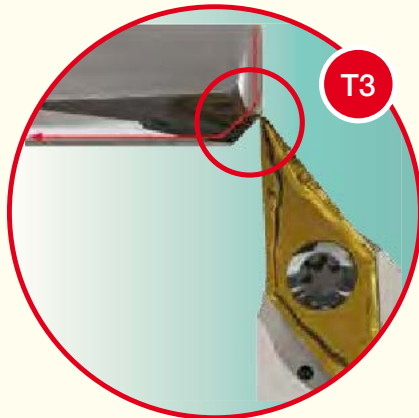


TOOLS FOR MINIATURE PARTS

Metric Version Catalog 2015

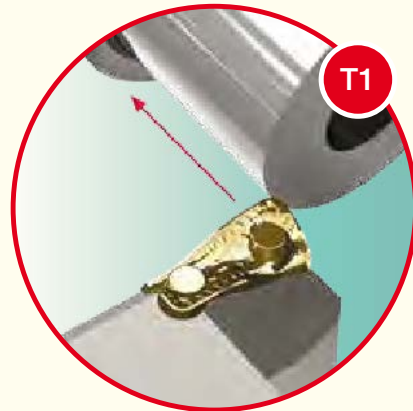


Small Part Production



ISOTURN

SVACR 1616M-11
VCET 1103005R-WF



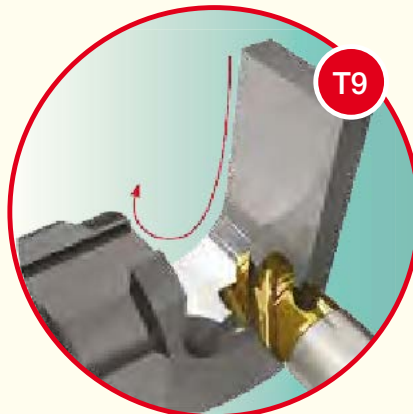
SWISSTURN

SLANR 1616H-11 TANG
LNMX 110408R



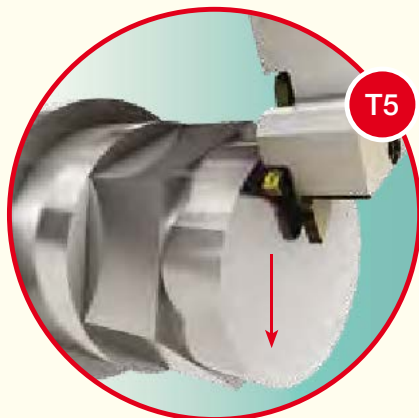
MULTI-MASTER

MM S-A-L075-C10-T06
MM EC100A07R0.5-6T06



MULTI-MASTER
INDEXABLE SOLID CARBIDE LINE

MM S-A-L075-C10-T06
MM EFS 100B07-4T06



PENTACUT

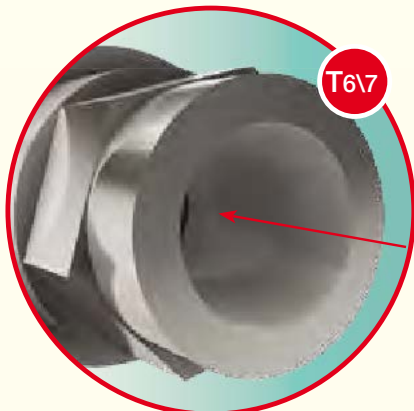
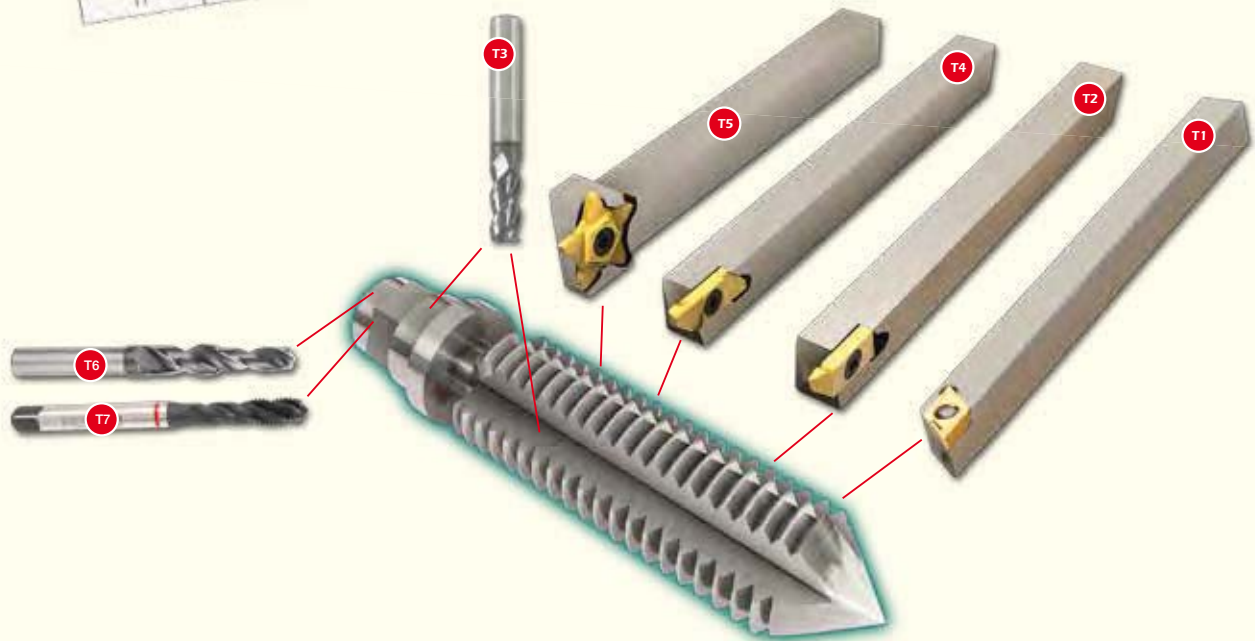
PCHR 16-24
PENTA 24N 15J010



Bone Line Machining Layout

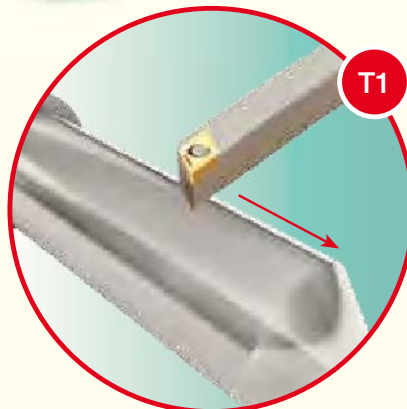
Time Study

TOOL NO.	OPERATION	DIAMETER (mm)	RPM	Vc (m/min) (cutting speed)	Fz (mm) (feed per insert/ flute)	Z (number of inserts/ flutes)	F (mm) (feed)	Vf (mm/min) (table feed)	DOC (mm) (depth of cut)	Tool length (mm)
T1	CUT 101	5	2868	45	0.015	1	0.015	43		
T1	CUT 102	5	2868	45	0.015	1	0.015	43		
T2	CUT 103	5	2123	20	0.015	4	0.06	127		
T3	CUT 104	3	2868	45	0.015	4	0.06	127		
T1	CUT 105	5	2123	20	0.015	1	0.015	55		
T3	CUT 106	3.5	3840	40	0.02	1	0.02	10		
T4	CUT 107	5	855	15	0.02	1	0.02	40		
T5	CUT 201	1.6	1990	10	0.02	1	0.02	41		
T6	CUT 202	1.55	2055	10						
T7	CUT 203									



SOLIDDRILL

SCDT 025-009-060-M3
TPG M-3X0.5-H



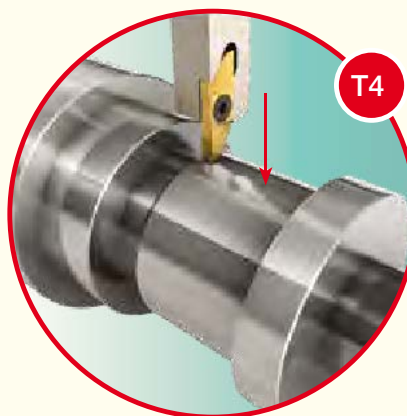
SWISSTURN

PDACR 1616M-11S
DCET 11T3005R-WF

Bone Line Machining Layout



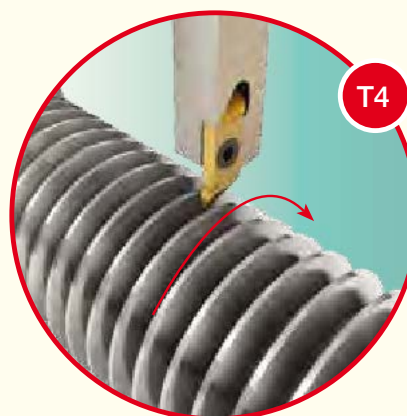
SOLIDMILL
SOLID CARBIDE LINE
ECO30B10-4C03



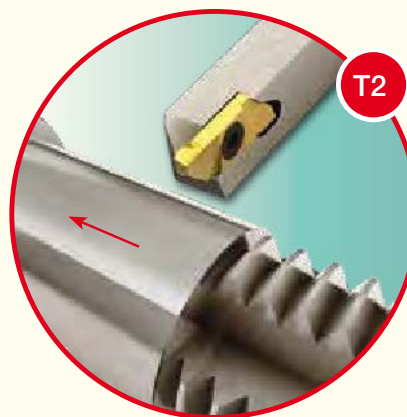
SWISSCUT
SCHR 16-22BF
SCIR 22-150NP...



SOLIDMILL
SOLID CARBIDE LINE
ECO30B10-4C03



SWISSCUT
SCHR 16-22BF
SCIR 22-MTR...



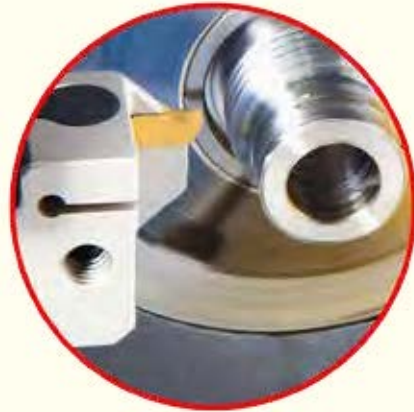
SWISSCUT
SCHR 16-22BF
SCIR 22-AR...

Grooving and turning

CUTGRIP

GEHSR/L-SL Tools with Side Clamping Mechanism

ISCAR is introducing the new **GEHSR/L-SL** tool family for Swiss-type and screw machines. These new tools with a unique clamping mechanism can solve the main problems related to insert clamping and replacement on Swiss-type and screw machines. They are an improved style of the current **GEHSR/L** screw-clamped tools.



MIN CUT MINI FACE LINE

Face Grooving and Turning Family for Dmin 8 mm

ISCAR's family for face grooving and turning in a diameter range of 8 to 17 mm for up to 5.5mm grooving depth, covers the range between ISCAR's **PICCO** and **CHAMGROOVE** tools.

Tool Features

- Can also be used for rotating applications.
- Internal coolant hole, directed to the cutting edge.
- Can be used for grooving in deep holes.
- Uninterrupted chip flow on the insert rake.



MIFR 8-2.20-0.20



MITR 8-MT1-0.05



MIGR 8-1.60-0.80



MIFR 8-1.60-0.80



MIUR 8-1.00-0.50



MIGR 8-2.00-0.10

Grooving and turning



SWISSCUT INNOVAL LINE

Upgraded SWISSCUT Line

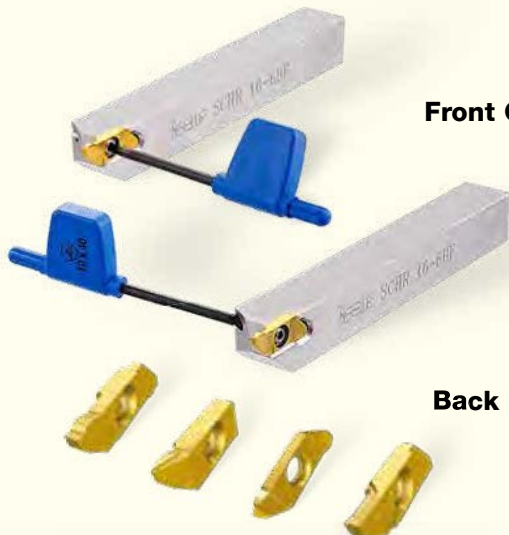
A compact tool design for Swiss-type automatics and CNC lathes, providing reduced setup time and easy indexing without having to remove the toolholder from the machine.

- The same tool and insert can be used in both front and back clamping
 - Insert indexing without removing the screw
- ISCAR is upgrading the **SWISSCUT** line. The new inserts feature an innovative oval-shaped hole that enables 2 important improvements.

The new clamping design uses a special screw that can be accessed and operated from both tool sides.

In the upgraded line the insert can be indexed without the need to fully remove the screw. Therefore, there is no risk of falling parts and indexing is easier and faster.

Dmin. 4 mm



Front Clamping

Back Clamping

SWISSTURN

ISCAR features a variety of ISO standard inserts, with small shank sizes. Also available are many standard geometry inserts with precision ground cutting edges and small radii for manufacturing small and thin parts. Toolholders with a unique clamping device for solving the main problems related to insert clamping and replacement on Swiss-type machines.



Parting



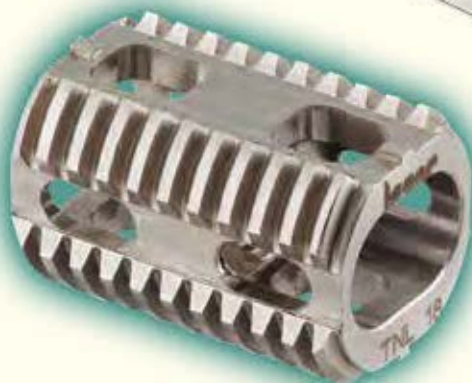
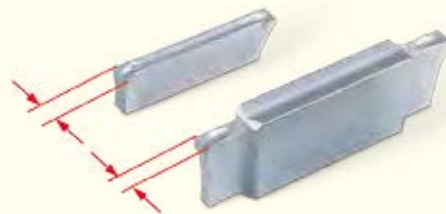
PENTACUT PARTING GROOVING LINE

The **PENTACUT** insert has 5 cutting edges, useful for multifunction applications including grooving, parting, recessing and chamfering. This cost-effective insert is designed to perform shallow grooving operations and parting of small solid bars up to 12.5 mm in diameter. Each cutting edge on the pentagonal shaped insert is equipped with a unique J-type positive chipformer that provides excellent chip control in grooving, parting and recessing (light side turning) applications.

DO-GRIP

ISCAR's short head, small shank holders (8-12mm) use **DO-GRIP**'s economical, double-ended twisted inserts in widths of 1-3 mm.

These inserts, featuring advanced PVD coatings, are capable of parting small diameter and thin walled parts while saving workpiece material. The new shank design features a very short clamping head and a slanted screw for convenient indexing - essential features for operating in the very limited space of Swiss-type automatic and small CNC machines.



Threading

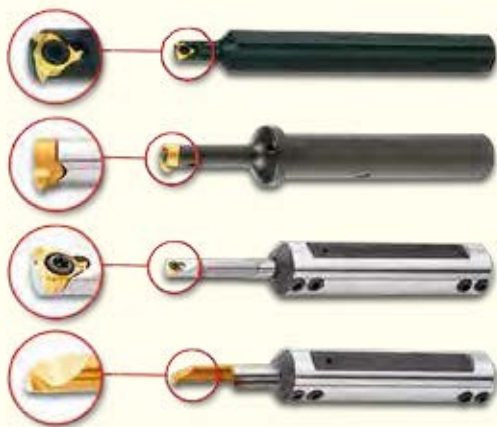


ISCAR[®]THREAD

ISCAR offers a wide range of threading standards for both external and internal operations. The smallest triangular laydown insert is the 06IRM which can be used for internal threading in minimum bore size of 7 mm. Other ISCAR threading systems include:

- PICCOCUT – solid carbide bars for minimum bore diameters of 4 mm.
- MINICHAM – miniature inserts for minimum bore diameters of 6 mm.
- CUT-GRIP and CHAMGROOVE – for a variety of innovative internal and external threading applications.

Dmin. 4mm



PENTACUT[®]

THREADING LINE

- Multi-corner, five cutting edges, which provide an advantageous price per cutting edge
- Combination of very rigid clamping system and a strong insert design enables machining at very high machining parameters
- Can be used for threading between walls to enable complete part production on bar feeder machines
- Inserts feature chipformers, providing short and easily exposed chips, excellent accuracy and surface quality

Dmin. 16mm

Whirling Head

Whirling tools are provided on request. Attached is a list of available whirling tools according to the machine model being used.

The customer should specify his specific thread profile and the required number of inserts in the cutter (or leave this decision to ISCAR designers).

The inserts are made from PVD coated grade IC908.



Grooving and Parting



CUTGRIP **PENTACUT** JET LINE

Grooving and Parting Tools for High Pressure Coolant

As in the ISO turning line, **JETCUT** groove-turn and parting tools also feature coolant outlets near the cutting zone and thus the coolant jet increases the amount of coolant that reaches directly to the cutting edge and chips.

In grooving and parting operations, applying high pressure coolant provides excellent chip breaking results on all materials.

JETCUT **SWISSCUT** INNOVAL LINE

Grooving and Parting Tools for High Pressure Coolant

Following the very successful launch of the **SWISSCUT INNOVAL** line and the smooth transition from the old line, ISCAR is expanding the product range: Tools with high pressure coolant channels (**JETCUT**) pinpointed directly to the cutting edge.

The tools can handle pressure up to 340 bars. They will be available in 10 to 16mm shank sizes.



Turning and Threading



DECAIQTHREAD ECO THREAD

New Tangentially Clamped Threading Inserts, Featuring 10 Cutting Edges.

This unique (patented) geometry is a 16 mm round insert with 5 double-sided corners, providing 10 cutting edges. The new geometry provides the most economical price per threading corner (when compared with the popular 3 corner laydown inserts).



ISOTURN

Boring Bars with Coolant Channel and New Small Size Inserts for Miniature

The boring tools for small diameters are available with steel and solid carbide shank options. These new tools carry new positive inserts.



JETCUT

SWISSTURN Toolholders

The new tools were designed for Swiss-type automatics and CNC machines. They include tools for ISO standard screw-clamped and lever-lock rhombic 80° (C-type), 55° (D-type) and 35° (V-type) inserts, all with 7° positive flank relief inclination.



Versatile System



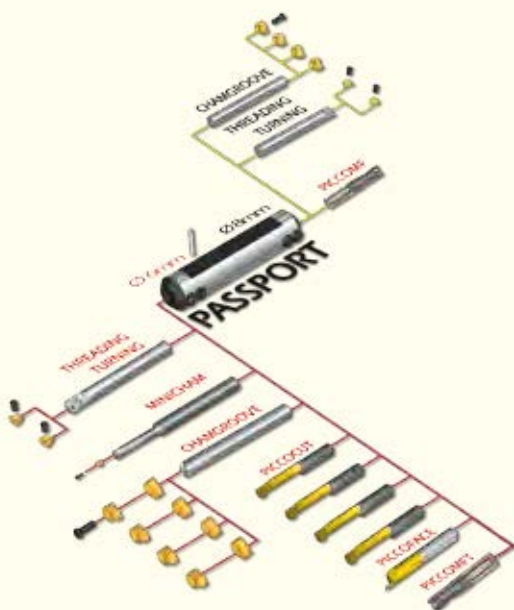
PASSPORT

The PASSPORT is a single holder-bar that is capable of clamping a variety of solid carbide shanks – the VISAS – that carry various inserts. The holder-bar accommodates 2 different diameters, one on each end, as well as both right- and left-hand shanks. This system allows the user to adjust the shank's extension for maximum rigidity. The PASSPORT system is designed for boring, grooving, profiling, back turning, threading and undercutting.

This system provides endless economical tooling combinations.

One Economical Holder for Many Applications

**Boring • Grooving
Profiling • Back-Turning
Threading • Undercutting**



PICCOACE

High Precision Holders for PICCO Inserts

The growing demands for high accuracy and flexibility in clamping orientation have led **ISCAR** to develop a new advanced line of **PICCO** holders. The **PICCOACE** features a unique patented clamping system which sets new standards for three highly important properties: accuracy, rigidity and flexibility of clamping orientation.

No Setup Time



Versatile System



The new **PICCO MF/MFT** was designed in particular for use on Swiss-type and all other machines that produce miniature parts. This family of tools provides a unique cutting geometry and machining abilities that combine the work of a few tools into one.

PICCO MF/MFT is a part of the versatile **PASSPORT** system.

PICCOMFT

The Drilling, Turning, Boring and Threading Combination Tool

Dmin. 4 mm



PICCOMF

The Drilling, Turning and Boring Combination Tool

Dmin. 3 mm



CHAMGROOVE

The same shank can carry either right- or left-hand inserts for turning, threading and grooving in bores as small as 8 mm. This system features easy mounting and indexing. **CHAMGROOVE** is a part of the versatile **PASSPORT** system.

Dmin. 4 mm



MINICHAM

Applications inside bores as small as 4 mm can now be performed by using **ISCAR's MINICHAM**.

This system features secure, self-clamping inserts with no spare parts.

The unique cartridge is used for mounting and indexing the inserts.

ISCAR's MINICHAM, a part of the versatile **PASSPORT** system, has eliminated many of the problems associated with very small inserts.

Dmin. 4 mm



DR-MF

ISCAR introduces the **DR-MF**, a multifunction tool. The new tool can be used for manufacturing small sized components. It reduces production time and the number of tools needed.



Milling Innovations



SOLIDMILL PREMIUM LINE

Micrograin solid carbide endmills with extended tool life are a part of the **ISCARMILL** family. These endmills have an improved design and are available with the most advanced TiCN or TiAlN PVD coatings, in a range of 2-20 mm. Ball nose endmills are available in a diameter range 3-20 mm.

Dmin. 4 mm



MULTI-MASTER INDEXABLE SOLID CARBIDE LINE

MULTI-MASTER is a family of tools with shanks and interchangeable heads for a variety of milling applications including ball nose, straight shoulder and slotting and slotting applications. This system features **ISCAR's** unique threaded carbide heads for superior performance, short indexing time and improved economy.

As there is no setup time for head replacement.

Dmin. 6-8 mm



Hole Making



SUMOCHAM FLAT HEAD

Flat SUMOCHAM Drilling Heads

ISCAR is extending the application range of the successful SUMOCHAM drilling line by adding flat face drilling heads.

The new flat face drilling heads are designated FCP, designed for drilling steel components (ISO P/K material group).



SOLIDDRILL

The unique requirements of the mass production industries make specially tailored drills essential for optimal performance. ISCAR's trained design engineers ensure that customers have the finest multifunction drilling tools for their required profiles.

Dmin. 0.8 mm



Hole Making



SUMOCHAMIQ CHAMDRILL LINE

HCP-IQ SUMOCHAM Drilling Heads

ISCAR is expanding the **SUMOCHAM** drilling head options, by introducing a revolutionary drilling head geometry that features concave cutting edges which substantially enhance the self-centering capability of the drill.

By eliminating the need for a pilot hole, the new drilling heads shorten machining cycle time and the number of tools required for the drilling operation. This can provide a substantial cost reduction.



SOLIDH-REAM **INDEXH-REAM** **BAYOT-REAM**

Solid carbide reamers for standard H7 reaming in the range of 3 to 40 mm are available in cylindrical or Morse cone shanks, with straight or helical flutes. Also available is an interchangeable, shell reaming head system with a unique quick-change mechanism, in IC08 submicron grade or IC908 PVD coating for high speed machining.

Dmin. 3 mm



Deep Drilling

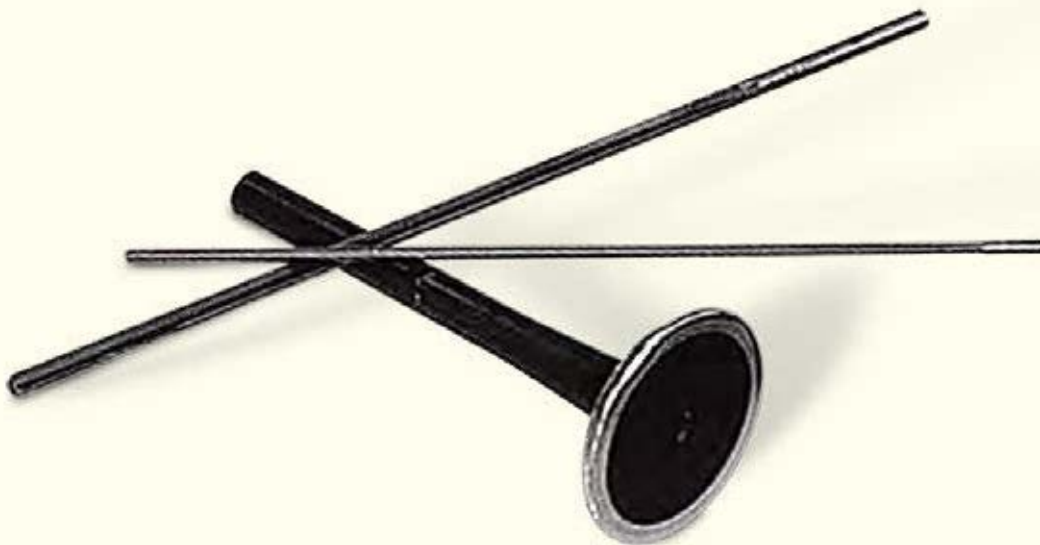


GUNDRILLS

ISCAR's gundrill consists of a single piece carbide head, a streamlined shank and a driver through which coolant flows to the working end where it is most needed. Chips are evacuated along the V-shaped external flute. Features:

- Drilling precision of IT7 to IT9 tolerances can be reached
- High precision hole center alignment
- Surface roughness of 0.4 to 1.6 μm is easily obtained
- Reboring operations are often unnecessary

Dmin. 1 mm



EXTERNAL TURNING

**A**

SWISSCUT for GROOVING, TURNING, PARTING and THREADING.....	A2
GROOVE TURN	A8
PARTING	A44
ISO TURN TOOLS	A85
THREADING.....	A104

INTERNAL TURNING

**B**

GROOVE TURN	B2
ISO TURN TOOLS	B33
THREADING.....	B95
ISO TURN INSERTS.....	B45
FACE GROOVING	B117

HOLE MAKING

**C**

SOLID DRILLS	C2
INDEXABLE HEAD DRILLS.....	C6
GUNDRILLS	C14
REAMERS	C19

MULTIFUNCTION TOOLS

**D**

MILLING TOOLS

**E**

MULTI-MASTER INTERCHANGEABLE SOLID CARBIDE ENDMILL HEADS.....	E2
SOLID ENDMILLS.....	E24

TOOLHOLDING SYSTEMS

**F**

ALPHABETICAL INDEX

**G**

External Turning

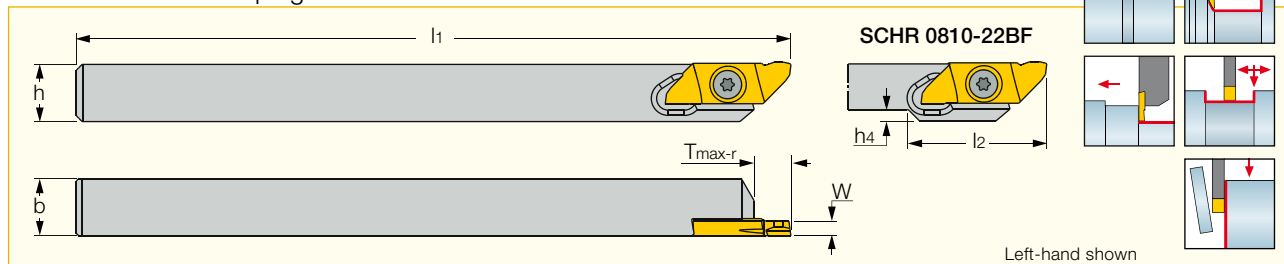


SWISSCUT
INNOVAL LINE



SCHR/L-BF

Grooving and Turning Holders, for Swiss-Type and Automatic Machines -
Back and Front Clamping



Designation	h	b	l ₁	h ₄	l ₂	T _{max-r} ⁽¹⁾	W _{min}	W _{max}
SCHR/L 0810-22BF	8.0	10.0	125.00	2.0	24.0	8.00	0.50	2.50
SCHR/L 10-22BF	10.0	10.0	125.00	-	-	8.00	0.50	2.50
SCHR/L 12-22BF	12.0	12.0	125.00	-	-	8.00	0.50	2.50
SCHR/L 16-22BF	16.0	16.0	125.00	-	-	8.00	0.50	2.50

⁽¹⁾ See insert dimensions

For inserts, see pages: SCIR-22-MTR-ISO (A10) • SCIR/L-22-AR/AL (A8) • SCIR/L-22-BR/BL (A8) • SCIR/L-22-ER/EL (A9) • SCIR/L-22-MTR/MTL (A115) • SCIR/L-22-N/L/R (A10) • SCIR/L-22-NP (A11).

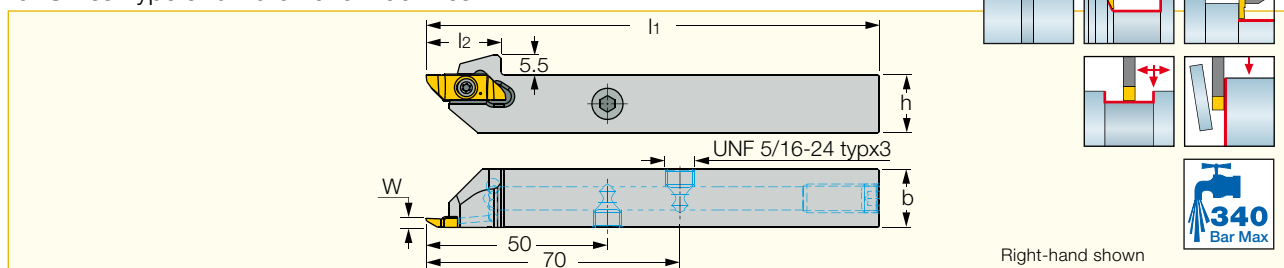
Spare Parts



Designation	Clamp Screw	Key
SCHR/L-BF	SR M4X0.7-19425	T-8/5

SCHR/L-BF-JHP

Grooving and Turning Tools with High Pressure Coolant Channels,
for Swiss-Type and Automatic Machines



Designation	h	b	l ₁	l ₂	W _{min}	W _{max}	T _{max-r} ⁽¹⁾
SCHR/L 10-22BF-JHP	10.0	10.0	125.00	20.7	0.50	2.50	8.00
SCHR/L 12-22BF-JHP	12.0	12.0	125.00	20.7	0.50	2.50	8.00
SCHR/L 16-22BF-JHP	16.0	16.0	125.00	20.7	0.50	2.50	8.00

• Note: Coolant ports of the left-hand tools are in the same position as those of the right-hand tools.

⁽¹⁾ See insert dimensions

For inserts, see pages: SCIR-22-MTR-ISO (A10) • SCIR/L-22-AR/AL (A8) • SCIR/L-22-BR/BL (A8) • SCIR/L-22-ER/EL (A9) • SCIR/L-22-MTR/MTL (A115) • SCIR/L-22-N/L/R (A10) • SCIR/L-22-NP (A11).

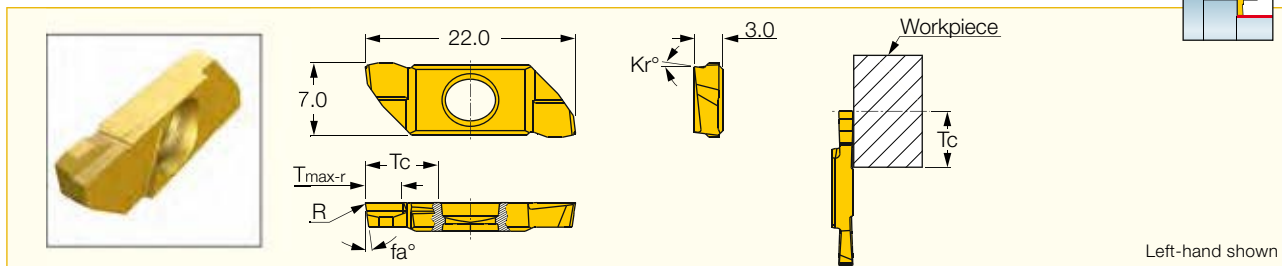
Spare Parts



Designation	Clamp Screw	Key	Plug	Key 1
SCHR/L-BF-JHP	SR M4X0.7-19425	HW 5/32"	SR 5/16UNF TL360	T-8/5

Flow Rate vs. Pressure

Designation	70 Bar Flow Rate (liters/min)	100 Bar Flow Rate (liters/min)	140 Bar Flow Rate (liters/min)
SCHR/L 10-22BF-JHP	1-3	2-4	3-5
SCHR/L 12-22BF-JHP	3-5	4-6	5-7
SCHR/L 16-22BF-JHP	6-8	7-9	8-10

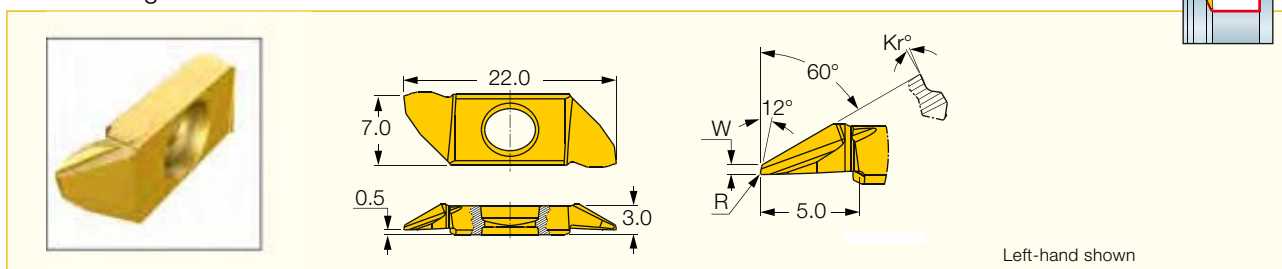


Designation	Dimensions					IC1008	Recommended Machining Data	
	$R_{\pm 0.02}$	T_c	f_a°	K_r°	T_{max-r}		a_p (mm)	f turn (mm/rev)
SCIL 22-AL00-25K16	0.00	8.0	8.0	16.0	3.80	●	0.05-3.80	0.01-0.15
SCIR 22-AR00-25K16	0.00	8.0	8.0	16.0	3.80	●	0.05-3.80	0.01-0.15
SCIL 22-AL10-25K8	0.10	8.0	12.0	8.0	3.80	●	0.12-3.80	0.01-0.15
SCIR 22-AR10-25K8	0.10	8.0	12.0	8.0	3.80	●	0.12-3.80	0.01-0.15

For tools, see pages: SCHR/L-BF (A7) • SCHR/L-BF-JHP (A7).

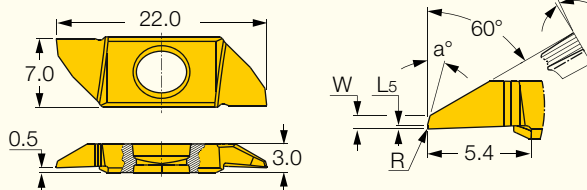
SCIR/L-22-BR/BL

Back Turning Inserts



Designation	Dimensions			IC1008	Recommended Machining Data	
	W	K_r°	$R_{\pm 0.02}$		a_p (mm)	f turn (mm/rev)
SCIL 22-BL00-05K7	0.50	7.0	0.00	●	0.05-3.00	0.01-0.15
SCIL 22-BL10-05K7	0.50	7.0	0.10	●	0.12-3.00	0.01-0.15
SCIR 22-BR00-05K7	0.50	7.0	0.00	●	0.05-3.00	0.01-0.15
SCIR 22-BR10-05K7	0.50	7.0	0.10	●	0.12-3.00	0.01-0.15
SCIR 22-BR10-05K15	0.50	15.0	0.10	●	0.12-3.00	0.01-0.15
SCIL 22-BL08-10K7	1.00	7.0	0.08	●	0.10-3.00	0.01-0.15
SCIR 22-BR08-10K7	1.00	7.0	0.08	●	0.10-3.00	0.01-0.15
SCIR 22-BR08-10K15	1.00	15.0	0.08	●	0.10-3.00	0.01-0.15

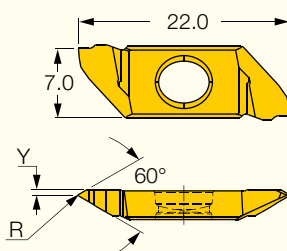
For tools, see pages: SCHR/L-BF (A7) • SCHR/L-BF-JHP (A7).



Left-hand shown

Designation	Dimensions			IC1008	Recommended Machining Data	
	$R_{\pm 0.02}$	W	a°		a_p (mm)	f turn (mm/rev)
SCIL 22-EL00-03K0	0.00	0.30	6.00	●	0.05-2.50	0.01-0.15
SCIR 22-ER00-03K0	0.00	0.30	6.00	●	0.05-2.50	0.01-0.15
SCIR/L 22-EL00-07K0	0.00	0.70	15.00	●	0.05-2.50	0.01-0.15
SCIR 22-ER00-07K0	0.00	0.70	15.00	●	0.05-2.50	0.01-0.15
SCIL 22-EL00-07K10	0.00	0.70	3.00	●	0.05-2.50	0.01-0.15
SCIR 22-ER00-07K10	0.00	0.70	3.00	●	0.05-2.50	0.01-0.15

For tools, see pages: SCHR/L-BF (A7) • SCHR/L-BF-JHP (A7).



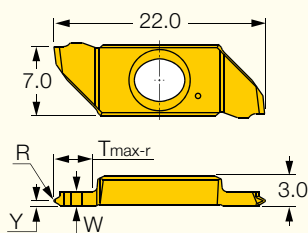
Left-hand shown

Designation	Dimensions						IC1008
	R	Y	P_{min}	P_{max}	TPI_{max}	TPI_{min}	
SCIL 22-MTL003	0.03	0.4	0.30	0.90	83	28	●
SCIR 22-MTR003	0.03	0.4	0.30	0.90	83	28	●
SCIL 22-MTR/L007	0.07	0.5	0.70	1.10	36	23	●
SCIR 22-MTR/L007	0.07	0.5	0.70	1.10	36	23	●
SCIL 22-MTL010	0.10	0.8	0.90	1.70	28	15	●
SCIR 22-MTR010	0.10	0.8	0.90	1.70	28	15	●

For tools, see pages: SCHR/L-BF (A7) • SCHR/L-BF-JHP (A7).

SCIR-22-MTR-ISO

Precision Ground ISO Metric Full Profile Threading Inserts

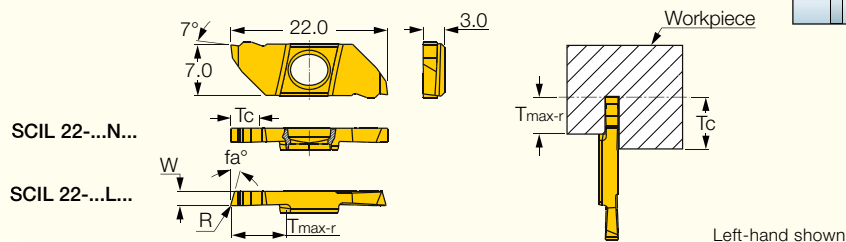
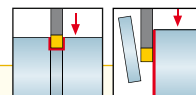


Designation	Dimensions						IC1008
	Pitch	W	T _{max-r}	R	Y		
SCIR 22-MTR-0.3ISO	0.30	1.00	3.00	0.03	0.2		●
SCIR 22-MTR-0.4ISO	0.40	1.00	3.00	0.04	0.2		●
SCIR 22-MTR-0.5ISO	0.50	1.00	3.00	0.06	0.3		●
SCIR 22-MTR-0.75ISO	0.75	1.00	3.00	0.10	0.4		●
SCIR 22-MTR-1.0ISO	1.00	1.50	4.00	0.14	0.6		●
SCIR 22-MTR-1.5ISO	1.50	2.00	4.00	0.20	0.8		●

For tools, see pages: SCHR/L-BF (A7) • SCHR/L-BF-JHP (A7).

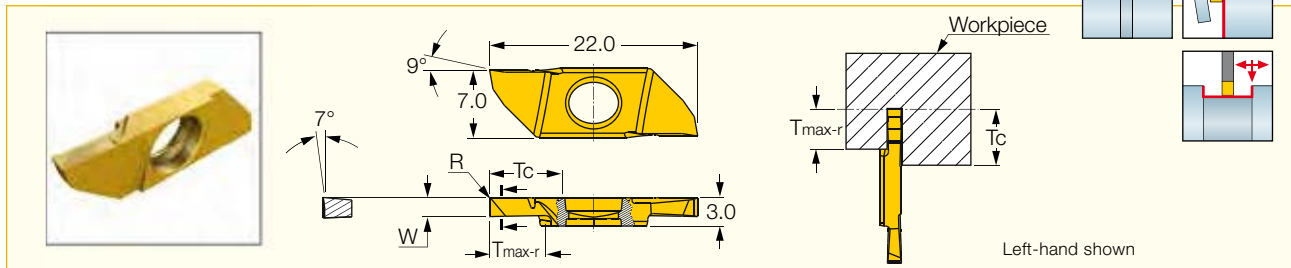
SCIR/L-22-N/L/R

Grooving and Parting Inserts



Designation	Dimensions						IC1008	Recommended Machining Data
	W _{±0.02}	f _a °	R	T _{max-r}	T _c			
SCIR/L 22-050N-00	0.50	0.0	0.00	1.80	5.5		●	0.02-0.04
SCIR/L 22-100N-00	1.00	0.0	0.00	4.00	5.5		●	0.03-0.05
SCIR/L 22-150N-00	1.50	0.0	0.00	5.50	8.0		●	0.03-0.07
SCIR/L 22-200N-10	2.00	0.0	0.10	7.00	8.0		●	0.03-0.09
SCIL 22-050R/L12-00	0.50	12.0	0.00	2.00	5.5		●	0.01-0.03
SCIR 22-050R/L12-00	0.50	12.0	0.00	2.00	5.5		●	0.01-0.03
SCIL 22-100R/L16-00	1.00	16.0	0.00	4.00	5.5		●	0.02-0.04
SCIR 22-100R/L16-00	1.00	16.0	0.00	4.00	5.5		●	0.02-0.04
SCIL 22-150R/L16-00	1.50	16.0	0.00	5.50	8.0		●	0.03-0.06
SCIR 22-150R/L16-00	1.50	16.0	0.00	5.50	8.0		●	0.03-0.06
SCIL 22-200R/L16-00	2.00	16.0	0.00	7.00	8.0		●	0.03-0.07
SCIR 22-200R/L16-00	2.00	16.0	0.00	7.00	8.0		●	0.03-0.07

For tools, see pages: SCHR/L-BF (A7) • SCHR/L-BF-JHP (A7).



Designation	Dimensions				IC1008	Recommended Machining Data		
	W±0.02	R±0.02	T _{max-r}	T _c		a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
SCIR/L 22-080NP00	0.80	0.00	2.50	8.0	●	0.05-0.70	0.02-0.06	0.02-0.05
SCIR/L 22-100NP08	1.00	0.08	3.00	8.0	●	0.05-0.80	0.02-0.08	0.02-0.06
SCIR/L 22-150NP05	1.50	0.05	6.00	8.0	●	0.05-1.80	0.02-0.11	0.02-0.07
SCIR/L 22-200NP05	2.00	0.05	6.00	8.0	●	0.05-2.50	0.03-0.15	0.03-0.09
SCIR/L 22-250NP05	2.50	0.05	6.00	8.0	●	0.05-3.10	0.03-0.19	0.03-0.11

For tools, see pages: SCHR/L-BF (A7) • SCHR/L-BF-JHP (A7).

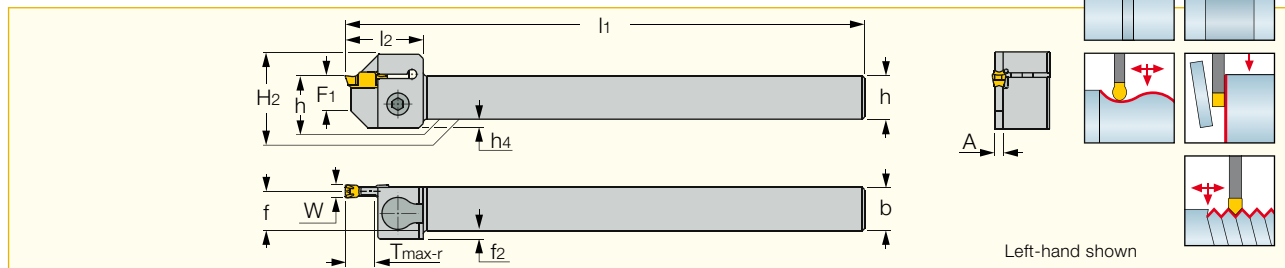


GROOVETURN



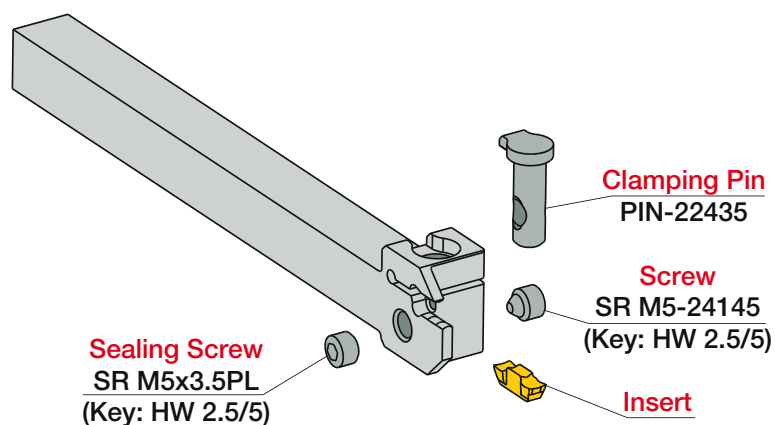
GEHSR/L-SL

External Machining Tools with Side Clamping Mechanism, for Swiss-Type and Automatic Machines



Designation	h	W _{min}	W _{max}	T _{max-r}	b	l ₁	f	h ₄	f ₂	A	l ₂	F ₁	H ₂
GEHSR/L 10-2-SL	10.0	2.20	3.20	6.80	10.0	120.00	9.1	2.0	2.00	1.80	18.0	8.0	15.0
GEHSR/L 12-2-SL	12.0	2.20	3.20	6.80	12.0	120.00	11.1	-	-	1.80	18.0	8.0	17.0
GEHSR/L 16-2-SL	16.0	2.20	3.20	6.80	16.0	120.00	15.1	-	-	1.80	18.0	8.0	21.0

For inserts, see pages: GEMI (B29) • GEPI (B30) • GEPI (full radius) (B30) • GEPI-MT (B102) • GEPI-WT (B99).

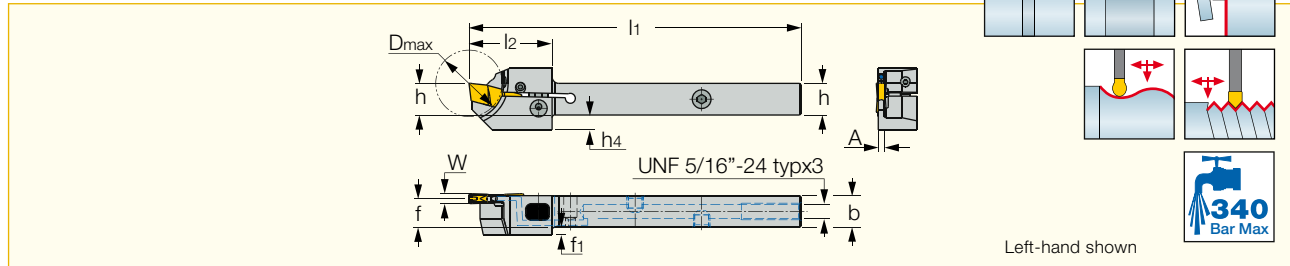


Spare Parts

Designation	Clamping Device	Clamp Screw	Plug	Hex Flag Key
GEHSR/L-SL	PIN-22435	SR M5-24145	SR M5X3.5 ULTEM 2300	HW 2.5/5

GHSR/L-JHP-SL

Grooving and Turning Side Lock Tools with Channels for High Pressure Coolant on Swiss-Type and Automatic Machines

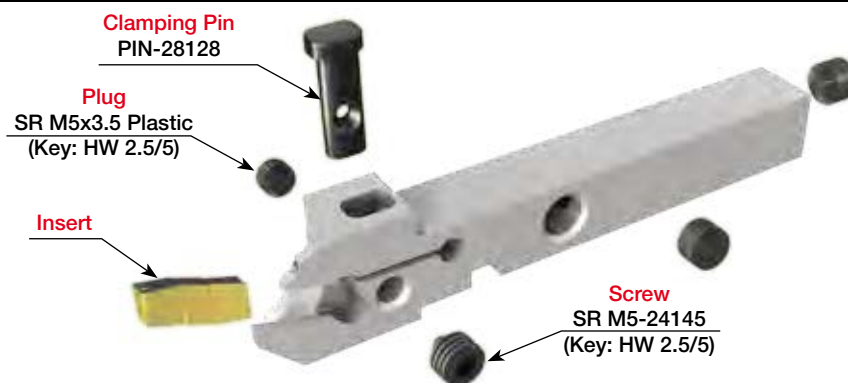


Designation	W _{min}	W _{max}	h	b	D _{max}	l ₁	l ₂	f	f ₁	A
GHSR/L 10-2-JHP-SL	2.20	3.00	10.0	10.0	20.0	100.00	25.0	9.1	2.2	1.80
GHSR/L 12-2-JHP-SL	2.20	3.00	12.0	12.0	25.0	100.00	25.0	11.1	-	1.80
GHSR/L 16-2-JHP-SL	2.20	3.00	16.0	16.0	25.0	120.00	27.0	15.1	-	1.80
GHSR/L 12-3-JHP-SL	2.80	4.00	12.0	12.0	25.0	100.00	25.0	10.8	-	2.40
GHSR/L 16-3-JHP-SL	2.80	4.00	16.0	16.0	25.0	120.00	27.0	14.8	-	2.40

For inserts, see pages: GiG (A32) • GIM-J (A77) • GIM-J-RA/LA (A78) • GIMY (A27) • GIMY (full radius) (A28) • GIP (A33) • GIP (full radius W<M) (A31) • GIP (full radius) (A33) • GIP-E (A29) • GIP-E (full radius) (A30) • GIPA (full radius W=3-6) (A37) • GIPA (W=3-6) (A36) • GIPM-A46 / GIP-1250 (A38) • GIPY (A36) • GITM (A35) • GITM (full radius) (A35) • TIP-MT (A114) • TIP-P-BSPT (A122) • TIP-P-BSW (A121) • TIP-P-ISO (A117) • TIP-P-NPT (A128) • TIP-P-UN (A119) • TIP-WT (A112).

Flow Rate vs. Pressure

Designation	70 Bar Flow Rate (liters/min)	100 Bar Flow Rate (liters/min)	140 Bar Flow Rate (liters/min)
GHSR/L...-JHP-SL	4-6	7-9	9-11

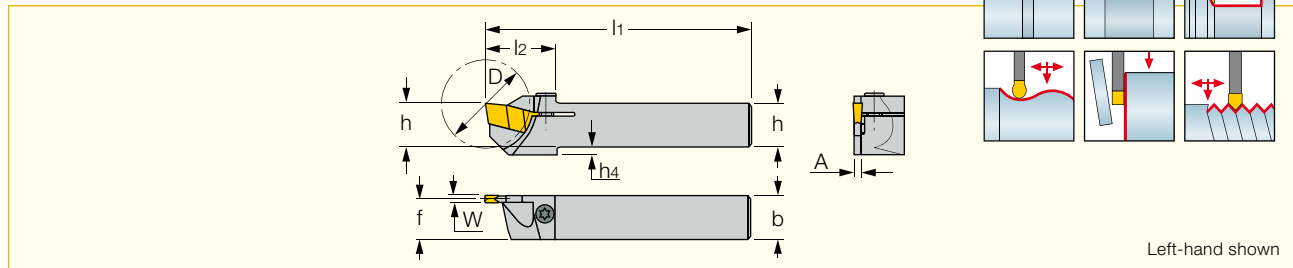


Spare Parts

Designation	Clamp Screw	Plug	Hex Flag Key	Plug 1	Key
GHSR/L 10-2-JHP-SL	SR M5-24145	SR M5X3.5 ULTEM 2300 HW 2.5/5	HW 2.5/5	SR 5/16XUNF-TL-S	HW 5/32"
GHSR/L 12-2-JHP-SL	SR M5-24145	SR M5X3.5 ULTEM 2300 HW 2.5/5	HW 2.5/5	SR 5/16UNF TL360	HW 5/32"
GHSR/L 16-2-JHP-SL	SR M5-24145	SR M5X3.5 ULTEM 2300 HW 2.5/5	HW 2.5/5	SR 5/16UNF TL360	HW 5/32"
GHSR/L 12-3-JHP-SL	SR M5-24145	SR M5X3.5 ULTEM 2300 HW 2.5/5	HW 2.5/5	SR 5/16UNF TL360	HW 5/32"
GHSR/L 16-3-JHP-SL	SR M5-24145	SR M5X3.5 ULTEM 2300 HW 2.5/5	HW 2.5/5	SR 5/16UNF TL360	HW 5/32"

GHSR/L

External Machining Holders for Swiss-Type and Automatic Machines



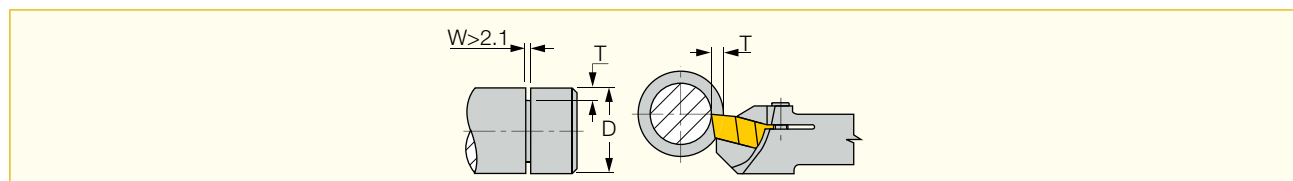
Designation	W _{min}	W _{max}	D _{max} ⁽¹⁾	h	b	l ₁	f	l ₂	h ₄	A
GHSR/L 10-2	2.20	3.15	20.0	10.0	10.0	120.00	9.1	18.0	2.0	1.80
GHSR/L 12-2	2.20	3.15	25.0	12.0	12.0	120.00	11.1	20.0	2.0	1.80
GHSR/L 14-2	2.20	3.15	26.0	14.0	14.0	120.00	13.1	20.0	-	1.80
GHSR/L 16-2	2.20	3.15	32.0	16.0	16.0	120.00	15.1	26.0	-	1.80

⁽¹⁾ For W>2.1 mm: grooving depth depends on part diameter

For inserts, see pages: GIG (A32) • GIM-J (A77) • GIM-J-RA/LA (A78) • GIMY (A27) • GIMY (full radius) (A28) • GIP (A33) • GIP (full radius W<M) (A31) • GIP (full radius) (A33) • GIP-E (A29) • GIP-E (full radius) (A30) • GIPA (full radius W=3-6) (A37) • GIPA (W=3-6) (A36) • GIPM-A46 / GIP-1250 (A38) • GIPY (A36) • GITM (A35) • GITM (full radius) (A35) • TIP-MT (A114) • TIP-P-BSPT (A122) • TIP-P-BSW (A121) • TIP-P-ISO (A117) • TIP-P-NPT (A128) • TIP-P-UN (A119) • TIP-WT (A112).

Grooving Depth

Grooving Depth T_{max} per Diameter for Width > 2.1 mm



T _{max}	5.0	4.5	4.0	3.5	3.0	2.5	2.3	2.0	1.7
D	10.5	10.8	11.5	12.6	14.5	17	20	25	34

T_{max} is also limited by insert.

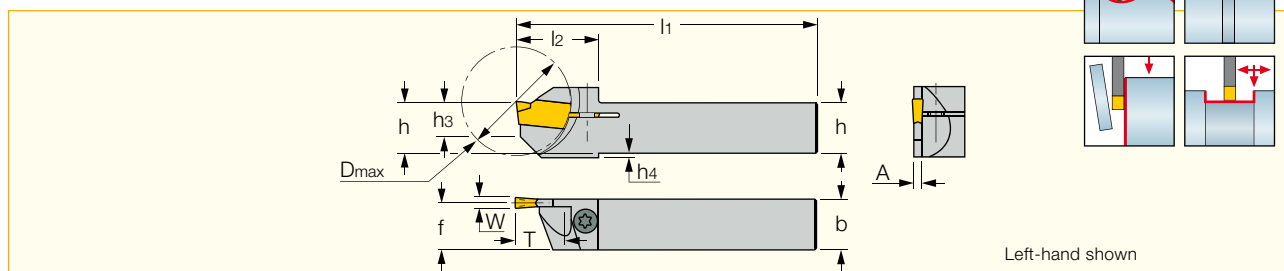
Spare Parts



Designation	Screw	Key
GHSR/L 10-2	SR 16-236 P	
GHSR/L 12-2	SR 16-236 P	
GHSR/L 14-2	SR 16-236 P	
GHSR/L 16-2	SR 16-212	T-20/3

PHSR/L

External Machining Holders for Swiss-Type and Automatic Machines



Designation	W _{min}	W _{max}	D _{max} ⁽¹⁾	h	b	l ₁	f	F ₁	l ₂	h ₄	A
PHSR/L 10-2.4	2.40	3.18	20.0	10.0	10.0	150.00	9.0	8.0	18.0	2.0	1.90
PHSR/L 12-2.4	2.40	3.18	25.0	12.0	12.0	150.00	11.1	7.0	20.0	-	1.90
PHSR/L 16-2.4	2.40	3.18	32.0	16.0	16.0	150.00	15.1	8.0	24.1	-	1.90

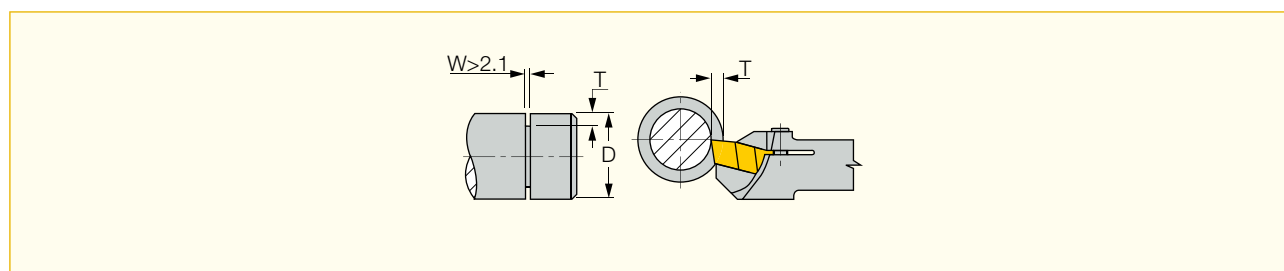
• T=Max depth capacity. see chart below.

⁽¹⁾ Limited by part diameter

For inserts, see pages: GDMW 2.4 (A17).

Grooving Depth

Grooving Depth Tmax per Diameter for Width > 2.1 mm



Tmax	5.0	4.5	4.0	3.5	3.0	2.5	2.3	2.0	1.7
D	10.5	10.8	11.5	12.6	14.5	17	20	25	34

Tmax is also limited by insert.

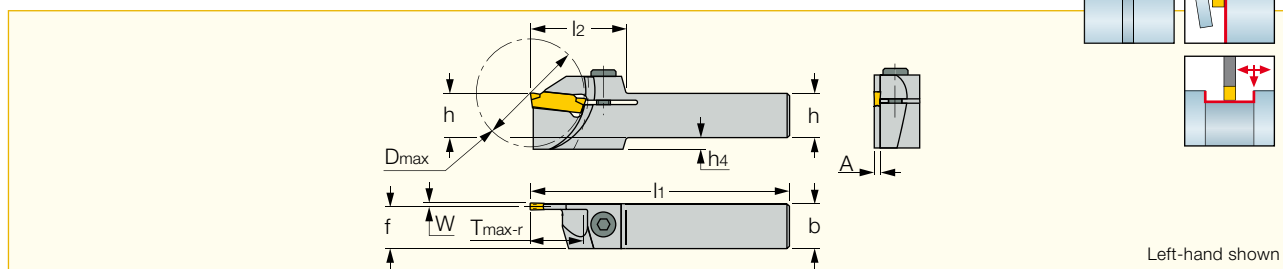
Spare Parts



Designation	Screw	Key
PHSR/L	SR 16-236 P	T-15/3

PHGR/L

Holders for External Grooving and Turning



Designation	W_{min}	W_{max}	$D_{max}^{(1)}$	T_{max-r}	h	b	l_1	l_2	f	h_4	A	Insert
PHGR/L 16-2.4	2.40	3.18	34.0	17.00	16.0	16.0	110.00	33.0	15.1	5.5	1.90	GDMW 2.4

⁽¹⁾ Maximum parting diameter.

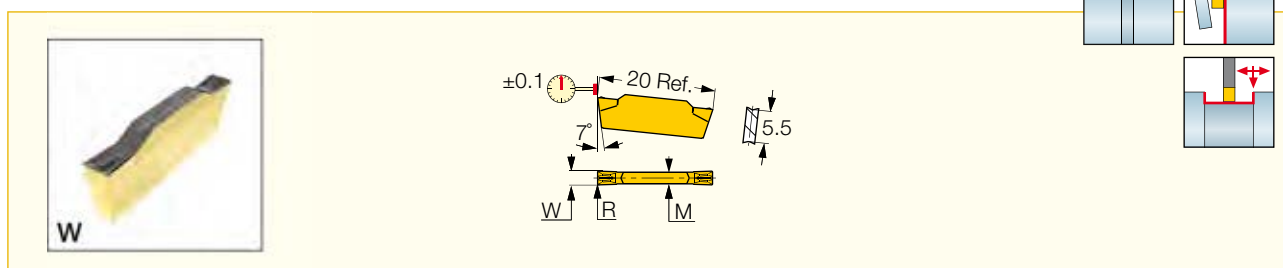
For inserts, see pages: GDMW 2.4 (A17).

Spare Parts

Designation	Screw	Key
PHGR/L	SR M5X16DIN912 12.9	HW 4.0

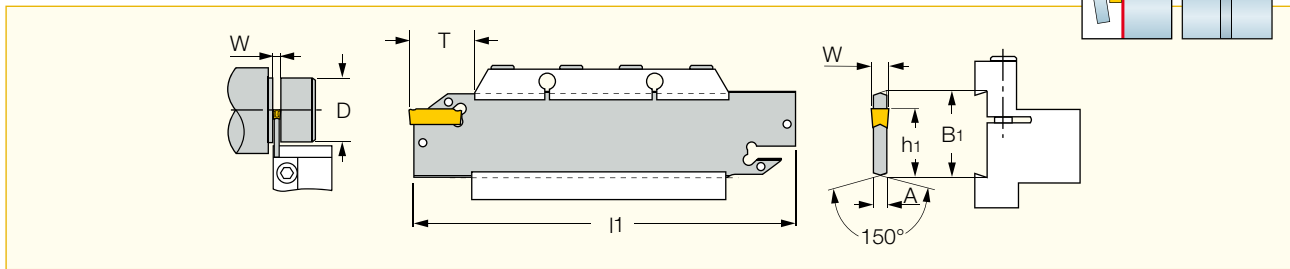
GDMW 2.4

Utility Double-Ended Inserts for External Turning, Grooving and Parting



Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data		
	$W_{\pm 0.04}$	$R_{\pm 0.03}$	M	T_{max-r}	IC830	IC808	IC20	IC20N	a_p (mm)	f turn (mm/rev)	f groove (mm/rev)
GDMW 2.4	2.40	0.18	2.0	18.00	●	●	●	●	0.25-1.50	0.07-0.12	0.05-0.08

For tools, see pages: • PHGR/L (A17) • PHSR/L (A16).



Designation	B ₁	W	A	l ₁	h ₁	T blade	D _{max}
HGFH 26-3	26.0	3.00	2.40	110.00	21.4	37.5	75.0
HGFH 32-3	32.0	3.00	2.40	150.00	24.8	50.0	100.0

For inserts, see pages: GRIP (A19) • GRIP (full radius) (A20) • HGN-C (A70) • HGR/L-C (A71) • HGN-J (A71) • HGN-UT (A72) • HGR/L-J/JS (A72).

For holders, see pages: • SGTBU/SGTBN (A88) .

Spare Parts

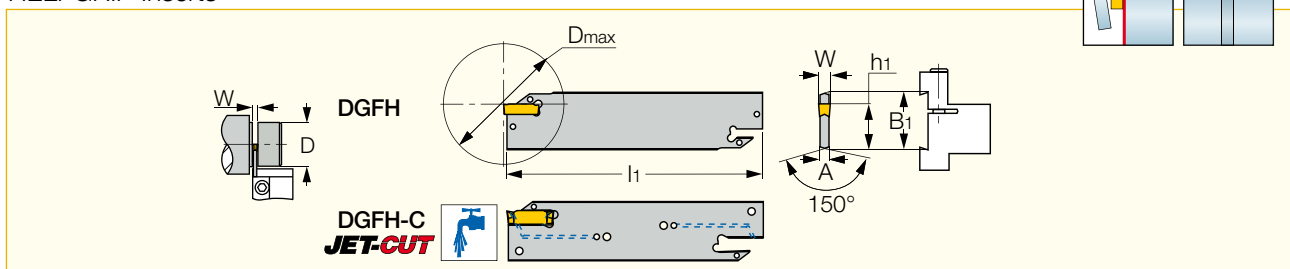


Designation	Extractor
HGFH	EDG 23B*

* (Optional, should be ordered separately)

DGFH

Parting and Grooving Blades with and without Coolant Holes for DO-GRIP and HELI-GRIP Inserts



Designation	B ₁	W _{min}	W _{max}	A	l ₁	h ₁	D _{max}	Insert
DGFH 26-1.4	26.0	1.40	1.40	2.50 ⁽⁴⁾	110.00	21.4	26.0	DG. 14..
DGFH 26-2 ⁽¹⁾	26.0	1.90 ⁽³⁾	2.50	1.60	110.00	21.4	39.0 ⁽⁵⁾	DG. 1.../DG. 2...
DGFH 26-3 ⁽¹⁾	26.0	3.00 ⁽³⁾	3.18	2.40	110.00	21.4	39.0 ⁽⁵⁾	DG. 1.../DG. 3...
DGFH 26C-3 ⁽²⁾	26.0	3.00	3.18	2.40	110.00	21.4	39.0 ⁽⁵⁾	DG. 3..C
DGFH 26-4	26.0	4.00	4.00	3.20	110.00	21.4	80.0	DG. 4.../GRIP 4...

• DG..1.0 insert can be mounted into pocket sizes 2 and 3. In that case the pocket width has to be modified

⁽¹⁾ For Dmax 50 mm, use single-ended insert (should be modified by the user). ⁽²⁾ Blades with frontal coolant holes (JET-CUT) • For Dmax 50 mm, use single-ended insert (should be modified by the user). ⁽³⁾ For DG. 1... insert, modify holder ⁽⁴⁾ Thickness at the D.O.C. area is 1.0 mm

⁽⁵⁾ Maximum diameter with double-sided inserts.

For inserts, see pages: DGN-MF (A65) • DGN/DGNC/DGNM-C (A64) • DGR/L-C DGRC/LC-C (A64) • DGN/DGNM-J/JS/JT (A65) • DGR/L-J/JS (A66) • DGN-P (A68) • DGN-UT/UA (A68) • DGN-WP (A69) • DGN-Z (A67) • DGR-P (A69) • DGR-WP (A70) • DGR-Z/ZS (A67) • GRIP (A19) • GRIP (full radius) (A20).

For holders, see pages: • SGTBU/SGTBN (A88) .

Spare Parts

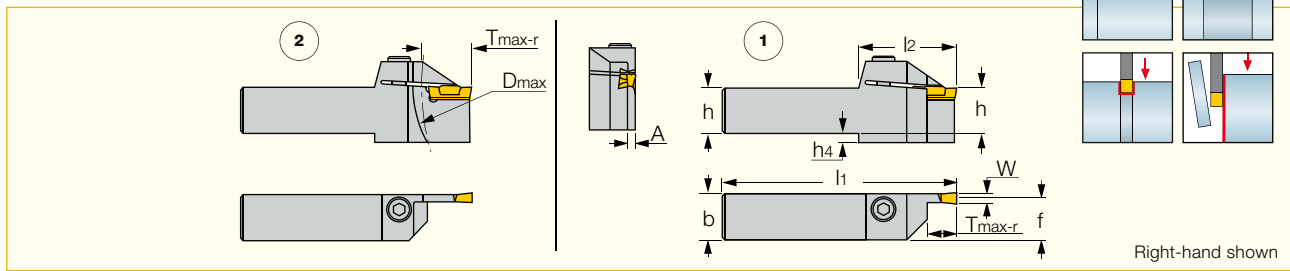


Designation	Extractor	Sealing Screw	Cooling Tube	Pipe Fitting	Pipe Fitting 1	Pipe Fitting 2
DGFH 26-1.4	EDG 23B*					
DGFH 26-2	EDG 23A*					
DGFH 26-3	EDG 23A*					
DGFH 26C-3	EDG 23A*	SGC 340	SGCU 341*	CGF 343*	CF 343*	CGM 343*
DGFH 26-4	EDG 23A*					

* (Optional, should be ordered separately)

HELIR/L

External Holders for Turning, Grooving and Parting



Designation	W min	W max	Tmax-r ⁽²⁾	Fig.	D max ⁽³⁾	h	b	f	l1	l2	A	h4	Insert
HELIR/L 1212-3T12	3.00	3.18	12.00	1	-	12.0	12.0	10.8	135.00	30.0	2.40	4.0	GRIP-3..., HG.-3
HELIR/L 1616-3T12	3.00	3.18	12.00	1	-	16.0	16.0	14.8	135.00	30.0	2.40	-	GRIP-3..., HG.-3
HELIR/L 1616-4T12	4.00	4.76	12.00	1	-	16.0	16.0	14.4	135.00	29.0	3.20	3.20	GRIP-4..., DG.-4
HELIR/L 1616-3T20 ⁽¹⁾	3.00	3.18	-	2	40.0	16.0	16.0	14.8	140.00	36.4	2.40	-	GRIP-3..., HG.-3
HELIR/L 1616-4T20	4.00	4.76	-	2	40.0	16.0	16.0	14.4	140.00	38.0	3.20	4.0	GRIP-4..., DG.-4

• For tool type as shown in Fig.2, Tmax for grooving is limited by the part diameter D. For grooving depth capacity, see table below.

⁽¹⁾ DGN inserts are not suitable for this tool. ⁽²⁾ Does not depend on the workpiece diameter ⁽³⁾ Maximum parting diameter

For inserts, see pages: GRIP (A19) • GRIP (full radius) (A20) • DGN/DGNC/DGNM-C (A64) • HGN-C (A70) • DGR/L-C DGRC/LC-C (A64)

• DGN/DGNM-J/JS/JT (A65) • HGN-J (A71) • DGR/L-J/JS (A66) • DGN-LF/LFT (A66) • DGN-UT/UA (A68) • DGN-Z (A67) • DGR-Z/ZS (A67) • HGN-UT (A72).

Depth Capacity

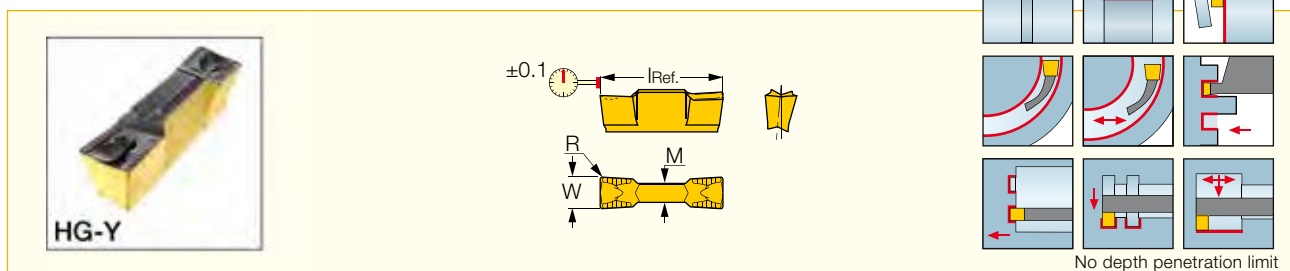
Designation	D												
HELIR/L 1616-3T20	-	-	-	-	80	194	∞	∞	∞	∞	∞	∞	∞
HELIR/L 1616-4T20	-	-	-	-	78	132	505	∞	∞	∞	∞	∞	∞
Depth T	30.0	28.0	25.0	23.0	21.0	20.0	18.0	16.0	14.0	12.0	10.0	8.0	6.5

Spare Parts

Designation	Screw	Key
HELIR/L 1212-3T12	SR M5X16DIN912 12.9 HW 4.0	
HELIR/L 1616-3T12	SR M5X16DIN912 12.9 HW 4.0	
HELIR/L 1616-4T12	SR M5X16DIN912 12.9 HW 4.0	
HELIR/L 1616-3T20	SR M6X20DIN912 12.9 HW 5.0	
HELIR/L 1616-4T20	SR M6X20DIN912 12.9 HW 5.0	

GRIP

Utility Double-Ended Inserts for External, Internal and Face Machining

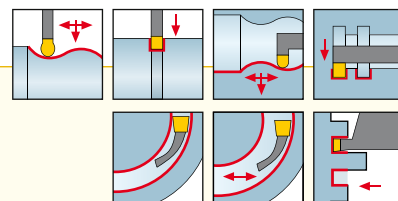
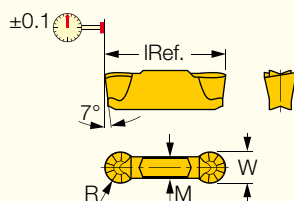


Designation	Dimensions				Tough ↔ Hard								Recommended Machining Data				
	W±0.05	R±0.05	I	M	IC830	IC8250	IC08	IC808	IC908	IC418	IC807	IC5010	ap (mm)	f turn (mm/rev)	f groove (mm/rev)	f face-groove (mm/rev)	f face-turn (mm/rev)
GRIP 3002Y	3.00	0.20	16.00	2.3	●	●	●	●	●	●	●	●	0.25-1.80	0.14-0.18	0.07-0.11	0.08-0.20	0.10-0.20
GRIP 3003Y	3.00	0.30	16.00	2.3	●	●	●	●	●	●	●	●	0.40-1.80	0.15-0.19	0.07-0.11	0.08-0.20	0.10-0.20
GRIP 318-040Y	3.18	0.40	16.00	2.3	●	●	●	●	●	●	●	●	0.50-1.90	0.17-0.22	0.07-0.12	0.08-0.20	0.10-0.20
GRIP 4002Y	4.00	0.20	19.00	2.8	●	●	●	●	●	●	●	●	0.25-2.40	0.16-0.21	0.09-0.14	0.10-0.24	0.15-0.30
GRIP 4004Y	4.00	0.40	19.00	2.8	●	●	●	●	●	●	●	●	0.50-2.40	0.18-0.24	0.09-0.15	0.10-0.24	0.15-0.30
GRIP 476-080Y	4.76	0.80	19.00	3.1	●	●	●	●	●	●	●	●	1.00-2.80	0.21-0.33	0.10-0.20	0.10-0.24	0.15-0.30

For tools, see pages: DGFH (A17) • DGTR/L (A56) • HELIR/L (A18) • HGFH (A17) • HGHR/L-3 (B127).

GRIP (full radius)

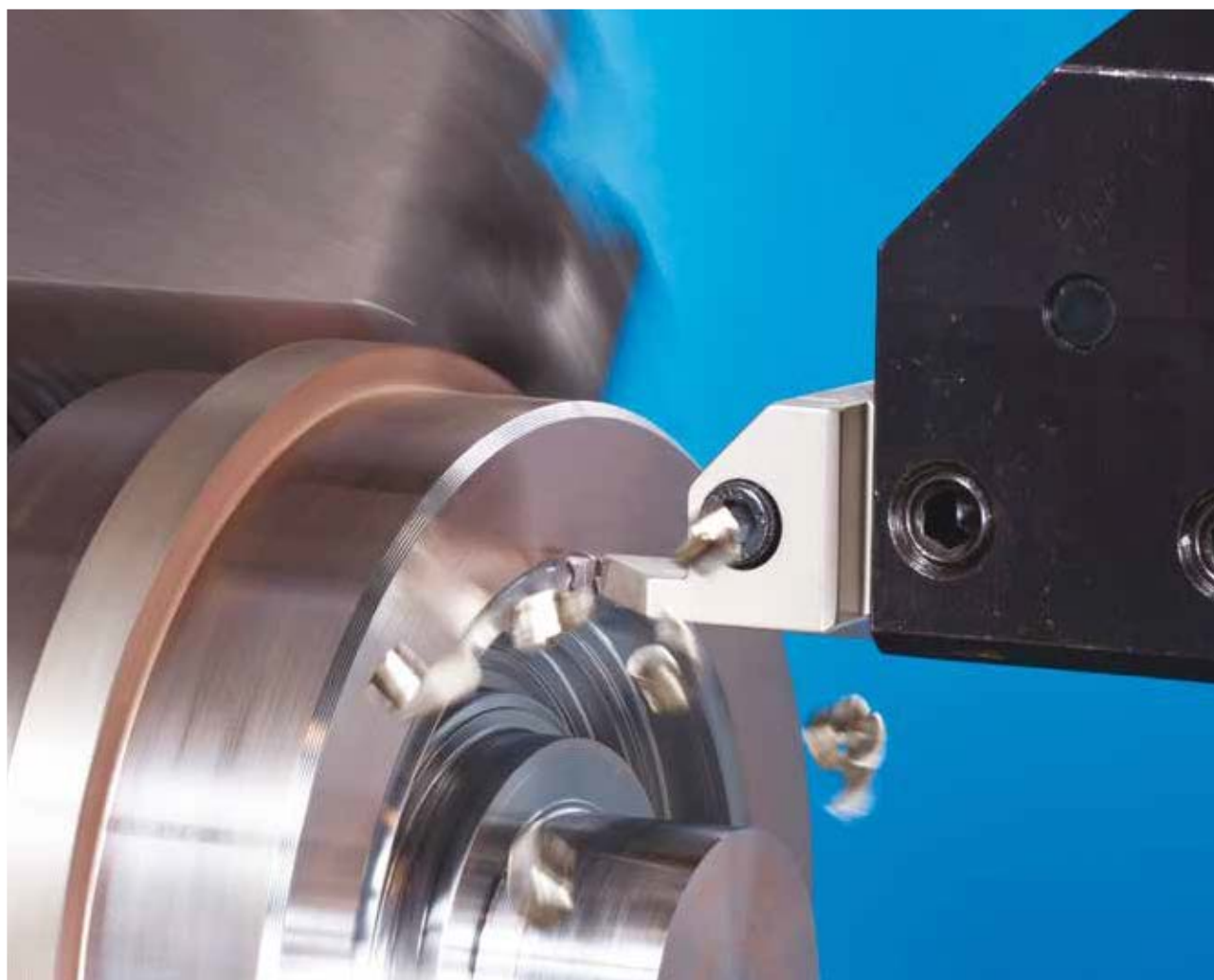
Utility Double-Ended Full Radius Inserts, for External, Internal and Face Machining



No depth penetration limit

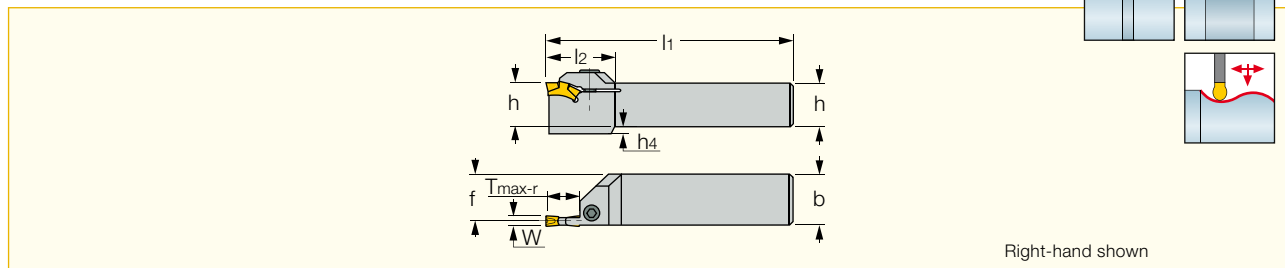
Designation	Dimensions				Tough ↔ Hard								Recommended Machining Data				
	W±0.05	R±0.05	I	M	IC830	IC8250	IC08	IC808	IC908	IC418	IC807	IC5010	ap (mm)	f turn (mm/rev)	f groove (mm/rev)	f face- groove (mm/rev)	f face- turn (mm/rev)
GRIP 3015Y	3.00	1.50	15.80	2.1	●	●	●	●	●	●	●	●	0.00-1.50	0.18-0.26	0.07-0.13	0.08-0.20	0.10-0.20
GRIP 318-159Y	3.18	1.59	16.00	2.3	●	●	●	●	●	●	●	●	0.00-1.50	0.19-0.28	0.07-0.13	0.08-0.20	0.10-0.20
GRIP 4020Y	4.00	2.00	19.00	2.8	●	●	●	●	●	●	●	●	0.00-2.00	0.20-0.34	0.09-0.17	0.10-0.24	0.15-0.30
GRIP 476-238Y	4.76	2.38	19.00	3.2	●	●	●	●	●	●	●	●	0.00-2.30	0.21-0.40	0.10-0.20	0.10-0.24	0.15-0.30

For tools, see pages: • DGFH (A18) • DGTR/L (A56) • HELIR/L (A19) • HGFH (A18) • HGHR/L-3 (B128)



TGDR/L

External Holders for Turning, Grooving and Profiling



Designation	W _{min}	W _{max}	T _{max-r} ⁽¹⁾	h	b	l ₁	l ₂	f	h ₄	Insert
TGDR/L 1616-3M	3.00	3.00	7.50	16.0	16.0	100.00	30.5	14.7	6.0	TGMF 3
TGDR/L 1616-4M	4.00	5.00	9.00	16.0	16.0	100.00	32.2	14.2	6.0	TGMF 4/TGMF 5

⁽¹⁾ Grooving depth is limited by the insert

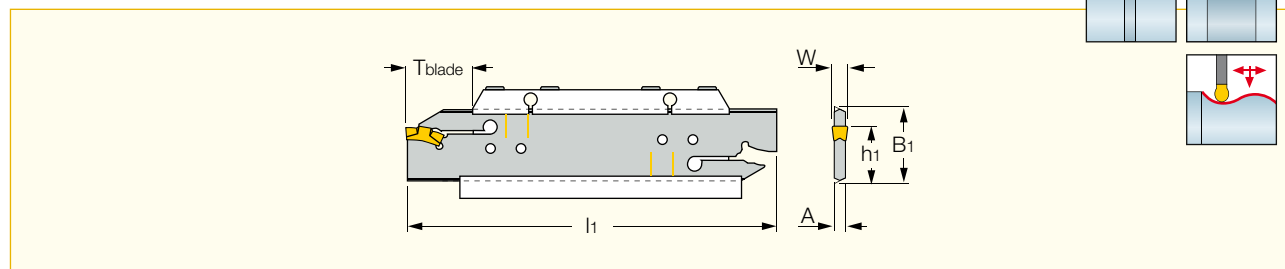
For inserts, see pages: TGMF (full radius) (A22) • TGMF/P (A22).

Spare Parts

Designation	Screw	Key
TGDR/L 1616	SR M5X12DIN912 12.9 HW 4.0	

TGHN-D

Double-Ended Blades for Utility Grooving and Turning Inserts



Designation	B ₁	W _{min}	W _{max}	T _{bl} min	T _{blade}	h ₁	l ₁	A	Insert
TGHN 26-3D	26.0	3.00	3.00	10.0	15.0	21.4	110.00	2.40	TGMF 3
TGHN 26-4D	26.0	4.00	5.00	10.0	15.0	21.4	110.00	3.20	TGMF 4, TGMF/P 5
TGHN 26-5D	26.0	5.00	5.00	10.0	20.0	21.4	110.00	4.00	TGMF/P 5

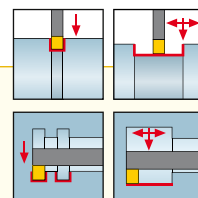
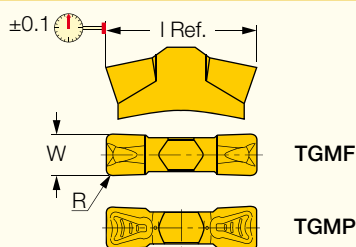
• Use the drilled holes on blade for min. and max. overhang • Grooving depth is limited by the insert

For inserts, see pages: TGMF (full radius) (A22) • TGMF/P (A22).

For holders, see pages: SGTBU/SGTBN (A88) .

TGMF/P

Utility Double-Ended Inserts, for External and Internal Grooving and Turning



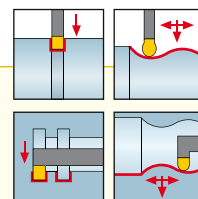
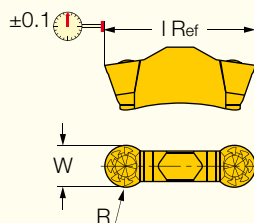
Designation	Dimensions				Tough ↔ Hard						Recommended Machining Data		
	W±0.05	R±0.05	I	T _{max-r}	IC830	IC8250	IC808	IC20	IC20N	IC428	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
TGMF 302	3.00	0.20	13.50	10.50	●	●	●	●	●	●	0.25-1.80	0.14-0.18	0.07-0.11
TGMF 304	3.00	0.40	13.55	10.30	●	●	●	●	●	●	0.50-1.80	0.16-0.20	0.07-0.12
TGMF 402	4.00	0.20	17.70	14.70	●	●	●	●	●	●	0.20-2.40	0.16-0.21	0.09-0.14
TGMF 404	4.00	0.40	17.70	14.60	●	●	●	●	●	●	0.50-2.40	0.18-0.24	0.09-0.15
TGMF 506	5.00	0.60	17.60	15.00	●	●	●	●	●	●	0.75-3.00	0.21-0.32	0.11-0.20
TGMF 508	5.00	0.80	17.80	14.20	●	●	●	●	●	●	1.00-3.00	0.23-0.35	0.11-0.21

• Dmin for internal application=20.5 mm

For tools, see pages: TGDR/L (A21) • TGHN-D (A21) • TGIR/L-C (B28) .

TGMF (full radius)

Utility Double-Ended Full Radius Inserts, for External and Internal Grooving and Profiling



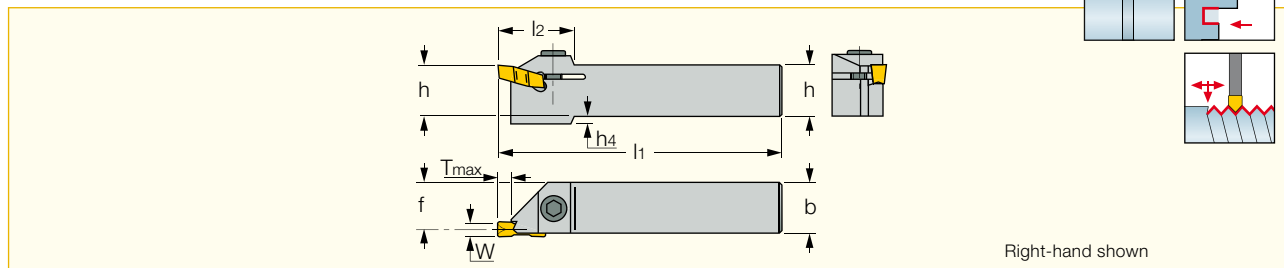
Designation	Dimensions				Tough ↔ Hard						Recommended Machining Data		
	W±0.05	R±0.05	I	T _{max-r}	IC830	IC8250	IC808	IC20	IC428	IC5010	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
TGMF 315	3.00	1.50	13.50	11.40	●	●	●	●	●	●	0.00-1.50	0.18-0.26	0.07-0.13
TGMF 420	4.00	2.00	17.80	14.90	●	●	●	●	●	●	0.00-2.00	0.20-0.34	0.09-0.17
TGMF 525	5.00	2.50	17.75	14.30	●	●	●	●	●	●	0.00-2.50	0.23-0.42	0.11-0.21

• Can cut arcs to 250° • Dmin for internal application=20.5 mm

For tools, see pages: TGDR/L (A21) • TGHN-D (A21) • TGIR/L-C (B28).

GHMR/L

Toolholders for Shallow Radial and Axial Grooving with Narrow and Special Profile Inserts



Designation	W _{max}	T _{max-r}	T _{max-a}	h	b	l ₁	l ₂	f	h ₄
GHMR/L 12	4.00	4.80	4.80	12.0	12.0	110.00	25.0	10.8	4.0
GHMR/L 16	4.80	4.80	4.80	16.0	16.0	115.00	25.0	14.5	-
GHMR 16-3 ST ⁽¹⁾	5.00	4.80	4.80	16.0	16.0	78.00	25.0	15.0	-

• Use for recessing: light turning, small depth of cut (ap=0.1-0.5 mm) and small feed (f=0.1 mm/rev).

⁽¹⁾ For Star and multi-spindle machines.

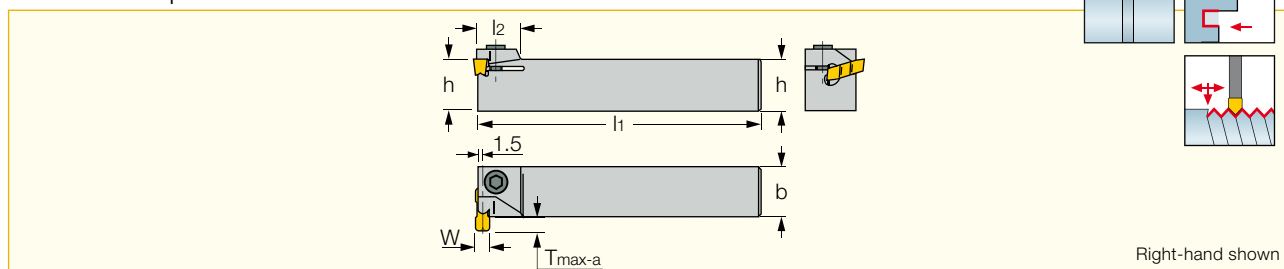
For inserts, see pages: • GIF (A34) • GIF (full radius) (A34) • GIF-E (W=4-6 full radius) (A30) • GIF-E (W=4-6) (A29) • GIG (A32) • GIM-C (A77) • GIM-J (A77) • GIM-J-RA/LA (A78) • GIM-UT (A79) • GIM-UT-RA/LA (A80) • GIM-W (A78) • GIM-W-RA/LA (A79) • GIMF (A27) • GIMN (A28) • GIMY (A27) • GIMY (full radius) (A28) • GIP (A33) • GIP (flat top W<M) (A31) • GIP (full radius W<M) (A31) • GIP (full radius) (A33) • GIP-E (A29) • GIP-E (full radius) (A30) • GIP-RX/LX (A38) • GIP-UN (A40) • GIPA (full radius W=3-6) (A37) • GIPA (W=3-6) (A36) • GIPM-A46 / GIP-1250 (A38) • GIPY (A36) • GITM (A35) • GITM (full radius) (A35) • TIP-MT (A114) • TIP-P-BSPT (A122) • TIP-P-BSW (A121) • TIP-P-ISO (A117) • TIP-P-NPT (A128) • TIP-P-UN (A119) • TIP-WT (A112).

Spare Parts

Designation	Screw	Key	Screw 1	Key 1
GHMR/L 12	SR 76-1021			
GHMR/L 16			SR M6X16DIN912 12.9	
GHMR 16-3 ST			SR M6X16DIN912 12.9	

GHMPR/L

Perpendicular Toolholders for Shallow Radial and Axial Grooving with Narrow and Special Profile Inserts



Designation	W _{max}	T _{max-r}	T _{max-a}	h	b	l ₁	l ₂
GHMPR/L 16	4.80	4.80	4.80	16.0	16.0	110.00	17.0

• Use for recessing: light turning, small depth of cut (ap=0.1-0.5 mm) and small feed (f=0.1 mm/rev).

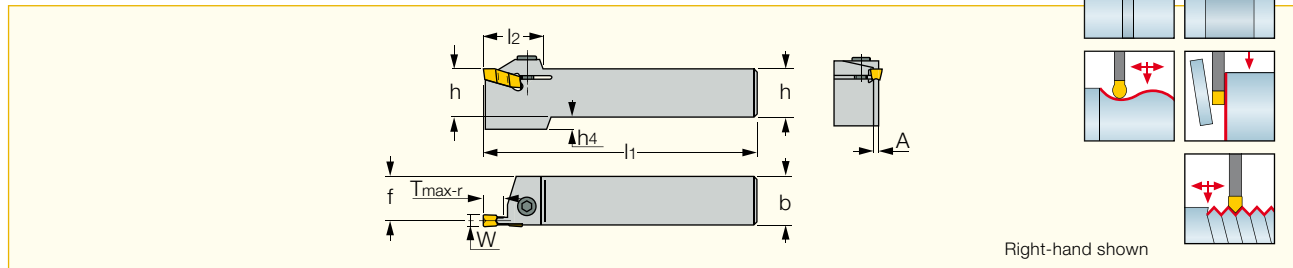
For inserts, see pages: • GIF (A34) • GIF (full radius) (A34) • GIF-E (W=4-6 full radius) (A30) • GIF-E (W=4-6) (A29) • GIG (A32) • GIM-C (A77) • GIM-J (A77) • GIM-J-RA/LA (A78) • GIM-UT (A79) • GIM-UT-RA/LA (A80) • GIM-W (A78) • GIM-W-RA/LA (A79) • GIMF (A27) • GIMN (A28) • GIMY (A27) • GIMY (full radius) (A28) • GIP (A33) • GIP (flat top W<M) (A31) • GIP (full radius W<M) (A31) • GIP (full radius) (A33) • GIP-E (A29) • GIP-E (full radius) (A30) • GIP-RX/LX (A38) • GIP-UN (A40) • GIPA (full radius W=3-6) (A37) • GIPA (W=3-6) (A36) • GIPM-A46 / GIP-1250 (A38) • GIPY (A36) • GITM (A35) • GITM (full radius) (A35) • TIP-MT (A114) • TIP-P-BSPT (A122) • TIP-P-BSW (A121) • TIP-P-ISO (A117) • TIP-P-NPT (A128) • TIP-P-UN (A119) • TIP-WT (A112).

Spare Parts

Designation	Screw	Key
GHMPR/L 16	SR M6X16DIN912 12.9	HW 5.0

GHDR/L (short pocket)

External Tools for Turning, Grooving and Parting



Designation	W _{min}	W _{max}	T _{max-r}	h	b	l ₁	l ₂	f	A	h ₄
GHDR/L 12-3	2.80	4.00	8.00	12.0	12.0	110.00	25.0	10.8	2.40	4.0
GHDR/L 16-3	2.80	4.00	9.00	16.0	16.0	110.00	26.0	14.8	2.40	4.0
GHDR/L 16-3 ST ⁽¹⁾	2.80	4.00	9.00	16.0	16.0	78.00	24.0	15.0	2.20	4.0
GHDR/L 16-4	4.00	5.00	10.00	16.0	16.0	110.00	26.0	14.4	3.20	4.0
GHDR 16-4 ST ⁽¹⁾	4.00	5.40	10.00	16.0	16.0	78.00	24.6	14.0	3.40	4.0

• For using TIP and GPV inserts, toolholder seat needs to be modified according to insert profile to ensure clearance.

⁽¹⁾ For Star and multi-spindle machines.

For inserts, see pages: • GIF (A34) • GIF (full radius) (A34) • GIF-E (W=4-6 full radius) (A30) • GIF-E (W=4-6) (A29) • GIG (A32) • GIM-C (A77) • GIM-J (A77) • GIM-J-RA/LA (A78) • GIM-UT (A79) • GIM-UT-RA/LA (A80) • GIM-W (A78) • GIM-W-RA/LA (A79) • GIMF (A27) • GIMN (A28) • GIMY (A27) • GIMY (full radius) (A28) • GIP (A33) • GIP (flat top W<M) (A31) • GIP (full radius W<M) (A31) • GIP (full radius) (A33) • GIP-E (A29) • GIP-E (full radius) (A30) • GIP-UN (A40) • GIPA (full radius W=3-6) (A37) • GIPA (W=3-6) (A36) • GIPM-A46 / GIP-1250 (A38) • GIPY (A36) • GITM (A35) • GITM (full radius) (A35) • TIP-MT (A114) • TIP-P-BSPT (A122) • TIP-P-BSW (A121) • TIP-P-ISO (A117) • TIP-P-NPT (A128) • TIP-P-UN (A119) • TIP-WT (A112).

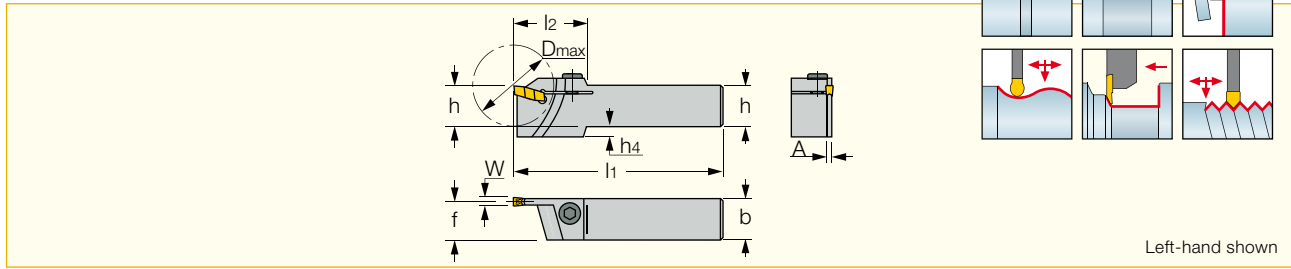
Spare Parts

Designation	Key	Screw	Key 1
GHDR/L 12-3		SR 76-1021	
GHDR/L 16-3		SR M5X16DIN912 12.9	
GHDR/L 16-3 ST		SR M5X16DIN912 12.9	
GHDR/L 16-4		SR M6X16DIN912 12.9	
GHDR 16-4 ST		SR M6X16DIN912 12.9	



GHGR/L

External Holders for Deep Grooving and Parting



Designation	W _{min}	W _{max}	D _{max} ⁽²⁾	h	b	l ₁	l ₂	f	A	h ₄
GHGR/L 16-3	3.00	4.00	40.0	16.0	16.0	110.00	36.0	14.7	2.50	4.0
GHGR/L 16-3 ST ⁽¹⁾	3.00	4.00	34.0	16.0	16.0	78.00	33.0	15.0	2.40	4.0
GHGR 16-4	4.00	5.00	40.0	16.0	16.0	110.00	36.0	14.4	3.20	4.0

• For machining depth over 13 mm, a single-ended insert is required (GIM, GIMF, GIMY). T_{max} for grooving depth depends on part diameter D. For grooving a part with a diameter larger than D_{max}, see next table. • For using TIP inserts, toolholder seat needs to be modified according to insert profile to ensure clearance.

⁽¹⁾ For Star and multi-spindle machines. ⁽²⁾ Maximum parting diameter

For inserts, see pages: • GIF (A34) • GIF (full radius) (A34) • GIF-E (W=4-6 full radius) (A30) • GIF-E (W=4-6) (A29) • GIG (A32) • GIM-C (A77) • GIM-J (A77) • GIM-J-RA/LA (A78) • GIM-UT (A79) • GIM-UT-RA/LA (A80) • GIM-W (A78) • GIM-W-RA/LA (A79) • GIMF (A27) • GIMN (A28) • GIMY (A27) • GIMY (full radius) (A28) • GIP (A33) • GIP (flat top W<M) (A31) • GIP (full radius W<M) (A31) • GIP (full radius) (A33) • GIP-E (A29) • GIP-E (full radius) (A30) • GIPA (full radius W=3-6) (A37) • GIPA (W=3-6) (A36) • GIPM-A46 / GIP-1250 (A38) • GIPY (A36) • GITM (A35) • GITM (full radius) (A35) • TIP-MT (A114) • TIP-P-BSPT (A122) • TIP-P-BSW (A121) • TIP-P-ISO (A117) • TIP-P-NPT (A128) • TIP-P-UN (A119) • TIP-WT (A112).

Spare Parts

Designation	Screw	Key
GHGR/L 16-3	SR M6X16DIN912 12.9 HW 5.0	
GHGR/L 16-3 ST	SR M6X16DIN912 12.9 HW 5.0	
GHGR 16-4	SR M6X16DIN912 12.9 HW 5.0	

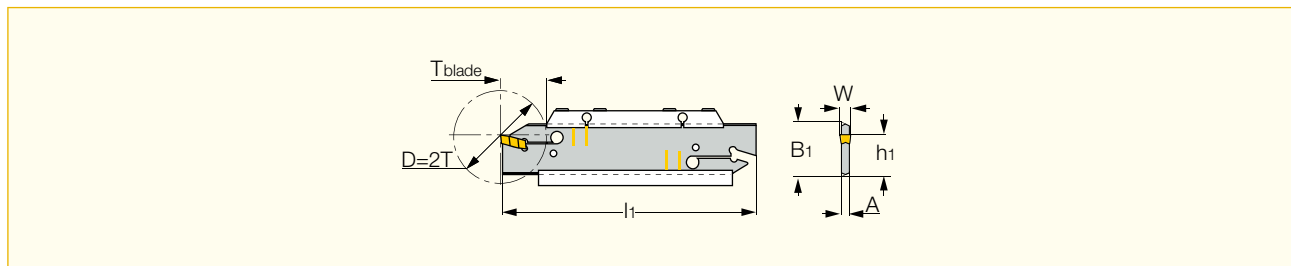
Depth Capacity*

Designation	D							
GHGR/L 16-3/16-4	—	40	50	68	80	120	290	1000 —
Depth T	23	20	19	17	16	14	12	11 9

* For over 13 mm depth: GIM, GIMF and GIMY, GPV (single ended insert) only.

CGHN-D

Double-Ended Blades for External Grooving and Turning



Designation	B ₁	W _{min}	W _{max}	T _{bl} min	T _{blade}	h ₁	l ₁	A
CGHN 26-3D	26.0	2.80	4.00	10.0	15.0	21.4	110.00	2.40
CGHN 26-4D	26.0	3.50	4.50	10.0	15.0	21.4	110.00	3.20
CGHN 26-5D	26.0	4.40	6.40	10.0	20.0	21.4	110.00	4.00

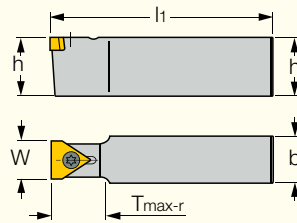
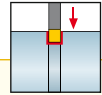
• Use the yellow lines on blade for min. and max. overhang. • For using TIP inserts, toolholder seat needs to be modified according to insert profile to ensure clearance. • When using a double-ended insert, grooving depth is limited by the insert.

For inserts, see pages: • GIF (A34) • GIF (full radius) (A34) • GIF-E (W=4-6 full radius) (A30) • GIF-E (W=4-6) (A29) • GIM-C (A77) • GIM-J (A77) • GIM-J-RA/LA (A78) • GIM-UT (A79) • GIM-UT-RA/LA (A80) • GIM-W (A78) • GIM-W-RA/LA (A79) • GIMF (A27) • GIMN (A28) • GIMY (A27) • GIMY (full radius) (A28) • GIP (A33) • GIP (full radius) (A33) • GIP-E (A29) • GIP-E (full radius) (A30) • GIPA (full radius W=3-6) (A37) • GIPA (W=3-6) (A36) • GIPM-A46 / GIP-1250 (A38) • GIPY (A36) • GITM (A35) • GITM (full radius) (A35) • TIP-MT (A114) • TIP-P-BSPT (A122) • TIP-P-BSW (A121) • TIP-P-ISO (A117) • TIP-P-NPT (A128) • TIP-P-UN (A119) • TIP-WT (A112).

For holders, see pages: SGTBU/SGTBN (A88) .

SXCNN

External Toolholders for Specially Tailored Wide Profile Inserts



Designation	W	T _{max-r}	h	b	l ₁	Insert
SXCNN 1212 K10-06	10.40	17.00	12.0	12.0	125.00	XNUW 10
SXCNN 1616 K10-06	10.40	17.00	16.0	16.0	125.00	XNUW 10
SXCNN 1212 K13-05	13.00	20.00	12.0	12.0	125.00	XNUW 13
SXCNN 1414 K13-05	13.00	23.00	14.0	14.0	125.00	XNUW 13
SXCNN 1616 K13-05	13.00	23.00	16.0	16.0	125.00	XNUW 13
SXCNN 1212 K14-03	14.50	-	12.0	12.0	125.00	XNUW 14
SXCNN 1616 K14-03	14.50	17.00	16.0	16.0	125.00	XNUW 14
SXCNN 1616 K20-05	20.50	-	16.0	16.0	125.00	XNUW 20

• Toolholder seat needs to be modified according to insert profile to ensure clearance.

For inserts, see pages: XNUW (A26).

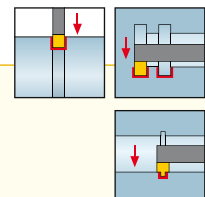
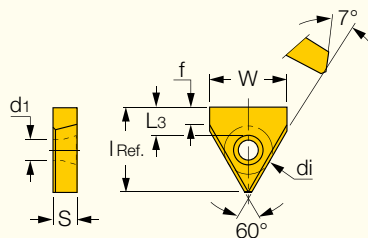
Spare Parts



Designation	Screw	Key
SXCNN 1212 K10-06	SR 76-2067	
SXCNN 1616 K10-06	SR 76-2067	
SXCNN 1212 K13-05	SR 76-2068	T-20/5
SXCNN 1414 K13-05	SR 76-2068	T-20/5
SXCNN 1616 K13-05	SR 14-591	T-20/5
SXCNN 1212 K14-03	SR 76-2067	
SXCNN 1616 K14-03	SR 76-2067	
SXCNN 1616 K20-05	SR 14-591	T-20/5

XNUW

Blank Inserts for Wide Profile Grooving

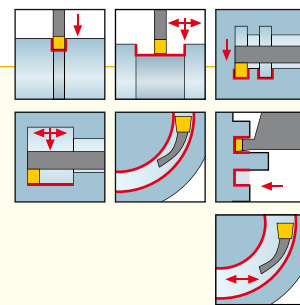
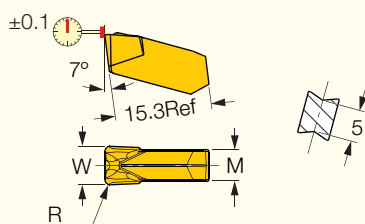


Designation	Dimensions							Tough ↔ Hard				
	W	f	L ₃	d _i	S	d ₁	I	IC28	IC54	IC08	IC07	IC20
XNUW 1003-06	10.40	6.0	10.50	6.35	3.18	4.53	17.00	●		●		
XNUW 1305-05	13.00	5.0	11.40	12.70	5.35	5.50	20.60	●	●	●		●
XNUW 14T3-03	14.50	3.0	3.70	9.52	3.97	4.40	14.00	●	●	●		●
XNUW 2006-05	20.50	4.8	5.00	12.70	6.35	5.50	20.30	●	●		●	●

For tools, see pages: • SXCNN (A26).

GIMF

Utility Single-Ended Inserts for Grooving and Turning



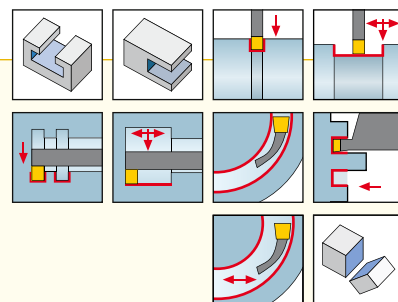
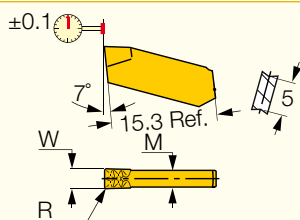
Designation	Dimensions			Tough ↔ Hard									Recommended Machining Data		
	W±0.05	R±0.05	M	IC830	IC8250	IC808	IC908	IC806	IC907	IC20	IC428	IC5010	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIMF 406	4.00	0.60	3.2	●	●	●	●	●	●	●	●	●	0.75-2.40	0.19-0.25	0.09-0.16
GIMF 502	5.00	0.20	4.0	●	●	●	●	●	●	●	●	●	0.25-3.00	0.18-0.26	0.11-0.18
GIMF 508	5.00	0.80	4.0	●	●	●	●	●	●	●	●	●	1.00-3.00	0.23-0.35	0.11-0.21

• Dmin for internal applications = 70 mm

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23).

GIMY

Utility Single-Ended Inserts, for Grooving and Turning



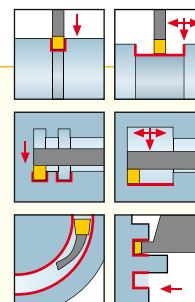
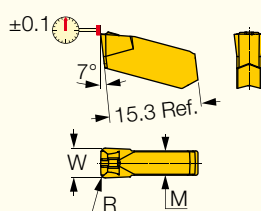
Designation	Dimensions			Tough $\longleftrightarrow$ Hard				Recommended Machining Data		
	W ± 0.05	R ± 0.05	M	IC830	IC8250	IC806	IC20	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIMY 304	3.00	0.40	2.4	●	●	●	●	0.50-1.80	0.16-0.20	0.07-0.12

• Dmin for internal applications = 70 mm

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSR/L (A15) • GHSR/L-JHP-SL (A14)

GIMN

Utility Single-Ended Inserts for Grooving and Turning Ductile Materials



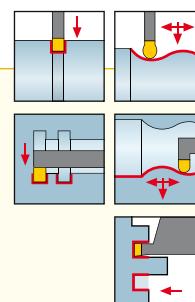
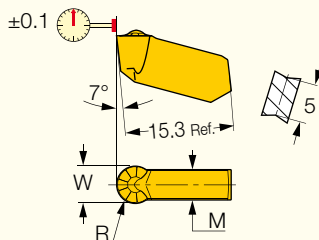
Dimensions	Dimensions			Dimensions		Dimensions		
	W ± 0.05	R ± 0.05	M	IC908	IC907	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIMN 302	3.00	0.20	2.4		●	0.30-1.20	0.07-0.11	0.04-0.09
GIMN 406	4.00	0.60	3.4		●	0.75-1.60	0.11-0.18	0.05-0.14
GIMN 508	5.00	0.80	4.1	●	●	1.00-2.00	0.15-0.25	0.06-0.18

• Dmin for internal applications = 70 mm

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23).

GIMY (full radius)

Utility Single-Ended Inserts, for Grooving and Profiling



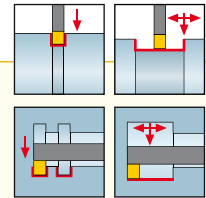
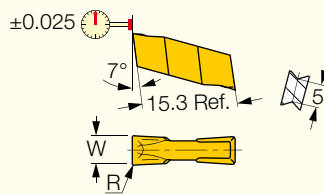
Designation	Dimensions			Tough $\longleftrightarrow$ Hard						Recommended Machining Data		
	W ± 0.05	R ± 0.05	M	IC830	IC8250	IC808	IC806	IC20	IC20N	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIMY 315	3.00	1.50	2.4	●	●	●	●	●	●	0.00-1.50	0.18-0.26	0.07-0.13
GIMY 420	4.00	2.00	3.2	●	●	●	●	●	●	0.00-2.00	0.20-0.28	0.09-0.17
GIMY 525	5.00	2.50	3.9	●	●	●	●	●	●	0.00-2.50	0.23-0.42	0.11-0.21

• Dmin for internal application=70 mm • Can cut arcs to 250°

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSL/L (A15) • GHSL/L-JHP-SL (A14).

GIF-E (W=4-6)

Precision Double-Ended Inserts for Grooving and Turning



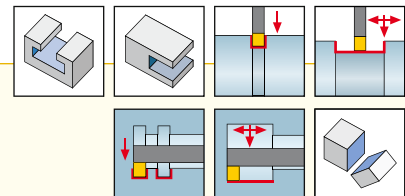
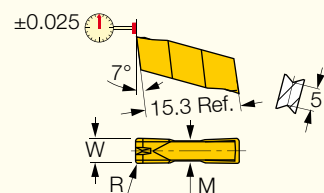
Designation	Dimensions				Tough ↔ Hard					Recommended Machining Data		
	W±0.02	R±0.05	M	T _{max-r}	IC830	IC8250	IC808	IC807	IC20	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIF 4.00E-0.40	4.00	0.40	3.2	13.00	●	●	●	●	●	0.50-2.40	0.18-0.24	0.09-0.15
GIF 4.00E-0.60	4.00	0.60	3.2	13.00	●	●	●	●	●	0.75-2.40	0.19-0.25	0.09-0.16
GIF 4.00E-0.80	4.00	0.80	3.2	13.00	●	●	●	●	●	1.00-2.40	0.20-0.28	0.09-0.17
GIF 5.00E-0.40	5.00	0.40	4.0	13.00	●	●	●	●	●	0.50-3.00	0.20-0.30	0.11-0.19
GIF 5.00E-0.60	5.00	0.60	4.0	13.00	●	●	●	●	●	0.75-3.00	0.21-0.32	0.11-0.20
GIF 5.00E-0.80	5.00	0.80	4.0	13.00	●	●	●	●	●	1.00-3.00	0.23-0.35	0.11-0.21

• Dmin for internal machining = 70 mm

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23).

GIP-E

Precision Double-Ended Inserts for Grooving and Turning



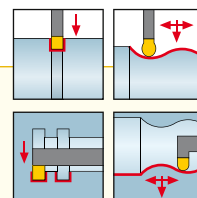
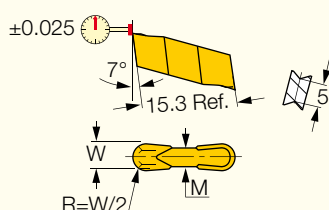
Designation	Dimensions				Tough ↔ Hard										Recommended Machining Data		
	W±0.02	R±0.05	M	T _{max-r}	IC830	IC8250	IC808	IC908	IC806	IC807	IC20	IC20N	IC428	IC5010	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIP 3.00E-0.00	3.00	0.00	2.4	13.00	●	●	●	●	●	●	●	●	●	●	0.00-1.80	0.12-0.16	0.07-0.11
GIP 3.00E-0.20	3.00	0.20	2.4	13.00	●	●	●	●	●	●	●	●	●	●	0.25-1.80	0.15-0.20	0.08-0.13
GIP 3.00E-0.40	3.00	0.40	2.4	13.00	●	●	●	●	●	●	●	●	●	●	0.50-1.80	0.17-0.22	0.08-0.14
GIP 3.00E-0.80	3.00	0.80	2.4	13.00	●	●	●	●	●	●	●	●	●	●	1.00-1.80	0.19-0.26	0.08-0.15
GIP 4.00E-0.40	4.00	0.40	3.2	13.00	●	●	●	●	●	●	●	●	●	●	0.50-2.40	0.19-0.26	0.10-0.18
GIP 4.00E-0.60	4.00	0.60	3.2	13.00	●	●	●	●	●	●	●	●	●	●	0.75-2.40	0.21-0.28	0.10-0.19
GIP 4.00E-0.80	4.00	0.80	3.2	13.00	●	●	●	●	●	●	●	●	●	●	1.00-2.40	0.22-0.31	0.10-0.20
GIP 4.78E-0.55	4.78	0.55	4.0	13.00	●	●	●	●	●	●	●	●	●	●	0.70-2.80	0.21-0.31	0.12-0.20
GIP 5.00E-0.40	5.00	0.40	4.0	13.00	●	●	●	●	●	●	●	●	●	●	0.50-3.00	0.22-0.33	0.13-0.21
GIP 5.00E-0.60	5.00	0.60	4.0	13.00	●	●	●	●	●	●	●	●	●	●	0.75-3.00	0.23-0.35	0.13-0.22
GIP 5.00E-0.80	5.00	0.80	4.0	13.00	●	●	●	●	●	●	●	●	●	●	1.00-3.00	0.24-0.39	0.13-0.23

• Dmin for internal machining = 70 mm

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSL/L (A15) • GHSL/L-JHP-SL (A14)

GIF-E (W=4-6 full radius)

Precision Double-Ended Full Radius Inserts, for Profiling and Grooving



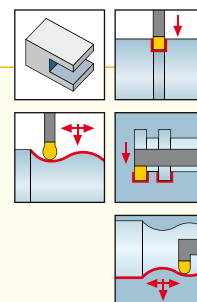
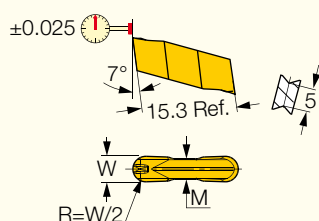
Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data		
	W±0.02	R±0.05	M	T _{max-r}	IC830	IC8250	IC808	IC20	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIF 4.00E-2.00	4.00	2.00	3.2	11.80	●	●	●	●	0.00-2.00	0.20-0.34	0.09-0.17
GIF 5.00E-2.50	5.00	2.50	4.0	11.30	●	●	●	●	0.00-2.50	0.23-0.42	0.11-0.21

• Dmin for internal machining = 70 mm

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23).

GIP-E (full radius)

Precision Double-Ended Full Radius Inserts, for Profiling and Grooving



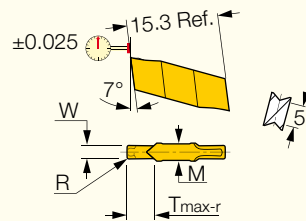
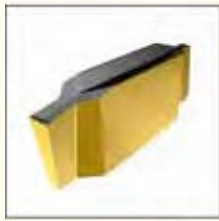
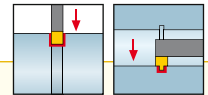
Designation	Dimensions				Tough ↔ Hard							Recommended Machining Data		
	W±0.02	R±0.05	M	T _{max-r}	IC830	IC8250	IC808	IC807	IC20	IC428	IC5010	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIP 3.00E-1.50	3.00	1.50	2.4	12.30	●	●	●	●	●	●	●	0.00-1.50	0.18-0.28	0.08-0.15
GIP 4.00E-2.00	4.00	2.00	3.2	11.80	●	●	●	●	●	●	●	0.00-2.00	0.20-0.34	0.10-0.20
GIP 5.00E-2.50	5.00	2.50	4.0	11.30	●	●	●	●	●	●	●	0.00-2.50	0.25-0.42	0.13-0.23

• Dmin for internal machining = 70 mm

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSL/L (A15) • GHSL/L-JHP-SL (A14)

GIP (flat top W<M)

Flat Top Precision Double-Ended Inserts for Grooving



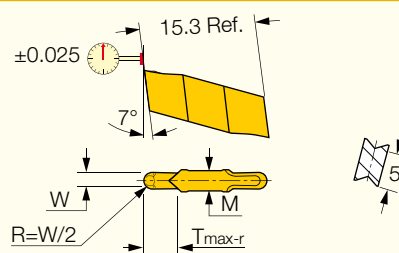
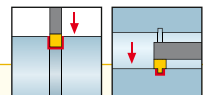
Designation	Dimensions				Tough ↔ Hard					Recommended Machining Data
	W±0.02	R±0.03	T _{max-r}	M	IC830	IC808	IC807	IC20	IC20N	
GIP 0.50-0.00	0.50	0.00	1.00	2.2		●		●		0.02-0.04
GIP 0.80-0.00	0.80	0.00	1.60	2.2		●		●		0.02-0.04
GIP 1.04-0.00	1.04	0.00	2.00	2.2	●	●	●	●	●	0.02-0.05
GIP 1.20-0.00	1.20	0.00	2.00	2.2	●	●	●	●	●	0.03-0.05
GIP 1.40-0.00	1.40	0.00	2.00	2.2	●	●		●		0.03-0.06
GIP 1.47-0.00	1.47	0.00	2.50	2.2	●	●		●		0.03-0.06
GIP 1.57-0.15	1.57	0.15	2.70	2.2	●	●	●	●		0.04-0.06
GIP 1.70-0.10	1.70	0.10	3.00	2.2	●	●		●	●	0.04-0.07
GIP 1.78-0.18	1.78	0.18	3.00	2.2	●	●		●		0.04-0.07
GIP 1.96-0.15	1.96	0.15	3.00	2.2	●	●	●	●	●	0.04-0.08

• Dmin for internal machining = 70 mm

For tools, see pages: GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23).

GIP (full radius W<M)

Flat Top Precision Double-Ended Inserts with Full Radius for Grooving



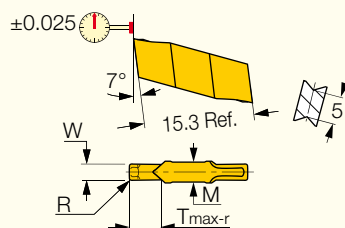
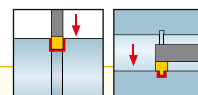
Designation	Dimensions				Dimensions						Dimensions
	W±0.02	R±0.05	T _{max-r}	M	IC830	IC808	IC908	IC806	IC807	IC20	
GIP 1.00-0.50	1.00	0.50	2.00	2.2		●			●		0.03-0.06
GIP 1.40-0.70	1.40	0.70	2.00	2.2		●			●		0.04-0.07
GIP 1.57-0.79	1.57	0.79	2.70	2.2	●	●	●		●	●	0.04-0.08
GIP 2.00-1.00	2.00	1.00	3.00	2.2	●	●		●	●	●	0.05-0.11
GIP 2.39-1.20	2.39	1.20	4.70	2.4		●			●	●	0.06-0.12

• Dmin for internal machining = 70 mm

For tools, see pages: GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSR/L (A15) • GHSL/L-JHP-SL (A14).

GIG

Precision Double-Ended Inserts for Grooving



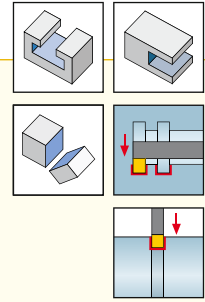
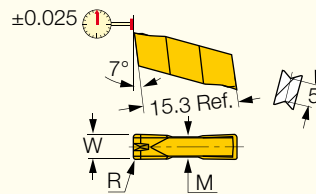
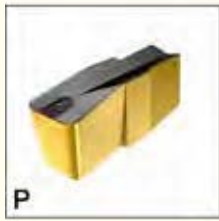
Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data
	W±0.02	R±0.03	T _{max-r}	M	IC830	IC808	IC20	
GIG 1.04-0.00	1.04	0.00	2.00	2.2		●		0.02-0.03
GIG 1.20-0.00	1.20	0.00	2.00	2.2		●		0.02-0.03
GIG 1.25-0.10	1.25	0.10	2.00	2.2	●	●		0.02-0.04
GIG 1.40-0.00	1.40	0.00	2.00	2.2		●		0.02-0.04
GIG 1.45-0.10	1.45	0.10	2.00	2.2	●	●		0.02-0.04
GIG 1.47-0.00	1.47	0.00	2.50	2.2		●		0.02-0.04
GIG 1.50-0.10	1.50	0.10	2.50	2.2	●	●		0.02-0.04
GIG 1.57-0.15	1.57	0.15	2.70	2.2		●		0.03-0.05
GIG 1.70-0.10	1.70	0.10	3.00	2.2		●		0.03-0.05
GIG 1.78-0.18	1.78	0.18	3.00	2.2		●		0.03-0.05
GIG 1.85-0.15	1.85	0.15	3.00	2.2	●	●		0.03-0.05
GIG 1.86-0.15	1.86	0.15	3.00	2.2		●		0.03-0.05
GIG 1.96-0.15	1.96	0.15	3.00	2.2		●		0.03-0.06
GIG 2.00-0.20	2.00	0.20	3.00	2.2	●	●	●	0.04-0.06
GIG 2.22-0.15	2.22	0.15	3.50	2.2		●		0.04-0.06
GIG 2.30-0.20	2.30	0.20	3.50	2.2	●	●		0.04-0.07

• Dmin for internal machining = 70 mm

For tools, see pages: GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSR/L (A15) • GHSR/L-JHP-SL (A14).

GIP

Precision Double-Ended Inserts for Grooving



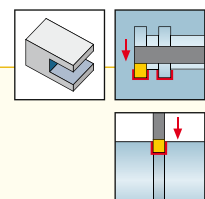
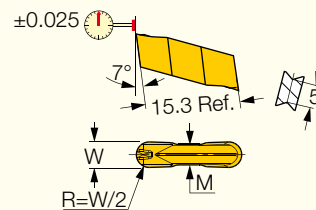
Designation	Dimensions				Tough ↔ Hard							Recommended Machining Data f groove (mm/rev)
	W ± 0.02	R ± 0.03	T $_{max-r}$	M	IC830	IC8250	IC808	IC806	IC807	IC20	IC20N	
GIP 2.22-0.15	2.22	0.15	3.50	2.2	●		●		●	●		0.05-0.09
GIP 2.39-0.15	2.39	0.15	4.70	2.4	●		●		●	●	●	0.05-0.09
GIP 2.47-0.20	2.47	0.20	5.00	2.4	●		●		●	●	●	0.06-0.10
GIP 2.70-0.10	2.70	0.10	13.00	2.4	●		●		●	●		0.06-0.10
GIP 2.70-0.20	2.70	0.20	13.00	2.4	●		●		●	●		0.07-0.11
GIP 2.87-0.20	2.87	0.20	13.00	2.4	●		●		●	●		0.07-0.12
GIP 3.00-0.00	3.00	0.00	13.00	2.4	●		●		●	●		0.07-0.11
GIP 3.00-0.20	3.00	0.20	13.00	2.4	●		●	●	●	●		0.08-0.13
GIP 3.00-0.40	3.00	0.40	13.00	2.4	●		●		●	●		0.08-0.14
GIP 3.15-0.15	3.15	0.15	13.00	2.4	●	●	●		●	●	●	0.07-0.12
GIP 3.18-0.20	3.18	0.20	13.00	2.4	●	●	●		●	●		0.08-0.13
GIP 3.30-0.10	3.30	0.10	13.00	2.4	●	●	●		●	●		0.07-0.12
GIP 3.48-0.20	3.48	0.20	13.00	3.2		●			●	●		0.09-0.15
GIP 3.56-0.20	3.56	0.20	13.00	3.2		●			●	●		0.09-0.15
GIP 3.74-0.20	3.74	0.20	13.00	3.2		●	●		●	●		0.09-0.16
GIP 3.98-0.20	3.98	0.20	13.00	3.2	●	●	●		●	●		0.10-0.17
GIP 4.00-0.80	4.00	0.80	13.00	3.2						●		0.10-0.20
GIP 4.23-0.10	4.23	0.10	13.00	3.2	●	●	●			●		0.10-0.16
GIP 5.00-0.40	5.00	0.40	13.00	4.0						●		0.13-0.21

• Dmin for internal machining = 70 mm

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSR/L (A15) • GHSR/L-JHP-SL (A14)

GIP (full radius)

Precision Double-Ended, Full Radius Inserts for Grooving

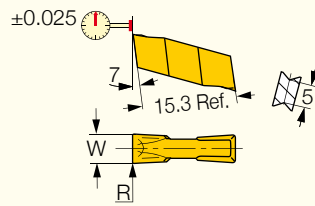
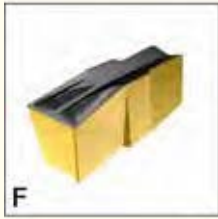
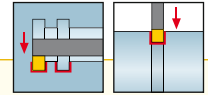


Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data f groove (mm/rev)
	W ± 0.02	R ± 0.05	T $_{max-r}$	M	IC830	IC8250	IC808	IC20	
GIP 3.00-1.50	3.00	1.50	12.30	2.4				●	0.08-0.15
GIP 3.18-1.59	3.18	1.59	12.20	2.4	●	●	●	●	0.08-0.16
GIP 3.98-1.99	3.98	1.99	11.80	3.2		●		●	0.10-0.20
GIP 4.78-2.39	4.78	2.39	11.40	4.8		●		●	0.12-0.22
GIP 5.00-2.50	5.00	2.50	11.30	4.0				●	0.13-0.23

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSR/L (A15) • GHSR/L-JHP-SL (A14)

GIF

Precision Double-Ended Inserts for Grooving



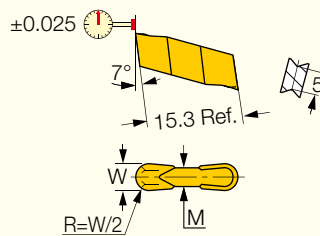
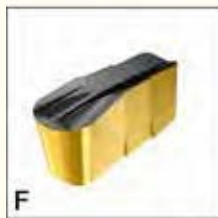
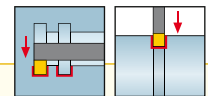
Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data f groove (mm/rev)
	W ± 0.02	R ± 0.03	M	T $_{max-r}$	IC830	IC8250	IC808	IC20	
GIF 3.48-0.20	3.48	0.20	3.2	13.00	●	●	●	●	0.08-0.12
GIF 3.56-0.20	3.56	0.20	3.2	13.00	●	●	●	●	0.08-0.13
GIF 3.74-0.20	3.74	0.20	3.2	13.00	●	●	●	●	0.08-0.13
GIF 3.98-0.20	3.98	0.20	3.2	13.00	●	●	●	●	0.09-0.14
GIF 4.23-0.10	4.23	0.10	3.2	13.00	●	●	●	●	0.08-0.13
GIF 4.45-0.15	4.45	0.15	4.0	13.00	●	●	●	●	0.09-0.14
GIF 4.78-0.55	4.78	0.55	4.0	13.00	●	●	●	●	0.11-0.18
GIF 4.86-0.30	4.86	0.30	4.0	13.00	●	●	●	●	0.11-0.18

• Dmin for internal machining = 70 mm

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23).

GIF (full radius)

Precision Double-Ended Full Radius Inserts for Grooving



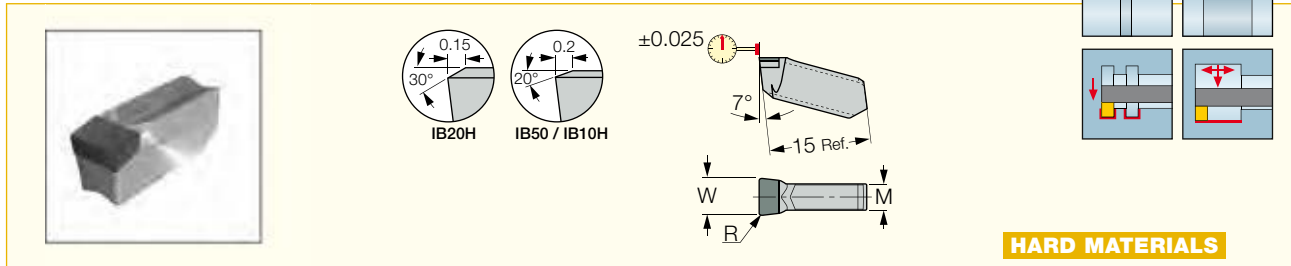
Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data f groove (mm/rev)
	W ± 0.02	R ± 0.05	M	T $_{max-r}$	IC8250	IC808	
GIF 4.78-2.39	4.78	2.39	4.0	11.40	●	●	0.11-0.20

• Dmin for internal machining = 70 mm

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23).

GITM

CBN Tipped Inserts for Turning and Grooving on Hard Ferrous Materials



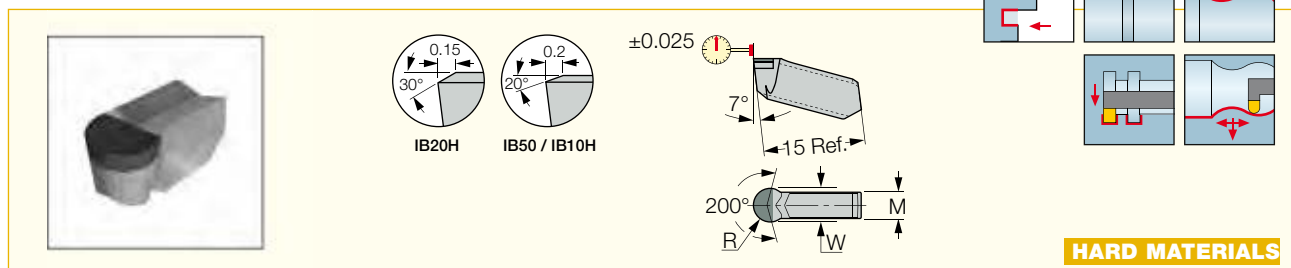
Designation	Dimensions			Tough ↔ Hard			Recommended Machining Data		
	W ± 0.02	R ± 0.05	M	IB20H	IB50	IB10H	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GITM 3.00K-0.20	3.00	0.20	2.4	●	●	●	0.00-0.30	0.02-0.07	0.02-0.05
GITM 4.00K-0.20	4.00	0.20	3.2	●	●	●	0.00-0.40	0.03-0.09	0.02-0.07
GITM 5.00K-0.40	5.00	0.40	4.0	●	●	●	0.00-0.50	0.05-0.13	0.03-0.10

• Dmin for internal machining = 70 mm

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23)
• GHSL/L (A15) • GHSL/L-JHP-SL (A14).

GITM (full radius)

CBN Tipped Inserts, Full Radius for Grooving and Turning on Hard Ferrous Materials



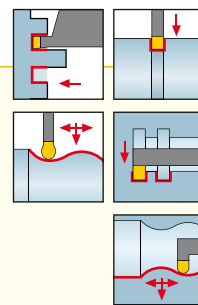
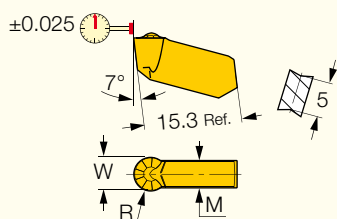
Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data		
	W ± 0.02	R ± 0.05	M	D _{1 min}	IB20H	IB50	IB10H	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GITM 3.00K-1.50	3.00	1.50	2.4	160.0	●	●	●	0.00-0.30	0.03-0.10	0.02-0.06
GITM 4.00K-2.00	4.00	2.00	3.2	160.0	●	●	●	0.00-0.40	0.04-0.14	0.02-0.09
GITM 5.00K-2.50	5.00	2.50	3.9	160.0	●	●	●	0.00-0.50	0.05-0.18	0.03-0.11

• Dmin for internal machining = 70 mm

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSL/L (A15) • GHSL/L-JHP-SL (A14).

GIPIY

Single-Ended Full Radius Sharp Edged Precision Inserts for Profiling of High Temperature Alloys



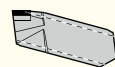
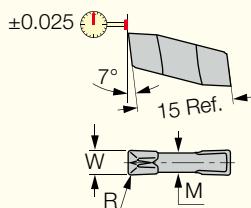
Designation	Dimensions			Tough ↔ Hard					Recommended Machining Data	
	W±0.02	R±0.05	M	IC07	IC806	IC907	IC20	IC320	f turn (mm/rev)	f groove (mm/rev)
GIPIY 3.00-1.50	3.00	1.50	2.4	●	●	●	●	●	0.19-0.28	0.08-0.15
GIPIY 4.00-2.00	4.00	2.00	3.2	●	●	●	●	●	0.22-0.37	0.10-0.20
GIPIY 5.00-2.50	5.00	2.50	3.9	●	●	●	●	●	0.24-0.46	0.13-0.23

• Can cut arcs to 250° • Dmin for internal machining = 70 mm

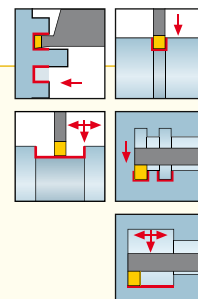
For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSR/L (A15) • GHSR/L-JHP-SL (A14).

GIPA (W=3-6)

Double-Ended Precision Ground Inserts with a Polished Top Rake, for Machining Aluminum



GIPA...D-ID5



Designation	Dimensions			Dimensions		Recommended Machining Data		
	W±0.02	R±0.03	M	IC20	ID5	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIPA 3.00-0.20	3.00	0.20	2.4	●		0.25-1.80	0.12-0.20	0.08-0.14
GIPA 3.00-0.20-D ⁽¹⁾	3.00	0.20	2.4		●	0.25-1.80	0.12-0.25	0.09-0.16
GIPA 4.00-0.40	4.00	0.40	3.2	●		0.50-2.40	0.14-0.31	0.10-0.20
GIPA 5.00-0.40	5.00	0.40	4.0	●		0.50-3.00	0.16-0.34	0.11-0.23

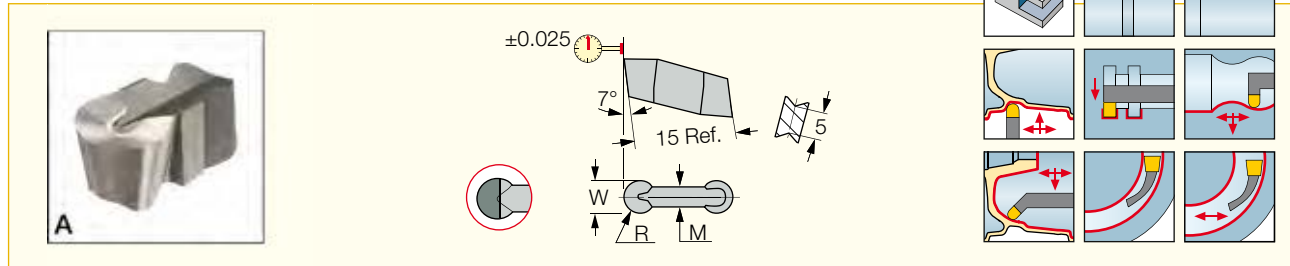
• Dmin for internal machining = 70 mm

⁽¹⁾ Single-ended PCD tipped insert

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSR/L (A15) • GHSR/L-JHP-SL (A14).

GIPA (full radius W=3-6)

Precision Double-Ended Inserts with Polished Top Rake, for Machining Aluminum



Designation	Dimensions			Tough ↔ Hard			Recommended Machining Data		
	W $\pm$ 0.02	R $\pm$ 0.05	M	IC806	IC20	ID5	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIPA 3.00-1.50	3.00	1.50	2.4		●		0.00-1.50	0.15-0.30	0.08-0.16
GIPA 3.00-1.50-D ⁽¹⁾	3.00	1.50	2.4			●	0.00-1.50	0.19-0.36	0.09-0.19
GIPA 3.00-1.50YZ-D ⁽²⁾	3.00	1.50	2.4			●	0.00-1.50	0.19-0.36	0.09-0.19
GIPA 4.00-2.00	4.00	2.00	3.2	●	●		0.00-2.00	0.20-0.43	0.10-0.22
GIPA 4.00-2.00-D ⁽¹⁾	4.00	2.00	3.2			●	0.00-2.00	0.25-0.53	0.12-0.26
GIPA 4.00-2.00YZ-D ⁽²⁾	4.00	2.00	3.2			●	0.00-2.00	0.25-0.53	0.12-0.26
GIPA 5.00-2.50	5.00	2.50	3.9	●	●		0.00-2.50	0.21-0.48	0.09-0.24
GIPA 5.00-2.50-D ⁽¹⁾	5.00	2.50	3.9			●	0.00-2.50	0.22-0.60	0.11-0.30
GIPA 5.00-2.50YZ-D ⁽²⁾	5.00	2.50	3.9			●	0.00-2.50	0.22-0.60	0.11-0.30

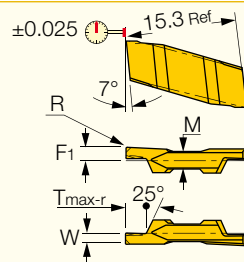
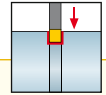
⁽¹⁾ Single-ended PCD tipped insert ⁽²⁾ Single-ended molded PCD chipformer tipped insert

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23)
• GHMR/L (A23) • GHSR/L (A15) • GHSR/L-JHP-SL (A14)



GIP-RX/LX

Precision Double-Ended Inserts for External Grooving Next to a Shoulder



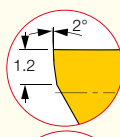
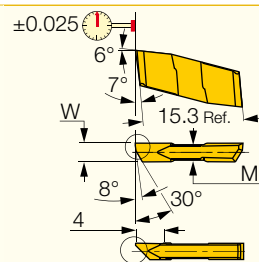
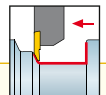
Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data
	W±0.02	R±0.03	T _{max-r}	M	F ₁	IC830	IC808	
GIP 0.80-0.00R/LX	0.80	0.00	1.60	2.4	1.6	●		0.02-0.04
GIP 1.00-0.00R/LX	1.04	0.00	2.00	2.4	1.6	●		0.02-0.05
GIP 1.19-0.1RX	1.19	0.10	2.00	2.4	1.6		●	0.03-0.05
GIP 1.57-0.15 R/LX	1.57	0.15	2.70	2.4	1.7	●		0.04-0.06
GIP 1.57-0.79RX	1.57	0.79	2.80	2.4	1.7		●	0.04-0.08
GIP 2.00-0.15 R/LX	2.00	0.15	3.00	2.4	1.7	●		0.05-0.08
GIP 2.39-0.15 RX	2.39	0.15	3.50	2.4	1.7	●		0.05-0.09
GIP 2.39-1.19RX	2.39	1.19	3.90	2.4	1.7		●	0.06-0.12

• Toolholder seat needs to be modified according to insert profile to ensure clearance.

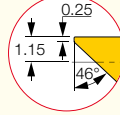
For tools, see pages: GHMPR/L (A23) • GHMR/L (A23).

GIPM-A46 / GIP-1250

Precision Back Turning Inserts, for External Machining on Swiss-Type and Automatic Machines



LX GIP 3.00-1250R



RX GIPM 2.35-A46R

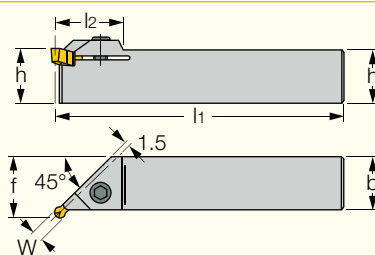
Designation	Dimensions			Tough ↔ Hard			Recommended Machining Data	
	W±0.05	R±0.03	M	IC328	IC908	IC20	a _p (mm)	f turn (mm/rev)
GIPM 2.35-A46L	2.35	0.05	2.2	●	●		0.10-1.00	0.02-0.15
GIPM 2.35-A46R	2.35	0.05	2.2	●	●		0.10-1.00	0.02-0.15
GIP 3.00-1250L	3.00	0.00	2.4	●		●	0.10-1.00	0.02-0.15
GIP 3.00-1250R	3.00	0.00	2.4	●		●	0.10-1.00	0.02-0.15

• Toolholder seat needs to be modified according to insert profile to ensure clearance. • For grooving, reduce cutting speed by 30% and feed by 50%.

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSL/L (A15) • GHSL/L-JHP-SL (A14).

GHMUR/L

External Holders for 45° Undercutting



Right-hand shown

Designation	W_{max}	h	b	l_1	l_2	f
GHMUR/L 16	4.80	16.0	16.0	112.00	25.0	19.0

• For $D > 100$ mm, GIP/GIF inserts can be used (clearance types UN, D or G are not required).

For inserts, see pages: GIMY-UN (A39) • GIP-UN (A40).

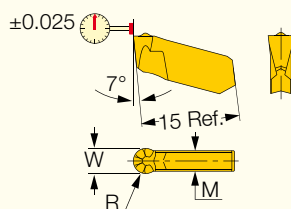
Spare Parts



Designation	Screw	Key
GHMUR/L	SR M6X16DIN912 12.9	HW 5.0

GIMY-UN

Utility Single-Ended Inserts for External Undercutting



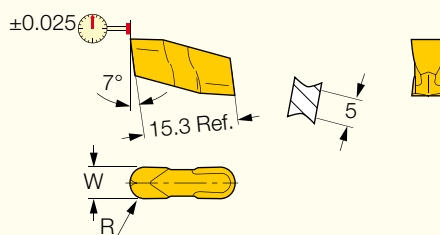
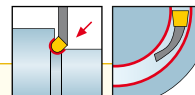
Designation	Dimensions				IC8250	Recommended Machining Data
	$W_{\pm 0.05}$	$R_{\pm 0.05}$	M	T_{max-r}		
GIMY 315-UN	3.00	1.50	2.4	2.00	●	f groove (mm/rev) 0.05-0.15
GIMY 420-UN	4.00	2.00	3.2	2.50	●	0.05-0.15

• For 45° undercutting on $D \geq 100$ mm, regular GIMY inserts may be used.

For tools, see pages: GHMUR/L (A39).

GIP-UN

Precision Double-Ended Inserts for External Undercutting



Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data
	W ± 0.05	R ± 0.05	M	T $_{max-r}$	IC830	IC8250	IC808	IC20	
GIP 3.00-1.50UN	3.00	1.50	2.4	4.00	●	●	●	●	0.05-0.15
GIP 4.00-2.0UN	4.00	2.00	3.2	4.00		●		●	0.05-0.15

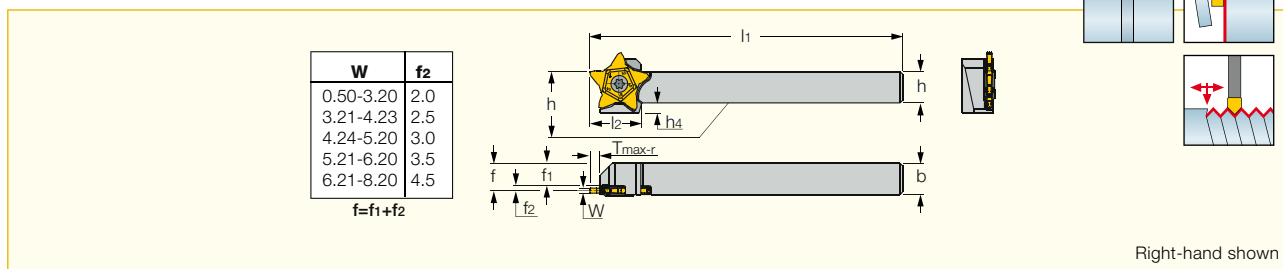
• Not recommended for turning. • For undercutting at 45° and D100 mm, other GIP inserts apply as well.

For tools, see pages: • GHDR/L (short pocket) (A24) • GHMPR/L (A23) • GHMR/L (A23) • GHMUR/L (A39).



PCHR/L-24

Grooving, Parting and Recessing Holders for Inserts with 5 Cutting Edges



Designation	h	b	W _{min}	W _{max}	f	T _{max-r} ⁽²⁾	l ₁	l ₂	h ₄	Insert
PCHR/L 10-24	10.0	10.0	0.50	3.20 ⁽¹⁾	8.5	6.50	120.00	19.5	6.0	PENTA 24
PCHR/L 12-24	12.0	12.0	0.50	3.20 ⁽¹⁾	10.5	6.50	120.00	19.5	4.0	PENTA 24
PCHR/L 16-24	16.0	16.0	0.50	3.20 ⁽¹⁾	14.5	6.50	120.00	19.5	-	PENTA 24

⁽¹⁾ Up to 6.2 mm width may be ordered on request. ⁽²⁾ For specific information, refer to insert data.

For inserts, see pages: PENTA 24-BSPT (A123) • PENTA 24-ISO (A117) • PENTA 24-MT (A114) • PENTA 24-UN (A119) • PENTA 24-W (A121) • PENTA 24-WT (A113) • PENTA 24N-C (A86) • PENTA 24N-C (full radius) (A87) • PENTA 24N-J (A44) • PENTA 24N-J (full radius) (A45) • PENTA 24N-PF/P (A45) • PENTA 24N-Z (A46) • PENTA 24R-C (A87) • PENTA 24R-P (A84) • PENTA 24R/L-J (A82) • PENTA 24R/L-Z (A85).

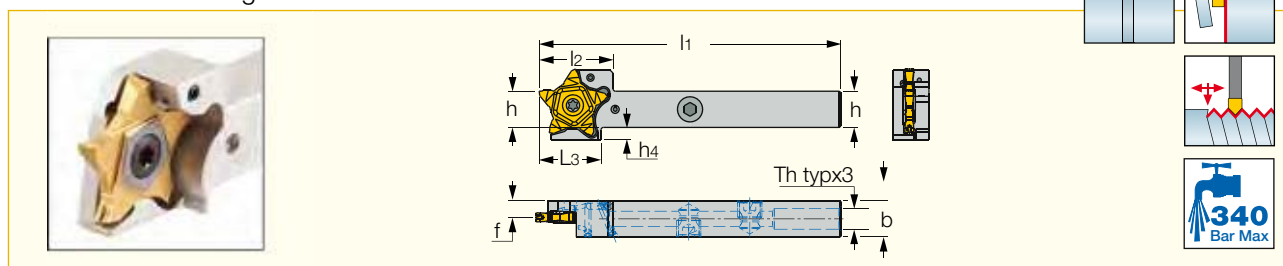
Spare Parts

Designation	Screw	Key
PCHL 10-24	SR 16-212-01397L	T-2010/5
PCHR 10-24	SR 16-212-01397	T-2010/5
PCHL 12-24	SR 16-212-01397L	T-2010/5
PCHR 12-24	SR 16-212-01397	T-2010/5
PCHL 16-24	SR 16-212-01397L	T-2010/5
PCHR 16-24	SR 16-212-01397	T-2010/5

PENTACUT • JETCUT

PCHR/L-24-JHP

Grooving, Parting and Recessing Holders for PENTA Inserts with Channels for High Pressure Coolant



Designation	h	b	W _{min}	W _{max} ⁽¹⁾	f	l ₁	l ₂	L ₃	h ₄	T _h	T _{max-r} ⁽²⁾	Insert
PCHR/L 12-24-JHP	12.0	12.0	0.50	3.20	5.5	100.00	24.5	20.50	4.0	UNF 5/16-24	6.50	PENTA 24
PCHR/L 16-24-JHP	16.0	16.0	0.50	3.20	9.5	120.00	24.5	0.00	-	UNF 5/16-24	6.50	PENTA 24

⁽¹⁾ Up to 6.2 mm width may be ordered on request. ⁽²⁾ For specific information, refer to insert data.

For inserts, see pages: PENTA 24-BSPT (A123) • PENTA 24-ISO (A117) • PENTA 24-MT (A114) • PENTA 24-UN (A119) • PENTA 24-W (A121) • PENTA 24-WT (A113) • PENTA 24N-C (A86) • PENTA 24N-C (full radius) (A87) • PENTA 24N-J (A44) • PENTA 24N-J (full radius) (A45) • PENTA 24N-PF/P (A45) • PENTA 24N-Z (A46) • PENTA 24R-C (A87) • PENTA 24R-P (A84) • PENTA 24R/L-J (A82) • PENTA 24R/L-Z (A85).

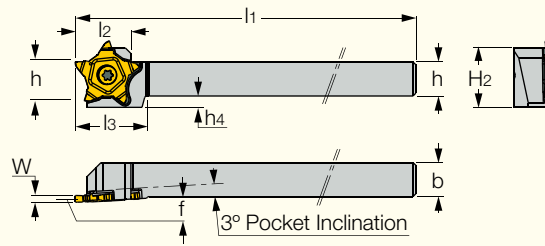
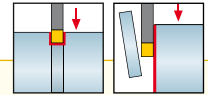
For Accessories, see pages: B134-135.

Spare Parts

Designation	Screw	Key	Plug	Plug Key
PCHL 12-24-JHP	SR M2.5X2.5DIN913 45H HW 5/32"	SR 5/16UNF TL360	HW 5/32"	HW 5/32"
PCHR 12-24-JHP	SR M2.5X2.5DIN913 45H HW 5/32"	SR 5/16UNF TL360	HW 5/32"	HW 5/32"
PCHL 16-24-JHP		HW 5/32"	SR 5/16UNF TL360	HW 5/32"
PCHR 16-24-JHP		HW 5/32"	SR 5/16UNF TL360	HW 5/32"

PCHRS/LS

Holders with 5 Edged Inserts for Grooving, Parting and Recessing Next to High Shoulders



Right-hand shown

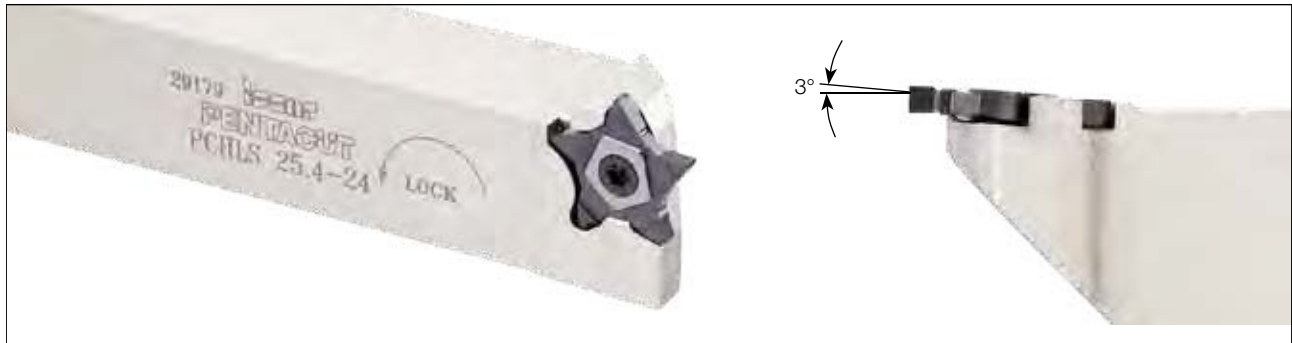
Designation	h	b	W _{min}	W _{max}	l ₁	l ₂	L ₃	h ₄	H ₂
PCHR/LS 12-24	12.0	12.0	0.80	4.80	120.00	19.5	24.50	4.0	21.0
PCHR/LS 16-24	16.0	16.0	0.80	4.80	120.00	19.5	-	-	21.0

For inserts, see pages: PENTA 24N-RS/LS (A47).

Spare Parts



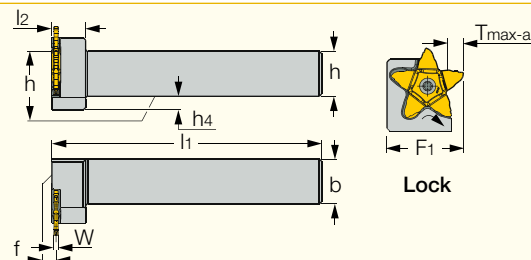
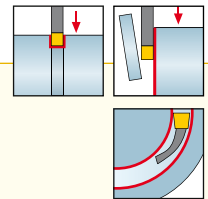
Designation	Screw	Key
PCHLS 12-24	SR 16-212-01397LS	T-2010/5
PCHRS 12-24	SR 16-212-01397RS	T-2010/5
PCHLS 16-24	SR 16-212-01397LS	T-2010/5
PCHRS 16-24	SR 16-212-01397RS	T-2010/5



PENTACUT

PCHPR/L

Facing, Grooving, Parting and Recessing Perpendicular Holders for Inserts with 5 Cutting Edges



Right-hand shown

Designation	h	b	W _{min}	W _{max}	f	F ₁	l ₁	l ₂	h ₄	T _{max-a} ⁽¹⁾
PCHPR/L 16-24	16.0	16.0	0.50	3.20 ⁽²⁾	1.5 ⁽³⁾	23.5	120.00	11.5	-	6.50

⁽¹⁾ For specific information, refer to insert data. ⁽²⁾ Up to 6.2 mm width may be ordered on request. ⁽³⁾ Valid for inserts with W<3.2 mm

For inserts, see pages: PENTA 24-BSPT (A123) • PENTA 24-ISO (A117) • PENTA 24-MT (A114) • PENTA 24-UN (A119) • PENTA 24-W (A121) • PENTA 24-WT (A113) • PENTA 24N-C (A86) • PENTA 24N-C (full radius) (A87) • PENTA 24N-J (A44) • PENTA 24N-J (full radius) (A45) • PENTA 24N-PF/P (A45) • PENTA 24N-Z (A46) • PENTA 24R-C (A87) • PENTA 24R-P (A84) • PENTA 24R/L-J (A82) • PENTA 24R/L-Z (A85)

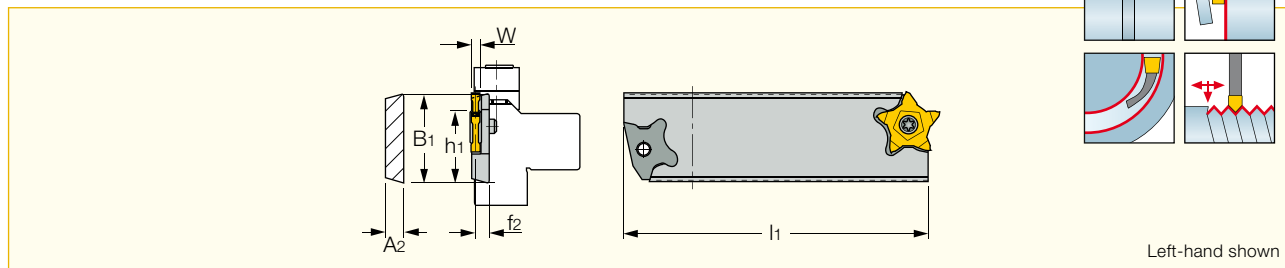
Spare Parts



Designation	Screw	Key
PCHPL 16-24	SR 16-212-01397	T-20/5
PCHPR 16-24	SR 16-212-01397L	T-20/5

PCHBR/L

Double-Ended Parting and Grooving Blades for PENTACUT Inserts

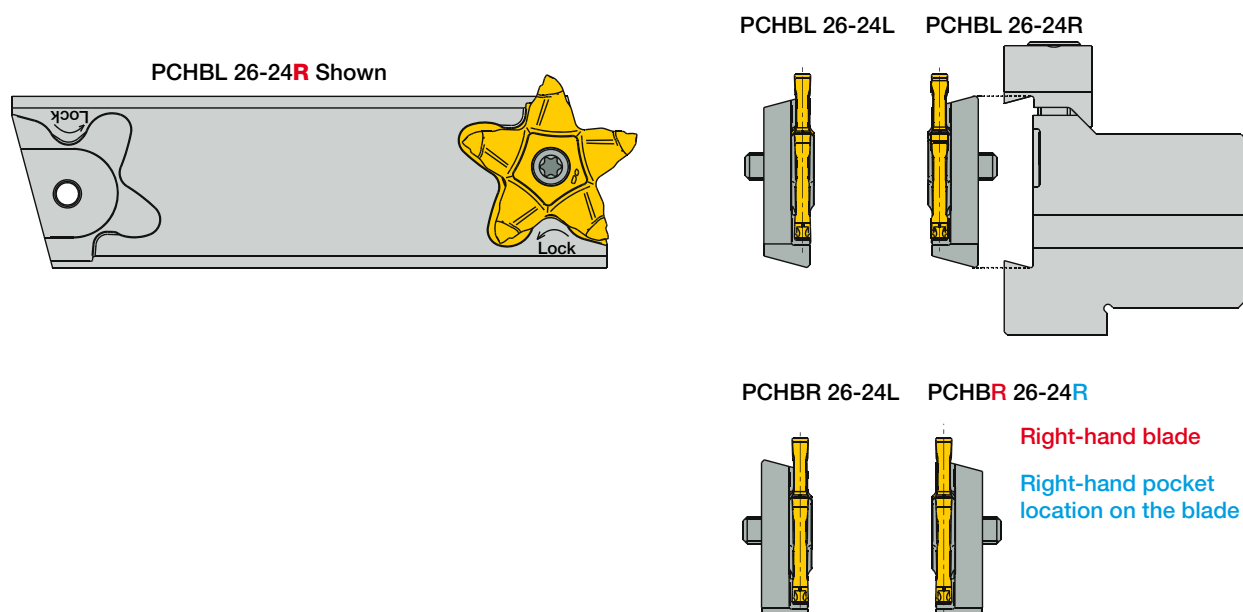


Designation	B ₁	W _{min}	W _{max}	h ₁	f ₂ (²)	l ₁	A ₂	Insert
PCHBR/L 26-24R	26.0	0.50	6.20	21.4	7.00	110.00	8.5	PENTA 24
PCHBR 26-24L	26.0	0.50	6.20	21.4	7.00	110.00	8.5	PENTA 24
PCHBR/L 26-34R ⁽¹⁾	26.0	1.50	4.00	21.4	7.15	110.00	8.5	PENTA 34
PCHBR 26-34L ⁽¹⁾	26.0	1.50	4.00	21.4	7.15	110.00	8.5	PENTA 34

• For insert/blade orientation, see the following drawings

(¹) Single pocket blade (²) To the center of inserts up to 4.15 mm width

For inserts, see pages: PENTA 24-BSPT (A123) • PENTA 24-ISO (A117) • PENTA 24-MT (A114) • PENTA 24-UN (A119) • PENTA 24-W (A121) • PENTA 24-WT (A113) • PENTA 24N-C (A86) • PENTA 24N-C (full radius) (A87) • PENTA 24N-J (A44) • PENTA 24N-J (full radius) (A45) • PENTA 24N-PF/P (A45) • PENTA 24N-Z (A46) • PENTA 24R-C (A87) • PENTA 24R-P (A84) • PENTA 24R/L-J (A82) • PENTA 24R/L-Z (A85)



Spare Parts

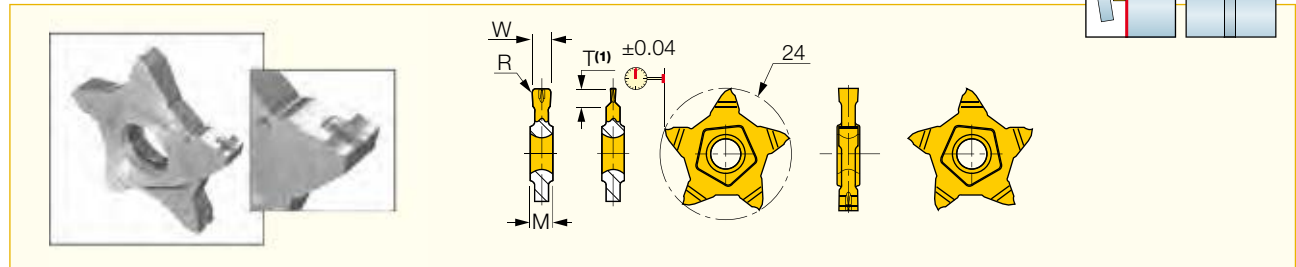
Designation	Screw	Key
PCHBR/L 26-24R	SR 16-212-01397L	T-2010/5
PCHBR 26-24L	SR 16-212-01397	
PCHBR/L 26-34R	SR 16-212-01397	T-2010/5

Identification System for Standard Inserts

PENTA	24	N	150	J	010
Family name	Circular circumference of the insert	Insert lead angle (K) N, R, L	Cutting edge width W(mm)x100	Chipbreaker style J, Z	Corner radius R (mm)x100 for neutral insert. (K=0) Or lead angle for right- or left-hand inserts. (eg. 15D=15°)

PENTA 24N-J

Parting and Grooving Insert with 5 Cutting Edges, for Soft Materials, Parting of Tubes, Small and Thin-Walled Parts



Designation	Dimensions			Tough ↔ Hard		Recommended Machining Data f groove (mm/rev)
	W±0.02	R	T _{max-r(1)}	IC908	IC1008	
PENTA 24N050J000	0.50	0.00	1.00	●		0.02-0.04
PENTA 24N050J004	0.50	0.04	2.50		●	0.02-0.05
PENTA 24N080J000	0.80	0.00	1.60	●		0.02-0.05
PENTA 24N100J004	1.00	0.04	3.50	●		0.03-0.07
PENTA 24N100J006	1.00	0.06	3.50		●	0.03-0.07
PENTA 24N104J000	1.04	0.00	2.00	●		0.02-0.07
PENTA 24N120J000	1.20	0.00	2.00	●		0.03-0.07
PENTA 24N125J010	1.25	0.10	2.00	●		0.03-0.07
PENTA 24N140J000	1.40	0.00	2.00	●		0.03-0.08
PENTA 24N147J000	1.47	0.00	2.50	●		0.03-0.08
PENTA 24N150J010	1.50	0.10	5.00	●	●	0.03-0.10
PENTA 24N157J015	1.57	0.15	3.00	●		0.03-0.12
PENTA 24N170J010	1.70	0.10	3.00	●		0.03-0.12
PENTA 24N178J018	1.78	0.18	3.00	●		0.04-0.12
PENTA 24N185J015	1.85	0.15	3.00	●		0.04-0.12
PENTA 24N196J015	1.96	0.15	3.00	●		0.04-0.12
PENTA 24N200J020	2.00	0.20	6.00	●	●	0.04-0.12
PENTA 24N222J015	2.22	0.15	3.50	●		0.04-0.16
PENTA 24N230J020	2.30	0.20	3.50	●		0.04-0.16
PENTA 24N239J015	2.39	0.15	5.00	●		0.04-0.16
PENTA 24N247J020	2.47	0.20	5.00	●		0.04-0.16
PENTA 24N270J010	2.70	0.10	5.00	●		0.04-0.16
PENTA 24N287J020	2.87	0.20	6.50	●		0.04-0.16
PENTA 24N300J000	3.00	0.00	6.50	●		0.04-0.10
PENTA 24N300J020	3.00	0.20	6.50	●		0.04-0.16
PENTA 24N300J040	3.00	0.40	6.50	●		0.04-0.16
PENTA 24N315J015	3.15	0.15	6.50	●		0.04-0.16
PENTA 24N318J020	3.18	0.20	6.50	●		0.04-0.16
PENTA 24N330J010	3.30	0.10	6.50	●		0.04-0.16
PENTA 24N348J020	3.48	0.20	6.50	●		0.04-0.18
PENTA 24N356J020	3.56	0.20	6.50	●		0.04-0.18
PENTA 24N374J020	3.74	0.20	6.50	●		0.04-0.18
PENTA 24N398J020	3.98	0.20	6.50	●		0.04-0.18
PENTA 24N400J040	4.00	0.40	6.50	●		0.04-0.18
PENTA 24N423J010	4.23	0.10	6.50	●		0.04-0.18

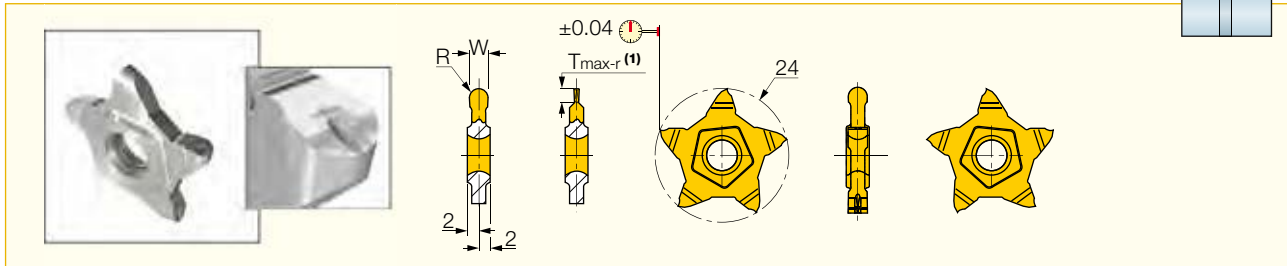
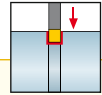
● Recessing is possible only with 2.39 mm and wider inserts.

(1) For grooving and parting depth relative to part diameter, see page (A46)

For tools, see pages: ● PCHBR/L (A43) ● PCHPR/L (A42) ● PCHR/L-24 (A41) ● PCHR/L-24-JHP (A41).

PENTA 24N-J (full radius)

Precision Grooving Pentagonal Full Radius Insert for Soft Materials



Designation	Dimensions			IC908	Recommended Machining Data
	W ± 0.02	R	T $_{max-r}$ ⁽¹⁾		f groove (mm/rev)
PENTA 24N100J050	1.00	0.50	3.50	●	0.03-0.07
PENTA 24N120J060	1.20	0.60	2.00	●	0.03-0.07
PENTA 24N140J070	1.40	0.70	2.00	●	0.05-0.08
PENTA 24N157J079	1.57	0.79	3.00	●	0.05-0.08
PENTA 24N200J100	2.00	1.00	3.00	●	0.05-0.12
PENTA 24N239J120	2.39	1.20	5.00	●	0.06-0.16
PENTA 24N300J150	3.00	1.50	6.50	●	0.06-0.20
PENTA 24N318J159	3.18	1.59	6.50	●	0.06-0.20
PENTA 24N400J200	4.00	2.00	6.25	●	0.06-0.20
PENTA 24N478J239	4.78	2.39	6.15	●	0.06-0.20

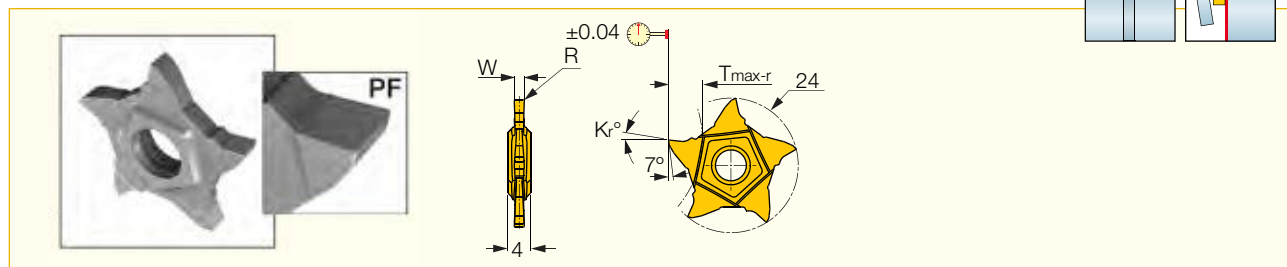
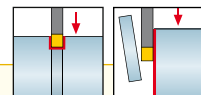
• Recessing is possible only with 2.39 mm and wider inserts.

⁽¹⁾ For grooving depth relative to part diameter, see page A46.

For tools, see pages: PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).

PENTA 24N-PF/P

Parting and Precision Grooving Pentagonal Insert with a High Positive Flat Rake



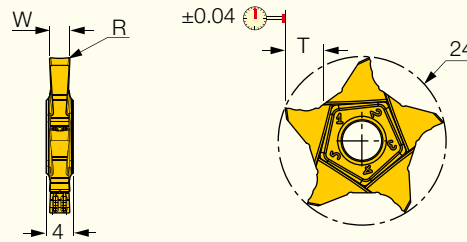
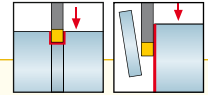
Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data
	W ± 0.02	R	R $\pm$ toler	T $_{max-r}$ ⁽¹⁾	K $_r$ °	IC908	IC1008	f groove (mm/rev)
PENTA 24N100P005	1.00	0.05	0.020	3.50	12.0	●	●	0.02-0.05
PENTA 24N100PF010	1.00	0.10	0.020	4.00	6.0	●	●	0.03-0.06
PENTA 24N150P005	1.50	0.05	0.020	5.00	12.0	●	●	0.02-0.07
PENTA 24N150PF020	1.50	0.20	0.030	6.00	6.0	●	●	0.03-0.09
PENTA 24N200P005	2.00	0.05	0.020	6.00	12.0	●	●	0.02-0.08
PENTA 24N200PF020	2.00	0.20	0.030	6.50	6.0	●	●	0.04-0.10
PENTA 24N239PF015	2.39	0.15	0.030	6.50	6.0	●	●	0.04-0.14
PENTA 24N250PF020	2.50	0.20	0.030	6.50	6.0	●	●	0.04-0.14
PENTA 24N300PF020	3.00	0.20	0.030	6.50	6.0	●	●	0.04-0.14

⁽¹⁾ For grooving and parting depth relative to part diameter, see page A46.

For tools, see pages: PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).

PENTA 24N-Z

Insert with 5 Cutting Edges, for Grooving and Parting of Tubes,
Small and Thin-Walled Parts

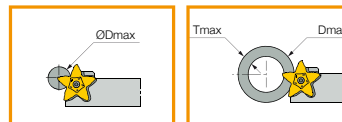


Designation	Dimensions			IC908	Recommended Machining Data
	W ± 0.02	R	T $_{max-r^{(1)}}$		f groove (mm/rev)
PENTA 24N150Z010	1.50	0.10	5.00	●	0.05-0.08
PENTA 24N200Z020	2.00	0.20	6.40	●	0.04-0.12
PENTA 24N300Z020	3.00	0.20	6.40	●	0.04-0.16

• Cutting edge with high positive rake, suitable for parting of tubes, thin walled parts and for small diameters • Suitable for machining soft materials and bearing steel at low to medium feeds

⁽¹⁾ For grooving and parting depth relative to part diameter, see below

For tools, see pages: • PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).



W ± 0.02	T $_{max}^{(3)}$	T $_{max}$ / D $_{max}$	D $_{max}$ as a Function of Parting / Grooving Depth (T) for PENTA 24 Inserts							
			T ≤ 3.0	T ≤ 3.5	T ≤ 4.0	T ≤ 4.5	T ≤ 5.0	T ≤ 5.5	T ≤ 6.5	T ≤ 6.4
W=0.50 ⁽¹⁾	1.0	1.0 / N.L.	-	-	-	-	-	-	-	-
W=0.50 ⁽²⁾	2.5			250						
W=0.80	1.6	1.6 / N.L.	-	-	-	-	-	-	-	-
W=1.00	3.5		N.L.	250	-	-	-	-	-	-
1.04 $\leq$ W $\leq$ 1.40	2.0	2.0 / N.L.	-	-	-	-	-	-	-	-
W=1.47	2.5	2.5 / N.L.	-	-	-	-	-	-	-	-
W=1.50	5.0		N.L.	470	210	70	30	-	-	-
1.57 $\leq$ W $\leq$ 1.96	3.0		N.L.	-	-	-	-	-	-	-
W=2.00	6.0 ⁽⁴⁾		N.L.	470	210	130	75	45	20	-
2.22 $\leq$ W $\leq$ 2.30	3.5		N.L.	250	-	-	-	-	-	-
2.39 $\leq$ W $\leq$ 2.50	5.0		N.L.	470	210	70	30	-	-	-
2.70 $\leq$ W $\leq$ 3.18	6.4		N.L.	470	210	135	100	70	40	20

⁽¹⁾ Refers to PENTA 24N050J000 - a precision grooving insert.

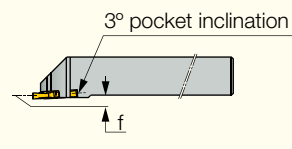
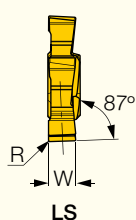
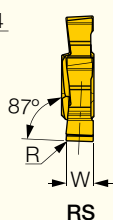
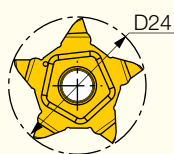
⁽²⁾ Refers to PENTA 24N050J004 - a parting insert.

⁽³⁾ D $_{max}$ for parting = 2 x T $_{max}$

⁽⁴⁾ For full radius insert , T $_{max}$ = 3.0, D $_{max}$ = No limit

PENTA 24N-RS/LS

Parting and Precision Grooving Pentagonal Inserts,
for Next to High Shoulder Applications

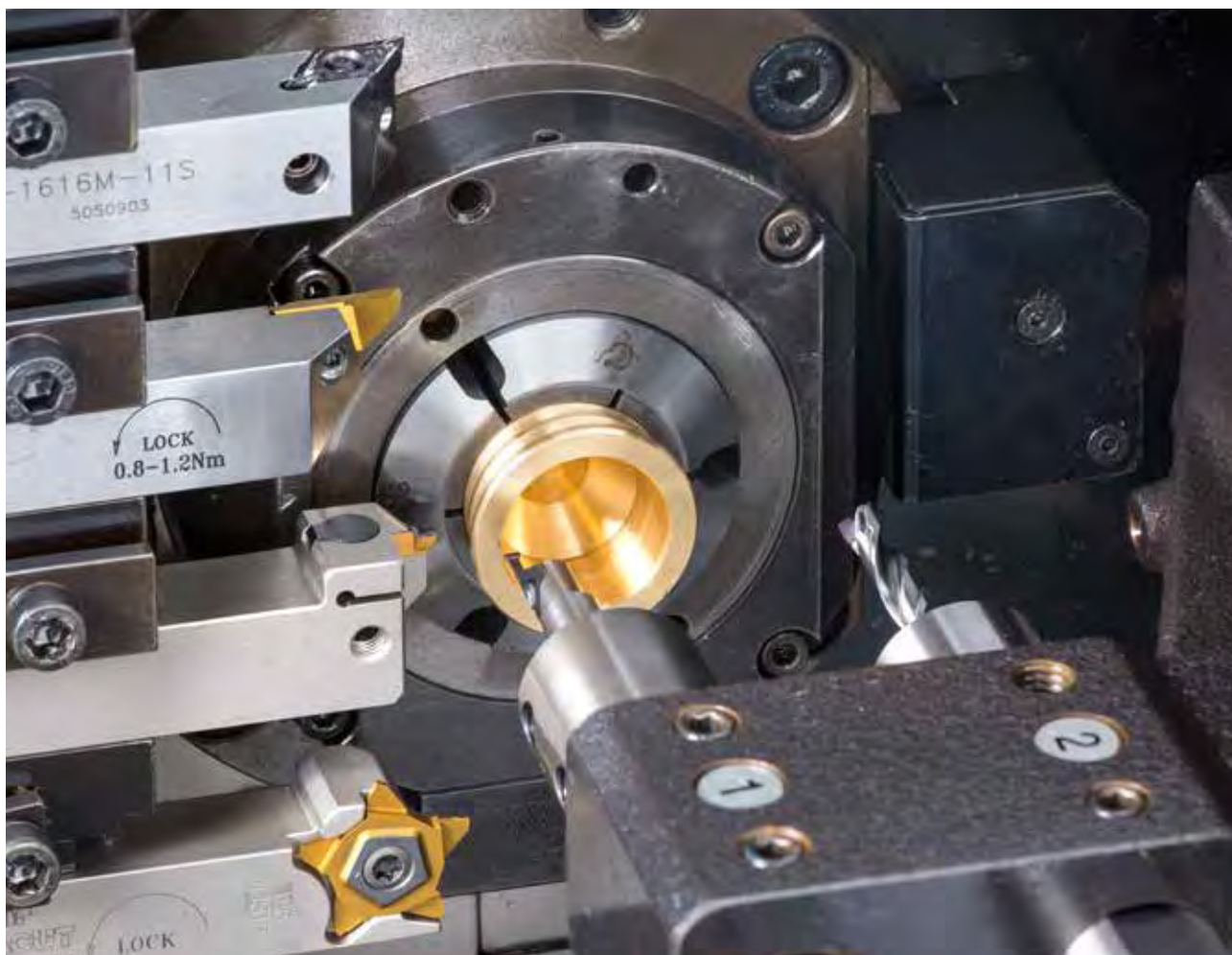


f - refer to inserts data

Designation	Dimensions						IC908	Recommended Machining Data
	W ± 0.02	R	T $_{max-r}$	D $_{max}$	f			f groove (mm/rev)
PENTA 24N080NF010R/LS	0.80	0.10	1.60	- ⁽¹⁾	1.6	●		0.03-0.05
PENTA 24N100NF010R/LS	1.00	0.10	1.80	- ⁽¹⁾	1.5	●		0.03-0.06
PENTA 24N119NF010R/LS	1.19	0.10	2.00	- ⁽¹⁾	1.4	●		0.03-0.06
PENTA 24N157NF020R/LS	1.57	0.20	3.00	- ⁽¹⁾	1.2	●		0.03-0.08
PENTA 24N157NF079R/LS	1.57	0.79	3.00	- ⁽¹⁾	1.2	●		0.03-0.08
PENTA 24N200NF020R/LS	2.00	0.20	3.00	- ⁽¹⁾	1.0	●		0.03-0.10
PENTA 24N239NF020R/LS	2.39	0.20	5.00	40.0	0.8	●		0.03-0.12
PENTA 24N239NF119R/LS	2.39	1.19	5.00	40.0	0.8	●		0.03-0.12
PENTA 24N300NF020R/LS	3.00	0.20	6.20	16.0	0.5	●		0.04-0.14
PENTA 24N318NF020R/LS	3.18	0.20	6.50	13.0	0.4	●		0.04-0.14
PENTA 24N318NF159R/LS	3.18	1.59	6.50	13.0	0.4	●		0.04-0.14
PENTA 24N400NF020R/LS	4.00	0.20	6.50	13.0	1.0	●		0.04-0.16
PENTA 24N480NF020R/LS	4.80	0.20	6.50	13.0	1.6	●		0.04-0.16

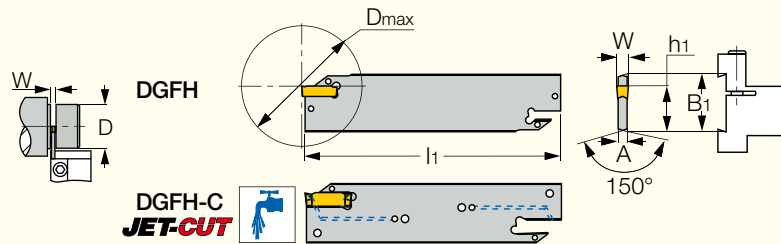
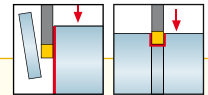
⁽¹⁾ No limit

For tools, see page: PCHRS/LS (A42).



PARTING





Designation	B ₁	W _{min}	W _{max}	A	l ₁	h ₁	D _{max}	Insert
DGFH 26-1.4	26.0	1.40	1.40	2.50 ⁽⁴⁾	110.00	21.4	26.0	DG. 14..
DGFH 26-2 ⁽¹⁾	26.0	1.90 ⁽³⁾	2.50	1.60	110.00	21.4	39.0 ⁽⁵⁾	DG. 1.../DG. 2...
DGFH 26-3 ⁽¹⁾	26.0	3.00 ⁽³⁾	3.18	2.40	110.00	21.4	39.0 ⁽⁵⁾	DG. 1.../DG. 3...
DGFH 26C-3 ⁽²⁾	26.0	3.00	3.18	2.40	110.00	21.4	39.0 ⁽⁵⁾	DG. 3..C
DGFH 26-4	26.0	4.00	4.00	3.20	110.00	21.4	80.0	DG. 4.../GRIP 4...

• DG..1.0 insert can be mounted into pocket sizes 2 and 3. In that case the pocket width has to be modified

⁽¹⁾ For Dmax 50 mm, use single-ended insert (should be modified by the user). ⁽²⁾ Blades with frontal coolant holes (JET-CUT)

• For Dmax 50 mm, use single-ended insert (should be modified by the user). ⁽³⁾ For DG. 1... insert, modify holder ⁽⁴⁾ Thickness at the D.O.C. area is 1.0 mm

⁽⁵⁾ Maximum diameter with double-sided inserts.

For inserts, see pages: DGN-MF (A65) • DGN/DGNC/DGNM-C (A64) • DGR/L-C DGRC/LC-C (A64) • DGN/DGNM-J/JS/JT (A65) • DGR/L-J/JS (A66) • DGN-P (A68) • DGN-UT/UA (A68) • DGN-WP (A69) • DGN-Z (A67) • DGR-P (A69) • DGR-WP (A70) • DGR-Z/ZS (A67) • GRIP (A19) • GRIP (full radius) (A20).

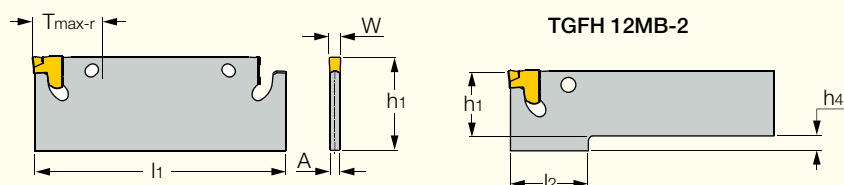
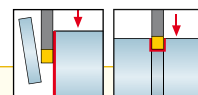
For holders, see pages: SGTBU/SGTBN (A88) .

Spare Parts



Designation	Extractor	Sealing Screw	Cooling Tube	Pipe Fitting	Pipe Fitting 1	Pipe Fitting 2
DGFH 26-1.4	EDG 23B*					
DGFH 26-2	EDG 23A*					
DGFH 26-3	EDG 23A*					
DGFH 26C-3	EDG 23A*	SGC 340	SGCU 341*	CGF 343*	CF 343*	CGM 343*
DGFH 26-4	EDG 23A*					

* (Optional, should be ordered separately)



Designation	W _{min}	W _{max}	A	l ₁	h ₁	h ₄	l ₂	T _{max-r}	Insert
TGFH 12MB-2 L58	1.80	2.40	1.65	58.00	12.2	2.8	15.5	11.50	TAG 2
TGFH 17MB-2 L58	1.80	2.40	1.65	58.00	17.2	-	-	11.50	TAG 2
TGFH 22MB-2 L58	1.80	2.40	1.65	58.00	22.2	-	-	11.50	TAG 2
TGFH 17MB-3	2.80	3.50	2.50	64.00	17.2	-	-	12.00	TAG 3
TGFH 22MB-3	2.80	3.50	2.50	64.00	22.2	-	-	12.00	TAG 3
TGFH 22MB-3-L84	2.80	3.50	2.50	84.00	22.2	-	-	16.00	TAG 3
TGFH 17MB-4	3.70	4.50	3.40	70.00	17.2	-	-	14.00	TAG 4
TGFH 22MB-4	3.70	4.50	3.40	70.00	22.2	-	-	14.00	TAG 4
TGFH 22MB-4-L90	3.70	4.50	3.40	90.00	22.2	-	-	17.00	TAG 4

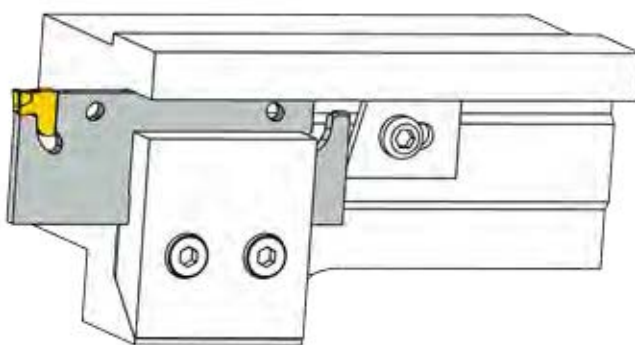
For inserts, see pages: TAG N-A (A74) • TAG N-C/W/M (A73) • TAG N-J/JS/JT (A75) • TAG N-LF (A76) • TAG N-MF (A73) • TAG N-UT (A74) • TAG R/L-C (A75) • TAG R/L-J/JS (A76).

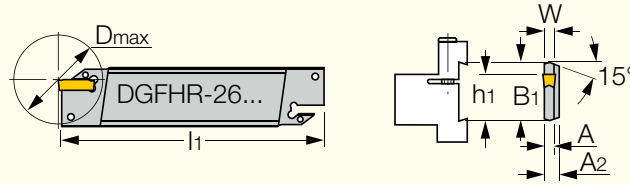
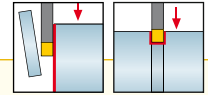
Spare Parts



Designation	Extractor
TGFH 12MB-2 L58	ETG 2*
TGFH 17MB-2 L58	ETG 2*
TGFH 22MB-2 L58	ETG 2*
TGFH 17MB-3	ETG 3-4-SH*
TGFH 22MB-3	ETG 3-4-SH*
TGFH 22MB-3-L84	ETG 3-4-SH*
TGFH 17MB-4	ETG 3-4-SH*
TGFH 22MB-4	ETG 3-4-SH*
TGFH 22MB-4-L90	ETG 3-4-SH*

* (Optional, should be ordered separately)





Designation	B ₁	W _{min} ⁽¹⁾	W _{max}	A ₂	A	l ₁	h ₁	D _{max} ⁽²⁾	Machines	Insert
DGFHR 26T16-2	26.0	1.90	2.50	8.0	1.70	110.00	21.4	42.0	TNS-30	DG. 1.../DG. 2..
DGFHR/L 26T23-2	26.0	1.90	2.50	8.0	1.60	110.00	21.4	42.0	TNS-30/112	DG. 1.../DG. 2..
DGFHR/L 26T16-3	26.0	3.00	3.18	8.0	2.40	110.00	21.4	30.0	TNS-30	DG. 1.../DG. 3..
DGFHR/L 26T23-3	26.0	3.00	3.18	8.0	2.40	110.00	21.4	42.0	TNS-30/42	DG. 1.../DG. 3..

• Insert limit is T_{max}=18 mm. If deeper penetration is required, the insert should be modified into single-ended by the user.

• DG..1.0 insert can be mounted into pocket sizes 2 and 3. In that case the pocket width has to be modified

⁽¹⁾ For DG: 1.0 insert - modify holder. ⁽²⁾ The specified limit refers to the tool.

For inserts, see pages: DGN-LF/LFT (A66) • DGN-P (A68) • DGN-UT/UA (A68) • DGN-WP (A69) • DGN-Z (A67) • DGN/DGNC/DGNM-C (A64) • DGN/DGNM-J/JS/JT (A65) • DGR-P (A69) • DGR-WP (A70) • DGR-Z/ZS (A67) • DGR/L-C DGRC/LC-C (A64) • DGR/L-J/JS (A66).

For holders, see pages: • SGTBU/SGTBN (A88) .

Spare Parts

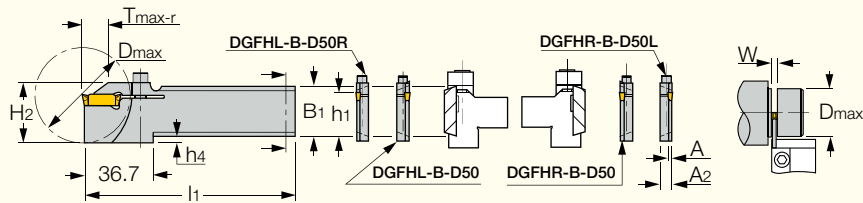
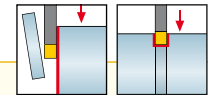


Designation	Extractor
DGFHR/L 26T	EDG 23A*

* (Optional, should be ordered separately)

DGFHR/L-B-D..(R/L)

Reinforced Type Blades with Screw Clamping



Designation	B ₁ ⁽³⁾	W _{min} ⁽⁴⁾	W _{max}	A	A ₂	l ₁	H ₂	h ₁	h ₄	T _{max-r}	D _{max} ⁽⁵⁾	Insert
DGFHR/L 26B-2D50 ⁽¹⁾	26.0	1.90	2.50	1.60	8.0	110.00	33.7	21.4	3.6	18.00	42.0	DG. 1.../DG. 2..
DGFHL 26B-2D50R ⁽²⁾	26.0	1.90	2.50	1.60	8.0	110.00	31.5	21.4	3.7	18.00	50.0	DG. 1.../DG. 2..
DGFHR 26B-2D50L ⁽²⁾	26.0	1.90	2.50	1.60	8.0	110.00	31.5	21.4	3.7	18.00	50.0	DG. 1.../DG. 2..
DGFHR/L 26B-3D50 ⁽¹⁾	26.0	3.00	3.18	2.40	8.0	110.00	31.5	21.4	3.7	18.00	30.0	DG. 1.../DG. 3..
DGFHL 26B-3D50R ⁽²⁾	26.0	3.00	3.18	2.40	8.0	110.00	31.5	21.4	3.7	18.00	50.0	DG. 1.../DG. 3..
DGFHR 26B-3D50L ⁽²⁾	26.0	3.00	3.18	2.40	8.0	110.00	31.5	21.4	3.7	18.00	50.0	DG. 1.../DG. 3..

• Insert limit is T_{max}=18 mm. If deeper penetration is required, the insert should be modified into single-ended by the user. • DG..1.0 insert can be mounted into pocket sizes 2 and 3. In that case the pocket width has to be modified

⁽¹⁾ For Traub machines, model TNC 30, TNM 28, TNS 26/30/42/112, TNA 300, TNK 260. ⁽²⁾ For Tornos Bechler, Emco 2000/20, 2000/26 machines.

⁽³⁾ Mounted on all ISCAR standard blocks. ⁽⁴⁾ For DG: 1.0 insert - modify holder. ⁽⁵⁾ The specified limit refers to the tool.

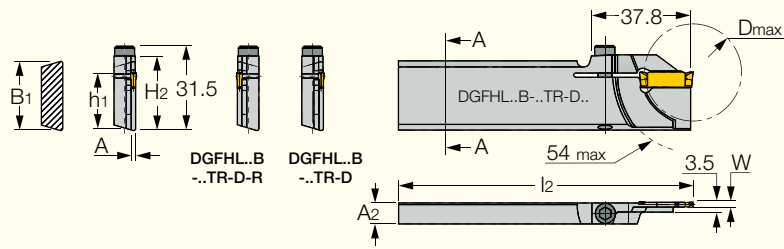
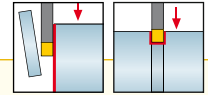
For inserts, see pages: DGN-LF/LFT (A66) • DGN-P (A68) • DGN-UT/UA (A68) • DGN-WP (A69) • DGN-Z (A67) • DGN/DGNC/DGNM-C (A64) • DGN/DGNM-J/JS/JT (A65) • DGR-Z/ZS (A67) • DGR/L-C DGRC/LC-C (A64).

For holders, see pages: • SGTBU/SGTBN (A88) .

Spare Parts



Designation	Screw	Key
DGFHR/L-B-D..(R/L)	SR M4X20DIN912 12.9	HW 3.0



Designation	B ₁ ⁽²⁾	W _{min}	W _{max}	A	A ₂	l ₁	H ₂	h ₁	D _{max} ⁽³⁾	Insert
DGFHL 26B-1.5TR-D20 ⁽¹⁾	26.0	1.00	1.50	1.20	7.9	110.00	27.9	21.4	20.0	DG. 1.../DG. 15..
DGFHL 26B-2TR-D36	26.0	1.90 ⁽⁴⁾	2.50	1.60	7.9	110.00	27.9	21.4	36.0	DG. 1.../DG. 2..
DGFHL 26B-2TR-D36R	26.0	1.90 ⁽⁴⁾	2.50	1.60	7.9	110.00	27.9	21.4	36.0	DG. 1.../DG. 2..
DGFHL 26B-3TR-D36	26.0	3.00 ⁽⁴⁾	3.18	2.40	7.9	110.00	27.9	21.4	36.0	DG. 1.../DG. 3..
DGFHL 26B-3TR-D36R	26.0	3.00 ⁽⁴⁾	3.18	2.40	7.9	110.00	27.9	21.4	36.0	DG. 1.../DG. 3..

• Insert limit is T_{max}=18 mm. If deeper penetration is required, the insert should be modified into single-ended by the user. • DG..1.0 insert can be mounted into pocket sizes 2 and 3. In that case the pocket width has to be modified

⁽¹⁾ Do not use DG.. 1.4 on this tool! ⁽²⁾ Mounted on all ISCAR standard blocks. ⁽³⁾ The specified limit refers to the tool. ⁽⁴⁾ For DG: 1.0 insert - modify holder.

For inserts, see pages: DGN-LF/LFT (A66) • DGN-P (A68) • DGN-UT/UA (A68) • DGN-WP (A69) • DGN-Z (A67) • DGN/DGNC/DGNM-C (A64) • DGN/DGNM-J/JS/JT (A65) • DGR-Z/ZS (A67) • DGR/L-C DGR/LC-C (A64) • DGR/L-J/JS (A66).

Spare Parts



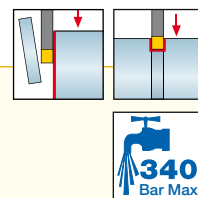
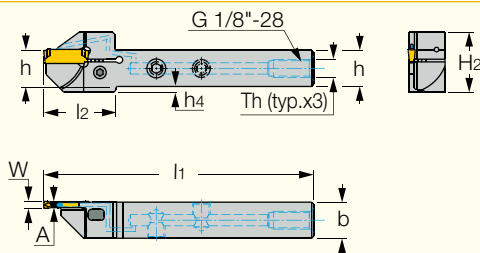
Designation	Screw	Key	Screw 1
DGFHL 26B-1.5TR-D20	SR M5X20-01172	HW 3.0	
DGFHL 26B-2TR-D36	SR M5X20-01172	HW 3.0	SR 76-1637*
DGFHL 26B-2TR-D36R	SR M4X20DIN912 12.9	HW 3.0	
DGFHL 26B-3TR-D36	SR M5X20-01172	HW 3.0	
DGFHL 26B-3TR-D36R	SR M5X20-01172	HW 3.0	SR 76-1637*

* (Optional, should be ordered separately)



DGTR/L-B-D-JHP-SL

Parting and Grooving, Short Head Tools with Channels for High Pressure Coolant, for CNC and Swiss Automatics



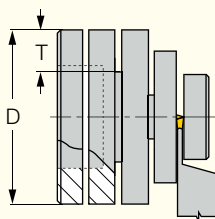
Designation	W _{min}	W _{max}	h	b	A	l ₂	D _{max}	H ₂	h ₄	l ₁
DGTR/L 12B-2D24-JHP-SL	1.90	2.50	12.0	12.0	1.60	29.4	24.0	25.7	6.5	100.00
DGTR/L 16B-2D35-JHP-SL	1.90	2.50	16.0	16.0	1.60	32.0	35.0	26.7	2.6	120.00
DGTR/L 12B-3D24-JHP-SL	3.00	3.18	12.0	12.0	2.40	29.4	24.0	25.7	6.5	100.00
DGTR/L 16B-3D35-JHP-SL	3.00	3.18	16.0	16.0	2.40	32.0	35.0	26.7	2.6	120.00

For inserts, see pages: DGN-LF/LFT (A66) • DGN-MF (A65) • DGN-P (A68) • DGN-UT/UA (A68) • DGN-WP (A69) • DGN-Z (A67) • DGN/DGNC/DGNM-C (A64)

• DGN/DGNM-J/JS/JT (A65) • DGR-P (A69) • DGR-WP (A70) • DGR-Z/ZS (A67) • DGR/L-C DGR/LC-C (A64) • DGR/L-J/JS (A66).

Depth Capacity DGTR/L-B-D-JHP-SL

Depth of Cut as Function of Workpiece Diameter
(DGN/R/L-100... excluded)



Designation	øD _{max}															
DGTR/L 12B-2D24-JHP-SL	—	—	—	—	—	—	—	—	24	26	27	28	30	32	36	42
DGTR/L 16B-2D35-JHP-SL	—	—	—	—	—	—	—	—	24	26	27	28	30	32	36	42
DGTR/L 20B-2D35-JHP-SL	—	—	—	35	39	42	46	51	59	71	91	130	230	1200	NL	NL
DGTR/L 25B-2D35-JHP-SL	—	—	—	65	70	75	80	90	100	120	140	180	250	410	1200	NL
DGTR/L 12B-3D24-JHP-SL	—	—	—	35	39	42	46	51	59	71	91	130	230	1200	NL	NL
DGTR/L 16B-3D35-JHP-SL	—	—	—	75	90	113	155	250	650	NL	NL	NL	NL	NL	NL	NL
DGTR/L 20B-3D40-JHP-SL	56	62	71	83	102	134	200	400	NL	NL	NL	NL	NL	NL	NL	NL
DGTR/L 25B-3D40-JHP-SL	50	55	60	67	75	85	100	115	140	200	350	1500	NL	NL	NL	NL

Depth T → 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4

NL - No Limit

Example:

For 9 mm depth of groove on a 75 mm workpiece diameter, six tools may be used.

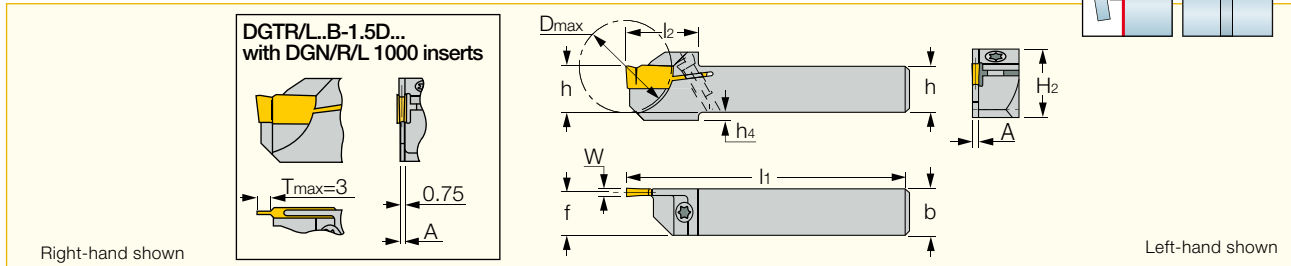
Flow Rate vs. Pressure

Designation	70 Bar Flow Rate (liters/min)	100 Bar Flow Rate (liters/min)	140 Bar Flow Rate (liters/min)
DGTR/L ...2-JHP-SL	3-4	4-5	5-6
DGTR/L ...3-JHP-SL	5-6	6-7	7-8

Spare Parts



Designation	Clamp Screw	Key	Plug 1	Key
DGTR/L 12B-2D24-JHP-SL	SR M5-24145	HW 5/32"	SR 5/16UNF TL360	HW 5/32"
DGTR/L 16B-2D35-JHP-SL	SR M5-24145	HW 2.5/5	SR 5/16UNF TL360	HW 5/32"
DGTR/L 12B-3D24-JHP-SL	SR M5-24145	HW 5/32"	SR 5/16UNF TL360	HW 5/32"
DGTR/L 16B-3D35-JHP-SL	SR M5-24145	HW 2.5/5	SR 5/16UNF TL360	HW 5/32"



Designation	W _{min}	W _{max}	h	b	A	f	l ₂	D _{max}	H ₂	h ₄	l ₁	Insert
DGTR/L 8B-1.4SH	1.40	1.40	8.0	8.0	1.00	7.5	18.0	10.0	15.4	2.0	125.00	DG. 14..
DGTR/L 10B-1.4D20SH	1.40	1.40	10.0	10.0	1.00	9.5	18.0	20.0	13.7	-	120.00	DG. 14..
DGTR/L 10B-1.5D20SH ⁽¹⁾	1.00	1.50	10.0	10.0	1.00	9.5	19.0	20.0	15.7	2.0	120.00	DG. 1.../DG. 15..
DGTR/L 10B-2D20SH	1.90	2.50	10.0	10.0	1.60	9.2	19.0	20.0	15.7	2.0	120.00	DG. 1.../DG. 2..
DGTR/L 12B-1.4D24SH	1.40	1.40	12.0	12.0	1.00	11.5	19.0	24.0	15.7	-	120.00	DG. 14..
DGTR/L 12B-1.5D24SH ⁽¹⁾	1.00	1.50	12.0	12.0	1.00	11.4	19.0	24.0	15.7	-	120.00	DG. 1.../DG. 15..
DGTR/L 12B-2D24SH	1.90	2.50	12.0	12.0	1.60	11.2	19.0	24.0	15.7	-	120.00	DG. 1.../DG. 2..
DGTR/L 12B-2D24SH-L85	1.90	2.50	12.0	12.0	1.60	11.2	19.0	24.0	15.7	-	85.00	DG. 1.../DG. 2..
DGTR/L 12B-3D24SH	3.00	3.18	12.0	12.0	2.40	10.8	19.0	24.0	15.7	-	120.00	DG. 3.../DG. 10..
DGTR/L 16B-1.5D25SH ⁽¹⁾	1.00	1.50	16.0	16.0	1.20	15.4	19.5	25.4	19.7	-	120.00	DG. 1.../DG. 15..
DGTR/L 16B-2D25SH	1.90	2.50	16.0	16.0	1.60	15.2	19.5	25.4	19.7	-	120.00	DG. 1.../DG. 2..
DGTR/L 16B-3D25SH	3.00	3.18	16.0	16.0	2.40	14.8	19.5	25.4	19.7	-	120.00	DG. 1.../DG. 3..

• DGN/R/L 1 mm inserts can also be mounted into pocket sizes 2 and 3.

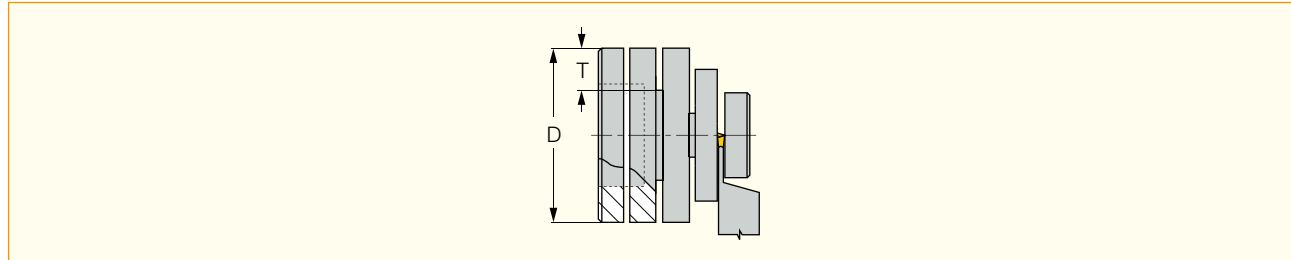
⁽¹⁾ Do not use DG.. 1.4 on this tool!

For inserts, see pages: DGN-LF/LFT (A66) • DGN-P (A68) • DGN-UT/UA (A68) • DGN-WP (A69) • DGN-Z (A67) • DGN/DGNC/DGNM-C (A64) • DGN/DGNM-J/JS/JT (A65) • DGR-P (A69) • DGR-WP (A70) • DGR-Z/ZS (A67) • DGR/L-C DGRC/LC-C (A64) • DGR/L-J/JS (A66).

Depth Capacity DGTR/L-B-D

Depth of Cut as Function of Workpiece Diameter

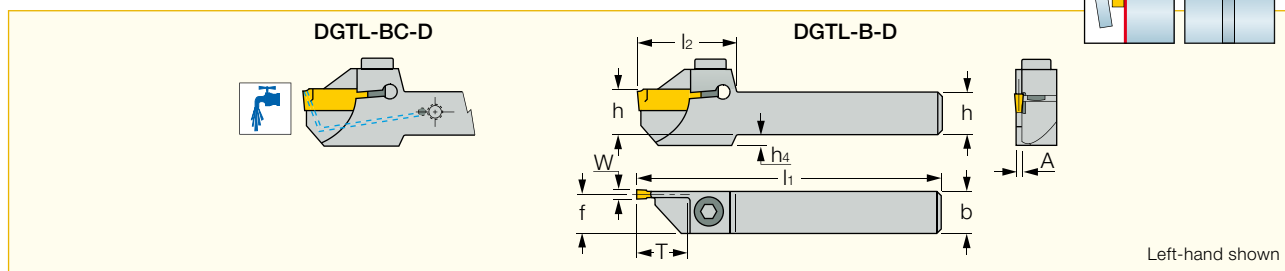
(DGN/R/L-100... excluded)



Designation	øD _{max}															
DGTR/L 10B-1.4D20	-	-	-	-	-	-	-	-	-	20	23	26	32	45	76	NL
DGTR/L 12B-1.4D30	-	-	-	-	-	30	32	35	38	43	50	62	83	125	300	NL
DGTR/L 16B-1.4D30	-	-	-	-	-	30	32	35	38	43	50	62	83	125	300	NL
DGTR/L 20B-1.4D30	-	-	-	-	-	30	32	35	38	43	50	62	83	125	300	NL
DGTR/L 10B-2D30	-	-	-	-	-	30	32	35	38	43	50	62	83	125	300	NL
DGTR/L 12B-2D30	-	-	-	-	-	30	32	35	38	43	50	62	83	125	300	NL
DGTR/L 16B-2D32	-	-	-	-	32	35	37	41	47	55	69	93	150	400	NL	NL
DGTR/L 20B-2D35	-	-	-	75	90	113	155	250	650	NL	NL	NL	NL	NL	NL	NL
DGTR/L 25B-2D35	-	-	-	75	90	113	155	250	650	NL	NL	NL	NL	NL	NL	NL
DGTR/L 12B-3D30	-	-	-	-	-	30	32	35	38	43	50	62	83	125	300	NL
DGTR/L 16B-3D35	-	-	-	35	39	42	46	51	59	71	91	130	230	1200	NL	NL
DGTR/L 20B-3D40	56	62	71	83	102	134	200	400	NL	NL	NL	NL	NL	NL	NL	NL
DGTR/L 25B-3D40	56	62	71	83	102	134	200	400	NL	NL	NL	NL	NL	NL	NL	NL

Spare Parts

Designation	Screw	Key
DGTR/L-B-D-SH	SR 16-236 P	T-15/5



Designation	W _{min}	W _{max}	h	b	A	l ₁	l ₂	T _{max-r} ⁽²⁾	f	h ₄	Coolant	Insert
DGTR/L 10B-1.4D20	1.40	1.40	10.0	10.0	1.00	140.00	23.6	10.00	9.5	2.0	N	DG. 14..
DGTR/L 12B-1.4D30	1.40	1.40	12.0	12.0	1.00	140.00	29.6	15.00	11.5	3.5	N	DG. 14..
DGTR/L 16B-1.4D30	1.40	1.40	16.0	16.0	1.00	140.00	29.6	15.00	15.5	-	N	DG. 14..
DGTR/L 10B-2D30	1.90	2.50	10.0	10.0	1.60	140.00	29.6	15.00	9.2	6.6	N	DG. 1.../DG. 2..
DGTR/L 12B-2D30	1.90	2.50	12.0	12.0	1.60	140.00	29.6	15.00	11.2	3.5	N	DG. 1.../DG. 2..
DGTR/L 16B-2D32	1.90	2.50	16.0	16.0	1.60	140.00	30.6	16.00	15.2	-	N	DG. 1.../DG. 2..
DGTR/L 12B-3D30	3.00	3.18	12.0	12.0	2.40	140.00	29.6	15.00	10.8	3.5	N	DG. 1.../DG. 3..
DGTR/L 16B-3D35	3.00	3.18	16.0	16.0	2.40	140.00	32.1	16.00	14.8	2.6	N	DG. 1.../DG. 3..
DGTR/L 16BC-3D35 ⁽¹⁾	3.00	3.18	16.0	16.0	2.40	140.00	31.1	16.00	14.8	2.6	Y	DG.C 3..

• Important: 1.4 mm width inserts should be used only on tools for 1.4 mm specific width tools. • DGN/R/L 1 mm inserts can also be mounted into pocket sizes 2 and 3.

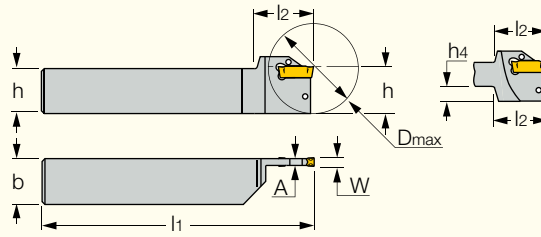
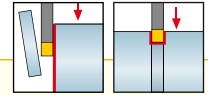
⁽¹⁾ Tools for inserts with coolant holes for high temperature alloys and stainless steel ⁽²⁾ The specified limit refers to the tool.

For inserts, see pages: DGN-LF/LFT (A66) • DGN-P (A68) • DGN-UT/UA (A68) • DGN-WP (A69) • DGN-Z (A67) • DGN/DGNC/DGNM-C (A64) • DGN/DGNM-J/JS/JT (A65) • DGR-P (A69) • DGR-WP (A70) • DGR-Z/ZZ (A67) • DGR/L-C DGRC/LC-C (A64) • DGR/L-J/JS (A66).

Spare Parts

Designation	Screw	Key	Pipe Fitting	Pipe Fitting 1	Cooling Tube	Pipe Fitting 2
DGTR/L 10B-1.4D20	SR M5X12DIN912 12.9 HW 4.0					
DGTR/L 12B-1.4D30	SR M5X12DIN912 12.9 HW 4.0					
DGTR/L 16B-1.4D30	SR M5X12DIN912 12.9 HW 4.0					
DGTR/L 10B-2D30	SR M5X12DIN912 12.9 HW 4.0					
DGTR/L 12B-2D30	SR M5X12DIN912 12.9 HW 4.0					
DGTR/L 16B-2D32	SR M4X14DIN912 12.9 HW 3.0					
DGTR/L 12B-3D30	SR M5X12DIN912 12.9 HW 4.0					
DGTR/L 16B-3D35	SR M5X12DIN912 12.9 HW 4.0					
DGTR/L 16BC-3D35	SR M5X12DIN912 12.9 HW 4.0	CGM 343*	CF 343*	SGCU 341*	CGF 343*	

* (Optional, should be ordered separately)



Right-hand shown

Designation	W _{min}	W _{max}	h	b	A	l ₁	l ₂	h ₄	D _{max}	Insert
DGTR/L 1010-2	1.90	2.50	10.0	10.0	1.80	150.00	29.0	6.6	35.0	DG. 1.../DG. 2..
DGTR/L 1212-2	1.90	2.50	12.0	12.0	1.80	150.00	29.0	6.6	35.0 ⁽¹⁾	DG. 1.../DG. 2..
DGTR/L 1616-2	1.90	2.50	16.0	16.0	1.80	150.00	29.0	2.6	35.0 ⁽¹⁾	DG. 1.../DG. 2..
DGTR/L 1212-3	3.00	3.18	12.0	12.0	2.50	150.00	29.0	6.6	35.0 ⁽¹⁾	DG. 1.../DG. 3..
DGTR/L 1616-3	3.00	3.18	16.0	16.0	2.50	150.00	29.0	6.6	35.0 ⁽¹⁾	DG. 1.../DG. 3..

• Insert limit is T_{max}=18 mm. If deeper penetration is required, the insert should be modified into single-ended by the user. • DG..1.0 insert can be mounted into pocket sizes 2 and 3. In that case the pocket width has to be modified

⁽¹⁾ D_{max}=43 mm when single-ended insert is used

For inserts, see pages: DGN-LF/LFT (A66) • DGN-MF (A65) • DGN/DGNC/DGNM-C (A64) • DGR/L-C DGRC/LC-C (A64) • DGN/DGNM-J/JS/JT (A65) • DGR/L-J/JS (A66) • DGN-P (A68) • DGN-UT/UA (A68) • DGN-WP (A69) • DGN-Z (A67) • DGR-P (A69) • DGR-WP (A70) • DGR-Z/ZS (A67) • GRIP (A19) • GRIP (full radius) (A20).

Spare Parts

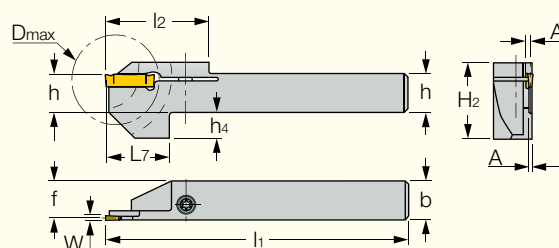
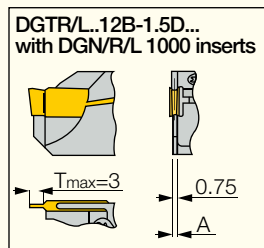
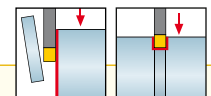


Designation	Extractor
DGTR/L 1010-2	EDG 33B*
DGTR/L 1212-2	EDG 33B*
DGTR/L 1616-2	EDG 33B*
DGTR/L 1212-3	EDG 33B*
DGTR/L 1616-3	EDG 33B*

* (Optional, should be ordered separately)

DGTR/L-B-D-TR

Reinforced Parting and Grooving Tools for Double-Ended DO-GRIP Inserts



Right -hand shown

Designation	W _{min}	W _{max}	h	b	A	A ₂	f	l ₁	l ₂	L ₇	D _{max}	H ₂	h ₄	Insert
DGTR/L 12B-1.4D20-TR12	1.40	1.40	12.0	12.0	1.00	2.3	11.5	95.00	32.5	20.00	20.0	23.7	8.0	DG. 14..
DGTL 12B-1.5D20-TR12	1.00	1.50	12.0	12.0	1.20	2.3	11.3	95.00	32.5	20.00	20.0	23.7	8.0	DG. 1.../DG. 15..
DGTR 12B-1.5-D20-TR12	1.00	1.50	12.0	12.0	1.20	2.3	11.3	95.00	32.5	20.00	20.0	23.7	8.0	DG. 1.../DG. 15..

• Important: 1.4 mm width inserts should be used only on tools for 1.4 mm specific width !! • For Traub machines, model TNL 12/7

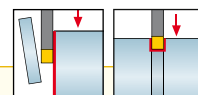
For inserts, see pages: DGN-P (A68) • DGN/DGNM-J/JS/JT (A65) • DGR-P (A69) • DGR/L-J/JS (A66).

Spare Parts

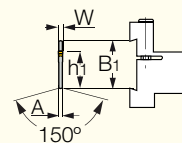
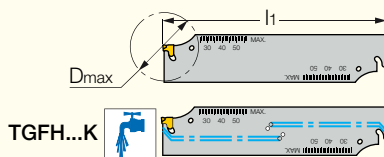
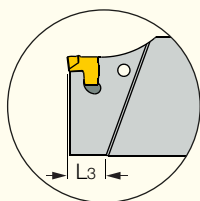


Designation	Screw	Key
DGTR/L-B-D-TR	SR 16-236 P	T-15/5

Blades with Tangentially Oriented Pocket for Parting and Grooving, for TANG-GRIP Single-Ended Inserts



TGFH...1.4/1.6



Designation	B ₁	W _{min}	W _{max}	A	l ₁	L ₃	h ₁	D _{max}	Coolant	Insert
TGFH 19-1.4	19.0	1.40	1.40	1.05 ⁽²⁾	86.00	9.60	15.7	30.0	N	TAG 1.4
TGFH 19-1.6	19.0	1.60	1.60	1.30 ⁽³⁾	86.00	11.00	15.7	32.0	32.0	TAG 1.6
TGFH 19-2	19.0	1.80	2.40	1.65	86.00	-	15.7	38.0	38.0	TAG 2
TGFH 26-1.4	26.0	1.40	1.40	1.05 ⁽²⁾	110.00	8.30	21.4	29.0	29.0	TAG 1.4
TGFH 26-1.6	26.0	1.60	1.60	1.30 ⁽³⁾	110.00	10.00	21.4	35.0	35.0	TAG 1.6
TGFH 26-2	26.0	1.80	2.40	1.65	110.00	-	21.4	50.0	50.0	TAG 2
TGFH 26-3	26.0	2.80	3.50	2.50	110.00	-	21.4	75.0	75.0	TAG 3
TGFH 26K-3 ⁽¹⁾	26.0	2.80	3.50	2.50	110.00	-	21.4	75.0	Y	TAG 3
TGFH 26-4	26.0	3.70	4.50	3.40	110.00	-	21.4	80.0	80.0	TAG 4
TGFH 26-5	26.0	4.70	5.50	4.00	150.00	-	21.4	80.0	80.0	TAG 5

⁽¹⁾ With coolant holes, recommended coolant pressure: 10 bar min, cooling tube SGC 341 should be ordered separately. ⁽²⁾ Thickness beyond the D.O.C. area is 2.50 mm ⁽³⁾ Thickness beyond the D.O.C. area is 1.60 mm

For inserts, see pages: TAG N-A (A74) • TAG N-C/W/M (A73) • TAG N-J/JS/JT (A75) • TAG N-LF (A76) • TAG N-MF (A73) • TAG N-UT (A74) • TAG R/L-C (A75) • TAG R/L-J/JS (A76) .

For holders, see pages: • SGTBU/SGTBN (A88) .



Spare Parts

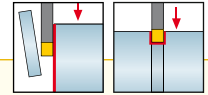


Designation	Extractor	Sealing Screw
TGFH 19-1.4	ETG 1.4/1.6*	
TGFH 19-1.6	ETG 1.4/1.6*	
TGFH 26-1.4	ETG 1.4/1.6*	
TGFH 26-1.6	ETG 1.4/1.6*	
TGFH 26-2	ETG 2*	
TGFH 26-3	ETG 3-4*	
TGFH 26K-3	ETG 3-4-SH*	SGC 340
TGFH 26-4	ETG 3-4*	
TGFH 26-5	ETG 5-7*	

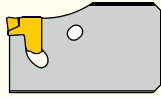
* (Optional, should be ordered separately)

TGFH-S

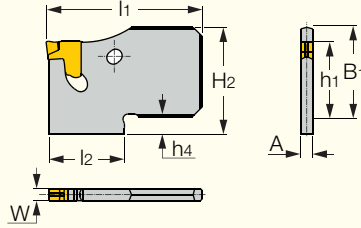
Single-Sided Blades for TANG-GRIP Parting and Grooving Inserts



TGFH 19-2S



TGFH 19-3S



Designation	B ₁	W _{min}	W _{max}	A	l ₁	h ₁	H ₂	h ₄	l ₂	T _{max-r}	D _{max}
TGFH 19-2S	19.0	1.80	2.40	1.65	32.00	15.7	19.0	-	-	12.00	36.0
TGFH 19-3S	19.0	2.80	3.50	2.50	32.00	15.7	22.0	3.0	15.5	16.00	40.0

• For D_{max} and T_{max} drawing see SGBHR/L holder.

For inserts, see pages: TAG N-A (A74) • TAG N-C/W/M (A73) • TAG N-J/JS/JT (A75) • TAG N-LF (A76) • TAG N-MF (A73) • TAG N-UT (A74) • TAG R/L-C (A75) • TAG R/L-J/JS (A76).

Spare Parts

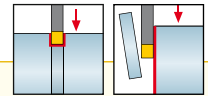


Designation	Extractor
TGFH 19-2S	ETG 2*
TGFH 19-3S	ETG 3-4-SH*

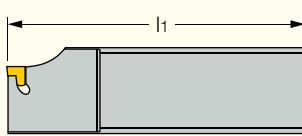
* (Optional, should be ordered separately)

TGFHR/L

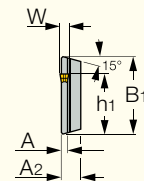
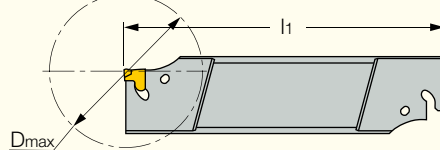
Single- and Double-Ended Parting and Grooving Reinforced Blades for TANG-GRIP Tangentially Clamped Inserts



TGFHR 32...



TGFHR 26...



Right-hand shown

Designation	B ₁	W _{min}	W _{max}	A	A ₂	l ₁	h ₁	D _{max}
TGFHL 26T16-2	26.0	1.80	2.40	1.65	7.9	110.50	21.4	43.0
TGFHR 26T16-3	26.0	2.80	3.50	2.50	7.9	110.50	21.4	43.0
TGFHR/L 26T23-2	26.0	1.80	2.40	1.65	7.9	110.50	21.4	46.0
TGFHR/L 26T23-3	26.0	2.80	3.50	2.50	7.9	110.50	21.4	46.0

For inserts, see pages: TAG N-A (A74) • TAG N-C/W/M (A73) • TAG N-J/JS/JT (A75) • TAG N-LF (A76) • TAG N-MF (A73) • TAG N-UT (A74) • TAG R/L-C (A75) • TAG R/L-J/JS (A76).

For holders, see pages: • SGTBU/SGTBN (A88) .

Spare Parts

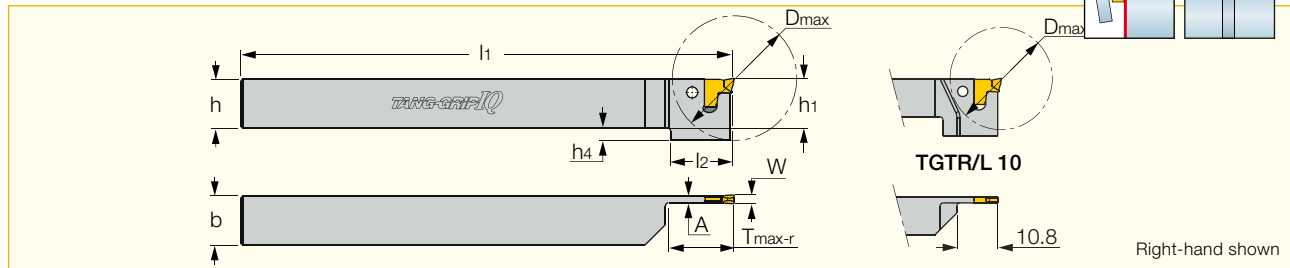


Designation	Extractor
TGFHL 26T16-2	ETG 2*
TGFHR 26T16-3	ETG 3-4-SH*
TGFHR/L 26T23-2	ETG 2*
TGFHR/L 26T23-3	ETG 3-4-SH*

* (Optional, should be ordered separately)

TGTR/L-2T..SH-L120

Integral Shank, Short-Head TANG-GRIP Parting and Grooving Toolholder



Designation	W	W _{min}	W _{max}	h	h ₁	b	A	l ₁	l ₂	h ₄	T _{max-r}	D _{max} ⁽¹⁾
TGTR/L 1010-2T10SH-L120-IQ	2.00	1.80	2.50	10.0	10.1	10.0	1.65	120.00	15.0	5.0	10.00	26.0
TGTR/L 1212-2T15SH-L120-IQ	2.00	1.80	2.50	12.0	12.1	12.0	1.65	120.00	15.0	3.0	15.00	30.0
TGTR/L 1616-2T18SH-L120-IQ	2.00	1.80	2.50	16.0	16.1	16.0	1.65	120.00	-	-	18.00	36.0

⁽¹⁾ For parting

For inserts, see pages: TAG N-A (A74) • TAG N-C/W/M (A73) • TAG N-J/JS/JT (A75) • TAG N-LF (A76) • TAG N-MF (A73) • TAG N-UT (A74) • TAG R/L-C (A75) • TAG R/L-J/JS (A76).

Spare Parts



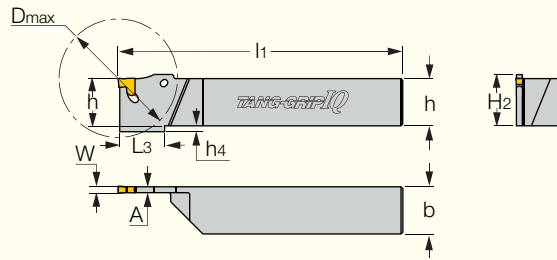
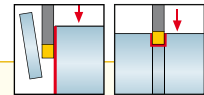
Designation	Extractor
TGTR/L-2T..SH-L120	ETG 2-SH-T*

* (Optional, should be ordered separately)



TGTR/L-IQ

Integral Shank, TANG-GRIP Parting and Grooving Toolholder



Left-hand shown

Designation	W _{min}	W _{max}	h	b	A	l ₁	H ₂	L ₃	h ₄	D _{max}	Insert
TGTR/L 1010-1.4-IQ	1.40	1.45	10.0	10.0	1.05	140.00	15.0	15.50	5.0	20.0	TAG 1.4
TGTR/L 1212-1.4-IQ	1.40	1.45	12.0	12.0	1.05	140.00	12.0	16.00	3.0	30.0	TAG 1.4
TGTR/L 1616-1.4-IQ	1.40	1.45	16.0	16.0	1.05	140.00	16.0	16.00	-	30.0	TAG 1.4
TGTR/L 1010-1.6-IQ	1.60	1.64	10.0	10.0	1.30	120.00	-	16.00	5.0	28.0	TAG 1.6
TGTR/L 1212-1.6-IQ	1.60	1.64	12.0	12.0	1.30	120.00	-	16.00	3.0	32.0	TAG 1.6
TGTR/L 1616-1.6-IQ	1.60	1.64	16.0	16.0	1.30	120.00	-	16.00	-	35.0	TAG 1.6
TGTR/L 1010-2-IQ	1.80	2.40	10.0	10.0	1.65	150.00	15.0	15.50	5.0	28.0	TAG 2
TGTR/L 1212-2-IQ	1.80	2.40	12.0	12.0	1.65	150.00	15.0	17.00	3.0	32.0	TAG 2
TGTR/L 1612-2-L120-IQ	1.80	2.50	16.0	12.0	1.65	120.00	16.0	16.00	-	35.0	TAG 2
TGTR/L 1616-2-IQ	1.80	2.40	16.0	16.0	1.65	150.00	16.0	16.00	-	35.0	TAG 2
TGTR/L 1212-3-IQ	2.80	3.50	12.0	12.0	2.50	150.00	19.0	19.00	7.0	32.0	TAG 3
TGTR/L 1612-3-L120-IQ	2.80	3.50	16.0	12.0	2.50	120.00	19.0	19.00	3.0	35.0	TAG 3
TGTR/L 1616-3-IQ	2.80	3.50	16.0	16.0	2.50	150.00	19.0	19.00	3.0	35.0	TAG 3

For inserts, see pages: TAG N-A (A74) • TAG N-C/W/M (A73) • TAG N-J/JS/JT (A75) • TAG N-LF (A76) • TAG N-MF (A73) • TAG N-UT (A74) • TAG R/L-C (A75) • TAG R/L-J/JS (A76) .

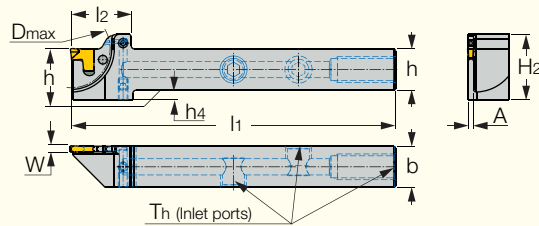
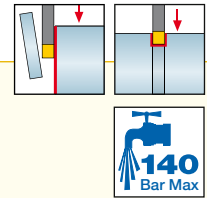
Spare Parts



Designation	Extractor
TGTR/L 1010-1.4-IQ	ETG 1.4/1.6*
TGTR/L 1212-1.4-IQ	ETG 1.4/1.6*
TGTR/L 1616-1.4-IQ	ETG 1.4/1.6*
TGTR/L 1010-1.6-IQ	ETG 1.4/1.6*
TGTR/L 1212-1.6-IQ	ETG 1.4/1.6*
TGTR/L 1616-1.6-IQ	ETG 1.4/1.6*
TGTR/L 1010-2-IQ	ETG 2*
TGTR/L 1212-2-IQ	ETG 2*
TGTR/L 1612-2-L120-IQ	ETG 2*
TGTR/L 1616-2-IQ	ETG 2*
TGTR/L 1212-3-IQ	ETG 3-4-SH*
TGTR/L 1612-3-L120-IQ	ETG 3-4-SH*
TGTR/L 1616-3-IQ	ETG 3-4-SH*

* Optional, should be ordered separately

Parting and Grooving Toolholders for TANG-GRIP Inserts,
with Channels for High Pressure Coolant



Left-hand shown

Designation	W _{min}	W _{max}	h	b	A	l ₁	H ₂	l ₂	h ₄	T _h	D _{max}	Insert
TGTR/L 1010-2JHP	1.80	2.50	10.0	10.0	1.72	100.00	19.5	18.5	5.0	UNF 5/16-24	24.0	TAG 2
TGTR/L 1212-2JHP	1.80	2.50	12.0	12.0	1.72	100.00	19.5	18.5	3.0	UNF 5/16-24	24.0	TAG 2
TGTR/L 1616-2JHP	1.80	2.50	16.0	16.0	1.72	120.00	21.5	25.5	-	UNF 5/16-24	35.0	TAG 2
TGTR/L 1616-3JHP	2.80	3.50	16.0	16.0	2.50	120.00	24.5	25.5	3.0	UNF 5/16-24	35.0	TAG 3

For inserts, see pages: TAG N-A (A74) • TAG N-C/W/M (A73) • TAG N-J/JS/JT (A75) • TAG N-LF (A76) • TAG N-MF (A73) • TAG N-UT (A74) • TAG R/L-C (A75)
• TAG R/L-J/JS (A76).

Flow Rate vs. Pressure

Designation	70 bar Flow Rate (liters/min)	100 bar Flow Rate (liters/min)	140 bar Flow Rate (liters/min)
TGTR/L....-2JHP	2-4	4-6	6-8
TGTR/L....-3JHP	7-9	9-11	11-13

Spare Parts

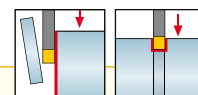
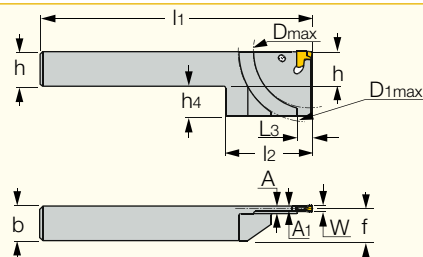


Designation	Extractor	Plug 1	Plug Key
TGTR/L 1010-2JHP	ETG 2-SH-T*	ETG 2-SH-T*	HW 5/32"
TGTR/L 1212-2JHP	ETG 2-SH-T*		HW 5/32"
TGTR/L 1616-2JHP	ETG 2*		HW 5/32"
TGTR/L 1616-3JHP	ETG 3-4-SH*		HW 5/32"

* (Optional, should be ordered separately)

TGTR/L-D

Integral Shank TANG-GRIP Parting and Grooving Toolholders with Reinforced Blades, Mainly for Sub-Spindle Machines



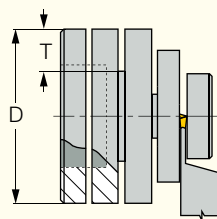
Right-hand shown

Designation	W	W _{min}	W _{max}	h	b	A	A ₁	l ₁	l ₂	f	h ₄	D _{max}	D _{1 max}	L ₃
TGTR/L 1616-2-D52-IQ	2.00	1.80	2.40	16.0	16.0	1.65	3.50	125.00	40.0	15.2	14.0	52.0	65.0	6.00
TGTR/L 1616-3-D52-IQ	3.00	2.80	3.50	16.0	16.0	2.50	3.50	125.00	40.0	14.8	14.0	52.0	65.0	6.00

For inserts, see pages: TAG N-A (A74) • TAG N-C/W/M (A73) • TAG N-J/JS/JT (A75) • TAG N-LF (A76) • TAG N-MF (A73) • TAG N-UT (A74) • TAG R/L-C (A75) • TAG R/L-J/JS (A76).

Depth Capacity TGTR/L-D

Table determining depth of cut as function of workpiece diameter



Designation	T _{max}									
TGTR/L 1616-2-D52-IQ	20	25	19	16	15	13	11	10	9	8
TGTR/L 1616-3-D52-IQ	20	25	20	17	15	13	11	10	9	8

D → 40 50 60 70 80 100 120 150 200 300

Spare Parts

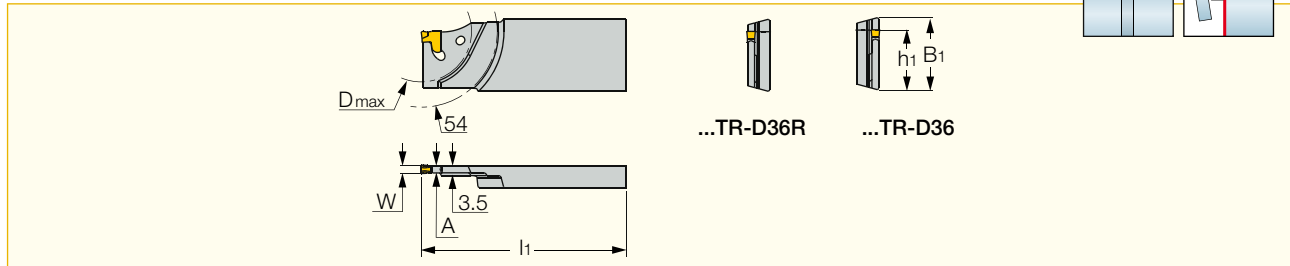


Designation	Extractor
TGTR/L 1616-2-D52-IQ	ETG 2*
TGTR/L 1616-3-D52-IQ	ETG 3-4-SH*

* (Optional, should be ordered separately)

TGFHL-TR

TANG-GRIP Reinforced Blades for Traub and Index Machines, for TANG-GRIP Tangentially Clamped Inserts



Designation	B ₁	W _{min}	W _{max}	A	l ₁	h ₁	D _{max}	Insert
TGFHL 26-2TR-D36	26.0	1.80	2.40	1.65	110.00	21.4	36.0	TAG 2
TGFHL 26-2TR-D36R	26.0	1.80	2.40	1.65	110.00	21.4	36.0	TAG 2
TGFHL 26-3TR-D36	26.0	2.80	3.50	2.50	110.00	21.4	36.0	TAG 3
TGFHL 26-3TR-D36R	26.0	2.80	3.50	2.50	110.00	21.4	36.0	TAG 3

For inserts, see pages: TAG N-A (A74) • TAG N-C/W/M (A73) • TAG N-J/JS/JT (A75) • TAG N-LF (A76) • TAG N-MF (A73) • TAG N-UT (A74) • TAG R/L-C (A75) • TAG R/L-J/JS (A76).

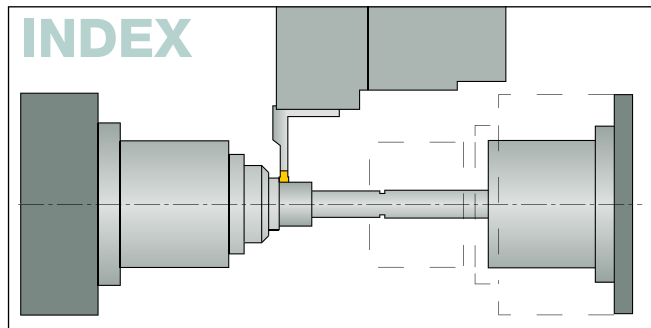
For holders, see pages: • SGTBU/SGTBN (A88) .

Spare Parts



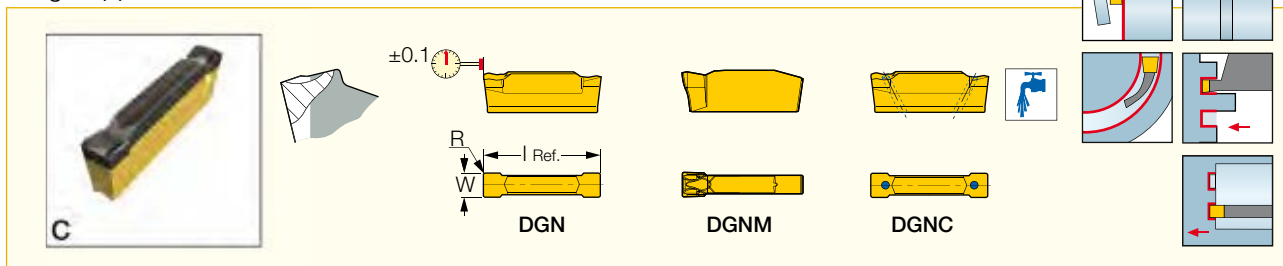
Designation	Extractor
TGFHL 26-2TR-D36	ETG 2*
TGFHL 26-2TR-D36R	ETG 2*
TGFHL 26-3TR-D36	ETG 3-4-SH*
TGFHL 26-3TR-D36R	ETG 3-4-SH*

* (Optional, should be ordered separately)



DGN/DGNC/DGNM-C

Double-Sided Parting Insert, for Parting and Grooving of Bars, Hard Materials and Tough Applications



Designation	Dimensions					Tough ↔ Hard										Recommended Machining Data		
	W	W tol ^(a)	R	T _{max-r}	I Ref.	IC328	IC830	IC1028	IC354	IC5400	IC308	IC808	IC908	IC30N	IC807	IC907	IC20	f groove (mm/rev)
DGN 2002C	2.00	0.03	0.20	18.00	19.9	●	●	●	●	●	●	●	●	●	●	●	●	0.05-0.16
DGN 2202C	2.20	0.03	0.20	18.00	19.8		●	●	●	●	●	●	●	●		●		0.05-0.16
DGN 2502C	2.50	0.03	0.20	18.00	20.7				●	●	●	●	●	●				0.08-0.20
DGN 3102C	3.10	0.04	0.20	18.00	20.1			●	●	●	●	●	●	●		●		0.10-0.25
DGNC 3102C ⁽¹⁾	3.10	0.04	0.20	18.00	21.0							●	●	●				0.10-0.25
DGNM 3202C ⁽²⁾	3.18	0.04	0.20	- ⁽³⁾	20.4				●				●	●				0.10-0.25
DGN 4003C	4.00	0.04	0.30	- ⁽³⁾	18.8	●	●	●	●		●	●	●	●	●		●	0.10-0.30
DGNC 4003C ⁽¹⁾	4.00	0.04	0.30	- ⁽³⁾	19.0							●	●					0.10-0.30

• Feed values for grade IC20 should be decreased by 50%

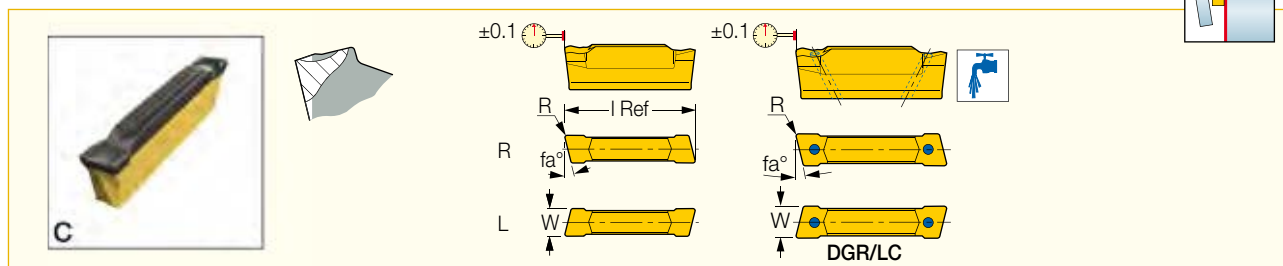
⁽¹⁾ Inserts with coolant holes, recommended coolant pressure 10 bar minimum ⁽²⁾ Single-ended insert. ⁽³⁾ No depth limit

For tools, see pages: • DGFH (A18) • DGFHL-26B-TR-D (A52) • DGFHR/L (A51) • DGFHR/L-B-D..(R/L) (A51) • DGTR/L (A56)

• DGTR/L-B-D-JHP-SL (A53) • DGTR/L-B-D-SH (A54) • DGTR/L-B/BC-D (A55) • HELIR/L (A19)

DGR/L-C DGR/LC-C

Double-Sided Parting Insert, for Parting Bars, Hard Materials and Tough Applications



Designation	Dimensions					Tough ↔ Hard							Recommended Machining Data
	W	R	T _{max-r}	f _a °	I Ref.	IC328	IC830	IC1028	IC354	IC808	IC908	IC20	
DGR/L 2202C-6D	2.20	0.20	18.00	6.0	20.8	●	●	●	●	●	●	●	0.04-0.12
DGR/L 3102C-15D	3.10	0.20	18.00	15.0	21.0	●	●	●	●	●	●	●	0.08-0.14
DGR/L 3102C-6D	3.10	0.20	18.00	6.0	21.0	●	●	●	●	●	●	●	0.08-0.18
DGR/LC 3102C-6D ⁽¹⁾	3.10	0.20	18.00	6.0	21.0					●	●		0.08-0.18
DGR 3102C-8D	3.10	0.20	18.00	8.0	21.1	●	●	●					0.05-0.15
DGR/L 4003C-4D	4.00	0.30	- ⁽²⁾	4.0	18.9	●	●	●	●		●	●	0.08-0.20
DGR/LC 4003C-4D ⁽¹⁾	4.00	0.30	- ⁽²⁾	4.0	19.0					●	●		0.08-0.20

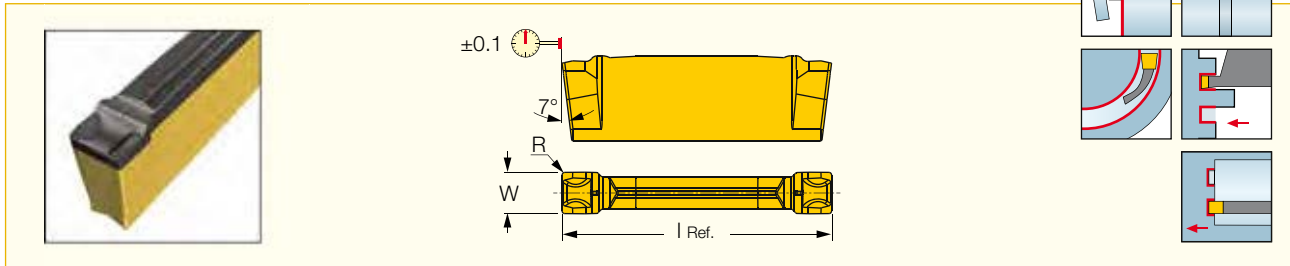
• Feed values for grade IC20 should be decreased by 50%

⁽¹⁾ Inserts with coolant holes, recommended coolant pressure 10 bar minimum ⁽²⁾ No depth limit

For tools, see pages: • DGFH (A18) • DGFHL-26B-TR-D (A52) • DGFHR/L (A51) • DGFHR/L-B-D..(R/L) (A51) • DGTR/L (A56)

• DGTR/L-B-D-JHP-SL (A53) • DGTR/L-B-D-SH (A54) • DGTR/L-B/BC-D (A55) • HELIR/L (A19)

Parting and Grooving Double-Sided Insert, for Soft and Hard Materials, Medium Feed

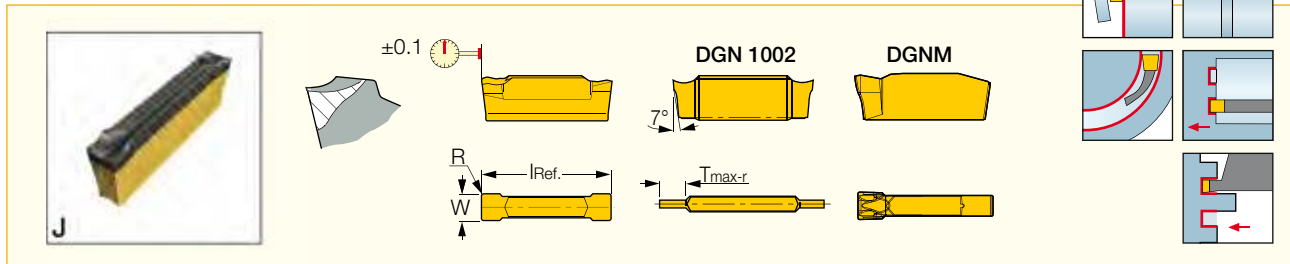


Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data f groove (mm/rev)
	W±0.04	R	T _{max-r}	I Ref.	IC830	IC5400	IC808	
DGN 2002MF	2.00	0.20	18.00	19.9	●	●	●	0.04-0.12
DGN 3002MF	3.00	0.20	18.00	20.1	●	●	●	0.06-0.18
DGN 3102MF	3.00	0.20	18.00	20.1	●	●	●	0.06-0.18

For tools, see pages: DGFH (A18) • DGTR/L (A56) • DGTR/L-B-D-JHP-SL (A53).

DGN/DGNM-J/JS/JT

Double-Sided Parting and Grooving Insert for Soft Materials, Parting of Tubes, Small Diameters and Thin-Walled Parts



Designation	Dimensions					Tough ↔ Hard										Recommended Machining Data	
	W	W tol ^(±)	R	T _{max-r}	I Ref.	IC328	IC830	IC1028	IC354	IC5400	IC308	IC808	IC908	IC807	IC907	IC20	f groove (mm/rev)
DGN 1002J	1.00	0.02	0.16	3.00	21.0	●		●					●				0.02-0.07
DGN 1402J	1.40	0.03	0.16	15.00	15.8	●	●	●	●		●	●	●				0.03-0.12
DGN 1502J	1.50	0.03	0.16	18.00	20.9	●		●					●				0.03-0.12
DGN 2002JT	2.00	0.03	0.20	18.00	19.8							●					0.04-0.14
DGN 2200JS ⁽¹⁾	2.20	0.03	0.02	18.00	19.4	●	●										0.03-0.08
DGN 2202J	2.20	0.03	0.20	18.00	19.8		●	●	●	●		●	●	●			0.04-0.12
DGN 2202JT	2.20	0.03	0.20	18.00	19.8		●			●		●					0.04-0.14
DGN 3100JS ⁽¹⁾	3.10	0.04	0.02	18.00	19.7	●					●						0.03-0.10
DGN 3102J	3.10	0.04	0.20	18.00	20.1		●	●	●	●	●	●	●		●		0.04-0.16
DGN 3102JT	3.10	0.04	0.20	18.00	20.1		●			●		●			●		0.05-0.18
DGN 3202J	3.18	0.04	0.20	18.00	21.0								●				0.04-0.16
DGNM 3202J ⁽²⁾	3.18	0.04	0.20	- ⁽³⁾	20.3	●			●				●				0.04-0.16
DGN 4003J	4.00	0.04	0.30	- ⁽³⁾	18.9	●	●	●	●		●	●	●	●		●	0.05-0.18
DGN 4003JT	4.00	0.04	0.30	- ⁽³⁾	18.9		●										0.05-0.18

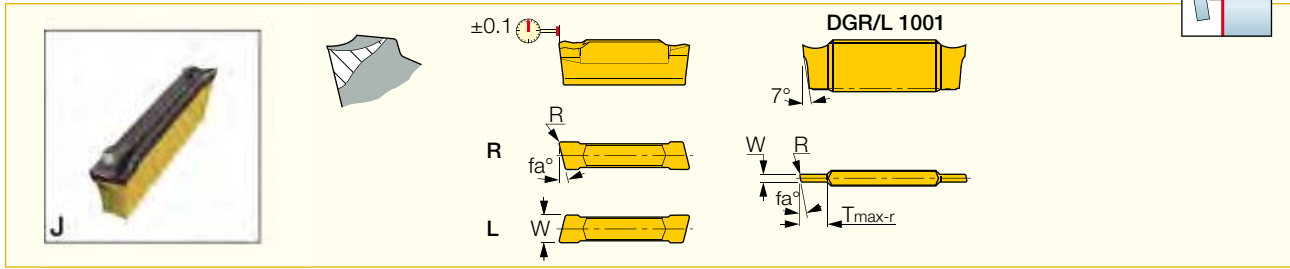
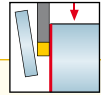
• JT chipformer has the basic positive configuration of the J-type and a reinforced negative frontal edge. Most suitable for soft materials at low to medium feeds. •

⁽¹⁾ Sharp corners ⁽²⁾ Single-ended insert. ⁽³⁾ No depth limit

For tools, see pages: DGFH (A18) • DGFHL-26B-TR-D (A52) • DGFHR/L (A51) • DGFHR/L-B-D..(R/L) (A51) • DGTR/L (A56) • DGTR/L-B-D-JHP-SL (A53) • DGTR/L-B-D-SH (A54) • DGTR/L-B-D-TR (A56) • DGTR/L-B/BC-D (A55) • HELIR/L (A19)

DGR/L-J/JS

Double-Sided Parting Insert for Soft Materials, Parting of Tubes, Small Diameters and Thin-Walled Parts



Designation	Dimensions					Tough ↔ Hard								Recommended Machining Data
	W	R	T _{max-r}	fa°	I Ref.	IC328	IC830	IC1028	IC354	IC308	IC808	IC908	IC20	
DGR/L 1001J-8D	1.00	0.07	3.00	8.0	21.0	●		●		●		●		0.02-0.06
DGR/L 1400JS-15D ⁽¹⁾	1.40	0.02	15.00	15.0	15.4	●	●	●		●		●		0.03-0.07
DGR/L 1402J-8D	1.40	0.16	15.00	8.0	15.8	●	●	●		●		●		0.03-0.08
DGR 1500J-8D	1.50	0.05	18.00	8.0	20.9	●	●	●		●		●		0.03-0.08
DGR/L 2200JS-15D ⁽¹⁾	2.20	0.02	18.00	15.0	20.4	●		●	●	●		●		0.03-0.07
DGR/L 2200JS-6D ⁽¹⁾	2.20	0.02	18.00	6.0	20.4	●	●	●		●		●		0.03-0.08
DGR/L 2202J-6D	2.20	0.20	18.00	6.0	21.0	●	●	●	●			●	●	0.03-0.10
DGR 2202J-15D	2.20	0.20	18.00	15.0	21.0	●	●	●				●		0.03-0.08
DGR/L 3100JS-15D ⁽¹⁾	3.10	0.02	18.00	15.0	20.6	●		●	●	●		●		0.03-0.07
DGR/L 3100JS-6D ⁽¹⁾	3.10	0.02	18.00	6.0	20.6	●	●	●		●		●		0.03-0.08
DGR/L 3102J-15D	3.10	0.20	18.00	15.0	21.0	●		●	●			●		0.04-0.10
DGR/L 3102J-6D	3.10	0.20	18.00	6.0	21.0	●	●	●	●			●	●	0.04-0.14
DGR 4000JS-15D ⁽¹⁾	4.00	0.00	- ⁽²⁾	15.0	18.4	●		●			●	●	●	0.04-0.10
DGR/L 4003J-4D	4.00	0.30	- ⁽²⁾	4.0	18.9	●	●	●	●		●	●	●	0.04-0.15

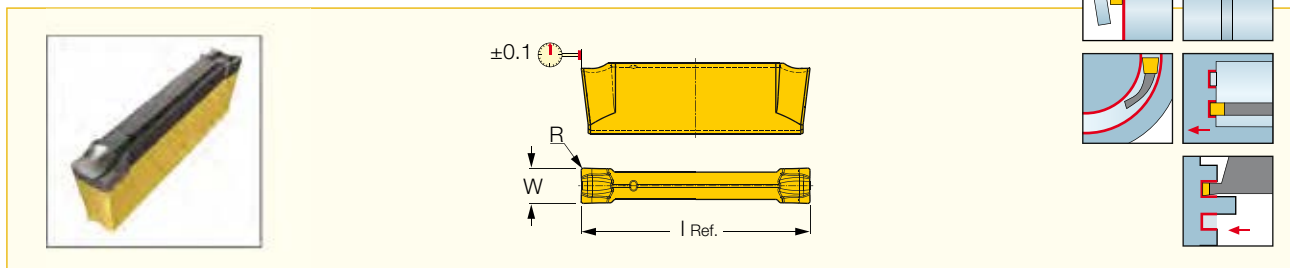
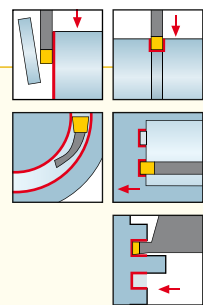
⁽¹⁾ Sharp corners ⁽²⁾ No depth limit.

For tools, see pages: • DGFH (A18) • DGFHL-26B-TR-D (A52) • DGFHR/L (A51) • DGTR/L (A56) • DGTR/L-B-D-JHP-SL (A53)

• DGTR/L-B-D-SH (A54) • DGTR/L-B-D-TR (A56) • DGTR/L-B/BC-D (A55) • HELIR/L (A19).

DGN-LF/LFT

Double-Sided Parting and Grooving Insert for Stainless Steel

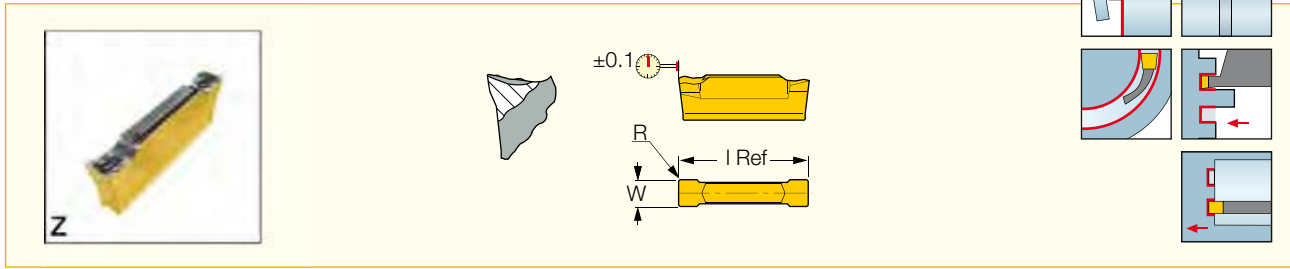


Designation	Dimensions					Tough ↔ Hard					Recommended Machining Data
	W	W tol ⁽⁴⁾	R	T _{max-r}	I Ref.	IC830	IC928	IC5400	IC808	IC908	
DGN 2002LF	2.00	0.03	0.20	18.00	19.8	●		●	●		0.03-0.08
DGN 2202LF	2.20	0.03	0.20	18.00	19.8		●	●		●	0.03-0.08
DGN 3102LF	3.10	0.04	0.20	18.00	20.1	●	●	●	●	●	0.04-0.10
DGN 3102LFT	3.10	0.04	0.20	18.00	21.1		●			●	0.04-0.12

• The LFT chipformer features basically the same design as the LF chipformer, except that it was reinforced by a T-land to improve its durability in interrupted-cut or on hard materials applications. It can be applied at higher feed than the LF chipformer.

For tools, see pages: • DGFHL-26B-TR-D (A52) • DGFHR/L (A51) • DGFHR/L-B-D..(R/L) (A51) • DGTR/L (A56) • DGTR/L-B-D-JHP-SL (A53) • DGTR/L-B-D-SH (A54) • DGTR/L-B/BC-D (A55).

Double-Sided Insert for Parting of Tubes, Thin-Walled and Small Parts

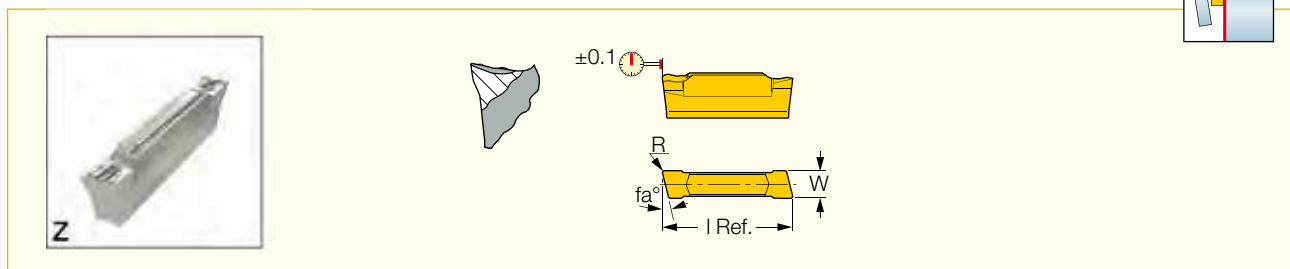


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data
	W ± 0.03	T $_{max-r}$	R	I Ref.	IC808	IC908	
DGN 2002Z	2.00	18.00	0.20	20.9	●	●	0.03-0.12
DGN 3002Z	3.00	18.00	0.20	20.9	●	●	0.03-0.16

For tools, see pages: • DGFH (A18) • DGFHL-26B-TR-D (A52) • DGFHR/L (A51) • DGFHR/L-B-D..(R/L) (A51) • DGTR/L (A56) • DGTR/L-B-D-JHP-SL (A53) • DGTR/L-B-D-SH (A54) • DGTR/L-B/BC-D (A55).

DGR-Z/ZS

Double-Sided Parting Insert, Very Positive Rake for Parting of Tubes, Thin-Walled and Small Parts

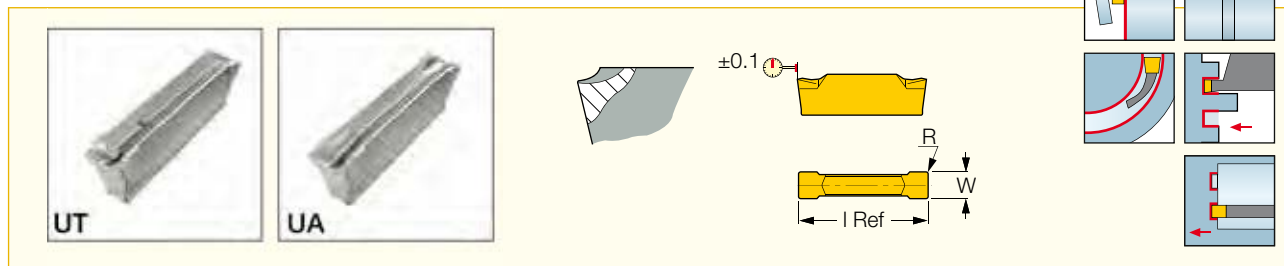


Designation	Dimensions					IC908	Recommended Machining Data
	W	R	I Ref.	T $_{max-r}$	f $_{a^{\circ}}$		
DGR 2000ZS-15D ⁽¹⁾	2.00	0.02	20.4	18.00	15.0	●	0.03-0.07
DGR 2000ZS-6D ⁽¹⁾	2.00	0.02	20.4	18.00	6.0	●	0.03-0.08
DGR 2002Z-15D	2.00	0.20	20.4	18.00	15.0	●	0.03-0.10
DGR 2002Z-6D	2.00	0.20	20.9	18.00	6.0	●	0.03-0.10
DGR 3000ZS-15D ⁽¹⁾	3.00	0.02	20.4	18.00	15.0	●	0.03-0.10
DGR 3000ZS-6D ⁽¹⁾	3.00	0.02	20.4	18.00	6.0	●	0.03-0.12
DGR 3002Z-6D	3.00	0.20	20.9	18.00	6.0	●	0.03-0.14

⁽¹⁾ Sharp corners

For tools, see pages: DGFH (A17) • DGFHL-26B-TR-D (A52) • DGFHR/L (A51) • DGFHR/L-B-D..(R/L) (A51) • DGTR/L (A56) • DGTR/L-B-D-JHP-SL (A53) • DGTR/L-B-D-SH (A54) • DGTR/L-B/BC-D (A55) • HELIR/L (A18).

Parting and Grooving Double-Sided Insert, for Low Feeds on Cr-Ni Alloys, Low Carbon Steel and Ductile Materials



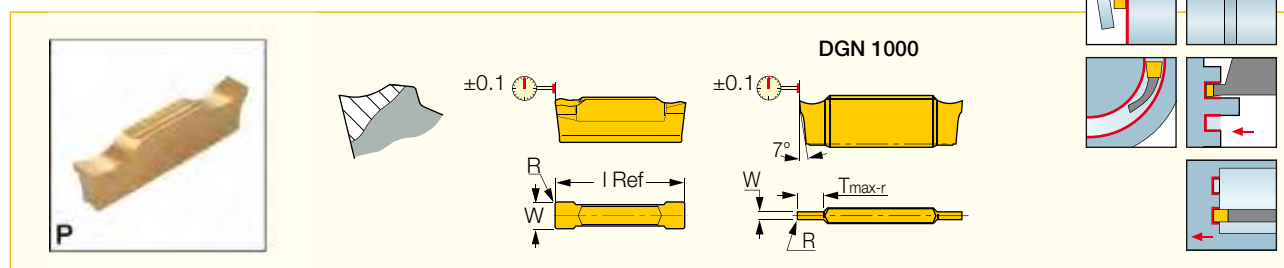
Designation	Dimensions					Tough ↔ Hard							Recommended Machining Data f groove (mm/rev)
	W	W tol ^(*)	R	T _{max-r}	I Ref.	IC328	IC1028	IC354	IC350	IC308	IC908	IC20	
DGN 2202UA	2.20	0.03	0.20	18.00	19.9	●	●	●			●		0.04-0.13
DGN 2202UT	2.20	0.03	0.20	18.00	19.6				●		●		0.03-0.11
DGN 3003UA	3.00	0.03	0.25	18.00	20.5	●	●	●		●		●	0.04-0.15
DGN 3003UT	3.00	0.03	0.25	18.00	20.5					●	●		0.04-0.13
DGN 4003UA	4.00	0.04	0.30	- ^(*)	19.4	●		●					0.05-0.16
DGN 4003UT	4.00	0.04	0.30	- ^(*)	19.3	●		●		●	●		0.04-0.15

^(*) No depth limit

For tools, see pages: • DGFH (A18) • DGFHL-26B-TR-D (A52) • DGFHR/L (A51) • DGFHR/L-B-D..(R/L) (A51) • DGTR/L (A56) • DGTR/L-B-D-JHP-SL (A53) • DGTR/L-B-D-SH (A54) • DGTR/L-B/BC-D (A55) • HELIR/L (A19)

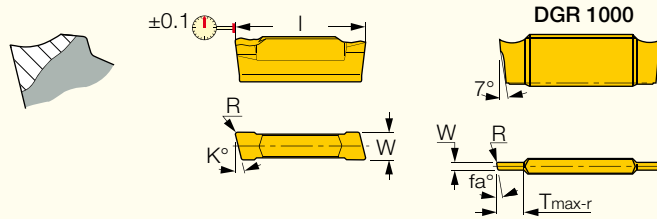
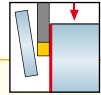
DGN-P

Parting and Grooving Double-Sided Insert, for Soft Materials, Thin and Miniature Parts



Designation	Dimensions				IC508	Recommended Machining Data f groove (mm/rev)
	W±0.02	R	I Ref.	T _{max-r}		
DGN 1000P	1.00	0.05	20.0	3.00	●	0.02-0.05
DGN 1500P	1.50	0.05	20.0	18.00	●	0.02-0.07
DGN 2000P	2.00	0.05	20.0	18.00	●	0.02-0.08
DGN 3000P	3.00	0.05	20.0	18.00	●	0.02-0.10

For tools, see pages: • DGFH (A18) • DGFHL-26B-TR-D (A52) • DGFHR/L (A51) • DGFHR/L-B-D..(R/L) (A51) • DGTR/L (A56) • DGTR/L-B-D-JHP-SL (A53) • DGTR/L-B-D-SH (A54) • DGTR/L-B-D-TR (A56) • DGTR/L-B/BC-D (A55).

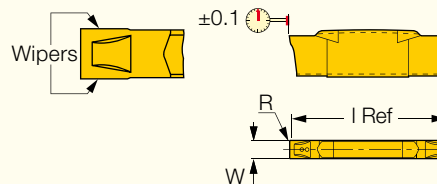
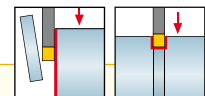


Dimensions	Dimensions					IC508	Recommended Machining Data
	W	R	I	T _{max-r}	fa°		f groove (mm/rev)
DGR 1000P-15D	1.00	0.05	20.00	3.00	15.0	●	0.02-0.03
DGR 1000P-6D	1.00	0.05	20.00	3.00	6.0	●	0.02-0.04
DGR 1500P-15D	1.50	0.05	20.00	18.00	15.0	●	0.02-0.04
DGR 1500P-6D	1.50	0.05	20.00	18.00	6.0	●	0.02-0.05
DGR 2000P-15D	2.00	0.05	20.00	18.00	15.0	●	0.02-0.05
DGR 2000P-6D	2.00	0.05	20.00	18.00	6.0	●	0.02-0.07

For tools, see pages: • DGFH (A18) • DGFHR/L (A51) • DGTR/L (A56) • DGTR/L-B-D-JHP-SL (A53) • DGTR/L-B-D-SH (A54) • DGTR/L-B-D-TR (A56) • DGTR/L-B/BC-D (A55).

DGN-WP

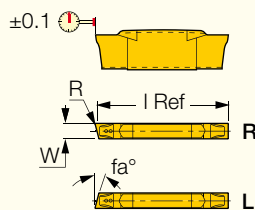
Parting and Grooving, Double-Sided Insert. Wiper Design for High Flatness and Surface Finish



Designation	Dimensions				IC328	Recommended Machining Data
	W _{±0.02}	R	T _{max-r}	I		f groove (mm/rev)
DGN 1900WP	1.90	0.05	6.00	19.70	●	0.04-0.12
DGN 2400WP	2.39	0.05	6.00	20.40	●	0.05-0.14

For tools, see pages: • DGFH (A18) • DGFHL-26B-TR-D (A52) • DGFHR/L (A51) • DGFHR/L-B-D..(R/L) (A51) • DGTR/L (A56) • DGTR/L-B-D-JHP-SL (A53) • DGTR/L-B-D-SH (A54) • DGTR/L-B/BC-D (A55).

Double-Sided Parting Insert, Wiper Design for High Flatness and Surface Finish

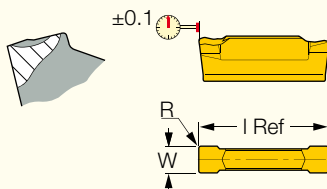
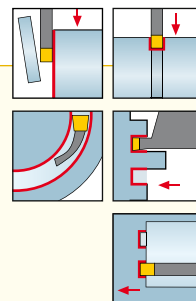


Dimensions	Dimensions					IC328	Recommended Machining Data
	W	R	T _{max-r}	I	fa°		f groove (mm/rev)
DGR 1900WP-12D	1.90	0.05	6.00	19.70	12.0	●	0.04-0.10
DGR 1900WP-5D	1.90	0.05	6.00	19.70	5.0	●	0.04-0.10
DGR 2400WP-12D	2.39	0.05	6.00	20.40	12.0	●	0.04-0.10
DGR 2400WP-5D	2.39	0.05	6.00	20.40	5.0	●	0.04-0.12

For tools, see pages: • DGFH (A18) • DGFHR/L (A51) • DGTR/L (A56) • DGTR/L-B-D-JHP-SL (A53) • DGTR/L-B-D-SH (A54) • DGTR/L-B/BC-D (A55).

HGN-C

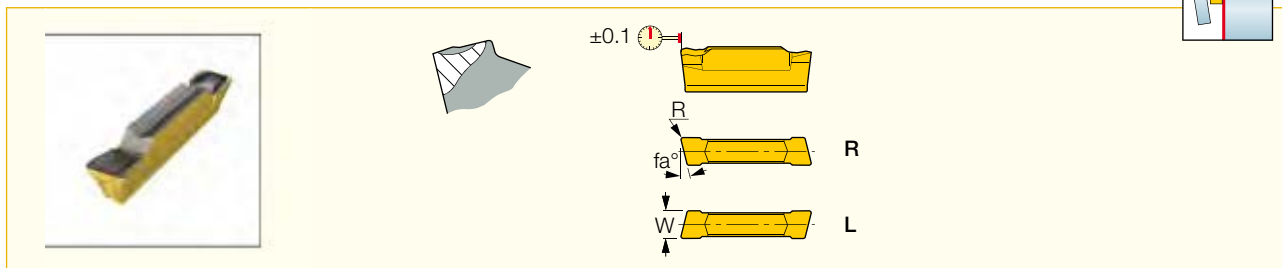
Parting and Grooving Insert, for Parting Bars, Hard Materials and Tough Applications



Designation	Dimensions			Tough ↔ Hard					Recommended Machining Data
	W ^{±0.05}	R	I	IC328	IC830	IC354	IC308	IC908	
HGN 3003C	3.00	0.30	15.80	●	●	●	●	●	f groove (mm/rev) 0.08-0.20

• No depth limit

For tools, see pages: • HELIR/L (A19) • HGFH (A18) • HGHR/L-3 (B128)



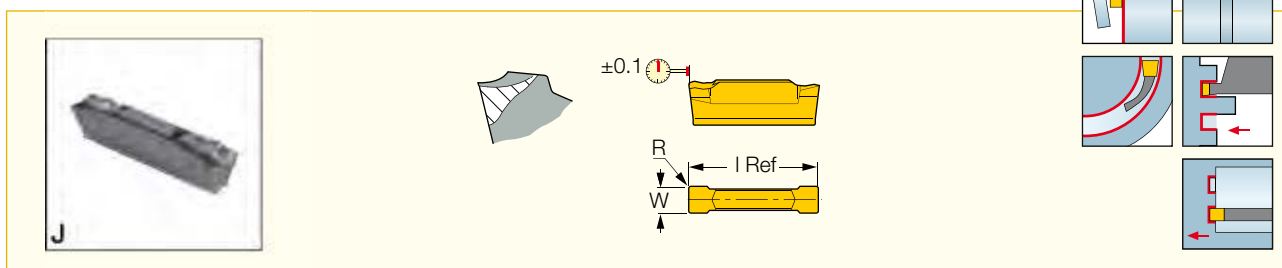
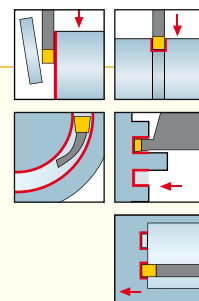
Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data
	W	R	L	fa°	IC328	IC830	
HGL 3003C -6D	3.00	0.30	15.60	6.0	●		0.06-0.16
HGR 3003C-6D	3.00	0.30	15.60	6.0	●	●	0.06-0.16

• No depth limit

For tools, see pages: • HGFH (A18).

HGN-J

Parting and Grooving Insert for Soft Materials, Parting of Tubes, Small Diameters and Thin-Walled Parts



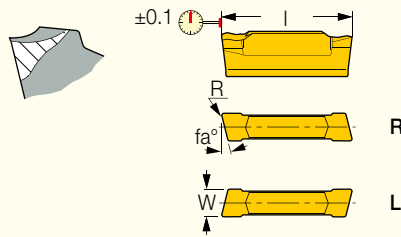
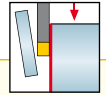
Designation	Dimensions			Tough ↔ Hard				Recommended Machining Data
	W±0.05	R	I	IC328	IC830	IC354	IC308	
HGN 3002J	3.00	0.20	16.10	●	●	●	●	0.04-0.15

• No depth limit

For tools, see pages: • HELIR/L (A19) • HGFH (A18) • HGHR/L-3 (B128)

DO-GRIP
TWISTED 2-SIDED
HGR/L-J/JS

Parting Double-Sided Insert for Soft Materials, Parting of Tubes,
Small Diameters and Thin-Walled Parts



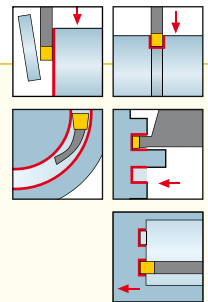
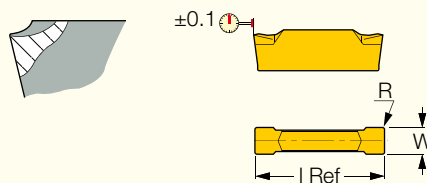
Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data
	W	R	I	fa°	IC328	IC830	IC354	f groove (mm/rev)
HGR/L 3000JS-15D ⁽¹⁾	3.00	0.02	15.20	15.0	●			0.03-0.07
HGL 3002J -6D	3.00	0.20	15.70	6.0	●			0.04-0.12
HGR 3002J-6D	3.00	0.20	15.70	6.0	●	●	●	0.04-0.12

- No depth limit
- ⁽¹⁾ Sharp corners

For tools, see pages: • HGFH (A18).

HGN-UT

Parting and Grooving Double-Sided Insert, for Low Feeds
on Cr-Ni Alloys and Low Carbon Steel

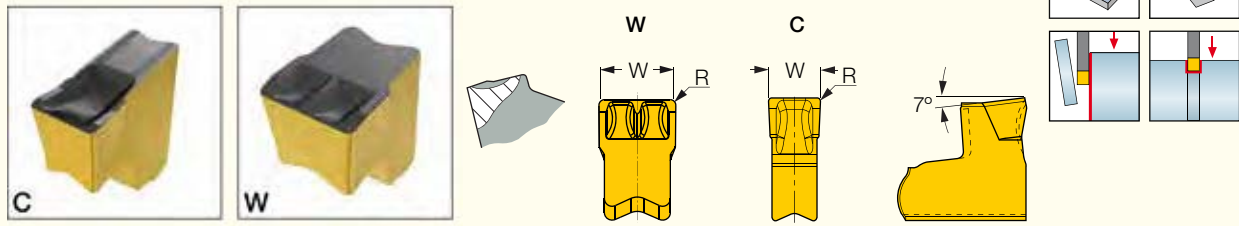


Designation	Dimensions			Tough ↔ Hard		Recommended Machining Data
	W ^{±0.05}	R	I	IC328	IC354	f groove (mm/rev)
HGN 3003UT	3.00	0.30	15.80	●	●	0.04-0.13

- No depth limit

For tools, see pages: • HELIR/L (A19) • HGFH (A18) • HGHR/L-3 (B128)

Parting Grooving and Slitting Single-Ended Inserts for Parting Bars, Hard Materials and Tough Applications



Designation	Dimensions			Tough ↔ Hard								Recommended Machining Data f groove (mm/rev)
	W	W tol ^(*)	R±0.04	IC830	IC928	IC5400	IC808	IC908	IC30N	IC807	IC20	
TAG N1.4C	1.40	0.05	0.16							●		0.04-0.10
TAG N1.6C	1.60	0.05	0.16	●			●					0.04-0.14
TAG N2C	2.00	0.05	0.20	●		●	●		●		●	0.05-0.16
TAG N2.4C	2.40	0.04	0.16	●			●					0.06-0.18
TAG N3CB ⁽¹⁾	3.00	0.05	0.35	●			●					0.12-0.30
TAG N3C	3.05	0.05	0.20	●	●	●	●	●	●	●	●	0.10-0.25
TAG N3M ⁽²⁾	3.05	0.05	0.20	●				●				0.06-0.18
TAG N3W	3.05	0.05	0.20	●				●				0.10-0.25
TAG N4C	4.00	0.05	0.24	●	●	●	●	●		●	●	0.10-0.30
TAG N4CB ⁽¹⁾	4.00	0.05	0.40	●				●				0.10-0.33
TAG N4M ⁽²⁾	4.00	0.05	0.24	●				●				0.06-0.20
TAG N4W	4.00	0.05	0.24	●				●				0.10-0.30
TAG N4.8C	4.80	0.05	0.30	●			●					0.10-0.35
TAG N5C	5.05	0.05	0.25	●			●				●	0.10-0.35

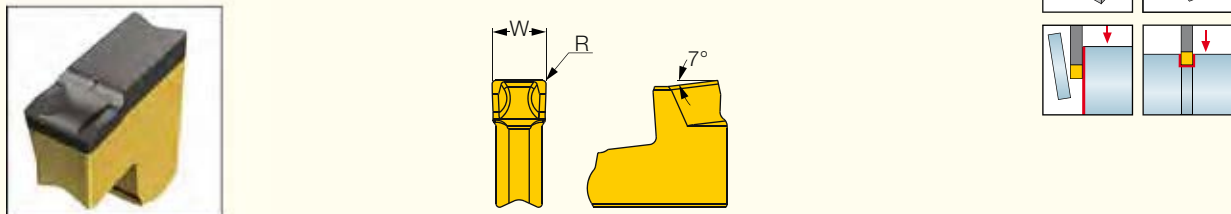
• Feed values for grade IC20 should be decreased by 50%

⁽¹⁾ Larger corner radii for interrupted cut and high feed applications. ⁽²⁾ Similar to C-type, but with a modified edge. Improved chip control at medium feeds.

For tools, see pages: • TGFH-MB (A50) • TGFH-S (A58) • TGFH/R/L (A57) • TGFHL-TR (A63) • TGFHR/L (A58) • TGTR/L-2T..SH-L120 (A59) • TGTR/L-D (A62) • TGTR/L-IQ (A60) • TGTR/L-JHP (A61).

TAG N-MF

Parting Grooving and Slitting Single-Ended Inserts for Stainless and Alloy Steel at Medium Feed Applications

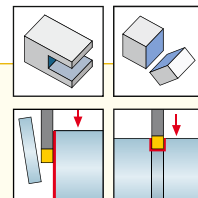
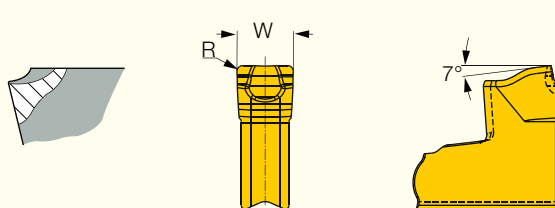


Designation	Dimensions			Tough ↔ Hard			Recommended Machining Data f groove (mm/rev)
	W	W tol ^(*)	R±0.03	IC830	IC5400	IC808	
TAG N2MF	2.00	0.05	0.20	●	●	●	0.04-0.12
TAG N3MF	3.00	0.05	0.20	●	●	●	0.06-0.18
TAG N4MF	4.00	0.05	0.25	●	●	●	0.07-0.22

For tools, see pages: • TGFH-MB (A50) • TGFH-S (A58) • TGFH/R/L (A57) • TGFHL-TR (A63) • TGFHR/L (A58) • TGTR/L-2T..SH-L120 (A59) • TGTR/L-D (A62) • TGTR/L-IQ (A60) • TGTR/L-JHP (A61).

TAG N-UT

Parting Grooving and Slitting Single-Sided Inserts, for Low Feeds on Cr-Ni Alloys, Ductile Materials & Low Carbon Steel

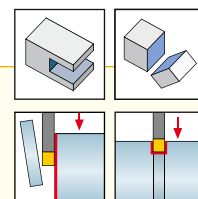
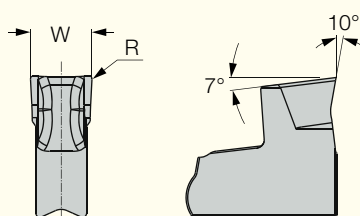


Designation	Dimensions		Tough $\longleftrightarrow$ Hard			Recommended Machining Data
	$W \pm 0.04$	$R \pm 0.04$	IC830	IC808	IC908	f groove (mm/rev)
TAG N2UT	2.00	0.20	●	●	●	0.03-0.10
TAG N3UT	3.00	0.30	●	●	●	0.04-0.12
TAG N4UT	4.00	0.30			●	0.05-0.15
TAG N5UT	5.00	0.30			●	0.05-0.18

For tools, see pages: • TGFH-MB (A50) • TGFH-S (A58) • TGFH/R/L (A57) • TGFHL-TR (A63) • TGFHR/L (A58) • TGTR/L-2T..SH-L120 (A59) • TGTR/L-D (A62) • TGTR/L-IQ (A60) • TGTR/L-JHP (A61).

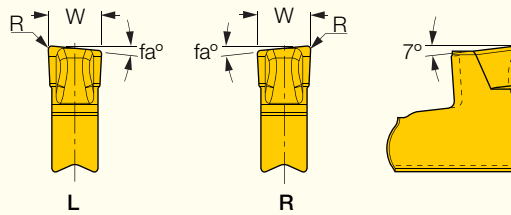
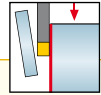
TAG N-A

Parting Grooving and Slitting Single-Ended Inserts for Machining Aluminum



Designation	Dimensions		IC20	Recommended Machining Data
	$W \pm 0.04$	$R \pm 0.05$		f groove (mm/rev)
TAG N2A	2.10	0.20	●	0.02-0.10
TAG N3A	3.05	0.20	●	0.03-0.14
TAG N4A	4.05	0.24	●	0.03-0.16

For tools, see pages: • TGFH-MB (A50) • TGFH-S (A58) • TGFH/R/L (A57) • TGFHL-TR (A63) • TGFHR/L (A58) • TGTR/L-2T..SH-L120 (A59) • TGTR/L-D (A62) • TGTR/L-IQ (A60) • TGTR/L-JHP (A61).

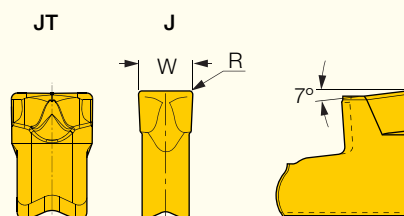
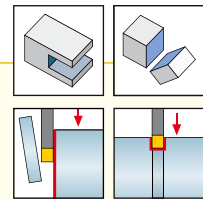


Designation	Dimensions			Tough ↔ Hard					Recommended Machining Data
	W ± 0.10	R ± 0.05	fa°	IC830	IC928	IC808	IC908	IC30N	
TAG R/L2C-6D	2.05	0.20	6.0	●		●			0.04-0.12
TAG R2.4C-8D	2.40	0.16	8.0			●			0.05-0.13
TAG R/L3C-6D	3.00	0.20	6.0	●	●	●	●		0.08-0.18
TAG R3C-8D	3.00	0.20	8.0					●	0.06-0.16
TAG R/L3C-15D	3.00	0.20	15.0	●	●	●	●		0.08-0.16
TAG R/L4C-4D	4.05	0.24	4.0	●	●	●	●		0.08-0.20
TAG R/L5C-4D	5.05	0.25	4.0	●		●			0.10-0.25
TAG R/L6.3C-4D	6.35	0.35	4.0	●		●			0.12-0.30

For tools, see pages: • TGFH-MB (A50) • TGFH-S (A58) • TGFH/R/L (A57) • TGFHL-TR (A63) • TGFHR/L (A58) • TGTR/L-2T..SH-L120 (A59) • TGTR/L-D (A62) • TGTR/L-IQ (A60) • TGTR/L-JHP (A61).

TAG N-J/JS/JT

Parting Grooving and Slitting Single-Ended Inserts, for Soft Materials



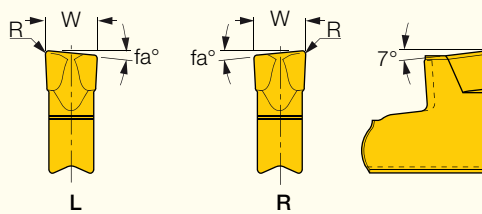
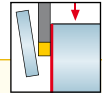
Designation	Dimensions		Tough ↔ Hard							Recommended Machining Data
	W ± 0.04	R ± 0.05	IC830	IC928	IC5400	IC808	IC908	IC807	IC20	
TAG N1.4J	1.40	0.16	●			●		●		0.03-0.10
TAG N1.6J	1.60	0.16	●			●				0.03-0.12
TAG N2JS ⁽¹⁾	2.00	0.02	●			●				0.03-0.08
TAG N2J	2.00	0.20	●		●	●			●	0.04-0.12
TAG N2JT	2.00	0.20	●	●	●	●	●			0.04-0.10
TAG N3JS ⁽¹⁾	3.05	0.02	●			●				0.04-0.10
TAG N3J	3.05	0.20	●	●	●	●	●	●	●	0.04-0.16
TAG N3JT	3.05	0.20	●		●	●	●			0.05-0.18
TAG N3.2JT	3.25	0.20			●	●				0.05-0.18
TAG N4J	4.00	0.24	●	●	●	●	●	●		0.04-0.18
TAG N4JT	4.05	0.24	●		●	●	●			0.06-0.20
TAG N5J	5.05	0.25	●			●				0.05-0.20
TAG N5JT	5.05	0.25	●			●	●			0.06-0.22

• JT chipformer has the basic positive configuration of the J-type and a reinforced negative frontal edge. Most suitable for soft materials at low to medium feeds. • ⁽¹⁾ Sharp corners

For tools, see pages: • TGFH-MB (A50) • TGFH-S (A58) • TGFH/R/L (A57) • TGFHL-TR (A63) • TGFHR/L (A58) • TGTR/L-2T..SH-L120 (A59) • TGTR/L-D (A62) • TGTR/L-IQ (A60) • TGTR/L-JHP (A61).

TAG R/L-J/JS

TANG-GRIP Parting Inserts for Soft Materials, Tubes, Small Diameters and Thin-Walled Parts



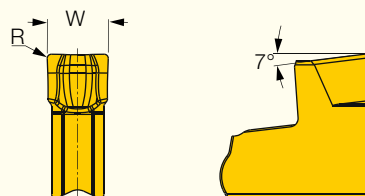
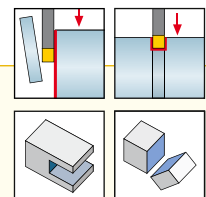
Designation	Dimensions			Tough ↔ Hard					Recommended Machining Data
	W	R	fa°	IC830	IC928	IC808	IC908	IC807	f groove (mm/rev)
TAG R/L1.4J-8D	1.40	0.16	8.0	●		●		●	0.03-0.08
TAG R/L1.4JS-10D ⁽¹⁾	1.40	0.02	10.0	●		●		●	0.02-0.06
TAG R/L2J-6D	2.00	0.20	6.0	●		●			0.03-0.10
TAG R/L2JS-6D ⁽¹⁾	2.00	0.02	6.0	●		●			0.02-0.08
TAG R/L2J-15D	2.00	0.20	15.0	●		●			0.03-0.08
TAG R/L2JS-15D ⁽¹⁾	2.00	0.02	15.0	●		●			0.02-0.06
TAG R/L3J-6D	3.00	0.20	6.0	●	●	●	●		0.04-0.14
TAG R/L3JS-6D ⁽¹⁾	3.00	0.02	6.0	●		●			0.03-0.10
TAG R/L3J-15D	3.00	0.20	15.0	●	●	●	●		0.04-0.12
TAG R/L3JS-15D ⁽¹⁾	3.00	0.02	15.0	●		●			0.03-0.08
TAG R/L4J-4D	4.00	0.24	4.0	●	●	●	●		0.04-0.15
TAG R/L5J-4D	5.05	0.25	4.0	●		●			0.05-0.18

⁽¹⁾ Sharp corners

For tools, see pages: • TGFH-MB (A50) • TGFH-S (A58) • TGFH/R/L (A57) • TGFHL-TR (A63) • TGFHR/L (A58) • TGTR/L-2T..SH-L120 (A59) • TGTR/L-D (A62) • TGTR/L-IQ (A60) • TGTR/L-JHP (A61).

TAG N-LF

Parting Grooving and Slitting Single-Ended Inserts, for Stainless Steel

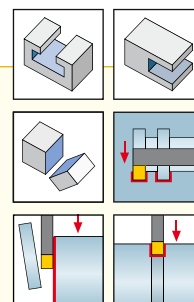
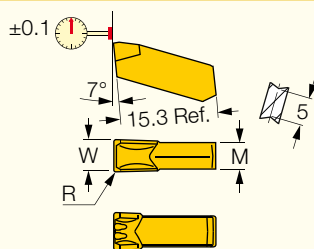


Designation	Dimensions		Tough ↔ Hard			Recommended Machining Data
	W _{±0.04}	R _{±0.03}	IC830	IC5400	IC808	f groove (mm/rev)
TAG N2LF	2.00	0.20	●	●	●	0.03-0.08
TAG N3LF	3.05	0.20	●	●	●	0.04-0.10

For tools, see pages: • TGFH-MB (A50) • TGFH-S (A58) • TGFH/R/L (A57) • TGFHL-TR (A63) • TGFHR/L (A58) • TGTR/L-2T..SH-L120 (A59) • TGTR/L-D (A62) • TGTR/L-IQ (A60) • TGTR/L-JHP (A61).

GIM-C

Parting and Grooving Single-Sided Insert, for Parting Bars, Hard Materials and Tough Applications

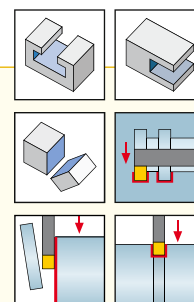
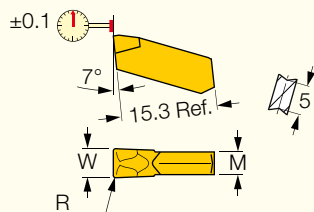


Designation	Dimensions			Tough $\longleftrightarrow$ Hard				Recommended Machining Data
	W ± 0.05	R ± 0.02	M	IC328	IC354	IC908	IC20	
GIM 3C	3.00	0.22	2.4	●	●	●	●	0.15-0.25
GIM 4C	4.00	0.25	3.4	●	●	●	●	0.15-0.25
GIM 5C	5.00	0.40	4.0	●	●	●	●	0.15-0.30

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23)

GIM-J

Utility Single-Sided Parting and Grooving Insert, for Soft Materials, Parting of Tubes and Small Diameters

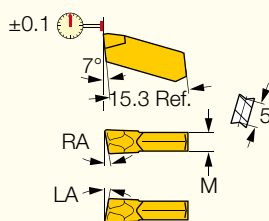
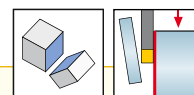


Designation	Dimensions			Tough $\longleftrightarrow$ Hard					Recommended Machining Data
	W ± 0.05	R ± 0.02	M	IC328	IC54	IC354	IC908	IC20	
GIM 2.2J	2.20	0.17	1.7	●	●	●	●	●	0.06-0.13
GIM 3J	3.00	0.22	2.4	●	●	●	●	●	0.08-0.15
GIM 4J	4.00	0.25	3.2	●	●	●	●	●	0.08-0.18

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSL/L (A15) • GHSL/L-JHP-SL (A14)

GIM-J-RA/LA

Utility Single-Sided Parting and Grooving Insert, for Soft Materials,
Parting of Tubes and Small Diameters

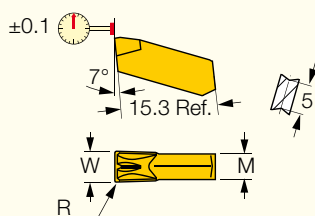
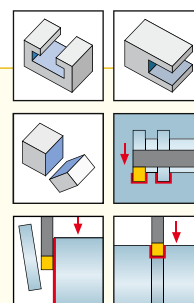


Designation	Dimensions				Tough ↔ Hard					Recommended Machining Data
	W±0.05	R±0.02	f _a °	M	IC328	IC54	IC354	IC908	IC20	
GIM 2.2J-8R/LA	2.20	0.17	8.0	1.7	●	●	●	●	●	0.05-0.10
GIM 2.2JS-15R/LA	2.20	0.02	15.0	1.7	●	●	●	●	●	0.05-0.10
GIM 3J-4R/LA	3.00	0.22	4.0	2.4	●		●		●	0.05-0.12
GIM 3J-8R/LA	3.00	0.22	8.0	2.4	●		●	●	●	0.05-0.12
GIM 3JS-15R/LA	3.00	0.02	15.0	2.4	●			●	●	0.05-0.12
GIM 4J-6R/LA	4.00	0.25	6.0	3.2			●		●	0.08-0.15

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSL/L (A15) • GHSL/L-JHP-SL (A14).

GIM-W

Parting and Grooving Single-Sided Inserts with Central Ridged Chipformer and
Reinforced Edge for Alloy Steel

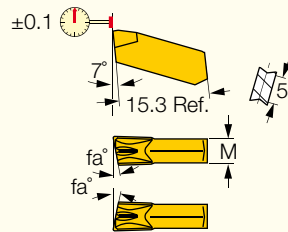
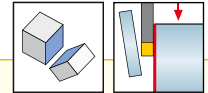


Designation	Dimensions			Tough ↔ Hard					Recommended Machining Data
	W±0.05	R±0.02	M	IC328	IC54	IC354	IC908	IC20	
GIM 2.4	2.40	0.17	2.4			●	●	●	0.10-0.18
GIM 3	3.00	0.25	2.4	●	●	●	●	●	0.10-0.18
GIM 3.2	3.20	0.22	2.4	●	●	●	●	●	0.10-0.20
GIM 4	4.00	0.25	3.2	●	●	●	●	●	0.15-0.20

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23)

GIM-W-RA/LA

Parting Single-Sided Screw-Clamped Inserts with Central Ridged Chipformer for Alloy Steel

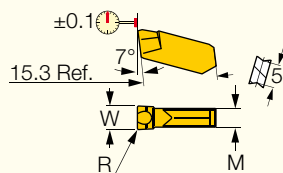
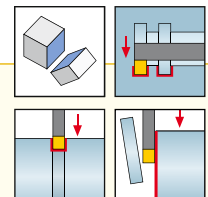


Designation	Dimensions				Tough ↔ Hard					Recommended Machining Data
	W±0.05	R±0.02	fa°	M	IC328	IC54	IC354	IC908	IC20	
GIM 3S-15RA	3.00	0.22	15.0	2.4	●					0.08-0.16
GIM 3-4R/LA	3.00	0.25	4.0	2.4	●	●	●	●	●	0.08-0.16
GIM 3-8R/LA	3.00	0.25	8.0	2.4	●	●	●	●	●	0.08-0.16
GIM 3.2-4R/LA	3.20	0.22	4.0	2.4	●		●		●	0.08-0.16
GIM 3.2-8R/LA	3.20	0.22	8.0	2.4	●		●	●	●	0.08-0.16
GIM 4-4R/LA	4.00	0.25	4.0	3.2			●	●	●	0.10-0.16
GIM 4-8R/LA	4.00	0.25	8.0	3.2	●		●	●	●	0.10-0.16

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23).

GIM-UT

Single-Ended Parting and Grooving Screw-Clamped Inserts, for Low Feeds, on CrNi Alloys and Low Carbon Steel

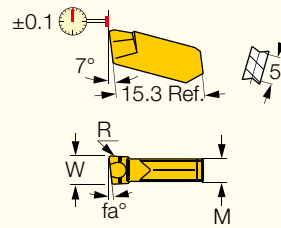
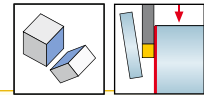


Designation	Dimensions			IC328	Recommended Machining Data
	W±0.03	R±0.02	M		
GIM 4.6UT	4.60	0.60	3.8	●	0.03-0.10

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23).

GIM-UT-RA/LA

Single-Ended Parting, Screw-Clamped Inserts, for Low Feeds on CrNi Alloys and Low Carbon Steel

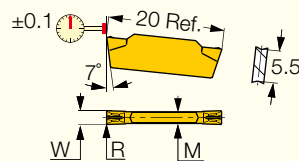
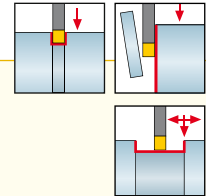


Designation	Dimensions				IC328	Recommended Machining Data
	$W \pm 0.03$	$R \pm 0.02$	f_a°	M		f groove (mm/rev)
	GIM 3UT-1.5RA	3.12	0.25	1.5		2.5

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23).

GDMW 2.4

Utility Double-Ended Inserts for External Turning, Grooving and Parting



Designation	Dimensions					Tough ↔ Hard				Recommended Machining Data		
	W±0.04	R±0.03	M	T _{max-r}	I	IC830	IC808	IC20	IC20N	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GDMW 2.4	2.40	0.18	2.0	18.00	20.00	●	●	●	●	0.25-1.50	0.07-0.12	0.05-0.08

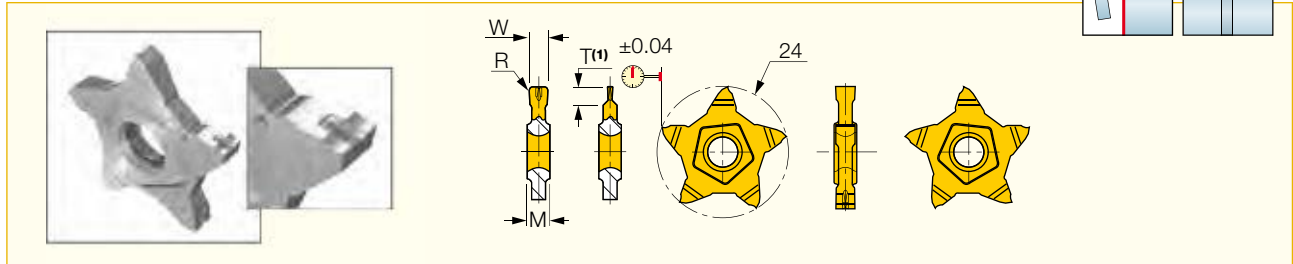
For tools, see pages: • PHGR/L (A17) • PHSR/L (A16).

Identification System for Standard Inserts

PENTA	24	N	150	J	010
Family name	Circular circumference of the insert	Insert lead angle (K) N, R, L	Cutting edge width W(mm)x100	Chipbreaker style J, Z	Corner radius R (mm)x100 for neutral insert. (K=0) Or lead angle for right- or left-hand inserts. (eg. 15D=15°)

PENTA 24N-J

Parting and Grooving Insert with 5 Cutting Edges, for Soft Materials, Parting of Tubes, Small and Thin-Walled Parts



Designation	Dimensions			Tough ↔ Hard		Recommended Machining Data f groove (mm/rev)
	W±0.02	R	T _{max-r(1)}	IC908	IC1008	
PENTA 24N050J000	0.50	0.00	1.00	●		0.02-0.04
PENTA 24N050J004	0.50	0.04	2.50		●	0.02-0.05
PENTA 24N080J000	0.80	0.00	1.60	●		0.02-0.05
PENTA 24N100J004	1.00	0.04	3.50	●		0.03-0.07
PENTA 24N100J006	1.00	0.06	3.50		●	0.03-0.07
PENTA 24N104J000	1.04	0.00	2.00	●		0.02-0.07
PENTA 24N120J000	1.20	0.00	2.00	●		0.03-0.07
PENTA 24N125J010	1.25	0.10	2.00	●		0.03-0.07
PENTA 24N140J000	1.40	0.00	2.00	●		0.03-0.08
PENTA 24N147J000	1.47	0.00	2.50	●		0.03-0.08
PENTA 24N150J010	1.50	0.10	5.00	●	●	0.03-0.10
PENTA 24N157J015	1.57	0.15	3.00	●		0.03-0.12
PENTA 24N170J010	1.70	0.10	3.00	●		0.03-0.12
PENTA 24N178J018	1.78	0.18	3.00	●		0.04-0.12
PENTA 24N185J015	1.85	0.15	3.00	●		0.04-0.12
PENTA 24N196J015	1.96	0.15	3.00	●		0.04-0.12
PENTA 24N200J020	2.00	0.20	6.00	●	●	0.04-0.12
PENTA 24N222J015	2.22	0.15	3.50	●		0.04-0.16
PENTA 24N230J020	2.30	0.20	3.50	●		0.04-0.16
PENTA 24N239J015	2.39	0.15	5.00	●		0.04-0.16
PENTA 24N247J020	2.47	0.20	5.00	●		0.04-0.16
PENTA 24N270J010	2.70	0.10	5.00	●		0.04-0.16
PENTA 24N287J020	2.87	0.20	6.50	●		0.04-0.16
PENTA 24N300J000	3.00	0.00	6.50	●		0.04-0.10
PENTA 24N300J020	3.00	0.20	6.50	●		0.04-0.16
PENTA 24N300J040	3.00	0.40	6.50	●		0.04-0.16
PENTA 24N315J015	3.15	0.15	6.50	●		0.04-0.16
PENTA 24N318J020	3.18	0.20	6.50	●		0.04-0.16
PENTA 24N330J010	3.30	0.10	0.00	●		0.00-0.00
PENTA 24N348J020	3.48	0.20	0.00	●		0.00-0.00
PENTA 24N356J020	3.56	0.20	0.00	●		0.00-0.00
PENTA 24N374J020	3.74	0.20	0.00	●		0.00-0.00
PENTA 24N398J020	3.98	0.20	0.00	●		0.00-0.00
PENTA 24N400J040	4.00	0.40	0.00	●		0.00-0.00
PENTA 24N423J010	4.23	0.10	0.00	●		0.00-0.00

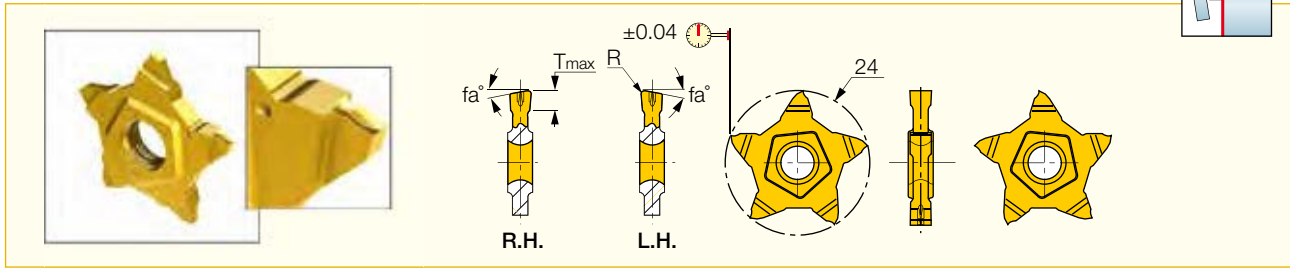
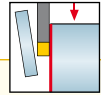
● Recessing is possible only with 2.39 mm and wider inserts.

(1) For grooving and parting depth relative to part diameter, see page (A85)

For tools, see pages: PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).

PENTA 24R/L-J

Insert with 5 Cutting Edges, for Parting of Tubes, Small and Thin-Walled Parts



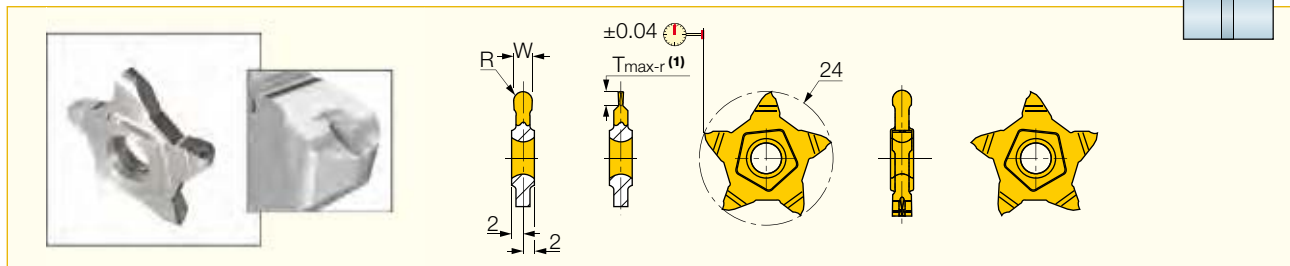
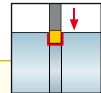
Designation	Dimensions				IC1008	Recommended Machining Data
	$W_{\pm 0.02}$	R	f_a°	$D_{max}^{(1)}$		f groove (mm/rev)
PENTA 24R/L100J15D	1.00	0.06	15.0	7.0	●	0.02-0.06
PENTA 24R/L150J15D	1.50	0.06	15.0	10.0	●	0.03-0.08
PENTA 24R/L150J06D	1.50	0.10	6.0	10.0	●	0.03-0.09
PENTA 24R/L200J06D	2.00	0.10	6.0	12.0	●	0.04-0.10
PENTA 24R/L200J15D	2.00	0.10	15.0	12.0	●	0.04-0.09

⁽¹⁾ For grooving and parting depth relative to part diameter, see page (A85)

For tools, see pages: • PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).

PENTA 24N-J (full radius)

Precision Grooving Pentagonal Full Radius Insert for Soft Materials



Designation	Dimensions			IC908	Recommended Machining Data
	$W_{\pm 0.02}$	R	$T_{max-r}^{(1)}$		f groove (mm/rev)
PENTA 24N100J050	1.00	0.50	3.50	●	0.03-0.07
PENTA 24N120J060	1.20	0.60	2.00	●	0.03-0.07
PENTA 24N140J070	1.40	0.70	2.00	●	0.05-0.08
PENTA 24N157J079	1.57	0.79	3.00	●	0.05-0.08
PENTA 24N200J100	2.00	1.00	3.00	●	0.05-0.12
PENTA 24N239J120	2.39	1.20	5.00	●	0.06-0.16
PENTA 24N300J150	3.00	1.50	6.50	●	0.06-0.20
PENTA 24N318J159	3.18	1.59	6.50	●	0.06-0.20
PENTA 24N400J200	4.00	2.00	6.25	●	0.06-0.20
PENTA 24N478J239	4.78	2.39	6.15	●	0.06-0.20

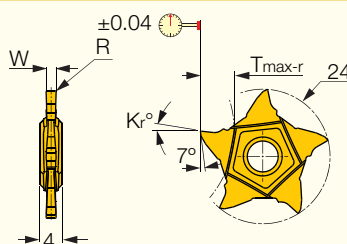
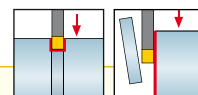
• Recessing is possible only with 2.39 mm and wider inserts.

⁽¹⁾ For grooving depth relative to part diameter, see page: (A85).

For tools, see pages: PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).

PENTA 24N-PF/P

Parting and Precision Grooving Pentagonal Insert with a High Positive Flat Rake



Designation	Dimensions					Tough ↔ Hard			Recommended Machining Data
	W±0.02	R	R±toler	T _{max-r} (1)	K _r °	IC908	IC1008	IC20N	
PENTA 24N100P005	1.00	0.05	0.020	3.50	12.0		●		0.02-0.05
PENTA 24N100PF010	1.00	0.10	0.020	4.00	6.0	●		●	0.03-0.06
PENTA 24N150P005	1.50	0.05	0.020	5.00	12.0		●		0.02-0.07
PENTA 24N150PF020	1.50	0.20	0.030	6.00	6.0	●		●	0.03-0.09
PENTA 24N185PF020	1.85	0.20	0.030	6.00	6.0			●	0.03-0.10
PENTA 24N200P005	2.00	0.05	0.020	6.00	12.0		●		0.02-0.08
PENTA 24N200PF020	2.00	0.20	0.030	6.50	6.0	●		●	0.04-0.10
PENTA 24N239PF015	2.39	0.15	0.030	6.50	6.0	●			0.04-0.14
PENTA 24N250PF020	2.50	0.20	0.030	6.50	6.0	●		●	0.04-0.14
PENTA 24N300PF020	3.00	0.20	0.030	6.50	6.0	●		●	0.04-0.14

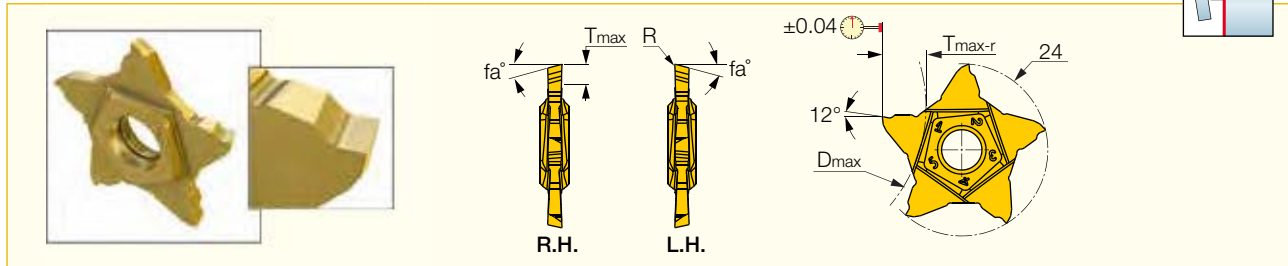
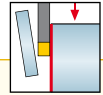
(1) For grooving and parting depth relative to part diameter, see page (A85)

For tools, see pages: • PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).



PENTA 24R-P

Parting Inserts with 5 Cutting Edges, for Soft Materials, Thin Walls and Miniature Parts



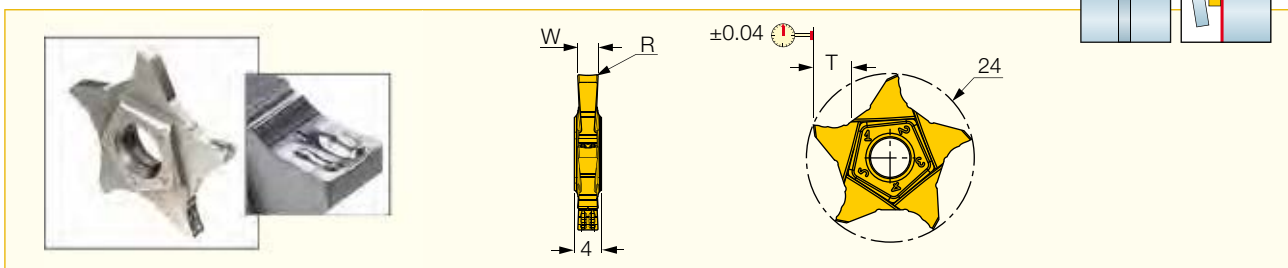
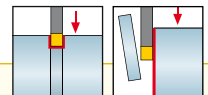
Designation	Dimensions				IC1008	Recommended Machining Data
	W ± 0.02	R	fa°	D _{max} ⁽¹⁾		f groove (mm/rev)
PENTA 24R100P06D	1.00	0.05	6.0	7.2	●	0.02-0.04
PENTA 24R100P15D	1.00	0.05	15.0	7.2	●	0.02-0.03
PENTA 24R150P06D	1.50	0.05	6.0	11.0	●	0.02-0.05
PENTA 24R150P15D	1.50	0.05	15.0	11.0	●	0.02-0.04
PENTA 24R200P06D	2.00	0.05	6.0	12.6	●	0.02-0.07
PENTA 24R200P15D	2.00	0.05	15.0	12.6	●	0.02-0.05

⁽¹⁾ For grooving and parting depth relative to part diameter, see page (A85)

For tools, see pages: • PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).

PENTA 24N-Z

Insert with 5 Cutting Edges, for Grooving and Parting of Tubes, Small and Thin-Walled Parts



Designation	Dimensions			IC908	Recommended Machining Data
	W ± 0.02	R	T _{max-r} ⁽¹⁾		f groove (mm/rev)
PENTA 24N150Z010	1.50	0.10	5.00	●	0.05-0.08
PENTA 24N200Z020	2.00	0.20	6.40	●	0.04-0.12
PENTA 24N300Z020	3.00	0.20	6.40	●	0.04-0.16

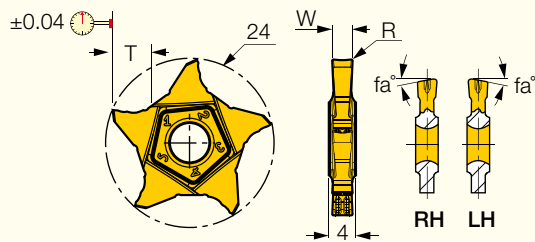
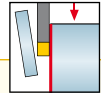
• Cutting edge with high positive rake, suitable for parting of tubes, thin walled parts and for small diameters • Suitable for machining soft materials and bearing steel at low to medium feeds

⁽¹⁾ For grooving and parting depth relative to part diameter, see page (A85)

For tools, see pages: • PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).

PENTA 24R/L-Z

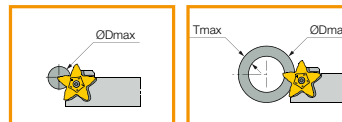
Insert with 5 Cutting Edges, for Parting of Tubes, Small and Thin-Walled Parts



Designation	Dimensions				IC1008	Recommended Machining Data
	W	fa°	R	D _{max}		f groove (mm/rev)
PENTA 24R/L150Z06D	1.50	6.0	0.06	10.0	●	0.03-0.09
PENTA 24R/L150Z15D	1.50	15.0	0.06	10.0	●	0.03-0.08
PENTA 24R/L200Z06D	2.00	6.0	0.10	12.8	●	0.04-0.10
PENTA 24R/L200Z15D	2.00	15.0	0.10	12.8	●	0.04-0.09
PENTA 24R/L300Z06D	3.00	6.0	0.20	12.8	●	0.04-0.13
PENTA 24R/L300Z15D	3.00	15.0	0.20	12.8	●	0.04-0.12

• Cutting edge with high positive rake, suitable for parting of tubes, thin walled parts and for small diameters • Suitable for machining soft materials and bearing steel at low to medium feeds

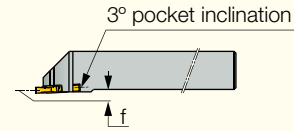
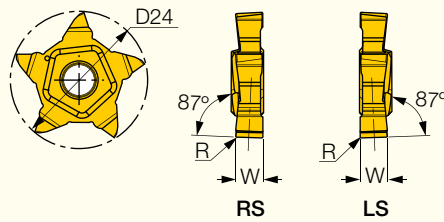
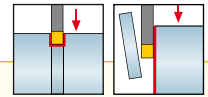
For tools, see pages: • PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).



W±0.02	T _{max} (1)	T _{max} / D _{max}	D _{max} as a Function of Parting / Grooving Depth (T) for PENTA 24 Inserts								
			T≤3.0	T≤3.5	T≤4.0	T≤4.5	T≤5.0	T≤5.5	T≤6.0	T≤6.2	T≤6.4
W=0.50	1.0	1.0 / N.L.	-	-	-	-	-	-	-	-	-
W=0.50	2.5	2.5 / N.L.	-	-	-	-	-	-	-	-	-
W=0.80	1.6	1.6 / N.L.	-	-	-	-	-	-	-	-	-
W=1.00	3.5		N.L.	250	-	-	-	-	-	-	-
1.04≤W≤1.40	2.0	2.0 / N.L.	-	-	-	-	-	-	-	-	-
W=1.47	2.5	2.5 / N.L.	-	-	-	-	-	-	-	-	-
W=1.50	5.0		N.L.	470	210	70	30	-	-	-	-
1.57≤W≤1.96	3.0		N.L.	-	-	-	-	-	-	-	-
W=2.00	6.0(2)		N.L.	470	210	130	75	45	20	-	-
2.22≤W≤2.30	3.5		N.L.	250	-	-	-	-	-	-	-
2.39≤W≤2.50	5.0		N.L.	470	210	70	30	-	-	-	-
2.70≤W≤3.18	6.2		N.L.	470	210	135	100	70	40	20	-
3.19≤W≤3.74	6.4		N.L.	350	180	115	80	52	32	26	20
3.75<W<4.00	6.2		N.L.	350	180	115	80	62	32	18	-

PENTA 24N-RS/LS

Parting and Precision Grooving Pentagonal Inserts, for Next to High Shoulder Applications



f - refer to inserts data

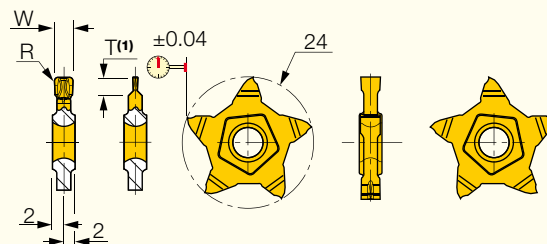
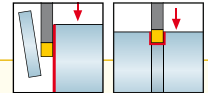
Designation	Dimensions					IC908	Recommended Machining Data
	W ± 0.02	R	T $_{max-r}$	D $_{max}$	f		f groove (mm/rev)
PENTA 24N080NF010R/LS	0.80	0.10	1.60	- ⁽¹⁾	1.6	●	0.03-0.05
PENTA 24N100NF010R/LS	1.00	0.10	1.80	- ⁽¹⁾	1.5	●	0.03-0.06
PENTA 24N119NF010R/LS	1.19	0.10	2.00	- ⁽¹⁾	1.4	●	0.03-0.06
PENTA 24N157NF020R/LS	1.57	0.20	3.00	- ⁽¹⁾	1.2	●	0.03-0.08
PENTA 24N157NF079R/LS	1.57	0.79	3.00	- ⁽¹⁾	1.2	●	0.03-0.08
PENTA 24N200NF020R/LS	2.00	0.20	3.00	- ⁽¹⁾	1.0	●	0.03-0.10
PENTA 24N239NF020R/LS	2.39	0.20	5.00	40.0	0.8	●	0.03-0.12
PENTA 24N239NF119R/LS	2.39	1.19	5.00	40.0	0.8	●	0.03-0.12
PENTA 24N300NF020R/LS	3.00	0.20	6.20	16.0	0.5	●	0.04-0.14
PENTA 24N318NF020R/LS	3.18	0.20	6.50	13.0	0.4	●	0.04-0.14
PENTA 24N318NF159R/LS	3.18	1.59	6.50	13.0	0.4	●	0.04-0.14
PENTA 24N400NF020R/LS	4.00	0.20	6.50	13.0	1.0	●	0.04-0.16
PENTA 24N480NF020R/LS	4.80	0.20	6.50	13.0	1.6	●	0.04-0.16

⁽¹⁾ No limit

For tools, see pages: PCHRS/LS (A42).

PENTA 24N-C

Parting and Grooving Insert with 5 Cutting Edges, for Parting Bars, Hard Materials and Tough Applications



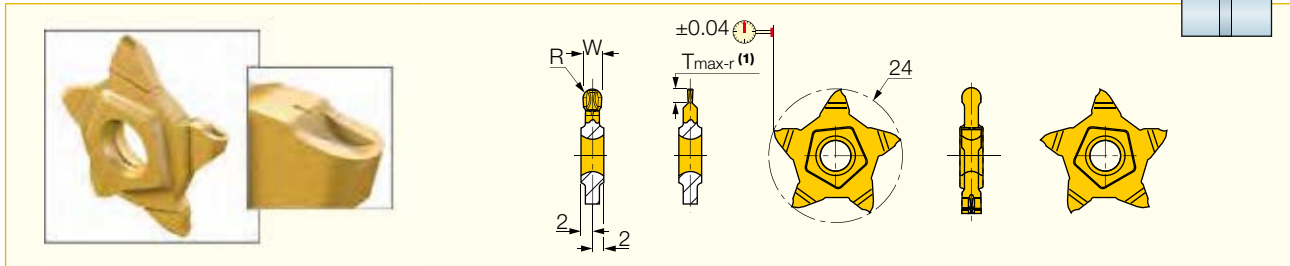
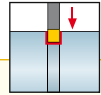
Designation	Dimensions			IC908	Recommended Machining Data
	W ± 0.02	R	T $_{max-r}$ ⁽¹⁾		f groove (mm/rev)
PENTA 24N150C010	1.50	0.10	5.00	●	0.05-0.11
PENTA 24N157C015	1.57	0.15	3.00	●	0.05-0.12
PENTA 24N178C018	1.78	0.18	3.00	●	0.05-0.14
PENTA 24N200C020	2.00	0.20	6.00	●	0.05-0.16
PENTA 24N230C020	2.30	0.20	3.50	●	0.06-0.17
PENTA 24N239C015	2.39	0.15	5.00	●	0.07-0.18
PENTA 24N247C020	2.47	0.20	5.00	●	0.08-0.20
PENTA 24N300C020	3.00	0.20	6.20	●	0.10-0.25
PENTA 24N300C040	3.00	0.40	6.20	●	0.10-0.25
PENTA 24N318C020	3.18	0.20	6.20	●	0.10-0.25

⁽¹⁾ For grooving and parting depth relative to part diameter, see page (A85)

For tools, see pages: ● PCHBR/L (A43) ● PCHPR/L (A42) ● PCHR/L-24 (A41) ● PCHR/L-24-JHP (A41).

PENTA 24N-C (full radius)

Full Radius Grooving Inserts with 5 Cutting Edges, for Hard Materials and Tough Applications



Designation	Dimensions			IC908	Recommended Machining Data
	$W \pm 0.02$	R	$T_{\max-r}^{(1)}$		f groove (mm/rev)
PENTA 24N200C100	2.00	1.00	3.00	●	0.04-0.16

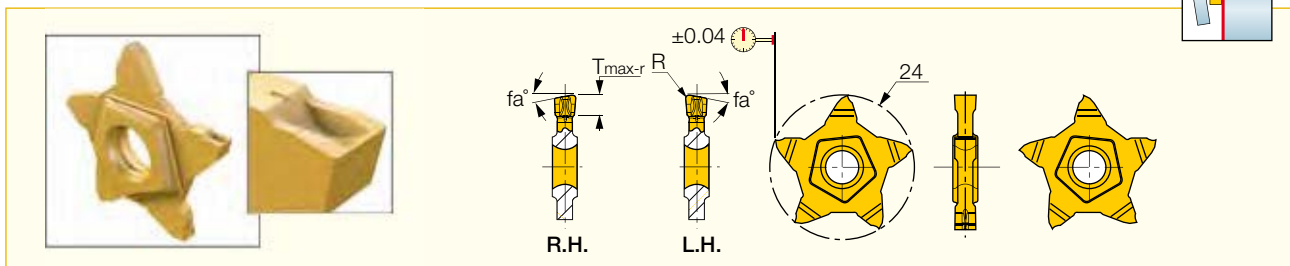
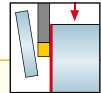
• Recessing is possible only with 2.39 mm and wider inserts.

⁽¹⁾ For grooving and parting depth relative to part diameter, see page (A85)

For tools, see pages: • PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).

PENTA 24R-C

Parting Inserts with 5 Cutting Edges, for Parting Bars, Hard Materials and Tough Applications



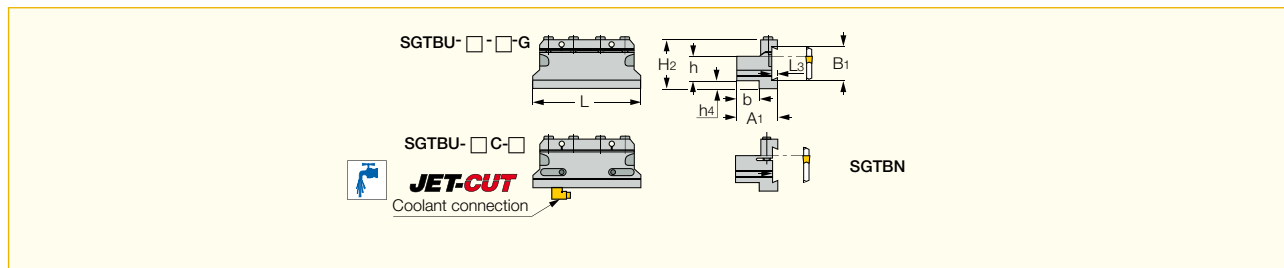
Designation	Dimensions				IC1008	Recommended Machining Data
	$W \pm 0.02$	R	f_a°	$T_{\max-r}$		f groove (mm/rev)
PENTA 24R150C06D	1.50	0.06	6.0	5.00	●	0.03-0.10
PENTA 24R200C06D	2.00	0.10	6.0	6.00	●	0.04-0.12

For tools, see pages: • PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).

TOOL BLOCKS

SGTBU/SGTBN

Blocks for Various Parting and Grooving Blades



Designation	h	b	B ₁	A ₁	H ₂	h ₄	L ₃	L
SGTBN 16-2	16.0	16.0	19.0	26.00	30.0	4.0	2.00	76.00
SGTBU 16-5G	16.0	17.0	26.0	34.00	43.0	13.0	4.00	86.00

- Choose blade by B₁ dimension

For tools, see pages: • CGHN-D (A25) • DGFH (A18) • DGFHR/L (A51) • DGFHR/L-B-D..(R/L) (A51) • HGFH (A18) • PCHBR/L (A43) • TGFH/R/L (A57) • TGFHL-TR (A63) • TGFHR/L (A58) • TGHN-D (A21)

Spare Parts

Designation	Top Clamp	Screw	Key
SGTBN 16-2		SR M5X25DIN912 12.9	HW 4.0
SGTBU 16-5G	BKU 86	SR M6X30DIN912 12.9	HW 5.0

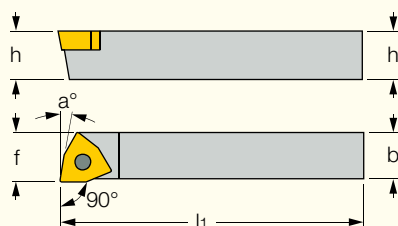
* (Optional, should be ordered separately)

ISO*TURN*



SWAPR/L

90° Approach Angle Screw Lock Toolholders Carrying Trigon Inserts, for Swiss Automatics



Right-hand shown

Designation	h	b	l ₁	f	a°	Insert
SWAPR/L 0808-04	8.0	8.0	140.00	8.1	6	WPEB/X 04..
SWAPR 1010-04	10.0	10.0	150.00	10.1	10	WPEB/X 04..
SWAPR/L 1010-05	10.0	10.0	150.00	10.1	10	WPEB/X 05..
SWAPR/L 1212-05	12.0	12.0	150.00	12.1	10	WPEB/X 05..
SWAPR/L 1212-06	12.0	12.0	150.00	12.1	10	WPEB/X 06..
SWAPR/L 1414-06	14.0	14.0	150.00	14.1	10	WPEB/X 06..
SWAPR/L 1616-06	16.0	16.0	150.00	16.1	10	WPEB/X 06..

• For R.H. tool use -R screw, for L.H. tool use -L screw.

For inserts, see pages: WPEB (B90) • WPEX (B90).

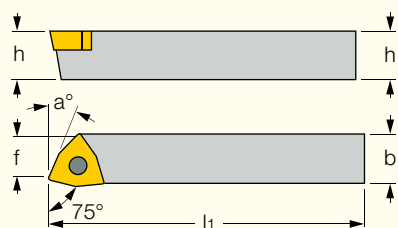
Spare Parts



Designation	Key	Screw
SWAPL 0808-04	T-8/5	SR M3.0L
SWAPR 0808-04	T-8/5	SR M3.0R
SWAPR 1010-04	T-8/5	SR M3.0R
SWAPL 1010-05	T-8/5	SR M3.5L
SWAPR 1010-05	T-8/5	SR M3.5R
SWAPL 1212-05	T-8/5	SR M3.5L
SWAPL 1212-06	T-8/5	SR M3.5L
SWAPR 1212-06	T-8/5	SR M3.5R
SWAPL 1414-06	T-8/5	SR M3.5L
SWAPR 1414-06	T-8/5	SR M3.5R
SWAPL 1616-06	T-8/5	SR M3.5L
SWAPR 1616-06	T-8/5	SR M3.5R

SWBPR/L

75° Approach Angle Screw Lock Toolholders Carrying Trigon Inserts, for Swiss Automatics



Right-hand shown

Designation	h	b	l ₁	f	a°	Insert
SWBPL 0810-04	8.0	10.0	150.00	10.1	21	WPEB/X 04..
SWBPR 1212-05	12.0	12.0	150.00	9.8	25	WPEB/X 05..
SWBPR/L 1414-06	14.0	14.0	150.00	14.1	25	WPEB/X 06..
SWBPR 1616-06	16.0	16.0	150.00	16.1	25	WPEB/X 06..

• For R.H. tool use -R screw, for L.H. tool use -L screw.

For inserts, see page: WPEB (B89) • WPEX (B89).

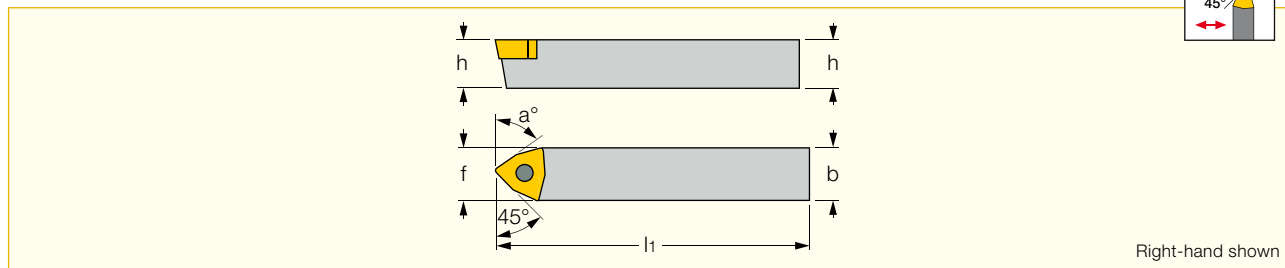
Spare Parts



Designation	Key	Screw
SWBPL 0810-04	T-8/5	SR M3.0L
SWBPR 1212-05	T-8/5	SR M3.5R
SWBPL 1414-06	T-8/5	SR M3.5L
SWBPR 1414-06	T-8/5	SR M3.5R
SWBPR 1616-06	T-8/5	SR M3.5R

SWDPR/L

45° Approach Angle Screw Lock Toolholders Carrying Trigon Inserts, for Swiss Automatics



Right-hand shown

Designation	h	b	l ₁	f	a°	Insert
SWDPR/L 1010-04	10.0	10.0	150.00	10.1	51	WPEB/X 04..
SWDPR/L 1212-05	12.0	12.0	150.00	12.1	55	WPEB/X 05..
SWDPR 1616-06	16.0	16.0	150.00	16.1	55	WPEB/X 06..

• For R.H. tool use -R screw, for L.H. tool use -L screw.

For inserts, see pages: WPEB (B90) • WPEX (B90).

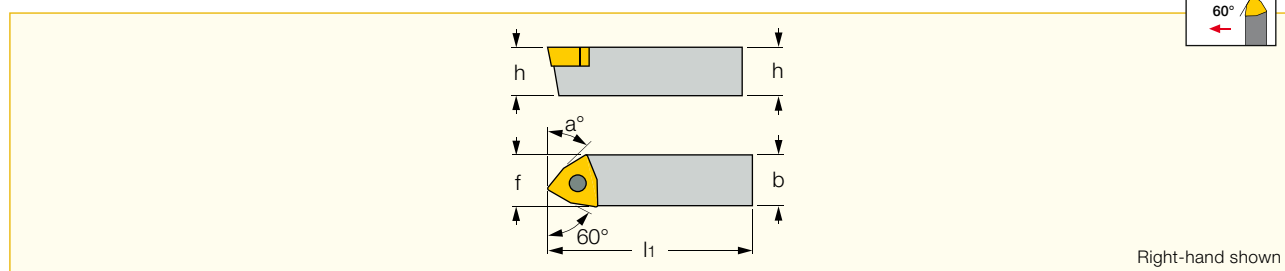
Spare Parts



Designation	Key	Screw
SWDPL 1010-04	T-8/5	SR M3.0L
SWDPR 1010-04	T-8/5	SR M3.0R
SWDPL 1212-05	T-8/5	SR M3.5L
SWDPR 1212-05	T-8/5	SR M3.5R
SWDPR 1616-06	T-8/5	SR M3.5R

SWEPR/L

60° Approach Angle Screw Lock Toolholders Carrying Trigon Inserts, for Swiss Automatics



Right-hand shown

Designation	h	b	l ₁	f	a°	Insert
SWEPR/L 0810-04	8.0	10.0	150.00	10.1	36	WPEB/X 04..
SWEPR/L 1010-04	10.0	10.0	150.00	10.1	36	WPEB/X 04..
SWEPR/L 1212-05	12.0	12.0	150.00	12.1	40	WPEB/X 05..
SWEPR 1414-06	14.0	14.0	150.00	14.1	40	WPEB/X 06..
SWEPR 1616-06	16.0	16.0	150.00	16.1	40	WPEB/X 06..

• For R.H. tool use -R screw, for L.H. tool use -L screw.

For inserts, see pages: WPEB (B89) • WPEX (B89).

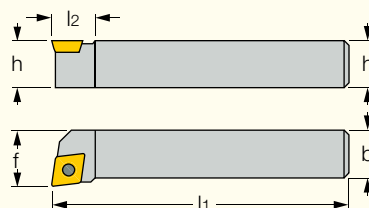
Spare Parts



Designation	Key	Screw
SWEPL 0810-04	T-8/5	SR M3.0L
SWEPR 0810-04	T-8/5	SR M3.0R
SWEPL 1010-04	T-8/5	SR M3.0L
SWEPR 1010-04	T-8/5	SR M3.0R
SWEPL 1212-05	T-8/5	SR M3.5L
SWEPR 1212-05	T-8/5	SR M3.5R
SWEPR 1414-06	T-8/5	SR M3.5R
SWEPR 1616-06	T-8/5	SR M3.5R

SCLCR/L

Screw Lock Toolholders for 80° Diamond Inserts with 7° Clearance Angle



Right-hand shown

Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
SCLCR/L 0808F-06	8.0	8.0	80.00	10.0	10.0	0	0	CC.. 0602
SCLCR/L 1010F-06	10.0	10.0	80.00	10.0	12.0	0	0	CC.. 0602
SCLCR/L 1212F-09	12.0	12.0	80.00	14.0	16.0	0	0	CC.. 09T3
SCLCR/L 1616H-09	16.0	16.0	100.00	14.0	20.0	0	0	CC.. 09T3

For inserts, see pages: CCMT-F3P (B67) • CCMT-M3M (B68) • CCMT-PF (B69) • CCMT/CCGT-SM (B68) • CCET-WF (B70) • CCMT-WG (B71) • CCGT-AS (B92) • CCGT-AF (B93) • CCMT-14 (B69) • CCMT/CCGT (B70)

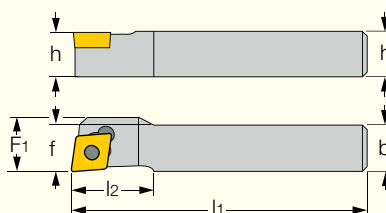
Spare Parts



Designation	Screw	Key
SCLCR/L 0808F-06	SR 14-548	
SCLCR/L 1010F-06	SR 14-548	
SCLCR/L 1212F-09	SR 16-236	
SCLCR/L 1616H-09	SR 16-236	

SCACR/L-S

Screw Lock Holders for 7° Clearance 80° Diamond Inserts for Swiss Type Machines



Right-hand shown

Designation	h	b	l ₁	l ₂	f	F ₁	G _a °	G _r °	Insert
SCACR/L 0808K-06S	8.0	8.0	125.00	8.0	8.2	-	0	0	CC.. 0602
SCACR/L 1010K-06S	10.0	10.0	150.00	-	10.0	-	0	0	CC.. 0602
SCACR/L 1616K-06S	16.0	16.0	125.00	-	16.2	-	0	0	CC.. 0602
SCACR/L 1010K-09S	10.0	10.0	125.00	15.2	10.2	-	0	0	CC.. 09T3
SCACR/L 1212K-09S	12.0	12.0	150.00	15.0	12.0	14.0	0	0	CC.. 09T3
SCACR/L 1616K-09S	16.0	16.0	125.00	-	16.2	-	0	0	CC.. 09T3

For inserts, see pages: CCMT-F3P (B67) • CCMT-M3M (B68) • CCMT-PF (B69) • CCMT/CCGT-SM (B68) • CCET-WF (B70) • CCMT-WG (B71) • CCGT-AS (B92) • CCMT-14 (B69) • CCMT/CCGT (B70)

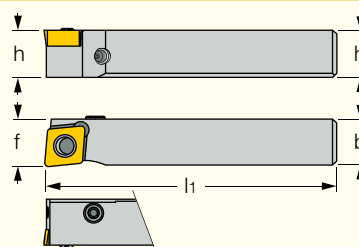
Spare Parts



Designation	Screw	Key
SCACR/L 0808K-06S	SR 14-548	T-7/5
SCACR/L 1010K-06S	SR 14-548	T-7/5
SCACR/L 1616K-06S	SR 14-548	T-7/5
SCACR/L 1010K-09S	SR 16-236	T-15/5
SCACR/L 1212K-09S	SR 16-236	T-15/5
SCACR/L 1616K-09S	SR 16-236	T-15/5

PCLCR/L-S

Side Lever Lock Tools for 80° Positive Rhombic Inserts for Swiss Automatic Machines



Right-hand shown

Designation	h	b	l ₁	f	G _a °	G _r °	Insert
PCLCR 0808M-06S	8.0	8.0	150.00	8.0	0	0	CC.. 0602
PCLCR/L 1010M-06S	10.0	10.0	150.00	10.2	0	0	CC.. 0602
PCLCR/L 1212M-06S	12.0	12.0	150.00	12.2	0	0	CC.. 0602
PCLCL 1616M-06S	16.0	16.0	150.00	16.2	0	0	CC.. 0602
PCLCR/L 1012M-09S	10.0	12.0	150.00	12.2	0	0	CC.. 09T3
PCLCR/L 1212M-09S	12.0	12.0	150.00	12.2	0	0	CC.. 09T3
PCLCR/L 1616M-09S	16.0	16.0	150.00	16.2	0	0	CC.. 09T3

• The clamping screw may be transferred to the opposite side if needed

For inserts, see pages: CCMT-F3P (B67) • CCMT-M3M (B68) • CCMT-PF (B69) • CCMT/CCGT-SM (B68) • CCET-WF (B70) • CCMT-WG (B71) • CCGT-AS (B92) • CCGT-AF (B93) • CCMT-14 (B69) • CCMT/CCGT (B70)

Spare Parts

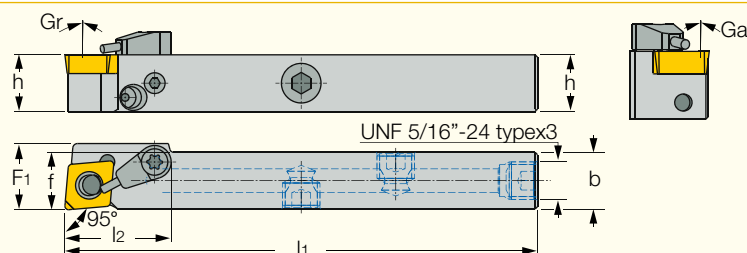


Designation	Lever	Locking Pin	Screw	Hex Flag Key
PCLCR 0808M-06S	SL LV-2	SL PI-2	PIN SR 10400611	HW 2.0/5
PCLCR/L 1010M-06S	SL LV-2	SL PI-2	PIN SR 10400611	HW 2.0/5
PCLCR/L 1212M-06S	SL LV-2	SL PI-2	PIN SR 10400611	HW 2.0/5
PCLCL 1616M-06S	SL LV-2	SL PI-2	PIN SR 10400611	HW 2.0/5
PCLCR/L 1012M-09S	SL LV-3	SL PI-3	SR 10400150	HW 2.5/5
PCLCR/L 1212M-09S	SL LV-3	SL PI-3	SR 10400150	HW 2.5/5
PCLCR/L 1616M-09S	SL LV-3	SL PI-3	SR 10400150	HW 2.5/5

ISOTURN • JETCUT

PCLCR/L-S-JHP

Lever Lock Tools with Channels for High Pressure Coolant for 80° Positive Rhombic Inserts for Swiss Automatic Machines



Right-hand shown

Designation	h	b	l ₁	l ₂	f	f ₁	G _a °	G _r °	Insert
PCLCR/L 1010H-06S-JHP	10.0	10.0	100.00	22.3	10.2	-	0	0	CC.. 0602
PCLCR/L 1212H-09S-JHP	12.0	12.0	100.00	22.3	12.2	14.0	0	0	CC.. 09T3
PCLCR/L 1616K-09S-JHP	16.0	16.0	125.00	22.3	16.2	-	0	0	CC.. 09T3

For inserts, see pages: CCMT-F3P (B67) • CCMT-M3M (B68) • CCMT-PF (B69) • CCMT/CCGT-SM (B68) • CCET-WF (B70) • CCMT-WG (B71) • CCGT-AS (B92) • CCGT-AF (B93) • CCMT-14 (B69) • CCMT/CCGT (B70)

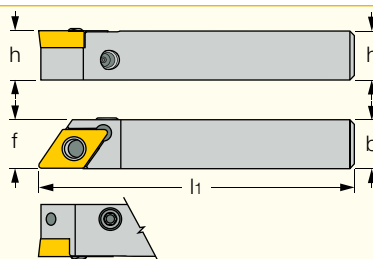
Spare Parts



Designation	Lever	Locking Pin	Screw	Hex Flag Key	Plug	Cooling Unit
PCLCR/L-JHP	SL LV-3	SL PI-3	SR 10400150	HW 2.5/5	SR 5/16UNF TL360	S-CU-JHP

PDACR/L-S

Side Lever Lock Tools for 55° Positive Rhombic Inserts for Swiss Automatic Machines



Right-hand shown

Designation	h	b	l ₁	f	G _a °	G _r °	Insert
PDACR/L 0808M-07S	8.0	8.0	150.00	8.0	0	0	DC..0702
PDACR/L 1010M-07S	10.0	10.0	150.00	10.0	0	0	DC..0702
PDACR/L 1212M-07S	12.0	12.0	150.00	12.0	0	0	DC..0702
PDACR/L 1616M-07S	16.0	16.0	150.00	16.0	0	0	DC..0702
PDACR/L 1012M-11S	10.0	12.0	150.00	12.0	0	0	DC..11T3
PDACR/L 1212M-11S	12.0	12.0	150.00	12.0	0	0	DC..11T3
PDACR/L 1616M-11S	16.0	16.0	150.00	16.0	0	0	DC..11T3

• The clamping screw may be transferred to the opposite side if needed

For inserts, see pages: DCMT-F3P (B73) • DCMT-M3M (B73) • DCMT-PF (B76) • DCMT/DCGT-SM (B74) • DCET-WF (B75) • DCGT-AS (B93) • DCGT-AF (B94) • DCMT-14 (B75) • DCMT/DCGT (B74)

Spare Parts

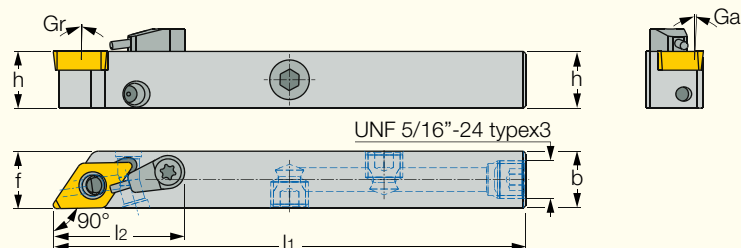


Designation	Lever	Locking Pin	Screw	Hex Flag Key
PDACR/L 0808M-07S	SL LV-2	SL PI-2	PIN SR 10400611	HW 2.0/5
PDACR/L 1010M-07S	SL LV-2	SL PI-2	PIN SR 10400611	HW 2.0/5
PDACR/L 1212M-07S	SL LV-2	SL PI-2	PIN SR 10400611	HW 2.0/5
PDACR/L 1616M-07S	SL LV-2	SL PI-2	PIN SR 10400611	HW 2.0/5
PDACR/L 1012M-11S	SL LV-3	SL PI-3	SR 10400150	HW 2.5/5
PDACR/L 1212M-11S	SL LV-3	SL PI-3	SR 10400150	HW 2.5/5
PDACR/L 1616M-11S	SL LV-3	SL PI-3	SR 10400150	HW 2.5/5

ISOTURN • JETCUT

PDACR/L-JHP

Lever Lock Tools with Channels for High Pressure Coolant for 55° Positive Rhombic Inserts for Swiss Automatic Machines



Right-hand shown

Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
PDACR/L 1010H-07S-JHP	10.0	10.0	100.00	20.4	10.2	0	0	DC..0702
PDACR/L 1212H-11S-JHP	12.0	12.0	100.00	28.0	12.2	0	0	DC..11T3
PDACR/L 1616K-11S-JHP	16.0	16.0	125.00	28.0	16.2	0	0	DC..11T3

For inserts, see pages: DCMT-F3P (B73) • DCMT-M3M (B73) • DCMT-PF (B76) • DCMT/DCGT-SM (B74) • DCET-WF (B75) • DCGT-AS (B93) • DCGT-AF (B94) • DCMT-14 (B75) • DCMT/DCGT (B74)

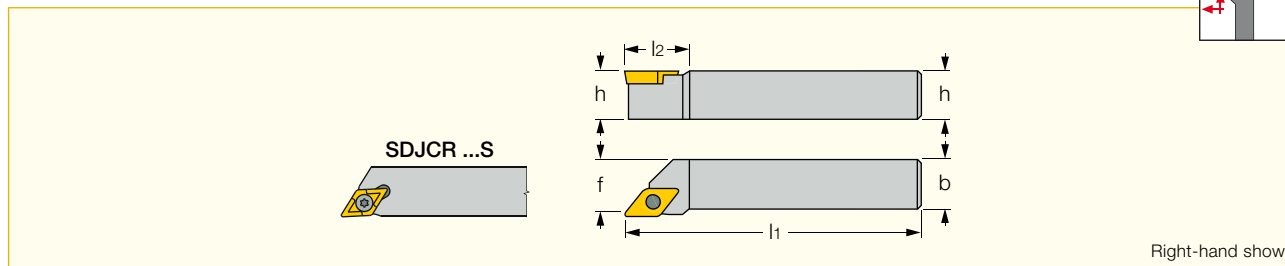
Spare Parts



Designation	Lever	Locking Pin	Screw	Hex Flag Key	Plug	Cooling Unit
PDACR/L-JHP	SL LV-3	SL PI-3	SR 10400150	HW 2.5/5	SR 5/16UNF TL360	S-CU-JHP

SDJCR/L

Screw Lock Toolholders for 55° Diamond Inserts with 7° Clearance Angle



Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
SDJCR/L 0808F-07	8.0	8.0	80.00	11.5	10.0	0	0	DC..0702
SDJCR/L 1010F-07	10.0	10.0	80.00	11.5	12.0	0	0	DC..0702
SDJCR/L 1212K-07S ⁽¹⁾	12.0	12.0	125.00	-	12.2	0	0	DC..0702
SDJCR/L 1616K-07S ⁽¹⁾	16.0	16.0	125.00	-	16.2	0	0	DC..0702
SDJCR/L 1010K-11S ⁽¹⁾	10.0	10.0	125.00	21.4	10.2	0	0	DC..11T3
SDJCR/L 1212F-11	12.0	12.0	80.00	20.0	16.0	0	0	DC..11T3
SDJCR/L 1616H-11	16.0	16.0	100.00	20.0	20.0	0	0	DC..11T3

⁽¹⁾ For Swiss type machines

For inserts, see pages: DCMT-F3P (B73) • DCMT-M3M (B73) • DCMT-PF (B76) • DCMT/DCGT-SM (B74) • DCET-WF (B75) • DCGT-AS (B93) • DCGT-AF (B94) • DCMT-14 (B75) • DCMT/DCGT (B74)

Spare Parts

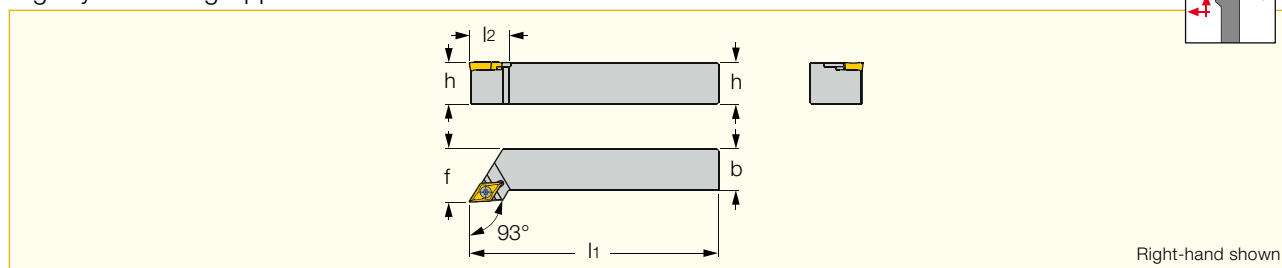


Designation	Screw	Key
SDJCR/L 0808F-07	SR 14-548	
SDJCR/L 1010F-07	SR 14-548	
SDJCR/L 1212K-07S	SR 14-548	
SDJCR/L 1616K-07S	SR 14-548	
SDJCR/L 1010K-11S	SR 16-236	
SDJCR/L 1212F-11	SR 16-236 P	
SDJCR/L 1616H-11	SR 16-236 P	

SAFE-T-LOCK • ISOTURN

SDJCR/L-13-SL

Screw Lock Toolholders for 55° Diamond Inserts with 7° Clearance Angle, High Rigidity in Profiling Applications



Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
SDJCR/L 1616H-13-SL	16.0	16.0	100.00	24.0	21.0	0	0	DCMT 13T5-SL

• Insert clamping torque 3 Nxm

For inserts, see pages: DCMT-F3P-SL (B77) • DCMT-M3M-SL (B78) • DCMT-PF-SL (B78) • DCMT-SM-SL (B78).

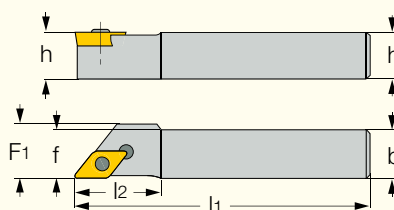
Spare Parts



Designation	Screw	Key
SDJCR/L-13-SL	SR M4X0.7-L9.6 IP15 TORX PLUS IP15X45	

SDACR/L

Screw Lock Toolholders for 55° Diamond Inserts with 7° Clearance Angle



Right-hand shown

Designation	h	b	l ₁	l ₂	f	F ₁	G _a °	G _r °	Insert
SDACR/L 1010K-07S	10.0	10.0	125.00	-	10.0	-	0	0	DC..0702
SDACR/L 1212K-07S	12.0	12.0	125.00	-	12.0	-	0	0	DC..0702
SDACR/L 1212K-11S	12.0	12.0	125.00	20.0	12.0	14.0	0	0	DC..11T3
SDACR/L 1616K-11S	16.0	16.0	150.00	-	16.0	-	0	0	DC..11T3

For inserts, see pages: DCMT-F3P (B73) • DCMT-M3M (B73) • DCMT-PF (B76) • DCMT/DCGT-SM (B74) • DCET-WF (B75) • DCGT-AS (B93) • DCGT-AF (B94) • DCMT-14 (B75) • DCMT/DCGT (B74)

Spare Parts

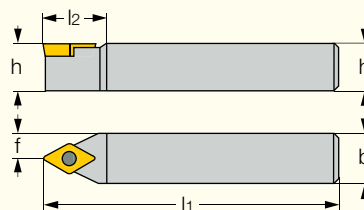


Designation	Screw	Key
SDACR/L 1010K-07S	SR 14-548	T-7/5
SDACR/L 1212K-07S	SR 14-548	T-7/5
SDACR/L 1212K-11S	SR 16-236 P	T-15/5
SDACR/L 1616K-11S	SR 16-236 P	T-15/5



SDNCN

Screw Lock Toolholders for 55° Diamond Inserts with 7° Clearance Angle



Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
SDNCN 0808F-07	8.0	8.0	80.00	14.0	4.0	0	0	DC..0702
SDNCN 1010F-07	10.0	10.0	80.00	14.5	5.0	0	0	DC..0702
SDNCN 1010K-11S ⁽¹⁾	10.0	10.0	120.00	20.0	5.0	0	0	DC..11T3
SDNCN 1212F-11	12.0	12.0	80.00	21.3	6.0	0	0	DC..11T3
SDNCN 1616H-11	16.0	16.0	100.00	21.0	8.0	0	0	DC..11T3

⁽¹⁾ For Swiss type machines

For inserts, see pages: DCMT-F3P (B73) • DCMT-M3M (B73) • DCMT-PF (B76) • DCMT/DCGT-SM (B74) • DCGT-AS (B93) • DCGT-AF (B94) • DCMT-14 (B75) • DCMT/DCGT (B74)

Spare Parts



Designation	Key 1	Screw
SDNCN 0808F-07	T-7/5	SR 14-548
SDNCN 1010F-07	T-7/5	SR 14-548
SDNCN 1010K-11S	T-15/5	SR 16-236
SDNCN 1212F-11	T-15/5	SR 16-236 P
SDNCN 1616H-11	T-15/5	SR 16-236 P

SAFE-T-LOCK • ISOTURN

SDNCN-13-SL

Screw Lock Toolholders for 55° Diamond Inserts with 7° Clearance Angle, High Rigidity in Profiling Applications



Designation	h	b	l ₁	l ₂	f	G _a °	G _r °
SDNCN 1616H-13-SL	16.0	16.0	100.00	25.0	8.0	0	0

• Insert clamping torque 3 Nxm

For inserts, see pages: DCMT-F3P-SL (B77) • DCMT-M3M-SL (B78) • DCMT-PF-SL (B78) • DCMT-SM-SL (B78).

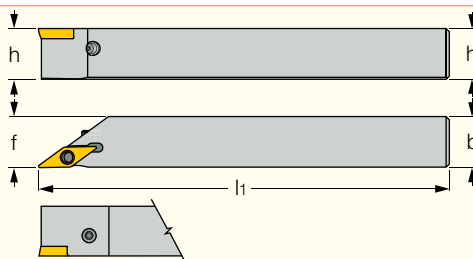
Spare Parts



Designation	Screw	Key
SDNCN-13-SL	SR M4X0.7-L9.6 IP15 TORX PLUS IP15X45	

PVACR/L-S

Side Lever Lock Tools for 35° Positive Rhombic Inserts for Swiss Automatic Machines



Right-hand shown

Designation	h	b	l ₁	f	G _a °	G _r °	Insert
PVACR/L 0808M-11S	8.0	8.0	150.00	8.0	0	0	VC..1103
PVACR/L 1010M-11S	10.0	10.0	150.00	10.2	0	0	VC..1103
PVACR/L 1212M-11S	12.0	12.0	150.00	12.2	0	0	VC..1103
PVACR/L 1616M-11S	16.0	16.0	150.00	16.2	0	0	VC..1103

• The clamping screw may be transferred to the opposite side if needed

For inserts, see pages: VCMT-F3P (B80) • VCMT-SM (B70) • VCET-WF (B80) • VCGT-AS (B92).

Spare Parts

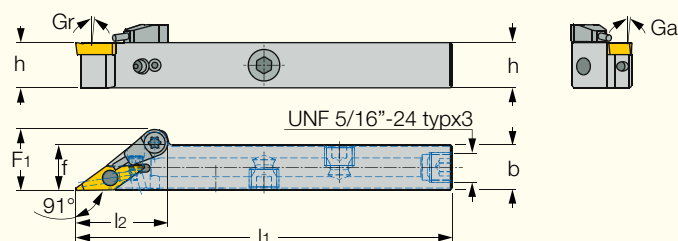


Designation	Lever	Locking Pin	Screw	Hex Flag Key
PVACR/L-S	SL LV-2	SL PI-2 PIN	SR 10400611	HW 2.0/5

ISOTURN • JETCUT

PVACR/L-JHP

Lever Lock Tools with Channels for High Pressure Coolant for 35° Positive Rhombic Inserts for Swiss Automatic Machines



Right-hand shown

Designation	h	b	l ₁	l ₂	f	f ₁	G _a °	G _r °	Insert
PVACR/L 1010H-11S-JHP	10.0	10.0	100.00	20.0	10.2	-	0	0	VC..1103
PVACR/L 1212H-11S-JHP	12.0	12.0	100.00	20.0	12.2	16.0	0	0	VC..1103
PVACR/L 1616K-11S-JHP	16.0	16.0	125.00	20.0	16.2	-	0	0	VC..1103

For inserts, see pages: VCMT-F3P (B80) • VCMT-SM (B70) • VCET-WF (B80) • VCGT-AS (B92).

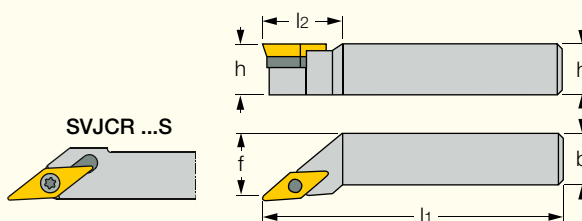
Spare Parts



Designation	Lever	Locking Pin	Screw	Hex Flag Key	Plug	Cooling Unit
PVACR/L-JHP	SL LV-2	SL PI-2 PIN	SR 10400611		SR 5/16UNF TL360	S-CU-JHP

SVJCR/L

93° Lead Angle Screw Lock Toolholders for 35° Diamond Inserts with 7° Clearance Angle



Right-hand shown

Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
SVJCR/L 0808K-11S ⁽¹⁾	8.0	8.0	125.00	11.5	8.2	0	0	VC..1103
SVJCR/L 1010K-11S ⁽¹⁾	10.0	10.0	125.00	22.0	10.2	0	0	VC..1103
SVJCR/L 1212K-11S ⁽¹⁾	12.0	12.0	125.00	-	12.2	0	0	VC..1103
SVJCR/L 1616K-11	16.0	16.0	125.00	25.0	20.0	0	0	VC..1103

⁽¹⁾ For Swiss type machines

For inserts, see pages: VCMT-F3P (B80) • VCMT-SM (B70) • VCET-WF (B80) • VCGT-AS (B92)

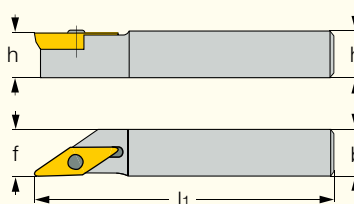
Spare Parts



Designation	Screw	Key
SVJCR/L 0808K-11S	SR 14-560	
SVJCR/L 1010K-11S	SR 14-560	
SVJCR/L 1212K-11S	SR 14-560	
SVJCR/L 1616K-11	SR 14-560	

SVACR/L

91° Lead Angle Screw Lock Toolholders for 35° Diamond Inserts with 7° Clearance Angle



Right-hand shown

Designation	h	b	l ₁	f	G _a °	G _r °	Insert
SVACR 1212K-11S	12.0	12.0	125.00	12.0	0	0	VC..11..
SVACR 1616K-11S	16.0	16.0	125.00	16.0	0	0	VC..11..
SVACR/L 1212K-13S	12.0	12.0	125.00	12.0	0	0	VC..13..
SVACR/L 1616K-13S	16.0	16.0	125.00	16.0	0	0	VC..13..

For inserts, see pages: VCMT-F3P (B80) • VCGT 1303...-PF (B79) • VCMT-SM (B70) • VCET-WF (B80) • VCGT-AS (B92).

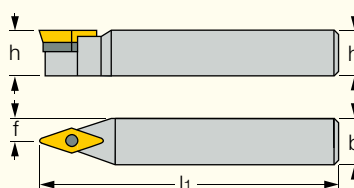
Spare Parts



Designation	Screw	Key
SVACR 1212K-11S	SR 14-560	T-8/5
SVACR 1616K-11S	SR 14-560	T-8/5
SVACR/L 1212K-13S	SR 14-513	T-8/5
SVACR/L 1616K-13S	SR 14-513	T-8/5

SVVCN

72.5° Lead Angle Screw Lock Toolholders for 35° Diamond Inserts with 7° Clearance Angle



Designation	h	b	l ₁	f	G _a °	G _r °	Insert
SVVCN 0808K-11S ⁽¹⁾	8.0	8.0	125.00	4.3	0	0	VC..1103
SVVCN 1010K-11S ⁽¹⁾	10.0	10.0	125.00	5.3	0	0	VC..1103
SVVCN 1212K-11S ⁽¹⁾	12.0	12.0	125.00	6.3	0	0	VC..1103
SVVCN 1616K-11S ⁽¹⁾	16.0	16.0	125.00	8.3	0	0	VC..1103

⁽¹⁾ For Swiss type machines

For inserts, see pages: VCMT-F3P (B80) • VCMT-SM (B70) • VCGT-AS (B92)

Spare Parts

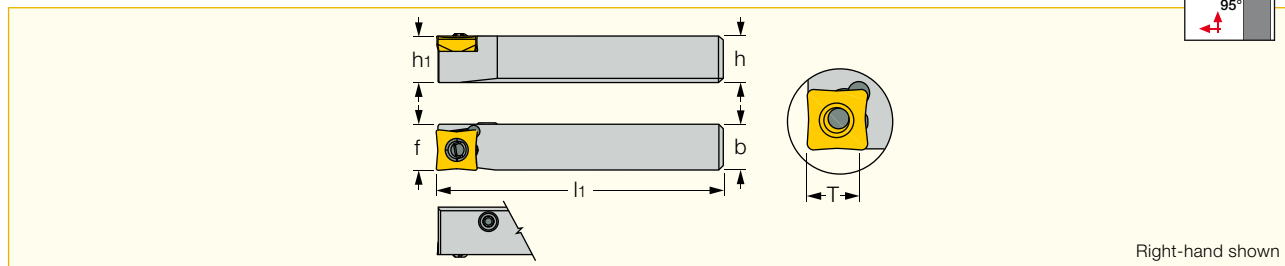


Designation	Screw	Key
SVVCN 0808K-11S	SR 14-560	
SVVCN 1010K-11S	SR 14-560	
SVVCN 1212K-11S	SR 14-560	
SVVCN 1616K-11S	SR 14-560	



PQLCR/L-S

Side Lever Lock Toolholders for 80° Positive 4-Cornered Inserts for Swiss Automatic Machines

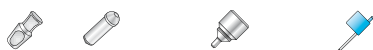


Right-hand shown

Designation	h	b	h ₁	l ₁	f	T	G _a °	G _r °	Insert
PQLCR/L 1212M-09S	12.0	12.0	12.0	150.00	12.0	8.5	0	0	QCMT 09T3

For inserts, see pages: QCMT-PF (B79) • QCMT-SM (B79).

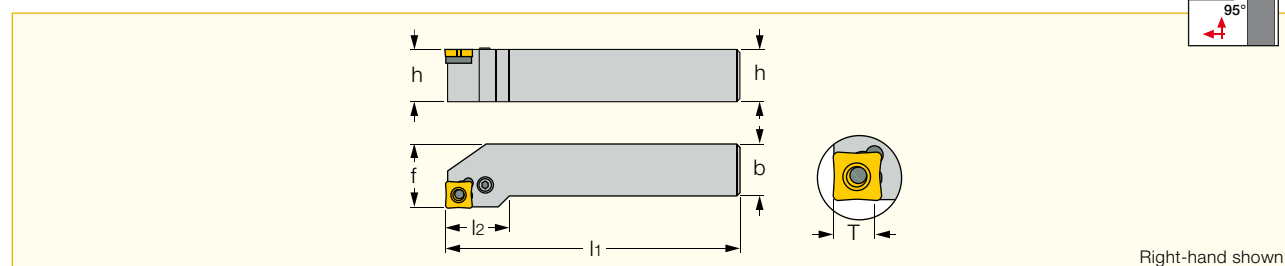
Spare Parts



Designation	Lever	Locking Pin	Screw	Hex Flag Key
PQLCR/L-S	SL LV-3	SL PI-3	SR 10400150	HW 2.5/5

PQLCR/L

Lever Lock Toolholders for 80° Positive 4-Cornered Inserts



Right-hand shown

Designation	h	b	l ₁	l ₂	f	T	G _a °	G _r °	Insert
PQLCR/L 1616H-09	16.0	16.0	100.00	22.0	20.0	8.5	0	0	QCMT 09T3

For inserts, see page: QCMT-PF (B78) • QCMT-SM (B78).

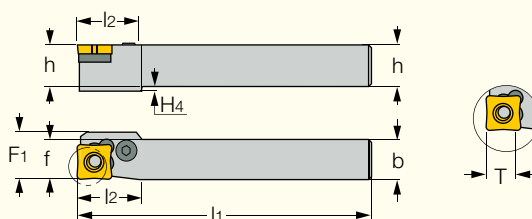
Spare Parts



Designation	Seat	Spring Pin	Punch	Lever	Screw	Hex Flag Key
PQLCR/L	TXC 322	SP 3	PN 3-4	LR 3	SR 117-2014	HW 2.5/5

PQLCR-A

Lever Lock Toolholders for 80° Positive 4-Cornered Inserts for Swiss Automatic Machines



Right-hand shown

Designation	h	b	l ₁	l ₂	f	F ₁	h ₄	T	G _a °	G _r °
PQLCR 1212M-09-A	12.0	12.0	150.00	19.5	12.0	14.0	2.0	8.5	0	0

For inserts, see pages: QCMT-PF (B79) • QCMT-SM (B79).

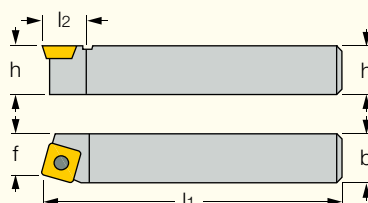
Spare Parts



Designation	Seat	Spring Pin	Punch	Lever	Screw	Hex Flag Key
PQLCR-A	TXC 322	SP 3	PN 3-4	LR 3	SR 117-2014	HW 2.5/5

SSBCR/L

75° Lead Angle Screw Lock Toolholders for Square Inserts with 7° Clearance Angle



Right-hand shown

Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
SSBCR/L 1616H-09	16.0	16.0	100.00	15.0	13.0	0	0	SC.. 09T3

For inserts, see pages: SCMT-F3P (B81) • SCMT-M3M (B81) • SCMT-SM (B82) • SCGT-AS (B91) • SCMT-14 (B82) • SCMT-19 (B83) .

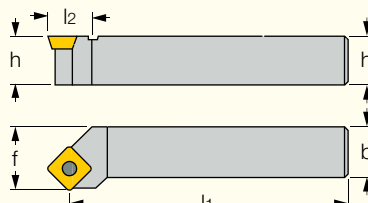
Spare Parts



Designation	Insert Screw	Key 1
SSBCR/L 1616H-09	SR 16-236	T-15/5

SSSCR/L

45° Lead Angle Screw Lock Toolholders for Square Inserts with 7° Clearance Angle



Right-hand shown

Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
SSSCR/L 1212F-09	12.0	12.0	80.00	18.0	16.0	0	0	SC.. 09T3
SSSCR/L 1616H-09	16.0	16.0	100.00	18.0	20.0	0	0	SC.. 09T3

For inserts, see pages: SCMT-F3P (B81) • SCMT-M3M (B81) • SCMT-SM (B82) • SCGT-AS (B91) • SCMT-14 (B82) • SCMT-19 (B83) .

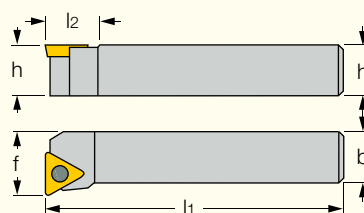
Spare Parts



Designation	Insert Screw	Key 1
SSSCR/L 1212F-09	SR 16-236	T-15/5
SSSCR/L 1616H-09	SR 16-236	T-15/5

STFCR/L

Screw Lock Toolholders for Triangular Inserts with 7° Clearance Angle for Face Turning



Right-hand shown

Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
STFCR/L 1212F-11	12.0	12.0	80.00	13.0	16.0	0	0	TC.. 1102

For inserts, see pages: TCMT-F3P (B83) • TCMT-M3M (B84) • TCMT-PF (B84) • TCMT-SM (B85) • TCGT-AS (B91)

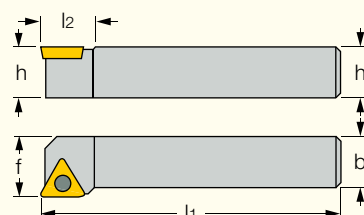
Spare Parts



Designation	Screw	Key
STFCR/L 1212F-11	SR 14-548	

STGCR/L

91° Lead Angle Screw Lock Toolholders for Triangular Inserts with 7° Clearance Angle



Right-hand shown

Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
STGCR/L 1212F-11	12.0	12.0	80.00	13.0	16.0	0	0	TC.. 1102
STGCR/L 1616H-11	16.0	16.0	100.00	13.0	20.0	0	0	TC.. 1102

For inserts, see pages: TCMT-F3P (B83) • TCMT-M3M (B84) • TCMT-PF (B84) • TCMT-SM (B85) • TCGT-AS (B91)

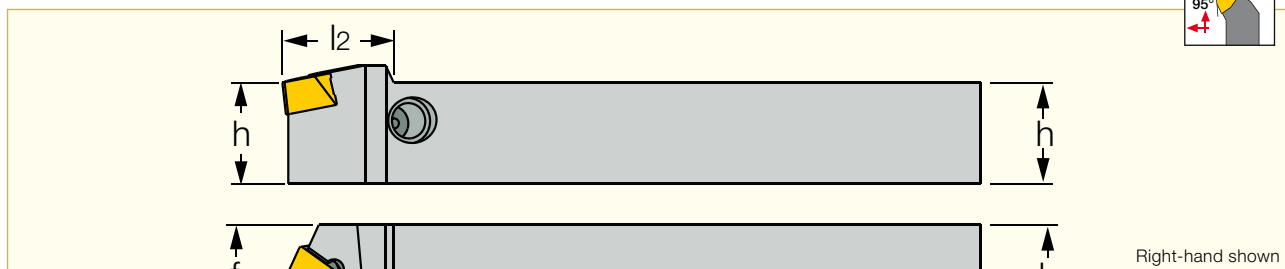
Spare Parts



Designation	Insert Screw	Key
STGCR/L 1212F-11	SR 14-548	
STGCR/L 1616H-11	SR 14-548	

PWLNR/L-04S

Lever Lock External Turning Toolholders for WNGP 0403.. Double-Sided Trigon Inserts



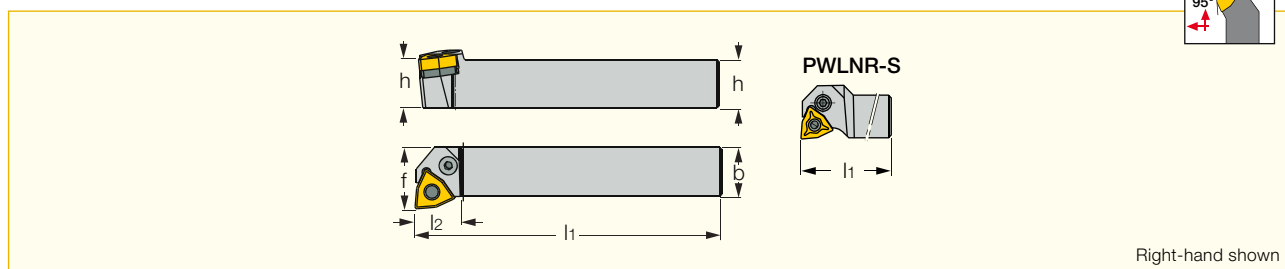
Right-hand shown

Designation	h	b	l ₁	l ₂	f	Insert
PWLNR/L 1010X-04S	10.0	10.0	120.00	11.0	10.0	WNGP 04
PWLNR/L 1212F-04S	12.0	12.0	80.00	11.0	12.0	WNGP 04
PWLNR/L 1212X-04S	12.0	12.0	120.00	11.0	12.0	WNGP 04
PWLNR/L 1616X-04S	16.0	16.0	120.00	13.0	16.0	WNGP 04

For inserts, see pages: WNGP-F2M (B45) • WNGP-F2P (B46).

PWLNR/L

Lever Lock External Turning Toolholders for 80° Negative Trigon Inserts



Right-hand shown

Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
PWLNR/L 1616H-06	16.0	16.0	100.00	16.0	20.0	-6	-6	WN..06T3
PWLNR/L 1616H-06S ⁽¹⁾	16.0	16.0	100.00	20.3	20.0	-6	-6	WN..06T3

⁽¹⁾ Can be used on automatics

For inserts, see pages: WNMG-F3P (B47) • WNMG-M3P (B48) • WNMG-F3M (B48) • WNMG-M3M (B49) • WNMG-TF (B53) • WNMG-GN (B49) • WNMG-PP (B52) • WNMG-VL (B51) • WNMG-SF (B50) • WNMG-NF (B51) • WNMG-WF (B52) • WNMG-WG (B50)

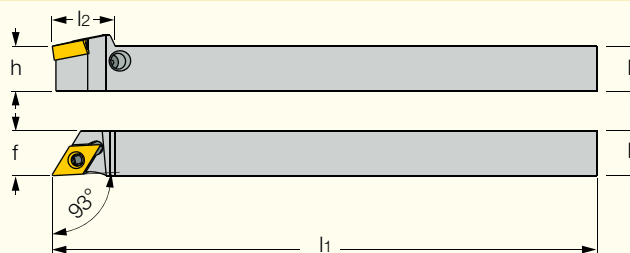
Spare Parts



Designation	Seat	Spring Pin	Punch	Hex Flag Key	Screw	Lever
PWLNR/L 1616H-06	TWN 322	SP 3	PN 3-4	HW 2.5/5	SR 117-2014	LR 3
PWLNR/L 1616H-06S	TWN 322	SP 3	PN 3-4	HW 2.5/5	SR 117-2014	LR 3

PDJNR/L-07S

Lever Lock Toolholders for DNGP 0703.. Double-Sided 55° Rhombic Inserts



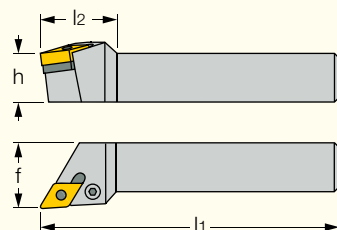
Right-hand shown

Designation	h	b	l ₁	l ₂	f	Insert
PDJNR/L 1010X-07S	10.0	10.0	120.00	14.0	10.0	DNGP 07
PDJNR/L 1212F-07S	12.0	12.0	80.00	14.0	12.0	DNGP 07
PDJNR/L 1212X-07S	12.0	12.0	120.00	14.0	12.0	DNGP 07
PDJNR/L 1616X-07S	16.0	16.0	120.00	18.0	16.0	DNGP 07

For inserts, see pages: DNGP-F2M (B53) • DNGP-F2P (B54).

PDJNR/L

Lever Lock Toolholders for 55° Negative Rhombic Inserts



Right-hand shown

Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
PDJNR/L 1616H-11	16.0	16.0	100.00	30.0	20.0	-6	-7	DNMG 1104

For inserts, see pages: DNMG-F3P (B54) • DNMG-M3P (B55) • DNMG-F3M (B55) • DNMG-M3M (B56) • DNMG-GN (B56) • DNMG-VL (B59) • DNMG-PF (B58) • DNMG-NF (B57)

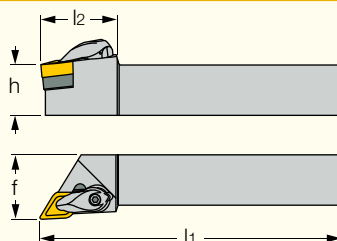
Spare Parts



Designation	Seat	Spring Pin	Punch	Lever	Screw	Hex Flag Key
PDJNR/L 1616H-11	TDN 322	SP 3	PN 3-4	LR 3D	SR 117-2014	HW 2.5/5

DDJNR/L

R-Clamp Toolholders with 93° Lead Angle for 55° Negative Rhombic Inserts



Right-hand shown

Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
DDJNR/L 1616H-11	16.0	16.0	100.00	30.0	20.0	-7	-6	DNMG 1104

For inserts, see pages: DNMG-F3P (B54) • DNMG-M3P (B55) • DNMG-F3M (B55) • DNMG-M3M (B56) • DNMG-GN (B56) • DNMG-VL (B59) • DNMG-PF (B58) • DNMG-NF (B57).

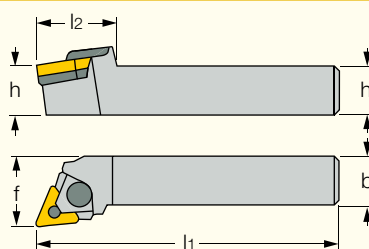
Spare Parts



Designation	Seat	Seat Screw	Clamp	Right-Left Screw	Key	Clamp Spring
DDJNR/L 1616H-11	RDT 3-2	SR 40085I	LCGR-3	SR RC3		KSP 3

MTJNR/L-W

93° Lead Angle Wedge Lock Turning Tools for Negative Triangular Inserts



Right-hand shown

Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
MTJNR/L 1616H-16W-M	16.0	16.0	100.00	32.0	20.0	-6	-6	TNMG 1604

For inserts, see pages: TNMG-F3P (B61) • TNMG-M3P (B62) • TNMG-F3M (B62) • TNMG-M3M (B63) • TNMG-TF (B65) • TNMG-GN (B63) • TNMG/TNGG-PP (B65) • TNMG-VL (B64) • TNMG-PF (B64) • TNMG-SF (B64) • TNMG-NF (B66)

Spare Parts



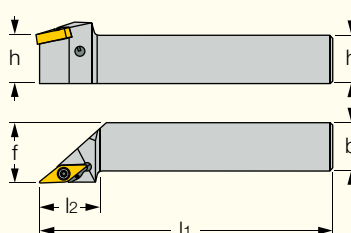
Designation	Seat	Seat 1	Locking Pin	Wedge Clamp	Ring	Wedge Screw	Key 1
MTJNR/L 1616H-16W-M	TTT 322N	TTT 332N ⁽¹⁾ *	ZNW 3WNS	LC 291N CLAMP	E RING N	SR 17-317NS	HW 3.0

* (Optional, should be ordered separately)

⁽¹⁾ Use for inserts TNMG 1603.. 3.18 mm thick

SVJNR/L-F

Screw Lock Toolholders for 35° Negative Inserts with a Wedge for High Rigidity in Profiling Applications



Right-hand shown

Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
SVJNR/L 1616H-12F	16.0	16.0	100.00	25.0	20.0	-6	-12	VNMG 12T3

• Repeatability: for VNMG is ±0.06 mm, for VNGG is ±0.02 mm

For inserts, see pages: VNMG-SF (B60) • VNMG/VNGG-NF (B60) • VNMM-PP (B61).

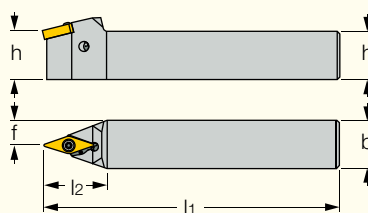
Spare Parts



Designation	Screw	Key	Wedge	Wedge Pin
SVJNR/L-F	SR 14-551	T-9/5	AV 12	PA 12

SVVNN-F

Screw Lock Toolholders for 35° Negative Inserts with a Wedge
for High Rigidity in Profiling Applications



Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
SVVNN 1616H-12F	16.0	16.0	100.00	26.0	8.0	0	-14	VNMG 12T3

• Repeatability: for VNMG is ±0.06 mm, for VNGG is ± 0.02 mm

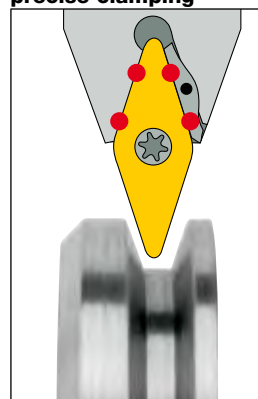
For inserts, see pages: VNMG-SF (B60) • VNMG/VNGG-NF (B60) • VNMM-PP (B61).

Spare Parts

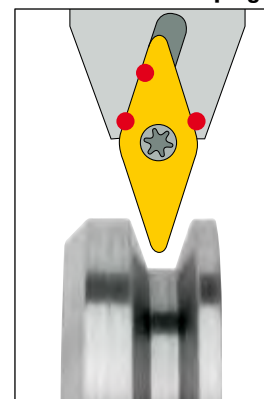


Designation	Screw	Key	Wedge Pin	Wedge
SVVNN-F	SR 14-551	T-9/5	PA 12	AV 12

4 contact points
ensure secure and
precise clamping



Conventional clamping

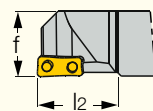
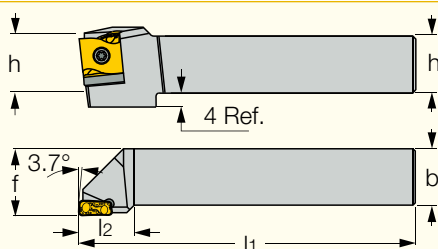


HELI TURN

TANGENTIAL LINE

SLANR/L-TANG

Toolholders for LNMX Tangentially Clamped Inserts



SLANR/L 1616M-11S

Right-hand shown

Designation	h	b	l ₁	l ₂	f	G _a °	G _r °	Insert
SLANR/L 1616H-11 TANG	16.0	16.0	100.00	20.0	20.0	-6	-6	LNMX 1104..
SLANR/L 1616M-11S TANG	16.0	16.0	150.00	20.0	16.2	-6	-6	LNMX 1104..

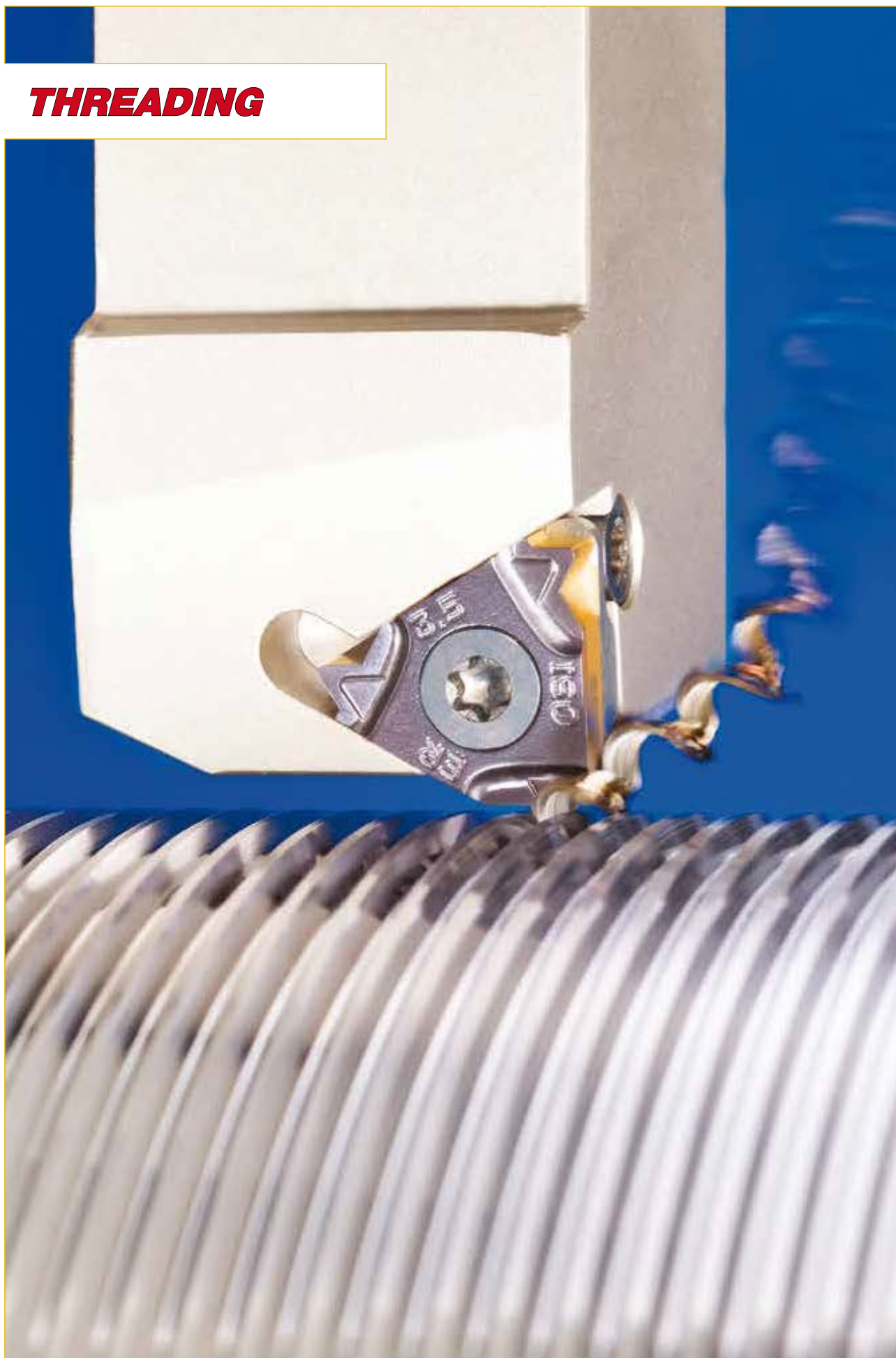
• ap max for facing: LNMX 11-2.8 mm, LNMX 15-3.8 mm, LNMX 22-5.8 mm

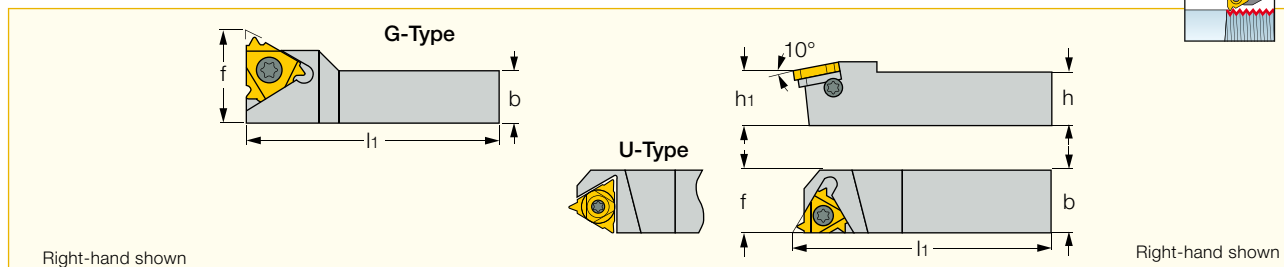
Spare Parts



Designation	Seat	Seat Screw	Key	Insert Screw	Torx Blade	T-Handle
SLANL 1616H-11 TANG	TLN 11L-HT	SR RS4	T-6/5	SR 34-550-C	BLD T10/S7	SW6-SD
SLANL 1616M-11S TANG	TLN 11L-HT	SR RS4	T-6/5	SR 34-550-C	BLD T10/S7	SW6-SD
SLANR 1616H-11 TANG	TLN 11R-HT	SR RS4	T-6/5	SR 34-550-C	BLD T10/S7	SW6-SD
SLANR 1616M-11S TANG	TLN 11R-HT	SR RS4	T-6/5	SR 34-550-C	BLD T10/S7	SW6-SD

THREADING





Designation	h	b	l ₁	f	Insert ⁽²⁾
SER 0808 H11 ⁽¹⁾	8.0	8.0	100.00	11.0	11 ER..
SER/L 1010 H11 ⁽¹⁾	10.0	10.0	100.00	11.0	11 ER/L..
SER/L 1212 F16	12.0	12.0	80.00	16.0	16 ER/L..
SER/L 1616 H16	16.0	16.0	100.00	16.0	16 ER/L..
SER 1616 K16G	16.0	16.0	125.00	21.7	16 ER..

• All tools are made for 1.5 helix angle • For multi-tooth inserts use anvils AE16M / AI16M; AE22M / AI22M; AE27M / AI27M • For GTGA inserts, use anvil AE 16-0

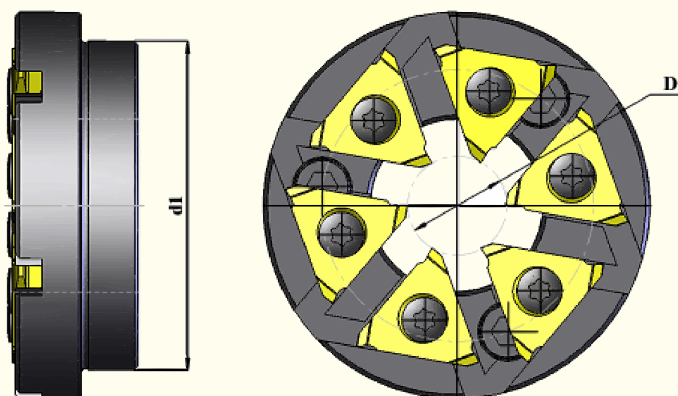
⁽¹⁾ Toolholder without anvil ⁽²⁾ Right-hand inserts (ER) for right-hand tools (SER)

Spare Parts



Designation	Insert Screw	Anvil Screw	Anvil Ext./Int. Right	Anvil Ext./Int. Left	Key
SER 0808 H11	S11				T-8/5
SER/L 1010 H11	S11				T-8/5
SEL 1212 F16	S16	A16		AI16	T-10/5
SER 1212 F16	S16	A16	AE16		T-10/5
SEL 1616 H16	S16	A16		AI16	T-10/5
SER 1616 H16	S16	A16	AE16		T-10/5
SER 1616 K16G	S16	A16	AE16		T-10/5

Whirling Head



Machine		Whirling Head	Z	D	d ₁	Insert Size	Insert Screw	Torx Key
Type	Model							
STAR	SV12 / SV20	SRW4012 418 - 6	6	12.0	40.0	16	SW16	KW16
		SRW4012 424 - 8	8			11	SW11	KW11
	SR20 / ECAS20	SRW4012 419 - 6	6	12.0	40.0	16	SW16	KW16
		SRW4012 425 - 8	8			11	SW11	KW11
Citizen	M12 / M16	SRW4512 422 - 6	6	12.0	45.0	16	SW16	KW16
		SRW4512 426 - 8	8			11	SW11	KW11
	M20 / M32	SRW4512 423 - 6	6	12.0	45.0	16	SW16	KW16
		SRW4512 427 - 8	8			11	SW11	KW11
Tornos	Deco 13 / 20	SRW4012 420 - 6	6	12.0	40.0	16	SW16	KW16
Traub	TNL26 / TNK36	SRW5425 421 - 6	6	25.0	54.0	16	SW16	KW16
Hanwha	SL26HPD	SRW4012 416 - 3	3	12.0	40.0	16	SW16	KW16
Maier	ML20D	SRW4012 417 - 5	5	12.0	40.0	16	SW16	KW16



Whirling tools are provided on request. Attached is a list of available whirling tools according to the machine model being used.

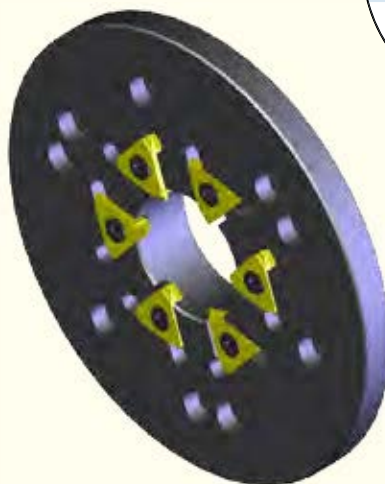
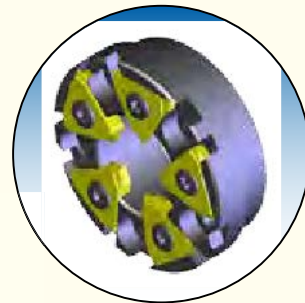
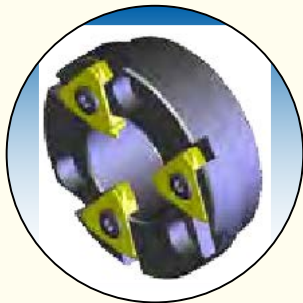
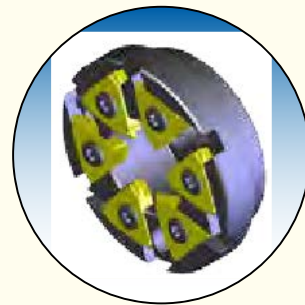
The customer should specify his specific thread profile and the required number of inserts in the cutter (or leave this decision to ISCAR designers).

The inserts are made from PVD coated grade IC908.

Advantages

- Increased productivity
- Increased tool life
- Quick setup
- Enables producing long threads
- Enables high helix angle threads
- Short machining time
- High quality surface finish

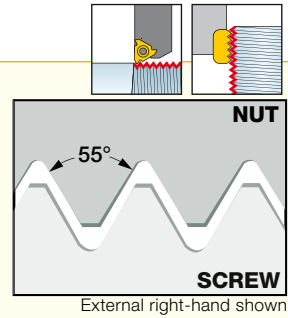
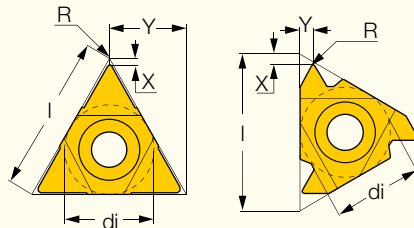
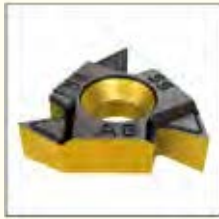
Lead time for whirling tools and inserts is 6-7 weeks.



ISCARTHREAD

ER/L-55°

External 55° Partial Profile Laydown Threading Inserts, for General Industry



Designation	Dimensions									Tough $\longleftrightarrow$ Hard						
	di	P _{min}	P _{max}	TPI _{max}	TPI _{min}	I	R	X	Y	IC228	IC50M	IC250	IC508	IC808	IC908	IC1007
11ER/L A 55	6.35	0.50	1.50	48	16	11.00	0.05	0.8	0.9		●	●			●	
16ER/L A 55	9.52	0.50	1.50	48	16	16.00	0.05	0.8	0.9		●	●			●	
16ER/L AG 55	9.52	0.50	3.00	48	8	16.00	0.05	1.2	1.7	●	●	●	●		●	
16ERB AG 55 ⁽¹⁾	9.52	0.50	3.00	48	8	16.00	0.05	1.2	1.7						●	
16ERM AG 55 ⁽¹⁾	9.52	0.50	3.00	48	8	16.00	0.07	1.2	1.7		●	●		●		●
16ER/L G 55	9.52	1.75	3.00	14	8	16.00	0.20	1.2	1.7		●	●			●	
16ERB G 55 ⁽¹⁾	9.52	1.75	3.00	14	8	16.00	0.20	1.2	1.7						●	
16ERM G 55 ⁽¹⁾	9.52	1.75	3.00	14	8	16.00	0.23	1.2	1.7			●		●	●	

• For threading between walls use GRIP-type inserts TIP-WT, GEPI-WT, TIPI-WT.

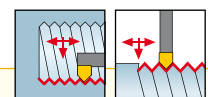
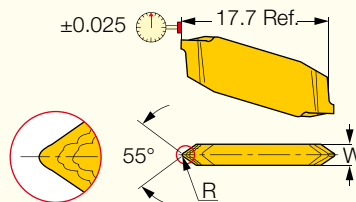
⁽¹⁾ With pressed chipformer

For tools, see pages: • SER/L (A109).

ISCARTHREAD • CUT-GRIP

TIP-WT

Precision Ground 55° Partial Profile, Double-Ended Threading Inserts with a Chipformer



TIP inserts are 1.6 mm longer than GIP in the same pocket

Designation	Dimensions					Tough $\longleftrightarrow$ Hard	
	W	R _{±0.03}	TPI _{max}	TPI _{min} ⁽¹⁾		IC08	IC908
TIP 2WT-0.05	2.40	0.05	54	D/6.4		●	●
TIP 4WT-0.15	4.00	0.15	19	D/6.4		●	●
TIP 5WT-0.25	5.50	0.25	12	D/6.4			

• Toolholder seat needs to be modified according to insert profile to ensure clearance. • Pitch max 0.187xD

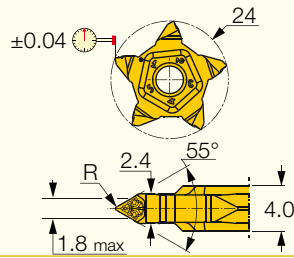
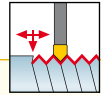
⁽¹⁾ D-Diameter of thread (inch)

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSL/L (A15) • GHSL/L-JHP-SL (A14).

ISCARTHREAD • PENTACUT

PENTA 24-WT

Whitworth 55° Partial Profile, Pentagonal External Threading Precision Ground Inserts with a Chipformer



Dimensions				IC908
Designation	TPI _{max}	TPI _{min}	R	
PENTA 24WT-0.05	48	14	0.05	●

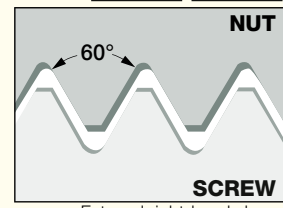
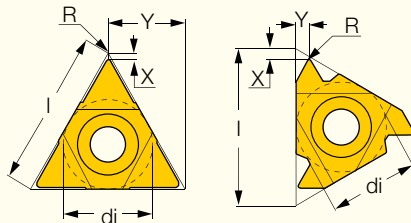
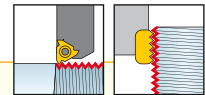
• TPI_{min}=6.4/D(inch) D-nominal thread diameter (inch)

For tools, see pages: • PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).

ISCARTHREAD

ER/L-60°

External 60° Partial Profile, Laydown Threading Inserts, for General Industry



External right-hand shown

Designation	Dimensions									Tough ↔ Hard							
	di	P _{min}	P _{max}	TPI	TPI	l	R	X	Y	IC228	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007
				max	min												
11ER/L A 60	6.35	0.50	1.50	48	16	11.00	0.05	0.8	0.9		●	●				●	
16ER/L A 60	9.52	0.50	1.50	48	16	16.00	0.05	0.8	0.9	●	●	●	●	●		●	
16ERB A 60 ⁽¹⁾	9.52	0.50	1.50	48	16	16.00	0.05	0.8	0.9				●			●	
16ERM A 60 ⁽¹⁾	9.52	0.50	1.50	48	16	16.00	0.05	0.8	0.9		●	●			●		●
16ER/L AG 60	9.52	0.50	3.00	48	8	16.00	0.05	1.2	1.7	●	●	●	●			●	●
16ERB AG 60 ⁽¹⁾	9.52	0.50	3.00	48	8	16.00	0.05	1.2	1.7							●	
16ERM AG 60 ⁽¹⁾	9.52	0.50	3.00	48	8	16.00	0.06	1.2	1.7		●	●		●		●	●
16ER/L G 60	9.52	1.75	3.00	14	8	16.00	0.17	1.2	1.7	●	●	●		●		●	
16ERB G 60 ⁽¹⁾	9.52	1.75	3.00	14	8	16.00	0.17	1.2	1.7							●	
16ERM G 60 ⁽¹⁾	9.52	1.75	3.00	14	8	16.00	0.17	1.2	1.7		●	●			●	●	●

• For threading between walls use GRIP-type inserts SCIR/L B/F -MTR/L, TIP-MT, GEPI-MT, TIPI-MT.

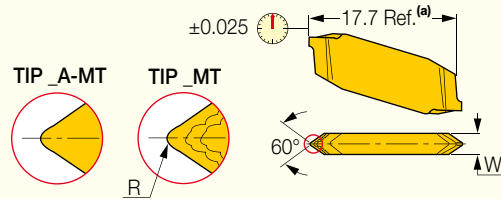
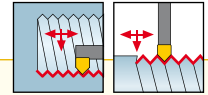
⁽¹⁾ With pressed chipformer.

For tools, see pages: • SER/L (A109).

ISCARTHREAD • CUT-GRIP

TIP-MT

Precision Ground 60° Partial Profile, Double-Ended Threading Inserts with Chipformers



Designation	Dimensions				Tough ↔ Hard	
	W	R ± 0.03	P $_{min}$	TPI $_{max}$	IC08	IC908
TIP 2A-MT-0.05 ⁽¹⁾	2.40	0.05	0.45	56		
TIP 2MT-0.05	2.40	0.05	0.45	56	●	●
TIP 2MT-0.14	2.40	0.14	1.11	23	●	●
TIP 4A-MT-0.15 ⁽¹⁾	4.00	0.15	1.25	20		
TIP 4MT-0.15	4.00	0.15	1.25	20		
TIP 4MT-0.20	4.00	0.20	1.63	16	●	●
TIP 5MT-0.25	5.50	0.25	1.94	13	●	●

• (a) TIP inserts are 1.6 mm longer than GIP in the same pocket. • Toolholder seat needs to be modified according to insert profile to ensure clearance.

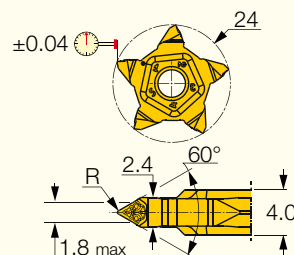
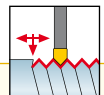
⁽¹⁾ Without chipformer (flat rake)

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSR/L (A15) • GHSR/L-JHP-SL (A14).

ISCARTHREAD • PENTACUT

PENTA 24-MT

60° Partial Profile, Pentagonal External Threading Precision Ground Inserts with a Chipformer

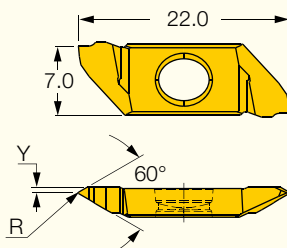


Designation	Dimensions			IC908
	P $_{min}$	P $_{max}$	R	
PENTA 24MT-0.05	0.50	1.75	0.05	●

For tools, see pages: • PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).

SCIR/L-22-MTR/MTL

60° Partial Profile Threading Inserts



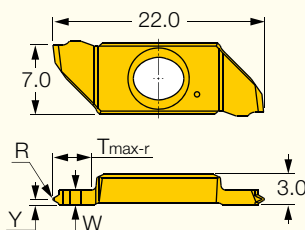
Left-hand shown

Designation	Dimensions						IC1008
	R	Y	P _{min}	P _{max}	TPI _{max}	TPI _{min}	
SCIL 22-MTL003	0.03	0.4	0.30	0.90	83	28	●
SCIR 22-MTR003	0.03	0.4	0.30	0.90	83	28	●
SCIL 22-MTR/L007	0.07	0.5	0.70	1.10	36	23	●
SCIR 22-MTR/L007	0.07	0.5	0.70	1.10	36	23	●
SCIL 22-MTL010	0.10	0.8	0.90	1.70	28	15	●
SCIR 22-MTR010	0.10	0.8	0.90	1.70	28	15	●

For tools, see pages: SCHR/L-BF (A7) • SCHR/L-BF-JHP (A7).

SCIR-22-MTR-ISO

Precision Ground ISO Metric Full Profile Threading Inserts

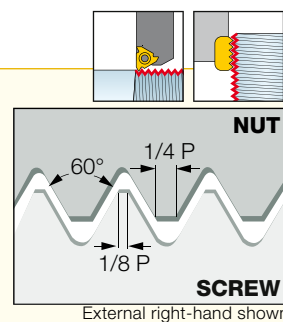
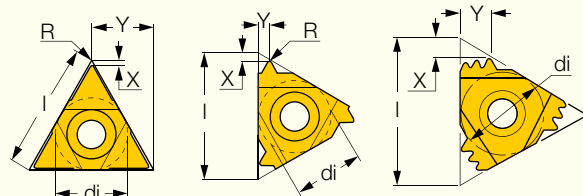


Designation	Dimensions						IC1008
	Pitch	W	T _{max-r}	R	Y		
SCIR 22-MTR-0.3ISO	0.30	1.00	3.00	0.03	0.2		●
SCIR 22-MTR-0.4ISO	0.40	1.00	3.00	0.04	0.2		●
SCIR 22-MTR-0.5ISO	0.50	1.00	3.00	0.06	0.3		●
SCIR 22-MTR-0.75ISO	0.75	1.00	3.00	0.10	0.4		●
SCIR 22-MTR-1.0ISO	1.00	1.50	4.00	0.14	0.6		●
SCIR 22-MTR-1.5ISO	1.50	2.00	4.00	0.20	0.8		●

For tools, see pages: SCHR/L-BF (A7) • SCHR/L-BF-JHP (A7).

ER/L-ISO

External ISO Metric (DIN13 12-1986 class: 6G), Laydown Threading Inserts, for General Industry



Designation	Dimensions							Tough ↔ Hard								
	di	Pitch	I	R	X	Y	Z ⁽³⁾	IC228	IC50M	IC250	IC950	IC08	IC508	IC808	IC908	IC1007
11ER/L 0.35 ISO	6.35	0.35	11.00	0.04	0.8	0.4	1		●						●	
11ER 0.40 ISO	6.35	0.40	11.00	0.04	0.7	0.4	1								●	
11ER 0.45 ISO	6.35	0.45	11.00	0.05	0.7	0.4	1	●								
11ER/L 0.50 ISO	6.35	0.50	11.00	0.05	0.6	0.6	1	●	●	●					●	
11ER 0.60 ISO	6.35	0.60	11.00	0.07	0.6	0.6	1		●						●	
11ER 0.70 ISO	6.35	0.70	11.00	0.07	0.6	0.6	1		●	●					●	
11ER/L 0.75 ISO	6.35	0.75	11.00	0.08	0.6	0.6	1		●						●	
11ER 0.80 ISO	6.35	0.80	11.00	0.09	0.6	0.6	1		●	●					●	
11ER/L 1.00 ISO	6.35	1.00	11.00	0.12	0.7	0.7	1		●	●			●		●	
11ER 1.25 ISO	6.35	1.25	11.00	0.15	0.8	0.9	1		●	●					●	
11ER/L 1.50 ISO	6.35	1.50	11.00	0.18	0.8	1.0	1		●	●		●			●	
11ER 1.75 ISO	6.35	1.75	11.00	0.21	0.8	1.1	1			●					●	
16ER/L 0.35 ISO	9.52	0.35	16.00	0.04	0.8	0.4	1			●					●	
16ER/L 0.40 ISO	9.52	0.40	16.00	0.04	0.7	0.4	1		●						●	
16ER 0.45 ISO	9.52	0.45	16.00	0.05	0.7	0.4	1			●					●	
16ER/L 0.50 ISO	9.52	0.50	16.00	0.04	0.6	0.6	1		●	●		●			●	
16ER 0.60 ISO	9.52	0.60	16.00	0.07	0.6	0.6	1		●	●					●	
16ER/L 0.70 ISO	9.52	0.70	16.00	0.07	0.6	0.6	1		●	●					●	
16ER/L 0.75 ISO	9.52	0.75	16.00	0.08	0.6	0.6	1		●	●		●			●	
16ER 0.75 ISO 3M ⁽¹⁾	9.52	0.75	16.00	0.08	1.3	1.9	3								●	
16ERM 0.75 ISO ⁽²⁾	9.52	0.75	16.00	0.08	0.6	0.6	1							●	●	
16ER/L 0.80 ISO	9.52	0.80	16.00	0.09	0.6	0.6	1		●	●					●	
16ERB 0.80 ISO ⁽²⁾	9.52	0.80	16.00	0.09	0.6	0.6	1								●	
16ER/L 1.00 ISO	9.52	1.00	16.00	0.12	0.7	0.7	1	●	●	●		●	●		●	●
16ER 1.00 ISO 3M ⁽¹⁾	9.52	1.00	16.00	0.12	1.7	2.5	3								●	
16ERB 1.00 ISO ⁽²⁾	9.52	1.00	16.00	0.12	0.7	0.7	1								●	
16ERM 1.00 ISO ⁽²⁾	9.52	1.00	16.00	0.11	0.7	0.7	1		●	●			●	●	●	●
16ER/L 1.25 ISO	9.52	1.25	16.00	0.15	0.8	0.9	1		●	●		●	●		●	
16ERB 1.25 ISO ⁽²⁾	9.52	1.25	16.00	0.15	0.8	0.9	1								●	
16ERM 1.25 ISO ⁽²⁾	9.52	1.25	16.00	0.14	0.8	0.9	1			●				●	●	●
16ER/L 1.50 ISO	9.52	1.50	16.00	0.18	0.8	1.0	1	●	●	●		●	●		●	●
16ER 1.50 ISO 2M ⁽¹⁾	9.52	1.50	16.00	0.18	1.5	2.3	2				●				●	
16ERB 1.50 ISO ⁽²⁾	9.52	1.50	16.00	0.19	0.8	1.0	1								●	
16ERM 1.50 ISO ⁽²⁾	9.52	1.50	16.00	0.19	0.8	1.0	1		●	●			●	●	●	●
16ER/L 1.75 ISO	9.52	1.75	16.00	0.21	0.9	1.2	1	●	●	●		●			●	
16ERB 1.75 ISO ⁽²⁾	9.52	1.75	16.00	0.21	0.9	1.2	1								●	
16ERM 1.75 ISO ⁽²⁾	9.52	1.75	16.00	0.20	0.9	1.2	1			●				●	●	●
16ER/L 2.00 ISO	9.52	2.00	16.00	0.25	1.0	1.3	1	●	●	●					●	●
16ER 2.00 ISO 2M ⁽¹⁾	9.52	2.00	16.00	0.25	2.0	3.0	2				●				●	
16ER 2.00 ISO 2M ⁽¹⁾	9.52	2.00	16.00	0.25	2.0	3.0	2	●								
16ERM 2.00 ISO ⁽²⁾	9.52	2.00	16.00	0.24	1.0	1.3	1			●			●	●	●	●
16ER/L 2.50 ISO	9.52	2.50	16.00	0.31	1.1	1.5	1		●	●			●		●	
16ERM 2.50 ISO ⁽²⁾	9.52	2.50	16.00	0.30	1.1	1.5	1		●	●				●	●	●
16ER/L 3.00 ISO	9.52	3.00	16.00	0.38	1.2	1.6	1	●	●	●			●		●	
16ERB 3.00 ISO ⁽²⁾	9.52	3.00	16.00	0.38	1.2	1.6	1								●	
16ERM 3.00 ISO ⁽²⁾	9.52	3.00	16.00	0.38	1.2	1.6	1		●	●			●	●	●	●

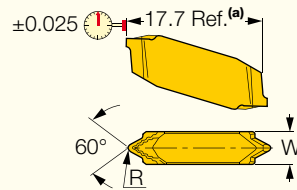
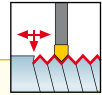
⁽¹⁾ Multi-tooth ⁽²⁾ With pressed chipformer ⁽³⁾ Number of teeth per corner.

For tools, see pages: ● SER/L (A109).

ISCARTHREAD • CUT-GRIP

TIP-P-ISO

Precision Ground ISO Metric Full Profile, Double-Ended, External Threading Inserts with a Chipformer



Designation	Dimensions				Tough ↔ Hard	
	Pitch	W	R	R _{ztoler}	IC08	IC908
TIP 2P0.5-ISO	0.50	2.40	0.08	0.030	●	●
TIP 2P0.75-ISO	0.75	2.40	0.11	0.030	●	●
TIP 2P0.8-ISO	0.80	2.40	0.12	0.030	●	●
TIP 2P1.0-ISO	1.00	2.40	0.14	0.030	●	●
TIP 2P1.25-ISO	1.25	2.40	0.18	0.030	●	●
TIP 2P1.5-ISO	1.50	2.40	0.22	0.030	●	●
TIP 2P1.75-ISO	1.75	2.40	0.25	0.030	●	●
TIP 4P2.0-ISO	2.00	4.00	0.28	0.030	●	●
TIP 4P2.5-ISO	2.50	4.00	0.35	0.050	●	●
TIP 4P3.0-ISO	3.00	4.00	0.42	0.050		●
TIP 4P3.5-ISO	3.50	4.00	0.48	0.050		●
TIP 5P4.0-ISO	4.00	5.50	0.55	0.050		●
TIP 5P5.0-ISO	5.00	5.50	0.68	0.050		●

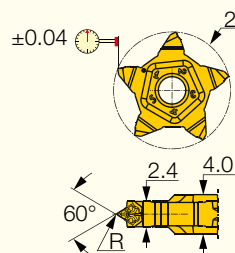
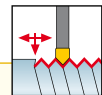
• (a) TIP Inserts are 1.6 mm longer than GIP in the same pocket. • Toolholder seat needs to be modified according to insert profile to ensure clearance.

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSL/L (A15) • GHSL/L-JHP-SL (A14).

ISCARTHREAD • PENTACUT

PENTA 24-ISO

ISO Metric Full Profile, Pentagonal, External Threading Precision Ground Inserts with a Chipformer

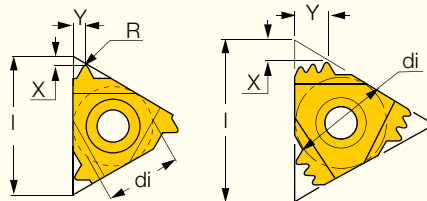
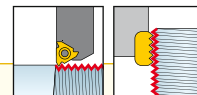


Designation	Dimensions		IC908
	Pitch	R	
PENTA 24-0.5-ISO	0.50	0.08	●
PENTA 24-0.75-ISO	0.75	0.11	●
PENTA 24-0.8-ISO	0.80	0.12	●
PENTA 24-1.0-ISO	1.00	0.14	●
PENTA 24-1.25-ISO	1.25	0.18	●
PENTA 24-1.5-ISO	1.50	0.22	●
PENTA 24-1.75-ISO	1.75	0.25	●
PENTA 24-2.0-ISO	2.00	0.28	●

For tools, see pages: • PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).

ER/L-UN

External American UN Full Profile (UN, UNC, UNF, UNEF) Laydown Threading Inserts, for General Industry



External right-hand shown

Designation	Dimensions							Tough ↔ Hard							
	di	TPI	I	R	X	Y	Z ⁽³⁾	IC228	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007
11ER 44 UN	6.35	44.0	11.00	0.05	0.6	0.6	1							●	
11ER 36 UN	6.35	36.0	11.00	0.07	0.6	0.6	1							●	
11ER 32 UN	6.35	32.0	11.00	0.09	0.6	0.6	1							●	
11ER/L 28 UN	6.35	28.0	11.00	0.10	0.6	0.7	1		●					●	
11ER/L 24 UN	6.35	24.0	11.00	0.12	0.7	0.8	1							●	
11ER/L 20 UN	6.35	20.0	11.00	0.15	0.8	0.9	1			●				●	
11ER 18 UN	6.35	18.0	11.00	0.17	0.8	1.0	1							●	
11ER 16 UN	6.35	16.0	11.00	0.18	0.9	1.1	1		●	●				●	
16ERB 16 UN ⁽¹⁾	9.52	16.0	16.00	0.18	0.9	1.1	1							●	
16ER 72 UN	9.52	72.0	16.00	0.04	0.8	0.4	1							●	
16ER 56 UN	9.52	56.0	16.00	0.04	0.7	0.4	1					●		●	
16ER 48 UN	9.52	48.0	16.00	0.05	0.6	0.6	1		●					●	
16ER 40 UN	9.52	40.0	16.00	0.06	0.6	0.6	1	●				●		●	
16ER/L 36 UN	9.52	36.0	16.00	0.07	0.6	0.6	1		●			●		●	
16ER/L 32 UN	9.52	32.0	16.00	0.09	0.6	0.6	1		●	●	●	●		●	
16ER/L 28 UN	9.52	28.0	16.00	0.10	0.6	0.7	1		●	●	●			●	
16ER 27 UN	9.52	27.0	16.00	0.10	0.7	0.8	1		●					●	
16ER/L 24 UN	9.52	24.0	16.00	0.12	0.7	0.8	1		●	●	●			●	
16ERB 24 UN ⁽¹⁾	9.52	24.0	16.00	0.12	0.7	0.8	1							●	
16ERM 24 UN ⁽¹⁾	9.52	24.0	16.00	0.11	0.7	0.8	1		●	●				●	
16ER/L 20 UN	9.52	20.0	16.00	0.15	0.8	0.9	1		●	●	●			●	
16ERB 20 UN ⁽¹⁾	9.52	20.0	16.00	0.15	0.8	0.9	1							●	
16ERM 20 UN ⁽¹⁾	9.52	20.0	16.00	0.14	0.8	0.9	1		●	●			●	●	●
16ER/L 18 UN	9.52	18.0	16.00	0.17	0.8	1.0	1		●	●				●	
16ERB 18 UN ⁽¹⁾	9.52	18.0	16.00	0.17	0.8	1.0	1							●	
16ERM 18 UN ⁽¹⁾	9.52	18.0	16.00	0.15	0.8	1.0	1			●			●	●	●
16ER/L 16 UN	9.52	16.0	16.00	0.18	0.9	1.1	1	●	●	●				●	
16ER 16 UN 2M ⁽²⁾	9.52	16.0	16.00	0.18	1.5	2.3	2							●	
16ERM 16 UN ⁽¹⁾	9.52	16.0	16.00	0.19	0.9	1.1	1			●			●	●	●
16ER/L 14 UN	9.52	14.0	16.00	0.22	1.0	1.2	1		●	●		●		●	
16ER 14 UN 2M ⁽²⁾	9.52	14.0	16.00	0.22	1.5	2.3	2							●	
16ERB 14 UN ⁽¹⁾	9.52	14.0	16.00	0.22	1.0	1.2	1							●	
16ERM 14 UN ⁽¹⁾	9.52	14.0	16.00	0.22	1.0	1.2	1			●			●	●	●
16ER/L 13 UN	9.52	13.0	16.00	0.24	1.0	1.3	1		●	●				●	
16ERB 13 UN ⁽¹⁾	9.52	13.0	16.00	0.24	1.0	1.3	1							●	
16ERM 13 UN ⁽¹⁾	9.52	13.0	16.00	0.24	1.0	1.3	1							●	
16ER/L 12 UN	9.52	12.0	16.00	0.26	1.1	1.4	1		●	●	●			●	
16ER 12 UN 2M ⁽²⁾	9.52	12.0	16.00	0.26	2.2	3.4	2							●	
16ERB 12 UN ⁽¹⁾	9.52	12.0	16.00	0.26	1.1	1.4	1							●	
16ERM 12 UN ⁽¹⁾	9.52	12.0	16.00	0.25	1.1	1.4	1		●	●			●	●	●
16ER 11.5 UN	9.52	11.5	16.00	0.27	1.1	1.5	1			●				●	
16ER/L 11 UN	9.52	11.0	16.00	0.28	1.1	1.5	1		●	●				●	
16ERB 11 UN ⁽¹⁾	9.52	11.0	16.00	0.28	1.1	1.5	1							●	
16ER/L 10 UN	9.52	10.0	16.00	0.32	1.1	1.5	1		●	●		●		●	
16ERB 10 UN ⁽¹⁾	9.52	10.0	16.00	0.32	1.1	1.5	1							●	
16ER/L 9 UN	9.52	9.0	16.00	0.36	1.2	1.7	1		●					●	
16ERB 9 UN ⁽¹⁾	9.52	9.0	16.00	0.36	1.2	1.7	1							●	
16ER/L 8 UN	9.52	8.0	16.00	0.41	1.2	1.6	1		●	●				●	
16ERB 8 UN ⁽¹⁾	9.52	8.0	16.00	0.41	1.2	1.6	1							●	
16ERM 8 UN ⁽¹⁾	9.52	8.0	16.00	0.41	1.2	1.6	1			●				●	

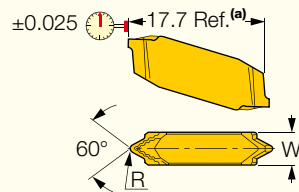
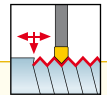
⁽¹⁾ With pressed chipformer. ⁽²⁾ Multi-tooth ⁽³⁾ Number of teeth per corner.

For tools, see pages: • SER/L (A109).

ISCARTHREAD • CUT-GRIP

TIP-P-UN

Precision Ground American UN (UNC, UNF, UNEF) Full Profile, Double-Ended, External Threading Inserts with a Chipformer



Designation	Dimensions				Tough ← Hard		
	W	R	R _{stoler}	TPI	IC08	IC808	IC908
TIP 2P32-UN	2.40	0.10	0.030	32.0	●		●
TIP 2P28-UN	2.40	0.11	0.030	28.0	●		●
TIP 2P24-UN	2.40	0.13	0.030	24.0	●		●
TIP 2P20-UN	2.40	0.16	0.030	20.0	●		●
TIP 2P18-UN	2.40	0.18	0.030	18.0	●		●
TIP 2P16-UN	2.40	0.20	0.030	16.0	●		●
TIP 2P14-UN	2.40	0.23	0.030	14.0	●		●
TIP 2P13-UN	2.40	0.25	0.030	13.0	●		●
TIP 2P12-UN	2.40	0.27	0.030	12.0	●		●
TIP 4P11-UN	4.00	0.30	0.030	11.0			●
TIP 4P10-UN	4.00	0.33	0.050	10.0		●	●
TIP 4P08-UN	4.00	0.41	0.050	8.0			●

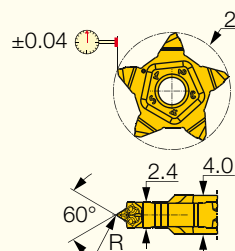
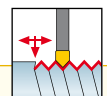
• (a) TIP inserts are 1.6 mm longer than GIP in the same pocket. • Toolholder seat needs to be modified according to insert profile to ensure clearance.

For tools, see pages: CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSLR/L (A15) • GHSLR/L-JHP-SL (A14).

ISCARTHREAD • PENTACUT

PENTA 24-UN

American UN (UNC, UNF, UNEF) Full Profile, Pentagonal External Threading Precision Ground Inserts with a Chipformer

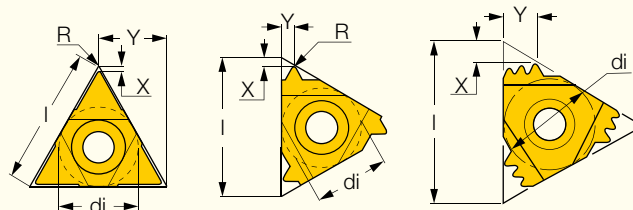
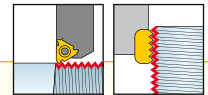


Designation	Dimensions		IC908
	TPI	R	
PENTA 24-24-UN	24.0	0.13	●
PENTA 24-20-UN	20.0	0.16	●
PENTA 24-18-UN	18.0	0.18	●
PENTA 24-16-UN	16.0	0.21	●
PENTA 24-14-UN	14.0	0.23	●

For tools, see pages: PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).

ER/L-W

External Whitworth (BSW, BSF, BSP), B.S.84-1956 DIN 259 Medium Class,
Full Profile Laydown Threading Inserts



External right-hand shown

Designation	Dimensions							Tough $\longleftrightarrow$ Hard						
	di	TPI	I	R	X	Y	Z ⁽³⁾	IC228	IC50M	IC250	IC508	IC808	IC908	IC1007
11ER 36 W	6.35	36.0	11.00	0.07	0.6	0.6	1						•	
11ER 20 W	6.35	20.0	11.00	0.14	8.0	0.9	1		•				•	
11ER/L 19 W	6.35	19.0	11.00	0.15	0.8	1.0	1						•	
11ER 18 W	6.35	18.0	11.00	0.16	0.8	1.0	1			•				
11ER 16 W	6.35	16.0	11.00	0.18	0.9	1.1	1		•					
11ER 14 W	6.35	14.0	11.00	0.21	0.9	1.1	1		•	•			•	
16ER 40 W	9.52	40.0	16.00	0.06	0.6	0.6	1				•			
16ER 32 W	9.52	32.0	16.00	0.09	0.6	0.6	1		•					
16ER/L 28 W	9.52	28.0	16.00	0.09	0.6	0.7	1		•	•			•	
16ER 26 W	9.52	26.0	16.00	0.10	0.7	0.7	1		•	•			•	
16ER/L 24 W	9.52	24.0	16.00	0.11	0.7	0.8	1		•	•			•	
16ER/L 22 W	9.52	22.0	16.00	0.13	0.8	0.9	1		•	•			•	
16ER 20 W	9.52	20.0	16.00	0.14	0.8	0.9	1		•	•	•		•	
16ER/L 19 W	9.52	19.0	16.00	0.15	0.8	1.0	1	•	•	•			•	
16ERB 19 W ⁽¹⁾	9.52	19.0	16.00	0.15	0.8	1.0	1						•	
16ERM 19 W ⁽¹⁾	9.52	19.0	16.00	0.16	0.8	1.0	1		•	•		•	•	•
16ER/L 18 W	9.52	18.0	16.00	0.16	0.8	1.0	1		•	•			•	
16ER 16 W	9.52	16.0	16.00	0.18	0.9	1.1	1		•	•			•	
16ERB 16 W ⁽¹⁾	9.52	16.0	16.00	0.18	0.9	1.1	1						•	
16ERM 16 W ⁽¹⁾	9.52	16.0	16.00	0.20	0.9	1.1	1			•		•	•	
16ER/L 14 W	9.52	14.0	16.00	0.21	1.0	1.2	1	•	•	•	•		•	
16ER 14 W 2M ⁽²⁾	9.52	14.0	16.00	0.21	1.7	2.7	2						•	
16ERB 14 W ⁽¹⁾	9.52	14.0	16.00	0.21	1.0	1.2	1						•	
16ERM 14 W ⁽¹⁾	9.52	14.0	16.00	0.24	1.0	1.2	1		•	•		•	•	•
16ER/L 12 W	9.52	12.0	16.00	0.25	1.1	1.4	1		•	•	•		•	
16ER/L 11 W	9.52	11.0	16.00	0.27	1.1	1.5	1	•	•	•	•		•	
16ERB 11 W ⁽¹⁾	9.52	11.0	16.00	0.27	1.1	1.5	1						•	
16ERM 11 W ⁽¹⁾	9.52	11.0	16.00	0.27	1.1	1.5	1			•	•	•	•	•
16ER/L 10 W	9.52	10.0	16.00	0.31	1.1	1.5	1		•	•			•	
16ERB 10 W ⁽¹⁾	9.52	10.0	16.00	0.31	1.1	1.5	1						•	
16ER 9 W	9.52	9.0	16.00	0.34	1.2	1.7	1		•	•				
16ER/L 8 W	9.52	8.0	16.00	0.39	1.2	1.5	1		•	•			•	

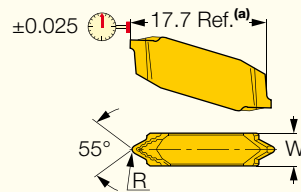
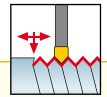
⁽¹⁾ With pressed chipformer. ⁽²⁾ Multi-tooth ⁽³⁾ Number of teeth per corner.

For tools, see pages: • SER/L (A109).

ISCARTHREAD • CUT-GRIP

TIP-P-BSW

Precision Ground American BSW, BSF, BSP, Full Profile, Double-Ended External Threading Inserts with a Chipformer



Designation	Dimensions			Tough ↔ Hard	
	W	R	TPI	IC08	IC908
TIP 2P28-BSW	2.40	0.11	28.0	●	●
TIP 2P26-BSW	2.40	0.12	26.0	●	●
TIP 2P-24BSW	2.40	0.12	24.0		●
TIP 2P24-BSW	2.40	0.12	24.0	●	
TIP 2P-20BSW	2.40	0.16	20.0		●
TIP 2P20-BSW	2.40	0.16	20.0	●	
TIP 2P19-BSW	2.40	0.16	19.0	●	●
TIP 2P-18BSW	2.40	0.17	18.0		●
TIP 2P18-BSW	2.40	0.17	18.0	●	
TIP 2P-16BSW	2.40	0.19	16.0		●
TIP 2P16-BSW	2.40	0.19	16.0	●	
TIP 2P14-BSW	2.40	0.22	14.0	●	●
TIP 4P12-BSW	4.00	0.25	12.0		●
TIP 4P11-BSW	4.00	0.28	11.0	●	●
TIP 4P10-BSW	4.00	0.31	10.0		●

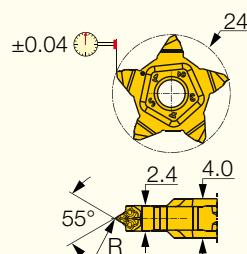
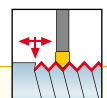
• (a) TIP inserts are 1.6 mm longer than GIP in the same pocket. • Toolholder seat needs to be modified according to insert profile to ensure clearance.

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSR/L (A15) • GHSR/L-JHP-SL (A14).

ISCARTHREAD • PENTACUT

PENTA 24-W

Whitworth (BSW, BSF, BSP), B.S.84-1956 DIN 259 Pentagonal Full Profile, External Threading Inserts with a Chipformer



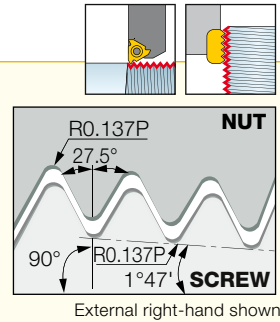
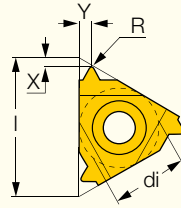
Designation	Dimensions		IC908
	TPI	R	
PENTA 24-28-W	28.0	0.09	●
PENTA 24-19-W	19.0	0.15	●
PENTA 24-14-W	14.0	0.21	●

For tools, see pages: • PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).

ISCARTHREAD

ER/L-BSPT

External BSPT (British Standard Pipe) B.S.21-1957, Full Profile, Laydown Threading Inserts



Designation	Dimensions						Tough ↔ Hard					
	di	TPI	l	R	X	Y	IC50M	IC250	IC508	IC808	IC908	IC1007
16ER 28 BSPT	9.52	28.0	16.00	0.11	0.6	0.6		●			●	
16ER/L 19 BSPT	9.52	19.0	16.00	0.16	0.8	0.9	●	●			●	
16ER/L 14 BSPT	9.52	14.0	16.00	0.21	1.0	1.2	●	●	●		●	
16ERB 14 BSPT ⁽¹⁾	9.52	14.0	16.00	0.21	1.0	1.2					●	
16ERM 14 BSPT ⁽¹⁾	9.52	14.0	16.00	0.21	1.0	1.2				●		●
16ER/L 11 BSPT	9.52	11.0	16.00	0.28	1.1	1.5	●	●			●	
16ERB 11 BSPT ⁽¹⁾	9.52	11.0	16.00	0.28	1.1	1.5					●	
16ERM 11 BSPT ⁽¹⁾	9.52	11.0	16.00	0.28	1.1	1.5					●	●

• For threading between walls use insert TIP-BSPT.

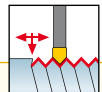
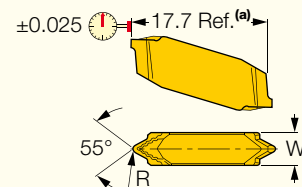
⁽¹⁾ With pressed chipformer.

For tools, see pages: • SER/L (A109).

ISCARTHREAD • CUT-GRIP

TIP-P-BSPT

Precision Ground BSPT (British Standard Pipe) Full Profile, Double-Ended External Threading Inserts with a Chipformer



Designation	Dimensions			Tough ↔ Hard	
	W	R _{±0.03}	TPI	IC08	IC908
TIP 2P28-BSPT	2.40	0.11	28.0	●	●
TIP 2P19-BSPT	2.40	0.16	19.0	●	●
TIP 2P14-BSPT	2.40	0.22	14.0	●	●
TIP 4P11-BSPT	4.00	0.28	11.0	●	●

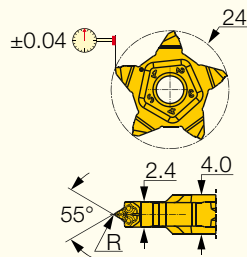
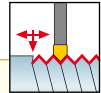
• (a) TIP inserts are 1.6 mm longer than GIP in the same pocket. • Toolholder seat needs to be modified according to insert profile to ensure clearance.

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSL/L (A15) • GHSLR/L-JHP-SL (A14).

ISCARTHREAD • PENTACUT

PENTA 24-BSPT

BSPT (British Standard Pipe) Full Profile, Pentagonal External Threading Precision Ground Inserts with a Chipformer



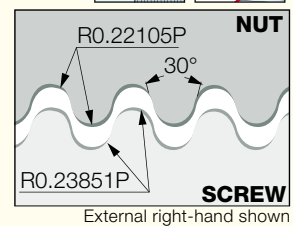
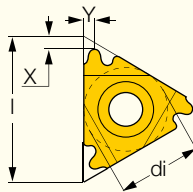
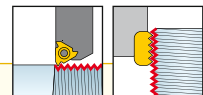
Dimensions				IC908
Designation	TPI	R		
PENTA 24-19-BSPT	19.0	0.16		
PENTA 24-14-BSPT	14.0	0.22		

For tools, see pages: • PCHBR/L (A43) • PCHPR/L (A42) • PCHR/L-24 (A41) • PCHR/L-24-JHP (A41).

ISCARTHREAD

ER/L-RND

External DIN 405, Round Laydown Threading Inserts, for Fire Fighting and Food Industry Pipe Couplings



External right-hand shown

Dimensions						Tough ↔ Hard				
Designation	di	TPI	l	X	Y	IC228	IC50M	IC250	IC508	IC908
16ER/L 10 RND	9.52	10.0	16.00	1.1	1.2		•	•		•
16ER/L 8 RND	9.52	8.0	16.00	1.4	1.3		•	•		•
16ERM 8 RND ⁽¹⁾	9.52	8.0	16.00	1.4	1.3					•
16ER/L 6 RND	9.52	6.0	16.00	1.5	1.7		•	•		•
16ERM 6 RND ⁽¹⁾	9.52	6.0	16.00	1.5	1.7				•	•

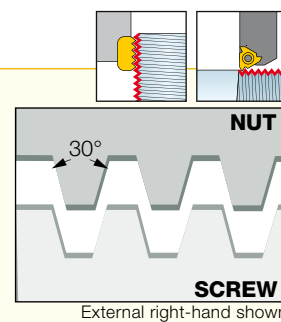
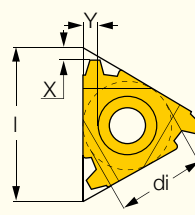
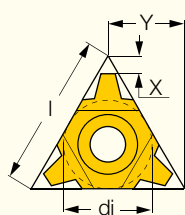
• Tolerance: Class 7H.

⁽¹⁾ With pressed chipformer

For tools, see pages: • SER/L (A109).

ER/L-TR

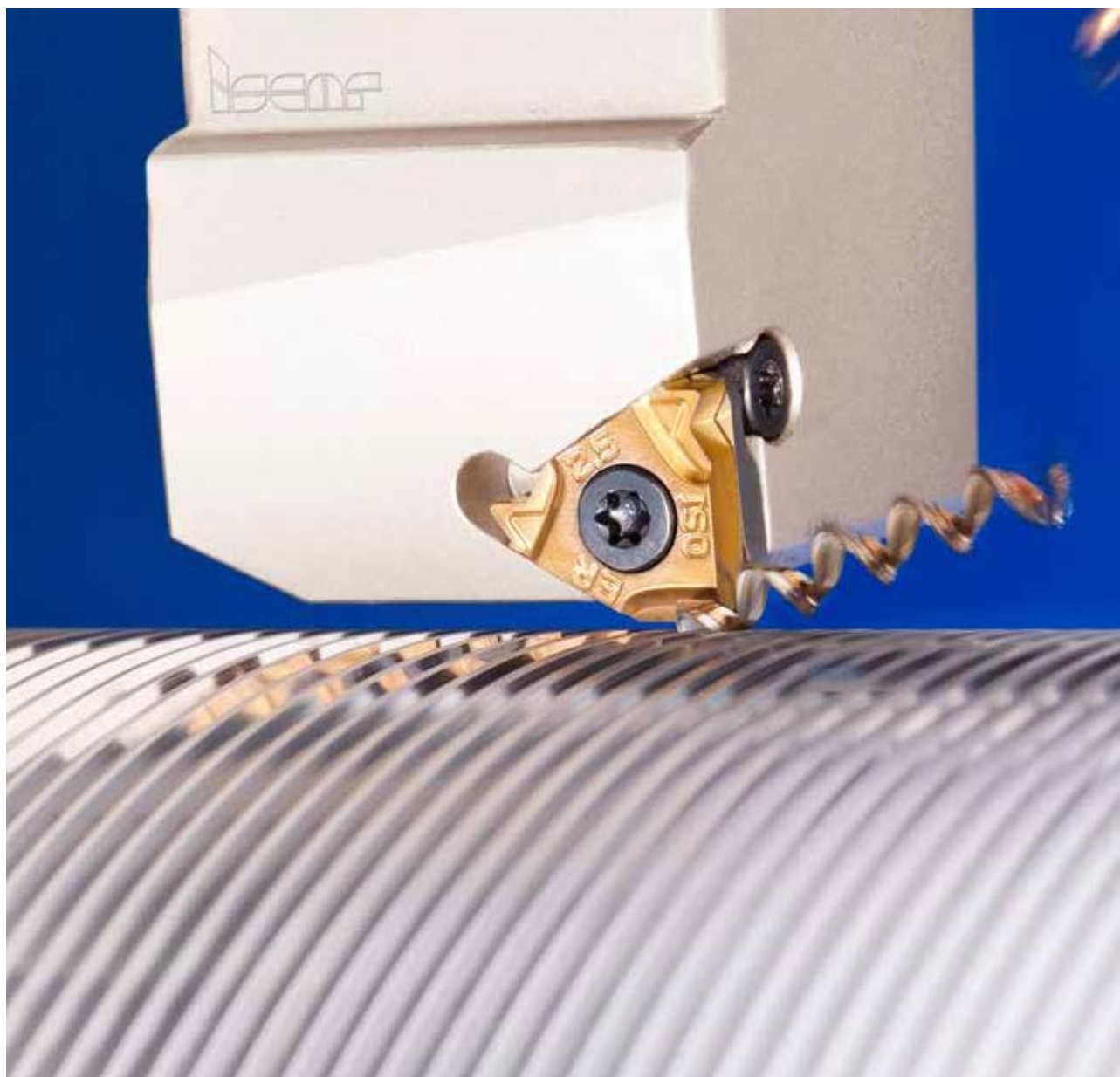
External Trapeze Shaped DIN 103 Laydown Threading Inserts, for Feed Screws



Designation	Dimensions					Tough $\longleftrightarrow$ Hard				
	di	Pitch	l	X	Y	IC228	IC50M	IC250	IC508	IC908
16ER/L 1.5 TR	9.52	1.50	16.00	1.0	1.1		●	●		●
16ER/L 2 TR	9.52	2.00	16.00	1.0	1.3		●	●		●
16ER/L 3 TR	9.52	3.00	16.00	1.3	1.5	●	●	●	●	●

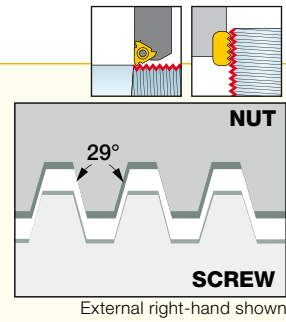
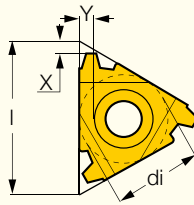
• DIN 103 04/1977, 1502901/1977 Class 7H.

For tools, see pages: SER/L (A109).



ER/L-STACME

External STUB ACME Laydown Threading Inserts, for Control Valves and Shallow ACME Profile

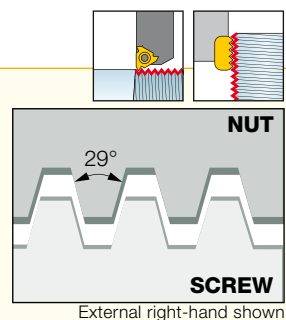
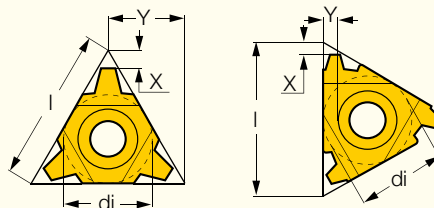


Designation	Dimensions					Dimensions		
	di	TPI	I	X	Y	IC50M	IC250	IC908
16ER/L 16 STACME	9.52	16.0	16.00	1.0	1.0	●	●	●
16ER/L 14 STACME	9.52	14.0	16.00	1.1	1.1	●	●	●
16ER/L 12 STACME	9.52	12.0	16.00	1.2	1.2	●	●	●
16ER/L 10 STACME	9.52	10.0	16.00	1.3	1.3	●	●	●
16ER/L 8 STACME	9.52	8.0	16.00	1.5	1.5	●	●	●
16ER/L 6 STACME	9.52	6.0	16.00	1.8	1.8	●	●	●

• STUB ACME ASME/ANSI B1.8-1988 Class 2G
For tools, see pages: SER/L (A109).

ER/L-ACME

External ACME Profile Laydown Threading Inserts, for Feed Screws

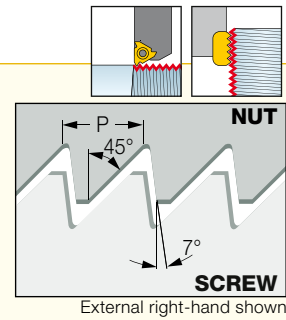
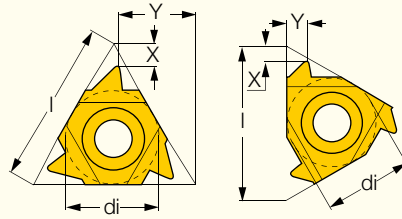


Designation	Dimensions					Dimensions		
	di	TPI	I	X	Y	IC50M	IC250	IC908
11ER 16 ACME	6.35	16.0	11.00	0.9	1.0	●	●	●
16ER/L 16 ACME	9.52	16.0	16.00	0.9	1.0	●	●	●
16ER/L 14 ACME	9.52	14.0	16.00	1.0	1.2	●	●	●
16ER/L 12 ACME	9.52	12.0	16.00	1.1	1.2	●	●	●
16ER/L 10 ACME	9.52	10.0	16.00	1.3	1.3	●	●	●
16ER/L 8 ACME	9.52	8.0	16.00	1.5	1.5	●	●	●

• ACME ASME/ANSI B1.5-1988 Class 3G
For tools, see pages: • SER/L (A109).

ER/L-ABUT

External American Buttress Laydown Threading Inserts, for High Force Transmission in One Direction



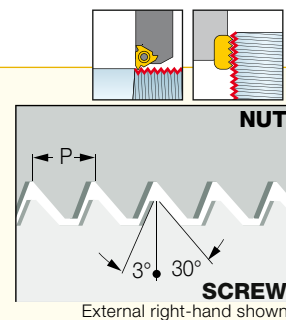
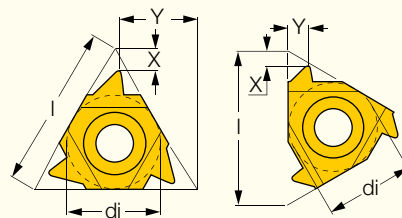
Designation	Dimensions					Tough ← Hard			
	di	TPI	l	X	Y	IC50M	IC250	IC08	IC908
11ER 20 ABUT	6.35	20.0	11.00	1.0	1.3		●	●	●
11ER 16 ABUT	6.35	16.0	11.00	1.0	1.5			●	●
16ER 20 ABUT	9.52	20.0	16.00	1.0	1.3				●
16ER/L 16 ABUT	9.52	16.0	16.00	1.1	1.5		●		●
16ER/L 12 ABUT	9.52	12.0	16.00	1.4	2.0	●	●		●
16ER/L 10 ABUT	9.52	10.0	16.00	1.5	2.3				●

• ANSI B1.9-1973 Class 2

For tools, see pages: • SER/L (A109).

ER/L-SAGE

External Sagengwinde Thread, Application for High Force in One Direction



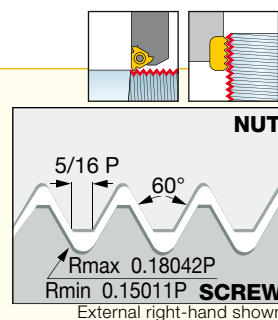
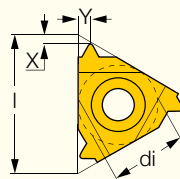
Designation	Dimensions					IC908
	di	Pitch	l	X	Y	
16ER/L 2 SAGE	9.52	2.00	16.00	1.1	1.6	●

• Sagengwinde (DIN 513)

For tools, see pages: • SER/L (A109).

ER/L-UNJ

External UNJ Profile Laydown Threading Inserts, for Aviation and Aerospace Industry



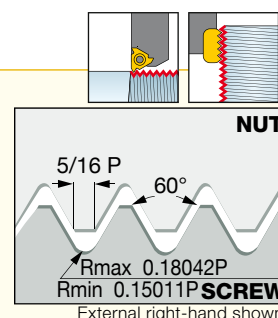
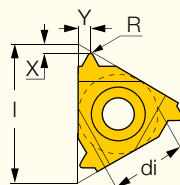
Designation	Dimensions						Tough ↔ Hard				
	di	TPI	l	R	X	Y	IC50M	IC250	IC08	IC508	IC908
11ER 28 UNJ	6.35	28.0	11.00	0.14	0.6	0.6					●
11ER 24 UNJ	6.35	24.0	11.00	0.16	0.7	0.8					●
11ER/L 20 UNJ	6.35	20.0	11.00	0.19	0.8	0.9					●
11EL 18 UNJ	6.35	18.0	11.00	0.21	0.8	1.0					●
16ER 48 UNJ	9.52	48.0	16.00	0.08	0.6	0.6					●
16ER 44 UNJ	9.52	44.0	16.00	0.09	0.6	0.6					●
16ER 40 UNJ	9.52	40.0	16.00	0.10	0.6	0.6					●
16ER 36 UNJ	9.52	36.0	16.00	0.11	0.6	0.6					●
16ER/L 32 UNJ	9.52	32.0	16.00	0.12	0.6	0.6	●				●
16ER 28 UNJ	9.52	28.0	16.00	0.14	0.6	0.6	●	●			●
16ER/L 24 UNJ	9.52	24.0	16.00	0.16	0.7	0.8	●	●			●
16ER/L 20 UNJ	9.52	20.0	16.00	0.19	0.8	0.9	●	●		●	●
16ER/L 18 UNJ	9.52	18.0	16.00	0.21	0.8	1.0	●	●	●		●
16ER/L 16 UNJ	9.52	16.0	16.00	0.24	0.8	1.0	●				●
16ER/L 14 UNJ	9.52	14.0	16.00	0.27	1.0	1.2	●	●			●
16ER 13 UNJ	9.52	13.0	16.00	0.29	1.1	1.3					●
16ER/L 12 UNJ	9.52	12.0	16.00	0.32	1.1	1.4	●	●			●
16ER 10 UNJ	9.52	10.0	16.00	0.38	1.1	1.5	●				●
16ER/L 8 UNJ	9.52	8.0	16.00	0.48	1.2	1.6	●	●			●

• UNJ MIL-S-8879C 9-1992 Class 3A

For tools, see pages: SER/L (A109).

ER-MJ

External MJ ISO 5855 Metric Full Profile Laydown Threading Inserts, for the Aviation and Aerospace Industry



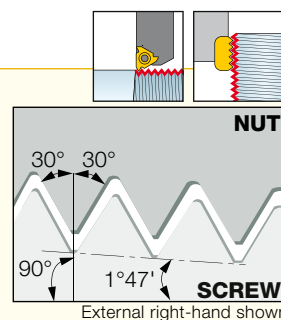
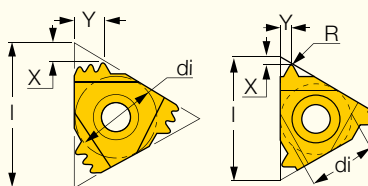
Designation	Dimensions						Tough ↔ Hard	
	di	Pitch	l	R	X	Y	IC250	IC908
16ER 1.00 MJ	9.52	1.00	16.00	0.16	0.7	0.8		●
16ER 1.25 MJ	9.52	1.25	16.00	0.20	0.8	0.9		●
16ER 1.50 MJ	9.52	1.50	16.00	0.23	0.8	1.0	●	●
16ER 2.00 MJ	9.52	2.00	16.00	0.32	1.0	1.3		●

For tools, see pages: • SER/L (A109).

ISCARTHREAD

ER/L-NPT

External NPT (National Pipe Threads) Full Profile Laydown Threading Inserts, for Steam, Gas and Water Pipes



External right-hand shown

Designation	Dimensions						Tough ↔ Hard						
	di	TPI	l	R	X	Y	IC228	IC50M	IC250	IC508	IC808	IC908	IC1007
16ER 27 NPT	9.52	27.0	16.00	0.04	0.7	0.8		●	●			●	
16ER 18 NPT	9.52	18.0	16.00	0.06	0.8	1.0		●	●			●	
16ERB 18 NPT ⁽¹⁾	9.52	18.0	16.00	0.06	0.8	1.0						●	
16ERM 18 NPT ⁽¹⁾	9.52	18.0	16.00	0.05	0.8	1.0			●		●	●	
16ER/L 14 NPT	9.52	14.0	16.00	0.07	0.9	1.2	●	●	●	●		●	
16ERB 14 NPT ⁽¹⁾	9.52	14.0	16.00	0.07	0.9	1.2						●	
16ERM 14 NPT ⁽¹⁾	9.52	14.0	16.00	0.05	0.9	1.2		●	●		●	●	●
16ER/L 11.5 NPT	9.52	11.5	16.00	0.09	1.1	1.5		●	●	●		●	
16ERB 11.5 NPT ⁽¹⁾	9.52	11.5	16.00	0.09	1.1	1.5						●	
16ERM 11.5 NPT ⁽¹⁾	9.52	11.5	16.00	0.09	1.1	1.5			●			●	●
16ER 8 NPT	9.52	8.0	16.00	0.12	1.3	1.8		●	●			●	
16ERB 8 NPT ⁽¹⁾	9.52	8.0	16.00	0.12	1.3	1.8						●	
16ERM 8 NPT ⁽¹⁾	9.52	8.0	16.00	0.12	1.3	1.8			●		●	●	

• For threading between walls use GRIP-type insert TIP-NPT. • National Pipe Threads ANSI/ASME B1.20.1-1983

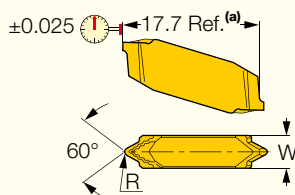
⁽¹⁾ With pressed chipformer.

For tools, see pages: • SER/L (A109).

ISCARTHREAD • CUT-GRIP

TIP-P-NPT

Precision Ground, NPT (National Pipe Threads) Full Profile, Double-Ended External Threading Inserts with a Chipformer



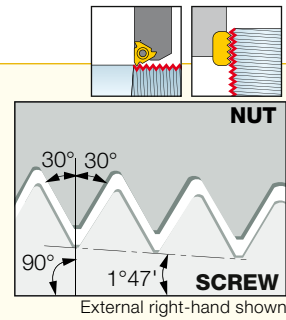
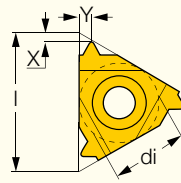
Designation	Dimensions			Tough ↔ Hard	
	W	R ^{±0.03}	TPI	IC08	IC908
TIP 2P27-NPT	2.40	0.05	27.0	●	●
TIP 2P18-NPT	2.40	0.07	18.0	●	●
TIP 2P14-NPT	2.40	0.09	14.0		●
TIP 4P11.5-NPT	4.00	0.10	11.5	●	●
TIP 4P8-NPT	4.00	0.13	8.0	●	●

• (a) TIP inserts are 1.6 mm longer than GIP in the same pocket. • Toolholder seat needs to be modified according to insert profile to ensure clearance.

For tools, see pages: • CGHN-D (A25) • GHDR/L (short pocket) (A24) • GHGR/L (A25) • GHMPR/L (A23) • GHMR/L (A23) • GHSL/L (A15) • GHSL/L-JHP-SL (A14).

ER-NPTF

External NPTF (National Pipe Threads) Full Profile Laydown Threading Inserts for Steam, Gas and Water Pipes



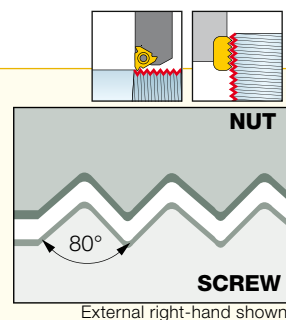
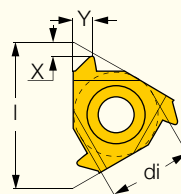
Designation	Dimensions						Tough ↔ Hard		
	di	TPI	l	X	Y	Z	IC50M	IC250	IC908
11ER 18 NPTF	6.35	18.0	11.00	0.8	1.0	1		●	
11ER 14 NPTF	6.35	14.0	11.00	0.8	1.0	1			●
16ER 27 NPTF	9.52	27.0	16.00	0.7	0.7	1	●		●
16ER 18 NPTF	9.52	18.0	16.00	0.8	1.0	1			●
16ER 14 NPTF	9.52	14.0	16.00	0.9	1.2	1	●	●	●
16ER 11.5 NPTF	9.52	11.5	16.00	1.1	1.5	1	●		●

• (National Pipe Threads-Dry Seal) ANSI/ASME B1.20.1-1976 full profile.

For tools, see pages: • SER/L (A109).

ER-PG

External Threading Inserts for the Electrical Industry

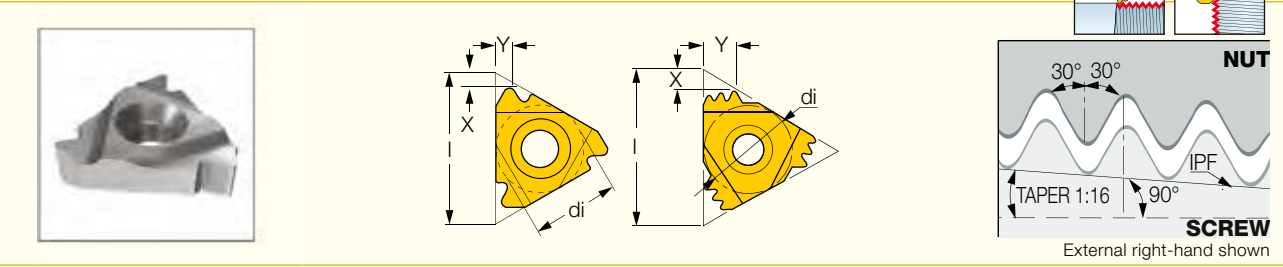


Designation	Dimensions						Tough ↔ Hard	
	di	Pitch	l	X	Y		IC08	IC908
16ER 16 PG	9.52	16.00	16.00	0.8	1.0			●
16ER 18 PG	9.52	18.00	16.00	0.8	0.9			●
16ER 20 PG	9.52	20.00	16.00	0.7	0.8		●	●

For tools, see pages: • SER/L (A109).

ER/L-API RD

External API - Oil Thread, Round Profile Laydown Threading Inserts

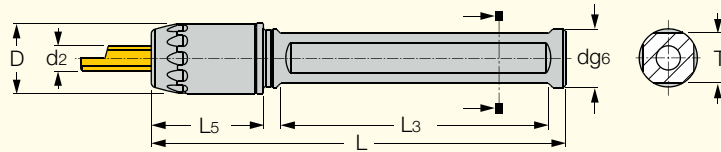


Designation	Dimensions						Tough $\longleftrightarrow$ Hard			
	di	TPI	l	IPF	X	Y	IC50M	IC250	IC508	IC908
							●	●	●	●
16ER 10 API RD	9.52	10.0	16.00	0.75	1.5	1.4	●	●	●	●
16ER/L 8 API RD	9.52	8.0	16.00	0.75	1.3	1.6	●	●	●	●

• API Spec 5B8-1996
For tools, see pages: SER/L (A109).

GROOVETURN





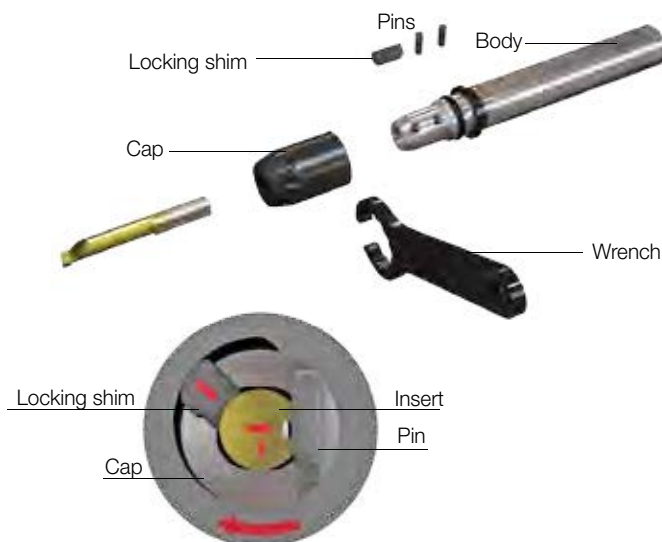
Designation	Dimensions							Wrench	Cap Ace
	d	d2	D	L	L5	L3	T		
PICCO ACE 12-4	12.00	4.00	14.50	85.00	23.00	53.00	10.3	WRENCH ACE 4-5	CAP ACE 4
PICCO ACE 12-5	12.00	5.00	14.50	85.00	23.00	53.00	10.3	WRENCH ACE 4-5	CAP ACE 5
PICCO ACE 16-4	16.00	4.00	14.50	85.00	21.50	53.50	14.0	WRENCH ACE 4-5	CAP ACE 4
PICCO ACE 16-5	16.00	5.00	14.50	85.00	21.50	53.00	14.0	WRENCH ACE 4-5	CAP ACE 5
PICCO ACE 16-6	16.00	6.00	19.90	85.00	23.00	53.50	14.0	WRENCH ACE 6-7	CAP ACE 6
PICCO ACE 16-7	16.00	7.00	19.90	85.00	23.00	53.50	14.0	WRENCH ACE 6-7	CAP ACE 7
PICCO ACE 20-4	20.00	4.00	14.50	150.00	21.50	118.00	18.0	WRENCH ACE 4-5	CAP ACE 4
PICCO ACE 20-5	20.00	5.00	14.50	150.00	21.50	118.00	18.0	WRENCH ACE 4-5	CAP ACE 5
PICCO ACE 20-6	20.00	6.00	19.90	150.00	21.50	118.00	18.0	WRENCH ACE 6-7	CAP ACE 6
PICCO ACE 20-7	20.00	7.00	19.90	150.00	21.50	118.00	18.0	WRENCH ACE 6-7	CAP ACE 7
PICCO ACE 22-4	22.00	4.00	14.50	150.00	21.50	118.00	20.0	WRENCH ACE 4-5	CAP ACE 4
PICCO ACE 22-5	22.00	5.00	14.50	150.00	21.50	118.00	20.0	WRENCH ACE 4-5	CAP ACE 5
PICCO ACE 22-6	22.00	6.00	19.90	150.00	21.50	118.00	20.0	WRENCH ACE 6-7	CAP ACE 6
PICCO ACE 22-7	22.00	7.00	19.90	150.00	21.50	118.00	20.0	WRENCH ACE 6-7	CAP ACE 7

• Holders are suitable for right- and left-hand PICCO inserts

PICCO ACE Inch

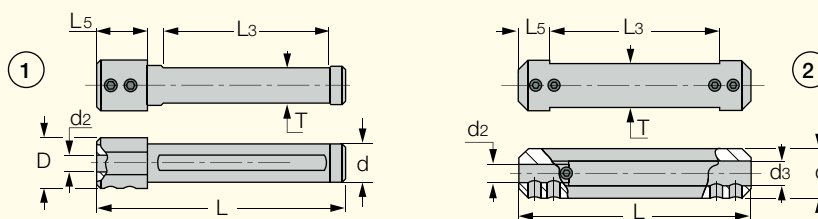
Designation	Dimensions							Wrench	Cap Ace
	d	d2	D	L	L5	L3	T		
PICCO ACE 12.7-4	.500	.157	.571	3.346	.906	2.087	.457	WRENCH ACE 4-5	CAP ACE 4
PICCO ACE 12.7-5	.500	.197	.571	3.346	.906	2.087	.457	WRENCH ACE 4-5	CAP ACE 5
PICCO ACE 15.9-4	.625	.157	.571	3.346	.846	2.087	.551	WRENCH ACE 4-5	CAP ACE 4
PICCO ACE 15.9-5	.625	.197	.571	3.346	.846	2.087	.551	WRENCH ACE 4-5	CAP ACE 5
PICCO ACE 15.9-6	.625	.236	.783	3.346	.906	2.087	.551	WRENCH ACE 6-7	CAP ACE 6
PICCO ACE 15.9-7	.625	.276	.783	3.346	.906	2.087	.551	WRENCH ACE 6-7	CAP ACE 7
PICCO ACE 19-4	.750	.157	.571	5.906	.846	4.646	.677	WRENCH ACE 4-5	CAP ACE 4
PICCO ACE 19-5	.750	.197	.571	5.906	.846	4.646	.677	WRENCH ACE 4-5	CAP ACE 5
PICCO ACE 19-6	.750	.236	.783	5.906	.906	4.646	.677	WRENCH ACE 6-7	CAP ACE 6
PICCO ACE 19-7	.750	.276	.783	5.906	.906	4.646	.677	WRENCH ACE 6-7	CAP ACE 7
PICCO ACE 25.4-4	1.000	.157	.571	5.906	.846	4.646	.905	WRENCH ACE 4-5	CAP ACE 4
PICCO ACE 25.4-5	1.000	.197	.571	5.906	.846	4.646	.905	WRENCH ACE 4-5	CAP ACE 5
PICCO ACE 25.4-6	1.000	.236	.783	5.906	.846	4.646	.905	WRENCH ACE 6-7	CAP ACE 6
PICCO ACE 25.4-7	1.000	.276	.783	5.906	.846	4.646	.905	WRENCH ACE 6-7	CAP ACE 7

• Holders are suitable for right- and left-hand PICCO inserts



PICCO/MG PCO (holder)

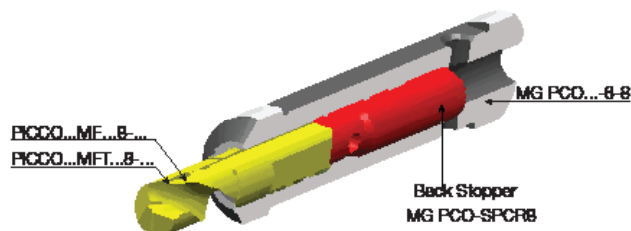
Holders for PICCO Inserts and Small Diameter Boring Bars



Designation	d	d ₂	d ₃	L	L ₅	L ₃	T	D	Fig.
PICCO 12-4-5	12.00	4.00	5.00	75.00	10.00	55.00	10.3	18.00	2
PICCO 16-4-5	16.00	4.00	5.00	75.00	10.00	55.00	14.0	18.00	2
PICCO 20-4-5	20.00	4.00	5.00	90.00	10.00	70.00	18.0	18.00	2
PICCO 22-4-5 ⁽¹⁾	22.00	4.00	5.00	90.00	10.00	70.00	20.0	18.00	2
PICCO 16-6-7	16.00	6.00	7.00	75.00	10.00	55.00	14.0	18.00	2
PICCO 20-6-7	20.00	6.00	7.00	90.00	10.00	70.00	18.0	18.00	2
PICCO 22-6-7 ⁽¹⁾	22.00	6.00	7.00	90.00	10.00	70.00	20.0	18.00	2
MG PCO-12-6	12.00	6.00	-	75.00	15.00	50.80	11.0	18.00	1
MG PCO-16-6-8	16.00	6.00	8.00	75.00	10.00	55.00	14.0	18.00	2
MG PCO-20-6-8	20.00	6.00	8.00	90.00	10.00	70.00	18.0	18.00	2
MG PCO-22-6-8 ⁽¹⁾	22.00	6.00	8.00	90.00	10.00	70.00	20.0	18.00	2
MG PCO-25-6-8	25.00	6.00	8.00	90.00	10.00	70.00	23.0	18.00	2
MG PCO-16-9	16.00	9.00	-	75.00	15.00	53.00	18.0	18.00	1

• Holders are suitable for right- and left-hand inserts, and boring bars.

⁽¹⁾ Tools for Swiss-type CNC



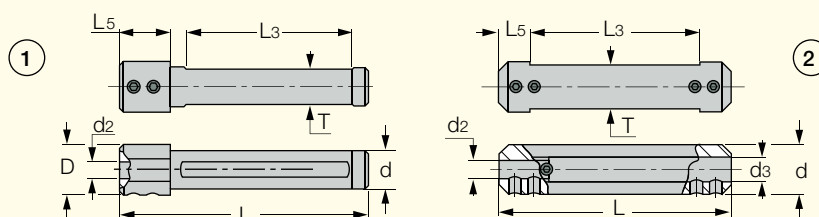
Spare Parts



Designation	Screw	Key	Coolant Fitting	Stopper
PICCO 12-4-5	SR M5X4-PF HW 2.5			
PICCO 16-4-5	SR M5X6-PF HW 2.5			
PICCO 20-4-5	SR M5X6-PF HW 2.5			
PICCO 22-4-5	SR M5X6-PF HW 2.5			
PICCO 16-6-7	SR M5X6-PF HW 2.5			
PICCO 20-6-7	SR M5X6-PF HW 2.5			
PICCO 22-6-7	SR M5X6-PF HW 2.5			
MG PCO-12-6	SR M5X6-PF HW 2.5			
MG PCO-16-6-8	SR M5X6-PF HW 2.5			MG PCO-SPCR8
MG PCO-20-6-8	SR M5X6-PF HW 2.5			MG PCO-SPCR8
MG PCO-22-6-8	SR M5X6-PF HW 2.5			MG PCO-SPCR8
MG PCO-25-6-8	SR M5X6-PF HW 2.5			MG PCO-SPCR8
MG PCO-16-9	SR M5X6-PF HW 2.5	PL 16		

PICCO/MG PCO (holder) Inch

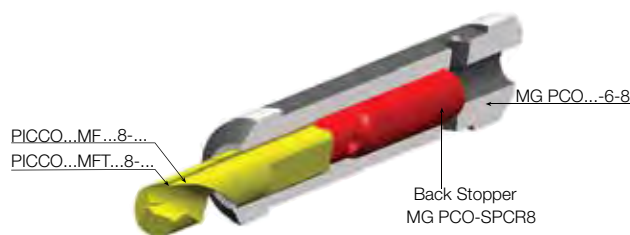
Holders for PICCO Inserts and Small Diameter Boring Bars



Designation	d	d ₂	d ₃	L	L ₅	L ₃	T	D	Fig.
PICCO 12.7-4-5	.500	.157	.197	2.950	.394	2.170	.410	.709	2
PICCO 15.9-4-5	.625	.157	.197	2.950	.394	2.170	.550	.709	2
PICCO 19-4-5	.750	.157	.197	3.540	.394	2.760	.710	.709	2
PICCO 25.4-4-5 ⁽¹⁾	1.000	.157	.197	3.543	.394	2.756	.921	.709	2
PICCO 15.9-6-7	.625	.236	.276	2.950	.394	2.170	.550	.709	2
PICCO 19-6-7	.750	.236	.276	3.540	.394	2.760	.710	.709	2
PICCO 25.4-6-7 ⁽¹⁾	1.000	.236	.276	3.543	.394	2.756	.921	.709	2
MG PCO-12.7-6	.500	.236	-	3.000	.590	2.090	.433	.709	1
MG PCO-15.9-6-8	.625	.236	.315	3.000	.390	2.170	.551	.709	2
MG PCO-19-6-8	.750	.236	.315	3.500	.390	2.760	.709	.709	2
MG PCO-25.4-6-8 ⁽¹⁾	1.000	.236	.315	3.543	.394	2.756	.921	.709	2
MG PCO-16-9	.630	.354	-	2.953	.591	2.087	.709	.709	1

• Holders are suitable for left- and right-hand inserts, and boring bars.

⁽¹⁾ Tools for Swiss-type CNC



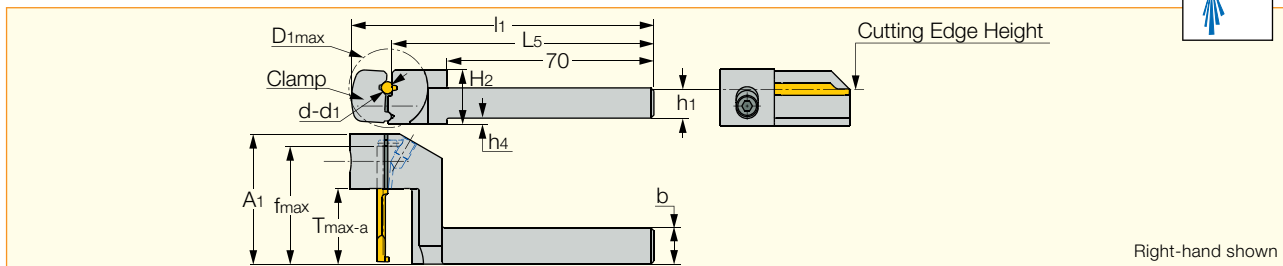
Spare Parts



Designation	Screw	Key	Seal	Stopper
PICCO 12.7-4-5	SR M5X4-PF	HW 2.5		
PICCO 15.9-4-5	SR M5X6-PF	HW 2.5		
PICCO 19-4-5	SR M5X6-PF	HW 2.5		
PICCO 25.4-4-5	SR M5X6-PF	HW 2.5		
PICCO 15.9-6-7	SR M5X6-PF	HW 2.5		
PICCO 19-6-7	SR M5X6-PF	HW 2.5		
PICCO 25.4-6-7	SR M5X6-PF	HW 2.5		
MG PCO-12.7-6	SR M5X6-PF	HW 2.5		
MG PCO-15.9-6-8	SR M5X6-PF	HW 2.5		MG PCO-SPCR8
MG PCO-19-6-8	SR M5X6-PF	HW 2.5		MG PCO-SPCR8
MG PCO-25.4-6-8	SR M5X6-PF	HW 2.5		MG PCO-SPCR8
MG PCO-16-9	SR M5X6-PF	HW 2.5	PL 16	

GHPCOR/L

Perpendicular Square-Shank Tools for Use on the Cross Slide Units of Swiss-Type and Automatic Machines



Designation	h	b	l ₁	L ₅	h ₄	H ₂	A ₁	D _{1 max}	T _{max-a}	f _{max}	d	d ₁
GHPCOR/L 08-16-4-5	8.0	8.0	102.00	88.00	4.0	15.0	34.00	26.0	16.00	30.0	4.00	5.00
GHPCOL 08-25-4-5	8.0	8.0	102.00	88.00	4.0	15.0	34.00	26.0	25.00	30.0	4.00	5.00
GHPCOR 08-28-4-5	8.0	8.0	102.00	88.00	4.0	15.0	34.00	26.0	28.00	30.0	4.00	5.00
GHPCOR/L 10-16-4-5	10.0	10.0	102.00	88.00	2.0	18.0	34.00	26.0	16.00	30.0	4.00	5.00
GHPCOR/L 10-25-4-5	10.0	10.0	102.00	88.00	2.0	18.0	34.00	26.0	25.00	30.0	4.00	5.00
GHPCOR/L 12-16-4-6	12.0	12.0	102.00	88.00	-	18.0	34.00	26.0	16.00	30.0	4.00	6.00
GHPCOR 12-25-4-6	12.0	12.0	102.00	88.00	-	18.0	43.00	26.0	25.00	39.0	4.00	6.00
GHPCOR/L 16-16-4-6	16.0	16.0	112.00	98.00	-	22.0	35.00	36.0	16.00	31.0	4.00	6.00
GHPCOR/L 16-25-4-6	16.0	16.0	112.00	98.00	-	22.0	44.00	36.0	25.00	40.0	4.00	6.00
GHPCOR/L 16-30-7-8	16.0	16.0	112.00	98.00	-	22.0	49.00	36.0	30.00	45.0	7.00	8.00

• PICCOCUT insert should not exceed A₁ length. • Left-hand holders are available upon request. • Coolant tube adapter: KQ2L06-M5 (for 6 mm coolant tube)

Indexing from the top



Indexing from the front



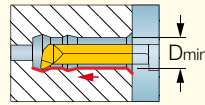
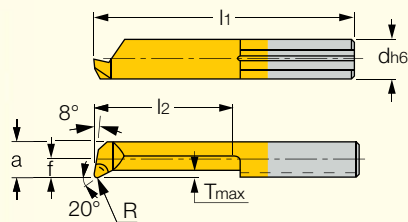
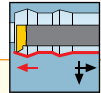
Spare Parts



Designation	Side Clamp	Screw	Key	Pipe Fitting
GHPCOR/L 08-16-4-5	HED 08	SR M4X14DIN912 12.9	HW 3.0	KQ2L06-M5
GHPCOL 08-25-4-5	HED 08	SR M4X14DIN912 12.9	HW 3.0	KQ2L06-M5
GHPCOR 08-28-4-5	HED 08	SR M4X14DIN912 12.9	HW 3.0	KQ2L06-M5
GHPCOR/L 10-16-4-5	HED 10	SR M4X14DIN912 12.9	HW 3.0	KQ2L06-M5
GHPCOR/L 10-25-4-5	HED 10	SR M4X14DIN912 12.9	HW 3.0	KQ2L06-M5
GHPCOR/L 12-16-4-6	HED 12	SR M4X14DIN912 12.9	HW 3.0	KQ2L06-M5
GHPCOR 12-25-4-6	HED 12	SR M4X14DIN912 12.9	HW 3.0	KQ2L06-M5
GHPCOR/L 16-16-4-6	HED 16-4-6	SR M4X14DIN912 12.9	HW 3.0	KQ2L06-M5
GHPCOR/L 16-25-4-6	HED 16-4-6	SR M4X14DIN912 12.9	HW 3.0	KQ2L06-M5
GHPCOL 16-30-7-8	HED 16-7-8	SR M4X14DIN912 12.9	HW 3.0	KQ2L06-M5
GHPCOR 16-30-7-8	HED 16-7-8	SR M4X14DIN912 12.9	HW 3.0	KQ2L06-M5

PICCO R/L 050, 053, 055

Inserts for Internal Turning and Chamfering



Right-hand shown

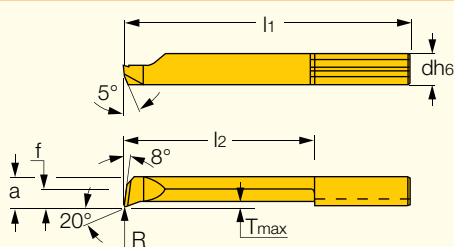
Designation	Dimensions								Tough ↔ Hard	
	d	f	a	l ₁	l ₂	R±0.05	T _{max}	D _{min}	IC228	IC908
PICCO R 050.06-2 ⁽¹⁾	4.00	-	0.50	20.00	2.0	0.04	0.08	0.60	●	●
PICCO R 050.06-3 ⁽¹⁾	4.00	-	0.50	20.00	3.0	0.04	0.08	0.60	●	●
PICCO R 050.08-4	4.00	-	0.70	20.00	4.0	0.04	0.08	0.80	●	●
PICCO R/L 050.1-5	4.00	-	0.90	20.00	4.5	0.05	0.10	1.00	●	●
PICCO R/L 050.1-7	4.00	-	0.90	22.00	6.5	0.05	0.10	1.00	●	●
PICCO R/L 050.2-5	4.00	-	1.70	19.00	4.0	0.05	0.10	2.00	●	●
PICCO R/L 050.2-10	4.00	-	1.70	24.00	9.0	0.05	0.10	2.00	●	●
PICCO R/L 050.2-15	4.00	-	1.70	29.00	14.0	0.05	0.10	2.00	●	●
PICCO R 050.25-5	4.00	0.2	2.20	19.00	5.0	0.05	0.15	2.50	●	●
PICCO R 050.25-10	4.00	0.2	2.20	24.00	10.0	0.05	0.15	2.50	●	●
PICCO R 050.25-16	4.00	0.2	2.20	30.00	16.0	0.05	0.15	2.50	●	●
PICCO R 053.3-10	4.00	0.6	2.60	24.00	9.0	0.03	0.20	2.80	●	●
PICCO R/L 050.3-10	4.00	0.6	2.60	24.00	9.0	0.10	0.20	2.80	●	●
PICCO R 053.3-16	4.00	0.6	2.60	30.00	15.0	0.03	0.20	2.80	●	●
PICCO R/L 050.3-16	4.00	0.6	2.60	30.00	15.0	0.10	0.20	2.80	●	●
PICCO R 053.3-20	4.00	0.6	2.60	34.00	19.0	0.03	0.20	2.80	●	●
PICCO R/L 050.3-20	4.00	0.6	2.60	34.00	19.0	0.10	0.20	2.80	●	●
PICCO R 050.35-10	4.00	1.1	3.10	24.00	10.0	0.10	0.25	3.50	●	●
PICCO R 050.35-16	4.00	1.1	3.10	30.00	16.0	0.10	0.25	3.50	●	●
PICCO R 050.35-20	4.00	1.1	3.10	34.00	20.0	0.10	0.25	3.50	●	●
PICCO R 050.35-24	4.00	1.1	3.10	38.00	24.0	0.10	0.25	3.50	●	●
PICCO R 053.4-10	4.00	1.5	3.50	24.00	9.0	0.03	0.30	4.00	●	●
PICCO R/L 050.4-10	4.00	1.5	3.50	24.00	9.0	0.10	0.30	4.00	●	●
PICCO R 053.4-16	4.00	1.5	3.50	30.00	15.0	0.03	0.30	4.00	●	●
PICCO R/L 050.4-16	4.00	1.5	3.50	30.00	15.0	0.10	0.30	4.00	●	●
PICCO R 053.4-20	4.00	1.5	3.50	34.00	19.0	0.03	0.30	4.00	●	●
PICCO R/L 050.4-20	4.00	1.5	3.50	34.00	19.0	0.10	0.30	4.00	●	●
PICCO R/L 050.4-24	4.00	1.5	3.50	38.00	23.0	0.10	0.30	4.00	●	●
PICCO R/L 050.4-28	4.00	1.5	3.50	42.00	27.0	0.10	0.30	4.00	●	●
PICCO R 055.5-10	5.00	1.9	4.40	25.00	9.0	0.05	0.50	5.00	●	●
PICCO R/L 050.5-10	5.00	1.9	4.40	25.00	9.0	0.15	0.50	5.00	●	●
PICCO R 055.5-15	5.00	1.9	4.40	30.00	14.0	0.05	0.50	5.00	●	●
PICCO R/L 050.5-15	5.00	1.9	4.40	30.00	14.0	0.15	0.50	5.00	●	●
PICCO R 055.5-20	5.00	1.9	4.40	35.00	19.0	0.05	0.50	5.00	●	●
PICCO R/L 050.5-20	5.00	1.9	4.40	35.00	19.0	0.15	0.50	5.00	●	●
PICCO R 055.5-25	5.00	1.9	4.40	40.00	24.0	0.05	0.50	5.00	●	●
PICCO R/L 050.5-25	5.00	1.9	4.40	40.00	24.0	0.15	0.50	5.00	●	●
PICCO R 055.5-30	5.00	1.9	4.40	45.00	29.0	0.05	0.50	5.00	●	●
PICCO R/L 050.5-30	5.00	1.9	4.40	45.00	29.0	0.15	0.50	5.00	●	●
PICCO R/L 050.5-35	5.00	1.9	4.40	50.00	34.0	0.15	0.50	5.00	●	●
PICCO R 055.6-15	6.00	2.3	5.30	30.00	14.0	0.05	0.50	6.00	●	●
PICCO R/L 050.6-15	6.00	2.3	5.30	30.00	14.0	0.15	0.50	6.00	●	●
PICCO R 055.6-22	6.00	2.3	5.30	37.00	21.0	0.05	0.50	6.00	●	●
PICCO R/L 050.6-22	6.00	2.3	5.30	37.00	21.0	0.15	0.50	6.00	●	●
PICCO R 055.6-25	6.00	2.3	5.30	40.00	24.0	0.05	0.50	6.00	●	●
PICCO R/L 050.6-25	6.00	2.3	5.30	40.00	24.0	0.15	0.50	6.00	●	●
PICCO R 055.6-30	6.00	2.3	5.30	45.00	29.0	0.05	0.50	6.00	●	●
PICCO R/L 050.6-30	6.00	2.3	5.30	45.00	29.0	0.15	0.50	6.00	●	●
PICCO R/L 050.6-35	6.00	2.3	5.30	50.00	34.0	0.15	0.50	6.00	●	●
PICCO R/L 050.6-42	6.00	2.3	5.30	57.00	41.0	0.15	0.50	6.00	●	●
PICCO R/L 050.7-20	7.00	2.8	6.30	35.00	19.0	0.15	0.60	6.80	●	●
PICCO R/L 050.7-25	7.00	2.8	6.30	40.00	24.0	0.15	0.60	6.80	●	●
PICCO R/L 050.7-30	7.00	2.8	6.30	45.00	29.0	0.15	0.60	6.80	●	●
PICCO R/L 050.7-35	7.00	2.8	6.30	50.00	34.0	0.15	0.60	6.80	●	●
PICCO R/L 050.7-40	7.00	2.8	6.30	55.00	39.0	0.15	0.60	6.80	●	●
PICCO R/L 050.7-45	7.00	2.8	6.30	60.00	44.0	0.15	0.60	6.80	●	●
PICCO R/L 050.7-50	7.00	2.8	6.30	65.00	49.0	0.15	0.60	6.80	●	●

• Specify right- or left-hand bars

⁽¹⁾ Maximum D.O.C.=0.01-0.03 mm, maximum feed=0.01 mm/rev.

PICCO R/L 050-C

Inserts with Chipformers for Internal Boring and Profiling



Right-hand shown

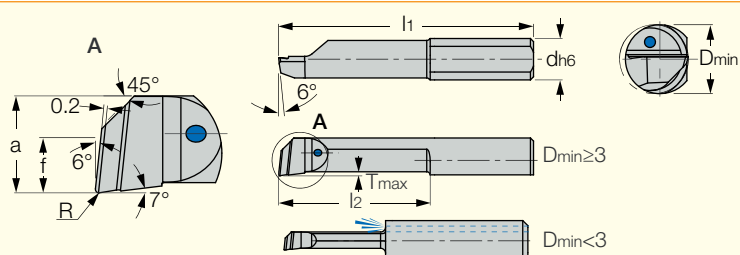
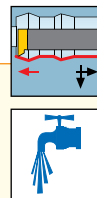
Designation	Dimensions								IC908
	d	f	a	l ₁	l ₂	T _{max}	D _{min}	R _{±0.05}	
PICCO R/L 050.4-10C	4.00	1.5	3.50	24.00	10.0	0.30	4.00	0.20	●
PICCO R/L 050.4-20C	4.00	1.5	3.50	34.00	20.0	0.30	4.00	0.20	●
PICCO R/L 050.4-24C ⁽¹⁾	4.00	1.5	3.50	38.00	24.0	0.30	4.00	0.20	●
PICCO R/L 050.4-28C ⁽¹⁾	4.00	1.5	3.50	42.00	28.0	0.30	4.00	0.20	●
PICCO R/L 050.5-10C	5.00	1.9	4.40	25.00	10.0	0.50	5.00	0.20	●
PICCO R/L 050.5-15C	5.00	1.9	4.40	30.00	15.0	0.50	5.00	0.20	●
PICCO R/L 050.5-20C	5.00	1.9	4.40	35.00	20.0	0.50	5.00	0.20	●
PICCO R/L 050.5-25C ⁽¹⁾	5.00	1.9	4.40	40.00	25.0	0.50	5.00	0.20	●
PICCO R/L 050.5-30C ⁽¹⁾	5.00	1.9	4.40	45.00	30.0	0.50	5.00	0.20	●
PICCO R/L 050.5-35C ⁽¹⁾	5.00	1.9	4.40	50.00	35.0	0.50	5.00	0.20	●
PICCO R/L 050.6-15C	6.00	2.3	5.30	30.00	15.0	0.50	6.00	0.20	●
PICCO R/L 050.6-22C	6.00	2.3	5.30	37.00	22.0	0.50	6.00	0.20	●
PICCO R/L 050.6-25C ⁽¹⁾	6.00	2.3	5.30	40.00	25.0	0.50	6.00	0.20	●
PICCO R/L 050.6-30C ⁽¹⁾	6.00	2.3	5.30	45.00	30.0	0.50	6.00	0.20	●
PICCO R/L 050.6-35C ⁽¹⁾	6.00	2.3	5.30	50.00	35.0	0.50	6.00	0.20	●
PICCO R/L 050.6-42C ⁽¹⁾	6.00	2.3	5.30	57.00	42.0	0.50	6.00	0.20	●
PICCO R/L 050.7-20C	7.00	2.8	6.30	35.00	20.0	0.60	6.80	0.20	●
PICCO R/L 050.7-25C ⁽¹⁾	7.00	2.8	6.30	40.00	25.0	0.60	6.80	0.20	●
PICCO R/L 050.7-30C ⁽¹⁾	7.00	2.8	6.30	45.00	30.0	0.60	6.80	0.20	●
PICCO R/L 050.7-35C ⁽¹⁾	7.00	2.8	6.30	50.00	35.0	0.60	6.80	0.20	●
PICCO R/L 050.7-40C ⁽¹⁾	7.00	2.8	6.30	55.00	40.0	0.60	6.80	0.20	●

• All left-hand inserts on request

⁽¹⁾ Upon request.

PICCO R 051

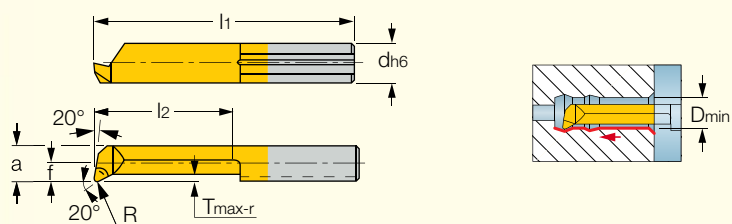
Reinforced Boring and Profiling Inserts with Internal Coolant Hole



Designation	Dimensions								IC908
	d	f	a	l ₁	l ₂	T _{max}	D _{min}	R±0.05	
PICCO R 051.2.15-5	4.00	-	1.80	19.00	5.0	0.10	2.00	0.15	●
PICCO R 051.2.5-10	4.00	-	1.80	24.00	10.0	0.10	2.00	0.05	●
PICCO R 051.2.15-10	4.00	-	1.80	24.00	10.0	0.10	2.00	0.15	●
PICCO R 051.3.10-16	4.00	0.7	2.70	30.00	16.0	0.15	3.00	0.10	●
PICCO R 051.3.20-16	4.00	0.7	2.70	30.00	16.0	0.15	3.00	0.20	●
PICCO R 051.4.10-10	4.00	1.6	3.60	24.00	10.0	0.20	4.00	0.10	●
PICCO R 051.4.20-10	4.00	1.6	3.60	24.00	10.0	0.20	4.00	0.20	●
PICCO R 051.4.10-16	4.00	1.6	3.60	30.00	16.0	0.20	4.00	0.10	●
PICCO R 051.4.20-16	4.00	1.6	3.60	30.00	16.0	0.20	4.00	0.20	●
PICCO R 051.5.10-15	5.00	2.1	4.60	30.00	15.0	0.30	5.00	0.10	●
PICCO R 051.5.20-15	5.00	2.1	4.60	30.00	15.0	0.30	5.00	0.20	●
PICCO R 051.5.10-25	5.00	2.1	4.60	40.00	25.0	0.30	5.00	0.10	●
PICCO R 051.5.20-25	5.00	2.1	4.60	40.00	25.0	0.30	5.00	0.20	●
PICCO R 051.6.10-15	6.00	2.5	5.50	30.00	15.0	0.40	6.00	0.10	●
PICCO R 051.6.20-15	6.00	2.5	5.50	30.00	15.0	0.40	6.00	0.20	●
PICCO R 051.6.20-22	6.00	2.5	5.50	37.00	22.0	0.40	6.00	0.20	●
PICCO R 051.6.20-35	6.00	2.5	5.50	50.00	35.0	0.40	6.00	0.20	●

PICCO R 050.20

Inserts for Internal Turning and Chamfering Next to the Bottom of Blind Holes

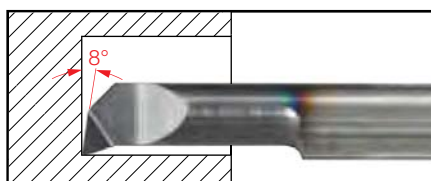


Right-hand shown

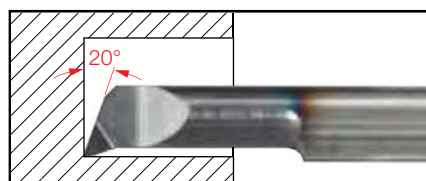
Designation	Dimensions								IC908
	d	f	a	l ₁	l ₂	R _{±0.05}	T _{max-r}	D _{min}	
PICCO R 050.20.2-10	4.00	-	1.70	24.00	10.0	0.05	0.10	2.00	●
PICCO R 050.20.3-10	4.00	0.6	2.60	24.00	10.0	0.10	0.20	2.80	●
PICCO R 050.20.4-16	4.00	1.5	3.50	30.00	16.0	0.10	0.30	4.00	●
PICCO R 050.20.5-20	5.00	1.9	4.40	35.00	19.0	0.15	0.50	5.00	●

• Specify right- or left-hand bars

PICCO 050...

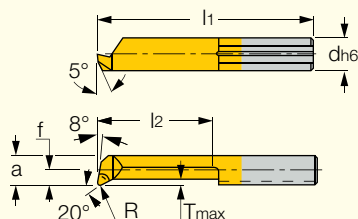


PICCO 050.20...



PICCO R 050 (CBN)

CBN Tipped Inserts for Internal Turning, Profiling and Chamfering of Hard Steel



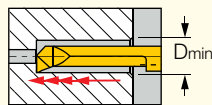
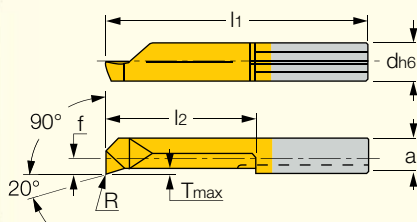
Right-hand shown • **HARD MATERIALS**

Designation	Dimensions								IB55
	d	f	a	l ₁	l ₂	T _{max}	D _{min}	R _{±0.05}	
PICCO R 050.3-10B	4.00	0.6	2.60	25.50	10.0	0.20	2.80	0.20	●
PICCO R 050.4-10B	4.00	1.5	3.50	25.50	10.0	0.30	4.00	0.20	●
PICCO R 050.5-15B	5.00	1.9	4.40	31.50	15.0	0.50	5.00	0.20	●
PICCO R 050.6-15B	6.00	2.3	5.30	31.50	15.0	0.50	6.00	0.20	●
PICCO R 050.7-20B	7.00	2.8	6.30	36.50	20.0	0.60	6.80	0.20	●

• It is not recommended to use coolant when machining with CBN tipped tools • Available on request only

PICCO R/L 090

Inserts for Internal Turning and Profiling



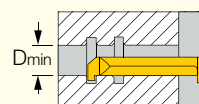
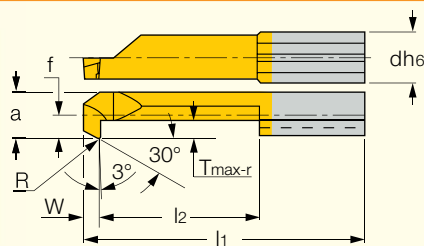
Right-hand shown

Designation	Dimensions								IC228
	d	f	a	l ₁	l ₂	R±0.05	T _{max}	D _{min}	
PICCO R/L 090.3-10	4.00	0.6	2.60	24.00	9.0	0.10	0.20	2.80	●
PICCO R/L 090.3-16	4.00	0.6	2.60	30.00	15.0	0.10	0.20	2.80	●
PICCO R/L 090.4-10	4.00	1.5	3.50	24.00	9.0	0.10	0.30	4.00	●
PICCO R/L 090.4-16	4.00	1.5	3.50	30.00	15.0	0.10	0.30	4.00	●
PICCO R/L 090.5-10	5.00	1.9	4.40	25.00	9.0	0.15	0.50	5.00	●
PICCO R/L 090.5-15	5.00	1.9	4.40	30.00	14.0	0.15	0.50	5.00	●
PICCO R/L 090.5-20	5.00	1.9	4.40	35.00	19.0	0.15	0.50	5.00	●

• Specify right- or left-hand bars

PICCO R/L 080

Inserts for Internal Back Turning



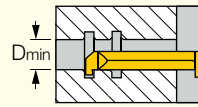
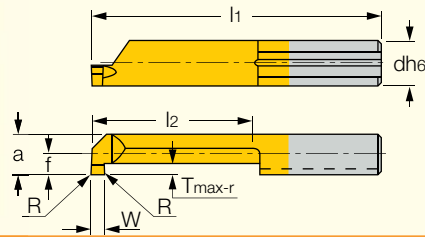
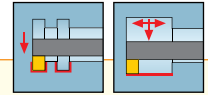
Right-hand shown

Designation	Dimensions									IC228
	d	f	a	W	l ₁	l ₂	R±0.05	T _{max-r}	D _{min}	
PICCO R/L 080.0003-15	4.00	0.6	2.60	1.50	29.00	14.0	0.10	0.50	3.00	●
PICCO R/L 080.0003-20	4.00	0.6	2.60	1.50	34.00	19.0	0.10	0.50	3.00	●
PICCO R/L 080.0004-15	4.00	1.5	3.50	1.50	29.00	14.0	0.15	0.80	4.00	●
PICCO R/L 080.0004-25	4.00	1.5	3.50	1.50	39.00	24.0	0.15	0.80	4.00	●
PICCO R/L 080.0005-20	5.00	1.9	4.40	1.50	35.00	19.0	0.20	1.00	5.00	●
PICCO R/L 080.0005-30	5.00	1.9	4.40	1.50	45.00	29.0	0.20	1.00	5.00	●
PICCO R/L 080.0006-20	6.00	2.3	5.30	1.50	35.00	19.0	0.20	1.80	6.00	●
PICCO R/L 080.0006-30	6.00	2.3	5.30	1.50	45.00	29.0	0.20	1.80	6.00	●
PICCO R/L 080.0007-20	7.00	2.8	6.30	1.50	35.00	19.0	0.20	2.50	7.00	●
PICCO R/L 080.0007-30	7.00	2.8	6.30	1.50	45.00	29.0	0.20	2.50	7.00	●

• Specify right- or left-hand bars

PICCO R/L 002-007

Inserts for Internal Grooving and Turning



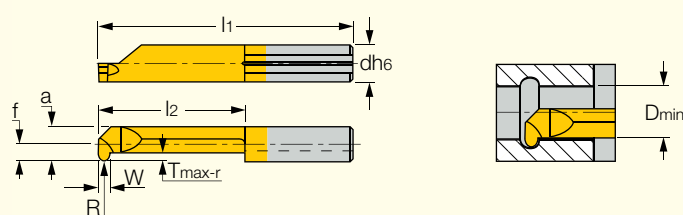
Right-hand shown

Designation	Dimensions								Tough ↔ Hard	
	d	W±0.05	f	a	l1	l2	Tmax-r	Dmin	IC228	IC908
PICCO R 002.0050-5	4.00	0.50	0.2	1.80	19.00	5.0	0.40	2.00		●
PICCO R 002.0050-10	4.00	0.50	0.2	1.80	24.00	10.0	0.40	2.00		●
PICCO R/L 002.0050-15	4.00	0.50	0.2	1.80	29.00	15.0	0.40	2.00		●
PICCO R 003.0070-5	4.00	0.70	0.7	2.70	19.00	5.0	0.60	3.00		●
PICCO R 003.0070-10	4.00	0.70	0.7	2.70	24.00	10.0	0.60	3.00		●
PICCO R 003.0070-16	4.00	0.70	0.7	2.70	29.00	15.0	0.60	3.00		●
PICCO R/L 004.0100-10	4.00	1.00	1.5	3.50	24.00	9.0	0.80	4.00	●	
PICCO R/L 004.0100-16	4.00	1.00	1.5	3.50	30.00	15.0	0.80	4.00	●	
PICCO R/L 004.0100-20	4.00	1.00	1.5	3.50	34.00	19.0	0.80	4.00	●	
PICCO R/L 005.0100-10	5.00	1.00	1.9	4.40	25.00	9.0	1.00	5.00	●	
PICCO R/L 005.0100-15	5.00	1.00	1.9	4.40	30.00	14.0	1.00	5.00	●	
PICCO R/L 005.0100-20	5.00	1.00	1.9	4.40	35.00	19.0	1.00	5.00	●	
PICCO R/L 005.0100-25	5.00	1.00	1.9	4.40	40.00	24.0	1.00	5.00	●	
PICCO R/L 005.0100-30	5.00	1.00	1.9	4.40	45.00	29.0	1.00	5.00	●	
PICCO R/L 005.0150-10	5.00	1.50	1.9	4.40	25.00	9.0	1.00	5.00	●	
PICCO R/L 005.0150-15	5.00	1.50	1.9	4.40	30.00	14.0	1.00	5.00	●	
PICCO R/L 005.0150-20	5.00	1.50	1.9	4.40	35.00	19.0	1.00	5.00	●	
PICCO R/L 005.0150-25	5.00	1.50	1.9	4.40	40.00	24.0	1.00	5.00	●	
PICCO R/L 005.0150-30	5.00	1.50	1.9	4.40	45.00	29.0	1.00	5.00	●	
PICCO R/L 005.0200-10	5.00	2.00	1.9	4.40	25.00	9.0	1.00	5.00	●	
PICCO R/L 005.0200-15	5.00	2.00	1.9	4.40	30.00	14.0	1.00	5.00	●	
PICCO R/L 005.0200-20	5.00	2.00	1.9	4.40	35.00	19.0	1.00	5.00	●	
PICCO R/L 005.0200-25	5.00	2.00	1.9	4.40	40.00	24.0	1.00	5.00	●	
PICCO R/L 005.0200-30	5.00	2.00	1.9	4.40	45.00	29.0	1.00	5.00	●	
PICCO R/L 006.0100-10	6.00	1.00	2.3	5.30	25.00	9.0	1.80	6.00	●	
PICCO R/L 006.0100-15	6.00	1.00	2.3	5.30	30.00	14.0	1.80	6.00	●	
PICCO R/L 006.0100-22	6.00	1.00	2.3	5.30	37.00	21.0	1.80	6.00	●	
PICCO R/L 006.0100-25	6.00	1.00	2.3	5.30	40.00	24.0	1.80	6.00	●	
PICCO R/L 006.0100-30	6.00	1.00	2.3	5.30	45.00	29.0	1.80	6.00	●	
PICCO R/L 006.0150-10	6.00	1.50	2.3	5.30	25.00	9.0	1.80	6.00	●	
PICCO R/L 006.0150-15	6.00	1.50	2.3	5.30	30.00	14.0	1.80	6.00	●	
PICCO R/L 006.0150-22	6.00	1.50	2.3	5.30	37.00	21.0	1.80	6.00	●	
PICCO R/L 006.0150-25	6.00	1.50	2.3	5.30	40.00	24.0	1.80	6.00	●	
PICCO R/L 006.0150-30	6.00	1.50	2.3	5.30	45.00	29.0	1.80	6.00	●	
PICCO R/L 006.0200-10	6.00	2.00	2.3	5.30	25.00	9.0	1.80	6.00	●	
PICCO R/L 006.0200-15	6.00	2.00	2.3	5.30	30.00	14.0	1.80	6.00	●	
PICCO R/L 006.0200-22	6.00	2.00	2.3	5.30	37.00	21.0	1.80	6.00	●	
PICCO R/L 006.0200-25	6.00	2.00	2.3	5.30	40.00	24.0	1.80	6.00	●	
PICCO R/L 006.0200-30	6.00	2.00	2.3	5.30	45.00	29.0	1.80	6.00	●	
PICCO R/L 007.0100-10	7.00	1.00	2.8	6.30	25.00	9.0	2.50	6.80	●	
PICCO R/L 007.0100-15	7.00	1.00	2.8	6.30	30.00	14.0	2.50	6.80	●	
PICCO R/L 007.0100-22	7.00	1.00	2.8	6.30	37.00	21.0	2.50	6.80	●	
PICCO R/L 007.0100-25	7.00	1.00	2.8	6.30	40.00	24.0	2.50	6.80	●	
PICCO R/L 007.0100-30	7.00	1.00	2.8	6.30	45.00	29.0	2.50	6.80	●	
PICCO R/L 007.0150-10	7.00	1.50	2.8	6.30	25.00	9.0	2.50	6.80	●	
PICCO R/L 007.0150-15	7.00	1.50	2.8	6.30	30.00	14.0	2.50	6.80	●	
PICCO R/L 007.0150-22	7.00	1.50	2.8	6.30	37.00	21.0	2.50	6.80	●	
PICCO R/L 007.0150-25	7.00	1.50	2.8	6.30	40.00	24.0	2.50	6.80	●	
PICCO R/L 007.0150-30	7.00	1.50	2.8	6.30	45.00	29.0	2.50	6.80	●	
PICCO R/L 007.0200-10	7.00	2.00	2.8	6.30	25.00	9.0	2.50	6.80	●	
PICCO R/L 007.0200-15	7.00	2.00	2.8	6.30	30.00	14.0	2.50	6.80	●	
PICCO R/L 007.0200-22	7.00	2.00	2.8	6.30	37.00	21.0	2.50	6.80	●	
PICCO R/L 007.0200-25	7.00	2.00	2.8	6.30	40.00	24.0	2.50	6.80	●	
PICCO R/L 007.0200-30	7.00	2.00	2.8	6.30	45.00	29.0	2.50	6.80	●	

• All carbide bars with sharp corners. • Specify right- or left-hand bars

PICCO R/L 004-007 (radius)

Full Radius Inserts, for Internal Profiling



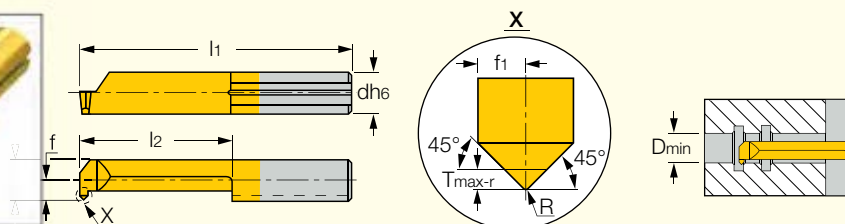
Right-hand shown

Designation	Dimensions									IC228
	d	W ± 0.05	f	a	R	l ₁	l ₂	T _{max-r}	D _{min}	
PICCO R/L 004.0.50-16	4.00	1.00	1.5	3.50	0.50	30.00	15.0	0.80	4.00	●
PICCO R/L 005.0.50-20	5.00	1.00	1.9	4.40	0.50	35.00	19.0	1.00	5.00	●
PICCO R/L 005.0.75-20	5.00	1.50	1.9	4.40	0.75	35.00	19.0	1.00	5.00	●
PICCO R/L 005.1.00-20	5.00	2.00	1.9	4.40	1.00	35.00	19.0	1.00	5.00	●
PICCO R/L 006.0.50-25	6.00	1.00	2.3	5.30	0.50	40.00	24.0	1.80	6.00	●
PICCO R/L 006.0.75-25	6.00	1.50	2.3	5.30	0.75	40.00	24.0	1.80	6.00	●
PICCO R/L 006.1.00-25	6.00	2.00	2.3	5.30	1.00	40.00	24.0	1.80	6.00	●
PICCO R/L 007.0.50-30	7.00	1.00	2.8	6.30	0.50	45.00	29.0	2.50	6.80	●
PICCO R/L 007.0.75-30	7.00	1.50	2.8	6.30	0.75	45.00	29.0	2.50	6.80	●
PICCO R/L 007.1.00-30	7.00	2.00	2.8	6.30	1.00	45.00	29.0	2.50	6.80	●

• Specify right- or left-hand bars

PICCO R/L 060

Inserts for Internal Turning and 45° Chamfering



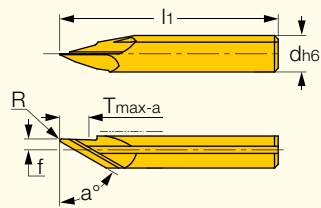
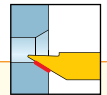
Right-hand shown

Designation	Dimensions									Tough $\longleftrightarrow$ Hard	
	d	R ± 0.04	f ₁	f	a	l ₂	l ₁	T _{max-r}	D _{min}	IC228	IC908
PICCO R/L 060.5-15	5.00	0.20	1.0	1.9	4.40	14.0	30.00	0.70	5.00	●	
PICCO R/L 060.5-20	5.00	0.20	1.0	1.9	4.40	19.0	35.00	0.70	5.00	●	
PICCO R 060.6-20	6.00	0.20	1.0	2.3	5.30	20.0	35.00	0.70	6.00		●
PICCO R 060.6-25	6.00	0.20	1.0	2.3	5.30	25.0	40.00	0.70	6.00		●
PICCO R/L 060.7-20	7.00	0.20	1.0	2.8	6.30	19.0	35.00	0.70	6.80	●	
PICCO R 060.7-40	7.00	0.20	1.0	2.8	6.30	40.0	55.00	0.70	6.80		●

• Specify right- or left-hand bars

PICCO R/L 520

Inserts for Internal Chamfering



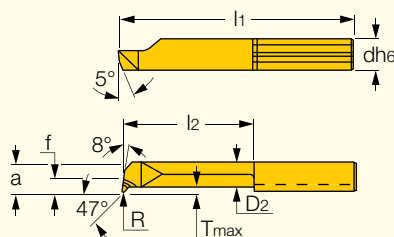
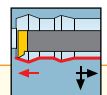
Right-hand shown

Designation	Dimensions								IC908
	d	f	a°	l ₁	R±0.05	T _{max-a}	D _{min}		
PICCO R/L 520.0045-15	5.00	1.5	45	30.00	0.20	3.50	1.00	●	
PICCO R/L 520.0060-15	5.00	1.5	60	30.00	0.20	4.00	1.00	●	

• Left hand inserts on request

PICCO R/L 047

Inserts for Internal Deep Profiling



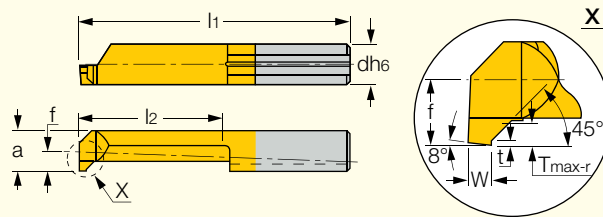
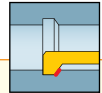
Right-hand shown

Designation	Dimensions										IC908
	d	f	a	l ₁	l ₂	D ₂	T _{max}	D _{min}	R±0.05		
PICCO R/L 047.4-20	4.00	1.5	3.50	34.00	20.0	3.00	0.30	4.00	0.15	●	
PICCO R/L 047.5-25	5.00	1.9	4.40	40.00	25.0	3.80	0.50	5.00	0.15	●	
PICCO R/L 047.6-30	6.00	2.3	5.30	45.00	30.0	4.50	0.50	6.00	0.15	●	

• Left hand inserts on request

PICCO R/L 070

Back Chamfering Inserts for Pre-Parting Operation



Right-hand shown

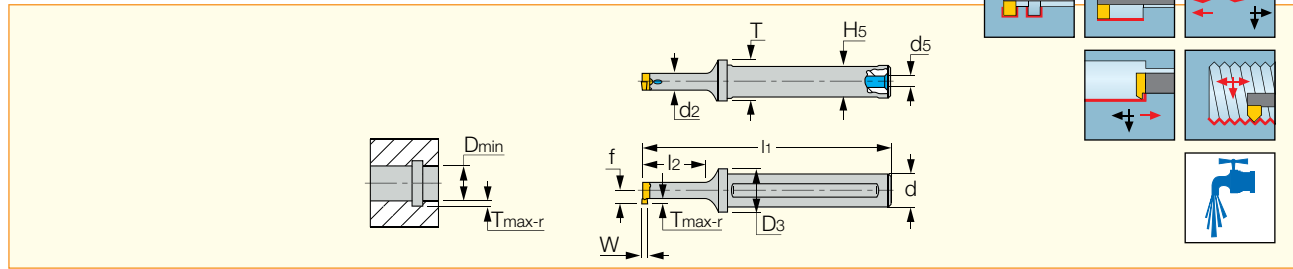
Designation	Dimensions									IC228
	d	W	f	a	l ₂	l ₁	t	T _{max-r}	D _{min}	
PICCO R/L 070.5-15	5.00	1.00	1.9	4.40	15.0	30.00	0.20	1.00	5.00	●
PICCO R/L 070.5-20	5.00	1.00	1.9	4.40	20.0	35.00	0.20	1.00	5.00	●

• All carbide bars with sharp corners • Specify right- or left-hand bars



MG

Internal Grooving, Turning and Threading Bars



Designation	d	D _{min} ⁽¹⁾	T _{max-r} ⁽¹⁾	d ₂	l ₁	l ₂	f ⁽²⁾	H ₅	W _{min}	W _{max}	T	D ₃	d ₅	Insert
MG 12-08C16	12.00	8.00	1.50	6.00	92.00	16.0	4.8	11.0	0.50	3.00	16.3	18.00	6.0	GIQR/L 8
MG 12-08C23	12.00	8.00	1.50	6.00	92.00	23.0	4.8	11.0	0.50	3.00	16.3	18.00	6.0	GIQR/L 8
MG 12-11C25	12.00	11.00	2.30	8.00	92.50	25.0	6.7	11.0	0.50	3.00	16.3	18.00	6.0	GIQR/L 11

• The same tool applies on right and left machining

⁽¹⁾ Check according to specific insert data ⁽²⁾ Cutting edge radius on rotating tool.

For inserts, see pages: GIQR/L 8 (B18) • GIQR/L 8-R (B18) • GIQR/L 11 (B19) • GIQR/L 11-R (B19) • GIQR/L 11-15 (B20) • GIQR/L 11-15-R (B20) • GIQR/L-A18 (B21) • GIQR/L-B18 (B21) • GIQR/L-MT (B103) • GIQR/L-WT (B100).

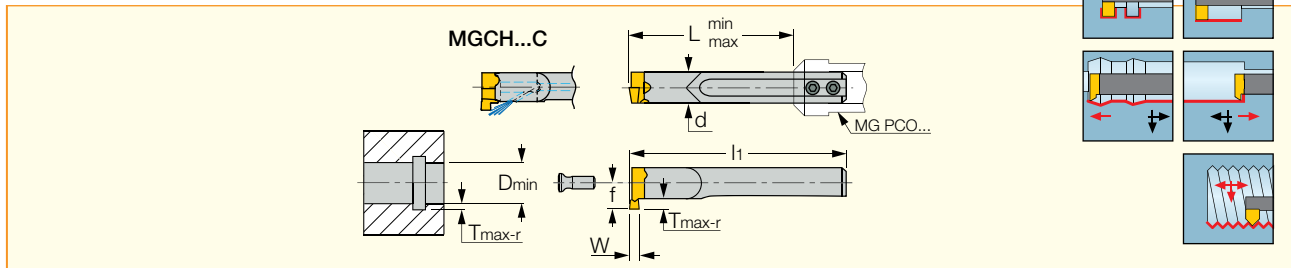
Spare Parts



Designation	Screw	Key
MG 12-08C16	SR 76-1499	T-8/5
MG 12-08C23	SR 76-1499	T-8/5
MG 12-11C25	SR M3.5-08134	T-9/5

MGCH

Solid Carbide Bars for Internal Grooving, Turning and Threading Dmin 8 mm



Designation	D _{min} ⁽¹⁾	T _{max-r} ⁽¹⁾	d	l ₁	L _{min}	L _{max}	f	W _{min}	W _{max}	Coolant	Insert
MGCH 06	8.00	1.50	6.00	62.00	16.0	42.0	4.8	0.50	4.00	N	GIQR/L 8
MGCH 06C	8.00	1.50	6.00	62.00	16.0	42.0	4.8	0.50	4.00	Y	GIQR/L 8
MGCH 06-L100	8.00	1.50	6.00	100.00	16.0	80.0	4.8	0.50	4.00	N	GIQR/L 8
MGCH 08	- ⁽²⁾	- ⁽³⁾	8.00	76.00	20.0	56.0	- ⁽⁴⁾	0.50	5.00	N	GIQR/L 11/11-15
MGCH 08C	- ⁽²⁾	- ⁽³⁾	8.00	76.00	20.0	56.0	- ⁽⁴⁾	0.50	5.00	Y	GIQR/L 11/11-15
MGCH 08-L125	- ⁽²⁾	- ⁽³⁾	8.00	125.00	70.0	105.0	- ⁽⁴⁾	0.50	5.00	N	GIQR/L 11/11-15

• The same tool applies on right and left machining.

⁽¹⁾ Check according to specific insert data ⁽²⁾ Dmin=11 mm for GIQR 11, Dmin=15 mm for GIQR 11-15 ⁽³⁾ Tmax-r=2.30 for GIQR 11, Tmax-r=6.3 for GIQR 11-15 ⁽⁴⁾ f=6.70 mm for GIQR 11, f=10.6 mm for GIQR 11-15

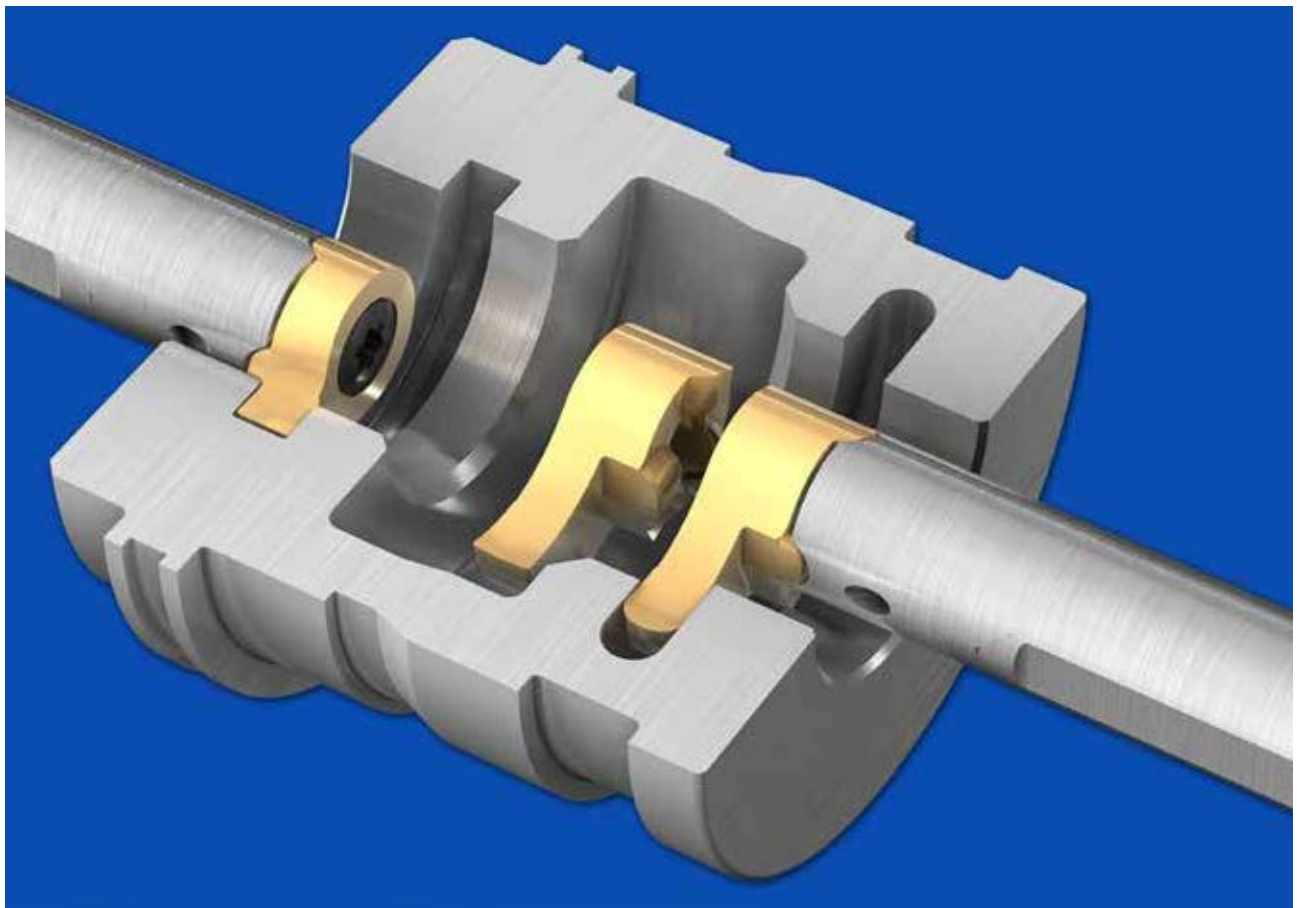
For inserts, see pages: GIQR/L 8 (B18) • GIQR/L 8-R (B18) • GIQR/L 11 (B19) • GIQR/L 11-R (B19) • GIQR/L 11-15 (B20) • GIQR/L 11-15-R (B20) • GIQR/L-A18 (B21) • GIQR/L-B18 (B21) • GIQR/L-MT (B103) • GIQR/L-WT (B100).

For holders, see pages: PICCO/MG PCO (holder) (B123).

Spare Parts

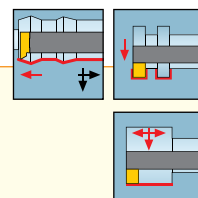
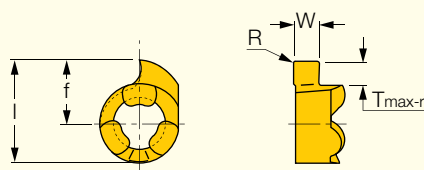


Designation	Screw	Key
MGCH 06	SR 76-1499	T-8/5
MGCH 06C	SR 76-1499	T-8/5
MGCH 06-L100	SR 76-1499	T-8/5
MGCH 08	SR M3.5-08134	T-9/5
MGCH 08C	SR M3.5-08134	T-9/5
MGCH 08-L125	SR M3.5-08134	T-9/5



GIQR/L 8

Precision Ground Single-Ended Internal Grooving and Turning Inserts



Left-hand shown

Designation	Dimensions					IC528	Recommended Machining Data		
	W ± 0.02	R ± 0.03	T $_{max-r}$	D $_{min}$	f		a $_p$ (mm)	f turn (mm/rev)	f groove (mm/rev)
GIQR/L 8-0.50-0.00 ⁽¹⁾	0.50	0.00	0.70	8.00	4.8	●	-	-	0.01-0.03
GIQR/L 8-0.75-0.00 ⁽¹⁾	0.75	0.00	1.20	8.00	4.8	●	-	-	0.01-0.03
GIQR/L 8-0.85-0.00 ⁽¹⁾	0.85	0.00	1.20	8.00	4.8	●	-	-	0.01-0.03
GIQR/L 8-0.95-0.00 ⁽¹⁾	0.95	0.00	1.50	8.00	4.8	●	-	-	0.01-0.03
GIQR/L 8-1.00-0.00 ⁽¹⁾	1.00	0.00	1.50	8.00	4.8	●	-	-	0.01-0.03
GIQR/L 8-1.04-0.05 ⁽¹⁾	1.04	0.05	1.50	8.00	4.8	●	-	-	0.01-0.03
GIQR/L 8-1.20-0.05 ⁽¹⁾	1.20	0.05	1.50	8.00	4.8	●	-	-	0.01-0.03
GIQR/L 8-1.40-0.05 ⁽¹⁾	1.40	0.05	1.50	8.00	4.8	●	-	-	0.01-0.03
GIQR/L 8-1.47-0.05 ⁽¹⁾	1.47	0.05	1.50	8.00	4.8	●	-	-	0.01-0.03
GIQR/L 8-1.50-0.05 ⁽¹⁾	1.50	0.05	1.50	8.00	4.8	●	-	-	0.01-0.03
GIQR/L 8-1.70-0.10	1.70	0.10	1.50	8.00	4.8	●	0.12-0.68	0.02-0.05	0.01-0.03
GIQR/L 8-1.96-0.10	1.96	0.10	1.50	8.00	4.8	●	0.12-0.78	0.02-0.05	0.01-0.03
GIQR/L 8-2.00-0.10	2.00	0.10	1.50	8.00	4.8	●	0.12-0.80	0.02-0.05	0.01-0.03
GIQR/L 8-2.22-0.10	2.22	0.10	1.50	8.00	4.8	●	0.12-0.88	0.02-0.05	0.01-0.03
GIQR/L 8-2.50-0.20	2.50	0.20	1.50	8.00	4.8	●	0.24-1.00	0.02-0.05	0.01-0.03
GIQR/L 8-3.00-0.20	3.00	0.20	1.50	8.00	4.8	●	0.24-1.20	0.02-0.05	0.01-0.03
GIQR 8-3.18-0.20	3.18	0.20	1.50	8.00	4.8	●	0.24-1.27	0.02-0.05	0.01-0.03
GIQR 8-3.50-0.20	3.50	0.20	1.50	8.00	4.8	●	0.24-1.40	0.02-0.05	0.01-0.03
GIQR 8-4.00-0.20	4.00	0.20	1.50	8.00	4.8	●	0.24-1.60	0.02-0.05	0.01-0.03

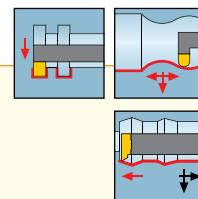
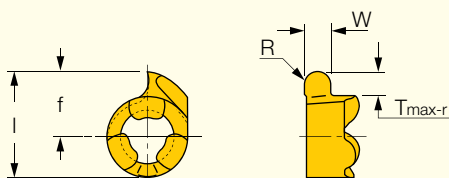
• According to retaining rings standard DIN 471/472. • Can be used for groove milling by circular interpolation.

⁽¹⁾ For grooving only

For tools, see pages: MG (B16) • MGCH (B17).

GIQR/L 8-R

Precision Ground Single-Ended Full Radius Inserts, for Internal Grooving and Profiling



Left-hand shown

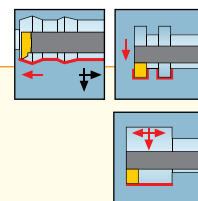
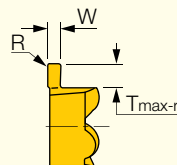
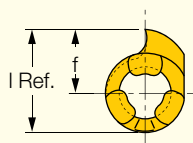
Designation	Dimensions						IC528	Recommended Machining Data		
	W ± 0.02	R ± 0.03	T $_{max-r}$	D $_{min}$	f	l		a $_p$ (mm)	f turn (mm/rev)	f groove (mm/rev)
GIQR/L 8-1.20-R060	1.20	0.60	1.50	8.00	4.8	7.78	●	0.30-0.60	0.02-0.05	0.01-0.03
GIQR/L 8-2.00-R100	2.00	1.00	1.50	8.00	4.8	7.78	●	0.50-1.00	0.02-0.05	0.01-0.03
GIQR 8-3.00-R150	3.00	1.50	1.50	8.00	4.8	7.78	●	0.70-1.50	0.02-0.05	0.01-0.03

• Comply to retaining rings DIN 471/472. • Can be used for groove milling by circular interpolation.

For tools, see pages: MG (B16) • MGCH (B17).

GIQR/L 11

Precision Ground Single-Ended Internal Grooving and Turning Inserts, for Dmin 11 mm



Left-hand shown

Designation	Dimensions						IC528	Recommended Machining Data		
	W±0.02	R±0.03	T _{max-r}	D _{min}	I	f		a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIQR/L 11-0.75-0.00 ⁽¹⁾	0.75	0.00	1.50	11.00	10.68	6.7	●	-	-	0.01-0.03
GIQR/L 11-0.85-0.00 ⁽¹⁾	0.85	0.00	1.50	11.00	10.68	6.7	●	-	-	0.01-0.03
GIQR/L 11-0.95-0.00 ⁽¹⁾	0.95	0.00	1.80	11.00	10.68	6.7	●	-	-	0.01-0.03
GIQR/L 11-1.04-0.05 ⁽¹⁾	1.04	0.05	2.00	11.00	10.68	6.7	●	-	-	0.01-0.03
GIQR/L 11-1.20-0.05 ⁽¹⁾	1.20	0.05	2.30	11.00	10.68	6.7	●	-	-	0.01-0.03
GIQR/L 11-1.40-0.05 ⁽¹⁾	1.40	0.05	2.30	11.00	10.68	6.7	●	-	-	0.01-0.03
GIQR/L 11-1.50-0.05 ⁽¹⁾	1.50	0.05	2.30	11.00	10.68	6.7	●	-	-	0.01-0.03
GIQR/L 11-1.70-0.05 ⁽¹⁾	1.70	0.05	2.30	11.00	10.68	6.7	●	-	-	0.01-0.03
GIQR/L 11-1.96-0.10 ⁽¹⁾	1.96	0.10	2.30	11.00	10.68	6.7	●	-	-	0.01-0.03
GIQR/L 11-2.00-0.10 ⁽¹⁾	2.00	0.10	2.30	11.00	10.68	6.7	●	-	-	0.01-0.03
GIQR/L 11-2.22-0.10	2.22	0.10	2.30	11.00	10.68	6.7	●	0.12-0.88	0.03-0.07	0.02-0.05
GIQR/L 11-2.39-0.15	2.39	0.15	2.30	11.00	10.68	6.7	●	0.18-0.95	0.03-0.07	0.02-0.05
GIQR/L 11-2.47-0.20	2.47	0.20	2.30	11.00	10.68	6.7	●	0.24-0.98	0.03-0.07	0.02-0.05
GIQR/L 11-2.50-0.20	2.50	0.20	2.30	11.00	10.68	6.7	●	0.24-1.00	0.03-0.07	0.02-0.05
GIQR/L 11-2.70-0.20	2.70	0.20	2.30	11.00	10.68	6.7	●	0.24-1.08	0.03-0.07	0.02-0.05
GIQR/L 11-3.00-0.20	3.00	0.20	2.30	11.00	10.68	6.7	●	0.24-1.20	0.03-0.07	0.02-0.05
GIQR 11-3.18-0.20	3.18	0.20	2.30	11.00	10.68	6.7	●	0.24-1.27	0.03-0.07	0.02-0.05
GIQR 11-4.00-0.20	4.00	0.20	2.30	11.00	10.68	6.7	●	0.24-1.60	0.03-0.07	0.02-0.05
GIQR 11-5.00-0.20	5.00	0.20	2.30	11.00	10.68	6.7	●	0.24-2.00	0.03-0.07	0.02-0.05

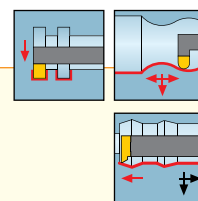
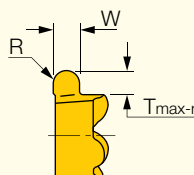
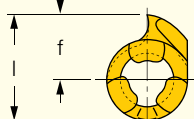
• Comply to retaining rings DIN 471/472. • Can be used for groove milling by circular interpolation.

⁽¹⁾ For grooving only

For tools, see pages: MG (B16) • MGCH (B17).

GIQR/L 11-R

Precision Ground Single-Ended Full Radius Inserts, for Internal Grooving and Profiling



Left-hand shown

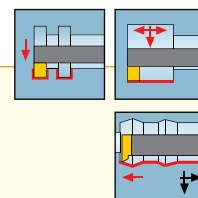
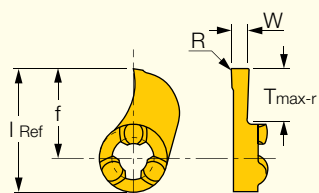
Designation	Dimensions						IC528	Recommended Machining Data		
	W±0.02	R±0.03	T _{max-r}	D _{min}	f	I		a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIQR/L 11-1.20-R060	1.20	0.60	2.30	11.00	6.7	10.68	●	0.30-0.60	0.02-0.05	0.01-0.03
GIQR/L 11-1.80-R090	1.80	0.90	2.30	11.00	6.7	10.68	●	0.40-0.90	0.02-0.05	0.01-0.03
GIQR/L 11-2.00-R100	2.00	1.00	2.30	11.00	6.7	10.68	●	0.50-1.00	0.02-0.05	0.01-0.03
GIQR/L 11-3.00-R150	3.00	1.50	2.30	11.00	6.7	10.68	●	0.70-1.50	0.02-0.05	0.01-0.03
GIQR 11-4.00-R200	4.00	2.00	2.30	11.00	6.7	10.68	●	1.00-2.00	0.02-0.05	0.01-0.03

• Comply to retaining rings DIN 471/472. • Can be used for groove milling by circular interpolation.

For tools, see pages: MG (B16) • MGCH (B17).

GIQR/L 11-15

Precision Ground Single-Ended Internal Deep Grooving and Turning Inserts



Left-hand shown

Designation	Dimensions						IC528	Recommended Machining Data		
	W ± 0.02	R ± 0.03	T $_{max-r}$	D $_{min}$	f	l		a $_p$ (mm)	f turn (mm/rev)	f groove (mm/rev)
GIQR/L 11-15-1.50-0.05	1.50	0.05	6.30	15.00	14.60	10.6	●	0.10-0.40	0.02-0.05	0.02-0.06
GIQR/L 11-15-2.00-0.10	2.00	0.10	6.30	15.00	14.60	10.6	●	0.15-0.50	0.02-0.05	0.02-0.06
GIQR/L 11-15-2.50-0.20	2.50	0.20	6.30	15.00	14.60	10.6	●	0.25-0.65	0.02-0.05	0.02-0.06
GIQR/L 11-15-3.00-0.20	3.00	0.20	6.30	15.00	14.60	10.6	●	0.25-0.75	0.02-0.05	0.02-0.06

• Comply to retaining rings DIN 471/472. • Can be used for groove milling by circular interpolation.

For tools, see pages: MG (B16) • MGCH (B17).

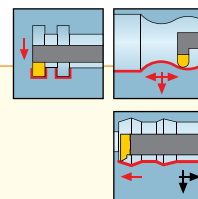
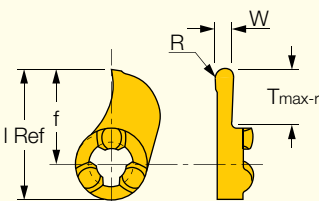
Spare Parts



Designation	Screw
GIQR/L 11-15	SR M3.5-08134

GIQR/L 11-15-R

Precision Ground Single-Ended Full Radius Inserts, for Deep Internal Grooving and Profiling



Left-hand shown

Designation	Dimensions						IC528	Recommended Machining Data		
	W ± 0.02	R ± 0.03	T $_{max-r}$	D $_{min}$	f	l		a $_p$ (mm)	f turn (mm/rev)	f groove (mm/rev)
GIQR/L 11-15-2.00-R100	2.00	1.00	6.30	15.00	10.6	14.60	●	0.00-0.50	0.02-0.05	0.02-0.06
GIQR/L 11-15-2.50-R125	2.50	1.25	6.30	15.00	10.6	14.60	●	0.00-0.65	0.02-0.05	0.02-0.06
GIQR/L 11-15-3.00-R150	3.00	1.50	6.30	15.00	10.6	14.60	●	0.00-0.75	0.02-0.05	0.02-0.06

• Comply to retaining rings DIN 471/472. • Can be used for groove milling by circular interpolation.

For tools, see pages: MG (B16) • MGCH (B17).

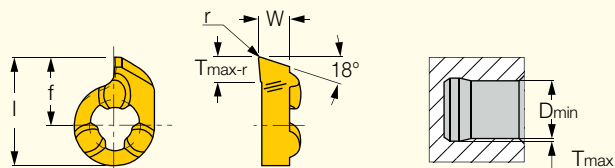
Spare Parts



Designation	Screw
GIQR/L 11-15-R	SR M3.5-08134

GIQR/L-A18

Internal Boring and Profiling Inserts



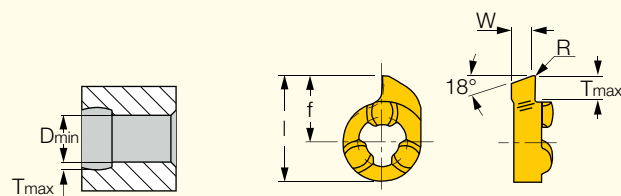
Left-hand shown

Designation	Dimensions						IC528	Recommended Machining Data		
	D _{min}	W	r	T _{max}	l	f		a _p (mm)	f (mm/rev)	f groove (mm/rev)
GIQR/L 8-A18-0.15	7.80	3.00	0.15	1.60	7.60	4.6	●	0.02-1.30	0.02-0.05	0.01-0.03
GIQR/L 11-A18-0.15	11.00	3.00	0.15	2.50	10.70	6.7	●	0.02-2.20	0.02-0.05	0.01-0.03

For tools, see pages: MG (B16) • MGCH (B17).

GIQR/L-B18

Internal Back Boring and Profiling Inserts



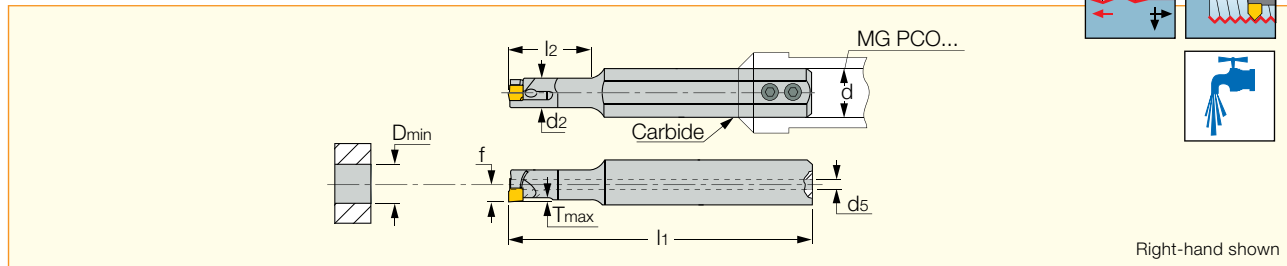
Left-hand shown

Designation	Dimensions						IC528	Recommended Machining Data	
	D _{min}	W	R±0.03	T _{max}	f	l		a _p (mm)	f (mm/rev)
GIQR/L 8-B18-0.15	7.80	2.50	0.15	1.30	4.6	7.60	●	0.02-1.00	0.02-0.05
GIQR/L 11-B18-0.15	11.00	2.50	0.15	2.30	6.7	10.70	●	0.02-2.00	0.02-0.05

For tools, see pages: MG (B16) • MGCH (B17).

MGUHR

Solid Carbide Bars, for Internal Turning and Threading at 4 mm
Minimum Bore Diameter



Designation	D _{min}	T _{max}	f ⁽²⁾	d	l ₁	l ₂	d ₂	d ₅
MGUHR 06-04L10 ⁽¹⁾	4.00	0.50	2.2	6.00	62.00	10.0	3.45	1.3
MGUHR 06-04L20	4.00	0.50	2.2	6.00	62.00	20.0	3.45	1.3

⁽¹⁾ D_{min} for turning 4.0 mm & T_{max} 0.43 mm; D_{min} for threading 5.0 mm & T_{max} 1.00 mm ⁽²⁾ f=2.17 for turning, f=2.7 for threading

For inserts, see pages: UMGR (B23) • UMGR-A55 (B100) • UMGR-A60 (B102).

For holders, see pages: PICCO/MG PCO (holder) (B123).

Mounting Operation

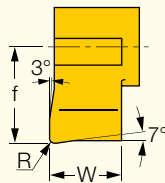
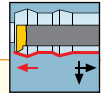


Dismounting Operation



UMGR

Miniature Indexable Inserts for Internal Turning



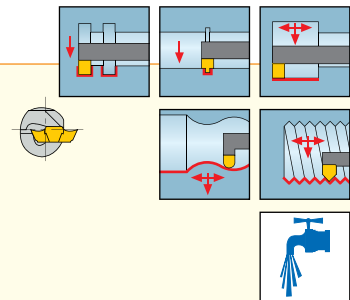
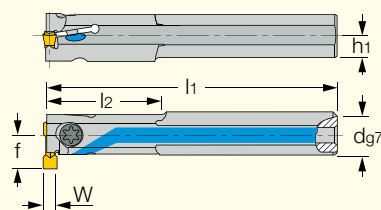
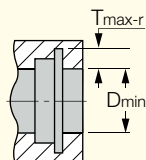
Right-hand shown

Designation	Dimensions				IC508
	W ± 0.02	R ± 0.02	f	D _{min}	
UMGR 4.0-0.0	1.63	0.00	2.2	4.00	•
UMGR 4.0-0.1	1.63	0.10	2.2	4.00	•

For tools, see pages: MGHUR (B22).

GEHIMR/L

Internal Machining Boring Bars with Coolant Holes,
for Insert Widths Less than 1.9 mm



Right-hand shown

Designation	W _{min}	W _{max} ⁽¹⁾	d	D _{min}	T _{max-r}	l ₁	l ₂	f	h ₁	Inlet
GEHIMR/L 10-13	0.80	1.90	10.00	12.50	2.50	125.00	25.0	7.6	5.0	3.5 mm
GEHIMR/L 12-14	0.80	1.90	12.00	14.00	2.50	150.00	35.0	9.0	6.0	6.0 mm
GEHIMR/L 16-13	0.80	1.90	16.00	12.50	2.50	125.00	20.0	10.6	7.5	M6 ⁽²⁾
GEHIMR/L 16-14	0.80	1.90	16.00	14.00	2.50	125.00	25.0	10.9	7.5	M6 ⁽²⁾
GEHIMR/L 16-16	0.80	1.90	16.00	16.00	2.50	160.00	40.0	10.5	7.5	M6 ⁽²⁾

⁽¹⁾ Pocket can carry inserts up to 3 mm width. ⁽²⁾ Plastic seal with M6 thread.

For inserts, see pages: GEPI (B30) • GEPI (W<M) (B29) • GEPI-MT (B102) • GEPI-RX/LX (B31) • GEPI-WT (B99).

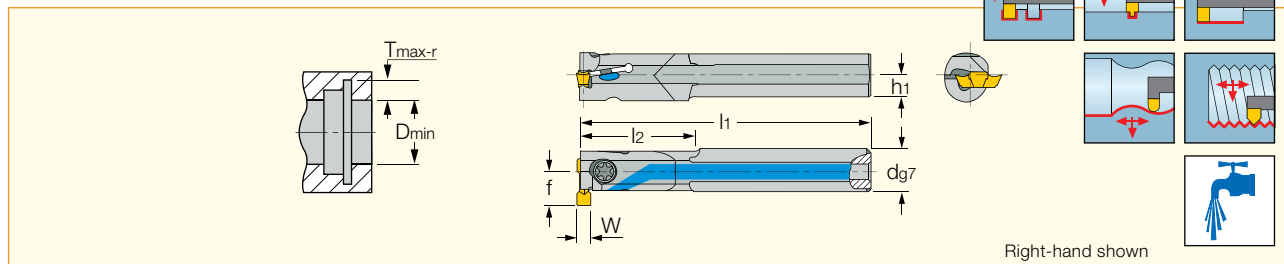
Spare Parts



Designation	Screw	Key	Coolant Fitting
GEHIMR/L 10-13	SR 16-236	T-15/5	
GEHIMR/L 12-14	SR 16-236	T-15/5	
GEHIMR/L 16-13	SR 16-236	T-15/5 PL 16	
GEHIMR/L 16-14	SR 16-236	T-15/5 PL 16	
GEHIMR/L 16-16	SR M5-04451	T-20/5 PL 16	

GEHIMR/L-SC

Internal Machining Solid Carbide Bars with Coolant Holes,
for Insert Widths Less than 1.9 mm



Designation	W_{min}	$W_{max}^{(1)}$	d	D_{min}	T_{max-r}	l_1	l_2	f	h_1	Inlet
GEHIMR/L 10SC-13	0.80	1.90	10.00	12.50	2.50	125.00	30.0	7.6	5.0	3.5 mm
GEHIMR/L 12SC-14	0.80	1.90	12.00	14.00	2.50	125.00	40.0	9.0	6.0	6.0 mm
GEHIMR/L 16SC-13	0.80	1.90	16.00	12.50	2.50	125.00	35.0	10.6	7.5	M6 ⁽²⁾
GEHIMR/L 16SC-16	0.80	1.90	16.00	16.00	2.50	160.00	70.0	10.5	7.5	M6 ⁽²⁾

⁽¹⁾ Pocket can carry inserts up to 3 mm width. ⁽²⁾ Plastic seal with M6 thread.

For inserts, see pages: GEPI (B30) • GEPI (W<M) (B29) • GEPI-MT (B102) • GEPI-RX/LX (B31) • GEPI-WT (B99).

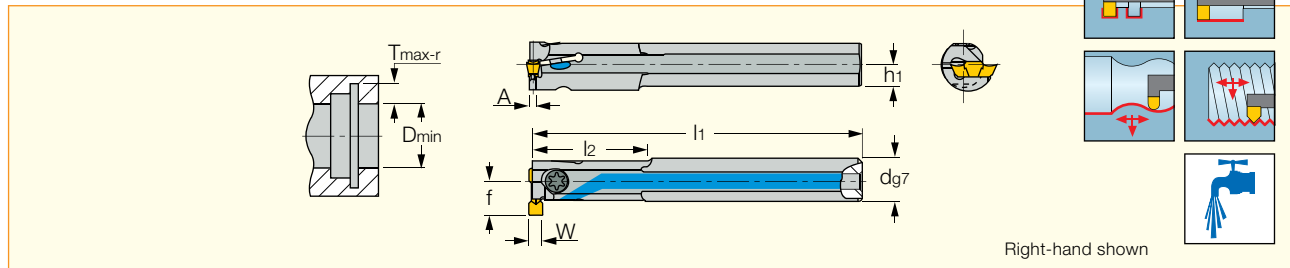
Spare Parts



Designation	Screw	Key	Coolant Fitting
GEHIMR/L 10SC-13	SR 16-236	T-15/5	
GEHIMR/L 12SC-14	SR 16-236	T-15/5	
GEHIMR/L 16SC-13	SR 16-236	T-15/5	PL 16
GEHIMR/L 16SC-16	SR M5-04451	T-20/5	PL 16

GEHIR/L

Internal Machining Bars with Coolant Holes



Designation	W _{min}	W _{max}	d	D _{min}	T _{max-r}	l ₁	l ₂	f	A	h ₁	Inlet
GEHIR/L 10-11.5-2-T3	1.90	2.40	10.00	11.50	3.00	125.00	25.0	8.8	1.60	5.0	3.5 mm
GEHIR/L 10-13-2-T2.4	1.90	2.40	10.00	12.50	2.40	125.00	25.0	7.5	1.60	5.0	3.5 mm
GEHIR/L 12-11.5-2-T3	1.90	2.40	12.00	11.50	3.00	125.00	20.0	11.6	1.60	6.0	6.0 mm
GEHIR/L 12-14-2-T2.6	1.90	2.40	12.00	14.00	2.60	150.00	35.0	9.1	1.60	6.0	6.0 mm
GEHIR/L 12-14-2-T4	1.90	2.40	12.00	14.00	4.00	150.00	35.0	10.3	1.60	6.0	6.0 mm
GEHIR/L 12-15-2-T6	1.90	2.40	12.00	15.00	6.00	150.00	29.0	12.3	1.60	6.0	6.0 mm
GEHIR/L 16-11.5-2-T3	1.90	2.40	16.00	11.50	3.00	125.00	20.0	11.6	1.60	7.5	M6 ⁽¹⁾
GEHIR/L 16-13-2-T2.4	1.90	2.40	16.00	12.50	2.40	125.00	20.0	10.5	1.60	7.5	M6 ⁽¹⁾
GEHIR/L 16-14-2-T2.6	1.90	2.40	16.00	14.00	2.60	125.00	25.0	11.0	1.60	7.5	M6 ⁽¹⁾
GEHIR/L 16-14-2-T4	1.90	2.40	16.00	14.00	4.00	125.00	25.0	12.4	1.60	7.5	M6 ⁽¹⁾
GEHIR/L 16-16-2-T3	1.90	2.40	16.00	16.00	3.00	160.00	40.0	11.0	1.60	7.5	M6 ⁽¹⁾
GEHIR/L 16-20-2-T8	1.90	2.40	16.00	20.00	8.00	160.00	40.0	16.1	1.60	7.5	M6 ⁽¹⁾
GEHIR/L 12-14-3-T2.6	2.40	3.20	12.00	14.00	2.60	150.00	35.0	9.1	2.00	6.0	6.0 mm
GEHIR/L 12-14-3-T4	2.40	3.20	12.00	14.00	4.00	150.00	35.0	10.3	2.00	6.0	6.0 mm
GEHIR/L 12-15-3-T6	2.40	3.20	12.00	15.00	6.00	150.00	29.0	12.3	2.00	6.0	6.0 mm
GEHIR/L 16-11.5-3-T3	2.40	3.20	16.00	11.50	3.00	125.00	20.0	11.6	2.00	7.5	M6 ⁽¹⁾
GEHIR/L 16-13-3-T2.4	2.40	3.20	16.00	12.50	2.40	125.00	20.0	10.5	2.00	7.5	M6 ⁽¹⁾
GEHIR/L 16-14-3-T2.6	2.40	3.20	16.00	14.00	2.60	125.00	25.0	11.0	2.00	7.5	M6 ⁽¹⁾
GEHIR/L 16-14-3-T4	2.40	3.20	16.00	14.00	4.00	125.00	25.0	12.4	2.00	7.5	M6 ⁽¹⁾
GEHIR/L 16-16-3-T3	2.40	3.20	16.00	16.00	3.00	160.00	40.0	11.0	2.00	7.5	M6 ⁽¹⁾
GEHIR/L 16-20-3-T8	2.40	3.20	16.00	20.00	8.00	160.00	40.0	16.1	2.00	7.5	M6 ⁽¹⁾

⁽¹⁾ Plastic seal with M6 thread

For inserts, see pages: GEMI (B29) • GEPI (B30) • GEPI (full radius) (B30) • GEPI-MT (B102) • GEPI-WT (B99).

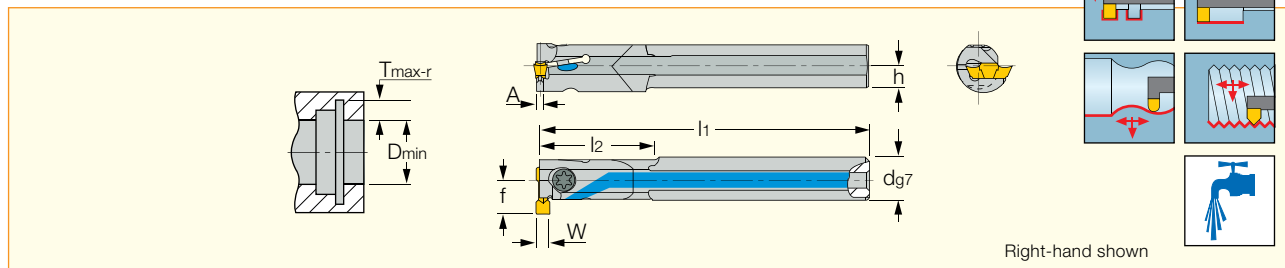
Spare Parts



Designation	Screw	Key	Coolant Fitting
GEHIR/L 10-11.5-2-T3	SR 14-513	T-8/5	
GEHIR/L 10-13-2-T2.4	SR 16-236	T-15/5	
GEHIR/L 12-14-2-T2.6	SR 16-236	T-15/5	
GEHIR/L 12-14-2-T4	SR 14-562	T-10/5	
GEHIR/L 12-15-2-T6	SR 14-513	T-8/5	
GEHIR/L 16-11.5-2-T3	SR 14-513	T-8/5	PL 16
GEHIR/L 16-13-2-T2.4	SR 16-236	T-15/5	PL 16
GEHIR/L 16-14-2-T2.6	SR 16-236	T-15/5	PL 16
GEHIR/L 16-14-2-T4	SR 14-562	T-10/5	PL 16
GEHIR/L 16-16-2-T3	SR M5-04451	T-20/5	PL 16
GEHIR/L 16-20-2-T8	SR M5-04451	T-20/5	PL 16
GEHIR/L 12-14-3-T2.6	SR 16-236	T-15/5	
GEHIR/L 12-14-3-T4	SR 14-562	T-10/5	
GEHIR/L 12-15-3-T6	SR 14-513	T-8/5	
GEHIR/L 16-11.5-3-T3	SR 14-513	T-8/5	PL 16
GEHIR/L 16-13-3-T2.4	SR 16-236	T-15/5	PL 16
GEHIR/L 16-14-3-T2.6	SR 16-236	T-15/5	PL 16
GEHIR/L 16-14-3-T4	SR 14-562	T-10/5	PL 16
GEHIR/L 16-16-3-T3	SR M5-04451	T-20/5	PL 16
GEHIR/L 16-20-3-T8	SR M5-04451	T-20/5	PL 16

GEHIR/L-SC

Internal Machining Solid Carbide Bars with Coolant Holes



Designation	W _{min}	W _{max}	d	D _{min}	T _{max-r}	l ₁	l ₂	f	A	h ₁	Inlet
GEHIR/L 10SC-13-2	1.90	2.40	10.00	12.50	2.40	125.00	30.0	7.5	1.60	5.0	3.5 mm
GEHIR 12SC-14-2	1.90	2.40	12.00	14.00	2.60	125.00	40.0	9.1	1.60	6.0	6.0 mm
GEHIR/L 16SC-16-2	1.90	2.40	16.00	16.00	3.00	160.00	70.0	11.0	1.60	7.5	M6 ⁽¹⁾
GEHIR 12SC-14-3	2.40	3.20	12.00	14.00	2.60	125.00	40.0	9.1	2.00	6.0	6.0 mm
GEHIR 16SC-13-3	2.40	3.20	16.00	12.50	2.40	125.00	35.0	10.5	2.00	7.5	M6 ⁽¹⁾
GEHIR/L 16SC-14-3	2.40	3.20	16.00	14.00	2.60	140.00	40.0	11.0	2.00	7.5	M6 ⁽¹⁾
GEHIR/L 16SC-16-3	2.40	3.20	16.00	16.00	3.00	160.00	70.0	11.0	2.00	7.5	M6 ⁽¹⁾

⁽¹⁾ Plastic seal with M6 thread

For inserts, see pages: GEMI (B29) • GEPI (B30) • GEPI (full radius) (B30) • GEPI-MT (B102) • GEPI-WT (B99).

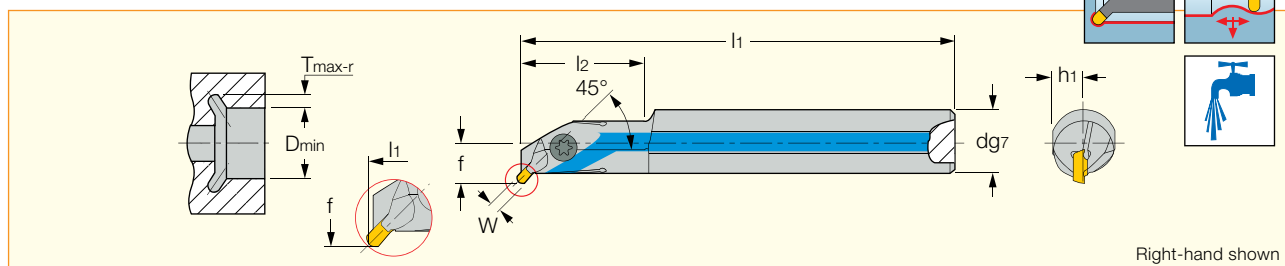
Spare Parts



Designation	Screw	Key	Coolant Fitting
GEHIR/L 10SC-13-2	SR 16-236	T-15/5	
GEHIR 12SC-14-2	SR 16-236	T-15/5	
GEHIR/L 16SC-16-2	SR M5-04451	T-20/5 PL 16	
GEHIR 12SC-14-3	SR 16-236	T-15/5	
GEHIR 16SC-13-3	SR 16-236	T-15/5 PL 16	
GEHIR/L 16SC-14-3	SR 16-236	T-15/5 PL 16	
GEHIR/L 16SC-16-3	SR M5-04451	T-20/5 PL 16	

GEHIUR/L

Undercutting and Turning Boring Bars with Coolant Holes



Designation	W _{max}	d	D _{min}	T _{max-r}	l ₁	l ₂	f	h ₁	Inlet
GEHIUR/L 12U	3.20	12.00	14.00	2.00	125.00	20.0	8.7	6.0	6.0 mm
GEHIUR/L 16U	3.20	16.00	16.00	2.00	125.00	32.0	9.7	7.5	M6 ⁽¹⁾

• For profiling use GEPI (full radius) inserts only. For undercutting use GEPI - UN/UR/UL.

⁽¹⁾ Plastic seal with M6 thread.

For inserts, see pages: GEPI (full radius) (B30) • GEPI-UN/UR/UL (B31).

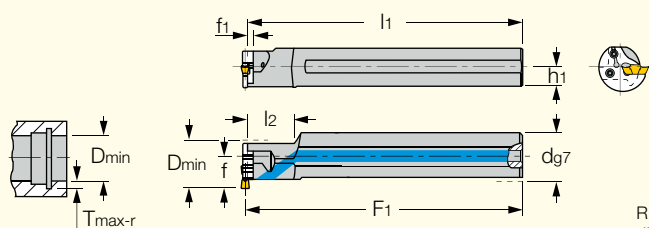
Spare Parts



Designation	Screw	Key	Coolant Fitting
GEHIUR/L 12U	SR 16-236 P	T-15/5	
GEHIUR/L 16U	SR M5-04451	T-20/5 PL 16	

GHAIR/L-GE

Bars with Coolant Holes for Internal Grooving and Turning Adapters



Designation	d	l ₂	l ₁	f	h ₁	f ₁	Adapter
GHAIR/L 16-20	16.00	-	150.00	11.5	7.5	2.4	GEAIR/L 20..

• For Dmin & Tmax refer to GEAIR/L adapters.

For tools, see pages: GEAIR/L (B27).

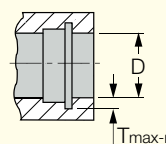
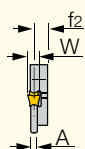
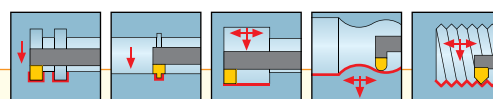
Spare Parts



Designation	Key	Lower & Side Screw	Coolant Fitting
GHAIR/L 16-20	T-8/5	SR 76-2057	PL 16

GEAIR/L

Internal Grooving and Turning Adapters



Right-hand shown

Designation	D min	W min	W max	T max-r	f ₂	A
GEAIR/L 20-2	20.00	1.90	2.40	3.00	3.40	1.60
GEAIR/L 20-3	20.00	2.40	3.00	3.00	3.60	2.00
GEAIR/L 20-4	20.00	3.00	4.00	3.00	3.90	2.50

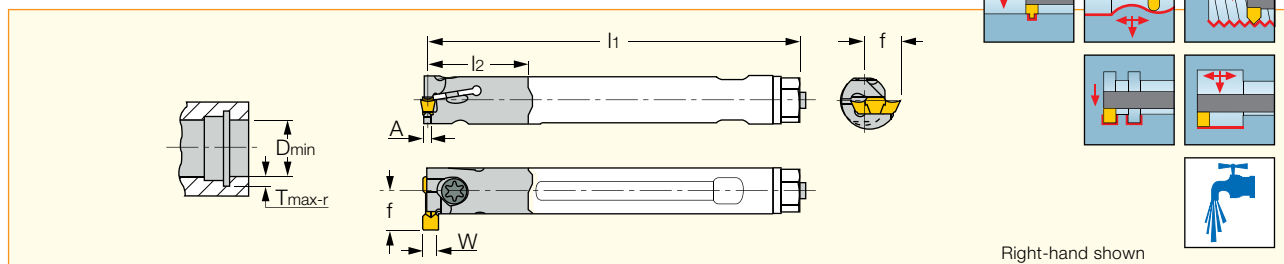
• For using TIPI insert, toolholder seat needs to be modified according to insert profile, to ensure clearance.

For inserts, see pages: GEMI (B29) • GEPI (B30) • GEPI (full radius) (B30) • GEPI-MT (B102) • GEPI-WT (B99).

For holders, see pages: GHAIR/L-GE (B27) .

E-GEHIR / E-GHIR

Interchangeable Heads for Internal Grooving and Turning



Designation	W _{min}	W _{max}	D _{min}	T _{max-r}	l ₁	l ₂	f	A	Insert
E12 GEHIR 16-1	1.50	1.90	16.00	2.20	174.00	21.0	9.0	1.20	GEPI, GEMI
E12 GEHIR 16-2	1.90	2.40	16.00	2.20	174.00	21.0	9.0	1.60	GEPI, GEMI
E12 GEHIR 16-3	2.40	3.00	16.00	2.20	174.00	21.0	9.0	2.00	GEPI, GEMI

• Left-hand heads on request • The shank assembly is the same for right- and left-hand heads

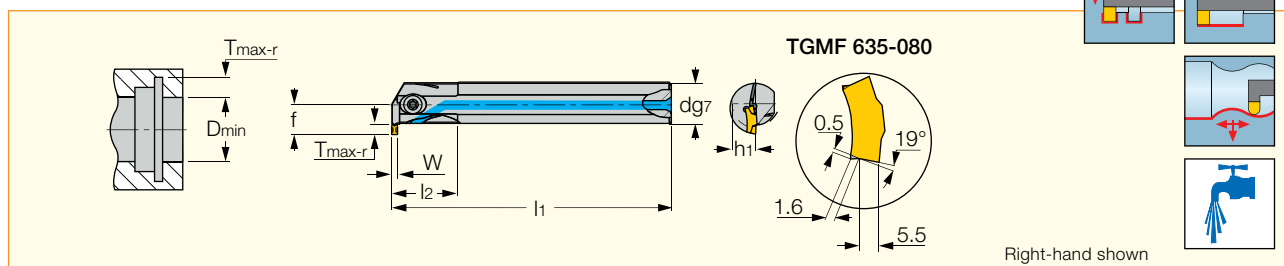
For inserts, see pages: GEMI (B29) • GEPI (B30) • GEPI (full radius) (B30) • GEPI (W<M) (B29) • GEPI-MT (B102) • GEPI-WT (B99) .

Spare Parts

Designation	Screw	Key
E12 GEHIR 16-1	SR M5-04451-L10.5	T-20/5
E12 GEHIR 16-2	SR M5-04451-L10.5	T-20/5
E12 GEHIR 16-3	SR M5-04451-L10.5	T-20/5

TGIR/L-C

Grooving and Turning Bars with Coolant Holes for TOP-GRIP Utility Inserts



Designation	d	W _{min}	W _{max}	D _{min}	T _{max-r}	h ₁	l ₁	l ₂	f	Inlet	Insert
TGIR/L 16C-3	16.00	3.00	3.00	20.50	5.50	7.5	150.00	25.0	12.0	M6	TGMF 3

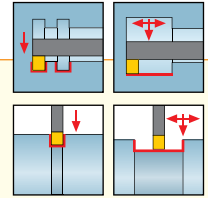
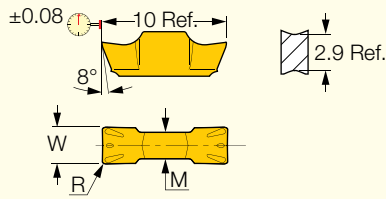
For inserts, see pages: TGMF (full radius) (A22) • TGMF/P (A22).

Spare Parts

Designation	Screw	Key	Coolant Fitting
TGIR/L 16C-3	SR 76-1400	T-20/5 PL 16	

GEMI

Utility Double-Ended Inserts, for Internal and External Grooving and Turning



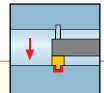
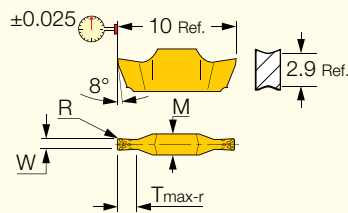
Designation	Dimensions		Tough ↔ Hard		Recommended Machining Data		
	W ± 0.02	M	IC808	IC908	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GEMI 3002M	3.00	2.2	●	●	0.25-1.30	0.10-0.14	0.05-0.09

• Dmin for internal application=12.5 mm

For tools, see pages: E-GEHIR / E-GHIR (B28) • GEAIR/L (B27) • GEHIR/L (B25) • GEHIR/L-SC (B26) • GEHSR/L-SL (A13).

GEPI (W<M)

Precision Ground Double-Ended Inserts for Internal Grooving



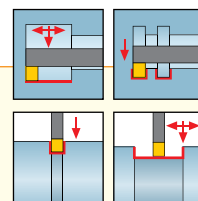
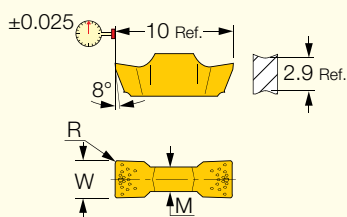
Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data
	W ± 0.02	R ± 0.03	T _{max-r}	M	IC528	IC08	f groove (mm/rev)
GEPI 1.00-0.10	1.00	0.10	1.60	1.8	●	●	0.01-0.03
GEPI 1.00-0.50	1.00	0.50	1.60	1.8	●	●	0.01-0.04
GEPI 1.04-0.00	1.04	0.00	1.60	1.8	●	●	0.01-0.03
GEPI 1.20-0.00	1.20	0.00	1.80	1.8	●	●	0.01-0.03
GEPI 1.25-0.10	1.25	0.10	2.00	1.8	●	●	0.02-0.04
GEPI 1.40-0.00	1.40	0.00	2.00	1.8	●	●	0.02-0.04
GEPI 1.47-0.00	1.47	0.00	2.00	1.8	●	●	0.02-0.04
GEPI 1.50-0.10	1.50	0.10	2.00	1.8	●	●	0.02-0.04
GEPI 1.57-0.15	1.57	0.15	2.00	1.8	●	●	0.02-0.05
GEPI 1.70-0.05	1.70	0.05	2.50	1.8	●	●	0.02-0.05
GEPI 1.78-0.15	1.78	0.15	2.50	1.8	●	●	0.02-0.05

• Toolholder seat needs to be modified according to insert profile to ensure clearance • Dmin for internal application=12.5mm

For tools, see pages: E-GEHIR / E-GHIR (B28) • GEHIMR/L (B23) • GEHIMR/L-SC (B24).

GEPI

Precision Ground Double-Ended Inserts for Internal and External Grooving



Designation	Dimensions				Tough $\longleftrightarrow$ Hard			Recommended Machining Data		
	$W \pm 0.02$	$R \pm 0.03$	$T_{\max-r}$	M	IC528	IC08	IC908	a_p (mm)	f turn (mm/rev)	f groove (mm/rev)
GEPI 1.85-0.10 ⁽¹⁾	1.85	0.10	2.50	1.8	●	●	●	0.15-0.50	0.05-0.07	0.03-0.05
GEPI 1.96-0.10	1.96	0.10	2.50	1.8	●	●	●	0.15-0.50	0.05-0.07	0.03-0.05
GEPI 1.96-0.15	1.96	0.15	2.50	1.8	●	●	●	0.20-0.50	0.05-0.07	0.03-0.05
GEPI 2.00-0.10	2.00	0.10	9.00	1.8	●	●	●	0.15-0.60	0.05-0.07	0.03-0.05
GEPI 2.22-0.10	2.22	0.10	9.00	1.8	●	●	●	0.15-0.60	0.06-0.08	0.04-0.06
GEPI 2.22-0.15	2.22	0.15	9.00	1.8	●	●	●	0.20-0.60	0.06-0.08	0.04-0.06
GEPI 2.39-0.10	2.39	0.10	9.00	2.2	●	●	●	0.15-1.00	0.07-0.09	0.04-0.06
GEPI 2.39-0.15	2.39	0.15	9.00	2.2	●	●	●	0.20-1.00	0.07-0.09	0.04-0.06
GEPI 2.47-0.20	2.47	0.20	9.00	2.2	●	●	●	0.25-1.10	0.08-0.11	0.04-0.07
GEPI 2.50-0.10	2.50	0.10	9.00	2.2	●	●	●	0.15-1.10	0.07-0.09	0.04-0.07
GEPI 2.50-0.20	2.50	0.20	9.00	2.2	●	●	●	0.25-1.10	0.08-0.11	0.05-0.08
GEPI 2.70-0.20	2.70	0.20	9.00	2.2	●	●	●	0.25-1.20	0.09-0.12	0.05-0.08
GEPI 3.00-0.20	3.00	0.20	9.00	2.2	●	●	●	0.25-1.30	0.10-0.14	0.05-0.09
GEPI 3.18-0.20	3.18	0.20	9.00	2.2	●	●	●	0.25-1.40	0.11-0.14	0.06-0.10

• Dmin for internal application=12.5mm

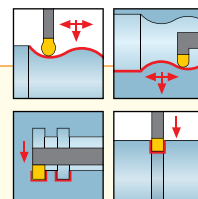
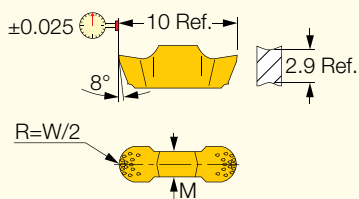
⁽¹⁾ Tool pocket should be modified

For tools, see pages: E-GEHIR / E-GHIR (B28) • GEAIR/L (B27) • GEHIRM/L (B23) • GEHIRM/L-SC (B24) • GEHIR/L (B25)

• GEHIR/L-SC (B26) • GEHSR/L-SL (A13).

GEPI (full radius)

Precision Double-Ended Full Radius Inserts for Internal and External Profiling and Grooving



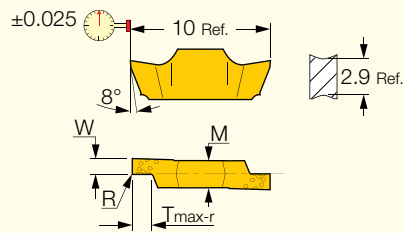
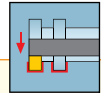
Designation	Dimensions				Tough $\longleftrightarrow$ Hard			Recommended Machining Data		
	$W \pm 0.02$	$R \pm 0.05$	$T_{\max-r}$	M	IC528	IC08	IC908	a_p (mm)	f turn (mm/rev)	f groove (mm/rev)
GEPI 2.00-1.00	2.00	1.00	5.00	1.8	●	●	●	0.00-0.60	0.08-0.12	0.04-0.07
GEPI 3.00-1.50	3.00	1.50	5.00	2.2	●	●	●	0.00-1.50	0.13-0.20	0.05-0.11
GEPI 3.18-1.59	3.18	1.59	5.00	2.2	●	●	●	0.00-1.59	0.13-0.21	0.06-0.11

• Dmin for internal application=12.5mm

For tools, see pages: E-GEHIR / E-GHIR (B28) • GEAIR/L (B27) • GEHIR/L (B25) • GEHIR/L-SC (B26) • GEHIUR/L (B26) • GEHSR/L-SL (A13).

GEPI-RX/LX

Precision Double-Ended Inserts for Internal Grooving Next to Shoulder



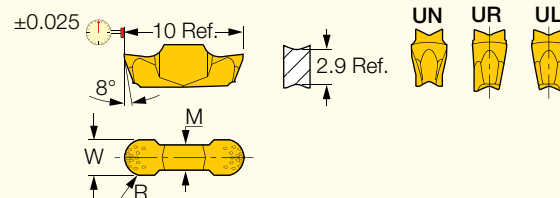
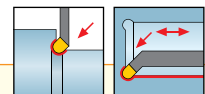
Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data f groove (mm/rev)
	W±0.02	R±0.03	T _{max-r}	M	IC528	IC908	
GEPI 0.80-0.00RX	0.80	0.00	1.50	1.8		●	0.01-0.02
GEPI 1.00-0.10 LX	1.00	0.10	1.50	1.8	●		0.01-0.03
GEPI 1.00-0.10 RX	1.00	0.10	1.50	1.8	●		0.01-0.03
GEPI 1.57-0.15RX	1.57	0.15	2.00	1.8		●	0.02-0.05

• Toolholder seat needs to be modified according to insert profile to ensure clearance • D_{min} for internal application=12.5mm

For tools, see pages: GEHIMR/L (B23) • GEHIMR/L-SC (B24).

GEPI-UN/UR/UL

Precision Double-Ended Inserts for Internal Undercutting

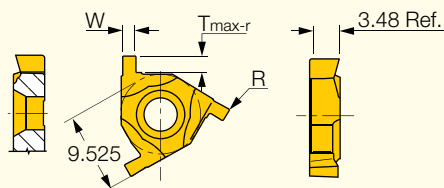
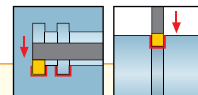


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data f groove (mm/rev)
	W±0.02	R±0.03	T _{max-r}	M	IC528	IC08	
GEPI 3.00-1.50UN	3.00	1.50	2.00	2.2	●		0.03-0.12
GEPI 2.00-1.00UR	2.00	1.00	2.00	1.8	●	●	0.03-0.12
GEPI 2.00-1.00UL	2.00	1.00	2.00	1.8	●	●	0.03-0.12

For tools, see pages: GEHIUR/L (B26).

GTGA

Precision Shallow Grooving Inserts with 3 Cutting Edges



GTGA 16 ER/IL shown

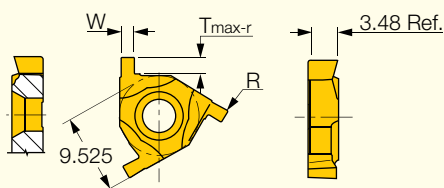
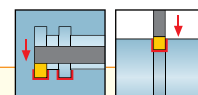
Designation	Dimensions			Tough $\longleftrightarrow$ Hard		Recommended Machining Data
	$W \pm 0.02$	$T_{\max-r}$	$R \pm 0.05$	IC528	IC508	f groove (mm/rev)
GTGA 16EL/IR 100	1.00	1.55	0.10	●	●	0.02-0.03
GTGA 16ER/IL 100	1.00	1.55	0.10	●	●	0.02-0.03
GTGA 16EL/IR 120	1.20	1.60	0.10	●	●	0.02-0.03
GTGA 16ER/IL 120	1.20	1.60	0.10	●	●	0.02-0.03
GTGA 16EL/IR 140	1.40	1.80	0.10	●	●	0.02-0.04
GTGA 16ER/IL 140	1.40	1.80	0.10	●	●	0.02-0.04
GTGA 16EL/IR 170	1.70	2.00	0.10	●	●	0.03-0.05
GTGA 16ER/IL 170	1.70	2.00	0.10	●	●	0.03-0.05
GTGA 16EL/IR 195	1.95	2.00	0.10	●	●	0.03-0.06
GTGA 16ER/IL 195	1.95	2.00	0.10	●	●	0.03-0.06
GTGA 16EL/IR 225	2.25	2.10	0.10	●	●	0.04-0.06
GTGA 16ER/IL 225	2.25	2.10	0.10	●	●	0.04-0.06

• Inserts for right-hand external grooving can be used as left-hand internal grooving. • Use with anvil AE 16-0 on external tools and with anvil AI 16-0 on internal tools.

For tools, see pages: • SER/L (A109) • SIR/L (B96).

GTMA

Utility Shallow Grooving Inserts with 3 Cutting Edges



GTMA 16 ER/IL shown

Designation	Dimensions			IC508	Recommended Machining Data
	$W \pm 0.05$	$T_{\max-r}$	$R \pm 0.05$		f groove (mm/rev)
GTMA 16ER/IL 120	1.20	1.60	0.10	●	0.02-0.03
GTMA 16ER/IL 140	1.40	1.80	0.10	●	0.02-0.04
GTMA 16ER/IL 160	1.60	2.00	0.10	●	0.03-0.05
GTMA 16ER/IL 175	1.75	2.00	0.10	●	0.03-0.05
GTMA 16ER/IL 195	1.95	2.00	0.10	●	0.03-0.06
GTMA 16ER/IL 222	2.22	2.10	0.10	●	0.04-0.06

• Inserts for right-hand external grooving can be used as left-hand internal grooving. • Use with anvil AE 16-0 on external tools and with anvil AI 16-0 on internal tools.

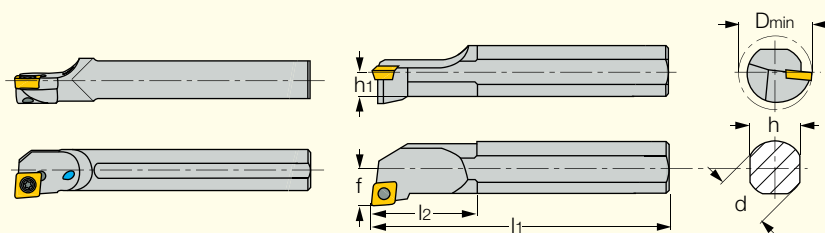
For tools, see pages: • SER/L (A109) • SIR/L (B96).

ISO*TURN*



A/E/S-SCLCR/L

Screw Lock Boring Bars for 80° Rhombic Inserts with 7° Clearance



Designation	d	l ₁	l ₂	h	h ₁	f	D _{min}	Shank m. ⁽¹⁾	Coolant	G _a °	G _r °	Insert
A04F SCLCR/L-03	4.00	80.00	8.0	3.8	1.9	2.5	5.00	S	Y	0	-15	CCGT 03X1
A05F SCLCR/L-03	5.00	80.00	9.0	4.8	2.4	3.0	6.00	S	Y	0	-13	CCGT 03X1
A06G SCLCR/L-04	6.00	90.00	10.0	5.8	2.9	3.5	7.00	S	Y	0	-13	CCGT 04T1
A07G SCLCR/L-04	7.00	90.00	11.0	6.8	3.4	4.0	8.00	S	Y	0	-11	CCGT 04T1
E04G SCLCR/L-03	4.00	90.00	9.0	3.8	1.9	2.5	5.00	C	Y	0	-15	CCGT 03X1
E05G SCLCR/L-03	5.00	90.00	10.0	4.8	2.4	3.0	6.00	C	Y	0	-13	CCGT 03X1
E06H SCLCR/L-04	6.00	100.00	12.0	5.8	2.9	3.5	7.00	C	Y	0	-13	CCGT 04T1
E07H SCLCR/L-04	7.00	100.00	14.0	6.8	3.4	4.0	8.00	C	Y	0	-11	CCGT 04T1
E08K SCLCR-06	8.00	125.00	-	7.6	3.8	5.0	10.00	C	Y	3	-11	CC.. 0602
E10M SCLCR/L-06	10.00	150.00	-	9.2	4.6	7.0	14.00	C	Y	3	-7	CC.. 0602
E12P SCLCR/L-06	12.00	170.00	-	11.0	5.5	9.0	16.00	C	Y	0	-7	CC.. 0602
E16R SCLCR/L-06	16.00	200.00	-	14.0	7.0	11.0	20.00	C	Y	0	-12	CC.. 0602
E16R SCLCR/L-09	16.00	200.00	-	15.0	7.5	11.0	20.00	C	Y	0	-6	CC.. 09T3
S08K SCLCR-06	8.00	125.00	12.0	8.0	3.8	5.0	10.50	S	N	0	-11	CC.. 0602
S10L SCLCR/L-06	10.00	140.00	19.0	10.0	4.6	7.0	13.00	S	N	0	-7	CC.. 0602
S12M SCLCR/L-06	12.00	150.00	12.0	12.0	5.5	9.0	16.00	S	N	0	-9	CC.. 0602
S16Q SCLCR/L-09	16.00	180.00	45.0	15.0	7.5	11.0	20.00	S	N	0	-6	CC.. 09T3

• S - steel shank, A - steel shank with coolant hole, E - carbide shank with coolant hole

For inserts, see pages: CCGT-F1P (B67) • CCMT-F3P (B67) • CCMT-M3M (B68) • CCMT-PF (B69) • CCMT/CCGT-SM (B68) • CCET-WF (B70) • CCMT-WG (B71) • CCGT-AS (B92) • CCGT-AF (B93) • CCMT-14 (B69) • CCMT/CCGT (B70).

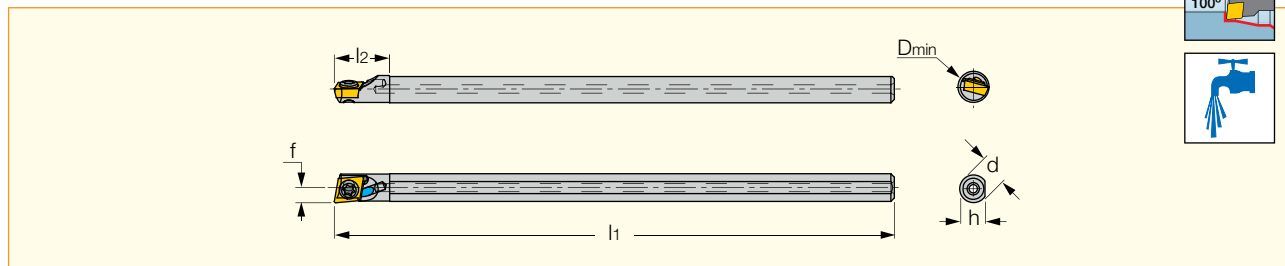
Spare Parts



Designation	Screw	Key
A04F SCLCR/L-03	CSTA-1.6	T-6F
A05F SCLCR/L-03	CSTA-1.6	T-6F
A06G SCLCR/L-04	CSTB-2	T-6F
A07G SCLCR/L-04	CSTB-2	T-6F
E04G SCLCR/L-03	CSTA-1.6	T-6F
E05G SCLCR/L-03	CSTA-1.6	T-6F
E06H SCLCR/L-04	CSTB-2	T-6F
E07H SCLCR/L-04	CSTB-2	T-6F
E08K SCLCR-06	SR 14-548	T-7/5
E10M SCLCR-06	SR 14-548	T-7/5
E12P SCLCR-06	SR 14-548	T-7/5
E16R SCLCR-09	SR 16-236	T-15/5
S08K SCLCR/L-06	SR 14-548	T-7/5
S10L SCLCR/L-06	SR 14-548	T-7/5
S12M SCLCR/L-06	SR 14-548	T-7/5
S16Q SCLCR/L-09	SR 16-236/L8.6	T-15/5

A/E-SEXPR/L-03

Screw Lock Boring Bars for 4.5 mm Minimum Bore Diameter, Carrying 75° Rhombic Inserts with 11° Clearance



Designation	d	l ₁	l ₂	h	h ₁	f	D _{min}	Shank m. ⁽¹⁾	G _a °	G _r °	Insert
A04F SEXPR/L-03	4.00	80.00	8.0	3.8	1.9	2.3	4.50	S	0	-15	EPGT03
E04G SEXPR/L-03	4.00	90.00	9.0	3.8	1.9	2.3	4.50	C	0	-15	EPGT03

• A - steel shank with coolant hole, E - carbide shank with coolant hole

For inserts, see pages: EPGT-F1P (B72).

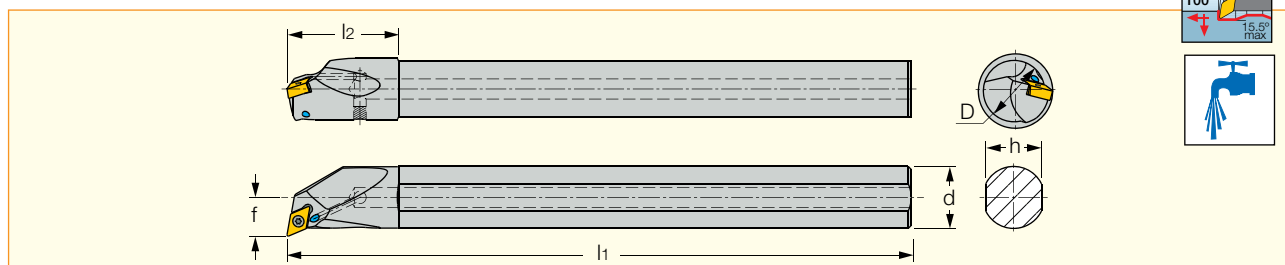
Spare Parts



Designation	Screw	Key
A/E-SEXPR/L-03	CSTA-1.6	T-6F

A/E-SDXNR/L-07

Boring Bars for Small Diameters, Carrying DNGP 0703..
Double-Sided 55° Rhombic Inserts



Designation	d	l ₁	l ₂	h	f	D _{min}	G _a °	G _r °	Shank m. ⁽¹⁾	Insert
A10K SDXNR/L-07	10.00	125.00	20.0	9.0	7.6	13.00	-14	-16	S	DNGP 07
A12M SDXNR/L-07	12.00	150.00	24.0	11.0	8.6	16.00	-14	-14	S	DNGP 07
A16Q SDXNR/L-07	16.00	180.00	32.0	15.0	10.6	20.00	-13	-13	S	DNGP 07
E10M SDXNR/L-07	10.00	125.00	20.0	9.0	7.6	13.00	-14	-16	C	DNGP 07
E12Q SDXNR/L-07	12.00	150.00	24.0	11.0	8.6	16.00	-14	-14	C	DNGP 07
E16R SDXNR/L-07	16.00	180.00	32.0	15.0	10.6	20.00	-13	-13	C	DNGP 07

• Use left-hand inserts on right-hand bars and vice versa. • A - steel shank with coolant hole, E - carbide shank with coolant hole.

For inserts, see pages: DNGP-F2M (B53) • DNGP-F2P (B54).

Spare Parts

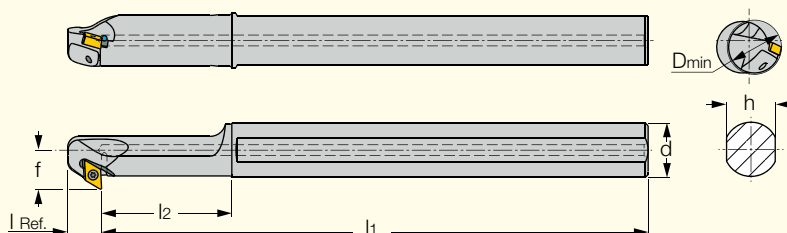


Designation	Screw	Key
A/E-SDXNR/L-07	SR 34-514	T-7F

A/E-SDZNR/L-07

Bakck Turning Boring Bars for Small Diameters, Carrying DNGP 0703..

Double-Sided 55° Rhombic Inserts



Designation	d	l ₁	l ₂	l Ref.	h	f	D _{min}	G _a °	G _r °	Insert
A12M SDZNR/L-07	12.00	150.00	38.0	13.0	11.0	11.0	14.00	-10	-14	DNGP 07
A16Q SDZNR/L-07	16.00	180.00	43.0	13.0	15.0	13.0	16.00	-10	-12.5	DNGP 07
E12Q SDZNR/L-07	12.00	180.00	-	13.0	11.0	11.0	18.00	-11	-11	DNGP 07
E16R SDZNR/L-07	16.00	200.00	-	13.0	15.0	13.0	22.00	-11	-9	DNGP 07

• Use right-hand inserts on right-hand bars and vice versa. • A - steel shank with coolant hole, E - carbide shank with coolant hole.

For inserts, see pages: DNGP-F2M (B53) • DNGP-F2P (B54).

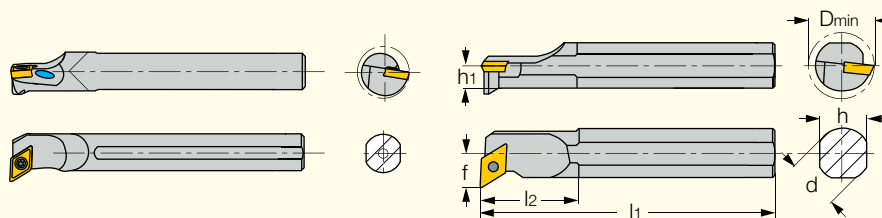
Spare Parts



Designation	Screw	Key
A/E-SDZNR/L-07	SR 34-514	T-7F

E/S-SDUCR/L

Screw Lock Boring Bars for 55° Rhombic Inserts with 7° Clearance



Designation	d	l ₁	l ₂	h	h ₁	f	D _{min}	G _a °	G _r °	Shank m. ⁽¹⁾	Coolant	Insert
E10M SDUCR/L-07	10.00	150.00	-	9.2	5.1	8.0	14.00	3	-7	C	Y	DC.. 0702
E12P SDUCR/L-07	12.00	170.00	-	11.0	5.5	9.0	16.00	0	-7	C	Y	DC.. 0702
E16R SDUCR/L-07	16.00	200.00	-	15.0	8.1	11.0	20.00	0	-8	C	Y	DC.. 0702
S10L SDUCR/L-07	10.00	140.00	18.0	9.2	5.0	8.0	14.00	-3	-9	S	N	DC.. 0702
S12M SDUCR/L-07	12.00	150.00	20.0	12.0	5.5	9.0	16.00	-7	-9	S	N	DC.. 0702
S16Q SDUCR/L-07	16.00	180.00	25.0	15.0	8.0	11.0	20.00	0	-8	S	N	DC.. 0702

• S - steel shank, E - carbide shank with coolant hole

⁽¹⁾ S-Steel, C-carbide

For inserts, see pages: DCMT-F3P (B73) • DCMT-M3M (B73) • DCMT-PF (B76) • DCMT/DCGT-SM (B74) • DCET-WF (B75) • DCGT-AS (B93) • DCGT-AF (B94) • DCMT-14 (B75) • DCMT/DCGT (B74).

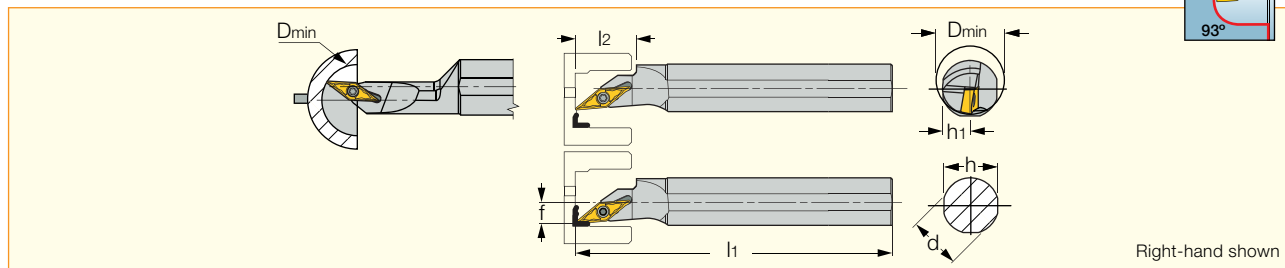
Spare Parts



Designation	Screw	Key
E/S SDUCR/L	SR 14-548	T-7/5

S/A-SVJCR/L

Screw Lock Boring Bars for 35° Diamond Inserts with 7° Clearance Angle



Designation	d	l ₁	l ₂	h	h ₁	f	D _{min}	G _a °	G _r °	Coolant	Insert
A16R SVJCR/L-11	16.00	200.00	47.5	15.0	8.0	8.5	20.00	-5	-5	Y	VC.. 1103
S16R SVJCR/L-11 ⁽¹⁾	16.00	200.00	20.0	15.0	8.0	7.0	19.00	-5	-4	N	VC.. 1103

⁽¹⁾ Cannot be used for internal sphere turning

For inserts, see pages: VCMT-F3P (B80) • VCMT-SM (B70) • VCET-WF (B80) • VCGT-AS (B92).



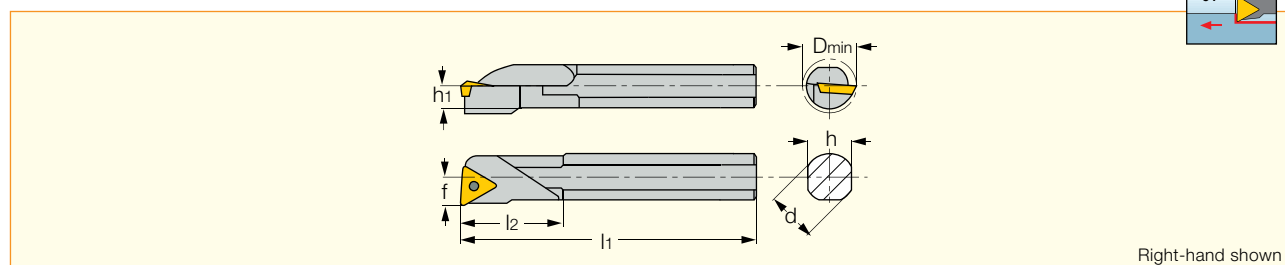
Spare Parts



Designation	Screw	Key	Coolant Fitting
A16R SVJCR/L-11	SR 14-560/S	T-8/5	PL 16
S16R SVJCR/L-11	SR 14-560/S	T-8/5	

S-STFCR/L

Screw Lock Boring Bars for Triangular 7° Clearance Angle Inserts



Designation	d	l ₁	l ₂	h	h ₁	f	D _{min}	G _a °	G _r °	Insert
S10K STFCR/L-11	10.00	125.00	29.0	9.0	4.5	7.0	13.00	0	-6	TC.. 1102
S12M STFCR/L-11	12.00	150.00	30.0	11.0	5.5	9.0	15.80	0	-3	TC.. 1102

For inserts, see pages: TCMT-F3P (B83) • TCMT-M3M (B84) • TCMT-PF (B84) • TCMT-SM (B85) • TCGT-AS (B91).

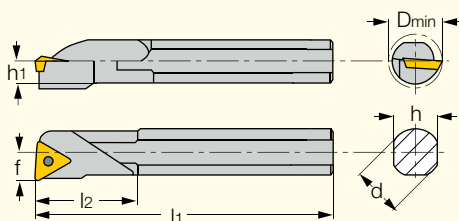
Spare Parts



Designation	Screw	Key
S-STFCR/L	SR 14-548	T-7/5

S-STLCR/L

Screw Clamp Bars for 7° Clearance Triangular Inserts



Right-hand shown

Designation	d	l ₁	l ₂	h	h ₁	f	D _{min}	G _a °	G _r °	Insert
S16Q STLCR/L-11	16.00	180.00	45.0	15.0	7.5	11.0	20.00	0	-1	TC.. 1102

For inserts, see pages: TCMT-F3P (B83) • TCMT-M3M (B84) • TCMT-PF (B84) • TCMT-SM (B85) • TCGT-AS (B91).

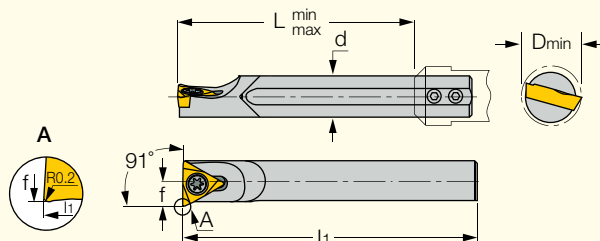
Spare Parts



Designation	Screw	Key
S16Q STLCR/L-11	SR 14-548	T-7/5

MG STFPR-X

Solid Carbide Boring Bar Using TPGX Inserts for Small Diameters



Right-hand shown

Designation	d	l ₁	L _{min} ⁽¹⁾	L _{max} ⁽¹⁾	f	G _a °	G _r °	D _{min}
MG 08-STFPR-09X	8.00	79.00	20.0	56.0	4.9	5	-15	9.50

⁽¹⁾ Adjustment range

For inserts, see pages: TPGX (B88).

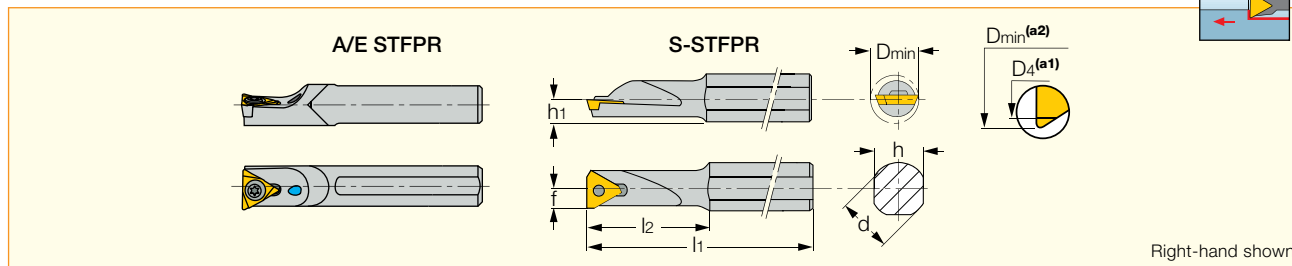
Spare Parts



Designation	Screw	Key
MG STFPR-X	SR 14-298	T-8/5

A/E/S-STFPR/L

Screw Lock Boring Bars for Triangular Inserts with 11° Clearance



Designation	d	l ₁	l ₂	h	h ₁	f	D _{min}	D ₄	G _a °	G _r °	Coolant	Shank m. ⁽¹⁾
A10K STFPR-11	10.00	125.00	-	9.0	5.3	6.0	11.00	12.00	3	0	Y	S
A12Q STFPR-11	12.00	180.00	-	11.0	6.3	7.0	13.00	14.00	4	0	Y	S
E10M STFPR-11	10.00	150.00	-	9.0	5.3	6.0	12.00	12.00	3	0	Y	C
E12P STFPR/L-11	12.00	170.00	-	11.0	6.3	7.0	14.00	14.00	4	0	Y	C
S12K STFPR/L-11	12.00	125.00	35.0	11.0	6.3	5.6	11.00	11.00	3	0	N	S
S12M STFPR/L-11	12.00	150.00	27.0	11.0	6.3	7.0	15.00	15.00	4	0	N	S
S16Q STFPR/L-11	16.00	180.00	27.0	15.0	8.0	9.2	18.00	18.00	5	0	N	S

• (a1) When used with insert TPG. 110204-XL (a2) When used with insert TP.. 110204-..

⁽¹⁾ S-Steel, C-Carbide

For inserts, see pages: TPMT-PF (B85) • TPGB-XL (B86) • TPGH-XL (B87) • TPGB (B86) .

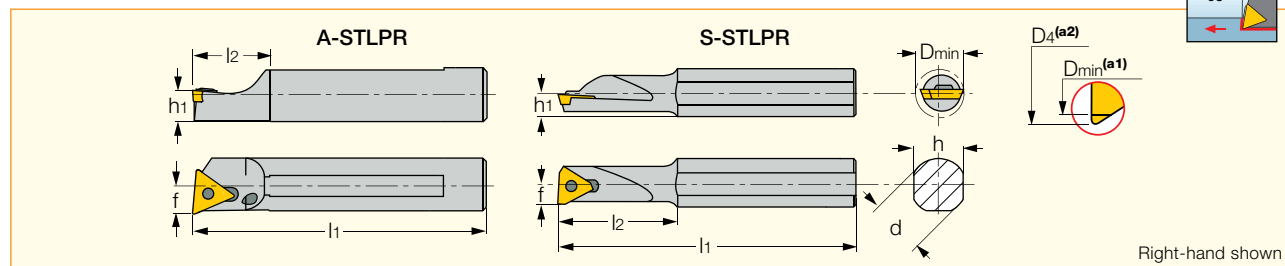
Spare Parts



Designation	Screw	Key
A/E/S-STFPR/L	SR 14-505	T-7/5

A/S-STLPR/L

Screw Lock Boring Bars for Triangular Inserts with 11° Clearance



Designation	d	l ₁	l ₂	h	h ₁	f	G _a °	G _r °	D _{min}	D ₄	Coolant
A10K STLPR-11	10.00	125.00	18.0	9.5	5.8	6.0	3	0	11.00	12.00	Y
A12Q STLPR-11	12.00	180.00	18.0	11.5	6.0	7.0	4	0	13.00	14.00	Y
S12K STLPR/L-11	12.00	125.00	35.0	11.0	6.3	5.6	3	0	9.70	11.00	N
S12M STLPR/L-11	12.00	150.00	27.0	11.0	6.3	7.0	4	0	14.00	15.00	N
S16Q STLPR-11	16.00	180.00	27.0	15.0	8.0	9.0	5	0	17.00	18.00	N

• (a1) When used with insert TPG. 110204-XL (a2) When used with insert TP.. 110204-..

For inserts, see pages: TPMT-PF (B85) • TPGB-XL (B86) • TPGH-XL (B87) • TPGB (B86) .

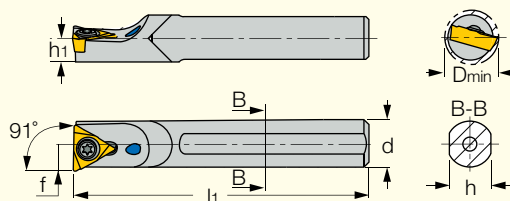
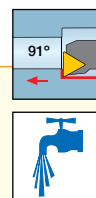
Spare Parts



Designation	Screw	Key
A/S-STLPR/L	SR 14-505	T-15/5

A/E-STFPR-X

Boring Bars for Small Diameters for TPGX 11° Clearance Triangular Inserts



Right-hand shown

Designation	d	l ₁	f	h	h ₁	D _{min}	G _a °	G _r °	Shank m. ⁽¹⁾	Insert
A08J STFPR-09X	8.00	110.00	5.0	7.2	3.6	9.50	5	-15	S	TPGX 0902
A10K STFPR-09X	10.00	125.00	5.7	9.0	4.5	10.90	5	-8	S	TPGX 0902
A12M STFPR-09X	12.00	150.00	6.7	11.0	5.5	13.00	5	-8	S	TPGX 0902
A10K STFPR-11X	10.00	125.00	6.0	9.0	4.5	11.40	3	-15	S	TPGX 1103
A12M STFPR-11X	12.00	150.00	6.8	11.0	5.5	13.50	3	-10	S	TPGX 1103
A16Q STFPR-11X	16.00	180.00	8.8	14.0	7.0	17.30	3	-5	S	TPGX 1103
E08K STFPR-09X	8.00	125.00	5.0	7.2	3.6	9.50	5	-15	C	TPGX 0902
E10M STFPR-09X	10.00	150.00	5.7	9.0	4.5	10.90	5	-8	C	TPGX 0902
E12P STFPR-09X	12.00	170.00	6.7	11.0	5.5	13.00	5	-8	C	TPGX 0902
E10M STFPR-11X	10.00	150.00	6.0	9.0	4.5	11.40	3	-15	C	TPGX 1103
E12P STFPR-11X	12.00	170.00	6.8	11.0	5.5	13.50	3	-10	C	TPGX 1103
E16R STFPR-11X	16.00	200.00	8.8	14.0	7.0	17.30	3	-5	C	TPGX 1103

⁽¹⁾ S-Steel, C-Carbide

For inserts, see pages: • TPGX (B88).

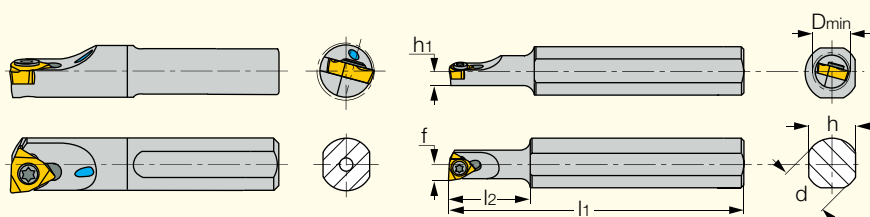
Spare Parts



Designation	Screw	Key
A08J STFPR-09X	SR 14-298	T-8/5
A10K STFPR-09X	SR 14-298	T-8/5
A12M STFPR-09X	SR 14-298	T-8/5
A10K STFPR-11X	SR 10400052	T-8/5
A12M STFPR-11X	SR 10400052	T-8/5
A16Q STFPR-11X	SR 10400052	T-8/5
E08K STFPR-09X	SR 14-298	T-8/5
E10M STFPR-09X	SR 14-298	T-8/5
E12P STFPR-09X	SR 14-298	T-8/5
E10M STFPR-11X	SR 10400052	T-8/5
E12P STFPR-11X	SR 10400052	T-8/5
E16R STFPR-11X	SR 10400052	T-8/5

E/S-SWUBR/L

Screw Clamp Miniature Boring Bars for Small WBMT Trigon Inserts



Right-hand shown

Designation	d	l ₁	l ₂	h	h ₁	f	G _a °	G _r °	D _{min}	Coolant	Shank m. ⁽¹⁾	Insert
E06H SWUBR/L-06	6.00	100.00	-	5.2	2.6	3.3	0	-15	6.50	Y	C	WBMT 020102L
E08K SWUBR-06	8.00	125.00	-	7.6	3.8	4.3	0	-8	8.70	Y	C	WBMT 020102L
E10M SWUBR-06	10.00	150.00	-	9.0	4.5	5.2	0	-12	10.90	Y	C	WBMT 020102L
S0606H SWUBR-06	6.00	100.00	-	5.2	2.6	3.3	0	-15	6.50	N	S	WBMT 020102L
S0610H SWUBR/L-06	10.00	100.00	20.0	9.0	4.5	3.0	0	-15	6.00	N	S	WBMT 020102L/R
S0710H SWUBR/L-06	10.00	100.00	24.0	9.0	4.5	3.5	0	-13	7.00	N	S	WBMT 020102L/R
S0808J SWUBR-06	8.00	100.00	-	7.4	3.7	4.3	0	-12	8.50	N	S	WBMT 020102L
S0812J SWUBR/L-06	12.00	110.00	32.0	11.0	5.5	4.0	0	-12	8.00	N	S	WBMT 020102L/R
S1010K SWUBR/L-06	10.00	125.00	-	9.0	4.5	5.2	0	-12	11.00	N	S	WBMT 020102L

• Use right-hand WBMT 06...R inserts on left-hand tools and left-hand WBMT 06...L inserts on right-hand tools.

⁽¹⁾ S-Steel, C-Carbide

For inserts, see pages: WBGT (B88) • WBMT (B89).

Spare Parts

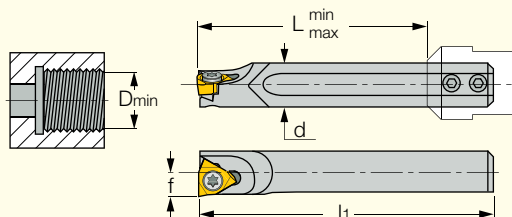
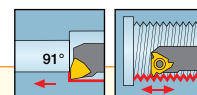


Designation	Screw	Key
E/S-SWUBR/L	SR 14-552	T-6/5

ISO TURN • ISCAR THREAD

MGSIR/L

Solid Carbide Bars for Internal Turning and Threading



Right-hand shown

Designation	d	l ₁	L _{min} ⁽³⁾	L _{max} ⁽³⁾	f	D _{min}
MGSIR/L 06-06W ⁽¹⁾	6.00	59.00	16.0	42.0	3.9	7.00
MGSIR/L 08-06W ⁽²⁾	8.00	72.00	20.0	56.0	5.0	9.20

• 91° for shoulder depth up to 2 mm • Use right-hand WBMT 06...R inserts on left-hand tools and left-hand WBMT 06...L inserts on right-hand tools. • In order to maintain high machining reliability we strongly recommend replacing the clamping screw every 10 insert indexes.

⁽¹⁾ For WBMT 060102 Dmin=6.6 mm f=4.13 mm ⁽²⁾ For WBMT 060102 Dmin=8.8 mm f=5.20 mm ⁽³⁾ Adjustment range

For inserts, see pages: IR/L-55° (B98) • IR/L-60° (B101) • IR/L-BSPT (B110) • IR/L-ISO (B104) • IR/L-NPT (B115) • IR/L-NPTF (B113) • IR/L-UN (B106) • IR/L-W (B109) • WBGT (B88) • WBMT (B89).

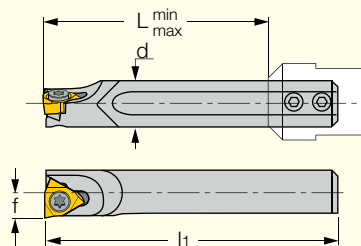
Spare Parts



Designation	Screw	Key
MGSIR/L	SR 14-552	T-6/5

MG-SWUBR/L

Solid Carbide Bars for Internal Turning



Right-hand shown

Designation	d	l ₁	L _{min} ⁽¹⁾	L _{max} ⁽¹⁾	f	D _{min}
MG 06-SWUBR/L-06	6.00	59.00	16.0	42.0	3.3	6.60
MG 08-SWUBR/L-06	8.00	72.00	20.0	56.0	4.3	8.70

• Use right-hand WBMT 06...R inserts on left-hand tools and left-hand WBMT 06...L inserts on right-hand tools

⁽¹⁾ Adjustment range

For inserts, see pages: WBGT (B88) • WBMT (B89).

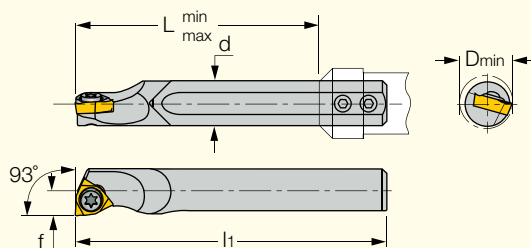
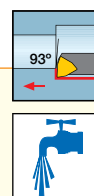
Spare Parts



Designation	Screw	Key
MG-SWUBR/L	SR 14-552	T-6/5

MG-SWUCR

Solid Carbide Boring Bar for Small Diameters Using WCGT Trigon Inserts



Right-hand shown

Designation	d	l ₁	L _{min} ⁽¹⁾	L _{max} ⁽¹⁾	f	G _a °	G _r °	D _{min}	Insert
MG 06-SWUCR-02	6.00	60.00	16.0	42.0	3.3	0	15	6.60	WCGT 0201
MG 08-SWUCR-02	8.00	75.70	20.0	56.0	4.3	0	12	8.80	WCGT 0201

⁽¹⁾ Adjustment range

For inserts, see pages: WCGT (B89).

For holders, see pages: PICCO/MG PCO (holder) (B123).

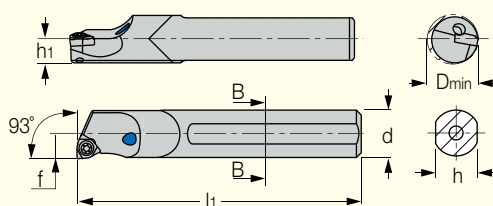
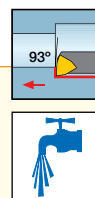
Spare Parts



Designation	Screw	Key
MG-SWUCR	SR 14-299	T-6/5

A/E-SWUCR

Boring Bars for Small Diameters Using WCGT Trigon Inserts



Right-hand shown

Designation	d	l ₁	h	h ₁	f	G _a °	G _r °	D _{min}	Shank m. ⁽¹⁾	Insert
A06H SWUCR-02	6.00	100.00	5.4	2.7	3.3	0	-15	6.60	S	WCGT 0201
A08J SWUCR-02	8.00	110.00	7.2	3.6	4.3	0	-12	8.70	S	WCGT 0201
A10K SWUCR-02	10.00	125.00	9.0	4.5	5.2	0	-12	10.90	S	WCGT 0201
E06H SWUCR-02	6.00	100.00	5.4	2.7	3.3	0	-15	6.60	C	WCGT 0201
E08K SWUCR-02	8.00	125.00	7.2	3.6	4.3	0	-12	8.70	C	WCGT 0201
E10M SWUCR-02	10.00	150.00	9.0	4.5	5.2	0	-12	10.90	C	WCGT 0201

⁽¹⁾ S-Steel, C-Carbide

For inserts, see pages: WCGT (B89).

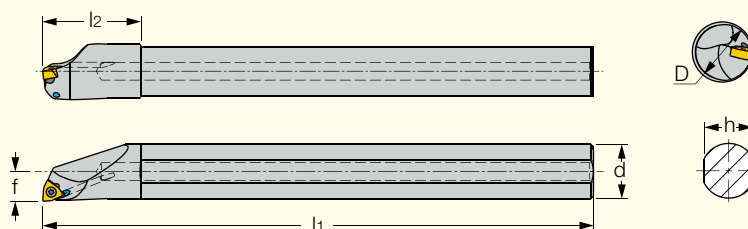
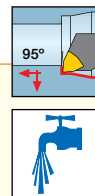
Spare Parts



Designation	Screw	Key
A/E-SWUCR	SR 14-299	T-6/5

A/E-SWLNR-04

Boring Bars for Small Diameters, Carrying WNGP 0403.. Double-Sided Trigon Inserts



Designation	d	l ₁	l ₂	h	f	G _a °	G _r °	D _{min}	Shank m. ⁽¹⁾	Insert
A10K SWLNR/L-04	10.00	125.00	20.0	9.0	6.0	-10	-16	12.00	S	WNGP 04
A12M SWLNR/L-04	12.00	150.00	24.0	11.0	7.0	-10	-14	14.00	S	WNGP 04
A16Q SWLNR/L-04	16.00	180.00	32.0	15.0	9.0	-10	-11	18.00	S	WNGP 04
E10M SWLNR/L-04	10.00	125.00	20.0	9.0	6.0	-10	-16	12.00	C	WNGP 04
E12Q SWLNR/L-04	12.00	150.00	24.0	11.0	7.0	-10	-14	14.00	C	WNGP 04
E16R SWLNR/L-04	16.00	180.00	32.0	15.0	9.0	-10	-11	18.00	C	WNGP 04

• Use left-hand inserts on right-hand bars and vice versa. • A - steel shank with coolant hole, E - carbide shank with coolant hole.

⁽¹⁾ S-Steel, C-Carbide

For inserts, see pages: WNGP-F2M (B45) • WNGP-F2P (B46).

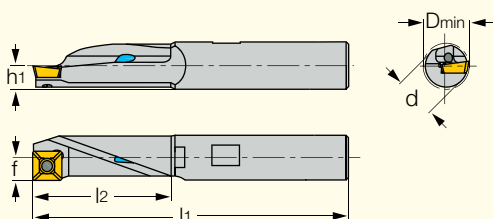
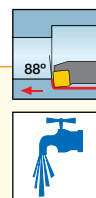
Spare Parts



Designation	Screw	Key
A/E-SWLNR-04	SR 34-514	T-7F

A-SXFOR/L

Boring Bars with Coolant Holes Using XOMT Inserts



Right-hand shown

Designation	d	l ₁	l ₂	h ₁	f	G _a °	G _r °	D _{min}	Insert
A10J SXFOR/L-06	10.00	110.00	28.5	5.0	4.9	6	1.75	10.00	XOMT 0602
A12K SXFOR/L-06	10.00	125.00	28.5	5.0	4.9	6	1.75	10.00	XOMT 0602

For inserts, see pages: XOMT-DT (B45).

Spare Parts

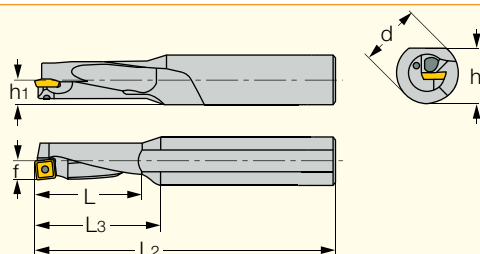
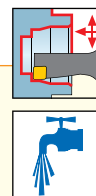


Designation	Screw	Key
A-SXFOR/L	SR 34-508	T-7/5

MULTIFUNCTION TOOLS

A-SXFOR-DR

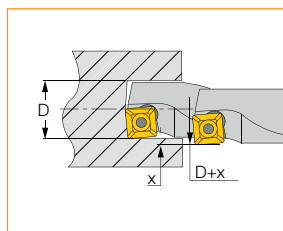
Boring and Drilling Bars for XOMT Inserts



Right-hand shown

Designation	d	L ₂	L ₃	L	f	h ₁	G _a °	G _r °	h	D _{min}	Insert
A1612M SXFOR-06DR	16.00	180.00	31.0	21.0	6.0	8.5	0	0	15.0	12.50	XOMT 0602

For inserts, see pages: XOMT-DT (B45).



Drilling Solid Material

Range:

D_{min}=12.5 mm

D_{max}=14 mm

To achieve required diameter ϕD , position tool as shown at $D + x$ ($x=0.10$) to compensate for tool deflection.

Use pecking cycle, pulling back 0.1 mm after each 1 mm of DOC.

Maximum feed for steel:

0.05 mm/rev;

For stainless steel:

0.03 mm/rev

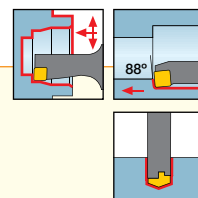
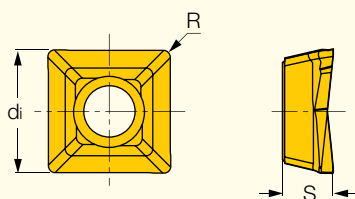
Spare Parts



Designation	Screw	Key	Coolant Fitting
A-SXFOR-DR	SR 34-508	T-7/51	PL 16

XOMT-DT

Inserts for DR Drills and Boring Bars



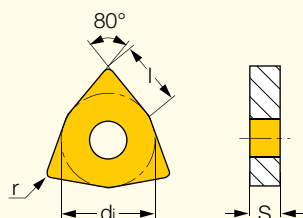
Designation	Dimensions			Tough $\longleftrightarrow$ Hard						
	di	S	R	IC28	IC328	IC250	IC350	IC908	IC520M	IC428
XOMT 060204-DT	6.16	2.56	0.40	●	●	●	●	●	●	●

• Two cutting edges • For hard materials and interrupted cut

ISOTURN

WNGP-F2M

Double-Sided Trigon Inserts, for Super Finish Machining Conditions on Stainless Steel

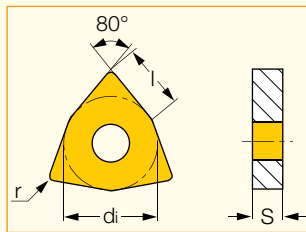
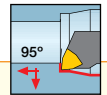


Designation	Dimensions				IC908	Recommended Machining Data	
	l	di	S	r		a_p (mm)	f (mm/rev)
WNGP 040302R/L-F2M	4.35	6.35	3.18	0.20	●	0.30-2.00	0.08-0.30
WNGP 040304R/L-F2M	4.35	6.35	3.18	0.40	●	0.30-2.00	0.08-0.30
WNGP 040308R/L-F2M	4.35	6.35	3.18	0.80	●	0.30-2.00	0.08-0.30

For tools, see page: PWLNR/L-04S (A104).

WNGP-F2P

Double-Sided Trigon Inserts, for Super Finish Machining Conditions on Alloyed Steel

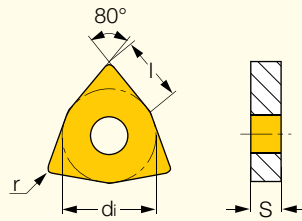
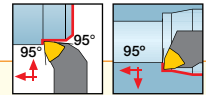


Designation	Dimensions				IC530N	Recommended Machining Data	
	l	di	S	r		a_p (mm)	f (mm/rev)
WNGP 040302R/L-F2P	4.35	6.35	3.18	0.20	●	0.30-2.00	0.08-0.30
WNGP 040304R/L-F2P	4.35	6.35	3.18	0.40	●	0.30-2.00	0.08-0.30
WNGP 040308R/L-F2P	4.35	6.35	3.18	0.80	●	0.30-2.00	0.08-0.30

For tools, see page: PWLNR/L-04S (A104).

WNMG-F3P

Double-Sided Trigon Inserts for Semi-Finishing and Finishing Applications



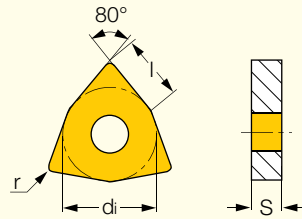
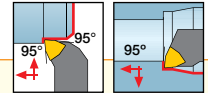
Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data	
	l	di	S	r	IC8250	IC8150	IC20N	IC520N	a_p (mm)	f (mm/rev)
WNMG 060404-F3P	6.52	9.52	4.76	0.40	●	●	●	●	0.50-2.50	0.07-0.25
WNMG 060408-F3P	6.52	9.52	4.76	0.80	●	●	●	●	0.90-3.00	0.08-0.25
WNMG 060412-F3P	6.52	9.52	4.76	1.20	●	●	●	●	1.30-3.00	0.10-0.25

For tools, see pages: PWNLR/L (A104)



WNMG-M3P

Double-Sided Trigon Inserts for Medium Machining Conditions on Steel

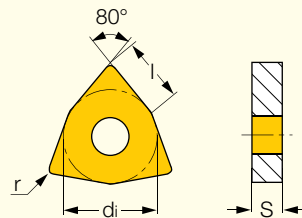
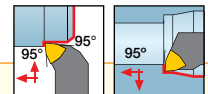


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	IC8250	IC8150	ap (mm)	f (mm/rev)
WNMG 06T304-M3P	6.52	9.52	3.97	0.40	●		0.45-2.50	0.10-0.45
WNMG 06T308-M3P	6.52	9.52	3.97	0.80	●	●	0.50-3.00	0.15-0.50
WNMG 06T312-M3P	6.52	9.52	3.97	1.20	●		0.80-3.00	0.18-0.60
WNMG 060404-M3P	6.52	9.52	4.76	0.40	●	●	0.45-2.50	0.10-0.45
WNMG 060408-M3P	6.52	9.52	4.76	0.80	●	●	0.50-3.00	0.15-0.50
WNMG 060412-M3P	6.52	9.52	4.76	1.20		●	0.80-3.00	0.18-0.60

For tools, see page: PWLNR/L (A104)

WNMG-F3M

Double-Sided Trigon Inserts for Stainless Steel Finishing Applications

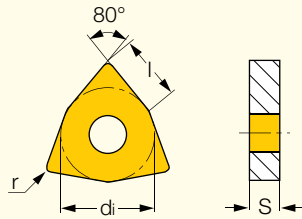
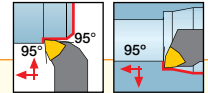


Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data	
	l	di	S	r	IC6025	IC6015	IC806	IC807	ap (mm)	f (mm/rev)
WNMG 060404-F3M	6.52	9.52	4.76	0.40	●	●	●	●	0.10-1.50	0.05-0.30
WNMG 060408-F3M	6.52	9.52	4.76	0.80	●	●	●	●	0.10-1.50	0.10-0.40
WNMG 060412-F3M	6.52	9.52	4.76	1.20	●	●	●	●	0.20-2.50	0.15-0.50

For tools, see pages: PWLNR/L (A104)

WNMG-M3M

Double-Sided Trigon Inserts for Machining Stainless and Low Carbon Steel

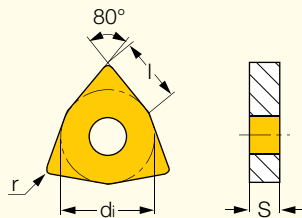
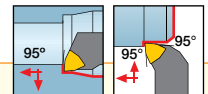


Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data	
	l	di	S	r	IC6025	IC6015	IC806	ap (mm)	f (mm/rev)
WNMG 060404-M3M	6.52	9.52	4.76	0.40	●	●	●	0.50-3.50	0.12-0.40
WNMG 060408-M3M	6.52	9.52	4.76	0.80	●	●	●	0.50-3.50	0.15-0.50
WNMG 060412-M3M	6.52	9.52	4.76	1.20	●	●	●	0.50-3.50	0.20-0.60

For tools, see pages: PWLNR/L (A104)

WNMG-GN

Double-Sided Trigon Inserts for General Applications

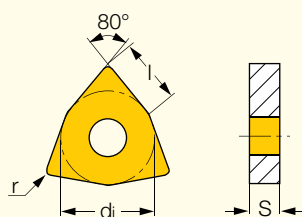
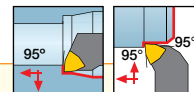


Designation	Dimensions				Tough ↔ Hard					Recommended Machining Data	
	l	di	S	r	IC3028	IC8350	IC8250	IC8150	IC20	ap (mm)	f (mm/rev)
WNMG 06T304-GN	6.52	9.52	3.97	0.40	●		●	●	●	1.00-3.50	0.14-0.40
WNMG 06T308-GN	6.52	9.52	3.97	0.80	●	●	●	●		1.00-3.50	0.16-0.45
WNMG 06T312-GN	6.52	9.52	3.97	1.20			●			1.50-4.00	0.18-0.45
WNMG 060404-GN	6.52	9.52	4.76	0.40			●			1.00-3.50	0.14-0.40
WNMG 060408-GN	6.52	9.52	4.76	0.80			●			1.00-3.50	0.16-0.45
WNMG 060412-GN	6.52	9.52	4.76	1.20				●		1.50-4.00	0.18-0.45

For tools, see pages: PWLNR/L (A104)

WNMG-WG

Double-Sided Trigon Wiper Inserts for High Surface Finish at High Feed Turning

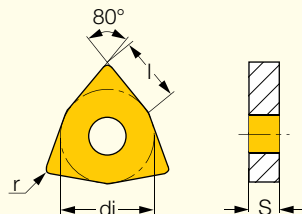
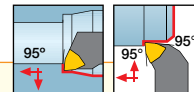


Designation	Dimensions				Tough ↔ Hard								Recommended Machining Data	
	di	l	S	r	IC3028	IC8250	IC530N	IC8150	IC807	IC907	IC20N	IC520N	ap (mm)	f (mm/rev)
WNMG 06T304-WG	9.52	6.52	3.97	0.40		●	●	●	●	●	●	●	0.40-3.00	0.10-0.35
WNMG 06T308-WG	9.52	6.52	3.97	0.80	●	●	●	●	●	●	●	●	0.60-3.50	0.10-0.50
WNMG 060404-WG	9.52	6.52	4.76	0.40		●	●	●	●	●	●	●	0.40-3.00	0.10-0.35
WNMG 060408-WG	9.52	6.52	4.76	0.80		●	●	●	●	●	●	●	0.60-3.50	0.10-0.50

For tools, see page: PWLNR/L (A104).

WNMG-SF

Double-Sided Trigon Inserts for Super Finishing

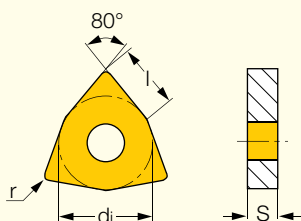
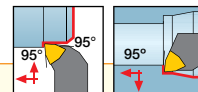


Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data	
	l	di	S	r	IC530N	IC807	IC907	IC520N	ap (mm)	f (mm/rev)
WNMG 06T302-SF	6.52	9.52	3.97	0.20	●	●	●	●	0.30-1.50	0.02-0.15
WNMG 06T304-SF	6.52	9.52	3.97	0.40	●	●	●	●	0.30-1.50	0.05-0.15

For tools, see page: PWLNR/L (A104).

WNMG-NF

Double-Sided Trigon Inserts for Semi-Finishing and Finishing Applications

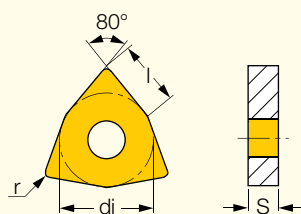
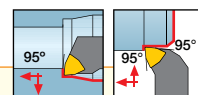


Designation	Dimensions				Tough ↔ Hard												Recommended Machining Data	
	l	di	S	r	IC8350	IC8250	IC908	IC30N	IC530N	IC10	IC8150	IC807	IC907	IC20	IC20N	IC520N	ap (mm)	f (mm/rev)
WNMG 06T301-NF	6.52	9.52	3.97	0.10			●										0.20-1.00	0.05-0.15
WNMG 06T302-NF	6.52	9.52	3.97	0.20	●	●		●	●	●	●	●	●		●		0.30-1.50	0.08-0.17
WNMG 06T304-NF	6.52	9.52	3.97	0.40	●	●		●	●	●	●	●	●	●	●	●	0.40-2.50	0.07-0.25
WNMG 06T308-NF	6.52	9.52	3.97	0.80	●	●				●	●			●	●		0.60-3.00	0.08-0.25
WNMG 060402-NF	6.52	9.52	4.76	0.20								●	●				0.30-3.00	0.05-0.20
WNMG 060404-NF	6.52	9.52	4.76	0.40		●						●	●				0.60-3.00	0.08-0.25
WNMG 060408-NF	6.52	9.52	4.76	0.80							●						0.80-3.00	0.08-0.25

For tools, see page: PWNLR/L (A104).

WNMG-VL

Double-Sided Trigon Inserts with a Chipformer for High Temperature Alloys and Stainless Steel Valves

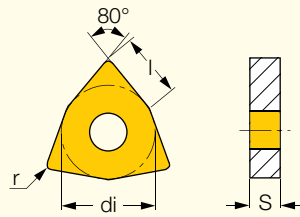
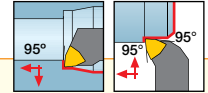


Designation	Dimensions				IC908	Recommended Machining Data	
	l	di	S	r		ap (mm)	f (mm/rev)
WNMG 06T308-VL	6.52	9.52	3.97	0.80	●	0.50-3.00	0.07-0.25

For tools, see page: PWNLR/L (A104).

WNMG-WF

Double-Sided Trigon Wiper Inserts for Finishing Operations at High Feeds

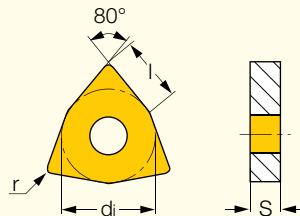
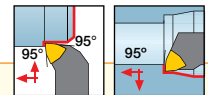


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	IC807	IC907	a_p (mm)	f (mm/rev)
WNMG 060402-WF	6.52	9.52	4.76	0.20		●	0.20-3.00	0.05-0.25
WNMG 060404-WF	6.52	9.52	4.76	0.40	●	●	0.50-3.00	0.05-0.30
WNMG 060408-WF	6.52	9.52	4.76	0.80		●	0.80-3.50	0.07-0.30

For tools, see pages: PWLNR/L (A104)

WNMG-PP

Double-Sided Trigon Inserts for Machining Very Ductile Materials at Medium Cutting Conditions

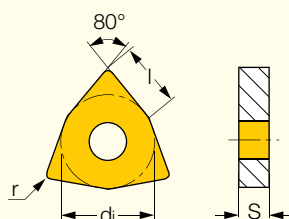
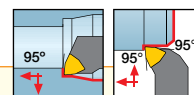


Designation	Dimensions				Tough ↔ Hard								Recommended Machining Data	
	l	di	S	r	IC3028	IC8350	IC8250	IC530N	IC10	IC8150	IC807	IC907	a_p (mm)	f (mm/rev)
WNMG 06T304-PP	6.52	9.52	3.97	0.40		●	●	●	●	●	●	●	1.00-3.00	0.14-0.30
WNMG 06T308-PP	6.52	9.52	3.97	0.80	●	●	●			●	●	●	1.00-3.00	0.14-0.30
WNMG 060404-PP	6.52	9.52	4.76	0.40		●	●				●	●	1.00-3.00	0.14-0.30
WNMG 060408-PP	6.52	9.52	4.76	0.80		●					●	●	1.00-3.00	0.14-0.30

For tools, see pages: PWLNR/L (A104)

WNMG-TF

Double-Sided Trigon Inserts for Machining a Wide Range of Materials at Medium Cutting Conditions

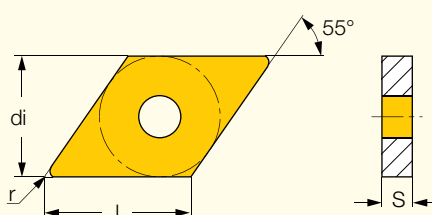


Designation	Dimensions				Tough $\longleftrightarrow$ Hard										Recommended Machining Data	
	l	di	S	r	IC3028	IC6025	IC8250	IC6015	IC8150	IC806	IC807	IC907	IC20	IC20N	a_p (mm)	f (mm/rev)
WNMG 06T304-TF	6.52	9.52	3.97	0.40	●	●	●	●	●	●	●	●	●	●	1.00-3.00	0.12-0.35
WNMG 06T308-TF	6.52	9.52	3.97	0.80	●	●	●	●	●	●	●	●	●	●	1.00-3.00	0.12-0.35
WNMG 06T312-TF	6.52	9.52	3.97	1.20							●	●			1.00-4.00	0.15-0.40
WNMG 060404-TF	6.52	9.52	4.76	0.40			●				●	●			1.00-3.00	0.12-0.35
WNMG 060408-TF	6.52	9.52	4.76	0.80	●		●		●		●	●			1.00-3.00	0.12-0.35
WNMG 060412-TF	6.52	9.52	4.76	1.20							●	●			1.00-4.00	0.15-0.35

For tools, see page: PWLNR/L (A104).

DNGP-F2M

Double-Sided 55° Rhombic Inserts for Semi-Finishing and Finishing Applications on Stainless Steel

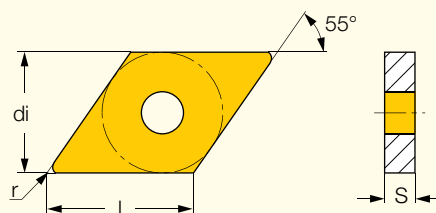


Designation	Dimensions				IC908	Recommended Machining Data	
	l	di	S	r		a_p (mm)	f (mm/rev)
DNGP 070302R/L-F2M	7.70	6.35	3.18	0.20	●	0.30-2.00	0.08-0.30
DNGP 070304R/L-F2M	7.70	6.35	3.18	0.40	●	0.30-2.00	0.08-0.30
DNGP 070308R/L-F2M	7.70	6.35	3.18	0.80	●	0.30-2.00	0.08-0.30

For tools, see pages: A/E-SDXNR/L-07 (B35) • A/E-SDZNR/L-07 (B36) .

DNGP-F2P

Double-Sided 55° Rhombic Inserts for Semi-Finishing and Finishing Applications on Alloyed Steel

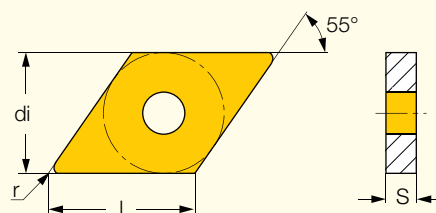
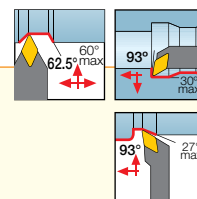


Designation	Dimensions				IC530N	Recommended Machining Data	
	l	di	S	r		a_p (mm)	f (mm/rev)
DNGP 070302R/L-F2P	7.70	6.35	3.18	0.20	●	0.30-2.00	0.08-0.30
DNGP 070304R/L-F2P	7.70	6.35	3.18	0.40	●	0.30-2.00	0.08-0.30
DNGP 070308R/L-F2P	7.70	6.35	3.18	0.80	●	0.30-2.00	0.08-0.30

For tools, see pages: A/E-SDXNR/L-07 (B35) • A/E-SDZNR/L-07 (B36) .

DNMG-F3P

Double-Sided 55° Rhombic Inserts for Semi-Finishing and Finishing Applications on Steel

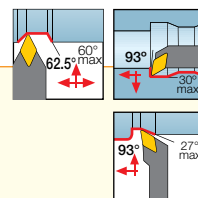
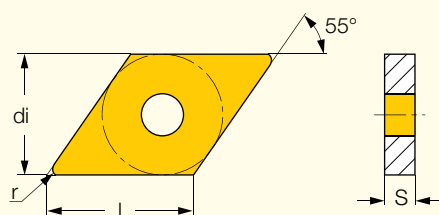


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	IC8250	IC8150	a_p (mm)	f (mm/rev)
DNMG 110404-F3P	11.63	9.52	4.76	0.40	●	●	0.80-3.00	0.07-0.25
DNMG 110408-F3P	11.63	9.52	4.76	0.80	●	●	1.00-3.50	0.08-0.25
DNMG 110412-F3P	11.63	9.52	4.76	1.20	●	●	1.40-4.00	0.10-0.25

For tools, see pages: • DDJNR/L (A105) • PDJNR/L (A105).

DNMG-M3P

Double-Sided 55° Rhombic Inserts for Medium Machining Conditions on Steel

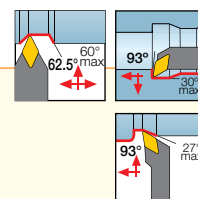
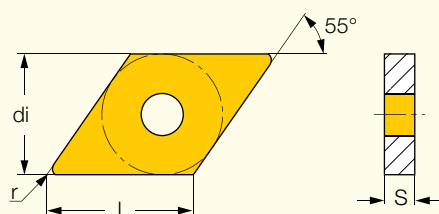


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	IC8250	IC8150	ap (mm)	f (mm/rev)
DNMG 110408-M3P	11.63	9.52	4.76	0.80	●	●	0.50-5.00	0.15-0.50
DNMG 110412-M3P	11.63	9.52	4.76	1.20	●	●	0.80-5.00	0.18-0.60

For tools, see pages: • DDJNR/L (A105) • PDJNR/L (A105).

DNMG-F3M

Double-Sided 55° Rhombic Inserts, for Finish Turning of Stainless and Low Carbon Steel

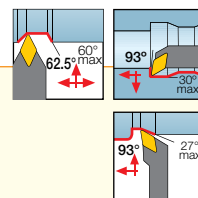
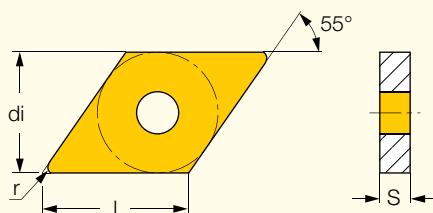


Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data	
	l	di	S	r	IC6025	IC6015	IC806	IC807	ap (mm)	f (mm/rev)
DNMG 110404-F3M	11.63	9.52	4.76	0.40	●	●	●	●	0.10-1.50	0.05-0.32
DNMG 110408-F3M	11.63	9.52	4.76	0.80	●	●	●	●	0.10-1.50	0.10-0.42
DNMG 110412-F3M	11.63	9.52	4.76	1.20	●	●	●	●	0.15-2.00	0.15-0.52

For tools, see pages: • DDJNR/L (A105) • PDJNR/L (A105).

DNMG-M3M

Double-Sided 55° Rhombic Inserts for Machining Stainless and Low Carbon Steel

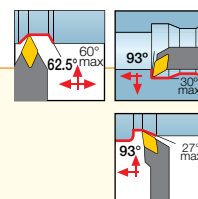
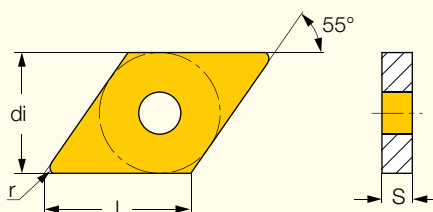


Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data	
	l	di	S	r	IC6025	IC6015	IC806	ap (mm)	f (mm/rev)
DNMG 110404-M3M	11.63	9.52	4.76	0.40	●	●	●	0.50-3.50	0.12-0.40
DNMG 110408-M3M	11.63	9.52	4.76	0.80	●	●	●	0.50-4.00	0.15-0.50
DNMG 110412-M3M	11.63	9.52	4.76	1.20	●	●	●	0.50-4.00	0.20-0.60

For tools, see pages: • DDJNR/L (A105) • PDJNR/L (A105).

DNMG-GN

Double-Sided 55° Rhombic Inserts for General Applications

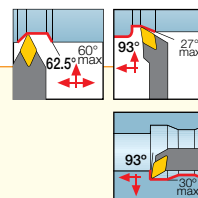
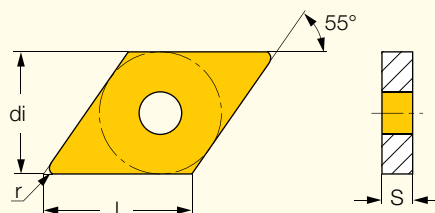


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	IC8250	IC8150	ap (mm)	f (mm/rev)
DNMG 110408-GN	11.63	9.52	4.76	0.80	●	●	1.00-4.00	0.18-0.38
DNMG 110412-GN	11.63	9.52	4.76	1.20	●	●	1.50-4.50	0.18-0.38

For tools, see pages: • DDJNR/L (A105) • PDJNR/L (A105).

DNMG-SF

Double-Sided 55° Rhombic Inserts for Super-Finishing. Controls Chip Flow at Very Low Feed and Depth of Cut

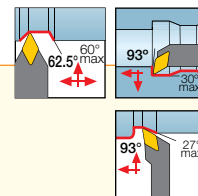
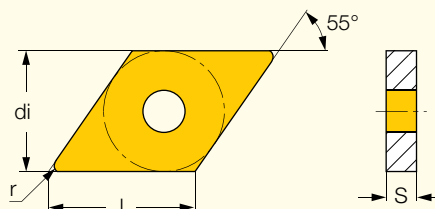


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	IC530N	IC520N	ap (mm)	f (mm/rev)
DNMG 110404-SF	11.63	9.52	4.76	0.40	●	●	0.50-3.00	0.05-0.25

For tools, see pages: • DDJNR/L (A105) • PDJNR/L (A105) .

DNMG-NF

Double-Sided 55° Rhombic Inserts for Semi-Finishing and Finishing Applications

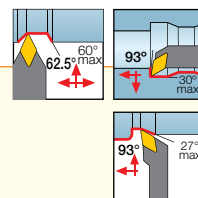
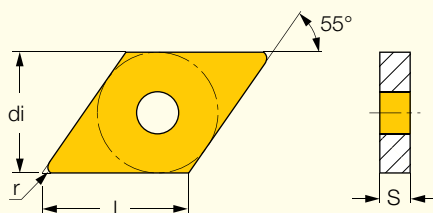


Designation	Dimensions				Tough ↔ Hard											Recommended Machining Data		
	l	di	S	r	IC3028	IC8350	IC6025	IC8250	IC530N	IC6015	IC8150	IC807	IC907	IC20N	IC520N	IC5010	ap (mm)	f (mm/rev)
DNMG 110402-NF	11.63	9.52	4.76	0.20													0.40-2.50	0.07-0.18
DNMG 110404-NF	11.63	9.52	4.76	0.40													0.80-3.00	0.07-0.25
DNMG 110408-NF	11.63	9.52	4.76	0.80													1.00-3.50	0.08-0.25

For tools, see pages: • DDJNR/L (A105) • PDJNR/L (A105).

DNMG-PF

Double-Sided 55° Rhombic Inserts for Finishing Applications on Alloyed and Stainless Steel

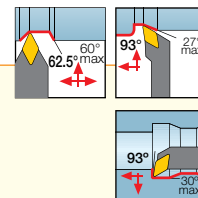
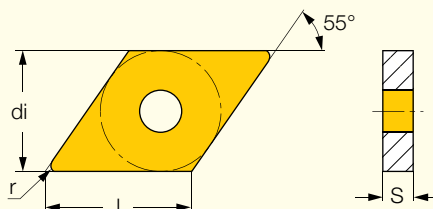


Designation	Dimensions				IC8150	Recommended Machining Data	
	L	di	S	r		a_p (mm)	f (mm/rev)
DNMG 110408-PF	11.63	9.52	4.76	0.80	●	0.30-3.00	0.07-0.30

For tools, see pages: • DDJNR/L (A105) • PDJNR/L (A105).

DNMG-PP

55° Double-Sided Rhombic Inserts for Machining Very Ductile Materials at Medium Cutting Conditions

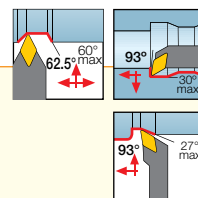
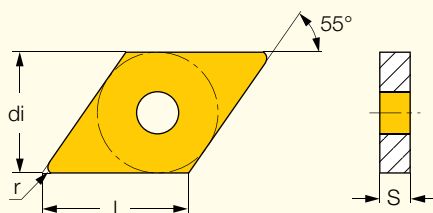


Designation	Dimensions				Tough ↔ Hard					Recommended Machining Data	
	L	di	S	r	IC3028	IC8250	IC10	IC8150	IC20	a_p (mm)	f (mm/rev)
DNMG 110404-PP	11.63	9.52	4.76	0.40	●	●	●	●	●	0.40-3.00	0.12-0.30
DNMG 110408-PP	11.63	9.52	4.76	0.80	●	●	●	●	●	1.00-3.50	0.12-0.30

For tools, see pages: • DDJNR/L (A105) • PDJNR/L (A105).

DNMG-VL

Double-Sided 55° Rhombic Inserts with a Chipformer for High Temperature Alloys and Stainless Steel Valves

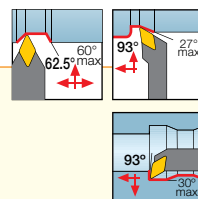
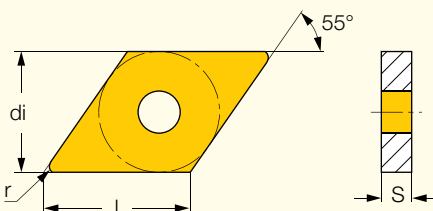


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	IC908	IC806	ap (mm)	f (mm/rev)
DNMG 110404-VL	11.63	9.52	4.76	0.40	●	●	0.50-3.50	0.10-0.25
DNMG 110404-VL	11.63	9.52	4.76	0.40	●	●	0.50-3.50	0.10-0.25
DNMG 110408-VL	11.63	9.52	4.76	0.80	●	●	0.50-3.50	0.10-0.25

For tools, see pages: • DDJNR/L (A105) • PDJNR/L (A105).

DNMG-TF

Double-Sided 55° Rhombic Inserts for Machining a Wide Range of Materials at Medium Cutting Conditions

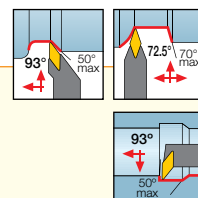
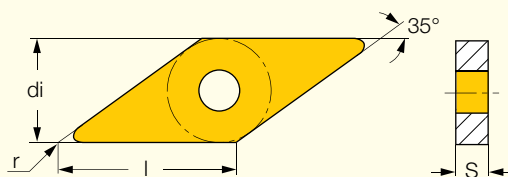


Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data	
	l	di	S	r	IC8250	IC530N	IC20	ap (mm)	f (mm/rev)
DNMG 110404-TF	11.63	9.52	4.76	0.40	●	●	●	1.00-3.00	0.12-0.30
DNMG 110412-TF	11.63	9.52	4.76	1.20	●	●	●	1.50-4.00	0.15-0.35

For tools, see pages: • DDJNR/L (A105) • PDJNR/L (A105).

VNMG-SF

Double-Sided 35° Rhombic Inserts for Super-Finishing

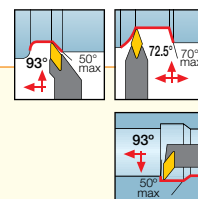
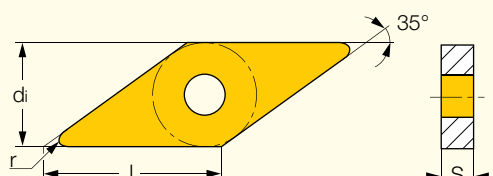


Designation	Dimensions				IC908	Recommended Machining Data	
	l	di	S	r		a_p (mm)	f (mm/rev)
VNMG 12T302-SF	12.40	7.15	3.97	0.20	●	0.30-2.00	0.03-0.20
VNMG 12T304-SF	12.40	7.15	3.97	0.40	●	0.50-3.00	0.05-0.25

For tools, see pages: • SVJNR/L-F (A106) • SVVNN-F (A107).

VNMG/VNMG-NF

Double-Sided 35° Rhombic Inserts for Semi-Finishing and Finishing Applications

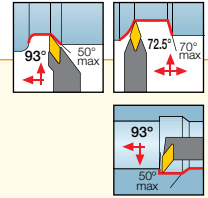
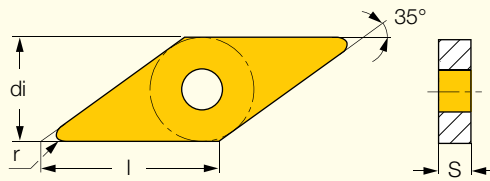


Designation	Dimensions				Tough ↔ Hard														Recommended Machining Data		
	l	di	S	r	IC830	IC3028	IC8350	IC6025	IC8250	IC30N	IC10	IC6015	IC8150	IC807	IC907	IC20N	IC428	IC5010	IC5005	ap (mm)	f (mm/rev)
VNMG 12T302-NF	12.40	7.15	3.97	0.20	●	●		●	●		●	●		●	●	●				0.40-2.50	0.07-0.18
VNMG 12T304-NF	12.40	7.15	3.97	0.40	●	●	●	●	●		●	●	●	●	●	●	●			0.70-2.00	0.07-0.24
VNMG 12T308-NF	12.40	7.15	3.97	0.80	●	●	●	●	●		●	●	●	●	●	●	●			1.00-3.00	0.08-0.24
VNGG 12T302-NF	12.40	7.15	3.90	0.20		●				●			●	●	●		●	●		0.40-2.50	0.05-0.17
VNGG 12T304-NF	12.40	7.15	3.90	0.40		●									●					0.50-3.00	0.05-0.25

For tools, see pages: • SVJNR/L-F (A106) • SVVNN-F (A107).

VNMM-PP

Single-Sided, 35° Rhombic Inserts for Machining Very Ductile Materials at Medium Cutting Conditions

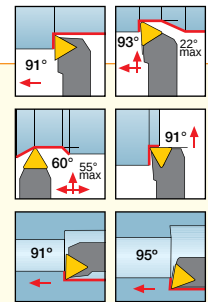
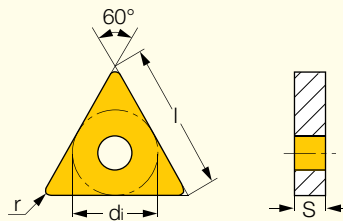


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	IC8250	IC20	ap (mm)	f (mm/rev)
VNMM 12T304-PP	12.40	7.15	3.97	0.40	●	●	0.80-2.50	0.12-0.20
VNMM 12T308-PP	12.40	7.15	3.97	0.80	●	●	1.00-2.50	0.12-0.25

For tools, see pages: • SVJNR/L-F (A106) • SVVNN-F (A107).

TNMG-F3P

Double-Sided Triangular Inserts for Semi-Finishing and Finishing Applications

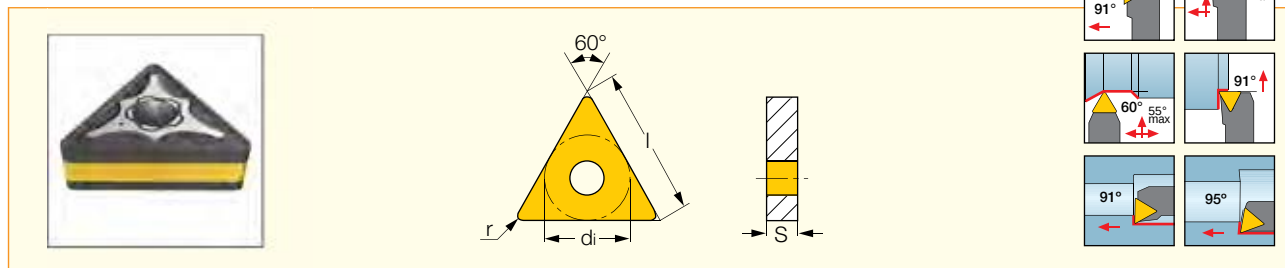


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	IC8250	IC8150	ap (mm)	f (mm/rev)
TNMG 160404-F3P	16.50	9.52	4.76	0.40	●	●	0.50-2.00	0.07-0.25
TNMG 160408-F3P	16.50	9.52	4.76	0.80	●	●	0.90-3.00	0.08-0.25
TNMG 160412-F3P	16.50	9.52	4.76	1.20	●	●	1.30-4.00	0.10-0.25

For tools, see page: MTJNR/L-W (A106).

TNMG-M3P

Double-Sided Triangular Inserts for Medium Machining Conditions on Steel

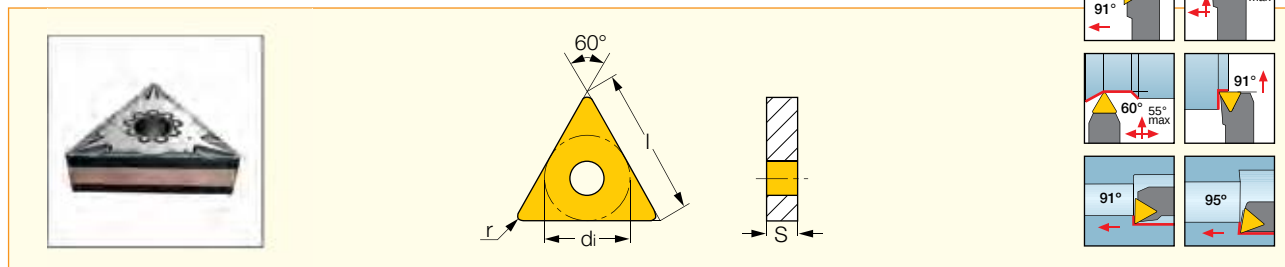


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	IC8250	IC8150	ap (mm)	f (mm/rev)
TNMG 160404-M3P	16.50	9.52	4.76	0.40	●	●	0.40-5.00	0.10-0.30
TNMG 160408-M3P	16.50	9.52	4.76	0.80	●	●	0.50-5.00	0.15-0.50
TNMG 160412-M3P	16.50	9.52	4.76	1.20	●	●	0.80-5.00	0.18-0.60

For tools, see page: MTJNR/L-W (A106).

TNMG-F3M

Double-Sided Triangular Inserts, for Finish Turning of Stainless and Low Carbon Steel

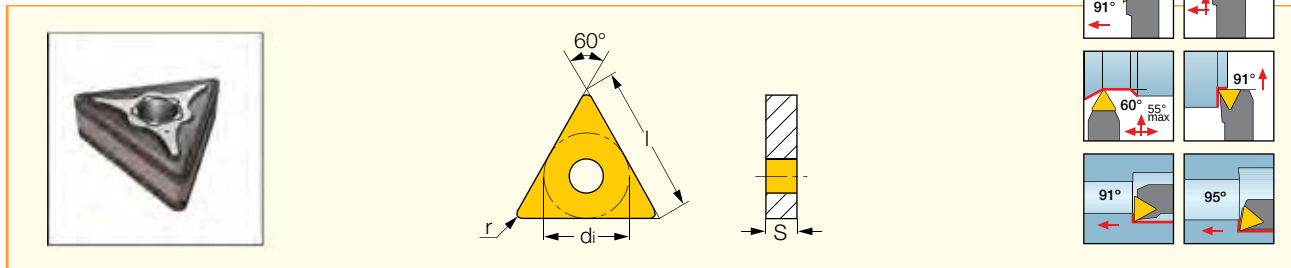


Designation	Dimensions				Tough ↔ Hard						Recommended Machining Data	
	l	di	S	r	IC6025	IC6015	IC806	IC807	IC20N	IC520N	ap (mm)	f (mm/rev)
TNMG 160404-F3M	16.50	9.52	4.76	0.40	●	●	●	●	●	●	0.10-1.50	0.05-0.32
TNMG 160408-F3M	16.50	9.52	4.76	0.80	●	●	●	●	●	●	0.10-1.50	0.10-0.42
TNMG 160412-F3M	16.50	9.52	4.76	1.20	●	●	●	●	●	●	0.15-2.00	0.15-0.52

For tools, see page: MTJNR/L-W (A106).

TNMG-M3M

Triangular Double-Sided Inserts, for Machining Stainless and Low Carbon Steel

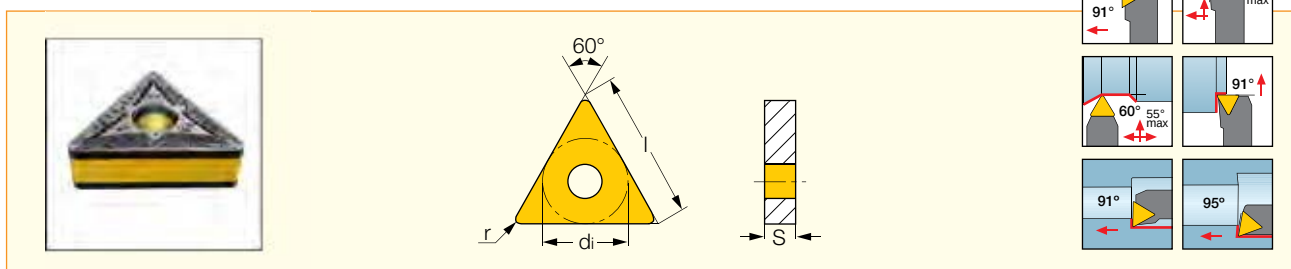


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	IC6025	IC6015	ap (mm)	f (mm/rev)
TNMG 160408-M3M	16.50	9.52	4.76	0.80	●	●	0.50-4.00	0.15-0.50
TNMG 160412-M3M	16.50	9.52	4.76	1.20	●	●	0.50-4.00	0.20-0.60

For tools, see page: MTJNR/L-W (A106).

TNMG-GN

Double-Sided Triangular Inserts for General Applications

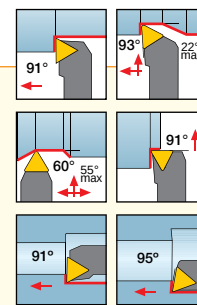
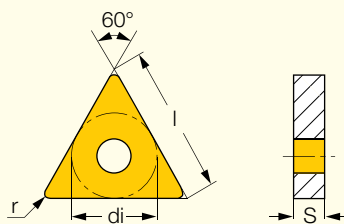


Designation	Dimensions				Tough ↔ Hard										Recommended Machining Data		
															a _p (mm)	f (mm/rev)	
	IC830	IC3028	IC8350	IC8250	IC8150	IC807	IC907	IC20	IC428	IC5010	IC5005						
TNMG 160404-GN	16.50	9.52	4.76	0.40												1.00-3.00	0.12-0.30
TNMG 160408-GN	16.50	9.52	4.76	0.80	●	●	●	●	●	●	●	●	●	●	●	1.00-3.50	0.18-0.39
TNMG 160412-GN	16.50	9.52	4.76	1.20				●	●					●	●	1.50-4.00	0.18-0.43

For tools, see page: MTJNR/L-W (A106).

TNMG-SF

Triangular Double-Sided Inserts for Super-Finishing. Controls Chip Flow at Very Low Feed and Depth of Cut

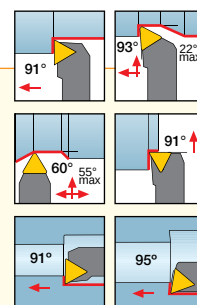
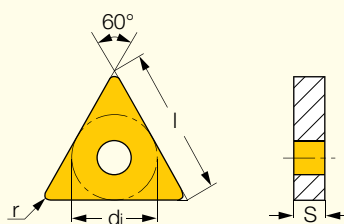


Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data	
	l	di	S	r	IC8250	IC530N	IC520N	ap (mm)	f (mm/rev)
TNMG 160404-SF	16.50	9.52	4.76	0.40	●	●	●	0.40-2.00	0.04-0.25
TNMG 160408-SF	16.50	9.52	4.76	0.80	●	●	●	1.00-3.00	0.06-0.30

For tools, see page: MTJNR/L-W (A106).

TNMG-PF

Triangular Double-Sided Inserts for Finishing Applications on Alloyed and Stainless Steel

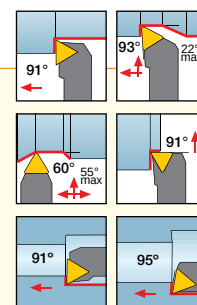
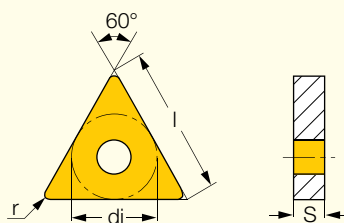


Designation	Dimensions				IC8150	Recommended Machining Data	
	l	di	S	r		ap (mm)	f (mm/rev)
TNMG 160408-PF	16.50	9.52	4.76	0.80	●	0.80-3.00	0.08-0.30

For tools, see page: MTJNR/L-W (A106).

TNMG-VL

Double-Sided Triangular Inserts with a Chipformer for High Temperature Alloys and Stainless Steel Valves

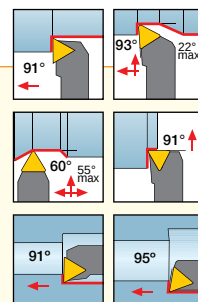
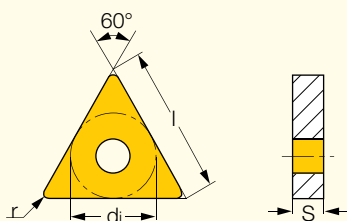


Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data	
	l	di	S	r	IC908	IC806	IC807	IC907	ap (mm)	f (mm/rev)
TNMG 160404-VL	16.50	9.52	4.76	0.40	●	●	●	●	0.80-3.50	0.10-0.25
TNMG 160408-VL	16.50	9.52	4.76	0.80	●	●	●	●	0.80-3.50	0.10-0.25

For tools, see page: MTJNR/L-W (A106).

TNMG-TF

Double-Sided Triangular Inserts for Machining a Wide Range of Materials at Medium Cutting Conditions

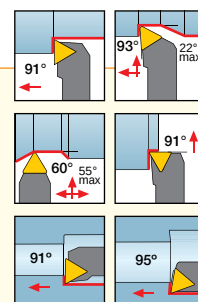
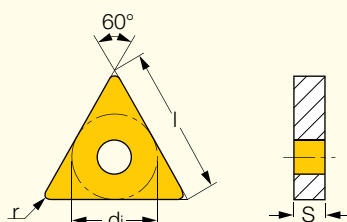


Designation	Dimensions				Tough ↔ Hard										Recommended Machining Data			
					IC830	IC3028	IC6025	IC8250	IC908	IC6015	IC8150	IC806	IC807	IC907	IC20	IC20N	a _p (mm)	f (mm/rev)
TNMG 160304-TF	16.50	9.52	3.18	0.40				●									1.00-3.00	0.12-0.30
TNMG 160308-TF	16.50	9.52	3.18	0.80										●			1.00-3.00	0.12-0.30
TNMG 160404-TF	16.50	9.52	4.76	0.40	●	●	●	●		●	●	●	●	●	●		1.00-3.00	0.12-0.30
TNMG 160408-TF	16.50	9.52	4.76	0.80		●	●	●	●	●	●	●	●	●	●	●	1.00-3.00	0.12-0.30
TNMG 160412-TF	16.50	9.52	4.76	1.20				●			●		●	●			1.00-5.00	0.12-0.40

For tools, see page: MTJNR/L-W (A106).

TNMG/TNGG-PP

Double-Sided Triangular Inserts for Machining Very Ductile Materials at Medium Cutting Conditions

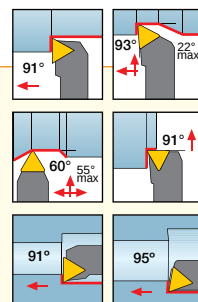
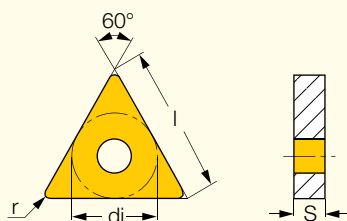


Designation	Dimensions				Tough ↔ Hard							Recommended Machining Data	
	l	di	S	r	IC3028	IC8350	IC8250	IC8150	IC907	IC20		ap (mm)	f (mm/rev)
TNGG 160402-PP	16.50	9.52	4.76	0.20					•			0.50-1.50	0.05-0.25
TNMG 160404-PP	16.50	9.52	4.76	0.40		•	•			•		0.50-3.00	0.13-0.30
TNMG 160408-PP	16.50	9.52	4.76	0.80	•		•	•		•		1.00-3.00	0.12-0.30

For tools, see page: MTJNR/L-W (A106).

TNMG-NF

Double-Sided Triangular Inserts for Semi-Finishing and Finishing Applications



Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	IC8250	IC8150	a_p (mm)	f (mm/rev)
TNMG 160408-NF	16.50	9.52	4.76	0.80	●	●	1.00-3.00	0.08-0.25

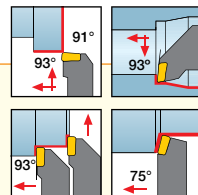
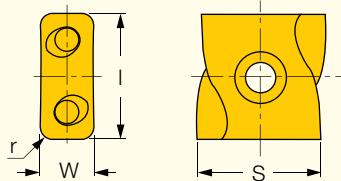
For tools, see page: MTJNR/L-W (A106).

HELITURN

TANGENTIAL LINE

LNMX-HT

Tangential Insert with 4 Cutting Edges and a Positive Rake Angle for High Metal Removal Rates

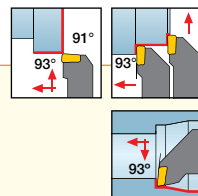
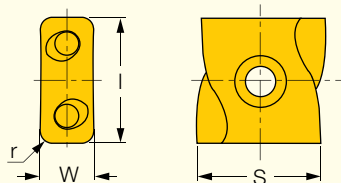


Designation	Dimensions				Tough ↔ Hard									Recommended Machining Data	
	W	l	S	r	IC3028	IC8350	IC8250	IC908	IC8150	IC807	IC907	IC428	IC5005	a _p (mm)	f (mm/rev)
					●	●	●	●	●	●	●	●	●		
LNMX 110408R/L-HT	4.75	11.00	11.40	0.80	●	●	●	●	●	●	●	●	●	0.50-5.00	0.15-0.60
LNMX 110412R/L-HT	4.75	11.00	11.40	1.20	●	●	●	●	●	●	●	●	●	0.80-5.00	0.20-0.80

For tools, see page: SLANR/L-TANG (A107).

LNMX-HM

Tangential Insert with a Positive Rake Angle for High Metal Removal on Soft and Ductile Materials

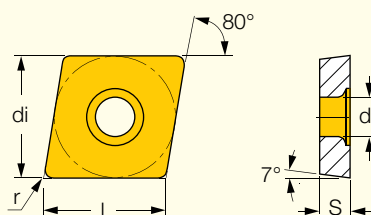
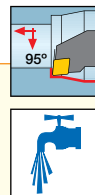


Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data	
	l	W	S	r	IC6025	IC8250	IC6015	IC807	a_p (mm)	f (mm/rev)
LNMX 110408R/L-HM	11.00	4.75	11.40	0.80	●	●	●	●	1.00-5.00	0.10-0.40
LNMX 110412R/L-HM	11.00	4.75	11.40	1.20	●	●	●	●	1.00-5.00	0.10-0.40

For tools, see page: SLANR/L-TANG (A107).

CCGT-F1P

80° Rhombic Positive Flank Inserts, for Very Low Finish Turning Conditions of Steel

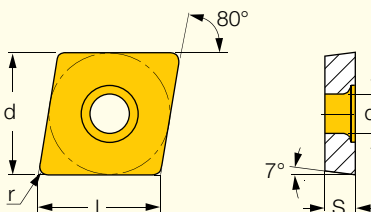


Designation	Dimensions					IC908	Recommended Machining Data	
	l	di	S	r	d1		ap (mm)	f (mm/rev)
CCGT 03X101-F1P	3.60	3.57	1.39	0.10	1.90	●	0.10-0.50	0.01-0.05
CCGT 03X102-F1P	3.60	3.57	1.39	0.20	1.90	●	0.10-0.50	0.02-0.10
CCGT 03X104-F1P	3.60	3.57	1.39	0.40	1.90	●	0.10-0.50	0.05-0.15
CCGT 04T101-F1P	4.40	4.37	1.79	0.10	2.30	●	0.10-0.50	0.01-0.05
CCGT 04T102-F1P	4.40	4.37	1.79	0.20	2.30	●	0.10-0.50	0.02-0.10
CCGT 04T104-F1P	4.40	4.37	1.79	0.40	2.30	●	0.10-0.50	0.05-0.15

For tools, see pages: A/E/S-SCLCR/L (B34).

CCMT-F3P

80° Rhombic Positive Flank Inserts, for Semi-Finishing and Finishing Turning of Steel

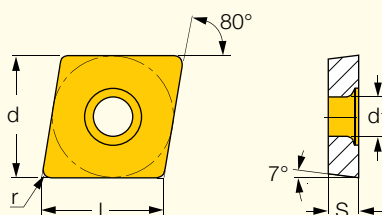


Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	d1	IC8250	IC8150	ap (mm)	f (mm/rev)
CCMT 060202-F3P	6.30	6.35	2.38	0.20	2.80	●	●	0.06-1.70	0.03-0.12
CCMT 060204-F3P	6.30	6.35	2.38	0.40	2.80	●	●	0.10-1.70	0.05-0.18
CCMT 09T302-F3P	9.70	9.52	3.97	0.20	4.40	●	●	0.08-2.00	0.04-0.16
CCMT 09T304-F3P	9.70	9.52	3.97	0.40	4.40	●	●	0.11-2.00	0.06-0.25
CCMT 09T308-F3P	9.70	9.52	3.97	0.80	4.40	●	●	0.15-2.00	0.08-0.32

For tools, see pages: A/E/S-SCLCR/L (B34) • PCLCR/L-S (A93) • PCLCR/L-S-JHP (A93) • SCACR/L-S (A92) • SCLCR/L (A92).

CCMT-M3M

80° Rhombic Positive Flank Inserts, for Machining Stainless and Low Carbon Steel

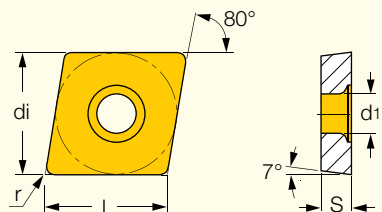
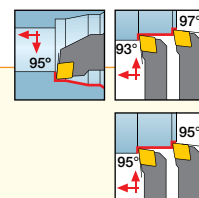


Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	l	d _i	S	r	d ₁	IC6025	IC6015	a _p (mm)	f (mm/rev)
CCMT 060204-M3M	6.30	6.35	2.38	0.40	2.80	●	●	0.40-2.50	0.07-0.23
CCMT 060208-M3M	6.30	6.35	2.38	0.80	2.80	●	●	0.80-2.50	0.10-0.25
CCMT 09T304-M3M	9.70	9.52	3.97	0.40	4.40	●	●	0.40-3.00	0.07-0.25
CCMT 09T308-M3M	9.70	9.52	3.97	0.80	4.40	●	●	0.80-3.00	0.10-0.30

For tools, see pages: A/E/S-SCLCR/L (B34) • PCLCR/L-S (A93) • PCLCR/L-S-JHP (A93) • SCACR/L-S (A92) • SCLCR/L (A92).

CCMT/CCGT-SM

Single-Sided Turning Inserts for Semi-Finishing and Finishing on Soft Materials and Exotic Alloys

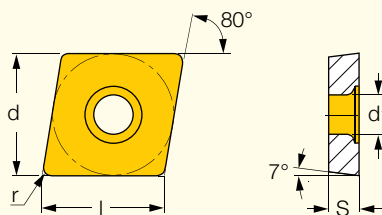


Designation	Dimensions					Tough ↔ Hard										Recommended Machining Data				
	l	d _i	S	r	d ₁	IC830	IC3028	IC6025	IC8250	IC6015	IC8150	IC806	IC807	IC907	IC20	IC428	IC5010	IC5005	a _p (mm)	f (mm/rev)
CCGT 060201-SM	6.45	6.35	2.38	0.10	2.80									●					0.25-2.00	0.05-0.20
CCGT 060202-SM	6.45	6.35	2.38	0.20	2.80									●					0.25-2.00	0.05-0.25
CCMT 060202-SM	6.45	6.35	2.38	0.20	2.80				●		●			●					0.25-2.00	0.05-0.25
CCMT 060204-SM	6.45	6.35	2.38	0.40	2.80			●	●	●	●	●	●	●					0.50-2.50	0.07-0.25
CCMT 060208-SM	6.45	6.35	2.38	0.80	2.80			●		●			●	●					0.50-2.50	0.07-0.25
CCMT 09T302-SM	9.70	9.52	3.97	0.20	4.40			●	●	●	●	●	●	●					0.50-2.50	0.06-0.25
CCMT 09T304-SM	9.70	9.52	3.97	0.40	4.40	●	●	●	●	●	●	●	●	●	●	●	●	●	0.50-2.50	0.06-0.25
CCMT 09T308-SM	9.70	9.52	3.97	0.80	4.40			●	●	●	●	●	●	●			●	●	0.50-3.00	0.07-0.25

For tools, see pages: A/E/S-SCLCR/L (B34) • PCLCR/L-S (A93) • PCLCR/L-S-JHP (A93) • SCACR/L-S (A92) • SCLCR/L (A92).

CCMT-PF

80° Rhombic Positive Flank Inserts for Semi-Finishing and Finishing on Soft Materials and Exotic Alloys

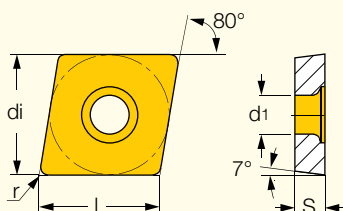
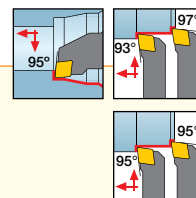


Designation	Dimensions					Tough ↔ Hard						Recommended Machining Data	
	l	di	S	r	d1	IC830	IC3028	IC6025	IC6015	IC807	IC907	ap (mm)	f (mm/rev)
CCMT 060202-PF	6.30	6.35	2.38	0.20	2.80	●	●	●	●	●	●	0.20-2.50	0.04-0.25
CCMT 060204-PF	6.30	6.35	2.38	0.40	2.80	●	●	●	●	●	●	0.40-2.50	0.04-0.30
CCMT 09T302-PF	9.70	9.52	3.97	0.20	4.40	●	●	●	●	●	●	0.50-3.00	0.05-0.30
CCMT 09T304-PF	9.70	9.52	3.97	0.40	4.40	●	●	●	●	●	●	0.50-3.50	0.05-0.35

For tools, see pages: A/E/S-SCLCR/L (B34) • PCLCR/L-S (A93) • PCLCR/L-S-JHP (A93) • SCACR/L-S (A92) • SCLCR/L (A92).

CCMT-14

80° Rhombic 7° Positive Flank Inserts for Semi-Finish and Finish Turning

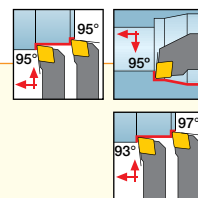
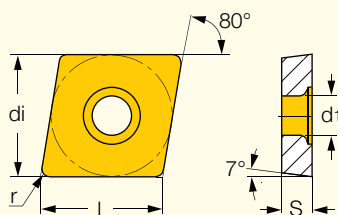


Designation	Dimensions					Tough ↔ Hard								Recommended Machining Data	
	l	di	S	r	d1	IC830	IC3028	IC8250	IC807	IC907	IC20	IC428	IC5005	ap (mm)	f (mm/rev)
CCMT 060204-14	6.30	6.35	2.38	0.40	2.80	●	●	●	●	●	●	●	●	0.50-2.50	0.14-0.25
CCMT 09T304-14	9.70	9.52	3.97	0.40	4.40	●	●	●	●	●	●	●	●	0.50-3.00	0.14-0.25
CCMT 09T308-14	9.70	9.52	3.97	0.80	4.40	●	●	●	●	●	●	●	●	0.80-3.00	0.14-0.30

For tools, see pages: A/E/S-SCLCR/L (B34) • PCLCR/L-S (A93) • PCLCR/L-S-JHP (A93) • SCACR/L-S (A92) • SCLCR/L (A92).

CCMT/CCGT

80° Rhombic 7° Positive Flank Inserts for Semi-Finish and Finish Turning



Designation	Dimensions					Tough $\longleftrightarrow$ Hard				Recommended Machining Data	
	l	di	S	r	d1	IC30N	IC20	IC20N	IC520N	ap (mm)	f (mm/rev)
CCGT 060202	6.30	6.35	2.38	0.20	2.80	●				0.50-2.00	0.10-0.20
CCGT 060202L ⁽¹⁾	6.30	6.35	2.38	0.20	2.80	●	●			0.50-2.00	0.10-0.20
CCGT 060204	6.30	6.35	2.38	0.40	2.80	●				0.50-2.00	0.10-0.20
CCGT 060204L ⁽¹⁾	6.30	6.35	2.38	0.40	2.80	●				0.50-2.00	0.10-0.20
CCMT 060202	6.30	6.35	2.38	0.20	2.80			●		0.50-2.00	0.10-0.20
CCMT 060204	6.30	6.35	2.38	0.40	2.80	●		●	●	0.50-2.00	0.12-0.22
CCMT 09T302	9.70	9.52	3.97	0.20	4.40			●	●	0.50-2.50	0.12-0.25
CCMT 09T304	9.70	9.52	3.97	0.40	4.40			●	●	0.50-2.50	0.12-0.25
CCMT 09T308	9.70	9.52	3.97	0.80	4.40			●	●	0.80-3.00	0.14-0.25

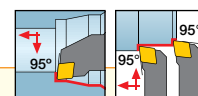
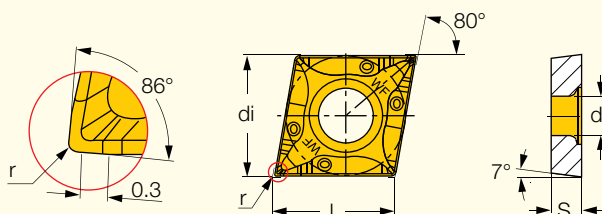
• Use left-hand inserts for left-hand external tools and for right-hand internal tools

⁽¹⁾ Left-hand insert

For tools, see pages: A/E/S-SCLCR/L (B34) • PCLCR/L-S (A93) • PCLCR/L-S-JHP (A93) • SCACR/L-S (A92) • SCLCR/L (A92).

CCET-WF

80° Rhombic Insert with a 7° Positive Flank and a Wiper Near the Corner for High Feed Finishing

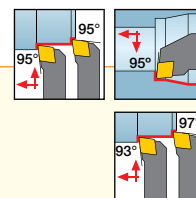
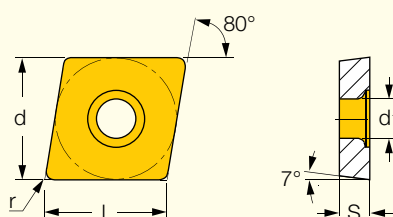


Designation	Dimensions					IC907	Recommended Machining Data	
	l	di	S	r	d1		ap (mm)	f (mm/rev)
CCET 0602005-WF	6.30	6.35	2.38	0.05	2.80	●	0.05-2.00	0.01-0.20
CCET 09T3005-WF	9.50	9.52	3.97	0.05	4.40	●	0.05-2.00	0.01-0.20

For tools, see pages: A/E/S-SCLCR/L (B34) • PCLCR/L-S (A93) • PCLCR/L-S-JHP (A1) • SCACR/L-S (A92) • SCLCR/L (A92).

CCMT-WG

80° Rhombic Insert with a 7° Positive Flank and a Wiper Near the Corner for High Feed Finishing

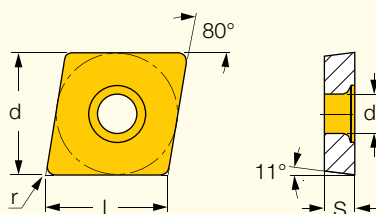


Designation	Dimensions					Tough ↔ Hard			Recommended Machining Data	
	l	d _i	S	r	d ₁	IC8250	IC807	IC907	a _p (mm)	f (mm/rev)
CCMT 060204-WG	6.30	6.35	2.38	0.40	2.80		●	●	0.40-2.00	0.10-0.35
CCMT 09T304-WG	9.70	9.52	3.97	0.40	4.40	●			0.40-2.00	0.14-0.30
CCMT 09T308-WG	9.70	9.52	3.97	0.80	4.40	●			0.50-2.50	0.20-0.38

For tools, see pages: A/E/S-SCLCR/L (B34) • PCLCR/L-S (A93) • PCLCR/L-S-JHP (A93) • SCACR/L-S (A92) • SCLCR/L (A92).

CPGT-SM

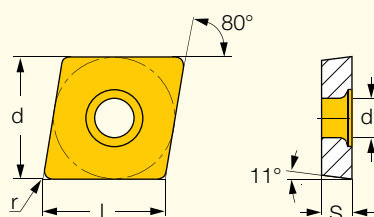
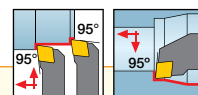
80° Rhombic 11° Positive Flank Inserts for Semi-Finish and Finish Turning on Soft Materials and Exotic Alloys



Designation	Dimensions					IC907	Recommended Machining Data	
	l	d _i	S	r	d ₁		a _p (mm)	f (mm/rev)
CPGT 060201-SM	6.45	6.35	2.38	0.10	2.80	●	0.25-2.00	0.05-0.20
CPGT 060202-SM	6.45	6.35	2.38	0.20	2.80	●	0.25-2.00	0.05-0.30
CPGT 060204-SM	6.45	6.35	2.38	0.40	2.80	●	0.50-3.00	0.10-0.35
CPGT 09T301-SM	9.67	9.52	3.97	0.10	4.40	●	0.25-2.00	0.05-0.25
CPGT 09T302-SM	9.67	9.52	3.97	0.20	4.40	●	0.50-2.50	0.10-0.30
CPGT 09T304-SM	9.67	9.52	3.97	0.40	4.40	●	0.60-3.50	0.10-0.35

CPMT-PF

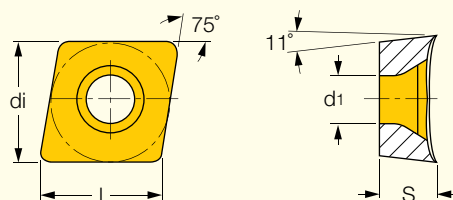
80° Rhombic Positive Flank Inserts, for Semi Finishing and Finishing on Soft Materials and Exotic Alloys



Designation	Dimensions					Tough ↔ Hard					Recommended Machining Data	
	l	di	S	r	d1	IC3028	IC6025	IC6015	IC807	IC907	ap (mm)	f (mm/rev)
CPMT 060204-PF	6.30	6.35	2.38	0.40	2.80	●	●	●	●	●	0.50-2.50	0.04-0.30
CPMT 060208-PF	6.30	6.35	2.38	0.80	2.80	●	●	●	●	●	0.50-2.50	0.08-0.30
CPMT 09T304-PF	9.50	9.52	3.97	0.40	4.40	●	●	●	●	●	0.50-3.00	0.05-0.35
CPMT 09T308-PF	9.50	9.52	3.97	0.80	4.40	●	●	●	●	●	0.50-3.50	0.10-0.35
CPMT 090308-PF	9.50	9.52	3.18	0.80	4.40	●	●	●	●	●	0.50-3.50	0.10-0.35

EPGT-F1P

75° Rhombic Positive Flank Inserts, for Very Low Finish Turning Conditions of Steel

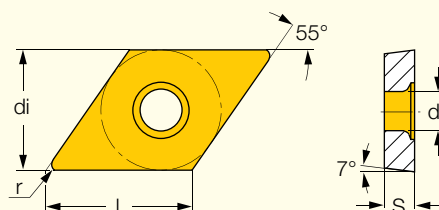
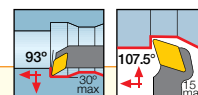


Designation	Dimensions					IC908	Recommended Machining Data	
	l	di	S	r	d1		ap (mm)	f (mm/rev)
EPGT 03X101-F1P	3.70	3.57	1.39	0.10	1.90	●	0.10-0.50	0.01-0.05
EPGT 03X102-F1P	3.70	3.57	1.39	0.20	1.90	●	0.10-0.50	0.02-0.10
EPGT 03X104-F1P	3.70	3.57	1.39	0.40	1.90	●	0.10-0.50	0.05-0.15

For tools, see pages: A/E-SEXPR/L-03 (B35).

DCMT-F3P

55° Rhombic Positive Flank Inserts, for Semi-Finishing and Finishing Turning of Steel

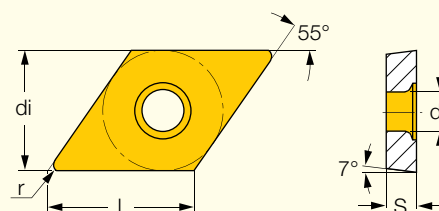
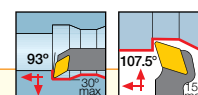


Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	d1	IC8250	IC8150	ap (mm)	f (mm/rev)
DCMT 070202-F3P	7.70	6.35	2.38	0.20	2.80	●	●	0.06-1.50	0.03-0.12
DCMT 070204-F3P	7.70	6.35	2.38	0.40	2.80	●	●	0.08-1.50	0.05-0.18
DCMT 11T302-F3P	11.60	9.52	3.97	0.20	4.40	●	●	0.08-2.00	0.04-0.16
DCMT 11T304-F3P	11.60	9.52	3.97	0.40	4.40	●	●	0.11-2.00	0.06-0.25
DCMT 11T308-F3P	11.60	9.52	3.97	0.80	4.40	●	●	0.15-2.00	0.08-0.32

For tools, see pages: • PDACR/L-JHP (A94) • PDACR/L-S (A94) • SDACR/L (A96) • SDJCR/L (A95) • SDNCN (A97).

DCMT-M3M

55° Rhombic Positive Flank Inserts, for Machining Stainless and Low Carbon Steel

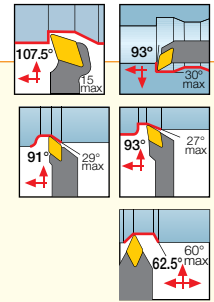
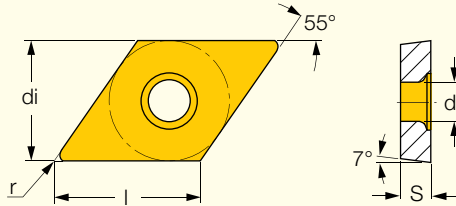
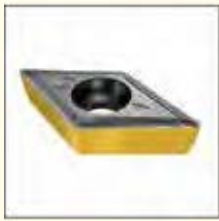


Designation	Dimensions					Tough ↔ Hard				Recommended Machining Data	
	l	di	S	r	d1	IC6025	IC6015	IC806	IC907	ap (mm)	f (mm/rev)
DCMT 070204-M3M	7.70	6.35	2.38	0.40	2.80	●	●			0.40-2.50	0.07-0.23
DCMT 070208-M3M	7.70	6.35	2.38	0.80	2.80	●	●			0.80-2.50	0.10-0.25
DCMT 11T304-M3M	11.60	9.52	3.97	0.40	4.40	●	●			0.40-3.00	0.07-0.25
DCMT 11T308-M3M	11.60	9.52	3.97	0.40	4.40	●	●	●	●	0.80-3.00	0.10-0.30
DCMT 11T312-M3M	11.60	9.52	3.97	1.20	4.40	●	●			1.20-3.00	0.13-0.35

For tools, see pages: • PDACR/L-JHP (A94) • PDACR/L-S (A94) • SDACR/L (A96) • SDJCR/L (A95) • SDNCN (A97).

DCMT/DCGT-SM

55° Rhombic 7° Positive Flank Inserts for Semi-Finish and Finish Turning on Soft Materials and Exotic Alloys

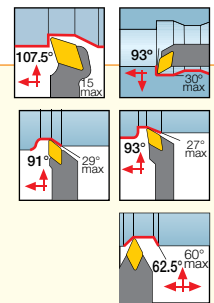
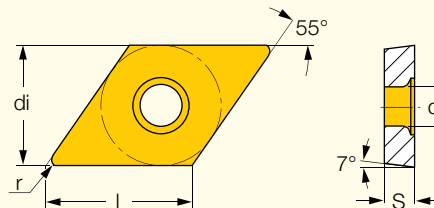
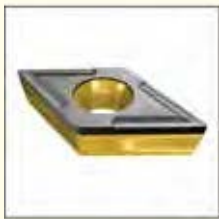


Designation	Dimensions					Tough ↔ Hard										Recommended Machining Data	
	l	di	S	r	d1	IC8350	IC6025	IC8250	IC530N	IC6015	IC8150	IC806	IC807	IC907	IC520N	ap (mm)	f (mm/rev)
DCMT 070202-SM	7.70	6.35	2.38	0.20	2.80		•			•	•	•	•	•		0.50-2.00	0.04-0.20
DCMT 070204-SM	7.70	6.35	2.38	0.40	2.80		•	•		•	•	•	•	•		0.50-2.50	0.05-0.25
DCMT 070208-SM	7.70	6.35	2.38	0.80	2.80			•								0.50-3.00	0.07-0.25
DCGT 11T302-SM	11.60	9.52	3.97	0.20	4.40									•		0.30-2.00	0.05-0.25
DCGT 11T304-SM	11.60	9.52	3.97	0.40	4.40									•		0.50-2.50	0.05-0.25
DCMT 11T302-SM	11.60	9.52	3.97	0.20	4.40		•	•	•	•			•	•		0.50-2.50	0.05-0.25
DCMT 11T304-SM	11.60	9.52	3.97	0.40	4.40	•	•	•	•		•	•	•	•		0.50-2.50	0.07-0.25
DCMT 11T308-SM	11.60	9.52	3.97	0.80	4.40	•	•	•		•	•		•	•		1.00-3.00	0.07-0.25
DCMT 11T312-SM	11.60	9.52	3.97	1.20	4.40										•	1.00-3.50	0.10-0.28

For tools, see pages: • PDACR/L-JHP (A94) • PDACR/L-S (A94) • SDACR/L (A96) • SDJCR/L (A95) • SDNCN (A97).

DCMT/DCGT

55° Rhombic Insert with 7° Positive Clearance for Finishing Applications



Designation	Dimensions					Tough ↔ Hard										Recommended Machining Data	
	l	di	S	r	d1	IC830	IC3028	IC8250	IC908	IC30N	IC530N	IC8150	IC20N	IC520N		ap (mm)	f (mm/rev)
DCGT 070201R ⁽¹⁾	7.70	6.35	2.38	0.10	2.80				•							0.25-1.50	0.05-0.15
DCGT 070202	7.70	6.35	2.38	0.20	2.80					•						0.50-2.00	0.08-0.20
DCGT 070204	7.70	6.35	2.38	0.40	2.80					•						0.80-2.50	0.10-0.25
DCMT 070202	7.70	6.35	2.38	0.20	2.80		•	•				•	•	•		0.50-2.00	0.08-0.20
DCMT 070204	7.70	6.35	2.38	0.40	2.80	•	•			•		•	•	•		0.50-2.00	0.08-0.22
DCGT 11T302	11.60	9.52	3.97	0.20	4.40					•						0.50-2.00	0.08-0.20
DCGT 11T304	11.60	9.52	3.97	0.40	4.40					•			•			1.00-2.50	0.12-0.25
DCMT 11T302	11.60	9.52	3.97	0.20	4.40					•	•		•	•		0.50-2.00	0.08-0.20
DCMT 11T304	11.60	9.52	3.97	0.40	4.40					•			•	•		0.50-2.00	0.12-0.25
DCMT 11T308	11.60	9.52	3.97	0.80	4.40	•	•						•	•		1.50-3.00	0.14-0.29

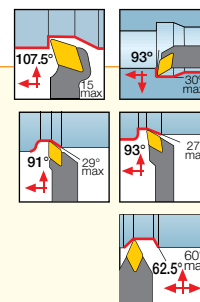
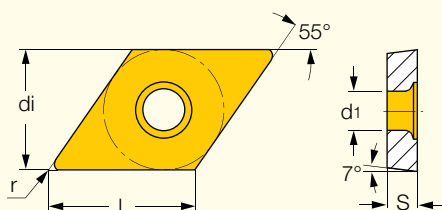
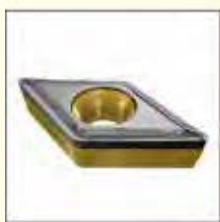
• Right-hand inserts for right-hand external tools and for left-hand internal tools

⁽¹⁾ Right-hand insert

For tools, see pages: PDACR/L-JHP (A94) • PDACR/L-S (A94) • SDACR/L (A96) • SDJCR/L (A95) • SDNCN (A97).

DCMT-14

55° Rhombic 7° Positive Flank Inserts for Semi-Finish and Finish Turning on Soft Materials and Exotic Alloys



Designation	Dimensions					Tough ↔ Hard					Recommended Machining Data	
	l	di	S	r	d ₁	IC830	IC3028	IC8150	IC20	IC428	a _p (mm)	f (mm/rev)
DCMT 11T304-14	11.60	9.52	3.97	0.40	4.40	●	●	●	●	●	1.00-2.50	0.14-0.25
DCMT 11T308-14	11.60	9.52	3.97	0.80	4.40	●	●	●	●	●	1.50-3.00	0.14-0.29

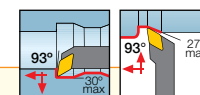
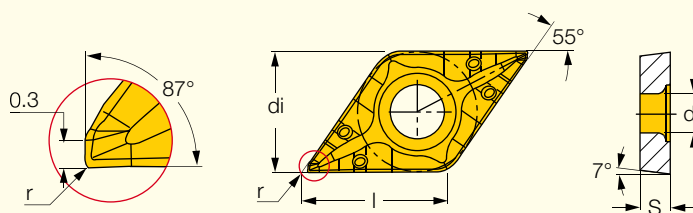
For tools, see pages: • PDACR/L-JHP (A94) • PDACR/L-S (A94) • SDACR/L (A96) • SDJCR/L (A95) • SDNCN (A97).

DCET-WF

55° Rhombic Wiper Inserts for Finishing Operations at High Feeds



Left-hand shown



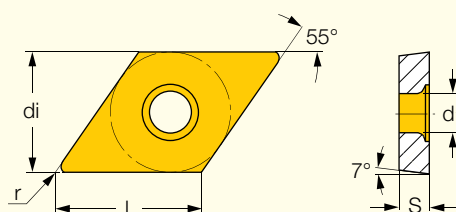
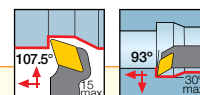
Right-hand shown

Designation	Dimensions					IC907	Recommended Machining Data	
	l	di	S	r	d ₁		a _p (mm)	f (mm/rev)
DCET 0702005R/L-WF	7.70	6.35	2.38	0.05	2.80	●	0.05-3.00	0.01-0.20
DCET 11T3005R/L-WF	11.60	9.52	3.97	0.05	4.40	●	0.05-3.00	0.01-0.20

For tools, see pages: • PDACR/L-JHP (A94) • PDACR/L-S (A94) • SDACR/L (A96) • SDJCR/L (A95).

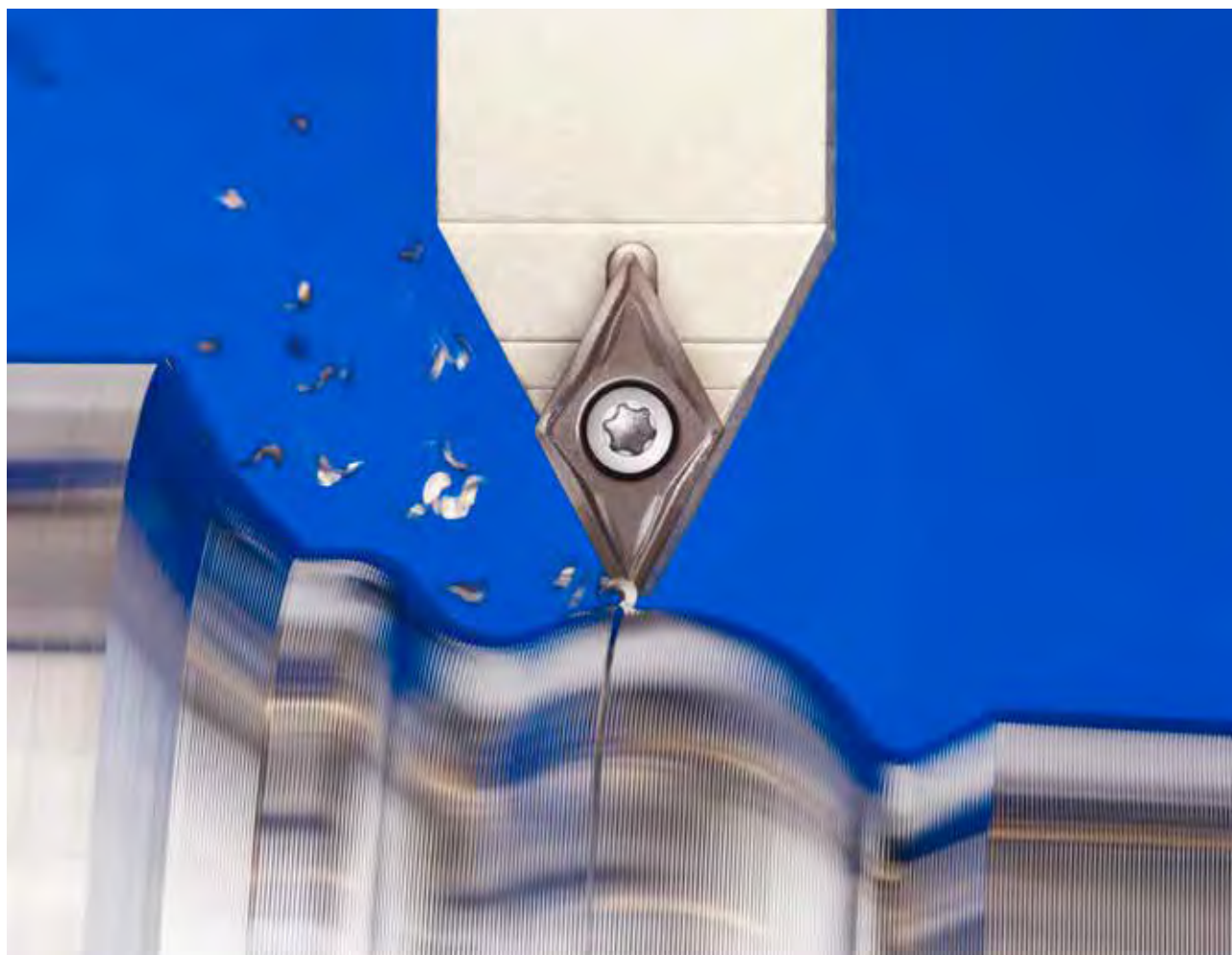
DCMT-PF

55° Rhombic Positive Flank Inserts for Semi-Finishing and Finishing on Soft Materials and Exotic Alloys



Designation	Dimensions					Tough $\longleftrightarrow$ Hard								Recommended Machining Data	
	l	di	S	r	d1	IC830	IC3028	IC6025	IC8250	IC6015	IC806	IC807	IC907	ap (mm)	f (mm/rev)
DCMT 070201-PF	7.70	6.35	2.38	0.10	2.80							●	●	0.30-3.00	0.02-0.25
DCMT 070202-PF	7.70	6.35	2.38	0.20	2.80		●					●		0.40-3.00	0.03-0.25
DCMT 070204-PF	7.70	6.35	2.38	0.40	2.80	●	●							0.50-3.50	0.05-0.30
DCMT 070208-PF	7.70	6.35	2.38	0.80	2.80							●	●	0.70-3.00	0.08-0.30
DCMT 11T302-PF	11.60	9.52	3.97	0.20	4.40	●	●					●		0.30-2.50	0.04-0.25
DCMT 11T304-PF	11.60	9.52	3.97	0.40	4.40	●	●	●	●	●	●	●	●	0.50-3.00	0.05-0.25
DCMT 11T308-PF	11.60	9.52	3.97	0.80	4.40	●	●	●	●	●	●	●	●	0.70-3.00	0.10-0.25

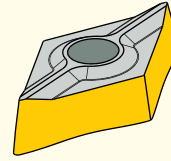
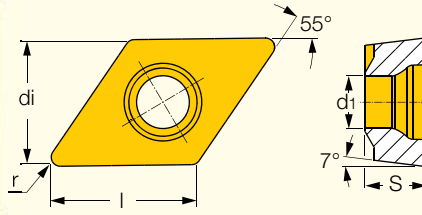
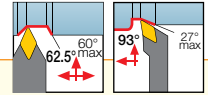
For tools, see pages: PDACR/L-JHP (A94) • PDACR/L-S (A94) • SDACR/L (A96) • SDJCR/L (A95) • SDNCN (A97).



SAFE-T-LOCK

DCMT-F3P-SL

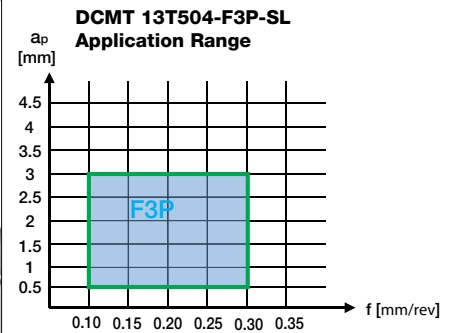
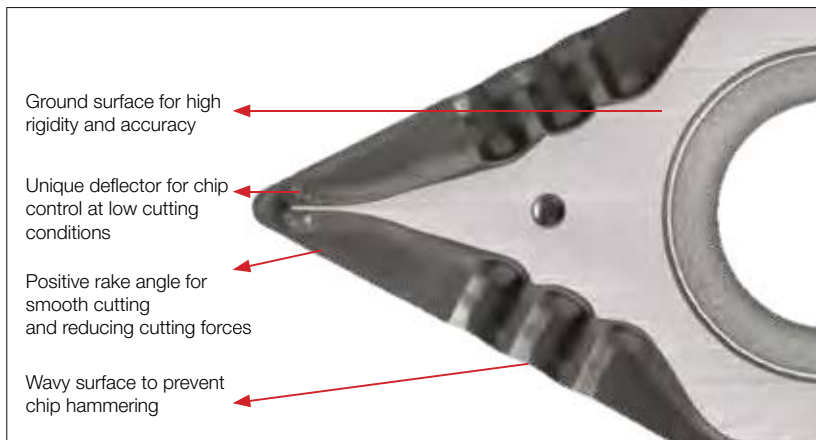
55° Rhombic Positive Flank Inserts with a Locating Bottom Ridge, for Semi-Finishing and Finishing of Steel



Bottom view

Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	L	d _i	S	r	d ₁	IC8250	IC8150	a _p (mm)	f (mm/rev)
DCMT 13T504-F3P-SL	13.40	11.00	5.11	0.40	4.50	●	●	0.50-3.00	0.05-0.25
DCMT 13T508-F3P-SL	13.40	11.00	5.11	0.80	4.50	●	●	0.90-3.50	0.10-0.25

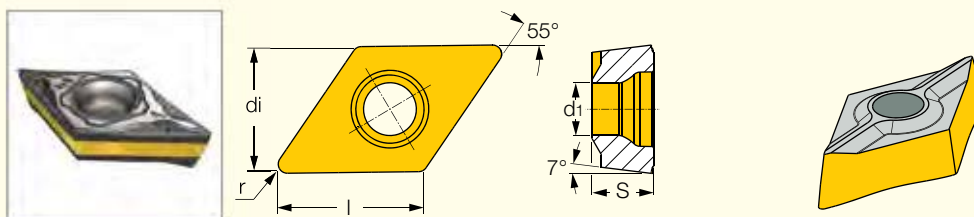
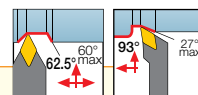
For tools, see pages: SDJCR/L-13-SL (A95) • SDNCN-13-SL (A97).



SAFE-T-LOCK

DCMT-PF-SL

55° Rhombic Positive Flank Inserts with a Locating Bottom Ridge, for Finish Turning on Soft Materials and Exotic Alloys

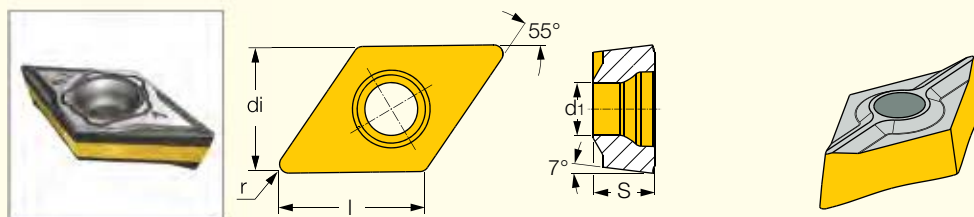
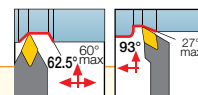


Designation	Dimensions					IC8150	Recommended Machining Data	
	l	di	S	r	d1		ap (mm)	f (mm/rev)
DCMT 13T504-PF-SL	13.40	11.00	5.11	0.40	4.50	●	0.50-3.00	0.05-0.25
DCMT 13T508-PF-SL	13.40	11.00	5.11	0.80	4.50	●	0.70-3.00	0.05-0.25

For tools, see pages: SDJCR/L-13-SL (A95) • SDNCN-13-SL (A97).

DCMT-SM-SL

55° Rhombic Positive Flank Inserts with a Locating Bottom Ridge, for Finish Turning on Soft Materials and Exotic Alloys

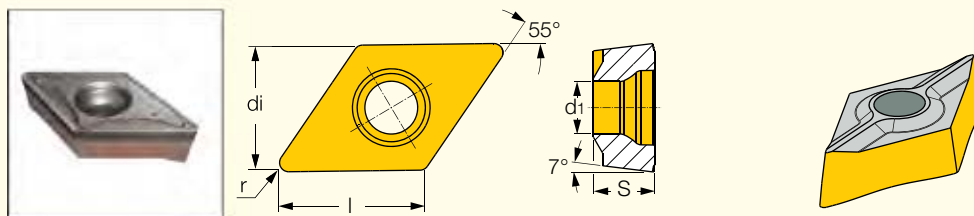
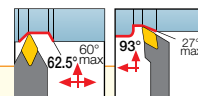


Designation	Dimensions					IC8150	Recommended Machining Data	
	l	di	S	r	d1		ap (mm)	f (mm/rev)
DCMT 13T504-SM-SL	13.40	11.00	5.11	0.40	4.50	●	0.50-2.50	0.07-0.27
DCMT 13T508-SM-SL	13.40	11.00	5.11	0.80	4.50	●	1.00-3.00	0.07-0.27

For tools, see pages: SDJCR/L-13-SL (A95) • SDNCN-13-SL (A97).

DCMT-M3M-SL

55° Rhombic Positive Flank Inserts with a Locating Bottom Ridge, for Machining Stainless and Low Carbon Steel



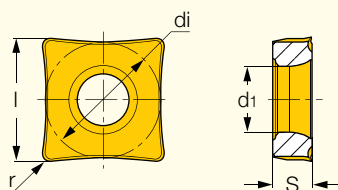
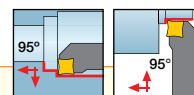
Bottom view

Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	d1	IC6025	IC6015	ap (mm)	f (mm/rev)
DCMT 13T508-M3M-SL	13.40	11.00	5.11	0.80	4.50	●	●	0.90-3.50	0.10-0.25
DCMT 13T512-M3M-SL	13.40	11.00	5.11	1.20	4.50	●	●	0.90-3.50	0.15-0.30

For tools, see pages: SDJCR/L-13-SL (A95) • SDNCN-13-SL (A97).

QCMT-PF

Positive 7° Clearance, Four 80° Cornered Insert with a Chipformer for Finishing

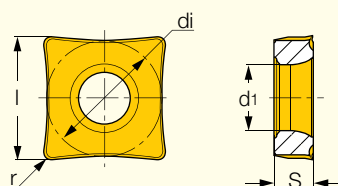
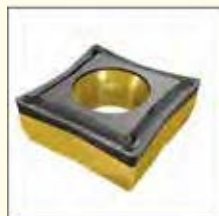
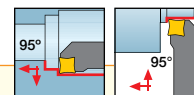


Designation	Dimensions				IC908	Recommended Machining Data	
	di	S	r	d1		ap (mm)	f (mm/rev)
QCMT 09T302-PF	9.65	3.97	0.20	4.40	●	0.50-2.50	0.05-0.30

For tools, see pages: PQLCR-A (A102) • PQLCR/L (A101) • PQLCR/L-S (A101).

QCMT-SM

Positive 7° Clearance, Four 80° Cornered Insert with a Chipformer for Finishing

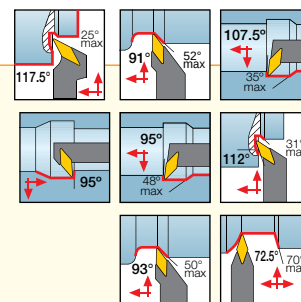
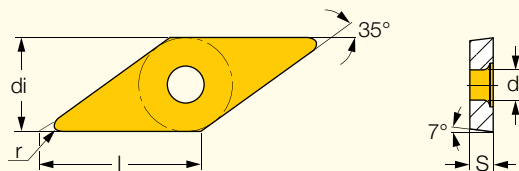


Designation	Dimensions					Tough ↔ Hard			Recommended Machining Data	
	l	di	S	r	d1	IC3028	IC8250	IC8150	ap (mm)	f (mm/rev)
QCMT 09T304-SM	10.40	9.65	3.97	0.40	4.40	●	●	●	0.50-2.50	0.06-0.25

For tools, see pages: PQLCR-A (A102) • PQLCR/L (A101) • PQLCR/L-S (A101).

VCGT 1303...-PF

35° Rhombic Positive Flank Inserts for Semi-Finishing and Finishing on Soft Materials and Exotic Alloys



Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	d1	IC830	IC3028	ap (mm)	f (mm/rev)
VCGT 130302-PF	13.00	7.94	3.18	0.20	3.40	●	●	0.30-2.50	0.03-0.25
VCGT 130304-PF	13.00	7.94	3.18	0.40	3.40	●	●	0.50-3.00	0.05-0.25

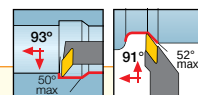
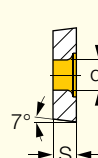
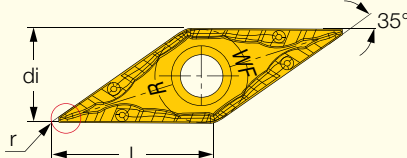
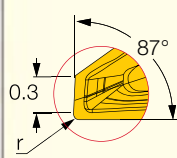
For tools, see pages: SVACR/L (A99).

VCET-WF

35° Rhombic Wiper Inserts for Finishing Operations at High Feeds



Left-hand shown



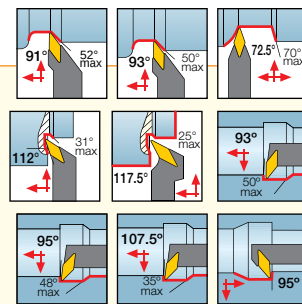
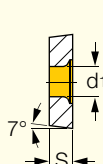
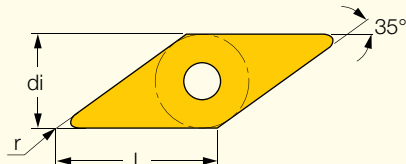
Right-hand shown

Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	l	d _i	S	r	d ₁	IC807	IC907	a _p (mm)	f (mm/rev)
						●	●	0.05-4.00	0.01-0.20
VCET 1103005R/L-WF	11.10	6.35	3.18	0.05	2.90	●	●	0.05-4.00	0.01-0.20

For tools, see pages: PVACR/L-JHP (A98) • PVACR/L-S (A98) • S/A-SVJCR/L (B37) • SVACR/L (A99) • SVJCR/L (A99).

VCMT-F3P

35° Rhombic Positive Flank Inserts, for Semi-Finishing and Finishing Turning of Steel

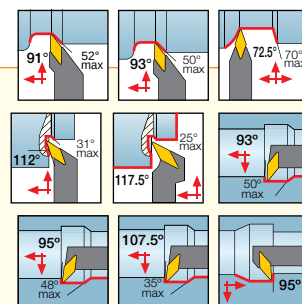
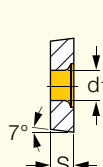
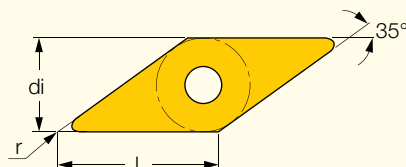


Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	l	d _i	S	r	d ₁	IC8250	IC8150	a _p (mm)	f (mm/rev)
VCMT 110302-F3P	11.10	6.35	3.18	0.20	2.80	●	●	0.06-1.70	0.03-0.14
VCMT 110304-F3P	11.10	6.35	3.18	0.40	2.80	●	●	0.10-1.70	0.05-0.20
VCMT 110308-F3P	11.10	6.35	3.18	0.80	2.80	●	●	0.13-1.70	0.07-0.28
VCMT 110312-F3P	11.10	6.35	3.18	1.20	2.80	●	●	0.13-1.70	0.08-0.33

For tools, see pages: PVACR/L-JHP (A98) • PVACR/L-S (A98) • S/A-SVJCR/L (B37) • SVACR/L (A99) • SVJCR/L (A99) • SWCN (A100).

VCMT-SM

35° Rhombic 7° Positive Flank Inserts for Semi-Finish and Finish Turning on Soft Materials and Exotic Alloys

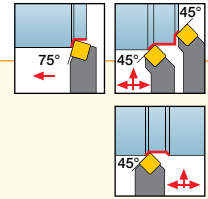
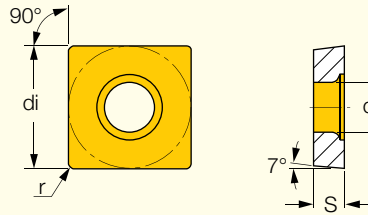
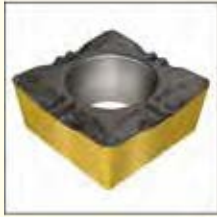


Designation	Dimensions					Tough ↔ Hard					Recommended Machining Data	
	l	d _i	S	r	d ₁	IC6025	IC908	IC6015	IC807	IC907	a _p (mm)	f (mm/rev)
VCMT 110302-SM	11.10	6.35	3.18	0.20	2.90		●		●	●	0.20-2.50	0.04-0.20
VCMT 110304-SM	11.10	6.35	3.18	0.40	2.90	●	●	●	●	●	0.50-3.00	0.07-0.24
VCMT 110308-SM	11.10	6.35	3.18	0.80	2.90		●				0.50-2.00	0.07-0.25

For tools, see pages: PVACR/L-JHP (A98) • PVACR/L-S (A98) • S/A-SVJCR/L (B37) • SVACR/L (A99) • SVVCN (A100).

SCMT-F3P

Square Positive Flank Inserts, for Semi-Finishing and Finishing Turning of Steel

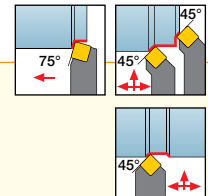
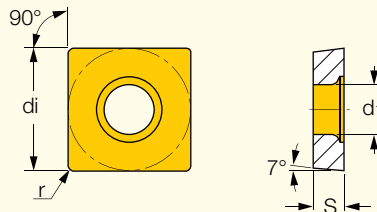


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	l	S	r	d ₁	IC8250	IC8150	a _p (mm)	f (mm/rev)
SCMT 09T304-F3P	9.52	3.97	0.40	4.40	●	●	0.11-2.00	0.06-0.25
SCMT 09T308-F3P	9.52	3.97	0.80	4.40	●	●	0.15-2.00	0.08-0.32

For tools, see pages: SBCR/L (A102) • SSSCR/L (A102).

SCMT-M3M

Square Positive Flank Inserts, for Machining Stainless and Low Carbon Steel

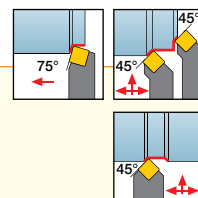
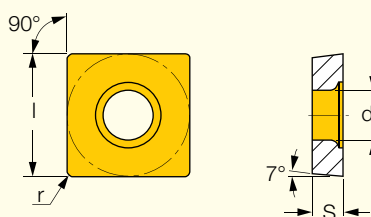
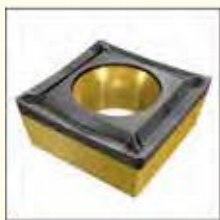


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	l	S	r	d ₁	IC6025	IC6015	a _p (mm)	f (mm/rev)
SCMT 09T304-M3M	9.52	3.97	0.40	4.40	●	●	0.40-3.80	0.07-0.25
SCMT 09T308-M3M	9.52	3.97	0.80	4.40	●	●	0.80-3.80	0.10-0.30

For tools, see pages: SBCR/L (A102) • SSSCR/L (A102).

SCMT-SM

Square 7° Positive Flank Inserts for Semi-Finish and Finish Turning on Soft Materials and Exotic Alloys

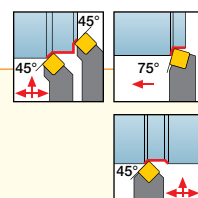
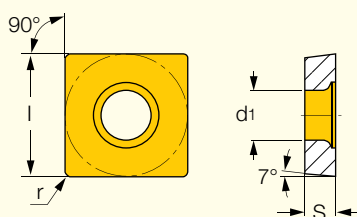


Designation	Dimensions				Tough ↔ Hard							Recommended Machining Data	
	l	S	r	d ₁	IC830	IC3028	IC6025	IC8250	IC8150	IC807	IC907	a _p (mm)	f (mm/rev)
SCMT 09T304-SM	9.52	3.97	0.40	4.40				●	●	●	●	0.50-3.00	0.07-0.25
SCMT 09T308-SM	9.52	3.97	0.80	4.40	●	●	●	●	●	●	●	0.50-3.00	0.10-0.30

For tools, see pages: SSBCL/L (A102) • SSSCL/L (A102).

SCMT-14

Square 7° Positive Flank Inserts for Semi-Finish and Finish Turning on Soft Materials and Exotic Alloys

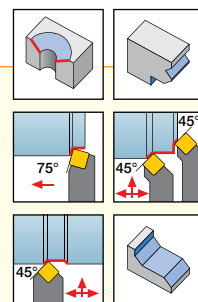
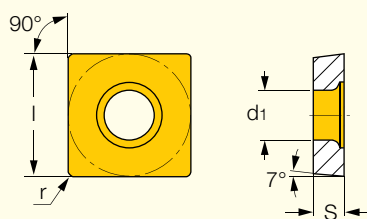


Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data	
	l	S	r	d ₁	IC8250	IC807	IC907	IC20	a _p (mm)	f (mm/rev)
SCMT 09T304-14	9.52	3.97	0.40	4.40		●	●	●	1.00-3.50	0.12-0.30

For tools, see pages: SSBCL/L (A102) • SSSCL/L (A102).

SCMT-19

Square 7° Positive Inserts for Semi-Roughing at Medium to High Feeds

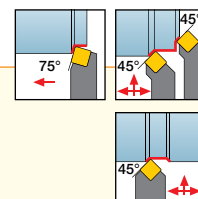
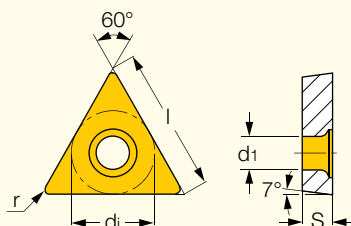


Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data	
	l	S	r	d ₁	IC635	IC50M	IC520M	IC20	a _p (mm)	f _z (mm/t)
SCMT 09T308-19	9.52	3.97	0.80	4.40	●	●	●	●	1.00-5.00	0.08-0.15

For tools, see pages: SSBCL/L (A102) • SSSCL/L (A102).

TCMT-F3P

Triangular Positive Flank Inserts, for Semi-Finishing and Finishing Turning of Steel

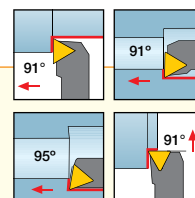
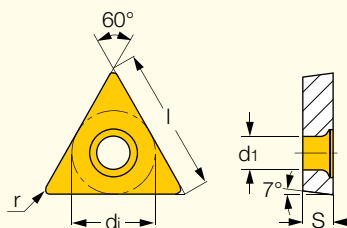


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	l	S	r	d ₁	IC8250	IC8150	a _p (mm)	f (mm/rev)
TCMT 110202-F3P	11.00	2.38	0.20	2.80	●	●	0.06-1.70	0.03-0.14
TCMT 110204-F3P	11.00	2.38	0.40	2.80	●	●	0.10-1.70	0.05-0.20
TCMT 110208-F3P	11.00	2.38	0.80	2.80	●	●	0.13-1.70	0.07-0.28

For tools, see pages: S-STFCR/L (B37) • S-STLCR/L (B38) • STFCR/L (A103) • STGCR/L (A103).

TCMT-M3M

Triangular Positive Flank Inserts, for Machining Stainless and Low Carbon Steel

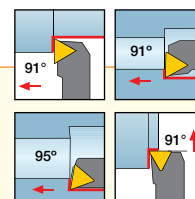
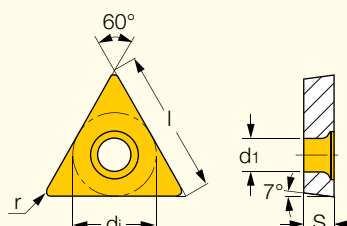


Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	d1	IC6025	IC6015	ap (mm)	f (mm/rev)
TCMT 110204-M3M	11.00	6.35	2.38	0.40	2.80	●	●	0.40-2.50	0.07-0.23
TCMT 110208-M3M	11.00	6.35	2.38	0.80	2.80	●	●	0.80-2.50	0.10-0.25

For tools, see pages: S-STFCR/L (B37) • S-STLCR/L (B38) • STFCR/L (A103) • STGCR/L (A103).

TCMT-PF

Triangular Positive Flank Inserts for Semi-Finishing and Finishing on Soft Materials and Exotic Alloys

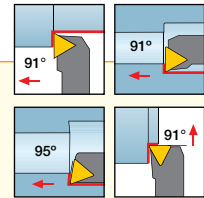
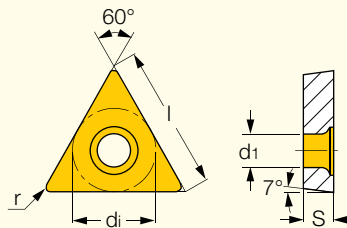


Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	d1	IC807	IC907	ap (mm)	f (mm/rev)
TCMT 110202-PF	11.00	6.35	2.38	0.20	2.85	●	●	0.20-3.00	0.05-0.25

For tools, see pages: S-STFCR/L (B37) • S-STLCR/L (B38) • STFCR/L (A103) • STGCR/L (A103).

TCMT-SM

Triangular 7° Positive Flank Inserts for Semi-Finish and Finish Turning on Soft Materials and Exotic Alloys

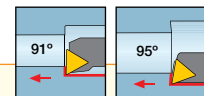
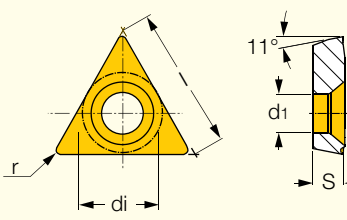


Designation	Dimensions					Tough ↔ Hard								Recommended Machining Data	
	l	di	S	r	d1	IC8350	IC8250	IC908	IC8150	IC807	IC907	IC5010	IC5005	ap (mm)	f (mm/rev)
TCMT 110204-SM	11.00	6.35	2.38	0.40	2.80	●	●	●	●	●	●	●	●	0.20-3.00	0.05-0.25
TCMT 110208-SM	11.00	6.35	2.38	0.80	2.80					●	●			0.50-2.50	0.07-0.25

For tools, see pages: S-STFCR/L (B37) • S-STLCR/L (B38) • STFCR/L (A103) • STGCR/L (A103).

TPMT-PF

11° Positive Triangular Inserts for Semi-Finish and Finishing Applications

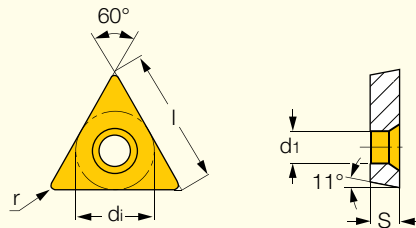
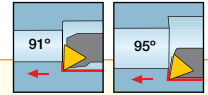


Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	l	di ⁽¹⁾	S	r	d1	IC8250	IC8150	ap (mm)	f (mm/rev)
TPMT 110204-PF	11.00	6.35	2.38	0.40	3.00	●	●	0.50-3.00	0.10-0.30

For tools, see pages: S-STFCR/L (B37) • S-STLCR/L (B38) • STFCR/L (A103) • STGCR/L (A103).

TPGB

Triangular 11° Positive Flank Inserts for Short Chipping Materials

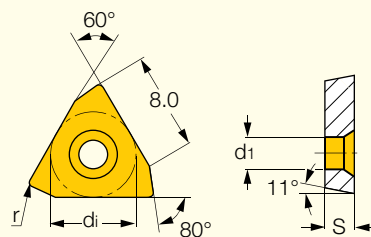
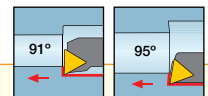


Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	d1	IC20	IC70	ap (mm)	f (mm/rev)
TPGB 110204	11.00	6.35	2.38	0.40	3.00	●	●	1.00-3.00	0.05-0.25

For tools, see pages: A/E/S-STFPR/L (B39) • A/S-STLPR/L (B39).

TPGB-XL

Triangular 11° Positive Flank Inserts for Short Chipping Materials

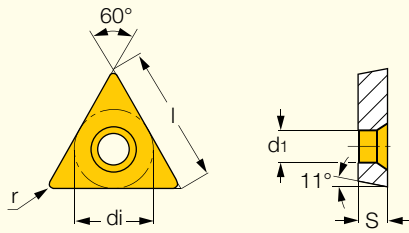
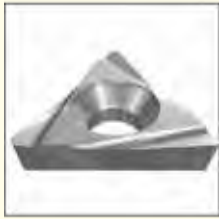
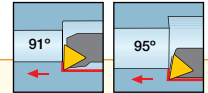


Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	d1	IC20	IC70	ap (mm)	f (mm/rev)
TPGB 110204-XL	11.00	6.35	2.38	0.40	3.00	●	●	1.00-3.00	0.05-0.25

For tools, see pages: A/E/S-STFPR/L (B39) • A/S-STLPR/L (B39).

TPGH-L

Triangular 11° Positive Flank Inserts with a Ground Chipformer for Finish Turning

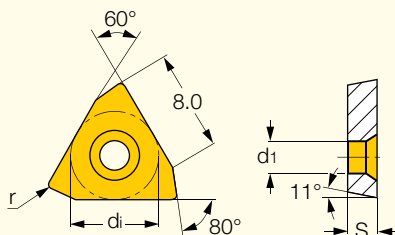
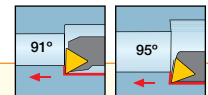


Designation	Dimensions					Tough $\longleftrightarrow$ Hard			Recommended Machining Data	
	l	di	S	r	d ₁	IC908	IC20	IC70	a _p (mm)	f (mm/rev)
TPGH 110204-L	11.00	6.35	2.38	0.40	3.00		●	●	1.00-3.00	0.05-0.25
TPGH 110208-L	11.00	6.35	2.38	0.40	3.00	●			1.00-3.00	0.05-0.25

For tools, see pages: A/E/S-STFPR/L (B39) • A/S-STLPR/L (B39).

TPGH-XL

Triangular 11° Positive Flank Inserts with a Ground Chipformer for Finish Turning

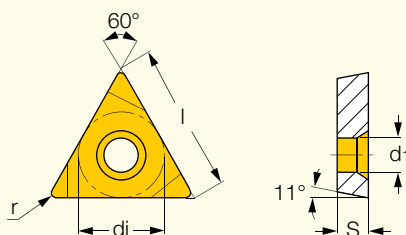


Designation	Dimensions					Tough $\longleftrightarrow$ Hard			Recommended Machining Data	
	l	di	S	r	d ₁	IC20	IC70		a _p (mm)	f (mm/rev)
TPGH 110204-XL	11.00	6.35	2.38	0.40	3.00	●	●		1.00-3.00	0.05-0.25

For tools, see pages: A/E/S-STFPR/L (B39) • A/S-STLPR/L (B39).

TPGX

Triangular 11° Positive Flank Inserts with a Ground Chipformer for Finish Turning

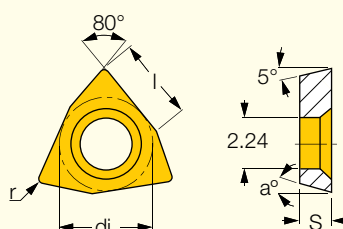


Designation	Dimensions					Tough ↔ Hard				Recommended Machining Data	
	l	di	S	r	d ₁	IC54	IC908	IC20	IC20N	a _p (mm)	f (mm/rev)
TPGX 090202-L	9.52	5.56	2.38	0.20	3.00		●	●	●	1.00-2.00	0.10-0.20
TPGX 090204-L	9.52	5.56	2.38	0.40	3.00	●	●	●	●	1.00-2.50	0.15-0.20
TPGX 110302-L	11.00	6.35	3.18	0.20	3.50		●	●	●	1.00-2.50	0.10-0.20
TPGX 110304-L	11.00	6.35	3.18	0.40	3.50	●	●	●	●	1.00-3.00	0.15-0.20
TPGX 110308-L	11.00	6.35	3.18	0.80	3.50			●		1.00-3.50	0.15-0.25

For tools, see pages: A/E-STFPR-X (B40) • MG STFPR-X (B38).

WGBT

Trigon 5° Positive Flank Inserts with a Ground Chipformer for Finish Turning

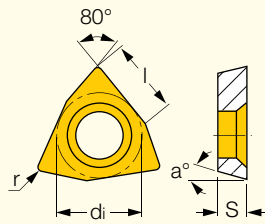
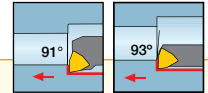


Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data	
	l	di	S	r	IC3028	IC908	IC807	IC907	a _p (mm)	f (mm/rev)
WGBT 060102L	2.18	3.97	1.59	0.20	●	●	●	●	0.10-1.00	0.05-0.10

For tools, see pages: E/S-SWUBR/L (B41) • MG-SWUBR/L (B42) • MGSIR/L (B41) • SIR/L (B96).

WBMT

Trigon 5° Positive Flank Inserts with a Ground Chipformer for Finish Turning



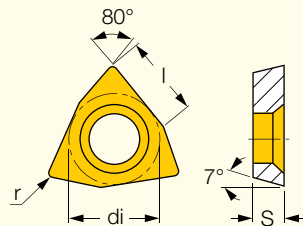
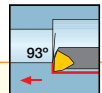
Designation	Dimensions				Tough ↔ Hard							Recommended Machining Data	
	l	di	S	r	IC830	IC3028	IC354	IC350	IC908	IC30N	IC530N	a _D (mm)	f (mm/rev)
WBMT 060101R/L	2.18	3.97	1.59	0.10					●			0.40-2.00	0.10-0.15
WBMT 060102R/L	2.18	3.97	1.59	0.20	●	●	●	●		●	●	0.40-2.00	0.10-0.15

• WBMT 06...R right-hand inserts used on left-hand tools and WBMT 06...L left-hand inserts used on right-hand tools

For tools, see pages: E/S-SWUBR/L (B41) • MG-SWUBR/L (B42) • MGSIR/L (B41) • SIR/L (B96).

WCGT

Trigon 7° Positive Flank Inserts with a Chipformer for Finish Turning

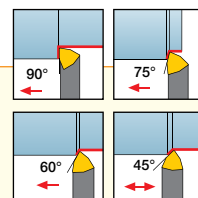
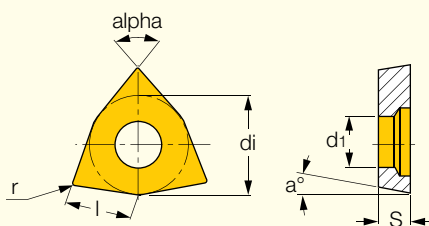


Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	IC908	IC30N	ap (mm)	f (mm/rev)
WCGT 020102L	2.18	3.97	1.59	0.20	●	●	0.40-2.00	0.05-0.10
WCGT 020104L	2.18	3.97	1.59	0.40	●	●	0.40-2.00	0.10-0.15

For tools, see pages: A/E-SWUCR (B43) • MG-SWUCR (B42).

WPEX

Precision Positive 8° and 12° Clearance, 80° and 84° Trigon Inserts with a Chipformer for Finishing Applications

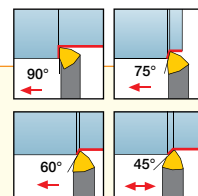
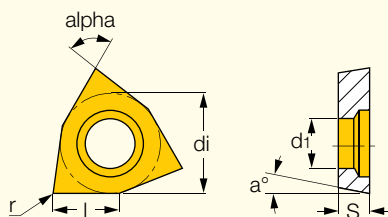


Designation	Dimensions							Tough ↔ Hard		Recommended Machining Data	
	l	S	r	di	d ₁	alpha	a°	IC08	IC908	a _p (mm)	f (mm/rev)
WPEX 040200R/L08	4.00	2.50	0.00	6.60	3.20	84	8.00	●		0.20-2.00	0.05-0.20
WPEX 040200R/L12	4.00	2.50	0.00	6.60	3.20	84	12.00	●		0.20-2.00	0.05-0.20
WPEX 040202R/L08	4.00	2.50	0.20	6.60	3.20	84	8.00	●		0.20-2.00	0.05-0.20
WPEX 050300R/L08	5.00	3.18	0.00	7.94	3.70	80	8.00	●	●	0.20-2.50	0.05-0.20
WPEX 050300R/L12	5.00	3.18	0.00	7.94	3.70	80	12.00	●	●	0.20-2.50	0.05-0.20
WPEX 050302R/L08	5.00	3.18	0.20	7.94	3.70	80	8.00	●	●	0.20-2.50	0.05-0.20
WPEX 050302R/L12	5.00	3.18	0.20	7.94	3.70	80	12.00	●	●	0.20-2.50	0.05-0.20
WPEX 050304R/L08	5.00	3.18	0.40	7.94	3.70	80	8.00	●	●	0.20-2.50	0.05-0.20
WPEX 050304R/L12	5.00	3.18	0.40	7.94	3.70	80	12.00	●	●	0.20-2.50	0.05-0.20
WPEX 060400R/L08	6.00	4.00	0.00	9.52	3.70	80	8.00	●	●	0.20-3.00	0.05-0.20
WPEX 060400R/L12	6.00	4.00	0.00	9.52	3.70	80	12.00	●	●	0.20-3.00	0.05-0.20
WPEX 060402R/L08	6.00	4.00	0.20	9.52	3.70	80	8.00	●	●	0.20-3.00	0.05-0.20
WPEX 060402R/L12	6.00	4.00	0.20	9.52	3.70	80	12.00	●	●	0.20-3.00	0.05-0.20
WPEX 060404R/L08	6.00	4.00	0.40	9.52	3.70	80	8.00	●	●	0.20-3.00	0.05-0.20
WPEX 060404R/L12	6.00	4.00	0.40	9.52	3.70	80	12.00	●	●	0.20-3.00	0.05-0.20

For tools, see pages: SWAPR/L (A90) • SWBPR/L (A90) • SWDPR/L (A91) • SWEPR/L (A91).

WPEB

Precision Positive 8° and 12° Clearance, 80° and 84° Trigon Inserts with a Flat Rake for Finishing Applications

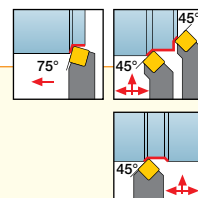
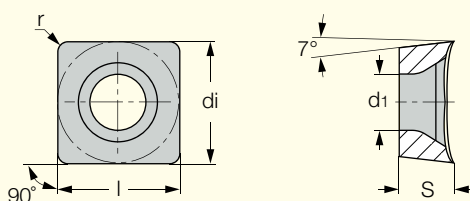


Designation	Dimensions							Tough ↔ Hard		Recommended Machining Data	
	l	S	r	di	d ₁	alpha	a°	IC08	IC908	a _p (mm)	f (mm/rev)
WPEB 040200R08	4.00	2.50	0.00	6.60	3.20	84	8.00	●		0.20-2.00	0.05-0.20
WPEB 050300R/L08	5.00	3.18	0.00	7.94	3.70	80	8.00	●		0.20-2.50	0.05-0.20
WPEB 050300L12	5.00	3.18	0.00	7.94	3.70	80	12.00	●		0.20-2.50	0.05-0.20
WPEB 050302N12	5.00	3.18	0.20	7.94	3.70	80	12.00	●		0.20-2.50	0.05-0.20
WPEB 060400R/L08	6.00	4.00	0.00	9.52	3.70	80	8.00	●	●	0.20-3.00	0.05-0.20
WPEB 060402N08	6.00	4.00	0.20	9.52	3.70	80	8.00	●		0.20-3.00	0.05-0.20
WPEB 060404N08	6.00	4.00	0.40	9.52	3.70	80	8.00	●	●	0.20-3.00	0.05-0.20
WPEB 060404N12	6.00	4.00	0.40	9.52	3.70	80	12.00	●		0.20-3.00	0.05-0.20

For tools, see pages: SWAPR/L (A90) • SWBPR/L (A90) • SWDPR/L (A91) • SWEPR/L (A91).

SCGT-AS

Square 7° Positive Flank, Very Positive Rake Angle and Sharp Cutting Edge for Machining Aluminum

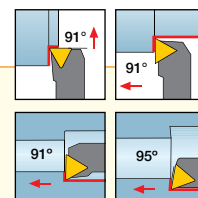
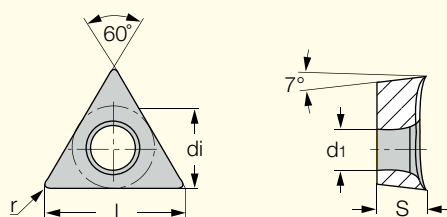


Designation	Dimensions					IC20	Recommended Machining Data	
	l	di	S	r	d1		ap (mm)	f (mm/rev)
	9.52	9.52	3.97	0.80	4.40		0.50-3.00	0.10-0.30

For tools, see pages: SSBCL/L (A102) • SSSCL/L (A102).

TCGT-AS

Triangular 7° Positive Flank, Very Positive Rake Angle and Sharp Cutting Edge for Machining Aluminum

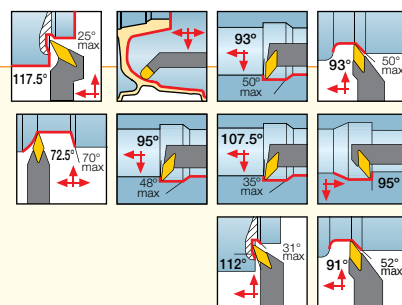
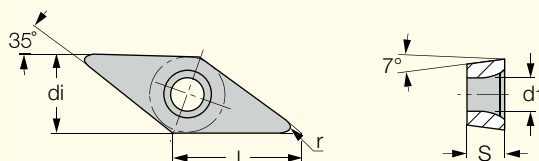


Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data	
	l	di	S	r	d1	IC20	IC320	ap (mm)	f (mm/rev)
	11.00	6.35	2.38	0.40	2.80	●	●	0.20-3.00	0.05-0.30

For tools, see pages: S-STFCR/L (B37) • S-STLCR/L (B38) • STFCR/L (A103) • STGCR/L (A103).

VCGT-AS

35° Rhombic 7° Positive Flank, Very Positive Rake Angle and Sharp Cutting Edge for Machining Aluminum

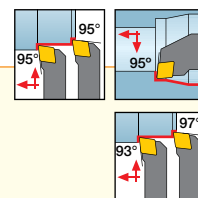
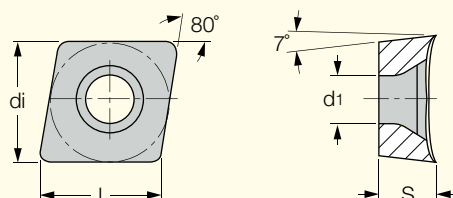


Designation	Dimensions					IC20	Recommended Machining Data	
	l	di	S	r	d1		ap (mm)	f (mm/rev)
VCGT 110302-AS	11.10	6.35	3.18	0.20	2.90	●	0.20-2.50	0.05-0.20
VCGT 110304-AS	11.10	6.35	3.18	0.40	2.90	●	0.50-3.00	0.05-0.25

For tools, see pages: PVACR/L-JHP (A98) • PVACR/L-S (A98) S/A-SVJCR/L (B37) • SVACR/L (A99) • SVJCR/L (A99) • SWCN (A100).

CCGT-AS

80° Rhombic 7° Positive Flank, Very Positive Rake Angle and Sharp Cutting Edge, for Machining Aluminum

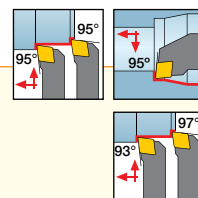
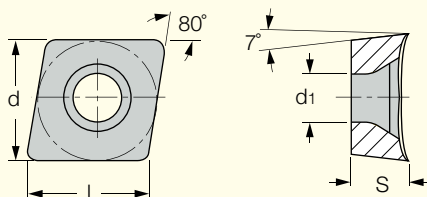


Designation	Dimensions					IC20	Recommended Machining Data	
	l	di	S	r	d1		ap (mm)	f (mm/rev)
CCGT 060201-AS	6.40	6.35	2.38	0.10	2.80	●	0.50-2.00	0.10-0.20
CCGT 060202-AS	6.40	6.35	2.38	0.20	2.80	●	0.50-2.00	0.10-0.20
CCGT 060204-AS	6.40	6.35	2.38	0.40	2.80	●	0.50-2.00	0.10-0.25
CCGT 09T301-AS	9.70	9.52	3.97	0.10	4.40	●	0.50-2.50	0.10-0.25
CCGT 09T302-AS	9.70	9.52	3.97	0.20	4.40	●	0.50-2.50	0.10-0.25
CCGT 09T304-AS	9.70	9.52	3.97	0.40	4.40	●	0.50-2.50	0.10-0.25
CCGT 09T308-AS	9.70	9.52	3.97	0.80	4.40	●	0.80-3.00	0.10-0.30

For tools, see pages: A/E/S-SCLCR/L (B34) • PCLCR/L-S (A93) • PCLCR/L-S-JHP (A1) • SCACR/L-S (A92) • SCLCR/L (A92).

CCGT-AF

80° Rhombic 7° Positive Flank Inserts, Very Positive Rake and Sharp Cutting Edge for Machining Aluminum

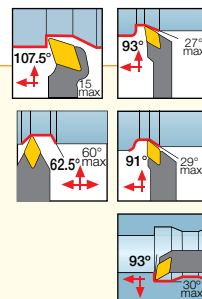
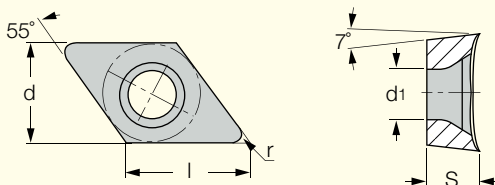


Designation	Dimensions					IC20	Recommended Machining Data	
	l	di	S	r	d1		ap (mm)	f (mm/rev)
CCGT 09T308-AF	9.70	9.52	3.97	0.80	4.40	●	0.80-3.00	0.15-0.25

For tools, see pages: A/E/S-SCLCR/L (B34) • PCLCR/L-S (A93) • PCLCR/L-S-JHP (A93) • SCLCR/L (A92).

DCGT-AS

55° Rhombic 7° Positive Flank, Very Positive Rake Angle and Sharp Cutting Edge for Machining Aluminum

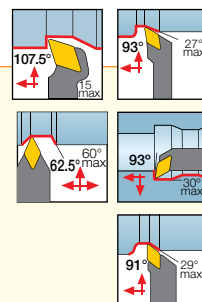
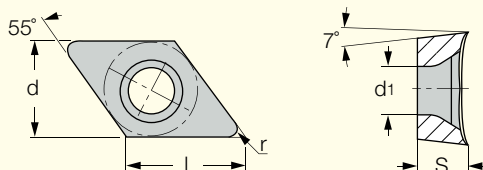


Designation	Dimensions					Tough ↔ Hard			Recommended Machining Data	
	l	di	S	r	d1	IC907	IC20	IC320	ap (mm)	f (mm/rev)
DCGT 070201-AS	7.75	6.35	2.38	0.10	2.80		●		0.50-2.00	0.03-0.20
DCGT 070202-AS	7.75	6.35	2.38	0.20	2.80		●		0.50-2.00	0.05-0.20
DCGT 070204-AS	7.75	6.35	2.38	0.40	2.80		●		0.50-2.50	0.05-0.25
DCGT 11T301-AS	11.60	9.52	3.97	0.10	4.40		●		0.50-2.50	0.05-0.25
DCGT 11T302-AS	11.60	9.52	3.97	0.20	4.40		●	●	0.50-2.50	0.05-0.26
DCGT 11T304-AS	11.60	9.52	3.97	0.40	4.40	●	●	●	0.50-2.50	0.05-0.25
DCGT 11T308-AS	11.60	9.52	3.97	0.80	4.40		●	●	0.80-3.00	0.08-0.30

For tools, see pages: PDACR/L-JHP (A94) • PDACR/L-S (A94) • SDACR/L (A96) • SDJCR/L (A95) • SDNCN (A97).

DCGT-AF

Very Positive Rake Angle and Sharp Cutting Edge Inserts for Semi-Finishing and Finishing on Aluminum



Designation	Dimensions					IC20	Recommended Machining Data	
	l	d _i	S	r	d ₁		a _p (mm)	f (mm/rev)
DCGT 11T304-AF	11.60	9.52	3.97	0.40	4.40	●	0.50-2.50	0.05-0.25

For tools, see pages: PDACR/L-JHP (A94) • PDACR/L-S (A94) • SDACR/L (A96) • SDJCR/L (A95) • SDNCN (A97).

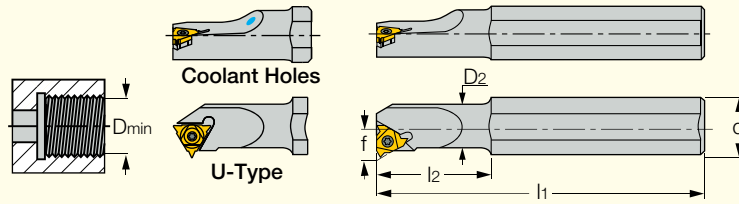
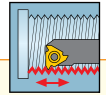


ISCARTHREAD



SIR/L

Internal Threading Bars



Right-hand shown

Designation	d	D ₂	l ₁	l ₂	D _{min}	f	Coolant	Shank m. ⁽⁴⁾	Insert ⁽⁵⁾
SIR/L 0005 H06 ⁽¹⁾	12.00	5.10	100.00	12.0	6.40	4.3	N	S	06 IR/IL..
SIR/L 0005 H06CB ⁽²⁾	6.00	5.10	100.00	25.0	6.40	4.3	Y	C	06 IR/IL..
SIR 0005 H06-W ⁽³⁾	12.00	5.10	100.00	12.0	6.40	4.3	N	S	06 IR/IL..
SIR/L 0007 K08 ⁽¹⁾	16.00	6.60	125.00	18.0	7.80	5.3	N	S	08 IR/IL..
SIR/L 0007 K08CB ⁽²⁾	8.00	6.60	125.00	30.0	7.80	5.3	Y	C	08 IR/IL..
SIR/L 0008 K08U ⁽¹⁾	16.00	7.40	125.00	21.0	9.00	6.4	N	S	08 UIRL..
SIR 0008 K08UCB ⁽²⁾	8.00	7.30	125.00	35.0	9.00	6.4	Y	C	08 UIRL..
SIR/L 0010 H11 ⁽¹⁾	10.00	10.00	100.00	-	12.00	7.4	N	S	11 IR/IL..
SIR 0010 H11B ⁽¹⁾	10.00	10.00	100.00	-	12.00	7.4	Y	S	11 IR/IL..
SIR/L 0010 K11 ⁽¹⁾	16.00	10.00	125.00	25.0	12.00	6.5	N	S	11 IR/IL..
SIR/L 0010 K11B ⁽¹⁾	16.00	10.00	125.00	25.0	12.00	7.4	Y	S	11 IR/IL..
SIR/L 0010 M11CB ⁽²⁾	10.00	10.00	150.00	-	12.00	7.4	Y	C	11 IR/IL..
SIR/L 0012 P11CB ⁽²⁾	12.00	12.00	170.00	-	15.00	8.4	Y	C	11 IR/IL..
SIR/L 0013 L11 ⁽¹⁾	16.00	13.00	140.00	32.0	15.00	8.9	N	S	11 IR/IL..
SIR/L 0013 M16 ⁽¹⁾	16.00	13.00	150.00	32.0	16.00	10.0	N	S	16 IR/L..
SIR/L 0013 M16B ⁽¹⁾	16.00	13.00	150.00	32.0	16.00	10.2	Y	S	16 IR/L..
SIR 0016 R16CB ⁽²⁾	16.00	16.00	200.00	-	19.00	11.7	Y	C	16 IR/IL..

• All toolholders are made for 1.5 helix angle • For GTGA inserts, use anvil AL 16-0

⁽¹⁾ Toolholder without anvil ⁽²⁾ Carbide shank without anvil ⁽³⁾ Toolholder without anvil • WBMT 060102 R/L for internal turning ⁽⁴⁾ C-carbide, S-steel ⁽⁵⁾ Right-hand inserts (IR) for right-hand tools (SIR)

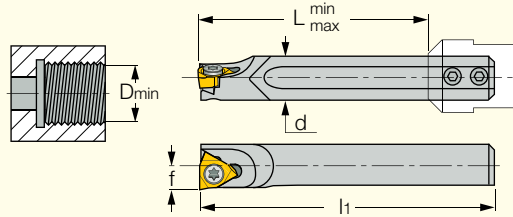
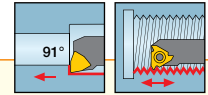
Spare Parts



Designation	Insert Screw	Key
SIR/L 0005 H06	SR 14-552	T-6/5
SIR/L 0005 H06CB	SR 14-552	T-6/5
SIR 0005 H06-W	SR 14-552	T-6/5
SIR/L 0007 K08	SR 14-558	T-6/5
SIR/L 0007 K08CB	SR 14-558	T-6/5
SIR/L 0008 K08U	SR 14-558	T-6/5
SIR 0008 K08UCB	SR 14-558	T-6/5
SIR/L 0010 H11	S11	T-8/5
SIR 0010 H11B	S11	T-6/5
SIR/L 0010 K11	S11	T-8/5
SIR/L 0010 K11B	S11	T-8/5
SIR/L 0010 M11CB	S11	T-8/5
SIR/L 0012 P11CB	S11	T-8/5
SIR/L 0013 L11	S11	T-8/5
SIR/L 0013 M16	S16S	T-10/5
SIR/L 0013 M16B	S16S	T-10/5
SIR 0016 R16CB	S16S	T-10/5

MGSIR/L

Solid Carbide Bars for Internal Turning and Threading



Right-hand shown

Designation	d	l ₁	L _{min} ⁽³⁾	L _{max} ⁽³⁾	f	D _{min}
MGSIR/L 06-06W ⁽¹⁾	6.00	59.00	16.0	42.0	3.9	7.00
MGSIR/L 08-06W ⁽²⁾	8.00	72.00	20.0	56.0	5.0	9.20

• 91° for shoulder depth up to 2 mm • Use right-hand WBMT 06...R inserts on left-hand tools and left-hand WBMT 06...L inserts on right-hand tools. • In order to maintain high machining reliability we strongly recommend replacing the clamping screw every 10 insert indexes.

⁽¹⁾ For WBMT 060102 D_{min}=6.6 mm f=4.13 mm ⁽²⁾ For WBMT 060102 D_{min}=8.8 mm f=5.20 mm ⁽³⁾ Adjustment range

For inserts, see pages: IR/L-55° (B98) • IR/L-60° (B101) • IR/L-BSPT (B110) • IR/L-ISO (B104) • IR/L-NPT (B115) • IR/L-NPTF (B113) • IR/L-UN (B106) • IR/L-W (B109) • WBGT (B88) • WBMT (B89).

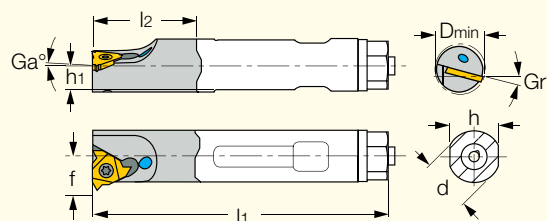
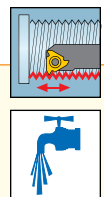
Spare Parts



Designation	Screw	Key
MGSIR/L	SR 14-552	T-6/5

E-SIR-HEAD

Interchangeable Threading Heads for Carbide Bars



Right-hand shown

Designation	d	l ₁	l ₂	h	h ₁	f	Ga°	Gr°	D _{min}	Insert
E12 SIR-11 HEAD	12.00	179.00	24.8	11.0	5.5	8.3	1.5	-15	14.90	11 IRM../11 IR
E16 SIR-16 HEAD	16.00	200.00	37.0	15.0	8.0	10.3	1.5	-15	20.00	16 IRM../16 IR

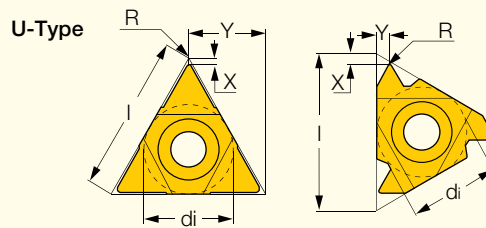
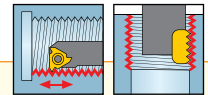
Spare Parts



Designation	Key	Screw
E12 SIR-11 HEAD	T-8/5	S11
E16 SIR-16 HEAD	T-10/5	S16S

IR/L-55°

Internal 55° Partial Profile Laydown Threading Inserts, for General Industry



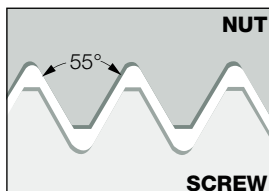
Internal left-hand shown

Designation	Dimensions									Tough ↔ Hard							
	di	P _{min}	P _{max}	TPI _{max}	TPI _{min}	I	R	X	Y	IC228	IC928	IC50M	IC250	IC508	IC808	IC908	IC1007
06IR/L A 55	3.97	0.50	1.25	48	20	6.00	0.05	0.5	0.6	●							
08IR/L A 55	4.76	0.50	1.50	48	16	8.00	0.05	0.6	0.7	●	●					●	
08UIRL U 55	4.76	1.75	2.00	14	11	8.00	0.10	0.9	4.0	●							
11IR/L A 55	6.35	0.50	1.50	48	16	11.00	0.05	0.8	0.9	●		●	●			●	
16IR A 55	9.52	0.50	1.50	48	16	16.00	0.05	0.8	0.9			●	●			●	
16IR/L AG 55	9.52	0.50	3.00	48	8	16.00	0.05	1.2	1.7	●		●	●	●		●	
16IRB AG 55 ⁽¹⁾	9.52	0.50	3.00	48	8	16.00	0.05	1.2	1.7							●	
16IRM AG 55 ⁽¹⁾	9.52	0.50	3.00	48	8	16.00	0.05	1.2	1.7			●	●		●	●	●
16IR/L G 55	9.52	1.75	3.00	14	8	16.00	0.20	1.2	1.7			●	●	●		●	
16IRB G 55 ⁽¹⁾	9.52	1.75	3.00	14	8	16.00	0.20	1.2	1.7							●	

For threading between walls use GRIP-type inserts TIP-WT, GEPI-WT, TIPI-WT

⁽¹⁾ With pressed chipformer .

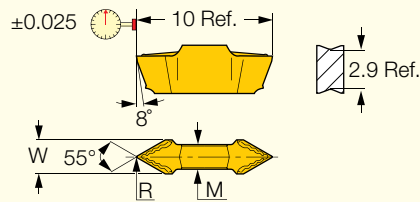
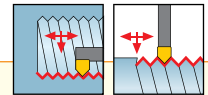
For tools, see pages: E-SIR-HEAD (B96) • MGSIR/L (B41) • SIR/L (B95).



ISCARTHREAD • CUT-GRIP

GEPI-WT

Precision Ground 55° Partial Profile, Double-Ended Threading Inserts with a Chipformer for 12.5 mm Bore Diameter



Designation	Dimensions						Tough ↔ Hard	
	W	R ± 0.03	M	TPI _{max}	P _{min}		IC08	IC908
	GEPI 2.5-WT0.05	2.50	0.05	1.8	54	0.47	●	●

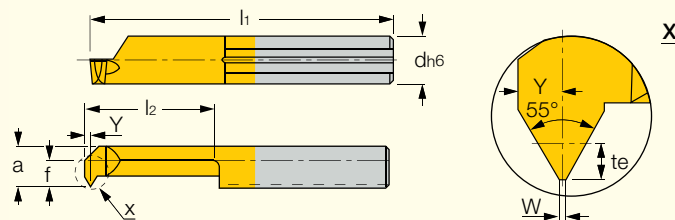
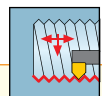
• Toolholder seat needs to be modified according to insert profile to ensure clearance • Pitch max 0.167xD, TPI min D/6.0

For tools, see pages: E-GEHIR / E-GHIR (B28) • GEAIR/L (B27) • GEHMR/L (B23) • GEHMR/L-SC (B24) • GEHIR/L (B25) • GEHIR/L-SC (B26) • GEHSR/L-SL (A13).

ISCARTHREAD • PICCOCUT

PICCO-Whitworth-Thread

Mini-Carbide Bars for Whitworth Profile Internal Threading



Right-hand shown

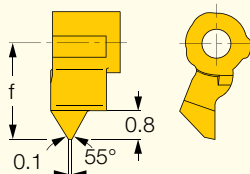
Designation	Dimensions											IC228
	d	TPI _{max}	TPI _{min}	t _e	w	Y	f	a	l ₂	l ₁	D _{min}	
	PICCO R 005.5548-15	5.00	48	24	0.40	0.06	0.5	1.9	4.40	15.0	30.00	4.80
PICCO R 006.5548-15	6.00	48	24	0.40	0.06	0.5	2.3	5.30	15.0	30.00	6.00	●
PICCO R 006.5524-15	6.00	24	16	0.81	0.12	0.8	2.3	5.30	15.0	30.00	6.00	●
PICCO R 007.5524-15	7.00	24	16	0.81	0.12	0.8	2.8	6.30	15.0	30.00	7.00	●

• All mini-bars have sharp corners

ISCARTHREAD • MINICHAM

UMGR-A55

Mini Indexable Inserts, for Threading Whitworth, Partial Profile in 5.2 mm and Larger Holes



Right-hand shown

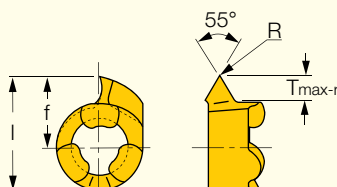
Designation	Dimensions						IC508
	f	TPI _{max}	TPI _{min}	P _{min}	P _{max}	D _{min}	
UMGR 4.0-A55	2.7	48	18	0.50	1.40	5.20	●

For tools, see pages: MGUHR (B22).

ISCARTHREAD • CHAMGROOVE

GIQR/L-WT

Internal Threading Inserts for Threading Whitworth, Partial Profile in 8 mm and Larger Holes



Left-hand shown

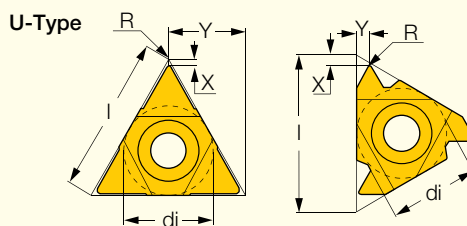
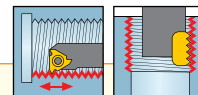
Designation	Dimensions							IC528
	l	R ^{±0.03}	T _{max-r}	f	D _{min}	P _{min}	TPI _{max}	
GIQR/L 8-WT-0.05	7.78	0.05	1.50	4.8	8.00	0.50	50	●
GIQR/L 11-WT-0.05	10.68	0.05	2.00	6.7	11.00	0.50	50	●

• Can be used for thread milling by circular interpolation. • TPI min D/5.9 • D-diameter of thread (pitch max<=W)

For tools, see pages: MG (B16) • MGCH (B17).

IR/L-60°

Internal 60° Partial Profile, Laydown Threading Inserts, for General Industry

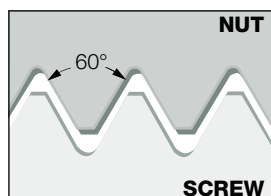


Internal left-hand shown

Designation	Dimensions									Tough ↔ Hard							
	di	P _{min}	P _{max}	TPI		L	R	X	Y	IC28	IC228	IC50M	IC250	IC508	IC808	IC908	IC1007
				max	min												
06IR/L A 60	3.97	0.50	1.25	48	20	6.00	0.05	0.6	0.6	●	●						
06IRM A 60 ⁽¹⁾	3.97	0.50	1.25	48	20	6.00	0.05	0.5	0.6		●						
08IR/L A 60	4.76	0.50	1.50	48	16	8.00	0.05	0.6	0.7		●						
08IRM A 60 ⁽¹⁾	4.76	0.50	1.50	48	16	8.00	0.05	0.6	0.7		●				●	●	●
08UIRL U 60	4.76	1.75	2.00	14	11	8.00	0.10	0.8	4.0		●						
11IR/L A 60	6.35	0.50	1.50	48	16	11.00	0.05	0.8	0.9		●	●				●	
11IRM A 60 ⁽¹⁾	6.35	0.50	1.50	48	16	11.00	0.05	0.7	0.9		●		●		●	●	●
16IR/L A 60	9.52	0.50	1.50	48	16	16.00	0.05	0.8	0.9		●	●	●			●	
16IRB A 60 ⁽¹⁾	9.52	0.50	1.50	48	16	16.00	0.05	0.8	0.9							●	
16IRM A 60 ⁽¹⁾	9.52	0.50	1.50	48	16	16.00	0.05	0.8	0.9				●		●		●
16IR/L AG 60	9.52	0.50	3.00	48	8	16.00	0.05	1.2	1.7		●	●	●			●	●
16IRB AG 60 ⁽¹⁾	9.52	0.50	3.00	48	8	16.00	0.05	1.2	1.7							●	
16IRM AG 60 ⁽¹⁾	9.52	0.50	3.00	48	8	16.00	0.05	1.2	1.7			●	●	●	●	●	●
16IR/L G 60	9.52	1.75	3.00	14	8	16.00	0.12	1.2	1.7		●	●	●			●	
16IRB G 60 ⁽¹⁾	9.52	1.75	3.00	14	8	16.00	0.12	1.2	1.7							●	
16IRM G 60 ⁽¹⁾	9.52	1.75	3.00	14	8	16.00	0.10	1.2	1.7			●	●		●	●	●

⁽¹⁾ With a pressed chipformer

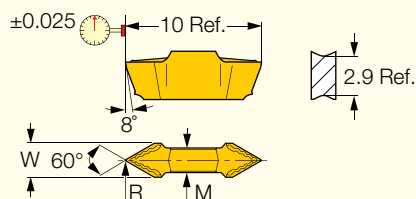
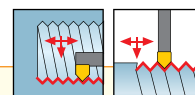
For tools, see pages: E-SIR-HEAD (B97) • MGSIR/L (B41) • SIR/L (B96).



ISCARTHREAD • CUT-GRIP

GEPI-MT

Internal Double-Ended Precision Threading Inserts for 60° Partial Profile, for General Applications



Designation	Dimensions					Tough ← Hard	
	W	R±0.03	M	P _{min}	TPI _{max}	IC08	IC908
GEPI 2.5-MT0.05	2.50	0.05	1.8	0.90	28	●	●

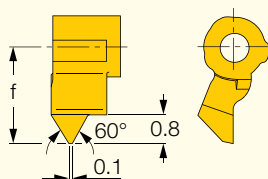
- Toolholder seat needs to be modified according to insert profile to ensure clearance.
- Pitch max 0.187xD, TPI min D/5.35
- D=Diameter of thread (pitch max≤W)

For tools, see pages: E-GEHIR / E-GHIR (B28) • GEAIR/L (B27) • GEHMR/L (B23) • GEHMR/L-SC (B24) • GEHIR/L (B25) • GEHIR/L-SC (B26) • GEHSR/L-SL (A13).

ISCARTHREAD • MINICHAM

UMGR-A60

Mini Indexable Inserts, for Threading 60° Partial Profile, in 5.2 mm and Larger Holes



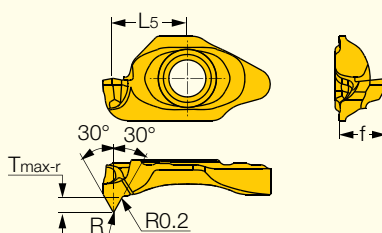
Right-hand shown

Designation	Dimensions				IC508
	f	D _{min}	P _{min}	P _{max}	
UMGR 4.0-A60	2.7	5.20	0.50	1.25	●

For tools, see pages: MGUHR (B22).

MITR 8-MT

Internal Partial Profile, ISO Metric Threading Inserts



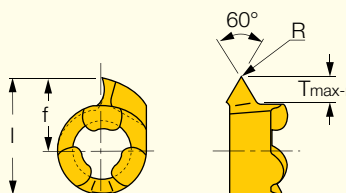
Designation	Dimensions						IC908
	T_{max-r}	$R_{\pm 0.02}$	l	D_{min}	P_{min}	P_{max}	
MITR 8-MT2-0.1	1.17	0.10	5.75	10.00	1.50	2.00	•
MITR 8-MT1-0.05	1.23	0.05	5.75	10.00	0.75	1.25	•

For tools, see pages: MIFHR (B125).

ISCARTHREAD • CHAMGROOVE

GIQR/L-MT

Internal Threading Inserts, for Threading 60° Partial Profile in 8 mm and Larger Holes



Left-hand shown

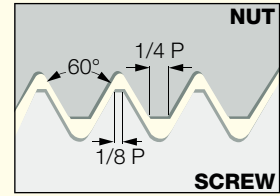
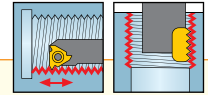
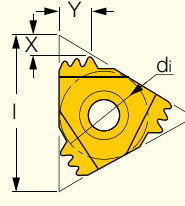
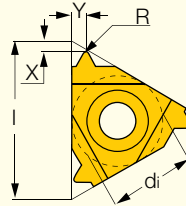
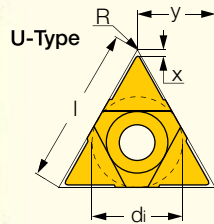
Designation	Dimensions							IC528
	l	$R_{\pm 0.03}$	T_{max-r}	f	D_{min}	P_{min}	TPI_{max}	
GIQR/L 8-MT-0.05	7.78	0.05	1.50	4.8	8.00	0.90	28	•
GIQR/L 11-MT-0.05	10.68	0.05	2.00	6.7	11.00	0.90	28	•

• Can be used for thread milling by circular interpolation. • Pitch max 0.19xD. • D-diameter of thread

For tools, see pages: MG (B16) • MGCH (B17).

IR/L-ISO

Internal ISO Metric (DIN13 12-1986 class 6H) Laydown Threading Inserts, for General Industry



Internal left-hand shown

Designation	Dimensions							Tough ↔ Hard								
	di	Pitch	l	R	X	Y	Z ⁽³⁾	IC28	IC228	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007
06IR/L 0.50 ISO	3.97	0.50	6.00	0.03	0.9	0.5	1		●							
06IR/L 0.75 ISO	3.97	0.75	6.00	0.04	0.8	0.5	1		●							
06IR/L 1.00 ISO	3.97	1.00	6.00	0.05	0.7	0.6	1		●							
06IR/L 1.25 ISO	3.97	1.25	6.00	0.07	0.6	0.6	1		●							
08IR/L 0.50 ISO	4.76	0.50	8.00	0.05	0.6	0.5	1		●							
08IR 0.75 ISO	4.76	0.75	8.00	0.04	0.6	0.5	1		●							
08IR/L 1.00 ISO	4.76	1.00	8.00	0.05	0.6	0.6	1		●						●	
08IR/L 1.25 ISO	4.76	1.25	8.00	0.07	0.6	0.7	1		●							
08IR/L 1.50 ISO	4.76	1.50	8.00	0.08	0.6	0.7	1	●	●							
08IR/L 1.75 ISO	4.76	1.75	8.00	0.10	0.6	0.8	1		●							
08UIRL 2.00 ISO	4.76	2.00	8.00	0.12	0.9	4.0	1		●							
11IR/L 0.35 ISO	6.35	0.35	11.00	0.02	0.8	0.3	1					●			●	
11IR 0.40 ISO	6.35	0.40	11.00	0.02	0.8	0.4	1								●	
11IR/L 0.50 ISO	6.35	0.50	11.00	0.03	0.6	0.6	1			●	●	●			●	
11IR 0.70 ISO	6.35	0.70	11.00	0.04	0.6	0.6	1								●	
11IR/L 0.75 ISO	6.35	0.75	11.00	0.08	0.6	0.6	1			●	●				●	
11IR 0.80 ISO	6.35	0.80	11.00	0.04	0.6	0.6	1			●	●				●	
11IR/L 1.00 ISO	6.35	1.00	11.00	0.05	0.6	0.7	1		●	●	●	●			●	
11IRM 1.00 ISO ⁽¹⁾	6.35	1.00	11.00	0.05	0.6	0.7	1							●	●	
11IR/L 1.25 ISO	6.35	1.25	11.00	0.07	0.8	0.8	1			●	●				●	
11IR/L 1.50 ISO	6.35	1.50	11.00	0.08	0.8	1.0	1		●	●	●				●	●
11IRM 1.50 ISO ⁽¹⁾	6.35	1.50	11.00	0.08	0.8	1.0	1				●			●	●	●
11IR/L 1.75 ISO	6.35	1.75	11.00	0.10	0.8	1.1	1			●	●				●	
11IR/L 2.00 ISO	6.35	2.00	11.00	0.12	0.8	0.9	1		●		●		●		●	
16IR 0.35 ISO	9.52	0.35	16.00	0.02	0.8	0.3	1								●	
16IR/L 0.40 ISO	9.52	0.40	16.00	0.02	0.8	0.4	1								●	
16IL 0.45 ISO	9.52	0.45	16.00	0.02	0.8	0.4	1								●	
16IR/L 0.50 ISO	9.52	0.50	16.00	0.03	0.6	0.6	1			●	●	●			●	
16IR/L 0.60 ISO	9.52	0.60	16.00	0.03	0.6	0.6	1			●					●	
16IR/L 0.70 ISO	9.52	0.70	16.00	0.04	0.6	0.6	1			●	●				●	
16IR/L 0.75 ISO	9.52	0.75	16.00	0.04	0.6	0.6	1		●	●	●	●			●	
16IR/L 0.80 ISO	9.52	0.80	16.00	0.04	0.6	0.6	1			●	●				●	
16IR/L 1.00 ISO	9.52	1.00	16.00	0.05	0.6	0.7	1			●	●	●	●		●	
16IR 1.00 ISO 3M ⁽²⁾	9.52	1.00	16.00	0.05	1.7	2.5	3								●	
16IRB 1.00 ISO ⁽¹⁾	9.52	1.00	16.00	0.05	0.6	0.7	1								●	
16IRM 1.00 ISO ⁽¹⁾	9.52	1.00	16.00	0.05	0.6	0.7	1			●	●		●	●	●	●

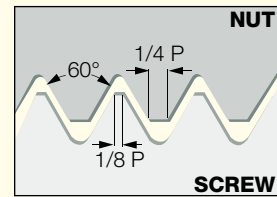
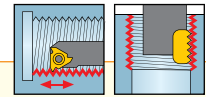
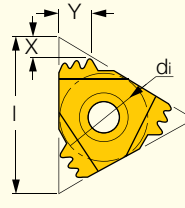
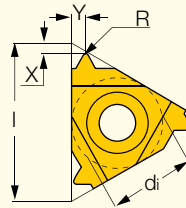
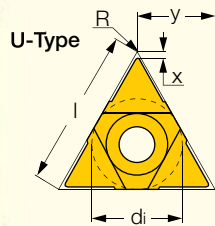
• Tolerance: Class 6H.

⁽¹⁾ With pressed chipformer ⁽²⁾ Multi-tooth ⁽³⁾ Number of teeth per corner.

For tools, see pages: E-SIR-HEAD (B97) • MGSIR/L (B41) • SIR/L (B96).

IR/L-ISO (continued)

Internal ISO Metric (DIN13 12-1986 class 6H) Laydown Threading Inserts, for General Industry



Internal left-hand shown

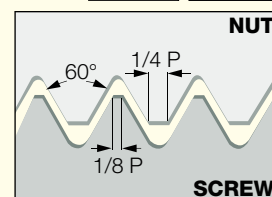
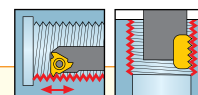
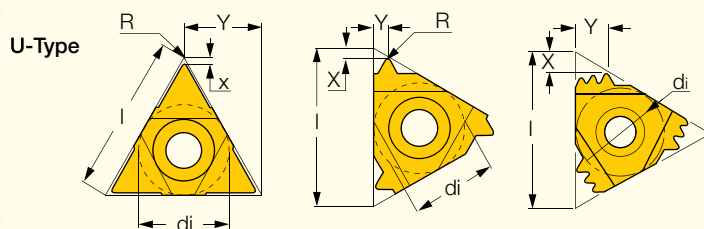
Designation	Dimensions							Tough ↔ Hard								
	di	Pitch	I	R	X	Y	Z ⁽³⁾	IC28	IC228	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007
16IR/L 1.25 ISO	9.52	1.25	16.00	0.07	0.8	0.9	1		●	●	●	●	●		●	
16IRB 1.25 ISO ⁽¹⁾	9.52	1.25	16.00	0.07	0.8	0.9	1								●	
16IRM 1.25 ISO ⁽¹⁾	9.52	1.25	16.00	0.06	0.8	0.9	1				●			●	●	
16IR/L 1.50 ISO	9.52	1.50	16.00	0.08	0.8	1.0	1		●	●	●	●	●		●	●
16IR 1.50 ISO 2M ⁽²⁾	9.52	1.50	16.00	0.08	1.5	2.3	2				●				●	
16IRB 1.50 ISO ⁽¹⁾	9.52	1.50	16.00	0.08	0.8	1.0	1								●	
16IRM 1.50 ISO ⁽¹⁾	9.52	1.50	16.00	0.08	0.8	1.0	1			●	●		●	●	●	●
16IR/L 1.75 ISO	9.52	1.75	16.00	0.10	0.9	1.2	1			●	●	●			●	
16IRB 1.75 ISO ⁽¹⁾	9.52	1.75	16.00	0.10	0.9	1.2	1								●	
16IRM 1.75 ISO ⁽¹⁾	9.52	1.75	16.00	0.10	0.9	1.2	1				●			●	●	
16IR/L 2.00 ISO	9.52	2.00	16.00	0.12	1.0	1.3	1		●	●	●		●		●	
16IR 2.00 ISO 2M ⁽²⁾	9.52	2.00	16.00	0.12	2.0	3.0	2								●	
16IRB 2.00 ISO ⁽¹⁾	9.52	2.00	16.00	0.12	1.0	1.3	1								●	
16IRM 2.00 ISO ⁽¹⁾	9.52	2.00	16.00	0.11	1.0	1.3	1			●	●		●	●	●	●
16IR/L 2.50 ISO	9.52	2.50	16.00	0.15	1.1	1.5	1		●	●	●		●		●	
16IRM 2.50 ISO ⁽¹⁾	9.52	2.50	16.00	0.14	1.1	1.5	1				●			●	●	●
16IR/L 3.00 ISO	9.52	3.00	16.00	0.18	1.1	1.5	1		●	●	●				●	
16IRB 3.00 ISO ⁽¹⁾	9.52	3.00	16.00	0.18	1.1	1.5	1								●	
16IRM 3.00 ISO ⁽¹⁾	9.52	3.00	16.00	0.17	1.1	1.5	1			●	●		●	●	●	●

⁽¹⁾ With pressed chipformer ⁽²⁾ Multi-tooth ⁽³⁾ Number of teeth per corner.

For tools, see pages: E-SIR-HEAD (B97) • MGSIR/L (B41) • SIR/L (B96).

IR/L-UN

Internal American UN, Full Profile (UN, UNC, UNF, UNEF) Laydown Threading Inserts, for General Industry



Internal left-hand shown

Designation	Dimensions							Tough ↔ Hard								
	di	TPI	I	R	X	Y	Z ⁽³⁾	IC228	IC928	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007
06IR 32 UN	3.97	32.0	6.00	0.04	0.8	0.5	1	●								
06IL 28 UN	3.97	28.0	6.00	0.04	0.8	0.6	1	●								
06IR/L 24 UN	3.97	24.0	6.00	0.05	0.7	0.6	1	●								
06IR/L 20 UN	3.97	20.0	6.00	0.06	0.6	0.6	1	●								
06IR/L 18 UN	3.97	18.0	6.00	0.07	0.6	0.7	1	●								
08IR 32 UN	4.76	32.0	8.00	0.04	0.6	0.5	1	●								
08IR/L 28 UN	4.76	28.0	8.00	0.04	0.6	0.6	1	●								
08IR/L 24 UN	4.76	24.0	8.00	0.05	0.6	0.6	1	●								
08IR/L 20 UN	4.76	20.0	8.00	0.06	0.6	0.7	1	●								
08IR 18 UN	4.76	18.0	8.00	0.07	0.6	0.7	1	●								
08IR/L 16 UN	4.76	16.0	8.00	0.09	0.6	0.7	1	●								
08IR 14 UN	4.76	14.0	8.00	0.10	0.6	0.8	1	●							●	
08UIRL 13 UN	4.76	13.0	8.00	0.10	1.0	4.0	1								●	
08UIRL 12 UN	4.76	12.0	8.00	0.10	0.9	4.0	1		●							
08UIRL 11 UN	4.76	11.0	8.00	0.10	0.9	4.0	1	●								
11IR 64 UN	6.35	64.0	11.00	0.02	0.8	0.4	1								●	
11IR 36 UN	6.35	36.0	11.00	0.04	0.6	0.6	1								●	
11IR/L 32 UN	6.35	32.0	11.00	0.04	0.6	0.6	1			●					●	
11IR/L 28 UN	6.35	28.0	11.00	0.04	0.6	0.7	1					●			●	
11IR/L 24 UN	6.35	24.0	11.00	0.05	0.7	0.8	1			●					●	
11IR/L 20 UN	6.35	20.0	11.00	0.06	0.8	0.9	1			●		●			●	
11IR/L 18 UN	6.35	18.0	11.00	0.07	0.8	1.0	1			●	●				●	
11IR/L 16 UN	6.35	16.0	11.00	0.09	0.9	1.1	1	●		●	●				●	
11IR/L 14 UN	6.35	14.0	11.00	0.10	0.9	1.1	1			●	●				●	
11IR 12 UN	6.35	12.0	11.00	0.12	0.9	1.1	1				●					
11IR 11 UN	6.35	11.0	11.00	0.14	0.8	1.1	1				●				●	
16IR 32 UN	9.52	32.0	16.00	0.04	0.6	0.6	1			●	●				●	
16IR/L 28 UN	9.52	28.0	16.00	0.04	0.6	0.7	1			●					●	
16IR 27 UN	9.52	27.0	16.00	0.04	0.7	0.8	1			●						
16IR 24 UN	9.52	24.0	16.00	0.05	0.7	0.8	1			●	●	●			●	
16IRB 24 UN ⁽¹⁾	9.52	24.0	16.00	0.05	0.7	0.8	1								●	
16IR/L 20 UN	9.52	20.0	16.00	0.06	0.8	0.9	1			●	●	●	●		●	
16IRB 20 UN ⁽¹⁾	9.52	20.0	16.00	0.06	0.8	0.9	1								●	
16IRM 20 UN ⁽¹⁾	9.52	20.0	16.00	0.06	0.8	0.9	1							●	●	
16IR/L 18 UN	9.52	18.0	16.00	0.07	0.8	1.0	1			●	●		●		●	
16IRB 18 UN ⁽¹⁾	9.52	18.0	16.00	0.07	0.8	1.0	1								●	
16IRM 18 UN ⁽¹⁾	9.52	18.0	16.00	0.08	0.8	1.0	1							●	●	
16IR/L 16 UN	9.52	16.0	16.00	0.09	0.9	1.1	1			●	●		●		●	
16IR 16 UN 2M ⁽²⁾	9.52	16.0	16.00	0.09	1.5	2.3	2						●			
16IRB 16 UN ⁽¹⁾	9.52	16.0	16.00	0.18	0.9	1.1	1								●	
16IRM 16 UN ⁽¹⁾	9.52	16.0	16.00	0.09	0.9	1.1	1				●			●	●	●
16IR/L 14 UN	9.52	14.0	16.00	0.10	0.9	1.2	1			●	●		●		●	
16IRB 14 UN ⁽¹⁾	9.52	14.0	16.00	0.10	0.9	1.2	1								●	
16IRM 14 UN ⁽¹⁾	9.52	14.0	16.00	0.11	0.9	1.2	1				●				●	
16IR/L 13 UN	9.52	13.0	16.00	0.11	1.0	1.3	1			●					●	

• Tolerance: class 2B, ANSI B1, 3M-1986.

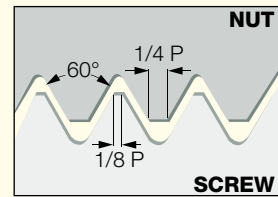
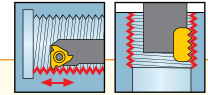
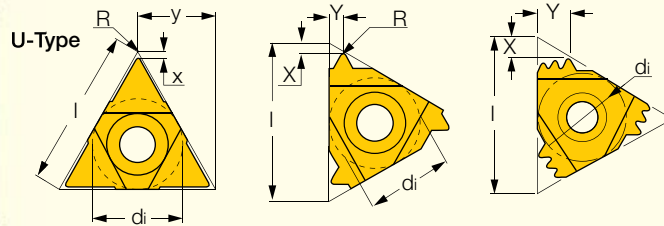
⁽¹⁾ With pressed chipformer. ⁽²⁾ Multi-tooth ⁽³⁾ Number of teeth per corner.

For tools, see pages: E-SIR-HEAD (B97) • MGSIR/L (B41) • SIR/L (B96).

ISCARTHREAD

IR/L-UN (continued)

Internal American UN, Full Profile (UN, UNC, UNF, UNEF) Laydown Threading Inserts, for General Industry



Internal left-hand shown

Designation	Dimensions							Tough $\longleftrightarrow$ Hard								
	di	TPI	l	R	X	Y	Z ⁽³⁾	IC228	IC928	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007
16IR/L 12 UN	9.52	12.0	16.00	0.12	1.1	1.4	1	●		●	●	●			●	
16IRB 12 UN ⁽¹⁾	9.53	12.0	16.00	0.12	1.1	1.4	1				●				●	
16IRM 12 UN ⁽¹⁾	9.52	12.0	16.00	0.12	1.1	1.4	1				●			●		●
16IR 11.5 UN	9.52	11.5	16.00	0.13	1.1	1.5	1				●				●	
16IR 11 UN	9.52	11.0	16.00	0.14	1.1	1.5	1			●	●				●	
16IR/L 10 UN	9.52	10.0	16.00	0.15	1.1	1.5	1			●	●				●	
16IRB 10 UN ⁽¹⁾	9.52	10.0	16.00	0.15	1.1	1.5	1								●	
16IR 9 UN	9.52	9.0	16.00	0.17	1.2	1.7	1								●	
16IR/L 8 UN	9.52	8.0	16.00	0.19	1.1	1.5	1			●	●		●		●	
16IRB 8 UN ⁽¹⁾	9.52	8.0	16.00	0.19	1.1	1.5	1						●		●	
16IRM 8 UN ⁽¹⁾	9.52	8.0	16.00	0.20	1.1	1.5	1				●			●	●	

• Tolerance: class 2B, ANSI B1, 3M-1986.

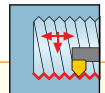
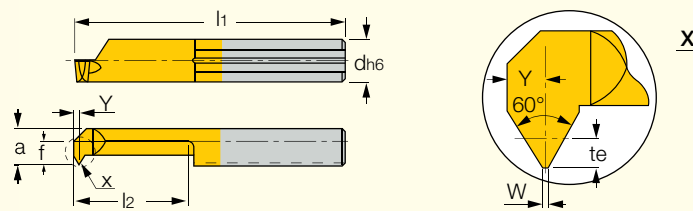
⁽¹⁾ With pressed chipformer. ⁽²⁾ Multi-tooth ⁽³⁾ Number of teeth per corner.

For tools, see pages: E-SIR-HEAD (B97) • MGSIR/L (B41) • SIR/L (B96).

ISCARTHREAD • PICCOCUT

PICCO R/L-ISO-Thread

Mini-Carbide Bars for ISO Internal Thread Turning, Dmin 2.4 mm

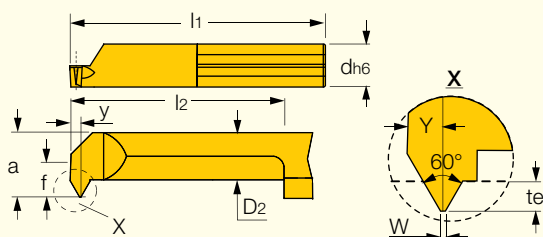


Right-hand shown

Designation	Dimensions											Tough $\longleftrightarrow$ Hard	
	d	Pitch	te	w	Y	f	a	l2	l1	D min		IC228	IC908
PICCO R 003.0105-8	3.00	0.50	0.27	0.04	0.3	0.3	2.30	8.0	22.00	2.40			●
PICCO R 004.0105-10	4.00	0.50	0.27	0.09	0.4	1.0	3.00	10.0	24.00	3.20			●
PICCO R/L 004.0205-15	4.00	0.50	0.27	0.06	0.4	1.5	3.50	15.0	30.00	4.00	●		
PICCO R/L 005.0205-15	5.00	0.50	0.27	0.06	0.4	1.9	4.40	15.0	30.00	5.00	●		
PICCO R/L 005.0407-15	5.00	0.75	0.40	0.90	0.5	1.9	4.40	15.0	30.00	5.00	●		●
PICCO R/L 005.0510-15	5.00	1.00	0.55	0.12	0.6	1.9	4.40	15.0	30.00	4.80	●		
PICCO R/L 006.0510-15	6.00	1.00	0.55	0.12	0.6	2.3	5.30	15.0	30.00	6.00	●		
PICCO R/L 006.0612-15	6.00	1.25	0.68	0.15	0.7	2.3	5.30	15.0	30.00	6.00	●		
PICCO R/L 006.0815-15	6.00	1.50	0.81	0.18	0.8	2.3	5.30	15.0	30.00	6.00	●		
PICCO R/L 007.0815-15	7.00	1.50	0.81	0.18	0.8	2.7	6.30	15.0	30.00	7.00	●		

PICCO ISO Full Profile

Inserts for ISO, Standard Full Profile Thread

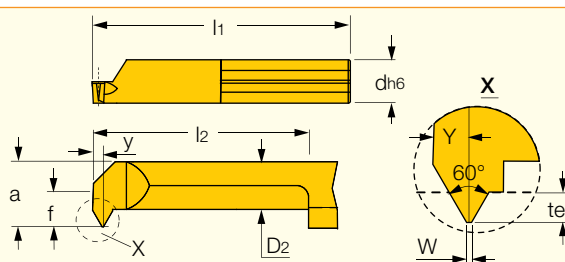


Right-hand shown

Designation	Dimensions											IC908
	Pitch	d	f	a	l ₁	l ₂	D ₂	Y	t _e	w	D _{min}	
PICCO R/L 105.0510-15	1.00	5.00	1.9	4.40	30.00	15.0	3.30	0.6	0.54	0.12	4.80	●
PICCO R/L 106.0612-15	1.25	6.00	2.3	5.30	30.00	15.0	3.40	0.7	0.67	0.15	6.00	●
PICCO R/L 106.0815-15	1.50	6.00	2.3	5.30	30.00	15.0	3.40	0.8	0.81	0.18	6.00	●
PICCO R/L 107.0815-15	1.50	7.00	2.8	6.30	30.00	15.0	3.80	0.8	0.81	0.18	7.00	●

PICCO ISO Full Profile Fine

Inserts ISO, Fine Pitch Full Profile Thread

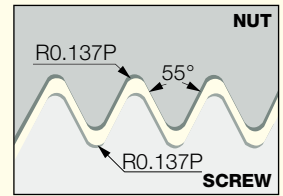
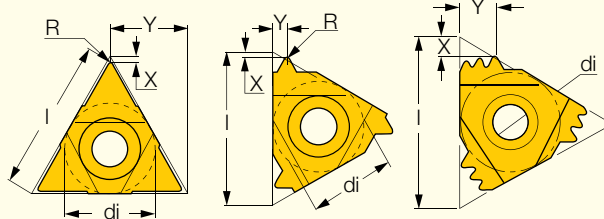
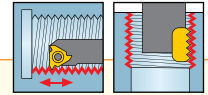


Right-hand shown

Designation	Dimensions											IC908
	Pitch	d	f	a	l ₁	l ₂	D ₂	Y	t _e	w	D _{min}	
PICCO R/L 104.0205-15	0.50	5.00	1.5	3.50	30.00	15.0	2.40	0.4	0.27	0.06	4.00	●
PICCO R/L 105.0205-15	0.50	5.00	1.9	4.40	30.00	15.0	3.30	0.4	0.27	0.06	5.00	●
PICCO R/L 105.0407-15	0.75	5.00	1.9	4.40	30.00	15.0	3.30	0.5	0.40	0.09	5.00	●
PICCO R/L 106.0510-15	1.00	6.00	2.3	5.30	30.00	15.0	3.40	0.6	0.54	0.12	6.00	●

IR/L-W

Internal Whitworth (BSW, BSF, BSP), B.S.84-1956 DIN 259 Medium Class, Full Profile Laydown Threading Inserts



Internal left-hand shown

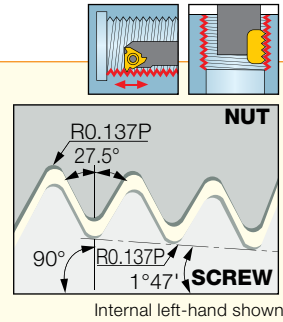
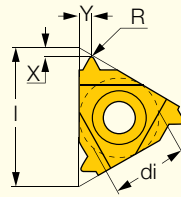
Designation	Dimensions							Tough ↔ Hard								
	di	TPI	L	R	X	Y	Z ⁽³⁾	IC228	IC928	IC50M	IC250	IC08	IC508	IC808	IC908	IC1007
06IR 26 W	3.97	26.0	6.00	0.10	0.7	0.6	1	●								
06IR 20 W	3.97	20.0	6.00	0.14	0.6	0.7	1	●								
08IR 24 W	4.76	24.0	8.00	0.11	0.6	0.6	1	●								
08IR/L 19 W	4.76	19.0	8.00	0.15	0.6	0.7	1	●	●							
08IR 18 W	4.76	18.0	8.00	0.16	0.6	0.7	1	●								
08IR 16 W	4.76	16.0	8.00	0.18	0.6	0.7	1	●								
08UIRL 12 W	4.76	12.0	8.00	0.25	0.9	4.0	1	●								
11IR 36 W	6.35	36.0	11.00	0.07	0.6	0.6	1					●				
11IR 28 W	6.35	28.0	11.00	0.10	0.6	0.7	1				●					
11IR 26 W	6.35	26.0	11.00	0.10	0.7	0.7	1	●								
11IR/L 24 W	6.35	24.0	11.00	0.11	0.7	0.8	1				●				●	
11IR 20 W	6.35	20.0	11.00	0.14	0.8	0.9	1			●	●				●	
11IR 19 W	6.35	19.0	11.00	0.15	0.8	1.0	1			●	●				●	
11IR/L 18 W	6.35	18.0	11.00	0.16	0.8	1.0	1			●	●				●	
11IR 16 W	6.35	16.0	11.00	0.18	0.9	1.1	1			●	●				●	
11IR/L 14 W	6.35	14.0	11.00	0.21	0.9	1.1	1	●		●	●	●			●	
11IL 12 W	6.35	12.0	11.00	0.27	1.0	1.1	1								●	
16IR 40 W	9.52	40.0	16.00	0.06	0.6	0.6	1			●						
16IR/L 32 W	9.52	32.0	16.00	0.09	0.6	0.6	1			●						
16IR/L 28 W	9.52	28.0	16.00	0.09	0.6	0.7	1			●	●					
16IR 26 W	9.52	26.0	16.00	0.10	0.7	0.7	1			●	●				●	
16IR/L 24 W	9.52	24.0	16.00	0.11	0.7	0.8	1			●	●				●	
16IR/L 22 W	9.52	22.0	16.00	0.13	0.8	0.9	1			●	●				●	
16IR/L 20 W	9.52	20.0	16.00	0.14	0.8	0.9	1			●	●		●		●	
16IRM 20 W ⁽¹⁾	9.52	20.0	16.00	0.14	0.8	0.9	1								●	
16IR/L 19 W	9.52	19.0	16.00	0.15	0.8	1.0	1			●	●		●		●	
16IRB 19 W ⁽¹⁾	9.52	19.0	16.00	0.15	0.8	1.0	1								●	
16IRM 19 W ⁽¹⁾	9.52	19.0	16.00	0.15	0.8	1.0	1				●				●	
16IR/L 18 W	9.52	18.0	16.00	0.16	0.8	1.0	1			●	●				●	
16IR/L 16 W	9.52	16.0	16.00	0.18	0.9	1.1	1			●					●	
16IRB 16 W ⁽¹⁾	9.52	16.0	16.00	0.18	0.9	1.1	1								●	
16IRM 16 W ⁽¹⁾	9.52	16.0	16.00	0.18	0.9	1.1	1				●			●	●	
16IR/L 14 W	9.52	14.0	16.00	0.21	1.0	1.2	1	●		●	●		●		●	
16IR 14 W 2M ⁽²⁾	9.52	14.0	16.00	0.23	1.7	2.7	2									
16IRB 14 W ⁽¹⁾	9.52	14.0	16.00	0.21	1.0	1.2	1								●	
16IRM 14 W ⁽¹⁾	9.52	14.0	16.00	0.21	1.0	1.2	1				●			●	●	●
16IR/L 12 W	9.52	12.0	16.00	0.25	1.1	1.4	1			●	●				●	
16IR/L 11 W	9.52	11.0	16.00	0.27	1.1	1.5	1	●		●	●	●			●	
16IRB 11 W ⁽¹⁾	9.52	11.0	16.00	0.27	1.1	1.5	1								●	
16IRM 11 W ⁽¹⁾	9.52	11.0	16.00	0.27	1.1	1.5	1				●		●	●	●	●
16IR/L 10 W	9.52	10.0	16.00	0.31	1.1	1.5	1			●	●				●	
16IRB 10 W ⁽¹⁾	9.52	10.0	16.00	0.31	1.1	1.5	1								●	
16IR/L 9 W	9.52	9.0	16.00	0.34	1.2	1.7	1			●	●					
16IR/L 8 W	9.52	8.0	16.00	0.39	1.2	1.5	1			●	●				●	

⁽¹⁾ With pressed chipformer. ⁽²⁾ Multi-tooth ⁽³⁾ Number of teeth per corner.

For tools, see pages: E-SIR-HEAD (B97) • MGSIR/L (B41) • SIR/L (B96).

IR/L-BSPT

Internal BSPT (British Standard Pipe) B.S.21-1957, Full Profile, Laydown Threading Inserts



Internal left-hand shown

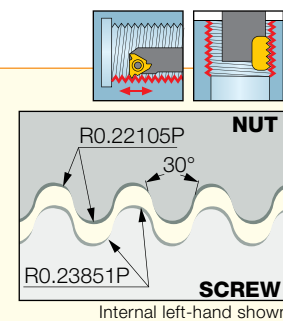
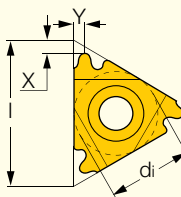
Designation	Dimensions						Tough ← Hard					
	di	TPI	I	R	X	Y	IC228	IC50M	IC250	IC808	IC908	IC1007
06IR 28 BSPT	3.97	28.0	6.00	0.11	0.7	0.6	●					
08IR 28 BSPT	4.76	28.0	8.00	0.11	0.6	0.6	●					
08IR 19 BSPT	4.76	19.0	8.00	0.16	0.6	0.6	●					
11IR 19 BSPT	6.35	19.0	11.00	0.16	0.8	0.9			●		●	
11IR/L 14 BSPT	6.35	14.0	11.00	0.21	0.9	1.0			●		●	
16IR 28 BSPT	9.52	28.0	16.00	0.11	0.6	0.6			●			
16IR 19 BSPT	9.52	19.0	16.00	0.16	0.8	0.9		●	●			
16IRB 14 BSPT ⁽¹⁾	9.52	14.0	16.00	0.21	1.0	1.2					●	
16IRM 14 BSPT ⁽¹⁾	9.52	14.0	16.00	0.21	1.0	1.2				●	●	●
16IR/L 14 BSPT	9.52	14.0	16.00	0.21	1.0	1.2		●	●		●	
16IRM 11 BSPT ⁽¹⁾	9.52	11.0	16.00	0.28	1.1	1.5				●	●	●
16IRB 11 BSPT ⁽¹⁾	9.52	11.0	16.00	0.28	1.1	1.5					●	
16IR/L 11 BSPT	9.52	11.0	16.00	0.28	1.1	1.5	●	●	●		●	

⁽¹⁾ With pressed chipformer.

For tools, see pages: E-SIR-HEAD (B97) • MGSIR/L (B41) • SIR/L (B96).

IR/L-RND

Internal DIN 405, Round Laydown Threading Inserts, for Fire Fighting and Food Industry Pipe Couplings



Internal left-hand shown

Designation	Dimensions						Tough ← Hard			
	di	TPI	I	X	Y		IC228	IC50M	IC250	IC908
16IR 10 RND	9.52	10.0	16.00	1.1	1.2			●	●	●
16IR/L 8 RND	9.52	8.0	16.00	1.4	1.4			●	●	●
16IRM 8 RND ⁽¹⁾	9.52	8.0	16.00	1.4	1.4				●	●
16IR/L 6 RND	9.52	6.0	16.00	1.4	1.5		●		●	●
16IRM 6 RND ⁽¹⁾	9.52	6.0	16.00	1.4	1.5					●

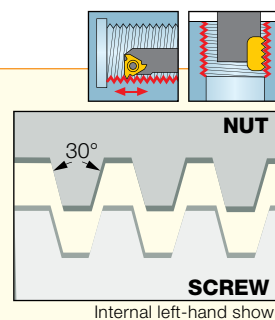
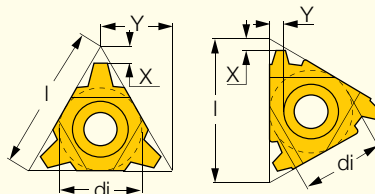
• Tolerance: Class 7H.

⁽¹⁾ With pressed chipformer.

For tools, see pages: E-SIR-HEAD (B97) • SIR/L (B96).

IR/L-TR

Internal Trapeze Shaped DIN 103 Laydown Threading Inserts, for Feed Screws



Designation	Dimensions					Tough ↔ Hard				
	di	Pitch	l	X	Y	IC228	IC50M	IC250	IC508	IC908
08IR 1.5 TR ⁽¹⁾	4.76	1.50	8.00	0.6	0.6	●				
08UIRL 2 TR	4.76	2.00	8.00	0.9	4.0	●				
16IR 1.5 TR	9.52	1.50	16.00	1.0	1.1			●		
16IR/L 2 TR	9.52	2.00	16.00	1.0	1.3		●	●		●
16IR/L 3 TR	9.52	3.00	16.00	1.3	1.5	●	●	●	●	●

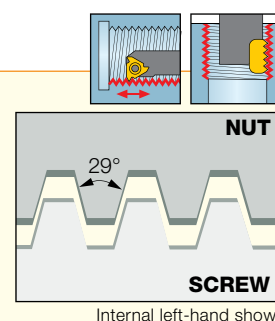
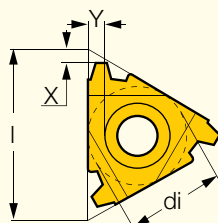
• Tolerance: Class 7H

⁽¹⁾ Single threading corner

For tools, see pages: E-SIR-HEAD (B97) • SIR/L (B96).

IR/L-STACME

Internal STUB ACME Laydown Threading Inserts, for Control Valves and Shallow ACME Profile



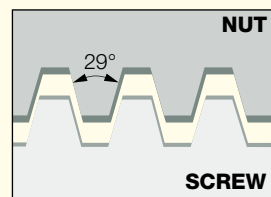
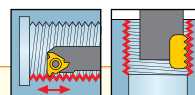
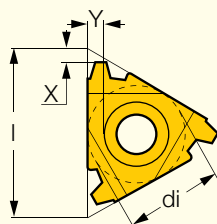
Designation	Dimensions					Tough ↔ Hard		
	di	TPI	l	X	Y	IC50M	IC250	IC908
16IR/L 16 STACME	9.52	16.0	16.00	1.0	1.0	●		
16IR/L 14 STACME	9.52	14.0	16.00	1.1	1.1	●		
16IR/L 12 STACME	9.52	12.0	16.00	1.2	1.2	●	●	●
16IR/L 10 STACME	9.52	10.0	16.00	1.3	1.3	●		
16IR/L 8 STACME	9.52	8.0	16.00	1.5	1.5	●		
16IR 6 STACME	9.52	6.0	16.00	1.8	1.8		●	●

• Tolerance: Class 2G.

For tools, see pages: E-SIR-HEAD (B97) • SIR/L (B96).

IR/L-ACME

Internal ACME Profile Laydown Threading Inserts, for Feed Screws



Internal left-hand shown

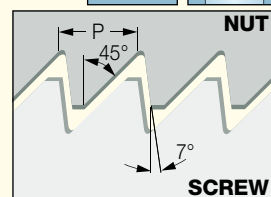
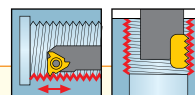
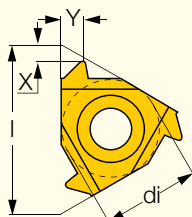
Designation	Dimensions					Tough ↔ Hard			
	di	TPI	I	X	Y	IC50M	IC250	IC508	IC908
16IR/L 16 ACME	9.52	16.0	16.00	0.9	1.0	●	●		
16IR/L 14 ACME	9.52	14.0	16.00	1.0	1.2	●	●		
16IR/L 12 ACME	9.52	12.0	16.00	1.1	1.2	●	●		●
16IR/L 10 ACME	9.52	10.0	16.00	1.3	1.3	●	●		●
16IR/L 8 ACME	9.52	8.0	16.00	1.5	1.5	●	●	●	●

• ACME ASME/ANSI B1.5-1988 Class 3G.

For tools, see pages: E-SIR-HEAD (B97) • SIR/L (B96).

IR/L-ABUT

Internal American Buttress Laydown Threading Inserts, for High Force Transmission in One Direction



Internal left-hand shown

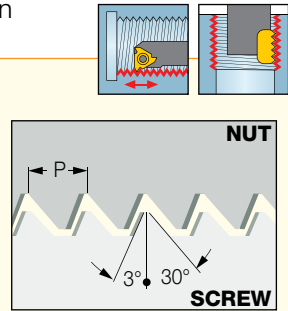
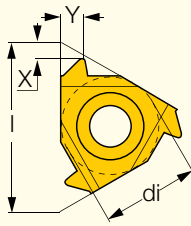
Designation	Dimensions					Tough ↔ Hard			
	di	TPI	I	X	Y	IC228	IC50M	IC250	IC908
11IR 20 ABUT	6.35	20.0	11.00	1.0	1.3				●
11IR/L 16 ABUT	6.35	16.0	11.00	1.0	1.5	●		●	●
16IR 20 ABUT	9.52	20.0	16.00	1.0	1.3			●	●
16IR/L 16 ABUT	9.52	16.0	16.00	1.0	1.5			●	●
16IR/L 12 ABUT	9.52	12.0	16.00	1.4	2.0		●	●	●
16IR/L 10 ABUT	9.52	10.0	16.00	1.5	2.3		●	●	●

• ANSI B1.9-1973 Class 2.

For tools, see pages: E-SIR-HEAD (B97) • SIR/L (B96).

IR/L-SAGE

Internal Sagengengewinde (DIN 513) Thread, Application for High Force in One Direction

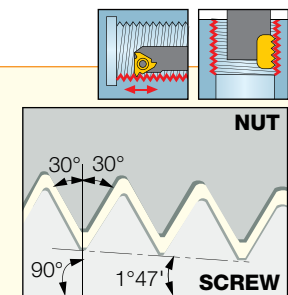
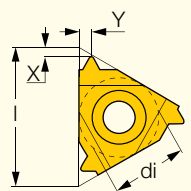


Designation	Dimensions						IC908
	di	Pitch	l	X	Y		
16IR/L 2 SAGE	9.52	2.00	16.00	1.2	1.7		●

For tools, see pages: E-SIR-HEAD (B97) • SIR/L (B96).

IR/L-NPTF

Internal NPTF (National Pipe Threads) Full Profile Laydown Threading Inserts for Steam, Gas and Water Pipes



Internal left-hand shown

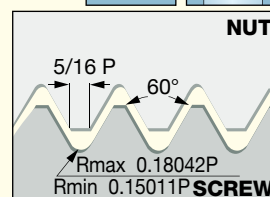
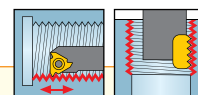
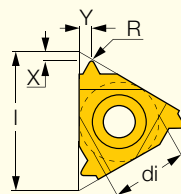
Designation	Dimensions						Tough ↔ Hard		
	di	TPI	l	R	X	Y	IC228	IC250	IC908
06IR 27 NPTF	3.97	27.0	6.00	0.04	0.7	0.6	●		
08IR 27 NPTF	4.76	27.0	8.00	0.04	0.6	0.6	●		
08IR 18 NPTF	4.76	18.0	8.00	0.06	0.6	0.6	●		
11IR 18 NPTF	6.35	18.0	11.00	0.06	0.8	1.0			●
11IR 14 NPTF	6.35	14.0	16.00	0.07	0.8	1.0			●
16IR 18 NPTF	9.52	18.0	16.00	0.06	0.8	1.0			●
16IR/L 14 NPTF	9.52	14.0	16.00	0.07	0.9	1.2		●	●
16IR 11.5 NPTF	9.52	11.5	16.00	0.09	1.1	1.5		●	●

• (National Pipe Threads-Dry seal) ANSI/ASME B1.20.1-1976.

For tools, see pages: E-SIR-HEAD (B97) • MGSIR/L (B41) • SIR/L (B96).

IR/L-UNJ

Internal Thread Profile Inserts, for the Aircraft and Aerospace Industry



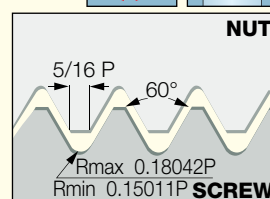
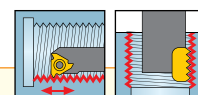
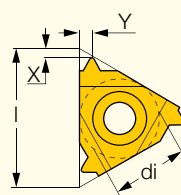
Internal left-hand shown

Designation	Dimensions						Tough ↔ Hard			
	di	TPI	I	R	X	Y	IC228	IC50M	IC250	IC908
08IR 20 UNJ	4.76	20.0	8.00	0.19	0.8	0.9	●			
08IR 18 UNJ	4.76	18.0	8.00	0.21	0.8	1.0	●			
11IR 32 UNJ	6.35	32.0	11.00	0.12	0.6	0.6				●
11IR 28 UNJ	6.35	28.0	11.00	0.14	0.6	0.6				●
11IR 24 UNJ	6.35	24.0	11.00	0.16	0.7	0.8				●
11IR 20 UNJ	6.35	20.0	11.00	0.19	0.8	0.9				●
11IR 18 UNJ	6.35	18.0	11.00	0.21	0.8	1.0				●
11IR 16 UNJ	6.35	16.0	11.00	0.24	0.8	1.0				●
16IR 28 UNJ	9.52	28.0	16.00	0.14	0.6	0.6		●		
16IR 24 UNJ	9.52	24.0	16.00	0.16	0.7	0.8		●		
16IR 20 UNJ	9.52	20.0	16.00	0.19	0.8	0.9				●
16IR 18 UNJ	9.52	18.0	16.00	0.21	0.8	1.0		●		
16IR/L 16 UNJ	9.52	16.0	16.00	0.24	0.8	1.0		●	●	●
16IR 14 UNJ	9.52	14.0	16.00	0.27	1.0	1.2		●		●
16IR/L 12 UNJ	9.52	12.0	16.00	0.13	1.1	1.4		●	●	●
16IR/L 8 UNJ	9.52	8.0	16.00	0.48	1.2	1.6				●

For tools, see pages: E-SIR-HEAD (B97) • SIR/L (B96).

IR-MJ

Internal MJ ISO 5855 Metric Full Profile Laydown Threading Inserts, for the Aviation and Aerospace Industry



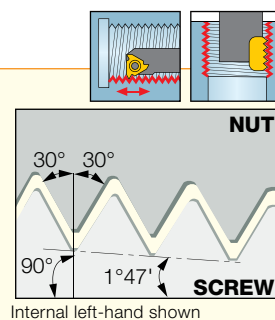
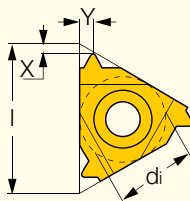
Internal left-hand shown

Designation	Dimensions						IC908
	di	Pitch	I	R	X	Y	
11IR 1.00 MJ	6.35	1.00	11.00	0.05	0.7	0.8	●
11IR 1.25 MJ	6.35	1.25	11.00	0.07	0.8	0.9	●
11IR 1.50 MJ	6.35	1.50	11.00	0.08	0.8	1.0	●
11IR 2.00 MJ	6.35	2.00	11.00	0.12	0.9	1.0	●
16IR 1.00 MJ	9.52	1.00	16.00	0.05	0.7	0.8	●
16IR 1.25 MJ	9.52	1.25	16.00	0.07	0.8	0.9	●
16IR 1.50 MJ	9.52	1.50	16.00	0.08	0.8	1.0	●

For tools, see pages: E-SIR-HEAD (B97) • SIR/L (B96).

IR/L-NPT

Internal NPT (National Pipe Threads) Full Profile Laydown Threading Inserts for Steam, Gas and Water Pipes



Designation	Dimensions						Tough ↔ Hard						
	di	TPI	I	R	X	Y	IC228	IC50M	IC250	IC508	IC808	IC908	IC1007
06IR 27 NPT	3.97	27.0	6.00	0.04	0.6	0.6	●						
08IR 18 NPT	4.76	18.0	8.00	0.06	0.6	0.6	●					●	
11IR 27 NPT	6.35	27.0	11.00	0.04	0.7	0.8			●			●	
11IR/L 18 NPT	6.35	18.0	11.00	0.06	0.8	1.0	●		●			●	
11IR/L 14 NPT	6.35	14.0	11.00	0.07	0.8	1.0			●			●	
16IR 27 NPT	9.52	27.0	16.00	0.04	0.7	0.8		●				●	
16IR 18 NPT	9.52	18.0	16.00	0.06	0.8	1.0		●				●	
16IRM 14 NPT ⁽¹⁾	9.52	14.0	16.00	0.05	0.9	1.2			●		●	●	●
16IRB 14 NPT ⁽¹⁾	9.52	14.0	16.00	0.07	0.9	1.2						●	
16IR/L 14 NPT	9.52	14.0	16.00	0.07	0.9	1.2	●	●	●	●		●	
16IRM 11.5 NPT ⁽¹⁾	9.52	11.5	16.00	0.09	1.1	1.5				●	●	●	●
16IRB 11.5 NPT ⁽¹⁾	9.52	11.5	16.00	0.09	1.1	1.5						●	
16IR/L 11.5 NPT	9.52	11.5	16.00	0.09	1.1	1.5	●	●	●	●		●	
16IRM 8 NPT ⁽¹⁾	9.52	8.0	16.00	0.12	1.3	1.8					●	●	●
16IRB 8 NPT ⁽¹⁾	9.52	8.0	16.00	0.12	1.3	1.8						●	
16IR/L 8 NPT	9.52	8.0	16.00	0.12	1.3	1.8		●	●			●	

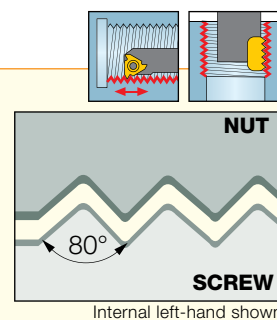
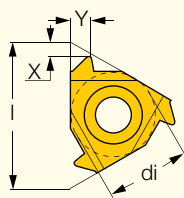
● National Pipe Threads ANSI/ASME B1.20.1-1983.

⁽¹⁾ With pressed chipformer.

For tools, see pages: E-SIR-HEAD (B97) • MGSIR/L (B41) • SIR/L (B96).

IR/L-PG

Internal Thread Profile Inserts for the Electrical Industry

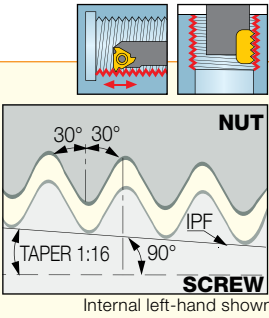
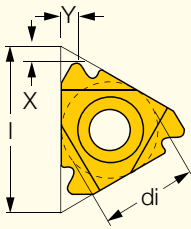


Designation	Dimensions					Tough ↔ Hard		
	di	Pitch	I	X	Y	IC50M	IC250	IC908
11IR 18 PG	6.35	18.00	11.00	0.8	0.9			●
16IR/L 16 PG	9.52	16.00	16.00	0.8	1.0	●	●	●
16IR 18 PG	9.52	18.00	16.00	0.8	0.9			●
16IL 20 PG	9.52	20.00	16.00	0.8	1.0			●

For tools, see pages: E-SIR-HEAD (B97) • SIR/L (B96).

IR/L-API RD

Internal API - Oil Thread, Round Profile Laydown Threading Inserts



Designation	Dimensions						Tough ↔ Hard			
	di	TPI	I	IPF	X	Y	IC228	IC50M	IC250	IC908
	9.52	10.0	16.00	0.75	1.5	1.4	●	●	●	●
16IR/L 10 API RD	9.52	8.0	16.00	0.75	1.3	1.6	●	●	●	●
16IR/L 8 API RD										

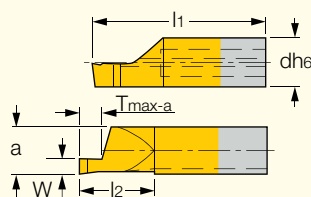
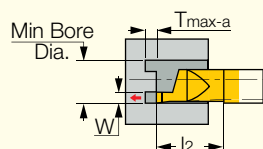
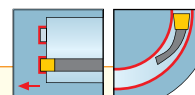
• API Spec 5B8-1996.
For tools, see pages: E-SIR-HEAD (B97) • SIR/L (B96).

FACE GROOVING



PICCO-010/610 (face grooving)

Inserts for Face Grooving



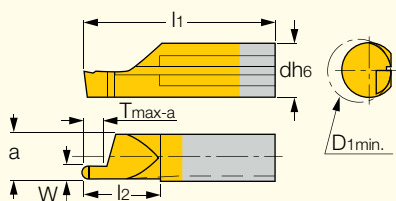
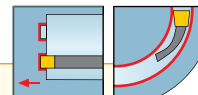
Right-hand shown

Designation	Dimensions							IC228	Recommended Machining Data
	D _{1 min}	W	T _{max-a}	d	a	l ₂	l ₁		f face-groove (mm/rev)
PICCO R 010.1006-10	6.0	1.00	1.50	6.00	5.20	11.0	26.00	●	0.01-0.04
PICCO R 010.1506-10	6.0	1.50	2.00	6.00	5.20	11.0	26.00	●	0.01-0.04
PICCO R 010.1008-10	8.0	1.00	1.50	7.00	5.90	11.0	26.00	●	0.01-0.04
PICCO R 010.1008-20	8.0	1.00	1.50	7.00	5.90	21.0	35.00	●	0.01-0.04
PICCO R 010.1008-30	8.0	1.00	1.50	7.00	5.90	30.0	45.00	●	0.01-0.04
PICCO R 610.1008-10	8.0	1.00	1.50	6.00	5.20	11.0	26.00	●	0.01-0.04
PICCO R 610.1008-20	8.0	1.00	1.50	6.00	5.20	20.0	35.00	●	0.01-0.04
PICCO R/L 010.1508-20	8.0	1.50	2.50	7.00	5.90	21.0	35.00	●	0.01-0.04
PICCO R/L 010.1508-30	8.0	1.50	2.50	7.00	5.90	30.0	45.00	●	0.01-0.04
PICCO R 010.1508-10	8.0	1.50	2.50	7.00	5.90	11.0	26.00	●	0.01-0.04
PICCO R 610.1508-10	8.0	1.50	2.50	6.00	5.20	11.0	26.00	●	0.01-0.04
PICCO R 610.1508-20	8.0	1.50	2.50	6.00	5.20	20.0	35.00	●	0.01-0.04
PICCO R/L 010.2008-30	8.0	2.00	3.00	7.00	5.90	30.0	45.00	●	0.02-0.05
PICCO R 010.2008-10	8.0	2.00	3.00	7.00	5.90	11.0	26.00	●	0.02-0.05
PICCO R 010.2008-20	8.0	2.00	3.00	7.00	5.90	21.0	35.00	●	0.02-0.05
PICCO R 610.2008-10	8.0	2.00	3.00	6.00	5.20	11.0	26.00	●	0.02-0.05
PICCO R 610.2008-20	8.0	2.00	3.00	6.00	5.20	20.0	35.00	●	0.02-0.05
PICCO R 010.2508-10	8.0	2.50	3.50	7.00	5.90	11.0	26.00	●	0.02-0.05
PICCO R 010.2508-20	8.0	2.50	3.50	7.00	5.90	21.0	35.00	●	0.02-0.05
PICCO R 010.2508-30	8.0	2.50	3.50	7.00	5.90	30.0	45.00	●	0.02-0.05
PICCO R 610.2508-10	8.0	2.50	3.50	6.00	5.20	11.0	26.00	●	0.02-0.05
PICCO R 610.2508-20	8.0	2.50	3.50	6.00	5.20	20.0	35.00	●	0.02-0.05
PICCO R 010.3008-10	8.0	3.00	3.50	7.00	5.90	11.0	26.00	●	0.02-0.06
PICCO R 010.3008-20	8.0	3.00	3.50	7.00	5.90	21.0	35.00	●	0.02-0.06
PICCO R 010.3008-30	8.0	3.00	3.50	7.00	5.90	30.0	45.00	●	0.02-0.06
PICCO R 610.3008-10	8.0	3.00	3.50	6.00	5.20	11.0	26.00	●	0.02-0.06
PICCO R 610.3008-20	8.0	3.00	3.50	6.00	5.20	20.0	35.00	●	0.02-0.06

• Only right-hand inserts are available as standard • All inserts are with sharp corners

PICCO-010 (round face groove)

Inserts for Round Profile Face Grooving



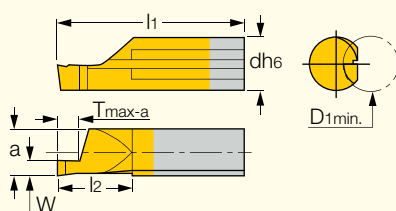
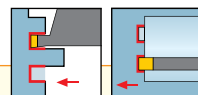
Right-hand shown

Designation	Dimensions								IC1008	Recommended Machining Data
	D1 min	W	R	Tmax-a	d	a	l2	l1		f face-groove (mm/rev)
PICCO R 010.1005-10	8.0	1.00	0.50	2.00	7.00	5.90	11.0	26.00	●	0.01-0.04
PICCO R 010.1005-20	8.0	1.00	0.50	2.00	7.00	5.90	20.0	35.00	●	0.01-0.04
PICCO R 010.1608-10	8.0	1.60	0.80	3.00	7.00	5.90	11.0	26.00	●	0.01-0.05
PICCO R 010.1608-20	8.0	1.60	0.80	3.00	7.00	5.90	20.0	35.00	●	0.01-0.05
PICCO R 010.2010-10	8.0	2.00	1.00	4.00	7.00	5.90	11.0	26.00	●	0.02-0.05
PICCO R 010.2010-20	8.0	2.00	1.00	4.00	7.00	5.90	20.0	35.00	●	0.02-0.05
PICCO R 010.2512-10	8.0	2.50	1.25	5.00	7.00	5.90	11.0	26.00	●	0.02-0.05
PICCO R 010.2512-20	8.0	2.50	1.25	5.00	7.00	5.90	20.0	35.00	●	0.02-0.05
PICCO R 010.3015-10	8.0	3.00	1.50	6.00	7.00	5.90	11.0	26.00	●	0.02-0.05
PICCO R 010.3015-20	8.0	3.00	1.50	6.00	7.00	5.90	20.0	35.00	●	0.02-0.05

• Only right-hand inserts are available as standard. Left-hand inserts on request.

PICCO-620 (groov.along shaft)

Inserts for Grooving Along a Shaft Dmin 6 mm



Right-hand shown

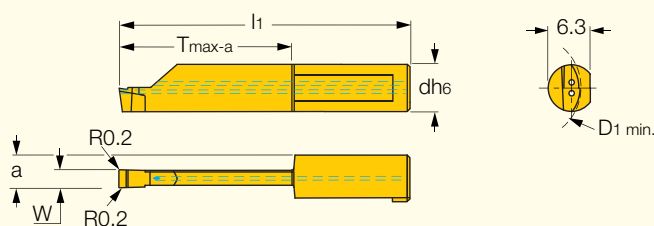
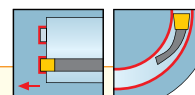
Designation	Dimensions							IC1008	Recommended Machining Data
	D _{1 min}	W	T _{max-a}	d	a	l ₂	l ₁		f face-groove (mm/rev)
PICCO R 620.1006-20	6.0	1.00	2.00	6.00	5.20	20.0	35.00	●	0.01-0.04
PICCO R 620.1506-20	6.0	1.50	3.00	6.00	5.20	20.0	35.00	●	0.01-0.05
PICCO R 620.2006-20	6.0	2.00	4.00	6.00	5.20	20.0	35.00	●	0.02-0.06
PICCO R 620.2506-20	6.0	2.50	5.00	6.00	5.20	20.0	35.00	●	0.02-0.06
PICCO R 620.3006-20	6.0	3.00	6.00	6.00	5.20	20.0	35.00	●	0.02-0.06

• Only right-hand inserts are available as standard. Left-hand inserts on request. • All carbide inserts are with sharp corners



PICCO-016/020 (face grooving)

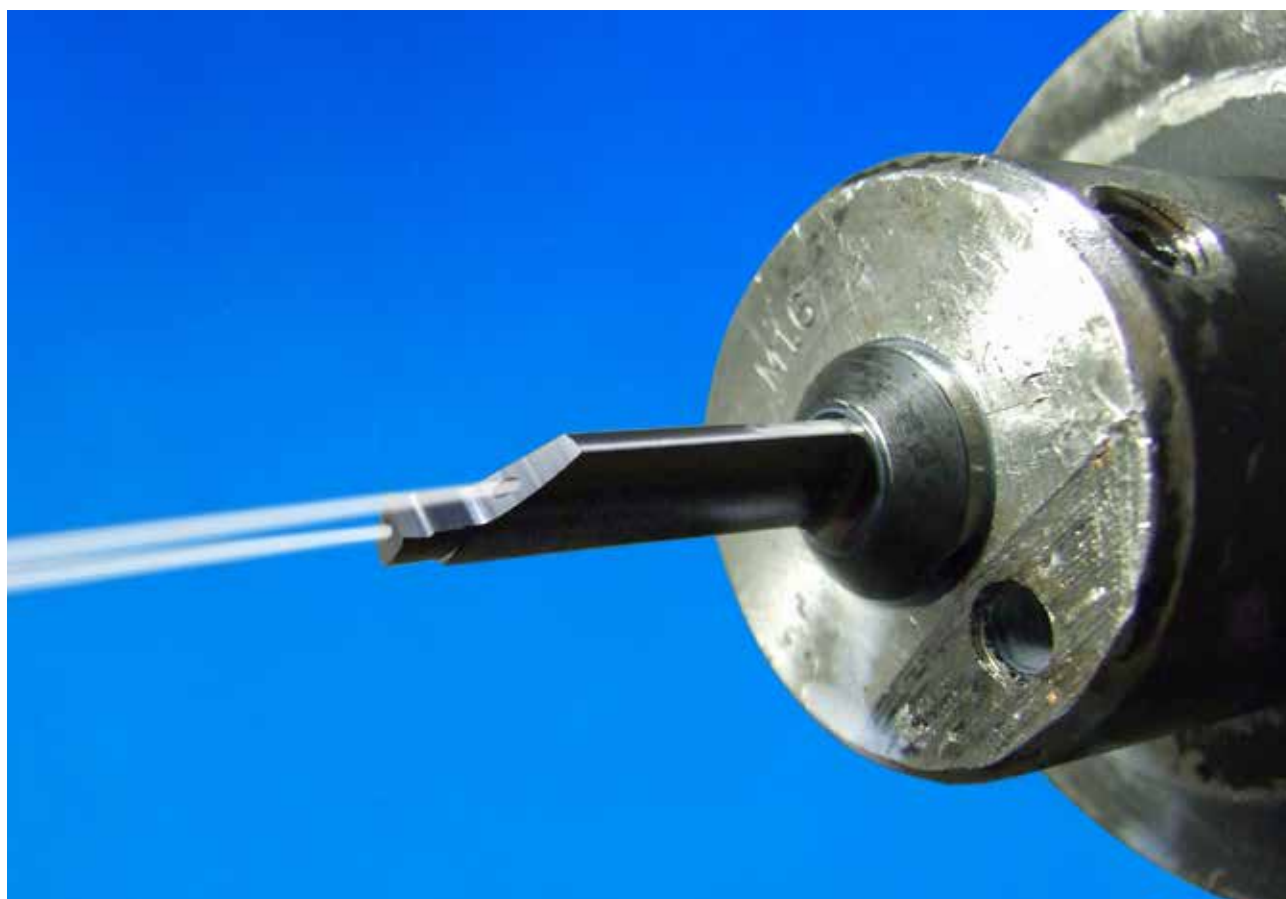
Inserts with Coolant Holes for Deep Face Grooving



Right-hand shown

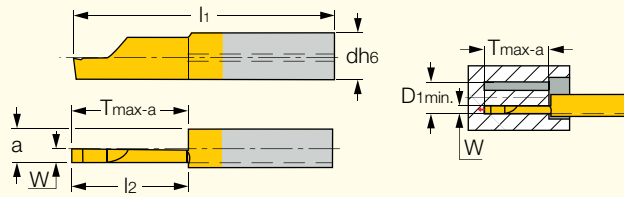
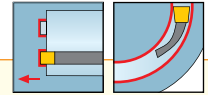
Designation	Dimensions						IC1008	Recommended Machining Data
	D1 min	W	Tmax-a	d	a	l1		f face-groove (mm/rev)
PICCO R 016.0300-10	16.0	3.00	10.00	8.00	5.50	30.00	●	0.01-0.05
PICCO R 016.0300-20	16.0	3.00	20.00	8.00	5.50	40.00	●	0.01-0.05
PICCO R 016.0400-10	16.0	4.00	10.00	8.00	6.00	30.00	●	0.01-0.05
PICCO R 016.0400-20	16.0	4.00	20.00	8.00	6.00	40.00	●	0.01-0.05
PICCO R 020.0300-25	20.0	3.00	25.00	8.00	5.50	45.00	●	0.01-0.05
PICCO R 020.0300-30	20.0	3.00	30.00	8.00	5.50	50.00	●	0.01-0.04
PICCO R 020.0300-35	20.0	3.00	35.00	8.00	5.50	55.00	●	0.01-0.04
PICCO R 020.0300-40	20.0	3.00	40.00	8.00	5.50	60.00	●	0.01-0.04
PICCO R 020.0400-25	20.0	4.00	25.00	8.00	6.00	45.00	●	0.01-0.06
PICCO R 020.0400-30	20.0	4.00	30.00	8.00	6.00	50.00	●	0.01-0.06
PICCO R 020.0400-35	20.0	4.00	35.00	8.00	6.00	55.00	●	0.01-0.05
PICCO R 020.0400-40	20.0	4.00	40.00	8.00	6.00	60.00	●	0.01-0.05
PICCO R 020.0500-20	20.0	5.00	20.00	8.00	6.50	40.00	●	0.02-0.06
PICCO R 020.0500-25	20.0	5.00	25.00	8.00	6.50	45.00	●	0.02-0.06
PICCO R 020.0500-30	20.0	5.00	30.00	8.00	6.50	50.00	●	0.02-0.06
PICCO R 020.0500-35	20.0	5.00	35.00	8.00	6.50	55.00	●	0.02-0.05
PICCO R 020.0500-40	20.0	5.00	40.00	8.00	6.50	60.00	●	0.02-0.05

• All inserts have two coolant holes which may be used with coolant pressure up to 100 bars.



PICCO-015 (face grooving)

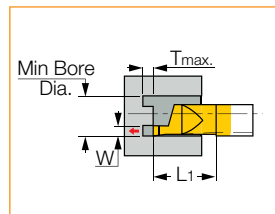
Inserts for Deep Face Grooving



Right-hand shown

Designation	Dimensions							IC228	Recommended Machining Data
	D1 min	W	Tmax-a	d	a	l2	l1		f face-groove (mm/rev)
PICCO R 015.2515-20	15.0	2.50	20.00	7.00	5.90	20.0	35.00	●	0.01-0.04
PICCO R/L 015.3015-20	15.0	3.00	20.00	7.00	5.90	20.0	35.00	●	0.02-0.05
PICCO R 015.3015-30	15.0	3.00	30.00	7.00	5.90	30.0	45.00	●	0.01-0.04

• Only right-hand inserts are available as standard. Left-hand inserts on request. • All inserts are with sharp corners



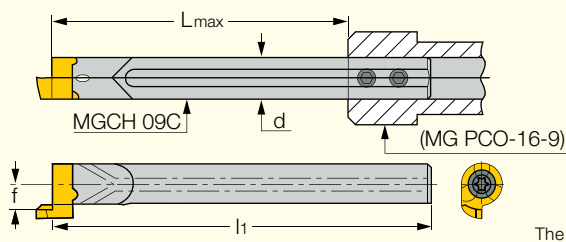
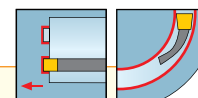
PICCO Mini-Bar Tool Kit Face Grooving KIT PICCO SET-4R

Designation	Mini Bore Dia.	L1	Tmax	W	Pcs.	Designation
PICCO 16.D6						Holder
PICCO R/L 010.1008-10	8.0	11	1.5	1.0	1x	Mini Carbide Bar
PICCO R/L 010.1508-10	8.0	11	2.5	1.5	1x	Mini Carbide Bar
PICCO R/L 010.2008-10	8.0	11	3.0	2.0	1x	Mini Carbide Bar
PICCO R/L 010.2508-20	8.0	21	3.5	2.5	1x	Mini Carbide Bar
PICCO R/L 010.3008-20	8.0	21	3.5	3.0	1x	Mini Carbide Bar

Available grade: IC228.

MGCH-C (face)

Face Machining Tools for Dmin 12 - Dmax 19 mm Penetration Range,
Using GFQR Inserts



The same tool applies for right-and left-machining

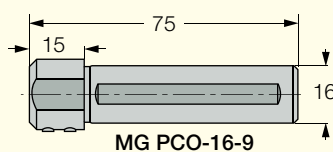
Designation	d	l ₁	L _{max}	f
MGCH 09C	9.00	83.50	65.0	5.5

For inserts, see pages: GFQR (B122).

For holders, see pages: PICCO/MG PCO (holder) (B123).

MG PCO

Holder Bar for Adjustable Shank



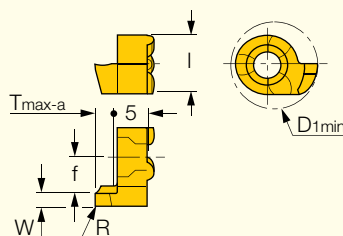
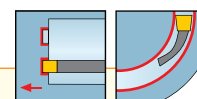
Spare Parts



Designation	Screw	Key
MGCH-C (face)	SR 76-2145	T-15/5

GFQR

Face Grooving Inserts

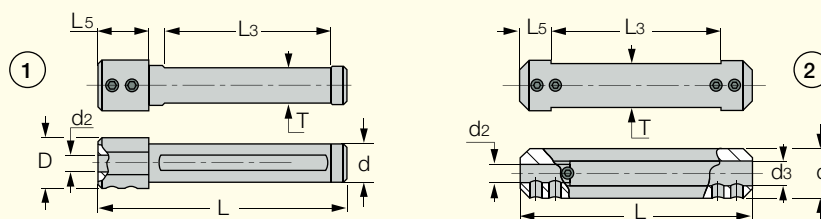


Designation	Dimensions					IC528	Recommended Machining Data f face-groove (mm/rev)
	W±0.02	R	T _{max-a}	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾		
GFQR 12-1.00-0.05	1.00	0.05	1.50	12.0	16.0	●	0.01-0.04
GFQR 12-1.50-0.20	1.50	0.20	2.50	12.0	17.0	●	0.01-0.04
GFQR 12-2.00-0.20	2.00	0.20	3.00	12.4	18.0	●	0.02-0.05
GFQR 12-2.50-0.20	2.50	0.20	3.00	13.0	19.0	●	0.02-0.05

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

PICCO/MG PCO (holder)

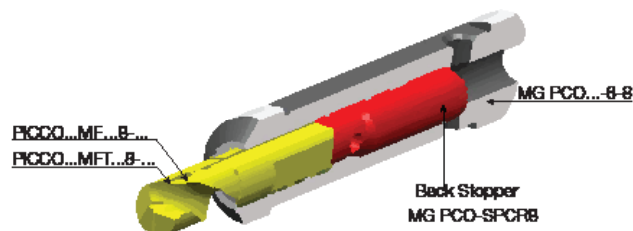
Holders for PICCO Inserts and Small Diameter Boring Bars



Designation	d	d ₂	d ₃	L	L ₅	L ₃	T	D	Fig.
PICCO 12-4-5	12.00	4.00	5.00	75.00	10.00	55.00	10.3	18.00	2
PICCO 16-4-5	16.00	4.00	5.00	75.00	10.00	55.00	14.0	18.00	2
PICCO 20-4-5	20.00	4.00	5.00	90.00	10.00	70.00	18.0	18.00	2
PICCO 22-4-5 ⁽¹⁾	22.00	4.00	5.00	90.00	10.00	70.00	20.0	18.00	2
PICCO 16-6-7	16.00	6.00	7.00	75.00	10.00	55.00	14.0	18.00	2
PICCO 20-6-7	20.00	6.00	7.00	90.00	10.00	70.00	18.0	18.00	2
PICCO 22-6-7 ⁽¹⁾	22.00	6.00	7.00	90.00	10.00	70.00	20.0	18.00	2
MG PCO-12-6	12.00	6.00	-	75.00	15.00	50.80	11.0	18.00	1
MG PCO-16-6-8	16.00	6.00	8.00	75.00	10.00	55.00	14.0	18.00	2
MG PCO-20-6-8	20.00	6.00	8.00	90.00	10.00	70.00	18.0	18.00	2
MG PCO-22-6-8 ⁽¹⁾	22.00	6.00	8.00	90.00	10.00	70.00	20.0	18.00	2
MG PCO-25-6-8	25.00	6.00	8.00	90.00	10.00	70.00	23.0	18.00	2
MG PCO-16-9	16.00	9.00	-	75.00	15.00	53.00	18.0	18.00	1

• Holders are suitable for right- and left-hand inserts, and boring bars.

⁽¹⁾ Tools for Swiss-type CNC



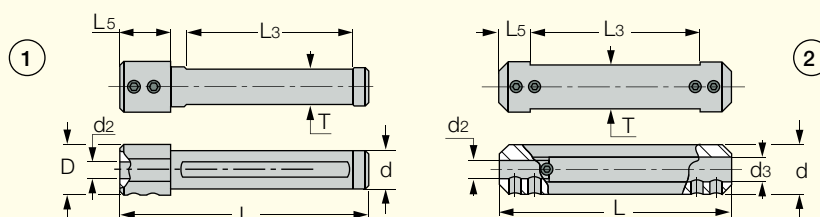
Spare Parts



Designation	Screw	Key	Coolant Fitting	Stopper
PICCO 12-4-5	SR M5X4-PF HW 2.5			
PICCO 16-4-5	SR M5X6-PF HW 2.5			
PICCO 20-4-5	SR M5X6-PF HW 2.5			
PICCO 22-4-5	SR M5X6-PF HW 2.5			
PICCO 16-6-7	SR M5X6-PF HW 2.5			
PICCO 20-6-7	SR M5X6-PF HW 2.5			
PICCO 22-6-7	SR M5X6-PF HW 2.5			
MG PCO-12-6	SR M5X6-PF HW 2.5			
MG PCO-16-6-8	SR M5X6-PF HW 2.5			MG PCO-SPCR8
MG PCO-20-6-8	SR M5X6-PF HW 2.5			MG PCO-SPCR8
MG PCO-22-6-8	SR M5X6-PF HW 2.5			MG PCO-SPCR8
MG PCO-25-6-8	SR M5X6-PF HW 2.5			MG PCO-SPCR8
MG PCO-16-9	SR M5X6-PF HW 2.5	PL 16		

PICCO/MG PCO (holder) Inch

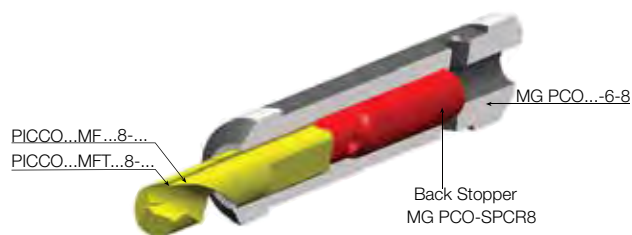
Holders for PICCO Inserts and Small Diameter Boring Bars



Designation	d	d ₂	d ₃	L	L ₅	L ₃	T	D	Fig.
PICCO 12.7-4-5	.500	.157	.197	2.950	.394	2.170	.410	.709	2
PICCO 15.9-4-5	.625	.157	.197	2.950	.394	2.170	.550	.709	2
PICCO 19-4-5	.750	.157	.197	3.540	.394	2.760	.710	.709	2
PICCO 25.4-4-5 ⁽¹⁾	1.000	.157	.197	3.543	.394	2.756	.921	.709	2
PICCO 15.9-6-7	.625	.236	.276	2.950	.394	2.170	.550	.709	2
PICCO 19-6-7	.750	.236	.276	3.540	.394	2.760	.710	.709	2
PICCO 25.4-6-7 ⁽¹⁾	1.000	.236	.276	3.543	.394	2.756	.921	.709	2
MG PCO-12.7-6	.500	.236	-	3.000	.590	2.090	.433	.709	1
MG PCO-15.9-6-8	.625	.236	.315	3.000	.390	2.170	.551	.709	2
MG PCO-19-6-8	.750	.236	.315	3.500	.390	2.760	.709	.709	2
MG PCO-25.4-6-8 ⁽¹⁾	1.000	.236	.315	3.543	.394	2.756	.921	.709	2
MG PCO-16-9	.630	.354	-	2.953	.591	2.087	.709	.709	1

• Holders are suitable for left- and right-hand inserts, and boring bars.

⁽¹⁾ Tools for Swiss-type CNC

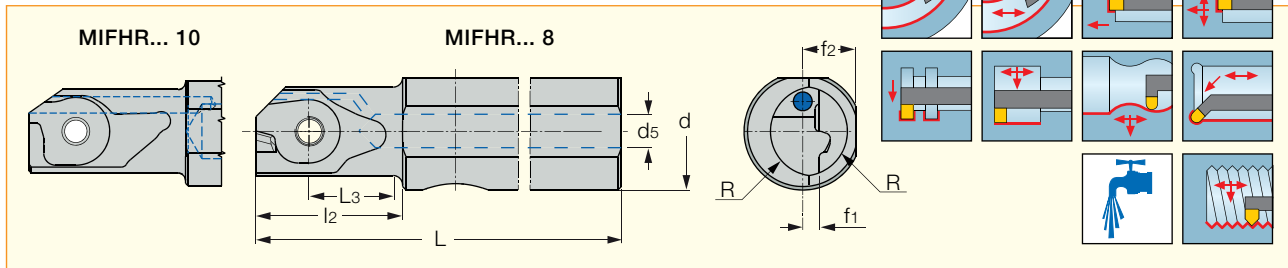


Spare Parts



Designation	Screw	Key	Seal	Stopper
PICCO 12.7-4-5	SR M5X4-PF	HW 2.5		
PICCO 15.9-4-5	SR M5X6-PF	HW 2.5		
PICCO 19-4-5	SR M5X6-PF	HW 2.5		
PICCO 25.4-4-5	SR M5X6-PF	HW 2.5		
PICCO 15.9-6-7	SR M5X6-PF	HW 2.5		
PICCO 19-6-7	SR M5X6-PF	HW 2.5		
PICCO 25.4-6-7	SR M5X6-PF	HW 2.5		
MG PCO-12.7-6	SR M5X6-PF	HW 2.5		
MG PCO-15.9-6-8	SR M5X6-PF	HW 2.5		MG PCO-SPCR8
MG PCO-19-6-8	SR M5X6-PF	HW 2.5		MG PCO-SPCR8
MG PCO-25.4-6-8	SR M5X6-PF	HW 2.5		MG PCO-SPCR8
MG PCO-16-9	SR M5X6-PF	HW 2.5	PL 16	

Bars for Face and Internal Grooving, Undercutting and Threading Inserts



Designation	d	d ₅	f ₁	f ₂	L	L ₃	l ₂	R	Insert
MIFHR 8SC-8-SRK ⁽¹⁾	8.00	1.2	1.4	3.70	75.00	7.40	11.7	3.80	MI.R 8
MIFHR 10C-8	10.00	4.0	1.4	4.50	102.50	7.40	12.5	3.80	MI.R 8
MIFHR 12C-8	12.00	5.0	1.4	5.50	102.50	7.40	12.5	3.80	MI.R 8
MIFHR 12C-10 ⁽²⁾	12.00	6.0	2.4	5.50	90.00	11.20	17.2	4.60	MIFR 10
MIFHR 16C-10 ⁽²⁾	16.00	6.0	2.4	7.50	90.00	11.20	17.2	4.60	MIFR 10

⁽¹⁾ Solid carbide shank ⁽²⁾ Only face grooving inserts are available for this tool

For inserts, see pages: • MIFR (B125) • MIGR 8 (B127) • MITR 8-MT (B103) • MIUR 8 (B127).

For holders, see pages: PICCO/MG PCO (holder) (B123).

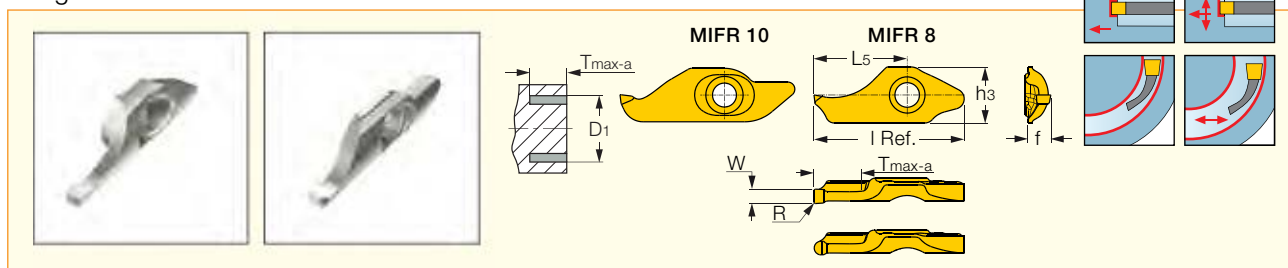
Spare Parts

Designation	Screw 1	Key
MIFHR 8SC-8-SRK	SR 14-297	T-8/5
MIFHR 10C-8	SR 14-297	T-8/5
MIFHR 12C-8	SR 14-297	T-8/5
MIFHR 12C-10	SR 34-506	T-9/5
MIFHR 16C-10	SR 34-506	T-9/5



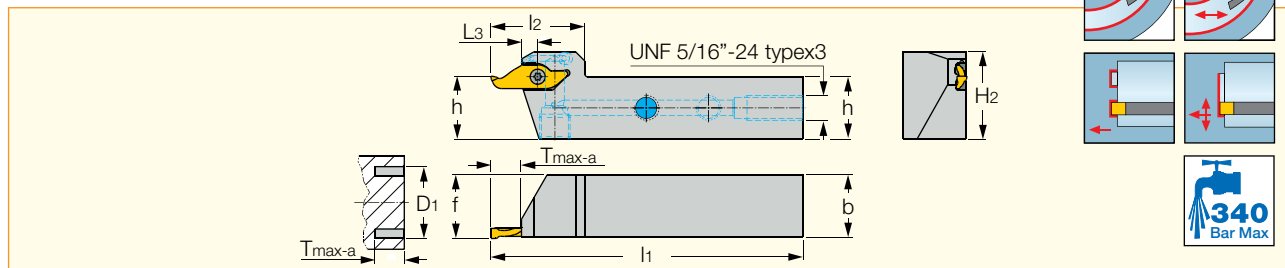
MIFR

Screw-Clamped Inserts for Internal Face Grooving and Turning, Penetration Diameter Range: 8-17 mm



Designation	Dimensions									IC908	Recommended Machining Data	
	I Ref.	W ± 0.02	R ± 0.02	f	h ₃	D _{1 min}	D _{1 max}	T _{max-a}	L ₅		f face-groove (mm/rev)	f face-turn (mm/rev)
MIFR 8-1.50-0.20	17.7	1.50	0.20	2.6	6.5	8.0	11.5	5.70	11.00	●	0.02-0.10	0.02-0.06
MIFR 8-1.60-0.80	17.7	1.60	0.80	2.6	6.5	8.0	12.1	5.70	11.00	●	0.02-0.10	0.02-0.06
MIFR 8-2.00-0.20	17.7	2.00	0.20	2.8	6.5	8.0	15.1	5.70	11.00	●	0.02-0.10	0.02-0.06
MIFR 8-2.20-0.20	17.7	2.20	0.20	2.9	6.5	8.0	17.0	5.70	11.00	●	0.02-0.10	0.02-0.06
MIFR 10-2.00-1.00	25.1	2.00	1.00	2.4	7.6	10.0	30.0	9.00	14.80	●	0.02-0.10	0.02-0.06
MIFR 10-2.50-0.20	25.1	2.50	0.20	3.1	7.6	10.0	30.0	9.00	14.80	●	0.02-0.10	0.02-0.06
MIFR 10-3.00-0.20	25.1	3.00	0.20	3.4	7.6	10.0	25.0	9.00	14.80	●	0.02-0.10	0.02-0.06
MIFR 10-3.00-1.50	25.1	3.00	1.50	3.3	7.6	10.0	35.0	9.00	14.80	●	0.02-0.10	0.02-0.06

For tools, see pages: MIFHR-JHP (B126) • MIFHR (B125).



Designation	h	b	l ₁	l ₂	L ₃	T _{max-a}	D ₁ min	H ₂	Insert
MFHR 12C-10-JHP	12.0	12.0	100.00	27.0	5.20	9.00	10.0	20.0	MIFR 10
MFHR 16C-10-JHP	16.0	16.0	100.00	27.0	5.20	9.00	10.0	24.0	MIFR 10

- For D1max, refer to insert data
- For inserts, see page: MIFR (B125).

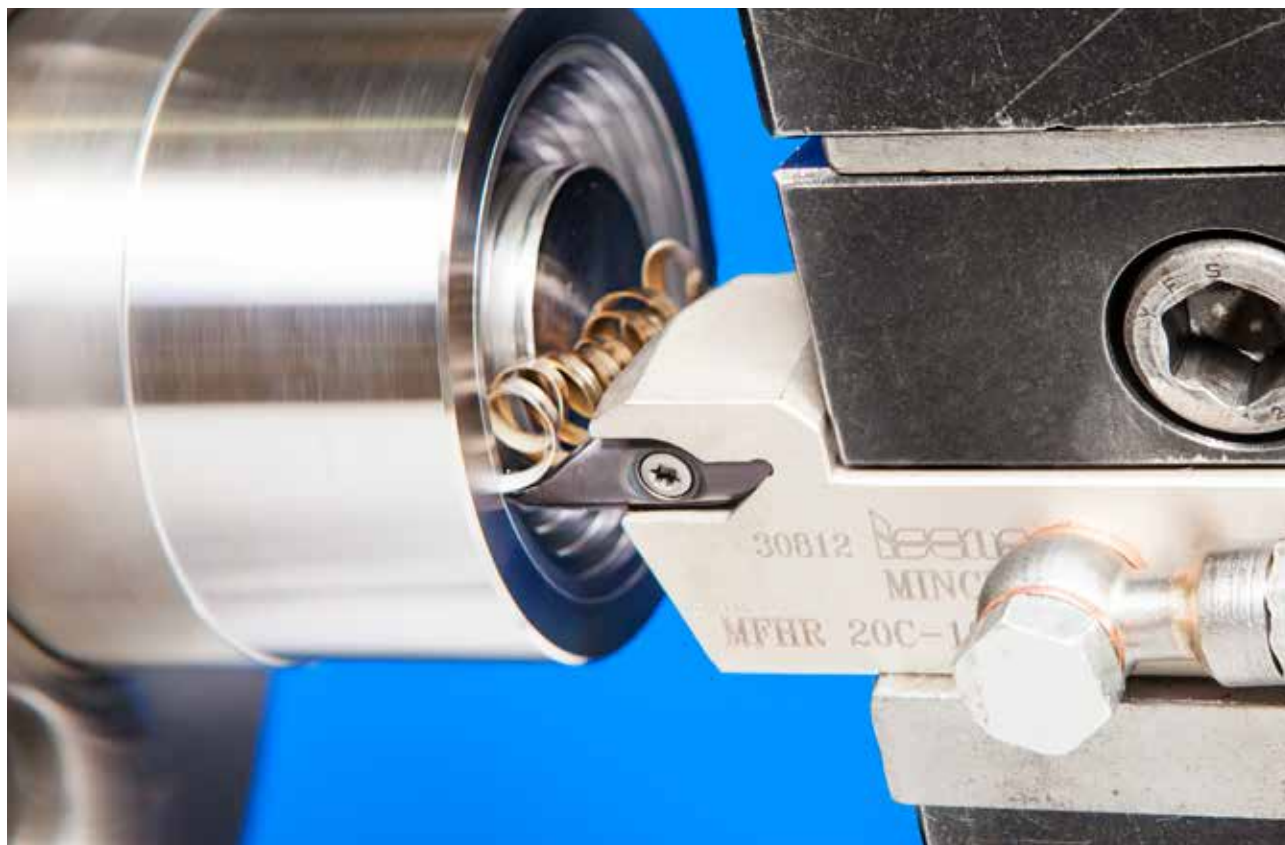
Flow Rate vs. Pressure

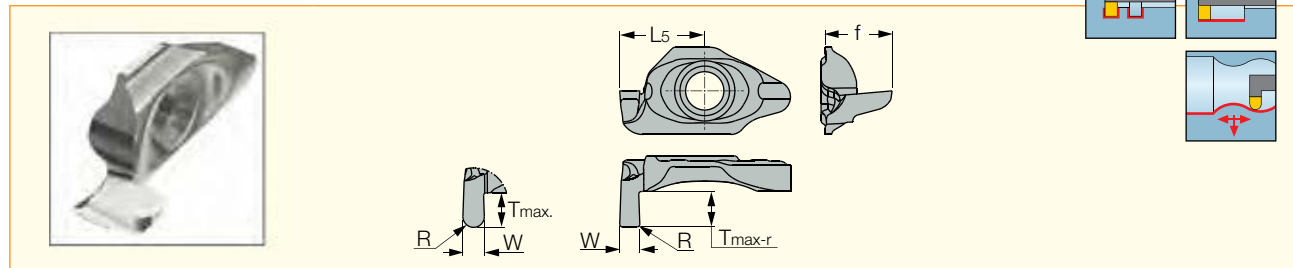
Designation	70 Bar Flow Rate (liters/min)	100 Bar Flow Rate (liters/min)	140 Bar Flow Rate (liters/min)
MFHR 12C-10-JHP	3	5-9	9-11
MFHR 16C-10-JHP	3	7-9	9-11

Spare Parts



Designation	Screw	Key	Plug
MFHR-JHP	SR 34-506	T-9/5	SR 5/16UNF TL360



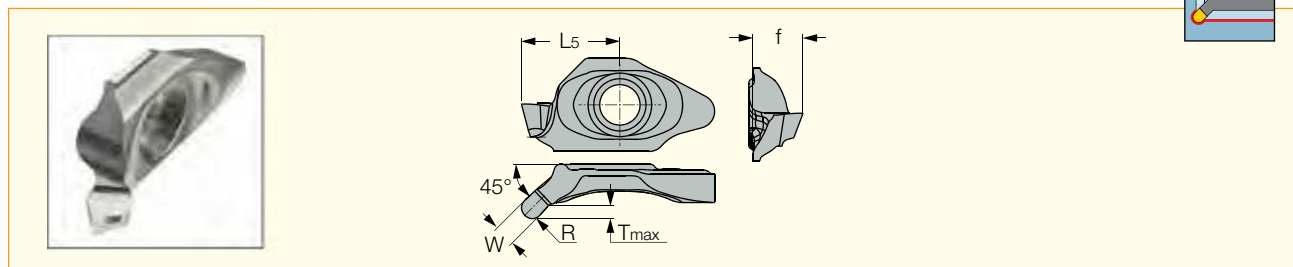


Designation	Dimensions						IC908	Recommended Machining Data		
	W ± 0.02	R ± 0.02	D _{min}	T _{max-r}	L ₅	f		a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
MIGR 8-0.50-0.00	0.50	-	8.50	1.40	6.30	4.0	●	0.05-0.50	0.03-0.10	0.01-0.03
MIGR 8-1.00-0.05	1.00	0.05	8.50	1.40	6.80	4.0	●	0.05-0.50	0.03-0.10	0.01-0.03
MIGR 8-1.20-0.05	1.20	0.05	9.20	2.10	6.80	4.7	●	0.05-0.50	0.03-0.10	0.01-0.03
MIGR 8-1.20-0.60	1.20	0.60	9.20	2.10	6.80	4.7	●	0.05-0.50	0.03-0.10	0.01-0.03
MIGR 8-1.50-0.05	1.50	0.05	9.20	2.10	6.80	4.7	●	0.05-0.50	0.03-0.10	0.01-0.03
MIGR 8-1.60-0.80	1.60	0.80	9.20	2.10	6.80	4.7	●	0.05-0.50	0.03-0.10	0.01-0.03
MIGR 8-2.00-0.10	2.00	0.10	8.90	1.80	6.80	4.4	●	0.05-0.50	0.03-0.10	0.01-0.03
MIGR 8-2.00-1.00	2.00	1.00	9.20	2.10	6.80	4.7	●	0.05-0.50	0.03-0.10	0.01-0.03

For tools, see pages: MIFHR (B125).

MIUR 8

45° Full Radius Internal Undercutting Inserts



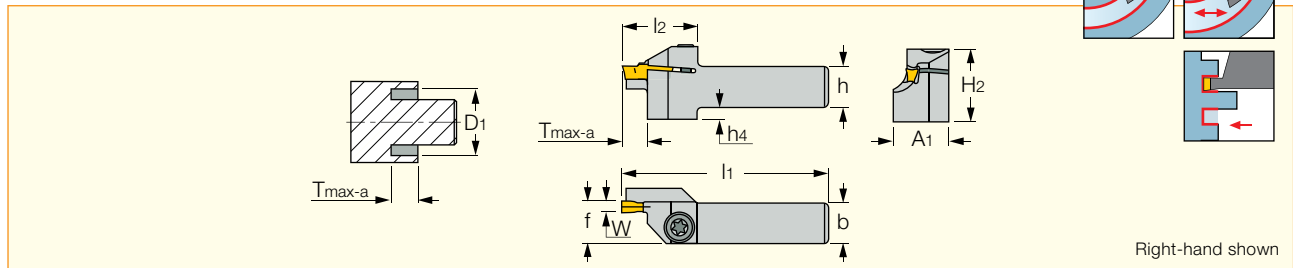
Designation	Dimensions						IC908	Recommended Machining Data		
	W ± 0.02	R ± 0.02	D _{min}	T _{max-r}	L ₅	f		a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
MIUR 8-1.00-0.50	1.00	0.50	8.00	1.10	6.70	3.6	●	0.03-0.50	0.03-0.10	0.01-0.03
MIUR 8-1.5-0.75	1.50	0.75	8.10	1.20	6.70	3.6	●	0.03-0.50	0.03-0.10	0.01-0.03
MIUR 8-2.00-1.00	2.00	1.00	8.30	1.36	6.70	3.6	●	0.03-0.50	0.03-0.10	0.01-0.03

For tools, see pages: MIFHR (B125).



HGHR/L-3

Integral Holders for Face Grooving and Turning, D_{min} 12 mm



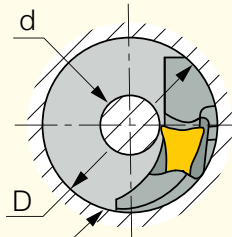
Designation	h	b	W	T_{max-a}	h_4	f	$D_{1 min}^{(1)}$	$D_{1 max}^{(2)}$	l_1	l_2	H_2	A_1
HGHR/L 1010-12-3T6	10.0	10.0	3.00	6.00	2.0	9.5	12.0	16.0	120.00	19.0	19.0	13.70
HGHR 1010-16-3T6	10.0	10.0	3.00	6.00	2.0	9.5	16.0	25.0	120.00	19.0	19.0	12.80
HGHR/L 1212-12-3T6	12.0	12.0	3.00	6.00	-	11.0	12.0	16.0	120.00	19.0	19.0	15.70
HGHR 1212-16-3T6	12.0	12.0	3.00	6.00	-	11.0	16.0	25.0	120.00	19.0	19.0	14.80
HGHR/L 1616-12-3T6	16.0	16.0	3.00	6.00	-	15.0	12.0	16.0	120.00	19.0	21.0	19.70
HGHR/L 1616-16-3T6	16.0	16.0	3.00	6.00	-	15.0	16.0	25.0	120.00	19.0	21.0	18.80

• Use HGN and GRIP inserts with right-hand toolholders only and HGPL inserts only with left-hand toolholders

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: GRIP (A19) • GRIP (full radius) (A20) • HGN-C (A70) • HGN-J (A71) • HGN-UT (A72) • HGPL (B133).

No limitation for widening groove toward or away from center, except for the following tools:



Limitation of widening toward center depends on the major diameter (D) as per chart.

HGHR/L....-12-3T6

D	d
12.0	4.0
13.0	1.0
13.5	0

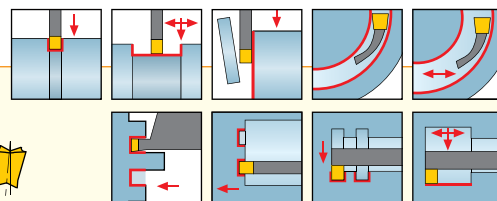
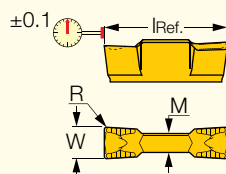
Spare Parts



Designation	Screw	Key
HGHR/L-3	SR 76-1400	T-20/3

GRIP

Utility Double-Ended Inserts for External, Internal and Face Machining



No depth penetration limit

Designation	Dimensions				Tough $\longleftrightarrow$ Hard								Recommended Machining Data				
	W ± 0.05	R ± 0.05	I	M	IC830	IC8250	IC08	IC808	IC908	IC418	IC807	IC5010	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)	f face-groove (mm/rev)	f face-turn (mm/rev)
GRIP 3002Y	3.00	0.20	16.00	2.3	●	●	●	●	●	●	●	●	0.25-1.80	0.14-0.18	0.07-0.11	0.08-0.20	0.10-0.20
GRIP 3003Y	3.00	0.30	16.00	2.3	●	●	●	●	●	●	●	●	0.40-1.80	0.15-0.19	0.07-0.11	0.08-0.20	0.10-0.20
GRIP 318-040Y	3.18	0.40	16.00	2.3	●	●	●	●	●	●	●	●	0.50-1.90	0.17-0.22	0.07-0.12	0.08-0.20	0.10-0.20
GRIP 4002Y	4.00	0.20	19.00	2.8	●	●	●	●	●	●	●	●	0.25-2.40	0.16-0.21	0.09-0.14	0.10-0.24	0.15-0.30
GRIP 4004Y	4.00	0.40	19.00	2.8	●	●	●	●	●	●	●	●	0.50-2.40	0.18-0.24	0.09-0.15	0.10-0.24	0.15-0.30
GRIP 476-080Y	4.76	0.80	19.00	3.1	●	●	●	●	●	●	●	●	1.00-2.80	0.21-0.33	0.10-0.20	0.10-0.24	0.15-0.30

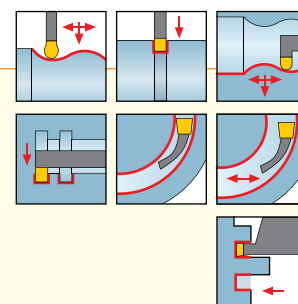
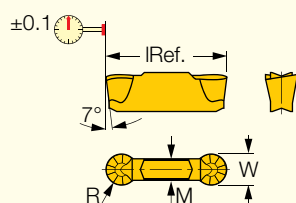
For tools, see pages: DGFH (A18) • DGTR/L (A56) • HELIR/L (A19) • HGFH (A18) • HGHR/L-3 (B128).

The Twisted Insert for Face Machining

The double-ended, twisted insert body makes it possible to machine to depths much larger than insert length. Unique chipformer for controlled chip flow in axial and radial directions. The rear angle is slanted in relation to the frontal edge so it does not come into contact with the machined groove surface, as tool penetrates deeply into the workpiece.

GRIP (full radius)

Utility Double-Ended Full Radius Inserts, for External, Internal and Face Machining



No depth penetration limit

Designation	Dimensions				Tough ↔ Hard								Recommended Machining Data				
	W±0.05	R±0.05	I	M	IC830	IC8250	IC08	IC808	IC908	IC418	IC807	IC5010	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)	f face-groove (mm/rev)	f face-turn (mm/rev)
GRIP 3015Y	3.00	1.50	15.80	2.1	●	●	●	●	●	●	●	●	0.00-1.50	0.18-0.26	0.07-0.13	0.08-0.20	0.10-0.20
GRIP 318-159Y	3.18	1.59	16.00	2.3	●	●	●	●	●	●	●	●	0.00-1.50	0.19-0.28	0.07-0.13	0.08-0.20	0.10-0.20
GRIP 4020Y	4.00	2.00	19.00	2.8	●	●	●	●	●	●	●	●	0.00-2.00	0.20-0.34	0.09-0.17	0.10-0.24	0.15-0.30
GRIP 476-238Y	4.76	2.38	19.00	3.2	●	●	●	●	●	●	●	●	0.00-2.30	0.21-0.40	0.10-0.20	0.10-0.24	0.15-0.30

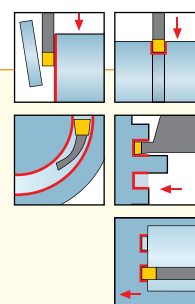
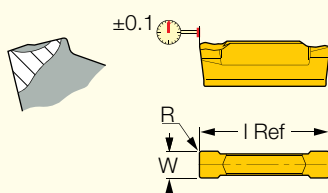
For tools, see pages: • DGFH (A18) • DGTR/L (A56) • HELIR/L (A19) • HGFH (A18) • HGHR/L-3 (B128)

DO-GRIP

TWISTED 2-SIDED

HGN-C

Parting and Grooving Insert, for Parting Bars, Hard Materials and Tough Applications



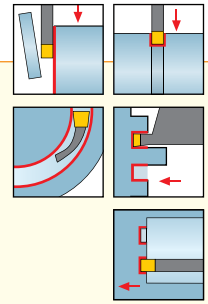
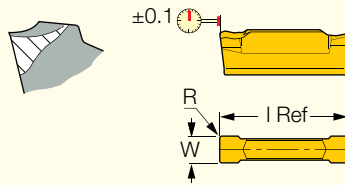
Designation	Dimensions			Tough $\longleftrightarrow$ Hard					Recommended Machining Data
	W ± 0.05	R	I	IC328	IC830	IC354	IC308	IC908	
HGN 3003C	3.00	0.30	15.80	●	●	●	●	●	f groove (mm/rev) 0.08-0.20

• No depth limit

For tools, see pages: • HELIR/L (A19) • HGFH (A18) • HGHR/L-3 (B128).

HGN-J

Parting and Grooving Insert for Soft Materials, Parting of Tubes, Small Diameters and Thin-Walled Parts



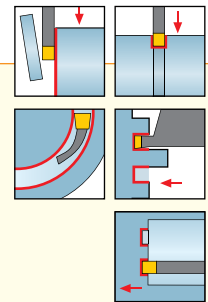
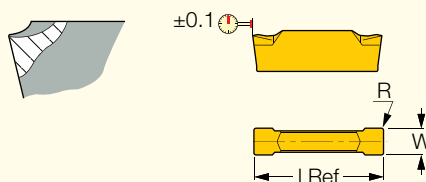
Designation	Dimensions			Tough ↔ Hard				Recommended Machining Data
	W ± 0.05	R	I	IC328	IC830	IC354	IC308	f groove (mm/rev)
HGN 3002J	3.00	0.20	16.10	●	●	●	●	0.04-0.15

• No depth limit

For tools, see pages: • HELIR/L (A19) • HGFH (A18) • HGHR/L-3 (B128).

HGN-UT

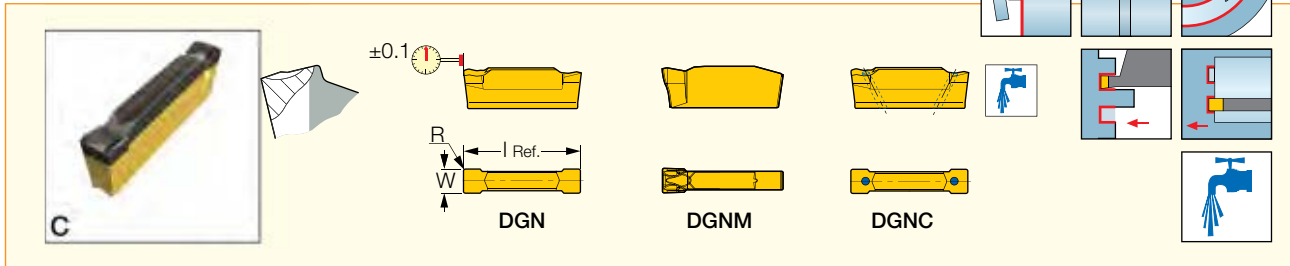
Parting and Grooving Double-Sided Insert, for Low Feeds on Cr-Ni Alloys and Low Carbon Steel



Designation	Dimensions			Tough ↔ Hard		Recommended Machining Data
	W ± 0.05	R	I	IC328	IC354	f groove (mm/rev)
HGN 3003UT	3.00	0.30	15.80	●	●	0.04-0.13

• No depth limit

For tools, see pages: HELIR/L (A19) • HGFH (A18) • HGHR/L-3 (B128).



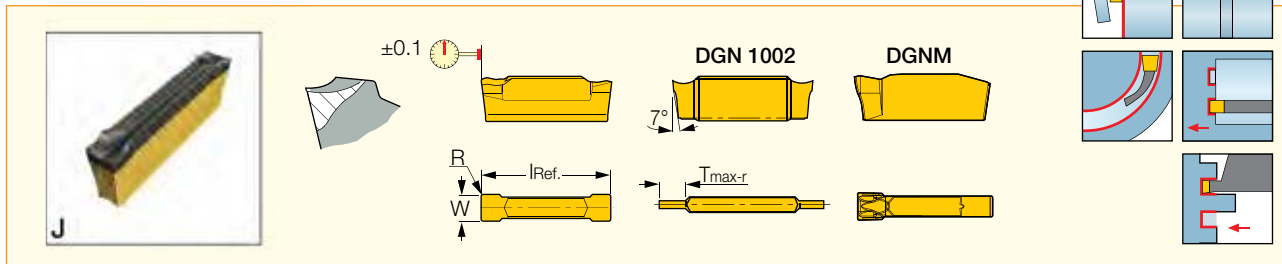
Designation	Dimensions					Tough ↔ Hard										Recommended Machining Data		
	W	W ^{±toler}	R	T _{max-r}	I Ref.	IC328	IC830	IC1028	IC354	IC5400	IC308	IC808	IC908	IC30N	IC807	IC907	IC20	f groove (mm/rev)
DGN 2002C	2.00	0.03	0.20	18.00	19.9	●	●	●	●	●	●	●	●	●	●	●	●	0.05-0.16
DGN 2202C	2.20	0.03	0.20	18.00	19.8	●	●	●	●	●	●	●	●	●	●	●	●	0.05-0.16
DGN 2502C	2.50	0.03	0.20	18.00	20.7	●	●	●	●	●	●	●	●	●	●	●	●	0.08-0.20
DGN 3102C	3.10	0.04	0.20	18.00	20.1	●	●	●	●	●	●	●	●	●	●	●	●	0.10-0.25
DGNC 3102C ⁽¹⁾	3.10	0.04	0.20	18.00	21.0	●	●	●	●	●	●	●	●	●	●	●	●	0.10-0.25
DGNM 3202C ⁽²⁾	3.18	0.04	0.20	- ⁽³⁾	20.4	●	●	●	●	●	●	●	●	●	●	●	●	0.10-0.25
DGN 4003C	4.00	0.04	0.30	- ⁽³⁾	18.8	●	●	●	●	●	●	●	●	●	●	●	●	0.10-0.30
DGNC 4003C ⁽¹⁾	4.00	0.04	0.30	- ⁽³⁾	19.0	●	●	●	●	●	●	●	●	●	●	●	●	0.10-0.30

• Feed values for grade IC20 should be decreased by 50%

⁽¹⁾ Inserts with coolant holes, recommended coolant pressure 10 bar minimum ⁽²⁾ Single-ended insert. ⁽³⁾ No depth limit

For tools, see pages: • DGFH (A18) • DGFHL-26B-TR-D (A52) • DGFHR/L (A51) • DGFHR/L-B-D..(R/L) (A51) • DGTR/L (A56) • DGTR/L-B-D-JHP-SL (A53) • DGTR/L-B-D-SH (A54) • DGTR/L-B/BC-D (A55) • HELIR/L (A19).





Designation	Dimensions					Tough $\longleftrightarrow$ Hard										Recommended Machining Data	
	W	W _{toler}	R	T _{max-r}	I Ref.	IC328	IC830	IC1028	IC354	IC5400	IC308	IC808	IC908	IC807	IC907	IC20	f groove (mm/rev)
DGN 1002J	1.00	0.02	0.16	3.00	21.0	•		•					•				0.02-0.07
DGN 1402J	1.40	0.03	0.16	15.00	15.8	•	•	•	•		•	•	•				0.03-0.12
DGN 1502J	1.50	0.03	0.16	18.00	20.9	•		•					•				0.03-0.12
DGN 2002JT	2.00	0.03	0.20	18.00	19.8							•					0.04-0.14
DGN 2200JS ⁽¹⁾	2.20	0.03	0.02	18.00	19.4	•	•										0.03-0.08
DGN 2202J	2.20	0.03	0.20	18.00	19.8	•	•	•	•	•	•	•	•	•		•	0.04-0.12
DGN 2202JT	2.20	0.03	0.20	18.00	19.8		•			•		•					0.04-0.14
DGN 3100JS ⁽¹⁾	3.10	0.04	0.02	18.00	19.7	•					•						0.03-0.10
DGN 3102J	3.10	0.04	0.20	18.00	20.1	•	•	•	•	•	•	•	•		•	•	0.04-0.16
DGN 3102JT	3.10	0.04	0.20	18.00	20.1		•			•		•			•		0.05-0.18
DGN 3202J	3.18	0.04	0.20	18.00	21.0								•				0.04-0.16
DGNM 3202J ⁽²⁾	3.18	0.04	0.20	- ⁽³⁾	20.3	•			•				•				0.04-0.16
DGN 4003J	4.00	0.04	0.30	- ⁽³⁾	18.9	•	•	•	•		•	•	•	•		•	0.05-0.18
DGN 4003JT	4.00	0.04	0.30	- ⁽³⁾	18.9		•					•					0.05-0.18

• JT chipformer has the basic positive configuration of the J-type and a reinforced negative frontal edge. Most suitable for soft materials at low to medium feeds.

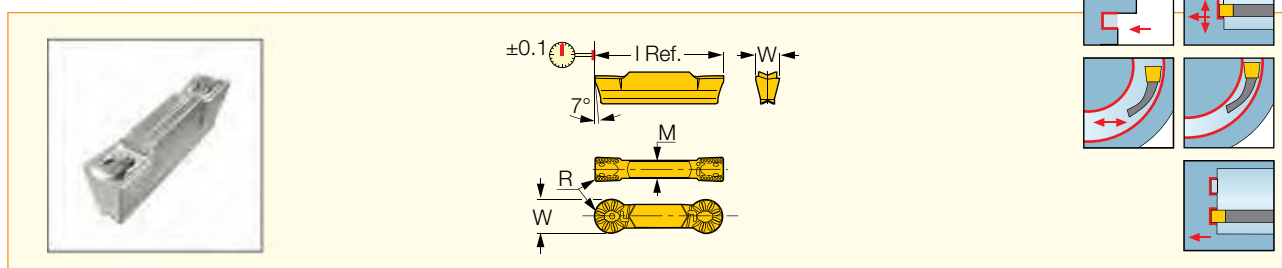
⁽¹⁾ Sharp corners ⁽²⁾ Single-ended insert. ⁽³⁾ No depth limit

For tools, see pages: • DGFH (A18) • DGFHL-26B-TR-D (A52) • DGFHR/L (A51) • DGFHR/L-B-D..(R/L) (A51) • DGTR/L (A56) • DGTR/L-B-D-JHP-SL (A53) • DGTR/L-B-D-SH (A54) • DGTR/L-B-D-TR (A56) • DGTR/L-B/BC-D (A55) • HELIR/L (A19).

HELI FACE

HGPL

Utility Double-Ended Face Machining Insert



Designation	Dimensions				Tough $\longleftrightarrow$ Hard					Recommended Machining Data		
	W ± 0.03	M	R ± 0.05	I	IC328	IC354	IC08	IC808	IC908	a _p (mm)	f face-groove (mm/rev)	f face-turn (mm/rev)
HGPL 3015Y	3.00	2.1	1.50	16.00				•	•	0.00-1.50	0.08-0.20	0.12-0.23
HGPL 3002Y	3.00	2.3	0.20	16.00		•	•	•	•	0.24-1.80	0.08-0.20	0.12-0.23
HGPL 3003Y	3.00	2.3	0.30	16.00	•	•	•	•	•	0.36-1.80	0.08-0.20	0.12-0.23
HGPL 4002Y	4.00	2.8	0.20	19.00		•	•	•	•	0.24-2.40	0.10-0.24	0.16-0.30
HGPL 4004Y	4.00	2.8	0.40	19.00		•	•	•	•	0.48-2.40	0.10-0.24	0.16-0.30
HGPL 4020Y	4.00	2.8	2.00	19.00			•	•	•	0.00-2.00	0.10-0.24	0.16-0.30

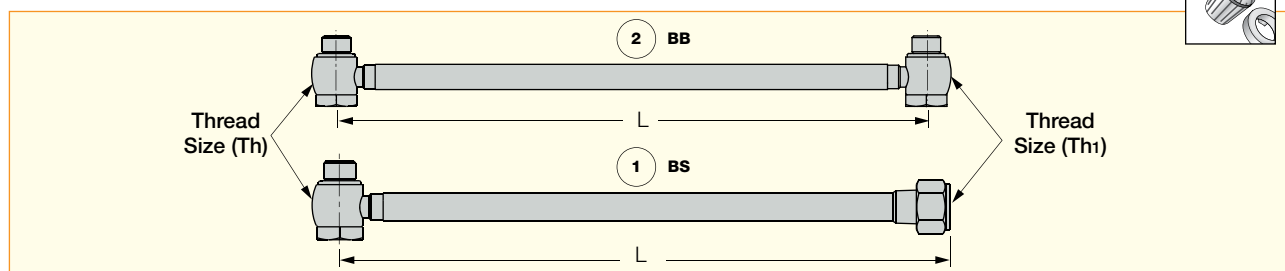
• No depth penetration limit

For tools, see pages: • HGHR/L-3 (B128).

Accessories

JHP HOSE

High Pressure Coolant Hose

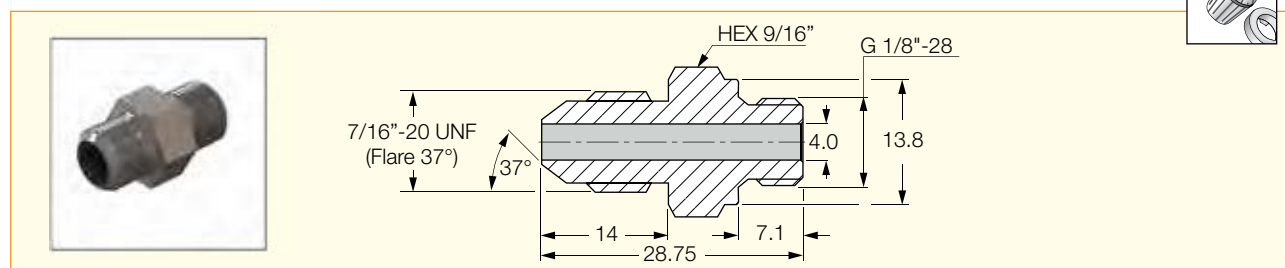


Designation	L	Fig.	Th	Th1
JHP HOSE G1/8"-7/16"-200BS	200.00	1	G1/8" BSPP	UNF 7/16" FLARE 37°
JHP HOSE 5/16"-G1/8"-200BS	200.00	1	5/16 -24 UNF	G1/8" BSPP
JHP HOSE 5/16"-7/16"-200BS	200.00	1	5/16 -24 UNF	UNF 7/16" FLARE 37°
JHP HOSE G1/8"-G1/8"-200BB	200.00	2	G1/8" BSPP	G1/8" BSPP
JHP HOSE G1/8"-7/16"-250BS	250.00	1	G1/8" BSPP	UNF 7/16" FLARE 37°
JHP HOSE G1/8"-G1/8"-250BB	250.00	2	G1/8" BSPP	G1/8" BSPP



JHP NIPPLE

High Pressure Adaptation Nipple

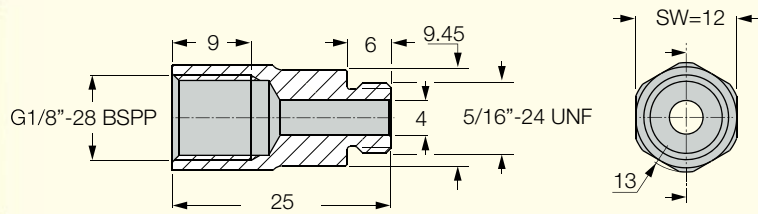


Designation	L
JHP NIPPLE G1/8"-7/16"UNF	28.75

Accessories

JHP CONNECTOR

High Pressure Connector



Designation	L
JHP CONECTOR 5/16"-G1/8"	25.00

Spare Parts

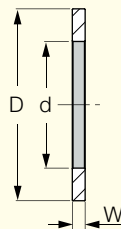


Designation	Seal
JHP CONECTOR 5/16"-G1/8"	JHP COPPER SEAL 5/16"-2.5

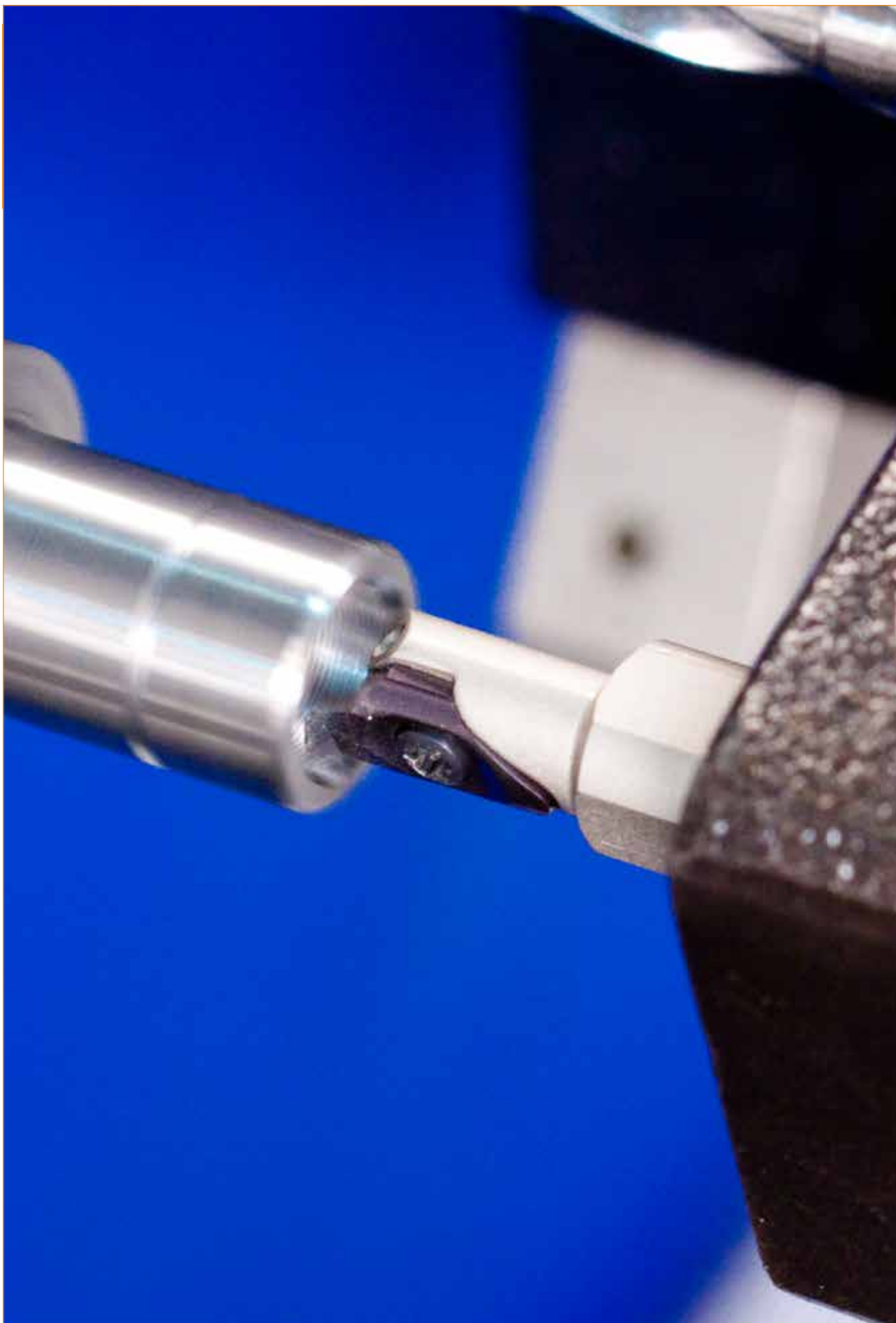
JETCUT

JHP COPPER SEAL

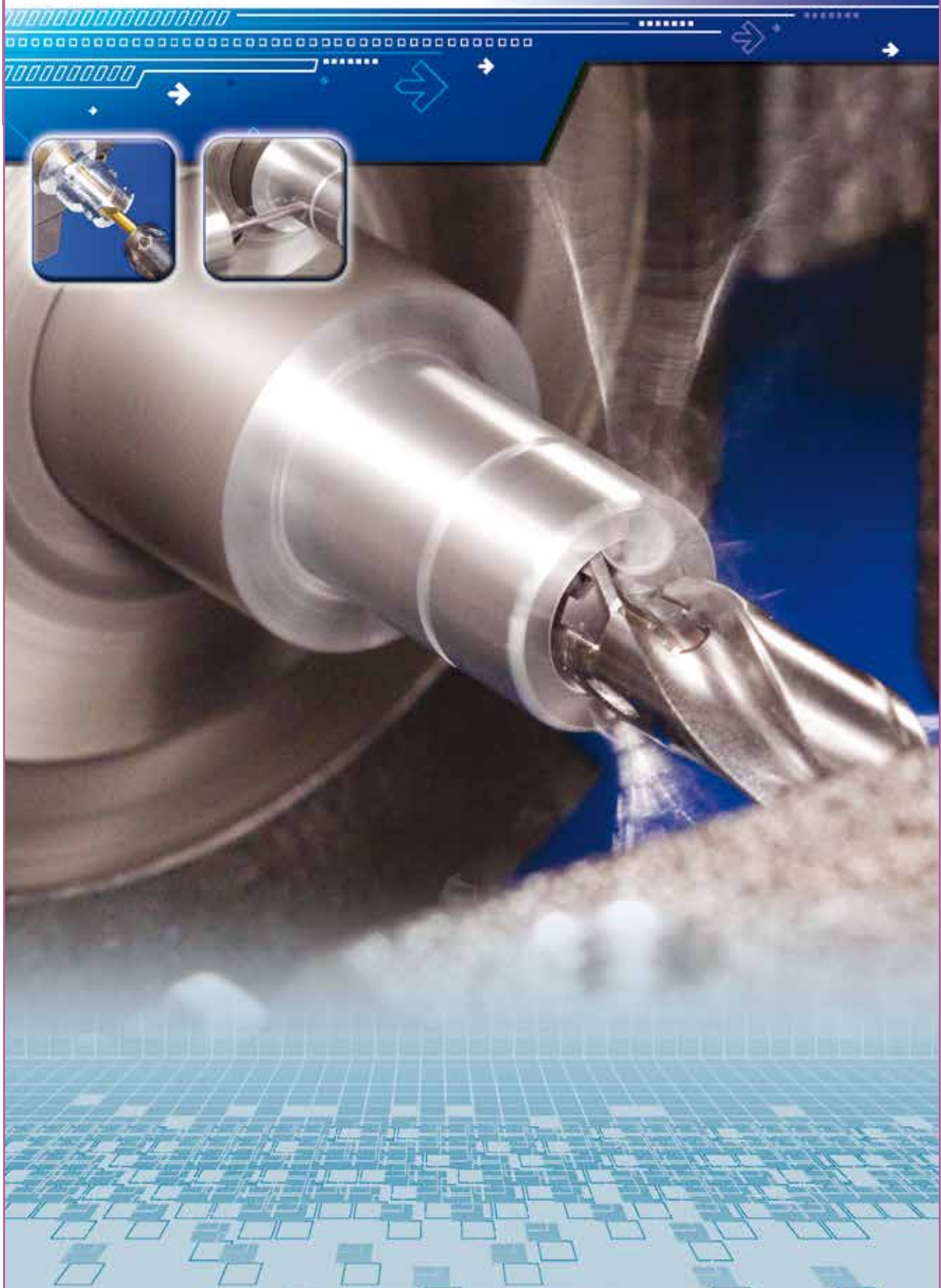
High Pressure Copper Seal



Designation	D	d	W
JHP COPPER SEAL 5/16"-2.5	9.4	8.00	2.50
JHP COPPER SEAL 5/16"	11.00	8.00	1.00
JHP COPPER SEAL 1/8"	15.00	10.00	1.00



Hole Making

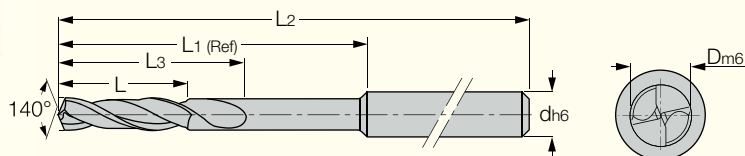


SCD-AP4 (4xD)

Solid Carbide Drills without Coolant Holes, Drilling Depth 4xD, DIN 6537



D	Tolerance m6
0.8-2.9	0.002-0.005



Designation	Dimensions							IC908
	D	d	L	L ₃	L ₁	L ₂	T _H ⁽¹⁾	
SCD 008-003-030 AP4	0.80	3.00	3.2	4.8	8.8	46.0	-	●
SCD 009-003-030 AP4	0.90	3.00	3.6	5.4	9.4	46.0	-	●
SCD 010-004-030 AP4	1.00	3.00	4.0	6.0	10.0	46.0	-	●
SCD 011-004-030 AP4	1.10	3.00	4.4	6.6	10.6	46.0	M1.4	●
SCD 012-004-030 AP4	1.20	3.00	4.8	7.2	11.2	46.0	-	●
SCD 013-005-030 AP4	1.30	3.00	5.2	7.8	11.8	46.0	-	●
SCD 014-005-030 AP4	1.40	3.00	5.6	8.4	12.4	46.0	-	●
SCD 015-006-030 AP4	1.50	3.00	6.0	9.0	13.0	46.0	-	●
SCD 016-006-030 AP4	1.60	3.00	6.4	9.6	13.6	46.0	M2	●
SCD 017-006-030 AP4	1.70	3.00	6.8	10.2	14.2	46.0	-	●
SCD 018-007-030 AP4	1.80	3.00	7.2	10.8	14.8	46.0	-	●
SCD 019-007-030 AP4	1.90	3.00	7.6	11.4	15.4	46.0	-	●
SCD 020-008-030 AP4	2.00	3.00	8.0	12.0	16.0	60.0	-	●
SCD 021-008-030 AP4	2.10	3.00	8.4	12.6	16.6	60.0	-	●
SCD 022-008-030 AP4	2.20	3.00	8.8	13.2	17.2	60.0	-	●
SCD 023-009-030 AP4	2.30	3.00	9.2	13.8	17.8	60.0	-	●
SCD 024-009-030 AP4	2.40	3.00	9.6	14.4	18.4	60.0	-	●
SCD 025-010-030 AP4	2.50	3.00	10.0	15.0	19.0	60.0	M3	●
SCD 026-010-030 AP4	2.60	3.00	10.4	15.6	19.6	60.0	-	●
SCD 027-010-030 AP4	2.70	3.00	10.8	16.2	20.2	60.0	-	●
SCD 028-011-030 AP4	2.80	3.00	11.2	16.8	20.8	60.0	-	●
SCD 029-011-030 AP4	2.90	3.00	11.6	17.4	21.4	60.0	M3.5	●

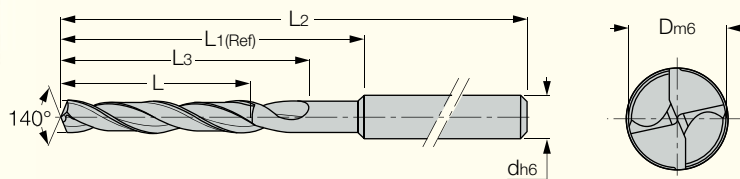
⁽¹⁾ Used for standard thread size

SCD-AP6 (6xD)

Solid Carbide Drills without Coolant Holes, Drilling Depth 6xD, DIN 6537



D	Tolerance m6
0.8-2.9	0.002-0.005



Designation	Dimensions							IC908
	D	d	L	L ₃	L ₁	L ₂	T _H ⁽¹⁾	
SCD 008-004-030 AP6	0.80	3.00	4.8	6.4	10.7	46.0	-	●
SCD 009-005-030 AP6	0.90	3.00	5.4	7.2	11.5	46.0	-	●
SCD 010-006-030 AP6	1.00	3.00	6.0	8.0	12.2	46.0	-	●
SCD 011-006-030 AP6	1.10	3.00	6.6	8.8	13.0	46.0	M1.4	●
SCD 012-007-030 AP6	1.20	3.00	7.2	9.6	13.7	46.0	-	●
SCD 013-007-030 AP6	1.30	3.00	7.8	10.4	14.5	46.0	-	●
SCD 014-008-030 AP6	1.40	3.00	8.4	11.2	15.2	46.0	-	●
SCD 015-009-030 AP6	1.50	3.00	9.0	12.0	16.0	46.0	-	●
SCD 016-009-030 AP6	1.60	3.00	9.6	12.8	16.7	46.0	M2	●
SCD 017-010-030 AP6	1.70	3.00	10.2	13.6	17.5	60.0	-	●
SCD 018-010-030 AP6	1.80	3.00	10.8	14.4	18.2	60.0	-	●
SCD 019-011-030 AP6	1.90	3.00	11.4	15.2	18.9	60.0	-	●
SCD 020-012-030 AP6	2.00	3.00	12.0	16.0	19.7	60.0	-	●
SCD 021-012-030 AP6	2.10	3.00	12.6	16.8	20.4	60.0	-	●
SCD 022-013-030 AP6	2.20	3.00	13.2	17.6	21.1	60.0	-	●
SCD 023-013-030 AP6	2.30	3.00	13.8	18.4	21.8	60.0	-	●
SCD 024-014-030 AP6	2.40	3.00	14.4	19.2	22.5	60.0	-	●
SCD 025-015-030 AP6	2.50	3.00	15.0	20.0	23.2	60.0	M3	●
SCD 026-015-030 AP6	2.60	3.00	15.6	20.8	23.9	60.0	-	●
SCD 027-016-030 AP6	2.70	3.00	16.2	21.6	24.5	60.0	-	●
SCD 028-016-030 AP6	2.80	3.00	16.8	22.4	25.2	60.0	-	●
SCD 029-017-030 AP6	2.90	3.00	17.4	23.2	25.7	60.0	M3.5	●

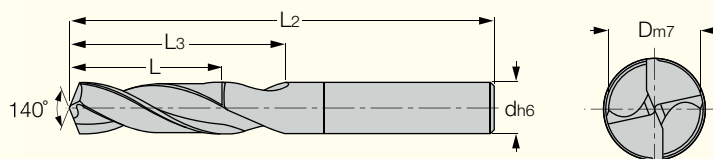
⁽¹⁾ Used for standard thread size

SCD-AP3 (3xD)

Solid Carbide Drills without Coolant Holes, Drilling Depth 3xD, DIN 6537



D	Tolerance m7
3.00-8	0.004-0.016
6.01-10	0.006-0.021
10.01-18	0.007-0.025
18.01-21	0.008-0.029

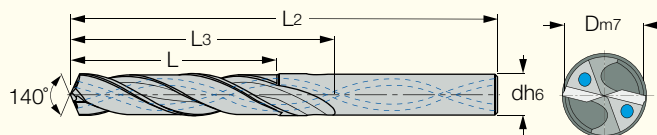
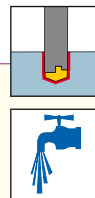


Designation	Dimensions						IC908
	D	d	L	L ₃	L ₂	T _h ⁽¹⁾	
SCD 030-014-060 AP3	3.00	6.00	14.0	20.0	62.0	-	●
SCD 031-014-060 AP3	3.10	6.00	14.0	20.0	62.0	-	●
SCD 032-014-060 AP3	3.20	6.00	14.0	20.0	62.0	-	●
SCD 033-014-060 AP3	3.30	6.00	14.0	20.0	62.0	M4	●
SCD 034-014-060 AP3	3.40	6.00	14.0	20.0	62.0	-	●
SCD 035-014-060 AP3	3.50	6.00	14.0	20.0	62.0	-	●
SCD 036-014-060 AP3	3.60	6.00	14.0	20.0	62.0	-	●
SCD 037-014-060 AP3	3.70	6.00	14.0	20.0	62.0	-	●
SCD 038-017-060 AP3	3.80	6.00	17.0	24.0	66.0	-	●
SCD 039-017-060 AP3	3.90	6.00	17.0	24.0	66.0	-	●
SCD 040-017-060 AP3	4.00	6.00	17.0	24.0	66.0	-	●
SCD 041-017-060 AP3	4.10	6.00	17.0	24.0	66.0	-	●
SCD 042-017-060 AP3	4.20	6.00	17.0	24.0	66.0	M5	●
SCD 043-017-060 AP3	4.30	6.00	17.0	24.0	66.0	-	●
SCD 044-017-060 AP3	4.40	6.00	17.0	24.0	66.0	-	●
SCD 045-017-060 AP3	4.50	6.00	17.0	24.0	66.0	-	●
SCD 046-017-060 AP3	4.60	6.00	17.0	24.0	66.0	-	●
SCD 047-017-060 AP3	4.70	6.00	17.0	24.0	66.0	-	●
SCD 048-020-060 AP3	4.80	6.00	20.0	28.0	66.0	-	●
SCD 049-020-060 AP3	4.90	6.00	20.0	28.0	66.0	-	●
SCD 050-020-060 AP3	5.00	6.00	20.0	28.0	66.0	M6	●
SCD 051-020-060 AP3	5.10	6.00	20.0	28.0	66.0	-	●
SCD 052-020-060 AP3	5.20	6.00	20.0	28.0	66.0	-	●
SCD 053-020-060 AP3	5.30	6.00	20.0	28.0	66.0	-	●
SCD 054-020-060 AP3	5.40	6.00	20.0	28.0	66.0	-	●
SCD 055-020-060 AP3	5.50	6.00	20.0	28.0	66.0	-	●
SCD 056-020-060 AP3	5.60	6.00	20.0	28.0	66.0	-	●
SCD 057-020-060 AP3	5.70	6.00	20.0	28.0	66.0	-	●
SCD 058-020-060 AP3	5.80	6.00	20.0	28.0	66.0	-	●
SCD 059-020-060 AP3	5.90	6.00	20.0	28.0	66.0	-	●
SCD 060-020-060 AP3	6.00	6.00	20.0	28.0	66.0	M7	●

⁽¹⁾ Used for standard thread size.

SCD-ACP5 (5xD)

Solid Carbide Drills with Coolant Holes, Drilling Depth 5xD

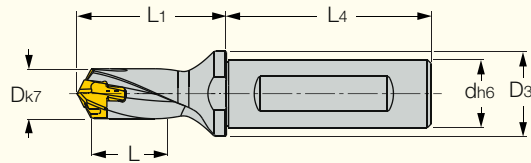
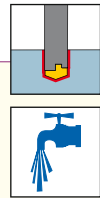


Designation	Dimensions						IC908
	D	d	L	L ₃	L ₂	T _h ⁽¹⁾	
SCD 030-023-060 ACP5	3.00	6.00	23.0	28.0	66.0	-	●
SCD 031-023-060 ACP5	3.10	6.00	23.0	28.0	66.0	-	●
SCD 032-023-060 ACP5	3.20	6.00	23.0	28.0	66.0	-	●
SCD 033-023-060 ACP5	3.30	6.00	23.0	28.0	66.0	M4	●
SCD 034-023-060 ACP5	3.40	6.00	23.0	28.0	66.0	-	●
SCD 035-023-060 ACP5	3.50	6.00	23.0	28.0	66.0	-	●
SCD 036-023-060 ACP5	3.60	6.00	23.0	28.0	66.0	-	●
SCD 037-023-060 ACP5	3.70	6.00	23.0	28.0	66.0	-	●
SCD 038-029-060 ACP5	3.80	6.00	29.0	36.0	74.0	-	●
SCD 039-029-060 ACP5	3.90	6.00	29.0	36.0	74.0	-	●
SCD 040-029-060 ACP5	4.00	6.00	29.0	36.0	74.0	-	●
SCD 041-029-060 ACP5	4.10	6.00	29.0	36.0	74.0	-	●
SCD 042-029-060 ACP5	4.20	6.00	29.0	36.0	74.0	M5	●
SCD 043-029-060 ACP5	4.30	6.00	29.0	36.0	74.0	-	●
SCD 044-029-060 ACP5	4.40	6.00	29.0	36.0	74.0	-	●
SCD 045-029-060 ACP5	4.50	6.00	29.0	36.0	74.0	-	●
SCD 046-029-060 ACP5	4.60	6.00	29.0	36.0	74.0	-	●
SCD 047-029-060 ACP5	4.70	6.00	29.0	36.0	74.0	-	●
SCD 048-035-060 ACP5	4.80	6.00	35.0	44.0	82.0	-	●
SCD 049-035-060 ACP5	4.90	6.00	35.0	44.0	82.0	-	●
SCD 050-035-060 ACP5	5.00	6.00	35.0	44.0	82.0	M6	●
SCD 051-035-060 ACP5	5.10	6.00	35.0	44.0	82.0	-	●
SCD 052-035-060 ACP5	5.20	6.00	35.0	44.0	82.0	-	●
SCD 053-035-060 ACP5	5.30	6.00	35.0	44.0	82.0	-	●
SCD 054-035-060 ACP5	5.40	6.00	35.0	44.0	82.0	-	●
SCD 055-035-060 ACP5	5.50	6.00	35.0	44.0	82.0	-	●
SCD 056-035-060 ACP5	5.60	6.00	35.0	44.0	82.0	-	●
SCD 057-035-060 ACP5	5.70	6.00	35.0	44.0	82.0	-	●
SCD 058-035-060 ACP5	5.80	6.00	35.0	44.0	82.0	-	●
SCD 059-035-060 ACP5	5.90	6.00	35.0	44.0	82.0	-	●
SCD 060-035-060 ACP5	6.00	6.00	35.0	44.0	82.0	-	●

⁽¹⁾ Used for standard thread size.

DCN A-1.5D

Indexable Head Drills with Coolant Holes and One Flat Shanks, Drilling Depth 1.5xD



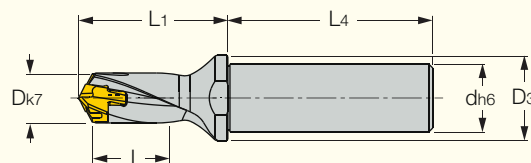
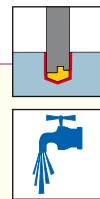
Designation	D _{min} ⁽¹⁾	D _{max}	L	d	D ₃	L ₁	L ₄	Po. Size	Clamping Key
DCN 060-009-12A-1.5D	6.00	6.40	9.0	12.00	16.00	23.0	45.0	6.0	K DCN 6-9.99-Y
DCN 065-010-12A-1.5D	6.50	6.90	10.0	12.00	16.00	24.1	45.0	6.5	K DCN 6-9.99-Y
DCN 070-011-12A-1.5D	7.00	7.40	11.0	12.00	16.00	25.1	45.0	7.0	K DCN 6-9.99
DCN 075-011-12A-1.5D	7.50	7.90	11.0	12.00	16.00	25.9	45.0	7.0	K DCN 6-9.99
DCN 080-012-12A-1.5D	8.00	8.40	12.0	12.00	16.00	27.9	45.0	8.0	K DCN 6-9.99

⁽¹⁾ Do not mount smaller drilling heads than specified range for drill body.

For inserts, see pages: FCP (C13) • ICM (C11) • ICP (C10) • ICP-2M (C12).

DCN R-1.5D

Indexable Head Drills with Coolant Holes and Cylindrical Shanks, Drilling Depth 1.5xD



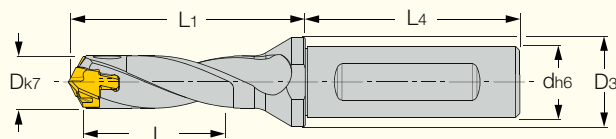
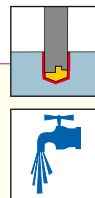
Designation	D _{min} ⁽¹⁾	D _{max}	L	d	D ₃	L ₁	L ₄	Po. Size	Clamping Key
DCN 060-009-12R-1.5D	6.00	6.40	9.0	12.00	16.00	23.0	45.0	6.0	K DCN 6-9.99-Y
DCN 065-010-12R-1.5D	6.50	6.90	10.0	12.00	16.00	24.1	45.0	6.5	K DCN 6-9.99-Y
DCN 070-011-12R-1.5D	7.00	7.40	11.0	12.00	16.00	25.1	45.0	7.0	K DCN 6-9.99
DCN 075-011-12R-1.5D	7.50	7.90	11.0	12.00	16.00	25.9	45.0	7.0	K DCN 6-9.99
DCN 080-012-12R-1.5D	8.00	8.40	12.0	12.00	16.00	27.9	45.0	8.0	K DCN 6-9.99

⁽¹⁾ Do not mount smaller drilling heads than specified range for drill body.

For inserts, see pages: FCP (C13) • ICM (C11) • ICP (C10) • ICP-2M (C12).

DCN A-3D

Indexable Head Drills with Coolant Holes and One Flat Shanks, Drilling Depth 3xD



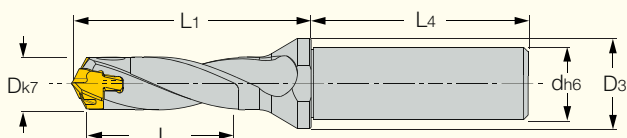
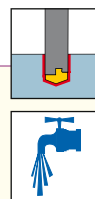
Designation	D _{min} ⁽¹⁾	D _{max}	L	d	D ₃	L ₁	L ₄	Po. Size	Clamping Key
DCN 060-018-12A-3D	6.00	6.40	18.0	12.00	16.00	32.0	45.0	6.0	K DCN 6-9.99-Y
DCN 065-020-12A-3D	6.50	6.90	20.0	12.00	16.00	33.8	45.0	6.5	K DCN 6-9.99-Y
DCN 070-021-12A-3D	7.00	7.40	21.0	12.00	16.00	35.6	45.0	7.0	K DCN 6-9.99
DCN 075-023-12A-3D	7.50	7.90	23.0	12.00	16.00	37.1	45.0	7.0	K DCN 6-9.99
DCN 080-024-12A-3D	8.00	8.40	24.0	12.00	16.00	39.4	45.0	8.0	K DCN 6-9.99

⁽¹⁾ Do not mount smaller drilling heads than specified range for drill body.

For inserts, see pages: ICP (C10) • ICM (C11) • ICP-2M (C12) • FCP (C13).

DCN R-3D

Indexable Head Drills with Coolant Holes and Cylindrical Shanks, Drilling Depth 3xD



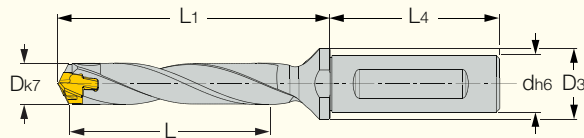
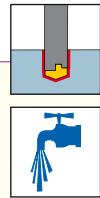
Designation	D _{min} ⁽¹⁾	D _{max}	L	d	D ₃	L ₁	L ₄	Po. Size	Clamping Key
DCN 060-018-12R-3D	6.00	6.40	18.0	12.00	16.00	32.0	45.0	6.0	K DCN 6-9.99-Y
DCN 065-020-12R-3D	6.50	6.90	20.0	12.00	16.00	33.8	45.0	6.5	K DCN 6-9.99-Y
DCN 070-021-12R-3D	7.00	7.40	21.0	12.00	16.00	35.6	45.0	7.0	K DCN 6-9.99
DCN 075-023-12R-3D	7.50	7.90	23.0	12.00	16.00	37.1	45.0	7.0	K DCN 6-9.99
DCN 080-024-12R-3D	8.00	8.40	24.0	12.00	16.00	39.4	45.0	8.0	K DCN 6-9.99

⁽¹⁾ Do not mount smaller drilling heads than specified range for drill body.

For inserts, see pages: FCP (C13) • ICM (C11) • ICP (C10) • ICP-2M (C12).

DCN A-5D

Indexable Head Drills with Coolant Holes and One Flat Shanks, Drilling Depth 5xD



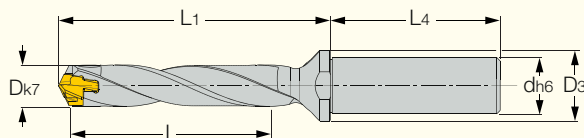
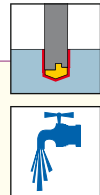
Designation	D _{min} ⁽¹⁾	D _{max}	L	d	D ₃	L ₁	L ₄	Po. Size	Clamping Key
DCN 060-030-12A-5D	6.00	6.40	30.0	12.00	16.00	44.0	45.0	6.0	K DCN 6-9.99-Y
DCN 065-033-12A-5D	6.50	6.90	33.0	12.00	16.00	46.8	45.0	6.5	K DCN 6-9.99-Y
DCN 070-035-12A-5D	7.00	7.40	35.0	12.00	16.00	49.6	45.0	7.0	K DCN 6-9.99
DCN 075-038-12A-5D	7.50	7.90	38.0	12.00	16.00	49.6	45.0	7.0	K DCN 6-9.99
DCN 080-040-12A-5D	8.00	8.40	40.0	12.00	16.00	55.4	45.0	8.0	K DCN 6-9.99

⁽¹⁾ Do not mount smaller drilling heads than specified range for drill body.

For inserts, see pages: FCP (C13) • ICM (C11) • ICP (C10) • ICP-2M (C12).

DCN R-5D

Indexable Head Drills with Coolant Holes and Cylindrical Shanks, Drilling Depth 5xD



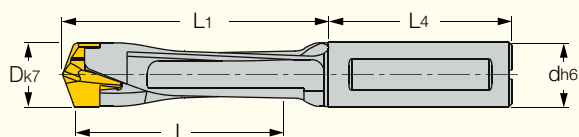
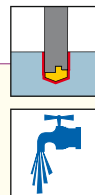
Designation	D _{min} ⁽¹⁾	D _{max}	L	d	D ₃	L ₁	L ₄	Po. Size	Clamping Key
DCN 060-030-12R-5D	6.00	6.40	30.0	12.00	16.00	44.0	45.0	6.0	K DCN 6-9.99-Y
DCN 065-033-12R-5D	6.50	6.90	33.0	12.00	16.00	46.8	45.0	6.5	K DCN 6-9.99-Y
DCN 070-035-12R-5D	7.00	7.40	35.0	12.00	16.00	49.6	45.0	7.0	K DCN 6-9.99
DCN 075-038-12R-5D	7.50	7.90	38.0	12.00	16.00	52.1	45.0	7.0	K DCN 6-9.99
DCN 080-040-12R-5D	8.00	8.40	40.0	12.00	16.00	55.4	45.0	8.0	K DCN 6-9.99

⁽¹⁾ Do not mount smaller drilling heads than specified range for drill body.

For inserts, see pages: FCP (C13) • ICM (C11) • ICP (C10) • ICP-2M (C12).

DCNS-3D

Indexable Head Drills without a Flange and One Flat Shank, Drilling Depth 3xD,
Suitable for Chamfering Holders



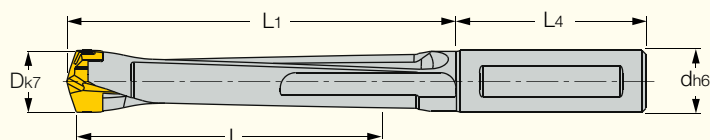
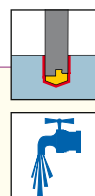
Designation	D min ⁽¹⁾	D max	L	d	L1	L4	Po. Size	Clamping Key
DCNS 075-022-080B-3D	7.50	7.90	22.5	8.00	34.2	36.0	7.0	K DCN 6-9.99
DCNS 080-024-080B-3D	8.00	8.40	24.0	8.00	34.7	36.0	8.0	K DCN 6-9.99

⁽¹⁾ Do not mount smaller drilling heads than specified range for drill body.

For inserts, see pages: FCP (C13) • ICM (C11) • ICP (C10) • ICP-2M (C12).

DCNS-5D

Indexable Head Drills without a Flange and One Flat Shank, Drilling Depth 5xD,
Suitable for Chamfering Holders

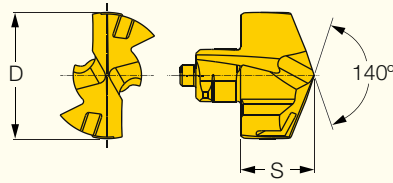
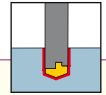


Designation	D min ⁽¹⁾	D max	L	d	L1	L4	Po. Size	Clamping Key
DCNS 075-037-080B-5D	7.50	7.90	37.5	8.00	49.2	36.0	7.0	K DCN 6-9.99
DCNS 080-040-080B-5D	8.00	8.40	40.0	8.00	56.4	36.0	8.0	K DCN 6-9.99

⁽¹⁾ Do not mount smaller drilling heads than specified range for drill body.

For inserts, see pages: FCP (C13) • ICM (C11) • ICP (C10) • ICP-2M (C12).

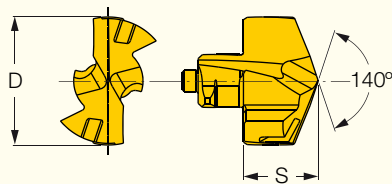




Designation	Dimensions			IC908
	D	S	Po. Size	
ICP 060	6.00	4.00	6.0	●
ICP 061	6.10	4.00	6.0	●
ICP 062	6.20	4.00	6.0	●
ICP 063	6.30	4.00	6.0	●
ICP 0635	6.35	4.00	6.0	●
ICP 064	6.40	4.00	6.0	●
ICP 065	6.50	4.30	6.5	●
ICP 066	6.60	4.30	6.5	●
ICP 067	6.70	4.30	6.5	●
ICP 068	6.80	4.30	6.5	●
ICP 069	6.90	4.30	6.5	●
ICP 070	7.00	4.60	7.0	●
ICP 071	7.10	4.60	7.0	●
ICP 072	7.20	4.60	7.0	●
ICP 073	7.30	4.60	7.0	●
ICP 074	7.40	4.60	7.0	●
ICP 075	7.50	4.60	7.0	●
ICP 076	7.60	4.60	7.0	●
ICP 077	7.70	4.60	7.0	●
ICP 078	7.80	4.60	7.0	●
ICP 079	7.90	4.60	7.0	●
ICP 080	8.00	5.40	8.0	●
ICP 081	8.10	5.40	8.0	●
ICP 082	8.20	5.40	8.0	●
ICP 083	8.30	5.40	8.0	●
ICP 084	8.40	5.40	8.0	●

ICM

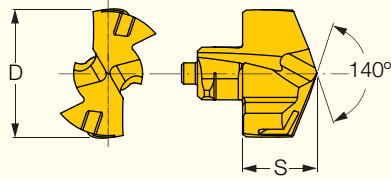
Exchangeable DCN Drill Heads, for Stainless Steel and High Temperature Alloys
(ISO M Materials)



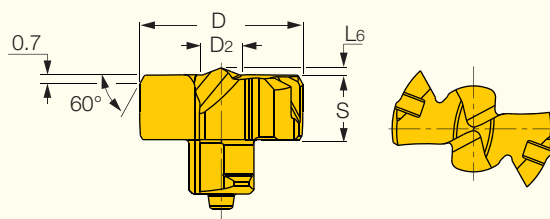
Designation	Dimensions			Tough ↔ Hard	
	D	S	Po. Size	IC908	IC907
ICM 060	6.00	4.00	6.0	●	
ICM 061	6.10	4.00	6.0	●	
ICM 062	6.20	4.00	6.0	●	
ICM 063	6.30	4.00	6.0	●	
ICM 0635	6.35	4.00	6.0	●	
ICM 064	6.40	4.00	6.0	●	
ICM 065	6.50	4.30	6.5	●	
ICM 066	6.60	4.30	6.5	●	
ICM 067	6.70	4.30	6.5	●	
ICM 068	6.80	4.30	6.5	●	
ICM 069	6.90	4.30	6.5	●	
ICM 070	7.00	4.60	7.0	●	
ICM 071	7.10	4.60	7.0	●	
ICM 072	7.20	4.60	7.0	●	
ICM 073	7.30	4.60	7.0	●	
ICM 074	7.40	4.60	7.0	●	
ICM 075	7.50	4.60	7.0	●	●
ICM 076	7.60	4.60	7.0	●	
ICM 077	7.70	4.60	7.0	●	
ICM 078	7.80	4.60	7.0	●	
ICM 079	7.90	4.60	7.0	●	
ICM 080	8.00	5.40	8.0	●	●
ICM 081	8.10	5.40	8.0	●	
ICM 082	8.20	5.40	8.0	●	
ICM 083	8.30	5.40	8.0	●	
ICM 084	8.40	5.40	8.0	●	

ICP-2M

Double Margin Drilling Heads for DCN Drills for Machining Steel with High Surface Finish Results



Designation	Dimensions			IC908
	D	S	Po. Size	
ICP 060-2M	6.00	4.00	6.0	●
ICP 061-2M	6.10	4.00	6.0	●
ICP 062-2M	6.20	4.00	6.0	●
ICP 063-2M	6.30	4.00	6.0	●
ICP 0635-2M	6.35	4.00	6.0	●
ICP 064-2M	6.40	4.00	6.0	●
ICP 065-2M	6.50	4.30	6.5	●
ICP 066-2M	6.60	4.30	6.5	●
ICP 067-2M	6.70	4.30	6.5	●
ICP 068-2M	6.80	4.30	6.5	●
ICP 069-2M	6.90	4.30	6.5	●
ICP 070-2M	7.00	4.60	7.0	●
ICP 071-2M	7.10	4.60	7.0	●
ICP 072-2M	7.20	4.60	7.0	●
ICP 073-2M	7.30	4.60	7.0	●
ICP 074-2M	7.40	4.60	7.0	●
ICP 075-2M	7.50	4.60	7.0	●
ICP 076-2M	7.60	4.60	7.0	●
ICP 077-2M	7.70	4.60	7.0	●
ICP 078-2M	7.80	4.60	7.0	●
ICP 079-2M	7.90	4.60	7.0	●
ICP 080-2M	8.00	5.40	8.0	●
ICP 081-2M	8.10	5.40	8.0	●
ICP 082-2M	8.20	5.40	8.0	●
ICP 083-2M	8.30	5.40	8.0	●
ICP 084-2M	8.40	5.40	8.0	●



Designation	Dimensions					IC908
	D	D ₂	S	L ₆	Po. Size	
FCP 080	8.00	2.44	4.00	0.39	8.0	●
FCP 081	8.10	2.44	4.00	0.39	8.0	●
FCP 082	8.20	2.44	4.00	0.39	8.0	●
FCP 083	8.30	2.44	4.00	0.39	8.0	●
FCP 084	8.40	2.44	4.00	0.39	8.0	●

Single Flute Gundrill

ISCAR's gundrill consists of a single piece carbide head, a streamlined shank and a driver through which coolant flows to the working end where it is most needed.

Chips are evacuated along the V-shaped external flute.

Drilling Head

The carbide head is tapered on its length to reduce friction. The taper angle depends on the type of material to be drilled. For high precision drilling, the taper should be reduced to a minimum. Note that when the head is resharpened, the diameter of the drill changes, affecting the hole tolerance.

Shank

The cross-section of the shank is V-shaped with coolant holes. It is made of hardened steel that is highly resistant to twisting (for information on carbide shanks, see next page). This cross-section provides the optimal conditions for twist resistance, coolant flow and chip evacuation.

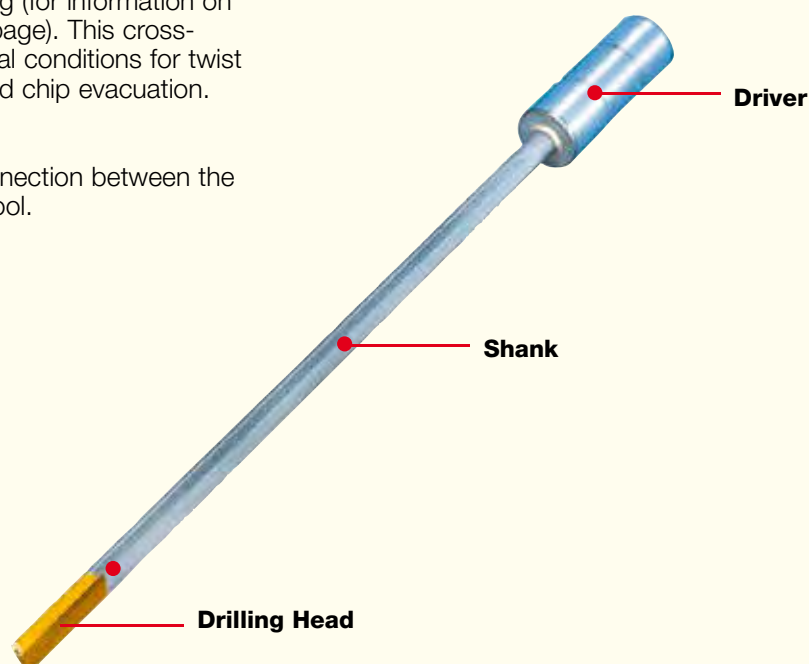
Driver

The driver ensures the connection between the gundrill and the machine tool.

Carbide Tipped Gundrill Range

Drill Diameter	Max. Flute Length
2.50 to 3.09	1100
3.10 to 5.99	2500
6.00 to 11.39	3000
11.40 to 40.00	3500

Overall length=flute length+driver length



Advantages

- Drilling precision of IT7 to IT9 tolerances can be reached.
- Excellent straightness and concentricity.
- Maintains high precision hole center alignment.
- Surface roughness of R 0.4-1.6mm is easily obtained.
- Reboring operations are often unnecessary.

ISCAR's advanced gundrill technology provides superior geometric and dimensional quality for both deep and shallow drilling.

The drills are available in the range of 2.5 to 40mm.

ISCAR Single Flute Solid Carbide Gundrills

Another type of gundrill is made with integral tip and shank, made of solid carbide with either a steel or a carbide driver.

These drills are designed for conventional machines, machining centers and lathes. This style of gundrill is available from 0.9-16.00mm and can be used on various types of materials. It provides superior rigidity and optimal coolant flow rates. As a result of its rigidity, up to 100% higher feed rate can be reached.

When using the small diameter drills, it is crucial to adhere closely to recommended drilling parameters.

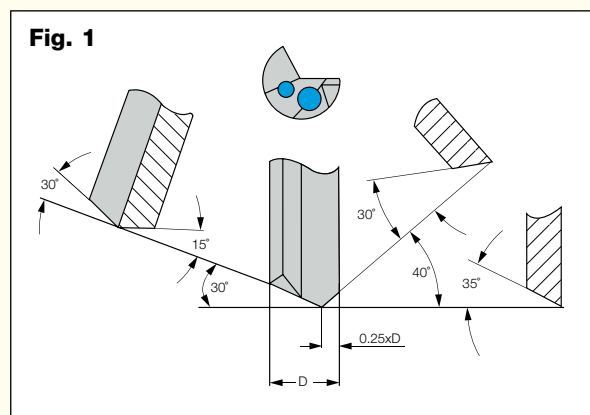
Solid Carbide Gundrill Range

(with or without brazed steel driver)

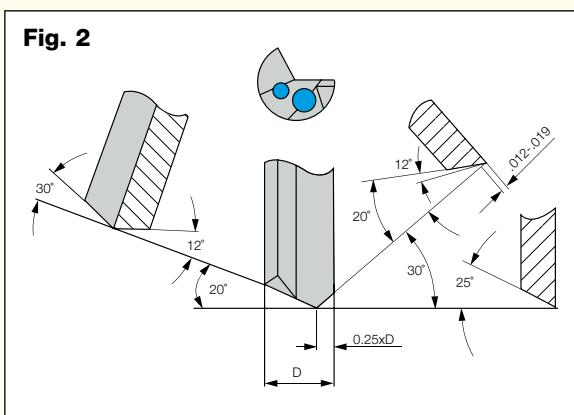
Drill Diameter	Max. Flute Length
0.9 to 16.00	300

Standard Gundrill Head Sharpening Angles

Subject to the required tolerance, cutting performance and desired chip shape, the following standard sharpening angles are recommended (shown in figures 1-3).

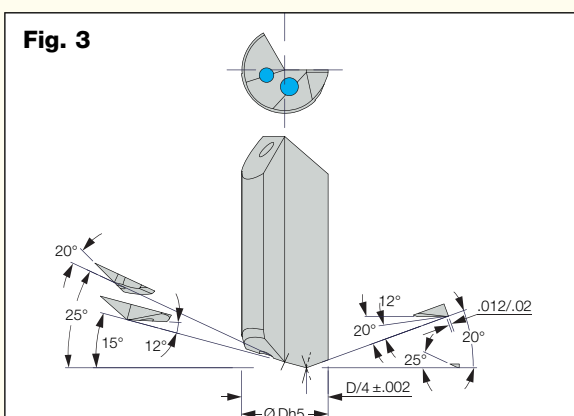


Standard sharpening for 0.9 to 4mm drill diameters



Standard sharpening for 4 to 32mm drill diameters

Note: For special or semi-standard gundrills, special geometries will be offered to match the application.

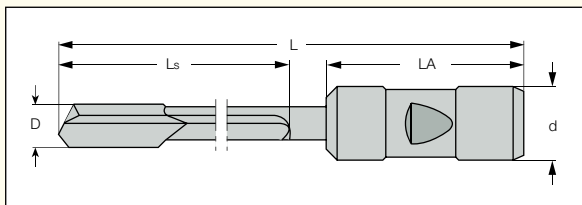


Standard sharpening for 32 to 40mm drill diameters

Gundrill Inquiry Form

1. Tool

Quantity.....
Nominal diameter and tolerance
Please fill in dimensions on the sketch below.

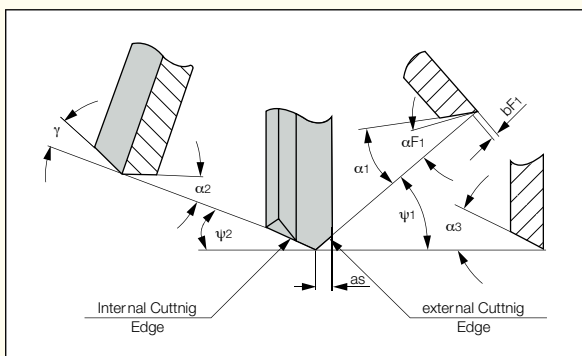


Driver

Driver: for standard drivers please use codes from HOLE MAKING TOOLS Metric Catalog.

- ☐ Code No.
☐ Special, please attach sketch and specifications.

Grind: Special (fill in the dimensions and angles below).



$\alpha 1 =$ $\alpha F 1 =$ $\psi 1 =$

$\alpha 2 =$ $b F 1 =$ $\psi 2 =$

$\alpha 3 =$ $a s =$ $\gamma =$

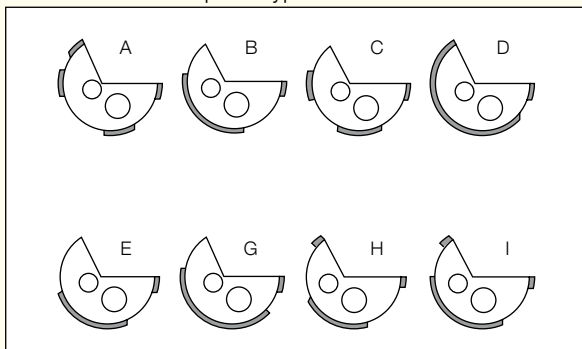
☐ Standard

Coating:

- ☐ TiN : TiCN : TiN+TiCN : TiAlN : Other
☐ IC208 (TiN) : IC308 (TiCN) : IC508 (TiCN+TiN)
☐ IC908 (TiAlN)

Type:

Please circle the required type.



2. Workpiece

(If possible, please attach a drawing)

2.1 Material

Material description (DIN material number or any other standard):

Hardness and Properties:

- ☐ Short Chips ☐ Long Chips

2.2 Hole Type

- ☐ Blind Hole ☐ Drilling into Pre-hole ☐ Angled Entry
☐ Drilling into Solid ☐ Boring ☐ Angled Exit

Drilling Depth mm Hole Tolerance

2.3 Application:

Workpiece: Stationary : Rotating

Tool : Stationary : Rotating

3. Machine

3.1 Technical Data

Machine Type.....

Power: kW

3.2 Cutting Data:

Cutting Speed V_c m/min

Revolutions N_{min} RPM, N_{max} RPM

Feed F_{min} mm/rev

F_{max} mm/rev

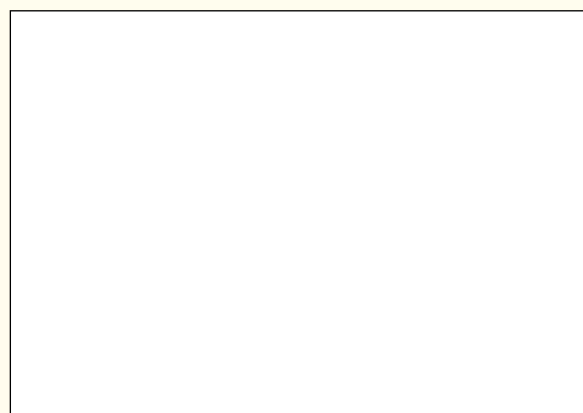
Feed Rate VF mm/min

Coolant:

- ☐ Oil ☐ Soluble Oil : Other

Coolant Pressure: Bar

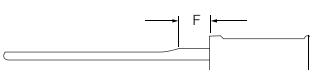
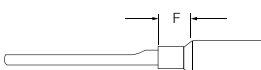
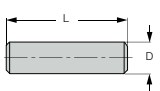
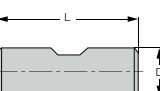
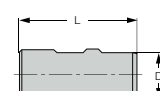
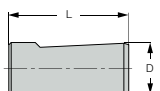
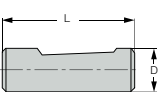
Sketch of drilling application



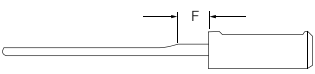
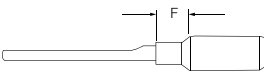
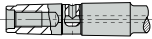
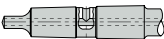
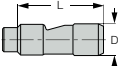
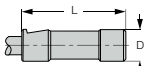
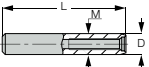
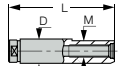
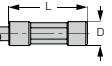
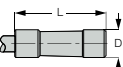
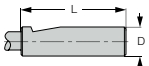
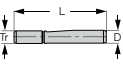
Note: It may be necessary to change several of the parameters that you indicated, based on our experience with your application.

ISCARGUNDRILLS USER GUIDE

Standard Gundrill Drivers for Machining Centers, Lathes, etc.

Driver Type	Drawing	DxL	Driver code				
				BRAZED GUNDRILL			SOLID CARBIDE GUNDRILL
				Max. cutting diameter	F = CYLINDRICAL TUBE		
					Equal or less than max. cutting diameter	More than maximum diameter	
						F = Straightening extension	
Cylindrical DIN1835A DIN6535HA		4x28	N°1	2.749	10	20	18
		5x28	N°2	3.249	10	20	15
		6x36	N°3	4.249	10	20	14
		8x36	N°4	5.749	10	20	14
		10x40	N°5	7.299	10	20	15
		12x45	N°6	8.999	10	20	15
		.50x1.78"	N°94	9.699	10	20	15
		14x45	N°7	10.999	10	20	15
		16x48	N°8	12.399	10	20	15
		18x48	N°9	14.399	10	20	15
		.75x2.03"	N°95	14.899	10	20	15
		20x50	N°10	15.899	10	20	
		25x56	N°11	19.509	10	25	
		1.00x2.28"	N°96	19.509	10	25	
		1.25x2.28"	N°97	25.609	10	25	
		32x60	N°12	25.609	10	25	
		40x70	N°13	32.609	10	25	
50x80	N°14	40	10	25			
63x90	N°15	40	10	25			
Weldon DIN1835B DIN6535HB	 	6x36	N°16	2.749	10	20	15
		8x36	N°17	3.249	10	20	15
		10x40	N°18	7.299	10	20	15
		12x45	N°19	8.999	10	20	15
		.50x1.78"	N°98	9.699	10	20	15
		16x48	N°20	12.399	10	20	15
		18x48	N°21	14.399	10	20	15
		.75x2.03"	N°99	14.899	10	20	15
		20x50	N°22	15.899	10	20	15
		25x56	N°23	19.509	10	25	
		1.00x2.28"	N°100	19.509	10	25	
		1.25x2.28"	N°101	25.609	10	25	
		32x60	N°24	25.609	10	25	
		40x70	N°25	32.609	10	25	
		50x80	N°26	40	10	25	
63x90	N°27	40	10	25			
Whistle Notch DIN1835E		6x36	N°28	2.749	10	20	
		8x36	N°29	3.249	10	20	
		10x40	N°30	7.299	10	20	15
		12x45	N°31	8.999	10	20	15
		16x48	N°32	12.399	10	20	15
		18x48	N°33	14.399	10	20	15
		20x50	N°34	15.899	10	20	15
		25x56	N°35	19.509	10	25	
		32x60	N°36	25.609	10	25	
40x70	N°37	32.609	10	25			
Whistle Notch DIN6535HE		6x36	N°38	2.749	10	20	15
		8x36	N°39	3.249	10	20	15
		10x40	N°40	7.299	10	20	15
		12x45	N°41	8.999	10	20	15
		16x48	N°42	12.399	10	20	15
		18x48	N°43	14.399	10	20	15
		20x50	N°44	15.899	10	20	15

Standard Drivers for Gundrill Machines

Driver Type	Drawing	DxL	Driver code				
				BRAZED GUNDRILL			SOLID CARBIDE GUNDRILL
				Max. cutting diameter	F = CYLINDRICAL TUBE		
					Equal or less than max. cutting diameter	More than maximum diameter	F = Straightening extension
DIN228AK		CM1	N°45	9.599	10	20	
		CM2	N°46	14.599	10	20	
		CM3	N°47	21.499	10	25	
		CM4	N°48	29.499	10	25	
DIN228BK		CM1	N°49	9.599	10	20	
		CM2	N°50	14.599	10	20	
		CM3	N°51	21.499	10	25	
		CM4	N°52	29.499	10	25	
Central Clamping Surface 15°		6x30	N°53	2.749	10	20	20
		10x40	N°54	7.299	10	20	15
		16x45	N°55	12.399	10	20	
		.750x2.75"	N°56	14.899	10	20	
		25x70	N°57	19.509	10	25	
		1.00x2.75"	N°58	19.509	10	25	
		1.25x2.75"	N°59	25.609	10	25	
Frontal Clamping Surface 15°		16x50	N°61	12.399	10	20	
Cylindrical with Thread		10x50 M6X0.5	N°62	7.299	10	20	15
		10x60 M6X0.5	N°63	7.299	10	20	
		.50x1.97" M6x0.5	N°64	8.999	10	20	15
		16x80 M10X1	N°65	12.399	10	20	15
		25x100 M16x1.5	N°66	19.509	10	25	
		36x120 M24x1.5	N°67	30.609	10	25	
VDI Design		10x68 M6x0.5	N°68	6.749	10	20	15
		16x90 M10x1	N°69	10.799	10	20	
		25x112 M16x1.5	N°70	19.509	10	25	
		36x135 M24x1.5	N°71	30.609	10	25	
Central Clamping Hexagonal		25x70	N°72	19.509	10	25	
		32x70	N°73	25.609	10	25	
Central Clamping Tapered		.50x1.50"	N°74	8.599	10	20	15
		16x70	N°75	12.099	10	20	15
		.75x2.75"	N°76	14.099	10	20	
		20x70	N°77	16.099	10	20	15
Frontal Clamping Surface 2°		.50x1.50"	N°78	9.699	10	20	
		.75x2.75"	N°79	14.899	10	20	
		1.00x2.75"	N°80	19.509	10	25	
		1.00x3.94"	N°81	19.509	10	25	
		1.25x2.75"	N°82	25.609	10	25	
		1.25x3.94"	N°83	25.609	10	25	
		1.50x2.75"	N°84	32.609	10	25	
1.50x3.94"	N°85	32.609	10	25			
Trapezoidal Thread		16x112 Tr 16x1.5	N°86	13.599	10	20	
		20x126 Tr 20x2	N°87	17.099	10	20	
		28x126 Tr 28x2	N°88	25.599	10	25	
		36x162 Tr 36x2	N°89	32.599	10	25	
Spraymist Driver		16x40	N°90	12.399	10	20	
		25x50	N°91	19.509	10	25	
		35x60	N°92	26.599	10	25	

Drivers are available for dedicated and CNC machines, for any specified diameter and length.

Holder Designation Code Key

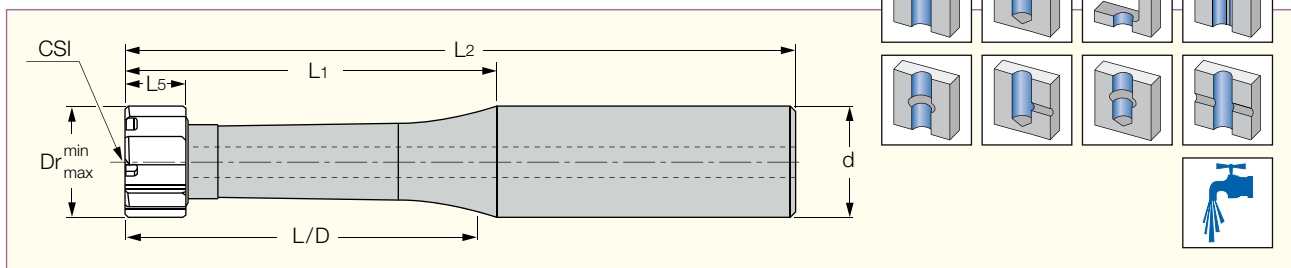
RM	-	BNT6	-	3D	-	16	-	C⁽¹⁾	-	 ⁽²⁾
Reamer		Bayonet tool size		Functional length		Shank diameter		Shank type		Shank material

⁽¹⁾ C-cylindrical (default), W-Weldon (by request), M-Morse (by request)

⁽²⁾ No letter-Steel (default), C-Carbide (by request), W-Heavy metal (by request)

RM-BNT-3D/5D/8D (Shanks)

Shanks for BAYO T-REAM Interchangeable Head Reamers



Designation	L/D	Dr(min)	Dr(max)	L5	L2	L1	d	CSI ⁽¹⁾
RM-BNT5-3D-16C	3.00	11.501	13.500	9.20	97.8	49.8	16.00	BN5
RM-BNT6-3D-16C	3.00	13.501	16.000	9.20	105.4	57.4	16.00	BN6
RM-BNT5-5D-16C	5.00	11.501	13.500	9.20	125.0	77.0	16.00	BN5
RM-BNT6-5D-16C	5.00	13.501	16.000	9.20	137.4	89.4	16.00	BN6
RM-BNT5-8D-16C	8.00	11.501	13.500	9.20	165.5	117.5	16.00	BN5
RM-BNT6-8D-16C	8.00	13.501	16.000	9.20	185.4	137.4	16.00	BN6

⁽¹⁾ Connection size

For inserts, see pages: RM-BN-H7LB (C20) • RM-BN-H7SA (C21).

Spare Parts



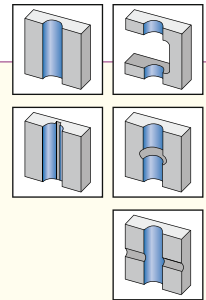
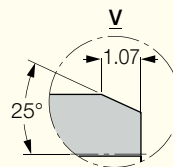
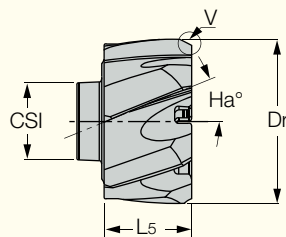
Designation	Bayonet Screw	Clamping Key
RM-BNT5-3D-16C	RM-BN5-SR	RM-BN5-K
RM-BNT6-3D-16C	RM-BN6-SR	RM-BN6-K
RM-BNT5-5D-16C	RM-BN5-SR	RM-BN5-K
RM-BNT6-5D-16C	RM-BN6-SR	RM-BN6-K
RM-BNT5-8D-16C	RM-BN5-SR	RM-BN5-K
RM-BNT6-8D-16C	RM-BN6-SR	RM-BN6-K

Designation Code Key

RM	-	BN6	-	16.000	-	H7LB
Reamer		Bayonet Size		Hole diameter	IT Hole Tolerance	Front End Configuration Code
					Flute Type (Straight, Left)	

RM-BN-H7LB

Interchangeable Left-Hand Flute Solid Carbide Reaming Heads with a Quick Change for High Speed Reaming of Through Holes



Designation	Dimensions					Tough ↔ Hard	
	CSI	Dr	L5	Flute	Ha°	IC08	IC908
RM-BN5-11.501-H7LB	BN5	11.501	9.20	6	20.0	●	●
RM-BN5-12.000-H7LB	BN5	12.000	9.20	6	20.0	●	●
RM-BN5-13.000-H7LB	BN5	13.000	9.20	6	20.0	●	●
RM-BN5-13.500-H7LB	BN5	13.500	9.20	6	20.0	●	●
RM-BN6-13.501-H7LB	BN6	13.501	9.20	6	20.0	●	●
RM-BN6-14.000-H7LB	BN6	14.000	9.20	6	20.0	●	●
RM-BN6-15.000-H7LB	BN6	15.000	9.20	6	20.0	●	●
RM-BN6-16.000-H7LB	BN6	16.000	9.20	6	20.0	●	●

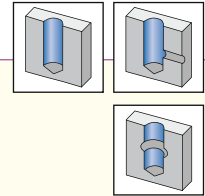
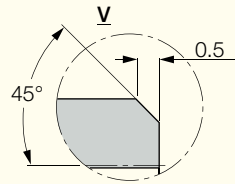
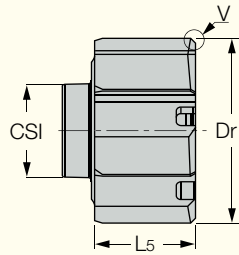
For tools, see page: RM-BNT-3D/5D/8D (Shanks) (C19).



BAYO TREAM

RM-BN-H7SA

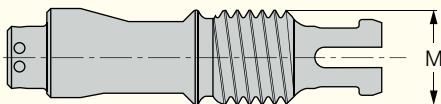
Interchangeable Straight Flute Solid Carbide Reaming Heads with Quick Change Bayonet Mechanism for High Speed Reaming



Designation	Dimensions				Tough $\longleftrightarrow$ Hard	
	CSI	Dr	L5	Flute	IC08	IC908
RM-BN5-11.501-H7SA	BN5	11.501	9.20	6	●	●
RM-BN5-12.000-H7SA	BN5	12.000	9.20	6	●	●
RM-BN5-13.000-H7SA	BN5	13.000	9.20	6	●	●
RM-BN5-13.500-H7SA	BN5	13.500	9.20	6	●	●
RM-BN6-13.501-H7SA	BN6	13.501	9.20	6	●	●
RM-BN6-14.000-H7SA	BN6	14.000	9.20	6	●	●
RM-BN6-15.000-H7SA	BN6	15.000	9.20	6	●	●
RM-BN6-16.000-H7SA	BN6	16.000	9.20	6	●	●

For tools, see page: RM-BNT-3D/5D/8D (Shanks) (C19).

Bayonet Screw



Designation	Head Diameter	Bayonet Size	M
RM-BN5-SR	11.501-13.500	BN5	M5
RM-BN6-SR	13.501-16.000	BN6	M6

Clamping Key



Designation	Head Diameter	Bayonet Size
RM-BN5-K	11.501-13.500	BN5
RM-BN6-K	13.501-16.000	BN6



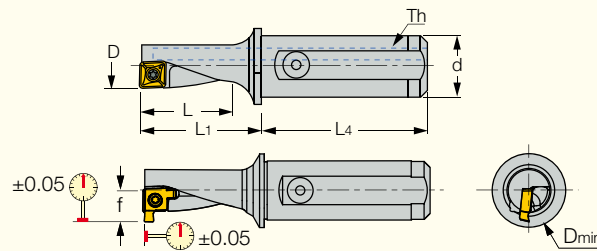
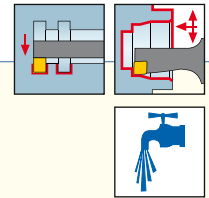
MULTIFUNCTION TOOLS



MULTIFUNCTION TOOLS

DRG-MF

Multifunction Drilling, Boring, Facing, External Turning and Internal Grooving Tools



Right-hand shown

Designation	D	D _{min}	f	L	L ₁	L ₄	d	T _h	Insert
DRG-MF-10R/L-2.25D-12A-05	10.00	12.00	7.1	22.5	27.5	42.0	12.00	G 1/16	XCMT 05...
DRG-MF-12R/L-2.25D-16A-06	12.00	14.50	8.5	27.0	33.0	45.0	16.00	G 1/8	XCMT 06...
DRG-MF-14R/L-2.25D-16A-07	14.00	16.50	9.5	31.5	38.5	45.0	16.00	G 1/8	XCMT 07...
DRG-MF-16R/L-2.25D-20A-08	16.00	19.00	11.1	36.0	44.0	50.0	20.00	G 1/8	XCMT 08...

• In non-rotating applications hole diameter can be adjusted within the specified range by shifting drill's center line along machine's X-axis. • The tools feature internal coolant holes.

For inserts, see page: XCMT-MF (D3) • XCMT-MG (D3).

Spare Parts

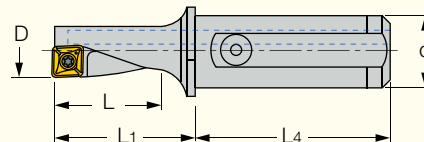
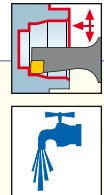


Designation	Screw	Key
DRG-MF-10R/L-2.25D-12A-05	SR 20038/HG-P* IP-6/5*	
DRG-MF-12R/L-2.25D-16A-06	SR 22052/HG-P* IP-7/5*	
DRG-MF-14R/L-2.25D-16A-07	SR 25064/HG-P* IP-8/5*	
DRG-MF-16R/L-2.25D-20A-08	SR 30070/HG-P* IP-9/151*	

* Optional, should be ordered separately

DR-MF-2.25D

Multifunction Drilling, Boring, Facing and External Turning Tool



Right-hand shown

Designation	D	d	L	L ₁	L ₄
DR-MF-08R/L-2.25D-12A-04	8.00	12.00	18.0	22.5	42.0
DR-MF-10R/L-2.25D-12A-05	10.00	12.00	22.5	27.5	42.0
DR-MF-12R/L-2.25D-16A-06	12.00	16.00	27.0	33.0	45.0
DR-MF-14R/L-2.25D-16A-07	14.00	16.00	31.5	38.5	45.0
DR-MF-16R/L-2.25D-20A-08	16.00	20.00	36.0	44.0	50.0

• In non-rotating applications hole diameter can be adjusted within the specified range by shifting drill's center line along machine's X-axis. • The tools have an internal coolant hole.

For inserts, see page: XCMT-MF (D3).

Spare Parts

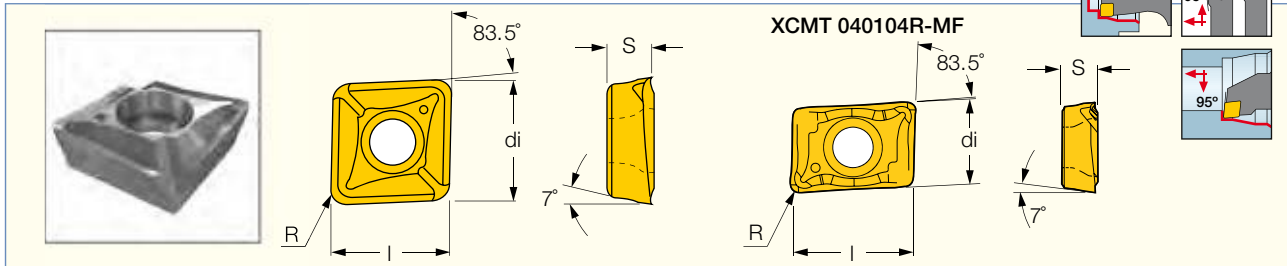


Designation	Screw	Key
DR-MF-08R/L-2.25D-12A-04	SR 18034/HG-P IP-6/5	
DR-MF-10R/L-2.25D-12A-05	SR 20038/HG-P IP-6/5	
DR-MF-12R/L-2.25D-16A-06	SR 22052/HG-P IP-7/5	
DR-MF-14R/L-2.25D-16A-07	SR 25064/HG-P IP-8/5	
DR-MF-16R/L-2.25D-20A-08	SR 30070/HG-P IP-9/151	

MULTIFUNCTION TOOLS

XCMT-MF

Inserts for DR-MF Multifunction Tools, Two Cutting Edges, for Hard Materials and Interrupted Cut

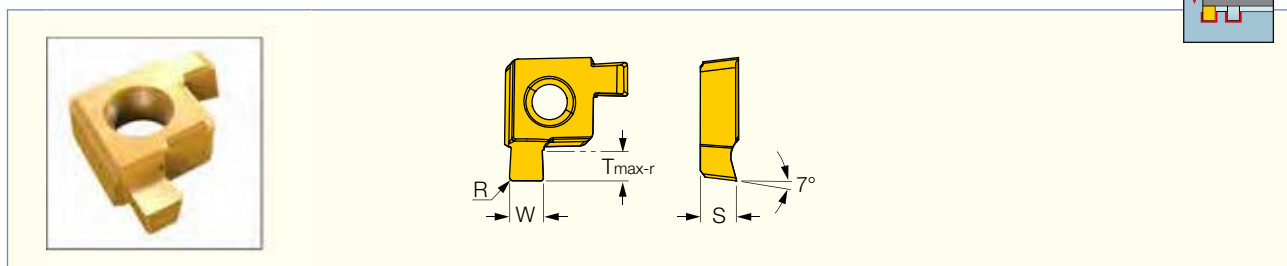


Designation	Dimensions				IC908
	di	l	S	R	
XCMT 040104L-MF	4.40	6.40	1.70	0.40	●
XCMT 040104R-MF	4.40	6.40	1.70	0.40	●
XCMT 050204-MF	5.60	5.60	2.10	0.40	●
XCMT 060204-MF	6.38	6.38	2.38	0.40	●
XCMT 070304-MF	7.48	7.48	3.18	0.40	●
XCMT 080304-MF	8.44	8.44	3.18	0.40	●

For tools, see page: DRG-MF (D2) • DR-MF-2.25D(D2)

XCMT-MG

Two Cutting Edged Internal Grooving Inserts, for DR-MF Multifunction Tools



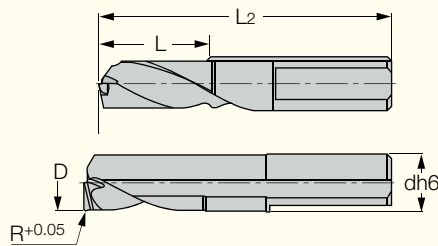
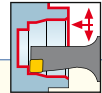
Designation	Dimensions				IC808G	Recommended Machining Data
	W ± 0.02	T $_{max-r}$	R	S		f groove (mm/rev)
XCMT 05R-201802-MG	2.00	1.80	0.20	2.28	●	0.02-0.10
XCMT 06R-202002-MG	2.00	2.00	0.20	2.65	●	0.02-0.12
XCMT 07R-252002-MG	2.50	2.00	0.20	3.41	●	0.03-0.14
XCMT 08R-252502-MG	2.50	2.50	0.20	3.50	●	0.03-0.17

For tools, see page: DRG-MF (D2).

MULTIFUNCTION TOOLS

PICCO-MF

Multifunction, Solid Carbide Tools for Drilling, Facing, Int. and Ext. Turning on Swiss and Small CNC Machines



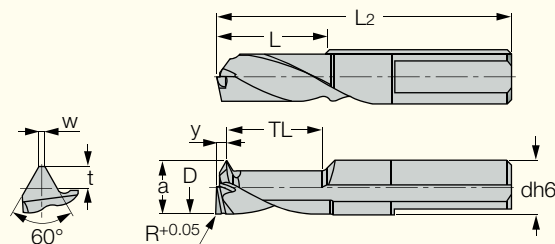
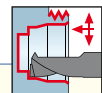
Right-hand shown

Designation	Dimensions						IC908
	D	L	L ₂	d	R		
PICCO R-MF 6-3 L06	3.00	6.0	28.0	6.00	0.10	●	●
PICCO R/L-MF 6-4 L08	4.00	8.0	30.0	6.00	0.10	●	●
PICCO R/L-MF 6-4 L12	4.00	12.0	34.0	6.00	0.20	●	●
PICCO R/L-MF 6-5 L10	5.00	10.0	32.0	6.00	0.10	●	●
PICCO R/L-MF 6-5 L15	5.00	15.0	41.0	6.00	0.30	●	●
PICCO R/L-MF 6-6 L12	6.00	12.0	34.0	6.00	0.10	●	●
PICCO R/L-MF 6-6 L18	6.00	18.0	43.0	6.00	0.30	●	●
PICCO R/L-MF 8-7 L14	7.00	14.0	41.0	8.00	0.10	●	●
PICCO R/L-MF 8-7 L21	7.00	21.0	55.0	8.00	0.30	●	●
PICCO R/L-MF 8-8 L16	8.00	16.0	43.0	8.00	0.10	●	●
PICCO R/L-MF 8-8 L24	8.00	24.0	58.5	8.00	0.30	●	●

• D_{min} can be 0.1 mm smaller by shifting tool center • Applications: Drilling; face turning; internal chamfering; internal turning\ boring; internal profiling; external chamfering; external turning.

PICCO-MFT

Solid Carbide Tools for Drilling, Facing, Int. and Ext. Turning and Threading on Swiss and Small CNC Machines



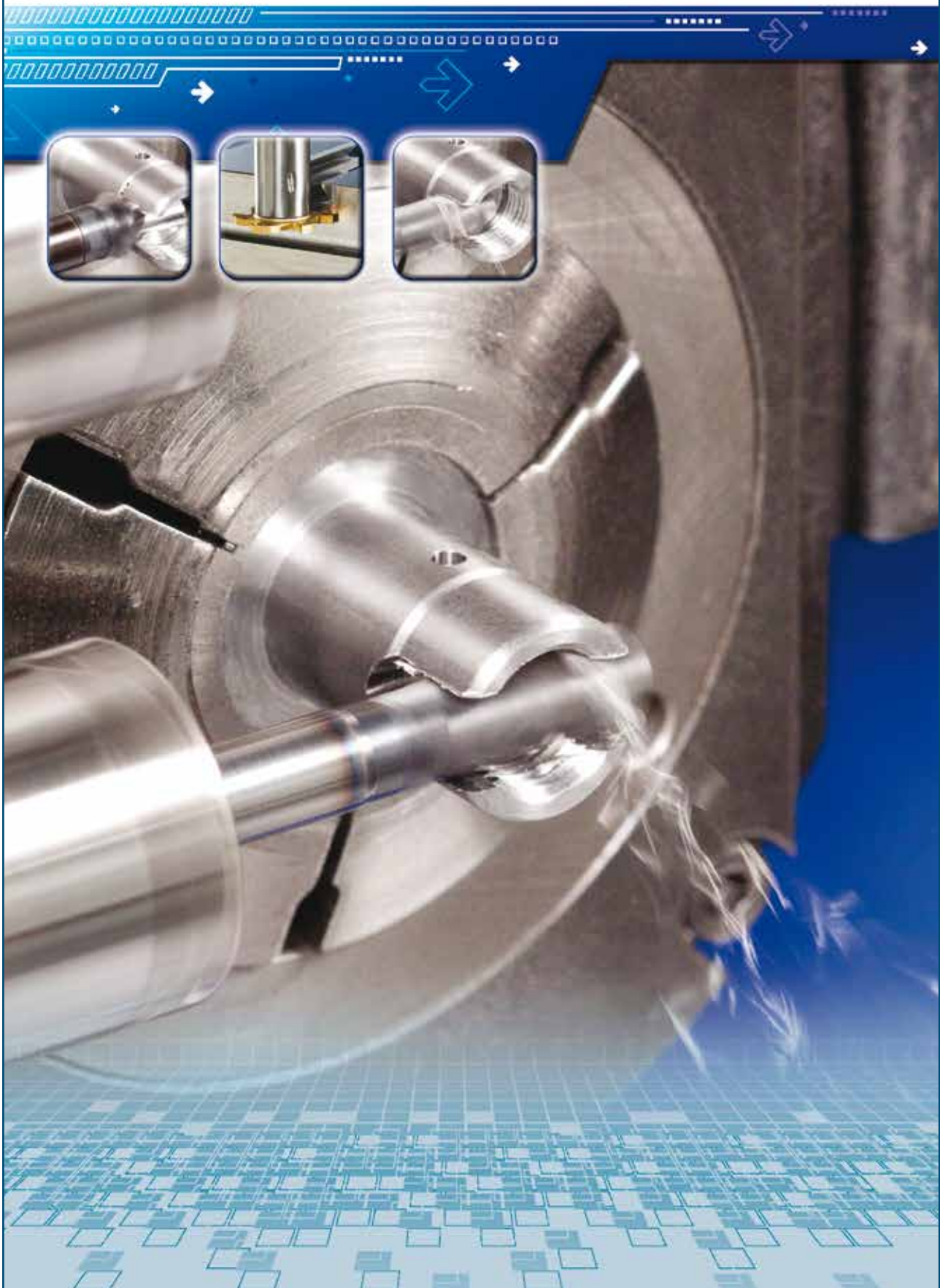
Right-hand shown

Designation	Dimensions													IC908
	D _{min}	P _{min}	P _{max}	t	a	w	L	T _L	L ₂	Y	d	R		
PICCO R/L-MFT60 6-4 L08	4.00	0.50	0.75	0.46	3.90	0.06	8.0	7.3	30.0	1.3	6.00	0.10	●	●
PICCO R-MFT60 6-4 L12	4.00	0.50	0.75	0.46	3.90	0.06	12.0	11.6	34.0	1.2	6.00	0.20	●	●
PICCO R/L-MFT60 6-5 L10	5.00	0.50	1.00	0.61	4.90	0.06	10.0	9.0	32.0	1.4	6.00	0.10	●	●
PICCO R/L-MFT60 6-5 L15 ⁽¹⁾	5.00	0.50	1.00	0.61	4.90	0.06	15.0	14.4	37.0	1.4	6.00	0.30	●	●
PICCO R/L-MFT60 6-6 L18 ⁽¹⁾	6.00	0.50	1.00	0.61	5.90	0.06	18.0	17.3	43.0	1.4	6.00	0.30	●	●
PICCO R-MFT60 6-6 L12	6.00	0.50	1.00	0.61	5.90	0.06	12.0	11.0	34.0	1.4	6.00	0.10	●	●
PICCO R/L-MFT60 8-7 L14	7.00	0.75	1.25	0.76	6.90	0.09	14.0	13.0	41.0	1.5	8.00	0.10	●	●
PICCO R-MFT60 8-7 L21	7.00	0.75	1.25	0.76	6.90	0.09	21.0	20.0	55.0	1.5	8.00	0.30	●	●
PICCO R/L-MFT60 8-8 L16	8.00	0.90	1.50	0.92	7.90	0.11	16.0	15.0	43.0	1.5	8.00	0.10	●	●
PICCO R/L-MFT60 8-8 L24 ⁽¹⁾	8.00	0.90	1.50	0.92	7.90	0.11	24.0	23.0	57.0	1.5	8.00	0.30	●	●

• Applications: Drilling; face turning; internal chamfering; internal turning\ boring; internal profiling; external chamfering; external turning; internal and external 60° threading (right- and left-hand).

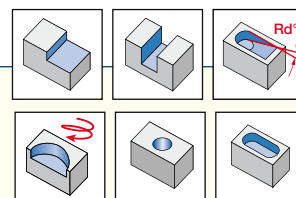
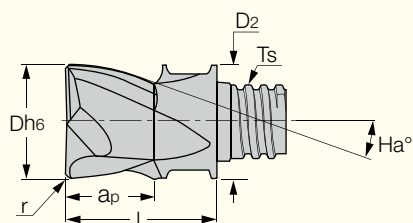
⁽¹⁾ Available on request.

MILLING TOOLS



MULTI-MASTER
INDEXABLE SOLID CARBIDE LINE





ALUMINUM

Designation	Dimensions								IC08	Recommended Machining Data f _z (mm/t)
	D	Flute	a _p	r	T _s	D ₂	l	H _a °		
MM EA080B05R0.5-2T05	8.00	2	5.00	0.50	T05	7.70	10.00	45.0	●	0.03-0.09
MM EA080B05R0.5-3T05	8.00	3	5.00	0.50	T05	7.70	10.00	45.0	●	0.03-0.09
MM EA100B07R0.5-2T06	10.00	2	7.00	0.50	T06	9.60	13.00	45.0	●	0.03-0.10
MM EA100B07R1.0-2T06	10.00	2	7.00	1.00	T06	9.60	13.00	45.0	●	0.03-0.10
MM EA100B06R0.5-3T06	10.00	3	6.00	0.50	T06	9.60	13.00	45.0	●	0.03-0.10
MM EA100B06R1.0-3T06	10.00	3	6.00	1.00	T06	9.60	13.00	45.0	●	0.03-0.10
MM EA120B09R0.5-2T08	12.00	2	9.00	0.50	T08	11.70	16.50	45.0	●	0.04-0.11
MM EA120B09R1.0-2T08	12.00	2	9.00	1.00	T08	11.70	16.50	45.0	●	0.04-0.11
MM EA120B08R0.5-3T08	12.00	3	8.00	0.50	T08	11.70	16.50	45.0	●	0.04-0.11
MM EA120B08R1.0-3T08	12.00	3	8.00	1.00	T08	11.70	16.50	45.0	●	0.04-0.11
MM EA120B08R3.0-3T08	12.00	3	8.00	3.00	T08	11.70	16.50	45.0	●	0.04-0.11
MM EA.500B37R000-2T08	12.70	2	9.50	0.00	T08	12.40	16.50	45.0	●	0.04-0.11
MM EA.500B37R020-2T08	12.70	2	9.50	0.50	T08	12.40	16.50	45.0	●	0.04-0.11
MM EA.500B31R031-3T08	12.70	3	8.00	0.80	T08	12.40	16.50	45.0	●	0.04-0.11
MM EA.500B31R062-3T08	12.70	3	8.00	1.60	T08	12.40	16.50	45.0	●	0.04-0.11
MM EA.500B31R094-3T08	12.70	3	8.00	2.40	T08	12.40	16.50	45.0	●	0.04-0.11
MM EA.500B31R125-3T08	12.70	3	8.00	3.20	T08	12.40	16.50	45.0	●	0.04-0.11

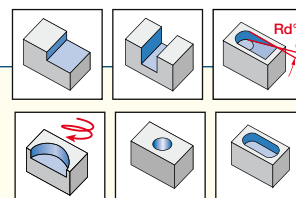
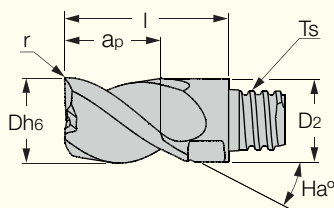
• For shanks, see pages E20-23 • For Clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20 • Do not apply lubricant to the threaded connection.

CHATTERFREE

MULTI-MASTER LINE

MM EA-CF

Interchangeable Solid Carbide Endmill Heads with Different Helix for Machining Aluminum



ALUMINUM

Designation	Dimensions									Recommended Machining Data
	D	Flute	a_p	r	T_s	D_2	l	H_a°	IC08	f_z (mm/t)
MM EA080H08R0CF-4T05	8.00	4	8.00	0.00	T05	7.70	15.00	40.0	●	0.03-0.09
MM EA100H10R0CF-4T06	10.00	4	10.00	0.00	T06	9.60	19.00	40.0	●	0.03-0.10
MM EA120H12R0.2CF-3T08	12.00	3	12.00	0.20	T08	11.70	23.00	40.0	●	0.04-0.11
MM EA120H12R0CF-4T08	12.00	4	12.00	0.00	T08	11.70	23.00	40.0	●	0.04-0.11

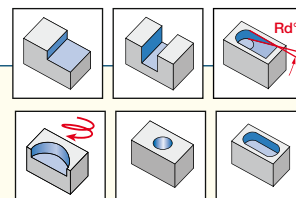
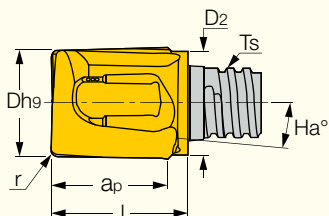
- For shanks, see pages E20-23 • For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection.

MULTI-MASTER

INDEXABLE SOLID CARBIDE LINE

MM HC

Interchangeable Solid Carbide Slot Drill Milling Heads with Two 10° Helix Flutes



ECONOMICAL SOLUTION

Designation	Dimensions										Tough ↔ Hard		Recommended Machining Data
	D	Flute	a_p	r	T_s	D_2	l	H_a°	$T_m^{(1)}$	IC908	IC903	f_z (mm/t)	
MM HC078C08R0.2-2T05	7.80	2	7.70	0.20	T05	7.60	10.00	10.0	r0-2.0	●	●	0.03-0.09	
MM HC080C08R0.4-2T05	8.00	2	7.70	0.40	T05	7.60	10.00	10.0	r0-2.0	●	●	0.03-0.09	
MM HC080C08R1.0-2T05	8.00	2	7.70	1.00	T05	7.60	10.00	10.0	r0-2.0	●	●	0.03-0.09	
MM HC080C08R2.0-2T05	8.00	2	7.70	2.00	T05	7.60	10.00	10.0	r0-2.0	●	●	0.03-0.09	
MM HC098C10R0.3-2T06	9.80	2	9.00	0.30	T06	9.60	12.35	10.0	r0-3.0	●	●	0.03-0.10	
MM HC100C10R0.4-2T06	10.00	2	9.00	0.40	T06	9.60	12.35	10.0	r0-3.0	●	●	0.03-0.10	
MM HC100C10R1.0-2T06	10.00	2	9.00	1.00	T06	9.60	12.35	10.0	r0-3.0	●	●	0.03-0.10	
MM HC100C10R2.0-2T06	10.00	2	9.00	2.00	T06	9.60	12.35	10.0	r0-3.0	●	●	0.03-0.10	
MM HC117C13R0.3-2T08	11.70	2	10.00	0.30	T08	11.50	14.20	10.0	r0-3.0	●	●	0.04-0.11	
MM HC120C13R0.4-2T08	12.00	2	10.00	0.40	T08	11.50	14.20	10.0	r0-3.0	●	●	0.04-0.11	
MM HC120C13R1.0-2T08	12.00	2	10.00	1.00	T08	11.50	14.20	10.0	r0-3.0	●	●	0.04-0.11	
MM HC120C13R2.0-2T08	12.00	2	10.00	2.00	T08	11.50	14.20	10.0	r0-3.0	●	●	0.04-0.11	
MM HC.500C55R016-2T08	12.70	2	11.00	0.40	T08	11.50	15.25	10.0	r0-3.2	●	●	0.04-0.11	
MM HC140C11R0.4-2T08	14.00	2	11.60	0.40	T08	11.50	15.05	10.0	r0-4.0	●	●	0.04-0.12	

- For shanks, see pages E20-23 • For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection.

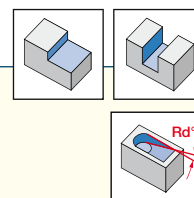
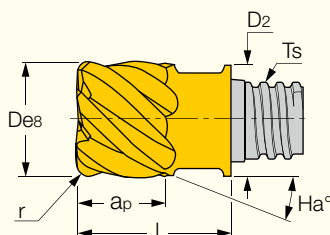
⁽¹⁾ Specially tailored radius range, available upon request.

MULTI-MASTER

INDEXABLE SOLID CARBIDE LINE

MM EC-6

6 Flute Interchangeable Solid Carbide Endmill Heads, 30° and 45° Helix,
Various Corner Radii

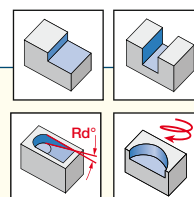
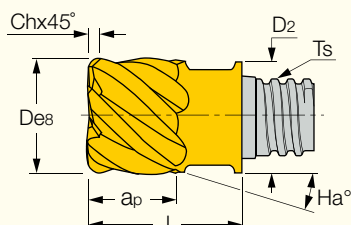


Designation	Dimensions									IC908	Recommended Machining Data
	D	Flute	ap	r	Ts	D2	l	Ha°	Rd°		fz (mm/t)
MM EC080A05R0.5-6T05	8.00	6	5.00	0.50	T05	7.70	10.00	30.0	6.0	●	0.03-0.09
MM EC080A05R1.0-6T05	8.00	6	5.00	1.00	T05	7.70	10.00	30.0	6.0	●	0.03-0.09
MM EC080A05R1.5-6T05	8.00	6	5.00	1.50	T05	7.70	10.00	30.0	6.0	●	0.03-0.09
MM EC080B05R0.5-6T05	8.00	6	5.00	0.50	T05	7.70	10.00	45.0	3.0	●	0.03-0.10
MM EC080B05R1.0-6T05	8.00	6	5.00	1.00	T05	7.70	10.00	45.0	3.0	●	0.03-0.09
MM EC080B05R1.5-6T05	8.00	6	5.00	1.50	T05	7.70	10.00	45.0	3.0	●	0.03-0.09
MM EC100A07R0.5-6T06	10.00	6	7.00	0.50	T06	9.60	13.00	30.0	6.0	●	0.03-0.10
MM EC100A07R1.0-6T06	10.00	6	7.00	1.00	T06	9.60	13.00	30.0	6.0	●	0.03-0.10
MM EC100A07R1.5-6T06	10.00	6	7.00	1.50	T06	9.60	13.00	30.0	6.0	●	0.03-0.10
MM EC100B07R0.5-6T06	10.00	6	7.00	0.50	T06	9.60	13.00	45.0	3.0	●	0.04-0.10
MM EC100B07R000-6T06	10.00	6	7.00	0.00	T06	9.60	13.00	45.0	3.0	●	0.03-0.10
MM EC100B07R1.0-6T06	10.00	6	7.00	1.00	T06	9.60	13.00	45.0	3.0	●	0.04-0.10
MM EC100B07R1.5-6T06	10.00	6	7.00	1.50	T06	9.60	13.00	45.0	3.0	●	0.03-0.10
MM EC100B12R1.5-6T06	10.00	6	12.00	1.50	T06	9.60	19.00	45.0	3.0	●	0.04-0.10
MM EC120A09R0.5-6T08	12.00	6	9.00	0.50	T08	11.70	16.50	30.0	6.0	●	0.04-0.11
MM EC120A09R1.0-6T08	12.00	6	9.00	1.00	T08	11.70	16.50	30.0	6.0	●	0.04-0.11
MM EC120B09R0.5-6T08	12.00	6	9.00	0.50	T08	11.70	16.50	45.0	3.0	●	0.04-0.10
MM EC120B09R000-6T08	12.00	6	9.00	0.00	T08	11.70	16.50	45.0	3.0	●	0.04-0.11
MM EC120B09R1.0-6T08	12.00	6	9.00	1.00	T08	11.70	16.50	45.0	3.0	●	0.04-0.10
MM EC120B09R1.5-6T08	12.00	6	9.00	1.50	T08	11.70	16.50	45.0	3.0	●	0.04-0.11
MM EC.500A37R015-6T08	12.70	6	9.50	0.40	T08	12.40	16.50	30.0	6.0	●	0.04-0.11
MM EC.500A37R030-6T08	12.70	6	9.50	0.76	T08	12.40	16.50	30.0	6.0	●	0.04-0.11
MM EC.500B37R000-6T08	12.70	6	9.50	0.00	T08	12.40	16.50	45.0	5.0	●	0.04-0.11
MM EC.500B37R015-6T08	12.70	6	9.50	0.40	T08	12.40	16.50	45.0	5.0	●	0.04-0.11
MM EC.500B37R031-6T08	12.70	6	9.50	0.80	T08	12.40	16.50	45.0	5.0	●	0.04-0.11
MM EC.500B37R060-6T08	12.70	6	9.50	1.50	T08	12.40	16.50	45.0	5.0	●	0.04-0.11

- For shanks, see pages E20-23 • For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection.

MM EC-D

6, 8, 10 Flute Interchangeable Solid Carbide Endmill Heads with 50° Helix,
for Machining Hardened Steel



Designation	Dimensions									IC903	Recommended Machining Data
	D	Flute	ap	Ch	Ts	D2	l	Ha°	Rd°		fz (mm/t)
MM EC080D05C01-6T05	8.00	6	5.00	0.10	T05	7.70	10.00	50.0	2.0	●	0.03-0.10
MM EC100D07C01-6T06	10.00	6	7.00	0.10	T06	9.60	13.00	50.0	2.0	●	0.03-0.10
MM EC120D09C01-6T08	12.00	6	9.00	0.10	T08	11.70	16.50	50.0	3.0	●	0.04-0.11

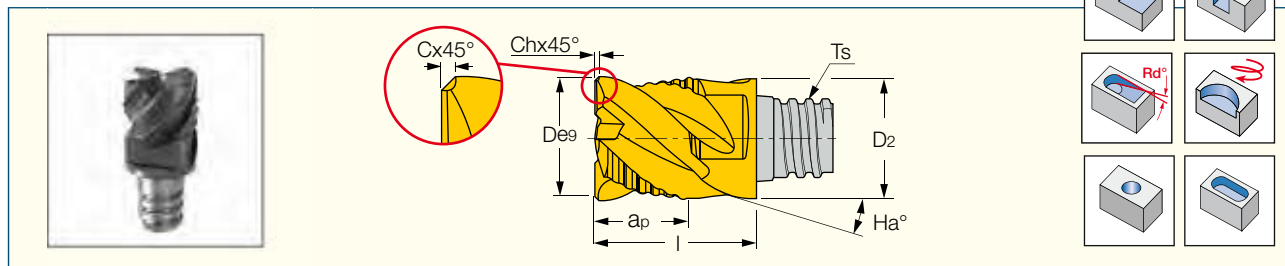
- For shanks, see pages E20-23 • For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection.

MULTI-MASTER • FINISHRED

INDEXABLE SOLID CARBIDE LINE MULTI-MASTER LINE

MM EFS

Combination of Roughing and Finishing Interchangeable Solid Carbide Endmill Heads



Designation	Dimensions								IC908	Recommended Machining Data f _z (mm/t)
	D	Flute	a _p	Ch	T _s	D ₂	I	H _a °		
MM EFS080B05-4T05	8.00	4	5.00	0.30	T05	7.70	10.00	45.0	●	0.03-0.08
MM EFS100B07-4T06	10.00	4	7.00	0.30	T06	9.60	13.00	45.0	●	0.03-0.09
MM EFS120B09-4T08	12.00	4	9.00	0.40	T08	11.70	16.50	45.0	●	0.04-0.10

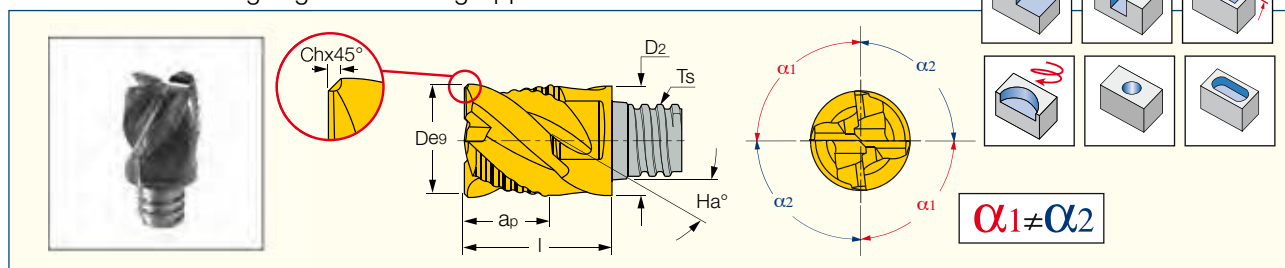
- For shanks, see pages E20-23 • For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection.

FINISHRED • CHATTERFREE

MULTI-MASTER LINE MULTI-MASTER LINE

MM EFS-CF

4 Flute 38° Helix with Variable Pitch, Solid Carbide Heads
for Chatter Free Roughing and Finishing Applications



Designation	Dimensions								IC908	Recommended Machining Data f _z (mm/t)
	D	Flute	a _p	Ch	T _s	D ₂	I	H _a °		
MM EFS060E05-4T05 CF	6.00	4	5.00	0.25	T05	7.70	10.00	38.0	●	0.03-0.08
MM EFS080E05-4T05 CF	8.00	4	5.00	0.3	T05	7.70	10.00	38.0	●	0.03-0.08
MM EFS100E07-4T06 CF	10.00	4	7.00	0.4	T06	9.60	13.00	38.0	●	0.03-0.09
MM EFS120E09-4T08 CF	12.00	4	9.00	0.5	T08	11.70	16.50	38.0	●	0.04-0.10
MM EFS.500E37-4T08 CF	12.70	4	9.50	0.5	T08	12.40	16.50	38.0	●	0.04-0.10

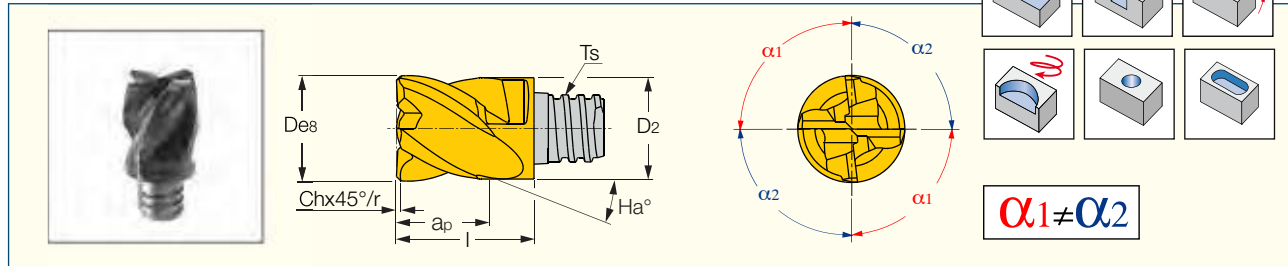
- For shanks, see pages E20-23 • For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection.

MULTI-MASTER • CHATTERFREE

INDEXABLE SOLID CARBIDE LINE MULTI-MASTER LINE

MM EC-CF

Interchangeable Solid Carbide Endmill Heads for Chatter Free
Roughing and Finishing Operations



Designation	Dimensions									IC908	Recommended Machining Data
	D	Ch	r	Flute	a _p	T _s	D ₂	l	H _a °		f _z (mm/t)
MM EC080E05C3CF-4T05	8.00	0.3	-	4	5.00	T05	7.70	10.00	38.0	●	0.03-0.09
MM EC080E05R0CF-4T05	8.00	-	0.00	4	5.00	T05	7.70	10.00	38.0	●	0.03-0.09
MM EC080E05R05CF-4T05	8.00	-	0.50	4	5.00	T05	7.70	10.00	38.0	●	0.03-0.09
MM EC100E07C4CF-4T06	10.00	0.4	-	4	7.00	T06	9.60	13.00	38.0	●	0.03-0.10
MM EC100E07R05CF-4T06	10.00	-	0.50	4	7.00	T06	9.60	13.00	38.0	●	0.03-0.10
MM EC120E09C5CF-4T08	12.00	0.5	-	4	9.00	T08	11.70	16.50	38.0	●	0.04-0.11
MM EC120E09R05CF-4T08	12.00	-	0.50	4	9.00	T08	11.70	16.50	38.0	●	0.04-0.11
MM EC500E37C20CF-4T08	12.70	0.5	-	4	9.50	T08	12.40	16.50	38.0	●	0.04-0.11
MM EC500E37R0-CF-4T08	12.70	-	-	4	9.50	T08	12.40	16.50	38.0	●	0.04-0.11
MM EC500E37R15CF-4T08	12.70	-	0.39	4	9.50	T08	12.40	16.50	38.0	●	0.04-0.11
MM EC500E37R31CF-4T08	12.70	-	0.78	4	9.50	T08	12.40	16.50	38.0	●	0.04-0.11
MM EC500E37R62CF-4T08	12.70	-	1.56	4	9.50	T08	12.40	16.50	38.0	●	0.04-0.11

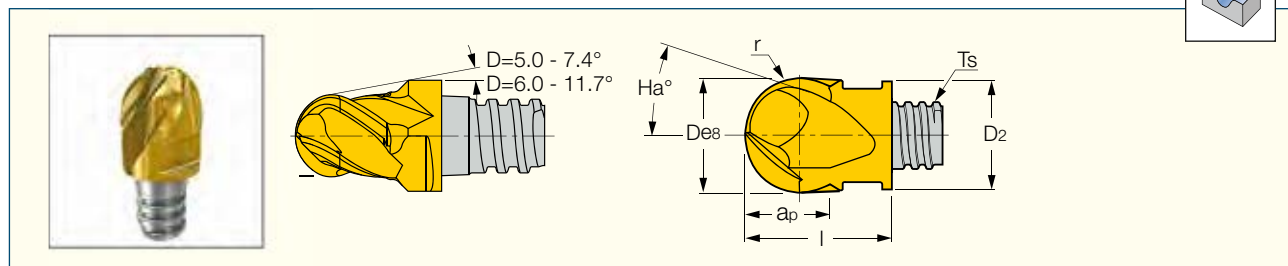
- For shanks, see pages E20-23 • For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection.

MULTI-MASTER

INDEXABLE SOLID CARBIDE LINE

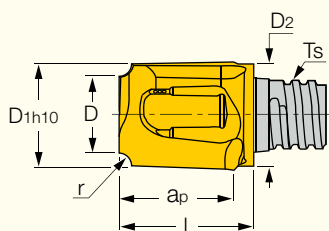
MM EB

Interchangeable Solid Carbide Ball Nose Milling Heads



Designation	Dimensions								IC908
	D	Flute	a ₀	r	T _s	D ₂	l	H _a °	
MM EB050E07-4T05	5.00	4	7.00	2.49	T05	8.00	15.00	38.0	●
MM EB060E05-4T05	6.00	4	5.00	2.99	T05	8.00	10.00	38.0	●
MM EB080A05-2T05	8.00	2	5.00	3.98	T05	7.70	10.00	30.0	●
MM EB080A05-4T05	8.00	4	5.00	3.98	T05	7.70	10.00	30.0	●
MM EB100A07-2T06	10.00	2	7.00	4.98	T06	9.60	13.00	30.0	●
MM EB100A07-4T06	10.00	4	7.00	4.98	T06	9.60	13.00	30.0	●
MM EB120A09-2T08	12.00	2	9.00	5.98	T08	11.70	16.50	30.0	●
MM EB120A09-4T08	12.00	4	9.00	5.98	T08	11.70	16.50	30.0	●
MM EB.500A37-2T08	12.70	2	9.50	6.33	T08	12.40	16.50	30.0	●
MM EB.500A37-4T08	12.70	4	9.50	6.33	T08	12.40	16.50	30.0	●

- For shanks, see pages E20-23 • For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection.



ECONOMICAL SOLUTION

Designation	Dimensions									IC908
	D ₁	r	Z	D	a _p	T _s	D ₂	l	T _m ⁽¹⁾	
MM HR1.0/047-5.8-2T05	8.0	1.00	2	5.80	7.50	T05	7.60	10.60	r0.5-3.0	●
MM HR1.6/063-6.8-2T06	10.0	1.60	2	6.80	9.50	T06	9.60	12.50	r0.5-3.0	●
MM HR2.0/078-6.0-2T06	10.0	2.00	2	6.00	9.50	T06	9.60	12.50	r0.5-3.0	●
MM HR2.5/094-5.1-2T06	10.0	2.50	2	5.10	9.50	T06	9.60	12.50	r0.5-3.0	●
MM HR3.0/125-6.5-2T08	12.7	3.00	2	6.50	12.00	T08	11.50	15.60	r0.5-4.0	●
MM HR4.0/156-4.7-2T08	12.7	4.00	2	4.70	12.00	T08	11.50	15.60	r0.5-4.0	●

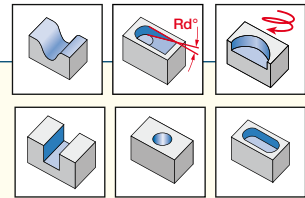
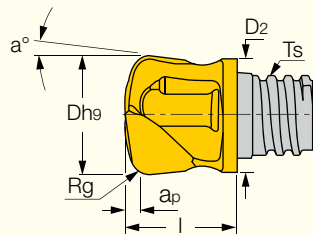
- For shanks, see pages E20-23
- For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection.

⁽¹⁾ Specially tailored radius range upon request.

MULTI-MASTER • SOLID^{FEED} MILL

INDEXABLE SOLID CARBIDE LINE
MM FF

2 Flute FEEDMILL Interchangeable Solid Carbide Heads,
for Milling at Very Fast Feed and Small D.O.C.



ECONOMICAL SOLUTION

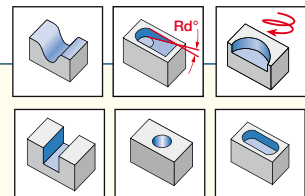
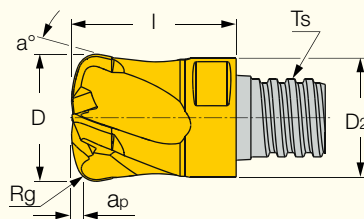
Designation	Dimensions									Tough ↔ Hard		Recommended Machining Data f _z (mm/t)
	D	Z	a _p	R _g ⁽¹⁾	T _s	D ₂	l	a°	R _d °	IC908	IC903	
MM FF100R1.5-L12-2T06	10.00	2	0.60	2.00	T06	9.60	12.50	7	90.0	●		0.30-0.60
MM FF120R2.0-2T08	12.00	2	0.68	2.50	T08	11.50	11.10	7	90.0	●	●	0.50-1.00
MM FF500R08-L59-2T08	12.70	2	0.68	2.50	T08	11.50	15.00	5	90.0	●		0.50-1.00

- For shanks, see pages E20-23 • For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection.

⁽¹⁾ Radius for programming

MM EFF

4, 6 Flute Solid Carbide Heads for Milling at Very Fast Feed and Small D.O.C.



Designation	Dimensions									Tough ↔ Hard		Recommended Machining Data f _z (mm/t)
	D	Z	a _p	T _s	D ₂	l	a°	R _g ⁽²⁾		IC908	IC903	
MM EFF080T3R1.62-4T05	8.00	4	0.40	T05	7.50	10.00	7	1.62			●	0.12-0.48
MM EFF100T4R2.01-4T06	10.00	4	0.50	T06	9.50	13.00	7	2.01			●	0.16-0.57
MM EFF120T4R1.8-4T08H ⁽¹⁾	12.00	4	0.60	T08	11.50	16.50	7	1.80	●			0.16-0.67
MM EFF120T4R2.47-4T08	12.00	4	0.60	T08	11.50	16.50	7	2.47			●	0.16-0.67
MM EFF127T4R2.59-4T08	12.70	4	0.60	T08	12.20	16.50	7	2.59			●	0.16-0.67

- For shanks, see pages E20-23 • For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection.

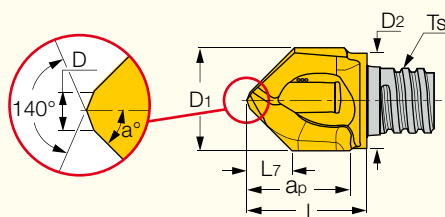
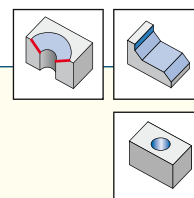
⁽¹⁾ With a central coolant hole ⁽²⁾ Radius for programming

MULTI-MASTER

INDEXABLE SOLID CARBIDE LINE

MM HCD

2 Flute Interchangeable Solid Carbide Heads, for Chamfering, Countersinking and Spot Drilling



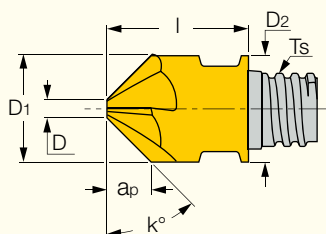
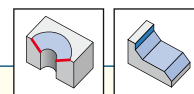
ECONOMICAL SOLUTION

Designation	Dimensions										IC908
	D ₁	Dtol ⁽³⁾	Z	a _p	T _s	D ₂	I	a°	L ₇	D	
MM HCD080-090-2T05 ⁽¹⁾	8.0	z9	2	7.00	T05	7.60	9.75	45	3.15	1.00	●
MM HCD083-090-2T05 ⁽¹⁾	8.3	z9	2	7.50	T05	7.60	10.00	45	3.56	1.00	●
MM HCD100-090-2T06 ⁽¹⁾	10.0	z9	2	9.00	T06	9.60	11.75	45	4.40	1.50	●
MM HCD100-060-2T06	10.0	h10	2	9.30	T06	9.60	11.75	30	7.60	1.50	●
MM HCD100-120-2T06	10.0	h10	2	9.50	T06	9.60	12.70	60	2.70	1.50	●
MM HCD104-090-2T06 ⁽¹⁾	10.4	z9	2	9.00	T06	9.60	11.75	45	4.60	1.50	●
MM HCD120-090-2T08 ⁽¹⁾	12.0	z9	2	12.00	T08	11.50	15.50	45	5.30	1.50	●
MM HCD120-060-2T08	12.0	h10	2	11.00	T08	11.50	15.40	30	9.24	1.50	●
MM HCD120-120-2T08	12.0	h10	2	11.65	T08	11.50	15.20	60	3.50	1.50	●
MM HCD124-090-2T08 ⁽¹⁾	12.4	z9	2	11.80	T08	11.50	15.50	45	5.50	1.50	●
MM HCD500-080-2T08 ⁽²⁾	12.7	z9	2	11.10	T08	12.20	15.50	40	6.80	1.50	●

- For shanks, see pages E20-23 • Clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection.
- ⁽¹⁾ May be used for F-type (fine) countersink according to DIN 74. ⁽²⁾ Countersink according to American National and British standard flat screws.
- ⁽³⁾ D diameter tolerance

MM ECF

Interchangeable Solid Carbide Heads, for Chamfering and Countersinking



Designation	Dimensions								IC908
	D ₁	Z	D	a _p	T _s	D ₂	I	K°	
MM ECF45-100-4T06	10.0	4	1.95	4.00	T06	10.00	13.00	45.0	●
MM ECF60-100-4T06	10.0	4	1.60	7.30	T06	10.00	13.00	60.0	●
MM ECF45-120-4T08	12.0	4	1.95	5.00	T08	12.00	16.50	45.0	●
MM ECF45-500-4T08	12.7	4	1.95	5.00	T08	12.70	16.50	45.0	●

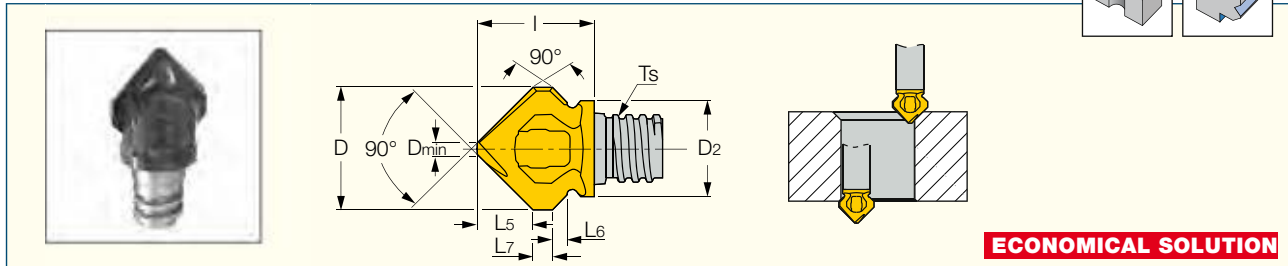
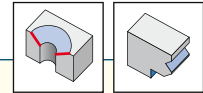
- For shanks, see pages E20-23 • For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection.

MULTI-MASTER

INDEXABLE SOLID CARBIDE LINE

MM HDF

2 Flute Interchangeable Solid Carbide Heads, for Upper and Bottom Chamfering



Designation	Dimensions									IC908	
	D	Z	L ₅	L ₆	L ₇	D _{min}	T _s	D ₂	I		
	MM HDF100-090-2T05	9.80	2	4.30	0.90	2.50	1.20	T05	7.60		10.80
	MM HDF120-090-2T06	11.80	2	5.30	1.20	2.00	1.20	T06	9.30		11.20
	MM HDF160-090-2T08	15.70	2	7.10	2.20	2.00	1.50	T08	11.50		14.00

- For shanks, see pages E20-23
- Clamping keys should be ordered separately
- For tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection

Spare Parts

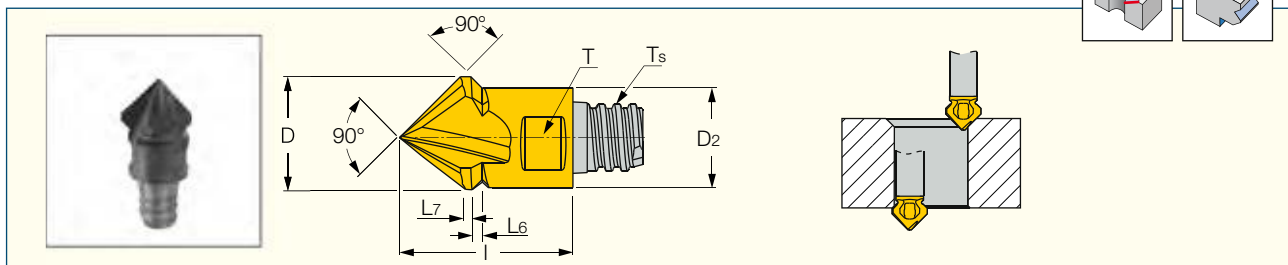
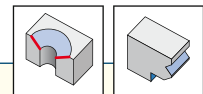


Designation	Wrench
MM HDF100-090-2T05	MM KEY 8X5*
MM HDF120-090-2T06	MM KEY 10X7*
MM HDF160-090-2T08	MM KEY 13X8*

* Optional, should be ordered separately

MM EDF

3 Flute Interchangeable Solid Carbide Heads, for Upper and Bottom Chamfering



Designation	Dimensions							IC908
	D	D ₂	Z	L ₆	L ₇	I	T _s	
MM EDF094-090-76-3T05	9.40	7.60	3	0.90	1.00	12.50	T05	●
MM EDF116-090-95-3T06	11.60	9.60	3	1.00	1.00	16.50	T06	●

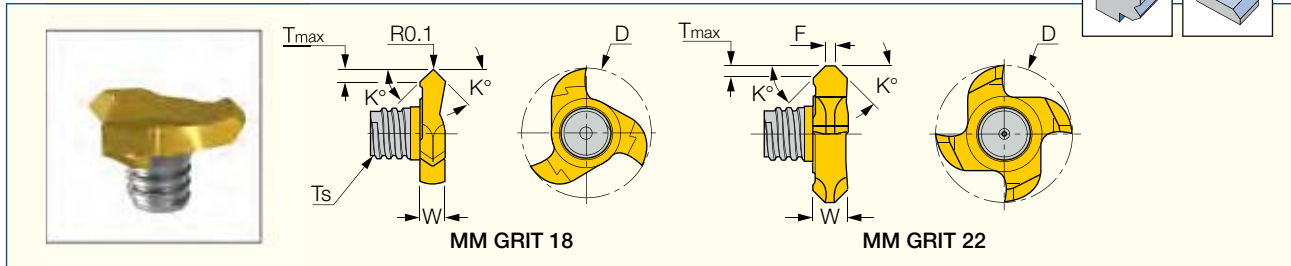
- Suitable for pecking applications.
- For shanks, see pages E20-23
- For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection.

MULTI-MASTER

INDEXABLE SOLID CARBIDE LINE

MM GRIT-K/P-45A

Interchangeable Solid Carbide Small Diameter 45° Chamfering Heads



Designation	Dimensions							IC528
	D	K°	T _{max}	F	W	T _s	Z	
MM GRIT 18K-45A	17.70	45.0	1.40	-	3.40	T06	3	●
MM GRIT 18P-45A	17.70	45.0	1.40	-	3.40	T06	3	●
MM GRIT 22K-45A	21.70	45.0	1.70	1.50	5.50	T08	4	●
MM GRIT 22P-45A	21.70	45.0	1.70	1.50	5.50	T08	4	●

• Use carbide shanks for groove milling heads. • Each MM GRT shank is supplied with MM EGR clamping key. • Keys for other milling heads must be ordered separately. • MM GRT.. shanks serve mainly for MM GRIT.. slitting heads. • K-Type - For general steel machining. • P-Type - Positive geometry for soft and gummy materials.

Spare Parts



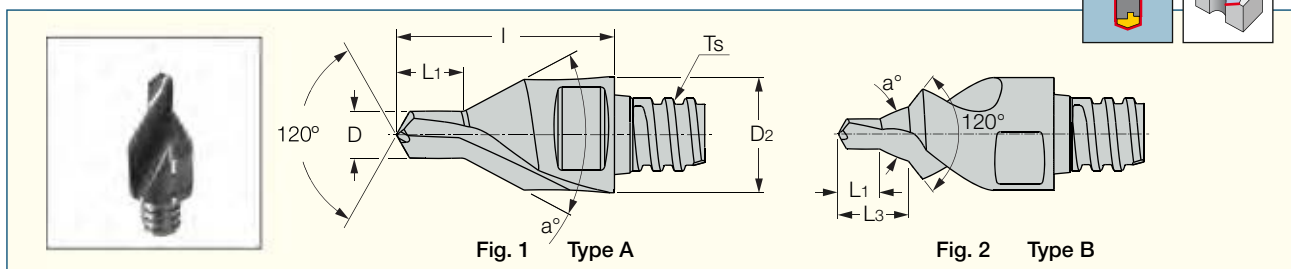
Designation	Clamping Key
MM GRIT 18K-45A	MM EGR 16-18*
MM GRIT 18P-45A	MM EGR 16-18*
MM GRIT 22K-45A	MM EGR 20-22*
MM GRIT 22P-45A	MM EGR 20-22*

* Optional, should be ordered separately

SOLIDDRILL • MULTI-MASTER

MM ECS

Centering Drill (DIN 332), Interchangeable Solid Carbide Heads

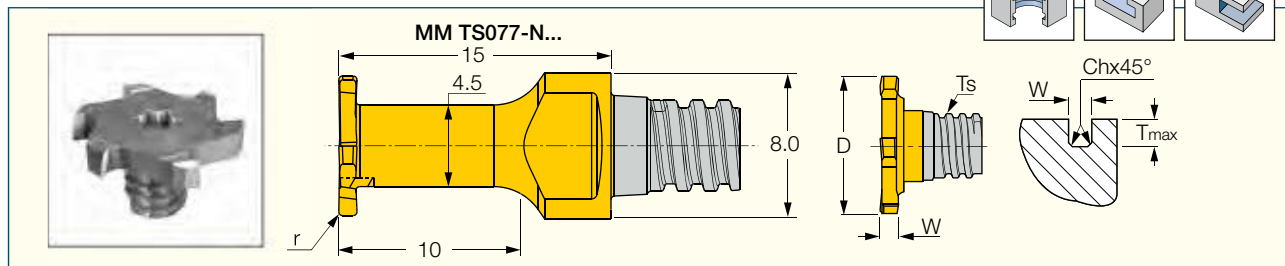


Designation	Dimensions							Fig.	IC908
	D	D ₂	L	L ₁	L ₂	T _s	a°		
MM ECS-A3.15X08-2T05	3.28	8.00	15.00	4.6	-	T05	60	1	●
MM ECS-A4.00X10-2T06	4.12	10.00	19.00	5.9	-	T06	60	1	●
MM ECS-A5.00X12-2T08	5.13	12.00	23.00	7.2	-	T08	60	1	●
MM ECS-B3.15X12-2T08	3.24	12.00	23.00	4.4	7.40	T08	60	2	●
MM ECS-B4.00X127-2T08	4.09	12.70	23.00	5.6	9.50	T08	60	2	●

• For shanks, see pages E20-23 • For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
• Do not apply lubricant to the threaded connection.

MM TS-N

Interchangeable Solid Carbide T-Slot Milling Heads



Designation	Dimensions							Tough $\longleftrightarrow$ Hard		
	D-0.05	W ± 0.02	T _{max}	Z	r	Ch	T _s	IC328	IC928	IC908
MM TS077-N07A-4T05	7.70	0.70	1.20	4	0.20	-	T05			●
MM TS077-N08A-4T05	7.70	0.80	1.20	4	0.20	-	T05			●
MM TS077-N09A-4T05	7.70	0.90	1.20	4	0.20	-	T05			●
MM TS077-N10A-4T05	7.70	1.00	1.20	4	0.20	-	T05			●
MM TS077-N15A-4T05	7.70	1.50	1.20	4	0.20	-	T05			●
MM TS077-N20A-4T05	7.70	2.00	1.20	4	0.20	-	T05			●
MM TS105-N20D-06T04	10.50	2.00	2.00	6	0.40	-	T04		●	
MM TS.500-N062P-06T05	12.70	1.58	2.25	6	-	0.15	T05	●		
MM TS.500-N078P-06T05	12.70	1.98	2.25	6	-	0.15	T05	●		
MM TS135-N20P-06T05	13.50	2.00	2.65	6	-	0.20	T05	●		
MM TS135-N25P-06T05	13.50	2.50	2.65	6	-	0.20	T05	●		

• For tightening torques and clamping instructions, see page E20 • Do not apply lubricant to the threaded connection • For shanks, see pages E20-23

MM TS077-N...

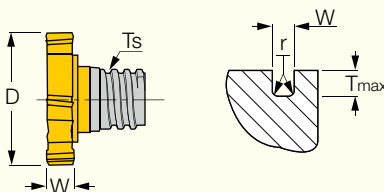
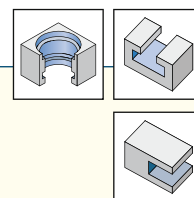


Spare Parts



Designation	Key	Wrench
MM TS077-N07A-4T05		MM KEY 6X4*
MM TS077-N08A-4T05		MM KEY 6X4*
MM TS077-N09A-4T05		MM KEY 6X4*
MM TS077-N10A-4T05		MM KEY 6X4*
MM TS077-N15A-4T05		MM KEY 6X4*
MM TS077-N20A-4T05		MM KEY 6X4*
MM TS105-N20D-06T04	T-15/3*	
MM TS.500-N062P-06T05	T-20/3*	
MM TS.500-N078P-06T05	T-20/3*	
MM TS135-N20P-06T05	T-20/3*	
MM TS135-N25P-06T05	T-20/3*	

* Optional, should be ordered separately



Designation	Dimensions						IC328
	D _{-0.05}	W _{±0.02}	T _{max}	Z	r	T _s	
MM TS135-H30D-06T05	13.50	3.00	2.65	6	0.40	T05	●
MM TS135-H40D-06T05	13.50	4.00	2.65	6	0.40	T05	●
MM TS165-H40A-06T05	16.50	4.00	4.25	6	0.20	T05	●
MM TS160-H20D-06T06	16.00	2.00	3.00	6	0.40	T06	●
MM TS160-H30D-06T06	16.00	3.00	3.00	6	0.40	T06	●
MM TS160-H40D-06T06	16.00	4.00	3.00	6	0.40	T06	●
MM TS165-H20D-06T06	16.50	2.00	3.25	6	0.40	T06	●
MM TS165-H30D-06T06	16.50	3.00	3.25	6	0.40	T06	●
MM TS165-H40D-06T06	16.50	4.00	3.25	6	0.40	T06	●
MM TS195-H60A-06T06	19.50	6.00	4.45	6	0.20	T06	●
MM TS225-H60A-06T06	22.50	6.00	5.95	6	0.20	T06	●
MM TS195-H40D-06T08	19.50	4.00	3.45	6	0.40	T08	●
MM TS195-H50D-06T08	19.50	5.00	3.45	6	0.40	T08	●
MM TS195-H60D-06T08	19.50	6.00	3.45	6	0.40	T08	●
MM TS225-H40D-06T08	22.50	4.00	4.90	6	0.40	T08	●
MM TS225-H50D-06T08	22.50	5.00	4.95	6	0.40	T08	●
MM TS225-H60D-06T08	22.50	6.00	4.95	6	0.40	T08	●
MM TS225-H80D-06T08	22.50	8.00	4.95	6	0.40	T08	●
MM TS250-H50D-06T08	25.00	5.00	5.90	6	0.40	T08	●
MM TS250-H60D-06T08	25.00	6.00	5.90	6	0.40	T08	●
MM TS250-H80D-06T08	25.00	8.00	5.90	6	0.40	T08	●

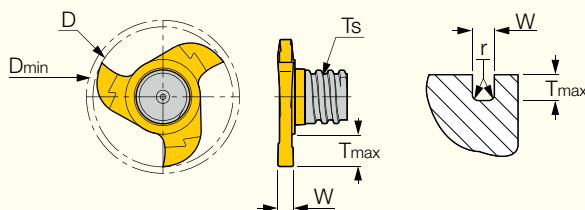
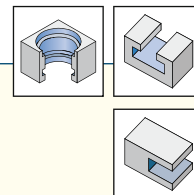
• For tightening torques and clamping instructions, see page E20 • Do not apply lubricant to the threaded connection • For shanks, see pages E20-23

Spare Parts



Designation	Key
MM TS135-H30D-06T05	T-20/3*
MM TS135-H40D-06T05	T-20/3*
MM TS165-H40A-06T05	T-20/3*
MM TS160-H20D-06T06	T-20/3*
MM TS160-H30D-06T06	T-25/3*
MM TS160-H40D-06T06	T-25/3*
MM TS165-H20D-06T06	T-20/3*
MM TS165-H30D-06T06	T-25/3*
MM TS165-H40D-06T06	T-25/3*
MM TS195-H60A-06T06	T-25/3*
MM TS225-H60A-06T06	T-25/3*
MM TS195-H40D-06T08	T-30/3 L*
MM TS195-H50D-06T08	T-30/3 L*
MM TS195-H60D-06T08	T-30/3 L*
MM TS225-H40D-06T08	T-40/3 L*
MM TS225-H50D-06T08	T-40/3 L*
MM TS225-H60D-06T08	T-40/3 L*
MM TS225-H80D-06T08	T-40/3 L*
MM TS250-H50D-06T08	T-50/3 L*
MM TS250-H60D-06T08	T-50/3 L*
MM TS250-H80D-06T08	T-50/3 L*

* Optional, should be ordered separately



Designation	Dimensions							IC528
	D	W±0.02	T _{max}	Z	r	D _{min} ⁽²⁾	T _s	
MM GRIT 16K-1.50-0.10	15.70	1.50	2.80	3	0.10	16.00	T06	●
MM GRIT 16P-1.50-0.10	15.70	1.50	2.80	3	0.10	16.00	T06	●
MM GRIT 16K-1.57-0.20	15.70	1.57	2.80	3	0.20	16.00	T06	●
MM GRIT 16K-2.00-0.20	15.70	2.00	2.80	3	0.20	16.00	T06	●
MM GRIT 16P-2.20-1.10	15.70	2.20	2.80	3	1.10	16.00	T06	●
MM GRIT 16K-2.39-0.20	15.70	2.39	2.80	3	0.20	16.00	T06	●
MM GRIT 16K-2.50-0.20	15.70	2.50	2.80	3	0.20	16.00	T06	●
MM GRIT 16K-3.00-0.20	15.70	3.00	2.80	3	0.20	16.00	T06	●
MM GRIT 16P-3.00-0.20	15.70	3.00	2.80	3	0.20	16.00	T06	●
MM GRIT 16K-3.17-0.20	15.70	3.17	2.80	3	0.20	16.00	T06	●
MM GRIT 18K-1.20-0.05 ⁽¹⁾	17.70	1.20	3.80	3	0.05	18.00	T06	●
MM GRIT 18P-1.20-0.60	17.70	1.20	3.80	3	0.60	18.00	T06	●
MM GRIT 18K-1.40-0.05 ⁽¹⁾	17.70	1.40	3.80	3	0.05	18.00	T06	●
MM GRIT 18K-1.50-0.10	17.70	1.50	3.80	3	0.10	18.00	T06	●
MM GRIT 18K-1.57-0.20	17.70	1.57	3.80	3	0.20	18.00	T06	●
MM GRIT 18K-1.70-0.05 ⁽¹⁾	17.70	1.70	3.80	3	0.05	18.00	T06	●
MM GRIT 18K-2.00-0.20	17.70	2.00	3.80	3	0.20	18.00	T06	●
MM GRIT 18P-2.00-1.00	17.70	2.00	3.80	3	1.00	18.00	T06	●
MM GRIT 18P-2.20-1.10	17.70	2.20	3.80	3	1.10	18.00	T06	●
MM GRIT 18K-2.39-0.20	17.70	2.39	3.80	3	0.20	18.00	T06	●
MM GRIT 18K-2.50-0.20	17.70	2.50	3.80	3	0.20	18.00	T06	●
MM GRIT 18K-3.00-0.20	17.70	3.00	3.80	3	0.20	18.00	T06	●
MM GRIT 18P-3.00-1.50	17.70	3.00	3.80	3	1.50	18.00	T06	●
MM GRIT 18K-3.17-0.20	17.70	3.17	3.80	3	0.20	18.00	T06	●

• Recommended for O-rings and retaining rings. • MM EGR clamping key is supplied with each MM GRT... shank. • Modification options on request. • Do not apply lubricant to the threaded connection. • Tightening torque: 1000 N x cm • For clamping instructions, see page E20 • For shanks, see pages E20-23 • K-For general steel machining. • P-Positive geometry for soft and gummy materials.

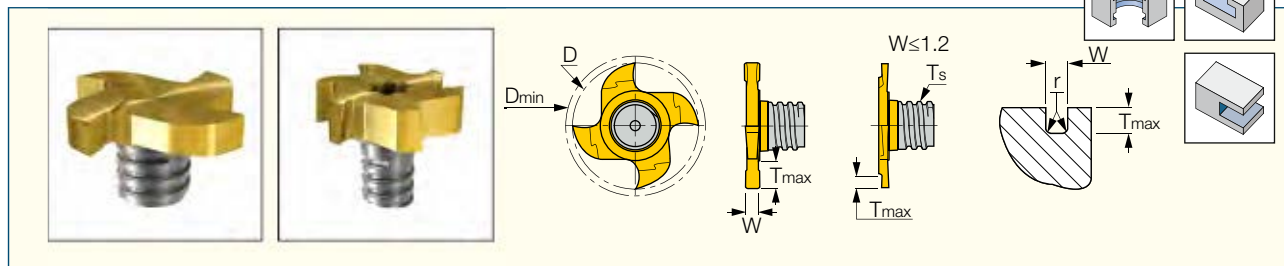
⁽¹⁾ For circle clips according to DIN 471/472 and ANSI B27.7M ⁽²⁾ Minimum bore diameter

Spare Parts



Designation	Clamping Key
MM GRIT-16K/P,18K/P	MM EGR 16-18*

* Optional, should be ordered separately



Designation	Dimensions							IC528
	D	W ± 0.02	T _{max}	Z	r	D _{min} ⁽²⁾	T _s	
MM GRIT 22K-0.76-0.00 ⁽¹⁾	21.70	0.76	1.50	4	0.00	22.00	T08	●
MM GRIT 22K-0.86-0.00 ⁽¹⁾	21.70	0.86	1.70	4	0.00	22.00	T08	●
MM GRIT 22K-0.96-0.00 ⁽¹⁾	21.70	0.96	1.90	4	0.00	22.00	T08	●
MM GRIT 22K-1.00-0.05	21.70	1.00	2.00	4	0.05	22.00	T08	●
MM GRIT 22P-1.00-0.05	21.70	1.00	2.00	4	0.05	22.00	T08	●
MM GRIT 22K-1.20-0.05 ⁽¹⁾	21.70	1.20	4.50	4	0.05	22.00	T08	●
MM GRIT 22K-1.40-0.05 ⁽¹⁾	21.70	1.40	4.50	4	0.05	22.00	T08	●
MM GRIT 22K-1.57-0.00	21.70	1.57	4.50	4	0.00	22.00	T08	●
MM GRIT 22K-1.70-0.10 ⁽¹⁾	21.70	1.70	4.50	4	0.10	22.00	T08	●
MM GRIT 22P-1.70-0.10 ⁽¹⁾	21.70	1.70	4.50	4	0.10	22.00	T08	●
MM GRIT 22K-1.95-0.20 ⁽¹⁾	21.70	1.95	4.50	4	0.20	22.00	T08	●
MM GRIT 22K-2.00-0.20	21.70	2.00	4.50	4	0.20	22.00	T08	●
MM GRIT 22P-2.00-0.20	21.70	2.00	4.50	4	0.20	22.00	T08	●
MM GRIT 22K-2.25-0.20 ⁽¹⁾	21.70	2.25	4.50	4	0.20	22.00	T08	●
MM GRIT 22K-2.39-0.20	21.70	2.39	4.50	4	0.20	22.00	T08	●
MM GRIT 22K-2.50-0.20	21.70	2.50	4.50	4	0.20	22.00	T08	●
MM GRIT 22P-2.50-0.20	21.70	2.50	4.50	4	0.20	22.00	T08	●
MM GRIT 22K-2.75-0.20 ⁽¹⁾	21.70	2.75	4.50	4	0.20	22.00	T08	●
MM GRIT 22K-3.00-0.20	21.70	3.00	4.50	4	0.20	22.00	T08	●
MM GRIT 22P-3.00-0.20	21.70	3.00	4.50	4	0.20	22.00	T08	●
MM GRIT 22K-3.17-0.20	21.70	3.17	4.50	4	0.20	22.00	T08	●
MM GRIT 22K-3.25-0.20 ⁽¹⁾	21.70	3.25	4.50	4	0.20	22.00	T08	●
MM GRIT 22P-3.81-0.20	21.70	3.81	4.50	4	0.20	22.00	T08	●
MM GRIT 22K-4.00-0.20	21.70	4.00	4.50	4	0.20	22.00	T08	●
MM GRIT 22P-3.98-0.20	21.70	3.98	4.50	4	0.20	22.00	T08	●
MM GRIT 22P-4.00-0.20	21.70	4.00	4.50	4	0.20	22.00	T08	●
MM GRIT 22P-4.00-2.00	21.70	4.00	4.50	4	2.00	22.00	T08	●
MM GRIT 22K-4.25-0.20 ⁽¹⁾	21.70	4.25	4.50	4	0.20	22.00	T08	●
MM GRIT 22K-4.25-1.20 ⁽¹⁾	21.70	4.25	4.50	4	1.20	22.00	T08	●
MM GRIT 22K-4.75-0.20	21.70	4.75	4.50	4	0.20	22.00	T08	●
MM GRIT 22K-5.25-0.20 ⁽¹⁾	21.70	5.25	4.50	4	0.20	22.00	T08	●
MM GRIT 22K-6.00-3.00	21.70	6.00	4.50	4	3.00	22.00	T08	●

• Recommended for O-rings and retaining rings • MM EGR 20-22 clamping keys are supplied with each MM GRIT... shank • Tightening torque for MM GRIT 22: 1500 N·cm, for MM GRIT 28: 2800 N·cm • K - for general steel & cast iron machining. P - for soft and gummy materials • Modification options on request. • Do not apply lubricant to the threaded connection. • For clamping instructions, see page E20 • For shanks, see pages E20-23

⁽¹⁾ For circle clips according to DIN471/472 and ANSI B27.7M ⁽²⁾ Minimum bore diameter.

Spare Parts

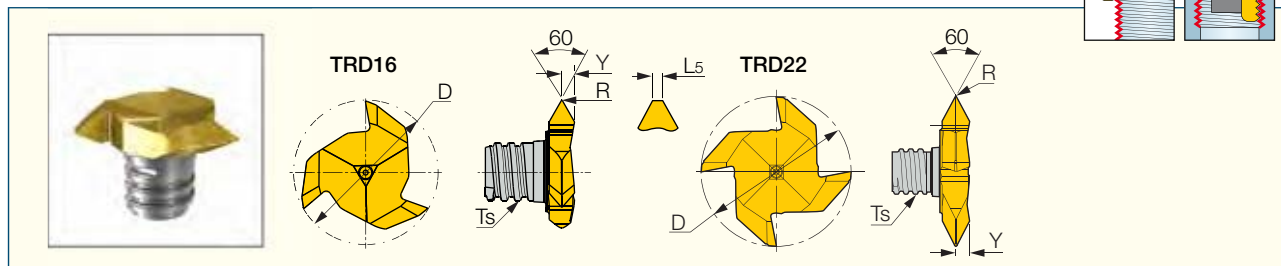
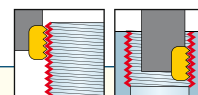


Designation	Clamping Key
MM GRIT 22K/P	MM EGR 20-22*

• Optional, should be ordered separately

MM TRD-M

Interchangeable Solid Carbide Milling Heads, for 60° Partial Profile Thread Milling



Designation	Dimensions											IC528
	D	Z	P _{min}	P _{max}	R	L ₅	Y	T _s	T _h ⁽¹⁾	D _{min}	Standard	
MM TRD16-M60-05P-3T06	15.70	3	0.50	2.00	- ⁽²⁾	0.05	1.2	T06	M20	19.05	ISO 68, DIN 13	●
MM TRD16-M60-15P-3T06	15.70	3	1.50	2.00	0.05	-	1.2	T06	M22	19.05	ISO 68, DIN 13	●
MM TRD22-M60-30P-4T08	21.70	4	3.00	4.50	0.20	-	2.8	T08	M36	31.00	ISO 68, DIN 13	●

• For shanks, see pages E20-23 • For clamping instructions, see page E20 • Do not apply lubricant to the threaded connection.

⁽¹⁾ Smallest possible thread ⁽²⁾ Flat

Spare Parts

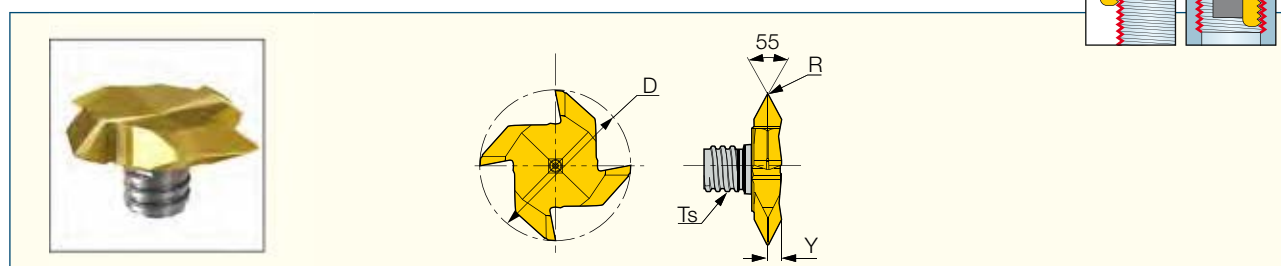
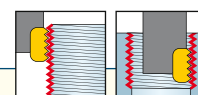


Designation	Clamping Key
MM TRD16-M60-05P-3T06	MM EGR 16-18*
MM TRD16-M60-15P-3T06	MM EGR 16-18*
MM TRD22-M60-30P-4T08	MM EGR 20-22*

* Optional, should be ordered separately

MM TRD-W

Interchangeable Solid Carbide Milling Heads, for 55° Partial Profile Thread Milling



Designation	Dimensions										IC528
	D	Z	R	Y	TPI _{max}	TPI _{min}	T _s	T _h	D _{min}	Standard	
MM TRD22-W55-14P-4T08	21.70	4	0.20	2.4	14	11	T08	G3/4	24.20	DIN ISO 228, B.S. 84	●

• For shanks, see pages E20-23 • For clamping instructions, see page E20 • Do not apply lubricant to the threaded connection.

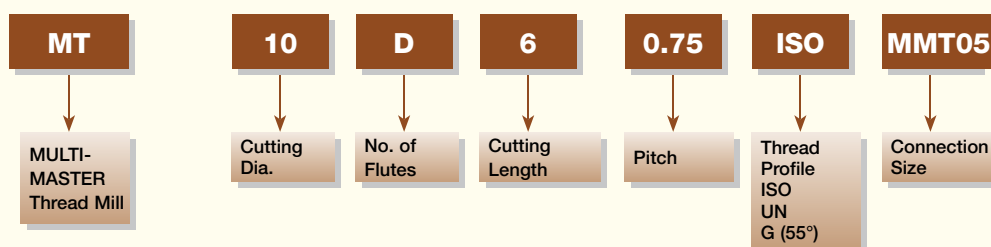
Spare Parts



Designation	Clamping Key
MM TRD-W	MM EGR 20-22*

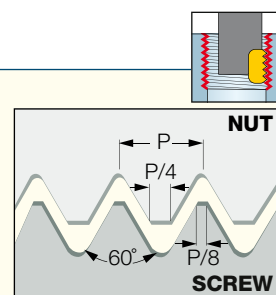
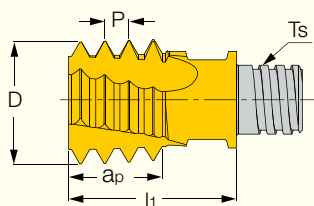
* Optional, should be ordered separately

Identification Code



MT-ISO-MM

Carbide Milling Heads with a Threaded Connection for Internal ISO Metric Thread



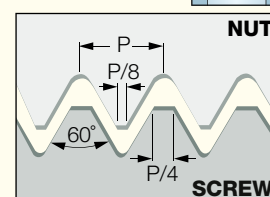
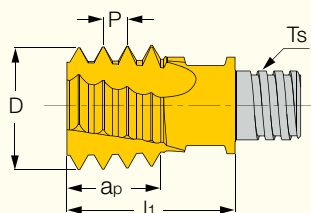
Application: General engineering

Designation	Dimensions									IC908
	Pitch	M Coarse	M Fine	D	Flute	ap	l1	Ts		
MT 10D6 0.75ISO-MMT05	0.75	-	≥12	10.00	4	6.00	12.75	T05		●
MT 10D6 1.0ISO-MMT05	1.00	-	≥12	10.00	4	6.00	12.75	T05		●
MT 10D6 1.5ISO-MMT05	1.50	-	≥14	10.00	4	6.00	12.75	T05		●
MT 12D7 1.5ISO-MMT06	1.50	-	≥16	12.00	4	7.50	17.05	T06		●
MT 12D8 2.0ISO-MMT06	2.00	M16	≥17	12.00	4	8.00	17.05	T06		●
MT 16F12 1.5ISO-MMT08	1.50	-	≥20	16.00	6	12.00	20.85	T08		●
MT 16E12 2.0ISO-MMT08	2.00	-	≥19	16.00	5	12.00	20.85	T08		●
MT 15E12 2.5ISO-MMT08	2.50	M20	≥22	15.40	5	12.50	20.85	T08		●
MT 16C12 3.0ISO-MMT08	3.00	M24	≥25	16.00	3	12.00	20.85	T08		●

- For shanks, see pages E20-23 • For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection

MT-UN-MM

Carbide Milling Heads with a Threaded Connection, for Internal UN Thread Profile



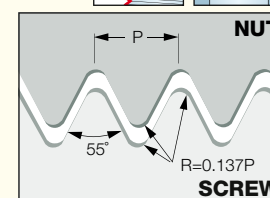
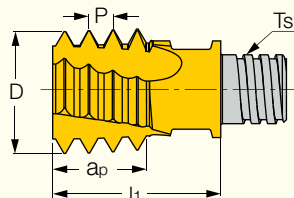
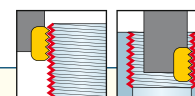
Application: General engineering

Designation	Dimensions									IC908
	TPI	UNC	UNF	UNEF	D	Flute	a _D	l ₁	T _s	
MT 10D6 24UN-MMT05	24.0	-	-	9/16-5/8	10.00	4	5.30	12.75	T05	●
MT 10D6 20UN-MMT05	20.0	-	1/2	-	10.00	4	5.10	12.75	T05	●
MT 10D5 18UN-MMT05	18.0	-	9/16-5/8	1 1/8-1 5/8	10.00	4	5.60	12.75	T05	●
MT 12D8 16UN-MMT06	16.0	-	3/4	-	12.00	4	8.00	17.05	T06	●
MT 16E12 14UN-MMT08	14.0	-	7/8	-	16.00	5	12.70	20.85	T08	●
MT 16E12 12UN-MMT08	12.0	-	1-1 1/2	-	16.00	5	12.70	20.85	T08	●
MT 15D12 10UN-MMT08	10.0	3/4	-	-	15.30	4	12.70	20.85	T08	●
MT 16C11 9UN-MMT08	9.0	7/8	-	-	16.00	3	11.30	20.85	T08	●
MT 16C12 8UN-MMT08	8.0	1.0	-	-	16.00	3	12.70	20.85	T08	●

- For shanks, see pages E20-23 • For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection

MT-W-MM

Carbide Milling Heads with a Threaded Connection, for Internal and External 55° BSW Thread Profile



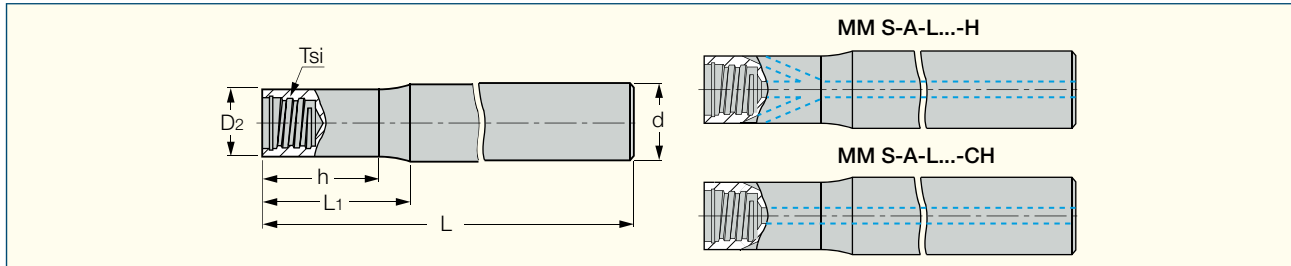
Application: General engineering fittings and pipe couplings

Designation	Dimensions							IC908	
	TPI	BSP	D	Flute	a _o	l ₁	T _s		
	MT 10D6 19W-MMT05	19.0	G1/4-3/8	10.00	4	5.30	12.75		T05
	MT 16D12 14W-MMT08	14.0	G1/2-7/8	16.00	4	12.70	20.85		T08
	MT 16D11 11W-MMT08	11.0	G≥1	16.00	4	11.60	20.85		T08

- For shanks, see pages E20-23 • For clamping keys (should be ordered separately), tightening torques and clamping instructions, see page E20
- Do not apply lubricant to the threaded connection

MM S-A (stepped shanks)

Stepped Cylindrical Shanks for Interchangeable Milling Heads



Designation	Tsi	d	D2	h	L1	L	Shank m. ⁽¹⁾	Coolant	RPM _{max} ⁽²⁾	Kg
MM S-A-L050-C08-T04	T04	8.00	5.80	9.90	14.0	50.00	S	N	60000	0.02
MM S-A-L060-C08-T05	T05	8.00	7.60	12.50	15.0	60.00	S	N	60000	0.02
MM S-A-L070-C08-T05-C	T05	8.00	7.60	18.60	20.0	70.00	C	N	60000	0.04
MM S-A-L070-C08-T05-W	T05	8.00	7.60	18.90	20.0	70.00	W	N	60000	0.06
MM S-A-L090-C08-T05-C	T05	8.00	7.60	38.60	40.0	90.00	C	N	50160	0.06
MM S-A-L090-C08-T05-W	T05	8.00	7.60	38.90	40.0	90.00	W	N	36090	0.07
MM S-A-L110-C08-T05-C	T05	8.00	7.60	57.90	60.0	110.00	C	N	30600	0.07
MM S-A-L110-C08-T05-W	T05	8.00	7.60	58.90	60.0	110.00	W	N	21060	0.09
MM S-A-L070-C10-T06-C	T06	10.00	9.60	18.50	20.0	70.00	C	N	54900	0.01
MM S-A-L070-C10-T06-W-H	T06	10.00	9.60	18.90	20.0	70.00	W	Y	60000	0.08
MM S-A-L075-C10-T06	T06	10.00	9.55	17.40	20.0	75.00	S	N	60000	0.05
MM S-A-L075-C10-T06-H	T06	10.00	9.55	18.80	20.0	75.00	S	Y	53940	0.04
MM S-A-L090-C10-T06-C	T06	10.00	9.60	38.50	40.0	90.00	C	N	55170	0.06
MM S-A-L090-C10-T06-W	T06	10.00	9.55	17.20	20.0	90.00	W	N	41670	0.12
MM S-A-L090-C10-T06-W-H	T06	10.00	9.60	39.00	40.0	90.00	W	Y	40860	0.10
MM S-A-L110-C10-T06-C	T06	10.00	9.60	57.90	60.0	110.00	C	N	34530	0.11
MM S-A-L110-C10-T06-W-H	T06	10.00	9.60	59.00	60.0	110.00	W	Y	24840	0.12
MM S-A-L150-C10-T06-C	T06	10.00	9.60	98.50	100.0	150.00	C	N	16620	0.15
MM S-A-L070-C12-T08-C	T08	12.00	11.50	17.90	20.0	70.00	C	N	60000	0.10
MM S-A-L070-C12-T08-W-H	T08	12.00	11.50	18.70	20.0	70.00	W	Y	60000	0.11
MM S-A-L090-C12-T08	T08	12.00	11.50	13.30	16.0	90.00	S	N	43000	0.10
MM S-A-L090-C12-T08-C	T08	12.00	11.50	39.00	40.0	90.00	C	N	43050	0.12
MM S-A-L090-C12-T08-H	T08	12.00	11.50	38.70	40.0	90.00	S	Y	41040	0.08
MM S-A-L090-C12-T08-W-H	T08	12.00	11.50	38.70	40.0	90.00	W	Y	49800	0.15
MM S-A-L090/42-C12-T08-CH	T08	12.00	11.50	41.00	42.0	90.00	S	Y	41010	0.07
MM S-A-L110-C12-T08-C	T08	12.00	11.50	57.00	60.0	110.00	C	N	41040	0.16
MM S-A-L110-C12-T08-W	T08	12.00	11.50	17.00	20.0	110.00	W	N	31350	0.09
MM S-A-L110-C12-T08-W-H	T08	12.00	11.50	58.70	60.0	110.00	W	Y	30210	0.18
MM S-A-L130-C12-T08-C	T08	12.00	11.50	77.80	80.0	130.00	C	N	27960	0.19
MM S-A-L130-C12-T08-W-H	T08	12.00	11.50	78.70	80.0	130.00	W	Y	20100	0.21

• Do not apply lubricant to the threaded connection.

⁽¹⁾ S-steel, C-carbide, W-tungsten ⁽²⁾ The actual maximum RPM should be calculated by dividing the listed RPM max by the number of the heads flutes being used.

Clamping and Indexing Instructions

Do not apply lubricant to the threaded connection.

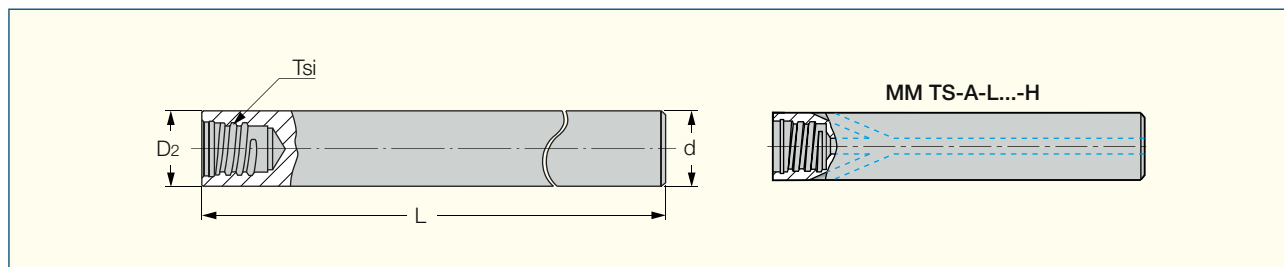


Thread Size	Key ⁽¹⁾	Tightening Torque (Nxcn)
T05	MM KEY 6x4	700
T06	MM KEY 8x5	1000
T08	MM KEY 10x7	1500
T10	MM KEY 13x8	2800
T12	MM KEY 16x9	2800
T15	MM KEY 20	4000

⁽¹⁾ Order separately



Cylindrical Shanks for Interchangeable Milling Heads



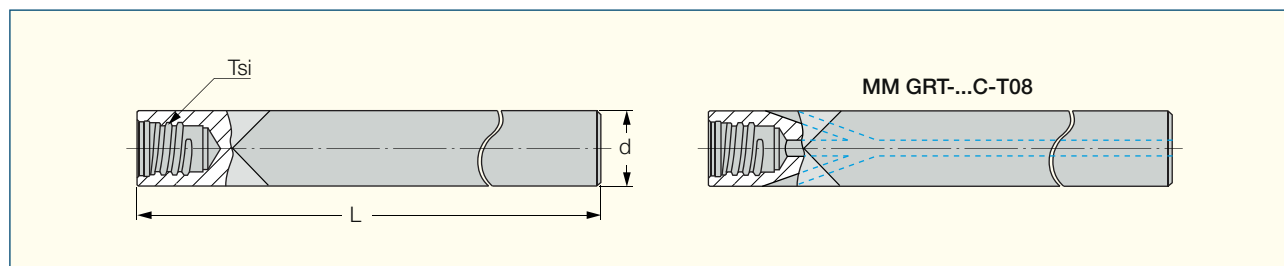
Designation	Tsi	d	D2	L	Coolant	RPM _{max} ⁽¹⁾	Kg
MM TS-A-L070-C08-T05	T05	8.00	8.00	70.00	N	60000	0.03
MM TS-A-L080-C10-T06	T06	10.00	10.00	80.00	N	47400	0.07
MM TS-A-L080-C10-T06-H	T06	10.00	10.00	80.00	Y	46920	0.04
MM TS-A-L090-C12-T08	T08	12.00	12.00	90.00	N	43110	0.12
MM TS-A-L090-C12-T08-H	T08	12.00	12.00	90.00	Y	42780	0.08

• Do not apply lubricant to the threaded connection

⁽¹⁾ The actual maximum RPM should be calculated by dividing the listed RPM max by the number of the heads flutes being used.

MM GRT (shanks)

Solid Carbide Cylindrical Shanks for Slitting and Grooving Interchangeable Milling Heads



Designation	Tsi	d	L	Shank ⁽¹⁾	Coolant	Kg
MM GRT-095-T06	T06	9.52	80.00	C	N	0.07
MM GRT-100-T06	T06	10.00	100.00	C	N	0.10
MM GRT-120C-T08	T08	12.00	100.00	C	Y	0.12
MM GRT-127C-T08	T08	12.70	120.00	C	Y	0.17

⁽¹⁾ C-Cylindrical

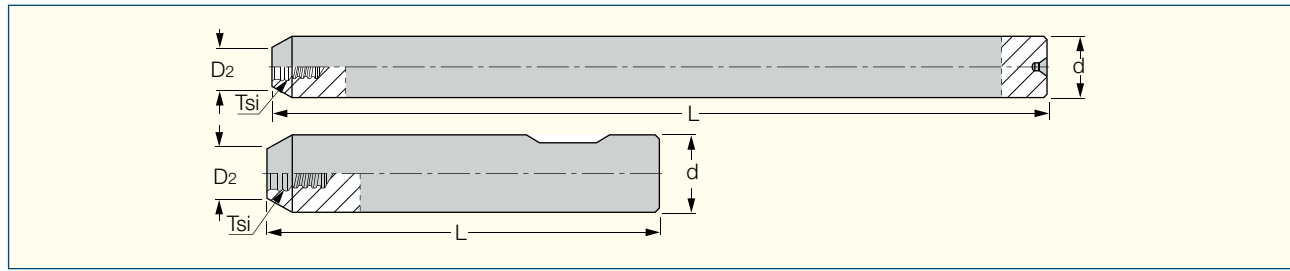
Spare Parts



Designation	Clamping Key
MM GRT-095-T06	MM EGR 16-18
MM GRT-100-T06	MM EGR 16-18
MM GRT-120C-T08	MM EGR 20-22
MM GRT-127C-T08	MM EGR 20-22

MM S-A (straight shanks)

Shanks for Interchangeable Milling Heads



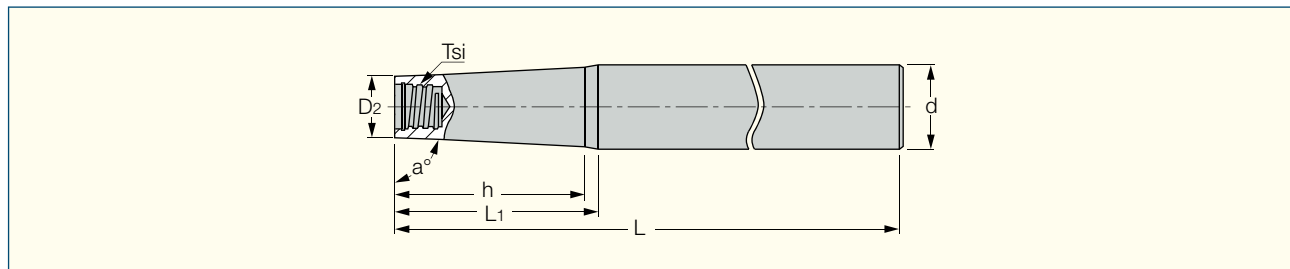
Designation	Tsi	d	D2	Shank ⁽¹⁾	L	RPM _{max} ⁽²⁾	Kg
MM S-A-L055-W12-T05	T05	12.00	7.60	W	55.00	60000	0.05

• Do not apply lubricant to the threaded connection.

⁽¹⁾ W-Weldon ⁽²⁾ The actual maximum RPM should be calculated by dividing the listed RPM max by the number of the heads flutes being used.

MM S-B (85° conical shanks)

85° Conical Shanks for Interchangeable Milling Heads



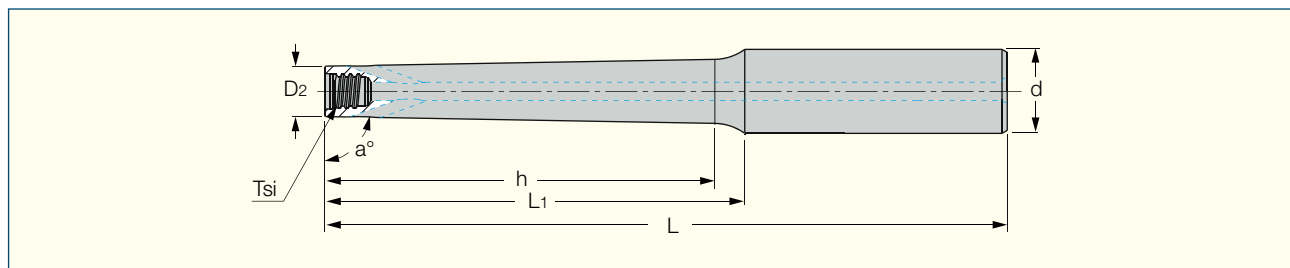
Designation	Tsi	a°	d	D2	Shank ⁽¹⁾	L1	L	Shank m.	h	RPM _{max} ⁽²⁾	Kg
MM S-B-L080-C12-T05	T05	85	12.00	7.60	C	25.0	80.00	S	-	60000	0.06

• Shank material (Shank m.): S-steel • Do not apply lubricant to the threaded connection.

⁽¹⁾ C-Cylindrical ⁽²⁾ The actual maximum RPM should be calculated by dividing the listed RPM max by the number of the heads flutes being used.

MM S-D (89° conical shanks)

89° Conical Shanks for Interchangeable Milling Heads



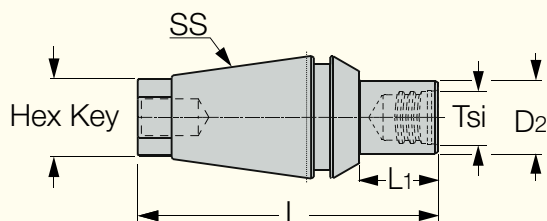
Designation	Tsi	a°	d	D2	L1	L	Shank m.	h	Coolant	RPM _{max} ⁽¹⁾	Kg
MM S-D-L100-C12-T05	T05	89	12.00	7.60	35.0	100.00	S	29.60	N	52000	0.15
MM S-D-L110-C12-T05-C	T05	89	12.00	7.60	60.0	110.00	C	55.90	N	53430	0.13
MM S-D-L110-C12-T05-W-H	T05	89	12.00	7.60	60.0	110.00	W	55.70	Y	38460	0.14
MM S-D-L130-C12-T05-C	T05	89	12.00	7.60	80.0	130.00	C	77.30	N	36420	0.15
MM S-D-L130-C12-T05-W-H	T05	89	12.00	7.60	80.0	130.00	W	76.40	Y	26160	0.16
MM S-D-L150-C16-T05-C	T05	89	16.00	7.60	100.0	150.00	C	91.50	N	29700	0.02
MM S-D-L110-C12-T06-W-H	T06	89	12.00	9.60	60.0	110.00	W	58.80	Y	36990	0.17

• Shank material (Shank m.): S-steel, C-carbide, W-tungsten. • Do not apply lubricant to the threaded connection.

⁽¹⁾ The actual maximum RPM should be calculated by dividing the listed RPM max by the number of the heads flutes being used.

MM S-ER

Shanks for MULTI-MASTER Solid Carbide Heads with ER Collet Adaptation



Designation	SS	Tsi	D2	L1	L	Key ⁽¹⁾
MM S-A-H004-ER11-T05	ER11	T05	7.60	4.0	26.50	6.35
MM S-A-H10.5-ER11-T05	ER11	T05	7.60	10.5	33.00	6.35
MM S-A-H004-ER16-T05	ER16	T05	7.60	4.0	33.50	7.94
MM S-A-H004-ER16-T06	ER16	T06	9.00	4.0	33.50	7.94
MM S-A-H004-ER16-T08	ER16	T08	11.50	4.0	33.50	7.94
MM S-A-H10.5-ER16-T05	ER16	T05	7.60	10.5	43.10	7.94
MM S-A-H10.5-ER16-T06	ER16	T06	9.00	10.5	43.10	7.94
MM S-A-H013-ER16-T08	ER16	T08	11.50	13.0	45.60	7.94
MM S-A-H004-ER20-T05	ER20	T05	7.60	4.0	40.60	11.11
MM S-A-H004-ER20-T06	ER20	T06	9.00	4.0	40.60	11.11
MM S-A-H004-ER20-T08	ER20	T08	11.50	4.0	40.60	11.11
MM S-A-H10.5-ER20-T05	ER20	T05	7.60	10.5	47.10	11.11
MM S-A-H10.5-ER20-T06	ER20	T06	9.00	10.5	47.10	11.11
MM S-A-H013-ER20-T08	ER20	T08	11.50	13.0	49.60	11.11

• Do not apply lubricant to the threaded connection.

⁽¹⁾ Inch size spanners (displayed in mm)

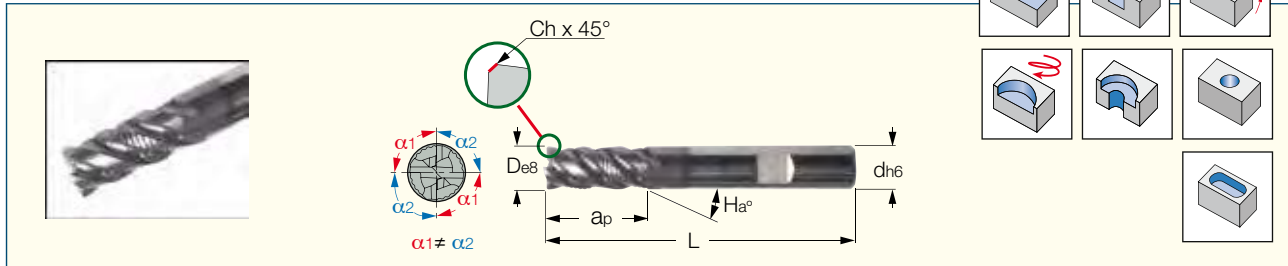


SOLIDMILL
PREMIUM LINE



EFS-E44

Combination of Roughing and Finishing Solid Carbide Endmill with Variable Pitch for Chatter Free Milling

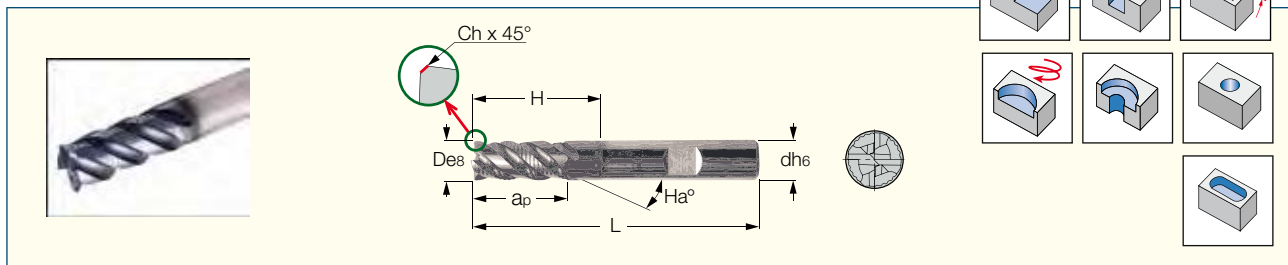


Designation	Dimensions										Recommended Machining Data	
	D	d	ap	L	Flute	Ha°	Rd°	Shank ⁽¹⁾	Ch	IC900	fz (mm/t)	
EFS-E44 06-14C06CF57	6.00	6.00	14.00	57.00	4	38.0	5.0	C	0.25	●	0.03-0.06	
EFS-E44 06-14W06CF57	6.00	6.00	14.00	57.00	4	38.0	5.0	W	0.25	●	0.03-0.06	
EFS-E44 08-18C08CF63	8.00	8.00	18.00	63.00	4	38.0	5.0	C	0.30	●	0.03-0.08	
EFS-E44 08-18W08CF63	8.00	8.00	18.00	63.00	4	38.0	5.0	W	0.30	●	0.03-0.08	
EFS-E44 10-22C10CF72	10.00	10.00	22.00	72.00	4	38.0	5.0	C	0.40	●	0.03-0.09	
EFS-E44 10-22W10CF72	10.00	10.00	22.00	72.00	4	38.0	5.0	W	0.40	●	0.03-0.09	
EFS-E44 12-26C12CF83	12.00	12.00	26.00	83.00	4	38.0	5.0	C	0.50	●	0.04-0.10	
EFS-E44 12-26W12CF83	12.00	12.00	26.00	83.00	4	38.0	5.0	W	0.50	●	0.04-0.10	

⁽¹⁾ C-Cylindrical, W-Weldon

EFS-B44

Combination of Roughing and Finishing Solid Carbide Endmill in a Single Tool



Designation	Dimensions										Tough ↔ Hard		Recommended Machining Data	
	D	d	ap	H	L	Flute	Ha°	Rd°	Shank ⁽¹⁾	Ch	IC300	IC900	fz (mm/t)	
EFS-B44 06-14/20C06-57	6.00	6.00	14.00	20.00	57.00	4	45.0	5.0	C	0.25		●	0.03-0.06	
EFS-B44 06-14/20W06-57	6.00	6.00	14.00	20.00	57.00	4	45.0	5.0	W	0.25		●	0.03-0.06	
EFS-B44 06-14C06-57	6.00	6.00	14.00	-	57.00	4	45.0	5.0	C	0.25	●	●	0.03-0.06	
EFS-B44 06-14W06-57	6.00	6.00	14.00	-	57.00	4	45.0	5.0	W	0.25		●	0.03-0.06	
EFS-B44 08-18/26C08-63	8.00	8.00	18.00	26.00	63.00	4	45.0	5.0	C	0.30		●	0.03-0.08	
EFS-B44 08-18/26W08-63	8.00	8.00	18.00	26.00	63.00	4	45.0	5.0	W	0.30		●	0.03-0.08	
EFS-B44 08-18C08-63	8.00	8.00	18.00	-	63.00	4	45.0	5.0	C	0.30	●	●	0.03-0.08	
EFS-B44 08-18W08-63	8.00	8.00	18.00	-	63.00	4	45.0	5.0	W	0.30	●	●	0.03-0.08	
EFS-B44 10-22/32C10-72	10.00	10.00	22.00	32.00	72.00	4	45.0	5.0	C	0.30		●	0.03-0.09	
EFS-B44 10-22/32W10-72	10.00	10.00	22.00	32.00	72.00	4	45.0	5.0	W	0.30		●	0.03-0.09	
EFS-B44 10-22C10-72	10.00	10.00	22.00	-	72.00	4	45.0	5.0	C	0.30	●	●	0.03-0.09	
EFS-B44 10-22W10-72	10.00	10.00	22.00	-	72.00	4	45.0	5.0	W	0.30		●	0.03-0.09	
EFS-B44 12-26/38C12-83	12.00	12.00	26.00	38.00	83.00	4	45.0	5.0	C	0.40		●	0.04-0.10	
EFS-B44 12-26/38W12-83	12.00	12.00	26.00	38.00	83.00	4	45.0	5.0	W	0.40		●	0.04-0.10	
EFS-B44 12-26C12-83	12.00	12.00	26.00	-	83.00	4	45.0	5.0	C	0.40		●	0.04-0.10	
EFS-B44 12-26W12-83	12.00	12.00	26.00	-	83.00	4	45.0	5.0	W	0.40	●	●	0.04-0.10	

● IC300 should be mainly used for machining exotic materials

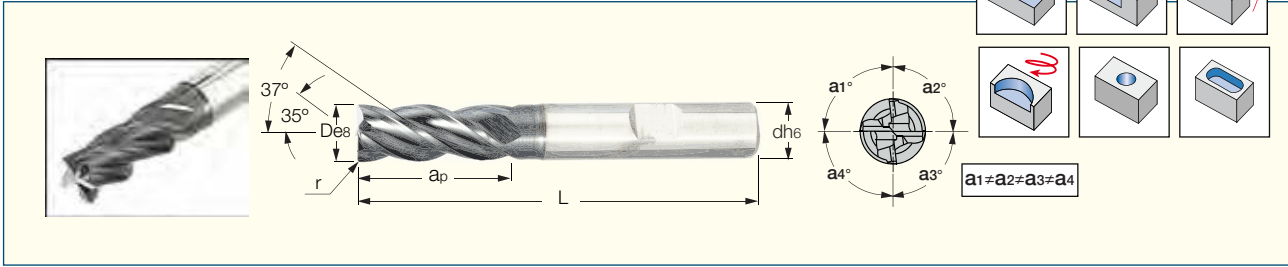
⁽¹⁾ C-Cylindrical, W-Weldon

CHATTERFREE

SOLID MILL LINE

EC-H4M-CFR

4 Flute Endmills with Different Helix and Variable Pitch,
for Chatter Dampening with Assorted Radii



Designation	Dimensions								IC900	Recommended Machining Data f _z (mm/t)
	D	d	a _p	L	Flute	r	R _d °	Shank ⁽¹⁾		
EC-H4M 06-12C06CFR0.2-57	6.00	6.00	12.00	57.00	4	0.20	5.0	C	●	0.03-0.06
EC-H4M 06-12W06CFR0.2-57	6.00	6.00	12.00	57.00	4	0.20	5.0	W	●	0.03-0.06
EC-H4M 08-16C08CFR0.4-63	8.00	8.00	16.00	63.00	4	0.40	5.0	C	●	0.03-0.08
EC-H4M 08-16W08CFR0.4-63	8.00	8.00	16.00	63.00	4	0.40	5.0	W	●	0.03-0.08
EC-H4M 10-20C10CFR0.5-72	10.00	10.00	20.00	72.00	4	0.50	5.0	C	●	0.03-0.09
EC-H4M 10-20W10CFR0.5-72	10.00	10.00	20.00	72.00	4	0.50	5.0	W	●	0.03-0.09
EC-H4M 12-24C12CFR0.6-83	12.00	12.00	24.00	83.00	4	0.60	5.0	C	●	0.04-0.10
EC-H4M 12-24W12CFR0.6-83	12.00	12.00	24.00	83.00	4	0.60	5.0	W	●	0.04-0.10

⁽¹⁾ C-Cylindrical, W-Weldon

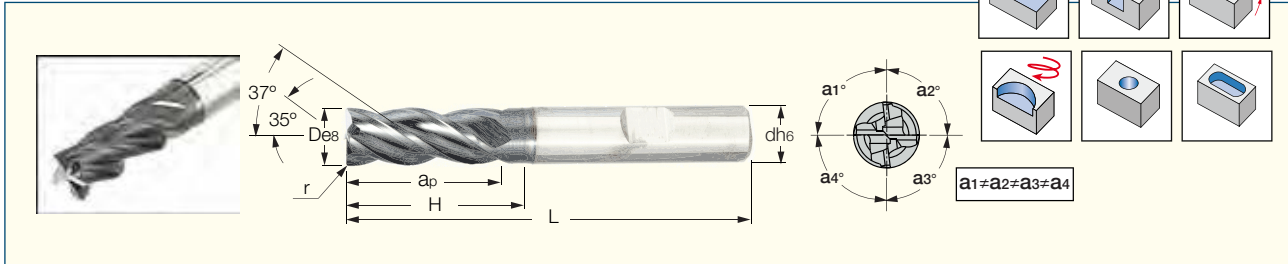
SOLIDMILL • CHATTERFREE

PREMIUM LINE

SOLID MILL LINE

EC-H4L-CFR (relieved neck)

4 Flute Endmills with 3xD Relieved Necks, Assorted Radii,
Different Helix and Variable Pitch, for Chatter Dampening



Designation	Dimensions									IC900	Recommended Machining Data
	D	d	a _p	H	L	Flute	r	R _d °	Shank ⁽¹⁾		f _z (mm/t)
EC-H4L 06-12/20C6CFR.2-57	6.00	6.00	12.00	20.00	57.00	4	0.20	5.0	C	●	0.03-0.06
EC-H4L 06-12/20W6CFR.2-57	6.00	6.00	12.00	20.00	57.00	4	0.20	5.0	W	●	0.03-0.06
EC-H4L 08-16/26C8CFR.4-63	8.00	8.00	16.00	26.00	63.00	4	0.40	5.0	C	●	0.03-0.08
EC-H4L 08-16/26W8CFR.4-63	8.00	8.00	16.00	26.00	63.00	4	0.40	5.0	W	●	0.03-0.08
EC-H4L 10-20/32C10CFR.5	10.00	10.00	20.00	32.00	72.00	4	0.50	5.0	C	●	0.03-0.09
EC-H4L 10-20/32W10CFR.5	10.00	10.00	20.00	32.00	72.00	4	0.50	5.0	W	●	0.03-0.09
EC-H4L 12-24/38C12CFR.6	12.00	12.00	24.00	38.00	83.00	4	0.60	5.0	C	●	0.04-0.10
EC-H4L 12-24/38W12CFR.6	12.00	12.00	24.00	38.00	83.00	4	0.60	5.0	W	●	0.04-0.10

⁽¹⁾ C-Cylindrical, W-Weldon

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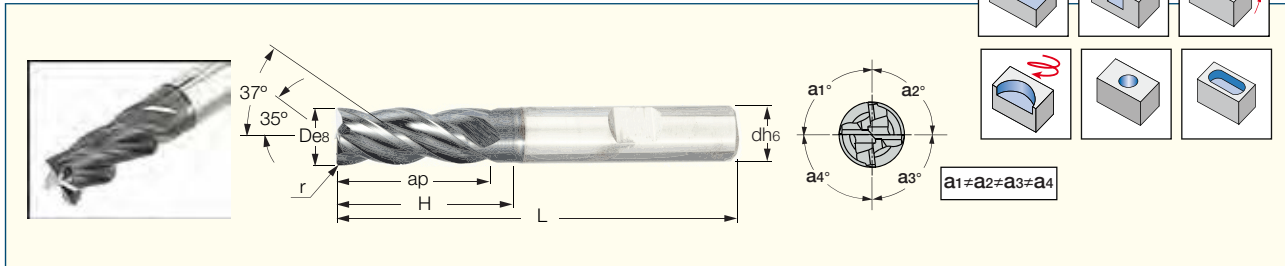
PREMIUM LINE

SOLID MILL LINE

EC-H4XL-CFR (relieved neck)

4 Flute Endmills with 4xD Relieved Necks, Assorted Radii

Different Helix and Variable Pitch, for Chatter Dampening



Designation	Dimensions									IC900	Recommended Machining Data	
	D	d	ap	H	L	Flute	r	Rd°	Shank ⁽¹⁾		fz	(mm/t)
EC-H4XL 06-12/25C06CFR.2	6.00	6.00	12.00	25.00	61.00	4	0.20	5.0	C	●	0.03-0.06	
EC-H4XL 06-12/25W06CFR.2	6.00	6.00	12.00	25.00	61.00	4	0.20	5.0	W	●	0.03-0.06	
EC-H4XL 08-16/32C08CFR.4	8.00	8.00	16.00	32.00	68.00	4	0.40	5.0	C	●	0.03-0.08	
EC-H4XL 08-16/32W08CFR.4	8.00	8.00	16.00	32.00	68.00	4	0.40	5.0	W	●	0.03-0.08	
EC-H4XL 10-20/40C10CFR.5	10.00	10.00	20.00	40.00	80.00	4	0.50	5.0	C	●	0.03-0.09	
EC-H4XL 10-20/40W10CFR.5	10.00	10.00	20.00	40.00	80.00	4	0.50	5.0	W	●	0.03-0.09	
EC-H4XL 12-24/50C12CFR.6	12.00	12.00	24.00	50.00	95.00	4	0.60	5.0	C	●	0.04-0.10	
EC-H4XL 12-24/50W12CFR.6	12.00	12.00	24.00	50.00	95.00	4	0.60	5.0	W	●	0.04-0.10	

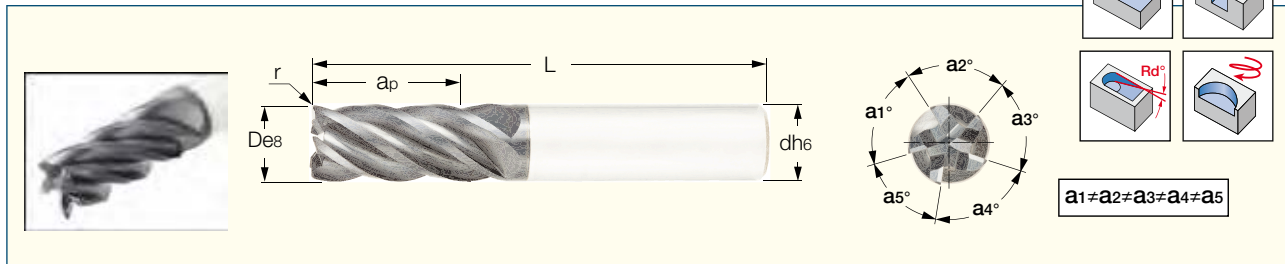
⁽¹⁾ C-Cylindrical, W-Weldon

CHATTERFREE

SOLID MILL LINE

EC-H5M-CFR

5 Flute Endmills with Different Helix (36 - 38°) and Variable Pitch for Chatter Dampening with Assorted Radii



Designation	Dimensions									IC900	Recommended Machining Data	
	D	d	ap	L	Flute	r	Rd°	Shank ⁽¹⁾			fz	(mm/t)
EC-H5M 04-09C06CFR0.2-57	4.00	6.00	9.00	57.00	5	0.20	5.0	C	●	0.02-0.04		
EC-H5M 05-11C06CFR0.2-57	5.00	6.00	11.00	57.00	5	0.20	5.0	C	●	0.02-0.04		
EC-H5M 06-13C06CFR0.2-57	6.00	6.00	13.00	57.00	5	0.20	5.0	C	●	0.03-0.07		
EC-H5M 06-13W06CFR0.2-57	6.00	6.00	13.00	57.00	5	0.20	5.0	W	●	0.03-0.07		
EC-H5M 08-19C08CFR0.4-63	8.00	8.00	19.00	63.00	5	0.40	5.0	C	●	0.03-0.09		
EC-H5M 08-19W08CFR0.4-63	8.00	8.00	19.00	63.00	5	0.40	5.0	W	●	0.03-0.09		
EC-H5M 10-22C10CFR0.5-72	10.00	10.00	22.00	72.00	5	0.50	5.0	C	●	0.03-0.10		
EC-H5M 10-22W10CFR0.5-72	10.00	10.00	22.00	72.00	5	0.50	5.0	W	●	0.03-0.10		
EC-H5M 12-26C12CFR0.6-83	12.00	12.00	26.00	83.00	5	0.60	5.0	C	●	0.04-0.11		
EC-H5M 12-26W12CFR0.6-83	12.00	12.00	26.00	83.00	5	0.60	5.0	W	●	0.04-0.11		

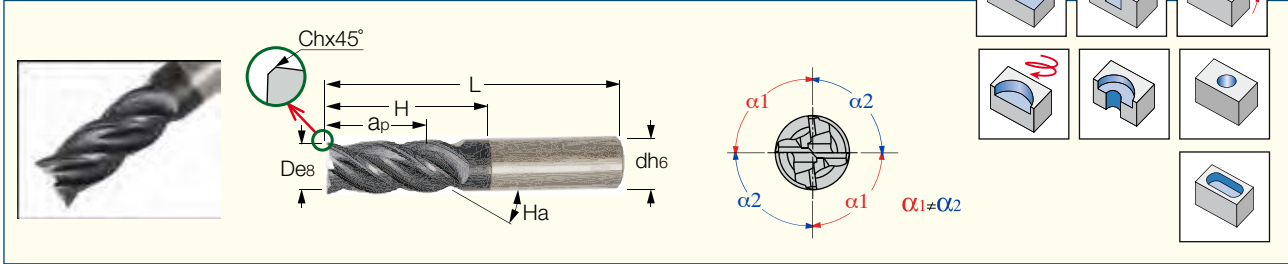
⁽¹⁾ C-Cylindrical, W-Weldon

CHATTERFREE

SOLID MILL LINE

EC-E4L-CF

4 Flute 38° Helix Endmills with 3xD Relieved Necks and Variable Pitch, for Chatter Dampening



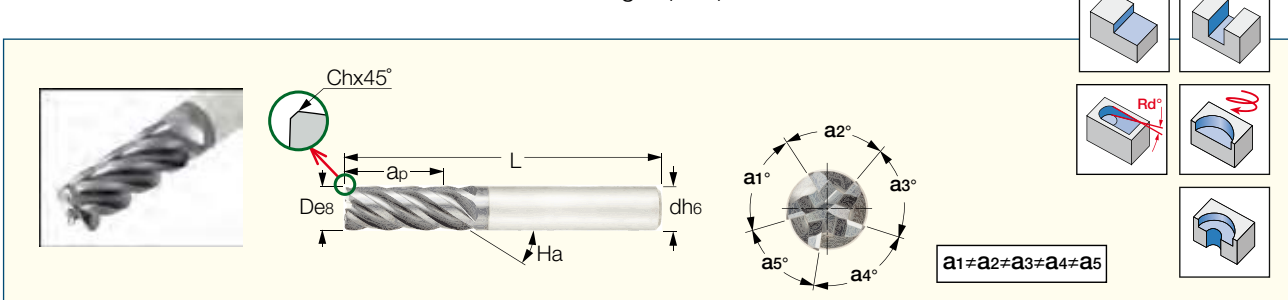
Designation	Dimensions										Tough ↔ Hard		Recommended Machining Data f _z (mm/t)
	D	d	a _p	H	L	Flute	H _a °	R _d °	Shank ⁽¹⁾	Ch	IC300	IC900	
EC-E4L 03-8/11C06CF57	3.00	6.00	8.00	11.00	57.00	4	38.0	5.0	C	0.10	●	●	0.02-0.05
EC-E4L 04-10/14C06CF57	4.00	6.00	10.00	14.00	57.00	4	38.0	5.0	C	0.15	●	●	0.02-0.05
EC-E4L 05-12/17C06CF57	5.00	6.00	12.00	17.00	57.00	4	38.0	5.0	C	0.18	●	●	0.02-0.06
EC-E4L 06-14/20C06CF57	6.00	6.00	14.00	20.00	57.00	4	38.0	5.0	C	0.25	●	●	0.03-0.07
EC-E4L 06-14/20W06CF57	6.00	6.00	14.00	20.00	57.00	4	38.0	5.0	W	0.25	●	●	0.03-0.07
EC-E4L 08-18/26C08CFS63	8.00	8.00	18.00	26.00	63.00	4	38.0	5.0	C	0	●	●	0.03-0.08
EC-E4L 08-18/26C08CF63	8.00	8.00	18.00	26.00	63.00	4	38.0	5.0	C	0.30	●	●	0.03-0.09
EC-E4L 08-18/26W08CF63	8.00	8.00	18.00	26.00	63.00	4	38.0	5.0	W	0.30	●	●	0.03-0.09
EC-E4L 10-22/32C10CFS72	10.00	10.00	22.00	32.00	72.00	4	38.0	5.0	C	0	●	●	0.03-0.09
EC-E4L 10-22/32C10CF72	10.00	10.00	22.00	32.00	72.00	4	38.0	5.0	C	0.40	●	●	0.03-0.10
EC-E4L 10-22/32W10CF72	10.00	10.00	22.00	32.00	72.00	4	38.0	5.0	W	0.40	●	●	0.03-0.10
EC-E4L 10-22/32W10CF72 30	10.00	10.00	22.00	32.00	72.00	4	38.0	5.0	W	0.40	●	●	0.03-0.10
EC-E4L 12-26/38C12CFS83	12.00	12.00	26.00	38.00	83.00	4	38.0	5.0	C	0	●	●	0.04-0.10
EC-E4L 12-26/38C12CF83	12.00	12.00	26.00	38.00	83.00	4	38.0	5.0	C	0.50	●	●	0.04-0.11
EC-E4L 12-26/38W12CF83	12.00	12.00	26.00	38.00	83.00	4	38.0	5.0	W	0.50	●	●	0.04-0.11

● IC300 should be mainly used for machining exotic materials

⁽¹⁾ C-Cylindrical, W-Weldon

EC-E5L-CF

5 Flute 38° Helix Endmills, Variable Pitch Medium Length (1xD)



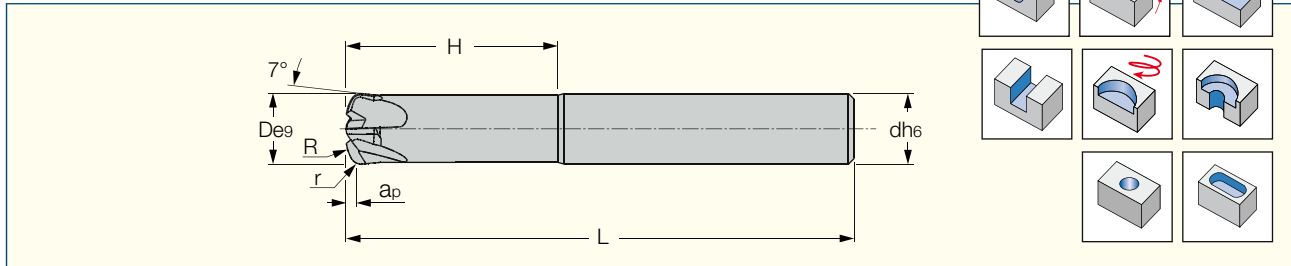
Designation	Dimensions									IC900	Recommended Machining Data
	D	d	a _p	L	Flute	H _a °	R _d °	Shank ⁽¹⁾	Ch		f _z (mm/t)
EC-E5L 06-15C06CF57	6.00	6.00	15.00	57.00	5	38.0	5.0	C	0.20	●	0.03-0.07
EC-E5L 06-15W06CF57	6.00	6.00	15.00	57.00	5	38.0	5.0	W	0.20	●	0.03-0.07
EC-E5L 08-20C08CF63	8.00	8.00	20.00	63.00	5	38.0	5.0	C	0.25	●	0.03-0.09
EC-E5L 08-20W08CF63	8.00	8.00	20.00	63.00	5	38.0	5.0	W	0.25	●	0.03-0.09
EC-E5L 10-25C10CF72	10.00	10.00	25.00	72.00	5	38.0	5.0	C	0.30	●	0.03-0.10
EC-E5L 10-25W10CF72	10.00	10.00	25.00	72.00	5	38.0	5.0	W	0.30	●	0.03-0.10
EC-E5L 12-30C12CF83	12.00	12.00	30.00	83.00	5	38.0	5.0	C	0.40	●	0.04-0.11
EC-E5L 12-30W12CF83	12.00	12.00	30.00	83.00	5	38.0	5.0	W	0.40	●	0.04-0.11

⁽¹⁾ C-Cylindrical, W-Weldon

SOLID^{FEED}MILL

EFF-S4

4 Flute with Relieved Necks, Fast Feed High Productivity Solid Carbide Endmills



Designation	Dimensions								IC903	Recommended Machining Data f _z (mm/t)
	D	d	L	Flute	H	r ⁽¹⁾	R	a _p		
EFF-S4-06 030/20C06R1.0M	6.00	6.00	57.00	4	20.00	1.23	5.3	0.30	●	0.10-0.30
EFF-S4-08 035/26C08R1.3M	8.00	8.00	63.00	4	26.00	1.62	7.0	0.40	●	0.10-0.40
EFF-S4-10 040/30C10R1.6M	10.00	10.00	72.00	4	30.00	2.01	8.8	0.50	●	0.15-0.50
EFF-S4-12 045/34C12R2.0M	12.00	12.00	83.00	4	34.00	2.47	10.6	0.60	●	0.15-0.50

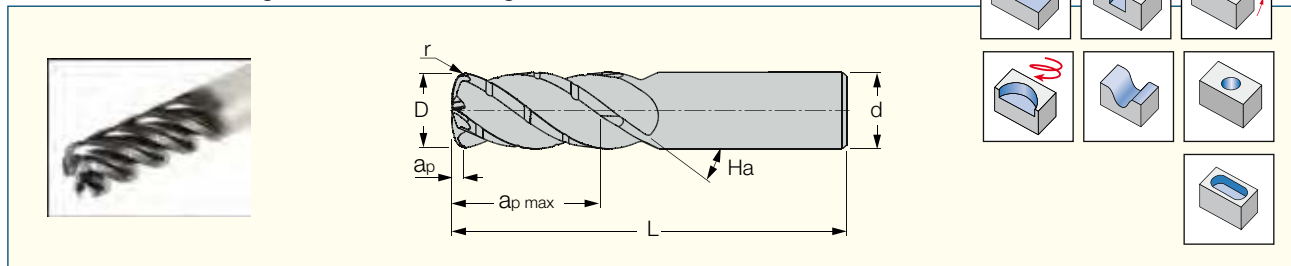
⁽¹⁾ Should be used for programming

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SOLID MILL LINE

EFP-E4,5CF

Solid Carbide Roughing Endmills with Chip Splitting Cutting Edges, Variable Pitch and Large Radius Frontal Edge

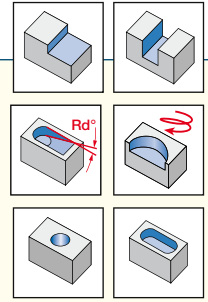
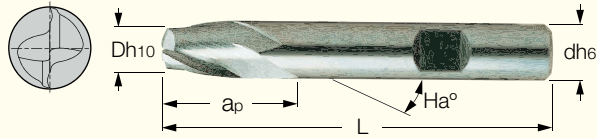


Designation	Dimensions									IC903	Recommended Machining Data
	D	d	L	r ⁽²⁾	Flute	H _a [°]	a _p ⁽³⁾	a _p max	R _d [°]		f _z (mm/t)
EFP-E4CF 06-12C06R1.0M57	6.00	6.00	57.00	1.00	4	38.0	0.30	12.00	5.0	●	0.02-0.30
EFP-E4CF 08-16C08R1.4M63	8.00	8.00	63.00	1.40	4	38.0	0.40	16.00	5.0	●	0.03-0.40
EFP-E4CF 10-20C10R1.7M72	10.00	10.00	72.00	1.70	4	38.0	0.50	20.00	5.0	●	0.03-0.50
EFP-E5CF 10-24C10R1.7M72 ⁽¹⁾	10.00	10.00	72.00	1.70	5	38.0	0.50	24.00	5.0	●	0.03-0.50
EFP-E4CF 12-25C12R2.0M83	12.00	12.00	83.00	2.00	4	38.0	0.60	24.00	5.0	●	0.04-0.50

⁽¹⁾ Cannot be used for plunging application ⁽²⁾ Used for programming ⁽³⁾ Maximum D.O.C. for high feed milling (FEEDMILL)

EC-A2 (economical-short)

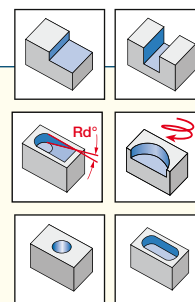
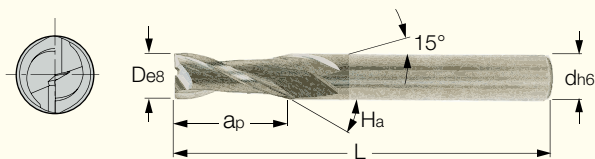
Economical Type 2 Flute, 30° Helix Center Cutting Short Solid Carbide Endmills



Designation	Dimensions								Tough ↔ Hard		Recommended Machining Data f _z (mm/t)
	D	d	a _p	L	Flute	H _a °	R _d °	Shank ⁽¹⁾	IC08	IC900	
EC-A2 02-03W06E50	2.00	6.00	3.00	50.00	2	30.0	5.0	W	●	●	0.01-0.03
EC-A2 03-04W06E50	3.00	6.00	4.00	50.00	2	30.0	5.0	W	●	●	0.01-0.04
EC-A2 04-05W06E54	4.00	6.00	5.00	54.00	2	30.0	5.0	W	●	●	0.02-0.05
EC-A2 045-05W06E54	4.50	6.00	5.00	54.00	2	30.0	5.0	W	●	●	0.02-0.05
EC-A2 05-06W06E54	5.00	6.00	6.00	54.00	2	30.0	5.0	W	●	●	0.02-0.06
EC-A2 06-07W06E54	6.00	6.00	7.00	54.00	2	30.0	5.0	W	●	●	0.03-0.07
EC-A2 07-08W08E58	7.00	8.00	8.00	58.00	2	30.0	5.0	W	●	●	0.03-0.08
EC-A2 08-09W08E58	8.00	8.00	9.00	58.00	2	30.0	5.0	W	●	●	0.03-0.09
EC-A2 09-10W10E66	9.00	10.00	10.00	66.00	2	30.0	5.0	W	●	●	0.03-0.09
EC-A2 10-11W10E66	10.00	10.00	11.00	66.00	2	30.0	5.0	W	●	●	0.03-0.10
EC-A2 12-12W12E73	12.00	12.00	12.00	73.00	2	30.0	5.0	W	●	●	0.04-0.11

⁽¹⁾ W-Weldon

2 Flute, 30 and 45° Helix Medium Length Solid Carbide Slot / Drill Endmills



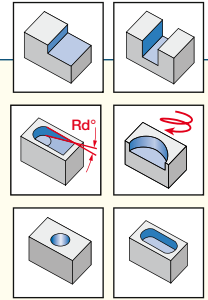
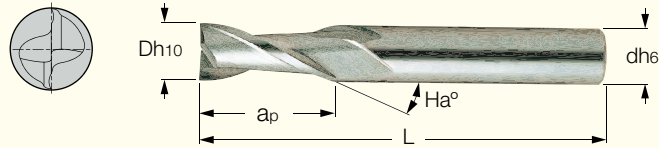
Designation	Dimensions								Tough ↔ Hard			Recommended Machining Data f _z (mm/t)
	D	d	a _p	L	Flute	H _a °	R _d °	Shank ⁽¹⁾	IC08	IC300	IC900	
EC020B07-2C03	2.00	3.00	7.00	38.00	2	45.0	5.0	C	●	●		0.01-0.03
EC020B07-2C06	2.00	6.00	7.00	57.00	2	45.0	5.0	C		●	●	0.01-0.03
EC025A07-2C03	2.50	3.00	7.00	38.00	2	30.0	5.0	C	●	●		0.01-0.03
EC030A10-2C03	3.00	3.00	10.00	38.00	2	30.0	5.0	C	●	●		0.01-0.04
EC030A10-2C06	3.00	6.00	10.00	57.00	2	30.0	5.0	C		●	●	0.01-0.04
EC035A12-2C04	3.50	4.00	12.00	50.00	2	30.0	5.0	C	●	●		0.01-0.04
EC040A12-2C04	4.00	4.00	12.00	50.00	2	30.0	5.0	C	●	●	●	0.02-0.05
EC040A12-2C06	4.00	6.00	12.00	57.00	2	30.0	5.0	C	●	●	●	0.02-0.05
EC045A14-2C06	4.50	6.00	14.00	57.00	2	30.0	5.0	C		●		0.02-0.05
EC050A14-2C05	5.00	5.00	14.00	50.00	2	30.0	5.0	C	●	●		0.02-0.06
EC050A14-2C06	5.00	6.00	14.00	57.00	2	30.0	5.0	C		●	●	0.02-0.06
EC055A16-2C06	5.50	6.00	16.00	57.00	2	30.0	5.0	C		●		0.02-0.06
EC060A16-2C06	6.00	6.00	16.00	57.00	2	30.0	5.0	C	●	●	●	0.03-0.07
EC060A16-2W06	6.00	6.00	16.00	57.00	2	30.0	5.0	W			●	0.03-0.07
EC065A20-2C07	6.50	7.00	20.00	60.00	2	30.0	5.0	C		●		0.03-0.07
EC070A20-2C07	7.00	7.00	20.00	60.00	2	30.0	5.0	C	●	●		0.03-0.08
EC080A20-2C08	8.00	8.00	20.00	63.00	2	30.0	5.0	C	●	●	●	0.03-0.09
EC080A20-2W08	8.00	8.00	20.00	63.00	2	30.0	5.0	W			●	0.03-0.09
EC085A22-2C10	8.50	10.00	22.00	72.00	2	30.0	5.0	C		●		0.03-0.09
EC100A22-2C10	10.00	10.00	22.00	72.00	2	30.0	5.0	C	●	●	●	0.03-0.10
EC120A25-2C12	12.00	12.00	25.00	83.00	2	30.0	5.0	C	●	●	●	0.04-0.11

⁽¹⁾ C-Cylindrical, W-Weldon

EC-A2 (economical-medium)

Economical Type 2 Flute, 30° Helix Center Cutting Medium Length

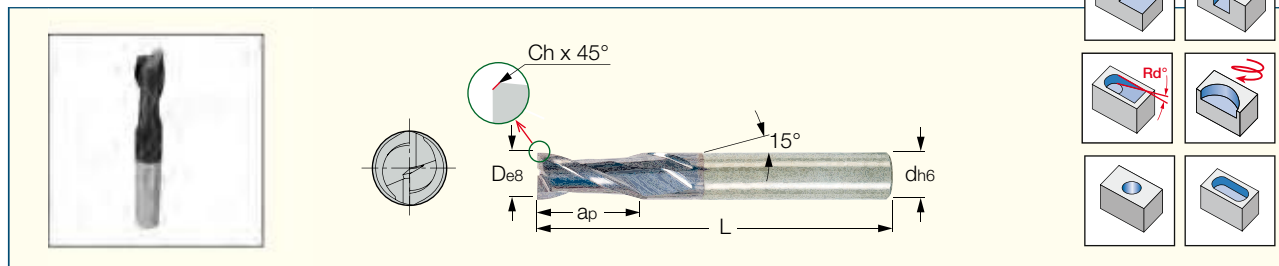
Solid Carbide Endmills



Designation	Dimensions								Tough ↔ Hard		Recommended Machining Data f _z (mm/t)
	D	d	a _p	L	Flute	H _a °	R _d °	Shank ⁽¹⁾	IC08	IC900	
EC-A2 01-03C04E50	1.00	4.00	3.00	50.00	2	30.0	5.0	C	●	●	0.00-0.01
EC-A2 015-045C04E50	1.50	4.00	4.50	50.00	2	30.0	5.0	C	●	●	0.00-0.02
EC-A2 02-08C02E32	2.00	2.00	8.00	32.00	2	30.0	5.0	C	●	●	0.01-0.03
EC-A2 025-08C025E32	2.50	2.50	8.00	32.00	2	30.0	5.0	C	●	●	0.01-0.03
EC-A2 03-12C03E38	3.00	3.00	12.00	38.00	2	30.0	5.0	C	●	●	0.01-0.04
EC-A2 035-12C035E32	3.50	3.50	12.00	32.00	2	30.0	5.0	C	●	●	0.01-0.04
EC-A2 04-12C04E50	4.00	4.00	12.00	50.00	2	30.0	5.0	C	●	●	0.02-0.05
EC-A2 045-14C045E50	4.50	4.50	14.00	50.00	2	30.0	5.0	C	●	●	0.02-0.05
EC-A2 05-14C05E50	5.00	5.00	14.00	50.00	2	30.0	5.0	C	●	●	0.02-0.06
EC-A2 055-16C055E50	5.50	5.50	16.00	50.00	2	30.0	5.0	C	●	●	0.02-0.06
EC-A2 06-16C06E50	6.00	6.00	16.00	50.00	2	30.0	5.0	C	●	●	0.03-0.07
EC-A2 07-20C07E60	7.00	7.00	20.00	60.00	2	30.0	5.0	C	●	●	0.03-0.08
EC-A2 08-20C08E63	8.00	8.00	20.00	63.00	2	30.0	5.0	C	●	●	0.03-0.09
EC-A2 09-20C09E60	9.00	9.00	20.00	60.00	2	30.0	5.0	C	●	●	0.03-0.09
EC-A2 10-22C10E72	10.00	10.00	22.00	72.00	2	30.0	5.0	C	●	●	0.03-0.10
EC-A2 12-22C12E70	12.00	12.00	22.00	70.00	2	30.0	5.0	C	●	●	0.04-0.11

⁽¹⁾ C-Cylindrical

2 Flute, 30° Helix Medium Length Solid Carbide Slot / Drill Endmills with Chamfered Corners

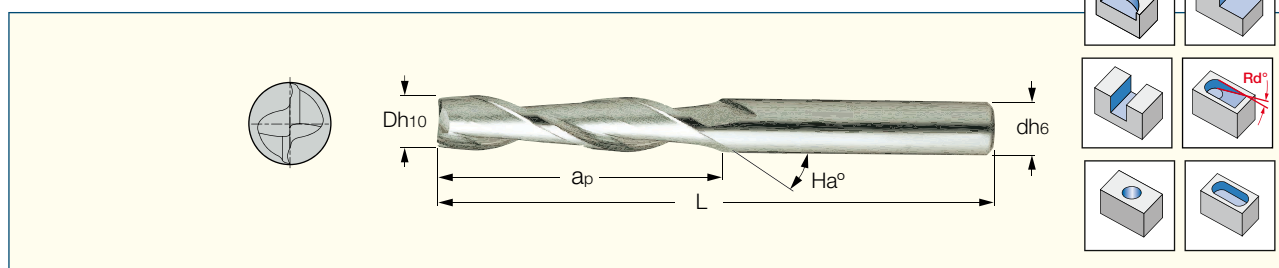


Designation	Dimensions								Tough ↔ Hard		Recommended Machining Data f _z (mm/t)
	D	d	Flute	a _p	L	R _d °	Shank ⁽¹⁾	Ch	IC300	IC900	
ECC020B07-2C03	2.00	3.00	2	7.00	38.00	5.0	C	0.10	●	●	0.01-0.03
ECC025A07-2C03	2.50	3.00	2	7.00	38.00	5.0	C	0.10	●	●	0.01-0.03
ECC030A10-2C03	3.00	3.00	2	10.00	38.00	5.0	C	0.10	●	●	0.01-0.04
ECC035A12-2C04	3.50	4.00	2	12.00	50.00	5.0	C	0.10	●	●	0.01-0.04
ECC040A12-2C04	4.00	4.00	2	12.00	50.00	5.0	C	0.15	●	●	0.02-0.05
ECC050A14-2C05	5.00	5.00	2	14.00	50.00	5.0	C	0.15	●	●	0.02-0.06
ECC060A16-2C06	6.00	6.00	2	16.00	57.00	5.0	C	0.15	●	●	0.03-0.07
ECC060A16-2W06	6.00	6.00	2	16.00	57.00	5.0	W	0.15	●	●	0.03-0.07
ECC080A20-2C08	8.00	8.00	2	20.00	63.00	5.0	C	0.15	●	●	0.03-0.09
ECC100A22-2C10	10.00	10.00	2	22.00	72.00	5.0	C	0.25	●	●	0.03-0.10
ECC120A25-2C12	12.00	12.00	2	25.00	83.00	5.0	C	0.25	●	●	0.04-0.11

⁽¹⁾ C-Cylindrical, W-Weldon

EC-A2(economical-extra long)

Economical Type 2 Flute, 30° Helix Center Cutting Extra Long Solid Carbide Endmills



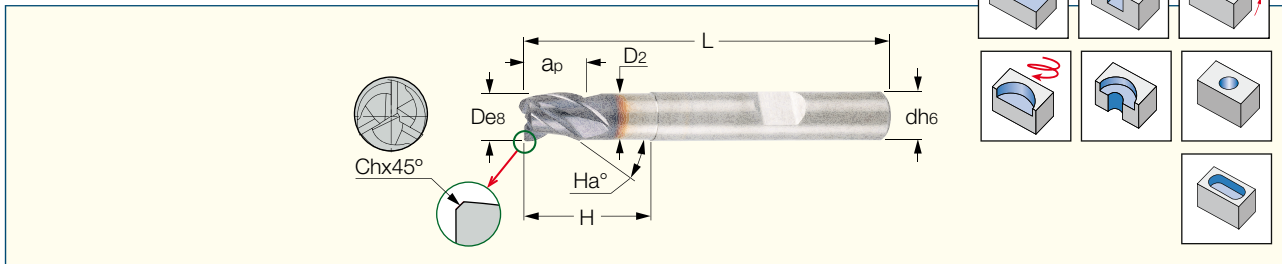
Designation	Dimensions								Tough ↔ Hard		Recommended Machining Data f _z (mm/t)
	D	d	a _p	L	Flute	H _a °	R _d °	Shank ⁽¹⁾	IC08	IC900	
EC-A2 03-30C03E75	3.00	3.00	30.00	75.00	2	30.0	5.0	C	●	●	0.01-0.04
EC-A2 04-30C04E75	4.00	4.00	30.00	75.00	2	30.0	5.0	C	●	●	0.02-0.05
EC-A2 05-40C05E100	5.00	5.00	40.00	100.00	2	30.0	5.0	C	●	●	0.02-0.06
EC-A2 06-50C06E150	6.00	6.00	50.00	150.00	2	30.0	5.0	C	●	●	0.03-0.07
EC-A2 08-50C08E150	8.00	8.00	50.00	150.00	2	30.0	5.0	C	●	●	0.03-0.09
EC-A2 10-60C10E150	10.00	10.00	60.00	150.00	2	30.0	5.0	C	●	●	0.03-0.10
EC-A2 12-75C12E150	12.00	12.00	75.00	150.00	2	30.0	5.0	C	●	●	0.04-0.11

⁽¹⁾ C-Cylindrical

SOLIDMILL

PREMIUM LINE
ECS/ECCS-E-3

3 Flute 38° Helix with 3xD Relieved Necks, Short Solid Carbide Slot / Drill Endmills, with Chamfered Corners



Designation	Dimensions											Tough ↔ Hard		Recommended Machining Data f _z (mm/t)
	D	d	a _p	H	D ₂	L	Flute	H _a °	R _d °	Shank ⁽¹⁾	Ch	IC300	IC900	
ECS020E03-3W06-57	2.00	6.00	3.00	8.00	1.90	57.00	3	38.0	5.0	W	-		●	0.01-0.03
ECS025E03-3W06-57	2.50	6.00	3.00	8.00	2.40	57.00	3	38.0	5.0	W	-		●	0.01-0.03
ECS030E04-3W06-57	3.00	6.00	4.00	9.00	2.90	57.00	3	38.0	5.0	W	-		●	0.01-0.04
ECS035E04-3W06-57	3.50	6.00	4.00	12.00	3.40	57.00	3	38.0	5.0	W	-		●	0.01-0.04
ECS040E05-3W06-57	4.00	6.00	5.00	13.00	3.90	57.00	3	38.0	5.0	W	-	●	●	0.02-0.05
ECS050E06-3W06-57	5.00	6.00	6.00	14.00	4.90	57.00	3	38.0	5.0	W	-		●	0.02-0.06
ECCS060E07-3W06-57	6.00	6.00	7.00	15.00	5.90	57.00	3	38.0	5.0	W	0.15		●	0.03-0.07
ECCS070E08-3W08-63	7.00	8.00	8.00	20.00	6.70	63.00	3	38.0	5.0	W	0.15		●	0.03-0.08
ECCS080E09-3W08-63	8.00	8.00	9.00	21.00	7.60	63.00	3	38.0	5.0	W	0.15		●	0.03-0.09
ECCS090E10-3W10-72	9.00	10.00	10.00	22.00	8.60	72.00	3	38.0	5.0	W	0.15		●	0.03-0.09
ECCS100E11-3W10-72	10.00	10.00	11.00	23.00	9.50	72.00	3	38.0	5.0	W	0.25		●	0.03-0.10
ECCS120E12-3W12-83	12.00	12.00	12.00	24.00	11.30	83.00	3	38.0	5.0	W	0.25		●	0.04-0.11

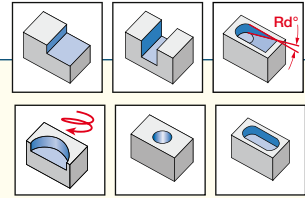
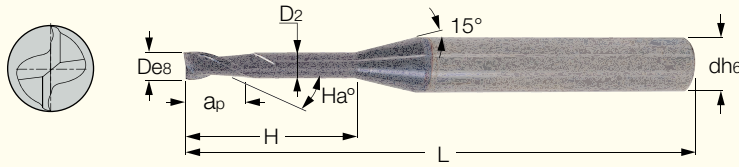
⁽¹⁾ W-Weldon

SOLIDMILL

PREMIUM LINE

EC-A2 (rib processing)

2 Flute, 30° Helix Solid Carbide Endmills, for Rib Processing on Hard Materials
up to 65 HRc



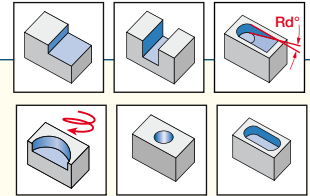
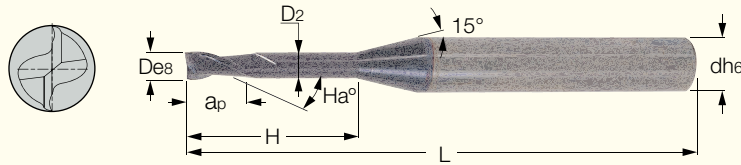
HARD MATERIALS

Designation	Dimensions										IC903	Recommended Machining Data
	D	d	ap	H	L	D2	Flute	Ha°	Rd°	Shank ⁽¹⁾		fz (mm/t)
EC-A2 004-006/02C4M45	0.40	4.00	0.60	2.00	45.00	0.37	2	30.0	3.0	C	●	0.01-0.01
EC-A2 004-006/03C4M45	0.40	4.00	0.60	3.00	45.00	0.37	2	30.0	3.0	C	●	0.01-0.01
EC-A2 004-006/04C4M45	0.40	4.00	0.60	4.00	45.00	0.37	2	30.0	3.0	C	●	0.01-0.01
EC-A2 004-006/05C4M45	0.40	4.00	0.60	5.00	45.00	0.37	2	30.0	3.0	C	●	0.01-0.01
EC-A2 005-007/02C4M45	0.50	4.00	0.70	2.00	45.00	0.45	2	30.0	3.0	C	●	0.01-0.01
EC-A2 005-007/04C4M45	0.50	4.00	0.70	4.00	45.00	0.45	2	30.0	3.0	C	●	0.01-0.01
EC-A2 005-007/06C4M45	0.50	4.00	0.70	6.00	45.00	0.45	2	30.0	3.0	C	●	0.01-0.01
EC-A2 005-007/08C4M45	0.50	4.00	0.70	8.00	45.00	0.45	2	30.0	3.0	C	●	0.01-0.01
EC-A2 006-009/02C4M45	0.60	4.00	0.90	2.00	45.00	0.55	2	30.0	3.0	C	●	0.01-0.02
EC-A2 006-009/04C4M45	0.60	4.00	0.90	4.00	45.00	0.55	2	30.0	3.0	C	●	0.01-0.02
EC-A2 006-009/06C4M45	0.60	4.00	0.90	6.00	45.00	0.55	2	30.0	3.0	C	●	0.01-0.02
EC-A2 006-009/08C4M45	0.60	4.00	0.90	8.00	45.00	0.55	2	30.0	3.0	C	●	0.01-0.02
EC-A2 006-009/10C4M45	0.60	4.00	0.90	10.00	45.00	0.55	2	30.0	3.0	C	●	0.01-0.02
EC-A2 007-010/02C4M45	0.70	4.00	1.00	2.00	45.00	0.65	2	30.0	3.0	C	●	0.01-0.03
EC-A2 007-010/08C4M45	0.70	4.00	1.00	8.00	45.00	0.65	2	30.0	3.0	C	●	0.01-0.03
EC-A2 008-012/04C4M45	0.80	4.00	1.20	4.00	45.00	0.75	2	30.0	3.0	C	●	0.01-0.03
EC-A2 008-012/06C4M45	0.80	4.00	1.20	6.00	45.00	0.75	2	30.0	3.0	C	●	0.01-0.03
EC-A2 008-012/08C4M45	0.80	4.00	1.20	8.00	45.00	0.75	2	30.0	3.0	C	●	0.01-0.03
EC-A2 008-012/10C4M45	0.80	4.00	1.20	10.00	45.00	0.75	2	30.0	3.0	C	●	0.01-0.03
EC-A2 009-0135/06C4M45	0.90	4.00	1.35	6.00	45.00	0.85	2	30.0	3.0	C	●	0.01-0.03
EC-A2 009-0135/10C4M45	0.90	4.00	1.35	10.00	45.00	0.85	2	30.0	3.0	C	●	0.01-0.03
EC-A2 009-0135/15C4M50	0.90	4.00	1.35	15.00	50.00	0.85	2	30.0	3.0	C	●	0.01-0.03
EC-A2 010-015/04C4M45	1.00	4.00	1.50	4.00	45.00	0.97	2	30.0	3.0	C	●	0.01-0.01
EC-A2 010-015/06C4M45	1.00	4.00	1.50	6.00	45.00	0.97	2	30.0	3.0	C	●	0.01-0.01
EC-A2 010-015/08C4M45	1.00	4.00	1.50	8.00	45.00	0.95	2	30.0	3.0	C	●	0.01-0.01
EC-A2 010-015/10C4M45	1.00	4.00	1.50	10.00	45.00	0.95	2	30.0	3.0	C	●	0.01-0.01
EC-A2 010-015/12C4M45	1.00	4.00	1.50	12.00	45.00	0.93	2	30.0	3.0	C	●	0.01-0.01
EC-A2 010-015/16C4M50	1.00	4.00	1.50	16.00	50.00	0.93	2	30.0	3.0	C	●	0.01-0.01
EC-A2 010-015/20C4M55	1.00	4.00	1.50	20.00	55.00	0.93	2	30.0	3.0	C	●	0.01-0.01
EC-A2 012-018/06C4M45	1.20	4.00	1.80	6.00	45.00	1.17	2	30.0	3.0	C	●	0.01-0.01
EC-A2 012-018/08C4M45	1.20	4.00	1.80	8.00	45.00	1.15	2	30.0	3.0	C	●	0.01-0.01
EC-A2 012-018/10C4M45	1.20	4.00	1.80	10.00	45.00	1.15	2	30.0	3.0	C	●	0.01-0.01
EC-A2 012-018/16C4M50	1.20	4.00	1.80	16.00	50.00	1.13	2	30.0	3.0	C	●	0.01-0.01
EC-A2 014-021/06C4M45	1.40	4.00	2.10	6.00	45.00	1.35	2	30.0	3.0	C	●	0.01-0.01
EC-A2 014-021/08C4M45	1.40	4.00	2.10	8.00	45.00	1.35	2	30.0	3.0	C	●	0.01-0.01
EC-A2 014-021/10C4M45	1.40	4.00	2.10	10.00	45.00	1.35	2	30.0	3.0	C	●	0.01-0.01
EC-A2 015-023/06C4M45	1.50	4.00	2.30	6.00	45.00	1.47	2	30.0	3.0	C	●	0.01-0.02
EC-A2 015-023/08C4M45	1.50	4.00	2.30	8.00	45.00	1.45	2	30.0	3.0	C	●	0.01-0.02
EC-A2 015-023/10C4M45	1.50	4.00	2.30	10.00	45.00	1.45	2	30.0	3.0	C	●	0.01-0.02
EC-A2 015-023/12C4M45	1.50	4.00	2.30	12.00	45.00	1.41	2	30.0	3.0	C	●	0.01-0.02
EC-A2 015-023/14C4M50	1.50	4.00	2.30	14.00	50.00	1.41	2	30.0	3.0	C	●	0.01-0.02
EC-A2 015-023/16C4M50	1.50	4.00	2.30	16.00	50.00	1.41	2	30.0	3.0	C	●	0.01-0.02
EC-A2 015-023/20C4M55	1.50	4.00	2.30	20.00	55.00	1.41	2	30.0	3.0	C	●	0.01-0.02
EC-A2 016-024/06C4M45	1.60	4.00	2.40	6.00	45.00	1.57	2	30.0	3.0	C	●	0.01-0.02
EC-A2 016-024/08C4M45	1.60	4.00	2.40	8.00	45.00	1.55	2	30.0	3.0	C	●	0.01-0.02
EC-A2 016-024/10C4M45	1.60	4.00	2.40	10.00	45.00	1.55	2	30.0	3.0	C	●	0.01-0.02
EC-A2 016-024/18C4M55	1.60	4.00	2.40	18.00	55.00	1.53	2	30.0	3.0	C	●	0.01-0.02
EC-A2 016-024/26C4M60	1.60	4.00	2.40	26.00	60.00	1.53	2	30.0	3.0	C	●	0.01-0.02
EC-A2 018-027/06C4M45	1.80	4.00	2.70	6.00	45.00	1.77	2	30.0	3.0	C	●	0.01-0.03
EC-A2 018-027/08C4M45	1.80	4.00	2.70	8.00	45.00	1.75	2	30.0	3.0	C	●	0.01-0.03
EC-A2 018-027/10C4M45	1.80	4.00	2.70	10.00	45.00	1.75	2	30.0	3.0	C	●	0.01-0.03
EC-A2 018-027/12C4M45	1.80	4.00	2.70	12.00	45.00	1.73	2	30.0	3.0	C	●	0.01-0.03
EC-A2 018-027/14C4M50	1.80	4.00	2.70	14.00	50.00	1.73	2	30.0	3.0	C	●	0.01-0.03
EC-A2 020-030/06C4M45	2.00	4.00	3.00	6.00	45.00	1.97	2	30.0	3.0	C	●	0.01-0.03

(1) C-Cylindrical

EC-A2 (rib processing) (continued)

2 Flute, 30° Helix Solid Carbide Endmills, for Rib Processing on Hard Materials
up to 65 HRC



HARD MATERIALS

Designation	Dimensions										IC903	Recommended Machining Data
	D	d	ap	H	L	D2	Flute	Ha°	Ra°	Shank ⁽¹⁾		fz (mm/t)
EC-A2 020-030/08C4M45	2.00	4.00	3.00	8.00	45.00	1.95	2	30.0	3.0	C	●	0.01-0.03
EC-A2 020-030/10C4M45	2.00	4.00	3.00	10.00	45.00	1.95	2	30.0	3.0	C	●	0.01-0.03
EC-A2 020-030/12C4M45	2.00	4.00	3.00	12.00	45.00	1.93	2	30.0	3.0	C	●	0.01-0.03
EC-A2 020-030/14C4M50	2.00	4.00	3.00	14.00	50.00	1.93	2	30.0	3.0	C	●	0.01-0.03
EC-A2 020-030/16C4M50	2.00	4.00	3.00	16.00	50.00	1.91	2	30.0	3.0	C	●	0.01-0.03
EC-A2 020-030/18C4M55	2.00	4.00	3.00	18.00	55.00	1.91	2	30.0	3.0	C	●	0.01-0.03
EC-A2 020-030/20C4M55	2.00	4.00	3.00	20.00	55.00	1.89	2	30.0	3.0	C	●	0.01-0.03
EC-A2 020-030/25C4M60	2.00	4.00	3.00	25.00	60.00	1.89	2	30.0	3.0	C	●	0.01-0.03
EC-A2 020-030/30C4M70	2.00	4.00	3.00	30.00	70.00	1.89	2	30.0	3.0	C	●	0.01-0.03
EC-A2 025-037/08C4M45	2.50	4.00	3.70	8.00	45.00	2.40	2	30.0	3.0	C	●	0.01-0.03
EC-A2 025-037/10C4M45	2.50	4.00	3.70	10.00	45.00	2.40	2	30.0	3.0	C	●	0.01-0.03
EC-A2 025-037/12C4M45	2.50	4.00	3.70	12.00	45.00	2.40	2	30.0	3.0	C	●	0.01-0.03
EC-A2 025-037/14C4M50	2.50	4.00	3.70	14.00	50.00	2.40	2	30.0	3.0	C	●	0.01-0.03
EC-A2 025-037/16C4M55	2.50	4.00	3.70	16.00	55.00	2.40	2	30.0	3.0	C	●	0.01-0.03
EC-A2 025-037/18C4M55	2.50	4.00	3.70	18.00	55.00	2.40	2	30.0	3.0	C	●	0.01-0.03
EC-A2 025-037/20C4M60	2.50	4.00	3.70	20.00	60.00	2.40	2	30.0	3.0	C	●	0.01-0.03
EC-A2 025-037/25C4M70	2.50	4.00	3.70	25.00	70.00	2.40	2	30.0	3.0	C	●	0.01-0.03
EC-A2 025-037/30C4M80	2.50	4.00	3.70	30.00	80.00	2.40	2	30.0	3.0	C	●	0.01-0.03
EC-A2 030-045/08C6M45	3.00	6.00	4.50	8.00	45.00	2.85	2	30.0	3.0	C	●	0.01-0.04
EC-A2 030-045/10C6M45	3.00	6.00	4.50	10.00	45.00	2.85	2	30.0	3.0	C	●	0.01-0.04
EC-A2 030-045/12C6M45	3.00	6.00	4.50	12.00	45.00	2.85	2	30.0	3.0	C	●	0.01-0.04
EC-A2 030-045/14C6M50	3.00	6.00	4.50	14.00	50.00	2.85	2	30.0	3.0	C	●	0.01-0.04
EC-A2 030-045/16C6M55	3.00	6.00	4.50	16.00	55.00	2.85	2	30.0	3.0	C	●	0.01-0.04
EC-A2 030-045/18C6M55	3.00	6.00	4.50	18.00	55.00	2.85	2	30.0	3.0	C	●	0.01-0.04
EC-A2 030-045/20C6M60	3.00	6.00	4.50	20.00	60.00	2.85	2	30.0	3.0	C	●	0.01-0.04
EC-A2 030-045/25C6M65	3.00	6.00	4.50	25.00	65.00	2.85	2	30.0	3.0	C	●	0.01-0.04
EC-A2 030-045/30C6M70	3.00	6.00	4.50	30.00	70.00	2.85	2	30.0	3.0	C	●	0.01-0.04
EC-A2 030-045/35C6M80	3.00	6.00	4.50	35.00	80.00	2.85	2	30.0	3.0	C	●	0.01-0.04
EC-A2 030-045/40C6M90	3.00	6.00	4.50	40.00	90.00	2.85	2	30.0	3.0	C	●	0.01-0.04
EC-A2 040-060/12C6M50	4.00	6.00	6.00	12.00	50.00	3.80	2	30.0	3.0	C	●	0.02-0.05
EC-A2 040-060/16C6M60	4.00	6.00	6.00	16.00	60.00	3.80	2	30.0	3.0	C	●	0.02-0.05
EC-A2 040-060/20C6M60	4.00	6.00	6.00	20.00	60.00	3.80	2	30.0	3.0	C	●	0.02-0.05
EC-A2 040-060/25C6M70	4.00	6.00	6.00	25.00	70.00	3.80	2	30.0	3.0	C	●	0.02-0.05
EC-A2 040-060/30C6M70	4.00	6.00	6.00	30.00	70.00	3.80	2	30.0	3.0	C	●	0.02-0.05
EC-A2 040-060/35C6M80	4.00	6.00	6.00	35.00	80.00	3.80	2	30.0	3.0	C	●	0.02-0.05
EC-A2 040-060/40C6M90	4.00	6.00	6.00	40.00	90.00	3.80	2	30.0	3.0	C	●	0.02-0.05
EC-A2 040-060/45C6M90	4.00	6.00	6.00	45.00	90.00	3.80	2	30.0	3.0	C	●	0.02-0.05
EC-A2 040-060/50C6M100	4.00	6.00	6.00	50.00	100.00	3.80	2	30.0	3.0	C	●	0.02-0.05
EC-A2 050-075/16C6M60	5.00	6.00	7.50	16.00	60.00	4.80	2	30.0	3.0	C	●	0.02-0.06
EC-A2 050-075/20C6M60	5.00	6.00	7.50	20.00	60.00	4.80	2	30.0	3.0	C	●	0.02-0.06
EC-A2 050-075/25C6M70	5.00	6.00	7.50	25.00	70.00	4.80	2	30.0	3.0	C	●	0.02-0.06
EC-A2 050-075/30C6M80	5.00	6.00	7.50	30.00	80.00	4.80	2	30.0	3.0	C	●	0.02-0.06
EC-A2 050-075/35C6M80	5.00	6.00	7.50	35.00	80.00	4.80	2	30.0	3.0	C	●	0.02-0.06
EC-A2 050-075/40C6M80	5.00	6.00	7.50	40.00	80.00	4.80	2	30.0	3.0	C	●	0.02-0.06
EC-A2 050-075/50C6M110	5.00	6.00	7.50	50.00	110.00	4.80	2	30.0	3.0	C	●	0.02-0.06
EC-A2 060-090/20C6M80	6.00	6.00	9.00	20.00	80.00	5.70	2	30.0	3.0	C	●	0.02-0.06
EC-A2 060-090/30C6M90	6.00	6.00	9.00	30.00	90.00	5.70	2	30.0	3.0	C	●	0.02-0.06
EC-A2 060-090/40C6M100	6.00	6.00	9.00	40.00	100.00	5.60	2	30.0	3.0	C	●	0.02-0.06
EC-A2 060-090/50C6M110	6.00	6.00	9.00	50.00	110.00	5.60	2	30.0	3.0	C	●	0.02-0.06

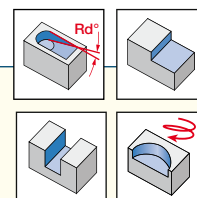
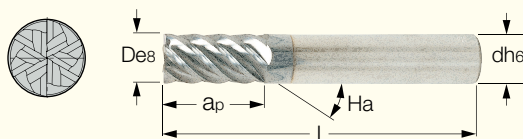
⁽¹⁾ C-Cylindrical

SOLIDMILL

PREMIUM LINE

ECH-B-6

6 Flute, 45° Helix Medium Length Solid Carbide Endmills, for Finishing of Hard Materials up to 65 HRc



HARD MATERIALS

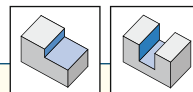
Designation	Dimensions							Tough ↔ Hard		Recommended Machining Data
	D	d	a _p	L	Flute	H _a °	Shank ⁽¹⁾	IC900	IC903	
ECH060B16-6C06	6.00	6.00	16.00	57.00	6	45.0	C	●	●	0.03-0.07
ECH060B16-6W06	6.00	6.00	16.00	57.00	6	45.0	W	●		0.03-0.07
ECH080B20-6C08	8.00	8.00	20.00	63.00	6	45.0	C	●	●	0.03-0.09
ECH080B20-6W08	8.00	8.00	20.00	63.00	6	45.0	W	●		0.03-0.09
ECH100B22-6C10	10.00	10.00	22.00	72.00	6	45.0	C	●	●	0.03-0.10
ECH100B22-6W10	10.00	10.00	22.00	72.00	6	45.0	W	●		0.03-0.10
ECH120B25-6C12	12.00	12.00	25.00	83.00	6	45.0	C	●	●	0.04-0.11
ECH120B25-6W12	12.00	12.00	25.00	83.00	6	45.0	W	●		0.04-0.11

• Use IC903 for machining hardened steel up to 65 HRc

⁽¹⁾ C-Cylindrical, W-Weldon

EC-B6

6 Flute, 45° Helix Extra Long Solid Carbide Endmills, for Finishing of Hard Materials up to 65 HRc

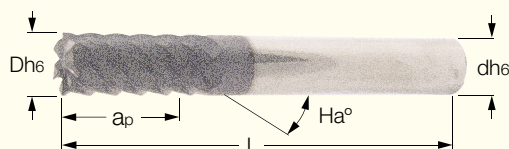
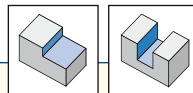

HARD MATERIALS

Designation	Dimensions							IC903	Recommended Machining Data
	D	d	a _p	L	Flute	Ha°	Shank ⁽¹⁾		f _z (mm/t)
EC-B6 060-026C06-70	6.00	6.00	26.00	70.00	6	45.0	C	●	0.03-0.07
EC-B6 080-036C08-90	8.00	8.00	36.00	90.00	6	45.0	C	●	0.03-0.09
EC-B6 100-46C10-100	10.00	10.00	46.00	100.00	6	45.0	C	●	0.03-0.10
EC-B6 120-56C12-110	12.00	12.00	56.00	110.00	6	45.0	C	●	0.04-0.11

⁽¹⁾ C-Cylindrical

EC-D6

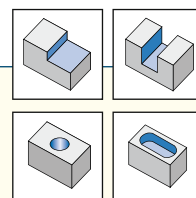
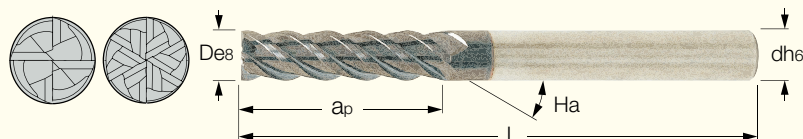
6 Flute, 50° Helix Medium Length Solid Carbide Endmills, for Finishing of Hard Materials up to 65 HRc


HARD MATERIALS

Designation	Dimensions								IC903	Recommended Machining Data
	D	d	a _p	L	Flute	Ha°	Shank ⁽¹⁾	R _d °		f _z (mm/t)
EC-D6 06-13C06H57	6.00	6.00	13.00	57.00	6	50.0	C	5.0	●	0.03-0.07
EC-D6 08-20C08H63	8.00	8.00	20.00	63.00	6	50.0	C	5.0	●	0.03-0.09
EC-D6 10-22C10H72	10.00	10.00	22.00	72.00	6	50.0	C	5.0	●	0.03-0.10
EC-D6 12-25C12H83	12.00	12.00	25.00	83.00	6	50.0	C	5.0	●	0.04-0.11
EC-D6 12-25W12H83	12.00	12.00	25.00	83.00	6	50.0	W	5.0	●	0.04-0.11

⁽¹⁾ W-Weldon, C-Cylindrical

4 & 6 Flute, 45° Helix Long Solid Carbide Endmills

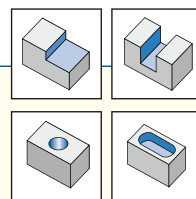
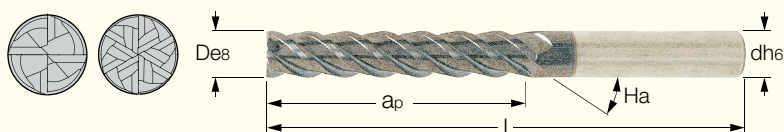


Designation	Dimensions							IC900	Recommended Machining Data
	D	d	ap	L	Flute	Ha°	Shank ⁽¹⁾		f _z (mm/t)
ECL060B24-4C06	6.00	6.00	24.00	65.00	4	45.0	C	●	0.03-0.07
ECL060B24-4W06	6.00	6.00	24.00	65.00	4	45.0	W	●	0.03-0.07
ECL080B32-4C08	8.00	8.00	32.00	80.00	4	45.0	C	●	0.03-0.09
ECL080B32-4W08	8.00	8.00	32.00	80.00	4	45.0	W	●	0.03-0.09
ECL100B40-4C10	10.00	10.00	40.00	100.00	4	45.0	C	●	0.03-0.10
ECL100B40-4W10	10.00	10.00	40.00	100.00	4	45.0	W	●	0.03-0.10
ECL120B48-4C12	12.00	12.00	48.00	100.00	4	45.0	C	●	0.04-0.11
ECL120B48-4W12	12.00	12.00	48.00	100.00	4	45.0	W	●	0.04-0.11

• Smooth cutting in extra long depth

⁽¹⁾ C-Cylindrical, W-Weldon

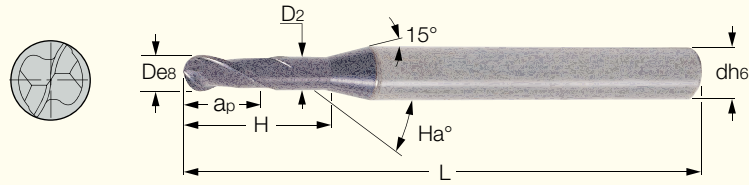
4 & 6 Flute, 45° Helix Extra Long Solid Carbide Endmills



Designation	Dimensions							IC900	Recommended Machining Data
	D	d	ap	L	Flute	Ha°	Shank ⁽¹⁾		f _z (mm/t)
ECXL100B60-4C10	10.00	10.00	60.00	112.00	4	45.0	C	●	0.03-0.10
ECXL100B60-4W10	10.00	10.00	60.00	112.00	4	45.0	W	●	0.03-0.10
ECXL120B72-4C12	12.00	12.00	72.00	150.00	4	45.0	C	●	0.04-0.11
ECXL120B72-4W12	12.00	12.00	72.00	150.00	4	45.0	W	●	0.04-0.11

• Smooth cutting in extra long depth.

⁽¹⁾ C-Cylindrical, W-Weldon



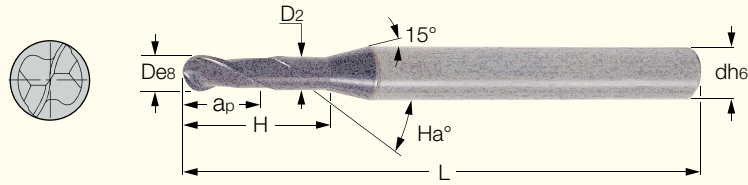
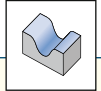
HARD MATERIALS

Designation	Dimensions									IC903
	D	d	ap	L	H	D2	Flute	Ha°	Shank ⁽¹⁾	
EB-A2 004-006/01C4M45	0.40	4.00	0.60	45.00	1.00	0.36	2	30.0	C	●
EB-A2 004-006/02C4M45	0.40	4.00	0.60	45.00	2.00	0.36	2	30.0	C	●
EB-A2 004-006/03C4M45	0.40	4.00	0.60	45.00	3.00	0.36	2	30.0	C	●
EB-A2 005-007/02C4M45	0.50	4.00	0.70	45.00	2.00	0.45	2	30.0	C	●
EB-A2 005-007/04C4M45	0.50	4.00	0.70	45.00	4.00	0.45	2	30.0	C	●
EB-A2 005-007/06C4M45	0.50	4.00	0.70	45.00	6.00	0.45	2	30.0	C	●
EB-A2 005-007/08C4M45	0.50	4.00	0.70	45.00	8.00	0.45	2	30.0	C	●
EB-A2 006-009/02C4M45	0.60	4.00	0.90	45.00	2.00	0.55	2	30.0	C	●
EB-A2 006-009/04C4M45	0.60	4.00	0.90	45.00	4.00	0.55	2	30.0	C	●
EB-A2 006-009/06C4M45	0.60	4.00	0.90	45.00	6.00	0.55	2	30.0	C	●
EB-A2 006-009/08C4M45	0.60	4.00	0.90	45.00	8.00	0.55	2	30.0	C	●
EB-A2 008-012/02C4M45	0.80	4.00	1.20	45.00	2.00	0.75	2	30.0	C	●
EB-A2 008-012/04C4M45	0.80	4.00	1.20	45.00	4.00	0.75	2	30.0	C	●
EB-A2 008-012/06C4M45	0.80	4.00	1.20	45.00	6.00	0.75	2	30.0	C	●
EB-A2 008-012/10C4M45	0.80	4.00	1.20	45.00	10.00	0.75	2	30.0	C	●
EB-A2 010-015/03C4M45	1.00	4.00	1.50	45.00	3.00	0.97	2	30.0	C	●
EB-A2 010-015/04C4M45	1.00	4.00	1.50	45.00	4.00	0.97	2	30.0	C	●
EB-A2 010-015/05C4M45	1.00	4.00	1.50	45.00	5.00	0.97	2	30.0	C	●
EB-A2 010-015/06C4M45	1.00	4.00	1.50	45.00	6.00	0.97	2	30.0	C	●
EB-A2 010-015/07C4M45	1.00	4.00	1.50	45.00	7.00	0.95	2	30.0	C	●
EB-A2 010-015/08C4M45	1.00	4.00	1.50	45.00	8.00	0.95	2	30.0	C	●
EB-A2 010-015/10C4M45	1.00	4.00	1.50	45.00	10.00	0.95	2	30.0	C	●
EB-A2 010-015/12C4M45	1.00	4.00	1.50	45.00	12.00	0.93	2	30.0	C	●
EB-A2 010-015/14C4M50	1.00	4.00	1.50	50.00	14.00	0.93	2	30.0	C	●
EB-A2 010-015/16C4M50	1.00	4.00	1.50	50.00	16.00	0.93	2	30.0	C	●
EB-A2 010-015/20C4M55	1.00	4.00	1.50	55.00	20.00	0.93	2	30.0	C	●
EB-A2 012-018/08C4M45	1.20	4.00	1.80	45.00	8.00	1.17	2	30.0	C	●
EB-A2 012-018/12C4M45	1.20	4.00	1.80	45.00	12.00	1.13	2	30.0	C	●
EB-A2 014-021/08C4M45	1.40	4.00	2.10	45.00	8.00	1.35	2	30.0	C	●
EB-A2 014-021/16C4M50	1.40	4.00	2.10	50.00	16.00	1.31	2	30.0	C	●
EB-A2 015-015/03C04M50	1.50	4.00	1.50	50.00	3.00	1.47	2	30.0	C	●
EB-A2 015-023/06C4M45	1.50	4.00	2.30	45.00	6.00	1.47	2	30.0	C	●
EB-A2 015-023/08C4M45	1.50	4.00	2.30	45.00	8.00	1.45	2	30.0	C	●
EB-A2 015-023/10C4M45	1.50	4.00	2.30	45.00	10.00	1.45	2	30.0	C	●
EB-A2 015-023/12C4M45	1.50	4.00	2.30	45.00	12.00	1.43	2	30.0	C	●
EB-A2 015-023/16C4M50	1.50	4.00	2.30	50.00	16.00	1.41	2	30.0	C	●
EB-A2 015-023/20C4M55	1.50	4.00	2.30	55.00	20.00	1.39	2	30.0	C	●
EB-A2 016-024/08C4M45	1.60	4.00	2.40	45.00	8.00	1.55	2	30.0	C	●
EB-A2 016-024/12C4M45	1.60	4.00	2.40	45.00	12.00	1.53	2	30.0	C	●
EB-A2 018-027/08C4M45	1.80	4.00	2.70	45.00	8.00	1.75	2	30.0	C	●
EB-A2 018-027/12C4M45	1.80	4.00	2.70	45.00	12.00	1.73	2	30.0	C	●
EB-A2 018-027/16C4M50	1.80	4.00	2.70	50.00	16.00	1.71	2	30.0	C	●
EB-A2 020-030/04C4M45	2.00	4.00	3.00	45.00	4.00	1.97	2	30.0	C	●
EB-A2 020-030/06C4M45	2.00	4.00	3.00	45.00	6.00	1.97	2	30.0	C	●
EB-A2 020-030/10C4M45	2.00	4.00	3.00	45.00	10.00	1.93	2	30.0	C	●
EB-A2 020-030/12C4M50	2.00	4.00	3.00	50.00	12.00	1.93	2	30.0	C	●
EB-A2 020-030/14C4M50	2.00	4.00	3.00	50.00	14.00	1.93	2	30.0	C	●
EB-A2 020-030/16C4M50	2.00	4.00	3.00	50.00	16.00	1.91	2	30.0	C	●
EB-A2 020-030/20C4M55	2.00	4.00	3.00	55.00	20.00	1.89	2	30.0	C	●
EB-A2 020-030/25C4M60	2.00	4.00	3.00	60.00	25.00	1.89	2	30.0	C	●
EB-A2 020-030/30C4M70	2.00	4.00	3.00	70.00	30.00	1.89	2	30.0	C	●
EB-A2 030-045/08C6M50	3.00	6.00	4.50	50.00	8.00	2.85	2	30.0	C	●
EB-A2 030-045/10C6M50	3.00	6.00	4.50	50.00	10.00	2.85	2	30.0	C	●

⁽¹⁾ C-Cylindrical

EB-A2 (rib processing) (continued)

2 Flute, 30° Helix Rib Processing Solid Carbide Ball Nose Endmills, for Materials up to 65 HRc

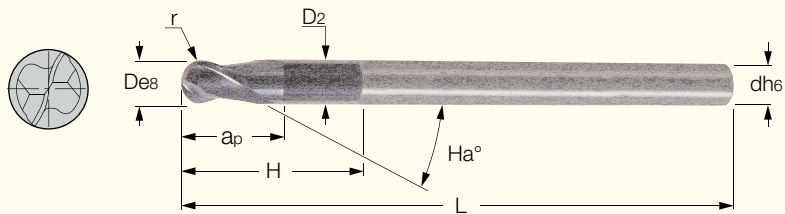
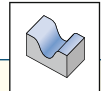


Designation	Dimensions									IC903
	D	d	ap	L	H	D2	Flute	Ha°	Shank ⁽¹⁾	
EB-A2 030-045/12C6M50	3.00	6.00	4.50	50.00	12.00	2.85	2	30.0	C	●
EB-A2 030-045/16C6M55	3.00	6.00	4.50	55.00	16.00	2.85	2	30.0	C	●
EB-A2 030-045/20C6M60	3.00	6.00	4.50	60.00	20.00	2.85	2	30.0	C	●
EB-A2 030-045/25C6M65	3.00	6.00	4.50	65.00	25.00	2.85	2	30.0	C	●
EB-A2 030-045/30C6M70	3.00	6.00	4.50	70.00	30.00	2.85	2	30.0	C	●
EB-A2 030-045/35C6M80	3.00	6.00	4.50	80.00	35.00	2.85	2	30.0	C	●
EB-A2 040-060/10C6M60	4.00	6.00	6.00	60.00	10.00	3.80	2	30.0	C	●
EB-A2 040-060/12C6M60	4.00	6.00	6.00	60.00	12.00	3.80	2	30.0	C	●
EB-A2 040-060/16C6M60	4.00	6.00	6.00	60.00	16.00	3.80	2	30.0	C	●
EB-A2 040-060/20C6M65	4.00	6.00	6.00	65.00	20.00	3.80	2	30.0	C	●
EB-A2 040-060/25C6M70	4.00	6.00	6.00	70.00	25.00	3.80	2	30.0	C	●
EB-A2 040-060/30C6M70	4.00	6.00	6.00	70.00	30.00	3.80	2	30.0	C	●
EB-A2 040-060/35C6M80	4.00	6.00	6.00	80.00	35.00	3.80	2	30.0	C	●
EB-A2 040-060/45C6M90	4.00	6.00	6.00	90.00	45.00	3.80	2	30.0	C	●
EB-A2 050-075/20C6M60	5.00	6.00	7.50	60.00	20.00	4.80	2	30.0	C	●
EB-A2 050-075/25C6M70	5.00	6.00	7.50	70.00	25.00	4.80	2	30.0	C	●
EB-A2 050-075/30C6M80	5.00	6.00	7.50	80.00	30.00	4.80	2	30.0	C	●
EB-A2 050-075/35C6M80	5.00	6.00	7.50	80.00	35.00	4.80	2	30.0	C	●
EB-A2 060-090/20C6M80	6.00	6.00	9.00	80.00	20.00	5.80	2	30.0	C	●
EB-A2 060-090/30C6M90	6.00	6.00	9.00	90.00	30.00	5.80	2	30.0	C	●
EB-A2 060-090/40C6M100	6.00	6.00	9.00	100.00	40.00	5.80	2	30.0	C	●
EB-A2 060-090/50C6M110	6.00	6.00	9.00	110.00	50.00	5.80	2	30.0	C	●

⁽¹⁾ C-Cylindrical

EB-A2 (precision stub cut)

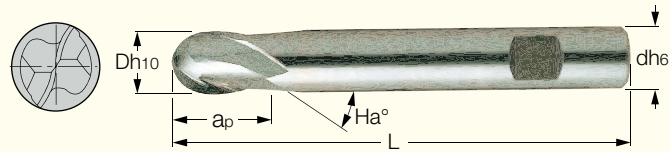
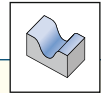
High Precision Ball Nose with 2 Flutes 30° Helix, Stub Cut Length and Relieved Necks, for Materials up to 65 HRc



HARD MATERIALS

Designation	Dimensions										IC903
	D	r	d	ap	H	L	D2	Flute	Ha°	Shank ⁽¹⁾	
EB-A2 01-01/02C04M50	1.00	0.50	4.00	1.00	2.20	50.00	0.95	2	30.0	C	●
EB-A2 01-01/02C06M50	1.00	0.50	6.00	1.00	2.20	50.00	0.95	2	30.0	C	●
EB-A2 012-012/02C04M50	1.20	0.60	4.00	1.20	2.60	50.00	1.10	2	30.0	C	●
EB-A2 02-02/04C06M50	2.00	1.00	6.00	2.00	4.00	50.00	1.90	2	30.0	C	●
EB-A2 025-025/05C06M60	2.50	1.25	6.00	2.50	5.00	60.00	2.40	2	30.0	C	●
EB-A2 03-03/06C06M60	3.00	1.50	6.00	3.00	6.00	60.00	2.90	2	30.0	C	●
EB-A2 04-04/08C06M70	4.00	2.00	6.00	4.00	8.00	70.00	3.90	2	30.0	C	●
EB-A2 05-05/10C06M80	5.00	2.50	6.00	5.00	10.00	80.00	4.90	2	30.0	C	●
EB-A2 06-06/12C06M90	6.00	3.00	6.00	6.00	12.00	90.00	5.90	2	30.0	C	●
EB-A2 07-07/14C08M90	7.00	3.50	8.00	7.00	14.00	90.00	6.90	2	30.0	C	●
EB-A2 08-08/16C08M100	8.00	4.00	8.00	8.00	16.00	100.00	7.90	2	30.0	C	●
EB-A2 09-09/18C10M100	9.00	4.50	10.00	9.00	18.00	100.00	8.90	2	30.0	C	●
EB-A2 10-10/20C10M100	10.00	5.00	10.00	10.00	20.00	100.00	9.90	2	30.0	C	●
EB-A2 12-12/24C12M110	12.00	6.00	12.00	12.00	24.00	110.00	11.90	2	30.0	C	●

⁽¹⁾ C-Cylindrical



Designation	Dimensions							Tough ↔ Hard	
	D	d	a _p	L	Flute	H _a °	Shank ⁽¹⁾	IC08	IC900
EB-A2 02-06C03E38	2.00	3.00	6.00	38.00	2	30.0	C	●	●
EB-A2 02-04C06E48	2.00	6.00	4.00	48.00	2	30.0	C	●	●
EB-A2 025-04C06E48	2.50	6.00	4.00	48.00	2	30.0	C	●	●
EB-A2 03-04C06E48	3.00	6.00	4.00	48.00	2	30.0	C	●	●
EB-A2 03-07W06E57	3.00	6.00	7.00	57.00	2	30.0	W	●	●
EB-A2 04-06C06E50	4.00	6.00	6.00	50.00	2	30.0	C	●	●
EB-A2 04-08W06E57	4.00	6.00	8.00	57.00	2	30.0	W	●	●
EB-A2 05-07C06E51	5.00	6.00	7.00	51.00	2	30.0	C	●	
EB-A2 05-10W06E57	5.00	6.00	10.00	57.00	2	30.0	W	●	●
EB-A2 06-07C06E51	6.00	6.00	7.00	51.00	2	30.0	C	●	●
EB-A2 06-10W06E57	6.00	6.00	10.00	57.00	2	30.0	W	●	●
EB-A2 08-09C08E59	8.00	8.00	9.00	59.00	2	30.0	C	●	●
EB-A2 08-16W08E63	8.00	8.00	16.00	63.00	2	30.0	W	●	●
EB-A2 10-10C10E60	10.00	10.00	10.00	60.00	2	30.0	C	●	●
EB-A2 10-19W10E72	10.00	10.00	19.00	72.00	2	30.0	W	●	●
EB-A2 12-14C12E71	12.00	12.00	14.00	71.00	2	30.0	C	●	●
EB-A2 12-22W12E83	12.00	12.00	22.00	83.00	2	30.0	W	●	●
EB-A2 14-14C14E71	14.00	14.00	14.00	71.00	2	30.0	C	●	●

⁽¹⁾ C-Cylindrical, W-Weldon



Designation	Dimensions								Tough ↔ Hard	
	D	r	d	a _p	L	Flute	H _a °	Shank ⁽¹⁾	IC08	IC900
EBM004A008-2C03	0.40	0.20	3.00	0.80	38.00	2	30.0	C	●	●
EBM005A010-2C03	0.50	0.25	3.00	1.00	38.00	2	30.0	C	●	●
EBM006A012-2C03	0.60	0.30	3.00	1.20	38.00	2	30.0	C	●	●
EBM007A014-2C03	0.70	0.35	3.00	1.40	38.00	2	30.0	C	●	●
EBM008A016-2C03	0.80	0.40	3.00	1.60	38.00	2	30.0	C	●	●
EBM010A025-2C04	1.00	0.50	4.00	2.50	50.00	2	30.0	C	●	●
EBM011A025-2C04	1.10	0.55	4.00	2.50	50.00	2	30.0	C	●	●
EBM012A030-2C04	1.20	0.60	4.00	3.00	50.00	2	30.0	C	●	●
EBM016A040-2C04	1.60	0.80	4.00	4.00	50.00	2	30.0	C	●	●
EBM020A060-2C04	2.00	1.00	4.00	6.00	50.00	2	30.0	C	●	●

• Short and stable design for profiling (roughing).

⁽¹⁾ C-Cylindrical



Designation	Dimensions							IC900
	D ₅	d	a _p	L	Flute	Shank ⁽¹⁾		
ECF D-1.5/45-4C04	1.00	4.00	1.50	50.00	4	C		●
ECF D-2/45-4C06	2.00	6.00	2.00	57.00	4	C		●
ECF D-3/45-4C08	2.00	8.00	3.00	63.00	4	C		●
ECF D-4/45-4C10	2.00	10.00	4.00	72.00	4	C		●
ECF D-5/45-4C12	2.00	12.00	5.00	83.00	4	C		●

⁽¹⁾ C-Cylindrical

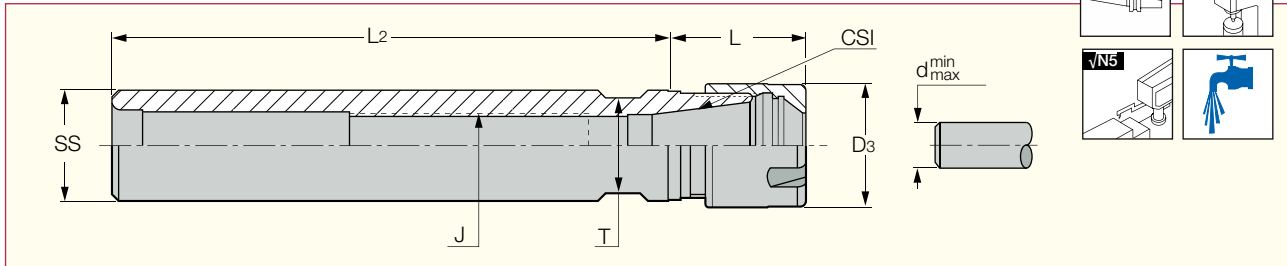
TOOLHOLDING SYSTEMS



Straight Shank

ST-ER-M (mini)

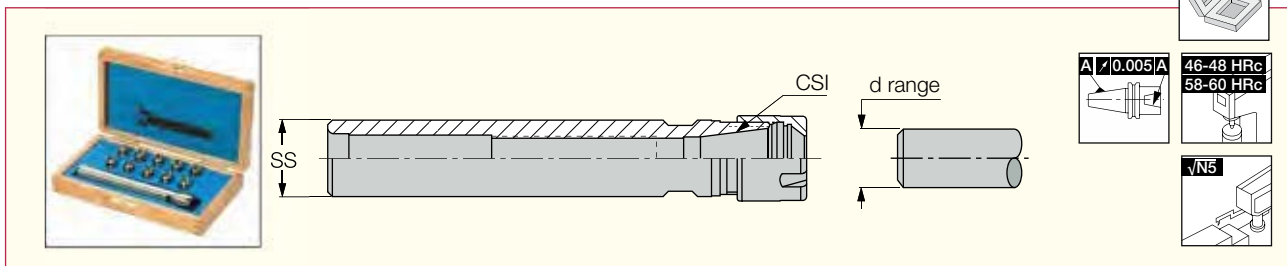
DIN 6499 ER Mini Collet Chucks with Cylindrical Shanks



Designation	SS	CSI	d _{min}	d _{max}	L ₂	L	J	D ₃	T	Kg
ST 12X 80 ER11 M	12	ER11	0.5	7.0	80.00	26.50	-	16.00	11.0	0.06
ST 16X100 ER11 M	16	ER11	0.5	7.0	100.00	18.50	M8	16.00	13.0	0.10
ST 16X150 ER11 M	16	ER11	0.5	7.0	150.00	18.50	M8	16.00	13.0	0.19
ST 22X150 ER11 M	22	ER11	0.5	7.0	150.00	18.50	M12	16.00	13.0	0.40
ST 12X 80 ER16 M	12	ER16	0.5	10.0	80.00	36.50	-	22.00	17.0	0.30
ST 20X100 ER16 M	20	ER16	0.5	10.0	100.00	25.00	M12	22.00	17.0	0.40
ST 20X150 ER16 M	20	ER16	0.5	10.0	150.00	25.00	M12	22.00	17.0	0.40
ST 20X100 ER20 M	20	ER20	1.0	13.0	100.00	40.00	M12	28.00	21.0	0.40
ST 20X150 ER20 M	20	ER20	1.0	13.0	150.00	40.00	M12	28.00	21.0	0.31

KIT ST-ER-M/MF

Contains ER Mini Collet Chuck with a Cylindrical Shank and a Set of Collets in Various Bore Sizes



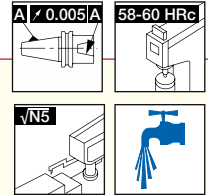
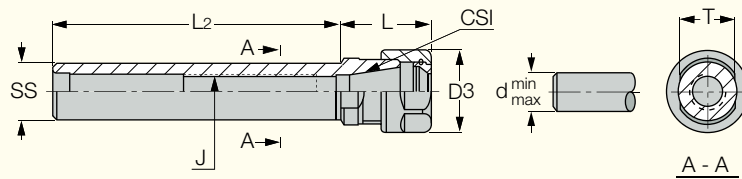
Designation	SS	CSI	d Range	Qty
KIT ST12X80 7 ER11 M	12	ER11	0.5-7	7
KIT ST12X80 10 ER16 M	12	ER16	0.5-10	10
KIT ST16X50 7 ER11MF	16	ER11	0.5-7	7
KIT ST16X100 7 ER11 M	16	ER11	0.5-7	7
KIT ST16X150 7 ER11 M	16	ER11	0.5-7	7
KIT ST20X100 10 ER16 M	20	ER16	0.5-10	10
KIT ST20X150 10 ER16 M	20	ER16	0.5-10	10
KIT ST20X100 12 ER20 M	20	ER20	1-12	12
KIT ST20X150 12 ER20 M	20	ER20	1-12	12

• F suffix indicates a flat on the shank.

Straight Shank

ST-ER

DIN 6499 ER Collet Chucks with Straight Shanks

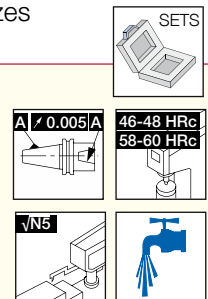
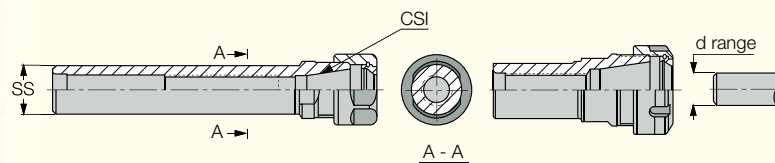


Designation	SS	CSI	d _{min}	d _{max}	L ₂	L	J	D ₃	T	Kg
ST 16X 50 ER11 F ⁽¹⁾	16	ER11	0.5	7.0	50.00	18.50	M8	19.00	13.0	0.06
ST 20X 50 ER11 F ⁽¹⁾	20	ER11	0.5	7.0	50.00	18.50	M10	19.00	17.0	0.08
ST 20X100 ER11	20	ER11	0.5	7.0	100.00	18.50	M10	19.00	17.0	0.20
ST 20X150 ER11	20	ER11	0.5	7.0	150.00	18.50	M10	19.00	17.0	0.25
ST 20X 50 ER16 F ⁽¹⁾	20	ER16	0.5	10.0	50.00	32.30	M12	28.00	19.0	0.07
ST 20X100 ER16	20	ER16	0.5	10.0	100.00	30.00	M12	28.00	19.0	0.20
ST 20X100 ER16 F ⁽¹⁾	20	ER16	0.5	10.0	100.00	30.00	M12	28.00	19.0	0.30
ST 20X150 ER16	20	ER16	0.5	10.0	150.00	30.00	M12	28.00	19.0	0.28
ST 20X 50 ER20 F ⁽¹⁾	20	ER20	1.0	13.0	50.00	42.50	M12	34.00	22.0	0.15

⁽¹⁾ With a clamping flat.

KIT ST-ER

Contains 1 ER Collet Chuck with a Cylindrical Shank and a Set of Collets in Various Bore Sizes



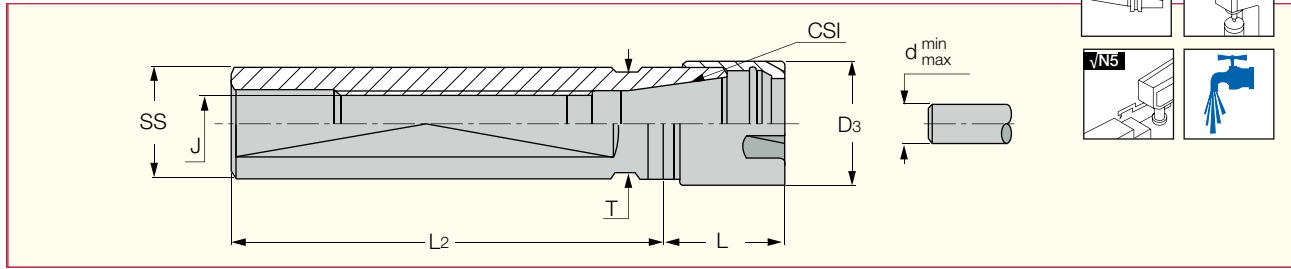
Designation	SS	CSI	d Range	Qty
KIT ST16X50 7 ER11 F	16	ER11	0.5-7	7
KIT ST20X100 7 ER11	20	ER11	0.5-7	7
KIT ST20X150 7 ER11	20	ER11	0.5-7	7
KIT ST20X50 10 ER16 F	20	ER16	0.5-10	10
KIT ST20X100 10 ER16	20	ER16	0.5-10	10
KIT ST20X150 10 ER16	20	ER16	0.5-10	10
KIT ST20X50 12 ER20 F	20	ER20	1.0-12	12

• F suffix indicates a flat on the shank. • For ER collets see pages: F8-11

Straight Shank

ST-ER-MF (mini flat)

DIN 6499 ER Mini Collet Chucks with Cylindrical Shanks and a Flat for Clamping on Swiss Type CNC Lathes



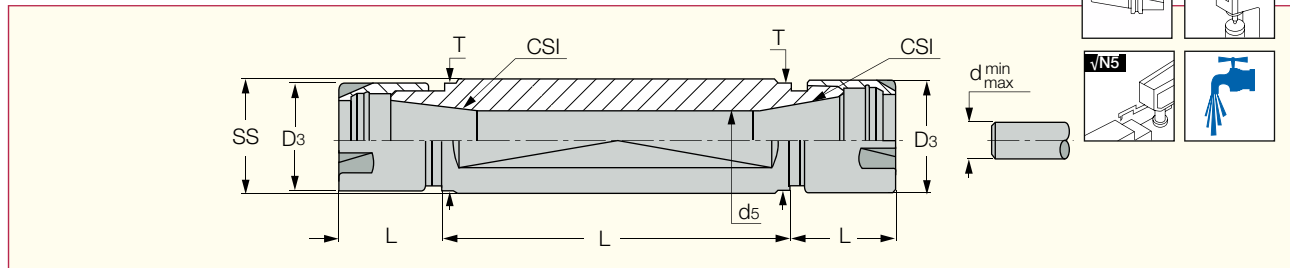
Designation	CSI	SS	d _{min}	d _{max}	L ₂	L	J	D ₃	T	Kg
ST 16X 38 ER11 MF ⁽¹⁾	ER11	16	0.5	7.0	38.00	18.50	M8X1	16.00	14.0	0.05
ST 16X 50 ER11 MF	ER11	16	0.5	7.0	50.00	18.50	M8X1	16.00	13.0	0.07
ST 16X140 ER11 MF	ER11	16	0.5	7.0	140.00	18.50	M8X1	16.00	14.0	0.18
ST 16X 35 ER16 MF ⁽¹⁾	ER16	16	0.5	10.0	35.00	36.00	M8X1	22.00	17.0	0.25
ST 20X 50 ER16 MF ⁽²⁾	ER16	20	0.5	10.0	50.00	26.00	M12X1	22.00	17.0	0.10
ST 20X 70 ER16 MF ⁽²⁾	ER16	20	0.5	10.0	70.00	26.00	M12X1	22.00	17.0	0.40
ST 20X120 ER16 MF ⁽²⁾	ER16	20	0.5	10.0	120.00	26.00	M12X1	22.00	17.0	0.19
ST 20X140 ER16 MF ⁽²⁾	ER16	20	0.5	10.0	140.00	26.00	M12X1	22.00	17.0	0.40
ST 22X 38 ER16 MF ⁽¹⁾	ER16	22	0.5	10.0	38.00	26.00	M12X1	22.00	19.0	0.10
ST 22X 70 ER16 MF ⁽¹⁾	ER16	22	0.5	10.0	70.00	26.00	M12X1	22.00	19.0	0.16
ST 22X100 ER16 MF ⁽¹⁾	ER16	22	0.5	10.0	100.00	28.00	M12X1	22.00	19.0	0.30
ST 22X 80 ER20 MF ⁽¹⁾	ER20	22	1.0	13.0	80.00	39.00	M12X1	28.00	21.0	0.21

⁽¹⁾ For Star machines. ⁽²⁾ For Citizen machines.

Straight Shank

ST-ER-MF-D (double-ended)

Double-Ended Mini Collets with Cylindrical Shanks and a Clamping Flat



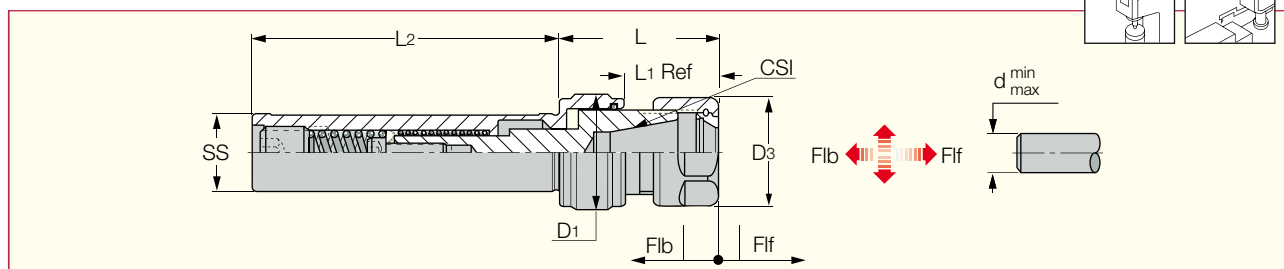
Designation	CSI	SS	d _{min}	d _{max}	D ₃	d ₅	L ₂	L	T	Kg
ST 16X 50 ER11 MF D	ER11	16	0.5	7.0	16.00	7.5	50.00	18.50	14.0	0.07
ST 20X 30 ER11 MF D ⁽¹⁾	ER11	20	0.5	7.0	16.00	7.5	30.00	18.50	17.0	0.09
ST 20X 50 ER11 MF D ⁽¹⁾	ER11	20	0.5	7.0	16.00	7.5	50.00	18.50	17.0	0.13
ST 20X 55 ER16 MF D ⁽¹⁾	ER16	20	0.5	10.0	22.00	10.5	55.00	25.00	17.0	0.12
ST 22X 55 ER16 MF D ⁽²⁾	ER16	22	0.5	10.0	22.00	10.5	55.00	28.00	19.0	0.17
ST 22X 75 ER16 MF D ⁽²⁾	ER16	22	0.5	10.0	22.00	10.5	75.00	28.00	19.0	0.21

⁽¹⁾ For Citizen machines. ⁽²⁾ For Star machines.

Straight Shank • GTI

GTI ER-ST (tapping)

DIN 6499 ER Tapping Attachments with Straight Shanks



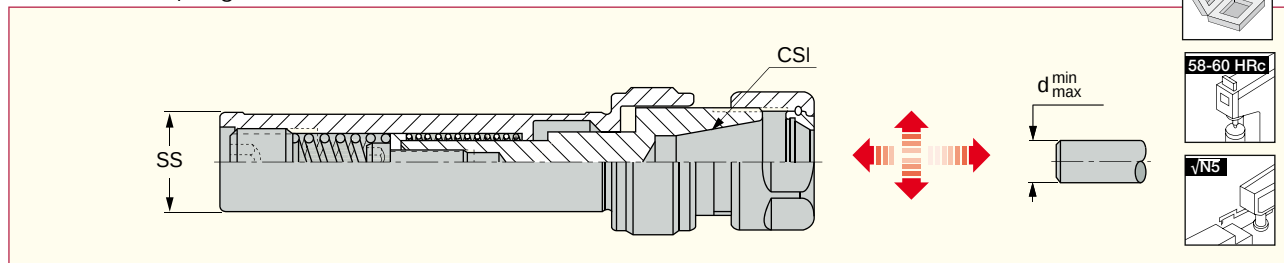
Designation	SS	CSI	Tap _{min}	Tap _{max}	d _{min}	d _{max}	D ₃	D ₁	L ₁	L	L ₂	Flf	Flb	Kg
GTI ER11 ST16X150 M ⁽¹⁾	ST16	ER11	M2	M7	0.5	7.0	16.00	-	19.0	-	150.00	6.0	3.0	0.18
GTI ER16 ST20X80	ST20	ER16	M3	M10	0.5	10.0	28.00	29.5	24.6	41.60	80.00	8.0	3.0	0.29
GTI ER20 ST20X80	ST20	ER20	M4	M14	1.0	13.0	34.00	33.5	28.0	49.00	80.00	8.0	3.0	0.35

⁽¹⁾ Without a clamping flat.



KIT GTI ER-ST

Contains a DIN 6499 ER Tapping Attachment with Straight Shank and a Set of Spring Collets in Various Bore Sizes



Designation	SS	CSI	d Range
KIT GTI ER11 ST16X150 4M	16	ER11	3,4,5,6
KIT GTI ER16 ST20X80 4	20	ER16	4,5,6,7
KIT GTI ER20 ST20X80 4	20	ER20	5,6,8,9

- Kit includes GTI, collets and wrench.
- For ER collets see pages: F8-11

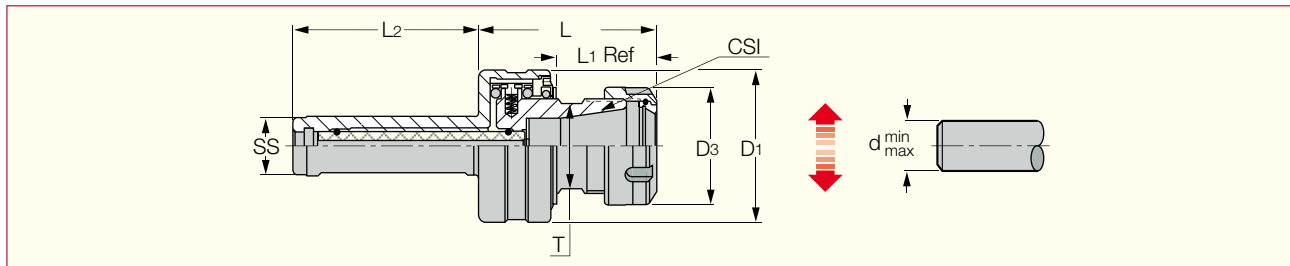


Kit GTI ER11
Tapping Attachment Kit

Straight Shank • GFI

GFI ST-ER

Floating Reamer DIN 6499 Collet Chucks with Cylindrical Shanks



Designation	SS	CSI	d min	d max	L2	L	L1	D3	D1	RFI	T	Kg
GFI ST20 ER20 ⁽¹⁾	20	ER20	1.0	13.0	65.00	55.50	34.5	34.00	50.0	1.0	22.0	0.30

• ! Maximum RPM 2000.

⁽¹⁾ Radial float 1 mm.

GFI ER - Floating Reamer Collet Chuck

Floating chuck - adjusts the misalignment between reamer and workpiece hole to ensure the same accuracy as the reamer itself.

Application

The GFI floating chuck is a unique holder that compensates for the radial misalignment existing in the reaming operations carried out on vertical and horizontal machine tools.

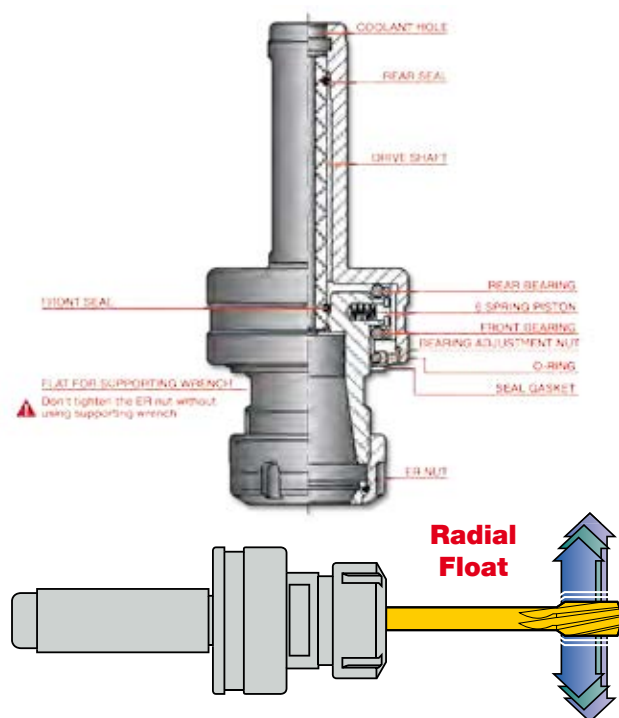
Features

Radial self-floating mechanism compensates for misalignment between reamer and workpiece to ensure the same tolerance as the reamer itself.

The special self-centering mechanism eliminates tapered and oversized bores.

Advantages

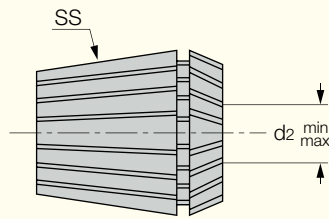
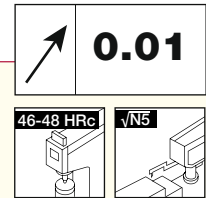
Unique ball bearing and axle drive shaft structure enables vertical and horizontal machining.
Precise and efficient clamping with ER spring collets or ER COOLIT collets.



ER Collet

ER-SPR

DIN 6499 ER Spring Collets with HARD TOUCH Coating

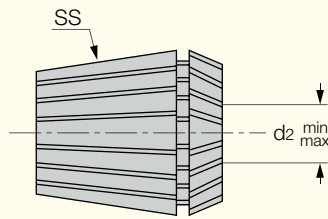
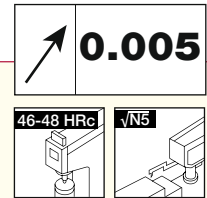


Designation	SS	d2 min	d2 max
ER11 SPR 0.5- 1	ER11	0.50	1.00
ER11 SPR 1-2	ER11	1.00	2.00
ER11 SPR 2-3	ER11	2.00	3.00
ER11 SPR 3-4	ER11	3.00	4.00
ER11 SPR 4-5	ER11	4.00	5.00
ER11 SPR 5-6	ER11	5.00	6.00
ER11 SPR 6-7	ER11	6.00	7.00
ER16 SPR 0.5-1	ER16	0.50	1.00
ER16 SPR 1-2	ER16	1.00	2.00
ER16 SPR 2-3	ER16	2.00	3.00
ER16 SPR 3-4	ER16	3.00	4.00
ER16 SPR 4-5	ER16	4.00	5.00
ER16 SPR 5-6	ER16	5.00	6.00
ER16 SPR 6-7	ER16	6.00	7.00
ER16 SPR 7-8	ER16	7.00	8.00
ER16 SPR 8-9	ER16	8.00	9.00
ER16 SPR 9-10	ER16	9.00	10.00
ER20 SPR 1-2	ER20	1.00	2.00
ER20 SPR 2-3	ER20	2.00	3.00
ER20 SPR 3-4	ER20	3.00	4.00
ER20 SPR 4-5	ER20	4.00	5.00
ER20 SPR 5-6	ER20	5.00	6.00
ER20 SPR 6-7	ER20	6.00	7.00
ER20 SPR 7-8	ER20	7.00	8.00
ER20 SPR 8-9	ER20	8.00	9.00
ER20 SPR 9-10	ER20	9.00	10.00
ER20 SPR 10-11	ER20	10.00	11.00
ER20 SPR 11-12	ER20	11.00	12.00
ER20 SPR 12-13	ER20	12.00	13.00

ER Collet

ER-SPR-AA

DIN 6499 'AA' Ultra Precise ER Spring Collets with HARD TOUCH Coating



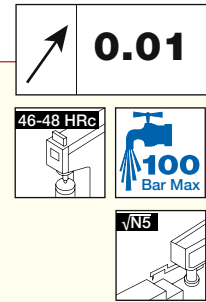
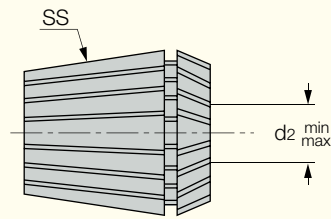
Designation	SS	d ₂ min	d ₂ max
ER11 SPR 0.5- 1 AA	ER11	0.50	1.00
ER11 SPR 1-2 AA	ER11	1.00	2.00
ER11 SPR 2-3 AA	ER11	2.00	3.00
ER11 SPR EX3.0AAA ⁽¹⁾	ER11	3.00	3.00
ER11 SPR 3-4 AA	ER11	3.00	4.00
ER11 SPR EX4.0AAA ⁽¹⁾	ER11	4.00	4.00
ER11 SPR 4-5 AA	ER11	4.00	5.00
ER11 SPR 5-6 AA	ER11	5.00	6.00
ER11 SPR EX6.0AAA ⁽¹⁾	ER11	6.00	6.00
ER11 SPR 6-7 AA	ER11	6.00	7.00
ER16 SPR 0.5-1 AA	ER16	0.50	1.00
ER16 SPR 1-2 AA	ER16	1.00	2.00
ER16 SPR 2-3 AA	ER16	2.00	3.00
ER16 SPR 3-4 AA	ER16	3.00	4.00
ER16 SPR 4-5 AA	ER16	4.00	5.00
ER16 SPR 5-6 AA	ER16	5.00	6.00
ER16 SPR 6-7 AA	ER16	6.00	7.00
ER16 SPR 7-8 AA	ER16	7.00	8.00
ER16 SPR 8-9 AA	ER16	8.00	9.00
ER16 SPR 9-10 AA	ER16	9.00	10.00
ER20 SPR 1-2 AA	ER20	1.00	2.00
ER20 SPR 2-3 AA	ER20	2.00	3.00
ER20 SPR 3-4 AA	ER20	3.00	4.00
ER20 SPR 4-5 AA	ER20	4.00	5.00
ER20 SPR 5-6 AA	ER20	5.00	6.00
ER20 SPR 6-7 AA	ER20	6.00	7.00
ER20 SPR 7-8 AA	ER20	7.00	8.00
ER20 SPR 8-9 AA	ER20	8.00	9.00
ER20 SPR 9-10 AA	ER20	9.00	10.00
ER20 SPR 10-11 AA	ER20	10.00	11.00
ER20 SPR 11-12 AA	ER20	11.00	12.00
ER20 SPR 12-13 AA	ER20	12.00	13.00

⁽¹⁾ 0.003 mm runout accuracy

ER Collet

ER-SEAL

DIN 6499 ER COOLIT, Sealed Spring Collets with HARD TOUCH Coating, for up to 100 Bar



Designation	SS	d ₂ min	d ₂ max
ER16 SEAL 3- 4	ER16	3.00	4.00
ER16 SEAL 4- 5	ER16	4.00	5.00
ER16 SEAL 5- 6	ER16	5.00	6.00
ER16 SEAL 6- 7	ER16	6.00	7.00
ER16 SEAL 7- 8	ER16	7.00	8.00
ER16 SEAL 8- 9	ER16	8.00	9.00
ER16 SEAL 9-10	ER16	9.00	10.00
ER20 SEAL 3-4	ER20	3.00	4.00
ER20 SEAL 4-5	ER20	4.00	5.00
ER20 SEAL 5-6	ER20	5.00	6.00
ER20 SEAL 6-7	ER20	6.00	7.00
ER20 SEAL 7-8	ER20	7.00	8.00
ER20 SEAL 8-9	ER20	8.00	9.00
ER20 SEAL 9-10	ER20	9.00	10.00
ER20 SEAL 10-11	ER20	10.00	11.00
ER20 SEAL 11-12	ER20	11.00	12.00
ER20 SEAL 12-13	ER20	12.00	13.00

- The HARD TOUCH coating increases wear resistance, improves corrosion protection, prolongs the surface finish quality and maintains longer runout accuracy.



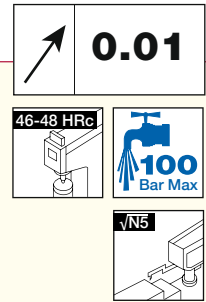
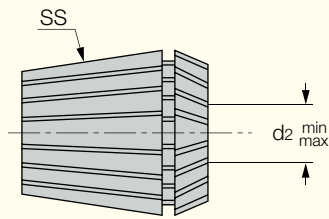
Sealed Collet JET

For straight shank cutting tools with internal coolant oil hole.

ER Collet

ER-SEAL-JET2

DIN 6499 ER COOLIT, Sealed Collets with Cooling Jets and HARD TOUCH Coating, for up to 100 Bars



Designation	SS	d ₂ min	d ₂ max
ER16 SEAL 3- 4 JET2	ER16	3.00	4.00
ER16 SEAL 4- 5 JET2	ER16	4.00	5.00
ER16 SEAL 5- 6 JET2	ER16	5.00	6.00
ER16 SEAL 6- 7 JET2	ER16	6.00	7.00
ER16 SEAL 7- 8 JET2	ER16	7.00	8.00
ER16 SEAL 8- 9 JET2	ER16	8.00	9.00
ER16 SEAL 9-10 JET2	ER16	9.00	10.00
ER20 SEAL 3-4 JET2	ER20	3.00	4.00
ER20 SEAL 4-5 JET2	ER20	4.00	5.00
ER20 SEAL 5-6 JET2	ER20	5.00	6.00
ER20 SEAL 6-7 JET2	ER20	6.00	7.00
ER20 SEAL 7-8 JET2	ER20	7.00	8.00
ER20 SEAL 8-9 JET2	ER20	8.00	9.00
ER20 SEAL 9-10 JET2	ER20	9.00	10.00
ER20 SEAL 10-11 JET2	ER20	10.00	11.00
ER20 SEAL 11-12 JET2	ER20	11.00	12.00
ER20 SEAL 12-13 JET2	ER20	12.00	13.00

- The HARD TOUCH coating increases wear resistance, improves corrosion protection, prolongs the surface finish quality and maintains longer runout accuracy.



Straight Shank • GTI



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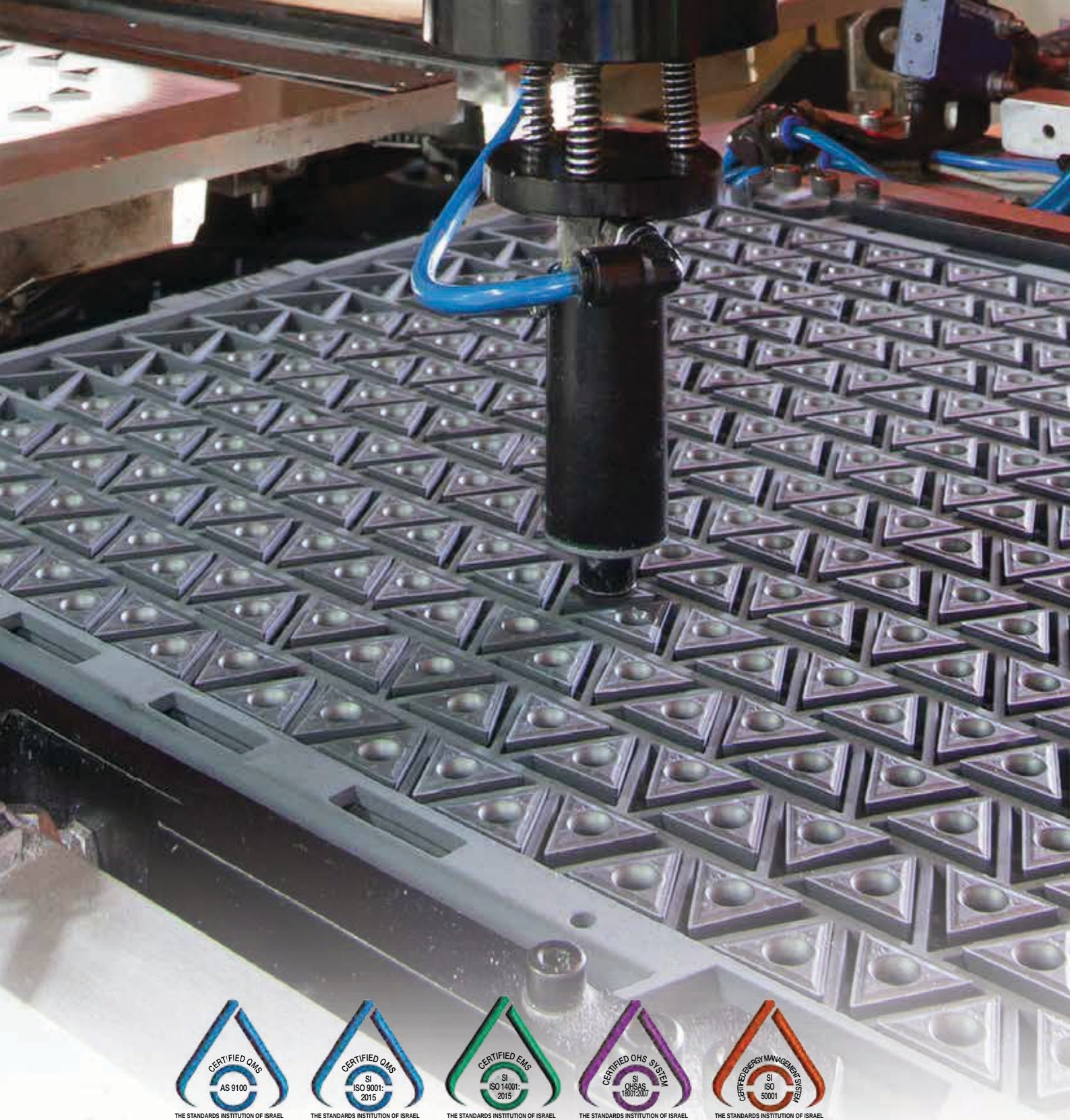
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Time Study

Estimated cutting time:

3 min. 48 sec.

Total cutting time:

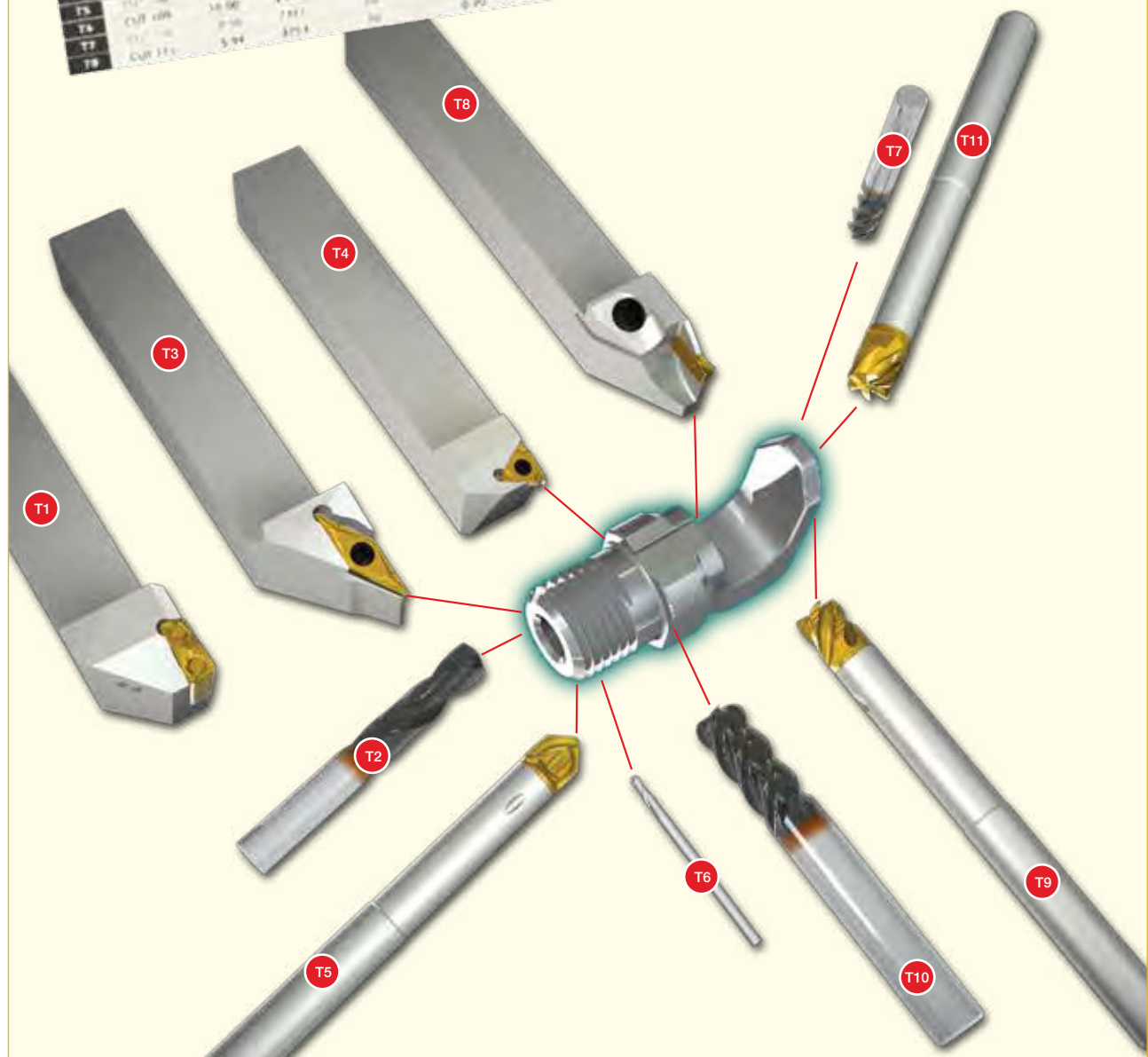
4 min. 56 sec.

Material:

Stainless steel

Time Study

Tool No.	Operation	Diameter (mm)	RPM	Vc (m/min)	Feed (mm/rev)	fz (mm/tooth)	Number of Inserts/Flutes	W (mm)	Wt (mm/min)	DOC (mm)	DOC (mm)	LOC (mm)	No. of Cuts	Time (min)
T1	CUT 101	8.00	2787	70	0.05	0.05	1	0.15	110	0.1	0.1	250.0	1	10.0
T1	CUT 102	8.00	2787	70	0.05	0.05	1	0.20	111.5	0.1	0.1	250.0	1	10.0
T2	CUT 103	8.00	2787	70	0.10	0.10	1	0.04	110	0.1	0.1	270.0	1	10.0
T2	CUT 104	12.00	1858	50	0.05	0.05	1	0.04	110	0.1	0.1	270.0	1	10.0
T3	CUT 105	12.00	1858	50	0.05	0.05	1	0.04	110	0.1	0.1	270.0	1	10.0
T4	CUT 106	12.00	1858	50	0.05	0.05	1	0.04	110	0.1	0.1	270.0	1	10.0
T4	CUT 107	12.00	1858	50	0.05	0.05	1	0.04	110	0.1	0.1	270.0	1	10.0
T5	CUT 108	12.00	1858	50	0.05	0.05	1	0.04	110	0.1	0.1	270.0	1	10.0
T6	CUT 109	12.00	1858	50	0.05	0.05	1	0.04	110	0.1	0.1	270.0	1	10.0
T7	CUT 110	12.00	1858	50	0.05	0.05	1	0.04	110	0.1	0.1	270.0	1	10.0
T8	CUT 111	12.00	1858	50	0.05	0.05	1	0.04	110	0.1	0.1	270.0	1	10.0



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