TTIM45

ISO - ISO Metric
UN - American UN (UNC. UNF, UNEF, UNS)
W - Whit Worth (BSW, BSF, BSP, BSB)
NPT - National Pipe Thread
NPTF - National Pipe Thread
BSPT - British Standard Pipe Thread (BSPT)

5 Carbide Grades

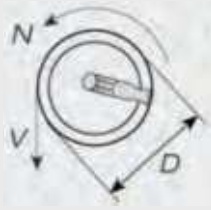
30 E 1.50 ISO TTIM45

TTIM45B

Conversion of Cutting Speed to Rotational Speed

Conversion of Selected cutting speed to rotational speed is calculated by the following formula:

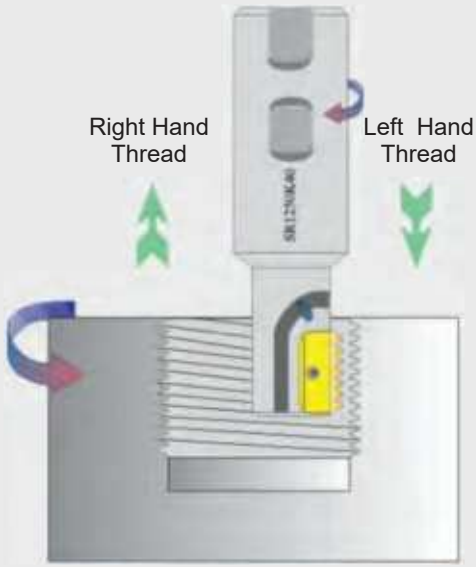
$$N = \frac{V \times 1000}{\pi \times D} = \frac{120 \times 1000}{3.14 \times 30} = 1274 RPM$$



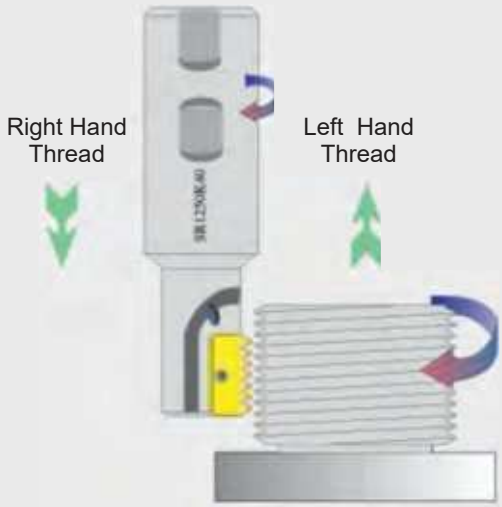
Example: V=120 m/min
D=30 mm

D=Cutting diameter

Internal Thread



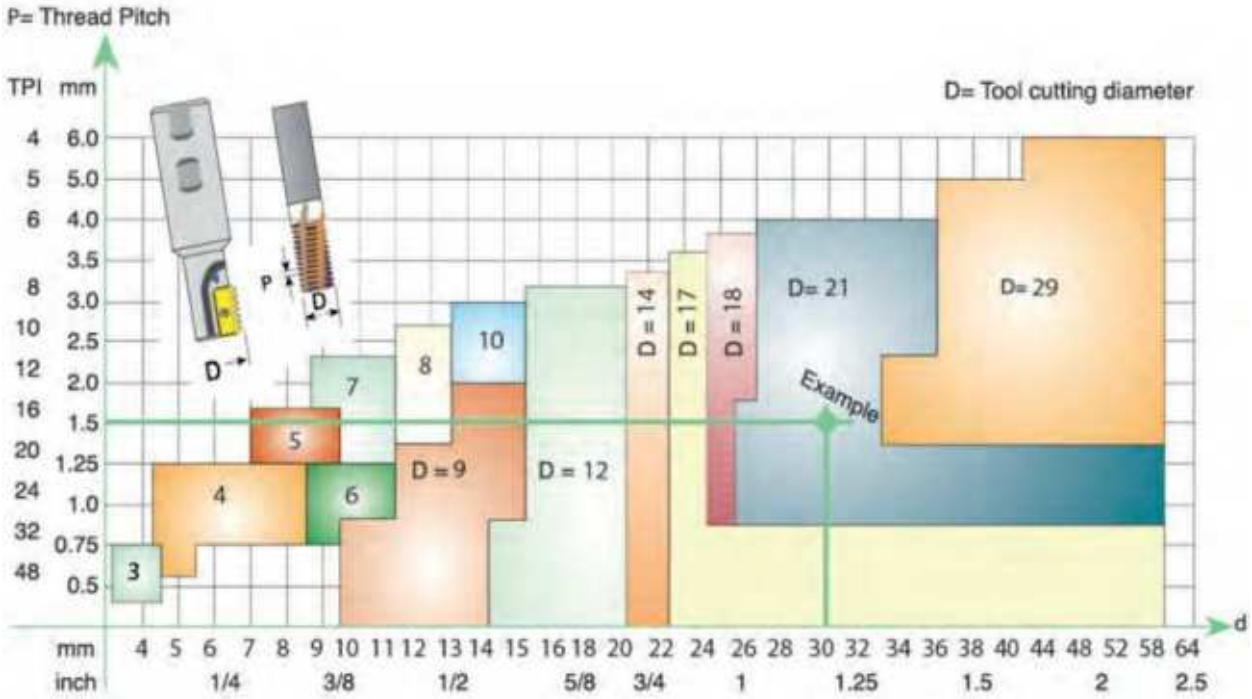
External Thread



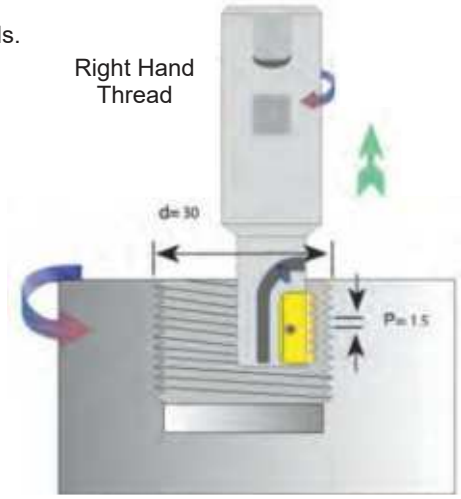
Tool Selection

For indexable and solid carbide Mill Threads

the following chart provides a fairly accurate visual selection tool for Internal Threading.
The chart is suitable for the following thread forms: ISO, UN, WHIT, NPT, NPTF, BSPT and PG.



Any tool with a small cutting diameter can produce larger diameter threads.
Example: Internal thread M30 x 1.5:
Find a Milling Tool to produce d=30 Internal
right nad ISO thread with a thread pitch P=1.5mm.
As can be seen from the chart above, the two red lines
intersect at a selected tool with a cutting diameter of D=21 mm



Chosen toolholder: SR0021 H21
Insert: 21 N 1.5 ISO

If you need assistance, please call your local distributor and ask for help in selecting the appropriate tool as well as for a CNC program to suit your CNC milling machine.

Mill-Thread Technical Section

Recommended Select for Thread Milling

TTIM45B

Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO P20-P30, K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.

Mill-Thread Insert Speed and Feed Selection

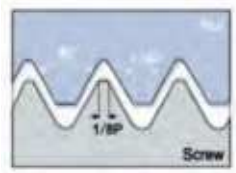
Material		Hardness	Vc (m/min)	Feed Rate (mm)
P Steel	Low alloy steel (alloying elements < 5%)	< HB180	80-160	0.05-0.15
	Higt alloy steel (alloying elements > 5%), cast steel, and tool steel	HB180-280	60-100	
M Stainless steel	Stainless steel & Cast steel	< HB200	130-190	
K Cast iron	Cast iron nodular (GGG)	HB160-260	80-100	
	Grey cast iron (GG)	Tensile Strenght < 350MPA	80-100	
	Malleable cast iron	HB130-230	100-120	
N Non-ferrous alloy	Aluminum alloy	< HB100	180-340	
	Copper and cooper alloy	< HB100	100-200	
	Non metallic	-	115-460	
S Heat resistant material	High Temperature. Alloys, Super Alloys	-	20-40	
	Titanium Alloy	-	25-90	
H Hardened material	Hardened steel	HRC45-55	20-45	

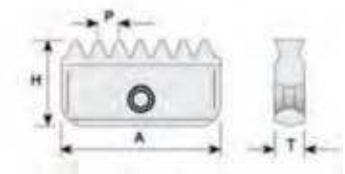
Long Milli-Thread Insert Speed and Feed Selection

Material		Hardness	Vc (m/min)	Feed Rate (mm)
P Steel	Low alloy steel (alloying elements < 5%)	< HB180	100-200	0.10-0.30
	Higt alloy steel (alloying elements > 5%), cast steel, and tool steel	HB180-280	70-170	0.10-0.30
M Stainless steel	Stainless steel & Cast steel	< HB200	90-140	0.10-0.30
K Cast iron	Cast iron nodular (GGG)	HB160-260	100-120	0.05-0.30
	Grey cast iron (GG)	Tensile Strenght < 350MPA	80-100	0.05-0.30
	Malleable cast iron	HB130-230	80-100	0.05-0.30
N Non-ferrous alloy	Aluminum alloy	< HB100	80-400	0.10-0.40
	Copper and cooper alloy	< HB100	100-200	0.10-0.40
	Non metallic	-	100-250	0.10-0.40
S Heat resistant material	High Temperature. Alloys, Super Alloys	-	10-30	0.04-0.10
	Titanium Alloy	-	20-90	0.04-0.10
H Hardened material	Hardened steel	HRC45-55	15-40	0.06-0.12

Mill-Thread Insert

ISO Metric



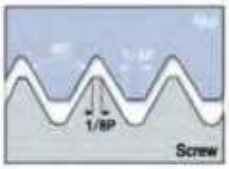


Pitch (mm)		Insert size = A				
		12	14	21	30	40
0.5	Ext.					
0.5	Int.	* 12N 0.50 ISO	14N 0.50 ISO			
0.75	Ext.		14E 0.75 ISO			
0.75	Int.	* 12N 0.75 ISO	14N 0.75 ISO			
1.0	Ext.		14E 1.00 ISO	21E 1.00 ISO		
1.0	Int.	* 12N 1.00 ISO	14N 1.00 ISO	21N 1.00 ISO		
1.25	Ext.		14E 1.25 ISO			
1.25	Int.	* 12N 1.25 ISO	14N 1.25 ISO	21N 1.25 ISO		
1.5	Ext.		14E 1.50 ISO	21E 1.50 ISO	30E 1.50 ISO	40E 1.50 ISO
1.5	Int.	* 12N 1.50 ISO	14N 1.50 ISO	21N 1.50 ISO	30N 1.50 ISO	40N 1.50 ISO
1.75	Ext.		14E 1.75 ISO			
1.75	Int.		14N 1.75 ISO	21N 1.75 ISO		
2.0	Ext.		14E 2.00 ISO	21E 2.00 ISO	30E 2.00 ISO	40E 2.00 ISO
2.0	Int.		14N 2.00 ISO	21N 2.00 ISO	30N 2.00 ISO	40N 2.00 ISO
2.5	Ext.		14E 2.50 ISO	21E 2.50 ISO		
2.5	Int.		14N 2.50 ISO	21N 2.50 ISO		
3.0	Ext.			21E 3.00 ISO	30E 3.00 ISO	40E 3.00 ISO
3.0	Int.			21N 3.00 ISO	30N 3.00 ISO	40N 3.00 ISO
3.5	Ext.				30E 3.50 ISO	
3.5	Int.			21N 3.50 ISO	30N 3.50 ISO	40N 3.50 ISO
4.0	Ext.				30E 4.00 ISO	40E 4.00 ISO
4.0	Int.				30N 4.00 ISO	40N 4.00 ISO
4.5	Ext.					
4.5	Int.				30N 4.50 ISO	40N 4.50 ISO
5.0	Ext.					40E 5.00 ISO
5.0	Int.				30N 5.00 ISO	40N 5.00 ISO
5.5	Ext.					
5.5	Int.				30N 5.50 ISO	40N 5.50 ISO
6.0	Ext.					40E 6.00 ISO
6.0	Int.					40N 6.00 ISO

H	6.3	7.5	12.0	16.0	20.0
T	2.9	3.1	4.7	5.5	6.3

※ One cutting edge

American UN (UN, UNC, UNF, UNEF, UNS)



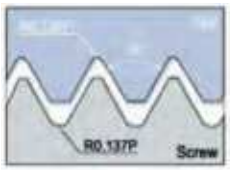
Pitch (mm)		Insert size = A				
		12	14	21	30	40
32	Ext.	* 12N 32 UN	14E 32 UN			
32	Int.		14N 32 UN			
28	Ext.	* 12N 28 UN	14E 28 UN			
28	Int.		14N 28 UN			
27	Ext.					
27	Int.		14N 27 UN			
24	Ext.	* 12N 24 UN	14E 24 UN	21E 24 UN		
24	Int.		14N 24 UN	21N 24 UN		
20	Ext.	* 12N 20 UN	14E 20 UN	21E 20 UN	30E 20 UN	
20	Int.		14N 20 UN	21N 20 UN	30N 20 UN	
18	Ext.	* 12N 18 UN	14E 18 UN	21E 18 UN	30E 18 UN	
18	Int.		14N 18 UN	21N 18 UN	30N 18 UN	
16	Ext.	* 12N 16 UN	14E 16 UN	21E 16 UN	30E 16 UN	40E 16 UN
16	Int.		14N 16 UN	21N 16 UN	30N 16 UN	40N 16 UN
14	Ext.		14E 14 UN	21E 14 UN	30E 14 UN	40E 14 UN
14	Int.		14N 14 UN	21N 14 UN	30N 14 UN	40N 14 UN
13	Ext.		14E 13 UN			
13	Int.					
12	Ext.		14E 12 UN	21E 12 UN	30E 12 UN	40E 12 UN
12	Int.		14N 12 UN	21N 12 UN	30N 12 UN	40N 12 UN
11	Ext.		14E 11 UN	21E 11 UN		
11	Int.		14N 11 UN			
10	Ext.		* 14E 10 UN	21E 10 UN	30E 10 UN	40E 10 UN
10	Int.		14N 10 UN	21N 10 UN	30N 10 UN	40N 10 UN
9	Ext.					
9	Int.		**14N 9 UN			
8	Ext.				30E 8 UN	40E 8 UN
8	Int.			21N 8 UN	30N 8 UN	40N 8 UN
7	Ext.					
7	Int.			21N 7 UN		
6	Ext.				30E 6 UN	40E 6 UN
6	Int.				30N 6 UN	40N 6 UN
5	Ext.					
5	Int.				30N 5 UN	
4.5	Ext.					
4.5	Int.					40N 4.5 UN
4	Ext.					
4	Int.					40N 4 UN

H	6.3	7.5	12.0	16.0	20.0
T	2.9	3.1	4.7	5.5	6.3

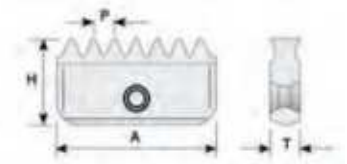
※ One cutting edge ※ Cannot be used with carbide shank Toolholders.

Mill-Thread Insert

Whitworth (BSW, BSF, BSP, BSB)



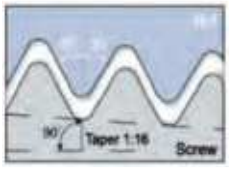
Same Insert for External and Internal thread.



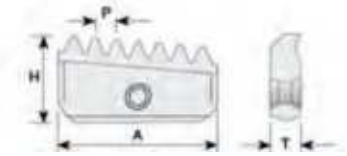
Pitch (mm)	Insert size = A				
	12	14	21	30	40
24		14EI 24W			
20		14EI 20W	21EI 20W		
19	* 12EI 19 W	14EI 19W	21EI 19W		
18		14EI 18W			
16		14EI 16W	21EI 16W	30EI 16W	
14		14EI 14W	21EI 14W	30EI 14W	
12		14EI 12W			
11		* 14EI 11W	21EI 11W	30EI 11W	40EI 11W
10			21EI 10W		
8					40EI 8W
H	6.3	7.5	12.0	16.0	20.0
T	2.9	3.1	4.7	5.5	6.3

※ One cutting edge

British Standard Pipe Thread (BSPT)

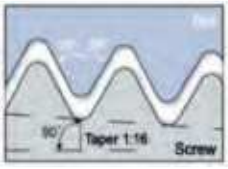


Conical pipe inserts are one-sided and may be used for both External and Internal threading.



Pitch (mm)	Insert size = A				
	12	14	21	30	40
19	12EI 19 BSPT	14EI 19 BSPT			
14		14EI 14 BSPT	21EI 14 BSPT		
11			21EI 11 BSPT	30EI 11 BSPT	40EI 11 BSPT
H	6.3	7.5	12.0	16.0	20.0
T	2.9	3.1	4.7	5.5	6.3

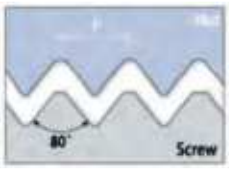
National Pipe Thread (NPT)



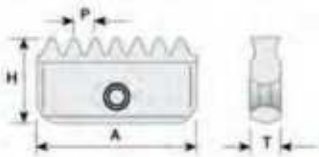
Conical pipe inserts are one-sided and may be used for both External and Internal threading.

Pitch (mm)	Insert size = A				
	12	14	21	30	40
18	12EI 18 NPT	14EI 18 NPT			
14		14EI 14 NPT	21EI 14 NPT		
11.5			21EI 11.5 NPT	30EI 11.5 NPT	40EI 11.5 NPT
8				30EI 8 NPT	40EI 8 NPT
H	6.3	7.5	12.0	16.0	20.0
T	2.9	3.1	4.7	5.5	6.3

PG - DIN 40430



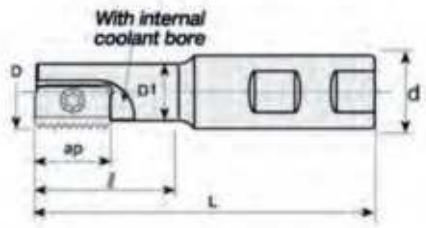
Conical pipe inserts are one-sided and may be used for both External and Internal threading.



Pitch (mm)	Insert size = A				
	12	14	21	30	40
18		14EI 18 PG (PG9, 11, 13.5, 16)	21EI 18 PG (PG16)		
16			21EI 16 PG (PG21, 29, 36, 42, 48)	30EI 16 PG (Pg36, 42, 48)	
H	6.3	7.5	12.0	16.0	20.0
T	2.9	3.1	4.7	5.5	6.3

Mill-Thread Holder

Single Insert Toolholder

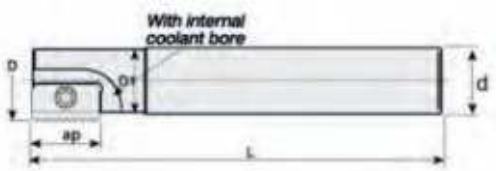


Designation	Stock		Dimensions(mm)						Application Insert	Spare parts	
	R	L	D	d	D1	L	ℓ	ap		Screw	Wrench
SR0009-H12(1)	●		9.5	20	7.5	85	14	12	12E/N	SX2TM	K2T
SR0010-H12	●		9.5	20	7.6	85	16	12			
SR0012-F14	●		12.0	20	8.9	75	20	14	14E/N	SX3TM	K3T
SR0012-H14	●		12.0	20	8.9	100	30	14			
SR0014-H14	●		14.5	20	11.7	85	25	14			
SR0017-H14	●		17.0	20	13.4	85	30	14			
SR0017-K14	●		17.0	20	13.4	120	40	14			
SR0018-H21(2)	●		18.0	20	14.4	85	30	21	21E/N	SX5TM	K5T
SR0018-K21(2)	●		18.0	20	14.4	120	45	21			
SR0021-H21	●		21.0	20	16.5	94	40	21			
SR0029-J30	●		29.0	25	23.0	110	50	30	30E/N	SX7TM	K7T
SR0048-M40	●		48.0	40	35.0	153	78	40	40E/N	SX7TM	K7T

※ (1) Not for conical inserts: 12-18NPT, 12-18 NPTF, 12-19 BSPT

※ (2) Cannot be used with the following inserts: 21 I 3.5 ISO, 21 I 8 UN, 21 I 7 UN, 21-11 BSPT, 21-11.5 NPT, 21-11.5 NPTF

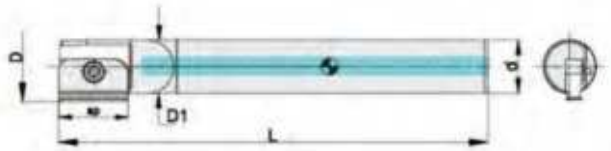
Single Insert Toolholder



Designation	Stock		Dimensions(mm)						Application Insert	Spare parts	
	R	L	D	d	D1	L	ℓ	ap		Screw	Wrench
SR0025-K21	●		25	20	20.7	125	-	21	21E/N	SX5TM	K5T
SR0031-M30	●		31	25	24.5	150	-	30	30E/N	SX7TM	K7T
SR0031-Q30	●		31	25	24.5	180	-	30			
SR0038-M30	●		38	32	31.5	150	-	30			
SR0038-Q40	●		38	32	31.5	180	-	40	40E/N	SX7TM	K7T
SR0048-R40	●		48	40	36	210		40			

※ For holders with long overhang reduce the cutting speed and feed rate between 20% to 40% (depends on workpiece material, pitch and overhang)

Long Carbide Shank Toolholder

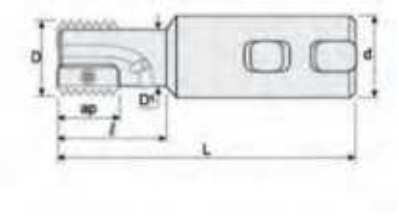


Designation	Stock		Dimensions(mm)						Application Insert	Spare parts	
	R	L	D	d	D1	L	ℓ	ap		Screw	Wrench
SR0010-K12C	●		9.9	8	8.0	125	-	12	12E/N	SX2TM	K2T
SR0013-H14C	●		13.2	10	10.0	110	-	14	14E/N	SX3TM	K3T
SR0013-J14C	●		13.2	10	10.0	155	-	14			
SR0015-K14C	●		15.2	12	12.0	175	-	14			
SR0021-K21C	●		21.0	16	16.0	130	-	21	21E/N	SX5TM	K5T
SR0021-M21C	●		21.0	16	16.0	200	-	21			
SR0027-S30C	●		27.0	20	20.0	250	-	30	30E/N	SX7TM	K7T

※ For holders with long overhang reduce the cutting speed and feed rate between 20% to 40% (depends on workpiece material, pitch and overhang)

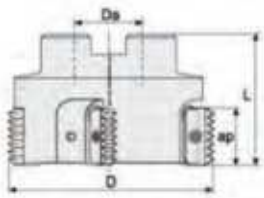
Mill-Thread Holder

Twin Insert Toolholder



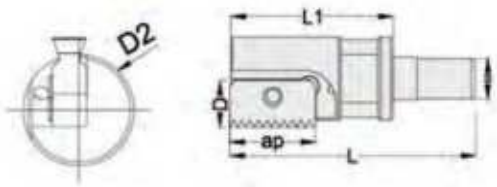
Designation	Stock		No. of Inserts	Dimensions(mm)						Application Insert	Spare parts	
	R	L		D	d	D1	L	ℓ	ap		Screw	Wrench
SR0020G14-2			2	20	20	16.0	93	37	14	14E/N	SX3TM	K3T
SR0020J14-2			2	20	20	16.0	113	57	14			
SR0030J21-2			2	30	25	24.0	113	52	21	21E/N	SX5TM	K5T
SR0030L21-2			2	30	25	24.0	140	80	21			
SR0040L30-2			2	40	32	30.0	135	7	30	30E/N	SX7TM	K7T
SR0040P30-2			2	40	32	30.0	170	103	30			
SR0050M40-2			2	50	50	38.0	153	80	40	40E/N	SX7TM	K7T

Multi Insert Thread Milling Cutter



Designation	Stock		No. of Inserts	Dimensions(mm)				Arbor	Application Insert	Spare parts	
	R	L		D	d	H	ap			Screw	Wrench
SR0050C21-4-22	●		4	50	22	50	21	A	21E/N	SX5TM	K5T
SR0063C21-5-22	●		5	63	22	50	21	A			
SR0063C30-4-22	●		4	63	22	50	30	A	30E/N	SX7TM	K7T
SR0080C30-4-27	●		4	80	27	55	30	A			
SR0100D30-4-32	●		4	100	32	60	30	B			
SR0100D30-8-32	●		8	100	32	60	30	B			
SR0080D40-4-27	●		4	80	27	65	40	A	40E/N	SX7TM	K7T
SR0100E40-4-32	●		4	100	32	70	40	B			
SR0100E40-6-32	●		6	100	32	70	40	B			

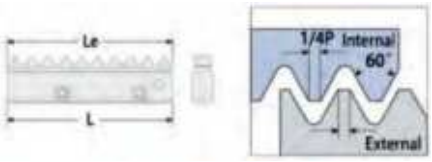
Thread Milling Modular



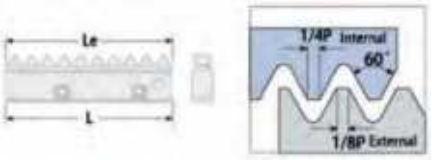
Designation	Stock		No. of Inserts	Dimensions(mm)						Application Insert	Spare parts	
	R	L		D	D2	L1	L	ap	M		Screw	Wrench
SR0013D14-M06-1T			1	13.7	9.6	17	23.3	14	M6	14E/N	SX3TM	K3T
SR0015D14-M08-1T			1	15.8	11.7	17	24.5	14	M8			
SR0020D14-M10-2T			2	20.0	15.3	18	29.3	14	M10			
SR0020D14-M10-3T			3	20.0	15.3	24	35.3	14	M10			
SR0021D21-M10-1T			1	21.0	15.3	25	36.3	21	M10	21E/N	SX5TM	K5T
SR0025D21-M10-1T			1	25.0	19.7	40	60.0	21	M10			
SR0030D21-M16-2T			2	30.4	23.9	25	42.0	21	M16			
SR0030D21-M16-3T			3	30.4	23.9	34	51.0	21	M16			
SR0027D30-M12-1T			1	27.0	18.3	38.2	52.0	30	M12	30E/N	SX7TM	K7T

Super Fast Mill-Thread Insert

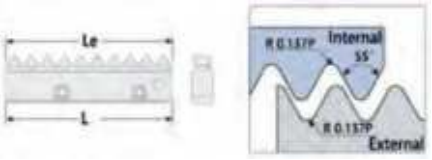
ISO Metric

Designation (External)	Designation (Internal)	Pitch (mm)	Dimensions(mm)		Teeth	Picture
			L	Le	Zt	
H25E1.00ISO SM	H25N1.00ISO SM	1.0	25	24.00	24	
H25E1.25ISO SM	H25N1.25ISO SM	1.25	25	23.75	19	
H25E1.50ISO SM	H25N1.50ISO SM	1.5	25	24.00	16	
H25E2.00ISO SM	H25N2.00ISO SM	2.0	25	24.00	12	
H25E2.50ISO SM	H25N2.50ISO SM	2.5	25	25.00	10	
H25E3.00ISO SM	H25N3.00ISO SM	3.0	25	24.00	8	

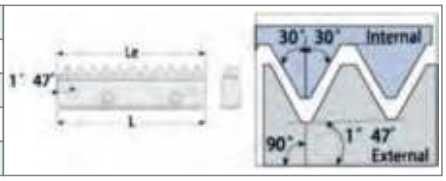
American UN (UN, UNF, UNEF. UNS)

Designation (External)	Designation (Internal)	Pitch (TPI)	Dimensions(mm)		Teeth	Picture
			L	Le	Zt	
H25E20UN SM	H25N20UN SM	20	25	24.13	19	
H25E18UN SM	H25N18UN SM	18	25	23.99	17	
H25E16UN SM	H25N16UN SM	16	25	23.81	15	
H25E14UN SM	H25N14UN SM	14	25	23.58	13	
H25E12UN SM	H25N12UN SM	12	25	23.28	11	
H25E10UN SM	H25N10UN SM	10	25	22.86	9	
H25E9 UN SM	H25N9 UN SM	9	25	22.58	8	
H25E8 UN SM	H25N8 UN SM	8	25	22.22	7	

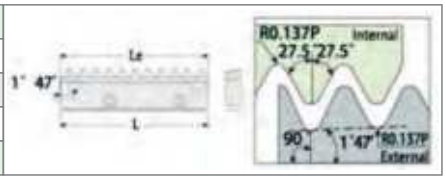
Whitworth (BSW, BSF, BSP, BSB)

Designation (External+Internal)	Pitch (TPI)	Dimensions(mm)		Teeth	Picture
		L	Le	Zt	
H25EI16W SM	16	25	23.81	15	
H25EI14W SM	14	25	23.58	13	
H25EI12W SM	12	25	23.28	11	
H25EI11W SM	11	25	23.09	10	

National Pipe Thread (NPT)

Designation (External+Internal)	Pitch (TPI)	Dimensions(mm)		Teeth	Picture
		L	Le	Zt	
H25EI14 NPT SM	14	25	23.58	13	
H25EI11.5NPT SM	11.5	25	24.30	11	
H25EI8 NPT SM	8	25	22.22	7	

British Standard Pipe Thread (BSPT)

Designation (External+Internal)	Pitch (TPI)	Dimensions(mm)		Teeth	Picture
		L	Le	Zt	
H25EI14BSPT SM	14	25	24.06	13	
H25EI11BSPT SM	11	25	23.09	10	

Super Fast Mill-Thread Holder

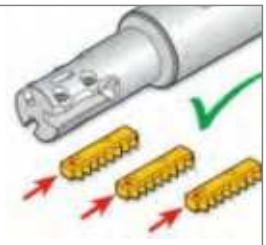
SM Standard Toolholder

Designation	Stock		No. of Inserts	Dimensions(mm)						Spare parts	
	R	L		D1	D2	d	L1	L	ap	Screw	Wrench
HSMC25 17-A25-26T2 (1)			2	14.0	17.0	25	26	85	25	SSTM4-3.6P	TT-08P
HSMC25 17-A25-36T2 (1)			2	14.0	17.0	25	36	95	25		
HSMC25 19-A25-32T2			2	15.0	19.0	25	32	92	25		
HSMC25 19-A25-44T2			2	15.0	19.0	25	44	104	25		
HSMC25 21-A25-37T3			3	16.5	20.5	25	37	96	25		
HSMC25 21-A25-44T3			3	16.5	20.5	25	44	103	25		
HSMC25 22-A25-43T3			3	18.0	22.0	25	43	102	25		
HSMC25 22-A25-55T3			3	18.0	22.0	25	55	114	25		
HSMC25 30-A25-55T5			5	26.0	30.0	25	55	115	25		
HSMC25 30-A25-80T4			4	26.0	30.0	25	80	140	25		

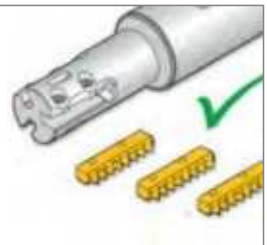
※ Insert with a thread pitch of > 3 mm or > 8TPI are not moutable

Standard Thread Application by Toolholder

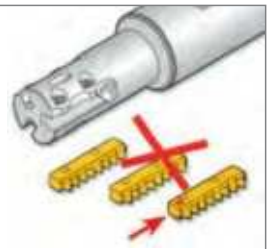
Tooholder	Min. Thread Dia.						
	D2 (mm)	ISO (coarse)	ISO (fine)	UNC	UN/UNF/UNEF/UNS	BSF	
HSMC25 17-A25-26T2 HSMC25 17-A25-36T2	17.0	M20x2.5	"M21x1; M21x1.5; M22x2"	-	7/8-10UNS; 13/16-12UN; 7/8-14UNF; 3/4-16UNF; 3/4-18UNS; 3/4-20UNEF	"7/8-11; 7/8-12; 7/8-14; 7/8-16"	1/2-14
HSMC25 19-A25-32T2 HSMC25 19-A25-44T2	19.0	M22x2.5 M24x3	"M19x1; M19x1.5; M20x2"	"7/8-9; 1-8'	"7/8-20UNEF; 7/8-18UNS; 7/8-16UN; 7/8-14UNF; 7/8-12UN; 7/8-10UNS"	"7/8-16; 7/8-14; 15/16-12; 15/16-11"	5/8-14
HSMC25 21-A25-37T3 HSMC25 21-A25-44T3	20.5	M24x3	"M22x1; M22x1.5; M23x2; M23.5x2.5"	1-8	"15/16-9UN; 1-10UNS; 15/16-12UN; 7/8-20UNEF"	"1-11; 1-12; 1-14; 1-16"	5/8-14
HSMC25 22-A25-43T3 HSMC25 22-A25-55T3	22.0	M27x3	"M24x1; M24x1.5; M25x2; M25x2.5"	-	"1 11/16-8UN; 1-9UN; 1-10UNS; 1-12UNF; 1-14UNS; 1-16UN; 1-18UN; 15/16-20UNEF"	"1-11; 1-12; 1-14; 1-16"	3/4-14
HSMC25 30-A25-55T5 HSMC25 30-A25-80T4	30.0	-	"M32x1; M32x1.5; M33x2; M33x2.5; M34x3"	-	1 3/8-8UN; 1 3/8-9UN; 1 3/8-10UN; 1 5/16-12UN; 1 3/8-14UNS; 1 5/16-16UN; 1 5/16-18UNEF; 1 5/16-20UN	"1 3/8-11; 1 3/8-12; 1 3/8-14; 1 3/8-16"	1-11



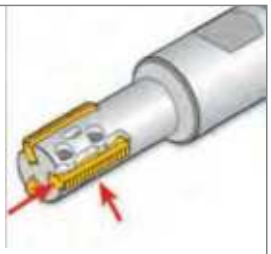
Side with identification marks.



Side without identification marks.



Always mount all insert with identification marks on the same side.



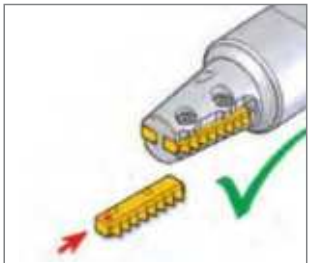
To mount insert correctly, push the insert toward the pocket walls.

SM Conical Toolholder

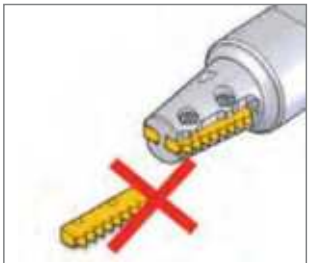
Designation	Stock		No. of Inserts	Dimensions(mm)						Spare parts	
	R	L		D1	D2	d	L1	L	ap	Screw	Wrench
HSMC25 17-A25-26T2-PT			2	14.0	17.2	25	26	85	25	SSTM4-3.6P	TT-08P
HSMC25 22-A25-43T3-PT			3	18.0	22.2	25	43	102	25		
HSMC25 28-A25-43T3-PT			3	25.0	28.4	25	43	103	25		

Conical Thread Application by Toolholder

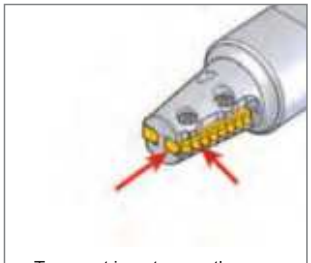
Tooholder	Min. Thread Dia.			
	D2 (mm)	NPT	NPTF	BSPT
HSMC25 17-A25-26T2-PT	17.2	1/2-14; 3/4-14; 1-11.5; 1 1/4-11.5; 1 1/2-11.5; 2-11.5	1/2-14; 3/4-14; 1-11.5; 1 1/4-11.5; 1 1/2-11.5; 2-11.5	1/2-14; 3/4-14
HSMC25 22-A25-43T3-PT	22.2	3/4-14; 1-11.5; 1 1/4-11.5; 1 1/2-11.5; 2-11.5	3/4-14; 1-11.5; 1 1/4-11.5; 1 1/2-11.5; 2-11.5	3/4-14; 1-11; 1 1/4-11; 1 1/2-11; 2-11; 2 1/2-11; 3-11; 4-11; 5-11; 6-11
HSMC25 28-A25-43T4-PT	28.4	1-11.5; 1 1/4-11.5; 1 1/2-11.5; 2-11.5	1-11.5; 1 1/4-11.5; 1 1/2-11.5; 2-11.5	1-11; 1 1/4-11; 1 1/2-11; 2-11; 2 1/2-11; 3-11; 4-11; 5-11; 6-11



On Conical inserts. the identification mark must face up.



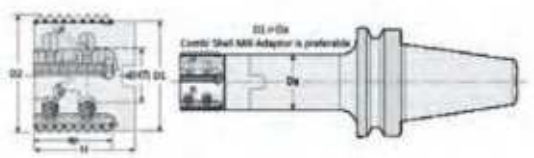
Side without identification marks.



To mount insert correctly, push the insert toward the pocket walls.

Super Fast Mill-Thread Cutter

SM Conical Toolholder



Coolant-Thru is recommended, especially when D2>0.7 x nominal thread diameter

Designation	Stock		No. of Inserts	Dimensions(mm)						Spare parts	
	R	L		D1	D2	d	Da	H	ap	Screw	Wrench
HSMC25 036-16-05T			5	32	36.0	16	38	33.5	25	SSTM4-3.6P	TT-08P
HSMC25 044-22-06T			6	40	44.0	22	48	38.0	25		
HSMC25 052-27-08T			8	48	52.0	27	60	40.0	25		
HSMC25 036-16-05T-PT			5	32	35.9*	16	38	33.5	25		

※ For inserts 8NPT and 8NPTF use CNC program 36.4mm.

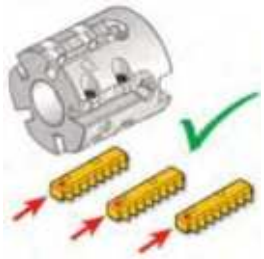
Standard Thread Application by Toolholder

Tooholder		Min. Thread Dia.			
	D2 (mm)	ISO(fine)	UN/UNF/YNEF/UNS	BSF	BSP(G)
HSMC25 036-16-05T-PT	36.0	M38x1; M39x1.5; M39x2: M40x3	1 9/16 -12UN; 1 5/8 -14UNS; 1 9/16 -16UN; 1 1/2 -8UNEF; 1 1/2 -20UN	“1 3/4 -16 1 3/4 -12"	1 1/4 - 11
HSMC25 044-22-06T	44.0	M48x1; M48x1.5; M48x2: M48x3	1 7/8 -12UN; 1 13/16 -16UN; 1 13/16 -20UN; 1 15/16 -8UN; 1 7/8 -10UNS; 1 7/8 -14UNS	“2-16 2-12"	1 1/2 - 11
HSMC25 052-27-08T	19.0	M55x1; M55x1.5; M55x2: M56x3	2 1/4 -8UN; 2 1/4 -10UN; 2 1/4 -12UN; 2 1/4 -14UN 2 1/4 -16UN; 2 1/4 -18UN; 2 1/4 -20UN; 7/8 - 14UNF: 7/8 -12UN; 7/8 -10UNS	“2 1/4 -16 2 1/4 -12"	2-11

Conical Thread Application by Toolholder

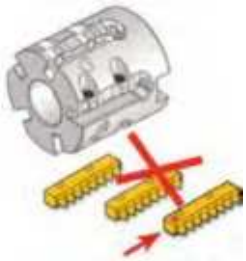
Tooholder		Min. Thread Dia.		
	D2 (mm)	NPT	NPTF	BSPT
HSMC25 0036-1625T-PT	35.9*	1 1/4 - 11.5; 1 1/2 - 11.5; 2 11.5; 2 1/2 - 8 (and up)	1 1/4 - 11.5; 1 1/2 - 11.5; 2 11.5; 2 1/2 - 8; 3-8	1 1/2-6x11

※ For inserts 8NPT and 8NPTF use CNC program 36.4mm.



Side with identification marks.

Side without identification marks.



Always mount all inserts on the same side!

To mount insert correctly, push the insert toward the pocket walls.

Thread Milling for Deep Holes

D-Thread Code System

S	R	0015	-	11	U	-	A16	-	95
1	2	3		4	5		6		7

1 S R 0021 - 11 U - 2 A16 95

S: Screw on system

2 S R 0021 - 11 U - 2 A16 95

R: Internal right hand

3 S R 0021 - 11 U - 2 A16 95

Cutting diametr

0015 = 15mm

4 S R 0021 - 11 U - 2 A16 95

Insert size

11 = 6.35 16 = 9.525
22 = 12.7 27 = 15.875

5 S R 0021 - 11 U - 2 A16 95

Insert style

U: A:

6 S R 0021 - 11 U - 2 A16 95

16 = Shank diameter 16mm

A: Weldon shank C: Cylindrical shank E: Carbide shank

7 S R 0021 - 11 U - 2 A16 95

Length of holder

11	U	I	1.50	ISO	D	TTIM45
1	2	3	4	5	6	7

1 11 U I 1.50 ISO D TTIM45

Insert size

11 = 6.35	16 = 9.525
22 = 12.7	27 = 15.875

2 11 U I 1.50 ISO D TTIM45

Insert style

U: A:

3 11 U I 1.50 ISO D TTIM45

Insert style

I: Internal	E: External + Internal

3 11 U I 1.50 ISO D TTIM45

Pitch

Full profile		Partial profile	
mm	TPI	mm	TPI
1.0-8.0	18-2.5	2.5-4.0	10-6
		1.5-2.5	18-10
		1.5-4.0	16-6
		2.5-6.0	10-4
		4.0-6.0	6-4
		6.0-8.0	4-3

5 11 U I 1.50 ISO D TTIM45

Standard

60 - Partial Profile 60°	ISO - ISO Metric
55 - Partial Profile 55°	UN - American UN
TR - Trapez DIN 103	NPT - NPT

6 11 U I 1.50 ISO D TTIM45

Deep hole thread

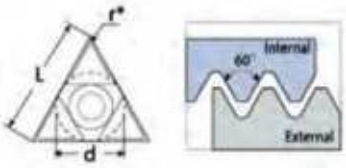
7 11 U I 1.50 ISO D TTIM45

Carbide grade

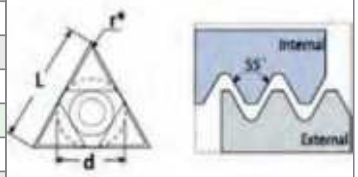
TTIM45	TTIS30	TTIG30

D-Thread Insert

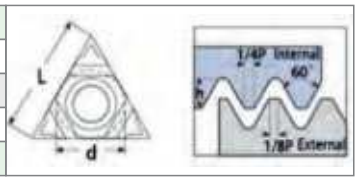
Partial Profile 60°

Designation	Pitch		Dimensions			Picture
	mm	TPI	d	L	r*	
11UI 60D	1.5-4.0	16-6	6.35U	11	0.10	
11UI 60D 48-16	0.5-1.5	48-16	6.35U	11	0.05	
11UI 60D 18-10	1.5-2.5	18-10	6.35U	11	0.08	
11UI 60D 16-12	1.5-2.0	16-12	6.35U	11	0.06	
11UI 60D 9-12	2.0-2.5	9-12	6.35U	11	0.11	
11UI 60D 10-6	2.5-4.0	10-6	6.35U	11	0.14	
16UI 60D	2.5-6.0	10-4	9.525U	16	0.16	
16UI 60D 16-12	1.5-2.0	16-12	9.525U	16	0.06	
16UI 60D 10-7	2.5-3.5	10-7	9.525U	16	0.14	
16UI 60D 6-4	4.0-6.0	6-4	9.525U	16	0.25	
22UI 60D	6.0-8.0	4-3	12.7U	22	0.30	

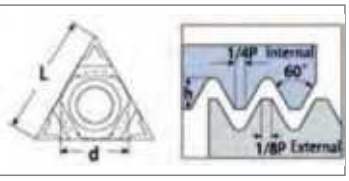
Partial Profile 55°

Designation	Pitch	Dimensions			Picture
	TPI	d	L	r*	
11UI 55D	11-7	6.35U	11	0.24	
11UI 55D 48-16	48-16	6.35U	11	0.11	
11UI 55D 16-12	16-12	6.35U	11	0.08	
16UI 55D	11-7	9.525U	16	0.24	
16UI 55D 16-12	16-12	9.525U	16	0.08	
16UI 55D 6-4	6-4	9.525U	16	0.07	
22UI 55D	4-3	12.7U	22	0.50	

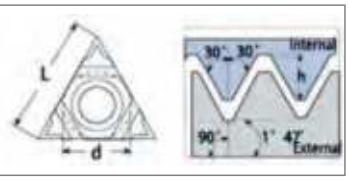
ISO Metric

Designation	Pitch	Dimensions		Toolholder Cutting Diameter D2(mm)	Picture
	TPI	d	L	* D2 Adjustment	
11UI - 1.50ISOD	1.50	6.35U	11	For 1.5ISO change D2 to D2-1.0	
11UI - 2.00ISOD	2.00	6.35U	11	For 2.0ISO change D2 to D2-1.15	

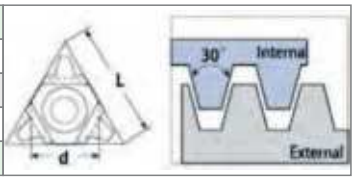
American UN - UNC; UNF; UNEF; UNS

Designation	Pitch	Dimensions		Toolholder Cutting Diameter D2(mm)	Picture
	TPI	d	L	* D2 Adjustment	
11UI - 14UND	14	6.35U	11	For 14ISO change D2 to D2-1.06	
11UI - 12UND	12	6.35U	11	For 12ISO change D2 to D2-1.15	

National Pipe Thread (NPT)

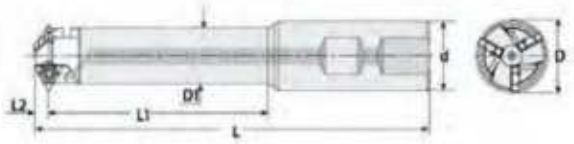
Designation	Pitch	Dimensions		Picture
	TPI	d	L	
11UI - 14 NPTD	14	6.35U	11	
11UI - 11.5 NPTD	11.5	6.35U	11	
16UI - 11.5 NPTD	11.5	9.525U	16	
16UI - 8 NPTD	8	9.525U	16	
22UI - 8 NPTD	8	12.7U	22	

Trapez

Designation	Pitch	Dimensions		Application	Picture
	TPI	d	L		
11UI - 3.0TRD	3.0	6.35U	11	(TR22-TR30)x3	
11UI - 4.0TRD	4.0	6.35U	11	(TR20-TR28)x4	
11UI - 5.0TRD	5.0	6.35U	11	Tr22x5; TR28x5	

D-Thread Holder

Standard Toolholders - Weldon Shank (U Style)



Designation	Stock		No. of Inserts	Dimensions(mm)						Insert Size		Spare parts	
	R	L		D	D1	d	L1	L2	L	L	d	Screw	Wrench
SR0015-11U-A16-95	●		1	14.75	11.0	16	40	5.4	95	11U	6.35U	Y55-SSTX2.5-3.6P	TPF-08
SR0021-11U-A25-125	●		2	20.65	16.0	25	60	5.4	125				
SR0023-11U-A25-135	●		3	23.00	17.7	25	70	5.4	135				
SR0026-11U-A25-150	●		3	26.00	20.4	25	80	5.4	150				
SR0031-11U-A32-170	●		4	31.00	25.7	32	95	5.4	170				
SR0036-16U-A32-170	●		3	36.50	29.0	32	95	8.0	170	16U	9.525U	Y60-SStx3.5-5.3P	TPF-15
SR0036-16U-A32-225	●		3	36.50	28.0	32	145	8.0	225				
SR0042-16U-A40-200	●		4	42.00	34.2	40	120	8.0	200				
SR0050-22U-A40-300			4	50.00	39.0	40	190	11.0	300	22U	12.7U	Y55-SSTX4.5-6.8P	TPF-20

Weldon Shank (U Style) Applications

Thread Applications for Partial Profile Inserts

Tool holder		Min. Thread Dia.						
Designation	D	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP(G)	Partial 55°	Trapez
SR0015-11U-A16-95	14.75	M18x2.5 M24x3.0	M16x0.5, M16x0.75, M16x1.0, M17x1.25, M17x1.5, M17x2.0	$^{3}/_{4}$ -10	$^{5}/_{8}$-32UN, $^{5}/_{8}$-28UN, $^{5}/_{8}$-27UNS, $^{11}/_{16}$-24UN, $^{11}/_{16}$-20UN, $^{11}/_{16}$-16UN, $^{3}/_{4}$-14UNS,$^{3}/_{4}$-12UN	$^{3}/_{8}$-19, $^{1}/_{2}$-14, 1-11	$^{11}/_{16}$-14; $^{3}/_{4}$-12, $^{7}/_{8}$-11; $^{3}/_{4}$-10. $^{7}/_{8}$-9; 1-8, $1^{1}/_{8}$-7	TR22x3, TR24x3
SR0021-11U-A25-125	20.65	M24x3.0 M30x3.5	M22x0.5, M22x0.75, M22x1.0, M23x1.25, M23x1.5, M23x2.0	1-8 $1^{1}/_{8}$-7 $1^{3}/_{8}$-6	$^{7}/_{8}$-32UN, $^{7}/_{8}$-28UN, $^{7}/_{8}$-27UNS, $^{7}/_{8}$-24UNS, $^{7}/_{16}$-20UNEF, 1-18UNS, $^{15}/_{16}$-16UN, 1-14UNS, $^{15}/_{16}$-12UN, 1-10UNS	$^{3}/_{4}$-14, 1-11	1-26, 1-20, 1-16, 1-12, 1-10, $1^{1}/_{8}$-9, 1-8, $1^{1}/_{8}$-7	TR26-TR60x3
SR0023-11U-A25-135	23.00	M27x3.0 M30x3.5 M36x4.0	M24x05, M24x0.75, M24x1.0, M25x1.25, M26x1.5, M26x2.0, M27x2.5	$1^{1}/_{8}$-7	1-32UN, 1-28UN, 1-27UNS, 1-24UNS, 1-20NEF, 1-18UNS, 1-16UN, 1-14UNS, 1-12UNF, $1^{1}/_{8}$-10UNS, $1^{1}/_{8}$-8UN	$^{3}/_{4}$-14, 1-11	1-26, 1-20, 1-16, $1^{1}/_{16}$-12, $1^{1}/_{8}$-9, $1^{1}/_{8}$-7	-
SR0026-11U-A25-150	26.00	M30x3.5 M36x4.0	M27x0.5, M27x0.75, M28x1.0, M28x1.25, M28x1.5, M29x2.0, M30x2.5, M30x3.0	$1^{1}/_{4}$-7 $1^{3}/_{8}$-6	$1^{1}/_{8}$-28UN, $1^{1}/_{8}$-24UNS, $1^{1}/_{8}$-20UN, $1^{1}/_{8}$-18UNEF, $1^{1}/_{8}$-16UN, $1^{1}/_{8}$-14UNS, $1^{1}/_{8}$-12UNF, $1^{1}/_{4}$-10UNS, $1^{3}/_{16}$-8UN	$^{7}/_{8}$-14, 1-11	$1^{1}/_{8}$-26, $1^{1}/_{8}$-20, $1^{3}/_{8}$-16, $1^{3}/_{8}$-12, $1^{3}/_{16}$-8, $1^{1}/_{4}$-7	-
SR0031-11U-A32-170	31.00	M36x4.0	M32x0.5, M32x0.75, M33x1.0, M33x1.25, M33x1.5, M34x2.0, M34x2.5, M35x3.0, M36x3.5	$1^{1}/_{2}$-6	$1^{5}/_{16}$-28UN, $1^{3}/_{8}$-24UNS, $1^{5}/_{16}$-20UN, $1^{5}/_{16}$-18UNEF, $1^{5}/_{16}$-16UN, $1^{3}/_{8}$-14UNS, $1^{3}/_{8}$-12UNF, $1^{3}/_{8}$-10UNS, $1^{3}/_{8}$-8UN	$1^{1}/_{8}$-11	$1^{3}/_{8}$-26, $1^{3}/_{8}$-20, $1^{3}/_{8}$-16, $1^{3}/_{8}$-12, $1^{7}/_{16}$-8	-
SR0036-16U-A32-170 SR0036-16U-A32-225	36.50	M42x4.5 M48x5.0 M56x5.5 M64x6.0	M39x1.5, M39x2.0, M40x2.5, M41x3.0, M42x3.5, M42x4.0	$1^{3}/_{4}$-5 2-4.5, $2^{1}/_{2}$-4	$1^{9}/_{16}$-16UN, $1^{5}/_{8}$-14UNS, $1^{9}/_{16}$-12UN, $1^{5}/_{8}$-10UNS, $1^{5}/_{8}$-8UN, $1^{5}/_{8}$-6UN	$1^{1}/_{4}$-11	$1^{5}/_{8}$-16, $1^{3}/_{8}$-12, $1^{5}/_{8}$-8, $1^{7}/_{8}$-6, $1^{3}/_{4}$-5	-
SR0042-16U-A40-200	42.00	M48x5.0 M56x5.5 M64x6.0	M45x1.5, M45x2.0, M46x2.5, M48x3.0, M48x3.5, M48x4.0	2-4.5, $2^{1}/_{2}$-4	$1^{3}/_{4}$-16UN, $1^{3}/_{4}$-14UNS, $1^{13}/_{16}$-12UN, $1^{13}/_{16}$-8UNS, $1^{15}/_{16}$-6UN	$1^{1}/_{2}$-11	$1^{7}/_{8}$-16, $1^{7}/_{8}$-12, $1^{7}/_{8}$-8, $1^{1}/_{4}$-6, 2-4.5	-

D-Thread Technical Section

Thread Applications for Full Profile Inserts (ISO & UN)

Tooholder	Pitch		Tooholder cutting diameter D (mm)	Min. Thread Dia.	
Designation	mm	TPI	D Adjustment	ISO Fine	UN/UNF/UNEF/UNS
SR0021-11U-A25-125	1.5	-	22.00	M26x1.5	- -
	2.0	-	21.85	M26x2.0	- -
	-	14	21.94	- -	1-14UNS
	-	12	21.85	- -	1-12UNF
SR0023-11U-A25-135	1.5	-	25.00	M28x1.5	- -
	2.0	-	24.85	M29x2.0	- -
	-	14	24.94	- -	1 1/8-14UNS
	-	12	24.85	- -	1 1/8-12UNF
SR0026-11U-A25-150	1.5	-	30.00	M33x1.5	- -
	2.0	-	29.85	M31x2.0	- -
	-	14	29.94	- -	1 3/8-14UNS
	-	12	29.85	- -	1 3/8-12UNF

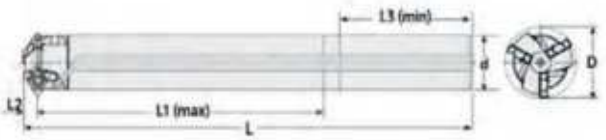
Thread Applications for Full Profile Inserts (NPT)

Tooholder	Pitch	Tooholder cutting diameter D2 (mm)	Cylindrical or Conical pre-drilled hole	Cylindrical pre-drilled hole
Designation	TPI	D Adjustment	NPT Threading by 1 Radial Pass	NPT Threading by 2 Radial Passes (50% / 50%)
SR0015-11U-A16-95	14	14.59	$^{1}/_{2}$-14NPT; $^{3}/_{4}$-14NPT	-
SR0021-11U-A25-125	14	20.49	$^{3}/_{4}$-14NPT	-
SR0023-11U-A25-135	11.5	22.63	1-11.5NPT; $1^{1}/_{4}$-11.5NPT; $1^{1}/_{2}$-11.5NPT; 2-11.5NPT	-
SR0026-11U-A25-150	11.5	25.63	1-11.5NPT; $1^{1}/_{4}$-11.5NPT; $1^{1}/_{2}$-11.5NPT; 2-11.5NPT	-
SR0031-11U-A32-170	11.5	30.63	$1^{1}/_{4}$-11.5NPT; $1^{1}/_{2}$-11.5NPT; 2-11.5NPT	-
SR0036-16U-A32-170	11.5	35.65	$1^{1}/_{4}$-11.5NPT; $1^{1}/_{2}$-11.5NPT; 2-11.5NPT	-
SR0036-16U-A32-225				
SR0036-16U-A32-170	8	35.65	-	2 1/2...10-8NPT
SR0036-16U-A32-225				
SR0042-16U-A40-200	11.5	41.15	$1^{1}/_{2}$-11,5NPT; 2-11.5NPT	-
SR0042-16U-A40-200	8	41.15	-	2 1/2...10-8NPT

※ Correct the toolholder cutting diameter D according to adjustment, as indication in the above table.

※ Note: When the pre-drilling hole for 8 NPT is conical, the thread can be machined in one pass.

Standard Toolholders - Steel Cylindrical Shank (U Style)



Coolant-Thru is recommended, especially when D>0.7 x nominal thread diameter

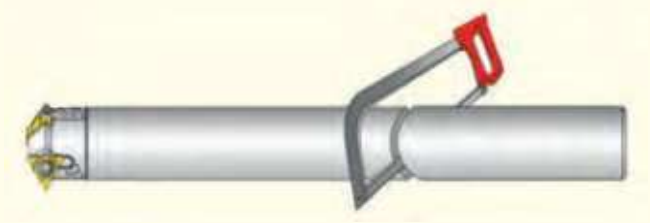
Designation	Stock		No. of Inserts	Dimensions(mm)						Insert Size		Spare parts	
	R	L		D	D1	L1 (max)	L2	L3 (max)	L	L	d	Screw	Wrench
SR0023-11U-C18-170			2	23.30	18	90	5.4	40	170	11U	6.35U	Y55-SSTX2.5-3.6P	TPF-08
SR0026-11U-C20-180			3	26.00	20	100	5.4	40	180				
SR0031-11U-C25-200			4	31.00	25	120	5.4	46	200				
SR0036-16U-C25-200			3	36.50	25	130	8.0	46	200	16U	9.525U	Y60-SSTX3.5-5.3P	TPF-15
SR0036-16U-C28-225			3	36.50	28	150	8.0	60	225				

D-Thread Technical Section

Steel Cylindrical Shank (U Style) Applications

Thread Applications for Partial Profile Inserts

Tool holder		Min. Thread Dia.					
Designation	D	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP(G)	Partial 55°
SR0023-11U-C18-170	23.00	M27x3.0 M30x3.5 M36x4.0	M24x0.5, M25x0.75, M25x1.0, M25x1.25, M26x1.5, M26x2.0, M27x2.5	$1^{1}/_{8}$-7	1-32UN; 1-28UN; 1-27UN; 1-24UNS; 1-20UNEF; 1-18UNS; 1-16UN; 1-14UNS; $1^{1}/_{16}$-12UN; $1^{1}/_{8}$-10UNS; $1^{1}/_{8}$-8UN	$^{3}/_{4}$-14, 1-11	1-26; 1-20; $1^{1}/_{8}$-16; $1^{1}/_{8}$-12; $1^{1}/_{8}$-9; $1^{1}/_{8}$-7
SR0026-11U-C20-180	26.00	M30x3.5 M36x4.0	M27x0.5, M27x0.75, M28x1.0, M28x1.25, M28x1.5, M29x2.0, M30x2.5; M30x3.0	$1^{1}/_{4}$-7 $1^{3}/_{8}$-6	$1^{1}/_{8}$-28UN; $1^{1}/_{8}$-24UNS; $1^{1}/_{8}$-20UN; $1^{1}/_{8}$-18UNEF; $1^{1}/_{8}$-16UN; $1^{1}/_{8}$-14UNS; $1^{1}/_{8}$-12UNF; $1^{3}/_{8}$-10UNS; $1^{7}/_{16}$-8UN	$^{7}/_{8}$-14, 1-11	$1^{1}/_{8}$-26; $1^{1}/_{8}$-20; $1^{3}/_{16}$-16; $1^{3}/_{16}$-12; $1^{3}/_{16}$-8; $1^{1}/_{4}$-7
SR0031-11U-C25-200	31.00	M36x4.0	M32x0.5, M32x0.75, M33x1.0, M33x1.25, M33x1.5, M34x2.0, M34x2.5; M35x3.0; M36x3.5	$1^{1}/_{2}$-6	$1^{5}/_{16}$-28UN; $1^{1}/_{2}$-24UNS; $1^{1}/_{2}$-20UN; $1^{1}/_{2}$-18UNEF; $1^{3}/_{8}$-16UN; $1^{3}/_{8}$-14UNS; $1^{3}/_{8}$-12UNF; $1^{3}/_{8}$-10UNS; $1^{7}/_{8}$-8UN	$1^{1}/_{8}$-11	$1^{5}/_{16}$-26; $1^{5}/_{16}$-20; $1^{3}/_{8}$-16; $1^{3}/_{8}$-12; $1^{7}/_{16}$-8
SR0036-16U-C25-200 SR0036-16U-C28-225	36.50	M42.5x4.5 M48x5.0 M56x5.5 M64x6.0	M32x05, M32x0.75, M33x1.0, M33x1.25, M33x1.5, M34x2.0, M34x2.5; M35x3.0; M36x3.5	$1^{3}/_{4}$-5 2-4.5 $2^{1}/_{2}$-4	$1^{9}/_{16}$-16UN; $1^{5}/_{8}$-14UNS; $1^{9}/_{16}$-12UN; $1^{5}/_{8}$-10UNS; $1^{5}/_{8}$-8UN; $1^{5}/_{8}$-6UN	$1^{1}/_{4}$-11	$1^{5}/_{8}$-16; $1^{5}/_{8}$-12; $1^{5}/_{8}$-8; $1^{7}/_{8}$-6; $1^{3}/_{4}$-5



The lengh of cylindrical shank toolholders can be modified to reduce chatter (vibration).
Note: The lenght of the shank inside the clamping device should be L3 at minimum.

Thread Applications for Full Profile Inserts (ISO & UN)

Tooholder	Pitch		Tooholder cutting diameter D (mm)	Min. Thread Dia.	
Designation	mm	TPI	D Adjustment	ISO Fine	UN/UNF/UNEF/UNS
SR0023-11U-C18-170	1.5	-	22.00	M26x1.5	- -
	2.0	-	21.85	M26x2.0	- -
	-	14	21.94	- -	1-14UNS
	-	12	21.85	- -	1-12UNF
SR0026-11U-C20-180	1.5	-	25.00	M28x1.5	- -
	2.0	-	24.85	M29x2.0	- -
	-	14	24.94	- -	1 1/8-14UNS
	-	12	24.85	- -	1 1/8-12UNF
SR0031-11U-C25-200	1.5	-	30.00	M33x1.5	- -
	2.0	-	29.85	M34x2.0	- -
	-	14	29.94	- -	1 3/8-14UNS
	-	12	29.85	- -	1 3/8-12UNF

Thread Applications for Full Profile Inserts (NPT)

Tooholder	Pitch	Tooholder cutting diameter D2 (mm)	Cylindrical or Conical pre-drilled hole	Cylindrical pre-drilled hole
Designation	TPI	D Adjustment	NPT Threading by 1 Radial Pass	NPT Threading by 2 Radial Passes (50% / 50%)
SR0023-11U-C18-170	11.5	22.63	1-11.5NPT; 1¹/₄-11.5NPT; 1¹/₂-11.5NPT; 2-11.5NPT	-
SR0026-11U-C20-180	11.5	25.63	1-11.5NPT; 1¹/₄-11.5NPT; 1¹/₂-11.5NPT; 2-11.5NPT	-
SR0031-11UC25-200	11.5	30.63	1¹/₄-11.5NPT; 1¹/₂-11.5NPT; 2-11.5NPT	-
SR0036-16U-C25-200	11.5	35.65	1¹/₄-11.5NPT; 1¹/₂-11.5NPT; 2-11.5NPT	-
SR0036-16U-C28-225				
SR0036-16U-C25-200	8	35.65	-	2 1/2...10-8NPT
SR0036-16U-C28-225				

※ Correct the toolholder cutting diameter D according to adjustment, as indication in the above table.

※ Note: When the pre-drilling hole for 8 NPT is conical, the thread can be machined in one pass.

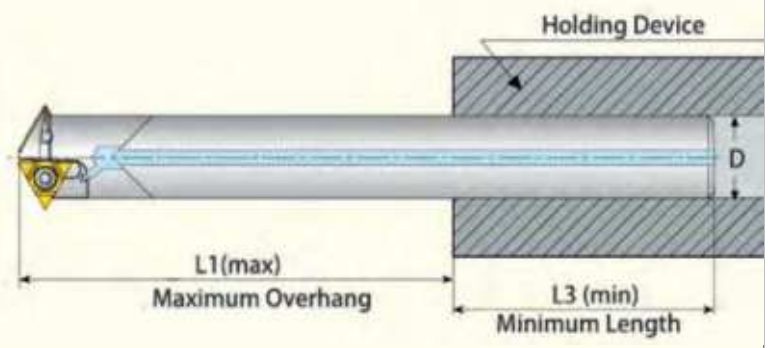
D-Thread Holder

Standard Toolholders - Carbide Cylindrical Shank (U Style)

Coolant-Thru is recommended, especially when D>0.7 x nominal thread diameter

Designation	Stock		No. of Inserts	Dimensions(mm)						Insert Size		Spare parts	
	R	L		D	d	L1 (max)	L2	L3 (max)	L	L	d	Screw	Wrench
SR0021-11U-E16-135			2	20.65*	16	80	5.4	34	135	11U	6.35U	Y55-SSTX2.5-3.6P	TPF-08
SR0026-11U-E20-175			3	26.00	20	120	5.4	40	175				
SR0031-11U-E25-190			4	31.00	25	140	5.4	46	190				

※ For TR inserts use the CNC program (D+0.25mm)



The overhand-to-bar diameter ratio should be as small as possible to eliminate the chance of chatter (vibration).
The minimum lenght inside a holding device should be 2 times the diameter of the bar shank.

Carbide Cylindrical Shank (U Style) Applications

Thread Applications for Full Profile Inserts (ISO & UN)

Tool holder		Min. Thread Dia.						
Designation	D	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP(G)	Partial 55°	Trapez
SR0021-11U-E16-135	20.65	M24x3.0 M30x3.5	M22x0.5, M22x0.75, M22x1.0, M23x1.25, M23x1.5, M23x2.0	1-8 1 1/8-7 1 3/8-6	7/8-32UN, 7/8-28UN, 7/8-27UNS, 7/8-24UNS, 7/16-20UNEF, 1-18UNS, 15/16-16UN, 1-14UNS, 15/16-12UN, 1-10UNS	3/4-14, 1-11	1-26, 1-20, 1-16, 1-12, 1-10, 1 1/8-9, 1-8, 1 1/8-7	(TR26-TR60)x3
SR0026-11U-E20-175	26.00	M30x3.5 M36x4.0	M27x0.5, M27x0.75, M28x1.0, M28x1.25, M28x1.5, M29x2.0, M30x2.5, M30x3.0	1 1/4-7 1 3/8-6	1 1/8-28UN, 1 1/8-24UNS, 1 1/8-20UN, 1 1/8-18UNEF, 1 1/8-16UN, 1 1/8-14UNS, 1 1/8-12UNF, 1 3/8-10UNS, 1 7/16-8UN	7/8-14, 1-11	1 1/8-26, 1 1/8-20, 1 3/8-16, 1 3/8-12, 1 3/16-8, 1 1/4-7	(TR40-TR60)x3 (TR65-TR110)x4
SR0031-11U-E25-190	31.00	M36x4.0	M32x0.5, M32x0.75, M33x1.0, M33x1.25, M33x1.5, M34x2.0, M34x2.5, M35x3.0, M36x3.5	1 1/2-6	1 5/16-28UN, 1 1/2-24UNS, 1 1/2-20UN, 1 1/2-18UNEF, 1 3/8-16UN, 1 3/8-14UNS, 1 3/8-12UNF, 1 3/8-10UNS, 1 7/16-8UN	1 1/8-11	1 5/16-26, 1 5/16-20, 1 3/8-16, 1 3/8-12, 1 7/16-8	(Tr50-TR60)x3 (TR65-TR110)x4

※ For TR inserts use the CNC program (D+0.25mm)

Thread Applications for Full Profile Inserts (ISO & UN)

Tooholder	Pitch		Tooholder cutting diameter D (mm)	Min. Thread Dia.	
Designation	mm	TPI	D Adjustment	ISO Fine	UN/UNF/UNEF/UNS
SR0026-11U-E20-175	1.5	-	25.00	M28x1.5	- -
	2.0	-	24.85	M29x2.0	- -
	-	14	24.94	- -	1 1/8-14UNS
	-	12	24.85	- -	1 1/8-12UNF
SR0031-11U-E25-190	1.5	-	30.00	M33x1.5	- -
	2.0	-	29.85	M34x2.0	- -
	-	14	29.94	- -	1 3/8-14UNS
	-	12	29.85	- -	1 3/8-12UNF

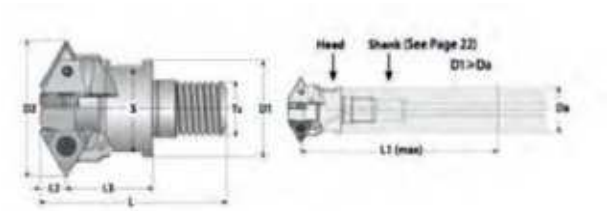
Thread Applications for Full Profile Inserts (NPT)

Tooholder	Pitch	Tooholder cutting diameter D2 (mm)	Cylindrical or Conical pre-drilled hole	Cylindrical pre-drilled hole
Designation	TPI	D Adjustment	NPT Threading by 1 Radial Pass	NPT Threading by 2 Radial Passes (50% / 50%)
SR0021-11U-E16-135	14	20.49	3/4-14NPT	-
SR0026-11U-E20-175	11.5	25.63	1-11.5NPT; 1 1/4-11.5NPT; 1 1/2-11.5NPT; 2-11.5NPT	-
SR0031-11U-E25-190	11.5	30.63	1 1/4-11.5NPT; 1 1/2-11.5NPT; 2-11.5NPT	-

※ Correct the toolholder cutting diameter D according to adjustment, as indication in the above table.

D-Thread Holder

Standard Toolholders - Modular (U Style)



Coolant-Thru is recommended, especially when D>0.7 x nominal thread diameter

Designation	Stock		No. of Inserts	Dimensions(mm)								Insert Size		Spare parts	
	R	L		D	D2	L1	L2	L3	L	M	S	L	d	Screw	Wrench
SR0015-11U-M06			1	14.75	10.6	57.5	5.4	15	33	M6	9	11U	6.35	Y55-SSTX2.5-3.6P	TPF-08
SR0017-11U-M08			1	16.75	13.0	72.0	5.4	17	37	M8	11				
SR0021-11U-M08			2	20.65	14.1	86.0	5.4	14	34	M8	12				
SR0023-11U-M10			2	22.65	18.0	103.0	5.4	14	38	M10	16				
SR0027-11U-M12			3	26.60	21.0	125.0	5.4	20	48	M12	18				
SR0031-11U-M12			4	31.00	25.0	138.0	5.4	23	51	M12	22				
SR0036-16U-M16			3	36.50	29.0	150.0	8.0	25	55	M16	25	16U	9.525	Y60-SSTX3.5-5.3P	TPF-15
SR0042-16U-M16			4	42.00	29.0	172.0	8.0	26	55	M16	25				

SR Modular Head (U Style) Applications

Thread Applications for Partial Profile Inserts

Tool holder		Min. Thread Dia.						
Designation	D	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP(G)	Partial 55°	Trapez
SR0015-11U-M06	14.75	M18x2.5 M24x3.0	M16x0.5, M16x0.75, M16x1.0, M17x1.25, M17x1.5, M17x2.0	$^{3}/_{4}$-10; $^{7}/_{8}$-9; 1-8	$^{5}/_{8}$-32UN, $^{5}/_{8}$-28UN, $^{5}/_{8}$-27UNS, $^{5}/_{8}$-24UN, $^{11}/_{16}$-20UN, $^{11}/_{16}$-16UN, $^{3}/_{4}$-14UNS, $^{3}/_{4}$-12UN	$^{3}/_{8}$-19, $^{1}/_{2}$-14, 1-11	$^{11}/_{16}$-14, $^{3}/_{4}$-12, $^{7}/_{8}$-11, $^{3}/_{4}$-10, $^{7}/_{8}$-9, 1-8, $1^{1}/_{8}$-7	TR22x3; TR24x3
SR0017-11U-M08	16.75	M20x2.5	M18x0.5, M18x0.75, M18x1.0, M19x1.25, M19x1.5, M19x2.0	-	$^{3}/_{4}$-32UN, $^{3}/_{4}$-28UN, $^{7}/_{8}$-27UNS, $^{3}/_{7}$-24UN, $^{3}/_{7}$-20UN, $^{3}/_{7}$-16UNF, $^{3}/_{4}$-14UNS, $^{13}/_{16}$-12UN, $^{7}/_{8}$-10UN	$^{1}/_{2}$-14, 1-11	$^{13}/_{16}$-12, $^{7}/_{8}$-11, 1-10, $^{7}/_{8}$-9	-
SR0021-11U-M08	20.65	M24x3.0 M30x3.5 M36x4.0	M22x0.5, M22x0.75, M22x1.0, M23x1.25, M23x1.5, M23x2.0	1-8; $1^{1}/_{8}$-7; $1^{3}/_{8}$-6	$^{7}/_{8}$-32UN, $^{7}/_{8}$-28UN, $^{7}/_{8}$-27UNS, $^{7}/_{8}$-24UNS, $^{7}/_{8}$-20UNEF, 1-18UNS, $^{15}/_{16}$-16UN, 1-14UNS, $^{15}/_{16}$-12UN, 1-10UNS	$^{3}/_{4}$-14, 1-11	1-26, 1-20, 1-16, 1-12, 1-10, $1^{1}/_{8}$-9, 1-8, $1^{1}/_{8}$-7	(TR26-TR60)x3; TR28x4; (TR60-TR110)x4; TR28x5
SR0023-11U-M10	22.65	M27x3.0 M30x3.5 M36x4.0	M24x0.5, M24x0.75, M25x1.5, M25x1.25, M26x1.5, M26x2.0, M27x2.5	$1^{1}/_{8}$-7	1-32UN, 1-28UN,1-27UNS, 1-24UNS, 1-20UNEF, 1-18UNS, 1-16UN, 1-14UNS, 1-12UN, $1^{1}/_{8}$-10UNS, $1^{1}/_{8}$-8UN	$^{3}/_{4}$-14, 1-11	1-26, 1-20, 1-16, $1^{1}/_{16}$-12, $1^{1}/_{8}$-9, $1^{1}/_{8}$-7	-
SR0027-11U-M12	26.60	M33x3.5 M36x4.0	M28x0.5, M28x0.75, M28x1.0, M28x1.25, M29x1.5, M29x2.0, M30x2.5, M33x3.0	$1^{1}/_{4}$-7 $1^{3}/_{8}$-6	$1^{1}/_{8}$-28UN, $1^{1}/_{8}$-24UNS, $1^{1}/_{8}$-20UN, $1^{1}/_{8}$-18UNEF, $1^{1}/_{8}$-16UN, $1^{1}/_{4}$-14UNS, $1^{3}/_{16}$-12UN, $1^{1}/_{4}$-10UNS, $1^{3}/_{16}$-8UN	$^{7}/_{8}$-14, 1-11	$1^{1}/_{8}$-26, $1^{1}/_{8}$-20, $1^{3}/_{8}$-16, $1^{3}/_{8}$-12, $1^{3}/_{8}$-8, $1^{1}/_{4}$-7	-
SR0031-11U-M12	31.00	M36x4.0	M32x0.5, M32x0.75, M33x1.0, M33x1.25, M33x1.5, M34x2.0, M34x2.5, M35x3.0, M36x3.5	$1^{1}/_{2}$-6	$1^{5}/_{16}$-28UN, $1^{3}/_{8}$-24UNS, $1^{5}/_{16}$-20UN, $1^{5}/_{16}$-18UNEF, $1^{5}/_{16}$-16UN, $1^{3}/_{8}$-14UNS, $1^{3}/_{8}$-12UN, $1^{3}/_{8}$-10UNS, $1^{3}/_{8}$-8UN	$1^{1}/_{8}$-11	$1^{3}/_{8}$-26, $1^{3}/_{8}$-20, $1^{3}/_{8}$-16, $1^{3}/_{8}$-12, $1^{7}/_{16}$-8	-
SR0036-16U-M16	36.50	M42x4.5 M48x5.0 M56x5.5	M39x1.5, M39x2.0, M40x2.5, M41x3.0, M42x3.5, M42x4.0	$1^{3}/_{4}$-5 2-4.5	$1^{9}/_{16}$-16UN, $1^{5}/_{8}$-14UNS, $1^{9}/_{16}$-12UN, $1^{5}/_{8}$-10UNS, $1^{5}/_{8}$-8UN, $1^{5}/_{8}$-6UN	$1^{1}/_{4}$-11	$1^{5}/_{8}$-16, $1^{5}/_{8}$-12, $1^{5}/_{8}$-8, $1^{7}/_{8}$-6	-
SR0042-16U-M16	42.00	M48x5.0 M56x5.5 M64x6.0	M45x1.5, M45x2.0, M46x2.5, M48x3.0, M48x3.5, M48x4.0	2-4.5 $2^{1}/_{2}$-5	$1^{3}/_{4}$-16UN, $1^{3}/_{4}$-14UNS, $1^{13}/_{16}$-12UN, $1^{15}/_{16}$-10UNS, $1^{15}/_{16}$-6UN	$1^{1}/_{2}$-11	$1^{7}/_{8}$-16, $1^{7}/_{8}$-12, $1^{7}/_{8}$-8, $2^{1}/_{4}$-6, 2-4.5	-

D-Thread Holder

SR Modular Head (U Style) Applications

Thread Application for Full Profile Inserts (ISO, UN, NPT & API Round)

Tool holder	Toolholder Cutting Diameter D2(mm)	Pitch		Min.Thread Dia.		Cylindrical or Conical Pre-Drilling hole	Cylindrical Pre-Drilling hole	PI Round, Cylindrical or Conical Pre-Drilled Hole (for cylidrical 2 radial passes 50%/50%; for conical one radial pass)	API Round, Conical Pre-Drilled Hole only (one pass)
Adjusted	D2	mm	TPI	ISO Coarse	UN/UNF/ UNEF/UNS	NPT Threading by 1 Radius Pass	NPT Threading by 2 Radial Passes (50%/50%)	Thread Dia.	
SR0015-11U-M06	13.80	1.5		M16x1.5	-	-	-	-	-
	13.60	2.0		M16x2.0	-	-	-	-	-
	13.70	-	14	-	5/8-14UNS	-	-	-	-
	13.60	-	12	-	11/16-12UN	-	-	-	-
	14.59	-	14	-	-	1/2-14NPT 3/4-14NPT	-	-	-
SR0017-11U-M08	15.79	1.5		M18x1.5	-	-	-	-	-
	15.60	2.0		M18x2.0	-	-	-	-	-
	15.69	-	14	-	3/4-14UNS	-	-	-	-
	15.60	-	12	-	3/4-12UN	-	-	-	-
	15.60	-	14	-	-	3/4-14NPT	-	-	-
SR0021-11U-M08	19.69	1.5		M22x1.5	-	-	-	-	-
	19.50	2.0		M22x2.0	-	-	-	-	-
	19.60	-	14	-	7/8-14UNF	-	-	-	-
	19.50	-	12	-	7/8-12UN	-	-	-	-
	20.50	-	14	-	-	/-14NPT	-	-	-
	20.28	-	11.5	-	-	1-11.5NPT 1 1/4-11.5NPT 1 1/2-11.5NPT 2-11NPT	-	-	-
SR0023-11U-M10	21.65	1.5		M24x1.5	-	-	-	-	-
	21.50	2.0		M24x2.0	-	-	-	-	-
	21.49	-	14	-	1-14UNS	-	-	-	-
	21.50	-	12	-	1-12UNF	-	-	-	-
	22.63	-	11.5	-	-	1-11.5NPT 1 1/4-11.5NPT 1 1/2-11.5NPT 2-11NPT	-	-	-
	21.44	-	10	-	-	-	-	1.05x10APIRD (for UPTBG: UP TBG Long); 1.315...2.375x 10APIRD (for TBG; UP TBG; UP TBG Long; Integral-Joint TBG)	-
SR0027-11U-M12	25.64	1.5		M28x1.5	-	-	-	-	-
	25.45	2.0		M30x2.0	-	-	-	-	-
	25.54	-	14	-	1 1/8-14UNS	-	-	-	-
	25.45	-	12	-	1 1/8-12UNF	-	-	-	-
	26.23	-	11.5	-	-	1-11.5NPT 1 1/4-11.5NPT 1 1/2-11.5NPT 2-11NPT	-	-	-
	24.94	-	10	-	-	-	-	1.315...2.375x10APIRD (for TBG; UP TBG; UP TBG Long; Integral-Joint TBG)	-

※ Correct the toolholder cutting diameter D2 according to adjustment, as indicated in the above table.

※ When the pre-drilled hole for 8NPT is conical, the thread can be machined in one pass.

SR Modular Head (U Style) Applications

Thread Application for Full Profile Inserts (ISO, UN, NPT & API Round)

Tool holder	Toolholder Cutting Diameter D2(mm)	Pitch		Min.Thread Dia.		Cylindrical or Conical Pre-Drilling hole	Cylindrical Pre-Drilling hole	PI Round, Cylindrical or Conical Pre-Drilled Hole (for cylidrical 2 radial passes 50%/50%; for conical one radial pass)	API Round, Conical Pre-Drilled Hole only (one pass)
Adjusted	D2	mm	TPI	ISO Coarse	UN/UNF/ UNEF/UNS	NPT Threading by 1 Radius Pass	NPT Threading by 2 Radial Passes (50%/50%)	Thread Dia.	
SR0031-11U-M12	30.00	1.5		M33x1.5	-	-	-	-	-
	29.85	2.0		M34x2.0	-	-	-	-	-
	29.94	-	14	-	$1^{3}/_{8}$-14UNS	-	-	-	-
	29.85	-	12	-	$1^{5}/_{16}$-12UN	-	-	-	-
	30.63	-	11.5	-	-	$1^{1}/_{4}$-11.5NPT $1^{1}/_{2}$-11.5NPT 2-11NPT	-	-	-
	29.44	-	10	-	-	-	-	1.66...3.5x10APIRD (for TBG; Up TBG; UP TBG Long; Integral-joint TBG)	- - - -
SR0031-11U-M12	35.65	-	11.5	-	-	$1^{1}/_{4}$-11.5NPT $1^{1}/_{2}$-11.5NPT 2-11.5NPT	-	-	-
	35.65	-	8	-	-	-	$2^{1}/_{2}$..10-8NPT	-	-
	34.70	-	8	-	-	-	-	2.375...13.375x8APIRD (for CSG; TBG; UP TBG; UP TBG Long); 4.5... 5.5x8APIRD (for LCSG)	8.625...20x8APIRD (for LCSG)
SR0031-11U-M12	41.15	-	11.5	-	-	$1^{1}/_{2}$-11.5NPT	-	-	-
	41.15	-	8	-	-	2-11.5NPT	$2^{1}/_{2}$..10-8NPT	-	-
	40.20	-	8	-	-	-	-	2.875...20x8APIRD (for CSG; TGB; UP TBG; UP TBG Long); 4.5...7.625x8APIRD (for LCSG)	8.625x8APIRD (for LCSG)

※ Correct the toolholder cutting diameter D2 according to adjustment, as indicated in the above table.

※ When the pre-drilled hole for 8NPT is conical, the thread can be machined in one pass.

D-Thread Holder

Standard Toolholders - Shell Mill (U Style)

Coolant-Thru is recommended, especially when D>0.7 x nominal thread diameter

Designation	Stock		No. of Inserts	Dimensions(mm)						Insert Size		Spare parts	
	R	L		D	D2	d	L2	H	Da	L	d	Screw	Wrench
SR0042B16U-16-04T			4	42.00	34	16	8	40	38	16U	9.525U	Y60-SSTX3.5-5.3P	TPF-15
SR0048B16U-22-05T			5	48.00	40	22	8	40	48				
SR0056B16U-22-06T			6	56.00	48	22	8	40	48				
SR0088B22U-27-06T			6	88.00	76	27	10.8	50	60	22U	12.7U	Y55-SSTX4.5-6.8P	TPF-20
SR0098B22U-32-07T			7	98.00	85	32	10.8	55	78				

Shell Mill (U Style) Applications

Thread Applications for Partial Profile Inserts

Tool holder		Min. Thread Dia.					
Designation	D	ISO Coarse	ISO Fine	UNC	UN/UNF/UNEF/UNS	BSP(G)	Partial 55°
SR0042B16U-16-04T	42.00	M48x5.0 M56x5.5 M64x6.0	M45x1.5; M45x2.0 M46x2.5; M48x3.0 M48x3.5; M48x4.0	2-4.5; $2^{1}/_{4}$-4	$1^{3}/_{4}$-16UN; $1^{3}/_{4}$-14UNS; $1^{13}/_{16}$-12UN; $1^{16}/_{16}$-8UN; $1^{15}/_{16}$-6UN	$1^{1}/_{2}$-11	$1^{7}/_{8}$-16; $1^{7}/_{8}$-12; $1^{7}/_{8}$-8; $1^{7}/_{8}$-6; 2-4.5
SR0048B16U-22-05T	48.00	M56x5.5 M64x6.0	M52x1.5; M52x2.0 M52x2.5; M52x3.0 M55x4.0	$2^{1}/_{4}$-4.5; $2^{1}/_{2}$-4	2-16UN; 2-14UN; 2-12UN; $2^{1}/_{4}$-10UNS; $2^{1}/_{8}$-8UN; $2^{3}/_{8}$-6UN	$1^{3}/_{4}$-11	2-16; $2^{1}/_{4}$-12; $2^{1}/_{4}$-8; $2^{1}/_{4}$-6; 3-5; $3^{1}/_{2}$-4.5; $2^{1}/_{4}$-4
SR00562B16U-22-06T	56.00	M64x6.0	M60x1.5; M60x2.0 M60x2.5; M60x3.0 M64x4.0	$2^{1}/_{2}$-4	$2^{3}/_{8}$-16UN; $2^{3}/_{8}$-14UN; $2^{3}/_{8}$-12UN; $2^{1}/_{2}$-10UNS; $2^{3}/_{8}$-8UN; $2^{1}/_{2}$-6UN	2-11	$2^{1}/_{2}$-16; $2^{1}/_{2}$-12; $2^{1}/_{2}$-8; $2^{3}/_{4}$-6; 3-5; 3-5; $3^{1}/_{2}$-4.5; $4^{1}/_{4}$-4
SR0088B22U-27-06T	88.00	-	M90x6.0; M125x8.0	4-4	$4^{1}/_{4}$-4UN	-	4-3; $4^{1}/_{4}$-4
SR0098B22U-32-07T	98.00	-	M105x6.0; M125x8.0	-	$4^{1}/_{4}$-4UN	-	$4^{1}/_{4}$-4

Thread Applications for Full Profile Inserts (NPT)

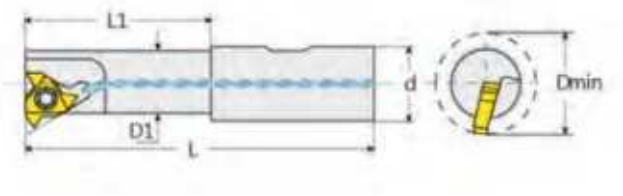
Tooholder	Pitch	Tooholder cutting diameter D2 (mm)	Cylindrical or Conical pre-drilled hole	Cylindrical pre-drilled hole
Designation	TPI	D Adjustment	NPT Threading by 1 Radial Pass	NPT Threading by 2 Radial Passes (50% / 50%)
SR0042B16U-16-04T	11.5	41.15	11/2-11.5NPT; 2-11.5NPT	-
SR0042B16U-16-04T	8	41.15	-	$2^{1}/_{2}$...10-8NPT
SR0048B16U-22-05T	11.5	47.15	2-11.5NPT	-
SR0048B16U-22-05T	8	47.15	-	$2^{1}/_{2}$...10-8NPT
SR00562B16U-22-06T	8	55.15	-	$2^{1}/_{2}$...10-8NPT
SR0088B22U-27-06T	8	88.26	$3^{1}/_{2}$...160D-8NPT	160D...240D-8NPT
SR0098B22U-32-07T	8	98.06	4"...160D-8NPT	160D...240D-8NPT

※ Correct the toolholder cutting diameter D according to adjustment, as indicated in the above table.

※ Note: When the pre-drilled hole for 8NPT is conical, the thread can be machined in one pass.

D-Thread Technical Section

Standard Toolholders - Weldon Shank (A Style)



Assemble internal thread turning inserts, can be used for milling internal thread and external threads.

Designation	Stock		No. of Inserts	Dimensions(mm)				Available Insert	Spare parts	
	R	L		Dmin	d	L1	L		Screw	Wrench
SR0009-08A-A12-80	●		1	8.20	12	12	80	08IR	Y50-SSTX2.0-2.8P	TPF-06
SR0012-11A-A12-80	○		1	12.00	12	25	80	11IR	Y55-SSTX2.5-3.6P	TPF-08
SR0014-11A-A16-100	○		1	14.00	16	35	100			
SR0016-16A-A16-100	●		1	16.00	16	40	100	16IR	Y60-SSTX3.5-5.3P	TPF-15
SR0018-16A-A20-125	○		1	18.00	20	35	125			
SR0020-16A-A20-125	○		1	20.00	20	50	125			
SR0025-16A-A25-150	○		1	25.00	25	65	150			
SR0025-22A-A25-150	○		1	25.00	25	65	150	22IR	Y55-SSTX4.5-6.8P	TPF-20
SR0032-22A-A32-200	○		1	32.00	32	100	200			
SR0035-22A-A32-250	○		1	35.00	32	110	250			

Recommended Grades, Cutting Speeds Vc [m/min] and Feed f [mm/tooth]

Material Group		Material	Hardness Brinell HB	Vc [m/min]		Feed* f [mm/tooth] by Cutting Dia. (D2)		
P Steel	Unalloyed Steel	Low Carbon (C=0.1-0.25%)	125	100-210	90-180	0.20-0.32	0.30-0.50	0.30-0.75
		Medium Carbon (C=0.25-0.55%)	152	100-180	90-170	0.20-0.32	0.30-0.50	0.30-0.75
		High Carbon (C=0.55-0.85%)	170	100-170	90-160	0.15-0.23	0.25-0.35	0.25-0.52
	Low Alloy Steel (alloying elements<5%)	Non Hardened	180	60-90	90-155	0.17-0.28	0.28-0.45	0.28-0.67
		Hardened	275	80-150	80-160	0.15-0.28	0.25-0.45	0.25-0.67
		Hardened	350	70-140	70-150	0.15-0.25	0.25-0.40	0.25-0.60
	High Alloy Steel (alloying elements>5%)	Annealed	200	60-130	70-115	0.15-0.22	0.20-0.30	0.20-0.45
		Hardened	325	70-110	60-100	0.13-0.21	0.18-0.30	0.18-0.45
	Cast Steel	Low Alloy (alloying elements <5%)	200	100-170	100-170	0.15-0.22	0.20-0.30	0.20-0.45
		High Alloy (alloying elements >5%)	225	70-120	70-130	0.12-0.22	0.17-0.30	0.17-0.45
M Stainless steel	Stainless Steel Ferritic	Non Hardened	200	100-170	120-180	0.15-0.22	0.22-0.34	0.22-0.50
		Hardened	330	100-170	120-180	0.16-0.23	0.21-0.32	0.21-0.48
	Stainless Steel Austenitic	Austenic	180	70-140	100-140	0.15-0.25	0.25-0.40	0.25-0.60
		Super Austenic	200	70-140	100-140	0.12-0.20	0.17-0.26	0.17-0.39
	Stainless Steel Cast Ferritic	Non Hardened	200	70-140	100-140	0.16-0.24	0.25-0.37	0.25-0.55
		Hardened	330	70-140	100-140	0.12-0.20	0.17-0.26	0.17-0.39
	Stainless Steel Cast Austenitic	Austenic	200	70-140	100-120	0.15-0.22	0.20-0.30	0.20-0.45
		Hardened	330	70-140	100-120	0.12-0.20	0.17-0.26	0.17-0.39
K Cast iron	Malleable Cast Iron	Ferritic (short chips)	130	60-130	100-120	0.16-0.24	0.25-0.37	0.25-0.55
		Pearlitic (long chips)	230	60-120	80-100	0.15-0.22	0.20-0.30	0.20-0.45
	Grey Cast Iron	Low Tensile Strength	180	60-130	80-100	0.15-0.22	0.22-0.34	0.22-0.50
		High Tensile Strength	260	60-100	80-100	0.15-0.22	0.20-0.30	0.20-0.45
	Nodular Sg Iron	Ferritic	160	60-125	80-100	0.10-0.20	0.15-0.25	0.15-0.37
		Pearlitic	260	50-90	60-90	0.15-0.22	0.20-0.30	0.20-0.45
M (K) Non-Ferrous material	Aluminum Alloys Wrought	Non Aging	60	100-250		0.30-0.50	0.60-1.00	0.60-1.50
		Aged	100	100-180		0.28-0.50	0.50-0.90	0.50-1.20
	Aluminum Alloys	Cast	75	150-400		0.28-0.50	0.50-0.90	0.50-1.20
		Cast & Aged	90	150-280		0.22-0.40	0.40-0.60	0.40-0.90
		Cast Si 13-22%	130	80-150		0.28-0.50	0.50-0.90	0.50-1.20
	Copper and Copper Alloys	Brass	90	120-210	100-200	0.30-0.50	0.60-1.00	0.60-1.50
		Bronze and Non Leaded Copper	100	120-210	100-200	0.28-0.50	0.50-0.90	0.50-1.20
S (M) Heat Resistant material	High Temperature Alloys	Annealed (iron based)	200	20-45	20-40	0.09-0.15	0.12-0.22	0.12-0.33
		Aged (iron based)	280	20-30	20-30	0.07-0.13	0.10-0.20	0.10-0.30
		Annealed (nickel or cobalt based)	250	15-20	15-20	0.08-0.15	0.08-0.20	0.08-0.30
		Aged (nickel or cobalt based)	350	10-15	10-15	0.08-0.15	0.08-0.20	0.08-0.30
	Titanium Alloys	Pure 99.5 Ti	400Rm	70-140	70-120	0.07-0.13	0.10-0.20	0.10-0.30
		α + β alloys	1050RM	20-50	20-50	0.07-0.13	0.10-0.20	0.10-0.30

TOOTOOL®

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Thread Milling Solid Endmill Code System

E	SMT	B	06	040	C	14	1.00	ISO	TTIM45
1	2	3	4	5	6	7	8	9	10
External	End Mill Type	Coolant Type	Shank Dia	Cutting Dia	No. of Flutes	The Approximate Cutting Lengh	Thread Pitch	Thread Profile	Carbide Grade

1 External

E SMT B 06 040 C 14 1.00 ISO TTIM45

Non: For Internal
E: For External
D: Deep Thread

2 Type

E SMT B 06 040 C 14 1.00 ISO TTIM45

S=Solid M=Mill T=Thread

3 End Mill Type

E SMT B 06 040 C 14 1.00 ISO TTIM45

Non=Without coolant hole
B=With coolant hole
Z=With coolant hole in the flutes

4 Shank Diameter

E SMT B 06 040 C 14 1.00 ISO TTIM45

06=6mm 8=8mm 10=10mm
12=12mm 14=14mm 16=16mm
20=20mm 25=25mm

5 Cutting Diameter

E SMT B 06 040 C 14 1.00 ISO TTIM45

031=3.1mm 040=4.0mm

6 No. of Flutes

E SMT B 06 040 C 14 1.00 ISO TTIM45

C=3 D=4 E=5 F=6

7 The Approximate Cutting Lenght

E SMT B 06 040 C 14 1.00 ISO TTIM45

8 Thread Pitch

E SMT B 06 040 C 14 1.00 ISO TTIM45

0.25-4.0 mm 72-7 TPI

9 Thread Profile

E SMT B 06 040 C 14 1.00 ISO TTIM45

ISO-ISO Metric
UN-American UN (UNC, UNF, UNEF, UNS)
W-Whit Woth (BSW, BSF, BSP, BSB)
NPT-National Pipe Thread
NPTF-National Pipe Thread
BSPT-British Standard Pipe Thread (BSPT)

10 Carbide Grade

E SMT B 06 040 C 14 1.00 ISO TTIM45

TTIM45 TTIS30

Technical Information for SMT Carbide

Mini Thread Milling Solid Endmill Code System

M	S	M	T	06	031	C	12	0.7	ISO	TTIM45
1				2	3	4	5	6	7	8
Type				Shank Dia	Cutting Dia	No. of Flute	The Approximate Cutting Lengh	Thread Pitch	Thread Profile	Carbide Grade

1 Type

MSMT 06 031 C
12 07 ISO TTIM45

M=Mini S=Solid
M=Mill T=Thread

2 Shank Diameter

MSMT 06 031 C
12 07 ISO TTIM45

06=6mm 08=8mm
10=10mm 12=12mm
14=14mm 16=16mm

3 Cutting Diameter

MSMT 06 031 C
12 07 ISO TTIM45

031=3.1mm 040=4.0mm

4 No. of Flutes

MSMT 06 031 C
12 07 ISO TTIM45

C=3 D=4 E=5

5 The Approximate Cutting Lenght

MSMT 06 031 C
12 07 ISO TTIM45

6 Thread Pitch

MSMT 06 031 C
12 07 ISO TTIM45

0.25-4.0 mm 72-7 TPI

7 Thread Profile

MSMT 06 031 C
12 07 ISO TTIM45

ISO-ISO Metric
UN-American UN (UNC, UNF, UNEF, UNS)
W-Whit Woth (BSW, BSF, BSP, BSB)
NPT-National Pipe Thread
NPTF-National Pipe Thread
BSPT-British Standard Pipe Thread (BSPT)

8 Carbide Grade

MSMT 06 031 C
12 07 ISO TTIM45

TTIM45 TTIS30

Mill-Thread Solid Carbide Grades, Speed and Feed Section

TTIM45	**Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.**
TTIS30	**Sub-Micro Grade with high hardness and toughness provides an excellent solution for machining steels, stainless steels, and super alloys Ni or Ti base. With a universal PVD multi-layer coating, provides high heat and wear rsistance**

SMT Type

ISO	Material	Cutting Speed m/min	Feed mm/tooth Cutting Diameter=D										
			φ2	φ3	φ4	φ6	φ8	φ10	φ12	φ14	φ16	φ20	φ25
P	Low and Medium Carbon Steels <0.55%C	90-200	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18
	High Carbon Steels >0.55%C	100-145	0.02	0.03	0.03	0.05	0.06	0.07	0.08	0.09	0.10	0.12	0.15
	Alloy Steels, Treated Steels												
M	Stainless Steels - Free Cutting	55-130	0.02	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.11
	Stainless Steels - Austenitic	55-100	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10
	Cast Steels	120-135	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10
K	Cast Iron	65-120	0.03	0.04	0.04	0.06	0.07	0.09	0.09	0.11	0.12	0.15	0.18
N	Aluminum <12% Si, Copper	135-280	0.03	0.04	0.04	0.06	0.07	0.09	0.09	0.11	0.12	0.15	0.18
	Aluminum >12% Si	90-200	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10
	Synthetics, Duroplastics, Thermoplastics	90-320	0.05	0.06	0.07	0.08	0.10	0.12	0.12	0.14	0.15	0.18	0.22
S	Nickel Alloys, Titanium Alloys												

※ Note: For cutters with long cutting length reduce feed rate by 40%

SMTB, SMTZ, ESMT Type

ISO	Material	Cutting Speed m/min	Feed mm/tooth Cutting Diameter=D										
			φ2	φ3	φ4	φ6	φ8	φ10	φ12	φ14	φ16	φ20	φ25
P	Low and Medium Carbon Steels <0.55%C	100-250	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18
	High Carbon Steels >0.55%C	110-180	0.02	0.03	0.03	0.05	0.06	0.07	0.08	0.09	0.10	0.12	0.15
	Alloy Steels, Treated Steels	90-160	0.02	0.02	0.03	0.04	0.04	0.05	0.05	0.06	0.07	0.08	0.10
M	Stainless Steels - Free Cutting	60-160	0.02	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.11
	Stainless Steels - Austenitic	60-120	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10
	Cast Steels	130-170	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10
K	Cast Iron	70-150	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18
N	Aluminum <12% Si, Copper	150-350	0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18
	Aluminum >12% Si	100-250	0.02	0.02	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.10
	Synthetics, Duroplastics, Thermoplastics	100-400	0.05	0.06	0.07	0.08	0.10	0.11	0.12	0.14	0.15	0.18	0.22
S	Nickel Alloys, Titanium Alloys	20-80	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05

※ Note: For cutters with long cutting length reduce feed rate by 40%V

Mill-Thread Solid Carbide

Mini Mill-Thread MSMT Type

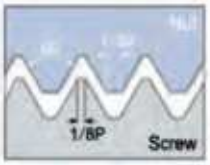
ISO	Material	Cutting Speed m/min	Feed mm/tooth Cutting Diameter=D													
			φ1	φ1.5	φ2	φ3	φ4	φ5	φ6	φ7	φ8	φ9	φ10	φ12	φ14	φ16
P	Low and Medium Carbon Steels <0.55%C	60-120	0.04	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18
	High Carbon Steels >0.55%C	60-90	0.03	0.04	0.05	0.05	0.08	0.09	0.10	0.12	0.13	0.14	0.14	0.16	0.17	0.18
	Alloy Steels, Treated Steels	50-80	0.03	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.10	0.12	0.13	0.14
M	Stainless Steels - Free Cutting	70-100	0.02	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
	Stainless Steels - Austenitic	60-90	0.02	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
	Cast Steels	70-90	0.03	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.10	0.12	0.13	0.14
K	Cast Iron	40-80	0.04	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18
N	Aluminum <12% Si, Copper	100-200	0.04	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.15	0.16	0.17	0.18	0.18
	Aluminum >12% Si	60-140	0.03	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.13	0.14
	Synthetics, Duroplastics, Thermoplastics	50-200	0.09	0.10	0.11	0.12	0.14	0.16	0.18	0.19	0.19	0.19	0.19	0.19	20	0.20
S	Nickel Alloys, Titanium Alloys	20-40	0.03	0.03	0.03	0.04	0.04	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08

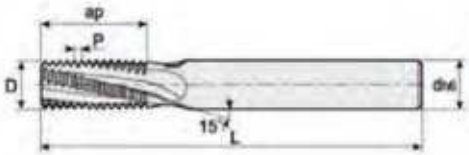
※ Note: For cutters with long cutting length reduce feed rate by 40%V

Mini Mill-Thread VS Taps

Feature	Mini Mill-Thread	Taps
Thread surface quality	High	Medium
Thread geometry	Very accurate	Medium
Thread tolerances	4H, 5H, 6H with std cutter	6H with standard tap, 4H with specific tap
Machining time	Same as tap or shorter	Short
Tool breakage	Almost not possible	Could happen often
Machining load	Very low	High
Range of thread diameters	Wide range of diameters	Specific tap for each diameter
Right/Left hand threading	Same cutter	Specific tap for each
Geometric shape	Full profile	Partial profile

ISO 60° METRIC

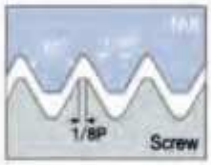


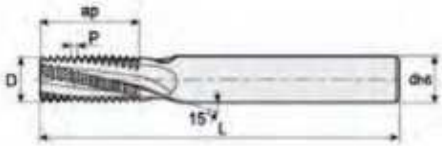


Designation (External)	Pitch	M coarse	Dimensions(mm)				No. of Inserts
			d	D	ap	L	
ESMT04039C06 0.50ISO	0.5	M3x0.5	4	3.90	6.0	50	3
ESMT04039C09 0.75ISO	0.75	M4.5x0.75	4	3.90	9.0	50	3
ESMT04039C12 1.00ISO	1.0	M6x1.0	4	3.90	12.0	50	3
ESMT10100D16 1.00ISO	1.0	M8x1.0	10	10.00	16.5	75	4
ESMT12120E20 1.00ISO	1.0	M10x1.0	12	12.00	20.5	75	5
ESMT06059C16 1.25ISO	1.25	M8x1.25	6	5.90	16.3	50	3
ESMT10100D16 1.25ISO	1.25	M10x1.25	10	10.00	16.9	75	4
ESMT08079C21 1.50ISO	1.5	M10x1.5	8	7.90	21.0	60	3
ESMT10100D15 1.50ISO	1.5	M12x1.5	10	10.00	15.8	75	4
ESMT12120D20 1.50ISO	1.5	M14x1.5	12	12.00	20.3	75	4
ESMT12120D20 1.75ISO	1.75	M12x1.75	12	12.00	20.1	75	4
ESMT10099D28 2.00ISO	2.0	M14x2.0	10	9.90	28.0	75	4
ESMT12120D21 2.00ISO	2.0	M16x2.0	12	12.00	21.0	75	4

Mill-Thread Solid Carbide

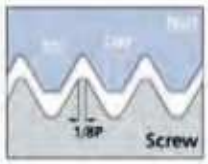
ISO 60° METRIC

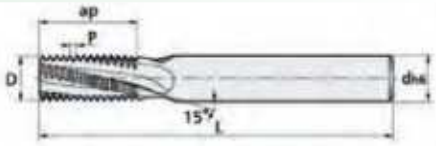




Designation (Internal)	Pitch	M coarse	M fine	Dimensions(mm)				No. of Inserts	Bore Dia.
				d	D	ap	L		
SMT04022C06 0.50ISO	0.5	M3x0.5	M3.5-M16x0.5	4	2.20	6.0	50	3	2.5
SMT06022C05 0.50ISO	0.5	M3x0.5	φ≥4	6	2.20	5.3	50	3	2.5
SMT04030C08 0.50ISO	0.5	-	M4x0.5	4	3.00	8.0	50	3	3.5
SMT04039C10 0.50ISO	0.5	-	M5x0.5	4	3.90	10.0	50	3	4.5
SMT06038C10 0.50ISO	0.5	-	φ≥5	6	3.80	10.4	50	3	4.5
SMT04028C08 0.70ISO	0.7	M4x0.7	-	4	2.80	8.4	50	3	3.3
SMT06031C07 0.70ISO	0.7	M4x0.7	φ≥5	6	3.10	7.4	50	3	3.3
SMT0439C12 0.75ISO	0.8	-	M6x0.75	4	3.90	12.0	50	3	5.3
SMT06045C10 0.75ISO	0.8	-	φ≥6	6	4.50	10.1	50	3	5.3
SMT04035C10 0.80ISO	0.8	M5x0.8	-	4	3.50	10.4	50	3	4.2
SMT06036C09 0.80ISO	0.8	M5x0.8	φ≥6	6	3.60	9.2	50	3	4.2
SMT04039C12 1.00ISO	1.0	M6x1.0	M8-M40x1.0	4	3.90	12.0	50	3	5.0
SMT06040C10 1.00ISO	1.0	M6x1.0	φ≥7	6	4.00	10.5	50	3	5.0
SMT06040C14 1.00ISO	1.0	M6x1.0	φ≥7	6	4.00	14.5	60	3	5.0
SMT06059C16 1.00ISO	1.0		M8x1.0	6	5.90	16.0	60	3	7.0
SMT08079C20 1.00ISO	1.0		M10x1.0	8	7.90	20.0	75	3	9.0
SMT10099D24 1.00ISO	1.0		M12x1.0	10	9.90	24.0	75	4	11.0
SMT06058C16 1.25ISO	1.25	M8x1.25	-	6	5.80	16.3	60	3	6.8
SMT06050C19 1.25ISO	1.25	M8x1.25	φ≥10	6	5.00	19.4	60	3	6.8
SMT08077C20 1.25ISO	1.25		M10x1.25	8	7.70	20.0	75	3	8.8
SMT08077C21 1.50ISO	1.5	M10x1.5	M12-48x1.5	8	7.70	21.0	75	3	8.5
SMT08070C24 1.50ISO	1.5	M10x1.5	φ≥12	8	7.00	24.8	75	3	8.5
SMT10094D24 1.50ISO	1.5	-	M12x1.5	10	9.40	24.0	75	4	10.5
SMT12112D28 1.50ISO	1.5	-	M14x1.5	12	11.20	28.5	75	4	12.5
SMT12119D33 1.50ISO	1.5	-	M16x1.5	12	11.90	33.0	80	4	14.5
SMT1616F33 1.50ISO	1.5	-	φ≥20	16	16.00	33.8	100	6	18.5
SMT08080C20 1.75ISO	1.75	M12x1.75	φ≥14	8	8.00	20.1	75	3	10.2
SMT08080C28 1.75ISO	1.75	M12x1.75	φ≥14	8	8.00	28.9	75	3	10.2
SMT10087D24 1.75ISO	1.75	M12x1.75	-	10	8.70	24.5	75	4	10.2
SMT10099D28 2.00ISO	2.0	M14x2.0	M17-M80x2.0	10	9.90	28.0	75	4	12.0
SMT10100C39 2.00ISO	2.0	M14x2.0	φ≥17	10	10.00	39.0	100	3	12.0
SMT12119D32 2.00ISO	2.0	M16x2.0	M17-M80x2.0	12	11.90	32.0	80	4	14.0
SMT20200F41 2.00ISO	2.0	-	φ≥26	20	20.00	41.0	100	5	24.0
SMT14140D33 2.50ISO	2.5	M20x2.5	φ≥22	14	14.00	33.8	80	4	17.5
SMT14140D33 2.50ISO	2.5	M20x2.5	φ≥22	14	14.00	48.8	100	4	17.5
SMT16139E40 2.50ISO	2.5	M18-M22x2.5	-	16	13.90	40.0	100	5	15.5
SMT16159D42 3.00ISO	3.0	M24x3.0	-	16	15.90	42.0	100	4	21.0
SMT16160C58 3.00ISO	3.0	M24x3.0	φ≥25	16	16.00	58.5	120	3	21.0
SMT20200D43 3.00ISO	3.0	M27x3.0	φ≥28	20	20.00	43.0	100	4	24.0

UN 60° AMERICAN UN (UNC, UNF, UNEF. UNS)



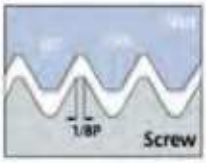


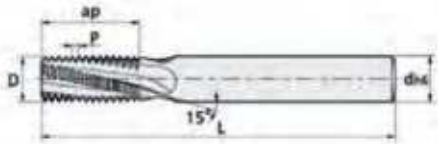
Application: General engineering

Designation (External)	TPI	UNC	UNF	Dimensions(mm)				No. of Inserts
				d	D	ap	L	
SMT04039C09 32UN	32	No.8-32	-	4	3.90	8.7	50	3
SMT04039C12 28UN	28	-	No.12-28	4	3.90	11.8	50	3
SMT04039C12 24UN	24	No.12-24	-	4	3.90	11.6	50	3
SMT10100D16 24UN	24	-	5/16", 3/8"x24	10	10.00	16.4	75	4
SMT04039C13 20UN	20	1/4"x20	-	4	3.90	12.7	50	3
SMT12120E21 20UN	20	-	7/16", 1/2"x20	12	12.00	21.0	75	5
SMT06059C17 18UN	18	5/16"x18	-	6	5.90	16.9	60	3
SMT12120D20 18UN	18	-	9/16", 5/8"x18	12	12.00	20.5	75	4
SMT08079C19 16UN	16	3/8"x16	-	8	7.90	19.1	75	3
SMT12120D21 16UN	16	-	3/4"x16	12	12.00	21.4	75	4
SMT12120D20 14UN	14	7/16"14	7/8"x14	12	12.00	20.9	75	4
SMT12119D30 12UN	12	9/16"x12	-	12	11.90	29.6	75	4

Mill-Thread Solid Carbide

UN 60° AMERICAN UN (UNC, UNF. UNEF, UNS)

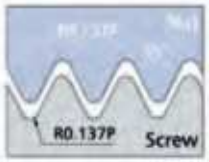


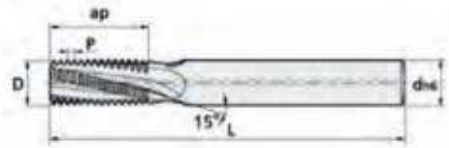


•Application: General engineering

Designation (Internal)	TPI	UNC	UNF	UNEF	Dimensions(mm)				No. of Inserts	Bore Dia.
					d	D	ap	L		
SMT04030C09 36UN	36	-	No. 8-32	-	4	3.00	8.5	50	3	3.5
SMT04033C11 32UN	32	No. 8-32	No. 10-32	No.12-3/8"x32	4	3.30	11.1	50	3	4.0
SMT06032C06 32UN	32	No. 8-32	No. 10-32	No.12-32	6	3.20	6.8	50	3	4.0
SMT04038C12 28UN	28	-	No. 12-28,1/4"x28	7/16", 1/2"x28	4	3.80	11.8	50	3	4.6
SMT06040C11 28UN	28	-	1/4"x28	7/16", 1/2"x28	6	4.00	11.3	50	3	5.4
SMT10092D23 28UN	28	-	-	7/16", 1/2"x28	10	9.20	22.7	75	4	10.0
SMT04029C11 24UN	24	No. 10-24	5/16", 3/8"x24	9/16",-11/16'x24	4	2.90	10.6	50	3	3.8
SMT04035C12 24UN	24	No. 12-24	5/16", 3/8"x24	9/16",-11/16'x24	4	3.50	11.6	50	3	4.5
SMT06057C16 24UN	24	-	5/16", 3/8"x24	9/16",-11/16'x24	6	5.70	15.9	60	3	6.8
SMT08074C19 24UN	24	-	3/8"x24	9/16",-11/16'x24	8	7.40	19.1	75	3	8.5
SMT12119D29 24UN	24	-	-	9/16",-11/16'x24	12	11.90	28.6	75	4	13.2
SMT04039C13 20UN	20	1/4"x20	7/16", 1/2"x20	3/4"-1"x20	4	3.90	12.7	50	3	5.2
SMT06045C12 20UN	20	1/4"x20	-	-	6	4.50	12.1	50	3	5.2
SMT08070C21 20UN	20	-	7/16", 1/2"x20	3/4"-1"x20	8	7.00	21.0	75	3	9.8
SMT10085D23 20UN	20	-	7/16", 1/2"x20	3/4"-1"x20	10	8.50	22.9	75	4	9.8
SMT10099D25 20UN	20	-	1/2"x20	3/4"-1"x20	10	9.90	25.4	75	4	11.5
SMT12120F27 20UN	20	-	-	3/4"-1"x20	12	12.00	27.3	75	5	17.8
SMT16159E38 20UN	20	-	-	3/4"-1"x20	16	15.90	38.1	100	5	17.8
SMT06052C17 18UN	18	5/16"x18	9/16", 5/8"x18	11/16"-1 11/16"x18	6	5.20	16.9	60	3	6.5
SMT10100D26 18UN	18	-	9/16", 5/8"x18	1 1/8" - 1 5/8"x18	10	10.00	26.1	75	4	12.8
SMT12113D30 18UN	18	-	9/16", 5/8"x18	11/16"-1 11/16"x18	12	11.30	29.6	75	4	12.8
SMT12119D33 18UN	18	-	5/8"x18	11/16"-1 11/16"x18	12	11.90	32.5	80	4	14.5
SMT06060C16 16UN	16	3/8"x16	-	-	6	6.00	16.7	60	3	8.0
SMT08067C19 16UN	16	3/8"x16	3/4"x16	-	8	6.70	19.1	75	3	8.0
SMT12120D31 16UN	16	-	3/4"x16	-	12	12.00	30.0	80	4	17.5
SMT16159D38 16UN	16	-	3/4"x16	-	16	15.90	38.1	100	4	17.5
SMT08076D24 14UN	14	7/16"x14	7/8"x14	-	8	7.60	23.6	75	4	9.3
SMT16150E37 14UN	14	-	7/8"x14	-	16	15.00	37.2	100	5	20.5
SMT20187D44 14UN	14	-	7/8"x14	-	20	18.70	44.4	100	4	20.5
SMT08080C22 13UN	13	1/2"x13	-	-	8	8.00	22.5	75	3	10.8
SMT10089D25 13UN	13	1/2"x13	-	-	10	8.90	25.4	75	4	10.8
SMT10100C26 12UN	12	9/16"x12	1"-1 1/2"x12	-	10	10.00	26.5	75	3	12.3
SMT12103D30 12UN	12	9/16"x12	1"-1 1/2"x12	-	12	10.30	29.6	80	4	12.3
SMT16160E41 12UN	12	-	1"-1 1/2"x12	-	16	16.00	41.3	100	5	23.5
SMT20199E51 12UN	12	-	1"-1 1/2"x12	-	20	19.90	50.8	100	5	23.5
SMT10100C29 11UN	11	5/8"x11	-	-	10	10.00	28.9	75	3	13.5
SMT12110D32 11UN	11	5/8"x11	-	-	12	11.00	32.3	80	4	13.5
SMT12120C34 10UN	10	3/4"x10	-	-	12	12.00	34.3	80	3	16.5
SMT16135E38 10UN	10	3/4"x10	-	-	16	13.50	38.1	100	5	16.5
SMT16152D45 9UN	9	7/8"x9	-	-	16	15.20	45.2	100	4	19.5
SMT16150C43 8UN	8	1"x8	-	-	16	15.00	42.9	100	3	22.0
SMT20170D51 8UN	8	1"x8	-	-	20	17.00	50.8	100	4	22.0
SMT20200C45 7UN	7	1 1/8" - 1 1/4"x7	-	-	20	20.00	45.4	100	3	25.0

W 60° WHIT WORTCH (BSW, BSF, BSF, BSB)

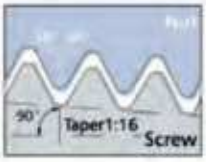


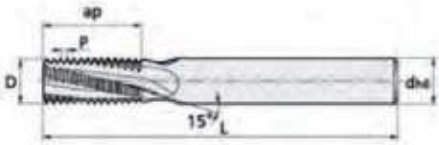


• **Application: General engineering fttings and pipe couplings**

Designation (External / Internal)	TPI	BSP (G)	Dimensions(mm)				No. of Inserts	Bore Dia.
			d	D	ap	L		
SMT06058C16 28W	28	1/16"x28, 1/8"x28	6	5.80	16.3	60	3	6.7
SMT08077C20 28W	28	1/8"x28	8	7.70	20.0	75	3	8.7
SMT08080C14 19W	19	1/4"x19, 3/8"x19	8	8.00	14.0	62	3	11.8
SMT10099D27 19W	19	1/4"x19, 3/8"x19	10	9.90	26.7	75	4	11.8
SMT16134D33 19W	19	3/8"x19	16	13.40	33.4	100	4	15.2
SMT12120D19 14W	14	1/2", 7/8"x14	12	12.00	19.0	75	4	18.6
SMT12120D26 14W	14	1/2", 7/8"x14	12	12.00	26.3	75	4	18.6
SMT16157E43 14W	14	1/2", 3/4"x14	16	15.70	43.5	100	5	19.0
SMT12120C24 11W	11	1", 1 1/2"x11	12	12.00	24.2	75	3	30.2
SMT16160D38 11W	11	1", 1 1/2", 2", 2 1/2", 3"x11	16	16.00	38.1	100	4	30.7
SMT20199E42 11W	11	1", 1 1/2", 2", 2 1/2"x11	20	19.90	41.6	100	5	30.7
SMT20200E47 11W	11	≥1"x11	20	20.00	47.3	100	5	30.7

NPT 60° NATIONAL PIPE



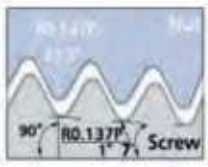


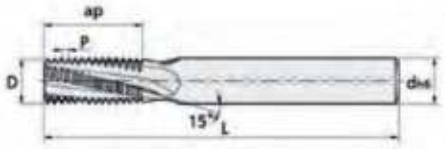
• **Application: General engineering**

Designation (External / Internal)	TPI	BSP (G)	Dimensions(mm)				No. of Inserts	Bore Dia.
			d	D	ap	L		
SMT06053C09 27NPT	27	1/16"x27	6	5.30	9.4	50	3	6.3
SMT08075E09 27NPT	27	1/8"x27	8	7.50	9.4	60	4	8.5
SMT08080C14 18NPT	18	1/4"x18	8	8.00	14.8	60	3	11.1
SMT10094E14 18NPT	18	1/4"x18	10	9.40	14.1	75	4	11.1
SMT12119E14 18NPT	18	3/8"x18	12	11.90	14.1	75	4	14.5
SMT12120D20 14NPT	14	1/2", 3/4"x14	12	12.00	20.9	75	4	17.7
SMT16155E25 14NPT	14	1/2", 3/4"x14	16	15.50	25.4	100	5	17.7, 23.0
SMT16160D27 11.5NPT	11.5	1"-2"x11.5	16	16.00	27.6	100	4	29.0
SMT20199E33 11.5NPT	11.5	1"-2"x11.5	20	19.90	33.1	100	5	29.0-56.0
SMT20199D38 8NPT	8	2 1/2", 3"x8	20	19.30	38.1	100	4	66.5

Mill-Thread Solid Carbide

BSPT 55° BRITISH STANDARD PIPE

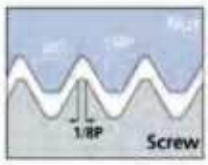


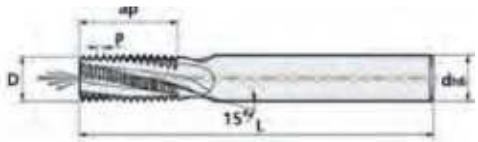


• **Application: General engineering fttings and pipe couplings**

Designation (External / Internal)	TPI	BSPT	Dimensions(mm)				No. of Inserts	Bore Dia.
			d	D	ap	L		
SMT06058C16 28BSPT	28	1/16"x28	6	5.80	16.3	60	3	6.7
SMT08077C20 28BSPT	28	1/8"x28	8	7.70	20.0	75	3	8.7
SMT08080C14 19BSPT	19	1/4"x19	8	8.00	14.0	60	3	10.9
SMT10099D27 19BSPT	19	1/4"x19	10	9.90	26.7	75	4	11.8
SMT16134D33 19BSPT	19	3/8"x19	16	15.70	33.4	100	4	15.2
SMT12120D19 14BSPT	14	1/2", 7/8"x14	12	12.00	19.1	75	4	18.0
SMT16157E43 14BSPT	14	1/2", 3/4"x14	16	15.70	43.5	100	5	19.0
SMT16160D28 11BSPT	11	1", 1 1/2", 2"x11	16	16.00	28.9	100	4	29.0
SMT20199E42 11BSPT	11	1", 1 1/2", 2 1/2"x1	20	19.90	41.6	100	5	30.7

ISO 60° METRIC

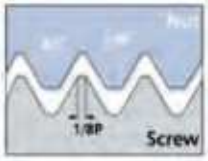


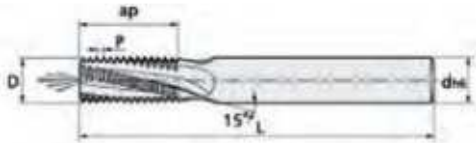


Designation (Internal)	Pitch	Mcoarse	Mfine	Dimensions(mm)				No. of Inserts	Bore Dia.
				d	D	ap	L		
SMTB04024C04 0.50ISO	0.5	M3x0.5	M3.5-M16x0.5	4	2.40	4.7	50	3	2.5
SMTB04031C06 0.70ISO	0.7	M4x0.7	-	4	3.15	6.6	50	3	3.3
SMTB04039C07 0.80ISO	0.8	M5x0.8	-	4	3.90	7.6	50	3	4.2
SMTB06048C09 1.00ISO	1.0	M6x1.0	M8-M40x1.0	6	4.80	9.5	50	3	5.0
SMTB08065C13 1.25ISO	1.25	M8x1.25	-	8	6.50	13.1	60	3	6.8
SMTB10082C15 1.50ISO	1.5	M10x1.5	M12-M48x1.5	10	8.20	15.7	75	3	8.5
SMTB10099D18 1.75ISO	1.75	M12x1.75	-	10	9.90	18.4	75	4	10.2
SMTB12116D21 2.00ISO	2.0	M14x2.0	M17-M80x2.0	12	11.60	21.0	75	4	12.0
SMTB14136D25 2.00ISO	2.0	M16x2.0	M17-M80x2.0	14	13.60	25.0	100	4	14.0

Mill-Thread Solid Carbide

ISO 60° METRIC



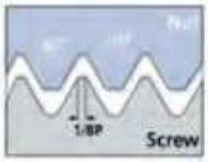


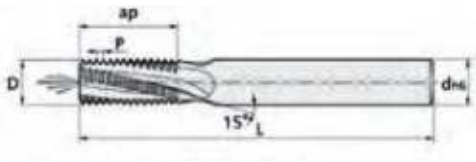
2.0 x Do (ap ≤ 2.0 x Thread Diameter)

• **Application: General engineering**

Designation (Internal)	Pitch	Mcoarse	Mfine	Dimensions(mm)				No. of Inserts	Bore Dia.
				d	D	ap	L		
SMTB04024C06 0.50ISO	0.5	M3x0.5	M3.5-M16x0.5	4	2.40	6.2	50	3	2.5
SMTB04032C08 0.50ISO	0.5	-	M4x0.5	4	3.20	8.2	50	3	3.3
SMTB06042C10 0.50ISO	0.5	-	M5x0.5	6	4.20	10.2	50	3	4.5
SMTB04031C08 0.70ISO	0.7	M4x0.7	-	4	3.15	8.7	50	3	3.3
SMTB06050C12 0.75ISO	0.75	-	M6x0.75	6	5.00	12.4	60	3	5.3
SMTB04039C10 0.80ISO	0.8	M5x0.8	-	4	3.90	10.8	50	3	4.2
SMTB06048C12 1.00ISO	1.0	M6x1.0	M8-M40x1.0	6	4.80	12.5	50	3	5.0
SMTB08067C16 1.00ISO	1.0	-	M8x1.0	8	6.70	16.5	60	3	7.0
SMTB10087C20 1.00ISO	1.0	-	M10x1.0	10	8.70	20.5	75	3	9.0
SMTB12107D24 1.00ISO	1.0	-	M12x1.0	12	10.70	24.5	75	4	11.0
SMTB06060C14 1.25ISO	1.25	M8x1.25	-	6	6.00	14.4	60	3	6.8
SMTB08065C16 1.25ISO	1.25	M8x1.25	-	8	6.50	16.9	60	3	6.8
SMTB10085C20 1.25ISO	1.25	-	M10x1.25	10	8.50	20.6	75	3	8.8
SMTB08078C17 1.50ISO	1.5	M10x1.5	M12-M48x1.5	8	7.80	17.0	60	3	8.5
SMTB10082C20 1.50ISO	1.5	M10x1.5	M12-M48x1.5	10	8.20	20.2	75	3	8.5
SMTB10099D24 1.50ISO	1.5	-	M12x1.5	10	9.90	24.7	75	4	10.5
SMTB12119D29 1.50ISO	1.5	-	M14x1.5	12	11.90	29.2	75	4	12.5
SMTB14139D32 1.50ISO	1.5	-	M16x1.5	14	13.90	32.2	100	4	14.5
SMTB16160F33 1.50ISO	1.5	-	M20x1.5	16	16.00	33.8	100	6	18.5
SMTB10099C25 1.75ISO	1.75	M12x1.75	-	10	9.90	25.4	75	4	10.2
SMTB10100C27 2.00ISO	2.0	M14x2.0	M15-M80x2.0	10	10.00	27.0	75	3	12.0
SMTB12116D29 2.00ISO	2.0	M14x2.0	M17-M80x2.0	12	11.60	29.0	75	4	12.0
SMTB14136D33 2.00ISO	2.0	M16x2.0	M17-M80x2.0	14	13.60	33.0	100	4	14.0
SMTB20200F41 2.00ISO	2.0	-	M26-M80x2.0	20	20.00	41.0	100	6	24.0
SMTB16148D36 2.50ISO	2.5	M18x2.5	-	16	14.80	36.2	100	4	15.5
SMTB16150E33 2.50ISO	2.5	M18x2.5	-	16	15.00	33.8	100	5	15.5
SMTB18171D41 2.50ISO	2.5	M20x2.5	-	18	17.10	41.2	100	4	17.5
SMTB20199D49 3.00ISO	3.0	M24x3.0	-	20	19.90	49.5	100	4	21.0

ISO 60° METRIC





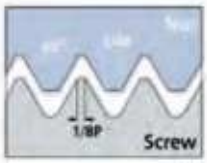
• **Application: General engineering**

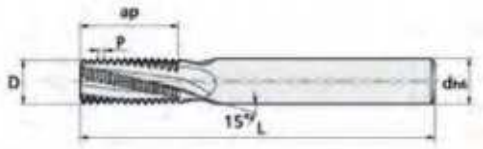
3.0 x Do (ap ≤ 3.0 x Thread Diameter)

Designation (Internal)	Pitch	Mcoarse	Mfine	Dimensions(mm)				No. of Inserts	Bore Dia.
				d	D	ap	L		
SMTB04024C09 0.50ISO	0.5	M3x0.5	M3.5-M16x0.5	4	2.40	9.25	50	3	2.5
SMTB04031C12 0.70ISO	0.7	M4x0.7	-	4	3.15	12.95	50	3	3.3
SMTB04039C15 0.80ISO	0.8	M5x0.8	-	4	3.90	15.60	50	3	4.2
SMTB06048C18 1.00ISO	1.0	M6x1.0	M8-M40x1.0	6	4.80	18.50	60	3	5.0
SMTB06060C19 1.25ISO	1.25	M8x1.25	-	6	6.00	19.40	60	3	6.8
SMTB08065C25 1.25ISO	1.25	M8x1.25	-	8	6.50	25.63	75	3	6.8
SMTB08078C24 1.50ISO	1.5	M10x1.5	M12-M48x1.5	8	7.80	24.80	75	3	8.5
SMTB10080C30 1.50ISO	1.5	M10x1.5	M12-M48x1.5	10	8.20	30.75	75	3	8.5
SMTB10099D37 1.75ISO	1.75	M12x1.75	-	10	9.90	37.63	75	4	10.2
SMTB12118D39 2.00ISO	2.0	M16x2.0	M17-M80x2.0	12	11.80	39.00	100	4	14.0
SMTB14136D49 2.00ISO	2.0	M16x2.0	M17-M80x2.0	14	13.60	49.00	100	4	14.0
SMTB16150E48 2.50ISO	2.5	M20x2.5	-	16	15.00	48.80	100	5	17.5
SMTB20180D58 3.00ISO	3.0	M24x3.0	-	20	18.00	58.50	120	4	21.0

Mill-Thread Solid Carbide

UN 60° AMERICAN UN (UNC, UNF. UNEF, UNS)



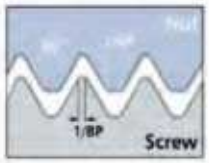


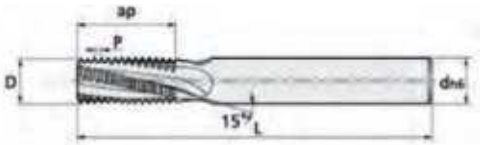
• **Application: General engineering**

1.5 x Do (ap ≤ 1.5 x Thread Diameter)

Designation (Internal)	TPI	UNC	UNF	UNEF	Dimensions(mm)				No. of Inserts	Bore Dia.
					d	D	ap	L		
SMTB04035C07 24UN	24	No. 10-24	5/16", 3/8"x24	9/16",-11/16'x24	4	3.58	7.9	50	3	3.8
SMTB06041C09 24UN	24	No. 10-24	5/16", 3/8"x24	9/16",-11/16'x24	6	4.15	9.0	50	3	4.5
SMTB06048C09 20UN	20	1/4"20	7/16", 1/2"x20	3/4"-1"x20	6	4.88	9.5	50	3	5.2
SMTB08061C12 18UN	18	5/16"x18	9/16", 5/8"x18	11/16"-1 11/16"x18	8	6.15	12.0	60	3	6.5
SMTB08076C15 16UN	16	3/8"x16	3/4"x16	-	8	7.65	15.1	60	3	8.0
SMTB10090C17 14UN	14	7/16"x14	7/8"x14	-	10	9.00	17.2	75	3	9.3
SMTB12104D20 13UN	13	1/2"x13	-	-	12	10.35	20.5	75	4	10.8
SMTB12118D22 12UN	12	9/16"x12	1"-1 1/2"x12	-	12	11.80	22.2	75	4	12.3

UN 60° AMERICAN UN (UNC, UNF. UNEF, UNS)





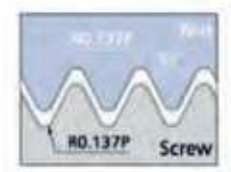
• **Application: General engineering**

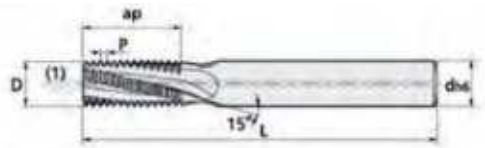
2.0 x Do (ap ≤ 2.0 x Thread Diameter)

Designation (Internal)	TPI	UNC	UNF	UNEF	Dimensions(mm)				No. of Inserts	Bore Dia.
					d	D	ap	L		
SMTB04038C10 32UN	32	-	No. 10-32	No.12-3/8"x32	4	3.80	9.9	50	3	4.0
SMTB06044C11 32UN	32	-	-	No.12-3/8"x32	6	4.40	11.5	50	3	4.7
SMTB06060C14 32UN	32	-	-	5/16"x32	6	6.00	14.7	50	3	7.1
SMTB08080D18 32UN	32	-	-	3/8"x32	8	8.00	18.7	60	4	8.7
SMTB06043C11 28UN	28	-	No. 12,1/4"x28	7/16", 1/2"x28	6	4.30	11.3	50	3	4.6
SMTB06050C13 28UN	28	-	1/4"x28	7/16", 1/2"x28	6	5.20	13.1	50	3	5.5
SMTB10099C22 28UN	28	-	-	7/16", 1/2"x28	10	9.90	22.2	75	3	10.2
SMTB04035C10 24UN	24	No. 10-24	5/16", 3/8"x24	9/16",-11/16'x24	4	3.58	10.0	50	3	3.8
SMTB06041C11 24UN	24	No. 12-24	5/16", 3/8"x24	9/16",-11/16'x24	6	4.15	11.1	50	3	4.5
SMTB08066C16 24UN	24	-	5/16", 3/8"x24	9/16",-11/16'x24	8	6.60	16.4	60	3	6.8
SMTB08080D21 24UN	24	-	3/8"x24	-	8	8.00	20.6	60	4	8.5
SMTB10082C20 24UN	24	-	3/8"x24	9/16",-11/16'x24	10	8.20	19.6	75	3	8.5
SMTB14129D29 24UN	24	-	-	9/16",-11/16'x24	14	12.90	29.1	100	4	13.2
SMTB06048C13 20UN	20	1/4"x20	7/16", 1/2"x20	3/4"-1"x20	6	4.88	13.3	50	3	5.2
SMTB08080C21 20UN	20	-	7/16"x20	-	8	8.00	21.0	60	3	9.8
SMTB10096C22 20UN	20	-	7/16", 1/2"x20	3/4"-1"x20	10	9.60	22.2	75	3	9.8
SMTB12111D26 20UN	20	-	1/2"x20	3/4"-1"x20	12	11.10	26.0	75	4	11.5
SMTB18174D38 20UN	20	-	-	3/4"-1"x20	18	17.40	38.7	100	4	17.8
SMTB06056C14 18UN	18	5/16"x18	-	1 1/8" - 1 5/8"x18	6	5.60	14.8	50	3	6.5
SMTB08061C16 18UN	18	5/16"x18	9/16", 5/8"x18	11/16"-1 11/16"x18	8	6.15	16.2	60	3	6.5
SMTB12113D26 18UN	18	-	9/16", 5/8"x18	-	12	11.30	26.1	75	4	12.8
SMTB14125D28 18UN	18	-	9/16", 5/8"x18	11/16"-1 11/16"x18	14	12.50	28.9	100	4	12.8
SMTB16141D31 18UN	18	-	5/8"x18	11/16"-1 11/16"x18	16	14.10	31.7	100	4	14.5
SMTB08076C20 16UN	16	3/8"x16	3/4"x16	-	8	7.65	19.8	60	3	8.0
SMTB12120D31 16UN	16	-	3/4"x16	-	12	12.00	31.0	75	4	17.5
SMTB18170D38 16UN	16	-	3/4"x16	-	18	17.00	38.8	100	4	17.5
SMTB08077C20 14UN	14	7/16"x14	-	-	8	7.70	20.9	60	3	9.3
SMTB10080C22 14UN	14	7/16"x14	7/8"x14	-	10	9.00	22.7	75	3	9.3
SMTB16160E37 14UN	14	-	7/8"x14	-	16	16.00	37.2	100	5	20.5
SMTB20199D44 14UN	14	-	7/8"x14	-	20	19.90	44.4	100	4	20.5
SMTB10092C22 13UN	13	1/2"x13	-	-	10	9.20	22.5	75	3	10.8
SMTB12104D26 13UN	13	1/2"x13	-	-	12	10.35	26.4	75	4	10.8
SMTB12118D28 12UN	12	9/16"x12	1"-1 1/2"x12	-	12	11.80	28.6	75	4	12.3
SMTB16160E41 12UN	12	-	1"-1 1/2"x12	-	16	16.00	41.3	100	5	23.5
SMTB20199D51 12UN	12	-	1"-1 1/2"x12	-	20	19.90	51.9	100	4	23.5
SMTB12114C29 11UN	11	5/8"x11	-	-	12	11.40	28.9	75	3	13.5
SMTB14131D33 11UN	11	5/8"x11	-	-	1	13.10	33.5	100	4	13.5
SMTB16159D46 10UN	10	3/4"x10	-	-	16	15.90	39.4	100	4	16.5
SMTB16160C38 9UN	9	7/8"x9	-	-	16	16.00	38.1	100	3	19.5
SMTB20190D46 9UN	9	7/8"x9	-	-	20	19.00	46.6	100	4	19.5
SMTB20199D52 8UN	8	1"x8	-	-	20	19.90	52.4	100	4	22.0
SMTB20200D45 7UN	7	1 1/8" - 1 1/4"x7	-	-	20	20.00	45.3	100	4	25.0

Mill-Thread Solid Carbide

W 55° WHIT WORTH (BSW, BSF, BSP, BSB)

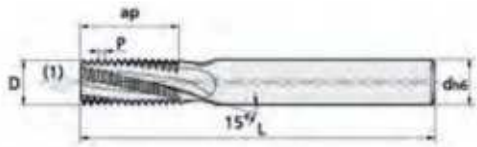




- **Application: General engineering fttings and pipe couplings**

Designation (External / Internal)	TPI	BSW	BSF	Dimensions(mm)				No. of Inserts	Bore Dia.
				d	D	ap	L		
SMTB06050C13 26W	26	-	1/4"x26	6	5.00	13.2	50	3	5.3
SMTB08063C16 22W	22	-	5/16"x22	8	6.35	16.7	60	3	6.7
SMTB06044C13 20W	20	1/4"x20	3/8"x20	6	4.45	13.3	50	3	5.0
SMTB08076C20 20W	20	-	3/8"x20	8	7.65	19.7	60	3	8.2
SMTB06058C16 18W	18	5/16"x18	7/16"x18	6	5.85	16.2	50	3	6.5
SMTB10092C23 18W	18	-	7/16"x18	10	9.20	23.3	75	3	9.7
SMTB08072C20 16W	16	3/8"x16	1/2", 9/16"x16	8	7.20	19.8	60	3	7.9
SMTB12105D26 16W	16	-	1/2", 9/16"x16	12	10.50	26.2	75	4	11.1
SMTB14121D29 16W	16	-	9/16"x16	14	12.15	29.4	100	4	12.6
SMTB10085C22 14W	14	7/16"x14	5/8", 11/16"x14	10	8.50	22.7	75	3	9.2
SMTB14134D31 14W	14	-	5/8", 11/16"x14	14	13.40	31.7	100	4	14.0
SMTB16150D35 14W	14	-	11/16"x14	16	15.00	35.4	100	4	15.6
SMTB10096C26 12W	12	1/2"x12	3/4"x12	10	9.65	26.5	75	3	10.5
SMTB12112D28 12W	12	9/16"x12	3/4"x12	12	11.25	28.6	75	4	12.1
SMTB18162D39 12W	12	-	3/4"x12	18	16.20	39.2	100	4	16.8
SMTB14126D33 11W	11	58"x11	7/8"x11	14	12.60	33.5	100	4	13.4
SMTB16142D35 11W	11	11/16"x11	-	16	14.20	35.8	100	4	15.0

W 55° WHIT WORTH (BSW, BSF, BSP, BSB)

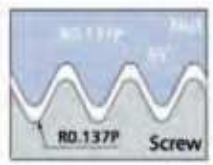


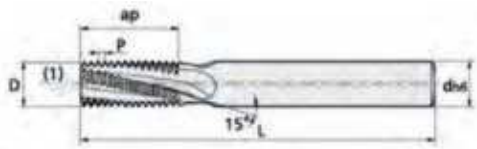
• **Application: General engineering fttings and pipe couplings**

1.5 x Do (ap ≤ 1.5 x Thread Diameter)

Designation (External / Internal)	TPI	BSW	Dimensions(mm)				No. of Inserts	Bore Dia.
			d	D	ap	L		
SMTB08064C12 28W	28	1/16", 1/8"x28	8	6.40	12.2	60	3	6.7
SMTB10082C15 28W	28	1/8"x28	10	8.20	15.0	75	3	8.7
SMTB10100D16 19W	19	1/4", 3/8"x19	10	10.00	16.7	75	4	11.8
SMTB12110D20 19W	19	1/4", 3/8"x19	12	11.00	20.7	75	4	11.8
SMTB16145D26 19W	19	3/8"x19	16	14.50	26.1	100	4	15.2
SMTB16160E26 14W	14	1/2"-7/8"x14	16	16.00	26.3	100	5	19.0
SMTB20199D42 11W	11	1"-4"x11	20	19.90	42.7	100	4	30.7

W 55° WHIT WORTH (BSW, BSF, BSP, BSB)





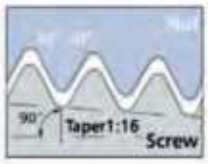
• **Application: General engineering fttings and pipe couplings**

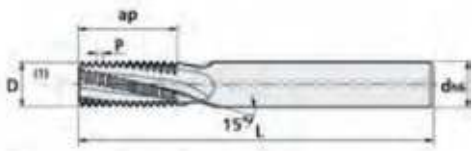
2.0 x Do (ap ≤ 2.0 x Thread Diameter)

Designation (External / Internal)	TPI	BSW	Dimensions(mm)				No. of Inserts	Bore Dia.
			d	D	ap	L		
SMTB08064C15 28W	28	1/16", 1/8"x28	8	6.40	15.9	60	3	6.7
SMTB10082C20 28W	28	1/8"x28	10	8.20	19.5	75	3	8.7
SMTB12110D27 19W	19	1/4", 3/8"x19	12	11.00	27.4	75	4	11.8
SMTB16145D34 19W	19	3/8"x19	16	14.50	34.1	100	4	15.2
SMTB18179D42 14W	14	1/2"-7/8"x14	18	17.90	42.6	100	4	19.0
SMTB16160D38 11W	11	1"-4"x11	16	16.00	38.1	100	4	30.7
SMTB20199E47 11W	11	1"-4"x11	20	19.90	47.3	100	5	30.7

Mill-Thread Solid Carbide

NPT 60° NATIONAL PIPE

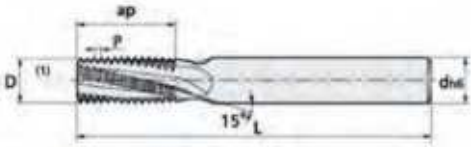




• **Application: Steam, gas and water pipes**

Designation (External / Internal)	TPI	BSW	Dimensions(mm)				No. of Inserts	Bore Dia.
			d	D	ap	L		
SMTB06059C10 27NPT	27	1/16"x27	6	5.90	9.9	50	3	6.3
SMTB08076C10 27NPT	27	1/8"x27	8	7.65	9.9	60	3	8.5
SMTB10099C14 18NPT	18	1/4"x18	10	9.90	14.8	75	3	11.1
SMTB12111D14 18NPT	18	3/8"x18	12	11.15	14.8	75	4	14.5
SMTB16142D19 14NPT	14	1/2", 3/4"x14	16	14.25	19.0	100	4	17.0, 23.0
SMTB20196D23 11.5NPT	11.5	1", 1 1/4", 1 1/2", 2"x11.5	20	19.60	23.2	100	4	29.0, 37.7, 44.0, 56.0
SMTB20196D33 8NPT	8	2 1/2", 3"x8	20	19.60	33.3	100	4	66.5, 82.1

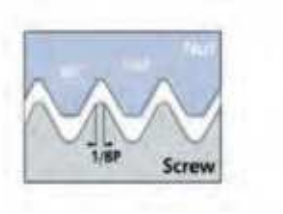
BSPT 55° BRITISH STANDARD PIPE

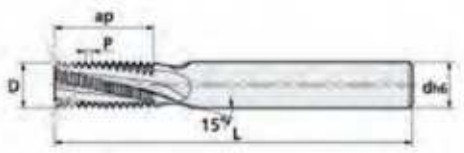


• **Application: General engineering fttings and pipe couplings**

Designation (External / Internal)	TPI	BSPT	Dimensions(mm)				No. of Inserts	Bore Dia.
			d	D	ap	L		
SMTB06059C10 28BSPT	28	1/16"x27	6	5.90	10.2	50	3	6.7
SMTB08076C10 28BSPT	28	1/8"x27	8	7.60	10.2	60	3	8.7
SMTB10099C15 19BSPT	19	1/4"x19	10	9.90	15.4	75	3	11.8
SMTB12111D15 19BSPT	19	3/8"x19	12	11.15	15.4	75	4	15.2
SMTB16142D22 14BSPT	14	1/2", 3/4"x14	16	14.20	22.7	100	4	19.0
SMTB16160D28 11BSPT	11	1", 1 1/2", 2", 2 1/2"x11	1620	16.00	28.9	100	4	30.7
SMTB20196D28 11BSPT	11	1", 1 1/2", 2", 2 1/2"x11		19.60	28.9	100	4	30.7

ISO 60° METRIC



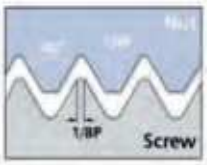


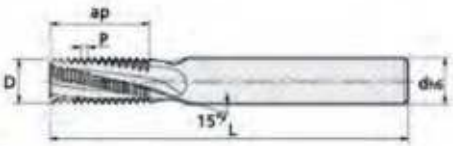
• **Application: General engineering**

Designation (Internal)	Pitch	Mcoarse	Mfine	Dimensions(mm)				No. of Inserts	Bore Dia.
				d	D	ap	L		
SMTZ06048C12 1.00ISO	1.0	M6x1.0	M8-M40x1.0	6	4.80	12.5	50	3	5.0
SMTZ10087C23 1.00ISO	1.0	-	M10x1.0	10	8.70	20.5	75	3	9.0
SMTZ12107D24 1.00ISO	1.0	-	M12x1.0	12	10.70	24.5	75	4	11.0
SMTZ08065C16 1.25ISO	1.25	M8x1.25	-	8	6.50	16.9	60	3	6.8
SMTZ10082C20 1.50ISO	1.5	M10x1.5	M12-M48x1.5	10	8.20	20.3	75	3	8.5
SMTZ10099D24 1.50ISO	1.5	-	M12x1.5	10	9.90	24.80	75	4	10.5
SMTZ12119D29 1.50ISO	1.5	-	M14x1.5	12	11.90	29.30	75	4	12.5
SMTZ14139D32 1.50ISO	1.5	-	M16x1.5	14	13.90	32.30	75	4	14.5
SMTZ16160E33 1.50ISO	1.5	-	M20x1.5	16	16.00	33.80	100	5	18.5
SMTZ10099D25 1.75ISO	1.75	M12x1.75	-	10	9.90	25.40	75	4	10.2
SMTZ10099C27 2.00ISO	2.0	M14x2.0	-	10	9.90	27.00	75	3	12.0
SMTZ12118D27 2.00ISO	2.0	M16x2.0	M17-M80x2.0	12	11.80	27.00	75	4	14.0
SMTZ16150E33 2.50ISO	2.5	M20x2.5	-	16	15.00	33.80	100	5	17.5

Mill-Thread Solid Carbide

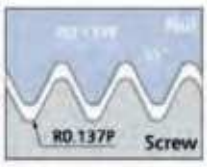
UN 60° AMERICAN UN (UNC UNF UNEF UNS)

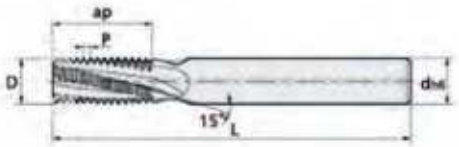




Designation (Internal)	TPI	UNC	UNF	UNEF	Dimensions(mm)				No. of Inserts	Bore Dia.
					d	D	ap	L		
SMTZ06050C11 28UN	28	-	1/4"x28	7/16", 1/2"x28	6	5.00	11.3	50	3	5.5
SMTZ06060C14 28UN	28	-	-	7/16", 1/2"x28	6	6.00	14.1	50	3	10.2
SMTZ08066C14 24UN	24	-	5/16", 3/8"x24	9/16", 11/16"x24	8	6.60	14.3	60	3	6.8
SMTZ08080D21 24UN	24	-	3/8"x24	9/16", 11/16"x24	8	8.00	20.6	60	4	8.5
SMTZ08080C21 20UN	20	-	7/16", 1/2"x20	3/4"-1x20	8	8.00	21.0	60	3	9.8
SMTZ10100D22 20UN	20	-	1/2"x20	3/4"-1x20	10	10.00	22.3	75	4	11.5
SMTZ12120E27 20UN	20	-	-	3/4"-1x20	12	12.00	27.3	75	5	17.8
SMTZ06056C14 18UN	18	5/16"x18	9/16", 5/8"x18	11/16"-1 11/16"x18	6	5.60	14.8	50	3	6.5
SMTZ12113D26 18UN	18	-	9/16", 5/8"x18	1 1/8"-1 5/8"x18	12	11.30	26.1	75	4	12.8
SMTZ08067C16 16UN	16	3/8"x16	3/4"x16	-	8	6.70	16.7	60	3	8.0
SMTZ12120D31 16UN	16	-	3/4"x16	-	12	12.00	31.0	75	4	17.5
SMTZ08077C20 14UN	14	7/16"x14	7/8"x14	-	8	7.70	20.9	60	3	9.3
SMTZ16160E37 14UN	14	-	7/8"x14	-	16	16.00	37.2	100	5	20.5
SMTZ10092C22 13UN	13	1/2"x13	-	-	10	9.20	22.5	75	3	10.8
SMTZ12105C26 12UN	12	9/16"x12	1"-1 1/2"x12	-	12	10.50	26.5	75	3	12.3
SMTZ12114C28 11UN	11	5/8"x11	-	-	12	11.40	28.9	75	3	13.5
SMTZ16144D34 10UN	10	3/4"x10	-	-	16	14.40	34.3	100	4	16.5

W 55° WHIT WORTH (BSW, BSF, BSP, BSB)

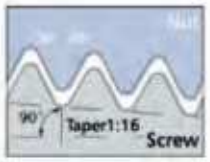


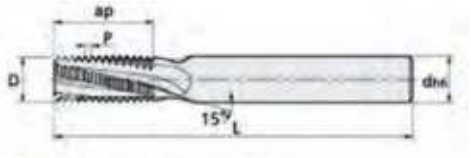


• **Application: General engineering**

Designation (External / Internal)	TPI	BSP (G)	Dimensions(mm)				No. of Inserts	Bore Dia.
			d	D	ap	L		
SMTZ08078C14 28W	28	1/8"x28	8	7.80	14.1	60	3	875
SMTZ10100D16 19W	19	1/4", 3/8"x19	10	10.00	16.7	75	4	11.8
SMTZ16160E26 14W	14	1/2", 3/4", 7/8"x14	16	16.00	26.3	100	5	19.0
SMTZ16160D38 11W	11	1", 1 1/2", 2", 2 1/2"x11	16	16.00	38.1	100	4	30.7

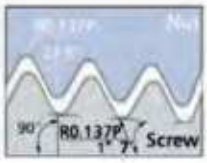
NPT 60° NATIONAL PIPE

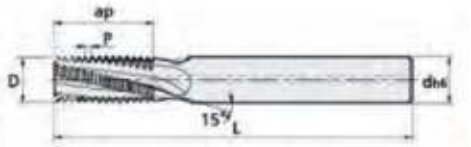




Designation (External / Internal)	TPI	NPT	Dimensions(mm)				No. of Inserts	Bore Dia.
			d	D	ap	L		
SMTZ08076C10 27NPT	27	1/8"x27	8	7.60	10.8	60	3	8.5
SMTZ10100D16 18NPT	18	1/4", 3/8"x18	10	10.00	16.2	75	4	11.1, 14.5
SMTZ16155D22 14NPT	14	1/2", 3/4"x14	16	15.50	22.7	100	4	17.7, 23.0

BSPT 55° BRITISH STANDARD PIPE

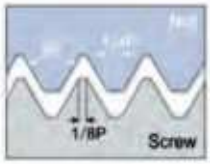


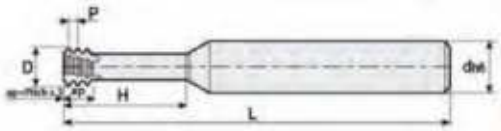


Designation (External / Internal)	TPI	BSP (G)	Dimensions(mm)				No. of Inserts	Bore Dia.
			d	D	ap	L		
SMTZ08078C14 28BSPT	28	1/8"x28	8	7.60	14.1	60	3	8.5
SMTZ10100D16 19BSPT	19	1/4", 3/8"x19	10	10.00	16.7	75	4	11.8
SMTZ16160E26 14BSPT	14	1/2", 3/4", 7/8"x14	16	16.00	26.3	100	5	19.0
SMTZ16160D28 11BSPT	11	1", 1 1/2", 2", 2 1/2"x11	16	16.00	38.1	100	4	30.7

Mini Mill-Thread Solid Carbide

ISO 60° METRIC

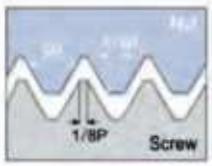


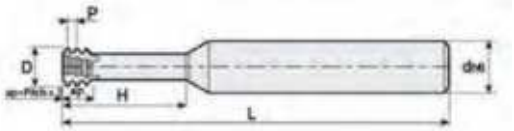


2 x Do (H ≤ 2 x Thread Diameter)

Designation (Internal)	Pitch	Mcoarse	Mfine	Dimensions(mm)					No. of Inserts	Bore Dia.
				d	D	ap	H	L		
MSMT04006C02 0.25ISO	0.25	M1.0x0.25		4	0.65	0.75	2.2	50	3	0.75
MSMT04008C02 0.25ISO	0.25	M1.2x0.25		4	0.85	0.75	2.6	50	3	0.95
MSMT04010C03 0.30ISO	0.3	M1.4x0.3		4	1.00	0.90	3.0	50	3	1.10
MSMT04011C03 0.35ISO	0.35	M1.6x0.35		4	1.15	1.05	3.4	50	3	1.25
MSMT04014C04 0.40ISO	0.4	M2x0.4		4	1.45	1.20	4.5	50	3	1.60
MSMT04019C05 0.45ISO	0.45	M2.5x0.45		4	1.90	1.35	5.5	50	3	2.05
MSMT04023C06 0.50ISO	0.5	M3x0.5	M3.5-M16x0.5	4	2.35	1.50	6.5	50	3	2.50
MSMT04031C08 0.70ISO	0.75	M4x0.7		4	3.15	2.10	8.5	50	3	3.30
MSMT06040C10 0.80ISO	0.8	M5x0.8		6	4.00	2.40	10.5	50	3	4.20
MSMT06048C12 1.00ISO	1.0	M6x1.0	M8-M40x1.0	6	4.80	3.00	12.5	50	3	5.00
MSMT08065D16 1.25ISO	1.25	M8x1.25		8	6.50	3.75	16.5	60	4	6.75
MSMT10082D21 1.50ISO	1.5	M10x1.5		10	8.20	4.50	21.0	75	4	8.50
MSMT12120D29 1.50ISO	1.5		M14x1.5	12	12.00	4.50	29.0	75	4	12.5
MSMT14140D33 1.50ISO	1.5		M16x1.5	14	14.00	4.50	33.0	80	4	14.50
MSMT10099D25 1.75ISO	1.75	M12x1.75		10	9.90	5.25	25.0	75	4	10.20
MSMT12116D29 2.00ISO	2.0	M14x2.0		12	11.60	6.00	29.0	75	4	12.00
MSMT14136D33 2.00ISO	2.0	M16x2.0		14	13.60	6.00	33.0	80	4	14.00
MSMT16160D40 2.50ISO	2.5	M20x2.5		16	16.00	7.50	40.0	100	4	17.50

ISO 60° METRIC



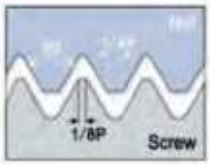


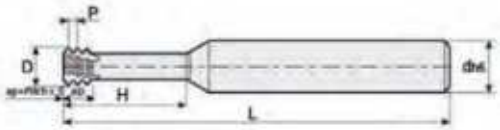
3 x Do (H ≤ 3 x Thread Diameter)

Designation (Internal)	Pitch	Mcoarse	Mfine	Dimensions(mm)					No. of Inserts	Bore Dia.
				d	D	ap	H	L		
MSMT04008C03 0.25ISO	0.25	M1.2x0.25		4	0.85	0.75	3.6	50	3	0.95
MSMT04010C04 0.30ISO	0.3	M1.4x0.3		4	1.00	0.90	4.2	50	3	1.10
MSMT04011C04 0.35ISO	0.35	M1.6x0.35		4	1.15	1.05	4.8	50	3	1.25
MSMT04014C06 0.40ISO	0.4	M2x0.4		4	1.45	1.20	6.0	50	3	1.60
MSMT04019C07 0.45ISO	0.45	M2.5x0.45		4	1.90	1.35	7.5	50	3	2.05
MSMT04023C09 0.50ISO	0.5	M3x0.5	M3.5-M16x0.5	4	2.35	1.50	9.0	50	3	2.50
MSMT06042C15 0.50ISO	0.5		M5x0.5	6	4.20	1.50	15.0	50	3	4.50
MSMT04031C12 0.70ISO	0.7	M4x0.7		4	3.15	2.10	12.0	50	3	3.30
MSMT06050C18 0.75ISO	0.75		M6x0.75	6	5.00	2.25	18.0	50	3	5.25
MSMT06040C15 0.80ISO	0.8	M5x0.8		6	4.00	2.40	15.0	50	3	4.20
MSMT06048C18 1.00ISO	1.0	M6x1.0	M8-M40x1.0	6	4.80	3.00	18.0	50	3	5.00
MSMT08065D24 1.00ISO	1.0		M8x1.0	8	6.50	3.00	24.0	60	4	7.00
MSMT10085D30 1.00ISO	1.0		M10x1.0	10	8.50	3.00	30.0	75	4	9.00
MSMT10100D36 1.00ISO	1.0		M12x1.0	10	10.00	3.00	36.0	75	4	11.00
MSMT08065D24 1.25ISO	1.25	M8x1.25		8	6.5	3.75	24.0	60	4	6.75
MSMT10082D30 1.25ISO	1.25		M10x1.25	10	8.20	3.75	30.0	75	4	8.75
MSMT10100D36 1.25ISO	1.25		M12x1.25	10	10.00	3.75	36.0	75	4	10.75
MSMT10082D30 1.50ISO	1.5	M10x1.5		10	8.20	4.50	30.0	75	4	8.50
MSMT10100D36 1.50ISO	1.5		M12x1.5	10	10.00	4.50	36.0	75	4	10.50
MSMT12120D36 1.50ISO	1.5		M14x1.5	12	12.00	4.50	36.0	75	4	12.50
MSMT14140D40 1.50ISO	1.5		M16x1.5	14	14.00	4.50	40.0	80	4	14.50
MSMT10099D36 1.75ISO	1.75	M12x1.75		10	9.90	5.25	36.0	75	4	10.20
MSMT12116D36 2.00ISO	2.0	M14x2.0		12	11.60	6.00	36.0	75	4	12.00
MSMT14136D40 2.00ISO	2.0	M16x2.0		14	13.60	6.00	40.0	80	4	14.00
MSMT16148D54 2.50ISO	2.5	M18x2.5		16	14.80	7.50	54.0	100	4	15.50
MSMT16160D60 2.50ISO	2.5	M20x2.5		16	16.00	7.50	60.0	100	4	17.50

Mini Mill-Thread Solid Carbide

UN 60° AMERICAN UN (UNC UNF UNEF UNS)

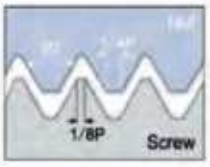


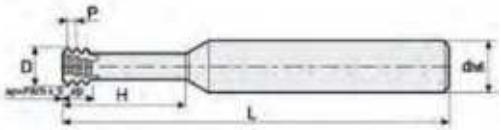


2 x Do (H ≤ 2 x Thread Diameter)

Designation (Internal)	TPI	UNC	UNF	Dimensions(mm)				No. of Inserts	Bore Dia.
				d	D	H	L		
MSMT06015C03 72UN	72		No.1-72	6	1.45	3.9	50	3	1.6
MSMT06014C04 64UN	64	No.1-64	No.2-64	6	1.40	4.2	50	3	1.5
MSMT06017C05 56UN	56	No.2-56	No.3-56	6	1.65	5.0	50	3	1.8
MSMT06019C06 48UN	48	No.3-48	No.4-48	6	1.90	6.0	50	3	2.1
MSMT06021C06 40UN	40	No.4, No.5-40	No.6-40	6	2.10	6.0	50	3	2.3
MSMT06025C07 40UN	40	No.5-40	No.6-40	6	2.45	7.2	50	3	2.6
MSMT06033C08 36UN	36		No.8-36	6	3.30	8.7	50	3	3.5
MSMT06026C07 32UN	32	No.6, No.8-32	No.10-32	6	2.55	7.4	50	3	2.8
MSMT06033C10 32UN	32	No.8-32	No.10-32	6	3.20	10.0	50	3	3.5
MSMT06038C10 32UN	32		No.10-32	6	3.80	10.3	50	3	4.0
MSMT06053C13 28UN	28		1/4"x28	6	5.25	13.2	50	3	5.5
MSMT06036C10 24UN	24	No.10-24	5/16"x24	6	3.58	10.2	50	3	3.9
MSMT08067C16 24UN	24		5/16"x24	8	6.68	16.5	60	3	6.9
MSMT06049C13 20UN	20	1/4"x20	7/16"x20	6	4.88	13.4	50	3	5.2
MSMT10096C23 20UN	20		7/16"x20	10	9.55	23.0	75	3	9.9
MSMT08062C16 18UN	18	5/16"x18		8	6.15	16.9	60	3	6.6
MSMT08067C19 16UN	16	3/8"x16		8	6.70	19.1	60	3	8.0
MSMT10080C12 14UN	14	7/16"x14		10	9.00	23.3	75	3	9.4

UN 60° AMERICAN UN (UNC UNF UNEF UNS)





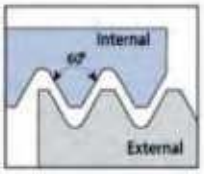
3 x Do (H ≤ 3 x Thread Diameter)

Designation (Internal)	TPI	UNC	UNF	Dimensions(mm)				No. of Inserts	Bore Dia.
				d	D	H	L		
MSMT06015C05 72UN	72		No.1-72	6	1.45	5.8	50	3	1.6
MSMT06017C07 56UN	56	No.2-56	No.3-56	6	1.65	7.0	50	3	1.8
MSMT06021C09 40UN	40	No.4, No.5-40	No.6-40	6	2.10	9.0	50	3	2.3
MSMT06025C10 40UN	40	No.5-40	No.6-40	6	2.45	10.0	50	3	2.6
MSMT06026C11 32UN	32	No.6, No.8-32	No.10-32	6	2.55	11.0	50	3	2.8
MSMT06032C15 32UN	32	No.8-32	No.10-32	6	3.20	13.0	50	3	3.5
MSMT06038C15 32UN	32		No.10-32	6	3.80	15.1	50	3	4.0
MSMT06044C17 28UN	28	No.12-28	1/4"x28	6	4.40	17.0	50	3	4.7
MSMT06053C19 28UN	28		1/4"x28	6	5.25	19.6	50	3	5.5
MSMT08067C24 24UN	24		5/16"x24	8	6.68	24.5	50	3	6.9
MSMT06049C19 20UN	20	1/4"x20	7/16"x20	6	4.88	19.8	50	3	5.2
MSMT008062C24 18UN	18	5/16"x18		8	6.15	24.0	60	3	6.6

※ Bore diameter applies to smallest thread dia.

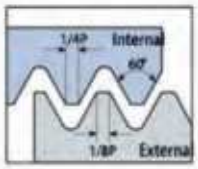
Mini Mill-Thread Solid Carbide for Deep Parts

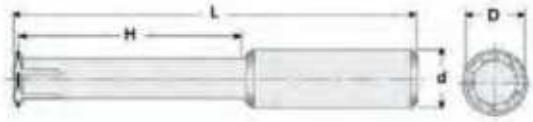
Partial Profile 60°



Designation (Internal)	Pitch		MCoarse	Mfine	Min. Thread	Dimensions(mm)				No. of flutes
	mm	TPI			UN, UNS, UNF, UNEF	d	D	H	L	
DSMT04011C3.4A60	0.25-0.35	72-100	M1.6x0.35	M1.6x0.25 M1.8x0.25 M2x0.25	No.0-80UNF	4	1.05	3.4	50	3
DSMT04015C4.5A60	0.35-0.45	56-72	M2x0.4 M2.2x0.45	M2x0.35 M2.2x0.35	No.1-64UNC, No.1-72UNF, No.2-56UNC, No.2-64UNF	4	1.45	4.5	50	3
DSMT04019C5.5A60	0.35-0.6	40-56	M2.5x0.45	M2.5x0.35 M3x0.35	No.3-48UNC, No.3-56UNF	4	1.90	5.5	50	3
DSMT04023C6.5A60	0.45-0.6	40-48	M3x0.5 M3.5x0.6	M3.5x0.5	No.4-40UNC, No.4-48UNC, No.5-40UNC, No.5-44UNF	4	2.35	6.5	50	3
DSMT04032C8.5A60	0.5-0.8	32-48	M4x0.7 M4.5x0.75	M4x0.5	No.6-32UNC, No.6-40UNF, No.8-32UNC, No.8-36UNF	4	3.15	8.5	50	3
DSMT04039D16A60	0.5-0.8	32-56	M5x0.8	M5x0.5 M5x0.75	No.10-56UNS, No.10-48UNS, No.10-40UNS, No.10-36UNS, No.10-32UNF	4	3.90	16.0	50	4
DSMT06040C10A60	0.7-1.0	24-36	M5x0.8 M6x1.0	M5x0.75 M6x0.75	No.10-36UNS, No.10-40UNS, No.12-24UNC, No.12-28UNF	6	3.15	10.0	50	3
DSMT06049E20B60	0.5-1.0	24-36	M6x1.0	M6x0.5 M6x0.75	No.12-56UNS, No.12-48UNS, 1/4-40UNS, 1/4-36UNS, 1/4-32UNEF, 1/4-28UNF, 1/4-27UNS, 1/4-24UNS	6	4.85	20.0	50	5
DSMT06048C12A60	0.8-1.25	20-32	M6x1.0 M8x1.25	M7.5x1.0	5/16-32UNEF, 5/16-28UN, 5/16-27UNS, 5/16-24UNS, 5/16-20UN	6	4.80	12.0	50	3
DSMT06059E20B60	0.5-1.25	20-48	M8x1.25	M7x0.5 M7x0.75 M7.5x1.0	5/16-48UNS, 5/16-40UNS, 5/16-36UNS, 5/16-32UNEF, 5/16-28UN, 5/16-27UNS, 5/16-24UNS, 5/16-20UN	6	5.90	25.0	50	5
DSMT10099F35B60	0.5-1.0	16-24	-	M10.5x0.5 M11x0.75. M11x1.0	7/16-32UN, 7/16-28UNEF, 7/16-27UNS, 7/16-24UNS	10	9.90	35.0	75	6
DSMT0806F16C60	1.0-1.5	24-14	M10x1.5	M10x1.0 M10x1.25	3/8-24UNF, 3/8-20UN, 7/16-18UNS, 7/16-16UN	8	6.50	16.0	50	6
DSMT08079F32C60	1.0-1.5	16-24	M10x1.5	M10x1.0 M10x1.25	3/8-24UNF, 3/8-20UN, 7/16-18UNS, 7/16-16UN	8	7.90	32.0	60	6
DSMT10082F21A60	1.25-1.75	14-24	M12x1.75	M10x1.25 M12x1.25	1/2-24UNS, 1/2-20UNS, 1/2-18UNS, 1/2-16UNS, 1/2-14UNS	10	8.20	21.0	75	6
DSMT10099F38D60	1.0-1.75	14-24	M12x1.75	M12x1.0 M12x1.25 M12x1.5	1/2-24UNS, 1/2-20UNS, 1/2-18UNS, 1/2-16UNS, 1/2-14UNS	10	9.90	38.0	75	6
DSMT12119F45D60	1.0-1.75	14-24	-	M13.5x1.0 M14x1.25 M14x1.5	9/16 - 24UNEF	12	11.90	45.0	80	6

ISO Metric





3 x Do (H ≤ 3 x Thread Diameter)

Designation (Internal)	Pitch	MCoarse	Dimensions(mm)				No. of Inserts	Bore Dia.
			d	D	H	L		
DSMT08041C19 1.00ISO	1.0	M6x1	8	4.10	19.0	60	3	5.0
DSMT10058C26 1.25ISO	1.25	M8x1.25	10	5.80	26.0	75	3	6.8
DSMT10077C32 1.50ISO	1.5	M10x1.5	10	7.70	32.0	75	3	8.5
DSMT12094D38 1.50ISO	1.5	M12x1.5	12	9.40	38.0	75	4	10.5
DSMT12087D38 1.75ISO	1.75	M12x1.75	12	8.70	38.0	75	4	10.2
DSMT16102D44 2.00ISO	2.0	M14x2	16	10.20	44.0	100	4	12.0
DSMT16122D50 2.00ISO	2.0	M16x2	16	12.20	50.0	100	4	14.0
DSMT16129E57 2.50ISO	2.5	M18x2.5	16	12.90	57.0	120	5	15.5
DSMT16148E63 2.50ISO	2.5	M20x2.5	16	14.80	63.0	120	5	17.5

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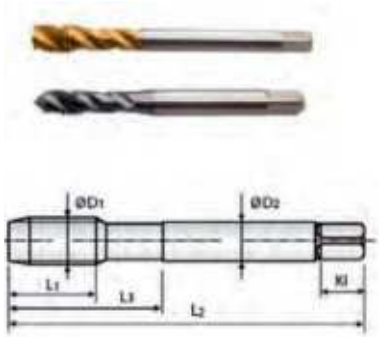
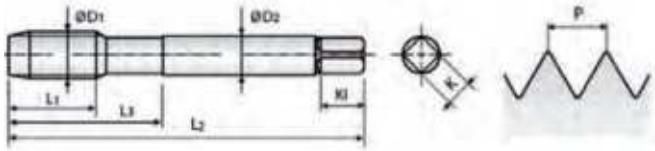
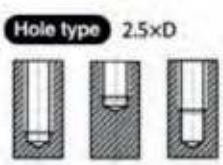
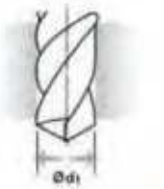
Spiral flute taps for multi-purpose









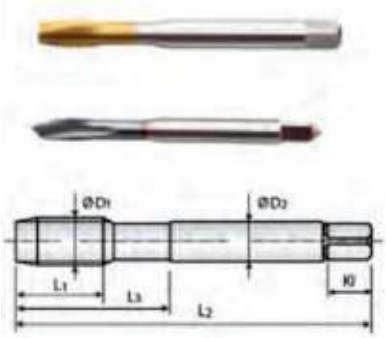
HSS-E | DIN 371/376 | 60° | 7H

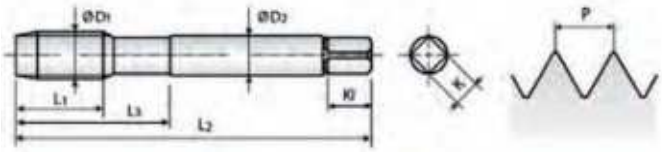
Size	Pitch	Order No.		Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No.of Flute	Tapping Drill Diameter
⌀D1	P	TiALN	TiN	L1	L2	L3	⌀D2	K	K1	Z	⌀d1
M2	0.40	TSF02004016	TSF02004016	6.0	45	18	2.8	2.10	5	3	1.60
M2.5	0.45	TSF02504516	TSF02504516	6.0	45	18	2.8	2.10	5	3	2.05
M3	0.50	TSF03005016	TSF03005016	6.0	56	18	3.5	2.70	6	3	2.50
M4	0.70	TSF04007016	TSF04007016	7.5	63	21	4.5	3.40	6	3	3.30
M5	0.80	TSF05008016	TSF05008016	8.5	70	25	6.0	4.90	8	3	4.20
M6	1.00	TSF06010016	TSF06010016	11.0	80	30	6.0	4.90	8	3	5.00
M8	1.25	TSF08012516	TSF08012516	14.0	90	35	8.0	6.20	9	3	6.80
M10	1.50	TSF10015016	TSF10015016	16.0	100	39	10.0	8.00	11	3	8.50
M12	1.75	TSF12017516	TSF12017516	18.5	110	49	9.0	7.00	10	3	10.20
M14	2.00	TSF14020016	TSF14020016	20.0	110	53	11.0	9.00	12	3	12.00
M16	2.00	TSF16020016	TSF16020016	20.0	110	54	12.0	9.00	12	3	14.00
M18	2.50	TSF18025016	TSF18025016	25.0	125	62	14.0	11.00	14	4	15.50
M20	2.50	TSF20025016	TSF20025016	25.0	140	62	16.0	12.00	15	4	17.50
M22	2.50	TSF22025016	TSF22025016	25.0	140	62	18.0	14.50	17	4	19.50
M24	3.00	TSF24030016	TSF24030016	30.0	160	73	18.0	14.50	17	4	21.00
M27	3.00	TSF27030016	TSF27030016	30.0	160	73	20.0	16.00	19	4	24.00
M30	3.00	TSF30035016	TSF30035016	35.0	180	85	22.0	18.00	21	4	26.50

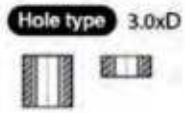
※ Note: Please specify DIN371 or DIN376 shank when ordering, if not will random delivery

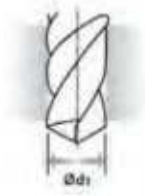
Hole Machine Taps

Spiral point taps for multi-purpose







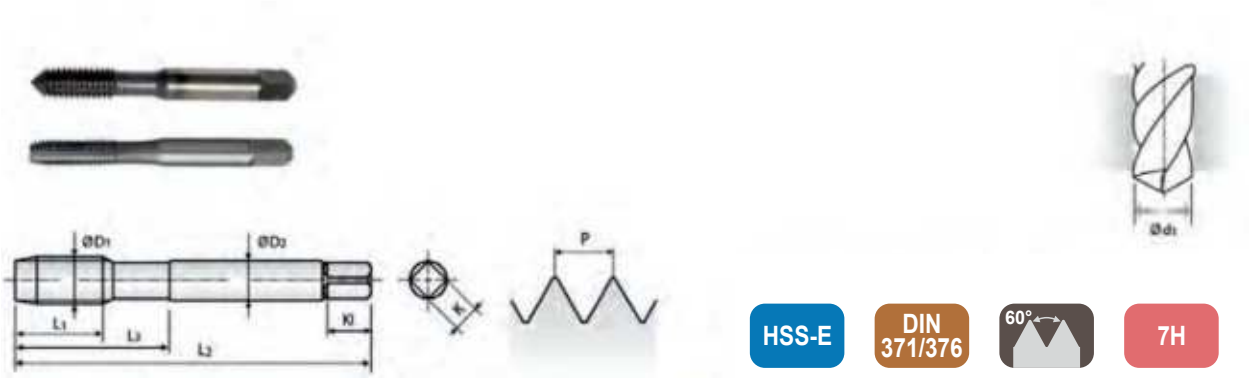


HSS-E | DIN 371/376 | 60° | 7H

Size	Pitch	Order No.		Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No.of Length	Tapping Drill Diameter
ØD1	P	TiALN	Tin	L1	L2	L3	ØD2	K	K1	Z	Ød 1
M2	0.40	TSP02004016	TSP02004026	10.0	45	18	2.8	2.10	5	3	1.60
M2.5	0.45	TSP02504516	TSP02504526	10.0	45	18	2.8	2.10	5	3	2.05
M3	0.50	TSP03005016	TSP03005026	10.0	56	18	3.5	2.70	6	3	2.50
M4	0.70	TSP04007016	TSP04007026	12.0	63	21	4.5	3.40	6	3	3.30
M5	0.80	TSP05008016	TSP05008026	14.0	70	25	6.0	4.90	8	3	4.20
M6	1.00	TSP06010016	TSP06010026	16.0	80	30	6.0	4.90	8	3	5.00
M8	1.25	TSP08012516	TSP08012526	18.0	90	35	8.0	6.20	9	3	6.80
M10	1.50	TSP10015016	TSP10015026	20.0	100	39	10.0	8.00	11	3	8.50
M12	1.75	TSP12017516	TSP12017526	24.0	110	49	9.0	7.00	10	3	10.20
M14	2.00	TSP14020016	TSP14020026	26.0	110	53	11.0	9.00	12	3	12.00
M16	2.00	TSP16020016	TSP16020026	26.0	110	54	12.0	9.00	12	3	14.00
M18	2.50	TSP18025016	TSP18025026	30.0	125	62	14.0	11.00	14	4	15.50
M20	2.50	TSP20025016	TSP20025026	32.0	140	62	16.0	12.00	15	4	17.50
M22	2.50	TSP22025016	TSP22025026	32.0	140	62	18.0	14.50	17	4	19.50
M24	3.00	TSP24030016	TSP24030026	34.0	160	73	18.0	14.50	17	4	21.00
M27	3.00	TSP27030016	TSP27030026	36.0	160	73	20.0	16.00	19	4	24.00
M30	3.50	TSP30035016	TSP30035026	40.0	180	85	22.0	18.00	21	4	26.50

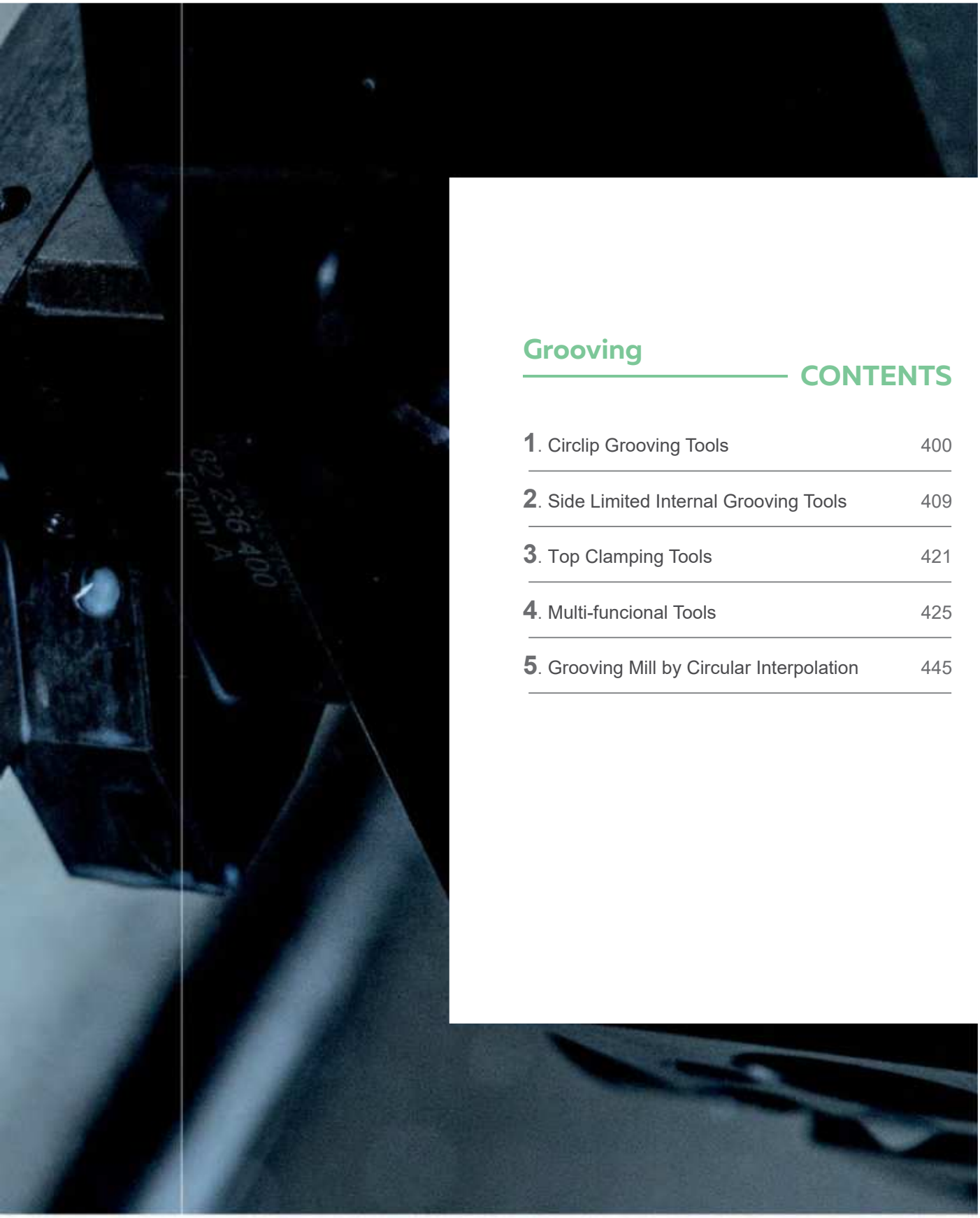
※ Note: Please specify DIN371 or DIN376 shank when ordering, if not will random delivery

Forming taps for multi-purpose



Size	Pitch	Order No.		Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No.of Length	Tapping Drill Diameter
ØD1	P	TiALN	Tin	L1	L2	L3	ØD2	K	K1	Z	Ød 1
M2	0.40	TFO02004016	TFO02004026	6.0	45	18	2.8	2.10	5	3	1.83
M2.5	0.45	TFO02504516	TFO02504526	6.0	50	18	2.8	2.10	5	3	2.30
M3	0.50	TFO03005016	TFO03005026	10.0	56	18	3.5	2.70	6	3	2.80
M4	0.70	TFO04007016	TFO04007026	12.0	63	21	4.5	3.40	6	3	3.70
M5	0.80	TFO05008016	TFO05008026	14.0	70	25	6.0	4.90	8	3	4.65
M6	1.00	TFO06010016	TFO06010026	16.0	90	30	6.0	4.90	8	3	5.55
M8	1.25	TFO08012516	TFO08012526	17.0	90	35	8.0	6.20	9	3	7.40
M10	1.50	TFO10015016	TFO10015026	20.0	100	39	10.0	8.00	11	3	9.30
M12	1.75	TSP12017516	TSP12017526	18.5	110	49	9.0	7.00	10	3	11.20
M14	2.00	TFO14020016	TFO14020026	20.0	110	53	11.0	9.00	12	3	13.10
M16	2.00	TFO16020016	TFO16020026	20.0	110	54	12.0	9.00	12	3	15.10

※ Note: Please specify DIN371 or DIN376 shank when ordering, if not will random delivery



Grooving

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1. Circlip Grooving Tools 400

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FOCUS PRODUCTS

MEDIUM TO SMALL HOLE GROOVING TOOL

Features Overview

▲ from Ø 8.0 mm

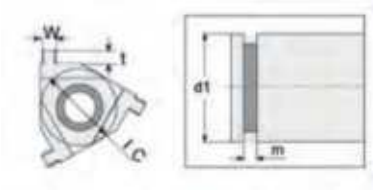
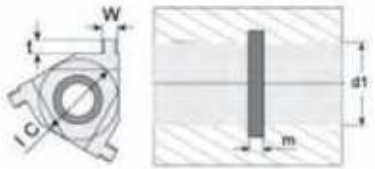
▲ The world's smallest double-ended grooving cutter

▲ High economy

TOOTOOL

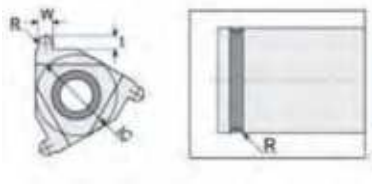
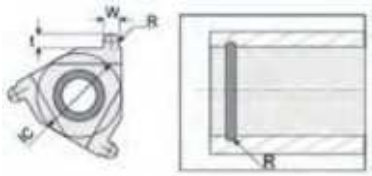
www.ttooltec.com

DIN 471/472 Standard (Partial Profile)

Type	Designation (Right)	Designation (Left)	Groove width	Dimensions		Picture
			m(H13)=W	IC	t	
External	11ER-0.50-D471-1.00	11EL-0.50-D471-1.00	0.50	6.350	0.70	
	11ER-0.60-D471-1.00	11EL-0.60-D471-1.00	0.60	6.350	1.00	
	11ER-0.80-D471-1.20	11EL-0.80-D471-1.20	0.80	6.350	1.20	
	11ER-1.00-D471-1.50	11EL-1.00-D471-1.50	1.00	6.350	1.50	
	11ER-1.20-D471-1.50	11EL-1.20-D471-1.50	1.20	6.350	1.50	
	11ER-1.40-D471-1.50	11EL-1.40-D471-1.50	1.40	6.350	1.50	
	11ER-1.50-D471-1.50	11EL-1.50-D471-1.50	1.50	6.350	1.50	
	11ER-1.80-D471-1.80	11EL-1.80-D471-1.80	1.80	6.350	1.80	
	16ER-0.33-D471-1.30	16EL-0.33-D471-1.30	0.33	9.525	1.30	
	16ER-0.50-D471-1.30	16EL-0.50-D471-1.30	0.50	9.525	1.30	
	16ER-0.75-D471-1.30	16EL-0.75-D471-1.30	0.75	9.525	1.30	
	16ER-0.80-D471-1.30	16EL-0.80-D471-1.30	0.80	9.525	1.30	
	16ER-1.00-D471-1.30	16EL-1.00-D471-1.30	1.00	9.525	1.30	
	16ER-1.10-D471-1.30	16EL-1.10-D471-1.30	1.10	9.525	1.30	
	16ER-1.17-D471-1.30	16EL-1.17-D471-1.30	1.17	9.525	1.30	
	16ER-1.20-D471-1.60	16EL-1.20-D471-1.60	1.20	9.525	1.60	
	16ER-1.30-D471-1.60	16EL-1.30-D471-1.60	1.37	9.525	1.60	
	16ER-1.40-D471-1.60	16EL-1.40-D471-1.60	1.40	9.525	1.60	
	16ER-1.50-D471-1.60	16EL-1.50-D471-1.60	1.50	9.525	1.60	
	16ER-1.60-D471-1.60	16EL-1.60-D471-1.60	1.60	9.525	1.60	
	16ER-1.67-D471-1.60	16EL-1.67-D471-1.60	1.67	9.525	1.60	
	16ER-1.70-D471-1.85	16EL-1.70-D471-1.85	1.70	9.525	1.85	
	16ER-1.75-D471-1.85	16EL-1.75-D471-1.85	1.75	9.525	1.85	
	16ER-1.80-D471-1.85	16EL-1.80-D471-1.85	1.80	9.525	1.85	
	16ER-1.85-D471-1.85	16EL-1.85-D471-1.85	1.85	9.525	1.85	
	16ER-1.92-D471-1.85	16EL-1.92-D471-1.85	1.92	9.525	1.85	
	16ER-2.00-D471-1.85	16EL-2.00-D471-1.85	2.00	9.525	1.85	
	16ER-2.15-D471-1.85	16EL-2.15-D471-1.85	2.15	9.525	1.85	
	16ER-2.15-D471-2.00	16EL-2.15-D471-2.00	2.15	9.525	2.00	
	16ER-2.20-D471-1.82	16EL-2.20-D471-1.82	2.20	9.525	1.85	
	16ER-2.20-D471-2.00	16EL-2.20-D471-2.00	2.20	9.525	2.00	
	16ER-2.25-D471-1.85	16EL-2.25-D471-1.85	2.25	9.525	1.85	
	16ER-2.25-D471-2.00	16EL-2.25-D471-2.00	2.25	9.525	2.00	
	16ER-2.30-D471-1.82	16EL-2.30-D471-1.82	2.30	9.525	1.85	
	16ER-2.30-D471-2.00	16EL-2.30-D471-2.00	2.30	9.525	2.00	
	16ER-2.50-D471-1.82	16EL-2.50-D471-1.82	2.50	9.525	1.85	
	16ER-2.50-D471-2.00	16EL-2.50-D471-2.00	2.50	9.525	2.00	
	16ER-2.65-D471-2.20	16EL-2.65-D471-2.20	2.65	9.525	2.20	
	16ER-2.72-D471-2.20	16EL-2.72-D471-2.20	2.72	9.525	2.20	
Internal	11IR-0.50-D472-1.00	11IL-0.50-D472-1.00	0.50	6.350	0.70	
	11IR-0.60-D472-1.00	11IL-0.60-D472-1.00	0.60	6.350	0.70	
	11IR-0.80-D472-1.20	11IL-0.80-D472-1.20	0.80	6.350	0.70	
	11IR-1.00-D472-1.50	11IL-1.00-D472-1.50	1.00	6.350	0.70	
	11IR-1.20-D472-1.50	11IL-1.20-D472-1.50	1.17	6.350	0.70	
	11IR-1.40-D472-1.50	11IL-1.40-D472-1.50	1.20	6.350	1.50	
	11IR-1.50-D472-1.50	11IL-1.50-D472-1.50	1.37	6.350	1.50	
	11IR-1.80-D472-1.80	11IL-1.80-D472-1.80	1.40	6.350	1.50	
	11IR-2.20-B742-2.20	11IL-2.20-D472-2.20	2.20	6.350	2.20	
	16IR-0.33-D472-1.30	16IL-0.33-D472-1.30	1.50	9.525	1.50	
	16IR-0.50-D472-1.30	16IL-0.50-D472-1.30	1.37	9.525	1.50	
	16IR-0.75-D472-1.30	16IL-0.75-D472-1.30	1.80	9.525	1.80	
	16IR-0.80-D472-1.30	16IL-0.80-D472-1.30	1.92	9.525	1.80	
	16IR-1.00-D472-1.30	16IL-1.00-D472-1.30	2.20	9.525	1.80	
	16IR-1.10-D472-1.30	16IL-1.10-D472-1.30	0.33	9.525	1.20	
	16IR-1.17-D472-1.30	16IL-1.17-D472-1.30	0.50	9.525	1.20	
	16IR-1.20-D472-1.60	16IL-1.20-D472-1.60	0.75	9.525	1.20	
	16IR-1.30-D472-1.60	16IL-1.30-D472-1.60	0.80	9.525	1.20	
	16IR-1.40-D472-1.60	16IL-1.40-D472-1.60	1.00	9.525	1.20	
	16IR-1.50-D472-1.60	16IL-1.50-D472-1.60	1.10	9.525	1.20	
	16IR-1.60-D472-1.60	16IL-1.60-D472-1.60	1.17	9.525	1.20	
	16IR-1.67-D472-1.60	16IL-1.67-D472-1.60	1.20	9.525	1.20	
	16IR-1.70-D472-1.85	16IL-1.70-D472-1.85	1.37	9.525	1.80	
	16IR-1.75-D472-1.85	16IL-1.75-D472-1.85	1.40	9.525	1.80	
	16IR-1.80-D472-1.85	16IL-1.80-D472-1.85	1.50	9.525	1.80	
	16IR-1.85-D472-1.85	16IL-1.85-D472-1.85	1.60	9.525	1.80	
	16IR-1.92-D472-1.85	16IL-1.92-D472-1.85	1.67	9.525	1.80	
	16IR-2.00-D472-1.85	16IL-2.00-D472-1.85	1.70	9.525	1.80	
	16IR-2.15-D472-1.85	16IL-2.15-D472-1.85	1.75	9.525	1.80	
	16IR-2.15-D472-2.00	16IL-2.15-D472-2.00	1.80	9.525	1.80	
	16IR-2.20-D472-1.82	16IL-2.20-D472-1.82	1.85	9.525	1.80	
	16IR-2.20-D472-2.00	16IL-2.20-D472-2.00	1.92	9.525	1.80	
	16IR-2.25-D472-1.85	16IL-2.25-D472-1.85	2.00	9.525	2.20	
	16IR-2.25-D472-2.00	16IL-2.25-D472-2.00	2.15	9.525	2.20	
	16IR-2.30-D472-1.82	16IL-2.30-D472-1.82	2.20	9.525	2.20	
	16IR-2.30-D472-2.00	16IL-2.30-D472-2.00	2.25	9.525	2.20	
	16IR-2.50-D472-1.82	16IL-2.50-D472-1.82	2.30	9.525	2.20	
	16IR-2.50-D472-2.00	16IL-2.50-D472-2.00	2.50	9.525	2.20	
	16IR-2.65-D472-2.20	16IL-2.65-D472-2.20	2.65	9.525	2.20	
	16IR-2.72-D472-2.20	16IL-2.72-D472-2.20	2.72	9.525	2.20	

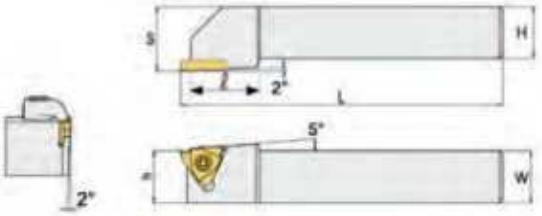
Circlip Groove Series

DIN 7993 Standard

Type	Designation (Right)	Designation (Left)	Groove width	Dimensions			Picture
			R	IC	W	t	
External	16ER-0.40-D7993-0.60	16EL-0.40-D7993-0.60	0.40	9.525	0.80	0.60	
	16ER-0.50-D7993-1.40	16EL-0.50-D7993-1.40	0.50	9.525	1.00	1.40	
	16ER-0.60-D7993-0.80	16EL-0.60-D7993-0.80	0.60	9.525	1.20	0.80	
	16ER-0.60-D7993-1.60	16EL-0.60-D7993-1.60	0.60	9.525	1.20	1.60	
	16ER-0.90-D7993-1.10	16EL-0.90-D7993-1.10	0.90	9.525	1.80	1.10	
	16ER-0.90-D7993-2.00	16EL-0.90-D7993-2.00	0.90	9.525	1.80	2.00	
	16ER-1.00-D7993-1.20	16EL-1.00-D7993-1.20	1.00	9.525	2.00	1.20	
	16ER-1.00-D7993-2.15	16EL-1.00-D7993-2.15	1.00	9.525	2.00	2.15	
	16ER-1.10-D7993-2.15	16EL-1.10-D7993-2.15	1.10	9.525	2.20	2.15	
	16ER-1.20-D7993-2.25	16EL-1.20-D7993-2.25	1.20	9.525	2.40	2.25	
Internal							
	16IR-0.50-D7993-1.40	16IL-0.50-D7993-1.40	0.50	9.525	1.00	1.40	
	16IR-0.60-D7993-0.80	16IL-0.60-D7993-0.80	0.60	9.525	1.20	0.80	
	16IR-0.60-D7993-1.60	16IL-0.60-D7993-1.60	0.60	9.525	1.20	1.60	
	16IR-0.90-D7993-1.10	16IL-0.90-D7993-1.10	0.90	9.525	1.80	1.10	
	16IR-0.90-D7993-2.00	16IL-0.90-D7993-2.00	0.90	9.525	1.80	2.00	
	16IR-1.00-D7993-1.20	16IL-1.00-D7993-1.20	1.00	9.525	2.00	1.20	
	16IR-1.00-D7993-2.15	16IL-1.00-D7993-2.15	1.00	9.525	2.00	2.15	
	16IR-1.10-D7993-2.15	16IL-1.10-D7993-2.15	1.10	9.525	2.20	2.15	
	16IR-1.20-D7993-2.25	16IL-1.20-D7993-2.25	1.20	9.525	2.40	2.25	

※ Additional size available by request

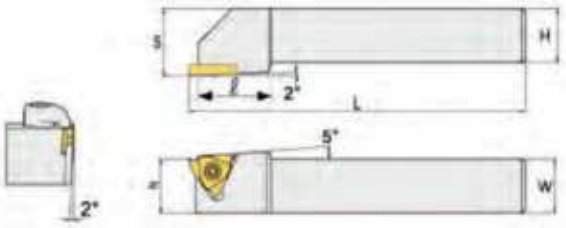
SGBR/L



External grooving holder, for 3 corner inserts

Designation	Stock		Dimensions(mm)						Insert	Spare parts	
	R	L	W	H	S	L	h	ℓ		Screw	Wrench
SGBR/L 1616H16	●	●	16	16	21	100	16	22	GBA32R/L	L1060SSTX4.0-5.7P	T-15
SGBR/L 2020K16	●	●	20	20	25	125	20	26			
SGBR/L 2525M16	●	●	25	25	30	150	25	26			
SGBR/L 2020K22-1	●	●	20	20	25	125	20	26	GBA43R/L125-185	L1160SSTX5.0-7.0P	T-20
SGBR/L 2525M22-1	●	●	25	25	30	150	25	26			
SGBR/L 2020K22-2	●	●	20	20	25	125	20	26	GBA43R/L200-280		
SGBR/L 2525M22-2	●	●	25	25	30	150	25	26			
SGBR/L 2020K22-3	●	●	20	20	25	125	20	26	GBA43R/L300-480		
SGBR/L 2525M22-3	●	●	25	25	30	150	25	26			

CGBR/L

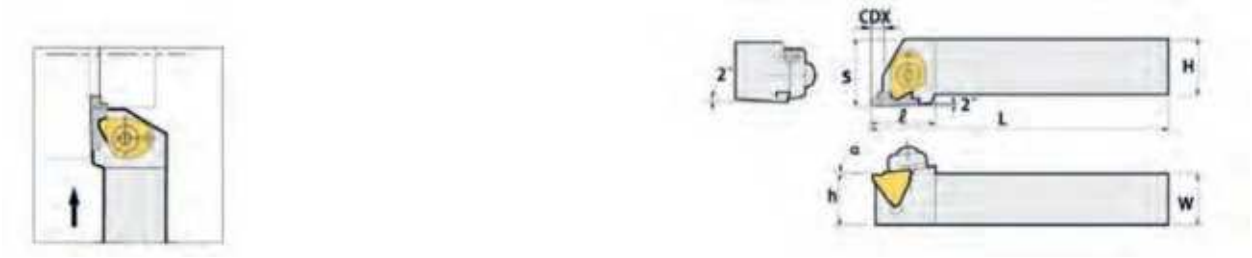


External grooving holder, for 3 corner inserts

Designation	Stock		Dimensions(mm)						Insert	Spare parts			
	R	L	W	H	S	L	h	ℓ		Clamp	Clamp screw	Screw	Wrench
CGBR/L 1616H16			16	16	21	100	16	22	GBA32R/L	JTY16	JTS06	L1060SSTX4.0-5.7P	T-15 HW30L
CGBR/L 2020K16			20	20	25	125	20	26					
CGBR/L 2525M16			25	25	30	150	25	26					
CGBR/L 2020K22-1			20	20	25	125	20	26	GBA43R/L125-185			L1160SSTX5.0-7.0P	T-20 HW30L
CGBR/L 2525M22-1			25	25	30	150	25	26					
CGBR/L 2020K22-2			20	20	25	125	20	26	GBA43R/L200-280				
CGBR/L 2525M22-2			25	25	30	150	25	26					
CGBR/L 2020K22-3			20	20	25	125	20	26	GBA43R/L300-480				
CGBR/L 2525M22-3			25	25	30	150	25	26					

Circlip Groove Series

KGBR/L



External grooving holder, for 3 corner inserts

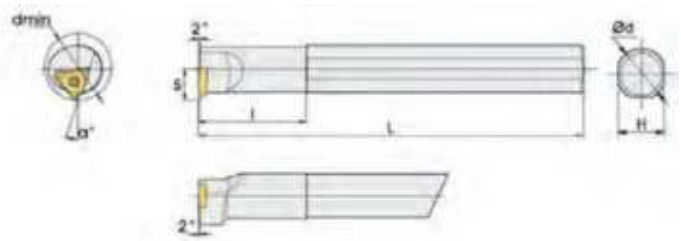
Designation	Stock		Size							Applicable Insert	Spare parts				
	R	L	W	H	S	L	h	ℓ	CDX		Clamp Bridge	Clamp screw	Spring	Insert screw	Wrench
KGBR/L 2020-K16	●	●	20	20	25	125	20	24.0	2.5	GBA32R/L	YBG22	DSPM6	GTS06	L1060SSTX4.0-5.7P	HW40L T-15
KGBR/L 2525-M16	●	●	25	25	30	150	25	24.0	2.5						
KGBR/L 2020-K22-15	●	●	20	20	25	125	20	25.5	4.0	GBA/L125-185				L1160SSTX5.0-7.0P	HW40L T-20
KGBR/L 2525-M22-15	●	●	25	25	30	150	25	25.5	4.0						
KGBR/L 2020-K22-25	●	●	20	20	25	125	20	25.5	4.5	GBA/L200-280					
KGBR/L 2525-M22-25	●	●	25	25	30	150	25	25.5	4.5						
KGBR/L 2020-K22-35	●	●	20	20	25	125	20	25.5	5.5	GBA/L300-400					
KGBR/L 2525-M22-35	●	●	25	25	30	150	25	25.5	5.5						

KGBSR/L

External grooving holder, for 3 corner inserts

Designation	Stock		Size							Applicable Insert	Spare parts				
	R	L	W	H	S	L	h	ℓ	CDX		Clamp Bridge	Clamp screw	Spring	Insert screw	Wrench
KGBSR/L 2020-K16			20	20	25	125	20	25.0	2.5	GBA32R/L	YBG22	DSPM6	GTS06	L1060SSTX4.0-5.7P	HW40L T-15
KGBSR/L 2525-M16			25	25	30	150	25	25.0	2.5						
KGBSR/L 2020-K22-15			20	20	27	125	20	25.0	4.0	GBA/L125-185				L1160SSTX5.0-7.0P	HW40L T-20
KGBSR/L 2525-M22-15			25	25	32	150	25	25.0	4.0						
KGBSR/L 2020-K22-25			20	20	27	125	20	25.0	4.5	GBA/L200-280					
KGBSR/L 2525-M22-25			25	25	32	150	25	25.0	4.5						
KGBSR/L 2020-K22-35			20	20	27	125	20	25.0	5.5	GBA/L300-400					
KGBSR/L 2525-M22-35			25	25	32	150	25	25.0	5.5						

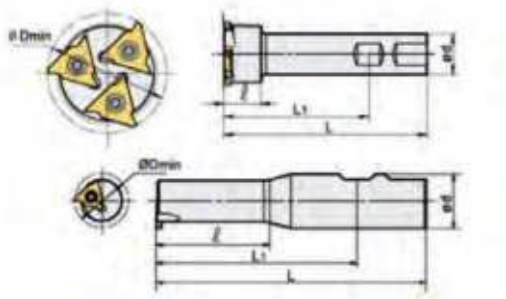
SGBR/L



Internal grooving holder, for 3 corner inserts

Designation	Stock		Dimensions(mm)						Insert	Spare parts	
	R	L	Dmin	d	H	L	ℓ	S		Screw	Wrench
S16Q-SGBR/L11			20	16	11.5	180	40	15	GBA22R/L	L0655SSTX2.5-3.6P	T-8
S20Q-SGBR/L11			25	20	12.5	180	40	18			
S16Q-SGBR/L16			20	16	11.5	180	40	15	GBA32R/L	L0960SSTX4.0-5.4P	T-15
S20Q-SGBR/L16			25	20	12.5	180	40	18			
S25R-SGBR/L16			35	25	17.5	200	45	23			
S25R-SGBR/L22-1			35	25	18.2	200	45	23	GBA43R/L125-185	L1160SSTX5.0-7.0P	T-20
S32S-SGBR/L22-1			40	32	21.0	250	45	30			
S25R-SGBR/L22-2			35	25	18.2	200	45	23	GBA43R/L200-280		
S32S-SGBR/L22-2			40	32	21.0	250	45	30			
S25R-SGBR/L22-3			35	25	18.2	200	45	23	GBA43R/L300-480		
S32S-SGBR/L22-3			40	32	21.0	250	45	30			

SGSR/L

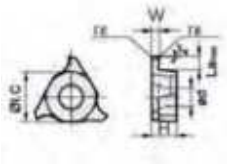
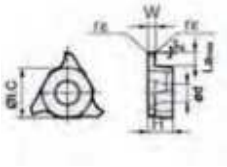


Grooving milling cutter, for 3 corner inserts

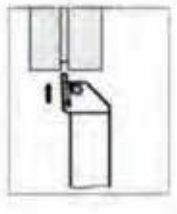
Designation	Stock		Dimensions(mm)							Insert	Spare parts	
	R	L	Dmin	d	L1	L	ℓ	Z	Width		Screw	Wrench
GF320178300-W16-1T			17	16	90	120	40	1	0.5-3.0	TGF32L050-300	L1060SSTX4.0-5.7P	T-15
GF320258300-W25-1T			25	25	89	125	40	1	0.5-3.0			
GF320398300-W25-3T			39	25	89	125	23	3	0.5-3.0			
GB430448480-W32-3T			44	32	89	125	23	3	1.0-4.8	GBA43L100-480	L1260SSTX5.0-7.0P	T-20

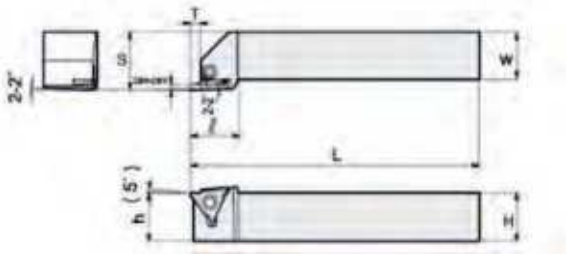
Circlip Groove Series

Inserts

Shape	Designation		Size						Coated		Configuration
			W±0.025	La max	rε	IC	H	d	TTIM45	TTIS30	
	GBA22R/L	050	0.50	1.00	0.05	6.35	3.18	2.8			
		100	1.00	1.50	0.05	6.35	3.18	2.8			
		120	1.20	1.50	0.20	6.35	3.18	2.8			
		125	1.25	1.50	0.20	6.35	3.18	2.8			
		145	1.45	1.50	0.20	6.35	3.18	2.8			
		150	1.50	1.50	0.20	6.35	3.18	2.8			
		200	2.00	2.00	0.20	6.35	3.18	2.8			
	GBA32R/L	050	0.50	1.00	0.05	9.525	3.18	4.4			
		100	1.00	2.00	0.05	9.525	3.18	4.4			
		110	1.10	2.00	0.05	9.525	3.18	4.4			
		120	1.20	2.00	0.05	9.525	3.18	4.4			
		125	1.25	2.00	0.20	9.525	3.18	4.4			
		145	1.45	2.00	0.20	9.525	3.18	4.4			
		150	1.50	2.00	0.20	9.525	3.18	4.4			
		175	1.75	2.00	0.20	9.525	3.18	4.4			
		185	1.85	2.50	0.20	9.525	3.18	4.4			
		200	2.00	2.50	0.20	9.525	3.18	4.4			
		250	2.50	2.50	0.20	9.525	3.18	4.4			
		300	3.00	3.00	0.20	9.525	3.18	4.4			
	GBA43R/L	125	1.25	2.00	0.20	12.7	4.76	5.5	●	●	
		145	1.45	2.00	0.20	12.7	4.76	5.5	●	●	
		150	1.50	3.50	0.20	12.7	4.76	5.5	●	●	
		175	1.75	3.50	0.20	12.7	4.76	5.5	●	●	
		185	1.85	3.50	0.20	12.7	4.76	5.5	●	●	
		200	2.00	3.50	0.20	12.7	4.76	5.5	●	●	
		230	2.30	3.50	0.20	12.7	4.76	5.5	●	●	
		250	2.50	4.00	0.30	12.7	4.76	5.5	●	●	
		265	2.65	4.00	0.30	12.7	4.76	5.5	●	●	
		280	2.80	4.00	0.30	12.7	4.76	5.5	●	●	
		300	3.00	4.00	0.30	12.7	4.76	5.5	●	●	
		320	3.20	4.00	0.30	12.7	4.76	5.5	●	●	
		330	3.30	4.00	0.30	12.7	4.76	5.5	●	●	
		350	3.50	5.00	0.30	12.7	4.76	5.5	●	●	
		400	4.00	5.00	0.40	12.7	4.76	5.5	●	●	
		430	4.30	5.00	0.40	12.7	4.76	5.5	●	●	
		450	4.50	5.00	0.40	12.7	4.76	5.5	●	●	
		480	4.80	5.00	0.40	12.7	4.76	5.5	●	●	

CTGFR/L

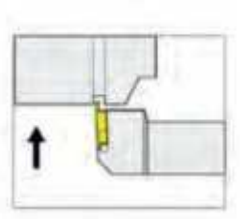


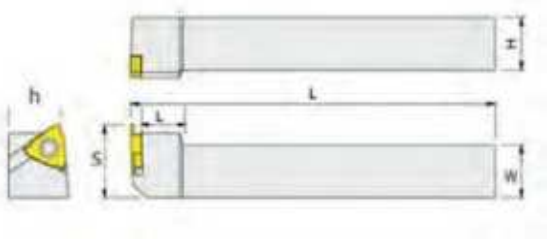


External grooving holder, for 3 corner inserts **R Type Insert**

Designation	Stock		Dimensions(mm)								Insert	Spare parts			
	R	L	CWN-CWX	H	W	h	L	ℓ	S	Tmax		Clamp	Clamp screw	Screw	Wrench
CTGFR/L 1616-H16	●	●	0.33-3.00	16	16	16	100	22	20	3.2	TGF32R/L	JTY16	JTS06	L0960SSTX4.0-5.7P	T-15 HW30L
CTGFR/L 2020-K16	●	●	0.33-3.00	20	20	20	125	22	25	3.2					
CTGFR/L 2525-M16	●	●	0.33-3.00	25	25	25	150	22	32	3.2					

CTGVR/L



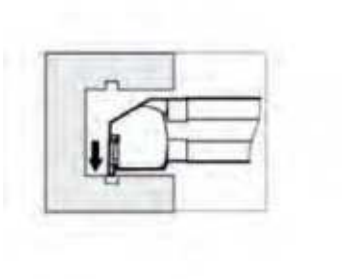


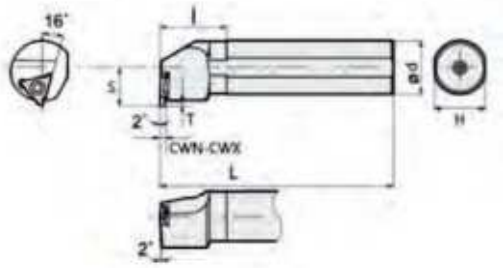
Perpendicular tool holder for external grooving for 3 corner inserts

Designation	Stock		Dimensions(mm)								Insert	Spare parts			
	R	L	CWN-CWX	H	W	h	L	ℓ	S	Tmax		Clamp	Clamp screw	Screw	Wrench
CTGVR/L 1616-H16			0.33-3.00	16	16	16	100	16	20	3.2	TGF32R/L	JTY16	JTS06	L0960SSTX4.0-5.7P	T-15 HW30L
CTGVR/L 2020-K16			0.33-3.00	20	20	20	125	20	27	3.2					
CTGVR/L 2525-M16			0.33-3.00	25	25	25	150	20	32	3.2					

Circlip Groove Series

STGFR/L

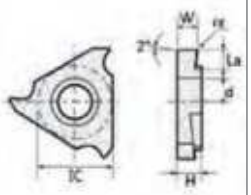




Internal grooving holder, for 3 corner inserts

Designation	Stock		Dimensions(mm)								Insert	Spare parts	
	R	L	CWN-CWX	Dmin	d	H	L	ℓ	S	Tmax		Screw	Wrench
S20Q-STGFR/L16	●	●	25	28	20	18	180	30	13.0	2.0	TGF32R/L	L0960SSTX4.0-5.7P	T-15
S25R-STGFR/L16	●	●	39	31	25	23	200	30	17.5	2.0			
S32S-STGFR/L16	●	●	44	38	32	30	250	45	19.0	2.0			

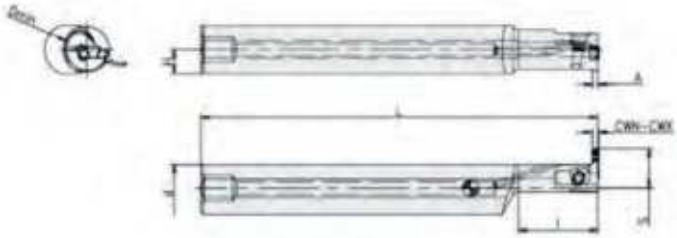
Inserts

Shape	Designation		Size						Coated		Configuration
			W±0.025	La max	rε	IC	H	d	TTIM45	TTIS30	
	TGF32R/L	033	0.33	0.80	0.05	9.525	3.18	4.6	●	●	
		043	0.43	1.20	0.05	9.525	3.18	4.6	●	●	
		050	0.50	1.20	0.05	9.525	3.18	4.6	●	●	
		065	0.65	2.20	0.05	9.525	3.18	4.6	●	●	
		075	0.75	2.20	0.05	9.525	3.18	4.6	●	●	
		080	0.80	2.20	0.10	9.525	3.18	4.6	●	●	
		085	0.85	2.20	0.10	9.525	3.18	4.6	●	●	
		090	0.90	2.20	0.10	9.525	3.18	4.6	●	●	
		095	0.95	2.20	0.10	9.525	3.18	4.6	●	●	
		100	1.00	2.20	0.10	9.525	3.18	4.6	●	●	
		110	1.10	2.20	0.10	9.525	3.18	4.6	●	●	
		115	1.15	2.20	0.10	9.525	3.18	4.6	●	●	
		120	1.20	2.20	0.10	9.525	3.18	4.6	●	●	
		125	1.25	2.20	0.10	9.525	3.18	4.6	●	●	
		130	1.30	2.20	0.10	9.525	3.18	4.6	●	●	
		135	1.35	2.20	0.10	9.525	3.18	4.6	●	●	
		140	1.40	2.20	0.10	9.525	3.18	4.6	●	●	
		145	1.45	2.20	0.10	9.525	3.18	4.6	●	●	
		150	1.50	2.20	0.10	9.525	3.18	4.6	●	●	
		155	1.55	2.20	0.10	9.525	3.18	4.6	●	●	
		160	1.60	2.20	0.10	9.525	3.18	4.6	●	●	
		165	1.65	2.20	0.10	9.525	3.18	4.6	●	●	
		170	1.70	2.20	0.10	9.525	3.18	4.6	●	●	
		175	1.75	2.20	0.10	9.525	3.18	4.6	●	●	
		180	1.80	2.20	0.10	9.525	3.18	4.6	●	●	
		190	1.90	2.20	0.10	9.525	3.18	4.6	●	●	
		195	1.95	2.20	0.10	9.525	3.18	4.6	●	●	
		200	2.00	2.70	0.10	9.525	3.18	4.6	●	●	
		220	2.20	2.70	0.10	9.525	3.18	4.6	●	●	
		225	2.25	2.70	0.10	9.525	3.18	4.6	●	●	
		240	2.40	2.70	0.10	9.525	3.18	4.6	●	●	
		250	2.50	2.70	0.10	9.525	3.18	4.6	●	●	
		270	2.70	2.70	0.15	9.525	3.18	4.6	●	●	
		275	2.75	2.70	0.15	9.525	3.18	4.6	●	●	
		300	3.00	3.20	0.15	9.525	3.18	4.6	●	●	

※ Note: 1. Additional size available by request. 2. Full radius can be request

Internal Groove (Side Limited)

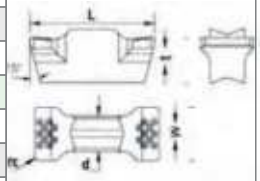
HGEPIR/L



Internal deep grooving holder, for double-sided inserts

Designation	Stock		Size										Insert	Spare parts	
	R	L	CWN	CWX	Dmin	d	ℓ	L	S	A	H	Tmax		Screw	Wrench
HGEPIR/L1620-D08-2-2.0	●		2.0	2.5	8.0	16.0	20	120	5.6	1.8	7.5	2.0	3GEPI	L1060SSTX4.0-5.7P	TPF-15
HGEPIR/L1625-D10-2-3.0	●		2.0	2.5	10.0	16.0	25	120	7.8	1.8	7.5	3.0			
HGEPIR/L1625-D12-2-3.5	●		1.9	2.3	11.5	16.0	25	120	8.8	1.6	7.5	3.5	4GEPI		
HGEPIR/L1630-D14-2-4.0	●		1.9	2.3	14.0	16.0	30	120	10.3	1.6	7.5	4.0			
HGEPIR/L1635-D15-2-6.0	●		1.9	2.3	15.0	16.0	35	150	12.3	1.6	7.5	6.0			
HGEPIR/L1630-D14-3-4.0	●		2.4	3.0	14.0	16.0	30	120	10.3	2.0	7.5	4.0			
HGEPIR/L1635-D15-3-6.0	●		2.4	3.0	15.0	16.0	35	150	12.3	2.0	7.5	6.0			
HGEPIR/L1640-D20-3-8.0	●		2.4	3.0	20.0	16.0	40	150	16.1	2.0	7.5	8.0			

Inserts

Shape	Designation	Size					Coated		Configuration
		L	W	d	t	rε	TPM8125	TTIN3025	
	3GEPI 2.00-0.20-Mini	6.00	2.0	1.8	2.30	0.20	●	○	
	3GEPI 2.50-0.20-Mini	6.00	2.5	1.8	2.30	0.20	●	○	
	3GEPI 2.00-R1.00-Mini	6.00	2.0	1.8	2.30	1.00	●	○	
	3GEPI 2.50-R125-Mini	6.00	2.5	1.8	2.30	1.25	●	○	
	4GEPI 2.00-0.20	10.03	2.0	1.8	2.90	0.20	●	○	
	4GEPI 2.50-0.20	10.03	2.5	2.2	2.90	0.20	●	○	
	4GEPI 3.00-0.20	10.03	3.0	2.2	2.90	0.20	●	○	
	4GEPI 2.00-R1.00	10.03	2.0	1.8	2.90	1.00	●	○	
	4GEPI 3.00-R1.50	10.03	3.0	2.2	2.90	1.50	●	○	

SIGER/L

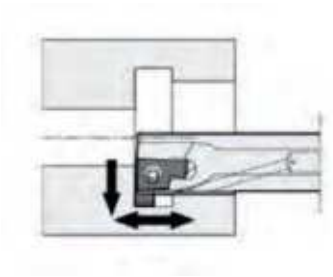


Fig.1

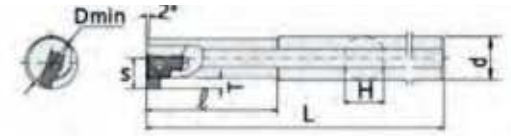
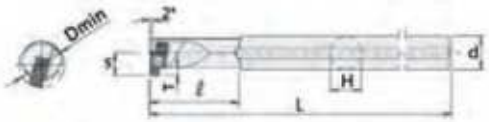


Fig.2

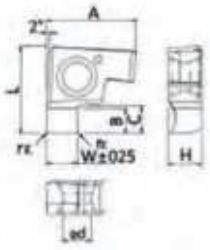


Internal grooving holder, for 2 corner inserts

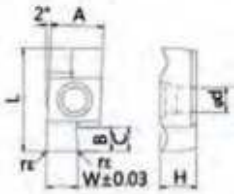
Designation	Stock		Size							Applicable Insert	Spare parts		Fig.
	R	L	Dmin	d	L	ℓ	H	S	Tmax		Screw	Wrench	
SIGER/L 0808A	●	○	8	8	100	20	7.2	4.8	1.5	GER/L**-A GER/L**-AR	M2.2x5	T-7	1
SIGER/L 1010B	●	○	10	10	125	25	9.0	6.2	2.2	GER/L**-B GER/L**-BR	M2.5x6	T-8	1
SIGER/L 1210B	●	○	12	10	125	30	9.0	7.0	2.2				1
SIGER/L 1412C	●	○	14	12	150	33	11.4	8.0	2.5	GER/L**-C GER/L**-CR			2
SIGER/L 1612C	●	○	16	12	150	20	11.4	8.5	2.5				2
SIGER/L 1616C	●	○	16	16	160	36	15.0	9.0	2.5				2
SIGER/L 2020D	●	○	20	20	180	40	19.0	12.1	4.5	GER/L**-D GER/L**-DR	M3.0x8	T-10	2
SIGER/L 2525D	●	○	25	25	200	45	24.0	12.3	4.5				2
SIGER/L 2525E	●	○	25	25	200	45	24.0	15.3	6.5	GER/L**-E GER/L**-ER	M4.0x10	T-15	2
SIGER/L 3232E	●	○	32	32	220	55	30.4	19.0	6.5				2
SIGER/L 4032E	●	○	40	32	250	-	30.4	23.0	6.5				2

Internal Groove (Side Limited)

Inserts

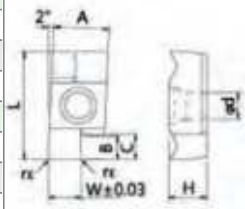
Shape	Designation		Size								Coated		Configuration
			W	d	H	L	A	B	C	rε	TTIM45	TTIS30	
	GER	050-005A	0.50	2.5	2.58	6.50	6.69	1.0	1.7	0.05	●	●	
		060-005A	0.60	2.5	2.58	6.50	6.69	1.0	1.7	0.05	●	●	
		070-005A	0.70	2.5	2.58	6.50	6.69	1.0	1.7	0.05	●	●	
		080-005A	0.80	2.5	2.58	6.50	6.69	1.0	1.7	0.05	●	●	
		100-005A	1.00	2.5	2.58	6.50	6.69	1.5	1.7	0.05	●	●	
		120-005A	1.20	2.5	2.58	6.50	6.69	1.5	1.7	0.05	●	●	
		125-005A	1.25	2.5	2.58	6.50	6.69	1.5	1.7	0.05	●	●	
		140-010A	1.40	2.5	2.58	6.50	6.69	1.5	1.7	0.10	●	●	
		150-010A	1.50	2.5	2.58	6.50	6.69	1.5	1.7	0.10	●	●	
		180-010A	1.80	2.5	2.58	6.50	6.69	1.5	1.7	0.10	●	●	
		200-010A	2.00	2.5	2.58	6.50	6.69	1.5	1.7	0.10	●	●	
		080-005B	0.80	2.7	3.18	8.20	8.46	1.8	2.5	0.05	●	●	
		100-005B	1.00	2.7	3.18	8.20	8.46	2.2	2.5	0.05	●	●	
		120-005B	1.20	2.7	3.18	8.20	8.46	2.2	2.5	0.05	●	●	
		125-005B	1.25	2.7	3.18	8.20	8.46	2.2	2.5	0.05	●	●	
		145-010B	1.45	2.7	3.18	8.20	8.46	2.2	2.5	0.10	●	●	
		150-010B	1.50	2.7	3.18	8.20	8.46	2.2	2.5	0.10	●	●	
		180-010B	1.80	2.7	3.18	8.20	8.46	2.2	2.5	0.10	●	●	
		200-010B	2.00	2.7	3.18	8.20	8.46	2.2	2.5	0.10	●	●	
		250-020B	2.50	2.7	3.18	8.20	8.46	2.2	2.5	0.20	●	●	
		280-020B	2.80	2.7	3.18	8.20	8.46	2.2	2.5	0.20	●	●	
		300-020B	3.00	2.7	3.18	8.20	8.46	2.2	2.5	0.20	●	●	
	GEL	050-005A	0.50	2.5	2.58	6.50	6.69	1.0	1.7	0.05			
		060-005A	0.60	2.5	2.58	6.50	6.69	1.0	1.7	0.05			
		070-005A	0.70	2.5	2.58	6.50	6.69	1.0	1.7	0.05			
		080-005A	0.80	2.5	2.58	6.50	6.69	1.0	1.7	0.05			
		100-005A	1.00	2.5	2.58	6.50	6.69	1.5	1.7	0.05	○	○	
		120-005A	1.20	2.5	2.58	6.50	6.69	1.5	1.7	0.05			
		125-005A	1.25	2.5	2.58	6.50	6.69	1.5	1.7	0.05			
		140-010A	1.40	2.5	2.58	6.50	6.69	1.5	1.7	0.10			
		150-010A	1.50	2.5	2.58	6.50	6.69	1.5	1.7	0.10	○	○	
		180-010A	1.80	2.5	2.58	6.50	6.69	1.5	1.7	0.10			
		200-010A	2.00	2.5	2.58	6.50	6.69	1.5	1.7	0.10			
		080-005B	0.80	2.7	3.18	8.20	8.46	1.8	2.5	0.05			
		100-005B	1.00	2.7	3.18	8.20	8.46	2.2	2.5	0.05	○	○	
		120-005B	1.20	2.7	3.18	8.20	8.46	2.2	2.5	0.05			
		125-005B	1.25	2.7	3.18	8.20	8.46	2.2	2.5	0.05			
		145-010B	1.45	2.7	3.18	8.20	8.46	2.2	2.5	0.10			
		150-010B	1.50	2.7	3.18	8.20	8.46	2.2	2.5	0.10	○	○	
		180-010B	1.80	2.7	3.18	8.20	8.46	2.2	2.5	0.10			
		200-010B	2.00	2.7	3.18	8.20	8.46	2.2	2.5	0.10	○	○	
		250-020B	2.50	2.7	3.18	8.20	8.46	2.2	2.5	0.20	○	○	
		280-020B	2.80	2.7	3.18	8.20	8.46	2.2	2.5	0.20			
		300-020B	3.00	2.7	3.18	8.20	8.46	2.2	2.5	0.20	○	○	

Inserts

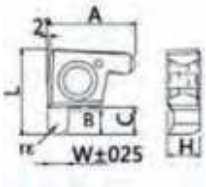
Shape	Designation		Size								Coated		Configuration
			W	d	H	L	A	B	C	rε	TTIM45	TTIS30	
	GER	100-005C	1.00	2.8	4.05	11.48	5.80	2.5	2.7	0.05	●	●	
		120-005C	1.20	2.8	4.05	11.48	5.80	2.5	2.7	0.05	●	●	
		125-005C	1.25	2.8	4.05	11.48	5.80	2.5	2.7	0.05	●	●	
		140-005C	1.40	2.8	4.05	11.48	5.80	2.5	2.7	0.05	●	●	
		145-010C	1.45	2.8	4.05	11.48	5.80	2.5	2.7	0.10	●	●	
		150-010C	1.50	2.8	4.05	11.48	5.80	2.5	2.7	0.10	●	●	
		170-010C	1.70	2.8	4.05	11.48	5.80	2.5	2.7	0.10	●	●	
		185-010C	1.85	2.8	4.05	11.48	5.80	2.5	2.7	0.10	●	●	
		195-010C	1.95	2.8	4.05	11.48	5.80	2.5	2.7	0.10	●	●	
		200-010C	2.00	2.8	4.05	11.48	5.80	2.5	2.7	0.10	●	●	
		250-020C	2.50	2.8	4.05	11.48	5.80	2.5	2.7	0.20	●	●	
		300-020C	3.00	2.8	4.05	11.48	5.80	2.5	2.7	0.20	●	●	
		350-020C	3.50	2.8	4.05	11.48	5.80	2.5	2.7	0.20	●	●	
		100-005D	1.00	2.8	5.05	16.44	6.80	2.5	4.8	0.05	●	●	
		140-005D	1.40	3.4	5.05	16.44	6.80	2.5	4.8	0.05	●	●	
		145-010D	1.45	3.4	5.05	16.44	6.80	2.5	4.8	0.10	●	●	
		150-010D	1.50	3.4	5.05	16.44	6.80	3.0	4.8	0.10	●	●	
		170-010D	1.70	3.4	5.05	16.44	6.80	3.0	4.8	0.10	●	●	
		185-010D	1.85	3.4	5.05	16.44	6.80	3.0	4.8	0.10	●	●	
		195-010D	1.95	3.4	5.05	16.44	6.80	3.0	4.8	0.10	●	●	
		200-010D	2.00	3.4	5.05	16.44	6.80	3.2	4.8	0.10	●	●	
		225-010D	2.25	3.4	5.05	16.44	6.80	3.2	4.8	0.10	●	●	
		230-010D	2.30	3.4	5.05	16.44	6.80	3.2	4.8	0.10	●	●	
		250-020D	2.50	3.4	5.05	16.44	6.80	3.2	4.8	0.20	●	●	
		275-020D	2.75	3.4	5.05	16.44	6.80	3.2	4.8	0.20	●	●	
		280-020D	2.80	3.4	5.05	16.44	6.80	3.2	4.8	0.20	●	●	
		300-020D	3.00	3.4	5.05	16.44	6.80	4.5	4.8	0.20	●	●	
		330-020D	3.30	3.4	5.05	16.44	6.80	4.5	4.8	0.20	●	●	
		350-020D	3.50	3.4	5.05	16.44	6.80	4.5	4.8	0.20	●	●	
		400-020D	4.00	3.4	5.05	16.44	6.80	4.5	4.8	0.20	●	●	
		100-005E	1.00	4.4	5.55	21.66	9.54	2.5	6.8	0.05	●	●	
		150-010E	1.50	4.4	5.55	21.66	9.54	3.0	6.8	0.10	●	●	
		170-010E	1.70	4.4	5.55	21.66	9.54	3.0	6.8	0.10	●	●	
		185-010E	1.85	4.4	5.55	21.66	9.54	3.0	6.8	0.10	●	●	
		195-010E	1.95	4.4	5.55	21.66	9.54	3.0	6.8	0.10	●	●	
		200-010E	2.00	4.4	5.55	21.66	9.54	3.2	6.8	0.10	●	●	
		225-010E	2.25	4.4	5.55	21.66	9.54	3.2	6.8	0.10	●	●	
		230-020E	2.30	4.4	5.55	21.66	9.54	3.2	6.8	0.20	●	●	
		250-020E	2.50	4.4	5.55	21.66	9.54	4.5	6.8	0.20	●	●	
		275-020E	2.75	4.4	5.55	21.66	9.54	4.5	6.8	0.20	●	●	
		280-020E	2.80	4.4	5.55	21.66	9.54	4.5	6.8	0.20	●	●	
		300-020E	3.00	4.4	5.55	21.66	9.54	4.5	6.8	0.20	●	●	
		330-020E	3.30	4.4	5.55	21.66	9.54	4.5	6.8	0.20	●	●	
		350-020E	3.50	4.4	5.55	21.66	9.54	5.5	6.8	0.20	●	●	
		400-020E	4.00	4.4	5.55	21.66	9.54	5.5	6.8	0.20	●	●	
		430-020E	4.30	4.4	5.55	21.66	9.54	5.5	6.8	0.20	●	●	
		450-020E	4.50	4.4	5.55	21.66	9.54	6.5	6.8	0.20	●	●	
		460-020E	4.60	4.4	5.55	21.66	9.54	6.5	6.8	0.20	●	●	
		500-020E	5.00	4.4	5.55	21.66	9.54	6.5	6.8	0.20	●	●	

Internal Groove (Side Limited)

Inserts

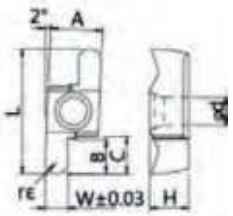
Shape	Designation		Size								Coated		Configuration
			W	d	H	L	A	B	C	rε	TTIM45	TTIS30	
	GEL	100-005C	1.00	2.8	4.05	11.48	11.48	2.5	2.7	0.05	○	○	
		120-005C	1.20	2.8	4.05	11.48	11.48	2.5	2.7	0.05			
		125-005C	1.25	2.8	4.05	11.48	11.48	2.5	2.7	0.05			
		140-005C	1.40	2.8	4.05	11.48	11.48	2.5	2.7	0.05			
		145-010C	1.45	2.8	4.05	11.48	11.48	2.5	2.7	0.10			
		150-010C	1.50	2.8	4.05	11.48	11.48	2.5	2.7	0.10	○	○	
		170-010C	1.70	2.8	4.05	11.48	11.48	2.5	2.7	0.10			
		185-010C	1.85	2.8	4.05	11.48	11.48	2.5	2.7	0.10			
		195-010C	1.95	2.8	4.05	11.48	11.48	2.5	2.7	0.10			
		200-010C	2.00	2.8	4.05	11.48	11.48	2.5	2.7	0.10	○	○	
		250-020C	2.50	2.8	4.05	11.48	11.48	2.5	2.7	0.20	○	○	
		300-020C	3.00	2.8	4.05	11.48	11.48	2.5	2.7	0.20	○	○	
		350-020C	3.50	2.8	4.05	11.48	11.48	2.5	2.7	0.20	○	○	
		100-005D	1.00	3.4	5.05	16.44	16.44	2.5	4.8	0.05	○	○	
		140-005D	1.40	3.4	5.05	16.44	16.44	2.5	4.8	0.05			
		145-010D	1.45	3.4	5.05	16.44	16.44	2.5	4.8	0.10			
		150-010D	1.50	3.4	5.05	16.44	16.44	3.0	4.8	0.10	○	○	
		170-010D	1.70	3.4	5.05	16.44	16.44	3.0	4.8	0.10			
		185-010D	1.85	3.4	5.05	16.44	16.44	3.0	4.8	0.10			
		195-010D	1.95	3.4	5.05	16.44	16.44	3.0	4.8	0.10			
		200-010D	2.00	3.4	5.05	16.44	16.44	3.2	4.8	0.10	○	○	
		225-010D	2.25	3.4	5.05	16.44	16.44	3.2	4.8	0.10			
		230-010D	2.30	3.4	5.05	16.44	16.44	3.2	4.8	0.10			
		250-020D	2.50	3.4	5.05	16.44	16.44	3.2	4.8	0.20	○	○	
		275-020D	2.75	3.4	5.05	16.44	16.44	3.2	4.8	0.20			
		280-020D	2.80	3.4	5.05	16.44	16.44	3.2	4.8	0.20			
		300-020D	3.00	3.4	5.05	16.44	16.44	4.5	4.8	0.20	○	○	
		330-020D	3.30	3.4	5.05	16.44	16.44	4.5	4.8	0.20			
		350-020D	3.50	3.4	5.05	16.44	16.44	4.5	4.8	0.20	○	○	
		400-020D	4.00	3.4	5.05	16.44	16.44	4.5	4.8	0.20	○	○	
		100-005E	1.00	4.4	5.55	21.66	21.66	2.5	6.8	0.05	○	○	
		150-010E	1.50	4.4	5.55	21.66	21.66	3.0	6.8	0.10	○	○	
		170-010E	1.70	4.4	5.55	21.66	21.66	3.0	6.8	0.10			
		185-010E	1.85	4.4	5.55	21.66	21.66	3.0	6.8	0.10			
		195-010E	1.95	4.4	5.55	21.66	21.66	3.0	6.8	0.10			
		200-010E	2.00	4.4	5.55	21.66	21.66	3.2	6.8	0.10			
		225-010E	2.25	4.4	5.55	21.66	21.66	3.2	6.8	0.10	○	○	
		230-020E	2.30	4.4	5.55	21.66	21.66	3.2	6.8	0.20			
		250-020E	2.50	4.4	5.55	21.66	21.66	4.5	6.8	0.20			
		275-020E	2.75	4.4	5.55	21.66	21.66	4.5	6.8	0.20			
		280-020E	2.80	4.4	5.55	21.66	21.66	4.5	6.8	0.20			
		300-020E	3.00	4.4	5.55	21.66	21.66	4.5	6.8	0.20	○	○	
		330-020E	3.30	4.4	5.55	21.66	21.66	4.5	6.8	0.20			
		350-020E	3.50	4.4	5.55	21.66	21.66	5.5	6.8	0.20	○	○	
		400-020E	4.00	4.4	5.55	21.66	21.66	5.5	6.8	0.20	○	○	
		430-020E	4.30	4.4	5.55	21.66	21.66	5.5	6.8	0.20			
		450-020E	4.50	4.4	5.55	21.66	21.66	6.5	6.8	0.20	○	○	
		460-020E	4.60	4.4	5.55	21.66	21.66	6.5	6.8	0.20			
		500-020E	5.00	4.4	5.55	21.66	21.66	6.50	6.8	0.20	○	○	

Inserts

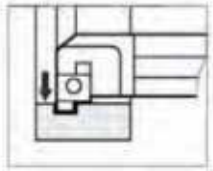
Shape	Designation		Size								Coated		Configuration
			W	d	H	L	A	B	C	rε	TTIM45	TTIS30	
	GER	100-050AR	1.00	2.5	2.58	6.50	6.69	1.5	1.7	0.50	•	•	
		150-075AR	1.50	2.5	2.58	6.50	6.69	1.5	1.7	0.75	•	•	
		200-100AR	2.00	2.5	2.58	6.50	6.69	1.5	1.7	1.00	•	•	
		100-050BR	1.00	2.7	3.18	8.20	8.46	2.2	2.5	0.50	•	•	
		150-075BR	1.50	2.7	3.18	8.20	8.46	2.2	2.5	0.75	•	•	
		200-100BR	2.00	2.7	3.18	8.20	8.46	2.2	2.5	1.00	•	•	
		250-125BR	2.50	2.7	3.18	8.20	8.46	2.2	2.5	1.25	•	•	
		300-150BR	3.00	2.7	3.18	8.20	8.46	2.2	2.5	1.50	•	•	
	GEL	100-050AR	1.00	2.5	2.58	6.50	6.69	1.5	1.7	0.50	○	○	
		150-075AR	1.50	2.5	2.58	6.50	6.69	1.5	1.7	0.75	○	○	
		200-100AR	2.00	2.5	2.58	6.50	6.69	1.5	1.7	1.00	○	○	
		100-050BR	1.00	2.7	3.18	8.20	8.46	2.2	2.5	0.50	○	○	
		150-075BR	1.50	2.7	3.18	8.20	8.46	2.2	2.5	0.75	○	○	
		200-100BR	2.00	2.7	3.18	8.20	8.46	2.2	2.5	1.00	○	○	
		250-125BR	2.50	2.7	3.18	8.20	8.46	2.2	2.5	1.25	○	○	
		300-150BR	3.00	2.7	3.18	8.20	8.46	2.2	2.5	1.50	○	○	

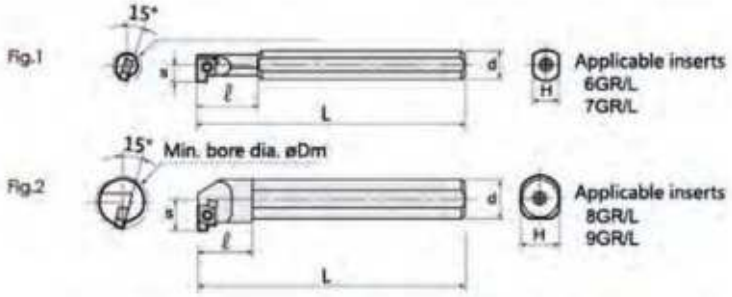
Internal Groove (Side Limited)

Inserts

Shape	Designation		Size								Coated		Configuration
			W	d	H	L	A	B	C	rε	TTIM45	TTIS30	
	GER	100-050CR	1.00	2.8	4.05	11.48	5.80	2.5	2.7	0.50	•	•	
		150-075CR	1.50	2.8	4.05	11.48	5.80	2.5	2.7	0.75	•	•	
		200-100CR	2.00	2.8	4.05	11.48	5.80	2.5	2.7	1.00	•	•	
		250-125CR	2.50	2.8	4.05	11.48	5.80	2.5	2.7	1.25	•	•	
		300-150CR	3.00	2.8	4.05	11.48	5.80	2.5	2.7	1.50	•	•	
		150-075DR	1.50	3.4	5.05	16.44	6.80	3.2	4.8	0.75	•	•	
		200-100DR	2.00	3.4	5.05	16.44	6.80	3.2	4.8	1.00	•	•	
		250-125DR	2.50	3.4	5.05	16.44	6.80	4.5	4.8	1.25	•	•	
		300-150DR	3.00	3.4	5.05	16.44	6.80	4.5	4.8	1.50	•	•	
		250-125ER	2.50	4.4	5.55	21.66	9.54	5.5	6.8	1.25	•	•	
		300-150ER	3.00	4.4	5.55	21.66	9.54	5.5	6.8	1.50	•	•	
		350-175ER	3.50	4.4	5.55	21.66	9.54	5.5	6.8	1.75	•	•	
		400-200ER	4.00	4.4	5.55	21.66	9.54	6.5	6.8	2.00	•	•	
		450-225ER	4.50	4.4	5.55	21.66	9.54	6.5	6.8	2.25	•	•	
		500-250ER	5.00	4.4	5.55	21.66	9.54	6.5	6.8	2.50	•	•	
	GEL	100-050CR	1.00	2.8	4.05	11.48	5.80	2.5	2.7	0.50	○	○	
		150-075CR	1.50	2.8	4.05	11.48	5.80	2.5	2.7	0.75	○	○	
		200-100CR	2.00	2.8	4.05	11.48	5.80	2.5	2.7	1.00	○	○	
		250-125CR	2.50	2.8	4.05	11.48	5.80	2.5	2.7	1.25	○	○	
		300-150CR	3.00	2.8	4.05	11.48	5.80	2.5	2.7	1.50	○	○	
		150-075DR	1.50	3.4	5.05	16.44	6.80	3.2	4.8	0.75	○	○	
		200-100DR	2.00	3.4	5.05	16.44	6.80	3.2	4.8	1.00	○	○	
		250-125DR	2.50	3.4	5.05	16.44	6.80	4.5	4.8	1.25	○	○	
		300-150DR	3.00	3.4	5.05	16.44	6.80	4.5	4.8	1.50	○	○	
		250-125ER	2.50	4.4	5.55	21.66	9.54	5.5	6.8	1.25	○	○	
		300-150ER	3.00	4.4	5.55	21.66	9.54	5.5	6.8	1.50	○	○	
		350-175ER	3.50	4.4	5.55	21.66	9.54	5.5	6.8	1.75	○	○	
		400-200ER	4.00	4.4	5.55	21.66	9.54	6.5	6.8	2.00	○	○	
		450-225ER	4.50	4.4	5.55	21.66	9.54	6.5	6.8	2.25	○	○	
		500-250ER	5.00	4.4	5.55	21.66	9.54	6.5	6.8	2.50	○	○	

SNGR/L



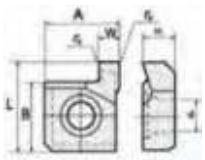
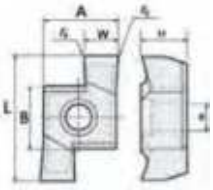


Internal grooving holder

Designation	Stock		Size						Applicable Insert	Spare parts		Fig.
	R	L	Dmin	d	L	ℓ	H	S		Screw	Wrench	
SNGR/L 08-H06	●	○	8	8	100	18	7	4.7	6GR/L	M2.0x4	T-6	1
SNGR/L 08-H07	●	○	10	8	100	23	7	5.8	7GR/L	M2.2x6	T-6	1
SNGR/L 10-K07	●	○	12	10	125	29	9	6.8				1
SNGR/L 10-K08	●	○	14	10	125	15	9	7.6	8GR/L			2
SNGR/L 12-M08	●	○	16	12	150	18	11	8.6				2
SNGR/L 16-Q09	●	○	20	16	180	20	15	11.6	9GR/L	M2.5x6	T-8	2
SNGR/L 20-R09	●	○	24	20	200	25	18	13.6				2

Inserts

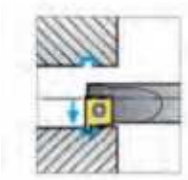
Internal grooving holder

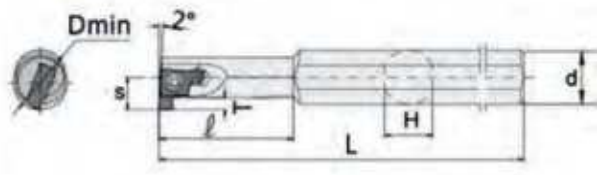
Shape	Designation	Size								Coated		Configuration
		W±0.025	d	H	L	A	B	rε	Max.groove depth	TTIM45	TTIS30	
	6GR/L 100	1.00	2.30	2.34	6.44	5.56	4.76	0.2	1.5	●	●	
	6GR/L 150	1.50	2.30	2.34	6.44	5.56	4.76	0.2	1.5	●	●	
	6GR/L 200	2.00	2.30	2.34	6.44	5.56	4.76	0.2	1.5	●	●	
	7GR/L 100	1.00	2.58	3.08	7.36	5.56	5.56	0.2	1.5	●	●	
	7GR/L 150	1.50	2.58	3.08	7.36	5.56	5.56	0.2	1.5	●	●	
	7GR/L 200	2.00	2.58	3.08	7.36	5.56	5.56	0.2	1.5	●	●	
	8GR/L 150	1.50	2.58	3.87	10.16	6.15	5.56	0.2	2.0	●	●	
	8GR/L 200	2.00	2.58	3.87	10.16	6.15	5.56	0.2	2.0	●	●	
	8GR/L 250	2.50	2.58	3.87	10.16	6.15	5.56	0.2	2.0	●	●	
	8GR/L 300	3.00	2.58	3.87	10.16	6.15	5.56	0.2	2.0	●	●	
	8GR/L 350	3.50	2.58	3.87	10.16	6.15	5.56	0.2	2.0	●	●	
	9GR/L 100	1.00	2.86	4.66	12.95	7.74	6.35	0.2	1.5	●	●	
	9GR/L 150	1.50	2.86	4.66	12.95	7.74	6.35	0.2	1.2	●	●	
	9GR/L 200	2.00	2.86	4.66	12.95	7.74	6.35	0.2	3.0	●	●	
	9GR/L 250	2.50	2.86	4.66	12.95	7.74	6.35	0.2	3.0	●	●	
	9GR/L 300	3.00	2.86	4.66	12.95	7.74	6.35	0.2	3.0	●	●	
	9GR/L 350	3.50	2.86	4.66	12.95	7.74	6.35	0.2	3.0	●	●	

※ Note: 1. Additional size available by request. 2. Full radius can be request

Internal Groove (Side Limited)

SDNR/L

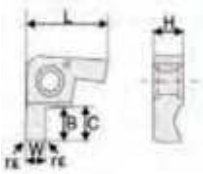
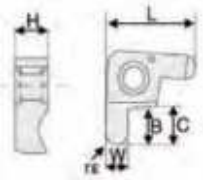




Internal deep grooving holder, for small hole

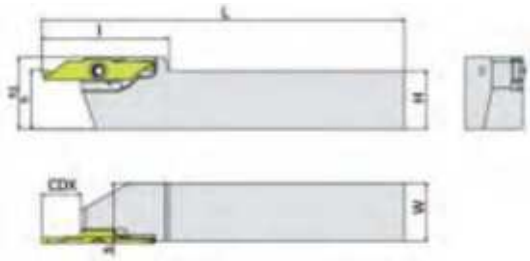
Designation	Stock		Size							Applicable Insert	Spare parts	
	R	L	Dmin	d	L	ℓ	H	S	Tmax		Screw	Wrench
SDNR/L 0616-L06T	●	○	6.5	16	125	10	15	3.2	1.0	HDNR/L**-D06	M2.0x4	T-6
SDNR/L 1416-L14T-0.8	●	○	14.0	16	150	33	15	7.0	4.0	HDNR/L100-200**-D14	M2.5x6	T-8
SDNR/L 1416-L14T-2.0	●	○	14.0	16	150	33	15	7.0	4.0	HDNR/L230-400**-D14		
SDNR/L 1616-L14T-0.8	●	○	16.0	16	150	38	15	8.1	4.0	HDNR/L100-200**-D14	M2.5x8	T-8
SDNR/L 1616-L14T-2.0	●	○	16.0	16	150	38	15	8.1	4.0	HDNR/L230-400**-D14		
SDNR/L 1820-L18T	●	○	18.0	20	180	35	19	9.1	6.6	HDNR/L**-D18	M4.0x7	T-15
SDNR/L 2120-L18T	●	○	21.0	20	180	40	19	10.7	6.6			

Inserts

Shape	Designation	Size						Coated		Configuration
		W	H	L	B	C	rε	TPIM45	TTIS30	
	HDNR 050-0.8D06	0.50	1.80	5.2	0.8	1.2	0.05	●	●	
	HDNR 075-0.8D06	0.75	1.80	5.2	0.8	1.2	0.05	●	●	
	HDNR 100-1.0D06	1.00	1.80	5.2	1.0	1.2	0.10	●	●	
	HDNR 120-1.0D06	1.20	1.80	5.2	1.0	1.2	0.10	●	●	
	HDNR 125-1.0D06	1.25	1.80	5.2	1.0	1.2	0.10	●	●	
	HDNR 150-1.0D06	1.50	1.80	5.2	1.0	1.2	0.10	●	●	
	HDNR 050-1.0D14	0.50	3.97	11.0	1.0	4.5	0.05	●	●	
	HDNR 075-1.5D14	0.75	3.97	11.0	1.5	4.5	0.05	●	●	
	HDNR 100-3.0D14	1.00	3.97	11.0	3.0	4.5	0.05	●	●	
	HDNR 125-3.5D14	1.25	3.97	11.0	3.5	4.5	0.05	●	●	
	HDNR 150-3.5D14	1.50	3.97	11.0	3.5	4.5	0.05	●	●	
	HDNR 200-4.0D14	2.00	3.97	11.0	4.0	4.5	0.20	●	●	
	HDNR 250-4.0D14	2.50	3.97	11.0	4.0	4.5	0.20	●	●	
	HDNR 300-4.0D14	3.00	3.97	11.0	4.0	4.5	0.20	●	●	
	HDNR 350-4.0D14	3.50	3.97	11.0	4.0	4.5	0.20	●	●	
	HDNR 100-3.0D18	1.00	5.35	15.0	3.0	6.6	0.05	●	●	
	HDNR 125-3.0D18	1.25	5.35	15.0	3.0	6.6	0.05	●	●	
	HDNR 140-4.5D18	1.40	5.35	15.0	4.5	6.6	0.05	●	●	
	HDNR 150-4.5D18	1.50	5.35	15.0	4.5	6.6	0.05	●	●	
	HDNR 175-5.0D18	1.75	5.35	15.0	5.0	6.6	0.05	●	●	
	HDNR 200-5.5D18	2.00	5.35	15.0	5.5	6.6	0.20	●	●	
	HDNR 250-6.2D18	2.50	5.35	15.0	6.2	6.6	0.20	●	●	
	HDNR 300-6.2D18	3.00	5.35	15.0	6.2	6.6	0.20	●	●	
	HDNR 350-6.2D18	3.50	5.35	15.0	6.2	6.6	0.20	●	●	
	HDNR 400-6.2D18	4.00	5.35	15.0	6.2	6.6	0.20	●	●	
	HDNR 050-R0.25D06	0.50	1.80	5.2	1.0	1.2	0.25	●	●	
	HDNR 100-R0.50D06	1.00	1.80	5.2	1.0	1.2	0.50	●	●	
	HDNR 120-R0.60D06	1.20	1.80	5.2	1.0	1.2	0.60	●	●	
	HDNR 150-R0.75D06	1.50	1.80	5.2	1.0	1.2	0.75	●	●	
	HDNR 100-R0.50D14	1.00	3.97	11.0	3.0	4.5	0.50	●	●	
	HDNR 150-R0.75D14	1.50	3.97	11.0	3.5	4.5	0.75	●	●	
	HDNR 200-R1.00D14	2.00	3.97	11.0	4.0	4.5	1.00	●	●	
	HDNR 250-R1.25D14	2.50	3.97	11.0	4.0	4.5	1.25	●	●	
	HDNR 300-R1.50D14	3.00	3.97	11.0	4.0	4.5	1.50	●	●	
	HDNR 350-R1.75D14	3.50	3.97	11.0	4.0	4.5	1.75	●	●	
	HDNR 100-R0.50D18	1.00	5.35	15.0	3.0	6.6	0.50	●	●	
	HDNR 140-R0.70D18	1.40	5.35	15.0	4.5	6.6	0.70	●	●	
	HDNR 150-R0.75D18	1.50	5.35	15.0	4.5	6.6	0.75	●	●	
	HDNR 200-R1.00D18	2.00	5.35	15.0	5.5	6.6	1.00	●	●	
	HDNR 250-R1.25D18	2.50	5.35	15.0	6.2	6.6	1.25	●	●	
	HDNR 300-R1.50D18	3.00	5.35	15.0	6.2	6.6	1.50	●	●	
	HDNR 350-R1.75D18	3.50	5.35	15.0	6.2	6.6	1.75	●	●	
	HDNR 400-R2.00D18	4.00	5.35	15.0	6.2	6.6	2.00	●	●	

External & Internal Face Groove (Side Limited)

MEFHR

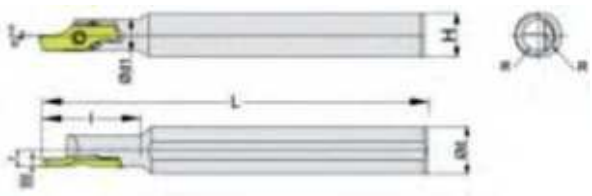


External face grooving holder, for 2 corner inserts

Designation	Stock	Size								Applicable Insert	Spare Parts	
		W	H	I	L	h	h1	S	CDX		Screw	Wrench
MEFHR 1212-06	○	12	12	25.0	125	12	15.0	12.60	5.7	MIFR-6	L055SSTX2.5-3.6P	TPF-08
MEFHR 1616-06	○	16	16	25.0	125	16	19.0	16.60	5.7		L075SSTX2.5-3.6P	TPF-08
MEFHR 1616-08	●	16	16	26.0	125	16	20.0	16.70	6.2	MIFR-8		
MEFHR 2020-08	●	20	20	26.0	125	20	24.0	20.70	6.2			
MEFHR 1616-10	●	16	16	43.6	125	16	20.5	16.60	13.6	MIFR-10	L0860SSTX3.5-5.3P	TPF-15
MEFHR 2020-10	●	20	20	43.6	125	20	24.5	20.60	13.6			
MEFHR 1616-15	○	16	16	53.0	125	16	25.0	25.00	18.0	MIFR-15		
MEFHR 2020-15	●	20	20	53.0	150	20	25.0	25.00	18.0			
MEFHR 2525-15	●	25	25	53.0	150	25	30.0	30.00	18.0			

MIFHR

for circlip groove milling with chamfer facet



External face grooving holder, for 2 corner inserts

Designation	Stock	Size								Applicable Insert	Spare Parts	
		W	d1	d	l	L	H	f	R		Screw	Wrench
MIFHR 1218C-06	●	1.4	6	12	18	100	11	3.0	3.8	MIFR-6	L055SSTX2.5-3.6P	TPF-08
MIFHR 1020-25C-08	○	1.4	8	10	25	100	9	4.2	3.8	MIFR-8	L055SSTX2.5-3.6P	TPF-08
MIFHR 1220-25C-08	●	1.4	8	12	25	100	11	4.2	3.8			
MIFHR 1635C-10	●	2.4	10	16	35	130	15	5.2	4.6	MIFR-10	L0860SSTX4.0-5.7P	TPF-15
MIFHR 1643C-15	●	4.7	14	16	43	150	15	7.0	10.3	MIFR-15		
MIFHR 2046C-15	●	4.7	14	20	46	150	18	7.0	11.3			
MIFHR 1200C-06	○	1.4	10	12	18	100	11	5.5	3.8	MIFR-6	L0755SSTX2.5-3.6P	TPF-08
MIFHR 1600C-08	●	1.4	14	16	20	156	15	8.5	3.8	MIFR-8		
MIFHR 2000C-08	○	1.4	18	20	20	150	18	9.0	3.8			
MIFHR 1600C-10	●	2.4	14	16	35	163	15	8.1	4.6	MIFR-10	L0860SSTX4.0-5.7P	TPF-15
MIFHR 2000C-10	○	2.4	18	20	35	150	18	9.0	4.6			
MIFHR 1600C-15	●	4.7	14	16	43	168	15	7.4	10.3	MIFR-15		
MIFHR 2000C-15	●	4.7	18	20	43	150	18	10.3	11.3			

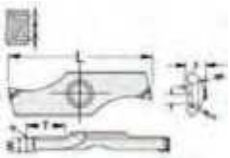
Internal Groove (Side Limited)

MIFHR

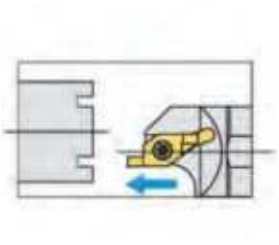
Face & internal grooving holder, for 2 corner inserts

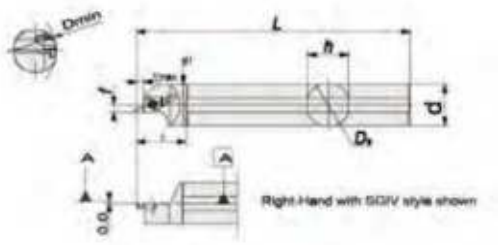
Designation	Stock	Size								Applicable Insert	Spare parts	
		W	d1	d	l	L	H	f	R		Screw	Wrench
MIFHR 1218C-06	●	1.4	6	12	18	100	11	3.0	3.8	MIFR-6	L055SSTX2.5-3.6P	TPF-08
MIFHR 1020-25C-08	○	1.4	8	10	25	100	9	4.2	3.8	MIFR-8	L055SSTX2.5-3.6P	TPF-08
MIFHR 1220-25C-08	●	1.4	8	12	25	100	11	4.2	3.8			
MIFHR 1635C-10	●	2.4	10	16	35	130	15	5.2	4.6	MIFR-10	L0860SSTX4.0-5.7P	TPF-15
MIFHR 1643C-15	●	4.7	14	16	43	150	15	7.0	10.3	MIFR-11		
MIFHR 2046C-15	●	4.7	14	20	46	150	18	7.0	11.3			
MIFHR 1200C-06	○	1.4	10	12	18	100	11	5.5	3.8	MIFR-6	L0755SSTX2.5-3.6P	TPF-08
MIFHR 1600C-08	●	1.4	14	16	20	156	15	8.5	3.8	MIFR-8		
MIFHR 2000C-08	○	1.4	18	20	20	150	18	9.0	3.8			
MIFHR 1600C-10	●	2.4	14	16	35	163	15	8.1	4.6	MIFR-10	L0860SSTX4.0-5.7P	TPF-15
MIFHR 2000C-10	○	2.4	18	20	35	150	18	9.0	4.6			
MIFHR 1600C-15	●	4.7	14	16	43	168	15	7.4	10.3	MIFR-15		
MIFHR 2000C-15	●	4.7	18	20	43	150	18	10.3	11.3			

Inserts

Shape	Designation	Size						Coated		Configuration
		W	L	T	DAXN	DAXX	rε	TPM8115S	TPM8125	
	MIFR6 1506-4.5	1.50	19	4.5	6.0	11.5	0.10		●	
	MIFR6 2006-4.5	2.00	19	4.5	6.0	16.0	0.20		●	
	MIFR8 2008-5.5	2.00	21	5.5	8.0	16.0	0.20		●	
	MIFR8 2508-5.5	2.50	21	5.5	8.0	21.0	0.20		●	
	MIFR9 2510-11.2	2.50	39	11.2	10.0	30.0	0.20		●	
	MIFR9 3010-11.2	3.00	39	11.2	10.0	30.0	0.20		●	
	MIFR9 3510-11.2	3.50	39	11.2	10.0	-	0.20		●	
	MIFR15 3015-16.5	3.00	49	16.5	15.0	60.0	0.20		○	
	MIFR15 3515-16.5	3.50	49	16.5	15.0	-	0.20		○	
	MIFR6 1506-R0.75-4.5	1.50	19	4.5	6.0	11.5	0.75		●	
	MIFR6 2006-R1.00-4.5	2.00	19	4.5	6.0	16.0	1.00		●	
	MIFR8 2008-R1.00-5.5	2.00	21	5.5	8.0	-	1.00		●	
	MIFR8 2508-R1.25-5.5	2.50	21	5.5	8.0	-	1.25		●	
	MIFR9 2510-R1.25-11.2	2.50	39	11.2	10.0	-	1.25		●	
	MIFR9 3010-R1.50-11.2	3.00	39	11.2	10.0	34.0	1.50		●	
	MIFR15 3015-R1.50-16.5	3.00	49	16.5	15.0	-	1.50		○	

SGIVR/L

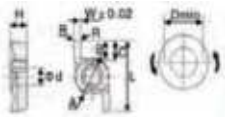
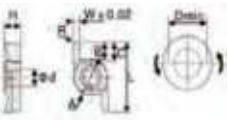




Face & internal grooving holder, for 2 corner inserts

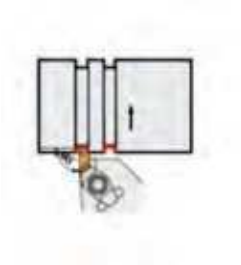
Designation	Stock		Size								Applicable Insert	Spare parts	
	R	L	Dmin	d	L	ℓ	L	H	S	Tmax		Screw	Wrench
SGIVR/L 1816-D	●	○	18	16	16	50	160	15	9.5	4.5	HNFGR/L Right-hand insert Matches right-hand holder	L0800SSTX4.0-5.7P	T-15
SGIVR/L 2420-D	●	○	24	19	20	50	160	19	13.5	4.5			
SGIVR/L 3025-D	●	○	30	24	25	60	200	24	16.5	4.5			
SGIVR/L 3632-D	●	○	36	31	32	70	250	31	19.0	4.5			

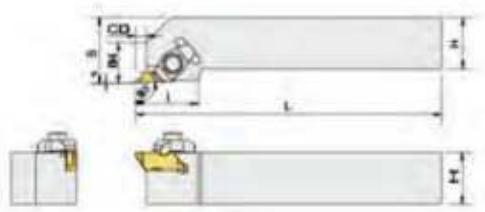
Inserts

Shape	Designation	Size									Coated		Configuration
		Dmin	W	L	A	d	H	B	C	rε	TTIM45	TTIS30	
	HNFGR/L 1016-2.5	18	1.0	18	9.3	4.4	4.8	2.5	2.6	0.05		●	
	HNFGR/L 1518-3.5	18	1.5	18	9.3	4.4	4.8	3.5	3.6	0.10		●	
	HNFGR/L 2018-4.5	18	2.0	18	9.3	4.4	4.8	4.5	4.6	0.10		●	
	HNFGR/L 2518-4.5	18	2.5	18	9.3	4.4	4.8	4.5	4.6	0.10		●	
	HNFGR/L 3018-4.5	18	3.0	18	9.3	4.4	4.8	4.5	4.6	0.10		●	
	HNFGR/L 3518-4.5	18	3.5	18	9.3	4.4	4.8	4.5	4.6	0.10		●	
	HNFGR/L 4018-4.5	18	4.0	18	9.3	4.4	4.8	4.5	4.6	0.10		●	
	HNFGR/L 1018-R0.50-2.5	18	1.0	18	9.3	4.4	4.8	2.5	2.6	1.50		●	
	HNFGR/L 1518-R0.75-3.5	18	1.5	18	9.3	4.4	4.8	3.5	3.6	0.75		●	
	HNFGR/L 2018-R1.00-4.5	18	2.0	18	9.3	4.4	4.8	4.5	4.6	1.00		●	
	HNFGR/L 2518-R1.25-4.5	18	2.5	18	9.3	4.4	4.8	4.5	4.6	1.25		●	
	HNFGR/L 3018-R1.50-4.5	18	3.0	18	9.3	4.4	4.8	4.5	4.6	1.50		●	
	HNFGR/L 4018-R2.00-4.5	18	4.0	18	9.3	4.4	4.8	4.5	4.6	2.00		●	

Top Clamping Tools

XNSR/L

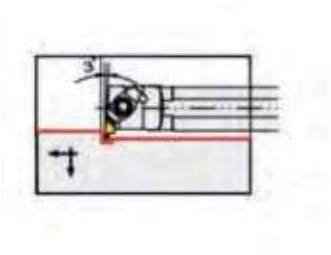


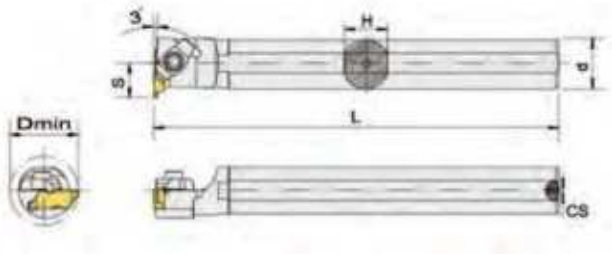


External grooving and profiling holder, for top clamping design

Designation	Stock		Dimension (mm)							Insert	Spare parts		
	R	L	H	W	L	ℓ	S	CD	B4		Clamp	Screw	Wrench
XNSR/L 1616-H2			16	16	100	19	20	3.5	9	XN□□2R/L	CM74	PTX0412	HW30L
XNSR/L 2020-K2			20	20	125	19	25	3.5	9				
XNSR/L 2525-M2			25	25	150	19	32	3.5	9				
XNSR/L 2020-K3			20	20	125	32	25	5.3	13	XN□□3R/L	CM72LP	PTX0520	HW40L
XNSR/L 2525-M3			25	25	150	32	32	5.3	13				
XNSR/L 3225-P3			32	25	170	32	32	5.3	13				
XNSR/L 3232-P3			32	32	170	32	40	5.3	13				

XNAR/L

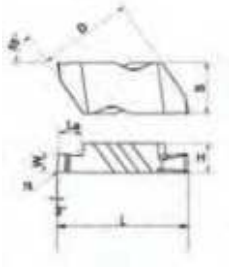
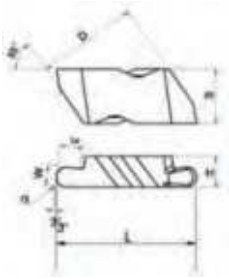


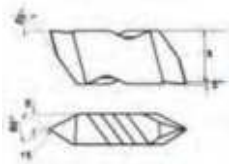


Internal grooving and profiling holder, for top clamping design

Designation	Stock		Dimension (mm)						Insert	Spare parts		
	R	L	Dmin	d	H	L	S	CS		Clamp	Screw	Wrench
A20Q-XNAR/L2			26	20	18	180	13	1/8-27NPT	XN□□2R/L	CM74	PTX0412	HW30L
A25R-XNAR/L2			34	25	23	200	17	1/4-18NPT				
A25R-XNAR/L3			34	25	23	200	17	1/4-18NPT	XN□□3R/L	CM72LP	PTX0520	HW40L
A32S-XNAR/L3			44	32	30	250	22	1/4-18NPT				
A40T-XNAR/L3			54	40	37	300	27	1/4-18NPT				

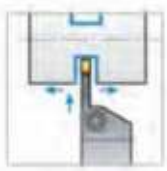
Inserts

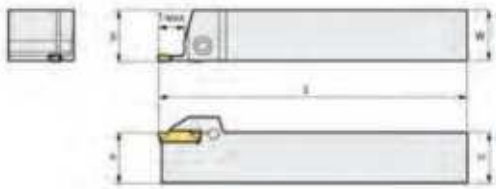
Shape	Designation	Size							Coated		Configuration
		W	rε	L	H	La	D	S	TPM8020	TPM8125	
	XNGP 2M050R/L	0.50	0.09	13.030	3.81	0.64	8.74	5.56		●	
	XNGP 2M100R/L	1.00	0.09	13.030	3.81	1.27	8.74	5.56		●	
	XNGP 2M150R/L	1.50	0.19	13.030	3.81	2.79	8.74	5.56		●	
	XNGP 2M170R/L	1.70	0.19	13.030	3.81	2.79	8.74	5.56		●	
	XNGP 2M200R/L	2.00	0.19	13.030	3.81	2.79	8.74	5.56		●	
	XNGP 2M220R/L	2.20	0.19	13.030	3.81	2.79	8.74	5.56		●	
	XNGP 2M250R/L	2.50	0.19	13.030	3.81	2.79	8.74	5.56		●	
	XNGP 3M100R/L	1.00	0.19	22.709	4.95	1.91	16.10	8.74		●	
	XNGP 3M150R/L	1.50	0.19	22.709	4.95	2.39	16.10	8.74		●	
	XNGP 3M200R/L	2.00	0.19	22.709	4.95	2.39	16.10	8.74		●	
	XNGP 3M250R/L	2.50	0.19	22.709	4.95	3.81	16.10	8.74		●	
	XNGP 3M300R/L	3.00	0.19	22.709	4.95	3.81	16.10	8.74		●	
	XNGP 3M350R/L	3.50	0.32	22.709	4.95	3.81	16.10	8.74		●	
	XNGP 3M400R/L	4.00	0.32	22.709	4.95	3.81	16.10	8.74		●	
	XNGP 3M450R/L	4.50	0.32	22.709	4.95	3.81	16.10	8.74		●	
	XNRP 2M050R/L	1.00	0.50	13.030	3.81	1.27	8.74	5.56		●	
	XNRP 2M075R/L	1.50	0.75	13.030	3.81	2.79	8.74	5.56		●	
	XNRP 2M100R/L	2.00	1.00	13.030	3.81	2.79	8.74	5.56		●	
	XNRP 2M125R/L	2.50	1.25	13.030	3.81	2.79	8.74	5.56		●	
	XNRP 2M150R/L	3.00	1.50	13.030	3.81	2.79	8.74	5.56		●	
	XNRP 2M175R/L	3.50	1.75	13.030	3.81	2.79	8.74	5.56		●	
	XNRP 3M100R/L	2.00	1.00	22.709	4.95	2.39	16.10	8.74		●	
	XNRP 3M125R/L	2.50	1.25	22.709	4.95	3.81	16.10	8.74		●	
	XNRP 3M150R/L	3.00	1.50	22.709	4.95	3.81	16.10	8.74		●	
	XNRP 3M175R/L	3.50	1.75	22.709	4.95	3.81	16.10	8.74		●	
	XNRP 3M200R/L	4.00	2.00	22.709	4.95	3.81	16.10	8.74		●	
	XNRP 3M225R/L	4.50	2.25	22.709	4.95	33.81	16.10	8.74		●	

Shape	Designation	Size							Coated		Configuration
		E	rε	L	External (mm)	Internal (mm)	External (tpi)	Internal (tpi)	TPM8020	TPM8125	
	XNTP 2R/L	1.91	0.10	5.56	0.70-3.00	1.25-3.50	8-36	7-20			
	XNTP 3R/L	2.49	0.17	8.74	1.25-4.00	2.00-5.00	4-20	5-12			
	XNTP 3004R/L	2.49	0.10	8.74	1.25-4.00	2.00-5.00	5-36	5-12			

Multi-functional Tools

MGEHR/L

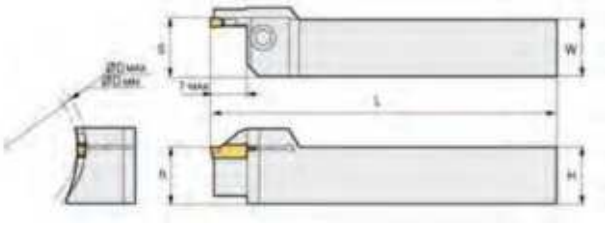




External grooving holder, for grooving, turning reliefiling, parting off, profiling machining.

Designation	Stock		Size					Applicable Insert	Spare parts	
	R	L	H=h	W	L	S	Tmax		Screw	Wrench
MGEHR/L 1616-1.5	●	●	16	16	100	16.2	14	MGMN150-G	PTX0512	HW40L
MGEHR/L 2020-1.5	●	●	20	20	125	20.2	14			
MGEHR/L 2525-1.5	●	●	25	25	150	25.2	14			
MGEHR/L 1212-2	●	●	12	12	100	12.25	14	MGMN200-G MGMN200-M MRMN200-M	PTX0516	HW40L
MGEHR/L 1616-2	●	●	16	16	100	16.25	14			
MGEHR/L 2020-2	●	●	20	20	125	20.25	14			
MGEHR/L 2525-2	●	●	25	25	150	25.25	14			
MGEHR/L 1616-2.5	●	●	16	16	100	16.30	16	MGMN250-G MGMN250-M	PTX0516	HW40L
MGEHR/L 2020-2.5	●	●	20	20	125	20.30	16			
MGEHR/L 2525-2.5	●	●	25	25	150	25.30	16			
MGEHR/L 1616-3	●	●	16	16	100	16.35	18	MGMN300-G MGMN300-M MRMN300-M	PTX0620	HW50L
MGEHR/L 2020-3	●	●	20	20	125	20.40	18			
MGEHR/L 2020-3-T10	●	●	20	20	125	20.40	10			
MGEHR/L 2525-3	●	●	25	25	150	25.40	18			
MGEHR/L 2525-3-T10	●	●	25	25	150	25.40	10			
MGEHR/L 3232-3	●	●	32	32	170	32.40	18			
MGEHR/L 3232-3-T10	●	●	32	32	170	32.40	10			
MGEHR/L 2020-4	●	●	20	20	125	20.40	18	MGMN400-G MGMN400-M MRMN400-M		
MGEHR/L 2020-4-T10	●	●	20	20	125	20.40	10			
MGEHR/L 2525-4	●	●	25	25	150	25.40	18			
MGEHR/L 2525-4-T10	●	●	25	25	150	25.40	10			
MGEHR/L 3232-4	●	●	32	32	170	32.40	18			
MGEHR/L 3232-4-T10	●	●	32	32	170	32.40	10			
MGEHR/L 2020-5	●	●	20	20	125	20.50	23	MGMN500-G MGMN500-M MRMN500-M		
MGEHR/L 2020-5-T15	●	●	20	20	125	20.50	15			
MGEHR/L 2525-5	●	●	25	25	150	25.50	23			
MGEHR/L 2525-5-T15	●	●	25	25	150	25.50	15			
MGEHR/L 3232-5	●	●	32	32	170	32.50	23			
MGEHR/L 3232-5-T15	●	●	32	32	170	32.50	15			
MGEHR/L 2020-6	●	●	20	20	125	20.60	23	MGMN600-G MGMN600-M MRMN600-M		
MGEHR/L 2020-6-T15	●	●	20	20	125	20.60	15			
MGEHR/L 2525-6	●	●	25	25	150	25.60	23			
MGEHR/L 2525-6-T15	●	●	25	25	150	25.60	15			
MGEHR/L 3232-6	●	●	32	32	170	32.60	23			
MGEHR/L 3232-6-T15	●	●	32	32	170	32.60	15			
MGEHR/L 2525-8	●	●	25	25	150	26.10	28	MGMN800-G MGMN800-M RMN800-M		
MGEHR/L 2525-8-T15	●	●	25	25	150	26.10	15			
MGEHR/L 3232-8	●	●	32	32	170	33.10	28			
MGEHR/L 3232-8-T15	●	●	32	32	170	33.10	15			
MGEHR/L 2525-6A			25	25	150	25.60	23	MRGN600-A		
MGEHR/L 2525-6A-T15			25	25	150	25.60	15			
MGEHR/L 3232-6A			32	32	170	32.60	23			
MGEHR/L 32-6A-T15			32	32	170	32.60	15			
MGEHR/L 2525-8A			25	25	150	26.10	28	MRGN800-A		
MGEHR/L 2525-8A-T15			25	25	150	26.10	15			
MGEHR/L 3232-8A			32	32	170	33.10	28			
MGEHR/L 3232-8A-T15			32	32	170	33.10	15			

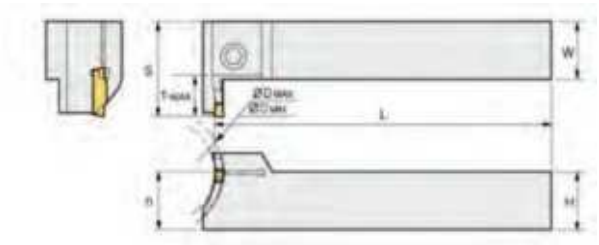
MGFHR/L



External facing grooving holder

Designation	Stock		Size							Insert	Spare parts	
	R	L	H=h	W	L	S	Tmax	Dmin	Dmax		Screw	Wrench
MGFHR/L 320-24/35-T10	●	●	20	20	125	20.5	10	24	35	MGMN300 MGGN300 MRMN300	PTX0620	HW50L
MGFHR/L 320-34/50-T10	●	●	20	20	125	20.5	10	34	50			
MGFHR/L 320-44/62-T15	●	●	20	20	125	20.5	15	44	62			
MGFHR/L 320-62/120-T15	●	●	20	20	125	20.5	15	62	120			
MGFHR/L 320-112/200-T15	●	●	20	20	125	20.5	15	112	200			
MGFHR/L 325-24/35-T10	●	●	25	25	150	25.5	10	24	35			
MGFHR/L 325-34/50-T10	●	●	25	25	150	25.5	10	34	50			
MGFHR/L 325-44/62-T15	●	●	25	25	150	25.5	15	44	62			
MGFHR/L 325-62/120-T15	●	●	25	25	150	25.5	15	62	120			
MGFHR/L 325-112/200-T15	●	●	25	25	150	25.5	15	112	200			
MGFHR/L 420-34/50-T15	●	●	20	20	125	20.6	15	34	50	MGMN400 MGGN400 MRMN400		
MGFHR/L 420-44/62-T15	●	●	20	20	125	20.6	15	44	62			
MGFHR/L 420-62/120-T15	●	●	20	20	125	20.6	15	62	120			
MGFHR/L 420-112/200-T15	●	●	20	20	125	20.6	15	112	200			
MGFHR/L 425-34/50-T15	●	●	25	25	150	25.6	15	34	50			
MGFHR/L 425-44/62-T15	●	●	25	25	150	25.6	15	44	62			
MGFHR/L 425-62/120-T15	●	●	25	25	150	25.6	15	62	120			
MGFHR/L 425-112/200-T15	●	●	25	25	150	25.6	15	112	200			
MGFHR/L 425-200-T20			25	25	150	25.6	20	200	∞			
MGFHR/L 525-50/80-T15			25	25	150	25.6	15	50	80	MGMN500 MRMN500		
MGFHR/L 525-50/80-T25			25	25	150	25.6	25	50	80			
MGFHR/L 525-70/110-T15			25	25	150	25.6	15	70	110			
MGFHR/L 525-70/110-T25			25	25	150	25.6	25	70	110			
MGFHR/L 525-100/150-T25			25	25	150	25.6	25	100	150			
MGFHR/L 525-140/200-T25			25	25	150	25.6	25	140	200			
MGFHR/L 525-200-T25			25	25	150	25.6	25	200	∞			

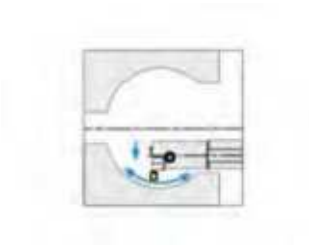
MGFVR/L

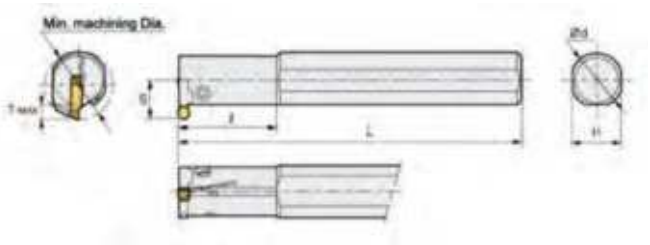


External facing grooving holder

Designation	Stock		Size							Insert	Spare parts	
	R	L	H=h	W	L	S	Tmax	Dmin	Dmax		Screw	Wrench
MGFVR/L 325-24/35-T10			25	25	150	36	10	24	35	MGMN300 MGGN300 MRMN300	PTX0620	HW50L
MGFVR/L 325-34/50-T10			25	25	150	36	10	34	50			
MGFVR/L 325-44/62-T10			25	25	150	36	10	44	62			
MGFVR/L 325-62/120-T15			25	25	150	36	15	62	120			
MGFVR/L 425-44/62-T15			25	25	150	41	15	44	62	MGMN400 MGGN400 MRMN400		
MGFVR/L 425-62/120-T15			25	25	150	41	15	62	120			
MGFVR/L 425-112/200-T15			25	25	150	41	15	112	200			
MGFVR/L 525-50/80-T20			25	25	150	46	20	50	80	MGMN500 MRMN500		
MGFVR/L 525-70/110-T20			25	25	150	46	20	70	110			
MGFVR/L 525-100/150-T20			25	25	150	46	20	100	150			
MGFVR/L 525-140/200-T20			25	25	150	46	20	140	200			
MGFVR/L 525-200-T20			25	25	150	46	20	200	∞			

MGIVR/L



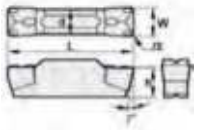
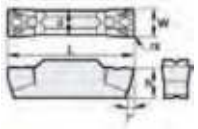
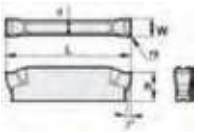
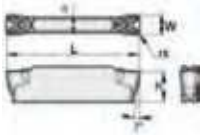
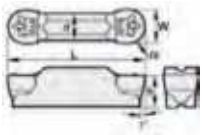
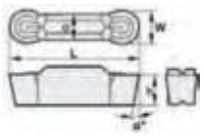


Internal grooving holder, for grooving, turning, profiling machining.

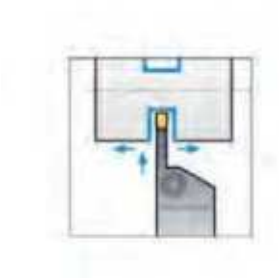
Designation	Stock		Dimension (mm)							Applicable Insert	Spare parts	
	R	L	Dmin	фd	L	l	H	S	Tmax		Screw	Wrench
MGIVR/L 2016-1.5	●	●	20	16	125	35	15	11.3	3.5	MGMN150-G	PTX0410	HW30L
MGIVR/L 2520-1.5	●	●	25	20	150	45	18	13.1	3.5		PTX0412	HW30L
MGIVR/L 2925-1.5	●	●	29	25	200	45	23	16.2	3.5		PTX0412	HW30L
MGIVR/L 2016-2	●	●	20	16	125	35	15	12.4	4.5	MGMN200-G MGMN200-M MRMN200-M	PTX0410	HW30L
MGIVR/L 2520-2	●	●	25	20	150	45	18	14.0	4.5		PTX0412	HW30L
MGIVR/L 2925-2	●	●	29	25	200	45	23	17.2	4.5		PTX0412	HW30L
MGIVR/L 2016-2.5	●	●	20	16	125	35	15	12.5	4.5	MGMN250-G MGMN250-M	PTX0410	HW30L
MGIVR/L 2520-2.5	●	●	25	20	150	45	18	15.1	4.5		PTX0412	HW30L
MGIVR/L 2925-2.5	●	●	29	25	200	45	23	18.2	4.5		PTX0412	HW30L
MGIVR/L 2520-3	●	●	25	20	150	45	18	15.6	5	MGMN300-G MGMN300-M MRMN300-M	PTX0412	HW30L
MGIVR/L 3125-3	●	●	31	25	200	45	23	18.9	6		PTX0412	HW30L
MGIVR/L 3732-3	●	●	37	32	250	65	30	21.5	6		PTX0516	HW40L
MGIVR/L 2520-4	●	●	25	20	150	45	18	15.6	6	MGMN400-G MGMN400-M MRMN400-M	PTX0412	HW30L
MGIVR/L 3125-4	●	●	31	25	200	45	23	18.9	6		PTX0520	HW40L
MGIVR/L 3732-4	●	●	37	32	250	65	30	21.5	6		PTX0516	HW40L
MGIVR/L 3125-5	●	●	31	25	200	45	23	19.4	8	MGMN500-G MGMN500-M MRMN500-M	PTX0520	HW40L
MGIVR/L 3732-5	●	●	37	32	250	65	30	21.5	8		PTX0516	HW40L
MGIVR/L 3125-6	●	●	31	25	200	45	23	19.4	8	MGMN600-G MGMN600-M MRMN600-M	PTX0520	HW40L
MGIVR/L 3732-6	●	●	37	32	250	65	30	21.5	8		PTX0516	HW40L
MGIVR/L 3732-8	●	●	37	32	250	65	30	23.4	10	MGMN800-G MGMN800-M MRMN800-M	PTX0520	HW40L
MGIVR/L 4540-8	●	●	45	40	300	70	37	27.2	10		PTX0520	HW40L
MGIVR/L 3125-6A			31	25	200	45	23	19.4	6	MRGN600-A	PTX0516	HW40L
MGIVR/L 3732-6A			37	32	250	65	30	21.5	6		PTX0520	HW40L
MGIVR/L 3732-8A			37	32	250	65	30	23.4	10	MRGN800-A	PTX0520	HW40L
MGIVR/L 4540-8A			45	40	300	70	37	27.2	10		PTX0520	HW40L

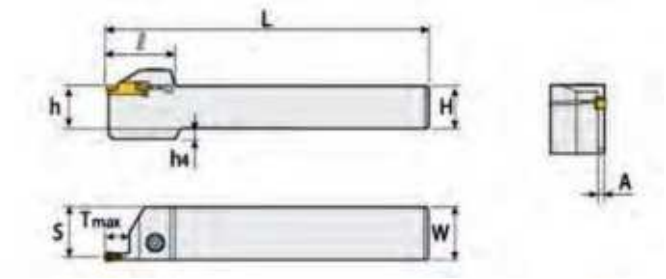
Multi-functional Tools

Inserts

Shape	Designation	Size					Coated								Configuration
		W	rε±0.050	L	h	d	TCP9120	TCP9225	TCP9340	TCK5215	TPM8125	TPM8225	TPM930	TPK01	
	MGMN 150-G	1.50	0.15	16.0	3.50	1.20	○				●				
	MGMN 200-G	2.00	0.20	16.0	3.50	1.60	●	●	●	●	●	●	●	●	
	MGMN 250-G	2.50	0.20	18.5	3.85	2.00									
	MGMN 300-G	3.00	0.30	21.0	4.80	2.35					○				
	MGMN 400-G	4.00	0.30	21.0	4.80	3.30					○				
	MGMN 500-G	5.00	0.50	26.0	5.80	4.10									
	MGMN 600-G	6.00	0.80	26.0	5.80	5.00									
	MGMN 200-M	2.00	0.20	16.0	3.50	1.60								●	
	MGMN 250-M	2.50	0.20	18.5	3.85	2.00	●	●	●	●	●	●	●	●	
	MGMN 300-M	3.00	0.40	21.0	4.80	2.35	●	●	●	●	●	●	●	●	
	MGMN 400-M	4.00	0.40	21.0	4.80	3.30	●	●	●	●	●	●	●	●	
	MGMN 500-M	5.00	0.80	26.0	5.80	4.10	●	●	●	●	●	●	●	●	
	MGMN 600-M	6.00	0.80	26.0	5.80	5.00	●	●	●	●	●	●	●	●	
	MGMN 800-M	8.00	0.80	31.0	6.50	6.00					●			●	
	MGMN 200-H	2.00	0.20	16.0	3.50	1.60	●				●				
	MGMN 250-H	2.50	0.20	18.5	3.85	2.00	●				●				
	MGMN 300-H	3.00	0.40	21.0	4.80	2.35	●				●				
	MGMN 400-H	4.00	0.40	21.0	4.80	3.30	●				●				
	MGMN 500-H	5.00	0.80	26.0	5.80	4.10	●				●				
	MGMN 200-L	2.00	0.20	16.5	3.50	1.60	●				●				
	MGMN 250-L	2.50	0.20	18.5	3.85	2.00	●				●				
	MGMN 300-L	3.00	0.20	21.0	4.80	2.35	●				●				
	MGMN 400-L	4.00	0.30	21.0	4.80	3.30	●				●				
	MGMN 500-L	5.00	0.30	26.0	5.80	4.10	●				●				
											○	●			
	MGMN 150-T	1.50	0.15	16.0	3.50	1.20					●	●			
	MGMN 200-T	2.00	0.20	16.0	3.50	1.60					●	●			
	MGMN 250-T	2.50	0.20	18.5	4.80	2.00					●	●			
	MGMN 300-T	3.00	0.40	21.0	4.80	2.35					●	●			
	MGMN 400-T	4.00	0.40	21.0	4.80	3.30					●	●			
	MGMN 500-T	5.00	0.80	26.0	5.80	4.10									
	MRMN 200-M	2.00	1.00	16.0	3.50	1.50	●				●	●			
	MRMN 300-M	3.00	1.50	21.0	4.80	2.35	●				●	●			
	MRMN 400-M	4.00	2.00	21.0	4.80	3.30	●				●	●			
	MRMN 500-M	5.00	2.50	26.0	5.80	4.10	●				●	●			
	MRMN 600-M	6.00	3.00	26.0	5.80	5.00	●				●				
	MRMN 800-M	8.00	4.00	31.0	6.50	6.00									
	MRGA 300-A	3.00	1.50	21.0	4.80	2.35									
	MRGA 400-A	4.00	2.00	21.0	4.80	3.30								●	
	MRGA 500-A	5.00	2.50	26.0	5.80	4.10								●	
	MRGA 600-A	6.00	3.00	26.0	5.80	5.00								●	
	MRGA 800-A	8.00	4.00	31.0	6.50	6.00								●	

TTER/L



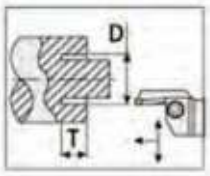


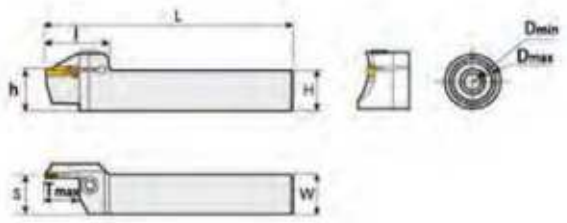
External grooving holder, for grooving, turning, profiling machining.

Designation	Stock		Dimension (mm)								Insert	Spare parts	
	R	L	H=h	W	L	S	ℓ	A	h4	Tmax		Screw	Wrench
TTER/L 1616-2T08	●		16	16	110	15.1	33.0	1.8	4	8	TD□2	PTX0516	HW40L
TTER/L 2020-2T08	●		20	20	125	19.1	33.0	1.8	-	8		PTX0520	HW40L
TTER/L 2525-2T08	●		25	25	150	24.1	33.0	1.8	-	8		PTX0525	HW40L
TTER/L 1616-2	●		16	16	110	15.1	32.0	1.8	4	12		PTX0516	HW40L
TTER/L 2020-2	●		20	20	125	19.1	32.0	1.8	-	12		PTX0520	HW40L
TTER/L 2525-2	●		25	25	150	24.1	32.0	1.8	-	12		PTX0525	HW40L
TTER/L 1616-2T17	●		16	16	110	15.1	37.0	1.8	4	17		PTX0516	HW40L
TTER/L 2020-2T17	●		20	20	125	19.1	37.0	1.8	-	17		PTX0520	HW40L
TTER/L 2525-2T17	●		25	25	150	24.1	37.0	1.8	-	17		PTX0525	HW40L
TTER/L 1616-3T09	●		16	16	110	15.1	32.0	2.4	4	9	TD□3	PTX0516	HW40L
TTER/L 2020-3T09	●		20	20	125	19.1	32.0	2.4	-	9		PTX0520	HW40L
TTER/L 2525-3T09	●		25	25	150	24.1	32.0	2.4	-	9		PTX0525	HW40L
TTER/L 1616-3	●		16	16	110	15.1	32.0	2.4	4	12		PTX0516	HW40L
TTER/L 2020-3	●		20	20	125	19.1	32.0	2.4	-	12		PTX0520	HW40L
TTER/L 2525-3	●		25	25	150	24.1	32.0	2.4	-	12		PTX0525	HW40L
TTER/L 1616-3T20	●		16	16	110	15.1	38.5	2.4	4	20		PTX0516	HW40L
TTER/L 2020-3T20	●		20	20	125	19.1	38.5	2.4	-	20		PTX0520	HW40L
TTER/L 2525-3T20	●		25	25	150	24.1	38.5	2.4	-	20		PTX0525	HW40L
TTER/L 2525-3T25	●		25	25	150	24.1	44.5	2.4	-	25		PTX0525	HW40L
TTER/L 1616-4T10	●		16	16	110	15.1	32.0	3.0	4	10	TD□4	PTX0616	HW50L
TTER/L 2020-4T10	●		20	20	125	19.1	32.0	3.0	-	10		PTX0620	HW50L
TTER/L 2525-4T10	●		25	25	150	24.1	32.0	3.0	-	10		PTX0625	HW50L
TTER/L 1616-4	●		16	16	110	15.1	33.0	3.0	4	15		PTX0616	HW50L
TTER/L 2020-4	●		20	20	125	19.1	33.0	3.0	-	15		PTX0620	HW50L
TTER/L 2525-4	●		25	25	150	24.1	33.0	3.0	-	15		PTX0625	HW50L
TTER/L 1616-4T25	●		16	16	110	15.1	45.0	3.0	4	25		PTX0616	HW50L
TTER/L 2020-4T25	●		20	20	125	19.1	45.0	3.0	-	25		PTX0620	HW50L
TTER/L 2525-4T25	●		25	25	150	24.1	45.0	3.0	-	25		PTX0625	HW50L
TTER/L 2020-5T12			20	20	125	19.1	37.0	4.0	-	12	TD□5	PTX0620	HW50L
TTER/L 2525-5T12			25	25	150	24.1	37.0	4.0	-	12		PTX0625	HW50L
TTER/L 2020-5			20	20	125	19.1	37.0	4.0	-	20		PTX0620	HW50L
TTER/L 2525-5			25	25	150	24.1	37.0	4.0	-	20		PTX0625	HW50L
TTER/L 2525-5T32			25	25	150	24.1	56.0	4.0	-	32		PTX0625	HW50L

Multi-functional Tools

TTFR/L

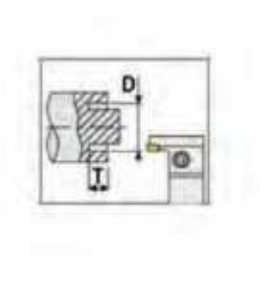


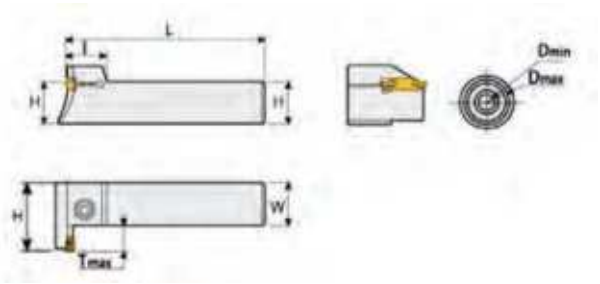


External deep face grooving and turning, for double-sided inserts

Designation	Stock		Dimension (mm)								Insert	Spare parts	
	R	L	H=h	W	ℓ	L	S	Dmin	Dmax	Tmax		Screw	Wrench
TTFR/L 320-21/30-T10			20	20	31	140	19.0	21	30	10	TD□3	PTX0620	HW50L
TTFR/L 320-24/35-T10			20	20	31	140	19.0	24	35	10			
TTFR/L 320-29/40-T10			20	20	31	140	19.0	29	40	10			
TTFR/L 320-34/50-T10			20	20	31	140	19.0	34	50	10			
TTFR/L 320-44/70-T15			20	20	35	140	19.0	44	70	15			
TTFR/L 320-64/100-T15			20	20	35	140	19.0	64	100	15			
TTFR/L 325-24/35-T10			25	25	38	150	24.0	24	35	10		PTX0625	HW50L
TTFR/L 325-29/40-T10			25	25	38	150	24.0	29	40	10			
TTFR/L 325-34/50-T10			25	25	38	150	24.0	34	50	10			
TTFR/L 325-44/70-T15			25	25	38	150	24.0	44	70	15			
TTFR/L 325-64/100-T15			25	25	38	150	24.0	64	100	15			
TTFR/L 420-19/30-T10			20	20	31	140	18.6	19	30	10	TD□4	PTX0620	HW50L
TTFR/L 420-22/36-T10			20	20	31	140	18.6	22	36	10			
TTFR/L 420-28/42-T16			20	20	36	140	18.6	28	42	16			
TTFR/L 420-34/50-T16			20	20	36	140	18.6	34	50	16			
TTFR/L 420-42/70-T16			20	20	36	140	18.6	42	70	16			
TTFR/L 420-62/120-T16			20	20	36	140	18.6	62	120	16			
TTFR/L 420-112/200-T16			20	20	36	140	18.6	112	200	16			
TTFR/L 425-22/36-T10			25	25	39	150	23.6	22	36	10		PTX0625	HW50L
TTFR/L 425-28/42-T20			25	25	39	150	23.6	28	42	20			
TTFR/L 425-34/50-T20			25	25	39	150	23.6	34	50	20			
TTFR/L 425-42/70-T20			25	25	39	150	23.6	42	70	20			
TTFR/L 425-62/120-T20			25	25	39	150	23.6	62	120	20			
TTFR/L 425-112/200-T20			25	25	39	150	23.6	112	200	20			
TTFR/L 425-200-T20			25	25	39	150	23.6	200	∞	20			
TTFR/L 525-50/80-T15			25	25	41	150	23.1	50	80	15	TD□5	PTX0825	HW60L
TTFR/L 525-50/80-T25			25	25	49	150	23.1	50	80	25			
TTFR/L 525-70/110-T15			25	25	41	150	23.1	70	110	15			
TTFR/L 525-70/110-T25			25	25	49	150	23.1	70	110	25			
TTFR/L 525-100/150-T25			25	25	49	150	23.1	100	150	25			
TTFR/L 525-140/200-T25			25	25	49	150	23.1	140	200	25			
TTFR/L 525-200-T25			25	25	49	150	23.1	200	∞	25			

TTFPR/L

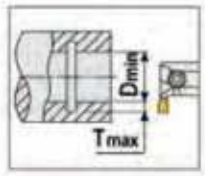


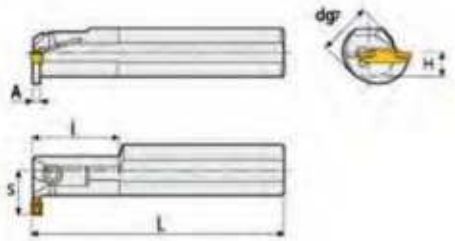


External deep face grooving and turning, for double-sided inserts

Designation	Stock		Dimension (mm)								Insert	Spare parts	
	R	L	H=h	W	ℓ	L	S	Dmin	Dmax	Tmax		Screw	Wrench
TTFPR/L 325-24/35-T10			25	25	18.0	150	36	24	35	10	TD□3	PTX0525	HW40L
TTFPR/L 325-29/40-T10			25	25	18.0	150	36	29	40	10			
TTFPR/L 325-34/50-T10			25	25	18.0	150	36	34	50	10			
TTFPR/L 325-44/60-T15			25	25	18.0	150	41	44	60	15			
TTFPR/L 325-54/85-T15			25	25	18.0	150	41	54	85	15			
TTFPR/L 425-22/40-T12			25	25	18.5	150	41	22	40	12	TD□4	PTX0625	HW50L
TTFPR/L 425-32/50-T15			25	25	18.5	150	41	32	50	15			
TTFPR/L 425-42/60-T15			25	25	18.5	150	41	42	60	15			
TTFPR/L 425-52/85-T15			25	25	18.5	150	41	52	85	15			
TTFPR/L 525-50/80-T20			25	25	22.0	150	46	50	80	20	TD□5	PTX0825	HW60L
TTFPR/L 525-70/110-T20			25	25	22.0	150	46	70	110	20			
TTFPR/L 525-100/150-T20			25	25	22.0	150	46	100	150	20			
TTFPR/L 525-140/200-T20			25	25	22.0	150	46	140	200	20			
TTFPR/L 525-200-T20			25	25	22.0	150	46	200	∞	20			

TTIR/L

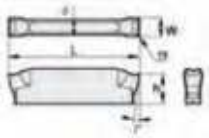
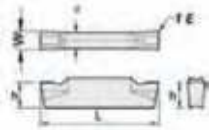
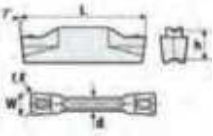




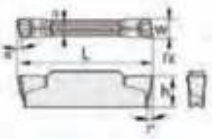
Internal turning and grooving holder, for double-sided inserts

Designation	Stock		Dimension (mm)								Insert	Spare parts	
	R	L	Dmin	d	L	ℓ	S	H	A	Tmax		Screw	Wrench
TTIR/L 16-2	●		25	16	125	-	16.5	7.5	1.80	8.5	TD□2	PTX0510	HW40L
TTIR/L 20-2	●		25	20	160	40	15.8	9.0	1.60	6.0		PTX0512	HW40L
TTIR/L 25-2	●		25	25	200	40	17.5	11.5	1.60	5.0		PTX0516	HW40L
TTIR/L 32-2	●		31	32	250	60	20.8	14.0	1.50	4.7		PTX0516	HW40L
TTIR/L 32-2-T08	●		36	32	250	40	24.8	14.0	1.80	8.0		PTX0516	HW40L
TTIR/L 20-3	●		25	20	150	40	15.8	9.0	2.10	6.0	TD□3	PTX0512	HW40L
TTIR/L 25-3	●		25	25	200	40	17.5	11.5	2.10	5.1		PTX0516	HW40L
TTIR/L 25-3-T08	●		32	25	200	40	21.5	11.5	2.40	8.0		PTX0516	HW40L
TTIR/L 32-3	●		31	32	250	60	20.8	14.0	2.10	4.7		PTX0516	HW40L
TTIR/L 32-3-T10	●		40	32	250	60	27.0	15.0	2.40	10.0		PTX0516	HW40L
TTIR/L 40-3-T12	●		50	40	300	65	33.0	19.0	2.40	12.0		PTX0516	HW40L
TTIR/L 20-4	●		25	20	160	40	15.8	9.0	2.90	6.0	TD□4	PTX0512	HW40L
TTIR/L 25-4	●		25	25	200	40	17.5	11.5	2.90	5.2		PTX0516	HW40L
TTIR/L 25-4-T08	●		32	25	200	40	21.5	11.5	3.00	8.0		PTX0516	HW40L
TTIR/L 32-4	●		31	32	250	60	20.8	14.0	2.90	4.7		PTX0516	HW40L
TTIR/L 32-4-T10	●		40	32	250	60	27.0	15.0	3.00	10.0		PTX0516	HW40L
TTIR/L 40-4-T12	●		50	40	300	65	33.0	19.0	3.00	12.0		PTX0516	HW40L
TTIR/L 25-5			31	25	200	40	17.3	11.5	3.90	5.2	TD□5	PTX0616	HW50L
TTIR/L 32-5			31	32	250	60	20.8	14.0	3.90	4.7		PTX0620	HW50L
TTIR/L 32-5-T10			40	32	250	60	27.0	15.0	3.85	10.0		PTX0620	HW50L
TTIR/L 40-5-T12			50	40	300	65	33.0	19.0	3.85	12.0		PTX0625	HW50L

Inserts

Shape	Designation	Size						Coated				Configuration
		W±0.020	rε±0.050	L	h	d	α°	TCP9120	TPM8125	TPM930	TPK01	
	TDC 2	2.00	0.2	20.0	4.7	1.7	-	●	●			
	TDC 3	3.00	0.2	20.0	4.7	2.4	-	●	●			
	TDC 4	4.00	0.3	20.0	4.7	3.0	-	●	●			
	TDC 5	5.00	0.3	25.0	5.2	4.0	-	●	●			
	TDJ 2	2.00	0.2	20.0	4.7	1.7	-	●	●			
	TDJ 3	3.00	0.2	20.0	4.7	2.4	-	●	●			
	TDJ 4	4.00	0.3	20.0	4.7	3.0	-	●	●			
	TDJ 5	5.00	0.3	25.0	5.2	4.0	-					
	TDT 2.00-E	2.00	0.2	20.0	4.7	1.7	-					
	TDT 3.00-E	3.00	0.4	20.0	4.7	2.2	-	●	●			
	TDT 4.00-E	4.00	0.4	20.0	4.7	3.0	-	●	●			
	TDT 5.00-E	5.00	0.4	25.0	5.2	4.0	-	●	●			

Inserts

Shape	Designation	Size						Coated				Configuration
		W±0.020	rε±0.050	L	h	d	α°	TCP9120	TPM8125	TPM930	TPK01	
	TDJ 2R-6D	2.00	0.2	20.0	4.7	1.7	6		●			
	TDJ 2L-6D	2.00	0.2	20.0	4.7	1.7	6		●			
	TDJ 2R-15D	2.00	0.2	20.0	4.7	1.7	15		●			
	TDJ 2L-15D	2.00	0.2	20.0	4.7	1.7	15		●			
	TDJ 3R-6D	3.00	0.2	20.0	4.7	2.4	6		●			
	TDJ 3L-6D	3.00	0.2	20.0	4.7	2.4	6		●			
	TDJ 3R-15D	3.00	0.2	20.0	4.7	2.4	15		●			
	TDJ 3L-15D	3.00	0.2	20.0	4.7	2.4	15		●			
	TDJ 4R-6D	4.00	0.3	20.0	4.7	3.0	6		●			
	TDJ 4L-6D	4.00	0.3	20.0	4.7	3.0	6		●			
	TDJ 4R-15D	4.00	0.3	20.0	4.7	3.0	15		●			
	TDJ 4L-15D	4.00	0.3	20.0	4.7	3.0	15		●			

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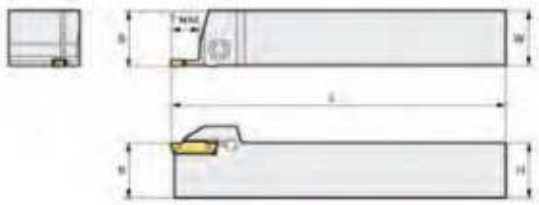

Internal turning and grooving holder, for double-sided inserts

Designation	Stock		Dimension (mm)					Insert	Spare parts	
	R	L	H=h	W	L	S	Tmax		Screw	Wrench
QEED 1616-R/L10	●		16	16	100	15.0	10	Z□ED□□	PTX0520	HW40L
QEED 1616-R/L17	●		16	16	100	15.0	17			
QEED 2020-R/L10	●		20	20	125	19.0	10		PTX0620	HW50L
QEED 2020-R/L17	●		20	20	125	19.0	17			
QEED 2525-R/L10	●		25	25	150	24.0	10			
QEED 2525-R/L17	●		25	25	150	24.0	17			
QEFD 1616-R/L10	●		16	16	100	14.8	10	Z□FD□□	PTX0520	HW40L
QEFD 1616-R/L17	●		16	16	100	14.8	17			
QEFD 2020-R/L10	●		20	20	125	18.8	10		PTX0620	HW50L
QEFD 2020-R/L17	●		20	20	125	18.8	17			
QEFD 2525-R/L10	●		25	25	150	23.8	10			
QEFD 2525-R/L17	●		25	25	150	23.8	17			
QEGD 2020-R/L13	●		20	20	125	18.5	13	Z□GD□□	PTX0620	HW50L
QEGD 2020-R/L22	●		20	20	125	18.5	22			
QEGD 2525-R/L13	●		25	25	150	23.5	13			
QEGD 2525-R/L22	●		25	25	150	23.5	22			
QEGD 3232-R/L13	●		32	32	170	30.5	13			
QEGD 3232-R/L22	●		32	32	170	30.5	22			
QEHD 2525-R/L13	●		25	25	150	23.0	13	Z□HD□□	PTX0620	HW50L
QEHD 2525-R/L22	●		25	25	150	23.0	22			
QEHD 3232-R/L13	●		32	32	170	30.0	13			
QEHD 3232-R/L22	●		32	32	170	30.0	22			
QEKD 2525-R/L13	●		25	25	150	22.6	13	Z□KD□□	PTX0620	HW50L
QEKD 2525-R/L22	●		25	25	150	22.6	22			
QEKD 3232-R/L13	●		32	32	170	29.6	13			
QEKD 3232-R/L22	●		32	32	170	29.6	22			
QEHS 2525-N30	●		25	25	150	12.5	30	Z□HS□□	PTX0620	HW50L
QEHS 3232-N30	●		32	32	170	16.0	30			
QEKS 2525-N30	●		25	25	150	12.5	30	Z□HS□□		
QEKS 3232-N30	●		32	32	170	16.0	30			

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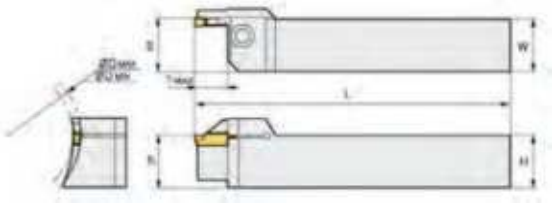

External facing grooving holder

Designation	Stock		Dimension (mm)							Applicable Insert	Spare parts	
	R	L	H=h	W	L	S	Tmax	Dmin	Dmax		Screw	Wrench
QFFD 2020R/L7-48H			20	20	125	21.0	7	48	66	Z□FD□□	PTX0620	HW50L
QFFD 2020R/L7-60H			20	20	125	21.0	7	60	80			
QFFD 2020R/L7-74H			20	20	125	21.0	7	74	110			
QFFD 2020R/L7-100H			20	20	125	21.0	7	100	150			
QFFD 2020R/L10-48H			20	20	125	21.0	10	48	66			
QFFD 2020R/L10-60H			20	20	125	21.0	10	60	80			
QFFD 2020R/L10-74H			20	20	125	21.0	10	74	110			
QFFD 2020R/L10-100H			20	20	125	21.0	10	100	150			
QFFD 2525R/L10-48H			25	25	150	26.0	10	48	66			
QFFD 2525R/L10-60H			25	25	150	26.0	10	60	80			
QFFD 2525R/L10-74H			25	25	150	26.0	10	74	110			
QFFD 2525R/L10-100H			25	25	150	26.0	10	100	150			
QFFD 2525R/L17-48H			25	25	150	26.0	17	48	66			
QFFD 2525R/L17-60H			25	25	150	26.0	17	60	80			
QFFD 2525R/L17-74H			25	25	150	26.0	17	74	110			
QFFD 2525R/L17-100H			25	25	150	26.0	17	100	150			
QFGD 2020R/L10-52H			20	20	125	19.0	10	52	72	Z□GD□□		
QFGD 2020R/L10-64H			20	20	125	19.0	10	64	100			
QFGD 2020R/L10-90H			20	20	125	19.0	10	90	140			
QFGD 2020R/L10-130H			20	20	125	19.0	10	130	230			
QFGD 2020R/L15-52H			20	20	125	19.0	15	52	72			
QFGD 2020R/L15-64H			20	20	125	19.0	15	64	100			
QFGD 2020R/L15-90H			20	20	125	19.0	15	90	140			
QFGD 2020R/L15-130H			20	20	125	19.0	15	130	230			
QFGD 2525R/L13-52H			25	25	150	24.0	13	52	72			
QFGD 2525R/L13-64H			25	25	150	24.0	13	64	100			
QFGD 2525R/L13-90H			25	25	150	24.0	13	90	140			
QFGD 2525R/L13-130H			25	25	150	24.0	13	130	230			
QFGD 2525R/L22-52H			25	25	150	24.0	22	52	72			
QFGD 2525R/L22-64H			25	25	150	24.0	22	64	100			
QFGD 2525R/L22-90H			25	25	150	24.0	22	90	140			
QFGD 2525R/L22-130H			25	25	150	24.0	22	130	230			
QFHD 2525R/L13-58H			25	25	150	23.5	13	58	96	Z□HD□□		
QFHD 2525R/L13-86H			25	25	150	23.5	13	86	140			
QFHD 2525R/L13-130H			25	25	150	23.5	13	130	200			
QFHD 2525R/L13-185H			25	25	150	23.5	13	185	400			
QFHD 2525R/L22-58H			25	25	150	23.5	22	58	96			
QFHD 2525R/L22-86H			25	25	150	23.5	22	86	140			
QFHD 2525R/L22-130H			25	25	150	23.5	22	130	200			
QFHD 2525R/L22-185H			25	25	150	23.5	22	185	400			
QFKD 2525R/L13-60H			25	25	150	23.0	13	60	100	Z□KD□□		
QFKD 2525R/L13-88H			25	25	150	23.0	13	88	180			
QFKD 2525R/L13-160H			25	25	150	23.0	13	160	400			
QFKD 2525R/L22-60H			25	25	150	23.0	22	60	100			
QFKD 2525R/L22-88H			25	25	150	23.0	22	88	180			
QFKD 2525R/L22-160H			25	25	150	23.0	22	160	400			

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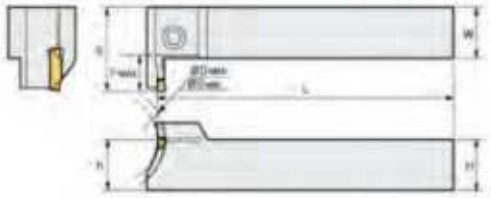
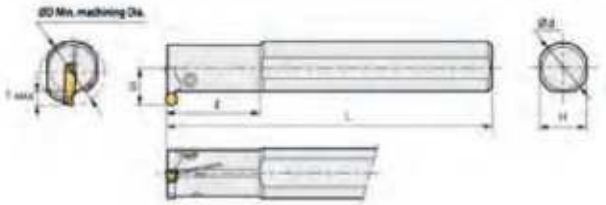


External facing grooving holder

Designation	Stock		Dimension (mm)							Applicable Insert	Spare parts	
	R	L	H=h	W	L	S	Tmax	Dmin	Dmax		Screw	Wrench
QFFD 2525R/L10-48L			25	25	150	36.5	10	48	66	Z□FD□□	PTX0620	HW50L
QFFD 2525R/L10-60L			25	25	150	36.5	10	60	80			
QFFD 2525R/L10-74L			25	25	150	36.5	10	74	110			
QFFD 2525R/L10-100L			25	25	150	36.5	10	100	150			
QFFD 2525R/L17-48L			25	25	150	43.5	17	48	66			
QFFD 2525R/L17-60L			25	25	150	43.5	17	60	80			
QFFD 2525R/L17-74L			25	25	150	43.5	17	74	110			
QFFD 2525R/L17-100L			25	25	150	43.5	17	100	150			
QFGD 2525R/L13-52L			25	25	150	39.5	13	52	72	Z□GD□□		
QFGD 2525R/L13-64L			25	25	150	39.5	13	64	100			
QFGD 2525R/L13-90L			25	25	150	39.5	13	90	140			
QFGD 2525R/L13-130L			25	25	150	39.5	13	130	230			
QFGD 2525R/L22-52L			25	25	150	48.5	22	52	72			
QFGD 2525R/L22-64L			25	25	150	48.5	22	64	100			
QFGD 2525R/L22-90L			25	25	150	48.5	22	90	140			
QFGD 2525R/L22-130L			25	25	150	48.5	22	130	230			
QFHD 2525R/L13-58L			25	25	150	39.5	13	58	96	Z□HD□□		
QFHD 2525R/L13-86L			25	25	150	39.5	13	86	140			
QFHD 2525R/L13-130L			25	25	150	39.5	13	130	200			
QFHD 2525R/L13-185L			25	25	150	39.5	13	185	400			
QFHD 2525R/L22-58L			25	25	150	48.5	22	58	96			
QFHD 2525R/L22-86L			25	25	150	48.5	22	86	140			
QFHD 2525R/L22-130L			25	25	150	48.5	22	130	200			
QFHD 2525R/L22-185L			25	25	150	48.5	22	185	400			
QFKD 2525R/L13-60L			25	25	150	39.5	13	60	100	Z□KD□□		
QFKD 2525R/L13-88L			25	25	150	39.5	13	88	180			
QFKD 2525R/L13-160L			25	25	150	39.5	13	160	400			
QFKD 2525R/L22-60L			25	25	150	48.5	22	60	100			
QFKD 2525R/L22-88L			25	25	150	48.5	22	88	180			
QFKD 2525R/L22-160L			25	25	150	48.5	22	160	400			

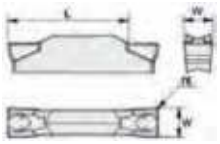
C-Q□D□



Internal grooving holder, for grooving, profiling, turning machining

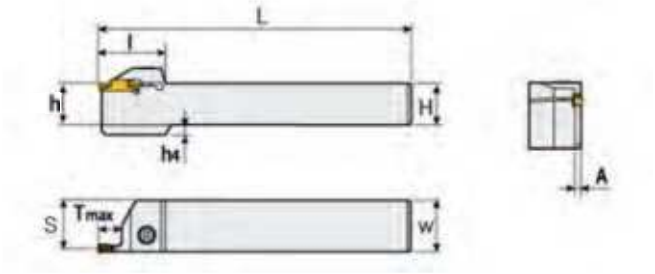
Designation	Stock		Dimension (mm)							Applicable Insert	Spare parts	
	R	L	Dmin	d	L	ℓ	S	H	Tmax		Screw	Wrench
C20Q-QEDR/L05-27			27	20	180	45	15.2	18.0	5	Z□ED□□	PTX0412	HW30L
C25R-QEDR/L07-33			33	25	200	45	20.3	23.0	7		PTX0516	HW40L
C32S-QEDR/L09-42			42	32	250	65	25.3	30.0	9		PTX0620	HW50L
C20Q-QFDR/L05-27			27	20	180	45	15.2	18.0	5	Z□FD□□	PTX0412	HW30L
C25R-QFDR/L07-33			33	25	200	45	20.3	23.0	7		PTX0516	HW40L
C32S-QFDR/L09-42			42	32	250	65	25.3	30.0	9		PTX0620	HW30L
C25R-QGDR/L08-35			35	25	200	45	21.5	23.0	8	Z□GD□□	PTX0516	HW40L
C32S-QGDR/L11-44			44	32	250	65	27.5	30.0	11		PTX0620	HW50L
C40T-QGDR/L13-54			54	40	300	70	33.5	37.0	13			
C25R-QHDR/L08-35			35	25	200	45	21.5	23.0	8	Z□HD□□	PTX0516	HW40L
C32S-QHDR/L11-44			44	32	250	65	27.5	30.0	11		PTX0620	HW50L
C40T-QHDR/L13-54			54	40	300	70	33.5	37.0	13			
C25R-QKDR/L08-35			35	25	200	45	21.5	23.0	8	Z□KD□□	PTX0516	HW40L
C32S-QKDR/L11-44			44	32	250	65	27.5	30.0	11		PTX0620	HW50L
C40T-QKDR/L13-54			54	40	300	70	33.5	37.0	13			

Inserts

Shape	Designation	Size			Coated						Configuration
		W±0.020	rε±0.050	L	TCP9120	TCP9225	TCP9340	TCK5215	TPM8125	TPM8225	
	ZTED 02503-MG	2.50	0.3	17.0	●	●	●	●	●	●	
	ZTFD 0303-MG	3.00	0.3	17.0	●	●	●	●	●	●	
	ZTGD 0404-MG	4.00	0.4	22.0	●	●	●	●	●	●	
	ZTHD 0504-MG	5.00	0.4	22.0	●	●	●	●	●	●	
	ZTKD 0608-MG	6.00	0.8	22.0	●	●	●	●	●	●	

Multi-functional Tools

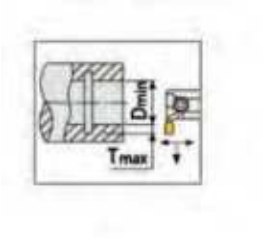
MDELR/L

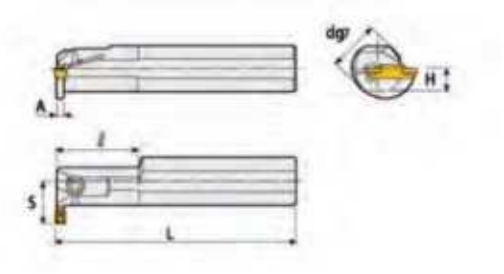


External Turning and grooving holder, for double-sided inserts

Designation	Stock		Dimension (mm)								Insert	Spare parts	
	R	L	H=h	W	L	S	ℓ	A	h4	Tmax		Screw	Wrench
MDELR/L 1212-3T12			12	12	125	10.8	30.0	2.4	4.0	12	DCPR/L3003-GM	PTX0516	HW40L
MDELR/L 1616-3T12			16	16	125	14.8	30.0	2.4	4.0	12		PTX0516	HW40L
MDELR/L 1616-3T20			16	16	135	14.8	30.0	2.4	-	20		PTX0616	HW50L
MDELR/L 2020-3T12			20	20	135	18.8	29.0	2.4	-	12		PTX0516	HW40L
MDELR/L 2020-3T20			20	20	140	18.8	36.4	2.4	-	20		PTX0616	HW50L
MDELR/L 2525-3T12			25	25	150	23.8	29.0	2.4	-	12		PTX0516	HW40L
MDELR/L 2525-3T20			25	25	150	23.8	36.4	2.4	-	20		PTX0620	HW50L
MDELR/L 3232-3T20			32	32	170	30.8	36.4	2.4	-	20		PTX0620	HW50L
MDELR/L 1616-4T12			16	16	125	14.4	29.0	3.2	-	12	DCPR/L400□-GM	PTX0516	HW40L
MDELR/L 1616-4T20			16	16	135	14.4	38.0	3.2	4.0	20		PTX0620	HW50L
MDELR/L 2020-4T12			20	20	135	18.4	29.0	3.2	-	12		PTX0516	HW40L
MDELR/L 2020-4T25			20	20	140	18.4	42.0	3.2	-	25		PTX0620	HW50L
MDELR/L 2525-4T12			25	25	150	23.4	29.0	3.2	-	12		PTX0516	HW40L
MDELR/L 2525-4T25			25	25	150	23.4	42.0	3.2	-	25		PTX0620	HW50L
MDELR/L 3232-4T25			32	32	170	30.4	43.0	3.2	-	25		PTX0620	HW50L
MDELR/L 2020-5T12			20	20	135	17.9	29.0	4.2	-	12	DCPR/L5005-GM	PTX0616	HW50L
MDELR/L 2020-5T25			20	20	140	17.9	42.0	4.2	-	25		PTX0620	HW50L
MDELR/L 2525-5T12			25	25	150	22.9	29.0	4.2	-	12		PTX0616	HW50L
MDELR/L 2525-5T25			25	25	150	22.9	42.0	4.2	-	25		PTX0620	HW50L
MDELR/L 3232-5T25			32	32	170	29.9	43.0	4.2	-	25		PTX0620	HW50L
MDELR/L 2525-6T12			25	25	150	22.4	29.0	5.2	-	12	DCPR/L600□-GM	PTX0620	HW50L
MDELR/L 2525-6T30			25	25	150	22.4	51.4	5.2	-	30		PTX0620	HW50L
MDELR/L 3232-6T30			32	32	170	29.4	51.4	5.2	-	30		PTX0620	HW50L

MDELIR/L

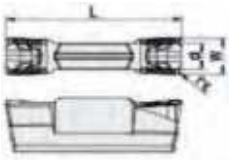




Internal Turning and grooving holder, for double-sided inserts

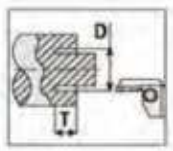
Designation	Stock		Dimension (mm)								Insert	Spare parts	
	R	L	Dmin	d	L	ℓ	S	H	A	Tmax		Screw	Wrench
MDELIR/L 20-3T05			26	20	160	40.0	15.2	9.00	2.40	5	DCPR/L3003-GM	PTX0512	HW40L
MDELIR/L 25-3T05			31	25	200	40	17.7	11.50	2.40	5		PTX0516	HW40L
MDELIR/L 25-4T10			43	25	200	40	22.7	11.50	3.20	10	DCPR/L400□-GM	PTX0516	HW40L
MDELIR/L 32-4T10			43	32	250	60	26.2	15.00	3.20	10		PTX0516	HW40L
MDELIR/L 40-4T12			53	40	300	65	32.2	19.00	3.20	12		PTX0516	HW40L
MDELIR/L 25-5T10			43	25	200	40	22.7	11.50	4.20	10	DCPR/L5005-GM	PTX0616	HW50L
MDELIR/L 32-5T10			43	32	250	60	26.2	15.00	4.20	10		PTX0620	HW50L
MDELIR/L 40-5T12			53	40	300	65	32.2	19.00	4.20	12		PTX0620	HW50L
MDELIR/L 25-6T10			43	25	200	40	22.7	11.50	5.20	10	DCPR/L600□-GM	PTX0616	HW50L
MDELIR/L 32-6T10			43	32	250	60	26.2	15.00	5.20	10		PTX0620	HW50L
MDELIR/L 40-6T12			53	40	300	65	32.2	19.00	5.20	12		PTX0620	HW50L

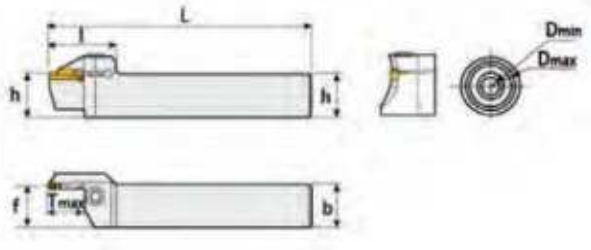
Inserts

Shape	Designation	Size				Coated					Configuration
		W±0.010	rε±0.10	L	d	TCP9225	TCP9340	TCK5215	TCM8125	TPM8225	
	DCPR 3003-GM	3.0	0.3	16.0	2.3			●	●	●	
	DCPR 4002-GM	4.0	0.2	19.0	2.8			●	●	●	
	DCPR 4004-GM	4.0	0.4	19.0	2.8			●	●	●	
	DCPR 5005-GM	5.0	0.5	19.0	3.3						
	DCPR 6005-GM	6.0	0.5	19.0	4.2						
	DCPR 6008-GM	6.0	0.8	19.0	4.2						
	DCPL 3003-GM	3.0	0.3	16.0	2.3						
	DCPL 4002-GM	4.0	0.2	19.0	2.8				●		
	DCPL 4004-GM	4.0	0.4	19.0	2.8			●	●	●	
	DCPL 5005-GM	5.0	0.5	19.0	3.3						
	DCPL 6005-GM	6.0	0.5	19.0	4.2						
	DCPL 6008-GM	6.0	0.8	19.0	4.2						

Multi-functional Tools

MDFHR/L

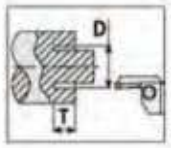


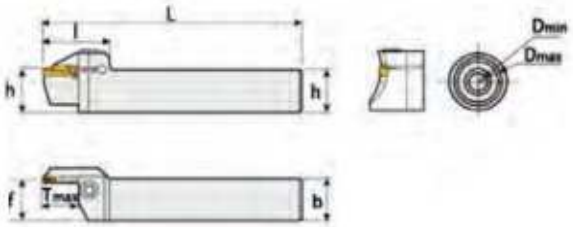


External deep face grooving and turning, for double-sided inserts

Designation	Stock		Dimension (mm)								Insert	Spare parts	
	R	L	H=h	W	ℓ	L	f	Dmin	Dmax	Tmax		Screw	Wrench
MDFHR/L 1212-12/16-3T06			12	12	19.0	120	11.0	12	16	6	DCPR/L3□□□-GM	PTX0514	HW40L
MDFHR/L 1212-16/25-3T06			12	12	19.0	120	11.0	16	25	6			
MDFHR/L 1616-12/16-3T06			16	16	19.0	120	15.0	12	16	6			
MDFHR/L 1616-16/25-3T06			16	16	19.0	120	15.0	16	25	6			
MDFHR/L 2020-12/16-3T06			20	20	19.0	120	20.0	12	16	6			
MDFHR/L 2020-16/25-3T06			20	20	19.0	120	20.0	16	25	6			
MDFHR/L 2525-12/16-3T06			25	25	19.0	120	25.0	12	16	6			
MDFHR/L 2525-16/25-3T06			25	25	19.0	120	25.0	16	25	6			
MDFHR/L 2020-25/30-3T12			20	20	38.0	140	20.5	25	30	12	DCPR/L3□□□-GH	PTX0616	HW50L
MDFHR/L 2020-30/38-3T12			20	20	38.0	140	20.5	30	38	12			
MDFHR/L 2020-38/48-3T12			20	20	38.0	140	20.5	38	48	12			
MDFHR/L 2020-48/60-3T12			20	20	38.0	140	20.5	48	60	12			
MDFHR/L 2020-60/75-3T22			20	20	40.0	140	20.5	60	75	22			
MDFHR/L 2020-75/100-3T25			20	20	43.0	140	20.5	75	100	25			
MDFHR/L 2525-25/30-3T12			25	25	38.0	150	25.5	25	30	12			
MDFHR/L 2525-30/38-3T12			25	25	38.0	150	25.5	30	38	12			
MDFHR/L 2525-38/48-3T12			25	25	38.0	150	25.5	38	48	12			
MDFHR/L 2525-48/60-3T22			25	25	40.0	150	25.5	48	60	22			
MDFHR/L 2525-60/75-3T22			25	25	40.0	150	25.5	60	75	22			
MDFHR/L 2525-75/100-3T25			25	25	43.0	150	25.5	75	100	25			
MDFHR/L 2020-25/29-4T12			20	20	39.0	140	20.6	25	29	12	DCPR/L4□□□-GM DCPR/L4□□□-GH		
MDFHR/L 2020-29/34-4T12			20	20	39.0	140	20.6	29	34	12			
MDFHR/L 2020-34/40-4T20			20	20	39.0	140	20.6	34	40	20			
MDFHR/L 2020-40/48-4T25			20	20	44.0	140	20.6	40	48	25			
MDFHR/L 2020-48/60-4T25			20	20	44.0	140	20.6	48	60	25			
MDFHR/L 2020-60/75-4T25			20	20	44.0	140	20.6	60	75	25			
MDFHR/L 2020-75/100-4T25			20	20	44.0	140	20.6	75	100	25			
MDFHR/L 2525-25/29-4T12			25	25	39.0	150	25.6	25	29	12			
MDFHR/L 2525-29/34-4T12			25	25	39.0	150	25.6	29	34	12			
MDFHR/L 2525-34/40-4T20			25	25	39.0	150	25.6	34	40	20			
MDFHR/L 2525-40/48-4T25			25	25	44.0	150	25.6	40	48	25			
MDFHR/L 2525-48/60-4T25			25	25	44.0	150	25.6	48	60	25			
MDFHR/L 2525-60/75-4T25			25	25	44.0	150	25.6	60	75	25			

MDFHR/L



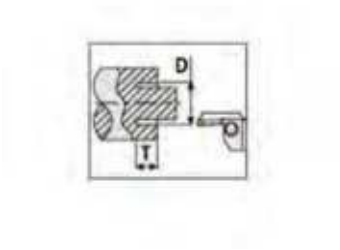


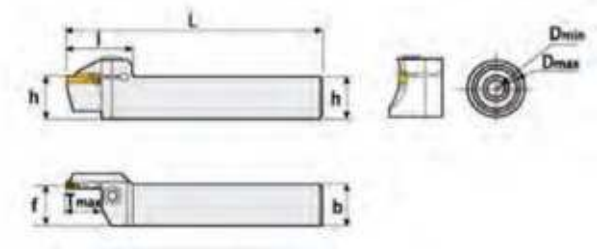
External deep face grooving and turning, for double-sided inserts

Designation	Stock		Dimension (mm)								Insert	Spare parts	
	R	L	H=h	W	ℓ	L	f	Dmin	Dmax	Tmax		Screw	Wrench
MDFHR/L 2525-75/100-4T25			25	25	44.0	150	25.6	75	100	25	DCPR/L4□□□-GM DCPR/L4□□□-GH	PTX0616	HW50L
MDFHR/L 2525-100/140-4T25			25	25	44.0	150	25.6	100	140	25			
MDFHR/L 2525-140/240-4T25			25	25	44.0	150	25.6	140	240	25			
MDFHR/L 2525-240/800-4T25			25	25	44.0	150	25.6	240	800	25			
MDFHR/L 2020-25/30-5T10			20	20	38.0	140	21.0	25	30	10	DCPR/L5□□□-GM DCPR/L5□□□-GH		
MDFHR/L 2020-28/31-5T15			20	20	34.0	140	21.0	28	31	15			
MDFHR/L 2020-31/35-5T15			20	20	34.0	140	21.0	31	35	15			
MDFHR/L 2020-35/40-5T20			20	20	39.0	140	21.0	35	40	20			
MDFHR/L 2020-40/45-5T20			20	20	39.0	140	21.0	40	45	20			
MDFHR/L 2020-45/55-5T25			20	20	44.0	140	21.0	45	55	25			
MDFHR/L 2020-55/70-5T25			20	20	44.0	140	21.0	55	70	25			
MDFHR/L 2020-70/95-5T28			20	20	47.0	150	21.0	70	95	28			
MDFHR/L 2525-25/30-5T10			25	25	38.0	150	26.0	25	30	10			
MDFHR/L 2525-28/31-5T15			25	25	34.0	150	26.0	28	31	15			
MDFHR/L 2525-31/35-5T15			25	25	34.0	150	26.0	31	35	15			
MDFHR/L 2525-35/40-5T20			25	25	39.0	150	26.0	35	40	20			
MDFHR/L 2525-40/45-5T20			25	25	39.0	150	26.0	40	45	20			
MDFHR/L 2525-45/55-5T25			25	25	44.0	150	26.0	45	55	25			
MDFHR/L 2525-55/70-5T25			25	25	44.0	150	26.0	55	70	25			
MDFHR/L 2525-70/95-5T32			25	25	51.0	150	26.0	70	95	32			
MDFHR/L 2525-95/130-5T32			25	25	51.0	150	26.0	95	130	32			
MDFHR/L 2525-130/180-5T32			25	25	51.0	150	26.0	130	180	32			
MDFHR/L 2525-180/800-5T32			25	25	51.0	150	26.0	180	800	32			
MDFHR/L 2525-52/75-5T14			25	25	32.5	150	23.5	52	75	14			
MDFHR/L 2525-75/110-5T14			25	25	32.5	150	23.5	75	110	14			
MDFHR/L 2525-110/200-5T14			25	25	32.5	150	23.5	110	200	14			
MDFHR/L 2525-200/800-5T20			25	25	32.5	150	23.5	200	800	20			
MDFHR/L 2020-26/30-6T10			20	20	39.0	140	21.4	26	30	10	DCPR/L6□□□-GM DCPR/L6□□□-GH		
MDFHR/L 2020-30/38-6T15			20	20	36.0	140	21.4	30	38	15			
MDFHR/L 2020-38/50-6T20			20	20	39.0	140	21.4	38	50	20			
MDFHR/L 2020-50/75-6T25			20	20	44.0	140	21.4	50	75	25			
MDFHR/L 2525-30/38-6T15			25	25	36.0	150	26.4	30	38	15			

Multi-functional Tools

MDFHR/L

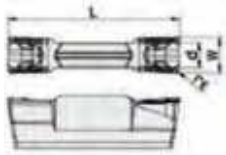
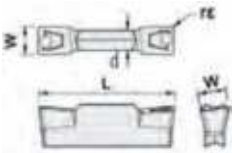




External deep face grooving and turning, for double-sided inserts

Designation	Stock		Dimension (mm)								Insert	Spare parts	
	R	L	H=h	W	ℓ	L	f	Dmin	Dmax	Tmax		Screw	Wrench
MDFHR/L 2525-38/50-6T20			25	25	39.0	150	26.4	38	50	20	DCPR/L6□□□-GM DCPR/L6□□□-GH	PTX0616	HW50L
MDFHR/L 2525-50/65-6T20			25	25	37.5	150	23.0	50	65	20			
MDFHR/L 2525-65/100-6T20			25	25	37.5	150	23.0	65	100	20			
MDFHR/L 2525-100/200-6T20			25	25	40.0	150	23.0	100	200	20			
MDFHR/L 2525-200-6T20			25	25	37.5	150	23.0	200	∞	20			
MDFHR/L 2525-50/70-6T25			25	25	44.0	150	26.4	50	70	25			
MDFHR/L 2525-70/100-6T32			25	25	51.0	150	26.4	70	100	32			
MDFHR/L 2525-100/180-6T32			25	25	51.0	150	26.4	100	180	32			
MDFHR/L 2525-180/400-6T32			25	25	51.0	150	26.4	180	400	32			
MDFHR/L 2525-400-6T32			25	25	51.0	150	26.4	400	∞	32			

Inserts

Shape	Designation	Size				Coated					Configuration
		W±0.010	rε±0.10	L	d	TCP9225	TCP9340	TCK5215	TPM8125	TPM8225	
DCPR/L-GM	DCPR 3003-GM	3.0	0.3	19.0	2.3			●	●	●	
	DCPR 4002-GM	4.0	0.2	19.0	2.8			●	●	●	
	DCPR 4004-GM	4.0	0.4	19.0	2.8			●	●	●	
	DCPR 5005-GM	5.0	0.5	19.0	3.3						
	DCPR 6005-GM	6.0	0.5	19.0	4.2				●		
	DCPR 6008-GM	6.0	0.8	19.0	4.2						
	DCPL 3003-GM	3.0	0.3	16.0	2.3				●		
	DCPL 4002-GM	4.0	0.2	19.0	2.8			●	●	●	
	DCPL 4004-GM	4.0	0.4	19.0	2.8						
	DCPL 5005-GM	5.0	0.5	19.0	3.3						
	DCPL 6005-GM	6.0	0.5	19.0	4.2						
	DCPL 6008-GM	6.0	0.8	19.0	4.2						
DCPR/L-GH	DCPR 3003-GH	3.0	0.3	19.0	2.1				●		
	DCPR 4004-GH	4.0	0.4	19.0	2.8						
	DCPR 5004-GH	5.0	0.4	19.0	3.4				●		
	DCPR 6004-GH	6.0	0.4	19.0	4.0			●	●	●	
	DCPL 3003-GH	3.0	0.3	19.0	2.1						
	DCPL 4004-GH	4.0	0.4	19.0	2.8						
	DCPL 5004-GH	5.0	0.4	19.0	3.4						
	DCPL 6004-GH	6.0	0.4	19.0	4.0			●	●	●	

FOCUS PRODUCTS

GROOVE MILLING BY CIRCULAR INTERPOLATION

Features Overview

▲ from Ø 10.0 mm

▲ High accuracy ground insert with three and six cutting edges， high economy

TOOTOOL

www.ttooltec.com

Mini Milling Cutter Code System

MG	22	12	-	B400	T45	-	X
1	2	3		4	5		5

1 Type of operation

MG 22 12 - B400 T45 - X

MG: Mini Grooving
MC: Mini Chamfer
MI: Mini Threading

2 Min. boring dia

MG 22 12 - B400 T45 - X

3 Connector size

MG 22 12 - B400 T45 - X

4 Grooving width Threading Pitch Chamfer angle

MG 22 12 - B400 T45 - X

B: Square Groove
R: Round Groove

5 Max. Proccessing legth

MG 22 12 - B400 T45 - X

T05 = processing lenght: 0.50
T45 = processing lenght: 4.50
T100 = processing lenght: 10.00

5 Special type MG 22 12 - B400 T45-X

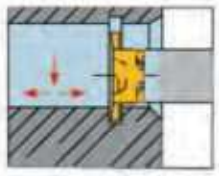
MG 22 12 - B400 T45 - X

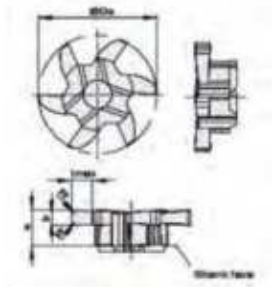
471/472: DIN471/472 standard
X: Misaligned tooth processing
45°: with 45° chamfer facet

Minimill Grooving

Groove Milling by circular interpolation

for groove milling general use

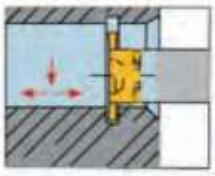


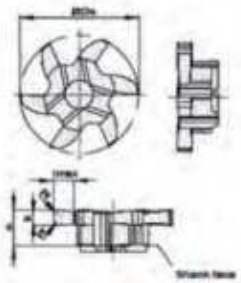


Designation	TPM8125	b±0.02	Ds	S	tmax	Dmin	Connector	No of Teeth	Fig.
MG 0604-B050T07	●	0.50	5.8	3.0	0.70	6.0	4	3	Fig.1
MG 0604-B100T07	●	1.00	5.8	3.0	0.70	6.0	4	3	Fig.1
MG 0604-B150T07	●	1.50	5.8	3.0	0.70	6.0	4	3	Fig.1
MG 0604-B200T07	●	2.00	5.8	3.0	0.70	6.0	4	3	Fig.1
MG 0804-B050T15	●	0.50	7.7	3.0	1.50	8.0	4	3	Fig.1
MG 0804-B100T15	●	1.00	7.7	3.0	1.50	8.0	4	3	Fig.1
MG 0804-B150T15	●	1.50	7.7	3.0	1.50	8.0	4	3	Fig.1
MG 0804-B200T15	●	2.00	7.7	3.0	1.50	8.0	4	3	Fig.1
MG 1006-B050T15	●	0.50	9.7	3.5	1.50	10.0	6	3	Fig.1
MG 1006-B070T15	●	0.70	9.7	3.5	1.50	10.0	6	3	Fig.1
MG 1006-B100T15	●	1.00	9.7	3.5	1.50	10.0	6	3	Fig.1
MG 1006-B150T15	●	1.50	9.7	3.5	1.50	10.0	6	3	Fig.1
MG 1006-B200T15	●	2.00	9.7	3.5	1.50	10.0	6	3	Fig.1
MG 1006-B250T15	●	2.50	9.7	3.5	1.50	10.0	6	3	Fig.1
MG 1006-B300T15	●	3.00	9.7	3.5	1.50	10.0	6	3	Fig.1
MG 1206-B100T25	●	1.00	11.7	3.5	2.50	12.0	6	3	Fig.1
MG 1206-B150T25	●	1.50	11.7	3.5	2.50	12.0	6	3	Fig.1
MG 1206-B200T25	●	2.00	11.7	3.5	2.50	12.0	6	3	Fig.1
MG 1206-B250T25	●	2.50	11.7	3.5	2.50	12.0	6	3	Fig.1
MG 1206-B300T25	●	3.00	11.7	3.5	2.50	12.0	6	3	Fig.1
MG 1408-B100T25	●	1.00	13.7	4.0	2.50	14.0	8	6	Fig.1
MG 1408-B150T25	●	1.50	13.7	4.0	2.50	14.0	8	6	Fig.1
MG 1408-B200T25	●	2.00	13.7	4.0	2.50	14.0	8	6	Fig.1
MG 1408-B250T25	●	2.50	13.7	4.0	2.50	14.0	8	6	Fig.1
MG 1408-B300T25	●	3.00	13.7	4.0	2.50	14.0	8	6	Fig.1
MG 1408-B400T25	●	4.00	13.7	4.0	2.50	14.0	8	6	Fig.1
MG 1608-B100T35	●	1.00	15.7	4.0	3.50	16.0	8	6	Fig.1
MG 1608-B150T35	●	1.50	15.7	4.0	3.50	16.0	8	6	Fig.1
MG 1608-B200T35	●	2.00	15.7	4.0	3.50	16.0	8	6	Fig.1
MG 1608-B250T35	●	2.50	15.7	4.0	3.50	16.0	8	6	Fig.1
MG 1608-B300T35	●	3.00	15.7	4.0	3.50	16.0	8	6	Fig.1
MG 1608-B350T35	●	3.50	15.7	4.0	3.50	16.0	8	6	Fig.1
MG 1608-B400T35	●	4.00	15.7	4.0	3.50	16.0	8	6	Fig.1
MG 1809-B100T40	●	1.00	17.7	5.5	4.00	18.0	9	6	Fig.1
MG 1809-B120T40	●	1.20	17.7	5.5	4.00	18.0	9	6	Fig.1
MG 1809-B150T40	●	1.50	17.7	5.5	4.00	18.0	9	6	Fig.1

Groove Milling by circular interpolation

for groove milling general use



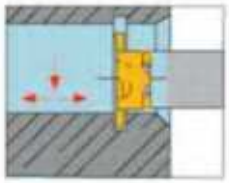


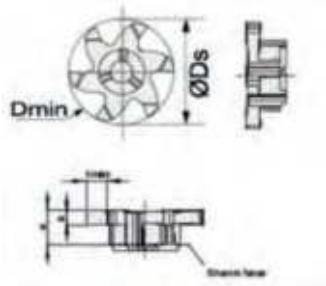
Designation	TPM8125	b±0.02	Ds	S	tmax	Dmin	Connector	No of Teeth	Fig.
MG 1809-B200T40	●	2.00	17.7	5.5	4.00	18.0	9	6	Fig.1
MG 1809-B250T40	●	2.50	17.7	5.5	4.00	18.0	9	6	Fig.1
MG 1809-B300T40	●	3.00	17.7	5.5	4.00	18.0	9	6	Fig.1
MG 1809-B350T40	●	3.50	17.7	5.5	4.00	18.0	9	6	Fig.1
MG 1809-B400T40	●	4.00	17.7	5.5	4.00	18.0	9	6	Fig.1
MG 2009-B100T50	●	1.00	19.7	4.0	5.00	20.0	9	6	Fig.1
MG 2009-B150T50	●	1.50	19.7	4.0	5.00	20.0	9	6	Fig.1
MG 2009-B200T50	●	2.00	19.7	4.0	5.00	20.0	9	6	Fig.1
MG 2009-B250T50	●	2.50	19.7	4.0	5.00	20.0	9	6	Fig.1
MG 2009-B300T50	●	3.00	19.7	4.0	5.00	20.0	9	6	Fig.1
MG 2009-B350T50	●	3.50	19.7	4.0	5.00	20.0	9	6	Fig.1
MG 2009-B400T50	●	4.00	19.7	4.0	5.00	20.0	9	6	Fig.1
MG 2212-B100T45	●	1.00	21.7	5.9	4.50	22.0	12	6	Fig.1
MG 2212-B150T45	●	1.50	21.7	5.9	4.50	22.0	12	6	Fig.1
MG 2212-B200T45	●	2.00	21.7	5.9	4.50	22.0	12	6	Fig.1
MG 2212-B250T45	●	2.50	21.7	5.9	4.50	22.0	12	6	Fig.1
MG 2212-B300T45	●	3.00	21.7	5.9	4.50	22.0	12	6	Fig.1
MG 2212-B350T45	●	3.50	21.7	5.9	4.50	22.0	12	6	Fig.1
MG 2212-B400T45	●	4.00	21.7	5.9	4.50	22.0	12	6	Fig.1
MG 2212-B500T45*	●	5.00	21.7	5.2	4.50	22.0	12	6	Fig.1
MG 2212-B600T45*	●	6.00	21.7	5.2	4.50	22.0	12	6	Fig.1
MG 2412-B100T55	●	1.00	23.7	5.9	5.50	24.0	12	6	Fig.1
MG 2412-B150T55	●	1.50	23.7	5.9	5.50	24.0	12	6	Fig.1
MG 2412-B200T55	●	2.00	23.7	5.9	5.50	24.0	12	6	Fig.1
MG 2412-B250T55	●	2.50	23.7	5.9	5.50	24.0	12	6	Fig.1
MG 2412-B300T55	●	3.00	23.7	5.9	5.50	24.0	12	6	Fig.1
MG 2412-B350T55	●	3.50	23.7	5.9	5.50	24.0	12	6	Fig.1
MG 2412-B400T55	●	4.00	23.7	5.9	5.50	24.0	12	6	Fig.1
MG 2412-B500T55*	●	5.00	23.7	5.2	5.50	24.0	12	6	Fig.1
MG 2412-B600T55*	●	6.00	23.7	5.2	5.50	24.0	12	6	Fig.1
MG 2514-B100T50	●	1.00	24.7	5.9	5.50	25.0	14	6	Fig.1
MG 2514-B150T50	●	1.50	24.7	5.9	5.00	25.0	14	6	Fig.1
MG 2514-B200T50	●	2.00	24.7	5.9	5.00	25.0	14	6	Fig.1
MG 2514-B250T50	●	2.50	24.7	5.9	5.00	25.0	14	6	Fig.1
MG 2514-B300T50	●	3.00	24.7	5.9	5.00	25.0	14	6	Fig.1
MG 2514-B350T50	●	3.50	24.7	5.9	5.00	25.0	14	6	Fig.1

Minimill Grooving

Groove Milling by circular interpolation

for groove milling general use

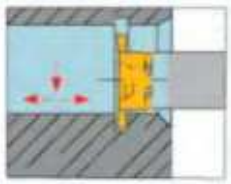


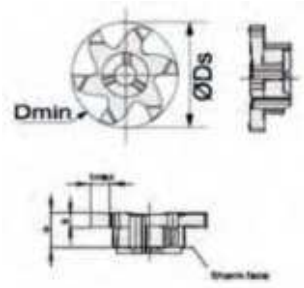


Designation	TPM8125	b±0.02	Ds	S	tmax	Dmin	Connector	No of Teeth	Fig.
MG 2514-B400T50	●	4.00	24.7	5.9	5.00	25.0	14	6	Fig.1
MG 2514-B500T50*	●	5.00	24.7	5.2	5.00	25.0	14	6	Fig.2
MG 2514-B600T50*	●	6.00	24.7	5.2	5.00	25.0	14	6	Fig.2
MG 2512-B100T60	○	1.00	24.7	5.9	6.00	25.0	12	6	Fig.1
MG 2512-B150T60	○	1.50	24.7	5.9	6.00	25.0	12	6	Fig.1
MG 2512-B200T60	○	2.00	24.7	5.9	6.00	25.0	12	6	Fig.1
MG 2512-B250T60	○	2.50	24.7	5.9	6.00	25.0	12	6	Fig.1
MG 2512-B300T60	○	3.00	24.7	5.9	6.00	25.0	12	6	Fig.1
MG 2512-B400T60	○	4.00	24.7	5.9	6.00	25.0	12	6	Fig.1
MG 2614-B200T55	○	2.00	25.7	5.9	5.50	26.0	14	6	Fig.1
MG 2614-B250T55	○	2.50	25.7	5.9	5.50	26.0	14	6	Fig.1
MG 2614-B300T55	○	3.00	25.7	5.9	5.50	26.0	14	6	Fig.1
MG 2614-B350T55	○	3.50	25.7	5.9	5.50	26.0	14	6	Fig.1
MG 2614-B400T55	○	4.00	25.7	5.9	5.50	26.0	14	6	Fig.1
MG 2614-B500T55*	○	5.00	25.7	5.2	5.50	26.0	14	6	Fig.2
MG 2614-B600T55*	○	6.00	25.7	5.2	5.50	26.0	14	6	Fig.2
MG 2814-B100T65	●	1.00	27.7	5.9	6.50	28.0	14	6	Fig.1
MG 2814-B150T65	●	1.50	27.7	5.9	6.50	28.0	14	6	Fig.1
MG 2814-B200T65	●	2.00	27.7	5.9	6.50	28.0	14	6	Fig.1
MG 2814-B250T65	●	2.50	27.7	5.9	6.50	28.0	14	6	Fig.1
MG 2814-B300T65	●	3.00	27.7	5.9	6.50	28.0	14	6	Fig.1
MG 2814-B350T65	●	3.50	27.7	5.9	6.50	28.0	14	6	Fig.1
MG 2814-B400T65	●	4.00	27.7	5.9	6.50	28.0	14	6	Fig.1
MG 2814-B500T65*	●	5.00	27.7	5.2	6.50	28.0	14	6	Fig.2
MG 2814-B600T65*	●	6.00	27.7	5.2	6.50	28.0	14	6	Fig.2
MG 2812-B200T75	○	2.00	27.7	5.9	7.50	28.0	12	6	Fig.1
MG 2812-B250T75	○	2.50	27.7	5.9	7.50	28.0	12	6	Fig.1
MG 2812-B300T75	○	3.00	27.7	5.9	7.50	28.0	12	6	Fig.1
MG 2812-B350T75	○	3.50	27.7	5.9	7.50	28.0	12	6	Fig.1
MG 2812-B400T75	○	4.00	27.7	5.9	7.50	28.0	12	6	Fig.1
MG 2812-B500T75*	○	5.00	27.7	5.2	7.50	28.0	12	6	Fig.2
MG 2812-B600T75*	○	6.00	27.7	5.2	7.50	28.0	12	6	Fig.2
MG 3214-B100T85	●	1.00	31.7	5.9	8.50	32.0	14	6	Fig.1
MG 3214-B150T85	●	1.50	31.7	5.9	8.50	32.0	14	6	Fig.1
MG 3214-B200T85	●	2.00	31.7	5.9	8.50	32.0	14	6	Fig.1
MG 3214-B250T85	●	2.50	31.7	5.9	8.50	32.0	14	6	Fig.1

Groove Milling by circular interpolation

for groove milling general use





Designation	TPM8125	b±0.02	Ds	S	tmax	Dmin	Connector	No of Teeth	Fig.
MG 3214-B300T85	●	3.00	31.7	5.9	8.50	32.0	14	6	Fig.1
MG 3214-B350T85	●	3.50	31.7	5.9	8.50	32.0	14	6	Fig.1
MG 3214-B400T85	●	4.00	31.7	5.9	8.50	32.0	14	6	Fig.1
MG 3514-B100T100	●	1.00	34.7	5.9	10.00	35.0	14	6	Fig.1
MG 3514-B150T100	●	1.50	34.7	5.9	10.00	35.0	14	6	Fig.1
MG 3514-B200T100	●	2.00	34.7	5.9	10.00	35.0	14	6	Fig.1
MG 3514-B250T100	●	2.50	34.7	5.9	10.00	35.0	14	6	Fig.1
MG 3514-B300T100	●	3.00	34.7	5.9	10.00	35.0	14	6	Fig.1
MG 3514-B350T100	●	3.50	34.7	5.9	10.00	35.0	14	6	Fig.1
MG 3514-B400T100	●	4.00	34.7	5.9	10.00	35.0	14	6	Fig.1

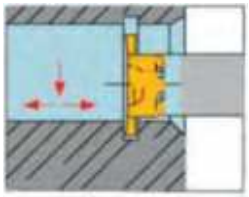
※ Note: 1. The product with "*" has a sub-cutting groove, note compared with Fig.1 type, that insert will be reduced by about 1.5mm after be installed on the holder.

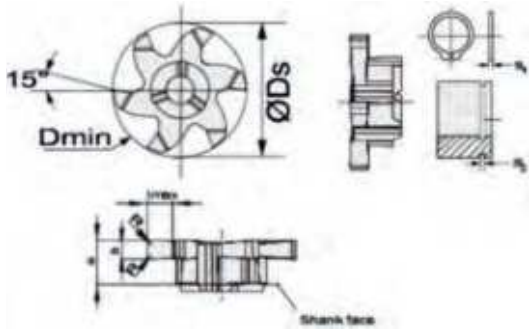
2. To distinguish between 6-teeth and 3-teeth inserts, please add -03 to the suffix of the same specifications when ordering 3-teeth tools, such as: MG2212-B200T45-03 TPM8125

Minimill Grooving

Groove Milling by circular interpolation

for groove milling general use





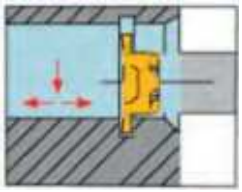
Designation	TPM8125	b±0.02	S1	S2	Ds	R	S	tmax	Dmin	Connector	No of Teeth
MG 1006-B050T15-471/472	O	0.57	0.40	0.50	9.7	-	3.5	1.50	10.0	6	3
MG 1006-B070T15-471/472	O	0.77	0.60	0.70	9.7	-	3.5	1.50	10.0	6	3
MG 1006-B080T15-471/472	O	0.84	0.70	0.80	9.7	-	3.5	1.50	10.0	6	3
MG 1006-B090T15-471/472	O	0.97	0.90	0.90	9.7	-	3.5	1.50	10.0	6	3
MG 1006-B110T15-471/472	O	1.21	1.00	1.10	9.7	-	3.5	1.50	10.0	6	3
MG 1006-B130T15-471/472	O	1.41	1.20	1.30	9.7	0.10	3.5	1.50	10.0	6	3
MG 1006-B160T15-471/472	O	1.71	1.50	1.60	9.7	0.10	3.5	1.50	10.0	6	3
MG 1206-B110T25-471/472	O	1.21	1.00	1.10	11.7	-	3.5	2.50	12.0	6	3
MG 1206-B130T25-471/472	O	1.41	1.20	1.30	11.7	0.10	3.5	2.50	12.0	6	3
MG 1206-B160T25-471/472	O	1.71	1.50	1.60	11.7	0.10	3.5	2.50	12.0	6	3
MG 1608-B110T35-471/472	O	1.21	1.00	1.10	15.7	-	4.0	3.50	16.0	8	6
MG 1608-B130T35-471/472	O	1.41	1.20	1.30	15.7	0.10	4.0	3.50	16.0	8	6
MG 1608-B160T35-471/472	O	1.71	1.50	1.60	15.7	0.10	4.0	3.50	16.0	8	6
MG 1809-B110T35-471/472	O	1.21	1.00	1.10	17.7	-	5.5	3.50	18.0	9	6
MG 1809-B130T35-471/472	O	1.41	1.20	1.30	17.7	0.10	5.5	3.50	18.0	9	6
MG 1809-B160T35-471/472	O	1.71	1.50	1.60	17.7	0.10	5.5	3.50	18.0	9	6
MG 2212-B130T45-471/472	O	1.41	1.20	1.30	21.7	0.10	5.9	4.50	22.0	12	6
MG 2212-B160T45-471/472	O	1.71	1.50	1.60	21.7	0.10	5.9	4.50	22.0	12	6
MG 2212-B185T45-471/472	O	1.96	1.75	1.85	21.7	0.20	5.9	4.50	22.0	12	6
MG 2212-B215T45-471/472	O	2.26	2.00	2.15	21.7	0.20	5.9	4.50	22.0	12	6
MG 2212-B265T45-471/472	O	2.76	2.50	2.65	21.7	0.20	5.9	4.50	22.0	12	6
MG 2212-B315T45-471/472	O	3.26	3.00	3.15	21.7	0.20	5.9	4.50	22.0	12	6
MG 2212-B415T45-471/472	O	4.26	4.00	4.15	21.7	0.20	5.9	4.50	22.0	12	6
MG 2212-B515T45-471/472	O	5.26	5.00	5.15	21.7	0.20	5.9	4.50	22.0	12	6
MG 2814-B130T65-471/472	O	1.41	1.20	1.30	27.7	0.10	5.9	6.50	28.0	14	6
MG 2814-B160T65-471/472	O	1.71	1.50	1.60	27.7	0.10	5.9	6.50	28.0	14	6
MG 2814-B185T65-471/472	O	1.96	1.75	1.82	27.7	0.20	5.9	6.50	28.0	14	6
MG 2814-B215T65-471/472	O	2.26	2.00	2.12	27.7	0.20	5.9	6.50	28.0	14	6
MG 2814-B265T65-471/472	O	2.76	2.50	2.65	27.7	0.20	5.9	6.50	28.0	14	6

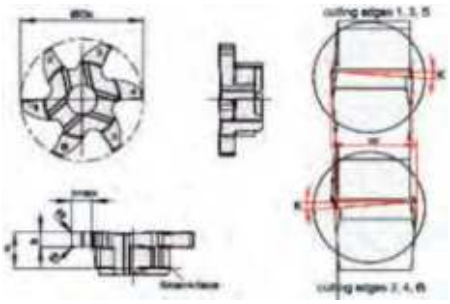
※ Note: 1. To distinguish between 6-teeth and 3-teeth inserts, please add -03 to the suffix of the same specifications when ordering 3-teeth tools, such as: MG2212-B200T45-03 TPM8125

2. Additional sizes available by request.

Groove Milling by circular interpolation

for smoother groove milling of difficult-to-machine materials



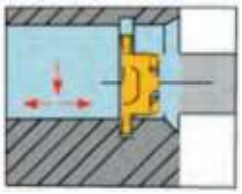


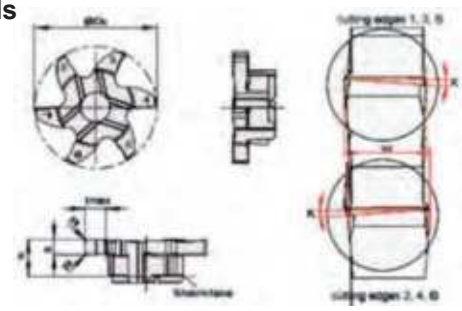
Designation	TPM8125	b±0.02	Ds	R	S	tmax	Dmin	Connector	No of Teeth	Fig.
MG 1408-B200T25-X	●	2.00	13.7	0.20	4.0	2.50	14.0	8	6	Fig.1
MG 1408-B250T25-X	●	2.50	13.7	0.20	4.0	2.50	14.0	8	6	Fig.1
MG 1408-B300T25-X	●	3.00	13.7	0.20	4.0	2.50	14.0	8	6	Fig.1
MG 1408-B400T25-X	●	4.00	13.7	0.20	4.0	2.50	14.0	8	6	Fig.1
MG 1608-B150T35-X	●	1.50	15.7	0.10	4.0	3.50	16.0	8	6	Fig.1
MG 1608-B200T35-X	●	2.00	15.7	0.20	4.0	3.50	16.0	8	6	Fig.1
MG 1608-B250T35-X	●	2.50	15.7	0.20	4.0	3.50	16.0	8	6	Fig.1
MG 1608-B300T35-X	●	3.00	15.7	0.20	4.0	3.50	16.0	8	6	Fig.1
MG 1608-B350T35-X	●	3.50	15.7	0.20	4.0	3.50	16.0	8	6	Fig.1
MG 1608-B400T35-X	●	4.00	15.7	0.20	4.0	3.50	16.0	8	6	Fig.1
MG 1809-B200T40-X	●	2.00	17.7	0.20	5.5	4.00	18.0	9	6	Fig.1
MG 1809-B250T40-X	●	2.50	17.7	0.20	5.5	4.00	18.0	9	6	Fig.1
MG 1809-B300T40-X	●	3.00	17.7	0.20	5.5	4.00	18.0	9	6	Fig.1
MG 1809-B350T40-X	●	3.50	17.7	0.20	5.5	4.00	18.0	9	6	Fig.1
MG 1809-B400T40-X	●	4.00	17.7	0.20	5.5	4.00	18.0	9	6	Fig.1
MG 2009-B200T50-X	●	2.00	19.7	0.20	4.0	5.00	20.0	9	6	Fig.1
MG 2009-B250T50-X	●	2.50	19.7	0.20	4.0	5.00	20.0	9	6	Fig.1
MG 2009-B300T50-X	●	3.00	19.7	0.20	4.0	5.00	20.0	9	6	Fig.1
MG 2009-B350T50-X	●	3.50	19.7	0.20	4.0	5.00	20.0	9	6	Fig.1
MG 2009-B400T50-X	●	4.00	19.7	0.20	4.0	5.00	20.0	9	6	Fig.1
MG 2212-B200T45-X	●	2.00	21.7	0.20	5.9	4.50	22.0	12	6	Fig.1
MG 2212-B250T45-X	●	2.50	21.7	0.20	5.9	4.50	22.0	12	6	Fig.1
MG 2212-B300T45-X	●	3.00	21.7	0.20	5.9	4.50	22.0	12	6	Fig.1
MG 2212-B350T45-X	●	3.50	21.7	0.20	5.9	4.50	22.0	12	6	Fig.1
MG 2212-B400T45-X	●	4.00	21.7	0.20	5.9	4.50	22.0	12	6	Fig.1
MG 2212-B500T45*-X	●	5.00	21.7	0.20	5.2	4.50	22.0	12	6	Fig.1
MG 2212-B600T45*-X	●	6.00	21.7	0.20	5.2	4.50	22.0	12	6	Fig.2
MG 2412-B250T55-X	●	2.50	23.7	0.20	5.9	5.50	24.0	12	6	Fig.2
MG 2412-B300T55-X	●	3.00	23.7	0.20	5.9	5.50	24.0	12	6	Fig.1
MG 2412-B350T55-X	●	3.50	23.7	0.20	5.9	5.50	24.0	12	6	Fig.1
MG 2412-B400T55-X	●	4.00	23.7	0.20	5.9	5.50	24.0	12	6	Fig.1
MG 2412-B500T55*-X	●	5.00	23.7	0.20	5.2	5.50	24.0	12	6	Fig.2
MG 2412-B600T55*-X	●	6.00	23.7	0.20	5.2	5.50	24.0	12	6	Fig.2
MG 2514-B250T50-X	●	2.50	24.7	0.20	5.9	5.00	25.0	14	6	Fig.1
MG 2514-B300T50-X	●	3.00	24.7	0.20	5.9	5.00	25.0	14	6	Fig.1
MG 2514-B350T50-X	●	3.50	24.7	0.20	5.9	5.00	25.0	14	6	Fig.1

Minimill Grooving

Groove Milling by circular interpolation

for smoother groove milling of difficult-to-machine materials





Designation	TPM8125	b±0.02	Ds	R	S	tmax	Dmin	Connector	No of Teeth	Fig.
MG 2514-B400T50-X	●	4.00	24.7	0.20	5.9	5.00	25.0	14	6	Fig.1
MG 2514-B500T50*-X	●	5.00	24.7	0.20	5.2	5.00	25.0	14	6	Fig.2
MG 2514-B600T50*-X	●	6.00	24.7	0.20	5.2	5.00	25.0	14	6	Fig.2
MG 2512-B250T60-X	●	2.50	24.7	0.20	5.9	6.00	25.0	12	6	Fig.1
MG 2512-B300T60-X	●	3.00	24.7	0.20	5.9	6.00	25.0	12	6	Fig.1
MG 2512-B400T60-X	●	4.00	24.7	0.20	5.9	6.00	25.0	12	6	Fig.1
MG 2814-B200T65-X	●	2.00	27.7	0.20	5.9	6.50	28.0	14	6	Fig.1
MG 2814-B250T65-X	●	2.50	27.7	0.20	5.9	6.50	28.0	14	6	Fig.1
MG 2814-B300T65-X	●	3.00	27.7	0.20	5.9	6.50	28.0	14	6	Fig.1
MG 2814-B350T65-X	●	3.50	27.7	0.20	5.9	6.50	28.0	14	6	Fig.1
MG 2814-B400T65-X	●	4.00	27.7	0.20	5.9	6.50	28.0	14	6	Fig.1
MG 2814-B500T65*-X	●	5.00	27.7	0.20	5.2	6.50	28.0	14	6	Fig.2
MG 2814-B600T65*-X	●	6.00	27.7	0.20	5.2	6.50	28.0	14	6	Fig.2
MG 3214-B200T85-X	●	2.00	31.7	0.20	5.9	8.50	32.0	14	6	Fig.1
MG 3214-B250T85-X	●	2.50	31.7	0.20	5.9	8.50	32.0	14	6	Fig.1
MG 3214-B300T85-X	●	3.00	31.7	0.20	5.9	8.50	32.0	14	6	Fig.1
MG 3214-B350T85-X	●	3.50	31.7	0.20	5.9	8.50	32.0	14	6	Fig.1
MG 3214-B400T85-X	●	4.00	31.7	0.20	5.9	8.50	32.0	14	6	Fig.1
MG 3514-B150T100-X	●	1.50	34.7	0.20	5.9	10.00	35.0	14	6	Fig.1
MG 3514-B200T100-X	●	2.00	34.7	0.20	5.9	10.00	35.0	14	6	Fig.1
MG 3514-B250T100-X	●	2.50	34.7	0.20	5.9	10.00	35.0	14	6	Fig.1
MG 3514-B300T100-X	●	3.00	34.7	0.20	5.9	10.00	35.0	14	6	Fig.1
MG 3514-B350T100-X	●	3.50	34.7	0.20	5.9	10.00	35.0	14	6	Fig.1
MG 3514-B400T100-X	●	4.00	34.7	0.20	5.9	10.00	35.0	14	6	Fig.1

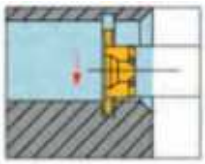
※ Note: 1. The product with "*" has a sub-cutting groove, note compared with Fig.1 type, that insert will be reduced by about 1.5mm after be installed on the holder.

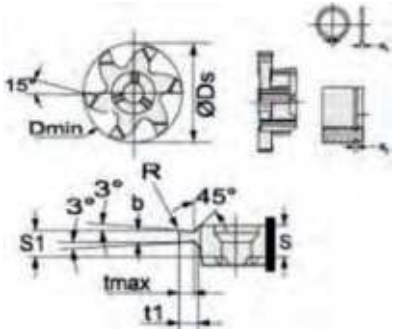
2. To distinguish between 6-teeth and 3-teeth inserts, please add -03 to the suffix of the same specifications when ordering 3-teeth tools, such as: MG2212-B200T45-X-03 TPM8125

3. Additional sizes available by request.

Groove Milling by circular interpolation

for circlip groove milling with chamfer facet





Designation	TPM8125	b±0.02	S1	S2	DS	R	S	tmax	t1	Dmin	Connector	No of Teeth
MG 2212-B100T05-45°	O	1.21	1.00	1.10	21.7	-	5.9	0.49	0.50	22	12	6
MG 2212-B130T07-45°	O	1.41	1.20	1.30	21.7	-	5.9	0.67	0.70	22	12	6
MG 2212-B130T08-45°	O	1.41	1.20	1.30	21.7	-	5.9	0.86	0.85	22	12	6
MG 2212-B160T08-45°	O	1.71	1.50	1.60	21.7	-	5.9	0.83	0.85	22	12	6
MG 2212-B160T10-45°	O	1.71	1.50	1.60	21.7	-	5.9	0.97	1.00	22	12	6
MG 2212-B185T12-45°	O	1.96	1.75	1.85	21.7	0.15	5.9	1.23	1.25	22	12	6
MG 2212-B215T15-45°	O	2.26	2.00	2.15	21.7	0.15	5.9	1.47	1.50	22	12	6
MG 2212-B265T17-45°	O	2.76	2.50	2.65	21.7	0.15	5.9	1.72	1.75	22	12	6
MG 2212-B265T15-45°	O	2.76	2.50	2.65	21.7	0.15	5.9	1.47	1.50	22	12	6
MG 2212-B315T17-45°	O	3.26	3.00	3.15	21.7	0.20	5.9	1.72	1.75	22	12	6
MG 2212-B415T25-45°	O	4.26	4.00	4.15	21.7	0.20	5.2	2.47	2.50	22	12	6
MG 2212-B415T20-45°	O	4.26	4.00	4.15	21.7	0.20	5.2	1.97	2.00	22	12	6

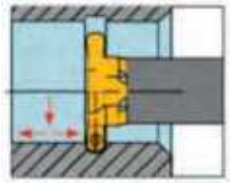
※ Note: 1. To distinguish between 6-teeth and 3-teeth inserts, please add -03 to the suffix of the same specifications when ordering 3-teeth tools, such as: MG2212-B215T15-45°-03 TPM8125

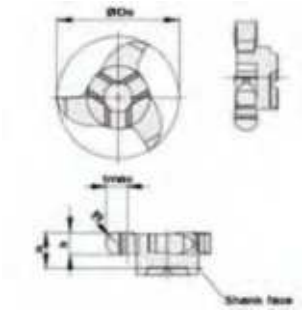
2. Additional sizes available by request.

Minimill Grooving

Groove Milling by circular interpolation

for Full Radius

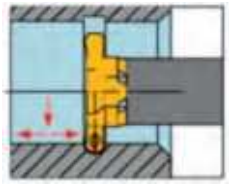


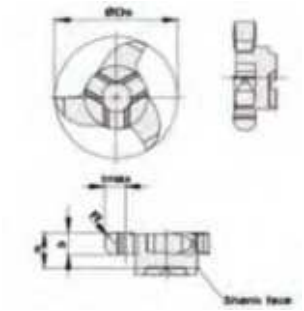


Designation	TPM8125	b±0.02	Ds	R	S	tmax	Dmin	Connector	No of Teeth	Fig.
MG 0604-R050T07	●	1.00	5.8	0.50	3.0	0.70	6.0	4	3	Fig.1
MG 0604-R075T07	●	1.50	5.8	0.75	3.0	0.70	6.0	4	3	Fig.1
MG 0604-R100T07	●	2.00	5.8	1.00	3.0	0.70	6.0	4	3	Fig.1
MG 0804-R040T15	●	0.80	7.7	0.40	3.0	1.50	8.0	4	3	Fig.1
MG 0804-R050T15	●	1.00	7.7	0.50	3.0	1.50	8.0	4	3	Fig.1
MG 0804-R060T15	○	1.20	7.7	0.60	3.0	1.50	8.0	4	3	Fig.1
MG 0804-R075T15	●	1.50	7.7	0.75	3.0	1.50	8.0	4	3	Fig.1
MG 0804-R080T15	○	1.60	7.7	0.80	3.0	1.50	8.0	4	3	Fig.1
MG 0804-R100T15	●	2.00	7.7	1.00	3.0	1.50	8.0	4	3	Fig.1
MG 1006-R040T15	○	0.80	9.7	0.40	3.5	1.50	10.0	6	3	Fig.1
MG 1006-R050T15	●	1.00	9.7	0.50	3.5	1.50	10.0	6	3	Fig.1
MG 1006-R060T15	○	1.20	9.7	0.60	3.5	1.50	10.0	6	3	Fig.1
MG 1006-R075T15	●	1.50	9.7	0.75	3.5	1.50	10.0	6	3	Fig.1
MG 1006-R080T15	●	1.60	9.7	0.80	3.5	1.50	10.0	6	3	Fig.1
MG 1006-R100T15	●	2.00	9.7	1.00	3.5	1.50	10.0	6	3	Fig.1
MG 1006-R125T15	●	2.50	9.7	1.25	3.5	1.50	10.0	6	3	Fig.1
MG 1006-R150T15	○	3.00	9.7	1.50	3.5	1.50	10.0	6	3	Fig.1
MG 1206-R050T25	●	1.00	11.7	0.50	3.5	2.50	12.0	6	3	Fig.1
MG 1206-R075T25	●	1.50	11.7	0.75	3.5	2.50	12.0	6	3	Fig.1
MG 1206-R100T25	●	2.00	11.7	1.00	3.5	2.50	12.0	6	3	Fig.1
MG 1206-R110T25	●	2.20	11.7	1.10	3.5	2.50	12.0	6	3	Fig.1
MG 1206-R125T25	●	2.50	11.7	1.25	3.5	2.50	12.0	6	3	Fig.1
MG 1206-R150T25	●	3.00	11.7	1.50	3.5	2.50	12.0	6	3	Fig.1
MG 1408-R050T25	○	1.00	13.7	0.50	4.0	2.50	14.0	8	6	Fig.1
MG 1408-R075T25	○	1.50	13.7	0.75	4.0	2.50	14.0	8	6	Fig.1
MG 1408-R100T25	○	2.00	13.7	1.00	4.0	2.50	14.0	8	6	Fig.1
MG 1408-R125T25	○	2.50	13.7	1.25	4.0	2.50	14.0	8	6	Fig.1
MG 1408-R150T25	○	3.00	13.7	1.50	4.0	2.50	14.0	8	6	Fig.1
MG 1408-R200T25	○	4.00	13.7	2.00	4.0	2.50	14.0	8	6	Fig.1
MG 1608-R050T35	○	1.00	15.7	0.50	4.0	3.50	16.0	8	6	Fig.1
MG 1608-R075T35	●	1.50	15.7	0.75	5.5	3.50	16.0	8	6	Fig.1
MG 1608-R100T35	●	2.00	15.7	1.00	5.5	3.50	16.0	8	6	Fig.1
MG 1608-R110T35	●	2.20	15.7	1.10	4.0	3.50	16.0	8	6	Fig.1
MG 1608-R125T35	●	2.50	15.7	1.25	5.5	3.50	16.0	8	6	Fig.1
MG 1608-R150T35	●	3.00	15.7	1.50	4.0	3.50	16.0	8	6	Fig.1
MG 1608-R200T35	●	4.00	15.7	2.00	4.0	3.50	16.0	8	6	Fig.1

Groove Milling by circular interpolation

for Full Radius



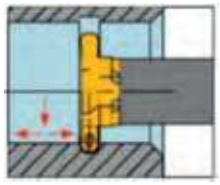


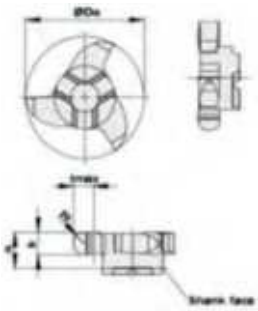
Designation	TPM8125	b±0.02	Ds	R	S	tmax	Dmin	Connector	No of Teeth	Fig.
MG 1809-R050T40	●	1.00	17.7	0.50	5.5	4.00	18.0	9	6	Fig.1
MG 1809-R075T40	●	1.50	17.7	0.75	5.5	4.00	18.0	9	6	Fig.1
MG 1809-R100T40	●	2.00	17.7	1.00	5.5	4.00	18.0	9	6	Fig.1
MG 1809-R110T40	●	2.20	17.7	1.10	5.5	4.00	18.0	9	6	Fig.1
MG 1809-R125T40	●	2.50	17.7	1.25	5.5	4.00	18.0	9	6	Fig.1
MG 1809-R150T40	●	3.00	17.7	1.50	5.5	4.00	18.0	9	6	Fig.1
MG 1809-R200T40	●	4.00	17.7	2.00	5.5	4.00	18.0	9	6	Fig.1
MG 2009-R050T50	○	1.00	19.7	0.50	4.0	5.00	20.0	9	6	Fig.1
MG 2009-R075T50	○	1.50	19.7	0.75	4.0	5.00	20.0	9	6	Fig.1
MG 2009-R100T50	○	2.00	19.7	1.00	4.0	5.00	20.0	9	6	Fig.1
MG 2009-R125T50	○	2.50	19.7	1.25	4.0	5.00	20.0	9	6	Fig.1
MG 2009-R150T50	○	3.00	19.7	1.50	4.0	5.00	20.0	9	6	Fig.1
MG 2009-R200T50	○	4.00	19.7	2.00	4.0	5.00	20.0	9	6	Fig.1
MG 2212-R050T45	●	1.00	21.7	0.50	5.9	4.50	22.0	12	6	Fig.1
MG 2212-R075T45	●	1.50	21.7	0.75	5.9	4.50	22.0	12	6	Fig.1
MG 2212-R080T45	●	1.60	21.7	0.80	5.9	4.50	22.0	12	6	Fig.1
MG 2212-R100T45	●	2.00	21.7	1.00	5.9	4.50	22.0	12	6	Fig.1
MG 2212-R110T45	●	2.20	21.7	1.10	5.9	4.50	22.0	12	6	Fig.1
MG 2212-R120T45	●	2.40	21.7	1.20	5.9	4.50	22.0	12	6	Fig.1
MG 2212-R125T45	●	2.50	21.7	1.25	5.9	4.50	22.0	12	6	Fig.1
MG 2212-R140T45	●	2.80	21.7	1.40	5.9	4.50	22.0	12	6	Fig.1
MG 2212-R150T45	●	3.00	21.7	1.50	5.9	4.50	22.0	12	6	Fig.1
MG 2212-R200T45	●	4.00	21.7	2.00	5.9	4.50	22.0	12	6	Fig.1
MG 2212-R220T45	●	4.40	21.7	2.20	5.9	4.50	22.0	12	6	Fig.1
MG 2212-R250T45*	○	5.00	21.7	2.50	5.2	4.50	22.0	12	6	Fig.2
MG 2212-R300T45*	○	6.00	21.7	3.00	5.2	4.50	22.0	12	6	Fig.2
MG 2412-R100T55	○	2.00	23.7	1.00	5.9	5.50	24.0	12	6	Fig.1
MG 2412-R125T55	○	2.50	23.7	1.25	5.9	5.50	24.0	12	6	Fig.1
MG 2412-R150T55	○	3.00	23.7	1.50	5.9	5.50	24.0	12	6	Fig.1
MG 2412-R200T55	○	4.00	23.7	2.00	5.9	5.50	24.0	12	6	Fig.1
MG 2412-R250T55*	○	5.00	23.7	2.50	5.2	5.50	24.0	12	6	Fig.2
MG 2412-R300T55*	○	6.00	23.7	3.00	5.2	5.50	24.0	12	6	Fig.2
MG 2514-R100T50	○	2.00	24.7	1.00	5.9	5.00	25.0	14	6	Fig.1
MG 2514-R125T50	○	2.50	24.7	1.25	5.9	5.00	25.0	14	6	Fig.1
MG 2514-R150T50	○	3.00	24.7	1.50	5.9	5.00	25.0	14	6	Fig.1
MG 2514-R200T50	○	4.00	24.7	2.00	5.9	5.00	25.0	14	6	Fig.1

Minimill Grooving

Groove Milling by circular interpolation

for Full Radius





Designation	TPM8125	b±0.02	Ds	R	S	tmax	Dmin	Connector	No of Teeth	Fig.
MG 2514-R250T50*	○	5.00	24.7	2.50	5.2	5.00	25.0	14	6	Fig.2
MG 2514-R300T50*	○	6.00	24.7	3.00	5.2	5.00	25.0	14	6	Fig.2
MG 2814-R100T65	●	2.00	27.7	1.00	5.9	6.50	28.0	14	6	Fig.1
MG 2814-R125T65	●	2.50	27.7	1.25	5.9	6.50	28.0	14	6	Fig.1
MG 2814-R140T65	●	2.80	27.7	1.40	5.9	6.50	28.0	14	6	Fig.1
MG 2814-R150T65	●	3.00	27.7	1.50	5.9	6.50	28.0	14	6	Fig.1
MG 2814-R200T65	●	4.00	27.7	2.00	5.9	6.50	28.0	14	6	Fig.1
MG 2814-R250T65*	○	5.00	27.7	2.50	5.2	6.50	28.0	14	6	Fig.2
MG 2814-R300T65*	○	6.00	27.7	3.00	5.2	6.50	28.0	14	6	Fig.2
MG 3214-R075T85	○	1.50	31.7	0.75	5.9	8.50	32.0	14	6	Fig.1
MG 3214-R100T85	●	2.00	31.7	1.00	5.9	8.50	32.0	14	6	Fig.1
MG 3214-R125T85	○	2.50	31.7	1.25	5.9	8.50	32.0	14	6	Fig.1
MG 3214-R150T85	●	3.00	31.7	1.50	5.9	8.50	32.0	14	6	Fig.1
MG 3214-R200T85	●	4.00	31.7	2.00	5.9	8.50	32.0	14	6	Fig.1
MG 3514-R075T100	○	1.50	34.7	0.75	5.9	10.00	35.0	14	6	Fig.1
MG 3514-R100T100	●	2.00	34.7	1.00	5.9	10.00	35.0	14	6	Fig.1
MG 3514-R125T100	○	2.50	34.7	1.25	5.9	10.00	35.0	14	6	Fig.1
MG 3514-R150T100	●	3.00	34.7	1.50	5.9	10.00	35.0	14	6	Fig.1
MG 3514-R200T100	●	4.00	34.7	2.00	5.9	10.00	35.0	14	6	Fig.1

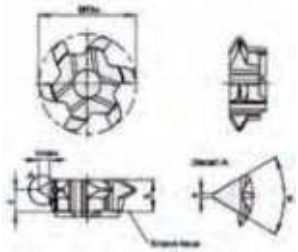
※ Note: 1. The product with "*" has a sub-cutting groove, note compared with Fig.1 type, that insert will be reduced by about 1.5mm after be installed on the holder.

2. To distinguish between 6-teeth and 3-teeth inserts, please add -03 to the suffix of the same specifications when ordering 3-teeth tools, such as: MG2212-R100T45-03 TPM8125

3. Additional sizes available by request.

Thread Milling by circular interpolation

for 60° Partial profile, internal



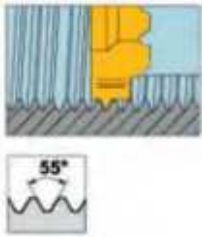
Designation	TPM8125	Pitch		Ds	S	b	E	tmax	α	Dmin	Connector	No of Teeth
		Pitch	TPI									
MI 0604-0507560	●	0.5-0.75	48-32	5.7	3.0	0.06	2.4	0.43	60°	6.0	4	3
MI 0704-051560	●	0.5-1.5	48-16	6.7	3.0	0.06	2.4	0.92	60°	7.0	4	3
MI 1006-050860	○	0.5-0.8	56-28	9.7	3.4	0.06	2.4	1.00	60°	10.0	6	3
MI 1006-1017560	○	1.0-1.75	24-15	9.7	3.4	0.13	2.4	1.08	60°	10.0	6	3
MI 1006-102560	○	1.0-2.5	24-12	10.1	3.4	0.13	2.4	1.53	60°	10.0	6	3
MI 1106-152560	○	1.5-2.5	16-12	11.0	3.4	0.19	2.4	1.47	60°	11.0	6	3
MI 1206-050860	○	0.5-0.8	56-28	11.7	3.4	0.06	2.4	1.00	60°	12.0	6	3
MI 1206-102560	○	1.0-2.5	24-12	11.7	3.4	0.13	2.4	1.53	60°	12.0	6	3
MI 1206-203060	○	2.0-3.0	12-8	11.7	3.4	0.25	2.2	1.85	60°	12.0	6	6
MI 1208-102060	○	1.0-2.0	24-12	12.3	4.0	0.13	2.5	1.25	60°	12.0	8	6
MI 1308-152560	○	1.5-2.5	16-12	13.2	4.0	0.19	2.4	1.53	60°	13.0	8	6
MI 1308-203060	○	2.0-3.0	12-8	13.3	4.0	0.25	2.4	1.85	60°	13.0	8	6
MI 1509-102560	●	1.0-2.5	24-12	14.7	3.4	0.13	2.5	1.53	60°	15.0	9	6
MI 1609-103060	○	1.0-3.0	24-8	15.7	4.2	0.13	2.4	1.84	60°	16.0	9	6
MI 1809-203060	○	2.0-3.0	13-8	17.7	5.9	0.25	4.4	1.73	60°	18.0	9	6
MI 1809-204060	○	2.0-4.0	12-6	17.7	5.2	0.25	4.0	2.53	60°	18.0	9	6
MI 1709-102560	○	1.0-2.5	24-12	17.2	4.0	0.13	4.9	1.53	60°	17.0	9	6
MI 2212-102560	○	1.0-2.5	24-12	21.7	5.9	0.13	4.9	1.53	60°	22.0	12	6
MI 2012-103060	○	1.0-3.0	24-8	19.7	4.0	0.13	2.4	1.84	60°	20.0	12	6
MI 2212-254060*	○	2.5-4.0	10-6	21.7	5.2	0.31	4.0	2.53	60°	22.0	12	6
MI 2012-203060	○	2.0-3.0	12-8	19.7	4.0	0.25	4.8	1.85	60°	20.0	12	6
MI 2614-102560	●	1.0-2.5	24-12	25.7	5.9	0.13	4.9	1.53	60°	26.0	14	6
MI 2614-254060*	●	2.5-4.0	10-6	25.7	5.2	0.31	4.0	2.53	60°	26.0	14	6
MI 2814-103060	○	1.0-3.0	8-24	27.7	5.9	0.13	4.5	1.84	60°	28.0	14	6
MI 2814-255060*	○	2.5-5.0	10-5	27.7	5.2	0.38	1.8	3.18	60°	28.0	14	6
MI 2814-406060	○	4.0-6.0	6-4	27.7	5.9	0.62	3.6	3.37	60°	28.0	14	6

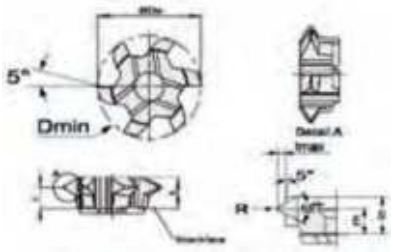
※ Note: Additional sizes available by request.

Minimill Grooving

Thread Milling by circular interpolation

for 55° Partial profile, internal

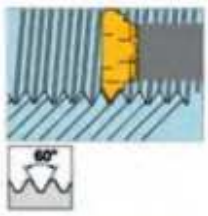


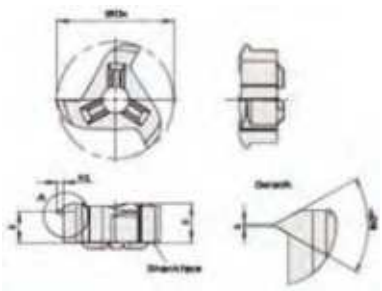


Designation	TPM8125	Thread min	TPI	Ds	S	R	E	tmax	Dmin	Connector	No of Teeth
MI 0604-281955	●	1/16-28	28-19	5.8	2.5	0.13	2.2	0.86	6.0	4	3
MI 1006-191455	○	1/4-19	19-14	9.7	3.5	0.18	2.5	1.16	10.0	6	3
MI 1206-191155	●	1/8-19	19-11	11.7	3.5	0.18	2.5	1.66	12.0	6	3
MI 1409-141155	○	1/2-14	14-11	13.7	3.5	0.25	2.3	1.73	14.0	9	6
MI 1809-140855	○	3/4-14	14-8	17.7	5.5	0.25	2.6	1.73	18.0	9	6
MI 2212-110655*	○	1 1/2-6	11-6	21.7	5.2	0.31	2.5	3.02	22.0	12	6

Thread Milling by circular interpolation

for 60° ISO Metric, internal





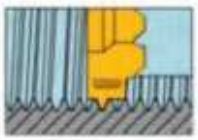
Designation	TPM8125	Thread min	Pitch (mm)	Ds	S	b	E	H1	Dmin	Connector	No of Teeth
MI 0604-0.40ISO	O	M8	0.4	5.7	2.5	0.05	2.0	0.220	6.0	4	3
MI 0604-0.45ISO	O	M8	0.45	5.7	2.5	0.06	2.0	0.240	6.0	4	3
MI 0604-0.50ISO	O	M8	0.5	5.7	2.5	0.06	2.0	0.270	6.0	4	3
MI 0604-0.60ISO	O	M8	0.6	5.7	2.5	0.08	2.0	0.320	6.0	4	3
MI 0604-0.70ISO	O	M8	0.7	5.7	2.5	0.09	2.0	0.380	6.0	4	3
MI 0804-0.75ISO	O	M10	0.75	7.7	2.5	0.09	2.0	0.41	8.0	4	3
MI 0804-0.80ISO	O	M10	0.8	7.7	2.5	0.09	2.0	0.430	8.0	4	3
MI 0804-1.00ISO	O	M10	1.0	7.7	2.5	0.13	2.0	0.540	8.0	4	3
MI 1006-1.00ISO	O	M12	1.0	9.7	3.5	0.13	3.0	0.540	10.0	6	3
MI 1006-1.50ISO	O	M12	1.5	9.7	3.5	0.19	2.8	0.810	10.0	6	3
MI 1206-1.75ISO	O	M12	1.75	11.7	3.5	0.21	2.7	0.950	12.0	6	3
MI 1206-2.00ISO	O	M14	2.0	11.7	3.5	0.25	2.6	1.080	12.0	6	3
MI 1408-1.00ISO	O	M16	1.0	13.7	4.0	0.19	3.6	0.540	14.0	8	6
MI 1408-1.50ISO	O	M18	1.5	13.7	4.0	0.19	3.5	0.810	14.0	8	6
MI 1408-2.00ISO	O	M18	2.0	13.7	4.0	0.25	3.3	1.080	14.0	8	6
MI 1809-1.50ISO	O	M22	1.5	17.7	5.5	0.19	4.8	0.810	18.0	9	6
MI 1809-2.00ISO	O	M22	2.0	17.7	5.5	0.25	4.6	1.080	18.0	9	6
MI 1809-3.00ISO	O	M27	3.0	17.7	5.5	0.37	4.3	1.620	18.0	9	6
MI 2212-1.50ISO	O	M24	1.5	21.7	5.5	0.19	4.8	0.810	22.0	12	6
MI 2212-2.00ISO	O	M27	2.0	21.7	5.5	0.25	4.6	1.080	22.0	12	6
MI 2212-3.00ISO	O	M30	3.0	21.7	5.5	0.37	4.4	1.620	22.0	12	6
MI 2212-3.50ISO	O	M30	3.5	21.7	5.5	0.43	4.3	0.890	22.0	12	6
MI 2212-4.00ISO	O	M33	4.0	21.7	5.2	0.50	2.5	2.160	22.0	12	6

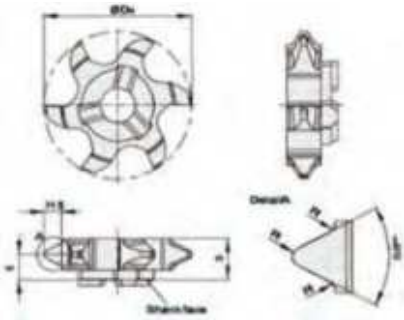
※ Note: Additional sizes available by request.

Minimill Grooving

Thread Milling by circular interpolation

for Whitworth (BSW, BSF, BSP, BSB), internal



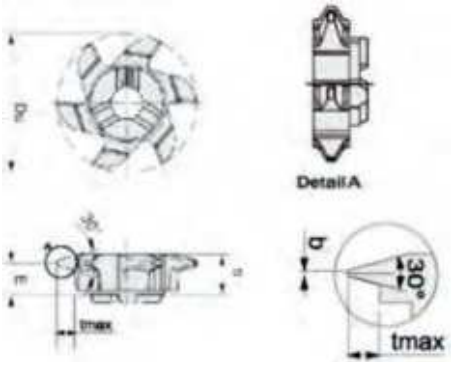


Designation	TPM8125	Thread min	TPI	Ds	S	b	E	H1	Dmin	Connector	No of Teeth
MI 0604-28W	O	G 1/16" G 1/8"	28	6.0	2.5	0.13	2.5	0.581	6.0	4	3
MI 1006-19W	O	G 1/4" G 3/8"	19	9.7	3.5	0.18	2.5	0.856	10.0	6	3
MI 1206-19W	O	G 3/8"	19	11.7	3.5	0.18	2.5	0.856	12.0	6	3
MI 1408-19W	O	G 3/8"	19	13.7	4.0	0.18	2.5	0.856	14.0	8	6
MI 1408-14W	O	G 3/4" G 5/8"	14	13.7	4.0	0.24	3.0	1.160	14.0	8	6
MI 1608-14W	O	G 1/2" G 3/4"	14	15.7	4.0	0.24	4.1	1.160	16.0	8	6
MI 1608-11W	O	G 1"	11	15.7	4.0	0.31	3.9	1.480	16.0	8	6
MI 1809-19W	O	-	19	17.7	5.5	0.18	4.5	1.160	18.0	9	6
MI 1809-14W	O	G 3/4"	14	17.7	5.5	0.24	4.3	1.160	18.0	9	6
MI 1809-11W	O	G 1"	11	17.7	5.5	0.31	4.1	1.480	18.0	9	6
MI 2212-11W	O	G 1"	11	21.7	5.2	0.31	1.6	1.480	22.0	12	6
MI 2212-8W	O	-	8	21.7	5.2	0.43	2.0	2.030	22.0	12	6
MI 2212-6W	O	G 1 1/2"	6	21.7	5.2	0.58	2.5	2.710	22.0	12	6
MI 2814-11W	O	G 1"	11	27.7	5.2	0.31	1.6	1.480	28.0	14	6
MI 2814-8W	O	-	8	27.7	5.2	0.43	2.0	2.030	28.0	14	6
MI 2814-6W	O	G 1 1/2"	6	27.7	5.2	0.58	2.5	2.710	28.0	14	6

※ Note: Additional sizes available by request.

Thread Milling by circular interpolation

for Trapez DIN103 (TR), internal

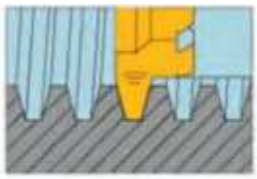


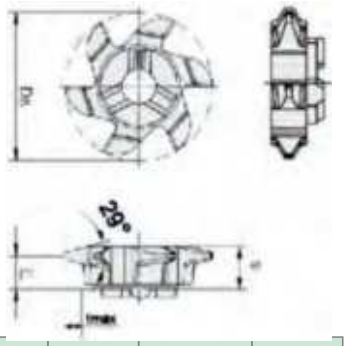
Designation	TPM8125	Thread min	Pitch (mm)	Ds	S	b	E	tmax	Dmin	Connector	No of Teeth
MI 0704-2.0TR	●	Tr12x2 Tr14x2	2.0	7.00	2.6	0.60	1.90	1.25	7.0	4	3
MI 1208-2.0TR-1	●	Tr16x2	2.0	12.30	3.5	0.60	2.70	1.25	12.0	8	6
MI 1208-2.0TR-2	●	Tr18x2	2.0	12.30	3.5	0.60	2.70	1.25	12.0	8	6
MI 1208-2.0TR-3	●	Tr20x2	2.0	12.30	3.5	0.60	2.70	1.25	12.0	8	6
MI 1609-3.0TR-1	●	Tr22x3	3.0	15.40	5.5	0.96	4.35	1.75	16.0	9	6
MI 1609-3.0TR-2	●	Tr24x3	3.0	15.40	5.5	0.96	4.35	1.75	16.0	9	6
MI 1609-3.0TR-3	●	Tr26x3 Tr28x3	3.0	15.70	5.5	0.96	4.35	1.75	16.0	9	6
MI 1509-4.0TR	●	Tr20x4	4.0	14.30	5.5	1.33	4.11	2.25	15.0	9	6
MI 1509-5.0TR	●	Tr22x5	5.0	14.75	5.5	1.69	3.80	2.75	15.0	9	6
MI 1609-5.0TR	●	Tr28x5	5.0	15.70	5.5	1.69	3.80	2.75	16.0	9	6
MI 2012-5.0TR	●	Tr28x5	5.0	19.70	5.5	1.69	3.80	2.75	20.0	12	6
MI 2212-6.0TR	●	Tr30x6 Tr32x6 Tr36x6	6.0	21.70	5.2	1.92	3.20	3.50	22.0	12	6
MI 2814-6.0TR	●	Tr115-130x6	6.0	27.70	5.2	1.92	3.20	3.50	28.0	14	6

Minimill Grooving

Thread Milling by circular interpolation

for American ACME, internal

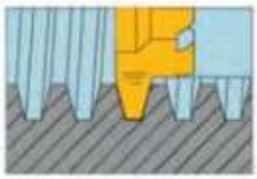


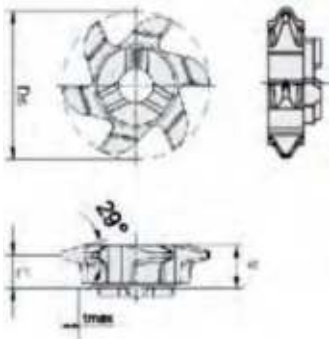


Designation	TPM8125	Thread min	TPI	Ds	S	E	tmax	Dmin	Connector	No of Teeth
MI 2212-05ACME	O	1-1/4" x 5	5	21.6	5.5	4.40	2.79	22.0	12	6
MI 2212-04ACME-1	O	1-3/8" x 4	4	21.6	5.5	4.10	3.43	22.0	12	6
MI 2212-04ACME-2	O	1-1/2" x 4	4	21.6	5.5	4.10	3.43	22.0	12	6
MI 2914-04ACME	O	1-3/4" x 4	4	28.5	5.5	4.10	3.43	29.0	14	6
MI 3414-04ACME	O	2" x 4	4	33.5	5.5	4.10	3.43	34.0	14	6

Thread Milling by circular interpolation

for American ACME, internal

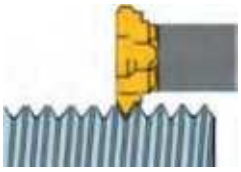


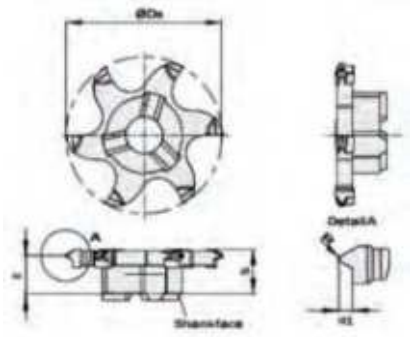


Designation	TPM8125	Thread min	TPI	Ds	S	E	tmax	Dmin	Connector	No of Teeth
MI 1308-08STACME	O	5/8" x 8	8	12.3	5.5	4.70	1.21	13.0	8	6
MI 1308-06STACME-1	O	3/4" x 6, 7/8" x 6	6	12.7	5.5	4.50	1.52	13.0	8	6
MI 1308-06STACME-2	O	7/8" x 6	6	12.7	5.5	4.50	1.52	13.0	8	6
MI 1709-05STACME-1	O	1" x 5	5	16.7	5.2	4.20	1.78	17.0	9	6
MI 1709-05STACME-2	O	1-1/8" x 5	5	16.7	5.2	4.20	1.78	17.0	9	6
MI 1709-05STACME-3	O	1-1/4" x 5	5	16.7	5.2	4.20	1.78	17.0	9	6
MI 2112-04STACME-1	O	1-3/8" x 4	4	20.8	5.2	4.00	2.16	21.0	12	6
MI 2112-04STACME-2	O	1-1/2" x 4	4	20.8	5.2	4.00	2.16	21.0	12	6
MI 2112-04STACME-3	O	1-3/4" x 4	4	20.8	5.2	4.00	2.16	21.0	12	6
MI 2112-04STACME-4	O	2" x 4	4	20.8	5.2	4.00	2.16	22.0	12	6

Thread Milling by circular interpolation

for 60° ISO Metric, external



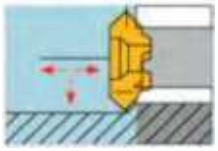


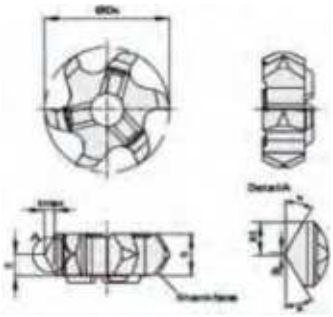
Designation	TPM8125	Thread min	Ds	S	E	tmax	Dmin	Connector	No of Teeth
ME 2212-1.50ISO	O	1.5	21.7	5.5	4.40	2.79	22.0	12	6
ME 2212-1.75ISO	O	1.75	21.7	5.5	4.10	3.43	22.0	12	6
ME 2212-2.00ISO	O	2.0	21.7	5.5	4.10	3.43	22.0	12	6
ME 2212-3.00ISO	O	3.0	21.7	5.5	4.10	3.43	29.0	14	6
ME 2212-4.00ISO	O	4.0	21.7	5.5	4.10	3.43	34.0	14	6

Minimill Grooving

Groove Milling by circular interpolation

for forward & backward chamfering

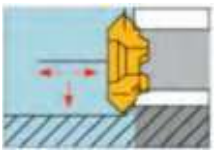


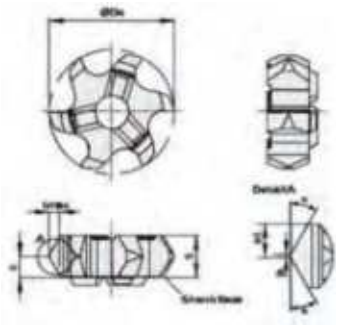


Designation	TPM8125	K	Ds	S	b	b1	E	tmax	Dmin	Connector	No of Teeth
MC 0604-B020T025-A15	○	15°	5.7	2.4	0.20	0.90	1.40	0.25	6.0	4	3
MC 0604-B020T03-A20	○	20°	5.7	2.4	0.20	0.90	1.40	0.30	6.0	4	3
MC 0604-B020T05-A30	○	30°	5.7	2.4	0.20	0.90	1.40	0.50	6.0	4	3
MC 0604-B020T07-A45	●	45°	5.7	3.0	0.20	0.70	1.20	0.70	6.0	4	3
MC 0804-B020T025-A15	○	15°	7.7	2.4	0.20	0.90	1.40	0.25	8.0	4	3
MC 0804-B020T03-A20	○	20°	7.7	2.4	0.20	0.90	1.40	0.30	8.0	4	3
MC 0804-B020T05-A30	○	30°	7.7	2.4	0.20	0.90	1.40	0.50	8.0	4	3
MC 0804-B020T07-A45	●	45°	7.7	3.0	0.20	0.70	1.20	0.70	8.0	4	3
MC 1006-B020T035-A15	○	15°	9.7	3.2	0.20	1.30	2.00	0.35	10.0	6	3
MC 1006-B020T045-A20	○	20°	9.7	3.2	0.20	1.30	2.00	0.45	10.0	6	3
MC 1006-B020T075-A30	○	30°	9.7	3.2	0.20	1.30	2.00	0.75	10.0	6	3
MC 1006-B020T12-A45	●	45°	9.7	3.5	0.20	1.20	2.00	1.20	10.0	6	3
MC 1206-B020T035-A15	○	15°	11.7	3.2	0.20	1.30	2.00	0.35	12.0	6	3
MC 1206-B020T045-A20	○	20°	11.7	3.2	0.20	1.30	2.00	0.45	12.0	6	3
MC 1206-B020T075-A30	○	30°	11.7	3.2	0.20	1.30	2.00	0.75	12.0	6	3
MC 1206-B020T12-A45	●	45°	11.7	3.5	0.20	1.20	2.00	1.20	12.0	6	3
MC 1408-B020T05-A15	○	15°	13.7	4.0	0.20	1.80	1.00	0.50	14.0	8	6
MC 1408-B020T06-A20	○	20°	13.7	4.0	0.20	1.80	1.00	0.60	14.0	8	6
MC 1408-B020T10-A30	○	30°	13.7	4.0	0.20	1.80	1.00	1.00	14.0	8	6
MC 1408-B020T17-A45	●	45°	13.7	4.0	0.20	1.70	1.50	1.70	14.0	8	6
MC 1608-B020T05-A15	○	15°	15.7	4.0	0.20	1.80	1.00	0.50	16.0	8	6
MC 1608-B020T06-A20	○	20°	15.7	4.0	0.20	1.80	1.00	0.60	16.0	8	6
MC 1608-B020T10-A30	○	30°	15.7	4.0	0.20	1.80	1.00	1.00	16.0	8	6
MC 1608-B020T17-A45	●	45°	15.7	4.0	0.20	1.70	1.50	1.70	16.0	8	6
MC 2009-B020T05-A15	○	15°	19.7	4.0	0.20	1.80	1.00	0.50	20.0	8	6
MC 2009-B020T06-A20	○	20°	19.7	4.0	0.20	1.80	1.00	0.60	20.0	8	6
MC 2009-B020T10-A30	○	30°	19.7	4.0	0.20	1.80	1.00	1.00	20.0	8	6
MC 2009-B020T17-A45	●	45°	19.7	4.0	0.20	1.70	1.50	1.70	20.0	8	6
MC 2212-B020T075-A15	○	15°	21.7	5.2	0.20	2.80	2.60	0.75	22.0	12	6
MC 2212-B020T09-A20	○	20°	21.7	5.2	0.20	2.80	2.60	0.90	22.0	12	6

Groove Milling by circular interpolation

for forward & backward chamfering

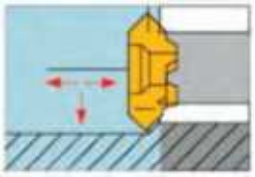


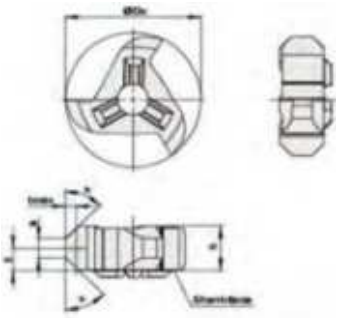


Designation	TPM8125	K	Ds	S	b	b1	E	tmax	Dmin	Connector	No of Teeth
MC 2212-B020T10-A30	○	30°	21.7	5.2	0.20	2.80	2.60	1.50	22.0	12	6
MC 2212-B020T27-A45	●	45°	21.7	5.2	0.20	2.70	2.40	2.70	22.0	12	6
MC 2812-B020T075-A15	○	15°	27.7	5.2	0.20	2.80	2.60	0.75	28.0	12	6
MC 2812-B020T09-A20	○	20°	27.7	5.2	0.20	2.80	2.60	0.90	28.0	12	6
MC 2812-B020T10-A30	○	30°	27.7	5.2	0.20	2.80	2.60	1.50	28.0	12	6
MC 2814-B020T27-A45	●	45°	27.7	5.2	0.20	2.70	2.40	2.70	28.0	14	6

Groove Milling by circular interpolation

for forward & backward chamfering



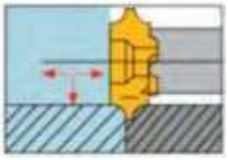


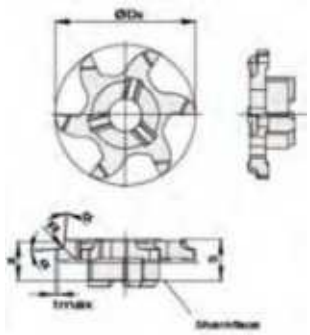
Designation	TPM8125	K	Ds	S	b	E	tmax	Dmin	Connector	No of Teeth
MC 1006-B090T10-A45	○	45°	9.7	3.5	0.90	1.50	1.00	10.0	6	3
MC 1006-B150T15-A45	○	45°	9.7	3.5	1.50	1.40	1.50	10.0	6	3
MC 1206-B120T08-A45	○	45°	11.7	3.5	1.20	1.20	0.80	12.0	6	3
MC 1408-B120T14-A45	○	45°	13.7	4.0	1.20	1.10	1.40	14.0	8	6
MC 1609-B200T20-A45	○	45°	15.7	5.5	2.00	2.30	2.00	16.0	9	6
MC 2009-B120T14-A45	○	45°	19.7	4.0	1.20	1.10	1.40	20.0	9	6
MC 2212-B200T17-A45	○	45°	21.7	5.2	2.00	2.00	1.80	22.0	12	6
MC 2212-B300T20-A45	○	45°	21.7	5.2	3.00	3.20	2.00	22.0	12	6
MC 2614-B300T20-A45	○	45°	25.7	5.2	3.00	3.20	2.00	26.0	14	6
MC 2814-B200T17-A45	○	45°	27.7	5.2	2.00	2.00	1.80	28.0	14	6

Minimill Grooving

Guadrant Milling by circular interpolation

for Corner rounding

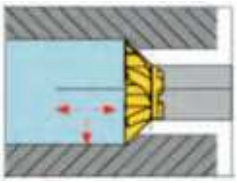


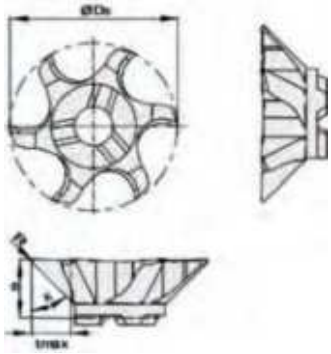


Designation	TPM8125	α	Ds	S	a	R	tmax	Dmin	Connector
MC 2212-NR050	O	5°	21.7	5.2	4.65	0.50	0.50	22.0	12
MC 2212-NR100	O	5°	21.7	5.2	4.65	1.00	0.50	22.0	12
MC 2212-NR150	O	5°	21.7	5.2	4.75	1.50	0.50	22.0	12
MC 2212-NR200	O	5°	21.7	5.2	4.75	2.00	0.50	22.0	12
MC 2212-NR250	O	5°	21.7	5.2	4.75	2.50	0.50	22.0	12
MC 2212-NR300	O	5°	21.7	5.2	4.75	3.00	0.50	22.0	12
MC 2212-NR400	O	5°	21.7	5.2	4.75	4.00	0.50	22.0	12

Groove Milling by circular interpolation

for Dovetail milling



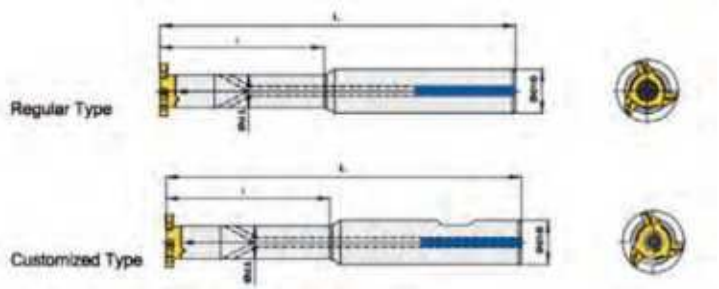


Designation	TPM8125	K	Ds	S	R	tmax	Dmin	Connector	No of Teeth
MG 0804-YW45T15	O	45°	7.7	3.1	0.20	1.5	8.0	4	3
MG 1206-YW45T20	O	45°	11.7	3.5	0.20	2.5	12.0	6	3
MG 1608-YW45T25	O	45°	15.7	4.0	0.20	3.5	16.0	8	6
MG 2412-YW45T40	O	45°	23.7	5.2	0.20	5.5	24.0	12	6
MG 2814-YW45T55	O	45°	27.7	5.2	0.20	5.5	28.0	14	6
MG 0804-YW60T15	O	30°	7.7	3.1	0.20	1.0	8.0	4	3
MG 1206-YW60T20	O	30°	11.7	3.5	0.20	1.5	12.0	6	3
MG 1608-YW60T25	O	30°	15.7	4.0	0.20	2.0	16.0	8	6
MG 2412-YW60T40	O	30°	23.7	5.2	0.20	3.2	24.0	12	6
MG 2814-YW60T55	O	30°	27.7	5.2	0.20	3.2	28.0	14	6
MG 0804-YW75T15	O	15°	7.7	3.1	0.20	1.0	8.0	4	3
MG 1206-YW75T20	O	15°	11.7	3.5	0.20	1.5	12.0	6	3
MG 1608-YW75T25	O	15°	15.7	4.0	0.20	2.0	16.0	8	6
MG 2412-YW75T40	O	15°	23.7	5.2	0.20	3.2	24.0	12	6
MG 2814-YW75T55	O	15°	27.7	5.2	0.20	3.2	28.0	14	6

Minimill Grooving

Mini Milling Body

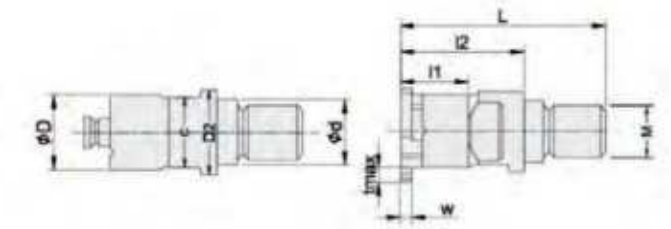
Groove Milling by circular interpolation



Designation	Stock	Dimension (mm)				Insert	Spare parts	
		d	d1	ℓ	L		Screw	Wrench
MC H08-13-04S	●	8	4	13	60	M□-04	S18SS25L365	TPF-06
MC H12-15-06S	●	12	6	15	70	M□-06	S25SS32L60X	TPF-06
MC H12-18-08S	●	12	8	18	80	M□-08	S40SS57L900	TPF-15
MC H16-18-08S	●	16	8	18	80	M□-08	S40SS57L900	TPF-15
MC H16-20-09S	●	16	9	20	80	M□-09	S40SS57L900	TPF-15
MC H16-25-12S	●	16	12	25	90	M□-12	S50SS70L120	TPF-20
MC H20-35-14S*	●	20	14	35	100	M□-14	S50SS70L120	TPF-20
MC H08-00-06S*	●	8	6	-	100	M□-06	S25SS32L60X	TPF-06
MC H12-00-09S*	●	12	9	-	120	M□-09	S40SS57L900	TPF-15
MC H16-00-14S*	●	16	14	-	150	M□-14	S50SS70L120	TPF-20
MC H20-00-14S*	●	20	14	-	160	M□-14	S50SS70L120	TPF-20
MC H25-00-14S*	●	25	14	-	180	M□-14	S50SS70L120	TPF-20
MC E08-13-04C	●	8	4	13	60	M□-04	S18SS25L365	TPF-06
MC E08-17-04C	●	8	4	17	64	M□-04	S18SS25L365	TPF-06
MC E08-21-04C	●	8	4	21	68	M□-04	S18SS25L365	TPF-06
MC E12-21-06C	●	12	6	21	80	M□-06	S25SS32L60X	TPF-06
MC E12-30-06C	●	12	6	30	90	M□-06	S25SS32L60X	TPF-06
MC E12-42-06C	●	12	6	42	100	M□-06	S25SS32L60X	TPF-06
MC E12-29-08C	●	12	8	29	95	M□-08	S40SS57L900	TPF-15
MC E12-42-08C	●	12	8	42	110	M□-08	S40SS57L900	TPF-15
MC E12-56-08C	●	12	8	56	120	M□-08	S40SS57L900	TPF-15
MC E16-32-09C	●	16	9	32	100	M□-09	S40SS57L900	TPF-15
MC E16-45-09C	●	16	9	45	110	M□-09	S40SS57L900	TPF-15
MC E16-64-09C	●	16	9	64	130	M□-09	S40SS57L900	TPF-15
MC E16-42-12C	●	16	12	42	100	M□-12	S50SS70L120	TPF-20
MC-E16-60-12C	●	16	12	60	130	M□-12	S50SS70L120	TPF-20
MC-E16-85-12C	●	16	12	85	160	M□-12	S50SS70L120	TPF-20
MC-E16-42-14C	●	16	14	42	100	M□-14	S50SS70L120	TPF-20
MC-E16-60-14C	●	16	14	60	130	M□-14	S50SS70L120	TPF-20
MC E16-85-14C	●	16	14	85	160	M□-14	S50SS70L120	TPF-20

※ Note: The "*" type is a straight shank thickened type, which cannot reach the maximum effective cutting depth of the insert design. Depending on the specific use requirements, it can be cut off or the neck can be ground into a void space.

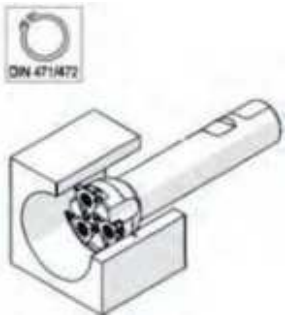
Mini Milling Modular

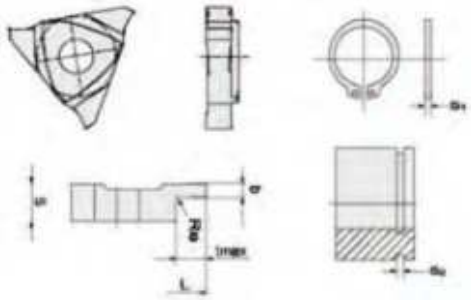


Designation	Stock	Dimension (mm)								Insert	Spare parts	
		D	d	ℓ1	ℓ2	L	D2	C	M		Screw	Wrench
MC 0606-M03	●	6	3.5	13	13	23	6	5	M3	M□-06	S25SS32L60X	TPF-06
MC 0808-M04	●	8	4.5	16	16	28	8	7	M4	M□-08	S40SS57L900	TPF-15
MC 0909-M05	●	9	5.5	16	16	30	9	8	M5	M□-09	S40SS57L900	TPF-15
MC 1212-M06	●	12	6.5	19	19	34	12	11	M6	M□-12	S50SS70L120	TPF-20
MC 1414-M08	●	14	8.5	19	19	36	14	13	M8	M□-14	S50SS70L120	TPF-20
MC 1209-M06ST	○	9	6.5	3	19	34	12	11	M6	M□-09	S40SS57L900	TPF-15
MC 1609-M08ST	○	9	8.5	3	19	36	16	15	M8	M□-09	S40SS57L900	TPF-15
MC 1612-M08ST	○	12	8.5	3	19	36	16	14	M8	M□-12	S50SS70L120	TPF-20
MC 2014-M12ST	○	14	12.5	3	19	41	20	18	M12	M□-14	S50SS70L120	TPF-20
MC 2014-M10ST	○	14	12.5	3	19	41	20	18	M10	M□-14	S50SS70L120	TPF-20
MC 2514-M12ST	○	14	12.5	3	19	41	25	18	M12	M□-14	S50SS70L120	TPF-20
MC 1606-M08	●	6	8.5	11	25	42	16	14	M8	M□-06	S25SS32L60X	TPF-06
MC 1608-M08	●	8	8.5	14	25	42	16	14	M8	M□-08	S40SS57L900	TPF-15
MC 1609-M08	●	9	8.5	14	25	42	16	14	M8	M□-09	S40SS57L900	TPF-15
MC 1612-M08	●	12	8.5	15	25	42	16	14	M8	M□-12	S50SS70L120	TPF-20
MC 1614-M08	●	14	8.5	15	25	42	16	14	M8	M□-14	S50SS70L120	TPF-20

Minimill Grooving

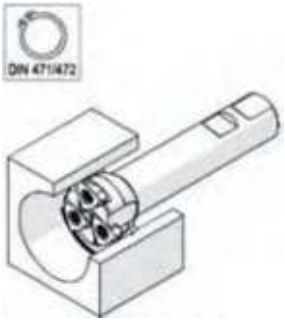
Milling Inserts for circlip grooves without chamfer

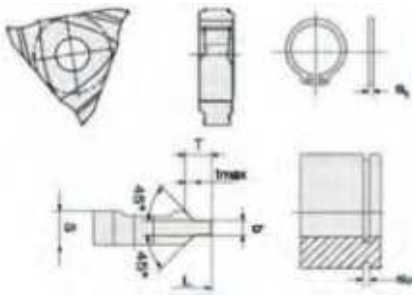




Designation	Dimension (mm)							Coated	
	S2	L	S	b-0.03	tmax	Re	S1	TTIS30	TTIM45
TX11L 090-070	0.90	10.60	2.34	0.98	0.70	0.3	0.80	O	O
TX11L 110-090	1.10	10.60	2.34	1.18	0.90	0.3	1.00	O	O
TX11L 130-110	1.30	10.60	2.34	1.38	1.10	0.3	1.20	O	O
TX11L 160-125	1.60	10.60	2.34	1.68	1.25	0.3	1.50	O	O
TX11L 185-125	1.85	10.60	2.34	1.93	1.25	0.3	1.75	O	O
TX16L 090-070	0.90	15.90	3.50	0.98	0.70	0.3	0.80	O	O
TX16L 110-130	1.10	15.90	3.50	1.18	0.90	0.3	1.00	O	O
TX16L 130-110	1.30	15.90	3.50	1.38	1.10	0.3	1.20	O	O
TX16L 160-120	1.60	15.90	3.50	1.68	1.25	0.3	1.50	O	O
TX16L 185-125	1.85	15.90	3.50	1.93	1.25	0.3	1.75	O	O
TX16L 215-175	2.15	15.90	3.50	2.23	1.75	0.3	2.00	O	O
TX16L 265-175	2.65	15.90	3.50	2.73	1.75	0.3	2.50	O	O
TX22L 090-070	0.90	21.30	4.00	0.98	0.70	0.3	0.80	O	O
TX22L 110-090	1.10	21.30	4.00	1.18	0.90	0.3	1.00	O	O
TX22L 130-110	1.30	21.30	4.00	1.38	1.10	0.3	1.20	O	O
TX22L 160-120	1.60	21.30	4.00	1.68	1.25	0.3	1.50	O	O
TX22L 185-125	1.85	21.30	4.00	1.93	1.25	0.3	1.75	O	O
TX22L 215-175	2.15	21.30	4.00	2.23	1.75	0.3	2.00	O	O
TX22L 265-175	2.65	21.30	4.00	2.73	1.75	0.3	2.50	O	O
TX22L 315-220	3.15	21.30	4.00	3.23	2.20	0.3	3.00	O	O

Milling Inserts for circlip grooves without chamfer

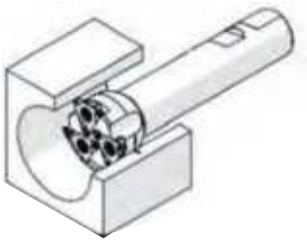


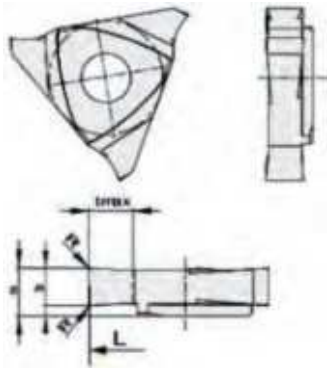


Designation	Dimension (mm)							Coated	
	S2	L	S	b-0.03	tmax	T	S1	TTIS30	TTIM45
TX11L 110-2X45-050	1.10	10.60	2.34	1.18	0.10	0.50	1.00	○	○
TX16L 110-2X45-050	1.10	15.90	3.50	1.18	0.10	0.50	1.00	○	○
TX16L 130-2X45-085	1.30	15.90	3.50	1.38	0.15	0.85	1.20	○	○
TX16L 160-2X45-100	1.60	15.90	3.50	1.68	0.15	1.00	1.50	○	○
TX16L 185-2X45-125	1.85	15.90	3.50	1.93	0.20	1.25	1.75	○	○
TX16L 215-2X45-150	2.15	15.90	3.50	2.23	0.20	1.50	2.00	○	○
TX16L 265-2X45-150	2.65	15.90	3.50	2.73	0.20	1.50	2.50	○	○
TX22L 110-2X45-050	1.10	21.30	4.00	1.18	0.10	0.50	1.00	○	○
TX22L 130-2X45-070	1.30	21.30	4.00	1.38	0.15	0.70	1.20	○	○
TX22L 130-2X45-085	1.30	21.30	4.00	1.38	0.15	0.85	1.20	○	○
TX22L 160-2X45-085	1.60	21.30	4.00	1.68	0.15	0.85	1.50	○	○
TX22L 160-2X45-100	1.60	21.30	4.00	1.68	0.15	1.00	1.50	○	○
TX22L 185-2X45-125	1.85	21.30	4.00	1.93	0.20	1.25	1.75	○	○
TX22L 215-2X45-150	2.15	21.30	4.00	2.23	0.20	1.50	2.00	○	○
TX22L 265-2X45-150	2.65	21.30	4.00	2.73	0.20	1.50	2.50	○	○
TX22L 265-2X45-175	2.65	21.30	4.00	2.73	0.20	1.75	2.50	○	○
TX22L 315-2X45-175	3.15	21.30	4.00	3.23	0.20	1.75	3.00	○	○

Minimill Grooving

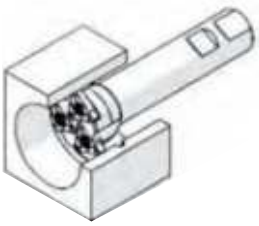
Milling inserts without profile, ground ready-for-use

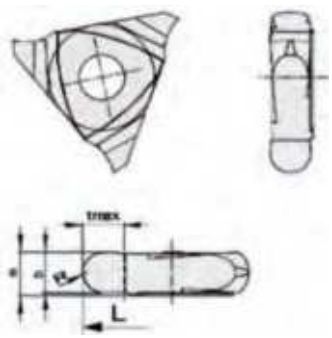




Designation	Dimension (mm)					Coated	
	b+0.02	L	S	R	tmax	TTIS30	TTIM45
TX11L 100-160	1.00	10.60	2.34	0.10	1.6	●	●
TX11L 150-160	1.50	10.60	2.34	0.10	1.6	●	●
TX11L 200-160	2.00	10.60	2.34	0.20	1.6	●	●
TX16L 100-180	1.00	15.90	3.50	0.10	1.8	●	●
TX16L 150-180	1.50	15.90	3.50	0.10	1.8	●	●
TX16L 200-180	2.00	15.90	3.50	0.20	1.8	●	●
TX16L 250-180	2.50	15.90	3.50	0.20	1.8	●	●
TX16L 300-180	3.00	15.90	3.50	0.20	1.8	●	●
TX22L 300-250	3.00	21.30	4.00	0.20	2.5	●	●
TX22L 400-250	4.00	21.30	4.00	0.20	2.5	●	●
TX22L 500-250	5.00	21.30	5.00	0.20	2.5	●	●

Full Radius Groove Milling inserts

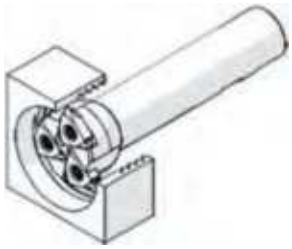


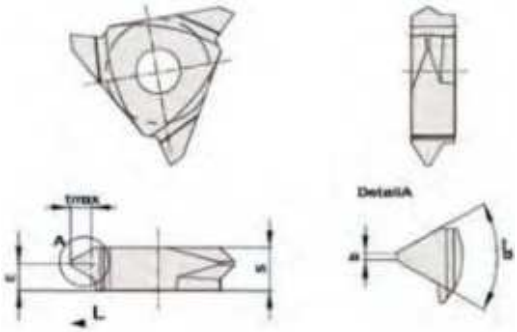


Designation	Dimension (mm)					Coated	
	b+0.02	L	S	R	tmax	TTIS30	TTIM45
TX11L 100-R050	1.00	10.60	2.34	0.50	1.6	○	○
TX11L 150-R075	1.50	10.60	2.34	0.75	1.6	○	○
TX11L 200-R100	2.00	10.60	2.34	1.00	1.6	○	○
TX16L 100-R050	1.00	15.90	3.50	0.50	1.8	○	○
TX16L 150-R075	1.50	15.90	3.50	0.75	1.8	○	○
TX16L 200-R0100	2.00	15.90	3.50	1.00	1.8	○	○
TX16L 250-R125	2.50	15.90	3.50	1.25	1.8	○	○
TX16L 300-R150	3.00	15.90	3.50	1.50	1.8	○	○
TX22L 300-R150	3.00	21.30	4.00	1.50	2.5	○	○
TX22L 400-R200	4.00	21.30	4.00	2.00	2.5	○	○
TX22L 500-R250	5.00	21.30	5.00	2.50	2.5	○	○

Minimill Grooving

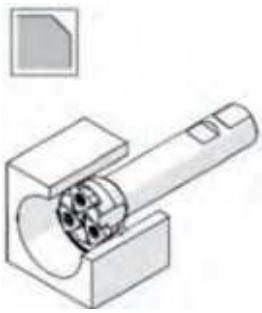
Thread Milling inserts - Partial profile

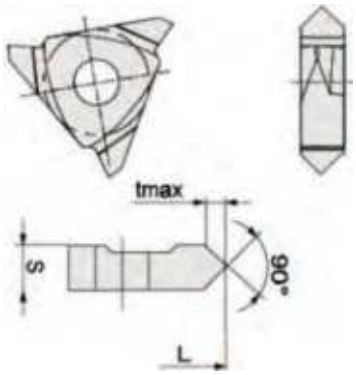




Designation	Pitch		Dimension (mm)						Coated	
	mm	TPI	S	L	E	b	tmax	α	TTIS30	TTIM45
TX11L 1.0-2.0-A60	1.0-2.0		2.34	10.60	1.4	0.12	1.23	60°	○	●
TX16L 1.0-2.5-A60	1.0-2.5		3.50	15.90	2.7	0.12	1.53	60°	○	●
TX22L 1.0-4.0-A60	1.0-4.0		4.00	21.30	2.3	0.12	2.31	60°	○	●
TX11L 24-13-A55		24-13	2.34	10.60	1.8	0.13	1.25	55°	○	●
TX16L 24-10-A55		24-10	3.50	15.90	2.8	0.13	1.63	55°	○	●
TX22L 24-6-A55		24-6	4.00	21.30	1.7	0.13	2.71	55°	○	●

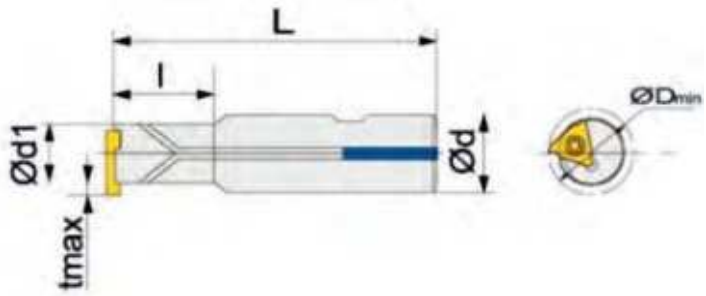
Milling inserts for chamfering and deburring





Designation	Dimension (mm)			Coated	
	S	L	tmax	TTIS30	TTIM45
TX11L T15-A90	3.0	10.60	1.5	○	○
TX16L T18-A90	5.0	17.50	1.8	○	○
TX22L T25-A90	6.5	23.00	2.5	○	○

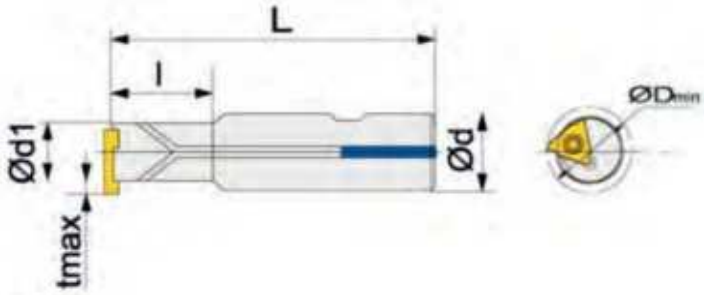
Circular milling cutter

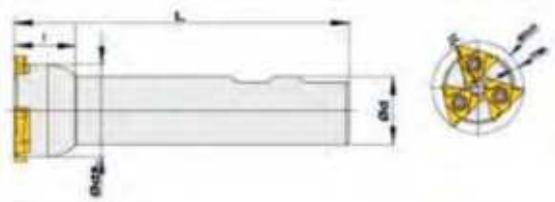


Designation	Dimension (mm)						Spare Parts	
	Dmin	tmax	l	d1	L	d	Screw	Wrench
MC H1225-TX11	11	1.6	25	7.4	65	12	LX0655SSTX2.5-3.6P	TPF-08
MC H1636-TX16	18	2.5	36	11.0	80	16	LX0960SSTX4.0-5.7P	TPF-15
MC H2050-TX22	23	3.5	50	16.0	100	20	LX1260SSTX5.0-7.0P	TPF-20
MC H2540-TX16	31	2.5	40	11.0	125	25	LX0960SSTX4.0-5.7P	TPF-15
MC H2550-TX22	31	3.5	50	16.0	125	25	LX1260SSTX5.0-7.0P	TPF-20

Minimill Grooving

Circular Milling cutter

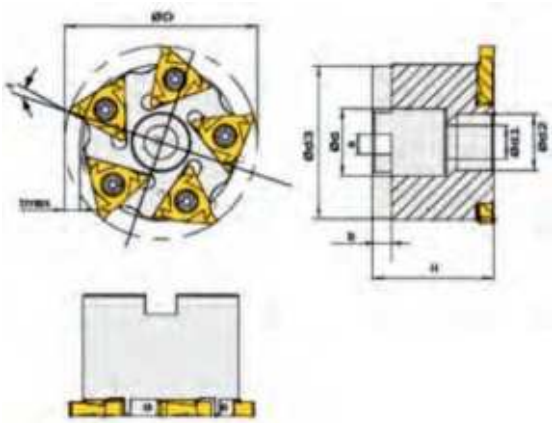




Designation	Stock		Dimension (mm)						No. of Inserts	Spare Parts	
	R	L	Dmin	d1	d	l	L	tmax		Screw	Wrench
MC H1225-TX11R/L-1T			11	7.4	12	25	65	1.6	1	LX0655SSTX2.5-3.6P	TPF-08
MC H1636-TX16R/L-1T			18	11.0	16	36	80	2.5	1	LX0960SSTX4.0-5.7P	TPF-15
MC H2050-TX22R/L-1T			23	16.0	20	50	100	3.0	1	LX1260SSTX5.0-7.0P	TPF-20
MC H2540-TX16R/L-1T			25	11.0	25	40	125	2.5	1	LX0960SSTX4.0-5.7P	TPF-15
MC H2023-TX16R/L-3T			32	26.0	20	23	125	3.0	3	LX0960SSTX4.0-5.7P	TPF-15
MC H2523-TX16R/L-3T			39	33.0	25	23	125	3.0	3	LX0960SSTX4.0-5.7P	TPF-15
MC H3223-TX22R/L-3T			44	34.0	32	23	125	5.0	3	LX1260SSTX5.0-7.0P	TPF-20
GF32R/L 0328300-W20-3T	○	○	32	25.0	20	23	125	3.0	3	LX0960SSTX4.0-5.7P	TPF-15
GB43R/L 044B480-W25-3T	○	○	44	34.0	25	23	125	4.8	3	LX1260SSTX5.0-7.0P	TPF-20

※ Note: For the insert of the GB43 & GF32 series, please refer to page 405 & 408

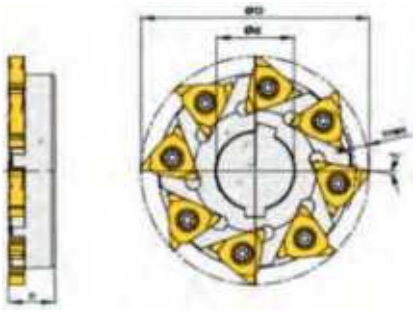
Circular Milling cutter



Designation	Stock		Dimension (mm)										No. of Inserts	Spare Parts	
	R	L	D	d	d1	d2	d3	a	b	H	λ	tmax		Screw	Wrench
MC 050R/L-TX22-22-04T			50	22.0	11.0	18.5	38	10.4	6.3	40	10°	5.0	4	LX1260SSTX5.0-7.0P	TPF-20
MC 063R/L-TX22-22-05T			63	22.0	11.0	18.5	50	10.4	6.3	40	10°	5.0	5	LX1260SSTX5.0-7.0P	TPF-20
MC 080R/L-TX22-27-06T			80	27.0	14.0	36.0	60	12.4	7.0	50	10°	5.0	6	LX1260SSTX5.0-7.0P	TPF-20
GB43 050B500R/L-22-04T	○	○	50	22.0	11.0	18.5	38	10.4	6.3	40	10°	5.0	4	LX1260SSTX5.0-7.0P	TPF-20
GB43 063B500R/L-22-05T	○	○	63	22.0	11.0	18.5	50	10.4	6.3	40	10°	5.0	5	LX1260SSTX5.0-7.0P	TPF-20
GB43 080B500R/L-27-06T	○	○	80	27.0	14.0	36.0	60	12.4	7.0	50	10°	5.0	6	LX1260SSTX5.0-7.0P	TPF-20

Minimill Grooving

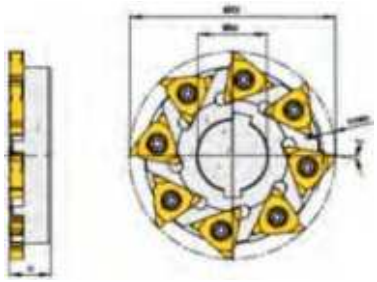
Circular Disc Milling Cutter



Designation	Stock		Dimension (mm)					No. of Inserts	Insert	Spare Parts	
	R	L	D	d	H	λ	tmax			Screw	Wrench
TX22R/L A22.063.B500.05T			63	22	14	10°	5.0	5	TX22-□□	LX1260SSTX5.0-7.0P	TPF-20
TX22R/L B27.080.B500.08T			80	27	16	10°	5.0	8		LX1260SSTX5.0-7.0P	TPF-20
TX22R/L B32.100.B500.10T			100	32	20	10°	5.0	10		LX1260SSTX5.0-7.0P	TPF-20
GB43R/L A22.063.B500.05T			63	22	14	10°	5.0	5	GBA43R/L	LX1260SSTX5.0-7.0P	TPF-20
GB43R/L B27.080.B500.08T			80	27	16	10°	5.0	8		LX1260SSTX5.0-7.0P	TPF-20
GB43R/L B32.100.B500.10T			100	32	20	10°	5.0	10		LX1260SSTX5.0-7.0P	TPF-20

※ Note: For the insert of the GB43 & GF32 series, please refer to page 405 & 408

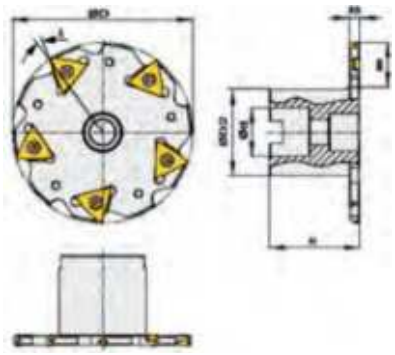
Circular Slot Milling Cutter



Designation	Stock	Dimension (mm)							No. of Inserts	Insert	Spare Parts	
		D	d	D2	H	ae	ap	λ			Screw	Wrench
TX22 J22.063.04.ap06		63	22	34	10	14.0	6	10°	2xR+2xL	TX22-□□	192 M5.0x5.1X	TPF-15
TX22 J27.080.08.ap06		80	27	41	10	19.0	6	10°	4xR+4xL		192 M5.0x5.1X	TPF-15
TX22 J27.080.08.ap08		80	27	41	12	19.0	8	10°			192 M5.0x7.5X	TPF-20
TX22 J27.080.08.ap10		80	27	41	12	19.0	10	10°			192 M5.0x9.1X	TPF-20
TX22 J32.100.10.ap06		100	32	47	10	26.0	6	10°	5xR+5xL		192 M5.0x5.1X	TPF-15
TX22 J32.100.10.ap08		100	32	47	12	26.0	8	10°			192 M5.0x7.5X	TPF-20
TX22 J32.100.10.ap10		100	32	47	12	26.0	10	10°			192 M5.0x9.1X	TPF-20
TX22 J40.125.12.ap06		125	40	55	10	34.5	6	10°	6xR+6xL		192 M5.0x5.1X	TPF-15
TX22 J40.125.12.ap08		125	40	55	12	34.5	8	10°			192 M5.0x7.5X	TPF-20
TX22 J40.125.12.ap10		125	40	55	14	34.5	10	10°			192 M5.0x9.1X	TPF-20
TX22 J40.125.12.ap12		125	40	55	14	34.5	12	10°			192 M5.0x10.7X	TPF-20
TX22 J40.160.16.ap06		160	40	55	10	50.0	6	10°	8xR+8xL		192 M5.0x5.1X	TPF-15
TX22 J40.160.16.ap08		160	40	55	12	50.0	8	10°			192 M5.0x7.5X	TPF-20
TX22 J40.160.16.ap10		160	40	55	14	50.0	10	10°			192 M5.0x9.1X	TPF-20
TX22 J40.160.16.ap12		160	40	55	14	50.0	12	10°			192 M5.0x10.7X	TPF-20
TX22 J50.200.20.ap06		200	50	69	10	65.0	6	10°	10xR+10xL		192 M5.0x5.1X	TPF-15
TX22 J50.200.20.ap08		200	50	69	12	65.0	8	10°			192 M5.0x7.5X	TPF-20
TX22 J50.200.20.ap10		200	50	69	14	65.0	10	10°			192 M5.0x9.1X	TPF-20
TX22 J50.200.20.ap12		200	50	69	14	65.0	12	10°			192 M5.0x10.7X	TPF-20
GB43 J22.063.04.ap06		63	22	34	10	14.0	6	10°	2xR+2xL	GBA43-□□	192 M5.0x5.1X	TPF-15
GB43 J27.080.08.ap06		80	27	41	10	19.0	6	10°	4xR+4xL		192 M5.0x5.1X	TPF-15
GB43 J27.080.08.ap08		80	27	41	12	19.0	8	10°			192 M5.0x7.5X	TPF-20
GB43 J27.080.08.ap10		80	27	41	12	19.0	10	10°			192 M5.0x9.1X	TPF-20
GB43 J32.100.10.ap06		100	32	47	10	26.0	6	10°	5xR+5xL		192 M5.0x5.1X	TPF-15
GB43 J32.100.10.ap08		100	32	47	12	26.0	8	10°			192 M5.0x7.5X	TPF-20
GB43 J32.100.10.ap10		100	32	47	12	26.0	10	10°			192 M5.0x9.1X	TPF-20
GB43 J40.125.12.ap06		125	40	55	10	34.5	6	10°	6xR+6xL		192 M5.0x5.1X	TPF-15
GB43 J40.125.12.ap08		125	40	55	12	34.5	8	10°			192 M5.0x7.5X	TPF-20
GB43 J40.125.12.ap10		125	40	55	14	34.5	10	10°			192 M5.0x9.1X	TPF-20
GB43 J40.125.12.ap12		125	40	55	14	34.5	12	10°			192 M5.0x10.7X	TPF-20
GB43 J40.160.16.ap06		160	40	55	10	50.0	6	10°	8xR+8xL		192 M5.0x5.1X	TPF-15
GB43 J40.160.16.ap08		160	40	55	12	50.0	8	10°			192 M5.0x7.5X	TPF-20
GB43 J40.160.16.ap10		160	40	55	14	50.0	10	10°			192 M5.0x9.1X	TPF-20
GB43 J40.160.16.ap12		160	40	55	14	50.0	12	10°			192 M5.0x10.7X	TPF-20
GB43 J50.200.20.ap06		200	50	69	10	65.0	6	10°	10xR+10xL		192 M5.0x5.1X	TPF-15
GB43 J50.200.20.ap08		200	50	69	12	65.0	8	10°			192 M5.0x7.5X	TPF-20
GB43 J50.200.20.ap10		200	50	69	14	65.0	10	10°			192 M5.0x9.1X	TPF-20
GB43 J50.200.20.ap12		200	50	69	14	65.0	12	10°			192 M5.0x10.7X	TPF-20

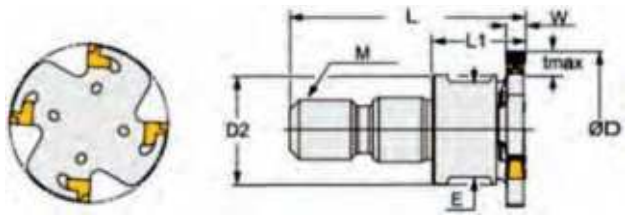
Minimill Grooving

Circular Slot Milling Cutter



Designation	Stock	Dimension (mm)							No. of Inserts	Insert	Spare Parts	
		D	d	D2	H	ae	ap	λ			Screw	Wrench
TX22 B27.100.10.ap06		100	27	48	10	25.0	6	10°	5xR+5xL	TX22-□□	192 M5.0x5.1X	TPF-15
TX22 B27.100.10.ap08		100	27	48	12	25.0	8	10°			192 M5.0x7.5X	TPF-20
TX22 B27.100.10.ap10		100	27	48	12	25.0	10	10°			192 M5.0x9.1X	TPF-20
TX22 B32.125.12.ap06		125	32	70	10	27.0	6	10°	6xR+6xL		192 M5.0x5.1X	TPF-15
TX22 B32.125.12.ap08		125	32	70	12	27.0	8	10°			192 M5.0x7.5X	TPF-20
TX22 B32.125.12.ap10		125	32	70	14	27.0	10	10°			192 M5.0x9.1X	TPF-20
TX22 B32.125.12.ap12		125	32	70	14	27.0	12	10°			192 M5.0x10.7X	TPF-20
GB43 B27.100.10.ap06		100	27	48	10	25.0	6	10°	5xR+5xL	GBA43-□□	192 M5.0x5.1X	TPF-15
GB43 B27.100.10.ap08		100	27	48	12	25.0	8	10°			192 M5.0x7.5X	TPF-20
GB43 B27.100.10.ap10		100	27	48	12	25.0	10	10°			192 M5.0x9.1X	TPF-20
GB43 B32.125.12.ap06		125	32	70	10	27.0	6	10°	6xR+6xL		192 M5.0x5.1X	TPF-15
GB43 B32.125.12.ap08		125	32	70	12	27.0	8	10°			192 M5.0x7.5X	TPF-20
GB43 B32.125.12.ap10		125	32	70	14	27.0	10	10°			192 M5.0x9.1X	TPF-20
GB43 B32.125.12.ap12		125	32	70	14	27.0	12	10°			192 M5.0x10.7X	TPF-20

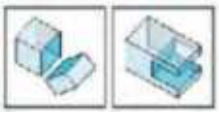
TAG series slitting cutters Modular

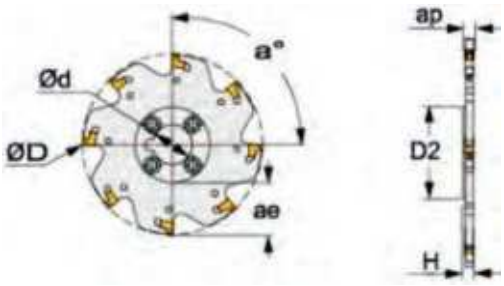


Designation	Stock	Dimension (mm)								No. of Inserts	Insert	Spare Parts	
		W	φD	D2	L1	L	tmax	E	M				
MG4018 TAG2T10.5-M10-4T	●	2.0	40	18	13	32	10.5	16	M10	4	TAG2	16	CT2
MG4018 TAG3T10.5-M10-4T	●	3.0	40	18	13	32	10.5	16	M10	4	TAG3	16	CT2
MG4018 TAG4T10.5-M10-4T		4.0	40	18	13	32	10.5	16	M10	4	TAG4	16	CT2
MG4018 TAG5T10.5-M10-4T		5.0	40	18	13	32	10.5	16	M10	4	TAG5	16	CT2
MG4018 TAG6T10.5-M10-4T		6.0	40	18	13	32	10.5	16	M10	4	TAG6	16	CT2
MG5021 TAG2T14.0-M12-5T	●	2.0	50	21	13	35	14.0	19	M12	5	TAG2	19	CT2
MG5021 TAG3T14.0-M12-5T	●	3.0	50	21	13	35	14.0	19	M12	5	TAG3	19	CT2
MG5021 TAG4T14.0-M12-5T		4.0	50	21	13	35	14.0	19	M12	5	TAG4	19	CT2
MG5021 TAG5T14.0-M12-5T		5.0	50	21	13	35	14.0	19	M12	5	TAG5	19	CT2
MG5021 TAG6T14.0-M12-5T		6.0	50	21	13	35	14.0	19	M12	5	TAG6	19	CT2
MG6328 TAG2T17.0-M16-7T	○	2.0	63	28	28	35	17.0	26	M16	6	TAG2	26	CT2
MG6328 TAG3T17.0-M16-7T	○	3.0	63	28	28	35	17.0	26	M16	6	TAG3	26	CT2
MG6328 TAG4T17.0-M16-7T		4.0	63	28	28	35	17.0	26	M16	6	TAG4	26	CT2
MG6328 TAG5T17.0-M16-6T		5.0	63	28	28	35	17.0	26	M16	6	TAG5	26	CT2
MG6328 TAG6T17.0-M16-6T		6.0	63	28	28	35	17.0	26	M16	6	TAG6	26	CT2

Minimill Grooving

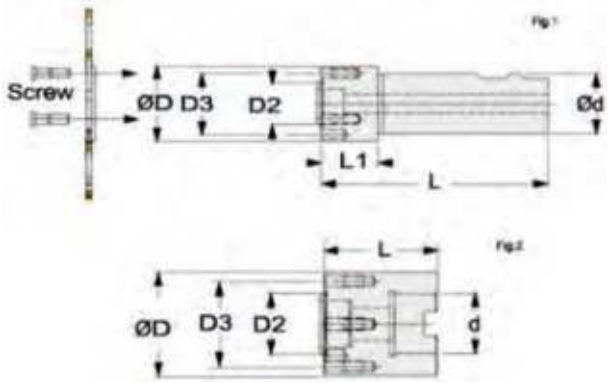
TAG series slitting cutters





Designation	Stock	Dimension (mm)							No. of Inserts	Insert	Spare Parts	
		D	d	D2	H	ae	apN~apX	α				
MGD40 J22.080.TAG2.08T		80	22	40	3.0	19.0	2.00~2.05	90°	8	TAG2	16	CT2
MGD40 J22.080.TAG3.08T		80	22	40	2.5	19.0	3.00~3.05	90°	8	TAG3	16	CT2
MGD40 J22.080.TAG4.08T		80	22	40	3.3	19.0	4.00~4.05	90°	8	TAG4	16	CT2
MGD40 J22.080.TAG5.08T		80	22	40	4.3	19.0	5.00~5.05	90°	8	TAG5	16	CT2
MGD40 J22.080.TAG6.08T		80	22	40	5.3	19.0	6.00~6.05	90°	8	TAG6	16	CT2
MGD40 J22.100.TAG2.10T		100	22	40	3.0	29.0	2.00~2.05	90°	10	TAG2	19	CT2
MGD40 J22.100.TAG3.10T		100	22	40	2.5	29.0	3.00~3.05	90°	10	TAG3	19	CT2
MGD40 J22.100.TAG4.10T		100	22	40	3.3	29.0	4.00~4.05	90°	10	TAG4	19	CT2
MGD40 J22.100.TAG5.10T		100	22	40	4.3	29.0	5.00~5.05	90°	10	TAG5	19	CT2
MGD40 J22.100.TAG6.10T		100	22	40	5.3	29.0	6.00~6.05	90°	10	TAG6	19	CT2
MGD40 J32.125.TAG2.12T		125	32	55	3.0	34.0	2.00~2.05	90°	12	TAG2	26	CT2
MGD40 J32.125.TAG3.12T		125	32	55	2.5	34.0	3.00~3.05	90°	12	TAG3	26	CT2
MGD40 J32.125.TAG4.12T		125	32	55	3.3	34.0	4.00~4.05	90°	12	TAG4	26	CT2
MGD40 J32.125.TAG5.12T		125	32	55	4.3	34.0	5.00~5.05	90°	12	TAG5	26	CT2
MGD40 J32.125.TAG6.12T		125	32	55	5.3	34.0	6.00~6.05	90°	12	TAG6	26	CT2

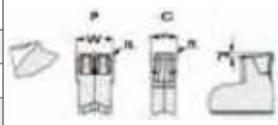
Adapter Holders



Designation	Stock	Dimension (mm)						Fig	Spare Parts		
		D	d	D2	D3	L1	L		Screw	Screw	Wrench
DH 25-32-110L		32	25	10	25.4	25	110	Fig.1	DR90-615	-	TPF-15
DH 32-40-120L		40	32	22	32.5	30	120	Fig.1	DR90-620	-	TPF-15
DH 32-40-200L		40	32	22	32.5	30	200	Fig.1	DR90-620	-	TPF-15
DC 32-55-60L		55	32	32	45.0	-	60	Fig.2	DR90-815	CR16x40-FF	TPF-20
DC 32-65-50L		65	32	32	52.0	-	50	Fig.2	DR90-815		TPF-20
DC 40-65-50L		65	40	40	52.0	-	50	Fig.2	DR90-820		TPF-20
DC 40-80-60L		80	40	40	63.0	-	60	Fig.2	DR90-820		TPF-20

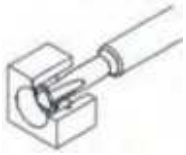
Minimill Grooving

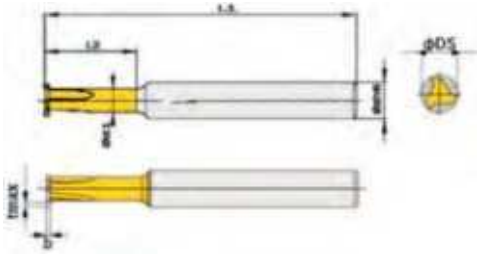
Inserts

Shape	Designation	Size		Coated			Uncoated	Configuration
		W	rε	TPM8020	TPM8125	TTIN3020	TPK01	
	TAGN 2-C	2.0	0.20	●	●	○		
	TAGN 3-C	3.0	0.20	●	●	○		
	TAGN 4-C	4.0	0.24	●	●	○		
	TAGN 5-C	5.0	0.25	●	●	○		
	TAGN 6-C	6.0	0.30	●	●	○		
	TAGN 2-P	2.0	0.20	○	○	○	○	
	TAGN 3-P	3.0	0.20	○	○	○	○	
	TAGN 4-P	4.0	0.20	○	○	○	○	
	TAGN 5-P	5.0	0.30	○	○	○	○	
	TAGN 6-P	6.0	0.30	○	○	○	○	

Micro Groove Milling by circular interpolation

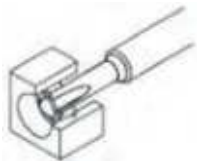
for groove milling general use

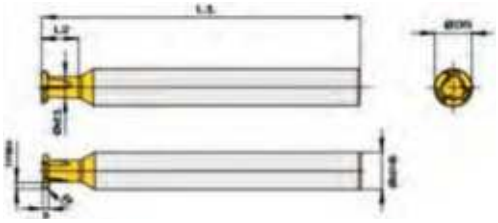




Designation	b±0.02	Ds	d1	d	tmax	L1	L2	Dmin	No of Teeth
MG 0404D04B050T05	0.50	4.00	2.80	4.00	0.5	50	4	4	4
MG 0404D04B100T05	1.00	4.00	2.80	4.00	0.5	50	4	4	4
MG 0505D08B150T10	1.50	5.00	2.80	5.00	1.0	50	8	5	4
MG 0606D04B100T10	1.00	6.00	3.70	6.00	1.0	50	4	6	4
MG 0606D06B100T10	1.00	6.00	3.70	6.00	1.0	63	6	6	4
MG 0606D06B150T10	1.50	6.00	3.70	6.00	1.0	63	6	6	4
MG 0808D08B150T15	1.50	8.00	4.60	8.00	1.5	63	8	8	4
MG 0808D08B200T15	2.00	8.00	4.60	8.00	1.5	63	8	8	4
MG 0808D16B150T15	1.50	8.00	4.60	8.00	1.5	63	16	8	4
MG 0808D16B200T15	2.00	8.00	4.60	8.00	1.5	63	16	8	4
MG 1010D20B100T20	1.00	10.00	5.50	10.00	2.0	77	20	10	4
MG 1010D20B150T20	1.50	10.00	5.50	10.00	2.0	77	20	10	4
MG 1010D20B200T20	2.00	10.00	5.50	10.00	2.0	77	20	10	4
MG 1010D20B250T20	2.50	10.00	5.50	10.00	2.0	77	20	10	4
MG 1010D20B300T20	3.00	10.00	5.50	10.00	2.0	77	20	10	4

for groove milling general use





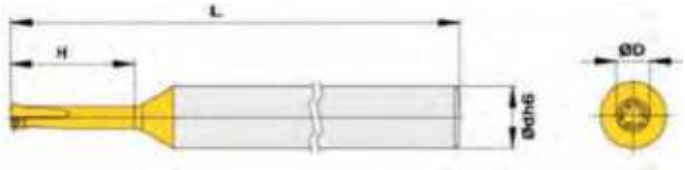
Designation	b±0.02	Ds	d1	d	tmax	L1	L2	Dmin	No of Teeth
MG 0404D04B050T05	0.50	4.00	2.80	4.00	0.5	50	4	4	4
MG 0606D04B100T10	1.00	6.00	3.70	6.00	1.0	50	4	4	4
MG 0606D06B100T10	1.00	6.00	3.70	6.00	1.0	63	6	5	4
MG 0606D06B150T10	1.50	6.00	3.70	6.00	1.0	63	6	6	4
MG 0808D08B150T15	1.50	8.00	4.60	8.00	1.5	63	8	8	4
MG 0808D08B200T15	2.00	8.00	4.60	8.00	1.5	63	8	8	4
MG 0808D16B150T15	1.50	8.00	4.60	8.00	1.5	63	16	8	4
MG 0808D16B200T15	2.00	8.00	4.60	8.00	1.5	63	16	8	4
MG 1010D20B100T20	1.00	10.00	5.50	10.00	2.0	77	20	10	4
MG 1010D20B150T20	1.50	10.00	5.50	10.00	2.0	77	20	10	4
MG 1010D20B200T20	2.00	10.00	5.50	10.00	2.0	77	20	10	4
MG 1010D20B250T20	2.50	10.00	5.50	10.00	2.0	77	20	10	4
MG 1010D20B300T20	3.00	10.00	5.50	10.00	2.0	77	20	10	4

Mini Mill-Thread for Dental Implants

Trapez DIN 103 (TR)

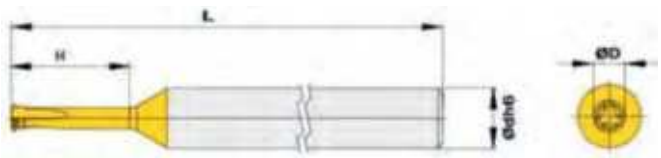
Designation (Internal)	Pitch (mm)	Thread Size	d	D	H	L	No. of flutes
DSMT 06060C15 1.5TR	1.5	Tr8x1.5 Tr9x1.5	6	6.0	15.0	50	3
DSMT 08065C21 2.0TR	2.0	Tr10x2.0 Tr11x2.0	8	6.5	21.0	55	3
DSMT 10086D25 2.0TR	2.0	Tr12x2.0 Tr14x2.0	10	8.6	25.0	65	4
DSMT 08070C25 3.0TR	3.0	Tr11x3.0 Tr12x3.0	8	7.0	25.0	65	3
DSMT 10095D30 3.0TR	3.0	Tr14x3.0 Tr22x3.0	10	9.5	30.0	65	4
DSMT 12110D35 4.0TR	4.0	Tr16x4.0 Tr18x4.0 Tr20x4.0	12	11.0	35.0	75	4
DSMT 14135D48 5.0TR	5.0	Tr22x5.0 Tr24x5.0 Tr26x5.0	14	13.5	48.0	105	4

American ACME

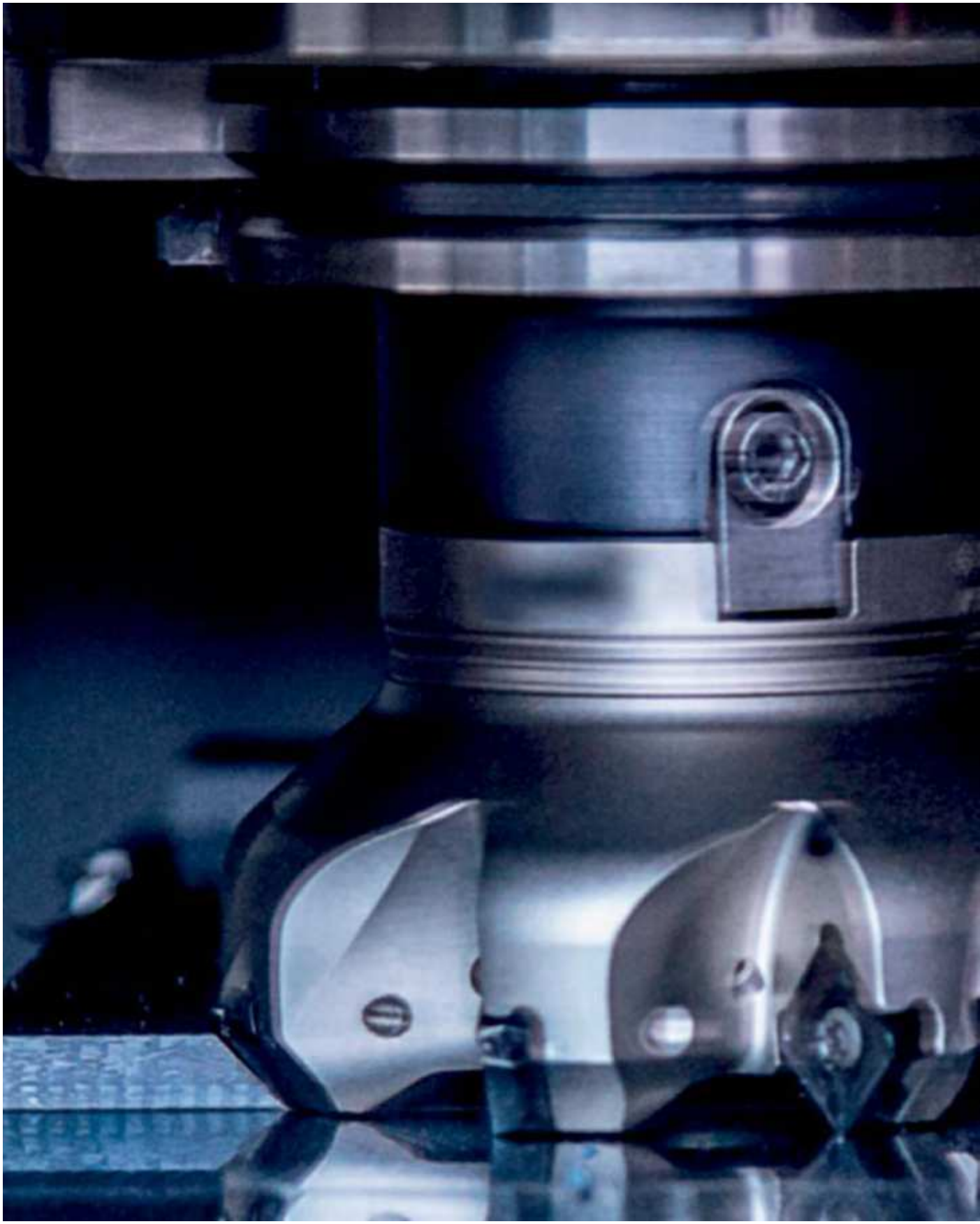


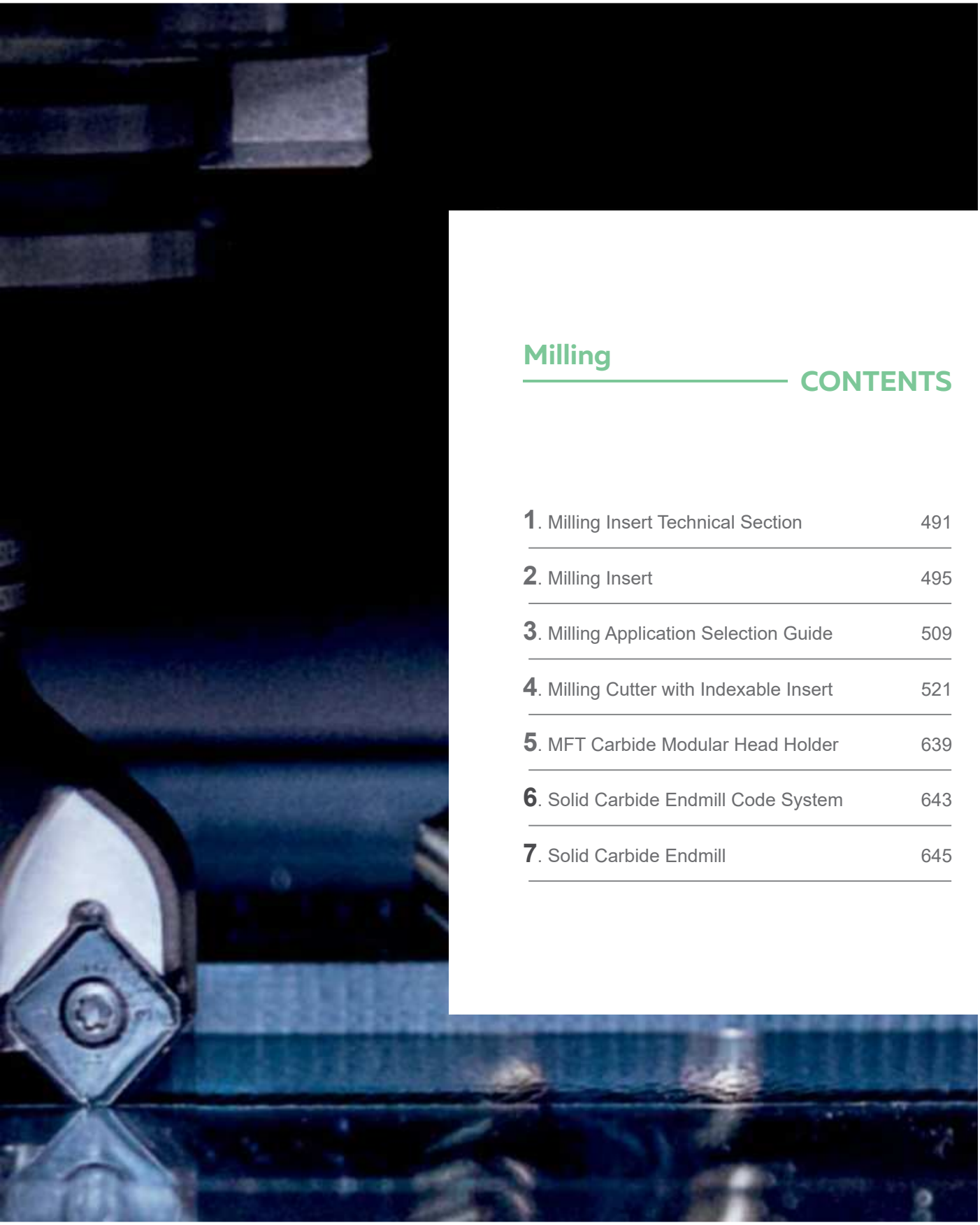
Designation (Internal)	Pitch (mm)	Thread Size	d	D	H	L	No. of flutes
DSMT 06043C09 16ACME	16	1/4"-16	6	4.3	9.0	60	3
DSMT 06043C13 16ACME	16	1/4"-16	6	4.3	13.0	60	3
DSMT 06052C13 14ACME	14	5/16"-14	6	5.2	13.0	60	3
DSMT 06052C19 14ACME	14	5/16"-14	6	5.2	19.0	65	3
DSMT 06060C15 12ACME	12	3/8"-12 7/16"12	6	6.0	15.5	60	3
DSMT 06060C23 12ACME	12	3/8"-12 7/16"12	6	6.0	23.0	60	3
DSMT 10083D19 10ACME	10	1/2"-10	10	8.3	19.0	75	4
DSMT 10083D30 10ACME	10	1/2"-10	10	8.3	30.5	75	4
DSMT 12104D20 8ACME	8	5/8"-8	12	10.4	20.5	90	4
DSMT 12104D33 8ACME	8	5/8"-8	12	10.4	33.0	90	4
DSMT 12120D20 6ACME	6	3/4"-6 7/8"-6	12	12.0	20.5	90	4
DSMT 12120D33 6ACME	6	3/4"-6 7/8"-6	12	12.0	33.0	90	4
DSMT 16159E32 5ACME	5	1"-5 1 1/8"-5 1 1/4"-5	16	15.9	32.0	100	5
DSMT 16159E45 5ACME	5	1"-5 1 1/8"-5 1 1/4"-5	16	15.9	45.0	100	5

Stub ACME



Designation (Internal)	Pitch (mm)	Thread Size	Dimensions (mm)				No. of flutes
			d	D	H	L	
DSMT 06043C09 16STACME	16	1/4"-16	6	4.3	9.0	60	3
DSMT 06043C13 16STACME	16	1/4"-16	6	4.3	13.0	60	3
DSMT 06052C13 14STACME	14	5/16"-14	6	5.2	13.0	60	3
DSMT 06052C19 14STACME	14	5/16"-14	6	5.2	19.0	65	3
DSMT 06060C15 12STACME	12	3/8"-12 7/16"12	6	6.0	15.5	60	3
DSMT 06060C23 12STACME	12	3/8"-12 7/16"12	6	6.0	23.0	60	3
DSMT 10083D19 10STACME	10	1/2"-10	10	8.3	19.0	75	4
DSMT 10083D30 10STACME	10	1/2"-10	10	8.3	30.5	75	4
DSMT 12104D20 8STACME	8	5/8"-8	12	10.4	20.5	90	4
DSMT 12104D33 8STACME	8	5/8"-8	12	10.4	33.0	90	4
DSMT 12120D20 6STACME	6	3/4"-6 7/8"-6	12	12.0	20.5	90	4
DSMT 12120D33 6STACME	6	3/4"-6 7/8"-6	12	12.0	33.0	90	4
DSMT 16159E32 5STACME	5	1"-5 1 1/8"-5 1 1/4"-5	16	15.9	32.0	100	5
DSMT 16159E45 5STACME	5	1"-5 1 1/8"-5 1 1/4"-5	16	15.9	45.0	100	5





Milling

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7. Solid Carbide Endmill 645

Milling Insert Technical Section

Selection System of CVD coated grades

Workpiece	Machining Type	Recom-mended grade	Recomme-nded cutting speed (m/min)	Application range										
				01	05	10	15	20	25	30	35	40	45	50
P	Medium to roughing	TCP9330	120-290					TCP9330						
	Medium to roughing	TCP9340	130-330							TCP9340				
	Interrupted roughing	TCP9350	100-270									TCP9350		
M	Medium to roughing	TCP9330	80-200					TCP9330						
	Medium to roughing	TCP9340	90-220						TCP9340					
	Interrupted roughing	TCP9350	80-100							TCP9350				
K	Medium to roughing	TCP9330	110-270				TCP9330							
	Medium to roughing	TCP9340	80-250						TCP9340					
	Finishing to semi-finishing	TCK5305	200-480		TCK5305									
	semi-finishing	TCK5315	130-310			TCK5315								
	light to heavy interrupted cuts.	TCK5325	140-230					TCK5325						
		TCK5335	110-160							TCK5335				

The features of CVD coated grades

Recomme-nded grade	ISO	Features
TCP9330	P20-P30 M20-M30 K15-K25	Medium hard CVD-coated grade (medium to thick coating) designed for medium to rough milling of low alloy steel & unalloy steel, applications in average cutting conditions for wet and dry machining. The first choice for roughing to semi-finish face milling.
TCP9340	P30-P40 M25-M35 K25-K30	Tough CVD-coated grade (medium thick coating) suited for tough and demanding medium to rough milling of steel, cast iron and hardened steel, applications for wet and dry machining. The first choice for rough shoulder milling and groove milling.
TCP9350	P35-P50 M30-M40	Toughest substrate with hard coating provides stable cutting and tool life for severeinterrupted and rough milling of steel and stainless steel.
TCK5315	K10-K25	Thigh wear-resistant substrates perfect combine with MT-TiCN, thick Al203 coating, ideal for ductile cast iron & grey cast iron at high cutting speed.
TCK5325	K20-K35	CVD-coated grade with high edge line security, wear-resistant & good toughness substrates perfect combine with MT-TiCN, thick Al203 coating, suitable for light to heavy interrupted cuts, the first choice grades for roughing & high metal removal rate of ductile cast iron & grey cast iron.
TCK5335	K30-K40	Hard CVD-coated grade with thick coating can withstand high temperatures without plastic deformation, are used for finishing to light rough milling of all cast iron in stable and wet conditions. Ideal for large diameter cutters.

Selection System of PVD coated grades

Workpiece	Machining Type	Recom-mended grade	Recomme-nded cutting speed (m/min)	Application range 01	05	10	15	20	25	30	35	40	45	50
P	Continuous finishing	TPM8115	150-280	TPM8115										
	light interrupted cuts.	TPM8125	180-360				TPM8115							
	Finishing to semi-finsihing	TPM8225	180-290			TPM8125								
	Roughing to semi-finishing	TPG4235	105-185					TPG4235						
	Interrupted roughing	TPM8135	100-150					TPM8135						
	Interrupted roughing	TPK4235H	75-135								TPK4235H			
M	Continuous finishing	TPM8115	150-250			TPM8115								
	light interrupted cuts.	TPM8125	110-270				TPM8125							
	Finishing to semi-finsihing	TPM8225	120-240					TPM8225						
	Roughing to semi-finsihing	TPG4235	100-230					TPG4235						
	Interrupted roughing	TPM8135	80-100									TPM8135		
K	Continuous finishing	TPM8115	140-230		TPM8115									
	light interrupted cuts.	TPM8125	110-180				TPM8125							
	Interrupted roughing	TPM8135	85-160							TPM8135				
	Interrupted roughing	TPG4235H	85-160							TPG4235H				
S	Continuous finishing	TPM8115	40-70		TPM8115									
	light interrupted cuts.	TPM8125	20-60				TPM8125							
	Finishing to semi-finsihing	TPM8225	30-60				TPM8225							
	Roughing to semi-finsihing	TPG4235	30-60					TPG4235						
	Interrupted roughing	TPM8135	30-50						TPM8135					
H	Finishing to semi-finsihing	HX200	35-65			HX200								
	Medium roughing	HX400	35-50		HX400									

The features of PVD coated grades

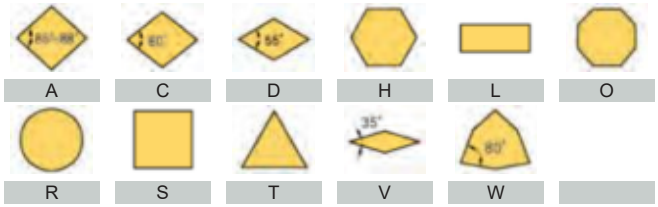
Recomme-nded grade	ISO		Features
TPM8115	P01-P15 K05-K15	M10-M20 505-S15	2-4 m TiALN PVD coating combined with ultra fine grain substrates with high-toughness suitable for a variety of steel, stainless steel, cast iron & HRS at high speed and continue machining. Strong cutting edge and excellent chipping resistance guarantees stable machining, longer tool life
TPM8125	P15-P35 K15-K35	M15-M35 S15-530	1. 2-4um TiALN PVD coating combined with ultra fine grain substrate with high toughness suitable for finishing to semi-finishing. 2. Basic material grade for milling steel parts and easy to cut/medium difficulty to process stainless steel. 3. High theraml shock resistance is suitable for light interrupted cut.
TPM8225	P10-P30 S15-525	M20-M40	1. 2-4pm AlCrN+ AlCrSiN PVD coating combined with ultra fine grain substrates with high-toughness suitable for martenstic stainless steel and austenitic stainless steel under difficult working conditions and high temperature. 2. Used as the preferred material grade for machining high temperature alloys under unstable working conditions. 3. It is recommended to process tempered steel and nickel-based material.
TPM8135	P20-P40	M25-M40	PVD coating combined with high-resistant substrates, suitable for stainless steel & low carbon steel in roughing to semi-finishing.
TPG4235	P20-P40 S20-540	M20-M40	1. Superior universal grade for steel, cast iron, hard-to-cut materials and stainless steel with stable machinability .2. New coating and ultra fine grain provide wear resistance and oxidation resistance. 3. TIALN+ TiN series new coatig.
TPK4235H	P35-P45	K25-K35	TiALN thick coating, optimized material grade for high wear resistance of milled steel and cast iron. It is also a general choice for low speed and unstable cutting conditions
HX200	H10-H20 M15-M35 S10-S20	P25-P35 K15-K25	The latest TiALN coating combined with the ultra-fine grained cemented carbide matrix provide good wear resistance and oxidation resistance. It is suitable for hardened steel below HRC58, cast iron and stainless steel at high speed milling.
HX400	H05-H15		1. Roughing grade for high hardened steel and pressed die steel. 2. Excellent wear resistance ideal for machining die steel and high hardened steel over HRC50

Milling Insert Technical Section

S	P	K	R	12
1	2	3	4	5

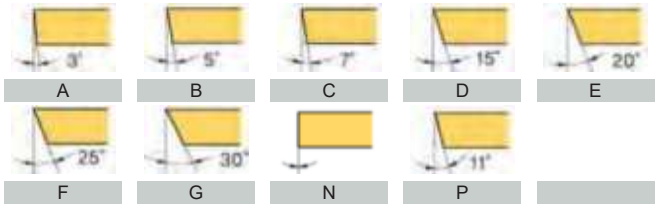
1 Insert shape

S P K N 12 03 ED S R - MX



2 Relief angle

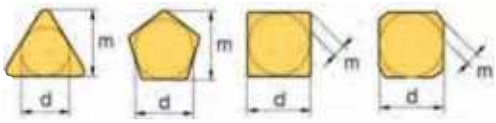
S P K N 12 03 ED S R - MX



3 Tolerance

S P K N 12 03 ED S R - MX

d: Inscribed circle
t: Thickness
m: Refer to figure



Glass	d	m	t
A	±0.025	±0.005	±0.025
C	±0.025	±0.013	±0.025
H	±0.013	±0.013	±0.025
E	±0.025	±0.025	±0.025
G	±0.025	±0.025	±0.13
J	±0.05~±0.15	±0.005	±0.025
K	±0.05~±0.15	±0.013	±0.025
L	±0.05~±0.15	±0.025	±0.025
M	±0.05~±0.15		±0.13
U			±0.13

Tolerance on C, E, H, O, P, R, S, T, W, Insert Shape (exceptional case)

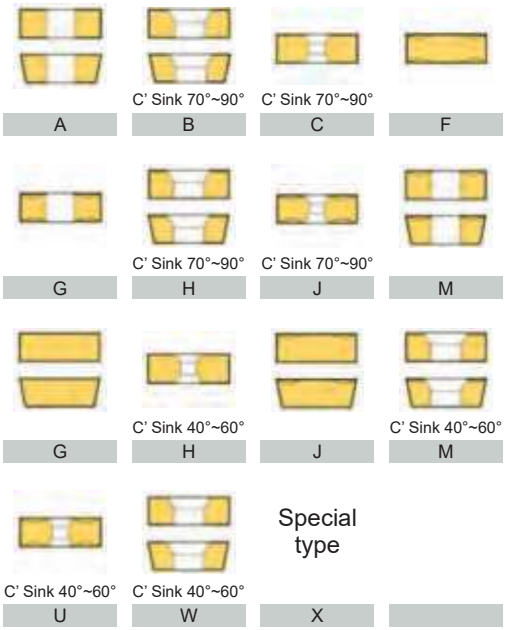
d	Tolerance on d		Tolerance on m	
	J,K,L,M,N	U N	M	M
6.35	±0.05			±0.13
9.525	±0.05			±0.13
12.7		±0.13	±0.13	±0.20
	±0.10		±0.15	±0.27
19.05	±0.10		±0.15	±0.27
25.4	±0.13	±0.25		

Tolerance on D Insert Shape (exceptional case)

d	Tolerance on d	Tolerance on m
6.35	±0.05	±0.11
9.525	±0.05	±0.11
12.7		±0.15
	±0.10	
19.05	±0.10	

4 Cross section type

S P K N 12 03 ED S R - MX

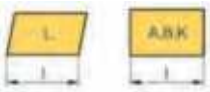


5 Cutting-edge length, diameter of inscribedcircle

S P K N 12 03 ED S R - MX

Metric system

Inch system



rhombic insert indicate cutting-edge length instead of inscribed circle.

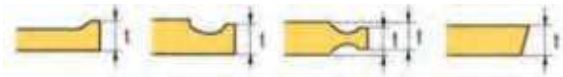
Cross over chart for "Metric" and "Inch" system

	06	09	11	16	22	27	33	44
	03	05	06	09	12	15	19	25
	04	06	07	11	15	19	23	31
	03	05	06	09	12	16	19	25
Inscribed circle								
Inch system	5	7						

03	ED	S	R	-	MX
6	7	8	9		10

6 Height of cutting-edge

S P K N 12 **03** ED S R - MX

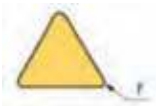


Symbol		Heigh of cutting-edge (t)	
Metric	Inch	mm	Inch
01	1 (2)	1.59	1/16
T0	1.125	1.79	
T1	1.2		5/64
02	1.5 (3)		3/32
T2	1.75		7/64
03	2		
T3	2.5	3.97	5/32
04	3	4.76	3/16
05	3.5	5.56	7/32
06	4	6.365	1/4
07	5	7.94	5/16
09	6	9.52	
11	7	11.11	7/16
12		12.70	1/2

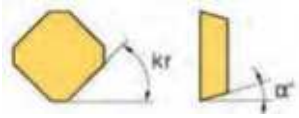
( ) Symbol for small size insert

7 Nose radius (Nose R)

S P K N 12 03 **ED** S R - MX



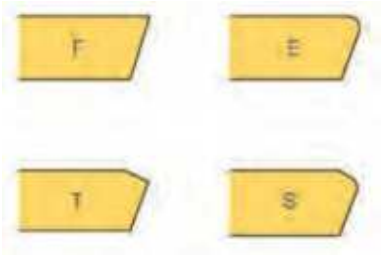
r		Symbol		r		Symbol	
mm	Inch	mm	Inch	mm	Inch	mm	Inch
00	0	0.0		12	3	1.2	3/64
02		0.2		15		1.5	
04	1	0.4	1/64	16	4	1.6	4/64
05		0.5		24	6	2.4	6/64
	2		2/64	32		3.2	
10		1.0		40		4.0	



Parallel land	Relief angle	
kr	a*	
A - 45°	A - 3°	F - 25°
D - 60°	B - 5°	G - 30°
E - 75°	C - 7°	N - 0°
	D - 15°	P - 11°
P - 90°	E - 20°	
Z - Special		

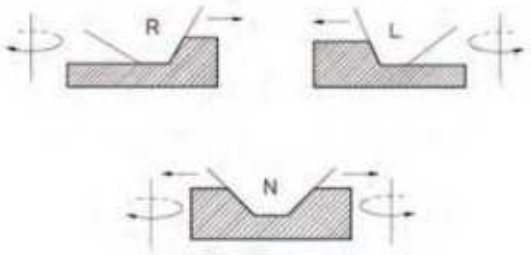
8 Edge preparation

S P K N 12 03 ED **S** R - MX



9 Hand

S P K N 12 03 ED S **R** - MX



10 Chip breaker for milling

S P K N 12 03 ED S R - **MX**

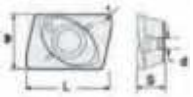
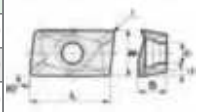
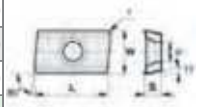
See catalogue for details

Milling Insert

Workpiece		TPM4036	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01
Steel	P	●	⦿	✱						●	⦿		✱	⦿	✱	
Stainless steel	M	⦿	✱							●	⦿	⦿	✱	⦿	✱	
Cast iron	K	⦿			●	●	⦿	⦿		●	⦿		✱	⦿	✱	✱
Non-ferrous metal	N															⦿
Heat resistant alloy, Titanium alloy	S									●	⦿	⦿	✱			
Hardened steel	H											⦿	✱	⦿	✱	

Machining Type

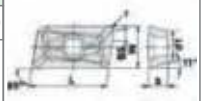
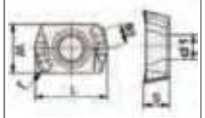
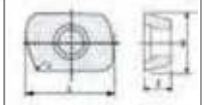
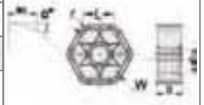
● Continuous cutting
⦿ General cutting
✱ Interrupted cutting

Inserts	Designation	TPM4036	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01	L	W	S	BS	r	d1	Geometries
ADMT	070204R										●	●				●	4.300	7.000	2.45	-	0.4	2.00	
	070208R										●	●				●	4.300	7.000	2.45	-	0.8	2.00	
ANGX-GM	090408PNR-GM									●							8.520	6.500	5.20	5.00	0.8	3.21	
	120508PNR-GM									●	●	●					13.670	10.000	9.15	3.50	0.8	4.70	
	170608PNR-GM	●												●	●		16.700	11.200	10.4	4.70	0.8	5.20	
APKT	113502PDFR-G2															●	11.300	6.200	3.60	1.20	0.2	2.80	
	113504PDFR-G2															●	11.300	6.200	3.60	1.20	0.4	2.80	
	113508PDFR-G2															●	11.300	6.200	3.60	1.20	0.8	2.80	
	1604PDFR-G2															●	17.000	9.260	4.76	1.40	0.8	4.40	
APKT-AL	11T304FR-AL															●	12.240	6.500	3.60	-	0.4	2.80	
	11T308FR-AL															●	12.240	6.500	3.60	-	0.8	2.80	
	160402FR-AL															●	16.880	9.800	4.76	-	0.2	4.40	
	160404FR-AL															●	16.880	9.800	4.76	-	0.4	4.40	
	160408FR-AL															●	16.880	9.800	4.76	-	0.8	4.40	
	160416FR-AL															●	16.880	9.800	4.76	-	1.6	4.40	
APKT	1003PDR		●	●	●	●				●	●	●	●				10.900	6.700	3.50	1.20	0.5	2.85	
	1003PDSR																9.800	6.650	3.50	1.00	0.5	2.80	
	1003PDFR-MA															●							
APKT-GM	11T304-GM		●	○	○	○				○	●	●	○				12.240	6.500	3.60	-	0.4	2.80	
	11T308-GM			●	○	○	●			○	●	●	○				12.240	6.500	3.60	-	0.8	2.80	
	160408-GM		○	●		●	●			●	●	●	●				17.877	9.330	5.76	-	0.8	4.40	
APMT-H2	1135PDER-H2			●		●	○	●	○		●	●					11.000	6.350	3.50	1.20	0.8	2.80	
	1604 PDER-H2			●		●	○	●	○		●	●					16.500	9.525	4.76	1.70	0.8	4.40	
	160416PDER-H2																16.310	9.330	4.76	-	1.6	4.40	
	160420PDER-H2																16.310	9.330	4.76	-	2.0	4.40	
	160430PDER-H2																16.310	9.330	4.76	-	3.0	4.40	

Workpiece		TPM4036	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01
Steel	P	●	⚙	✱						●	⚙		✱	⚙	✱	
Stainless steel	M	⚙	✱							●	⚙	⚙	✱	⚙	✱	
Cast iron	K	⚙			●	●	⚙	⚙	●	⚙			✱	⚙	✱	✱
Non-ferrous metal	N															⚙
Heat resistant alloy, Titanium alloy	S									●	⚙	⚙	✱			
Hardened steel	H											⚙	✱	⚙	✱	

Machining Type

● Continuous cutting
⚙ General cutting
✱ Interrupted cutting

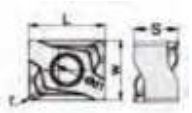
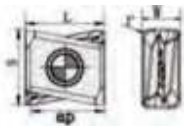
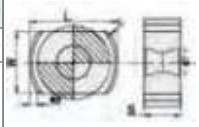
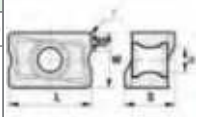
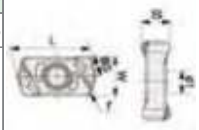
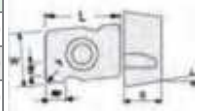
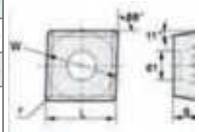
Inserts	Designation	CVD Coated								PVD Coated							Dimensions(mm)						Geometries
		TPM4036	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01	L	W	S	BS	r	d1	
APMT-M2	1135PDER-M2			●		●	○	●	○		●	●					11.000	6.350	3.50	1.20	0.8	2.80	
	1604 PDER-M2			●		●	○	●	○		●	●					16.500	9.525	4.76	1.70	0.8	4.40	
APMT-XM	1135PDER-XM			●		●	○	●	○		●	●					11.150	6.200	3.50	1.20	0.8	2.80	
	1604PDER-XM			●		●	○	●	○		●	●					17.300	9.350	4.76	1.70	0.8	4.40	
CNHX-GR	100508-GR	●												●			10.300	10.060	5.40	-	0.8	4.70	
	120508-GR	●												●			12.700	11.000	5.60	-	0.8	4.70	
	160608-GR	●												●			16.000	12.000	6.40	-	0.8	5.90	
ENGU-GM	11T310R-GM										●	●				●	11.900	6.200	3.96	-	1.0	3.45	
EPGT-GM	060210R-GM										●	●					6.260	4.190	2.19	1.70	1.0	2.10	
EPNW	0603TN-8										●	●					10.000	6.350	3.18	-	8.0	-	
HNGX	0604ANSN-GM													●	●		10.500	-	4.76	0.09	-	3.70	
	0906ANSN-GM			●		●	●	●	●		●	●		●	●		16.500	-	6.35	0.12	-	4.90	
	0906ANSN-GR			●		●	●	●	●		●	●					16.500	-	6.35	0.20	-	4.90	

Milling Insert

Workpiece		TPM4036	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01
Steel	P	●	⦿	✱						●	⦿		✱	⦿	✱	
Stainless steel	M	⦿	✱							●	⦿	⦿	✱	⦿	✱	
Cast iron	K	⦿			●	●	⦿	⦿		●	⦿		✱	⦿	✱	✱
Non-ferrous metal	N															⦿
Heat resistant alloy, Titanium alloy	S									●	⦿	⦿	✱			
Hardened steel	H											⦿	✱	⦿	✱	

Machining Type

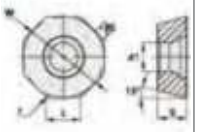
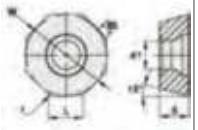
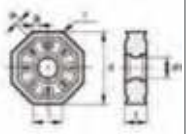
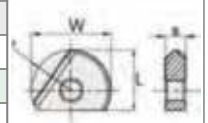
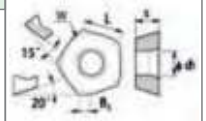
● Continuous cutting
⦿ General cutting
✱ Interrupted cutting

Inserts	Designation	CVD Coated								PVD Coated							Dimensions(mm)						Geometries
		TPM4036	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01	L	W	S	BS	r	d1	
LNGU-GM	120508R-GM	●												●	●		12.000	9.500	5.96	-	0.8	4.50	
	160708R-GM	●		○										●	●		16.600	13.200	7.50	-	0.8	5.70	
LNKT-GM	13068ER-GM														●								
LNKT-GH	080404ER-GH																8.59	4.24	7.43	-	0.4	3.40	
	080408ER-GH																8.59	4.24	7.43	-	0.8	3.40	
	130608ER-GH																13.81	6.65	13.05	-	0.8	4.50	
	130612 ERGH																13.81	6.65	13.05	-	1.2	4.50	
	160708ER-GH																17.05	7.00	15.83	-	0.8	5.80	
	160712ER-GH																17.05	7.00	15.83	-	1.2	5.80	
LNMX-GM	060310ER-GM										●	●					9.000	6.390	3.73	-	1.0	3.00	
	090415ER-GM										●	●					11.900	9.180	4.80	-	1.5	4.00	
LNMU-GM	110408SRE-GM	●		●		●					●	●		●			12.000	6.600	4.83	0.90	0.8	3.50	
	15T608SRE-GM	●									●	●		●			16.900	10.000	6.96	1.80	0.8	4.50	
LNMU	0303ZER-TW										●	●					11.500	6.000	4.30	3.2	1.2	2.75	
	0303ZER-TL										●	●					11.500	6.000	4.30	3.2	1.2	2.75	
MPHW	060304EL										●	●					10.090	6.350	3.18	-	0.4	2.80	
	060308EL											●					10.060	6.350	3.18	-	0.8	2.80	
	060320EL										○	○					9.960	6.350	3.18	-	2.0	2.80	
	060304EL-0.5																10.090	6.350	3.18	0.50	0.4	2.80	
	060308EL-1.5																10.060	6.350	3.18	1.50	0.8	2.80	
MPHT-GM	060304-GM		●	○	●	○			○		●	●					6.350	6.350	3.18	-	0.4	2.80	
	080305-GM		●	●	●	○			○		●	●					8.300	8.300	3.18	-	0.5	3.40	
	120408-GM		●	○	●	●			○		●	●					12.700	12.700	4.76	-	0.8	5.56	

Workpiece																
Steel	P	●	⬍	✖					●	⬍		✖	⬍	✖	
Stainless steel	M	⬍	✖						●	⬍	⬍	✖	⬍	✖	
Cast iron	K	⬍			●	●	⬍	⬍	●	⬍		✖	⬍	✖	✖
Non-ferrous metal	N														⬍
Heat resistant alloy, Titanium alloy	S								●	⬍	⬍	✖			
Hardened steel	H										⬍	✖	⬍	✖	

Machining Type

● Continuous cutting
⬍ General cutting
✖ Interrupted cutting

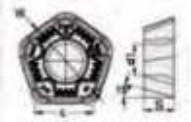
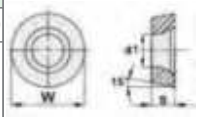
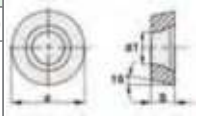
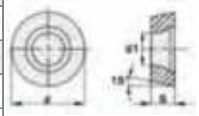
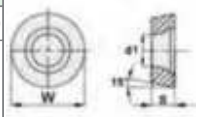
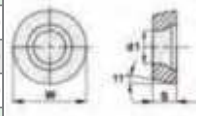
Inserts	Designation	CVD Coated								PVD Coated							Dimensions(mm)						Geometries
		TPM81155	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01	L	W	S	BS	r	d1	
ODHT	050408TN-GM										●	●					5.260	12.700	4.76	1.20	0.8	4.30	
ONHT	060508-GH										●	●					6.580	15.875	5.56	-	0.8	5.60	
ONHU	050408-GM										●	●					5.260	12.700	4.86	-	0.8	4.30	
	060408-GM										●						6.580	15.875	4.76	-	0.8	4.40	
	08T508-GM			●				●			●	●					8.390	20.200	5.77	-	0.8	5.30	
P3200	D08	●									●						9.500	8.000	2.00	-	4.0	-	
	D10	●									●						11.500	10.000	2.50	-	5.0	-	
	D12	●									●						12.000	12.000	2.50	-	6.0	-	
	D16	●									●						14.000	16.000	3.00	-	8.0	-	
	D20	●									●						16.000	20.000	3.00	-	10.0	-	
	D25	○									○						21.500	25.000	4.00	-	12.5	-	
	D30	○									○						25.000	30.000	5.00	-	15.0	-	
	D32	○									○						26.000	32.000	5.00	-	16.0	-	
PDGW	090530SR													●	●		9.000	13.500	5.47	-	3.0	5.50	
PDKX	0905ZEER-GM													●	●		9.000	13.500	5.47	2.00	-	5.50	

Milling Insert

Workpiece		TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01
Steel	P	●	⬌	✱					●	⬌		✱	⬌	✱	
Stainless steel	M	⬌	✱						●	⬌	⬌	✱	⬌	✱	
Cast iron	K	⬌			●	●	⬌	⬌	●	⬌		✱	⬌	✱	✱
Non-ferrous metal	N														⬌
Heat resistant alloy, Titanium alloy	S								●	⬌	⬌	✱			
Hardened steel	H										⬌	✱	⬌	✱	

Machining Type

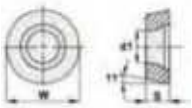
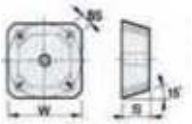
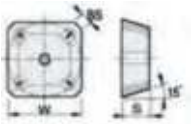
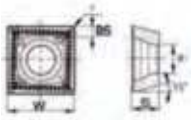
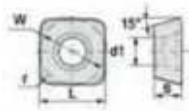
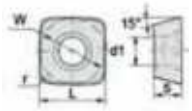
● Continuous cutting
⬌ General cutting
✱ Interrupted cutting

Inserts	Designation	CVD Coated							PVD Coated							Dimensions(mm)						Geometries
		TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01	L	W	S	BS	r	d1	
PDKT-GM	090530ER-GM												●	●		9.000	13.500	5.47	-	3.0	5.50	
	120530ER-GM													●	●							
PNMU-GM	0905XNER-GM									●	●					14.600	12.200	5.56	2.00	-	4.70	
RDHX	1003MOT									●	●					-	10.000	3.18	-	-	3.90	
	12T3MOT									●	●					-	12.000	3.97	-	-	3.90	
RDMW	0501MOEN									●						-	5.000	1.59	-	-	2.00	
	0702 MOEN									●						-	7.000	2.38	-	-	2.80	
RDMT	08T2MOTN		●		○		○		○	●	●					-	8.000	2.78	-	-	2.80	
	10T3MOTN		●		○		○		○	●	●					-	10.000	3.97	-	-	3.90	
	1204MOTN		●		○		○		○	●	●					-	12.000	4.76	-	-	4.50	
	1604MOTN		●		○		○		○	●	●					-	16.000	4.76	-	-	5.00	
RDMX	1003MOTN									●	●					-	10.000	3.18	-	-	3.90	
	12T3MOTN									●	●					-	12.000	3.97	-	-	3.90	
RPMW	08T2MO		○		○		○			●	●					-	8.000	2.78	-	-	2.90	
	10T3MO		○		○		○			●	●					-	10.000	3.97	-	-	4.00	
	1204MO		○		○		○			●	●					-	12.000	4.76	-	-	5.00	
	1606MO		○		○		○			●	●					-	16.000	6.35	-	-	5.50	
	2006MO															-	20.000	6.35	-	-	5.50	

Workpiece															
Steel	P	●	⬍	✠					●	⬍		✠	⬍	✠	
Stainless steel	M	⬍	✠						●	⬍	⬍	✠	⬍	✠	
Cast iron	K	⬍			●	●	⬍	⬍	●	⬍		✠	⬍	✠	✠
Non-ferrous metal	N														⬍
Heat resistant alloy, Titanium alloy	S								●	⬍	⬍	✠			
Hardened steel	H										⬍	✠	⬍	✠	

Machining Type

● Continuous cutting
⬍ General cutting
✠ Interrupted cutting

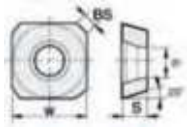
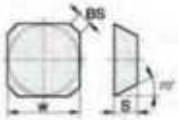
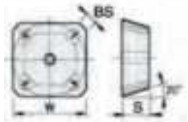
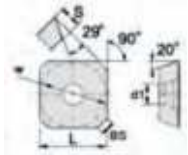
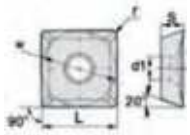
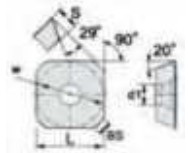
Inserts	Designation	CVD Coated							PVD Coated							Dimensions(mm)						Geometries
		TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01	L	W	S	BS	r	d1	
RPMT-JS	08T2MOE-JS		●			○		○		●	●					-	8.000	2.78	-	-	2.90	
	10T3MOE-JS		●			○		○		●	●					-	10.000	3.97	-	-	4.00	
	1204MOE-JS		●			○		○		●	●					-	12.000	4.76	-	-	5.00	
	1606MOE-JS		●			○		○		●	●					-	16.000	6.35	-	-	5.50	
SDNK-D3	1203AESN-D3									●	●					-	12.700	3.18	2.08	-	-	
	1504AESN-D3									●	●					-	15.875	4.76	2.10	-	-	
SDKN-G2	1203AESN-G2									●	●					-	12.700	3.18	2.08	-	-	
	1504AESN-G2									●	●					-	15.875	4.76	2.10	-	-	
SDMT-GM	120408-GM		○							●	●					12.700	12.700	4.76	-	0.8	4.40	
SDMT-SM	09T312-SM									●	●					9.525	9.525	3.97	-	1.2	4.00	
	120412-SM									●	●					12.700	12.700	4.76	-	1.2	4.40	
SDMT	120512-GM									●	●					12.700	12.700	5.65	-	1.2	4.30	
	150512-GM									●	●					15.950	15.950	5.65	-	1.2	5.50	
	150512-GM									●												
SDMX	09T307SN									●						9.000	9.000	3.50	-	0.7	3.50	
	09T307SW									●	●					9.000	9.000	3.50	-	0.7	3.50	

Milling Insert

Workpiece		TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01
Steel	P	●	⬍	✖					●	⬍		✖	⬍	✖	
Stainless steel	M	⬍	✖						●	⬍	⬍	✖	⬍	✖	
Cast iron	K	⬍			●	●	⬍	⬍	●	⬍		✖	⬍	✖	✖
Non-ferrous metal	N														⬍
Heat resistant alloy, Titanium alloy	S								●	⬍	⬍	✖			
Hardened steel	H										⬍	✖	⬍	✖	

Machining Type

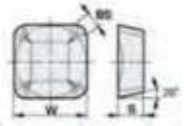
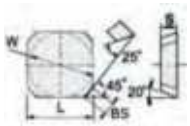
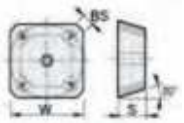
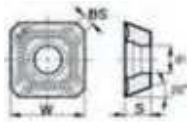
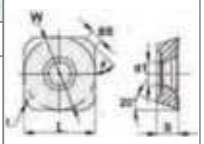
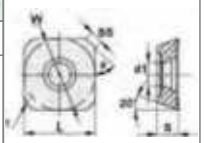
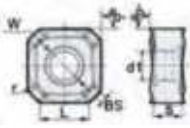
● Continuous cutting
⬍ General cutting
✖ Interrupted cutting

Inserts	Designation	CVD Coated							PVD Coated							Dimensions(mm)						Geometries
		TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01	L	W	S	BS	r	d1	
SECA	1204AFTN									●						-	12.700	4.76	2.66	-	5.56	
	1504AFTN															-	15.875	4.76	2.80	-	5.50	
SEEN	1203AFTN		●		●					●	●					-	12.700	3.18	2.36	-	-	
	1504AFTN		●		●					●	●					-	15.875	4.76	2.40	-	-	
	1203AGTN		●		●					●	●					-	12.700	3.18	2.11	-	-	
	1504AGTN		●		●					●	●					-	15.875	4.76	2.64	-	-	
SEEN-D	1203AFTN-D		●		●					●	●											
	1504AFTN-D		●		●					●	●											
	1203AGTN-D	●	●		●					●	●											
	1504AGTN-D		●		●					●	●											
	1504EEER-D																					
SEET-FM	12T3-FM	●	●		●	○				●	●	○				13.400	13.400	3.97	2.55	-	4.10	
SEET-PM	09T308PER-PM															9.525	9.525	4.01	-	0.8	3.30	
	120308PER-PM		●							●	●					13.308	13.308	4.04	-	0.8	4.10	
SEET-SM	12T3-SM	●	●		●	○				●	●	○				13.400	13.400	3.97	2.55	-	4.10	
SEET-SR										●						13.400	13.400	3.97	2.55	-	4.10	
SEET-AL															●	13.400	17.400	3.97	2.55	-	4.10	

Workpiece		TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01
Steel	P	●	⬍	✱					●	⬍		✱	⬍	✱	
Stainless steel	M	⬍	✱						●	⬍	⬍	✱	⬍	✱	
Cast iron	K	⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱	✱
Non-ferrous metal	N														⬍
Heat resistant alloy, Titanium alloy	S								●	⬍	⬍	✱			
Hardened steel	H										⬍	✱	⬍	✱	

Machining Type

● Continuous cutting
⬍ General cutting
✱ Interrupted cutting

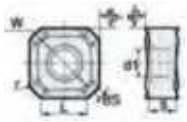
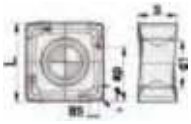
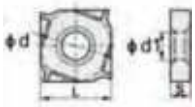
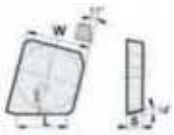
Inserts	Designation	CVD Coated							PVD Coated							Dimensions(mm)						Geometries
		TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01	L	W	S	BS	r	d1	
SEER	1203AFSN	○	●		●	○				●	●					-	12.700	3.18	1.40	1.0	-	
	1504AFSN	○	●		●	○				●	●					-	15.875	4.76	1.40	1.0	-	
SEKN	1203AFTN	●	●			●				●	●	○				12.700	12.700	3.18	1.80	-	-	
	1504AFTN	●	●			●				●	●	○				15.875	15.875	4.76	1.60	-	-	
SEKN-D	1203AFTN-D	●	●			●				●	●	○				12.700	12.700	3.18	1.80	-	-	
	1504AFTN-D	●	●			●				●	●	○				15.875	15.875	4.76	1.60	-	-	
SEKT	1204AFTN	○	○	●	●					●	●	●				12.700	12.700	4.76	2.60	-	5.50	
SEHT-X45	1204AFSN-X45									●						12.700	12.700	4.76	2.60	-	5.50	
SEHT	1204AFFN-AL														●	12.700	12.700	4.76	2.60	-	5.50	
SNMX-GM	1205ANN-GM	●	○	○	●	●	●	●		●	●	○				12.700	12.700	5.54	1.50	-	5.80	
	120512-GM	○	○	○	●	●	○	○		●	○	○				12.700	12.700	5.54	-	1.2	5.80	
	1506ANR-GM									●	●					15.000	15.000	5.60	1.30	0.9	5.50	

Milling Insert

Workpiece		TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01
Steel	P	●	⧗	✱					●	⧗		✱	⧗	✱	
Stainless steel	M	⧗	✱						●	⧗	⧗	✱	⧗	✱	
Cast iron	K	⧗			●	●	⧗	⧗	●	⧗		✱	⧗	✱	✱
Non-ferrous metal	N														⧗
Heat resistant alloy, Titanium alloy	S								●	⧗	⧗	✱			
Hardened steel	H										⧗	✱	⧗	✱	

Machining Type

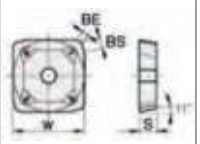
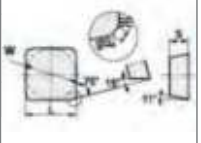
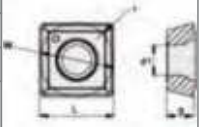
● Continuous cutting
⧗ General cutting
✱ Interrupted cutting

Inserts	Designation	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01	L	W	S	BS	r	d1	Geometries
SNMX-GR	1506ANR-GR									●						15.000	15.000	5.60	1.30	0.9	5.50	
	1907ANR-GR				●					●						19.000	19.000	7.00	1.67	1.2	7.20	
SNMX-GM	1206ENTN-GM		●	●		○	○	○	○	●	●					13.500	13.500	7.00	2.20	0.4	5.30	
SNMX-GM	120612-GM			●						●	●					13.500	13.500	6.80	-	1.2	5.30	
	120616-GM															13.500	13.500	6.80	-	1.6	5.30	
SNEQ	1202														●	12.700	12.700	2.30	-	-	5.20	
	1203														●	12.700	12.700	3.00	-	-	5.20	
	12T3														●	12.700	12.700	3.50	-	-	5.00	
	1204														●	12.700	12.700	4.00	-	-	5.00	
	12T4														●	12.700	12.700	4.50	-	-	5.00	
SPEX	1203 EDR-1				●										●	10.200	12.700	3.18	-	-	-	
	1203EDL-1				●										●	10.200	12.700	3.18	-	-	-	
	1504EDR-1				●										●	10.200	15.875	4.76	-	-	-	
	1504EDL-1				●										●	10.200	15.875	4.76	-	-	-	

Workpiece		TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01
Steel	P	●	⊂	✱					●	⊂		✱	⊂	✱	
Stainless steel	M	⊂	✱						●	⊂	⊂	✱	⊂	✱	
Cast iron	K	⊂			●	●	⊂	⊂	●	⊂		✱	⊂	✱	✱
Non-ferrous metal	N														⊂
Heat resistant alloy, Titanium alloy	S								●	⊂	⊂	✱			
Hardened steel	H										⊂	✱	⊂	✱	

Machining Type

● Continuous cutting
⊂ General cutting
✱ Interrupted cutting

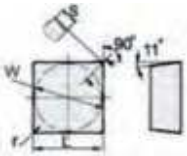
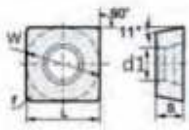
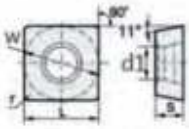
Inserts	Designation	CVD Coated							PVD Coated							Dimensions(mm)						Geometries
		TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01	L	W	S	BS	r	d1	
SPKN	1203EDR	○	●		●		●		●	●	●				●	12.700	12.700	3.18	1.40	-	-	
	1203EDL	○	●		●		○		○	●	●				●	12.700	12.700	3.18	1.40	-	-	
	1504EDR	○	●		●		●		●	●	●				●	15.875	15.875	4.76	1.40	-	-	
	1504EDL	○	●		●		○		○	●	●				●	15.875	15.875	4.76	1.40	-	-	
	1203EDSR	○	●		●		○		○	●	●				●	12.700	12.700	3.18	1.40	-	-	
	1203EDSL															12.700	12.700	3.18	1.40	-	-	
	1504EDSR	○	●		●		○		○	●	●				●	15.875	15.875	4.76	1.40	-	-	
	1504EDSL															15.875	15.875	4.76	1.40	-	-	
	1203EDTR	○	●		●		○		○	●	●				●	12.700	12.700	3.18	1.40	-	-	
	1203EDTL															12.700	12.700	3.18	1.40	-	-	
	1504EDTR	○	●		●		○		○	●	●				●	15.875	15.875	4.76	1.40	-	-	
	1504EDTL															15.875	15.875	4.76	1.40	-	-	
SPEN-D	1203EDR-D	○	●		●		●		●	●	●				●	12.700	12.700	3.18	1.40	-	-	
	1203EDL-D	○	●		●		○		○	●	●				●	12.700	12.700	3.18	1.40	-	-	
	1504EDR-D	○	●		●		●		●	●	●				●	15.875	15.875	4.76	1.40	-	-	
	1504EDL-D	○	●		●		○		○	●	●				●	15.875	15.875	4.76	1.40	-	-	
	1203EDSR-D	○	●		●		○		○	●	●				●	12.700	12.700	3.18	1.40	-	-	
	1203EDSL-D															12.700	12.700	3.18	1.40	-	-	
	1504EDSR-D	○	●		●		○		○	●	●				●	15.875	15.875	4.76	1.40	-	-	
	1504EDSL-D															15.875	15.875	4.76	1.40	-	-	
	1203EDTR-D	○	●		●		○		○	●	●				●	12.700	12.700	3.18	1.40	-	-	
	1203EDTL-D															12.700	12.700	3.18	1.40	-	-	
	1504EDTR-D	○	●		●		○		○	●	●				●	15.875	15.875	4.76	1.40	-	-	
	1504EDTL-D															15.875	15.875	4.76	1.40	-	-	
SPKR	1203EDR															12.700	12.700	3.18	1.40	-	-	
	1203EDL															12.700	12.700	3.18	1.40	-	-	
	1504EDR															15.875	15.875	4.76	1.40	-	-	
	1504EDL															15.875	15.875	4.76	1.40	-	-	
SPMG	060204-Z		●							●	●					6.000	6.000	2.38	-	0.4	2.61	
	090408-Z		●							●	●					9.800	9.800	4.30	-	0.8	4.05	
	110408-Z									●	●					11.500	11.500	4.80	-	0.8	4.45	

Milling Insert

Workpiece		TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01
Steel	P	●	⧗	✱					●	⧗		✱	⧗	✱	
Stainless steel	M	⧗	✱						●	⧗	⧗	✱	⧗	✱	
Cast iron	K	⧗			●	●	⧗	⧗	●	⧗		✱	⧗	✱	✱
Non-ferrous metal	N														⧗
Heat resistant alloy, Titanium alloy	S								●	⧗	⧗	✱			
Hardened steel	H										⧗	✱	⧗	✱	

Machining Type

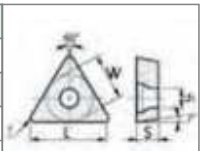
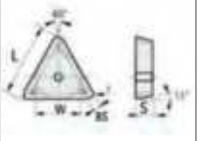
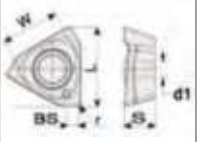
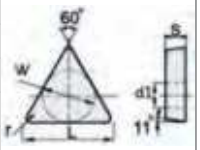
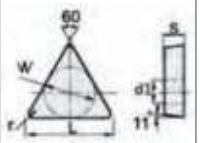
● Continuous cutting
⧗ General cutting
✱ Interrupted cutting

Inserts	Designation	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01	L	W	S	BS	r	d1	Geometries
		CVD Coated							PVD Coated							Dimensions(mm)						
SPMR	090304															9.525	9.525	3.18	-	0.4	-	
	090308															9.525	9.525	3.18	-	0.8	-	
	120304		●		●					●	●					12.700	12.700	3.18	-	0.4	-	
	120308		●		●		●			●	●					12.700	12.700	3.18	-	0.8	-	
	120312		●		●					●	●					12.700	12.700	3.18	-	1.2	-	
SPMT	120408				●	○				●	●	●				12.700	12.700	4.76	-	0.8	5.50	
	120412				●	○					●					12.700	12.700	4.76	-	1.2	5.50	
	120416				●	○										12.700	12.700	4.76	-	1.6	5.50	
	120420				●	○										12.700	12.700	4.76	-	2.0	5.50	
	120430				●	○										12.700	12.700	4.76	-	3.0	5.50	
SPMT-HM	120408-HM									●	●					12.700	12.700	4.76	-	0.8	5.50	

Workpiece		TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01
Steel	P	●	⊂	✱					●	⊂		✱	⊂	✱	
Stainless steel	M	⊂	✱						●	⊂	⊂	✱	⊂	✱	
Cast iron	K	⊂			●	●	⊂	⊂	●	⊂		✱	⊂	✱	✱
Non-ferrous metal	N														⊂
Heat resistant alloy, Titanium alloy	S								●	⊂	⊂	✱			
Hardened steel	H										⊂	✱	⊂	✱	

Machining Type

● Continuous cutting
⊂ General cutting
✱ Interrupted cutting

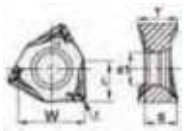
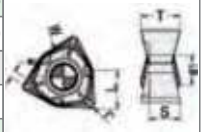
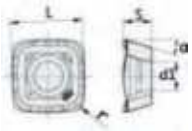
Inserts	Designation	CVD Coated							PVD Coated							Dimensions(mm)						Geometries
		TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01	L	W	S	BS	r	d1	
TCEX-AR	090204-AR									●	●					9.600	5.560	2.50	-	0.4	2.60	
	13T304-AR															13.400	7.900	3.97	-	0.4	4.05	
	16T304-AR									●	●					16.500	9.525	3.97	-	0.4	4.45	
	16T308-AR									●	●					16.500	9.525	3.97	-	0.8	4.45	
TPKN	1603PDTR		●		●											16.500	9.525	3.18	1.00	-	-	
	1603PDSKR	●	●		●											16.500	9.525	3.18	1.00	-	-	
	2204PDTR	●	●	●	●						●					22.000	15.875	4.76	0.70	-	-	
	2204PDSKR		●	●	●											22.000	15.875	4.76	0.70	-	-	
TPKN-D	1603PDTR-D				●					●	●					16.500	9.525	3.18	1.00	-	-	
	1603PDSKR-D				●					●	●					16.500	9.525	3.18	1.00	-	-	
	2204PDTR-D				●					●	●					22.000	15.875	4.76	0.70	-	-	
	2204PDSKR-D				●					●	●					22.000	15.875	4.76	0.70	-	-	
TPKT-GM	100404R-GM									●	●					9.830	6.900	4.00	1.30	0.4	3.20	
	110408R-GM									●	●					9.830	6.900	4.00	1.30	0.8	3.20	
	150508R-GM									●	●					14.850	10.700	5.00	1.60	0.8	4.50	
TPMR	090204															9.630	5.560	2.38	-	0.4	-	
	110304															11.000	6.350	3.18	-	0.4	-	
	110308															11.000	6.350	3.18	-	0.8	-	
	160304	●					●			●	●					16.500	9.525	3.18	-	0.4	-	
	160308	●	○				●			●	●					16.500	9.525	3.18	-	0.8	-	
	160312															16.500	9.525	3.18	-	1.2	-	
	220412															22.000	12.700	4.76	-	1.2	-	
TPUN	090204															9.630	5.560	2.38	-	0.4	-	
	110304															11.000	6.350	3.18	-	0.4	-	
	110308															11.000	6.350	3.18	-	0.8	-	
	160304		●							●	●					16.500	9.525	3.18	-	0.4	-	
	160308		●		●					●	●					16.500	9.525	3.18	-	0.8	-	
	160312															16.500	9.525	3.18	-	1.2	-	
	220412		●		●					●	●					22.000	12.700	4.76	-	1.2	-	

Milling Insert

Workpiece																
Steel	P	●	⬍	✱					●	⬍		✱	⬍	✱	
Stainless steel	M	⬍	✱						●	⬍	⬍	✱	⬍	✱	
Cast iron	K	⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱	✱
Non-ferrous metal	N														⬍
Heat resistant alloy, Titanium alloy	S								●	⬍	⬍	✱			
Hardened steel	H										⬍	✱	⬍	✱	

Machining Type

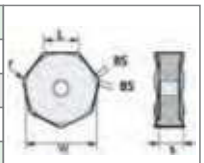
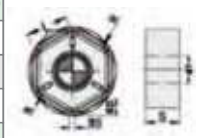
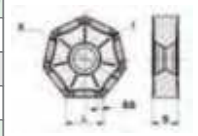
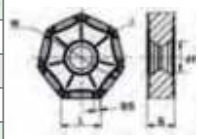
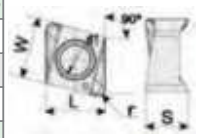
● Continuous cutting
⬍ General cutting
✱ Interrupted cutting

Inserts	Designation	CVD Coated								PVD Coated							Dimensions(mm)						Geometries
			TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01	L	W	S	BS	r	d1	
WNGX	040304R-GM																4.000	6.700	3.30	0.80	0.4	3.25	
	040308R-GM																4.000	6.700	3.30	0.40	0.8	3.25	
	080608R-GM	●	○	●		●	●	●	●		●	●					7.500	12.500	6.45	1.40	0.8	4.60	
	080612R-GM	●	○	●		●	●	●	●		●	●					7.500	12.480	6.45	1.00	1.2	4.60	
	080608R-GH		○	●		●	●	●	●		●	●					7.500	12.480	6.45	1.30	0.8	4.60	
	080612R-GH		○	●		●	●	●	●		●	●					7.500	12.480	6.45	0.90	1.2	4.60	
WNMU-GM	040304EN-GM										●						4.200	6.700	3.06	0.40	0.4	3.25	
	080608EN-GM		●	●		●	●	○	○		●	●					8.700	14.020	6.65	1.30	0.8	6.20	
XCET	170402ER										●						17.120	9.525	4.00	-	0.2	5.00	
	310404ER										●						30.150	12.700	4.50	-	0.4	5.50	
XDHW	060210SN										●	●					6.500	6.500	2.38	-	1.0	2.95	
	10T310SN										●	●					10.000	10.000	3.97	-	1.0	3.95	
XOMT-GM	100420R-GM										●	●					10.300	10.300	4.58	-	2.0	4.60	
	140520R-GM										●	●					14.140	14.140	5.56	-	2.0	5.80	
XOMT-LD	140520R-LD										●	●					14.760	14.760	5.56	1.60	2.0	5.80	

Workpiece																
Steel	P	●	⬍	✖					●	⬍		✖	⬍	✖		
Stainless steel	M	⬍	✖						●	⬍	⬍	✖	⬍	✖		
Cast iron	K	⬍			●	●	⬍	⬍	●	⬍		✖	⬍	✖	✖	
Non-ferrous metal	N														⬍	
Heat resistant alloy, Titanium alloy	S								●	⬍	⬍	✖				
Hardened steel	H										⬍	✖	⬍	✖		

Machining Type

● Continuous cutting
⬍ General cutting
✖ Interrupted cutting

Inserts	Designation	CVD Coated							PVD Coated							Dimensions(mm)						Geometries
		TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01	L	W	S	BS	r	d1	
XNHF-GM	070508-GM				●					●	●					7.000	14.500	5.00	-	0.8	-	
	090612-GM				●		●									9.000	19.050	5.68	-	1.2	-	
XNHU-ML	0605ANR-MLW															6.000	13.700	6.20	1.00	1.0	4.90	
XNMU-GM	0705ANN-GM				●					●	●					7.000	14.500	5.40	1.10	0.8	4.00	
XNMU-MM	0906ANTN-MM		●		●	●				●	●					9.000	18.500	6.35	1.00	1.0	6.00	
YNKT-GM	060308R-GM		●							●	●					6.600	6.600	4.67	-	0.8	3.25	

Toolfinger - Application Selection Guide

Cutters for face milling

Type	HRM	FM01	FM01.11	FM02	MFA
Page	488	494	494	496	500
A.A...Angle	90°	90°	90°	75°	90°
Max.cutting depth (mm)	9.0	15.5	39.0	6.0	14.0
Diameter range (mm)	ф40-ф250	ф40-ф250	ф50-ф100	ф80-ф100	ф40-ф200
Available Insert	LN.U...	AP.T..	AP.T11T3...	AP.T..	LN.T..
Application					
Facing	●	●	●	●	●
Shouldering	●	●	●		●
Slotting	●	●	●		●
Plunge milling					
Helical milling	●	●	●		
Ramping	●	●	●		
Pocketing					
Chamfering					
Copying		●	●		●

Cutters for face milling

Type	MFA13N	ASPV06R	TFXND	ELN11R	ELS
Page	501	505	516	527	530
A.A...Angle	90°	90°	90°	90°	-
Max.cutting depth (mm)	70.0	3.0	7.5	1.0	2.0
Diameter range (mm)	ф50-ф100	ф40-ф63	ф50-ф250	ф40-ф63	ф50-ф160
Available Insert	LN.U...	MPHW0603...	WN.X0806...	EN.U11T310..	XOMT..

Application	Facing		●	●	●	●
	Shouldering	●	●	●	●	●
	Slotting		●	●	●	●
	Plunge milling					
	Helical milling			●		
	Ramping			●		
	Pocketing					
	Chamfering		●		●	
	Copying		●	●		

Toolfinger - Application Selection Guide

Cutters for face milling

Type	EMR/EMRW	TRS	TRD	KM12	TWSX45
Page	541	546	549	556	558
A.A...Angle	-	-	-	45°	45°
Max.cutting depth (mm)	6.0	8.0	6.0	6.0	9.0
Diameter range (mm)	ф50-ф200	ф50-ф200	ф50-ф160	ф50-ф250	ф50-ф250
Available Insert	RPM...	RDM...	RDX...	SE.1204..	SN.X..

Application	Facing	●	●	●	●	●
	Shouldering					
	Slotting					
	Plunge milling					
	Helical milling	●	●	●		
	Ramping	●	●	●	●	
	Pocketing					
	Chamfering				●	
	Copying	●	●	●		

Cutters for face milling

Type	TWSX75	TWSX88	SEPD	SSPD	SFPD
Page	560	562	564	564	564
A.A...Angle	75°	88°	45°	60°	19°
Max.cutting depth (mm)	9.5	12.0	4.5	5.5	2
Diameter range (mm)	ф50-ф250	ф50-ф200	ф50-ф160	ф50-ф160	ф50-ф125
Available Insert	SN.X1206..	SN.X1206...	PD.0905..	PD.0905..	PD.0905..
Application					
Facing	●	●	●	●	●
Shouldering					
Slotting					
Plunge milling					
Helical milling					
Ramping					
Pocketing					
Chamfering					
Copying					

Toolfinger - Application Selection Guide

Cutters for face milling

Type	MFPN66	MFHN45	TFXN45	MFXN45	SOD43
Page	567	569	571	573	575
A.A...Angle	66°	45°	45°	45°	45°
Max.cutting depth (mm)	8.0	5.0	4.0	4.4	4
Diameter range (mm)	ф50-ф250	ф50-ф200	ф63-ф200	ф40-ф160	ф40-ф200
Available Insert	PN.U0905..	HN.X...	XN.F..	XN.U0705..	OD.T0605..
Application					
Facing	●	●	●	●	●
Shouldering					
Slotting					
Plunge milling					
Helical milling					
Ramping		●			●
Pocketing		●			●
Chamfering		●			●
Copying					

Cutters for face milling

Type	HRM03R	HRM03R	FM01	FM01.11	MEA
Page	487	487	493	493	498
A.A...Angle	90°	90°	90°	90°	90°
Max.cutting depth (mm)	9.0	43.0	15.5	58.0	12.5
Diameter range (mm)	ф25-ф40	ф40	ф12-ф40	ф20-ф40	ф25-ф50
Available Insert	LN.U1205..	LN.U1205..	AP.T	AP.T11T3..	LN.T1306..
Application					
Facing	●	●	●	●	●
Shouldering	●	●	●	●	●
Slotting	●	●	●	●	●
Plunge milling	●		●		
Helical milling	●	●	●	●	
Ramping	●	●	●	●	
Pocketing					
Chamfering					
Copying					

Toolfinger - Application Selection Guide

Cutters for Molds

Type	MEA-W	ASPV06R	AMS07	CPE3	CNE4
Page	499	503	507	510	513
A.A...Angle	90°	90°	90°	90°	90°
Max.cutting depth (mm)	59	3.0	5.0	7.0	6.0
Diameter range (mm)	ф40-ф50	ф16-ф40	ф8-ф21	ф16-ф40	ф16-ф40
Available Insert	LN.T1306..	MPHW0603...	ADMT0702..	TPKT1004..	YNKT060308
Application					
Facing	●	●	●	●	●
Shouldering	●	●	●	●	●
Slotting		●	●	●	●
Plunge milling					
Helical milling			●	●	●
Ramping					
Pocketing					
Chamfering					
Copying			●	●	●

Cutters for Molds

Type	ASR20	ELT06R	ELN11R	ELS	EMR

Page	518	522	525	529	537
A.A...Angle	-	-	-	-	-
Max.cutting depth (mm)	2.0	0.5	1	2.0	5.0
Diameter range (mm)	ф16-ф33	ф8-ф16	ф16-ф40	ф25-ф80	ф12-ф40
Available Insert	EP.W0603..	EP.T0602..	EN.U11T3..	XO.T..	RPM...

Application	Facing	●	●	●	●	●
	Shouldering		●	●	●	
	Slotting	●	●	●	●	
	Plunge milling					
	Helical milling	●				●
	Ramping					●
	Pocketing		●	●	●	
	Chamfering					
	Copying	●				●

Toolfinger - Application Selection Guide

Cutters for Molds

Type	EMRW	TRS	TRD	WGR	845-AP	ECC
Page	540	543	548	551	580	586
A.A...Angle	-	-	-	-	45°	45°~60°
Max.cutting depth (mm)	6.0	6.0	4.0	15.0	-	20.5
Diameter range (mm)	ф25-ф50	ф8-ф40	ф10-ф42	ф21-ф50	ф13-ф40	ф20-ф55
Available Insert	RPM.1204..	RDM..	RD.X..	P3200	APMT...	XECT
Application						
Facing	●	●	●	●		●
Shouldering				●		●
Slotting				●		●
Plunge milling						
Helical milling	●	●	●			
Ramping	●	●	●			
Pocketing						
Chamfering					●	●
Copying	●	●	●	●		

Cutters for Molds

Type	B45-SP	B45-AP	DX45	DX45/SSP45	SSP60
Page	578	580	584	583	583
A.A...Angle	45°	45°	45°	45°	60°
Max.cutting depth (mm)		-	7.6	11.3	11.83
Diameter range (mm)	ф16-ф46	ф13-ф40	ф13,8-ф22,5	ф13.8-ф22.5	ф13.8-ф22.5
Available Insert	SPM..	APT...	TC.X...	S.X.	DC.X...
Application					
Facing					
Shouldering					
Slotting					
Plunge milling					
Helical milling					
Ramping					
Pocketing					
Chamfering	●	●	●	●	●
Copying					

Toolfinger - Application Selection Guide

Side Cutters

Type	PT01-J	PT01	PT01-W	PT02-J	PT02
Page	588	589	590	592	593
A.A...Angle	-	-	-	-	-
Max.cutting depth (mm)	20.0	20.0	22.0	8.0	8.0
Diameter range (mm)	ф80-ф200	ф80-ф200	ф21-ф50	ф100-ф250	ф63-ф160
Available Insert	MPHT...	MPHT...	MPHT...	SNEQ	SNEQ
Application					
Facing					
Shouldering					
Slotting	●	●	●	●	●
Plunge milling					
Helical milling					
Ramping					
Pocketing					
Chamfering					
Copying					

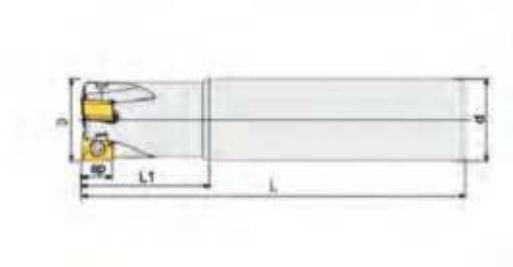
Side Cutters

Type	TSCN-J	TSCN	DCW60	DCW55	
Page	596	597	599	600	
A.A...Angle	-	-	60°	55°	
Max.cutting depth (mm)	22.0	24.0	-	-	
Diameter range (mm)	ф80-ф250	ф80-ф250	ф25-ф80	ф25-ф80	
Available Insert	CN.X	CN.X	DC...	DC...	

Application	Facing					
	Shouldering					
	Slotting	●	●	●	●	
	Plunge milling					
	Helical milling					
	Ramping					
	Pocketing					
	Chamfering					
	Copying					

Shouldering

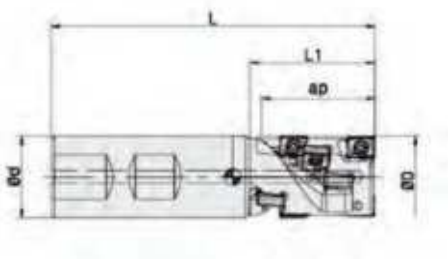
HRM Type Shoulder Endmill



mm

Designation	No.of Inserts	Dimension (mm)					Adapter	kg
		D	d	L1	L	ap		
HRM03R 2525-170L-2T	2	25	25	34	170	9.0	S	0.58
HRM03R 3232-195L-2T	2	32	32	34	195	9.0	S	1.05
HRM03R 2525-099L-2T-W	2	25	25	42	99	9.0	W	0.30
HRM03R 3232-103L-3T-W	3	32	32	42	103	9.0	W	0.50
HRM03R 4032-111L-4T-W	4	40	32	50	111	9.0	W	0.62

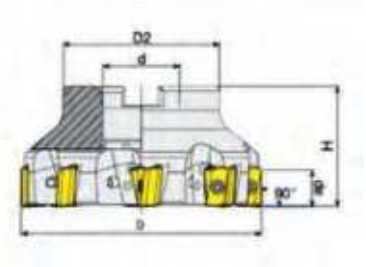
HRM Type Extended Flute Shoulder Endmill



mm

Designation	No.of Insert	No.of flutes	Dimension (mm)					Adapter	kg
			D	d	L1	L	ap		
HRM03R 4032-043M-130L-2T-W	2	8	40	32	66	130	43	W	0.77

HRM Type Shell Endmill

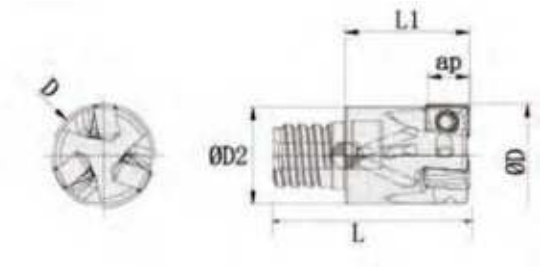


mm

Designation	No.of Insert	Dimension (mm)					Arbor	kg
		D	D2	d	H	ap		
HRM03R 040-16-04T	4	40	35	16	40	9.0	A	0.23
HRM03R 050-22-04T	4	50	42	22	40	9.0	A	0.35
HRM03R 050-22-05T	5	50	42	22	40	9.0	A	0.36
HRM03R 063-22-04T	4	63	49	22	40	9.0	A	0.55
HRM03R 063-22-06T	6	63	49	22	40	9.0	A	0.50
HRM03R 080-27-05T	5	80	57	27	50	9.0	B	1.18
HRM03R 080-27-07T	7	80	57	27	50	9.0	B	1.02
HRM03R 100-32-06T	6	100	67	32	50	9.0	B	1.78
HRM03R 100-32-08T	8	100	67	32	50	9.0	B	2.01
HRM03R 125-40-07T	7	125	87	40	63	9.0	B	3.44
HRM03R 125-40-09T	9	125	87	40	63	9.0	B	3.38
HRM04R 063-22-04T	4	63	49	22	40	13.0	A	0.46
HRM04R 063-22-05T	5	63	49	22	40	13.0	A	0.46
HRM04R 080-27-04T	4	80	57	27	50	13.0	B	0.98
HRM04R 080-27-06T	6	80	57	27	50	13.0	B	0.89
HRM04R 100-32-05T	5	100	67	32	50	13.0	B	0.98
HRM04R 100-32-07T	7	100	67	32	50	13.0	B	1.84
HRM04R 125-40-06T	6	125	87	40	63	13.0	B	3.44
HRM04R 125-40-08T	8	125	87	40	63	13.0	B	3.33
HRM04R 160-40-08T	8	160	107	40	63	13.0	C	6.19
HRM04R 200-60-10T	10	200	130	60	63	13.0	C	7.00
HRM04R 250-60-12T	12	250	180	60	63	13.0	C	9.36

Shouldering

HRM Type Milling Modular



mm

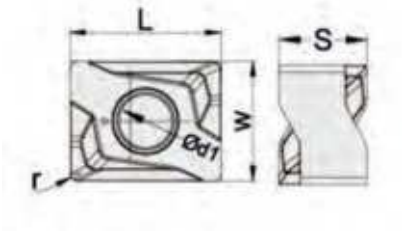
Designation	No.of Insert	Dimension (mm)						kg
		D	M	D2	L1	L	ap	
HRM03R 025-M12-2T	2	25	M12	21.0	33	55	9.0	0.12
HRM03R 032-M16-2T	2	32	M16	29.0	43	66	9.0	0.22
HRM03R 032-M16-3T	3	32	M16	29.0	43	66	9.0	0.23
HRM03R 040-M16-3T	3	40	M16	29.0	43	66	9.0	0.30

Parts

TYPE		
	Insert screw	Wrench
HRM03R	L1060SSTX4.0-5.7P	SF-TPF15
HRM04R	L1250SSTX5.0-7.0P	SF-TPF20

Available Inserts

LNGU

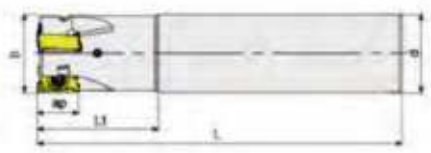


Workpiece			Machining Type	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPM4036
	Steel	P		●	⬌	✖					●	⬌		✖	⬌	✖
	Stainless steel	M			✖						●	⬌	⬌	✖	⬌	✖
	Cast iron	K		⬌			●	●	⬌	⬌	●	⬌		✖	⬌	✖
	Non-ferrous metal	N	● Continuous cutting													
	Heat resistant alloy, Titanium alloy	S	⬌ General cutting								●	⬌	⬌	✖		
	Hardened steel	H	✖ Interrupted cutting										⬌	✖	⬌	✖

Designations		Dimensions(mm)					CVD Coated							PVD Coated						
		L	W	S	r	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPM4036
LNGU-GM	LNGU 120508R-GM	12.0	9.5	5.96	0.8	4.5												●	●	●
	LNGU 160708R-GM	16.6	13.2	7.50	0.8	5.7												●	●	●

Shouldering

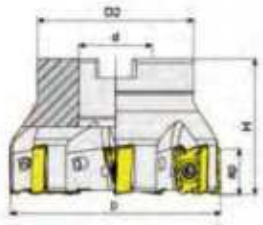
EPN Type Shoulder Endmill



mm

Designation	No.of Insert	Dimension (mm)						kg
		D	d	L1	L	ap	Adaptor	
EPN03R 1616-150L-2T	2	16	16	25	150	11.0	S	0.23
EPN03R 1716-150L-2T	2	17	16	25	150	11.0	S	0.24
EPN03R 2020-150L-3T	3	20	20	28	150	11.0	S	0.35
EPN03R 2120-150L-3T	3	21	20	28	150	11.0	S	0.36
EPN03R 2525-150L-4T	4	25	25	43	150	11.0	S	0.54
EPN03R 3232-150L-5T	5	32	32	49	150	11.0	S	0.89
EPN04R 2525-150L-2T	2	25	25	43	150	15.5	S	0.53
EPN04R 3232-150L-3T	3	32	32	49	150	15.5	S	0.87
EPN04R 4032-150L-4T	4	40	32	49	150	15.5	S	0.93

EPN Type Shell Endmill



mm

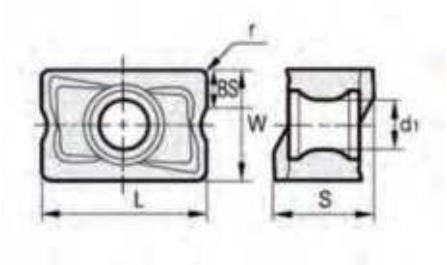
Designation	No.of Insert	Dimension (mm)						kg
		D	d	D2	H	ap	Adaptor	
EPN03R 050-22-07T	7	50	22	42	40	11.0	A	0.36
EPN03R 063-22-07T	7	63	22	50	40	11.0	A	0.58
EPN03R 080-27-08T	8	80	27	60	50	11.0	B	1.08
EPN04R 050-22-05T	5	50	22	42	40	15.5	A	0.32
EPN04R 063-22-06T	6	63	22	50	40	15.5	A	0.52
EPN04R 080-27-07T	7	80	27	60	50	15.5	B	1.05
EPN04R 100-32-08T	8	100	32	80	50	15.5	B	1.55
EPN04R 125-40-09T	9	125	40	90	63	15.5	B	3.11
EPN04R 160-40-12T	12	160	40	110	63	15.5	C	5.51

Parts

TYPE		
	Insert screw	Wrench
EPN03R	L0760SSTX3.0-4.0P	TPF-08
EPN04R	L1060SSTX4.0-5.7P	TPF-15

Available Inserts

LNMU



Workpiece		
Steel	P	
Stainless steel	M	
Cast iron	K	
Non-ferrous metal	N	
Heat resistant alloy, Titanium alloy	S	
Hardened steel	H	

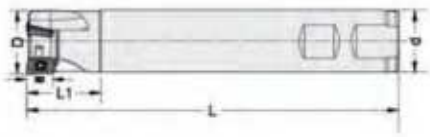
Machining Type

● Continuous cutting
⬌ General cutting
✖ Interrupted cutting

Designations		Dimensions(mm)						CVD Coated							PVD Coated					
		L	W	S	BS	r	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
LNMU-GM	LNMU 110408SRE-GM	12.0	6.6	4.83	0.9	0.8	3.5									●	●			
	LNMU 15T608SRE-GM	16.9	10.0	6.96	1.8	0.8	4.5									●	●			

Shouldering

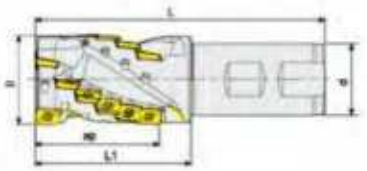
FM01 Type Shoulder Endmill



mm

Designation	No.of Insert	Dimension (mm)						kg
		D	d	L1	L	ap	Adaptor	
FM01.11 1216-085L-1T	1	12	16	25	85	10.5	S	0.10
FM01.11 1616-090L-2T	2	16	16	25	90	10.5	S	0.10
FM01.11 2020-100L-2T	2	20	20	30	100	10.5	S	0.20
FM01.11 2020-100L-3T	3	20	20	30	100	10.5	S	0.20
FM01.11 2525-115L-3T	3	25	25	35	115	10.5	S	0.40
FM01.11 2525-115L-4T	4	25	25	35	115	10.5	S	0.40
FM01.11 3232-125L-4T	4	32	32	40	125	10.5	S	0.70
FM01.16 2525-115L-2T	2	25	25	35	115	15.5	S	0.40
FM01.16 3232-125L-3T	3	32	32	40	125	15.5	S	0.70
FM01.16 4032-130L-4T	4	40	32	42	130	15.5	S	0.70

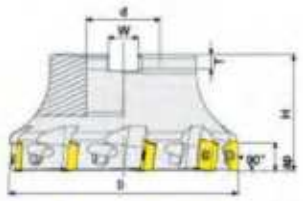
FM01 Type Extended Flute Endmill



mm

Designation	No.of flutes	No.of Insert	Dimension (mm)					Adapter	kg
			D	d	L1	L	ap		
FM01.11 2020-029M-120L-1T-W	1	3	20	20	45	120	29.4	W	0.32
FM01.11 2525-039M-130L-2T-W	2	8	25	25	55	130	38.9	W	0.40
FM01.11 3232-048M-140L-2T-W	2	10	32	32	65	140	48.5	W	0.65
FM01.11 4040-058M-150L-2T-W	2	14	40	40	75	150	58.0	W	0.75

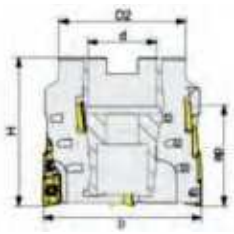
FM01 Type Shoulder Endmill



mm

Designation	No.of Insert	Dimension (mm)						Arbor	kg
		D	d	H	W	T	ap		
FM01.11 040-16-05T	5	40	16	40	8.4	5.6	11.0	A	0.18
FM01.11 050-22-06T	6	50	22	40	10.4	6.3	11.0	A	0.30
FM01.11 063-22-08T	8	63	22	40	10.4	6.3	11.0	A	0.60
FM01.11 080-27-08T	8	80	27	50	12.4	7.0	11.0	A	1.20
FM01.11 100-32-10T	10	100	32	50	14.4	8.0	11.0	B	1.70
FM01.11 125-40-10T	10	125	40	63	16.4	9.0	11.0	B	3.42
FM01.16 040-16-04T	4	40	16	40	8.4	5.6	15.5	A	0.17
FM01.16 050-22-05T	5	50	22	40	10.4	6.3	15.5	A	0.30
FM01.16 063-22-06T	6	63	22	40	10.4	6.3	15.5	A	0.50
FM01.16 080-27-07T	7	80	27	50	12.4	7.0	15.5	A	1.10
FM01.16 100-32-08T	8	100	32	50	14.4	8.0	15.5	B	1.60
FM01.16 125-40-10T	10	125	40	63	16.4	9.0	15.5	B	3.20
FM01.16 160-40-10T	10	160	40	63	16.4	9.0	15.5	B	6.30
FM01.16 200-60-12T	12	200	60	63	25.7	14.0	15.5	C	8.10
FM01.16 250-60-12T	12	250	60	63	25.7	14.0	15.5	C	11.20

FM01 Type Extended Flute Shell Mill

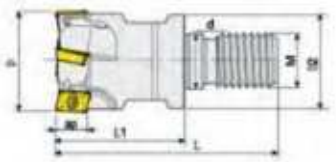


mm

Designation	No.of flutes	No.of Insert	Dimension (mm)					Adapter	kg
			D	d	D2	H	ap		
FM01.11 050-22 -39M-04T	4	16	50	22	40	58	39.0	A	0.70
FM01.11 063-27 -39M-04T	4	16	63	27	50	58	39.0	A	0.90
FM01.11 080-32 -39M-05T	5	20	80	32	60	63	39.0	B	1.30
FM01.11 100-40 -39M-06T	6	24	100	40	80	63	39.0	B	2.00

Shouldering

FM01 Type Shoulder Mill Modular



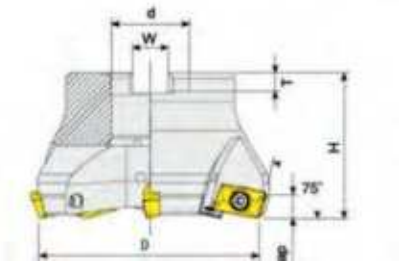
mm

Designation	No.of Insert	Dimension (mm)							kg
		D	M	D2	L1	L	d	ap	
FM01.11 016-M08-2T	2	16	M8	14.5	25	42	8.5	11.0	0.04
FM01.11 020-M10-2T	2	20	M10	18.0	30	51	10.5	11.0	0.07
FM01.11 025-M12-3T	3	25	M12	23.0	35	59	12.5	11.0	0.04
FM01.11 032-M16-4T	4	32	M16	29.0	40	67	17.0	11.0	0.23
FM01.11 040-M16-5T	5	40	M16	29.0	40	67	17.0	11.0	0.25

Parts

TYPE		
	Insert screw	Wrench
FM01.11	L0655SSTX2.5-3.6P	TPF-08
FM01.16	L1060SSTX4.0-5.7P	TPF-15

FM02 Type Shoulder Shell Mill



mm

Designation	No.of Insert	Dimension (mm)							kg
		D	d	H	W	T	ap	Arbor	
FM02.11 080-27-05T	5	80	27	50	12.4	7.0	4.0	B	1.20
FM02.11 100-32-06T	6	100	32	63	12.4	8.0	4.0	B	2.33
FM02.16 080-27-04T	4	80	27	50	12.4	7.0	6.0	B	1.30
FM02.16 100-32-05T	5	100	32	63	12.4	8.0	6.0	B	2.30

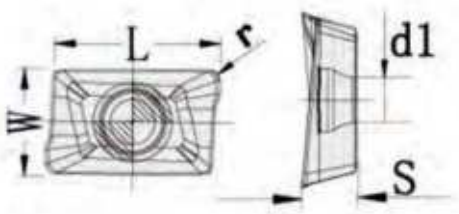
Parts

TYPE		
	Insert screw	Wrench
FM02.11	L0655SSTX2.5-3.6P	FF-TPF08
FM02.16	L1060SSTX4.0-5.7P	FF-TPF15

Shouldering

Available Inserts

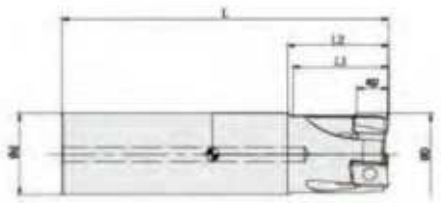
APKT



Workpiece			Machining Type	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPM8115S	TPK01
Steel	P			●	⬌	✖						●	⬌		✖	⬌	✖	
Stainless steel	M				✖							●	⬌	⬌	✖	⬌	✖	
Cast iron	K			⬌			●	●	⬌	⬌		●	⬌		✖	⬌	✖	
Non-ferrous metal	N		● Continuous cutting															
Heat resistant alloy, Titanium alloy	S		⬌ General cutting									●	⬌	⬌	✖			
Hardened steel	H		✖ Interrupted cutting											⬌	✖	⬌	✖	

Designations		Dimensions(mm)					CVD Coated							PVD Coated							
		L	W	S	r	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPM8115S	TPK01
APKT-GM	APKT 11T304-GM	12.240	6.50	3.60	0.8	2.8	○	○							●	●					
	APKT 11T308-GM	12.240	6.50	3.60	0.8	2.8		●		●					●	●					
	APKT 160408-GM	17.877	9.33	5.76	0.8	4.4		●		●					●	●	●				
APKT-QM	APKT 11T308-QM	12.240	6.50	3.60	0.8	2.8		○		○					○	○					
	APKT 11T312-QM	12.240	6.50	3.60	1.2	2.8														●	
	APKT 11T316-QM	12.240	6.50	3.60	1.6	2.8														●	
	APKT 11T320-QM	12.240	6.50	3.60	2.0	2.8														●	
	APKT 160408-QM	17.877	9.33	5.76	0.8	4.4		○		○					●	●				●	
	APKT 160416-QM	17.877	9.33	5.76	1.6	4.4														●	
	APKT 160420-QM	17.877	9.33	5.76	2.0	4.4														●	
	APKT 160424-QM	17.877	9.33	5.76	2.4	4.4														●	
	APKT 160430-QM	17.877	9.33	5.76	3.0	4.4														●	
APKT-PM	APKT 11T308-PM	12.240	6.50	3.60	0.8	2.8									●						
	APKT 160408-PM	17.877	9.33	5.76	0.8	4.4									●						
APKT-GF	APKT 11T330-GF	12.240	6.50	3.60	3.0	2.8														●	
APKT-TO	APKT 11T304-TO	12.240	6.50	3.60	0.4	2.8															●

MEA Type Shoulder Endmill

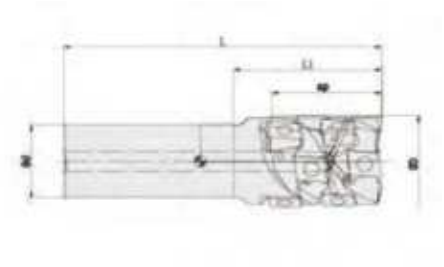


mm

Designation	No.of Insert	Dimension (mm)						Adapter	kg
		D	d	L1	L2	L	ap		
MEA08N 1616-100L-2T	2	16	16	26	28	100	8.0	S	0.13
MEA08N 2020-120L-2T	2	20	20	26	28	120	8.0	S	0.22
MEA08N 2525-120L-3T	3	25	25	26	28	120	8.0	S	0.40
MEA08N 3232-130L-3T	3	32	32	30	32	130	8.0	S	0.72
MEA08N 4032-130L-4T	4	40	32	-	30	130	8.0	S	0.81
MEA13N 2525-120L-2T	2	25	25	33	35.0	120	12.5	S	0.39
MEA13N 3232-130L-2T	2	32	32	38	40.0	130	12.5	S	0.72
MEA13N 4032-130L-3T	3	40	32	-	40.0	120	12.5	S	0.81
MEA13N 5032-130L-4T	4	50	32	-	36.5	130	12.5	S	0.96

Shouldering

MEA Type Extended Flute Shoulder Endmill



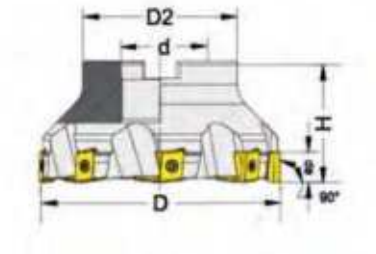
mm

Designation	No.of flutes	No.of Insert	Dimension (mm)					Adapter	kg
			D	d	L1	L	ap		
MEA08N 2020-021M-110L-1T-W	1	6	20	20	30	110	21	W	0.22
MEA08N 2525-027M-125L-2T-W	2	8	25	25	35	125	27	W	0.39
MEA08N 3232-034M-140L-2T-W	2	10	32	32	50	140	34	W	0.74
MEA08N 4032-040M-150L-3T-W	3	18	40	32	60	150	44	W	0.92
MEA13N 4032-036M-115L-2T-W	2	6	40	32	50	115	36.0	W	0.68
MEA13N 4032-048M-125L-3T-W	3	12	40	32	65	125	48.0	W	0.70
MEA13N 5040-047M-135L-3T-W	3	12	50	40	65	135	47.0	W	1.24
MEA13N 5040-059M-135L-4T-W	4	20	50	40	65	135	59.0	W	1.21

Parts

TYPE		
	Insert screw	Wrench
MEA08N	L0760SSTX3.0-4.0P	TPF-08
MEA13N	L1060SSTX4.0-5.7P	TPF-15

MFA Type Shell Mill

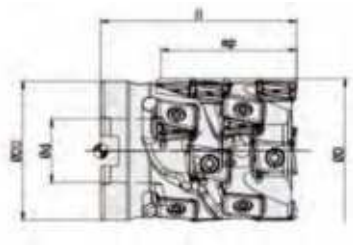


mm

Designation	No.of Insert	Dimension (mm)					Adapter	kg
		D	D2	d	H	ap		
MFA08N 040-16-04T	5	40	38	16	40	8.0	A	0.23
MFA08N 050-22-05T	6	50	48	22	40	8.0	A	0.36
MFA08N 063-22-06T	6	63	60	22	40	8.0	A	0.60
MFA08N 063-22-08T	8	63	60	22	40	8.0	A	0.62
MFA08N 080-27-10T	10	80	60	27	50	8.0	B	0.84
MFA13N 040-16-04T	4	40	38	16	40	12.5	A	0.22
MFA13N 040-16-05T	5	40	38	16	40	12.5	A	0.22
MFA13N 050-22-05T	5	50	47	22	40	12.5	A	0.31
MFA13N 050-22-06T	6	50	47	22	40	12.5	A	0.31
MFA13N 063-22-06T	6	63	59	22	40	12.5	A	0.55
MFA13N 063-22-08T	8	63	59	22	40	12.5	A	0.56
MFA13N 080-27-07T	7	80	70	27	50	12.5	B	0.98
MFA13N 080-27-10T	10	80	70	27	50	12.5	B	1.00
MFA13N 100-32-09T	9	100	78	32	50	12.5	B	1.45
MFA13N 100-32-13T	13	100	78	32	50	12.5	B	1.49
MFA13N 125-40-11T	11	125	82	40	63	12.5	B	2.98
MFA13N 125-40-16T	16	125	82	40	63	12.5	B	3.04
MFA13N 160-40-13T	13	160	120	40	63	12.5	B	4.32
MFA16N 050-22-04T	4	50	48	22	40	16.0	A	0.36
MFA16N 063-22-05T	5	63	60	22	40	16.0	A	0.60
MFA16N 080-27-05T	5	80	63	27	50	16.0	B	0.84
MFA16N 080-27-07T	7	80	63	27	50	16.0	B	0.91
MFA16N 100-32-06T	6	100	80	32	50	16.0	B	1.44
MFA16N 100-32-08T	8	100	80	32	50	16.0	B	1.50
MFA16N 125-40-07T	7	125	82	40	63	16.0	B	2.42
MFA16N 125-40-10T	10	125	82	40	63	16.0	B	2.46
MFA16N 160-40-12T	12	160	105	40	63	16.0	C	4.28
MFA16N 200-60-12T	12	200	135	60	63	16.0	C	5.40

Shouldering

MFA Type Extended Flute Shell Mill



mm

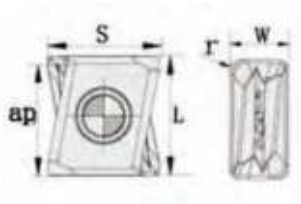
Designation	No.of Insert	No.of flutes	Dimension (mm)					Adapter	kg
			D	d	D2	H	ap		
MFA13N 050-22-36M-03T	9	3	50	22	48	56	36.0	A	0.43
MFA13N 050-22-47M-04T	16	4	50	22	48	68	47.0	A	0.54
MFA13N 063-27-36M-04T	12	4	63	27	58	60	36.0	A	0.79
MFA13N 063-27-59M-05T	25	5	63	27	58	80	59.0	A	1.09
MFA13N 080-32-58M-05T	25	5	80	32	74	75	58.0	A	1.73
MFA13N 080-32-70M-05T	30	5	80	32	74	111	70.0	A	2.65
MFA13N 100-40-59M-06T	30	6	100	40	88	86	59.0	A	3.11

Parts

TYPE		
	Insert screw	Wrench
MFA08N	L0760SSTX3.0-4.0P	FF-TPF08
MFA13N	L1060SSTX4.0-5.7P	FF-TPF15
MFA16N	L1455SSTX5.0-7.2P	FF-TPF20

Available Inserts

LNKT

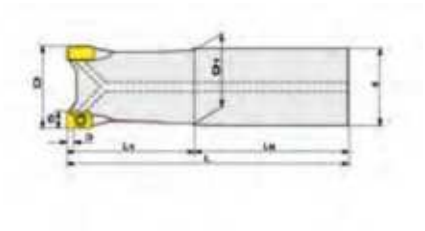


Workpiece			Machining Type	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPM4036
	Steel	P		●	⬌	✖						●	⬌		✖	⬌	✖
	Stainless steel	M			✖							●	⬌	⬌	✖	⬌	✖
	Cast iron	K		⬌			●	●	⬌	⬌		●	⬌		✖	⬌	✖
	Non-ferrous metal	N	● Continuous cutting														
	Heat resistant alloy, Titanium alloy	S	⬌ General cutting									●	⬌	⬌	✖		
	Hardened steel	H	✖ Interrupted cutting											⬌	✖	⬌	✖

Designations		Dimensions(mm)					CVD Coated							PVD Coated					
		L	W	S	r	ap	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPM4036
LNKT-GH	080404ER-GH	8.59	4.24	7.43	0.4	8.0											●	●	
	080408ER-GH	8.59	4.24	7.43	0.8	8.0													
	130608ER-GH	13.81	6.65	13.05	0.8	12.5								●			●	●	●
	130612ER-GH	13.81	6.65	13.05	1.2	12.5													
	160708ER-GH	17.05	7.00	15.83	0.8	16.0													
	160712ER-GH	17.05	7.00	15.83	1.2	16.0													

Shouldering

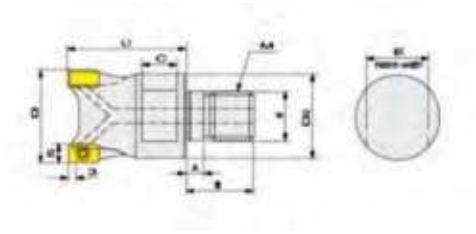
ASPV Type Endmill



mm

Designation	No.of Insert	Dimension (mm)						Arbor	kg
		D1	L1	L	LS	d	D1		
ASPV06R 1616-100L-2T	2	16	30	100	70	16	14.5	S	0.12
ASPV06R 2020-100L-3T	3	20	30	100	70	20	18.0	S	0.21
ASPV06R 2020-150L-3T	3	20	30	150	120	20	18.0	S	0.34
ASPV06R 2525-150L-4T	4	25	40	150	110	25	23.0	S	0.35
ASPV06R 2525-200L-4T	4	25	40	200	160	25	23.0	S	0.59
ASPV06R 3025-150L-4T	4	30	50	150	100	25	28.0	S	0.38
ASPV06R 3025-200L-4T	4	30	50	200	150	25	28.0	S	0.62
ASPV06R 3232-150L-5T	5	32	50	150	100	32	30.0	S	0.60
ASPV06R 3232-200L-5T	5	32	50	200	150	32	30.0	S	1.00
ASPV06R 3532-150L-5T	5	35	50	150	100	32	31.0	S	0.70
ASPV06R 3532-200L-5T	5	35	50	200	150	32	31.0	S	1.10
ASPV06R 4032-150L-6T	6	40	50	150	100	32	31.0	S	0.80
ASPV06R 4032-200L-6T	6	40	50	200	150	32	31.0	S	1.20

ASPV Type Milling Modular

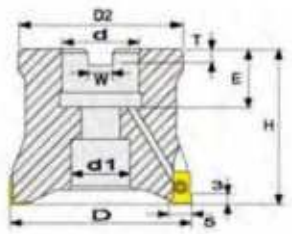


mm

Designation	No.of Insert	Dimension (mm)									kg
		D	L1	d	M	D2	A	B	C	E	
ASPV06R 016-M08-2T	2	16	25	8.5	M8	12.8	5.5	17	8	10	0.03
ASPV06R 017-M08-2T	2	17	25	8.5	M8	14.5	5.5	17	8	10	0.03
ASPV06R 020-M10-3T	3	20	30	10.5	M10	17.8	5.5	19	10	15	0.05
ASPV06R 021-M10-3T	3	21	30	10.5	M10	17.8	5.5	19	10	15	0.05
ASPV06R 025-M12-4T	4	25	35	12.5	M12	20.8	5.5	22	10	17	0.09
ASPV06R 026-M12-4T	4	26	35	12.5	M12	20.8	5.5	22	10	17	0.10
ASPV06R 032-M16-5T	5	32	40	17.0	M16	28.8	6.0	23	12	22	0.19
ASPV06R 035-M16-5T	5	35	40	17.0	M16	28.8	6.0	23	12	22	0.21
ASPV06R 042-M16-6T	6	42	40	17.0	M16	28.8	6.0	23	12	22	0.25

Shouldering

ASPV Type Shell Mill



mm

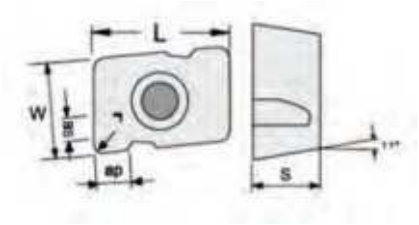
Designation	No.of Insert	Dimension (mm)								arbor	kg
		D	H	d	d1	D2	W	T	E		
ASPV06R 040-16 -06T	6	40	40	16	13.5	38	8.4	5.6	18	A	0.22
ASPV06R 050-22 -07T	7	50	50	22	17.0	47	8.4	6.3	20	A	0.34
ASPV06R 063-22 -08T	8	63	50	22	17.0	60	10.4	6.3	20	A	0.57

Parts

TYPE		
	Insert screw	Wrench
ASPV06R	L0655SSTX2.5-3.6P	TPF-08

Available Inserts

MPHW



Workpiece		Machining Type													
Steel	P	● Continuous cutting	●	⬍	✱					●	⬍		✱	⬍	✱
Stainless steel	M	⬍ General cutting		✱						●	⬍	⬍	✱	⬍	✱
Cast iron	K	✱ Interrupted cutting	⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱
Non-ferrous metal	N														
Heat resistant alloy, Titanium alloy	S									●	⬍	⬍	✱		
Hardened steel	H											⬍	✱	⬍	✱

Designations		Dimensions(mm)						CVD Coated							PVD Coated					
		L	W	ap	S	BS	r	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
MPHW	MPHW 060304EL	10.09	6.35	3.0	3.18	-	0.4													
	MPHW 060308EL	10.06	6.35	3.0	3.18	-	0.8									●	●			
	MPHW 060320EL	9.96	6.35	3.0	3.18	-	2.0									●	●			
	MPHW 060304EL-0.5	10.09	6.35	3.0	3.18	0.5	0.4													
	MPHW 060308EL-1.5	10.06	6.35	3.0	3.18	1.5	0.8													

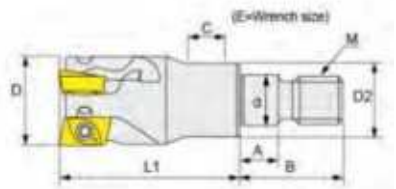
Shouldering

ASM Type Mini Shoulder Endmill

mm

Designation	No.of Insert	Dimension (mm)					Adapter	kg
		D	d	L1	L	ap		
ASM07R 0810-075L-1T	1	8	10	16	75	5.0	S	0.04
ASM07R 0810-120L-1T	1	8	10	20	120	5.0	S	0.06
ASM07R 1010-080L-2T	2	10	10	20	80	5.0	S	0.04
ASM07R 1010-120L-2T	2	10	10	20	120	5.0	S	0.09
ASM07R 1110-120L-2T	2	10	10	20	120	5.0	S	0.06
ASM07R 1212-120L-2T	2	12	12	20	120	5.0	S	0.11
ASM07R 1212-080L-3T	3	12	12	20	80	5.0	S	0.07
ASM07R 1212-120L-3T	3	12	12	20	120	5.0	S	0.09
ASM07R 1312-120L-3T	3	13	12	20	120	5.0	S	0.09
ASM07R 1412-120L-3T	3	14	12	20	120	5.0	S	0.09
ASM07R 1616-090L-4T	4	16	16	25	90	5.0	S	0.12
ASM07R 1616-120L-4T	4	16	16	20	120	5.0	S	0.16
ASM07R 1616-160L-4T	4	16	16	25	160	5.0	S	0.23
ASM07R 1716-120L-4T	4	17	16	20	120	5.0	S	0.17
ASM07R 1716-160L-4T	4	17	16	25	160	5.0	S	0.23
ASM07R 2020-150L-4T	5	20	20	25	150	5.0	S	0.38
ASM07R 2020-105L-5T	5	20	20	25	140	5.0	S	0.25
ASM07R 2120-150L-4T	4	21	20	25	150	5.0	S	0.8

ASM Type Mini Shoulder Mill Modular



mm

Designation	No.of Insert	Dimension (mm)									kg
		D	M	D2	L1	d	A	B	C	ap	
ASM07R 008-M06-1T	1	8	M6	9.8	20	6.5	5.5	14.5	5.0	5.0	0.01
ASM07R 010-M06-2T	2	10	M6	9.8	20	6.5	5.5	14.5	5.0	5.0	0.01
ASM07R 011-M06-2T	2	11	M6	9.8	20	6.5	5.5	14.5	5.0	5.0	0.01
ASM07R 012-M06-3T	3	12	M6	9.8	20	6.5	5.5	14.5	5.0	5.0	0.01
ASM07R 013-M06-3T	3	13	M6	9.8	20	6.5	5.5	14.5	5.0	5.0	0.01
ASM07R 014-M06-3T	3	14	M6	9.8	20	6.5	5.5	14.5	5.0	5.0	0.01
ASM07R 016-M08-4T	4	16	M8	12.8	25	8.5	5.5	17.0	8.0	5.0	0.03
ASM07R 017-M08-4T	4	17	M8	12.8	25	8.5	5.5	17.0	8.0	5.0	0.03
ASM07R 020-M10-5T	5	20	M10	17.8	30	10.5	5.5	19.0	10.0	5.0	0.06
ASM07R 021-M10-5T	5	21	M10	17.8	30	10.5	5.5	19.0	10.0	5.0	0.06
ASM07R 025-M12-6T	6	25	M12	20.8	30	12.5	5.5	22.0	10.0	5.0	0.11
ASM07R 026-M12-6T	6	26	M12	20.8	30	12.5	5.5	22.0	10.0	5.0	0.11
ASM07R 032-M16-8T	8	32	M16	28.8	30	17.0	6.0	23.0	12.0	5.0	0.24

Parts

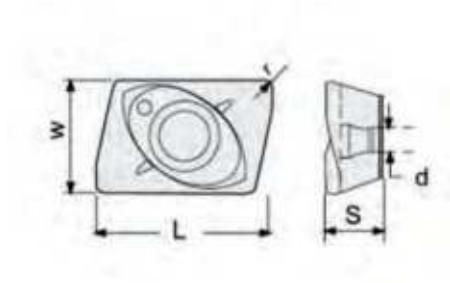
TYPE		
	Insert screw	Wrench
ASM07R	L0455SSTX1.8-2.7P	TPF-06

TURN LINE
THREAD LINE
GROOVE LINE
MILL LINE
DRILL LINE
HARPIN BAYONET
TOOL LINE

Shouldering

Available Inserts

ADMT

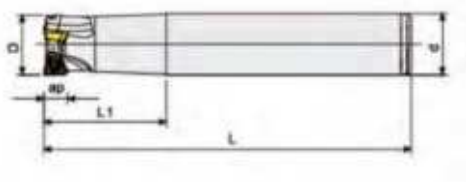


Workpiece			Machining Type													
Steel	P		●	⬍	✱					●	⬍		✱	⬍	
Stainless steel	M			✱						●	⬍	⬍	✱	⬍	
Cast iron	K		⬍			●	●	⬍	⬍	●	⬍		✱	⬍	
Non-ferrous metal	N														⬍
Heat resistant alloy, Titanium alloy	S									●	⬍	⬍	✱		
Hardened steel	H											⬍	✱	⬍	

● Continuous cutting
⬍ General cutting
✱ Interrupted cutting

Designations		Dimensions(mm)					CVD Coated							PVD Coated						
		W	L	S	r	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01
ADMT	ADMT 070204R	4.3	7.00	2.45	0.4	2.0									●	●				●
	ADMT 070208R	4.3	7.00	2.45	0.8	2.0									●	●				●

CPE3 Type Shoulder Endmill

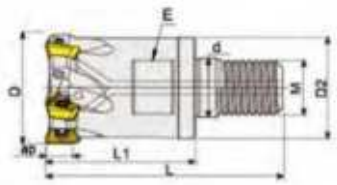


mm

Designation	No.of Insert	Dimension (mm)					Adapter	kg
		D	d	L1	L	ap		
CPE3 1616-100L-1T-10	1	16	16	20	100	7.0	S	0.12
CPE3 1616-160L-1T-10	1	16	16	25	160	7.0	S	0.22
CPE3 2020-160L-2T-10	2	20	20	40	160	7.0	S	0.39
CPE3 2020-200L-2T-10	2	20	20	30	200	7.0	S	0.47
CPE3 2120-200L-2T-10	2	21	20	30	200	7.0	S	0.47
CPE3 2525-160L-3T-10	3	25	25	40	160	7.0	S	0.62
CPE3 2525-200L-3T-10	3	25	25	40	200	7.0	S	0.76
CPE3 2625-250L-2T-10	2	26	25	30	250	7.0	S	0.93
CPE3 3232-250L-3T-10	3	32	32	60	250	7.0	S	1.49
CPE3 4032-200L-4T-10	4	40	32	40	200	7.0	S	1.26

Shouldering

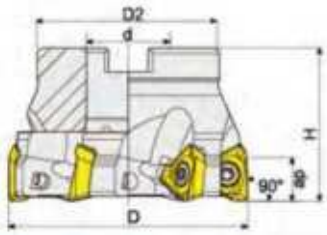
CPE3 Type Shoulder Mill Modular



mm

Designation	No.of Insert	Dimension (mm)								kg
		D	M	D2	d	L1	L	E	ap	
CPE3 020-M10-2T-10	2	20	M10	18	10.5	35	55	15	7.0	0.07
CPE3 025-M12-3T-10	3	25	M12	21	12.5	35	57	17	7.0	0.10
CPE3 026-M12-3T-10	3	26	M12	21	12.5	35	57	17	7.0	0.10
CPE3 032-M16-4T-10	4	32	M16	29	17.0	43	68	22	7.0	0.22
CPE3 040-M16-5T-10	5	40	M16	29	17.0	43	68	22	7.0	0.27
CPE3 042-M16-5T-10	5	42	M16	29	17.0	43	68	22	7.0	0.30

CPE3 Type Shoulder Shell Mill



mm

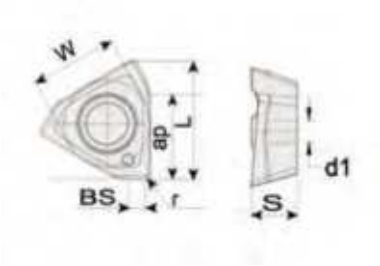
Designation	No.of Insert	Dimension (mm)					arbor	kg
		D	H	d	D2	ap		
CPE3 040-16 -04T-10	4	40	40	16	38	7.0	A	0.30
CPE3 050-22 -05T-10	5	50	40	22	45	7.0	A	0.40
CPE3 063-22 -06T-10	6	63	40	22	47	7.0	A	0.50

Parts

TYPE		
	Insert screw	Wrench
CPE3-10	L0655SSTX2.5-3.6P	TPF-08

Available Inserts

TPKT



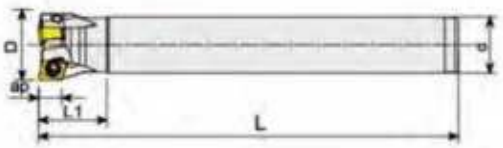
Workpiece			Machining Type													
Steel	P		●	⇕	✱					●	⇕		✱	⇕	✱
Stainless steel	M			✱						●	⇕	⇕	✱	⇕	✱
Cast iron	K		⇕			●	●	⇕	⇕	●	⇕		✱	⇕	✱
Non-ferrous metal	N														
Heat resistant alloy, Titanium alloy	S									●	⇕	⇕	✱		
Hardened steel	H											⇕	✱	⇕	✱

● Continuous cutting
⇕ General cutting
✱ Interrupted cutting

Designations		Dimensions(mm)							CVD Coated							PVD Coated					
		L	W	S	BS	r	d1	ap	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
TPKT-GM	TPKT 100404R-GM	9.83	6.9	4.0	1.3	0.4	3.2	7.0		○		○					●	●			
	TPKT 100408R-GM	9.83	6.9	4.0	1.3	0.8	3.2	7.0		○		○					●	●			

Shouldering

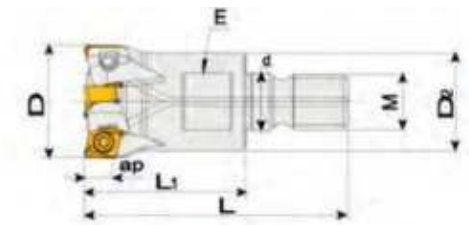
CNE4 Type Shoulder Endmill



mm

Designation	No.of Insert	Dimension (mm)					arbor	kg
		D	d	L1	L	ap		
CNE4 1616-100L-2T-06	2	16	16	25	100	6.0	S	0.13
CNE4 1616-160L-2T-06	2	16	16	25	160	6.0	S	0.21
CNE4 1716-160L-2T-06	2	17	16	25	160	6.0	S	0.21
CNE4 1716-200L-2T-06	2	17	16	25	200	6.0	S	0.28
CNE4 1816-160L-2T-06	2	18	16	25	160	6.0	S	0.21
CNE4 2020-100 L3T-06	3	20	20	25	100	6.0	S	0.24
CNE4 2020-160L-3T-06	3	20	20	25	160	6.0	S	0.36
CNE4 2120-160L-3T-06	3	21	20	25	160	6.0	S	0.36
CNE4 2120-200L-3T-06	3	21	20	25	200	6.0	S	0.50
CNE4 2525-160L-4T-06	4	25	25	30	160	6.0	S	0.41
CNE4 2525-200L-4T-06	4	25	25	30	200	6.0	S	0.71
CNE4 2625-160L-4T-06	4	26	25	30	160	6.0	S	0.41
CNE4 2625-200L-4T-06	4	26	25	30	200	6.0	S	0.71
CNE4 3232-160L-5T-06	5	32	32	35	160	6.0	S	0.72
CNE4 3232-200L-5T-06	5	32	32	35	200	6.0	S	1.19
CNE4 4032-200L-6T-06	6	40	32	40	200	6.0	S	0.90
CNE4 4032-250L-6T-06	6	40	32	40	250	6.0	S	1.49

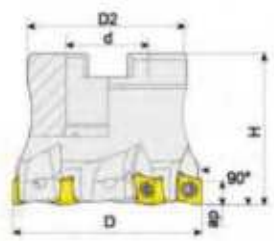
CNE4 Type Mini Shoulder Mill Modular



mm

Designation	No.of Insert	Dimension (mm)								kg
		D	M	D2	d	L1	L	E	ap	
CNE4 016-M08-2T-06	2	16	M8	13	8.5	23	40.5	10	6.0	0.03
CNE4 017-M08-2T-06	2	17	M8	13	8.5	23	40.5	10	6.0	0.03
CNE4 020-M10-3T-06	3	20	M10	18	10.5	35	55.0	15	6.0	0.07
CNE4 021-M10-3T-06	3	21	M10	18	10.5	35	55.0	15	6.0	0.08
CNE4 025-M12-4T-06	4	25	M12	21	12.5	35	57.0	17	6.0	0.10
CNE4 026-M12-4T-06	4	26	M12	21	12.5	35	57.0	17	6.0	0.12
CNE4 032-M16-5T-06	5	32	M16	29	17.0	43	68.0	22	6.0	0.24
CNE4 033-M16-5T-06	5	33	M16	29	17.0	43	68.0	22	6.0	0.26
CNE4 035-M16-5T-06	5	35	M16	29	17.0	43	68.0	22	6.0	0.27
CNE4 040-M16-6T-06	6	40	M16	29	17.0	43	68.0	22	6.0	0.30

CNE4 Type Mini Shoulder Mill Modular



mm

Designation	No.of Insert	Dimension (mm)					arbor	kg
		D	H	d	D2	ap		
CNE4 040-16-06T-06	6	40	40	16	38	6.0	A	0.30
CNE4 050-22-06T-06	6	50	40	22	45	6.0	A	0.40
CNE4 063-22-07T-06	7	63	40	22	47	6.0	A	0.60

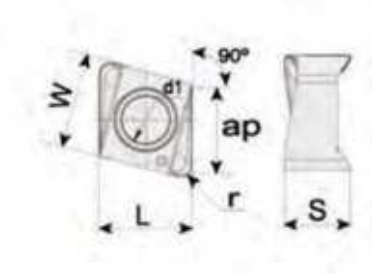
Shouldering

Parts

TYPE		
	Insert screw	Wrench
CNE4-06	L0760SSTX3.0-4.0P	TPF-08

Available Inserts

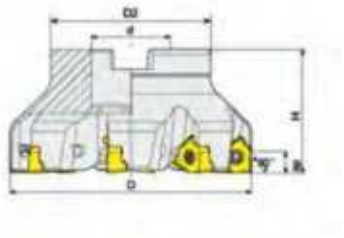
YNKT



Workpiece															
Steel	P	Machining Type	●	⬍	✱					●	⬍		✱	⬍	✱
Stainless steel	M			✱						●	⬍	⬍	✱	⬍	✱
Cast iron	K		⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱
Non-ferrous metal	N	● Continuous cutting													
Heat resistant alloy, Titanium alloy	S	⬍ General cutting								●	⬍	⬍	✱		
Hardened steel	H	✱ Interrupted cutting										⬍	✱	⬍	✱

Designations		Dimensions(mm)						CVD Coated							PVD Coated						
		L	W	S	r	d1	T	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	HX400
YNKT	YNKT 060308R-GM	6.6	6.6	4.67	0.8	3.25	6.0		●		●					●	●				●

TFXND Type Shell Mill



mm

Designation	No.of Insert	Dimension (mm)					arbor
		D	d	H	ap	D2	
TFXND 90050-22-04T	4	50	22	45	7.5	40	A
TFXND 90063-22-06T	6	63	22	45	7.5	47	A
TFXND 90080-27-07T	7	80	27	50	7.5	60	B
TFXND 90100-32-08T	8	100	32	52	7.5	70	B
TFXND 90125-40-10T	10	125	40	60	7.5	87	B
TFXND 90160-40-12T	12	160	40	63	7.5	102	C
TFXND 90200-60-14T	14	200	60	63	7.5	142	C
TFXND 90250-60-16T	16	250	60	63	7.5	142	C

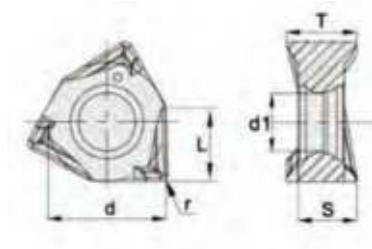
Parts

TYPE		
	Insert screw	Wrench
TFXND	L1060SSTX4-5.7P	FF TPF-15

Shouldering

Available Inserts

WNGX



Workpiece															
Steel	P	Machining Type	●	⬍	✱					●	⬍		✱	⬍	✱
Stainless steel	M			✱						●	⬍	⬍	✱	⬍	✱
Cast iron	K		⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱
Non-ferrous metal	N	● Continuous cutting													
Heat resistant alloy, Titanium alloy	S	⬍ General cutting								●	⬍	⬍	✱		
Hardened steel	H	✱ Interrupted cutting										⬍	✱	⬍	✱

Designations		Dimensions(mm)						CVD Coated							PVD Coated						
		L	d	S	r	d1	T	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPM8325
WNGX	WNGX 080608R-GM	7.5	12.5	6.45	0.8	4.5	7.9	○	●		●	●	●	●		●	●		○	○	●
	WNGX 080612R-GM	7.5	12.5	6.45	1.2	4.5	7.9	○	●		●	●	●	●		●	●		○	○	●
	WNGX 080608R-GH	7.5	12.5	6.45	0.8	4.5	7.9	○	●		●	●	●	●		●	●		○	○	
	WNGX 080612R-GH	7.5	12.5	6.45	1.2	4.5	7.9	○	●		●	●	●	●		●	●		○	○	

ASR High Feedrate Endmill

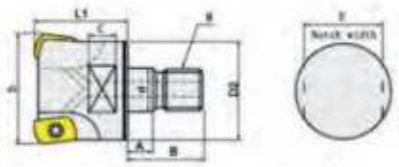
mm

Designation	No.of Insert	Dimension (mm)						Adapter	kg
		D	d	ap	L1	L	LS		
ASR20 16-160-C16-2T	2	16	16	2	50	160	110	S	0.21
ASR20 17-160-C16-2T	2	17	16	2	30	160	130	S	0.21
ASR20 20-160-C20-2T	2	20	20	2	50	160	110	S	0.36
ASR20 21-160-C20-2T	2	21	20	2	30	160	130	S	0.36
ASR20 25-160-C25-3T	3	25	25	2	50	160	110	S	0.53
ASR20 25-200-C25-3T	3	25	25	2	50	200	150	S	0.59
ASR20 26-200-C25-3T	3	26	25	2	40	200	160	S	0.59
ASR20 32-160-C32-4T	4	32	32	2	75	160	85	S	1.00
ASR20 33-160-C32-4T	4	33	32	2	45	160	115	S	1.00
ASR20 33-200-C32-4T	4	33	32	2	45	200	155	S	1.10

Parts

TYPE		
	Insert screw	Wrench
ASR20	L0655SSTX2.5-3.6P	TPF-08

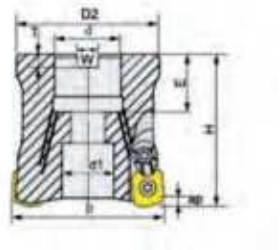
ASR Type Milling Modular



mm

Designation	No.of Insert	Dimension (mm)									kg
		D	L1	d	D2	M	A	B	C	E	
ASR20 016-M08-2T	2	16	25	8.5	13	M8	5.5	17	10	10	0.03
ASR20 017-M08-2T	2	17	25	8.5	13	M8	5.5	17	10	10	0.03
ASR20 020-M10-3T	3	20	30	10.5	18	M10	6.0	19	10	15	0.05
ASR20 021-M10-3T	3	21	30	10.5	18	M10	6.0	19	10	15	0.05
ASR20 025-M12-4T	4	25	35	12.5	21	M12	7.0	22	10	17	0.09
ASR20 026-M12-4T	4	26	35	12.5	21	M12	7.0	22	10	17	0.09
ASR20 032-M16-5T	5	32	40	17.0	29	M16	7.0	23	12	22	0.19
ASR20 035-M16-5T	5	35	40	17.0	29	M16	7.0	23	12	22	0.23
ASR20 040-M16-6T	6	40	40	17.0	29	M16	7.0	23	12	22	0.26
ASR20 042-M16-6T	6	42	40	17.0	29	M16	7.0	23	12	22	0.28

ASR High Feedrate Face Mill



mm

Designation	No.of Insert	Dimension (mm)									kg
		D	d	W	T	H	D2	E	d1	ap	
ASR20 040-16-04T	4	40	16	8.4	5.6	42	38	18	13.5	2.0	0.22
ASR20 050-22-05T	5	50	22	10.4	6.3	50	47	20	17.0	2.0	0.42
ASR20 063-22-06T	6	63	22	10.4	6.3	50	50	20	17.0	2.0	0.62

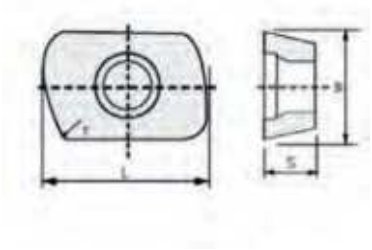
Parts

TYPE		
	Insert screw	Wrench
ASR20	L0655SSTX2.5-3.6P	TPF-08

Fast Feed Milling

Available Inserts

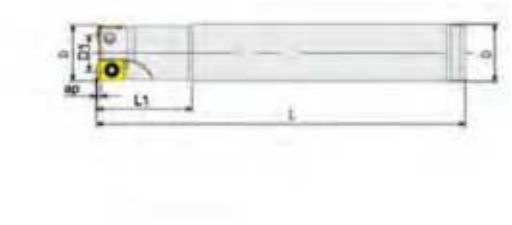
EPNW



Workpiece															
Steel	P	Machining Type	●	⬍	✱					●	⬍		✱	⬍	✱
Stainless steel	M			✱						●	⬍	⬍	✱	⬍	✱
Cast iron	K		⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱
Non-ferrous metal	N	● Continuous cutting													
Heat resistant alloy, Titanium alloy	S	⬍ General cutting								●	⬍	⬍	✱		
Hardened steel	H	✱ Interrupted cutting										⬍	✱	⬍	✱

Designations		Dimensions(mm)				CVD Coated							PVD Coated					
		L	W	S	r	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
EPNW	EPNW 0603TN-8	10	6.35	3.18	8.0									●	●			

ELT Micro Type Endmill

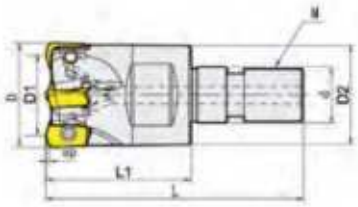


mm

Designation	No.of Insert	Dimension (mm)								Adapter
		D	D1	d	L1	L	ap	Maximum rampinganglea	A.R.	
ELT06R-0810-075L-1T	1	8	4.2	10	16	75	0.5	4°	+5°	S
ELT06R-1010-080L-2T	2	10	6.2	10	20	80	0.5	3°	+5°	S
ELT06R-1212-080L-3T	3	12	8.2	12	20	80	0.5	2°	+5°	S
ELT06R-1412-080L-3T	3	14	10.2	12	20	80	0.5	1.5°	+5°	S
ELT06R-1616-100L-4T	4	16	12.2	16	25	100	0.5	1.2°	+5°	S
ELT06R-1716-100L-4T	4	17	13.2	16	25	100	0.5	1.2°	+5°	S
ELT06R-2020-150L-ST	5	20	16.2	20		150	0.5	1.2°	+5°	S

Fast Feed Milling

ELT Micro Type Milling Modular



mm

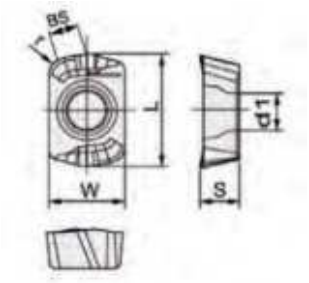
Designation	No.of Insert	Dimension (mm)									
		D	D1	D2	d	L1	L	M1	ap	Maximum rampinganglea	A.R.
ELT06R 008-M06-1T	1	8	4.2	4.2	6.5	17	31.5	M6	0.5	4°	+5°
ELT06R 010-M06-2T	2	10	6.2	9.2	6.5	17	31.5	M6	0.5	3°	+5°
ELT06R 012-M06-3T	3	12	8.2	11.2	6.5	17	31.5	M6	0.5	2°	+5°
ELT06R 014-M06-4T	4	14	10.2	11.2	6.5	17	31.5	M6	0.5	1.5°	+5°
ELT06R 016-M08-4T	4	16	12.2	14.7	8.5	22	40.0	M8	0.5	1.2°	+5°
ELT06R 017-M08-4T	4	17	13.2	14.7	8.5	22	40.0	M8	0.5	1.2°	+5°

Parts

TYPE		
	Insert screw	Wrench
ELT06R	L0455SSTX1.8-2.7P	TPF-06

Available Inserts

EPGT

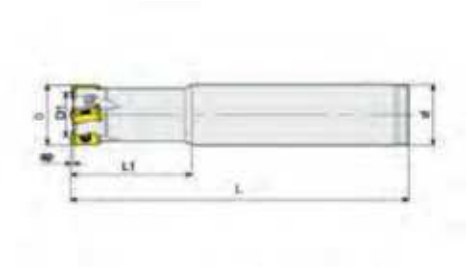


Workpiece			Machining Type	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
	Steel	P		●	⬌	✖					●	⬌		✖	⬌	✖
	Stainless steel	M			✖						●	⬌	⬌	✖	⬌	✖
	Cast iron	K		⬌			●	●	⬌	⬌	●	⬌		✖	⬌	✖
	Non-ferrous metal	N	● Continuous cutting													
	Heat resistant alloy, Titanium alloy	S	⬌ General cutting								●	⬌	⬌	✖		
	Hardened steel	H	✖ Interrupted cutting										⬌	✖	⬌	✖

Designations		Dimensions(mm)						CVD Coated							PVD Coated					
		L	W	S	r	BS	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
EPGT-GM	EPGT 060210R-GM	6.26	4.19	2.19	1.0	1.7	2.1									●	●			

Fast Feed Milling

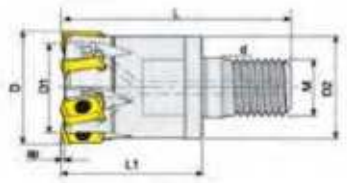
ELN Type Endmill



mm

Designation	No.of Insert	Dimension (mm)							Arbor
		D	D1	d	L	L1	ap	A.R.	
ELN11R-1616-100L-2T	2	16	8	16	100	30	1	-10°	S
ELN11R-1616-150L-2T	2	16	8	16	150	50	1	-10°	S
ELN11R-1716-100L-2T	2	17	9	16	100	20	1	-10°	S
ELN11R-1716-150L-2T	2	17	9	16	150	50	1	-10°	S
ELN11R-2020-100L-3T	3	20	12	20	100	20	1	-10°	S
ELN11R-2020-150L-3T	3	20	12	20	150	70	1	-10°	S
ELN11R-2020-200L-3T	3	20	12	20	200	80	1	-10°	S
ELN11R-2121-100L-3T	3	21	13	20	100	20	1	-10°	S
ELN11R-2220-150L-3T	3	22	14	20	150	50	1	-10°	S
ELN11R-2220-200L-3T	3	22	14	20	200	50	1	-10°	S
ELN11R-2220-150L-4T	4	22	14	20	150	50	1	-10°	S
ELN11R-2220-200L-4T	4	22	14	20	200	50	1	-10°	S
ELN11R-2525-150L-4T	4	25	17	25	150	70	1	-10°	S
ELN11R-2525-200L-4T	4	25	17	25	200	120	1	-10°	S
ELN11R-2825-150L-4T	4	28	20	25	150	50	1	-10°	S
ELN11R-2825-200L-4T	4	28	20	25	200	50	1	-10°	S
ELN11R-2825-150L-5T	5	28	20	25	150	50	1	-10°	S
ELN11R-2825-200L-5T	5	28	20	25	200	50	1	-10°	S
ELN11R-3232-150L-5T	5	32	24	32	150	70	1	-10°	S
ELN11R-3232-200L-5T	5	32	24	32	200	120	1	-10°	S
ELN11R-3232-150L-6T	6	32	24	32	150	70	1	-10°	S
ELN11R-3232-200L-6T	6	32	24	32	200	120	1	-10°	S
ELN11R-3332-150L-6T	6	33	25	32	150	50	1	-10°	S
ELN11R-3332-200L-6T	6	33	25	32	200	50	1	-10°	S
ELN11R-3532-150L-6T	6	35	27	32	150	50	1	-10°	S
ELN11R-3532-200L-6T	6	35	27	32	200	50	1	-10°	S
ELN11R-4032-150L-6T	6	40	32	32	150	50	1	-10°	S
ELN11R-4032-200L-6T	6	40	32	32	200	50	1	-10°	S

ELN Type Milling Modular

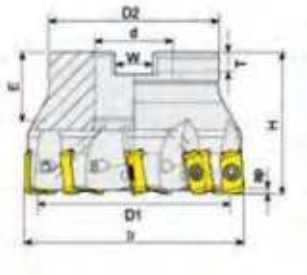


mm

Designation	No.of Insert	Dimension (mm)								
		D	D1	D2	d	L	L1	M	ap	A.R.
ELN11R-016-M08-2T	2	16	8	14.7	8.5	43	25	M8	1.0	-10°
ELN11R-017-M08-2T	2	17	9	14.7	8.5	43	25	M8	1.0	-10°
ELN11R-018-M08-2T	2	18	10	14.7	8.5	43	25	M8	1.0	-10°
ELN11R-020-M10-3T	3	20	12	18.7	10.5	49	30	M10	1.0	-10°
ELN11R-020-M10-4T	4	20	12	18.7	10.5	49	30	M10	1.0	-10°
ELN11R-022-M10-3T	3	22	14	18.7	10.5	49	30	M10	1.0	-10°
ELN11R-022-M10-4T	4	22	14	18.7	10.5	49	30	M10	1.0	-10°
ELN11R-025-M12-4T	4	25	17	23.0	12.5	57	35	M12	1.0	-10°
ELN11R-025-M12-5T	5	25	17	23.0	12.5	57	35	M12	1.0	-10°
ELN11R-028-M12-4T	4	28	20	23.0	12.5	57	35	M12	1.0	-10°
ELN11R-028-M12-5T	5	28	20	23.0	12.5	57	35	M12	1.0	-10°
ELN11R-032-M16-5T	5	32	24	30.0	17.0	63	40	M16	1.0	-10°
ELN11R-032-M16-6T	6	32	24	30.0	17.0	63	40	M16	1.0	-10°

Fast Feed Milling

ELN Type Shell Mill



mm

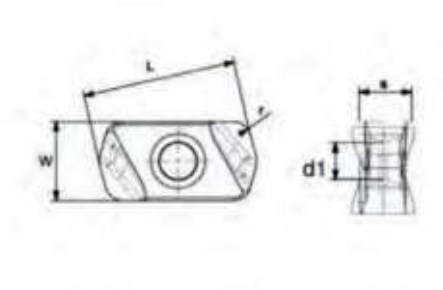
Designation	No.of Insert	Dimension (mm)										Arbor
		D	D1	D2	d	H	E	T	W	ap	A.R.	
ELN11R-040-16 -05T	5	40	32	38	16	40	19	5.6	8.4	1.0	-10°	A
ELN11R-040-16 -06T	6	40	32	38	16	40	19	5.6	8.4	1.0	-10°	A
ELN11R-050-22 -07T	7	50	42	47	22	50	21	6.3	10.4	1.0	-10°	A
ELN11R-050-22 -08T	8	50	42	47	22	50	21	6.3	10.4	1.0	-10°	A
ELN11R-063-22 -08T	8	63	55	60	22	50	21	6.3	10.4	1.0	-10°	A
ELN11R-063-22 -09T	9	63	55	60	22	50	21	6.3	10.4	1.0	-10°	A

Parts

TYPE		
	Insert screw	Wrench
ELN11R	L0760SSTX3.0-4.0P	TPF-08

Available Inserts

ENGU

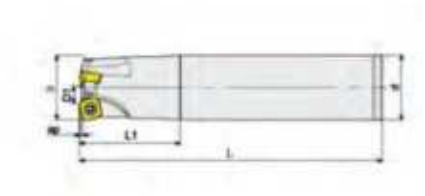


Workpiece															
Steel	P	Machining Type	●	⇕	✱					●	⇕		✱	⇕	
Stainless steel	M			✱						●	⇕	⇕	✱	⇕	
Cast iron	K		⇕			●	●	⇕	⇕	●	⇕		✱	⇕	
Non-ferrous metal	N	● Continuous cutting													⇕
Heat resistant alloy, Titanium alloy	S	⇕ General cutting								●	⇕	⇕	✱		
Hardened steel	H	✱ Interrupted cutting										⇕	✱	⇕	

Designations		Dimensions(mm)					CVD Coated							PVD Coated						
		L	W	S	r	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01
ENGU-GM	ENGU 11T310R-GM	11.90	6.20	3.96	1.0	3.45									●	●				●

Fast Feed Milling

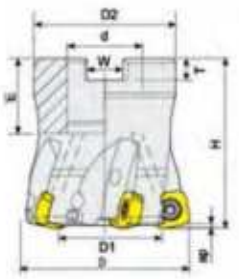
ELS Type Endmill



mm

Designation	No.of Insert	Dimension (mm)									Arbor
		D	D1			d	L1	L	ap	A.R.	
			GM	LD	FL						
ELS10R 2525-150L-2T	2	25	8	12.5	11.5	25	60	150	1.5	-10°	S
ELS10R 2525-200L-2T	2	25	8	12.5	11.5	25	120	200	1.5	-10°	S
ELS10R 2825-150L-2T	2	28	11	15.5	14.5	25	40	150	1.5	-10°	S
ELS10R 2825-200L-2T	2	28	11	15.5	14.5	25	40	200	1.5	-10°	S
ELS10R 3232-150L-3T	3	32	15	19.5	18.5	32	70	150	1.5	-10°	S
ELS10R 3232-200L-3T	3	32	15	19.5	18.5	32	120	200	1.5	-10°	S
ELS10R 3532-150L-3T	3	35	18	22.5	21.5	32	50	150	1.5	-10°	S
ELS10R 3532-200L-3T	3	35	18	22.5	21.5	32	50	200	1.5	-10°	S
ELS10R 4032-150L-4T	4	40	23	27.5	26.5	32	50	150	1.5	-10°	S
ELS10R 4032-200L-4T	4	40	23	27.5	26.5	32	50	200	1.5	-10°	S
ELS10R 4032-250L-4T	4	40	23	27.5	26.5	32	50	250	1.5	-10°	S
ELS14R 5042-150L-3T	3	50	27	33.0	32.0	42	50	150	2.0	-10°	S
ELS14R 6342-150L-4T	4	63	40	46.0	45.0	42	50	150	2.0	-10°	S
ELS14R 8042-150L-5T	5	80	57	63.0	62.0	42	50	150	2.0	-10°	S

ELS Type Shell Mill

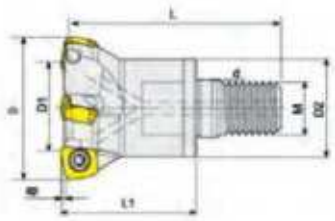


mm

Designation	No.of Insert	Dimension (mm)												Arbor
		D	D1			D2	d	H	E	T	W	ap	A.R.	
			GM	LD	FL									
ELS10R 050-22-04T	4	50	33	37.5	36.5	47	22	50	21	6.3	10.4	1.5	+10°	A
ELS10R 050-22-05T	5	50	33	37.5	36.5	47	22	50	21	6.3	10.4	1.5	+10°	A
ELS10R 063-22-05T	5	63	46	50.5	49.5	60	22	50	21	6.3	10.4	1.5	+10°	A
ELS10R 063-22-06T	6	63	46	50.5	49.5	60	22	50	21	6.3	10.4	1.5	+10°	A
ELS10R 080-27-07T	7	80	63	67.5	66.5	76	27	63	24	7.0	12.4	1.5	+10°	B
ELS14R 050-22-04T	4	50	27	33	32	47	22	50	21	6.3	10.4	2.0	+10°	A
ELS14R 063-22-05T	5	63	40	46	45	60	22	50	24	6.3	10.4	2.0	+10°	A
ELS14R 080-27-06T	6	80	57	63	62	76	27	63	24	7.0	12.4	2.0	+10°	B
ELS14R 100-32-07T	7	100	77	83	82	96	32	63	28	8.0	14.4	2.0	+10°	B
ELS14R 125-40-07T	7	125	102	108	107	100	40	63	33	9.0	16.4	2.0	+10°	B
ELS14R 160-40-08T	8	160	137	143	142	100	40	63	32	9.0	16.4	2.0	+10°	C

Fast Feed Milling

ELS Type Milling Modular



mm

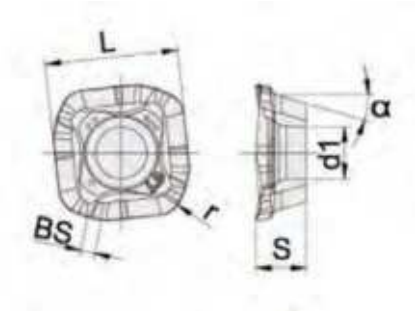
Designation	No.of Insert	Dimension (mm)										
		D	D1			D2	d	L1	L	M	ap	A.R.
			GM	LD	FL							
ELS10R 025-M12-2T	2	25	8	12.5	11.5	23	12.5	35	57	M12	1.5	+10°
ELS10R 028-M12-2T	2	28	11	15.5	14.5	23	12.5	35	57	M12	1.5	+10°
ELS10R 032-M16-3T	3	32	15	19.5	18.5	30	17.0	40	63	M16	1.5	+10°
ELS10R 035-M16-3T	3	35	18	22.5	21.5	30	17.0	40	63	M16	1.5	+10°
ELS10R 040-M16-4T	4	40	23	27.5	26.5	30	17.0	40	63	M16	1.5	+10°

Parts

TYPE		
	Insert screw	Wrench
ELS10R	L1060SSTX4.0-5.7P	TPF-15
ELS14R	L1260SSTX5.0-7.0P	TPF-20

Available Inserts

XOMT



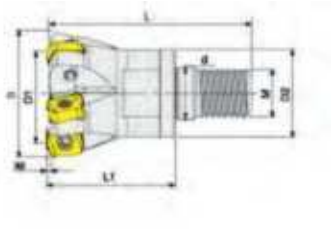
Workpiece		Machining Type												
Steel	P		●	⧗	✱					●	⧗		✱	⧗	✱
Stainless steel	M			✱						●	⧗	⧗	✱	⧗	✱
Cast iron	K		⧗			●	●	⧗	⧗	●	⧗		✱	⧗	✱
Non-ferrous metal	N														
Heat resistant alloy, Titanium alloy	S									●	⧗	⧗	✱		
Hardened steel	H											⧗	✱	⧗	✱

● Continuous cutting
⧗ General cutting
✱ Interrupted cutting

Designations		Dimensions(mm)						CVD Coated							PVD Coated					
		L	W	S	r	d1	ap	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
XOMT-GM	XOMT 100420R-GM	10.30	4.58	-	2.0	4.6	16°									●	●			
	XOMT 140520R-GM	14.14	5.56	-	2.0	5.8	16°									●	●			
XOMT-LD	XOMT 140520R-LD	14.76	5.56	1.6	2.0	5.8	16°									●	●			

Fast Feed Milling

ELX Type Milling Modular



mm

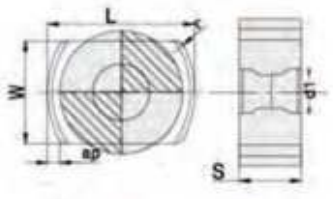
Designation	No.of Insert	Dimension (mm)						
		D	D1	D2	M	L1	L	ap
ELX06R-016-M08-2T	2	16	9.4	13	M8	25	42.5	0.7
ELX06R-018-M08-2T	2	18	11.1	13	M8	25	42.5	0.7
ELX06R-020-M10-3T	3	20	12.4	18	M10	30	50.0	1.0
ELX06R-025-M12-4T	4	25	17.3	21	M12	35	57.0	1.0
ELX06R-032-M16-5T	5	32	24.3	29	M16	40	65.0	1.0
ELX06R-035-M16-5T	5	35	27.3	29	M16	43	68.0	1.0
ELX06R-040-M16-6T	6	40	32.2	29	M16	43	68.0	1.0
ELX06R-042-M16-6T	6	42	34.2	29	M16	43	68.0	1.0
ELX09R-025-M12-3T	3	25	14.7	21	M12	35	57.0	1.5
ELX09R-030-M16-3T	3	30	19.6	29	M16	43	68.0	1.5
ELX09R-032-M16-4T	4	32	21.6	29	M16	43	68.0	1.5
ELX09R-040-M16-5T	5	40	29.6	29	M16	43	68.0	1.5
ELX09R-042-M16-5T	5	42	31.6	29	M16	43	68.0	1.5

Spare Parts

TYPE		
	Insert screw	Wrench
ELX06R	L0750SSTX3.0-4.0P	TPF-08
ELX09R	L0960SSTX4.0-5.7P	TPF-15

Available Inserts

LNMX

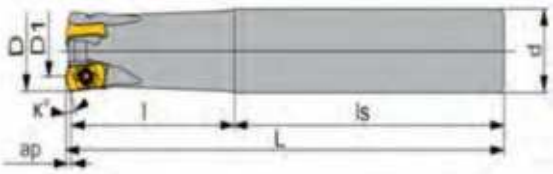


Workpiece			Machining Type	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
	Steel	P		●	⬌	✖					●	⬌		✖	⬌	✖
	Stainless steel	M			✖						●	⬌	⬌	✖	⬌	✖
	Cast iron	K		⬌			●	●	⬌	⬌	●	⬌		✖	⬌	✖
	Non-ferrous metal	N	● Continuous cutting													
	Heat resistant alloy, Titanium alloy	S	⬌ General cutting								●	⬌	⬌	✖		
	Hardened steel	H	✖ Interrupted cutting										⬌	✖	⬌	✖

Designations		Dimensions(mm)						CVD Coated							PVD Coated					
		L	W	S	r	d1	ap	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
LNMX-GM	LNMX 060310ER-GM	9.0	6.39	3.73	1.0	3.0	1.0									●	●			
	LNMX 090415ER-GM	11.9	9.18	4.80	1.5	4.0	1.5									●	●			

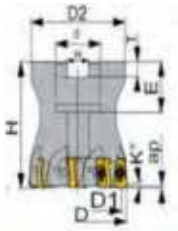
Fast Feed Milling

EXN Type Endmill



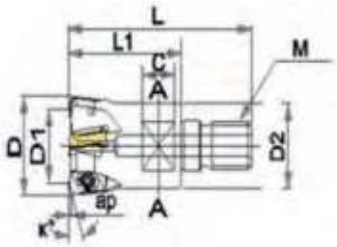
Designation	No.of Insert	Dimension (mm)								Spare Parts	
		ΦD	φd	φD1	l	ls	L	κ°	ap	Screw	Wrench
EXN03R-1616-100L-2T	2	16	16	9,6	30	70	100	15	1.0	L06555SS TX2.5-3.6P	TPF-08
EXN03R-1616-150L-2T	2	16	16	9,6	50	100	150	15	1.0		
EXN03R-1616-200L-2T	2	16	16	9.6	60	140	200	15	1.0		
EXN03R-1716-150L-2T	2	17	16	10.6	30	120	150	15	1.0		
EXN03R-1716-200L-2T	2	17	16	10.6	30	170	200	15	1.0		
EXN03R-1816-150L-2T	2	18	16	11.5	30	120	150	15	1.0		
EXN03R-1816-200L-2T	2	18	16	11.5	30	170	200	15	1.0		
EXN03R-2019-150L-3T	3	20	19	13.5	35	115	150	17	1.0		
EXN03R-2019-200L-3T	3	20	19	13.5	35	165	200	17	1.0		
EXN03R-2019-250L-3T	3	20	19	13.5	35	215	250	17	1.0		
EXN03R-2020-100L-3T	3	20	20	13.5	30	70	100	17	1.0		
EXN03R-2020-150L-3T	3	20	20	13.5	50	100	150	17	1.0		
EXN03R-2020-200L-3T	3	20	20	13.5	100	100	200	17	1.0		
EXN03R-2020-250L-3T	3	20	20	13.5	100	150	250	17	1.0		
EXN03R-2120-150L-3T	3	21	20	14.5	35	115	150	17	1.0		
EXN03R-2120-200L-3T	3	21	20	14.5	35	165	200	17	1.0		
EXN03R-2120-250L-3T	3	21	20	14.5	35	215	250	17	1.0		
EXN03R-2220-150L-3T	3	22	20	15.5	35	115	150	17	1.0		
EXN03R-2220-200L-3T	3	22	20	15.5	35	165	200	17	1.0		
EXN03R-2524-150L-4T	4	25	24	18.5	40	110	150	17	1.0		
EXN03R-2524-200L-4T	4	25	24	18.5	40	160	200	17	1.0		
EXN03R-2525-150L-4T	4	25	25	18.5	50	100	150	17	1.0		
EXN03R-2525-200L-4T	4	25	25	18.5	100	100	200	17	1.0		
EXN03R-2525-250L-4T	4	25	25	18.5	100	150	250	17	1.0		
EXN03R-2625-150L-4T	4	26	25	19.5	40	110	150	17	1.0		
EXN03R-2625-200L-4T	4	26	25	19.5	40	160	200	17	1.0		
EXN03R-2625-250L-4T	4	26	25	19.5	40	210	250	17	1.0		
EXN03R-2825-150L-4T	4	28	25	21.5	40	110	150	17	1.0		
EXN03R-2825-200L-4T	4	28	25	21.5	40	160	200	17	1.0		
EXN03R-3232-150L-5T	5	32	32	25.5	50	100	150	17	1.0		
EXN03R-3232-200L-5T	5	32	32	25.5	100	100	200	17	1.0		
EXN03R-3232-250L-5T	5	32	32	25.5	100	150	250	17	1.0		
EXN03R-3332-150L-5T	5	33	32	26.5	40	110	150	17	1.0		
EXN03R-3332-200L-5T	5	33	32	26.5	40	160	200	17	1.0		
EXN03R-3332-250L-5T	5	33	32	26.5	40	210	250	17	1.0		
EXN03R-3532-150L-5T	5	35	32	29.5	40	110	150	17	1.0		
EXN03R-3532-200L-5T	5	35	32	29.5	40	160	200	17	1.0		
EXN03R-3532-250L-5T	5	35	32	29.5	40	210	250	17	1.0		
EXN03R-4032-150L-6T	6	40	32	33.6	35	115	150	17	1.0		
EXN03R-4032-200L-6T	6	40	32	33.6	35	165	200	17	1.0		
EXN03R-4032-250L-6T	6	40	32	33.6	35	215	250	17	1.0		

EXN Type Milling Modular



Designation	No.of Insert	Dimension (mm)									Spare Parts	
		ΦD	φD2	ΦD1	E	H	T	W	κ°	ap	Screw	Wrench
EXN03R-040-16-06T	6	40	35	16	33.6	19	5.6	8.4	17	1.0	L06555SS TX2.5-3.6P	TPF-08
EXN03R-040-22-06T	6	40	35	22	33.6	19	5.6	8.4	17	1.0		
EXN03R-050-22-08T	8	50	45	22	43.6	20	6.3	10.4	17	1.0		
EXN03R-063-22-08T	8	63	52	22	56.6	20	6.3	10.4	17	1.0		
EXN03R-080-27-10T	10	80	60	27	73.6	25	7.0	12.4	17	1.0		
EXN03R-100-32-12T	12	100	70	32	93.6	33	8.0	14.4	17	1.0		

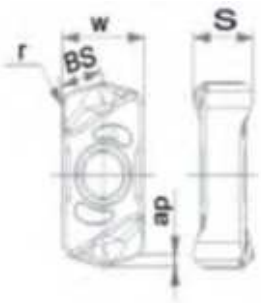
EXN Type Shell Mill



Designation	No.of Insert	Dimension (mm)										Spare Parts	
		ΦD	D1	D2	L1	L	C	H	κ°	M	ap	Screw	Wrench
EXN03R-016-M08-2T	2	16	9.6	15.5	28	47	8	10	15	M8	1.0	L06555SS TX2.5-3.6P	T-8
EXN03R-017-M08-2T	2	17	10.6	15.5	28	47	8	10	17	M8	1.0		
EXN03R-018-M08-2T	2	18	11.5	15.5	28	47	8	10	17	M8	1.0		
EXN03R-020-M10-3T	3	20	13.5	19.5	30	49	10	15	17	M10	1.0		
EXN03R-021-M10-3T	3	21	14.5	19.5	30	49	10	15	17	M10	1.0		
EXN03R-022-M10-3T	3	22	15.5	19.5	30	49	10	15	17	M10	1.0		
EXN03R-025-M12-4T	4	25	18.5	23.0	35	57	10	17	17	M12	1.0		
EXN03R-028-M12-4T	4	28	21.5	23.0	35	57	10	17	17	M12	1.0		
EXN03R-030-M16-5T	5	30	23.5	28.0	40	65	12	22	17	M16	1.0		
EXN03R-032-M16-5T	5	32	25.5	30.0	40	65	12	22	17	M16	1.0		
EXN03R-040-M16-6T	6	40	33.6	30.0	40	65	12	22	17	M16	1.0		

Available Inserts

LNMU

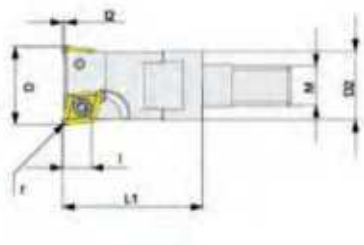


Workpiece			Machining Type												
	Steel	P		●	⧗	✖					●	⧗				
	Stainless steel	M			✖						●	⧗	⧗	✖	⧗	
	Cast iron	K		⧗			●	●	⧗	⧗	●	⧗				
	Non-ferrous metal	N	● Continuous cutting													⧗
	Heat resistant alloy, Titanium alloy	S	⧗ General cutting								●	⧗	⧗	✖	⧗	
	Hardened steel	H	✖ Interrupted cutting										⧗	✖	⧗	

Designations		Dimensions(mm)					CVD Coated							PVD Coated				
		W	S	BS	ap	r	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8125	TPM8225	TPM8325	X400	TPK01
LNMU-TW	LNMU0303ZER-TW	6.0	4.3	3.2	1.0	1.2								●	●	●	●	●
LNMU-TL	LNMU0303ZER-TL	6.0	4.3	3.2	1.0	1.2								●	●			

Fast Feed Milling

XDH Type Milling Modular



mm

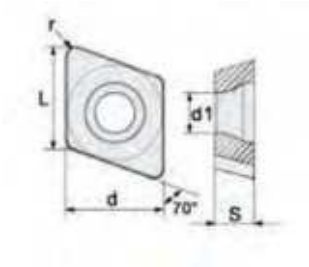
Designation	No.of Insert	Dimension (mm)						
		D	D2	L1	M	l2	l	r
XDH06-016-M08-2T	2	16	13.8	28.5	M8	1.3	6.5	1.0
XDH06-020-M10-3T	3	20	18.0	28.5	M10	1.3	6.5	1.0
XDH06-025-M12-4T	4	25	21.0	32.5	M12	1.3	6.5	1.0
XDH06-030-M12-5T	5	30	21.0	32.5	M12	1.3	6.5	1.0
XDH06-035-M16-6T	6	35	29.0	42.5	M16	1.3	6.5	1.0
XDH06-042-M16-6T	6	42	29.0	42.5	M16	1.3	6.5	1.0
XDH10-025-M12-2T	2	25	21.0	32.0	M12	-	10.0	1.0
XDH10-030-M12-3T	3	30	21.0	32.0	M12	-	10.0	1.0
XDH10-032-M12-3T	3	32	21.0	32.0	M12	-	10.0	1.0
XDH10-035-M16-3T	3	35	29.0	42.0	M16	-	10.0	1.0
XDH10-042-M16-4T	4	42	29.0	42.0	M16	-	10.0	1.0

Spare Parts

TYPE		
	Insert screw	Wrench
XDH06	L0655SSTX2.5-3.6P	TPF-08
XDH10	L1060SSTX4.0-5.7P	TPF-15

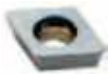
Available Inserts

XDHW

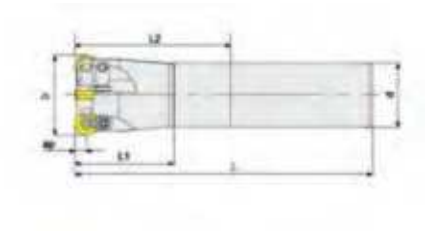


Workpiece		Machining Type													
Steel	P	● Continuous cutting	●	⬍	✱					●	⬍		✱	⬍	✱
Stainless steel	M	⬍ General cutting		✱						●	⬍	⬍	✱	⬍	✱
Cast iron	K	✱ Interrupted cutting	⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱
Non-ferrous metal	N														
Heat resistant alloy, Titanium alloy	S									●	⬍	⬍	✱		
Hardened steel	H											⬍	✱	⬍	✱

Designations		Dimensions(mm)					CVD Coated							PVD Coated					
		L	d	S	r	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
XDHW	XDHW 060210SN	6.5	6.5	2.38	1.0	2.95									●	●			
	XDHW 10T310SN	10.0	10.0	3.97	1.0	3.95									●	●			



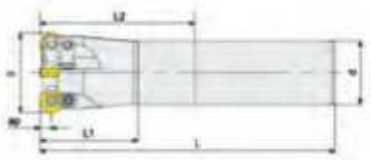
EMR Corner Radius Endmill



mm

Designation	No.of Insert	Dimension (mm)						Adapter
		D	d	ap	L1	L2	L	
EMR-4R-12-130-C12-1T	1	12	12	4	40	-	130	S
EMR-4R-13-130-C12-1T	1	13	12		40	-	130	S
EMR-4R-16-130-C16-2T	2	16	16		40	-	130	S
EMR-4R-16-160-C16-2T	2	16	16		40	-	160	S
EMR-4R-16-160-C15-2T	2	16	15		40	-	160	S
EMR-4R-16-200-C16-2T	2	16	16		40	100	200	S
EMR-4R-16-200-C15-2T	2	16	15		40	-	200	S
EMR-4R-17-160-C16-2T	2	17	16		40	-	160	S
EMR-4R-17-200-C16-2T	2	17	16		50	-	200	S
EMR-4R-20-160-C20-2T	2	20	20		50	-	160	S
EMR-4R-20-200-C20-2T	2	20	20		50	100	200	S
EMR-4R-20-160-C19-2T	2	20	19		50	-	160	S
EMR-4R-20-200-C19-2T	2	20	19		50	-	200	S
EMR-4R-21-160-C20-2T	2	21	20		50	-	160	S
EMR-4R-21-200-C20-2T	2	21	20	5	50	-	200	S
EMR-5R-20-160-C20-2T	2	20	20		50	-	160	S
EMR-5R-20-200-C20-2T	2	20	20		50	100	200	S
EMR-5R-21-160-C20-2T	2	21	20		50	-	160	S
EMR-5R-21-200-C20-2T	2	21	20		50	-	200	S
EMR-5R-25-160-C20-2T	2	25	20		50	-	160	S
EMR-5R-25-160-C25-2T	2	25	25		50	-	160	S
EMR-5R-25-160-C24-2T	2	25	24		50	-	160	S

EMR Corner Radius Endmill

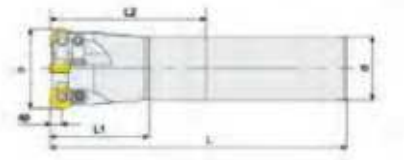


mm

Designation	No.of Insert	Dimension (mm)						Adapter
		D	d	ap	L1	L2	L	
EMR-5R-25-200-C20-2T	2	25	20	5	50	-	200	S
EMR-5R-25-200-C25-2T	2	25	25		75	-	200	S
EMR-5R-25-200-C24-2T	2	25	24		50	-	200	S
EMR-5R-25-250-C25-2T	2	25	25		60	115	250	S
EMR-5R-25-250-C24-2T	2	25	24		50	-	250	S
EMR-5R-26-160-C25-2T	2	26	25		50	-	160	S
EMR-5R-26-200-C25-2T	2	26	25		50	-	200	S
EMR-5R-26-250-C25-2T	2	26	25		50	-	250	S
EMR-5R-30-110-C20-2T	2	30	20		40	-	110	S
EMR-5R-30-110-C34-2T	2	30	19.05		40	-	110	S
EMR-5R-30-160-C25-2T	2	30	25		50	-	160	S
EMR-5R-30-200-C25-2T	2	30	25		50	-	200	S
EMR-5R-30-250-C25-2T	2	30	25		60	-	250	S
EMR-5R-30-300-C25-2T	2	30	25		60	-	300	S
EMR-5R-30-300-C32-3T	2	30	32		60	-	300	S
EMR-5R-35-160-C32-2T	2	35	32		50	-	160	S
EMR-5R-35-160-C32-3T	3	35	32		50	-	160	S
EMR-5R-35-200-C32-2T	2	35	32		50	-	200	S
EMR-5R-35-200-C32-3T	3	35	32		50	-	200	S
EMR-5R-35-250-C32-3T	3	35	32		60	-	250	S
EMR-5R-35-300-C32-3T	3	35	32		60	-	300	S
EMR-5R-35-350-C32-3T	3	35	32		60	-	350	S

Profiling

EMR Corner Radius Endmill



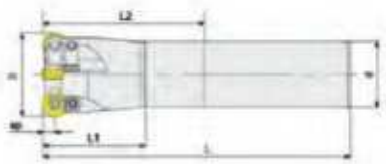
mm

Designation	No.of Insert	Dimension (mm)						Adapter
		D	d	ap	L1	L2	L	
EMR-5R-35-400-C32-3T	3	35	32	5	60	-	400	S
EMR-5R-40-160-C32-4T	4	40	32	5	50	-	160	S
EMR-5R-40-200-C32-4T	4	40	32	5	50	-	200	S
EMR-5R-40-250-C32-4T	4	40	32	5	60	-	250	S
EMR-5R-40-300-C32-4T	4	40	32	5	60	-	300	S
EMR-5R-40-350-C32-4T	4	40	32	5	60	-	350	S

Parts

TYPE				
	Clamp	Clamp screw	Insert screw	Wrench
EMR-4R	Y-4R	YS30070PN	L0755SSTX3.0-4.0P	TPF-08
EMR-5R	Y-5R	YS35100PN	L0960SSTX4.0-5.7P	TPF-15

EMRW Corner Radius Endmill

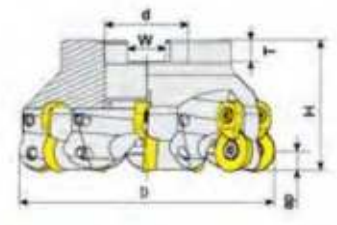


mm

Designation	No.of Insert	Dimension (mm)						Adapter
		D	d	ap	L1	L2	L	
EMRW-6R-25-200-C25-2T	2	25	25	6	50	-	200	S
EMRW-6R-25-250-C25-2T	2	25	25	6	60	-	250	S
EMRW-6R-32-160-C32-2T	2	32	32	6	50	-	160	S
EMRW-6R-32-200-C25-2T	2	32	25	6	50	-	200	S
EMRW-6R-32-200-C32-2T	2	32	32	6	80	-	200	S
EMRW-6R-32-250-C25-2T	2	32	25	6	60	-	250	S
EMRW-6R-32-250-C32-2T	2	32	32	6	100	-	250	S
EMRW-6R-35-160-C32-3T	3	35	32	6	50	-	160	S
EMRW-6R-35-200-C32-3T	3	35	32	6	50	-	200	S
EMRW-6R-35-250-C32-3T	3	35	32	6	60	-	250	S
EMRW-6R-35-300-C32-3T	3	35	32	6	60	-	300	S
EMRW-6R-35-350-C32-3T	3	35	32	6	60	-	350	S
EMRW-6R-35-400-C32-3T	3	35	32	6	60	-	400	S
EMRW-6R-40-160-C32-3T	3	40	32	6	50	-	160	S
EMRW-6R-40-200-C32-3T	3	40	32	6	50	-	200	S
EMRW-6R-40-250-C32-3T	3	40	32	6	60	-	250	S
EMRW-6R-40-300-C32-3T	3	40	32	6	60	-	300	S
EMRW-6R-40-350-C32-3T	3	40	32	6	60	-	350	S
EMRW-6R-50-200-C32-4T	4	50	32	6	60	-	200	S
EMRW-6R-50-250-C32-4T	4	50	32	6	60	-	250	S

Profiling

EMR/EMRW Corner Radius Face Mill



mm

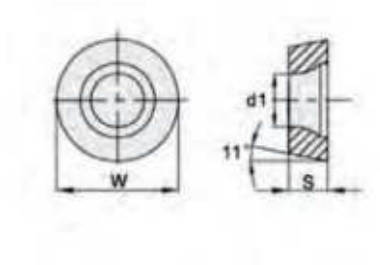
Designation	No.of Insert	Dimension (mm)						Arbor
		D	d	ap	W	T	H	
EMR-5R-050-22-04T	4	50	22	5	10.4	6.3	50	A
EMR-5R-063-22-04T	4	63	22		10.4	6.3	50	A
EMR-5R-080-27-06T	6	80	27		12.4	7.0	50	A
EMR-5R-100-32-06T	6	100	32		14.4	7.0	50	A
EMR-5R-125-40-07T	8	125	40		16.4	9.0	63	A
EMR-5R-160-40-08T	8	160	40		16.4	9.0	63	B
EMRW-6R-050-22-04T	4	50	22	6	10.4	6.3	50	B
EMRW-6R-063-22-04T	4	63	22		10.4	6.3	50	B
EMRW-6R-080-27-06T	6	80	27		12.4	7.0	50	C
EMRW-6R-100-32-06T	6	100	32		14.4	7.0	50	C
EMRW-6R-125-40-07T	7	125	40		16.4	9.0	63	C
EMRW-6R-160-40-08T	8	160	40		16.4	9.0	63	C
EMRW-6R-200-60-09T	9	200	60		25.7	14.0	63	C

Parts

TYPE				
	Clamp	Clamp screw	Insert screw	Wrench
EMR-5R	Y-5R	YS35100PN	L0960SSTX4.0-5.7P	TPF-15
EMRW-6R	Y-6R	YS40100PN	L1060SSTX4.0-5.7P	TPF-15

Available Inserts

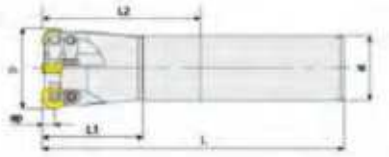
RPM



Workpiece		Machining Type													
Steel	P	● Continuous cutting	●	⬍	✱					●	⬍		✱	⬍	✱
Stainless steel	M	⬍ General cutting		✱						●	⬍	⬍	✱	⬍	✱
Cast iron	K	✱ Interrupted cutting	⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱
Non-ferrous metal	N														
Heat resistant alloy, Titanium alloy	S									●	⬍	⬍	✱		
Hardened steel	H											⬍	✱	⬍	✱

Designations		Dimensions(mm)			CVD Coated							PVD Coated					
		W	S	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
RPMW	RPMW 08T2MO	8.0	2.78	2.90	○	○		○		○			●	●	●		
	RPMW 10T3MO	10.0	3.97	4.00	○	○		○		○			●	●	●		
	RPMW 1204MO	12.0	4.76	4.50	○	○		○		○			●	●	●		
	RPMW 1606MO	16.0	6.35	5.50	○	○		○		○			●	●	●		
	RPMW 2006MO	20.0	6.35	5.50	○	○		○		○			●	●	●		
RPMT-JS	RPMT-JS 08T2MOE-JS	8.0	2.78	2.90	○	●		○		○			●	●	●		
	RPMT-JS 10T3MOE-JS	10.0	3.97	4.00	○	●		○		○			●	●	●		
	RPMT-JS 1204MOE-JS	12.0	4.76	4.50	○	●		○		○			●	●	●		
	RPMT-JS 1606MOE-JS	16.0	6.35	5.50	○	○		○		○			●	●	●		

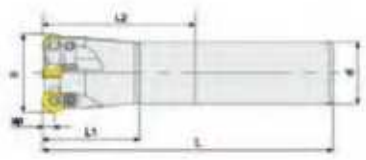
TRS Corner Radius End Mill



mm

Designation	No.of Insert	Dimension (mm)					
		D	d	ap	L1	L2	L
TRS-2.5R-8-80-C8-1T	1	8	8	2.5	30	-	80
TRS-2.5R-10-120-C10-2T	2	10	10		40	-	120
TRS-2.5R-12-120-C12-2T	2	12	12		40	-	120
TRS-3.5R-10-120-C10-1T	1	10	10	3.5	40	-	120
TRS-3.5R-12-120-C12-1T	1	12	12		40	-	120
TRS-3.5R-16-120-C16-2T	2	16	16		40	-	120
TRS-3.5R-16-160-C16-2T	2	16	16		40	-	160
TRS-4R-12-130-C12-1T	1	12	12	4	40	-	130
TRS-4R-13-130-C12-1T	1	13	12		40	-	130
TRS-4R-16-160-C16-2T	2	16	16		40	-	160
TRS-4R-16-160-C15-2T	2	16	15		40	-	160
TRS-4R-16-200-C16-2T	2	16	16		40	100	200
TRS-4R-16-200-C15-2T	2	16	15		50	-	200
TRS-4R-17-160-C16-2T	2	17	16		40	-	160
TRS-4R-17-200-C16-2T	2	17	16		50	-	200
TRS-4R-20-160-C20-2T	2	20	20		50	-	160
TRS-4R-20-160-C19-2T	2	20	19		50	-	160
TRS-4R-20-200-C20-2T	2	20	20		50	100	200
TRS-4R-20-200-C19-2T	2	20	19		50	-	200
TRS-4R-21-160-C20-2T	2	21	20		50	-	160
TRS-4R-21-200-C20-2T	2	21	20		50	-	200

TRS Corner Radius End Mill

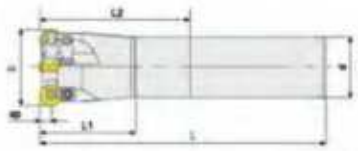


mm

Designation	No.of Insert	Dimension (mm)						Adapter
		D	d	ap	L1	L2	L	
TRS-5R-20-160-C20-2T	2	20	20	5	50	-	160	S
TRS-5R-20-200-C20-2T	2	20	20		50	100	200	S
TRS-5R-25-160-C25-2T	2	25	25		50	-	160	S
TRS-5R-25-160-C20-2T	2	25	20		50	-	160	S
TRS-5R-25-160-C24-2T	2	25	24		50	-	160	S
TRS-5R-25-200-C25-2T	2	25	25		60	-	200	S
TRS-5R-25-250-C25-2T	2	25	25		60	115	250	S
TRS-5R-26-160-C25-2T	2	26	25		50	-	160	S
TRS-5R-26-200-C25-2T	2	26	25		60	-	200	S
TRS-5R-30-160-C25-2T	2	30	25		50	-	160	S
TRS-5R-30-200-C25-2T	2	30	25		50	-	200	S
TRS-5R-30-250-C25-2T	2	30	25		60	-	250	S
TRS-5R-35-160-C32-2T	2	35	32		50	-	160	S
TRS-5R-35-200-C32-2T	2	35	32		50	-	200	S
TRS-5R-35-160-C32-3T	3	35	32		50	-	160	S
TRS-5R-35-200-C32-3T	3	35	32		50	-	200	S
TRS-5R-35-250-C32-3T	3	35	32		60	-	250	S
TRS-6R-32-160-C25-2T	2	32	25	6	50	-	160	S
TRS-6R-32-200-C25-2T	2	32	25		50	-	200	S
TRS-6R-32-250-C25-2T	2	32	25		60	-	250	S
TRS-6R-35-160-C25-3T	3	35	25		50	-	160	S
TRS-6R-35-200-C25-3T	3	35	25		50	-	200	S
TRS-6R-40-160-C32-3T	3	40	32		50	-	160	S

Profiling

TRS Corner Radius End Mill



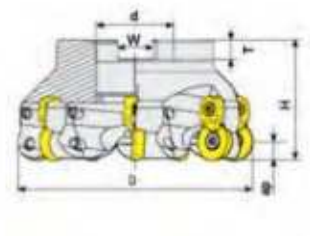
mm

Designation	No.of Insert	Dimension (mm)						Adapter
		D	d	ap	L1	L2	L	
TRS-6R-40-200-C32-3T	3	40	32	6	50	-	200	S
TRS-6R-40-250-C32-3T	3	40	32		60	-	250	S
TRS-6R-40-300-C32-3T	3	40	32		60	-	300	S

Parts

TYPE				
	Clamp	Clamp screw	Insert screw	Wrench
TRS-2.5R	-	-	L0460SSTX2.0-2.8P	TPF-06
TRS-3.5R	-	-	L0655SSTX2.5-3.6P	TPF-08
TRS-4R	Y-4R	YS30070PN	L0755SSTX3.0-4.0P	TPF-08
TRS-5R	Y-5R	YS40090PN	L0960SSTX4.0-5.7P	TPF-15
TRS-6R	Y-6R	YS40100PN	L1060SSTX4.0-5.7P	TPF-15
TRS-8R	Y-8R	YS50120PN	L1260SSTX5.0-7.0P	TPF-20

TRS Corner Radius Face Mill



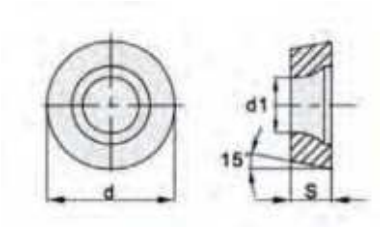
mm

Designation	No.of Insert	Dimension (mm)						Arbor
		D	d	ap	W	T	H	
TRS-5R-050-22-04T	4	50	22	5	10.4	6.3	50	A
TRS-5R-063-22-04T	4	63	22		10.4	6.3	50	A
TRS-5R-080-27-06T	6	80	27		12.4	7.0	50	B
TRS-5R-100-32-06T	6	100	32		14.4	8.0	50	B
TRS-5R-125-40-07T	7	125	40		16.4	9.0	63	B
TRS-6R-050-22-04T	4	50	22	6	10.4	6.3	50	A
TRS-6R-063-22-04T	4	63	22		10.4	6.3	50	A
TRS-6R-080-27-06T	6	80	27		12.4	7.0	50	B
TRS-6R-100-32-06T	6	100	32		14.4	8.0	50	B
TRS-6R-125-40-07T	7	125	40		16.4	9.0	63	B
TRS-6R-160-40-08T	8	160	40		16.4	9.0	63	C
TRS-8R-063-22-04T	4	63	22	8	10.4	6.3	50	A
TRS-8R-080-27-05T	5	80	27		12.4	7.0	50	B
TRS-8R-100-32-06T	6	100	32		14.4	8.0	50	B
TRS-8R-125-40-06T	6	125	40		16.4	9.0	63	B
TRS-8R-160-40-08T	8	160	40		16.4	9.0	63	C
TRS-8R-200-60-09T	9	200	60		25.7	14.0	63	C

Profiling

Available Inserts

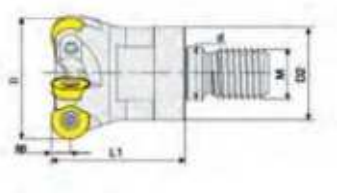
RDMW/RDMT



Workpiece		Machining Type	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
Steel	P		●	⊕	✱					●	⊕		✱	⊕	✱
Stainless steel	M			✱						●	⊕	⊕	✱	⊕	✱
Cast iron	K		⊕			●	●	⊕	⊕	●	⊕		✱	⊕	✱
Non-ferrous metal	N	● Continuous cutting													
Heat resistant alloy, Titanium alloy	S	⊕ General cutting								●	⊕	⊕	✱		
Hardened steel	H	✱ Interrupted cutting										⊕	✱	⊕	✱

	Designations	Dimensions(mm) d	S	d1	CVD Coated TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	PVD Coated TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
RDMW	RDMW 0501MOEN	5.00	1.59	2.0									●				
	RDMW 0702MOEN	7.00	2.38	2.8									●				
RDMT	RDMT 08T2MOTN	8.0	2.78	2.8	○	○		○		○			●	●			
	RDMT 10T3MOTN	10.0	3.97	3.9	○	○		○		○			●	●			
	RDMT 1204MOTN	12.0	4.76	4.5	○	○		○		○			●	●			
	RDMT 1604MOTN	16.0	4.76	5.0	○	○		○		○			●	●			

TRD Type Milling Modular

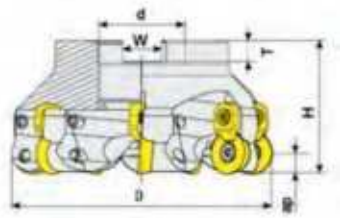


mm

Designation	No.of Insert	Dimension (mm)					
		D	L1	D2	M	d	APmax
TRD2.5R-010-M06-2T	2	10	20	9.8	M6	6.5	2.5
TRD2.5R-012-M06-3T	3	12	20	10.0	M6	6.5	2.5
TRD2.5R-015-M08-4T	4	15	20	13.5	M8	8.5	2.5
TRD3.5R-015-M08-2T	2	15	28	13.5	M8	8.5	3.5
TRD3.5R-015-M08-3T	3	15	28	13.5	M8	8.5	3.5
TRD3.5R-020-M10-4T	4	20	28	18.0	M10	10.5	3.5
TRD3.5R-025-M12-5T	5	25	28	21.0	M12	12.5	3.5
TRD05R-020-M10-2T	2	20	32	18.0	M10	10.5	5.0
TRD05R-025-M12-2T	2	25	32	21.0	M12	12.5	5.0
TRD05R-025-M12-3T	3	25	32	21.0	M12	12.5	5.0
TRD05R-030-M16-4T	4	30	42	29.0	M16	17.0	5.0
TRD05R-035-M16-5T	5	35	42	29.0	M16	17.0	5.0
TRD06R-024-M12-2T	2	24	32	21.0	M12	12.5	6.0
TRD06R-035-M16-3T	3	35	42	29.0	M16	17.0	6.0
TRD06R-035-M16-4T	4	35	42	29.0	M16	17.0	6.0
TRD06R-042-M16-4T	4	42	42	29.0	M16	17.0	6.0
TRD06R-042-M16-5T	5	42	42	29.0	M16	17.0	6.0
TRD08R-032-M16-2T	2	32	42	29.0	M16	17.0	8.0

Profiling

TRD Corner Radius Face Mill



mm

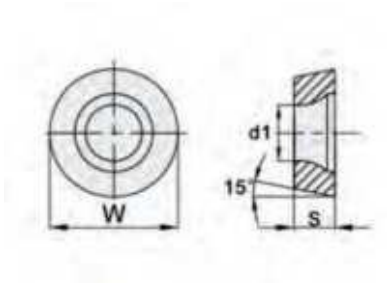
Designation	No.of Insert	Dimension (mm)						Arbor
		D	d	ap	W	T	H	
TRD05R-050-22-04T	4	50	22	5	10.4	6.3	50	A
TRD05R-063-22-04T	4	63	22		10.4	6.3	50	A
TRD05R-080-27-06T	6	80	27		12.4	7.0	50	B
TRD05R-100-32-06T	6	100	32		14.4	8.0	50	B
TRD05R-125-40-07T	7	125	40		16.4	9.0	63	B
TRD06R-050-22-04T	4	50	22	6	10.4	6.3	50	A
TRD06R-063-22-04T	4	63	22		10.4	6.3	50	A
TRD06R-080-27-06T	6	80	27		12.4	7.0	50	B
TRD06R-100-32-06T	6	100	32		14.4	8.0	50	B
TRD06R-125-40-07T	7	125	40		16.4	9.0	63	B
TRD06R-160-40-08T	8	160	40		16.4	9.0	63	C

Spare Parts

TYPE				
	Clamp	Clamp screw	Insert screw	Wrench
TRD 2.5R	-	-	LS0460SSTX2.0-2.8P	TPF-06
TRD 3.5R	-	-	LS0655SSTX2.5-3.6P	TPF-08
TRB 5R	Y-5R	YS40090PN	LS1060SSTX3.5-5.0P	TPF-15
TRD 6R	Y-6R	YS40100PN	LS1060SSTX3.5-5.0P	TPF-15
TRD 8R	-	-	LS1260SSTX5.0-7.0P	TPF-20

Available Inserts

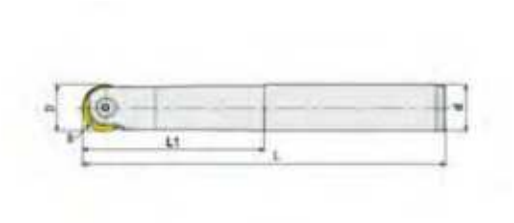
RD*X



Workpiece		Machining Type													
Steel	P	● Continuous cutting	●	⬍	✱					●	⬍		✱	⬍	✱
Stainless steel	M	⬍ General cutting		✱						●	⬍	⬍	✱	⬍	✱
Cast iron	K	✱ Interrupted cutting	⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱
Non-ferrous metal	N														
Heat resistant alloy, Titanium alloy	S									●	⬍	⬍	✱		
Hardened steel	H											⬍	✱	⬍	✱

Designations		Dimensions(mm)			CVD Coated							PVD Coated					
		L	S	d	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
RDHX	RDHX 1003MOT	10.0	3.18	3.9	○	○		○		○			●	●			
	RDHX 12T3MOT	12.0	3.97	3.9	○	○		○		○			●	●			
RDMX	RDMX 1003MOTN	10.0	3.18	3.9	○	○		○		○			●	●			
	RDMX 12T3MOTN	12.0	3.97	3.9	○	○		○		○			●	●			

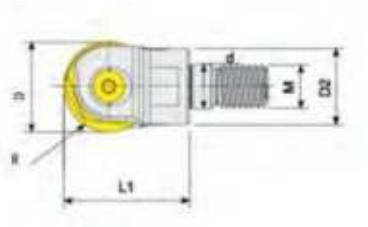
WGR Type Ball Precision Endmill



mm

Designation	No.of Insert	Dimension (mm)					Spare parts		R
		D	d	L1	L	R	Screw	Wrench	
WGR-04R-C08-110L	1	8	8	25	110	4	TS30070B	T-8	S
WGR-04R-C10-110L	1	8	10	25	110	4	TS30070B	T-8	S
WGR-04R-C12-130L	1	8	12	55	130	4	TS30070B	T-8	S
WGR-05R-C10-130L	1	10	10	30	130	5	TS40085B	T-15	S
WGR-05R-C12-160L	1	10	12	30	160	5	TS40085B	T-15	S
WGR-06R-C12-130L	1	12	12	32	130	6	TS50094B	T-20	S
WGR-06R-C16-160L	1	12	16	58.5	160	6	TS50094B	T-20	S
WGR-08R-C16-160L	1	16	16	65	160	8	TS50128B	T-20	S
WGR-08R-C20-200L	1	16	20	65	200	8	TS50128B	T-20	S
WGR-10R-C20-160L	1	20	20	45	160	10	TS50129B	T-20	S
WGR-10R-C20-200L	1	20	20	76	200	10	TS50129B	T-20	S
WGR-10R-C25-250L	1	20	25	120	250	10	TS50129B	T-20	S
WGR-12.5R-C25-160L	1	25	25	45	160	12.5	TS60210B	T-25	S
WGR-12.5R-C25-200L	1	25	25	76	200	12.5	TS60210B	T-25	S
WGR-12.5R-C32-200L	1	25	32	98	200	12.5	TS60210B	T-25	S
WGR-12.5R-C32-250L	1	25	32	120	250	12.5	TS60210B	T-25	S
WGR-15R-C32-200L	1	30	32	80	200	15	TS80247B	T-30	S
WGR-15R-C40-250L	1	30	40	121	250	15	TS80247B	T-30	S

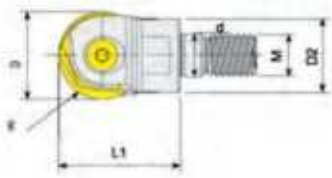
WGR Type Ball Precision Modular



mm

Designation	No.of Insert	Dimension (mm)					Spare parts		R
		D	L1	d	M	D2	Screw	Wrench	
WGR-008-M04	1	8	16	4.5	M4	9.2	TS30070B	T-8	4
WGR-010-M05	1	10	20	5.5	M5	9.2	TS40085B	T-15	5
WGR-012-M06	1	12	20	6.5	M6	10.0	TS50094B	T-20	6
WGR-016-M08	1	16	28	8.5	M8	13.0	TS50128B	T-20	8
WGR-020-M10	1	20	30	10.5	M10	18.0	TS50129B	T-20	10
WGR-025-M12	1	25	35	12.5	M12	21.0	TS60210B	T-25	12.5
WGR-030-M16	1	30	40	17.0	M16	29.0	TS80247B	T-30	15
WGR-032-M16	1	32	40	17.0	M16	29.0	TS80247B	T-30	16

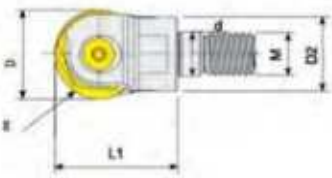
PPH Type Ball Precision Modular



mm

Designation	No.of Insert	Dimension (mm)					Spare parts		R
		D	L1	d	M	D2	Screw	Wrench	
PPH 008-M04	1	8	16	4.5	M4	9.2	TS30078B	T-8	4
PPH 010-M05	1	10	20	5.5	M5	9.2	TS30078B	T-8	5
PPH 012-M06	1	12	20	6.5	M6	10.0	TS35095B	T-15	6
PPH 016-M08	1	16	28	8.5	M8	13.0	TS40132B	T-15	8
PPH 020-M10	1	20	30	10.5	M10	18.0	TS50163B	T-20	10
PPH 025-M12	1	25	35	12.5	M12	21.0	TS60202B	T-25	12.5
PPH 030-M16	1	30	40	17.0	M16	29.0	TS80252B	T-30	15

ABPF Type Ball Precision Modular



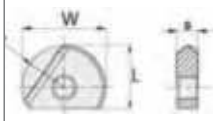
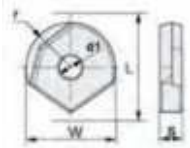
mm

Designation	No.of Insert	Dimension (mm)					Spare parts		R
		D	L1	d	M	D2	Screw	Wrench	
ABPF 008-M04	1	8	16	4.5	M4	9.2	TS30067B	T-8	4
ABPF 010-M05	1	10	20	5.5	M5	9.2	TS35083B	T-15	5
ABPF 012-M06	1	12	20	6.5	M6	10.0	TS50100B	T-20	6
ABPF 016-M08	1	16	28	8.5	M8	13.0	TS50134B	T-20	8
ABPF 020-M10	1	20	30	10.5	M10	18.0	TS60167B	T-25	10
ABPF 025-M12	1	25	35	12.5	M12	21.0	TS60218B	T-20	12.5
ABPF 030-M16	1	30	40	17.0	M16	29.0	TS80250B	T-30	15

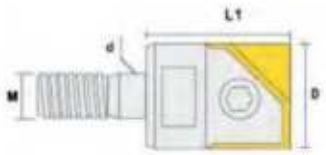
Available Inserts

Workpiece		Machining Type													
Steel	P		●	⬍	✱					●	⬍		✱	⬍	✱
Stainless steel	M			✱						●	⬍	⬍	✱	⬍	✱
Cast iron	K		⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱
Non-ferrous metal	N														
Heat resistant alloy, Titanium alloy	S									●	⬍	⬍	✱		
Hardened steel	H											⬍	✱	⬍	✱

● Continuous cutting
⬍ General cutting
✱ Interrupted cutting

Designations		Dimensions(mm)				CVD Coated							PVD Coated						
		L	W	S	r	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPM8115S
P3200 	P3200 D08	8.0	9.50	2.0	4.0									●					●
	P3200 D10	10.0	11.50	2.5	5.0									●					●
	P3200 D12	12.0	12.00	2.5	6.0									●					●
	P3200 D16	16.0	14.00	3.0	8.0									●					●
	P3200 D20	20.0	16.00	3.0	10.0									●					●
	P3200 D25	25.0	21.50	4.0	12.5									●					○
	P3200 D30	30.0	25.00	5.0	15.0									●					○
	P3200 D32	32.0	26.00	5.0	16.0									●					○
ZPFG 	ZPFG 080	8.0	9.70	2.1	4.0														
	ZPFG 100	10.0	12.10	2.7	5.0														
	ZPFG 120	12.0	14.60	3.2	6.0														
	ZPFG 160	16.0	16.60	4.2	8.0														
	ZPFG 200	20.0	20.30	5.2	10.0														
	ZPFG 250	25.0	24.10	6.2	12.5														
	ZPFG 300	30.0	29.20	7.2	15.0														

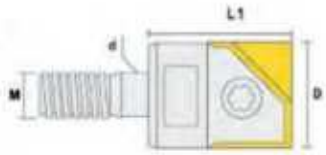
ABPF Type Ball Precision Modular



mm

Designation	No.of Insert	Dimension (mm)				Spare parts	
		D	L1	d	M	Screw	Wrench
ARPF-012-M06	1	12	20	6.5	M6	TS50100B	T-20
ARPF-016-M08	1	16	28	8.5	M8	TS50134B	T-20
ARPF-020-M10	1	20	30	10.5	M10	TS60167B	T-25
ARPF-025-M12	1	25	35	12.5	M12	TS60218B	T-30
ARPF-030-M16	1	30	40	17.0	M16	TS80250B	T-30

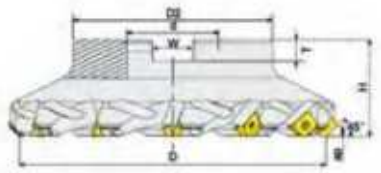
BNM Type Ball Precision Modular



mm

Designation	No.of Insert	Dimension (mm)				Spare parts	
		D	L1	d	M	Screw	Wrench
RNM-012-M06	1	12	20	6.5	M6	TS35095B	T-15
RNM-016-M08	1	16	28	8.5	M8	TS40132B	T-15
RNM-020-M10	1	20	30	10.5	M10	TS50163B	T-20
RNM-025-M12	1	25	35	12.5	M12	TS60202B	T-25
RNM-030-M16	1	30	40	17.0	M16	TS80252B	T-30

KM Type Shell Mill



mm

Designation	No.of Inserts	Dimension (mm)							Arbor
		D	D2	d	W	T	H	ap	
KM12-050-22-04T	4	50	64	22	10.4	6.3	50	6.0	A
KM12-063-22-04T	4	63	77	22	10.4	6.3	50	6.0	A
KM12-080-27-05T	5	80	94	27	12.4	7.0	50	6.0	B
KM12-100-32-05T	5	100	114	32	14.4	8.0	50	6.0	B
KM12-125-40-06T	6	125	139	40	16.4	9.0	63	6.0	B
KM12-160-40-06T	6	160	174	40	16.4	9.0	63	6.0	C
KM12-200-60-08T	8	200	210	60	25.7	14.0	63	6.0	C
KM12-250-60-10T	10	250	260	60	25.7	14.0	63	6.0	C

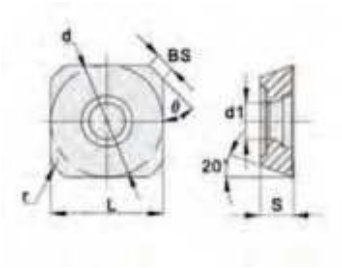
Parts

TYPE		
	Insert screw	Wrench
KM12	L1160SSTX5.0-7.0P	FF-TPF15

Slanted Shoulder & Chamfer

Available Inserts

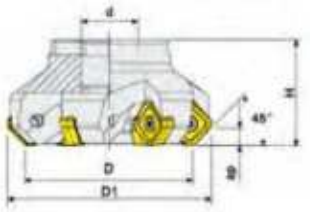
SE..T



Workpiece		Machining Type													
Steel	P	● Continuous cutting	●	⬍	✱					●	⬍		✱		
Stainless steel	M	⬍ General cutting		✱						●	⬍	⬍	✱		
Cast iron	K	✱ Interrupted cutting	⬍			●	●	⬍	⬍	●	⬍		✱		
Non-ferrous metal	N														⬍
Heat resistant alloy, Titanium alloy	S									●	⬍	⬍	✱		
Hardened steel	H											⬍	✱		

Designations		Dimensions(mm)						CVD Coated							PVD Coated							
		L	S	d	BS	d1	θ	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPM930	TPK01
SEHT-X45	SEHT 1204AFSN-X45	12.7	4.76	12.7	2.64	5.5	45°									●					●	
SEKT	SEKT 1204AFTN	12.7	4.76	12.7	2.60	5.5	45°	○	○	●			○			●	●	●				
SEHT-AL	SEHT 1204AFFN-AL	12.7	4.76	12.7	2.60	5.5	45°															●

TWSX45 Type Shell Mill



mm

Designation	No.of Inserts	Dimension (mm)					Arbor	kg
		D	D1	d	ap	H		
TWSX4512-050R-22-04T	4	50	64.8	22	6.50	40	A	0.50
TWSX4512-063R-22-06T	6	63	77.8	22	6.50	40	A	0.70
TWSX4512-080R-27-07T	7	80	94.8	27	6.50	50	B	1.20
TWSX4512-100R-32-08T	8	100	114.8	32	6.50	50	B	1.70
TWSX4512-100R-32-12T	12	100	114.8	32	6.50	50	B	1.70
TWSX4512-125R-40-10T	10	125	139.8	40	6.50	63	B	3.60
TWSX4512-125R-40-16T	16	125	139.8	40	6.50	63	B	3.70
TWSX4512-160R-40-12T	12	160	174.8	40	6.50	63	C	5.30
TWSX4512-160R-40-20T	20	160	174.8	40	6.50	63	C	5.40
TWSX4512-200R-60-14T	14	200	214.8	60	6.50	63	C	7.10
TWSX4512-200R-60-24T	24	200	214.8	60	6.50	63	C	7.10
TWSX4512-250R-60-16T	16	250	264.8	60	6.50	63	C	11.90
TWSX4512-250R-60-30T	30	250	264.8	60	6.50	63	C	12.00
TWSX4512-315R-60-18T	18	315	329.8	60	6.50	63	C	18.60
TWSX4512-315R-60-20T	20	315	329.8	60	6.50	63	C	18.60
TWSX4515-080R-27-06T	6	80	94.8	27	7.15	50	B	1.12
TWSX4515-100R-32-07T	7	100	114.8	32	7.15	50	B	1.62
TWSX4515-125R-40-08T	8	125	139.8	40	7.15	63	C	2.68
TWSX4515-160R-40-10T	10	160	174.8	40	7.15	63	C	4.16
TWSX4515-200R-60-12T	12	200	214.8	60	7.15	63	C	5.82
TWSX4515-250R-60-15T	15	250	264.8	60	7.15	63	C	8.58
TWSX4515-315R-60-20T	20	315	329.8	60	7.15	63	C	18.90
TWSX4519-125R-40-07T	7	125	142.6	40	9.00	63	B	3.00
TWSX4519-160R-40-09T	9	160	167.6	40	9.00	63	C	4.25
TWSX4519-200R-60-11T	11	200	217.6	60	9.00	63	C	6.18
TWSX4519-250R-60-13T	13	250	267.6	60	9.00	63	C	11.55
TWSX4519-315R-60-16T	16	315	332.6	60	9.00	63	D	20.90

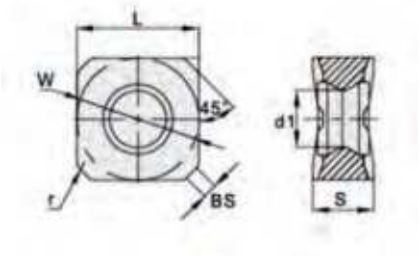
Parts

TYPE		
	Insert screw	Wrench
TWSX4512	L1360SSTX5.0-7.0P	FF-TPF20
TWSX4515	L1360SSTX5.0-7.2P	FF-TPF20
TWSX4519	L1645SSTX6.0-8.5P	FF-TPF25

Slanted Shoulder & Chamfer

Available Inserts

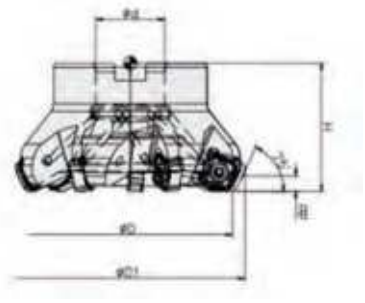
SNMX
(Suitable for TWSX45 Type)



Workpiece															
Steel	P	Machining Type	●	⇕	✱					●	⇕		✱	⇕	✱
Stainless steel	M			✱						●	⇕	⇕	✱	⇕	✱
Cast iron	K		⇕			●	●	⇕	⇕	●	⇕		✱	⇕	✱
Non-ferrous metal	N	● Continuous cutting													
Heat resistant alloy, Titanium alloy	S	⇕ General cutting								●	⇕	⇕	✱		
Hardened steel	H	✱ Interrupted cutting										⇕	✱	⇕	✱

Designations		Dimensions(mm)						CVD Coated							PVD Coated					
		L	S	W	BS	d1	r	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
SNMX-GM	SNMX 1205ANN-GM	12.70	5.54	12.70	1.50	5.8	-	●	○	○	●	●	●	●		●	●	○		
	SNMX 120512-GM	12.70	5.54	12.70	1.50	5.8	1.2	○	○	○	●	●	○	○		●	○	○		
	SNMX 1506ANR-GM	15.00	5.60	15.00	1.30	5.5	0.9									●	●			
SNMX-GR	SNMX 1506ANR-GR	15.00	5.60	15.00	1.30	5.5	0.9									●				
	SNMX 1907ANR-GR	19.00	7.00	19.00	1.67	7.2	1.0				●					●				

TWSX75 Type Shell Mill



mm

Designation	No.of Inserts	Dimension (mm)					Arbor	kg
		D	D1	d	ap	H		
TWSX7512-050-22-04T	4	50	55.4	22	9.5	40	A	0.40
TWSX7512-063-22-06T	6	63	68.4	22	9.5	40	A	0.60
TWSX7512-080-27-07T	7	80	85.4	27	9.5	50	A	1.30
TWSX7512-100-32-06T	8	100	105.4	32	9.5	50	A	1.90
TWSX7512-100-32-08T	12	100	105.4	32	9.5	50	A	1.90
TWSX7512-125-40-08T	10	125	130.4	40	9.5	63	B	3.20
TWSX7512-125-40-10T	16	125	130.4	40	9.5	63	B	3.20
TWSX7512-160-40-10T	12	160	165.4	40	9.5	63	C	4.70
TWSX7512-160-40-12T	20	160	165.4	40	9.5	63	C	4.70
TWSX7512-200-60-16T	16	200	205.4	60	9.5	63	C	6.40
TWSX7512-250-60-16T	20	250	255.3	60	9.5	63	C	11.70

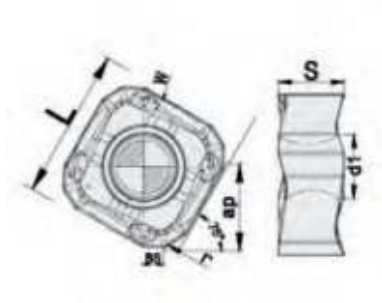
Parts

TYPE		
	Insert screw	Wrench
TWSX7512	L1060SSTX4.0-5.7P	FF-TPF15

Slanted Shoulder & Chamfer

Available Inserts

SNMX12
(Suitable for TWSX75 Type)

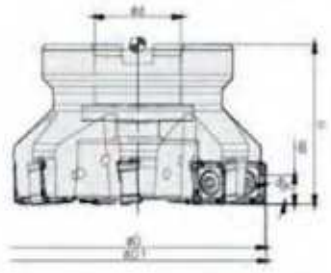


Workpiece			Machining Type													
Steel	P		●	⬍	✱					●	⬍		✱	⬍	✱
Stainless steel	M			✱						●	⬍	⬍	✱	⬍	✱
Cast iron	K		⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱
Non-ferrous metal	N														
Heat resistant alloy, Titanium alloy	S									●	⬍	⬍	✱		
Hardened steel	H											⬍	✱	⬍	✱

● Continuous cutting
⬍ General cutting
✱ Interrupted cutting

Designations		Dimensions(mm)						CVD Coated							PVD Coated					
		L	S	W	BS	r	ap	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
SNMX-GM	SNMX 1206ENTN-GM	13.5	7.00	13.50	2.20	0.4	9.5	●	●		●	○	○	○	○	●	●			

TWSX88 Type Shell Mill



mm

Designation	No.of Inserts	Dimension (mm)					Arbor	kg
		D	D1	d	ap	H		
TWSX8812-050R-22-04T	4	50	51	22	7.0	40	A	0.30
TWSX8812-063R-22-05T	5	63	64	22	7.0	40	A	0.41
TWSX8812-080R-27-07T	7	80	81	27	7.0	50	A	0.92
TWSX8812-100R-32-08T	8	100	101	32	7.0	50	B	1.29
TWSX8812-125R-40-10T	10	125	126	40	7.0	63	B	2.88
TWSX8812-160R-40-12T	12	160	161	40	7.0	63	C	3.86
TWSX8812-200R-60-14T	14	200	201	60	7.0	63	C	6.00
TWSX8812-250R-60-16T	16	250	251	60	7.0	63	C	9.64
TWSX8812-315R-60-20T	20	315	316	60	7.0	80	D	16.96

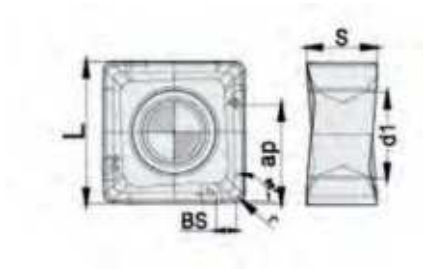
Parts

TYPE		
	Insert screw	Wrench
TWSX8812	L1060SSTX4.0-5.7P	FF-TPF15

Slanted Shoulder & Chamfer

Available Inserts

SNMX12
(Suitable for TWSX88 Type)



Workpiece															
Steel	P	Machining Type	●	⬍	✠					●	⬍		✠	⬍	✠
Stainless steel	M			✠						●	⬍	⬍	✠	⬍	✠
Cast iron	K		⬍			●	●	⬍	⬍	●	⬍		✠	⬍	✠
Non-ferrous metal	N	● Continuous cutting													
Heat resistant alloy, Titanium alloy	S	⬍ General cutting								●	⬍	⬍	✠		
Hardened steel	H	✠ Interrupted cutting										⬍	✠	⬍	✠

Designations		Dimensions(mm)						CVD Coated							PVD Coated					
		L	S	BS	d1	r	ap	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
SNMX-GM	SNMX 120612-GM	13.5	6.8	-	5.3	1.2	12.0		●							●	●			
	SNMX 120616-GM	13.5	6.8	-	5.3	1.6	12.0													

S*PD Type Shell Mill

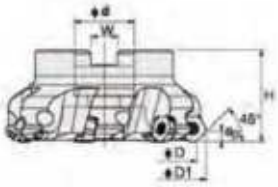


Fig.1

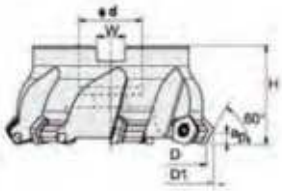


Fig.2

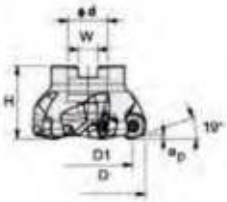


Fig.3

Designation	No.of Inserts	Dimension (mm)							Arbor	kg	Fig
		D	D1	d	H	W	F	ap			
SEPD09-050-22-04T	4	50	60.8	22	40	10.40	-	4.50	A	0.31	1
SEPD09-063-22-05T	5	63	73.8	22	40	10.40	-	4.50	A	0.41	1
SEPD09-080-27-06T	6	80	90.9	27	50	12.40	-	4.50	B	0.95	1
SEPD09-100-32-07T	7	100	110.9	32	50	14.40	-	4.50	B	1.59	1
SEPD09-125-40-07T	7	125	135.9	40	63	16.40	-	4.50	B	3.06	1
SEPD09-160-40-09T	9	160	170.9	40	63	16.40	66.70	4.50	C	4.20	1
SSPD09-040-16-03T	3	40	46.8	16	40	8.40	-	5.50	A	0.18	2
SSPD09-050-22-04T	4	50	58.8	22	40	10.40	-	5.50	A	0.26	2
SSPD09-063-22-05T	5	63	71.8	22	40	10.40	-	5.50	A	0.34	2
SSPD09-080-27-06T	6	80	88.8	27	50	12.40	-	5.50	B	0.81	2
SSPD09-100-32-07T	7	100	108.9	32	50	14.40	-	5.50	B	1.54	2
SSPD09-125-40-08T	8	125	133.9	40	63	16.40	-	5.50	B	2.78	2
SSPD09-160-40-10T	10	160	168.9	40	63	16.40	66.70	5.50	C	4.51	2
SFPD09-050-22-04T	4	50	35.6	22	40	10.40	-	2.00	A	0.23	3
SFPD09-050-22-05T	5	50	35.6	22	40	10.40	-	2.00	A	0.36	3
SFPD09-063-22-05T	5	63	48.6	22	40	10.40	-	2.00	A	0.33	3
SFPD09-063-22-06T	6	63	48.6	22	40	10.40	-	2.00	A	0.47	3
SFPD09-080-27-05T	5	80	65.6	27	50	12.40	-	2.00	B	0.84	3
SFPD09-080-27-06T	6	80	65.6	27	50	12.40	-	2.00	B	0.88	3
SFPD09-100-32-06T	6	100	85.6	32	50	14.40	-	2.00	B	1.46	3
SFPD09-100-32-08T	8	100	85.6	32	50	14.40	-	2.00	B	1.40	3
SFPD09-125-40-08T	8	125	111.0	40	63	16.40	-	2.00	B	3.16	3
SFPD09-125-40-10T	10	125	111.0	40	63	16.40	-	2.00	B	3.15	3

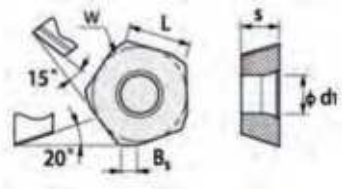
Slanted Shoulder & Chamfer

Parts

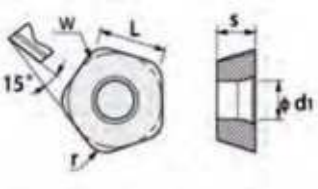
TYPE		
	Insert screw	Wrench
SEPD09	L1255SSTX4.5-6.4P	FF-TPF20
SSPD09	L1255SSTX4.5-6.4P	FF-TPF20
SFPD09	L1255SSTX4.5-6.4P	FF-TPF20

Available Inserts

PD**



Utility Inserts



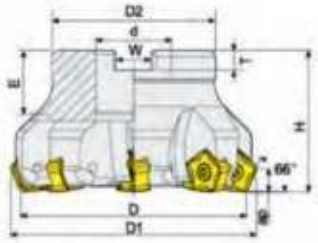
Universal Inserts

Workpiece		Machining Type													
Steel	P		●	⬌	✖					●	⬌		✖	⬌	✖
Stainless steel	M			✖						●	⬌	⬌	✖	⬌	✖
Cast iron	K		⬌			●	●	⬌	⬌	●	⬌		✖	⬌	✖
Non-ferrous metal	N	● Continuous cutting													
Heat resistant alloy, Titanium alloy	S	⬌ General cutting								●	⬌	⬌	✖		
Hardened steel	H	✖ Interrupted cutting										⬌	✖	⬌	✖

	Designations	Dimensions(mm)						CVD Coated							PVD Coated						
		L	W	S	BS	r	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPM4036
PDKX-GM	PDKX 0905ZEER-GM	9.0	13.50	5.47	2.00	-	5.5												●	●	
PDKT-GM	PDKT 090530ER-GM	9.0	13.50	5.47	-	3.0	5.5												●	●	
	PDKT 120530ER-GM																			●	●
PDGW	PDGW 090530SR	9.0	13.50	5.47	-	3.0	5.5												●	●	

Slanted Shoulder & Chamfer

MFPN Type Shell Mill



mm

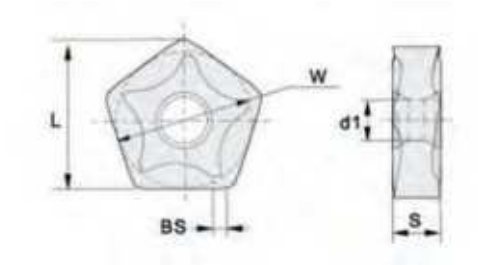
Designation	No.of Inserts	Dimension (mm)									Arbor
		D	D1	D2	d	H	E	T	W	ap	
MFPN66-050-22-04T	4	50	58	48	22	40	21	6.3	10.4	8	A
MFPN66-050-22-05T	5	50	58	48	22	40	21	6.3	10.4	8	A
MFPN66-063-22-05T	5	63	71	48	22	40	21	6.3	10.4	8	A
MFPN66-063-22-07T	7	63	71	48	22	40	21	6.3	10.4	8	A
MFPN66-080-27-06T	6	80	88	70	27	50	24	7.0	12.4	8	B
MFPN66-080-27-09T	9	80	88	70	27	50	24	7.0	12.4	8	B
MFPN66-100-32-07T	7	100	108	78	32	50	30	8.0	14.4	8	B
MFPN66-100-32-11T	11	100	108	78	32	50	30	8.0	14.4	8	B
MFPN66-125-40-09T	9	125	133	89	40	63	33	9.0	16.4	8	B
MFPN66-125-40-13T	13	125	133	89	40	63	33	9.0	16.4	8	B
MFPN66-160-40-11T	11	160	168	89	40	63	33	9.0	16.4	8	C
MFPN66-160-40-15T	15	160	168	89	40	63	33	9.0	16.4	8	C
MFPN66-200-60-13T	13	200	208	140	60	63	35	14.0	25.7	8	C
MFPN66-200-60-17T	17	200	208	140	60	63	35	14.0	25.7	8	C
MFPN66-250-60-15T	15	250	258	140	60	63	35	14.0	25.7	8	C
MFPN66-250-60-19T	19	250	258	140	60	63	35	14.0	25.7	8	C

Spare Parts

TYPE		
	Insert screw	Wrench
MFPN66	L1060SSTX4.0-5.7P	FF-TPF15

Available Inserts

PNMU

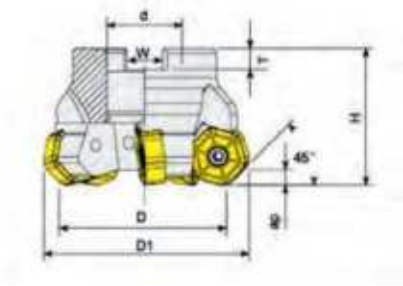


Workpiece		Machining Type													
Steel	P	● Continuous cutting	●	⬍	✱					●	⬍		✱	⬍	✱
Stainless steel	M	⬍ General cutting		✱						●	⬍	⬍	✱	⬍	✱
Cast iron	K	✱ Interrupted cutting	⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱
Non-ferrous metal	N														
Heat resistant alloy, Titanium alloy	S									●	⬍	⬍	✱		
Hardened steel	H											⬍	✱	⬍	✱

Designations		Dimensions(mm)					CVD Coated							PVD Coated					
		L	W	S	BS	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
PNMU-GM	PNMU 0905XNER-GM	14.6	12.2	5.56	2.0	4.7		○		○					●	●			

Slanted Shoulder & Chamfer

MFHN45 Type Shell Mill



mm

Designation	No.of Inserts	Dimension (mm)							Arbor	kg
		D	D1	d	H	W	T	ap		
MFHN45-6040-16-05T	5	40	47.3	16	40	8.4	5.6	3.0	A	0.37
MFHN45-6050-22-04T	4	50	57.3	22	40	10.4	6.3	3.0	A	0.62
MFHN45-6050-22-06T	6	50	57.3	22	40	10.4	6.3	3.0	A	0.41
MFHN45-6063-22-06T	6	63	70.3	22	40	10.4	6.3	3.0	A	0.56
MFHN45-6063-22-08T	8	63	70.3	22	40	10.4	6.3	3.0	A	0.69
MFHN45-6080-27-07T	7	80	86.8	27	50	12.4	7.0	3.0	B	1.10
MFHN45-6080-27-10T	10	80	86.8	27	50	12.4	7.0	3.0	B	1.19
MFHN45-6100-32-08T	8	100	107.1	32	50	14.4	8.0	3.0	B	2.07
MFHN45-6100-32-12T	12	100	107.1	32	50	14.4	8.0	3.0	B	1.82
MFHN45-6125-40-10T	10	125	132.2	40	63	16.4	9.0	3.0	B	3.62
MFHN45-6125-40-16T	16	125	132.2	40	63	16.4	9.0	3.0	B	3.62
MFHN45-8050-22-04T	4	50	61.7	22	40	10.4	6.3	5.0	A	0.38
MFHN45-8063-22-06T	6	63	74.7	22	40	10.4	6.3	5.0	A	0.54
MFHN45-8080-27-06T	6	80	91.7	27	50	12.4	7.0	5.0	B	1.06
MFHN45-8080-27-08T	8	80	91.7	27	50	12.4	7.0	5.0	B	1.06
MFHN45-8100-32-08T	8	100	111.7	32	50	14.4	8.0	5.0	B	1.76
MFHN45-8100-32-10T	10	100	111.7	32	50	144	8.0	5.0	B	1.76
MFHN45-8125-40-10T	10	125	136.7	40	63	16.4	9.0	5.0	B	3.36
MFHN45-8125-40-12T	12	125	136.7	40	63	16.4	9.0	5.0	B	3.36
MFHN45-8160-40-12T	12	160	171.7	40	63	16.4	9.0	5.0	C	6.46
MFHN45-8160-40-14T	14	160	171.7	40	63	16.4	9.0	5.0	C	6.45
MFHN45-8200-60-12T	12	200	211.7	60	63	25.7	14.0	5.0	C	11.37
MFHN45-8250-60-14T	14	250	261.7	60	63	25.7	14.0	5.0	C	18.50
MFHN45-8315-60-16T	16	315	326.7	60	63	25.7	14.0	5.0	C	37.00

Spare Parts

TYPE		
	Insert screw	Wrench
MFHN45-6	L0755SSTX3.0-4.0P	FF-TPF08
MFHN45-8	L1255SSTX4.5-6.4P	FF-TPF20

Available Inserts

HNGX

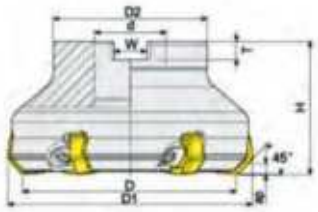
Workpiece			Machining Type													
Steel	P		●	⬍	✱					●	⬍		✱	⬍	✱
Stainless steel	M			✱						●	⬍	⬍	✱	⬍	✱
Cast iron	K		⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱
Non-ferrous metal	N														
Heat resistant alloy, Titanium alloy	S									●	⬍	⬍	✱		
Hardened steel	H											⬍	✱	⬍	✱

● Continuous cutting
⬍ General cutting
✱ Interrupted cutting

Designations		Dimensions(mm)					CVD Coated							PVD Coated					
		L	S	BS	D1	α	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
HNGX	HNGX 0604ANSN-GM	10.5	4.76	0.09	3.7	23°												●	●
	HNGX 0906ANSN-GM	16.5	6.35	0.12	4.9	22°		●		○	●	●	●		●	●			
	HNGX 0906ANSN-GR	16.5	6.35	0.20	4.9	17°		●		○	●	●	●		●	●		●	●

Slanted Shoulder & Chamfer

TFXN45 Type Shell Mill



mm

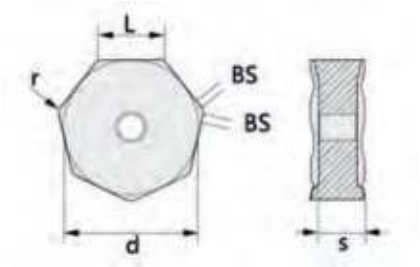
Designation	No.of Inserts	Dimension (mm)								Arbor
		D	D1	D2	d	H	ap	T	W	
TFXN4507-063-22-09T	9	63	71	53	22	50	4.0	6.3	10.4	A
TFXN4507-080-27-11T	11	80	88	65	27	50	4.0	7.0	12.4	B
TFXN4507-100-32-14T	14	100	108	80	32	50	4.0	8.0	14.4	B
TFXN4507-125-40-18T	18	125	133	80	40	63	4.0	9.0	16.4	B
TFXN4507-160-40-22T	22	160	168	115	40	63	4.0	9.0	16.4	C
TFXN4507-200-60-28T	28	200	208	160	60	63	4.0	14.0	25.7	C
TFXN4509-125-40-16T	16	125	137	80	40	63	6.0	9.0	16.4	B
TFXN4509-160-40-20T	20	160	172	115	40	63	6.0	9.0	16.4	C
TFXN4509-200-60-26T	26	200	212	160	60	63	6.0	14.0	25.7	C

Parts

TYPE			
	Clamping Wedge	Insert screw	Wrench
TFXN4507	Tk4507	TI2134	HW20L
TFXN4509	Tk4509	TI2157	HW40L

Available Inserts

XNHF

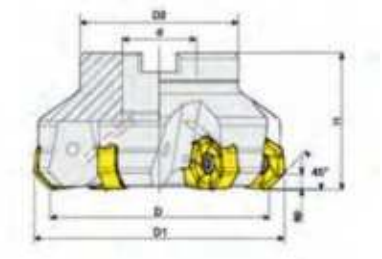


Workpiece		Machining Type	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
Steel	P		●	⬌	✖					●	⬌		✖	⬌	✖
Stainless steel	M			✖						●	⬌	⬌	✖	⬌	✖
Cast iron	K		⬌			●	●	⬌	⬌	●	⬌		✖	⬌	✖
Non-ferrous metal	N	● Continuous cutting													
Heat resistant alloy, Titanium alloy	S	⬌ General cutting								●	⬌	⬌	✖		
Hardened steel	H	✖ Interrupted cutting										⬌	✖	⬌	✖

Designations		Dimensions(mm)					CVD Coated							PVD Coated					
		L	d	S	BS	r	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
XNHF-GM	XNHF 070508-GM	7.0	14.5	5.50	-	0.8				●					●	●			
	XNHF 090612-GM	9.0	19.05	5.68	-	1.2				●									

Slanted Shoulder & Chamfer

MFXN45 Type Shell Mill



mm

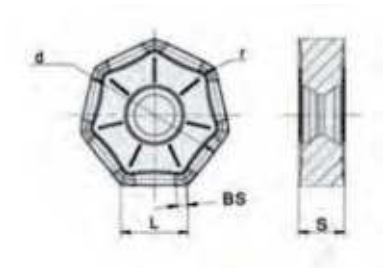
Designation	No.of Inserts	Dimension (mm)						
		D	D1	D2	d	H	ap	Arbor
MFXN4507-040-16-03T	3	40	49.8	37	16	40	4.4	A
MFXN4507-050-22-04T	4	50	59.8	42	22	40	4.4	A
MFXN4507-050-22-05T	5	50	59.8	42	22	40	4.4	A
MFXN4507-063-22-05T	5	63	72.8	53	22	40	4.4	A
MFXN4507-063-22-06T	6	63	72.8	53	22	40	4.4	A
MFXN4507-080-27-06T	6	80	89.8	65	27	50	4.4	B
MFXN4507-080-27-07T	7	80	89.8	65	27	50	4.4	B
MFXN4507-100-32-07T	7	100	109.8	80	32	50	4.4	B
MFXN4507-100-32-08T	8	100	109.8	80	32	50	4.4	B
MFXN4507-125-40-08T	8	125	134. 8	80	40	63	4.4	B
MFXN4507-125-40-10T	10	125	134. 8	80	40	63	4.4	B
MFXN4507-160-40-09T	9	160	169.8	115	40	63	4.4	C
MFXN4507-160-40-12T	12	160	169.8	115	40	63	4.4	C

Parts

TYPE		
	Insert screw	Wrench
MFXN4507	L1260SSTX3.5-5.3P	FF-TPF15

Available Inserts

XNMU

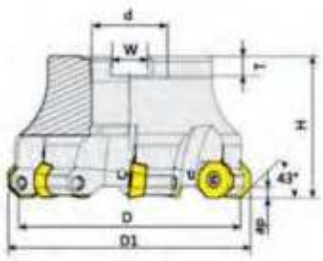


Workpiece		Machining Type													
Steel	P	● Continuous cutting	●	⬍	✱					●	⬍		✱	⬍	✱
Stainless steel	M	⬍ General cutting		✱						●	⬍	⬍	✱	⬍	✱
Cast iron	K	✱ Interrupted cutting	⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱
Non-ferrous metal	N														
Heat resistant alloy, Titanium alloy	S									●	⬍	⬍	✱		
Hardened steel	H											⬍	✱	⬍	✱

Designations		Dimensions(mm)					CVD Coated							PVD Coated					
		L	d	S	BS	r	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
XNMU-GM	XNMU 0705ANN-GM	7.0	14.5	5.40	1.1	0.8				●	○				●	●	○		

Slanted Shoulder & Chamfer

SOD43 Type Shell Mill



mm

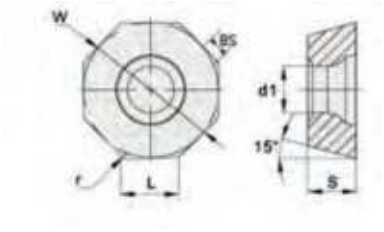
Designation	No.of Inserts	Dimension (mm)							
		D	D1	d	H	W	T	ap	Adapter
SOD4306-040-16-03T	3	40	50	16	40	8.4	5.6	4.0	A
SOD4306-050-22-04T	4	50	60	22	40	10.4	6.3	4.0	A
SOD4306-063-22-05T	5	63	73	22	40	10.4	6.3	4.0	A
SOD4306-080-27-06T	6	80	90	27	50	12.4	7.0	4.0	A
SOD4306-100-32-07T	7	100	110	32	50	14.4	8.0	4.0	B
SOD4306-125-40-08T	8	125	135	40	63	16.4	9.0	4.0	B
SOD4306-160-40-10T	10	160	170	40	63	16.4	9.0	4.0	C
SOD4306-200-60-12T	12	200	210	60	63	25.7	14.0	4.0	C

Parts

TYPE		
	Insert screw	Wrench
SOD4306	L1260SSTX5.0-7.0P	FF-TPF20

Available Inserts

ODHT

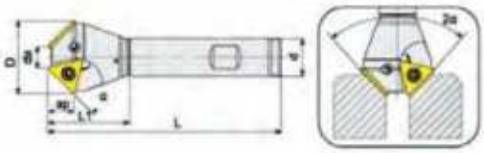


Workpiece		Machining Type	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
Steel	P		●	⬌	✖					●	⬌		✖	⬌	✖
Stainless steel	M			✖						●	⬌	⬌	✖	⬌	✖
Cast iron	K		⬌			●	●	⬌	⬌	●	⬌		✖	⬌	✖
Non-ferrous metal	N	● Continuous cutting													
Heat resistant alloy, Titanium alloy	S	⬌ General cutting								●	⬌	⬌	✖		
Hardened steel	H	✖ Interrupted cutting										⬌	✖	⬌	✖

Designations		Dimensions(mm)						CVD Coated							PVD Coated					
		L	W	S	BS	r	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
ODHT	ODHT 060508-GH	6.58	15.875	5.56	-	0.8	5.6									●	●			

Countersink & Chamfer

TC Type Chamfer Cutter



mm

Designation	No.of Inserts	Dimension (mm)							Available Inserts	Adapter
		D	d	L1	L	da	ap	α		
B15°-TC11-C20T2-120ap18-22	2	22	20	30	120	18	9.7	15°	TC□□1102**	S
B15°-TC16-C20T1-120ap13-19	1	19	20	30	120	13	14.9	15°	TC□□16T3**	S
B15°-TC16-C20T1-120ap18-22	1	22	20	30	120	18	14.9	15°	TC□□16T3**	S
B15°-TC16-C20T1-120ap22-28	1	28	20	40	120	22	14.9	15°	TC□□16T3**	S
B30°-TC16-C16T1-120ap6-20	1	20	16	30	120	6	13.4	30°	TC□□16T3**	S
B30°-TC16-C20T2-120ap18-30	2	30	20	30	120	18	13.4	30°	TC□□16T3**	S
B30°-TC16-C25T2-120ap18-30	2	30	25	30	120	18	13.4	30°	TC□□16T3**	S
B30°-TC16-C25T2-120ap28-40	2	40	25	40	120	28	13.4	30°	TC□□16T3**	S
B45°-TC11-C12T1-120ap4-15	1	15	12	30	120	4	6.9	45°	TC□□1102**	S
B45°-TC16-C16T2-120ap6-20	1	20	16	30	120	6	10.8	45°	TC□□16T3**	S
B45°-TC16-C20T1-120ap6-20	1	20	20	30	120	6	10.8	45°	TC□□16T3**	S
B45°-TC16-C20T1-160ap8-25	1	25	20	40	160	8	10.8	45°	TC□□16T3**	S
B45°-TC16-C20T2-120ap14-30	2	30	20	30	120	14	10.8	45°	TC□□16T3**	S
B45°-TC16-C25T2-120ap14-30	2	30	25	30	120	14	10.8	45°	TC□□16T3**	S
B45°-TC16-C25T2-120ap20-40	2	40	25	40	120	20	10.8	45°	TC□□16T3**	S
B45°-TC16-C25T2-120ap30-50	2	50	25	40	120	30	10.8	45°	TC□□16T3**	S
B45°-TC16-C25T2-120ap45-60	2	60	25	45	120	45	10.8	45°	TC□□16T3**	S
B60°-TC11-C20T1-120ap6-20	1	20	20	30	120	6	5.0	60°	TC□□1102**	S
B60°-TC11-C20T2-120ap10-25	2	25	20	30	120	10	5.0	60°	TC□□1102**	S
B60°-TC16-C16T1-120ap6-20	1	20	16	30	120	6	7.8	60°	TC□□16T3**	S
B60°-TC16-C20T1-120ap5-25	1	25	20	30	120	5	7.8	60°	TC□□16T5**	S
B60°-TC16-C20T2-120ap10-30	2	30	20	30	120	10	7.8	60°	TC□□16T3**	S
B60°-TC16-C25T2-120ap10-30	2	30	25	30	120	10	7.8	60°	TC□□16T3**	S
B60°-TC16-C25T2-120ap17-40	2	40	25	30	120	18	7.8	60°	TC□□16T3**	S
B75°-TC16-C25T2-120ap13-40	2	40	25	30	120	13	4.0	75°	TC□□16T3**	S

Parts

TYPE		
	Insert screw	Wrench
B-TC11	L0655SSTX2.5-3.6P	TPF-08
B-TC16	L0960SSTX3.5-5.3P	TPF-15

45° SP Type Chamfer Cutter

mm

Designation	No.of Inserts	Dimension (mm)						
		D	d	L1	L	da	α	Adapter
B45°-SP05-C10-T1-120ap04-09	1	9	10	30	120	4	45°	S
B45°-SP05-C12-T1-120ap04-09	1	9	12	30	120	4	45°	S
B45°-SP05-C12-T1-120ap06-11	1	11	12	30	120	6	45°	S
B45°-SP05-C12-T2-120ap10-14	2	14	12	30	120	10	45°	S
B45°-SP06-C12-T1-120ap08-16	1	16	12	30	120	8	45°	S
B45°-SP07-C20-T2-160ap17-25	2	25	20	35	160	17	45°	S
B45°-SP09-C16-T1-120ap14-20	1	20	16	30	120	14	45°	S
B45°-SP12-C20-T1-100ap12-23	1	23	20	40	100	12	45°	S
B45°-SP12-W20-T1-100ap12-23	1	23	20	40	100	12	45°	W
B45°-SP12-C25-T2-120ap25-36	2	36	25	40	120	25	45°	S
B45°-SP12-W25-T2-120ap25-36	2	36	25	40	120	25	45°	W
B45°-SP12-C32-T3-180ap32-43	3	43	32	50	180	32	45°	S
B45°-SP12-W32-T3-180ap32-43	3	43	32	50	180	32	45°	W

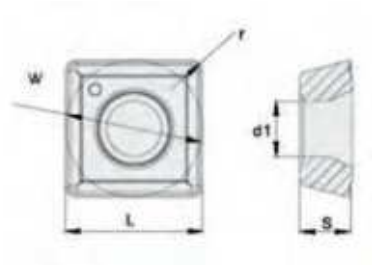
Parts

TYPE		
	Insert screw	Wrench
B45°SP05	L0460SSTX2.0-2.8P	TPF-06
B45°SP06	L0560SSTX2.2-3.0P	TPF-06
B45°SP07	L0560SSTX2.5-3.6P	TPF-08
B45°SP09	L0960SSTX3.5-5.0P	TPF-15
B45°SP12	L1260SSTX5.0-7.0P	TPF-20

Chamfering

Available Inserts

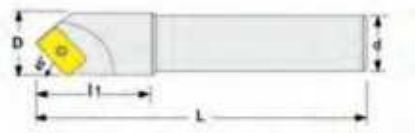
SPMG



Workpiece		Machining Type													
Steel	P	● Continuous cutting	●	⬍	✱					●	⬍		✱	⬍	✱
Stainless steel	M	⬍ General cutting		✱						●	⬍	⬍	✱	⬍	✱
Cast iron	K	✱ Interrupted cutting	⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱
Non-ferrous metal	N														
Heat resistant alloy, Titanium alloy	S									●	⬍	⬍	✱		
Hardened steel	H											⬍	✱	⬍	✱

Designations		Dimensions(mm)					CVD Coated							PVD Coated					
		L	W	S	r	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
SPMG-Z	SPMG 050204-Z	5.00	5.00	2.38	0.4	2.25		●							●	●			
	SPMG 060204-Z	6.00	6.00	2.38	0.4	2.61		●							●	●			
	SPMG 07T308-Z	7.94	7.94	3.97	0.8	2.85		●							●	●			
	SPMG 090408-Z	9.80	9.80	4.30	0.8	4.05		●							●	●			
SPMT-HM	SPMT 120408-HM	12.7	12.70	4.76	0.8	5.50						●			●	●			

45° AP Type Chamfer Cutter

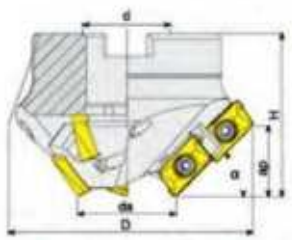


mm

Designation	No.of Insert	Dimension (mm)				
		D	d	L1	L	Chamfering Range
B45°-AP11-C16T1-120ap4-15	1	15	16	30	120	4-15
B45°-AP16-C16T1-120ap8-21	1	21	16	35	120	8-21
B45°-AP16-C20T1-120ap8-21	1	21	20	35	120	8-21
B45°-AP16-C20T2-120ap18-32	2	32	20	35	120	18-32
B45°-AP16-C25T2-120ap25-40	2	40	25	35	120	25-40

Chamfering

AP Type Helix Chamfer Cutter



mm

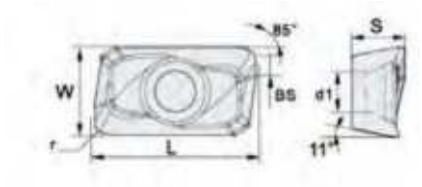
Designation	No.of flute	No.of Insert	Dimension (mm)					
			D	da	d	H	ap	a
B15°-AP16-D3593-A27-Z0306	3	6	93	35	27	50	8.0	15
B30°-AP16-D3587-A27-Z0306	3	6	87	35	27	50	15.0	30
B45°-AP16-D3577-A27-Z0306	3	6	77	35	27	50	21.5	45
B60°-AP16-D3565-A22-Z0306	3	6	65	35	22	50	26.5	60
B75°-AP16-D3550-A22-Z0306	3	6	50	35	22	50	29.5	75

Parts

TYPE		
	Insert screw	Wrench
B-AP11	L0655SSTX2.5-3.6P	TPF-08
B-AP16	L0960SSTX4.0-5.7P	TPF-15

Available Inserts

APMT



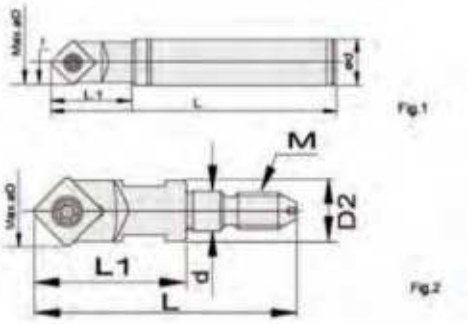
Workpiece			Machining Type													
Steel	P		●	⬍	✖					●	⬍		✖	⬍	✖
Stainless steel	M			✖						●	⬍	⬍	✖	⬍	✖
Cast iron	K		⬍			●	●	⬍	⬍	●	⬍		✖	⬍	✖
Non-ferrous metal	N														
Heat resistant alloy, Titanium alloy	S									●	⬍	⬍	✖		
Hardened steel	H											⬍	✖	⬍	✖

● Continuous cutting
⬍ General cutting
✖ Interrupted cutting

Designations		Dimensions(mm)					CVD Coated							PVD Coated					
		L	W	S	BS	r	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
APMT-H2	APMT 1135PDER-H2	11.0	6.350	3.50	1.2	0.80		●		●		●		●	●	●	●		
	APMT 1604PDER-H2	16.5	9.525	4.76	1.7	0.80		●		●		●		●	●	●	●		
APMT-M2	APMT 1135PDER-M2	11.0	6.350	3.50	1.2	0.80		●		●		●		●	●	●	●		
	APMT 1604PDER-M2	16.5	9.525	4.76	1.7	0.80		●		●		●		●	●	●	●		
APGT	APGT 160404FR	16.5	9.525	4.76	-	0.40									●				
APMT	APMT 160404	16.5	9.525	4.76	-	0.40									●				

Spotting & Chamfer

90° Multi-pupose Chamfer Cutter



mm

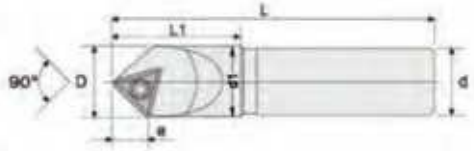
Designation	No.of Insert	Dimension (mm)								Spare parts	
		Dmax	d	f	L1	L	M	D2	fig	Screw	Wrench
DX45-SD06C08T1-080L	1	8	8.0	4.75	-	80	-	-	1	NS25065B	TPF-08
DX45-SD09C12T1-120L	1	14	12.0	6.75	29	120	-	-	1	NS35080B	TPF-15
SSP-1008-20-M04-1T-06	1	10	4.5	4.75	20	32	M4	7.8	2	NS25065B	TPF-08
SSP-1412-30-M06-1T-09	1	14	6.5	6.75	30	45	M6	11.0	2	NS35080B	TPF-15

60° Multi-pupose Chamfer Cutter

mm

Designation	No.of Insert	Dimension (mm)				Spare parts	
		Dmax	d	L1	L	Screw	Wrench
SSP-0808-080L-60°-07	1	9	8.0	-	80	NS25065B	TPF-08
SSP-1616-110L-60°-11	1	13	16.0	29	110	NS40080B	TPF-15

90° Multi-pupose Chamfer Cutter



mm

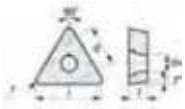
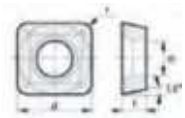
Designation	No.of Insert	Dimension (mm)						Spare parts	
		D	d1	d	a	L1	L	Screw	Wrench
DX45-TC09R0.4-C12T1-120L	1	13.8	11.8	12	6.05	26	120	NS22050B	TPF-06
DX45-TC16R0.4-C20T1-120L	1	22.5	19.0	20	11.30	50	120	NS40080B	TPF-15
DX45-TC16R0.8-C20T1-120L	1	22.5	19.0	20	11.30	50	120	NS40080B	TPF-15

Spotting & Chamfer

Available Inserts

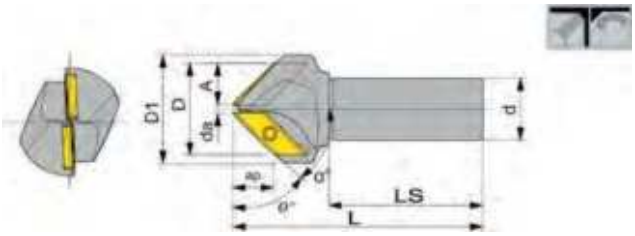
Workpiece			Machining Type													
Steel	P		●	⬍	✱					●	⬍		✱	⬍	✱
Stainless steel	M			✱						●	⬍	⬍	✱	⬍	✱
Cast iron	K		⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱
Non-ferrous metal	N														
Heat resistant alloy, Titanium alloy	S									●	⬍	⬍	✱		
Hardened steel	H											⬍	✱	⬍	✱

● Continuous cutting
⬍ General cutting
✱ Interrupted cutting

Designations		Dimensions(mm)					CVD Coated							PVD Coated					
		L	W	S	r	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
TCEX 	TCEX 090204E-AR	9.60	5.56	2.50	0.4	2.80									●				
	TCEX 16T304E-AR	16.50	9.525	3.97	0.4	4.45									●				
	TCEX 16T308E-AR	16.50	9.525	3.97	0.8	4.45									●				
DCEX	DCEX 070204E-AR	7.80	6.35	2.38	0.4	2.80									●				
	DCEX 11T304E-AR	11.60	9.525	3.97	0.4	4.40									●				
SDEX 	SDEX 060204E-AR	6.00	6.0	2.38	0.4	2.80									●				
	SDEX 090408E-AR	9.53	9.53	4.80	0.8	4.40									●				

ECC Type Chamfer Cutter

Chamfering endmill, screw clamp system, for large parallelogram inserts



mm

Designation	No.of Insert	Dimension (mm)										Arbor
		D1	D	d	da	A	L	LS	α	θ	ap	
ECC 17005R-30	2	26	20	12	11	7.5	78	40	30°	60°	13.5	S
ECC 17005R-45	2	36	27	12	5	11.0	78	40	45°	45°	11.0	S
ECC 17005R-60	2	44	32	12	5	13.5	78	40	60°	30°	7.5	S
ECC 31005R-30	1	40	34	32	5	14.5	130	80	30°	60°	25.5	S
ECC 31005R-45	2	56	46	32	5	20.5	130	80	45°	45°	20.5	S
ECC 31005R-45-3071	2	81	71	32	30	20.5	130	80	45°	45°	20.5	S
ECC 31005R-60	2	72	55	32	5	20.5	130	80	60°	30°	14.5	S

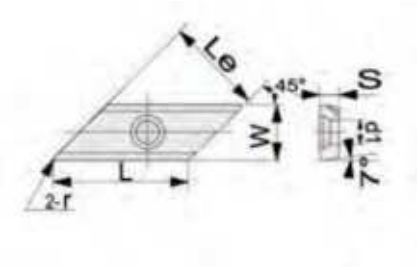
Parts

TYPE		
	Insert screw	Wrench
ECC-17	L1060SSTX4.0-5.7P	TPF-15
ECC-31	L1260SSTX5.0-7.0P	TPF-20

Chamfering

Available Inserts

XCET

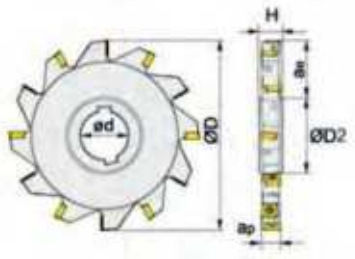


Workpiece			Machining Type													
Steel	P		●	⬍	✱					●	⬍		✱	⬍	✱
Stainless steel	M			✱						●	⬍	⬍	✱	⬍	✱
Cast iron	K		⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱
Non-ferrous metal	N														
Heat resistant alloy, Titanium alloy	S									●	⬍	⬍	✱		
Hardened steel	H											⬍	✱	⬍	✱

● Continuous cutting
⬍ General cutting
✱ Interrupted cutting

Designations		Dimensions(mm)						CVD Coated							PVD Coated					
		L	W	S	Le	r	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H
XCET	XCET 170402ER	17.12	9.525	4.0	12.0	0.2	5.0									●				
	XCET 310404ER	30.15	12.70	4.5	22.0	0.4	5.5									●				

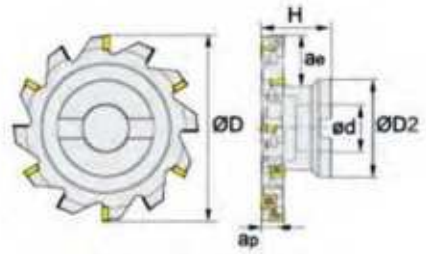
PT01 Type Full Side Milling Cutter



mm

Designation	No.of Insert	Dimension (mm)						kg
		D	D2	d	ap	H	ae	
PT01.06 J27.080.10.ap08	10	80	41	27	8	12	17.6	0.20
PT01.06 J32.100.14.ap08	14	100	47	32	8	12	25.1	0.30
PT01.06 J32.100.14.ap10	14	100	47	32	10	14	25.1	0.40
PT01.06 J40.125.16.ap10	16	125	55	40	10	14	33.6	0.60
PT01.08 J40.125.12.ap12	12	125	55	40	12	16	32.6	0.70
PT01.08 J40.160.12.ap12	12	160	62	40	12	16	31.5	1.30
PT01.12 J40.160.12.ap16	12	160	62	40	16	20	47.6	1.60
PT01.12 J40.160.12.ap18	12	160	62	40	18	24	47.3	1.90
PT01.12 J40.160.12.ap20	12	160	62	40	20	26	47.3	2.10
PT01.12 J50.200.14.ap16	14	200	72	50	16	20	62.6	2.50
PT01.12 J50.200.14.ap18	14	200	72	50	18	24	62.3	2.90
PT01.12 J50.200.14.ap20	14	200	72	50	20	26	62.3	3.30

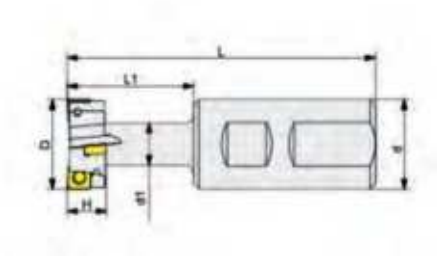
PT01 Type Side Milling Cutter



mm

Designation	No.of Insert	Dimension (mm)						Arbor	kg
		D	D2	d	ap	H	ae		
PT01.06 A22.080.10.ap08	10	80	45	22	8	40.0	21.0	A	0.40
PT01.06 B27.100.14.ap08	14	100	55	27	8	40.0	24.5	B	0.60
PT01.06 B27.100.14.ap10	14	100	55	27	10	40.0	24.5	B	0.70
PT01.06 B32.125.16.ap10	16	125	65	32	10	45.0	33.3	B	1.10
PT01.08 B32.125.12.ap12	12	125	65	32	12	45.0	33.0	B	1.40
PT01.08 B40.160.14.ap12	14	160	80	40	12	45.0	44.0	B	1.90
PT01.08 C40.200.18.ap12	18	200	92	40	12	50.0	52.0	C	3.20
PT01.12 B32.125.12.ap16	12	125	65	32	16	50.0	33.0	B	2.30
PT01.12 B40.160.12.ap16	12	160	80	40	16	60.0	45.0	B	2.30
PT01.12 B40.160.12.ap18	12	160	80	40	18	60.0	45.0	B	2.40
PT01.12 C40.200.14.ap16	14	200	92	40	16	50.0	52.0	C	3.60
PT01.12 C40.200.14.ap18	14	200	92	40	18	50.0	52.0	C	3.90
PT01.12 C40.200.14.ap20	14	200	92	40	20	50.0	52.0	C	4.20

PT01 Type T-Cutter



mm

Designation	No.of Insert	Dimension (mm)					
		D	d	d1	L	L1	H
PT01.06 W25.021.01.H09	2	21	25	10	100	32	9
PT01.06 W25.025.01.H11	2	25	25	12	100	35	11
PT01.08 W32.032.02.H14	4	32	32	15	110	45	14
PT01.12 W32.040.02.H18	4	40	32	19	125	55	18
PT01.12 W40.050.02.H22	4	50	40	25	140	65	22

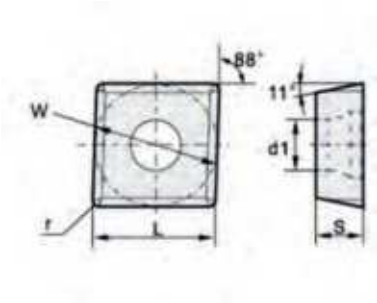
Parts

TYPE		
	Insert screw	Wrench
PT01.06	L0655SSTX2.5-3.6P	TPF-08
PT01.08	L0750SSTX3.0-4.0P	TPF-08
PT01.12	L1160SSTX5.0-7.0P	TPF-15

Slotting

Available Inserts

MPHT

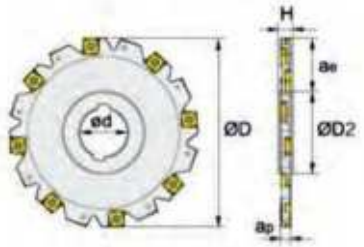


Workpiece			Machining Type														
Steel	P		●	⬍	✱					●	⬍		✱	⬍	✱	
Stainless steel	M			✱						●	⬍	⬍	✱	⬍	✱	
Cast iron	K		⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱	
Non-ferrous metal	N															⬍
Heat resistant alloy, Titanium alloy	S									●	⬍	⬍	✱			
Hardened steel	H											⬍	✱	⬍	✱	

● Continuous cutting
⬍ General cutting
✱ Interrupted cutting

Designations		Dimensions(mm)					CVD Coated							PVD Coated						
		L	W	S	r	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPK01
MPHT-GM	MPHT 060304-GM	6.35	6.35	3.18	0.4	2.80	○	●	○	●			○		●	●	○			●
	MPHT 080305-GM	8.30	8.30	3.18	0.5	3.40	○	●	○	●			○		●	●	○			●
	MPHT 120408-GM	12.70	12.70	4.76	0.8	5.56	○	●	○	●			○		●	●	○			●

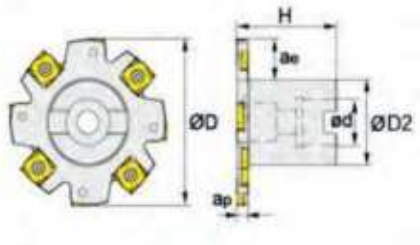
PT02 Type Full Side Milling Cutter



mm

Designation	No.of Insert	Dimension (mm)						kg
		D	D2	d	ap	H	ae	
PT02.1202.J27.100.10.ap04	10	100	40.7	27	4	12	25	0.20
PT02.1202.J40.125.12.ap04	12	125	50.5	40	4	12	32	0.30
PT02.1202.J40.160.16.ap04	16	160	66.7	40	4	12	44	0.50
PT02.1203.J27.100.10.ap05	10	100	45.0	27	5	12	25	0.20
PT02.1203.J40.125.12.ap05	12	125	58.0	40	5	12	32	0.30
PT02.1203.J40.160.16.ap05	16	160	68.0	40	5	12	44	0.60
PT02.12T3.J27.100.10.ap06	10	100	45.0	27	6	12	25	0.30
PT02.12T3.J40.125.12.ap06	12	125	58.0	40	6	12	32	0.40
PT02.12T3.J40.160.16.ap06	16	160	68.0	40	6	12	44	0.70
PT02.12T3.J50.200.18.ap06	18	200	72.0	50	6	12	62	1.10
PT02.12T3.J50.250.24.ap06	24	250	72.0	50	6	12	87	1.70
PT02.1204.J27.100.10.ap07	10	100	45.0	27	7	12	25	0.30
PT02.1204.J40.125.12.ap07	12	125	58.0	40	7	12	32	0.40
PT02.1204.J40.160.16.ap07	16	160	68.0	40	7	12	44	0.80
PT02.1204.J50.200.18.ap07	18	200	72.0	50	7	12	62	1.20
PT02.1204.J50.250.24.ap07	24	250	72.0	50	7	12	87	1.90
PT02.12T4.J27.100.10.ap08	10	100	45.0	27	8	12	25	0.30
PT02.12T4.J40.125.12.ap08	12	125	58.0	40	8	12	32	0.50
PT02.12T4.J40.160.16.ap08	16	160	68.0	40	8	12	44	0.90
PT02.12T4.J50.200.18.ap08	18	200	72.0	50	8	12	62	1.40
PT02.12T4.J50.250.24.ap08	24	250	72.0	50	8	12	87	2.20

PT02 Type Full Side Milling Cutter



mm

Designation	No.of Insert	Dimension (mm)						Arbor	kg
		D	D2	d	ap	H	ae		
PT02.1202.A22.063.06.ap04	6	63	32	22	4	40	14	A	0.20
PT02.1202.A22.080.08.ap04	8	80	40	22	4	50	18	A	0.40
PT02.1202.A27.100.10.ap04	10	100	48	27	4	50	23	A	0.60
PT02.1203.A22.063.06.ap05	6	63	32	22	5	40	14	A	0.20
PT02.1203.A22.080.08.ap05	8	80	40	22	5	50	18	A	0.40
PT02.1203.A27.100.10.ap05	10	100	48	27	5	50	23	A	0.70
PT02.12T3.A22.063.06.ap06	6	63	32	22	6	40	14	A	0.20
PT02.12T3.A22.080.08.ap06	8	80	40	22	6	50	18	A	0.50
PT02.12T3.A27.100.10.ap06	10	100	48	27	6	50	23	A	0.70
PT02.12T3.B40.125.12.ap06	12	125	70	40	6	50	23	B	1.00
PT02.12T3.B40.160.16.ap06	16	160	70	40	6	50	41	B	1.30
PT02.1204.A22.063.06.ap07	6	63	32	22	7	40	14	A	0.20
PT02.1204.A22.080.08.ap07	8	80	40	22	7	50	18	A	0.50
PT02.1204.A27.100.10.ap07	10	100	48	27	7	50	23	A	0.70
PT02.1204.B40.125.12.ap07	12	125	70	40	7	50	23	B	1.10
PT02.1204.B40.160.16.ap07	16	160	70	40	7	50	41	B	1.40
PT02.12T4.A22.063.06.ap08	6	63	32	22	8	40	14	A	0.20
PT02.12T4.A22.080.08.ap08	8	80	40	22	8	50	18	A	0.50
PT02.12T4.A27.100.10.ap08	10	100	48	27	8	50	23	A	0.80
PT02.12T4.B40.125.12.ap08	12	125	70	40	8	50	23	B	1.10
PT02.12T4.B40.160.16.ap08	16	160	70	40	8	50	41	B	1.50

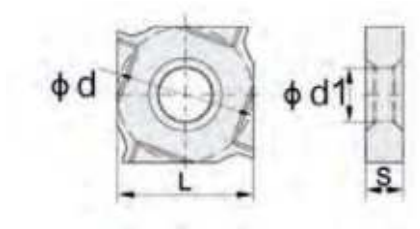
Parts

TYPE		
	Insert screw	Wrench
PT02.1202	191M4.0x3.2X	FF-TF09
PT02.1203	191M4.0x4.2X	FF-TPF15
PT02.12T3	191M4.0x5.1X	FF-TPF15
PT02.1204	191M4.0x6.1X	FF-TPF15
PT02.12T4	191M4.0x7.1X	FF-TPF15

Slotting

Available Inserts

SNEQ

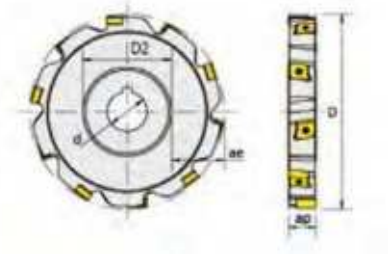


Workpiece		Machining Type													
Steel	P		●	⇄	✱					●	⇄		✱		
Stainless steel	M			✱						●	⇄	⇄	✱		
Cast iron	K		⇄			●	●	⇄	⇄	●	⇄		✱		
Non-ferrous metal	N														⇄
Heat resistant alloy, Titanium alloy	S									●	⇄	⇄	✱		
Hardened steel	H											⇄	✱		

● Continuous cutting
⇄ General cutting
✱ Interrupted cutting

Designations		Dimensions(mm)				CVD Coated							PVD Coated							
		L	d	S	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPM9030	TPK01
SNEQ	1202	12.70	12.7	2.3	5.0									●	●				●	○
	1203	12.70	12.7	3.0	5.0									○	○				●	○
	12T3	12.70	12.7	3.5	5.0									○	○				●	○
	1204	12.70	12.7	4.0	5.0									○	○				●	○
	12T4	12.70	12.7	4.5	5.0									●	●				●	○

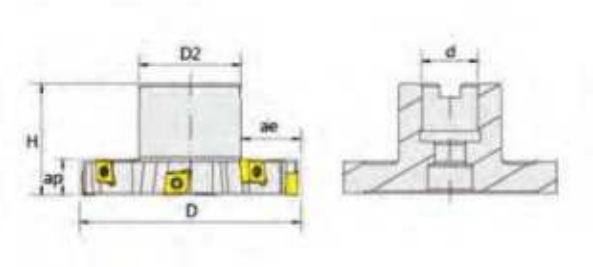
TSCN Type Full Side Milling Cutter



mm

Designation	No.of Insert	Dimension (mm)					kg
		D	D2	d	ap	ae	
TSCN10.J27.080.06.ap14	6	80	44	27	14	18	0.30
TSCN10.J27.100.08.ap14	8	100	48	27	14	26	0.50
TSCN10.J32.125.10.ap14	10	125	55	32	14	35	0.90
TSCN10.J40.160.12.ap14	12	160	68	40	14	46	1.09
TSCN10.J50.200.16.ap14	16	200	78	50	14	61	1.79
TSCN10.J50.250.20.ap14	20	250	86	50	14	82	2.88
TSCN12.J27.080.06.ap18	6	80	44	27	18	18	0.30
TSCN12.J27.100.08.ap18	8	100	48	27	18	26	0.50
TSCN12.J32.125.10.ap18	10	125	55	32	18	35	0.90
TSCN12.J40.160.12.ap18	12	160	68	40	18	46	1.09
TSCN12.J50.200.16.ap18	16	200	78	50	18	61	1.79
TSCN12.J50.250.20.ap18	20	250	86	50	18	82	2.88
TSCN16.J27.080.06.ap22	6	80	44	27	22	18	0.30
TSCN16.J27.100.08.ap22	8	100	48	27	22	26	0.50
TSCN16.J32.125.10.ap22	10	125	55	32	22	35	0.90
TSCN16.J40.160.12.ap22	12	160	68	40	22	46	1.09
TSCN16.J50.200.16.ap22	16	200	78	50	22	61	1.79
TSCN16.J50.250.20.ap22	20	250	86	50	22	82	2.88

TSCN Type Full Side Milling Cutter



mm

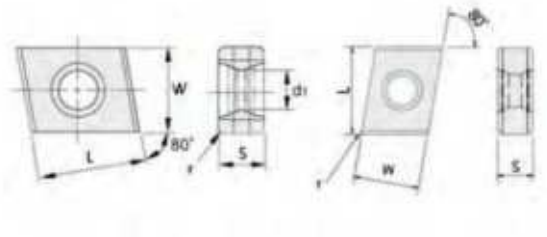
Designation	No.of Insert	Dimension (mm)						Arbor	kg
		D	D2	d	ap	H	ae		
TSCN10.A27.080.06.ap16	6	80	48	27	16	50	15	A	0.35
TSCN10.B27.100.08.ap16	8	100	48	27	16	50	25	B	0.61
TSCN10.B32.125.10.ap16	10	125	58	32	16	50	32	B	1.01
TSCN10.B40.160.12.ap16	12	160	70	40	16	50	43	B	1.75
TSCN10.C40.200.16.ap16	16	200	88	40	16	50	55	C	2.63
TSCN10.C60.250.20.ap16	20	250	112	60	16	50	68	C	5.86
TSCN12.A27.080.06.ap20	6	80	48	27	20	50	15	A	0.35
TSCN12.B27.100.08.ap20	8	100	48	27	20	50	25	B	0.61
TSCN12.B32.125.10.ap20	10	125	58	32	20	50	32	B	1.01
TSCN12.B40.160.12.ap20	12	160	70	40	20	50	43	B	1.75
TSCN12.C40.200.16.ap20	16	200	88	40	20	50	55	C	2.63
TSCN12.C60.250.20.ap20	20	250	112	60	20	50	68	C	5.86
TSCN16.A27.080.06.ap24	6	80	48	27	24	50	15	A	0.35
TSCN16.B27.100.08.ap24	8	100	48	27	24	50	25	B	0.61
TSCN16.B32.125.10.ap24	10	125	58	32	24	50	32	B	1.01
TSCN16.B40.160.12.ap24	12	160	70	40	24	50	43	B	1.75
TSCN16.C40.200.16.ap24	16	200	88	40	24	50	55	C	2.63
TSCN16.C60.250.20.ap24	20	250	112	60	24	50	68	C	5.86

Parts

TYPE		
	Insert screw	Wrench
TSCN10	L1160SSTX4.0-5.5P	FF-TPF15
TSCN12	L1160SSTX4.0-5.5P	FF-TPF15
TSCN16	L1360SSTX5.0-7.2P	FF-TPF20

Available Inserts

CNHX



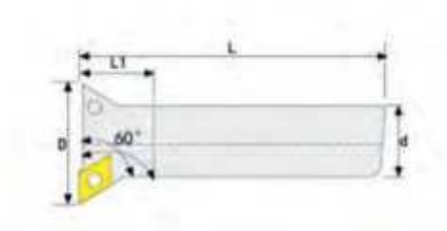
Workpiece		
Steel	P	
Stainless steel	M	
Cast iron	K	
Non-ferrous metal	N	
Heat resistant alloy, Titanium alloy	S	
Hardened steel	H	

Machining Type

● Continuous cutting
⬌ General cutting
✱ Interrupted cutting

Designations		Dimensions(mm)					CVD Coated							PVD Coated						
		L	W	S	r	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPM4036
								●	⬌	✱					●	⬌		✱	⬌	✱
									✱						●	⬌	⬌	✱	⬌	✱
							⬌			●	●	⬌	⬌	●	⬌			✱	⬌	✱
															●	⬌	⬌	✱		
																	⬌	✱	⬌	✱
CNHX-GR	CNHX 100508-GR	10.3	10.03	5.4	0.8	4.7												●		○
	CNHX 120508-GR	12.7	11.00	5.6	0.8	4.7												●		○
	CNHX 160608-GR	16.0	12.00	6.4	0.8	5.9												●		○

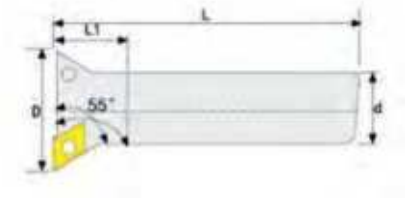
DCW60 Type Dovetail Slot Cutter



mm

Designation	No.of Insert	Dimension (mm)				Available Inserts
		D	d	L1	L	
DCW60-25-C16-120L-2T-07	2	25	16	25	120	DC□□0702**
DCW60-25-C20-120L-2T-07	2	25	20	25	120	
DCW60-30-C20-120L-3T-07	3	30	20	25	120	
DCW60-40-C25-160L-3T-11	3	40	25	25	160	DC□□11T3**
DCW60-50-C32-160L-3T-11	3	50	32	30	160	
DCW60-60-C32-160L-4T-11	4	60	32	30	160	
DCW60-80-C32-160L-5T-11	5	80	32	30	160	

DCW55 Type Dovetail Slot Cutter



mm

Designation	No.of Insert	Dimension (mm)				Available Inserts
		D	d	L1	L	
DCW55-25-C16-120L-2T-07	2	25	16	25	120	DC□□0702**
DCW55-25-C20-120L-2T-07	2	25	20	25	120	
DCW55-30-C20-120L-3T-07	3	30	20	25	120	
DCW55-40-C25-160L-3T-11	3	40	25	25	160	DC□□11T3**
DCW55-50-C32-160L-3T-11	3	50	32	30	160	
DCW55-60-C32-160L-4T-11	4	60	32	30	160	
DCW55-80-C32-160L-5T-11	5	80	32	30	160	

Parts

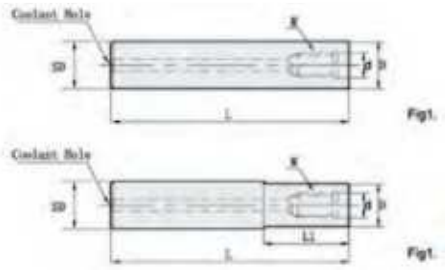
TYPE		
	Insert screw	Wrench
DCW-07	TS25060A	T-8
DCW-11	TS40090A	T-15

Slotting

MFT Carbide Modular Head Holder

A: standard

B: customization

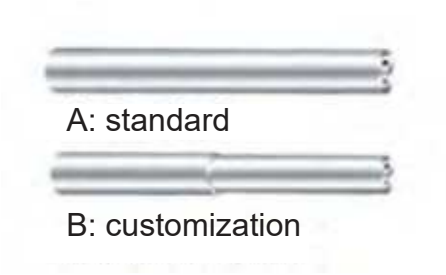


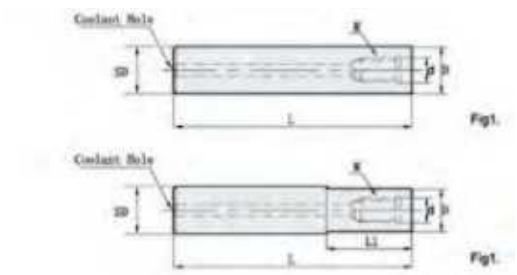
The size of the clearance space is customized according to customer requirements

mm

Designation	Dimension (mm)					Shape
	D	SD	d	L	M	
MFT06-06-M3	6.0	6	3.5	100	M3	Fig.1
MFT08-08-100-M04	8.0	8	4.5	100	M4	
MFT10-10-100M 05	10.0	10	5.5	100	M5	
MFT10-10-150-M05	10.0	10	5.5	150	M5	
MFT10-10-100-M06	10.0	10	6.5	100	M6	
MFT10-10-150-M06	10.0	10	6.5	150	M6	
MFT12-12-100-M06	12.0	12	6.5	100	M6	
MFT12-12-150-M06	12.0	12	6.5	150	M6	
MFT12-12-200-M06	12.0	12	6.5	200	M6	
MFT15-15-100-M08	15.0	15	8.5	100	M8	
MFT15-15-150-M08	15.0	15	8.5	150	M8	
MFT15-15-200-M08	15.0	15	8.5	200	M8	
MFT15-15-250-M08	15.0	15	8.5	250	M8	
MFT15.6-15.6-100-M08	15.6	15.6	8.5	100	M8	
MFT15.6-15.6-150-M08	15.6	15.6	8.5	150	M8	
MFT15.6-15.6-200-M08	15.6	15.6	8.5	200	M8	
MFT15.6-15.6-250-M08	15.6	15.6	8.5	250	M8	
MFT16-16-100-M08	16.0	16	8.5	100	M8	
MFT16-16-150-M08	16.0	16	8.5	150	M8	
MFT16-16-200-M08	16.0	16	8.5	200	M8	
MFT16-16-250-M08	16.0	16	8.5	250	M8	
MFT19-19-100-M10	19.0	19	10.5	100	M10	
MFT19-19-200-M10	19.0	19	10.5	200	M10	
MFT19-19-250-M10	19.0	19	10.5	250	M10	
MFT20-20-100-M10	20.0	20	10.5	100	M10	
MFT20-20-150-M10	20.0	20	10.5	150	M10	
MFT20-20-200-M10	20.0	20	10.5	200	M10	
MFT20-20-250-M10	20.0	20	10.5	250	M10	
MFT24-24-150-M12	24.0	24	12.5	150	M12	
MFT24-24-200-M12	24.0	24	12.5	200	M12	
MFT24-24-250-M12	24.0	24	12.5	250	M12	
MFT24-24-300-M12	24.0	24	12.5	300	M12	

MFT Carbide Modular Head Holder





The size of the clearance space is customized according to customer requirements

mm

Designation	Dimension (mm)					Shape
	D	SD	d	L	M	
MTF25-25-150-M12	25.0	25	12.5	150	M12	Fig.1
MTF25-25-200-M12	25.0	25	12.5	200	M12	
MTF25-25-250-M12	25.0	25	12.5	250	M12	
MTF25-25-300-M12	25.0	25	12.5	300	M12	
MTF32-32-200-M16	32.0	32	17.0	200	M16	
MTF32-32-250-M16	32.0	32	17.0	250	M16	
MTF32-32-300-M16	32.0	32	17.0	300	M16	
MTF32-32-350-M16	32.0	32	17.0	350	M16	
MTF32-32-400-M16	32.0	32	17.0	400	M16	

Type B does not have any inventory, which needs to be produced, And can also customized according the customer's size

mm

Designation	Dimension (mm)						Shape
	D	SD	d	L1	L	M	
MFT10-9.5-100-M06	9.5	10	6.5	40	100	M6	Fig.2
MFT10-9.5-150-M06	9.5	10	6.5	80	150	M6	
MFT12-11.5-100-M06	11.5	12	6.5	40	100	M6	
MFT12-11.5-150-M06	11.5	12	6.5	80	150	M6	
MFT12-11.5-200-M06	11.5	12	6.5	120	200	M6	
MFT16-15.5-100-M08	15.5	16	8.5	40	100	M8	
MFT16-15.5-150-M08	15.5	16	8.5	80	150	M8	
MFT16-15.5-200-M08	15.5	16	8.5	120	200	M8	
MFT16-15.5-250-M08	15.5	16	8.5	160	250	M8	
MFT20-19.5-100-M10	19.5	20	10.5	40	100	M10	
MFT20-19.5-150-M10	19.5	20	10.5	80	150	M10	
MFT20-19.5-200-M10	19.5	20	10.5	120	200	M10	
MFT20-19.5-250-M10	19.5	20	10.5	160	250	M10	
MFT25-24.3-150-M12	24.3	25	12.5	70	150	M12	
MFT25-24.3-200-M12	24.3	25	12.5	100	200	M12	
MFT25-24.3-250-M12	24.3	25	12.5	150	250	M12	
MFT25-24.3-300-M12	24.3	25	12.5	200	300	M12	

Carbide Holder

MFT Carbide Modular Head Holder

A: standard

B: customization

The size of the clearance space is customized according to customer requirements

mm

Designation	Dimension (mm)						Shape
	D	SD	d	L1	L	M	
MTF32-29.0-150-M16	29.0	32	17.0	70	150	M16	Fig.2
MTF32-29.0-200-M16	29.0	32	17.0	120	200	M16	
MTF32-29.0-250-M16	29.0	32	17.0	150	250	M16	
MTF32-29.0-300-M16	29.0	32	17.0	200	300	M16	
MTF32-29.0-350-M16	29.0	32	17.0	250	350	M16	
MTF32-29.0-400-M16	29.0	32	17.0	300	400	M16	

TOOTOOL®

www.ttooltec.com

Solid Carbide Endmill Code System

4	D	B	E	040
1	2	3	4	5

1 No. Of flutes

4 D B E 040 04 200 V10 060 X

2. flutes

3. flutes

4. flutes

6. flutes

2	3	4	6

2 Series

4 D B E 040 04 200 V10 060 X

D: Graphite, Non-ferrous Endmill
N: Endmill for general usage
V: Variable Endmill

CP: Composite Router Endmill
A: Aluminum Endmill
SP: Stainless Steel

R: Roughing, Endmill
A: Micro, Endmill

3 Type

4 D B E 040 04 200 V10 060 X

Flat type

Ball type

Radius type

F	B	R

4 Endmill

4 D B E 040 04 200 V10 060 X

5 Cutting dia

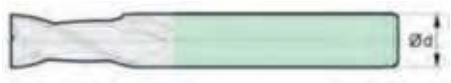
4 D B E 040 04 200 V10 060 X

Notation	ØD (mm)
040	Ø4.0
060	Ø6.0
080	Ø8.0
100	Ø10.0

04	200	V10	60	X
6	7	8	9	10

6 Shank diameter

4 D B E 040 **04** 200 V10 060 X



Shank diameter	
Notation	Ød (mm)
06	Ø6
08	Ø8
10	Ø10
12	Ø12
16	Ø16

7 Corner radius

4 D B E 040 04 **200** V10 060 X

Corner radius	
Notation	R (mm)
020	r 0.2
050	r 0.5
100	r 1.0
150	r 1.5

8 Taper length

4 D B E 040 04 200 **V10** 060 X

Corner radius	
Notation	(mm)
V05	5
V10	10
V15	15

9 Taper length

4 D B E 040 04 200 V10 **060** X

Corner radius	
Notation	L (mm)
050	50
080	80
100	100

10 Over length

4 D B E 040 04 200 V10 060 **X**

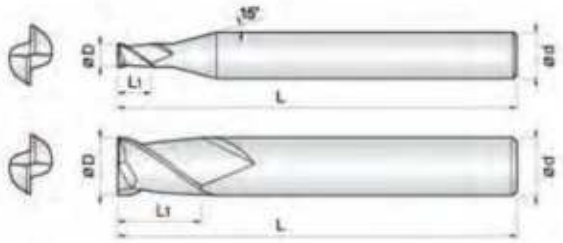
X: Special

※ This code system is only for common endmills

H Endmill

2 Flutes Standard Length Endmills

ØD	Tolerance
Ø1~Ø12	0.00~0.02
Ø12.1~Ø20	0.00~0.03

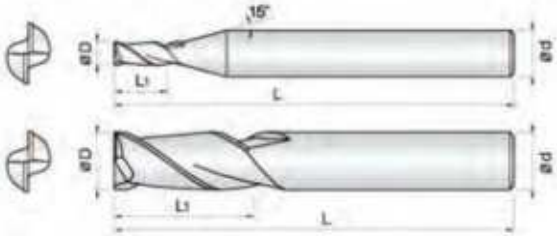


(mm)

Order Code	φD	φd	L1	L	Coating		
					~HRC52	HRC50~62	HRC52~68
					TT550	TS600	N400
2NFE 01004000V03050	1.0	4	3	50	●	●	●
2NFE 01504000V04050	1.5	4	4	50			
2NFE 02002000V06050	2.0	2	6	50			
2NFE 02004000V06050	2.0	4	6	50	●	●	●
2NFE 02504000V08050	2.5	4	8	50			
2NFE 03003000V08050	3.0	3	8	50	●	●	●
2NFE 03004000V08050	3.0	4	8	50	●	●	●
2NFE 03504000V11050	3.5	4	11	50			
2NFE 04004000V11050	4.0	4	11	50	●	●	●
2NFE 05005000V13050	5.0	5	13	50	●	●	●
2NFE 05006000V13050	5.0	6	13	50	●	●	●
2NFE 06006000V15050	6.0	6	15	50	●	●	●
2NFE 07008000V20060	7.0	8	20	60	●	●	●
2NFE 08008000V20060	8.0	8	20	60	●	●	●
2NFE 09010000V25075	9.0	10	25	75	●	●	●
2NFE 10010000V25075	10.0	10	25	75	●	●	●
2NFE 12012000V30075	12.0	12	30	75	●	●	●
2NFE 14014000V35080	14.0	14	35	80	●	●	●
2NFE 16016000V45100	16.0	16	45	100	●	●	●
2NFE 18018000V45100	18.0	18	45	100			
2NFE 20020000V45100	20.0	20	45	100			

2 Flutes Long Length Endmills

ØD	Tolerance
Ø1~Ø12	0.00~0.02
Ø12.1~Ø20	0.00~0.03



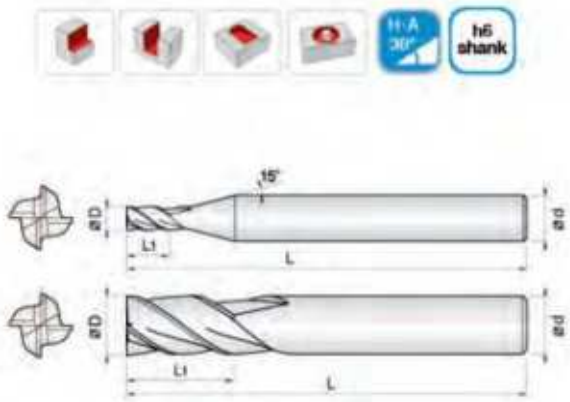
(mm)

Order Code	φD	φd	L1	L	Coating		
					~HRC52	HRC50~62	HRC52~68
					TT550	TS600	N400
2NFE 03003000V09075	3.0	3	9	75	●	●	●
2NFE 03004000V09075	3.0	4	9	75	●	●	●
2NFE 03003000V12100	3.0	3	12	100	●	●	●
2NFE 03004000V12100	3.0	4	12	100	●	●	●
2NFE 04004000V12075	4.0	4	12	75	●	●	●
2NFE 04004000V16100	4.0	4	16	100	●	●	●
2NFE 06006000V18075	6.0	6	18	75	●	●	●
2NFE 06006000V24100	6.0	6	24	100	●	●	●
2NFE 06006000V30150	6.0	6	30	150	●	●	●
2NFE 08008000V24075	8.0	8	24	75	●	●	●
2NFE 08008000V32100	8.0	8	32	100	●	●	●
2NFE 08008000V40150	8.0	8	40	150	●	●	●
2NFE 10010000V40100	10.0	10	40	100	●	●	●
2NFE 10010000V50150	10.0	10	50	150	●	●	●
2NFE 12012000V45100	12.0	12	45	100	●	●	●
2NFE 12012000V60150	12.0	12	60	150	●	●	●
2NFE 14014000V45100	14.0	14	45	100	●	●	●
2NFE 14014000V60150	14.0	14	60	150	●	●	●
2NFE 16016000V60150	16.0	16	60	150	●	●	●
2NFE 20020000V60150	20.0	20	60	150			

H Endmill

4 Flutes Standard Length Endmills

ØD	Tolerance
Ø1~Ø12	0.00~0.02
Ø12.1~Ø20	0.00~0.03

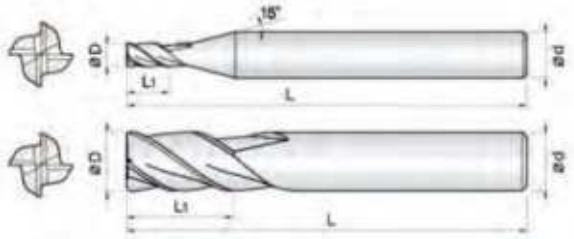


(mm)

Order Code	φD	φd	L1	L	Coating		
					~HRC52	HRC50~62	HRC52~68
					TT550	TS600	N400
4NFE 01004000V03050	1.0	4	3	50	●	●	●
4NFE 01504000V04050	1.5	4	4	50			
4NFE 02002000V06050	2.0	2	6	50			
4NFE 02004000V06050	2.0	4	6	50	●	●	●
4NFE 02504000V08050	2.5	4	8	50			
4NFE 03003000V08050	3.0	3	8	50	●	●	●
4NFE 03004000V08050	3.0	4	8	50	●	●	●
4NFE 03504000V11050	3.5	4	11	50			
4NFE 04004000V11050	4.0	4	11	50	●	●	●
4NFE 05005000V13050	5.0	5	13	50	●	●	●
4NFE 05006000V13050	5.0	6	13	50	●	●	●
4NFE 06006000V15050	6.0	6	15	50	●	●	●
4NFE 07008000V20060	7.0	8	20	60	●	●	●
4NFE 08008000V20060	8.0	8	20	60	●	●	●
4NFE 09010000V25075	9.0	10	25	75	●	●	●
4NFE 10010000V25075	10.0	10	25	75	●	●	●
4NFE 12012000V30075	12.0	12	30	75	●	●	●
4NFE 14014000V35080	14.0	14	35	80	●	●	●
4NFE 16016000V45100	16.0	16	45	100	●	●	●
4NFE 18018000V45100	18.0	18	45	100			
4NFE 20020000V45100	20.0	20	45	100			

4 Flutes Long Length Endmills

ØD	Tolerance
Ø1~Ø12	0.00~0.02
Ø12.1~Ø20	0.00~0.03



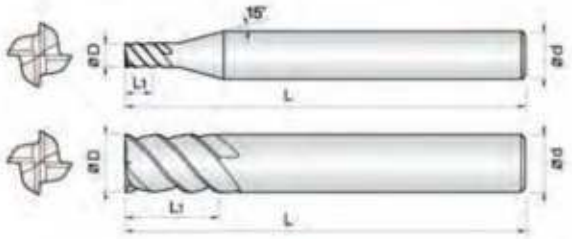
(mm)

Order Code	φD	φd	L1	L	Coating		
					~HRC52	HRC50~62	HRC52~68
					TT550	TS600	N400
4NFE 03003000V09075	3.0	3	9	75	●	●	●
4NFE 03004000V09075	3.0	4	9	75	●	●	●
4NFE 03003000V12100	3.0	3	12	100	●	●	●
4NFE 03004000V12100	3.0	4	12	100	●	●	●
4NFE 04004000V12075	4.0	4	12	75	●	●	●
4NFE 04004000V16100	4.0	4	16	100	●	●	●
4NFE 06006000V18075	6.0	6	18	75	●	●	●
4NFE 06006000V24100	6.0	6	24	100	●	●	●
4NFE 06006000V30150	6.0	6	30	150	●	●	●
4NFE 08008000V24075	8.0	8	24	75	●	●	●
4NFE 08008000V32100	8.0	8	32	100	●	●	●
4NFE 08008000V40150	8.0	8	40	150	●	●	●
4NFE 10010000V40100	10.0	10	40	100	●	●	●
4NFE 10010000V50150	10.0	10	50	150	●	●	●
4NFE 12012000V45100	12.0	12	45	100	●	●	●
4NFE 12012000V60150	12.0	12	60	150	●	●	●
4NFE 14014000V45100	14.0	14	45	100	●	●	●
4NFE 14014000V60150	14.0	14	60	150	●	●	●
4NFE 16016000V60150	16.0	16	60	150	●	●	●
4NFE 20020000V60150	20.0	20	60	150	●	●	●

H Endmill

4 Flutes High Speed Helix 45° Endmills

ØD	Tolerance
Ø1~Ø12	0.00~0.02
Ø12.1~Ø20	0.00~0.03



(mm)

Order Code	φD	φd	L1	L	Coating		
					~HRC52	HRC50~62	HRC52~68
					TT550	TS600	N400
4NFE 01004000V03050S	1.0	4	3	50			
4NFE 01504000V04050S	1.5	4	4	50			
4NFE 02004000V06050S	2.0	4	6	50			
4NFE 02504000V08050S	2.5	4	8	50			
4NFE 03004000V08050S	3.0	4	8	50			
4NFE 04004000V11050S	4.0	4	11	50			
4NFE 05006000V16050S	5.0	6	16	50			
4NFE 06006000V16050S	6.0	6	16	50			
4NFE 08008000V20060S	8.0	8	20	60			
4NFE 10010000V25075S	10.0	10	25	75			
4NFE 12012000V30075S	12.0	12	30	75			
4NFE 14014000V40100S	14.0	14	40	100			
4NFE 16016000V45100S	16.0	16	45	100			
4NFE 18018000V45100S	18.0	18	45	100			
4NFE 20020000V45100S	20.0	20	45	100			

4 Flutes High Speed Helix 45° Endmills

ØD	Tolerance
Ø1~Ø12	0.00~0.02
Ø12.1~Ø20	0.00~0.03

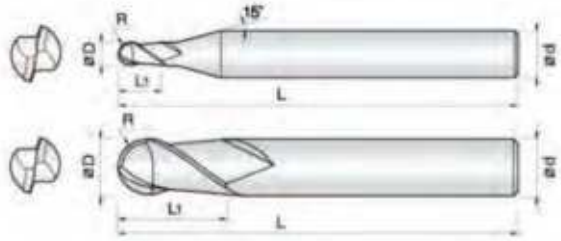
(mm)

Order Code	φD	φd	L1	L	Coating		
					~HRC52	HRC50~62	HRC52~68
					TT550	TS600	N400
6NFE 06006000V15050S	6.0	6	16	50			
6NFE 08008000V20060S	8.0	8	20	60			
6NFE 10010000V25075S	10.0	10	25	75			
6NFE 12012000V30075S	12.0	12	30	75			
6NFE 16016000V45100S	16.0	16	45	100			
6NFE 20020000V45100S	20.0	20	45	100			

H Endmill

2 Flutes Standard Length Ball Endmills

ØD	Tolerance
Ø1~Ø12	0.00~0.02
Ø12.1~Ø20	0.00~0.03

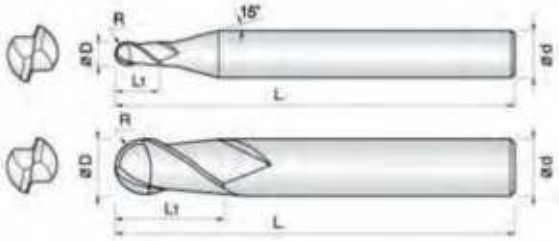


(mm)

Order Code	φD	φd	L1	L	R	Coating		
						~HRC52	HRC50~62	HRC52~68
						TT550	TS600	N400
2NBE 01004050V02050	1.0	4	2	50	0.50	●	●	●
2NBE 01504075V03050	1.5	4	3	50	0.75	●	●	●
2NBE 02004100V04050	2.0	4	4	50	1.00	●	●	●
2NBE 02504125V05050	2.5	4	5	50	1.25	●	●	●
2NBE 03003150V06050	3.0	3	6	50	1.50	●	●	●
2NBE 03004150V06050	3.0	4	6	50	1.50	●	●	●
2NBE 03504175V07050	3.5	4	7	50	1.75	●	●	●
2NBE 04004200V08050	4.0	4	8	50	2.00	●	●	●
2NBE 05005250V10050	5.0	5	10	50	2.50	●	●	●
2NBE 05006250V10050	5.0	6	10	50	2.50	●	●	●
2NBE 06006300V12050	6.0	6	12	50	3.00	●	●	●
2NBE 08008400V16060	8.0	8	16	60	4.00	●	●	●
2NBE 10010500V20075	10.0	10	20	75	5.00	●	●	●
2NBE 12012600V25075	12.0	12	25	75	6.00	●	●	●
2NBE 16016800V30100	16.0	16	30	100	8.00	●	●	●

2 Flutes Long Length Ball Endmills

ØD	Tolerance
Ø1~Ø12	0.00~0.02
Ø12.1~Ø20	0.00~0.03



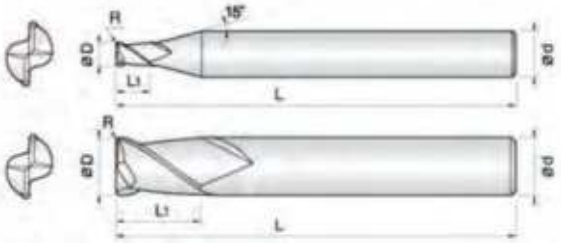
(mm)

Order Code	φD	φd	L1	L	R	Coating		
						~HRC52	HRC50~62	HRC52~68
						TT550	TS600	N400
2NBE 04004200V08075	4.0	4	8	75	2.00	●	●	●
2NBE 04004200V08100	4.0	4	8	100	2.00	●	●	●
2NBE 06006300V12075	6.0	6	12	75	3.00	●	●	●
2NBE 06006300V12100	6.0	6	12	100	3.00	●	●	●
2NBE 08008400V16075	8.0	8	16	75	4.00	●	●	●
2NBE 08008400V16100	8.0	8	16	100	4.00	●	●	●
2NBE 08008400V16150	8.0	8	16	150	4.00	●	●	●
2NBE 10010500V20100	10.0	10	20	100	5.00	●	●	●
2NBE 10010500V20150	10.0	10	20	150	5.00	●	●	●
2NBE 12012600V24100	12.0	12	24	100	6.00	●	●	●
2NBE 12012600V24150	12.0	12	24	150	6.00	●	●	●

H Endmill

2 Flutes Corner Radius Endmills

ØD	Tolerance
Ø1~Ø12	0.00~0.02
Ø12.1~Ø20	0.00~0.03

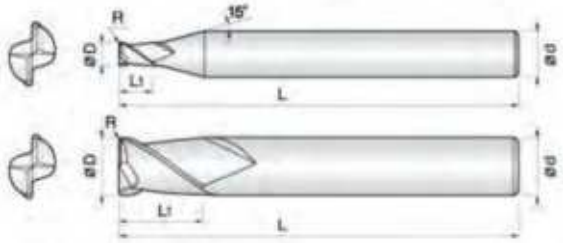


(mm)

Order Code	φD	φd	L1	L	R	Coating		
						~HRC52	HRC50~62	HRC50~68
						TT550	TS600	N400
2NRE 01004020V03050	1.0	4	3	50	0.2			
2NRE 01504020V04050	1.5	4	4	50	0.2			
2NRE 02004020V05050	2.0	4	5	50	0.2			
2NRE 02004050V05050	2.0	4	5	50	0.5			
2NRE 03003020V08050	3.0	3	8	50	0.2			
2NRE 03004020V08050	3.0	4	8	50	0.2	●	●	●
2NRE 03003050V08050	3.0	3	8	50	0.5	●	●	●
2NRE 03004050V08050	3.0	4	8	50	0.5	●	●	●
2NRE 04004020V10050	4.0	4	10	50	0.2	●	●	●
2NRE 04004050V10050	4.0	4	10	50	0.5	●	●	●
2NRE 04004050V10075	4.0	4	10	75	0.5	●	●	●
2NRE 04004050V12100	4.0	4	12	100	0.5			
2NRE 04004100V10050	4.0	4	10	50	1.0	●	●	●
2NRE 04004100V10075	4.0	4	10	75	1.0	●	●	●
2NRE 06006020V15050	6.0	6	15	50	0.2	●	●	●
2NRE 06006050V15050	6.0	6	15	50	0.5	●	●	●
2NRE 06006050V15075	6.0	6	15	75	0.5	●	●	●
2NRE 06006050V18100	6.0	6	18	100	0.5	●	●	●
2NRE 06006100V15050	6.0	6	15	50	1.0	●	●	●
2NRE 06006100V15075	6.0	6	15	75	1.0	●	●	●
2NRE 06006100V18100	6.0	6	18	100	1.0	●	●	●
2NRE 08008050V20060	8.0	8	20	60	0.5	●	●	●
2NRE 08008050V20075	8.0	8	20	75	0.5	●	●	●
2NRE 08008050V24100	8.0	8	24	100	0.5	●	●	●
2NRE 08008050V32150	8.0	8	32	150	0.5			
2NRE 08008100V20060	8.0	8	20	60	1.0	●	●	●
2NRE 08008100V20075	8.0	8	20	75	1.0	●	●	●
2NRE 08008100V24100	8.0	8	24	100	1.0	●	●	●
2NRE 08008150V20060	8.0	8	20	60	1.5	●	●	●

2 Flutes Corner Radius Endmills

ØD	Tolerance
Ø1~Ø12	0.00~0.02
Ø12.1~Ø20	0.00~0.03



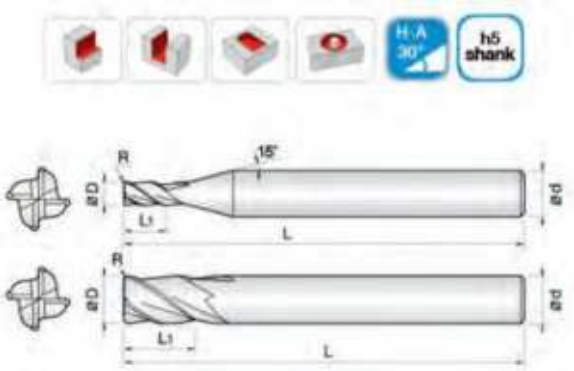
(mm)

Order Code	φD	φd	L1	L	R	Coating		
						~HRC52	HRC50~62	HRC52~68
						TT550	TS600	N400
2NRE 08008150V20075	8.0	8	20	75	1.5	●	●	●
2NRE 08008150V24100	8.0	8	24	100	1.5	●	●	●
2NRE 10010050V25075	10.0	10	25	75	0.5	●	●	●
2NRE 10010100V25075	10.0	10	25	75	1.0	●	●	●
2NRE 10010100V30100	10.0	10	30	100	1.0	●	●	●
2NRE 10010100V40150	10.0	10	40	150	1.0			
2NRE 10010150V25075	10.0	10	25	75	1.5	●	●	●
2NRE 10010150V30100	10.0	10	30	100	1.5	●	●	●
2NRE 10010150V40150	10.0	10	40	150	1.5			
2NRE 12012050V30075	12.0	12	30	75	0.5	●	●	●
2NRE 12012100V30075	12.0	12	30	75	1.0	●	●	●
2NRE 12012100V35100	12.0	12	35	100	1.0	●	●	●
2NRE 12012150V30075	12.0	12	30	75	1.5	●	●	●
2NRE 12012150V35100	12.0	12	35	100	1.5	●	●	●
2NRE 12012200V30075	12.0	12	30	75	2.0	●	●	●
2NRE 12012200V35100	12.0	12	35	100	2.0	●	●	●

H Endmill

4 Flutes Corner Radius Endmills

ØD	Tolerance
Ø1~Ø12	0.00~0.02
Ø12.1~Ø20	0.00~0.03

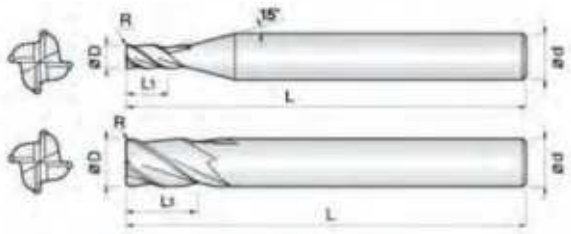


(mm)

Order Code	φD	φd	L1	L	R	Coating		
						~HRC52	HRC50~62	HRC50~68
						TT550	TS600	N400
4NRE 01004020V03050	1.0	4	3	50	0.2			
4NRE 01504020V04050	1.5	4	4	50	0.2			
4NRE 02004020V05050	2.0	4	5	50	0.2			
4NRE 02004050V05050	2.0	4	5	50	0.5			
4NRE 03003020V08050	3.0	3	8	50	0.2			
4NRE 03004020V08050	3.0	4	8	50	0.2	●	●	●
4NRE 03003050V08050	3.0	3	8	50	0.5	●	●	●
4NRE 03004050V08050	3.0	4	8	50	0.5	●	●	●
4NRE 04004020V10050	4.0	4	10	50	0.2	●	●	●
4NRE 04004050V10050	4.0	4	10	50	0.5	●	●	●
4NRE 04004050V10075	4.0	4	10	75	0.5	●	●	●
4NRE 04004050V12100	4.0	4	12	100	0.5			
4NRE 04004100V10050	4.0	4	10	50	1.0	●	●	●
4NRE 04004100V10075	4.0	4	10	75	1.0	●	●	●
4NRE 06006020V15050	6.0	6	15	50	0.2	●	●	●
4NRE 06006050V15050	6.0	6	15	50	0.5	●	●	●
4NRE 06006050V15075	6.0	6	15	75	0.5	●	●	●
4NRE 06006050V18100	6.0	6	18	100	0.5	●	●	●
4NRE 06006100V15050	6.0	6	15	50	1.0	●	●	●
4NRE 06006100V15075	6.0	6	15	75	1.0	●	●	●
4NRE 06006100V18100	6.0	6	18	100	1.0	●	●	●
4NRE 08008050V20060	8.0	8	20	60	0.5	●	●	●
4NRE 08008050V20075	8.0	8	20	75	0.5	●	●	●
4NRE 08008050V24100	8.0	8	24	100	0.5	●	●	●
4NRE 08008050V32150	8.0	8	32	150	0.5			
4NRE 08008100V20060	8.0	8	20	60	1.0	●	●	●
4NRE 08008100V20075	8.0	8	20	75	1.0	●	●	●
4NRE 08008100V24100	8.0	8	24	100	1.0	●	●	●
4NRE 08008150V20060	8.0	8	20	60	1.5	●	●	●

4 Flutes Corner Radius Endmills

ØD	Tolerance
Ø1~Ø12	0.00~0.02
Ø12.1~Ø20	0.00~0.03



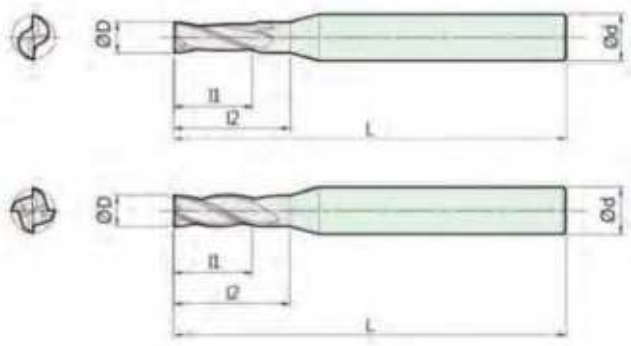
(mm)

Order Code	φD	φd	L1	L	R	Coating		
						~HRC52	HRC50~62	HRC52~68
						TT550	TS600	N400
4NRE 08008150V20075	8.0	8	20	75	1.5	●	●	●
4NRE 08008150V24100	8.0	8	24	100	1.5	●	●	●
4NRE 10010050V25075	10.0	10	25	75	0.5	●	●	●
4NRE 10010100V25075	10.0	10	25	75	1.0	●	●	●
4NRE 10010100V30100	10.0	10	30	100	1.0	●	●	●
4NRE 10010100V40150	10.0	10	40	150	1.0			
4NRE 10010150V25075	10.0	10	25	75	1.5	●	●	●
4NRE 10010150V30100	10.0	10	30	100	1.5	●	●	●
4NRE 10010150V40150	10.0	10	40	150	1.5			
4NRE 12012050V30075	12.0	12	30	75	0.5	●	●	●
4NRE 12012100V30075	12.0	12	30	75	1.0	●	●	●
4NRE 12012100V35100	12.0	12	35	100	1.0	●	●	●
4NRE 12012150V30075	12.0	12	30	75	1.5	●	●	●
4NRE 12012150V35100	12.0	12	35	100	1.5	●	●	●
4NRE 12012200V30075	12.0	12	30	75	2.0	●	●	●
4NRE 12012200V35100	12.0	12	35	100	2.0	●	●	●

D Endmill

2&4 Flutes Endmills for Graphite

ØD	Tolerance
~Ø5.9	0.00~0.02
Ø6.0~	0.00~0.03

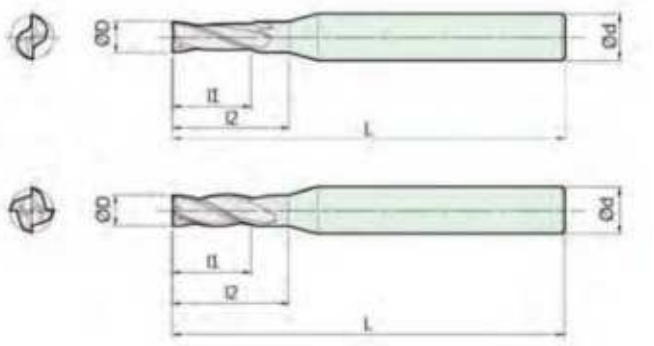


(mm)

Order Code	φD	φd	L1	L1	L	No.of flutes
2DFE 00504000N05050	0.5	4	1.0	5	50	2
2DFE 00604000N06050	0.6	4	1.2	6	50	2
2DFE 00604000N08050	0.6	4	1.2	8	50	2
2DFE 00804000N08050	0.8	4	2.0	8	50	2
2DFE 01004000V03060	1.0	4	3.0	-	60	2
2DFE 01004000N06060	1.0	4	3.0	6	60	2
2DFE 01004000N10060	1.0	4	3.0	10	60	2
2DFE 01004000N15060	1.0	4	3.0	15	60	2
2DFE 01004000N20060	1.0	4	3.0	20	60	2
4DFE 01504000V04060	1.5	4	4.0	-	60	4
4DFE 01504000N10060	1.5	4	4.0	10	60	4
4DFE 01504000N15060	1.5	4	4.0	15	60	4
4DFE 01504000N20080	1.5	4	4.0	20	80	4
4DFE 01504000N25080	1.5	4	4.0	25	80	4
4DFE 02004000V06060	2.0	4	6.0	-	60	4
4DFE 02004000N10060	2.0	4	6.0	10	60	4
4DFE 02004000N12060	2.0	4	6.0	12	60	4
4DFE 02004000N15060	2.0	4	6.0	15	60	4
4DFE 02004000N20080	2.0	4	6.0	20	80	4
4DFE 02004000N25080	2.0	4	6.0	25	80	4
4DFE 02004000N30080	2.0	4	6.0	30	80	4
4DFE 03004000V09050	3.0	4	9.0	-	50	4
4DFE 03004000N20080	3.0	4	9.0	20	80	4
4DFE 03004000N25080	3.0	4	9.0	25	80	4
4DFE 03004000N30080	3.0	4	9.0	30	80	4
4DFE 04004000V12050	4.0	4	12.0	-	50	4
4DFE 04004000N20060	4.0	4	10.0	20	60	4
4DFE 04004000N25060	4.0	4	10.0	25	60	4
4DFE 04004000N20080	4.0	4	10.0	20	80	4

2&4 Flutes Endmills for Graphite

ØD	Tolerance
~Ø5.9	0.00~0.02
Ø6.0~	0.00~0.03



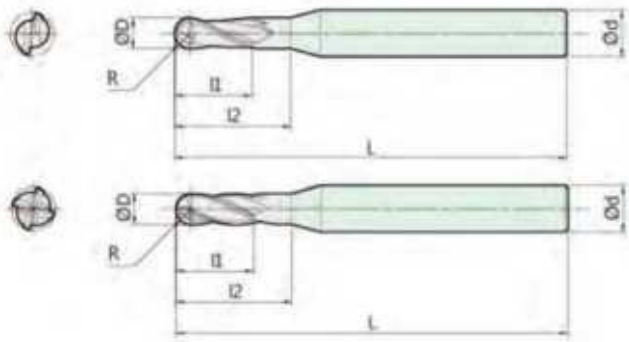
(mm)

Order Code	φD	φd	L1	L1	L	No.of flutes
4DFE 04004000N25080	4.0	4	10.0	25	80	4
4DFE 06006000N30080	6.0	6	18.0	30	80	4
4DFE 06006000N40110	6.0	6	18.0	40	110	4
4DFE 06006000N50150	6.0	6	18.0	50	150	4
4DFE 08008000N40110	8.0	8	20.0	40	110	4
4DFE 08008000N50150	8.0	8	20.0	50	150	4
4DFE 10010000V40110	10.0	10	30.0	40	110	4
4DFE 10010000N50150	10.0	10	30.0	50	150	4
4DFE 12012000N50110	12.0	12	30.0	50	110	4
4DFE 12012000N60150	12.0	12	30.0	60	150	4

D Endmill

2&4 Flutes Ball Endmills for Graphite

ØD	Tolerance
~Ø5.9	0.00~0.02
Ø6.0~	0.00~0.03

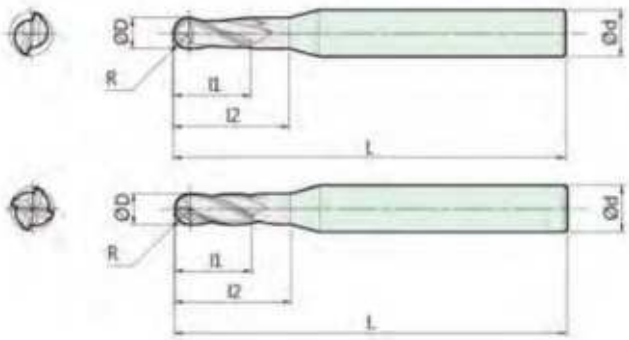


(mm)

Order Code	φD	φd	L1	L1	L	R	No.of flutes
2DBE 00504005N07050	0.5	4	1.2	5	50	0.25	2
2DBE 00504005N10050	0.5	4	1.2	10	50	0.25	2
2DBE 00604030N06050	0.6	4	1.5	6	50	0.30	2
2DBE 00604030N08050	0.6	4	1.5	8	50	0.30	2
2DBE 00604030N10050	0.6	4	1.5	10	50	0.30	2
2DBE 00604030N15050	0.6	4	1.5	15	50	0.30	2
2DBE 01004050V03060	1.0	4	3.0	-	60	0.50	2
2DBE 01004050N06060	1.0	4	2.5	6	60	0.50	2
2DBE 01004050N08060	1.0	4	2.5	8	60	0.50	2
2DBE 01004050N10060	1.0	4	2.5	10	60	0.50	2
2DBE 01004050N15060	1.0	4	2.5	15	60	0.50	2
2DBE 01004050N20060	1.0	4	2.5	20	60	0.50	2
2DBE 01004050N10080	1.0	4	2.5	10	80	0.50	2
2DBE 01004050N15080	1.0	4	2.5	15	80	0.50	2
2DBE 01004050N20080	1.0	4	2.5	20	80	0.50	2
2DBE 01504075N08060	1.5	4	4.0	8	60	0.75	2
2DBE 01504075N12060	1.5	4	4.0	12	60	0.75	2
2DBE 01504075N15060	1.5	4	4.0	15	60	0.75	2
2DBE 01504075N20060	1.5	4	4.0	20	60	0.75	2
2DBE 01504075N25080	1.5	4	4.0	25	80	0.75	2
2DBE 01504075N30080	1.5	4	4.0	30	80	0.75	2
2DBE 02004100N05060	2.0	4	5.0	-	60	1.00	2
2DBE 02004100N08060	2.0	4	5.0	8	60	1.00	2
2DBE 02004100N10060	2.0	4	5.0	10	60	1.00	2
2DBE 02004100N15060	2.0	4	5.0	15	60	1.00	2
2DBE 02004100N20060	2.0	4	5.0	20	60	1.00	2
2DBE 02004100N16080	2.0	4	5.0	16	80	1.00	2
2DBE 02004100N20080	2.0	4	5.0	20	80	1.00	2
2DBE 02004100N25080	2.0	4	5.0	25	80	1.00	2

2&4 Flutes Ball Endmills for Graphite

ØD	Tolerance
~Ø5.9	0.00~0.02
Ø6.0~	0.00~0.03



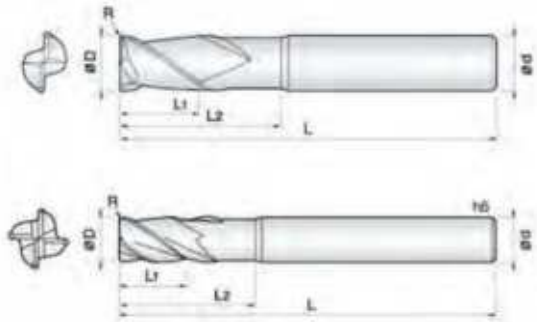
(mm)

Order Code	φD	φd	L1	L1	L	R	No.of flutes
2DBE 02004100N30080	2.0	4	5.0	30	80	1.00	2
2DBE 03004150V08060	3.0	4	8.0	-	60	1.50	2
2DBE 03004150N20080	3.0	4	7.5	20	80	1.50	2
2DBE 03004150N25080	3.0	4	7.5	25	80	1.50	2
2DBE 03004150N30100	3.0	4	7.5	30	100	1.50	2
2DBE 04004200V10050	4.0	4	10.0	-	50	2.00	2
2DBE 04004200N20080	4.0	4	10.0	20	80	2.00	2
2DBE 04004200N30080	4.0	4	10.0	30	80	2.00	2
2DBE 04004200N30100	4.0	4	10.0	30	100	2.00	2
2DBE 06006300N30080	6.0	6	15.0	30	80	3.00	2
4DBE 06006300N40110	6.0	6	15.0	40	110	3.00	4
4DBE 06006300N50150	6.0	6	15.0	50	150	3.00	4
4DBE 08008400N40110	8.0	8	20.0	40	110	4.00	4
4DBE 08008400N50150	8.0	8	20.0	50	150	4.00	4
4DBE 10010500V40110	10.0	10	30.0	40	110	5.00	4
4DBE 10010500N50150	10.0	10	30.0	50	150	5.00	4
4DBE 12012600N50110	12.0	12	30.0	50	110	6.00	4
4DBE 12012600N60150	12.0	12	30.0	60	150	6.00	4

D Endmill

2&4 Flutes Corner Radius Endmills for Graphite

ØD	Tolerance
~Ø5.9	0.00~0.02
Ø6.0~	0.00~0.03

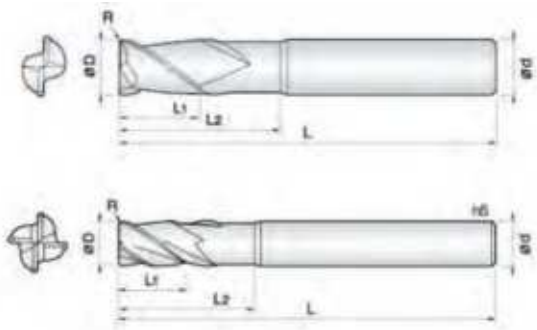


(mm)

Order Code	φD	φd	L1	L1	L	R	No.of flutes
2DRE 00504005N07050	0.5	4	1.0	7	50	0.05	2
2DRE 00504005N10050	0.5	4	1.0	10	50	0.05	2
2DRE 00804005N06050	0.8	4	2.0	6	50	0.05	2
2DRE 00804005N08050	0.8	4	2.0	8	50	0.05	2
2DRE 01004010N12050	1.0	4	2.5	12	50	0.10	2
2DRE 01004020N10050	1.0	4	2.5	10	50	0.20	2
4DRE 01504020N10050	1.5	4	3.0	10	50	0.20	4
4DRE 02004020N10050	2.0	4	5.0	15	50	0.10	4
4DRE 02004010N15050	2.0	4	5.0	10	60	0.20	4
4DRE 02004020N15060	2.0	4	5.0	15	60	0.20	4
4DRE 02004020N20080	2.0	4	5.0	20	80	0.20	4
4DRE 02004020N25080	2.0	4	5.0	25	80	0.20	4
4DRE 03004010N18050	3.0	4	8.0	18	50	0.10	4
4DRE 03004020N20080	3.0	4	8.0	20	80	0.20	4
4DRE 03004020N25080	3.0	4	8.0	25	80	0.20	4
4DRE 03004020N30080	3.0	4	8.0	30	80	0.20	4
4DRE 04004020V12050	4.0	4	12.0	-	50	0.20	4
4DRE 04004020N16060	4.0	4	10.0	16	60	0.20	4
4DRE 04004030V12060	4.0	4	12.0	-	60	0.30	4
4DRE 04004020N20080	4.0	4	10.0	20	80	0.20	4
4DRE 04004020N25080	4.0	4	10.0	25	80	0.20	4
4DRE 04004020N30080	4.0	4	10.0	30	80	0.20	4
4DRE 04004050N20080	4.0	4	10.0	20	80	0.50	4
4DRE 04004050N30080	4.0	4	10.0	30	80	0.50	4
4DRE 04004050N30100	4.0	4	10.0	30	100	0.50	4
4DRE 06006020N30080	6.0	6	15.0	30	80	0.20	4
4DRE 06006030N30080	6.0	6	15.0	30	80	0.30	4
4DRE 06006050N40110	6.0	6	15.0	40	110	0.50	4
4DRE 06006050N50150	6.0	6	15.0	50	150	0.50	4

2&4 Flutes Corner Radius Endmills for Graphite

ØD	Tolerance
~Ø5.9	0.00~0.02
Ø6.0~	0.00~0.03



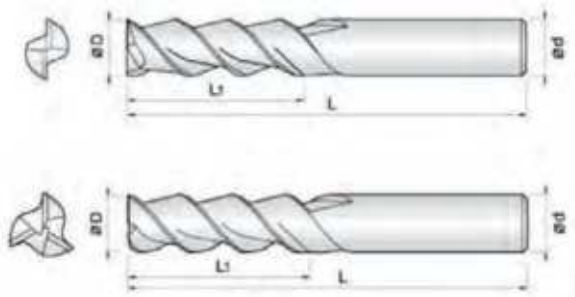
(mm)

Order Code	φD	φd	L1	L1	L	R	No.of flutes
4DRE 08008050N40110	8.0	8	20.0	40	110	0.50	4
4DRE 08008050N50150	8.0	8	20.0	50	150	0.50	4
4DRE 10010050N40110	10.0	10	25.0	40	110	0.50	4
4DRE 10010050N60150	10.0	10	25.0	60	150	0.50	4
4DRE 12012050N50110	12.0	12	30.0	50	110	0.50	4
4DRE 12012050N60150	12.0	12	30.0	60	150	0.50	4

A Endmill

2&3 Flutes 45° Helix End Mills for Aluminum

ØD	Tolerance
Ø1~Ø12	0.00~0.02
Ø12.1~Ø20	0.00~0.03



(mm)

Order Code	φD	φd	L1	L	Carbide		Fig.
					Non-coated	Coated	
					TPK01	PDL025	
2AFE 01004000V03050	1.0	4	3	50	●		1
2AFE 01504000V04050	1.5	4	4	50	●		1
2AFE 02004000V06050	2.0	4	6	50	●		1
2AFE 02504000V08050	2.5	4	8	50	●		1
2AFE 03003000V08050	3.0	3	8	50	●		1
2AFE 03004000V08050	3.0	4	8	50	●		1
2AFE 04004000V11050	4.0	4	11	50	●		1
2AFE 05006000V13050	5.0	6	13	50	●		1
2AFE 06006000V13050	6.0	6	13	50	●		1
2AFE 08008000V20060	8.0	8	20	60	●		1
2AFE 10010000V25075	10.0	10	25	75	●		1
2AFE 12012000V30075	12.0	12	30	75	●		1
2AFE 14014000V45080	14.0	14	45	80	●		1
2AFE 16016000V45100	16.0	16	45	100	●		1
2AFE 18018000V45100	18.0	18	45	100	●		1
2AFE 20020000V45100	20.0	20	45	100	●		1
2AFE 02004000V08100	2.0	4	8	100	●		1
2AFE 03003000V09075	3.0	3	9	75	●		1
2AFE 03003000V12100	3.0	3	12	100	●		1
2AFE 03004000V12100	3.0	4	12	100	●		1
2AFE 04004000V12075	4.0	4	12	75	●		1
2AFE 04004000V16100	4.0	4	16	100	●		1
2AFE 06006000V18075	6.0	6	18	75	●		1
2AFE 06006000V24100	6.0	6	24	100	●		1
2AFE 06006000V30150	6.0	6	30	150	●		1
2AFE 08008000V24075	8.0	8	24	75	●		1
2AFE 08008000V32100	8.0	8	32	100	●		1
2AFE 08008000V40150	8.0	8	40	150	●		1
2AFE 08008000V40200	8.0	8	40	200	●		1
2AFE 10010000V40100	10.0	10	40	100	●		1
2AFE 10010000V50150	10.0	10	50	150	●		1
2AFE 10010000V50200	10.0	10	50	200	●		1
2AFE 12012000V45100	12.0	12	45	100	●		1
2AFE 12012000V60150	12.0	12	60	150	●		1

(mm)

Order Code	φD	φd	L1	L	Carbide		Fig.
					Non-coated	Coated	
					TPK01	PDL025	
2AFE 12012000V60200	12.0	12	60	200	●		1
2AFE 14014000V45100	14.0	14	45	100	●		1
2AFE 14014000V60150	14.0	14	60	150	●		1
2AFE 14014000V60200	14.0	14	60	200	●		1
2AFE 16016000V60150	16.0	16	60	150	●		1
2AFE 16016000V60200	16.0	16	60	200	●		1
2AFE 18018000V60150	18.0	18	60	150	●		1
2AFE 20020000V60150	20.0	20	60	150	●		1
2AFE 20020000V60200	20.0	20	60	200	●		1
3AFE 01004000V03050	1.0	4	3	50	●		2
3AFE 01504000V04050	1.5	4	4	50	●		2
3AFE 02004000V06050	2.0	4	6	50	●		2
3AFE 02504000V08050	2.5	4	8	50	●		2
3AFE 03003000V08050	3.0	3	8	50	●		2
3AFE 03004000V08050	3.0	4	8	50	●		2
3AFE 04004000V11050	4.0	4	11	50	●		2
3AFE 05006000V13050	5.0	6	13	50	●		2
3AFE 06006000V13050	6.0	6	13	50	●		2
3AFE 08008000V20060	8.0	8	20	60	●		2
3AFE 10010000V25075	10.0	10	25	75	●		2
3AFE 12012000V30075	12.0	12	30	75	●		2
3AFE 14014000V45080	14.0	14	45	80	●		2
3AFE 16016000V45100	16.0	16	45	100	●		2
3AFE 18018000V45100	18.0	18	45	100	●		2
3AFE 20020000V45100	20.0	20	45	100	●		2
3AFE 02004000V08100	2.0	4	8	100	●		2
3AFE 03003000V09075	3.0	3	9	75	●		2
3AFE 03003000V12100	3.0	3	12	100	●		2
3AFE 03004000V12100	3.0	4	12	100	●		2
3AFE 04004000V12075	4.0	4	12	75	●		2
3AFE 04004000V16100	4.0	4	16	100	●		2
3AFE 06006000V18075	6.0	6	18	75	●		2
3AFE 06006000V24100	6.0	6	24	100	●		2
3AFE 06006000V30150	6.0	6	30	150	●		2
3AFE 08008000V24075	8.0	8	24	75	●		2
3AFE 08008000V32100	8.0	8	32	100	●		2
3AFE 08008000V40150	8.0	8	40	150	●		2
3AFE 08008000V40200	8.0	8	40	200	●		2
3AFE 10010000V40100	10.0	10	40	100	●		2
3AFE 10010000V50150	10.0	10	50	150	●		2
3AFE 10010000V50200	10.0	10	50	200	●		2
3AFE 12012000V45100	12.0	12	45	100	●		2
3AFE 12012000V60150	12.0	12	60	150	●		2
3AFE 12012000V60200	12.0	12	60	200	●		2
3AFE 14014000V45100	14.0	14	45	100	●		2
3AFE 14014000V45150	14.0	14	60	150	●		2
3AFE 14014000V60200	14.0	14	60	200	●		2
3AFE 16016000V60150	16.0	16	60	150	●		2
3AFE 16016000V60200	16.0	16	60	200	●		2
3AFE 18018000V60150	18.0	18	60	150	●		2
3AFE 20020000V60150	20.0	20	60	150	●		2
3AFE 20020000V60200	20.0	20	60	200	●		2

A Endmill

2 Flutes 45° Helix Ball End Mills for Aluminum

ØD	Tolerance
Ø1~Ø12	0.00~0.02

(mm)

Order Code	φD	φd	L1	L	R	Carbide	
						Non-coated	Coated
						TPK01	PDL025
2ABE 01004050V02050	1.0	4	2	50	0.50	●	
2ABE 01504075V03050	1.5	4	3	50	0.75	●	
2ABE 02004100V04050	2.0	4	4	50	1.00	●	
2ABE 02504125V05050	2.5	4	5	50	1.25	●	
2ABE 03004150V06050	3.0	4	6	50	1.50	●	
2ABE 04004200V08050	4.0	4	8	50	2.00	●	
2ABE 04006200V08050	4.0	6	8	50	2.00	●	
2ABE 05006250V10050	5.0	6	10	50	2.50	●	
2ABE 06006300V12050	6.0	6	12	50	3.00	●	
2ABE 08008400V16060	8.0	88	16	60	4.00	●	
2ABE 10010500V20075	10.0	10	20	75	5.00	●	
2ABE 12012600V24075	12.0	12	24	75	6.00	●	
2ABE 12012600V24100	12.0	12	24	100	6.00	●	

3 Flutes 45° Helix Roughing End Mills for Aluminum

ØD	Tolerance
Ø1~Ø12	0.00~0.02

(mm)

Order Code	φD	φd	L1	L	Carbide	
					Non-coated	Coated
					TPK01	PDL025
3RAFE 04004050V10050	4.0	4	10	50	●	
3RAFE 05006000V13050	5.0	6	13	50	●	
3RAFE 06006000V16050	6.0	6	16	50	●	
3RAFE 08008000V20060	8.0	8	20	60	●	
3RAFE 10010000V25075	10.0	10	25	75	●	
3RAFE 12012000V30075	12.0	12	30	75	●	
3RAFE 16016000V45100	16.0	16	45	100	●	
3RAFE 20020000V45100	20.0	20	45	100	●	

R Endmill

3&4 Flutes Roughing End Mills

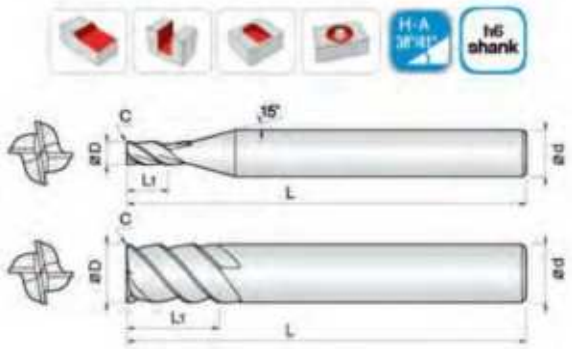
ØD	Tolerance
Ø5~Ø20	0.00~0.05

(mm)

Order Code	φD	φd	L1	L	Coating		
					~HRC52	HRC50~62	HRC52~68
					TT550	TS600	N400
3RFE 04004000V10050	4.0	4	10	50	●	●	●
3RFE 05006000V13050	5.0	6	13	50	●	●	●
3RFE 06006000V16050	6.0	6	16	50	●	●	●
3RFE 08008000V20060	8.0	8	20	60	●	●	●
3RFE 10010000V25075	10.0	10	25	75	●	●	●
3RFE 12012000V30075	12.0	12	30	75	●	●	●
3RFE 16016000V45100	16.0	16	45	100	●	●	●
3RFE 20020000V45100	20.0	20	45	100			
4RFE 04004000V10050	4.0	4	10	50	●	●	●
4RFE 05006000V13050	5.0	6	13	50	●	●	●
4RFE 06006000V16050	6.0	6	16	50	●	●	●
4RFE 08008000V20060	8.0	8	20	60	●	●	●
4RFE 10010000V25075	10.0	10	25	75	●	●	●
4RFE 12012000V30075	12.0	12	30	75	●	●	●
4RFE 16016000V45100	16.0	16	45	100	●	●	●
4RFE 20020000V45100	20.0	20	45	100			

4 Flutes Variable Helix End Mills for SUS & HRSA etc

ØD	Tolerance
Ø2.5~Ø9	0.00~0.02
Ø10~Ø16	0.00~0.03



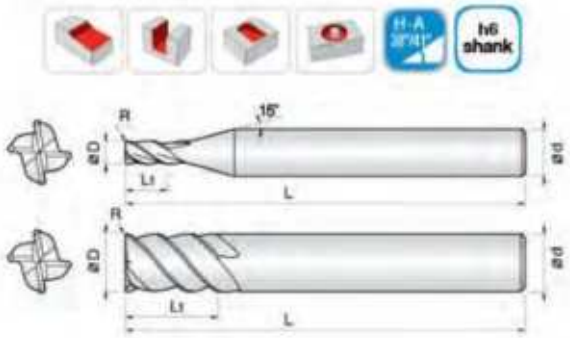
(mm)

Order Code	φD	φd	L1	Avoidance diameter	L	C		Coating	
						A Shield Edge	B Shield Edge	HRC62	
								TSM600	PDL025
4VFE 03004000V08050	3.0	4	8	-	50			●	
4VFE 04004000V10050	4.0	4	10	-	50			●	
4VFE 05005000V13050	5.0	5	13	-	50			●	
4VFE 05006000V13050	5.0	6	13	-	50			●	
4VFE 06006000V15050	6.0	6	15	-	50			●	
4VFE 08008000V20060	8.0	8	20	-	60			●	
4VFE 10010000V25075	10.0	10	25	-	75			●	
4VFE 12012000V30075	12.0	12	30	-	75			●	
4VFE 14014000V35100	14.0	14	35	-	100			●	
4VFE 16016000V40100	16.0	16	40	-	100			●	
4VFE 18018000V40100	18.0	18	40	-	100			●	
4VFE 20020000V45100	20.0	20	45	-	100			●	
4VFE 04004000V10075	4.0	4	10	-	75			●	
4VFE 06006000V15075	6.0	6	15	-	75			●	
4VFE 08008000V20075	8.0	8	20	-	75			●	
4VFE 04004000V12100	4.0	4	12	-	100			●	
4VFE 06006000V18100	6.0	6	18	-	100			●	
4VFE 08008000V24100	8.0	8	24	-	100			●	
4VFE 10010000V30100	10.0	10	30	-	100			●	
4VFE 12012000V36100	12.0	12	36	-	100			●	
4VFE 06006000V18150	6.0	6	18	5.8	150			●	
4VFE 08008000V24150	8.0	8	24	7.8	150			●	
4VFE 10010000V30150	10.0	10	30	9.8	150			●	
4VFE 12012000V36150	12.0	12	36	11.8	150			●	
4VFE 14014000V42150	14.0	14	42	13.8	150			●	
4VFE 16016000V48150	16.0	16	48	15.8	150				
4VFE 18018000V54150	18.0	18	54	17.8	150				
4VFE 20020000V60150	20.0	20	60	19.8	150				

S Endmill

4 Flutes Variable Helix End Mills for SUS & HRSA etc

ØD	Tolerance
Ø2.5~Ø9	0.00~0.02
Ø10~Ø16	0.00~0.03



(mm)

Order Code	φD	φd	L1	Avoidance diameter	L	R	Coating ~HRC62 TSM600	Coating ~HRC62 PDL025
4VFE 03004050V08050	3.0	4	8	-	50	0.5	●	
4VFE 04004050V10050	4.0	4	10	-	50	0.5	●	
4VFE 04004100V10050	4.0	4	10	-	50	1.0	●	
4VFE 05005050V13050	5.0	5	13	-	50	0.5	●	
4VFE 05005100V13050	5.0	5	13	-	50	1.0	●	
4VFE 05006050V13050	5.0	6	13	-	50	0.5	●	
4VFE 05006100V13050	5.0	6	13	-	50	1.0	●	
4VFE 06006050V15050	6.0	6	15	-	50	0.5	●	
4VFE 06006100V15050	6.0	6	15	-	50	1.0	●	
4VFE 08008050V20060	8.0	8	20	-	60	0.5	●	
4VFE 08008100V20060	8.0	8	20	-	60	1.0	●	
4VFE 08008200V20060	8.0	8	20	-	60	2.0	●	
4VFE 10010050V25075	10.0	10	25	-	75	0.5	●	
4VFE 10010100V25075	10.0	10	25	-	75	1.0	●	
4VFE 10010200V25075	10.0	10	25	-	75	2.0	●	
4VFE 12012050V30075	12.0	12	30	-	75	0.5	●	
4VFE 12012100V30075	12.0	12	30	-	75	1.0	●	
4VFE 12012200V30075	12.0	12	30	-	75	2.0	●	
4VFE 14014050V35100	14.0	14	35	-	100	0.5	●	
4VFE 14014100V35100	14.0	14	35	-	100	1.0	●	
4VFE 14014200V35100	14.0	14	35	-	100	2.0	●	
4VFE 16016050V40100	16.0	16	40	-	100	0.5	●	
4VFE 16016100V40100	16.0	16	40	-	100	1.0	●	
4VFE 16016200V40100	16.0	16	40	-	100	2.0	●	
4VFE 18018050V40100	18.0	18	40	-	100	0.5	●	
4VFE 18018100V40100	18.0	18	40	-	100	1.0	●	
4VFE 18018200V40100	18.0	18	40	-	100	2.0	●	
4VFE 20020050V45100	20.0	20	45	-	100	0.5	●	
4VFE 20020100V45100	20.0	20	45	-	100	1.0	●	

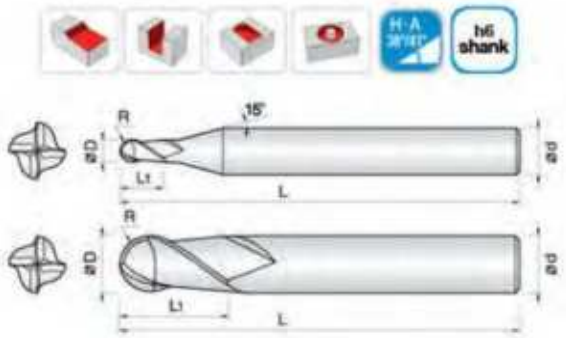
(mm)

Order Code	φD	φd	L1	Avoidance diameter	L	R	Coating ~HRC62 TSM600	Coating ~HRC62 PDL025
4VFE 20020200V45100	20.0	20	45	-	100	2.0	●	●
4VFE 04004050V10075	4.0	4	10	-	75	0.5	●	●
4VFE 04004100V10075	4.0	4	10	-	75	1.0	●	●
4VFE 06006050V15075	6.0	6	15	-	75	0.5	●	●
4VFE 06006100V15075	6.0	6	15	-	75	1.0	●	●
4VFE 08008050V20075	8.0	8	20	-	75	0.5	●	●
4VFE 08008100V20075	8.0	8	20	-	75	1.0	●	●
4VFE 08008200V20075	8.0	8	20	-	75	2.0	●	●
4VFE 04004050V12100	4.0	4	12	-	100	0.5	●	●
4VFE 04004100V12100	4.0	4	12	-	100	1.0	●	●
4VFE 06006050V18100	6.0	6	18	-	100	0.5	●	●
4VFE 06006100V18100	6.0	6	18	-	100	1.0	●	●
4VFE 08008050V24100	8.0	8	24	-	100	0.5	●	●
4VFE 08008100V24100	8.0	8	24	-	100	1.0	●	●
4VFE 08008200V24100	8.0	8	24	-	100	2.0	●	●
4VFE 10010050V30100	10.0	10	30	-	100	0.5	●	●
4VFE 10010100V30100	10.0	10	30	-	100	1.0	●	●
4VFE 10010200V30100	10.0	10	30	-	100	2.0	●	●
4VFE 12012050V36100	12.0	12	36	-	100	0.5	●	●
4VFE 12012100V36100	12.0	12	36	-	100	1.0	●	●
4VFE 12012200V36100	12.0	12	36	-	100	2.0	●	●
4VFE 06006050V18150	6.0	6	18	5.8	150	0.5	●	●
4VFE 06006100V18150	6.0	6	18	5.8	150	1.0	●	●
4VFE 08008050V24150	8.0	8	24	7.8	150	0.5	●	●
4VFE 08008100V24150	8.0	8	24	7.8	150	1.0	●	●
4VFE 08008200V24150	8.0	8	24	7.8	150	2.0	●	●
4VFE 10010050V30150	10.0	10	30	9.8	150	0.5	●	●
4VFE 10010100V30150	10.0	10	30	9.8	150	1.0	●	●
4VFE 10010200V30150	10.0	10	30	9.8	150	2.0	●	●
4VFE 12012050V36150	12.0	12	36	11.8	150	0.5	●	●
4VFE 12012100V36150	12.0	12	36	11.8	150	1.0	●	●
4VFE 12012200V36150	12.0	12	36	11.8	150	2.0	●	●
4VFE 14014050V42150	14.0	14	42	13.8	150	0.5	●	●
4VFE 14014100V42150	14.0	14	42	13.8	150	1.0	●	●
4VFE 14014200V42150	14.0	14	42	13.8	150	2.0	●	●
4VFE 16016050V48150	16.0	16	48	15.8	150	0.5	●	●
4VFE 16016100V48150	16.0	16	48	15.8	150	1.0	●	●
4VFE 16016200V48150	16.0	16	48	15.8	150	2.0	●	●
4VFE 18018050V54150	18.0	18	54	17.8	150	0.5		
4VFE 18018100V54150	18.0	18	54	17.8	150	1.0		
4VFE 18018200V54150	18.0	18	54	17.8	150	2.0		
4VFE 20020050V60150	20.0	20	60	19.8	150	0.5		
4VFE 20020100V60150	20.0	20	60	19.8	150	1.0		
4VFE 20020200V60150	20.0	20	60	19.8	150	2.0		

S Endmill

4 Flutes Variable Helix Ball End Mills for SUS & HRSA etc

ØD	Tolerance
Ø2.5~Ø9	0.00~0.02
Ø10~Ø16	0.00~0.03

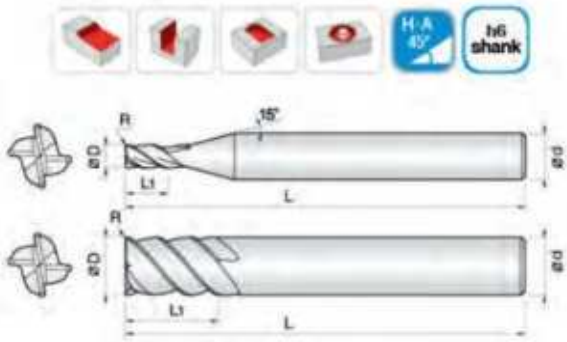


(mm)

Order Code	φD	φd	L1	Avoidance diameter	L	R	Coating ~HRC62 TSM600	Coating ~HRC62 PDL025
4VBE 03004150V06050	3.0	4	6	-	50	1.5	●	
4VBE 04004200V08050	4.0	4	8	-	50	2.0	●	
4VBE 05005250V10050	5.0	5	10	-	50	2.5	●	
4VBE 05006250V10050	5.0	6	10	-	50	2.5	●	
4VBE 06006300V12050	6.0	6	12	-	50	3.0	●	
4VBE 08008400V16060	8.0	8	16	-	60	4.0	●	
4VBE 10010500V20075	10.0	10	20	-	75	5.0	●	
4VBE 12012600V24075	12.0	12	24	-	75	6.0	●	
4VBE 04004200V08075	4.0	4	8	-	75	2.0	●	
4VBE 06006300V12075	6.0	6	12	-	75	3.00	●	
4VBE 08008400V16075	8.0	8	16	-	75	4.0	●	
4VBE 04004200V08100	4.0	4	8	-	75	2.0		
4VBE 06006300V12100	6.0	6	12	-	100	3.0		
4VBE 08008400V16100	8.0	8	16	-	100	4.0		
4VBE 10010500V20100	10.0	10	20	-	100	5.0		
4VBE 12012600V24100	12.0	12	24	-	100	6.0		

4 Flutes Non Symmetry Corner Radius End Mills for SUS

ØD	Tolerance
Ø2.5~Ø9	0.00~0.02
Ø10~Ø16	0.00~0.03



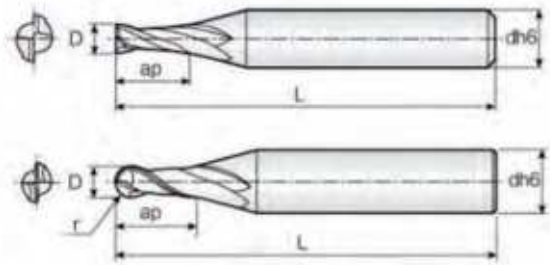
(mm)

Order Code	φD	φd	L1	L	R	Coating ~HRC62 TSM600	Coating ~HRC62 PDL025
4SPFE 04004050V10050	4.0	4	10	50	0.5	●	
4SPFE 06006050V15050	6.0	6	15	50	0.5	●	
4SPFE 08008050V20060	8.0	8	20	60	0.5	●	
4SPFE 10010050V20060	10.0	10	25	75	0.5	●	
4SPFE 12012050V30075	12.0	12	30	75	0.5	●	
4SPFE 16016050V40100	16.0	16	40	100	0.5		
4SPFE 16016100V40100	16.0	16	40	100	1.0		

M Endmill

2 Flutes Micro End Mills

ØD	Tolerance
All	0.00~0.012

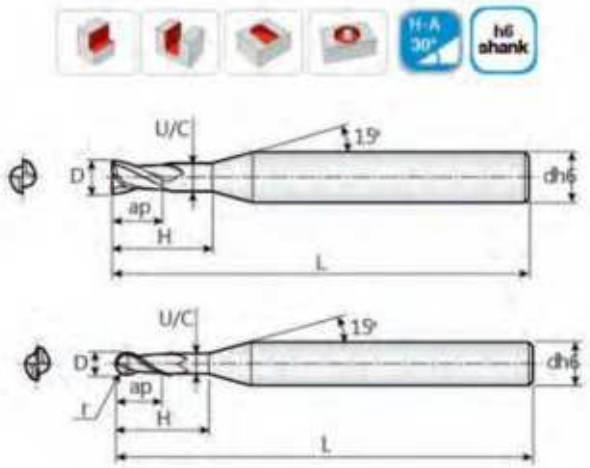


(mm)

Order Code	φD	φd	L1	L	R	Coating		
						~HRC52	HRC50~62	HRC52~68
						TT550	TS600	N400
2MFE 00204000N010050	0.2	4	0.4	50	-	●	●	●
2MFE 00304000N015050	0.3	4	0.6	50	-	●	●	●
2MFE 00404000N020050	0.4	4	0.8	50	-	●	●	●
2MFE 00504000N025050	0.5	4	1.0	50	-	●	●	●
2MFE 00604000N030050	0.6	4	1.2	50	-	●	●	●
2MFE 00704000N035050	0.7	4	1.4	50	-	●	●	●
2MFE 00804000N040050	0.8	4	1.6	50	-	●	●	●
2MFE 00904000N045050	0.9	4	1.8	50	-	●	●	●
2MFE 01004000N060050	1.0	4	2.5	50	-	●	●	●
2MFE 01204000N080050	1.2	4	4.0	50	-	●	●	●
2MFE 01504000N100050	1.5	4	4.0	50	-	●	●	●
2MBE 00204000N010050	0.2	4	0.4	50	0.10	●	●	●
2MBE 00304000N015050	0.3	4	0.6	50	0.15	●	●	●
2MBE 00404000N020050	0.4	4	0.8	50	0.20	●	●	●
2MBE 00504000N025050	0.5	4	1.0	50	0.25	●	●	●
2MBE 00604000N030050	0.6	4	1.2	50	0.30	●	●	●
2MBE 00704000N035050	0.7	4	1.4	50	0.35	●	●	●
2MBE 00804000N040050	0.8	4	1.6	50	0.40	●	●	●
2MBE 00904000N045050	0.9	4	1.8	50	0.45	●	●	●
2MBE 01004000N060050	1.0	4	2.5	50	0.50	●	●	●
2MBE 01204000N080050	1.2	4	3.0	50	0.60	●	●	●
2MBE 01504000N100050	1.5	4	4.0	50	0.75	●	●	●

2 Flutes Micro Rib End Mills

ØD	Tolerance
All	0.00~0.015

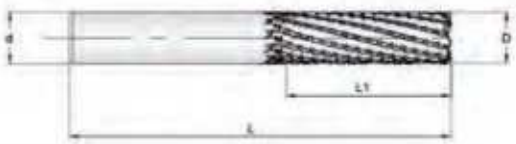


(mm)

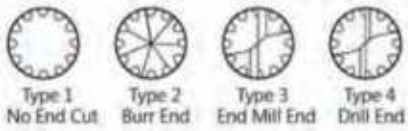
Order Code	φD	φd	L1	L2	L	UC	R	Coating		
								~HRC52	HRC50~62	HRC52~68
								TT550	TS600	N400
2RMFE 00204000N010050	0.2	4	0.4	1.0	50	-	-	●	●	●
2RMFE 00304000N015050	0.3	4	0.6	1.5	50	-	-	●	●	●
2RMFE 00404000N020050	0.4	4	0.8	2.0	50	0.37	-	●	●	●
2RMFE 00504000N025050	0.5	4	1.0	2.5	50	0.45	-	●	●	●
2RMFE 00604000N030050	0.6	4	1.2	3.0	50	0.55	-	●	●	●
2RMFE 00704000N035050	0.7	4	1.4	3.5	50	0.65	-	●	●	●
2RMFE 00804000N040050	0.8	4	1.6	4.0	50	0.75	-	●	●	●
2RMFE 00904000N045050	0.9	4	1.8	4.5	50	0.85	-	●	●	●
2RMFE 01004000N060050	1.0	4	1.8	6.0	50	0.97	-	●	●	●
2RMFE 01204000N080050	1.2	4	1.8	8.0	50	1.17	-	●	●	●
2RMFE 01504000N100050	1.5	4	2.3	10.0	50	1.45	-	●	●	●
2RMBE 00204000N010050	0.2	4	0.4	1.0	50	-	0.10	●	●	●
2RMBE 00304000N015050	0.3	4	0.6	1.5	50	-	0.15	●	●	●
2RMBE 00404000N020050	0.4	4	0.8	2.0	50	0.36	0.20	●	●	●
2RMBE 00504000N025050	0.5	4	1.0	2.5	50	0.45	0.25	●	●	●
2RMBE 00604000N030050	0.6	4	1.2	3.0	50	0.55	0.30	●	●	●
2RMBE 00704000N035050	0.7	4	1.4	3.5	50	0.65	0.35	●	●	●
2RMBE 00804000N040050	0.8	4	1.6	4.0	50	0.75	0.40	●	●	●
2RMBE 00904000N045050	0.9	4	1.8	4.5	50	0.85	0.45	●	●	●
2RMBE 01004000N060050	1.0	4	1.8	6.0	50	0.97	0.50	●	●	●
2RMBE 01204000N080050	1.2	4	1.8	8.0	50	1.17	0.60	●	●	●
2RMBE 01504000N100050	1.5	4	2.3	10.0	50	1.45	0.75	●	●	●

CR Endmill

Solid Carbide, CFRP Routers with Chip Breaker Helical Flutes



ØD	Tolerance
Ø4~12	0.02~0.08



INCH SIZES

(mm)

Order Code				D		d	L1	L	No.of flutes
Type 1	Type 2	Type 3	Type 4	Fraction	Decimal				
2CPR0125V005003	6CPHR0125V005003	4CPHR0125V005003	4CPDR0125V005003	1/8	0.1250	1/8	1/2	3	Multi Fltues
2CPR0250V010003	6CPHR0250V010003	4CPHR0250V010003	4CPDR0250V010003	1/4	0.2500	1/4	1	3	Multi Fltues
2CPR0375V010003	6CPHR0375V010003	4CPHR0375V010003	4CPDR0375V010003	3/8	0.3750	3/8	1	3	Multi Fltues
2CPR0500V015004	6CPHR0500V015004	4CPHR0500V015004	4CPDR0500V015004	1/2	0.5000	1/2	1-1/2	4	Multi Fltues

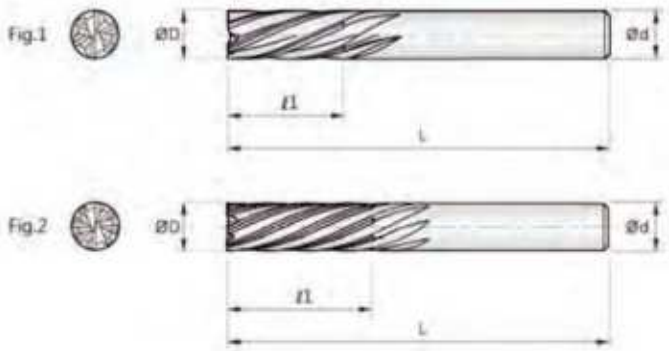
METRIC SIZES

(mm)

Order Code				D	d	L1	L	No.of flutes
Type 1	Type 2	Type 3	Type 4					
2CPR03003000V09050	6CPHR03003000V09050	4CPHR03003000V09050	4CPDR03003000V09050	3.0	3	9	50	Multi Fltues
2CPR06006000V18065	6CPHR06006000V18065	4CPHR06006000V18065	4CPDR06006000V18065	6.0	6	18	65	Multi Fltues
2CPR08008000V24070	6CPHR08008000V24070	4CPHR08008000V24070	4CPDR08008000V24070	8.0	8	24	70	Multi Fltues
2CPR10010000V30080	6CPHR10010000V30080	4CPHR10010000V30080	4CPDR10010000V30080	10.0	10	30	80	Multi Fltues
2CPR12012000V36100	6CPHR12012000V36100	4CPHR12012000V36100	4CPDR12012000V36100	12.0	12	36	100	Multi Fltues

Solid Carbide, CFRP Routers with Chip Breaker Helical Flutes

ØD	Tolerance
Ø6~12	0.00~0.03



INCH SIZES

(mm)

Order Code		D		d	L1	L2	L	No.of flutes
without chipbreaker	with chipbreaker	Fraction	Decimal					
6CPNR0250V010003	6CPNR0250V010003	1/4	0.2500	1/4	1	3	3	6
6CPNR0375V010003	6CPNR0375V010003	3/8	0.3750	3/8	1	3	3	6
6CPNR0500V015004	6CPNR0500V015004	1/2	0.5000	1/2	1-1/2	4	4	6

METRIC SIZES

(mm)

Order Code		D	d	L1	L2	L	No.of flutes
without chipbreaker	with chipbreaker						
6CPNR06006000V18065	6CPNR06006000V18065	6.0	6	18	65	65	6
6CPNR08008000V24070	6CPNR08008000V24070	8.0	8	24	70	70	6
6CPNR1001000V30080	6CPNR1001000V30080	10.0	10	30	80	80	6
6CPNR12012000V36100	6CPNR12012000V36100	12.0	12	36	100	100	6

Drilling

CONTENTS

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2. Indexable Insert Drill 685
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7. V-max Drill 741
8. Technical Information for Turbo Drill 745
9. Turbo Drill 747
10. Technical Information for Multi-function Cutter 719
11. Multi-function Cutter 761
12. TC Type Replaceable Head Drill 765
13. HD Type Replaceable Head Drill 771
14. Solid Carbide Twist Drill 779
15. Special Order 801

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Recommended cutting conditions

Materials	Cutting Speed m/min	Feed (mm/rev)						
		φ13.0-φ15.0	φ15.5-φ21.5	φ22.0-φ27.5	φ28.0-φ33.0	φ34.0-φ41.0	φ42.0-φ50.0	φ51.0-φ60.0
Low Carbon Steel (-0.3% C)	180-250	0.05-0.08	0.06-0.10	0.06-0.12	0.07-0.13	0.08-0.15	0.08-0.16	0.06-0.12
Carbon Steel (0.3% C-)	160-220	0.06-0.12	0.08-0.15	0.10-0.18	0.12-0.22	0.12-0.24	0.13-0.25	0.10-0.15
Low Alloy Steel (-Hb300)	150-220	0.06-0.12	0.08-0.14	0.10-0.18	0.12-0.22	0.12-0.23	0.13-0.24	0.08-0.15
High Alloy Steel (Hb300-)	130-180	0.06-0.10	0.08-0.15	0.10-0.20	0.12-0.23	0.12-0.24	0.13-0.25	0.08-0.15
Stainless Steel	170-240	0.05-0.10	0.06-0.12	0.08-0.15	0.09-0.16	0.10-0.17	0.11-0.19	0.06-0.12
Cast Iron	180-250	0.06-0.12	0.08-0.16	0.12-0.20	0.15-0.25	0.16-0.28	0.18-0.30	0.12-0.20
Ductile Cast Iron	130-200	0.06-0.10	0.08-0.15	0.10-0.18	0.12-0.20	0.15-0.23	0.16-0.25	0.10-0.15
Aluminum	330-380	0.06-0.14	0.08-0.15	0.10-0.20	0.12-0.22	0.14-0.23	0.15-0.26	0.15-0.22
Ti Alloy (Ti 6Al)	30-60	0.05-0.10	0.06-0.17	0.10-0.18	0.10-0.22	0.14-0.23	0.15-0.24	0.10-0.15

Coolant Supply

It is important to ensure that the recommended coolant pressure is applied

-Low pressure can cause vibration and reduced tool life

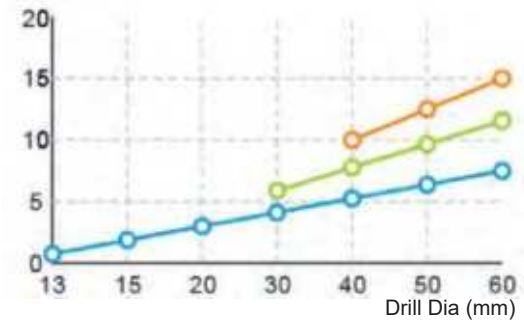
-The recommended minimum pressure is 4kg/cm2 for 2XD and 3XD and for the 4XD the minimum pressure recommended is 5kg/cm2

fn(mm/rev)=0.25

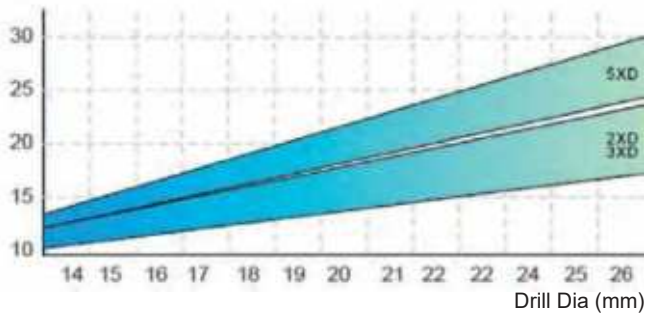
fn(mm/rev)=0.20

fn(mm/rev)=0.10

Net Power Consumption

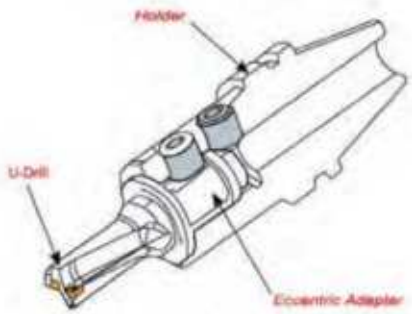


Coolant

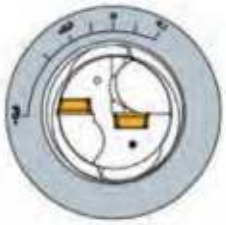


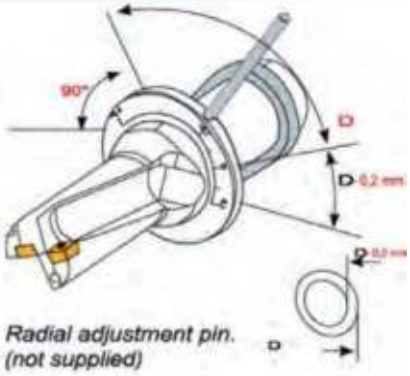
Technical Information for High Speed Drill

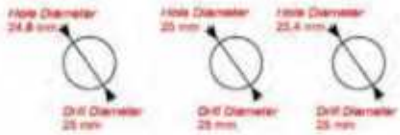
User Guider



On a milling machine the drill's nom inal diameter can be changed By shifting the drill's axis out of the tool spindle.







The adjustment marking should be located perpendicular to the fat on the circumference of the U-DRILL fange.
To facilate the rotation of the adaptor, a metal rod or a screw key may be inserted into a hole on the exentric adaptor fange. Unlock adapter screw before adjusting adaptor.

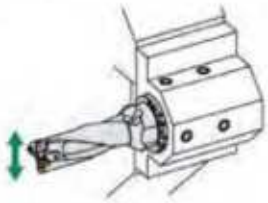
Adjust lathe center height

The lathe issue is most caused by the center height is out of position.
The center height is acceptable if there remains core of dia. 0.5mm on the end side of hole.
Should adjust the center height if there are following condition
1. No core remained 2. Diameter of core is more than 1mm

Adjustment methods.

(1) Let the scale of eccentric collet(for lathe use) be on the center of pin hole for coolant (drill head outside).
(2) Rotate in direction of "+" if no core existed.
Rotate in direction of "-" if the core diameter is more than 1mm.
(3) Please use adjustable round bar of φ3~φ5mm which inserted i nto the slot for rotating the eccentric collet.
(4) When using the shank to fix the set screw, directly lock the drill head on the slot opening of eccentric collet.

Center height adjustment for lathe machining use



Adjustable range for center height

Adjustable Range
-0.15~+0.2

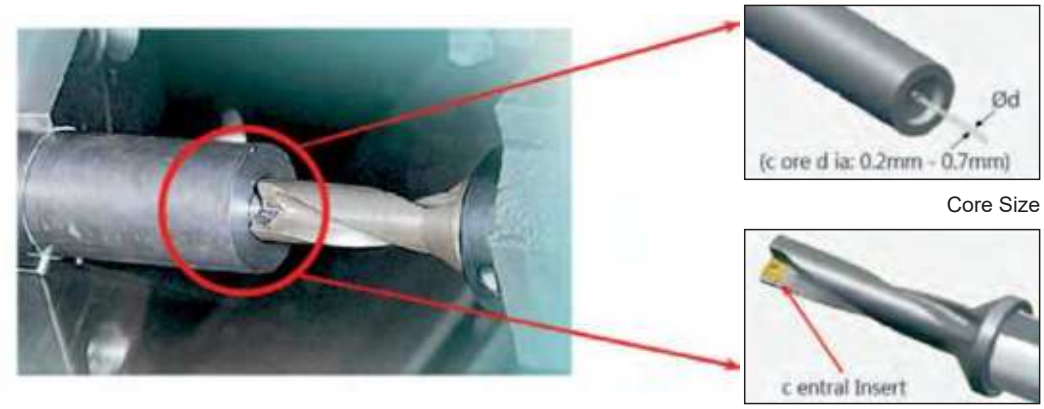
>> Technical Information for Lathe Applications

-Initial drill set up and check

On first hole - please retract the drill after drilling to a depth of 3mm - 6mm
and check it has produced a small core within 0.2mm - 0.7mm

If a core is not created:
--It can cause insert breakage and vibration when drilling.
--Please reverse the drill bode 180 degrees in tool post and try again.

If the size of core is over the recommendations:
--Please adjust offsets to bring core to correct size.
--Failure to do so can cause overload and vibration during drilling.



Core Size

Initial set up of U-Drill

Hole tolerance

Depth of drilling	Tolerance (mm)	Test Cutting Consdition
2XD	+0.20/-0.1	● vc = 130 ~ 200 m/min ● fn = 0.04 ~ 0.15 mm/rev ● Workpiece = SCM440 ● Coolant: Over 5kg/cm2
3XD	+0.25/-0.1	
4XD	+0.30/-0.1	
5XD	+0.40/-0.1	

How to calculate machining power of drill: P (kw)

PC(kw) = 425xkcxvcxfnxD/107		
	Example	
● Specific cutting force, kc(Mpa)	● Workpiece = 4140	● Fn = 0.1mm/rev
● Cutting speed: vc(m/min)	● kc = 254Mpa	● D = 20mm
● Feed rate: fn(mm/rev)	● vc = 100m/min	
● Drill diameter: D(mm)	● PC(kw) = 425x254x100x0.1x20/10000000 = 2.159kw	

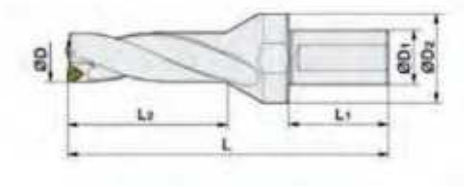
Technical Information for High Speed Drill

Hole Tolerance and Maximum Hole Size with Radial Adjustment

Drill Dia	3XD			4XD		
	Normal	Radial shift	Max'hole (ф)	Normal	Radial shift	Max'hole (ф)
13	13.16	+0.5	-14.0	13.22	+0.5	-14.0
14	14.10	+0.5	-15.0	14.15	+0.5	-15.0
15	15.10	+0.5	-16.0	15.17	+0.5	-16.0
16	16.07	+0.5	-17.0	16.09	+0.5	-17.0
17	17.08	+0.5	-18.0	17.13	+0.5	-18.0
18	18.05	+0.5	-19.0	18.20	+0.5	-19.0
19	19.08	+0.5	-20.0	19.18	+0.5	-20.0
20	20.06	+0.5	-21.0	20.05	+0.5	-21.0
21	20.97	+0.25	-21.5	21.00	+0.25	-21.5
22	21.94	+0.5	-23.0	22.01	+0.5	-23.0
23	23.10	+0.5	-24.0	23.10	+0.5	-24.0
24	24.10	+0.5	-25.0	24.15	+0.5	-25.0
25	25.06	+0.5	-26.0	25.13	+0.5	-26.0
26	26.03	+0.25	-26.5	26.09	+0.25	-26.5
27	27.05	+0.25	-27.5	26.96	+0.25	-27.5
28	28.11	+0.5	-29.0	27.97	+0.5	-29.0
29	28.54	+0.5	-30.0	29.07	+0.5	-30.0
30	30.23	+0.5	-31.0	30.13	+0.5	-31.0
31	31.07	+0.25	-31.5	31.12	+0.25	-31.5
32	32.06	+0.25	-32.5	32.11	+0.25	-32.5
33	33.12	+0.25	-33.5	33.17	+0.25	-33.5
34	34.10	+0.5	-35.0	34.15	+0.5	-35.0
35	35.07	+0.5	-36.0	35.12	+0.5	-36.0
36	36.03	+0.5	-37.0	36.08	+0.5	-37.0
37	37.14	+0.5	-38.0	37.19	+0.5	-38.0
38	38.05	+0.5	-39.0	38.08	+0.5	-39.0
39	39.03	+0.5	-40.0	39.08	+0.5	-40.0
40	40.00	+0.25	-40.5	40.05	+0.25	-40.5
41	40.99	+0.25	-41.5	41.04	+0.25	-41.5
42	42.03	+0.5	-43.0	42.08	+0.5	-43.0
43	42.99	+0.5	-44.0	43.04	+0.5	-44.0
44	44.17	+0.5	-45.0	44.22	+0.5	-45.0
45	45.21	+0.5	-46.0	45.26	+0.5	-46.0
46	46.17	+0.5	-47.0	46.23	+0.5	-47.0
47	47.15	+0.5	-48.0	47.20	+0.5	-48.0
48	48.12	+0.25	-48.5	48.17	+0.25	-48.5
49	49.00	+0.25	-49.5	49.05	+0.25	-49.5
50	50.02	+0.25	-50.0	50.07	+0.25	-50.0

※ Choose the shortest possible drill for best perfomance and productivity results.

2D WC

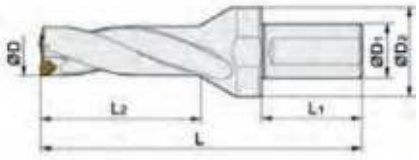


mm

Designation	Stock	Size						Insert	Spare parts	
		D	D1	D2	L2	L1	L			
ZD02-140-XP25-WC03-02	●	14.0	25	32	28	56	106	WC□□0302□□	M2.5x6	T-8
ZD02-145-XP25-WC03-02	●	14.5	25	32	29	56	107			
ZD02-150-XP25-WC03-02	●	15.0	25	32	30	56	108			
ZD02-155-XP25-WC03-02	●	15.5	25	32	31	56	109			
ZD02-160-XP25-WC03-02	●	16.0	25	32	32	56	110			
ZD02-165-XP25-WC03-02	●	16.5	25	32	33	56	111			
ZD02-170-XP25-WC03-02	●	17.0	25	32	34	56	112			
ZD02-175-XP25-WC03-02	●	17.5	25	32	35	56	113			
ZD02-180-XP25-WC03-02	●	18.0	25	32	36	56	114			
ZD02-185-XP25-WC03-02	●	18.5	25	32	37	56	115			
ZD02-190-XP25-WC03-02	●	19.0	25	32	38	56	116			
ZD02-195-XP25-WC03-02	●	19.5	25	32	39	56	117			
ZD02-200-XP25-WC03-02	●	20.0	25	32	40	56	119			
ZD02-205-XP25-WC03-02	●	20.5	25	32	41	56	120			
ZD02-210-XP25-WC04-02	●	21.0	25	45	42	56	121	WC□□0402□□	L0655SSTX2.5-3.6P	T-8
ZD02-215-XP25-WC04-02	●	21.5	25	45	43	56	122			
ZD02-220-XP25-WC04-02	●	22.0	25	45	44	56	123			
ZD02-225-XP25-WC04-02	●	22.5	25	45	45	56	124			
ZD02-230-XP25-WC04-02	●	23.0	25	45	46	56	125			
ZD02-235-XP25-WC04-02	●	23.5	25	45	47	56	126			
ZD02-240-XP25-WC04-02	●	24.0	25	45	48	56	127			
ZD02-245-XP25-WC04-02	●	24.5	25	45	49	56	128			
ZD02-250-XP32-WC05-02	●	25.0	32	55	50	60	141	WC□□0502□□	L0760SSTX3.0-4.0P	T-8
ZD02-255-XP32-WC05-02	●	25.5	32	55	51	60	142			
ZD02-260-XP32-WC05-02	●	26.0	32	55	52	60	143			
ZD02-265-XP32-WC05-02	●	26.5	32	55	53	60	144			
ZD02-270-XP32-WC05-02	●	27.0	32	55	54	60	145			
ZD02-275-XP32-WC05-02	●	27.5	32	55	55	60	146			
ZD02-280-XP32-WC05-02	●	28.0	32	55	56	60	147			
ZD02-285-XP32-WC05-02	●	28.5	32	55	57	60	148			
ZD02-290-XP32-WC05-02	●	29.0	32	55	58	60	149			
ZD02-295-XP32-WC05-02	●	29.5	32	55	59	60	150			
ZD02-300-XP32-WC05-02	●	30.0	32	55	60	60	151			
ZD02-305-XP32-WC05-02	●	30.5	32	55	61	60	152			
ZD02-310-XP32-WC05-02	●	31.0	32	55	62	60	153			
ZD02-315-XP32-WC05-02	●	31.5	32	55	63	60	154			

High Speed Drill

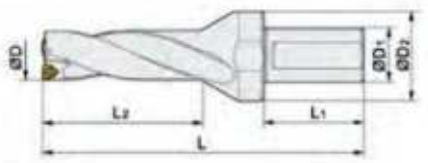
2D WC



mm

Designation	Stock	Size						Insert	Spare parts	
		D	D1	D2	L2	L1	L			
ZD02-320-XP32-WC06-02	●	32.0	32	55	64	60	155	WC□□06T3□□	L0900SSTX3.5-5.7P	T-15
ZD02-325-XP32-WC06-02	●	32.5	32	55	65	60	156			
ZD02-330-XP32-WC06-02	●	33.0	32	55	66	60	157			
ZD02-335-XP32-WC06-02	●	33.5	32	55	67	60	158			
ZD02-340-XP32-WC06-02	●	34.0	32	55	68	60	159			
ZD02-345-XP32-WC06-02	●	34.5	32	55	69	60	160			
ZD02-350-XP32-WC06-02	●	35.0	32	55	70	60	161			
ZD02-355-XP32-WC06-02	●	35.5	32	55	71	60	162			
ZD02-360-XP32-WC06-02	●	36.0	32	55	72	60	163			
ZD02-365-XP32-WC06-02	●	36.5	32	55	73	60	164			
ZD02-370-XP32-WC06-02	●	37.0	32	55	74	60	165			
ZD02-375-XP32-WC06-02	●	37.5	32	55	75	60	166			
ZD02-380-XP32-WC06-02	●	38.0	32	55	76	60	167			
ZD02-385-XP32-WC06-02	●	38.5	32	55	77	60	168			
ZD02-390-XP32-WC06-02	●	39.0	32	55	78	60	169			
ZD02-395-XP32-WC06-02	●	39.5	32	55	79	60	170			
ZD02-400-XP32-WC06-02	●	40.0	32	55	80	60	171			
ZD02-410-XP32-WC06-02	●	41.0	32	55	82	60	173			
ZD02-420-XP32-WC06-02	●	42.0	32	55	84	60	175			
ZD02-430-XP40-WC08-02	●	43.0	40	60	86	70	191	WC□□0804□□	L1060SSTX4.0-5.7P	T-15
ZD02-440-XP40-WC08-02	●	44.0	40	60	88	70	193			
ZD02-450-XP40-WC08-02	●	45.0	40	60	90	70	195			
ZD02-460-XP40-WC08-02	●	46.0	40	60	92	70	197			
ZD02-470-XP40-WC08-02	●	47.0	40	60	94	70	199			
ZD02-480-XP40-WC08-02	●	48.0	40	60	96	70	201			
ZD02-490-XP40-WC08-02	●	49.0	40	60	98	70	203			
ZD02-500-XP40-WC08-02	●	50.0	40	60	100	70	205			
ZD02-510-XP40-WC08-02	●	51.0	40	70	102	70	207			
ZD02-520-XP40-WC08-02	●	52.0	40	70	104	70	209			
ZD02-530-XP40-WC08-02	●	53.0	40	70	106	70	211			
ZD02-540-XP40-WC08-02	●	54.0	40	70	108	70	213			
ZD02-550-XP40-WC08-02	●	55.0	40	70	110	70	215			
ZD02-560-XP40-WC08-02	●	56.0	40	70	112	70	217			
ZD02-570-XP40-WC08-02	●	57.0	40	70	114	70	219			
ZD02-580-XP40-WC06-04	●	58.0	40	70	116	70	221	WC□□06T3□□	L0900SSTX3.5-5.7P	T-15
ZD02-590-XP40-WC06-04	●	59.0	40	70	118	70	223			
ZD02-600-XP40-WC06-04	●	60.0	40	70	120	70	225			

3D WC

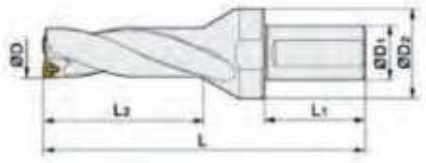


mm

Designation	Stock	Size						Insert	Spare parts	
		D	D1	D2	L2	L1	L			
ZD03-140-XP25-WC03-02	●	14.0	25	32	42.0	56	120	WC□□0302□□	M2.5x6	T-8
ZD03-145-XP25-WC03-02	●	14.5	25	32	43.5	56	122			
ZD03-150-XP25-WC03-02	●	15.0	25	32	45.0	56	123			
ZD03-155-XP25-WC03-02	●	15.5	25	32	46.5	56	125			
ZD03-160-XP25-WC03-02	●	16.0	25	32	48.0	56	126			
ZD03-165-XP25-WC03-02	●	16.5	25	32	49.5	56	128			
ZD03-170-XP25-WC03-02	●	17.0	25	32	51.0	56	129			
ZD03-175-XP25-WC03-02	●	17.5	25	32	52.5	56	131			
ZD03-180-XP25-WC03-02	●	18.0	25	32	54.0	56	132			
ZD03-185-XP25-WC03-02	●	18.5	25	32	55.5	56	134			
ZD03-190-XP25-WC03-02	●	19.0	25	32	57.0	56	135			
ZD03-195-XP25-WC03-02	●	19.5	25	32	58.5	56	137			
ZD03-200-XP25-WC03-02	●	20.0	25	32	60.0	56	138			
ZD03-205-XP25-WC03-02	●	20.5	25	32	61.5	56	140			
ZD03-210-XP25-WC04-02	●	21.0	25	45	63.0	56	141	WC□□0402□□	L0655SSTX2.5-3.6P	T-8
ZD03-215-XP25-WC04-02	●	21.5	25	45	64.5	56	143			
ZD03-220-XP25-WC04-02	●	22.0	25	45	66.0	56	144			
ZD03-225-XP25-WC04-02	●	22.5	25	45	67.5	56	146			
ZD03-230-XP25-WC04-02	●	23.0	25	45	69.0	56	147			
ZD03-235-XP25-WC04-02	●	23.5	25	45	70.5	56	149			
ZD03-240-XP25-WC04-02	●	24.0	25	45	72.0	56	150			
ZD03-245-XP25-WC04-02	●	24.5	25	45	73.5	56	152			
ZD03-250-XP32-WC05-02	●	25.0	32	55	75.0	60	166	WC□□0503□□	L0760SSTX3.0-4.0P	T-8
ZD03-255-XP32-WC05-02	●	25.5	32	55	76.5	60	168			
ZD03-260-XP32-WC05-02	●	26.0	32	55	78.0	60	169			
ZD03-265-XP32-WC05-02	●	26.5	32	55	79.5	60	171			
ZD03-270-XP32-WC05-02	●	27.0	32	55	81.0	60	172			
ZD03-275-XP32-WC05-02	●	27.5	32	55	82.5	60	174			
ZD03-280-XP32-WC05-02	●	28.0	32	55	84.0	60	175			
ZD03-285-XP32-WC05-02	●	28.5	32	55	85.5	60	177			
ZD03-290-XP32-WC05-02	●	29.0	32	55	87.0	60	178			
ZD03-295-XP32-WC05-02	●	29.5	32	55	88.5	60	180			
ZD03-300-XP32-WC05-02	●	30.0	32	55	90.0	60	181			
ZD03-305-XP32-WC05-02	●	30.5	32	55	91.5	60	183			
ZD03-310-XP32-WC05-02	●	31.0	32	55	93.0	60	184			
ZD03-315-XP32-WC05-02	●	31.5	32	55	94.5	60	186			

High Speed Drill

3D WC



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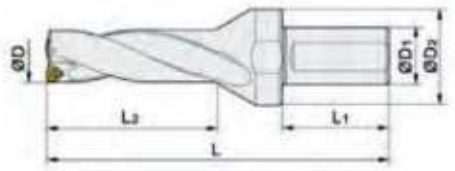
Designation	Stock	Size						Insert	Spare parts	
		D	D1	D2	L2	L1	L			
ZD03-320-XP32-WC06-02	●	32.0	32	55	96.0	60	187	WC□□06T3□□	L0900SSTX3.5-5.7P	T-15
ZD03-325-XP32-WC06-02	●	32.5	32	55	97.0	60	189			
ZD03-330-XP32-WC06-02	●	33.0	32	55	99.0	60	190			
ZD03-335-XP32-WC06-02	●	33.5	32	55	100.5	60	192			
ZD03-340-XP32-WC06-02	●	34.0	32	55	102.0	60	193			
ZD03-345-XP32-WC06-02	●	34.5	32	55	103.5	60	195			
ZD03-350-XP32-WC06-02	●	35.0	32	55	105.0	60	196			
ZD03-355-XP32-WC06-02	●	35.5	32	55	106.5	60	198			
ZD03-360-XP32-WC06-02	●	36.0	32	55	108.0	60	199			
ZD03-365-XP32-WC06-02	●	36.5	32	55	109.5	60	201			
ZD03-370-XP32-WC06-02	●	37.0	32	55	111.0	60	202			
ZD03-375-XP32-WC06-02	●	37.5	32	55	112.5	60	204			
ZD03-380-XP32-WC06-02	●	38.0	32	55	114.0	60	205			
ZD03-385-XP32-WC06-02	●	38.5	32	55	115.5	60	207			
ZD03-390-XP32-WC06-02	●	39.0	32	55	117.0	60	208			
ZD03-395-XP32-WC06-02	●	39.5	32	55	118.5	60	210			
ZD03-400-XP32-WC06-02	●	40.0	32	55	120.0	60	211			
ZD03-410-XP32-WC06-02	●	41.0	32	55	123.0	60	214			
ZD03-420-XP32-WC06-02	●	42.0	32	55	126.0	60	217			
ZD03-430-XP40-WC08-02	●	43.0	40	60	129.0	70	234	WC□□0804□□	L1060SSTX4.0-5.7P	T-15
ZD03-440-XP40-WC08-02	●	44.0	40	60	132.0	70	237			
ZD03-450-XP40-WC08-02	●	45.0	40	60	135.0	70	240			
ZD03-460-XP40-WC08-02	●	46.0	40	60	138.0	70	243			
ZD03-470-XP40-WC08-02	●	47.0	40	60	141.0	70	246			
ZD03-480-XP40-WC08-02	●	48.0	40	60	144.0	70	249			
ZD03-490-XP40-WC08-02	●	49.0	40	60	147.0	70	252			
ZD03-500-XP40-WC08-02	●	50.0	40	60	150.0	70	255			
ZD03-510-XP40-WC08-02	●	51.0	40	70	153.0	70	258			
ZD03-520-XP40-WC08-02	●	52.0	40	70	156.0	70	261			
ZD03-530-XP40-WC08-02	●	53.0	40	70	159.0	70	264			
ZD03-540-XP40-WC08-02	●	54.0	40	70	162.0	70	267			
ZD03-550-XP40-WC08-02	●	55.0	40	70	165.0	70	270			
ZD03-560-XP40-WC08-02	●	56.0	40	70	168.0	70	273			
ZD03-570-XP40-WC08-02	●	57.0	40	70	171.0	70	276			
ZD03-580-XP40-WC06-04	●	58.0	40	70	174.0	70	279	WC□□06T3□□	L0900SSTX3.5-5.7P	T-15
ZD03-590-XP40-WC06-04	●	59.0	40	70	177.0	70	282			
ZD03-600-XP40-WC06-04	●	60.0	40	70	180.0	70	285			

4D WC

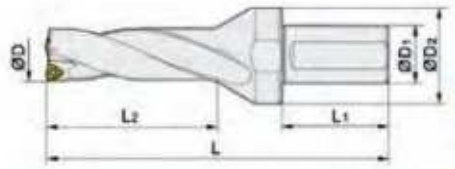


mm

Designation	Stock	Size						Insert	Spare parts	
		D	D1	D2	L2	L1	L			
ZD04-140-XP25-WC03-02	●	14.0	25	32	56	56	134	WC□□0302□□	M2.5x6	T-8
ZD04-145-XP25-WC03-02	●	14.5	25	32	58	56	136			
ZD04-150-XP25-WC03-02	●	15.0	25	32	60	56	138			
ZD04-155-XP25-WC03-02	●	15.5	25	32	62	56	140			
ZD04-160-XP25-WC03-02	●	16.0	25	32	64	56	142			
ZD04-165-XP25-WC03-02	●	16.5	25	32	66	56	144			
ZD04-170-XP25-WC03-02	●	17.0	25	32	68	56	146			
ZD04-175-XP25-WC03-02	●	17.5	25	32	70	56	148			
ZD04-180-XP25-WC03-02	●	18.0	25	32	72	56	150			
ZD04-185-XP25-WC03-02	●	18.5	25	32	74	56	152			
ZD04-190-XP25-WC03-02	●	19.0	25	32	76	56	154			
ZD04-195-XP25-WC03-02	●	19.5	25	32	78	56	155			
ZD04-200-XP25-WC03-02	●	20.0	25	32	80	56	159			
ZD04-205-XP25-WC03-02	●	20.5	25	32	82	56	161			
ZD04-210-XP25-WC04-02	●	21.0	25	45	84	56	163	WC□□0402□□	L0655SSTX2.5-3.6P	T-8
ZD04-215-XP25-WC04-02	●	21.5	25	45	86	56	165			
ZD04-220-XP25-WC04-02	●	22.0	25	45	88	56	167			
ZD04-225-XP25-WC04-02	●	22.5	25	45	90	56	169			
ZD04-230-XP25-WC04-02	●	23.0	25	45	92	56	171			
ZD04-235-XP25-WC04-02	●	23.5	25	45	94	56	173			
ZD04-240-XP25-WC04-02	●	24.0	25	45	96	56	175			
ZD04-245-XP25-WC04-02	●	24.5	25	45	98	56	177			
ZD04-250-XP32-WC05-02	●	25.0	32	55	100	60	191	WC□□0503□□	L0760SSTX3.0-4.0P	T-8
ZD04-255-XP32-WC05-02	●	25.5	32	55	102	60	193			
ZD04-260-XP32-WC05-02	●	26.0	32	55	104	60	195			
ZD04-265-XP32-WC05-02	●	26.5	32	55	106	60	197			
ZD04-270-XP32-WC05-02	●	27.0	32	55	108	60	199			
ZD04-275-XP32-WC05-02	●	27.5	32	55	110	60	201			
ZD04-280-XP32-WC05-02	●	28.0	32	55	112	60	203			
ZD04-285-XP32-WC05-02	●	28.5	32	55	114	60	205			
ZD04-290-XP32-WC05-02	●	29.0	32	55	116	60	207			
ZD04-295-XP32-WC05-02	●	29.5	32	55	118	60	209			
ZD04-300-XP32-WC05-02	●	30.0	32	55	120	60	211			
ZD04-305-XP32-WC05-02	●	30.5	32	55	122	60	213			
ZD04-310-XP32-WC05-02	●	31.0	32	55	124	60	215			
ZD04-315-XP32-WC05-02	●	31.5	32	55	126	60	217			

High Speed Drill

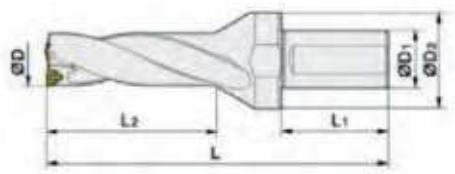
4D WC



mm

Designation	Stock	Size						Insert	Spare parts	
		D	D1	D2	L2	L1	L			
ZD04-320-XP32-WC06-02	●	32.0	32	55	128	60	219	WC□□06T3□□	L0900SSTX3.5-5.7P	T-15
ZD04-325-XP32-WC06-02	●	32.5	32	55	130	60	221			
ZD04-330-XP32-WC06-02	●	33.0	32	55	132	60	223			
ZD04-335-XP32-WC06-02	●	33.5	32	55	134	60	225			
ZD04-340-XP32-WC06-02	●	34.0	32	55	136	60	227			
ZD04-345-XP32-WC06-02	●	34.5	32	55	138	60	229			
ZD04-350-XP32-WC06-02	●	35.0	32	55	140	60	231			
ZD04-355-XP32-WC06-02	●	35.5	32	55	142	60	233			
ZD04-360-XP32-WC06-02	●	36.0	32	55	144	60	235			
ZD04-365-XP32-WC06-02	●	36.5	32	55	146	60	237			
ZD04-370-XP32-WC06-02	●	37.0	32	55	148	60	239			
ZD04-375-XP32-WC06-02	●	37.5	32	55	150	60	241			
ZD04-380-XP32-WC06-02	●	38.0	32	55	152	60	243			
ZD04-385-XP32-WC06-02	●	38.5	32	55	154	60	245			
ZD04-390-XP32-WC06-02	●	39.0	32	55	156	60	247			
ZD04-395-XP32-WC06-02	●	39.5	32	55	158	60	249			
ZD04-400-XP32-WC06-02	●	40.0	32	55	160	60	251			
ZD04-410-XP32-WC06-02	●	41.0	32	55	164	60	255			
ZD04-420-XP32-WC06-02	●	42.0	32	55	168	60	259			
ZD04-430-XP40-WC08-02	●	43.0	40	60	172	70	277	WC□□0804□□	L1060SSTX4.0-5.7P	T-15
ZD04-440-XP40-WC08-02	●	44.0	40	60	176	70	281			
ZD04-450-XP40-WC08-02	●	45.0	40	60	180	70	285			
ZD04-460-XP40-WC08-02	●	46.0	40	60	184	70	286			
ZD04-470-XP40-WC08-02	●	47.0	40	60	188	70	293			
ZD04-480-XP40-WC08-02	●	48.0	40	60	192	70	297			
ZD04-490-XP40-WC08-02	●	49.0	40	60	196	70	301			
ZD04-500-XP40-WC08-02	●	50.0	40	60	200	70	305			
ZD04-510-XP40-WC08-02	●	51.0	40	70	204	70	309			
ZD04-520-XP40-WC08-02	●	52.0	40	70	208	70	313			
ZD04-530-XP40-WC08-02	●	53.0	40	70	212	70	317			
ZD04-540-XP40-WC08-02	●	54.0	40	70	216	70	321			
ZD04-550-XP40-WC08-02	●	55.0	40	70	220	70	325			
ZD04-560-XP40-WC08-02	●	56.0	40	70	224	70	329			
ZD04-570-XP40-WC08-02	●	57.0	40	70	228	70	333			
ZD04-580-XP40-WC06-04	●	58.0	40	70	232	70	337	WC□□06T3□□	L0900SSTX3.5-5.7P	T-15
ZD04-590-XP40-WC06-04	●	59.0	40	70	236	70	341			
ZD04-600-XP40-WC06-04	●	60.0	40	70	240	70	345			

5D WC



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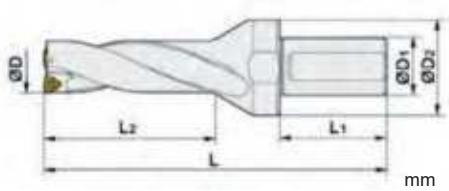
Designation	Stock	Size						Insert	Spare parts	
		D	D1	D2	L2	L1	L			
ZD05-200-XP25-WC03-02	●	20.0	25	32	100.0	56	179	WC□□0302□□	M2.5x6	T-8
ZD05-205-XP25-WC03-02	●	20.5	25	32	102.5	56	182			
ZD05-210-XP25-WC04-02	●	21.0	25	45	105.0	56	184	WC□□0402□□	L0655SSTX2.5-3.6P	T-8
ZD05-215-XP25-WC04-02	●	21.5	25	45	107.0	56	187			
ZD05-220-XP25-WC04-02	●	22.0	25	45	110.0	56	189			
ZD05-225-XP25-WC04-02	●	22.5	25	45	112.5	56	192			
ZD05-230-XP25-WC04-02	●	23.0	25	45	115.0	56	194			
ZD05-235-XP25-WC04-02	●	23.5	25	45	117.5	56	197			
ZD05-240-XP25-WC04-02	●	24.0	25	45	120.0	56	199			
ZD05-245-XP25-WC04-02	●	24.5	25	45	122.5	56	202			
ZD05-250-XP32-WC05-02	●	25.0	32	55	125.0	60	216	WC□□0503□□	L0760SSTX3.0-4.0P	T-8
ZD05-255-XP32-WC05-02	●	25.5	32	55	127.5	60	219			
ZD05-260-XP32-WC05-02	●	26.0	32	55	130.0	60	221			
ZD05-265-XP32-WC05-02	●	26.5	32	55	132.5	60	224			
ZD05-270-XP32-WC05-02	●	27.0	32	55	135.0	60	226			
ZD05-275-XP32-WC05-02	●	27.5	32	55	137.5	60	229			
ZD05-280-XP32-WC05-02	●	28.0	32	55	140.0	60	231			
ZD05-285-XP32-WC05-02	●	28.5	32	55	142.5	60	234			
ZD05-290-XP32-WC05-02	●	29.0	32	55	145.0	60	236			
ZD05-295-XP32-WC05-02	●	29.5	32	55	147.5	60	239			
ZD05-300-XP32-WC05-02	●	30.0	32	55	150.0	60	241			
ZD05-305-XP32-WC05-02	●	30.5	32	55	152.5	60	244			
ZD05-310-XP32-WC05-02	●	31.0	32	55	155.0	60	246			
ZD05-315-XP32-WC05-02	●	31.5	32	55	157.5	60	249			
ZD05-320-XP32-WC06-02	●	32.0	32	55	160.0	60	251	WC□□06T3□□	L0900SSTX3.5-5.7P	T-15
ZD05-325-XP32-WC06-02	●	32.5	32	55	162.5	60	254			
ZD05-330-XP32-WC06-02	●	33.0	32	55	165.0	60	256			
ZD05-335-XP32-WC06-02	●	33.5	32	55	167.5	60	259			
ZD05-340-XP32-WC06-02	●	34.0	32	55	170.0	60	261			
ZD05-345-XP32-WC06-02	●	34.5	32	55	172.5	60	264			
ZD05-350-XP32-WC06-02	●	35.0	32	55	175.0	60	266			
ZD05-355-XP32-WC06-02	●	35.5	32	55	177.5	60	269			
ZD05-360-XP32-WC06-02	●	36.0	32	55	180.0	60	271			
ZD05-365-XP32-WC06-02	●	36.5	32	55	182.5	60	274			
ZD05-370-XP32-WC06-02	●	37.0	32	55	185.0	60	276			
ZD05-375-XP32-WC06-02	●	37.5	32	55	187.5	60	279			

High Speed Drill

5D WC



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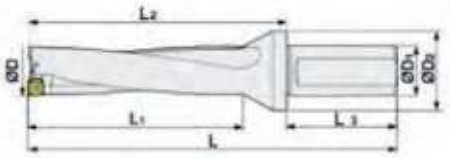
Designation	Stock	Size						Insert	Spare parts	
		D	D1	D2	L2	L1	L			
ZD05-380-XP32-WC06-02	●	38.0	32	55	190.0	60	281	WC□□06T3□□	L0900SSTX3.5-5.7P	T-15
ZD05-385-XP32-WC06-02	●	38.5	32	55	192.5	60	284			
ZD05-390-XP32-WC06-02	●	39.0	32	55	195.0	60	286			
ZD05-395-XP32-WC06-02	●	39.5	32	55	197.5	60	289			
ZD05-400-XP32-WC06-02	●	40.0	32	55	200.0	60	291			
ZD05-410-XP32-WC06-02	●	41.0	32	55	205.0	60	296			
ZD05-420-XP32-WC06-02	●	42.0	32	55	210.0	60	301			
ZD05-430-XP40-WC08-02	●	43.0	40	60	215.0	70	320	WC□□0804□□	L1060SSTX4.0-5.7P	T-15
ZD05-440-XP40-WC08-02	●	44.0	40	60	220.0	70	325			
ZD05-450-XP40-WC08-02	●	45.0	40	60	225.0	70	330			
ZD05-460-XP40-WC08-02	●	46.0	40	60	230.0	70	335			
ZD05-470-XP40-WC08-02	●	47.0	40	60	235.0	70	340			
ZD05-480-XP40-WC08-02	●	48.0	40	60	240.0	70	345			
ZD05-490-XP40-WC08-02	●	49.0	40	60	245.0	70	350			
ZD05-500-XP40-WC08-02	●	50.0	40	60	250.0	70	355			
ZD05-510-XP40-WC08-02	●	51.0	40	70	255.0	70	360			
ZD05-520-XP40-WC08-02	●	52.0	40	70	260.0	70	365			
ZD05-530-XP40-WC08-02	●	53.0	40	70	265.0	70	370			
ZD05-540-XP40-WC08-02	●	54.0	40	70	270.0	70	375			
ZD05-550-XP40-WC08-02	●	55.0	40	70	275.0	70	380			
ZD05-560-XP40-WC08-02	●	56.0	40	70	280.0	70	385			
ZD05-570-XP40-WC08-02	●	57.0	40	70	285.0	70	390			
ZD05-580-XP40-WC06-04	●	58.0	40	70	290.0	70	395	WC□□06T3□□	L0900SSTX3.5-5.7P	T-15
ZD05-590-XP40-WC06-04	●	59.0	40	70	295.0	70	400			
ZD05-600-XP40-WC06-04	●	60.0	40	70	300.0	70	405			

2D SP



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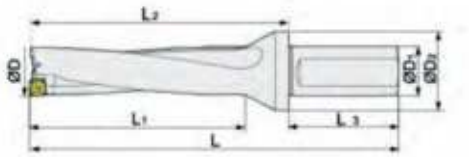
Designation	Stock	Size							Insert	Spare parts	
		D	D1	D2	L1	L2	L3	L			
ZD02-100-XP16-SP04-02	●	10.0	16	20	20	38	48	88	SP□□040202	L0455SSTX1.8-2.7P	T-6
ZD02-105-XP16-SP04-02	●	10.5	16	20	21	39	48	89			
ZD02-110-XP16-SP04-02	●	11.0	16	20	22	40	48	90			
ZD02-115-XP16-SP04-02	●	11.5	16	20	23	40	48	90			
ZD02-120-XP20-SP04-02	●	12.0	20	25	24	42	50	92			
ZD02-125-XP20-SP04-02	●	12.5	20	25	25	43	50	93			
ZD02-130-XP25-SP05-02	●	13.0	25	32	26	48	56	104	SP□□0502□□	L0420SSTX2.0-2.8P	T-6
ZD02-135-XP25-SP05-02	●	13.5	25	32	27	49	56	105			
ZD02-140-XP25-SP05-02	●	14.0	25	32	28	50	56	106			
ZD02-145-XP25-SP05-02	●	14.5	25	32	29	51	56	107			
ZD02-150-XP25-SP05-02	●	15.0	25	32	30	52	56	108			
ZD02-155-XP25-SP06-02	●	15.5	25	32	31	53	56	109	SP□□0602□□	L0560SSTX2.2-3.0P	T-6
ZD02-160-XP25-SP06-02	●	16.0	25	32	32	54	56	110			
ZD02-165-XP25-SP06-02	●	16.5	25	32	33	55	56	111			
ZD02-170-XP25-SP06-02	●	17.0	25	32	34	56	56	112			
ZD02-175-XP25-SP06-02	●	17.5	25	32	35	57	56	113			
ZD02-180-XP25-SP06-02	●	18.0	25	32	36	58	56	114			
ZD02-185-XP25-SP06-02	●	18.5	25	32	37	59	56	115			
ZD02-190-XP25-SP06-02	●	19.0	25	32	38	60	56	116			
ZD02-195-XP25-SP06-02	●	19.5	25	32	39	61	56	117			
ZD02-200-XP25-SP06-02	●	20.0	25	32	40	63	56	119			
ZD02-205-XP25-SP06-02	●	20.5	25	32	41	64	56	120			
ZD02-210-XP25-SP06-02	●	21.0	25	45	42	65	56	121			
ZD02-215-XP25-SP06-02	●	21.5	25	45	43	66	56	122			
ZD02-220-XP25-SP07-02	●	22.0	25	45	44	67	56	123	SP□□07T3□□	L0655SSTX5.5-3.6P	T-8
ZD02-225-XP25-SP07-02	●	22.5	25	45	45	68	56	124			
ZD02-230-XP25-SP07-02	●	23.0	25	45	46	69	56	125			
ZD02-235-XP25-SP07-02	●	23.5	25	45	47	70	56	126			
ZD02-240-XP25-SP07-02	●	24.0	25	45	48	71	56	127			
ZD02-245-XP25-SP07-02	●	24.5	25	45	49	72	56	128			
ZD02-250-XP32-SP07-02	●	25.0	32	55	50	81	60	141			
ZD02-255-XP32-SP07-02	●	25.5	32	55	51	82	60	142			
ZD02-260-XP32-SP07-02	●	26.0	32	55	52	83	60	143			
ZD02-265-XP32-SP07-02	●	26.5	32	55	53	84	60	144			
ZD02-270-XP32-SP07-02	●	27.0	32	55	54	85	60	145			
ZD02-275-XP32-SP09-02	●	27.5	32	55	55	86	60	146	SP□□0904□□	L0900SSTX3.5-5.7P	T-15
ZD02-280-XP32-SP09-02	●	28.0	32	55	56	87	60	147			
ZD02-285-XP32-SP09-02	●	28.5	32	55	57	88	60	148			
ZD02-290-XP32-SP09-02	●	29.0	32	55	58	89	60	149			
ZD02-295-XP32-SP09-02	●	29.5	32	55	59	90	60	150			
ZD02-300-XP32-SP09-02	●	30.0	32	55	60	91	60	151			
ZD02-305-XP32-SP09-02	●	30.5	32	55	61	92	60	152			

High Speed Drill

2D SP



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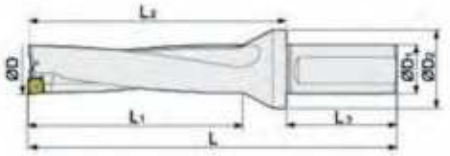
Designation	Stock	Size							Insert	Spare parts	
		D	D1	D2	L1	L2	L3	L			
ZD02-310-XP32-SP09-02	●	31.0	32	55	62	93	60	153	SP□□0904□□	L0900SSTX3.5-5.7P	T-15
ZD02-315-XP32-SP09-02	●	31.5	32	55	63	94	60	154			
ZD02-320-XP32-SP09-02	●	32.0	32	55	64	95	60	155			
ZD02-325-XP32-SP09-02	●	32.5	32	55	65	96	60	156			
ZD02-330-XP32-SP09-02	●	33.0	32	55	66	97	60	157			
ZD02-335-XP32-SP11-02	●	33.5	32	55	67	98	60	158	SP□□1104□□	L1060SSTX4.0-5.7P	T-15
ZD02-340-XP32-SP11-02	●	34.0	32	55	68	99	60	159			
ZD02-345-XP32-SP11-02	●	34.5	32	55	69	100	60	160			
ZD02-350-XP32-SP11-02	●	35.0	32	55	70	101	60	161			
ZD02-355-XP32-SP11-02	●	35.5	32	55	71	102	60	162			
ZD02-360-XP32-SP11-02	●	36.0	32	55	72	103	60	163			
ZD02-365-XP32-SP11-02	●	36.5	32	55	73	104	60	164			
ZD02-370-XP32-SP11-02	●	37.0	32	55	74	105	60	165			
ZD02-375-XP32-SP11-02	●	37.5	32	55	75	106	60	166			
ZD02-380-XP32-SP11-02	●	38.0	32	55	76	107	60	167			
ZD02-385-XP32-SP11-02	●	38.5	32	55	77	108	60	168			
ZD02-390-XP32-SP11-02	●	39.0	32	55	78	109	60	169			
ZD02-395-XP32-SP11-02	●	39.5	32	55	79	110	60	170			
ZD02-400-XP32-SP11-02	●	40.0	32	55	80	111	60	171			
ZD02-410-XP32-SP14-02	●	41.0	32	55	82	113	60	173	SP□□1405□□	L1250SSTX5.0-7.0P	T-20
ZD02-420-XP32-SP14-02	●	42.0	32	55	84	115	60	175			
ZD02-430-XP40-SP14-02	●	43.0	40	60	86	121	70	191			
ZD02-440-XP40-SP14-02	●	44.0	40	60	88	123	70	193			
ZD02-450-XP40-SP14-02	●	45.0	40	60	90	125	70	195			
ZD02-460-XP40-SP14-02	●	46.0	40	60	92	127	70	197			
ZD02-470-XP40-SP14-02	●	47.0	40	60	94	129	70	199			
ZD02-480-XP40-SP14-02	●	48.0	40	60	96	131	70	201			
ZD02-490-XP40-SP14-02	●	49.0	40	60	98	133	70	203			
ZD02-500-XP40-SP14-02	●	50.0	40	60	100	135	70	205			
ZD02-510-XP40-SP14-02	●	51.0	40	70	102	137	70	207			
ZD02-520-XP40-SP09-04	●	52.0	40	70	104	139	70	209	SP□□0904□□	L0900SSTX3.5-5.7P	T-15
ZD02-530-XP40-SP09-04	●	53.0	40	70	106	141	70	211			
ZD02-540-XP40-SP09-04	●	54.0	40	70	108	143	70	213			
ZD02-550-XP40-SP09-04	●	55.0	40	70	110	145	70	215			
ZD02-560-XP40-SP09-04	●	56.0	40	70	112	147	70	217			
ZD02-570-XP40-SP09-04	●	57.0	40	70	114	149	70	219			
ZD02-580-XP40-SP09-04	●	58.0	40	70	116	151	70	221			
ZD02-590-XP40-SP09-04	●	59.0	40	70	118	153	70	223			
ZD02-600-XP40-SP09-04	●	60.0	40	70	120	155	70	225			

3D SP



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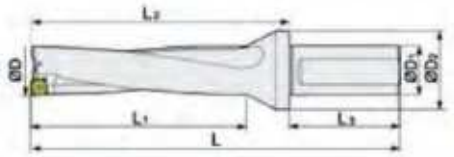
Designation	Stock	Size							Insert	Spare parts	
		D	D1	D2	L1	L2	L3	L			
ZD03-100-XP16-SP04-02	●	10.0	16	20	30.0	48	48	98	SP□□040202	L0455SSTX1.8-2.7P	T-6
ZD03-105-XP16-SP04-02	●	10.5	16	20	31.5	50	48	100			
ZD03-110-XP16-SP04-02	●	11.0	16	20	33.0	51	48	101			
ZD03-115-XP16-SP04-02	●	11.5	16	20	34.5	52	48	102			
ZD03-120-XP20-SP04-02	●	12.0	20	25	36.0	53	50	103			
ZD03-125-XP20-SP04-02	●	12.5	20	25	37.5	55	50	105			
ZD03-130-XP25-SP05-02	●	13.0	25	32	39.0	61	56	117	SP□□0502□□	L0420SSTX2.0-2.8P	T-6
ZD03-135-XP25-SP05-02	●	13.5	25	32	40.5	63	56	119			
ZD03-140-XP25-SP05-02	●	14.0	25	32	12.0	64	56	120			
ZD03-145-XP25-SP05-02	●	14.5	25	32	43.5	66	56	122			
ZD03-150-XP25-SP05-02	●	15.0	25	32	45.0	67	56	123			
ZD03-155-XP25-SP06-02	●	15.5	25	32	16.5	69	56	125	SP□□0602□□	L0560SSTX2.2-3.0P	T-6
ZD03-160-XP25-SP06-02	●	16.0	20	25	48.0	70	56	126			
ZD03-165-XP25-SP06-02	●	16.5	20	25	49.5	72	56	128			
ZD03-170-XP25-SP06-02	●	17.0	25	32	51.0	73	56	129			
ZD03-175-XP25-SP06-02	●	17.5	25	32	52.5	75	56	131			
ZD03-180-XP25-SP06-02	●	18.0	25	32	54.0	79	56	132			
ZD03-185-XP25-SP06-02	●	18.5	25	32	55.5	78	56	134			
ZD03-190-XP25-SP06-02	●	19.0	25	32	57.0	79	56	135			
ZD03-195-XP25-SP06-02	●	19.5	25	32	58.5	81	56	137			
ZD03-200-XP25-SP06-02	●	20.0	25	32	60.0	82	56	138			
ZD03-205-XP25-SP06-02	●	20.5	25	32	61.5	84	56	140			
ZD03-210-XP25-SP06-02	●	21.0	25	45	63.0	85	56	141			
ZD03-215-XP25-SP06-02	●	21.5	25	45	64.5	87	56	143			
ZD03-220-XP25-SP07-02	●	22.0	25	45	66.0	88	56	144	SP□□07T3□□	L0655SSTX5.5-3.6P	T-8
ZD03-225-XP25-SP07-02	●	22.5	25	45	67.5	90	56	146			
ZD03-230-XP25-SP07-02	●	23.0	25	45	69.0	91	56	147			
ZD03-235-XP25-SP07-02	●	23.5	25	45	70.5	93	56	149			
ZD03-240-XP25-SP07-02	●	24.0	25	45	72.0	94	56	150			
ZD03-245-XP25-SP07-02	●	24.5	25	45	73.5	96	56	152			
ZD03-250-XP32-SP07-02	●	25.0	32	55	75.0	106	60	166			
ZD03-255-XP32-SP07-02	●	25.5	32	55	76.5	108	60	168			
ZD03-260-XP32-SP07-02	●	26.0	32	55	78.0	109	60	169			
ZD03-265-XP32-SP07-02	●	26.5	32	55	79.5	111	60	171			
ZD03-270-XP32-SP07-02	●	27.0	32	55	81.0	112	60	172			
ZD03-275-XP32-SP09-02	●	27.5	32	55	82.5	114	60	174	SP□□0904□□	L0900SSTX3.5-5.7P	T-15
ZD03-280-XP32-SP09-02	●	28.0	32	55	84.0	115	60	175			
ZD03-285-XP32-SP09-02	●	28.5	32	55	85.5	117	60	177			
ZD03-290-XP32-SP09-02	●	29.0	32	55	87.0	118	60	178			
ZD03-295-XP32-SP09-02	●	29.5	32	55	88.5	120	60	180			
ZD03-300-XP32-SP09-02	●	30.0	32	55	90.0	121	60	181			
ZD03-305-XP32-SP09-02	●	30.5	32	55	91.5	123	60	183			

High Speed Drill

3D SP



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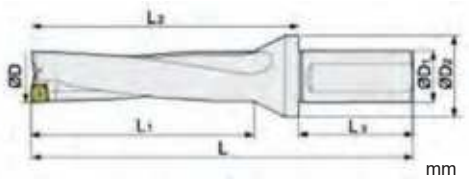
Designation	Stock	Size							Insert	Spare parts	
		D	D1	D2	L1	L2	L3	L			
ZD03-310-XP32-SP09-02	●	31.0	32	55	93.0	124	60	184	SP□□0904□□	L0900SSTX3.5-5.7P	T-15
ZD03-315-XP32-SP09-02	●	31.5	32	55	94.5	126	60	186			
ZD03-320-XP32-SP09-02	●	32.0	32	55	96.0	127	60	187			
ZD03-325-XP32-SP09-02	●	32.5	32	55	97.5	129	60	189			
ZD03-330-XP32-SP09-02	●	33.0	32	55	99.0	130	60	190			
ZD03-335-XP32-SP11-02	●	33.5	32	55	100.5	132	60	192	SP□□1104□□	L1060SSTX4.0-5.7P	T-15
ZD03-340-XP32-SP11-02	●	34.0	32	55	102.0	133	60	193			
ZD03-345-XP32-SP11-02	●	34.5	32	55	103.5	135	60	195			
ZD03-350-XP32-SP11-02	●	35.0	32	55	105.0	136	60	196			
ZD03-355-XP32-SP11-02	●	35.5	32	55	106.5	138	60	198			
ZD03-360-XP32-SP11-02	●	36.0	32	55	108.0	139	60	199			
ZD03-365-XP32-SP11-02	●	36.5	32	55	109.5	141	60	201			
ZD03-370-XP32-SP11-02	●	37.0	32	55	111.0	142	60	202			
ZD03-375-XP32-SP11-02	●	37.5	32	55	112.5	144	60	204			
ZD03-380-XP32-SP11-02	●	38.0	32	55	114.0	145	60	205			
ZD03-385-XP32-SP11-02	●	38.5	32	55	115.5	147	60	207			
ZD03-390-XP32-SP11-02	●	39.0	32	55	117.0	148	60	208			
ZD03-395-XP32-SP11-02	●	39.5	32	55	118.5	150	60	210			
ZD03-400-XP32-SP11-02	●	40.0	32	55	120.0	151	60	211			
ZD03-410-XP32-SP14-02	●	41.0	32	55	123.0	154	60	214	SP□□1405□□	L1250SSTX5.0-7.0P	T-20
ZD03-420-XP32-SP14-02	●	42.0	32	55	126.0	157	60	217			
ZD03-430-XP40-SP14-02	●	43.0	40	60	129.0	164	70	234			
ZD03-440-XP40-SP14-02	●	44.0	40	60	132.0	167	70	237			
ZD03-450-XP40-SP14-02	●	45.0	40	60	135.0	170	70	240			
ZD03-460-XP40-SP14-02	●	46.0	40	60	138.0	173	70	243			
ZD03-470-XP40-SP14-02	●	47.0	40	60	141.0	176	70	246			
ZD03-480-XP40-SP14-02	●	48.0	40	60	144.0	179	70	249			
ZD03-490-XP40-SP14-02	●	49.0	40	60	147.0	182	70	252			
ZD03-500-XP40-SP14-02	●	50.0	40	60	150.0	185	70	255			
ZD03-510-XP40-SP14-02	●	51.0	40	70	153.0	188	70	258			
ZD03-520-XP40-SP09-04	●	52.0	40	70	156.0	191	70	261	SP□□0904□□	L0900SSTX3.5-5.7P	T-15
ZD03-530-XP40-SP09-04	●	53.0	40	70	159.0	194	70	264			
ZD03-540-XP40-SP09-04	●	54.0	40	70	162.0	197	70	267			
ZD03-550-XP40-SP09-04	●	55.0	40	70	165.0	200	70	270			
ZD03-560-XP40-SP09-04	●	56.0	40	70	168.0	203	70	273			
ZD03-570-XP40-SP09-04	●	57.0	40	70	171.0	206	70	276			
ZD03-580-XP40-SP09-04	●	58.0	40	70	174.0	209	70	279			
ZD03-590-XP40-SP09-04	●	59.0	40	70	177.0	212	70	282			
ZD03-600-XP40-SP09-04	●	60.0	40	70	180.0	215	70	285			

4D SP



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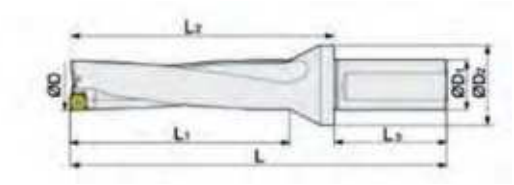
Designation	Stock	Size							Insert	Spare parts	
		D	D1	D2	L1	L2	L3	L			
ZD04-100-XP20-SP04-02	●	10.0	16	-	-	-	-	-	SP□□040202	L0455SSTX1.8-2.7P	T-6
ZD04-100-XP20-SP04-02	●	10.0	20	-	-	-	-	-			
ZD04-105-XP20-SP04-02	●	10.5	20	-	-	-	-	-			
ZD04-110-XP20-SP04-02	●	11.0	20	-	-	-	-	-			
ZD04-115-XP20-SP04-02	●	11.5	20	-	-	-	-	-			
ZD04-120-XP20-SP04-02	●	12.0	20	25	48	65	50	115			
ZD04-125-XP20-SP04-02	●	12.5	20	25	50	67	50	117			
ZD04-130-XP25-SP05-02	●	13.0	25	32	52	74	56	130	SP□□0502□□	L0420SSTX2.0-2.8P	T-6
ZD04-135-XP25-SP05-02	●	13.5	25	32	54	76	56	132			
ZD04-140-XP25-SP05-02	●	14.0	25	32	56	78	56	134			
ZD04-145-XP25-SP05-02	●	14.5	25	32	58	80	56	136			
ZD04-150-XP25-SP05-02	●	15.0	25	32	60	82	56	138	SP□□0602□□	L0560SSTX2.2-3.0P	T-6
ZD04-155-XP25-SP06-02	●	15.5	25	32	62	84	56	140			
ZD04-160-XP25-SP06-02	●	16.0	25	32	64	86	56	142			
ZD04-165-XP25-SP06-02	●	16.5	25	32	66	88	56	144			
ZD04-170-XP25-SP06-02	●	17.0	25	32	68	90	56	146			
ZD04-175-XP25-SP06-02	●	17.5	25	32	70	92	56	148			
ZD04-180-XP25-SP06-02	●	18.0	25	32	72	94	56	150			
ZD04-185-XP25-SP06-02	●	18.5	25	32	74	96	56	152			
ZD04-190-XP25-SP06-02	●	19.0	25	32	76	98	56	154			
ZD04-195-XP25-SP06-02	●	19.5	25	32	78	100	56	156			
ZD04-200-XP25-SP06-02	●	20.0	25	32	80	102	56	158			
ZD04-205-XP25-SP06-02	●	20.5	25	32	82	104	56	160			
ZD04-210-XP25-SP06-02	●	21.0	25	45	84	106	56	162			
ZD04-215-XP25-SP06-02	●	21.5	25	45	86	108	56	164			
ZD04-220-XP25-SP07-02	●	22.0	25	45	88	110	56	166	SP□□07T3□□	L0655SSTX5.5-3.6P	T-8
ZD04-225-XP25-SP07-02	●	22.5	25	45	90	112	56	168			
ZD04-230-XP25-SP07-02	●	23.0	25	45	92	114	56	170			
ZD04-235-XP25-SP07-02	●	23.5	25	45	94	116	56	172			
ZD04-240-XP25-SP07-02	●	24.0	25	45	96	118	56	174			
ZD04-245-XP25-SP07-02	●	24.5	25	45	98	120	56	176			
ZD04-250-XP25-SP07-02	●	22.0	32	55	100	131	60	191			
ZD04-255-XP25-SP07-02	●	25.5	32	55	102	133	60	193			
ZD04-260-XP25-SP07-02	●	26.0	32	55	104	135	60	195			
ZD04-265-XP25-SP07-02	●	26.5	32	55	106	137	60	197			
ZD04-270-XP25-SP07-02	●	27.0	32	55	108	139	60	199			
ZD04-275-XP32-SP09-02	●	27.5	32	55	110	141	60	201	SP□□0904□□	L0900SSTX3.5-5.7P	T-15
ZD04-280-XP32-SP09-02	●	28.0	32	55	112	143	60	203			
ZD04-285-XP32-SP09-02	●	28.5	32	55	114	145	60	205			
ZD04-290-XP32-SP09-02	●	29.0	32	55	116	147	60	207			
ZD04-295-XP32-SP09-02	●	29.5	32	55	118	149	60	209			
ZD04-300-XP32-SP09-02	●	30.0	32	55	120	151	60	211			
ZD04-305-XP32-SP09-02	●	30.5	32	55	122	153	60	213			

High Speed Drill

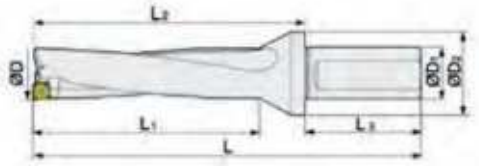
4D SP



mm

Designation	Stock	Size							Insert	Spare parts	
		D	D1	D2	L1	L2	L3	L			
ZD04-310-XP32-SP09-02	●	31.0	32	55	124	155	60	215	SP□□0904□□	L0900SSTX3.5-5.7P	T-15
ZD04-315-XP32-SP09-02	●	31.5	32	55	126	157	60	217			
ZD04-320-XP32-SP09-02	●	32.0	32	55	128	159	60	219			
ZD04-325-XP32-SP09-02	●	32.5	32	55	130	161	60	221			
ZD04-330-XP32-SP09-02	●	33.0	32	55	132	163	60	223			
ZD04-335-XP32-SP11-02	●	33.5	32	55	134	165	60	225	SP□□1104□□	L1060SSTX4.0-5.7P	T-15
ZD04-340-XP32-SP11-02	●	34.0	32	55	136	167	60	227			
ZD04-345-XP32-SP11-02	●	34.5	32	55	138	169	60	229			
ZD04-350-XP32-SP11-02	●	35.0	32	55	140	171	60	231			
ZD04-355-XP32-SP11-02	●	35.5	32	55	142	173	60	233			
ZD04-360-XP32-SP11-02	●	36.0	32	55	144	175	60	235			
ZD04-365-XP32-SP11-02	●	36.5	32	55	146	177	60	237			
ZD04-370-XP32-SP11-02	●	37.0	32	55	148	179	60	239			
ZD04-375-XP32-SP11-02	●	37.5	32	55	150	181	60	241			
ZD04-380-XP32-SP11-02	●	38.0	32	55	152	183	60	243			
ZD04-385-XP32-SP11-02	●	38.5	32	55	154	185	60	245			
ZD04-390-XP32-SP11-02	●	39.0	32	55	156	187	60	247			
ZD04-395-XP32-SP11-02	●	39.5	32	55	158	189	60	249			
ZD04-400-XP32-SP11-02	●	40.0	32	55	160	191	60	251			
ZD04-410-XP32-SP14-02	●	41.0	32	55	164	195	60	255	SP□□1405□□	L1250SSTX5.0-7.0P	T-20
ZD04-420-XP32-SP14-02	●	42.0	32	55	168	199	60	259			
ZD04-430-XP40-SP14-02	●	43.0	40	60	172	207	70	277			
ZD04-440-XP40-SP14-02	●	44.0	40	60	176	211	70	281			
ZD04-450-XP40-SP14-02	●	45.0	40	60	180	215	70	285			
ZD04-460-XP40-SP14-02	●	46.0	40	60	184	219	70	289			
ZD04-470-XP40-SP14-02	●	47.0	40	60	188	223	70	293			
ZD04-480-XP40-SP14-02	●	48.0	40	60	192	227	70	297			
ZD04-490-XP40-SP14-02	●	49.0	40	60	196	231	70	301			
ZD04-500-XP40-SP14-02	●	50.0	40	60	200	235	70	305			
ZD04-510-XP40-SP14-02	●	51.0	40	70	204	239	70	309			
ZD04-520-XP40-SP09-04	●	52.0	40	70	208	243	70	313	SP□□0904□□	L0900SSTX3.5-5.7P	T-15
ZD04-530-XP40-SP09-04	●	53.0	40	70	212	247	70	317			
ZD04-540-XP40-SP09-04	●	54.0	40	70	216	251	70	321			
ZD04-550-XP40-SP09-04	●	55.0	40	70	220	255	70	325			
ZD04-560-XP40-SP09-04	●	56.0	40	70	224	259	70	329			
ZD04-570-XP40-SP09-04	●	57.0	40	70	228	263	70	333			
ZD04-580-XP40-SP09-04	●	58.0	40	70	232	267	70	337			
ZD04-590-XP40-SP09-04	●	59.0	40	70	236	271	70	341			
ZD04-600-XP40-SP09-04	●	60.0	40	70	240	275	70	345			

5D SP

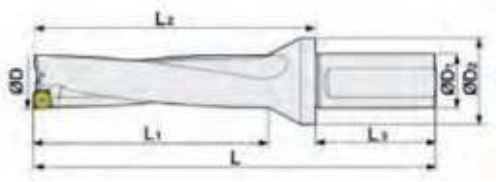


mm

Designation	Stock	Size							Insert	Spare parts	
		D	D1	D2	L1	L2	L3	L			
ZD05-140-XP25-SP06-02	●	14.0	25	32	70.0	93	56	149	SP□□0502□□	L0420SSTX2.0-2.8P	T-6
ZD05-150-XP25-SP06-02	●	15.0	25	32	75.0	98	56	154			
ZD05-160-XP25-SP06-02	●	16.0	25	32	80.0	103	56	159	SP□□0602□□	L0560SSTX2.2-3.0P	
ZD05-170-XP25-SP06-02	●	17.0	25	32	85.0	109	56	164			
ZD05-180-XP25-SP06-02	●	18.0	25	32	90.0	113	56	169			
ZD05-185-XP25-SP06-02	●	18.5	25	32	92.5	116	56	172			
ZD05-190-XP25-SP06-02	●	19.0	25	32	95.0	118	56	174			
ZD05-195-XP25-SP06-02	●	19.5	25	32	95.5	121	56	177			
ZD05-200-XP25-SP06-02	●	20.0	25	32	100.0	123	56	179			
ZD05-205-XP25-SP06-02	●	20.5	25	32	102.5	126	56	182			
ZD05-210-XP25-SP06-02	●	21.0	25	45	105.0	128	56	184			
ZD05-215-XP25-SP06-02	●	21.5	25	45	107.5	131	56	187			
ZD05-220-XP25-SP07-02	●	22.0	25	45	110.0	133	56	189	SP□□07T3□□	L0655SSTX3.5-5.7P	T-8
ZD05-225-XP25-SP07-02	●	22.5	25	45	112.5	136	56	192			
ZD05-230-XP25-SP07-02	●	23.0	25	45	115.0	138	56	194			
ZD05-235-XP25-SP07-02	●	23.5	25	45	117.5	141	56	197			
ZD05-240-XP25-SP07-02	●	24.0	25	45	120.0	143	56	199			
ZD05-245-XP25-SP07-02	●	24.5	25	45	122.5	146	56	202			
ZD05-250-XP32-SP07-02	●	25.0	32	55	125.0	156	60	216			
ZD05-255-XP32-SP07-02	●	25.5	32	55	127.5	159	60	219			
ZD05-260-XP32-SP07-02	●	26.0	32	55	130.0	161	60	221			
ZD05-265-XP32-SP07-02	●	26.5	32	55	132.5	164	60	224			
ZD05-270-XP32-SP07-02	●	27.0	32	55	135.0	166	60	226			
ZD05-275-XP32-SP09-02	●	27.5	32	55	137.5	169	60	229	SP□□0904□□	L0900SSTX3.5-5.7P	T-15
ZD05-280-XP32-SP09-02	●	28.0	32	55	140.0	171	60	231			
ZD05-285-XP32-SP09-02	●	28.5	32	55	142.5	174	60	234			
ZD05-290-XP32-SP09-02	●	29.0	32	55	145.0	176	60	236			
ZD05-295-XP32-SP09-02	●	29.5	32	55	147.5	179	60	239			
ZD05-300-XP32-SP09-02	●	30.0	32	55	150.0	181	60	241			
ZD05-305-XP32-SP09-02	●	30.5	32	55	152.5	184	60	244			
ZD05-310-XP32-SP09-02	●	31.0	32	55	155.0	186	60	246			
ZD05-315-XP32-SP09-02	●	31.5	32	55	157.5	189	60	249			
ZD05-320-XP32-SP09-02	●	32.0	32	55	160.0	191	60	251			
ZD05-325-XP32-SP09-02	●	32.5	32	55	162.5	194	60	254			
ZD05-330-XP32-SP09-02	●	33.0	32	55	165.0	196	60	256			
ZD05-335-XP32-SP11-02	●	33.5	32	55	167.5	199	60	259	SP□□1104□□	L1060SSTX4.0-5.7P	T-15
ZD05-340-XP32-SP11-02	●	34.0	32	55	170.0	201	60	261			
ZD05-345-XP32-SP11-02	●	34.5	32	55	172.5	204	60	264			
ZD05-350-XP32-SP11-02	●	35.0	32	55	175.0	206	60	266			
ZD05-355-XP32-SP11-02	●	35.5	32	55	177.5	209	60	269			
ZD05-360-XP32-SP11-02	●	36.0	32	55	180.0	211	60	271			
ZD05-365-XP32-SP11-02	●	36.5	32	55	182.5	214	60	274			
ZD05-370-XP32-SP11-02	●	37.0	32	55	185.0	216	60	276			
ZD05-375-XP32-SP11-02	●	37.5	32	55	187.5	219	60	279			

High Speed Drill

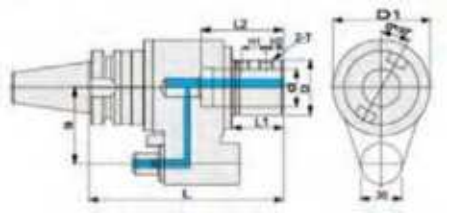
5D SP



mm

Designation	Stock	Size							Insert	Spare parts	
		D	D1	D2	L1	L2	L3	L			
ZD05-380-XP32-SP11-02	●	38.0	32	55	190.0	221	60	281	SP□□1104□□	L1060SSTX4.0-5.7P	T-15
ZD05-385-XP32-SP11-02	●	38.5	32	55	192.5	224	60	284			
ZD05-390-XP32-SP11-02	●	39.0	32	55	195.0	226	60	286			
ZD05-395-XP32-SP11-02	●	39.5	32	55	197.5	229	60	289			
ZD05-400-XP32-SP11-02	●	40.0	32	55	200.0	231	60	291			
ZD05-410-XP32-SP14-02	●	41.0	32	55	205.0	236	60	296	SP□□1405□□	L1250SSTX5.0-7.0P	T-20
ZD05-420-XP32-SP14-02	●	42.0	32	55	210.0	241	60	301			
ZD05-430-XP40-SP14-02	●	43.0	40	60	215.0	250	70	320			
ZD05-440-XP40-SP14-02	●	44.0	40	60	220.0	255	70	325			
ZD05-450-XP40-SP14-02	●	45.0	40	60	225.0	230	70	330			
ZD05-460-XP40-SP14-02	●	46.0	40	60	230.0	265	70	335			
ZD05-470-XP40-SP14-02	●	47.0	40	60	235.0	270	70	340			
ZD05-480-XP40-SP14-02	●	48.0	40	60	240.0	275	70	345			
ZD05-490-XP40-SP14-02	●	49.0	40	60	245.0	280	70	350			
ZD05-500-XP40-SP14-02	●	50.0	40	60	250.0	285	70	355			
ZD05-510-XP40-SP14-02	●	51.0	40	70	255.0	290	70	360			
ZD05-520-XP40-SP09-04	●	52.0	40	70	260.0	295	70	365	SP□□0904□□	L0900SSTX3.5-5.7P	T-15
ZD05-530-XP40-SP09-04	●	53.0	40	70	265.0	300	70	370			
ZD05-540-XP40-SP09-04	●	54.0	40	70	270.0	305	70	375			
ZD05-550-XP40-SP09-04	●	55.0	40	70	275.0	310	70	380			
ZD05-560-XP40-SP09-04	●	56.0	40	70	280.0	315	70	385			
ZD05-570-XP40-SP09-04	●	57.0	40	70	285.0	320	70	390			
ZD05-580-XP40-SP09-04	●	58.0	40	70	290.0	325	70	395			
ZD05-590-XP40-SP09-04	●	59.0	40	70	295.0	330	70	400			
ZD05-600-XP40-SP09-04	●	60.0	40	70	300.0	335	70	405			

OIL-FEED HOLDER BT

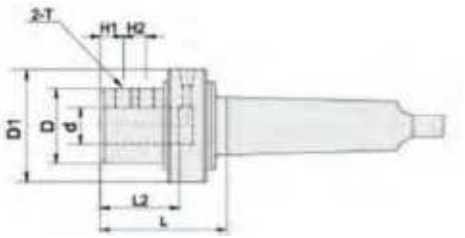


mm

Designation	Designation(mm)										
	D1	D	d	L1	L2	L	H1	H2	B	T	Kg
BT40-OSL20-165	82	46.5	20	37.5	50	165	-	25	60/65	M12x1.75	3.5
BT40-OSL25-165	82	47.0	25	50.0	60	165	20	15	60/65	M12x1.75	3.5
BT40-OSL32-165	82	56.0	32	50.0	70	165	20	15	60/65	M12x1.75	5.2
BT40-OSL40-165	90	56.0	40	50.0	80	165	25	15	60/65	M12x1.75	6.0
BT50-OSL25-165	98	50.0	25	50.0	60	165	20	15	80/82	M16x2.00	7.5
BT50-OSL32-165	98	60.0	32	50.0	70	165	20	15	80/82	M16x2.00	7.8
BT50-OSL40-165	105	62.0	40	50.0	80	170	25	15	80/82	M14x2.00	8.5

※ Notice: 1.Please confirm the “B” size before ordering.
2.Please confirm the machining center with installation high pressure pump before use.

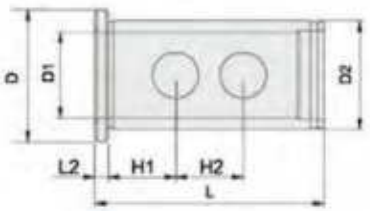
OIL-FEED HOLDER MTA



mm

Designation	Designation(mm)						
	D1	D	d	H1	H2	L2	L
MTA4-OSL32	92	60	32	15	18	60	127
MTA5-OSL32	92	60	32	15	18	60	127
MTA5-OSL40	98	70	40	15	18	65	127
MTA6-OSL32	92	60	32	15	18	60	127
MTA6-OSL40	98	70	40	15	18	65	127

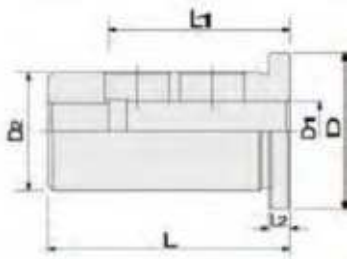
REDUCING SLEEVE



mm

Designation	Designation(mm)						
	D	D1	D2	L	L2	H1	H2
COS 32-16	53	16	32	65	10	20	15
COS 32-20	53	20	32	65	10	20	15
COS 32-25	53	25	32	65	10	20	15
COS 40-16	63	16	40	75	10	20	15
COS 40-20	63	20	40	75	10	20	15
COS 40-25	63	25	40	75	10	20	15
COS 40-30	63	32	40	75	10	20	15

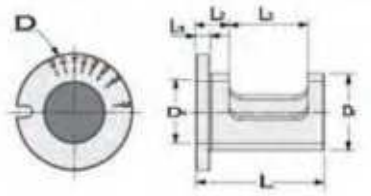
REDUCING SLEEVE



mm

Designation	Designation(mm)					
	D	D1	D2	L	L1	L2
OSL 32-20	49	20	32	62	54.5	5
OSL 32-25	49	25	32	62	54.5	5
OSL 40-20	58	20	40	65	55.5	6
OSL 40-25	58	25	40	65	55.5	6
OSL 40-32	58	32	40	65	55.5	6
OSL 50-25	65	25	50	70	55.5	6
OSL 50-32	65	32	50	70	55.5	6
OSL 50-40	65	40	50	70	55.5	6

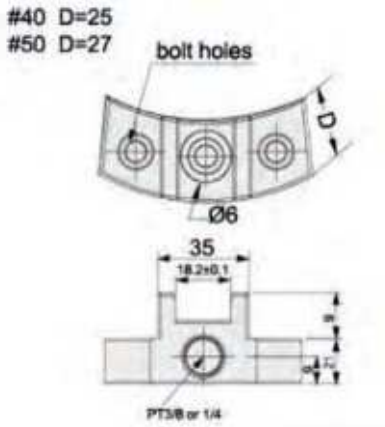
ECCENTRIC SLEEVE



mm

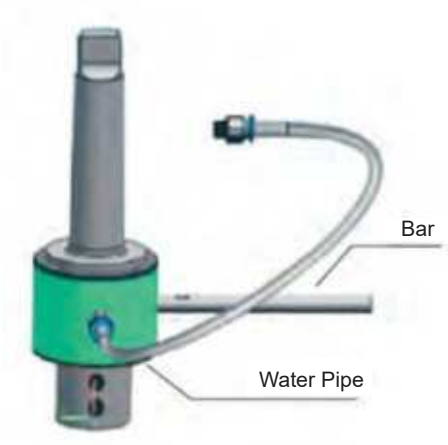
Designation	Designation(mm)							adjustment range for Processing diameter	adjustment range for Center height
	D	D1	D2	L	L1	L2	L3		
CE 20-25	41	20	25	48	6	11	33	+0.4-0.2	+0.2-0.15
CE 25-32	49	25	32	60	6	11	45	+0.4-0.2	+0.2-0.15
CE 32-40	58	32	40	65	6	11	50	+0.4-0.2	+0.2-0.15
CE 40-50	68	40	50	76	6	11	61	+0.4-0.2	+0.2-0.2

POSITIONING BLOCK

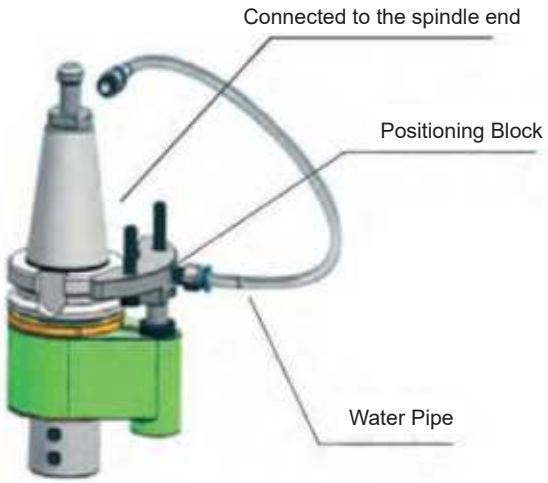


Technical Information for Spade Drill

Positionning Block



※ Schematic diagram of Morse handle installation



※ BT handle installation diagram

Reduce your drilling cost by high precision grinding and superior clamping precision

Original Spade Drill

Spade drill is the new generation product replacement of the traditional twist drills, can be applied to CNC machines and various traditional equipments such as vertical driller and radial drilling machines.

•12 holders cover a range of 9.5mm to 114mm.

•Through coolant optimizes chip evacuation and improved tool performance.

The reverse double threaded hole and groove design of the insert's connections can make the insert clamping more stable, ensure the machining accuracy and the stability of the inserts.

•Processing different materials of the workpieces chose different grade of inserts.Inserts are made of cobalt high speed steel, powder high speed steel and carbide cement, but recommend the inserts made of powder HSS & cobalt HSS for vertical driller and radial drilling machines. These traditional machines have low speed and large gap, it is easy to cause carbide cement chipping.

•Inserts of spade drill are combined with various coating, improved 3-5 times longer tool life than normal twist drills, overall efficiency of drilling double improved.

•Corner clip allows for effective heat dispersion and increased tool life

•New XR edge design can better reduce the cutting resistance, and self-centering point eliminates center drilling

•Ground back location ensures accurate positioning

Features

Two back flank surface

◎ Reduce the friction with the workpiece.
◎ Better self-centering.
◎ Reduce the axial resistance

XR chisel edge regrinding

◎ Improve the strenght of cutting edges.
◎ Increase the stability

Technical Information for Spade Drill

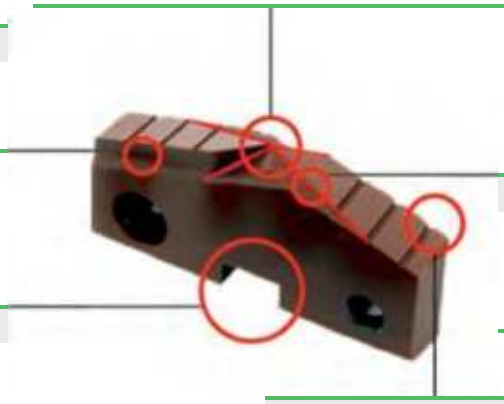
Features

Core drilling

◎ Thinner core drilling, which reduce 20% axial resistance compared with normal drilling products.
◎ Better self-centering

Core drilling

◎ Better chip flow.
◎ Reduce drilling torque.



Chip breaker

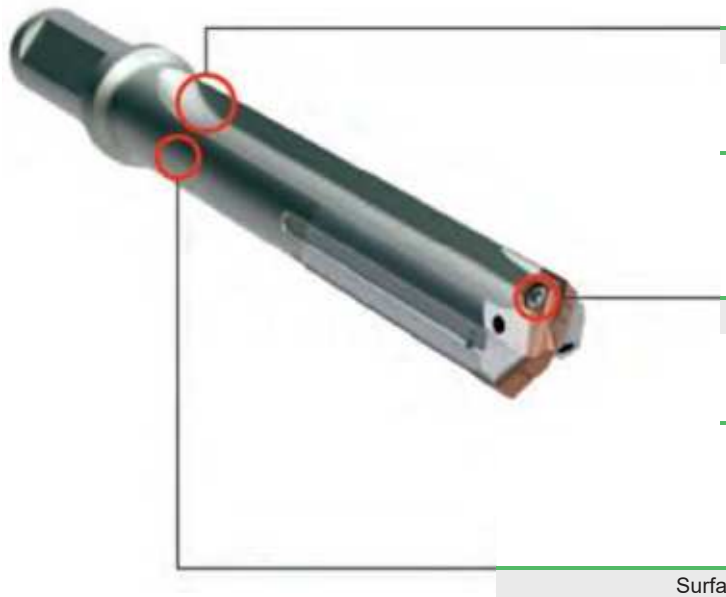
◎ Improve the strenght of cutting edges.
◎ Increase the stability

Location groove

◎ ensure the accuracy of the radial direction

Chip dividing groove

◎ Better chip removal. reduce the cutting width and drilling torque.



Flute with excellent chip evacuation

◎ better chip flow.

◎ easy to change the insert.

Surface treatment

◎ Superior rigidity and wear resistance of holder.

Key point for application

I.Correct selection of spade drill

1. When selecting spade drill, users should get the connection type of arbor shank according to spindle connection type of the equipment used. Generally, the spindle connection type of ordinary equipment such as bench drill, vertical drill, radial drilling machine, etc. is in taper shank mode, while as to the numerically controlled equipment, side fixed type flange shank, straight shank and taper shank can be selected according to spindle type of the lathe.

2. Users should determine the maximum drilling length of arbor according to the depth of the machined hole. Usually, the selection of arbor shall follow the principle of the minimum arbor length suitable to the thickness of machining workpiece, so as to improve the drilling rigidity of arbor and give full play to the drilling effects of spade drill to the largest effect.

3. Users should determine the equivalent insert's and arbor's diameter, insert' material and coating type according to the hole diameter, material and hardness of the machined workpiece. Generally, the machining hole by spade drills can be controlled within 0.1mm and relatively high machining precision can guarantee users' requirements on hole diameter and tolerance.

II. Correct selection of drilling parameters

Aiming at spade drills of different diameters, the requirement on drilling speed is certainly different. Reasonable drilling speed will directly influence the service life of spade drill. Therefore, it's particularly important to select reasonable drilling speed so that the spade drill can match the drilling & machining material.

1. Selection of drilling speed (please refer to the Drilling Speed Recommendation List)

RPM = (Vc × 1000) / (n × Dia.)
where:
RPM = Revolution per minute (rev/min)
Vc = Cutting speed (m/min)
π =3.1416
Dia. = Diameter of drill (mm)

Vf = fn x RPM (mm/min)
Vf = Feed per minute (mm/min)
fn = Feed per revolution (mm/rev)
RPM = Revolution per minute (rev/min)

Tc = H / (Vf x 60)
where:
Tc = Drilling Time (secs.)
H = Drilling depth (mm)
Vf = Feed per minute (mm/min)

2. Selection of feed speed (please refer to the Drilling Speed Recommendation List).

irons and different scrap irons will change the chip removal performance. Therefore, the control of drilling speed can directly decide the chip removal performance and it's also the decisive factor of the service life os spade drills

If the feed speed is too slow during drilling process, the scrap iron will be too soft to be broken and will twine the arbor. In addition, the excessively slow feed speed will accelerate the abrasion speed of insert. If the feed speed is too fast, the scrap iron is relatively hard, will be removed in fragment shape, and is easy to cause chip blockage and result in tipping, fragmenting. Therefore, it's particularly important to choose appropriate drilling speed.

III. Selection of cooling liqid

(please refer to the Recommendation List for Pressure and Flow of Cooling Liquid)

Reasonable selection of drilling fluid can reduce the drilling force, decrease drilling temperature, reduce the thermal deformation of processing system, prolong the service life of tools, and improve the quality of processing surface, particularly important to choose appropriate drilling speed.

1. Functions of cling liquid

Cooling function: pour the drilling fluid in the processing area and take advantage of thermal conduction, convection, gasification and other means to decrease the processing temperature and reduce the thermal deformation of processing syste. Lubricating function: the drilling liquid can permeate to the tools and between chip and processing surface to form
protective film which can reduce the friction between contact surfaces and improve the quality of processing surface. Chip removal and washing fuctions: it can remove the chip, guide the chip flow direction, and flush the scattered chips on the equipment and processing surface. Antirust function: since the drilling fluid is added antirust additive, it can react with the metal surface to form
protective film. So as to play the functions of antirust and anti-corrosion.

2. Kinds and selection of cooling liquid

*Water", with almost no direct cost, is the rapidest and the most convenient. The water can be supplied as much as you want. However, the indirect cost is the highest. Since it doesn't have antirust & lubricating functions, the cooling effect is not so good. After using the water, the life of drill bit will be influenced, the drilling machine & drill bit will be oxidized quickly, and the machine will be damaged quickly. Therefore, it's not recommended to use " water" as cooling liquid. "Oily drilling fluid" can reach the maximum in the aspect of various performances. However, the cost is too high and
it's often used on high-end equipment and is recycled."Emulsified liquid", with lower economic cost and proportion for mixing with water of 1:20, has lubricating and antirust functions, as well as cooling function. It's featured by high acceptability and economical efficiency. Due to rapid speed and high efficiency of spade drill during drilling process, to realize full cooling and improve the
service life of tools, internal cooling method is adopted during the drilling process and there is also certain requirement on the cooling. For example, the drilling pressure of common steel plate (such as Q235, Q345, etc) is 3-4kg, and the flow is about 20-25L/min.

IV. Matters needing attention

1. When selecting the spade drill, it's required to choose sitable connection type and matching arbor and insert according to requirements on equipment and workpeice materials, so as to give full play to the performances of spade drill.

2. Select correct and reasonable cutting parameters in accordance with workpeice material to avoid mismatching spade drill with drilling parameters of twist drill

3. Select appropriate cooling liquid and cooling pressure to improve the drilling quality and life of tools.

4. Prevent violent bump during the cutting and spotting to avoid tipping and influence on life of the insert.

5. Prevent the phenomena such as spindle off and reverse rotation of the equipment during the drilling process for such phenomena amy damage the insert easily.

Holder selection

Technical Information for Spade Drill

Installation diagram

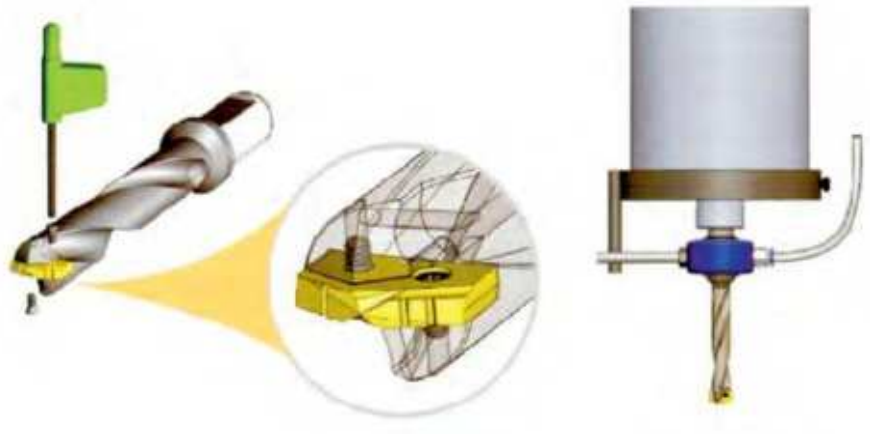
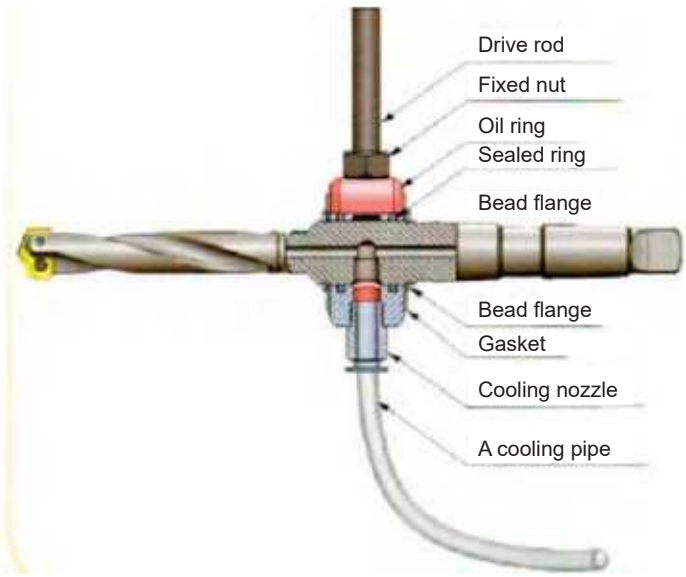


Diagram of outside cooling ⟶ inside cooling
on drilling machine

Schematic diagram of oil ring assembly



Supply ring decomposition of a graph

Using Method

Preparations

To increase the effciency of spade drill, workpieces must be fixed tightly on the fixing frame, in case of the workpieces or drilling machines are with poor rigidity, it will reduce the tool life of spade drill or even damage spade drill.

Coolant

Sufficient coolant supply & pressure is required to increase the quality of the surface of the workpieces and extend tool life. The size ofsolid particles in the coolant fluid should not exceed to micron use coolant filtration to filter the solid particles exceed to micron.

Cautions

1. Use lower feed at the very beginning of drilling and at the moment of going through the holes, this will be hlepful to increase the quality of holes and tool life of the spade drills.
2. Use lower feed when adopting outer coolant supply, if the ratio between length and diameter exceeds 3 times, inner coolant supply will be quite effective.
3. When drilling roughness, slope, cross hole, you need to reduce the cutting speed and feed, at the same time, shorter holders are preferable, or choose different drill points.
4. When chamfering, reduce cutting parameters appropriately and avoid the chip-breaking grooves cut workpieces first.
5. If the rigidity of working condition is poor, tighten the workpieces or reduce cutting parameters.
6. If the color of chips changes during drilling, increase the coolant fluid and pressure, or reduce cutting parameters to be less heat.
7. Check whether the screws are locked tightly to be sure the reliability of insert clamping.
8. It is recommended to replace the insert before it is completely worn out, this can protect the holders, and the insert can be re-grinded. 9. Better to choose shorter holder, ensure the machines are with good rigidity and high power.

The above are the points to be noed, applications on jobsites usually differ, you may meet various problem about tool life, accuracy of holes and so on. Thanks for the interchangeable inserts, which can solve problem by changing inserts and holders. We expect to discuss hole drilling technology wth customers and provide our technology and service to customers in order to increase hole drilling efficiency.

Technical Information for Spade Drill

Code system of holder

SD	10	S	-	48	-	XP	25
1	2	3		4		5	6

1 Spade Drill

SD 10 S - 48 - XP 25

2 Spade Drill

SD 10 S - 48 - XP 25

Connector	Metric	Inch
Y0	9.5-11.0	3/8"-27/64"
Z0	11.5-12.5	7/16"-1/2"
00	13.0-17.5	33/64"-11/16"
05	15.5-17.5	39/64"-11/16"
10	17.6-24.4	11/16"-15/16"
15	22.0-24.4	7/8"-15/16"
20	24.5-35.0	15/16"-13/8"
25	30.0-35.0	13/16"-13/8"
30	35.1-47.9	13/8"-17/8"
35	42.0-47.9	1 21/32"-1 7/8"
40	48.0-65.28	1 29/32"-2 9/16"
45	56.0-65.28	2 7/32"-2 9/16"
50	65.3-89.08	2 7/32"-3 1/2"
70	89.10-114.48	3 1/32"-4 1/2"

3 Flute

SD 10 S - 48 - XP 25

H = Helical

S = Straight

4 Drill depth

SD 10 S - 48 - XP 25

5 Shank type

SD 10 S - 48 - XP 25

XP = Weldon shank

MT = Morse taper shank

6 Shank dia.

SD 10 S - 48 - XP 25

Code system of Insert

SI	-	1	-	0750	-	S2	DF	A
1		2		3		4	5	6

1 Insert of Spade drill

SI - 1 - 0750 - S2 DF A

2 Connector code

SI - **1** - 0750 - S2 DF A

Connector	Metric	Inch
Y	9.5-11.0	3/8"-27/64"
Z	11.5-12.5	7/16"-1/2"
0	13.0-17.5	33/64"-11/16"
1	18.0-24.0	45/64"-15/16"
2	24.5-35.0	31/32"-1 3/8"
3	36.0-47.0	1 13/32"-1 7/8"
4	48.0-65.0	1 29/32"-2 9/16"
5	66.0-89.0	2 5/8"-3 1/2"
7	90.0-114.0	3 17/32"-4 1/2"

3 Insert dia.

SI - 1 - **0750** - S2 DF A

4 Material

SI - 1 - 0750 - **S2** DF A

S2 = Cobalt HSS
S6 = Powder HSS
G2 = Carbide

5 Coating

SI - 1 - 0750 - S2 **DF** A

DF = General chipbreaker
DT = Chamfered cutting edge

6 Coating

SI - 1 - 0750 - S2 DF **A**

A = TiALN coating
S = TiSiN coating

Technical Information for Spade Drill

Recommended Cutting Condition

Recommended Speed and Feeds for HSS Drill Inserts

Material	Hardness (BHN)	Grade	Feed (mm/rev)									
			TiN m/min	TiALN m/min	TiCN m/min	9.50 to 12.50	13.00 to 17.50	17.60 to 24.40	24.50 to 35.00	35.10 to 47.90	48.00 to 65.28	65.30 to 114.48
Free Machining Steel 1118, 1215, 12L14, etc	100-150	M42	61	85	79	0.18	0.25	0.33	0.41	0.51	0.58	0.71
	150-200	M42	55	79	72	0.18	0.25	0.33	0.41	0.51	0.58	0.71
	200+250	M42	49	73	64	0.15	0.25	0.33	0.41	0.51	0.58	0.71
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc	85-125	M42	52	76	67	0.15	0.23	0.30	0.38	0.48	0.58	0.69
	125-175	M42	49	73	64	0.15	0.23	0.30	0.38	0.48	0.58	0.69
	175-225	M42	46	69	59	0.13	0.20	0.25	0.36	0.48	0.53	0.61
	225-275	M42	43	64	55	0.13	0.20	0.25	0.36	0.48	0.53	0.61
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc	125-175	M42	49	73	64	0.15	0.23	0.30	0.38	0.48	0.58	0.69
	175-225	M42	46	69	59	0.13	0.20	0.25	0.36	0.46	0.53	0.61
	225-275	M42	43	64	55	0.13	0.20	0.25	0.36	0.46	0.53	0.61
	275-325	M40	40	59	52	0.10	0.18	0.23	0.30	0.41	0.48	0.56
Alloy Steel 4140, 5140, 8640, etc	125-175	M42	46	64	59	0.15	0.20	0.25	0.36	0.43	0.48	0.56
	175-225	M42	43	59	55	0.13	0.20	0.25	0.36	0.43	0.48	0.56
	225-275	M42	40	55	52	0.13	0.18	0.25	0.36	0.43	0.48	0.56
	275-325	M40	37	52	47	0.10	0.15	0.23	0.30	0.38	0.43	0.51
	325-375	M40	34	47	44	0.08	0.15	0.23	0.30	0.38	0.43	0.51
High Strength Alloy 4340, 4330V, 300M, etc	225-300	M40	24	34	30	0.13	0.18	0.23	0.25	0.36	0.43	0.51
	300-350	M40	18	26	24	0.10	0.18	0.23	0.25	0.36	0.43	0.51
	350-400	M40	15	21	20	0.08	0.15	0.22	0.23	0.30	0.38	0.46
Structural Steel A36, A516, A285, etc	100-150	M42	43	61	55	0.15	0.25	0.30	0.36	0.46	0.53	0.66
	150-250	M42	37	52	47	0.13	0.23	0.25	0.30	0.41	0.48	0.61
	250-350	M40	30	43	40	0.10	0.20	0.23	0.25	0.36	0.43	0.51
Tool Steel H13, H12, A4, S3, etc	150-200	M40	24	34	32	0.10	0.15	0.20	0.25	0.30	0.38	0.43
	200-250	M40	18	27	26	0.10	0.15	0.20	0.25	0.30	0.38	0.43
High Temp, Alloy Hastelloy B, Inconel 600, etc	140-220	M40	9	12	11	0.08	0.18	0.20	0.25	0.30	0.38	–
	220-310	M40	8	11	9	0.08	0.15	0.18	0.20	0.25	0.30	–
Titanium Alloy	140-220	M40	11	11	14	0.08	0.18	0.20	0.25	0.30	0.38	–
	220-310	M40	9	15	11	0.08	0.15	0.18	0.20	0.25	0.30	–
Aerospace Alloy S82	185-275	M40	23	32	29	0.15	0.20	0.23	0.25	0.36	0.41	0.51
	275-350	M40	18	27	24	0.13	0.18	0.20	0.20	0.30	0.36	0.46
Stainless steel 400 series, 416, 420, etc	185-275	M40	23	32	29	0.15	0.20	0.23	0.25	0.36	0.41	0.51
	275-350	M40	18	27	24	0.13	0.18	0.20	0.20	0.30	0.36	0.46
Stainless steel 300 series, 304, 316, etc	135-185	M40	23	32	29	0.08	0.18	0.20	0.25	0.36	0.41	0.51
	185-275	M40	18	27	24	0.08	0.15	0.18	0.20	0.30	0.36	0.46
Nodular, Grey, Ductile Cast Iron	120-150	M42	52	76	67	0.18	0.30	0.41	0.51	0.61	0.69	0.76
	150-200	M42	46	69	59	0.15	0.28	0.36	0.46	0.56	0.64	0.71
	200-220	M42	40	59	52	0.15	0.23	0.30	0.41	0.46	0.53	0.61
	220-260	M40	34	50	44	0.13	0.18	0.23	0.30	0.36	0.43	0.51
	260-320	M40	27	41	37	0.10	0.15	0.18	0.23	0.30	0.36	0.41
Cast Aluminum	30	M42	183	259	229	0.20	0.33	0.41	0.51	0.56	0.64	0.64
	180	M42	91	137	122	0.20	0.33	0.41	0.46	0.56	0.64	0.64
Wrought Aluminum	30	M42	183	259	229	0.10	0.15	0.25	0.30	0.56	0.64	0.64
	180	M42	91	137	122	0.20	0.33	0.41	0.46	0.56	0.64	0.64
Aluminum Bronze	100-200	M40	52	76	67	0.15	0.28	0.36	0.46	0.56	0.66	0.71
	200-250	M40	40	58	52	0.13	0.18	0.23	0.30	0.36	0.43	0.51
Brass	100	M42	91	136	122	0.18	0.30	0.41	0.51	0.61	0.71	0.76
Copper	60	M40	40	50	46	0.05	0.08	0.15	0.20	0.30	0.36	0.41
Hardness Steel	300-400	M40	15	29	21	0.08	0.15	0.20	0.23	0.30	0.41	0.46
	400-500	M40	11	14	12	0.05	0.13	0.18	0.20	0.25	0.30	0.41

Recommended Cutting Condition

Recommended Speed and Feeds for HSS Carbide Inserts

Material	Hardness (BHN)	Grade	Speed			Feed (mm/rev)				
			TiN m/min	TiALN m/min	TiCN m/min	9.50 to 12.50	13.00 to 17.50	17.60 to 24.40	24.50 to 35.00	35.10 to 47.90
Free Machining Steel 1118, 1215, 12L14, etc	100-150	G12	96	128	115	0.20	0.30	0.38	0.45	0.53
	150-200	G12	85	110	100	0.18	0.28	0.35	0.40	0.48
	200+250	G12	79	104	90	0.15	0.25	0.33	0.38	0.43
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc	85-125	G12	91	119	110	0.20	0.25	0.33	0.43	0.48
	125-175	G12	79	104	90	0.18	0.25	0.33	0.40	0.45
	175-225	G12	73	95	82	0.15	0.23	0.30	0.38	0.43
	225-275	G12	64	83	75	0.13	0.23	0.30	0.38	0.43
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc	125-175	G12	79	104	90	0.18	0.25	0.33	0.40	0.45
	175-225	G12	73	95	84	0.15	0.23	0.30	0.38	0.43
	225-275	G12	67	83	72	0.15	0.23	0.30	0.38	0.43
	275-325	G12	55	70	62	0.13	0.20	0.28	0.35	0.40
Alloy Steel 4140, 5140, 8640, etc	125-175	G12	76	99	87	0.18	0.25	0.33	0.40	0.45
	175-225	G12	70	92	80	0.15	0.23	0.30	0.38	0.43
	225-275	G12	64	83	72	0.15	0.23	0.30	0.38	0.43
	275-325	G12	61	76	68	0.13	0.20	0.28	0.35	0.40
	325-375	G12	52	67	60	0.10	0.18	0.25	0.33	0.38
High Strength Alloy 4340, 4330V, 300M, etc	225-300	G12	49	61	55	0.15	0.23	0.25	0.30	0.38
	300-350	G12	43	55	49	0.13	0.20	0.23	0.28	0.35
	350-400	G12	37	49	43	0.10	0.18	0.20	0.25	0.30
Structural Steel A36, A516, A285, etc	100-150	G12	73	95	84	0.20	0.28	0.35	0.40	0.45
	150-250	G12	61	76	68	0.15	0.25	0.30	0.35	0.40
	250-350	G12	55	70	62	0.13	0.23	0.28	0.30	0.35
Tool Steel H13, H12, A4, S3, etc	150-200	G12	49	67	58	0.10	0.18	0.23	0.28	0.33
	200-250	G12	37	52	45	0.10	0.18	0.23	0.28	0.33
High Temp, Alloy Hastelloy B, Inconel 600, etc	140-220	G12	24	32	28	0.10	0.18	0.23	0.28	0.33
	220-310	G12	18	26	22	0.10	0.15	0.20	0.25	0.30
Titanium Alloy	140-220	G12	30	38	32	0.10	0.18	0.23	0.28	0.30
	220-310	G12	24	33	28	0.10	0.15	0.20	0.35	0.30
Aerospace Alloy S82	185-275	G12	49	64	57	0.17	0.22	0.29	0.35	0.40
	275-350	G12	37	49	43	0.14	0.19	0.27	0.30	0.35
Stainless steel 400 series, 416, 420, etc	185-275	G12	49	64	57	0.17	0.22	0.29	0.35	0.40
	275-350	G12	37	49	43	0.14	0.19	0.27	0.30	0.45
Stainless steel 300 series, 304, 316, etc	135-185	G12	49	64	57	0.13	0.17	0.22	0.26	0.30
	185-275	G12	37	49	43	0.11	0.14	0.20	0.22	0.25
Nodular, Grey, Ductile Cast Iron	120-150	G12	98	141	127	0.20	0.30	0.38	0.48	0.58
	150-200	G12	82	122	102	0.18	0.28	0.33	0.43	0.53
	200-220	G12	73	110	93	0.15	0.23	0.30	0.38	0.45
	220-260	G12	64	95	79	0.13	0.20	0.28	0.33	0.38
	260-320	G12	55	83	69	0.13	0.18	0.25	0.28	0.33
Cast Aluminum	30	G12	366	460	410	0.25	0.38	0.45	0.50	0.55
	180	G12	244	306	275	0.3\23	0.33	0.40	0.45	0.50
Wrought Aluminum	30	G12	366	460	410	0.10	0.15	0.25	0.30	0.36
	180	G12	244	306	275	0.20	0.28	0.36	0.45	0.40
Aluminum Bronze	100-200	G12	85	110	100	0.13	0.20	0.25	0.36	0.42
	200-250	G12	64	94	79	0.10	0.15	0.18	0.25	0.33
Brass	100	G12	130	184	160	0.15	0.23	0.28	0.38	0.45
Copper	60	G12	80	120	100	0.05	0.08	0.10	0.15	0.25

Technical Information for Spade Drill

Coolant Recommendations

Material	Pressure or Flow rate	HSS							Carbide				
		9.5 to 12.5	13 to 17	18 to 24	25 to 35	36 to 50	51 to 76	76 to 102	9.5 to 12.5	13 to 17	18 to 24	25 to 35	36 to 47
Free Machining Steel 1118, 1215, 12L14, etc	BAR	12-13	7-8	7-10	6-8	5-7	4	5-6	17-20	17	15	15	20
	LPM	9.5-9.8	10.6-11.4	16.7-19.7	26.5-30.3	45.4-53.0	114-125	144-167	12.2	16.3	25.2	41.5	71.9
Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc	BAR	11-12	5-6	5-7	4-6	4-5	2-3	3-5	18	11	11	12	9
	LPM	9.1-9.5	9.1-9.8	14.0-15.9	22.7-26.5	41.6-45.4	98-114	125-144	11.4	13.3	20.6	36.5	62.0
Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc	BAR	11	5-6	5-6	4-5	3-5	2-3	3-5	17	10	10	10	8
	LPM	8.7-9.1	8.7-9.8	13.6-15.5	18.9-22.7	37.9-45.4	98-114	125-144	11.3	12.5	20.0	33.8	57.0
Alloy Steel 4140, 5140, 8640, etc	BAR	11	5	5-6	3-5	3-4	2	3	17	9	10	8	7
	LPM	8.7-9.1	8.3-9.1	13.2-14.8	18.9-22.7	31.9-41.6	98-106	114-125	11.1	12.3	19.3	30.0	55.8
High Strength Alloy 4340, 4330V, 300M, etc	BAR	10-11	4	3	2	2	1-2	2	15	5	4	3	3
	LPM	8.7-9.1	7.9-8.3	11.0-11.7	15.1-18.9	26.5-30.3	79-87	87-98	10.4	9.1	12.6	18.8	33.6
Structural Steel A36, A516, A285, etc	BAR	11	5-6	5-6	3-4	3	2	3	16	9	8	7	5
	LPM	8.7-9.1	9.1-9.8	13.2-14.8	18.9-22.7	34.1-37.9	87-98	114-125	10.8	12.0	17.5	27.8	47.1
Tool Steel H13, H12, A4, S3, etc	BAR	10-11	4	3	2	2	1-2	2	15	5	5	3	3
	LPM	8.7-9.1	7.9-8.3	11.0-11.7	15.1-18.9	26.5-30.3	79-87	87-98	10.4	9.1	13.6	19.7	36.5
High Temp, Alloy Hastelloy B, Inconel 600, etc	BAR	10-11	4-5	3-4	2	2	2	3	17	11	12	11	9
	LPM	8.7-9.1	8.3-8.7	11.7-12.1	15.1-18.9	26.5-30.3	87-98	125	11.1	13.5	21.9	35.4	62.0
Titanium Alloy	BAR	10-11	4-5	3-4	2	2	1-2	3	17	11	12	11	9
	LPM	8.7-9.1	8.3-8.7	11.7-12.1	15.1-18.9	26.5-30.3	79-87	125	11.1	13.5	21.9	35.4	62.0
Aerospace Alloy S82	BAR	10-11	4-5	3-4	2	2	2	3	17	11	12	11	9
	LPM	8.7-9.1	8.3-8.7	11.7-12.1	15.1-18.9	26.5-30.3	87-98	125	11.1	13.5	21.9	35.4	62.0
Stainless steel 400 series, 416, 420, etc	BAR	11.8	5.9	5.2	3.8	3.5	2	3.1	22.7	16.5	17.9	17.2	13.1
	LPM	9.5	9.8	14	23	38	98	117	13	16.3	26.3	44.2	75
Stainless steel 300 series, 304, 316, etc	BAR	11.8	5.9	5.2	3.8	3.5	2	3.1	22.7	16.5	17.9	17.2	13.1
	LPM	9.5	9.8	14	23	38	98	117	13	16.3	26.3	44.2	75
SG/Nodular Cast Iron	BAR	11	4.5	4.2	2.8	2.4	2	2.4	15.5	7.2	6.2	6.2	5.5
	LPM	9.1	5.7	12.5	19	34	98	106	10.7	10.8	15.4	26.5	48.7
Grey/White Cast Iron	BAR	11	4.5	4.2	2.8	2.4	2	2.4	15.5	7.2	6.2	6.2	5.5
	LPM	9.1	8.7	12.5	19	34	98	106	10.7	10.8	15.4	26.5	48.7
Cast Aluminum	BAR	14.5	12.4	15.8	11	8.6	3.5	5.5	24.1	22.0	21.7	19.6	13.8
	LPM	10	14	23	34	61	125	159	13.4	18.8	29	47.2	77
Wrought Aluminum	BAR	14.5	12.4	15.8	11	8.6	3.5	5.5	24.1	22.0	21.7	19.6	13.8
	LPM	10	14	23	34	61	125	159	13.4	18.8	29	47.2	77
Aluminum Bronze	BAR	12.8	8.3	9.65	7.95	6.9	3.5	6.2	20	16.5	16.5	15.2	12
	LPM	9.6	11.4	19.7	30.3	53	125	167	12.2	16.3	25.2	41.5	71.9
Brass	BAR	11	4.5	4.2	2.8	2.4	2	2.4	24.1	22.0	21.7	19.6	13.8
	LPM	9.1	8.7	12.5	19	34	98	106	13.4	18.8	29	47.2	77
Copper	BAR	12.8	8.3	9.65	7.95	6.9	3.5	6.2	20	16.5	16.5	15.2	12
	LPM	9.6	11.4	19.7	30.3	53	125	167	12.2	16.3	25.2	41.5	71.9
Hardness Steel	BAR	10.7	4.2	3.5	2	2	1.7	2	14.5	5.2	4.8	3.4	3.1
	LPM	9.1	8.3	11.7	19	30	87	98	10.4	9.1	13.6	19.7	36.5

Deep Hole Drilling Speed & Feed Ajustment

Holder	Extended	Long	XL	3XL
Speed	0.90	0.85	0.80	0.75
Feed		0.95	0.90	0.90

RECOMMENDED SPEED AND FEED EXAMPLE:

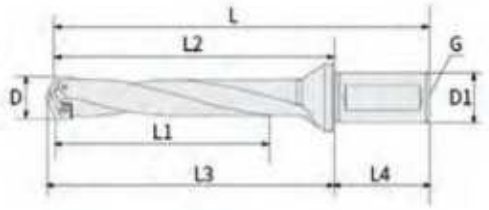
If recommended speed and feed is 50m/min and 0.20 mm/rev for a standard lenght holder, then the speed and feed using a 3XL holder in the same application would be 37.5 m/min and 0.18 mm/rev.

50 x 0.75 = 37.5 m/min 0.20 x 0.90 = 0.18 mm/rev

Original Spade Drill

Original SD Drill

Weldon Shank



Y0 Connector (D = φ 9.5 ÷ φ11.0) mm

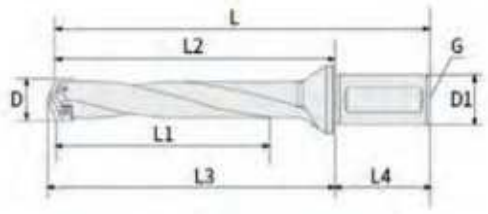
Designation	Stock	Size							Spare Parts	
		L1	L2	L3	L	D1	L4	G		
SDY0S-19-XP16	●	19	47.6	50	95.6	16	48	1/8	M2.0x5	T-6
SDY0S-32-XP20	●	32	61.1	63.5	111.1	20	50	1/8	M2.0x5	T-6
SDY0H-60-XP20	●	60	89.7	92.1	139.7	20	50	1/8	M2.0x5	T-6
SDY0H-111-XP20	●	111	140.5	142.9	190.5	20	50	1/8	M2.0x5	T-6
SDY0S-222-XP20	●	222	251.7	254.1	301.7	20	50	1/8	M2.0x5	T-6
SDY0S-290-XP20	●	290	319.9	322.3	369.9	20	50	1/8	M2.0x5	T-6

Z0 Connector (D = φ 11.1 ÷ φ 12.9) mm

Designation	Stock	Size							Spare Parts	
		L1	L2	L3	L	D1	L4	G		
SDZ0S-19-XP16	●	19	47.6	50	95.6	16	48	1/8	M2.0x5	T-6
SDZ0S-32-XP20	●	32	61.1	63.5	111.1	20	50	1/8	M2.0x5	T-6
SDZ0H-60-XP20	●	60	89.7	92.1	139.7	20	50	1/8	M2.0x5	T-6
SDZ0H-111-XP20	●	111	140.5	142.9	190.5	20	50	1/8	M2.0x5	T-6
SDZ0S-222-XP20	●	222	251.7	254.1	301.7	20	50	1/8	M2.0x5	T-6
SDZ0S-290-XP20	●	290	319.9	322.3	369.9	20	50	1/8	M2.0x5	T-6

Original SD Drill

Weldon Shank



00 Connector (D = φ 13.0 - φ 17.5) mm

Designation	Stock	Size							Spare Parts	
		L1	L2	L3	L	D1	L4	G		
SD00S-23-XP20	●	23	47.6	50.4	97.6	20	50	1/8	M2.5x5	T-8
SD00S-35-XP20	●	35	63.5	66.3	113.5	20	50	1/8	M2.5x5	T-8
SD00H-64-XP20	●	64	92.1	94.9	142.1	20	50	1/8	M2.5x5	T-8
SD00H-114-XP20	●	114	142.9	145.7	192.9	20	50	1/8	M2.5x5	T-8
SD00H-178-XP20	●	178	206.4	209.1	256.4	20	50	1/8	M2.5x5	T-8
SD00S-240-XP20	●	240	268.6	271.3	318.6	20	50	1/8	M2.5x5	T-8
SD00S-295-XP20	●	295	323.9	326.7	373.9	20	50	1/8	M2.5x5	T-8
SD00S-387-XP20	●	387	416.0	418.8	466.0	20	50	1/8	M2.5x5	T-8

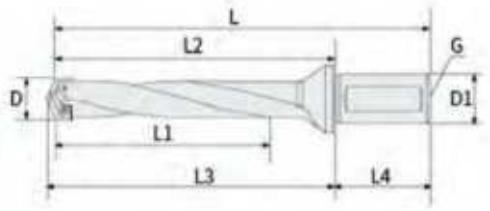
05 Connector (D = φ 15.5 - φ 17.5) mm

Designation	Stock	Size							Spare Parts	
		L1	L2	L3	L	D1	L4	G		
SD05S-23-XP20	●	23	47.6	50.4	97.6	20	50	1/8	M2.5x6	T-8
SD05S-35-XP20	●	35	63.5	66.3	113.5	20	50	1/8	M2.5x6	T-8
SD05H-64-XP20	●	64	92.1	94.9	142.1	20	50	1/8	M2.5x6	T-8
SD05H-114-XP20	●	114	142.9	145.7	192.9	20	50	1/8	M2.5x6	T-8
SD05H-178-XP20	●	178	206.4	209.1	256.4	20	50	1/8	M2.5x6	T-8
SD05S-240-XP20	●	240	268.6	271.3	318.6	20	50	1/8	M2.5x6	T-8
SD05S-295-XP20	●	295	323.9	326. 7	373.9	20	50	1/8	M2.5x6	T-8
SD05S-387-XP20	●	387	416.0	418.8	466.0	20	50	1/8	M2.5x6	T-8

Original Spade Drill

Original SD Drill

Weldon Shank



10 Connector (D = φ 17.6 - φ 24.4) mm

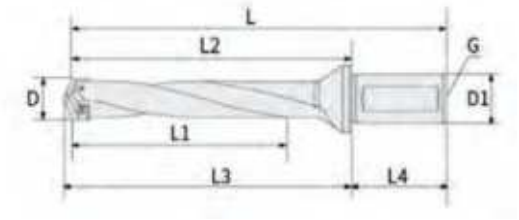
Designation	Stock	Size							Spare Parts	
		L1	L2	L3	L	D1	L4	G		
SD10S-48-XP25	●	48	75.8	79.4	131.8	25	56	1/8	M3.0x8	T-8
SD10S-67-XP25	●	67	107.2	110.7	163.1	25	56	1/8	M3.0x8	T-8
SD10H-118-XP25	●	118	154.8	158.4	210.8	25	56	1/8	M3.0x8	T-8
SD10H-168-XP25	●	168	205.6	209.2	261.6	25	56	1/8	M3.0x8	T-8
SD10H-218-XP25	●	218	255.3	258.9	311.3	25	56	1/8	M3.0x8	T-8
SD10H-270-XP25	●	270	307.2	310.8	363.2	25	56	1/8	M3.0x8	T-8
SD10S-365-XP25	●	365	402.2	405.8	458.2	25	56	1/8	M3.0x8	T-8
SD10S-457-XP25	●	457	494.5	498.1	550.5	25	56	1/8	M3.0x8	T-8
SD10S-569-XP25	●	569	602.5	606.1	658.5	25	56	1/8	M3.0x8	T-8

15 Connector (D = φ 22.0 - φ 24.4) mm

Designation	Stock	Size							Spare Parts	
		L1	L2	L3	L	D1	L4	G		
SD15S-57-XP25	●	56	88.5	92.1	131.8	25	56	1/8	M3.0x8	T-8
SD15S-67-XP25	●	67	107. 2	110.7	163.1	25	56	1/8	M3.0x8	T-8
SD15H-118-XP25	●	118	154.8	158.4	210.8	25	56	1/8	M3.0x8	T-8
SD15H-168-XP25	●	168	205.6	209.2	261.6	25	56	1/8	M3.0x8	T-8
SD15H-218-XP25	●	218	255.3	258.9	311.3	25	56	1/8	M3.0x8	T-8
SD15H-270-XP25	●	270	307.2	310.8	363.2	25	56	1/8	M3.0x8	T-8
SD15S-365-XP25	●	365	402.2	405.8	458.2	25	56	1/8	M3.0x8	T-8
S15S-457-XP25	●	457	494.5	498.1	550.5	25	56	1/8	M3.0x8	T-8
SD15S-569-XP25	●	569	602.5	606.1	658.5	25	56	1/8	M3.0x8	T-8

Original SD Drill

Weldon Shank



20 Connector (D = φ 24.5 - φ 35.0) mm

Designation	Stock	Size							Spare Parts	
		L1	L2	L3	L	D1	L4	G		
SD20S-57-XP32	●	57	88.5	92.1	148.5	32	60	1/4	M3.5x10	T-15
SD20S-86-XP32	●	86	128.6	132.2	188.6	32	60	1/4	M3.5x10	T-15
SD20H-137-XP32	●	137	179.4	183.0	239.4	32	60	1/4	M3.5x10	T-15
SD20H-187-XP32	●	187	230.2	233.8	290.2	32	60	1/4	M3.5x10	T-15
SD20H-237-XP32	●	237	279. 9	283.5	339.9	32	60	1/4	M3.5x10	T-15
SD20H-289-XP32	●	289	331.8	335.4	391.8	32	60	1/4	M3.5x10	T-15
SD20H-400-XP32	●	400	442.8	446.4	502.8	32	60	1/4	M3.5x10	T-15
SD20S-400-XP32	●	400	442.8	446.4	502.8	32	60	1/4	M3.5x10	T-15
SD20S-511-XP32	●	511	554.1	557.7	614.1	32	60	1/4	M3.5x10	T-15
SD20S-692-XP32	●	692	735.1	738.7	795.1	32	60	1/4	M3.5x10	T-15

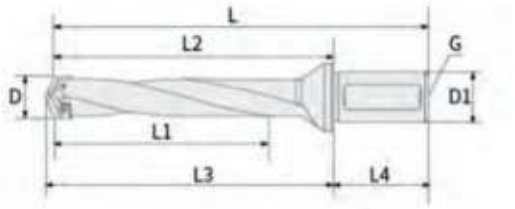
25 Connector (D = φ 30.0 - φ 35.0) mm

Designation	Stock	Size							Spare Parts	
		L1	L2	L3	L	D1	L4	G		
SD25S-92-XP32	●	92	123.4	127.0	183.4	32	60	1/4	M3.5x10	T-15
SD25S-86-XP32	●	86	128.6	132.2	188.6	32	60	1/4	M3.5x10	T-15
SD25H-137-XP32	●	137	179.4	183.0	239.4	32	60	1/4	M3.5x10	T-15
SD25H-187-XP32	●	187	230.2	233.8	290.2	32	60	1/4	M3.5x10	T-15
SD25H-237-XP32	●	237	279.9	283.5	339.9	32	60	1/4	M3.5x10	T-15
SD25H-289-XP32	●	289	331.8	335.4	391.8	32	60	1/4	M3.5x10	T-15
SD25H-400-XP32	●	400	442.8	446.4	502.8	32	60	1/4	M3.5x10	T-15
SD25S-400-XP32	●	400	442.8	446.4	502.8	32	60	1/4	M3.5x10	T-15
SD25S-511-XP32	●	511	554.1	557.7	614.1	32	60	1/4	M3.5x10	T-15
SD25S-692-XP32	●	692	735.1	738.7	795.1	32	60	1/4	M3.5x10	T-15

Original Spade Drill

Original SD Drill

Weldon Shank



30 Connector (D = φ 35.1 - φ 47.9) mm

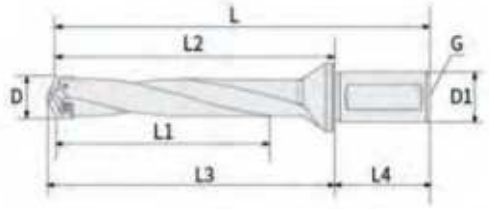
Designation	Stock	Size							Spare Parts	
		L1	L2	L3	L	D1	L4	G		
SD30S-76-XP40	●	76	125.0	129.8	195.0	40	70	1/4	M5.0x10	T-20
SD30S-121-XP40	●	121	173.0	177.8	243.0	40	70	1/4	M5.0x10	T-20
SD30H-165-XP40	●	165	217.5	222.3	287.5	40	70	1/4	M5.0x10	T-20
SD30H-210-XP40	●	210	261.9	266.7	331.9	40	70	1/4	M5.0x10	T-20
SD30H-260-XP40	●	260	312.3	317.1	382.3	40	70	1/4	M5.0x10	T-20
SD30S-349-XP40	●	349	401.6	406.4	471.6	40	70	1/4	M5.0x10	T-20
SD30H-349-XP40	●	349	401.6	406.4	471.6	40	70	1/4	M5.0x10	T-20
SD30S-559-XP40	●	559	611.1	615.9	681.1	40	70	1/4	M5.0x10	T-20
SD30S-787-XP40	●	787	839.7	844.5	909.7	40	70	1/4	M5.0x10	T-20

35 Connector (D = φ 42.0 - φ 47.9) mm

Designation	Stock	Size							Spare Parts	
		L1	L2	L3	L	D1	L4	G		
SD35S-76-XP40	●	76	125.0	129.8	195.0	40	70	1/4	M5.0x10	T-20
SD35S-121-XP40	●	121	173.0	177.8	243.0	40	70	1/4	M5.0x10	T-20
SD35H-165-XP40	●	165	217.5	222.3	287.5	40	70	1/4	M5.0x10	T-20
SD35H-210-XP40	●	210	261.9	266.7	331.9	40	70	1/4	M5.0x10	T-20
SD35H-260-XP40	●	260	312.3	317.1	382.3	40	70	1/4	M5.0x10	T-20
SD35S-349-XP40	●	349	401.6	406.4	471.6	40	70	1/4	M5.0x10	T-20
SD35H-349-XP40	●	349	401.6	406.4	471.6	40	70	1/4	M5.0x10	T-20
SD35S-559-XP40	●	559	611.1	615.9	681.1	40	70	1/4	M5.0x10	T-20
SD35S-787-XP40	●	787	839.7	844.5	909.7	40	70	1/4	M5.0x10	T-20

Original SD Drill

Weldon Shank



40 Connector (D = φ 48.0 - φ 65.28) mm

Designation	Stock	Size							Spare Parts	
		L1	L2	L3	L	D1	L4	G		
SD40S-130-XP40	●	130	179.4	184.2	249.4	40	70	1/4	M5.0x15	T-20
SD40H-232-XP40	●	232	281.0	285.8	351.0	40	70	1/4	M5.0x15	T-20
SD40S-350-XP40	●	350	399.2	404.0	469.2	40	70	1/4	M5.0x15	T-20
SD40H-350-XP40	●	350	399.2	404.0	469.2	40	70	1/4	M5.0x15	T-20
SD40S-422-XP40	●	422	471.5	476.3	541.5	40	70	1/4	M5.0x15	T-20
SD40H-422-XP40	●	422	471.5	476.3	541.5	40	70	1/4	M5.0x15	T-20
SD40S-525-XP40	●	525	574.2	579.0	644.2	40	70	1/4	M5.0x15	T-20
SD40S-625-XP40	●	625	674.7	679.5	744.7	40	70	1/4	M5.0x15	T-20
SD40S-879-XP40	●	879	928.7	933.5	998.7	40	70	1/4	M5.0x15	T-20

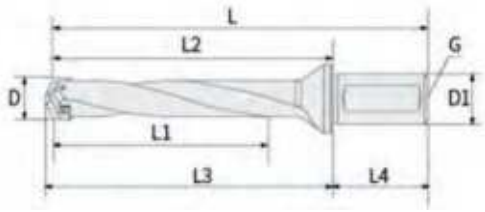
45 Connector (D = φ 56.0 - φ 65.28) mm

Designation	Stock	Size							Spare Parts	
		L1	L2	L3	L	D1	L4	G		
SD45S-130-XP40	●	130	179.4	184.2	249.4	40	70	1/4	M5.0x15	T-20
SD45H-232-XP40	●	232	281.0	285.8	351.0	40	70	1/4	M5.0x15	T-20
SD45S-350-XP40	●	350	399.2	404.0	469.2	40	70	1/4	M5.0x15	T-20
SD45H-350-XP40	●	350	399.2	404.0	469.2	40	70	1/4	M5.0x15	T-20
SD45S-422-XP40	●	422	471.5	476.3	541.5	40	70	1/4	M5.0x15	T-20
SD45H-422-XP40	●	422	471.5	476.3	541.5	40	70	1/4	M5.0x15	T-20
SD45S-525-XP40	●	525	574.2	579.0	644.2	40	70	1/4	M5.0x15	T-20
SD45S-625-XP40	●	625	674.7	679.5	744.7	40	70	1/4	M5.0x15	T-20
SD45S-879-XP40	●	879	928.7	933.5	998.7	40	70	1/4	M5.0x15	T-20

Original Spade Drill

Original SD Drill

Flanged Shank



50 Connector (D = φ 65.3 - φ 89.08) mm

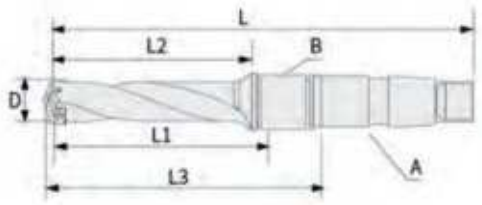
Designation	Stock	Size							Spare Parts	
		L1	L2	L3	L	D1	L4	G		
SD50S-171-XP50	●	171	235.0	240. 0	315.0	50	80	1/2	M6.0x15	T-25
SD50S-350-XP50	●	350	414.0	419. 0	494.0	50	80	1/2	M6.0x15	T-25
SD50S-660-XP50	●	660	724. 0	729.0	804.0	50	80	1/2	M6.0x15	T-25

70 Connector (D = φ 89.1 - φ 114.48) mm

Designation	Stock	Size							Spare Parts	
		L1	L2	L3	L	D1	L4	G		
SD70S-200-XP50	●	200	275.0	280.0	355.0	50	80	1/2	M6.0x15	T-25
SD70S-400-XP50	●	400	475.0	480.0	555.0	50	80	1/2	M6.0x15	T-25
SD70S-800-XP50	●	800	875.0	880.0	955.0	50	80	1/2	M6.0x15	T-25

Original SD Drill

Morse Taper Shank



Y0 Connector (D = φ 9.5 - φ 11.1) mm

Designation	Stock	Size						Spare Parts		
		L1	L2	L3	L	A	B			
SDY0S-32-MT2	●	32	51.5	88.0	160.3	MT2	1/16	RK-MT2R	M2.0x5	T-6
SDY0H-60-MT2	●	60	80.2	116.7	188.9	MT2	1/16	RK-MT2R	M2.0x5	T-6
SDY0H-111-MT2	●	111	130.9	167.4	239.7	MT2	1/16	RK-MT2R	M2.0x5	T-6

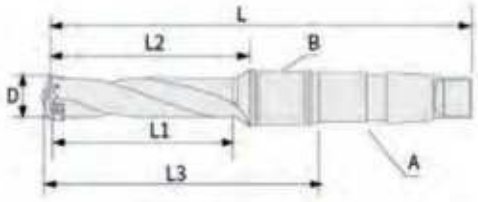
Z0 Connector (D = φ 11.1 - φ 12.9) mm

Designation	Stock	Size						Spare Parts		
		L1	L2	L3	L	A	B			
SDZ0S-32-MT2	●	32	51.5	88.0	160.3	MT2	1/16	RK-MT2R	M2.0x5	T-6
SDZ0H-60-MT2	●	60	80.2	116.7	188.9	MT2	1/16	RK-MT2R	M2.0x5	T-6
SDZ0H-111-MT2	●	111	130.9	167.4	239.7	MT2	1/16	RK-MT2R	M2.0x5	T-6

Original Spade Drill

Original SD Drill

Morse Taper Shank



00 Connector (D = φ 13.0 - φ 17.5) mm

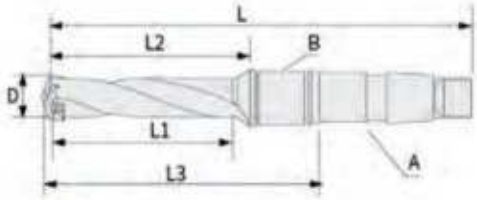
Designation	Stock	Size						Spare Parts		
		L1	L2	L3	L	A	B			
SD00S-35-MT2	●	35	55.5	95.4	167.3	MT2	1/16	RK-MT2R	M2.5x6	T-8
SD00H-63-MT2	●	63	84.1	124.0	195.9	MT2	1/16	RK-MT2R	M2.5x6	T-8
SD00H-114-MT2	●	114	135.0	174.8	246.7	MT2	1/16	RK-MT2R	M2.5x6	T-8
SD00H-178-MT2	●	178	198.5	238.3	310.2	MT2	1/16	RK-MT2R	M2.5x6	T-8

05 Connector (D = φ 15.5 - φ 17.5) mm

Designation	Stock	Size						Spare Parts		
		L1	L2	L3	L	A	B			
SD05S-35-MT2	●	35	55.5	95.4	167.3	MT2	1/16	RK-MT2R	M2.5x6	T-8
SD05H-63-MT2	●	63	84.1	124.0	195.9	MT2	1/16	RK-MT2R	M2.5x6	T-8
SD05H-114-MT2	●	114	135.0	174.8	246.7	MT2	1/16	RK-MT2R	M2.5x6	T-8
SD05H-178-MT2	●	178	198.5	238.3	310.2	MT2	1/16	RK-MT2R	M2.5x6	T-8

Original SD Drill

Morse Taper Shank



10 Connector (D = φ 17.6 - φ 24.4) mm

Designation	Stock	Size						Spare Parts		
		L1	L2	L3	L	A	B			
SD10S-70-MT3	●	70	98.4	149.0	239.0	MT3	1/8	RK-MT3R	M3.0x8	T-8
SD10H-121-MT3	●	121	149. 2	199.8	289.8	MT3	1/8	RK-MT3R	M3.0x8	T-8
SD10H-171-MT3	●	171	200. 0	250.6	340.7	MT3	1/8	RK-MT3R	M3.0x8	T-8
SD10H-222-MT3	●	222	250.5	301.1	391.2	MT3	1/8	RK-MT3R	M3.0x8	T-8
SD10H-273-MT3	●	273	301. 6	352.2	442.3	MT3	1/8	RK-MT3R	M3.0x8	T-8

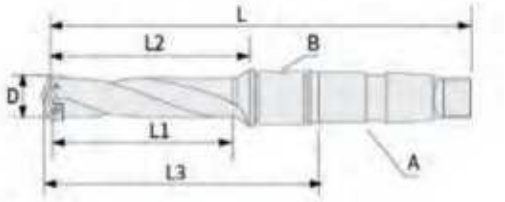
15 Connector (D = φ 22.0 - φ 24.4) mm

Designation	Stock	Size						Spare Parts		
		L1	L2	L3	L	A	B			
SD15S-70-MT3	●	70	98.4	149.0	239.0	MT3	1/8	RK-MT3R	M3.0x8	T-8
SD15H-121-MT3	●	121	149. 2	199.8	289.8	MT3	1/8	RK-MT3R	M3.0x8	T-8
SD15H-171-MT3	●	171	200. 0	250.6	340.7	MT3	1/8	RK-MT3R	M3.0x8	T-8
SD15H-222-MT3	●	222	250.5	301.1	391.2	MT3	1/8	RK-MT3R	M3.0x8	T-8
SD15H-273-MT3	●	273	301. 6	352.2	442.3	MT3	1/8	RK-MT3R	M3.0x8	T-8

Original Spade Drill

Original SD Drill

Morse Taper Shank



20 Connector (D = φ 24.5 - φ 35.0) mm

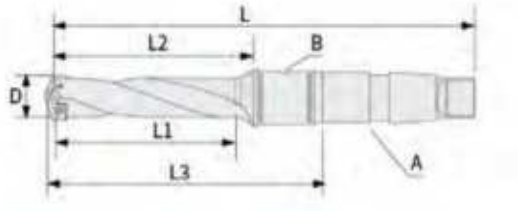
Designation	Stock	Size						Spare Parts		
		L1	L2	L3	L	A	B			
SD20S-86-MT4	●	86	114.3	172.9	286.3	MT4	1/4	RK-MT4R	M3.5x10	T-15
SD20H-137-MT4	●	137	165.1	223.7	337.1	MT4	1/4	RK-MT4R	M3.5x10	T-15
SD20H-187-MT4	●	187	215.9	274.5	387.9	MT4	1/4	RK-MT4R	M3.5x10	T-15
SD20H-237-MT4	●	237	265.6	324.2	437.6	MT4	1/4	RK-MT4R	M3.5x10	T-15
SD20H-289-MT4	●	289	317.5	376.1	489.5	MT4	1/4	RK-MT4R	M3.5x10	T-15
SD20S-400-MT4	●	400	428.5	487.1	600.0	MT4	1/4	RK-MT4R	M3.5x10	T-15
SD20H-400-MT4	●	400	428.5	487.1	600.0	MT4	1/4	RK-MT4R	M3.5x10	T-15

25 Connector (D = φ 30.0 - φ 35.0) mm

Designation	Stock	Size						Spare Parts		
		L1	L2	L3	L	A	B			
SD25S-86-MT4	●	86	114.3	172.9	286.3	MT4	1/4	RK-MT4R	M3.5x10	T-15
SD25H-137-MT4	●	137	165.1	223.7	337.1	MT4	1/4	RK-MT4R	M3.5x10	T-15
SD25H-187-MT4	●	187	215.9	274.5	387.9	MT4	1/4	RK-MT4R	M3.5x10	T-15
SD25H-237-MT4	●	237	265.6	324.2	437.6	MT4	1/4	RK-MT4R	M3.5x10	T-15
SD25H-289-MT4	●	289	317.5	376.1	489.5	MT4	1/4	RK-MT4R	M3.5x10	T-15
SD25S-400-MT4	●	400	428.5	487.1	600.0	MT4	1/4	RK-MT4R	M3.5x10	T-15
SD25H-400-MT4	●	400	428.5	487.1	600.0	MT4	1/4	RK-MT4R	M3.5x10	T-15

Original SD Drill

Morse Taper Shank



30 Connector (D = φ 35.1 - φ 47.9) mm

Designation	Stock	Size						Spare Parts		
		L1	L2	L3	L	A	B			
SD30S-121-MT4	●	121	152.4	211.7	324.4	MT4	1/4	RK-MT4R	M5.0x10	T-20
SD30H-165-MT4	●	165	196.9	256.2	368.9	MT4	1/4	RK-MT4R	M5.0x10	T-20
SD30H-209-MT4	●	209	241.3	300.6	413.3	MT4	1/4	RK-MT4R	M5.0x10	T-20
SD30H-260-MT4	●	260	291.8	351.1	463.8	MT4	1/4	RK-MT4R	M5.0x10	T-20
SD30H-349-MT4	●	349	381.0	440.3	553.0	MT4	1/4	RK-MT4R	M5.0x10	T-20
SD30S-349-MT4	●	349	381.0	440.3	553.0	MT4	1/4	RK-MT4R	M5.0x10	T-20
SD30S-559-MT4	●	559	590.6	649.9	762.5	MT4	1/4	RK-MT4R	M5.0x10	T-20
SD30S-787-MT4	●	787	819.2	878.5	991.1	MT4	1/4	RK-MT4R	M5.0x10	T-20

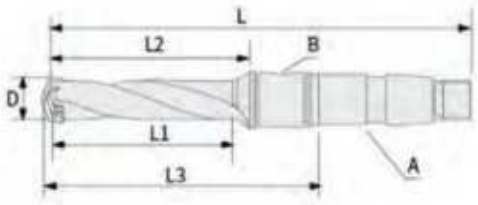
35 Connector (D = φ 42.0 - φ 47.9) mm

Designation	Stock	Size						Spare Parts		
		L1	L2	L3	L	A	B			
SD35S-121-MT4	●	121	152.4	211.7	324.4	MT4	1/4	RK-MT4R	M5.0x10	T-20
SD35H-165-MT4	●	165	196.9	256.2	368.9	MT4	1/4	RK-MT4R	M5.0x10	T-20
SD35H-209-MT4	●	209	241.3	300.6	413.3	MT4	1/4	RK-MT4R	M5.0x10	T-20
SD35H-260-MT4	●	260	291.8	351.1	463.8	MT4	1/4	RK-MT4R	M5.0x10	T-20
SD35H-349-MT4	●	349	381.0	440.3	553.0	MT4	1/4	RK-MT4R	M5.0x10	T-20
SD35S-349-MT4	●	349	381.0	440.3	553.0	MT4	1/4	RK-MT4R	M5.0x10	T-20
SD35S-559-MT4	●	559	590.6	649.9	762.5	MT4	1/4	RK-MT4R	M5.0x10	T-20
SD35S-787-MT4	●	787	819.2	878.5	991.1	MT4	1/4	RK-MT4R	M5.0x10	T-20

Original Spade Drill

Original SD Drill

Morse Taper Shank



40 Connector (D = φ 48.0 - φ 65.28) mm

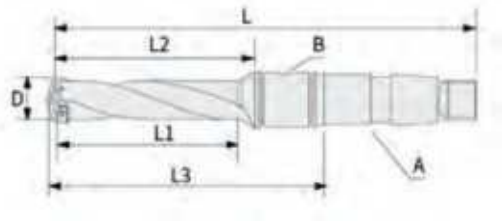
Designation	Stock	Size						Spare Parts		
		L1	L2	L3	L	A	B			
SD40S-130-MT5	●	130	165.1	225.0	369.4	MT5	1/4	RK-MT5R1	M5.0x15	T-20
SD40H-232-MT5	●	232	266.7	326.6	471.0	MT5	1/4	RK-MT5R1	M5.0x15	T-20
SD40S-350-MT5	●	350	384.9	444.8	589.2	MT5	1/4	RK-MT5R1	M5.0x15	T-20
SD40H-350-MT5	●	350	384.9	444.8	589.2	MT5	1/4	RK-MT5R1	M5.0x15	T-20
SD40H-422-MT5	●	422	457.2	517.1	661.5	MT5	1/4	RK-MT5R1	M5.0x15	T-20
SD40S-422-MT5	●	422	457.2	517.1	661.5	MT5	1/4	RK-MT5R1	M5.0x15	T-20
SD40S-625-MT5	●	625	660.4	720.3	864.7	MT5	1/4	RK-MT5R1	M5.0x15	T-20
SD40S-879-MT5	●	879	914.4	974.3	1118.7	MT5	1/4	RK-MT5R1	M5.0x15	T-20

45 Connector (D = φ 56.0 - φ 65.28) mm

Designation	Stock	Size						Spare Parts		
		L1	L2	L3	L	A	B			
SD45S-130-MT5	●	130	165.1	225.0	369.4	MT5	1/4	RK-MT5R1	M5.0x15	T-20
SD45H-232-MT5	●	232	266.7	326.6	471.0	MT5	1/4	RK-MT5R1	M5.0x15	T-20
SD45S-350-MT5	●	350	384.9	444.8	589.2	MT5	1/4	RK-MT5R1	M5.0x15	T-20
SD45H-350-MT5	●	350	384.9	444.8	589.2	MT5	1/4	RK-MT5R1	M5.0x15	T-20
SD45H-422-MT5	●	422	457.2	517.1	661.5	MT5	1/4	RK-MT5R1	M5.0x15	T-20
SD45S-422-MT5	●	422	457.2	517.1	661.5	MT5	1/4	RK-MT5R1	M5.0x15	T-20
SD45S-625-MT5	●	625	660.4	720.3	864.7	MT5	1/4	RK-MT5R1	M5.0x15	T-20
SD45S-879-MT5	●	879	914.4	974.3	1118.7	MT5	1/4	RK-MT5R1	M5.0x15	T-20

Original SD Drill

Morse Taper Shank



50 Connector (D = φ 65.3 - φ 89.08) mm

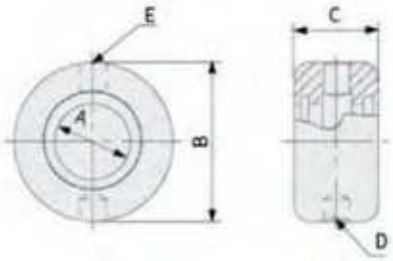
Designation	Stock	Size						Spare Parts		
		L1	L2	L3	L	A	B			
SD50S-171-MT5	●	171	215.9	287.3	430.2	MT5	1/2	RK-MT5R2	M6.0x15	T-25
SD50H-273-MT5	●	273	317.5	388.9	531.8	MT5	1/2	RK-MT5R2	M6.0x15	T-25
SD50S-464-MT5	●	464	508.0	579.4	722.3	MT5	1/2	RK-MT5R2	M6.0x15	T-25
SD50S-660-MT5	●	660	704.8	776.2	919.1	MT5	1/2	RK-MT5R2	M6.0x15	T-25
SD50S-889-MT5	●	889	933.4	1004.8	1147.7	MT5	1/2	RK-MT5R2	M6.0x15	T-25

70 Connector (D = φ 89.1 - φ 114.48) mm

Designation	Stock	Size						Spare Parts		
		L1	L2	L3	L	A	B			
SD70S-171-MT5	●	171	225. 4	296.8	439.7	MT5	1/2	RK-MT5R2	M6.0x15	T-25
SD70H-273-MT5	●	273	327. 0	398.5	541.3	MT5	1/2	RK-MT5R2	M6.0x15	T-25
SD70S-464-MT5	●	556	609. 6	681.1	823.9	MT5	1/2	RK-MT5R2	M6.0x15	T-25
SD70S-660-MT5	●	685	739. 7	811.2	954.0	MT5	1/2	RK-MT5R2	M6.0x15	T-25
SD70S-889-MT5	●	939	993. 7	1065.2	1208.0	MT5	1/2	RK-MT5R2	M6.0x15	T-25

Original Spade Drill

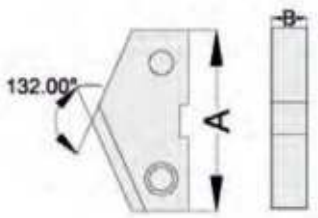
Oil Ring



mm

Designation	A	B	C	D	E
	Inside Dia	Outside Dia	Thickness	Driving Rod Thread	Cooling nozzle thread
RK-MT2R	19.4	49.0	22.5	M8x1.25	1/8"
RK-MT3R	25.5	53.0	30.0	M8x1.25	1/8"
RK-MT4R	32.5	63.0	36.0	M10x1.5	1/4"
RK-MT5R1	48.5	76.0	36.0	M10x1.5	1/4"
RK-MT5R2	60.1	95.3	44.5	M12x1.75	1/2"

Available Insert

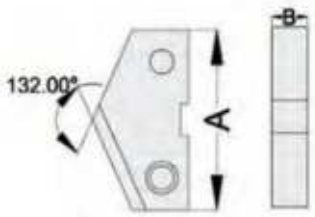


mm

Connector	A	B	S2	S6	G2
Y 9.5 to 11.0	9.5	2.38	SI-Y-0950-S2	SI-Y-0950-S6	SI-Y-0950-G2
	10.0	2.38	SI-Y-1000-S2	SI-Y-1000-S6	SI-Y-1000-G2
	10.5	2.38	SI-Y-1050-S2	SI-Y-1050-S6	SI-Y-1050-G2
	11.0	2.38	SI-Y-1100-S2	SI-Y-1100-S6	SI-Y-1100-G2
Z 11.5 to 12.5	11.5	2.38	SI-Z-1150-S2	SI-Z-1150-S6	SI-Z-1150-G2
	12.0	2.38	SI-Y-1200-S2	SI-Y-1200-S6	SI-Y-1200-G2
	12.5	2.38	SI-Z-1250-S2	SI-Z-1250-S6	SI-Z-1250-G2
0 13.0 to 17.5	13.0	3.18	SI-0-1300-S2	SI-0-1300-S6	SI-0-1300-G2
	13.5	3.18	SI-0-1350-S2	SI-0-1350-S6	SI-0-1350-G2
	14.0	3.18	SI-0-1400-S2	SI-0-1400-S6	SI-0-1400-G2
	14.5	3.18	SI-0-1450-S2	SI-0-1450-S6	SI-0-1450-G2
	15.0	3.18	SI-0-1500-S2	SI-0-1500-S6	SI-0-1500-G2
	15.5	3.18	SI-0-1550-S2	SI-0-1550-S6	SI-0-1550-G2
	16.0	3.18	SI-0-1600-S2	SI-0-1600-S6	SI-0-1600-G2
	16.5	3.18	SI-0-1650-S2	SI-0-1650-S6	SI-0-1650-G2
	17.0	3.18	SI-0-1700-S2	SI-0-1700-S6	SI-0-1700-G2
	17.5	3.18	SI-0-1750-S2	SI-0-1750-S6	SI-0-1750-G2
1 18.0 to 24.0	18.0	3.97	SI-1-1800-S2	SI-1-1800-S6	SI-1-1800-G2
	18.5	3.97	SI-1-1850-S2	SI-1-1850-S6	SI-1-1850-G2
	19.0	3.97	SI-1-1900-S2	SI-1-1900-S6	SI-1-1900-G2
	19.5	3.97	SI-1-1950-S2	SI-1-1950-S6	SI-1-1950-G2
	20.0	3.97	SI-1-2000-S2	SI-1-2000-S6	SI-1-2000-G2
	20.5	3.97	SI-1-2050-S2	SI-1-2050-S6	SI-1-2050-G2
	21.0	3.97	SI-1-2100-S2	SI-1-2100-S6	SI-1-2100-G2
	21.5	3.97	SI-1-2150-S2	SI-1-2150-S6	SI-1-2150-G2
	22.0	3.97	SI-1-2200-S2	SI-1-2200-S6	SI-1-2200-G2
	22.5	3.97	SI-1-2250-S2	SI-1-2250-S6	SI-1-2250-G2
	23.0	3.97	SI-1-2300-S2	SI-1-2300-S6	SI-1-2300-G2
	23.5	3.97	SI-1-2350-S2	SI-1-2350-S6	SI-1-2350-G2
	24.0	3.97	SI-1-2400-S2	SI-1-2400-S6	SI-1-2400-G2

Original Spade Drill

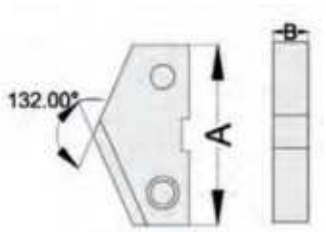
Available Insert



mm

Connector	A	B			
			S2	S6	G2
2 24.50 to 35.0	24.5	4.76	SI-2-2450-S2	SI-2-2450-S6	SI-2-2450-G2
	25.0	4.76	SI-2-2500-S2	SI-2-2500-S6	SI-2-2500-G2
	25.5	4.76	SI-2-2550-S2	SI-2-2550-S6	SI-2-2550-G2
	26.0	4.76	SI-2-2600-S2	SI-2-2600-S6	SI-2-2600-G2
	26.5	4.76	SI-2-2650-S2	SI-2-2650-S6	SI-2-2650-G2
	27.0	4.76	SI-2-2700-S2	SI-2-2700-S6	SI-2-2700-G2
	27.5	4.76	SI-2-2750-S2	SI-2-2750-S6	SI-2-2750-G2
	28.0	4.76	SI-2-2800-S2	SI-2-2800-S6	SI-2-2800-G2
	28.5	4.76	SI-2-2850-S2	SI-2-2850-S6	SI-2-2850-G2
	29.0	4.76	SI-2-2900-S2	SI-2-2900-S6	SI-2-2900-G2
	29.5	4.76	SI-2-2950-S2	SI-2-2950-S6	SI-2-2950-G2
	30.0	4.76	SI-2-3000-S2	SI-2-3000-S6	SI-2-3000-G2
	30.5	4.76	SI-2-3050-S2	SI-2-3050-S6	SI-2-3050-G2
	31.0	4.76	SI-2-3100-S2	SI-2-3100-S6	SI-2-3100-G2
	31.5	4.76	SI-2-3150-S2	SI-2-3150-S6	SI-2-3150-G2
	32.0	4.76	SI-2-3200-S2	SI-2-3200-S6	SI-2-3200-G2
	32.5	4.76	SI-2-3250-S2	SI-2-3250-S6	SI-2-3250-G2
	33.0	4.76	SI-2-3300-S2	SI-2-3300-S6	SI-2-3300-G2
	33.5	4.76	SI-2-3350-S2	SI-2-3350-S6	SI-2-3350-G2
	34.0	4.76	SI-2-3400-S2	SI-2-3400-S6	SI-2-3400-G2
	34.5	4.76	SI-2-3450-S2	SI-2-3450-S6	SI-2-3450-G2
	35.0	4.76	SI-2-3500-S2	SI-2-3500-S6	SI-2-3500-G2

Available Insert

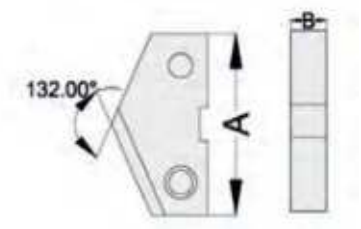


mm

Connector	A	B			
			S2	S6	G2
3 36.0 to 47.0	35.5	6.35	SI-3-3550-S2	SI-3-3550-S6	SI-3-3550-G2
	36.0	6.35	SI-3-3600-S2	SI-3-3600-S6	SI-3-3600-G2
	36.5	6.35	SI-3-3650-S2	SI-3-3650-S6	SI-3-3650-G2
	37.0	6.35	SI-3-3700-S2	SI-3-3700-S6	SI-3-3700-G2
	37.5	6.35	SI-3-3750-S2	SI-3-3750-S6	SI-3-3750-G2
	38.0	6.35	SI-3-3800-S2	SI-3-3800-S6	SI-3-3800-G2
	38.5	6.35	SI-3-3850-S2	SI-3-3850-S6	SI-3-3850-G2
	39.0	6.35	SI-3-3900-S2	SI-3-3900-S6	SI-3-3900-G2
	39.5	6.35	SI-3-3950-S2	SI-3-3950-S6	SI-3-3950-G2
	40.0	6.35	SI-3-4000-S2	SI-3-4000-S6	SI-3-4000-G2
	40.5	6.35	SI-3-4050-S2	SI-3-4050-S6	SI-3-4050-G2
	41.0	6.35	SI-3-4100-S2	SI-3-4100-S6	SI-3-4100-G2
	42.0	6.35	SI-3-4200-S2	SI-3-4200-S6	SI-3-4200-G2
	43.0	6.35	SI-3-4300-S2	SI-3-4300-S6	SI-3-4300-G2
	44.0	6.35	SI-3-4400-S2	SI-3-4400-S6	SI-3-4400-G2
	45.0	6.35	SI-3-4500-S2	SI-3-4500-S6	SI-3-4500-G2
	46.0	6.35	SI-3-4600-S2	SI-3-4600-S6	SI-3-4600-G2
	47.0	6.35	SI-3-4700-S2	SI-3-4700-S6	SI-3-4700-G2

Original Spade Drill

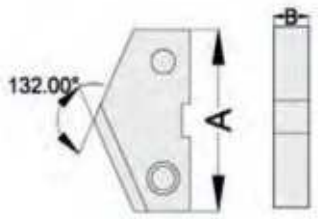
Available Insert



mm

Connector	A	B			
			S2	S6	G2
4 48.0 to 65.0	48.0	7.94	SI-4-4800-S2	SI-4-4800-S6	
	49.0	7.94	SI-4-4900-S2	SI-4-4900-S6	
	50.0	7.94	SI-4-5000-S2	SI-4-5000-S6	
	51.0	7.94	SI-4-5100-S2	SI-4-5100-S6	
	52.0	7.94	SI-4-5200-S2	SI-4-5200-S6	
	53.0	7.94	SI-4-5300-S2	SI-4-5300-S6	
	54.0	7.94	SI-4-5400-S2	SI-4-5400-S6	
	55.0	7.94	SI-4-5500-S2	SI-4-5500-S6	
	56.0	7.94	SI-4-5600-S2	SI-4-5600-S6	
	57.0	7.94	SI-4-5700-S2	SI-4-5700-S6	
	58.0	7.94	SI-4-5800-S2	SI-4-5800-S6	
	59.0	7.94	SI-4-5900-S2	SI-4-5900-S6	
	60.0	7.94	SI-4-6000-S2	SI-4-6000-S6	
	61.0	7.94	SI-4-6100-S2	SI-4-6100-S6	
	62.0	7.94	SI-4-6200-S2	SI-4-6200-S6	
	63.0	7.94	SI-4-6300-S2	SI-4-6300-S6	
	64.0	7.94	SI-4-6400-S2	SI-4-6400-S6	
	65.0	7.94	SI-4-6500-S2	SI-4-6500-S6	

Available Insert

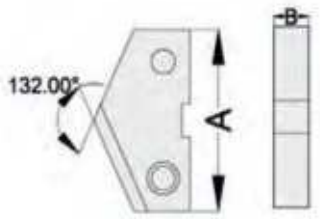


mm

Connector	A	B			
			S2	S6	G2
5 66.0 to 89.0	66.0	11.10	SI-5-6600-S2	SI-5-6600-S6	
	67.0	11.10	SI-5-6700-S2	SI-5-6700-S6	
	68.0	11.10	SI-5-6800-S2	SI-5-6800-S6	
	69.0	11.10	SI-5-6900-S2	SI-5-6900-S6	
	70.0	11.10	SI-5-7000-S2	SI-5-7000-S6	
	71.0	11.10	SI-5-7100-S2	SI-5-7100-S6	
	72.0	11.10	SI-5-7200-S2	SI-5-7200-S6	
	73.0	11.10	SI-5-7300-S2	SI-5-7300-S6	
	74.0	11.10	SI-5-7400-S2	SI-5-7400-S6	
	75.0	11.10	SI-5-7500-S2	SI-5-7500-S6	
	76.0	11.10	SI-5-7600-S2	SI-5-7600-S6	
	77.0	11.10	SI-5-7700-S2	SI-5-7700-S6	
	78.0	11.10	SI-5-7800-S2	SI-5-7800-S6	
	79.0	11.10	SI-5-7900-S2	SI-5-7900-S6	
	80.0	11.10	SI-5-8000-S2	SI-5-8000-S6	
	81.0	11.10	SI-5-8100-S2	SI-5-8100-S6	
	82.0	11.10	SI-5-8200-S2	SI-5-8200-S6	
	83.0	11.10	SI-5-8300-S2	SI-5-8300-S6	
	84.0	11.10	SI-5-8400-S2	SI-5-8400-S6	
	85.0	11.10	SI-5-8500-S2	SI-5-8500-S6	
	86.0	11.10	SI-5-8600-S2	SI-5-8600-S6	
	87.0	11.10	SI-5-8700-S2	SI-5-8700-S6	
	88.0	11.10	SI-5-8800-S2	SI-5-8800-S6	
	89.0	11.10	SI-5-8900-S2	SI-5-8900-S6	

Original Spade Drill

Available Insert



mm

Connector	A	B			
			S2	S6	G2
7 90.0 to 114.0	90.0	11.10	SI-7-9000-S2	SI-7-9000-S6	
	91.0	11.10	SI-7-9100-S2	SI-7-9100-S6	
	92.0	11.10	SI-7-9200-S2	SI-7-9200-S6	
	93.0	11.10	SI-7-9300-S2	SI-7-9300-S6	
	94.0	11.10	SI-7-9400-S2	SI-7-9400-S6	
	95.0	11.10	SI-7-9500-S2	SI-7-9500-S6	
	96.0	11.10	SI-7-9600-S2	SI-7-9600-S6	
	97.0	11.10	SI-7-9700-S2	SI-7-9700-S6	
	98.0	11.10	SI-7-9800-S2	SI-7-9800-S6	
	99.0	11.10	SI-7-9900-S2	SI-7-9900-S6	
	100.0	11.10	SI-7-10000-S2	SI-7-10000-S6	
	101.0	11.10	SI-7-10100-S2	SI-7-10100-S6	
	102.0	11.10	SI-7-10200-S2	SI-7-10200-S6	
	103.0	11.10	SI-7-10300-S2	SI-7-10300-S6	
	104.0	11.10	SI-7-10400-S2	SI-7-10400-S6	
	105.0	11.10	SI-7-10500-S2	SI-7-10500-S6	
	106.0	11.10	SI-7-10600-S2	SI-7-10600-S6	
	107.0	11.10	SI-7-10700-S2	SI-7-10700-S6	
	108.0	11.10	SI-7-10800-S2	SI-7-10800-S6	

TOOTOOL®

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Technical Information for V-max Drill

▶ The application of V-max indexable drill can greatly improve the machining efficiency.

V-Max Indexable Drill

•The drill has good centering effect with center pilot drill structure, so as to ensure the hole with good straightness.

•The inner and outer edges are used in insertable cartridge. In actual application, the most easily damaged is outer edge, by replacing the cartridge to avoid the scrap of the whole drill, saving the cost of tools.

•By adjusting the outer cartridge, the drilling size can be changed within 0-5mm

•The drill head and the adoptor adopt modular structure. By changing the adoptor of various lengths to drill the hole of different depths.

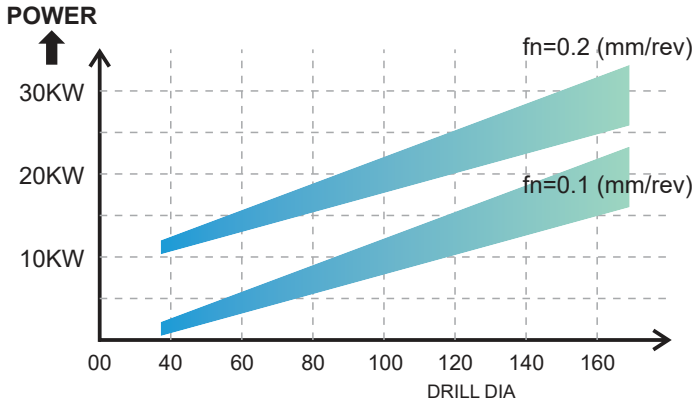
•With through coolant hole, the drill can increase the life of inserts by better cooling the inserts, also it will be good for chip flow.

•In the process of drilling, the chips are all broken, without the slender winding iron chips like traditional twist drill processing, thereby improving the security greatly.

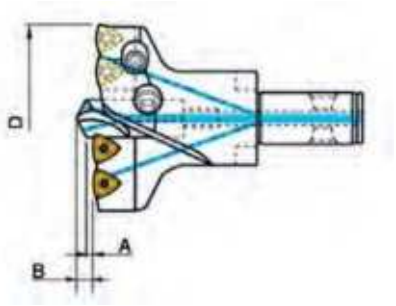
•In the process of drilling, by automatic feeding continuously, it doesn't need to return back each chip off, so that significantly enhance machining efficiency.

•The connecting strength by the drill modular system is excellent and the drilling depth is freely adjustable by connecting adoptor

POWER REQUIRMENTS



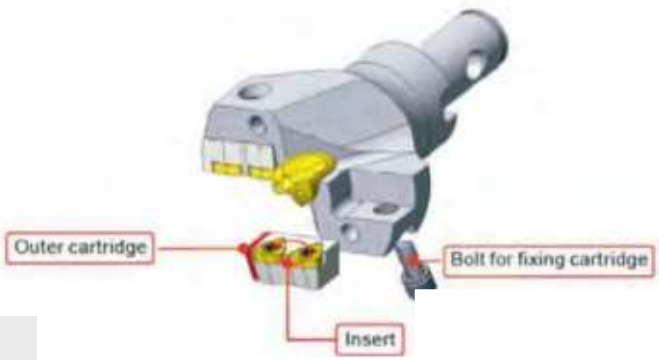
PILOT DRILL (PLD) SETTING



D	2-4XD		4-6XD		6-8XD	
	A	B	A	B	A	B
45-55	1.6	4.0	1.8	4.2	2.0	4.4
55-75	1.8	5.4	2.0	5.6	2.2	5.8
75-100	2.2	6.5	2.5	6.8	2.8	7.1
100-120	2.4	7.7	2.8	8.1	3.2	8.5
120-170	3.2	9.9	3.6	10.3	4.0	10.7
170-180	3.5	12.2	3.9	12.6	4.3	13.0

THE DIAMETER ADJUSTING PROCEDURES OF VMD

1. Loosen the clamping bolt of the outer cartridge and remove it from the drill body.
2. Cut off the inside part, the contacted side of the outer cartridge by milling after calculating the drilling diameter.
3. Slick the sharp corner of the cut cartridge.
4. Clamp the bolt for fixing cartridge without any gap in between the holder and the machined outer cartridge.

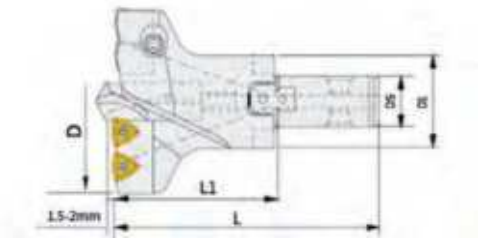


Example

If setting VMD-135140 to ⌀136 seat
The standard drill diameter is ⌀140 so ⌀140-⌀136=4→4÷2=2(calculation by semidiameter)
2mm is cut off.

V-max Drill

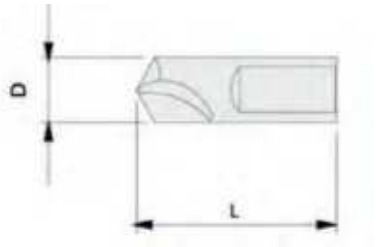
Modular Shank Type



mm

Designation	Dimension					Cartridge		Pilot Drill	No.of Insert	Insert	Spare Parts	
	D	DS	D1	L1	L	Inner	Outer					
VMD-045050	45-50	16	30	60	95	VMC-045050N	VMC-045050T	PLD-1035-H	2	WCMX030208	M2.5x6	T-8
VMD-050055	50-55					VMC-050055N	VMC-050055T		2			
VMD-055060	55-60					VMC-055060N	VMC-055060T	PLD-1238-H	2	WCMX040208		
VMD-060065	60-65	25	45	82	127	VMC-060065N	VMC-060065T		2	WCMX050308	M3.0x7	
VMD-065070	65-70					VMC-065070N	VMC-065070T		2			
VMD-070075	70-75					VMC-070075N	VMC-070075T		2	WCMX06T308	M3.5x9	T-15
VMD-075080	75-80					VMC-075080N	VMC-075080T	PLD-1645-H	2			
VMD-080085	80-85				139	VMC-080085N	VMC-080085T		2			
VMD-085090	85-90	30	50			VMC-085090N	VMC-085090T		2			
VMD-090095	90-95					VMC-090095N	VMC-090095T		2			
VMD-095100	95-100					VMC-095100N	VMC-095100T		3	WCMX050308	M3.0x7	T-8
VMD-100105	100-105	32	58	94	154	VMC-100105N	VMC-100105T	PLD-2045-H	3			
VMD-105110	105-110					VMC-105110N	VMC-105110T		3			
VMD-110115	110-115					VMC-110115N	VMC-110115T		3	WCMX06T308	M3.5x9	T-15
VMD-115120	115-120	40	70	104		VMC-115120N	VMC-115120T		3			
VMD-120125	120-125					VMC-120125N	VMC-120125T	PLD-2556-H	3			
VMD-125130	125-130					VMC-125130N	VMC-125130T		3			
VMD-130135	130-135					VMC-130135N	VMC-130135T		3			
VMD-135140	135-140					VMC-135140N	VMC-135140T		4			
VMD-140145	140-145	50	80	116	176	VMC-140145N	VMC-140145T		4			
VMD-145150	145-150					VMC-145150N	VMC-145150T		3	WCMX080408	M4.0x10	
VMD-150155	150-155					VMC-150155N	VMC-150155T		3			
VMD-155160	155-160					VMC-155160N	VMC-155160T		3			
VMD-160165	160-165					VMC-160165N	VMC-160165T		5	WCMX06T308	M3.5x9	
VMD-165170	165-170					VMC-165170N	VMC-165170T		5			
VMD-170175	170-175					VMC-170175N	VMC-170175T		4	WCMX080408	M4.0x10	
VMD-175180	175-180					VMC-175180N	VMC-175180T		4			

Pilot Drill



mm

Designation	Coated		Dimension (mm)	
	TiN	TiALN	ΦD	L
PLD-1035-H	●	●	10	35
PLD-1238-H	●	●	12	38
PLD-1645-H	●	●	16	45
PLD2045-H	●	●	20	45
PLD2556-H	●	●	25	56
PLD-3068-H	●	●	30	68

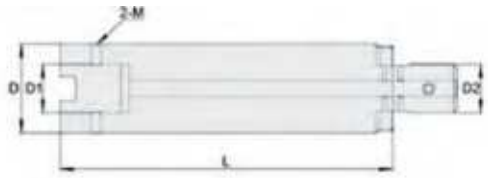
V-max Drill

Cylindrical Adaptor

mm

Designation	Dimension					M	Drilling Range
	D	D1	D2	L	L1		
DXZ-3016100	30	16	32	100	75	M8x0.75	φ45-φ55
DXZ-3016150	30	16	32	150	75	M8x0.75	
DXZ-3016200	30	16	32	200	75	M8x0.75	
DXZ-3016250	30	16	32	250	75	M8x0.75	
DXZ-3016300	30	16	32	300	75	M8x0.75	
DXZ-3016400	30	16	32	400	75	M8x0.75	
DXZ-4525100	45	25	40	100	75	M10x1	φ60-φ80
DXZ-4525150	45	25	40	150	75	M10x1	
DXZ-4525200	45	25	40	200	75	M10x1	
DXZ-4525250	45	25	40	250	75	M10x1	
DXZ-4525300	45	25	40	300	75	M10x1	
DXZ-4525400	45	25	40	400	75	M10x1	
DXZ-5030100	50	30	40	100	75	M12x1	φ85-φ95
DXZ-5030150	50	30	40	150	75	M12x1	
DXZ-5030200	50	30	40	200	75	M12x1	
DXZ-5030250	50	30	40	250	75	M12x1	
DXZ-5030300	50	30	40	300	75	M12x1	
DXZ-5030400	50	30	40	400	75	M12x1	
DXZ-5832100	58	32	40	100	75	M12x1	φ100-φ110
DXZ-5832150	58	32	40	150	75	M12x1	
DXZ-5832200	58	32	40	200	75	M12x1	
DXZ-5832250	58	32	40	250	75	M12x1	
DXZ-5832300	58	32	40	300	75	M12x1	
DXZ-5832400	58	32	40	400	75	M12x1	
DXZ-7040100	70	40	50	100	80	M12x1	φ115-φ135
DXZ-7040150	70	40	50	150	80	M12x1	
DXZ-7040200	70	40	50	200	80	M12x1	
DXZ-7040250	70	40	50	250	80	M12x1	
DXZ-7040300	70	40	50	300	80	M12x1	
DXZ-7040400	70	40	50	400	80	M12x1	
DXZ-8050100	80	50	50	100	80	M12x1	φ140-φ195
DXZ-8050150	80	50	50	150	80	M12x1	
DXZ-8050200	80	50	50	200	80	M12x1	
DXZ-8050250	80	50	50	250	80	M12x1	
DXZ-8050300	80	50	50	300	80	M12x1	
DXZ-8050400	80	50	50	400	80	M12x1	

Cylindrical Adaptor



mm

Designation	Dimension				M	Drilling Range
	D	D1	D2	L		
YXZ-3016100	30	16	16	100	M8x0.75	φ45-φ55
YXZ-3016200	30	16	16	200	M8x0.75	
YXZ-3016300	30	16	16	300	M8x0.75	
YXZ-4525100	45	25	25	100	M10x1	φ60-φ80
YXZ-4525200	45	25	25	200	M10x1	
YXZ-4525300	45	25	25	300	M10x1	
YXZ-5030100	50	30	30	100	M12x1	φ85-φ95
YXZ-5030200	50	30	30	200	M12x1	
YXZ-5030300	50	30	30	300	M12x1	
YXZ-5832100	58	32	32	100	M12x1	φ100-φ110
YXZ-5832200	58	32	32	200	M12x1	
YXZ-5832300	58	32	32	300	M12x1	
YXZ-7040200	70	40	40	200	M12x1	φ115-φ135
YXZ-7040300	70	40	40	300	M12x1	
YXZ-7040400	70	40	40	400	M12x1	
YXZ-8050200	80	50	50	200	M12x1	φ140-φ195
YXZ-8050300	80	50	50	300	M12x1	
YXZ-8050400	80	50	50	400	M12x1	

Cutting Condition Formula

RPM = (Vc x 1000) / (π x Dia.)
where:
RPM = Revolution per minute (rev/min)
Vc = Cutting speed (m/min)
π = 3.1416
Dia. = Diameter of drill (mm)

Tc = H / (Vf x 60)
where:
Tc = Drilling Time (secs.)
H = Drilling depth (mm)
Vf = Feed per minute (mm/min)

Vf = fn x RPM (mm/min)
where:
Vf = Feed per minute (mm/min)
fn = Feed per revolution (mm/rev)
RPM = Revolution per minute (rev/min)

Technical Information for Turbo Drill

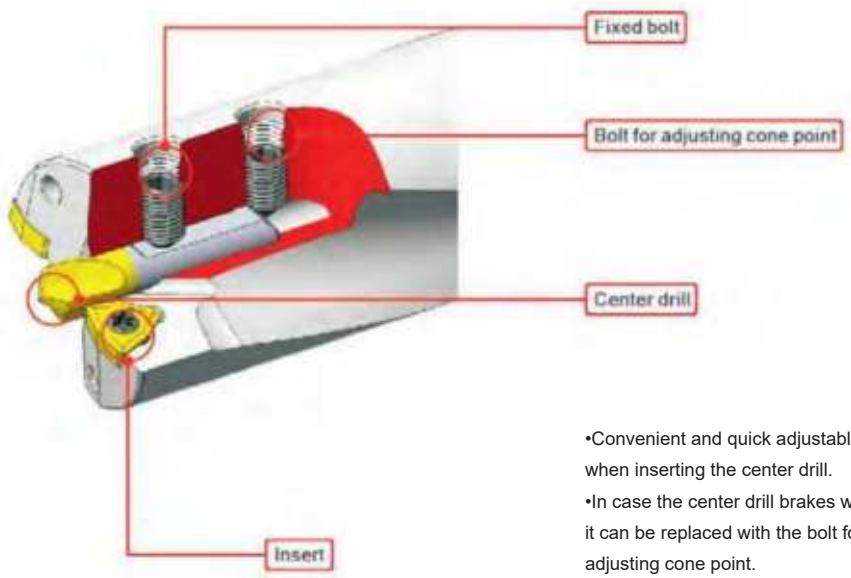
Feature And Benefits

The turbo drill delivers the strength and versatility needed for any deep hole drilling application.
The excellent geometry is designed to increase penetration rates and tool life, providing the lowest cost per hole among deep hole drilling lines.

•The Turbo Drill uses the pilot drill to stabilize the tool through the cut, and outboard carbide inserts to achieve the final cutting diameter
•Allows for higher spindle speeds and taking advantage of the power curve on modern CNC machines for maximum penetration rates on deep holes.

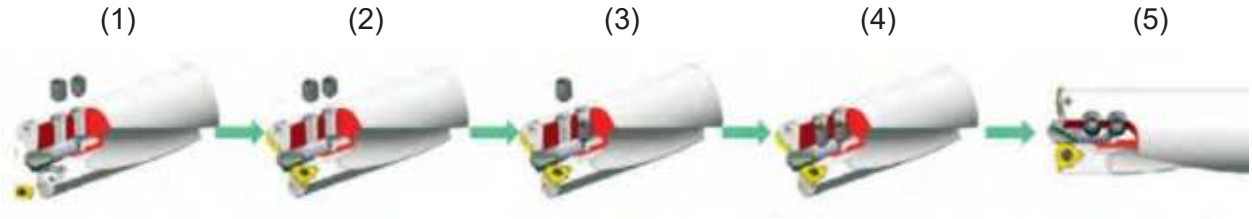
•Diameter Range: 25.00 - 80.00mm.
• Available in 4×D, 5xD, 6.5×D, 8xD & 10×D
•Utilizes Standard WCMX & SPMG Inserts

Feature of corn-point system



•Convenient and quick adjustable heights when inserting the center drill.
•In case the center drill brakes while in usage, it can be replaced with the bolt for adjusting cone point.
•The bolt for adjusting cone point prevents chattering on the center drill.

Clamping



1) Place a center drill.

2) Clamp insert and cartridge.

3) Adjust the center drill with the bolt for adjusting cone point.

4) Clamp the center drill firmly with fixing bolt.

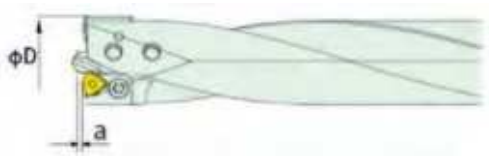
5) Reassure the clamp with bolt for adjusting cone point.

Caution (1) Use safety covers for your safety when clamping the center drill and insert.

(2) When machining, be careful of the drill disk

Lenght of the 'a' part of center drill

The lenght of the 'a' being too short can cause bad surface finish or high cutting load. On the other hand, the length of 'a' being too long can make tool failure and chattering while drilling.



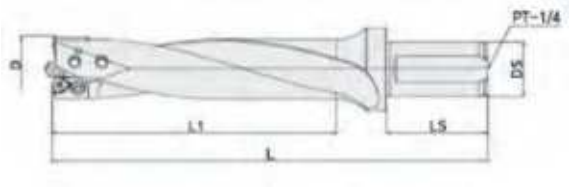
mm

Designation	Lenhth of the "a" part of center drill		
	Steel	Alloy steel	Non-ferrous metal
25-30	1.2	1.0	1.5
31-40	1.5	1.3	1.8
41-50	1.8	1.5	2.2
51-59	2.2	1.8	2.5
60-75	2.5	2.0	2.8
76-80	3.0	2.5	3.5

Turbo Drill

VLT 5xD/6xD/8xD/10xD

Standard Type



Shank	DS	LS
S32	32	60

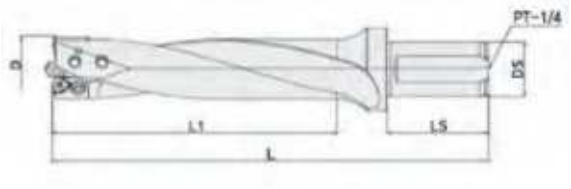
mm

Designation	D	5D		6D		8D		10D		Insert	Pilot Drill
		L1	L	L1	L	L1	L	L1	L		
VLT-250-32-☐	25	125	211	150	236	200	286	-	-	WCMX030204	PLD-0630
VLT-260-32-☐	26	130	216	156	242	208	294	-	-	WCMX040204	
VLT-270-32-☐	27	135	221	162	248	216	302	-	-		
VLT-280-32-☐	28	140	226	168	254	224	310	-	-		
VLT-290-32-☐	29	145	231	174	260	232	318	-	-		
VLT-300-32-☐	30	150	236	180	266	240	326	300	386	WCMX050308	PLD-0835
VLT-310-32-☐	31	155	241	186	272	248	334	310	396		
VLT-320-32-☐	32	160	246	192	278	256	342	320	406		
VLT-330-32-☐	33	165	251	198	284	264	350	330	416		
VLT-340-32-☐	34	170	256	204	290	272	358	340	426		
VLT-350-32-☐	35	175	261	210	296	280	366	350	436		
VLT-360-32-☐	36	180	266	216	302	288	374	360	446		
VLT-370-32-☐	37	185	271	222	308	296	382	370	456		
VLT-380-32-☐	38	190	276	228	314	304	390	380	466		
VLT-390-32-☐	39	195	281	234	320	312	398	390	476		
VLT-400-32-☐	40	200	286	240	326	320	406	400	486		

※ Ex) machining hole 32.5mm * 6D -> VLT-325-32-6D

VLT 5xD/6xD/8xD/10xD

Standard Type



Shank	DS	LS
S40	40	70

mm

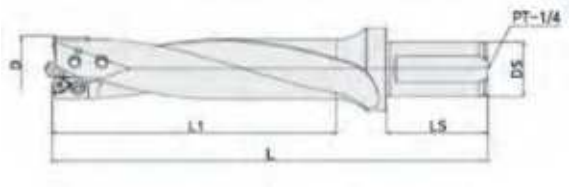
Designation	D	5D		6D		8D		10D		Insert	Pilot Drill
		L1	L	L1	L	L1	L	L1	L		
VLT-400-40-□	40	200	286	240	326	320	406	400	486	WCMX050308	PLD-0835
VLT-410-40-□	41	205	291	246	332	328	414	410	496	WCMX06T308	PLD-1035-H
VLT-420-40-□	42	210	296	252	338	336	422	420	506		
VLT-430-40-□	43	215	301	258	344	344	430	430	516		
VLT-440-40-□	44	220	306	264	350	352	438	440	526		
VLT-450-40-□	45	225	311	270	356	360	446	450	536		
VLT-460-40-□	46	230	316	276	362	368	454	460	546		
VLT-470-40-□	47	235	321	282	368	376	462	470	556		
VLT-480-40-□	48	240	326	288	374	384	470	480	566		
VLT-490-40-□	49	245	331	294	380	392	478	490	576		
VLT-500-40-□	50	250	336	300	386	400	486	500	586		
VLT-510-40-□	51	255	341	306	392	408	494	510	596	WCMX080408	PLD-1238-H
VLT-520-40-□	52	260	346	312	398	416	502	520	606		
VLT-530-40-□	53	265	351	318	404	424	510	530	616		
VLT-540-40-□	54	270	356	324	410	432	518	540	626		
VLT-550-40-□	55	275	361	330	416	440	526	550	636		
VLT-560-40-□	56	280	366	336	422	448	534	560	646		
VLT-570-40-□	57	285	371	342	428	456	542	570	656		
VLT-580-40-□	58	290	376	348	434	464	550	580	666		
VLT-590-40-□	59	295	381	354	440	472	558	590	676		

※ Ex) machining hole 42.5mm * 6D -> VLT-425-40-6D

Turbo Drill

VLT 5xD/6.5xD/8xD/10xD

Dual insert cartridge type



Shank	DS	LS
S40	40	70

mm

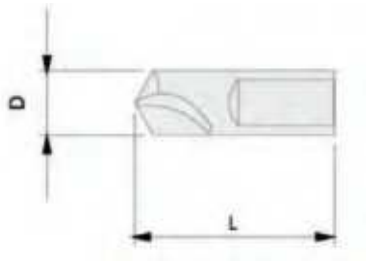
Designation	D	5D		6D		8D		10D		Insert	Pilot Drill
		L1	L	L1	L	L1	L	L1	L		
VLT-6065-40-□	60-65	325	430	390	495	520	625	650	755	WCMX050308	PLD-1238-H
VLT-6570-40-□	65-70	350	455	420	525	560	665	700	805		
VLT-7075-40-□	70-75	375	480	450	555	600	705	750	855		
VLT-7580-40-□	75-80	400	505	485	585	640	745	800	905	WCMX06T308	PLD-1645-H

※ Ex) machining hole 70.5mm * 6D -> VLT-7075-40-6D
Ø60~Ø80 : Cut the outer cartridge and setting.(adjust 5mm)

Parts

TYPE		
	Insert screw	Wrench
VLT-250~300	L0655SSTX2.5-3.6P	TPF-08
VLT-310~400	L0750SSTX3.0-4.0P	TPF-08
VLT-410~500	L0960SSTX3.5-5.3P	TPF-15
VLT-510~590	L1160SSTX4.0-5.7P	TPF-15
VLT-6065~7075	L0750SSTX3.0-4.0P	TPF-08
VLT-7580	L0960SSTX3.5-5.3P	TPF-15

Pilot Drill



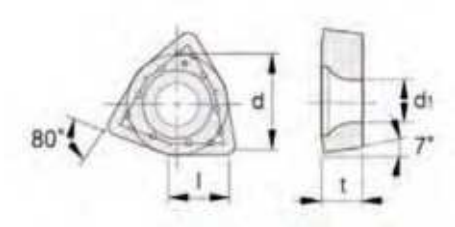
mm

Designation	Coated		Dimension(mm)		Oil-hole
	TiN	TiALN	D	L	
PLD-0630			6	30	NO
PLD-0835			8	35	YES
PLD-1035-H	●	●	10	35	YES
PLD-1238-H	●	●	12	38	YES
PLD-1645-H	●	●	16	45	YES

TURN LINE
THREAD LINE
GROOVE LINE
MILL LINE
DRILL LINE
HARPIN BAYONET
TOOL LINE

Available inserts

WCMX



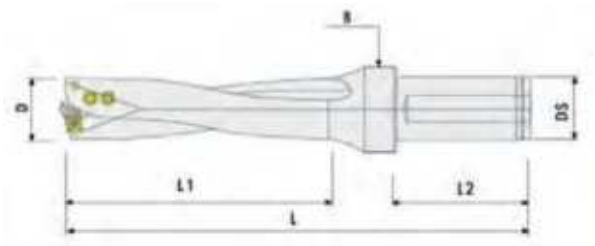
Workpiece			Machining Type														
Steel	P		●	⬍	✱					●	⬍		✱	⬍	✱	
Stainless Steel	M			✱						●	⬍	⬍	✱	⬍	✱	
Cast iron	K		⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱	
Non-ferrous metal	N															
Heat resistant alloy, Titanium alloy	S										●	⬍	✱			
Hardened steel	H											⬍	✱	⬍	✱	

● Continuous cutting
⬍ General cutting
✱ Interrupted cutting

Designation		Dimensions(mm)					CVD Coated							PVD Coated						
		l	d	t	r	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPM8328
WCMX-Z	030204-Z	3.80	5.56	2.38	0.4	2.5										●				
	030208-Z	3.80	5.56	2.38	0.8	2.8										●				
	040204-Z	4.30	6.35	2.38	0.4	2.8										●	●			
	040208-Z	4.30	6.35	2.38	0.8	3.0										●	●			
	050308-Z	5.40	7.94	3.18	0.8	3.4										●	●			
	06T308-Z	6.50	9.525	3.97	0.8	4.4										●	●			
	080408-Z	8.70	12.70	4.76	0.8	4.3														
	080412-Z	8.70	12.70	4.76	1.2	4.3										●	●			
WCMX-ZN	030208-ZN	3.80	5.56	2.38	0.8	2.8										●	●			
	040208-ZN	4.30	6.35	2.38	0.8	3.0										●	●			
	050308-ZN	5.40	7.94	3.18	0.8	3.4										●	●			
	06T308-ZN	6.50	9.525	3.97	0.8	4.4										●	●			
	080412-ZN	8.70	12.70	4.76	1.2	4.3														
	030208-ZW	3.80	5.56	2.38	0.8	2.8										●				●
	040208-ZW	4.30	6.35	2.38	0.8	3.0										●				●
	050308-ZW	5.40	7.94	3.18	0.8	3.4										●				●
	06T308-ZW	6.50	9.525	3.97	0.8	4.4										●				●
	080412-ZW	8.70	12.70	4.76	1.2	4.3										●				●

FXD 5xD/6xD/8xD/10xD

Standard Type



Shank	DS	LS	B
S32	32	60	PT-1/4

mm

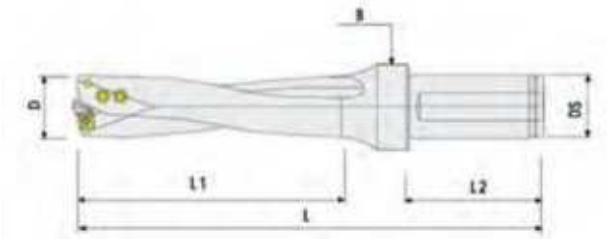
Designation	D	5D		6D		8D		10D		Insert	Pilot Drill
		L1	L	L1	L	L1	L	L1	L		
FXD-250-32-□	25	125	211	150	236	200	286	-	-	SPMG060204	PLD-0620
FXD-260-32-□	26	130	216	156	242	208	294	-	-	SPMG07T308	
FXD-270-32-□	27	135	221	162	248	216	302	-	-		
FXD-280-32-□	28	140	226	168	254	224	310	-	-		
FXD-290-32-□	29	145	231	174	260	232	318	-	-		
FXD-300-32-□	30	150	236	180	266	240	326	300	386	SPMG090408	PLD-0835
FXD-310-32-□	31	155	241	186	272	248	334	310	396		
FXD-320-32-□	32	160	246	192	278	256	342	320	406		
FXD-330-32-□	33	165	251	198	284	264	350	330	416		
FXD-340-32-□	34	170	256	204	290	272	358	340	426		
FXD-350-32-□	35	175	261	210	296	280	366	350	436		
FXD-360-32-□	36	180	266	216	302	288	374	360	446		
FXD-370-32-□	37	185	271	222	308	296	382	370	456		
FXD-380-32-□	38	190	276	228	314	304	390	380	466		
FXD-390-32-□	39	195	281	234	320	312	398	390	476		
FXD-400-32-□	40	200	286	240	326	320	406	400	486		

※ FXD Drill is capable of working laminated boards. Please reduce the feed rate by 30%~50% when performing penetration work.

Turbo Drill

FXD 5xD/6xD/8xD/10xD

Standard Type



Shank	DS	LS	B
S40	40	70	PT-1/4

mm

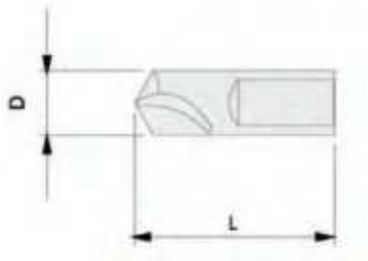
Designation	D	5D		6D		8D		10D		Insert	Pilot Drill
		L1	L	L1	L	L1	L	L1	L		
FXD-400-40-☐	40	200	286	240	326	320	406	400	486	SPMG090408	PLD-1035-H
FXD-410-40-☐	41	205	291	246	332	328	414	410	496		
FXD-420-40-☐	42	210	296	252	338	336	422	420	506		
FXD-430-40-☐	43	215	301	258	344	344	430	430	516		
FXD-440-40-☐	44	220	306	264	350	352	438	440	526		
FXD-450-40-☐	45	225	311	270	356	360	446	450	536	SPMG110408	
FXD-460-40-☐	46	230	316	276	362	368	454	460	546		
FXD-470-40-☐	47	235	321	282	368	376	462	470	556		
FXD-480-40-☐	48	240	326	288	374	384	470	480	566		
FXD-490-40-☐	49	245	331	294	380	392	478	490	576		
FXD-500-40-☐	50	250	336	300	386	400	486	500	586		

※ FXD Drill is capable of working laminated boards. Please reduce the feed rate by 30%~50% when performing penetration work.

Parts

TYPE		
	Insert screw	Wrench
FXD-250	L0560SSTX2.2-3.0P	TPF-06
FXD-260~350	L0655SSTX2.5-3.6P	TPF-08
FXD-360~440	L0960SSTX3.5-5.3P	TPF-15
FXD-450~500	L1060SSTX4.0-5.7P	TPF-15

Pilot Drill



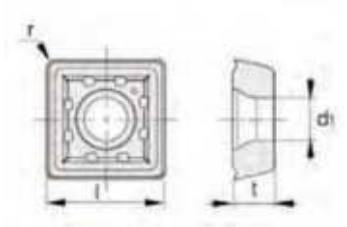
mm

Designation	Coated		Dimension(mm)		Oil-hole
	TiN	TiALN	D	L	
PLD-0620	●	●	6	20	NO
PLD-0835	●	●	8	35	YES
PLD-1035-H	●	●	10	35	YES

Turbo Drill

Available inserts

SPMG



Workpiece																			
	Steel	P	Machining Type	●	⬍	✱					●	⬍		✱	⬍	✱	
	Stainless Steel	M			✱						●	⬍	⬍	✱	⬍	✱	
	Cast iron	K		⬍			●	●	⬍	⬍	●	⬍		✱	⬍	✱	
	Non-ferrous metal	N	● Continuous cutting														
	Heat resistant alloy, Titanium alloy	S	⬍ General cutting									●	⬍	✱			
	Hardened steel	H	✱ Interrupted cutting										⬍	✱	⬍	✱	

Designation		Dimensions(mm)				CVD Coated							PVD Coated						
		l	t	r	d1	TCP9330	TCP9340	TCP9350	TCK5215	TCK5315	TCK5225	TCK5325	TPM8115	TPM8125	TPM8225	TPM8135	TPG4235	TPK4235H	TPM8328
SPMG	040202-Z	4.70	2.38	0.2	2.25									●	●				
	040204-Z	4.70	2.38	0.4	2.25									●					
	050204-Z	5.00	2.38	0.4	2.25									●	●				
	060204-Z	6.00	2.38	0.4	2.61									●	●				
	07T308-Z	7.94	3.97	0.8	2.85									●	●				
	090408-Z	9.80	4.30	0.8	4.05									●	●				
	110408-Z	11.50	4.80	0.8	4.45									●	●				
	140512-Z	14.30	5.20	1.2	5.75									●	●				
SPMG-ZW	050204-ZW	5.00	2.38	0.4	2.25									●					●
	060204-ZW	6.00	2.38	0.4	2.61									●					●
	07T308-ZW	7.94	3.97	0.8	2.85									●					●
	090408-ZW	9.80	4.30	0.8	4.05									●					●
	110408-ZW	11.50	4.80	0.8	4.45									●					●
	140512-ZW	14.30	5.20	1.2	5.75									●					●

NEW DRILL DEVELOPING

SMT MODULAR SYSTEM, STAY TUNED

Features Overview

- ▲ Low thrust prevents workpiece flexing.
- ▲ Excellent centering capabilities.
- ▲ Robust pocket design requires only a simple wrench for blade removal, easy Insert Change
- ▲ Four-wall pocket provides insert stability.

TOOTOOL

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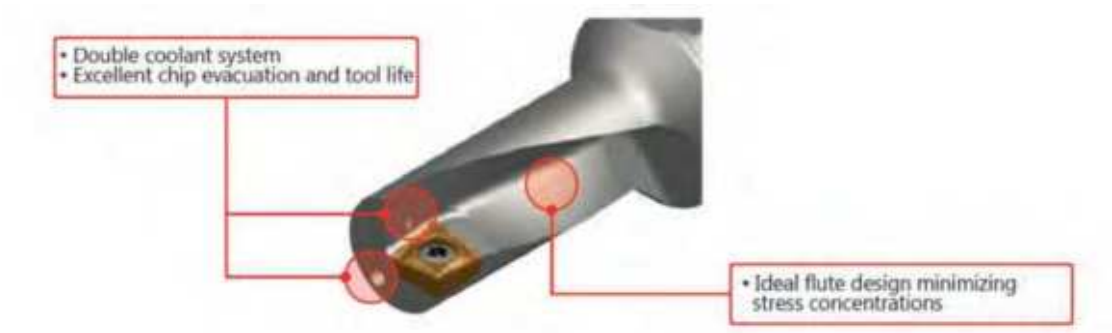
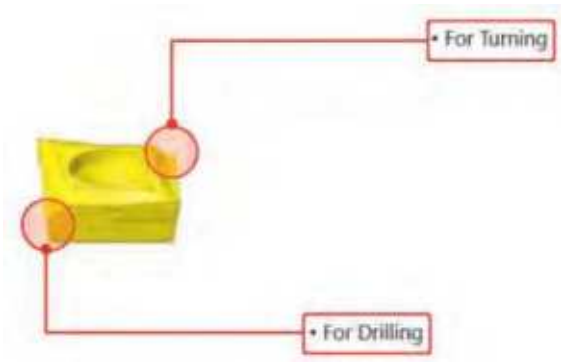
Technical Information for Multi-function system

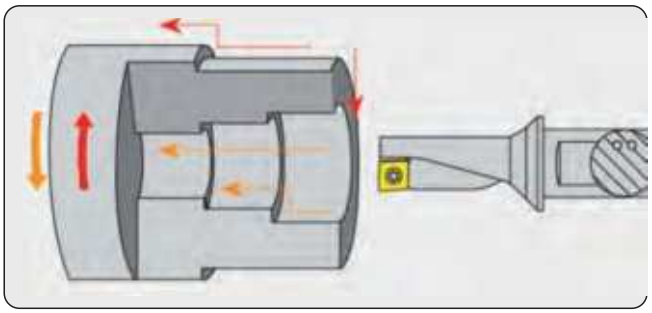
▶ Substitute the existing solid drill, boring bar and lathe turning holder.

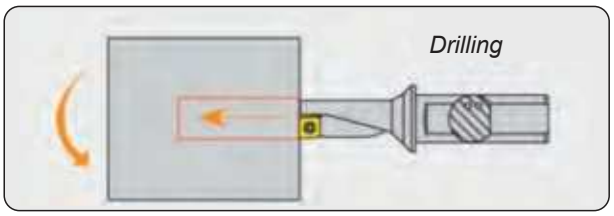
Multi-function system

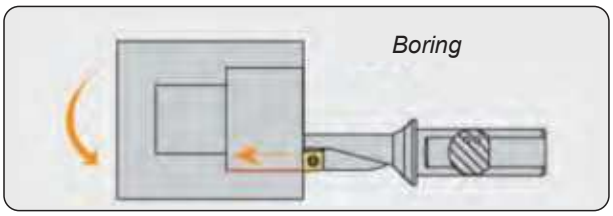


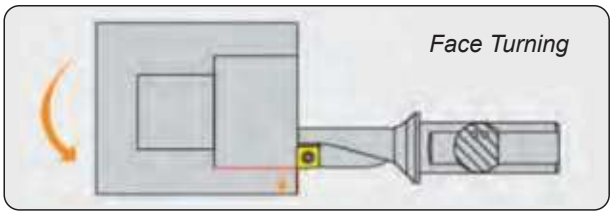


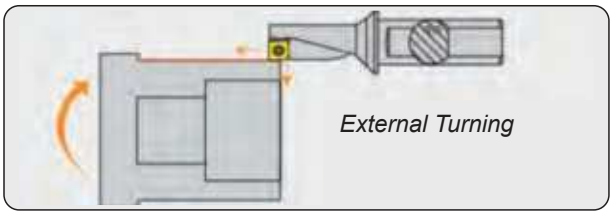
•Internal coolant supply.
•Helical flute for smooth chip flow.
•Large ship gullet for good chip evacuation.
•Two different unique geometries for drilling and turning
•High helix cutting edge to minimize cutting forces.
•Excellent chip control at low feed and small d.o.c.





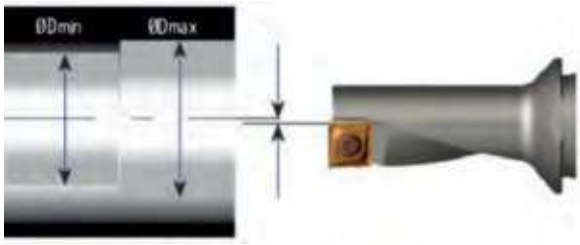






USER'S GUIDE

Offset (Diameter compensation)



Designation	Machined diameter (mm)	ØDmin(mm)	ØDmax(mm)
TCMT-08	8	7.86	8.35
TCMT-10	10	9.82	10.60
TCMT-12	12	11.82	12.60
TCMT-14	14	13.80	14.60
TCMT-16	16	15.76	16.50
TCMT-20	20	19.80	20.60
TCMT-25	25	24.80	25.80
TCMT-32	32	31.80	33.00

Technical Information for Multi-function system

USER'S GUIDE

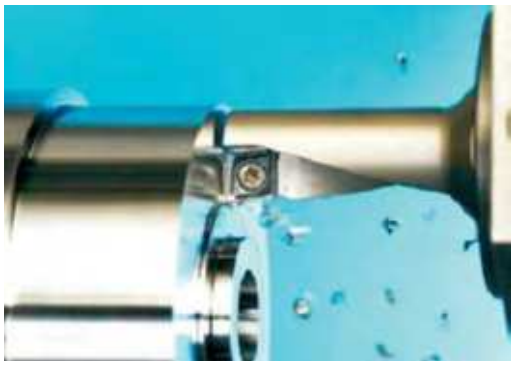
External / Internal turing

● Feed

Designation	ap (mm)	f (mm/rev)
TCMT-08	0.6 (0.2~1.8)	0.05 (0.02~0.15)
TCMT-10	0.8 (0.2~2.2)	0.08 (0.03~0.18)
TCMT-12	1.0 (0.3~2.5)	0.08 (0.03~0.20)
TCMT-14	1.2 (0.4~2.8)	0.12 (0.05~0.22)
TCMT-16	1.5 (0.4~3.2)	0.12 (0.06~0.25)
TCMT-20	1.8 (0.5~3.5)	0.12 (0.06~0.30)
TCMT-25	2.0 (0.6~4.3)	0.15 (0.08~0.33)
TCMT-32	3.0 (0.7~5.3)	0.20 (0.10~0.38)

● Cutting speed

Workepeice Material	Hardness (BHN)	Vc (m/min)
Low Carbon Steel (-0.25% C)	150	150-270
Carbon Steel (0.25%< C)	150-250	100-180
Low Alloy Steel	180	140-230
Medium Alloy Steel	200-250	80-160
High Alloy Steel	250-350	60-120
Martensitic Stainless Steel	200	130-200
Austenitic Stainless Steel	200	100-180
Gray Cast Iron	180-220	120-200
Ductile Cast Iron	200-240	100-180
Aluminum Alloy	60-130	150-600
Copper Alloy	90-100	100-500



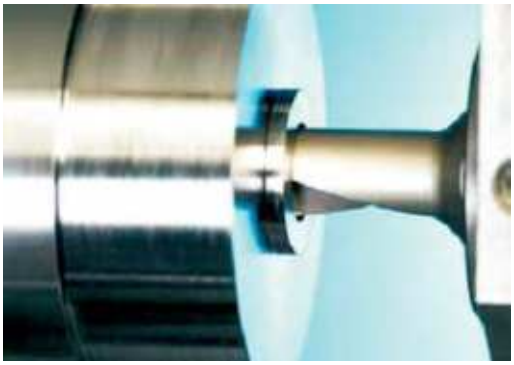
● Feed

Designation	ap (mm)	f (mm/rev)
TCMT-08	0.6 (0.2~1.8)	0.05 (0.02~0.15)
TCMT-10	0.8 (0.2~2.2)	0.08 (0.03~0.18)
TCMT-12	1.0 (0.3~2.5)	0.08 (0.03~0.20)
TCMT-14	1.2 (0.4~2.8)	0.12 (0.05~0.22)
TCMT-16	1.5 (0.4~3.2)	0.12 (0.06~0.25)
TCMT-20	1.8 (0.5~3.5)	0.12 (0.06~0.30)
TCMT-25	2.0 (0.6~4.3)	0.15 (0.08~0.33)
TCMT-32	3.0 (0.7~5.3)	0.20 (0.10~0.38)

Cutting speed

Workepeice Material	Hardness (BHN)	Vc (m/min)
Low Carbon Steel (-0.25% C)	150	150-270
Carbon Steel (0.25%< C)	150-250	100-180
Low Alloy Steel	180	140-230
Medium Alloy Steel	200-250	80-160
High Alloy Steel	250-350	60-120
Martensitic Stainless Steel	200	130-200
Austenitic Stainless Steel	200	100-180
Gray Cast Iron	180-220	120-200
Ductile Cast Iron	200-240	100-180
Aluminum Alloy	60-130	150-600
Copper Alloy	90-100	100-500

Drilling



Feed

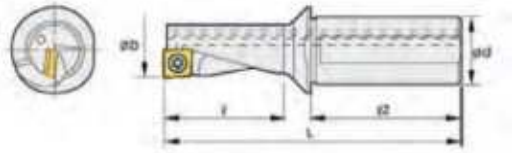
Designation	ap (mm)	f (mm/rev)
TCMT-08		0.06 (0.02~0.09)
TCMT-10		0.06 (0.03~0.11)
TCMT-12		0.08 (0.03~0.12)
TCMT-14		0.08 (0.03~0.13)
TCMT-16		0.08 (0.03~0.13)
TCMT-20		0.08 (0.03~0.13)
TCMT-25		0.08 (0.03~0.13)
TCMT-32		0.08 (0.03~0.13)

Cutting speed

Workepeice Material	Hardness (BHN)	Vc (m/min)
Low Carbon Steel (-0.25% C)	150	130-240
Carbon Steel (0.25%< C)	150-250	90-160
Low Alloy Steel	180	120-210
Medium Alloy Steel	200-250	70-140
High Alloy Steel	250-350	50-100
Martensitic Stainless Steel	200	110-180
Austenitic Stainless Steel	200	90-160
Gray Cast Iron	180-220	110-180
Ductile Cast Iron	200-240	90-160
Aluminum Alloy	60-130	100-500
Copper Alloy	90-100	100-400

Multifunctional tools

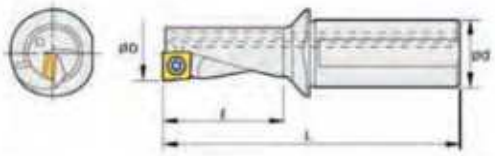
TCMT (Multi-Turn) - 2.25xD



mm

Designation	Size					Inserts	Spare Parts	
	ØD	Ød	ℓ	ℓ2	L			
TCMT08R-2.25D-N12-XC	8	12	18.0	38	60.0	XCMT040104	L0455SSTX1.8-2.7P	TPF-06
TCMT10R-2.25D-N12-XC	10	12	22.5	42	69.5	XCMT050204	L0420SSTX2.0-2.8P	TPF-06
TCMT12R-2.25D-N16-XC	12	16	27.0	45	78.0	XCMT060204	L0560SSTX2.2-3.0P	TPF-06
TCMT14R-2.25D-N16-XC	14	16	31.5	45	83.5	XCMT070304	L0655SSTX2.5-3.6P	TPF-08
TCMT16R-2.25D-N20-XC	16	20	36.0	50	94.0	XCMT080304	L0750SSTX3.0-4.0P	TPF-08
TCMT20R-2.25D-N25-XC	20	25	45.0	56	111.0	XCMT10T304	L0960SSTX3.5-5.5P	TPF-15
TCMT25R-2.25D-N32-XC	25	32	56.5	61	130.0	XCMT130404	L1060SSTX4.5-5.7P	TPF-20
TCMT32R-2.25D-N40-XC	32	40	72.0	74	160.0	XCMT170508	L1260SSTX5.0-7.0P	TPF-20

TCMT (Multi-Turn) - 3xD



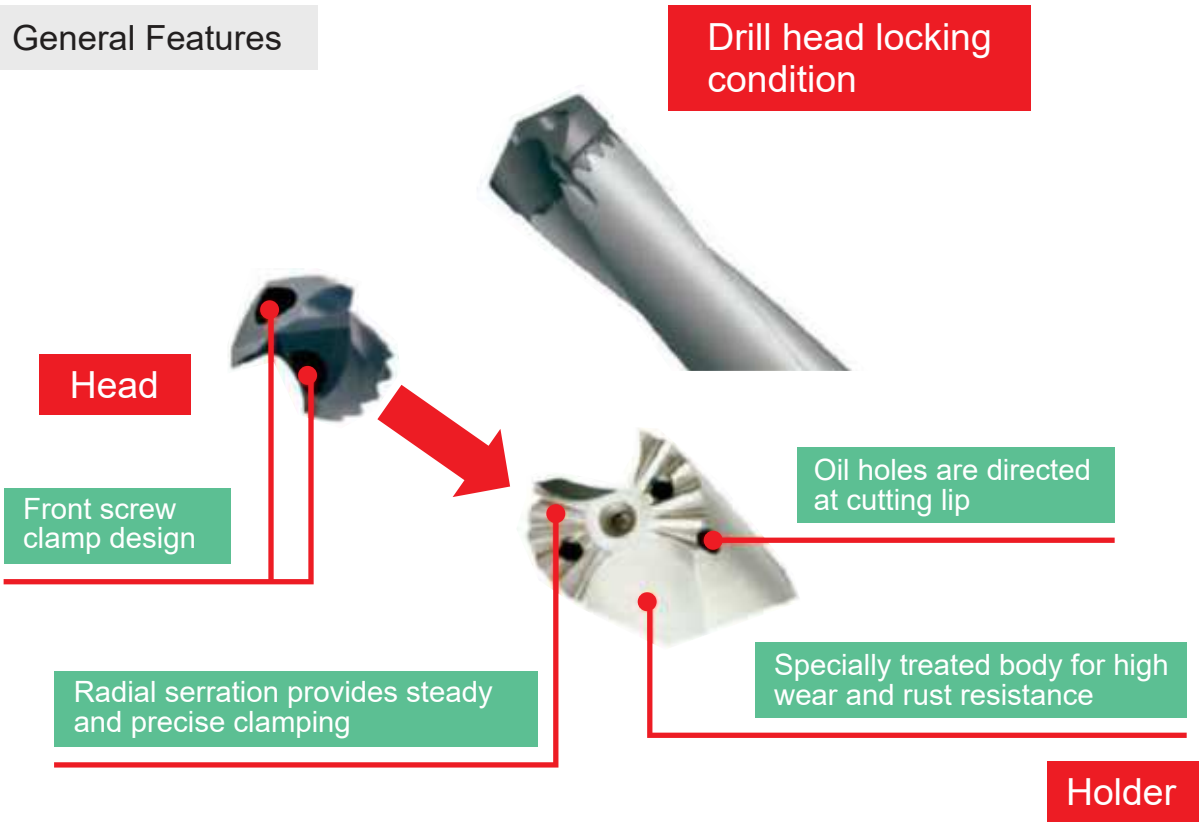
mm

Designation	Size				Inserts	Spare Parts	
	ØD	Ød	ℓ	L			
TCMT08R-3D-N12-XC	8	12	24	70	XCMT040104	L0455SSTX1.8-2.7P	TPF-06
TCMT10R-3D-N12-XC	10	12	30	75	XCMT050204	L0420SSTX2.0-2.8P	TPF-06
TCMT12R-3D-N16-XC	12	16	36	90	XCMT060204	L0560SSTX2.2-3.0P	TPF-06
TCMT14R-3D-N16-XC	14	16	42	95	XCMT070304	L0655SSTX2.5-3.6P	TPF-08
TCMT16R-3D-N20-XC	16	20	48	100	XCMT080304	L0750SSTX3.0-4.0P	TPF-08
TCMT20R-3D-N25-XC	20	25	60	130	XCMT10T304	L0960SSTX3.5-5.5P	TPF-15
TCMT25R-3D-N32-XC	25	32	75	150	XCMT130404	L1060SSTX4.5-5.7P	TPF-20
TCMT32R-3D-N40-XC	32	40	96	185	XCMT170508	L1260SSTX5.0-7.0P	TPF-20

TC Series

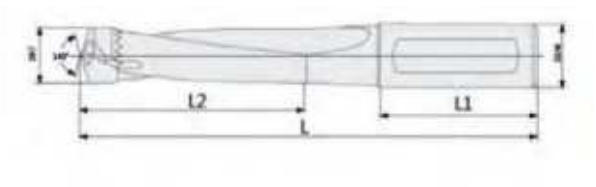
Replaceable Carbide Head

General Features



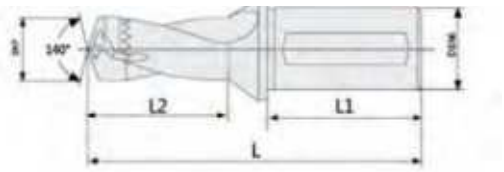
- The drill head diameter range is12-32mm, the depth is 1.5/3/5/8/12 times
- Regrinding allowance of 1.5mm to 3.0mm makes further tool cost reductions possible.
- Indexable type drill with exchangeable head, which has a radial serration design, for high precision and strength.
- An exchangeable drill head provides a new cutting edge, higher productivity and cost efficiency with easy tool management.
- The same tool holder can be equipped with different diameter heads, saving tool costs
- Optimized spiral design improves chip control for soft materials.
- Enhanced cutting edge treatment significantly improves tools life.
- Holder shank design suitable for multiple tooling systems
- With the coolant hole design, the drilling is fully cold, makes longer tool life and the smoother chip removal.

The Ultimate in Low Cost Drilling



mm

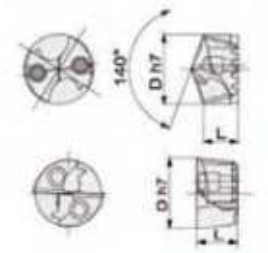
D	3D			5D			8D			L1	D1
	Designations	Dimension		Designations	Dimension		Designations	Dimension			
		L2	L		L2	L		L2	L		
12.00-12.49	TC03-120-XP16	46	107	TC05-120-XP16	71	132	-	-	-	48	16
12.50-13.49	TC03-130-XP16	49	112	TC05-130-XP16	76	142	-	-	-	48	16
13.50-14.50	TC03-140-XP16	55	119	TC05-140-XP16	84	149	TC08-140-XP16	127	194	48	16
14.51-15.50	TC03-150-XP20	58	129	TC05-150-XP20	89	159	TC08-150-XP20	136	204	50	20
15.51-16.50	TC03-160-XP20	62	134	TC05-160-XP20	95	169	TC08-160-XP20	144	214	50	20
16.51-17.50	TC03-170-XP20	66	140	TC05-170-XP20	101	175	TC08-170-XP20	154	225	50	20
17.51-18.50	TC03-180-XP20	70	145	TC05-180-XP20	107	180	TC08-180-XP20	162	230	50	20
18.51-19.50	TC03-190-XP25	73	160	TC05-190-XP25	112	195	TC08-190-XP25	171	255	56	25
19.51-20.50	TC03-200-XP25	77	160	TC05-200-XP25	118	200	TC08-200-XP25	179	262	56	25
20.51-21.50	TC03-210-XP25	80	160	TC05-210-XP25	123	200	TC08-210-XP25	188	266	56	25
21.51-22.80	TC03-220-XP25	84	165	TC05-220-XP25	129	205	TC08-220-XP25	196	275	56	25
22.81-23.80	TC03-230-XP25	87	165	TC05-230-XP25	134	215	TC08-230-XP25	205	285	56	25
23.81-24.80	TC03-240-XP32	91	175	TC05-240-XP32	140	225	TC08-240-XP32	213	300	60	32
24.81-25.80	TC03-250-XP32	93	175	TC05-250-XP32	145	230	TC08-250-XP32	222	305	60	32
25.81-26.80	TC03-260-XP32	97	180	TC05-260-XP32	151	235	TC08-260-XP32	230	315	60	32
26.81-27.80	TC03-270-XP32	99	180	TC05-270-XP32	156	240	TC08-270-XP32	239	325	60	32
27.81-28.80	TC03-280-XP32	102	185	TC05-280-XP32	162	245	TC08-280-XP32	247	330	60	32
28.81-29.80	TC03-290-XP32	105	190	TC05-290-XP32	167	250	TC08-290-XP32	256	340	60	32
29.81-30.80	TC03-300-XP32	110	191	TC05-300-XP32	173	261	TC08-300-XP32	265	351	60	32
30.81-32.00	TC03-320-XP32	116	201	TC05-320-XP32	181	266	TC08-320-XP32	276	361	60	32
32.01-33.50	TC03-330-XP32	121	206	TC05-330-XP32	191	276	TC08-330-XP32	291	376	60	32



mm

D	1.5D			12D			D1	L1
	Designations	Dimension		Designations	Dimension			
		L2	L		L2	L		
12.00-12.49	TC1.5-120-XP16	28	91	-	-	-	48	16
12.50-13.49	TC1.5-130-XP16	30	92	-	-	-	48	16
13.50-14.50	TC1.5-140-XP16	34	96	TC12-140-XP16	171	239	48	16
14.51-15.50	TC1.5-150-XP20	35	100	TC12-150-XP20	183	239	50	20
15.51-16.50	TC1.5-160-XP20	38	103	TC12-160-XP20	195	266	50	20
16.51-17.50	TC1.5-170-XP20	39	105	TC12-170-XP20	207	278	50	20
17.51-18.50	TC1.5-180-XP20	43	107	TC12-180-XP20	219	291	50	20
18.51-19.50	TC1.5-190-XP25	44	115	TC12-190-XP25	232	309	56	25
19.51-20.50	TC1.5-200-XP25	47	118	TC12-200-XP25	244	321	56	25
20.51-21.50	TC1.5-210-XP25	48	119	TC12-210-XP25	256	334	56	25
21.51-22.80	TC1.5-220-XP25	51	121	TC12-220-XP25	268	347	56	25
22.81-23.80	TC1.5-230-XP25	51	122	TC12-230-XP25	280	359	56	25
23.81-24.80	TC1.5-240-XP32	54	129	TC12-240-XP32	292	376	60	32
24.81-25.80	TC1.5-250-XP32	54	129	TC12-250-XP32	305	388	60	32
25.81-26.80	TC1.5-260-XP32	57	132	-	-	-	60	32
26.81-27.80	TC1.5-270-XP32	58	133	-	-	-	60	32
27.81-28.80	TC1.5-280-XP32	60	135	-	-	-	60	32
28.81-29.80	TC1.5-290-XP32	61	136	-	-	-	60	32
29.81-30.80	TC1.5-300-XP32	64	139	-	-	-	60	32

TC Type Replaceable Head Drill



- TCEA is most suitable for soft steel, gray cast iron, stainless steel, relative to low rigidity equipment
- TCPA is most suitable for general steel.
- TCFA is flat drill

mm

Dh7(mm)	Designations		L(mm)	Designations	L(mm)
12.0	TCEA-1200	TCPA-1200	9.1	TCFA-1200	7.1
12.5	TCEA-1250	TCPA-1250	9.4	TCFA-1250	7.2
13.0	TCEA-1300	TCPA-1300	9.7	TCFA-1300	7.5
13.5	TCEA-1350	TCPA-1350	10.3	TCFA-1350	7.9
14.0	TCEA-1400	TCPA-1400	10.3	TCFA-1400	7.9
14.5	TCEA-1450	TCPA-1450	10.3	TCFA-1450	7.9
15.0	TCEA-1500	TCPA-1500	11.0	TCFA-1500	8.3
15.5	TCEA-1550	TCPA-1550	11.0	TCFA-1550	8.3
16.0	TCEA-1600	TCPA-1600	11.6	TCFA-1600	8.8
16.5	TCEA-1650	TCPA-1650	11.6	TCFA-1650	8.8
17.0	TCEA-1700	TCPA-1700	12.3	TCFA-1700	9.3
17.5	TCEA-1750	TCPA-1750	12.3	TCFA-1750	9.3
18.0	TCEA-1800	TCPA-1800	12.9	TCFA-1800	9.8
18.5	TCEA-1850	TCPA-1850	12.9	TCFA-1850	9.8
19.0	TCEA-1900	TCPA-1900	13.6	TCFA-1900	10.2
19.5	TCEA-1950	TCPA-1950	13.6	TCFA-1950	10.2
20.0	TCEA-2000	TCPA-2000	14.1	TCFA-2000	10.7
20.5	TCEA-2050	TCPA-2050	14.1	TCFA-2050	10.7
21.0	TCEA-2100	TCPA-2100	14.8	TCFA-2100	11.2
21.5	TCEA-2150	TCPA-2150	14.8	TCFA-2150	11.2
22.0	TCEA-2200	TCPA-2200	15.0	TCFA-2200	11.2
22.5	TCEA-2250	TCPA-2250	15.0	TCFA-2250	11.2
23.0	TCEA-2300	TCPA-2300	15.2	TCFA-2300	11.2
23.5	TCEA-2350	TCPA-2350	15.2	TCFA-2350	11.2
24.0	TCEA-2400	TCPA-2400	15.4	TCFA-2400	11.3
24.5	TCEA-2450	TCPA-2450	15.4	TCFA-2450	11.3
25.0	TCEA-2500	TCPA-2500	15.9	TCFA-2500	11.7
25.5	TCEA-2550	TCPA-2550	15.9	TCFA-2550	11.7
26.0	TCEA-2600	TCPA-2600	16.5	TCFA-2600	12.2
26.5	TCEA-2650	TCPA-2650	16.5	TCFA-2650	12.2
27.0	TCEA-2700	TCPA-2700	17.2	TCFA-2700	12.7
27.5	TCEA-2750	TCPA-2750	17.2	TCFA-2750	12.7
28.0	TCEA-2800	TCPA-2800	17.8	TCFA-2800	13.2
28.5	TCEA-2850	TCPA-2850	17.8	TCFA-2850	13.2
29.0	TCEA-2900	TCPA-2900	18.4	TCFA-2900	13.6
29.5	TCEA-2950	TCPA-2950	18.4	TCFA-2950	13.6
30.0	TCEA-3000	TCPA-3000	19.0	TCFA-3000	14.1
30.5	TCEA-3050	TCPA-3050	19.0	TCFA-3050	14.1
31.0	TCEA-3100	TCPA-3100	21.0		
31.5	TCEA-3150	TCPA-3150	21.0		
32.0	TCEA-3200	TCPA-3200	21.0		
32.5	TCEA-3250	TCPA-3250	21.0		
33.0	TCEA-3300	TCPA-3300	21.0		
33.5	TCEA-3350	TCPA-3350	21.0		

Parts

TYPE		
	Insert screw	Wrench
12.0 < D = 15.5	SSTX2.2-3.0PXD	TPF-06
15.5 < D = 18.5	SSTX2.5-3.6PXD	TPF-08
18.5 < D = 21.5	SSTX3.0-4.0PXD	TPF-08
21.5 < D = 24.8	SSTX3.5-5.5PXD	TPF-15
24.8 < D = 27.8	SSTX4.0-5.7PXD	TPF-15
27.8 < D = 33.5	SSTX4.5-5.7PXD	TPF-20

Recommended Cutting Conditions

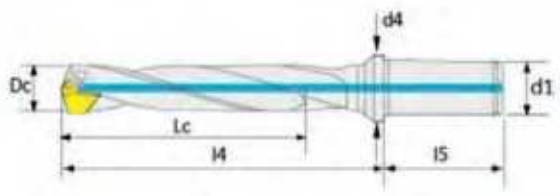
mm

Materials		Recommend Inserts	Cutting Speed Vc m/min	Feed Rate Fn (mm/rev)		
				12~16	16~20	20~30.8
P	Carbon Steel (SxxC)	TCPA/TCEA	80-110 (50-80)	0.15-0.30	0.15-0.30	0.15-0.35
	Alloy Steel (SCM)	TCPA/TCEA	70-110 (50-80)	0.15-0.30	0.15-0.30	0.15-0.35
	Hardnessteel (HRC40-50)	TCPA	40-80 (30-70)	0.10-0.20	0.10-0.20	0.15-0.25
M	~200HB Gray	TCEA	50-80 (40-60)	0.10-0.20	0.10-0.20	0.15-0.25
K	Cast Iron (FC)	TCPA/TCEA	50-100 (40-80)	0.15-0.30	0.15-0.35	0.15-0.40
	Nodular Cast Iron (FCD)	TCPA/TCEA	50-90 (40-70)	0.15-0.30	0.15-0.35	0.15-0.35

For 8xD, 12xD machining, it is recommended to use a short diameter holder to process the guide hole.
And the processing parameters, use () recommended parameters.

Top Solid Indexable Drill

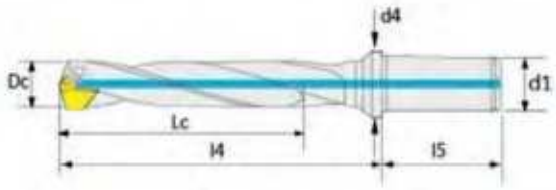
HD Type Replaceable Head Drill 3 x D



mm

Designation	Size							Spare Parts	
	Dc	Lc	l4	l5	d1	d4	Seat size		
HD-XD-03-120-XP16	12	36	68	48	16	20	A	FS3011D	T-10S
HD-XD-03-130-XP16	13	41	72	48	16	20	A	FS3012D	T-10S
HD-XD-03-140-XP16	14	45	76	48	16	20	B	FS3013D	T-10S
HD-XD-03-150-XP16	15	48	80	48	16	20	B	FS3013D	T-10S
HD-XD-03-160-XP20	16	51	84	50	20	25	C	FS3514D	T-15S
HD-XD-03-170-XP20	17	54	88	50	20	25	C	FS3514D	T-15S
HD-XD-03-180-XP20	18	57	92	50	20	25	D	FS3515D	T-15S
HD-XD-03-190-XP20	19	61	96	50	20	25	D	FS3516D	T-15S
HD-XD-03-200-XP20	20	64	100	50	20	25	E	FS4018D	T-15S
HD-XD-03-210-XP20	21	67	104	50	20	25	E	FS4018D	T-15S
HD-XD-03-220-XP25	22	70	109	56	25	32	F	FS5019D	T-20S
HD-XD-03-230-XP25	23	73	113	56	25	32	F	FS5019D	T-20S
HD-XD-03-240-XP25	24	76	117	56	25	32	G	FS5021D	T-20S
HD-XD-03-250-XP25	25	80	121	56	25	32	G	FS5021D	T-20S
HD-XD-03-260-XP25	26	83	125	56	25	32	H	FS6023D	T-25S
HD-XD-03-270-XP25	27	86	129	56	25	32	H	FS6023D	T-25S
HD-XD-03-280-XP32	28	89	134	60	32	40	J	FS6025D	T-25S
HD-XD-03-290-XP32	29	92	138	60	32	40	J	FS6025D	T-25S
HD-XD-03-300-XP32	30	95	142	60	32	40	K	FS6028D	T-25S
HD-XD-03-310-XP32	31	99	146	60	32	40	K	FS6028D	T-25S
HD-XD-03-320-XP40	32	102	150	70	40	50	M	FS6028D	T-25S
HD-XD-03-330-XP40	33	105	154	70	40	50	M	FS6030D	T-25S
HD-XD-03-340-XP40	34	108	158	70	40	50	N	FS6030D	T-25S
HD-XD-03-350-XP40	35	111	162	70	40	50	N	FS6030D	T-25S
HD-XD-03-360-XP40	36	115	166	70	40	50	P	FS6033D	T-25S
HD-XD-03-370-XP40	37	118	170	70	40	50	P	FS6033D	T-25S
HD-XD-03-380-XP40	38	121	173	70	40	50	Q	FS6035D	T-25S
HD-XD-03-390-XP40	39	124	176	70	40	50	Q	FS6035D	T-25S

HD Type Replaceable Head Drill 5 x D

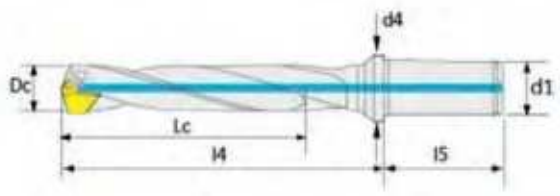


mm

Designation	Size							Spare Parts	
	Dc	Lc	l4	l5	d1	d4	Seat size		
HD-XD-05-120-XP16	12	62	92	48	16	20	A	FS3011D	T-10S
HD-XD-05-130-XP16	13	67	98	48	16	20	A	FS3012D	T-10S
HD-XD-05-140-XP16	14	73	104	48	16	20	B	FS3013D	T-10S
HD-XD-05-150-XP16	15	78	110	48	16	20	B	FS3013D	T-10S
HD-XD-05-160-XP20	16	83	116	50	20	25	C	FS3514D	T-15S
HD-XD-05-170-XP20	17	88	122	50	20	25	C	FS3514D	T-15S
HD-XD-05-180-XP20	18	93	128	50	20	25	D	FS3515D	T-15S
HD-XD-05-190-XP20	19	98	134	50	20	25	D	FS3516D	T-15S
HD-XD-05-200-XP20	20	104	140	50	20	25	E	FS4018D	T-15S
HD-XD-05-210-XP20	21	109	146	50	20	25	E	FS4018D	T-15S
HD-XD-05-220-XP25	22	114	153	56	25	32	F	FS5019D	T-20S
HD-XD-05-230-XP25	23	119	159	56	25	32	F	FS5019D	T-20S
HD-XD-05-240-XP25	24	124	165	56	25	32	G	FS5021D	T-20S
HD-XD-05-250-XP25	25	130	171	56	25	32	G	FS5021D	T-20S
HD-XD-05-260-XP25	26	135	177	56	25	32	H	FS6023D	T-25S
HD-XD-05-270-XP25	27	140	183	56	25	32	H	FS6023D	T-25S
HD-XD-05-280-XP32	28	145	190	60	32	40	J	FS6025D	T-25S
HD-XD-05-290-XP32	29	150	196	60	32	40	J	FS6025D	T-25S
HD-XD-05-300-XP32	30	155	202	60	32	40	K	FS6028D	T-25S
HD-XD-05-310-XP32	31	161	208	60	32	40	K	FS6028D	T-25S
HD-XD-05-320-XP40	32	166	213	70	40	50	M	FS6028D	T-25S
HD-XD-05-330-XP40	33	171	218	70	40	50	M	FS6030D	T-25S
HD-XD-05-340-XP40	34	176	223	70	40	50	N	FS6030D	T-25S
HD-XD-05-350-XP40	35	181	231	70	40	50	N	FS6030D	T-25S
HD-XD-05-360-XP40	36	186	236	70	40	50	P	FS6033D	T-25S
HD-XD-05-370-XP40	37	191	241	70	40	50	P	FS6033D	T-25S
HD-XD-05-380-XP40	38	196	246	70	40	50	Q	FS6035D	T-25S
HD-XD-05-390-XP40	39	201	251	70	40	50	Q	FS6035D	T-25S

Top Solid Indexable Drill

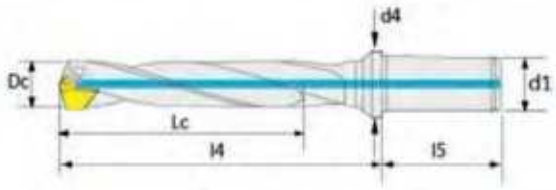
HD Type Replaceable Head Drill 7 x D



mm

Designation	Size							Spare Parts	
	Dc	Lc	l4	l5	d1	d4	Seat size		
HD-XD-07-120-XP16	12	86	116	48	16	20	A	FS3011D	T-10S
HD-XD-07-130-XP16	13	93	124	48	16	20	A	FS3012D	T-10S
HD-XD-07-140-XP16	14	101	132	48	16	20	B	FS3013D	T-10S
HD-XD-07-150-XP16	15	108	140	48	16	20	B	FS3013D	T-10S
HD-XD-07-160-XP20	16	115	148	50	20	25	C	FS3514D	T-15S
HD-XD-07-170-XP20	17	122	156	50	20	25	C	FS3514D	T-15S
HD-XD-07-180-XP20	18	133	164	50	20	25	D	FS3515D	T-15S
HD-XD-07-190-XP20	19	136	172	50	20	25	D	FS3516D	T-15S
HD-XD-07-200-XP20	20	144	180	50	20	25	E	FS4018D	T-15S
HD-XD-07-210-XP20	21	151	188	50	20	25	E	FS4018D	T-15S
HD-XD-07-220-XP25	22	158	197	56	25	32	F	FS5019D	T-20S
HD-XD-07-230-XP25	23	165	205	56	25	32	F	FS5019D	T-20S
HD-XD-07-240-XP25	24	172	213	56	25	32	G	FS5021D	T-20S
HD-XD-07-250-XP25	25	180	221	56	25	32	G	FS5021D	T-20S
HD-XD-07-260-XP25	26	187	229	56	25	32	H	FS6023D	T-25S
HD-XD-07-270-XP25	27	194	237	56	25	32	H	FS6023D	T-25S
HD-XD-07-280-XP32	28	201	246	60	32	40	J	FS6025D	T-25S
HD-XD-07-290-XP32	29	208	254	60	32	40	J	FS6025D	T-25S
HD-XD-07-300-XP32	30	215	262	60	32	40	K	FS6028D	T-25S
HD-XD-07-310-XP32	31	223	270	60	32	40	K	FS6028D	T-25S
HD-XD-07-320-XP40	32	230	277	70	40	50	M	FS6028D	T-25S
HD-XD-07-330-XP40	33	237	285	70	40	50	M	FS6030D	T-25S
HD-XD-07-340-XP40	34	245	293	70	40	50	N	FS6030D	T-25S
HD-XD-07-350-XP40	35	252	300	70	40	50	N	FS6030D	T-25S
HD-XD-07-360-XP40	36	260	308	70	40	50	P	FS6033D	T-25S
HD-XD-07-370-XP40	37	267	316	70	40	50	P	FS6033D	T-25S
HD-XD-07-380-XP40	38	274	323	70	40	50	Q	FS6035D	T-25S
HD-XD-07-390-XP40	39	281	330	70	40	50	Q	FS6035D	T-25S

HD Type Replaceable Head Drill 10 x D



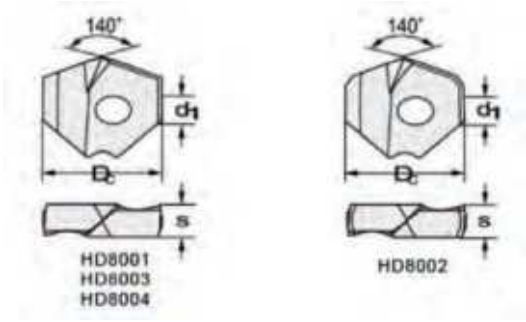
mm

Designation	Size							Spare Parts	
	Dc	Lc	l4	l5	d1	d4	Seat size		
HD-XD-10-120-XP16	12	122	157	48	16	20	A	FS3011D	T-10S
HD-XD-10-130-XP16	13	132	167	48	16	20	A	FS3012D	T-10S
HD-XD-10-140-XP16	14	142	177	48	16	20	B	FS3013D	T-10S
HD-XD-10-150-XP16	15	152	186	48	16	20	B	FS3013D	T-10S
HD-XD-10-160-XP20	16	163	197	50	20	25	C	FS3514D	T-15S
HD-XD-10-170-XP20	17	173	208	50	20	25	C	FS3514D	T-15S
HD-XD-10-180-XP20	18	183	218	50	20	25	D	FS3515D	T-15S
HD-XD-10-190-XP20	19	193	228	50	20	25	D	FS3516D	T-15S
HD-XD-10-200-XP20	20	204	240	50	20	25	E	FS4018D	T-15S
HD-XD-10-210-XP20	21	214	250	50	20	25	E	FS4018D	T-15S
HD-XD-10-220-XP25	22	224	263	56	25	32	F	FS5019D	T-20S
HD-XD-10-230-XP25	23	234	273	56	25	32	F	FS5019D	T-20S
HD-XD-10-240-XP25	24	244	285	56	25	32	G	FS5021D	T-20S
HD-XD-10-250-XP25	25	254	295	56	25	32	G	FS5021D	T-20S
HD-XD-10-260-XP25	26	265	305	56	25	32	H	FS6023D	T-25S
HD-XD-10-270-XP25	27	275	316	56	25	32	H	FS6023D	T-25S
HD-XD-10-280-XP32	28	285	326	60	32	40	J	FS6025D	T-25S
HD-XD-10-290-XP32	29	295	337	60	32	40	J	FS6025D	T-25S
HD-XD-10-300-XP32	30	305	346	60	32	40	K	FS6028D	T-25S
HD-XD-10-310-XP32	31	315	361	60	32	40	K	FS6028D	T-25S
HD-XD-10-320-XP40	32	325	372	70	40	50	M	FS6028D	T-25S
HD-XD-10-330-XP40	33	336	383	70	40	50	M	FS6030D	T-25S
HD-XD-10-340-XP40	34	346	393	70	40	50	N	FS6030D	T-25S
HD-XD-10-350-XP40	35	356	404	70	40	50	N	FS6030D	T-25S
HD-XD-10-360-XP40	36	366	414	70	40	50	P	FS6033D	T-25S
HD-XD-10-370-XP40	37	376	424	70	40	50	P	FS6033D	T-25S
HD-XD-10-380-XP40	38	386	434	70	40	50	Q	FS6035D	T-25S
HD-XD-10-390-XP40	39	396	444	70	40	50	Q	FS6035D	T-25S

HD Available Head

Available Head

HD800



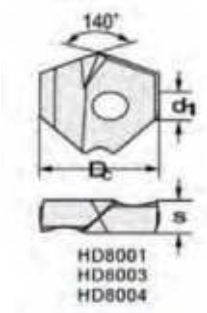
mm

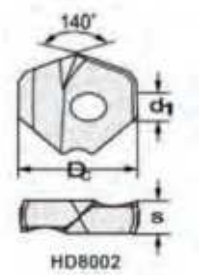
Designations	D1		d1 mm	S mm	Seat size
	mm	In			
HD800..-D12.00	12.00		3.3	3.6	A
HD800..-D12.10	12.10		3.3	3.6	A
HD800..-D12.20	12.20		3.3	3.6	A
HD800..-D12.30	12.30		3.3	3.6	A
HD800..-D12.40	12.40		3.3	3.6	A
HD800..-D12.50	12.50		3.3	3.6	A
HD800..-D12.60	12.60		3.3	3.6	A
HD800..-D12.70	12.70		3.3	3.6	A
HD800..-D12.80	12.80		3.3	3.6	A
HD800..-D12.90	12.90		3.3	3.6	A
HD800..-D12.95	12.95		3.3	3.6	A
HD800..-D13.00	13.00		3.3	3.6	A
HD800..-D13.10	13.10		3.3	3.6	A
HD800..-D13.11	13.11		3.3	3.6	A
HD800..-D13.20	13.20		3.3	3.6	A
HD800..-D13.30	13.30		3.3	3.6	A
HD800..-D13.40	13.40		3.3	3.6	A
HD800..-D13.49	13.49		3.3	3.6	A
HD800..-D13.50	13.50		3.3	3.6	A
HD800..-D13.60	13.60		3.3	3.6	A
HD800..-D13.70	13.70		3.3	3.6	A
HD800..-D13.80	13.80		3.3	3.6	A
HD800..-D13.89	13.89		3.3	3.6	A
HD800..-D13.90	13.90		3.3	3.6	A
HD800..-D14.00	14.00		3.3	4.0	B
HD800..-D14.10	14.10		3.3	4.0	B
HD800..-D14.20	14.20		3.3	4.0	B
HD800..-D14.29	14.29		3.3	4.0	B
HD800..-D14.30	14.30		3.3	4.0	B
HD800..-D14.40	14.40		3.3	4.0	B

Designations	D1		d1 mm	S mm	Seat size
	mm	In			
HD800..-D14.50	14.50		3.3	4.0	B
HD800..-D14.60	14.60		3.3	4.0	B
HD800..-D14.68	14.68		3.3	4.0	B
HD800..-D14.70	14.70		3.3	4.0	B
HD800..-D14.80	14.80		3.3	4.0	B
HD800..-D14.90	14.90		3.3	4.0	B
HD800..-D15.00	15.00		3.3	4.0	B
HD800..-D15.08	15.08		3.3	4.0	B
HD800..-D15.09	15.09		3.3	4.0	B
HD800..-D15.10	15.10		3.3	4.0	B
HD800..-D15.20	15.20		3.3	4.0	B
HD800..-D15.30	15.30		3.3	4.0	B
HD800..-D15.40	15.40		3.3	4.0	B
HD800..-D15.47	15.47		3.3	4.0	B
HD800..-D15.48	15.48		3.3	4.0	B
HD800..-D15.50	15.50		3.3	4.0	B
HD800..-D15.60	15.60		3.3	4.0	B
HD800..-D15.70	15.70		3.3	4.0	B
HD800..-D15.80	15.80		3.3	4.0	B
HD800..-D15.87	15.87		3.3	4.0	B
HD800..-D15.88	15.88		3.3	4.0	B
HD800..-D15.90	15.90		3.3	4.0	B
HD800..-D16.00	16.00		4.0	4.5	C
HD800..-D16.13	16.13		4.0	4.5	C
HD800..-D16.26	16.26		4.0	4.5	C
HD800..-D16.27	16.27		4.0	4.5	C
HD800..-D16.43	16.43		4.0	4.5	C
HD800..-D16.50	16.50		4.0	4.5	C
HD800..-D16.66	16.66		4.0	4.5	C
HD800..-D16.67	16.67		4.0	4.5	C

Available Head

HD800





mm

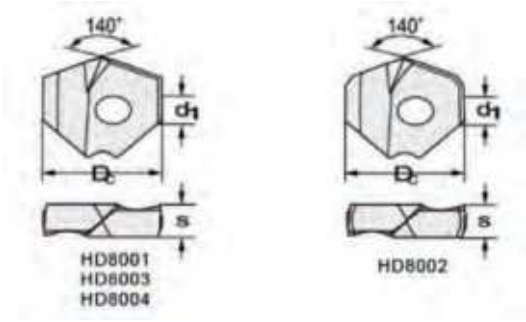
Designations	D1		d1 mm	S mm	Seat size
	mm	In			
HD800..-D16.70	16.70		4.0	4.5	C
HD800..-D16.80	16.80		4.0	4.5	C
HD800..-D17.00	17.00		4.0	4.5	C
HD800..-D17.07	17.07		4.0	4.5	C
HD800..-D17.20	17.20		4.0	4.5	C
HD800..-D17.45	17.45		4.0	4.5	C
HD800..-D17.50	17.50		4.0	4.5	C
HD800..-D17.70	17.70		4.0	4.5	C
HD800..-D17.80	17.80		4.0	4.5	C
HD800..-D17.86	17.86		4.0	4.5	C
HD800..-D18.00	18.00		4.0	5.0	D
HD800..-D18.24	18.24		4.0	5.0	D
HD800..-D18.26	18.26	45/64"	4.0	5.0	D
HD800..-D18.50	18.50		4.0	5.0	D
HD800..-D18.65	18.65		4.0	5.0	D
HD800..-D18.70	18.70		4.0	5.0	D
HD800..-D18.80	18.80		4.0	5.0	D
HD800..-D19.00	19.00		4.0	5.0	D
HD800..-D19.05	19.05		4.0	5.0	D
HD800..-D19.20	19.20		4.0	5.0	D
HD800..-D19.25	19.25		4.0	5.0	D
HD800..-D19.30	19.30	3/4"	4.0	5.0	D
HD800..-D19.43	19.43		4.0	5.0	D
HD800..-D19.45	19.45		4.0	5.0	D
HD800..-D19.50	19.50		4.0	5.0	D
HD800..-D19.60	19.60		4.0	5.0	D
HD800..-D19.70	19.70		4.0	5.0	D
HD800..-D19.80	19.80		4.0	5.0	D
HD800..-D19.84	19.84		4.0	5.0	D
HD800..-D20.00	20.00		4.5	5.5	E

Designations	D1		d1 mm	S mm	Seat size
	mm	In			
HD800..-D20.20	20.20		4.5	5.5	E
HD800..-D20.24	20.24	51/64"	4.5	5.5	E
HD800..-D20.50	20.50		4.5	5.5	E
HD800..-D20.64	20.64		4.5	5.5	E
HD800..-D20.70	20.70		4.5	5.5	E
HD800..-D21.00	21.00		4.5	5.5	E
HD800..-D21.41	21.41		4.5	5.5	E
HD800..-D21.43	21.43		4.5	5.5	E
HD800..-D21.50	21.50		4.5	5.5	E
HD800..-D21.70	21.70		4.5	5.5	E
HD800..-D21.83	21.83		4.5	5.5	E
HD800..-D22.00	22.00		4.5	5.5	E
HD800..-D22.22	22.22		5.5	6.0	F
HD800..-D22.23	22.23		5.5	6.0	F
HD800..-D22.42	22.42		5.5	6.0	F
HD800..-D22.47	22.47		5.5	6.0	F
HD800..-D22.50	22.50		5.5	6.0	F
HD800..-D22.62	22.62		5.5	6.0	F
HD800..-D22.70	22.70		5.5	6.0	F
HD800..-D22.77	22.77		5.5	6.0	F
HD800..-D23.00	23.00		5.5	6.0	F
HD800..-D23.02	23.02		5.5	6.0	F
HD800..-D23.39	23.39		5.5	6.0	F
HD800..-D23.50	23.50		5.5	6.0	F
HD800..-D23.70	23.70		5.5	6.0	F
HD800..-D23.80	23.80		5.5	6.0	F
HD800..-D23.81	23.81		5.5	6.0	F
HD800..-D24.00	24.00		5.0	6.5	G
HD800..-D24.21	24.21	61/64"	5.0	6.5	G
HD800..-D24.50	24.50		5.0	6.5	G

HD Available Head

Available Head

HD800



mm

Designations	D1		d1 mm	S mm	Seat size
	mm	In			
HD800..-D24.59	24.59		5.0	6.5	G
HD800..-D24.61	24.61		5.0	6.5	G
HD800..-D24.70	24.70		5.0	6.5	G
HD800..-D25.00	25.00		5.0	6.5	G
HD800..-D25.25	25.25		5.0	6.5	G
HD800..-D25.40	25.40	1"	5.0	6.5	G
HD800..-D25.50	25.50		5.0	6.5	G
HD800..-D25.65	25.65		5.0	6.5	G
HD800..-D25.70	25.70		5.0	6.5	G
HD800..-D25.80	25.80		5.0	6.5	G
HD800..-D26.00	26.00		6.5	7.1	H
HD800..-D26.25	26.25		6.5	7.1	H
HD800..-D26.50	26.50		6.5	7.1	H
HD800..-D26.59	26.59	1 3/64"	6.5	7.1	H
HD800..-D27.00	27.00		6.5	7.1	H
HD800..-D27.38	27.38		6.5	7.1	H
HD800..-D27.50	27.50		6.5	7.1	H
HD800..-D27.78	27.78		6.5	7.1	H
HD800..-D28.00	28.00		6.5	7.7	J
HD800..-D28.17	28.17		6.5	7.7	J
HD800..-D28.50	28.50		6.5	7.7	J
HD800..-D28.57	28.57		6.5	7.7	J
HD800..-D29.00	29.00		6.5	7.7	J
HD800..-D29.37	29.37		6.5	7.7	J
HD800..-D29.50	29.50		6.5	7.7	J
HD800..-D29.77	29.77		6.5	7.7	J
HD800..-D30.00	30.00		6.5	7.7	J
HD800..-D30.15	30.15		6.5	7.7	J
HD800..-D30.50	30.50		6.5	8.0	K
HD800..-D31.00	31.00		6.5	8.0	K

Designations	D1		d1 mm	S mm	Seat size
	mm	In			
HD800..-D31.50	31.50		6.5	8.0	K
HD800..-D31.75	31.75	1 1/4"	6.5	8.0	K
HD800..-D31.99	31.99		6.5	8.0	K
HD800..-D32.00	32.00		6.5	8.3	M
HD800..-D32.10	32.10		6.5	8.3	M
HD800..-D33.00	33.00		6.5	8.3	M
HD800..-D34.00	34.00		6.5	8.3	N
HD800..-D35.00	35.00		6.5	8.3	N
HD800..-D36.00	36.00		6.5	8.3	P
HD800..-D37.00	37.00		6.5	8.3	P
HD800..-D37.99	37.99		6.5	8.3	P
HD800..-D38.00	38.00		6.5	8.3	Q
HD800..-D39.00	39.00		6.5	8.3	Q
HD800..-D39.99	39.99		6.5	8.3	Q

Recommended Cutting Speed

mm

Material			Condition	3xD		5xD		7xD		10xD	
				Vc (m/min)	VRR	Vc (m/min)	VRR	Vc (m/min)	VRR	Vc (m/min)	VRR
P PSteel	Non-alloy steel and cast steel, free cutting steel	≤0.25%C	Annealed	110	7	100	7	100	7	90	7
		>0.25%C..≤0.55%	Annealed	110	7	100	7	100	7	90	7
		<0.25%C..≤0.55%	Quenched & Tempered	100	7	100	7	100	7	80	7
		>0.55%	Annealed	100	6	90	6	90	6	80	6
		>0.55%	Quenched & Tempered	80	7	71	7	71	7	63	7
		Free cutting steel (short chips)	Annealed	110	7	100	7	100	7	90	7
	Low alloy steel (alloying elements ≤5%)		Annealed	110	7	100	7	100	7		
			Quenched & Tempered	71	7	63	7	63	7	56	7
	High alloy steel (alloying elements > 5%), cast steel, and tool steel		Annealed	80	6	80	6	80	6	63	6
			Quenched & Tempered	80	7	71	7	71	7	63	7
M Stainless steel	Stainless steel & Cast steel		Ferric / Martensitic Annealed								
			Martensitic Quenched & Tempered								
			Annealed Quenched								
			Austenitic precipitation hardened stainless steel (PH stainless steel)								
			Austenitic -ferritic duplex stainless steel								
K Cast iron	Malleable cast iron		Ferritic	110	8	110	8	110	8	100	8
			Pearlitic	110	8	110	8	110	8	100	8
	Grey cast iron (GG)		Low tensile strenght	140	9	120	9	120	9	120	9
			High tensile strenght / Austenitic	120	9	120	9	120	9	110	9
	Cast iron Nodular (GGG)		Ferritic	120	8	120	8	120	8	110	8
			Pearlitic	110	8	110	8	110	8	100	8
N Non-ferrous alloy	Aluminum alloy wrought		Non cureable								
			Cured								
	Aluminum-cast alloy	≤ 12% Si	Non cureable								
			Cured								
		> 12% Si	High temperature								
	Copper and cooper alloy	> 1% Pb	Free cutting								
			Electrolytic Copper								
			Brass								
	Magnesium alloy										
S Heat resistant material	High Temperature. Alloys, Super Alloys	Fe based	Annealed								
			Cured								
		Ni or Co based	Annealed								
			Cured								
	Titanium Alloy		Pure 99.5 Ti								
			Alpha+Beta Alloys Cured								
H Hardened material	Hardened steel		Hardened 45-50HRC								
			Hardened 51-55HRC								
			Hardened 52-62HRC								
	Cast iron		Hardened								

Recommended Cutting Conditions

Recommended Feed Rate

mm

Diameter (mm) corresponding to feed (mm/rev)					
VRR	12	15	20	25	40
2	0.052	0.058	0.067	0.075	0.094
3	0.077	0.087	0.100	0.110	0.140
4	0.100	0.120	0.130	0.150	0.190
5	0.130	0.140	0.170	0.190	0.240
6	0.150	0.170	0.200	0.220	0.280
7	0.180	0.200	0.230	0.260	0.330
8	0.210	0.230	0.270	0.300	0.380
9	0.230	0.260	0.300	0.340	0.420
10	0.260	0.290	0.330	0.370	0.470
12	0.310	0.350	0.400	0.450	0.570
16	0.410	0.460	0.530	0.600	0.750

TOOTOOL®

www.ttooltec.com

Solid Drill Code System

DC 1 - 03 - 03.175 A 6S - 100L - C DFA

1 2 3 4 5 6 7 8 9

1 Tool group

DC 1 - 03 - 03.175 A 6S - 100L - C DFA

DC Carbide Drill

2 Tool Type

DC 1 - 03 - 03.175 A 6S - 100L - C DFA

1. Cylindrical twist drill
2. Chamferdrill
3. Small diameter drill
4. Straight flute drill
5. NC spotting dril

3 Drilling depth / Drilling angle

DC 1 - 03 - 03.175 A 6S - 100L - C DFA

03 ~ 3 x D
05 ~ 5 x D
08 ~ 8 x D
15 ~ 12 x D

60 ~ 60°
90 ~ 90°
120 ~ 120°
** mark the actual shank of the small diameter drill

4 Cutting diameter

DC 1 - 03 - 03.175 A 6S - 100L - C DFA

5 Shank type

DC 1 - 03 - 03.175 A 6S - 100L - C DFA

A DIN 6535 HA Parallel shank

F DIN 6535 HE Parallel shank

6 Shank diameter

DC 1 - 03 - 03.175 A 6S - 100L - C DFA

7 Over length

DC 1 - 03 - 03.175 A 6S - 100L - C DFA

8 Cooling

DC 1 - 03 - 03.175 A 6S - 100L - C DFA

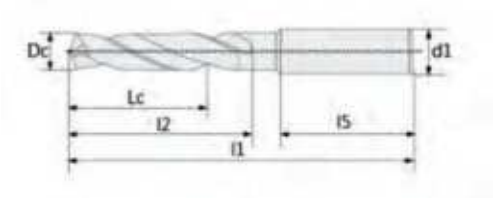
N External coolant

C Axial internal coolant

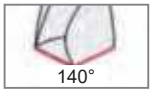
9 Over length

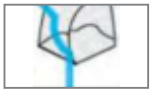
DC 1 - 03 - 03.175 A 6S - 100L - C DFA

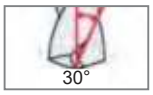
DFS TiSiN coating
DSS Special coating for stainless steel
DFC TiAlCrN coating
DFA TiALN Coating
DF0 Uncoated



- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation





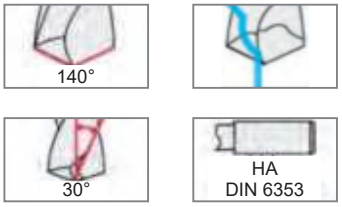


mm

Designation	Dc		d1	3 x D			5 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 03.000A6S-	3.0		6	14	20	62	23	28	66	36
DC1..- 03.100A6S-	3.1		6	14	20	62	23	28	66	36
DC1..- 03.175A6S-	3.175	1/8"	6	14	20	62	23	28	66	36
DC1..- 03.200A6S-	3.2		6	14	20	62	23	28	66	36
DC1..- 03.250A6S-	3.25		6	14	20	62	23	28	66	36
DC1..- 03.300A6S-	3.3		6	14	20	62	23	28	66	36
DC1..- 03.400A6S-	3.4		6	14	20	62	23	28	66	36
DC1..- 03.500A6S-	3.5		6	14	20	62	23	28	66	36
DC1..- 03.572A6S-	3.572	9/64"	6	14	20	62	23	28	66	36
DC1..- 03.600A6S-	3.6		6	14	20	62	23	28	66	36
DC1..- 03.650A6S-	3.65		6	14	20	62	23	28	66	36
DC1..- 03.700A6S-	3.7		6	14	20	62	23	28	66	36
DC1..- 03.800A6S-	3.8		6	17	24	66	29	36	74	36
DC1..- 03.900A6S-	3.9		6	17	24	66	29	36	74	36
DC1..- 03.969A6S-	3.969	5/32"	6	17	24	66	29	36	74	36
DC1..- 04.000A6S-	4.0		6	17	24	66	29	36	74	36
DC1..- 04.100A6S-	4.1		6	17	24	66	29	36	74	36
DC1..- 04.200A6S-	4.2		6	17	24	66	29	36	74	36
DC1..- 04.300A6S-	4.3		6	17	24	66	29	36	74	36
DC1..- 04.366A6S-	4.366	11/64"	6	17	24	66	29	36	74	36
DC1..- 04.400A6S-	44		6	17	24	66	29	36	74	36
DC1..- 04.500A6S-	4.5		6	17	24	66	29	36	74	36
DC1..- 04.600A6S-	4.6		6	17	24	66	29	36	74	36
DC1..- 04.650A6S-	4.65		6	17	24	66	29	36	74	36
DC1..- 04.700A6S-	4.7		6	17	24	66	29	36	74	36
DC1..- 04.763A6S-	4.763	3/16"	6	20	28	66	35	44	82	36

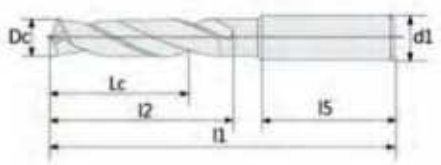
Solid Carbide Twist Drill

- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation



mm

Designation	Dc		d1	3 x D			5 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 04.800A6S-	4.8		6	20	28	66	35	44	82	36
DC1..- 04.900A6S-	4.9		6	20	28	66	35	44	82	36
DC1..- 05.000A6S-	5.0		6	20	28	66	35	44	82	36
DC1..- 05.100A6S-	5.1		6	20	28	66	35	44	82	36
DC1..- 05.159A6S-	5.159	13/64"	6	20	28	66	35	44	82	36
DC1..- 05.200A6S-	5.2		6	20	28	66	35	44	82	36
DC1..- 05.300A6S-	5.3		6	20	28	66	35	44	82	36
DC1..- 05.400A6S-	5.4		6	20	28	66	35	44	82	36
DC1..- 05.500A6S-	5.5		6	20	28	66	35	44	82	36
DC1..- 05.550A6S-	5.55		6	20	28	66	35	44	82	36
DC1..- 05.556A6S-	5.556	7/32"	6	20	28	66	35	44	82	36
DC1..- 05.600A6S-	5.6		6	20	28	66	35	44	82	36
DC1..- 05.700A6S-	5.7		6	20	28	66	35	44	82	36
DC1..- 05.800A6S-	5.8		6	20	28	66	35	44	82	36
DC1..- 05.900A6S-	5.9		6	20	28	66	35	44	82	36
DC1..- 05.953A6S-	5.953	15/64"	6	20	28	66	35	44	82	36
DC1..- 06.000A6S-	6.0		6	20	28	66	35	44	82	36
DC1..- 06.100A8S-	6.1		8	24	34	79	43	53	91	36
DC1..- 06.200A8S-	6.2		8	24	34	79	43	53	91	36
DC1..- 06.300A8S-	6.3		8	24	34	79	43	53	91	36
DC1..- 06.350A8S-	6.35	1/4"	8	24	34	79	43	53	91	36
DC1..- 06.400A8S-	6.4		8	24	34	79	43	53	91	36
DC1..- 06.500A8S-	6.5		8	24	34	79	43	53	91	36
DC1..- 06.600A8S-	6.6		8	24	34	79	43	53	91	36
DC1..- 06.700A8S-	6.7		9	24	34	79	43	53	91	36
DC1..- 06.747A8S-	6.747	17/64"	10	24	34	79	43	53	91	36



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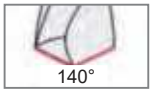
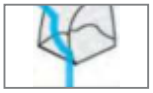
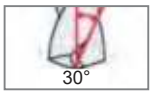




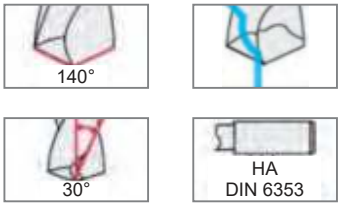


mm

Designation	Dc		d1	3 x D			5 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 06.800A8S-	6.8		8	24	34	79	43	53	91	36
DC1..- 06.900A8S-	6.9		8	24	34	79	43	53	91	36
DC1..- 07.000A8S-	7.0		8	24	34	79	43	53	91	36
DC1..- 07.100A8S-	7.1		8	29	41	79	43	53	91	36
DC1..- 07.144A8S-	7.144		8	29	41	79	43	53	91	36
DC1..- 07.200A8S-	7.2		8	29	41	79	43	53	91	36
DC1..- 07.300A8S-	7.3		8	29	41	79	43	53	91	36
DC1..- 07.400A8S-	7.4		8	29	41	79	43	53	91	36
DC1..- 07.500A8S-	7.5	9/32"	8	29	41	79	43	53	91	36
DC1..- 07.541A8S-	7.541		8	29	41	79	43	53	91	36
DC1..- 07.550A8S-	7.55		8	29	41	79	43	53	91	36
DC1..- 07.600A8S-	7.6		8	29	41	79	43	53	91	36
DC1..- 07.700A8S-	7.7	19/64"	8	29	41	79	43	53	91	36
DC1..- 07.800A8S-	7.8		8	29	41	79	43	53	91	36
DC1..- 07.900A8S-	7.9		8	29	41	79	43	53	91	36
DC1..- 07.938A8S-	7.938		8	29	41	79	43	53	91	36
DC1..- 08.000A8S-	8.0		8	29	41	79	43	53	91	36
DC1..- 08.100A10S-	8.1	5/16"	10	35	47	89	49	61	103	40
DC1..- 08.200A10S-	8.2		10	35	47	89	49	61	103	40
DC1..- 08.300A10S-	8.3		10	35	47	89	49	61	103	40
DC1..- 08.344A10S-	8.344		10	35	47	89	49	61	103	40
DC1..- 08.400A10S-	8.4	21/64"	10	35	47	89	49	61	103	40
DC1..- 08.500A10S-	8.5		10	35	47	89	49	61	103	40
DC1..- 08.600A10S-	8.6		10	35	47	89	49	61	103	40
DC1..- 08.700A10S-	8.7		10	35	47	89	49	61	103	40
DC1..- 08.731A10S-	8.731	11/32"	10	35	47	89	49	61	103	40

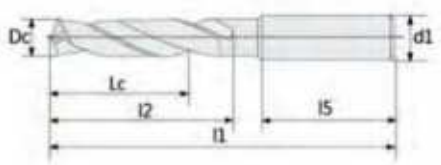
Solid Carbide Twist Drill

- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation

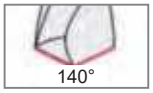


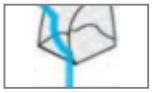
mm

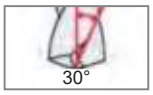
Designation	Dc		d1	3 x D			5 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 08.800A10S-	8.8		10	35	47	89	49	61	103	40
DC1..- 08.900A10S-	8.9		10	35	47	89	49	61	103	40
DC1..- 09.000A10S-	9.0		10	35	47	89	49	61	103	40
DC1..- 09.100A10S-	9.1		10	35	47	89	49	61	103	40
DC1..- 09.128A10S-	9.128	23/64"	10	35	47	89	49	61	103	40
DC1..- 09.200A10S-	9.2		10	35	47	89	49	61	103	40
DC1..- 09.300A10S-	9.3		10	35	47	89	49	61	103	40
DC1..- 09.400A10S-	9.4		10	35	47	89	49	61	103	40
DC1..- 09.500A10S-	9.5		10	35	47	89	49	61	103	40
DC1..- 09.525A10S-	9.525	3/8"	10	35	47	89	49	61	103	40
DC1..- 09.550A10S-	9.55		10	35	47	89	49	61	103	40
DC1..- 09.600A10S-	9.6		10	35	47	89	49	61	103	40
DC1..- 09.700A10S-	9.7		10	35	47	89	49	61	103	40
DC1..- 09.800A10S-	9.8		10	35	47	89	49	61	103	40
DC1..- 09.900A10S-	9.9		10	35	47	89	49	61	103	40
DC1..- 09.922A10S-	9.922	25/64"	10	35	47	89	49	61	103	40
DC1..- 10.000A10S-	10.0		10	35	47	89	49	61	103	40
DC1..- 10.100A12S-	10.1		12	40	55	102	56	71	118	45
DC1..- 10.200A12S-	10.2		12	40	55	102	56	71	118	45
DC1..- 10.300A12S-	10.3		12	40	55	102	56	71	118	45
DC1..- 10.319A12S-	10.319	13/32"	12	40	55	102	56	71	118	45
DC1..- 10.400A12S-	10.4		12	40	55	102	56	71	118	45
DC1..- 10.500A12S-	10.5		12	40	55	102	56	71	118	45
DC1..- 10.600A12S-	10.6		12	40	55	102	56	71	118	45
DC1..- 10.700A12S-	10.7		12	40	55	102	56	71	118	45
DC1..- 10.716A12S-	10.716	27/64"	12	40	55	102	56	71	118	45



- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation



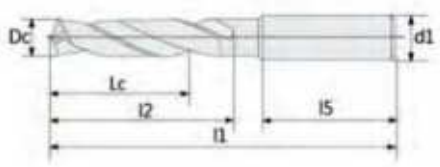




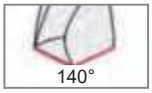
mm

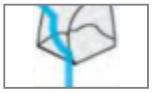
Designation	Dc		d1	3 x D			5 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 10.800A12S-	10.8		12	40	55	102	56	71	118	45
DC1..- 10.900A12S-	10.9		12	40	55	102	56	71	118	45
DC1..- 11.000A12S-	11.0		12	40	55	102	56	71	118	45
DC1..- 11.100A12S-	11.1		12	40	55	102	56	71	118	45
DC1..- 11.113A12S-	11.113	7/16"	12	40	55	102	56	71	118	45
DC1..- 11.200A12S-	11.2		12	40	55	102	56	71	118	45
DC1..- 11.300A12S-	11.3		12	40	55	102	56	71	118	45
DC1..- 11.400A12S-	11.4		12	40	55	102	56	71	118	45
DC1..- 11.500A12S-	11.5		12	40	55	102	56	71	118	45
DC1..- 11.509A12S-	11.509	29/64"	12	40	55	102	56	71	118	45
DC1..- 11.550A12S-	11.55		12	40	55	102	56	71	118	45
DC1..- 11.600A12S-	11.6		12	40	55	102	56	71	118	45
DC1..- 11.700A12S-	11.7		12	40	55	102	56	71	118	45
DC1..- 11.800A12S-	11.8		12	40	55	102	56	71	118	45
DC1..- 11.900A12S-	11.9		12	40	55	102	56	71	118	45
DC1..- 11.906A12S-	11.906	15/32"	12	40	55	102	56	71	118	45
DC1..- 12.000A12S-	12.0		12	40	55	102	56	71	118	45
DC1..- 12.100A14S-	12.1		14	43	60	107	60	77	124	45
DC1..- 12.200A14S-	12.2		14	43	60	107	60	77	124	45
DC1..- 12.250A14S-	12.25		14	43	60	107	60	77	124	45
DC1..- 12.300A14S-	12.3		14	43	60	107	60	77	124	45
DC1..- 12.303A14S-	12.303	31/64"	14	43	60	107	60	77	124	45
DC1..- 12.400A14S-	12.4		14	43	60	107	60	77	124	45
DC1..- 12.500A14S-	12…5		14	43	60	107	60	77	124	45
DC1..- 12.600A14S-	12.6		14	43	60	107	60	77	124	45
DC1..- 12.700A14S-	12.7		14	43	60	107	60	77	124	45

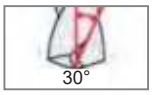
Solid Carbide Twist Drill



- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation

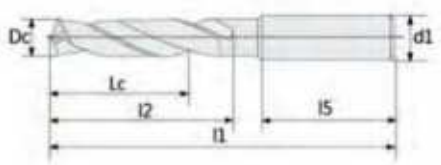




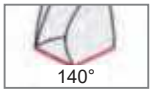


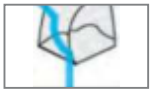
mm

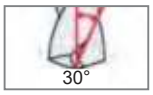
Designation	Dc		d1	3 x D			5 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 12.750A14S-	12.75	1/2"	14	43	60	107	60	77	124	45
DC1..- 12.800A14S-	12.8		14	43	60	107	60	77	124	45
DC1..- 12.900A14S-	12.9		14	43	60	107	60	77	124	45
DC1..- 13.000A14S-	13.0		14	43	60	107	60	77	124	45
DC1..- 13.100A14S-	13.1		14	43	60	107	60	77	124	45
DC1..- 13.200A14S-	13.2		14	43	60	107	60	77	124	45
DC1..- 13.300A14S-	13.3		14	43	60	107	60	77	124	45
DC1..- 13.400A14S-	13.4		14	43	60	107	60	77	124	45
DC1..- 13.494A14S-	13.494	17/32"	14	43	60	107	60	77	124	45
DC1..- 13.500A14S-	13.5		14	43	60	107	60	77	124	45
DC1..- 13.600A14S-	13.6		14	43	60	107	60	77	124	45
DC1..- 13.700A14S-	13.7		14	43	60	107	60	77	124	45
DC1..- 13.800A14S-	13.8		14	43	60	107	60	77	124	45
DC1..- 13.900A14S-	13.9		14	43	60	107	60	77	124	45
DC1..- 14.000A14S-	14.0		14	43	60	107	60	77	124	45
DC1..- 14.100A16S-	14.1		16	45	65	115	63	83	133	48
DC1..- 14.200A16S-	14.2		16	45	65	115	63	83	133	48
DC1..- 14.288A16S-	14.288	9/16"		45	65	115	63	83	133	48
DC1..- 14.300A16S-	14.3			45	65	115	63	83	133	48
DC1..- 14.400A16S-	14.4			45	65	115	63	83	133	48
DC1..- 14.500A16S-	14.5			45	65	115	63	83	133	48
DC1..- 14.600A16S-	14.6			45	65	115	63	83	133	48
DC1..- 14.700A16S-	14.7			45	65	115	63	83	133	48
DC1..- 14.750A16S-	14.75			45	65	115	63	83	133	48
DC1..- 14.800A16S-	14.8			45	65	115	63	83	133	48
DC1..- 15.000A16S-	15.0			45	65	115	63	83	133	48



- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation



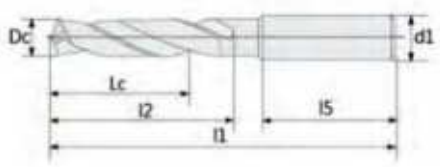




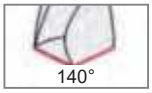
mm

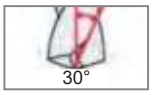
Designation	Dc		d1	3 x D			5 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 15.100A16S-	15.1			45	65	115	63	83	133	48
DC1..- 15.200A16S-	15.2			45	65	115	63	83	133	48
DC1..- 15.300A16S-	15.3			45	65	115	63	83	133	48
DC1..- 15.500A16S-	15.5			45	65	115	63	83	133	48
DC1..- 15.600A16S-	15.6			45	65	115	63	83	133	48
DC1..- 15.700A16S-	15.7			45	65	115	63	83	133	48
DC1..- 15.800A16S-	15.8			45	65	115	63	83	133	48
DC1..- 15.875A16S-	15.875	5/8"		45	65	115	63	83	133	48
DC1..- 15.900A16S-	15.9			45	65	115	63	83	133	48
DC1..- 16.000A16S-	16.0			45	65	115	63	83	133	48
DC1..- 16.100A18S-	16.1			51	73	123	71	93	143	48
DC1..- 16.200A18S-	16.2			51	73	123	71	93	143	48
DC1..- 16.300A18S-	16.3		18	51	73	123	71	93	143	48
DC1..- 16.400A18S-	16.4		18	51	73	123	71	93	143	48
DC1..- 16.500A18S-	16.5		18	51	73	123	71	93	143	48
DC1..- 16.600A18S-	16.6		18	51	73	123	71	93	143	48
DC1..- 16.700A18S-	16.7		18	51	73	123	71	93	143	48
DC1..- 16.750A18S-	16.75		18	51	73	123	71	93	143	48
DC1..- 16.800A18S-	16.8		18	51	73	123	71	93	143	48
DC1..- 17.000A18S-	17.0		18	51	73	123	71	93	143	48
DC1..- 17.200A18S-	17.2		18	51	73	123	71	93	143	48
DC1..- 17.300A18S-	17.3		18	51	73	123	71	93	143	48
DC1..- 17.500A18S-	17.5		18	51	73	123	71	93	143	48
DC1..- 17.600A18S-	17.6		18	51	73	123	71	93	143	48
DC1..- 17.700A18S-	17.7		18	51	73	123	71	93	143	48
DC1..- 17.800A18S-	17.8		18	51	73	123	71	93	143	48

Solid Carbide Twist Drill



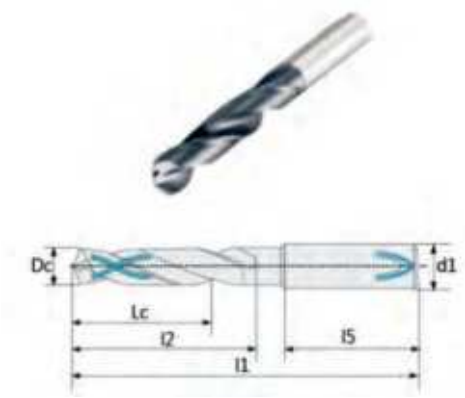
- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation



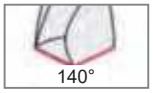


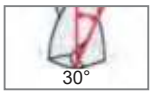
mm

Designation	Dc		d1	3 x D			5 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 18.000A18S-	18.0		18	51	73	123	71	93	143	48
DC1..- 18.200A20S-	18.2		20	55	79	131	77	101	153	50
DC1..- 18.500A20S-	18.5		20	55	79	131	77	101	153	50
DC1..- 18.700A20S-	18.7		20	55	79	131	77	101	153	50
DC1..- 18.800A20S-	18.8		20	55	79	131	77	101	153	50
DC1..- 19.000A20S-	19.0		20	55	79	131	77	101	153	50
DC1..- 19.050A20S-	19.05		20	55	79	131	77	101	153	50
DC1..- 19.500A20S-	19.5	3/4"	20	55	79	131	77	101	153	50
DC1..- 19.700A20S-	19.7		20	55	79	131	77	101	153	50
DC1..- 19.800A20S-	19.8		20	55	79	131	77	101	153	50
DC1..- 20.000A20S-	20.0		20	55	79	131	77	101	153	50
DC1..- 20.500A25S-	20.5		25	-	-	-	86	108	166	56
DC1..- 21.000A25S-	21.0		25	-	-	-	86	108	166	56
DC1..- 21.500A25S-	21.5		25	-	-	-	86	108	166	56
DC1..- 22.000A25S	22.0		25	-	-	-	86	108	166	56
DC1..- 22.500A25S	22.5		25	-	-	-	91	115	173	56
DC1..- 23.000A25S	23.0		25	-	-	-	91	115	173	56
DC1..- 23.500A25S	23.5		25	-	-	-	91	115	173	56
DC1..- 24.000A25S	24.0		25	-	-	-	91	115	173	56
DC1..- 24.500A25S	24.5		25	-	-	-	97	122	180	56
DC1..- 25.000A25S	25.0		25	-	-	-	97	122	180	56



- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation

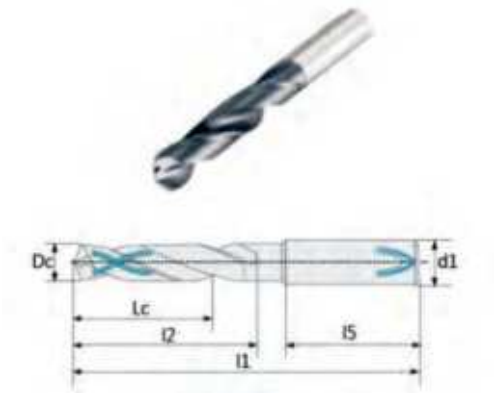




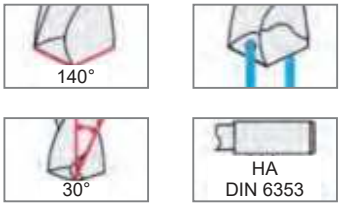
mm

Designation	Dc		d1	3 x D			5 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 03.000A6S-C	3.0		6	14	20	62	23	28	66	36
DC1..- 03.100A6S-C	3.1		6	14	20	62	23	28	66	36
DC1..- 03.175A6S-C	3.175	1/8"	6	14	20	62	23	28	66	36
DC1..- 03.200A6S-C	3.2		6	14	20	62	23	28	66	36
DC1..- 03.250A6S-C	3.25		6	14	20	62	23	28	66	36
DC1..- 03.300A6S-C	3.3		6	14	20	62	23	28	66	36
DC1..- 03.400A6S-C	3.4		6	14	20	62	23	28	66	36
DC1..- 03.500A6S-C	3.5		6	14	20	62	23	28	66	36
DC1..- 03.572A6S-C	3.572	9/64"	6	14	20	62	23	28	66	36
DC1..- 03.600A6S-C	3.6		6	14	20	62	23	28	66	36
DC1..- 03.650A6S-C	3.65		6	14	20	62	23	28	66	36
DC1..- 03.700A6S-C	3.7		6	14	20	62	23	28	66	36
DC1..- 03.800A6S-C	3.8		6	17	24	66	29	36	74	36
DC1..- 03.900A6S-C	3.9		6	17	24	66	29	36	74	36
DC1..- 03.969A6S-C	3.969	5/32"	6	17	24	66	29	36	74	36
DC1..- 04.000A6S-C	4.0		6	17	24	66	29	36	74	36
DC1..- 04.100A6S-C	4.1		6	17	24	66	29	36	74	36
DC1..- 04.200A6S-C	4.2		6	17	24	66	29	36	74	36
DC1..- 04.300A6S-C	4.3		6	17	24	66	29	36	74	36
DC1..- 04.366A6S-C	4.366	11/64"	6	17	24	66	29	36	74	36
DC1..- 04.400A6S-C	4.4		6	17	24	66	29	36	74	36
DC1..- 04.500A6S-C	4.5		6	17	24	66	29	36	74	36
DC1..- 04.600A6S-C	4.6		6	17	24	66	29	36	74	36
DC1..- 04.650A6S-C	4.65		6	17	24	66	29	36	74	36
DC1..- 04.700A6S-C	4.7		6	17	24	66	29	36	74	36
DC1..- 04.763A6S-C	4.763	3/16"	6	20	28	66	35	44	82	36

Solid Carbide Twist Drill

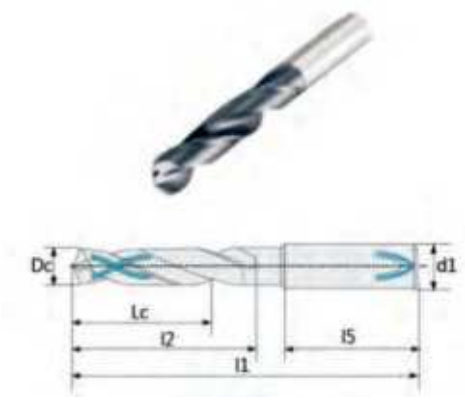


- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation

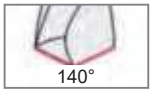


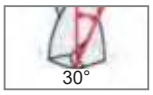
mm

Designation	Dc		d1	3 x D			5 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 04.800A6S-C	4.8		6	20	28	66	35	44	82	36
DC1..- 04.900A6S-C	4.9		6	20	28	66	35	44	82	36
DC1..- 05.000A6S-C	5.0		6	20	28	66	35	44	82	36
DC1..- 05.100A6S-C	5.1		6	20	28	66	35	44	82	36
DC1..- 05.159A6S-C	5.159	13/64"	6	20	28	66	35	44	82	36
DC1..- 05.200A6S-C	5.2		6	20	28	66	35	44	82	36
DC1..- 05.300A6S-C	5.3		6	20	28	66	35	44	82	36
DC1..- 05.400A6S-C	5.4		6	20	28	66	35	44	82	36
DC1..- 05.500A6S-C	5.5		6	20	28	66	35	44	82	36
DC1..- 05.550A6S-C	5.55		6	20	28	66	35	44	82	36
DC1..- 05.556A6S-C	5.556	7/32"	6	20	28	66	35	44	82	36
DC1..- 05.600A6S-C	5.6		6	20	28	66	35	44	82	36
DC1..- 05.700A6S-C	5.7		6	20	28	66	35	44	82	36
DC1..- 05.800A6S-C	5.8		6	20	28	66	35	44	82	36
DC1..- 05.900A6S-C	5.9		6	20	28	66	35	44	82	36
DC1..- 05.953A6S-C	5.953	15/64"	6	20	28	66	35	44	82	36
DC1..- 06.000A6S-C	6.0		6	20	28	66	35	44	82	36
DC1..- 06.100A8S-C	6.1		8	24	34	79	43	53	91	36
DC1..- 06.200A8S-C	6.2		8	24	34	79	43	53	91	36
DC1..- 06.300A8S-C	6.3		8	24	34	79	43	53	91	36
DC1..- 06.350A8S-C	6.35	1/4"	8	24	34	79	43	53	91	36
DC1..- 06.400A8S-C	6.4		8	24	34	79	43	53	91	36
DC1..- 06.500A8S-C	6.5		8	24	34	79	43	53	91	36
DC1..- 06.600A8S-C	6.6		8	24	34	79	43	53	91	36
DC1..- 06.700A8S-C	6.7		8	24	34	79	43	53	91	36
DC1..- 06.747A8S-C	6.747	17/64"	8	24	34	79	43	53	91	36



- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation

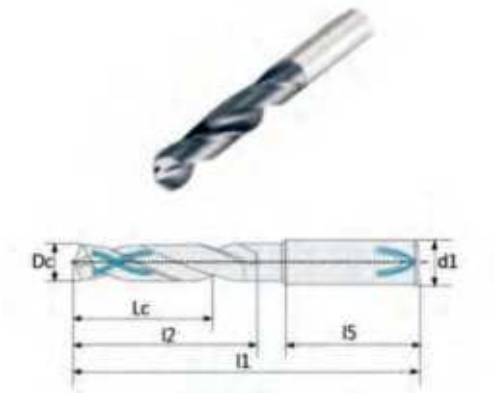




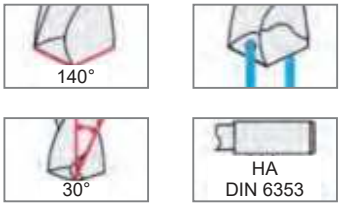
mm

Designation	Dc		d1	3 x D			5 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 06.800A8S-C	6.8		8	24	34	79	43	53	91	36
DC1..- 06.900A8S-C	6.9		8	24	34	79	43	53	91	36
DC1..- 07.000A8S-C	7.0		8	24	34	79	43	53	91	36
DC1..- 07.100A8S-C	7.1		8	29	41	79	43	53	91	36
DC1..- 07.144A8S-C	7.144	9/32"	8	29	41	79	43	53	91	36
DC1..- 07.200A8S-C	7.2		8	29	41	79	43	53	91	36
DC1..- 07.300A8S-C	7.3		8	29	41	79	43	53	91	36
DC1..- 07.400A8S-C	7.4		8	29	41	79	43	53	91	36
DC1..- 07.500A8S-C	7.5		8	29	41	79	43	53	91	36
DC1..- 07.541A8S-C	7.541		8	29	41	79	43	53	91	36
DC1..- 07.550A8S-C	7.55	19/64"	8	29	41	79	43	53	91	36
DC1..- 07.600A8S-C	7.6		8	29	41	79	43	53	91	36
DC1..- 07.700A8S-C	7.7		8	29	41	79	43	53	91	36
DC1..- 07.800A8S-C	7.8		8	29	41	79	43	53	91	36
DC1..- 07.900A8S-C	7.9		8	29	41	79	43	53	91	36
DC1..- 07.938A8S-C	7.938	5/16"	8	29	41	79	43	53	91	36
DC1..- 08.000A8S-C	8.0		8	29	41	79	43	53	91	36
DC1..- 08.100A10S-C	8.1		10	35	47	89	49	61	103	40
DC1..- 08.200A10S-C	8.2		10	35	47	89	49	61	103	40
DC1..- 08.300A10S-C	8.3		10	35	47	89	49	61	103	40
DC1..- 08.344A10S-C	8.344	21/64"	10	35	47	89	49	61	103	40
DC1..- 08.400A10S-C	8.4		10	35	47	89	49	61	103	40
DC1..- 08.500A10S-C	8.5		10	35	47	89	49	61	103	40
DC1..- 08.600A10S-C	8.6		10	35	47	89	49	61	103	40
DC1..- 08.700A10S-C	8.7		10	35	47	89	49	61	103	40
DC1..- 08.731A10S-C	8.731	11/32"	10	35	47	89	49	61	103	40

Solid Carbide Twist Drill

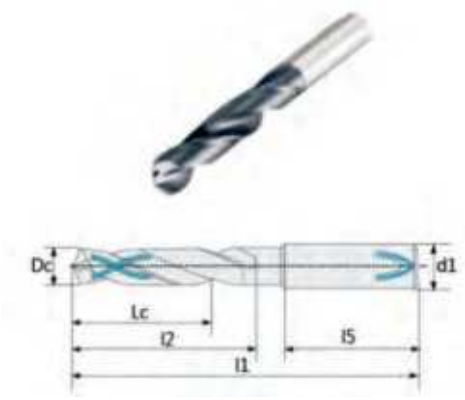


- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation

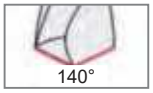


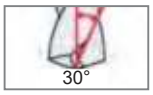
mm

Designation	Dc		d1	3 x D			5 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 08.800A10S-C	8.8		10	35	47	89	49	61	103	40
DC1..- 08.900A10S-C	8.9		10	35	47	89	49	61	103	40
DC1..- 09.000A10S-C	9.0		10	35	47	89	49	61	103	40
DC1..- 09.100A10S-C	9.1		10	35	47	89	49	61	103	40
DC1..- 09.128A10S-C	9.128		10	35	47	89	49	61	103	40
DC1..- 09.200A10S-C	9.2		10	35	47	89	49	61	103	40
DC1..- 09.300A10S-C	9.3		10	35	47	89	49	61	103	40
DC1..- 09.400A10S-C	9.4		10	35	47	89	49	61	103	40
DC1..- 09.500A10S-C	9.5	23/64"	10	35	47	89	49	61	103	40
DC1..- 09.525A10S-C	9.525		10	35	47	89	49	61	103	40
DC1..- 09.550A10S-C	9.55		10	35	47	89	49	61	103	40
DC1..- 09.600A10S-C	9.6		10	35	47	89	49	61	103	40
DC1..- 09.700A10S-C	9.7	3/8"	10	35	47	89	49	61	103	40
DC1..- 09.800A10S-C	9.8		10	35	47	89	49	61	103	40
DC1..- 09.900A10S-C	9.9		10	35	47	89	49	61	103	40
DC1..- 09.922A10S-C	9.922		10	35	47	89	49	61	103	40
DC1..- 10.000A10S-C	10.0		10	35	47	89	49	61	103	40
DC1..- 10.100A12S-C	10.1	25/64"	12	40	55	102	56	71	118	45
DC1..- 10.200A12S-C	10.2		12	40	55	102	56	71	118	45
DC1..- 10.300A12S-C	10.3		12	40	55	102	56	71	118	45
DC1..- 10.319A12S-C	10.319		12	40	55	102	56	71	118	45
DC1..- 10.400A12S-C	10.4	13/32"	12	40	55	102	56	71	118	45
DC1..- 10.500A12S-C	10.5		12	40	55	102	56	71	118	45
DC1..- 10.600A12S-C	10.6		12	40	55	102	56	71	118	45
DC1..- 10.700A12S-C	10.7		12	40	55	102	56	71	118	45
DC1..- 10.716A12S-C	10.716	27/64"	12	40	55	102	56	71	118	45



- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation

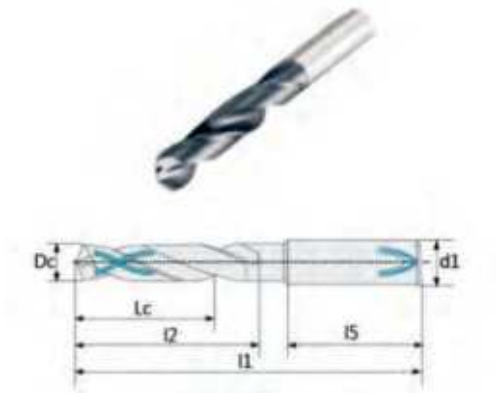




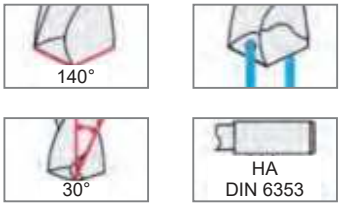
mm

Designation	Dc		d1	3 x D			5 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 0.800A12S-C	10.8		12	40	55	102	56	71	118	45
DC1..- 10.900A12S-C	10.9		12	40	55	102	56	71	118	45
DC1..- 11.000A12S-C	11.0		12	40	55	102	56	71	118	45
DC1..- 11.100A12S-C	11.1		12	40	55	102	56	71	118	45
DC1..- 11.113A12S-C	11.113	7/16"	12	40	55	102	56	71	118	45
DC1..- 11.200A12S-C	11.2		12	40	55	102	56	71	118	45
DC1..- 11.300A125-C	11.3		12	40	55	102	56	71	118	45
DC1..- 11.400A12S-C	11.4		12	40	55	102	56	71	118	45
DC1..- 11.500A12S-C	11.5		12	40	55	102	56	71	118	45
DC1..- 11.509A12S-C	11.509	29/64"	12	40	55	102	56	71	118	45
DC1..- 11.550A12S-C	11.55		12	40	55	102	56	71	118	45
DC1..- 11.600A12S-C	11.6		12	40	55	102	56	71	118	45
DC1..- 11.700A12S-C	11.7		12	40	55	102	56	71	118	45
DC1..- 11.800A12S-C	11.8		12	40	55	102	56	71	118	45
DC1..- 11.900A12S-C	11.9		12	40	55	102	56	71	118	45
DC1..- 11.906A12S-C	11.906	15/32"	12	40	55	102	56	71	118	45
DC1..- 12.000A12S-C	12.0		12	40	55	102	56	71	118	45
DC1..- 12.100A14S-C	12.1		14	43	60	107	60	77	124	45
DC1..- 12.200A14S-C	12.2		14	43	60	107	60	77	124	45
DC1..- 12.250A14S-C	12.25		14	43	60	107	60	77	124	45
DC1..- 12.300A14S-C	12.3		14	43	60	107	60	77	124	45
DC1..- 12.303A14S-C	12.303	31/64"	14	43	60	107	60	77	124	45
DC1..- 12.400A14S-C	12.4		14	43	60	107	60	77	124	45
DC1..- 12.500A14S-C	12…5		14	43	60	107	60	77	124	45
DC1..- 12.600A14S-C	12.6		14	43	60	107	60	77	124	45
DC1..- 12.700A14S-C	12.7		14	43	60	107	60	77	124	45

Solid Carbide Twist Drill

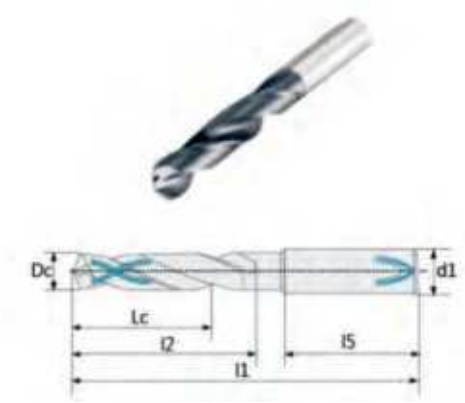


- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation

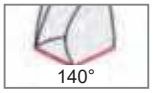


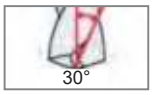
mm

Designation	Dc		d1	3 x D			5 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 12.750A14S-C	12.75	1/2"	14	43	60	107	60	77	124	45
DC1..- 12.800A14S-C	12.8		14	43	60	107	60	77	124	45
DC1..- 12.900A14S-C	12.9		14	43	60	107	60	77	124	45
DC1..- 13.000A14S-C	13.0		14	43	60	107	60	77	124	45
DC1..- 13.100A14S-C	13.1		14	43	60	107	60	77	124	45
DC1..- 13.200A14S-C	13.2		14	43	60	107	60	77	124	45
DC1..- 13.300A14S-C	13.3		14	43	60	107	60	77	124	45
DC1..- 13.400A14S-C	13.4		14	43	60	107	60	77	124	45
DC1..- 13.494A14S-C	13.494	17/32"	14	43	60	107	60	77	124	45
DC1..- 13.500A14S-C	13.5		14	43	60	107	60	77	124	45
DC1..- 13.600A14S-C	13.6		14	43	60	107	60	77	124	45
DC1..- 13.700A14S-C	13.7		14	43	60	107	60	77	124	45
DC1..- 13.800A14S-C	13.8		14	43	60	107	60	77	124	45
DC1..- 13.900A14S-C	13.9		14	43	60	107	60	77	124	45
DC1..- 14.000A14S-C	14.0		14	43	60	107	60	77	124	45
DC1..- 14.100A16S-C	14.1		16	45	65	115	63	83	133	48
DC1..- 14.200A16S-C	14.2		16	45	65	115	63	83	133	48
DC1..- 14.288A16S-C	14.288	9/16"	16	45	65	115	63	83	133	48
DC1..- 14.300A16S-C	14.3		16	45	65	115	63	83	133	48
DC1..- 14.400A16S-C	14.4		16	45	65	115	63	83	133	48
DC1..- 14.500A16S-C	14.5		16	45	65	115	63	83	133	48
DC1..- 14.600A16S-C	14.6		16	45	65	115	63	83	133	48
DC1..- 14.700A16S-C	14.7		16	45	65	115	63	83	133	48
DC1..- 14.750A16S-C	14.75		16	45	65	115	63	83	133	48
DC1..- 14.800A16S-C	14.8		16	45	65	115	63	83	133	48
DC1..- 15.000A16S-C	15.0		16	45	65	115	63	83	133	48



- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation

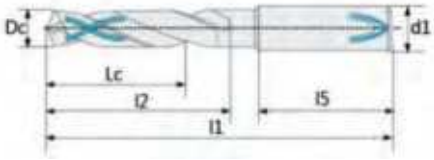




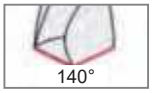
mm

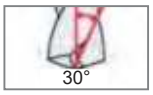
Designation	Dc		d1	3 x D			5 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 15.100A16S-C	15.1		16	45	65	115	63	83	133	48
DC1..- 15.200A16S-C	15.2		16	45	65	115	63	83	133	48
DC1..- 15.300A16S-C	15.3		16	45	65	115	63	83	133	48
DC1..- 15.500A16S-C	15.5		16	45	65	115	63	83	133	48
DC1..- 15.600A16S-C	15.6		16	45	65	115	63	83	133	48
DC1..- 15.700A16S-C	15.7		16	45	65	115	63	83	133	48
DC1..- 15.800A16S-C	15.8		16	45	65	115	63	83	133	48
DC1..- 15.875A16S-C	15.875	5/8"	16	45	65	115	63	83	133	48
DC1..- 15.900A16S-C	15.9		16	45	65	115	63	83	133	48
DC1..- 16.000A16S-C	16.0		16	45	65	115	63	83	133	48
DC1..- 16.100A18S-C	16.1		18	51	73	123	71	93	143	48
DC1..- 16.200A18S-C	16.2		18	51	73	123	71	93	143	48
DC1..- 16.300A18S-C	16.3		18	51	73	123	71	93	143	48
DC1..- 16.400A18S-C	16.4		18	51	73	123	71	93	143	48
DC1..- 16.500A18S-C	16.5		18	51	73	123	71	93	143	48
DC1..- 16.600A18S-C	16.6		18	51	73	123	71	93	143	48
DC1..- 16.700A18S-C	16.7		18	51	73	123	71	93	143	48
DC1..- 16.750A18S-C	16.75		18	51	73	123	71	93	143	48
DC1..- 16.800A18S-C	16.8		18	51	73	123	71	93	143	48
DC1..- 17.000A18S-C	17.0		18	51	73	123	71	93	143	48
DC1..- 17.200A18S-C	17.2		18	51	73	123	71	93	143	48
DC1..- 17.300A18S-C	17.3		18	51	73	123	71	93	143	48
DC1..- 17.500A18S-C	17.5		18	51	73	123	71	93	143	48
DC1..- 17.600A18S-C	17.6		18	51	73	123	71	93	143	48
DC1..- 17.700A18S-C	17.7		18	51	73	123	71	93	143	48
DC1..- 17.800A18S-C	17.8		18	51	73	123	71	93	143	48

Solid Carbide Twist Drill



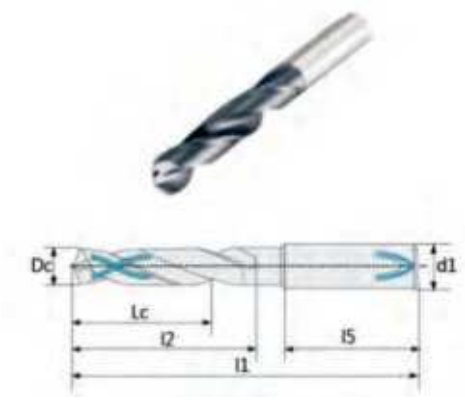
- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation



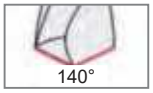


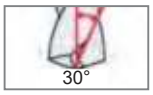
mm

Designation	Dc		d1	3 x D			5 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 18.000A18S-C	18.0		18	51	73	123	71	93	143	48
DC1..- 18.200A20S-C	18.2		20	55	79	131	77	101	153	50
DC1..- 18.500A20S-C	18.5		20	55	79	131	77	101	153	50
DC1..- 18.700A20S-C	18.7		20	55	79	131	77	101	153	50
DC1..- 18.800A20S-C	18.8		20	55	79	131	77	101	153	50
DC1..- 19.000A20S-C	19.0		20	55	79	131	77	101	153	50
DC1..- 19.050A20S-C	19.05	3/4"	20	55	79	131	77	101	153	50
DC1..- 19.500A20S-C	19.5		20	55	79	131	77	101	153	50
DC1..- 19.700A20S-C	19.7		20	55	79	131	77	101	153	50
DC1..- 19.800A20S-C	19.8		20	55	79	131	77	101	153	50
DC1..- 20.000A20S-C	20.0		20	55	79	131	77	101	153	50
DC1..- 20.500A25S-C	20.5		25	-	-	-	86	108	166	56
DC1..- 21.000A25S-C	21.0		25	-	-	-	86	108	166	56
DC1..- 21.500A25S-C	21.5		25	-	-	-	86	108	166	56
DC1..- 22.000A25S	22.0		25	-	-	-	86	108	166	56
DC1..- 22.500A25S	22.5		25	-	-	-	91	115	173	56
DC1..- 23.000A25S	23.0		25	-	-	-	91	115	173	56
DC1..- 23.500A25S	23.5		25	-	-	-	91	115	173	56
DC1..- 24.000A25S	24.0		25	-	-	-	91	115	173	56
DC1..- 24.500A25S	24.5		25	-	-	-	97	122	180	56
DC1..- 25.000A25S	25.0		25	-	-	-	97	122	180	56



- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation

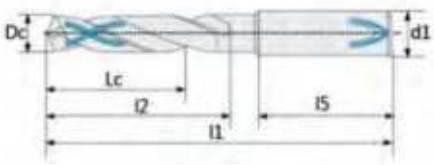




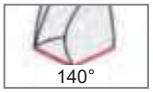
mm

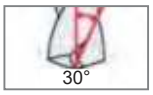
Designation	Dc		d1	8 x D			12 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..-03.000A6S-C	3.0		6	28	34	74	48	54	92	36
DC1..-03.100A6S-C	3.1		6	28	34	74	48	54	92	36
DC1..-03.175A6S-C	3.175	1/8"	6	28	34	74	48	54	92	36
DC1..-03.200A6S-C	3.2		6	28	34	74	48	54	92	36
DC1..-03.300A6S-C	3.3		6	28	34	74	48	54	92	36
DC1..-03.400A6S-C	3.4		6	28	34	74	48	54	92	36
DC1..-03.500A6S-C	3.5		6	28	34	74	48	54	92	36
DC1..-03.572A6S-C	3.572	9/64"	6	28	34	74	48	54	92	36
DC1..-03.600A6S-C	3.6		6	28	34	74	48	54	92	36
DC1..-03.700A6S-C	3.7		6	28	34	74	48	54	92	36
DC1..-03.800A6S-C	3.8		6	37	45	85	56	64	102	36
DC1..-03.900A6S-C	3.9		6	37	45	85	56	64	102	36
DC1..-03.969A6S-C	3.969	5/32"	6	37	45	85	56	64	102	36
DC1..-04.000A6S-C	4.0		6	37	45	85	56	64	102	36
DC1..-04.100A6S-C	4.1		6	37	45	85	56	64	102	36
DC1..-04.200A6S-C	4.2		6	37	45	85	56	64	102	36
DC1..-04.300A6S-C	4.3		6	37	45	85	56	64	102	36
DC1..-04.366A6S-C	4.366	11/64"	6	37	45	85	56	64	102	36
DC1..-04.400A6S-C	4.4		6	37	45	85	56	64	102	36
DC1..-04.500A6S-C	4.5		6	37	45	85	56	64	102	36
DC1..-04.600A6S-C	4.6		6	37	45	85	56	64	102	36
DC1..-04.700A6S-C	4.7		6	37	45	85	56	64	102	36
DC1..-04.763A6S-C	4.763		6	48	57	97	74	83	121	36
DC1..-04.800A6S-C	4.8	3/16"	6	48	57	97	74	83	121	36
DC1..-04.900A6S-C	4.9		6	48	57	97	74	83	121	36
DC1..-05.000A6S-C	5.0		6	48	57	97	74	83	121	36

Solid Carbide Twist Drill



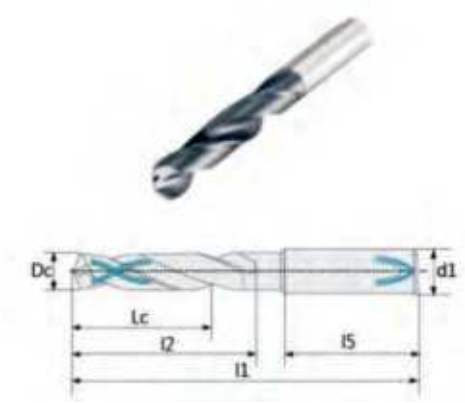
- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation



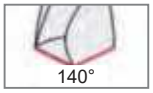


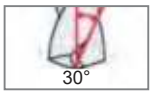
mm

Designation	Dc		d1	8 x D			12 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..-05.100A6S-C	5.1		6	48	57	97	74	83	121	36
DC1..-05.159A6S-C	5.159	13/64"	6	48	57	97	74	83	121	36
DC1..-05.200A6S-C	5.2		6	48	57	97	74	83	121	36
DC1..-05.300A6S-C	5.3		6	48	57	97	74	83	121	36
DC1..-05.400A6S-C	5.4		6	48	57	97	74	83	121	36
DC1..-05.500A6S-C	5.5		6	48	57	97	74	83	121	36
DC1..-05.556A6S-C	5.556	7/32"	6	48	57	97	74	83	121	36
DC1..-05.600A6S-C	5.6		6	48	57	97	74	83	121	36
DC1..-05.700A6S-C	5.7		6	48	57	97	74	83	121	36
DC1..-05.800A6S-C	5.8		6	48	57	97	74	83	121	36
DC1..-05.900A6S-C	5.9		6	48	57	97	74	83	121	36
DC1..-05.953A6S-C	5.953	15/64"	6	48	57	97	74	83	121	36
DC1..-06.000A6S-C	6.0		6	48	57	97	74	83	121	36
DC1..-06.100A8S-C	6.1		8	55	66	106	98	110	148	36
DC1..-06.200A8S-C	6.2		8	55	66	106	98	110	148	36
DC1..-06.300A8S-C	6.3		8	55	66	106	98	110	148	36
DC1..-06.350A8S-C	6.35	1/4"	8	55	66	106	98	110	148	36
DC1..-06.400A8S-C	6.4		8	55	66	106	98	110	148	36
DC1..-06.500A8S-C	6.5		8	55	66	106	98	110	148	36
DC1..-06.600A8S-C	6.6		8	55	66	106	98	110	148	36
DC1..-06.700A8S-C	6.7		8	55	66	106	98	110	148	36
DC1..-06.747A8S-C	6.747	17/64"	8	55	66	106	98	110	148	36
DC1..-06.800A8S-C	6.8		8	55	66	106	98	110	148	36
DC1..-06.900A8S-C	6.9		8	55	66	106	98	110	148	36
DC1..-07.000A8S-C	7.0		8	55	66	106	98	110	148	36
DC1..-07.100A8S-C	7.1		8	64	76	116	98	110	148	36



- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation

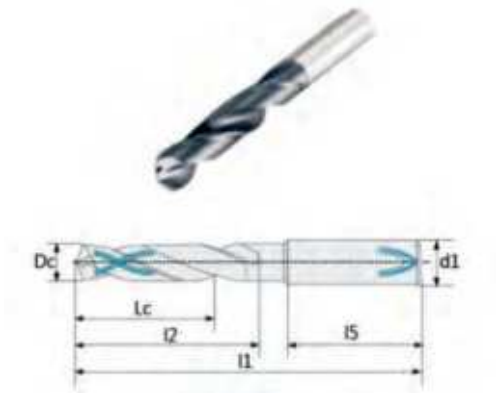




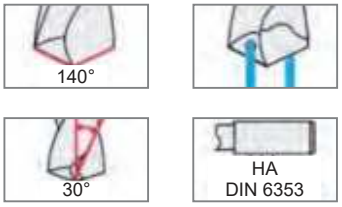
mm

Designation	Dc		d1	8 x D			12 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 07.144A8S-C	7.144	9/32"	8	64	76	116	98	110	148	36
DC1..- 07.200A8S-C	7.2		8	64	76	116	98	110	148	36
DC1..- 07.300A8S-C	7.3		8	64	76	116	98	110	148	36
DC1..- 07.400A8S-C	7.4		8	64	76	116	98	110	148	36
DC1..- 07.500A8S-C	7.5		8	64	76	116	98	110	148	36
DC1..- 07.541A8S-C	7.541	19/64"	8	64	76	116	98	110	148	36
DC1..- 07.600A8S-C	7.6		8	64	76	116	98	110	148	36
DC1..- 07.700A8S-C	7.7		8	64	76	116	98	110	148	36
DC1..- 07.800A8S-C	7.8		8	64	76	116	98	110	148	36
DC1..- 07.900A8S-C	7.9		8	64	76	116	98	110	148	36
DC1..- 07.938A8S-C	7.938	5/16"	8	64	76	116	98	110	148	36
DC1..- 08.000A8S-C	8.0		8	64	76	116	98	110	148	36
DC1..- 08.100A10S-C	8.1		10	80	95	139	123	138	180	40
DC1..- 08.200A10S-C	8.2		10	80	95	139	123	138	180	40
DC1..- 08.300A10S-C	8.3		10	80	95	139	123	138	180	40
DC1..- 08.344A10S-C	8.344	21/64"	10	80	95	139	123	138	180	40
DC1..- 08.400A10S-C	8.4		10	80	95	139	123	138	180	40
DC1..- 08.500A10S-C	8.5		10	80	95	139	123	138	180	40
DC1..- 08.600A10S-C	8.6		10	80	95	139	123	138	180	40
DC1..- 08.700A10S-C	87		10	80	95	139	123	138	180	40
DC1..- 08.731A10S-C	8.731	11/32"	10	80	95	139	123	138	180	40
DC1..- 08.800A10S-C	8.8		10	80	95	139	123	138	180	40
DC1..- 08.900A10S-C	8.9		10	80	95	139	123	138	180	40
DC1..- 09.000A10S-C	9.0		10	80	95	139	123	138	180	40
DC1..- 09.100A10S-C	9.1		10	80	95	139	123	138	180	40
DC1..- 09.128A10S-C	9.128	23/64"	10	80	95	139	123	138	180	40

Solid Carbide Twist Drill

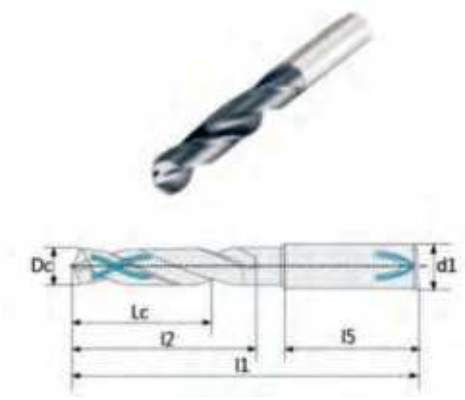


- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation

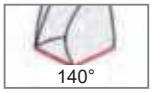


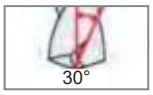
mm

Designation	Dc		d1	8 x D			12 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 09.200A10S-C	9.2		10	80	95	139	123	138	180	40
DC1..- 09.300A10S-C	9.3		10	80	95	139	123	138	180	40
DC1..- 09.400A10S-C	9.4		10	80	95	139	123	138	180	40
DC1..- 09.500A10S-C	9.5		10	80	95	139	123	138	180	40
DC1..- 09.525A10S-C	9.525	3/8"	10	80	95	139	123	138	180	40
DC1..- 09.600A10S-C	9.6		10	80	95	139	123	138	180	40
DC1..- 09.700A10S-C	9.7		10	80	95	139	123	138	180	40
DC1..- 09.800A10S-C	9.8		10	80	95	139	123	138	180	40
DC1..- 09.900A10S-C	9.9		10	80	95	139	123	138	180	40
DC1..- 09.922A10S-C	9.922	25/64"	10	80	95	139	123	138	180	40
DC1..- 10.000A10S-C	10.0		10	80	95	139	123	138	180	40
DC1..- 10.100A12S-C	10.1		12	96	114	163	140	158	206	45
DC1..- 10.200A12S-C	10.2		12	96	114	163	140	158	206	45
DC1..- 10.300A12S-C	10.3		12	96	114	163	140	158	206	45
DC1..- 10.319A12S-C	10.319	13/32"	12	96	114	163	140	158	206	45
DC1..- 10.400A12S-C	10.4		12	96	114	163	140	158	206	45
DC1..- 10.500A12S-C	10.5		12	96	114	163	140	158	206	45
DC1..- 10.600A12S-C	10.6		12	96	114	163	140	158	206	45
DC1..- 10.700A12S-C	10.7		12	96	114	163	140	158	206	45
DC1..- 10.716A12S-C	10.716	27/64"	12	96	114	163	140	158	206	45
DC1..- 10.800A12S-C	10.8		12	96	114	163	140	158	206	45
DC1..- 10.900A12S-C	10.9		12	96	114	163	140	158	206	45
DC1..- 11.000A12S-C	11.0		12	96	114	163	140	158	206	45
DC1..- 11.100A12S-C	11.1		12	96	114	163	140	158	206	45
DC1..- 11.113A12S-C	11.113	7/16"	12	96	114	163	140	158	206	45
DC1..- 11.200A12S-C	11.2		12	96	114	163	140	158	206	45



- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation

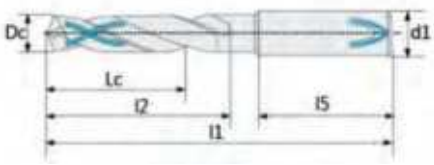




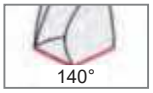
mm

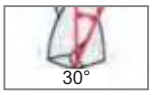
Designation	Dc		d1	8 x D			12 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 11.300A12S-C	11.3		12	96	114	163	140	158	205	45
DC1..- 11.400A12S-C	11.4		12	96	114	163	140	158	205	45
DC1..- 11.500A12S-C	11.5		12	96	114	163	140	158	205	45
DC1..- 11.509A12S-C	11.509	29/64"	12	96	114	163	140	158	205	45
DC1..- 11.600A12S-C	11.6		12	96	114	163	140	158	205	45
DC1..- 11.700A12S-C	11.7		12	96	114	163	140	158	205	45
DC1..- 11.800A12S-C	11.8		12	96	114	163	140	158	205	45
DC1..- 11.900A12S-C	11.9		12	96	114	163	140	158	205	45
DC1..- 11.906A12S-C	11.906	15/32"	12	96	114	163	140	158	205	45
DC1..- 12.000A12S-C	12.0		12	96	114	163	140	158	205	45
DC1..- 12.100A14S-C	12.1		14	119	133	182	168	182	230	45
DC1..- 12.200A14S-C	12.2		14	119	133	182	168	182	230	45
DC1..- 12.303A14S-C	12.303	31/64"	14	119	133	182	168	182	230	45
DC1..- 12.250A14S-C	12.25		14	119	133	182	168	182	230	45
DC1..- 12.500A14S-C	12…5		14	119	133	182	168	182	230	45
DC1..- 12.600A14S-C	12.6		14	119	133	182	168	182	230	45
DC1..- 12.700A14S-C	12.7		14	119	133	182	168	182	230	45
DC1..- 13.000A14S-C	13.0		14	119	133	182	168	182	230	45
DC1..- 13.494A14S-C	13.494	17/32"	14	119	133	182	168	182	230	45
DC1..- 13.500A14S-C	13.5		14	119	133	182	168	182	230	45
DC1..- 14.000A14S-C	14.0		14	119	133	182	168	182	230	45
DC1..- 14.288A16S-C	14.288	9/16"	14	136	133	204	192	208	260	48
DC1..- 14.500A16S-C	14.5		14	136	133	204	192	208	260	48
DC1..- 15.000A16S-C	15.0		14	136	133	204	192	208	260	48
DC1..- 15.500A16S-C	15.5		14	136	133	204	192	208	260	48
DC1..- 15.875A16S-C	15.875	5/8"	14	136	133	204	192	208	260	48

Solid Carbide Twist Drill



- Manufacturing standard: DIN 6537
- Chisel edge grinding: TOOTOOL standard
- Tolerance of cutting edge diameter: m7
- Chip evacuation flute special designed, easy evacuation





mm

Designation	Dc		d1	8 x D			12 x D			l5
	mm	inch		Lc	l2	l1	Lc	l2	l1	
DC1..- 16.000A16S-C	16.0		16	136	152	204	192	208	260	48
DC1..- 16.500A18S-C	16.5		18	153	171	223	216	234	285	48
DC1..- 17.000A18S-C	17.0		18	153	171	223	216	234	285	48
DC1..- 17.500A18S-C	17.5		18	153	171	223	216	234	285	48
DC1..- 18.000A18S-C	18.0		18	153	171	223	216	234	285	48
DC1..- 18.500A20S-C	18.5		20	170	171	244	238	258	310	50
DC1..- 19.000A20S-C	19.0		20	170	190	244	238	258	310	50
DC1..- 19.050A20S-C	19.05	3/4"	20	170	190	244	238	258	310	50
DC1..- 19.500A20S-C	19.5		20	170	190	244	238	258	310	50
DC1..- 20.000A20S-C	20.0		20	170	190	244	238	258	310	50

Recommended cutting conditions

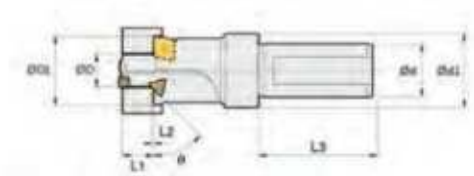
mm

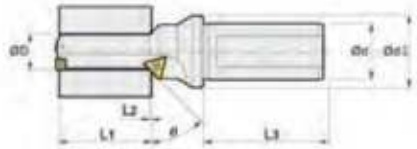
Workpiece				Grade	Feed				
					Feed rate (mm/rev) per drill dia.(mm)				
ISO		Workpiece	HB		ф3.0-ф4.0	ф4.1-ф8.0	ф8.1-ф12.0	ф12.1-ф16.0	ф16.1-ф20.0
P	Carbon steel	Low carbon steel	80-120	DFS	0.10-0.15	0.16-0.24	0.20-0.30	0.25-0.36	0.30-0.40
		High carbon steel	Over 250	DFS	0.08-0.20	0.08-0.20	0.10-0.25	0.15-0.25	0.15-0.30
	Alloy steel	Low alloy steel	140-260	DFS	0.10-0.15	0.10-0.15	0.20-0.30	0.25-0.36	0.30-0.40
		Hardened low alloy steel	200-400	DFS	0.10-0.15	0.10-0.15	0.20-0.30	0.25-0.36	0.30-0.40
		High alloy steel	50-260	DFS	0.08-0.20	0.08-0.20	0.10-0.25	0.15-0.25	0.15-0.30
		Hardened high alloy steel	Over 250	DFS	0.08-0.20	0.08-0.20	0.10-0.25	0.15-0.25	0.15-0.30
M	Stainless steel	Austenite series	135-275	DFS	0.05-0.20	0.05--0.20	0.10-0.25	0.10-0.25	0.15-0.30
		Ferrite series Martensite series	135-275	DFS	0.05-0.20	0.05--0.20	0.10-0.25	0.10-0.25	0.15-0.30
K	Cast iron	Gray cast iron	150-230	DFS	0.10-0.15	0.16-0.24	0.20-0.30	0.25-0.36	0.30-0.40
		Ductile cast iron	160-260	DFS	0.10-0.15	0.16-0.24	0.20-0.30	0.25-0.36	0.30-0.40
N	Aluminium	Aluminum alloy	30-150	DFS	0.24-0.38	0.38-0.53	0.53-0.75	0.61-0.85	0.68-0.98
	Copper alloy	Copper alloy	150-160	DFS	0.10-0.15	0.16-0.24	0.20-0.30	0.25-0.36	0.30-0.40

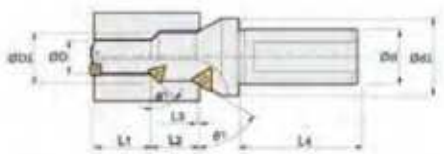
※ Cutting conditions above are for the case of less than 5D depth of cut and through coolant system applied
※ In case of external coolant system, reduce the above feed values by 20%

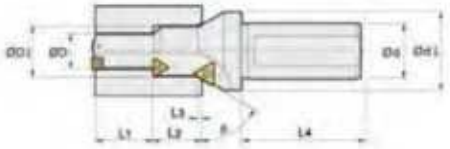
Special Order

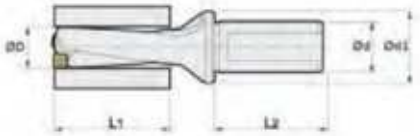
Special drill order form





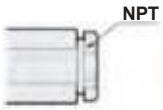






Coolant type

Through coolant
Plug Type (Standard)



Through coolant
Non Plug Type

No coolant

Types of shank

Flat Type

Weldon Type

Whistle Notch Type

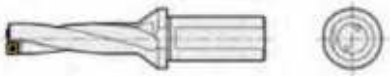
Hole type

Blind hole

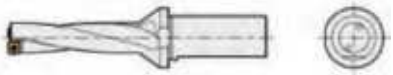
Thru hole

Location of side lock

Parallel to peripheral insert (standard)

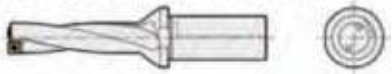


90° angle to peripheral insert (standard)



180° angle to peripheral insert (standard)

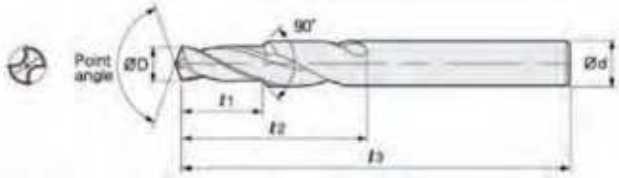
270° angle to peripheral insert (standard)



Note

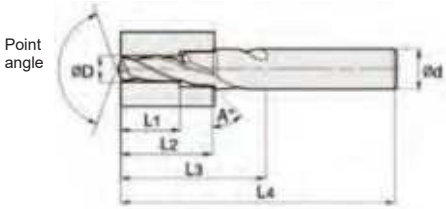
- Currently using tool:
- Current cutting condition
- RPM or vc (m/min):
- vf (mm/min) or fn (mm/rev):
- Depth of cut (mm):
- Standard of measuring tool life:
- Currently using machine
- Machining center:
- General lathe:
- CNC lathe

Chamfering Step hole Multi chamfering



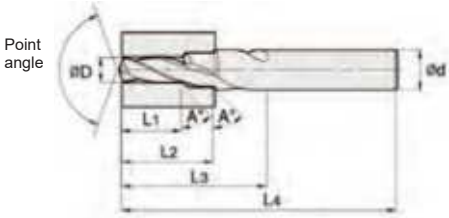
Multi chamfering

(**Coolant:** Through system External system)



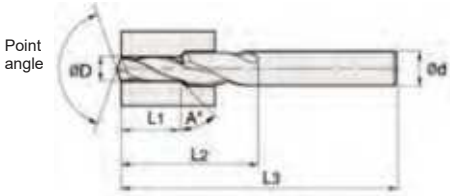
Multi chamfering

(**Coolant:** Through system External system)



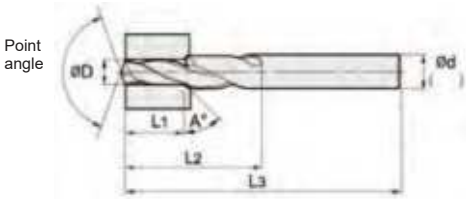
Step hole

(**Coolant:** Through system External system)



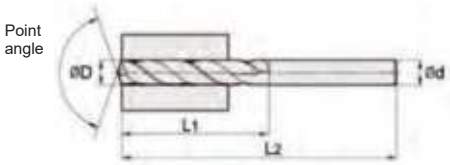
Chamfering

(**Coolant:** Through system External system)



Drilling

(**Coolant:** Through system External system)



TOOTOOL®

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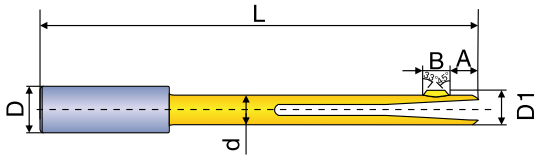
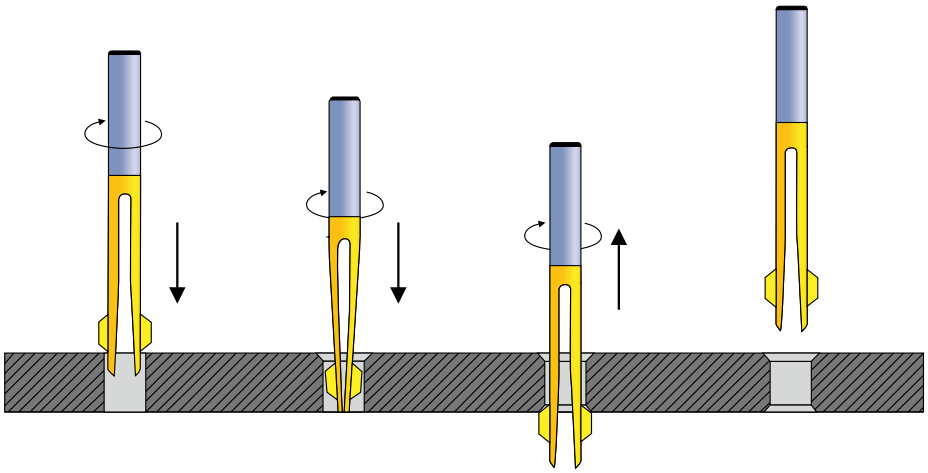
BURR OFF TOOLS - UNEQUAL SHANK SINGLE EDGE



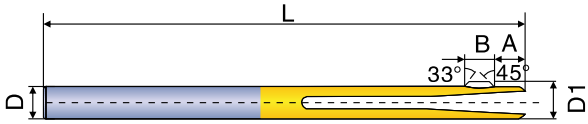
Tool Number	Range of hole size	D	d	L	A	B	D1	RPM
TT-BS-0.8-1	0.8-0.9	3.0	0.7	45	1.0	1.5	1.05	1800
TT-BS-0.9-1	0.9-1.0	3.0	0.8	45	1.0	1.5	1.20	
TT-BS-1.0-1	1.0-1.1	3.0	0.9	45	1.0	1.5	1.35	
TT-BS-1.1-1	1.1-1.2	3.0	1.0	45	1.0	1.5	1.50	
TT-BS-1.2-1	1.2-1.3	3.0	1.1	45	1.0	1.5	1.65	
TT-BS-1.3-1	1.3-1.4	3.0	1.2	45	1.0	1.5	1.80	
TT-BS-1.4-1	1.4-1.5	3.0	1.3	45	1.0	1.5	1.95	
TT-BS-1.5-1	1.5-1.6	3.0	1.4	50	2.0	2.5	2.10	
TT-BS-1.6-1	1.6-1.7	3.0	1.5	50	2.0	2.5	2.25	
TT-BS-1.7-1	1.7-1.8	3.0	1.6	50	2.0	2.5	2.40	
TT-BS-1.8-1	1.8-1.9	3.0	1.7	60	2.0	2.5	2.55	
TT-BS-1.9-1	1.9-2.0	3.0	1.8	60	2.0	2.5	2.65	
TT-BS-2.0-1	2.0-2.2	3.0	1.9	60	2.0	2.5	2.80	
TT-BS-2.2-1	2.2-2.4	3.0	2.1	80	2.0	2.5	3.15	
TT-BS-2.4-1	2.4-2.6	3.0	2.3	80	2.0	2.5	3.45	
TT-BS-2.6-1	2.6-2.8	3.0	2.5	80	2.0	2.5	3.70	

Recommended feed F=0.05-0.20mm/rpm



Integral Deburring Chamfering Tools

BURR OFF TOOLS - UNEQUAL SHANK SINGLE EDGE

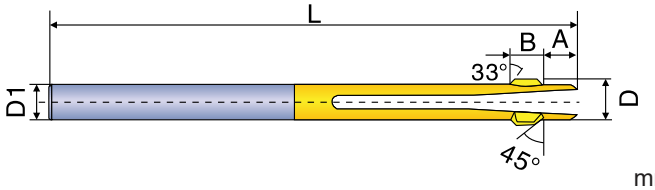


mm

Tool Number	Range of hole size	D	d	L	B	D1	RPM
TT-BS-2.80-1	2.80-3.18	2.75	101.6	3.18	4.45	4.00	1800
TT-BS-3.18-1	3.18-3.56	3.15	101.6	3.18	4.45	4.34	
TT-BS-3.56-1	3.56-3.96	3.58	101.6	3.18	4.45	4.74	
TT-BS-3.96-1	3.96-4.36	3.90	101.6	3.18	4.45	5.54	
TT-BS-4.36-1	4.36-4.74	4.34	101.6	3.18	4.45	5.94	
TT-BS-4.74-1	4.74-5.15	4.72	101.6	3.18	6.22	6.35	
TT-BS-5.15-1	5.15-5.56	5.13	101.6	3.18	6.22	6.78	

Recommended feed F=0.05-0.20mm/rpm

BURR OFF TOOLS - DOUBLE EDGE

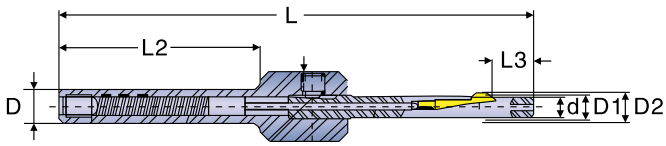


mm

Tool Number	Range of hole size	D1	L	A	B	D	RPM
TT-BD-5.56-2	5.56-5.94	5.54	101.6	6.48	6.22	7.92	800-1000
TT-BD-5.94-2	5.94-6.35	5.92	101.6	6.48	6.22	8.33	
TT-BD-6.35-2	6.35-6.75	6.32	101.6	6.48	6.22	8.71	
TT-BD-6.75-2	6.75-7.13	6.73	101.6	6.48	6.22	9.12	
TT-BD-7.13-2	7.13-7.54	7.11	101.6	6.48	6.22	9.53	
TT-BD-7.54-2	7.54-7.95	7.52	101.6	6.48	6.22	9.91	
TT-BD-7.95-2	7.95-8.33	7.92	101.6	7.24	6.48	10.31	
TT-BD-8.33-2	8.33-8.71	8.31	101.6	7.24	6.48	10.72	
TT-BD-8.71-2	8.71-9.11	8.69	101.6	7.24	6.48	11.10	
TT-BD-9.11-2	9.11-9.52	9.09	101.6	7.24	6.48	11.51	
TT-BD-9.52-2	9.52-9.90	9.50	112.7	8.00	6.48	12.70	
TT-BD-9.90-2	9.90-10.31	9.88	112.7	8.00	6.48	13.08	

Recommended feed F=0.05-0.20mm/rpm

BURRAWAY TOOLS WITH CHANGEABLE BLADE FOR SMALL HOLE



mm

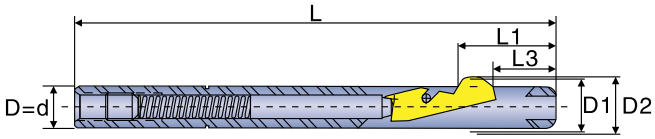
Tool Number	Range of hole size	L	L1	L2	L3	D	D1	D2	d	Blade	RPM
TT-BW-3.0	3.0-4.0	87.5	9.0	35	3.5	6.3	5.8	6.6	2.8	TB-1/8#	800-1000
TT-BW-4.0	4.0-5.0	98.0	11.4	38	3.8	6.3	6.6	7.4	3.8	TB-1/8#	
TT-BW-5.0	5.0-6.0	105.0	17.3	40	3.8	6.3	6.8	9.0	4.8	TB-3/16#	

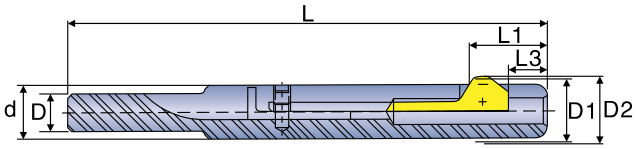
Recommended feed F=0.05-0.20mm/rpm

BURRAWAY TOOLS WITH CHANGEABLE BLADE

Fig1.

Fig2.

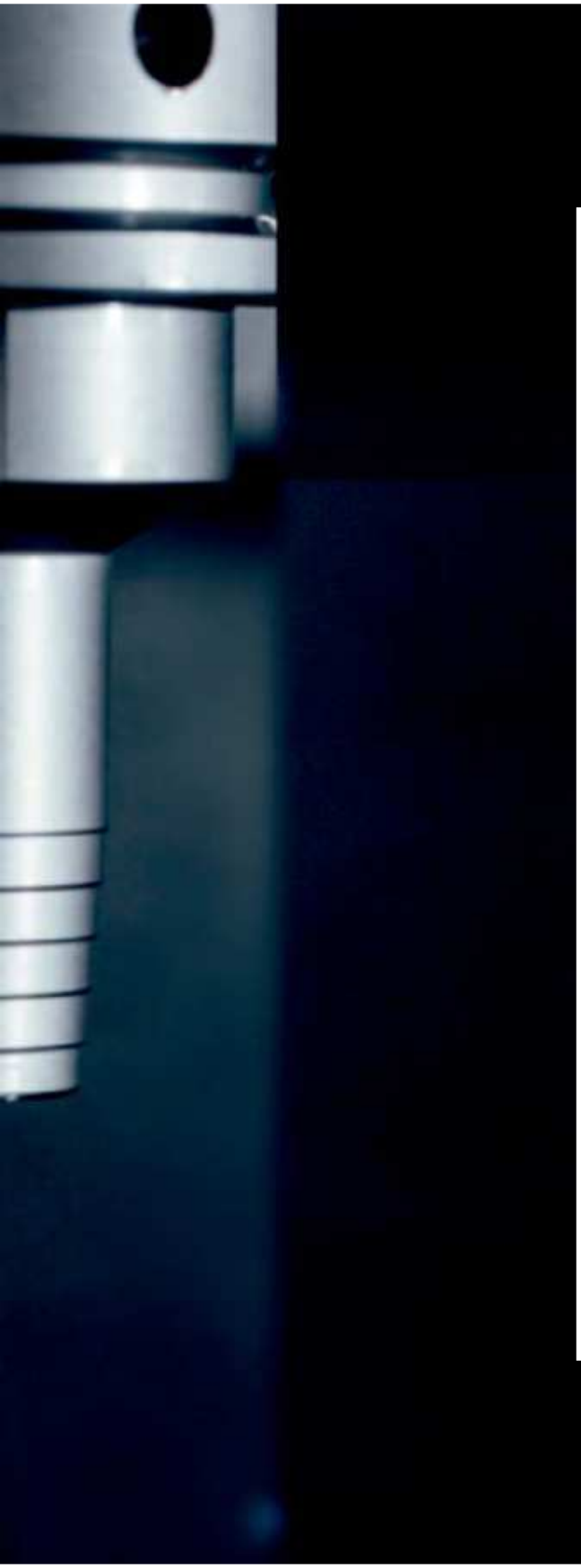




mm

Tool Number	Range of hole size	L	L1	L3	D	d	D1	D2	Blade	Fig	RPM
TT-BW-6.0	6.0-7.0	110	14.2	5	5.8	5.8	9.2	9.8	TB-1#	Fig 1	800-1000
TT-BW-7.0	7.0-8.0	110	13.4	5	6.8	6.8	10.0	10.8	TB-1#	Fig 1	
TT-BW-8.0	8.0-9.0	115	15.5	5	7.8	7.8	13.0	14.4	TB-2#	Fig 1	
TT-BW-9.0	9.0-10.0	127	15.0	5	8.8	8.8	13.2	14.4	TB-3#	Fig 1	
TT-BW-10.0	10.0-11.0	127	15.0	5	9.8	9.8	14.6	16.0	TB-3#	Fig 1	
TT-BW-11.0	11.0-12.0	127	20.5	5	10.8	10.8	16.8	18.2	TB-3-1/2#	Fig 1	600
TT-BW-12.0	12.0-13.0	127	19.0	5	11.8	11.8	17.8	19.2	TB-3-1/2#	Fig 1	
TT-BW-13.0	13.0-14.0	127	18.7	10	12.8	12.8	18.8	20.2	TB-3-1/2#	Fig 1	
TT-BW-14.0	14.0-15.0	140	26.5	10	13.8	13.8	20.2	22.4	TB-4#	Fig 1	
TT-BW-15.0	15.0-16.0	140	26.5	10	14.8	14.8	21.4	23.6	TB-4#	Fig 1	
TT-BW-16.0	16.0-17.0	155	26.4	10	15.8	15.8	23.0	24.2	TB-4#	Fig 1	
TT-BW-17.0	17.0-18.0	155	26.5	10	16.8	16.8	23.4	25.6	TB-4#	Fig 1	
TT-BW-18.0	18.0-19.0	155	26.5	10	17.8	17.8	24.4	26.6	TB-4#	Fig 1	
TT-BW-19.0	19.0-20.0	180	26.5	10	18.8	18.8	25.4	27.6	TB-4#	Fig 1	
TT-BW-20.0	20.0-21.0	180	26.5	10	16.0	19.8	26.4	28.6	TB-3-1/2#	Fig 2	
TT-BW-21.0	21.0-22.0	180	27.1	10	16.0	20.8	27.0	29.6	TB-3-1/2#	Fig 2	
TT-BW-22.0	22.0-23.0	180	27.1	10	16.0	21.8	28.0	30.6	TB-3-1/2#	Fig 2	
TT-BW-23.0	23.0-24.0	180	27.1	10	16.0	22.8	29.0	31.6	TB-3-1/2#	Fig 2	
TT-BW-24.0	24.0-25.0	180	27.3	10	16.0	23.8	30.0	32.6	TB-3-1/2#	Fig 2	
TT-BW-25.0	25.0-26.0	180	27.1	10	16.0	24.8	30.6	33.4	TB-3-1/2#	Fig 2	

Recommended feed F=0.05-0.20mm/rpm



Tooling

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SHRINK-FIT HOLDER

EL

Features Overview

- ▲ Use of specially heat-treated steel
- ▲ High precision machining and clamping
- ▲ Increased precision and longer tool life due to minimized overhang when machining deep grooves
- ▲ Applicable shank diameter: ϕ 3- ϕ 32

TOOTOOL

www.ttooltec.com

Code System

BT50 - EL SA 3 - M67 - 120 - CV

1 2 3 4 5 6 7

1 Shank type

BT50 - EL SA 3 - M67 - 120 - CV

BT, HSK

2 holder type

BT50 - EL SA 3 - M67 - 120 - CV

EL: One-piece type

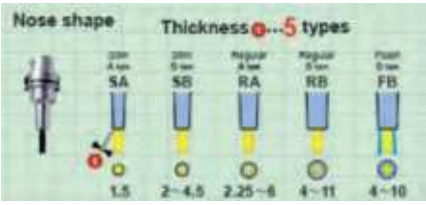
ELK: Two-piece type

3 Nose shape

BT50 - EL SA 3 - M67 - 120 - CV

BT, HSK

General Type



CVType

4 Tool Dia

BT50 - EL SA 3 - M67 - 120 - CV

5 Effective length

BT50 - EL SA 3 - M67 - 120 - CV

6 Overlenght

BT50 - EL SA 3 - M67 - 120 - CV

7 Special

BT50 - EL SA 3 - M67 - 120 - CV

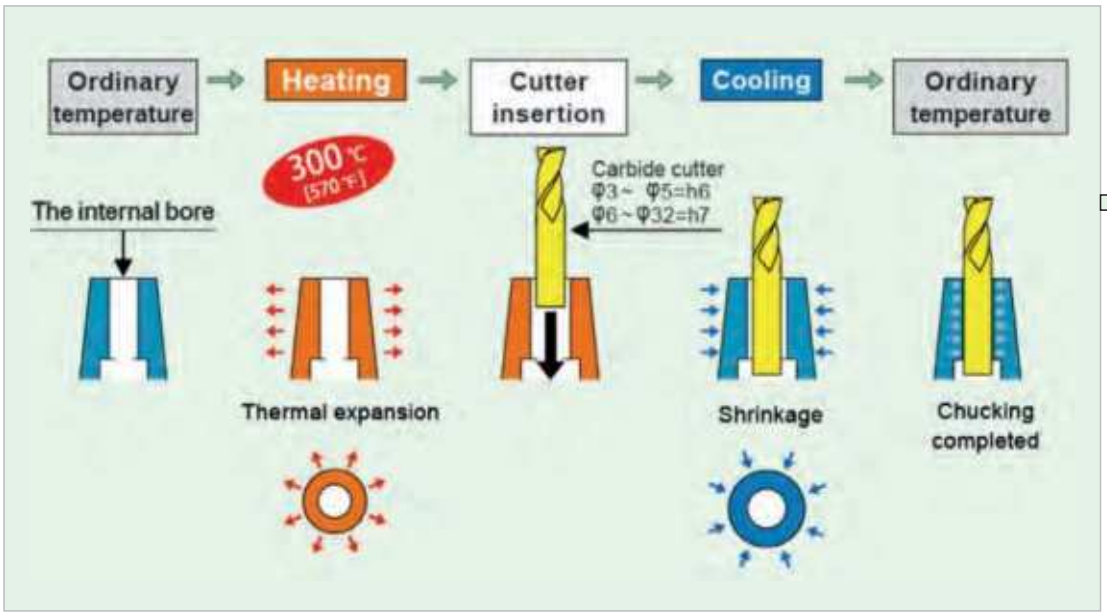
NON: General

CV: Curve type

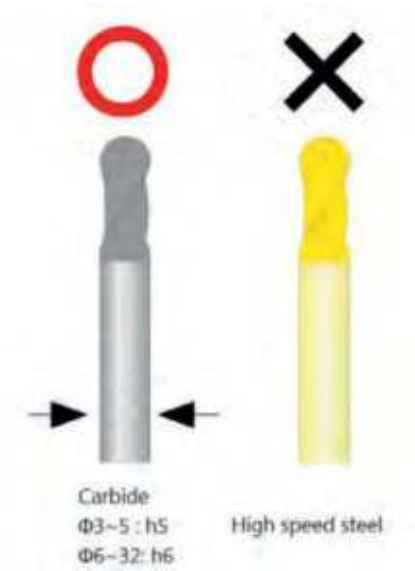
Instructions for use

Principle of shrinking technology

*A shrinking-fit holder is a chucking system that utilizes the difference between the coefficients of thermal expansion of the holder material (steel) and the cutter (carbide).



Usable tools



To ensure optimum, trouble-free performance,
please read this instructions carefully before using products.
Please contact us if your holder is damaged.
We are ready to help you

- Please use only carbide cutters.
  No shrink release is possible for any tool using high-speed steel.
- A tool exceeding its tolerance can cause breakage or slippage.
- Sometimes melted particles such as tiny cutting chips on cutter shanks get stuck in clamping holes, and cutters can't be removed. (DON'T remove or insert the cutting tool forcedly, when you can't remove it, please reheat again.)

Before shrink-fitting

Cleaning

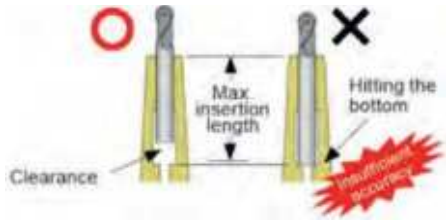
You must clean the cutter shank and internal bore of holder before you shrink-fit it.
Please use cleaning brush to clean out dust and dirt inside before your shrink-fit.

Using heat-resistant gloves

Use these gloves to protect from burns during operation.

Max. insert ion length

Inserting the cutter all the way to the bottom of the holder may result in insufficient accuracy.
Please ensure the insertion length



Min. holding length

A short insertion length may cause the holder to be damaged when the cutter is insertion.
Always insert the cutter shank beyond the safety mark

Instructions for use

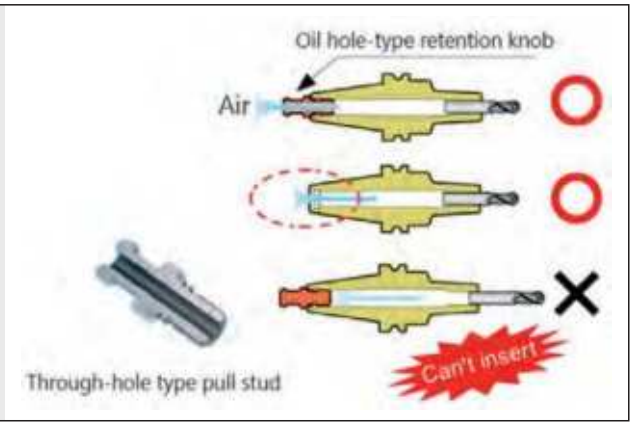
When shrink-fitting

Don't repeat heating

Always conduct a cooling operation for at least one minute after a heating operation, as continuous heating may damage the unit

Pull stud with hole (BT)

Use a pull stud that has a through hole, or remove the pull stud and heat it. The typical pull stud has no vent to release air which prevents tools from being inserted.



Water cooling

Water-cooling immediately after shrink-fitting may result in burns due to the large quantity of steam generated.
Be sure to set the shrink-fitting heater setting to COOL and cool the holder for at least one minute before water-cooling,
Moisture left on the holder may lead to rust formation and damage to the holder, so be sure to completely remove all moisture.

One-piece 3° Type Holder

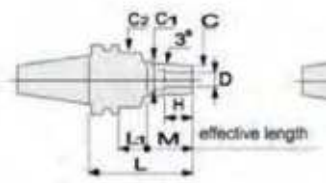


Fig.1

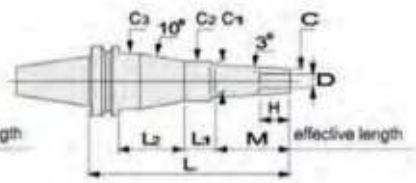


Fig. 2

mm

Designation	Dimension (mm)											Fig	Kg
	D	C	Thickness	C1	C2	C3	M	H	L1	L2	L		
BT30-ELRA3-M42-95	3.0	7.50	2.25	11.9	25	-	42	9	31	-	95	1	0.4
BT30-ELRA3-M67-120	3.0	7.50	2.25	14.4	25	-	67	9	31	-	120	1	0.5
BT30-ELSA4-M42-95	4.0	7.00	1.50	11.4	25	-	42	12	31	-	95	1	0.4
BT30-ELSA4-M67-120	4.0	7.00	1.50	14.0	25	-	67	12	31	-	120	1	0.5
BT30-ELRA4-M42-95	4.0	10.00	3.00	14.4	25	-	42	12	31	-	95	1	0.4
BT30-ELRA4-M67-120	4.0	10.00	3.00	17.0	25	-	67	12	31	-	120	1	0.5
BT30-ELSA6-M42-95	6.0	9.00	1.50	13.4	25	-	42	18	31	-	95	1	0.4
BT30-ELSA6-M67-120	6.0	9.00	1.50	16.0	25	-	67	18	31	-	120	1	0.5
BT30-ELSB6-M42-95	6.0	10.00	2.00	14.4	25	-	42	18	31	-	95	1	0.4
BT30-ELSB6-M67-120	6.0	10.00	2.00	17.0	25	-	67	18	31	-	120	1	0.5
BT30-ELRA8-M42-95	8.0	14.00	3.00	18.4	25	-	42	24	31	-	95	1	0.6
BT30-ELRA10-M42-95	10.0	16.00	3.00	20.4	25	-	42	30	31	-	95	1	0.6
BT30-ELRA12-M42-95	12.0	20.00	4.00	24.4	25	-	42	30	31	-	95	1	0.6
BT40-ELSA3-M42-95	3.0	6.00	1.50	10.4	25	-	42	9	26	-	95	1	1.0
BT40-ELSA3-M67-120	3.0	6.00	1.50	13.0	25	-	67	9	26	-	120	1	1.0
BT40-ELSA3-M67-180	3.0	6.00	1.50	13.0	25	39	67	9	33	53	180	2	1.4
BT40-ELRA3-M42-95	3.0	7.50	2.25	11.9	25	-	42	9	26	-	95	1	1.0
BT40-ELRA3-M67-120	3.0	7.50	2.25	14.5	25	-	67	9	26	-	120	1	1.0
BT40-ELRA3-M67-180	3.0	7.50	2.25	14.5	25	39	67	9	33	53	180	2	1.4
BT40-ELSA4-M42-95	4.0	7.00	1.50	11.4	25	-	42	12	26	-	95	1	1.0
BT40-ELSA4-M67-120	4.0	7.00	1.50	14.0	25	-	67	12	26	-	120	1	1.0
BT40-ELSA4-M67-180	4.0	7.00	1.50	14.0	25	39	67	12	33	53	180	2	1.4
BT40-ELRA4-M42-95	4.0	10.00	3.00	14.4	25	-	42	12	26	-	95	1	1.0
BT40-ELRA4-M67-120	4.0	10.00	3.00	17.0	25	-	67	12	26	-	120	1	1.0
BT40-ELRA4-M67-180	4.0	10.00	3.00	17.0	25	39	67	12	33	53	180	2	1.4
BT40-ELSA6-M42-95	6.0	9.00	1.50	13.4	25	-	42	18	26	-	95	1	1.0
BT40-ELSA6-M67-120	6.0	9.00	1.50	16.0	25	-	67	18	26	-	120	1	1.1
BT40-ELSA6-M67-180	6.0	9.00	1.50	16.0	25	39	67	18	33	53	180	2	1.4
BT40-ELSB6-M42-95	6.0	10.00	2.00	14.4	25	-	42	18	26	-	95	1	1.0
BT40-ELSB6-M67-120	6.0	10.00	2.00	17.0	25	-	67	18	26	-	120	1	1.1
BT40-ELSB6-M67-180	6.0	10.00	2.00	17.0	25	39	67	18	33	53	180	2	1.4
BT40-ELSA8-M42-95	8.0	11.00	1.50	15.4	25	-	42	24	26	-	95	1	1.0
BT40-ELSA8-M67-120	8.0	11.00	1.50	18.0	32	-	67	24	26	-	120	1	1.1

One-piece Series

One-piece 3° Type Holder

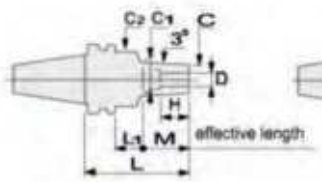


Fig. 1

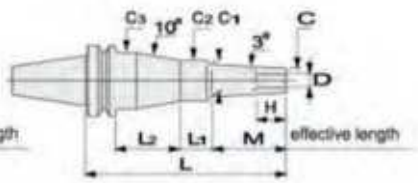


Fig. 2

mm

Designation	Dimension (mm)											Fig	Kg
	D	C	Thickness	C1	C2	C3	M	H	L1	L2	L		
BT40-ELSA8-M67-180	8.0	11.00	1.50	18.0	32	46	67	24	28	58	180	2	1.6
BT40-ELSB8-M42-95	8.0	13.00	2.50	17.4	32	-	42	24	26	-	95	1	1.0
BT40-ELSB8-M67-120	8.0	13.00	2.50	20.0	32	-	67	24	26	-	120	1	1.1
BT40-ELSB8-M67-180	8.0	13.00	2.50	20.0	32	46	67	24	28	58	180	2	1.6
BT40-ELSA10-M42-95	10.0	13.00	1.50	17.4	25	-	42	30	26	-	95	1	1.0
BT40-ELSA10-M67-120	10.0	13.00	1.50	20.0	32	-	67	30	26	-	120	1	1.1
BT40-ELSA10-M67-180	10.0	13.00	1.50	20.0	32	46	67	30	28	58	180	2	1.8
BT40-ELSB10-M42-95	10.0	16.00	3.00	20.4	32	-	42	30	26	-	95	1	1.0
BT40-ELSB10-M67-120	10.0	16.00	3.00	23.0	32	-	67	30	26	-	120	1	1.1
BT40-ELSB10-M67-180	10.0	16.00	3.00	23.0	32	46	67	30	28	58	180	2	1.8
BT40-ELSA12-M42-95	12.0	15.00	1.50	19.4	32	-	42	30	26	-	95	1	1.1
BT40-ELSA12-M67-120	12.0	15.00	1.50	22.0	32	-	67	30	26	-	120	1	1.1
BT40-ELSA12-M67-180	12.0	15.00	1.50	22.0	32	46	67	30	30	56	180	2	1.7
BT40-ELSB12-M42-95	12.0	19.00	3.50	23.4	32	-	42	30	26	-	95	1	1.1
BT40-ELSB12-M67-120	12.0	19.00	3.50	26.0	32	-	67	30	26	-	120	1	1.1
BT40-ELSB12-M67-180	12.0	19.00	3.50	26.0	32	46	67	30	30	56	180	2	1.7
BT40-ELSB16-M42-95	16.0	24.00	4.00	28.4	42	-	42	32	26	-	95	1	1.2
BT40-ELSB16-M67-120	16.0	24.00	4.00	31.0	42	-	67	32	26	-	120	1	1.3
BT40-ELSB16-M67-180	16.0	24.00	4.00	31.0	42	53	67	32	86	-	180	2	2.0
BT40-ELSB20-M42-95	20.0	29.00	4.50	33.4	42	-	42	40	26	-	95	1	1.2
BT40-ELSB20-M67-120	20.0	29.00	4.50	36.0	42	-	67	40	26	-	120	1	1.3
BT40-ELSB20-M67-180	20.0	29.00	4.50	36.0	50	-	67	40	86	-	180	1	2.0
BT50-ELSA6-M42-110	6.0	9.00	1.50	13.4	25	-	42	18	30	-	110	1	3.6
BT50-ELSA6-M67-135	6.0	9.00	1.50	16.0	25	-	67	18	30	-	135	1	3.7
BT50-ELSA6-M67-195	6.0	9.00	1.50	16.0	25	39	67	18	33	57	195	2	4.0
BT50-ELSB6-M42-110	6.0	10.00	2.00	14.4	25	-	42	18	30	-	110	1	3.6
BT50-ELSB6-M67-135	6.0	10.00	2.00	17.0	25	-	67	18	30	-	135	1	3.7
BT50-ELSB6-M67-195	6.0	10.00	2.00	17.0	25	39	67	18	33	57	195	2	4.0
BT50-ELSA8-M42-110	8.0	11.00	1.50	15.4	25	-	42	24	30	-	110	1	3.6
BT50-ELSA8-M67-135	8.0	11.00	1.50	18.0	32	-	67	24	30	-	135	1	3.7
BT50-ELSA8-M67-195	8.0	11.00	1.50	18.0	32	46	67	24	30	60	195	2	4.3
BT50-ELSB8-M42-110	8.0	13.00	2.50	17.4	32	-	42	24	30	-	110	1	3.6
BT50-ELSB8-M67-135	8.0	13.00	2.50	20.0	32	-	67	24	30	-	135	1	3.7

One-piece 3° Type Holder

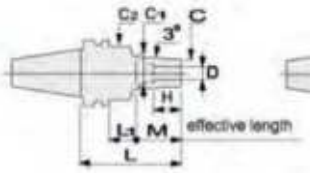


Fig.1

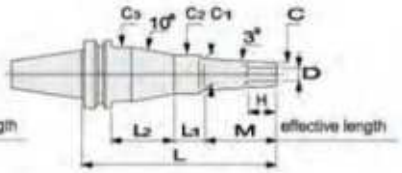


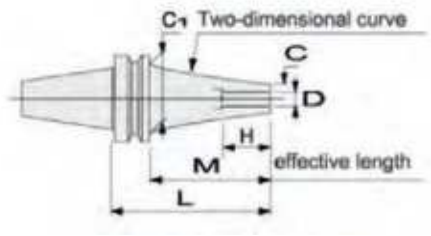
Fig. 2

mm

Designation	Dimension (mm)											Fig	Kg
	D	C	Thickness	C1	C2	C3	M	H	L1	L2	L		
BT50-ELSB8-M67-195	8.0	13.00	2.50	20.0	32	46	67	24	30	60	195	2	4.3
BT50-ELSA10-M42-110	10.0	13.00	1.50	17.4	25	-	42	30	30	-	110	1	3.6
BT50-ELSA10-M67-135	10.0	13.00	1.50	20.0	32	-	67	30	30	-	135	1	3.7
BT50-ELSA10-M67-195	10.0	13.00	1.50	20.0	32	46	67	30	28	62	195	2	4.3
BT50-ELSB10-M42-110	10.0	16.00	3.00	20.4	32	-	42	30	30	-	110	1	3.6
BT50-ELSB10-M67-135	10.0	16.00	3.00	23.0	32	-	67	30	30	-	135	1	3.7
BT50-ELSB10-M67-195	10.0	16.00	3.00	23.0	32	46	67	30	30	60	195	2	4.3
BT50-ELSA12-M42-110	12.0	15.00	1.50	19.4	32	-	42	30	30	-	110	1	3.7
BT50-ELSA12-M67-135	12.0	15.00	1.50	22.0	32	-	67	30	30	-	135	1	3.7
BT50-ELSA12-M67-195	12.0	15.00	1.50	22.0	32	46	67	30	28	62	195	2	4.3
BT50-ELSB12-M42-110	12.0	19.00	3.50	23.4	32	-	42	30	30	-	110	1	3.7
BT50-ELSB12-M67-135	12.0	19.00	3.50	26.0	32	-	67	30	30	-	135	1	3.7
BT50-ELSB12-M67-195	12.0	19.00	3.50	26.0	32	46	67	30	28	62	195	2	4.3
BT50-ELSB16-M42-110	16.0	24.00	4.00	28.4	42	-	42	32	30	-	110	1	3.8
BT50-ELSB16-M67-135	16.0	24.00	4.00	31.0	42	-	67	32	30	-	135	1	3.9
BT50-ELSB16-M67-195	16.0	24.00	4.00	31.0	42	56	67	32	90	-	195	2	4.7
BT50-ELSB20-M42-110	20.0	29.00	4.50	33.4	42	-	42	40	30	-	110	1	3.8
BT50-ELSB20-M67-135	20.0	29.00	4.50	36.0	42	-	67	40	30	-	135	1	3.9
BT50-ELSB20-M67-195	20.0	29.00	4.50	36.0	50	56	67	40	90	-	195	2	4.8

One-piece Series

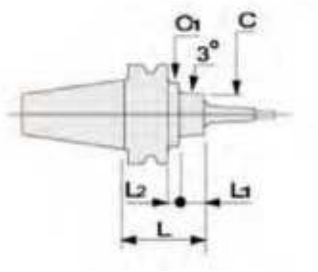
One-pieceCurve Type Holder



mm

Designation	Dimension (mm)							Kg
	D	C	Thickness	C1	M	H	L	
BT30-ELSA4-M53-75-CV	4.0	7.00	1.50	34.0	53	12	75	0.5
Bt30-ELSA6-M53-75-CV	6.0	9.00	1.50	34.0	53	18	75	0.5
Bt30-ELSA8-M53-75-CV	8.0	11.00	1.50	34.0	53	24	75	0.5
Bt30-ELSA10-M53-75-CV	10.0	13.00	1.50	34.0	53	30	75	0.5
Bt40-ELSA4-M63-90-CV	4.0	7.00	1.50	53.0	63	12	90	1.2
Bt40-ELSA6-M63-90-CV	6.0	9.00	1.50	53.0	63	18	90	1.2
Bt40-ELSA8-M63-90-CV	8.0	11.00	1.50	53.0	63	24	90	1.2
Bt40-ELSA10-M63-90-CV	10.0	13.00	1.50	53.0	63	30	90	1.2
Bt40-ELSA12-M63-90-CV	12.0	15.00	1.50	53.0	63	30	90	1.3
Bt40-ELSB16-M63-90-CV	16.0	21.00	2.50	53.0	63	32	90	1.3
Bt40-ELSB20-M63-90-CV	20.0	26.00	3.00	50.5	63	40	90	1.3
Bt50-ELSA6-M127-165-CV	6.0	9.00	1.50	85.0	127	18	165	5.1
Bt50-ELSA8-M127-165-CV	8.0	11.00	1.50	85.0	127	24	165	4.9
Bt50-ELSA10-M127-165-CV	10.0	13.00	1.50	85.0	127	30	165	4.9
Bt50-ELSA12-M127-165-CV	12.0	15.00	1.50	84.0	127	30	165	4.8
Bt50-ELSB16-M127-165-CV	16.0	21.00	2.50	85.0	127	32	165	5.4
BT50-ELSB20-M127-165-CV	20.0	26.00	3.00	85.0	127	40	165	5.4

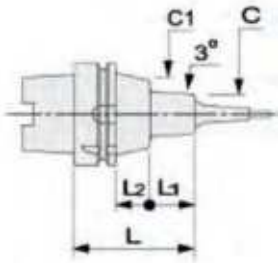
BT Master Holder



mm

Designation	Dimension (mm)					Kg
	C	C1	L1	L2	L	
BT30-ELK12-35	38.0	-	13	-	35	0.4
BT30-ELK12-75	38.0	-	53	-	75	0.6
BT30-ELK12-100	38.0	-	78	-	100	0.8
BT40-ELK12-45	38.0	-	18	-	45	1.1
BT40-ELK12-75	38.0	-	48	-	75	1.4
BT40-ELK12-135	38.0	-	108	-	135	2.0
BT40-ELK12-165	38.0	-	138	-	165	2.3
BT40-ELK12-200	38.0	-	173	-	200	2.6
BT50-ELK12-75	38.0	65.0	25	12	75	4.0
BT50-ELK12-135	38.0	65.0	85	12	135	4.5
BT50-ELK12-180	38.0	65.0	130	12	180	5.5
BT50-ELK12-225	38.0	65.0	175	12	225	6.4
BT50-ELK12-315	38.0	65.0	225	12	315	10.0

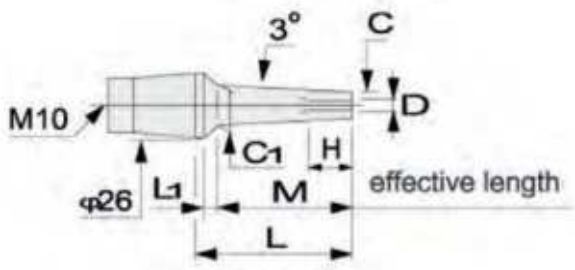
HSK Master Holder



mm

Designation	Dimension (mm)					Kg
	C	C1	L1	L2	L	
HSK50A-ELK12-75	38.0	-	49	-	75	0.8
HSK63A-ELK12-75	38.0	-	49	-	75	1.0
HSK63A-ELK12-135	38.0	-	109	-	135	1.7
HSK63A-ELK12-165	38.0	-	139	-	165	2.5
HSK63A-ELK12-180	38.0	-	154	-	180	2.7
HSK63A-ELK12-200	38.0	-	174	-	200	3.1
HSK63A-ELK12-220	38.0	-	194	-	220	3.3
HSK100A-ELK12-105	38.0	65.0	43	33	105	3.4
HSK100A-ELK12-165	38.0	65.0	103	33	165	4.4
HSK100A-ELK12-225	38.0	65.0	163	33	225	5.4
HSK100A-ELK12-315	38.0	65.0	253	33	315	6.4
HSK50E-ELK12-75	38.0	-	49	-	75	0.8

Collet ECS12 Type (Slim Type)

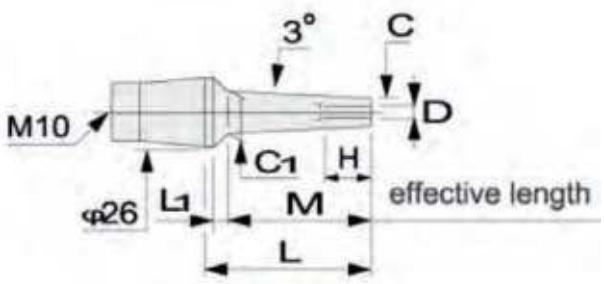


mm

Designation	Dimension (mm)								Kg
	D	C	Thickness	C1	M	H	L1	L	
ECS12-3-35	3.0	6.00	1.50	8.4	22	10	9.5	35	0.2
ECS12-3-55	3.0	6.00	1.50	10.5	42	10	9.5	55	0.2
ECS12-3-80	3.0	6.00	1.50	13.1	67	10	9.5	80	0.2
ECS12-3-110	3.0	6.00	1.50	16.2	97	10	9.5	110	0.2
ECS12-4-35	4.0	7.00	1.50	9.4	22	12	9.5	35	0.2
ECS12-4-55	4.0	7.00	1.50	11.5	42	12	9.5	55	0.2
ECS12-4-80	4.0	7.00	1.50	14.1	67	12	9.5	80	0.2
ECS12-4-110	4.0	7.00	1.50	17.2	97	12	9.5	110	0.2
ECS12-6-35	6.0	9.00	1.50	11.4	22	18	9.5	35	0.2
ECS12-6-55	6.0	9.00	1.50	13.5	42	18	9.5	55	0.2
ECS12-6-80	6.0	9.00	1.50	16.1	67	18	9.5	80	0.2
ECS12-6-110	6.0	9.00	1.50	19.2	97	18	9.5	110	0.2
ECS12-8-35	8.0	11.00	1.50	13.4	22	24	9.5	35	0.2
ECS12-8-55	8.0	11.00	1.50	15.5	42	24	9.5	55	0.2
ECS12-8-80	8.0	11.00	1.50	18.1	67	24	9.5	80	0.2
ECS12-8-110	8.0	11.00	1.50	21.2	97	24	9.5	110	0.3
ECS12-10-35	10.0	13.00	1.50	15.4	22	30	9.5	35	0.2
ECS12-10-55	10.0	13.00	1.50	17.5	42	30	9.5	55	0.2
ECS12-10-80	10.0	13.00	1.50	20.1	67	30	9.5	80	0.2
ECS12-10-110	10.0	13.00	1.50	23.2	97	30	9.5	110	0.3
ECS12-12-35	12.0	15.00	1.50	17.4	22	30	9.5	35	0.2
ECS12-12-55	12.0	15.00	1.50	19.5	42	30	9.5	55	0.2
ECS12-12-80	12.0	15.00	1.50	22.1	67	30	9.5	80	0.2
ECS12-12-110	12.0	15.00	1.50	-	-	30	-	110	0.3

Two-piece Series

Collet ECS12 Type (Standard Type)



mm

Designation	Dimension (mm)								Kg
	D	C	Thickness	C1	M	H	L1	L	
ECR12-3-35	3.0	7.50	2.25	9.9	22	10	9.5	35	0.2
ECR12-3-55	3.0	7.50	2.25	12.0	42	10	9.5	55	0.2
ECR12-3-80	3.0	7.50	2.25	14.6	67	10	9.5	80	0.2
ECR12-3-110	3.0	7.50	2.25	19.2	97	10	9.5	110	0.2
ECR12-4-35	4.0	10.00	3.00	12.4	22	12	9.5	35	0.2
ECR12-4-55	4.0	10.00	3.00	14.5	42	12	9.5	55	0.2
ECR12-4-80	4.0	10.00	3.00	17.1	67	12	9.5	80	0.2
ECR12-4-110	4.0	10.00	3.00	20.2	97	12	9.5	110	0.2
ECR12-6-35	6.0	12.00	3.00	14.4	22	18	9.5	35	0.2
ECR12-6-55	6.0	12.00	3.00	16.5	42	18	9.5	55	0.2
ECR12-6-80	6.0	12.00	3.00	19.1	67	18	9.5	80	0.2
ECR12-6-110	6.0	12.00	3.00	22.2	97	18	9.5	110	0.2
ECR12-8-35	8.0	14.00	3.00	16.4	22	24	9.5	35	0.2
ECR12-8-55	8.0	14.00	3.00	18.5	42	24	9.5	55	0.2
ECR12-8-80	8.0	14.00	3.00	21.1	67	24	9.5	80	0.2
ECR12-8-110	8.0	14.00	3.00	24.2	97	24	9.5	110	0.3
ECR12-10-35	10.0	16.00	3.00	18.4	22	30	9.5	35	0.2
ECR12-10-55	10.0	16.00	3.00	20.5	42	30	9.5	55	0.2
ECR12-10-80	10.0	16.00	3.00	23.1	67	30	9.5	80	0.2
ECR12-10-110	10.0	16.00	3.00	-	-	30	-	110	0.3
ECR12-12-35	12.0	20.00	4.00	22.4	22	30	9.5	35	0.2
ECR12-12-55	12.0	20.00	4.00	24.5	42	30	9.5	55	0.2
ECR12-12-80	12.0	20.00	4.00	25.5	67	30	9.5	80	0.2
ECS12-12-110	12.0	20.00	4.00	-	-	30	-	110	0.3

Technical Infomation for Straight Arbor

Code System

SH	10	-	EL	SA	4	-	M35	-	115
1	2		3	4	5		6		7

1 Name

SH 10 - EL SA 4 M35 - 120

Straight Arbor

2 Shank Dia

SH 10 - EL SA 4 M35 - 120

Straight Arbor

3 Holder type

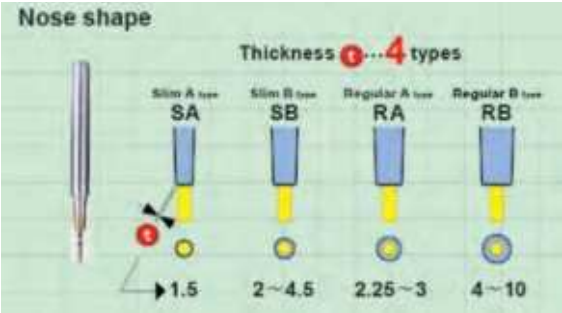
SH 10 - EL SA 4 M35 - 120

EL: One-piece steel shank type

ED: One-piece carbide shank type

4 Nose shape

SH 10 - EL SA 4 M35 - 120



5 Tool Dia

SH 10 - EL SA 4 M35 - 120

6 Effective lenght

SH 10 - EL SA 4 M35 - 120

EL: One-piece steel shank type

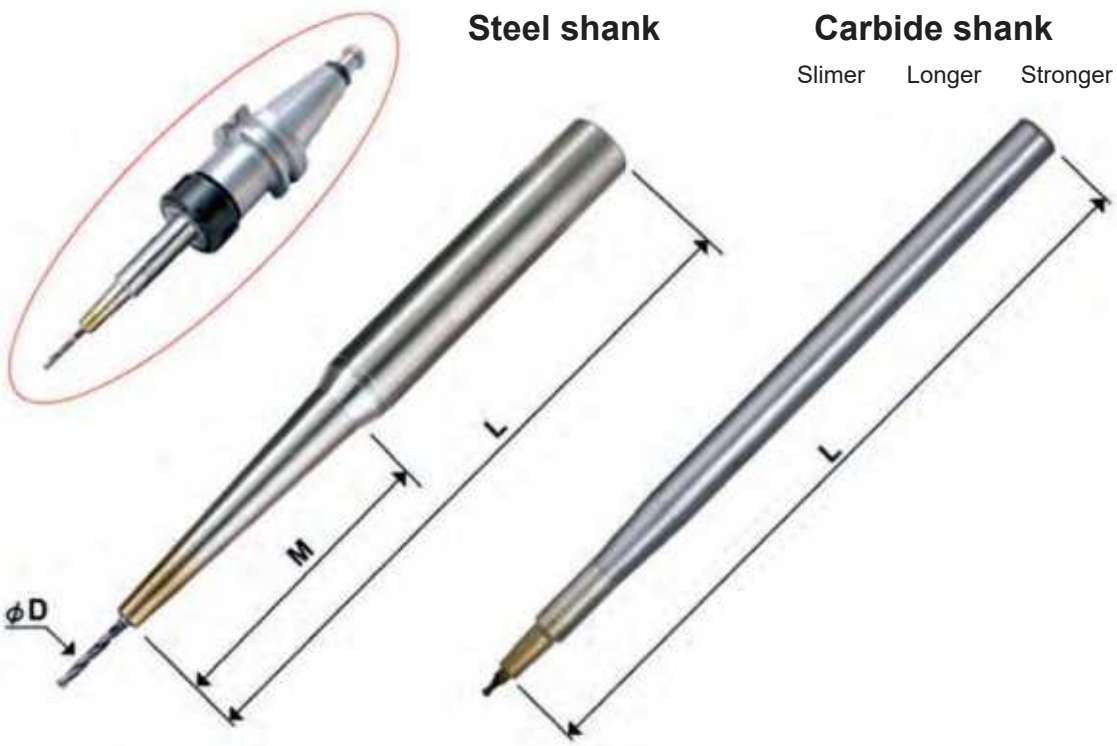
ED: One-piece carbide shank type

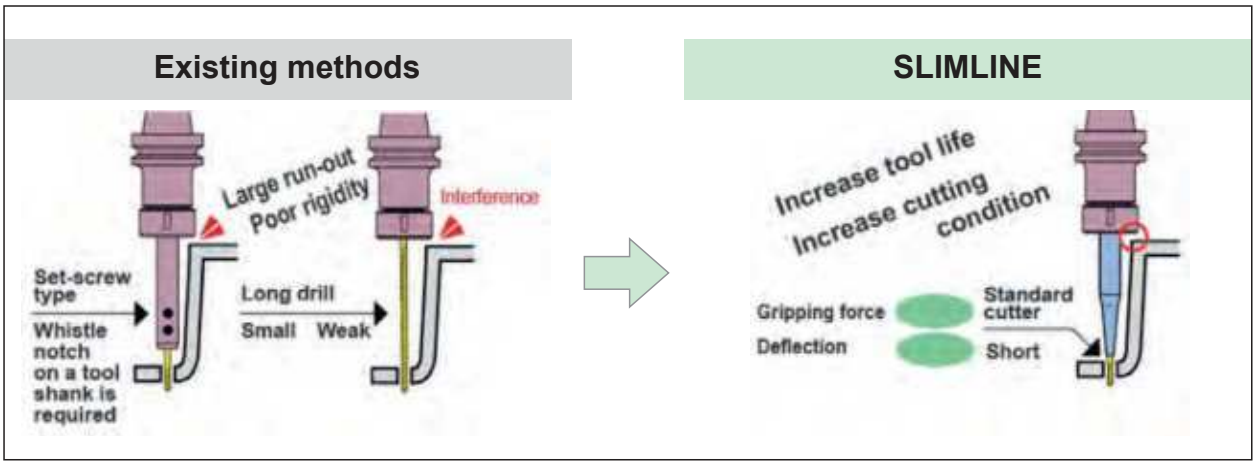
7 Overlenght

SH 10 - EL SA 4 M35 - 120

Technical Infomation for Straight Arbor

STRAIGHT ARBOR





Straight Arbor of Steel Shank

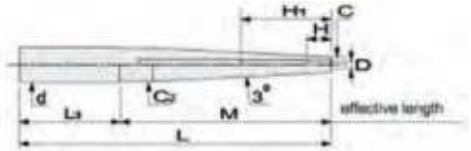


Fig. 1

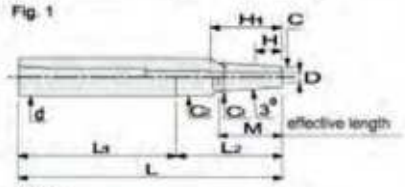


Fig. 2

mm

Designation	Dimension (mm)												Fig	Kg
	D	C	Thickness	C1	C2	M	H1	H	d	L1	L2	L		
SH10ELSA4-M35-115	4.0	7.00	1.50	-	9.5	35	-	12	10	80	-	115	1	0.03
SH12ELSA4-M50-115	4.0	7.00	1.50	-	11.5	50	-	12	12	65	-	115	1	0.04
SH12ELRA4-M42-115	4.0	10.00	3.00	-	11.5	42	-	12	12	73	-	115	1	0.04
SH16ELRA4-M42-115	4.0	10.00	3.00	14.4	11.5	42	-	12	16	65	50	115	2	0.10
SH16ELSA4-M67-140	4.0	7.00	1.50	14.2	15.5	67	-	12	16	60	80	140	2	0.10
SH16ELRA4-M67-140	4.0	10.00	3.00	-	15.5	67	-	12	16	73	-	140	1	0.10
SH20ELSA4-M97-200	4.0	7.00	1.50	-	19.5	97	-	12	20	110	-	200	1	0.30
SH20ELRA4-M97-200	4.0	10.00	3.00	-	19.5	97	-	12	20	103	-	200	1	0.30
SH25ELRA4-M97-245	4.0	10.00	3.00	20.2	24.5	97	-	12	25	120	125	245	2	0.30
SH25ELRA4-M67-315	4.0	10.00	3.00	17.1	24.5	67	-	12	25	220	95	315	2	0.90
SH12ELSA6-M42-115	6.0	9.00	1.50	-	11.5	42	-	18	12	73	-	115	1	0.04
SH16ELSB6-M42-115	6.0	10.00	2.00	14.4	15.5	42	-	18	16	65	50	115	2	0.10
SH16ELSB6-M60-140	6.0	10.00	2.00	-	15.5	60	-	18	16	80	-	140	1	0.10
SH20ELRB6-M60-175	6.0	14.00	4.00	-	19.5	60	-	18	20	115	-	175	1	0.30
SH20ELSB6-M95-175	6.0	10.00	2.00	-	-	95	-	18	20	80	-	175	1	0.30
SH25ELSB6-M127-205	6.0	10.00	2.00	23.4	24.5	127	-	18	25	78	135	205	2	0.50
SH25ELRB6-M42-240	6.0	14.00	4.00	18.4	24.5	42	-	18	25	170	70	240	2	0.70
SH32ELSB6-M157-255	6.0	10.00	2.00	26.5	31.5	157	-	18	32	70	185	255	2	0.80
SH32ELRB6-M67-345	6.0	14.00	4.00	21.1	31.5	67	-	18	32	250	95	345	2	1.60
SH32ELSB6-M157-375	6.0	10.00	2.00	26.5	31.5	157	-	18	32	190	185	375	2	1.40
SH16ELSB8-M42-145	8.0	13.00	2.50	-	15.5	42	-	24	16	103	-	145	1	0.10
SH20ELSB8-M70-145	8.0	13.00	2.50	-	19.5	70	-	24	20	75	-	145	1	0.20
SH20ELSB8-M80-200	8.0	13.00	2.50	-	19.5	80	-	24	20	120	-	200	1	0.30
SH25ELSB8-M97-175	8.0	13.00	2.50	23.2	24.5	97	-	24	25	70	105	175	2	0.40
SH25ELRB8-M90-210	8.0	18.00	5.00	-	24.5	90	-	24	25	120	-	210	1	0.60
SH25ELSB8-M140-260	8.0	13.00	2.50	-	24.5	140	-	24	25	120	-	260	1	0.70
SH32ELRB8-M67-285	8.0	18.00	5.00	25.0	31.5	67	-	24	32	190	95	285	2	1.30
SH32ELSB8-M157-375	8.0	13.00	2.50	29.5	31.5	157	-	24	32	190	185	375	2	1.50
SH20ELSB10-M70-145	10.0	16.00	3.00	-	19.5	70	60	30	20	75	-	145	1	0.20
SH20ELSB10-M70-200	10.0	16.00	3.00	-	19.5	70	60	30	20	130	-	200	1	0.20
SH25ELSB10-M105-175	10.0	16.00	3.00	-	24.5	105	60	30	25	70	-	175	1	0.50
SH25ELRB10-M90-210	10.0	22.00	6.00	-	24.5	90	60	30	25	120	-	210	1	0.70
SH25ELSB10-M105-275	10.0	16.00	3.00	-	24.5	105	60	30	25	170	-	275	1	0.80

Straight Arbor Series

Straight Arbor of Steel Shank

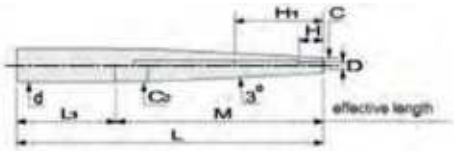


Fig. 1

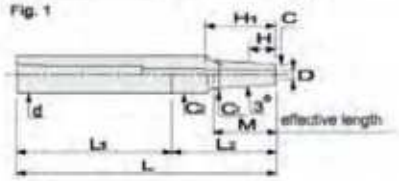
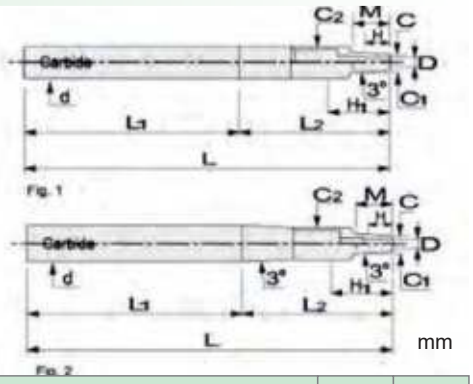


Fig. 2

mm

Designation	Dimension (mm)												Fig	Kg
	D	C	Thickness	C1	C2	M	H1	H	d	L1	L2	L		
SH32ELSB10-M170-240	10.0	16.00	3.00	-	31.5	170	60	30	32	70	-	240	1	0.90
SH32ELRB10-M67-285	10.0	22.00	6.00	29	31.5	67	60	30	32	190	-	285	2	1.40
SH32ELSB10-M170-360	10.0	16.00	3.00	-	31.5	170	60	30	32	190	-	360	1	1.50
SH25ELSB12-M80-150	12.0	19.00	3.50	-	24.5	80	60	30	25	70	-	150	1	0.40
SH25ELSB12-M80-250	12.0	19.00	3.50	-	24.5	80	60	30	25	170	-	250	1	0.80
SH32ELRB12-M70-260	12.0	26.00	7.00	-	31.5	70	60	30	32	190	-	260	1	1.30
SH32ELSB12-M150-340	12.0	19.00	3.50	-	31.5	150	60	30	32	190	-	340	1	1.50
Sh25ELSB16-M50-175	16.0	24.00	4.00	-	24.5	50	60	32	25	125	-	175	1	0.50
SH32ELRB16-M45-175	16.0	32.00	8.00	-	31.5	45	60	32	32	130	-	175	1	0.80
SH32ELSB16-M100-290	16.0	24.00	4.00	-	31.5	100	60	32	32	190	-	290	1	1.40
SH32ELSB20-M50-175	20.0	29.00	4.50	-	31.5	50	70	40	32	125	-	175	1	0.80
SH32ELSB20-M97-255	20.0	29.00	4.50	-	31.5	97	70	40	32	158	-	255	1	1.30

Straight Arbor of Carbide Shank

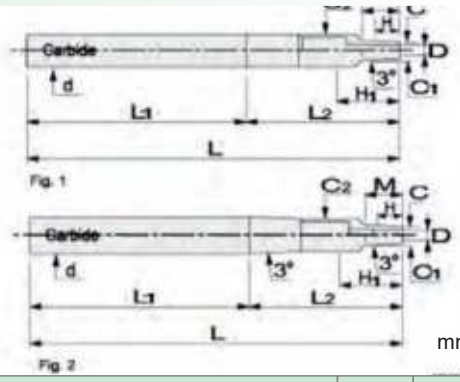


mm

Designation	Dimension (mm)												Fig	Kg
	D	C	Thickness	C1	C2	M	H1	H	d	L1	L2	L		
SH10ED03-M12-150	3.0	6.00	1.50	7.3	10	12	17	10	10	40	-	150	1	0.40
SH10ED04-M12-150	4.0	7.00	1.50	8.3	10	12	17	12	10	40	-	150	1	0.40
SH10ED06-150	6.0	10.00	2.00	-	10	-	17	15	10	40	-	150	1	0.40
SH12ED04-M20-175	4.0	7.00	1.50	9.1	12	20	25	12	12	50	-	175	1	0.70
SH12ED06-175	6.0	10.00	2.00	-	12	-	25	18	12	50	-	175	1	0.70
SH12ED08-175	8.0	12.00	2.00	-	12	-	25	22	12	50	-	175	1	0.70
SH16ED04-M20-150	4.0	10.00	3.00	12.1	16	20	28	12	16	60	-	150	1	1.10
SH16ED06-M22-150	6.0	10.00	2.00	12.4	16	22	28	18	16	60	-	150	1	1.10
SH16ED08-150	8.0	13.00	2.50	-	16	-	28	24	16	60	-	150	1	1.10
SH16ED10-150	10.0	16.00	3.00	-	16	-	28	24	16	60	-	150	1	1.10
SH16ED04-M20-200	4.0	10.00	3.00	12.1	16	20	28	12	16	60	-	200	1	1.50
SH16ED06-M22-200	6.0	10.00	2.00	12.4	16	22	28	18	16	60	-	200	1	1.50
SH16ED08-200	8.0	13.00	2.50	-	16	-	28	24	16	60	-	200	1	1.50
SH16ED10-200	10.0	16.00	3.00	-	16	-	28	24	16	60	-	200	1	1.50
SH16ED04-M20-250	4.0	10.00	3.00	12.1	16	20	28	12	16	60	-	250	1	1.85
SH16ED06-M22-250	6.0	10.00	2.00	12.4	16	22	28	18	16	60	-	250	1	1.85
SH16ED08-250	8.0	13.00	2.50	-	16	-	28	24	16	60	-	250	1	1.85
SH16ED10-250	10.0	16.00	3.00	-	16	-	28	24	16	60	-	250	1	1.85
SH16ED06-M22-270	6.0	10.00	2.00	12.4	16	22	28	18	16	60	-	270	1	2.00
SH16ED08-270	8.0	13.00	2.50	-	16	-	28	24	16	60	-	270	1	2.00
SH20ED06-M26-175	6.0	10.00	2.00	12.8	20	26	33	18	20	70	-	175	1	2.00
SH20ED08-M28-175	8.0	13.00	2.50	15.9	20	28	33	24	20	70	-	175	1	2.00
SH20ED10-175	10.0	16.00	3.00	-	20	-	33	30	20	70	-	175	1	2.00
SH20ED12-175	12.0	20.00	4.00	-	20	-	33	30	20	70	-	175	1	2.00
SH20ED06-M26-225	6.0	10.00	2.00	12.8	20	26	33	18	20	70	-	225	1	2.60
SH20ED08-M28-225	8.0	13.00	2.50	15.9	20	28	33	24	20	70	-	225	1	2.60
SH20ED10-225	10.0	16.00	3.00	-	20	-	33	30	20	70	-	225	1	2.60
SH20ED12-225	12.0	20.00	4.00	-	20	-	33	30	20	70	-	225	1	2.60
SH20ED06-M26-275	6.0	10.00	2.00	12.8	20	26	33	18	20	70	-	275	1	3.20
SH20ED08-M28-275	8.0	13.00	2.50	15.9	20	28	33	24	20	70	-	275	1	3.20
SH20ED10-275	10.0	16.00	3.00	-	20	-	33	30	20	70	-	275	1	3.20
SH20ED12-275	12.0	20.00	4.00	-	20	-	33	30	20	70	-	275	1	3.20
SH20ED06-M26-300	6.0	10.00	2.00	12.8	20	26	33	18	20	70	-	300	1	3.50

Straight Arbor Series

Straight Arbor of Carbide Shank



mm

Designation	Dimension (mm)												Fig	Kg
	D	C	Thickness	C1	C2	M	H1	H	d	L1	L2	L		
SH20ED08-M28-300	8.0	13.00	2.50	15.9	20	28	33	24	20	70	-	300	1	3.50
SH20ED10-300	10.0	16.00	3.00	-	20	-	33	30	20	70	-	300	1	3.50
SH20ED12-300	12.0	20.00	4.00	-	20	-	33	30	20	70	-	300	1	3.50
SH25ED08-M28-200	8.0	13.00	2.50	15.9	20	28	33	24	25	70	118	200	2	3.65
SH25ED10-200	10.0	16.00	3.00	-	20	-	33	30	25	70	118	200	2	3.65
SH25ED12-200	12.0	20.00	4.00	-	20	-	33	30	25	70	118	200	2	3.65
SH25ED08-M28-250	8.0	13.00	2.50	15.9	20	28	33	24	25	70	118	250	2	4.55
SH25ED10-250	10.0	16.00	3.00	-	20	-	33	30	25	70	118	250	2	4.55
SH25ED12-250	12.0	20.00	4.00	-	20	-	33	30	25	70	118	250	2	4.55
SH25ED08-M28-300	8.0	13.00	2.50	15.9	20	28	33	24	25	70	118	300	2	5.45
SH25ED10-300	10.0	16.00	3.00	-	20	-	33	30	25	70	118	300	2	5.45
SH25ED12-300	12.0	20.00	4.00	-	20	-	33	30	25	70	118	300	2	5.45
SH25ED08-M28-350	8.0	13.00	2.50	15.9	20	28	33	24	25	70	118	350	2	6.40
SH25ED10-350	10.0	16.00	3.00	-	20	-	33	30	25	70	118	350	2	6.40
SH25ED12-350	12.0	20.00	4.00	-	20	-	33	30	25	70	118	350	2	6.40
SH32ED10-M32-300	10.0	16.00	3.00	15.9	25	32	40	30	32	85	152	300	2	8.90
SH32ED12-300	12.0	20.00	4.00	-	25	-	40	30	32	85	152	300	2	8.90
SH32ED16-300	16.0	25.00	4.50	-	25	-	40	30	32	85	152	300	2	8.90
SH32ED10-M32-350	10.0	16.00	3.00	15.9	25	32	40	30	32	85	152	350	2	10.40
SH32ED12-350	12.0	20.00	4.00	-	25	-	40	30	32	85	152	350	2	10.40
SH32ED16-350	16.0	25.00	4.50	-	25	-	40	30	32	85	152	350	2	10.40

HCM SERIES

HYDRAULIC CHUCK

Features Overview

- ▲ Special nickel-plated surface treatment to enhance rust-proof ability
- ▲ Ultra-large torque design, excellent damping & vibration reduction performance and ultra-high clamping accuracy (≤0.003mm/4d)
- ▲ Shark gill anti-skid design, integrated with human engineering technology, reliable and durable function

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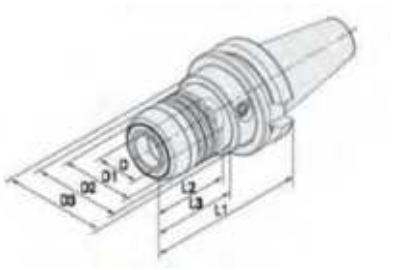
Hydraulic Chuck

BT Hydraulic Chuck

Handle diameter tolerance	Rotation accuracy	25000RPM
h6	0.003mm	G2.5

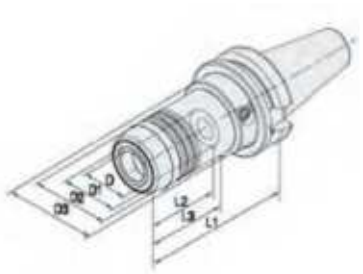


mm

Designation	Dimension (mm)							Spare Parts		
	D	D1	D2	D3	L1	L2	L3	Screw	Collets	Hex Wrench
BT30-HCM06-50.8	6	23	26	46.0	50.8	37	15.6	BHC0514	-	TT-HW04L
BT30-HCM08-50.8	8	25	28	46.0	50.8	37	15.6	BHC0614	-	TT-HW04L
BT30-HCM10-50.8	10	27	30	46.0	50.8	41	15.6	BHC0814	-	TT-HW05L
BT30-HCM12-50.8	12	29	32	46.0	50.8	46	15.6	BHC0814	HC12	TT-HW05L
BT30-HCM16-90	16	34	38	50.0	90.0	49	50.0	BHC0814	-	TT-HW05L
BT30-HCM20-90	20	38	42	50.0	90.0	51	50.0	BHC0814	HC20	TT-HW05L
BT40-HCM06-90	6	22	26	50.0	90.0	37	43.0	BHC0514	-	TT-HW04L
BT40-HCM08-90	8	24	28	50.0	90.0	37	44.5	BHC0614	-	TT-HW04L
BT40-HCM10-90	10	26	30	50.0	90.0	41	44.5	BHC0814	-	TT-HW05L
BT40-HCM12-90	12	28	32	50.0	90.0	46	44.5	BHC0814	HC12	TT-HW05L
BT40-HCM14-90	14	30	34	50.0	90.0	46	44.5	BHC0814	-	TT-HW05L
BT40-HCM16-90	16	34	38	50.0	90.0	49	44.5	BHC0814	-	TT-HW05L
BT40-HCM18-90	18	36	40	50.0	90.0	49	44.5	BHC0814	-	TT-HW05L
BT40-HCM20-90	20	38	42	50.0	90.0	51	44.5	BHC0814	HC20	TT-HW05L
BT40-HCM25-83	25	53	57	72.0	83.0	57	25.5	BHC1214	-	TT-HW06L
BT40-HCM32-83	32	60	63	80.0	83.0	61	25.5	BHC1214	HC32	TT-HW06L
BT50-HCM06-90	6	22	26	44.5	90.0	37	29.5	BHC0514	-	TT-HW04L
BT50-HCM08-90	8	24	28	44.5	90.0	37	30.0	BHC0614	-	TT-HW04L
BT50-HCM10-90	10	26	30	44.5	90.0	41	31.0	BHC0814	-	TT-HW05L
BT50-HCM12-90	12	28	32	44.5	90.0	46	34.0	BHC0814	HC12	TT-HW05L
BT50-HCM16-90	16	34	38	44.5	90.0	49	34.0	BHC0814	-	TT-HW05L
BT50-HCM20-90	20	38	42	44.5	90.0	51	34.0	BHC0814	HC20	TT-HW05L
BT50-HCM25-90	25	53	57	66.0	90.0	57	34.0	BHC1214	-	TT-HW06L
BT50-HCM32-90	32	60	64	72.0	90.0	61	34.0	BHC1214	HC32	TT-HW06L

BT Hydraulic Chuck

Handle diameter tolerance	Rotation accuracy	25000RPM
h6	0.003mm	G2.5



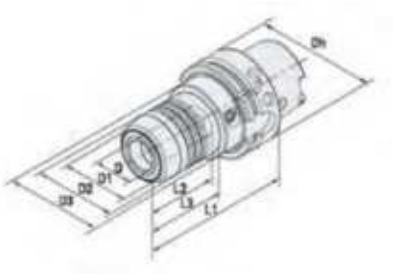
mm

Designation	Dimension (mm)							Spare Parts		
	D	D1	D2	D3	L1	L2	L3	Screw	Collets	Hex Wrench
BT30-HCM06-150	6	22	26	50.0	150.0	37	103.0	BHC0514	-	TT-HW04L
BT30-HCM08-150	8	24	28	50.0	150.0	37	104.0	BHC0614	-	TT-HW04L
BT30-HCM10-150	10	26	30	50.0	150.0	41	104.0	BHC0814	-	TT-HW05L
BT30-HCM12-150	12	28	32	50.0	150.0	46	105.0	BHC0814		TT-HW05L
BT30-HCM14-150	14	30	34	50.0	150.0	46	105.0	BHC0814	-	TT-HW05L
BT30-HCM16-150	16	34	38	50.0	150.0	49	106.0	BHC0814	-	TT-HW05L
BT30-HCM18-150	18	36	40	50.0	150.0	46	107.0	BHC0814	-	TT-HW05L
BT30-HCM20-150	20	38	42	50.0	150.0	51	107.0	BHC0814		TT-HW05L
BT40-HCM06-200	6	22	26	50.0	200.0	37	153.0	BHC0514	-	TT-HW04L
BT40-HCM08-200	8	24	28	50.0	200.0	37	154.0	BHC0614	-	TT-HW04L
BT40-HCM10-200	10	26	30	50.0	200.0	41	154.0	BHC0814	-	TT-HW05L
BT40-HCM12-200	12	28	32	50.0	200.0	46	155.0	BHC0814		TT-HW05L
BT40-HCM14-200	14	30	34	50.0	200.0	46	155.0	BHC0814	-	TT-HW05L
BT40-HCM16-200	16	34	38	50.0	200.0	49	156.0	BHC0814	-	TT-HW05L
BT40-HCM18-200	18	36	40	50.0	200.0	49	157.0	BHC0814	-	TT-HW05L
BT40-HCM20-200	20	38	42	50.0	200.0	51	157.0	BHC0814	-	TT-HW05L
BT50-HCM12-150	12	28	32	50.0	150.0	46	95.0	BHC0814	-	TT-HW05L
BT50-HCM20-150	20	38	42	50.0	150.0	51	95.0	BHC0814	-	TT-HW05L

Hydraulic Chuck

BT Hydraulic Chuck

Handle diameter tolerance	Rotation accuracy	25000RPM
h6	0.003mm	G2.5

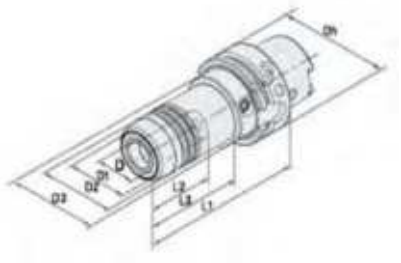


mm

Designation	Dimension (mm)								Spare Parts		
	D	D1	D2	Dh	D3	L1	L2	L3	Screw	Collets	Hex Wrench
HSK63A-HCM06-70	6	22	26	63	50.0	70.0	37	24.0	BHC0514	-	TT-HW04L
HSK63A-HCM08-70	8	24	28	63	50.0	70.0	37	25.0	BHC0614	-	TT-HW04L
HSK63A-HCM10-80	10	26	30	63	50.0	80.0	41	35.0	BHC0814	-	TT-HW05L
HSK63A-HCM12-85	12	28	32	63	50.0	85.0	46	40.0	BHC0814	HC12	TT-HW05L
HSK63A-HCM14-85	14	30	34	63	50.0	85.0	46	40.0	BHC0814	-	TT-HW05L
HSK63A-HCM16-90	16	34	38	63	50.0	90.0	49	46.0	BHC0814	-	TT-HW05L
HSK63A-HCM18-90	18	36	40	63	50.0	90.0	49	47.0	BHC0814	-	TT-HW05L
HSK63A-HCM20-90	20	38	42	63	50.0	90.0	51	48.0	BHC0814	HC20	TT-HW05L
HSK63A-HCM25-120	25	53	57	63	63.0	120.0	57	59.0	BHC1214	-	TT-HW06L
HSK63A-HCM32-125	32	60	64	63	75.0	125.0	61	63.0	BHC1214	HC32	TT-HW06L
HSK100A-HCM06-75	6	22	26	100	50.0	75.0	37	26.0	BHC0514	-	TT-HW04L
HSK100A-HCM0875	8	24	28	100	50.0	75.0	37	26.0	BHC0614	-	TT-HW04L
HSK100A-HCM10-90	10	26	30	100	50.0	90.0	41	42.0	BHC0814	-	TT-HW05L
HSK100A-HCM12-90	12	28	32	100	50.0	90.0	46	47.0	BHC0814	HC12	TT-HW05L
HSK100A-HCM16-100	16	34	38	100	50.0	100.0	49	53.0	BHC0814	-	TT-HW05L
HSK100A-HCM20-105	20	38	42	100	50.0	105.0	51	59.0	BHC0814	HC20	TT-HW05L
HSK100A-HCM25-110	25	53	57	100	63.0	110.0	57	62.0	BHC1214	-	TT-HW06L
HSK100A-HCM32-110	32	60	64	100	75.0	110.0	61	62.0	BHC1214	HC32	TT-HW06L

HSK Hydraulic Chuck

Handle diameter tolerance	Rotation accuracy	25000RPM
h6	0.003mm	G2.5



mm

Designation	Dimension (mm)								Spare Parts		
	D	D1	D2	Dh	D3	L1	L2	L3	Screw	Collets	Hex Wrench
HSK63A-HCM06-150	6	22	26	63	50.0	150.0	37	103.0	BHC0514	-	TT-HW04L
HSK63A-HCM08-150	8	24	28	63	50.0	150.0	37	104.0	BHC0614	-	TT-HW04L
HSK63A-HCM10-150	10	26	30	63	50.0	150.0	41	104.0	BHC0814	-	TT-HW05L
HSK63A-HCM12-150	12	28	32	63	50.0	150.0	46	105.0	BHC0814	-	TT-HW05L
HSK63A-HCM14-150	14	30	34	63	50.0	150.0	46	105.0	BHC0814	-	TT-HW05L
HSK63A-HCM16-150	16	34	38	63	50.0	150.0	49	106.0	BHC0814	-	TT-HW05L
HSK63A-HCM18-150	18	36	40	63	50.0	150.0	49	107.0	BHC0814	-	TT-HW05L
HSK63A-HCM20-150	20	38	42	63	50.0	150.0	51	108.0	BHC0814	-	TT-HW05L
HSK63A-HCM06-200	6	22	26	63	50.0	200.0	37	153.0	BHC0514	-	TT-HW04L
HSK63A-HCM08-200	8	24	28	63	50.0	200.0	37	154.0	BHC0614	-	TT-HW04L
HSK63A-HCM10-200	10	26	30	63	50.0	200.0	41	154.0	BHC0814	-	TT-HW05L
HSK63A-HCM12-200	12	28	32	63	50.0	200.0	46	155.0	BHC0814	-	TT-HW05L
HSK63A-HCM14-200	14	30	34	63	50.0	200.0	46	155.0	BHC0814	-	TT-HW05L
HSK63A-HCM16-200	16	34	38	63	50.0	200.0	49	156.0	BHC0814	-	TT-HW05L
HSK63A-HCM18-200	18	36	40	63	50.0	200.0	49	157.0	BHC0814	-	TT-HW05L
HSK63A-HCM20-200	20	38	42	63	50.0	200.0	51	158.0	BHC0814	-	TT-HW05L
HSK100A-HCM12-200	12	28	57	100	50.0	200.0	46	102.0	BHC0814	-	TT-HW05L
HSK100A-HCM20-200	200	38	64	100	50.0	200.0	51	104.0	BHC0814	-	TT-HW05L

Adapters and Accessories overview

Adapters

Type	Illusration
ER collet chuck	
GSK collet chuck	
DC back pull collet chuck	
SLD side lock adapter for small diameter	
C power milling chuck	
Quck change tapping holder	
TER tapping chuck	
VER synchro tapping	
Hydraulic expansion chucks	

Type	Illusration
SLN side lock arbor	
FMA, FMB, FMC face milling adapter	
SEM combi mill holder	
SCA side cutter arbor	
MTA morse taper adapter	
MTB morse taper adapter	
Tool holder adapter sleeve	
APU drill chuck holder	
B drill chuck adapter	

Accessories

Type	Illusration
MTB-ER collet chuck	
MTA-ER collet chuck	
C-ER collet chuck	
ER collet	
SC collet	
OZ-A collet	
OZ-B collet	
Tapping collet	

Type	Illusration
Hook spanner	
ER UM spanner	
ER Mini spanner	
Pull stud	
ER nut	
Toolholder locking device	
Clamping kits	
Mechanical edge finder	

TOOTOOL®

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