

GROOVE-TURN TOOLS

Metric Version Catalog 2012



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ISCAR TOOL ADVISOR
www.iscar.com/ita



The Ultimate Expert in Selecting the Best Tool

INTRODUCTION



TANG-GRIP PARTING LINE

Tangentially Clamped, Single-Ended Parting System

ISCAR's single-ended insert for parting with a rigid clamping method.

TAG insert features

- Very rigid clamping in a tangentially oriented pocket.
- Enables machining at very high feed rates and provides excellent straightness and surface finish.
- Recommended for parting large diameter parts and for interrupted cuts.
- Offers a free, unobstructed chip flow, since there is no upper jaw as in the other clamping systems (very important in deep grooving and parting applications).
- The combination of tangential clamping and free chip flow results in improved tool and insert lifetime.
- Provides a solution to the problem of inserts being pulled out during retraction.

INTRODUCTION



JET-CUT

The Double Sided DO-GRIP Insert with Internal Coolant Holes

The insert features a coolant hole that passes through the insert, with an outlet near the cutting edge. The **DGNC** inserts were designed for parting and grooving on stainless steel and high temperature alloys. When machining stainless steel or high temperature alloys, the temperature near the cutting edge becomes very high. These materials tend to adhere to the cutting edge, causing built-up edge. This phenomenon can be reduced or even eliminated, by efficient cooling of the cutting edge.

In grooving and parting applications, there is a problem, that the chip prevents the coolant from reaching the cutting edge. The new **DGNC** inserts are an ideal solution, as they have a coolant hole through the insert with an outlet near the cutting edge.

The coolant reaches the cutting edge and the insert body is internally cooled. Materials such as titanium, inconel, or austenitic stainless steel tend to strain hardening during the cutting process and they form long and tangled chips. The efficient coolant supplied to the cutting zone decreases flank and cratering rates. This leads to substantially longer tool life and a better machined surface finish. The coolant supply can be attached directly to the **DGFH-C** blades used on the regular blocks, or through the **SGTBU-C** blocks which have coolant passages and connecting ports.

The **DGNC** insert is the best solution for grooving and parting on high temperature alloys and stainless steel.

INTRODUCTION



SUMO-GRIP HEAVY DUTY LINE

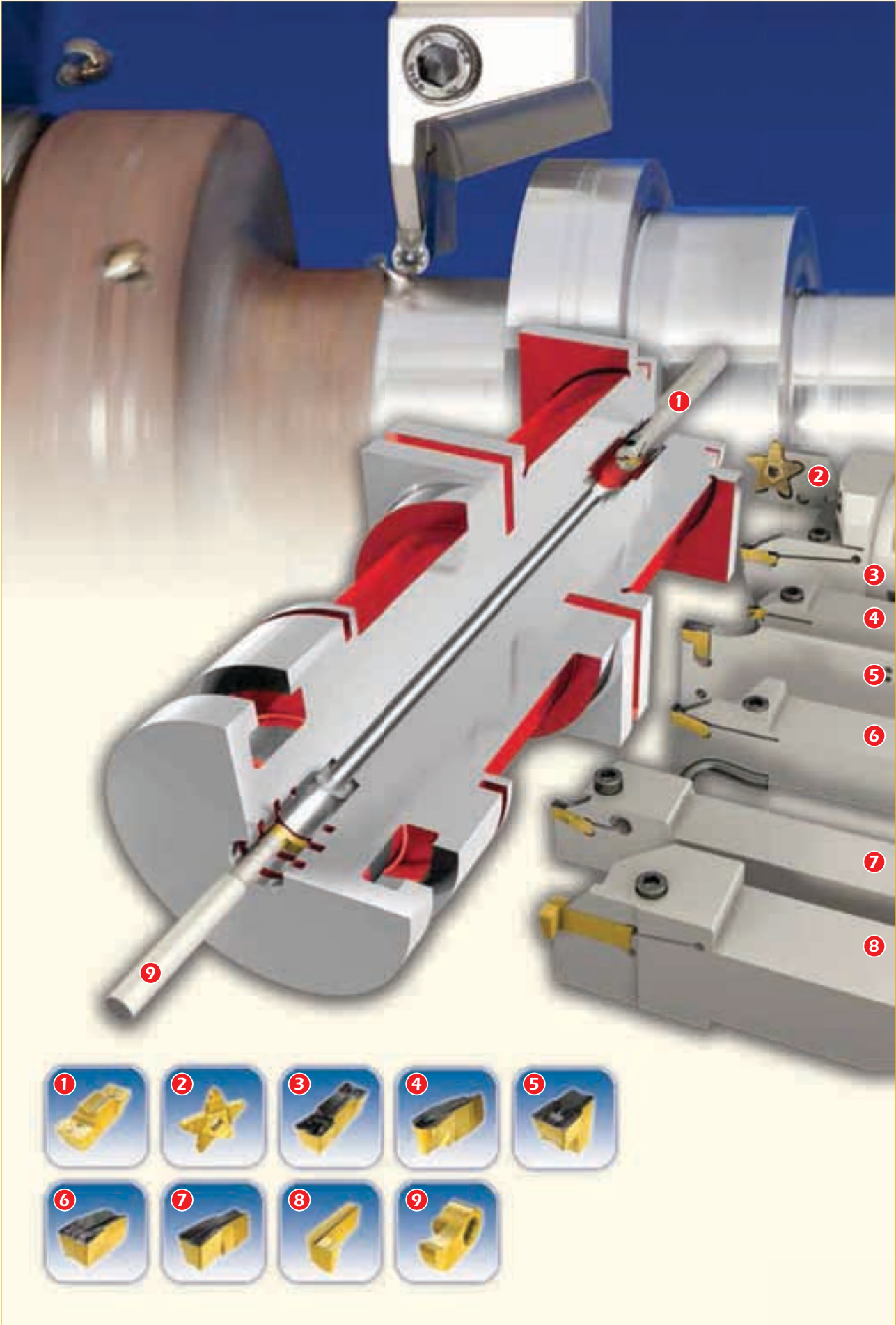
SUMO-GRIP System for Heavy Duty Groove-Turn Applications

ISCAR's single-ended insert for heavy grooving & turning applications is based on the very successful **TANG-GRIP** family.

Features

- Tangentially oriented pocket creates a very rigid and secure clamping.
- Very strong insert design enables machining at very high feed rates of up to 1.0 mm/rev.
- Free, unobstructed chip flow, since there is no upper jaw as in the other clamping systems.
- Combination of tangential clamping, strong design and free chip flow results in improved insert and tool life and higher feed rates, thus significantly increasing productivity.
- Recommended for machining large diameter parts and heavy interrupted cuts.

INTRODUCTION



INTRODUCTION



PENTACUT PARTING GROOVING LINE

PENTA Insert for Economical Face Grooving and Recessing

- Multi-cornered with five cutting edges, which provides the most advantageous price per cutting edge.
- Fast edge indexing on the machine - from either side of the holder.

4 Applications in One System

- **Precision grooving**
- **Parting**
- **Recessing - light side turning**
- **Chamfering**
- Same insert for right- and left-hand cutting
- Width range 0.5 - 4.0 mm
- Unique, versatile chipformer
- The very rigid clamping system, produces excellent sidewall straightness surface quality and flat groove bottoms.

Useful for:

- A wide range of materials and machining conditions excellent machined surface quality.
- A combination of a very rigid clamping system and strong insert design enables machining at very high parameters.
- A variety of chipformers for wide range of materials and applications.

INTRODUCTION



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 5.5 mm 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.



INTRODUCTION



CUT-GRIP

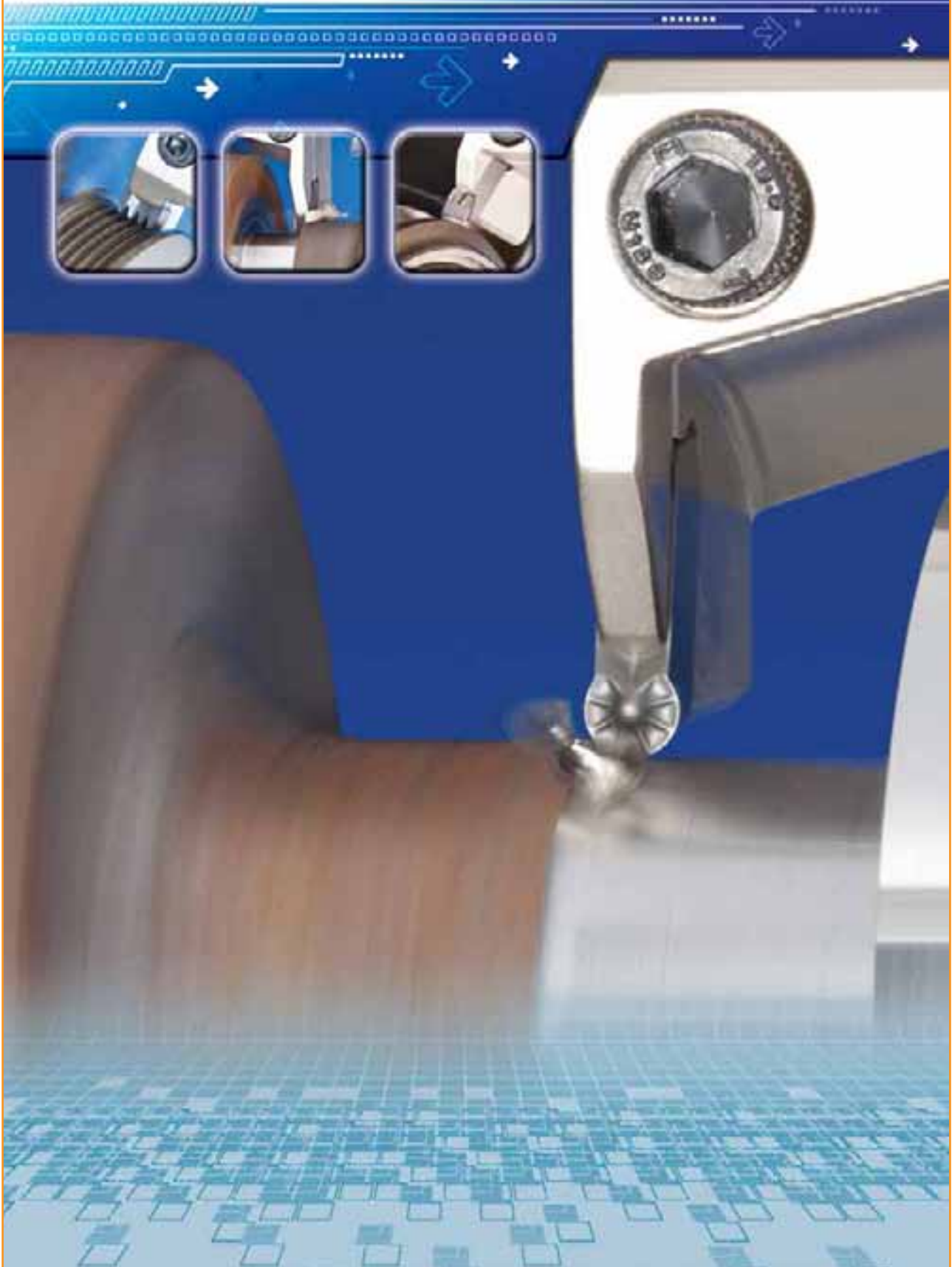
Multifunction Groove-Turn Tools for Increased Productivity and Profitability

ISCAR's unique groove-turn tools are multifunction turning tools, able to operate in a sequence of grooving and turning modes. Moving from turning to grooving requires consideration of the basic **GRIP** principle, thereby eliminating the possibility of insert breakage. The **CUT-GRIP** line offers a diverse range of multifunction groove-turn tools for increased productivity and profitability.

A single **MODULAR-GRIP**, straight or perpendicular toolholder can be used for many applications, which will reduce tooling cost and stock.



GROOVETURN



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External Tools & Inserts

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TOP-GRIP - Tools & inserts **B15**



CUT-GRIP Tools & Inserts **B18**



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General Groove-Turn Systems

B1

Internal Tools and Inserts




GEHIR Boring Bars Dmin 12.5 mm (GEPI inserts).....	B72
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External Tools and Inserts

SWISSCUT.....		B99
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Internal Boring Bars and Inserts

PICCO (Dmin 0.6 mm).....		B105
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MINICHAM (Dmin 4 mm)		B117
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MINCUT (Dmin 8 mm).....		B118
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CHAMGROOVE (Dmin 8 mm).....		B120
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Form Tools



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Broaching Tools



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USER GUIDE

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Necessary Information in Order to Select the Correct Insert

ISCAR has a huge variety of groove-turn products. In many cases your operation can be performed using several different products. In order to make the optimal selection, these basic parameters need to be defined:

- Insert width [W]
- Necessary tolerance on the insert
- Maximum depth of grooving [T max]
- If the application will require grooving and turning, or only grooving (E-Type or not)

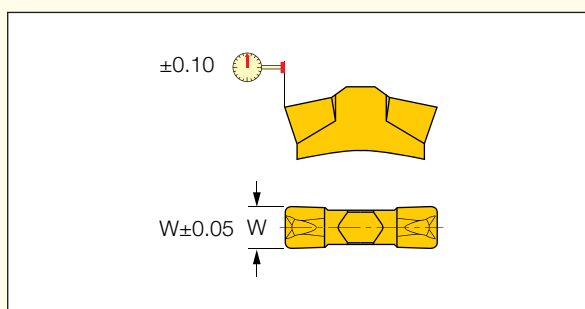
According to these parameters:

- Select the most suitable product according to the tables on pages B5-6
- Select the most suitable chipformer according to the information on pages B7-10

Utility Inserts

Pressed to Size Inserts

Width	± 0.05
Repeatability	± 0.10

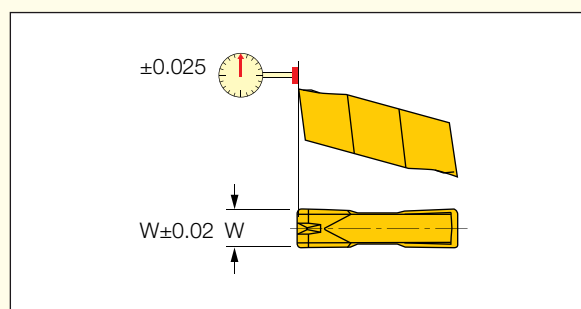


If you don't need the tight tolerance, save money and select a utility (less expensive) insert.

Precision Grooving Inserts

Peripheral Ground Inserts

Width	± 0.02
Repeatability	± 0.025



What is an E-type Groove-Turn Insert?

E-type inserts are precision ground grooving inserts with **turning** capability.

These inserts include the letter **E** in their description. (example: GIP 3.00**E**-0.4). This is to distinguish them from precision ground inserts which are not suitable for turning operations that don't include an **E** in their description. (example: GIP 3.00-0.2)

- E-type inserts usually have a larger corner radius
- E-type inserts have a larger honing size

Precision Grooving Insert



E-Type Groove-Turn Insert



External Groove-Turn Insert Type

		Insert	Properties				W range	Tmax	Page
			Precision Ground	Utility	Number of Cutting Edges	Option for Turning			
PENTACUT		PENTACUT Size 24	✓		5		0.5-3.18	1-6.5	B57-59
		PENTACUT Size 34	✓		5		1.5-4.0	5-10	B60-61
HELI-GRIP		HELI-GRIP		✓	2	✓	3-6.35	No depth limit	B14
TOP-GRIP		TOP-GRIP		✓	2	✓	3-6.35	10.5-18.6	B17
CUT-GRIP		Short Pocket		✓	1	✓	3-12	No depth limit	B35-48
		Short Pocket	✓		2	✓*	0.5-11.0	13**	B29, B35-48
		Long Pocket		✓	2	✓*	8.0	26	B30-34, B47
		Long Pocket	✓		2	✓	8.0-11.0	26	B29, B35, B43-44, B48
HEAVY DUTY		SUMO-GRIP		✓	1	✓	8-12	No depth limit	B67
		TIGER		✓	1		14-20	No depth limit	B69-70

* Not on all the products

** On most items

Internal Groove-Turn Insert Type

		Tool	Insert	Utility	Precision	Dmin	Tmax	W	Page
PICCO CUT		PICCO/ MG PCO	PICCO		✓	2.0-7.0	0.4-2.5	0.5-2	B108-116
CHAM GROOVE		MG/MGCH	GIRQ 8		✓	8.0	0.7-1.5	0.5-4	B121, B124
		MG/MGCH	GIQR 11		✓	11.0	1.5-2.3	0.75-5	B122, B124
		MGCH	GIQR 11-15		✓	15.0	6.3	1-3	B123
CUT-GRIP		GEHIR/L	GEPI/ GEMI	✓	✓	12.5-16	2.4-3.0	1-3.18	B77-79
		GHIR/L	GIFI/GIFI/ GINI/GIMIY	✓	✓	20-49	2.5-8.0	1.53-6.35	B85-90
TOP-GRIP		TGIR/L	TGMF	✓		20.5-57	5.5-17.5	3-6.35	B17
HELI-GRIP		HELIIR/L	GRIP	✓		26-53	5-12	3-6.35	B14
CUT-GRIP		GHIR/L 40-8	GDMF/ GDMY/ GDMN...	✓	✓	65	15-20	8-11	B29-48
		GHIC/CGHN	GIP/GIF/ GIMN/GIMF/ GIA...	✓	✓	70-250	10-26	2.8-6.35	B29-48

Chipbreaker Selection

General Use

P-Type

- Very “open” geometry
- Medium to high feed in turning and grooving
- Large variety of standard sizes
- Precision ground inserts only
- Width range
External: 2.39 - 6.35 mm
Internal: 2.39 - 6.35 mm



F-Type

- First choice in grooving
- Low to medium feeds in grooving and turning
- Both precision ground and utility inserts
- Width range
External: 3.0 - 10 mm
Internal: 3 - 6 mm



G-Type

- Efficient chipbreaker for narrow width grooves
- Width range: 1 - 2.3 mm
- No option for turning



Y-Type

- General use in grooving and turning
- Positive top rake reduces cutting forces
- Excellent for long shafts
- Eliminates vibrations
- Both precision ground and utility inserts
- Width range
External: 8 - 20 mm



HG-Y-Type

- General use in grooving and turning
- Efficient for a wide range of materials and cutting conditions
- Utility inserts only
- Width range
External: 3 - 6.35 mm
Internal: 3 - 6.35 mm



Chipbreaker Selection

Problematic and Specific Materials

N-Type

- First choice in grooving of problematic, soft & gummy materials
- Very low to medium feeds (from 0.05 mm/rev)
- Both precision ground and utility inserts
- Option for turning
- Width range
External: 3 - 8 mm
Internal: 3 - 5 mm



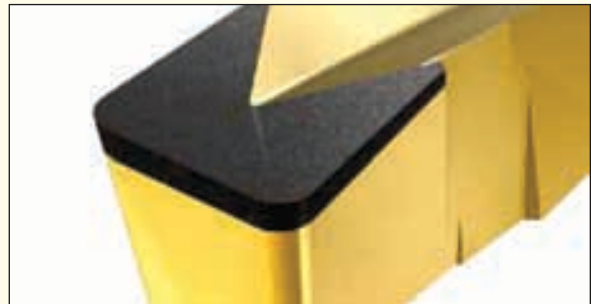
M-Type

- Unique chipbreaker with splitter
Chips are split into **3 segments**
- Efficient for problematic, soft & gummy materials
- Option for light turning
- Width - 8 mm



A-Type

- First choice for machining cast Iron
- Peripheral 15° T-land on a flat top
- Exerts high cutting forces, therefore suitable for stable conditions
- Precision ground inserts only
- Width range
External: 3 - 8 mm



PA-Type

- First choice for machining aluminum
- High positive rake
- Peripheral ground and polished top rake with a very sharp edge
- Suitable also for finish operations on titanium and heat resistant alloys
- Width range
External: 3 - 8 mm



CW-Type

- Unique chipformer for heavy-duty grooving
- Very wide chipbreaking range on carbon and alloy steel
- Width range 14 and 17 mm



Chipbreaker Selection

Profiling (Full radius)

Y-Type

- First choice in profiling
- Positive top rake reduces cutting forces
- Excellent for long shafts
- Eliminates vibrations
- Both precision ground and utility inserts
- Width range
External: 3 - 12 mm



YF-Type

- First choice for profiling ductile materials
- Utility inserts only
- Width range
External: 3 - 8 mm



PA-Type

- First choice for profiling aluminum
- High positive rake
- Peripheral ground and polished top rake with a very sharp edge
- Suitable also for finish operations on titanium and heat resistant alloys
- Width range
External: 3 - 8 mm



YZ-Type

- First choice for profiling ductile aluminum
- Peripheral ground and polished top rake with a very sharp edge
- Width range
External: 3 - 8 mm



H-Type

- Unique chipbreaker for heavy-duty profiling
- Negative T-land for extra edge toughness
- Suitable for heavy interrupted cuts and cast iron machining
- Width - 12 mm



Chipbreaker Width Range






External

Insert Width									
12				20					
11									
10									
9									
8									
7									
6		6.35				6.35			
5									
4									
3			3.48						
2	2.3	2.39							
1									
	G	P	F	Y	N	HG-Y	M	A	PA

Internal

Insert Width				
7				
6	6.35			6.35
5				
4				
3				
2	2.39			
1				
	P	F	N	HG-Y

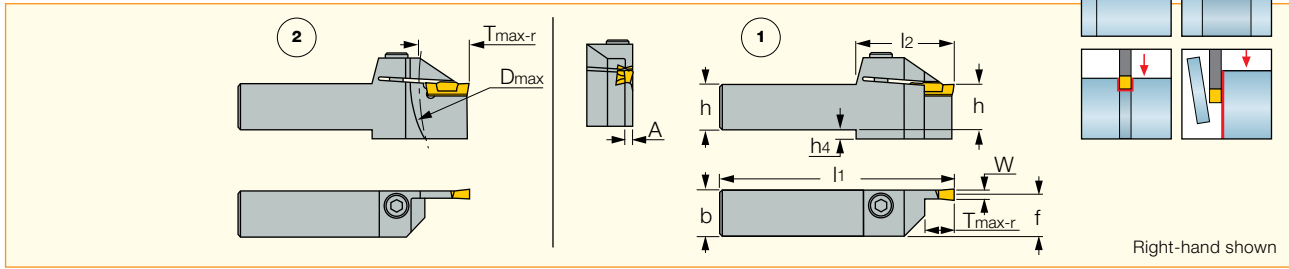
Suitable Chipbreaker and Required Feed Range for Workpiece Material

High ↑ Feed ↓ Low	Alloy Steel	Austenitic Stainless	High Temp. Alloys	Nonferrous Materials	Cast Iron
		P	P	P	
	HG-Y	HG-Y	Y	PA*	A*
	Y	Y	F	P	P
	F	F	PA (finish only)		HG
	N				F

* First Choice

HELIR/L

External Holders for Turning, Grooving and Parting



Designation	W _{min}	W _{max}	T _{max-r} ⁽²⁾	Fig	D _{max} ⁽³⁾	h	b	f	l ₁	l ₂	A	h ₄	Inserts
HELIR/L 1212-3T12	3.00	3.18	12.00	1	-	12.0	12.0	10.0	135.00	30.0	2.40	3.0	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 2020-3T12	3.00	3.18	12.00	1	-	20.0	20.0	18.8	135.00	29.0	2.40	-	GRIP-3..., HG.-3
HELIR/L 2525-3T12	3.00	3.18	12.00	1	-	25.0	25.0	23.8	135.00	29.0	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	4.0	GRIP-4..., DG.-4
HELIR/L 2020-4T12	4.00	4.76	12.00	1	-	20.0	20.0	18.4	135.00	29.0	3.20	-	GRIP-4..., DG.-4
HELIR/L 2525-4T12	4.00	4.76	12.00	1	-	25.0	25.0	23.4	135.00	29.0	3.20	-	GRIP-4..., DG.-4
HELIR/L 2020-5T12	5.00	5.00	12.00	1	-	20.0	20.0	17.9	135.00	29.0	4.20	-	GRIP-5..., DG.-5
HELIR/L 2525-5T12	5.00	5.00	12.00	1	-	25.0	25.0	22.9	135.00	29.0	4.20	-	GRIP-5..., DG.-5
HELIR/L 2525-6T12	6.00	6.35	12.00	1	-	25.0	25.0	22.4	135.00	29.0	5.20	-	GRIP-6..., DG.-6
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 2020-3T20 ⁽¹⁾	3.00	3.18	-	2	40.0	20.0	20.0	18.8	140.00	36.4	2.40	-	GRIP-3..., HG.-3
HELIR/L 2525-3T20 ⁽¹⁾	3.00	3.18	-	2	40.0	25.0	25.0	23.8	140.00	36.4	2.40	-	GRIP-3..., HG.-3
HELIR/L 3232-3T20 ⁽¹⁾	3.00	3.18	-	2	40.0	32.0	32.0	30.8	150.00	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
HELIR/L 2020-4T25	4.00	4.76	-	2	50.0	20.0	20.0	18.4	140.00	42.0	3.20	-	GRIP-4..., DG.-4
HELIR/L 2525-4T25	4.00	4.76	-	2	50.0	25.0	25.0	23.4	140.00	42.0	3.20	-	GRIP-4..., DG.-4
HELIR/L 3232-4T25	4.00	4.76	-	2	50.0	32.0	32.0	30.4	150.00	43.0	3.20	-	GRIP-4..., DG.-4
HELIR/L 2020-5T25	5.00	5.00	-	2	50.0	20.0	20.0	17.9	140.00	42.0	4.20	-	GRIP-5..., DG.-5
HELIR/L 2525-5T25	5.00	5.00	-	2	50.0	25.0	25.0	22.9	140.00	42.0	4.20	-	GRIP-5..., DG.-5
HELIR/L 3232-5T25	5.00	5.00	-	2	50.0	32.0	32.0	29.9	150.00	43.0	4.20	-	GRIP-5..., DG.-5
HELIR/L 2525-6T30	6.00	6.35	-	2	60.0	25.0	25.0	22.4	140.00	51.4	5.20	-	GRIP-6..., DG.-6
HELIR/L 3232-6T30	6.00	6.35	-	2	60.0	32.0	32.0	29.4	150.00	51.4	5.20	-	GRIP-6..., DG.-6

- For tool type as shown in Fig.2, T_{max} for grooving is limited by the part diameter D. For grooving depth capacity, see table below.
- For user guide, see pages B132-145

⁽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 (B14) • GRIP (Full Radius) (B14) • DGN/DGNC/DGNM-C (D24) • HGN-C (D30) • DGR/L-C DGRC/LC-C (D24) • DGN/DGNM-J/JS/JT (D25) • HGN-J (D30) • DGR/L-J/JS (D26) • DGN-UT/UA (D27) • DGN-W (D25) • HGN-UT (D31).

Spare Parts



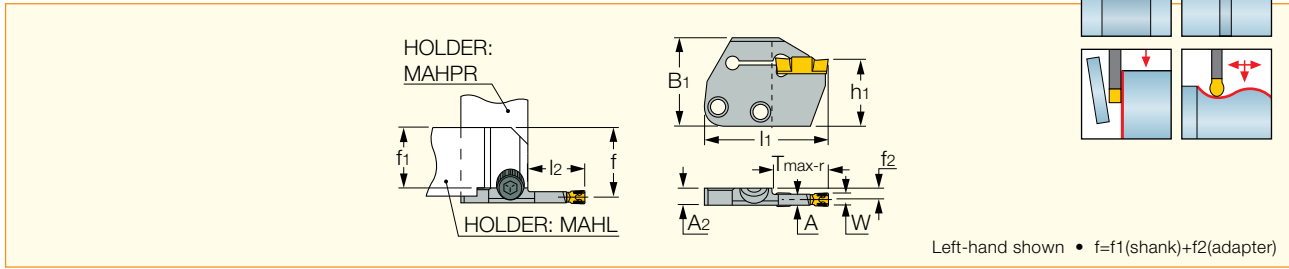
Designation	Screw	Key
HELIR/L 1212-3T12	SR M5X16DIN912	HW 4.0
HELIR/L 1616-3T12	SR M5X16DIN912	HW 4.0
HELIR/L 2020-3T12	SR M5X16DIN912	HW 4.0
HELIR/L 2525-3T12	SR M5X16DIN912	HW 4.0
HELIR/L 1616-4T12	SR M5X16DIN912	HW 4.0
HELIR/L 2020-4T12	SR M5X16DIN912	HW 4.0
HELIR/L 2525-4T12	SR M5X16DIN912	HW 4.0
HELIR/L 2020-5T12	SR M6X16DIN912	HW 5.0
HELIR/L 2525-5T12	SR M6X16DIN912	HW 5.0
HELIR/L 2525-6T12	SR M6X16DIN912	HW 5.0
HELIR/L 1616-3T20	SR M6X20DIN912	HW 5.0
HELIR/L 2020-3T20	SR M6X20DIN912	HW 5.0
HELIR/L 2525-3T20	SR M6X20DIN912	HW 5.0
HELIR/L 3232-3T20	SR M6X20DIN912	HW 5.0
HELIR/L 1616-4T20	SR M6X20DIN912	HW 5.0
HELIR/L 2020-4T25	SR M6X20DIN912	HW 5.0
HELIR/L 2525-4T25	SR M6X20DIN912	HW 5.0
HELIR/L 3232-4T25	SR M6X20DIN912	HW 5.0
HELIR/L 2020-5T25	SR M6X20DIN912	HW 5.0
HELIR/L 2525-5T25	SR M6X20DIN912	HW 5.0
HELIR/L 3232-5T25	SR M6X20DIN912	HW 5.0
HELIR/L 2525-6T30	SR M6X20DIN912	HW 5.0
HELIR/L 3232-6T30	SR M6X20DIN912	HW 5.0

Depth Capacity

Designation	D												
HELIR/L 1616-3T20	-	-	-	-	-	80	194	∞	∞	∞	∞	∞	∞
HELIR/L 2020-3T20	-	-	-	-	-	80	123	299	∞	∞	∞	∞	∞
HELIR/L 2525-3T20	-	-	-	-	-	79	99	136	229	815	∞	∞	∞
HELIR/L 3232-3T20	-	-	-	-	-	79	89	103	127	169	261	604	∞
HELIR/L 1616-4T20	-	-	-	-	-	78	132	505	∞	∞	∞	∞	∞
HELIR/L 2020-4T25	-	-	98	185	∞	∞	∞	∞	∞	∞	∞	∞	∞
HELIR/L 2525-4T25	-	-	98	136	233	368	∞	∞	∞	∞	∞	∞	∞
HELIR/L 3232-4T25	-	-	98	-	149	175	270	626	∞	∞	∞	∞	∞
HELIR/L 2020-5T25	-	-	98	182	∞	∞	∞	∞	∞	∞	∞	∞	∞
HELIR/L 2525-5T25	-	-	98	136	233	368	∞	∞	∞	∞	∞	∞	∞
HELIR/L 3232-5T25	-	-	98	-	149	175	270	626	∞	∞	∞	∞	∞
HELIR/L 2525-6T30	98	135	354	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞
HELIR/L 3232-6T30	98	121	194	345	1718	∞	∞	∞	∞	∞	∞	∞	∞
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

HGPAD

Adapters for Turning, Grooving and Parting



Designation	W _{min}	W _{max}	T _{max-r}	l ₂	f ₂	A	A ₂	l ₁	B ₁	h ₁	Inserts
HGPAD 3R/L-T12	3.00	3.00	12.00	15.2	4.80	2.50	6.0	39.70	32.0	24.0	GRIP 3, HGN 3
HGPAD 3R/L-T20	3.00	3.00	20.00	21.2	4.80	2.50	6.0	45.70	32.0	24.0	GRIP 3, HGN 3
HGPAD 4R/L-T12	4.00	4.76	12.00	18.7	4.40	3.30	6.0	43.20	32.0	24.0	GRIP 4, DGN 4
HGPAD 4R/L-T20	4.00	4.76	20.00	21.2	4.40	3.30	6.0	45.70	32.0	24.0	GRIP 4, DGN 4
HGPAD 5R/L-T12	5.00	5.00	12.00	18.7	3.90	4.20	6.0	43.20	32.0	24.0	GRIP 5, DGN 5
HGPAD 5R/L-T20	5.00	5.00	20.00	21.2	3.90	4.20	6.0	45.70	32.0	24.0	GRIP 5, DGN 5
HGPAD 6R/L-T12	6.00	6.35	12.00	18.7	3.40	5.20	6.0	43.20	32.0	24.0	GRIP 6, DGN 6
HGPAD 6R/L-T22	6.00	6.35	22.00	23.2	3.40	5.20	6.0	47.70	32.0	24.0	GRIP 6, DGN 6

• DO-GRIP DGN, HGN inserts can be used for grooving only • For user guide, see pages B132-145.

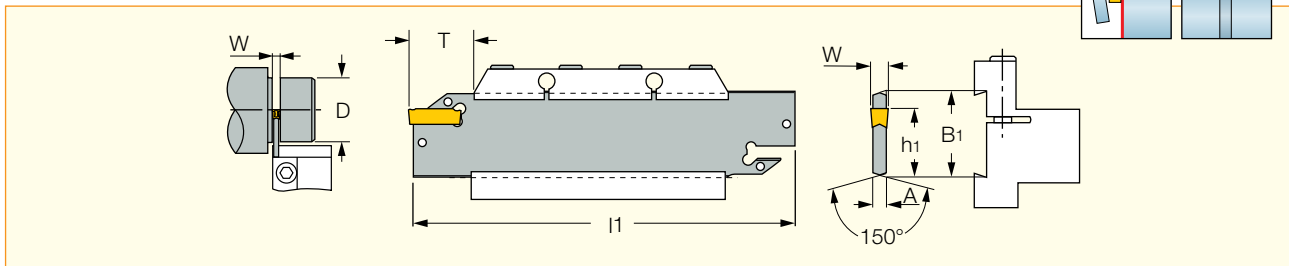
For inserts, see pages: GRIP (B14) • GRIP (Full Radius) (B14) • DGN/DGNC/DGNM-C (D24) • HGN-C (D30) • DGN/DGNM-J/JS/JT (D25) • HGN-J (D30) • DGN-UT/UA (D27) • DGN-W (D25) • HGN-UT (D31).

For holders, see pages: MAHPR/L (B22) • MAHR/L (B22) • C#-MAHD (G7) • C#-MAHDOR (G5) • C#-MAHDR-45 (G4) • C#-MAHPD (G7) • C#-MAHUR/L (G5) • HSK A63WH-MAHDOR (G17) • HSK A63WH-MAHDR-45 (G16) • HSK A63WH-MAHUR/L (G17) • IM-MAHD (G26) • IM-MAHPD (G27) • IM63 XMZ MAHDOR (G24) • IM63 XMZ MAHDR-45 (G23) • IM63 XMZ MAHUR/L (G25)..

DO-GRIP • HELI-GRIP

HGFH

Parting and Grooving Blades for 3 mm GRIP Inserts



Designation	B ₁	W	A	l ₁	h ₁	T blade
HGFH 26-3	26.0	3.00	2.40	110.00	21.4	37.5
HGFH 32-3	32.0	3.00	2.40	150.00	24.8	50.0

For inserts, see pages: GRIP (B14) • GRIP (Full Radius) (B14) • HGN-C (D30) • HGR/L-C (D30) • HGN-J (D30) • HGN-UT (D31) • HGR/L-J/JS (D31).

For holders, see pages: C#-TBK-R/L (G6) • HSK A63WH-TBK-R/L (G18) • IM63 XMZ TBK (G25) • SGTBF (F4) • SGTBR/L (F3) • SGTBU/SGTBN (F2) • UBHCR/L (F4).

Spare Parts

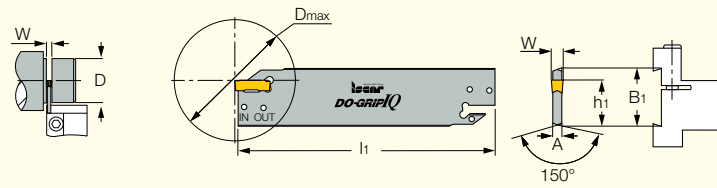
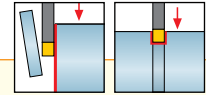


Designation	Extractor
HGFH	EDG 23B*

* 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}	Inserts
DGFH 32-4	32.0	4.00	4.00	3.20	150.00	24.8	100.0	DG. 4.../GRIP 4...
DGFH 32C-4 ⁽¹⁾	32.0	4.00	4.00	3.20	150.00	24.8	69.0	DG. 4...C
DGFH 32-5	32.0	5.00	5.00	4.00	150.00	24.8	120.0	DG. 5.../GRIP 5...
DGFH 32-6	32.0	6.00	6.35	5.20	150.00	24.8	120.0	DG. 6.../GRIP 6...
DGFH 45-3	45.0	3.00 ⁽⁴⁾	3.18	2.40	225.00	38.0	160.0	DG. 3.../DG. 1...
DGFH 45-4	45.0	4.00	4.10	3.20	225.00	38.0	160.0	DG. 4.../GRIP 4...
DGFH 45-5	45.0	4.80	5.00	4.00	225.00	38.0	160.0	DG. 5.../GRIP 5...
DGFH 45-6	45.0	6.00	6.40	5.20	225.00	38.0	160.0	DG. 6.../GRIP 6...

- DG..1.0 insert can be mounted into pocket sizes 2 and 3. In that case the pocket width has to be modified - see page D22
- For user guide, see pages B132-145.

⁽¹⁾ These blades are suitable for turning, using GRIP 4 inserts • Blades with frontal coolant holes (JET-CUT)

For inserts, see pages: DGN/DGNC/DGNM-C (D24) • DGR/L-C DGRC/LC-C (D24) • DGN/DGNM-J/JS/JT (D25) • DGR/L-J/JS (D26) • DGN-P (D28) • DGN-UT/UA (D27) • DGN-W (D25) • DGN-WP (D29) • DGN-Z (D26) • DGR-WP (D29) • DGR/L-P (D28) • DGR/L-Z/ZS (D27) • GRIP (B14) • GRIP (Full Radius) (B14).

For holders, see pages: C#-TBK-R/L (G6) • HSK A63WH-TBK-R/L (G18) • IM63 XMZ TBK (G25) • SGTBF (F4) • SGTBR/L (F3) • SGTBU/SGTBN (F2) • UBHCR/L (F4).

Spare Parts

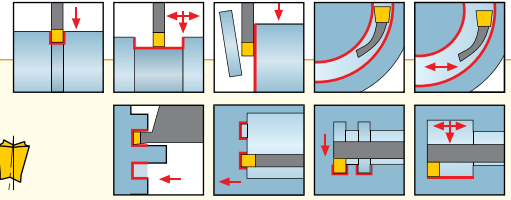
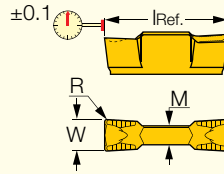


Designation	Extractor	Male Conn.	Cooling Tube
DGFH 32-4	EDG 33A*		
DGFH 32C-4	EDG 33A*	CM 343 MALE CONN.*	SGCU 341*
DGFH 32-5	EDG 33A*		
DGFH 32-6	EDG 33A*		
DGFH 45-3	EDG 33A*		
DGFH 45-4	EDG 33A*		
DGFH 45-5	EDG 33A*		
DGFH 45-6	EDG 33A*		

* Optional, should be ordered separately

GRIP

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



No depth penetration limit

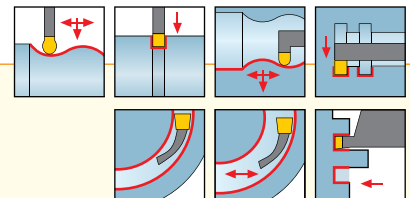
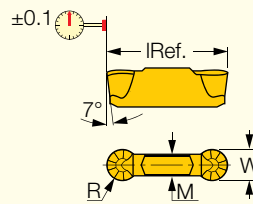
Designation	Dimensions				Tough ↔ Hard							Recommended Machining Data		
	W±0.05	R±0.05	I	M	IC830	IC8250	IC418	IC808	IC908	IC5010	IC807	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GRIP 3002Y	3.00	0.20	16.00	2.3	●	●		●	●		●	0.25-1.80	0.14-0.18	0.07-0.11
GRIP 3003Y	3.00	0.30	16.00	2.3	●	●	●	●	●	●		0.40-1.80	0.15-0.19	0.07-0.11
GRIP 318-040Y	3.18	0.40	16.00	2.3	●	●	●	●	●			0.50-1.90	0.17-0.22	0.07-0.12
GRIP 4002Y	4.00	0.20	19.00	2.8	●	●		●	●		●	0.25-2.40	0.16-0.21	0.09-0.14
GRIP 4004Y	4.00	0.40	19.00	2.8	●	●		●	●	●		0.50-2.40	0.18-0.24	0.09-0.15
GRIP 476-080Y	4.76	0.80	19.00	3.1	●	●	●	●	●			1.00-2.80	0.21-0.33	0.10-0.20
GRIP 5005Y	5.00	0.50	19.00	3.3	●	●	●	●	●	●		0.60-3.00	0.20-0.30	0.11-0.20
GRIP 5008Y	5.00	0.80	19.00	3.4	●	●	●	●	●	●		1.00-3.00	0.23-0.35	0.11-0.21
GRIP 6005Y	6.00	0.50	19.00	4.2	●	●	●	●	●	●		0.60-3.60	0.22-0.36	0.13-0.23
GRIP 6008Y	6.00	0.80	19.00	4.2	●	●	●	●	●	●		1.00-3.60	0.24-0.42	0.13-0.25
GRIP 635-080Y	6.35	0.80	19.00	4.2	●	●	●	●	●			1.00-3.80	0.25-0.44	0.14-0.27

• For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-HELIR/L (G10) • C#-HFIR/L-MC (G12) • CR HFIR/L-M (E34) • DGAD/HGAD (D22) • DGFH (B13) • DGFS (D12) • DGTR/L (D18) • HELIR/L (B93) • HELIR/L (B11) • HFAER/L-4T (E24) • HFAER/L-5,6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5,6T (E32) • HFFR/L-T (E22) • HFHR/L-4T (E18) • HFHR/L-5T (E19) • HFIR/L-MC (E33) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGAER/L-3 (E24) • HGAIR/L-3 (E30) • HGFL (B12) • HGHR/L-3 (E16) • HGPAD (B12) • IM-HFIR/L-MC (G29).

GRIP (Full Radius)

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



No depth penetration limit.

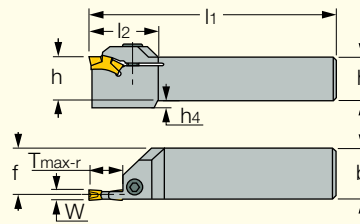
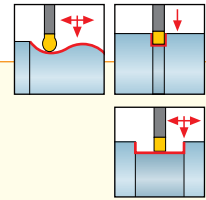
Designation	Dimensions				Tough ↔ Hard							Recommended Machining Data		
	W±0.05	R±0.05	I	M	IC830	IC8250	IC418	IC808	IC908	IC5010	IC807	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GRIP 3015Y	3.00	1.50	16.00	2.1	●	●	●	●	●	●	●	0.00-1.50	0.18-0.26	0.07-0.13
GRIP 318-159Y	3.18	1.59	16.00	2.3	●	●	●	●	●	●		0.00-1.50	0.19-0.28	0.07-0.13
GRIP 4020Y	4.00	2.00	19.00	2.8	●	●	●	●	●	●		0.00-2.00	0.20-0.34	0.09-0.17
GRIP 476-238Y	4.76	2.38	19.00	3.2	●	●	●	●	●			0.00-2.30	0.21-0.40	0.10-0.20
GRIP 5025Y	5.00	2.50	19.00	3.4	●	●	●	●	●	●		0.00-2.50	0.23-0.42	0.11-0.21
GRIP 6030Y	6.00	3.00	19.00	4.2	●	●	●	●	●	●		0.00-3.00	0.24-0.50	0.13-0.25
GRIP 635-318Y	6.35	3.18	19.00	4.0	●	●	●	●	●			0.00-3.10	0.25-0.53	0.14-0.27

• For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-HELIR/L (G10) • C#-HFIR/L-MC (G12) • CR HFIR/L-M (E34) • DGAD/HGAD (D22) • DGFH (B13) • DGFS (D12) • DGTR/L (D18) • HELIR/L (B93) • HELIR/L (B11) • HFAER/L-4T (E24) • HFAER/L-5,6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5,6T (E32) • HFFR/L-T (E22) • HFHR/L-4T (E18) • HFHR/L-5T (E19) • HFIR/L-MC (E33) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGAER/L-3 (E24) • HGAIR/L-3 (E30) • HGFL (B12) • HGHR/L-3 (E16) • HGPAD (B12) • IM-HFIR/L-MC (G29).

TGDR/L

External Holders for Turning, Grooving and Profiling



Right-hand shown

Designation	W _{min}	W _{max}	T _{max-r}	h	b	l ₁	l ₂	f	h ₄	Inserts
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 2020-3M	3.00	3.00	7.50	20.0	20.0	125.00	30.5	18.7	-	TGMF 3
TGDR/L 2525-3M	3.00	3.00	7.50	25.0	25.0	140.00	30.5	23.7	-	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
TGDR/L 2020-4M	4.00	5.00	9.00	20.0	20.0	125.00	32.2	18.2	6.0	TGMF 4/TGMF 5
TGDR/L 2525-4M	4.00	5.00	15.50	25.0	25.0	140.00	34.0	23.2	-	TGMF 4/TGMF 5
TGDR/L 2525-5M	5.00	5.00	18.00	25.0	25.0	140.00	37.0	22.7	-	TGMF 5
TGDR/L 3232-5M	5.00	5.00	22.00	32.0	32.0	150.00	45.0	29.8	-	TGMF 5
TGDR/L 2525-6M	6.00	6.35	22.00	25.0	25.0	150.00	43.0	22.5	-	TGMF 6
TGDR/L 3232-6M	6.00	6.35	22.00	32.0	32.0	150.00	43.0	29.5	-	TGMF 6

• For user guide, see pages B132-145.

For inserts, see pages: TGMF (Full Radius) (B17) • TGMF/P (B17).

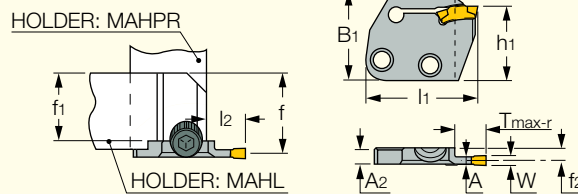
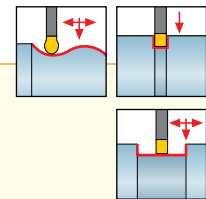
Spare Parts



Designation	Screw	Key
TGDR/L 1616-3M	SR M5X16DIN912	HW 4.0
TGDR/L 2020-3M	SR M5X20DIN912	HW 4.0
TGDR/L 2525-3M	SR M5X20DIN912	HW 4.0
TGDR/L 1616-4M	SR M5X20DIN912	HW 4.0
TGDR/L 2020-4M	SR M5X20DIN912	HW 4.0
TGDR/L 2525-4M	SR M5X20DIN912	HW 4.0
TGDR/L 2525-5M	SR M5X25DIN912	HW 4.0
TGDR/L 3232-5M	SR M6X25DIN912 UNB.	HW 5.0
TGDR/L 2525-6M	SR M6X25DIN912 UNB.	HW 5.0
TGDR/L 3232-6M	SR M6X25DIN912 UNB.	HW 5.0

TGPAD

Adapters for TGMF / TGMP Groove-Turn Inserts



Left-hand shown • f=f1(shank)+f2(adapter)

Designation	W _{min}	W _{max}	T _{max-r}	f ₂	A	A ₂	l ₂	l ₁	h ₁	B ₁
TGPAD 3R/L-T9	3.00	3.00	9.00	4.00	2.40	5.2	12.7	37.20	24.0	30.0
TGPAD 4R/L-T16	4.00	5.00	16.00	3.50	3.40	5.2	17.2	41.70	24.0	30.0
TGPAD 5R/L-T16	5.00	5.00	16.00	3.00	4.40	5.2	17.2	41.70	24.0	30.0
TGPAD 6R/L-T22	6.00	6.35	22.00	3.50	5.00	6.0	23.2	47.10	24.0	32.0

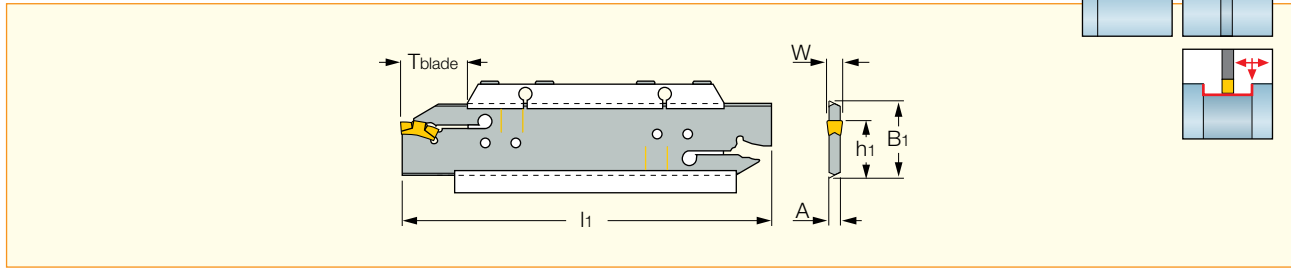
• For user guide, see pages B132-145.

For inserts, see pages: TGMF (Full Radius) (B17) • TGMF/P (B17).

For holders, see pages: MAHPR/L (B22) • MAHR/L (B22) • C#-MAHD (G7) • C#-MAHDR-45 (G4) • C#-MAHPD (G7) • C#-MAHUR/L (G5) • HSK A63WH-MAHDOR (G17) • HSK A63WH-MAHDR-45 (G16) • HSK A63WH-MAHUR/L (G17) • IM-MAHD (G26) • IM-MAHPD (G27) • IM63 XMZ MAHDOR (G24) • IM63 XMZ MAHDR-45 (G23) • IM63 XMZ MAHUR/L (G25).

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	Inserts
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
TGHN 32-3D	32.0	3.00	3.00	10.0	18.0	24.8	150.00	2.40	TGMF 3
TGHN 32-4D	32.0	4.00	5.00	12.0	21.0	24.8	150.00	3.20	TGMF 4, TGMF/P 5
TGHN 32-5D	32.0	5.00	5.00	12.0	26.0	24.8	150.00	4.00	TGMF/P 5
TGHN 32-6D	32.0	6.00	6.35	16.0	26.0	24.8	150.00	5.20	TGMF 6

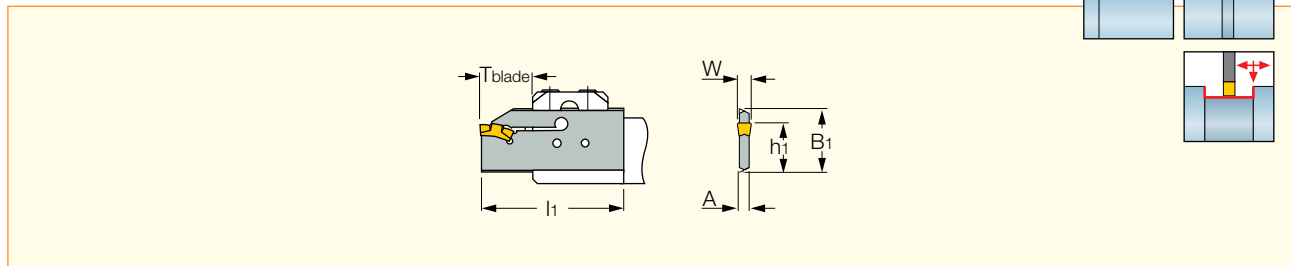
• Use the drilled holes on blade for min. and max. overhang • When using a double-ended insert, grooving depth is limited by the insert. • For user guide, see pages B132-145.

For inserts, see pages: TGMF (Full Radius) (B17) • TGMF/P (B17).

For holders, see pages: SGTBU/SGTBN (F2) • UBHCR/L (F4).

TGHN-S

Single-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	Inserts
TGHN 32-3S	32.0	3.00	3.00	10.0	18.0	24.8	48.30	2.40	TGMF 3
TGHN 32-4S	32.0	4.00	5.00	12.0	21.0	24.8	49.50	3.20	TGMF 4, TGMF/P 5
TGHN 32-5S	32.0	5.00	5.00	12.0	25.0	24.8	54.00	4.00	TGMF/P 5
TGHN 32-6S	32.0	6.00	6.35	16.0	25.0	24.8	55.70	5.20	TGMF 6

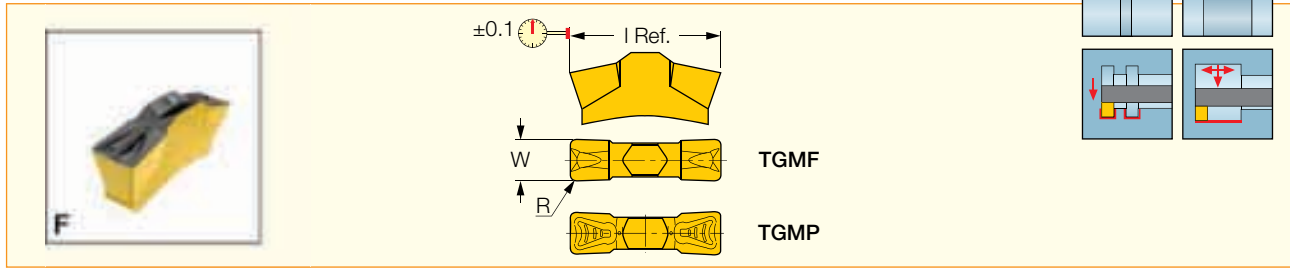
• Use the drilled holes on blade for min. and max. overhang • When using a double-ended insert, grooving depth is limited by the insert. • For user guide, see pages B132-145.

For inserts, see pages: TGMF (Full Radius) (B17) • TGMF/P (B17).

For holders, see pages: C#-TBU (G6) • IM-TBU (G26) • UBHCR/L (F4).

TGMF/P

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



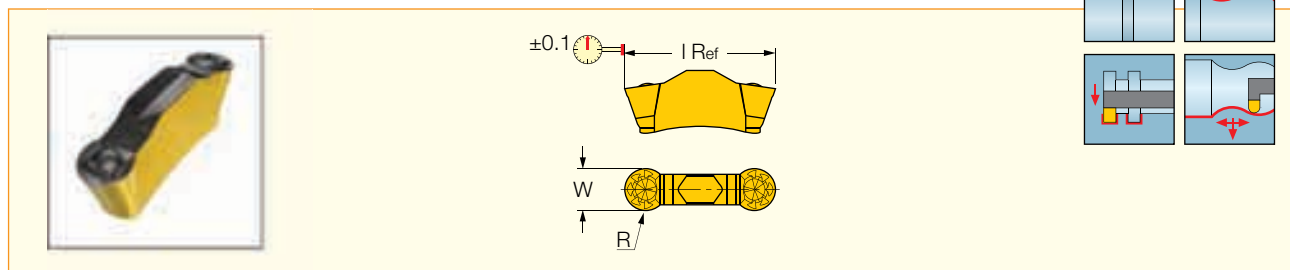
Designation	Dimensions				Tough ↔ Hard						Recommended Machining Data		
	W ± 0.05	R ± 0.05	I	T _{max-r}	IC830	IC8250	IC808	IC20	IC428	IC20N	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
TGMF 302	3.00	0.20	13.50	10.50	●	●	●	●	●	●	0.25-1.80	0.14-0.18	0.07-0.11
TGMF 304	3.00	0.40	13.55	10.30	●	●	●	●	●	●	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
TGMP 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
TGMF 635-080	6.35	0.80	22.15	18.60	●	●	●	●	●	●	1.00-3.80	0.25-0.44	0.14-0.27

• Dmin for internal application=20.5 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: TGDR/L (B15) • TGHN 26-M (B92) • TGHN-D (B16) • TGHN-S (B16) • TGIR/L-C (B91) • TGPAD (B15).

TGMF (Full Radius)

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



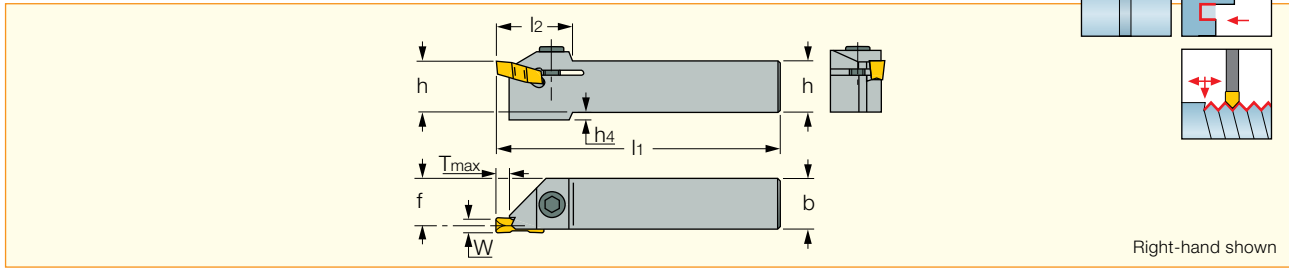
Designation	Dimensions				Tough ↔ Hard						Recommended Machining Data		
	W ± 0.05	R ± 0.05	I	T _{max-r}	IC830	IC8250	IC808	IC20	IC428	IC5010	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
TGMF 315	3.00	1.50	13.50	11.40	●	●	●	●	●	●	0.00-1.50	0.18-0.26	0.07-0.13
TGMF 420	4.00	2.00	17.80	14.90	●	●	●	●	●	●	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
TGMF 630	6.00	3.00	22.15	18.30	●	●	●	●	●	●	0.00-3.00	0.24-0.50	0.13-0.25

• Can cut arcs to 250° • Dmin for internal application=20.5 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: TGDR/L (B15) • TGHN 26-M (B92) • TGHN-D (B16) • TGHN-S (B16) • TGIR/L-C (B91) • TGPAD (B15).

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/L 16-3 ST ⁽¹⁾	5.00	4.80	4.80	16.0	16.0	78.00	25.0	15.0	-
GHMR/L 20	6.40	4.80	4.80	20.0	20.0	125.00	25.0	18.5	-
GHMR/L 25	6.40	4.80	4.80	25.0	25.0	140.00	25.0	23.5	-
GHMR/L 32	6.40	4.80	4.80	32.0	32.0	150.00	25.0	30.2	-

• Use for recessing: light turning, small depth of cut ($a_p=0.1-0.5$ mm) and small feed ($f=0.1$ mm/rev). • For user guide, see pages B132-145.

⁽¹⁾ For Star and multi-spindle machines.

For inserts, see pages: B29-51 and for TIP threading inserts, see in ISCAR TURNING & THREADING TOOLS catalog.

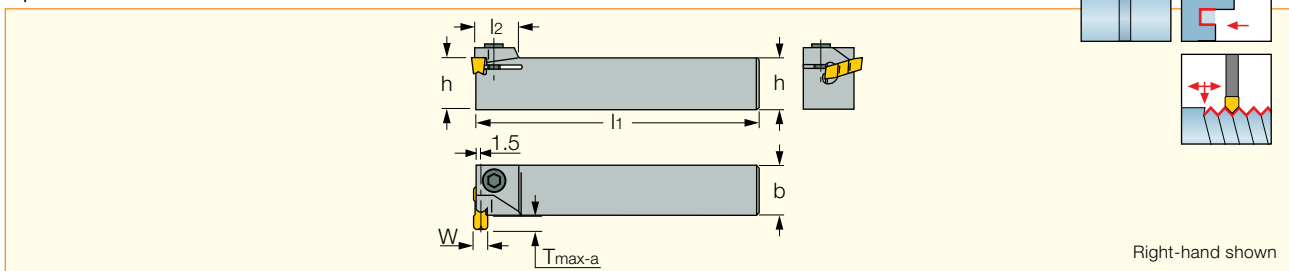
Spare Parts



Designation	Screw	Key
GHMR/L 12	SR 76-1022	T-20/5
GHMR/L 16	SR M6X16DIN912	HW 5.0
GHMR/L 16-3 ST	SR M6X16DIN912	HW 5.0
GHMR/L 20	SR M6X20DIN912	HW 5.0
GHMR/L 25	SR M6X25DIN912 UNB.	HW 5.0
GHMR/L 32	SR M6X25DIN912 UNB.	HW 5.0

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
GHMPR/L 20	6.40	4.80	4.80	20.0	20.0	120.00	17.0
GHMPR/L 25	6.40	4.80	4.80	25.0	25.0	135.00	17.0

• Use for recessing: light turning, small depth of cut ($a_p=0.1-0.5$ mm) and small feed ($f=0.1$ mm/rev). • For user guide, see pages B132-145.

For inserts, see pages: B29-51 and for TIP threading inserts, see in ISCAR TURNING & THREADING TOOLS catalog.

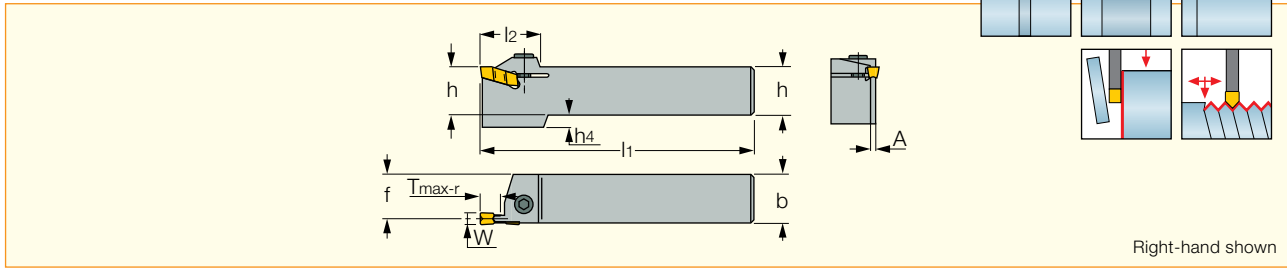
Spare Parts



Designation	Screw	Key
GHMPR/L 16	SR M6X16DIN912	HW 5.0
GHMPR/L 20	SR M6X20DIN912	HW 5.0
GHMPR/L 25	SR M6X25DIN912 UNB.	HW 5.0

GHDR/L (Short Pocket)

External Holders 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 20-3	2.80	4.00	9.00	20.0	20.0	120.00	26.0	18.8	2.40	-
GHDR/L 25-3	2.80	4.00	9.00	25.0	25.0	135.00	26.0	23.8	2.40	-
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/L 16-4 ST ⁽¹⁾	4.00	5.40	10.00	16.0	16.0	78.00	24.6	14.0	3.40	4.0
GHDR/L 20-4	4.00	5.00	10.00	20.0	20.0	120.00	26.0	18.4	3.20	-
GHDR/L 25-4	4.00	5.00	10.00	25.0	25.0	135.00	27.0	23.4	3.20	-
GHDR/L 32-4	4.00	5.00	10.00	32.0	32.0	150.00	27.0	30.4	3.20	-
GHDR/L 20-5	5.00	6.40	12.00	20.0	20.0	120.00	29.0	17.9	4.20	-
GHDR/L 25-5	5.00	6.40	12.00	25.0	25.0	135.00	29.0	22.9	4.20	-
GHDR/L 32-5	5.00	6.40	12.00	32.0	32.0	150.00	29.0	29.9	4.20	-
GHDR/L 25-6	6.00	6.40	12.00	25.0	25.0	135.00	29.0	22.3	5.40	-
GHDR/L 25-P8 ⁽²⁾	7.00	10.00	16.50	25.0	25.0	150.00	35.7	21.8	6.50	-
GHDR/L 32-P8 ⁽²⁾	7.00	10.00	16.50	32.0	32.0	170.00	35.7	28.8	6.50	-

• For using TIP and GPV inserts, toolholder seat needs to be modified according to insert profile to ensure clearance. • For user guide, see pages B132-145.

⁽¹⁾ For Star and multi-spindle machines. ⁽²⁾ Used with GIMF, GIMY, GIPY, GIMM, GITM, GPV inserts.

For inserts, see pages: B29-51 and for TIP threading inserts, see in ISCAR TURNING & THREADING TOOLS catalog.

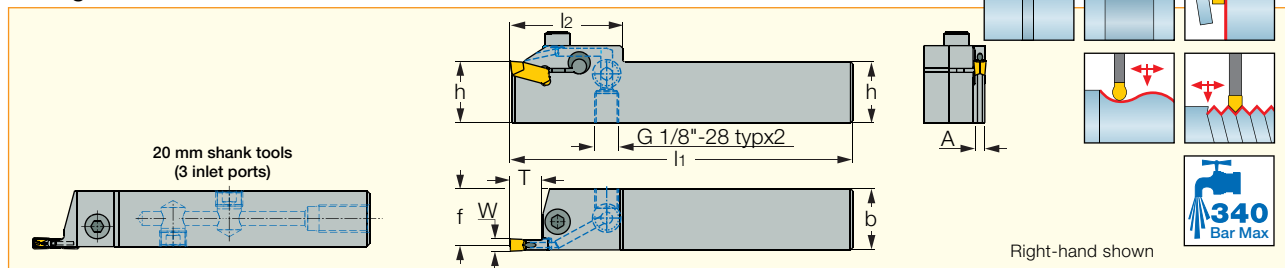
Spare Parts



Designation	Screw	Key
GHDR/L 12-3	SR 76-1022	T-20/5
GHDR/L 16-3	SR M5X20DIN912	HW 4.0
GHDR/L 16-3 ST	SR M5X20DIN912	HW 4.0
GHDR/L 20-3	SR M5X20DIN912	HW 4.0
GHDR/L 25-3	SR M5X25DIN912	HW 4.0
GHDR/L 16-4	SR M6X20DIN912	HW 5.0
GHDR/L 16-4 ST	SR M6X20DIN912	HW 5.0
GHDR/L 20-4	SR M6X20DIN912	HW 5.0
GHDR/L 25-4	SR M6X20DIN912	HW 5.0
GHDR/L 32-4	SR M6X25DIN912 UNB.	HW 5.0
GHDR/L 20-5	SR M6X20DIN912	HW 5.0
GHDR/L 25-5	SR M6X25DIN912 UNB.	HW 5.0
GHDR/L 32-5	SR M6X25DIN912 UNB.	HW 5.0
GHDR/L 25-6	SR M6X25DIN912 UNB.	HW 5.0
GHDR/L 25-P8	SR M8X25DIN912	HW 6.0
GHDR/L 32-P8	SR M8X25DIN912	HW 6.0

GHDR/L-JHP (Short Pocket)

Grooving and Turning CUT-GRIP Toolholders with Channels for High Pressure Coolant



Designation	W _{min}	W _{max}	h	T _{max-r}	b	l ₁	l ₂	f	A
GHDR/L 20-3-JHP	2.80	4.00	20.0	9.00	20.0	120.00	29.0	18.8	2.40
GHDR/L 25-3-JHP	2.80	4.00	25.0	9.00	25.0	140.00	44.0	23.8	2.40
GHDR/L 20-4-JHP	4.00	5.00	20.0	10.00	20.0	120.00	29.0	18.4	3.20
GHDR/L 25-4-JHP	4.00	5.00	25.0	10.00	25.0	140.00	45.0	23.4	3.20
GHDR/L 25-5-JHP	5.00	6.40	25.0	12.00	25.0	140.00	46.0	22.9	4.20

• For using TIP and GPV inserts, toolholder seat needs to be modified according to insert profile to ensure clearance. • For user guide see pages B132-148.

For inserts, see pages: B29-51 and for TIP threading inserts, see in ISCAR TURNING & THREADING TOOLS catalog.

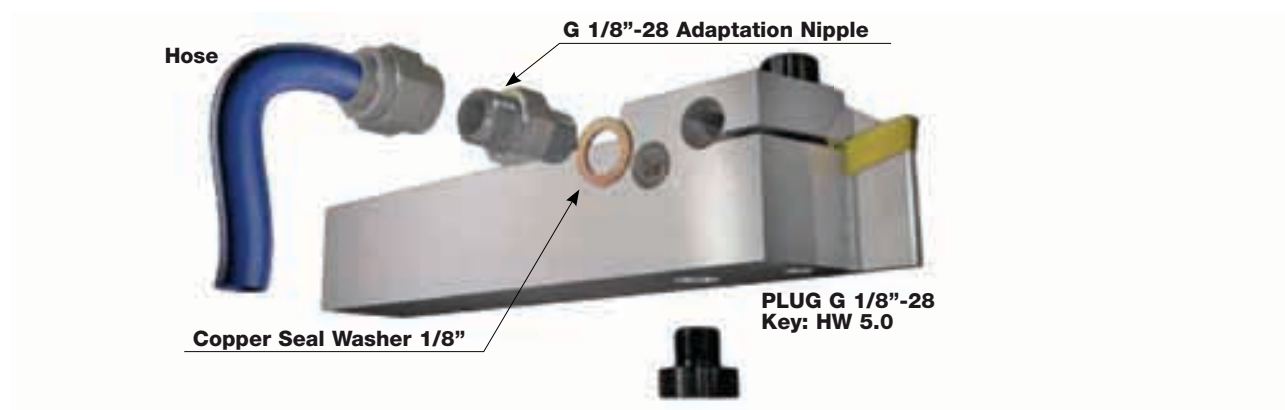
Spare Parts

Designation	Screw	Screw 1	Key	Plug	Key 1
GHDR/L 20-3-JHP	SR M5X16DIN912 12.9		HW 4.0	PLG 1/8BSP TL360	HW 5.0
GHDR/L 25-3-JHP		SR M5X20DIN912 12.9	HW 4.0	PLG 1/8ISO1179	HW 5.0
GHDR/L 20-4-JHP	SR M6X16DIN912 12.9			PLG 1/8BSP TL360	HW 5.0
GHDR/L 25-4-JHP		SR M6X20DIN912 12.9		PLG 1/8ISO1179	HW 5.0
GHDR/L 25-5-JHP		SR M6X20DIN912 12.9		PLG 1/8ISO1179	HW 5.0

Flow Rate vs. Pressure

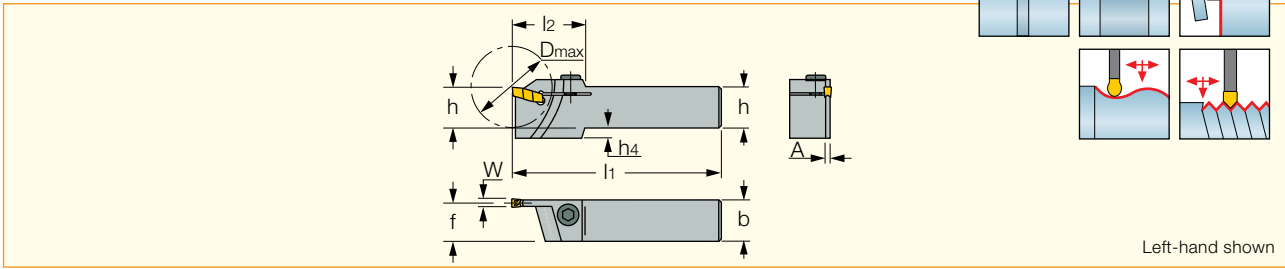
Designation	70 bar Flow Rate (liters/min)	100 bar Flow Rate (liters/min)	140 bar Flow Rate (liters/min)
GHDR/L 20-3-JHP	5-7	7-9	9-11
GHDR/L 20-4-JHP	6-8	10-12	12-14
GHDR/L 25-3-JHP	6-8	8-10	10-12
GHDR/L 25-4-JHP	10-12	14-16	16-18
GHDR/L 25-5-JHP	13-16	19-21	22-24

GHDR...-JHP



GHGR/L

External Holders for Deep Grooving and Parting



Designation	W _{min}	W _{max}	D _{max} ⁽³⁾	h	b	l ₁	l ₂	f	A	h ₄
GHGR/L 20-2 ⁽¹⁾	0.40	2.40	34.0	20.0	20.0	120.00	33.0	19.2	1.70	-
GHGR/L 25-2 ⁽¹⁾	0.40	2.40	34.0	25.0	25.0	140.00	33.0	24.2	1.70	-
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 ⁽²⁾	3.00	4.00	34.0	16.0	16.0	78.00	33.0	15.0	2.40	4.0
GHGR/L 20-3	3.00	4.00	40.0	20.0	20.0	120.00	36.0	18.7	2.50	-
GHGR/L 25-3	3.00	4.00	40.0	25.0	25.0	140.00	36.0	23.7	2.50	-
GHGR 16-4	4.00	5.00	40.0	16.0	16.0	110.00	36.0	14.4	3.20	4.0
GHGR/L 20-4	4.00	5.00	40.0	20.0	20.0	120.00	36.0	18.2	3.50	-
GHGR/L 25-4	4.00	5.00	40.0	25.0	25.0	140.00	36.0	23.2	3.50	-
GHGR/L 25-425	4.00	5.00	50.0	25.0	25.0	140.00	41.0	23.2	3.50	-
GHGR/L 25-5	5.00	6.40	50.0	25.0	25.0	140.00	41.0	22.9	4.20	-
GHGR/L 32-5	5.00	6.40	50.0	32.0	32.0	150.00	41.0	29.9	4.20	-
GHGR/L 25-630	6.00	8.00	60.0	25.0	25.0	140.00	45.0	22.3	5.40	-
GHGR/L 32-632	6.00	8.00	64.0	32.0	32.0	170.00	50.0	29.4	5.40	-

• 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. • For user guide, see pages B132-145

⁽¹⁾ In the case of inserts with W<2 mm, tool pocket should be ground to 0.3 mm thinner than the insert's grooving width. ⁽²⁾ For Star and multi-spindle machines.

⁽³⁾ Maximum parting diameter

For inserts, see pages: B29-51 and for TIP threading inserts, see in ISCAR full ISCAR TURNING & THREADING TOOLS catalog.

Depth Capacity*

Designation	D												
GHGR/L 16-3	-	-	-	-	40	50	68	80	120	290	1000	-	-
GHGR/L 20-2	-	-	-	-	-	-	66	80	120	270	1000	-	-
GHGR/L 20-3	-	-	-	-	40	50	68	80	120	290	1000	-	-
GHGR/L 20-4	-	-	-	-	40	50	68	80	120	290	1000	-	-
GHGR/L 25-2	-	-	-	-	-	-	66	72	86	110	130	220	320
GHGR/L 25-3	-	-	-	-	40	80	105	120	190	450	1500	-	-
GHGR/L 25-4	-	-	-	-	40	80	105	120	190	450	1500	-	-
GHGR/L 25-425	-	-	99	135	350	700	-	-	-	-	-	-	-
GHGR/L 25-5	-	-	50	130	300	600	-	-	-	-	-	-	-
GHGR/L 25-630	-	100	350	-	-	-	-	-	-	-	-	-	-
GHGR/L 32-5	-	-	50	130	300	600	-	-	-	-	-	-	-
GHGR 32-632	-	-	-	-	-	-	-	-	-	-	-	-	-
Depth T	32	30	25	23	20	19	17	16	14	12	11	9	8

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

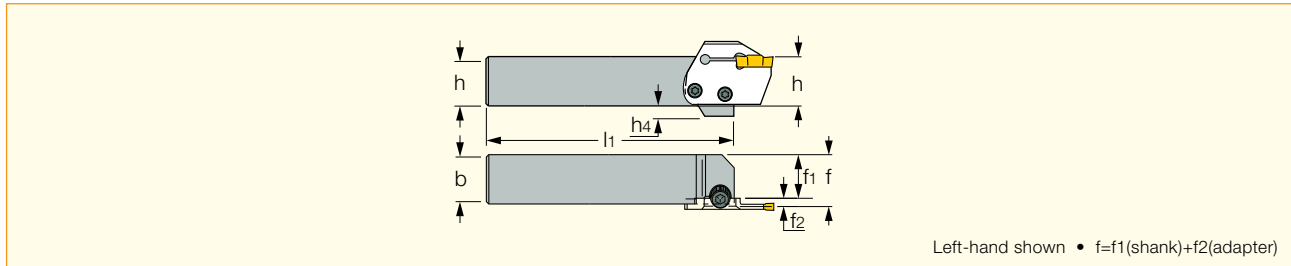
Spare Parts



Designation	Screw	Key
GHGL 20-2	SR M5X20DIN912	HW 4.0
GHGR 20-2	SR M5X16DIN912	HW 4.0
GHGR/L 25-2	SR M5X20DIN912	HW 4.0
GHGR/L 16-3	SR M6X20DIN912	HW 5.0
GHGR/L 16-3 ST	SR M6X20DIN912	HW 5.0
GHGR/L 20-3	SR M6X20DIN912	HW 5.0
GHGL 25-3	SR M6X25DIN912 UNB.	HW 5.0
GHGR 25-3	SR M6X16DIN912	HW 5.0
GHGR 16-4	SR M6X20DIN912	HW 5.0
GHGR/L 20-4	SR M6X20DIN912	HW 5.0
GHGR/L 25-4	SR M6X25DIN912 UNB.	HW 5.0
GHGR/L 25-425	SR M6X25DIN912 UNB.	HW 5.0
GHGR/L 25-5	SR M6X25DIN912 UNB.	HW 5.0
GHGR/L 32-5	SR M6X25DIN912 UNB.	HW 5.0
GHGR/L 25-630	SR M6X16DIN912	HW 5.0
GHGR/L 32-632	SR M6X20DIN912	HW 5.0

MAHR/L

Holders for Adapters of all GRIP Systems



Designation	h	b	l ₁	h ₄	f ₁
MAHR/L 20	20.0	20.0	130.00	10.0	17.1
MAHR/L 25	25.0	25.0	130.00	5.0	22.1
MAHR/L 32	32.0	32.0	140.00	-	29.1

For tools, see pages: CGPAD (B23) • DGAD-B-D (D23) • DGAD/HGAD (D22) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGPAD (B12) • PCADR/L (B55) • TGAD (D39) • TGPAD (B15).

Spare Parts



Designation	Lower Locking Screw	Key	Side Locking Screw	Upper Locking Screw	Key 1	Sealing Screw
MAHR/L	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 ⁽³⁾

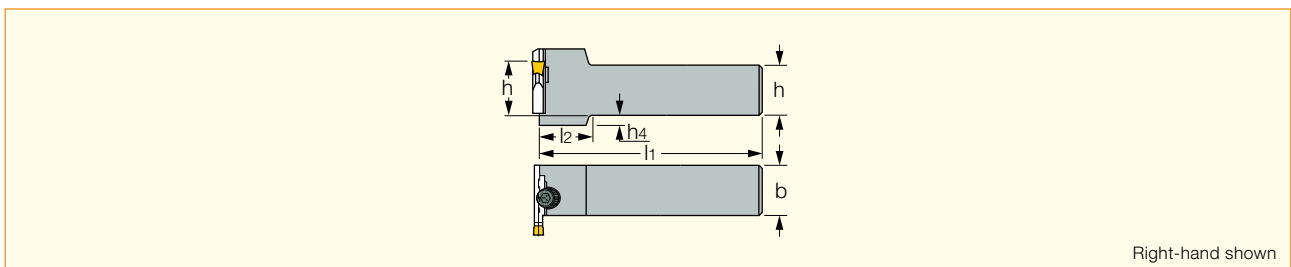
⁽¹⁾ For CGPAD, HGPAD, TGPAD and HFPAD adapters. Supplied with the tools.

⁽²⁾ For DGAD, HGAD and PCADR/L adapters supplied in the attached plastic bag.

⁽³⁾ Used to prevent chips from entering the upper locking screw hole when it is not used for the adaptation. Supplied in the attached plastic bag.

MAHPR/L

Holders for all GRIP Systems, Perpendicularly Mounted Adapters



Designation	h	b	l ₁	l ₂	h ₄
MAHPR/L 20	20.0	20.0	140.00	25.00	10.0
MAHPR/L 25	25.0	25.0	140.00	25.00	5.0
MAHPR/L 32	32.0	32.0	150.00	25.00	-

For tools, see pages: CGPAD (B23) • DGAD-B-D (D23) • DGAD/HGAD (D22) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGPAD (B12) • PCADR/L (B55) • TGAD (D39) • TGPAD (B15).

Spare Parts



Designation	Lower Locking Screw	Key	Side Locking Screw	Upper Locking Screw	Key 1	Sealing Screw
MAHPR/L	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 ⁽³⁾

⁽¹⁾ For CGPAD, HGPAD, TGPAD and HFPAD adapters. Supplied with the tools.

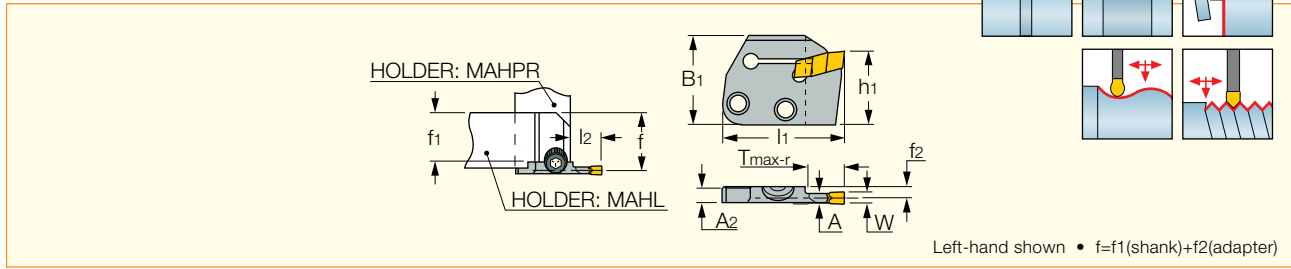
⁽²⁾ For DGAD, HGAD and PCADR/L adapters supplied in the attached plastic bag.

⁽³⁾ Used to prevent chips from entering the upper locking screw hole when it is not used for the adaptation. Supplied in the attached plastic bag.

MODULAR-GRIP • CUT-GRIP

CGPAD

Adapters for CUT-GRIP Inserts



Left-hand shown • $f = f_1(\text{shank}) + f_2(\text{adapter})$

Designation	W_{\min}	W_{\max}	$T_{\max-r}$	l_2	f_2	A	A_2	l_1	B_1	h_1
CGPAD 3R/L-T16	2.80	4.00	16.00	17.3	4.00	2.40	5.2	42.00	30.0	24.0
CGPAD 3R/L-T22	2.80	4.00	22.00	23.0	4.00	2.40	5.2	47.70	30.0	24.0
CGPAD 4R/L-T16	4.00	5.00	16.00	17.3	3.60	3.50	5.2	42.00	30.0	24.0
CGPAD 4R/L-T22	4.00	5.00	22.00	23.0	3.50	3.50	5.2	47.70	30.0	24.0
CGPAD 5R/L-T16	5.00	6.40	16.00	17.3	3.10	4.50	5.2	42.00	30.0	24.0
CGPAD 5R/L-T22	5.00	6.40	22.00	23.0	3.00	4.50	5.2	47.70	30.0	24.0
CGPAD 8R/L-T16	6.40	8.00	16.00	17.3	3.00	6.00	6.0	42.00	30.0	24.0
CGPAD 8R/L-T22	6.40	8.00	22.00	23.0	3.00	6.00	6.0	47.70	30.0	24.0

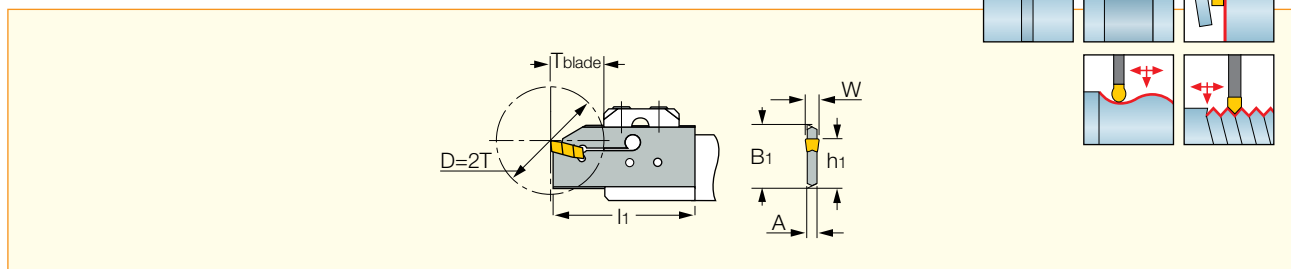
• For using TIP insert, toolholder seat needs to be modified according to insert profile to ensure clearance. • For user guide, see pages B132-145

For inserts: see pages B29-51 and for TIP threading inserts, see in ISCAR TURNING & THREADING TOOLS catalog.

CUT-GRIP

CGHN-S

External Machining Single-Ended Blades



Designation	B_1	W_{\min}	W_{\max}	$T_{bl\min}$	T_{blade}	h_1	l_1	A
CGHN 32-3S	32.0	2.80	4.00	10.0	19.0	24.8	51.00	2.40
CGHN 32-4S	32.0	3.50	5.00	12.0	21.0	24.8	53.00	3.20
CGHN 32-5S	32.0	4.40	6.40	12.0	25.0	24.8	56.00	4.00
CGHN 32-6S	32.0	5.50	6.40	12.0	25.0	24.8	56.00	5.20

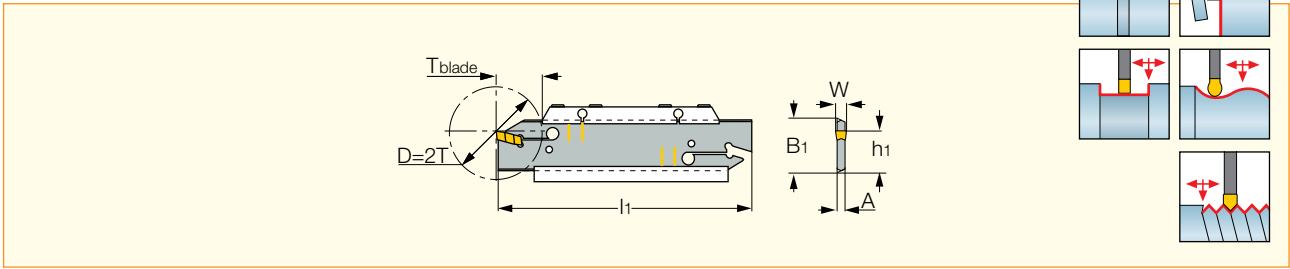
• When using a double-ended insert, grooving depth is limited by the insert. • For user guide, see pages B132-145.

For inserts, see pages: B29-51 and for TIP threading inserts, see in ISCAR TURNING & THREADING TOOLS catalog.

For holders, see pages: C#-TBU (G6) • IM-TBU (G26) • UBHCR/L (F4).

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
CGHN 32-3D	32.0	2.80	4.00	10.0	19.0	24.8	150.00	2.40
CGHN 32-4D	32.0	3.50	5.00	12.0	21.0	24.8	150.00	3.20
CGHN 32-5D	32.0	4.40	6.40	12.0	26.0	24.8	150.00	4.00
CGHN 32-6D	32.0	5.50	6.40	12.0	26.0	24.8	150.00	5.20

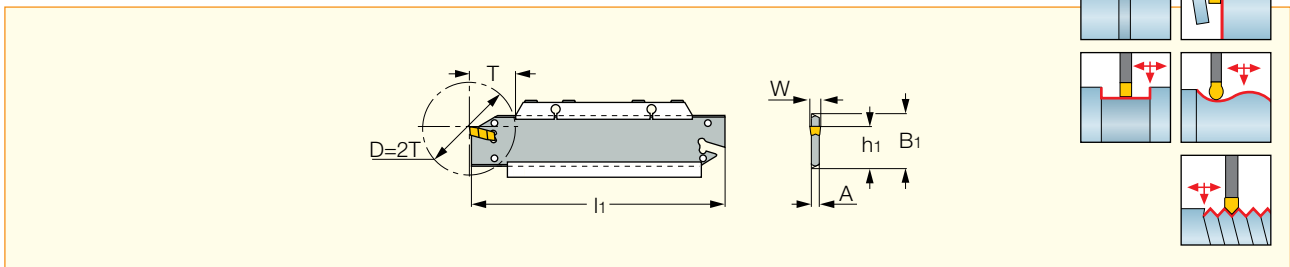
• Use the yellow lines on blade for min. and max. overhang. • For using TIP inserts, toolholder seat needs to be modified according to insert profile to ensure clearance. • When using a double-ended insert, grooving depth is limited by the insert. • For user guide, see pages B132-145.

For inserts, see pages: B29-51 and for TIP threading inserts, see in ISCAR full ISCAR TURNING & THREADING TOOLS catalog.

For holders, see pages: SGTBU/SGTBN (F2) • UBHCR/L (F4).

CGHN-DG

Double-Ended Blades for External Grooving and Turning Self Clamped Inserts



Designation	B ₁	W _{min}	W _{max}	T _{turn}	T _{groove}	h ₁	l ₁	A
CGHN 32-3DG	32.0	2.80	4.00	25.0	50.0	24.8	150.00	2.40
CGHN 32-4DG	32.0	3.50	5.00	30.0	50.0	24.8	150.00	3.20
CGHN 32-5DG	32.0	4.40	6.40	33.0	60.0	24.8	150.00	4.00
CGHN 32-6DG	32.0	5.50	6.40	35.0	60.0	24.8	150.00	5.20

• DO-GRIP clamping insert is self-retained for long 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 user guide, see pages B132-145.

For inserts, see pages: B29-51 and for TIP threading inserts, see in ISCAR TURNING & THREADING TOOLS catalog.

For holders, see pages: C#-TBK-R/L (G6) • HSK A63WH-TBK-R/L (G18) • IM63 XMZ TBK (G25) • SGTBU/SGTBN (F2) • UBHCR/L (F4).

Spare Parts

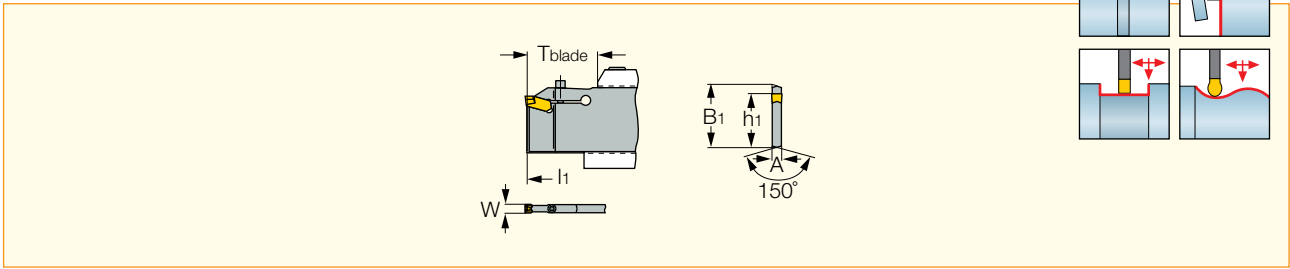


Designation	Extractor
CGHN-DG	EDG 44A*

* Optional, should be ordered separately

CGHN-P8

Blades for Deep Grooving and Turning



Designation	W	T blade	T _{max-r}	A	h ₁	B ₁	l ₁
CGHN 52-P8 ⁽¹⁾	8.00	50.0	43.00	7.40	45.0	52.6	190.00
CGHN 53-P8 ⁽²⁾	8.00	70.0	63.00	7.40	45.0	52.6	260.00

• For user guide, see pages B132-145.

⁽¹⁾ If D (workpiece) is smaller than 200 mm, then T_{max}=48, if D (workpiece) is larger than 200 mm, then T_{max}=43. ⁽²⁾ If D (workpiece) is smaller than 200 mm, then T_{max}=68, if D (workpiece) is larger than 200 mm, then T_{max}=63.

For inserts, see pages: GIMF (B29) • GIMM 8CC (E46) • GIMY (B30) • GIMY (Full Radius) (B32) • GIMY-F (B34) • GIPY (B46).

For holders, see pages: SGTBK (F3) • SGTBU/SGTBN (F2).

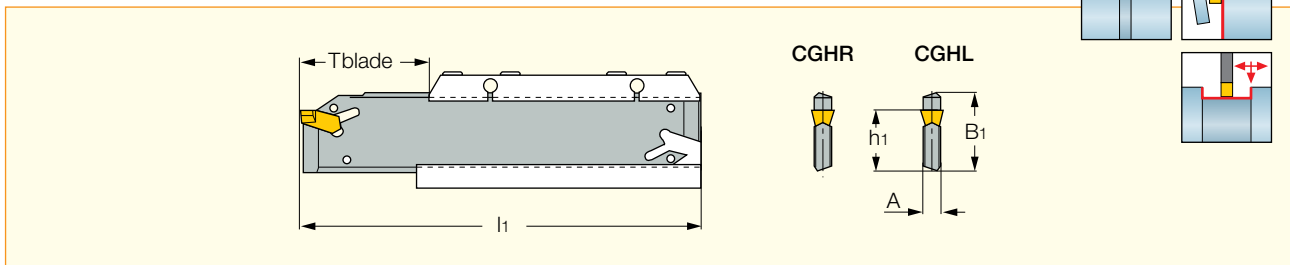
Spare Parts



Designation	Screw	Key
CGHN-P8	SR 76-1637	HW 4.0

CGHR/L-P8DG

Double-Ended, Heavy Duty, Self Clamped Grooving and Turning Blades



Designation	W	T blade	A	h ₁	B ₁	l ₁
CGHR/L 32-P8DG	8.00	40.0	6.80	24.8	32.0	150.00

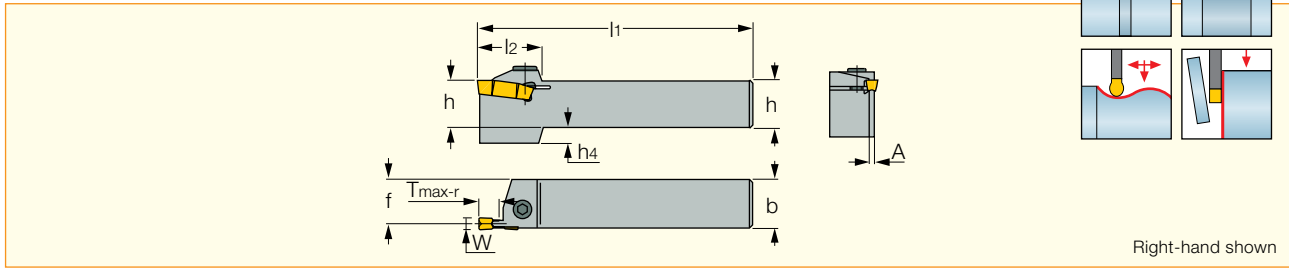
• For user guide, see pages B132-145.

For inserts, see pages: GIMF (B29) • GIMM 8CC (E46) • GIMY (B30) • GIMY (Full Radius) (B32) • GIMY-F (B34).

For holders, see pages: C#-TBK-R/L (G6) • HSK A63WH-TBK-R/L (G18) • IM63 XMZ TBK (G25) • SGTBK (F3) • SGTBU/SGTBN (F2).

GHDR/L (Long Pocket)

External Holders for Turning, Grooving and Parting



Designation	W _{min}	W _{max}	T _{max-r}	h	b	l ₁	f	A	l ₂	h ₄
GHDR/L 25-8	6.60	8.30	25.00	25.0	25.0	150.00	22.0	6.00	40.0	7.6
GHDR/L 3225-8	6.60	8.30	25.00	32.0	25.0	168.50	22.0	5.90	40.0	-
GHDR/L 25-812	6.60	8.30	12.00	25.0	25.0	140.00	22.0	5.90	33.0	-
GHDR/L 32-8	6.60	8.30	25.00	32.0	32.0	170.00	29.0	6.00	40.0	-
GHDR/L 32-812	6.60	8.30	12.00	32.0	32.0	160.00	29.0	5.90	33.0	-
GHDR/L 32-836	7.00	8.30	36.00	32.0	32.0	170.00	28.9	6.30	56.0	8.0
GHDR/L 25-10	8.60	11.10	25.00	25.0	25.0	150.00	21.3	7.40	43.0	7.6
GHDR/L 32-10	8.60	11.10	25.00	32.0	32.0	170.00	28.3	7.40	43.0	-
GHDR/L 40-10	8.60	11.10	25.00	40.0	40.0	200.00	36.3	7.40	43.0	-

• For user guide, see pages B132-145.

For inserts, see pages: GDMF (B29) • GDMC-CC (E46) • GDMN (B31) • GDMU (B31) • GDMY (B30) • GDMY (Full Radius) (B33) • GDMY-F (B34) • GDPY (B36) • GIA-K (Long Pocket) (B44) • GIF (Long Pocket) (B43) • GIF-E (W=8,10 Full Radius) (B38) • GIF-E (W=8,10) (B35) • GIPA/GIDA 8 (Full Radius) (B48).

Spare Parts

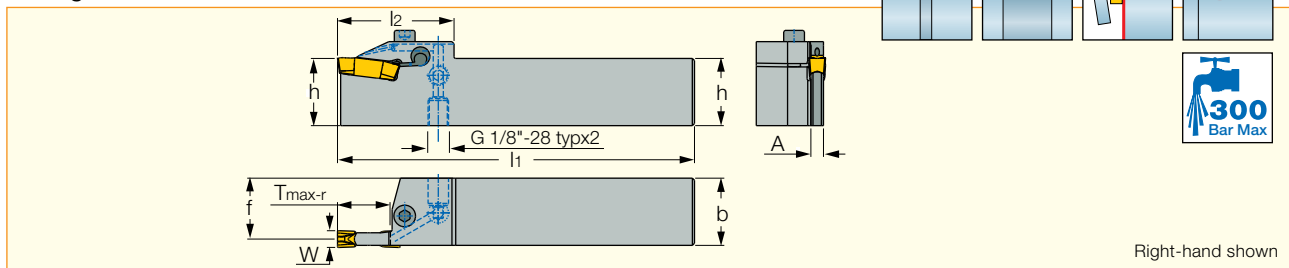


Designation	Screw	Key
GHDR/L 25-8	SR M6X25DIN912 UNB.	HW 5.0
GHDL 3225-8	SR M6X25DIN912 UNB.	HW 5.0
GHDR/L 25-812	SR M6X25DIN912 UNB.	HW 5.0
GHDR/L 32-8	SR M6X25DIN912 UNB.	HW 5.0
GHDR/L 32-812	SR M6X25DIN912 UNB.	HW 5.0
GHDR/L 32-836	SR M8X20DIN912	HW 6.0
GHDR/L 25-10	SR M8X30DIN912	HW 6.0
GHDR/L 32-10	SR M8X30DIN912	HW 6.0
GHDR/L 40-10	SR M8X30DIN912	HW 6.0

CUT-GRIP • JET HPLINE

GHDR/L-JHP (Long Pocket)

Grooving and Turning CUT-GRIP Toolholders with Channels for High Pressure Coolant



Designation	W _{min}	W _{max}	T _{max-r}	h	b	l ₁	l ₂	f	A
GHDR 32-8-JHP	6.60	8.30	25.00	32.0	32.0	170.00	55.0	29.0	6.00

• For user guide see pages B132-148.

For inserts, see pages: GDMF (B29) • GDMC-CC (E46) • GDMN (B31) • GDMU (B31) • GDMY (B30) • GDMY (Full Radius) (B33) • GDMY-F (B34) • GIA-K (Long Pocket) (B44) • GIF (Long Pocket) (B43) • GIF-E (W=8,10 Full Radius) (B38) • GIF-E (W=8,10) (B35) • GIPA/GIDA 8 (Full Radius) (B48).

Spare Parts



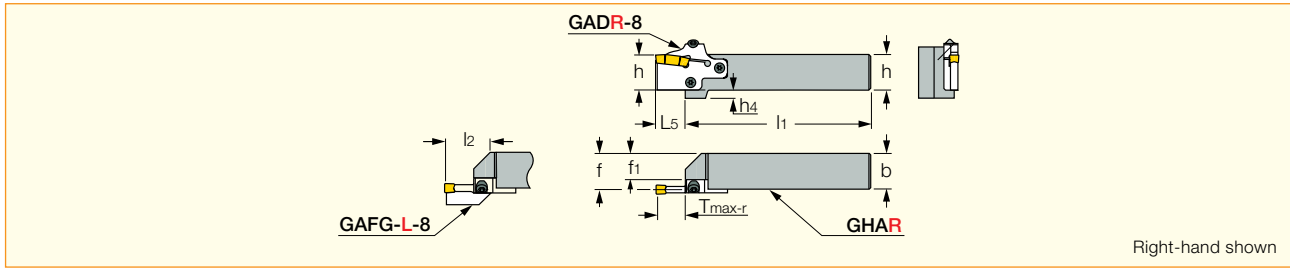
Designation	Key	Screw
GHDR/L-JHP (Long Pocket)	HW 5.0	SR M6X25DIN912 UNB.

Flow Rate vs. Pressure

Designation	70 bar Flow Rate (liters/min)	100 bar Flow Rate (liters/min)	140 bar Flow Rate (liters/min)
GHDR/L 32-8-JHP	13-16	19-21	22-24

GHAR/L-8

External Holders for Grooving and Turning Adapters



Right-hand shown

Designation	h	b	l ₁	l ₂	h ₄	T _G ⁽¹⁾	T _{max-r} ⁽²⁾	FG ⁽³⁾	T _{max-a}
GHAR/L 25-8	25.0	25.0	150.00	45.0	14.0	GADR/L 8	25.50	GAFG...R/L-8	25.00
GHAR/L 32-8	32.0	32.0	170.00	45.0	7.0	GADR/L 8	25.50	GAFG...R/L-8	25.00

• Adapters GADR/L-8 for turning and grooving, GAFG-R/L-8 for face-grooving.

⁽¹⁾ Adapters to be ordered separately. ⁽²⁾ See specific adapter dimensions ⁽³⁾ Adapters to be ordered separately.

For tools, see pages: GADR/L-8 (B28) • GAFG-R/L-8 (E42).

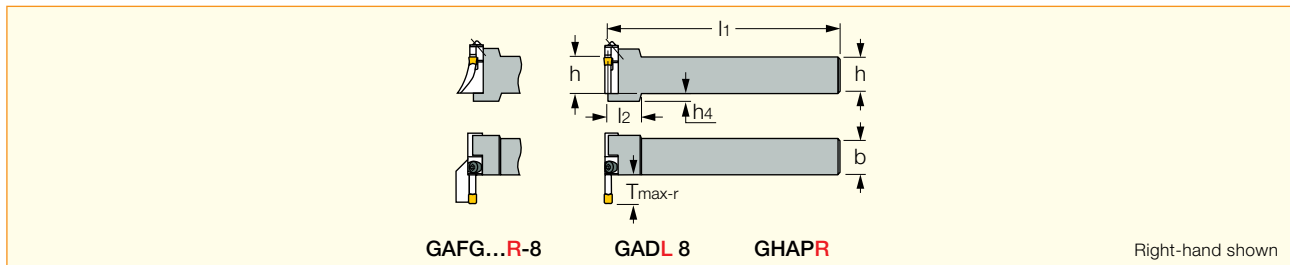
Spare Parts



Designation	Side Locking Screw	Key	Upper Locking Screw	Key 1
GHAR/L-8	SR 14-519	T-20/5	SR M6X25DIN912 UNB.	HW 5.0

GHAPR/L-8

External Holders for Grooving and Turning Perpendicularly Oriented Adapters



Right-hand shown

Designation	h	b	l ₁	l ₂	h ₄	T _G ⁽¹⁾	T _{max-r} ⁽²⁾	FG ⁽³⁾	T _{max-a}
GHAPR/L 32-8	32.0	32.0	155.00	30.0	7.0	GADR/L 8	25.50	GAFG...R/L-8	26.00

⁽¹⁾ Adapters to be ordered separately ⁽²⁾ See specific adapter dimensions ⁽³⁾ Adapters to be ordered separately.

For tools, see pages: GADR/L-8 (B28) • GAFG-R/L-8 (E42).

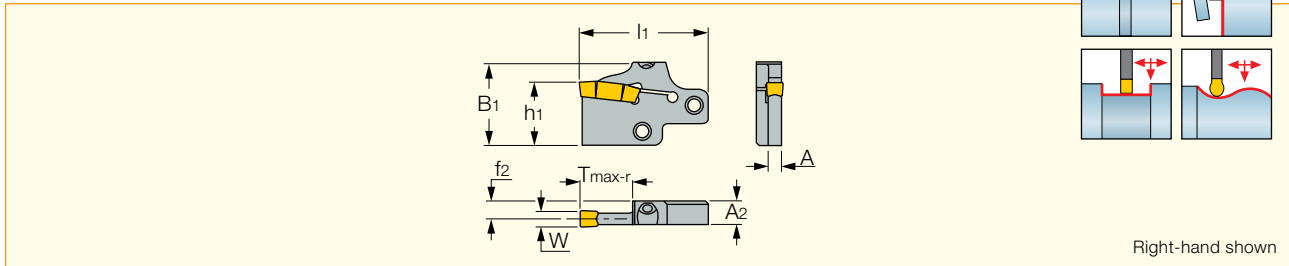
Spare Parts



Designation	Side Locking Screw	Key	Upper Locking Screw	Key 1
GHAPR/L 32-8	SR 14-519	T-20/5	SR M6X25DIN912 UNB.	HW 5.0

GADR/L-8

Adapters for up to 25 mm Deep Machining



Designation	W _{min}	W _{max}	T _{max-r}	A	h ₁	B ₁	l ₁	A ₂	f ₂
GADR/L 8	6.60	8.30	25.50	6.00	-	42.0	63.00	12.0	9.00

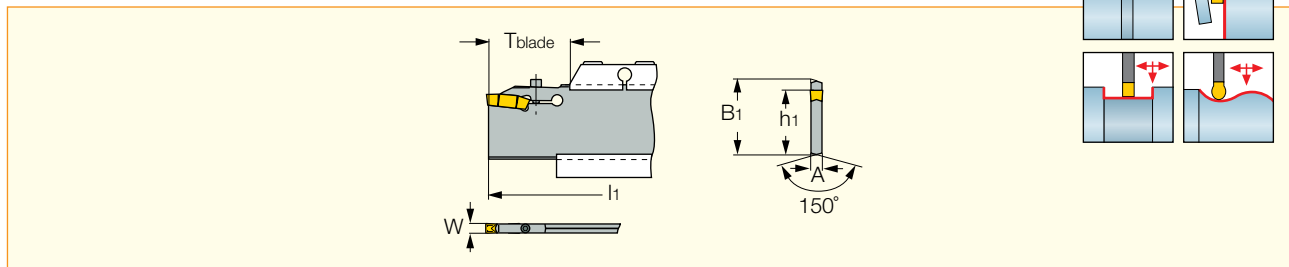
• For user guide, see pages B132-145.

For inserts, see pages: GDMA (B47) • GDMF (B29) • GDMM-CC (E46) • GDMN (B31) • GDMU (B31) • GDMY (B30) • GDMY (Full Radius) (B33) • GDMY-F (B34) • GIA-K (Long Pocket) (B44) • GIF-E (W=8,10 Full Radius) (B38) • GIF-E (W=8,10) (B35) • GIPA 8-35V (V Shape) (C12) • GIPA/GIDA 8 (Full Radius) (B48).

For holders, see pages: C#-GHAD-8 (G8) • C#-GHAPR/L-8 (G8) • GHAPR/L-8 (B27) • GHAR/L-8 (B27) • IM-GHAD-8 (G27) • IM-GHAPR/L-8 (G28).

CGHN-8-10D

Heavy Duty, Deep Grooving and Turning Blades



Designation	W _{min}	W _{max}	T _{blade} ⁽¹⁾	A	h ₁	B ₁	l ₁
CGHN 52-8D	8.00	8.30	50.0	7.40	45.0	52.6	190.00
CGHN 53-8D	8.00	8.30	70.0	7.40	45.0	52.6	260.00
CGHN 52-10D	10.00	11.00	70.0	9.20	45.0	52.6	190.00
CGHN 53-10D	10.00	11.00	100.0	9.20	45.0	52.6	260.00

• For user guide, see pages B132-145.

⁽¹⁾ When using a double-ended insert, grooving depth is limited by the insert.

For inserts, see pages: GDMF (B29) • GDMN (B31) • GDMU (B31) • GDMY (B30) • GDMY (Full Radius) (B33) • GDMY-F (B34) • GDPY (B36) • GIF-E (W=8,10 Full Radius) (B38) • GIF-E (W=8,10) (B35) • GIPA 8-35V (V Shape) (C12) • GIPA/GIDA 8 (Full Radius) (B48).

For holders, see pages: SGTBK (F3) • SGTBU/SGTBN (F2).

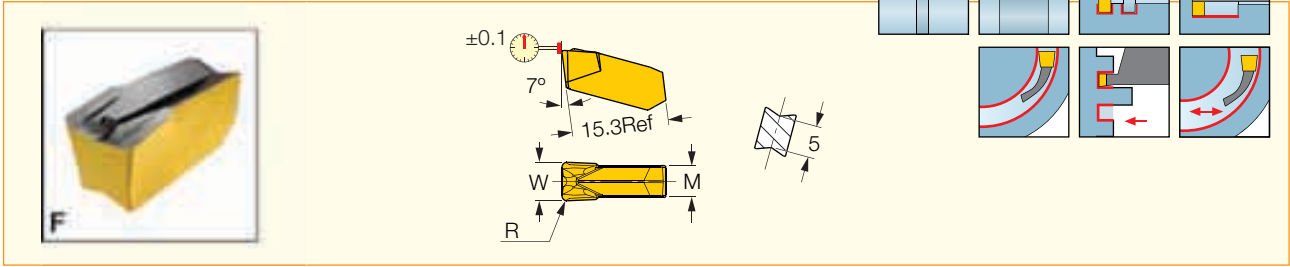
Spare Parts



Designation	Screw	Key
CGHN 52-8D	SR 76-1637	HW 4.0
CGHN 53-8D	SR 76-1637	HW 4.0
CGHN 52-10D	SR 76-1289	HW 5.0
CGHN 53-10D	SR 76-1289	HW 5.0

GIMF

Utility Single-Ended Inserts for Turning and Grooving



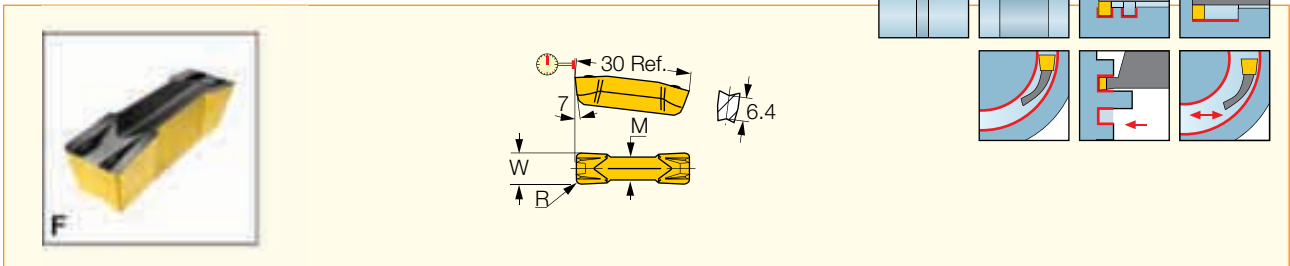
Designation	Dimensions			Tough ↔ Hard								Recommended Machining Data			
	W±0.05	R±0.05	M	IC830	IC8250	IC808	IC908	IC20	IC428	IC5010	IC907	IC806	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIMF 406	4.00	0.60	3.2	●	●	●	●	●	●	●	●	●	0.75-2.40	0.19-0.25	0.09-0.16
GIMF 502	5.00	0.20	4.0	●	●	●	●	●	●	●	●	●	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
GIMF 605	6.00	0.50	5.0	●	●	●	●	●	●	●	●	●	0.60-3.60	0.22-0.36	0.13-0.23
GIMF 608	6.00	0.80	5.0	●	●	●	●	●	●	●	●	●	1.00-3.60	0.24-0.42	0.13-0.25
GIMF 808	8.00	0.80	6.0	●	●	●	●	●	●	●	●	●	1.00-4.80	0.32-0.56	0.18-0.34

• Dmin for internal applications = 70 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGFG 51-P8 (E42) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-P8 (B25) • CGHN-S (B23) • CGHR/L-P8DG (B25) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18).

GDMF

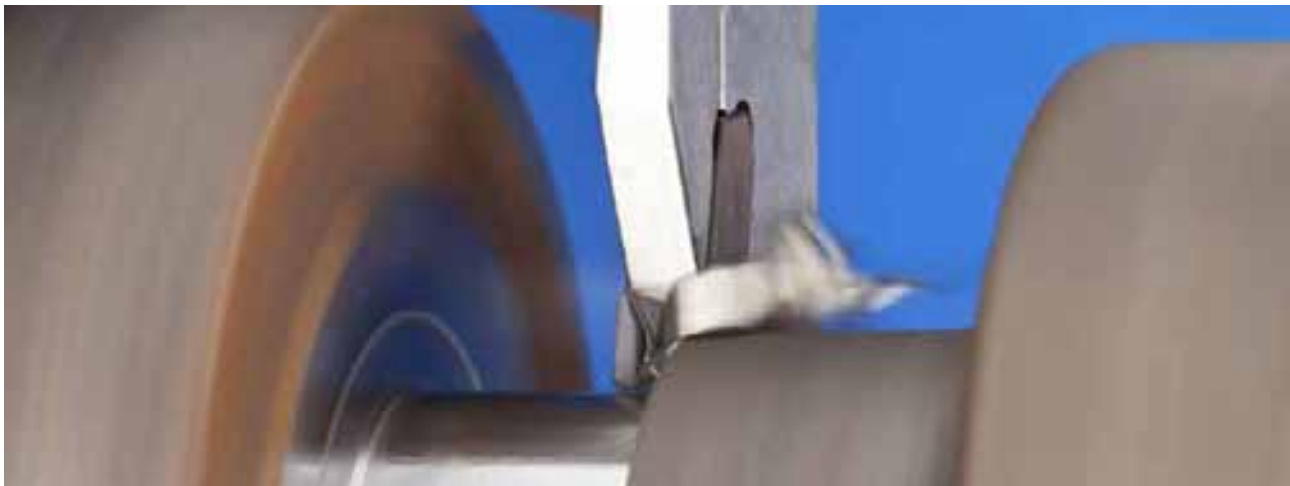
Utility Double-Ended Inserts for Turning and Grooving



Designation	Dimensions				Tough ↔ Hard					Recommended Machining Data		
	W±0.05	R±0.05	T _{max-r}	M	IC830	IC8250	IC808	IC428	IC5010	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GDMF 808	8.00	0.80	27.00	6.0	●	●	●	●	●	1.00-4.80	0.32-0.56	0.18-0.34

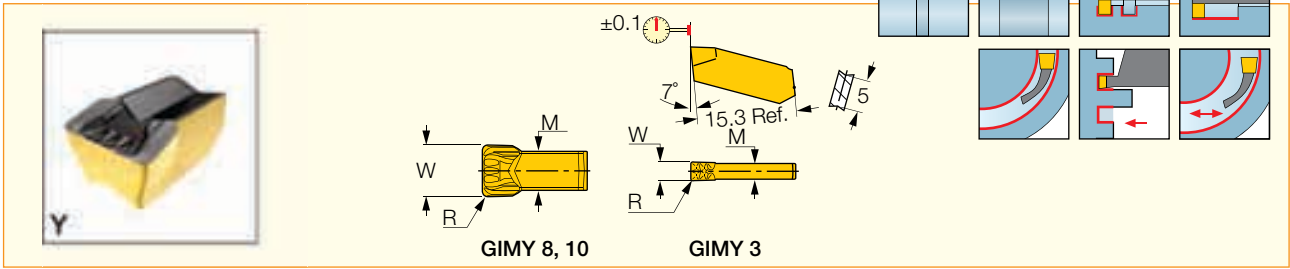
• Dmin for internal machining = 65 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN-8-10D (B28) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDR/L (Long Pocket) (B26) • GHDR/L-JHP (Long Pocket) (B26) • GHFGR/L-8 (E40) • GHIR/L (W=7.0-8.3) (B93).



GIMY

Utility Single-Ended Inserts, for Grooving and Turning



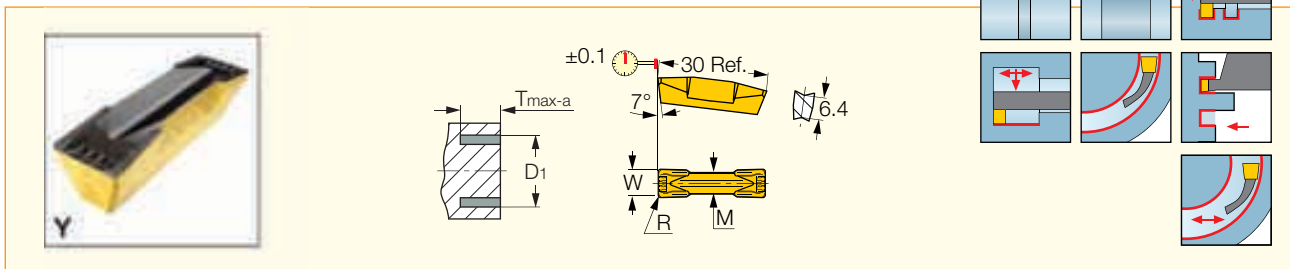
Designation	Dimensions			Tough ↔ Hard						Recommended Machining Data		
	W±0.05	R±0.05	M	IC830	IC8250	IC808	IC908	IC20	IC806	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIMY 304	3.00	0.40	2.4	●	●	●	●	●	●	0.50-1.80	0.16-0.20	0.07-0.12
GIMY 808	8.00	0.80	6.0	●	●	●	●	●	●	1.00-4.80	0.32-0.56	0.18-0.34
GIMY 1008	10.00	0.80	8.0	●	●	●	●	●	●	1.00-6.00	0.35-0.65	0.22-0.40

• Dmin for internal applications = 70mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGFG 51-P8 (E42) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-P8 (B25) • CGHN-S (B23) • CGHR/L-P8DG (B25) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18) • GHSL/L (B104)

GDMY

Utility Double-Ended Inserts, for Turning and Grooving



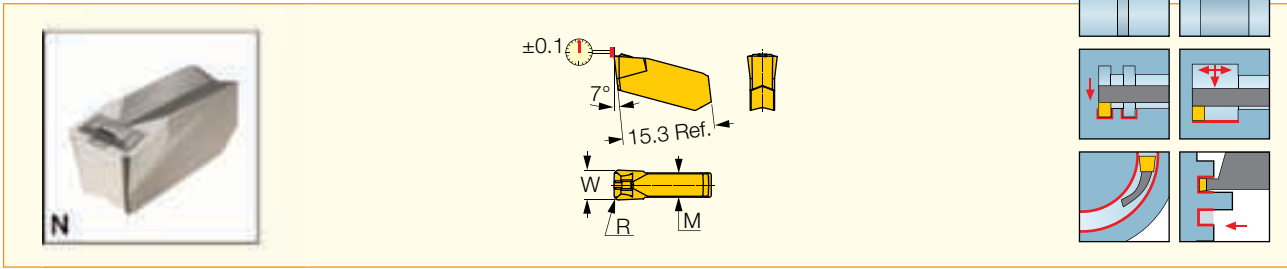
Designation	Dimensions					Tough ↔ Hard						Recommended Machining Data		
	W±0.05	R±0.05	M	D1 min	T _{max-a}	IC830	IC8250	IC808	IC20	IC428	IC5010	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GDMY 808	8.00	0.80	6.0	50.0	27.00	●	●	●	●	●	●	1.00-4.80	0.32-0.56	0.18-0.34

• Dmin for internal machining = 65 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN 8-10D (B28) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDR/L (Long Pocket) (B26) • GHDR/L-JHP (Long Pocket) (B26) • GHFG-R/L-8 (E39) • GHFGR/L-8 (E40) • GHIR/L (W=7.0-8.3) (B93).

GIMN

Utility Single-Ended Groove-Turn Inserts for Machining Ductile Materials



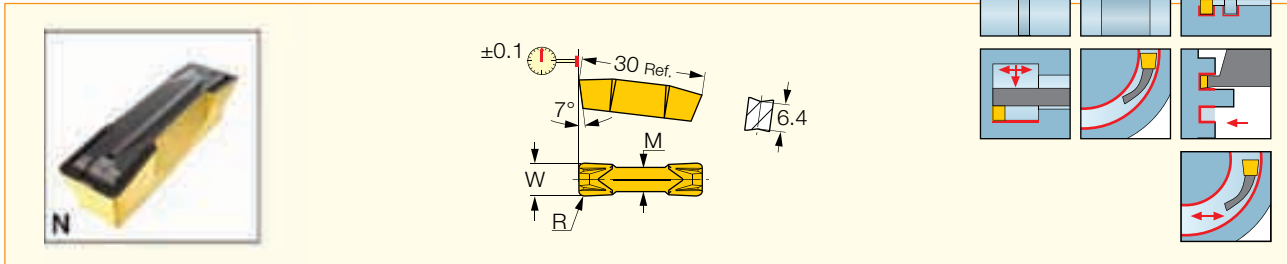
Designation	Dimensions			Tough ↔ Hard		Recommended Machining Data		
	W±0.05	R±0.05	M	IC908	IC907	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIMN 302	3.00	0.20	2.4		●	0.30-1.20	0.07-0.11	0.04-0.09
GIMN 406	4.00	0.60	3.4		●	0.75-1.60	0.11-0.18	0.05-0.14
GIMN 508	5.00	0.80	4.1	●	●	1.00-2.00	0.15-0.25	0.06-0.18
GIMN 608	6.00	0.80	5.0		●	1.00-2.40	0.18-0.30	0.07-0.22

• Dmin for internal applications = 70 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18).

GDMN

Utility Double-Ended Inserts for Turning and Grooving Ductile Materials



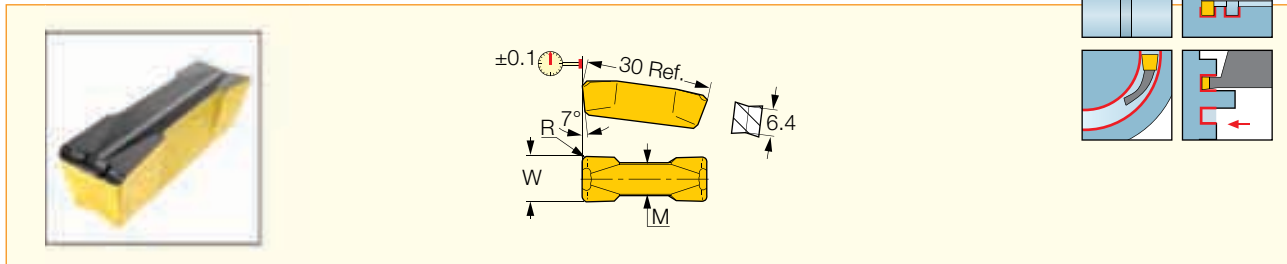
Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data		
	W±0.05	R±0.05	T _{max-r}	M	IC830	IC8250	IC808	IC907	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GDMN 808	8.00	0.80	27.00	6.0	●	●	●	●	1.00-3.20	0.20-0.35	0.10-0.30

• Dmin for internal machining = 65 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN-8-10D (B28) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDR/L (Long Pocket) (B26) • GHDR/L-JHP (Long Pocket) (B26) • GHFGR/L-8 (E40) • GHIR/L (W=7.0-8.3) (B93).

GDMU

Utility Inserts for Heavy Grooving on Ductile Materials



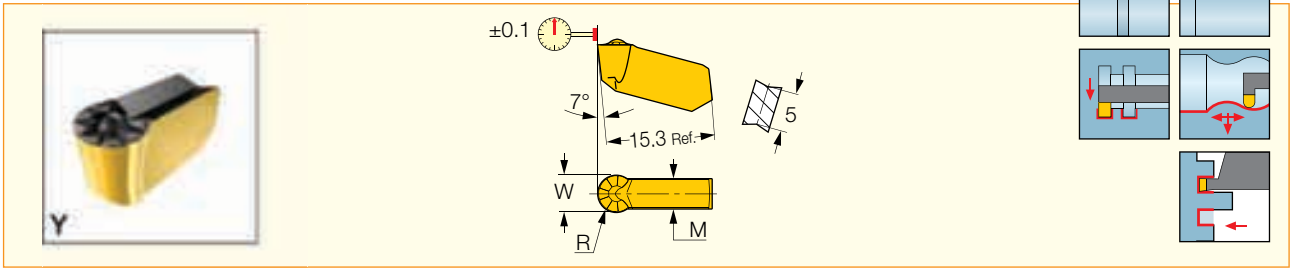
Designation	Dimensions			Tough ↔ Hard		Recommended Machining Data
	W±0.05	R±0.05	M	IC830	IC8250	
GDMU 808	8.00	0.80	6.0	●	●	f groove (mm/rev) 0.10-0.24

• For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN-8-10D (B28) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDR/L (Long Pocket) (B26) • GHDR/L-JHP (Long Pocket) (B26) • GHFGR/L-8 (E40) • GHIR/L (W=7.0-8.3) (B93).

GIMY (Full Radius)

Utility Single-Ended Inserts, for Grooving and Profiling



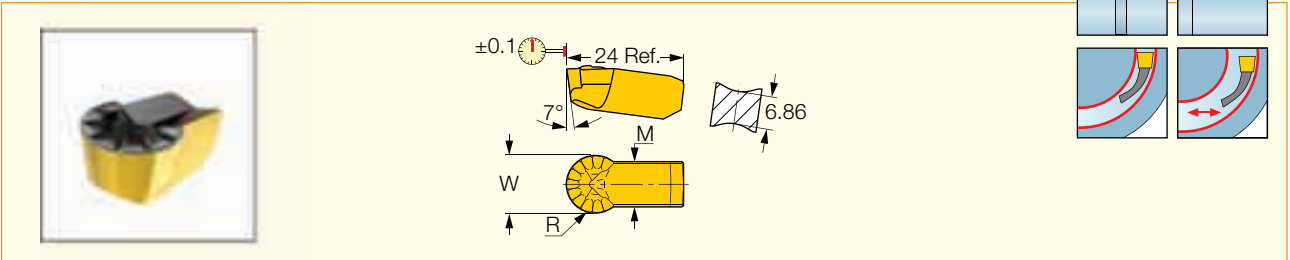
Designation	Dimensions			Tough ↔ Hard						Recommended Machining Data		
	W \pm 0.05	R \pm 0.05	M	IC830	IC8250	IC808	IC20	IC806	IC20N	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIMY 315	3.00	1.50	2.4	●	●	●	●	●	●	0.00-1.50	0.18-0.26	0.07-0.13
GIMY 420	4.00	2.00	3.2	●	●	●	●	●	●	0.00-2.00	0.20-0.28	0.09-0.17
GIMY 525	5.00	2.50	3.9	●	●	●	●	●	●	0.00-2.50	0.23-0.42	0.11-0.21
GIMY 630	6.00	3.00	5.0	●	●	●	●	●	●	0.00-3.00	0.24-0.50	0.13-0.25
GIMY 635-318	6.35	3.18	5.1	●	●	●	●	●	●	0.00-3.10	0.25-0.53	0.14-0.27
GIMY 840	8.00	4.00	5.6	●	●	●	●	●	●	0.00-4.00	0.32-0.67	0.18-0.34

• Dmin for internal application=70 mm • Can cut arcs to 250° • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGFG 51-P8 (E42) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-P8 (B25) • CGHN-S (B23) • CGHR/L-P8DG (B25) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18) • GHSR/L (B104).

GIMY 1260

Utility Single-Ended Inserts, for External Grooving and Profiling



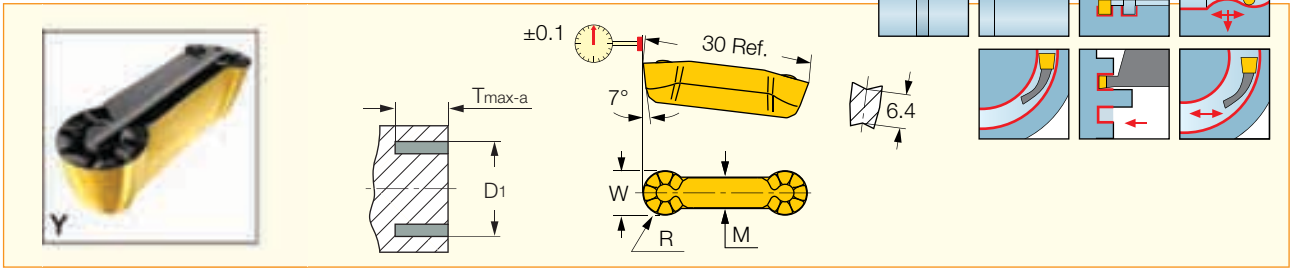
Designation	Dimensions			Tough ↔ Hard				Recommended Machining Data		
	W \pm 0.05	R \pm 0.05	M	IC830	IC8250	IC808	IC20	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIMY 1260	12.00	6.00	9.5	●	●	●	●	0.00-6.00	0.42-0.86	0.26-0.45

• Toolholder seat needs to be modified according to insert profile to ensure clearance.
• For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: CGHR/L-12-14D (B69) • GHDR/L/N 12/14 (B68).

GDMY (Full Radius)

Utility Double-Ended Full Radius Inserts for Grooving and Profiling



Designation	Dimensions					Tough ↔ Hard						Recommended Machining Data			
	W ^{±0.05}	R ^{±0.05}	M	D1 min	Tmax-r	IC830	IC8250	IC808	IC20	IC428	IC5010	IC806	ap (mm)	f turn (mm/rev)	f groove (mm/rev)
GDMY 840	8.00	4.00	5.6	50.0	25.00	●	●	●	●	●	●	●	0.00-4.00	0.32-0.67	0.18-0.34

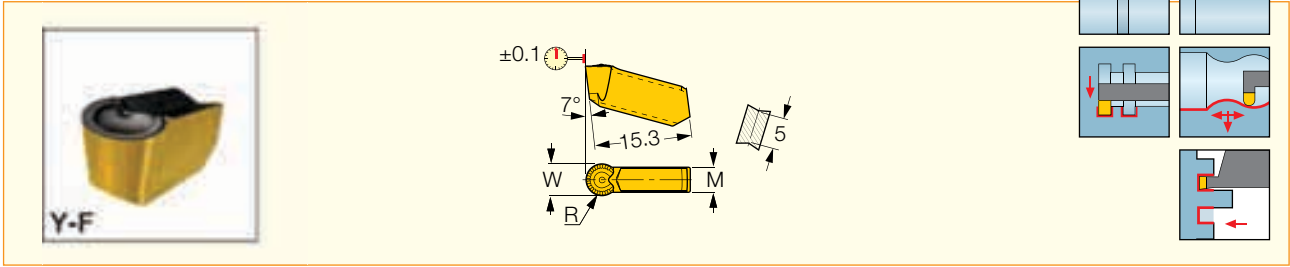
• Can cut arcs to 250° • Dmin for internal machining = 65 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN-8-10D (B28) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDKR/L (C10) • GHDR/L (Long Pocket) (B26) • GHDR/L-JHP (Long Pocket) (B26) • GHFG-R/L-8 (E39) • GHFGR/L-8 (E40) • GHIR/L (W=7.0-8.3) (B93).



GIMY-F

Utility Single-Ended Inserts, for Grooving and Profiling Ductile Materials



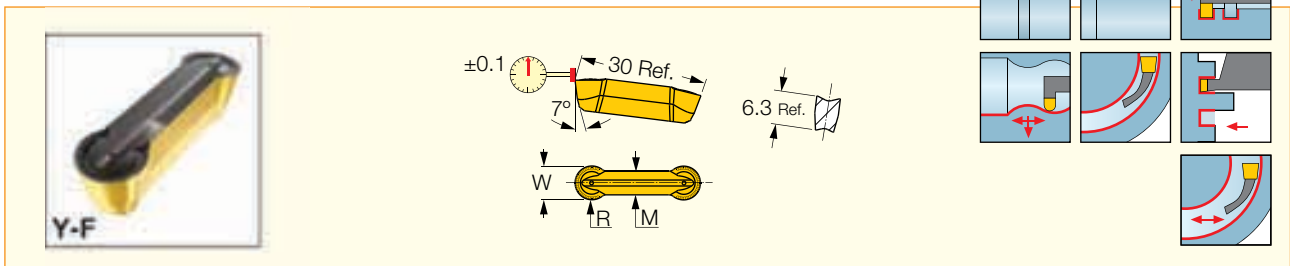
Designation	Dimensions			Tough ↔ Hard				Recommended Machining Data		
	W±0.05	R±0.05	M	IC8250	IC808	IC908	IC806	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIMY 315F	3.00	1.50	2.4		●			0.00-1.50	0.18-0.26	0.07-0.13
GIMY 525F	5.00	2.50	3.9		●		●	0.00-2.50	0.23-0.42	0.11-0.21
GIMY 630F	6.00	3.00	5.0		●	●	●	0.00-3.00	0.24-0.50	0.13-0.25
GIMY 840F	8.00	4.00	5.6	●				0.00-4.00	0.32-0.67	0.18-0.34

• Dmin for internal applications = 70 mm • Can cut arcs to 250° • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGFG 51-P8 (E42) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-P8 (B25) • CGHN-S (B23) • CGHR/L-P8DG (B25) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18) • GHSR/L (B104).

GDMY-F

Utility Double-Ended Inserts, for Grooving and Profiling Ductile Materials



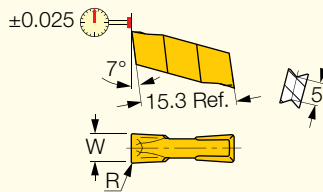
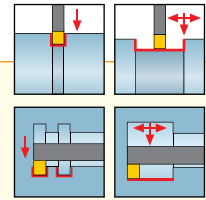
Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data		
	W±0.05	R±0.05	M	T _{max-r}	IC808	IC908	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GDMY 840F	8.00	4.00	5.6	25.00	●	●	0.00-4.00	0.32-0.67	0.18-0.34

• Dmin for internal applications = 65 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN-8-10D (B28) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDR/L (Long Pocket) (B26) • GHDR/L-JHP (Long Pocket) (B26) • GHFG-R/L-8 (E39) • GHFGR/L-8 (E40) • GHIR/L (W=7.0-8.3) (B93).

GIF-E (W=4-6)

Precision Double-Ended Inserts for Turning and Grooving



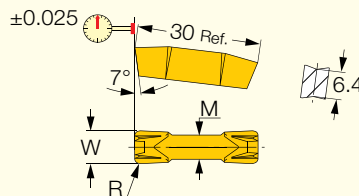
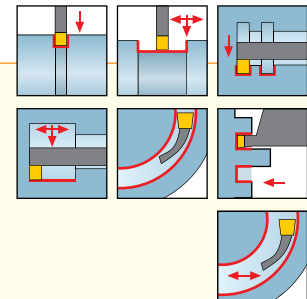
Designation	Dimensions				Tough ↔ Hard					Recommended Machining Data		
	W ± 0.02	R ± 0.05	M	T $_{max-r}$	IC830	IC8250	IC808	IC807	IC20	a $_p$ (mm)	f turn (mm/rev)	f groove (mm/rev)
GIF 4.00E-0.40	4.00	0.40	3.2	13.00	●	●	●	●	●	0.50-2.40	0.18-0.24	0.09-0.15
GIF 4.00E-0.60	4.00	0.60	3.2	13.00	●	●	●	●	●	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
GIF 6.00E-0.40	6.00	0.40	4.8	13.00	●	●	●	●	●	0.50-3.60	0.22-0.36	0.13-0.23
GIF 6.00E-0.80	6.00	0.80	4.8	13.00	●	●	●	●	●	1.00-3.60	0.24-0.42	0.13-0.25
GIF 6.00E-1.20	6.00	1.20	4.8	13.00	●	●	●	●	●	1.45-3.60	0.24-0.46	0.13-0.25

• Dmin for internal machining = 70 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18).

GIF-E (W=8,10)

Precision Double-Ended Inserts for Turning and Grooving



Designation	Dimensions				Tough ↔ Hard						Recommended Machining Data				
	W ± 0.02	R ± 0.05	M	T $_{max-r}$	IC830	IC8250	IC808	IC20	IC428	IC5010	IC807	IC806	a $_p$ (mm)	f turn (mm/rev)	f groove (mm/rev)
GIF 8.00E-0.40	8.00	0.40	6.0	27.00	●	●	●	●	●	●	●	●	0.50-4.80	0.29-0.48	0.18-0.31
GIF 8.00E-0.80	8.00	0.80	6.0	27.00	●	●	●	●	●	●	●	●	1.00-4.80	0.32-0.56	0.18-0.34
GIF 8.00E-1.20	8.00	1.20	6.0	27.00	●	●	●	●	●	●	●	●	1.45-4.80	0.32-0.62	0.18-0.34
GIF 10.00E-0.80	10.00	0.80	8.0	27.00	●	●	●	●	●	●	●	●	1.00-6.00	0.35-0.65	0.22-0.40
GIF 10.00E-1.20	10.00	1.20	8.0	27.00	●	●	●	●	●	●	●	●	1.45-6.00	0.35-0.72	0.22-0.40

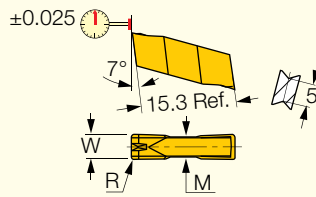
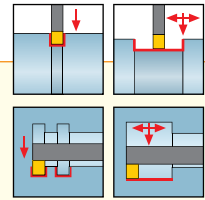
• Dmin for internal machining = 65 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN-8-10D (B28) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDR/L (Long Pocket) (B26) • GHDR/L-JHP (Long Pocket) (B26) • GHFGR/L-8 (E40) • GHIR/L (W=7.0-8.3) (B93).



GIP-E

Precision Double-Ended Inserts for Turning and Grooving



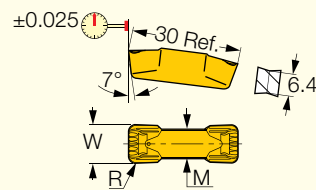
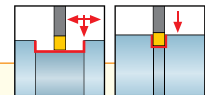
Designation	Dimensions				Tough ↔ Hard								Recommended Machining Data				
	W ± 0.02	R ± 0.05	M	T $_{max-r}$	IC830	IC8250	IC808	IC908	IC20	IC428	IC5010	IC807	IC806	IC20N	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIP 3.00E-0.00	3.00	0.00	2.4	13.00	●										0.00-1.80	0.12-0.16	0.07-0.11
GIP 3.00E-0.20	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
GIP 5.55E-0.55	5.55	0.55	4.8	13.00		●	●								0.70-3.30	0.21-0.36	0.14-0.23
GIP 6.00E-0.80	6.00	0.80	4.8	13.00		●	●								1.00-3.60	0.26-0.46	0.15-0.27
GIP 6.00E-1.20	6.00	1.20	4.8	13.00		●	●								1.45-3.60	0.26-0.51	0.15-0.27
GIP 6.35E-0.80	6.35	0.80	4.8	13.00	●	●	●								1.00-3.80	0.27-0.49	0.16-0.29

• Dmin for internal machining = 70 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18) • GHSR/L (B104)

GDPY

Precision Double-Ended Inserts for External Heavy-Duty Turning and Grooving



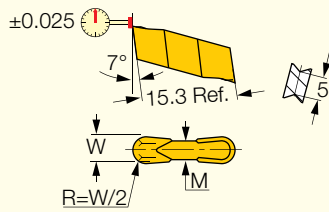
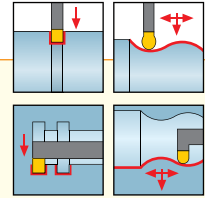
Designation	Dimensions			Tough ↔ Hard			Recommended Machining Data		
	W ± 0.02	R ± 0.05	M	IC830	IC8250	IC20	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GDPY 10.00-0.80	10.00	0.80	8.0	●	●	●	1.00-6.00	0.35-0.65	0.22-0.40
GDPY 10.00-1.20	10.00	1.20	8.0	●			1.45-6.00	0.45-0.80	0.22-0.40
GDPY 10.00-2.00	10.00	2.00	8.0	●		●	2.40-6.00	0.35-0.78	0.22-0.40
GDPY 11.00-1.20	11.00	1.20	8.0	●			1.45-6.60	0.39-0.73	0.24-0.41
GDPY 11.00-2.00	11.00	2.00	8.0	●		●	2.40-6.60	0.39-0.79	0.24-0.41

• For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: CGHN-8-10D (B28) • GHDR/L (Long Pocket) (B26).

GIF-E (W=4-6 Full Radius)

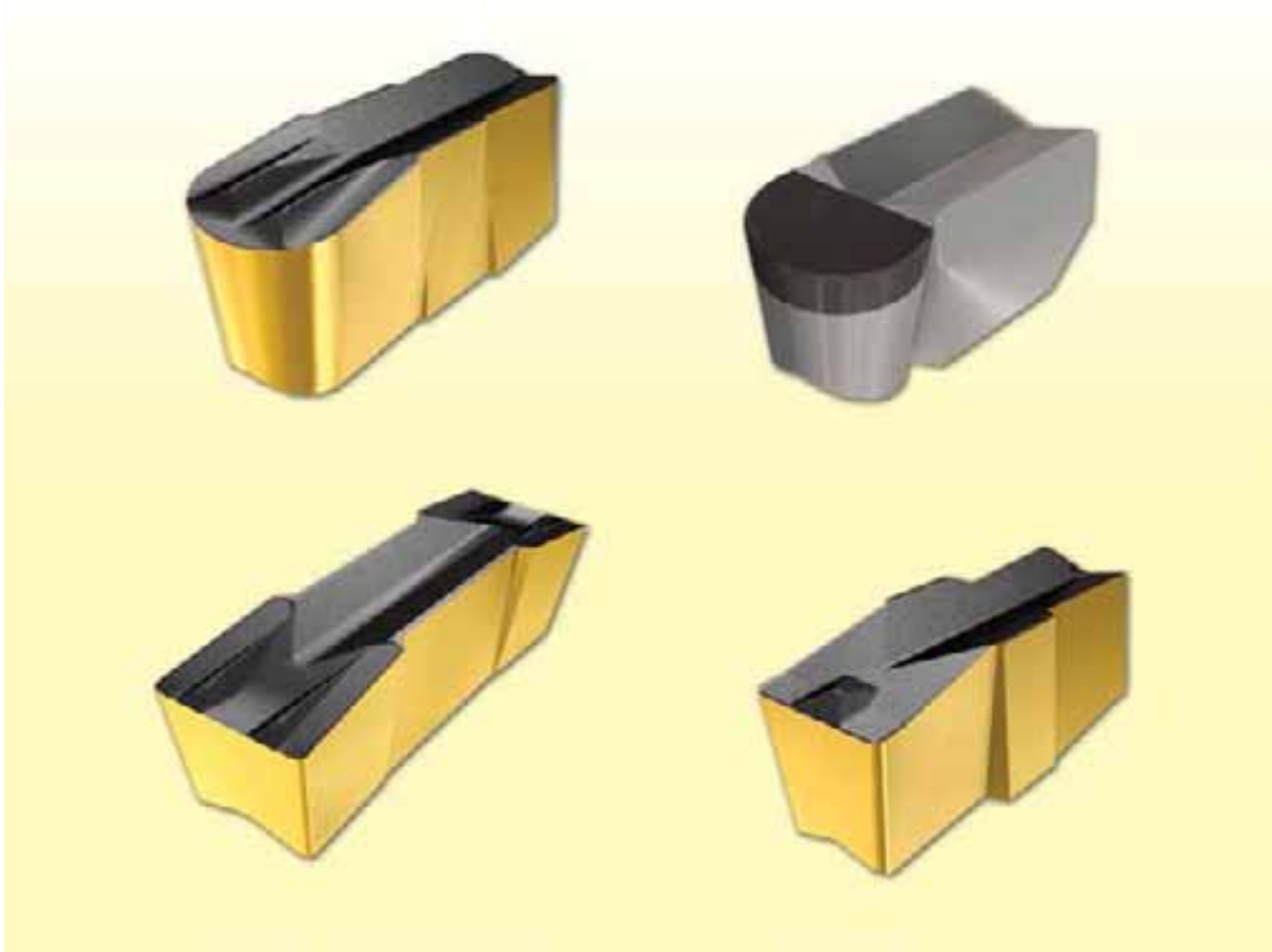
Precision Double-Ended Full Radius Inserts, for Profiling and Grooving



Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data		
	W \pm 0.02	R \pm 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
GIF 6.00E-3.00	6.00	3.00	4.8	10.80	●	●	●	●	0.00-3.00	0.24-0.50	0.13-0.25

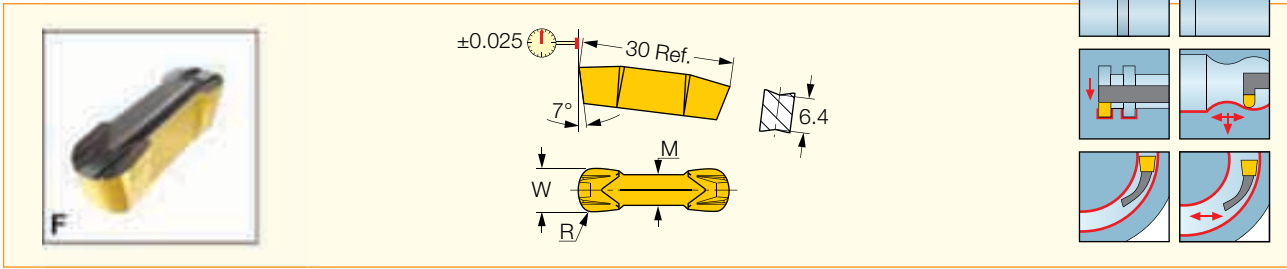
• Dmin for internal machining = 70 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18).



GIF-E (W=8,10 Full Radius)

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



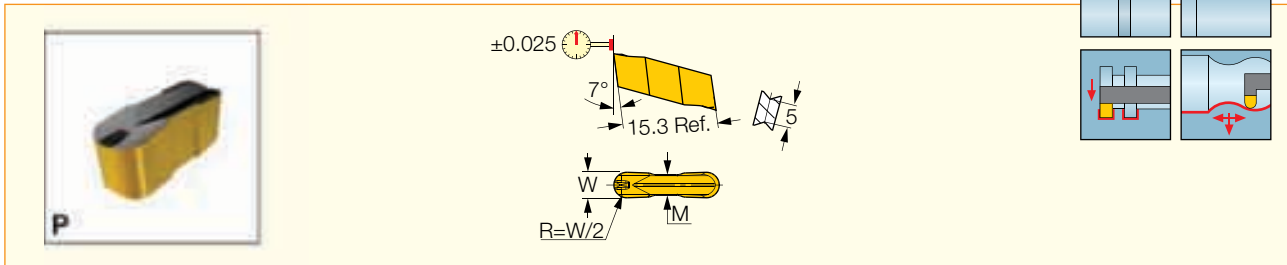
Designation	Dimensions			Tough ↔ Hard		Recommended Machining Data		
	W±0.02	R±0.05	M	IC830	IC8250	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIF 8.00E-4.00	8.00	4.00	6.0	●	●	0.00-4.00	0.32-0.67	0.18-0.34
GIF 10.00E-5.00	10.00	5.00	8.0	●	●	0.00-5.00	0.35-0.78	0.22-0.40

• Dmin for internal machining = 65 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN-8-10D (B28) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDR/L (Long Pocket) (B26) • GHDR/L-JHP (Long Pocket) (B26) • GHFGR/L-8 (E40) • GHIR/L (W=7.0-8.3) (B93).

GIP-E (Full Radius)

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



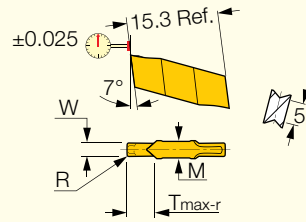
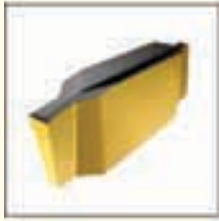
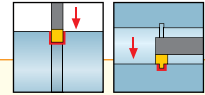
Designation	Dimensions				Tough ↔ Hard							Recommended Machining Data		
	W±0.02	R±0.05	M	T _{max-f}	IC830	IC8250	IC808	IC20	IC428	IC5010	IC807	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIP 3.00E-1.50	3.00	1.50	2.4	12.30	●	●	●	●	●	●	●	0.00-1.50	0.18-0.28	0.08-0.15
GIP 4.00E-2.00	4.00	2.00	3.2	11.80	●	●	●	●	●	●	●	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
GIP 6.00E-3.00	6.00	3.00	4.8	10.80	●	●	●	●	●	●	●	0.00-3.00	0.27-0.54	0.15-0.27
GIP 6.35E-3.18	6.35	3.18	4.8	10.63	●	●	●	●	●	●	●	0.00-3.10	0.29-0.57	0.16-0.29

• Dmin for internal machining = 70 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18) • GHSLR/L (B104)

GIP (Flat Top $W < M$)

Flat Top Precision Double-Ended Inserts for Grooving



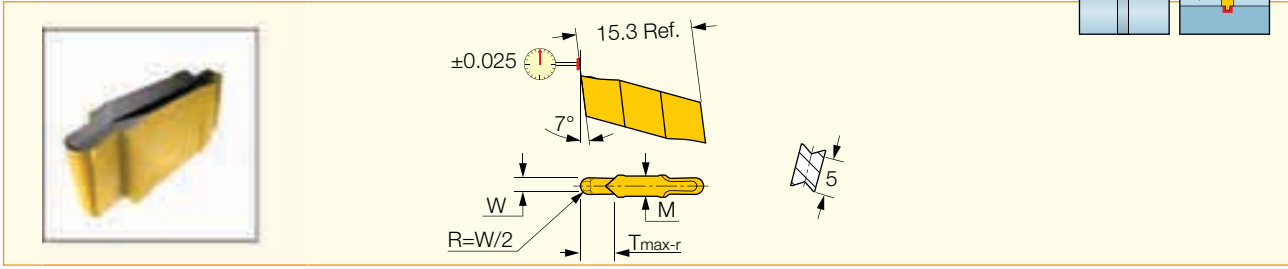
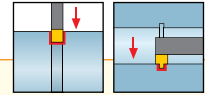
Designation	Dimensions				Tough ↔ Hard					Recommended Machining Data
	$W \pm 0.02$	$R \pm 0.03$	T_{max-r}	M	IC830	IC808	IC20	IC807	IC20N	f groove (mm/rev)
GIP 0.50-0.00	0.50	0.00	1.00	2.2		●	●			0.02-0.04
GIP 0.80-0.00	0.80	0.00	1.60	2.2		●	●			0.02-0.04
GIP 1.04-0.00	1.04	0.00	2.00	2.2	●	●	●	●	●	0.02-0.05
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 cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: GHDR/L (Short Pocket) (B19) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18).

GIP (Full Radius $W < M$)

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



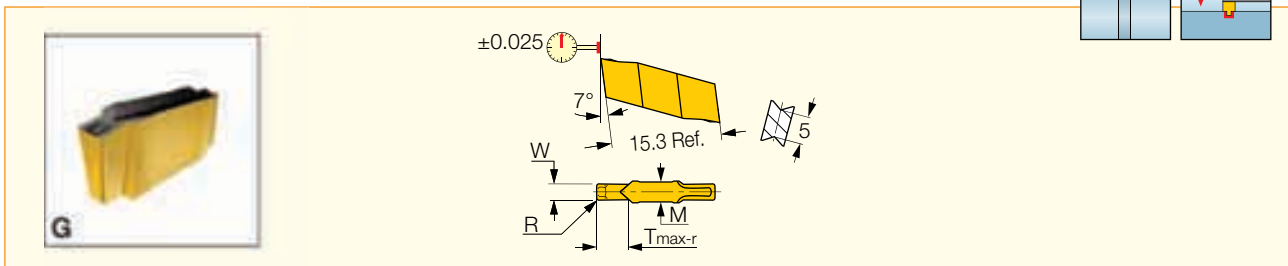
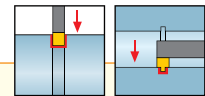
Designation	Dimensions				Tough ↔ Hard						Recommended Machining Data f groove (mm/rev)
	W±0.02	R±0.05	T _{max-r}	M	IC830	IC808	IC908	IC20	IC807	IC806	
GIP 1.00-0.50	1.00	0.50	2.00	2.2		●			●		0.03-0.06
GIP 1.40-0.70	1.40	0.70	2.00	2.2		●			●		0.04-0.07
GIP 1.57-0.79	1.57	0.79	2.70	2.2	●	●	●	●	●		0.04-0.08
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 cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: GHDR/L (Short Pocket) (B19) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18) • GHSR/L (B104).

GIG

Precision Double-Ended Inserts for Grooving



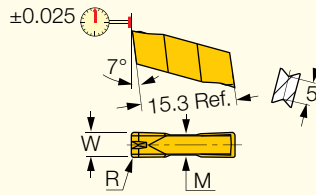
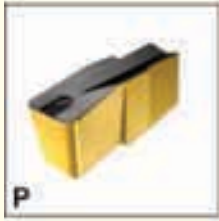
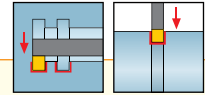
Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data f groove (mm/rev)
	W±0.02	R±0.03	T _{max-r}	M	IC830	IC808	IC20	
GIG 1.04-0.00	1.04	0.00	2.00	2.2		●		0.02-0.03
GIG 1.20-0.00	1.20	0.00	2.00	2.2		●		0.02-0.03
GIG 1.25-0.10	1.25	0.10	2.00	2.2	●	●		0.02-0.04
GIG 1.40-0.00	1.40	0.00	2.00	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 cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: GHDR/L (Short Pocket) (B19) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18) • GHSR/L (B104).

GIP

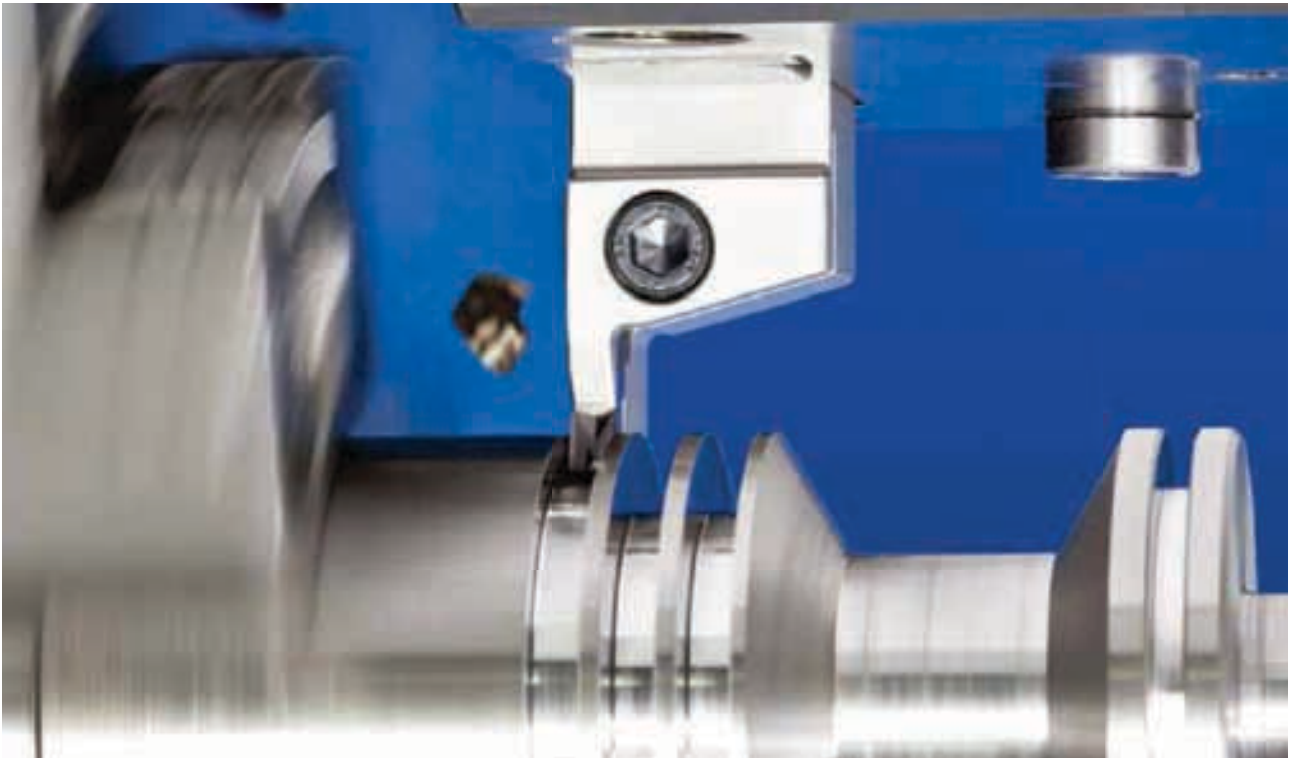
Precision Double-Ended Inserts for Grooving



Designation	Dimensions				Tough ↔ Hard							Recommended Machining Data f groove (mm/rev)
	W±0.02	R±0.03	T _{max-r}	M	IC830	IC8250	IC808	IC20	IC807	IC806	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
GIP 6.00-0.40	6.00	0.40	13.00	4.8				●				0.15-0.25
GIP 6.00-0.80	6.00	0.80	13.00	4.8				●				0.15-0.27

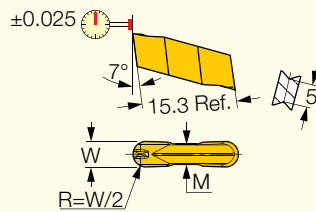
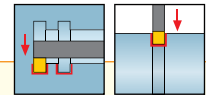
• Dmin for internal machining = 70 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23)
 • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18) • GHSR/L (B104)



GIP (Full Radius)

Precision Double-Ended, Full Radius Inserts for Grooving



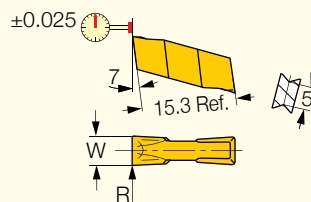
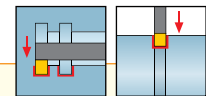
Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data f groove (mm/rev)
	W±0.02	R±0.05	T _{max-r}	M	IC830	IC8250	IC808	IC20	
GIP 3.00-1.50	3.00	1.50	12.30	2.4				●	0.08-0.15
GIP 3.18-1.59	3.18	1.59	12.20	2.4	●	●	●	●	0.08-0.16
GIP 3.98-1.99	3.98	1.99	11.80	3.2		●		●	0.10-0.20
GIP 4.78-2.39	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 cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18) • GHSR/L (B104).

GIF

Precision Double-Ended Inserts for Grooving



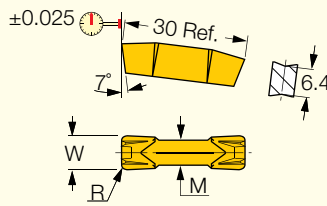
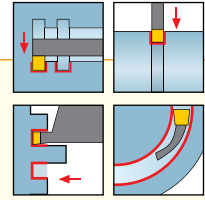
Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data f groove (mm/rev)
	W±0.02	R±0.03	M	T _{max-r}	IC830	IC8250	IC808	IC20	
GIF 3.48-0.20	3.48	0.20	3.2	13.00	●	●	●	●	0.08-0.12
GIF 3.56-0.20	3.56	0.20	3.2	13.00		●	●		0.08-0.13
GIF 3.74-0.20	3.74	0.20	3.2	13.00		●	●		0.08-0.13
GIF 3.98-0.20	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
GIF 5.28-0.20	5.28	0.20	4.0	13.00		●	●	●	0.12-0.18
GIF 5.39-0.20	5.39	0.20	4.0	13.00		●	●	●	0.12-0.19
GIF 5.90-0.20	5.90	0.20	4.8	13.00		●	●		0.12-0.21
GIF 6.35-0.50	6.35	0.50	4.8	13.00		●	●	●	0.14-0.24
GIF 6.35-0.55	6.35	0.55	4.8	13.00		●	●		0.14-0.24

• Dmin for internal machining = 70 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18).

GIF (Long Pocket)

Precision Double-Ended Inserts for Grooving



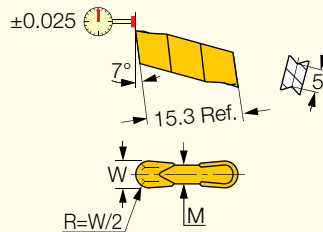
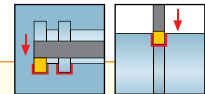
Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	$W_{\pm 0.02}$	$R_{\pm 0.03}$	M	T_{max-r}	IC20	IC806	f groove (mm/rev)	f face-groove (mm/rev)
GIF 8.00-0.40	8.00	0.40	6.0	27.00	●	●	0.18-0.31	0.14-0.23
GIF 8.00-0.80	8.00	0.80	6.0	27.00	●	●	0.18-0.34	0.14-0.25

• Dmin for internal machining = 65 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • GAFG-R/L-8 (E42) • GHDR/L (Long Pocket) (B26) • GHDR/L-JHP (Long Pocket) (B26) • GHFGR/L-8 (E40).

GIF (Full Radius)

Precision Double-Ended Full Radius Inserts for Grooving



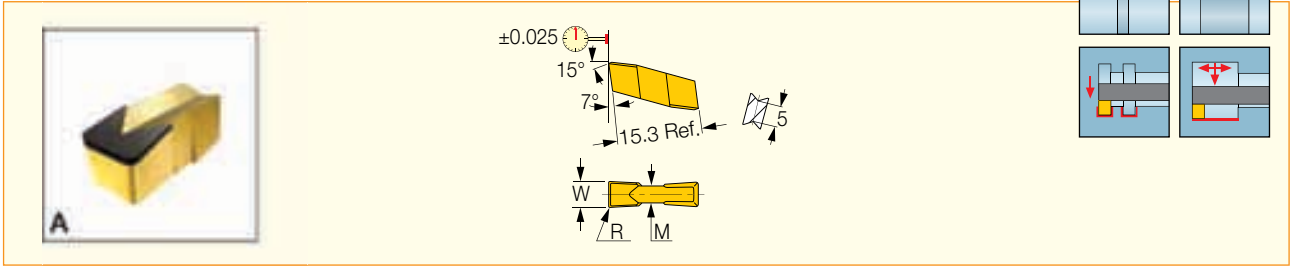
Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data
	$W_{\pm 0.02}$	$R_{\pm 0.05}$	M	T_{max-r}	IC8250	IC808	IC20	
GIF 4.78-2.39	4.78	2.39	4.0	11.40	●	●		f groove (mm/rev) 0.11-0.20
GIF 6.35-3.18	6.35	3.18	4.8	10.60			●	0.14-0.27

• Dmin for internal machining = 70 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-S (B23) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) () • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18).

GIA-K (W=3-6)

Flat Top Precision Double-Ended Inserts with T-Land for Machining Cast Iron



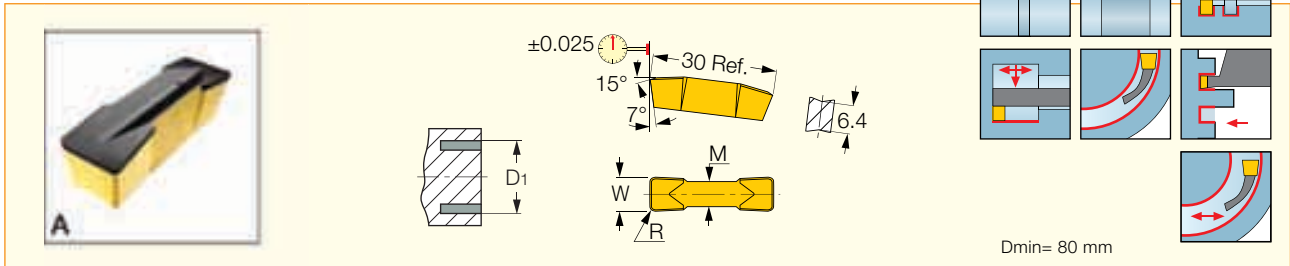
Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data		
	W±0.02	R±0.05	M	T _{max-r}	IC428	IC5010	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIA 3.00K-0.40	3.00	0.40	2.4	13.00	●	●	0.50-1.80	0.12-0.20	0.07-0.13
GIA 4.00K-0.40	4.00	0.40	3.2	13.00	●	●	0.50-2.40	0.16-0.27	0.09-0.18
GIA 4.00K-0.80	4.00	0.80	3.2	13.00	●	●	1.00-2.40	0.18-0.32	0.09-0.19
GIA 5.00K-0.80	5.00	0.80	4.0	13.00	●	●	1.00-3.00	0.23-0.40	0.11-0.24
GIA 6.00K-0.80	6.00	0.80	4.8	13.00	●	●	1.00-3.60	0.27-0.48	0.14-0.29

• Dmin for internal machining = 70mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18).

GIA-K (Long Pocket)

Flat Top Precision Double-Ended Inserts with T-Land, for Machining Cast Iron



Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data		
	W±0.02	R±0.05	M	T _{max-r}	D _{1 min}	IC428	IC5010	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIA 8.00K-0.80	8.00	0.80	6.0	25.00	160.0	●	●	1.00-4.80	0.36-0.64	0.18-0.38
GIA 8.00K-1.20	8.00	1.20	6.0	25.00	160.0	●	●	1.45-4.80	0.36-0.70	0.18-0.38

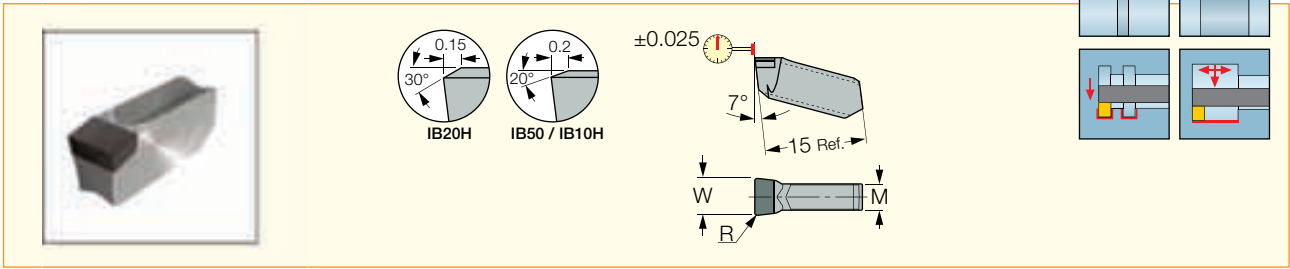
• Dmin for internal machining = 65 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDR/L (Long Pocket) (B26) • GHDR/L-JHP (Long Pocket) (B26) • GHFGR/L-8 (E40) • GHIR/L (W=7.0-8.3) (B93).



GITM

CBN Tipped Inserts for Turning and Grooving on Hard Ferrous Materials



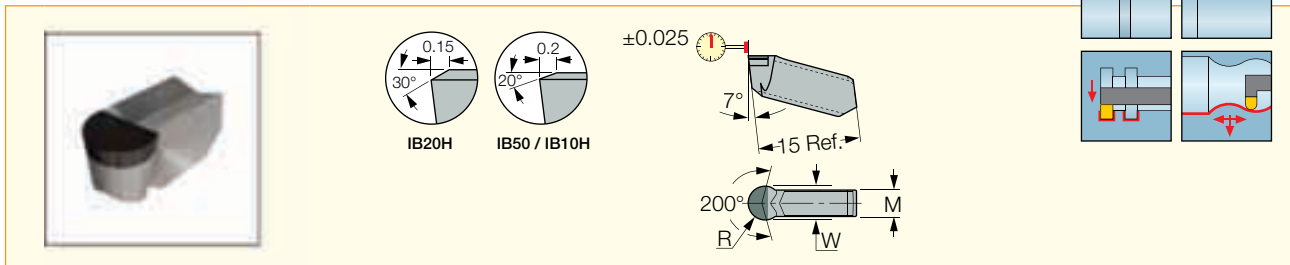
Designation	Dimensions			Tough ↔ Hard			Recommended Machining Data		
	W±0.02	R±0.05	M	IB20H	IB50	IB10H	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GITM 3.00K-0.20	3.00	0.20	2.4	●	●	●	0.00-0.30	0.02-0.07	0.02-0.05
GITM 4.00K-0.20	4.00	0.20	3.2	●	●	●	0.00-0.40	0.03-0.09	0.02-0.07
GITM 5.00K-0.40	5.00	0.40	4.0	●	●	●	0.00-0.50	0.05-0.13	0.03-0.10
GITM 6.00K-0.40	6.00	0.40	4.8	●	●	●	0.00-0.60	0.05-0.15	0.04-0.12
GITM 8.00K-0.40	8.00	0.40	6.0	●	●	●	0.00-0.80	0.07-0.20	0.05-0.16

• Dmin for internal machining = 70mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18) • GHSR/L (B104).

GITM (Full Radius)

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



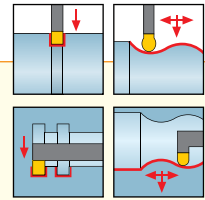
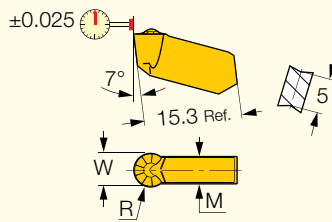
Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data		
	W±0.02	R±0.05	M	D _{1 min}	IB20H	IB50	IB10H	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GITM 3.00K-1.50	3.00	1.50	2.4	160.0	●	●	●	0.00-0.30	0.03-0.10	0.02-0.06
GITM 4.00K-2.00	4.00	2.00	3.2	160.0	●	●	●	0.00-0.40	0.04-0.14	0.02-0.09
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
GITM 6.00K-3.00	6.00	3.00	5.0	160.0	●	●	●	0.00-0.60	0.06-0.22	0.04-0.13
GITM 8.00K-4.00	8.00	4.00	5.6	160.0	●	●	●	0.00-0.80	0.08-0.29	0.05-0.17

• Dmin for internal machining = 70mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18) • GHSR/L (B104).

GIPY

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



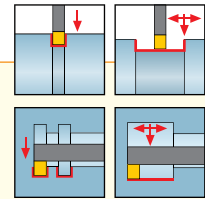
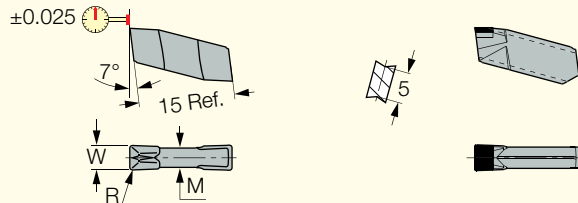
Designation	Dimensions			Tough ↔ Hard				Recommended Machining Data	
	W±0.02	R±0.05	M	IC20	IC07	IC907	IC806	f turn (mm/rev)	f groove (mm/rev)
GIPY 3.00-1.50	3.00	1.50	2.4	●	●	●	●	0.19-0.28	0.08-0.15
GIPY 4.00-2.00	4.00	2.00	3.2	●	●	●	●	0.22-0.37	0.10-0.20
GIPY 5.00-2.50	5.00	2.50	3.9	●	●	●	●	0.24-0.46	0.13-0.23
GIPY 6.00-3.00	6.00	3.00	5.0	●	●	●	●	0.26-0.55	0.15-0.27
GIPY 8.00-4.00	8.00	4.00	5.6	●	●	●	●	0.34-0.74	0.20-0.36

• Can cut arcs to 250° • Dmin for internal machining = 70 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-P8 (B25) • CGHN-S (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18) • GHSR/L (B104).

GIPA (W=3-6)

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



GIPA...D-ID5

Designation	Dimensions			Tough ↔ Hard		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
GIPA 6.00-0.40	6.00	0.40	4.8	●		0.50-3.60	0.19-0.41	0.11-0.26

• Dmin for internal machining = 70 mm • For cutting speed recommendations and user guide, see pages B132-145.

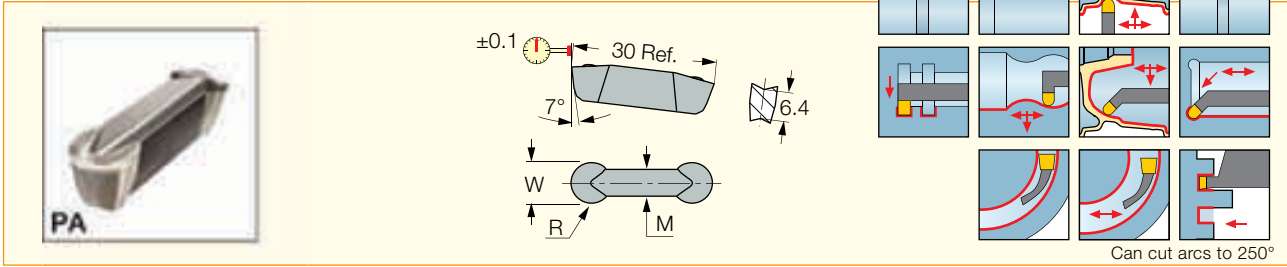
⁽¹⁾ Single-ended PCD tipped insert

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHIUR/L-UC (C9) • GHMPR/L (B18) • GHMR/L (B18) • GHSR/L (B104).



GDMA

Utility Double-Ended Insert with a Polished Top Rake, for Machining Aluminum



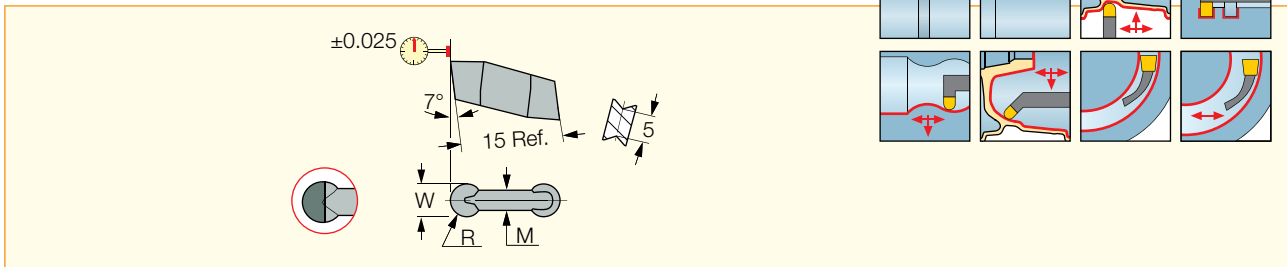
Designation	Dimensions			Tough ↔ Hard		Recommended Machining Data		
	W±0.05	R±0.05	M	IC07	IC507	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GDMA 840	8.00	4.00	5.6	●	●	0.00-4.00	0.24-0.67	0.14-0.38

• For heavy-duty machining • Dmin for internal machining = 65 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: CF5 GHIFR-8A (C2) • CF5 GHIUR-15A (C3) • GADR/L-8 (B28) • GHDKR/L (C10) • GHIFR/L-A (C9) • GHIR/L (W=7.0-8.3) (B93) • GHIUR/L-C-A(15° & 27.5°)Bars (C8) • GHIUR/L-UC (C9).

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±0.02	R±0.05	M	IC20	IC806	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
GIPA 6.00-3.00	6.00	3.00	4.8	●			0.00-3.00	0.21-0.58	0.11-0.29
GIPA 6.00-3.00-D ⁽¹⁾	6.00	3.00	4.8			●	0.00-3.00	0.26-0.72	0.13-0.36
GIPA 6.00-3.00YZ	6.00	3.00	4.8	●			0.00-3.00	0.21-0.58	0.11-0.29
GIPA 6.00-3.00YZ-D ⁽²⁾	6.00	3.00	4.8			●	0.00-3.00	0.26-0.72	0.13-0.36
GIPA 6.00-3.00CB ⁽³⁾	6.00	3.00	4.8			●	0.00-3.00	0.21-0.58	0.11-0.29

• For cutting speed recommendations and user guide, see pages B132-145.

⁽¹⁾ Single-ended PCD tipped insert ⁽²⁾ Single-ended molded PCD chipformer tipped insert ⁽³⁾ Single-ended flat PCD tipped insert with chip deflector

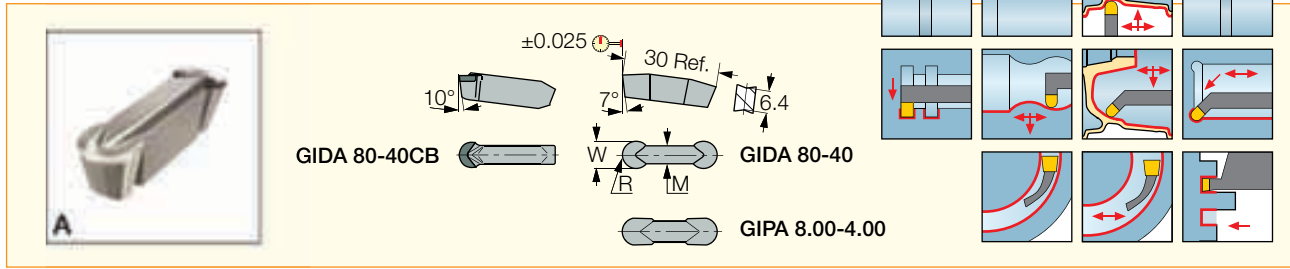
For tools, see pages: C#-GHDR/L (G11) • CF5 GHIUR-15A (C3) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • CGPAD (B23) • GHDKR/L (C10) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHIFR/L-A (C9) • GHIUR/L-C-A(15° & 27.5°)Bars (C8) • GHMPR/L (B18) • GHMR/L (B18) • GHSR/L (B104).



CUT-GRIP Aluminum • Next to Shoulder

GIPA/GIDA 8 (Full Radius)

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	IC20	ID5	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIDA 80-40	8.00	4.00	5.6	●		0.00-4.00	0.24-0.67	0.14-0.38
GIDA 80-40-D	8.00	4.00	5.6		●	0.00-4.00	0.24-0.67	0.14-0.38
GIDA 80-40CB-D (1)	8.00	4.00	5.6		●	0.00-4.00	0.24-0.67	0.14-0.38
GIDA 80-40YZ	8.00	4.00	5.6	●		0.00-4.00	0.24-0.67	0.14-0.38
GIDA 80-40YZ-D	8.00	4.00	5.6		●	0.00-4.00	0.35-0.96	0.18-0.48
GIPA 8.00-4.00	8.00	4.00	6.0	●		0.00-4.00	0.24-0.67	0.14-0.38

• ID5 is a single-ended PCD tipped insert • For cutting speed recommendations and user guide, see pages B132-145.

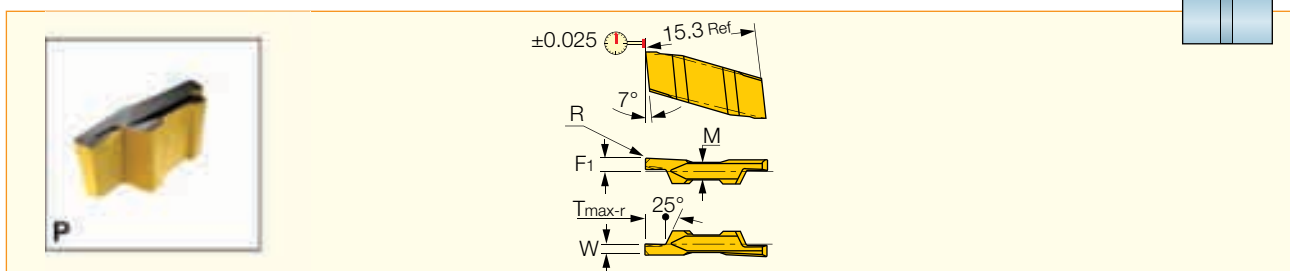
(1) Should not be clamped on tools with "A" suffix

For tools, see pages: C#-GHDR/L (G11) • CF5 GHFR-8A (C2) • CF5 GHIUR-15A (C3) • CGHN-8-10D (B28) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDKR/L (C10) • GHDR/L (Long Pocket) (B26) • GHDR/L-8A (C10) • GHDR/L-JHP (Long Pocket) (B26) • GHFR/L-8 (E40) • GHFR/L-A (C9) • GHIR/L (W=7.0-8.3) (B93) • GHIUR/L-C-A(15° & 27.5°)Bars (C8) • GHIUR/L-UC (C9).



GIP-RX/LX

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



Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data
	W \pm 0.02	R \pm 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

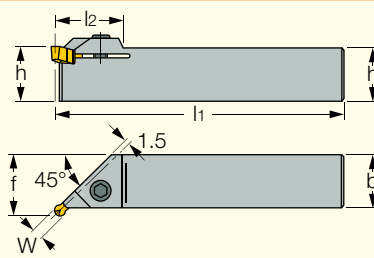
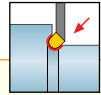
• Toolholder seat needs to be modified according to insert profile to ensure clearance. • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: GHMPR/L (B18) • GHMR/L (B18).

CUT-GRIP Undercutting

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
GHMUR/L 20	6.40	20.0	20.0	122.00	25.0	23.0
GHMUR/L 25	6.40	25.0	25.0	137.00	25.0	28.0

• 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 (B49) • GIP-UN (B50).

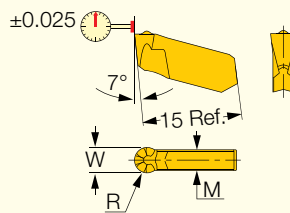
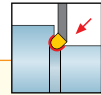


Spare Parts

Designation	Screw	Key
GHMUR/L 16	SR M6X16DIN912	HW 5.0
GHMUR/L 20	SR M6X20DIN912	HW 5.0
GHMUR/L 25	SR M6X25DIN912 UNB.	HW 5.0

GIMY-UN

Utility Single-Ended Inserts for External Undercutting



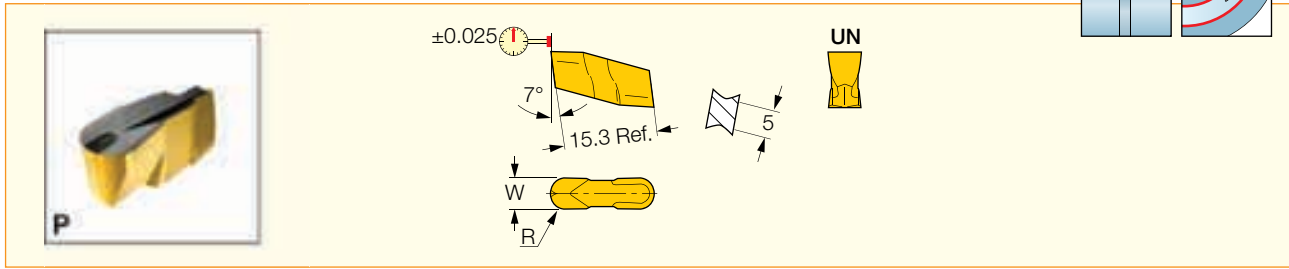
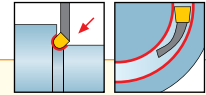
Designation	Dimensions				IC8250	Recommended Machining Data
	$W_{\pm 0.05}$	$R_{\pm 0.05}$	M	T_{max-r}		f groove (mm/rev)
GIMY 315-UN	3.00	1.50	2.4	2.00	●	0.05-0.15
GIMY 420-UN	4.00	2.00	3.2	2.50	●	0.05-0.15

• For 45° undercutting on D 100 mm, regular GIMY inserts may be used. • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: GHMUR/L (B49).

GIP-UN

Precision Double-Ended Inserts for External Undercutting



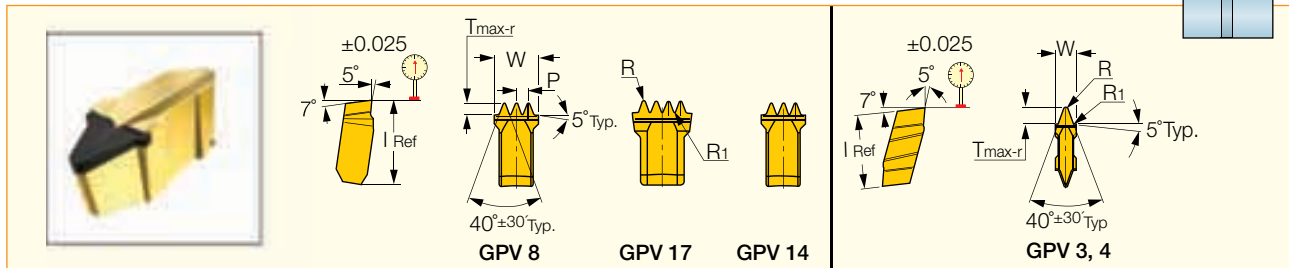
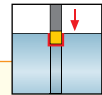
Designation	Dimensions					Tough ↔ Hard				Recommended Machining Data f groove (mm/rev)
	W±0.05	R±0.05	D _{min}	M	T _{max-r}	IC830	IC8250	IC808	IC20	
GIP 3.00-1.50UN	3.00	1.50	35.00	2.4	4.00	●	●	●	●	0.05-0.15
GIP 4.00-2.0UN	4.00	2.00	35.00	3.2	4.00		●		●	0.05-0.15

• Not recommended for turning. • For undercutting at 45° and D100 mm, other GIP inserts apply as well. • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: C#-GHDR/L (G11) • CGHN-DG (B24) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHMPR/L (B18) • GHMR/L (B18) • GHMUR/L (B49).

GPV

Precision Inserts for Grooving Multi V-Ribbed Pulleys



Designation	Dimensions							Tough ↔ Hard			Recommended Machining Data f groove (mm/rev)
	W	P±0.03	T _{max-r}	R±0.05	R ₁ ±0.05	Z	I	IC8250	IC428	IC5010	
GPV 3-2.34-1 ⁽¹⁾	2.80	2.34	2.21	0.32	0.20	1	15.30	●		●	0.06-0.15
GPV 4-3.56-1 ⁽¹⁾	4.03	3.56	3.42	0.45	0.30	1	15.30	●	●	●	0.06-0.15
GPV 8-2.34-3 ⁽²⁾	7.48	2.34	2.21	0.32	0.20	3	15.30	●	●		0.06-0.15
GPV 14-2.34-4 ⁽³⁾	9.82	2.34	2.21	0.32	0.20	4	24.00	●	●	●	0.06-0.15
GPV 14-3.56-3 ⁽³⁾	11.14	3.56	3.42	0.45	0.30	3	24.00	●	●	●	0.06-0.15
GPV 17-3.56-4 ⁽⁴⁾	14.68	3.56	3.42	0.45	0.30	4	24.00	●	●	●	0.06-0.15

• Toolholder seat needs to be modified according to insert profile to ensure clearance. • For cutting speed recommendations and user guide, see pages B132-145.

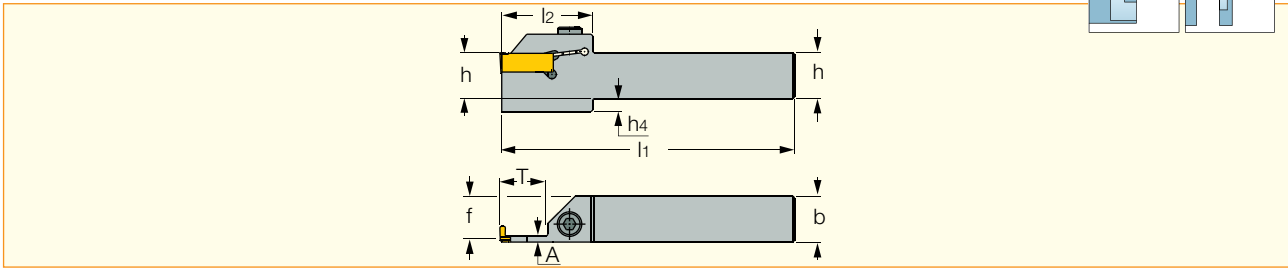
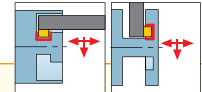
⁽¹⁾ Use holders which are suitable for GIP 3 / GIP 4 ⁽²⁾ Use holders which are suitable for GIMY 808 ⁽³⁾ Use holders which are suitable for TIGER 14 ⁽⁴⁾ Use holders which are suitable for TIGER 17

For tools, see pages: C#-GHDR/L (G11) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHDR/L/N 12/14 (B68) • GHMPR/L (B18) • GHMR/L (B18).



HLPGR/L

Tools for L-Type LPGIR/L Inserts



Designation	T _{max-r}	h	h ₁	h ₄	b	A	f	l ₁	l ₂
HLPGR/L 2525-12-A3.5-T25	25.00	25.0	25.0	7.0	25.0	3.50	23.25	160.00	50.0
HLPGR/L 3225-12-A3.5-T25	25.00	32.0	32.0	-	25.0	3.50	23.25	160.00	50.0
HLPGR/L 2525-12-A4.5-T30	30.00	25.0	25.0	7.0	25.0	4.50	22.75	160.00	55.0
HLPGR/L 3225-12-A4.5-T30	30.00	32.0	32.0	-	25.0	4.50	22.75	160.00	55.0

• In case of face penetration prior to radial grooving, please check that the lower insert support is relieved from the groove's outer diameter.

Spare Parts

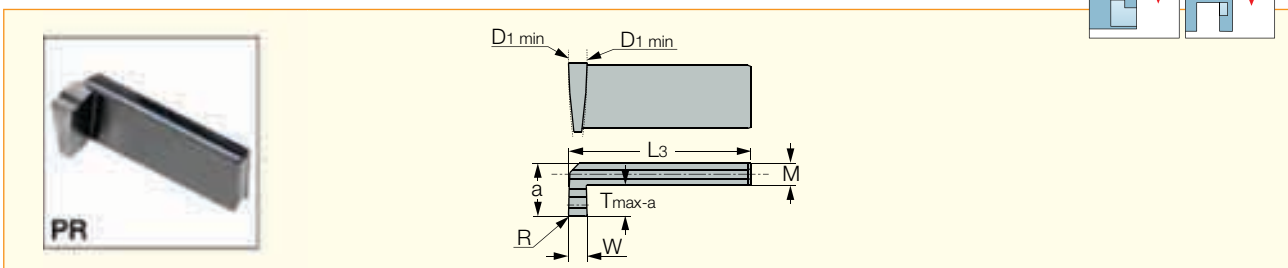
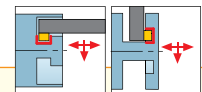


Designation	Screw	Key
HLPGR/L	SR M6X20DIN912	HW 5.0



LPGIR

Inserts for Axial Grooves Inside Radial Grooves and for Radial Grooves Inside Axial Grooves

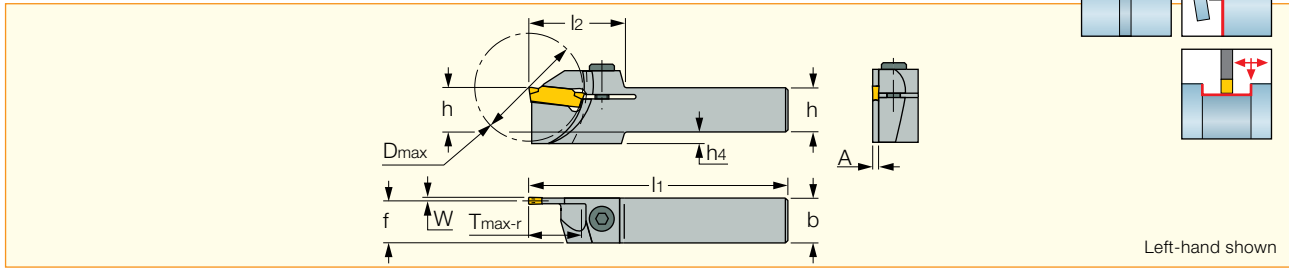


Designation	Dimensions							IC907
	W	R	M	T _{max-a}	L ₃	a	D _{1 min}	
LPGIL 12-8-2T4PR	2.00	0.20	4.0	4.00	30.00	8.00	200.0	●
LPGIR 12-8-2T4PR	2.00	0.20	4.0	4.00	30.00	8.00	200.0	●
LPGIL 12-8.5-3T5PR	3.00	0.30	3.5	5.00	30.00	8.50	200.0	●
LPGIR 12-8.5-3T5PR	3.00	0.30	3.5	5.00	30.00	8.50	200.0	●
LPGIL 12-9.5-4T6PR	4.00	0.40	3.5	6.00	30.00	9.50	200.0	●
LPGIR 12-9.5-4T6PR	4.00	0.40	3.5	6.00	30.00	9.50	200.0	●
LPGIL 12-11-5T6.5PR	5.00	0.40	4.5	6.50	30.00	11.00	200.0	●
LPGIR 12-11-5T6.5PR	5.00	0.40	4.5	6.50	30.00	11.00	200.0	●

• For cutting speed recommendations and user guide, see pages B132-145.

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	Inserts
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/GDMY 318
PHGR/L 20-2.4	2.40	3.18	34.0	17.00	20.0	20.0	120.00	33.0	19.1	-	1.90	GDMW 2.4/GDMY 318
PHGR/L 25-2.4	2.40	3.18	34.0	17.00	25.0	25.0	140.00	33.0	24.1	-	1.90	GDMW 2.4/GDMY 318

• For user guide, see pages B132-145.

⁽¹⁾ Maximum parting diameter.

For inserts, see pages: GDMW 2.4 (B53).

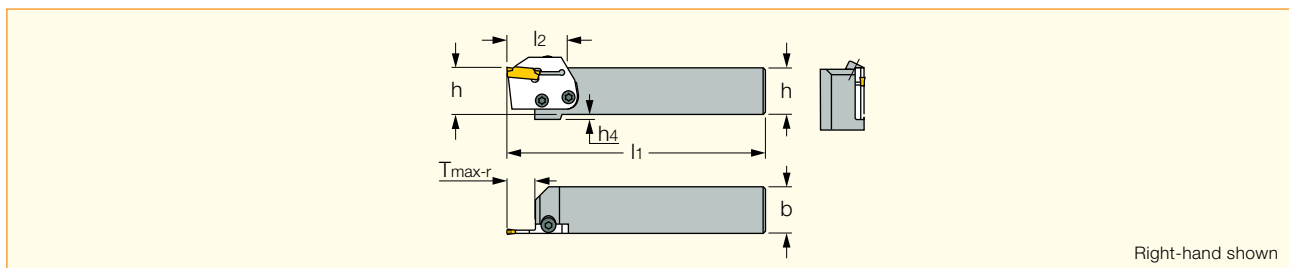
Spare Parts



Designation	Screw	Key
PHGR/L	SR M5X20DIN912	HW 4.0

PHAR/L

External Machining Holders for PADR/L Adapters



Designation	T _{max-r}	h	b	l ₁	h ₄	Adapter ⁽¹⁾
PHAR/L 20	16.30	20.0	20.0	140.00	10.0	PADR/L 2.4
PHAR/L 25	16.30	25.0	25.0	140.00	5.0	PADR/L 2.4

⁽¹⁾ Adapters to be ordered separately.

For tools, see pages: PADR/L (B53).

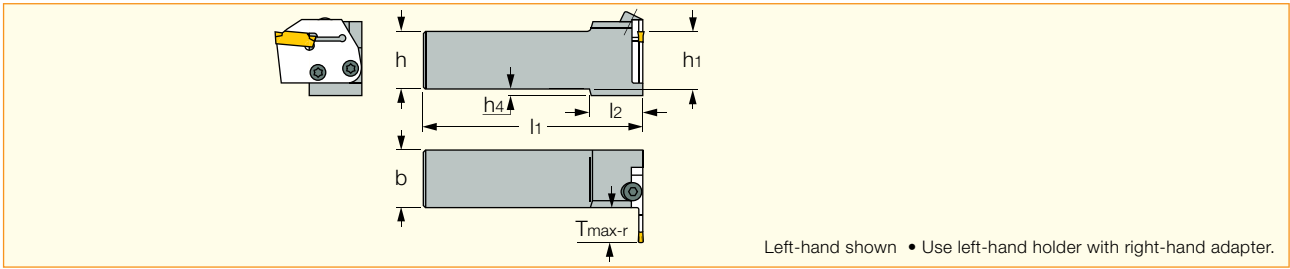
Spare Parts



Designation	Screw	Key	Lower Locking Screw	Key 1
PHAR/L	SR 76-1368	HW 4.0	SR M5-04451	T-20/5

PHAPR/L

External Machining Holders for Perpendicularly Oriented PADR/L Adapters



Designation	T_{max-r}	h	b	l_1	h_4	Adapter ⁽¹⁾
PHAPR/L 25	16.30	25.0	25.0	140.00	5.0	PADL/R 2.4

⁽¹⁾ Adapters to be ordered separately.

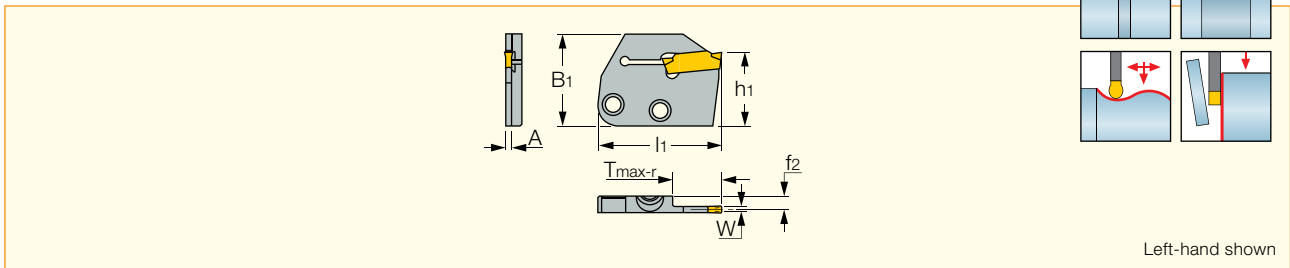
Spare Parts



Designation	Screw	Key	Lower Locking Screw	Key 1
PHAPR/L 25	SR 76-1368	HW 4.0	SR M5-04451	T-20/5

PADR/L

Adapters for GDMW/GDMY Groove-Turn Inserts



Designation	W_{min}	W_{max}	T_{max-r}	l_1	A	h_1	B_1	f_2
PADR/L 2.4	2.40	3.18	16.30	41.00	1.90	24.0	30.0	4.20

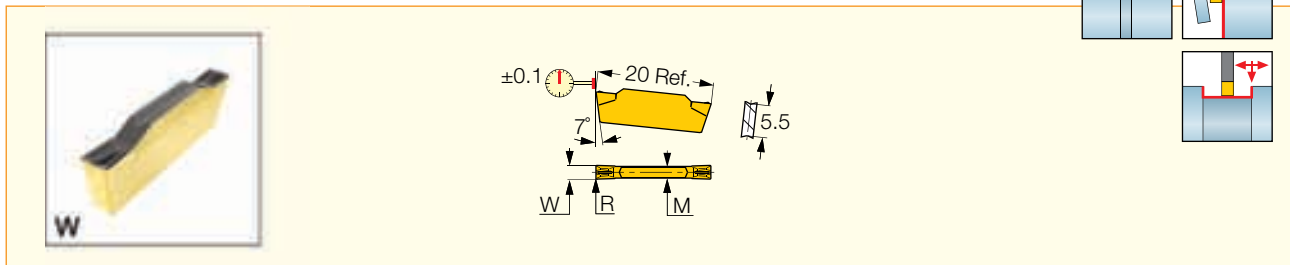
• For user guide, see pages B132-145.

For inserts, see pages: GDMW 2.4 (B53).

For holders, see pages: PHAPR/L (B53) • PHAR/L (B52).

GDMW 2.4

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



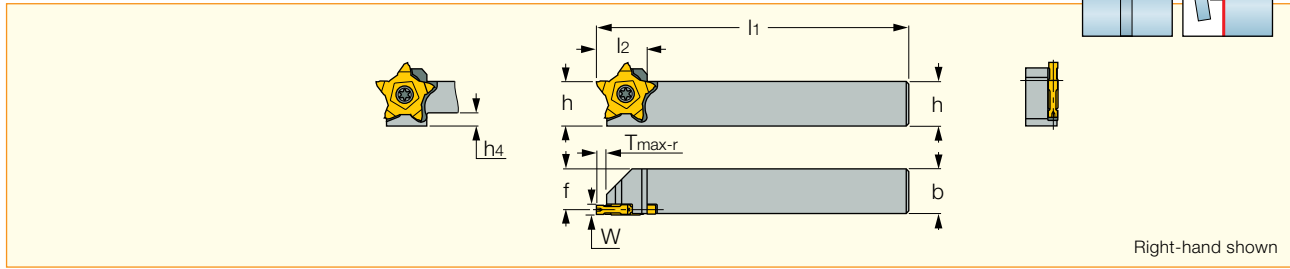
Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data		
	$W_{\pm 0.04}$	$R_{\pm 0.03}$	M	T_{max-r}	IC830	IC808	IC20	IC20N	a_p (mm)	f turn (mm/rev)	f groove (mm/rev)
GDMW 2.4	2.40	0.18	2.0	18.00	●	●	●	●	0.25-1.50	0.07-0.12	0.05-0.08

• For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: PADR/L (B53) • PHGR/L (B52) • PHSR/L (B103).

PCHR/L-24

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



Designation	h	b	W _{min}	W _{max} ⁽²⁾	f	l ₁	l ₂	h ₄	T _{max-r} ⁽³⁾	Inserts
PCHR/L 10-24	10.0	10.0	0.50	3.20 ⁽⁴⁾	8.5	120.00	19.5	6.0	6.50	PENTA 24
PCHR/L 12-24	12.0	12.0	0.50	3.20 ⁽⁴⁾	10.5	120.00	19.5	4.0	6.50	PENTA 24
PCHR/L 16-24	16.0	16.0	0.50	3.20 ⁽⁴⁾	14.5	120.00	19.5	-	6.50	PENTA 24
PCHR/L 20-24	20.0	20.0	0.50	3.20 ⁽⁴⁾	18.5	120.00	19.5	-	6.50	PENTA 24
PCHR/L 25-24	25.0	25.0	0.50	3.20 ⁽⁴⁾	23.5	135.00	19.5	-	6.50	PENTA 24
PCHR/L 25-24-8 ⁽¹⁾	25.0	25.0	6.25	8.20	22.5	135.00	19.5	-	6.50	PENTAS 24-8

⁽¹⁾ Used with special inserts only ⁽²⁾ The W_{max} value for standard PENTA 24 inserts is 3.18 ⁽³⁾ For specific information, refer to insert data. ⁽⁴⁾ Up to 6.2 mm width may be ordered on request

For inserts, see pages: PENTA 24N-J (B57) • PENTA 24N-J (Full Radius) (B58) • PENTA 24N-PF (B58) • PENTA 24N-Z (B59) • PENTA 24R/L-J (D53) • PENTA 24R/L-Z (D55).

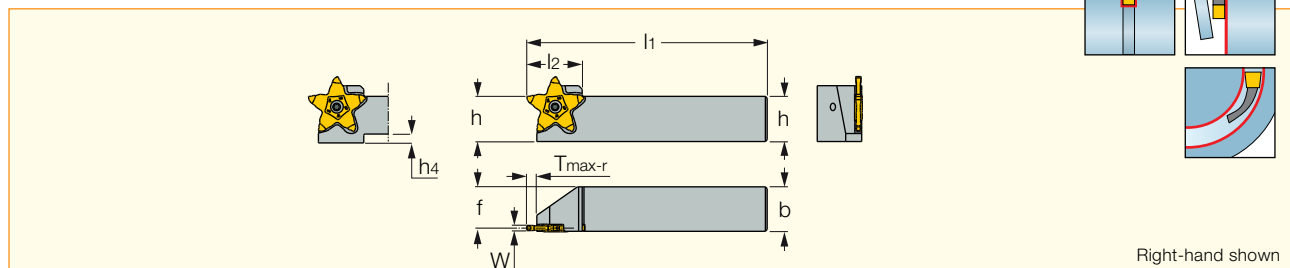
Spare Parts



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
PCHL 20-24	SR 16-212-01397L	T-2010/5
PCHR 20-24	SR 16-212-01397	T-2010/5
PCHL 25-24	SR 16-212-01397L	T-2010/5
PCHR 25-24	SR 16-212-01397	T-2010/5
PCHL 25-24-8	SR PCHL-8-06642	T-15/5
PCHR 25-24-8	SR PCHR-8-06642	T-15/5

PCHR/L-34

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
PCHR/L 16-34	16.0	16.0	1.50	4.00	14.2	10.00	120.00	31.0	9.0
PCHR/L 20-34	20.0	20.0	1.50	4.00	18.2	10.00	120.00	31.0	6.0
PCHR/L 25-34	25.0	25.0	1.50	4.00	23.2	10.00	135.00	31.0	-
PCHR/L 25-34-8 ⁽¹⁾	25.0	25.0	3.19	8.20	22.5	10.00	135.00	31.0	-
PCHR/L 32-34	32.0	32.0	1.50	4.00	30.1	10.00	135.00	31.0	-

⁽¹⁾ For specific information, refer to insert data.

For inserts, see pages: PENTA 34F-R/L (E51) • PENTA 34N-C (B61) • PENTA 34N-PB (B60) • PENTA 34R/L-C (D57) • PENTA 34R/L-PB (D58).

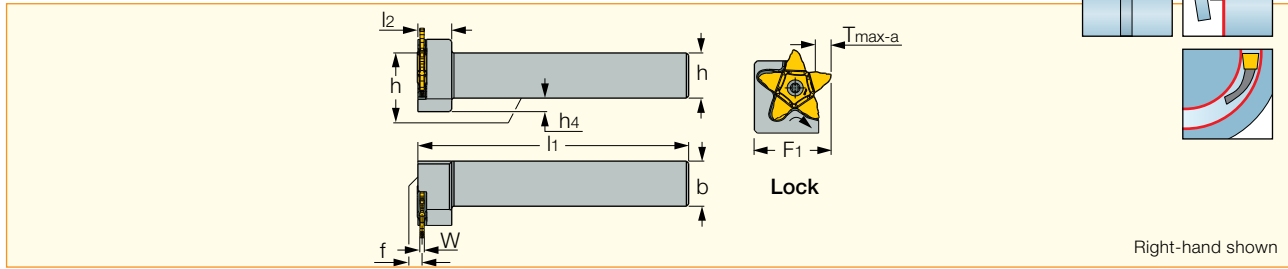
Spare Parts



Designation	Screw	Key
PCHR/L 16-34	SR 16-212-01397	T-2010/5
PCHR/L 20-34	SR 16-212-01397	T-2010/5
PCHR/L 25-34	SR 16-212-01397	T-2010/5
PCHR/L 25-34-8	SR PCHR-8-06642	T-15/5
PCHR/L 32-34	SR 16-212-01397	T-2010/5

PCHPR/L

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



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
PCHPR/L 20-24	20.0	20.0	0.50	3.20 ⁽²⁾	1.5 ⁽³⁾	28.0	120.00	11.5	-	6.50
PCHPR/L 25-24	25.0	25.0	0.50	3.20 ⁽²⁾	1.5 ⁽³⁾	33.0	135.00	11.5	-	6.50
PCHPR/L 20-34	20.0	20.0	1.40	4.00	1.9	34.0	120.00	15.0	6.0	10.00
PCHPR/L 25-34	25.0	25.0	1.40	4.00	1.9	34.0	135.00	15.0	-	10.00

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

For inserts, see pages: PENTA 24N-J (B57) • PENTA 24N-J (Full Radius) (B58) • PENTA 24N-PF (B58) • PENTA 24N-Z (B59) • PENTA 24R/L-J (D53) • PENTA 24R/L-Z (D55) • PENTA 34F-R/L (E51) • PENTA 34N-C (B61) • PENTA 34N-PB (B60) • PENTA 34R/L-C (D57) • PENTA 34R/L-PB (D58).

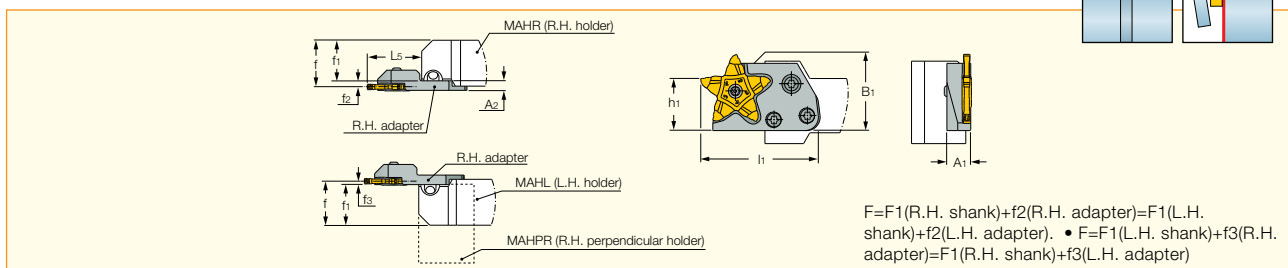
Spare Parts



Designation	Screw	Key
PCHPL 16-24	SR 16-212-01397	T-20/5
PCHPR 16-24	SR 16-212-01397L	T-20/5
PCHPL 20-24	SR 16-212-01397	T-20/5
PCHPR 20-24	SR 16-212-01397L	T-20/5
PCHPL 25-24	SR 16-212-01397	T-20/5
PCHPR 25-24	SR 16-212-01397L	T-20/5
PCHPR/L 20-34	SR 16-212-01397	T-20/5
PCHPR/L 25-34	SR 16-212-01397	T-20/5

PCADR/L

Adapters for PENTACUT Grooving Inserts



F=F₁(R.H. shank)+f₂(R.H. adapter)=F₁(L.H. shank)+f₂(L.H. adapter). • F=F₁(L.H. shank)+f₃(R.H. adapter)=F₁(R.H. shank)+f₃(L.H. adapter)

Designation	W _{min}	W _{max}	L ₅	l ₁	f ₂	f ₃	A ₂	h ₁	B ₁	A ₁
PCADR/L 24N	0.50	3.18 ⁽¹⁾	17.00	41.50	3.20	2.00	5.2	24.0	30.3	9.00
PCADL 24N-RHS	0.50	3.18	17.00	41.50	3.20	2.00	5.2	24.0	30.3	9.00
PCADR/L 34N	1.50	4.00	29.60	54.20	3.35	1.85	5.2	24.0	31.0	11.00

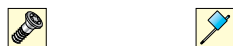
• Tmax and Dmax according to insert limitation.

(¹) Up to 6.2 mm width may be ordered on request

For inserts, see pages: PENTA 24N-J (B57) • PENTA 24N-J (Full Radius) (B58) • PENTA 24N-PF (B58) • PENTA 24N-Z (B59) • PENTA 24R/L-J (D53) • PENTA 24R/L-Z (D55) • PENTA 34F-R/L (E51) • PENTA 34N-C (B61) • PENTA 34N-PB (B60) • PENTA 34R/L-C (D57) • PENTA 34R/L-PB (D58).

For holders, see pages: C#-MAHD-JHP () • MAHPR/L-JHP () • MAHR/L-JHP () • MAHR/L (B22) • MAHPR/L (B22) • C#-MAHD (G7) • C#-MAHPD (G7) • C#-MAHUR/L (G5) • C#-MAHDR-45 (G4) • C#-MAHDOR (G5) • HSK A63WH-MAHUR/L (G17) • HSK A-WH-MAHDR/L-45 (G16) • HSK A63WH-MAHDOR (G17) • IM-MAHD (G26) • IM-MAHPD (G27) • IM63 XMZ MAHUR/L (G25) • IM63 XMZ MAHDR-45 (G23) • IM63 XMZ MAHDOR (G24).

Spare Parts

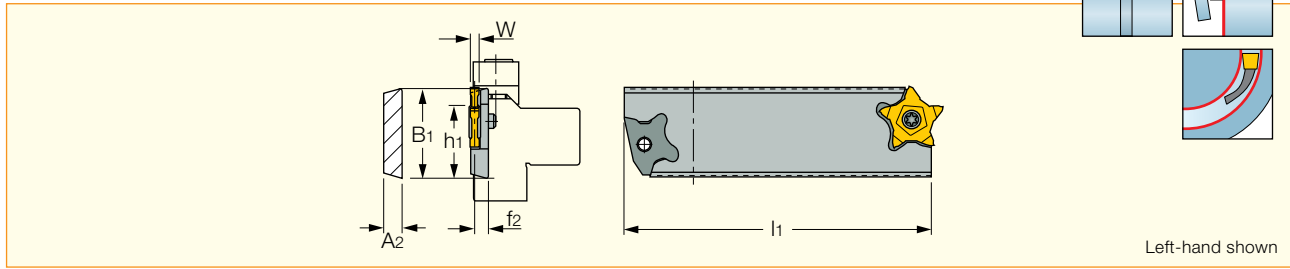


Designation	Screw	Key
PCADL 24N	SR 16-212-01397L(¹)	T-2010/5
PCADL 24N-RHS	SR 16-212-01397	T-2010/5
PCADR 24N	SR 16-212-01397	T-2010/5
PCADR/L 34N	SR 16-212-01397	T-2010/5

(¹) For left-hand holders

PCHBR/L

Double-Ended Parting and Grooving Blades for PENTACUT Inserts



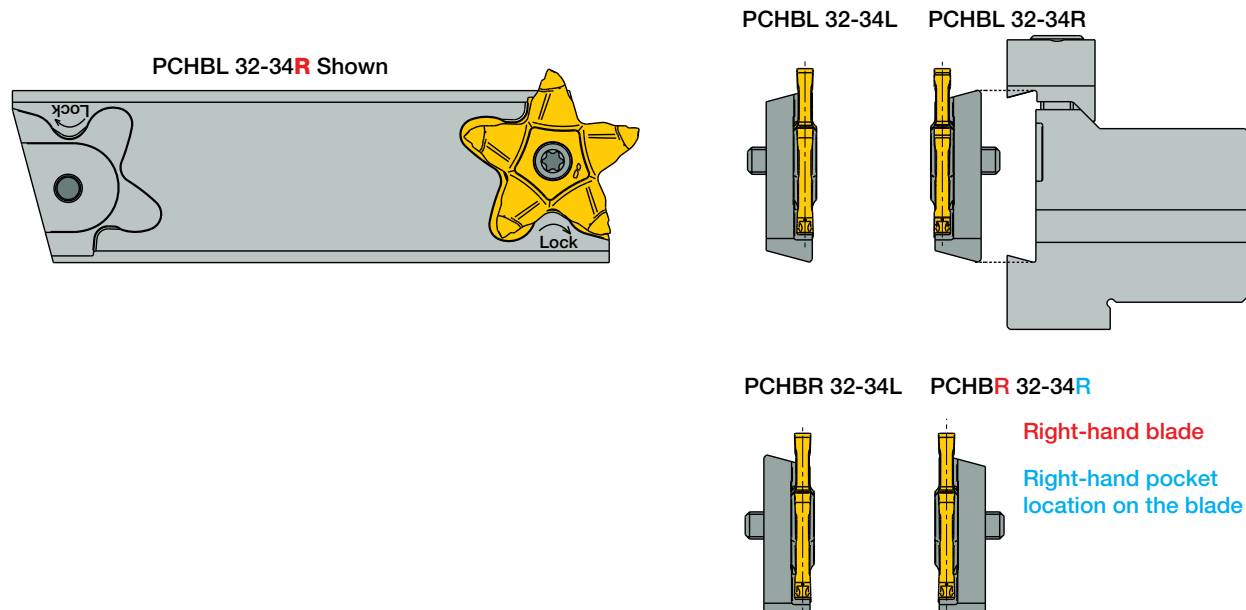
Designation	B ₁	W _{min}	W _{max}	h ₁	f ₂ (2)	l ₁	A ₂	Inserts
PCHBR/L 26-24R ⁽¹⁾	26.0	0.50	6.20	21.4	7.00	110.00	8.5	PENTA 24
PCHBR 26-24L ⁽¹⁾	26.0	0.50	6.20	21.4	7.00	110.00	8.5	PENTA 24
PCHBL 32-24R	32.0	0.50	6.20	24.8	7.00	110.00	8.5	PENTA 24
PCHBR 32-24L	32.0	0.50	6.20	24.8	7.00	110.00	8.5	PENTA 24
PCHBR/L 26-34R	26.0	1.50	4.00	21.4	7.15	110.00	8.5	PENTA 34
PCHBR 26-34L	26.0	1.50	4.00	21.4	7.15	110.00	8.5	PENTA 34
PCHBL 32-34R	32.0	1.50	4.00	24.8	7.15	110.00	8.5	PENTA 34
PCHBR 32-34L	32.0	1.50	4.00	24.8	7.15	110.00	8.5	PENTA 34

• For insert/blade orientation, see the next drawings

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

For inserts, see pages: PENTA 24N-J (B57) • PENTA 24N-J (Full Radius) (B58) • PENTA 24N-PF (B58) • PENTA 24N-Z (B59) • PENTA 24R/L-J (D53) • PENTA 24R/L-Z (D55) • PENTA 34F-R/L (E51) • PENTA 34N-C (B61) • PENTA 34N-PB (B60) • PENTA 34R/L-C (D57) • PENTA 34R/L-PB (D58).

For holders, see pages: C#-TBK-R/L (G6) • HSK A63WH-TBK-R/L (G18) • IM63 XMZ TBK (G25) • SGTBK (F3) • SGTBR/L (F3) • SGTBU/SGTBN (F2).

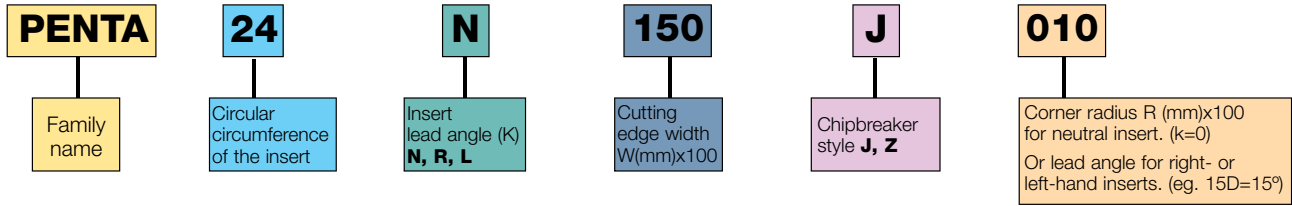


Spare Parts



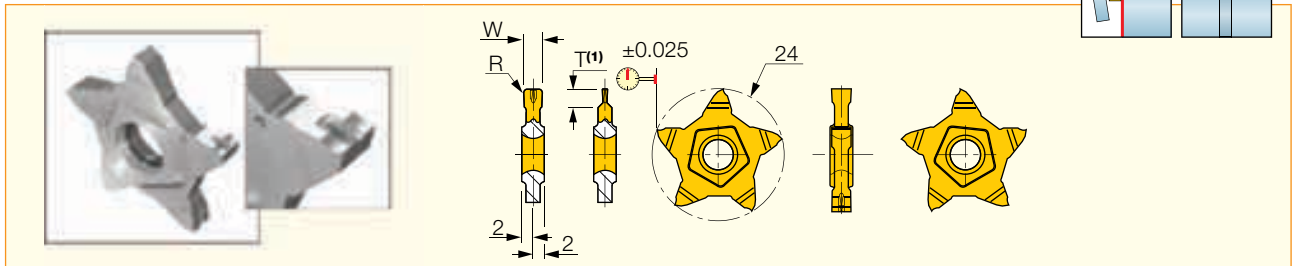
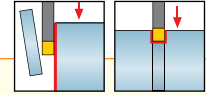
Designation	Screw	Key
PCHBR/L 26-24R	SR 16-212-01397L	T-2010/5
PCHBR 26-24L	SR 16-212-01397	T-2010/5
PCHBL 32-24R	SR 16-212-01397L	T-2010/5
PCHBR 32-24L	SR 16-212-01397	T-2010/5
PCHBR/L 26-34R	SR 16-212-01397	T-2010/5
PCHBR 26-34L	SR 16-212-01397	T-2010/5
PCHBL 32-34R	SR 16-212-01397	T-2010/5
PCHBR 32-34L	SR 16-212-01397	T-2010/5

Identification System for Standard Inserts



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} -(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 24N330J010V1	3.30	0.10	-	●		---
PENTA 24N348J020	3.48	0.20	-	●		---
PENTA 24N356J020V1	3.56	0.20	-	●		---
PENTA 24N374J020V1	3.74	0.20	-	●		---
PENTA 24N398J020	3.98	0.20	-	●		---
PENTA 24N400J040V1	4.00	0.40	-	●		---
PENTA 24N423J010V1	4.23	0.10	-	●		---
PENTA 24N445J015	4.45	0.15	-	●		---
PENTA 24N478J055	4.78	0.55	-	●		---
PENTA 24N486J030	4.86	0.30	-	●		---
PENTA 24N500J040	5.00	0.40	-	●		---
PENTA 24N528J020	5.28	0.20	-	●		---

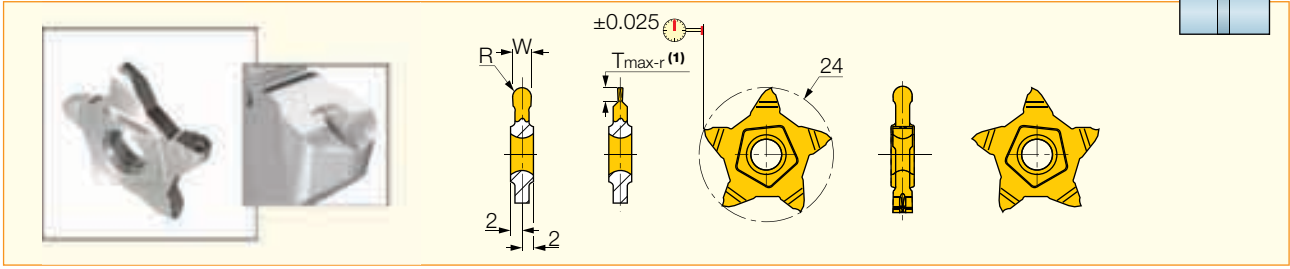
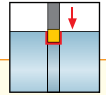
• Recessing is possible only with 2.39 mm and wider inserts. • For cutting speed recommendations and user guide, see pages B134-136.

(1) For grooving and parting depth relative to part diameter, see page B59.

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (B55) • PCHR/L-24 (B54).

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	-	●	---	
PENTA 24N120J060	1.20	0.60	-	●	---	
PENTA 24N140J070	1.40	0.70	-	●	---	
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	-	●	---	
PENTA 24N400J200	4.00	2.00	-	●	---	
PENTA 24N478J239	4.78	2.39	-	●	---	

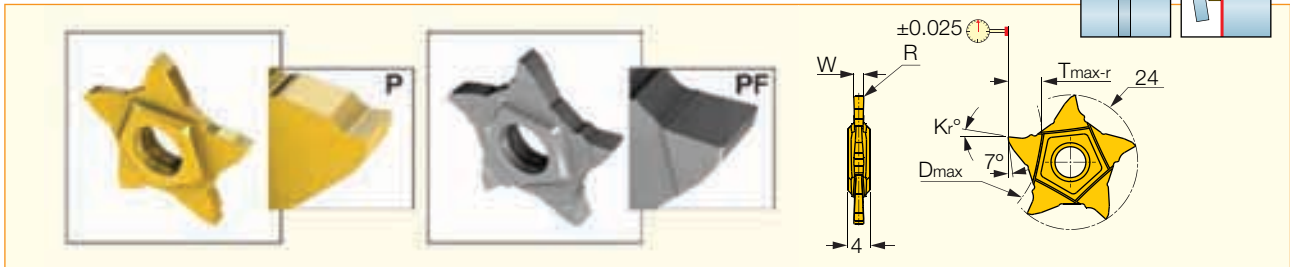
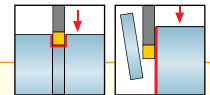
• Recessing is possible only with 2.39 mm and wider inserts. • For cutting speed recommendations and user guide, see pages B134-136.

(1) For grooving depth relative to part diameter, see page B59.

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (B55) • PCHR/L-24 (B54).

PENTA 24N-PF

Parting and Precision Grooving Pentagonal Insert with a High Positive Rake



Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data
	W ± 0.02	R	R $\pm toler$	T $_{max-r(1)}$	K $_r^\circ$	IC908	IC1008	
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

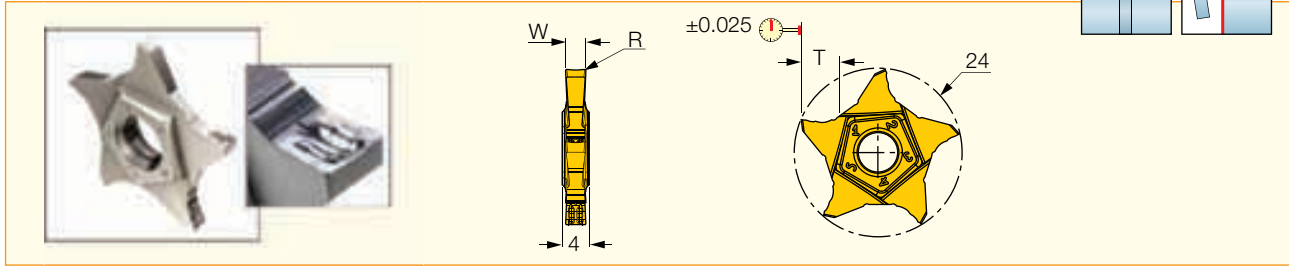
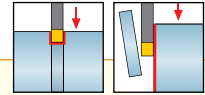
• For cutting speed recommendations and user guide, see pages B134-136.

(1) For grooving and parting depth relative to part diameter, see page B59.

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (B55) • PCHR/L-24 (B54).

PENTA 24N-Z

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

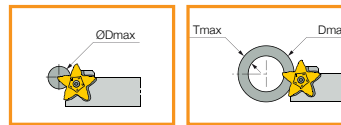


Designation	Dimensions			IC908	Recommended Machining Data
	W±0.02	R	T _{max-r} ⁽¹⁾		f groove (mm/rev)
PENTA 24N150Z010	1.50	0.10	5.00	●	0.05-0.08
PENTA 24N200Z020	2.00	0.20	6.40	●	0.04-0.12
PENTA 24N300Z020	3.00	0.20	6.40	●	0.04-0.16

• 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 • For cutting speed recommendations and user guide, see pages B134-136.

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

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (B55) • PCHR/L-24 (B54).



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≤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 ⁽⁴⁾		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	6.4		N.L.	470	210	135	100	70	40	20

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

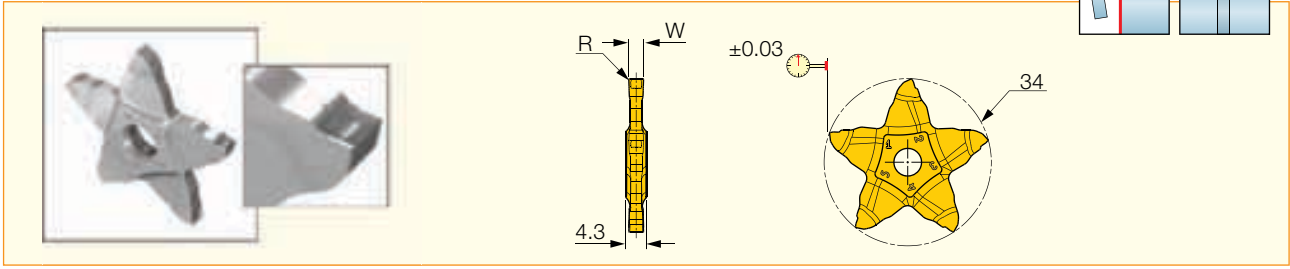
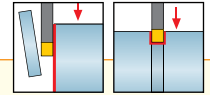
⁽²⁾ Refers to PENTA 24N050J004 - a parting insert.

⁽³⁾ D_{max} for parting = 2 x T_{max}

⁽⁴⁾ For full radius insert , T_{max} = 3.0, D_{max} = No limit

PENTA 34N-PB

Parting & Grooving Pentagonal Insert, for Parting Bearing Steel and Other Ductile Materials

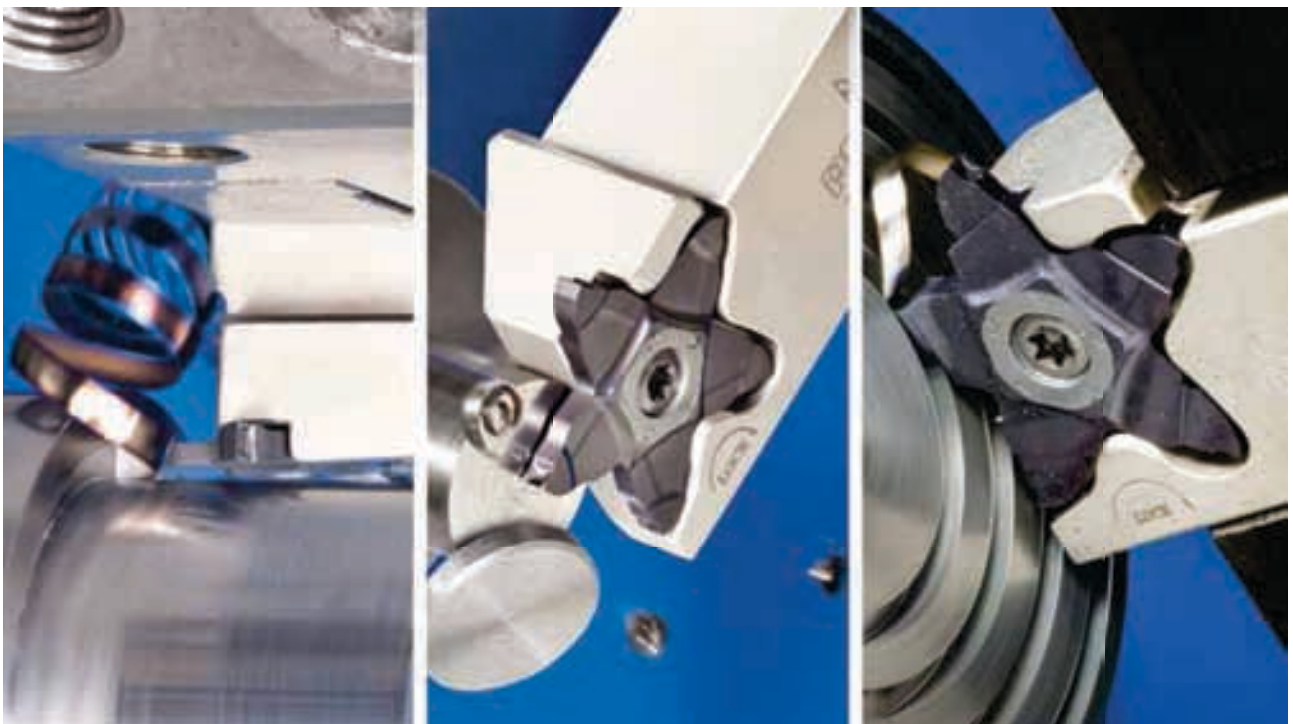


Designation	Dimensions			IC908	Recommended Machining Data
	W \pm 0.02	R	T _{max-r} ⁽¹⁾		f groove (mm/rev)
PENTA 34N150PB015	1.50	0.15	8.50	●	0.03-0.06
PENTA 34N200PB020	2.00	0.20	8.50	●	0.03-0.08
PENTA 34N300PB020	3.00	0.20	9.50	●	0.03-0.10

• For cutting speed recommendations and user guide, see pages B134-136.

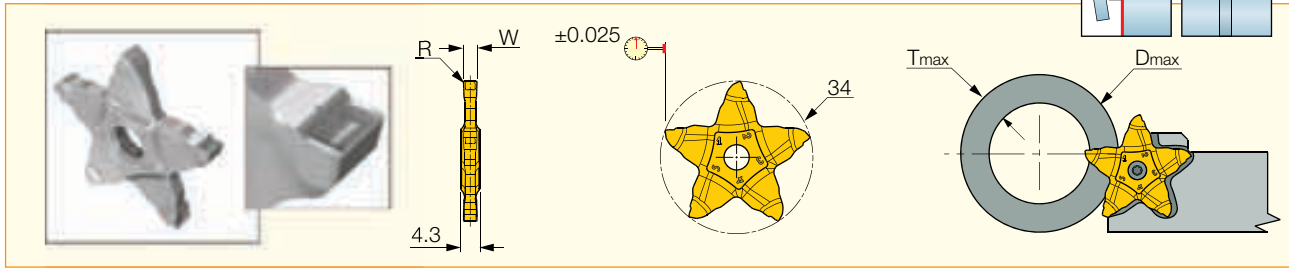
⁽¹⁾ For grooving and parting depth relative to part diameter, see page B61.

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (B55) • PCHR/L-34 (B54).



PENTA 34N-C

Insert with 5 Cutting Edges, for Parting & Grooving, of Hard Materials, Tough and General Applications

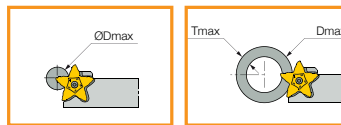


Designation	Dimensions			IC908	Recommended Machining Data
	W ^{±0.02}	R	T _{max-r} ⁽¹⁾		f groove (mm/rev)
PENTA 34N150C015	1.50	0.15	8.00	●	0.03-0.07
PENTA 34N200C020	2.00	0.20	8.00	●	0.04-0.14
PENTA 34N200C100	2.00	1.00	8.00	●	0.05-0.16
PENTA 34N222C015	2.22	0.15	8.00	●	0.05-0.14
PENTA 34N230C020	2.30	0.20	8.00	●	0.05-0.14
PENTA 34N239C015	2.39	0.15	8.00	●	0.05-0.15
PENTA 34N239C120	2.39	1.20	8.00	●	0.05-0.18
PENTA 34N247C020	2.47	0.20	8.00	●	0.05-0.18
PENTA 34N250C020	2.50	0.20	8.00	●	0.05-0.18
PENTA 34N270C010	2.70	0.10	10.00	●	0.05-0.18
PENTA 34N287C020	2.87	0.20	10.00	●	0.05-0.18
PENTA 34N300C000	3.00	0.00	10.00	●	0.04-0.10
PENTA 34N300C020	3.00	0.20	10.00	●	0.06-0.22
PENTA 34N300C040	3.00	0.40	10.00	●	0.06-0.25
PENTA 34N300C150	3.00	1.50	10.00	●	0.06-0.20
PENTA 34N315C015	3.15	0.15	10.00	●	0.06-0.20
PENTA 34N318C020	3.18	0.20	10.00	●	0.06-0.22
PENTA 34N330C010	3.30	0.10	10.00	●	0.06-0.20
PENTA 34N348C020	3.48	0.20	10.00	●	0.06-0.25
PENTA 34N350C025	3.50	0.25	10.00	●	0.06-0.30
PENTA 34N398C020	3.98	0.20	10.00	●	0.06-0.30
PENTA 34N400C030	4.00	0.30	10.00	●	0.06-0.30

• For cutting speed recommendations and user guide, see pages B134-136.

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

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (B55) • PCHR/L-34 (B54).



W ^{±0.02}	D _{max} as a Function of Parting / Grooving Depth (T) for PENTA 34 Inserts						
	T ≤ 5.0	T ≤ 6.0	T ≤ 7.0	T ≤ 8.0	T ≤ 8.5	T ≤ 9.0	T ≤ 10.0
1.50 ≤ W ≤ 2.69	N.L.	350	165	100	55	-	-
2.70 ≤ W ≤ 4.00						55	20

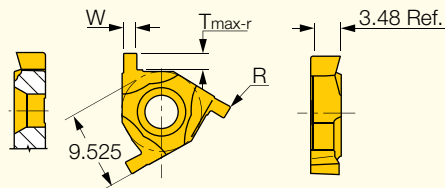
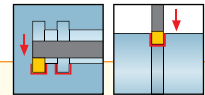
D_{max} for parting = 2 x T_{max}

N.L. = No Limit

GTGA (3 cutting edges)

GTGA

Precision Shallow Grooving Inserts with 3 Cutting Edges



GTGA 16 ER/IL shown

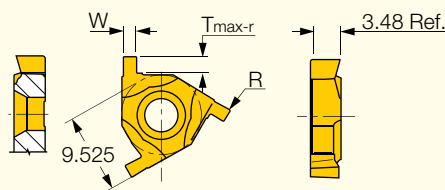
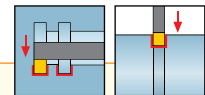
Designation	Dimensions			Tough ↔ Hard		Recommended Machining Data f groove (mm/rev)
	W±0.02	T _{max-r}	R±0.05	IC528	IC508	
GTGA 16EL/IR 100	1.00	1.55	0.10	●	●	0.02-0.03
GTGA 16ER/IL 100	1.00	1.55	0.10	●	●	0.02-0.03
GTGA 16EL/IR 120	1.20	1.60	0.10	●	●	0.02-0.03
GTGA 16ER/IL 120	1.20	1.60	0.10	●	●	0.02-0.03
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. • For cutting speed recommendations and user guide, see pages B134-136.

For tools, see pages: see in ISCAR TURNING & THREADING TOOLS catalog.

GTMA

Utility Shallow Grooving Inserts with 3 Cutting Edges



GTMA 16 ER/IL shown

Designation	Dimensions			IC508	Recommended Machining Data f groove (mm/rev)
	W±0.05	T _{max-r}	R±0.05		
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

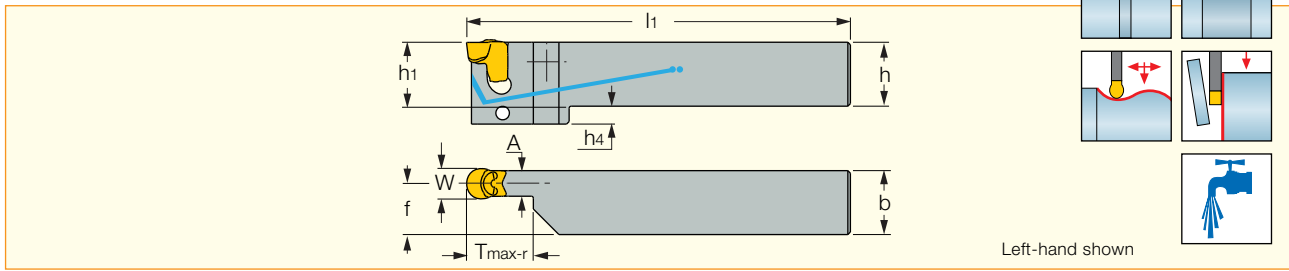
• Inserts for right-hand external grooving can be used as left-hand internal grooving. • For cutting speed recommendations and user guide, see pages B134-136.

For tools, see pages: see in ISCAR TURNING & THREADING TOOLS catalog.

HEAVY DUTY



Toolholders for Heavy Duty Groove-Turn and Parting Applications



Designation	W	h	h ₁	b	A	l _i	T _{max-r}	f	h ₄
TGBHR/L 20C-6	6.00	20.0	20.0	20.0	5.20	135.00	12.00 ⁽¹⁾	17.4	5.0
TGBHR/L 25C-6	6.00	25.0	25.0	25.0	5.20	135.00	12.00 ⁽¹⁾	22.4	-
TGBHR/L 32C-6	6.00	32.0	32.0	32.0	5.20	150.00	12.00 ⁽¹⁾	29.4	-
TGBHR/L 25C-8	8.00	25.0	25.0	25.0	7.00	150.00	25.00	21.5	12.0
TGBHR/L 32C-8	8.00	32.0	32.0	32.0	7.00	170.00	30.00	28.5	5.0
TGBHR/L 25C-10	10.00	25.0	25.0	25.0	8.00	150.00	25.00	21.0	12.0
TGBHR/L 32C-10	10.00	32.0	32.0	32.0	8.00	170.00	30.00	28.0	5.0
TGBHR/L 25C-12	12.00	25.0	25.0	25.0	10.00	150.00	25.00	20.0	12.0
TGBHR/L 32C-12	12.00	32.0	32.0	32.0	10.00	170.00	30.00	27.0	5.0
TGBHR/L 25C-14T20	14.00	25.0	25.0	25.0	12.00	140.00	20.00	19.0	12.0
TGBHR/L 32C-14T40	14.00	32.0	32.0	32.0	12.00	170.00	40.00	26.0	5.0
TGBHR/L 40C-14T40	14.00	40.0	40.0	40.0	12.00	170.00	40.00	34.0	-

* For user guide, see pages B132-145.

For inserts, see pages: TAG N-C/W/M (D44) • TAGB/TAGBA (B67).

TGBHR/L...C-6									
Tmax	28	26	24	22	20	18	16	14	12
Dmax	35	55	75	100	120	150	200	350	

Spare Parts



Designation	Extractor	Cooling Tube	Plug	Pipe Fitting
TGBHR/L 20C-6	ETG 5-7*	SGCU 341*		
TGBHR/L 25C-6	ETG 5-7*	SGCU 341*		
TGBHR/L 32C-6	ETG 5-7*	SGCU 341*		
TGBHR/L 25C-8	ETG 8-12*	SGCU 341*		
TGBHR/L 32C-8	ETG 8-12*	SGCU 341*		
TGBHR/L 25C-10	ETG 8-12*	SGCU 341*		
TGBHR/L 32C-10	ETG 8-12*	SGCU 341*		
TGBHR/L 25C-12	ETG 8-12*	SGCU 341*		
TGBHR/L 32C-12	ETG 8-12*	SGCU 341*		
TGBHR/L 25C-14T20	ETG 8-12*		PLG 1/8BSP TL360	JHP NIPPLE G1/8"-7/16"UNF*
TGBHR/L 32C-14T40	ETG 8-12*		PLG 1/8BSP TL360	JHP NIPPLE G1/8"-7/16"UNF*
TGBHR/L 40C-14T40	ETG 8-12*		PLG 1/8BSP TL360	JHP NIPPLE G1/8"-7/16"UNF*

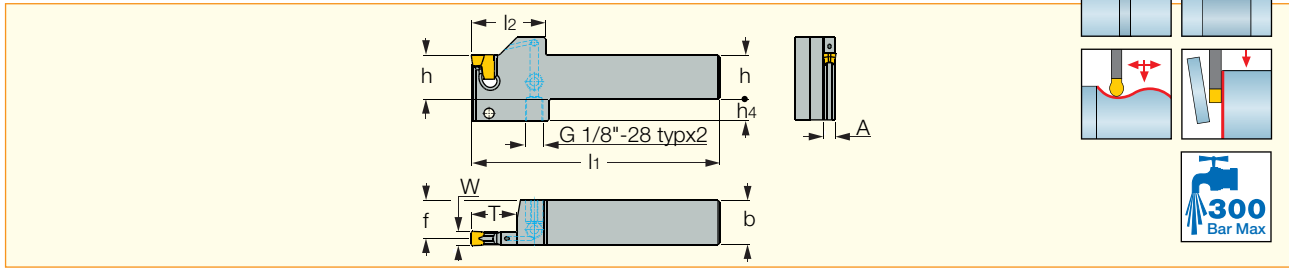
* Optional, should be ordered separately

SUMO-GRIP • JET HPLINE

HEAVY DUTY LINE

TGBHR/L-JHP

Grooving and Turning SUMO-GRIP Tools with Channels for High Pressure Coolant



Designation	h	W	h ₁	b	l ₂	A	l ₁	T _{max-r}	f	h ₄
TGBHR/L 25-8-JHP	25.0	8.00	25.0	25.0	42.0	7.00	150.00	25.00	21.50	12.0
TGBHR/L 32-8-JHP	32.0	8.00	32.0	32.0	42.0	7.00	170.00	25.00	28.50	12.0

• For user guide see pages B132-148.

For inserts, see pages: TAG N-C/W/M (D44) • TAGB/TAGBA (B67).

Spare Parts



Designation	Extractor	Key
TGBHL 25-8-JHP	ETG 8-12	
TGBHR/L 25-8-JHP		HW 5.0
TGBHR 25-8-JHP	ETG 8-12*	
TGBHL 32-8-JHP	ETG 8-12	
TGBHR/L 32-8-JHP		HW 5.0
TGBHR 32-8-JHP	ETG 8-12*	

* Optional, should be ordered separately

Flow Rate vs. Pressure

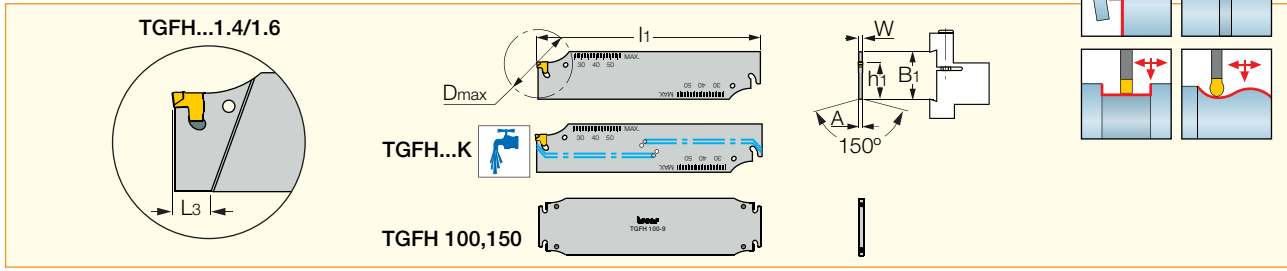
Designation	70 bar Flow Rate (liters/min)	100 bar Flow Rate (liters/min)	140 bar Flow Rate (liters/min)
TGBHR/L 25-8-JHP	13-16	19-21	22-24
TGBHR/L 32-8-JHP	13-16	19-21	22-24

ETG 8-12 Extractor for 8 to 12.7 mm Inserts



TGFH/R/L

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



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	-	TAG 1.4
TGFH 19-1.6	19.0	1.60	1.60	1.30 ⁽²⁾	86.00	11.00	15.7	32.0	-	TAG 1.6
TGFH 19-2	19.0	1.80	2.40	1.65	86.00	-	15.7	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	-	TAG 1.4
TGFH 26-1.6	26.0	1.60	1.60	1.30 ⁽²⁾	110.00	10.00	21.4	35.0	-	TAG 1.6
TGFH 26-2	26.0	1.80	2.40	1.65	110.00	-	21.4	50.0	-	TAG 2
TGFH 26-3	26.0	2.80	3.50	2.50	110.00	-	21.4	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	-	TAG 4
TGFH 26-5	26.0	4.70	5.50	4.00	150.00	-	21.4	80.0	-	TAG 5
TGFH 32-1.4	32.0	1.40	1.40	1.05 ⁽²⁾	150.00	7.10	24.8	29.0	-	TAG 1.4
TGFH 32-1.6	32.0	1.60	1.60	1.30 ⁽²⁾	150.00	10.00	24.8	38.0	-	TAG 1.6
TGFH 32-2	32.0	1.80	2.40	1.65 ⁽²⁾	150.00	-	24.8	50.0	-	TAG 2
TGFH 32-3	32.0	2.80	3.50	2.50	150.00	-	24.8	100.0	-	TAG 3
TGFH 32K-3 ⁽¹⁾	32.0	2.80	3.50	2.50	150.00	-	24.8	100.0	Y	TAG 3
TGFH 32-4	32.0	3.70	4.50	3.40	150.00	-	24.8	100.0	-	TAG 4
TGFH 32K-4 ⁽¹⁾	32.0	3.70	4.50	3.40	150.00	-	24.8	100.0	Y	TAG 4
TGFH 32-5	32.0	4.70	5.50	4.00	150.00	-	24.8	120.0	-	TAG 5
TGFH 32-6	32.0	5.70	6.50	5.20	150.00	-	24.8	120.0	-	TAG 6
TGFH 32-7	32.0	6.80	7.50	6.00	148.00	-	24.8	120.0	-	TAG 7
TGFH 45-3	45.0	2.80	3.50	2.50	225.00	-	38.1	160.0	-	TAG 3
TGFH 45-4	45.0	3.70	4.50	3.40	225.00	-	38.1	160.0	-	TAG 4
TGFH 45-5	45.0	4.70	5.50	4.00	225.00	-	38.1	160.0	-	TAG 5
TGFH 45-6	45.0	5.70	6.50	5.20	225.00	-	38.1	160.0	-	TAG 6
TGFH 45-7	45.0	6.80	7.50	6.00	225.00	-	38.1	160.0	-	TAG 7
TGFH 52-7	52.6	6.80	7.50	6.00	190.00	-	45.2	190.0	-	TAG 7
TGFH 53-7	52.6	6.80	7.50	6.00	260.00	-	45.2	220.0	-	TAG 7
TGFH 52K-8 ⁽¹⁾	52.6	7.70	8.50	7.20	190.00	-	45.2	190.0	Y	TAG 8
TGFH 53K-8 ⁽¹⁾	52.6	7.70	8.50	7.20	260.00	-	45.2	215.0	Y	TAG 8
TGFH 52K-9 ⁽¹⁾	52.6	8.70	10.00	8.20	190.00	-	45.2	190.0	Y	TAG 9
TGFH 53K-9 ⁽¹⁾	52.6	8.70	10.00	8.20	260.00	-	45.2	215.0	Y	TAG 9
TGFHR/L 53K-12 ⁽¹⁾	52.6	11.70	12.70	10.00	260.00	-	45.2	215.0	Y	TAG 12
TGFH 100-9	100.0	8.70	10.00	8.20	460.00	-	92.5	450.0	-	TAG 9
TGFH 100-12	100.0	11.70	12.70	10.00	460.00	-	92.5	450.0	-	TAG 12
TGFH 150-12	150.0	11.70	12.70	10.00	610.00	-	142.5	600.0	-	TAG 12

• For user guide, see pages B132-145.

⁽¹⁾ With coolant holes, recommended coolant pressure: 10 bar min, cooling tube SGCU 341 should be ordered separately.

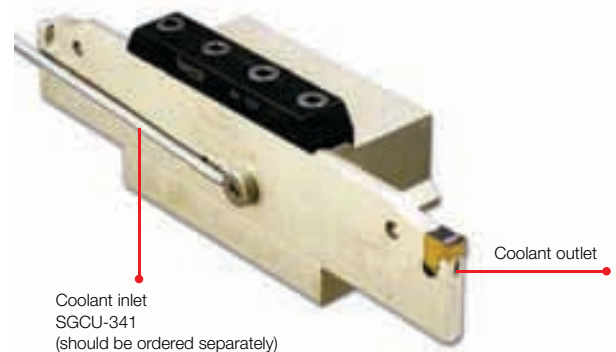
For inserts, see pages: TAG N-C/W/M (D44) • TAGB/TAGBA (B67).

For holders, see pages: C#-TBK-R/L (G6) • HSK A63WH-TBK-R/L (G18) • IM63 XMZ TBK (G25)

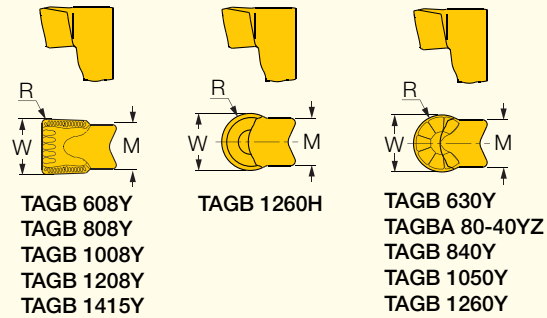
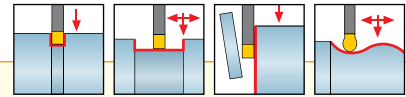
Spare Parts



Designation	Extractor	Sealing Screw	Cooling Tube
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*		
TGFH 32-1.4	ETG 1.4/1.6*		
TGFH 32-1.6	ETG 1.4/1.6*		
TGFH 32-2	ETG 2*		
TGFH 32-3	ETG 3-4*		
TGFH 32K-3	ETG 3-4-SH*	SGC 340	
TGFH 32-4	ETG 3-4*		
TGFH 32K-4	ETG 3-4-SH*	SGC 340	
TGFH 32-5	ETG 5-7*		
TGFH 32-7	ETG 5-7*		
TGFH 45-3	ETG 3-4*		
TGFH 45-4	ETG 3-4*		
TGFH 45-5	ETG 5-7*		
TGFH 45-6	ETG 5-7*		
TGFH 45-7	ETG 5-7*		
TGFH 52-7	ETG 5-7*		
TGFH 53-7	ETG 5-7*		
TGFH 52K-8	ETG 8-12*		SGCU 341*
TGFH 53K-8	ETG 8-12*		SGCU 341*
TGFH 52K-9	ETG 8-12*		SGCU 341*
TGFH 53K-9	ETG 8-12*		SGCU 341*
TGFHR/L 53K-12	ETG 8-12*		SGCU 341*
TGFH 100-9	ETG 8-12*		
TGFH 100-12	ETG 8-12*		
TGFH 150-12	ETG 8-12*		



* Optional, should be ordered separately



Designation	Dimensions				Tough ↔ Hard					Recommended Machining Data		
	W	W _{stoler}	R _{±0.05}	M	IC8250	IC808	IC07	IC806	IC807	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
TAGB 608Y	6.00	0.05	0.80	5.2		●		●		1.00-3.60	0.20-0.60	0.18-0.30
TAGB 630Y	6.00	0.05	3.00	5.2		●		●		0.00-3.00	0.25-0.55	0.18-0.32
TAGB 808Y	8.00	0.05	0.80	6.2	●	●		●	●	1.00-5.60	0.25-0.55	0.18-0.32
TAGB 840Y ⁽¹⁾	8.00	0.05	4.00	6.2	●	●		●	●	0.00-4.00	0.24-0.67	0.18-0.32
TAGB 1008Y	10.00	0.05	0.80	8.0	●	●				1.00-7.00	0.30-0.70	0.22-0.40
TAGB 1050Y	10.00	0.05	5.00	8.0	●	●				0.00-5.00	0.30-0.85	0.22-0.40
TAGB 1208Y	12.00	0.07	0.80	10.0	●	●				1.00-8.40	0.35-0.85	0.26-0.48
TAGB 1260Y	12.00	0.07	6.00	10.0	●	●				0.00-6.00	0.35-0.90	0.26-0.48
TAGB 1260H ⁽²⁾	12.00	0.07	6.00	10.0	●	●				0.00-6.00	0.45-1.00	0.35-0.55
TAGB 1415Y	14.00	0.07	1.50	12.0	●	●				1.80-8.40	0.35-0.85	0.26-0.50
TAGBA 80-40YZ	8.00	0.05	4.00	6.0			●			0.00-4.00	0.40-0.70	0.25-0.40

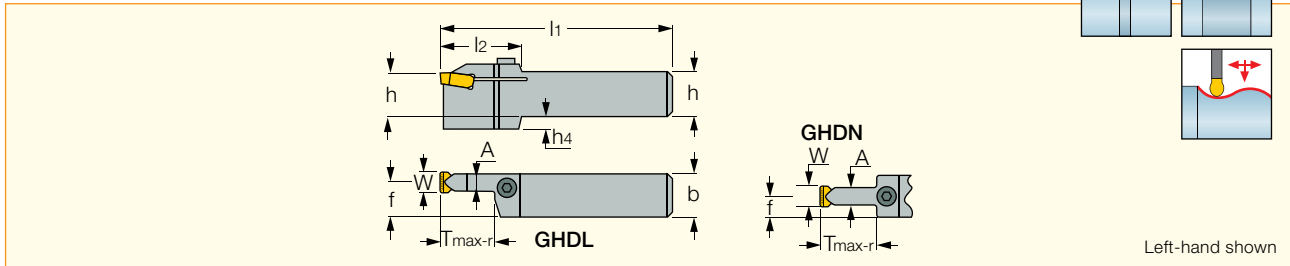
• For cutting speed recommendations and user guide, see pages B132-145.

⁽¹⁾ H-type chipformer with a negative T-land for machining heavy interrupted applications and cast iron parts

For tools, see pages: TGBHR/L (B64) • TGBHR/L-JHP (B65) • TGFH/R/L (B66) • TGSU (D36).

GHDR/L/N 12/14

External Holders for Wide Grooving Inserts



Designation	W _{min}	W _{max}	T _{max-r}	h	b	l ₁	f	A	l ₂	h ₄	Inserts
GHDR/L 32-12	12.00	14.53	30.00	32.0	32.0	170.00	27.3	9.50	50.0	-	GIMY 1260, TIGER 1453
GHDR/L 2525-14T12	13.00	17.40	12.00	25.0	25.0	150.00	19.0	12.00	41.0	-	TIGER/GPV 14/16/17
GHDR/L 3232-14T12	13.00	17.40	12.00	32.0	32.0	170.00	26.0	12.00	41.0	-	TIGER/GPV 14/16/17
GHDR/L 3232-14T38	13.00	17.40	38.00	32.0	32.0	170.00	26.0	12.00	59.0	8.0	TIGER 14/16/17
GHDN 3232-14T38	13.00	17.40	38.00	32.0	32.0	170.00	16.0	12.00	57.5	8.0	TIGER 14/16/17
GHDR/L 4040-14T38	13.00	17.40	38.00	40.0	40.0	170.00	34.0	12.00	59.0	-	TIGER 14/16/17
GHDN 4040-14T45	14.50	17.40	45.00	40.0	40.0	170.00	20.0	12.00	55.5	-	TIGER 14/16/17

• For user guide, see pages B132-145.

For inserts, see pages: GIMY 1260 (B32) • GPV (B50) • TIGER (B69).

Spare Parts

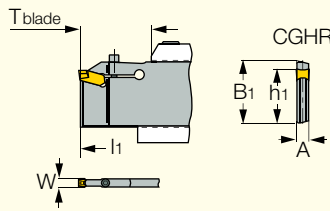
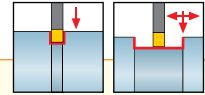


Designation	Screw	Key
GHDR/L 32-12	SR M8X20DIN912	HW 6.0
GHDR/L 2525-14T12	SR M8X25DIN912	HW 6.0
GHDR/L 3232-14T12	SR M8X30DIN912	HW 6.0
GHDR/L 3232-14T38	SR M8X20DIN912	HW 6.0
GHDN 3232-14T38	SR M8X20DIN912	HW 6.0
GHDR/L 4040-14T38	SR M8X20DIN912	HW 6.0
GHDN 4040-14T45	SR 76-1289	HW 5.0



CGHR/L-12-14D

Deep Machining Screw-Clamped Blades for Wide Grooving and Heavy Turning Applications



Designation	W _{min}	W _{max}	T blade	T _{max-r}	A	l ₁	h ₁	B ₁
CGHR/L 53-12D	12.00	14.50	100.0	93.00	9.50	260.00	45.0	52.6
CGHR/L 53-14D	12.50	17.40	100.0	93.00	11.10	260.00	45.0	52.6

• For user guide, see pages B132-145.

For inserts, see pages: GIMY 1260 (B32) • TIGER (B69).

For holders, see pages: SGTBK (F3) • SGTBU/SGTBN (F2).

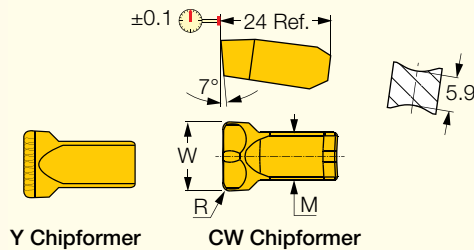
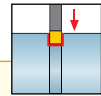
Spare Parts



Designation	Screw	Key
CGHR/L 53-12D	SR 76-4002	HW 5.0
CGHR/L 53-14D	SR M6X25DIN912 UNB.	HW 5.0

TIGER

Utility Inserts for External Heavy Grooving, Single-Ended for Deep Machining



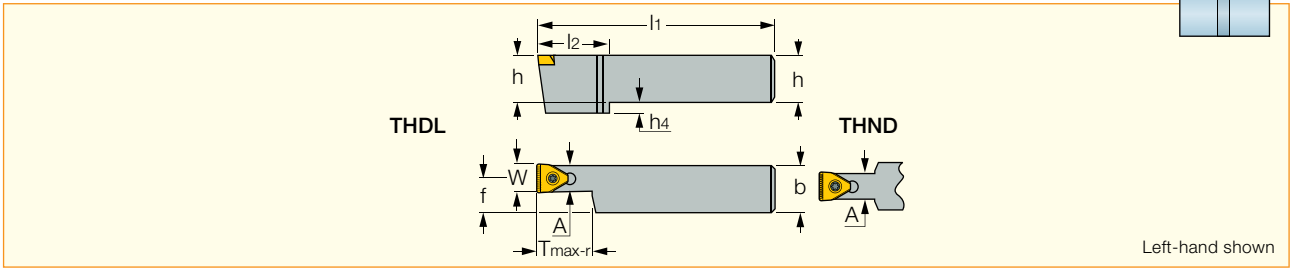
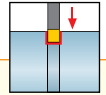
Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data f groove (mm/rev)
	W	W _{stoler}	R _{±0.05}	M	IC830	IC808	IC20	
TIGER 1453-152	14.53	0.08	1.52	10.0	●	●	●	0.22-0.44
TIGER 1453-152-CW	14.53	0.08	1.52	10.0		●		0.15-0.50
TIGER 16.63-1.52	16.63	0.02	1.52	12.7		●		0.25-0.50
TIGER 1740-200	17.40	0.08	2.00	12.7		●		0.26-0.52

• For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: CGHR/L-12-14D (B69) • GHDR/L/N 12/14 (B68).

THDR/L/N

External Holders for Wide Grooving Inserts



Designation	W	T _{max-r}	h	b	l ₁	A	f	h ₄	l ₂	Inserts
THDR/L 3232-17T38	17.00	38.00	32.0	32.0	170.00	15.00	24.5	8.0	50.0	TIGERV 1740
THDR/L 4040-17T45	17.00	45.00	40.0	40.0	170.00	15.00	32.5	-	-	TIGERV 1740
THDR/L 3232-20T38	20.06	38.00	32.0	32.0	170.00	17.50	23.3	8.0	50.0	TIGERV 2006
THDN 3232-20T38	20.06	38.00	32.0	32.0	170.00	17.50	16.0	8.0	50.0	TIGERV 2006
THDR/L 4040-20T45	20.06	45.00	40.0	40.0	170.00	17.50	31.3	-	-	TIGERV 2006
THDN 4040-20T45	20.06	45.00	40.0	40.0	170.00	17.50	20.0	-	-	TIGERV 2006

• For grooving only

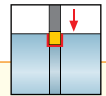
Spare Parts



Designation	Screw	Torx Blade	T-Handle
THDR/L/N	SR 14-519	BLD T20/M7	SW6-T

TIGERV

Utility Inserts for External Heavy Grooving, Single-Ended for Deep Machining



Designation	Dimensions		Tough ↔ Hard			Recommended Machining Data
	W±0.08	R±0.05	IC830	IC808	IC20	
TIGERV 1700-200-CW	17.00	2.00	●	●	●	f groove (mm/rev) 0.20-0.60
TIGERV 2006-152	20.06	1.52	●	●	●	0.30-0.60

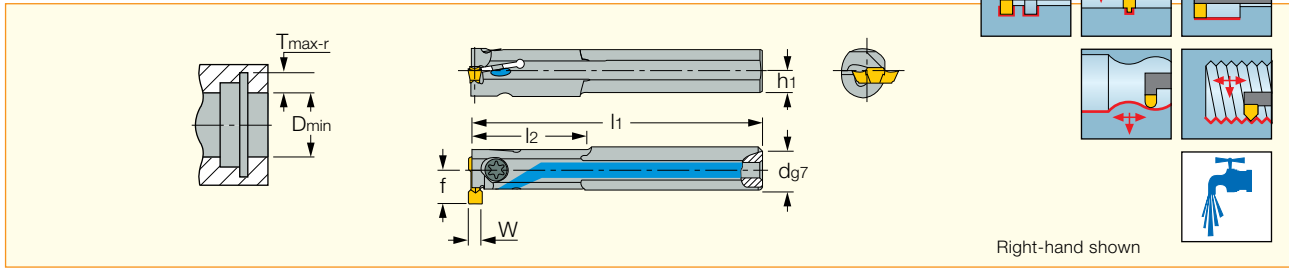
• For cutting speed recommendations and user guide, see pages B134-136.

INTERNAL TOOLS AND INSERTS



GEHIMR/L

Internal Machining Boring Bars with Coolant Holes, for Insert Widths Less than 1.9 mm



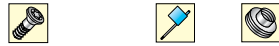
Designation	W _{min}	W _{max} ⁽¹⁾	d	D _{min}	T _{max-r}	l ₁	l ₂	f	h ₁	Inlet
GEHIMR/L 10-13	0.80	1.90	10.00	12.50	2.50	125.00	25.0	7.6	5.0	3.5 mm
GEHIMR/L 12-14	0.80	1.90	12.00	14.00	2.50	150.00	35.0	9.0	6.0	6.0 mm
GEHIMR/L 16-13	0.80	1.90	16.00	12.50	2.50	125.00	20.0	10.6	7.5	M6 ⁽²⁾
GEHIMR/L 16-14	0.80	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	260.00	40.0	10.5	7.5	M6 ⁽²⁾

• For user guide, see pages B132-145.

⁽¹⁾ Pocket can carry inserts up to 3 mm width. ⁽²⁾ Plastic seal with M6 thread.

For inserts, see pages: GEPI (B78) • GEPI (W<M) (B77) • GEPI-RX/LX (B79) For GEPI threading inserts, see ISCAR TURNING & THREADING TOOLS catalog.

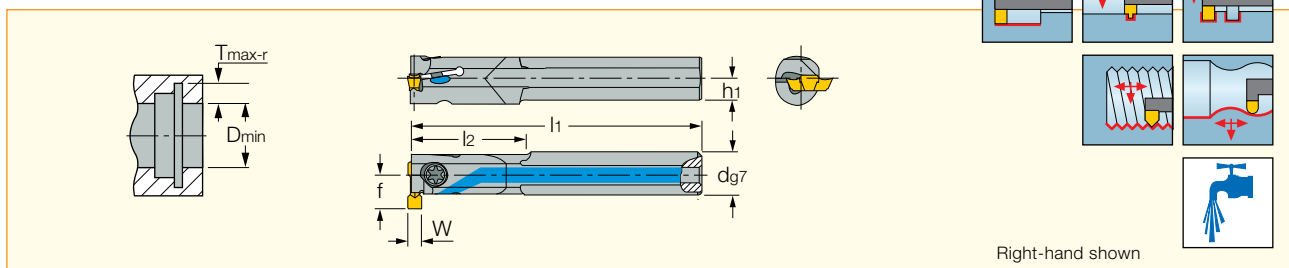
Spare Parts



Designation	Screw	Key	Seal
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-14	0.80	1.90	16.00	14.00	2.50	140.00	40.0	10.9	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⁾

• For user guide, see pages B132-145.

⁽¹⁾ Pocket can carry inserts up to 3 mm width. ⁽²⁾ Plastic seal with M6 thread.

For inserts, see pages: GEPI (B78) • GEPI (W<M) (B77) • GEPI-RX/LX (B79) For GEPI threading inserts, see ISCAR TURNING & THREADING TOOLS catalog.

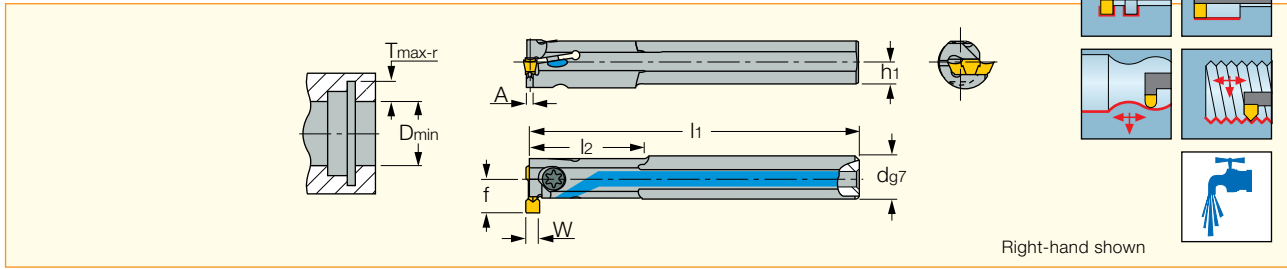
Spare Parts



Designation	Screw	Key	Seal
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-14	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



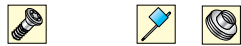
Designation	W _{min}	W _{max}	d	D _{min}	T _{max-r}	l ₁	l ₂	f	A	h ₁	Inlet
GEHIR/L 10-11.5-2-T3	1.90	2.40	10.00	11.50	3.00	125.00	25.0	8.8	1.60	5.0	3.5 mm
GEHIR/L 10-13-2-T2.4	1.90	2.40	10.00	12.50	2.40	125.00	25.0	7.5	1.60	5.0	3.5 mm
GEHIR/L 12-11.5-2-T3	1.90	2.40	12.00	11.50	3.00	125.00	20.0	11.6	1.60	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⁾

• For user guide, see pages B132-145.

⁽¹⁾ Plastic seal with M6 thread

For inserts, see pages: GEM1 (B77) • GEPI (B78) • GEPI (Full Radius) (B78) • For GEPI threading inserts, see ISCAR TURNING & THREADING TOOLS catalog.

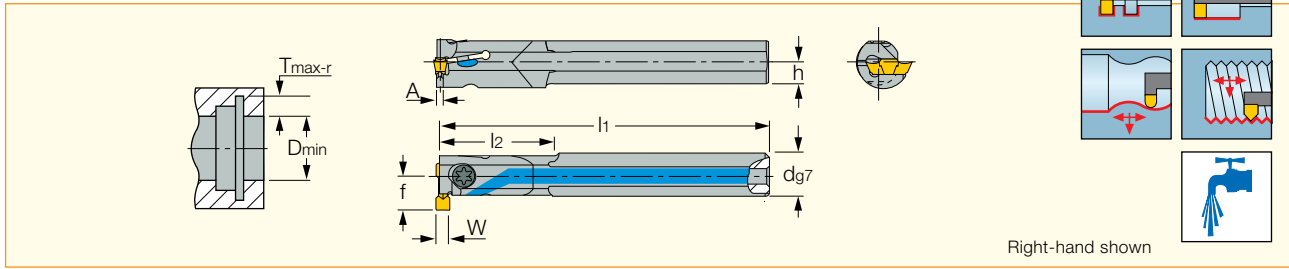
Spare Parts



Designation	Screw	Key	Seal
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/L 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/L 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/L 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⁾

• For user guide, see pages B132-145.

⁽¹⁾ Plastic seal with M6 thread

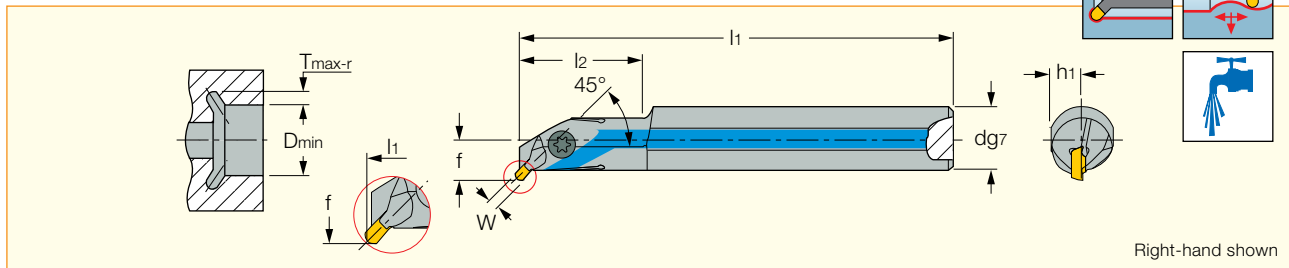
For inserts, see pages: GEMl (B77) • GEPI (B78) • GEPI (Full Radius) (B78) • For GEPI threading inserts, see ISCAR TURNING & THREADING TOOLS catalog.

Spare Parts

Designation	Screw	Key	Seal
GEHIR/L 10SC-13-2	SR 16-236	T-15/5	
GEHIR/L 12SC-14-2	SR 16-236	T-15/5	
GEHIR/L 16SC-16-2	SR M5-04451	T-20/5	PL 16
GEHIR/L 12SC-14-3	SR 16-236	T-15/5	
GEHIR/L 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.

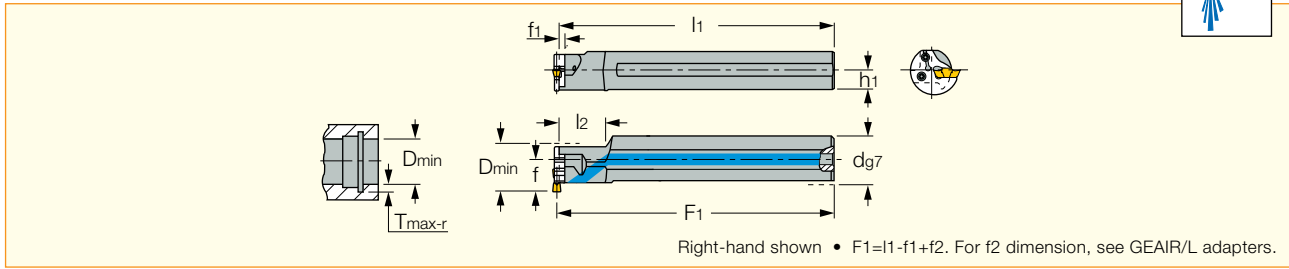
For inserts, see pages: GEPI (Full Radius) (B78) • GEPI-UN/UR/UL (B79).

Spare Parts

Designation	Screw	Key	Seal
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..
GHAIR/L 20-20	20.00	20.0	150.00	13.5	9.0	2.4	GEAIR/L 20..
GHAIR/L 25-20	25.00	25.0	200.00	16.0	11.5	2.4	GEAIR/L 20..
GHAIR/L 32-20	32.00	32.0	200.00	19.5	14.5	2.4	GEAIR/L 20..
GHAIR/L 20-25	20.00	-	150.00	14.5	9.0	2.4	GEAIR/L 25..
GHAIR/L 25-25	25.00	25.0	200.00	17.0	11.5	2.4	GEAIR/L 25..
GHAIR/L 32-25	32.00	32.0	200.00	20.5	14.5	2.4	GEAIR/L 25..

• For Dmin & Tmax refer to GEAIR/L adapters.

For tools, see pages: GEAIR/L (B76).

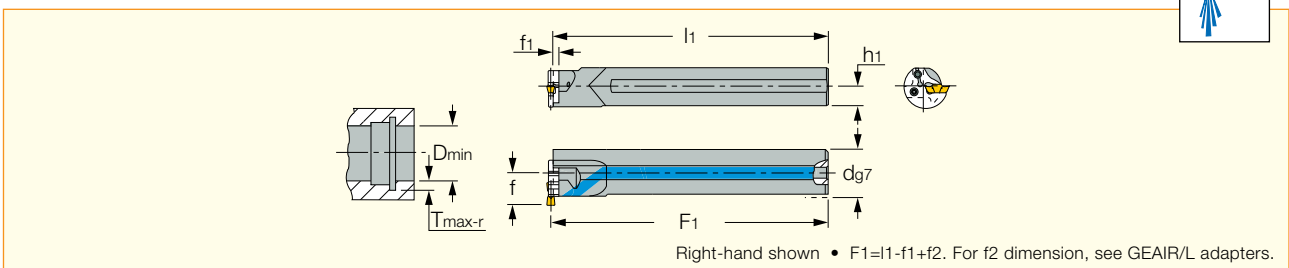
Spare Parts



Designation	Lower & Side Screw	Key	Seal
GHAIR/L 16-20	SR 76-2057	T-8/5	PL 16
GHAIR/L 20-20	SR 76-2057	T-8/5	PL 20
GHAIR/L 25-20	SR 76-2057	T-8/5	PL 25
GHAIR/L 32-20	SR 76-2057	T-8/5	PL 32
GHAIR/L 20-25	SR 16-236 P	T-15/5	PL 20
GHAIR/L 25-25	SR 16-236 P	T-15/5	PL 25
GHAIR/L 32-25	SR 16-236 P	T-15/5	PL 32

GHAIR/L-SC-GE

Solid Carbide Bars with Coolant Holes for Internal Grooving and Turning Adapters



Designation	d	D _{min}	T _{max-r}	l ₁	f	h ₁	f ₁	Adapter
GHAIR/L 20SC-20	20.00	25.00	3.00	200.00	13.5	9.0	2.4	GEAIR/L 20-...
GHAIR/L 25SC-25	25.00	31.00	4.00	200.00	17.0	11.5	2.4	GEAIR/L 25-...

• For D min & T max refer to GEAIRLI & GAIR/L adapters.

For tools, see pages: GEAIR/L (B76).

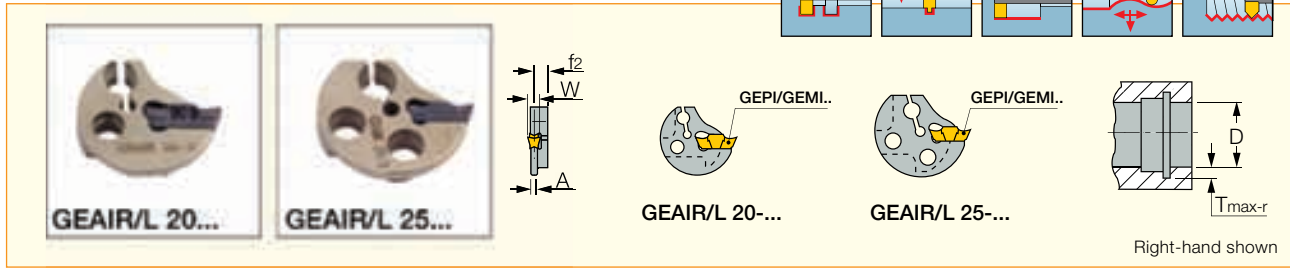
Spare Parts



Designation	Screw	Key	Seal
GHAIR/L 20SC-20	SR 76-2057	T-8/5	PL 20
GHAIR/L 25SC-25	SR 16-236 P	T-15/5	PL 25

GEAIR/L

Internal Grooving and Turning Adapters



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
GEAIR/L 25-2	25.00	1.90	2.40	4.00	3.40	1.60
GEAIR/L 25-3	25.00	2.40	3.00	4.00	3.60	2.00
GEAIR/L 25-4	25.00	3.00	4.00	4.00	3.90	2.50

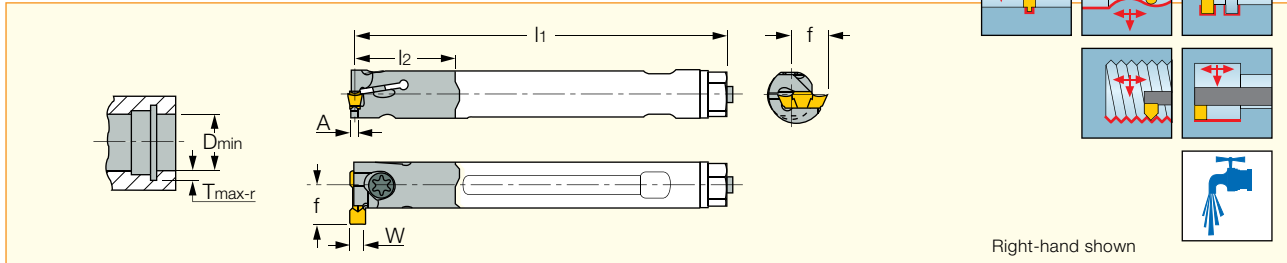
• For using TIPI insert, toolholder seat needs to be modified according to insert profile, to ensure clearance. • For user guide, see pages B132-145.

For inserts, see pages: GEMI (B77) • GEPI (B78) • GEPI (Full Radius) (B78) • For GEPI threading inserts, see ISCAR TURNING & THREADING TOOLS catalog.

For holders, see pages: GHAIR/L-GE (B75) • GHAIR/L-SC-GE (B75).

E-GEHIR / E-GHIMR

Interchangeable Heads for Internal Grooving and Turning



Designation	W _{min}	W _{max}	D _{min}	T _{max-r}	l ₁	l ₂	f	A	Inserts
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
E16 GHIR 25-3	2.40	3.00	25.00	4.00	209.00	28.7	12.8	2.00	GIPI, GIMIY, GIF, TIPI

• Left-hand heads on request • The shank assembly is the same for right- and left-hand heads • Shank assembly screw and the nut are available in KITBORING E12 SHANK • For user guide, see pages B132-145.

For inserts, see pages: GEMI (B77) • GEPI (B78) • GEPI (Full Radius) (B78) • GEPI (W<M) (B77) • GIMIY (B85) • GINI-E (B87) • GIPI (B88) • GIPI-E (B85)
 • For GEPI threading inserts, see ISCAR full ISCAR TURNING & THREADING TOOLS catalog..

For shanks: (E-SHANK) see ISCAR TURNING & THREADING TOOLS catalog.

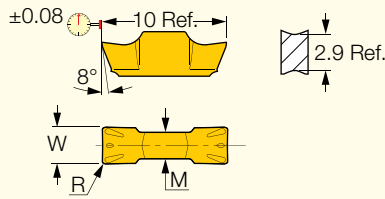
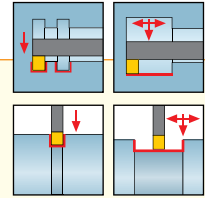
Spare Parts

Designation	Left-Right Screw	Nut	Screw	Key
E12 GEHIR 16-1	SR 14-19/2 SCREW*	SR 14-19/4*	SR M5-04451-L10.5	T-20/5
E12 GEHIR 16-2	SR 14-19/2 SCREW*	SR 14-19/4*	SR M5-04451-L10.5	T-20/5
E12 GEHIR 16-3	SR 14-19/2 SCREW*	SR 14-19/4*	SR M5-04451-L10.5	T-20/5
E16 GHIR 25-3	SR 10400197-2 SCREW*	SR 10400197-3 NUT*	SR M5-04451	T-20/5

* Optional, should be ordered separately

GEMI

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



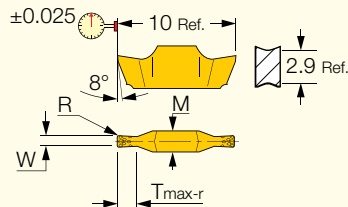
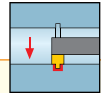
Designation	Dimensions			Tough ↔ Hard		Recommended Machining Data		
	W ± 0.02	R ± 0.05	M	IC808	IC908	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GEMI 3002M	3.00	0.20	2.2	●	●	0.25-1.30	0.10-0.14	0.05-0.09

• Dmin for internal application=12.5 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: E-GEHIR / E-GHIMR (B76) • GEAIR/L (B76) • GEHIR/L (B73) • GEHIR/L-SC (B74) • GEHSR/L (B102).

GEPI (W<M)

Precision Ground Double-Ended Inserts for Internal Grooving



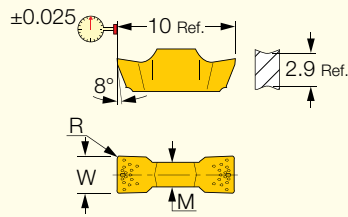
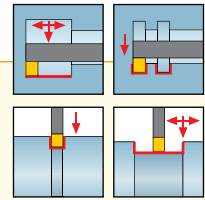
Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data
	W ± 0.02	R ± 0.03	T _{max-r}	M	IC528	IC08	IC908	f groove (mm/rev)
GEPI 1.00-0.10	1.00	0.10	1.60	1.8	●	●	●	0.01-0.03
GEPI 1.00-0.50	1.00	0.50	1.60	1.8	●	●	●	0.01-0.04
GEPI 1.04-0.00	1.04	0.00	1.60	1.8	●	●	●	0.01-0.03
GEPI 1.04-0.00 00	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=12.5 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: E-GEHIR / E-GHIMR (B76) • GEHIMR/L (B72) • GEHIMR/L-SC (B72) • GEHSR/L (B102).

GEPI

Precision Ground Double-Ended Inserts for Internal and External Grooving



Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data		
	W±0.02	R±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

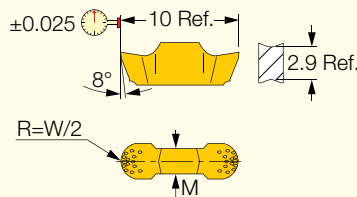
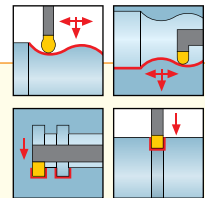
• Dmin for internal application=12.5 mm • For cutting speed recommendations and user guide, see pages B132-145.

⁽¹⁾ Tool pocket should be modified.

For tools, see pages: E-GEHIR / E-GHIMR (B76) • GEAIR/L (B76) • GEHIR/L (B73) • GEHIR/L-SC (B74) • GEHIR/L (B73) • GEHIR/L-SC (B74) • GEHSR/L (B102).

GEPI (Full Radius)

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



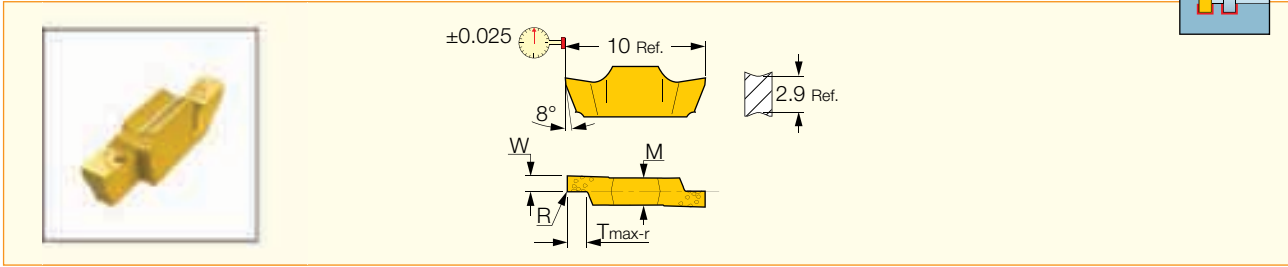
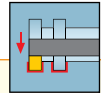
Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data		
	W±0.02	R±0.05	T _{max-r}	M	IC528	IC08	IC908	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GEPI 2.00-1.00	2.00	1.00	5.00	1.8	●	●	●	0.00-0.60	0.08-0.12	0.04-0.07
GEPI 3.00-1.50	3.00	1.50	5.00	2.2	●	●	●	0.00-1.50	0.13-0.20	0.05-0.11
GEPI 3.18-1.59	3.18	1.50	5.00	2.2	●	●	●	0.00-1.50	0.13-0.21	0.06-0.11

• Dmin for internal application=12.5 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: E-GEHIR / E-GHIMR (B76) • GEAIR/L (B76) • GEHIR/L (B73) • GEHIR/L-SC (B74) • GEHIR/L (B73) • GEHIR/L-SC (B74) • GEHSR/L (B102).

GEPI-RX/LX

Precision Double-Ended Inserts for Internal Grooving Next to Shoulder



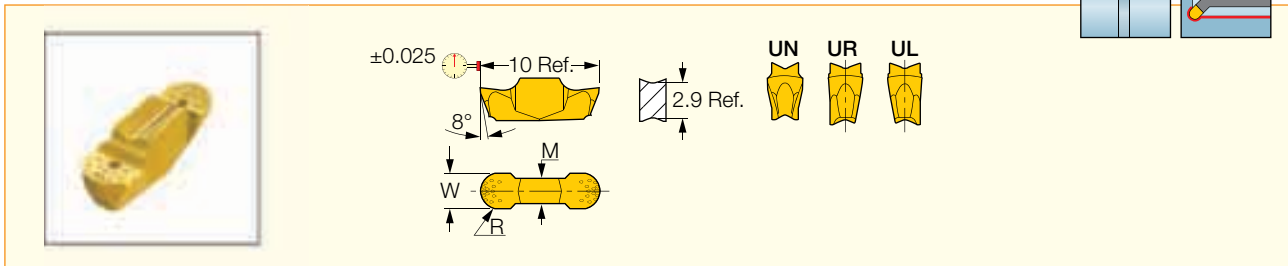
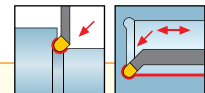
Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data f groove (mm/rev)
	W±0.02	R±0.03	T _{max-r}	M	IC528	IC908	
GEPI 0.80-0.00RX	0.80	0.00	1.50	1.8		●	0.01-0.02
GEPI 1.00-0.10 LX	1.00	0.10	1.50	1.8	●		0.01-0.03
GEPI 1.00-0.10 RX	1.00	0.10	1.50	1.8	●		0.01-0.03
GEPI 1.57-0.15RX	1.57	0.15	2.00	1.8		●	0.02-0.05

• Toolholder seat needs to be modified according to insert profile to ensure clearance • Dmin for internal application=12.5 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: GEHIMR/L (B72) • GEHIMR/L-SC (B72) • GEHSR/L (B102).

GEPI-UN/UR/UL

Precision Double-Ended Inserts for Internal Undercutting



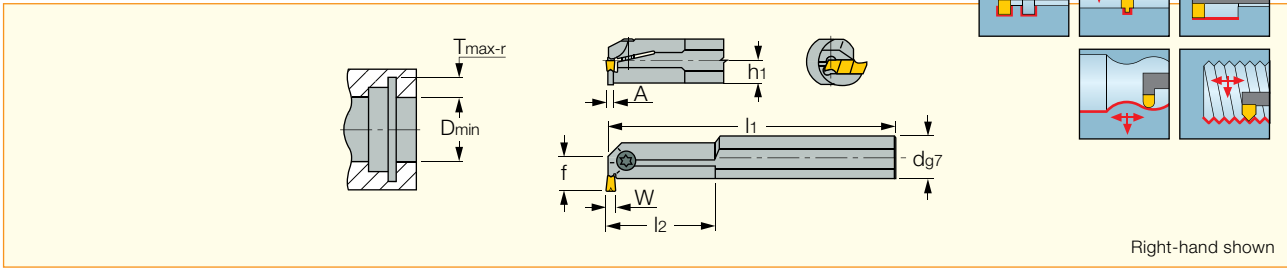
Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data f groove (mm/rev)
	W±0.02	R±0.03	T _{max-r}	M	IC528	IC08	
GEPI 3.00-1.50UN	3.00	1.50	2.00	2.2	●		0.03-0.12
GEPI 2.00-1.00UR	2.00	1.00	2.00	1.8	●	●	0.03-0.12
GEPI 2.00-1.00UL	2.00	1.00	2.00	1.8	●	●	0.03-0.12

• For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: GEHIUR/L (B74).

GHIR/L (W=1.9-6.4)

Internal Grooving and Turning Bars



Designation	W _{min}	W _{max}	d	D _{min}	T _{max-r}	l ₁	l ₂	f	h ₁	A
GHIR/L 20-3	1.90	3.50	20.00	20.00	4.50	160.00	16.0	14.5	9.0	1.60
GHIR/L 20-20-3	2.00	3.50	20.00	20.00	4.50	200.00	40.0	14.5	9.0	1.60
GHIR/L 20-4	3.00	4.80	20.00	20.00	4.50	160.00	25.0	14.5	9.0	2.60
GHIR/L 20-20-4	3.00	4.80	20.00	20.00	4.50	200.00	40.0	14.5	9.0	2.60
GHIR/L 25-25-4	2.50	4.00	25.00	25.00	5.00	200.00	50.0	17.5	11.5	2.10
GHIR/L 32-4	2.50	4.00	32.00	38.00	5.00	250.00	-	21.3	14.5	2.10
GHIR/L 25-5	3.20	5.30	25.00	26.00	6.00	160.00	25.0	18.5	11.5	2.80
GHIR/L 25-25-6	4.00	6.40	25.00	25.00	5.00	200.00	50.0	17.5	11.5	3.60
GHIR/L 32-6	4.00	6.40	32.00	39.00	6.50	250.00	-	22.8	14.5	3.60
GHIR/L 40-6	4.00	6.40	40.00	49.00	8.00	300.00	-	28.3	18.0	3.60

• For using TIPI insert, toolholder seat needs to be modified according to insert profile, to ensure clearance. • For user guide, see pages B132-145.

For inserts, see pages: GIFI (B89) • GIFI-E (B86) • GIFI-E (Full Radius) (B86) • GIMIY (B85) • GINI-E (B87) • GIPI (B88) • GIPI (Full Radius W<M) (B88) • GIPI (Full Radius) (B89) • GIPI (W<M) (B87) • GIPI-E (B85) • GIPI-RX/LX (B90) • TIPI threading inserts, see ISCAR TURNING & THREADING TOOLS catalog.

Spare Parts

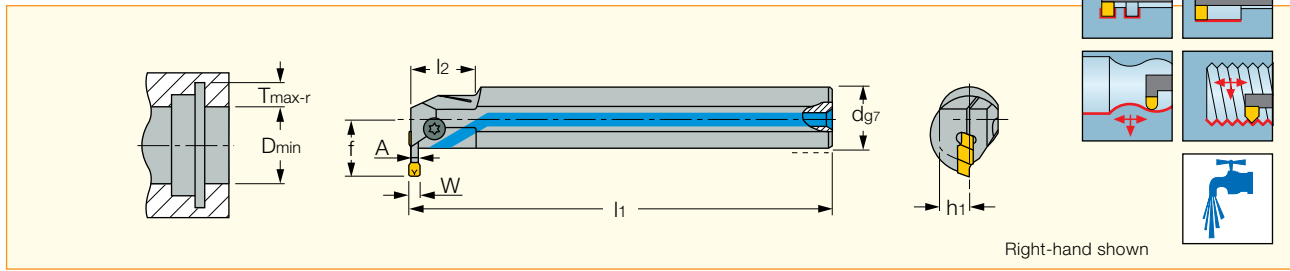


Designation	Screw	Key
GHIR/L 20-3	SR 76-1021	T-20/5
GHIR/L 20-20-3	SR 76-1021	T-20/5
GHIR/L 20-4	SR 76-1021	T-20/5
GHIR/L 20-20-4	SR 76-1021	T-20/5
GHIR/L 25-25-4	SR 76-1022	T-20/5
GHIR/L 32-4	SR 76-1022	T-20/5
GHIR/L 25-5	SR 76-1022	T-20/5
GHIR/L 25-25-6	SR 76-1022	T-20/5
GHIR/L 32-6	SR 76-1022	T-20/5
GHIR/L 40-6	SR 76-1022	T-20/5



GHIR/L-C (W=4-6.4)

Grooving and Turning Bars with Internal Coolant Holes



Right-hand shown

Designation	d	W _{min}	W _{max}	D _{min}	T _{max-r}	h ₁	l ₁	l ₂	f	A	Inlet
GHIR/L 25C-510	25.00	4.00	5.30	32.00	10.00	11.5	160.00	25.0	22.5	3.50	R1/8
GHIR/L 32C-610	32.00	4.80	6.40	43.00	10.00	14.5	200.00	-	26.2	4.40	R1/8
GHIR/L 40C-612	40.00	4.80	6.40	53.00	12.00	18.0	250.00	-	32.2	4.40	R1/8

• For using TIPI insert, toolholder seat needs to be modified according to insert profile, to ensure clearance. • For user guide, see pages B132-145.

For inserts, see pages: GIF1 (B89) • GIF1-E (B86) • GIF1-E (Full Radius) (B86) • GIMIY (B85) • GINI-E (B87) • GIPI (B88) • GIPI (Full Radius) (B89) • GIPI-E (B85) • TIPI threading inserts, see ISCAR full ISCAR TURNING & THREADING TOOLS catalog.

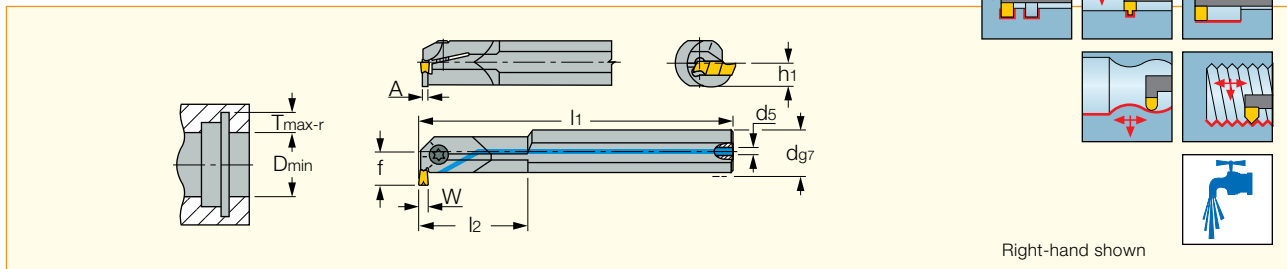
Spare Parts



Designation	Screw	Key	Seal
GHIR/L 25C-510	SR 76-1022	T-20/5	PL 25
GHIR/L 32C-610	SR 76-1022	T-20/5	PL 32
GHIR/L 40C-612	SR 76-1022	T-20/5	PL 40

GHIR/L-SC (W=2-4.8)

Grooving and Turning Solid Carbide Bars with Internal Coolant Holes



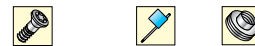
Right-hand shown

Designation	W _{min}	W _{max}	d	D _{min}	T _{max-r}	l ₁	l ₂	f	h ₁	d ₅	A
GHIR/L 20SC-3	2.00	3.50	20.00	20.00	4.50	200.00	60.0	14.5	9.0	8.5	1.60
GHIR/L 20SC-4	3.00	4.80	20.00	20.00	4.50	200.00	60.0	14.5	9.0	8.5	2.60

• Tool head is made of steel. • For using TIPI insert, toolholder seat needs to be modified according to insert profile, to ensure clearance. • For user guide, see pages B132-145.

For inserts, see pages: GIF1 (B89) • GIF1-E (B86) • GIF1-E (Full Radius) (B86) • GIMIY (B85) • GINI-E (B87) • GIPI (B88) • GIPI (Full Radius W<M) (B88) • GIPI (Full Radius) (B89) • GIPI-E (B85) • GIPI-RX/LX (B90) • TIPI threading inserts, see ISCAR full ISCAR TURNING & THREADING TOOLS catalog.

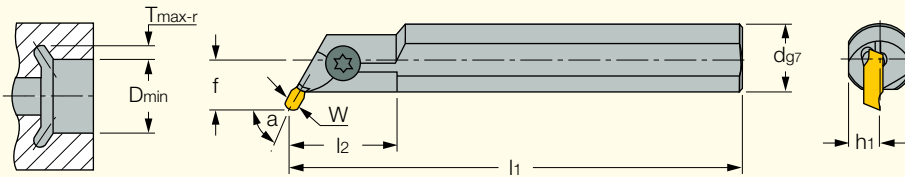
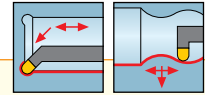
Spare Parts



Designation	Screw	Key	Seal
GHIR/L-SC (W=2-4.8)	SR 76-1021	T-20/5	PL 20

GHIUR/L

Undercutting and Turning Boring Bars



Right-hand shown

Designation	W_{max}	d	D_{min}	T_{max-r}	l_1	l_2	f	h_1	a°
GHIUR/L 20U	4.80	20.00	20.00	2.50	160.00	40.0	12.5	9.0	45.00
GHIUR/L 20-20-5	4.80	20.00	20.00	3.00	200.00	50.0	13.0	9.0	60.00
GHIUR/L 25U	6.40	25.00	25.00	3.00	160.00	50.0	15.5	11.5	45.00
GHIUR/L 25-25-6	6.40	25.00	25.00	3.50	200.00	60.0	16.0	11.5	60.00

For inserts, see pages: GIPI-UR/UL (B90).

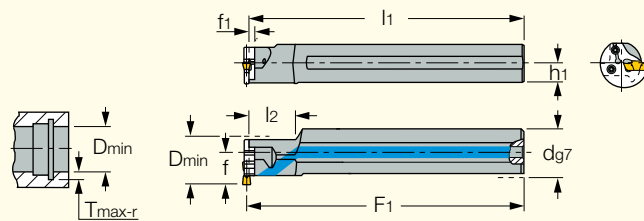
Spare Parts



Designation	Screw	Key
GHIUR/L 20U	SR 76-1021	T-20/5
GHIUR/L 20-20-5	SR 76-1021	T-20/5
GHIUR/L 25U	SR 76-1022	T-20/5
GHIUR/L 25-25-6	SR 76-1022	T-20/5

GHAIR/L-GI

Bars with Coolant Holes for Internal Grooving and Turning Adapters



Right-hand shown • $F_1 = l_1 - f_1 + f_2$. For f_2 dimension, see GAIR/L adapters.

Designation	d	l_2	l_1	f	h_1	f_1	Adapter
GHAIR/L 25-32	25.00	-	200.00	19.7	11.5	3.0	GAIR/L 32..
GHAIR/L 32-32	32.00	32.0	200.00	23.2	14.5	3.0	GAIR/L 32..
GHAIR/L 32-40	32.00	40.0	200.00	24.0	14.5	3.0	GAIR/L 40..

• For D_{min} & T_{max} refer to GAIR/L adapters.

For tools, see pages: GAIR/L (B83).

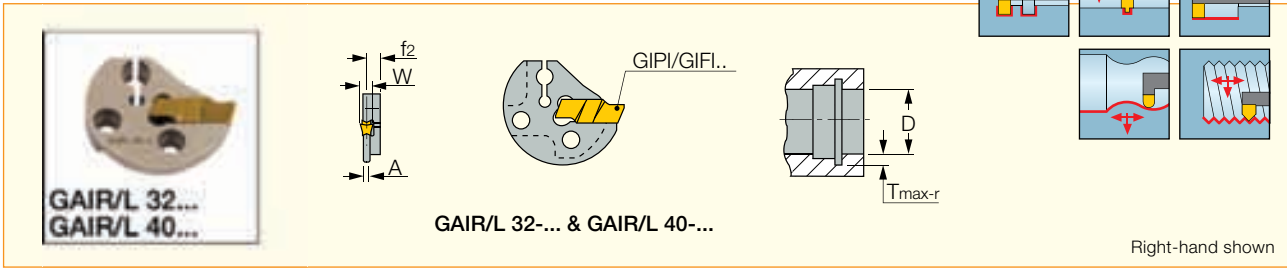
Spare Parts



Designation	Side Locking Screw	Lower & Side Screw	Key	Seal
GHAIR/L 25-32		SR 16-236 P	T-15/5	PL 25
GHAIR/L 32-32		SR 16-236 P	T-15/5	PL 32
GHAIR/L 32-40	SR 14-519	SR 16-212	T-20/5	PL 32

GAIR/L

Internal Grooving and Turning Adapters



Designation	D _{min}	W _{min}	W _{max}	T _{max-r}	f ₂	A
GAIR/L 32-2	32.00	1.50	2.10	3.00	3.80	1.20
GAIR/L 32-3	32.00	2.10	3.00	3.00	4.10	1.80
GAIR/L 32-4	32.00	3.00	4.50	5.00	4.50	2.50
GAIR/L 32-5	32.00	4.50	6.40	5.00	5.20	4.00
GAIR/L 40-2	40.00	1.50	2.10	3.00	3.80	1.20
GAIR/L 40-3	40.00	2.10	3.00	4.00	4.10	1.80
GAIR/L 40-4	40.00	3.00	4.50	7.00	4.50	2.50
GAIR/L 40-5	40.00	4.50	6.40	7.00	5.20	4.00

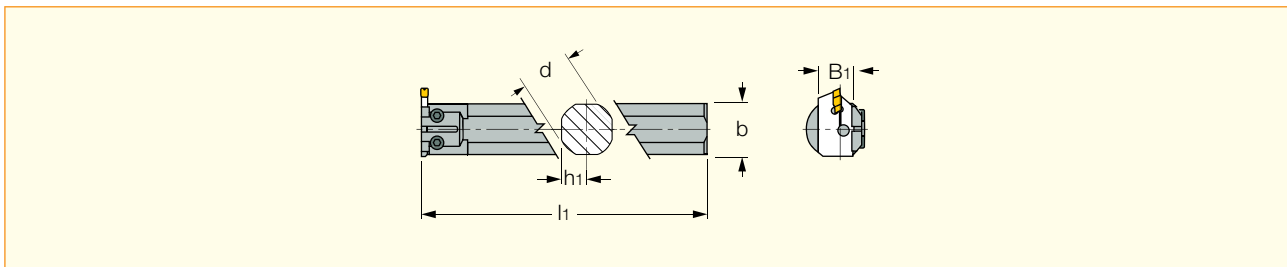
• For using TIPI insert, toolholder seat needs to be modified according to insert profile, to ensure clearance. • For user guide, see pages B132-145.

For inserts, see pages: GIMIY (B85) • GIPI-E (B85) • GIFI-E (B86) • GIFI-E (Full Radius) (B86) • GINI-E (B87) • GIPI (W<M) (B87) • GIPI (B88) • GIPI (Full Radius W<M) (B88) • GIPI (Full Radius) (B89) • GIFI (B89) • GIPI-RX/LX (B90) • TIPI threading inserts, see ISCAR TURNING & THREADING TOOLS catalog.

For holders, see pages: GHAIR/L-GI (B82).

GHIC-50

Boring Bars for Internal Grooving and Turning Blades D_{min}=50 mm



Designation	B ₁	d	l ₁	h ₁	b
GHIC 32-50	26.0	32.00	220.00	14.5	29.0
GHIC 40-50	26.0	40.00	260.00	18.0	36.0

• For both right and left hand applications.

For tools, see pages: CGIN 26 (B84).

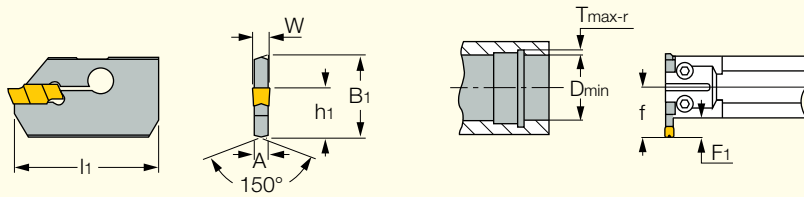
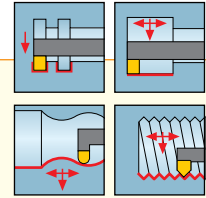
Spare Parts



Designation	Screw	Key
GHIC-50	SR M5X16DIN912	HW 4.0

CGIN 26

Internal Grooving and Turning Blades for GHIC...-50 Bars



Designation	W_{min}	W_{max}	A	$f_{min}^{(1)}$	$F_{1min}^{(2)}$	$f_{max}^{(2)}$	$F_{1max}^{(2)}$	l_1	B_1	D_{min}
CGIN 26K-3	2.80	4.00	2.40	28.0	10.0	33.0	15.0	45.00	26.0	50.00
CGIN 26K-4	3.60	4.50	3.20	28.0	10.0	33.0	15.0	45.00	26.0	50.00
CGIN 26K-5	4.40	6.40	4.00	28.0	10.0	33.0	15.0	45.00	26.0	54.00
CGIN 26A-3	2.80	4.00	2.40	32.5	14.5	37.5	19.5	49.50	26.0	54.00
CGIN 26A-4	3.60	4.50	3.20	32.5	14.5	37.5	19.5	49.50	26.0	54.00
CGIN 26A-5	4.40	6.40	4.00	32.5	14.5	37.5	19.5	49.50	26.0	54.00

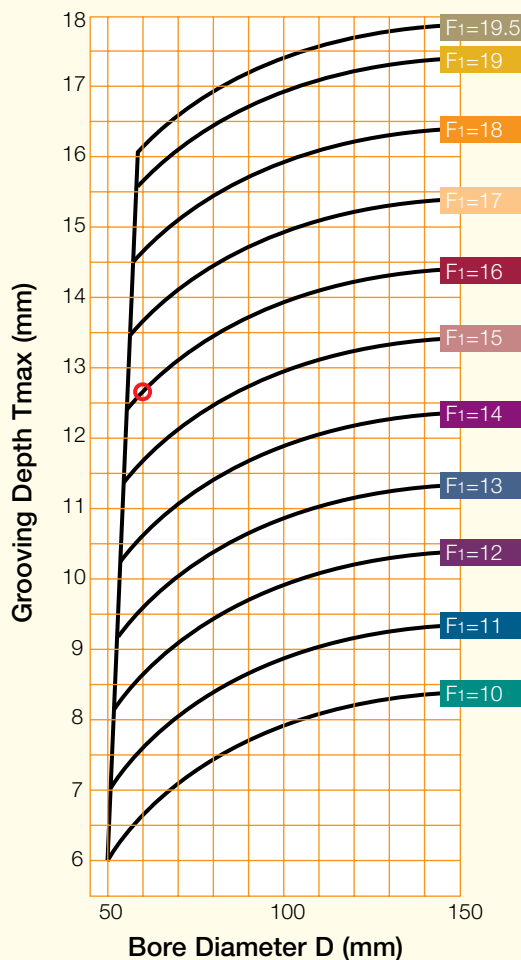
• f and F_1 are the blade extension range • Grooving depth (T_{max-r}) varies in conformance with blade's overhang (F_1) and it depends on the bore diameter (D).
 For grooving capacity, see chart below. • For using TIPI inserts, toolholder seat needs to be modified according to insert profile, to ensure clearance. • For user guide, see pages B132-145.

⁽¹⁾ Adjustable extension ⁽²⁾ Adjustable extension

For inserts, see pages: GIF1 (B89) • GIF1-E (B86) • GIF1-E (Full Radius) (B86) • GIMIY (B85) • GINI-E (B87) • GIPI (B88) • GIPI (Full Radius) (B89) • GIPI-E (B85)
 • TIPI threading inserts, see ISCAR TURNING & THREADING TOOLS catalog.

For holders, see pages: GHIC-50 (B83).

Internal Grooving Capacity for CGIN 26 for Bar GHIC...-50

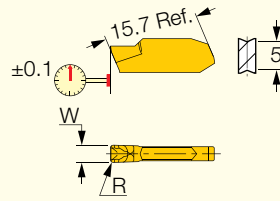
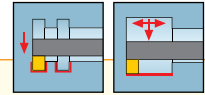


Example:

For grooving depth $T=12.7$ mm, and grooving width=4 mm, in bore $\phi D=60$, use blade CGIN 26A-4 and adjust overhang to $F_1=16$ mm.

GIMIY

Utility Single-Ended Inserts, for Internal Turning and Grooving



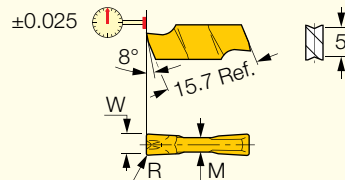
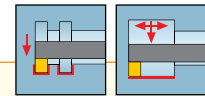
Designation	Dimensions		Tough ↔ Hard			Recommended Machining Data		
	W \pm 0.02	R \pm 0.05	IC830	IC08	IC808	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIMIY 304	3.00	0.40	●	●	●	0.50-1.50	0.10-0.14	0.05-0.08
GIMIY 404	4.00	0.40	●	●	●	0.50-2.00	0.13-0.19	0.06-0.11

• Dmin for internal applications=20 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: CGIN 26 (B84) • E-GEHIR / E-GHIMR (B76) • GAIR/L (B83) • GHIR/L (W=1.9-6.4) (B80) • GHIR/L-C (W=4-6.4) (B81) • GHIR/L-SC (W=2-4.8) (B81).

GIPI-E

Precision Double-Ended Inserts for Internal Turning and Grooving



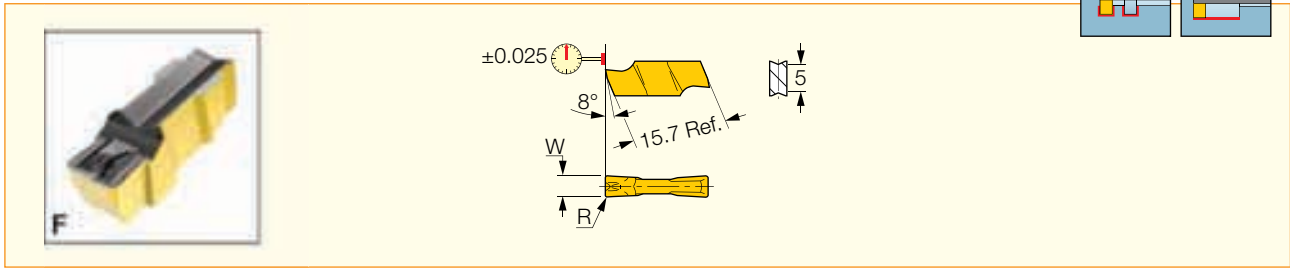
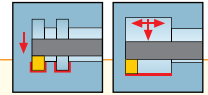
Designation	Dimensions				Tough ↔ Hard					Recommended Machining Data		
	W \pm 0.02	R \pm 0.05	M	T _{max-r}	IC830	IC8250	IC808	IC20	IC20N	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIPI 3.00E-0.40	3.00	0.40	2.4	15.50	●	●	●	●	●	0.50-1.50	0.14-0.18	0.06-0.12
GIPI 4.00E-0.40	4.00	0.40	3.2	15.50	●	●	●	●	●	0.50-2.00	0.15-0.21	0.08-0.15
GIPI 5.00E-0.50	5.00	0.50	4.0	15.50	●	●	●	●	●	0.70-3.10	0.19-0.33	0.11-0.20
GIPI 6.35E-0.55	6.35	0.55	4.8	15.50	●	●	●	●	●	0.70-3.10	0.23-0.30	0.13-0.21

• Dmin for internal applications = 20 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: CGIN 26 (B84) • E-GEHIR / E-GHIMR (B76) • GAIR/L (B83) • GHIR/L (W=1.9-6.4) (B80) • GHIR/L-C (W=4-6.4) (B81) • GHIR/L-SC (W=2-4.8) (B81).

GIFI-E

Precision Double-Ended Inserts for Internal Turning and Grooving



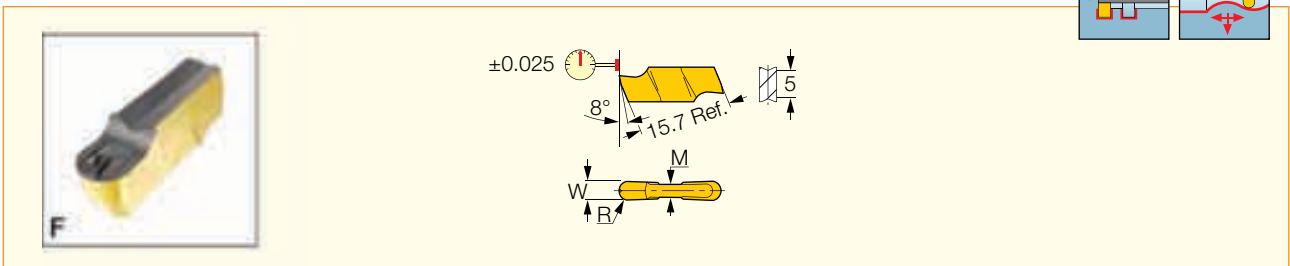
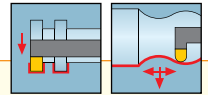
Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data		
	W ± 0.02	R ± 0.05	M	T $_{max-r}$	IC830	IC8250	IC808	IC20	a $_p$ (mm)	f turn (mm/rev)	f groove (mm/rev)
GIFI 4.00E-0.40	4.00	0.40	3.2	15.50	●	●	●	●	0.50-2.00	0.13-0.19	0.06-0.11
GIFI 5.00E-0.50	5.00	0.50	4.0	15.50	●	●	●	●	0.60-2.50	0.16-0.24	0.08-0.14
GIFI 6.00E-0.80	6.00	0.80	4.8	15.50	●	●	●	●	1.00-3.00	0.19-0.34	0.09-0.18

• Dmin for internal applications = 20 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: CGIN 26 (B84) • GAIR/L (B83) • GHIR/L (W=1.9-6.4) (B80) • GHIR/L-C (W=4-6.4) (B81) • GHIR/L-SC (W=2-4.8) (B81).

GIFI-E (Full Radius)

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



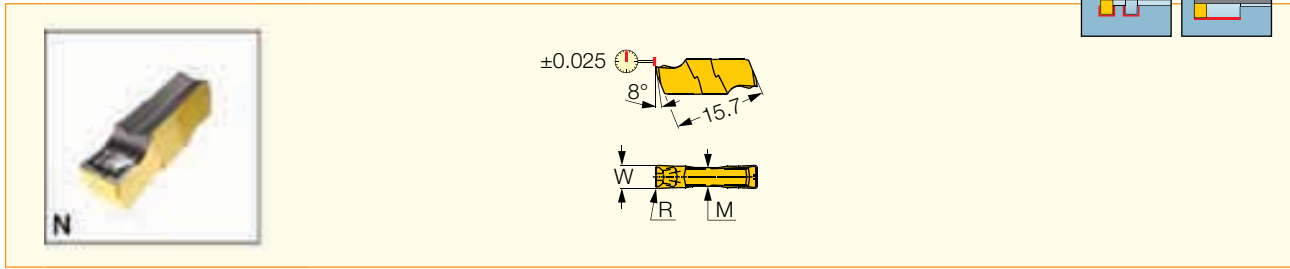
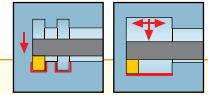
Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data		
	W ± 0.02	R ± 0.05	M	T $_{max-r}$	IC830	IC8250	IC808	IC20	a $_p$ (mm)	f turn (mm/rev)	f groove (mm/rev)
GIFI 4.00E-2.00	4.00	2.00	3.2	14.00	●	●	●	●	0.00-2.00	0.14-0.27	0.06-0.12
GIFI 5.00E-2.50	5.00	2.50	4.0	13.50	●	●	●	●	0.00-2.50	0.18-0.34	0.08-0.15

• Dmin for internal applications = 20 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: CGIN 26 (B84) • GAIR/L (B83) • GHIR/L (W=1.9-6.4) (B80) • GHIR/L-C (W=4-6.4) (B81) • GHIR/L-SC (W=2-4.8) (B81).

GINI-E

Precision Double Ended Inserts for Internal Grooving and Turning of Ductile Materials



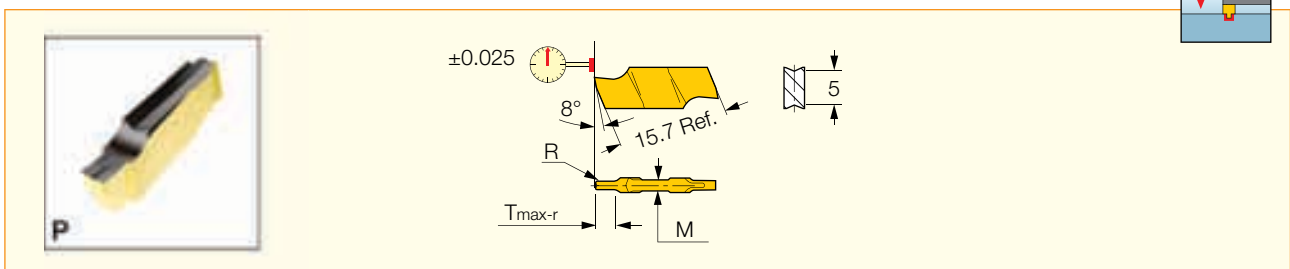
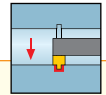
Designation	Dimensions				IC808	Recommended Machining Data		
	W ± 0.02	R ± 0.05	M	T $_{max-r}$		a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GINI 3.00E-0.40	3.00	0.40	2.4	15.50	●	0.50-1.20	0.08-0.13	0.03-0.09
GINI 4.00E-0.40	4.00	0.40	3.2	15.50	●	0.50-1.60	0.10-0.17	0.04-0.12
GINI 5.00E-0.50	5.00	0.50	4.0	15.50	●	0.50-2.00	0.12-0.20	0.05-0.14

• Dmin for internal applications=20 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: CGIN 26 (B84) • E-GEHIR / E-GHIMR (B76) • GAIR/L (B83) • GHIR/L (W=1.9-6.4) (B80) • GHIR/L-C (W=4-6.4) (B81) • GHIR/L-SC (W=2-4.8) (B81).

GIPI (W<M)

Precision Double-Ended Inserts for Internal Grooving and Recessing



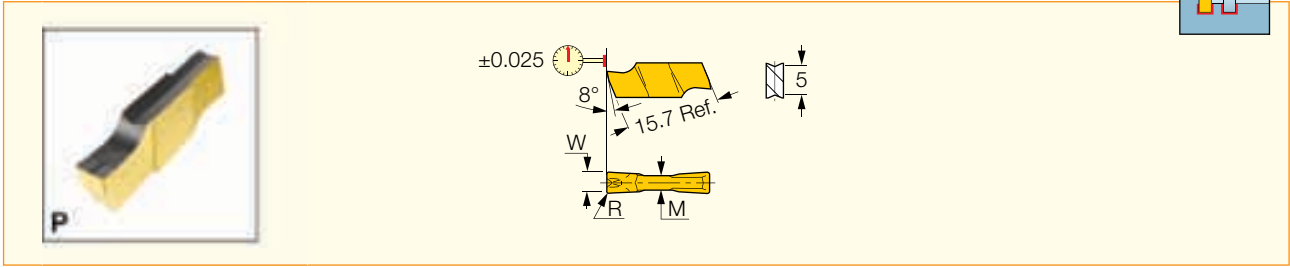
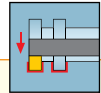
Designation	Dimensions					Tough ↔ Hard			Recommended Machining Data
	W ± 0.02	R ± 0.03	R $\pm toler$	T $_{max-r}$	M	IC830	IC808	IC20	
GIPI 1.57-0.15	1.57	0.15	0.030	2.50	2.2	●	●	●	0.03-0.05
GIPI 1.70-0.00	1.70	0.00	0.030	2.50	2.2	●	●	●	0.03-0.06
GIPI 1.78-0.10	1.78	0.10	0.030	2.50	2.2	●	●	●	0.03-0.06
GIPI 1.96-0.10	1.96	0.10	0.030	2.50	2.2	●	●	●	0.04-0.06
GIPI 1.96-0.15	1.96	0.15	0.030	2.50	2.2	●	●	●	0.04-0.06

• The tool pocket should be modified • Dmin for internal application=20 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: GAIR/L (B83) • GHIR/L (W=1.9-6.4) (B80).

GIPI

Precision Double-Ended Inserts for Internal Grooving and Recessing



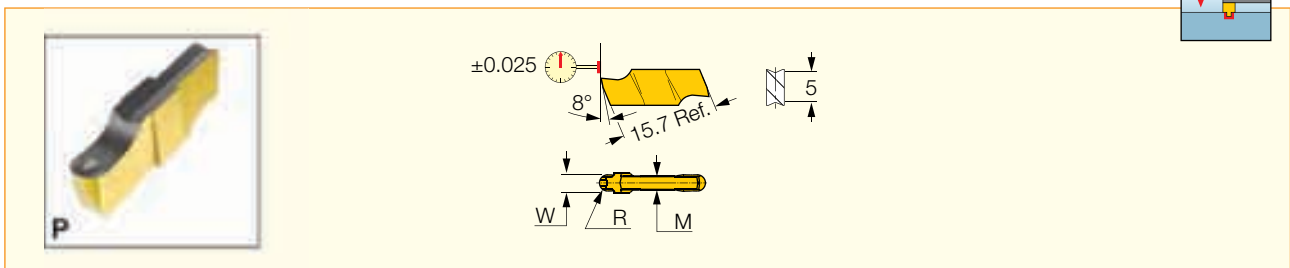
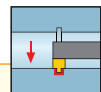
Designation	Dimensions				Tough ↔ Hard						Recommended Machining Data f groove (mm/rev)
	W±0.02	R±0.03	T _{max-r}	M	IC830	IC8250	IC808	IC908	IC20	IC20N	
GIPI 2.22-0.10	2.22	0.10	2.50	2.2	●		●	●	●		0.04-0.07
GIPI 2.22-0.15	2.22	0.15	2.50	2.2			●	●	●		0.04-0.07
GIPI 2.30-0.20	2.30	0.20	3.00	2.2	●				●		0.05-0.08
GIPI 2.39-0.15	2.39	0.15	6.40	2.4	●		●	●	●		0.04-0.07
GIPI 2.50-0.20	2.50	0.20	6.00	2.4	●				●		0.05-0.09
GIPI 2.70-0.10	2.70	0.10	-	2.4	●		●	●	●	●	0.05-0.08
GIPI 2.70-0.15	2.70	0.15	-	2.4			●	●	●		0.05-0.08
GIPI 3.00-0.40	3.00	0.40	-	2.4					●		0.06-0.11
GIPI 3.18-0.20	3.18	0.20	-	2.4	●	●	●	●	●	●	0.06-0.11
GIPI 3.30-0.10	3.30	0.10	-	2.4	●	●	●				0.06-0.10
GIPI 3.96-0.20	3.96	0.20	-	3.2		●			●		0.08-0.13
GIPI 4.23-0.10	4.23	0.10	-	3.2		●			●		0.08-0.13
GIPI 4.78-0.55	4.78	0.55	-	4.0	●	●	●		●		0.08-0.15

• Dmin for internal application = 20 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: CGIN 26 (B84) • E-GEHIR / E-GHIMR (B76) • GAIR/L (B83) • GHIR/L (W=1.9-6.4) (B80) • GHIR/L-C (W=4-6.4) (B81) • GHIR/L-SC (W=2-4.8) (B81).

GIPI (Full Radius W<M)

Precision Double-Ended Inserts, Full Radius for Internal Grooving and Recessing



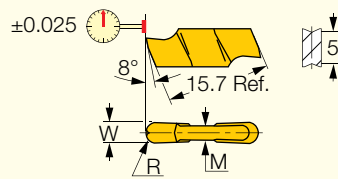
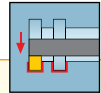
Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data f groove (mm/rev)
	W±0.02	R±0.05	T _{max-r}	M	IC830	IC808	IC20	
GIPI 2.39-1.20	2.39	1.20	6.40	2.4	●	●	●	0.05-0.10

• The tool pocket should be modified • Dmin for internal applications= 20 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: GAIR/L (B83) • GHIR/L (W=1.9-6.4) (B80) • GHIR/L-SC (W=2-4.8) (B81).

GIPI (Full Radius)

Precision Double-Ended Inserts, Full Radius for Internal Grooving and Recessing



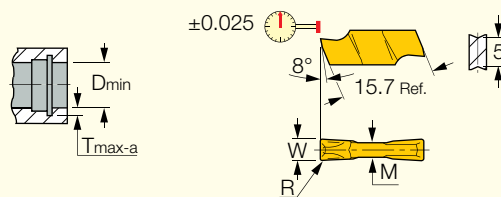
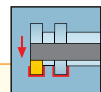
Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data f groove (mm/rev)
	W±0.02	R±0.05	T _{max-r}	M	IC8250	IC20	
GIPI 3.18-1.59	3.18	1.59	-	2.4	●	●	0.06-0.13
GIPI 3.96-1.98	3.96	1.98	-	3.2	●	●	0.08-0.16
GIPI 4.78-2.39	4.78	2.39	-	4.0	●	●	0.08-0.16
GIPI 6.35-3.18	6.35	3.18	-	4.8	●	●	0.11-0.21

• D_{min} for internal application = 20 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: CGIN 26 (B84) • GAIR/L (B83) • GHIR/L (W=1.9-6.4) (B80) • GHIR/L-C (W=4-6.4) (B81) • GHIR/L-SC (W=2-4.8) (B81).

GIFI

Precision Double-Ended Inserts for Internal Grooving and Recessing



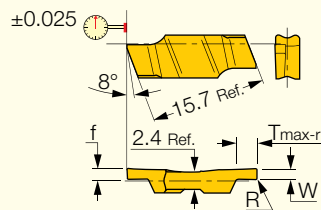
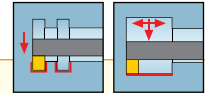
Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data f groove (mm/rev)
	W±0.02	R±0.03	M	T _{max-r}	IC830	IC8250	IC20	
GIFI 4.78-0.55	4.78	0.55	4.0	15.50	●	●	●	0.07-0.13
GIFI 5.28-0.20	5.28	0.20	4.0	15.50	●	●	●	0.08-0.13

• D_{min} for internal applications = 20 mm • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: CGIN 26 (B84) • GAIR/L (B83) • GHIR/L (W=1.9-6.4) (B80) • GHIR/L-C (W=4-6.4) (B81) • GHIR/L-SC (W=2-4.8) (B81).

GIPI-RX/LX

Precision Double-Ended Inserts for Internal Grooving Next to Shoulder



RX shown

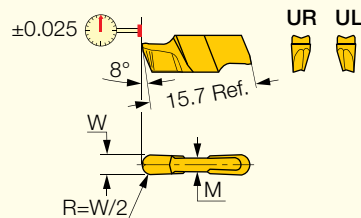
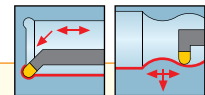
Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data f groove (mm/rev)
	W ± 0.02	R ± 0.03	f	T $_{max-r}$	IC830	IC808	
GIPI 0.78-0.1LX	0.78	0.10	1.55	1.30		●	0.02-0.04
GIPI 1.00-0.00R/LX	1.00	0.00	1.55	2.00	●	●	0.02-0.04
GIPI 1.19-0.1LX	1.19	0.10	1.55	2.00		●	0.03-0.05
GIPI 1.57-0.15LX	1.57	0.15	1.65	2.80		●	0.03-0.05
GIPI 1.57-0.79LX	1.57	0.79	1.65	2.80		●	0.03-0.06
GIPI 2.00-0.10R/LX	2.00	0.10	1.65	2.70	●	●	0.04-0.06
GIPI 2.39-0.2LX	2.39	0.20	1.65	3.90		●	0.05-0.08
GIPI 2.39-1.19LX	2.39	1.19	1.65	3.90		●	0.05-0.10

• Tool's pocket should be modified • For grooving and recessing only • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: GAIR/L (B83) • GHIR/L (W=1.9-6.4) (B80) • GHIR/L-SC (W=2-4.8) (B81).

GIPI-UR/UL

Precision Double-Ended Inserts for Internal Undercutting



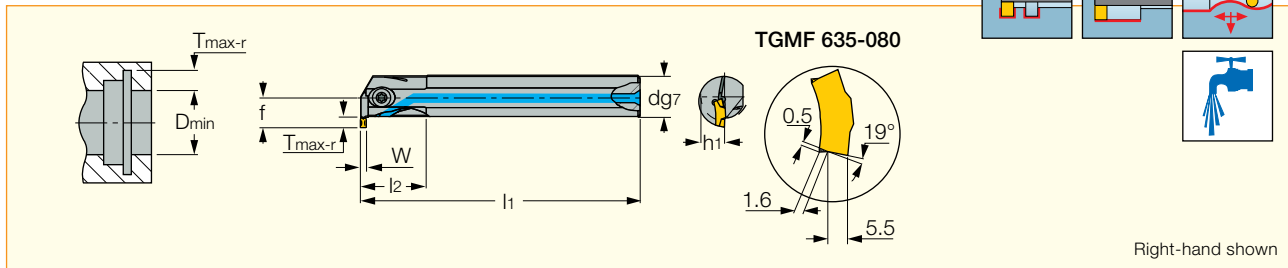
Designation	Dimensions			Tough ↔ Hard		Recommended Machining Data f groove (mm/rev)
	W ± 0.02	R ± 0.05	M	IC8250	IC20	
GIPI 3.00-1.5UR/L	3.00	1.50	2.4	●	●	0.05-0.15
GIPI 4.00-2.0UR/L	4.00	2.00	3.2	●	●	0.05-0.15

• The tool's pocket should be modified • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: GHIUR/L (B82).

TGIR/L-C

Grooving and Turning Bars with Coolant Holes for TOP-GRIP Utility Inserts



Right-hand shown

Designation	d	W _{min}	W _{max}	D _{min}	T _{max-r}	h ₁	l ₁	l ₂	f	Inlet	Inserts
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
TGIR/L 20C-3	20.00	3.00	3.00	25.00	5.50	9.0	180.00	32.0	14.2	M6	TGMF 3
TGIR/L 25C-3	25.00	3.00	3.00	32.00	8.00	11.5	200.00	40.0	18.8	R1/8	TGMF 3
TGIR/L 25C-4	25.00	4.00	5.00	32.50	8.50	11.5	200.00	40.0	19.5	R1/8	TGMF 4, TGMF/P 5
TGIR/L 32C-4	32.00	4.00	5.00	42.00	11.00	14.5	220.00	50.0	25.5	R1/8	TGMF 4, TGMF/P 5
TGIR/L 32C-6	32.00	6.00	6.35	57.00 ⁽¹⁾	17.50	14.5	220.00	50.0	29.0	R1/8	TGMF 6
TGIR/L 40C-6	40.00	6.00	6.35	57.00 ⁽¹⁾	17.50	18.0	300.00	60.0	35.2	R1/8	TGMF 6

• For user guide, see pages B132-145.

⁽¹⁾ For Dmin 47 mm, modify insert according to sketch

For inserts, see pages: TGMF (Full Radius) (B17) • TGMF/P (B17).

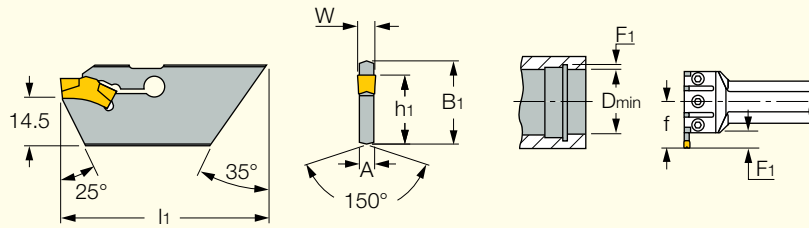
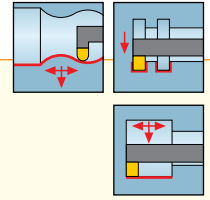
Spare Parts



Designation	Screw	Key	Seal
TGIR/L 16C-3	SR 76-1400	T-20/5	PL 16
TGIR/L 20C-3	SR 76-1400	T-20/5	PL 20
TGIR/L 25C-3	SR M5X16DIN912	HW 4.0	PL 25
TGIR/L 25C-4	SR M5X16DIN912	HW 4.0	PL 25
TGIR/L 32C-4	SR M6X20DIN912	HW 5.0	PL 32
TGIR/L 32C-6	SR M6X20DIN912	HW 5.0	PL 32
TGIR/L 40C-6	SR M6X25DIN912 UNB.	HW 5.0	PL 40

TGHN 26-M

Internal Grooving and Turning Blades, for GHIC...-70 Bars



Designation	W _{min}	W _{max}	A	f _{min} ⁽¹⁾	F _{1min} ⁽²⁾	f _{max} ⁽²⁾	F _{1max} ⁽²⁾	h ₁	l ₁	B ₁	D _{min}
TGHN 26-3M	3.00	3.00	2.40	40.0	13.5	41.5	15.0	21.4	63.00	26.0	70.00
TGHN 26-4M	4.00	5.00	3.20	40.0	13.5	41.5	15.0	21.4	63.00	26.0	70.00
TGHN 26-5M	5.00	5.00	4.00	40.0	13.5	46.5	20.0	21.4	63.00	26.0	70.00

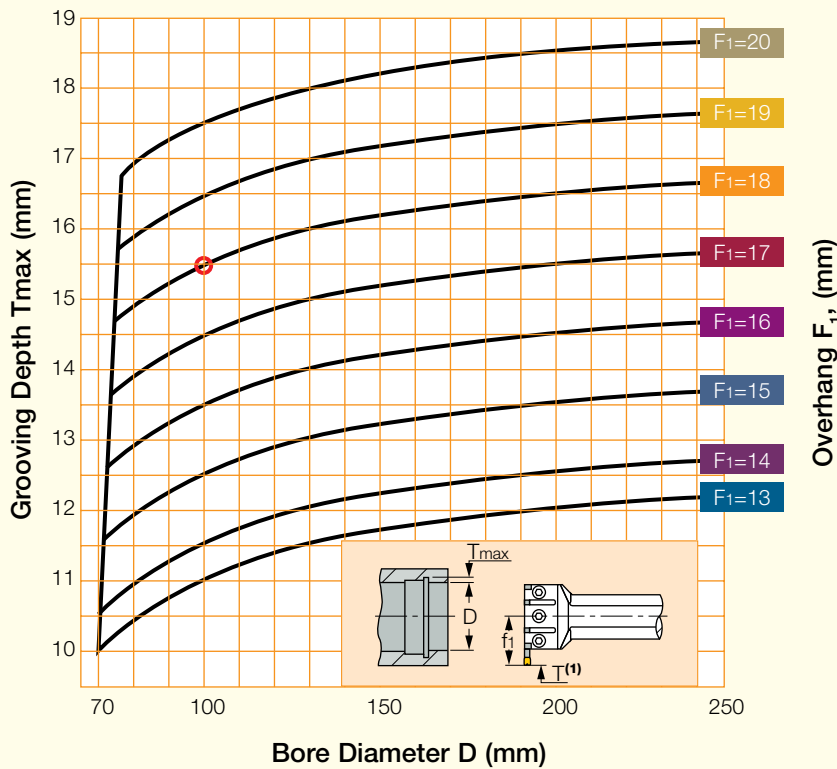
• Grooving depth (T_{max}-r) varies in conformance with blade's overhang (f and F₁) and it depends on the bore diameter (D). • TGHN 26...-M can be modified from external double-sided TGHN blades • For user guide, see pages B132-145.

⁽¹⁾ Adjustable extension ⁽²⁾ Adjustable extension

For inserts, see pages: TGMF (Full Radius) (B17) • TGMF/P (B17).

For holders, see pages: GHIC-70 (B94).

Internal Grooving Capacity for Bar GHIC...70



Example:

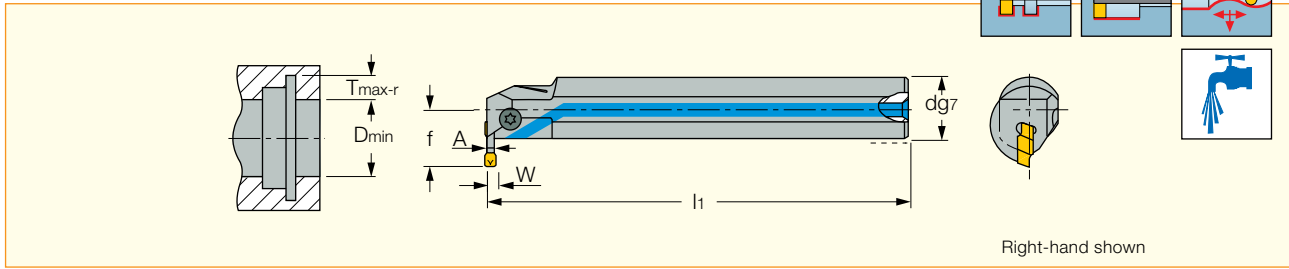
For grooving depth T=15.5 mm, and grooving width=5 mm, in bore øD=100, use blade TGHN 26-5M and adjust overhang to F₁=18 mm.



TGHN 26-...M

HELIIR/L

Grooving and Turning Bars with Coolant Holes for HELI-GRIP Utility Inserts



Designation	d	W _{min}	W _{max}	D _{min}	T _{max-r}	l ₁	f	Inlet	Inserts ⁽¹⁾
HELIIR/L 20C-305	20.00	3.00	3.18	26.00	5.00	160.00	15.2	M6	GRIP 3
HELIIR/L 25C-305	25.00	3.00	3.18	31.00	5.00	160.00	17.7	R1/8	GRIP 3
HELIIR/L 25C-410	25.00	4.00	4.76	43.00	10.00	160.00	22.7	R1/8	GRIP 4
HELIIR/L 25C-510	25.00	5.00	5.00	43.00	10.00	160.00	22.7	R1/8	GRIP 5
HELIIR/L 25C-610	25.00	6.00	6.35	43.00	10.00	160.00	22.7	R1/8	GRIP 6
HELIIR/L 32C-410	32.00	4.00	4.76	43.00	10.00	200.00	26.2	R1/8	GRIP 4
HELIIR/L 32C-510	32.00	5.00	5.00	43.00	10.00	200.00	26.2	R1/8	GRIP 5
HELIIR/L 32C-610	32.00	6.00	6.35	43.00	10.00	200.00	26.2	R1/8	GRIP 6
HELIIR/L 40C-412	40.00	4.00	4.76	53.00	12.00	250.00	32.2	R1/8	GRIP 4
HELIIR/L 40C-512	40.00	5.00	5.00	53.00	12.00	250.00	32.2	R1/8	GRIP 5
HELIIR/L 40C-612	40.00	6.00	6.35	53.00	12.00	250.00	32.2	R1/8	GRIP 6

• For user guide, see pages B132-145.

⁽¹⁾ DO-GRIP DGN inserts may be used only for grooving: DGN 4.. (Dmin=51 mm), DGN 5.. (Dmin=57 mm) and DGN 6.. (Dmin=62 mm)

For inserts, see pages: GRIP (B14) • GRIP (Full Radius) (B14).

Spare Parts



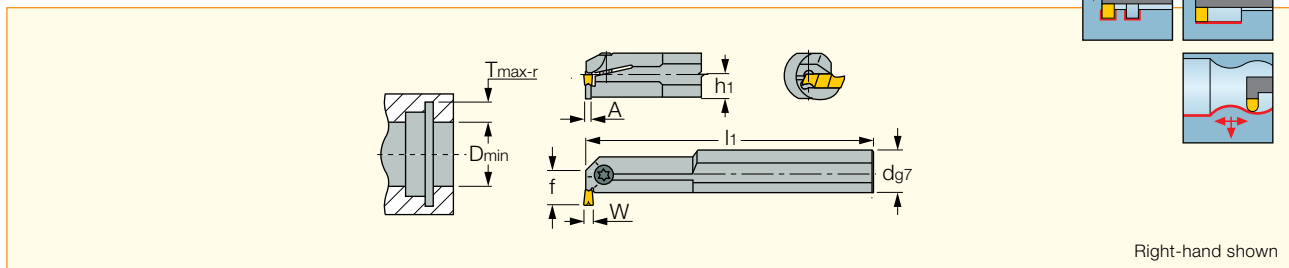
Designation	Screw	Key	Seal
HELIIR/L 20C-305	SR 76-1400	T-20/5	PL 20
HELIIR/L 25C-305	SR M5X16DIN912	HW 4.0	PL 25
HELIIR/L 25C-410	SR M5X16DIN912	HW 4.0	PL 25
HELIIR/L 25C-510	SR M5X16DIN912	HW 4.0	PL 25
HELIIR/L 25C-610	SR M5X16DIN912	HW 4.0	PL 25
HELIIR/L 32C-410	SR M5X16DIN912	HW 4.0	PL 32
HELIIR/L 32C-510	SR M5X16DIN912	HW 4.0	PL 32
HELIIR/L 32C-610	SR M5X16DIN912	HW 4.0	PL 32
HELIIR/L 40C-412	SR M5X16DIN912	HW 4.0	PL 40
HELIIR/L 40C-512	SR M5X16DIN912	HW 4.0	PL 40
HELIIR/L 40C-612	SR M5X16DIN912	HW 4.0	PL 40

CUT-GRIP

GHIR Boring Bars Dmin 64 mm (GDMY/F/N 8 mm inserts)

GHIR/L (W=7.0-8.3)

Internal Grooving and Turning Boring Bars



Designation	W _{min}	W _{max}	d	D _{min}	T _{max-r}	l ₁	f	h ₁	A
GHIR/L 40-815	7.00	8.30	40.00	64.00	15.00	300.00	36.0	18.0	6.00
GHIR/L 40-820	7.00	8.30	40.00	65.00	20.00	300.00	41.0	18.0	6.00

• For user guide, see pages B132-145.

For inserts, see pages: GDMA (B47) • GDMF (B29) • GDMM-CC (E46) • GDMN (B31) • GDMU (B31) • GDMY (B30) • GDMY (Full Radius) (B33) • GDMY-F (B34) • GIA-K (Long Pocket) (B44) • GIF-E (W=8,10 Full Radius) (B38) • GIF-E (W=8,10) (B35) • GIPA/GIDA 8 (Full Radius) (B48).

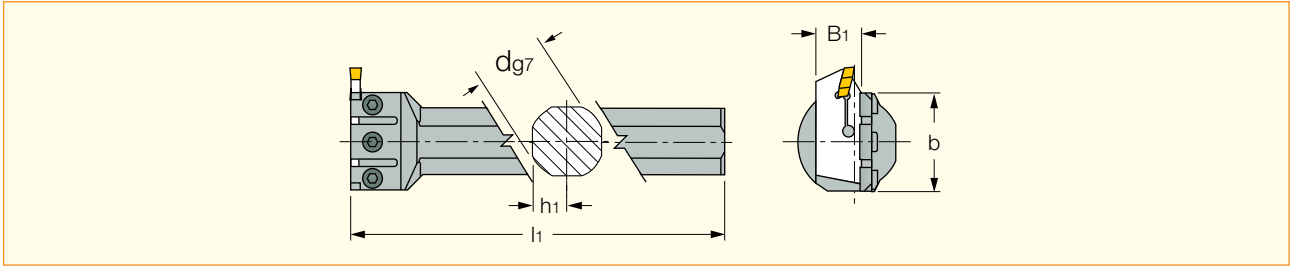
Spare Parts



Designation	Screw	Key
GHIR/L (W=7.0-8.3)	SR M8X20DIN912	HW 6.0

GHIC-70

Boring Bars for Internal Grooving and Turning Blades Dmin=70 mm



Designation	B ₁	d	l ₁	h ₁	b
GHIC 40-70	26.0	40.00	260.00	18.0	53.0
GHIC 50-70	26.0	50.00	300.00	23.0	53.0

• For both right and left hand applications.

For tools, see pages: CGHN 26-M (B95) • TGHN 26-M (B92).

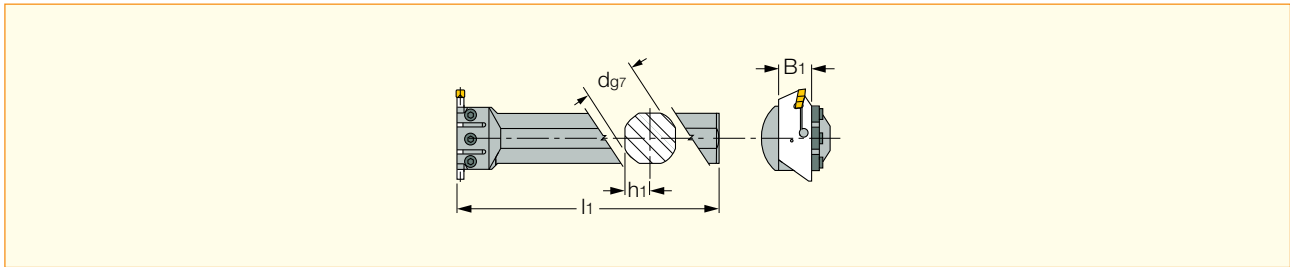
Spare Parts



Designation	Screw	Key
GHIC-70	SR M6X16DIN912	HW 5.0

GHIC-85

Boring Bars for Internal Grooving and Turning Blades Dmin=85 mm



Designation	B ₁	d	l ₁	h ₁
GHIC 40-85	32.0	40.00	260.00	18.0
GHIC 50-85	32.0	50.00	300.00	23.0

• For both right and left hand applications.

For tools, see pages: CGHN 32-DGM (B97) • CGHN 32-M (B96).

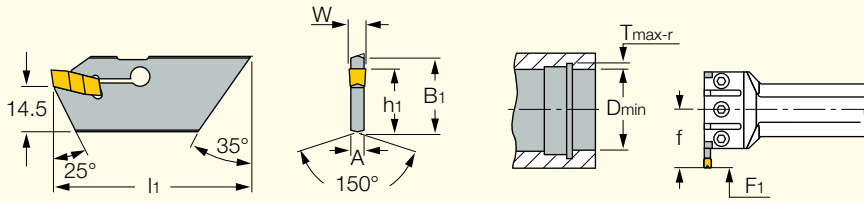
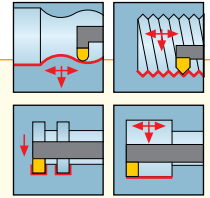
Spare Parts



Designation	Screw	Key
GHIC-85	SR M6X16DIN912	HW 5.0

CGHN 26-M

Internal Grooving and Turning Blades, for GHIC...-70 Bars



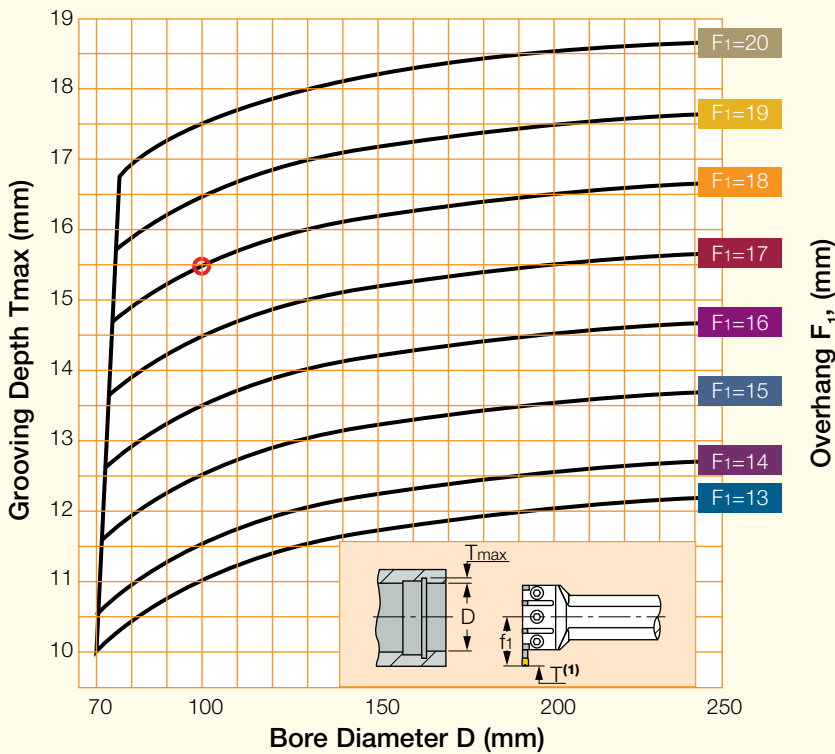
Designation	W _{min}	W _{max}	A	D _{min}	f _{min} ⁽¹⁾	F _{1min} ⁽²⁾	f _{max} ⁽²⁾	F _{1max} ⁽²⁾	h ₁	l ₁	B ₁
CGHN 26-3M	2.80	4.00	2.40	70.00	40.0	13.5	46.5	20.0	21.4	63.00	26.0
CGHN 26-4M	3.60	4.50	3.20	70.00	40.0	13.5	46.5	20.0	21.4	63.00	26.0
CGHN 26-5M	4.40	6.40	4.00	70.00	40.0	13.5	46.5	20.0	21.4	63.00	26.0

• Grooving depth (T_{max-r}) varies in conformance with blade's overhang (f and F_1) and it depends on the bore diameter (D). • CGHN 26...-M can be modified from external double-sided CGHN blades • When TIP inserts are used, the seat needs to be modified to ensure clearance. • For user guide, see pages B132-145.

⁽¹⁾ Adjustable extension ⁽²⁾ Adjustable extension

For inserts, see pages: B29-51 and for TIP threading inserts, see in ISCAR TURNING & THREADING TOOLS catalog. For holders, see pages: GHIC-70 (B94).

Internal Grooving Capacity for Bar GHIC...70



Example:

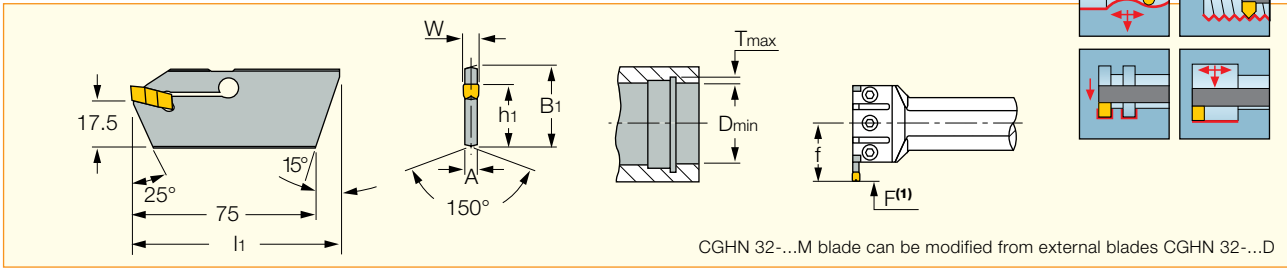
For grooving depth $T=15.5$ mm, and grooving width=5 mm, in bore $\varnothing D=100$, use blade CGHN 26-5M and adjust overhang to $F_1=18$ mm.



CGHN 26-...M

CGHN 32-M

Internal Grooving and Turning Blades, for GHIC...-85 Bars



CGHN 32-...M blade can be modified from external blades CGHN 32-...D

Designation	W _{min}	W _{max}	A	f _{min} ⁽¹⁾	F _{1min} ⁽²⁾	f _{max} ⁽²⁾	F _{1max} ⁽²⁾	h ₁	l ₁	B ₁	D _{min}
CGHN 32-3M	2.80	4.00	2.40	44.0	15.0	48.0	19.0	24.8	82.00	32.0	85.00
CGHN 32-4M	3.60	5.00	3.20	44.0	15.0	50.0	21.0	24.8	82.00	32.0	85.00
CGHN 32-5M	4.40	6.40	4.00	44.0	15.0	55.0	26.0	24.8	82.00	32.0	85.00
CGHN 32-6M	5.60	6.40	5.20	44.0	15.0	55.0	26.0	24.8	82.00	32.0	85.00

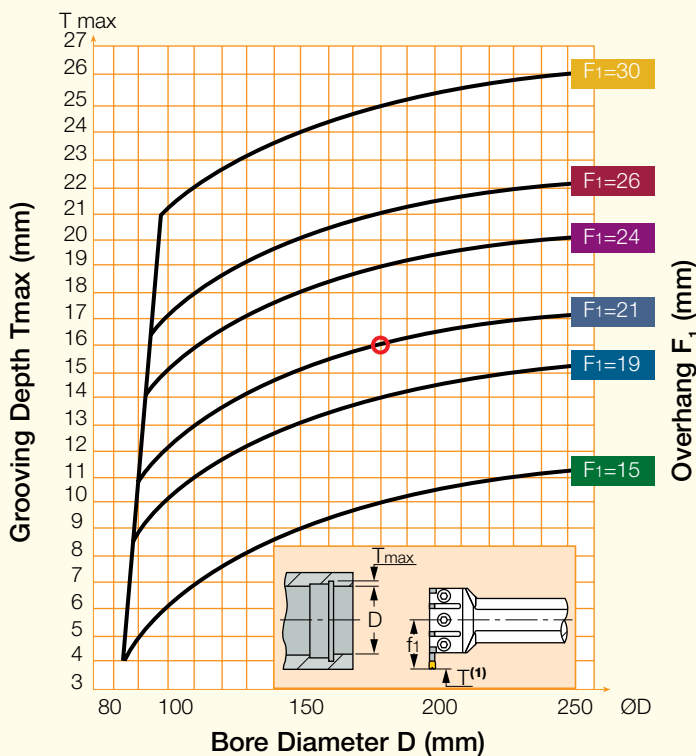
• f and F₁ are the blade extension range. • Grooving depth (T_{max}-r) varies in conformance with blade's overhang (F₁) and it depends on the bore diameter (D). For grooving capacity, see graph. • For using TIP insert, toolholder seat needs to be modified. • For user guide, see pages B132-145.

⁽¹⁾ Adjustable extension ⁽²⁾ Adjustable extension

For inserts, see pages: B29-51 and for TIP threading inserts, see in ISCAR TURNING & THREADING TOOLS catalog.

For holders, see pages: GHIC-85 (B94).

Internal Machining Grooving Capacity for Bar GHIC...85



Example:

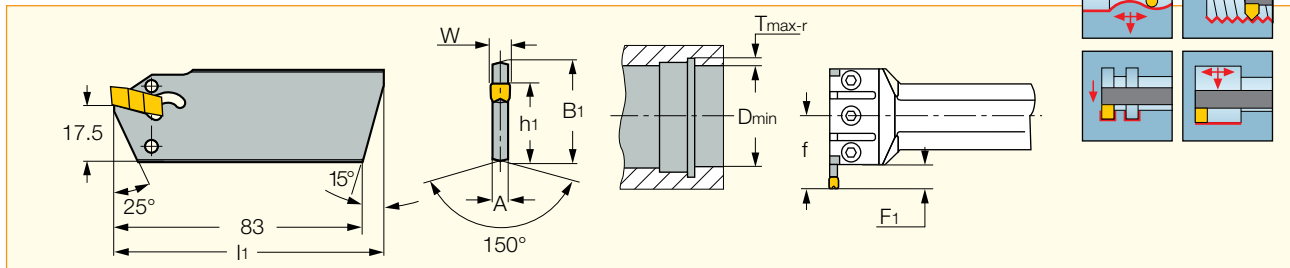
For grooving depth $T=16$, and grooving width= 4, in bore $\varnothing D=180$, use blade CGHN-32-4M and adjust overhang to $F_1=21$ mm.



TGHN 32-...M

CGHN 32-DGM

Internal Grooving and Turning Blades, for GHIC...-85 Bars (Self Clamping)



Designation	W _{min}	W _{max}	A	f _{min} ⁽¹⁾	F _{1min} ⁽²⁾	f _{max} ⁽²⁾	F _{1max} ⁽²⁾	h ₁	l ₁	B ₁	D _{min}
CGHN 32-3DGM	2.80	4.00	2.40	53.0	24.0	59.0	30.0	24.8	90.00	32.0	93.00
CGHN 32-4DGM	3.50	5.00	3.20	53.0	24.0	59.0	30.0	24.8	90.00	32.0	93.00
CGHN 32-5DGM	4.40	6.40	4.00	53.0	24.0	59.0	30.0	24.8	90.00	32.0	98.00
CGHN 32-6DGM	5.60	6.40	5.20	53.0	24.0	59.0	30.0	24.8	90.00	32.0	98.00

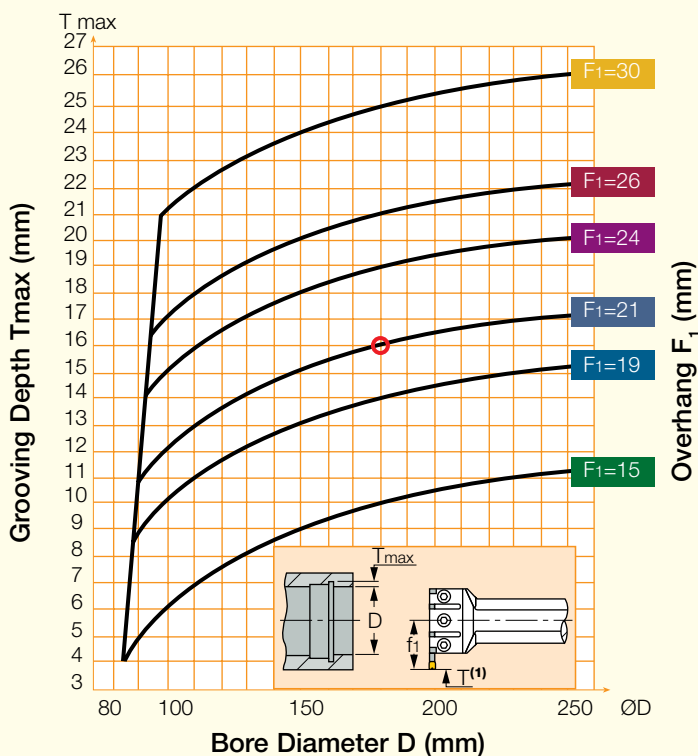
• Grooving depth (T_{max-r}) varies in conformance with blade's overhang (f and F₁) and it depends on the bore diameter (D). • CGHN 32...DGM can be modified from external double-sided CGHN -DG blades • When TIP inserts are used, the seat needs to be modified to ensure clearance. • For user guide, see pages B132-145.

⁽¹⁾ Adjustable extension ⁽²⁾ Adjustable extension

For inserts, see pages: B29-51 and for TIP threading inserts, see in ISCAR TURNING & THREADING TOOLS catalog.

For holders, see pages: GHIC-85 (B94).

Internal Machining Grooving Capacity for Bar GHIC...-85



Example:

For grooving depth T=16, and grooving width=4, in bore $\varnothing D=180$, use blade CGHN-32-4M and adjust overhang to F₁=21 mm.



CGHN 32-...M/DGN

Spare Parts



Designation	Extractor
CGHN 32-DGM	EDG 44A*

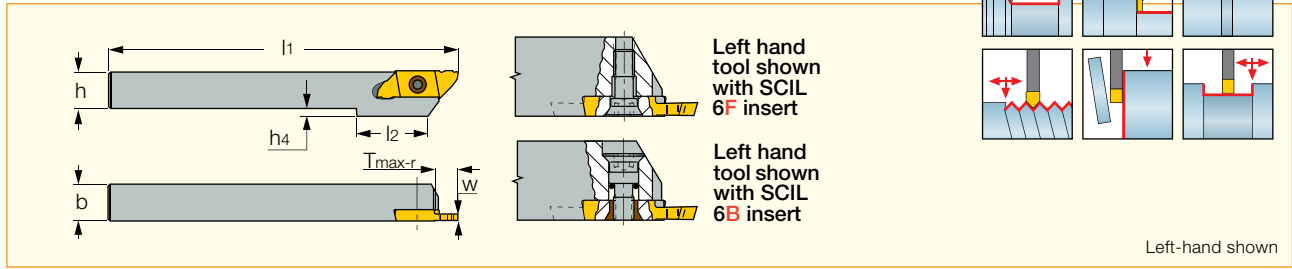
* Optional, should be ordered separately

Miniature



SCHR/L-B/F

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

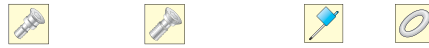


Designation	h	b	l ₁	h ₄	l ₂	T _{max-r} ⁽¹⁾	W _{min}	W _{max}	Inserts
SCHR/L 0810-6B	8.0	10.0	125.00	2.0	23.7	6.00	0.50	2.50	SCIR/L 6B
SCHR/L 10-6B	10.0	10.0	125.00	-	-	6.00	0.50	2.50	SCIR/L 6B
SCHR/L 12-6B	12.0	12.0	125.00	-	-	6.00	0.50	2.50	SCIR/L 6B
SCHR/L 16-6B	16.0	16.0	125.00	-	-	6.00	0.50	2.50	SCIR/L 6B
SCHR/L 10-6F	10.0	10.0	125.00	-	-	6.00	0.50	2.50	SCIR/L 6F
SCHR/L 12-6F	12.0	12.0	125.00	-	-	6.00	0.50	2.50	SCIR/L 6F
SCHR/L 16-6F	16.0	16.0	125.00	-	-	6.00	0.50	2.50	SCIR/L 6F

⁽¹⁾ See insert dimensions

For inserts, see pages: SCIR/L-B-NP (B102) • SCIR/L-B/F-AR/AL (B100) • SCIR/L-B/F-BR/BL (B99) • SCIR/L-B/F-ER/EL (B100)
• SCIR/L-B/F-MTR/MTL threading inserts, see ISCAR TURNING & THREADING TOOLS catalog. • SCIR/L-B/F-N/L/R (B101).

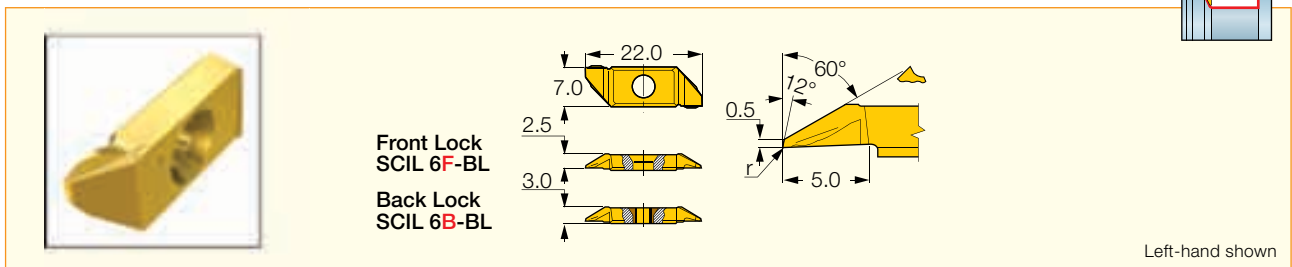
Spare Parts



Designation	Back Screw	Front Screw	Key	O RING
SCHR/L 0810-6B	SCRB 103		IP-10/5	OR 2.5X1.2N
SCHR/L 10-6B	SCRB 103		IP-10/5	OR 2.5X1.2N
SCHR/L 12-6B	SCRB 103		IP-10/5	OR 2.5X1.2N
SCHR/L 16-6B	SCRB 103		IP-10/5	OR 2.5X1.2N
SCHR/L 10-6F		SCRF 103	IP-10/5	
SCHR/L 12-6F		SCRF 103	IP-10/5	
SCHR/L 16-6F		SCRF 103	IP-10/5	

SCIR/L-B/F-BR/BL

Back Turning Inserts



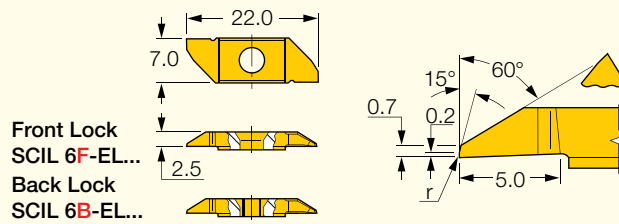
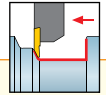
Designation	Dimensions		IC1008	Recommended Machining Data	
	r			a _p (mm)	f (mm/rev)
SCIL 6B-BL000	0.00		●	0.05-3.00	0.01-0.15
SCIL 6F-BL000	0.00		●	0.05-3.00	0.01-0.15
SCIR 6B-BR000	0.00		●	0.05-3.00	0.01-0.15
SCIR 6F-BR000	0.00		●	0.05-3.00	0.01-0.15
SCIL 6B-BL010	0.10		●	0.12-3.00	0.01-0.15
SCIL 6F-BL010	0.10		●	0.12-3.00	0.01-0.15
SCIR 6B-BR010	0.10		●	0.12-3.00	0.01-0.15
SCIR 6F-BR010	0.10		●	0.12-3.00	0.01-0.15

• For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: SCHR/L-B/F (B99).

SCIR/L-B/F-ER/EL

Back Turning Inserts for Short Chipping Materials



Left-hand shown

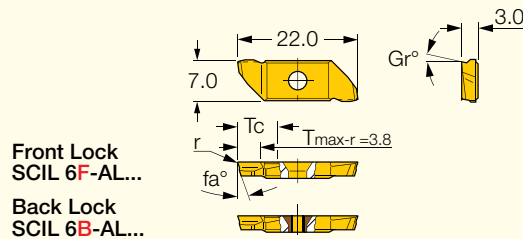
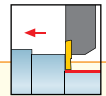
Designation	Dimensions		IC1008	Recommended Machining Data	
	r			a_p (mm)	f (mm/rev)
SCIR/L 6B-EL000	0.00		●	0.05-2.50	0.01-0.15
SCIL 6F-EL000	0.00		●	0.05-2.50	0.01-0.15
SCIR 6B-ER000	0.00		●	0.05-2.50	0.01-0.15
SCIR 6F-ER000	0.00		●	0.05-2.50	0.01-0.15

• For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: SCHR/L-B/F (B99).

SCIR/L-B/F-AR/AL

Turning Inserts with a Frontal Relief Angle



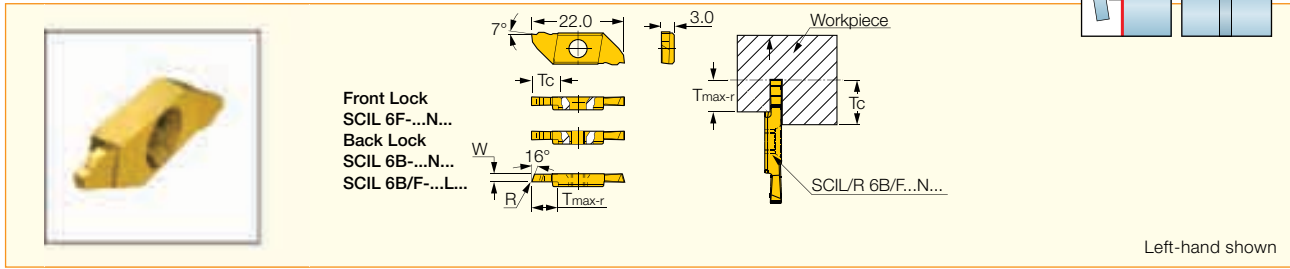
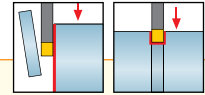
Left-hand shown

Designation	Dimensions				IC1008	Recommended Machining Data	
	r	f_a°	G_r°	$T_c^{(1)}$		a_p (mm)	f (mm/rev)
SCIL 6B-AL000	0.00	8.0	16	8.0	●	0.05-3.80	0.01-0.15
SCIL 6F-AL000	0.00	8.0	16	8.0	●	0.05-3.80	0.01-0.15
SCIR 6B-AR000	0.00	8.0	16	8.0	●	0.05-3.80	0.01-0.15
SCIR 6F-AR000	0.00	8.0	16	8.0	●	0.05-3.80	0.01-0.15
SCIL 6B-AL010	0.10	12.0	8	8.0	●	0.12-3.80	0.01-0.15
SCIL 6F-AL010	0.10	12.0	8	8.0	●	0.12-3.80	0.01-0.15
SCIR 6B-AR010	0.10	12.0	8	8.0	●	0.12-3.80	0.01-0.15
SCIR 6F-AR010	0.10	12.0	8	8.0	●	0.12-3.80	0.01-0.15

• For cutting speed recommendations and user guide, see pages B132-145.

⁽¹⁾ T_c - clearance for face turning for D_{max} 16 mm

For tools, see pages: SCHR/L-B/F (B99).

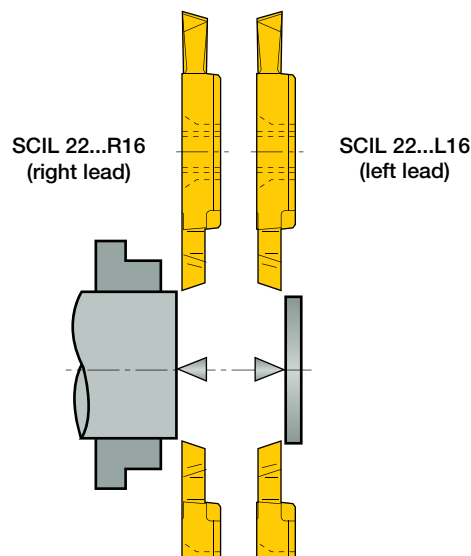


Designation	Dimensions				IC1008	Recommended Machining Data
	W±0.02	R	T _{max-r}	T _c (¹⁾)		f groove (mm/rev)
SCIR/L 6B-050N000	0.50	0.00	1.80	1.8	●	0.02-0.04
SCIR/L 6F-050N000	0.50	0.00	1.80	1.8	●	0.02-0.04
SCIR/L 6B-100N000	1.00	0.00	4.00	4.0	●	0.03-0.05
SCIR/L 6F-100N000	1.00	0.00	4.00	4.0	●	0.03-0.05
SCIR/L 6B-150N000	1.50	0.00	6.00	8.0	●	0.03-0.07
SCIR/L 6F-150N000	1.50	0.00	6.00	8.0	●	0.03-0.07
SCIR/L 6B-200N010	2.00	0.10	8.00	8.0	●	0.03-0.09
SCIR/L 6F-200N010	2.00	0.10	8.00	8.0	●	0.03-0.09
SCIL 6B-100L16	1.00	0.00	4.00	4.0	●	0.02-0.04
SCIL 6F-100L16	1.00	0.00	4.00	4.0	●	0.02-0.04
SCIR 6B-100R16	1.00	0.00	4.00	4.0	●	0.02-0.04
SCIR 6F-100R16	1.00	0.00	4.00	4.0	●	0.02-0.04
SCIL 6B-150R/L16	1.50	0.00	6.00	8.0	●	0.03-0.06
SCIL 6F-150R/L16	1.50	0.00	6.00	8.0	●	0.03-0.06
SCIR 6B-150R/L16	1.50	0.00	6.00	8.0	●	0.03-0.06
SCIR 6F-150R/L16	1.50	0.00	6.00	8.0	●	0.03-0.06
SCIL 6B-200L16	2.00	0.00	8.00	8.0	●	0.03-0.07
SCIL 6F-200L16	2.00	0.00	8.00	8.0	●	0.03-0.07
SCIR 6B-200R16	2.00	0.00	8.00	8.0	●	0.03-0.07
SCIR 6F-200R16	2.00	0.00	8.00	8.0	●	0.03-0.07

• For cutting speed recommendations and user guide, see pages B132-145.

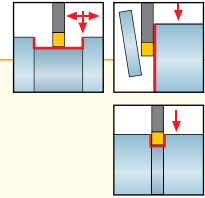
(¹⁾ T_c- clearance for face turning for D_{max} 16 mm

For tools, see pages: SCHR/L-B/F (B99).

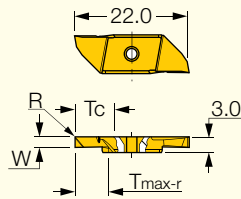


SCIR/L-B-NP

Groove-Turn and Parting Inserts



Back Lock SCIL 6B-...NP...



Designation	Dimensions				IC1008	Recommended Machining Data		
	W±0.02	R±0.02	T _{max-r}	T _c ⁽¹⁾		a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
SCIR/L 6B-150NP005	1.50	0.04	6.00	8.0	●	0.05-1.80	0.02-0.11	0.02-0.07
SCIR/L 6B-200NP005	2.00	0.04	6.00	8.0	●	0.05-2.50	0.03-0.15	0.03-0.09
SCIR/L 6B-250NP005	2.50	0.04	6.00	8.0	●	0.05-3.10	0.03-0.19	0.03-0.11

• For cutting speed recommendations and user guide, see pages B132-145.

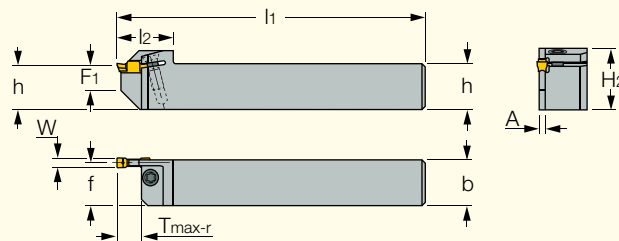
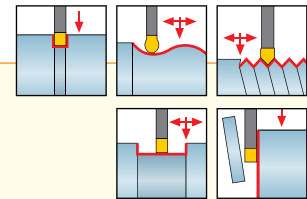
⁽¹⁾ T_c- clearance for face turning, 16 max.

For tools, see pages: SCHR/L-B/F (B99).

CUT-GRIP

GEHSR/L

External Machining Holders, for Swiss-Type Automatics



Left-hand shown

Designation	h	W _{min}	W _{max}	T _{max-r}	b	l ₁	f	A	l ₂	F ₁	H ₂
GEHSR/L 8-1 ⁽¹⁾	8.0	1.40	1.90	2.00	8.0	120.00	7.1	1.00	17.0	7.0	12.0
GEHSR/L 8-2 ⁽¹⁾	8.0	2.20	3.20	6.80	8.0	120.00	7.1	1.80	17.0	7.0	12.0
GEHSR/L 10-2	10.0	2.20	3.20	6.80	10.0	120.00	9.1	1.80	17.0	7.0	14.0
GEHSR/L 12-2	12.0	2.20	3.20	6.80	12.0	120.00	11.1	1.80	17.0	8.0	16.0
GEHSR/L 16-2	16.0	2.20	3.20	6.80	16.0	120.00	15.1	1.80	20.0	8.0	20.0
GEHSR/L 20-2	20.0	2.20	3.20	6.80	20.0	120.00	19.1	1.80	20.0	-	24.0
GEHSR/L 25-2	25.0	2.20	3.20	6.80	25.0	120.00	24.1	1.80	20.0	-	29.0

• For user guide, see pages B132-145.

⁽¹⁾ On request

For inserts, see pages: GEMI (B77) • GEPI (B78) • GEPI (Full Radius) (B78) • GEPI (W<M) (B77) • For GEPI threading inserts, refer to ISCAR TURNING & THREADING TOOLS catalog.

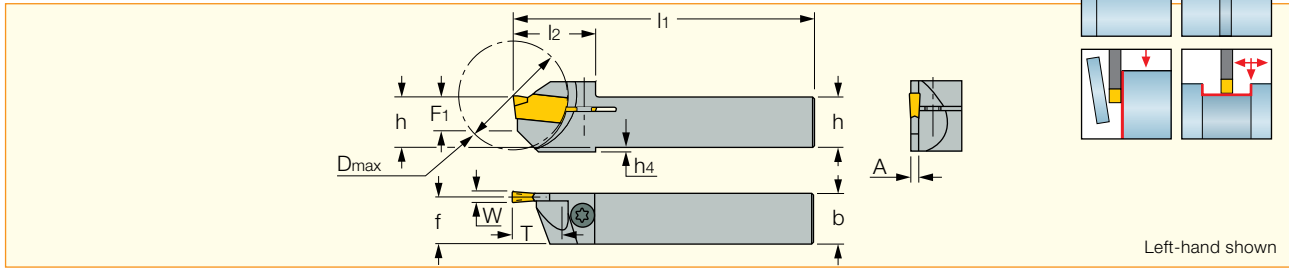
Spare Parts



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

PHSR/L

External Machining Holders for Swiss 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	9.1	7.0	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	7.0	24.1	-	1.90

• T=Max depth capacity. see chart below. • For user guide, see pages B132-145.

⁽¹⁾ Limited by part diameter

For inserts, see pages: GDMW 2.4 (B53).

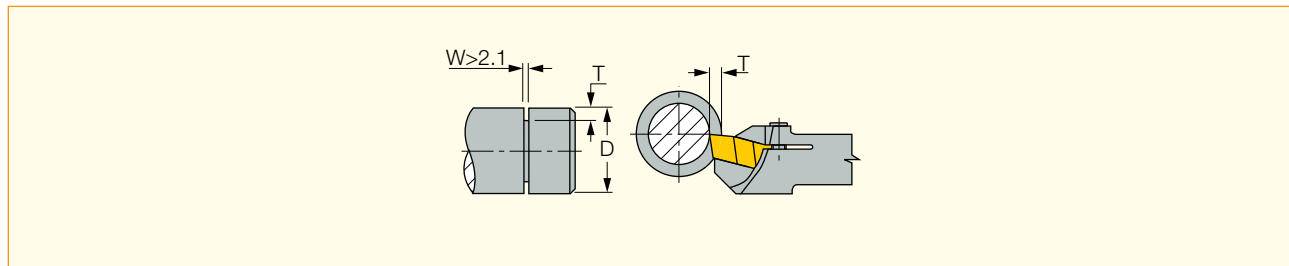
Spare Parts



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

Grooving Depth

Grooving Depth Tmax per Diameter for Width > 2.1 mm

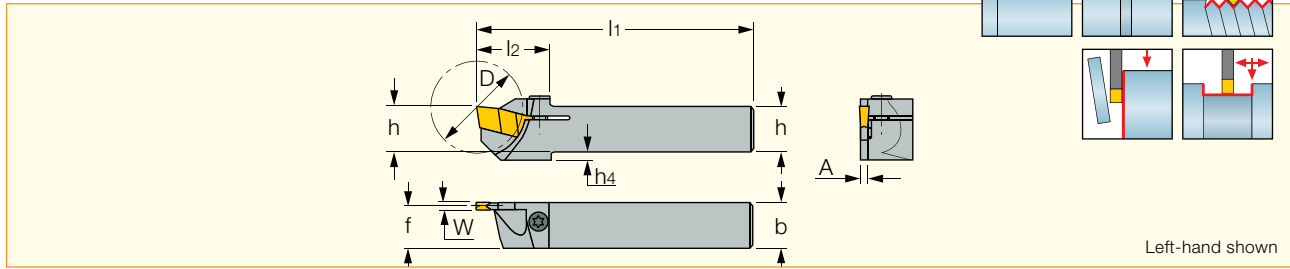


Tmax	5.0	4.5	4.0	3.5	3.0	2.5	2.3	2.0	1.7
D	10.5	10.8	11.5	12.6	14.5	17	20	25	34

Tmax is also limited by insert.

GHSR/L

External Machining Holders for Swiss 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

• For user guide, see pages B132-145.

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

For inserts, see pages: GIG (B40) • GIM-J (D49) • GIM-J-RA/LA (D49) • GIMY (B30) • GIMY (Full Radius) (B32) • GIMY-F (B34) • GIP (B41) • GIP (Full Radius W<M) (B40) • GIP (Full Radius) (B42) • GIP-E (B36) • GIP-E (Full Radius) (B38) • GIPA (Full Radius W=3-6) (B47) • GIPA (W=3-6) (B46) • GIPM-A46 / GIP-1250 (B104) • GIPY (B46) • GITM (B45) • GITM (Full Radius) (B45) • TIP threading inserts, see ISCAR full ISCAR TURNING & THREADING TOOLS catalog.

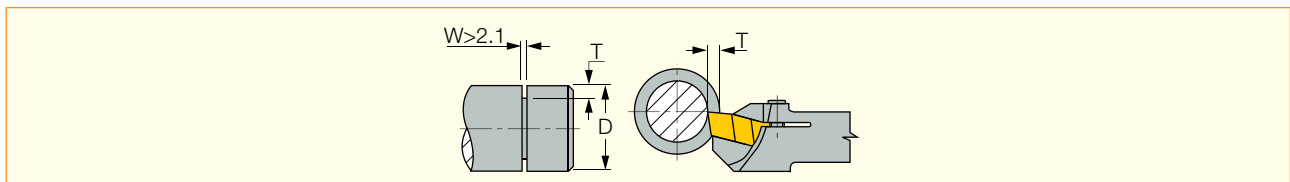
Spare Parts



Designation	Screw	Key
GHSR/L 10-2	SR 16-236 P	T-15/3
GHSR/L 12-2	SR 16-236 P	T-15/3
GHSR/L 14-2	SR 16-236 P	T-15/3
GHSR/L 16-2	SR 16-212	T-20/3

Grooving Depth

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

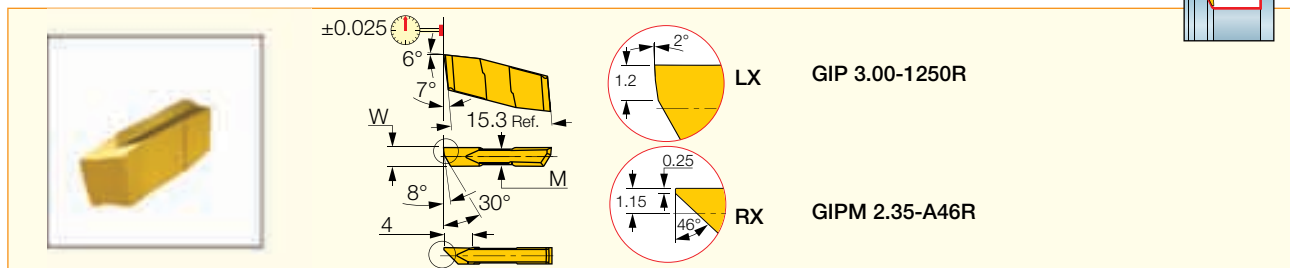


T _{max}	5.0	4.5	4.0	3.5	3.0	2.5	2.3	2.0	1.7
D	10.5	10.8	11.5	12.6	14.5	17	20	25	34

T_{max} is also limited by insert.

GIPM-A46 / GIP-1250

Precision Back Turning Inserts, for External Machining on Swiss-Type Automatics



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

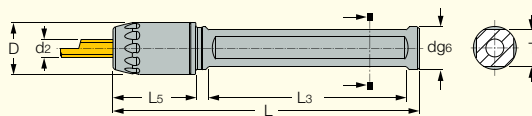
• Toolholder seat needs to be modified according to insert profile to ensure clearance. • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: GHGR/L (B21) • GHSR/L (B104).

PICCOACE PICCO (Dmin 0.6 mm)

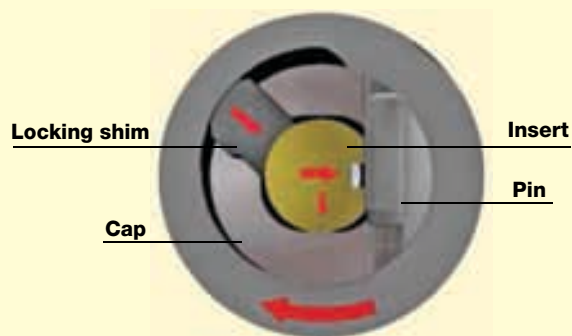
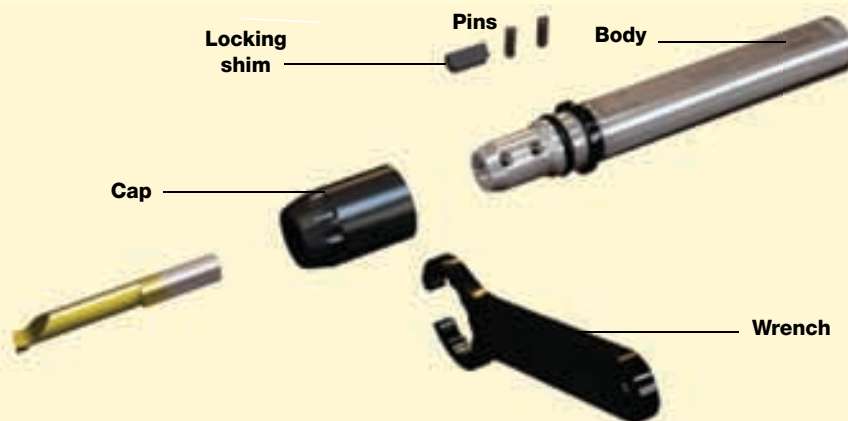
PICCO ACE

Collet Chuck Holders for PICCOCUT Inserts



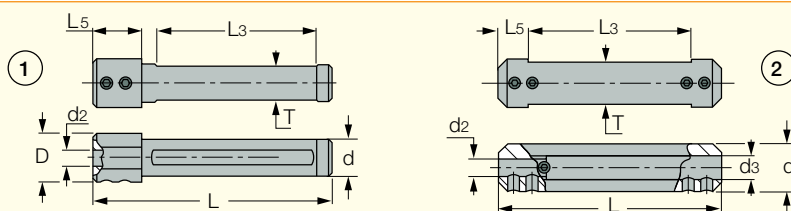
Designation	Dimensions								Pin	Wrench	Cap Ace
	d	d2	D	L	L5	L3	T				
PICCO ACE 12-4	12.00	4.00	14.50	85.00	23.00	53.00	10.3		WRENCH ACE 4-5	CAP ACE 4	
PICCO ACE 12-5	12.00	5.00	14.50	85.00	23.00	53.00	10.3		WRENCH ACE 4-5	CAP ACE 5	
PICCO ACE 16-4	16.00	4.00	14.50	85.00	21.50	53.50	14.0		WRENCH ACE 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	ZAD 3X8 DIN 6325 m6	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 left- and right-hand mini-bars, and ISO bars.



PICCO/ MG PCO (Holder)

Holders for PICCO Inserts



Designation	d	d ₂	d ₃	L	L ₅	L ₃	T	h
PICCO 12-4-5	12.00	4.00	5.00	75.00	10.00	55.00	10.3	18.0
PICCO 16-4-5	16.00	4.00	5.00	75.00	10.00	55.00	14.0	18.0
PICCO 20-4-5	20.00	4.00	5.00	90.00	10.00	70.00	18.0	18.0
PICCO 22-4-5 ⁽¹⁾	22.00	4.00	5.00	90.00	10.00	70.00	20.0	18.0
PICCO 16-6-7	16.00	6.00	7.00	75.00	10.00	55.00	14.0	18.0
PICCO 20-6-7	20.00	6.00	7.00	90.00	10.00	70.00	18.0	18.0
PICCO 22-6-7 ⁽¹⁾	22.00	6.00	7.00	90.00	10.00	70.00	20.0	18.0
MG PCO-12-6	12.00	6.00	-	75.00	15.00	53.00	11.0	18.0
MG PCO-16-6-8	16.00	6.00	8.00	75.00	10.00	55.00	14.0	18.0
MG PCO-16-9	16.00	9.00	-	75.00	16.00	75.00	18.0	18.0
MG PCO-20-6-8	20.00	6.00	8.00	90.00	10.00	70.00	18.0	18.0
MG PCO-22-6-8 ⁽¹⁾	22.00	6.00	8.00	90.00	10.00	70.00	20.0	18.0
MG PCO-25-6-8	25.00	6.00	8.00	90.00	10.00	70.00	23.0	18.0

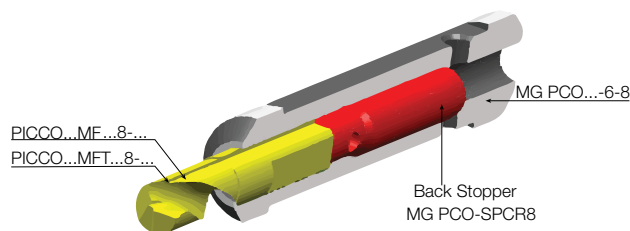
• Holders are suitable for left- and right-hand mini-bars, and ISO bars.

⁽¹⁾ Tools for Swiss-type CNC.

Spare Parts

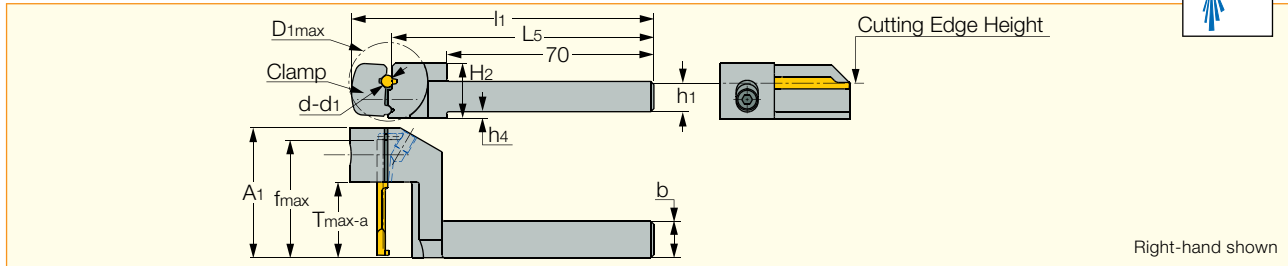


Designation	Screw	Key	Seal
PICCO 12-4-5		HW 2.5	
PICCO 16-4-5	SR M5X6-PF	HW 2.5	
PICCO 20-4-5	SR M5X6-PF	HW 2.5	
PICCO 22-4-5	SR M5X6-PF	HW 2.5	
PICCO 16-6-7	SR M5X6-PF	HW 2.5	
PICCO 20-6-7	SR M5X6-PF	HW 2.5	
PICCO 22-6-7	SR M5X6-PF	HW 2.5	
MG PCO-12-6	SR M5X6-PF	HW 2.5	
MG PCO-16-6-8	SR M5X6-PF	HW 2.5	
MG PCO-16-9	SR M5X6-PF	HW 2.5	PL 16
MG PCO-20-6-8	SR M5X6-PF	HW 2.5	
MG PCO-22-6-8	SR M5X6-PF	HW 2.5	
MG PCO-25-6-8	SR M5X6-PF	HW 2.5	



GHPCOR/L

Perpendicular Square-Shank Tools for Use on the Cross Slide Units of Swiss Type 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
GHPCOL 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 08-16-4-5	8.0	8.0	102.00	88.00	4.0	15.0	34.00	26.0	16.00	30.0	4.00	5.00
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
GHPCOL 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
GHPCOL 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 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 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
GHPCOL 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
GHPCOL 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 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
GHPCOL 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
GHPCOL 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
GHPCOL 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
GHPCOR 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 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 16-30-7-8	16.0	16.0	116.00	98.00	-	22.0	49.00	36.0	30.00	45.0	7.00	8.00

• PICCO CUT 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



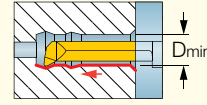
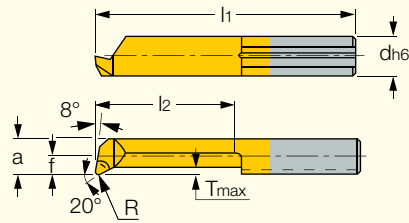
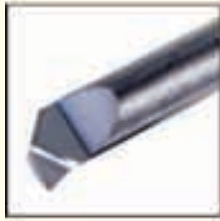
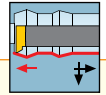
Spare Parts



Designation	Side Clamp	Screw	Key	Pipe Fitting
GHPCOL 08-16-4-5	HED 08	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOL 08-25-4-5	HED 08	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOR 08-16-4-5	HED 08	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOR 08-28-4-5	HED 08	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOL 10-16-4-5	HED 10	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOL 10-25-4-5	HED 10	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOR 10-16-4-5	HED 10	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOR 10-25-4-5	HED 10	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOL 12-16-4-6	HED 12	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOL 12-25-4-6	HED 12	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOR 12-16-4-6	HED 12	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOR 12-25-4-6	HED 12	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOL 16-16-4-6	HED 16-4-6	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOL 16-25-4-6	HED 16-4-6	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOL 16-30-7-8	HED 16-7-8	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOR 16-16-4-6	HED 16-4-6	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOR 16-25-4-6	HED 16-4-6	SR M4X14DIN912	HW 3.0	KQ2L06-M5
GHPCOR 16-30-7-8	HED 16-7-8	SR M4X14DIN912	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	●	●

• Specify right- or left-hand bars • For cutting speed recommendations, see pages B134-135.

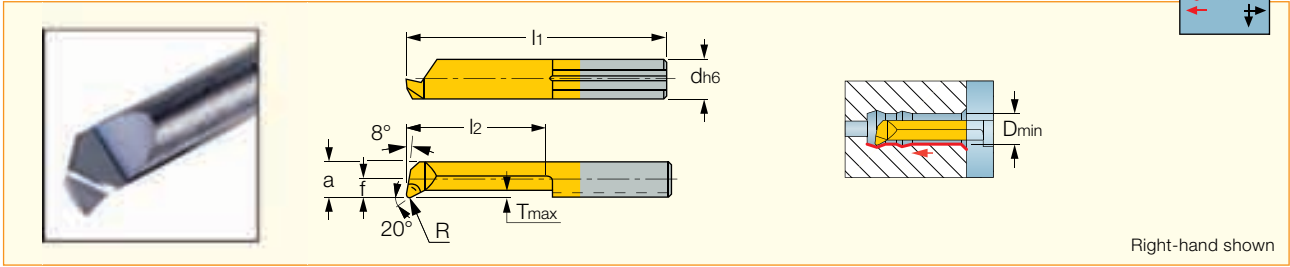
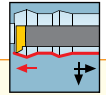
⁽¹⁾ Maximum D.O.C.=0.01-0.03 mm, maximum feed=0.01 mm/rev.

For holders, see pages B105-107.

PICCO CUT

PICCO R/L 050, 053, 055 (continued)

Inserts for Internal Turning and Chamfering



Designation	Dimensions								Tough ↔ Hard	
	d	f	a	l ₁	l ₂	R ^{±0.05}	T _{max}	D _{min}	IC228	IC908
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 • For cutting speed recommendations, see pages B134-135 .

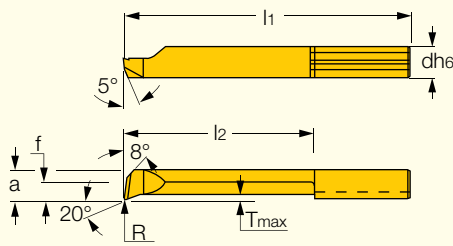
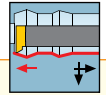
(1) Maximum D.O.C.=0.01-0.03 mm, maximum feed=0.01 mm/rev.

For holders, see pages B105-107.



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 • For cutting speed recommendations, see pages B134-135.

⁽¹⁾ Upon request.

For holders, see pages B105-107.

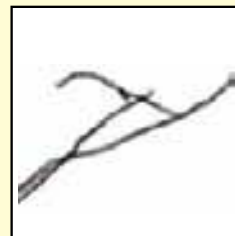
Stainless Steel 316L

f= 0.03 mm/rev



**PICCO R 050.6-35C
with Chipbreaker**

f= 0.05 mm/rev



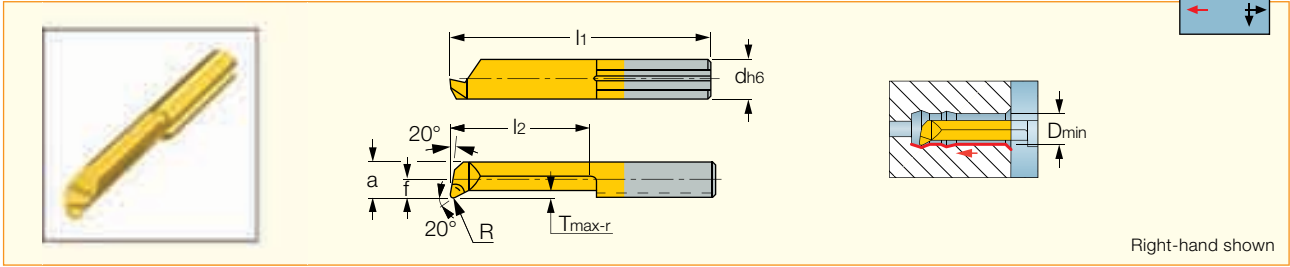
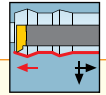
**PICCO R 050.6-35
Standard**



PICCO CUT

PICCO R 050.20

Inserts for Internal Turning and Chamfering Next to the Bottom of Blind Holes

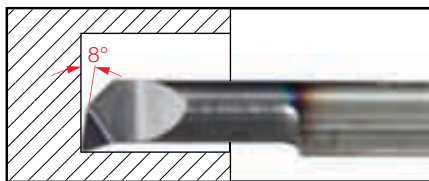


Right-hand shown

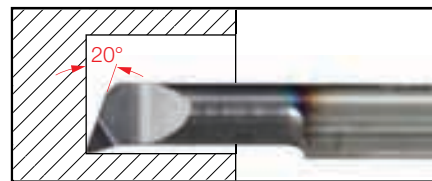
Designation	Dimensions								IC908
	d	f	a	l ₁	l ₂	R±0.05	T _{max-r}	D _{min}	
PICCO R 050.20.2-10	4.00	-	1.70	24.00	10.0	0.05	0.10	2.00	●
PICCO R 050.20.3-10	4.00	0.6	2.60	24.00	10.0	0.10	0.20	2.80	●
PICCO R 050.20.4-16	4.00	1.5	3.50	30.00	16.0	0.10	0.30	4.00	●
PICCO R 050.20.5-20	5.00	1.4	4.40	25.00	20.0	0.15	0.50	5.00	●

• Specify right- or left-hand bars • For cutting speed recommendations, see pages B134-135.
For holders, see pages B105-107.

PICCO 050...

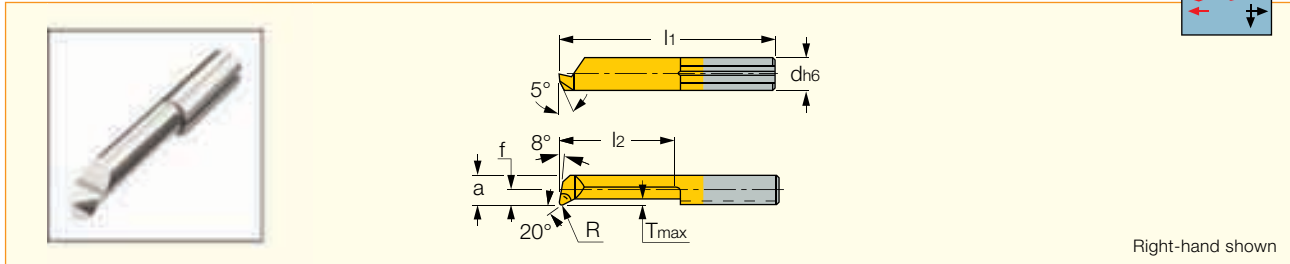
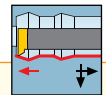


PICCO 050.20...



PICCO R/L 050 (CBN)

CBN Tipped Inserts for Internal Turning Profiling and Chamfering of Hard Steel



Right-hand shown

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	0.10	●
PICCO R 050.4-10B	4.00	1.5	3.50	25.50	10.0	0.30	4.00	0.10	●
PICCO R 050.5-15B	5.00	1.9	4.40	31.50	15.0	0.50	5.00	0.15	●
PICCO R 050.6-15B	6.00	2.3	5.30	31.50	15.0	0.50	6.00	0.15	●
PICCO R 050.7-20B	7.00	2.8	6.30	36.50	20.0	0.60	6.80	0.15	●

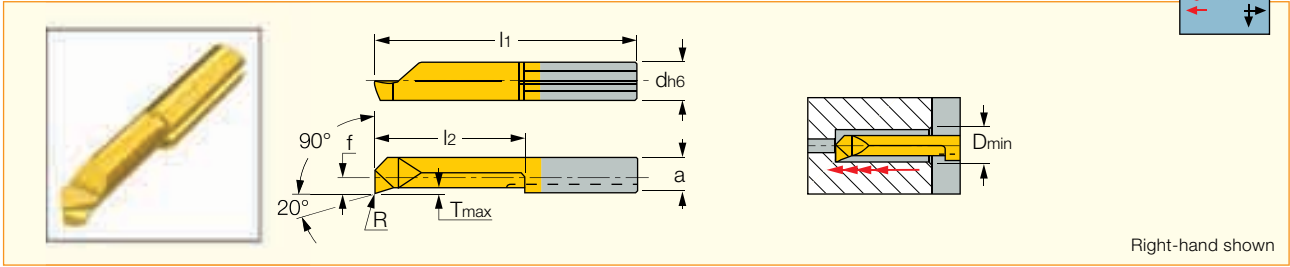
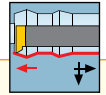
• It is not recommended to use coolant when machining with CBN tipped tools • Available on request only • For cutting speed recommendations, see pages B134-135.

For holders, see pages B105-107.

PICCO CUT

PICCO R/L 090

Inserts for Internal Turning and Profiling



Right-hand shown

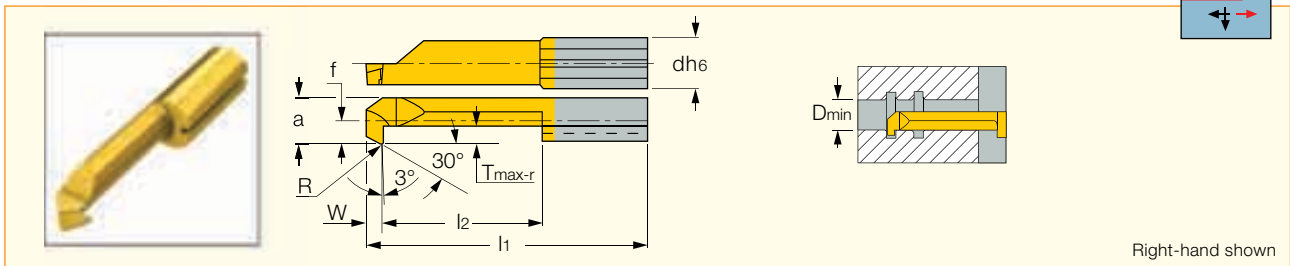
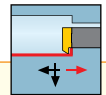
Designation	Dimensions								IC228
	d	f	a	l ₁	l ₂	R ^{±0.05}	T _{max}	D _{min}	
PICCO R/L 090.3-10	4.00	0.6	2.60	24.00	9.0	0.10	0.20	2.80	●
PICCO R/L 090.3-16	4.00	0.6	2.60	30.00	15.0	0.10	0.20	2.80	●
PICCO R/L 090.4-10	4.00	1.5	3.50	24.00	9.0	0.10	0.30	4.00	●
PICCO R/L 090.4-16	4.00	1.5	3.50	30.00	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 • For cutting speed recommendations, see pages B134-135

For holders, see pages B105-107.

PICCO-080

Inserts for Internal Back Turning



Right-hand shown

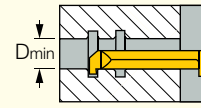
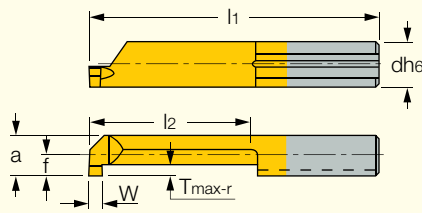
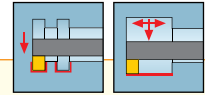
Designation	Dimensions									IC228
	d	f	a	W	l ₁	l ₂	R ^{±0.05}	T _{max-r}	D _{min}	
PICCO R/L 080.0003-15	4.00	0.6	2.60	1.50	29.00	14.0	0.10	0.50	3.00	●
PICCO R/L 080.0003-20	4.00	0.6	2.60	1.50	34.00	19.0	0.10	0.50	3.00	●
PICCO R/L 080.0004-15	4.00	1.5	3.50	1.50	29.00	14.0	0.15	0.80	4.00	●
PICCO R/L 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 • For cutting speed recommendations, see pages B134-135.

For holders, see pages B105-107.

PICCO R/L 002-007

Inserts for Internal Grooving and Turning



Right-hand shown

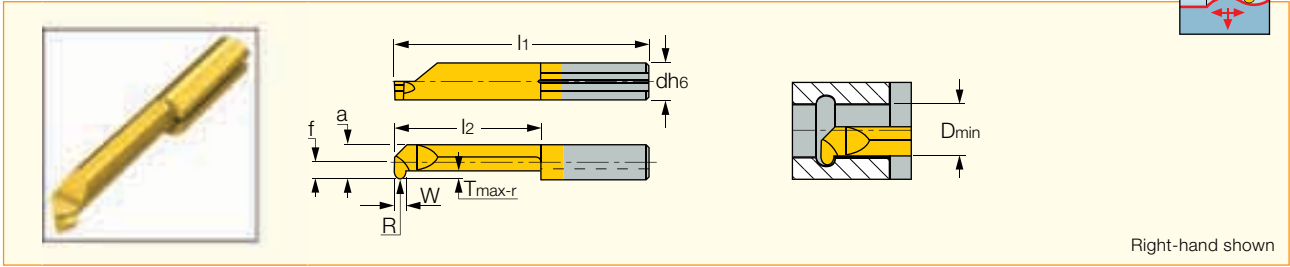
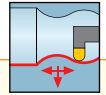
Designation	Dimensions								Tough ↔ Hard	
	d	W±0.05	f	a	l1	l2	Tmax-r	Dmin	IC228	IC908
PICCO R 002.0050-5	4.00	0.50	0.2	1.80	19.00	5.0	0.40	2.00		●
PICCO R 002.0050-10	4.00	0.50	0.2	1.80	24.00	10.0	0.40	2.00		●
PICCO R/L 002.0050-15	4.00	0.50	0.2	1.80	29.00	15.0	0.40	2.00		●
PICCO R 003.0070-5	4.00	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 • For cutting speed recommendations, see pages B134-135.

For holders, see pages B105-107.

PICCO R/L 004-007 (Radius)

Full Radius Inserts, for Internal Profiling



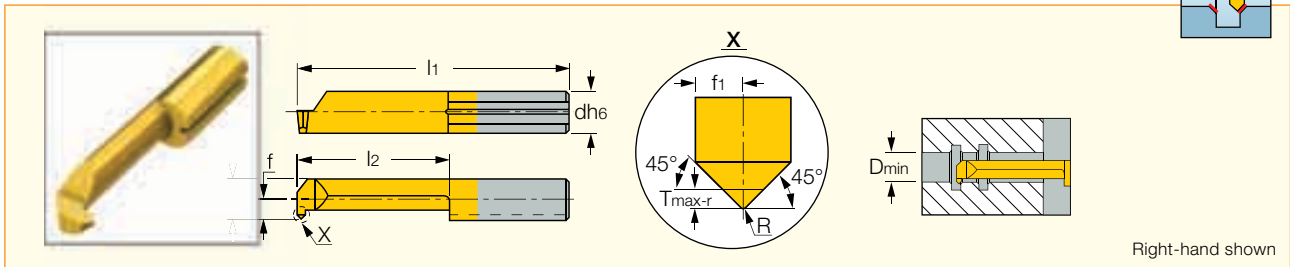
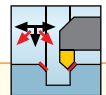
Designation	Dimensions									IC228
	d	W ± 0.05	f	a	R	l ₁	l ₂	T _{max-r}	D _{min}	
PICCO R/L 004.0.50-16	4.00	1.00	1.5	3.50	0.50	30.00	15.0	0.80	4.00	●
PICCO R/L 005.0.50-20	5.00	1.00	1.9	4.40	0.50	35.00	19.0	1.00	5.00	●
PICCO R/L 005.0.75-20	5.00	1.50	1.9	4.40	0.75	35.00	19.0	1.00	5.00	●
PICCO R/L 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 • For cutting speed recommendations, see pages B134-135.

For holders, see pages B105-107.

PICCO R/L 060

Inserts for Internal Turning and 45° Chamfering



Designation	Dimensions									Tough \leftrightarrow 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		●

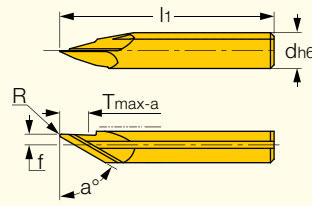
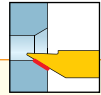
• Specify right- or left-hand bars • For cutting speed recommendations, see pages B134-135.

For holders, see pages B105-107.

PICCO CUT

PICCO R/L 520

Inserts for Internal Chamfering



Right-hand shown

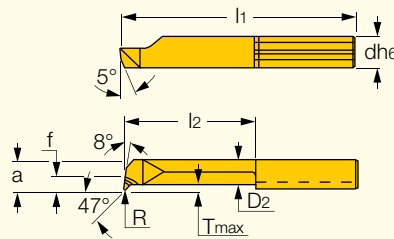
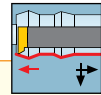
Dimensions								IC908
Designation	d	f	a°	l ₁	R±0.05	T _{max-a}	D _{min}	
PICCO R/L 520.0045-15	5.00	1.5	45	30.00	0.20	3.50	1.00	●
PICCO R/L 520.0060-15	5.00	1.5	60	30.00	0.20	4.00	1.00	●

• Left hand inserts on request • For cutting speed recommendations, see pages B134-135.

For holders, see pages B105-107.

PICCO R/L 047

Inserts for Internal Deep Profiling



Right-hand shown

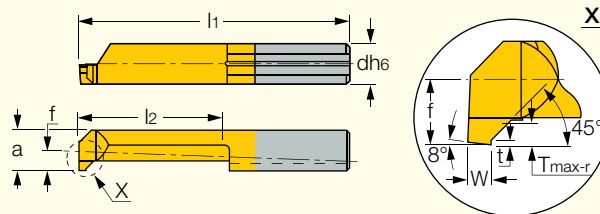
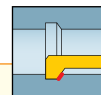
Dimensions										IC908
Designation	d	f	a	l ₁	l ₂	D ₂	T _{max}	D _{min}	R±0.05	
PICCO R/L 047.4-20	4.00	1.5	3.50	34.00	20.0	3.00	0.30	4.00	0.15	●
PICCO R/L 047.5-25	5.00	1.9	4.40	40.00	25.0	3.80	0.50	5.00	0.15	●
PICCO R/L 047.6-30	6.00	2.3	5.30	45.00	30.0	4.50	0.50	6.00	0.15	●

• Left hand inserts on request • For cutting speed recommendations, see pages B134-135.

For holders, see pages B105-107.

PICCO R/L 070

Back Chamfering Inserts for Pre-Parting Operation



Right-hand shown

Dimensions										IC228
Designation	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

For holders, see pages B105-107.

PICCO CUT

KIT PICCO SET

Contains 2 Toolholders and a Set of Solid Carbide Miniature Turning and Grooving Boring Bars

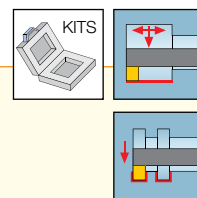


Fig. A

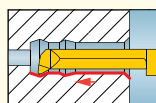


Fig. B

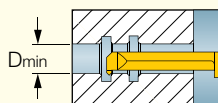
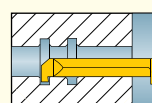


Fig. C

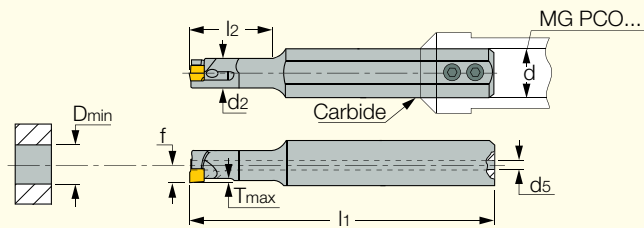
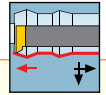


Designation	Min Bore Dia.	L1	t max	W	Pcs.	Fig.No.	Description
PICCO 16-4-5					1x		Holder
PICCO 16-6-7					1x		Holder
PICCO R 050.3-16	3.0	15	—	—	1x	A	Mini carbide bar
PICCO R 050.4-16	4.0	15	—	—	1x	A	Mini carbide bar
PICCO R 050.5-20	5.0	19	—	—	1x	A	Mini carbide bar
PICCO R 050.6-22	6.0	21	—	—	1x	A	Mini carbide bar
PICCO R 060.5-20	5.0	19	—	—	1x	B	Mini carbide bar
PICCO R 004.0100-16	4.0	15	0.8	1.0	1x	C	Mini carbide bar
PICCO R 005.0150-20	5.0	19	1.0	1.5	1x	C	Mini carbide bar
PICCO R 005.0200-20	5.0	19	1.0	2.0	1x	C	Mini carbide bar
PICCO R 006.0150-22	6.0	21	1.8	1.5	1x	C	Mini carbide bar
PICCO R 006.0200-22	6.0	21	1.8	2.0	1x	C	Mini carbide bar



MGUHR

Solid Carbide Bars, for Internal Turning and Threading at 4 mm Minimum Bore Diameter



Right-hand shown

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 (B117) • UMGR-A55 () • UMGR-A60 ().

For holders, see pages B105-107.

Mounting Operation

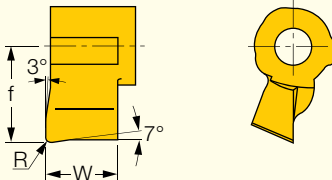
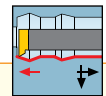


Dismounting Operation



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	●

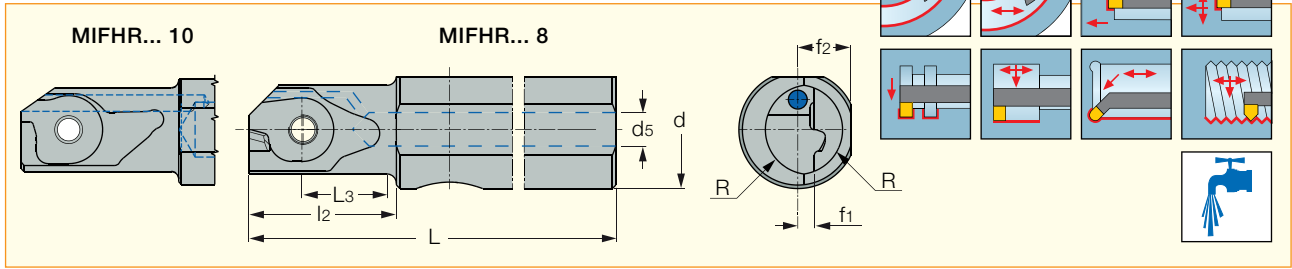
Spare Parts



Designation	Magazine
UMGR	UMGK MAGAZINE

MIFHR

Bars for Face and Internal Grooving Undercutting and Threading Inserts



Designation	d	d ₅	f ₁	f ₂	L	L ₃	l ₂	R	Inserts
MIFHR 8SC-8-8-SRK ⁽¹⁾	8.00	1.2	1.4	3.70	74.30	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 (E15) • MIGR 8 (B119) • MIUR 8 (B119).

Spare Parts

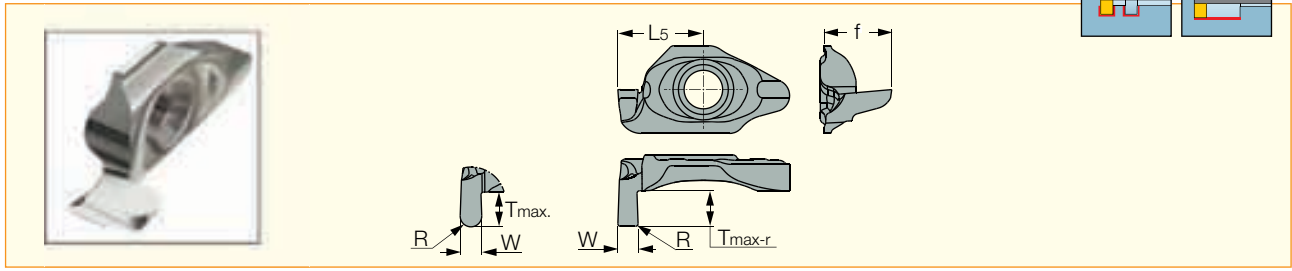
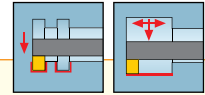


Designation	Screw	Key
MIFHR 8SC-8-8-SRK	SR 14-297	T-8/5
MIFHR 10C-8	SR 14-297	T-8/5
MIFHR 12C-8	SR 14-297	T-8/5
MIFHR 12C-10	SR 34-506	T-9/5
MIFHR 16C-10	SR 34-506	T-9/5



MIGR 8

Internal Shallow Grooving Inserts



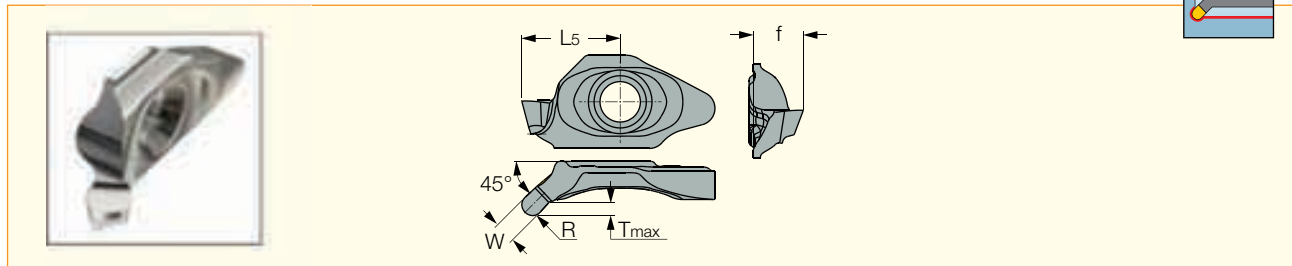
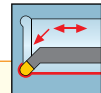
Designation	Dimensions						IC908	Recommended Machining Data		
	W ± 0.02	R ± 0.02	D _{min}	T _{max-r}	L ₅	f		a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
MIGR 8-0.50-0.00	0.50	-	8.50	1.40	6.30	4.0	●	0.05-0.50	0.03-0.10	0.01-0.03
MIGR 8-1.00-0.05	1.00	0.05	8.50	1.40	6.80	4.0	●	0.05-0.50	0.03-0.10	0.01-0.03
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 cutting speed recommendations, see pages B134-135.

For tools, see pages: MIFHR (B118).

MIUR 8

45° Full Radius Internal Undercutting Inserts



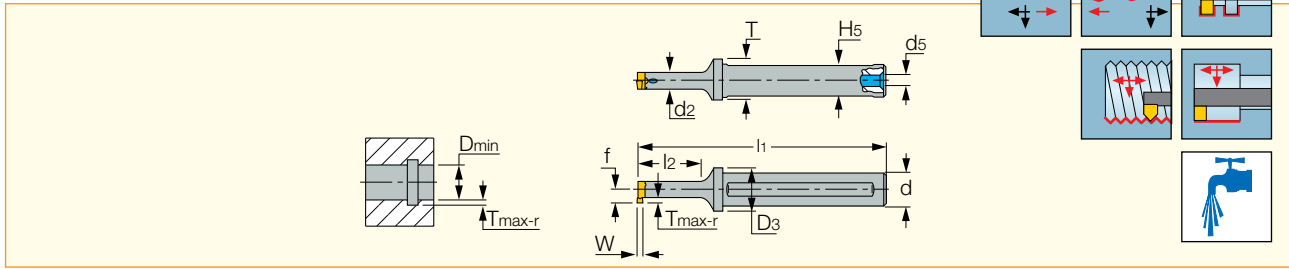
Designation	Dimensions						IC908	Recommended Machining Data		
	W ± 0.02	R ± 0.02	D _{min}	T _{max-r}	L ₅	f		a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
MIUR 8-1.00-0.50	1.00	0.50	8.00	1.10	6.70	3.6	●	0.03-0.50	0.03-0.10	0.01-0.03
MIUR 8-1.5-0.75	1.50	0.75	8.10	1.20	6.70	3.6	●	0.03-0.50	0.03-0.10	0.01-0.03
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 cutting speed recommendations, see pages B134-135.

For tools, see pages: MIFHR (B118).

MG

Internal Grooving, Turning and Threading Bars



Designation	d	D _{min} ⁽¹⁾	T _{max-r} ⁽²⁾	d ₂	l ₁	l ₂	f ⁽²⁾	H ₅	W _{min}	W _{max}	D ₃	d ₅	Inserts
MG 12-08C16	12.00	8.00	1.50	6.00	92.00	16.0	4.8	11.0	0.50	3.00	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	18.00	6.0	GIQR/L 8
MG 12-11C25	12.00	11.00	2.30	8.00	92.00	25.0	6.7	11.0	0.50	3.00	18.00	6.0	GIQR/L 11

• The same tool applies on right and left machining

⁽¹⁾ Check according to specific insert data ⁽²⁾ Check according to specific insert data

For inserts, see pages: GIQR/L 8 (B121) • GIQR/L-8-R (B121) • GIQR/L 11 (B122) • GIQR/L-11-R (B122) • GIQR/L 11-15 (B123) • GIQR/L 11-15-R (B123) • GIQR/L-A18 (B124) • GIQR/L-B18 (B124).

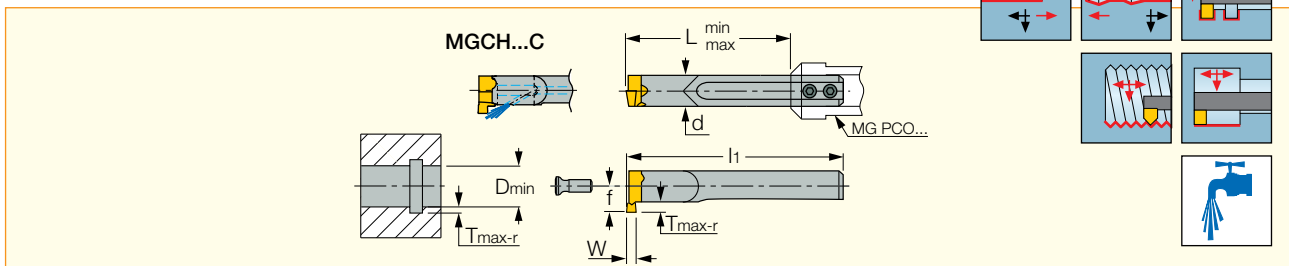
Spare Parts



Designation	Screw	Hex Flag 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} ⁽²⁾	d	l ₁	L _{min}	L _{max}	f	W _{min}	W _{max}	Coolant	Inserts
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	- ⁽⁴⁾	- ⁽⁵⁾	8.00	75.00	20.0	56.0	- ⁽³⁾	0.50	5.00	N	GIQR/L 11/11-15
MGCH 08C	- ⁽⁴⁾	- ⁽⁵⁾	8.00	75.00	20.0	56.0	- ⁽³⁾	0.50	5.00	Y	GIQR/L 11/11-15
MGCH 08-L125	- ⁽⁴⁾	- ⁽⁵⁾	8.00	125.00	70.0	105.0	- ⁽³⁾	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⁾ Check according to specific insert data ⁽³⁾ T_{max-r}=2.30 for GIQR 11, T_{max-r}=6.3 for GIQR 11-15 ⁽⁴⁾ f=6.70 mm for GIQR 11, f=10.6 mm for GIQR 11-15 ⁽⁵⁾ D_{min}=11 mm for GIQR 11, D_{min}=15 mm for GIQR 11-15

For inserts, see pages: GIQR/L 8 (B121) • GIQR/L-8-R (B121) • GIQR/L 11 (B122) • GIQR/L-11-R (B122) • GIQR/L 11-15 (B123) • GIQR/L 11-15-R (B123) • GIQR/L-A18 (B124) • GIQR/L-B18 (B124).

For holders, see pages: PICCO/MG PCO (Holder) (B106).

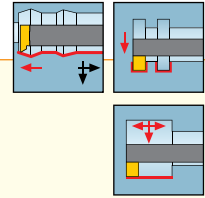
Spare Parts



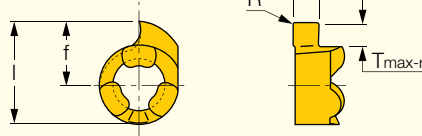
Designation	Screw	Key
MGCH 06	SR 76-1499	T-8/5
MGCH 06C	SR 76-1499	T-8/5
MGCH 06-L100	SR 76-1499	T-8/5
MGCH 08	SR M3.5-08134	T-9/5
MGCH 08C	SR M3.5-08134	T-9/5
MGCH 08-L125	SR M3.5-08134	T-9/5

GIQR/L 8

Precision Ground Single-Ended Internal Grooving and Turning Inserts



Right-hand shown



Left-hand shown

Designation	Dimensions						IC528	Recommended Machining Data		
	W \pm 0.02	R \pm 0.03	T _{max-r}	D _{min}	f	l		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	7.78	●	-	-	0.01-0.03
GIQR/L 8-0.75-0.00 ⁽¹⁾	0.75	0.00	1.20	8.00	4.8	7.78	●	-	-	0.01-0.03
GIQR/L 8-0.85-0.00 ⁽¹⁾	0.85	0.00	1.20	8.00	4.8	7.78	●	-	-	0.01-0.03
GIQR/L 8-0.95-0.00 ⁽¹⁾	0.95	0.00	1.50	8.00	4.8	7.78	●	-	-	0.01-0.03
GIQR/L 8-1.00-0.00 ⁽¹⁾	1.00	0.00	1.50	8.00	4.8	7.78	●	-	-	0.01-0.03
GIQR/L 8-1.04-0.05 ⁽¹⁾	1.04	0.05	1.50	8.00	4.8	7.78	●	-	-	0.01-0.03
GIQR/L 8-1.20-0.05 ⁽¹⁾	1.20	0.05	1.50	8.00	4.8	7.78	●	-	-	0.01-0.03
GIQR/L 8-1.40-0.05 ⁽¹⁾	1.40	0.05	1.50	8.00	4.8	7.78	●	-	-	0.01-0.03
GIQR/L 8-1.47-0.05 ⁽¹⁾	1.47	0.05	1.50	8.00	4.8	7.78	●	-	-	0.01-0.03
GIQR/L 8-1.50-0.05 ⁽¹⁾	1.50	0.05	1.50	8.00	4.8	7.78	●	-	-	0.01-0.03
GIQR/L 8-1.70-0.10	1.70	0.10	1.50	8.00	4.8	7.78	●	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	7.78	●	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	7.78	●	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	7.78	●	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	7.78	●	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	7.78	●	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	7.78	●	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	7.78	●	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	7.78	●	0.24-1.60	0.02-0.05	0.01-0.03

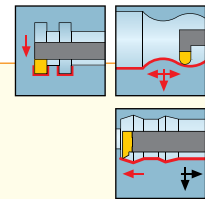
• According to retaining rings standard DIN 471/472. • Can be used for groove milling by circular interpolation. • For cutting speed recommendations, see pages B134-135.

⁽¹⁾ For grooving only

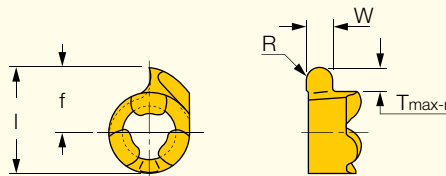
For tools, see pages: MG (B120) • MGCH (B120).

GIQR/L-8-R

Precision Ground Single-Ended Full Radius Inserts, for Internal Grooving and Profiling



Right-hand shown



Left-hand shown

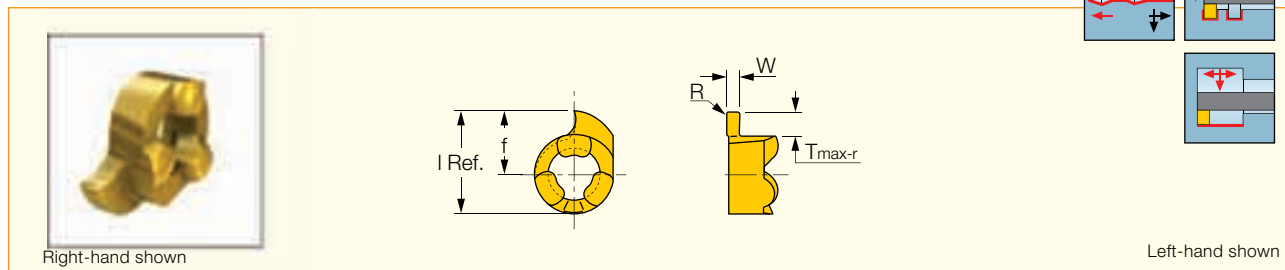
Designation	Dimensions						IC528	Recommended Machining Data		
	W \pm 0.02	R \pm 0.03	T _{max-r}	D _{min}	f	l		a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIQR/L 8-1.20-R060	1.20	0.60	1.50	8.00	4.8	7.78	●	0.30-0.60	0.02-0.05	0.01-0.03
GIQR/L 8-2.00-R100	2.00	1.00	1.50	8.00	4.8	7.78	●	0.50-1.00	0.02-0.05	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 cutting speed recommendations, see pages B134-135.

For tools, see pages: MG (B120) • MGCH (B120).

GIQR/L 11

Precision Ground Single-Ended Internal Grooving and Turning Inserts, for D_{min} 11 mm



Right-hand shown

Left-hand shown

Designation	Dimensions						IC528	Recommended Machining Data		
	W±0.02	R±0.03	T _{max-r}	D _{min}	l	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

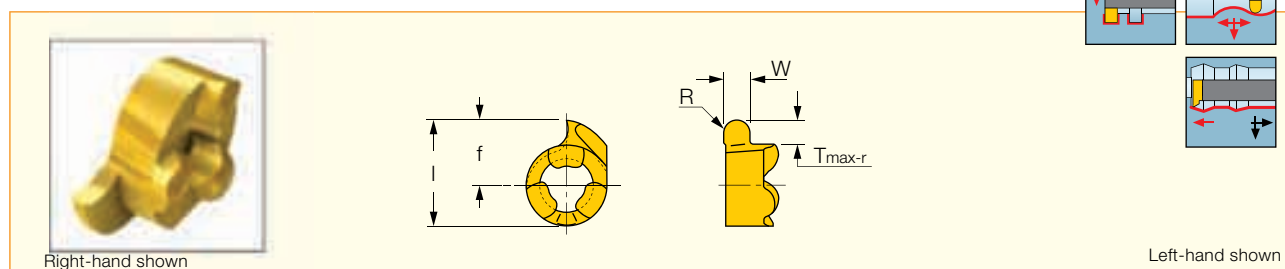
• Comply to retaining rings DIN 471/472. • Can be used for groove milling by circular interpolation. • For cutting speed recommendations, see pages B134-135.

⁽¹⁾ For grooving only

For tools, see pages: MG (B120) • MGCH (B120).

GIQR/L-11-R

Precision Ground Single-Ended Full Radius Inserts, for Internal Grooving and Profiling



Right-hand shown

Left-hand shown

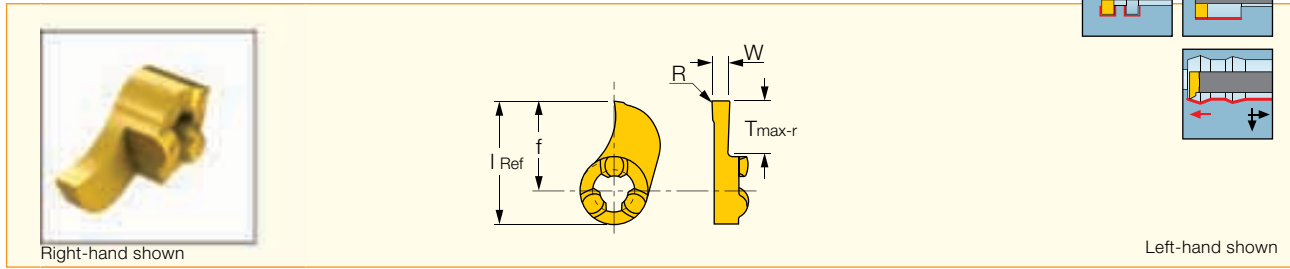
Designation	Dimensions						IC528	Recommended Machining Data		
	W±0.02	R±0.03	T _{max-r}	D _{min}	f	l		a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIQR/L 11-1.20-R060	1.20	0.60	2.30	11.00	6.7	10.68	●	0.30-0.60	0.02-0.05	0.01-0.03
GIQR/L 11-1.80-R090	1.80	0.90	2.30	11.00	6.7	10.68	●	0.40-0.90	0.02-0.05	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 cutting speed recommendations, see pages B134-135.

For tools, see pages: MG (B120) • MGCH (B120).

GIQR/L 11-15

Precision Ground Single-Ended Internal Deep Grooving and Turning Inserts



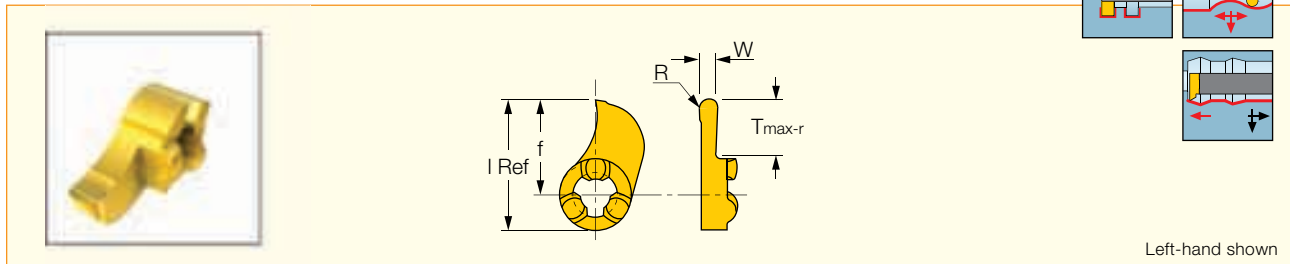
Designation	Dimensions						IC528	Recommended Machining Data		
	W \pm 0.02	R \pm 0.03	T _{max-r}	D _{min}	l	f		a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIQR/L 11-15-1.50-0.05	1.50	0.05	6.30	15.00	14.60	10.6	●	0.10-0.40	0.02-0.05	0.02-0.06
GIQR/L 11-15-2.00-0.10	2.00	0.10	6.30	15.00	14.60	10.6	●	0.15-0.50	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 cutting speed recommendations, see pages B134-135.

For tools, see pages: MG (B120) • MGCH (B120).

GIQR/L 11-15-R

Precision Ground Single-Ended Full Radius Inserts, for Deep Internal Grooving and Profiling



Designation	Dimensions						IC528	Recommended Machining Data		
	W \pm 0.02	R \pm 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 cutting speed recommendations, see pages B134-135.

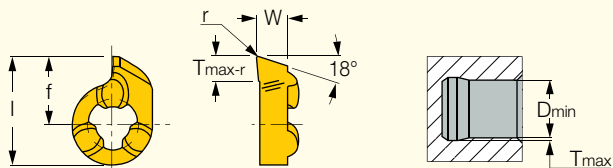
For tools, see pages: MG (B120) • MGCH (B120).

GIQR/L-A18

Internal Boring & Profiling Inserts



Right-hand shown



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 cutting speed recommendations, see pages B134-135.

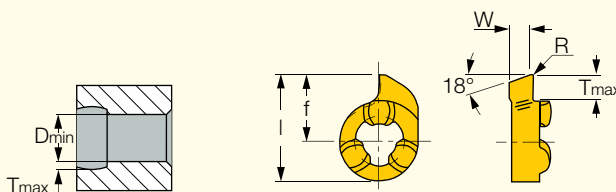
For tools, see pages: MG (B120) • MGCH (B120).

GIQR/L-B18

Internal Back Boring & Profiling Inserts



Right-hand shown



Left-hand shown

Designation	Dimensions						IC528	Recommended Machining Data	
	D_{min}	W	$R_{\pm 0.03}$	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

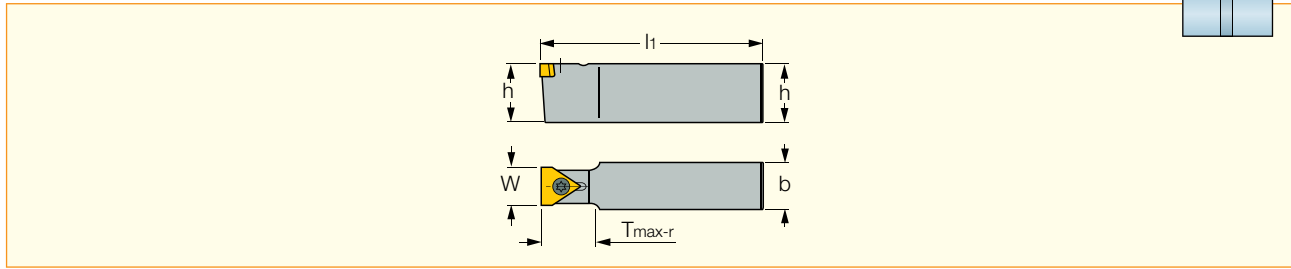
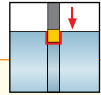
• For cutting speed recommendations, see pages B134-135.

For tools, see pages: MG (B120) • MGCH (B120).



SXCNN

External Toolholders for Wide, Specially Tailored Profile Inserts



Designation	W	T_{max-r}	h	b	l_i	Inserts
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 2020 P10-06	10.40	17.00	20.0	20.0	170.00	XNUW 10
SXCNN 2525 P10-06	10.40	17.00	25.0	25.0	170.00	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 2020 P13-05	13.00	23.00	20.0	20.0	170.00	XNUW 13
SXCNN 2525 P13-05	13.00	23.00	25.0	25.0	170.00	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 2020 P14-03	14.50	17.00	20.0	20.0	170.00	XNUW 14
SXCNN 2525 P14-03	14.50	17.00	25.0	25.0	170.00	XNUW 14
SXCNN 1616 K20-05	20.50	-	16.0	16.0	125.00	XNUW 20
SXCNN 2020 P20-05	20.50	24.00	20.0	20.0	170.00	XNUW 20
SXCNN 2525 P20-05	20.50	24.00	25.0	25.0	170.00	XNUW 20
SXCNN 3232 P20-05	20.50	24.00	32.0	32.0	170.00	XNUW 20
SXCNN 2525 P24-05	24.50	28.00	25.0	25.0	170.00	XNUW 24
SXCNN 3232 P24-05	24.50	28.00	32.0	32.0	170.00	XNUW 24
SXCNN 3232 P36-10	36.50	-	32.0	32.0	170.00	XNUW 36

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

For inserts, see pages: XNUW (B127).

Spare Parts

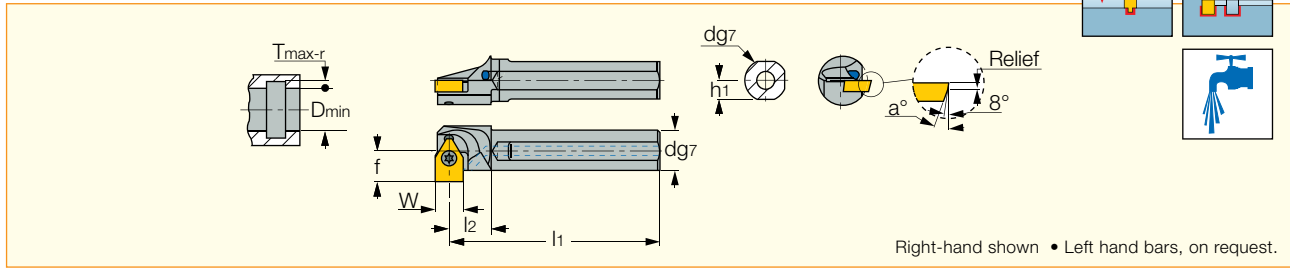


Designation	Screw	Key
SXCNN 1212 K10-06	SR 76-2067	T-15/5
SXCNN 1616 K10-06	SR 76-2067	T-15/5
SXCNN 2020 P10-06	SR 76-2067	T-15/5
SXCNN 2525 P10-06	SR 76-2067	T-15/5
SXCNN 1212 K13-05	SR 76-2068	T-20/5
SXCNN 1414 K13-05	SR 76-2068	T-20/5
SXCNN 1616 K13-05	SR 14-591	T-20/5
SXCNN 2020 P13-05	SR 14-591	T-20/5
SXCNN 2525 P13-05	SR 14-591	T-20/5
SXCNN 1212 K14-03	SR 76-2067	T-15/5
SXCNN 1616 K14-03	SR 76-2067	T-15/5
SXCNN 2020 P14-03	SR 76-2067	T-15/5
SXCNN 2525 P14-03	SR 76-2067	T-15/5
SXCNN 1616 K20-05	SR 14-591	T-20/5
SXCNN 2020 P20-05	SR 14-591	T-20/5
SXCNN 2525 P20-05	SR 14-591	T-20/5
SXCNN 3232 P20-05	SR 14-591	T-20/5
SXCNN 2525 P24-05	SR 14-591	T-20/5
SXCNN 3232 P24-05	SR 14-591	T-20/5
SXCNN 3232 P36-10	SR 14-519	T-20/5



SXCIR

Internal Toolholders for Specially Tailored Profile Inserts



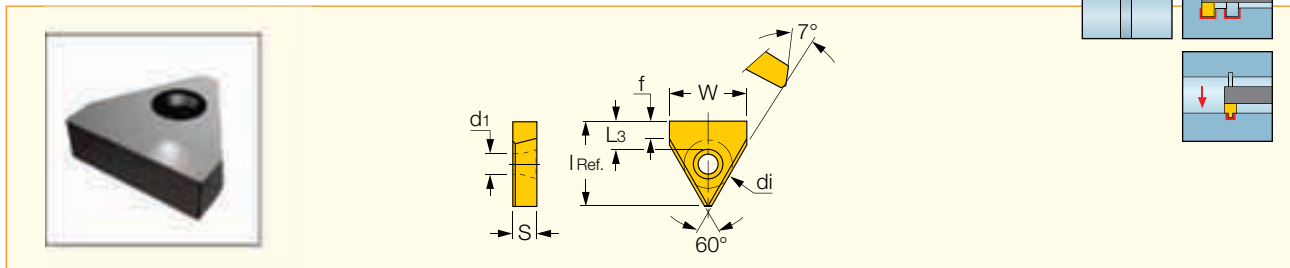
Designation	W	d	l ₁	l ₂	f	D _{min}	T _{max-r}	h ₁	a° ⁽²⁾	Relief ⁽³⁾	Screw	Key	Seal
SXCIR 16-10 ⁽¹⁾	10.40	16.00	125.00	20.0	11.5	25.00	3.00	7.5	15.00	1.5	SR 76-2067	T-15/5	PL 16
SXCIR 20-10 ⁽¹⁾	10.40	20.00	150.00	25.0	13.0	25.00	3.00	9.0	15.00	1.5	SR 76-2067	T-15/5	PL 20
SXCIR 25-10 ⁽¹⁾	10.40	25.00	170.00	30.0	15.5	29.00	3.00	11.5	15.00	1.5	SR 76-2067	T-15/5	PL 25
SXCIR 16-13	13.00	16.00	125.00	20.0	13.0	30.00	4.00	7.5	20.00	2.0	SR 76-2068	T-20/5	PL 16
SXCIR 20-13	13.00	20.00	150.00	25.0	14.5	30.00	4.00	9.0	20.00	2.0	SR 76-2068	T-20/5	PL 20
SXCIR 25-13	13.00	25.00	170.00	30.0	17.0	30.50	4.00	11.5	20.00	2.0	SR 76-2068	T-20/5	PL 25
SXCIR 32-13	13.00	32.00	200.00	35.0	20.0	37.00	4.00	14.5	20.00	2.0	SR 76-2068	T-20/5	PL 32
SXCIR 16-14 ⁽¹⁾	14.50	16.00	125.00	20.0	11.5	30.00	3.00	7.5	15.00	2.0	SR 76-2067	T-15/5	PL 16
SXCIR 20-14 ⁽¹⁾	14.50	20.00	150.00	25.0	13.0	30.00	3.00	9.0	15.00	2.0	SR 76-2067	T-15/5	PL 20
SXCIR 25-14 ⁽¹⁾	14.50	25.00	170.00	30.0	15.5	30.00	3.00	11.5	15.00	2.0	SR 76-2067	T-15/5	PL 25
SXCIR 32-14 ⁽¹⁾	14.50	32.00	200.00	35.0	18.5	36.00	3.00	14.5	15.00	2.0	SR 76-2067	T-15/5	PL 32
SXCIR 20-20	20.50	20.00	150.00	25.0	15.0	40.00	4.00	9.0	15.00	2.5	SR 14-591	T-20/5	PL 20
SXCIR 25-20	20.50	25.00	170.00	30.0	17.5	40.00	4.00	11.5	15.00	2.5	SR 14-591	T-20/5	PL 25
SXCIR 32-20	20.50	32.00	200.00	35.0	20.5	40.00	4.00	14.5	15.00	2.5	SR 14-591	T-20/5	PL 32
SXCIR 25-24	24.50	25.00	170.00	30.0	17.5	40.00	4.00	11.5	15.00	2.5	SR 14-591	T-20/5	PL 25
SXCIR 32-24	24.50	32.00	200.00	35.0	20.5	40.00	4.00	14.5	15.00	2.5	SR 14-591	T-20/5	PL 32

⁽¹⁾ On request. ⁽²⁾ Blank insert reference dimensions ⁽³⁾ Blank insert reference dimensions

For inserts, see pages: XNUW (B127).

XNUW

Blank Inserts for Wide Profile Grooving



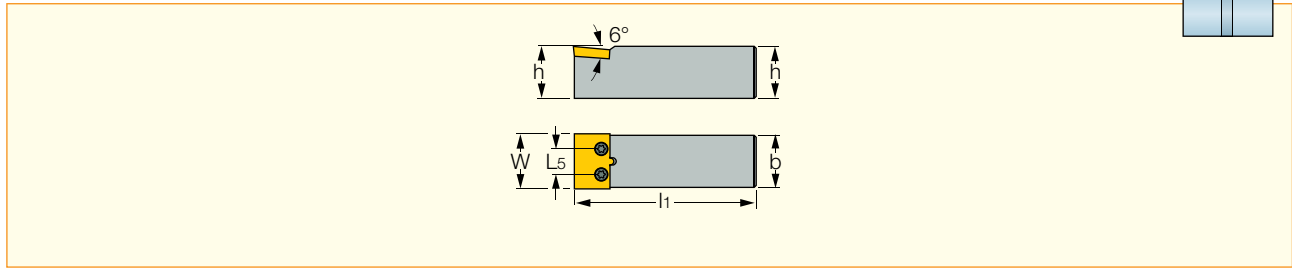
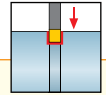
Designation	Dimensions							Tough ↔ Hard				
	W	f	L ₃	d _i	S	d ₁	l	IC28	IC54	IC08	IC07	IC20
XNUW 1003-06	10.40	6.0	10.50	6.35	3.18	4.53	17.00	●		●		
XNUW 1305-05	13.00	5.0	11.40	12.70	5.35	5.50	20.60	●	●	●		●
XNUW 14T3-03	14.50	3.0	3.70	9.52	3.97	4.40	14.00	●	●	●		●
XNUW 2006-05	20.50	4.8	5.00	12.70	6.35	5.50	20.30	●	●		●	●
XNUW 2406-05	24.50	5.0	6.00	15.87	6.35	5.50	25.00	●	●	●	●	●
XNUW 3606-10	36.50	5.4	10.00	19.05	6.35	6.50	34.60	●		●		●

For tools, see pages: SXCIR (B126) • SXCNN (B125).

FORMTOOL

FTHN

Square Shank Toolholders for FTB Profile Turning Inserts



Designation	W	h	b	l ₁	L ₅
FTHN 2525M-3010	30.40	25.0	25.0	150.00	14.00
FTHN 2525M-3510	35.40	25.0	25.0	150.00	14.00
FTHN 3232P-3510	35.40	32.0	32.0	170.00	14.00
FTHN 3232P-4510	45.40	32.0	32.0	170.00	18.00
FTHN 3232P-5107	50.00	32.0	32.0	170.00	21.90

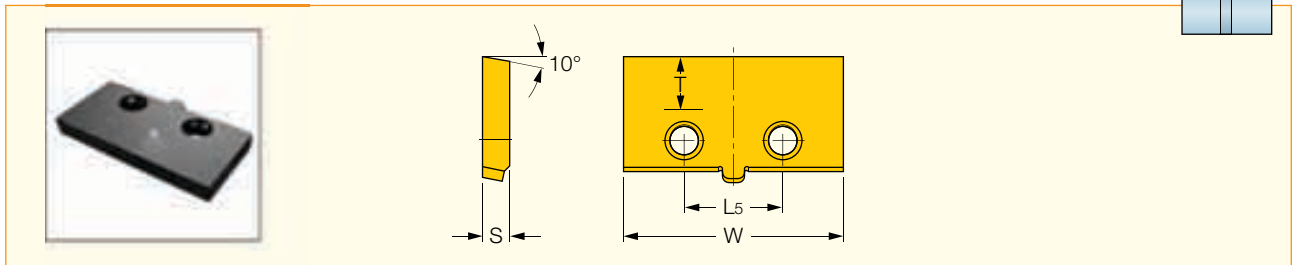
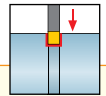
Spare Parts



Designation	Screw	Key
FTHN	SR 14-591	T-20/5

FTB

Blank Inserts for Wide Profile Grooving

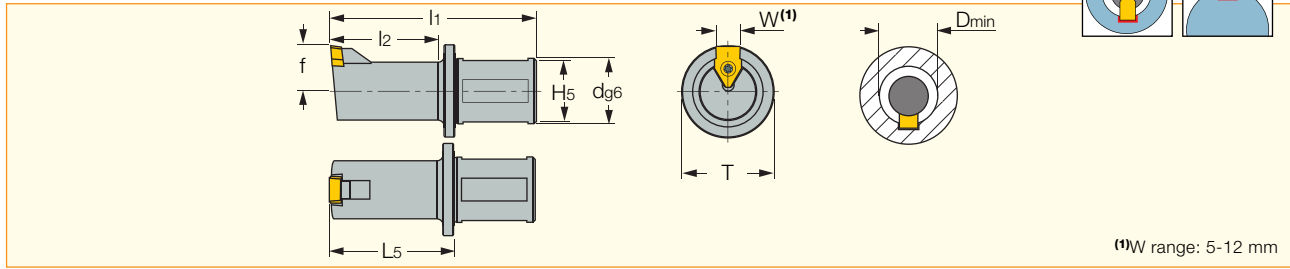
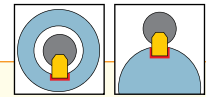


Designation	Dimensions				IC08
	W	T groove	S	L ₅	
FTB 3010	30.40	10.0	5.00	14.00	●
FTB 3510	35.40	10.0	5.00	14.00	●
FTB 4010	40.40	10.0	5.00	18.00	●
FTB 4510	45.40	10.0	5.00	18.00	●
FTB 5107	51.40	7.0	5.00	21.90	●

ISCARBROACH Broaching Tools

SXCIB

Broaching Holders for Lathe and Milling Machines



(1)W range: 5-12 mm

Designation	d	l ₁	l ₂	L ₅	f	D _{min}	H ₅	T	Inserts
SXCIB 25-22-50	25.00	100.00	50.0	60.00	12.0	22.00	23.0	33.0	Group #1
SXCIB 32-30-50	32.00	100.00	50.0	60.00	16.5	30.00	30.0	45.0	Group #2
SXCIB 32-30-75	32.00	100.00	50.0	60.00	22.0	38.00	30.0	45.0	Group #2
SXCIB 32-38-50	32.00	125.00	75.0	85.00	16.5	30.00	30.0	45.0	Group #3
SXCIB 32-38-75	32.00	125.00	75.0	85.00	22.0	38.00	30.0	45.0	Group #3

For inserts, see pages: XNUWB (B128) • XNUWB (Light Fit) (B129) • XNUWB (Tight Fit) (B129).

Insert Group #1	Insert Group #2	Insert Group #3
XNUWB 13-4.98-0.2	XNUWB 13-7.98-0.2	XNUWB 13-10.13-1.05
XNUWB 13-5.01-0.2	XNUWB 13-8.13-1.05	XNUWB 13-11.98-0.3
XNUWB 13-5.98-0.2	XNUWB 13-9.98-0.3	XNUWB 13-12.02-0.3
XNUWB 13-6.01-0.2	XNUWB 13-10.01-0.3	XNUWB 13-12.02-0.5
XNUWB 13-6.12-0.85		XNUWB 13-12.15-1.35
XNUWB 13-7.13-0.85		XNUWB 13-12.15-1.75
XNUWB 13-7.98-0.2		XNUWB 13-12.15-2.25
XNUWB 13-8.01-0.2		
XNUWB 13-8.13-1.05		

Spare Parts

Clamping screw: SR M5X13 T20

Key: T-20/5

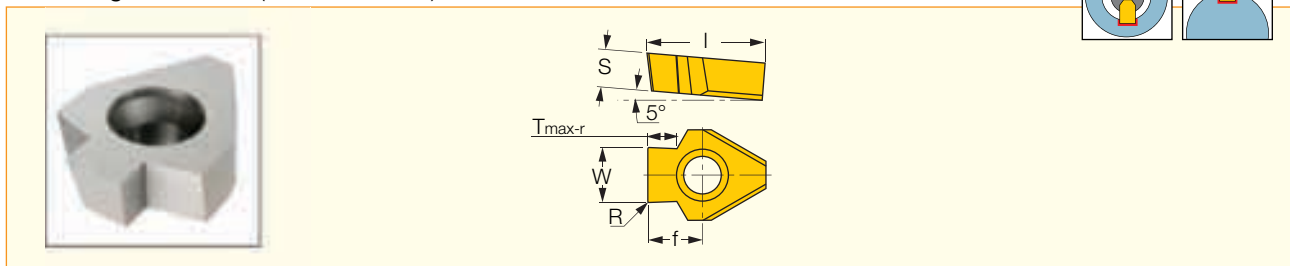
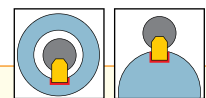
Spare Parts



Designation	Key
SXCIB	T-20/5

XNUWB

Inserts for Keyway Broaching on Lathe and Milling Machines, According to DIN138 (Tolerance C11)



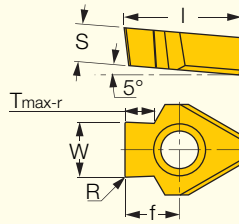
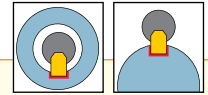
Designation	Dimensions						IC908
	W±0.02	R±0.05	f	l	T _{max-r}	S	
XNUWB 13-6.12-0.85	6.12	0.85	8.0	17.30	2.60	5.30	●
XNUWB 13-7.13-0.85	7.13	0.85	8.0	17.30	3.30	5.30	●
XNUWB 13-8.13-1.05	8.13	1.05	8.0	17.30	3.40	5.30	●
XNUWB 13-10.13-1.05	10.13	1.05	10.9	20.20	4.20	5.30	●
XNUWB 13-12.15-1.35	12.15	1.35	10.9	20.20	5.10	5.30	●
XNUWB 13-12.15-1.75	12.15	1.75	10.9	20.20	6.60	5.30	●
XNUWB 13-12.15-2.25	12.15	2.25	10.9	20.20	8.50	5.30	●

• Typical conditions: Vc = 4000-8000 mm/min, ap = 0.02-0.08 mm

ISCARBROACH

XNUWB (Light Fit)

Inserts for Keyway Broaching on Lathe and Milling Machines, Light Fit (JS9),
According to DIN6885



Designation	Dimensions							IC908
	W ⁽¹⁾	R	R ^{toler}	f	l	T _{max-r}	S	
XNUWB 13-5.01-0.2	5.01	0.20	0.030	8.0	17.30	2.70	5.30	●
XNUWB 13-6.01-0.2	6.01	0.20	0.030	8.0	17.30	3.40	5.30	●
XNUWB 13-8.01-0.2	8.01	0.20	0.030	8.0	17.30	4.10	5.30	●
XNUWB 13-10.01-0.3	10.01	0.30	0.030	8.0	17.30	4.20	5.30	●
XNUWB 13-12.02-0.3	12.02	0.30	0.030	10.9	20.20	5.70	5.30	●
XNUWB 13-12.02-0.5	12.02	0.50	0.050	10.9	20.20	8.50	5.30	●

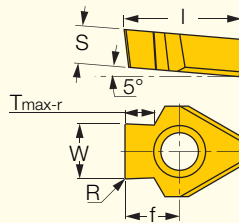
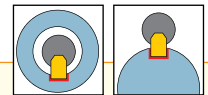
• Typical conditions: Vc = 4000-8000 mm/min, ap = 0.02-0.08 mm

⁽¹⁾ Tolerance: +0 -0.03

For tools, see pages: SXCIB (B128).

XNUWB (Tight Fit)

Inserts for Keyway Broaching on Lathe and Milling Machines, Tight Fit (P9),
According to DIN6885



Designation	Dimensions						IC908
	W ⁽¹⁾	R ^{±0.03}	f	l	T _{max-r}	S	
XNUWB 13-4.98-0.2	4.98	0.20	8.0	17.30	2.70	5.30	●
XNUWB 13-5.98-0.2	5.98	0.20	8.0	17.30	3.40	5.30	●
XNUWB 13-7.98-0.2	7.98	0.20	8.0	17.30	4.10	5.30	●
XNUWB 13-9.98-0.3	9.98	0.30	8.0	17.30	4.20	5.30	●
XNUWB 13-11.98-0.3	11.98	0.30	10.9	20.20	5.70	5.30	●

• Typical conditions: Vc = 4000-8000 mm/min, ap = 0.02-0.08 mm

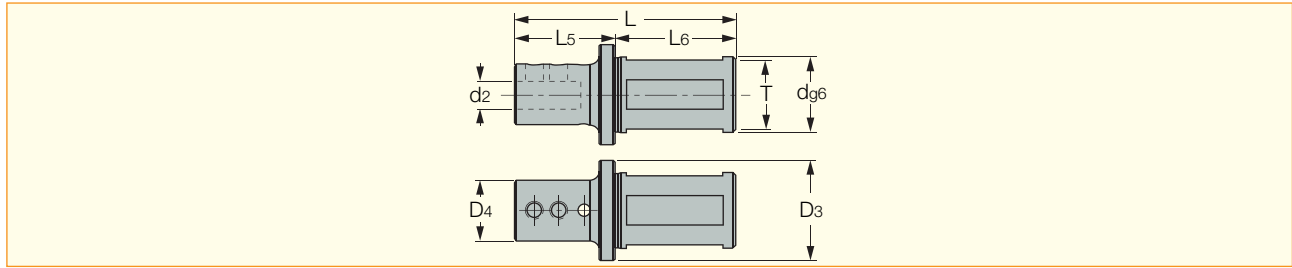
⁽¹⁾ Tolerance: +0 -0.03

For tools, see pages: SXCIB (B128).

ISCARBROACH

BDHN

Broaching Holders for Lathe and Milling Machines



Designation	d ₂	d	D ₄	D ₃	L ₅	L	L ₆	T	Inserts
BHDN 25-10-33	10.00	25.00	20.00	33.00	33.00	73.00	40.00	23.0	SCB 010
BHDN 32-10-33	10.00	32.00	20.00	40.00	33.00	73.00	40.00	30.0	SCB 010

• Holders are suitable for left- and right-hand mini-bars, and ISO bars.

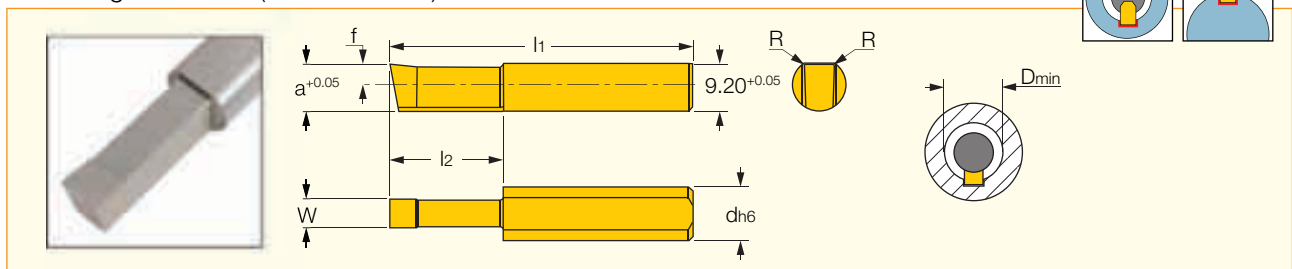
Spare Parts



Designation	Key	Screw
BDHN	HW 2.5	SR M5X6DIN913

SCB

Inserts for Keyway Broaching on Lathe and Milling Machines,
According to DIN138 (Tolerance C11)



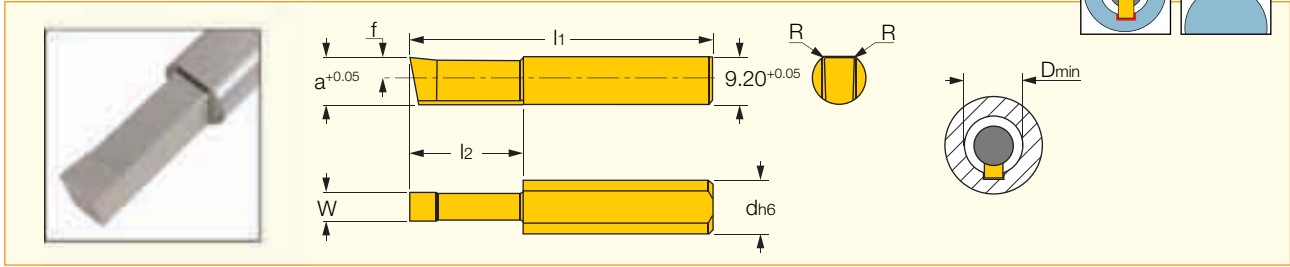
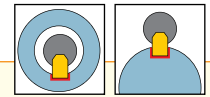
Designation	Dimensions								IC908
	W ^{+0.02}	R ^{+0.05}	d	f	a	l ₁	l ₂	D _{min}	
SCB 010.410.050-25	4.10	0.50	10.00	4.0	9.00	50.00	25.0	10.00	●
SCB 010.410.050-41	4.10	0.50	10.00	4.0	9.00	66.00	41.0	10.00	●
SCB 010.510.050-25	5.10	0.50	10.00	4.0	9.00	50.00	25.0	10.00	●
SCB 010.510.050-41	5.10	0.50	10.00	4.0	9.00	66.00	41.0	10.00	●

• Typical conditions: V_c = 4000-8000 mm/min, a_p = 0.02-0.08 mm

ISCARBROACH

SCB (Light Fit)

Inserts for Keyway Broaching on Lathe and Milling Machines, Light Fit (JS9),
According to DIN6885



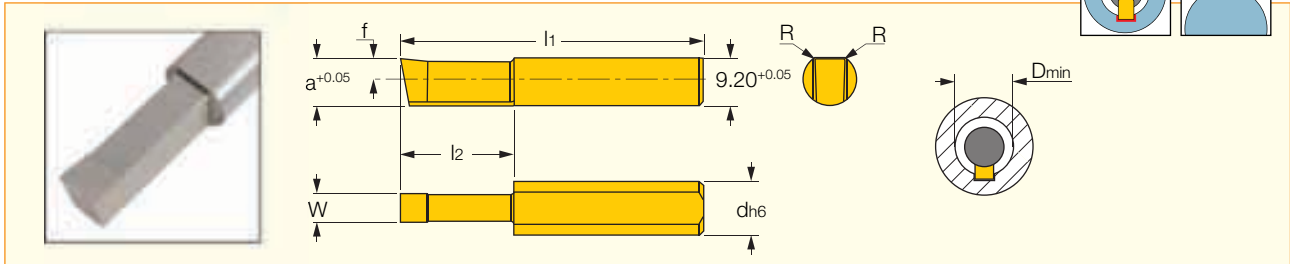
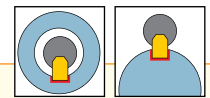
Designation	Dimensions								IC908
	W±0.015	R±0.03	d	f	a	l ₁	l ₂	D _{min}	
SCB 010.400.020-25	4.000	0.20	10.00	4.0	9.00	50.00	25.0	10.00	●
SCB 010.400.020-41	4.000	0.20	10.00	4.0	9.00	66.00	41.0	10.00	●
SCB 010.500.020-25	5.000	0.20	10.00	4.0	9.00	50.00	25.0	10.00	●
SCB 010.500.020-41	5.000	0.20	10.00	4.0	9.00	66.00	41.0	10.00	●

• Typical conditions: V_c = 4000-8000 mm/min, a_p = 0.02-0.08 mm

For tools, see page B130.

SCB (Tight Fit)

Inserts for Keyway Broaching on Lathe and Milling Machines, Tight Fit (P9),
According to DIN6885

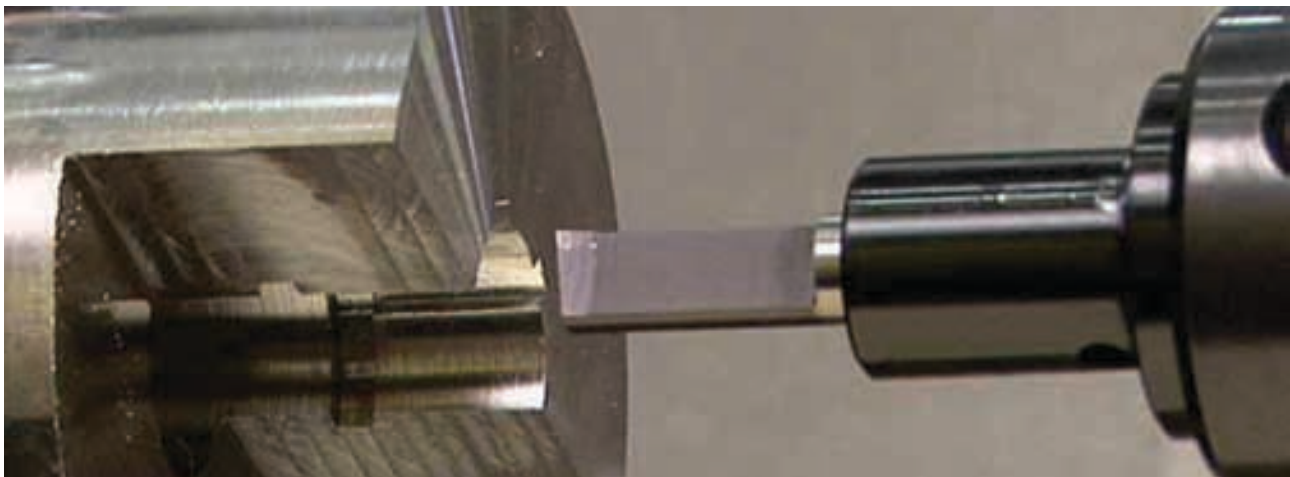


Designation	Dimensions								IC908
	W ⁽¹⁾	R±0.03	d	f	a	l ₁	l ₂	D _{min}	
SCB 010.398.020-25	3.98	0.20	10.00	4.0	9.00	50.00	25.0	10.00	●
SCB 010.398.020-41	3.98	0.20	10.00	4.0	9.00	66.00	41.0	10.00	●
SCB 010.498.020-25	4.98	0.20	10.00	4.0	9.00	50.00	25.0	10.00	●
SCB 010.498.020-41	4.98	0.20	10.00	4.0	9.00	66.00	41.0	10.00	●

• Typical conditions: V_c = 4000-8000 mm/min, a_p = 0.02-0.08 mm

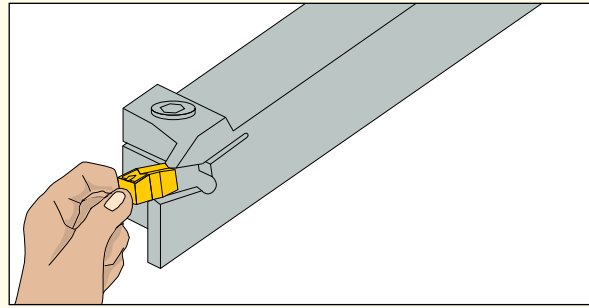
⁽¹⁾ Tolerance: +0.01 -0.02

For tools, see page B130.



What is a GRIP Insert?

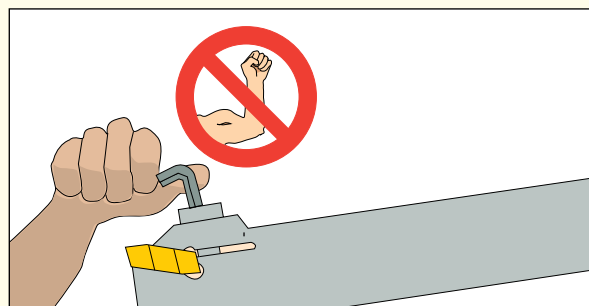
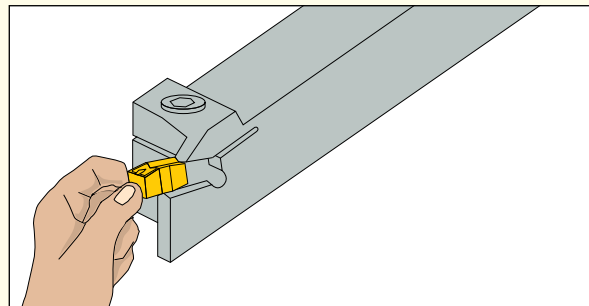
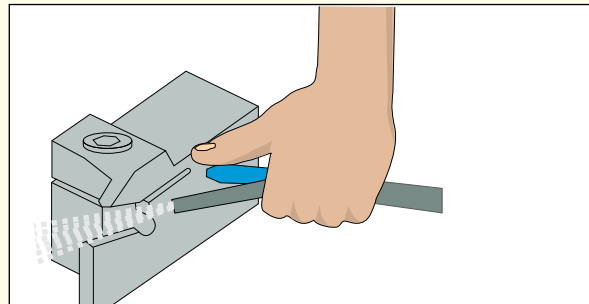
A GRIP insert is a grooving, groove-turn or parting insert that is clamped between 2 prisms.



Clamping a GRIP Insert

Clamping an insert correctly in the holder is necessary for stable machining.

- Ensure that the seat is clean of dirt and swarf.
- In the first stage of clamping, ease the insert gently into place. Make sure that the prismatic surfaces match.
- Always use the wrench supplied together with the tool. Use reasonable force to the point of resistance for the final clamping. The maximum recommended clamping torque is $1.5 \times d \text{ Nm}$ or $15 \times d \text{ Kgf} \times \text{cm}$.
 d =clamping screw dia. in mm.



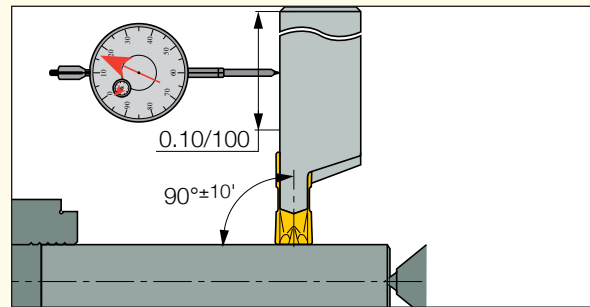
It is very important not to overtighten a GRIP insert, even though you may get the impression that the insert is more secure.

In fact, when overtightened, the insert is not clamped into its correct and carefully designed clamping points, it is actually less stable.

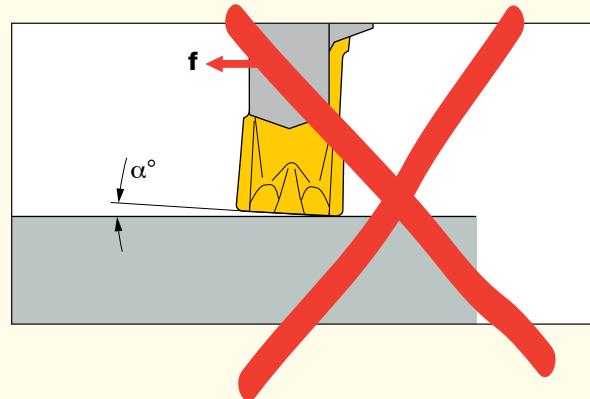
Positioning the Tool on the Turret

Successful machining can be achieved only if the tool is properly positioned on the turret. The following sequence should be followed:

- Position the GRIP holder perpendicular to the workpiece. Deviation may be 0.10/100 mm along the holder.
- Check to ensure that the frontal cutting edge is aligned parallel to the workpiece.



If the cutting edge is not parallel to the workpiece or is positioned as shown, the deflection during machining (in the indicated direction) will be too small and chatter may occur.



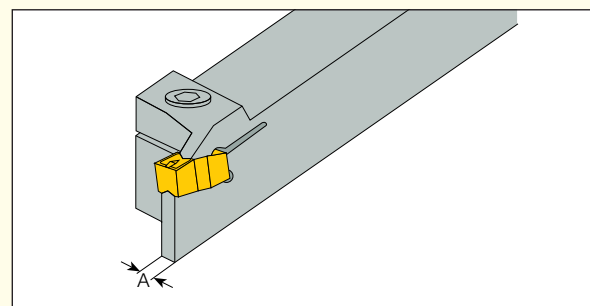
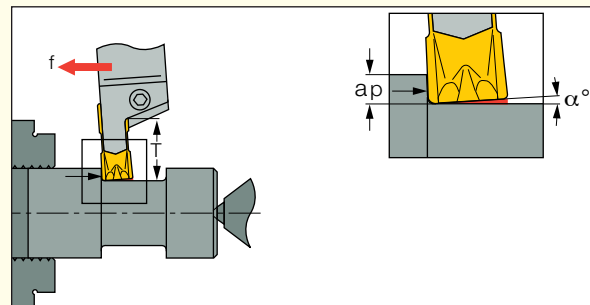
Principles of Turning with Groove-Turn Tools

The basic principle in turning with groove-turn tools is the deflection of the cutting tool, which results in a frontal clearance angle α° between the insert and the workpiece.

The clearance angle α° is a function of the side cutting forces and is not constant, as is the case with ISO inserts.

The deflection is influenced by the following factors:

Feed f
Depth of Cut ap
Overhang of Insert Support T
Width of Insert Support A
Cutting Speed Vc
Workpiece Material



When all of the above factors remain constant during turning, a high degree of accuracy with a tolerance up to ± 0.01 mm can be achieved.



If the conditions are too light (such as in a super finish operation), there may not be enough deflection and the clearance angle will be very small. This may result in chatter and vibration.

Groove Turn Cutting Speed Recommendations

ISO	Material	Condition	Tensile Strength [N/mm ²]	Hardness HB	Material No. ⁽¹⁾	
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	1
		>= 0.25 %C	Annealed	650	190	2
		< 0.55 %C	Quenched and tempered	850	250	3
		>= 0.55 %C	Annealed	750	220	4
		>= 0.55 %C	Quenched and tempered	1000	300	5
	Low alloy steel and cast steel (less than 5% all elements)	Annealed	600	200	6	
			930	275	7	
		Quenched and tempered	1000	300	8	
	High alloy steel, cast steel, tool steel	Annealed	680	200	10	
		Quenched and tempered	1100	325	11	
	M	Stainless steel and cast steel	Ferritic/martensitic	680	200	12
Martensitic			820	240	13	
Austenitic			600	180	14	
K	Grey cast iron (GG)	Pearlitic/ferritic		180	15	
		Pearlitic/martensitic		260	16	
	Ductile cast iron (nodular) (GGG)	Ferritic		160	17	
		Pearlitic		250	18	
	Malleable cast iron	Ferritic		130	19	
		Pearlitic		230	20	
N	Aluminum-wrought alloy	Not cureable		60	21	
		Cured		100	22	
	Aluminum-cast, alloyed	<=12% Si	Not cureable		75	23
			Cured		90	24
	Copper alloys	>12% Si	High temperature		130	25
			Free cutting		110	26
		>1% Pb	Brass		90	27
			Electrolytic copper		100	28
	Non-metallic	Duroplastics, fiber plastics			29	
		Hard rubber			30	
S	High temp. alloys	Fe Baswd	Annealed		200	31
			Cured		280	32
		Ni or Co based	Annealed		250	33
			Cured		350	34
			Cast		320	35
	Titanium and Ti alloys		RM 400		36	
		Alpha+beta alloys cured	RM 1050		37	
H	Hardened steel	Hardened		55 HRc	38	
		Hardened		60 HRc	39	
	Chilled cast iron	Cast		400	40	
	Cast iron	Hardened		55 HRc	41	

⁽¹⁾ For material groups see H8-60

GROOVETURN USER GUIDE

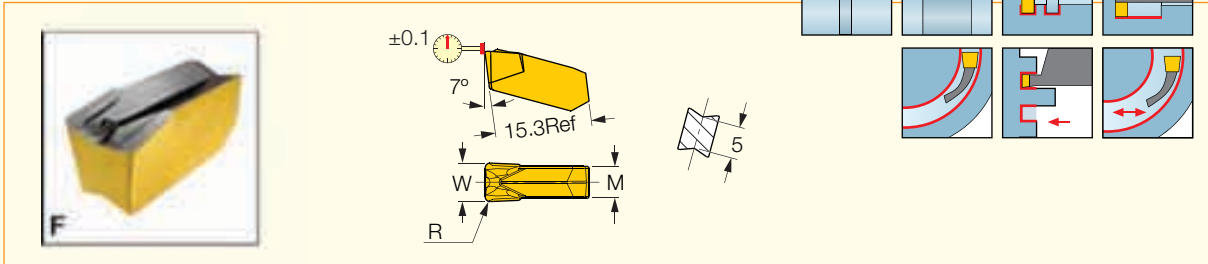
No.	IC20N	IC8250	IC807	IC808	IC908/1008	IC354	IC830	IC228/ 328/ 528
1	240 - 320	220 - 300	170 - 230	160 - 210	150-200	120 - 160	110 - 150	100 - 140
2	210 - 290	190 - 270	150 - 210	140 - 190	130-180	100 - 140	100 - 130	90 - 130
3	160 - 240	150 - 220	110 - 170	100 - 160	100-150	80 - 120	70 - 110	70 - 100
4	180 - 270	160 - 250	130 - 200	120 - 180	110-170	90 - 140	80 - 130	80 - 120
5	140 - 220	130 - 210	100 - 160	90 - 150	90-140	70 - 110	70 - 100	60 - 100
6	180 - 270	160 - 250	130 - 200	120 - 180	110-170	90 - 140	80 - 130	80 - 120
7	140 - 240	130 - 220	100 - 170	90 - 160	90-150	70 - 120	70 - 110	60 - 100
8	140 - 220	130 - 210	100 - 160	90 - 150	90-140	70 - 110	70 - 100	60 - 100
9	130 - 210	120 - 190	90 - 150	80 - 140	80-130	60 - 100	60 - 100	60 - 90
10	210 - 290	190 - 270	150 - 210	140 - 190	130-180	100 - 140	100 - 130	90 - 130
11	130 - 210	120 - 190	90 - 150	80 - 140	80-130	60 - 100	60 - 100	60 - 90
No.	IC807	IC8250	IC808	IC908	IC320	IC830		
12	130 - 230	120 - 220	120 - 210	110-200	100 - 180	80 - 150		
13	110 - 220	110 - 210	100 - 200	100-190	90 - 170	70 - 140		
14	100 - 200	60-120	90 - 180	90-170	80 - 150	70 - 130		
No.	IC5010	IC428	IC8250					
15	160 - 300	150-270	140 - 260					
16	140 - 210	130-190	120 - 180					
17	150 - 250	140-230	130 - 220					
18	120 - 200	110-180	100 - 170					
19	190 - 310	170-280	160 - 270					
20	150 - 250	140-230	130 - 220					
No.	ID5	IC20						
21	400-2500	400-1200						
22	400-2500	300-1000						
23	400-2500	300-1000						
24	400-2500	200-600						
25	300-1500	200-400						
26	300-1000	200-400						
27	300-800	150-300						
28	300-800	100-200						
29	150-600	50-200						
30								
No.	IC806	IC807	IC907	IC908	IC07	IC20	IC08	
31		45-75	45-70	40-60	30-40	25-35	25-35	
32		35-50	30-45	25-35	25-30	20-40	20-40	
33	50-80	35-50	35-45	25-35	20-30	20-30	20-30	
34	40-70	30-45	30-40	25-35	15-20	15-20	15-20	
35	30-65	30-40	25-35	25-30	15-20	15-20	15-20	
36		120-200	110-190	100-170	100-130	100-130	100-130	
37		45-80	45-75	35-65	25-50	20-50	20-50	
No.	IB10H	IB50	IB20H	IC807	IC808			
38	100-155	90-140	80-125	35-45	30-40			
39	90-135	80-120	75-110	30-40	25-35			
40	110-175	100-160	90-145	45-65	40-60			
41	100-135	90-120	80-110	40-50	35-45			

Cutting Conditions

Choosing the Correct Cutting Conditions

Specific cutting conditions are listed in the catalog for every individual insert as shown below:

Example: GIMF 608 Utility Inserts for Grooving and Turning



Designation	Dimensions			Tough \leftrightarrow Hard								Recommended Machining Data			
	W \pm 0.05	R \pm 0.05	M	IC830	IC8250	IC808	IC908	IC20	IC428	IC5010	IC907	IC806	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIMF 608	6.00	0.80	5.0	●	●	●		●		●	●	●	1.00-3.60	0.24-0.42	0.13-0.25
													Depth of cut	Turning feed	Grooving feed

Grades for Applications and Materials

- Carbide grades and cutting speeds:
- Cutting speed recommendations are derived from the type of workpiece material and choice of carbide grade.
- Choose the carbide grade according to the chart below and the specific workpiece material, receive the cutting speed recommendation from the table on page B135.

Material Groups	ISO P	ISO H	ISO M	ISO S	ISO K	ISO N
	1-11	38-41	12-14	31-37	15-20	21-28
Main Applications	Steel	Hard Steel	Stainless Steel	High Temp.	Cast Iron	Nonferrous
 GROOVE TURN	Harder ↑ IC20N IC807 IC808 (908) IC8250 IC830 Tougher	Harder ↑ IB10H IB50 IB20H IC807 IC808 Tougher	Harder ↑ IC807 IC808 (908) IC830 Tougher	Harder ↑ IC806* IC807/907 IC07** IC20 IC908 IC08 Tougher	Harder ↑ IC5010 IC428 IC8250 Tougher	Harder ↑ ID5 IC20 Tougher

* IC806 - First choice for machining heat resistance alloys (Inconel)

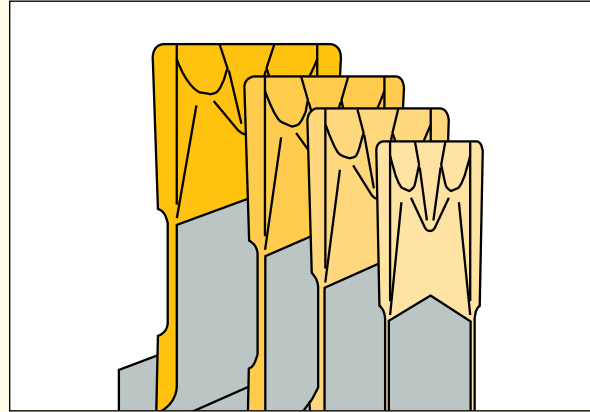
** IC07 - First choice for machining titanium

Machining Tips

Insert width: Generally the insert width should be as wide as possible as it contributes to its strength. However, there are additional considerations that should be taken into account in order to choose the correct width:

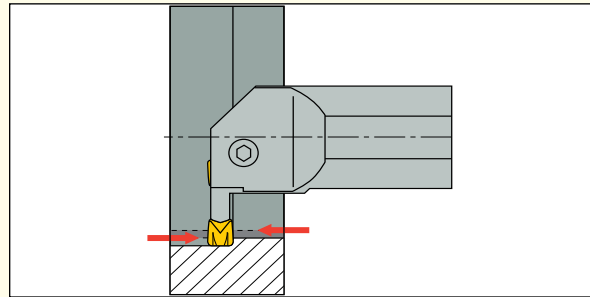
- Workpiece size and clamping stability:
A larger width means higher cutting forces during grooving. A width that is too large can cause deformation of the workpiece and/or vibration.
- When using a larger width, make sure your machine has enough power. (See page B144)
- Machining strategy:
- Grooving in a correct sequence should also affect your choice. (see page B138)
- Required overhang:
A larger tool overhang will require a wider insert to maintain stability.

- The larger the insert, the wider the upper and lower jaws can be. therefore, higher forces are required to effect the necessary side deflection.
- If the depth of cut is small, the width of the insert should be proportionately smaller in order to guarantee the required deflection.



Efficient use of insert's corners:

Always try to evenly split machining between the two corners. This optimization will increase the insert's life.

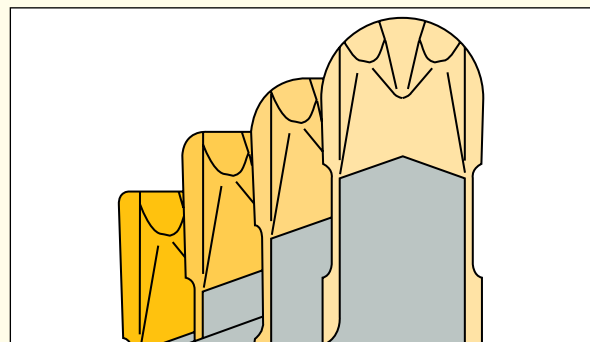


Insert Radius

Choosing the insert radius for a particular application is a combination of many factors. The corner radius of the groove-turn insert influences the product shape and tool life.

- A larger radius in turning operations normally improves surface quality.
- An insert with a larger radius has a better distribution of the cutting load and of the generated heat. It is stronger and ensures longer tool life.
- Small radii on GRIP inserts result in increased side forces and side deflection, preventing instability, especially with small depth of cut and feed.
- The best radius to use is basically determined by the geometry and dimensions of the workpiece. The more securely the workpiece is fastened in the machine tool, the larger the radius may be.

- When the ratio of a workpiece's length compared to its diameter is large, inserts with smaller radii will prevent chatter.
- A larger corner radius enables machining at a larger feed rate.
- In profiling operations, inserts with larger corner radii or full radii are required.

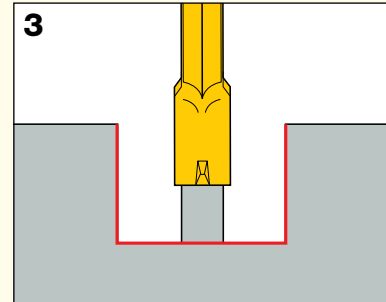
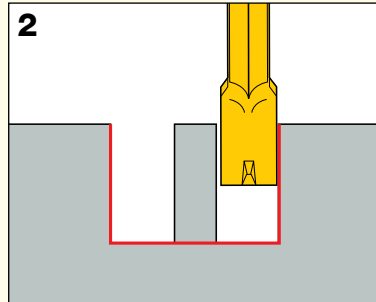
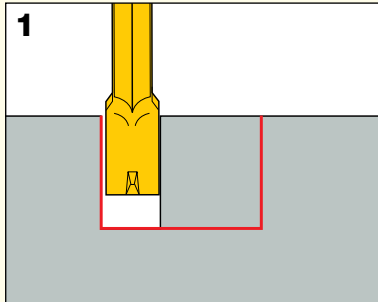


Machining Tips

Correct Grooving Sequence

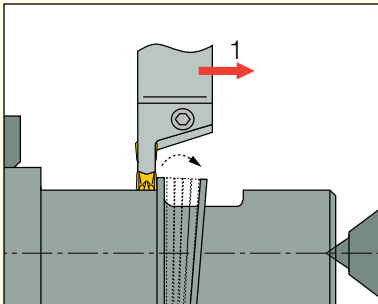
When making a groove where the insert's width is not identical to the groove's, it is recommended to select an insert that will enable to groove symmetrically in such

a way that the material is always in the center of the insert. This practice will ensure better chipbreaking and symmetrical cutting forces.

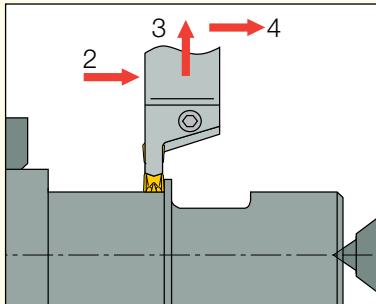


Eliminating a "Hanging Ring"

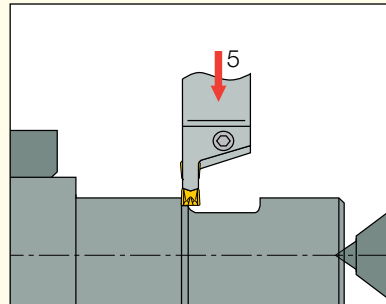
When turning at the end of a bar or toward a recess between two walls, a "hanging ring" may be formed. To eliminate the unwanted "hanging ring":



1. Turn toward the recess. Stop a short distance before reaching the recess.



2. Pull back the groove-turn tool and re-position it.



3. Machine as shown. This final operation achieves the size and flatness of the side wall.

Internal Machining

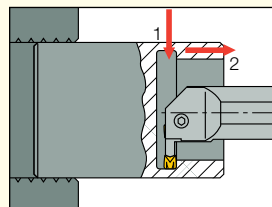
Improving Internal Turning in a Blind Hole

Internal turning in a blind hole brings about the problem of chip exit. When the tool reaches the rear side wall, chips may be caught between the wall and the insert, possibly causing insert breakage.

Two solutions that can eliminate this problem:

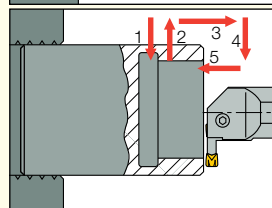
First Solution

1. Start by grooving at the rear wall.
2. Continue by turning from the inside toward the outside.



Second Solution

Start by grooving at the rear wall. Pull the tool back to the outside. Turn the final diameter from outside, toward the groove.

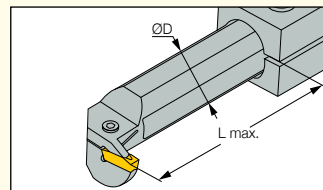


Optimizing Internal Machining Toolholder Overhang

It is always recommended to use the minimum possible overhang in order to maintain maximum toolholder rigidity.

As a general rule, maximum overhang should not exceed three times the holder-bar diameter.

$$L_{max.} \leq 3D$$



Finishing Operation: Diameter Compensation

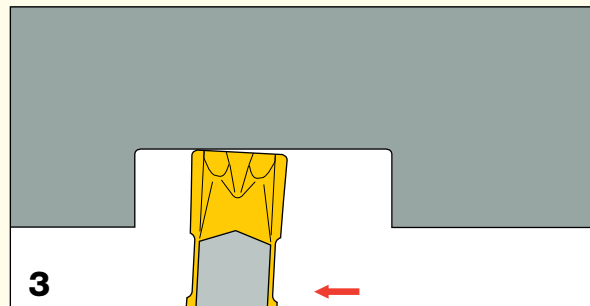
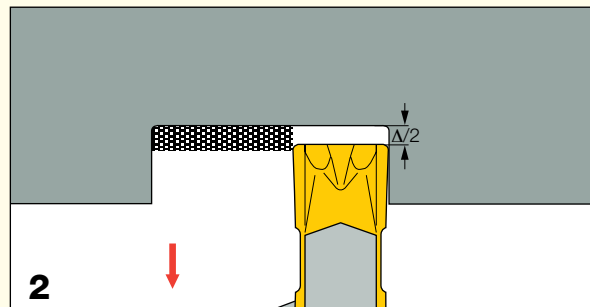
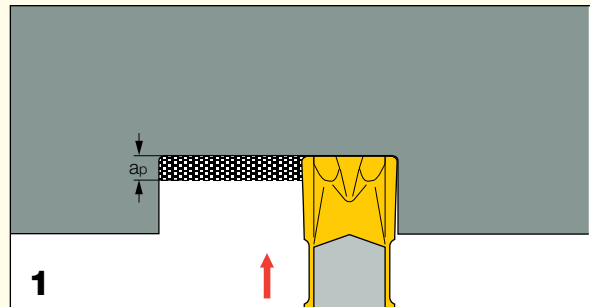
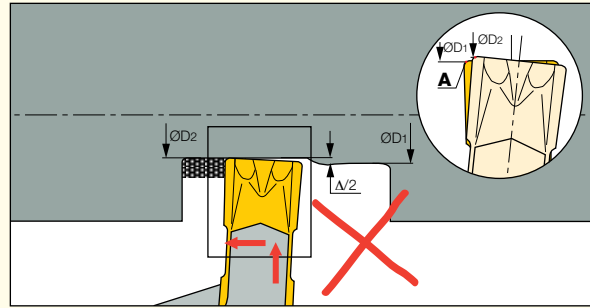
A compensation factor for the final diameter must be used in the final machining operation. After the initial grooving to the required final diameter, the machining direction is normally changed for longitudinal turning. At this point the deflection occurs. If machining continues without correction, corner **A** will penetrate the material. This will result in two different diameters: ϕD_1 from the grooving and ϕD_2 from the turning. The difference between ϕD_1 and ϕD_2 is a value we define as Δ . The compensation factor is $\Delta/2$, as shown below.

$$\frac{\Delta}{2} = \frac{\phi D_1 - \phi D_2}{2}$$

Using the compensation factor will eliminate the small surface step. Follow this simple procedure during machining:

1. Groove to the final diameter.
2. Pull the tool back, a distance equal to the value of $\Delta/2$.
3. Continue the finish turning operation.

Characteristic values of Δ are shown in the diagrams on the next page.

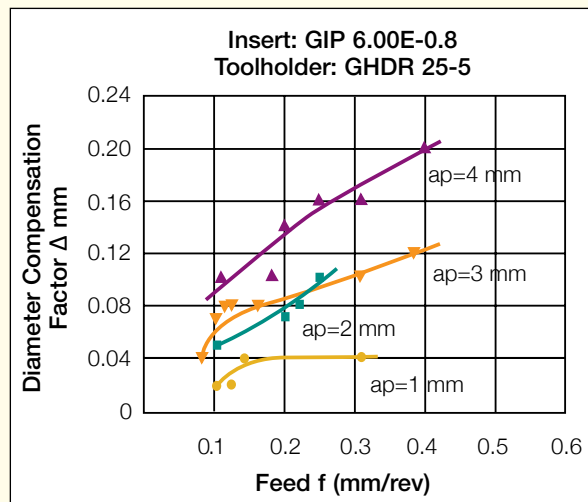
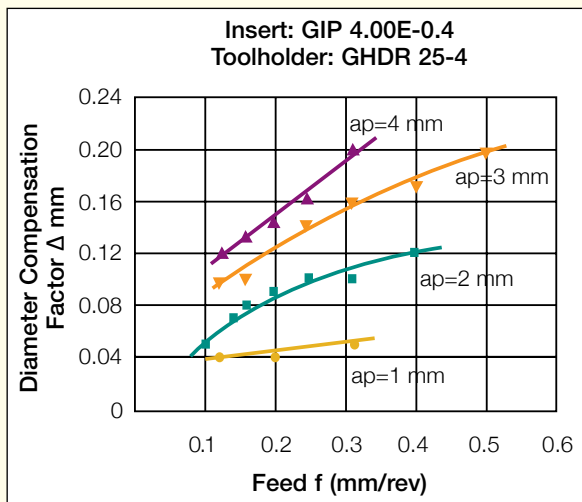
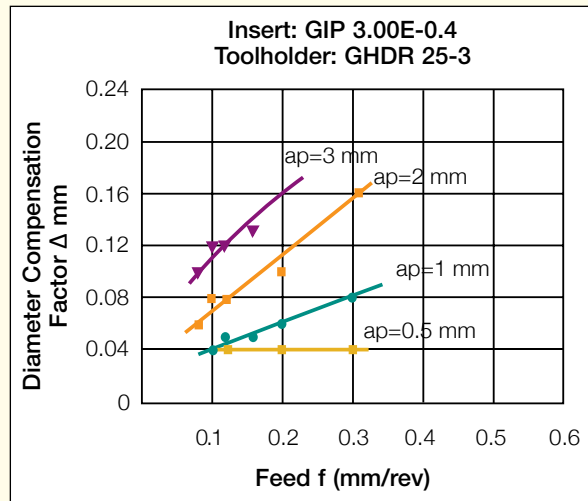


Characteristic Values of Δ

The diagrams show experimental results for specific machining conditions. These are sample values that will vary with different workpiece materials and different holder types.

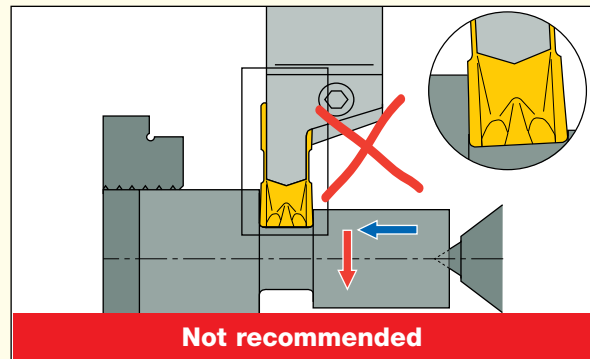


Measure the Δ value for your finishing operation in a short test using your selected finishing conditions. Do not run your test using the final diameter.

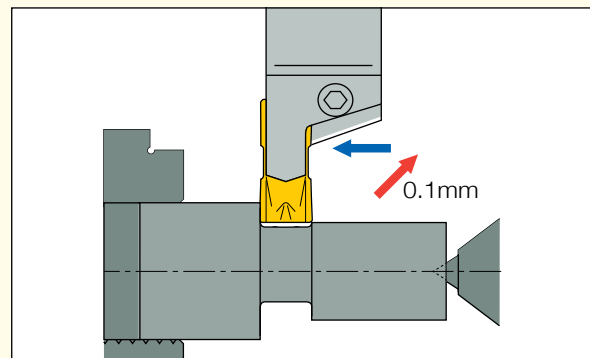


Multifunction Operations

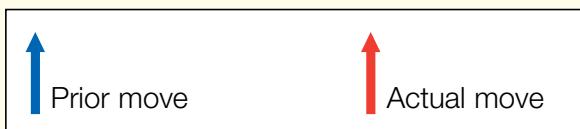
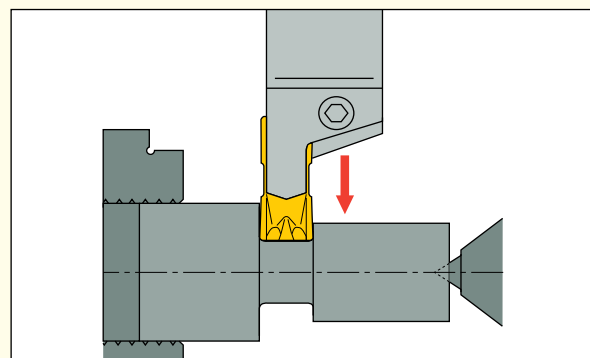
The groove-turn are multifunction tools, able to operate in a sequence of grooving and turning modes. Moving from turning to grooving requires consideration of the basic GRIP principle, thereby eliminating the possibility of insert breakage. In this situation one must release the side deflection which is necessary in turning, but not recommended in grooving.



The following machining sequence is suggested: After completing the longitudinal turning, but before starting the grooving, the side deflection must be released. Move the tool in the direction opposite that of feed, approximately 0.1 mm, and return to the original position without side load.



Then, after the deflection has been released and the holder is perpendicular to the workpiece, the grooving operation may start.



Machining Between Walls

One of the most important advantages of the GROOVE TURN systems is the ability to machine between walls. To achieve the best results, the following sequence is recommended:

Roughing

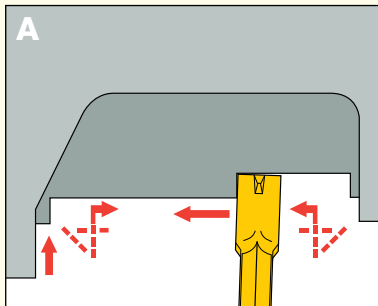
Plunge to depth of cut. Pull back 0.2 mm radially. Turn longitudinally, retract at the end of the cut by 0.2 mm, simultaneously in radial and axial directions. Plunge again and repeat same cycle leaving steps

of 0.2 mm at the shoulders for the finishing cut. Minimum D.O.C. has to be $a_p \geq R \times 1.2$ (corner radius).

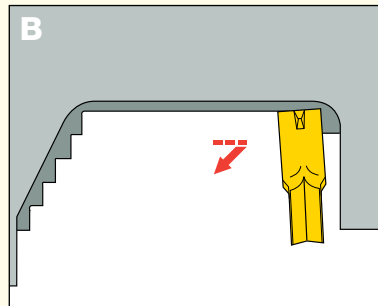
Finishing

Plunge on the right side, reaching the tangent of the bottom radius. Retract and relieve the tangent point of the radius on the other side. Retract and machine all of the contour, pulling back by compensation value along the bottom (see page B140).

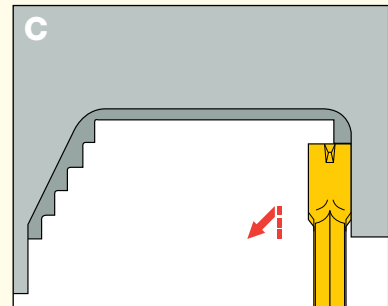
Roughing



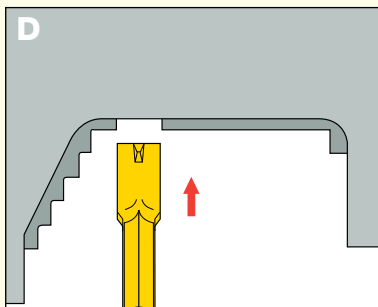
Roughing



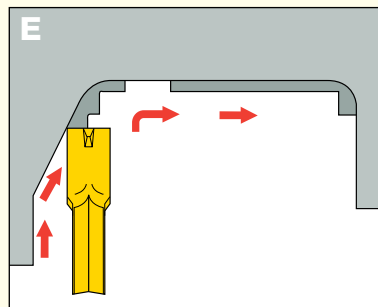
Finishing



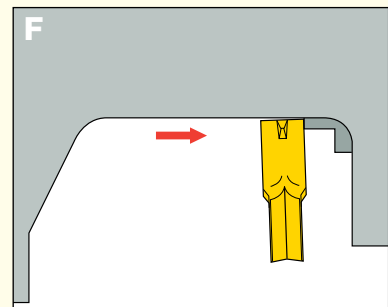
Finishing



Finishing



Finishing



These instructions can be viewed at: <http://www.youtube.com/watch?v=HXhEtc1z14w>

Recommended Criteria for Replacement of the Cutting Edge

The cutting edge should be replaced in time to save costly downtime. The recommended value of wear at replacement is defined as the wear land size. The insert should be replaced when the wear land size is such that the increase in side forces is still small - not causing the insert to break and still maintaining the required workpiece tolerances. Wear is a function of machining time. The cutting edge should normally be replaced after 15 minutes of machining time.

Insert Wear - Tool Life

Wear on the Clearance Face

Wear land on groove turn inserts generally occurs at the corner of the clearance face **VB_N**, on the side near the corner **VB**, on the frontal cutting edge **VB_F** and at the end of the cutting side **VG**. The effective life of the cutting edge ends when any of the wear land values - **VB**, **VB**, **VB_F** or **VG** - exceed the recommended maximum values shown.

The largest wear land is normally measured at the corner of the clearance face **VB_N**. It has the most influence on the dimensions and tolerances of the final workpiece.

The wear land shape on GRIP inserts differs slightly from that of ISO inserts. Although the frontal cutting surface of GRIP inserts absorbs more heat and wear, the wear land **VB_F** is generally negligible in turning operations when compared to **VB** and **VB_N**. Wear land may be found only occasionally at the end of the cutting side **VG**.

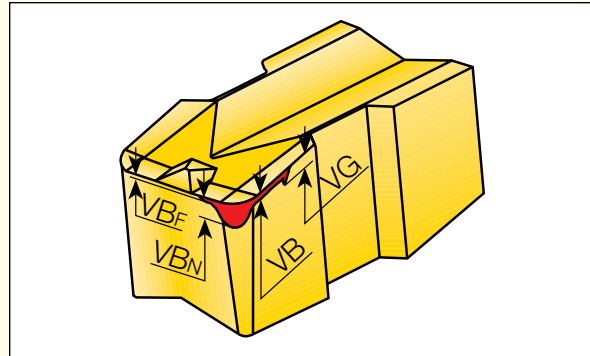
Crater Wear and Tool Life

Crater wear **KB** occurs on the rake face and is mainly affected by feed and cutting speed. Crater wear develops over time toward the frontal cutting edge.

If penetration of the frontal cutting edge occurs, it will immediately affect the quality of the machined surface.

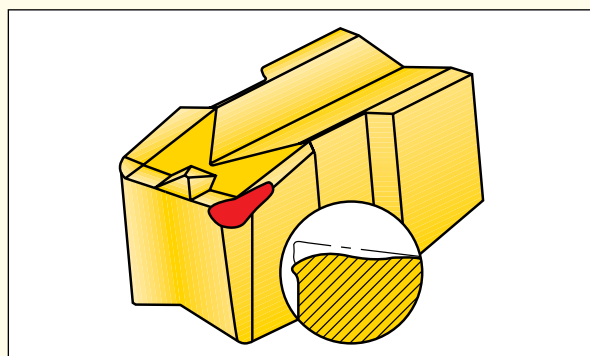
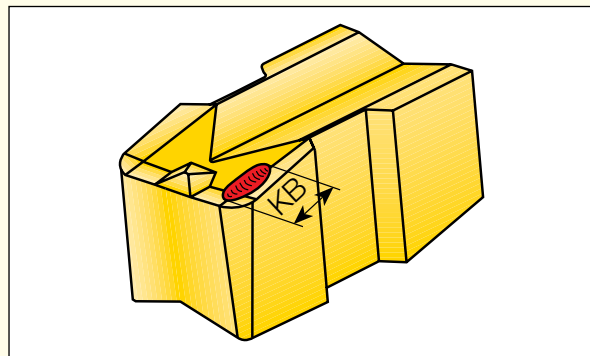
Plastic Deformation

Plastic deformation occurs when the hardness of a cutting edge is decreased due to heat and pressure. The so-called "hot hardness" of the cutting tool material limits the feed and the cutting speed. Plastic deformation will affect the dimensions and tolerances of the finished product. It generally occurs when a small corner radius is used with high cutting speeds and high feeds. Using the proper insert geometry and the correct speed and feed ranges should eliminate the problem.



Maximum Recommended Wear Land Values Relative to Insert Widths

W Insert Width (mm)	Maximum Wear Land (mm)
≤3	0.20
4	0.22
5	0.25
6	0.27
8	0.27
≥10	0.30



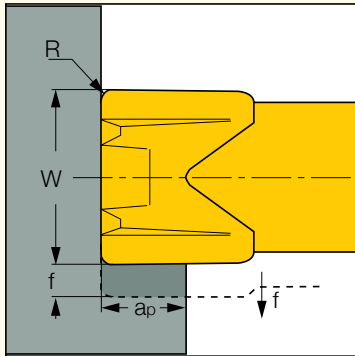
Machine Power Calculation

Calculation of Required Machine Power

Use the formulas below or use our internet web tool at: <http://mpwr.iscar.com/machiningpwr>

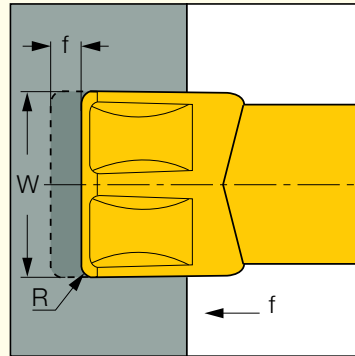
Turning

$$P = \frac{K_C \cdot a_p \cdot f \cdot v_C}{h \cdot 61 \cdot 10^3} \text{ [kW]}$$



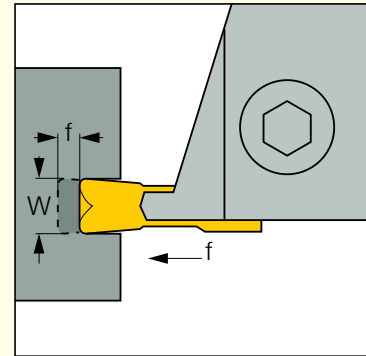
Grooving/Parting

$$P = \frac{K_C \cdot W \cdot f \cdot v_C}{h \cdot 61 \cdot 10^3} \text{ [kW]}$$



Face Grooving

$$P = \frac{K_C \cdot W \cdot f \cdot v_C}{h \cdot 61 \cdot 10^3} \text{ [kW]}$$



Where:

K_C - Specific cutting forces (N/mm²), turning values could be used.

h - Efficiency ($h \approx 0.8$)

Kc Values

Mtl. Gr. No.	Kc [N/mm ²]	Mtl. Gr. No.	Kc [N/mm ²]
1	2000	21	500
2	2100	22	800
3	2150	23	800
4	2200	26	700
5	2100	27	700
6	2100	28	1700
7	2100	31	3000
8	2100	32	3100
9	2100	33	3300
10	2500	34	3300
11	3250	35	3200
12	2300	36	1700
13	2800	37	1700
14	2600	38	4600
15	1100	39	4700
16	1300	40	4600
17	1100	41	4500
18	1800		
19	900		
20	1000		

For material groups, see page B134.

M-type Tools

- The M-type tools do not have a support under the insert's cutting edge.
- For an insert with a smaller width than 2.2 mm there are no standard catalog tools available. There are 2 options how to use these narrow inserts:
 1. Modify an existing tool and adjust the support under the insert to the required width.
 2. Use a standard M-type tool without support.
- In wider widths there are also cases where the support under the insert will disturb the machining. (threading inserts, pulley-V inserts and various specially tailored inserts). Also in these cases the above explanation should be considered.
- These tools also provide the option for the customer to use a very wide range of insert widths on the same tool. (Up to 6.4 mm)
- **Machining conditions need to be light due to small support and limited gripping forces.**



Tools for Machining with High Pressure (up to 340 bar)

The high pressure coolant feature has been in existence for a long time in the metal removal world, taking a bigger role in today's machining.

ISCAR was one of the first cutting tools companies to respond to market needs by designing and producing tools for ultra high and high pressure coolant flow.

High pressure coolant was initially implemented mainly for difficult-to-machine materials such as titanium, inconel and other heat resistant alloys.

Later it was found that tool-life, productivity and chip control can be improved when machining stainless and alloyed steel.

The new JHP tools are essential and important in the aviation, aerospace and medical industries.

How does it work?

The stream velocity of the coolant emitted from the pump increases as the coolant holes become smaller. When it emerges out of the tool through the nozzle, the velocity is very high, exerting considerable force on the chips, lowering their temperature and protecting the cutting edge from thermal shock.


High temperature alloys produce a very high temperature as they are being cut. By effectively removing the heat, the chips become less ductile and thus easier to break.

Shorter chips are easily managed - they do not tangle around the workpiece or machine parts, so there is no need to stop the process frequently.

Usually in conventional cooling the chip prevents the coolant from reaching the insert rake face in the cutting zone. The coolant stream of the JHP tools is directed precisely between the insert rake face and the flowing chip. This results in longer tool life and a much more reliable process.

The coolant channels of the JHP tools feature outlets very close to the cutting edges, thus gaining the following advantages:

- Shorter machining time – The cutting speed may be increased by up to 200% when machining titanium & heat resistant alloys.
- Longer tool life – tool life increases by up to 100% not only on titanium and heat resistant alloys, but also on stainless and alloy steels.
- Improved chip control – even on the most ductile and problematic materials, small chips can be obtained.
- Very effective cooling down of the cutting edge, which reduces sensitivity to heat fluctuations
- Safer and more stable process

 JHP tools provide advantageous performance also when conventional pressure is applied.

General Information

Pressure Ranges

Up to 30 bar – Low pressure (LP) may provide some improvement in tool life. Usually will not have an effect on chip control.

30 – 120 bar – High pressure (HP) the most commonly used pressure range used with JHP tools.

Increase in tool life, increase in cutting speeds, improved chip control.

120 – 400 bar – Ultra high pressure (UHP) requires special tool design in order to take advantage of the extra pressure. Minor increase in tool life compared to HP range.

Ultra high pressure coolant is usually implemented for machining titanium and heat resistant alloys when there is a need for very small chips and higher machining rates.

Since 2000, ISCAR has provided hundreds of special tools featuring ultra high pressure coolant capability, for various customers and applications.

Pressure vs. Flow

Each JHP tool is designed to work at a certain flow rate, depending on the pressure. The flow rates are listed in the catalog pages for each tool. The user should verify that his pump can supply the required flow in order to achieve the optimal results. The pump data sheet will usually list the maximum flow rate for each pressure range.

Chips & Pressure

The coolant flow will start to break the chips at a certain pressure, depending on the specific tool and the workpiece material. If the chips are not breaking, the pressure should be increased until chip control is achieved. Above this pressure, as it is increased the chips become smaller and smaller. It is possible to control the size of the chips by modifying the pressure in order to achieve the desired chip size.

Tools for Machining with High Pressure (up to 340 bar)

High Pressure Coolant with Groove-Turn and Parting Tools

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

On exotic alloys such as inconel and titanium, it is usually impossible to break the chips with standard external coolant pressure.

Applying high coolant pressure provides excellent chip breaking results.

On some alloyed and stainless steel, especially when low feeds are applied, high pressure coolant may solve chip breaking problems.

High pressure coolant reduces or even eliminates built-up edge phenomenon, especially when machining stainless steel and high temperature alloys.

In turning operations, applying high pressure coolant is less effective because the jet is directed to the frontal edge.



Grooving Test

Material: Titanium (Ti6Al4v)

Operation: Grooving




Tool: GHDL 25-6-JHP

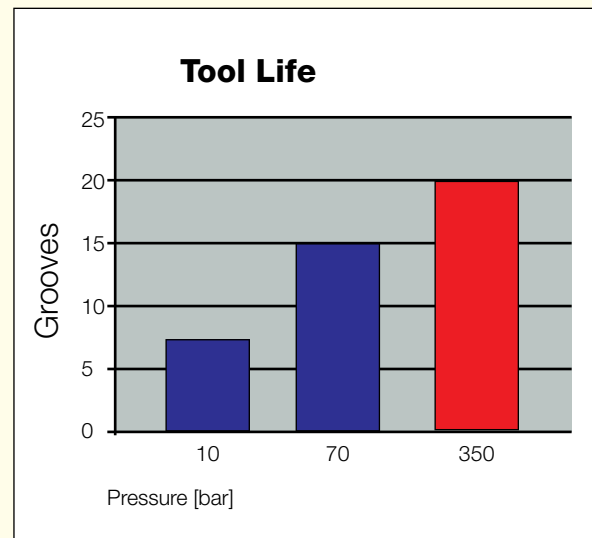
Insert: GIMF 608 IC07

Vc: 50 mm/min

f: 0.15 mm/rev



Pressure [bar]		
10 (External)	70	350
		



Grooving Test

Material: Stainless Steel AISI 316L

Operation: Grooving

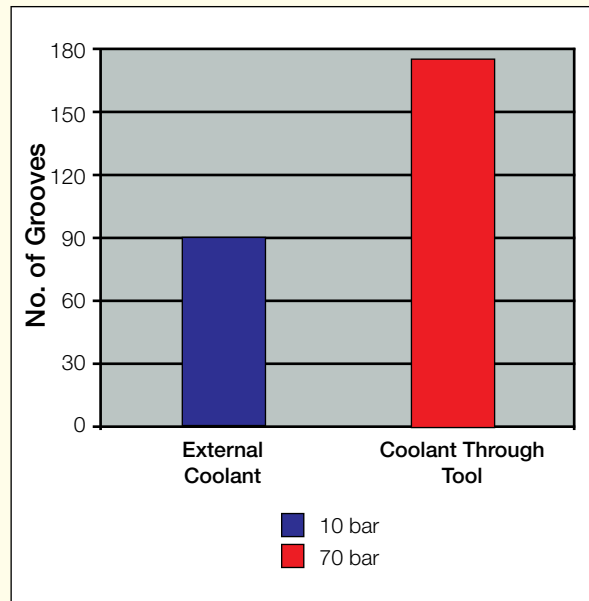
Tool: TGTR 25-3JHP

Insert: TAG N3J IC808

Groove depth: 25 mm

Vc: 150 m/min

f: 0.15 mm/rev



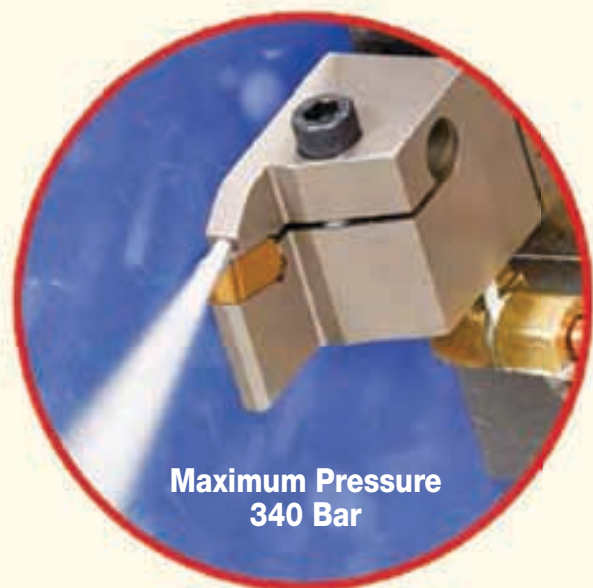
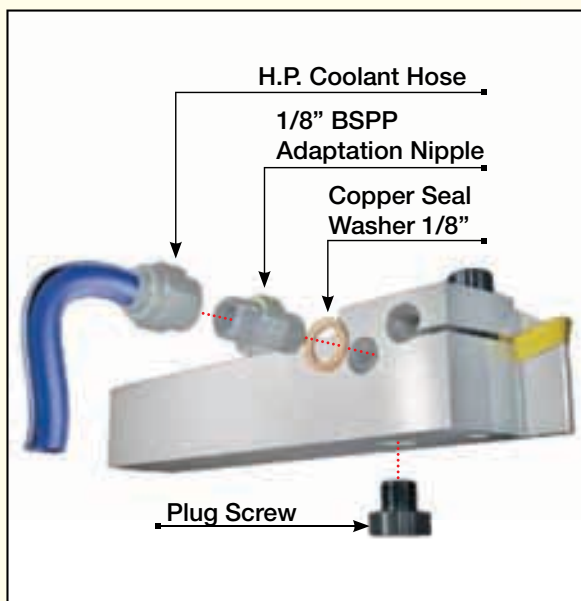
Assembly and Safety Guidelines When Using the JET HP ISO Turning and Grooving Tools

Before use, please ensure that:

- The machine door is in a fully closed position.
- The coolant hose is in the correct location and fully tightened with all seals in position.
- A blank plug is inserted into the unused coolant hole.
- All O-rings and washers are in place.
- The coolant hose is tightened securely to the toolholder and tool block, to prevent leakage of coolant.

Important

Always pay attention not to exceed the maximum safe working pressure for **GROOVE-TURN tools 340 bar** and **PARTING OFF tools 300 bar**.



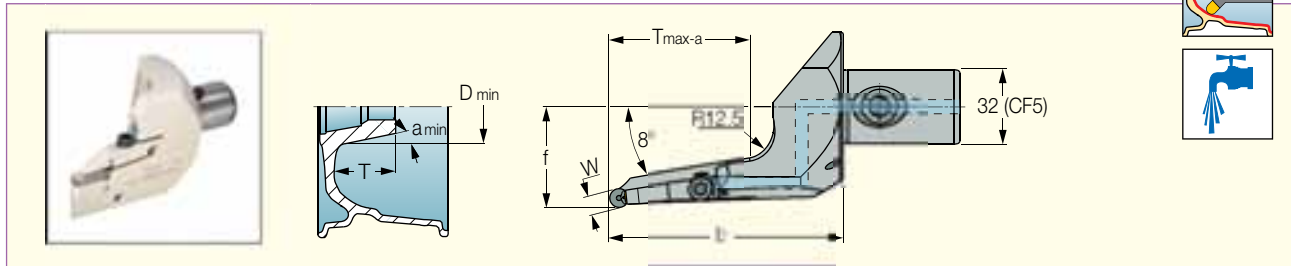
Tools for Machining Aluminum Wheels



FIX-GRIP • CLICKFIT

CF5 FGHIFR-8A

Internal Machining Heads with CLICKFIT Adaptation for Facing and Internal Machining of Aluminum Wheels



Designation	D _{min}	W	l ₂	T _{max-a}	f
CF5 FGHIFR-8A-8	300.00	8.00	100.0	60.00	43.0

For inserts, see pages: FGMA (C14) • FGPA (C14).

For holders, see pages: GHIA VDI-CF5 (C7) • GHIA-CF5 (C7).

Spare Parts

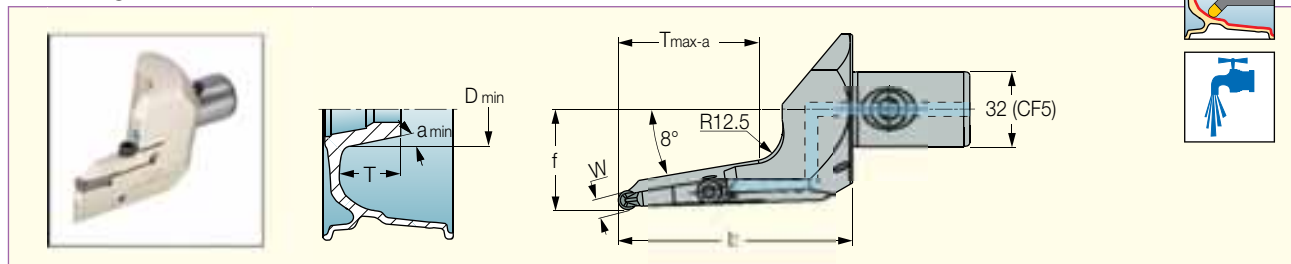
Designation	Screw	Key	Extractor	Cooling Nozzle
CF5 FGHIFR-8A	SR M6X25DIN912 UNB.	HW 5.0	EDG 33A*	EZ 62

* Optional, should be ordered separately

CUT-GRIP • CLICKFIT

CF5 GHIFR-8A

Internal Machining Heads with CLICKFIT Adaptation for Facing and Internal Machining of Aluminum Wheels



Designation	D _{min}	W	l ₂	T _{max-a}	f
CF5 GHIFR-8A-8	300.00	8.00	100.0	60.00	43.0

For inserts, see pages: GDMA (B47) • GIPA/GIDA 8 (Full Radius) (B48).

For holders, see pages: GHIA VDI-CF5 (C7) • GHIA-CF5 (C7).

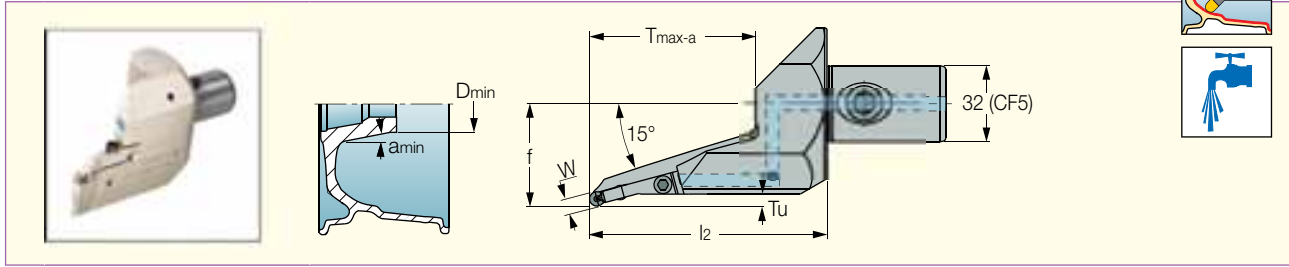
Spare Parts

Designation	Screw	Key	Cooling Nozzle
CF5 GHIFR-8A-8	SR M6X25DIN912 UNB.	HW 5.0	EZ 62

CUT-GRIP • CLICKFIT

CF5 GHIUR-15A

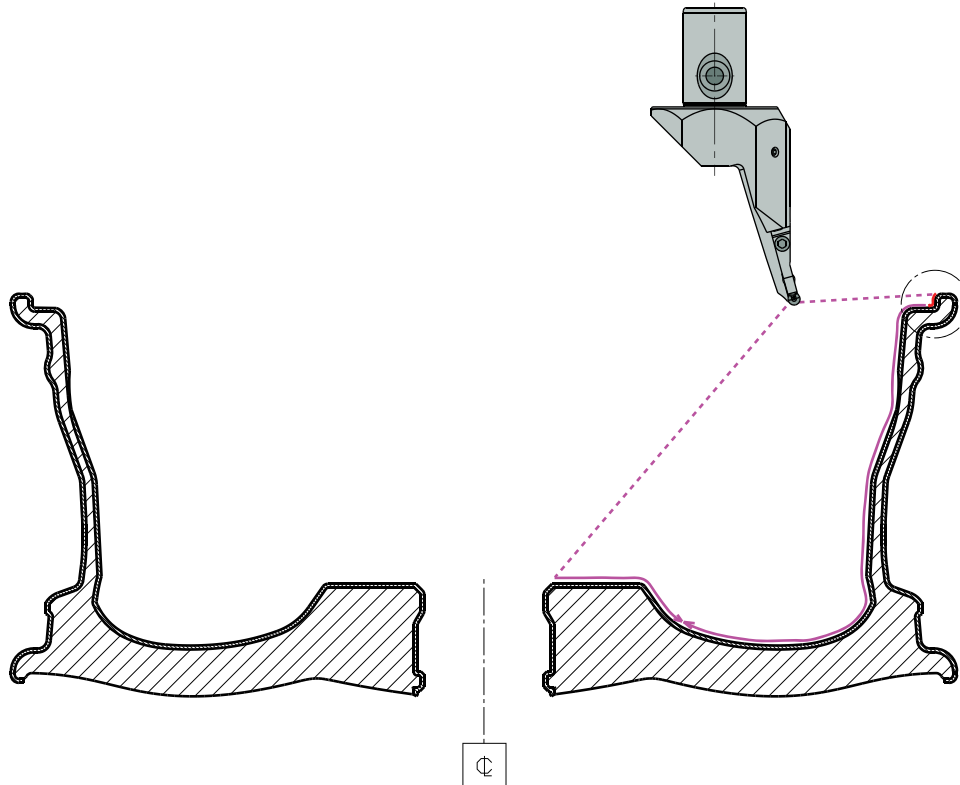
Internal Machining Heads with CLICKFIT Adaptation for Facing and Internal Machining of Aluminum Wheels (15° approach)



Designation	D _{min}	W	l ₂	T _{max-a}	f	F ₁
CF5 GHIUR-15A-6	300.00	6.00	100.0	70.00	43.0	5.0
CF5 GHIUR-15A-8	300.00	8.00	100.0	70.00	43.0	5.0

For inserts, see pages: GDMA (B47) • GIPA (Full Radius W=3-6) (B47) • GIPA/GIDA 8 (Full Radius) (B48).

For holders, see pages: GHIA VDI-CF5 (C7) • GHIA-CF5 (C7).



Spare Parts

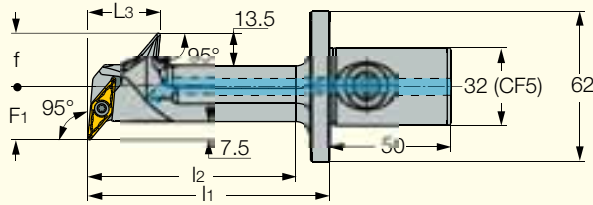
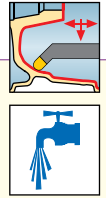


Designation	Screw	Key	Cooling Nozzle
CF5 GHIUR-15A-6	SR 76-1637	HW 4.0	EZ 83
CF5 GHIUR-15A-8	SR M6X25DIN912 UNB.	HW 5.0	EZ 104

ISOTURN • CLICKFIT

CF5 A-SVXCR-16X2

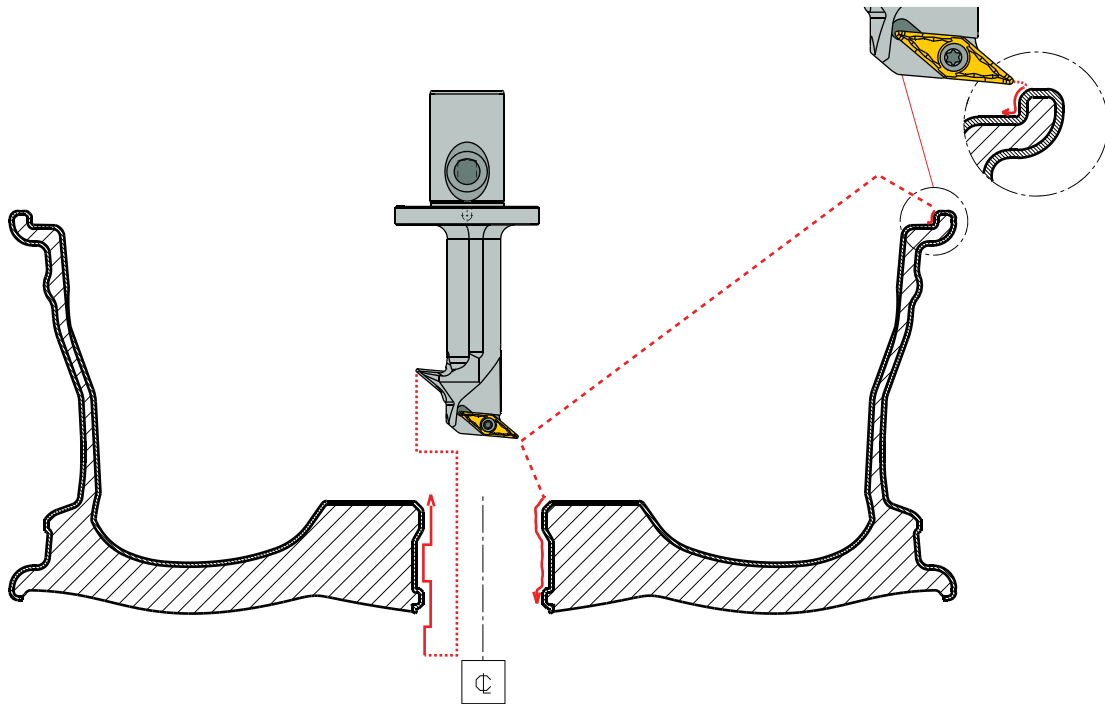
Double Pocket, Boring Head for VCGT 1604 Inserts and a CLICKFIT CF5 Adaptation, for Machining Aluminum Wheels



Designation	D _{min}	l ₁	l ₂	L ₃	f	F ₁
CF5 A-SVXCR-16X2	45.00	100.00	86.0	30.00	22.0	22.0

For inserts, see pages: VCGT-AS refer to ISCAR TURNING & THREADING TOOLS catalog. • VCGT-DW (PCD) (C16) • VCGT/VCMT (PCD & CBN) (C16).

For holders, see pages: GHIA VDI-CF5 (C7) • GHIA-CF5 (C7).



Spare Parts

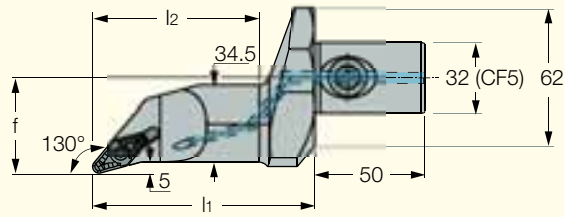
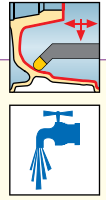


Designation	Screw	Key
CF5 A-SVXCR-16X2	SR 16-236	T-15/5

ISOTURN • CLICKFIT

CF5 A-SVXCR-22

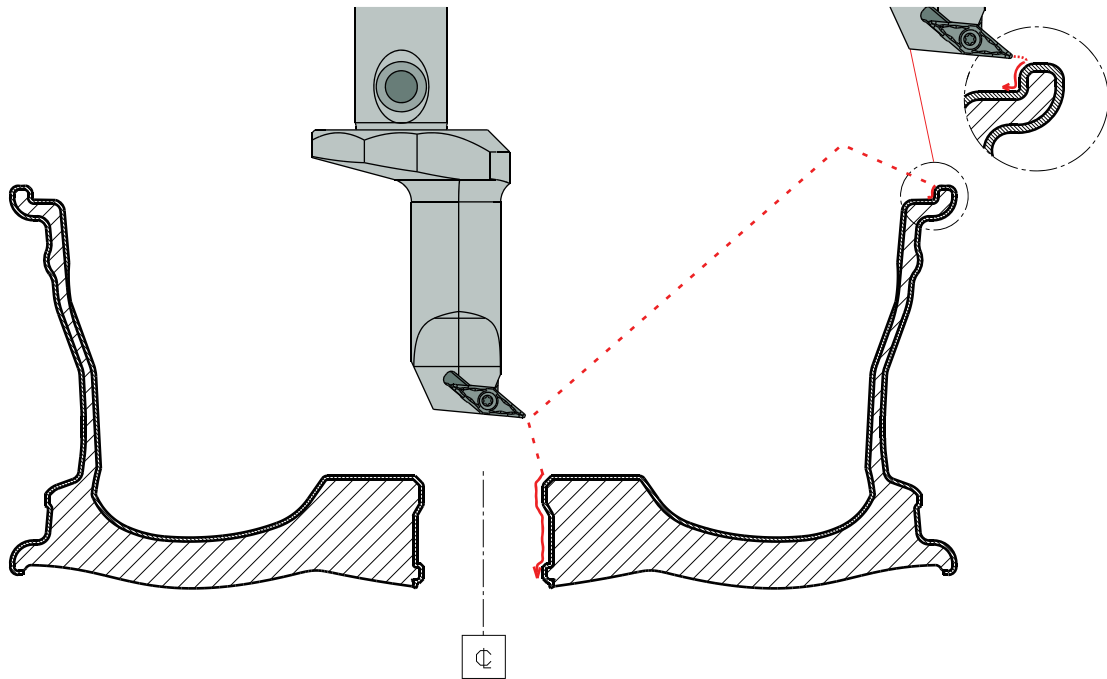
Boring Heads for VCGT 2205 Inserts and a CLICKFIT CF5 Adaptation, for Machining Aluminum Wheels



Designation	D _{min}	l ₁	l ₂	f
CF5 A-SVXCR-43100-22	40.00	100.00	75.0	43.0

For inserts, see pages: VCGT-AS refer to ISCAR TURNING & THREADING TOOLS catalog.

For holders, see pages: GHIA VDI-CF5 (C7) • GHIA-CF5 (C7).



Spare Parts

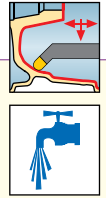
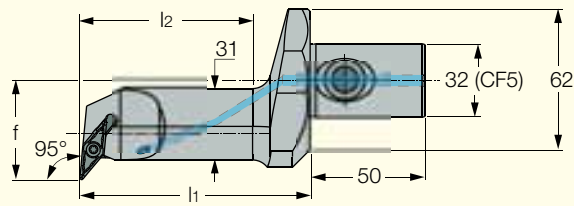


Designation	Screw	Key
CF5 A-SVXCR-22	SR 16-212	T-20/5

ISOTURN • CLICKFIT

CF5 A-SVLFCR-16

Boring Head for VCGT 1604 Inserts and a CLICKFIT CF5 Adaptation, for Machining Aluminum Wheels

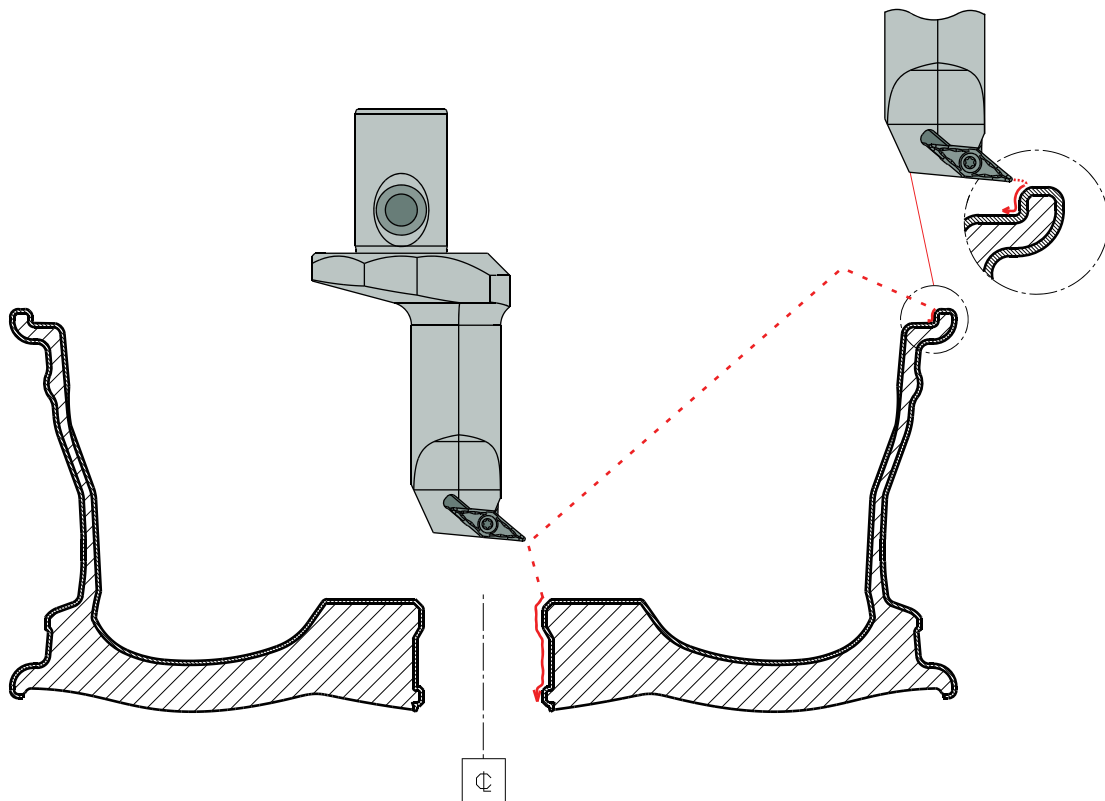


Right-hand shown

Designation	D _{min}	l ₁	l ₂	f
CF5 A-SVLFCR-43100-16	40.00	100.00	75.0	43.0

For inserts, see pages: VCGT-AS refer to ISCAR TURNING & THREADING TOOLS catalog.

For holders, see pages: GHIA VDI-CF5 (C7) • GHIA-CF5 (C7).



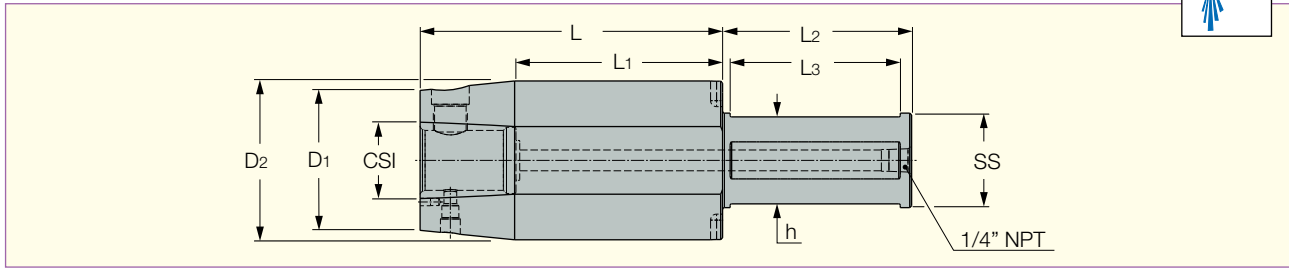
Spare Parts

Designation	Screw	Key	Seat Screw	Key 1
CF5 A-SVLFCR-43100-16	SR 16-236 P	T-15/5	SR TC-3P	HW 4.0

CLICKFIT • Straight Shank

GHIA-CF5

Female CLICKFIT Holder with a Straight Cylindrical Shank



Designation	SS	CSI	L	L1	L2	L3	D1	D2	h
GHIA 40-CF5	40	CF5	160.00	110.0	100.00	90.00	74.0	84.00	36.0
GHIA 50-CF5	50	CF5	160.00	110.0	100.00	90.00	74.0	84.00	46.0

For tools, see pages: CF5 A-SVLFCR-16 (C6) • CF5 A-SVXCR-16X2 (C4) • CF5 A-SVXCR-22 (C5) • CF5 FGHIFR-8A (C2) • CF5 GHIFR-8A (C2) • CF5 GHIUR-15A (C3).

Spare Parts

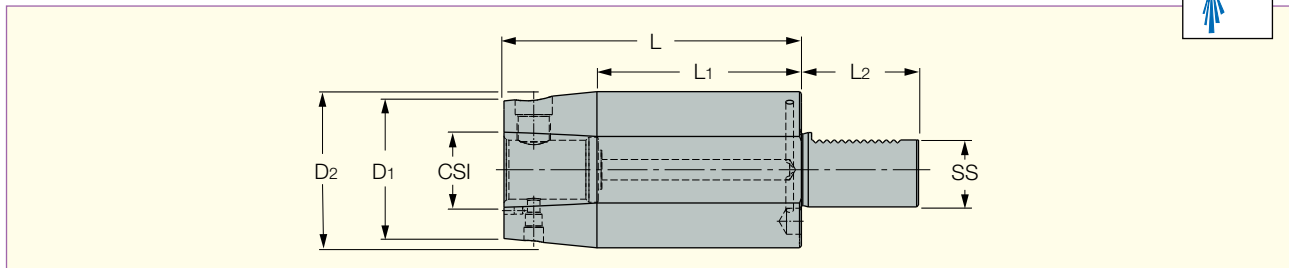


Designation	Screw	Key	O RING	Extractor
GHIA-CF5	SCREW M18X1.5 FOR CF5 HD	WRENCH HW10 225X40DIN 911	OR 15X3N	WRENCH REAL C.F M8

CLICKFIT • VDI

GHIA VDI-CF5

Female CLICKFIT Holder with a VDI DIN69880 Standard Shank



Designation	SS	CSI	L	L1	L2	D1	D2
GHIA VDI40-CF5	VDI40	CF5	150.00	110.0	63.00	74.0	84.00
GHIA VDI50-CF5	VDI50	CF5	150.00	110.0	78.00	74.0	84.00

For tools, see pages: CF5 A-SVLFCR-16 (C6) • CF5 A-SVXCR-16X2 (C4) • CF5 A-SVXCR-22 (C5) • CF5 FGHIFR-8A (C2) • CF5 GHIFR-8A (C2) • CF5 GHIUR-15A (C3).

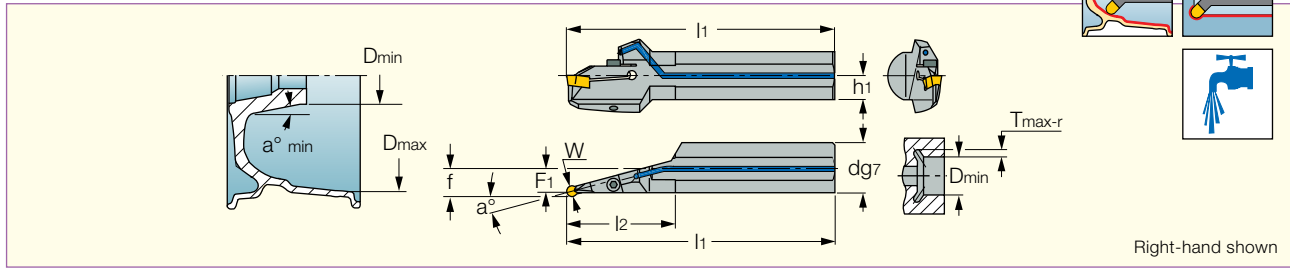
Spare Parts



Designation	Screw	Key	O RING	Extractor
GHIA VDI-CF5	SCREW M18X1.5 FOR CF5 HD	WRENCH HW10 225X40DIN 911	OR 15X3N	WRENCH REAL C.F M8

GHIUR/L-C-A(15° & 27.5°)Bars

Internal Grooving and Turning Bars for Machining Aluminum Wheels



Designation	W	d	D _{min}	T _{max-r} (¹⁾)	l ₁	l ₂	f	F ₁	h ₁	a°
GHIUR/L 40C-15A-6	6.00	40.00	160.00	-	320.00	83.0	21.2	19.0	18.0	15.0
GHIUR/L 40C-15A-8	8.00	40.00	160.00	0.00 (³⁾)	320.00	83.0	21.0	18.0	18.0	15.0
GHIUR/L 50C-15A-8	8.00	50.00	100.00	0.00 (⁴⁾)	350.00	83.0	26.0	23.0	23.0	15.0
GHIUR/L 40C-27.5A-6	6.00	40.00	90.00	0.60 (²⁾)	320.00	80.0	25.1	23.5	18.0	27.5
GHIUR/L 40C-27.5A-8	8.00	40.00	108.00	1.60 (²⁾)	320.00	81.0	25.2	23.0	18.0	27.5
GHIUR/L 50C-27.5A-8	8.00	50.00	120.00	1.80 (²⁾)	350.00	82.0	30.2	28.0	23.0	27.5

(¹) Dimension for minimum bore diameter. (²) For bore diameter D>200, T_{max} is 4.0 mm (³) For bore diameter D>200, T_{max} is 0.5 mm (⁴) For bore diameter D>200, T_{max} is 1.4 mm

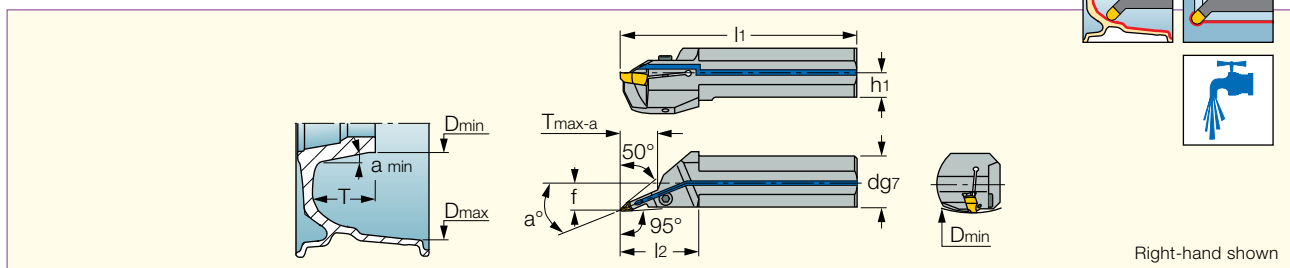
For inserts, see pages: GDMA (B47) • GIPA (Full Radius W=3-6) (B47) • GIPA 8-35V (V Shape) (C12) • GIPA/GIDA 8 (Full Radius) (B48).

Spare Parts

Designation	Screw	Key	Seal
GHIUR/L 40C-15A-6	SR M5X25DIN912	HW 4.0	PL 40
GHIUR/L 40C-15A-8	SR M6X25DIN912 UNB.	HW 5.0	PL 40
GHIUR/L 50C-15A-8	SR M6X25DIN912 UNB.	HW 5.0	PL 40
GHIUR/L 40C-27.5A-6	SR M6X25DIN912 UNB.	HW 5.0	PL 40
GHIUR/L 40C-27.5A-8	SR M6X25DIN912 UNB.	HW 5.0	PL 40
GHIUR/L 50C-27.5A-8	SR M6X25DIN912 UNB.	HW 5.0	PL 40

GHIUR/L-C-22.5A-8V

22.5° Approach Angle Bars, for Facing and Internal Machining



Designation	W	d	D _{min}	T _{max-a} (¹⁾)	l ₁	l ₂	h ₁	f	a°
GHIUR/L 40C-22.5A-8V	8.00	40.00	300.00	28.50	250.00	60.0	18.0	21.0	22.5

(¹) Dimension for min. bore diameter & up to 200 mm

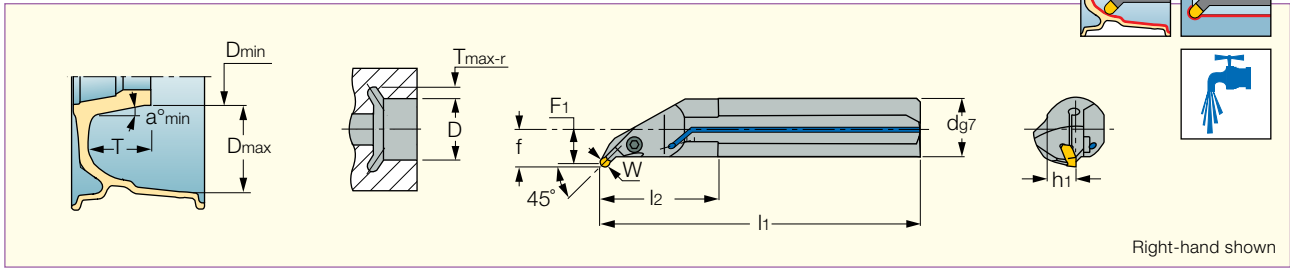
For inserts, see pages: GIPA 8-35V (V Shape) (C12).

Spare Parts

Designation	Screw	Key	Seal
GHIUR/L-C-22.5A-8V	SR M6X25DIN912 UNB.	HW 5.0	PL 40

GHIUR/L-UC

45° Undercutting Bars for Internal Turning of Aluminum Wheels



Designation	W	d	D _{min}	T _{max-r}	l ₁	l ₂	f	F ₁	h ₁
GHIUR/L 40UC-6	6.00	40.00	70.00	0.00 ⁽¹⁾	350.00	75.0	23.8	24.7	18.0
GHIUR/L 50UC-6	6.00	50.00	78.00	0.00 ⁽²⁾	350.00	75.0	28.8	29.7	23.0
GHIUR/L 40UC-8	8.00	40.00	68.00	0.00 ⁽³⁾	350.00	79.0	28.8	26.0	18.0
GHIUR 50UC-8	8.00	50.00	58.00	0.00 ⁽⁴⁾	350.00	80.0	30.2	31.4	23.0

⁽¹⁾ For bore diameter D>200, Tmax is 1.3 mm ⁽²⁾ For bore diameter D>200, Tmax is 2.0 mm ⁽³⁾ For bore diameter D>200, Tmax is 2.8 mm ⁽⁴⁾ For bore diameter D>200, Tmax is 6.0 mm

For inserts, see pages: GDMA (B47) • GIPA (W=3-6) (B46) • GIPA 8-35V (V Shape) (C12) • GIPA/GIDA 8 (Full Radius) (B48).

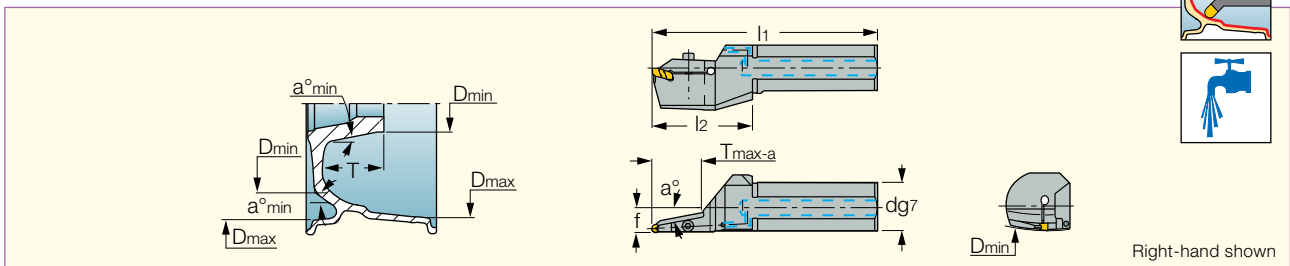
Spare Parts



Designation	Screw	Key	Seal
GHIUR/L-UC	SR M6X20DIN912	HW 5.0	PL 40

GHI FR/L-A

8° / 10° Approach Angle Bars, for Facing and Internal Machining



Designation	W	D _{min}	D _{max}	l ₁	l ₂	T _{max-a}	f	a°	d
GHI FR/L 40C-10A-6	6.00	300.00	360.0	300.00	80.0	40.00	19.3	10	40.00
GHI FR/L 40C-8A-8	8.00	300.00	360.0	320.00	100.0	70.00	19.5	8	40.00

For inserts, see pages: GDMA (B47) • GIPA (Full Radius W=3-6) (B47) • GIPA/GIDA 8 (Full Radius) (B48).

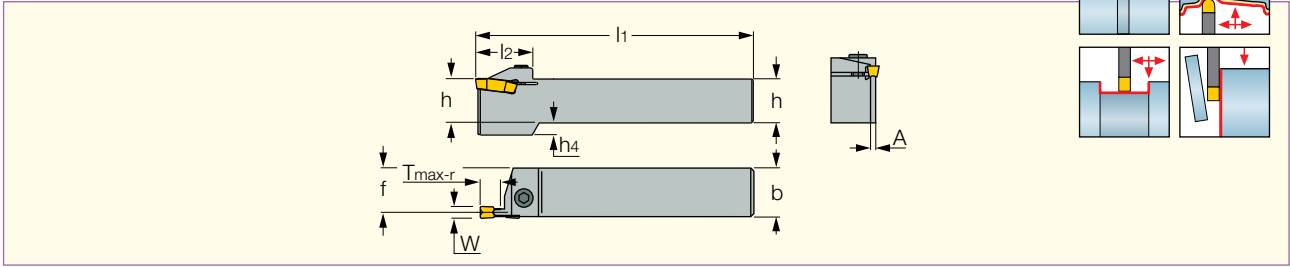
Spare Parts



Designation	Screw	Key	Seal
GHI FR/L 40C-10A-6	SR M5X25DIN912	HW 4.0	PL 40
GHI FR/L 40C-8A-8	SR M6X20DIN912	HW 5.0	PL 40

GHDR/L-8A

External Toolholders for Turning, Grooving and Parting. Upper Jaw with Hard Coating to Sustain Chip Deflection



Designation	h	W _{min}	W _{max}	T _{max-r}	b	l ₁	f	A	l ₂	h ₄
GHDR/L 25-8A	25.0	8.00	8.00	25.00	25.0	150.00	22.0	6.00	40.0	7.6
GHDR/L 32-8A	32.0	8.00	8.00	25.00	32.0	170.00	29.0	6.00	40.0	-

• For user guide, see pages B132-145.

For inserts, see pages: GIPA/GIDA 8 (Full Radius) (B48).

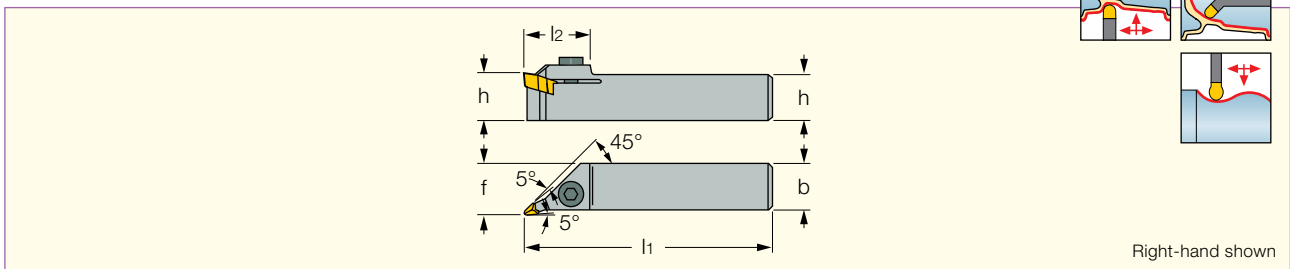
Spare Parts



Designation	Screw	Key
GHDR/L-8A	SR M6X25DIN912 UNB.	HW 5.0

GHVR/L

Internal and External Profiling Holders for Machining Aluminum Wheels



Designation	W	h	b	l ₁	f	l ₂
GHVR/L 25-8	8.00	25.0	25.0	150.00	29.0	41.0

For inserts, see pages: GIPA 8-35V (V Shape) (C12).

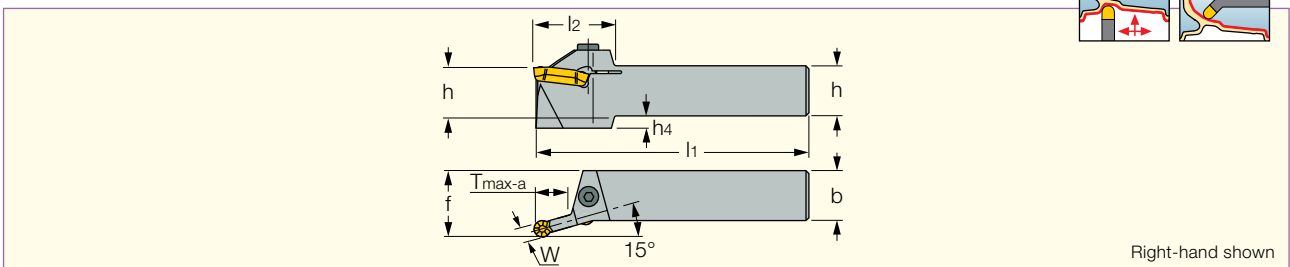
Spare Parts



Designation	Screw	Key
GHVR/L	SR M6X25DIN912 UNB.	HW 5.0

GHDKR/L

External and Internal Profiling Holders for Machining Aluminum Wheels



Designation	W	h	b	l ₁	l ₂	f	h ₄
GHDKR/L 25-6 ⁽¹⁾	6.00	25.0	25.0	150.00	40.0	32.2	6.0
GHDKR/L 25-8	8.00	25.0	25.0	150.00	44.0	33.0	6.0
GHDKR/L 32-8	8.00	32.0	32.0	170.00	44.0	40.0	-

⁽¹⁾ Only insert GIPA 6.00-3.00 is suitable for this tool.

For inserts, see pages: GDMA (B47) • GDMY (Full Radius) (B33) • GIPA (Full Radius W=3-6) (B47) • GIPA/GIDA 8 (Full Radius) (B48).

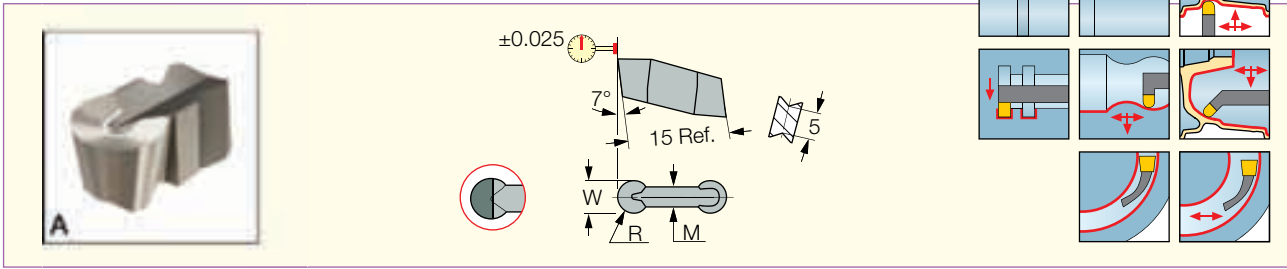
Spare Parts



Designation	Screw	Key
GHDKR/L	SR M6X25DIN912 UNB.	HW 5.0

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±0.02	R±0.05	M	IC20	IC806	ID5	ap (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
GIPA 6.00-3.00	6.00	3.00	4.8	●			0.00-3.00	0.21-0.58	0.11-0.29
GIPA 6.00-3.00-D (1)	6.00	3.00	4.8			●	0.00-3.00	0.26-0.72	0.13-0.36
GIPA 6.00-3.00YZ	6.00	3.00	4.8	●			0.00-3.00	0.21-0.58	0.11-0.29
GIPA 6.00-3.00YZ-D (2)	6.00	3.00	4.8			●	0.00-3.00	0.26-0.72	0.13-0.36
GIPA 6.00-3.00CB (3)	6.00	3.00	4.8			●	0.00-3.00	0.21-0.58	0.11-0.29

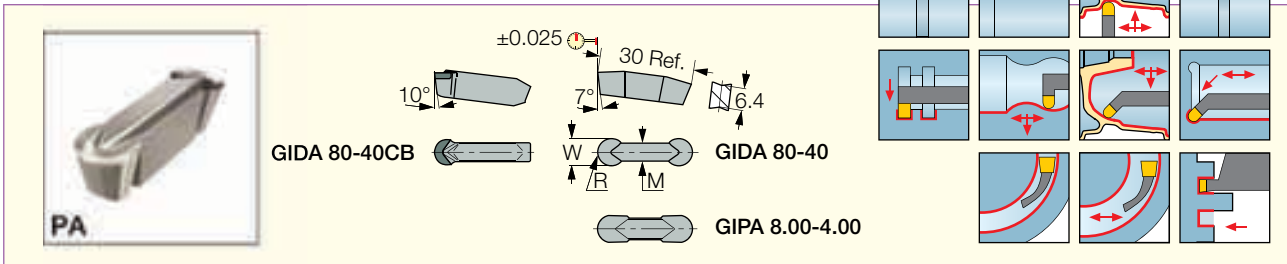
• For cutting speed recommendations and user guide, see pages B132-145.

(1) Single-ended PCD tipped insert (2) Single-ended molded PCD chipformer tipped insert (3) Single-ended flat PCD tipped insert with chip deflector

For tools, see pages: C#-GHDR/L (G11) • CF5 GHIUR-15A (C3) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • CGPAD (B23) • GHDKR/L (C10) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHIFR/L-A (C9) • GHIUR/L-C-A(15° & 27.5°)Bars (C8) • GHMPR/L (B18) • GHMR/L (B18) • GHSR/L (B104).

GIPA/GIDA 8 (Full Radius)

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



Designation	Dimensions			Tough ↔ Hard		Recommended Machining Data		
	W±0.02	R±0.05	M	IC20	ID5	ap (mm)	f turn (mm/rev)	f groove (mm/rev)
GIDA 80-40	8.00	4.00	5.6	●		0.00-4.00	0.24-0.67	0.14-0.38
GIDA 80-40-D	8.00	4.00	5.6		●	0.00-4.00	0.24-0.67	0.14-0.38
GIDA 80-40CB-D (1)	8.00	4.00	5.6		●	0.00-4.00	0.24-0.67	0.14-0.38
GIDA 80-40YZ	8.00	4.00	5.6	●		0.00-4.00	0.24-0.67	0.14-0.38
GIDA 80-40YZ-D	8.00	4.00	5.6		●	0.00-4.00	0.35-0.96	0.18-0.48
GIPA 8.00-4.00	8.00	4.00	6.0	●		0.00-4.00	0.24-0.67	0.14-0.38

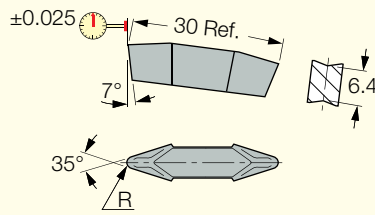
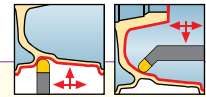
• ID5 is a single-ended PCD tipped insert • For cutting speed recommendations and user guide, see pages B132-145.

(1) Should be clamped on GHDR/L...-8 only

For tools, see pages: C#-GHDR/L (G11) • CF5 GHIFR-8A (C2) • CF5 GHIUR-15A (C3) • CGHN-8-10D (B28) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDKR/L (C10) • GHDR/L (Long Pocket) (B26) • GHDR/L-8A (C10) • GHDR/L-JHP (Long Pocket) (B26) • GHFGR/L-8 (E40) • GHIFR/L-A (C9) • GHIR/L (W=7.0-8.3) (B93) • GHIUR/L-C-A(15° & 27.5°)Bars (C8) • GHIUR/L-UC (C9).

GIPA 8-35V (V Shape)

V-Shaped Inserts for Machining Aluminum Wheels



Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data	
	W	R	R _{±toler}	M	IC20	ID5	a _p (mm)	f turn (mm/rev)
GIPA 6.0-35V-0.8	6.00	0.80	0.050	4.8	●		1.00-3.60	0.21-0.48
GIPA 8YZ-35V-0.80	8.00	0.80	0.050	6.0			1.00-4.80	0.24-0.56
GIPA 8YZ-35V-1.20	8.00	1.20	0.050	6.0			1.45-4.80	0.24-0.62
GIPA 8YZ-35V-1.20-D ⁽¹⁾	8.00	1.20	0.050	6.0		●	1.45-4.80	0.35-0.88
GIPA 8-35V-1.20	8.00	1.20	0.050	6.0	●		1.45-4.80	0.24-0.62
GIPA 8-35V-1.20-D ⁽¹⁾	8.00	1.20	0.050	6.0		●	1.45-4.80	0.35-0.88
GIPA 8-35V-3.0	8.00	3.00	0.050	6.0	●		3.60-4.80	0.24-0.67

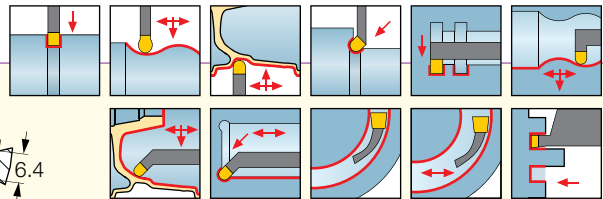
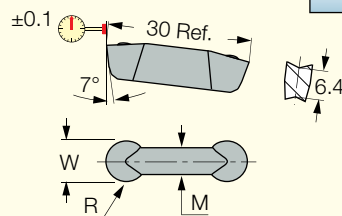
• Precision ground and polished rake to avoid built-up edge • Toolholder seat needs to be modified according to insert profile to ensure clearance

⁽¹⁾ Single-ended PCD tipped insert

For tools, see pages: CGHN-8-10D (B28) • GADR/L-8 (B28) • GHIUR/L-C-22.5A-8V (C8) • GHIUR/L-C-A(15° & 27.5°)Bars (C8) • GHIUR/L-UC (C9) • GHVR/L (C10).

GDMA

Utility Double-Ended Insert with a Polished Top Rake, for Machining Aluminum



Can cut arcs to 250°

Designation	Dimensions			Tough ↔ Hard		Recommended Machining Data		
	W _{±0.05}	R _{±0.05}	M	IC07	IC507	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GDMA 840	8.00	4.00	5.6	●	●	0.00-4.00	0.24-0.67	0.14-0.38

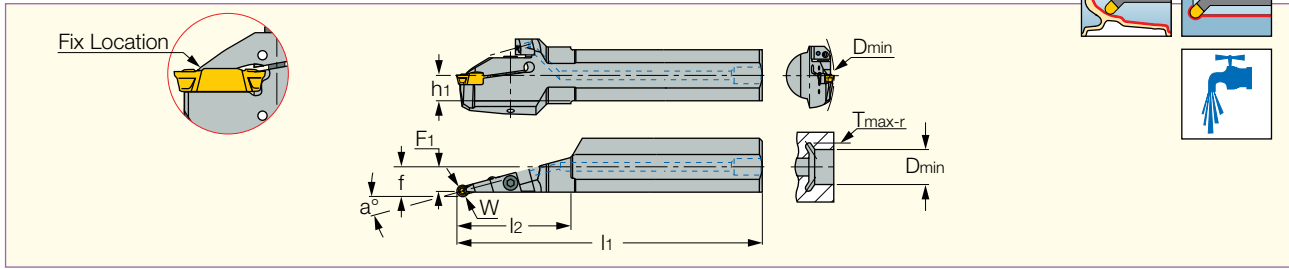
• For heavy-duty machining • Dmin for internal machining = 65 mm (2.26") • For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: CF5 GHIFR-8A (C2) • CF5 GHIUR-15A (C3) • GADR/L-8 (B28) • GHDKR/L (C10) • GHIFR/L-A (C9) • GHIR/L (W=7.0-8.3) (B93) • GHIUR/L-C-A(15° & 27.5°)Bars (C8) • GHIUR/L-UC (C9).



FGHIUR-C-15A-8

15° Approach Angle Bars, for Interrupted Cuts and Back Turning on Aluminum



Designation	W	d	D _{min}	T _{max-r}	l ₁	l ₂	f	F ₁	h ₁	a°	Coolant
FGHIUR 40C-15A-8	8.00	40.00	160.00	0.00	320.00	80.0	21.0	18.0	18.0	15	Y

For inserts, see pages: FGPA (C14).

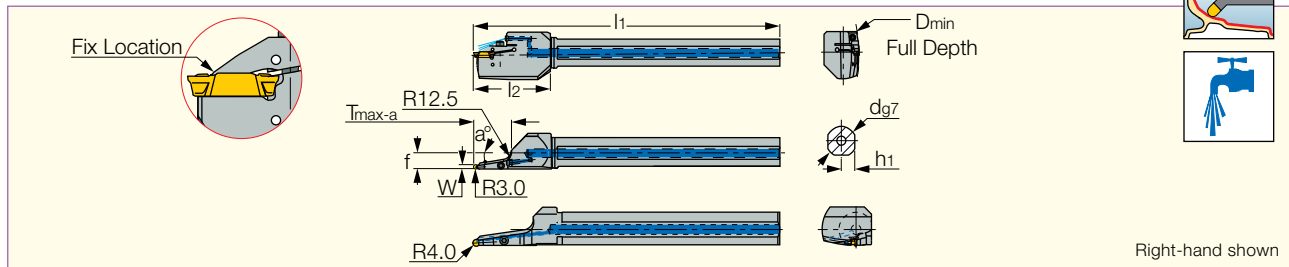
Spare Parts



Designation	Screw	Key	Seal	Sealing Screw
FGHIUR-C-15A-8	SR M6X25DIN912 UNB.	HW 5.0	PL 40	SR 34-510

FGHIFR

8° / 10° Approach Angle Bars, for Interrupted Cuts and Back Turning on Aluminum



Designation	W	d	D _{min}	D _{max}	l ₁	l ₂	T _{max-a}	f	h ₁	a°
FGHIFR 40C-10A-6	6.00	40.00	300.00	360.0	300.00	80.0	40.00	20.8	18.0	10
FGHIFR 40C-8A-8	8.00	40.00	300.00	360.0	320.00	100.0	70.00	19.5	18.0	8

For inserts, see pages: FGMA (C14) • FGPA (C14).

Spare Parts

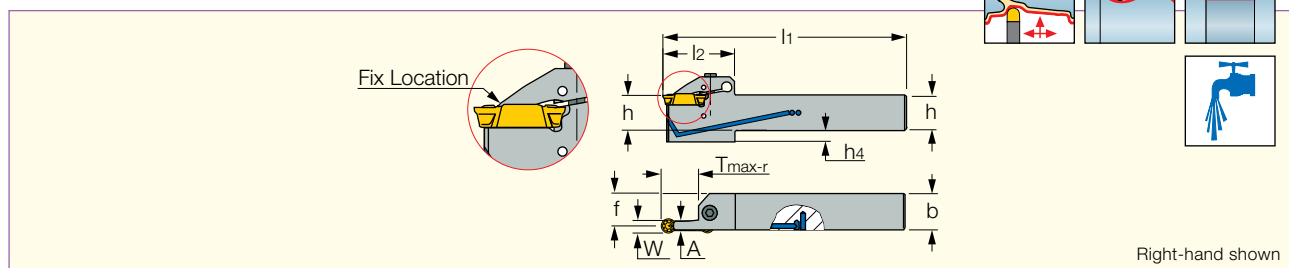


Designation	Screw	Key	Seal	Cooling Nozzle	Extractor
FGHIFR 40C-10A-6	SR 76-1289	HW 5.0	PL 40	EZ 83	EDG 33A*
FGHIFR 40C-8A-8	SR M6X25DIN912 UNB.	HW 5.0	PL 40		EDG 33A*

* Optional, should be ordered separately

FGHR/L

Tools for Interrupted Cuts and Back Turning of Aluminum Wheels



Designation	W	T _{max-r}	h	b	l ₁	f	A	l ₂	h ₄	Coolant
FGHR 2525-6A ⁽¹⁾	6.00	20.00	25.0	25.0	150.00	23.0	4.00	39.0	-	N
FGHR/L 2525C-8A	8.00	25.00	25.0	25.0	170.00	22.0	5.90	50.0	7.6	Y

• For user guide, see pages B132-145.

⁽¹⁾ Without coolant hole

For inserts, see pages: FGMA (C14) • FGPA (C14).

Spare Parts

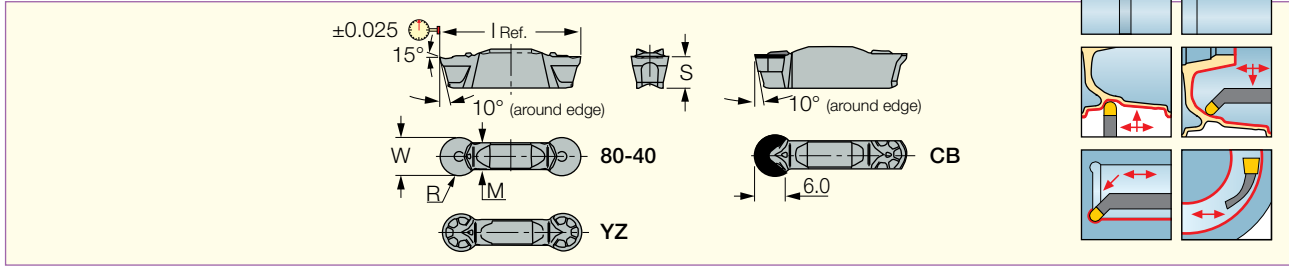


Designation	Screw	Key	Extractor	Pipe Fitting	Cooling Tube
FGHR 2525-6A	SR M6X25DIN912 UNB.	HW 5.0	EDG 33A*	CM 343 MALE CONN.*	SGCU 341*
FGHR/L 2525C-8A	SR M6X25DIN912 UNB.	HW 5.0		CM 343 MALE CONN.*	SGCU 341*
FGHR 2525C-8A			EDG 33A*		

* Optional, should be ordered separately

FGPA

Double-Ended Precision Inserts for Machining Aluminum at Medium-to-High Feeds, Cut Arcs to 250°



Designation	Dimensions						Tough ↔ Hard		Recommended Machining Data	
	W±0.02	R	R±toler	S	M	I	IC20	ID5	a _p (mm)	f turn (mm/rev)
FGPA 6.00-3.00	6.00	3.00	0.050	4.25	3.9	24.60	●		0.00-3.00	0.30-0.54
FGPA 6.00-3.00YZ-D ⁽¹⁾	6.00	3.00	0.050	4.25	3.9	24.90		●	0.00-3.00	0.12-0.30
FGPA 80-40	8.00	4.00	0.050	6.30	5.6	29.80	●		0.00-4.00	0.16-0.72
FGPA 80-40CB ⁽²⁾	8.00	4.00	0.050	6.30	5.6	29.80		●	0.00-4.00	0.16-0.40
FGPA 80-40YZ	8.00	4.00	0.050	6.30	5.6	29.80	●		0.00-4.00	0.40-0.72
FGPA 80-40YZ-D ⁽¹⁾	8.00	4.00	0.050	6.30	5.6	29.80		●	0.00-4.00	0.16-0.40

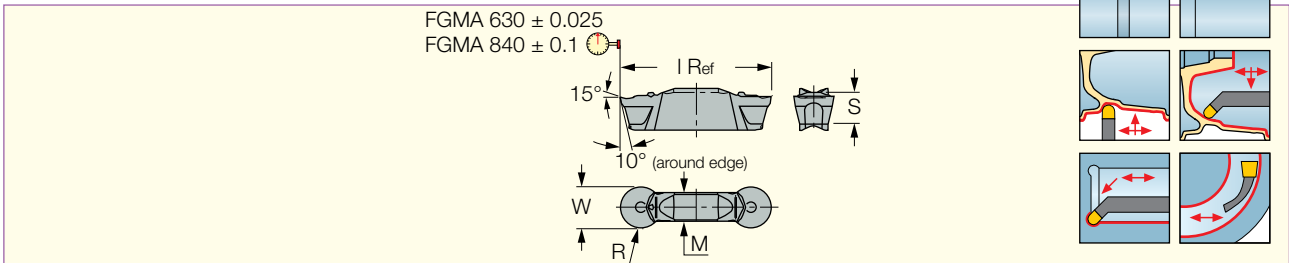
• For cutting speed recommendations and user guide, see pages B132-145.

⁽¹⁾ Single-ended molded PCD chipformer tipped insert ⁽²⁾ Single-ended flat PCD tipped insert with chip deflector

For tools, see pages: CF5 FGHIFR-8A (C2) • FGHIFR (C13) • FGIUR-C-15A-8 (C13) • FGHR/L (C13).

FGMA

Double-Ended Full Radius Utility Inserts, for Machining Aluminum at Medium-to-High Feeds, Cut Arcs to 250°



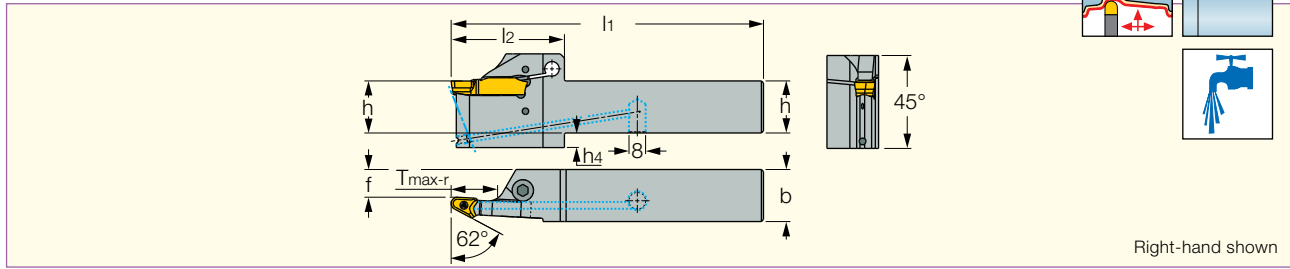
Designation	Dimensions					IC07	Recommended Machining Data	
	W±0.05	R±0.05	M	S	I		a _p (mm)	f turn (mm/rev)
FGMA 630	6.00	3.00	3.9	4.25	24.60	●	0.00-3.00	0.24-0.45
FGMA 840	8.00	4.00	5.6	6.30	29.80	●	0.00-4.00	0.32-0.60

• For cutting speed recommendations and user guide, see pages B132-145.

For tools, see pages: CF5 FGHIFR-8A (C2) • FGHIFR (C13) • FGHR/L (C13).

FGHDUR

Tools for Interrupted Cuts and Back Turning of Aluminum Wheels



Right-hand shown

Designation	T_{max-r}	h	b	l ₁	f	l ₂	h ₄
FGHDUR 25C-3A-10S	22.30	25.0	25.0	150.00	13.3	54.4	7.0

For inserts, see pages: FGPAM (C15).

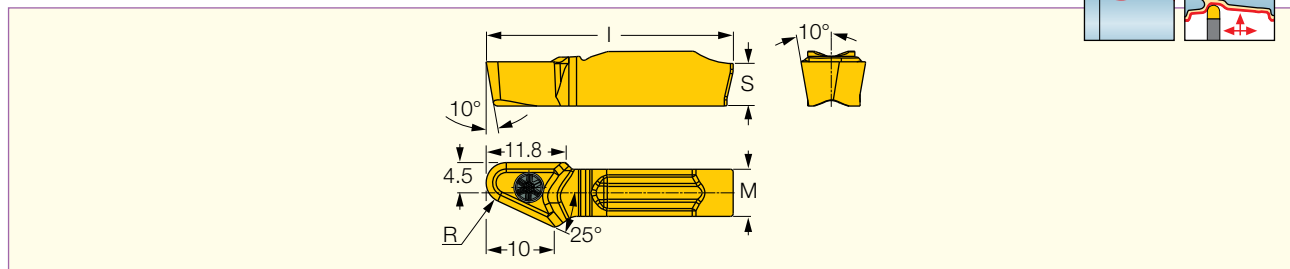
Spare Parts



Designation	Screw	Key
FGHDUR	SR M6X25DIN912 UNB.	HW 5.0

FGPAM

V-Shaped Inserts for Machining Aluminum Wheels

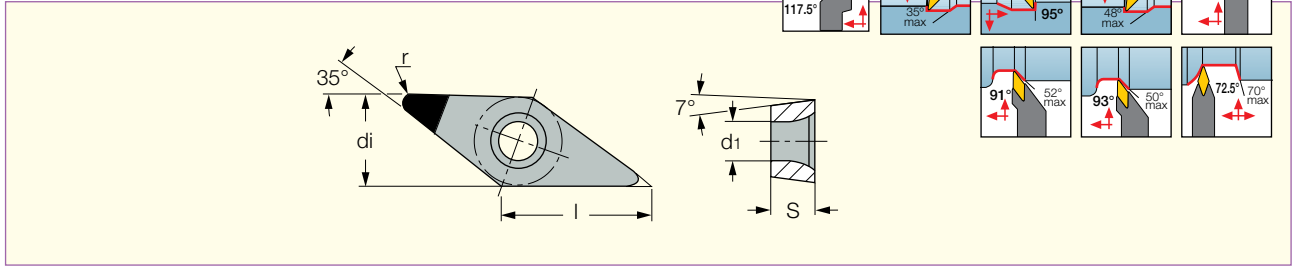


Designation	Dimensions			IC20	Recommended Machining Data	
	R	M	S		a _p (mm)	f turn (mm/rev)
FGPAM 10S-3R-25A	3.00	7.0	8.20	●	0.05-12.00	0.40-0.72

For tools, see pages: FGHDUR (C15).

VCGT-DW (PCD)

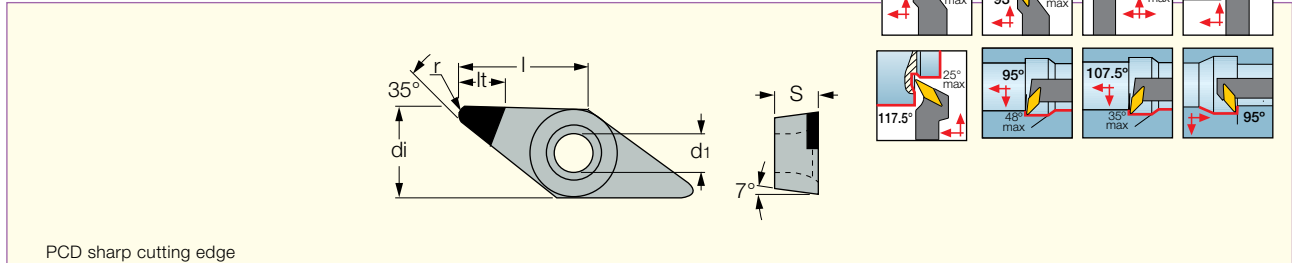
Inserts with 7° Clearance, PCD Single Top Corner Tip with a Chipformer for Machining Aluminum



Designation	Dimensions					ID5	Recommended Machining Data	
	l	di	S	r	d1		ap (mm)	f (mm/rev)
VCGT 160404-DW	16.60	9.52	4.76	0.40	4.40	●	0.10-3.00	0.05-0.30
VCGT 160408-DW	16.60	9.52	4.76	0.80	4.40	●	0.10-3.00	0.05-0.30
VCGT 160412-DW	16.60	9.52	4.76	1.20	4.40	●	0.10-3.00	0.05-0.30
VCGT 220516-DW	22.10	12.70	5.56	1.60	5.50	●	0.10-3.00	0.05-0.30
VCGT 220520-DW	22.10	12.70	5.56	2.00	5.50	●	0.10-3.00	0.05-0.30
VCGT 220530-DW	22.10	12.70	5.56	3.00	5.50	●	0.10-3.00	0.05-0.30

VCGT/VCMT (PCD & CBN)

35° Rhombic Single Brazed Tip Corner Inserts, for Finishing Aluminum (PCD) and Cast Iron (CBN)







PCD sharp cutting edge

Designation	Dimensions					ID5	Recommended Machining Data	
	di	S	r	l	d1		ap (mm)	f (mm/rev)
VCGT 160404D	9.52	4.76	0.40	16.60	4.40	●	0.10-3.00	0.05-0.30
VCGT 160408D	9.52	4.76	0.80	16.60	4.40	●	0.10-3.00	0.05-0.30

ISCAR PARTING



PARTING

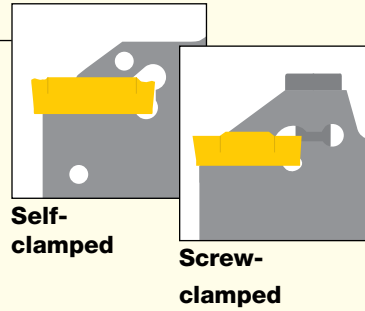
	Page	
Selection Guide	D3	
DO-GRIP	D10	
TANG-GRIP	D32	
CUT-GRIP Screw-Clamp Inserts	D48	
PENTACUT	D52	
USER GUIDE	D59	

Clamping Systems

DO-GRIP

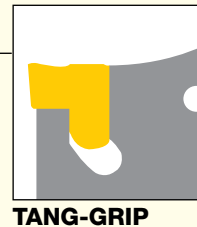
- First choice for parting
- Double-ended insert
- Self clamped for deep grooving and large diameters
- Screw clamped for small diameters
See also HELI-GRIP, page B5.

FIRST CHOICE!



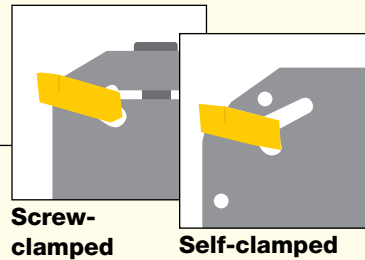
TANG-GRIP

- Very rigid clamping in a tangentially oriented pocket
- Enables machining at very high feed rates and provides excellent straightness and surface finish
- Recommended for parting large diameter parts and for interrupted cuts
- Offers a free, unobstructed chip flow
- Excellent tool and pocket life



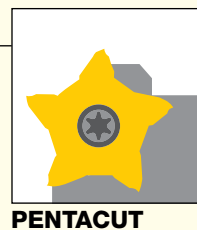
CUT-GRIP

- Single-ended insert
- Self- and screw-clamped options



PENTACUT

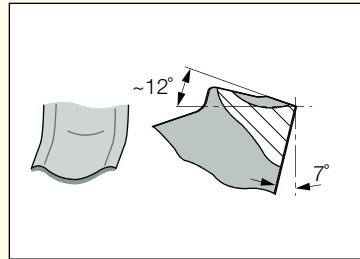
- 5 cutting edges
- Fast edge indexing
- For shallow grooving and up to 20 mm parting diameter



Main Chipformers

C-Type

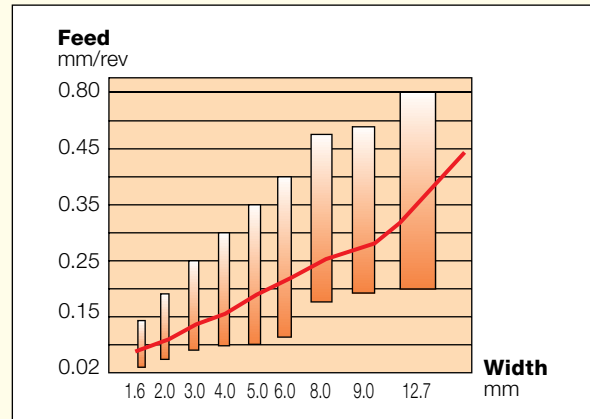
- First choice for the parting of bars, hard materials, and tough applications.
- A positive rake, single cavity with negative land and shoulders, provides extra cutting-edge strength.
- Medium-to-high feed.



$$f \approx \frac{W_{\text{insert}}}{22} \text{ [mm/rev]}$$

Alloy Steel	Austenitic Stainless	High Temp. Alloys	Nonferrous Materials	Cast Iron
✓	✗	✓ (IC20 only)	✓ (IC20 only)	✓

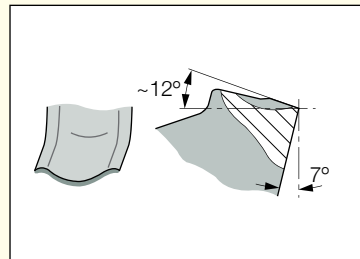
Recommended feed range as a function of insert width



Recommendations are for neutral inserts. For R/L inserts, reduce feed by 20-40%.

W-Type

- Similar to C-type, but with a central ridge that forms double cavities on the rake face and reinforces the frontal cutting edge.
- Used for interrupted cuts and unfavorable conditions.



$$f \approx \frac{W_{\text{insert}}}{22} \text{ [mm/rev]}$$

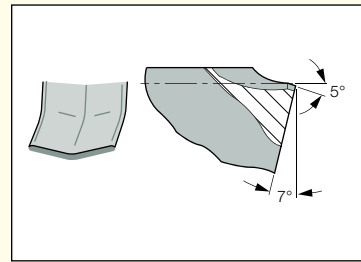
Alloy Steel	Austenitic Stainless	High Temp. Alloys	Nonferrous Materials	Cast Iron
✓	✗	✗	✗	✓

JT-Type

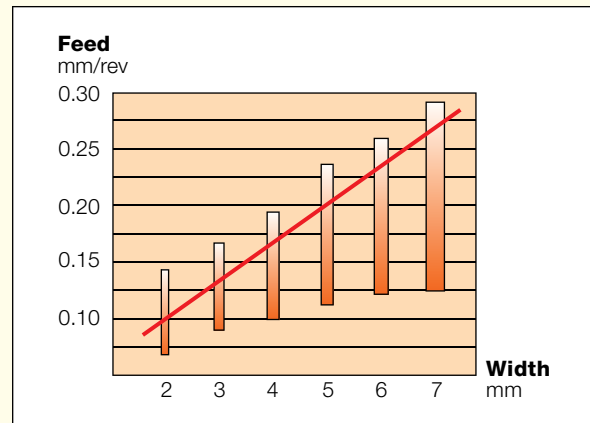
The JT chipformer design is based on the J-type chipformer, with a T-land reinforced frontal cutting edge. JT chipformer provides a solution for the intermediate range between the strong and negative C-type configuration and the positive edged J-type chipformer. The JT chipformer can be used on a wide range of materials, including soft or hard alloy and stainless steel, high temperature alloys and also cast iron. The JT chipformer deforms the chips into compact shapes, in the same manner as the J-type, but it can be used at higher feeds due to its reinforced edge.

$$f \approx \frac{W_{\text{insert}}}{25} \text{ [mm/rev]}$$

Alloy Steel	Austenitic Stainless	High Temp. Alloys	Nonferrous Materials	Cast Iron
✓	✓	✓	✗	✓



Recommended feed range as a function of insert width



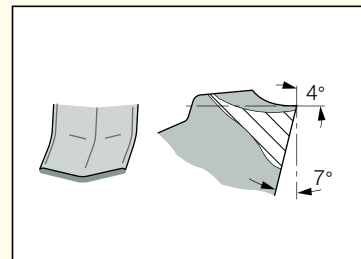
J-Type

- First choice for soft materials, parting of tubes, small diameters and thin-walled parts
- Cutting edge with positive rake
- General application on low carbon steel, alloy steel, austenitic stainless steel.
- Low-to-medium feed

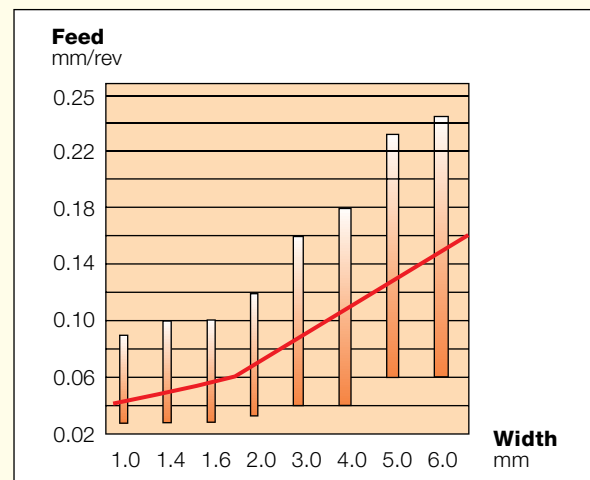
Material: Austenitic stainless steel

$$f \approx \frac{W_{\text{insert}}}{29} \text{ [mm/rev]}$$

Alloy Steel	Austenitic Stainless	High Temp. Alloys	Nonferrous Materials	Cast Iron
✓	✓	✓	✓	✗



Recommended feed range as a function of insert width



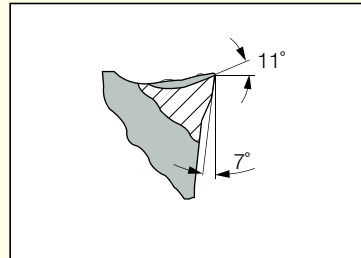
Recommendations are for neutral inserts. For R/L inserts, reduce feed by 20-40%.

Z-Type

- Cutting edge with high positive rake, suitable for parting of tubes, thin walled parts and for small diameters
- Suitable for soft materials
- Excellent for cutting bearing steel and stainless steel
- Low-to-medium feeds

$$f \approx \frac{W \text{ insert}}{33} \text{ [mm/rev]}$$

Alloy Steel	Austenitic Stainless	High Temp. Alloys	Nonferrous Materials	Cast Iron
✓	✓	✓	✓	✗

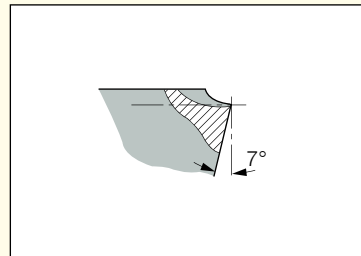


UA/UT-Type

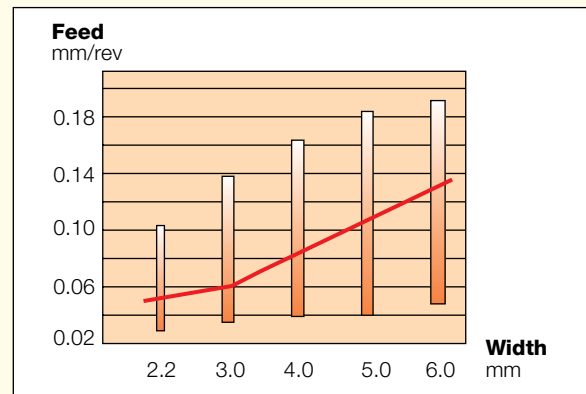
- A chipformer for use at low feeds
- Recommended for CrNi alloys and low carbon steel, especially in the bearing industry and on similar, problematic materials
- The narrow chipformer design ensures short deformed chips and provides improved performance
- UA and UT are similar chipformers. UT is slightly tighter than the UA chipformer

$$f \approx \frac{W \text{ insert}}{45} \text{ [mm/rev]}$$

Alloy Steel	Austenitic Stainless	High Temp. Alloys	Nonferrous Materials	Cast Iron
✓	✗	✗	✗	✗



Recommended feed range as a function of insert width

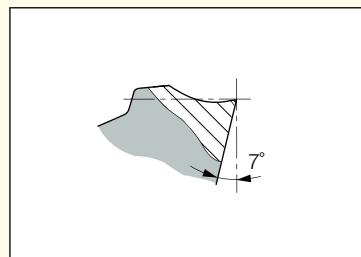


P-Type

- Very positive rake inclination and sharp cutting edge.
- For soft materials, slim parts and general parting.

$$f \approx \frac{W \text{ insert}}{55} \text{ [mm/rev]}$$

Alloy Steel	Austenitic Stainless	High Temp. Alloys	Nonferrous Materials	Cast Iron
✓	✓	✗	✓	✗

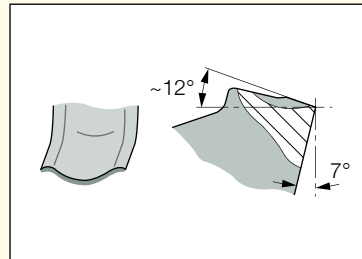


M-Type

- Similar to C-type, but with modified edge
- Improved chip control at medium feed

$$f \approx \frac{W \text{ insert}}{22} \text{ [mm/rev]}$$

Alloy Steel	Austenitic Stainless	High Temp. Alloys	Nonferrous Materials	Cast Iron
✓	✗	✓	✗	✗

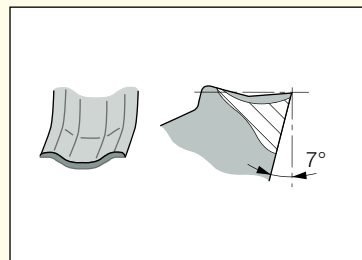


A-Type










- Positive rake, sharp edge
- For parting aluminum
- In grade IC20

$$f \approx \frac{W \text{ insert}}{43} \text{ [mm/rev]}$$

Alloy Steel	Austenitic Stainless	High Temp. Alloys	Nonferrous Materials	Cast Iron
✗	✗	✗	✓	✗



Selection of Chipformers for Various Workpiece Materials

Inserts		Alloy Steel	Austenitic Stainless	High Temp. Alloys	Nonferrous Materials	Cast Iron
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">High</div> <div style="margin-bottom: 10px;">↑</div> <div style="margin-bottom: 10px;">↓</div> <div style="margin-bottom: 10px;">Feed</div> <div style="margin-bottom: 10px;">↑</div> <div style="margin-bottom: 10px;">↓</div> <div>Low</div> </div>	 C	✓	x	✓ <small>(IC20 only)</small>	✓ <small>(IC20 only)</small>	✓
	 W	✓	x	x	x	✓
	 C-jet	✓	✓	✓	x	x
	 JT	✓	✓	✓	x	✓
	 J	✓	✓	✓	✓	x
	 Z	✓	✓	✓	✓	x
	 UT	✓	x	x	x	x
	 P	✓	✓	x	✓	x
	 A	x	x	x	✓	x

✓ First choice

Chipbreaking Range

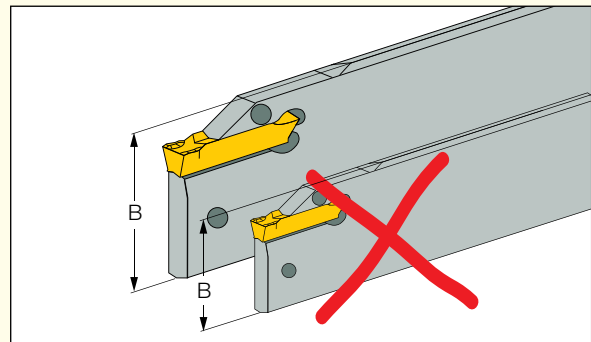
Material: 100 Cr6 Cutting Speed: 120 m/min

Chip Deflector Type	Feed mm/rev							Chip Deflector Type
	0.02	0.05	0.08	0.10	0.12	0.15	0.20	
C								
JT								
J								
Z								
UT								
P								

The blue highlighted areas represent the recommended chipformer shape for each chipbreaker.

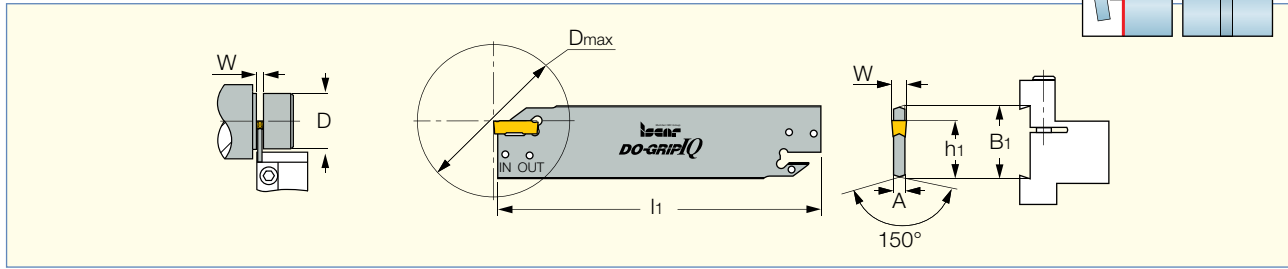
Selection Preference Priority

- Use an insert with 0° lead angle.
- Tool up with largest blade size B.
- Smallest appropriate width of cut.



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 ⁽⁵⁾	110.00	21.4	26.0	DG. 14..
DGFH 26-2 ⁽¹⁾	26.0	1.90 ⁽⁴⁾	2.50	1.60	110.00	21.4	39.0 ⁽⁶⁾	DG. 1.../DG. 2...
DGFH 26-3 ⁽¹⁾	26.0	3.00 ⁽⁴⁾	3.18	2.40	110.00	21.4	39.0 ⁽⁶⁾	DG. 1.../DG. 3...
DGFH 26C-3 ⁽²⁾	26.0	3.00	3.18	2.40	110.00	21.4	39.0 ⁽⁶⁾	DG. 3..C
DGFH 26-4	26.0	4.00	4.00	3.20	110.00	21.4	80.0	DG. 4.../GRIP 4...
DGFH 32-1.4	32.0	1.40	1.40	2.50 ⁽⁵⁾	150.00	24.8	26.0	DG. 14
DGFH 32-2 ⁽¹⁾	32.0	1.90 ⁽⁴⁾	2.50	1.80	150.00	24.8	39.0 ⁽⁶⁾	DG. 1.../DG. 2...
DGFH 32-3 ⁽¹⁾	32.0	3.00 ⁽⁴⁾	3.18	2.40	150.00	24.8	39.0 ⁽⁷⁾	DG. 1.../DG. 3...
DGFH 32C-3 ⁽²⁾	32.0	3.00	3.18	2.40	150.00	24.8	39.0 ⁽⁷⁾	DG. 3..C
DGFH 32-4	32.0	4.00	4.00	3.20	150.00	24.8	100.0	DG. 4.../GRIP 4...
DGFH 32C-4 ⁽³⁾	32.0	4.00	4.00	3.20	150.00	24.8	69.0	DG. 4..C
DGFH 32-5	32.0	5.00	5.00	4.00	150.00	24.8	120.0	DG. 5.../GRIP 5...
DGFH 32-6	32.0	6.00	6.35	5.20	150.00	24.8	120.0	DG. 6.../GRIP 6...
DGFH 45-3	45.0	3.00 ⁽⁴⁾	3.18	2.40	225.00	38.0	160.0	DG. 1.../DG. 3...
DGFH 45-4	45.0	4.00	4.10	3.20	225.00	38.0	160.0	DG. 4.../GRIP 4...
DGFH 45-5	45.0	4.80	5.00	4.00	225.00	38.0	160.0	DG. 5.../GRIP 5...
DGFH 45-6	45.0	6.00	6.40	5.20	225.00	38.0	160.0	DG. 6.../GRIP 6...

- DG..1.0 insert can be mounted into pocket sizes 2 and 3. In that case the pocket width has to be modified - see page D22
- For user guide, see pages D59-71.

⁽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⁾ These blades are suitable for turning, using GRIP 4 inserts • Blades with frontal coolant holes (JET-CUT) ⁽⁴⁾ For DG. 1... insert, modify holder ⁽⁵⁾ Thickness at the D.O.C. area is 1.0 mm ⁽⁶⁾ Maximum diameter with double-sided inserts. ⁽⁷⁾ Maximum diameter with double-sided inserts.

For inserts, see pages: DGN/DGNC/DGNM-C (D24) • DGR/L-C DGRC/LC-C (D24) • DGN/DGNM-J/JS/JT (D25) • DGR/L-J/JS (D26) • DGN-P (D28) • DGN-UT/UA (D27) • DGN-W (D25) • DGN-WP (D29) • DGN-Z (D26) • DGR-WP (D29) • DGR/L-P (D28) • DGR/L-Z/ZS (D27) • GRIP (B14) • GRIP (Full Radius) (B14).

For holders, see pages: C#-TBK-R/L (G6) • HSK A63WH-TBK-R/L (G18) • IM63 XMZ TBK (G25) • SGTBF (F4) • SGTBR/L (F3) • SGTBU/SGTBN (F2) • UBHCR/L (F4).

Spare Parts

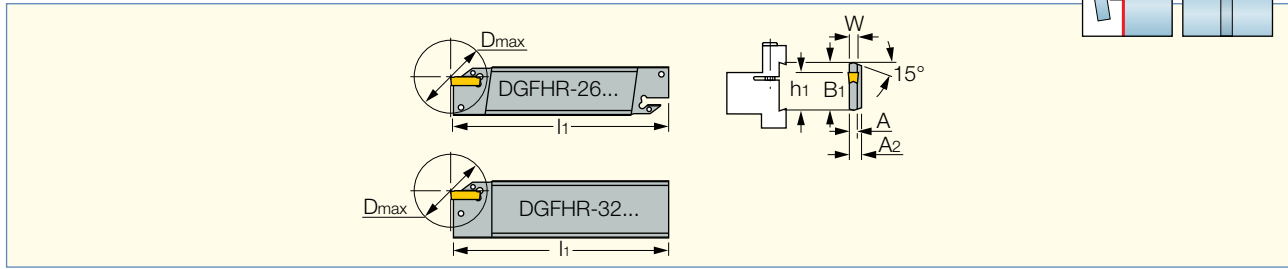
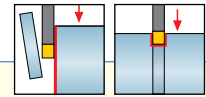


Designation	Extractor	Sealing Screw	Cooling Tube	Pipe Fitting	Pipe Fitting 1	Pipe Fitting 2
DGFH 26-1.4	EDG 23B*					
DGFH 26-2	EDG 23A*					
DGFH 26-3	EDG 23A*					
DGFH 26C-3	EDG 23A*	SGC 340	SGCU 341*	CGF 343*	CF 343*	CGM 343*
DGFH 26-4	EDG 23A*					
DGFH 32-1.4	EDG 23B*					
DGFH 32-2	EDG 33A*					
DGFH 32-3	EDG 33A*					
DGFH 32C-3	EDG 33A*	SGC 340	SGCU 341*	CGF 343*	CF 343*	CGM 343*
DGFH 32-4	EDG 33A*					
DGFH 32C-4	EDG 33A*	SGC 340	SGCU 341*	CGF 343*	CF 343*	CGM 343*
DGFH 32-5	EDG 33A*					
DGFH 32-6	EDG 33A*					
DGFH 45-3	EDG 33A*					
DGFH 45-4	EDG 33A*					
DGFH 45-5	EDG 33A*					
DGFH 45-6	EDG 33A*					

* Optional, should be ordered separately

DGFHR/L

Parting and Grooving Reinforced Blades for DO-GRIP Inserts



Designation	B ₁	W _{min} ⁽¹⁾	W _{max}	A ₂	A	l ₁	h ₁	D _{max} ⁽²⁾	Machines	Inserts
DGFHR 26T16-2	26.0	1.90	2.50	8.0	1.70	110.00	21.4	42.0	TNS-30	DG. 2.../DG. 10..
DGFHR/L 26T23-2	26.0	1.90	2.50	8.0	1.60	110.00	21.4	42.0	TNS-30/112	DG. 2.../DG. 10..
DGFHR/L 26T16-3	26.0	3.00	3.18	8.0	2.40	110.00	21.4	30.0	TNS-30	DG. 3.../DG. 10..
DGFHR/L 26T23-3	26.0	3.00	3.18	8.0	2.40	110.00	21.4	42.0	TNS-30/42	DG. 3.../DG. 10..
DGFHR/L 32T22-2	32.0	1.90	2.50	8.0	1.60	110.00	24.8	42.0	TNS-42	DG. 2.../DG. 10..
DGFHR/L 32T22-4	32.0	4.00	4.00	8.0	3.40	110.00	24.8	42.0	TNS-42	DG. 4.../GRIP 4..
DGFHR/L 32T33-3	32.0	3.00	3.18	8.0	2.40	110.00	24.8	60.0	TNS-42/60/65	DG. 3.../DG. 10..
DGFHR/L 32T33-4	32.0	4.00	4.00	8.0	3.40	110.00	24.8	60.0	TNS-42/60/65	DG. 4.../GRIP 4..
DGFHR/L 32T41-4	32.0	4.00	4.00	10.0	3.40	110.00	24.8	80.0	TNS-65/80/480	DG. 4.../GRIP 4..

• 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 - see page D22 • For user guide, see pages D59-71.

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

For inserts, see pages: DGN-P (D28) • DGN-UT/UA (D27) • DGN-WP (D29) • DGN-Z (D26) • DGN/DGNC/DGNM-C (D24) • DGN/DGNM-J/JS/JT (D25) • DGR-WP (D29) • DGR/L-C DGRC/LC-C (D24) • DGR/L-J/JS (D26) • DGR/L-P (D28) • DGR/L-Z/ZS (D27).

For holders, see pages: C#-TBK-R/L (G6) • HSK A63WH-TBK-R/L (G18) • IM63 XMZ TBK (G25) • SGTBF (F4) • SGTBR/L (F3) • SGTBU/SGTBN (F2) • UBHCR/L (F4).

Spare Parts

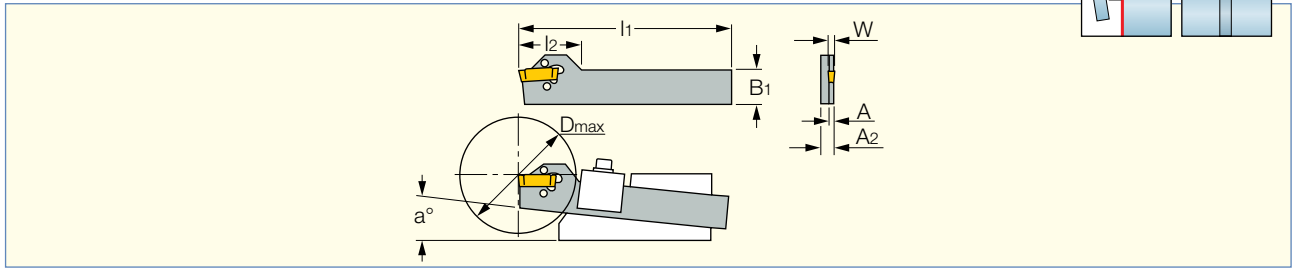
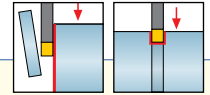


Designation	Extractor
DGFHR 26T16-2	EDG 23A*
DGFHR/L 26T23-2	EDG 23A*
DGFHR/L 26T16-3	EDG 23A*
DGFHR/L 26T23-3	EDG 23A*
DGFHR/L 32T22-2	EDG 33A*
DGFHR 32T22-4	EDG 33A*
DGFHR/L 32T33-3	EDG 33A*
DGFHR/L 32T33-4	EDG 33A*
DGFHR/L 32T41-4	EDG 33A*

* Optional, should be ordered separately

DGFS

Blades for Multi-Spindle Machines, Replacement for HSS and Brazed Tools



Designation	B ₁	W _{min} ⁽⁶⁾	W _{max}	D _{max}	A	l ₁	l ₂	a°
DGFS 0-12-2 ⁽¹⁾	12.7	1.90	2.50	32.0	1.60	110.00	32.0	0
DGFS 0-17-2 ⁽²⁾	17.4	1.90	2.50	35.0	1.60	110.00	32.0	0
DGFS 0-17-3 ⁽²⁾	17.4	3.00	3.18	60.0	2.40	110.00	32.0	0
DGFS 5-12-3 ⁽³⁾	12.7	3.00	3.18	32.0	2.40	110.00	32.0	5
DGFS 5-17-2 ⁽⁴⁾	17.4	1.90	2.50	35.0	1.60	110.00	32.0	5
DGFS 5-17-3 ⁽⁴⁾	17.4	3.00	3.18	60.0	2.40	110.00	32.0	5
DGFS 5-17-4 ⁽⁴⁾	17.4	4.00	4.00	60.0	3.20	110.00	32.0	5
DGFS 5-22-2 ⁽⁵⁾	22.2	1.90	2.50	50.0	1.60	150.00	32.0	5
DGFS 5-22-3 ⁽⁶⁾	22.2	3.00	3.18	75.0	2.40	150.00	32.0	5
DGFS 5-22-4 ⁽⁶⁾	22.2	4.00	4.00	80.0	3.20	150.00	32.0	5
DGFS 5-24-3	23.8	3.00	3.18	80.0	2.40	150.00	32.0	5
DGFS 5-28-2 ⁽⁷⁾	28.5	1.90	2.50	65.0	1.60	150.00	32.0	5
DGFS 5-28-3 ⁽⁷⁾	28.5	3.00	3.18	100.0	2.40	150.00	32.0	5
DGFS 5-28-4 ⁽⁷⁾	28.5	4.00	4.00	100.0	3.20	150.00	32.0	5

- DG..1.0 insert can be mounted into pocket sizes 2 and 3. In that case the pocket width has to be modified - see page D22
- For user guide, see pages D59-71.

⁽¹⁾ Toolholder assembly X18-1,46,47-WT,160-CL,354-CL,701-ACL,702,702-CL,703,703-CL,704,704-CL,6921,6925. ⁽²⁾ Toolholder assembly E-7,47,102-CL,103-CL,161-A-CL,162-A-CL. ⁽³⁾ Toolholder assembly 361-CL,431,431-CL,630. ⁽⁴⁾ Toolholder assembly 226,226-CL,275,275-CL,276-CL,361-CL,431,630,707-A,707-A-CL. ⁽⁵⁾ Toolholder assembly 100-CL,274,277,277-CL,274-CL,370,383-CL, 6722,6754,6755,6854,6855,6922,51,51-CL,353-CL,167,370-CL ⁽⁶⁾ Toolholder assembly 100-CL,274,277,277-CL,274-CL,370,383-CL, 6722,6754,6755,6854,6855,51,51-CL,353-CL,167,370-CL. ⁽⁷⁾ Toolholder assembly 278,278-CL,279,279-CL,280,280-CL,281,281-CL,375-CL,359-CL,372-CL,A6120,52,52-CL. ⁽⁸⁾ For DG: 1.0 insert - modify holder.

For inserts, see pages: DGN/DGNC/DGNM-C (D24) • DGR/L-C DGRC/LC-C (D24) • DGN/DGNM-J/JS/JT (D25) • DGR/L-J/JS (D26) • DGN-P (D28) • DGN-UT/UA (D27) • DGN-WP (D29) • DGN-Z (D26) • DGR-WP (D29) • DGR/L-P (D28) • DGR/L-Z/ZS (D27) • GRIP (B14) • GRIP (Full Radius) (B14).

Spare Parts



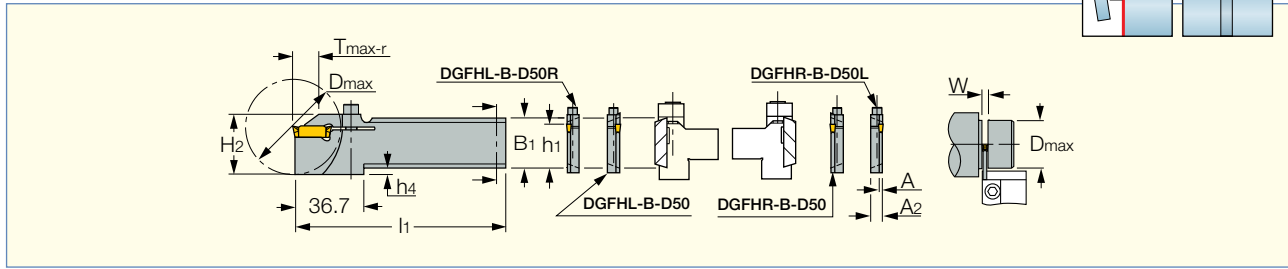
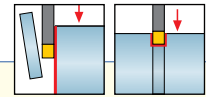
Designation	Extractor
DGFS	EDG 33B*

* Optional, should be ordered separately



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

Reinforced Type Blades with Screw Clamping



Designation	B ₁ ⁽⁴⁾	W _{min} ⁽⁵⁾	W _{max}	A	A ₂	l ₁	H ₂	h ₁	h ₄	T _{max-r}	D _{max} ⁽⁶⁾	Inserts
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. 2.../DG. 10..
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. 2.../DG. 10..
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. 2.../DG. 10..
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. 3.../DG. 10..
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. 3.../DG. 10..
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. 3.../DG. 10..
DGFHR/L 32B-2D50 ⁽³⁾	32.0	1.90	2.50	1.60	8.0	120.00	31.5	24.8	-	18.00	42.0	DG. 2.../DG. 10..
DGFHL 32B-2D50R ⁽²⁾	32.0	1.90	2.50	1.60	8.0	120.00	31.5	24.8	-	18.00	50.0	DG. 2.../DG. 10..
DGFHR 32B-2D50L ⁽²⁾	32.0	1.90	2.50	1.60	8.0	120.00	31.5	24.8	-	18.00	50.0	DG. 2.../DG. 10..
DGFHR/L 32B-3D50 ⁽³⁾	32.0	3.00	3.18	2.40	8.0	120.00	31.5	24.8	-	18.00	42.0	DG. 3.../DG. 10..
DGFHL 32B-3D50R ⁽²⁾	32.0	3.00	3.18	2.40	8.0	120.00	31.5	24.8	-	18.00	50.0	DG. 3.../DG. 10..
DGFHR 32B-3D50L ⁽²⁾	32.0	3.00	3.18	2.40	8.0	120.00	31.5	24.8	-	18.00	50.0	DG. 3.../DG. 10..

• 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 -see page D22 • For user guide, see pages D59-71.

⁽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⁾ For Traub machines, model TNC 42/65, TNM 42/65, TNS 42/60/65, TNA 300/400. ⁽⁴⁾ Mounted on all ISCAR standard blocks. ⁽⁵⁾ For DG: 1.0 insert - modify holder. ⁽⁶⁾ The specified limit refers to the tool.

For inserts, see pages: DGN-P (D28) • DGN-UT/UA (D27) • DGN-WP (D29) • DGN-Z (D26) • DGN/DGNC/DGNM-C (D24) • DGN/DGNM-J/JS/JT (D25) • DGR/L-C DGRC/LC-C (D24) • DGR/L-Z/ZS (D27).

For holders, see pages: C#-TBK-R/L (G6) • HSK A63WH-TBK-R/L (G18) • IM63 XMZ TBK (G25) • SGTBF (F4) • SGTBR/L (F3) • SGTBU/SGTBN (F2) • UBHCR/L (F4).

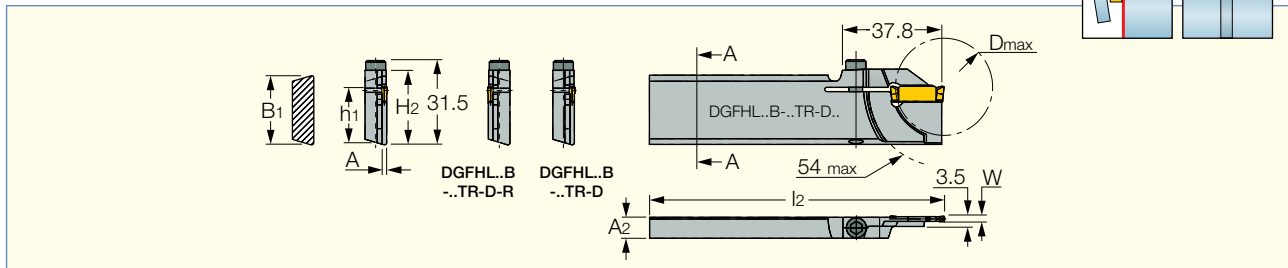
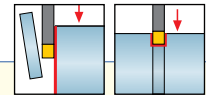
Spare Parts



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

DGFHL-26B-TR-D

Reinforced Type Blades with Screw Clamping for Traub and Index Machines



Designation	B ₁ ⁽²⁾	W _{min}	W _{max}	A	A ₂	l ₁	H ₂	h ₁	D _{max} ⁽³⁾	Inserts
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. 10../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. 10../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. 10../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. 10../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. 10../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 -see page D22 • For user guide, see pages D59-71.

⁽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-P (D28) • DGN-UT/UA (D27) • DGN-WP (D29) • DGN-Z (D26) • DGN/DGNC/DGNM-C (D24) • DGN/DGNM-J/JS/JT (D25) • DGR/L-C DGRC/LC-C (D24) • DGR/L-Z/ZS (D27).

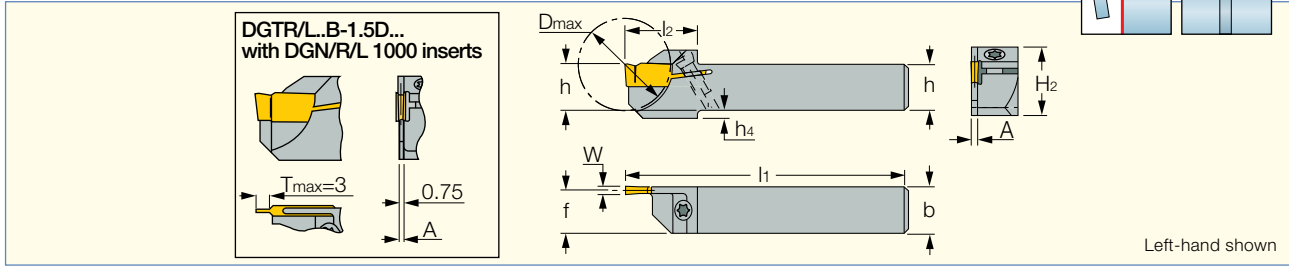
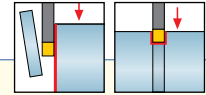
Spare Parts



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

DGTR/L-B-D-SH

Parting and Grooving, Short Head Toolholder, for CNC and Swiss Automatics



Designation	W _{min}	W _{max}	h	b	A	f	l ₂	D _{max}	H ₂	h ₄	l ₁	Inserts
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. 15../DG. 10..
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. 2../DG. 10..
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. 15../DG. 10..
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. 2../DG. 10..
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	0
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. 15../DG. 10..
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. 2../DG. 10..
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. 3../DG. 10..
DGTR/L 20B-1.5D25SH ⁽¹⁾	1.00	1.50	20.0	20.0	1.20	19.4	19.5	25.4	23.7	-	120.00	DG. 15../DG. 10..
DGTR/L 20B-3D25SH	3.00	3.18	20.0	20.0	2.40	18.8	19.5	25.4	23.7	-	120.00	DG. 3../DG. 10..

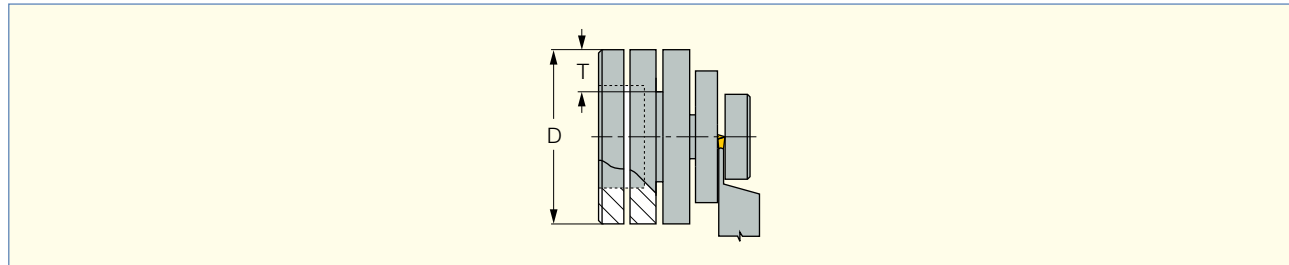
• DGN/R/L 1 mm inserts can also be mounted into pocket sizes 2 and 3. For insert depth capacity table and modification instructions for the 2 and 3 holder pockets, see page D22 • For user guide, see pages D59-71.

⁽¹⁾ Do not use DG.. 1.4 on this tool!

For inserts, see pages: DGN-P (D28) • DGN-UT/UA (D27) • DGN-WP (D29) • DGN-Z (D26) • DGN/DGNC/DGNM-C (D24) • DGN/DGNM-J/JS/JT (D25) • DGR-WP (D29) • DGR/L-C DGRC/LC-C (D24) • DGR/L-J/JS (D26) • DGR/L-P (D28) • DGR/L-Z/ZS (D27).

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	NL
DGTR/L 16B-1.4D30	-	-	-	-	30	32	35	38	43	50	62	83	125	300	NL	NL
DGTR/L 20B-1.4D30	-	-	-	-	30	32	35	38	43	50	62	83	125	300	NL	NL
DGTR/L 10B-2D30	-	-	-	-	30	32	35	38	43	50	62	83	125	300	NL	NL
DGTR/L 12B-2D30	-	-	-	-	30	32	35	38	43	50	62	83	125	300	NL	NL
DGTR/L 16B-2D32	-	-	-	32	35	37	41	47	55	69	93	150	400	NL	NL	NL
DGTR/L 20B-2D35	-	-	75	90	113	155	250	650	NL	NL	NL	NL	NL	NL	NL	NL
DGTR/L 25B-2D35	-	-	75	90	113	155	250	650	NL	NL	NL	NL	NL	NL	NL	NL
DGTR/L 12B-3D30	-	-	-	-	30	32	35	38	43	50	62	83	125	300	NL	NL
DGTR/L 16B-3D35	-	-	35	39	42	46	51	59	71	91	130	230	1200	NL	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

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.

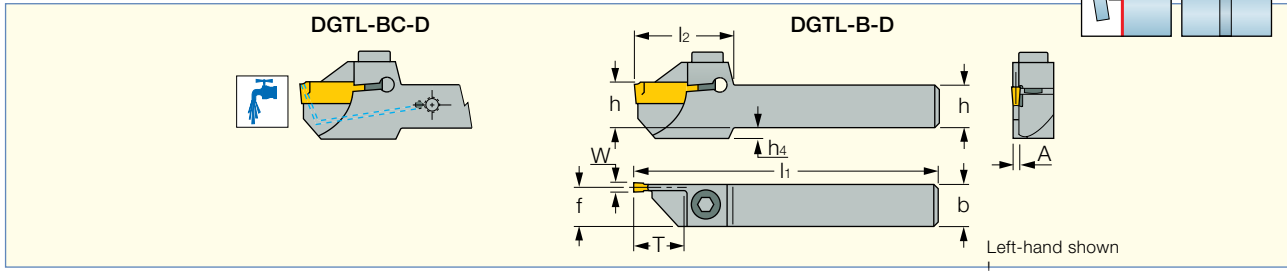
Spare Parts



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

DGTR/L-B/BC-D

Integral Shank, Reinforced, Parting and Grooving Toolholders



Designation	W _{min}	W _{max}	h	b	A	l ₁	l ₂	T _{max-r} ⁽⁹⁾	f	h ₄	Inserts
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	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	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	-	DG. 14..
DGTR/L 20B-1.4D30	1.40	1.40	20.0	20.0	1.00	140.00	29.6	15.00	19.5	-	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	DG. 2.../DG. 10..
DGTR/L 12B-2D30	1.90	2.50	12.0	12.0	1.60	140.00	29.6	15.00	11.2	3.5	DG. 2.../DG. 10..
DGTR/L 16B-2D32	1.90	2.50	16.0	16.0	1.60	140.00	30.6	16.00	15.2	-	DG. 2.../DG. 10..
DGTR/L 20B-2D35	1.90	2.50	20.0	20.0	1.60	140.00	32.1	17.50	19.2	-	DG. 2.../DG. 10..
DGTR/L 25B-2D35	1.90	2.50	25.0	25.0	1.60	140.00	32.1	17.50	24.2	-	DG. 2.../DG. 10..
DGTR/L 12B-3D30	3.00	3.18	12.0	12.0	2.40	140.00	29.6	15.00	10.8	3.5	DG. 3.../DG. 10..
DGTR/L 16B-3D35	3.00	3.18	16.0	16.0	2.40	140.00	32.1	16.00	14.8	2.6	DG. 3.../DG. 10..
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	DG.C 3.../DG. 3...
DGTR/L 20B-3D40 ⁽²⁾	3.00	3.18	20.0	20.0	2.40	140.00	35.6	20.00	18.8	-	DG. 3.../DG. 10..
DGTR/L 20BC-3D40 ⁽¹⁾	3.00	3.18	20.0	20.0	2.40	140.00	34.6	20.00	18.8	-	DG.C 3.../DG. 3...
DGTR/L 25B-3D40 ⁽²⁾	3.00	3.18	25.0	25.0	2.40	140.00	35.6	20.00	23.8	-	DG. 3.../DG. 10..

• 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. For inserts' depth capacity table and modification instructions for the 2 and 3 holder pockets, see page D22 • For user guide, see pages D59-71.

⁽¹⁾ Tools for inserts with coolant holes for high temperature alloys and stainless steel ⁽²⁾ Insert's T_{max}=18 mm, for deeper penetration modify insert into single-ended. ⁽⁹⁾ The specified limit refers to the tool.

For inserts, see pages: DGN-P (D28) • DGN-UT/JA (D27) • DGN-WP (D29) • DGN-Z (D26) • DGN/DGNC/DGNM-C (D24) • DGN/DGNM-J/JS/JT (D25) • DGR-WP (D29) • DGR/L-C DGRC/LC-C (D24) • DGR/L-J/JS (D26) • DGR/L-P (D28) • DGR/L-Z/ZS (D27).

Spare Parts

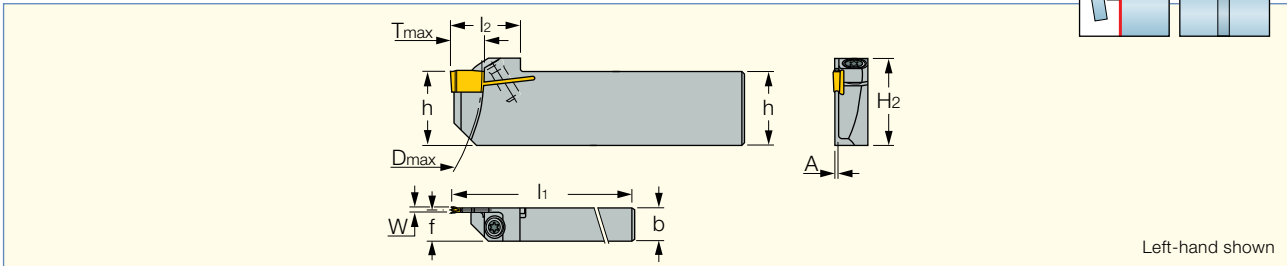
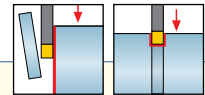


Designation	Screw 1	Key	Pipe Fitting	Cooling Tube
DGTL 10B-1.4D20	SR M5X16DIN912	HW 4.0		
DGTR 10B-1.4D20	SR M5X12	HW 4.0		
DGTR/L 12B-1.4D30	SR M5X12	HW 4.0		
DGTR/L 16B-1.4D30	SR M5X12	HW 4.0		
DGTR/L 20B-1.4D30	SR M5X12	HW 4.0		
DGTR/L 10B-2D30	SR M5X12	HW 4.0		
DGTR/L 12B-2D30	SR M5X12	HW 4.0		
DGTR/L 16B-2D32	SR M4X14DIN912	HW 3.0		
DGTR/L 20B-2D35	SR M5X12	HW 4.0		
DGTR/L 25B-2D35	SR M5X12	HW 4.0		
DGTR/L 12B-3D30	SR M5X12	HW 4.0		
DGTR/L 16B-3D35	SR M5X12	HW 4.0		
DGTR/L 16BC-3D35	SR M5X12	HW 4.0	CM 343 MALE CONN.*	SGCU 341*
DGTR/L 20B-3D40	SR M5X12	HW 4.0		
DGTR/L 20BC-3D40	SR M5X12	HW 4.0	CM 343 MALE CONN.*	SGCU 341*
DGTR/L 25B-3D40	SR M5X12	HW 4.0		

* Optional, should be ordered separately

DGTR/L-B-T-SH

Reinforced Parting and Grooving Toolholders for the DGN Double-Ended Inserts



Designation	W _{min}	W _{max}	h	b	A	f	l ₁	l ₂	D _{max}	T _{max-r}	H ₂
DGTR/L 2009B-1.5T9SH	1.00	1.50	20.0	9.0	1.20	8.4	100.00	19.0	95.0	9.00	23.7

• Important: 1.4 mm width inserts should be used only on tools for 1.4 mm specific width tools • For user guide, see pages D59-71.

For inserts, see pages: DGN-P (D28) • DGN/DGNM-J/JS/JT (D25) • DGR/L-J/JS (D26) • DGR/L-P (D28).

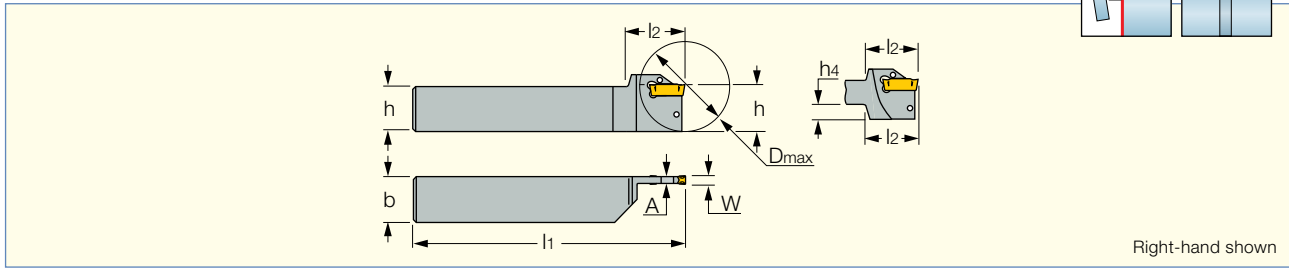
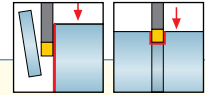
Spare Parts



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

DGTR/L

Integral Shank Parting and Grooving Toolholders



Designation	W _{min}	W _{max}	h	b	A	l ₁	l ₂	h ₄	D _{max}	Inserts
DGTR/L 1010-2	1.90	2.50	10.0	10.0	1.80	150.00	29.0	6.6	35.0	DG. 2.../DG. 10..
DGTR/L 1212-2	1.90	2.50	12.0	12.0	1.80	150.00	29.0	6.6	35.0 ⁽¹⁾	DG. 2.../DG. 10..
DGTR/L 1616-2	1.90	2.50	16.0	16.0	1.80	150.00	29.0	2.6	35.0 ⁽¹⁾	DG. 2.../DG. 10..
DGTR/L 2012-2	1.90	2.50	20.0	12.0	1.80	150.00	29.0	-	35.0 ⁽¹⁾	DG. 2.../DG. 10..
DGTR/L 1212-3	3.00	3.18	12.0	12.0	2.50	150.00	29.0	6.6	35.0 ⁽¹⁾	DG. 3.../DG. 10..
DGTR/L 1616-3	3.00	3.18	16.0	16.0	2.50	150.00	29.0	6.6	35.0 ⁽¹⁾	DG. 3.../DG. 10..
DGTR/L 2012-3	3.00	3.18	20.0	12.0	2.50	125.00	29.0	-	35.0 ⁽¹⁾	DG. 3.../DG. 10..
DGTR/L 2020-3	3.00	3.18	20.0	20.0	2.50	125.00	29.0	-	35.0 ⁽¹⁾	DG. 3.../DG. 10..
DGTR/L 2525-3	3.00	3.18	25.0	25.0	2.50	150.00	29.0	-	35.0 ⁽¹⁾	DG. 3.../DG. 10..
DGTR/L 2020-4	4.00	4.76	20.0	20.0	3.40	125.00	31.0	-	51.0	DG. 4.../GRIP 4..
DGTR/L 2525-4	4.00	4.76	25.0	25.0	3.40	150.00	31.0	-	51.0	DG. 4.../GRIP 4..
DGTR/L 2020-5	4.80	5.00	20.0	20.0	4.00	125.00	33.0	-	59.0	DG. 5.../GRIP 5..
DGTR/L 2525-5	4.80	5.00	25.0	25.0	4.00	150.00	33.0	-	76.0	DG. 5.../GRIP 5..
DGTR/L 2525-6	6.00	6.35	25.0	25.0	5.30	150.00	33.0	-	76.0	DG. 6.../GRIP 6..

• 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 -see page D22 • For user guide, see pagesD59-71.

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

For inserts, see pages: DGN/DGNC/DGNM-C (D24) • DGR/L-C DGRC/LC-C (D24) • DGN/DGNM-J/JS/JT (D25) • DGR/L-J/JS (D26) • DGN-P (D28) • DGN-UT/UA (D27) • DGN-W (D25) • DGN-WP (D29) • DGN-Z (D26) • DGR-WP (D29) • DGR/L-P (D28) • DGR/L-Z/ZS (D27) • GRIP (B14) • GRIP (Full Radius) (B14).

Spare Parts

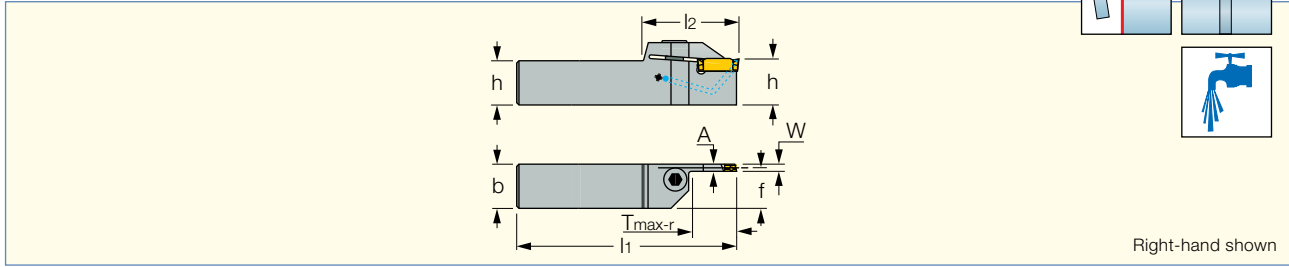
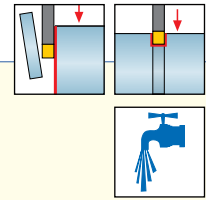


Designation	Extractor
DGTR/L 1010-2	EDG 33B*
DGTR/L 1212-2	EDG 33B*
DGTR/L 1616-2	EDG 33B*
DGTR/L 2012-2	EDG 33A*
DGTR/L 1212-3	EDG 33B*
DGTR/L 1616-3	EDG 33B*
DGTR/L 2012-3	EDG 33A*
DGTR/L 2020-3	EDG 33A*
DGTR/L 2525-3	EDG 33A*
DGTR/L 2020-4	EDG 33A*
DGTR/L 2525-4	EDG 33A*
DGTR/L 2020-5	EDG 33A*
DGTR/L 2525-5	EDG 33A*
DGTR/L 2525-6	EDG 33A*

* Optional, should be ordered separately

DGTR/L-BC-T

Parting and Grooving Toolholders with Coolant Holes for JET-CUT Inserts with Coolant Holes



Designation	h	b	W _{min}	W _{max}	l ₁	A	l ₂	T _{max-r}
DGTR/L 20BC-4T25	20.0	20.0	4.00	4.00	140.00	3.40	42.0	25.00
DGTR/L 25BC-4T25	25.0	25.0	4.00	4.00	140.00	3.40	42.0	25.00

• For user guide, see pages D59-71.

For inserts, see pages: DGN-UT/JA (D27) • DGN/DGNC/DGNM-C (D24) • DGN/DGNM-J/JS/JT (D25) • DGR/L-C DGRC/LC-C (D24) • DGR/L-J/JS (D26).

Spare Parts

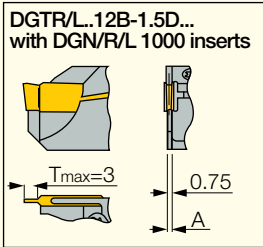
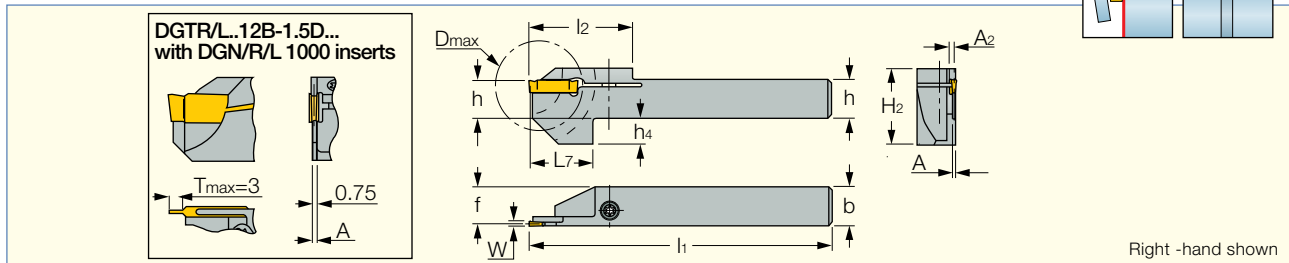
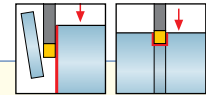


Designation	Screw	Key	Pipe Fitting	Cooling Tube
DGTR/L-BC-T	SR M6X16DIN912	HW 5.0	CM 343 MALE CONN.*	SGCU 341*

* Optional, should be ordered separately

DGTR/L-B-D-TR

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



Designation	W _{min}	W _{max}	h	b	A	A ₂	f	l ₁	l ₂	L ₇	D _{max}	H ₂	h ₄	Inserts
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. 15../DG. 10..
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. 15../DG. 10..

• Important: 1.4 mm width inserts should be used only on tools for 1.4 mm specific width tools!! • For Traub machines, model TNL 12/7 • For user guide, see pages D59-71.

For inserts, see pages: DGN-P (D28) • DGN/DGNM-J/JS/JT (D25) • DGR/L-J/JS (D26) • DGR/L-P (D28).

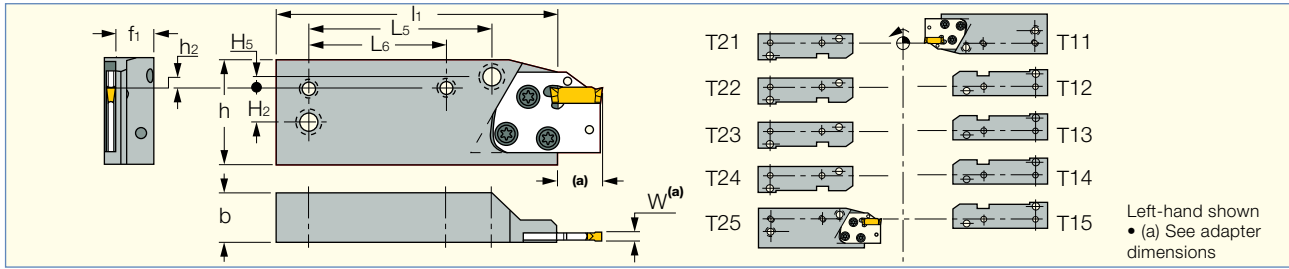
Spare Parts



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

DGHAL-DECO

Holders for DGAD Adapters, for Tornos Bechler Deco Machines



Designation	h	b	l_1	f_1	h_2	H_2	H_5	L_6	L_5
DGHAL DECO 7-10 ⁽¹⁾	40.3	18.2	106.00	15.0	-	12.8	4.8	52.00	69.00
DGHAL DECO 13 ⁽²⁾	42.0	35.2	115.00	28.7	2.0	16.0	16.0	60.00	60.00
DGHAL DECO 20-26 ⁽²⁾	44.8	23.2	120.00	20.0	4.0	17.0	17.0	65.00	65.00

• DGAD-... HGAD-... adapters should be ordered separately

⁽¹⁾ Positioning combinations: T11; T25 ⁽²⁾ Positioning combinations: All

For tools, see pages: DGAD-B-D (D23) • DGAD/HGAD (D22).

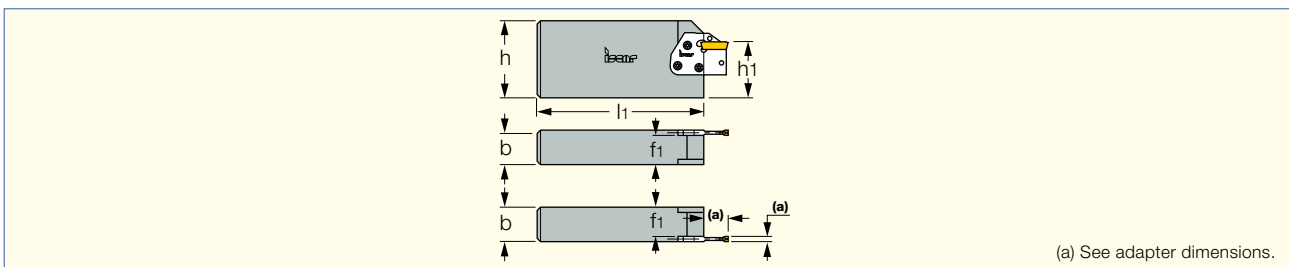
Spare Parts



Designation	Screw	Screw 1	Screw 2	Key	Tool Clamping Screw	Key 1	Cooling Nozzle
DGHAL DECO 7-10	SR 14-519-L9.7	SR 16-212-L9.5	SR 16-212	T-20/5	SR M5X25DIN912	HW 4.0	
DGHAL DECO 13	SR 14-519-L9.7	SR 16-212-L7.5	SR 16-212	T-20/5	SR M6X25DIN912 UNB.	HW 5.0	
DGHAL DECO 20-26	SR 14-519-L12.8	SR 16-212-L7.5	SR 16-212	T-20/5	SR M6X25DIN912 UNB.	HW 5.0	EZ 104

HMSN-Acme Gridley

Holders for Grooving and Turning Adapters, for Acme Gridley Multi-Spindle Bar Machines



Designation	h	b	h_1	f_1	l_1	S_1 ⁽⁴⁾
HMSN 30/4322 ⁽¹⁾	42.9	21.5	30.5	20.4	152.40	AZ71479-I
HMSN 34/4332 ⁽²⁾	42.9	31.8	34.3	26.8	198.90	AZ41483/AZ41479-I
HMSN 37/4438 ⁽³⁾	44.5	38.1	37.3	33.1	134.60	

• DGAD-... HGAD-... adapters should be ordered separately

⁽¹⁾ For Acme-Gridley machines, model 1-1/4"RA6. ⁽²⁾ For Acme-Gridley machines, model 1-1/4"RB8, 1-5/8"RB8, 1-5/8"RB6, 2"RB6 ⁽³⁾ For models 2"RA6, 2-1/4"RA6, 2-5/8"RA6, 2-5/8"RB6, 3"RA6, 3"RB6, 4"RA6, 3-1/2"RB6, 2-5/8"RA8, 2-1/4"RA8/RB8, 3-1/2"RB8 ⁽⁴⁾ Acme block designation. l_1 =in-board position model.

For tools, see pages: DGAD-B-D (D23) • DGAD/HGAD (D22) • TGAD (D39).

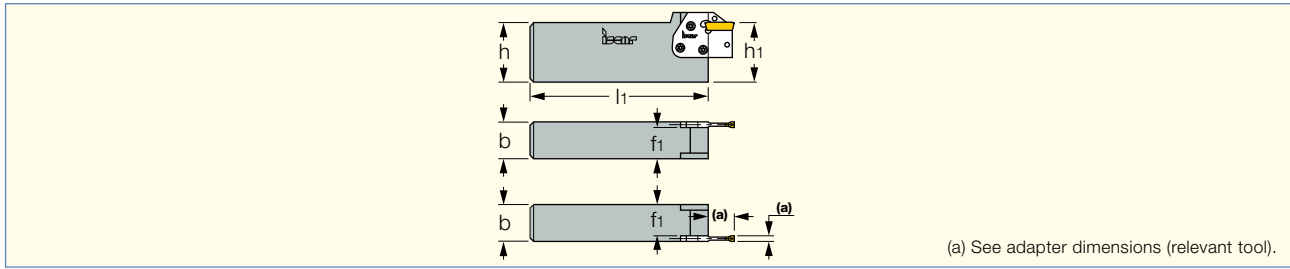
Spare Parts



Designation	Lower Locking Screw	Side Locking Screw	Key
HMSN-Acme Gridley	SR 16-212	SR 14-519	T-20/5

HMSN-Conomatic

Holders for Grooving and Turning Adapters, for Conomatic Multi-Spindle Bar Machines



Designation	h	b	h ₁	f ₁	l ₁	S ₁ ⁽²⁾
HMSN 6437 ⁽¹⁾	63.5	37.1	63.6	33.9	198.10	277

• DGAD-... HGAD-..., adapters should be ordered separately

⁽¹⁾ For Conomatic machines, model 2-1/4" & 2-5/8"-6SP, 2-1/4" & 2-5/8"-VERT-6SP. ⁽²⁾ Comparable empire block

For tools, see pages: DGAD-B-D (D23) • DGAD/HGAD (D22) • TGAD (D39).

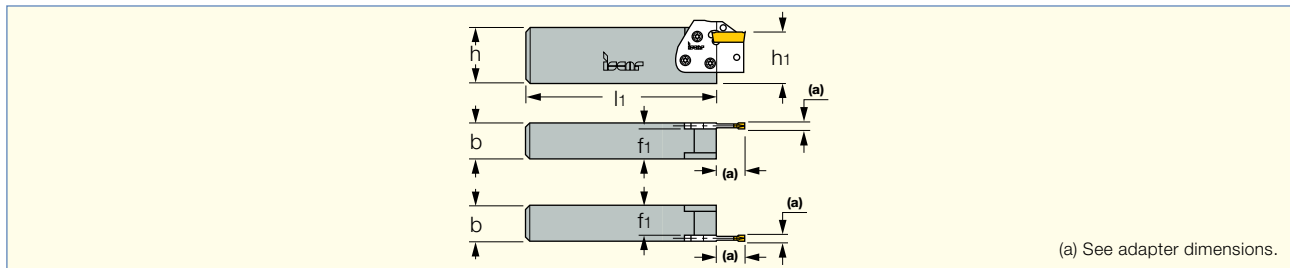
Spare Parts



Designation	Lower Locking Screw	Side Locking Screw	Key
HMSN-Conomatic	SR 16-212	SR 14-519	T-20/5

HMSN-New Britain

Holders for Grooving and Turning Adapters, for New Britain Multi-Spindle Bar Machines



Designation	h	b	h ₁	l ₁	f ₁	S ₁ ⁽²⁾
HMSN 35/3722 ⁽¹⁾	36.5	22.4	34.5	181.70	18.4	226

• DGAD-... HGAD-..., adapters should be ordered separately

⁽¹⁾ For models #42; #52; #60; #61; #62; #602 ⁽²⁾ Comparable empire block

For tools, see pages: DGAD-B-D (D23) • DGAD/HGAD (D22).

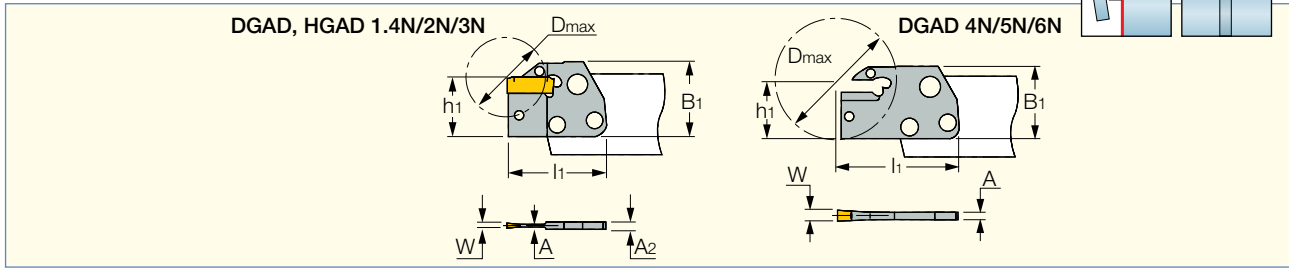
Spare Parts



Designation	Lower Locking Screw	Side Locking Screw	Key
HMSN-New Britain	SR 16-212	SR 14-519	T-20/5

DGAD/HGAD

Adapters for Parting and Grooving, for DO-GRIP Double-Ended Inserts



Designation	W _{min}	W _{max}	A	A ₂	B ₁	h ₁	l ₁	l ₂	D _{max}
DGAD 1.4N	1.40	1.40	1.00	3.2	30.0	24.0	41.50	24.5	28.0
DGAD 2N	1.90 ⁽²⁾	2.50	1.60	3.2	30.0	24.0	41.50	24.5	32.0
DGAD 3N ⁽¹⁾	3.00 ⁽²⁾	3.18	2.40	4.0	30.0	24.0	41.50	24.5	32.0
HGAD 3N	3.00	3.00	2.40	4.0	30.0	24.0	50.50	24.5	50.0
DGAD 4N	4.00	4.00	3.20	3.2	30.0	24.0	50.50	24.5	50.0
DGAD 5N	4.80	5.00	4.00	4.0	30.0	24.0	50.50	24.5	50.0
DGAD 6N	6.00	6.35	5.20	5.2	30.0	24.0	50.50	24.5	50.0

• DG..1.0 insert can be mounted into pocket sizes 2 and 3. In that case the pocket width has to be modified - see page below. • For user guide, see pages D59-71.

⁽¹⁾ Only the DGN/R/L inserts are suitable for this adapter ⁽²⁾ For 1 mm inserts, modify adapter

For inserts, see pages: DGN/DGNC/DGNM-C (D24) • HGN-C (D30) • DGR/L-C DGRC/LC-C (D24) • HGR/L-C (D30) • DGN/DGNM-J/JS/JT (D25) • HGN-J (D30) • DGR/L-J/JS (D26) • HGR/L-J/JS (D31) • DGN-P (D28) • DGN-UT/UA (D27) • DGN-W (D25) • DGN-WP (D29) • DGN-Z (D26) • DGR-WP (D29) • DGR/L-P (D28) • DGR/L-Z/ZS (D27) • HGN-UT (D31) • GRIP (B14) • GRIP (Full Radius) (B14).

For holders, see pages: C#-MAHD-JHP () • MAHPR/L-JHP () • MAHR/L-JHP () • MAHR/L (B22) • MAHPR/L (B22) • C#-MAHD (G7) • C#-MAHPD (G7) • C#-MAHUR/L (G5) • C#-MAHDR-45 (G4) • C#-MAHDOR (G5) • HSK A63WH-MAHUR/L (G17) • HSK A-WH-MAHDR/L-45 (G16) • HSK A63WH-MAHDOR (G17) • IM-MAHD (G26) • IM-MAHPD (G27) • IM63 XMZ MAHUR/L (G25) • IM63 XMZ MAHDR-45 (G23) • IM63 XMZ MAHDOR (G24) • HMSN-Conomatic (D21) • HMSN-Acme Gridley (D20) • HMSN-New Britain (D21) • DGHAL-DECO (D20).

Spare Parts



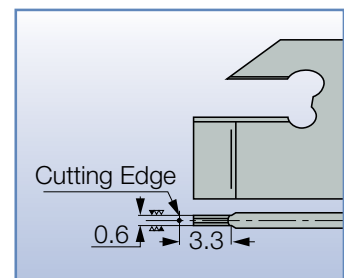
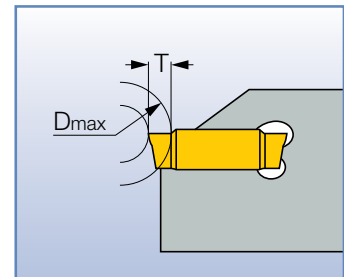
Designation	Extractor
DGAD 1.4N	EDG 23B*
DGAD 2N	EDG 33A*
DGAD 3N	EDG 33A*
HGAD 3N	EDG 23B*
DGAD 4N	EDG 33A*
DGAD 5N	EDG 33A*
DGAD 6N	EDG 33A*

* Optional, should be ordered separately

Depth Capacity for DGN/R-1002J Insert on Standard Holders

Depth: T	D max
Up to 1.2	No limit
1.3	830
1.4	218
1.5	126
1.6	88.4
1.7	68.2
1.8	55.6
1.9	46.9
2.0	40.7
2.1	36.0

Depth: T	D max
Up to 2.2	32.3
2.3	29.3
2.4	26.7
2.5	24.8
2.6	23.2
2.7	21.7
2.8	20.5
2.9	19.4
3.0	18.4

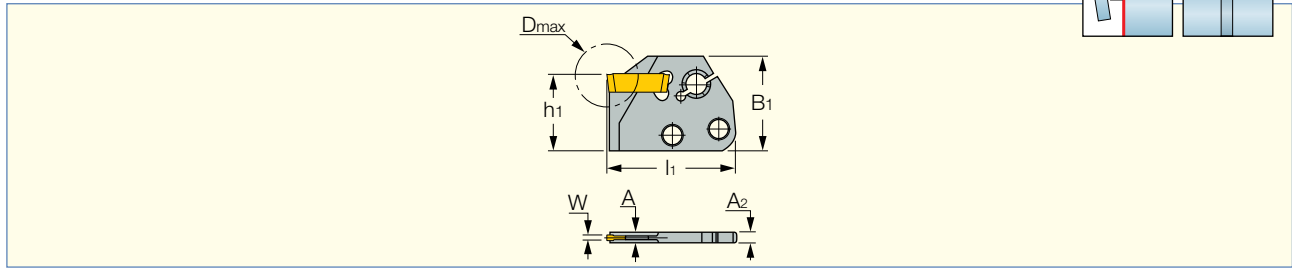
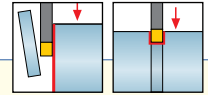


Standard Holders Modification

To achieve no limitation on the workpiece diameter up to 3 mm depth, the steel support under the insert should be ground, as per the shown sketch.

DGAD-B-D

Screw Clamped Adapters for Parting and Grooving, for DO-GRIP Double-Ended Inserts



Designation	W_{min}	W_{max}	A_2	A	l_1	D_{max}	h_1	B_1
DGAD 1.4B-D16	1.40	1.40	3.2	1.00	36.80	16.0	24.0	30.3
DGAD 1.5B-D20 ⁽¹⁾	1.00	1.50	3.2	1.00	41.00	20.0	24.0	30.3
DGAD 2B-D20	1.90	2.50	3.2	1.60	41.00	20.0	24.0	30.3

• Up to 3 mm depth, without any limitation on the diameter. • DG..1.0 insert can also be mounted into pocket sizes 2 and 3. In that case the pocket width has to be modified -see page D22 • For user guide, see pages D59-71.

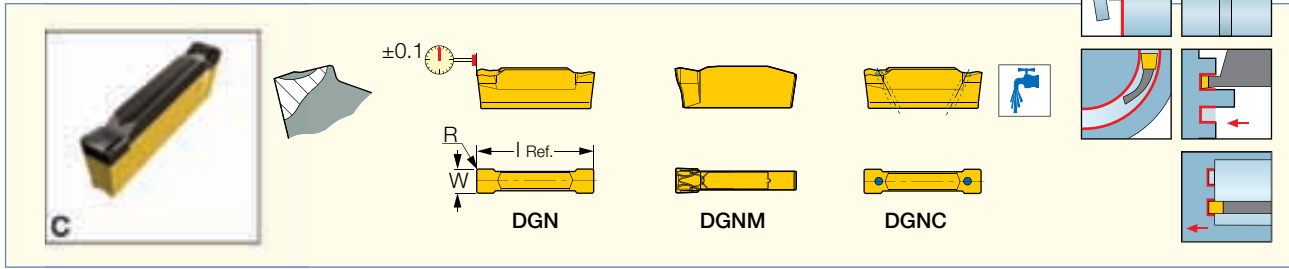
⁽¹⁾ Do not use DG.. 1.4 on this tool!

For inserts, see pages: DGN-P (D28) • DGN-UT/JA (D27) • DGN-WP (D29) • DGN-Z (D26) • DGN/DGNC/DGNM-C (D24) • DGN/DGNM-J/JS/JT (D25) • DGR-WP (D29) • DGR/L-C DGRC/LC-C (D24) • DGR/L-J/JS (D26) • DGR/L-P (D28) • DGR/L-Z/ZS (D27).

For holders, see pages: C#-MAHD (G7) • C#-MAHDOR (G5) • C#-MAHDR-45 (G4) • C#-MAHPD (G7) • C#-MAHUR/L (G5) • DGHAL-DECO (D20) • HMSN-Acme Gridley (D20) • HMSN-Conomatic (D21) • HMSN-New Britain (D21) • HSK A63WH-MAHDOR (G17) • HSK A63WH-MAHDR-45 (G16) • HSK A63WH-MAHUR/L (G17) • IM-MAHD (G26) • IM-MAHPD (G27) • IM63 XMZ MAHDOR (G24) • IM63 XMZ MAHDR-45 (G23) • IM63 XMZ MAHUR/L (G25) • MAHPR/L (B22) • MAHR/L (B22).

DGN/DGNC/DGNM-C

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



Designation	Dimensions					Tough ↔ Hard										Recommended Machining Data f groove (mm/rev)		
	W	W ^{stoler}	R	T _{max-r}	I Ref.	IC328	IC830	IC1028	IC354	IC5400	IC308	IC808	IC908	IC30N	IC807		IC907	IC20
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
DGN 4803C	4.80	0.04	0.30	- ⁽³⁾	19.9	●												0.12-0.35
DGN 5003C	5.00	0.04	0.30	- ⁽³⁾	19.1	●	●	●	●									0.12-0.35
DGN 6303C	6.35	0.04	0.35	- ⁽³⁾	19.1	●	●	●	●									0.15-0.40

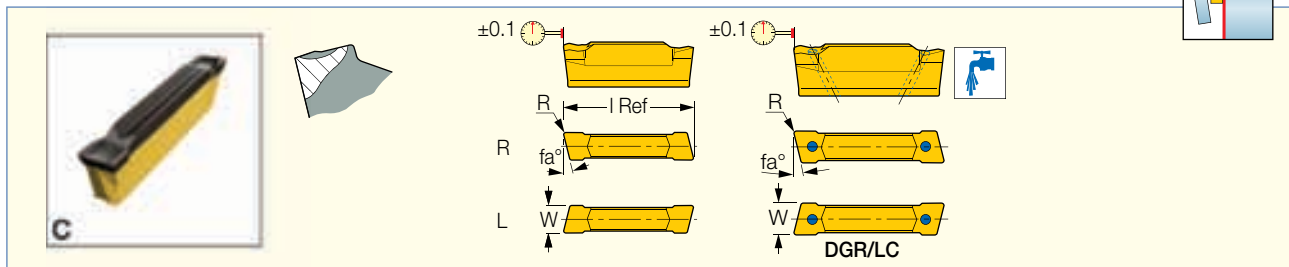
• Feed values for grade IC20 should be decreased by 50% • For cutting speed recommendations and user guide, see pages D59-71.

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

For tools, see pages: C#-HELIR/L (G10) • C#-HFIR/L-MC (G12) • CR HFIR/L-M (E34) • DGAD-B-D (D23) • DGAD/HGAD (D22) • DGFH (B13) • DGFHL-26B-TR-D (D14) • DGFHR/L (D11) • DGFHR/L-B-D.,(R/L) (D13) • DGFS (D12) • DGTR/L (D18) • DGTR/L-B-D-SH (D15) • DGTR/L-B/BC-D (D16) • DGTR/L-BC-T (D19) • HELIR/L (B11) • HFAER/L-4T (E24) • HFAER/L-5,6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5,6T (E32) • HFHR/L-4T (E18) • HFIR/L-MC (E33) • HFPAD-4 (E21) • HFPAD-5 (E21) • HGPAD (B12) • IM-HFIR/L-MC (G29).

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 f groove (mm/rev)
	W	R	T _{max-r}	fa°	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
DGR 4800CS-4D	4.80	0.02	- ⁽²⁾	4.0	19.7	●							0.05-0.15
DGR 4800CS-8D	4.80	0.02	- ⁽²⁾	8.0	19.7	●							0.05-0.15
DGR 4803C-4D	4.80	0.30	- ⁽²⁾	4.0	20.3	●							0.10-0.25
DGR 4803C-8D	4.80	0.30	- ⁽²⁾	8.0	20.3	●							0.10-0.20
DGR/L 5003C-4D	5.00	0.30	- ⁽²⁾	4.0	19.1	●			●				0.10-0.25
DGR/L 6303C-4D	6.35	0.35	- ⁽²⁾	4.0	19.1	●			●				0.12-0.30

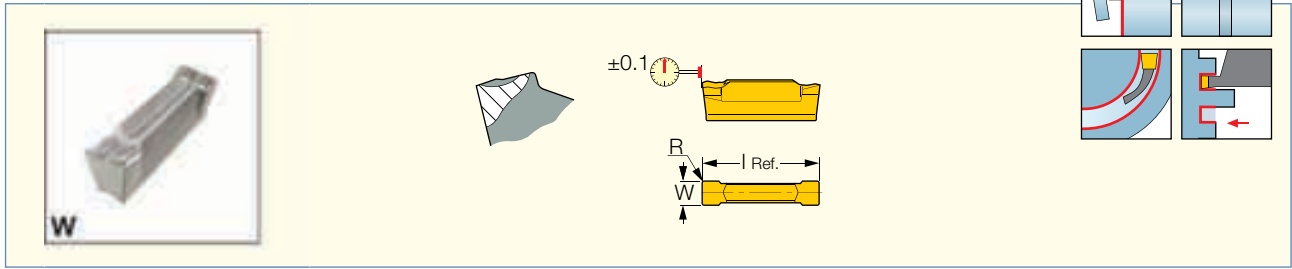
• Feed values for grade IC20 should be decreased by 50% • For cutting speed recommendations and user guide, see pages D59-71.

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

For tools, see pages: C#-HELIR/L (G10) • DGAD-B-D (D23) • DGAD/HGAD (D22) • DGFH (B13) • DGFHL-26B-TR-D (D14) • DGFHR/L (D11) • DGFHR/L-B-D.,(R/L) (D13) • DGFS (D12) • DGTR/L (D18) • DGTR/L-B-D-SH (D15) • DGTR/L-B/BC-D (D16) • DGTR/L-BC-T (D19) • HELIR/L (B11).

DGN-W

Parting & Grooving Double-Sided Insert. Central Ridged Chipformer used on Hard Materials and Interrupted Cuts.



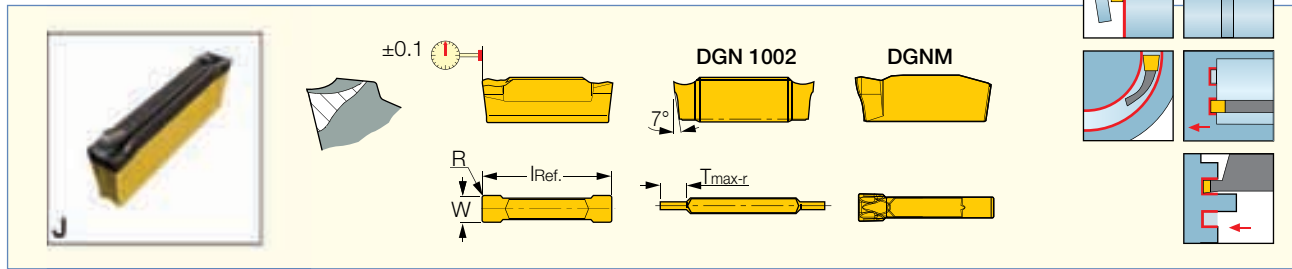
Designation	Dimensions			Tough ↔ Hard		Recommended Machining Data
	W ± 0.04	R	I Ref.	IC328	IC354	
DGN 5003W	5.00	0.30	19.0	●	●	f groove (mm/rev) 0.12-0.33

• No depth limit • For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: C#-HELIR/L (G10) • C#-HFIR/L-MC (G12) • CR HFIR/L-M (E34) • DGAD/HGAD (D22) • DGFH (B13) • DGTR/L (D18) • HELIR/L (B11) • HFAER/L-5,6T (E25) • HFAIR/L-5,6T (E32) • HFIR/L-MC (E33) • HFPAD-5 (E21) • HGPAD (B12) • IM-HFIR/L-MC (G29).

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 \pm toler	R	T $_{max-r}$	I Ref.	IC328	IC830	IC928	IC1028	IC354	IC5400	IC308	IC808	IC908	IC807		IC907	IC20
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
DGN 4803J	4.80	0.04	0.30	- ⁽³⁾	20.4	●												0.05-0.20
DGN 5003J	5.00	0.04	0.30	- ⁽³⁾	19.0	●	●		●	●		●	●	●			●	0.05-0.20
DGN 5003JT	5.00	0.04	0.30	- ⁽³⁾	19.0		●					●	●	●				0.05-0.20
DGN 6303J	6.35	0.04	0.35	- ⁽³⁾	19.1	●	●		●	●		●	●	●			●	0.05-0.25
DGN 6303JT	6.35	0.04	0.35	- ⁽³⁾	19.1		●					●	●	●				0.05-0.25

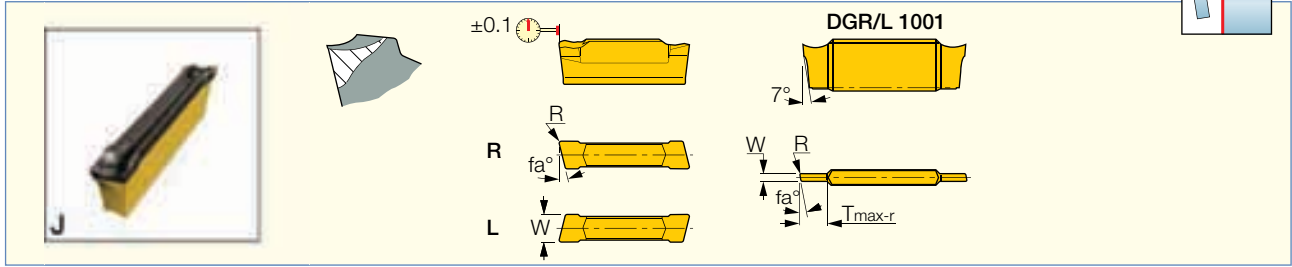
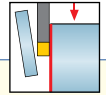
• JT chipformer has the basic positive configuration of the J-type and a reinforced negative frontal edge. Most suitable for soft materials at low to medium feeds.
• For cutting speed recommendations and user guide, see pages D59-71.

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

For tools, see pages: C#-HELIR/L (G10) • C#-HFIR/L-MC (G12) • CR HFIR/L-M (E34) • DGAD-B-D (D23) • DGAD/HGAD (D22) • DGFH (B13) • DGFHL-26B-TR-D (D14) • DGFHR/L (D11) • DGFHR/L-B-D..(R/L) (D13) • DGFS (D12) • DGTR/L (D18) • DGTR/L-B-D-SH (D15) • DGTR/L-B-D-TR (D19) • DGTR/L-B-T-SH (D17) • DGTR/L-B/BC-D (D16) • DGTR/L-BC-T (D19) • HELIR/L (B11) • HFAER/L-4T (E24) • HFAER/L-5,6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5,6T (E32) • HFFR/L-T (E22) • HFHR/L-4T (E18) • HFHR/L-5T (E19) • HFHR/L-6T (E20) • HFIR/L-MC (E33) • HFPAD-4 (E21) • HFPAD-5 (E21) • HGPAD (B12) • IM-HFIR/L-MC (G29).

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 f groove (mm/rev)
	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
DGR 4800JS-4D ⁽¹⁾	4.80	0.03	- ⁽²⁾	4.0	19.7	●								0.04-0.12
DGR 4800JS-8D ⁽¹⁾	4.80	0.03	- ⁽²⁾	8.0	19.7	●								0.04-0.14
DGR 4803J-4D	4.80	0.30	- ⁽²⁾	4.0	20.4	●								0.04-0.18
DGR 4803J-8D	4.80	0.30	- ⁽²⁾	8.0	20.4	●								0.04-0.15
DGR/L 5003J-4D	5.00	0.30	- ⁽²⁾	4.0	19.0	●		●	●				●	0.05-0.20
DGR/L 6303J-4D	6.35	0.35	- ⁽²⁾	4.0	19.1	●			●				●	0.05-0.25

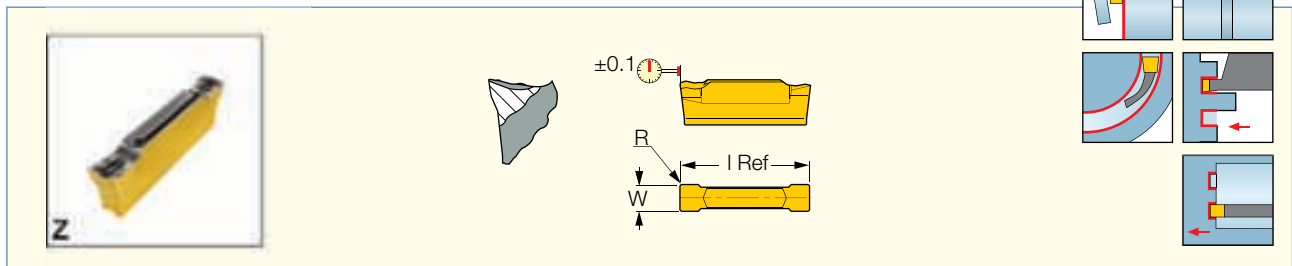
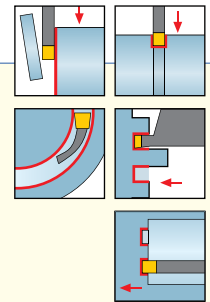
• For cutting speed recommendations and user guide, see pages D59-71.

⁽¹⁾ Sharp corners ⁽²⁾ No depth limit.

For tools, see pages: C#-HELIR/L (G10) • DGAD-B-D (D23) • DGAD/HGAD (D22) • DGFH (B13) • DGFHR/L (D11) • DGFS (D12) • DGTR/L (D18) • DGTR/L-B-D-SH (D15) • DGTR/L-B-D-TR (D19) • DGTR/L-B-T-SH (D17) • DGTR/L-B/BC-D (D16) • DGTR/L-BC-T (D19) • HELIR/L (B11).

DGN-Z

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



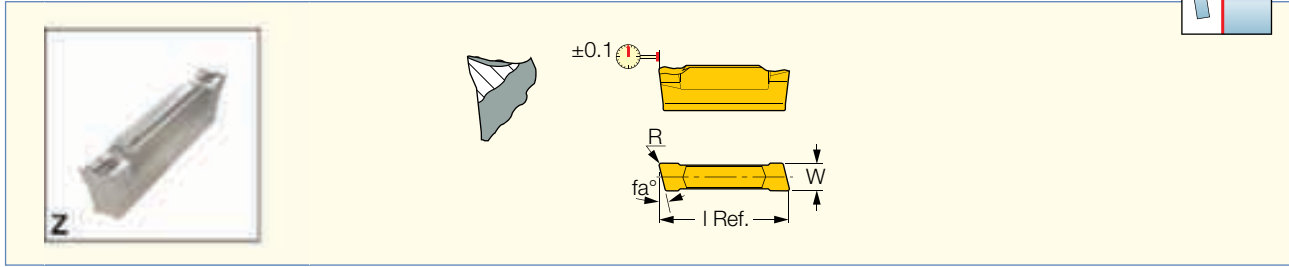
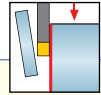
Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data f groove (mm/rev)
	W ^{±0.03}	T _{max-r}	R	I Ref.	IC808	IC908	
DGN 2002Z	2.00	18.00	0.20	20.9	●	●	0.03-0.12
DGN 3002Z	3.00	18.00	0.20	20.9	●	●	0.03-0.16

• For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: DGAD-B-D (D23) • DGAD/HGAD (D22) • DGFH (B13) • DGFHL-26B-TR-D (D14) • DGFHR/L (D11) • DGFHR/L-B-D..(R/L) (D13) • DGFS (D12) • DGTR/L (D18) • DGTR/L-B-D-SH (D15) • DGTR/L-B/BC-D (D16).

DGR/L-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}	fa°		f groove (mm/rev)
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

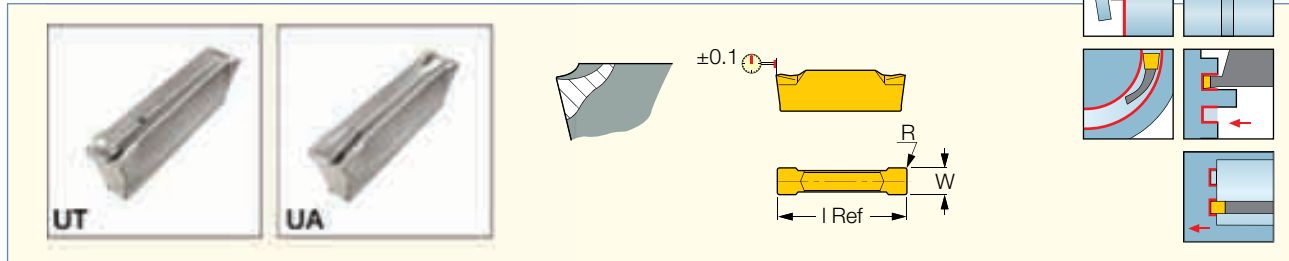
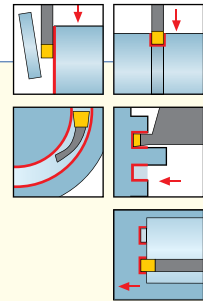
• For cutting speed recommendations and user guide, see pages D59-71 .

⁽¹⁾ Sharp corners

For tools, see pages: DGAD-B-D (D23) • DGAD/HGAD (D22) • DGFH (B13) • DGFHL-26B-TR-D (D14) • DGFHR/L (D11) • DGFHR/L-B-D..(R/L) (D13) • DGFS (D12) • DGTR/L (D18) • DGTR/L-B-D-SH (D15) • DGTR/L-B/BC-D (D16).

DGN-UT/UA

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
	W	W ^{±toler}	R	T _{max-r}	I Ref.	IC328	IC1028	IC354	IC350	IC308	IC908	IC20	f groove (mm/rev)
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	- ⁽¹⁾	19.4	●	●	●	●	●	●	●	0.05-0.16
DGN 4003UT	4.00	0.04	0.30	- ⁽¹⁾	19.3	●	●	●	●	●	●	●	0.04-0.15
DGN 5003UT	5.00	0.04	0.30	- ⁽¹⁾	19.0	●	●	●	●	●	●	●	0.05-0.18
DGN 6008UT	6.00	0.04	0.80	- ⁽¹⁾	19.1	●	●	●	●	●	●	●	0.06-0.20

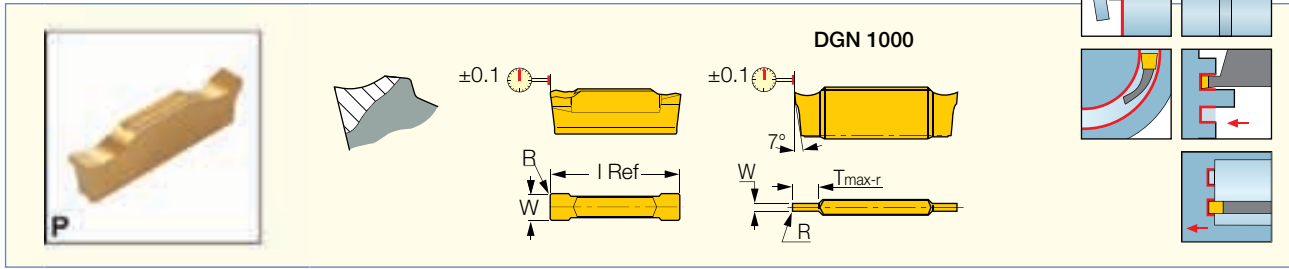
• For cutting speed recommendations and user guide, see pages D59-71.

⁽¹⁾ No depth limit

For tools, see pages: C#-HELIR/L (G10) • C#-HFIR/L-MC (G12) • CR HFIR/L-M (E34) • DGAD-B-D (D23) • DGAD/HGAD (D22) • DGFH (B13) • DGFHL-26B-TR-D (D14) • DGFHR/L (D11) • DGFHR/L-B-D..(R/L) (D13) • DGFS (D12) • DGTR/L (D18) • DGTR/L-B-D-SH (D15) • DGTR/L-B/BC-D (D16) • DGTR/L-BC-T (D19) • HELIR/L (B11) • HFAER/L-4T (E24) • HFAER/L-5,6T (E25) • HFFR/L-T (E22) • HFHR/L-6T (E20) • HFIR/L-MC (E33) • HFPAD-4 (E21) • HFPAD-5 (E21) • HGPAD (B12) • IM-HFIR/L-MC (G29).

DGN-P

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



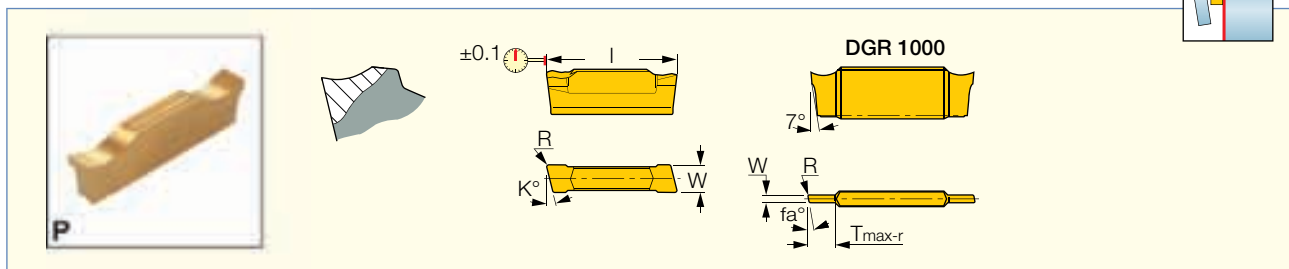
Designation	Dimensions				IC508	Recommended Machining Data
	$W_{\pm 0.02}$	R	I Ref.	T_{max-r}		f groove (mm/rev)
DGN 1000P	1.00	0.05	20.0	3.00	●	0.02-0.05
DGN 1500P	1.50	0.05	20.0	18.00	●	0.02-0.07
DGN 2000P	2.00	0.05	20.0	18.00	●	0.02-0.08
DGN 3000P	3.00	0.05	20.0	18.00	●	0.02-0.10

• For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: DGAD-B-D (D23) • DGAD/HGAD (D22) • DGFH (B13) • DGFHL-26B-TR-D (D14) • DGFHR/L (D11) • DGFHR/L-B-D..(R/L) (D13) • DGFS (D12) • DGTR/L (D18) • DGTR/L-B-D-SH (D15) • DGTR/L-B-D-TR (D19) • DGTR/L-B-T-SH (D17) • DGTR/L-B/BC-D (D16).

DGR/L-P

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



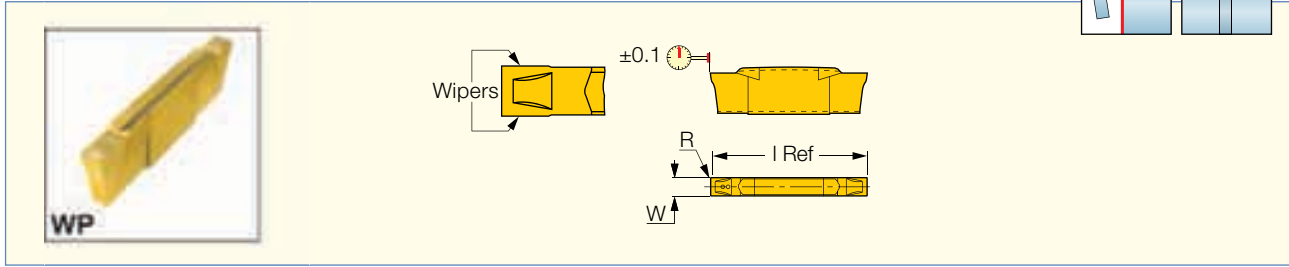
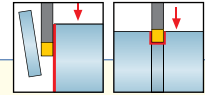
Designation	Dimensions					IC508	Recommended Machining Data
	W	R	I	T_{max-r}	fa°		f groove (mm/rev)
DGR 1000P-15D	1.00	0.05	20.00	3.00	15.0	●	0.02-0.03
DGR 1000P-6D	1.00	0.05	20.00	3.00	6.0	●	0.02-0.04
DGR 1500P-15D	1.50	0.05	20.00	18.00	15.0	●	0.02-0.04
DGR 1500P-6D	1.50	0.05	20.00	18.00	6.0	●	0.02-0.05
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 cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: DGAD-B-D (D23) • DGAD/HGAD (D22) • DGFH (B13) • DGFHR/L (D11) • DGFS (D12) • DGTR/L (D18) • DGTR/L-B-D-SH (D15) • DGTR/L-B-D-TR (D19) • DGTR/L-B-T-SH (D17) • DGTR/L-B/BC-D (D16).

DGN-WP

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



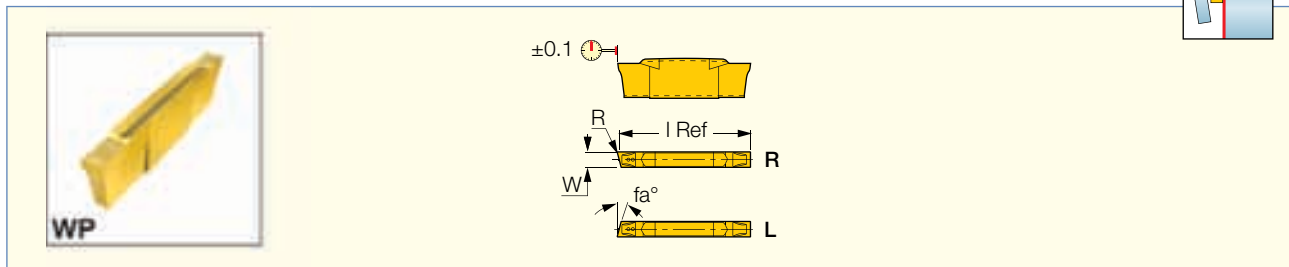
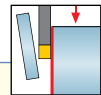
Designation	Dimensions				IC328	Recommended Machining Data
	W ± 0.02	R	T $_{max-r}$	I		f groove (mm/rev)
DGN 1900WP	1.90	0.05	6.00	19.70	●	0.04-0.12
DGN 2400WP	2.39	0.05	6.00	20.40	●	0.05-0.14

• For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: DGAD-B-D (D23) • DGAD/HGAD (D22) • DGFH (B13) • DGFHL-26B-TR-D (D14) • DGFHR/L (D11) • DGFHR/L-B-D..(R/L) (D13) • DGFS (D12) • DGTR/L (D18) • DGTR/L-B-D-SH (D15) • DGTR/L-B/BC-D (D16).

DGR-WP

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



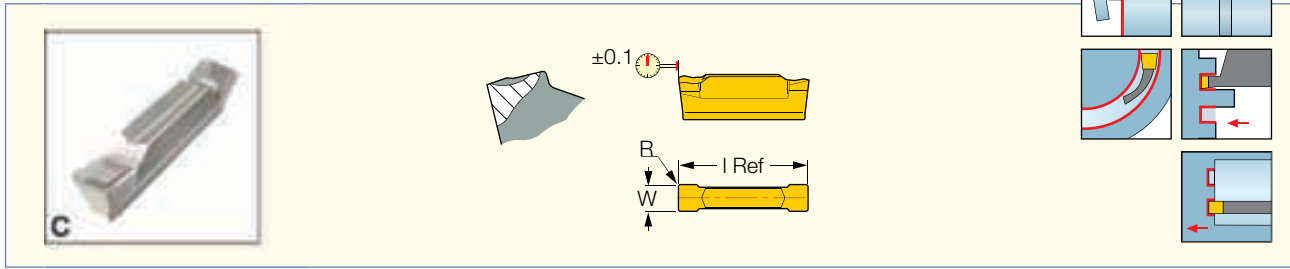
Designation	Dimensions					IC328	Recommended Machining Data
	W	R	T $_{max-r}$	I	fa°		f groove (mm/rev)
DGR 1900WP-12D	1.90	0.05	6.00	19.70	12.0	●	0.04-0.10
DGR 1900WP-5D	1.90	0.05	6.00	19.70	5.0	●	0.04-0.10
DGR 2400WP-12D	2.39	0.05	6.00	20.40	12.0	●	0.04-0.10
DGR 2400WP-5D	2.39	0.05	6.00	20.40	5.0	●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

• For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: DGAD-B-D (D23) • DGAD/HGAD (D22) • DGFH (B13) • DGFHR/L (D11) • DGFS (D12) • DGTR/L (D18) • DGTR/L-B-D-SH (D15) • DGTR/L-B/BC-D (D16).

HGN-C

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



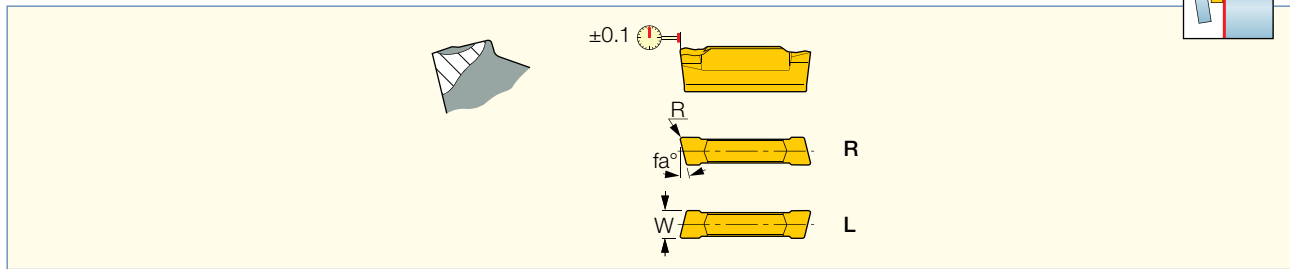
Designation	Dimensions			Tough ↔ Hard					Recommended Machining Data
	W ^{±0.05}	R	I	IC328	IC830	IC354	IC308	IC908	
HGN 3003C	3.00	0.30	15.80	●	●	●	●	●	0.08-0.20

• No depth limit • For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: C#-HELIR/L (G10) • DGAD/HGAD (D22) • HELIR/L (B11) • HFPAD-3 (E20) • HGAI/L-3 (E30) • HGFH (B12) • HGHR/L-3 (E16) • HGPAD (B12).

HGR/L-C

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



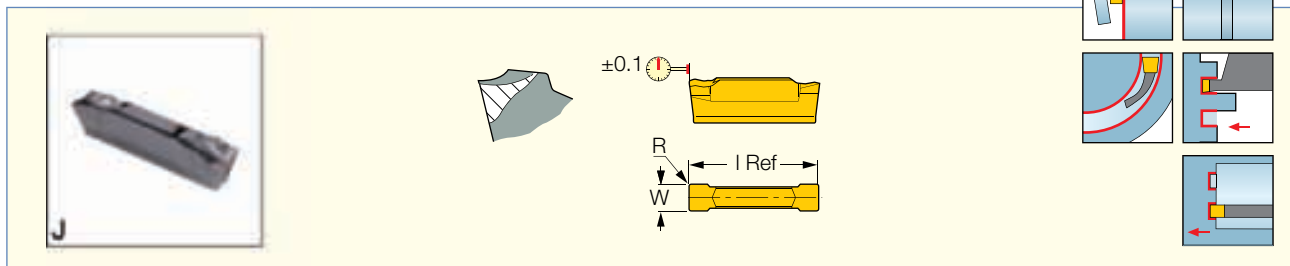
Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data
	W	R	I	fa°	IC328	IC830	
HGL 3003C -6D	3.00	0.30	15.60	6.0	●	●	0.06-0.16
HGR 3003C-6D	3.00	0.30	15.60	6.0	●	●	0.06-0.16

• No depth limit • For cutting speed recommendations and user guide, see pages D59-71 .

For tools, see pages: DGAD/HGAD (D22) • HGFH (B12).

HGN-J

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



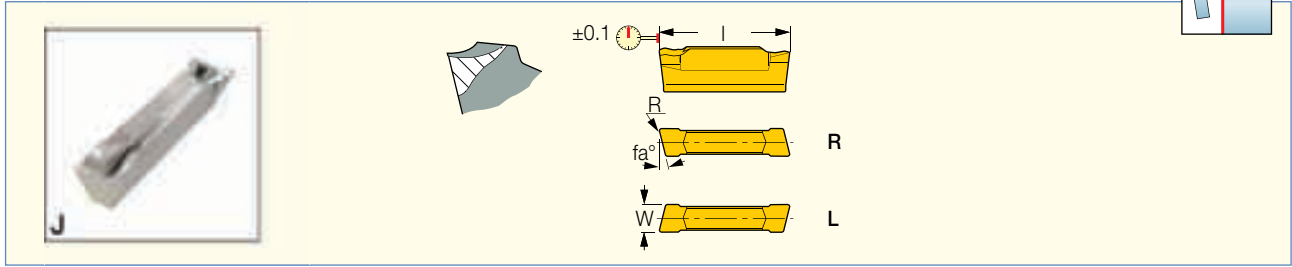
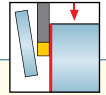
Designation	Dimensions			Tough ↔ Hard				Recommended Machining Data
	W ^{±0.05}	R	I	IC328	IC830	IC354	IC308	
HGN 3002J	3.00	0.20	16.10	●	●	●	●	0.04-0.15

• No depth limit • For cutting speed recommendations and user guide, see pages D59-71 .

For tools, see pages: C#-HELIR/L (G10) • DGAD/HGAD (D22) • HELIR/L (B11) • HFPAD-3 (E20) • HGAI/L-3 (E30) • HGFH (B12) • HGHR/L-3 (E16) • HGPAD (B12).

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 f groove (mm/rev)
	W	R	I	fa°	IC328	IC830	IC354	
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

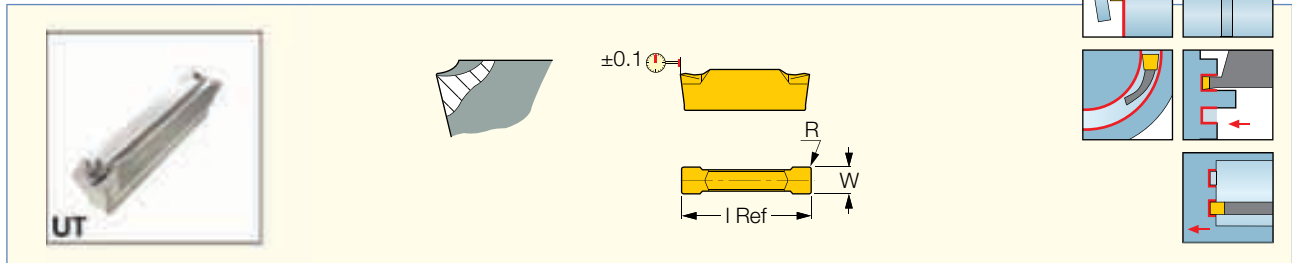
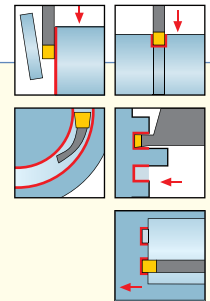
• No depth limit • For cutting speed recommendations and user guide, see pages D59-71.

⁽¹⁾ Sharp corners

For tools, see pages: DGAD/HGAD (D22) • HGFH (B12).

HGN-UT

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



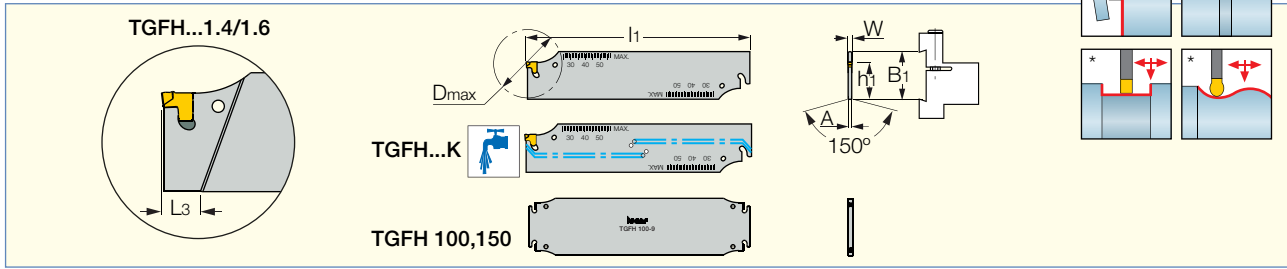
Designation	Dimensions			Tough ↔ Hard		Recommended Machining Data f groove (mm/rev)
	W±0.05	R	I	IC328	IC354	
HGN 3003UT	3.00	0.30	15.80	●	●	0.04-0.13

• No depth limit • For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: C#-HELIR/L (G10) • DGAD/HGAD (D22) • HELIR/L (B11) • HFPAD-3 (E20) • HGAIK/L-3 (E30) • HGFH (B12) • HGHR/L-3 (E16) • HGPAD (B12).

TGFH/R/L

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



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	-	TAG 1.4
TGFH 19-1.6	19.0	1.60	1.60	1.30 ⁽³⁾	86.00	11.00	15.7	32.0	-	TAG 1.6
TGFH 19-2	19.0	1.80	2.40	1.65	86.00	-	15.7	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	-	TAG 1.4
TGFH 26-1.6	26.0	1.60	1.60	1.30 ⁽³⁾	110.00	10.00	21.4	35.0	-	TAG 1.6
TGFH 26-2	26.0	1.80	2.40	1.65	110.00	-	21.4	50.0	-	TAG 2
TGFH 26-3	26.0	2.80	3.50	2.50	110.00	-	21.4	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	-	TAG 4
TGFH 26-5	26.0	4.70	5.50	4.00	150.00	-	21.4	80.0	-	TAG 5
TGFH 32-1.4	32.0	1.40	1.40	1.05 ⁽²⁾	150.00	7.10	24.8	29.0	-	TAG 1.4
TGFH 32-1.6	32.0	1.60	1.60	1.30 ⁽²⁾	150.00	10.00	24.8	38.0	-	TAG 1.6
TGFH 32-2	32.0	1.80	2.40	1.65 ⁽²⁾	150.00	-	24.8	50.0	-	TAG 2
TGFH 32-3	32.0	2.80	3.50	2.50	150.00	-	24.8	100.0	-	TAG 3
TGFH 32K-3 ⁽¹⁾	32.0	2.80	3.50	2.50	150.00	-	24.8	100.0	Y	TAG 3
TGFH 32-4	32.0	3.70	4.50	3.40	150.00	-	24.8	100.0	-	TAG 4
TGFH 32K-4 ⁽¹⁾	32.0	3.70	4.50	3.40	150.00	-	24.8	100.0	Y	TAG 4
TGFH 32-5	32.0	4.70	5.50	4.00	150.00	-	24.8	120.0	-	TAG 5
TGFH 32-6	32.0	5.70	6.50	5.20	150.00	-	24.8	120.0	-	TAG 6
TGFH 32-7	32.0	6.80	7.50	6.00	148.00	-	24.8	120.0	-	TAG 7
TGFH 45-3	45.0	2.80	3.50	2.50	225.00	-	38.1	160.0	-	TAG 3
TGFH 45-4	45.0	3.70	4.50	3.40	225.00	-	38.1	160.0	-	TAG 4
TGFH 45-5	45.0	4.70	5.50	4.00	225.00	-	38.1	160.0	-	TAG 5
TGFH 45-6	45.0	5.70	6.50	5.20	225.00	-	38.1	160.0	-	TAG 6
TGFH 45-7	45.0	6.80	7.50	6.00	225.00	-	38.1	160.0	-	TAG 7
TGFH 52-7	52.6	6.80	7.50	6.00	190.00	-	45.2	190.0	-	TAG 7
TGFH 53-7	52.6	6.80	7.50	6.00	260.00	-	45.2	220.0	-	TAG 7
TGFH 52K-8 ⁽¹⁾	52.6	7.70	8.50	7.20	190.00	-	45.2	190.0	Y	TAG 8
TGFH 53K-8 ⁽¹⁾	52.6	7.70	8.50	7.20	260.00	-	45.2	215.0	Y	TAG 8
TGFH 52K-9 ⁽¹⁾	52.6	8.70	10.00	8.20	190.00	-	45.2	190.0	Y	TAG 9
TGFH 53K-9 ⁽¹⁾	52.6	8.70	10.00	8.20	260.00	-	45.2	215.0	Y	TAG 9
TGFHR/L 53K-12 ⁽¹⁾	52.6	11.70	12.70	10.00	260.00	-	45.2	215.0	Y	TAG 12
TGFH 100-9	100.0	8.70	10.00	8.20	460.00	-	92.5	450.0	-	TAG 9
TGFH 100-12	100.0	11.70	12.70	10.00	460.00	-	92.5	450.0	-	TAG 12
TGFH 150-12	150.0	11.70	12.70	10.00	610.00	-	142.5	600.0	-	TAG 12

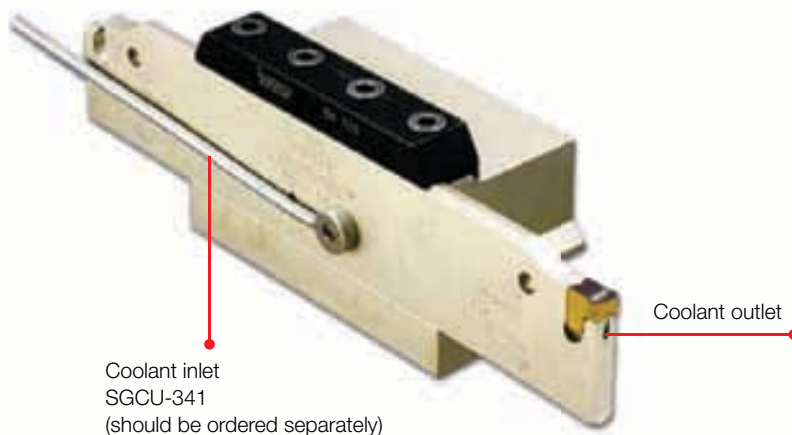
• For user guide, see pages D59-71.

⁽¹⁾ With coolant holes, recommended coolant pressure: 10 bar min, cooling tube SGCU 341 should be ordered separately. ⁽²⁾ A=1.05 at DOC area only. Overall thickness is 2.5 ⁽³⁾ A=1.65 at DOC area only. Overall thickness is 2.5

For inserts, see pages: TAG N-A (D45) • TAG N-C/W/M (D44) • TAG N-J/JS/JT (D47) • TAG N-UT (D45) • TAG R/L-C (D46) • TAG R/L-J/JS (D48) • TAGB/TAGBA (B67).

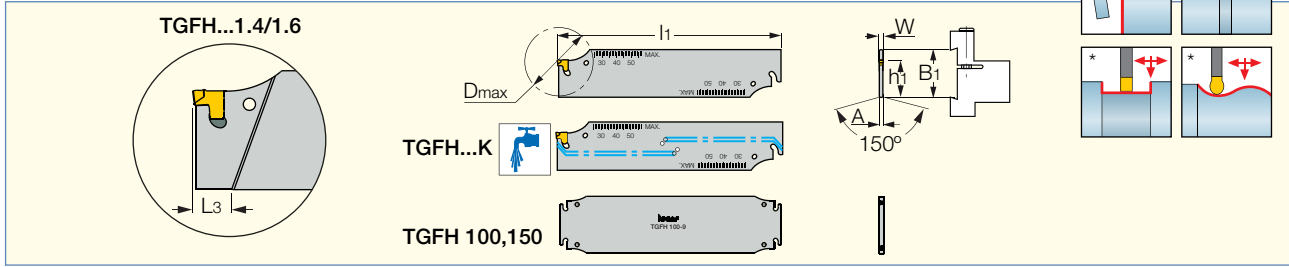
For holders, see pages: C#-TBK-R/L (G6) • HSK A63WH-TBK-R/L (G18) • IM63 XMZ TBK (G25) • SGTBF (F4) • SGTBR/L (F3) • SGTBU/SGTBN (F2) • UBHCR/L (F4).

* Valid only for TAGB and TAGBA inserts.



TGFH/R/L (continued)

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



Spare Parts



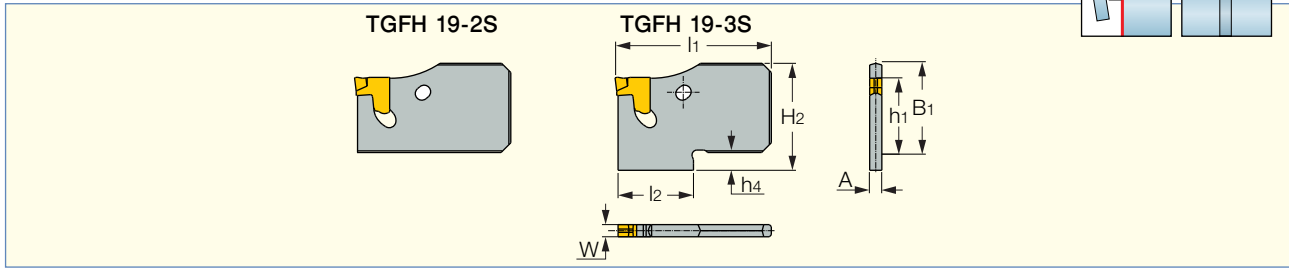
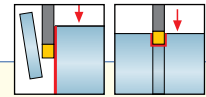
Designation	Extractor	Sealing Screw	Cooling Tube
TGFH 19-1.4	ETG 1.4/1.6*		
TGFH 19-1.6	ETG 1.4/1.6*		
TGFH 26-1.4	ETG 1.4/1.6*		
TGFH 26-1.6	ETG 1.4/1.6*		
TGFH 26-2	ETG 2*		
TGFH 26-3	ETG 3-4*		
TGFH 26K-3	ETG 3-4-SH*	SGC 340	
TGFH 26-4	ETG 3-4*		
TGFH 26-5	ETG 5-7*		
TGFH 32-1.4	ETG 1.4/1.6*		
TGFH 32-1.6	ETG 1.4/1.6*		
TGFH 32-2	ETG 2*		
TGFH 32-3	ETG 3-4*		
TGFH 32K-3	ETG 3-4-SH*	SGC 340	
TGFH 32-4	ETG 3-4*		
TGFH 32K-4	ETG 3-4-SH*	SGC 340	
TGFH 32-5	ETG 5-7*		
TGFH 32-7	ETG 5-7*		
TGFH 45-3	ETG 3-4*		
TGFH 45-4	ETG 3-4*		
TGFH 45-5	ETG 5-7*		
TGFH 45-6	ETG 5-7*		
TGFH 45-7	ETG 5-7*		
TGFH 52-7	ETG 5-7*		
TGFH 53-7	ETG 5-7*		
TGFH 52K-8	ETG 8-12*		SGCU 341*
TGFH 53K-8	ETG 8-12*		SGCU 341*
TGFH 52K-9	ETG 8-12*		SGCU 341*
TGFH 53K-9	ETG 8-12*		SGCU 341*
TGFHR/L 53K-12	ETG 8-12*		SGCU 341*
TGFH 100-9	ETG 8-12*		
TGFH 100-12	ETG 8-12*		
TGFH 150-12	ETG 8-12*		

* Optional, should be ordered separately

* Valid only for TAGB and TAGBA inserts.

TGFH-S

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



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 (D45) • TAG N-C/W/M (D44) • TAG N-J/JS/JT (D47) • TAG N-UT (D45) • TAG R/L-C (D46) • TAG R/L-J/JS (D48).

Spare Parts

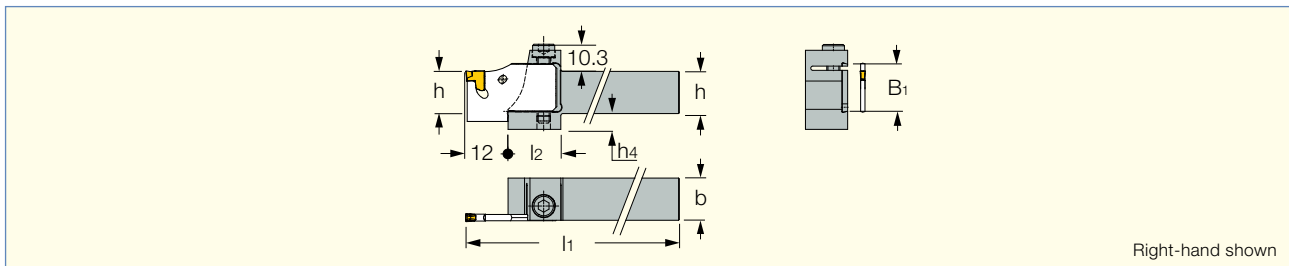


Designation	Extractor	Extractor 1
TGFH 19-2S	ETG 2*	
TGFH 19-3S		ETG 3-4-SH*

* Optional, should be ordered separately

SGBHR/L

Tool Blocks for SELF-GRIP Single-Sided Blades



Designation	h	b	h ₄	l ₁	B ₁	l ₂	T _{max-r}	D _{max}
SGBHR/L 1010	10.0	10.0	10.0	154.00	19.0	20.0	16.00	40.0
SGBHR/L 1212	12.0	12.0	8.0	154.00	19.0	20.0	16.00	40.0
SGBHR/L 1414	14.0	14.0	6.0	154.00	19.0	20.0	16.00	40.0
SGBHR/L 1616	16.0	16.0	6.0	154.00	19.0	20.0	16.00	40.0
SGBHR/L 2020	20.0	20.0	2.0	154.00	19.0	20.0	16.00	40.0
SGBHR/L 2525	25.0	25.0	-	154.00	19.0	20.0	16.00	40.0

• For D_{max} and T_{max} dimensions see TGFH-S adapters.

For tools, see pages: TGFH-S (D34).

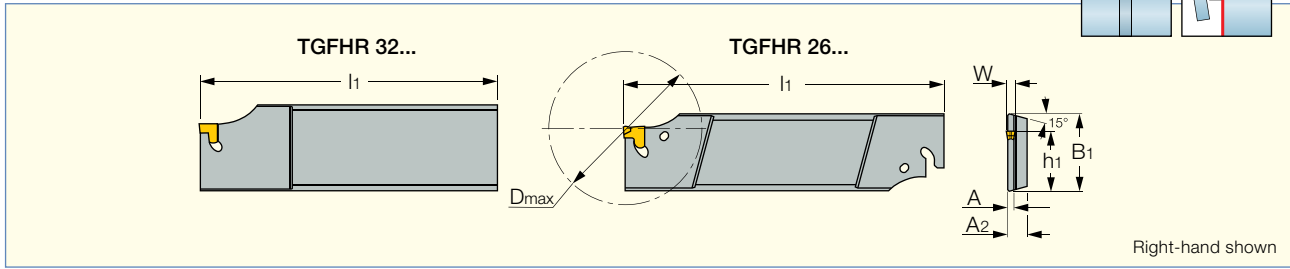
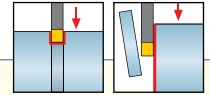
Spare Parts



Designation	Screw	Key
SGBHR/L 1010	SR M5X25DIN912	HW 4.0
SGBHR/L 1212	SR M5X25DIN912	HW 4.0
SGBHR/L 1414	SR M5X25DIN912	HW 4.0
SGBHR/L 1616	SR M5X25DIN912	HW 4.0
SGBHR/L 2020	SR M5X25DIN912	HW 4.0
SGBHR/L 2525	SR M5X25DIN912	HW 4.0

TGFHR/L

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



Designation	B ₁	W _{min}	W _{max}	A	A ₂	l ₁	h ₁	D _{max}	Inserts
TGFHL 26T16-2	26.0	1.80	2.40	1.65	7.9	110.50	21.4	43.0	TAG 2
TGFHR 26T16-3	26.0	2.80	3.50	2.50	7.9	110.50	21.4	43.0	TAG 3
TGFHR/L 26T23-2	26.0	1.80	2.40	1.65	7.9	110.50	21.4	56.0	TAG 2
TGFHR/L 26T23-3	26.0	2.80	3.50	2.50	7.9	110.50	21.4	46.0	TAG 3
TGFHR/L 32T22-2	32.0	1.80	2.40	1.65	7.9	110.50	24.8	42.0	TAG 2
TGFHR/L 32T22-3	32.0	2.80	3.50	2.50	7.9	110.50	24.8	42.0	TAG 3
TGFHR/L 32T33-3	32.0	2.80	3.50	2.50	7.9	110.50	24.8	66.0	TAG 3
TGFHR/L 32T33-4	32.0	3.70	4.50	3.40	7.9	110.50	24.8	66.0	TAG 4

• For user guide, see pages D59-71.

For inserts, see pages: TAG N-A (D45) • TAG N-C/W/M (D44) • TAG N-J/JS/JT (D47) • TAG N-UT (D45) • TAG R/L-C (D46) • TAG R/L-J/JS (D48).

For holders, see pages: C#-TBK-R/L (G6) • HSK A63WH-TBK-R/L (G18) • IM63 XMZ TBK (G25) • SGTBF (F4) • SGTBR/L (F3) • SGTBU/SGTBN (F2) • UBHCR/L (F4).

Spare Parts



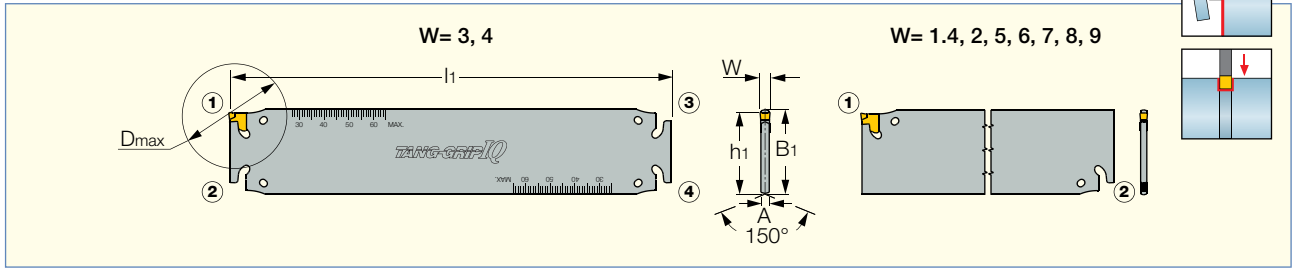
Designation	Extractor	Extractor 1
TGFHL 26T16-2	ETG 2*	
TGFHR 26T16-3		ETG 3-4-SH*
TGFHR/L 26T23-2	ETG 2*	
TGFHR/L 26T23-3		ETG 3-4-SH*
TGFHR/L 32T22-2	ETG 2*	
TGFHR/L 32T22-3		ETG 3-4-SH*
TGFHR/L 32T33-3		ETG 3-4-SH*
TGFHR/L 32T33-4		ETG 3-4-SH*

* Optional, should be ordered separately



TGSU

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



Designation	B ₁	W _{min}	W _{max}	D _{max}	NOP ⁽²⁾	A	l ₁	h ₁	Insert	Coolant
TGSU 35-1.4-IQ	35.0	1.40	1.40	35.0	2	2.50 ⁽³⁾	180.00	33.2	TAG 1.4	-
TGSU 35-2-IQ	35.0	1.80	2.40	59.5	2	2.50 ⁽⁴⁾	160.00	33.2	TAG 2	-
TGSU 35-3-IQ-4Z	35.0	2.80	3.50	120.0	4	2.50	180.00	33.2	TAG 3	-
TGSU 35-4-IQ-4Z	35.0	3.70	4.50	120.0	4	3.40	180.00	33.2	TAG 4	-
TGSU 35-5-IQ	35.0	4.70	5.50	144.0	2	4.00	180.00	33.2	TAG 5	-
TGSU 35-6-IQ	35.0	5.70	6.50	144.0	2	5.20	180.00	33.2	TAG 6	-
TGSU 35-7-IQ	35.0	6.80	7.50	144.0	2	6.00	180.00	33.2	TAG 7	-
TGSU 35C-8-IQ ⁽¹⁾	35.0	7.70	8.50	144.0	2	7.20	180.00	33.2	TAG 8	Y
TGSU 35C-9-IQ ⁽¹⁾	35.0	8.70	10.00	144.0	2	8.20	180.00	33.2	TAG 9	Y
TGSU 56C-7-IQ ⁽¹⁾	56.0	6.80	7.50	220.0	2	6.00	260.00	53.6	TAG 7	Y
TGSU 56C-8-IQ ⁽¹⁾	56.0	7.70	8.50	220.0	2	7.20	260.00	53.6	TAG 8	Y
TGSU 56C-9-IQ ⁽¹⁾	56.0	8.70	10.00	220.0	2	8.20	260.00	53.6	TAG 9	Y

• For user guide, see pages D59-71.

⁽¹⁾ C- Internal coolant, use with TGTBU HD blocks only, cooling tube SGCU 341 should be ordered separately. ⁽²⁾ A=1.05 at DOC area only. Overall thickness is 2.5
⁽³⁾ A=1.65 at DOC area only. Overall thickness is 2.5

For inserts, see pages: TAG N-A (D45) • TAG N-C/W/M (D44) • TAG N-J/JS/JT (D47) • TAG N-UT (D45) • TAG R/L-C (D46) • TAG R/L-J/JS (D48) • TAGB/ TAGBA (B67).

For holders, see pages: TGTBU (D37).

TGSU 35-3-IQ-4
TGSU 35-4-IQ-4



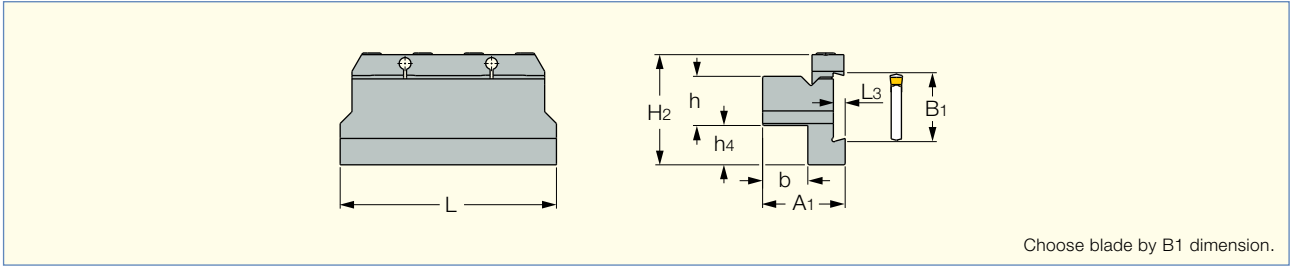
Spare Parts

Designation	Extractor	Cooling Tube
TGSU 35-1.4-IQ	ETG 1.4/1.6*	
TGSU 35-2-IQ	ETG 2*	
TGSU 35-3-IQ-4Z	ETG 3-4-SH*	
TGSU 35-4-IQ-4Z	ETG 3-4-SH*	
TGSU 35-5-IQ	ETG 5-7*	
TGSU 35-6-IQ	ETG 5-7*	
TGSU 35-7-IQ	ETG 5-7*	
TGSU 35C-8-IQ	ETG 8-12*	SGCU 341*
TGSU 35C-9-IQ	ETG 8-12*	SGCU 341*
TGSU 56C-7-IQ	ETG 5-7*	SGCU 341*
TGSU 56C-8-IQ	ETG 8-12*	SGCU 341*
TGSU 56C-9-IQ	ETG 8-12*	SGCU 341*

* Optional, should be ordered separately

TGTBU

Blocks for TGSU Parting and Grooving Blades



Designation	h	b	B ₁	L ₃	A ₁	H ₂	h ₄	L
TGTBU 20-35	20.0	19.0	35.0	6.00	38.00	56.0	23.7	110.00
TGTBU 25-35	25.0	23.0	35.0	6.00	42.00	56.0	18.7	110.00
TGTBU 32-35	32.0	29.0	35.0	6.00	48.00	56.0	11.7	110.00
TGTBU 32-35 HD ⁽¹⁾	32.0	30.0	35.0	8.00	55.00	64.0	18.0	130.00
TGTBU 40-35	40.0	41.0	35.0	6.00	60.00	56.0	3.7	110.00
TGTBU 40-35 HD ⁽¹⁾	40.0	41.0	35.0	8.00	66.00	64.0	10.0	130.00
TGTBU 40-56 HD ⁽¹⁾	40.0	41.0	56.0	8.00	66.00	72.0	28.0	130.00

⁽¹⁾ HD - Recommended blocks for TGSU...-8, TGSU...-9 blades.

For tools, see pages: TGSU (D36).

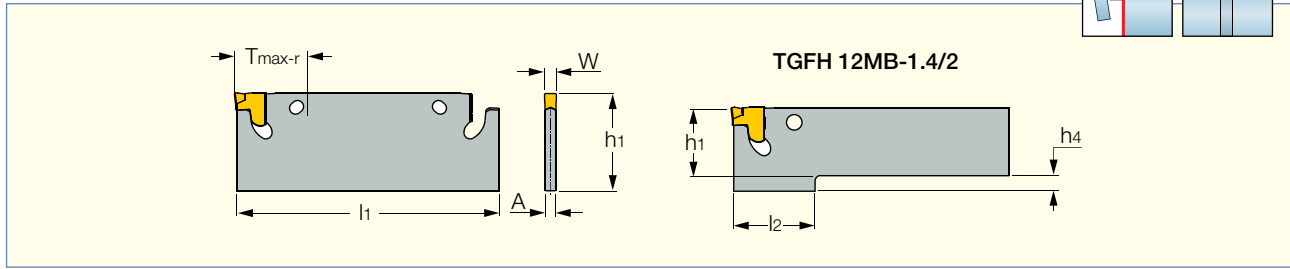
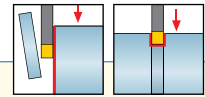
Spare Parts



Designation	Top Clamp	Screw	Key
TGTBU 20-35	BKU 110	SR M6X30DIN912	HW 5.0
TGTBU 25-35	BKU 110	SR M6X30DIN912	HW 5.0
TGTBU 32-35	BKU 110	SR M6X30DIN912	HW 5.0
TGTBU 32-35 HD	BK 509	SR M8X30DIN912	HW 6.0
TGTBU 40-35	BKU 110	SR M6X30DIN912	HW 5.0
TGTBU 40-35 HD	BK 509	SR M8X30DIN912	HW 6.0
TGTBU 40-56 HD	BK 509	SR M8X30DIN912	HW 6.0

TGFH-MB

Parting and Grooving Blades for Other Manufacturer's Blocks

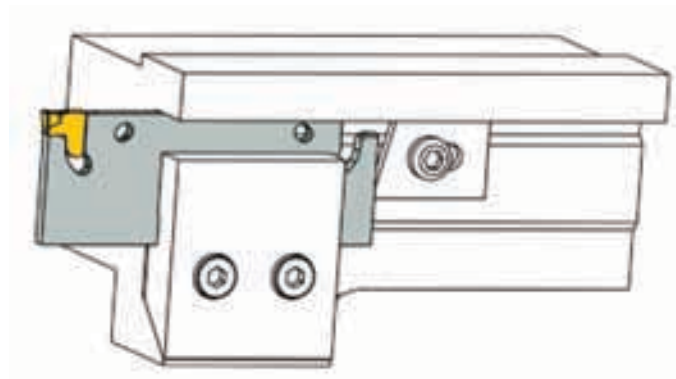


Designation	W _{min}	W _{max}	A	l ₁	h ₁	h ₄	l ₂	T _{max-r}	Inserts
TGFH 12MB-1.4-L58	1.40	1.40	1.05 ⁽¹⁾	58.00	12.0	3.0	15.5	11.50	TAG 1.4
TGFH 12MB-2 L58	1.80	2.40	1.65	58.00	12.2	2.8	15.5	11.50	TAG 2
TGFH 17MB-2 L58	1.80	2.40	1.65	58.00	17.2	-	-	11.50	TAG 2
TGFH 22MB-2 L58	1.80	2.40	1.65	58.00	22.2	-	-	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 28MB-3	2.80	3.50	2.50	100.00	28.0	-	-	19.00	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
TGFH 28MB-4	3.70	4.50	3.40	100.00	28.0	-	-	19.00	TAG 4

• For user guide, see pages D59-71.

⁽¹⁾ A=1.05 at DOC area only. Overall thickness is 1.65

For inserts, see pages: TAG N-A (D45) • TAG N-C/W/M (D44) • TAG N-J/JS/JT (D47) • TAG N-UT (D45) • TAG R/L-C (D46) • TAG R/L-J/JS (D48).



Spare Parts

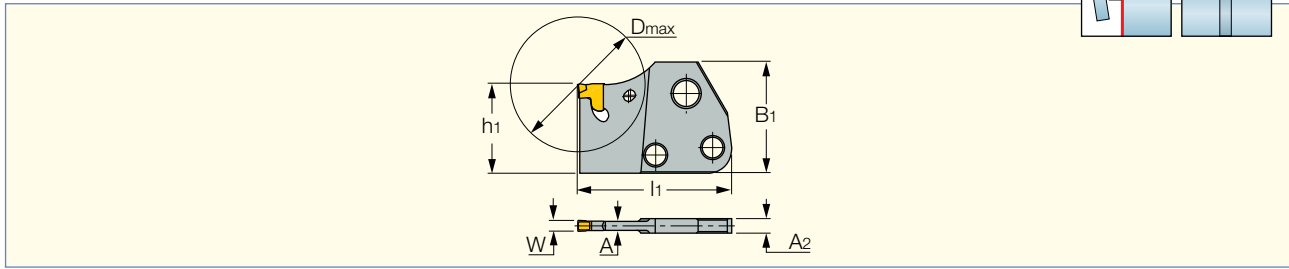
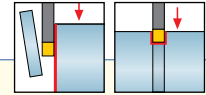


Designation	Extractor	Extractor 1
TGFH 12MB-1.4-L58		ETG 1.4*
TGFH 12MB-2 L58	ETG 2*	
TGFH 17MB-2 L58	ETG 2*	
TGFH 22MB-2 L58	ETG 2*	
TGFH 17MB-3		ETG 3-4-SH*
TGFH 22MB-3		ETG 3-4-SH*
TGFH 22MB-3-L84		ETG 3-4-SH*
TGFH 28MB-3		ETG 3-4-SH*
TGFH 17MB-4		ETG 3-4-SH*
TGFH 22MB-4		ETG 3-4-SH*
TGFH 22MB-4-L90		ETG 3-4-SH*
TGFH 28MB-4		ETG 3-4-SH*

* Optional, should be ordered separately

TGAD

Parting and Grooving Adapters for TANG-GRIP Tangentially Clamped Inserts



Designation	W _{min}	W _{max}	A	A ₂	l ₁	D _{max}	h ₁	B ₁	Inserts
TGAD 1.4N	1.40	1.40	1.05	3.2	41.50	32.0	24.0	29.0	TAG 1.4
TGAD 2N	1.80	2.40	1.65	3.2	41.50	32.0	24.0	30.0	TAG 2
TGAD 3N	2.80	3.50	2.40	4.0	41.50	35.0	24.0	30.0	TAG 3
TGAD 4N	3.70	4.50	3.20	3.2	50.50	50.0	24.0	30.0	TAG 4
TGAD 5N	4.70	5.50	4.00	4.0	50.50	50.0	24.0	30.0	TAG 5

• For user guide, see pages D59-71.

For inserts, see pages: TAG N-A (D45) • TAG N-C/W/M (D44) • TAG N-J/JS/JT (D47) • TAG N-UT (D45) • TAG R/L-C (D46) • TAG R/L-J/JS (D48).

For holders, see pages: C#-MAHD (G7) • C#-MAHDR-45 (G4) • C#-MAHPD (G7) • C#-MAHUR/L (G5) • HMSN-Acme Gridley (D20) • HMSN-Conomatic (D21) • HSK A63WH-MAHDOR (G17) • HSK A63WH-MAHDR-45 (G16) • HSK A63WH-MAHUR/L (G17) • IM-MAHD (G26) • IM-MAHPD (G27) • IM63 XMZ MAHDOR (G24) • IM63 XMZ MAHDR-45 (G23) • MAHPR/L (B22) • MAHR/L (B22).

Spare Parts

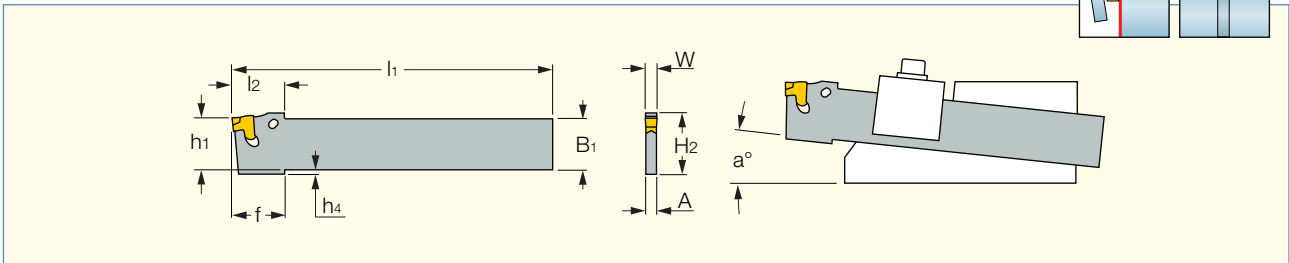
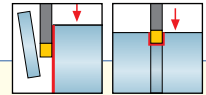


Designation	Extractor	Extractor 1
TGAD 1.4N		ETG 1.4*
TGAD 2N	ETG 2*	
TGAD 3N		ETG 3-4-SH*
TGAD 4N		ETG 3-4-SH*
TGAD 5N	ETG 5-7*	

* Optional, should be ordered separately

TGFS

Blades for Multi-Spindle Machines - Replacement for HSS and Brazed Tools



Designation	W _{min}	W _{max}	B ₁	A	l ₁	H ₂	h ₁	l ₂	f	h ₄	D _{max}	a°	Inserts
TGFS 0-17-2	1.80	2.40	17.2	1.65	110.00	17.2	17.2	-	18.00	1.8	35.0	0	TAG 2
TGFS 0-17-3	2.80	3.50	17.2	2.50	110.00	19.0	17.2	-	18.00	1.8	60.0	0	TAG 3
TGFS 5-17-2	1.80	2.40	17.4	1.65	110.00	18.9	17.5	18.0	18.00	1.5	35.0	5	TAG 2
TGFS 5-17-3	2.80	3.50	17.4	2.50	110.00	20.7	17.5	18.0	18.00	1.5	60.0	5	TAG 3
TGFS 5-17-4	3.70	4.50	17.4	3.40	110.00	20.7	17.5	18.0	18.00	1.5	60.0	5	TAG 4
TGFS 5-22-2	1.80	2.40	22.2	1.65	150.00	23.8	22.4	18.0	-	-	50.0	5	TAG 2
TGFS 5-22-3	2.80	3.50	22.2	2.50	150.00	24.1	22.4	18.0	-	-	75.0	5	TAG 3
TGFS 5-22-4	3.70	4.50	22.2	3.40	150.00	24.1	22.4	18.0	-	-	80.0	5	TAG 4
TGFS 5-28-4	3.70	4.50	28.6	3.40	150.00	30.4	28.7	18.0	-	-	100.0	5	TAG 4

• For user guide, see pages D59-71.

For inserts, see pages: TAG N-A (D45) • TAG N-C/W/M (D44) • TAG N-J/JS/JT (D47) • TAG N-UT (D45) • TAG R/L-C (D46) • TAG R/L-J/JS (D48).

Spare Parts

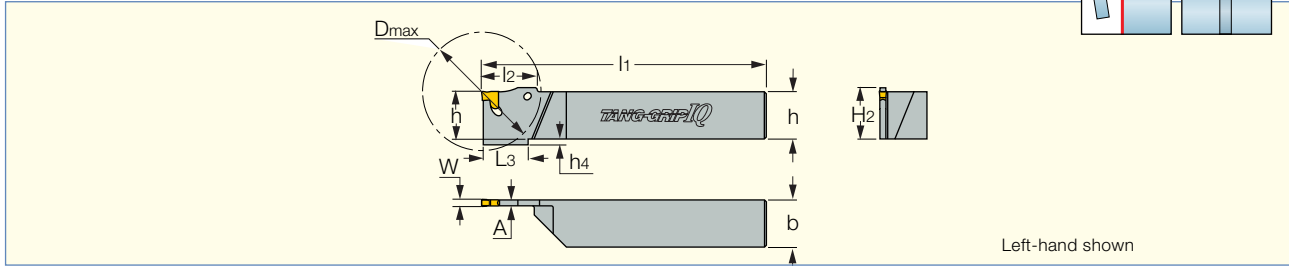
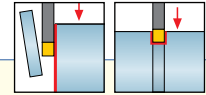


Designation	Extractor	Extractor 1
TGFS 0-17-2	ETG 2*	
TGFS 0-17-3		ETG 3-4-SH*
TGFS 5-17-2	ETG 2*	
TGFS 5-17-3		ETG 3-4-SH*
TGFS 5-17-4		ETG 3-4-SH*
TGFS 5-22-2	ETG 2*	
TGFS 5-22-3		ETG 3-4-SH*
TGFS 5-22-4		ETG 3-4-SH*
TGFS 5-28-4		ETG 3-4-SH*

* Optional, should be ordered separately

TGTR/L

Integral Shank, TANG-GRIP Parting and Grooving Toolholder



Designation	W _{min}	W _{max}	h	b	A	l ₁	H ₂	l ₂	f	h ₄	D _{max}	Inserts
TGTR/L 1010-1.4	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	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	1.40	1.45	16.0	16.0	1.05	140.00	16.0	-	-	-	30.0	TAG 1.4
TGTR/L 2020-1.4	1.40	1.45	20.0	20.0	1.05	140.00	20.0	-	-	-	30.0	TAG 1.4
TGTR/L 1010-2	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	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	1.80	2.50	16.0	12.0	1.65	120.00	16.0	-	-	-	35.0	TAG 2
TGTR/L 1616-2	1.80	2.40	16.0	16.0	1.65	150.00	16.0	-	-	-	35.0	TAG 2
TGTR/L 2012-2	1.80	2.40	20.0	12.0	1.65	125.00	20.0	-	-	-	35.0	TAG 2
TGTR/L 1212-3	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	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	2.80	3.50	16.0	16.0	2.50	150.00	19.0	-	19.00	3.0	35.0	TAG 3
TGTR/L 2012-3	2.80	3.50	20.0	12.0	2.50	125.00	20.0	-	-	-	43.0	TAG 3
TGTR/L 2020-3	2.80	3.50	20.0	20.0	2.50	120.50	21.7	23.4	-	-	54.0	TAG 3
TGTR/L 2525-3	2.80	3.50	25.0	25.0	2.50	150.50	26.7	23.4	-	-	56.0	TAG 3
TGTR 2525K-3 ⁽¹⁾	2.80	3.50	25.0	25.0	2.50	150.00	26.7	23.4	-	-	56.0	TAG 3
TGTR/L 2020-4	3.70	4.50	20.0	20.0	3.40	120.50	21.7	23.4	-	-	57.0	TAG 4
TGTR/L 2525-4	3.70	4.50	25.0	25.0	3.40	150.50	26.7	23.4	-	-	65.0	TAG 4
TGTR/L 2020-5	4.70	5.50	20.0	20.0	4.00	120.00	21.7	-	-	-	57.0	TAG 5
TGTR/L 2525-5	4.70	5.50	25.0	25.0	4.00	150.00	25.0	-	-	-	76.0	TAG 5
TGTR/L 2525-6	5.70	6.50	25.0	25.0	5.20	150.00	25.0	-	-	-	76.0	TAG 6

• For user guide, see pages D59-71.

⁽¹⁾ With coolant

For inserts, see pages: TAG N-A (D45) • TAG N-C/W/M (D44) • TAG N-J/JS/JT (D47) • TAG N-UT (D45) • TAG R/L-C (D46) • TAG R/L-J/JS (D48).

Spare Parts

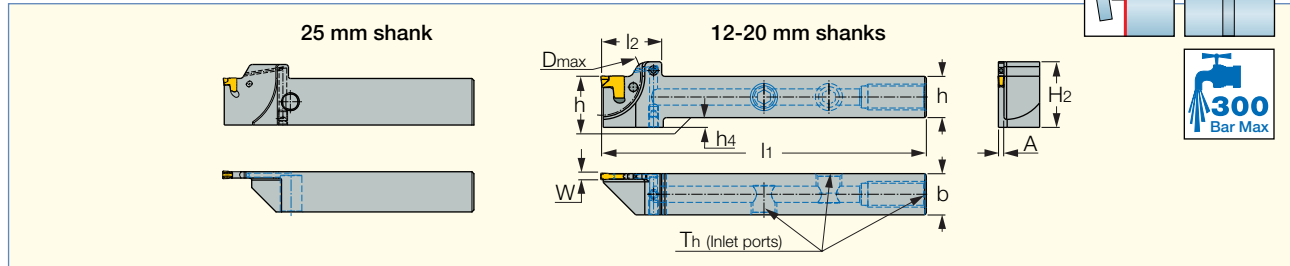


Designation	Extractor	Extractor 1	Extractor 2
TGTR/L 1010-1.4			ETG 1.4*
TGTR/L 1212-1.4			ETG 1.4*
TGTR/L 1616-1.4			ETG 1.4*
TGTR/L 2020-1.4			ETG 1.4*
TGTR/L 1010-2		ETG 2*	
TGTR/L 1212-2		ETG 2*	
TGTR/L 1612-2-L120		ETG 2*	
TGTR/L 1616-2		ETG 2*	
TGTR/L 2012-2		ETG 2*	
TGTR/L 1212-3			ETG 3-4-SH*
TGTR/L 1612-3-L120			ETG 3-4-SH*
TGTR/L 1616-3			ETG 3-4-SH*
TGTR/L 2012-3			ETG 3-4-SH*
TGTR/L 2020-3	ETG 3-4*		
TGTR/L 2525-3	ETG 3-4*		
TGTR 2525K-3	ETG 3-4*		
TGTR/L 2020-4	ETG 3-4*		
TGTR/L 2525-4	ETG 3-4*		
TGTR/L 2020-5		ETG 5-7*	
TGTR/L 2525-5		ETG 5-7*	
TGTR/L 2525-6		ETG 5-7*	

* Optional, should be ordered separately

TGTR/L-JHP

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



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	119.00	15.0	18.0	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 2012-2JHP	1.80	2.50	20.0	12.0	1.72	120.00	25.6	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
TGTR/L 2020-3JHP	2.80	3.50	20.0	20.0	2.50	120.00	27.0	35.0	-	G1/8	54.0	TAG 3
TGTR/L 2525-3JHP	2.80	3.50	25.0	25.0	2.50	150.00	32.5	35.0	-	G1/8	56.0	TAG 3
TGTR/L 2020-4JHP	3.70	4.50	20.0	20.0	3.40	120.00	27.0	35.0	-	G1/8	54.0	TAG 4
TGTR/L 2525-4JHP	3.70	4.50	25.0	25.0	3.40	150.00	32.5	35.0	-	G1/8	56.0	TAG 4

• For user guide see pages D59-71, B147-148.

(1) Thread size (2) Use M5 G1/8 adapter.

For inserts, see pages: TAG N-A (D45) • TAG N-C/W/M (D44) • TAG N-J/JS/JT (D47) • TAG N-UT (D45) • TAG R/L-C (D46) • TAG R/L-J/JS (D48).

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
TGTR/L....-4JHP	7-9	9-11	11-13

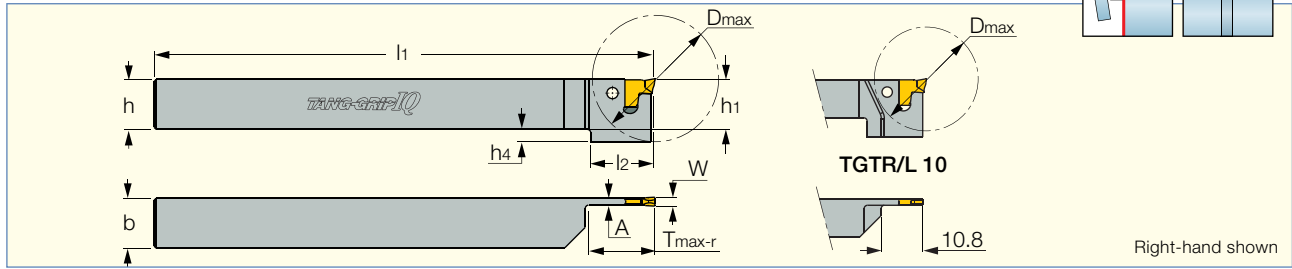
Spare Parts

Designation	Plug	Screw	Extractor	Plug 1	Plug 3	Plug Key
TGTR/L 1010-2JHP	SR 5/16XUNF-TL-S	SR M3X3DIN913	ETG 2-SH-T*			HW 5/32"
TGTR/L 1212-2JHP			ETG 2-SH-T*	SR 5/16UNF TL360		HW 5/32"
TGTR/L 1616-2JHP			ETG 2*	SR 5/16UNF TL360		HW 5/32"
TGTR/L 2012-2JHP			ETG 2*	SR 5/16UNF TL360		HW 5/32"
TGTR/L 1616-3JHP			ETG 3-4-SH*	SR 5/16UNF TL360		HW 5/32"
TGTR/L 2020-3JHP			ETG 3-4-SH*		PLG 1/8BSP TL360	HW 5.0
TGTR/L 2525-3JHP			ETG 3-4-SH*	SR 5/16UNF TL360	PLG 1/8BSP TL360	
TGTR/L 2020-4JHP			ETG 3-4-SH*		PLG 1/8BSP TL360	HW 5.0
TGTR/L 2525-4JHP			ETG 3-4-SH*	SR 5/16UNF TL360	PLG 1/8BSP TL360	

* 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	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	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	2.00	1.80	2.50	16.0	16.1	16.0	1.65	120.00	-	-	18.00	36.0

• For user guide, see pages D59-71.

⁽¹⁾ For parting

For inserts, see pages: TAG N-A (D45) • TAG N-C/W/M (D44) • TAG N-J/JS/JT (D47) • TAG N-UT (D45) • TAG R/L-C (D46) • TAG R/L-J/JS (D48).

Spare Parts

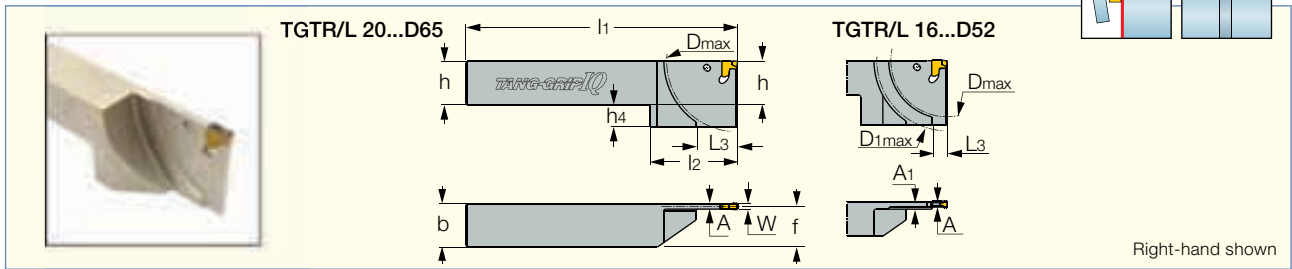


Designation	Extractor
TGTR/L-2T..SH-L120	ETG 2-SH*

* Optional, should be ordered separately

TGTR/L-D

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



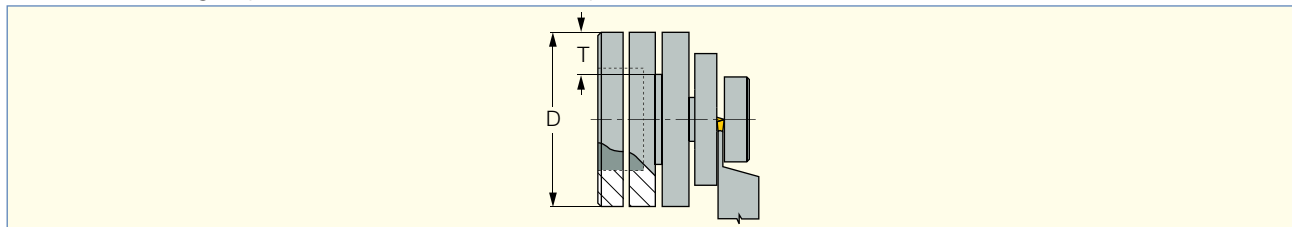
Designation	W	W _{min}	W _{max}	h	b	A	A ₁	l ₁	l ₂	f	h ₄	D _{max}	D _{1max}	L ₃
TGTR/L 1616-2-D52	2.00	1.80	2.40	16.0	16.0	1.65	3.50	125.00	40.0	15.18	14.0	52.0	65.0	6.00
TGTR/L 2020-2-D65	2.00	1.80	2.40	20.0	20.0	1.65	-	125.00	40.0	19.18	10.0	65.0	-	18.00
TGTR/L 1616-3-D52	3.00	2.80	3.50	16.0	16.0	2.50	3.50	125.00	40.0	14.75	14.0	52.0	65.0	6.00
TGTR/L 2020-3-D65	3.00	2.80	3.50	20.0	20.0	2.50	-	125.00	40.0	18.75	10.0	65.0	-	18.00

• For user guide, see pages D59-71.

For inserts, see pages: TAG N-A (D45) • TAG N-C/W/M (D44) • TAG N-J/JS/JT (D47) • TAG N-UT (D45) • TAG R/L-C (D46) • TAG R/L-J/JS (D48).

Depth Capacity DGTR/L-D

Table determining depth of cut as function of workpiece diameter



Designation	T _{max}									
TGTR/L 1616-2-D52	26	19	16	15	13	11	10	9	8	
TGTR/L 2020-2-D65		32.5	31	29	26	24	23	22	20	
TGTR/L 1616-3-D52	26	20	17	15	13	11	10	9	8	
TGTR/L 2020-3-D65		32.5	31	29	26	24	23	22	20	
D →	52	65	70	80	100	120	150	200	300	

Spare Parts

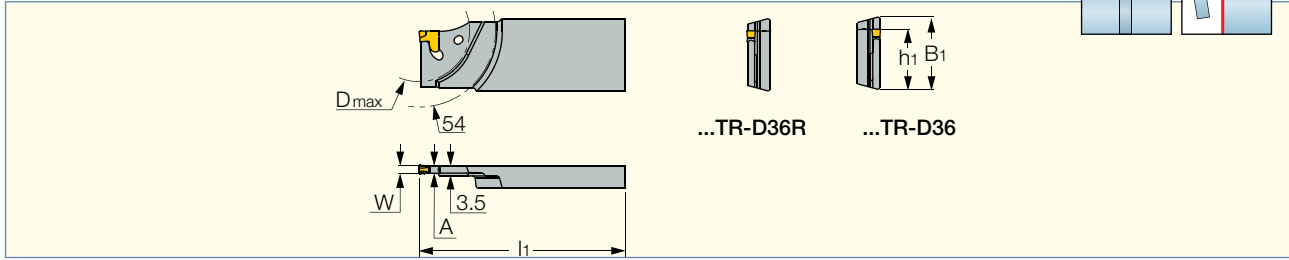


Designation	Extractor	Extractor 1
TGTR/L 1616-2-D52	ETG 2*	
TGTR/L 2020-2-D65	ETG 2*	
TGTR/L 1616-3-D52		ETG 3-4-SH*
TGTR/L 2020-3-D65		ETG 3-4-SH*

* Optional, should be ordered separately

TGFHL-TR

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

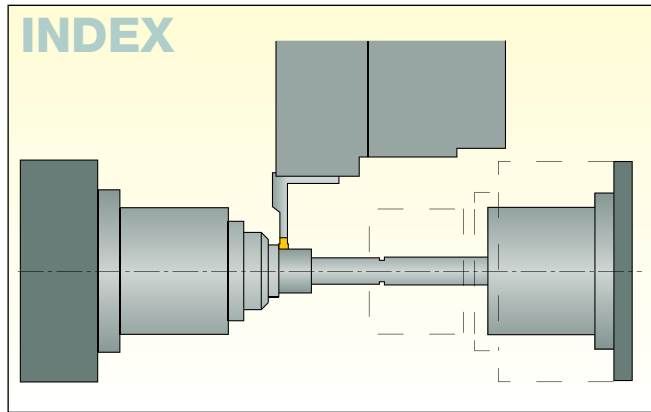


Designation	B ₁	W _{min}	W _{max}	A	l ₁	h ₁	D _{max}	Inserts
TGFHL 26-2TR-D36	26.0	1.80	2.40	1.65	110.00	21.4	36.0	TAG 2
TGFHL 26-2TR-D36R	26.0	1.80	2.40	1.65	110.00	21.4	36.0	TAG 2
TGFHL 26-3TR-D36	26.0	2.80	3.50	2.50	110.00	21.4	36.0	TAG 3
TGFHL 26-3TR-D36R	26.0	2.80	3.50	2.50	110.00	21.4	36.0	TAG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

• For user guide, see pages D59-71.

For inserts, see pages: TAG N-A (D45) • TAG N-C/W/M (D44) • TAG N-J/JS/JT (D47) • TAG N-UT (D45) • TAG R/L-C (D46) • TAG R/L-J/JS (D48).

For holders, see pages: SGTBR/L (F3) • SGTBU/SGTBN (F2) • UBHCR/L (F4).



Spare Parts

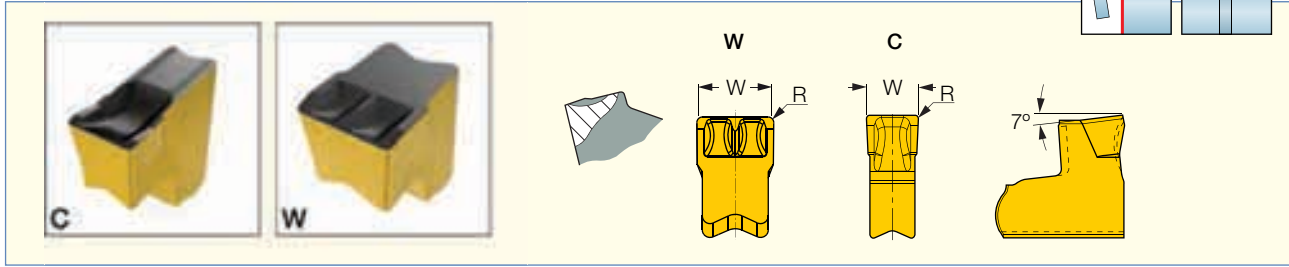
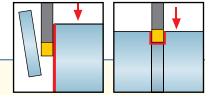


Designation	Extractor	Extractor 1
TGFHL 26-2TR-D36	ETG 2*	
TGFHL 26-2TR-D36R	ETG 2*	
TGFHL 26-3TR-D36		ETG 3-4-SH*
TGFHL 26-3TR-D36R		ETG 3-4-SH*

* Optional, should be ordered separately

TAG N-C/W/M

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



Designation	Dimensions			Tough ↔ Hard							Recommended Machining Data	
	W	W _{toler}	R _{±0.04}	IC830	IC928	IC5400	IC808	IC908	IC30N	IC807	IC20	f groove (mm/rev)
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
TAG N6.3C	6.30	0.10	0.35	●			●					0.15-0.40
TAG N7W	7.00	0.10	0.50	●			●					0.18-0.40
TAG N8C	8.00	0.10	0.50	●			●					0.20-0.70
TAG N9.5C	9.50	0.10	0.50	●			●					0.25-0.80
TAG N9.5W	9.50	0.10	0.50	●			●					0.22-0.80
TAG N12.7W	12.70	0.10	0.85	●			●					0.30-0.80

• Feed values for grade IC20 should be decreased by 50% • For cutting speed recommendations and user guide, see pages D59-71.

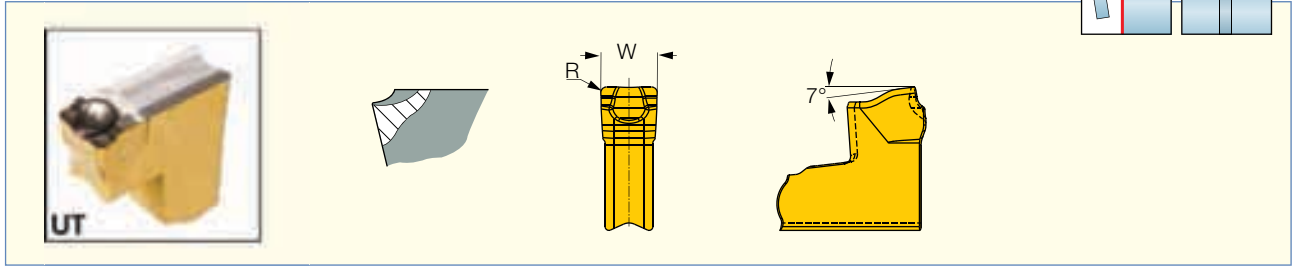
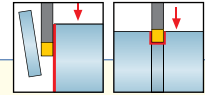
⁽¹⁾ Larger corner radii for interrupted-cut and high feed applications. ⁽²⁾ Similar to C type, but with a modified edge. Improved chip control at medium feeds.

For tools, see pages: TGAD (D39) • TGBHR/L (B64) • TGBHR/L-JHP (B65) • TGFH-MB (D38) • TGFH-S (D34) • TGFH/R/L (B66) • TGFHL-TR (D43) • TGFHR/L (D35) • TGFS (D39) • TGSU (D36) • TGTR/L (D40) • TGTR/L-2T..SH-L120 (D42) • TGTR/L-D (D42) • TGTR/L-JHP (D41).



TAG N-UT

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



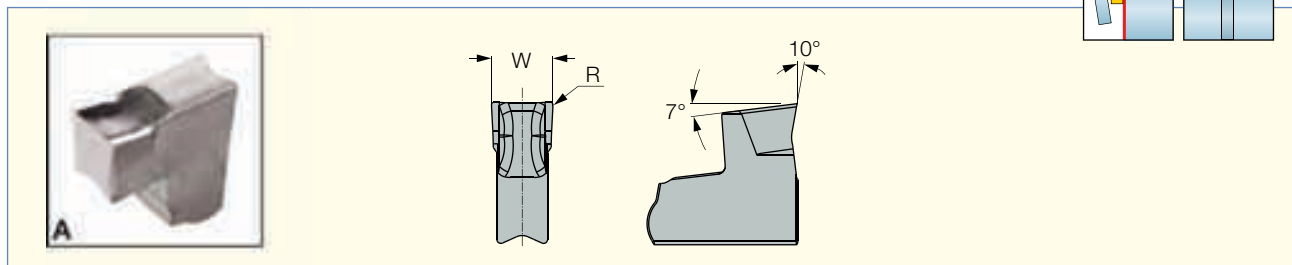
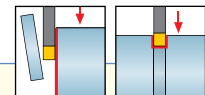
Designation	Dimensions		Tough ↔ Hard			Recommended Machining Data
	W±0.04	R±0.04	IC830	IC808	IC908	
TAG N2UT	2.00	0.20	●	●	●	f groove (mm/rev) 0.03-0.10
TAG N3UT	3.00	0.30	●	●	●	0.04-0.12
TAG N4UT	4.00	0.30			●	0.05-0.15
TAG N5UT	5.00	0.30			●	0.05-0.18
TAG N6UT	6.00	0.85			●	0.06-0.22

• For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: TGAD (D39) • TGFH-MB (D38) • TGFH-S (D34) • TGFH/R/L (B66) • TGFHL-TR (D43) • TGFHR/L (D35) • TGFS (D39) • TGSU (D36) • TGTR/L (D40) • TGTR/L-2T..SH-L120 (D42) • TGTR/L-D (D42) • TGTR/L-JHP (D41).

TAG N-A

Parting and Grooving Single-Ended Insert for Machining Aluminum



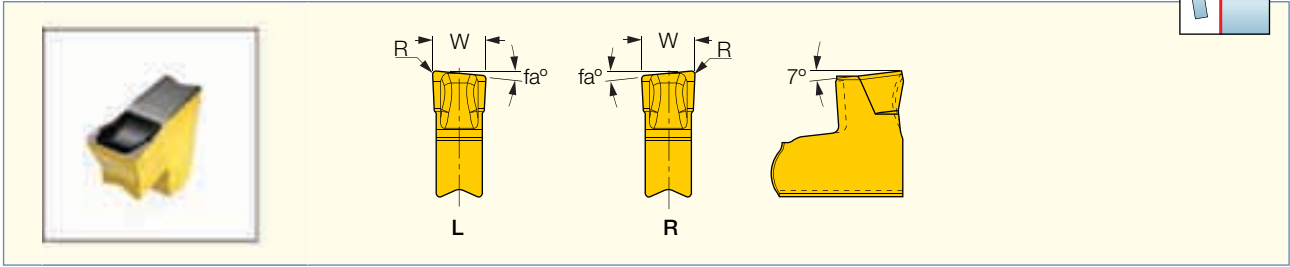
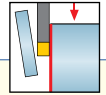
Designation	Dimensions		IC20	Recommended Machining Data
	W±0.04	R±0.05		
TAG N2A	2.10	0.20	●	f groove (mm/rev) 0.02-0.10
TAG N3A	3.05	0.20	●	0.03-0.14
TAG N4A	4.05	0.24	●	0.03-0.16

• For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: TGAD (D39) • TGFH-MB (D38) • TGFH-S (D34) • TGFH/R/L (B66) • TGFHL-TR (D43) • TGFHR/L (D35) • TGFS (D39) • TGSU (D36) • TGTR/L (D40) • TGTR/L-2T..SH-L120 (D42) • TGTR/L-D (D42) • TGTR/L-JHP (D41).

TAG R/L-C

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



Designation	Dimensions			Tough ← Hard					Recommended Machining Data f groove (mm/rev)
	W±0.10	R±0.05	fa°	IC830	IC928	IC30N	IC808	IC908	
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/L63C-4D	6.35	0.35	4.0	●			●		0.12-0.30

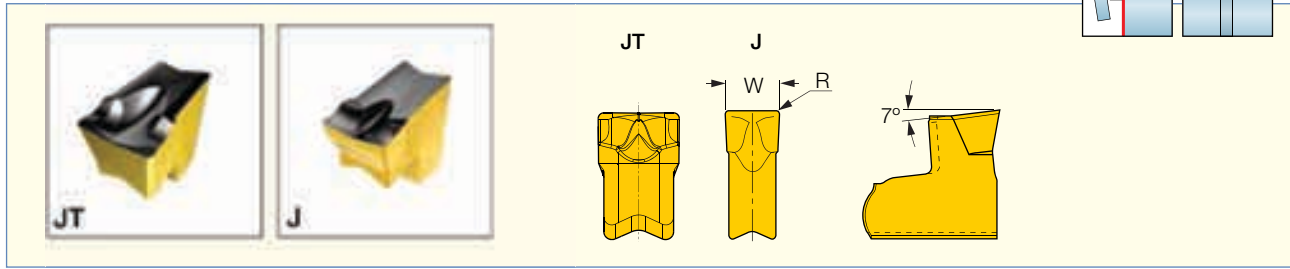
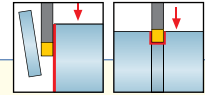
• For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: TGAD (D39) • TGFH-MB (D38) • TGFH-S (D34) • TGFH/R/L (B66) • TGFHL-TR (D43) • TGFHR/L (D35) • TGFS (D39) • TGSU (D36) • TGTR/L (D40) • TGTR/L-2T.SH-L120 (D42) • TGTR/L-D (D42) • TGTR/L-JHP (D41).



TAG N-J/JS/JT

Parting & Grooving Single-Ended Insert, for Soft Materials



Designation	Dimensions		Tough ↔ Hard							Recommended Machining Data
	W±0.04	R±0.05	IC830	IC928	IC5400	IC808	IC908	IC807	IC20	f groove (mm/rev)
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
TAG N6.3J	6.35	0.34	●			●				0.06-0.22
TAG N6.3JT	6.35	0.34	●				●			0.08-0.25
TAG N7JT	7.05	0.50	●			●				0.10-0.28

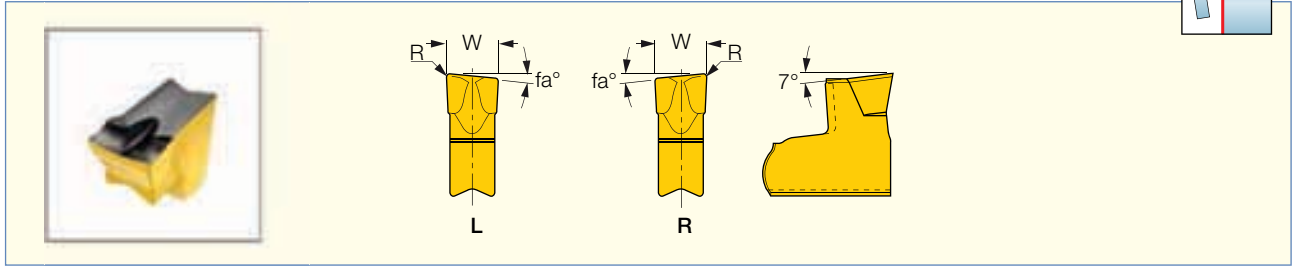
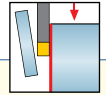
• JT chipformer has the basic positive configuration of the J-type and a reinforced negative frontal edge. Most suitable for soft materials at low to medium feeds. The JS-type has sharp corners. • For cutting speed recommendations and user guide, see pages D59-71.

(1) Sharp corners

For tools, see pages: TGAD (D39) • TGFH-MB (D38) • TGFH-S (D34) • TGFH/R/L (B66) • TGFHL-TR (D43) • TGFHR/L (D35) • TGFS (D39) • TGSU (D36) • TGTR/L (D40) • TGTR/L-2T..SH-L120 (D42) • TGTR/L-D (D42) • TGTR/L-JHP (D41).

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 f groove (mm/rev)
	W	R	fa°	IC830	IC928	IC808	IC908	IC807	
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
TAG R/L6.3J-4D	6.35	0.35	4.0	●		●			0.05-0.20

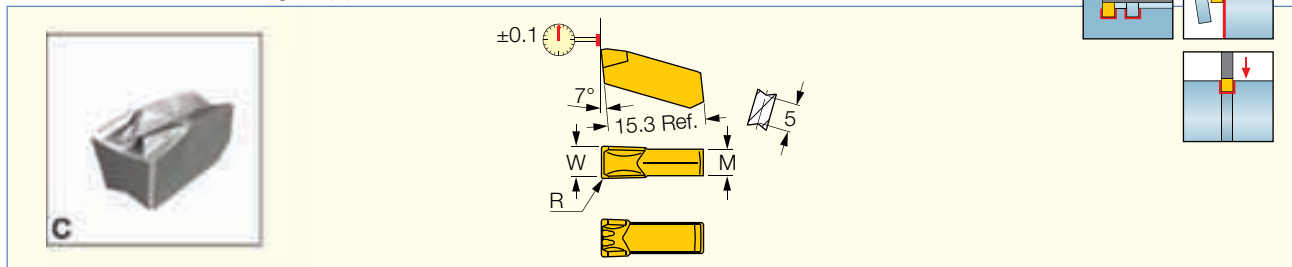
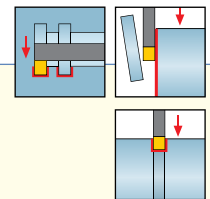
• For cutting speed recommendations and user guide, see pages D59-71.

⁽¹⁾ Sharp corners

For tools, see pages: TGAD (D39) • TGFH 26/32-JHP () • TGFH-MB (D38) • TGFH-S (D34) • TGFH/R/L (B66) • TGFHL-TR (D43) • TGFHR/L (D35) • TGFS (D39) • TGSU (D36) • TGTR/L (D40) • TGTR/L-2T..SH-L120 (D42) • TGTR/L-D (D42) • TGTR/L-JHP (D41).

GIM-C

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



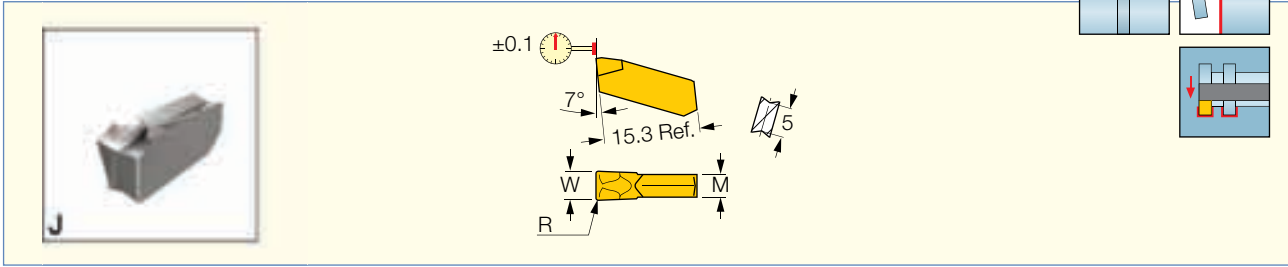
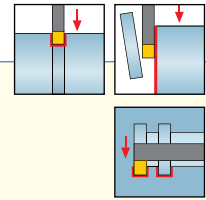
Designation	Dimensions			Tough ↔ Hard					Recommended Machining Data f groove (mm/rev)
	W±0.05	R±0.02	M	IC328	IC54	IC354	IC908	IC20	
GIM 3C	3.00	0.22	2.4	●	●	●	●	●	0.15-0.25
GIM 4C	4.00	0.25	3.4	●		●	●	●	0.15-0.25
GIM 5C	5.00	0.40	4.0	●	●	●	●	●	0.15-0.30
GIM 6C	6.00	0.40	4.8	●		●	●	●	0.15-0.30

• For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18).

GIM-J

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



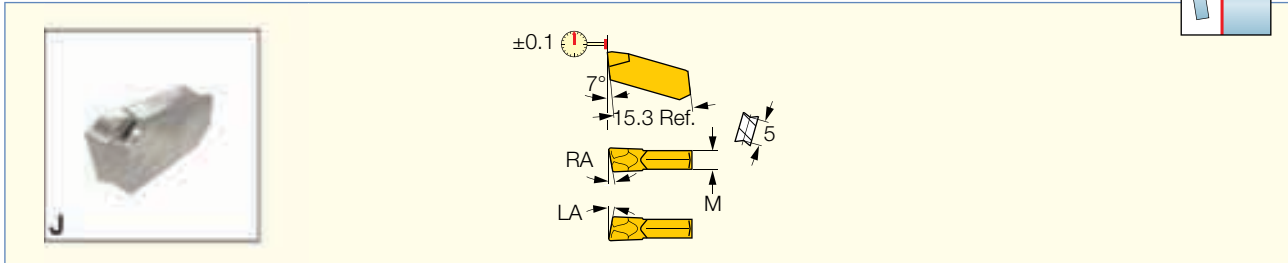
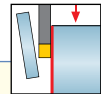
Designation	Dimensions			Tough ↔ Hard					Recommended Machining Data
	W±0.05	R±0.02	M	IC328	IC54	IC354	IC908	IC20	
GIM 2.2J	2.20	0.17	1.7	●	●	●	●	●	0.06-0.13
GIM 3J	3.00	0.22	2.4	●	●	●	●	●	0.08-0.15
GIM 4J	4.00	0.25	3.2	●		●	●	●	0.08-0.18

• For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23)
• CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18) • GHSR/L (B104).

GIM-J-RA/LA

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



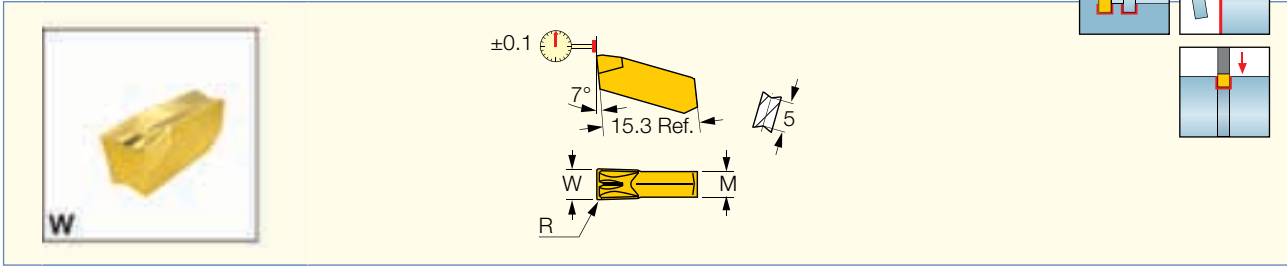
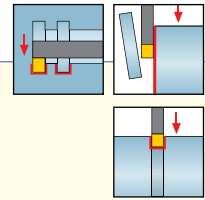
Designation	Dimensions				Tough ↔ Hard					Recommended Machining Data
	W±0.05	R±0.02	f _a °	M	IC328	IC54	IC354	IC908	IC20	
GIM 2.2J-8R/LA	2.20	0.17	8.0	1.7	●	●	●	●	●	0.05-0.10
GIM 2.2JS-15R/LA	2.20	0.02	15.0	1.7	●	●	●	●	●	0.05-0.10
GIM 3J-4R/LA	3.00	0.22	4.0	2.4	●		●	●	●	0.05-0.12
GIM 3J-8R/LA	3.00	0.22	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 cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23)
• CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18) • GHSR/L (B104).

GIM-W

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



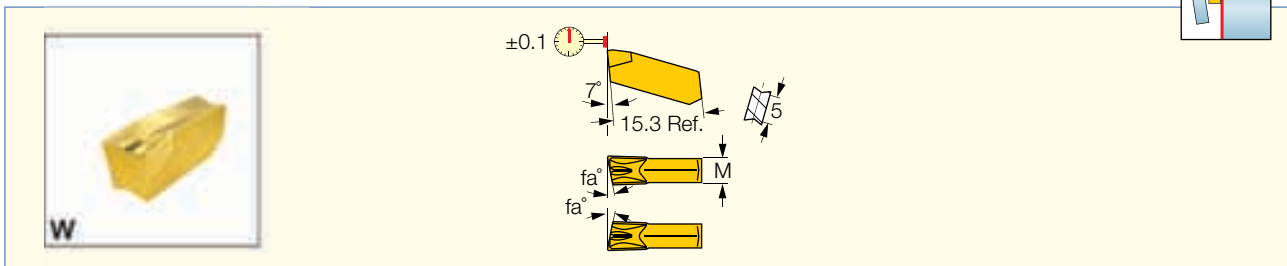
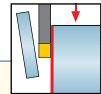
Designation	Dimensions			Tough ↔ Hard					Recommended Machining Data
	W ± 0.05	R ± 0.02	M	IC328	IC54	IC354	IC908	IC20	f groove (mm/rev)
GIM 2.4	2.40	0.17	2.4			●	●	●	0.10-0.18
GIM 3	3.00	0.25	2.4	●	●	●	●	●	0.10-0.18
GIM 3.2	3.20	0.22	2.4	●	●	●	●	●	0.10-0.20
GIM 4	4.00	0.25	3.2	●	●	●	●	●	0.15-0.20

• For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18).

GIM-W-RA/LA

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



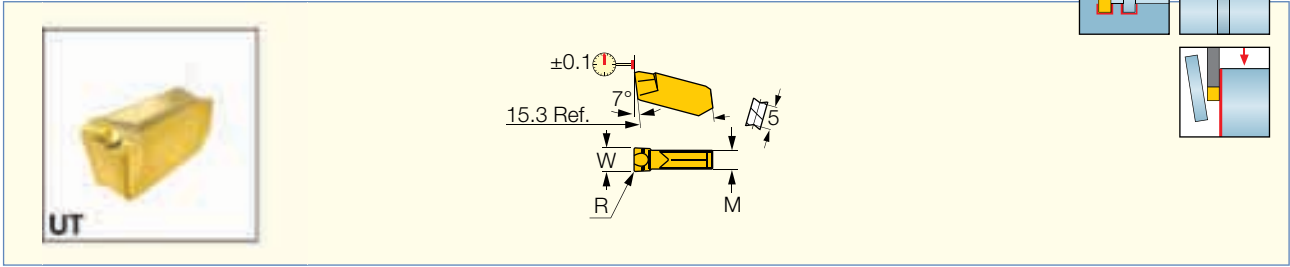
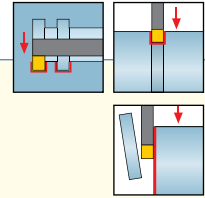
Designation	Dimensions				Tough ↔ Hard					Recommended Machining Data
	W ± 0.05	R ± 0.02	f_a°	M	IC328	IC54	IC354	IC908	IC20	f groove (mm/rev)
GIM 3S-15RA	3.00	0.22	15.0	2.4	●					0.08-0.16
GIM 3-4R/LA	3.00	0.25	4.0	2.4	●	●	●	●	●	0.08-0.16
GIM 3-8R/LA	3.00	0.25	8.0	2.4	●	●	●	●	●	0.08-0.16
GIM 3.2-4R/LA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

• For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18).

GIM-UT

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



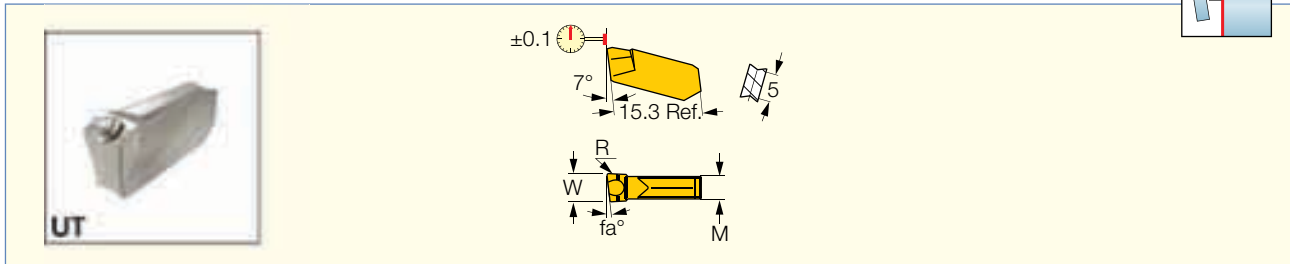
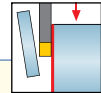
Designation	Dimensions				IC328	Recommended Machining Data
	$W_{\pm 0.03}$	$R_{\pm 0.02}$	M	f groove (mm/rev)		
GIM 4.6UT	4.60	0.60	3.8	●	0.03-0.10	

• For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18).

GIM-UT-RA/LA

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



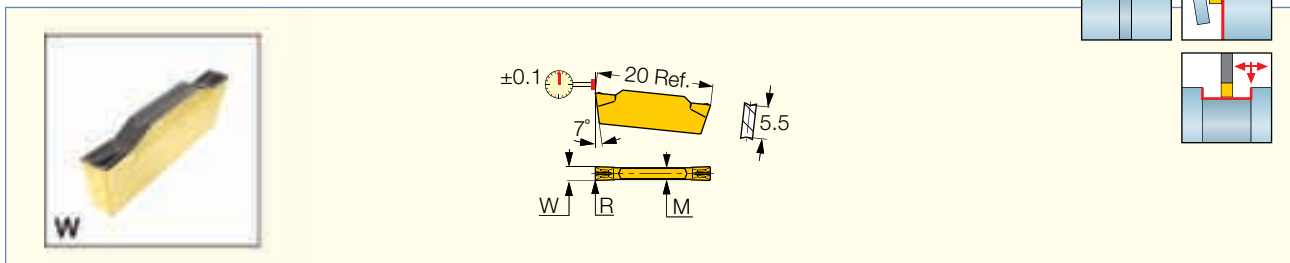
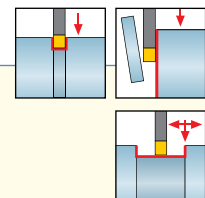
Designation	Dimensions				IC328	Recommended Machining Data
	$W_{\pm 0.03}$	$R_{\pm 0.02}$	f_a°	M		f groove (mm/rev)
GIM 3UT-1.5RA	3.12	0.25	1.5	2.5	●	0.03-0.10

• For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: C#-GHDR/L (G11) • CGHN 26-M (B95) • CGHN 32-DGM (B97) • CGHN 32-M (B96) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • CGPAD (B23) • GHDR/L (Short Pocket) (B19) • GHDR/L-JHP (Short Pocket) (B20) • GHGR/L (B21) • GHMPR/L (B18) • GHMR/L (B18).

GDMW 2.4

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

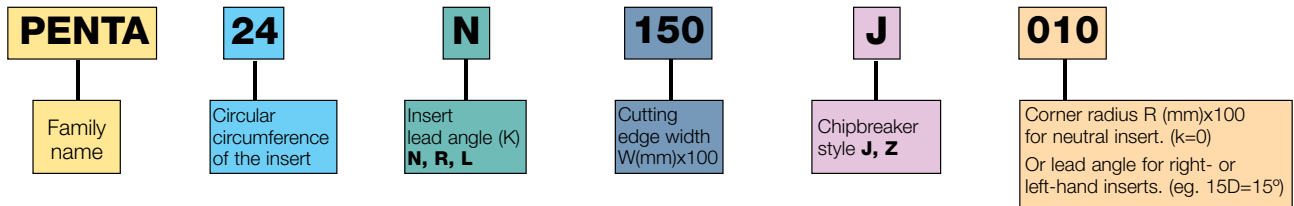


Designation	Dimensions				Tough ↔ Hard				Recommended Machining Data		
	$W_{\pm 0.04}$	$R_{\pm 0.03}$	M	T_{max-r}	IC830	IC808	IC20	IC20N	a_p (mm)	f turn (mm/rev)	f groove (mm/rev)
GDMW 2.4	2.40	0.18	2.0	18.00	●	●	●	●	0.25-1.50	0.07-0.12	0.05-0.08

• For cutting speed recommendations and user guide, see pages D59-71.

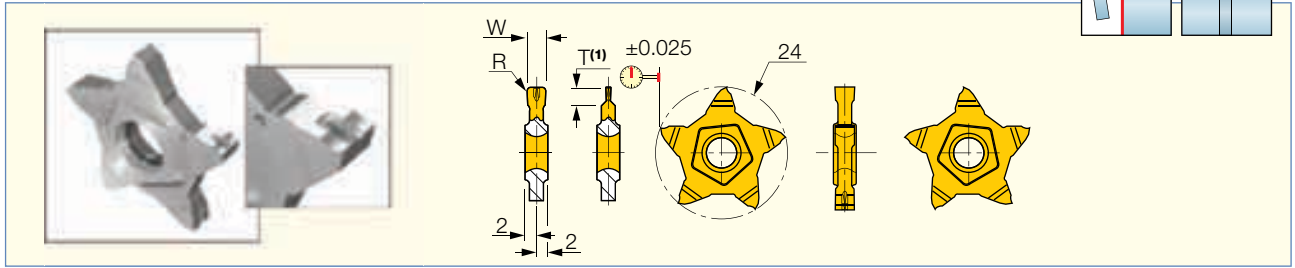
For tools, see pages: PADR/L (B53) • PHGR/L (B52) • PHSR/L (B103).

Identification System for Standard Inserts



PENTA 24N-J

Parting & 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 24N330J010V1	3.30	0.10	-	●		---
PENTA 24N348J020	3.48	0.20	-	●		---
PENTA 24N356J020V1	3.56	0.20	-	●		---
PENTA 24N374J020V1	3.74	0.20	-	●		---
PENTA 24N398J020	3.98	0.20	-	●		---
PENTA 24N400J040V1	4.00	0.40	-	●		---
PENTA 24N423J010V1	4.23	0.10	-	●		---
PENTA 24N445J015	4.45	0.15	-	●		---
PENTA 24N478J055	4.78	0.55	-	●		---
PENTA 24N486J030	4.86	0.30	-	●		---
PENTA 24N500J040	5.00	0.40	-	●		---
PENTA 24N528J020	5.28	0.20	-	●		---

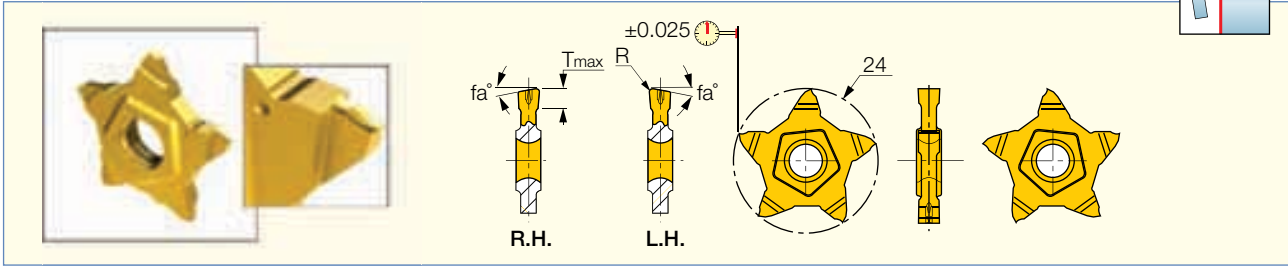
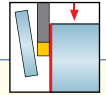
● Recessing is possible only with 2.39 mm and wider inserts. ● For cutting speed recommendations and user guide, see pages D59-71.

(1) For grooving and parting depth relative to part diameter, see page D55.

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (B55) • PCHR/L-24 (B54).

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	fa°	$D_{max}^{(1)}$		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

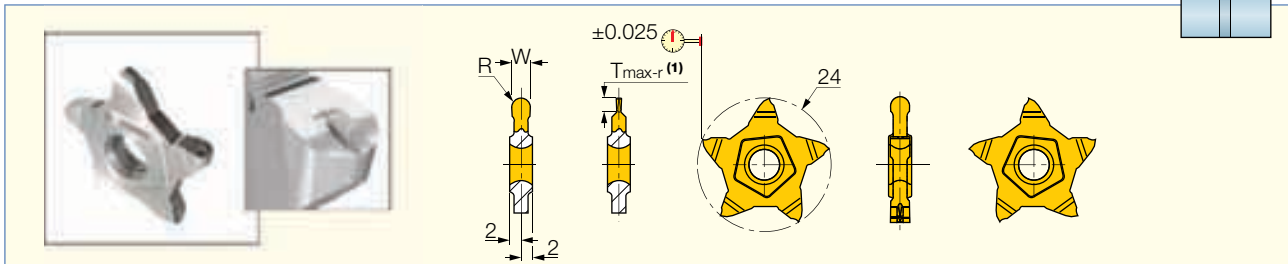
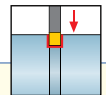
• For cutting speed recommendations and user guide, see pages D59-71.

⁽¹⁾ For grooving and parting depth relative to part diameter, see page D55.

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (B55) • PCHR/L-24 (B54).

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 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

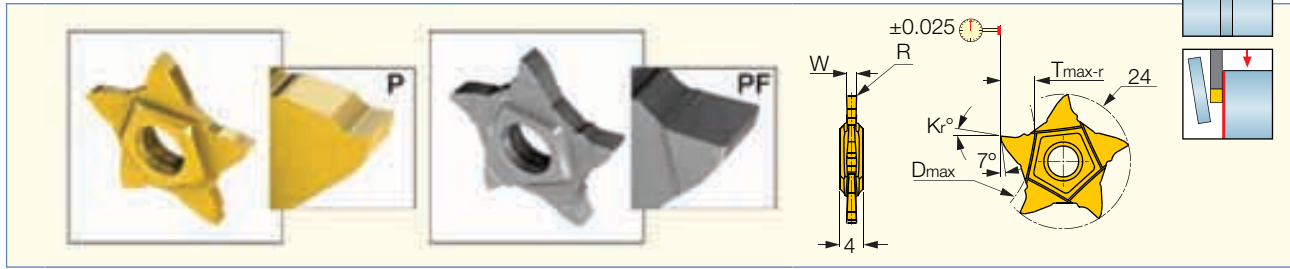
• Recessing is possible only with 2.39 mm and wider inserts. • For cutting speed recommendations and user guide, see pages D59-71.

⁽¹⁾ For grooving depth relative to part diameter, see page D55.

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (B55) • PCHR/L-24 (B54).

PENTA 24N-PF

Parting and Precision Grooving Pentagonal Insert with a High Positive Rake



Designation	Dimensions				IC908	Recommended Machining Data
	W ± 0.02	R	R \pm toler	T $_{max-r}$ ⁽¹⁾		f groove (mm/rev)
PENTA 24N100PF010	1.00	0.10	0.020	4.00	●	0.03-0.06
PENTA 24N150PF020	1.50	0.20	0.030	6.00	●	0.03-0.09
PENTA 24N200PF020	2.00	0.20	0.030	6.50	●	0.04-0.10
PENTA 24N239PF015	2.39	0.15	0.030	6.50	●	0.04-0.14
PENTA 24N250PF020	2.50	0.20	0.030	6.50	●	0.04-0.14
PENTA 24N300PF020	3.00	0.20	0.030	6.50	●	0.04-0.14

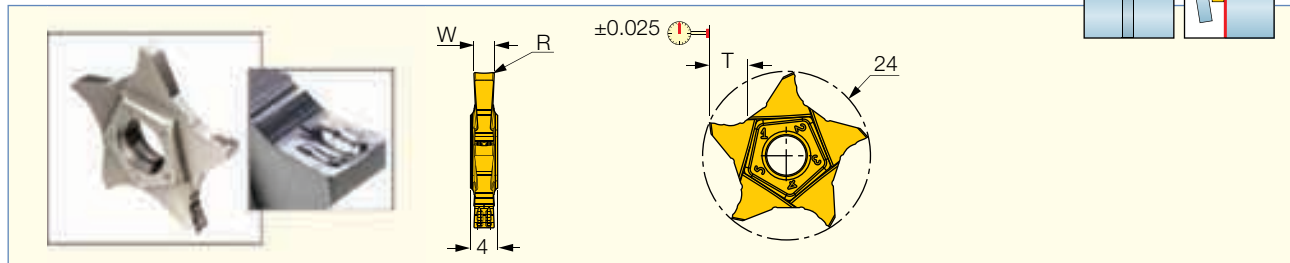
• For cutting speed recommendations and user guide, see pages D59-71.

⁽¹⁾ For grooving and parting depth relative to part diameter, see page D55.

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (B55) • PCHR/L-24 (B54).

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

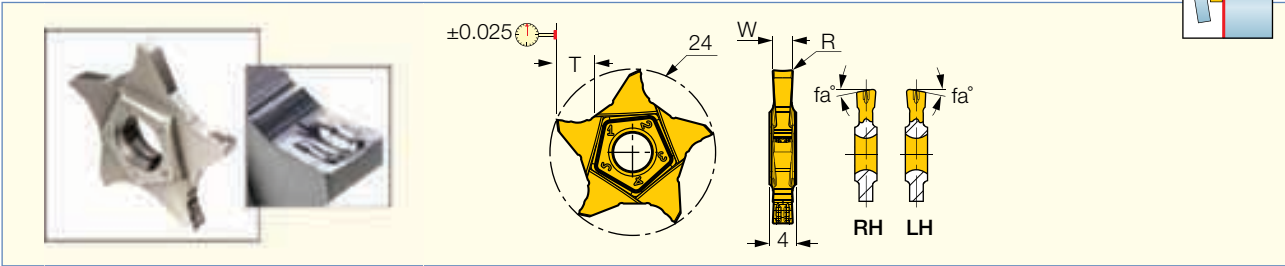
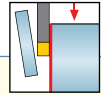
• Cutting edge with high positive rake, suitable for parting of tubes, thin walled parts and for small diameters • Suitable for machining soft materials and bearing steel at low to medium feeds • For cutting speed recommendations and user guide, see pages D59-71.

⁽¹⁾ For grooving and parting depth relative to part diameter, see page D55.

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (B55) • PCHR/L-24 (B54).

PENTA 24R/L-Z

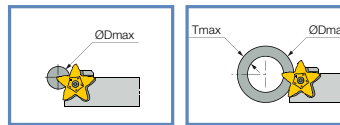
Insert with 5 Cutting Edges, for Parting of Tubes, Small and Thin-Walled Parts



Designation	Dimensions				IC1008	Recommended Machining Data
	W±0.02	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 cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (B55) • PCHR/L-24 (B54).



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≤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 ⁽⁴⁾		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	6.4		N.L.	470	210	135	100	70	40	20

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

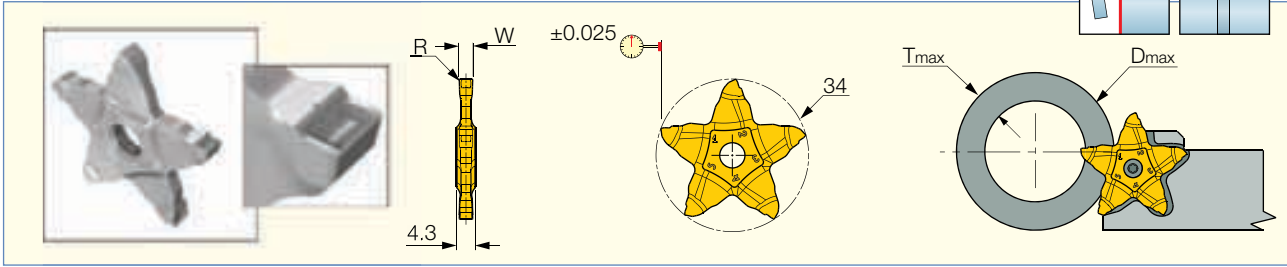
⁽²⁾ Refers to PENTA 24N050J004- a parting insert.

⁽³⁾ D_{max} for parting = 2 x T_{max}

⁽⁴⁾ For full radius insert , T_{max} = 3.0, D_{max} = No limit

PENTA 34N-C

Insert with 5 Cutting Edges, for Parting & Grooving, of Hard Materials, Tough and General Applications



Designation	Dimensions			IC908	Recommended Machining Data
	W \pm 0.02	R	T $_{max-r^{(1)}}$		f groove (mm/rev)
PENTA 34N150C015	1.50	0.15	8.00	●	0.03-0.07
PENTA 34N200C020	2.00	0.20	8.00	●	0.04-0.14
PENTA 34N200C100	2.00	1.00	8.00	●	0.05-0.16
PENTA 34N222C015	2.22	0.15	8.00	●	0.05-0.14
PENTA 34N230C020	2.30	0.20	8.00	●	0.05-0.14
PENTA 34N239C015	2.39	0.15	8.00	●	0.05-0.15
PENTA 34N239C120	2.39	1.20	8.00	●	0.05-0.18
PENTA 34N247C020	2.47	0.20	8.00	●	0.05-0.18
PENTA 34N250C020	2.50	0.20	8.00	●	0.05-0.18
PENTA 34N270C010	2.70	0.10	10.00	●	0.05-0.18
PENTA 34N287C020	2.87	0.20	10.00	●	0.05-0.18
PENTA 34N300C000	3.00	0.00	10.00	●	0.04-0.10
PENTA 34N300C020	3.00	0.20	10.00	●	0.06-0.22
PENTA 34N300C040	3.00	0.40	10.00	●	0.06-0.25
PENTA 34N300C150	3.00	1.50	10.00	●	0.06-0.20
PENTA 34N315C015	3.15	0.15	10.00	●	0.06-0.20
PENTA 34N318C020	3.18	0.20	10.00	●	0.06-0.22
PENTA 34N330C010	3.30	0.10	10.00	●	0.06-0.20
PENTA 34N348C020	3.48	0.20	10.00	●	0.06-0.25
PENTA 34N350C025	3.50	0.25	10.00	●	0.06-0.30
PENTA 34N398C020	3.98	0.20	10.00	●	0.06-0.30
PENTA 34N400C030	4.00	0.30	10.00	●	0.06-0.30

• For cutting speed recommendations and user guide, see pages D59-71

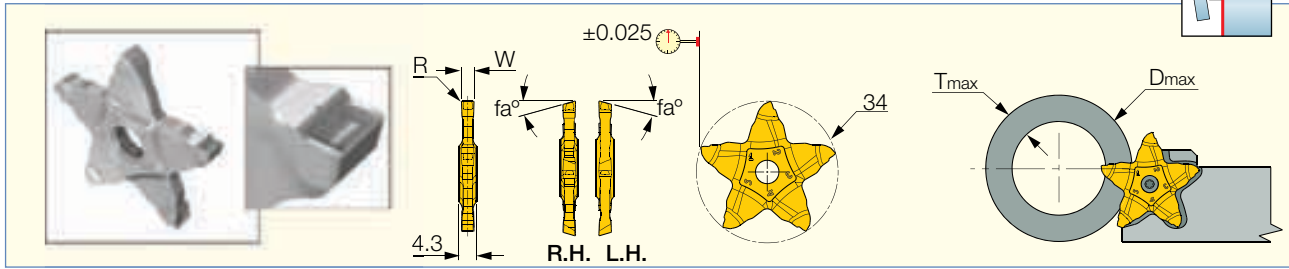
⁽¹⁾ For grooving and parting depth relative to part diameter, see page D58.

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (B55) • PCHR/L-34 (B54).



PENTA 34R/L-C

Insert with 5 Cutting Edges, for Parting of Hard Materials, Tough and General Applications



Designation	Dimensions				IC908	Recommended Machining Data
	$W_{\pm 0.02}$	R	$D_{max}^{(1)}$	fa°		f groove (mm/rev)
PENTA 34R/L150C08D	1.50	0.07	18.0	8.0	●	0.03-0.08
PENTA 34R/L200C06D	2.00	0.10	18.0	6.0	●	0.04-0.12
PENTA 34R/L200C15D	2.00	0.10	18.0	15.0	●	0.04-0.10
PENTA 34R/L300C06D	3.00	0.20	20.0	6.0	●	0.04-0.14
PENTA 34R/L300C15D	3.00	0.20	20.0	15.0	●	0.04-0.10

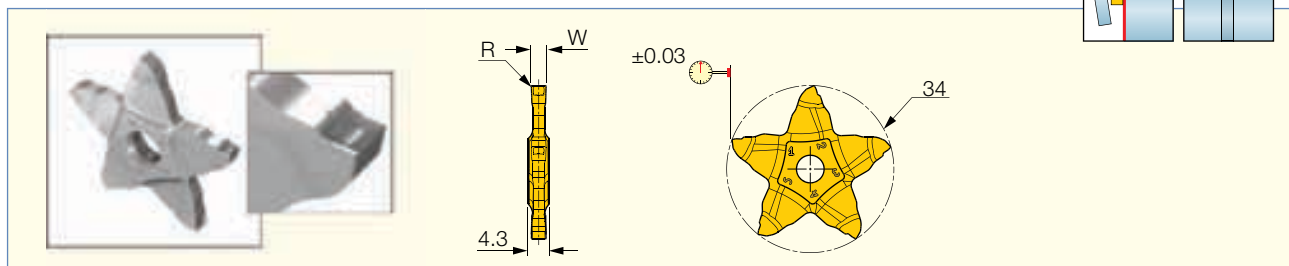
• For cutting speed recommendations and user guide, see pages D59-71.

⁽¹⁾ For grooving and parting depth relative to part diameter, see page D58.

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (B55) • PCHR/L-34 (B54).

PENTA 34N-PB

Parting & Grooving Pentagonal Insert, for Parting Bearing Steel and Other Ductile Materials



Designation	Dimensions			IC908	Recommended Machining Data
	$W_{\pm 0.02}$	R	$T_{max}^{(1)}$		f groove (mm/rev)
PENTA 34N150PB015	1.50	0.15	8.50	●	0.03-0.06
PENTA 34N200PB020	2.00	0.20	8.50	●	0.03-0.08
PENTA 34N300PB020	3.00	0.20	9.50	●	0.03-0.10

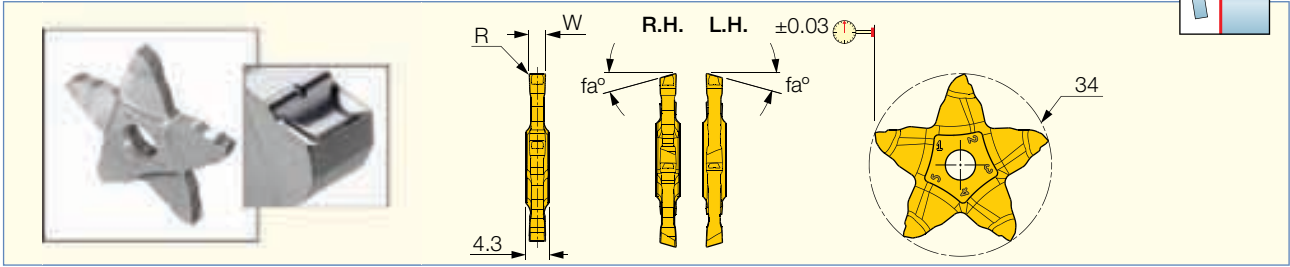
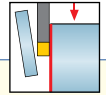
• For cutting speed recommendations and user guide, see pages D59-71.

⁽¹⁾ For grooving and parting depth relative to part diameter, see page D58.

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (B55) • PCHR/L-34 (B54).

PENTA 34R/L-PB

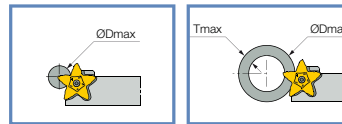
Parting Pentagonal Insert, for Parting Bearing Steel and other Ductile Materials



Designation	Dimensions				IC908	Recommended Machining Data
	W ^{±0.02}	R	D _{max}	fa°		f groove (mm/rev)
PENTA 34R/L150PB-6D	1.50	0.07	18.0	6.0	●	0.03-0.05
PENTA 34R/L200PB-6D	2.00	0.10	18.0	6.0	●	0.03-0.06
PENTA 34R/L300PB-6D	3.00	0.20	20.0	6.0	●	0.03-0.08

• For cutting speed recommendations and user guide, see pages D59-71.

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (B55) • PCHR/L-34 (B54).



W ^{±0.02}	D _{max} as a Function of Parting / Grooving Depth (T) for PENTA 34 Inserts						
	T ≤ 5.0	T ≤ 6.0	T ≤ 7.0	T ≤ 8.0	T ≤ 8.5	T ≤ 9.0	T ≤ 10.0
1.50 ≤ W ≤ 2.69	N.L.	350	165	100	55	-	-
2.70 ≤ W ≤ 4.00						55	20

D_{max} for parting = 2 x T_{max}

N.L. = No Limit

Parting and Grooving

Selection of Inserts

For a proper match of insert and cutting material to application, the following variables must be taken into consideration:

- Width of cut (width of insert)
- Chipformer style
- Lead angle
- Corner radius
- Carbide grade

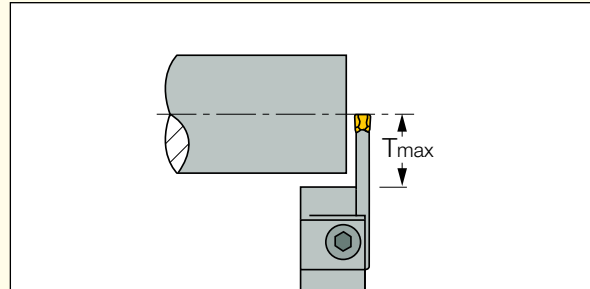
Width of Cut (W.O.C.) and Depth of Cut (D.O.C.)

In selecting W.O.C., the main factor to consider is the required D.O.C. The ratio $D.O.C. \approx 8 \times W.O.C.$ is of practical use on alloy steel of average machinability. For example, applying a 3 mm W.O.C. insert TAG N3C to cut-off a 48 mm solid bar. Additional factors which affect D.O.C. capacity, relative to the ratio, are:

Holder or Blade Size

To minimize risk of vibration and deflection always choose:

- Blade or toolholder with smallest possible overhang.
 - Toolholder with maximum shank dimension.
 - Blade height (B) dimension which is larger than T_{max} .
 - Blade or holder with maximum blade width (largest possible insert seat size).
- Example:
- A W.O.C. 9.5 mm on blade TGFH 53K-9 (B=52.6 mm) extends the ratio of D.O.C. to W.O.C. by some 50% to 120 mm.



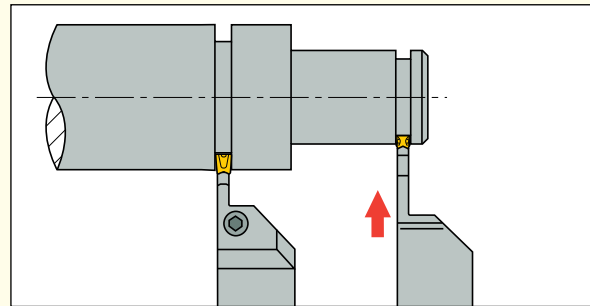
Insert Support

A self-clamped tool is recommended for deep radial machining.

A screw-clamp holder is recommended for axial and small D.O.C. machining.

90° Mounting

It is very important that the insert is mounted at 90° to the center line of the workpiece in order to obtain perpendicular surfaces and reduce the risk of vibration.



Workpiece Machinability

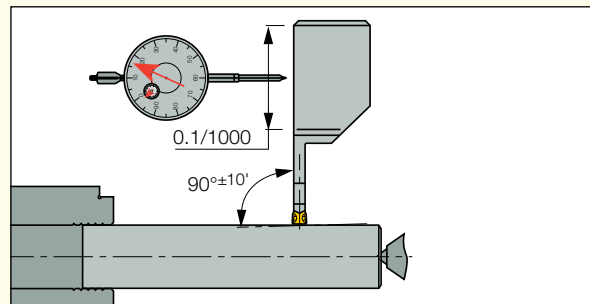
The workpiece material affects all of the above factors.

Machine Power and Setup Rigidity

Excessive W.O.C. on a light-duty machine will yield vibration and may even stop spindle rotation.

Expensive Workpiece Material

On costly metals the narrowest applicable W.O.C. should be used.

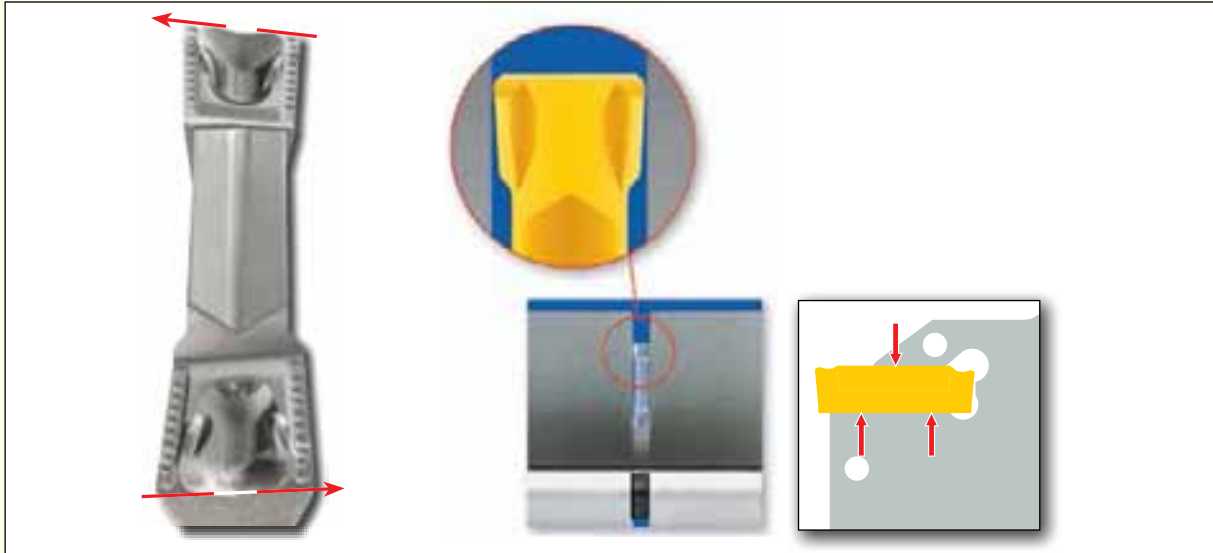


Insert Positioning

The Twisted Insert for Cut-Off and Grooving Applications

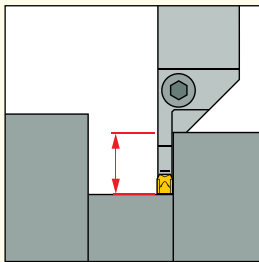
Machining depths longer than insert length is made possible with the double-ended, twisted insert body. The rear edge is slanted in relation to the frontal edge

so it does not come into contact with the machined groove surface when the tool penetrates deeply into the workpiece.



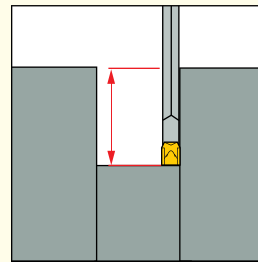
Clamping

Extended, prismatic surfaces guarantee reliable, foolproof clamping even in unstable machining conditions.



Screw-Clamping

Small diameters (D.O.C.) with screw-clamped Inserts



Self-Clamping

Large diameters (D.O.C.) with self-clamped Inserts

Setup

- The optimal cutting edge height above center of SELF-GRIP tools is up to 0.08 mm + 0.025 mm W.O.C., an advantage when cutting solid bar to center.
- Cut-off as close to chuck as possible.
- On new applications, machine first in the low or middle range of recommended speeds and feeds.

Machining

- Consistency of speed and feed improves performance.
- Apply coolant abundantly.
- Secure inserts into clean pockets.
- Cutting forces on soft workpiece materials may be insufficient to push insert well into pocket. Tap insert into place, using a plastic hammer.
- On a conventional lathe, lock the carriage to prevent axial motion during cut-off.

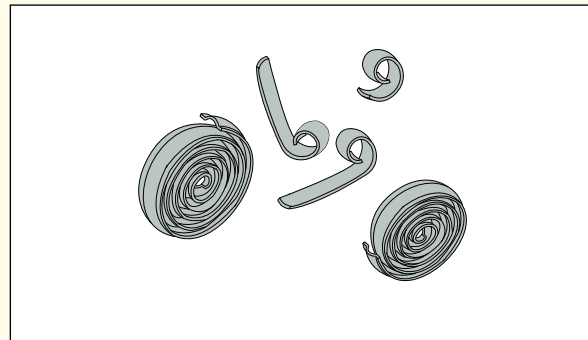
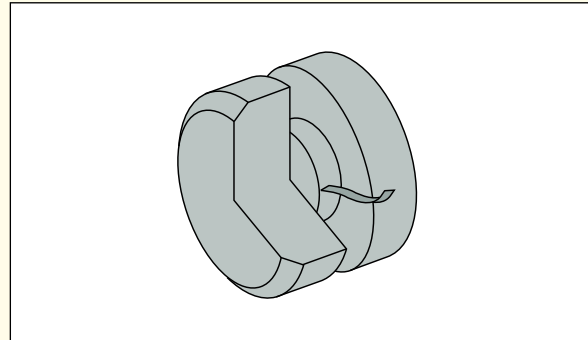
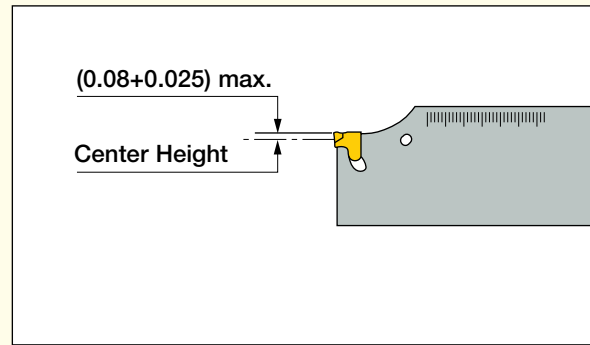
Usage

- Replace worn inserts promptly. The price of a new one is much less than the risk of damage from continuing with one that is worn out.
- Replace blades which have worn or damaged pockets.
- Never try to repair damaged pockets.

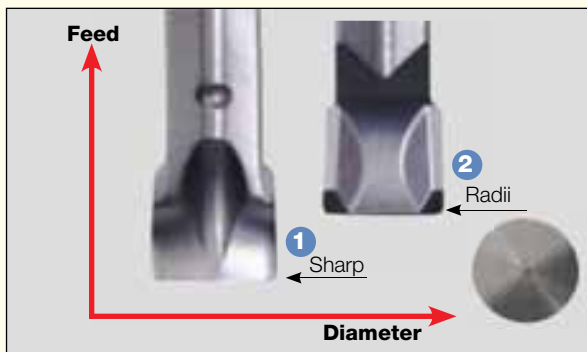
Chip curling is dependent upon the chipformer type and the machining conditions.

Chipformer Features

- Narrows the chip.
- Eliminates friction with groove walls, prevents chip jam overload.
- Permits higher feeds.
- Produces unscratched surfaces, eliminating additional facing.
- Curls the chips into compact spirals for easy disposal.



Selection of Corner Radius



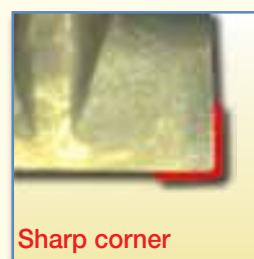
- 1 A smaller corner radius (r) will reduce the load on the workpiece and produce a smaller size of burr.
- 2 At the same time a large corner radius allows for higher feeds and increased tool life.

"S" Sharp Corners

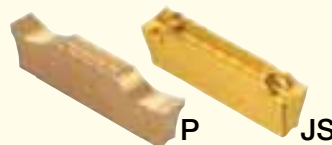


JS/P

- Cutting edge with positive rake and sharp corners.
- When a minimum burr (pip) size is essential.
- For small feeds.
- For small diameters or thin walls.
- For CNCs, multi-spindle and screw machines.



Sharp corner



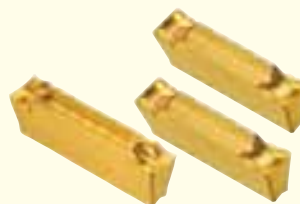
Standard Corner Radius



- Standard medium corner size.
- For general applications and materials.



Medium (standard) corner radius



"B" Large Corner Radius



- Reinforced corners with stronger cutting edge.
- For tough applications and interrupted cuts.



Large corner radius



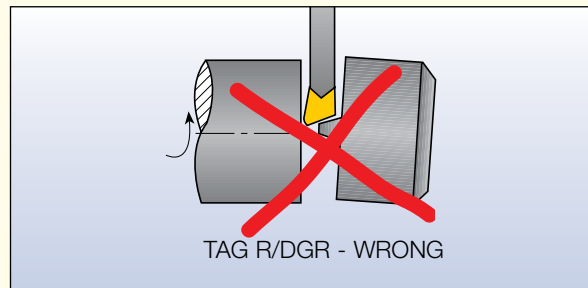
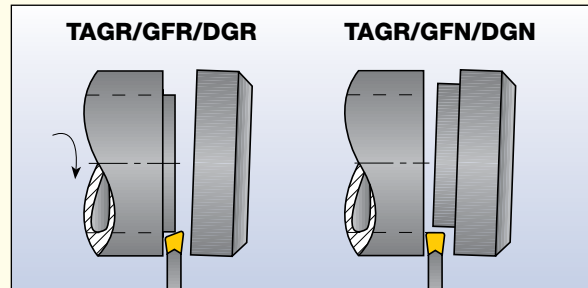
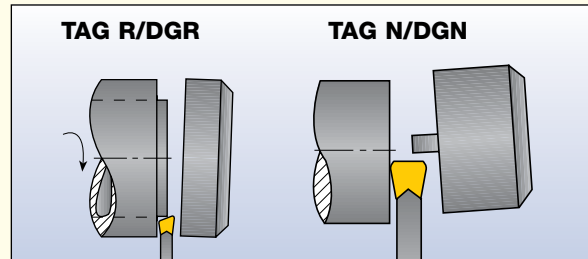
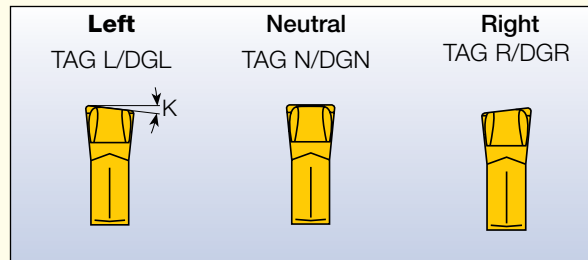
Lead Angle

Lead angle (K) on cut-off inserts reduces size of burr remaining on workpiece. Increasing the lead angle reduces the burr, but also reduces possible feed rates and tool life.

Therefore, neutral inserts are recommended for parts on which a burr is tolerated.

Insert designations such as TAG R... DGR (R.H.) and TAG L... DGL (L.H.) comply with standard terms for turning direction. When looking toward the chuck from the workpiece, R.H.=counterclockwise (C.C.) rotation of workpiece and L.H.=clockwise (C) rotation of workpiece. C.C. requires right-hand inserts; C requires left-hand inserts.

A neutral insert with 0° lead angle increases D.O.C. capacity.



Neutral Insert vs. Lead Angle Type

Neutral Insert



Better chip control



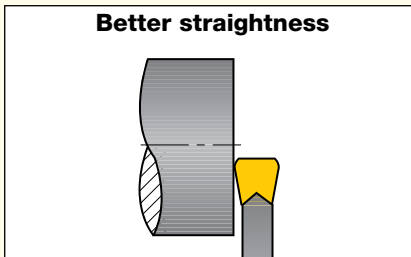
Better surface finish



Longer tool life



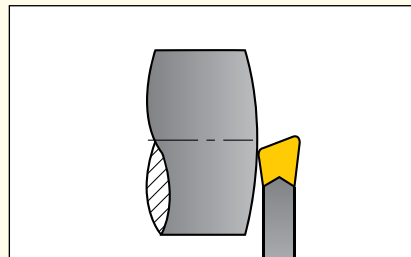
Better straightness



Bigger burr size



Lead Angle Type



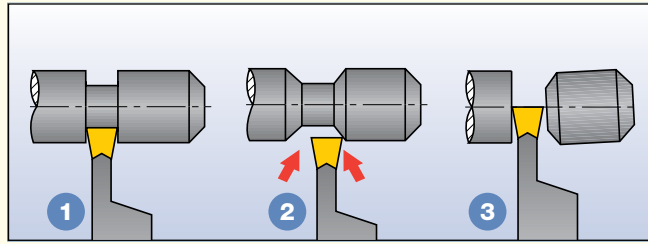
Smaller burr size



General Rules for Specific Applications

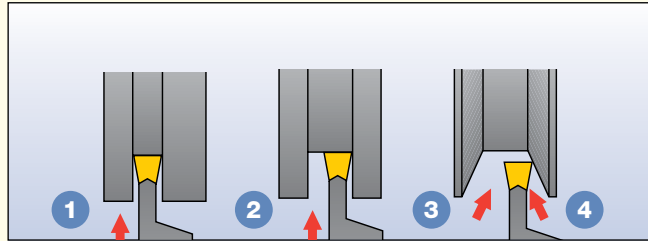
Chamfer and Cut-Off

- 1 Break in and/or groove
- 2 Chamfer
- 3 Cut-off



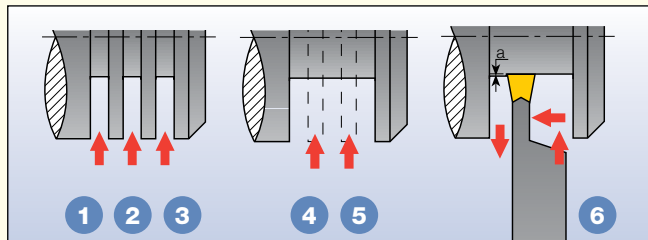
V-Belt Pulley Grooves

- 1 Break in
- 2 Multiple plunge to depth, at minor width of groove
- 3 4 Bevel, plunge and turn to minor diameter



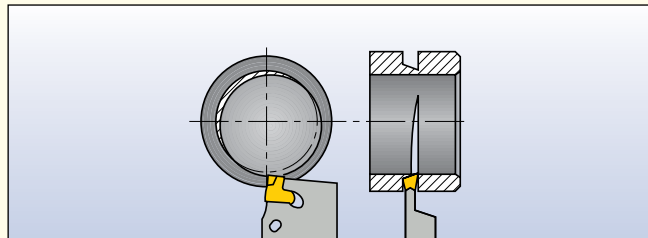
Neck Recessing

- 1-5 Multiple plunge grooves
 - 6 Necking
- On neck turning, DOC (a)=up to size of insert corner radius



Cut-Off on Eccentric Tubes

Inserts with 4° lead angle are usually recommended for tubes. However, the combination of eccentric bore and machine resiliency may increase feed-snap on breakthrough and damage the cutting edge. Changing to 6° lead angle inserts will moderate breakthrough. Alternatively, inserts with an extra negative rake-land that strengthens the cutting edge are available on request.



Clamping / Extraction Instructions

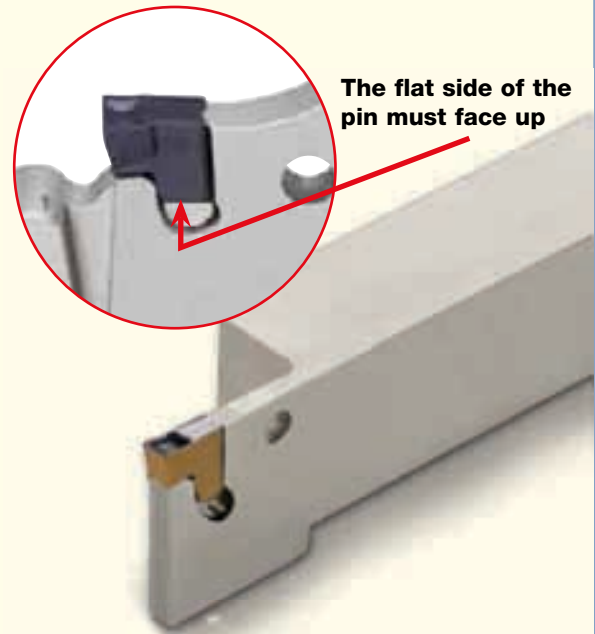
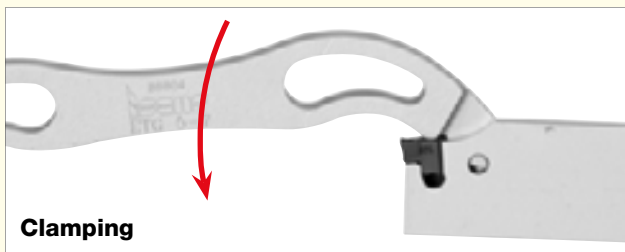
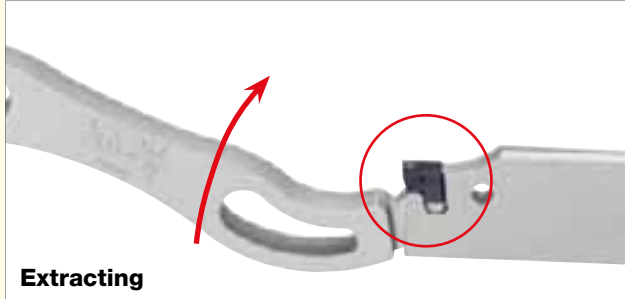
The tools are equipped with a user-friendly clamping and extraction device

TANG-GRIP
PARTING LINE

ETG 5-7 (for 5-7 mm tools)

ETG 2 (for 2 mm tools)

ETG 1.4 (for 1.4 mm tools)



ETG 3-4 (for 3 and 4 mm tools)



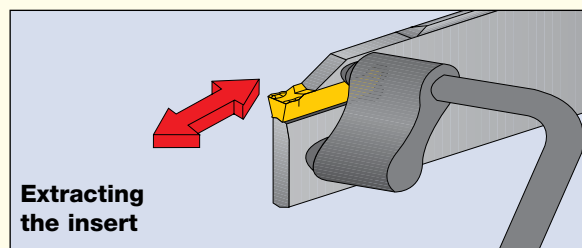
ETG 8-12 Extractor for 8 to 12.7 mm Inserts



Clamping / Extraction Instructions

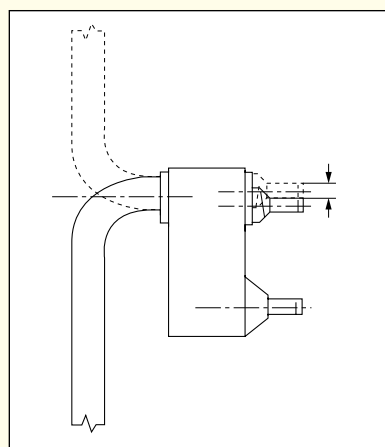
DO-GRIP

Extractor for DGN/R/L Double-Ended Inserts
DO-GRIP Insert Clamping/Extracting



Extractor and Insert Replacement The Eccentric Extractor

Simple to operate; controlled rotation requires low force;
guarantees limited upper jaw movement and secures
maximum load on blade.



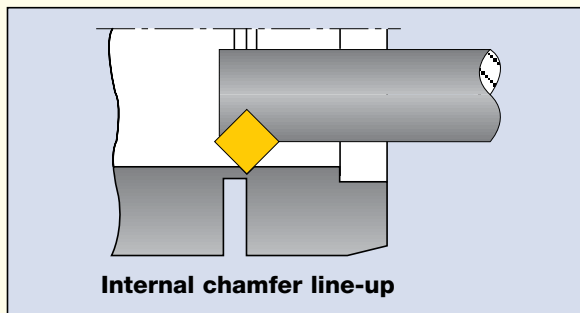
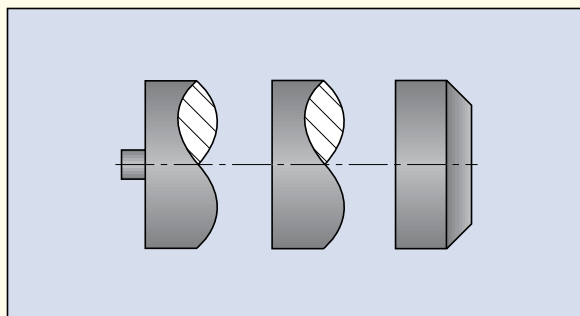
Practical Suggestions

To Reduce Burr

On CNCs, reduce feed by 75% on approaching center when stub diameters \approx W.O.C.

- Check center height of cutting edge.
- Use insert with lead angle.
- If 0° lead angle must be used for any reason, apply narrow W.O.C.
- Apply a supporting part-catcher (or adjust concentricity).
- On internally chamfered hollow bar, line up chamfer corner with parted workpiece surface.

Note: Conditions which yield large burrs may also cause chipping of insert corners.



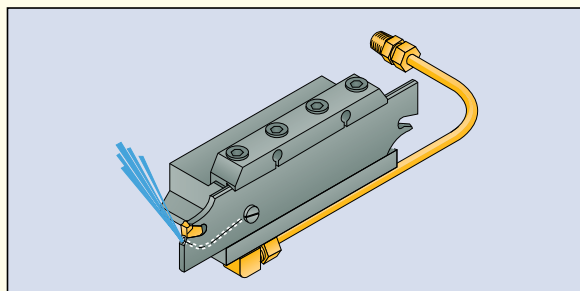
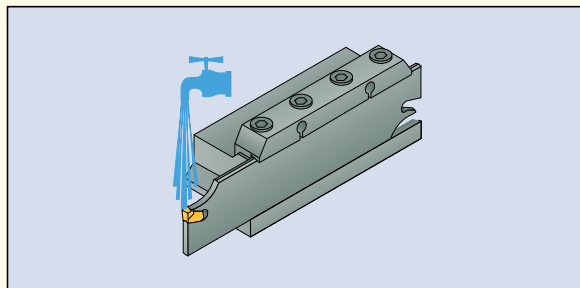
To Improve Surface Finish

- Increase cutting speed.
- Use insert with 0° lead angle.
- Select chipformer which will provide optimum chip control.
- Use coated carbide.
- Improve coolant application.
- Eliminate chatter.

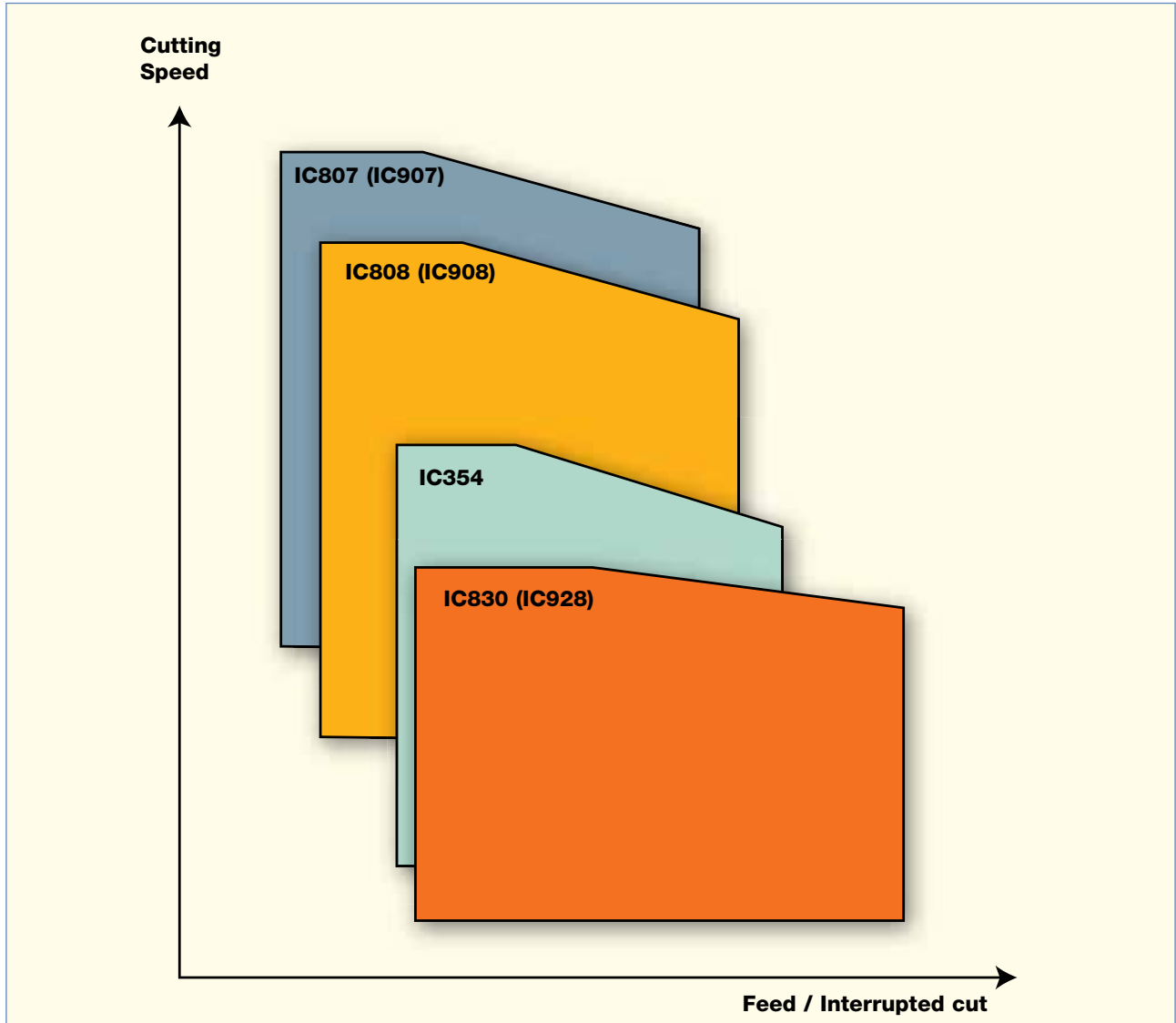
Cutting Fluid

A copious supply of cutting fluid, directed exactly at the cutting edge, should be used while the insert is engaged and throughout the operation.

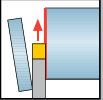
For tool blocks a coolant adapter can be mounted and the coolant supply connected from above or from either side. The adapter can be ordered as an optional extra and is supplied with an assembly screw.



Grade Application Range



Selection Guide for Parting Grades

Material Groups	ISO P	ISO H	ISO M	ISO S	ISO K	ISO N
	1 - 11	38 - 41	12 - 14	31 - 37	15 - 20	21 - 28
	Steel	Hard Steel	Stainless Steel	High Temp Alloys	Cast Iron	Nonferrous
 PARTING	Harder ↑ IC807(907) IC808 (908) ↓ IC830 (928) IC1028 Tougher	Harder ↑ IC807 (907) ↓ IC808 (908) Tougher	Harder ↑ IC807 (907) IC808 (908) ↓ IC830 (928) (1028) Tougher	Harder ↑ IC807 (907) IC20 IC808 (908) ↓ IC830 (928) Tougher	Harder ↑ IC807 (907) IC20 ↓ IC808 (908) Tougher	Harder ↑ IC20 ↓ Tougher

■ First choice

Machining Data

ISO	Material	Condition	Tensile Strength [N/mm ²]	Hardness HB	Material No.	
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	1
		>= 0.25 %C	Annealed	650	190	2
		< 0.55 %C	Quenched and tempered	850	250	3
		>= 0.55 %C	Annealed	750	220	4
		>= 0.55 %C	Quenched and tempered	1000	300	5
	Low alloy steel and cast steel (less than 5% all elements)	Annealed	600	200	6	
			930	275	7	
		Quenched and tempered	1000	300	8	
			1200	350	9	
	High alloy steel, cast steel, and tool steel	Annealed	680	200	10	
		Quenched and tempered	1100	325	11	
M	Stainless steel and cast steel	Ferritic/martensitic	680	200	12	
		Martensitic	820	240	13	
		Austenitic	600	180	14	
K	Grey cast iron (GG)	Pearlitic/ferritic		180	15	
		Pearlitic/martensitic		260	16	
	Ductile cast iron (nodular) (GGG)	Ferritic		160	17	
		Pearlitic		250	18	
	Malleable cast iron	Ferritic		130	19	
		Pearlitic		230	20	
N	Aluminum-wrought alloy	Not cureable		60	21	
		Cured		100	22	
	Aluminum-cast, alloyed	<=12% Si	Not cureable		75	23
		Cured		90	24	
			>12% Si	High temperature		130
	Copper alloys	>1% Pb	Free cutting		110	26
		Brass		90	27	
			Electrolitic copper		100	28
	Non-metallic		Duroplastics, fiber plastics			29
			Hard rubber			30
S	High temp. alloys	Fe based	Annealed		200	31
			Cured		280	32
		Ni or Co based	Annealed		250	33
			Cured		350	34
			Cast		320	35
	Titanium and Ti alloys		RM 400		36	
		Alpha+beta alloys cured	RM 1050		37	
H	Hardened steel	Hardened		55 HRc	38	
		Hardened		60 HRc	39	
	Chilled cast iron	Cast		400	40	
	Cast iron	Hardened		55 HRc	41	

Parting Speed Recommendations

No.	IC807, IC907	IC808, IC908, IC1008	IC354	IC328	IC830, IC928, IC1028	IC20
1	140-270	130-230	110-170	80-130	80-140	
2	120-240	110-200	100-150	80-110	80-120	
3	100-220	90-180	80-140	70-90	70-100	
4	110-240	100-200	80-130	70-100	70-110	
5	80-210	70-170	60-100	40-70	40-80	
6	100-180	90-140	80-120	70-100	70-110	
7	90-200	80-160	80-130	60-90	60-100	
8	80-180	70-140	60-110	40-70	40-80	
9	90-190	80-150	60-100	30-60	30-70	
10	80-170	70-130	80-140	50-70	50-80	
11	70-160	60-120	60-100	30-50	30-70	
12	80-200	70-180		60-110	70-140	
13	70-180	60-160		50-100	70-120	
14	60-150	50-130		40-90	50-110	
15	120-200	110-180				50-110
16	110-180	100-160				40-70
17	130-260	120-240				60-90
18	110-170	100-150				40-80
19	150-250	140-230				60-90
20	130-200	120-180				50-90
21						300-800
22						230-310
23						280-830
24						200-500
25						170-300
26						150-250
27						120-200
28						90-150
29						
30						
31	40-70	30-50				30-40
32	30-60	20-40				20-40
33	30-50	20-30				20-30
34	25-40	15-20				15-20
35	25-40	15-20				15-20
36	90-140	80-110				50-90
37	50-90	40-70				20-50
38	20-50					
39	15-40					
40						
41						

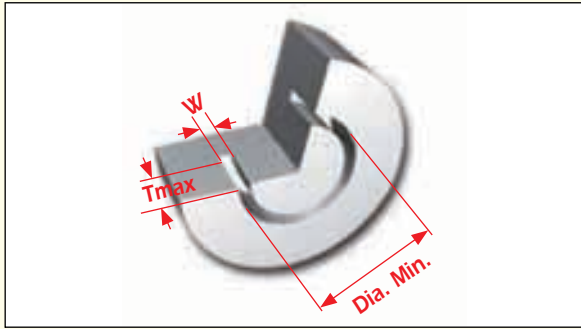


HELIFACE



HELIFACE Face Grooving and Turning Selection Guide




A Variety of Inserts for Face Machining Applications



Face Grooving D min 6–30 mm

		D min	D max	W min	W max	T max	Page
PICCO		6	–	1	3	30	E9-12
MIFR		8	17	1.5	2.2	5.5	E15
GFQR		2	19	1	2.5	3	E13
HGPL		2	∞	3	6	∞	E39
GRIP		2	∞	3	6	∞	E36-37
DGN		21	∞	4	6	∞	E37-38

Face Grooving D min 24–80 mm

		D min	D max	W min	W max	T max	Page
HFPR/L		24	∞	3	6	∞	E35
PENTA 34F		22	∞	2.39	4	5	E51
GDMY/N		50	∞	8	8	25	B31 E44-45
GIF 8		80	∞	8	8	25	E43
GIFG 8		50	∞	8	8	25	E43
GIMM 8CC		80	∞	7	8	∞	E46
GDMM 8CC		50	∞	8	8	∞	E46

Small Diameter Face Machining Systems



B A

Tool: HGHR/L see page E16

Insert: GRIP... / HGPL...

W = 3 mm

Tmax = 6 mm

Min. dia. = 12 mm

Integral shank toolholder which uses double-ended 3 mm inserts. Used for face grooving and face turning of small parts, for 12 mm minimum groove diameter.



B A

Tool: HGAER/L... (adapter) see page E24

Tool: HFAER/L... (adapter) see page E24-25

Insert: HFPR/L...

W = 3-6 mm

Tmax = 32 mm

Min. dia. = 12 mm

Exchangeable external adapters. Used with HELIFACE and GRIP inserts, for deep face machining.



B A

Tool: PENTA 34F see page E51

W = 2.39-4 mm

Tmax = 5 mm

Min. dia. = 22 mm

Pentagonal insert for face grooving and recessing up to 5 mm depth of cut at a minimum 22 mm diameter.



C B

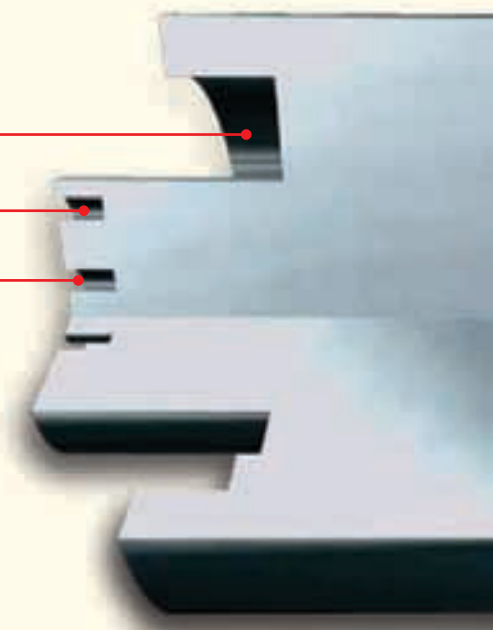
Tool: PICCO R010 see page E9-10

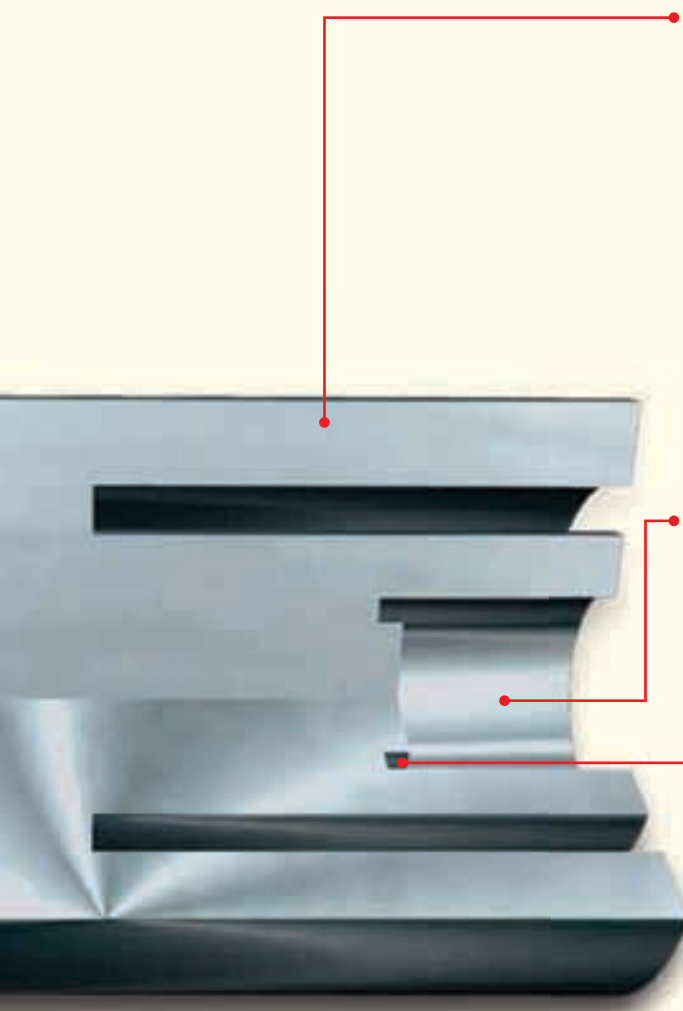
W = 1-3 mm

Tmax = 3.5 mm

Min. dia. = 6 mm

Small solid carbide bars, for machining shallow grooves from 6 mm minimum diameter.





Tool: PICCO R015 see page E12

W = 2.5-3 mm

Tmax = 30 mm

Min. dia. = 15 mm

Small solid carbide bars for machining deep face grooves of up to 30 mm and 15 mm minimum diameter.



Tool: MIFHR 9.5C-8-8 see page E15

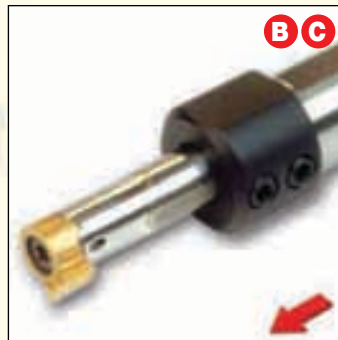
Insert: MIFR 8-...

W = 1.5-3 mm

Tmax = 5.5 mm

Min. dia. = 8 mm

MINCUT - A new family of internal face grooving and face turning tools for machining small diameters ranging from 8-17 mm. Strong and stable tangential pocket with internal coolant.



Tool: MGCH 09C see page E13

Insert: GFQR...

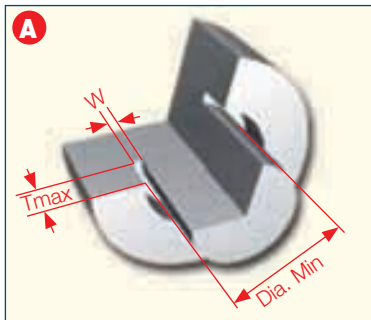
W = 1-2.5 mm

Tmax = 3 mm

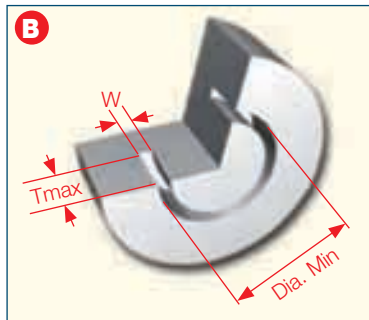
Min. dia. = 12 mm

A screw-clamped insert on an internal coolant solid carbide bar. Used for machining shallow grooves of 12 mm minimum diameter.

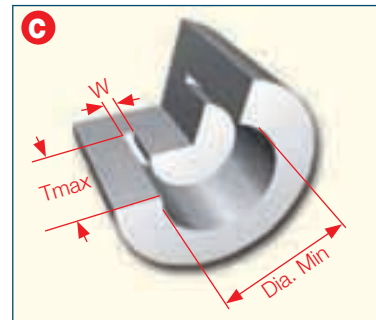
Main Applications



Grooving Next to a Shaft



External Grooving



Internal Grooving

Medium Diameter Face Machining Systems



B A

Tool: HFHR/L... see page E17-20

Insert: HFPR/L...

W = 3-6 mm

Tmax = 32 mm

Min. Dia. = 25 mm

Integral shank toolholders which use HELIFACE and GRIP inserts. For deep face grooving and side face turning.



B A

Tool: HFPAD... (adapter) see page E20-22

Insert: HFPR/L...

W = 3-6 mm

Tmax = 22 mm

Min. Dia. = 25 mm

Slanted, screw clamped adapter, used with HELIFACE and GRIP inserts. A part of the MODULAR-GRIP system. Very rigid, for tough face operations.



B

Tool: SGFFR/L see page E47

Insert: GFF...

W = 2-6 mm

Tmax = 30 mm

Min. Dia. = 25 mm

Integral toolholders which use SELF-GRIP inserts. Recommended for face grooving only. Excellent chip evacuation.



B

Tool: HFFR/L... see page E22

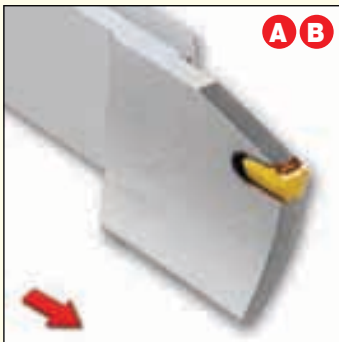
Insert: HFPR/L...

W = 4-6 mm

Tmax = 38 mm

Min. Dia. = 48 mm

Economical, double-ended blades which use HELIFACE and GRIP inserts. Recommended for deep face grooving and face turning to a maximum depth of 38 mm.



A B

Tool: SGFFA R/L see page E48

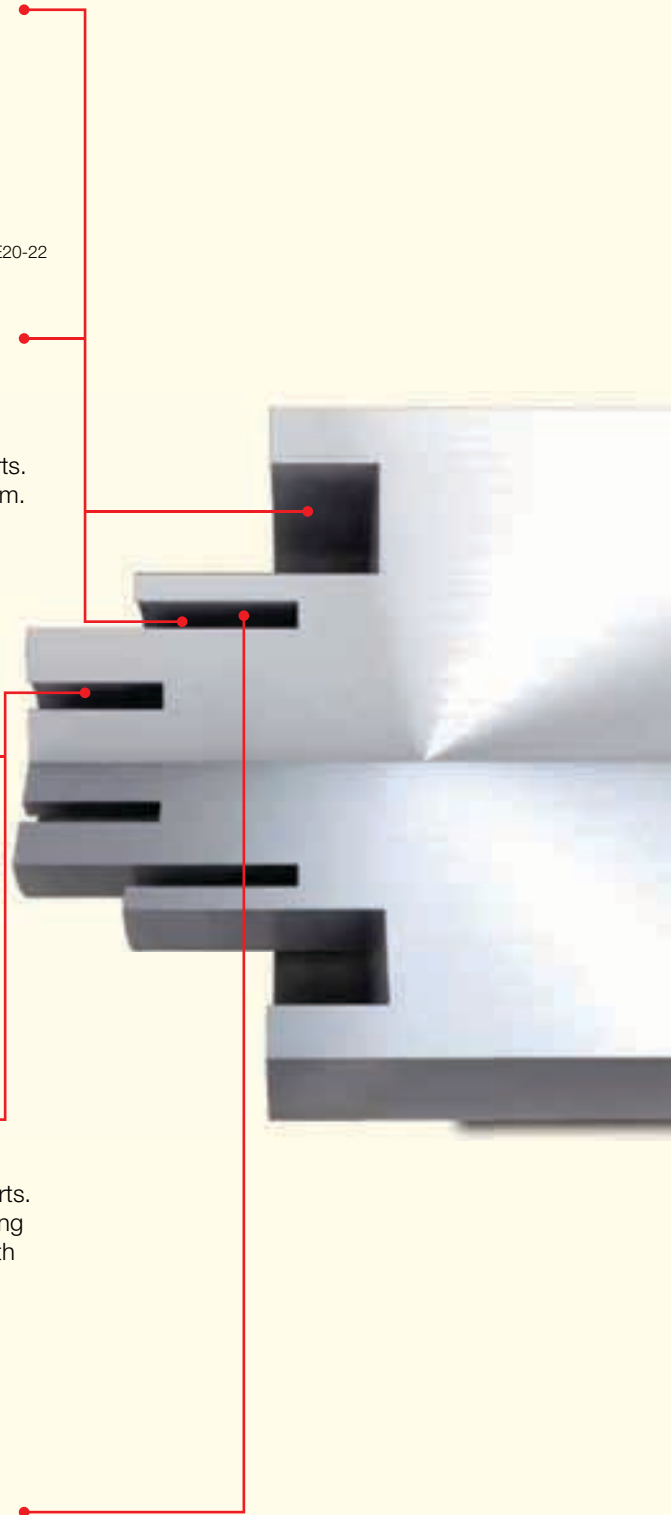
Insert: GFF...

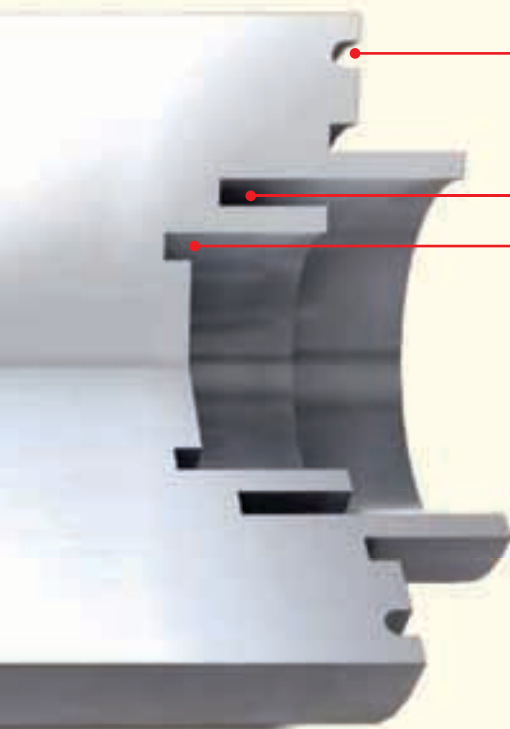
W = 2-6 mm

Tmax = 40 mm

Min. Dia. = 25 mm

Reinforced blades which use SELF-GRIP inserts. Recommended for face grooving only, can machine along shaft. Excellent chip evacuation.





Tool: HFHR/L...-M see page E26
Insert: HFPR/L...

W = 3-6 mm

Tmax = 5 mm

Min. Dia. = 20 mm

Integral toolholders, used with HELIFACE and GRIP inserts. For machining up to 5 mm depth. 3–6 mm wide inserts can be mounted in the same pocket.



Tool: HFAIR/L...& HGAIR/L (Adapter) see page E30, E32
Insert: HFPR/L...

W = 3-6 mm

Tmax = 12 mm

Min. Dia. = 32 mm

Exchangeable, internal coolant, internal adapters. Used with HELIFACE and GRIP inserts. Recommended for deep internal face machining.



Tool: HFIR/L...-MC see page E33
Insert: HFPR/L...

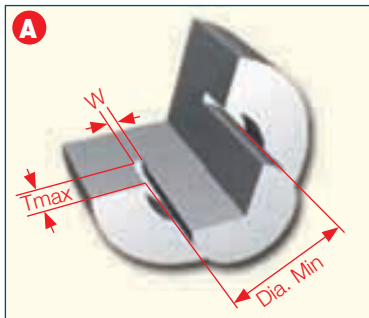
W = 3-6 mm

Tmax = 5 mm

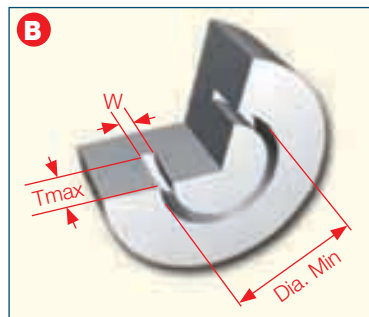
Min. Dia. = 20 mm

Boring bars for shallow face machining of up to 5 mm depth. Used with HELIFACE and GRIP inserts. Internal coolant. 3–6 mm width inserts can be mounted on the same pocket.

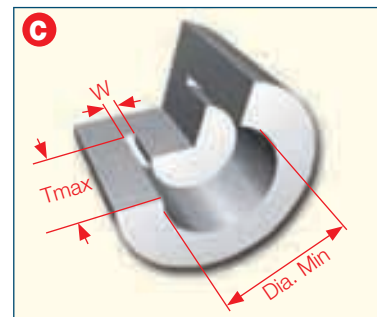
Main Applications



Grooving Next to a Shaft




External Grooving



Internal Grooving

Large Diameter Face Machining Systems



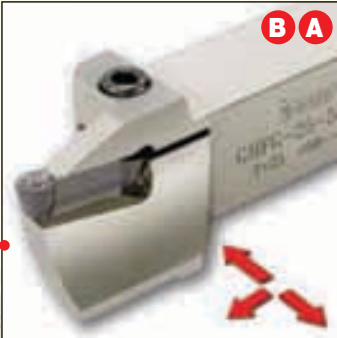
Tool: CGFG 51-..R/L-P8DG
see page E42
Insert: GIMY 8...

W = 8 mm

Tmax = 120 mm

Min. Dia. = 180 mm

Blades used with 8 mm single-ended CUT-GRIP inserts. Can machine up to 120 mm depth next to a shaft. Used for large diameters.



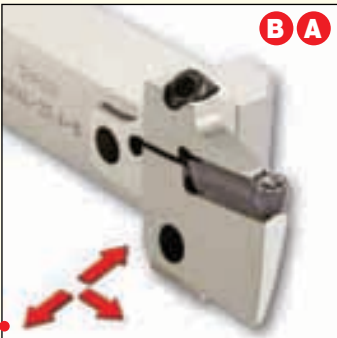
Tool: GHFG ..R/L-8 see page E39
Insert: GDMY 8..

W = 8 mm

Tmax = 25 mm

Min. Dia. = 50 mm

Integral toolholders, used with 8 mm CUT-GRIP inserts. For heavy machining of medium and large parts. Can machine next to a shaft up to 25 mm depth.



Tool: GAFG ..R/L-8 (adapter)
see page E42
Insert: GDMM 8CC

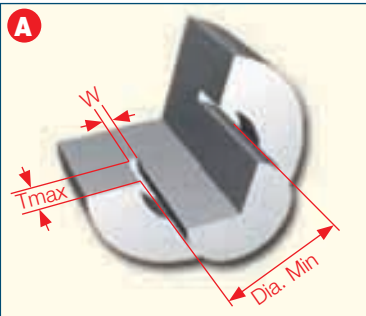
W = 8 mm

Tmax = 25 mm

Min. Dia. = 80 mm

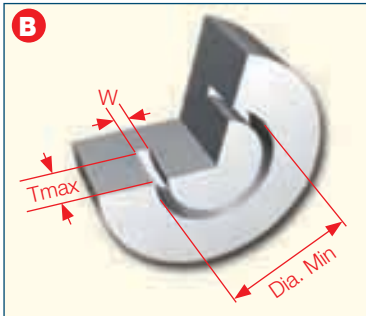
Exchangeable adapters, used with 8 mm CUT-GRIP inserts. Can machine up to 25 mm depth next to a shaft. For heavy machining of medium and large parts.

Main Applications



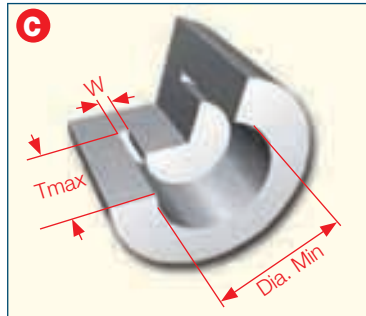
A

Grooving Next to a Shaft



B

External Grooving

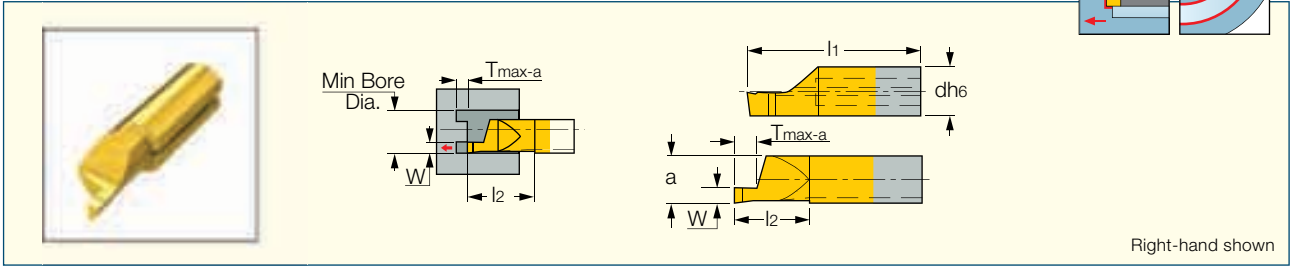
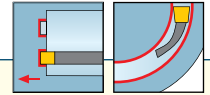


C

Internal Grooving

PICCO-010/610 (Face Grooving)

PICCO Mini Solid Carbide Bars for Face Grooving



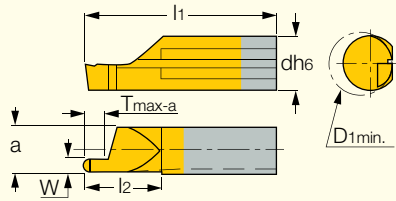
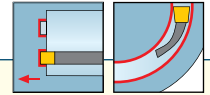
Designation	Dimensions								IC228	Recommended Machining Data
	D _{1 min}	W	T _{max-a}	d	a	l ₂	l ₁	f face-groove (mm/rev)		
PICCO R 010.1006-10	6.0	1.00	1.50	6.00	4.20	11.0	26.00	●	0.01-0.04	
PICCO R 010.1506-10	6.0	1.50	2.00	6.00	4.20	11.0	26.00	●	0.01-0.04	
PICCO R 010.1008-10	8.0	1.00	1.50	7.00	5.90	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 bars are available as standard • All carbide bars are with sharp corners • For detailed cutting data, see pages E62-63.

For holders, see pages PICCO/MG PCO (Holder) (E14).

PICCO-010 (Round Face Groove)

Mini-Bars for Round Profile Face Grooving



Right-hand shown

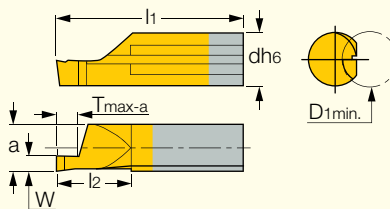
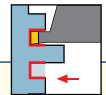
Designation	Dimensions								IC1008	Recommended Machining Data
	D1 min	W	R	Tmax-a	d	a	l2	l1		f face-groove (mm/rev)
PICCO R 010.1005-10	8.0	1.00	0.50	2.00	7.00	5.90	11.0	26.00	●	0.01-0.04
PICCO R 010.1005-20	8.0	1.00	0.50	2.00	7.00	5.90	20.0	35.00	●	0.01-0.04
PICCO R 010.1608-10	8.0	1.60	0.80	3.00	7.00	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 bars are available as standard. Left-hand bars on request. • For detailed cutting data, see pages E62-63.

For holders, see pages PICCO/MG PCO (Holder) (E14).

PICCO-620 (Groov. Along Shaft)

PICCO Mini Solid Carbide Bars for Grooving Along a Shaft Dmin 6 mm



Right-hand shown

Designation	Dimensions								IC1008	Recommended Machining Data
	D1 min	W	Tmax-a	d	a	l2	l1	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	

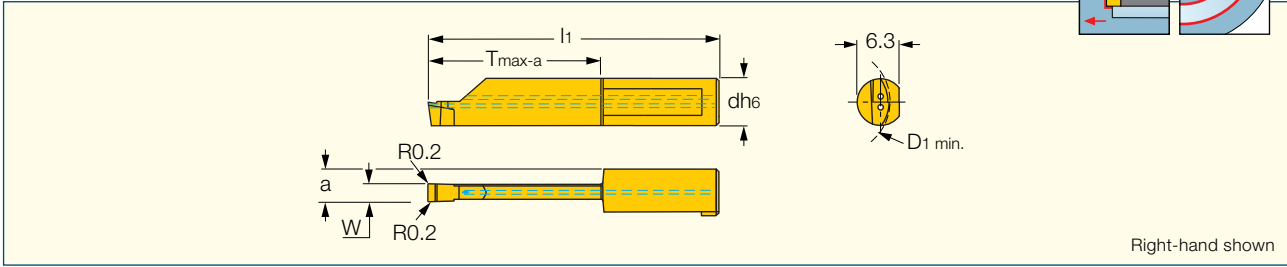
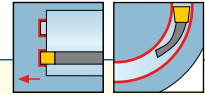
• Only right-hand bars are available as standard, left-hand bars on request. • All carbide bars are with sharp corners • For detailed cutting data, see pages E62-63.

For holders, see pages PICCO/MG PCO (Holder) (E14).



PICCO-016/020 (Face Grooving)

PICCO Mini Solid Carbide Bars with Coolant Holes for Deep Face Grooving



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

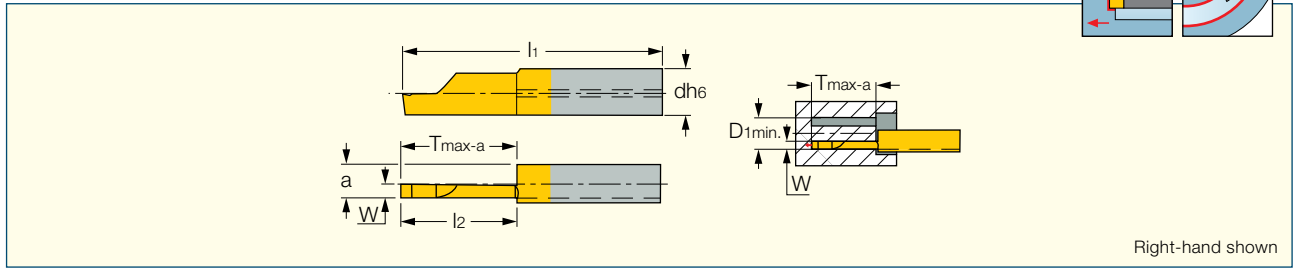
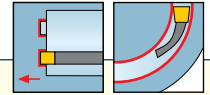
• All bars have two coolant holes which may be used with coolant pressure up to 100 bars. (1450 PSI) • For detailed cutting data, see pages E62-63.

For holders, see pages PICCO/MG PCO (Holder) (E14).



PICCO-015 (Face Grooving)

PICCO Mini Solid Carbide Bars for Deep Face Grooving

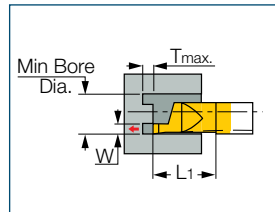


Right-hand shown

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 bars are available as standard, left-hand bars on request. • All carbide bars are with sharp corners • For detailed cutting data, see pages E62-63.

For holders, see pages PICCO/MG PCO (Holder) (E14).



PICCO Mini-Bar Tool Kit Face Grooving KIT PICCO SET-4R

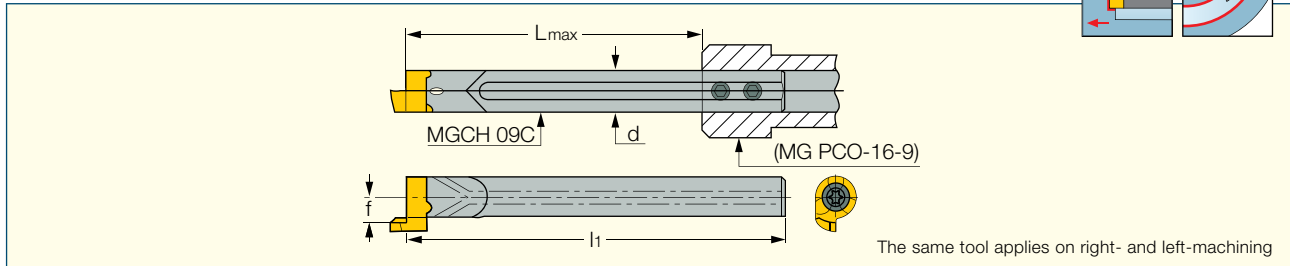
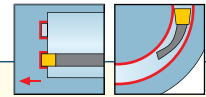
Designation	Mini Bore Dia.	L1	Tmax	W	Pcs.	Designation
PICCO 16.D6					1x	Holder
PICCO R/L 010.1008-10	8.0	11	1.5	1.0	1x	Mini Carbide Bar
PICCO R/L 010.1508-10	8.0	11	2.5	1.5	1x	Mini Carbide Bar
PICCO R/L 010.2008-10	8.0	11	3.0	2.0	1x	Mini Carbide Bar
PICCO R/L 010.2508-20	8.0	21	3.5	2.5	1x	Mini Carbide Bar
PICCO R/L 010.3008-20	8.0	21	3.5	3.0	1x	Mini Carbide Bar

Available grade: IC228.

CHAMGROOVE

MGCH-C (Face)

Face Machining Solid Carbide Bars for Dmin 12 - Dmax 19 mm Penetration Range,
Using GFQR Inserts



Designation	D _{min}	d	l ₁	L _{max}	f
MGCH 09C	12.00	9.00	83.50	65.0	5.5

For inserts, see pages: GFQR (E13).

For holders, see pages: PICCO/MG PCO (Holder) (E14).

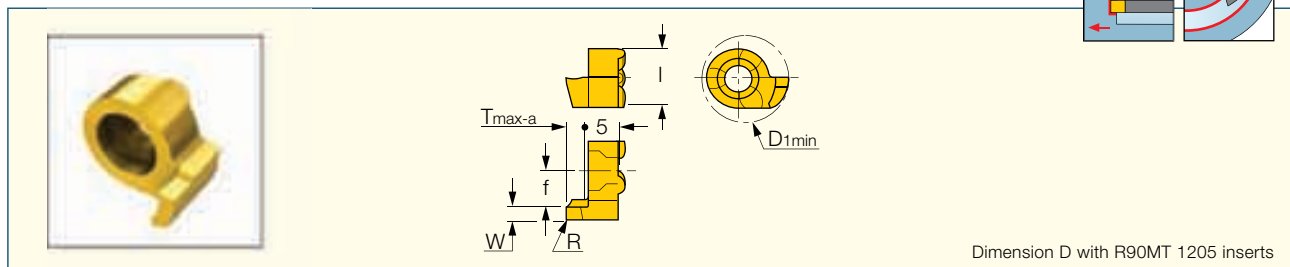
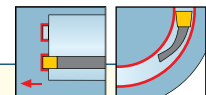
Spare Parts



Designation	Screw	Key
MGCH-C (Face)	SR 76-2145	T-15/5

GFQR

Face Grooving Inserts



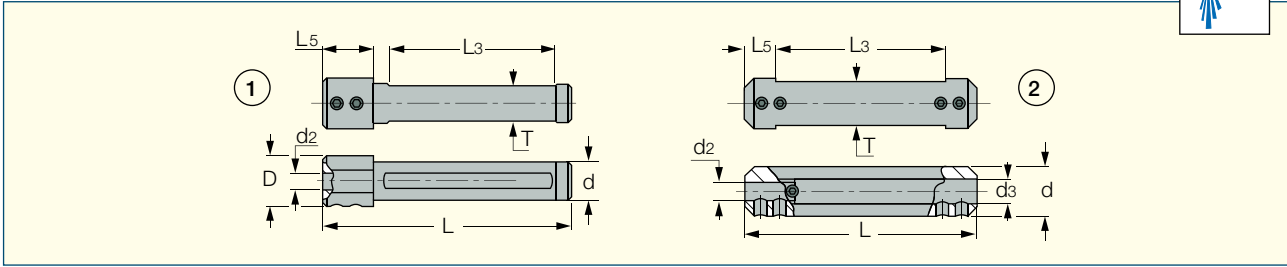
Designation	Dimensions					IC528	Recommended Machining Data
	W ^{+0.02}	R	T _{max-a}	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾		f face-groove (mm/rev)
GFQR 12-1.00-0.05	1.00	0.05	1.50	12.0	16.0	●	0.01-0.04
GFQR 12-1.50-0.20	1.50	0.20	2.50	12.0	17.0	●	0.01-0.04
GFQR 12-2.00-0.20	2.00	0.20	3.00	12.4	18.0	●	0.02-0.05
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

For detailed cutting data, see pages E62-63.

PICCO/MG PCO (Holder)

Holders for PICCO Inserts



Designation	d	d ₂	d ₃	L	L ₅	L ₃	T	h
PICCO 12-4-5	12.00	4.00	5.00	75.00	10.00	55.00	10.3	18.0
PICCO 16-4-5	16.00	4.00	5.00	75.00	10.00	55.00	14.0	18.0
PICCO 20-4-5	20.00	4.00	5.00	90.00	10.00	70.00	18.0	18.0
PICCO 22-4-5 ⁽¹⁾	22.00	4.00	5.00	90.00	10.00	70.00	20.0	18.0
PICCO 16-6-7	16.00	6.00	7.00	75.00	10.00	55.00	14.0	18.0
PICCO 20-6-7	20.00	6.00	7.00	90.00	10.00	70.00	18.0	18.0
PICCO 22-6-7 ⁽¹⁾	22.00	6.00	7.00	90.00	10.00	70.00	20.0	18.0
MG PCO-12-6	12.00	6.00	-	75.00	15.00	53.00	11.0	18.0
MG PCO-16-6-8	16.00	6.00	8.00	75.00	10.00	55.00	14.0	18.0
MG PCO-16-9	16.00	9.00	-	75.00	16.00	75.00	18.0	18.0
MG PCO-20-6-8	20.00	6.00	8.00	90.00	10.00	70.00	18.0	18.0
MG PCO-22-6-8 ⁽¹⁾	22.00	6.00	8.00	90.00	10.00	70.00	20.0	18.0
MG PCO-25-6-8	25.00	6.00	8.00	90.00	10.00	70.00	23.0	18.0

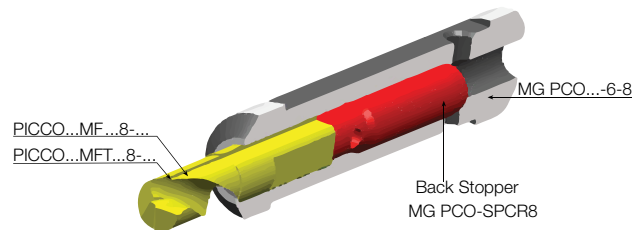
• Holders are suitable for left- and right-hand mini-bars, and ISO bars.

⁽¹⁾ Tools for Swiss-type CNC.

Spare Parts

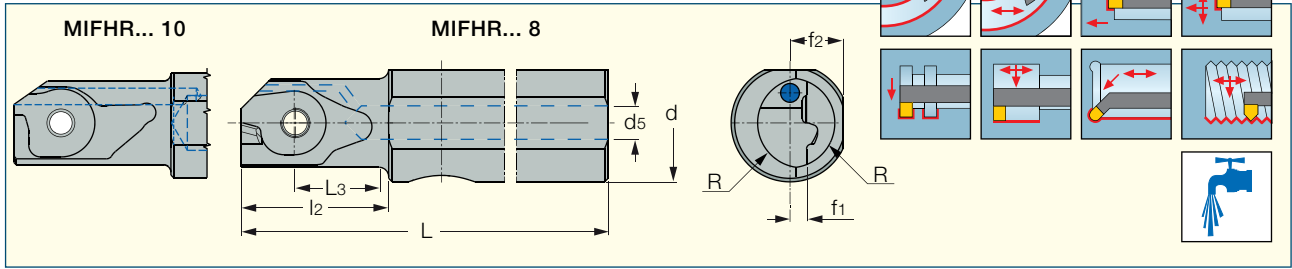


Designation	Screw	Key	Seal
PICCO 12-4-5	SR M5X6-PF	HW 2.5	
PICCO 16-4-5	SR M5X6-PF	HW 2.5	
PICCO 20-4-5	SR M5X6-PF	HW 2.5	
PICCO 22-4-5	SR M5X6-PF	HW 2.5	
PICCO 16-6-7	SR M5X6-PF	HW 2.5	
PICCO 20-6-7	SR M5X6-PF	HW 2.5	
PICCO 22-6-7	SR M5X6-PF	HW 2.5	
MG PCO-12-6	SR M5X6-PF	HW 2.5	
MG PCO-16-6-8	SR M5X6-PF	HW 2.5	
MG PCO-16-9	SR M5X6-PF	HW 2.5	PL 16
MG PCO-20-6-8	SR M5X6-PF	HW 2.5	
MG PCO-22-6-8	SR M5X6-PF	HW 2.5	
MG PCO-25-6-8	SR M5X6-PF	HW 2.5	



MIFHR

Bars for Face and Internal Grooving Undercutting and Threading Inserts



Designation	d	d5	f1	f2	L	L3	l2	R	Inserts
MIFHR 8SC-8-8-SRK ⁽¹⁾	8.00	1.2	1.4	3.70	74.30	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 (E15) • MIGR 8 (B119) • MITR 8-MT inserts refer to ISCAR TURNING & THREADING TOOLS catalog.

Spare Parts

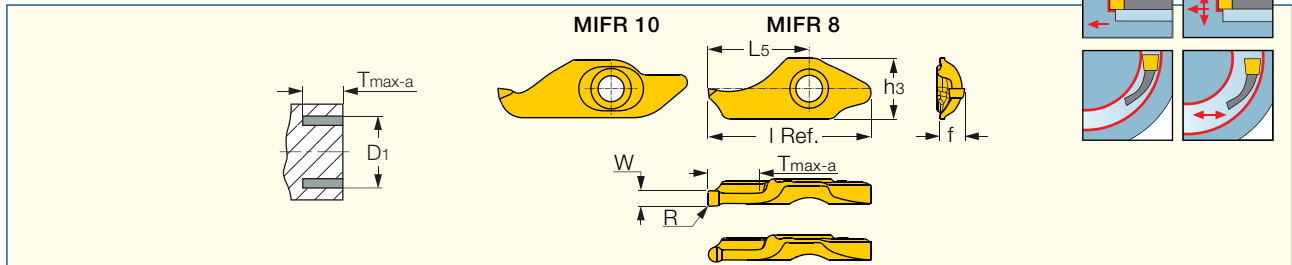


Designation	Screw	Key
MIFHR 8SC-8-8-SRK	SR 14-297	T-8/5
MIFHR 10C-8	SR 14-297	T-8/5
MIFHR 12C-8	SR 14-297	T-8/5
MIFHR 12C-10	SR 34-506	T-9/5
MIFHR 16C-10	SR 34-506	T-9/5



MIFR

MINCUT Screw Clamped Inserts for Internal Face Grooving and Turning, Penetration Diameter Range: 8-17 mm



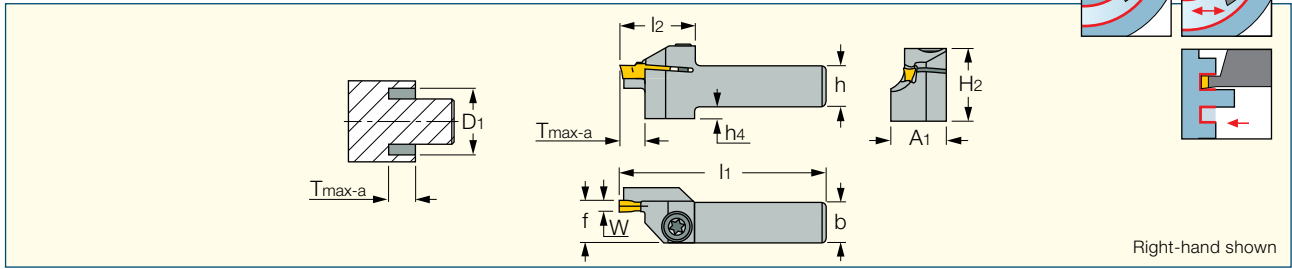
Designation	Dimensions										IC908	Recommended Machining Data	
	I Ref.	W ^{±0.02}	R ^{±0.02}	f	h ₃	D ₁ min	D ₁ max	T _{max-a}	L ₅	f face-groove (mm/rev)		f face-turn (mm/rev)	
MIFR 8-1.50-0.20	17.7	1.50	0.20	2.6	6.5	8.0	11.5	5.70	11.00	●	0.02-0.10	0.02-0.06	
MIFR 8-1.60-0.80	17.7	1.60	0.80	2.6	6.5	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 cutting speed recommendations, see pages E62-63.



HGHR/L-3

Integral Holders for Face Grooving and Turning, Dmin. 12 mm



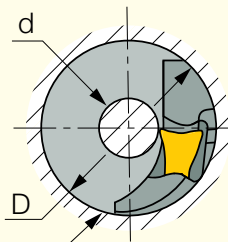
Designation	W	T _{max-a}	h	b	h ₄	f	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	l ₁	l ₂	H ₂	A ₁
HGHR/L 1010-12-3T6	3.00	6.00	10.0	10.0	2.0	9.5	12.0	16.0	120.00	19.0	19.0	13.70
HGHR/L 1010-16-3T6	3.00	6.00	10.0	10.0	2.0	9.5	16.0	25.0	120.00	19.0	19.0	12.80
HGHR/L 1212-12-3T6	3.00	6.00	12.0	12.0	-	11.0	12.0	16.0	120.00	19.0	19.0	15.70
HGHR/L 1212-16-3T6	3.00	6.00	12.0	12.0	-	11.0	16.0	25.0	120.00	19.0	19.0	14.80
HGHR/L 1616-12-3T6	3.00	6.00	16.0	16.0	-	15.0	12.0	16.0	120.00	19.0	21.0	19.70
HGHR/L 1616-16-3T6	3.00	6.00	16.0	16.0	-	15.0	16.0	25.0	120.00	19.0	21.0	18.80
HGHR/L 2020-12-3T6	3.00	6.00	20.0	20.0	-	20.0	12.0	16.0	120.00	19.0	25.0	24.00
HGHR/L 2020-16-3T6	3.00	6.00	20.0	20.0	-	20.0	16.0	25.0	120.00	19.0	25.0	24.00
HGHR/L 2525-12-3T6	3.00	6.00	25.0	25.0	-	25.0	12.0	16.0	120.00	19.0	30.0	29.00
HGHR/L 2525-16-3T6	3.00	6.00	25.0	25.0	-	25.0	16.0	25.0	120.00	19.0	30.0	29.00

• Use HGN and GRIP inserts with right-hand toolholders only and HGPL inserts with left-hand toolholders • For user guide, see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: GRIP (E36) • GRIP (Full Radius) (B14) • HGN-C (E37) • HGN-J (D30) • HGN-UT (D31) • HGPL (E39).

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

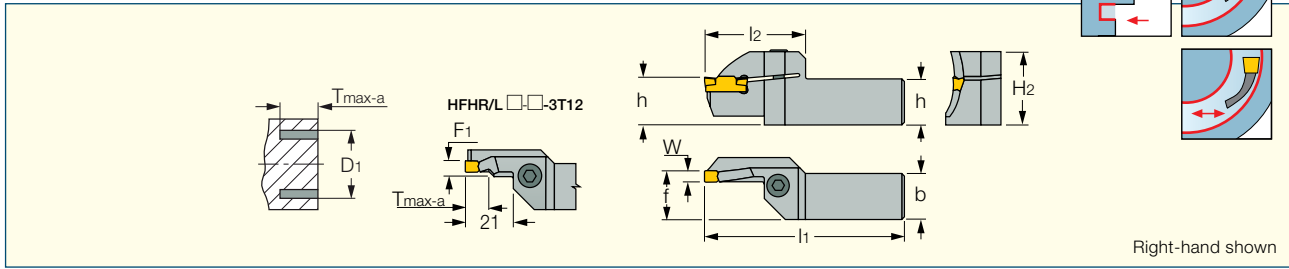
Spare Parts



Designation	Screw	Key
HGHR/L-3	SR 76-1400	T-20/3

HFHR/L-3T

Integral Holders for Facing, Dmin. 25 mm



Designation	W	T _{max-a}	h	b	l ₁	f	D _{1 min} ⁽²⁾	D _{1 max} ⁽³⁾	l ₂	H ₂
HFHR/L 20-25-3T12	3.00	12.00	20.0	20.0	140.00	20.5	25.0	30.0	38.0	28.0
HFHR/L 20-30-3T12	3.00	12.00	20.0	20.0	140.00	20.5	30.0	38.0	38.0	29.0
HFHR/L 20-38-3T12	3.00	12.00	20.0	20.0	140.00	20.5	38.0	48.0	38.0	30.0
HFHR/L 20-48-3T12	3.00	12.00	20.0	20.0	140.00	20.5	48.0	60.0	38.0	30.0
HFHR/L 25-25-3T12	3.00	12.00	25.0	25.0	150.00	25.5	25.0	30.0	38.0	33.0
HFHR/L 25-30-3T12	3.00	12.00	25.0	25.0	150.00	25.5	30.0	38.0	38.0	34.0
HFHR/L 25-38-3T12	3.00	12.00	25.0	25.0	150.00	25.5	38.0	48.0	38.0	35.0
HFHR/L 20-60-3T22 ⁽¹⁾	3.00	22.00	20.0	20.0	140.00	20.5	60.0	75.0	40.0	31.0
HFHR/L 25-48-3T22 ⁽¹⁾	3.00	22.00	25.0	25.0	150.00	25.5	48.0	60.0	40.0	36.0
HFHR/L 25-60-3T22 ⁽¹⁾	3.00	22.00	25.0	25.0	150.00	25.5	60.0	75.0	40.0	36.0
HFHR/L 20-75-3T25 ⁽¹⁾	3.00	25.00	20.0	20.0	140.00	20.5	75.0	100.0	43.0	31.0
HFHR/L 25-75-3T25 ⁽¹⁾	3.00	25.00	25.0	25.0	150.00	25.5	75.0	100.0	43.0	36.0

• For user guide, see pages E52-68.

⁽¹⁾ For deep face grooving only. ⁽²⁾ Minimum penetration diameter ⁽³⁾ Maximum penetration diameter

For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35).

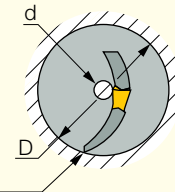
Penetration Range

HFHR/L-□-25-3T12

D	d
25	5
26	2
≥27	0

No limitation for widening groove toward or away from center, except for the following tools:

Limitation of widening toward center (d) depends on the major diameter (D) as per chart.



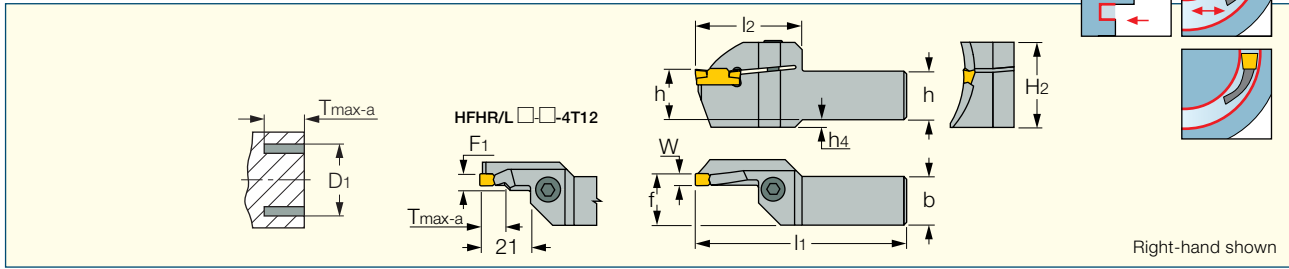
Spare Parts



Designation	Screw	Key
HFHR/L-3T	SR M6X16DIN912	HW 5.0

HFHR/L-4T

Integral Holders for Facing, Dmin. 25 mm



Designation	W	T _{max-a}	h	b	l ₁	f	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	l ₂	H ₂	h ₄
HFHR/L 20-25-4T12	4.00	12.00	20.0	20.0	140.00	20.6	25.0	29.0	39.0	29.0	-
HFHR/L 20-29-4T12	4.00	12.00	20.0	20.0	140.00	20.6	29.0	34.0	39.0	30.0	-
HFHR/L 25-25-4T12	4.00	12.00	25.0	25.0	150.00	25.6	25.0	29.0	39.0	34.0	-
HFHR/L 25-29-4T12	4.00	12.00	25.0	25.0	150.00	25.6	29.0	34.0	39.0	35.0	-
HFHR/L 20-34-4T20	4.00	20.00	20.0	20.0	140.00	20.6	34.0	40.0	39.0	30.0	-
HFHR/L 25-34-4T20	4.00	20.00	25.0	25.0	150.00	25.6	34.0	40.0	39.0	35.0	-
HFHR/L 20-40-4T25	4.00	25.00	20.0	20.0	140.00	20.6	40.0	48.0	44.0	31.0	-
HFHR/L 20-48-4T25	4.00	25.00	20.0	20.0	140.00	20.6	48.0	60.0	44.0	32.0	-
HFHR/L 20-60-4T25	4.00	25.00	20.0	20.0	140.00	20.6	60.0	75.0	44.0	32.0	-
HFHR/L 20-75-4T25	4.00	25.00	20.0	20.0	140.00	20.6	75.0	100.0	44.0	34.0	2.0
HFHR/L 25-100-4T25	4.00	25.00	25.0	25.0	150.00	25.6	100.0	140.0	44.0	37.0	-
HFHR/L 25-140-4T25	4.00	25.00	25.0	25.0	150.00	25.6	140.0	240.0	44.0	37.0	-
HFHR/L 25-240-4T25	4.00	25.00	25.0	25.0	150.00	25.6	240.0	800.0	44.0	37.0	-
HFHR/L 25-40-4T25	4.00	25.00	25.0	25.0	150.00	25.6	40.0	48.0	44.0	36.0	-
HFHR/L 25-48-4T25	4.00	25.00	25.0	25.0	150.00	25.6	48.0	60.0	44.0	37.0	-
HFHR/L 25-60-4T25	4.00	25.00	25.0	25.0	150.00	25.6	60.0	75.0	44.0	37.0	-
HFHR/L 25-75-4T25	4.00	25.00	25.0	25.0	150.00	25.6	75.0	100.0	44.0	37.0	-

• DGN & GRIP 4 mm inserts can be used only with right-hand tools, HGPL 4 mm with left-hand tools. • For user guide, see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35) • GRIP (E36) • GRIP (Full Radius) (E37) • DGN/DGNC/DGNM-C (E37) • DGN/DGNM-J/JS/JT (E38) • HGPL (E39).

Spare Parts



Designation	Screw	Key
HFHR/L-4T	SR M6X16DIN912	HW 5.0

Penetration Range

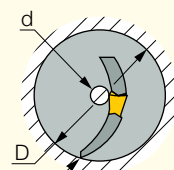
HFHR/L-□-25-4T12

D	d
25	1
≥26	0

HFHR/L-□-29-4T12

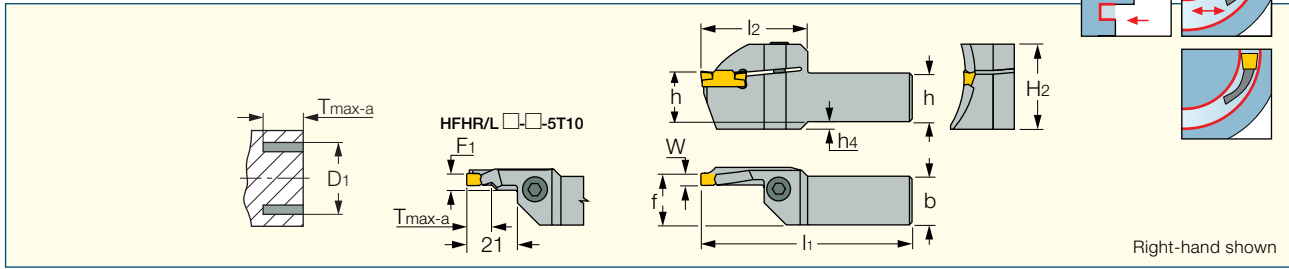
D	d
29	1
≥46	0

Limitation of widening toward center (d) depends on the major diameter (D) as per chart.



HFHR/L-5T

Integral Holders for Facing, Dmin. 25 mm



Designation	W	T _{max-a}	h	b	l ₁	f	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	l ₂	H ₂	h ₄
HFHR/L 20-25-5T10	5.00	10.00	20.0	20.0	140.00	21.0	25.0	30.0	38.0	28.0	-
HFHR/L 25-25-5T10	5.00	10.00	25.0	25.0	150.00	26.0	25.0	30.0	38.0	33.0	-
HFHR/L 25-110-5T14	5.00	14.00	25.0	25.0	150.00	23.5	110.0	200.0	32.5	33.0	-
HFHR/L 25-52-5T14	5.00	14.00	25.0	25.0	150.00	23.5	52.0	75.0	32.5	33.0	-
HFHR/L 25-75-5T14	5.00	14.00	25.0	25.0	150.00	23.5	75.0	110.0	32.5	33.0	-
HFHR/L 20-28-5T15	5.00	17.00	20.0	20.0	140.00	21.0	28.0	31.0	34.0	30.0	-
HFHR/L 20-31-5T15	5.00	17.00	20.0	20.0	140.00	21.0	31.0	35.0	34.0	30.0	-
HFHR/L 25-28-5T15	5.00	17.00	25.0	25.0	150.00	26.0	28.0	31.0	34.0	35.0	-
HFHR/L 25-31-5T15	5.00	17.00	25.0	25.0	150.00	26.0	31.0	35.0	34.0	35.0	-
HFHR/L 20-35-5T20	5.00	20.00	20.0	20.0	140.00	21.0	35.0	40.0	39.0	31.0	-
HFHR/L 20-40-5T20	5.00	20.00	20.0	20.0	140.00	21.0	40.0	45.0	39.0	31.0	-
HFHR/L 25-200-5T20	5.00	20.00	25.0	25.0	150.00	23.5	200.0	800.0	32.5	33.0	-
HFHR/L 25-35-5T20	5.00	20.00	25.0	25.0	150.00	26.0	35.0	40.0	39.0	36.0	-
HFHR/L 25-40-5T20	5.00	20.00	25.0	25.0	140.00	26.0	40.0	45.0	39.0	36.0	-
HFHR/L 20-45-5T25	5.00	25.00	20.0	20.0	140.00	21.0	45.0	55.0	44.0	32.0	-
HFHR/L 20-55-5T25	5.00	25.00	20.0	20.0	140.00	21.0	55.0	70.0	44.0	35.0	3.0
HFHR/L 25-45-5T25	5.00	25.00	25.0	25.0	150.00	26.0	45.0	55.0	44.0	37.0	-
HFHR/L 25-55-5T25	5.00	25.00	25.0	25.0	150.00	26.0	55.0	70.0	44.0	37.0	-
HFHR/L 20-70-5T28	5.00	28.00	20.0	20.0	140.00	21.0	70.0	95.0	47.0	35.0	3.0
HFHR/L 25-130-5T32	5.00	32.00	25.0	25.0	150.00	26.0	130.0	180.0	51.0	37.0	-
HFHR/L 25-180-5T32	5.00	32.00	25.0	25.0	150.00	26.0	180.0	800.0	51.0	37.0	-
HFHR/L 25-70-5T32	5.00	32.00	25.0	25.0	150.00	26.0	70.0	95.0	51.0	37.0	-
HFHR/L 25-95-5T32	5.00	32.00	25.0	25.0	150.00	26.0	95.0	130.0	51.0	37.0	-

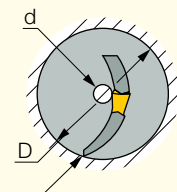
• DGN & GRIP 5.. inserts can be used only with right-hand tools, HGPL 5.. inserts with left-hand tools. • For user guide, see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35) • GRIP (E36) • GRIP (Full Radius) (E37) • DGN/DGNM-J/JS/JT (E38) • HGPL (E39).

No limitation for widening groove toward or away from center, except for the following tools:

HFHR/L-□-31-5T15		HFHR/L-□-28-5T15		HFHR/L-□-25-5T10	
D	d	D	d	D	d
31	15	28	13	25	4
32	10	29	8	26	1
33	7	30	5	≥27	0
34	4	31	3		
35	2	32	1		
≥36	0	≥33	0		



Limitation of widening toward center (d) depends on the major diameter (D) as per chart.

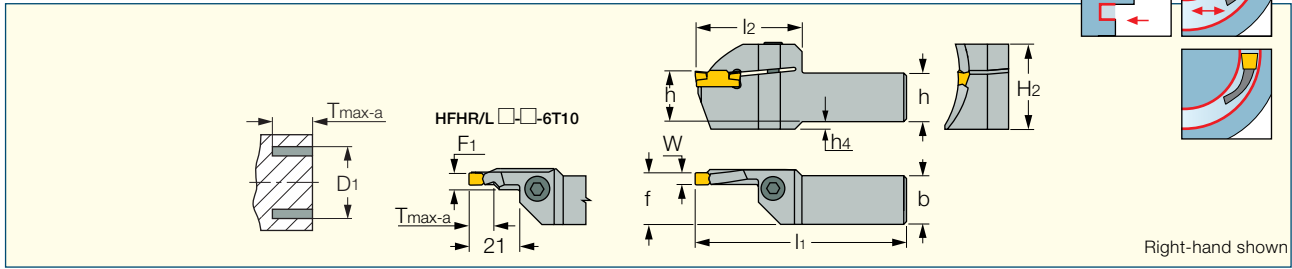
Spare Parts



Designation	Screw	Key
HFHR/L-5T	SR M6X16DIN912	HW 5.0

HFHR/L-6T

Integral Holders for Facing, Dmin. 26 mm



Designation	W	T _{max-a}	h	b	l ₁	f	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	l ₂	H ₂	h ₄
HFHR/L 20-26-6T10	6.00	10.00	20.0	20.0	140.00	21.4	26.0	30.0	39.0	29.0	-
HFHR/L 20-30-6T15	6.00	17.00	20.0	20.0	140.00	21.4	30.0	38.0	36.0	30.0	-
HFHR/L 25-30-6T15	6.00	17.00	25.0	25.0	150.00	26.4	30.0	38.0	36.0	35.0	-
HFHR/L 20-38-6T20	6.00	20.00	20.0	20.0	140.00	21.4	38.0	50.0	39.0	31.0	-
HFHR/L 25-100-6T20	6.00	20.00	25.0	25.0	150.00	26.0	100.0	200.0	40.0	33.0	-
HFHR/L 25-200-6T20	6.00	20.00	25.0	25.0	150.00	23.0	200.0	3000.0	37.5	33.0	-
HFHR/L 25-38-6T20	6.00	20.00	25.0	25.0	150.00	26.4	38.0	50.0	39.0	36.0	-
HFHR/L 25-50-6T20	6.00	20.00	25.0	25.0	150.00	23.0	50.0	65.0	37.5	33.0	-
HFHR/L 25-65-6T20	6.00	20.00	25.0	25.0	150.00	23.0	65.0	100.0	37.5	33.0	-
HFHR/L 20-50-6T25	6.00	25.00	20.0	20.0	140.00	21.4	50.0	70.0	44.0	32.0	-
HFHR/L 25-50-6T25	6.00	25.00	25.0	25.0	150.00	26.4	50.0	70.0	44.0	37.0	-
HFHR/L 25-100-6T32	6.00	32.00	25.0	25.0	150.00	26.4	100.0	180.0	51.0	37.0	-
HFHR/L 25-180-6T32	6.00	32.00	25.0	25.0	150.00	26.4	180.0	400.0	51.0	40.0	3.0
HFHR/L 25-400-6T32	6.00	32.00	25.0	25.0	150.00	26.4	400.0	3000.0	51.0	40.0	3.0
HFHR/L 25-70-6T32	6.00	32.00	25.0	25.0	150.00	26.4	70.0	100.0	51.0	37.0	-

• DGN & GRIP 6.. inserts can be used only with right-hand tools, HGPL 6.. inserts with left-hand tools. • For user guide, see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35) • GRIP (E36) • DGN/DGNM-J/JS/JT (E38) • DGN-UT/UA (D27) • HGPL (E39).

Spare Parts

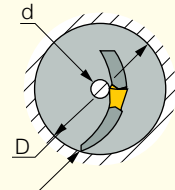


Designation	Screw	Key
HFHR/L-6T	SR M6X16DIN912	HW 5.0

No limitation for widening groove toward or away from center, except for the following tools:

HFHR/L-□-30-6T10

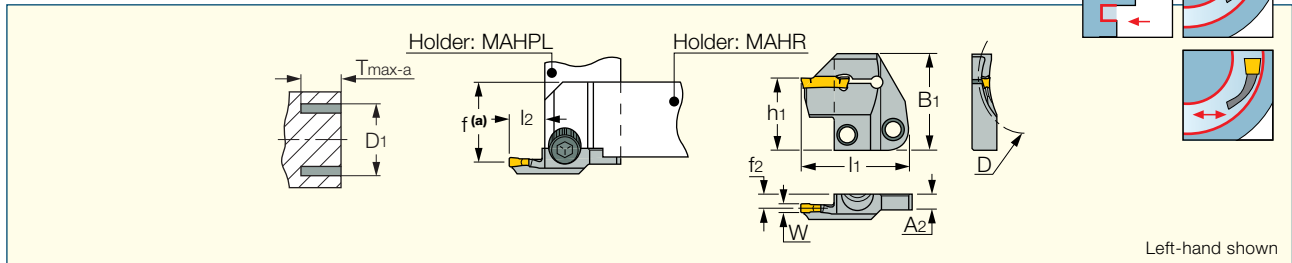
D	d
30	7
31	4
32	1
≥33	0



Limitation of widening toward center (d) depends on the major diameter (D) as per chart.

HFPAD-3

Adapters for Face Machining



Designation	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	W	T _{max-a}	l ₂	f ₂	A ₂	l ₁
HFPAD 3R/L-25-T10	25.0	30.0	3.00	10.00	15.0	4.80	5.8	39.50
HFPAD 3R/L-30-T10	30.0	40.0	3.00	10.00	15.0	4.80	5.8	39.50
HFPAD 3R/L-40-T10	40.0	65.0	3.00	10.00	15.0	4.80	5.8	39.50
HFPAD 3R/L-65-T18	65.0	115.0	3.00	18.00	19.0	4.80	5.8	43.50
HFPAD 3R/L-115-T18	115.0	400.0	3.00	18.00	19.0	4.80	5.8	43.50

• f(a)=f1 (shank) + f2(adapter) • HGN & GRIP 3.. inserts can be used only with right-hand adapters, HGPL 3.. inserts with left-hand adapters. • For user guide, see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

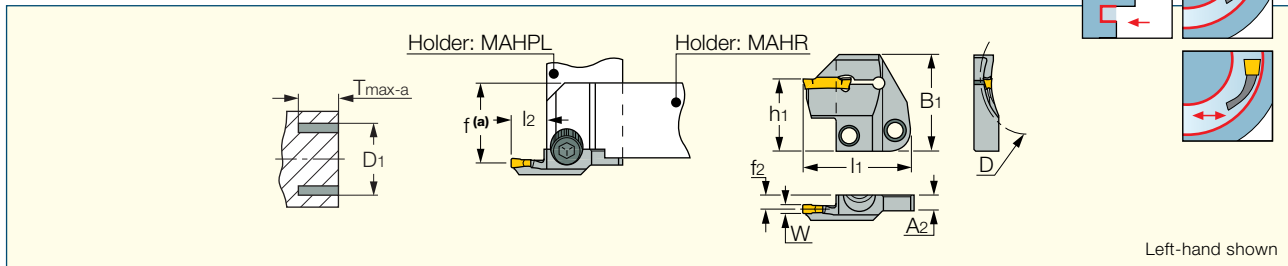
For inserts, see pages: GRIP (E36) • GRIP (Full Radius) (E37) • HGN-C (D30) • HGN-J (D30) • HGN-UT (D31) • HGPL (E39).

For holders, see pages: C#-MAHD (G7) • C#-MAHDOR (G5) • C#-MAHDR-45 (G4) • C#-MAHPD (G7) • C#-MAHUR/L (G5) • HSK A63WH-MAHDOR (G17) • HSK A63WH-MAHDR-45 (G16) • HSK A63WH-MAHUR/L (G17) • IM-MAHD (G26) • IM-MAHPD (G27) • IM63 XMZ MAHDOR (G24) • IM63 XMZ MAHDR-45 (G23) • IM63 XMZ MAHUR/L (G25) • MAHPR/L (B22) • MAHR/L (B22).

MODULAR-GRIP

HFPAD-4

Adapters for Face Machining



Designation	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	W	T _{max-a}	l ₂	f ₂	A ₂	l ₁
HFPAD 4R/L-25-T10	25.0	31.0	4.00	10.00	16.0	4.50	5.8	40.50
HFPAD 4R/L-31-T10	31.0	44.0	4.00	10.00	16.0	4.50	5.8	40.50
HFPAD 4R/L-44-T14	44.0	58.0	4.00	14.00	16.0	4.50	5.8	40.50
HFPAD 4R/L-58-T14	58.0	88.0	4.00	14.00	16.0	4.50	5.8	40.50
HFPAD 4R/L-88-T14	88.0	175.0	4.00	14.00	16.0	4.50	5.8	40.50
HFPAD 4R/L-175-T20	175.0	800.0	4.00	20.00	21.0	4.50	6.5	45.50

• $f(a)=f_1(\text{shank}) + f_2(\text{adapter})$ • DGN & GRIP 4.. inserts can be used only with right-hand adapters, HGPL 4.. inserts with left-hand adapters. • For user guide, see pages E52-68.

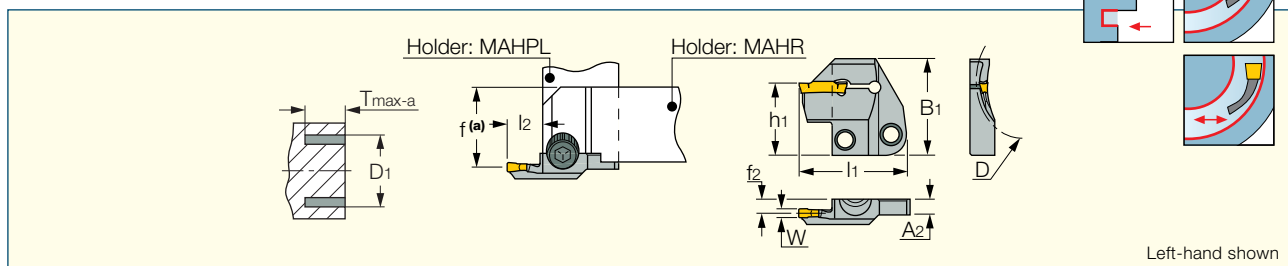
⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35) • GRIP (E36) • GRIP (Full Radius) (E37) • DGN/DGNC/DGNM-C (E37) • DGN-UT/UA (D27) • DGN/DGNM-J/JS/JT (E38) • HGPL (E39).

For holders, see pages: C#-MAHD (G7) • C#-MAHDOR (G5) • C#-MAHDR-45 (G4) • C#-MAHPD (G7) • C#-MAHUR/L (G5) • HSK A63WH-MAHDOR (G17) • HSK A63WH-MAHDR-45 (G16) • HSK A63WH-MAHUR/L (G17) • IM-MAHD (G26) • IM-MAHPD (G27) • IM63 XMZ MAHDOR (G24) • IM63 XMZ MAHDR-45 (G23) • IM63 XMZ MAHUR/L (G25) • MAHPR/L (B22) • MAHR/L (B22).

HFPAD-5

Adapters for Face Machining



Designation	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	W	T _{max-a}	l ₂	f ₂	A ₂	l ₁
HFPAD 5R/L-40-T14	40.0	50.0	5.00	14.00	16.0	4.50	6.3	40.50
HFPAD 5R/L-50-T14	50.0	75.0	5.00	14.00	16.0	4.50	6.3	40.50
HFPAD 5R/L-75-T14	75.0	110.0	5.00	14.00	16.0	4.50	6.3	40.50
HFPAD 5R/L-110-T14	110.0	200.0	5.00	14.00	16.0	4.50	6.3	40.50
HFPAD 5R/L-200-T20	200.0	800.0	5.00	20.00	21.0	4.50	6.6	45.50

• $f(a)=f_1(\text{shank}) + f_2(\text{adapter})$ • DGN & GRIP 5.. inserts can be used only with right-hand adapters, HGPL 5.. inserts with left-hand adapters. • For user guide, see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

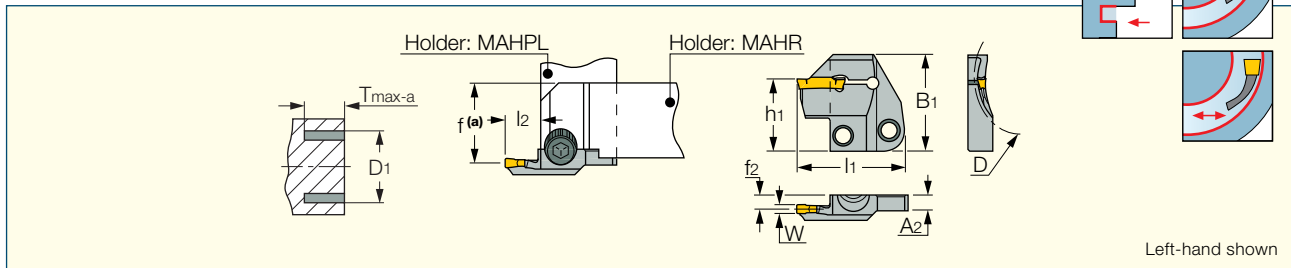
For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35) • GRIP (E36) • GRIP (Full Radius) (E37) • DGN/DGNC/DGNM-C (E37) • DGN/DGNM-J/JS/JT (E38) • DGN-UT/UA (D27) • DGN-W (D25) • HGPL (E39).

For holders, see pages: C#-MAHD (G7) • C#-MAHDOR (G5) • C#-MAHDR-45 (G4) • C#-MAHPD (G7) • C#-MAHUR/L (G5) • HSK A63WH-MAHDOR (G17) • HSK A63WH-MAHDR-45 (G16) • HSK A63WH-MAHUR/L (G17) • IM-MAHD (G26) • IM-MAHPD (G27) • IM63 XMZ MAHDOR (G24) • IM63 XMZ MAHDR-45 (G23) • IM63 XMZ MAHUR/L (G25) • MAHPR/L (B22) • MAHR/L (B22).

MODULAR-GRIP

HFPAD-6

Adapters for Face Machining



Designation	D1 min ⁽¹⁾	D1 max ⁽²⁾	W	T _{max-a}	l ₂	f ₂	A ₂	l ₁
HFPAD 6R/L-60-T14	60.0	100.0	6.00	14.00	16.0	4.50	6.8	40.50
HFPAD 6R/L-100-T20	100.0	200.0	6.00	20.00	21.0	4.50	6.8	45.50
HFPAD 6R/L-200-T20	200.0	3000.0	6.00	20.00	21.0	4.50	6.8	45.50

• $f(a)=f_1(\text{shank}) + f_2(\text{adapter})$ • DGN & GRIP 6.. inserts can be used only with right-hand adapters, HGPL 6.. inserts with left-hand adapters. • For user guide, see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

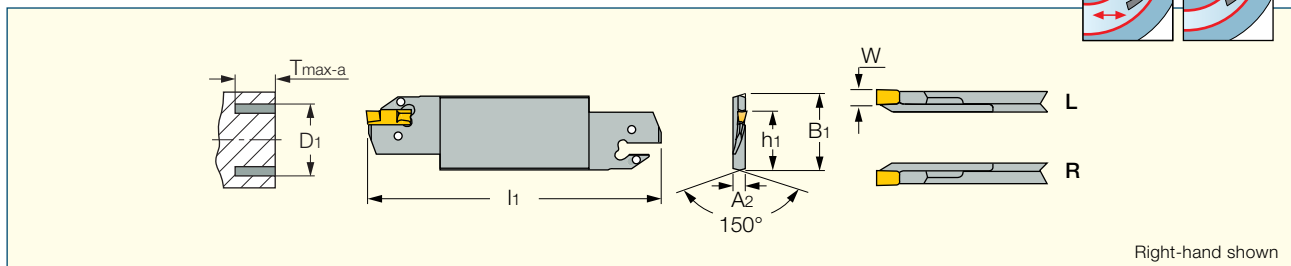
For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35) • GRIP (E36) • GRIP (Full Radius) (E37) • HGPL (E39).

For holders, see pages: C#-MAHD (G7) • C#-MAHDOR (G5) • C#-MAHDR-45 (G4) • C#-MAHPD (G7) • C#-MAHUR/L (G5) • HSK A63WH-MAHDOR (G17) • HSK A63WH-MAHDR-45 (G16) • HSK A63WH-MAHUR/L (G17) • IM-MAHD (G26) • IM-MAHPD (G27) • IM63 XMZ MAHDOR (G24) • IM63 XMZ MAHDR-45 (G23) • IM63 XMZ MAHUR/L (G25) • MAHPR/L (B22) • MAHR/L (B22).

HELIFACE

HFFR/L-T

Blades for Face Machining



Designation	W	D1 min ⁽²⁾	T _{max-a}	D1 max ⁽³⁾	l ₁	B ₁	A ₂
HFFR/L 48-4T25 ⁽¹⁾	4.00	48.0	25.00	60.0	150.00	32.0	5.2
HFFR/L 60-4T25	4.00	60.0	25.00	75.0	150.00	32.0	5.2
HFFR/L 75-4T30	4.00	75.0	30.00	140.0	150.00	32.0	5.2
HFFR/L 140-4T30	4.00	140.0	30.00	1500.0	150.00	32.0	3.2
HFFR/L 70-5T32	5.00	70.0	32.00	95.0	150.00	32.0	5.2
HFFR/L 95-5T35	5.00	95.0	35.00	130.0	150.00	32.0	5.2
HFFR/L 130-5T38	5.00	130.0	38.00	180.0	150.00	32.0	5.2
HFFR/L 180-5T38	5.00	180.0	38.00	1500.0	150.00	32.0	4.0
HFFR/L 90-6T32	6.00	90.0	32.00	180.0	150.00	32.0	5.2
HFFR/L 180-6T38	6.00	180.0	38.00	400.0	150.00	32.0	5.2

• After initial groove, no limitation to widening groove outward or toward center. • DGN & GRIP inserts can be used only with right-hand adapters, HGPL inserts with left-hand blades. • For user guide, see pages E52-68.

⁽¹⁾ HGPL 4...Y with LH blade. ⁽²⁾ Minimum penetration diameter ⁽³⁾ Maximum penetration diameter

For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35) • GRIP (E36) • GRIP (Full Radius) (E37) • DGN/DGNM-J/JS/JT (E38) • DGN-UT/UA (D27) • HGPL (E39).

For holders, see pages: SGTBF (F4) • SGTBU/SGTBN (F2) • UBHCR/L (F4).

Spare Parts

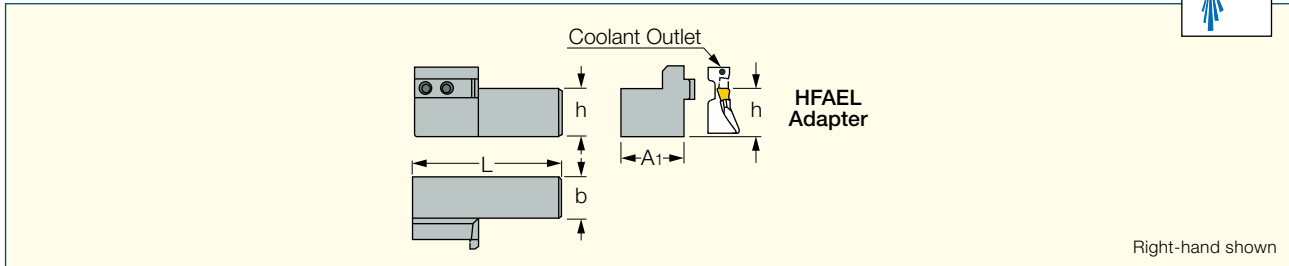


Designation	Extractor
HFFR/L-T	EDG 33B*

* Optional, should be ordered separately

HAR/L

Face Machining Adapter Holders



Designation	L	b	h	A ₁
HAR/L 25C	110.00	25.0	25.0	39.00
HAR/L 32C	130.00	32.0	32.0	46.00

• Holders for adapters HFAER/L & HGAER/L, HFAIR/L & HGAIIR/L.

For tools, see pages: HFAER/L-4T (E24) • HFAER/L-5,6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5,6T (E32) • HGAER/L-3 (E24) • HGAIIR/L-3 (E30).

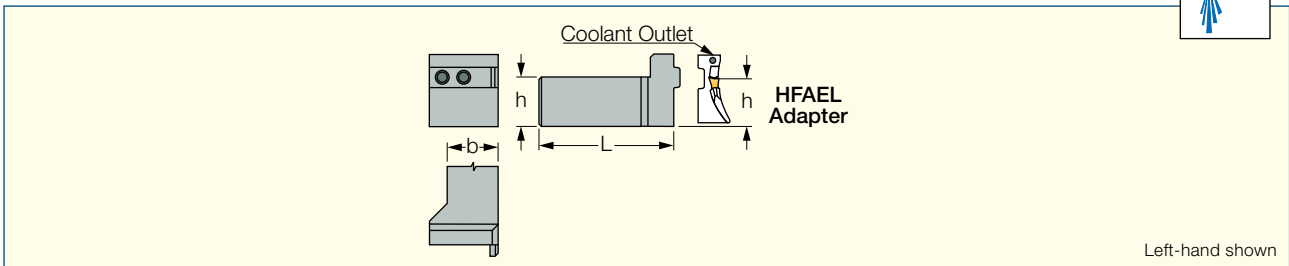
Spare Parts



Designation	Screw	Key
HAR/L	SR 14-519	T-20/3

HAPR/L

Face Machining Perpendicular Holders for Adapters



Designation	L	h	b
HAPR/L 25C	124.00	25.0	25.0
HAPR/L 32C	139.00	32.0	32.0

• Holders for adapters HFAER/L & HGAER/L, HFAIR/L & HGAIIR/L.

For tools, see pages: HFAER/L-4T (E24) • HFAER/L-5,6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5,6T (E32) • HGAER/L-3 (E24) • HGAIIR/L-3 (E30).

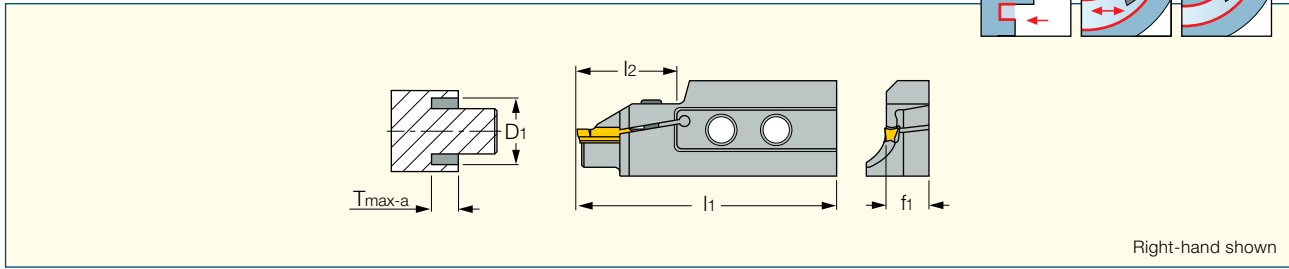
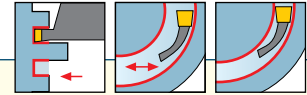
Spare Parts



Designation	Screw	Key
HAPR/L	SR 14-519	T-20/3

HGAER/L-3

Adapters for External Facing Along Shafts



Designation	T _{max-a}	W	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	l ₂	f ₁	l ₁
HGAER/L 12-3M	2.00	3.00	12.0	500.0	21.0	10.2	55.00
HGAER/L 12-3T6	6.00	3.00	12.0	15.0	21.0	10.2	55.00
HGAER/L 14-3T7	7.00	3.00	14.0	17.0	21.0	10.2	55.00
HGAER/L 17-3T8	8.00	3.00	17.0	21.0	21.0	10.2	55.00
HGAER/L 21-3T9	9.00	3.00	21.0	25.0	21.0	10.2	55.00

• GRIP 3... inserts can be used with right-hand adapters only, HGPL 3 with left-hand adapters. • For user guide, see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: GRIP (E36) • GRIP (Full Radius) (E37) • HGPL (E39).

For holders, see pages: C#-HAD (G9) • C#-HAPR/L (G9) • HAPR/L (E23) • HAR/L (E23) • IM-HAD (G28) • IM-HAPR/L (G29).

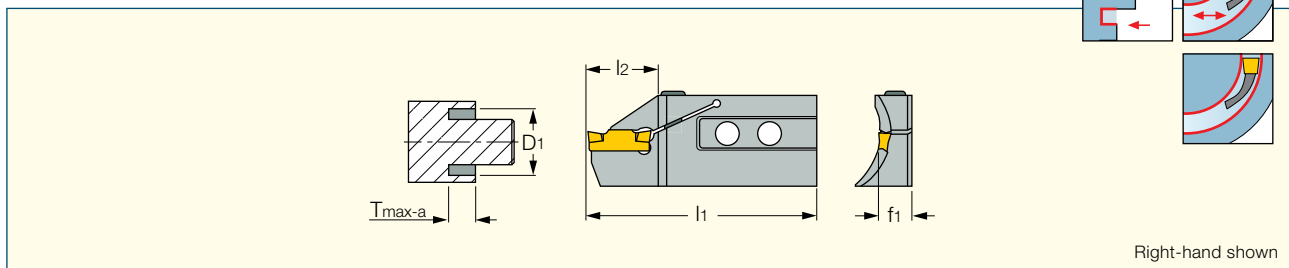
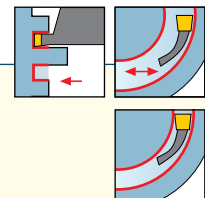
Spare Parts



Designation	Screw	Key
HGAEL 12-3M	SR 16-236 P	T-15/5
HGAER 12-3M	SR 16-236 P	T-15/3
HGAEL 12-3T6	SR 16-236 P	T-15/5
HGAER 12-3T6	SR 16-236 P	T-15/3
HGAER/L 14-3T7	SR 16-236 P	T-15/3
HGAEL 17-3T8	SR 16-236 P	T-15/5
HGAER 17-3T8	SR 16-236 P	T-15/3
HGAER/L 21-3T9	SR 16-236 P	T-15/3

HFAER/L-4T

Adapters for External Facing Along Shafts



Designation	T _{max-a}	W	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	l ₁	l ₂	f ₁
HFAER/L 40-4T20	20.00	4.00	40.0	48.0	68.50	32.5	11.6
HFAER/L 48-4T20	20.00	4.00	48.0	60.0	68.50	32.5	11.6
HFAER/L 60-4T25	25.00	4.00	60.0	75.0	68.50	32.5	11.6
HFAER/L 75-4T25	25.00	4.00	75.0	100.0	68.50	32.5	11.6

• DGN & GRIP inserts can be used only with right-hand adapters, HGPL inserts with left-hand blades. • For user guide, see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35) • GRIP (E36) • GRIP (Full Radius) (E37) • DGN/DGNC/DGNM-C (E37)

• DGN/DGNM-J/JS/JT (E38) • DGN-UT/UA (D27) • HGPL (E39).

For holders, see pages: C#-HAD (G9) • C#-HAPR/L (G9) • HAPR/L (E23) • HAR/L (E23) • IM-HAD (G28) • IM-HAPR/L (G29).

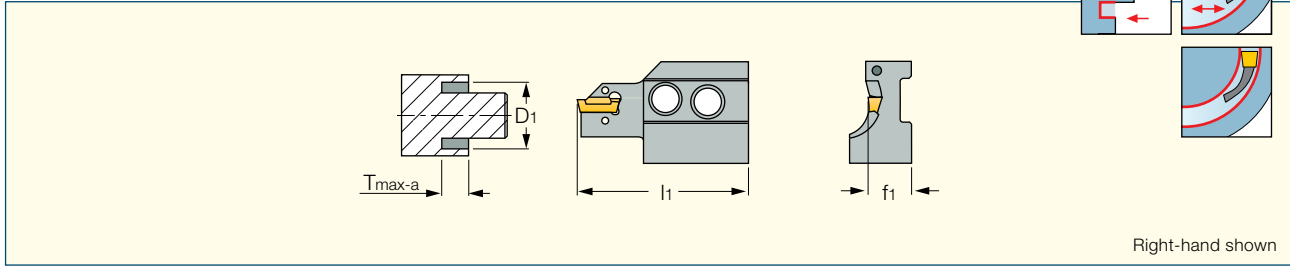
Spare Parts



Designation	Screw	Key
HFAER/L-4T	SR M5X16DIN912	HW 4.0

HFAER/L-5,6T

Adapters for External Facing Along Shafts



Right-hand shown

Designation	W	T _{max-a}	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	l ₁	f ₁
HFAER/L 70C-5T25	5.00	25.00	70.0	95.0	66.00	12.2
HFAER/L 95C-5T25	5.00	25.00	95.0	130.0	66.00	12.2
HFAER/L 70C-6T28	6.00	28.00	70.0	100.0	69.00	12.3
HFAER/L 100C-6T32	6.00	32.00	100.0	180.0	73.00	12.3
HFAER/L 180C-6T32	6.00	32.00	180.0	400.0	73.00	12.3

• After initial groove, no limitation to widening groove outward from or toward center. • Adapters can be mounted on standard HAR/L, HAPR/L, HAI holders for external machining. • DGN & GRIP inserts can be used only with right-hand adapters, HGPL inserts with left-hand blades. • For user guide, see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35) • GRIP (E36) • GRIP (Full Radius) (E37) • DGN/DGNC/DGNM-C (E37) • DGN/DGNM-J/JS/JT (E38) • DGN-UT/UA (D27) • DGN-W (D25) • HGPL (E39).

For holders, see pages: C#-HAD (G9) • C#-HAPR/L (G9) • HAPR/L (E23) • HAR/L (E23) • IM-HAD (G28) • IM-HAPR/L (G29).

Spare Parts

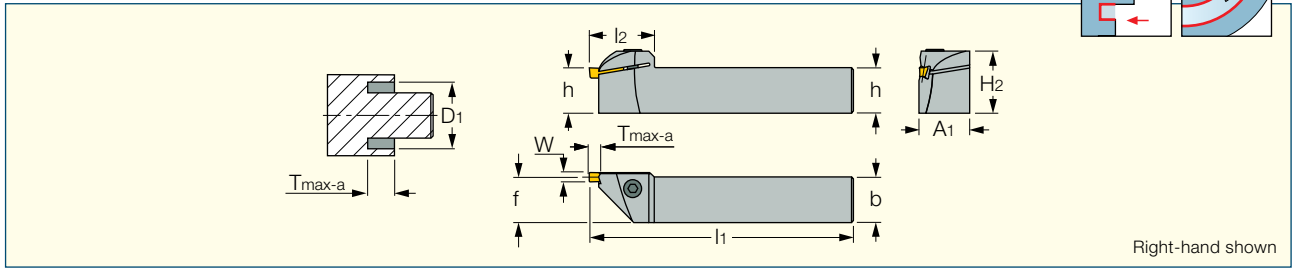
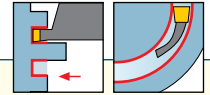


Designation	Extractor
HFAER/L-5,6T	EDG 33B*

* Optional, should be ordered separately

HFHR/L-M

Toolholders for Shallow Face Grooving



Designation	W _{min}	W _{max}	T _{max-a}	h	b	l ₁	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	H ₂	A ₁
HFHR/L 20M	3.00	6.00	5.30	20.0	20.0	130.00	20.0	2000.0	29.0	22.50
HFHR/L 25M	3.00	6.00	5.30	25.0	25.0	150.00	20.0	2000.0	34.0	27.50

• DGN & GRIP 4.. - 6.. inserts can be used only with right-hand tools, HGPL 4.. - 6.. inserts with left-hand tools. • After initial groove, no limitation to widening groove outward or toward center. • For user guide, see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

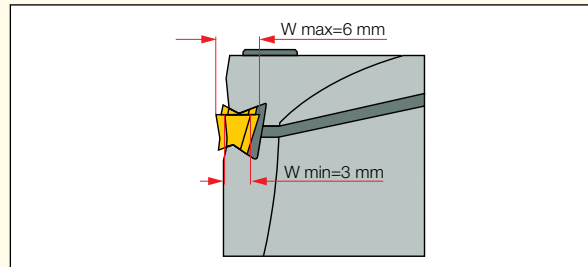
For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35).

HFHR/L-□M & HFPR/L-□M Integral Toolholders

For shallow machining to max. 5 mm depth of groove. One toolholder can be mounted with inserts in 3-6 mm widths.

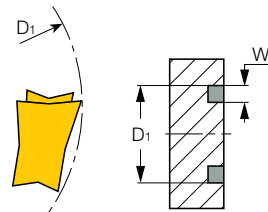
The initial major diameter groove is limited by the insert geometry in each size.

After initial groove, face recessing outward or toward center is not limited by insert geometry.



Insert initial face grooving range

W	D ₁	
	Min.	Max.
3	25.6	51.5
4	24.1	73.7
5	22.1	170
6	20.8	∞



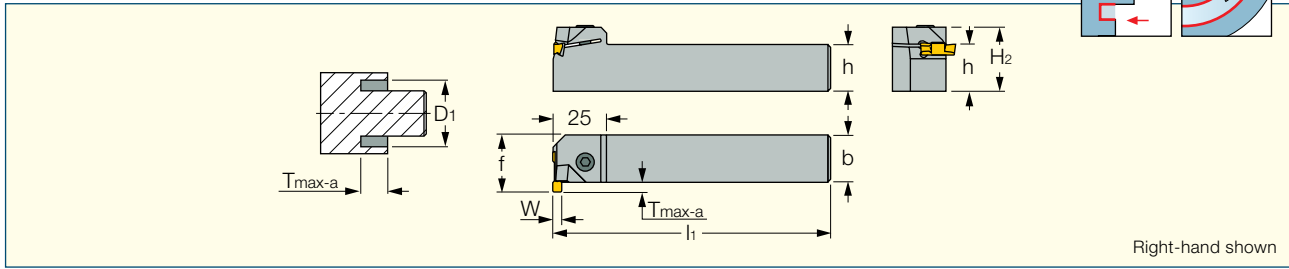
Spare Parts



Designation	Screw	Screw 1	Key
HFHR/L 20M		SR M6X20DIN912	HW 5.0
HFHL 25M		SR M6X20DIN912	HW 5.0
HFHR 25M	SR M6X16DIN912		HW 5.0

HFHPR/L-M

Perpendicular Toolholders for Shallow Face Grooving



Designation	W _{min}	W _{max}	T _{max-a}	f	h	b	l ₁	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	H ₂
HFHPR/L 20M	3.00	6.00	5.00	25.3	20.0	20.0	130.00	20.0	2000.0	29.0
HFHPR/L 25M	3.00	6.00	5.00	30.3	25.0	25.0	150.00	20.0	2000.0	34.0

• DGN & GRIP 4.. - 6.. inserts can be used only with right-hand tools, HGPL 4.. - 6.. inserts with left-hand tools. • After initial groove, no limitation to widening groove outward or toward center. • For user guide, see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35).

Spare Parts



Designation	Screw	Key
HFHPR/L-M	SR M6X20DIN912	HW 5.0

Boring Bars for Adapters



HGAIR/L & HFAIR/L Adapters and HAI Holders

Adapter clamped on HAI round shank holders can machine deep internal boring and grooving applications. The tool can bore down to bottom. Tool is supplied with internal coolant for better performance.



HFAIR/L & HGAIR/L
Exchangeable adapters, see pages B268, B270.

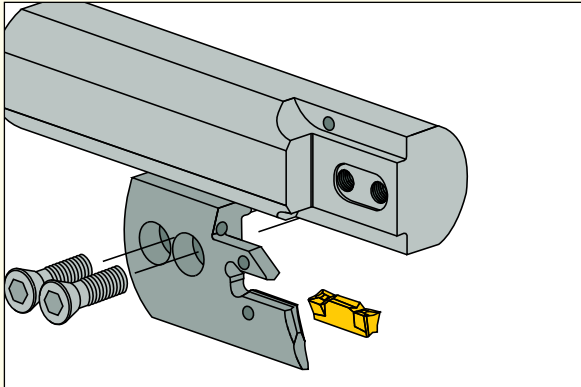


HAI Holders for adapters, see page B269.

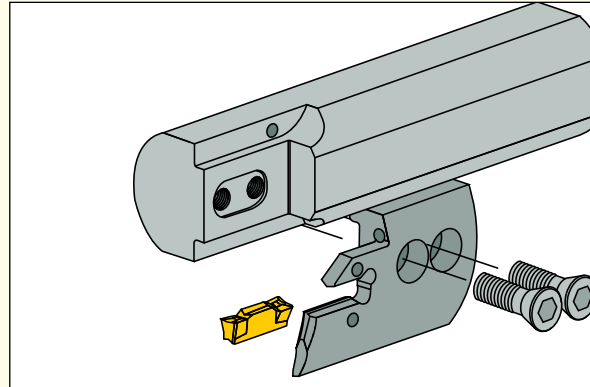
HFAIR/L HGAIR/L	- □	C	- □	T □
HELIFACE Internal adapters Right or left	Min. initial groove diameter	Internal coolant	Insert width	Max. depth of groove

Boring Bars for Adapters

HAI Holder System Assembly



HFAIL & HGAIL
Left-hand Adapters

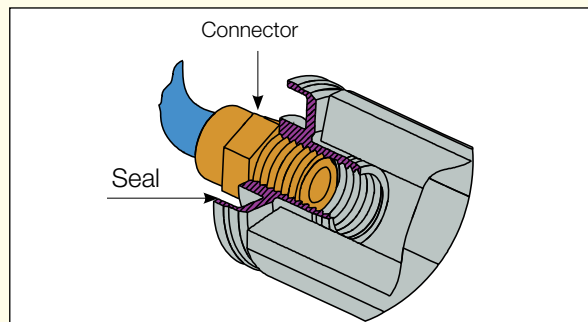
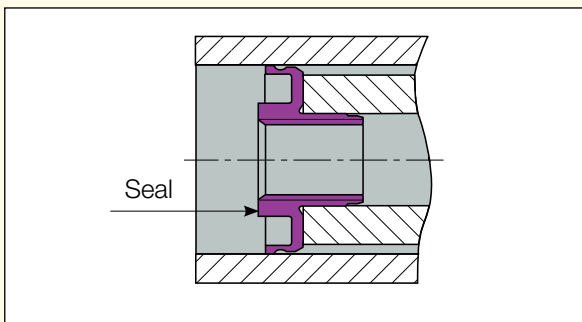
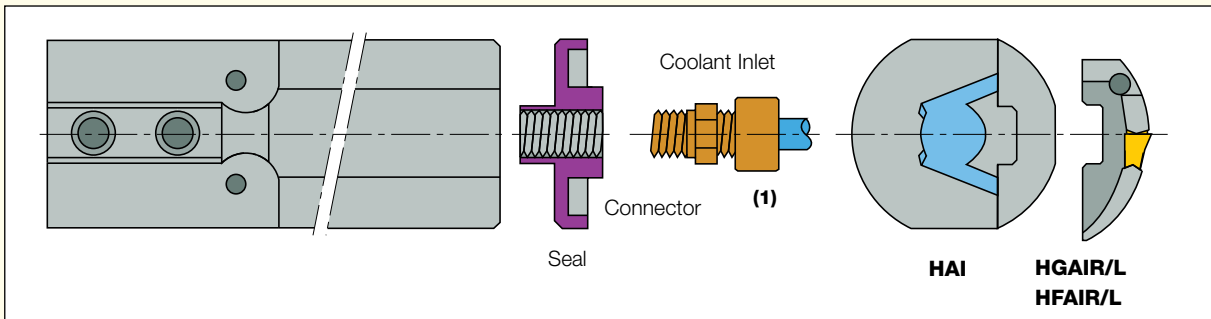


HFAIR & HGAIR
Right-hand Adapters

The same HAI boring bar can be used with right- and left-hand adapters in a wide range of face machining applications. The two screws and the central guiding

slot on the adapter correspond to the key and holes on the holder ensuring strong, safe, and accurate clamping.

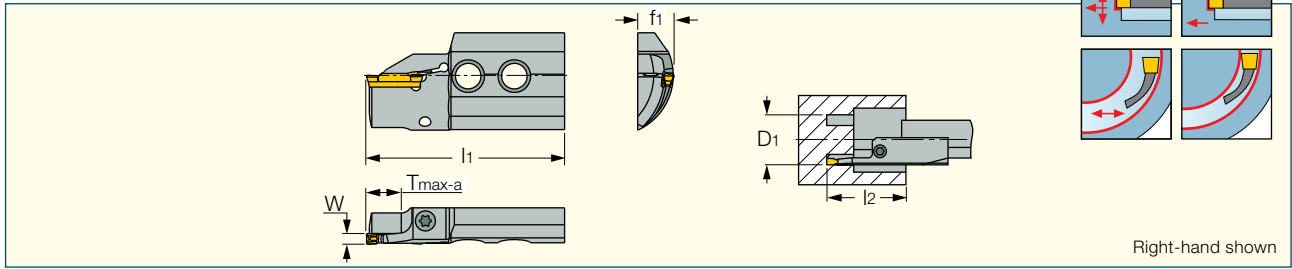
Coolant System



⁽¹⁾ Connector for coolant inlet BSP 1/8 thread. For PL-20, use M6 thread.
Connector not supplied with tools.

HGAIR/L-3

Adapters for Internal Face Grooving and Turning



Designation	T _{max-a}	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	W	l ₁	f ₁	l ₂
HGAIR/L 12-3M	2.00	12.0	500.0	3.00	55.00	10.2	21.0
HGAIR/L 12-3T6	6.00	12.0	15.0	3.00	55.00	10.2	21.0
HGAIR/L 14-3T7	7.00	14.0	17.0	3.00	55.00	10.2	21.0
HGAIR/L 17-3T8	8.00	17.0	21.0	3.00	55.00	10.2	21.0
HGAIR/L 21-3T9	9.00	21.0	25.0	3.00	55.00	10.2	21.0
HGAIR/L 25-3T9	9.00	25.0	34.0	3.00	55.00	10.2	21.0
HGAIR/L 35-3T10	10.00	35.0	45.0	3.00	56.00	10.3	22.0
HGAIR/L 45-3T10	10.00	45.0	65.0	3.00	56.00	10.3	22.0
HGAIR/L 65-3T18	18.00	65.0	115.0	3.00	64.00	11.3	30.0
HGAIR/L 115-3T18	18.00	115.0	400.0	3.00	64.00	11.3	30.0

• GRIP 3... inserts can be used with right-hand adapters only, HGPL 3 with left-hand adapters. • For user guide, see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: GRIP (E36) • GRIP (Full Radius) (E37) • HGN-C (D30) • HGN-J (D30) • HGN-UT (D31) • HGPL (E39).

For holders, see pages: C#-HAD (G9) • C#-HAPR/L (G9) • HAI-C (E31) • HAPR/L (E23) • HAR/L (E23) • IM-HAD (G28) • IM-HAPR/L (G29).

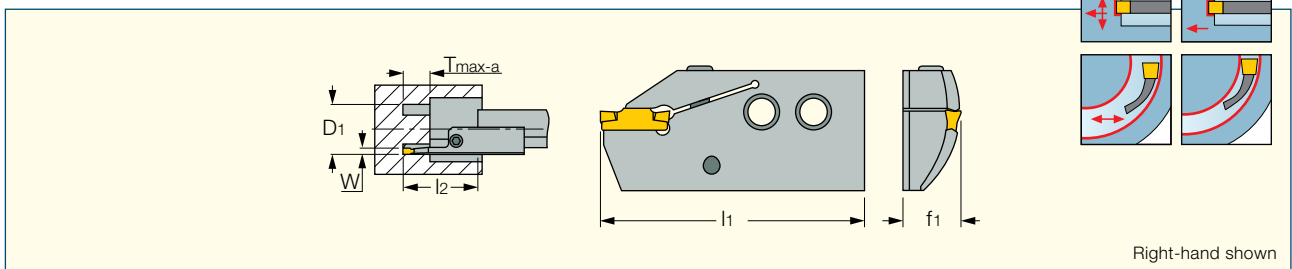
Spare Parts



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

HFAIR/L-4T

Adapters for Internal Face Grooving and Turning



Designation	T _{max-a}	W	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	l ₁	f ₁	l ₂
HFAIR/L 34-4T18	18.00	4.00	34.0	40.0	67.00	15.3	33.0
HFAIR/L 40-4T20	20.00	4.00	40.0	48.0	67.00	15.3	33.0
HFAIR/L 48-4T20	20.00	4.00	48.0	60.0	67.00	15.3	33.0
HFAIR/L 60-4T25	25.00	4.00	60.0	75.0	67.00	15.3	33.0

• DGN & GRIP inserts can be used only with right-hand adapters, HGPL inserts with left-hand blades. • For user guide, see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35) • GRIP (E36) • GRIP (Full Radius) (E37) • DGN/DGNC/DGNM-C (E37) • DGN/DGNM-J/JS/JT (E38) • HGPL (E39).

For holders, see pages: C#-HAD (G9) • C#-HAPR/L (G9) • HAI-C (E31) • HAPR/L (E23) • HAR/L (E23) • IM-HAD (G28) • IM-HAPR/L (G29).

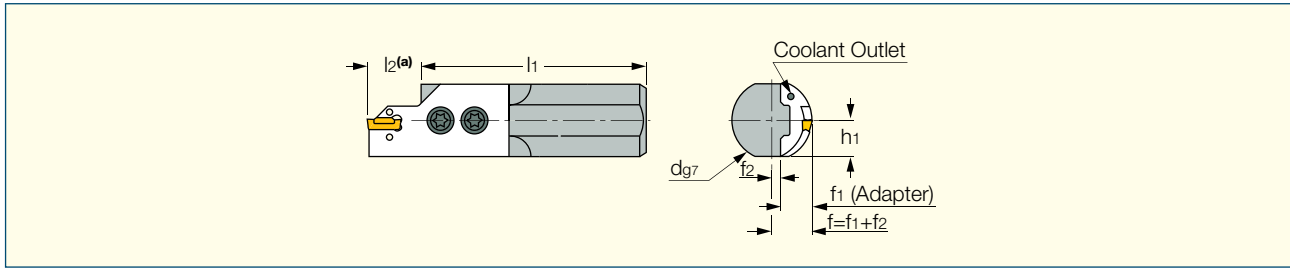
Spare Parts



Designation	Screw	Key
HFAIR/L-4T	SR M5X16DIN912	HW 4.0

HAI-C

Boring Bars with Coolant Holes for Internal Grooving and Turning Adapters



Designation	d	l ₁	h ₁	f ₂	Coolant
HAI 20	20.00	130.00	9.0	0.50	N
HAI 25C	25.00	150.00	11.5	3.00	Y
HAI 32C	32.00	200.00	14.5	6.50	Y
HAI 40C	40.00	250.00	18.0	10.50	Y

• (a) l3- see sketch on page ... • The HAI boring bars can be used with right- and left-hand adapters.

For tools, see pages: HFAIR/L-4T (E30) • HFAIR/L-5,6T (E32) • HGAIR/L-3 (E30).

Spare Parts

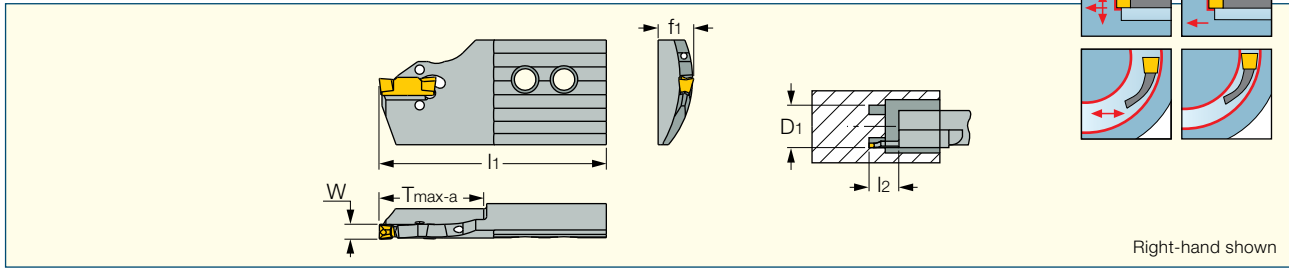


Designation	Screw	Key	Seal
HAI 20	SR 14-519	T-20/3	
HAI 25C	SR 14-519	T-20/3	PL 25
HAI 32C	SR 14-519	T-20/3	PL 32
HAI 40C	SR 14-519	T-20/3	PL 40



HFAIR/L-5,6T

Adapters for Internal Face Grooving and Turning



Designation	T _{max-a}	W	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	f ₁	l ₂	l ₁
HFAIR/L 55C-5T25	25.00	5.00	55.0	70.0	11.9	32.0	66.00
HFAIR/L 70C-5T25	25.00	5.00	70.0	95.0	11.9	32.0	66.00
HFAIR/L 70C-6T28	28.00	6.00	70.0	100.0	12.0	35.0	69.00
HFAIR/L 100C-6T32	32.00	6.00	100.0	180.0	12.0	39.0	73.00

• After initial groove, no limitation to widening groove outward or toward center.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35) • GRIP (E36) • GRIP (Full Radius) (E37) • DGN/DGNC/DGNM-C (D24) • DGN/DGNM-J/JS/JT (E38) • DGN-W (D25) • HGPL (E39).

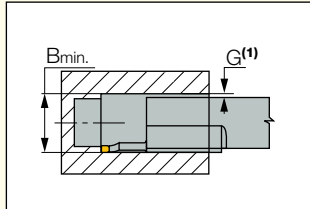
For holders, see pages: C#-HAD (G9) • C#-HAPR/L (G9) • HAI-C (E31) • HAPR/L (E23) • HAR/L (E23) • IM-HAD (G28) • IM-HAPR/L (G29).

Adapters can be used for internal machining along bore.
Adapters can be mounted on standard HAI boring bars for internal machining and on HAR/L, HAPR/L holders for external machining

Boring, Face Grooving & Face Recessing Capacity

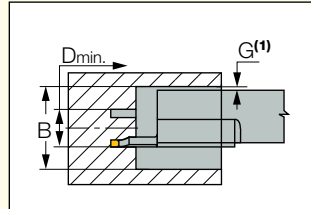
Boring

$$B \text{ Min. } = F + G + d/2$$



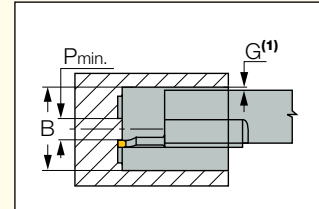
Face Grooving

$$D \text{ Min. } = 2F - B + 2G + d$$



Face Recessing

$$P \text{ Min. } = 2F - B - 2W + 2G + d$$



⁽¹⁾ The minimum recommended value for clearance (G) is 0.5 mm.

Spare Parts

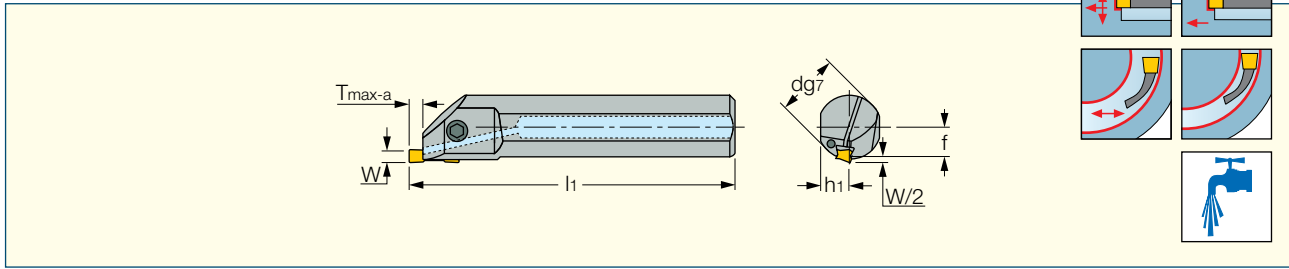


Designation	Extractor
HFAIR/L-5,6T	EDG 33B*

* Optional, should be ordered separately

HFIR/L-MC

Boring Bars for Internal Grooving and Turning



Designation	W _{min}	W _{max}	d	l ₁	f _{±0.10}	h ₁	T _{max-a}
HFIR/L 25MC	4.00	6.00	25.00	200.00	11.14	11.5	5.00
HFIR/L 32MC	4.00	6.00	32.00	250.00	14.68	14.5	5.00
HFIR/L 40MC	4.00	6.00	40.00	300.00	18.70	18.0	5.00

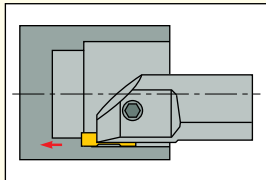
• DGN & GRIP 4.. - 6.. inserts can be used only with right-hand tools, HGPL 4.. - 6.. inserts with left-hand tools. • After initial groove, no limitation to widening groove outward or toward center. • For user guide, see pages E52-68.

For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35) • GRIP (E36) • GRIP (Full Radius) (E37) • DGN/DGNC/DGNM-C (E37)

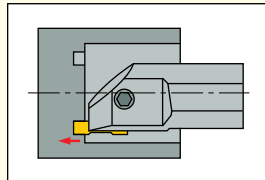
• DGN/DGNM-J/JS/JT (E38) • DGN-UT/UA (D27) • DGN-W (D25) • HGPL (E39).

For holders, see pages: SC-T (Sleeves) (G21).

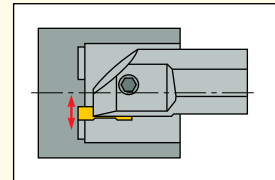
Boring



Internal Face Grooving



Internal Face Recessing



HFIR/L-: MC Integral Boring bars

For shallow, internal face machining to max. 5 mm depth of groove. One boring bar can be mounted with inserts in 4-6 mm widths.

The initial major diameter groove is limited by the insert geometry in each size.

After initial groove, face recessing outward or toward center is not limited by insert geometry.

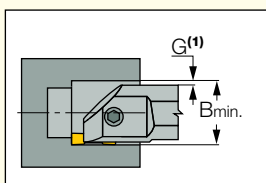
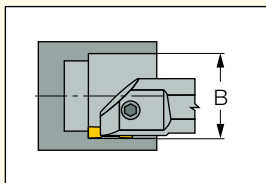
Insert Initial Face Grooving Range

W	D	
	Min.	Max.
4	23	90
5	21	300
6	20	∞

Boring, Face Grooving & Face Recessing Capacity

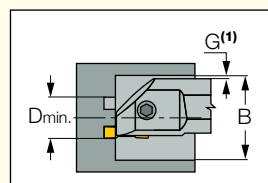
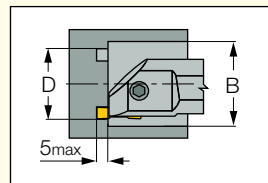
Boring

$$B \text{ Min.} = F + d/2 + W/2 + 2G$$



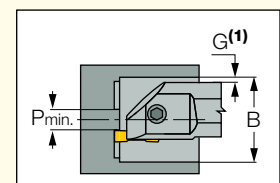
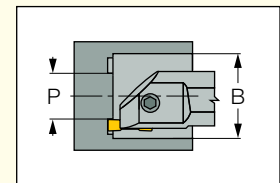
Face Grooving

$$D \text{ Min.} = 2F + d + W - B + 2G$$



Face Recessing

$$P \text{ Min.} = 2F + d - W - B + 2G$$



⁽¹⁾ The minimum recommended value for clearance (G) is 0.5 mm.

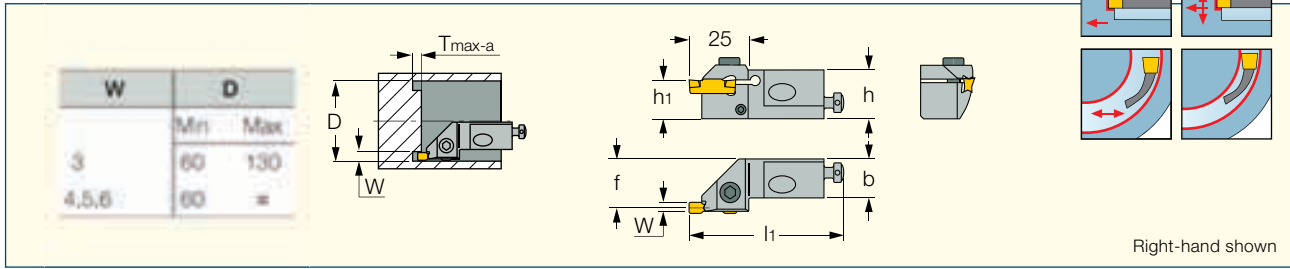
Spare Parts



Designation	Screw	Key	Seal
HFIR/L 25MC	SR M5X16DIN912	HW 4.0	PL 25
HFIR/L 32MC	SR M6X20DIN912	HW 5.0	PL 32
HFIR/L 40MC	SR M6X20DIN912	HW 5.0	PL 40

CR HFIR/L-M

Cartridges for Face Grooving and Turning



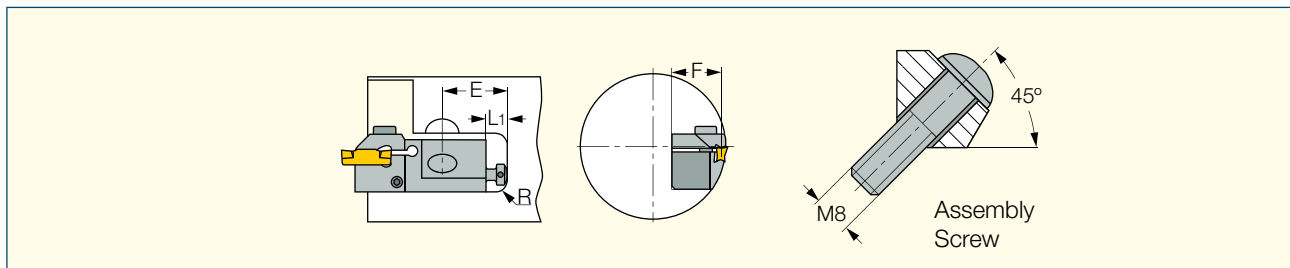
Designation	W _{min}	W _{max}	h ₁	b	h	l ₁	f	T _{max-a}
CR HFIR-16M	3.00	6.00	16.0	16.0	20.0	67.00	20.0	5.00
CR HFIR-20M	3.00	6.00	20.0	20.0	24.0	72.00	24.0	5.00

- Used for shallow internal face machining to max. 5 mm depth of groove
- Only DGN & GRIP 4...6... inserts can be used with the right-hand tools
- Inserts in 3-6 mm widths can be mounted on the cartridges

For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35) • GRIP (E36) • GRIP (Full Radius) (E37) • DGN/DGNC/DGNM-C (E37) • DGN/DGNM-J/JS/JT (E38) • DGN-UT/UA (D27) • DGN-W (D25).

CR-HFIR/L-M

Assembly Dimensions



Designation	E	L ₁ ⁽¹⁾	F ⁽²⁾	R _{max.}	Assembly Screw ⁽³⁾
CR HFIR/L-16M	25	8	20	6	M8X30
CR HFIR/L-20M	30	10	24	6	M8X30

⁽¹⁾ L adjustment ± 1.

⁽²⁾ F adjustment $\begin{matrix} +0.3 \\ -0 \end{matrix}$

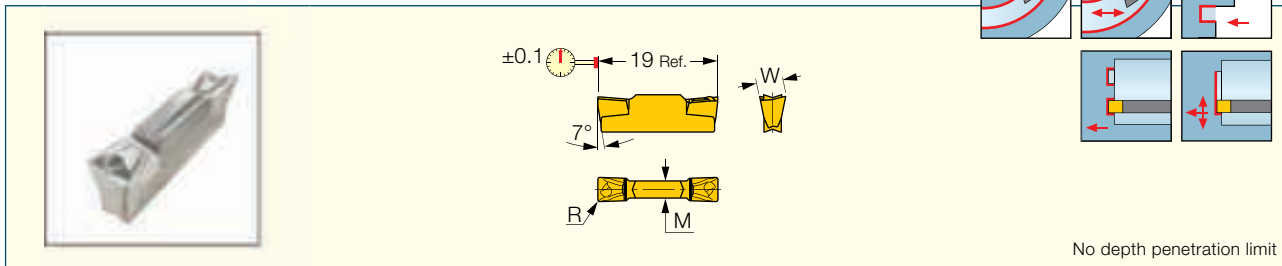
⁽³⁾ Assembly screws ISO 7380 are recommended.

Spare Parts

Designation	Upper Locking Screw	Key	Rear Adjusting Screw	Screw	Side Adjustment Screw	Hex Key
CR HFIR-16M	SR M5X20DIN912	HW 4.0	SR 76-1401		SR M4X10DIN916	HW 2.0
CR HFIR-20M	SR M5X20DIN912	HW 4.0	SR 76-1401	SR M4X10DIN913		HW 2.0

HFPR/L

Utility, Double-Ended, Face Machining Inserts



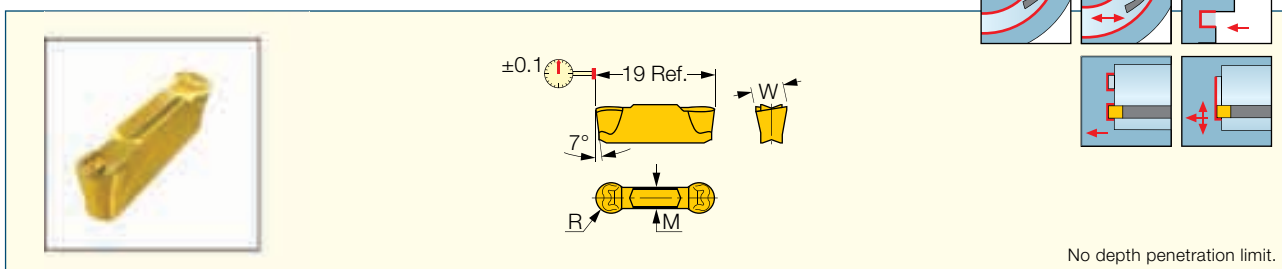
Designation	Dimensions					Tough ↔ Hard									Recommended Machining Data			
	W ^{±0.05}	R ^{±0.05}	M	D _{1 min}	D _{1 max}	IC328	IC830	IC354	IC9054	IC8250	IC9015	IC808	IC20	IC428	IC5010	a _p (mm)	f face-groove (mm/rev)	f face-turn (mm/rev)
HFPR/L 3003	3.00	0.30	2.1	25.6	51.5		●	●	●	●	●	●	●	●	●	0.30-1.50	0.08-0.20	0.10-0.20
HFPR/L 4004	4.00	0.40	2.8	24.1	73.7	●	●	●	●	●	●	●	●	●	●	0.40-2.00	0.10-0.24	0.15-0.25
HFPR/L 5004	5.00	0.40	3.4	21.0	170.0		●	●	●	●	●	●	●	●	●	0.50-2.50	0.12-0.24	0.15-0.35
HFPR/L 6004	6.00	0.40	4.0	20.8	-		●	●	●	●	●	●	●	●	●	0.40-3.00	0.12-0.28	0.15-0.40

• For cutting speed recommendations and user guide, see pages E52-68.

For tools, see pages: C#-HFIR/L-MC (G12) • CR HFIR/L-M (E34) • HFAER/L-4T (E24) • HFAER/L-5,6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5,6T (E32) • HFFR/L-T (E22) • HFHPR/L-M (E27) • HFHR/L-3T (E17) • HFHR/L-4T (E18) • HFHR/L-5T (E19) • HFHR/L-6T (E20) • HFHR/L-M (E26) • HFIR/L-MC (E33) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • IM-HFIR/L-MC (G29).

HFPR/L (Full Radius)

Utility Double-Ended Full Radius, Face Machining Inserts



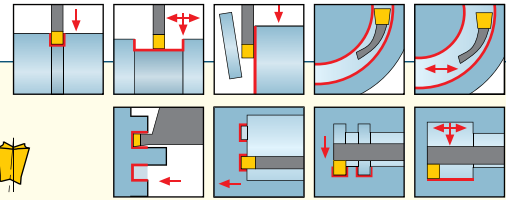
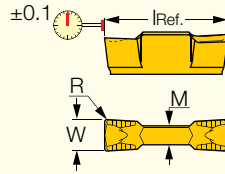
Designation	Dimensions					Tough ↔ Hard									Recommended Machining Data		
	W ^{±0.05}	R ^{±0.05}	M	D _{1 min}	D _{1 max}	IC830	IC354	IC9054	IC8250	IC9015	IC808	IC20	IC428	IC5010	a _p (mm)	f face-groove (mm/rev)	f face-turn (mm/rev)
HFPR/L 3015	3.00	1.50	2.1	25.6	51.5	●	●	●	●	●	●	●	●	●	0.00-1.50	0.08-0.20	0.12-0.20
HFPR/L 4020	4.00	2.00	2.8	24.1	73.7	●	●	●	●	●	●	●	●	●	0.00-2.00	0.10-0.24	0.15-0.25
HFPR/L 5025	5.00	2.50	3.4	22.1	170.0	●	●	●	●	●	●	●	●	●	0.00-2.50	0.12-0.24	0.15-0.35
HFPR/L 6030	6.00	3.00	4.0	20.8	-	●	●	●	●	●	●	●	●	●	0.00-3.00	0.12-0.28	0.20-0.40

• For cutting speed recommendations and user guide, see pages E52-68.

For tools, see pages: C#-HFIR/L-MC (G12) • CR HFIR/L-M (E34) • HFAER/L-4T (E24) • HFAER/L-5,6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5,6T (E32) • HFFR/L-T (E22) • HFHPR/L-M (E27) • HFHR/L-3T (E17) • HFHR/L-4T (E18) • HFHR/L-5T (E19) • HFHR/L-6T (E20) • HFHR/L-M (E26) • HFIR/L-MC (E33) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • IM-HFIR/L-MC (G29).

GRIP

Utility Double-Ended 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	IC418	IC808	IC908	IC5010	IC807	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
GRIP 5005Y	5.00	0.50	19.00	3.3	●	●	●	●	●	●	●	0.60-3.00	0.20-0.30	0.11-0.20	0.12-0.24	0.15-0.35
GRIP 5008Y	5.00	0.80	19.00	3.4	●	●	●	●	●	●	●	1.00-3.00	0.23-0.35	0.11-0.21	0.12-0.24	0.15-0.35
GRIP 6005Y	6.00	0.50	19.00	4.2	●	●	●	●	●	●	●	0.60-3.60	0.22-0.36	0.13-0.23	0.12-0.28	0.15-0.40
GRIP 6008Y	6.00	0.80	19.00	4.2	●	●	●	●	●	●	●	1.00-3.60	0.24-0.42	0.13-0.25	0.12-0.28	0.15-0.40
GRIP 635-080Y	6.35	0.80	19.00	4.2	●	●	●	●	●	●	●	1.00-3.80	0.25-0.44	0.14-0.27	0.12-0.28	0.15-0.40

• For cutting speed recommendations and user guide, see pages E52-68.

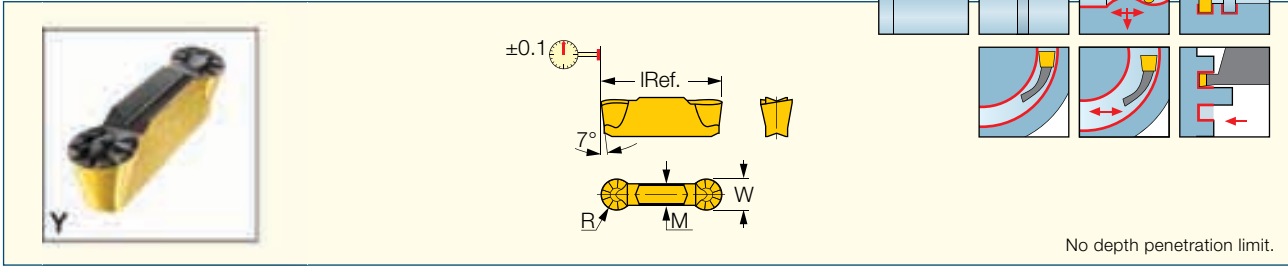
For tools, see pages: C#-HELIR/L (G10) • C#-HFIR/L-MC (G12) • CR HFIR/L-M (E34) • DGAD/HGAD (D22) • DGFH (B13) • DGFS (D12) • DGTR/L (D18) • HELIR/L (B93) • HELUR/L (B11) • HFAER/L-4T (E24) • HFAER/L-5,6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5,6T (E32) • HFFR/L-T (E22) • HFHR/L-4T (E18) • HFHR/L-5T (E19) • HFIR/L-MC (E33) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGAER/L-3 (E24) • HGAIIR/L-3 (E30) • HGFH (B12) • HGHR/L-3 (E16) • HGPAD (B12) • IM-HFIR/L-MC (G29).

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	IC418	IC808	IC908	IC5010	IC807	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	16.00	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
GRIP 5025Y	5.00	2.50	19.00	3.4	●	●	●	●	●	●	●	0.00-2.50	0.23-0.42	0.11-0.21	0.12-0.24	0.15-0.35
GRIP 6030Y	6.00	3.00	19.00	4.2	●	●	●	●	●	●	●	0.00-3.00	0.24-0.50	0.13-0.25	0.12-0.28	0.15-0.40
GRIP 635-318Y	6.35	3.18	19.00	4.0	●	●	●	●	●	●	●	0.00-3.10	0.25-0.53	0.14-0.27	0.12-0.28	0.15-0.40

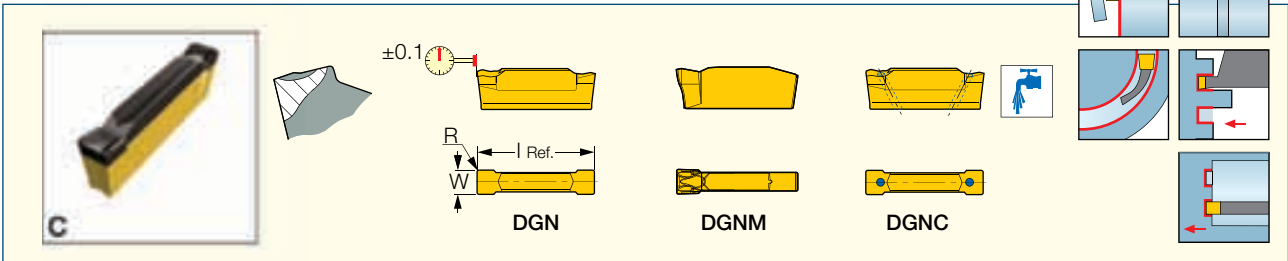
• For cutting speed recommendations and user guide, see pages E52-68.

For tools, see pages: C#-HELIR/L (G10) • C#-HFIR/L-MC (G12) • CR HFIR/L-M (E34) • DGAD/HGAD (D22) • DGFH (B13) • DGFS (D12) • DGTR/L (D18) • HELIR/L (B93) • HELIR/L (B11) • HFAER/L-4T (E24) • HFAER/L-5,6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5,6T (E32) • HFHR/L-T (E22) • HFHR/L-4T (E18) • HFHR/L-5T (E19) • HFIR/L-MC (E33) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGAER/L-3 (E24) • HGAIR/L-3 (E30) • HGFH (B12) • HGHR/L-3 (E16) • HGPAD (B12) • IM-HFIR/L-MC (G29).

DO-GRIP

DGN/DGNC/DGNM-C

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



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
DGN 4803C	4.80	0.04	0.30	- (3)	19.9	●	●	●	●	●	●	●	●	●	●	●	●	0.12-0.35
DGN 5003C	5.00	0.04	0.30	- (3)	19.1	●	●	●	●	●	●	●	●	●	●	●	●	0.12-0.35
DGN 6303C	6.35	0.04	0.35	- (3)	19.1	●	●	●	●	●	●	●	●	●	●	●	●	0.15-0.40

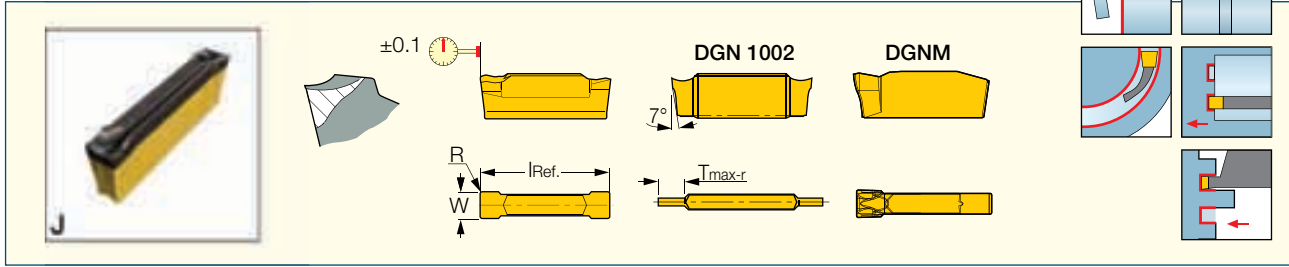
• Feed values for grade IC20 should be decreased by 50% • For cutting speed recommendations and user guide, see pages E52-68.

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

For tools, see pages: C#-HELIR/L (G10) • C#-HFIR/L-MC (G12) • CR HFIR/L-M (E34) • DGAD-B-D (D23) • DGAD/HGAD (D22) • DGFH (B13) • DGFHL-26B-TR-D (D14) • DGFHR/L (D11) • DGFHR/L-B-D..(R/L) (D13) • DGFS (D12) • DGTR/L (D18) • DGTR/L-B-D-SH (D15) • DGTR/L-B/BC-D (D16) • DGTR/L-BC-T (D19) • HELIR/L (B11) • HFAER/L-4T (E24) • HFAER/L-5,6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5,6T (E32) • HFHR/L-4T (E18) • HFIR/L-MC (E33) • HFPAD-4 (E21) • HFPAD-5 (E21) • HGPAD (B12) • IM-HFIR/L-MC (G29).

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 f groove (mm/rev)	
	W	W _{toler}	R	T _{max-r}	I _{Ref.}	IC328	IC830	IC928	IC1028	IC354	IC5400	IC308	IC808	IC908	IC807	IC907		IC20
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
DGN 4803J	4.80	0.04	0.30	- ⁽³⁾	20.4	●												0.05-0.20
DGN 5003J	5.00	0.04	0.30	- ⁽³⁾	19.0	●	●		●	●		●	●	●			●	0.05-0.20
DGN 5003JT	5.00	0.04	0.30	- ⁽³⁾	19.0			●						●				0.05-0.20
DGN 6303J	6.35	0.04	0.35	- ⁽³⁾	19.1	●	●		●	●		●	●	●			●	0.05-0.25
DGN 6303JT	6.35	0.04	0.35	- ⁽³⁾	19.1			●						●				0.05-0.25

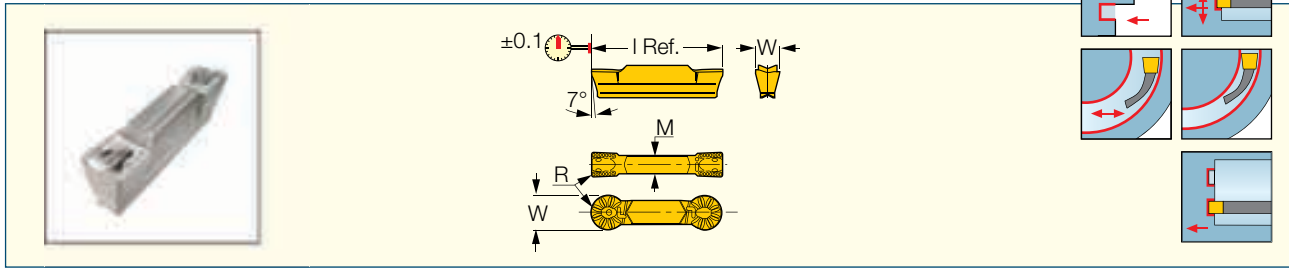
- JT chipformer has the basic positive configuration of the J-type and a reinforced negative frontal edge. Most suitable for soft materials at low to medium feeds.
- For cutting speed recommendations and user guide, see pages E52-68.

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

For tools, see pages: C#-HELIR/L (G10) • C#-HFIR/L-MC (G12) • CR HFIR/L-M (E34) • DGAD-B-D (D23) • DGAD/HGAD (D22) • DGFH (B13) • DGFHL-26B-TR-D (D14) • DGFHR/L (D11) • DGFHR/L-B-D..(R/L) (D13) • DGFS (D12) • DGTR/L (D18) • DGTR/L-B-D-SH (D15) • DGTR/L-B-D-TR (D19) • DGTR/L-B-T-SH (D17) • DGTR/L-B/BC-D (D16) • DGTR/L-BC-T (D19) • HELIR/L (B11) • HFAER/L-4T (E24) • HFAER/L-5,6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5,6T (E32) • HFFR/L-T (E22) • HFHR/L-4T (E18) • HFHR/L-5T (E19) • HFHR/L-6T (E20) • HFIR/L-MC (E33) • HFPAD-4 (E21) • HFPAD-5 (E21) • HGPAD (B12) • IM-HFIR/L-MC (G29).

HGPL

Utility Double-Ended Face Machining Insert



Designation	Dimensions				Tough ↔ 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
HGPL 5005Y	5.00	3.3	0.50	19.00		●		●	●	0.60-3.00	0.12-0.24	0.20-0.38
HGPL 5025Y	5.00	3.3	2.50	19.00			●	●	●	0.00-2.50	0.12-0.24	0.20-0.38
HGPL 6005Y	6.00	4.2	0.50	19.00		●	●	●	●	0.60-3.60	0.12-0.28	0.24-0.45
HGPL 6030Y	6.00	4.2	3.00	19.00			●	●	●	0.00-3.00	0.12-0.28	0.24-0.45

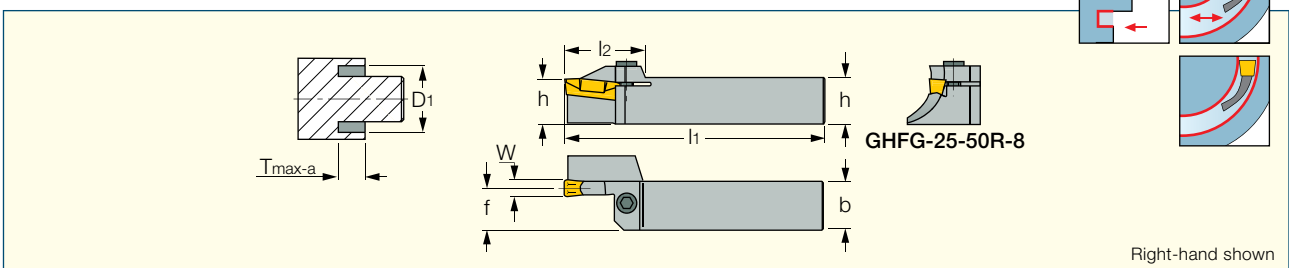
• No depth penetration limit • For cutting speed recommendations and user guide, see pages E52-68.

For tools, see pages: C#-HFIR/L-MC (G12) • HFAER/L-4T (E24) • HFAER/L-5,6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5,6T (E32) • HFFR/L-T (E22) • HFHR/L-4T (E18) • HFHR/L-5T (E19) • HFHR/L-6T (E20) • HFIR/L-MC (E33) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGAER/L-3 (E24) • HGAIR/L-3 (E30) • HGHR/L-3 (E16) • IM-HFIR/L-MC (G29).

CUT-GRIP

GHFG-R/L-8

Holders for Face Grooving and Turning Along Shafts



Designation	T _{max-a}	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	h	b	l ₁	f
GHFG 25-50R/L-8	25.00	50.0	64.0	25.0	25.0	150.00	22.0
GHFG 25-63R/L-8	25.00	63.0	82.0	25.0	25.0	150.00	22.0
GHFG 32-63R/L-8	25.00	63.0	82.0	32.0	32.0	170.00	29.0

• For user guide, see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: GDMM-CC (E46) • GDMY (E44) • GDMY (Full Radius) (E45) • GDMY-F (E45) • GIFG-E (W=8) (E43).

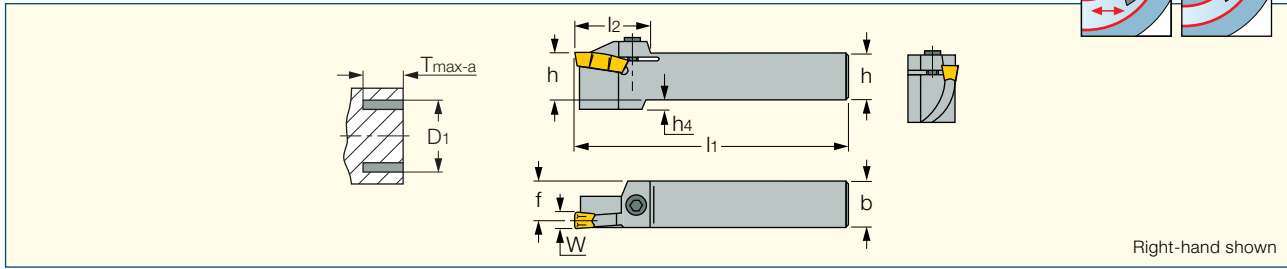
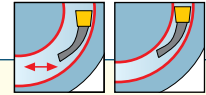
For holders, see pages: C#-ASHR/L (G12) • HSK A-WH-ASHR/L-1 (G19) • HSK A63WH-ASHR/L-2 (G20) • HSK A63WH-ASHR/L-3 (G20) • HSK A63WH-ASHR/L-45 (G19) • IM63 XMZ-ASHR/L-1 (G29).

Spare Parts

Designation	Screw	Key
GHFG-R/L-8	SR M6X25DIN912 UNB.	HW 5.0

GHFGR/L-8

Holders for Face Grooving and Turning



Right-hand shown

Designation	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	h	b	l ₁	l ₂	f	h ₄
GHFGR/L 25-80-8	80.0	115.0	25.0	25.0	150.00	43.5	21.3	6.0
GHFGR/L 32-80-8	80.0	115.0	32.0	32.0	170.00	43.5	28.3	-
GHFGR/L 25-105-8	105.0	160.0	25.0	25.0	150.00	43.5	21.3	6.0
GHFGR/L 32-105-8	105.0	160.0	32.0	32.0	170.00	43.5	28.3	-
GHFGR/L 25-155-8	155.0	510.0	25.0	25.0	150.00	43.5	21.3	6.0
GHFGR/L 32-155-8	155.0	510.0	32.0	32.0	170.00	43.5	28.3	-

- No limitation to widening groove either way after initial grooving. • Tmax depends on the penetration diameter and the insert.
- For user guide see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: GDMF (B29) • GDMM-CC (E46) • GDMN (B31) • GDMU (B31) • GDMY (E44) • GDMY (Full Radius) (E45) • GDMY-F (E45) • GIA-K (Long Pocket) (E44) • GIF (Long Pocket) (B43) • GIF-E (W=8,10 Full Radius) (B38) • GIF-E (W=8,10) (E43) • GIFG-E (W=8) (E43) • GIPA/GIDA 8 (Full Radius) (B48).

Tmax for GHFGR/L (25/32)-80-8							
D	GIF 8...	GIFG 8...	GDMY 8...	GIPA 8...	GIDA 8...	GIA 8...	GDMM 8CC...
80	16	23	23	20	24	16	24
82	17	23	23	20	24	17	24
84	18	23	23	21	24	18	24
86	19	23	23	21	24	19	24
88	20	23	23	22	24	20	24
90	20	23	23	22	24	20	24
96	20	23	23	22	24	20	24
104	20	23	23	22	24	20	24
115	22	23	23	22	24	22	24

Tmax for GHFGR/L (25/32)-105-8							
D	GIF 8...	GIFG 8...	GDMY 8...	GIPA 8...	GIDA 8...	GIA 8...	GDMM 8CC...
105	21	23	23	23	24	21	24
114	22	23	23	23	24	22	24
126	23	23	24	23	24	23	24
140-160	24	24	24	23	24	24	24

Tmax for GHFGR/L (25/32)-155-8							
D	GIF 8...	GIFG 8...	GDMY 8...	GIPA 8...	GIDA 8...	GIA 8...	GDMM 8CC...
155	24	24	24	23	24	24	24
180	24	24	24	23	24	24	24
210-510	24	24	24	23	24	24	24

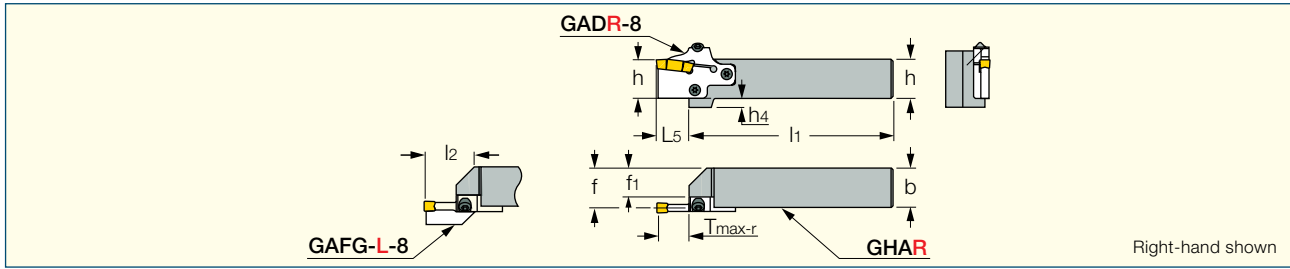
Spare Parts



Designation	Screw	Key
GHFGR/L 25-80-8	SR M6X25DIN912 UNB.	HW 5.0
GHFGR/L 32-80-8	SR M6X20DIN912	HW 5.0
GHFGR/L 25-105-8	SR M6X25DIN912 UNB.	HW 5.0
GHFGR/L 32-105-8	SR M6X25DIN912 UNB.	HW 5.0
GHFGR/L 25-155-8	SR M6X25DIN912 UNB.	HW 5.0
GHFGR/L 32-155-8	SR M6X25DIN912 UNB.	HW 5.0

GHAR/L-8

External Holders for Grooving and Turning Adapters



Designation	h	b	l ₁	l ₂	h ₄	T _G ⁽¹⁾	T _{max-r} ⁽²⁾	F _G ⁽³⁾	T _{max-a}
GHAR/L 25-8	25.0	25.0	150.00	45.0	14.0	GADR/L 8	25.50	GAFG...R/L-8	25.00
GHAR/L 32-8	32.0	32.0	170.00	45.0	7.0	GADR/L 8	25.50	GAFG...R/L-8	25.00

• Adapters GADR/L-8 for turning and grooving, GAFG-R/L-8 for face-grooving.

⁽¹⁾ Adapters to be ordered separately. ⁽²⁾ See specific adapter dimensions ⁽³⁾ Adapters to be ordered separately.

For tools, see pages: GADR/L-8 (B28) • GAFG-R/L-8 (E42).

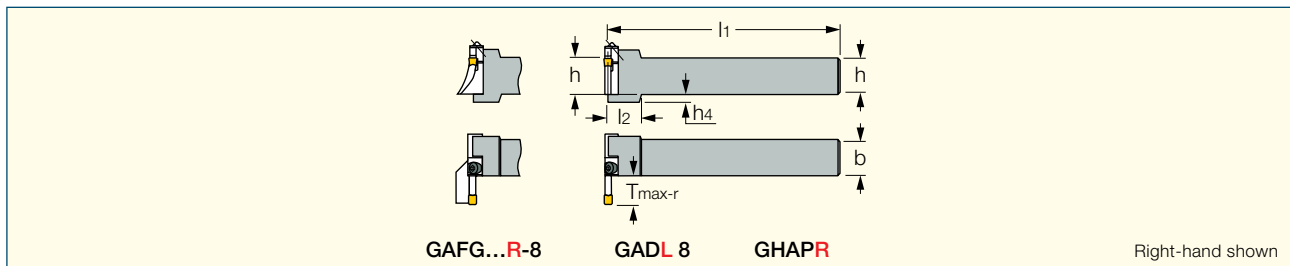
Spare Parts



Designation	Side Locking Screw	Key	Upper Locking Screw	Key 1
GHAR/L-8	SR 14-519	T-20/5	SR M6X25DIN912 UNB.	HW 5.0

GHAPR/L-8

External Holders for Grooving and Turning Perpendicularly Oriented Adapters



Designation	h	b	l ₁	l ₂	h ₄	T _G ⁽¹⁾	T _{max-r} ⁽²⁾	F _G ⁽³⁾	T _{max-a}
GHAPR/L 32-8	32.0	32.0	155.00	30.0	7.0	GADR/L 8	25.50	GAFG...R/L-8	26.00

⁽¹⁾ Adapters to be ordered separately ⁽²⁾ See specific adapter dimensions ⁽³⁾ Adapters to be ordered separately.

For tools, see pages: GADR/L-8 (B28) • GAFG-R/L-8 (E42).

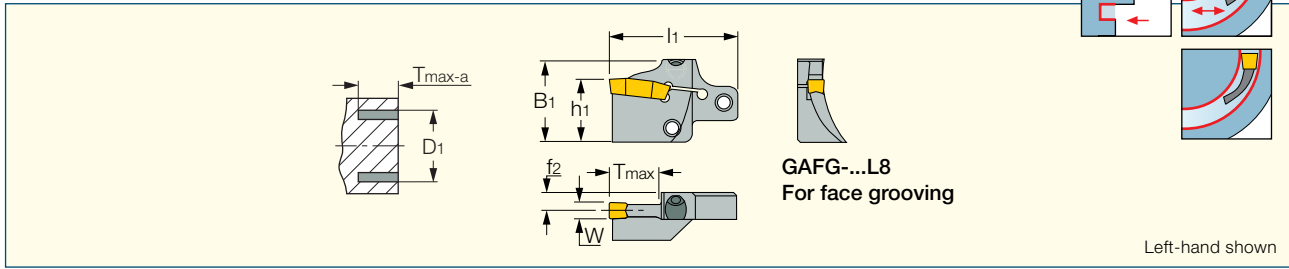
Spare Parts



Designation	Side Locking Screw	Key	Upper Locking Screw	Key 1
GHAPR/L 32-8	SR 14-519	T-20/5	SR M6X25DIN912 UNB.	HW 5.0

GAFG-R/L-8

Adapters for Face Machining



Designation	W	D1 min ⁽¹⁾	D1 max ⁽²⁾	Tmax-a ⁽³⁾	l1
GAFG 80R/L-8	8.00	80.0	115.0	23.00	63.50
GAFG 105R/L-8	8.00	105.0	160.0	25.00	63.50
GAFG 155R/L-8	8.00	155.0	510.0	25.00	63.50

• No limitation for widening of groove either way after initial grooving • For user guide, see pages E52-68.

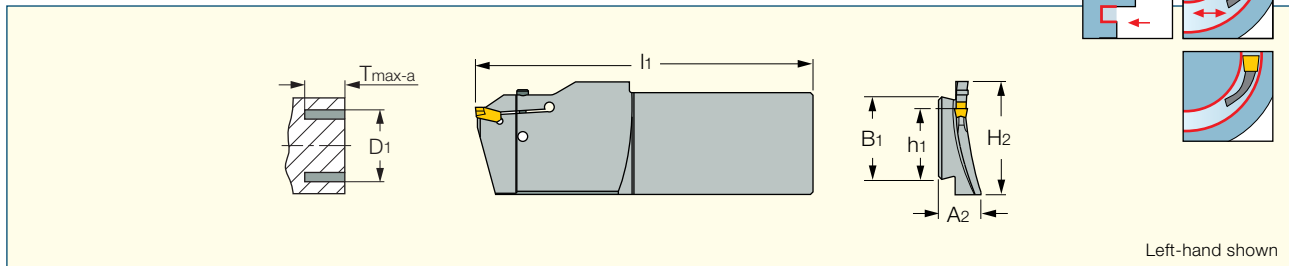
⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter ⁽³⁾ For GIFG-8 & GDMY-8 Tmax=25 mm (.984") for D range.

For inserts, see pages: GDMF (B29) • GDMM-CC (E46) • GDMN (B31) • GDMU (B31) • GDMY (E44) • GDMY (Full Radius) (E45) • GDMY-F (E45) • GIA-K (Long Pocket) (E44) • GIF (Long Pocket) (B43) • GIF-E (W=8,10 Full Radius) (B38) • GIF-E (W=8,10) (B35) • GIFG-E (W=8) (E43) • GIPA/GIDA 8 (Full Radius) (B48).

For holders, see pages: C#-GHAD-8 (G8) • C#-GHAPR/L-8 (G8) • GHAPR/L-8 (B27) • GHAR/L-8 (B27) • IM-GHAD-8 (G27) • IM-GHAPR/L-8 (G28).

CGFG 51-P8

Blades for Face Machining, Carry 8 mm Inserts



Designation	W	D1 min ⁽¹⁾	D1 max ⁽²⁾	Tmax-a	l1	H2	A2
CGFG 51-180R/L-P8	8.00	180.0	240.0	70.00	200.00	60.0	27.5
CGFG 51-240R/L-P8	8.00	240.0	320.0	80.00	210.00	70.0	26.0
CGFG 51-320R/L-P8	8.00	320.0	440.0	90.00	220.00	80.0	24.5
CGFG 51-440R/L-P8	8.00	440.0	700.0	100.00	230.00	90.0	22.5
CGFG 51-700R/L-P8	8.00	700.0	1500.0	120.00	250.00	100.0	20.0

• For user guide, see pages E52-68.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: GIMF (B29) • GIMM 8CC (E46) • GIMY (B30) • GIMY (Full Radius) (B32) • GIMY-F (B34).

For holders, see pages: SGTBK (F3) • SGTBU/SGTBN (F2).

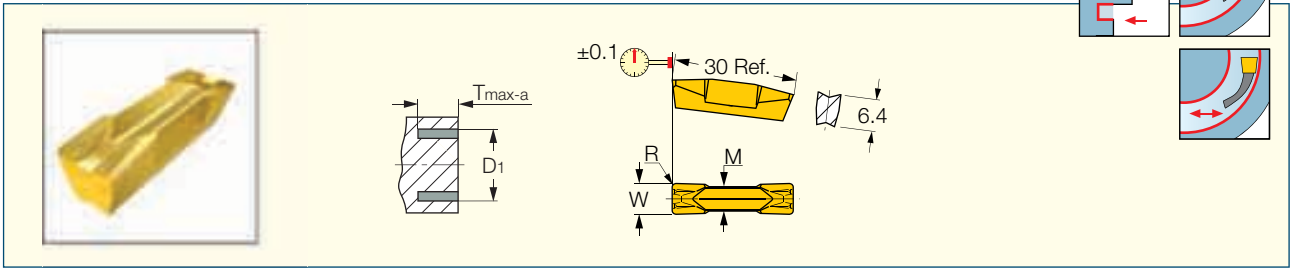
Spare Parts



Designation	Screw	Key
CGFG 51-P8	SR M4-2052	HW 3.0

GIFG-E (W=8)

Inserts for Deep Face Grooving and Turning



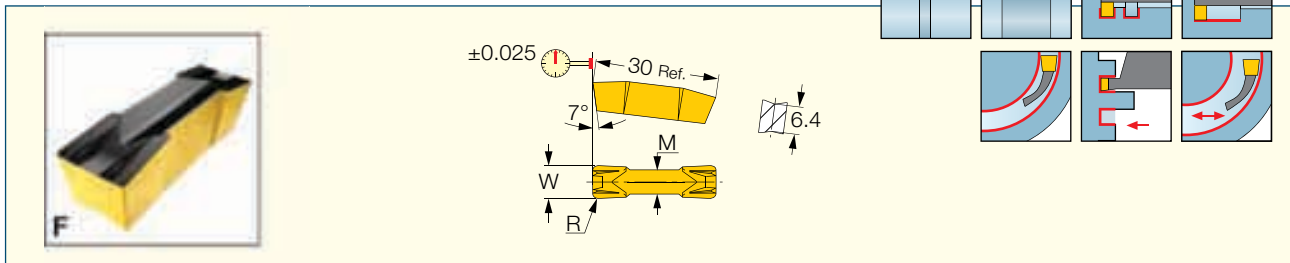
Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data
	W±0.02	R±0.05	D1 min	T _{max-a}	M	IC635	IC20	f face-groove (mm/rev)
GIFG 8.00E-0.80	8.00	0.80	50.0	25.00	6.0	●	●	0.15-0.25
GIFG 8.00E-1.20	8.00	1.20	50.0	25.00	6.0	●	●	0.15-0.25

• For cutting speed recommendations, see pages E52-68.

For tools, see pages: GAFG-R/L-8 (E42) • GHFG-R/L-8 (E39) • GHFGR/L-8 (E40).

GIF-E (W=8,10)

Precision Double-Ended Inserts for Turning and Grooving



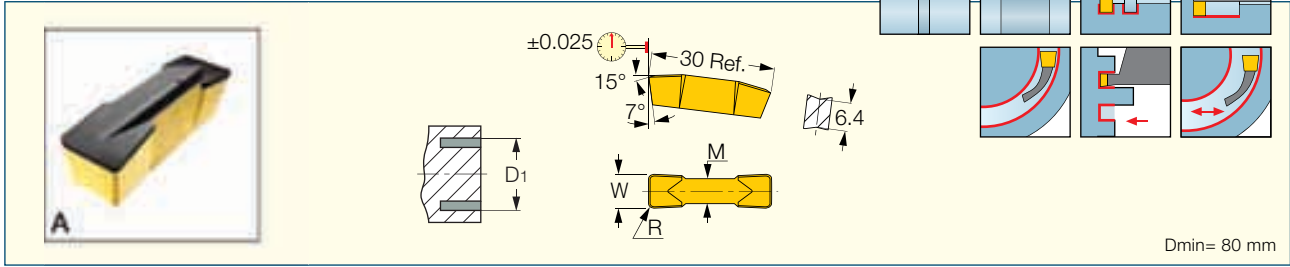
Designation	Dimensions				Tough ↔ Hard								Recommended Machining Data		
	W±0.02	R±0.05	M	T _{max-r}	IC830	IC8250	IC808	IC20	IC428	IC5010	IC807	IC806	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIF 8.00E-0.40	8.00	0.40	6.0	27.00	●	●	●	●	●	●	●	●	0.50-4.80	0.29-0.48	0.18-0.31
GIF 8.00E-0.80	8.00	0.80	6.0	27.00	●	●	●	●	●	●	●	●	1.00-4.80	0.32-0.56	0.18-0.34
GIF 8.00E-1.20	8.00	1.20	6.0	27.00	●	●	●	●	●	●	●	●	1.45-4.80	0.32-0.62	0.18-0.34
GIF 10.00E-0.80	10.00	0.80	8.0	27.00	●	●	●	●	●	●	●	●	1.00-6.00	0.35-0.65	0.22-0.40
GIF 10.00E-1.20	10.00	1.20	8.0	27.00	●	●	●	●	●	●	●	●	1.45-6.00	0.35-0.72	0.22-0.40

• Dmin for internal machining = 65 mm (2.26") • For cutting speed recommendations and user guide, see pages E52-68.

For tools, see pages: C#-GHDR/L (G11) • CGHN-8-10D (B28) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDR/L (Long Pocket) (B26) • GHDR/L-JHP (Long Pocket) (B26) • GHFGR/L-8 (E40) • GHIR/L (W=7.0-8.3) (B93).

GIA-K (Long Pocket)

Flat Top Precision Double-Ended Inserts with T-Land, for Machining Cast Iron



Dmin = 80 mm

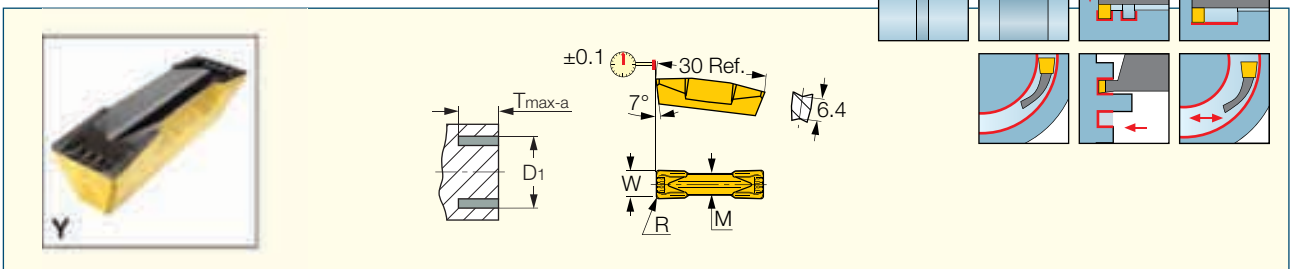
Designation	Dimensions					Tough ↔ Hard		Recommended Machining Data		
	W±0.02	R±0.05	M	T _{max-r}	D _{1 min}	IC428	IC5010	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GIA 8.00K-0.80	8.00	0.80	6.0	25.00	160.0	●	●	1.00-4.80	0.36-0.64	0.18-0.38
GIA 8.00K-1.20	8.00	1.20	6.0	25.00	160.0	●	●	1.45-4.80	0.36-0.70	0.18-0.38

• Dmin for internal machining = 65 mm (2.26") • For cutting speed recommendations and user guide, see pages E52-68.

For tools, see pages: C#-GHDR/L (G11) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDR/L (Long Pocket) (B26) • GHDR/L-JHP (Long Pocket) (B26) • GHFGR/L-8 (E40) • GHIR/L (W=7.0-8.3) (B93).

GDMY

Utility Double-Ended Inserts, for Turning and Grooving



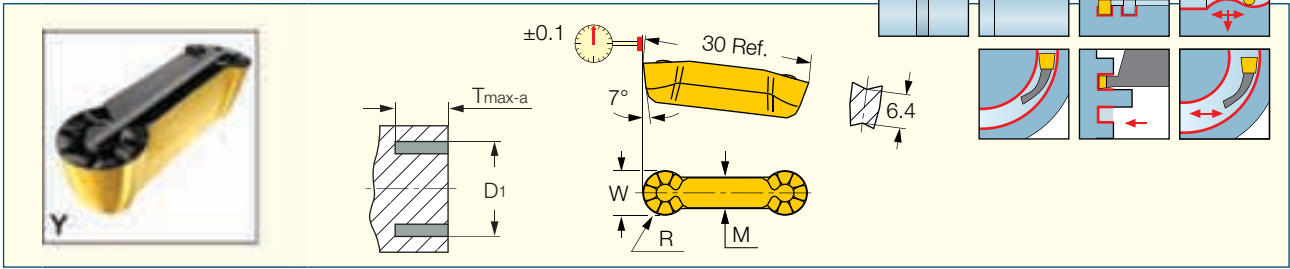
Designation	Dimensions					Tough ↔ Hard						Recommended Machining Data		
	W±0.05	R±0.05	M	D _{1 min}	T _{max-r}	IC830	IC8250	IC808	IC20	IC428	IC5010	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GDMY 808	8.00	0.80	6.0	50.0	27.00	●	●	●	●	●	●	1.00-4.80	0.32-0.56	0.18-0.34

• Dmin for internal machining = 65 mm (2.26") • For cutting speed recommendations and user guide, see pages E52-68.

For tools, see pages: C#-GHDR/L (G11) • CGHN-8-10D (B28) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDR/L (Long Pocket) (B26) • GHDR/L-JHP (Long Pocket) (B26) • GHFGR/L-8 (E39) • GHFGR/L-8 (E40) • GHIR/L (W=7.0-8.3) (B93).

GDMY (Full Radius)

Utility Double-Ended Full Radius Inserts for Grooving and Profiling



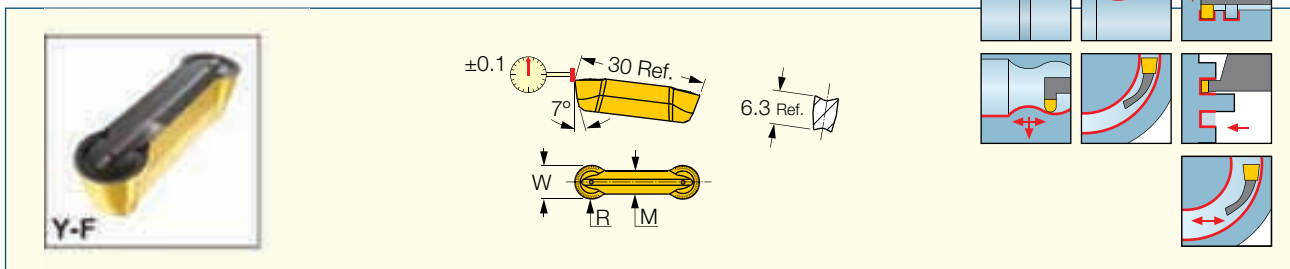
Designation	Dimensions					Tough ↔ Hard							Recommended Machining Data		
	W ^{±0.05}	R ^{±0.05}	M	D1 _{min}	T _{max-r}	IC830	IC8250	IC808	IC20	IC428	IC5010	IC806	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GDMY 840	8.00	4.00	5.6	50.0	25.00	●	●	●	●	●	●	●	0.00-4.00	0.32-0.67	0.18-0.34

• Can cut arcs to 250° • Dmin for internal machining = 65mm (2.26") • For cutting speed recommendations and user guide, see pages E52-68.

For tools, see pages: C#-GHDR/L (G11) • CGHN-8-10D (B28) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDKR/L (C10) • GHDR/L (Long Pocket) (B26) • GHDR/L-JHP (Long Pocket) (B26) • GHFG-R/L-8 (E39) • GHFGR/L-8 (E40) • GHIR/L (W=7.0-8.3) (B93).

GDMY-F

Utility Double-Ended Inserts, for Grooving and Profiling Ductile Materials



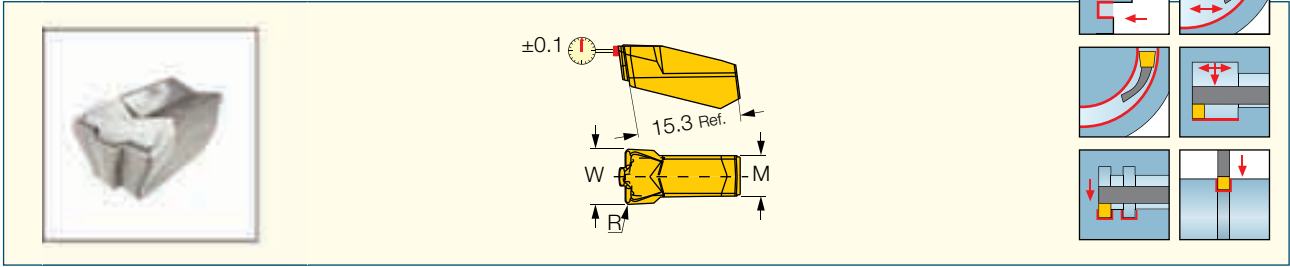
Designation	Dimensions				Tough ↔ Hard		Recommended Machining Data		
	W ^{±0.05}	R ^{±0.05}	M	T _{max-r}	IC808	IC908	a _p (mm)	f turn (mm/rev)	f groove (mm/rev)
GDMY 840F	8.00	4.00	5.6	25.00	●	●	0.00-4.00	0.32-0.67	0.18-0.34

• Dmin for internal applications = 65 mm (2.56") • For cutting speed recommendations and user guide, see pages E52-68.

For tools, see pages: C#-GHDR/L (G11) • CGHN-8-10D (B28) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDR/L (Long Pocket) (B26) • GHDR/L-JHP (Long Pocket) (B26) • GHFG-R/L-8 (E39) • GHFGR/L-8 (E40) • GHIR/L (W=7.0-8.3) (B93).

GIMM 8CC

Single-Ended Utility Insert for External Rough Grooving and Side Turning with a Frontal Chip Splitter



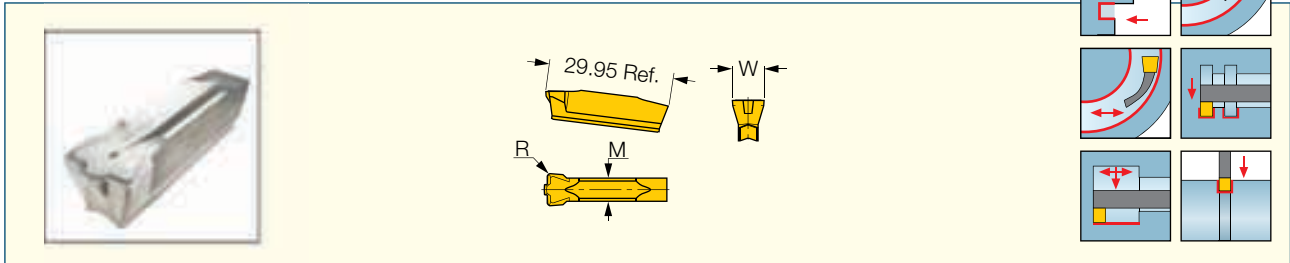
Designation	Dimensions			Tough ↔ Hard		Recommended Machining Data
	W ± 0.05	R ± 0.05	M	IC808	IC908	
GIMM 8CC	8.00	0.80	5.8	●	●	f face-groove (mm/rev) 0.30-0.45

• For cutting speed recommendations, see pages E52-68.

For tools, see pages: CGFG 51-P8 (E42) • CGHN-P8 (B25) • CGHR/L-P8DG (B25) • GHDR/L (Short Pocket) (B19) • GHGR/L (B21).

GDMM-CC

Single-Ended Utility Insert for External Rough Grooving and Side Turning with a Frontal Chip Splitter



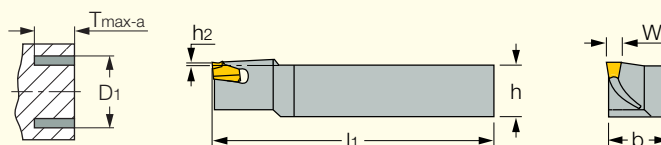
Designation	Dimensions			Tough ↔ Hard				Recommended Machining Data
	W ± 0.05	R ± 0.05	M	IC830	IC354	IC808	IC907	
GDMM 8CC	8.00	0.80	5.6	●	●	●	●	f face-groove (mm/rev) 0.30-0.45

• For cutting speed recommendations, see pages E52-68.

For tools, see pages: C#-GHDR/L (G11) • GADR/L-8 (B28) • GAFG-R/L-8 (E42) • GHDR/L (Long Pocket) (B26) • GHDR/L-JHP (Long Pocket) (B26) • GHFG-R/L-8 (E39) • GHFGR/L-8 (E40) • GHIR/L (W=7.0-8.3) (B93).

SGFFR/L

Face Grooving Integral Shank Tools



Left-hand shown

Designation	W	h	b	T _{max-a}	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	h ₂	l ₁	Inserts
SGFFR/L 20-25-2	2.10	20.0	20.0	13.00	25.0	30.0	0.0	120.00	GFF 2R/L
SGFFR/L 20-30-2	2.10	20.0	20.0	14.00	29.0	36.0	0.0	120.00	GFF 2R/L
SGFFR/L 20-35-2	2.10	20.0	20.0	16.00	35.0	46.0	0.8	120.00	GFF 2N
SGFFR/L 20-45-2	2.10	20.0	20.0	20.00	45.0	61.0	0.8	120.00	GFF 2N
SGFFR/L 20-60-2	2.10	20.0	20.0	20.00	60.0	80.0	0.8	120.00	GFF 2N
SGFFR/L 25-25-2	2.10	25.0	25.0	13.00	25.0	30.0	0.0	130.00	GFF 2N
SGFFR/L 25-30-2	2.10	25.0	25.0	14.00	29.0	36.0	0.0	130.00	GFF 2N
SGFFR/L 25-35-2	2.10	25.0	25.0	16.00	35.0	46.0	0.8	130.00	GFF 2N
SGFFR/L 25-45-2	2.10	25.0	25.0	20.00	45.0	61.0	0.8	130.00	GFF 2N
SGFFR/L 25-60-2	2.10	25.0	25.0	20.00	60.0	80.0	0.8	130.00	GFF 2N
SGFFR/L 20-30-3	3.00	20.0	20.0	16.00	30.0	35.0	0.0	120.00	GFF 3R/L
SGFFR/L 20-35-3	3.00	20.0	20.0	18.00	34.4	40.6	0.0	120.00	GFF 3R/L
SGFFR/L 20-40-3	3.00	20.0	20.0	20.00	40.0	47.0	0.0	120.00	GFF 3R/L
SGFFR/L 20-46-3	3.00	20.0	20.0	22.00	46.0	55.0	0.0	120.00	GFF 3R/L
SGFFR/L 20-55-3	3.00	20.0	20.0	22.00	54.0	65.0	1.2	120.00	GFF 3N
SGFFR/L 20-80-3	3.00	20.0	20.0	24.00	79.0	100.0	0.7	120.00	GFF 3N
SGFFR 20-65-3	3.00	20.0	20.0	23.00	64.0	80.0	1.0	120.00	GFF 3N
SGFFR/L 25-30-3	3.00	25.0	25.0	16.00	30.0	35.0	0.0	130.00	GFF 3R/L
SGFFR/L 25-35-3	3.00	25.0	25.0	18.00	34.4	40.6	0.0	130.00	GFF 3R/L
SGFFR/L 25-40-3	3.00	25.0	25.0	20.00	40.0	47.0	0.0	130.00	GFF 3R/L
SGFFR/L 25-46-3	3.00	25.0	25.0	22.00	46.0	55.0	0.0	130.00	GFF 3R/L
SGFFR/L 25-55-3	3.00	25.0	25.0	24.00	54.0	65.0	1.2	130.00	GFF 3N
SGFFR/L 25-80-3	3.00	25.0	25.0	26.00	79.0	100.0	0.7	130.00	GFF 3N
SGFFR 25-46-3	3.00	25.0	25.0	22.00	46.0	55.0	0.0	130.00	GFF 3R/L
SGFFR 25-65-3	3.00	25.0	25.0	25.00	64.0	80.0	1.0	130.00	GFF 3N
SGFFR/L 20-35-4	4.00	20.0	20.0	20.00	35.0	45.0	0.0	120.00	GFF 4N
SGFFR/L 20-45-4	4.00	20.0	20.0	25.00	44.0	58.0	0.0	120.00	GFF 4N
SGFFR/L 20-60-4	4.00	20.0	20.0	25.00	57.0	80.0	0.0	120.00	GFF 4N
SGFFR 20-80-4	4.00	20.0	20.0	25.00	79.0	130.0	0.0	120.00	GFF 4N
SGFFR/L 25-35-4	4.00	25.0	25.0	20.00	35.0	45.0	0.0	150.00	GFF 4N
SGFFR/L 25-45-4	4.00	25.0	25.0	25.00	44.0	58.0	0.0	150.00	GFF 4N
SGFFR/L 25-60-4	4.00	25.0	25.0	26.00	57.0	80.0	0.0	150.00	GFF 4N
SGFFR/L 25-80-4	4.00	25.0	25.0	26.00	79.0	130.0	0.0	150.00	GFF 4N
SGFFR/L 20-40-5	5.00	20.0	20.0	22.00	40.0	52.0	0.0	120.00	GFF 5N
SGFFR/L 20-50-5	5.00	20.0	20.0	25.00	50.0	75.0	0.0	120.00	GFF 5N
SGFFR/L 20-75-5	5.00	20.0	20.0	26.00	74.0	130.0	0.0	120.00	GFF 5N
SGFFR/L 25-100-5	5.00	25.0	25.0	30.00	100.0	180.0	0.0	150.00	GFF 5N
SGFFR/L 25-40-5	5.00	25.0	25.0	22.00	40.0	52.0	0.0	150.00	GFF 5N
SGFFR/L 25-50-5	5.00	25.0	25.0	26.00	50.0	71.0	0.0	150.00	GFF 5N
SGFFR/L 25-70-5	5.00	25.0	25.0	28.00	69.0	102.0	0.0	150.00	GFF 5N
SGFFR/L 20-60-6	6.00	20.0	20.0	25.00	57.0	90.0	0.0	120.00	GFF 6N
SGFFR 20-45-6	6.00	20.0	20.0	25.00	44.0	58.0	0.0	120.00	GFF 6N
SGFFR/L 25-100-6	6.00	25.0	25.0	30.00	100.0	180.0	0.0	150.00	GFF 6N
SGFFR/L 25-45-6	6.00	25.0	25.0	25.00	44.0	58.0	0.0	150.00	GFF 6N
SGFFR/L 25-60-6	6.00	25.0	25.0	30.00	57.0	77.0	0.0	150.00	GFF 6N
SGFFR/L 25-75-6	6.00	25.0	25.0	30.00	75.0	102.0	0.0	150.00	GFF 6N

• Important: Apply R.H. insert on R.H. tool and L.H. insert on L.H. tool. Neutral insert only as indicated.

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: GFF-N (E50) • GFF-R/L (E50).

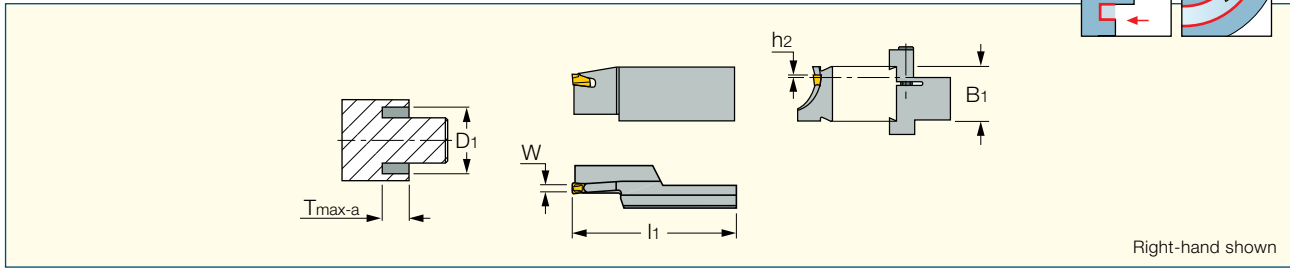
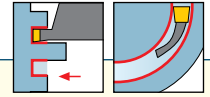
Spare Parts



Designation	Extractor
SGFFR/L...-2	ESG 0.5
SGFFR/L...-3, 4, 5, 6	ESG 1

SGFFA

Reinforced Face Grooving Blades, for Standard Tool Blocks



Designation	W	T _{max-a}	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	B ₁	h ₂	l ₁
SGFFA 25-R/L-2	2.10	13.00	25.0	30.0	32.0	0.0	80.00
SGFFA 30-R/L-2	2.10	14.00	29.0	36.0	32.0	0.0	80.00
SGFFA 35-R/L-2	2.10	16.00	35.0	46.0	32.0	0.8	80.00
SGFFA 45-R/L-2	2.10	20.00	45.0	61.0	32.0	0.8	80.00
SGFFA 60-R/L-2	2.10	20.00	60.0	80.0	32.0	0.8	80.00
SGFFA 80-R/L-2	2.10	20.00	79.0	102.0	32.0	0.8	80.00
SGFFA 30-R/L-3	3.00	19.00	30.0	35.0	32.0	0.0	90.00
SGFFA 35-R/L-3	3.00	20.00	34.4	40.6	32.0	0.0	90.00
SGFFA 40-R/L-3	3.00	22.00	40.0	47.0	32.0	0.0	90.00
SGFFA 46-R/L-3	3.00	24.00	46.0	55.0	32.0	0.0	90.00
SGFFA 55-R/L-3	3.00	25.00	54.0	65.0	32.0	1.2	90.00
SGFFA 65-R/L-3	3.00	26.00	64.0	80.0	32.0	1.0	90.00
SGFFA 80-R/L-3	3.00	28.00	79.0	100.0	32.0	0.7	95.00
SGFFA 35-R/L-4	4.00	25.00	35.0	45.0	32.0	0.0	90.00
SGFFA 45-R/L-4	4.00	25.00	44.0	58.0	32.0	0.0	90.00
SGFFA 60-R/L-4	4.00	28.00	57.0	80.0	32.0	0.0	95.00
SGFFA 80-R/L-4	4.00	30.00	79.0	130.0	32.0	0.0	95.00
SGFFA 40-R/L-5	5.00	25.00	40.0	52.0	32.0	0.0	90.00
SGFFA 50-R/L-5	5.00	28.00	50.0	71.0	32.0	0.0	95.00
SGFFA 70-R/L-5	5.00	30.00	69.0	102.0	32.0	0.0	95.00
SGFFA 100-R/L-5	5.00	35.00	100.0	180.0	32.0	0.0	100.00
SGFFA 45-R/L-6	6.00	25.00	44.0	58.0	32.0	0.0	90.00
SGFFA 60-R/L-6	6.00	30.00	57.0	77.0	32.0	0.0	95.00
SGFFA 75-R/L-6	6.00	35.00	75.0	102.0	32.0	0.0	100.00
SGFFA 100-R/L-6	6.00	40.00	100.0	150.0	32.0	0.0	105.00
SGFFA 150-R/L-6	6.00	40.00	149.0	250.0	32.0	0.0	105.00

• Important: Apply R.H. insert on R.H. tool and L.H. insert on L.H. tool. Neutral insert only as indicated. • B₁ dimension links blades and blocks

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: GFF-N (E50) • GFF-R/L (E50).

For holders, see pages: SGTBF (F4) • SGTBU/SGTBN (F2) • UBHCR/L (F4).

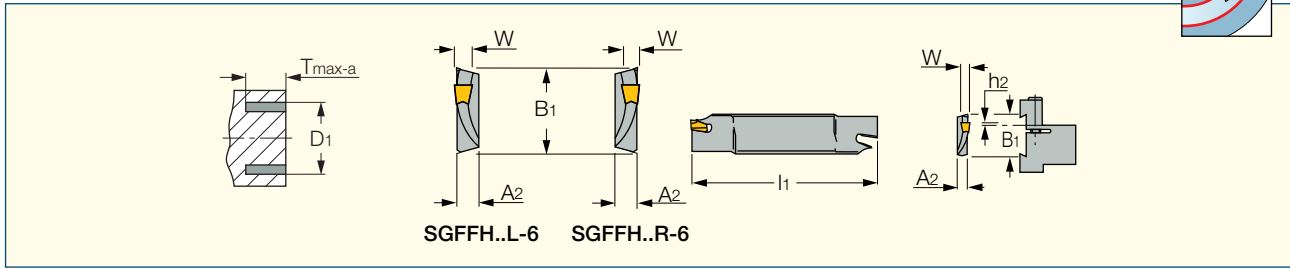
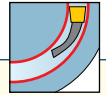
Spare Parts



Designation	Extractor
SGFFA...-2	ESG 0.5
SGFFA...-3, 4, 5, 6	ESG 1

SGFFH

Face Grooving Blades



Designation	W	T _{max-a}	D _{1 min} ⁽¹⁾	D _{1 max} ⁽²⁾	h ₂	B ₁	A ₂	I ₁
SGFFH 35-R/L-2	2.10	20.00	35.0	46.0	0.8	32.0	5.2	150.00
SGFFH 45-R/L-2	2.10	20.00	45.0	61.0	0.8	32.0	5.2	150.00
SGFFH 60-R/L-2	2.10	20.00	60.0	80.0	0.8	32.0	5.2	150.00
SGFFH 80-R/L-2	2.10	20.00	79.0	102.0	0.8	32.0	4.0	150.00
SGFFH 100-R/L-2	2.10	20.00	101.0	132.0	0.0	32.0	4.0	150.00
SGFFH 75-R/L-3	3.00	20.00	65.0	92.0	1.0	32.0	5.2	150.00
SGFFH 90-R/L-3	3.00	20.00	90.0	122.0	0.2	32.0	5.2	150.00
SGFFH 120-R/L-3	3.00	25.00	120.0	160.0	0.0	32.0	5.2	150.00
SGFFH 80-R/L-4	4.00	30.00	80.0	155.0	2.5	32.0	5.2	150.00
SGFFH 150-R/L-4	4.00	30.00	150.0	500.0	2.5	32.0	5.2	150.00
SGFFH 80-R/L-5	5.00	32.00	80.0	162.0	0.0	32.0	5.2	150.00
SGFFH 150-R/L-5	5.00	35.00	150.0	600.0	0.0	32.0	5.2	150.00
SGFFH 90-R/L-6	6.00	32.00	90.0	150.0	0.0	32.0	8.0	150.00
SGFFH 150-R/L-6	6.00	35.00	148.0	700.0	0.0	32.0	5.2	150.00

• Important: Apply R.H. insert on R.H. tool and L.H. insert on L.H. tool. Neutral insert only as indicated. • B₁ dimension links blades and blocks

⁽¹⁾ Minimum penetration diameter ⁽²⁾ Maximum penetration diameter

For inserts, see pages: GFF-N (E50).

For holders, see pages: SGTBF (F4) • SGTBK (F3) • SGTBU/SGTBN (F2) • UBHCR/L (F4).

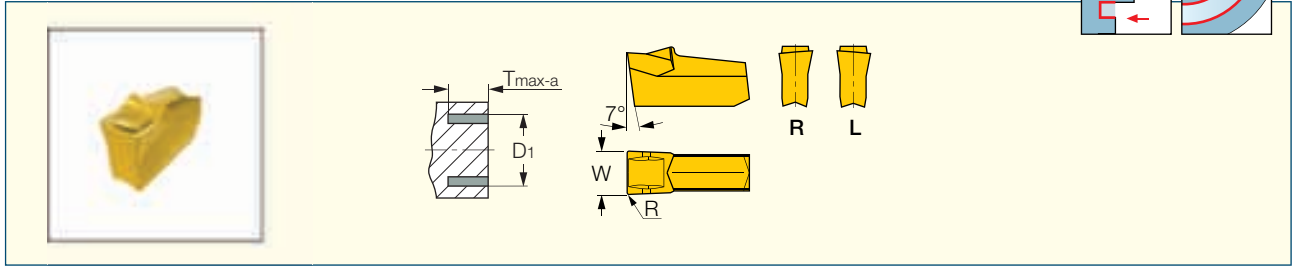
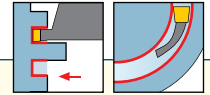
Spare Parts



Designation	Extractor
SGFFH...-2	ESG 0.5
SGFFH...-3, 4, 5, 6	ESG 1

GFF-R/L

SELF-GRIP Face Grooving Inserts

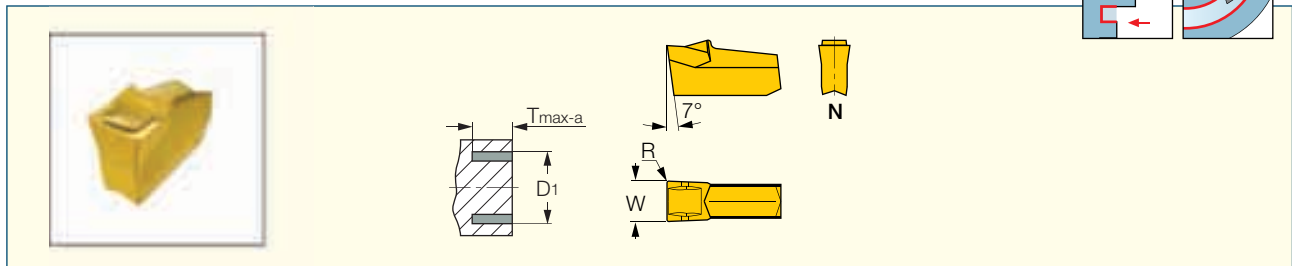
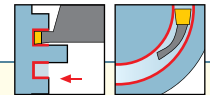


Designation	Dimensions				Tough ↔ Hard			Recommended Machining Data f face-groove (mm/rev)
	W±0.10	R±0.05	D1 min	D1 max	IC635	IC354	IC20	
GFF 2R/L	2.10	0.20	25.0	36.0	●	●	●	0.03-0.13
GFF 3R/L	3.00	0.30	30.0	55.0	●	●	●	0.03-0.15

For tools, see pages: SGFFA (E48) • SGFFR/L (E47).

GFF-N

Face Grooving Inserts

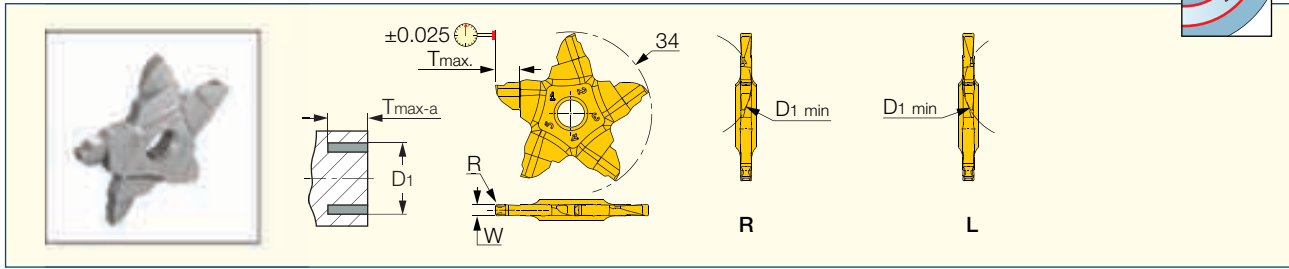
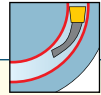


Designation	Dimensions			Tough ↔ Hard			Recommended Machining Data f face-groove (mm/rev)
	W±0.10	R±0.05	D1 min	IC635	IC354	IC20	
GFF 2N	2.10	0.20	35.0	●	●	●	0.03-0.13
GFF 3N	3.00	0.30	54.0	●	●	●	0.03-0.15
GFF 4N	4.00	0.25	35.0	●	●	●	0.04-0.18
GFF 5N	5.00	0.25	40.0	●	●	●	0.05-0.18
GFF 6N	6.00	0.25	44.0	●	●	●	0.05-0.20

For tools, see pages: SGFFA (E48) • SGFFH (E49) • SGFFR/L (E47).

PENTA 34F-R/L

Pentagonal Inserts for Face Grooving and Recessing



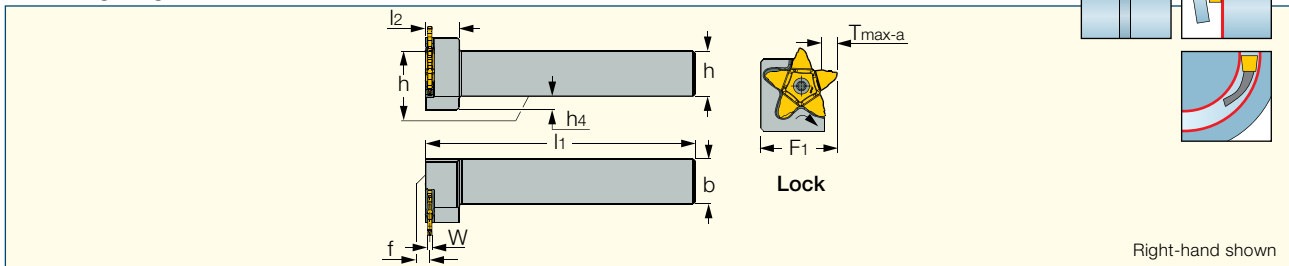
Designation	Dimensions				IC908	Recommended Machining Data
	W \pm 0.02	R	T $_{max-a}$	D1 min		f face-groove (mm/rev)
PENTA 34F239-0.15-22R/L	2.39	0.15	5.00	22.0	●	0.08-0.12
PENTA 34F247-0.20-22R/L	2.47	0.20	5.00	22.0	●	0.08-0.12
PENTA 34F300-0.40-22R/L	3.00	0.40	5.00	22.0	●	0.08-0.15
PENTA 34F400-0.40-22R/L	4.00	0.40	5.00	22.0	●	0.08-0.15

• For cutting speed recommendations, see pages E52-68.

For tools, see pages: PCADR/L (B55) • PCHBR/L (B56) • PCHPR/L (E51) • PCHR/L-34 (B54).

PCHPR/L

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



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
PCHPR/L 20-24	20.0	20.0	0.50	3.20 ⁽²⁾	1.5 ⁽³⁾	28.0	120.00	11.5	-	6.50
PCHPR/L 25-24	25.0	25.0	0.50	3.20 ⁽²⁾	1.5 ⁽³⁾	33.0	135.00	11.5	-	6.50
PCHPR/L 20-34	20.0	20.0	1.40	4.00	1.9	34.0	120.00	15.0	6.0	10.00
PCHPR/L 25-34	25.0	25.0	1.40	4.00	1.9	34.0	135.00	15.0	-	10.00

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

For inserts, see pages: PENTA 24N-J (B57) • PENTA 24N-J (Full Radius) (B58) • PENTA 24N-PF (B58) • PENTA 24N-Z (B59) • PENTA 24R/L-J (D53) • PENTA 24R/L-Z (D55) • PENTA 34F-R/L (E51) • PENTA 34N-C (B61) • PENTA 34N-PB (B60) • PENTA 34R/L-C (D57) • PENTA 34R/L-PB (D58).

Spare Parts

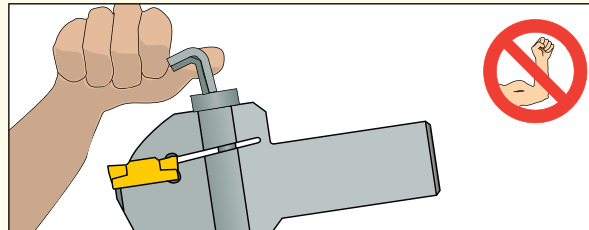
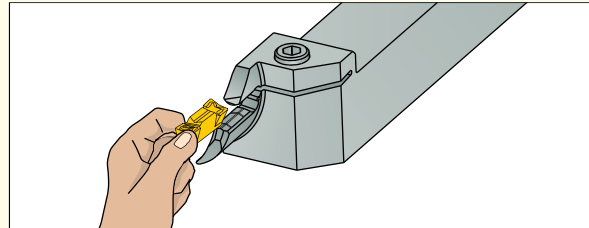
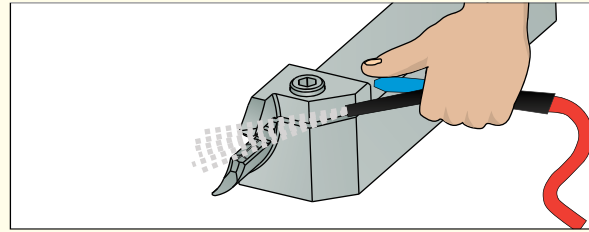


Designation	Screw	Key
PCHPL 16-24	SR 16-212-01397	T-20/5
PCHPR 16-24	SR 16-212-01397L	T-20/5
PCHPL 20-24	SR 16-212-01397	T-20/5
PCHPR 20-24	SR 16-212-01397L	T-20/5
PCHPL 25-24	SR 16-212-01397	T-20/5
PCHPR 25-24	SR 16-212-01397L	T-20/5
PCHPR/L 20-34	SR 16-212-01397	T-20/5
PCHPR/L 25-34	SR 16-212-01397	T-20/5

Clamping the Insert

Clamping an insert correctly into the holder is necessary for stable machining.

- Be sure that the seat is clean of dirt and swarf.
- At the first stage of clamping, ease the insert gently into place. Make sure that the prismatic surfaces match.



Screw Clamping Torque

Insert Width	Nxm
3	4-5
4	5-6
5	6-7
6/8	7-9
CGFG 51...	4-6

The unique chipformer is designed for deep grooving and face turning both toward and away from center, with excellent chip formation.



HELIFACE HFPR/L & HGPL Type

For general use in turning & grooving on all kinds of materials. Use for deep grooving in low-to-medium feeds 0.04-0.15 mm/rev. Min grooving dia. 12 mm.



HELI-GRIP GRIP...Y Type

The "all in one" insert: for parting, external grooving and turning, internal grooving and turning, face grooving and turning.



DO-GRIP DGN...C Type

For grooving operations only. Strong cutting edge for hard materials and tough applications in feeds 0.1-0.2 mm/rev.

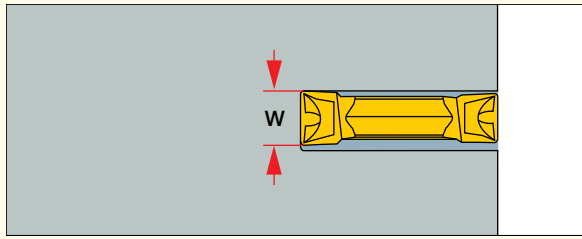


DO-GRIP DGN...J Type

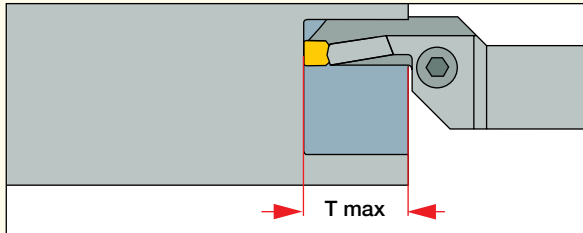
For grooving operations only. Positive rake, for soft materials in low-to-medium feeds 0.05-0.15 mm/rev.

Face Machining Guide

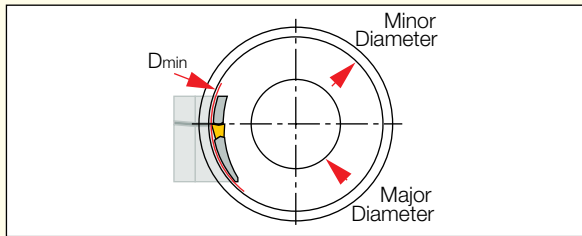
Tool Selection - Follow these recommendations to choose the right tool for high performance.



Choose the widest possible insert and tool, according to the cutting width and geometry to be machined.



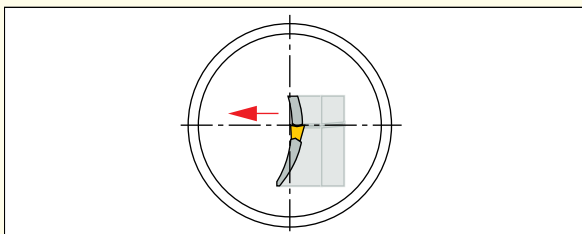
Choose the shortest tool blade overhang, according to the maximum depth required.



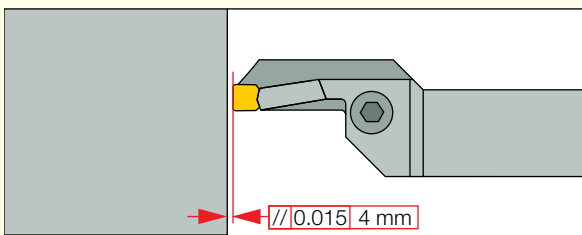
Choose the tool range with the largest diameter, depending on the initial grooving diameter required in the application.

Remark: On integral shank tools the given range refers to the holder capacity.

Tool Adjustment - Prior to machining, check and adjust the following tool positions.



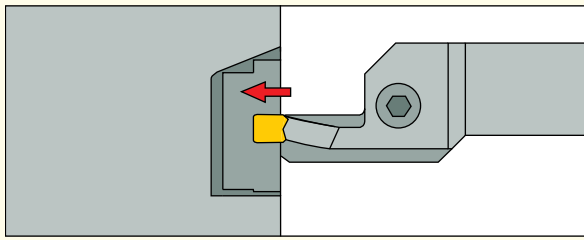
Check the cutting edge height at center line, machine in light turning down to center, and check for burr.



Check parallelism of cutting edge and the machined surface. Correct position can guarantee good surface quality when face turning in both directions.

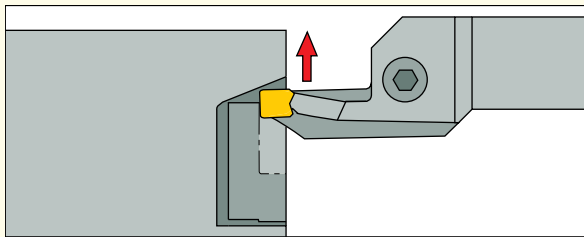
Face Machining Guide

Recommended machining sequence in roughing operation using multifunction HELIFACE tools.



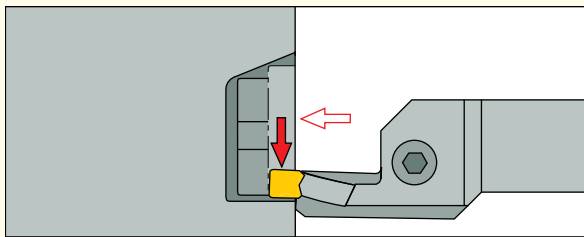
1

Groove at the initial diameter up to the depth of cut selected for next step in face turning.



2

Continue with face turning away from center.



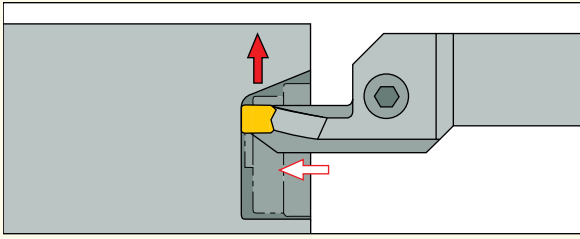
3

After rapid positioning back into initial groove, continue with face turning to center.

Note: When face grooving, reduce the speed by 40% in relation to that used in face turning.

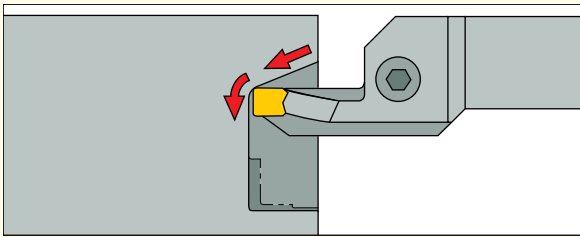
Optimizing the Machining Sequence

Recommended machining sequence using multifunction tools.



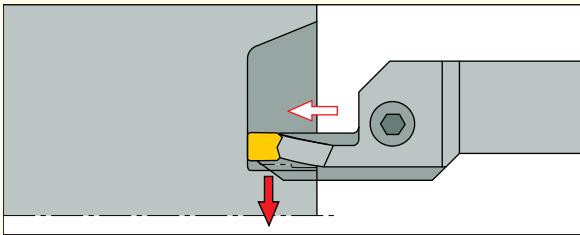
1

Groove at the initial diameter to the final depth of groove and continue face turning away from center to the tangential point on the radius.



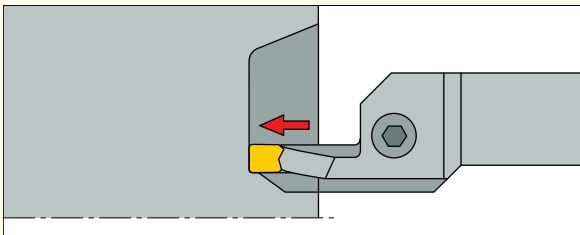
2

Finish major diameter toward the bottom and generate the radius.



3

Position the tool in rapid movement in the initial groove, continue face turning to center, without touching the machined roughing steps on the wall.

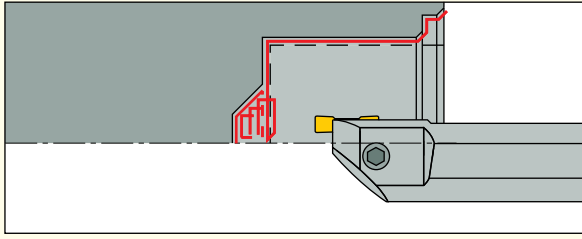


4

Finish boring the minor diameter to the bottom, up to final depth.

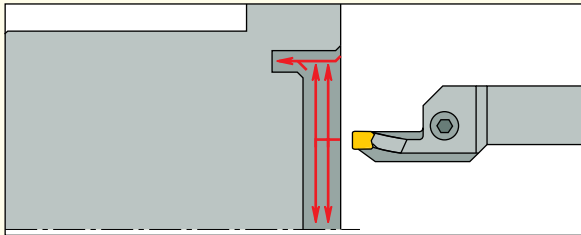
Note: When face grooving, reduce the speed by 40% in relation to that used in face turning.

The Multifunction Advantage



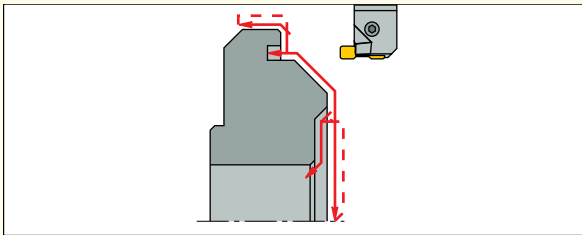
1

The **HELIFACE** internal boring bar **HFIR/L MC** type with internal coolant can replace the three different ISO tools and shorten machining time by 20%.



2

A single multifunction tool machines the whole part: grooving, face turning and chamfering, replacing three ISO tools and reducing machining time by 40%.

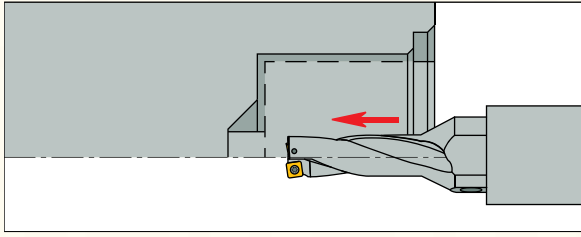


3

A single integral **HELIFACE** tool **HFHPL-M** replaces three ISO tools and reduces machining time by 50%.

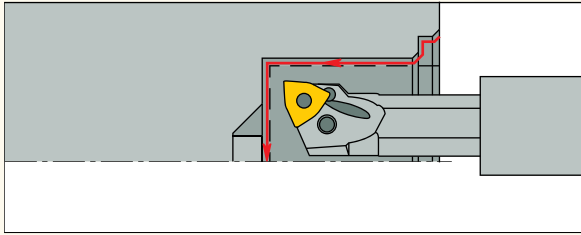
The Multifunction Advantage

This workpiece was machined using three different conventional tools.



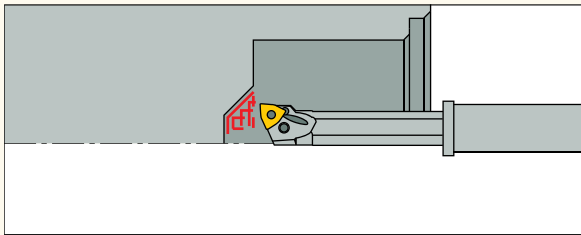
1

An indexable drill for bottom drilling.



2

A standard internal boring bar with trigon insert for roughing and finishing.

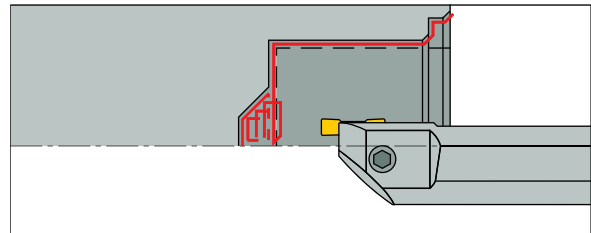


3

A standard internal boring bar with trigon insert for bottom machining. This operation requires a small diameter shank and long overhang.

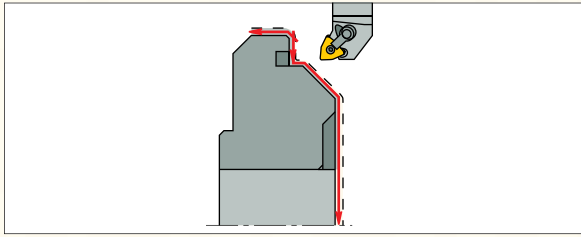
The HELIFACE Solution

The HELIFACE internal boring bar **HFIR/L MC** type with internal coolant can replace the three different ISO tools and shorten machining time by 20%.

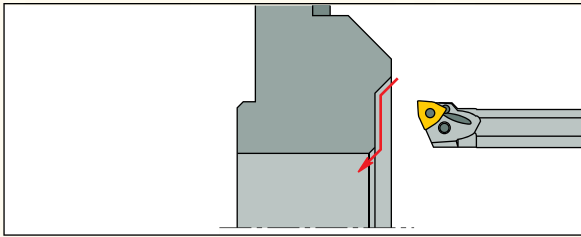


The Multifunction Advantage

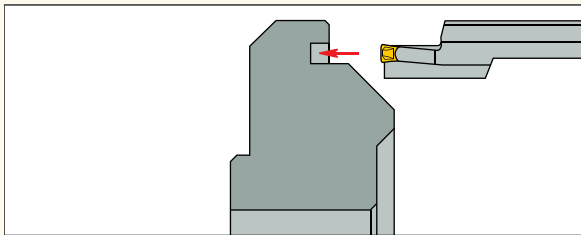
This part was machined using three different conventional tools.



1 A standard ISO tool for external turning.



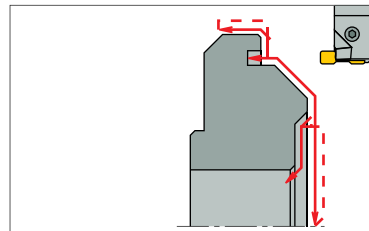
2 A boring bar for face turning and chamfering.



3 A face grooving tool for grooving, recessing and chamfering.

The HELIFACE Solution

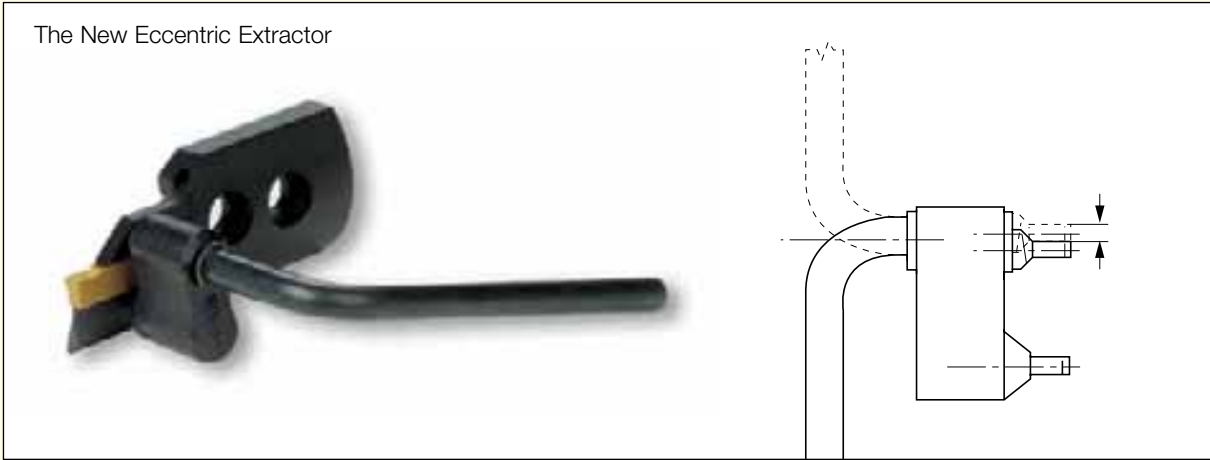
A single integral HELIFACE tool **HFHPL-M** replaces three ISO tools and reduces machining time by 50%.



Insert Replacement

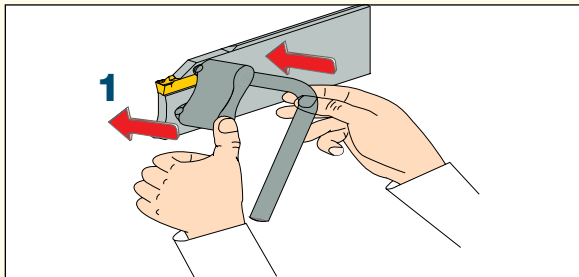
EDG 33B

The New Eccentric Extractor



Simple to operate; controlled rotation requires low force; guarantees limited upper jaw movement and secures maximum load on blade.

Two extractor pins are placed in the two holes in the holder blades.

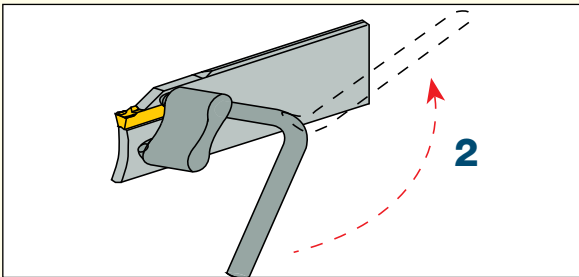


Indexing

Place the EDG extractor in the holes

1- Hold the extractor against the tool.

2- Rotate the eccentric handle to lift the upper jaw.



Grade Selection for Facing Applications

Material Groups	ISO P 1 - 11	ISO H 38 - 41	ISO M 12 - 14	ISO S 31 - 37	ISO K 15 - 20	ISO N 21 - 28
	Steel	Hard Steel	Stainless Steel	High Temp	Cast Iron	Nonferrous
<p>FACING</p>	Harder ↑ IC808 IC8250 IC830 ↓ Tougher	Harder ↑ IC808 ↓ IC20 Tougher	Harder ↑ IC808 IC8250 IC354 IC830 ↓ Tougher	Harder ↑ IC808 ↓ IC20 Tougher	Harder ↑ IC5010 ↓ IC428 Tougher	Harder ↑ IC20 ↓ Tougher

■ First choice

Machining Data for Face Machining

ISO	Material	Condition	Tensile Strength [N/mm ²]	Hardness HB	Material No.	
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	1
		>= 0.25 %C	Annealed	650	190	2
		< 0.55 %C	Quenched and tempered	850	250	3
		>= 0.55 %C	Annealed	750	220	4
			Quenched and tempered	1000	300	5
	Low alloy steel and cast steel (less than 5% all elements)	Annealed	600	200	6	
		Quenched and tempered	930	275	7	
			1000	300	8	
			1200	350	9	
	High alloyed steel, cast steel, and tool steel	Annealed	680	200	10	
		Quenched and tempered	1100	325	11	
M	Stainless steel and cast steel	Ferritic/martensitic	680	200	12	
		Martensitic	820	240	13	
		Austenitic	600	180	14	
K	Grey cast iron (GG)	Ferritic/pearlitic		180	15	
		Pearlitic		260	16	
	Ductile cast iron (nodular GGG)	Ferritic		160	17	
		Pearlitic		250	18	
	Malleable cast iron	Ferritic		130	19	
		Pearlitic		230	20	
N	Aluminum-wrought alloy	Not cureable		60	21	
		Cured		100	22	
	Aluminum-cast, alloyed	<=12% Si	Not cureable		75	23
			Cured		90	24
		>12% Si	High temperature		130	25
			Free cutting		110	26
	Copper alloys	>1% Pb	Brass		90	27
			Electrolytic copper		100	28
	Non-metallic		Duroplastics, fiber plastics			29
			Hard rubber			30
S	High temp. alloys	Fe based	Annealed		200	31
			Cured		280	32
		Ni or Co based	Annealed		250	33
			Cured		350	34
			Cast		320	35
	Titanium and Ti alloys			RM 400		36
				RM 1050		37
H	Hardened steel	Hardened		55 HRc	38	
		Hardened		60 HRc	39	
	Chilled cast iron	Cast		400	40	
	Cast iron	Hardened		55 HRc	41	

Material	Groove-Turn, Profiling				
No.	IC228/528	IC830	IC354	IC808	IC8250
1	80 - 100	90 - 110	70 - 100	120 - 160	170 - 220
2	70 - 90	70 - 100	60 - 90	100 - 140	150 - 200
3	60 - 80	60 - 90	50 - 80	80 - 130	120 - 180
4	60 - 90	60 - 100	60 - 80	90 - 140	130 - 190
5	50 - 80	50 - 80	50 - 70	70 - 120	100 - 160
6	60 - 90	60 - 100	60 - 80	90 - 140	130 - 190
7	50 - 80	50 - 90	50 - 70	70 - 120	100 - 170
8	50 - 70	50 - 80	50 - 70	70 - 110	100 - 160
9	40 - 70	40 - 70	40 - 60	60 - 100	90 - 150
10	70 - 90	70 - 100	60 - 90	100 - 140	150 - 200
11	40 - 70	40 - 70	40 - 60	60 - 100	90 - 150
No.	IC830	IC808	IC907	IC8250	IC08
12	60 - 110	90 - 160	90 - 160	90 - 160	40 - 70
13	60 - 100	80 - 150	80 - 150	80 - 150	40 - 70
14	50 - 100	70 - 140	70 - 140	80 - 140	30 - 60
No.	IC808	IC8250	IC428	IC5010	IC20
15	90 - 150	110 - 190	115-200	130 - 220	60 - 100
16	70 - 100	90 - 130	100-140	110 - 150	50 - 70
17	70 - 130	90 - 160	100-170	110 - 190	50 - 80
18	60 - 100	80 - 130	85-135	90 - 150	40 - 70
19	100 - 160	120 - 200	130-210	140 - 230	60 - 100
20	80 - 130	100 - 160	105-170	120 - 190	50 - 80
No.	IC08	IC20			
21	330 - 990	300-900			
22	250 - 770	225-700			
23	250 - 770	225-700			
24	165 - 495	150-450			
25	165 - 330	150-300			
26	165 - 330	150-300			
27	125 - 250	115-225			
28	80 - 165	75-150			
29	45 - 165	40-150			
30					
No.	IC808	IC20			
31	20-40	20-30			
32	15-30	15-20			
33	15-20	15-20			
34	15-20	15-20			
35	15-20	15-20			
36	90-120	80-100			
37	20-50	20-40			
No.	IC808	IC20			
38	25-30	20-30			
39	20-30	15-25			
40	30-45	30-40			
41	25-30	25-30			

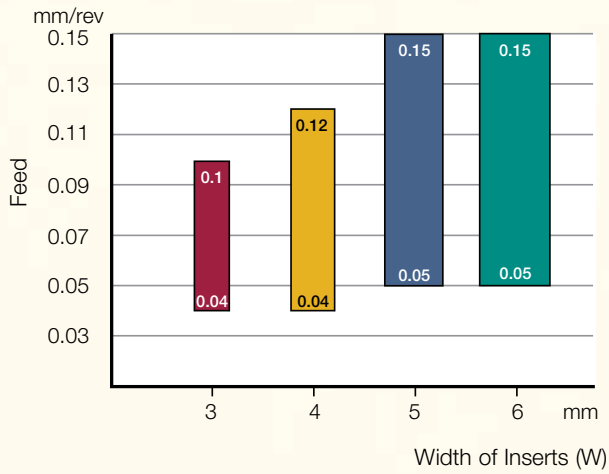
Machining Data for Face Machining

ISO	Material	Condition	Tensile Strength [N/mm ²]	Hardness HB	Material No.	
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	1
		>= 0.25 %C	Annealed	650	190	2
		< 0.55 %C	Quenched and tempered	850	250	3
		>= 0.55 %C	Annealed	750	220	4
			Quenched and tempered	1000	300	5
	Low alloy steel and cast steel (less than 5% all elements)	Annealed		600	200	6
				930	275	7
		Quenched and tempered		1000	300	8
				1200	350	9
	High alloy steel, cast steel, and tool steel	Annealed	680	200	10	
		Quenched and tempered	1100	325	11	
M	Stainless steel and cast steel	Ferritic/martensitic	680	200	12	
		Martensitic	820	240	13	
		Austenitic	600	180	14	
K	Grey cast iron (GG)	Ferritic/pearlitic		180	15	
		Pearlitic		260	16	
	Ductile cast iron (nodular GGG)	Ferritic		160	17	
		Pearlitic		250	18	
	Malleable cast iron	Ferritic		130	19	
		Pearlitic		230	20	
N	Aluminum-wrought alloy	Not cureable		60	21	
		Cured		100	22	
	Aluminum-cast, alloyed	<=12% Si	Not cureable		75	23
			Cured		90	24
		>12% Si	High temperature		130	25
	Copper alloys	>1% Pb	Free cutting		110	26
			Brass		90	27
			Electrolytic copper		100	28
	Non-metallic		Duroplastics, fiber plastics			29
			Hard rubber			30
S	High temp. alloys	Fe based	Annealed		200	31
			Cured		280	32
		Ni or Co based	Annealed		250	33
			Cured		350	34
			Cast		320	35
	Titanium and Ti alloys			RM 400		36
			Alpha+beta alloys cured		RM 1050	
H	Hardened steel	Hardened		55 HRc	38	
		Hardened		60 HRc	39	
	Chilled cast iron	Cast		400	40	
	Cast iron	Hardened		55 HRc	41	

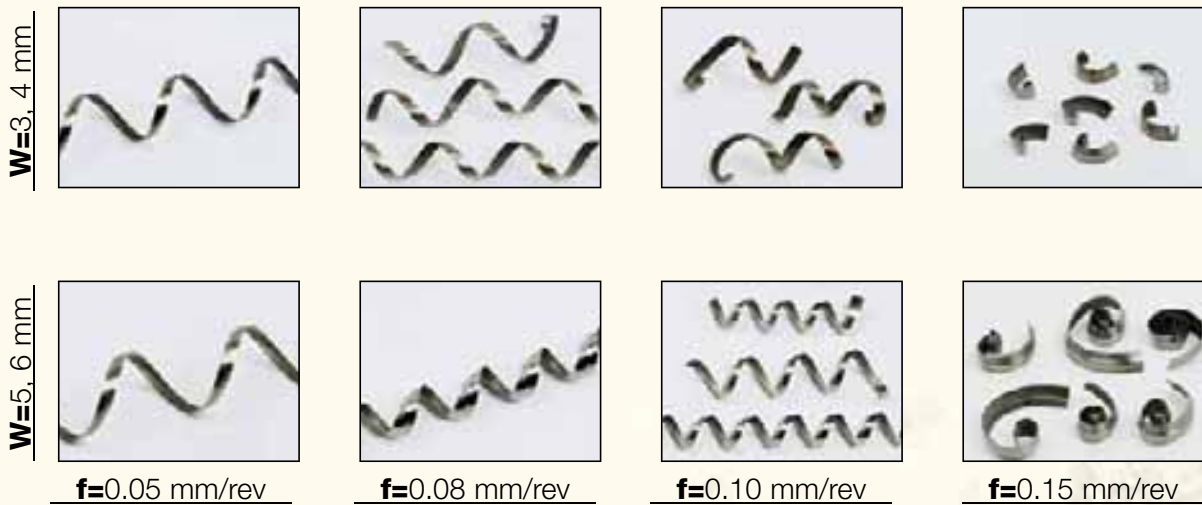
Cutting Speed (m/min)	GFQR IC528 Feed (mm/rev)	PICCO IC228 Feed (mm/rev)	MIFR 8 IC908 Feed (mm/rev)	MIFR 10 IC908 Feed (mm/rev)
40-180	0.02-0.08	0.015-0.05	0.015-0.08	0.03-0.10
40-130	0.02-0.06	0.015-0.04		
40-120	0.02-0.06	0.015-0.04		
40-140	0.02-0.08	0.015-0.04		
40-140	0.02-0.08	0.015-0.04		
40-120	0.02-0.06	0.015-0.03		
40-120	0.02-0.05	0.015-0.03		
40-140	0.02-0.08	0.015-0.04		
40-120	0.02-0.08	0.015-0.03		
40-120	0.02-0.08	0.015-0.04	0.015-0.07	0.03-0.08
40-120	0.02-0.07	0.015-0.04		
40-100	0.02-0.06	0.015-0.03		
40-140	0.02-0.08	0.015-0.05	0.02-0.10	0.05-0.12
40-120	0.02-0.07	0.015-0.04		
40-140	0.02-0.08	0.015-0.04		
40-120	0.02-0.07	0.015-0.04		
40-140	0.02-0.06	0.015-0.04		
40-120	0.02-0.07	0.015-0.04		
150-320	0.02-0.08	0.015-0.05	0.02-0.10	0.05-0.15
100-250	0.02-0.08	0.015-0.05		
150-300	0.02-0.08	0.015-0.05		
150-300	0.02-0.08	0.015-0.05		
100-150	0.02-0.08	0.015-0.05		
80-230	0.02-0.08	0.015-0.05		
70-200	0.02-0.08	0.015-0.05		
50-180	0.02-0.08	0.015-0.05		
20-40	0.02-0.06	0.015-0.04	0.015-0.07	0.02-0.08
15-30	0.02-0.06	0.015-0.04		
15-20	0.02-0.06	0.015-0.04		
15-20	0.02-0.06	0.015-0.04		
15-20	0.02-0.06	0.015-0.04		
40-120	0.02-0.06	0.015-0.04		
20-50	0.02-0.06	0.015-0.04		

Machining Conditions in Face Grooving

Recommended feed range for grooving, with **HFPR/L** inserts in various widths.



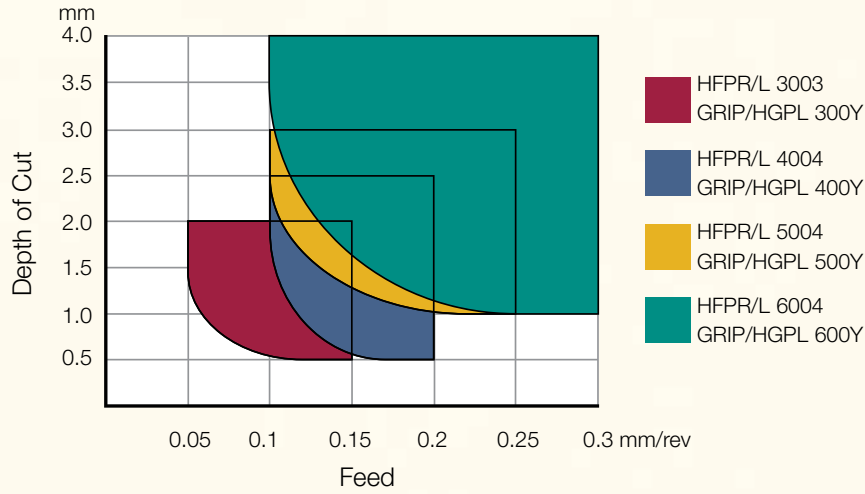
Chip shapes for grooving, according to width of insert and feed, using **HFHR/L** toolholders.



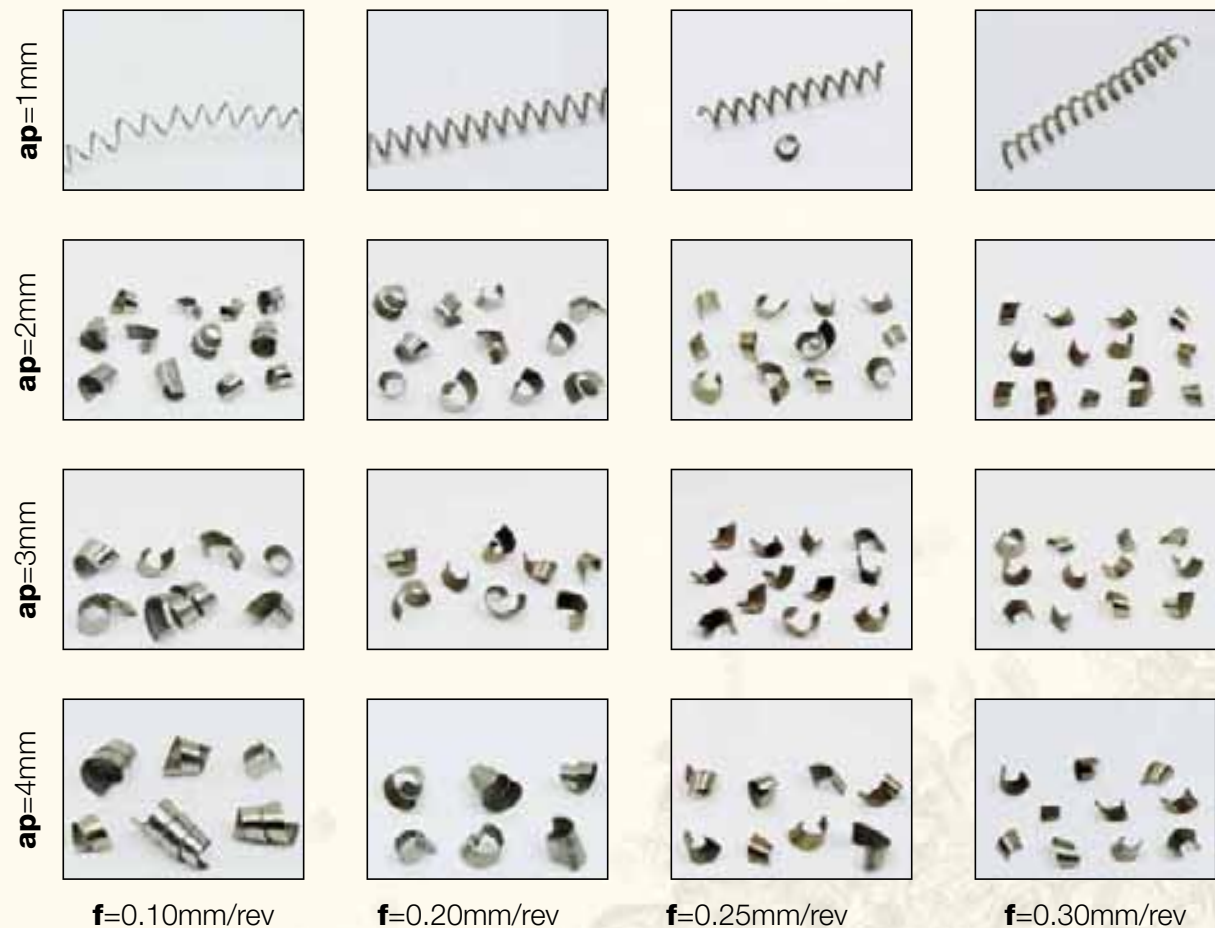
Note: In face grooving, narrowed and deformed chips are preferred. Curled and long chips can flow out more easily from deep grooves.

Machining Conditions in Face Turning

Recommended depth of cut and feed range for face turning with **HFPR/L** inserts in various widths, using **HFHR/L** toolholders.



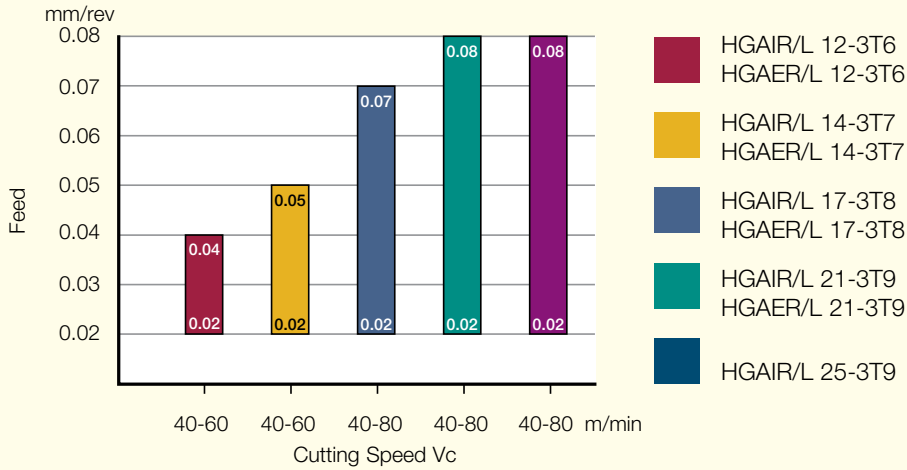
Chip shapes in face turning with inserts **HFPR/L-5004** & **HFPR/L 6004** and **HFHR/L** toolholders



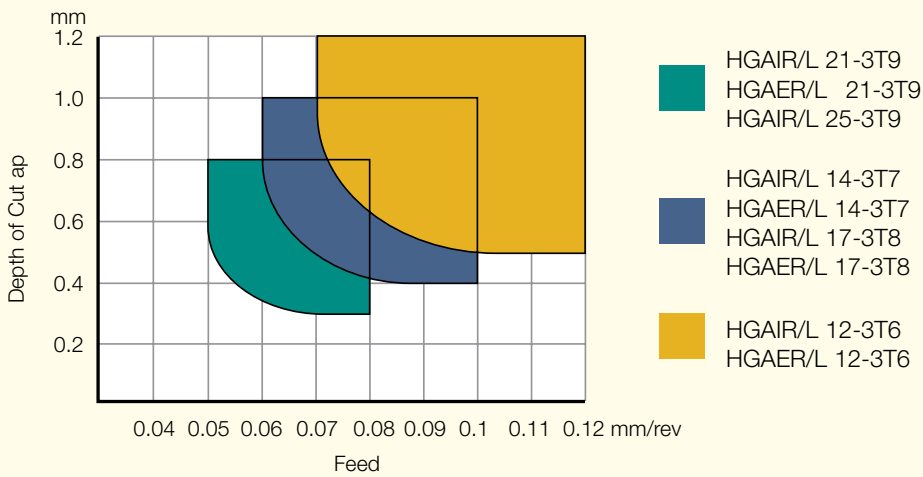
Note: In roughing, increase feed at small depth of cut, and reduce feed at large depth of cut

Face Grooving and Turning Recommendations Using Adapters for 3 mm Inserts

Recommended feed range for grooving with **GRIP 3...** and **HGPL 3...** inserts, with HGAIR/L and HGAER/L adapters. Feed range changes according to adapter type.



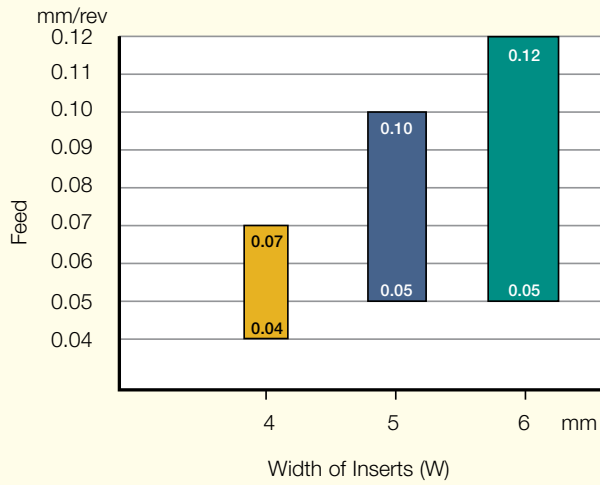
Recommended depth of cut and feed range for turning with and inserts, with **HGAIR/L** and **HGAER/L** adapters. Feed range changes according to adapter type.



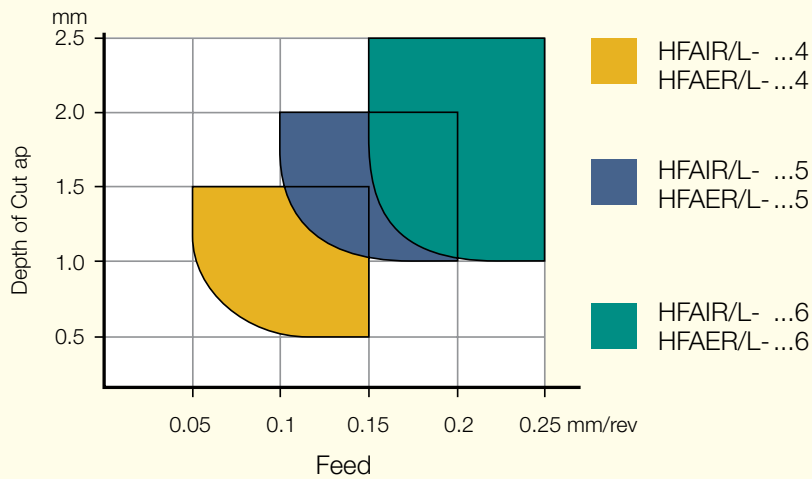
Note: In roughing, increase feed at small depth of cut, and reduce feed at large depth of cut.

Face Grooving and Turning Recommendations Using Adapters for 4-6 mm Inserts

Recommended feed range in grooving with **HFPR/L** inserts and **HFAIR/L** & **HFAER/L** adapters.



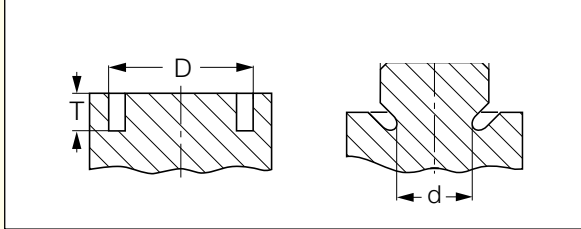
Recommended depth of cut and feed range in turning with **HFPR/L** inserts and **HFAIR/L** & **HFAER/L** adapters. Feed range changes according to adapter type.



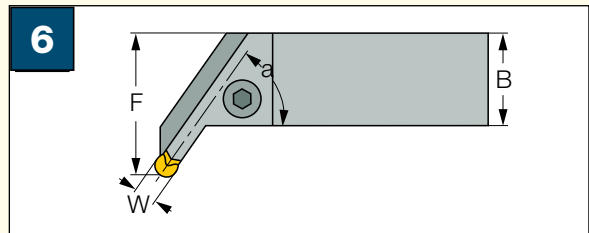
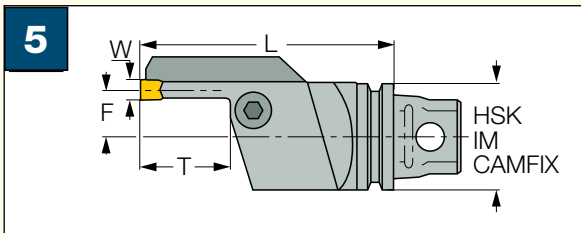
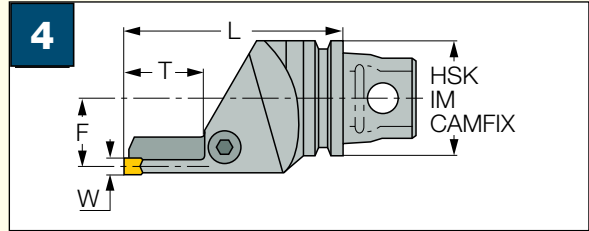
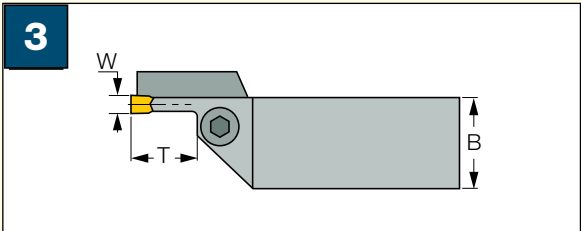
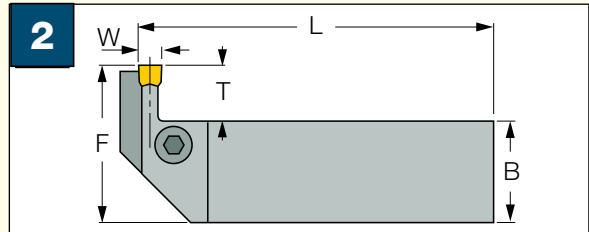
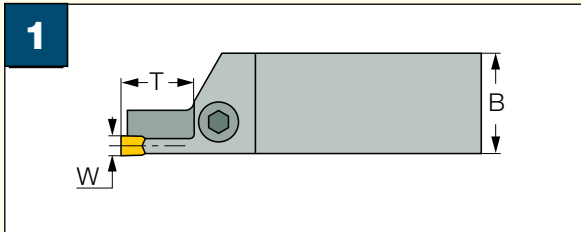
Note: In roughing, reduce feed when depth of cut is increased, and increase feed at small depth of cut.

Specially Tailored

Semi-Standard Face Grooving and Undercutting Tools



The following drawings show typical semi-standard face grooving tools which can be ordered. Please specify all relevant dimensions and attach workpiece material geometric details.



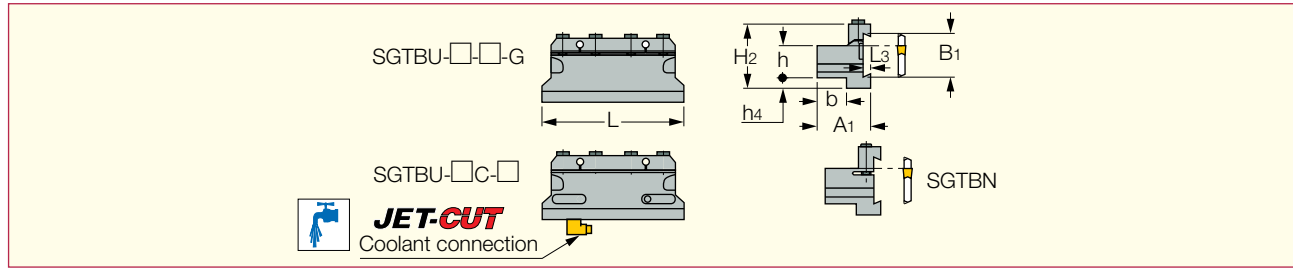
TOOL BLOCKS



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
SGTBU 20-5G	20.0	21.0	26.0	38.00	43.0	9.0	4.00	86.00
SGTBU 20-6G	20.0	19.0	32.0	38.00	50.0	13.0	5.30	100.00
SGTBU 25-5G	25.0	23.0	26.0	42.00	45.0	5.0	4.00	110.00
SGTBU 25-6G	25.0	23.0	32.0	42.00	50.0	8.0	5.30	110.00
SGTBU 25-8M	25.0	23.0	45.0	42.00	70.0	27.0	5.30	110.00
SGTBU 25C-6 ⁽¹⁾	25.0	23.0	32.0	42.00	50.0	8.0	5.30	110.00
SGTBU 32-25-6G	32.0	25.0	32.0	44.00	54.0	5.0	5.30	110.00
SGTBU 32-6G	32.0	29.0	32.0	48.00	54.0	5.0	5.30	110.00
SGTBU 32-8M	32.0	29.0	45.0	48.00	70.0	20.0	5.30	110.00
SGTBU 40-6G	40.0	-	32.0	60.00	57.0	-	5.30	114.00
SGTBU 40-9	40.0	41.0	52.6	66.00	81.0	22.0	8.00	130.00
SGTBU 50-9	50.0	41.0	52.6	66.00	83.0	14.0	8.00	135.00

• Choose blade by B₁ dimension

⁽¹⁾ Elbow-style connector unit supplied with each JET-CUT tool block

For tools, see pages: CGFG 51-P8 (E42) • CGHN-8-10D (B28) • CGHN-D (B24) • CGHN-DG (B24) • CGHN-P8 (B25) • CGHR/L-12-14D (B69) • CGHR/L-P8DG (B25) • DGFH (B13) • DGFHR/L (D11) • DGFHR/L-B-D..(R/L) (D13) • HFFR/L-T (E22) • HGFH (B12) • PCHBR/L (B56) • SGFFA (E48) • SGFFH (E49) • TGFH/R/L (B66) • TGFHL-TR (D43) • TGFHR/L (D35) • TGHN-D (B16).

Spare Parts

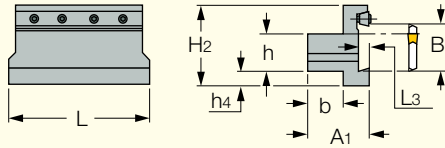


Designation	Top Clamp	Screw	Key	Pipe Fitting
SGTBN 16-2		SR M5X25DIN912	HW 4.0	
SGTBU 16-5G	BKU 86	SR M6X30DIN912	HW 5.0	
SGTBU 20-5G	BKU 86	SR M6X30DIN912	HW 5.0	
SGTBU 20-6G	BKU 100	SR M6X30DIN912	HW 5.0	
SGTBU 25-5G	BKU 105	SR M6X30DIN912	HW 5.0	
SGTBU 25-6G	BKU 110	SR M6X30DIN912	HW 5.0	
SGTBU 25-8M	BKU 110	SR M6X30DIN912	HW 5.0	
SGTBU 25C-6	BKU 110	SR M6X30DIN912	HW 5.0	SGCU-344
SGTBU 32-25-6G	BKU 110	SR M6X30DIN912	HW 5.0	
SGTBU 32-6G	BKU 110	SR M6X30DIN912	HW 5.0	
SGTBU 32-8M	BKU 110	SR M6X30DIN912	HW 5.0	
SGTBU 40-6G	BKU 110	SR M6X30DIN912	HW 5.0	
SGTBU 40-9	BK 509	SR M8X30DIN912	HW 6.0	
SGTBU 50-9	BK 509	SR M8X30DIN912	HW 6.0	

TOOL BLOCKS

SGTBK

Blocks for Heavy Duty Parting and Grooving Blades



Right-hand shown

Designation	h	b	B ₁	A ₁	H ₂	h ₄	L
SGTBK 32-9	32.0	28.0	32.0	48.00	62.0	3.0	120.00
SGTBK 38-9	38.0	35.0	52.6	60.00	90.0	25.0	135.00
SGTBK 40-9	40.0	35.0	52.6	60.00	90.0	23.0	135.00
SGTBK 50-9	50.0	40.0	52.6	65.00	90.0	15.0	135.00

• Choose blade by B₁ dimension

For tools, see pages: CGFG 51-P8 (E42) • CGHN-8-10D (B28) • CGHN-P8 (B25) • CGHR/L-12-14D (B69) • CGHR/L-P8DG (B25) • PCHBR/L (B56) • SGFFH (E49).

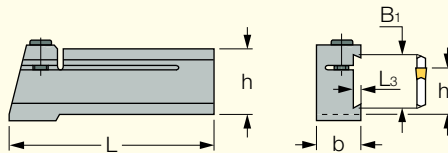
Spare Parts



Designation	Side Clamp	Screw	Key
SGTBK 32-9	BK 32-9 WEDG	SR M6X16DIN912	HW 5.0
SGTBK 38-9	BK 40-9	SR M6X20DIN912	HW 5.0
SGTBK 40-9	BK 40-9	SR M6X20DIN912	HW 5.0
SGTBK 50-9	BK 40-9	SR M6X20DIN912	HW 5.0

SGTBR/L

Blocks for Parting and Grooving Blades, for Conventional Lathes



Right-hand shown

Designation	h ₁	B ₁	b	h	L ₃	L
SGTBR/L 19-2	19.0	19.0	19.0	25.0	2.00	100.00
SGTBR/L 25-6	25.0	26.0	20.0	32.0	5.00	120.00

• Choose blade by B₁ dimension

For tools, see pages: DGFH (B13) • DGFHR/L (D11) • DGFHR/L-B-D..(R/L) (D13) • HGFH (B12) • PCHBR/L (B56) • TGFH/R/L (B66) • TGFHL-TR (D43) • TGFHR/L (D35).

Spare Parts

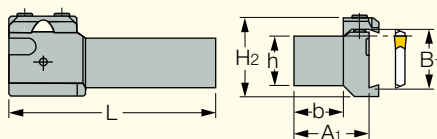


Designation	Screw	Key
SGTBR/L 19-2	SR M6X25DIN912 UNB.	HW 5.0
SGTBR/L 25-6	SR M6X30DIN912	HW 5.0

TOOL BLOCKS

UBHCR/L

Holders for Grooving Turning and Parting Blades



Right-hand shown

Designation	h	B ₁	b	H ₂	A ₁	L
UBHCR/L 20-26	20.0	26.0	20.0	42.0	35.60	100.00
UBHCR/L 25-32	25.0	32.0	25.0	46.0	40.00	130.00
UBHCR/L 32-32	32.0	32.0	32.0	46.0	47.00	130.00

• Choose blade by B₁ dimension

For tools, see pages: CGHN-D (B24) • CGHN-DG (B24) • CGHN-S (B23) • CGHR/L-P8DG (B25) • DGFH (B13) • DGFHR/L (D11) • DGFHR/L-B-D..(R/L) (D13) • HFFR/L-T (E22) • HGFH (B12) • SGFFA (E48) • SGFFH (E49) • TGFH/R/L (B66) • TGFHL-TR (D43) • TGFHR/L (D35) • TGHN-D (B16) • TGHN-S (B16).

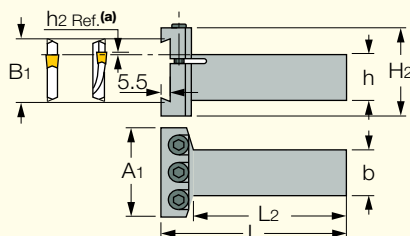
Spare Parts



Designation	Top Clamp	Screw	Key	Spring Plunger
UBHCR/L	BKU 176 307	SR M6X16DIN912	HW 5.0	SPRING PLUNGER M6X14X3.5

SGTBF

Perpendicular Blocks for Parting and Grooving Blades



Designation	h	b	L	L ₂	B ₁	A ₁	H ₂	L ₃
SGTBF 25-A	25.0	25.0	102.00	80.00	32.0	48.00	48.0	5.50
SGTBF 32-A	32.0	32.0	116.00	100.00	32.0	48.00	48.0	5.50

• (a) h₂ Ref. as defined for SELF-GRIP face grooving blades • Choose blade by B₁ dimension

For tools, see pages: DGFH (B13) • DGFHR/L (D11) • DGFHR/L-B-D..(R/L) (D13) • HFFR/L-T (E22) • HGFH (B12) • SGFFA (E48) • SGFFH (E49) • TGFH/R/L (B66) • TGFHR/L (D35).

Spare Parts



Designation	Screw	Key
SGTBF	SR M6X40DIN912	HW 5.0

USER GUIDE

JET-CUT Assembly

C Insert GF□

D Blade SGFH□K-□

E Cap **SGC 340** supplied with each blade. To be used only with Option 1.

F Tool block **SGTBU□C-□**

G Elbow-style connector unit supplied with each tool block. **SGCU-344**.

H 3/16" copper **Tube 343** (length 250 mm).

I Choice of connector sets:

CGM-343 (G1/8 external thread).

CGF-343 (G1/8 internal thread).

CF-343 (NPT 1/8 internal thread).

J Standard current tool block.

SGTBN, SGTBU, SGTBF.

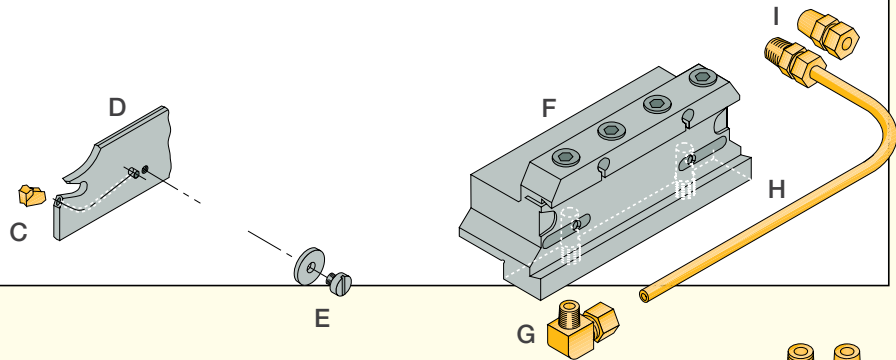
K Coolant connection unit. **SGCU-341.**

M Integral shank holder

SGTFR/L□K-□

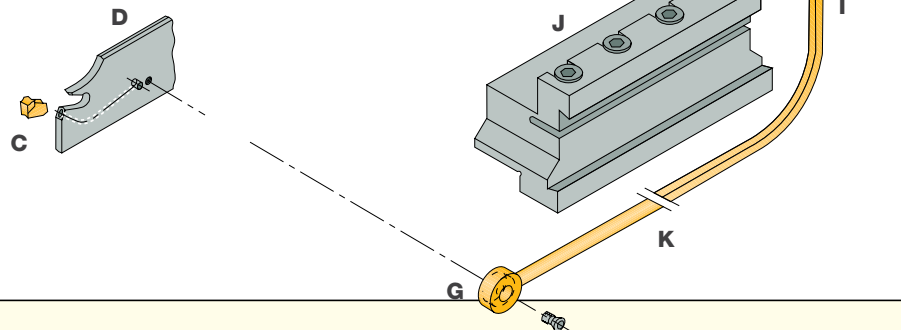
Option 1:

Coolant supplied through the tool block.



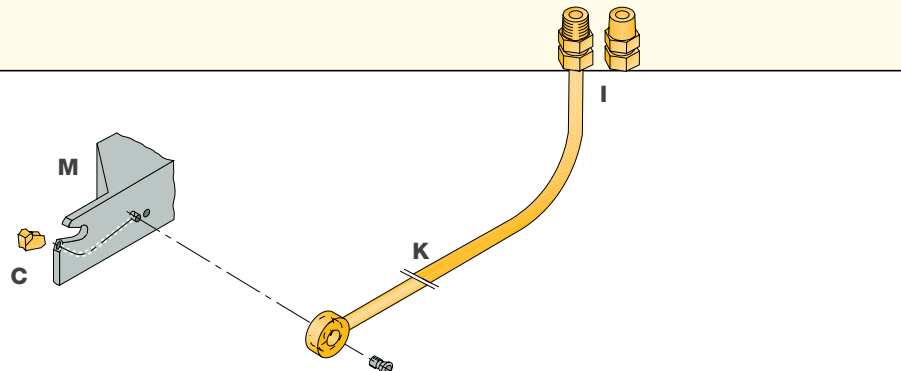
Option 2:

Coolant supplied directly to the blade.



Option 3:

Coolant supplied directly to the integral shank tool.



USER GUIDE

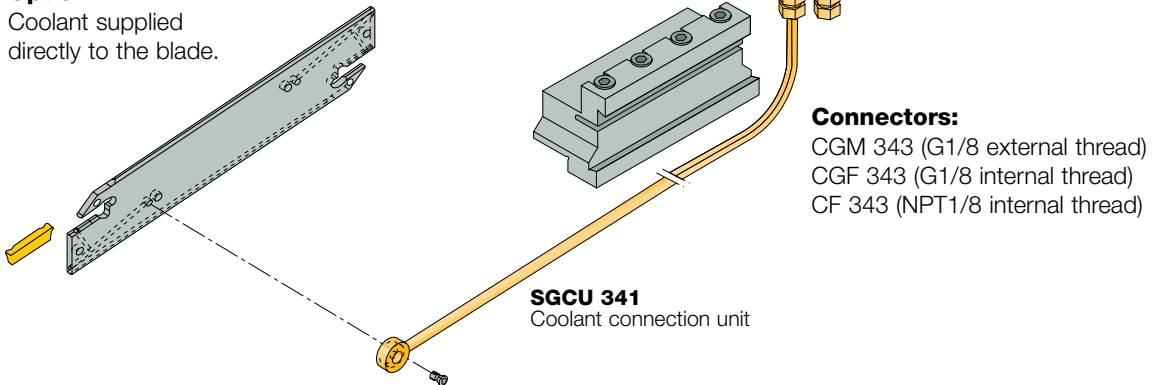
The coolant supply tube can be attached directly to the DGTR...C integral tool, to the DGFH-C blades used on

the regular blocks, or to the SGTBU-C blocks which have coolant passages and connecting ports.

JET-CUT Assembly The Right Connection for Your Application

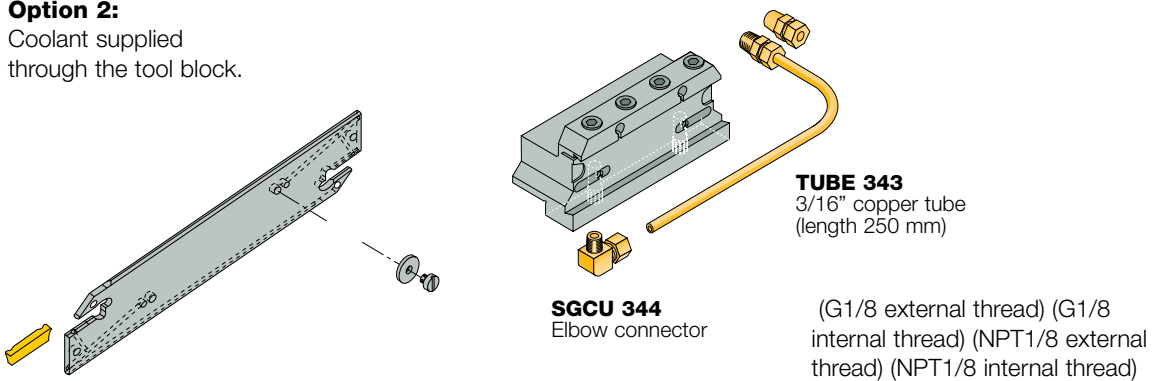
Option 1:

Coolant supplied directly to the blade.



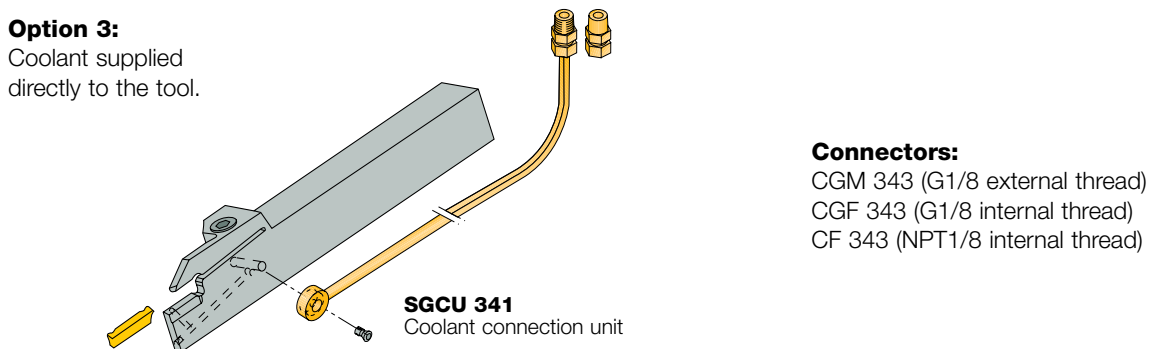
Option 2:

Coolant supplied through the tool block.



Option 3:

Coolant supplied directly to the tool.



EXCHANGEABLE HEADS



EXCHANGEABLE HEADS

Tools and Holders with Exchangeable Hollow Tapered Shanks

Page

CAMFIX (ISO 26623-1)

G3

HSK-T (ISO 12164-3 T Type and ICTM Standard)

G15

IM (ISO 26622-1 and Mazak XMZ Standard)

G22

ISCAR offers a wide range of tools for three types of Quick-Change systems:

CAMFIX (ISO 26623-1),

HSK-T (ISO 12164-3 T Type and ICTM Standards) and

IM (ISO 26622-1 and Mazak XMZ Standards)

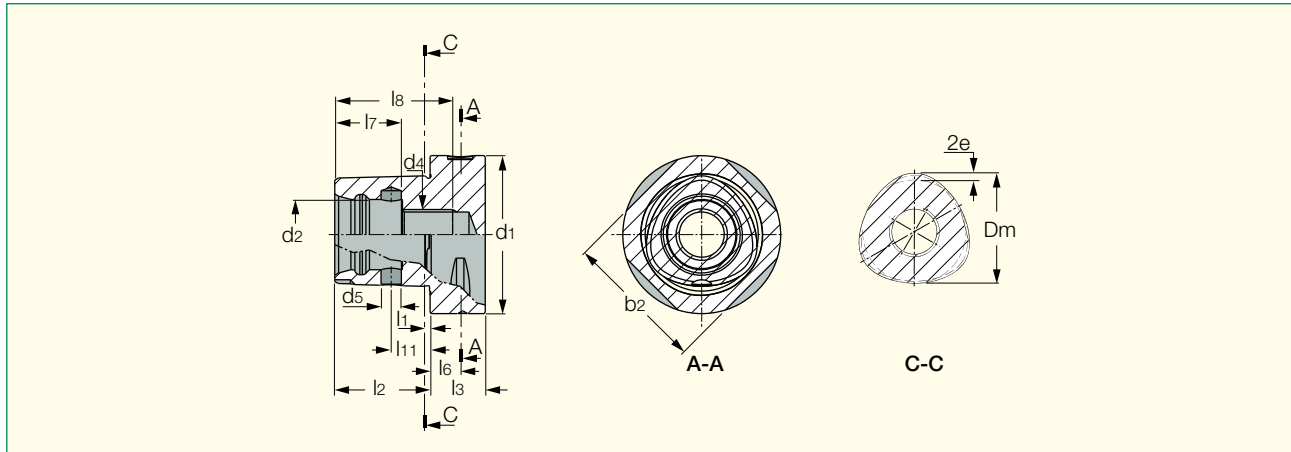
CHAMFIX (ISO 266231)



Quick-Change tools are expensive compared to standard shank tools. ISCAR offers economical solutions by using adapters, blades, or regular tools and boring bars on the Quick-Change adaptations.

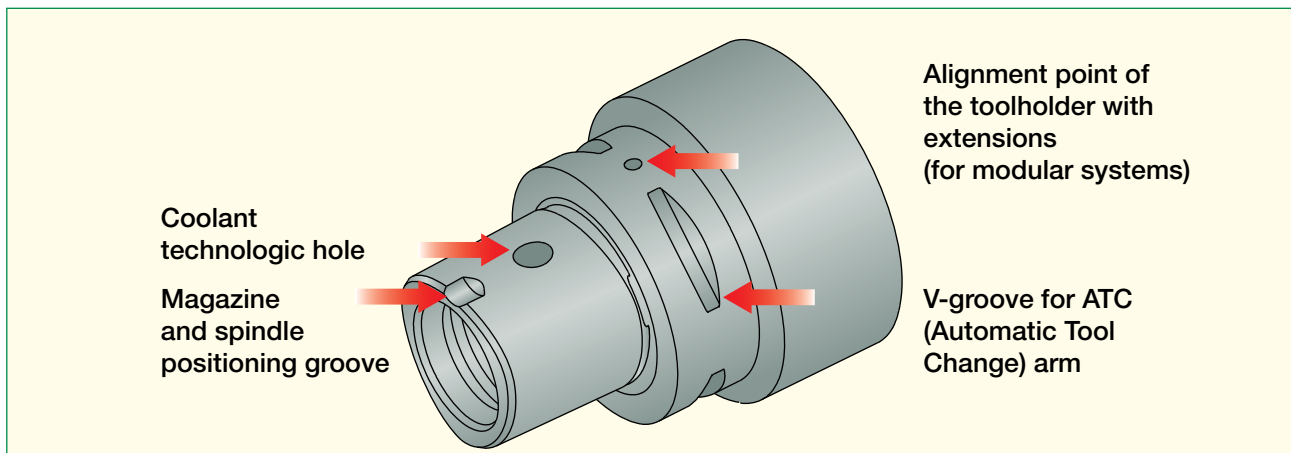
HSK-T (ISO 1264-3 T Type and ICTM Standard)





CAMFIX	b ₂	d ₁ ±0.1	d ₂	d ₄	d ₅ ±0.1	D _m	e	l ₁	l ₂ ±0.1	l ₃ min	l ₆ ±0.15	l ₇ ±0.15	l ₈ min	l ₁₁ ±0.1
C3	28,3	32	15	M12x1.5	3,6	22	0,7	2,5	19	15	6	13	25	8
C4	35,3	40	18	M14x1.5	4,6	28	0,9	2,5	24	20	8	15	30	11,5
C5	44,4	50	21	M16x1.5	6,1	35	1,12	3	30	20	10	20	37	14
C6	55,8	63	28	M20x2	8,1	44	1,4	3	38	22	12	27	47	15,5
C8	71,1	80	32	M20x2	9,1	55	2	3	48	30	12	28	48	25
CBX	88,7	100	32	M20x2	9,1	55	2	3	48	32	16	28	48	25
C10	88,3	100	43	M24x2	12	72	2,8	3	60	36	16	40	70	26,5

CAMFIX - ISO 26623-1 Standard Quick Change Shanks



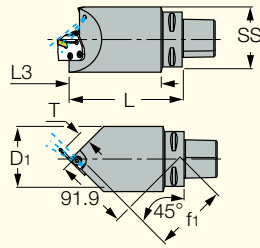
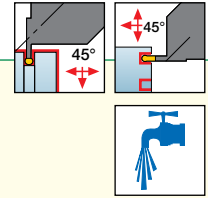
Features

- **Symmetrical design:** Due to the symmetrical design, the torque load is distributed on the polygon, providing a self-centering effect.
- **Rigidity:** The CAMFIX clamping mechanism is extremely rigid against bending forces.
- **Accuracy:** The taper and face contact ensure high repeatability within 2 microns, when operated with an automatic tool changer.

MODULAR-GRIP • CAMFIX

C#-MAHDR-45

Holders for Parting, Grooving, Turning and Facing Adapters with CAMFIX (ISO 26623-1 standard) Exchangeable Shanks



Right-hand shown • T= See specific adapter dimensions.

Designation	SS	L	f ₁	D ₁	L ₃
C6 MAHDR-45	63	130.00	89.0	75.0	105.78
C8 MAHDR-45	80	130.00	89.0	80.0	-

For tools, see pages: CGPAD (B23) • DGAD-B-D (D23) • DGAD/HGAD (D22) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGPAD (B12) • PCADR/L (B55) • TGAD (D39) • TGPAD (B15).

Spare Parts



Designation	Lower Locking Screw	Key	Side Locking Screw	Upper Locking Screw	Key 1	Sealing Screw	Cooling Nozzle
C6 MAHDR-45	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20DIN7984	HW 4.0	SR M6X6DIN551 ⁽³⁾	EZ 83
C8 MAHDR-45	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 ⁽³⁾	EZ 83

⁽¹⁾ For CGPAD, HGPAD, TGPAD and HFPAD adapters. Supplied with the tools.

⁽²⁾ For DGAD, HGAD and PCADR/L adapters. Supplied in the attached plastic bag.

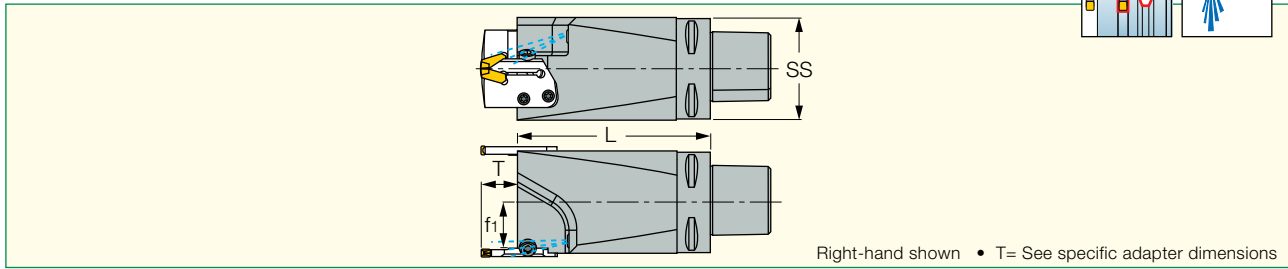
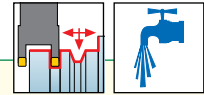
⁽³⁾ Used to prevent chips from entering the upper locking screw hole.



MODULAR-GRIP • CAMFIX

C#-MAHDOR

Holders for Parting, Grooving, Turning and Facing Adapters with CAMFIX (ISO 26623-1 standard) Exchangeable Shanks



Designation	SS	f ₁	L
C6 MAHDOR	63	29.0	130.00
C8 MAHDOR	80	37.5	130.00

For tools, see pages: CGPAD (B23) • DGAD-B-D (D23) • DGAD/HGAD (D22) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGPAD (B12) • PCADR/L (B55).

Spare Parts



Designation	Lower Locking Screw	Key	Side Locking Screw	Upper Locking Screw	Key 1	Sealing Screw	Cooling Nozzle
C#-MAHDOR	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 ⁽³⁾	EZ 125

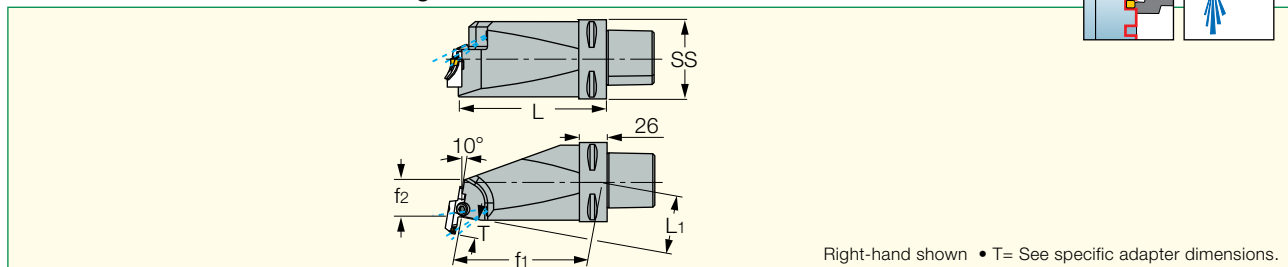
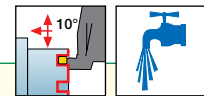
⁽¹⁾ For CGPAD, HGPAD, TGPAD and HFPAD adapters. Supplied with the tools.

⁽²⁾ For DGAD, HGAD and PCADR/L adapters. Supplied in the attached plastic bag.

⁽³⁾ Used to prevent chips from entering the upper locking screw hole.

C#-MAHUR/L

Holders for Parting, Grooving, Turning and Facing Adapters with CAMFIX Shanks. 10° Mounting on Mill-Turn Machines



Designation	SS	f ₁	f ₂	L	L ₁
C6 MAHUR/L-10	63	113.1	29.00	123.00	49.4
C8 MAHUR-10	80	113.1	29.00	123.00	49.4

For tools, see pages: CGPAD (B23) • DGAD-B-D (D23) • DGAD/HGAD (D22) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGPAD (B12) • PCADR/L (B55) • TGAD (D39) • TGPAD (B15).

Spare Parts



Designation	Lower Locking Screw	Key	Side Locking Screw	Upper Locking Screw	Key 1	Sealing Screw	Cooling Nozzle
C#-MAHUR/L	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 ⁽³⁾	EZ 125

⁽¹⁾ For CGPAD, HGPAD, TGPAD and HFPAD adapters. Supplied with the tools.

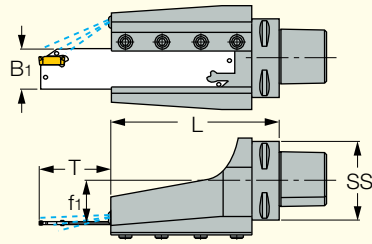
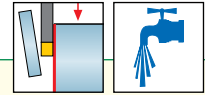
⁽²⁾ For DGAD, HGAD and PCADR/L adapters. Supplied in the attached plastic bag.

⁽³⁾ Used to prevent chips from entering the upper locking screw hole.

EXCHANGEABLEHEADS • CAMFIX

C#-TBK-R/L

Blocks with CAMFIX (ISO 26623-1 standard) Exchangeable,
Tapered Shanks for Parting and Grooving Blades



Designation	SS	f ₁	L	B ₁
C6 TBK-32R/L	63	32.0	138.00	32.0
C8 TBK-32R	80	40.5	147.00	32.0
C8 TBK-52R	80	40.5	161.00	52.0

For tools, see pages: CGHN-DG (B24) • CGHR/L-P8DG (B25) • DGFH (B13) • DGFHR/L (D11) • DGFHR/L-B-D..(R/L) (D13) • HGFH (B12) • PCHBR/L (B56) • TGFH/R/L (B66) • TGFHR/L (D35).

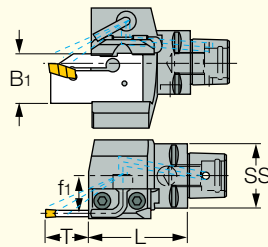
Spare Parts



Designation	Side Clamp	Screw	Key	Cooling Nozzle
C6 TBK-32R/L	BK 32-9 WEDG	SR M6X16DIN912	HW 5.0	EZ 125
C8 TBK-32R	BK 32-9 WEDG	SR M6X16DIN912	HW 5.0	EZ 125
C8 TBK-52R	BK 40-9	SR M6X16DIN912	HW 5.0	EZ 125

C#-TBU

Blocks with CAMFIX Exchangeable, Tapered Shanks for Parting and Grooving Blades



Designation	SS	L	f ₁	B ₁
C4 TBU-32R/L	40	60.00	21.0	32.0
C5 TBU-32R/L	50	64.00	30.0	32.0
C6 TBU-32R/L	63	70.00	38.0	32.0

Spare Parts



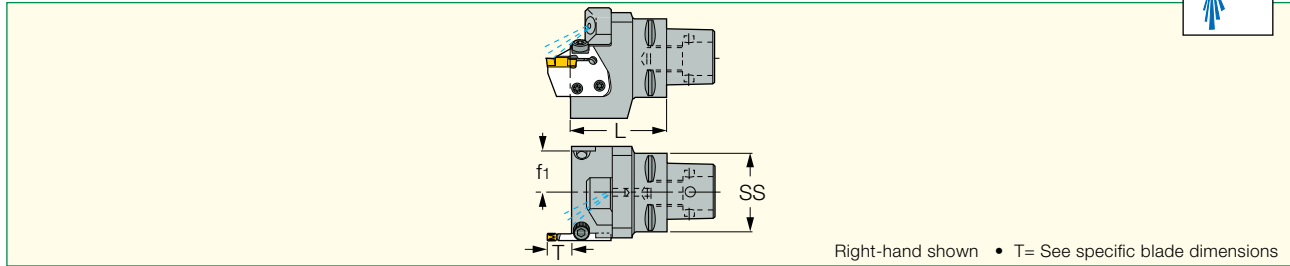
Designation	Top Clamp	Screw	Key	Screw 1	Pipe	Cooling Nozzle
C4 TBU-32R/L	BKU 176 307	SR M6X25DIN912	HW 5.0	SR M6X8	EZP 5	EZ 125
C5 TBU-32L	BKU 176 307	SR M6X25DIN912	HW 5.0	SR M6X8	EZP 5	EZ 125
C5 TBU-32R	BKU 176 307	SR M6X20DIN912	HW 5.0	SR M6X8	EZP 5	EZ 125
C6 TBU-32R/L	BKU 176 307	SR M6X25DIN912	HW 5.0	SR M6X8	EZP 5	EZ 125

For tools, see pages: CGHN-S (B23) • TGHN-S (B16).

MODULAR-GRIP • CAMFIX

C#-MAHD

Holders for Parting, Grooving, Turning and Facing Adapters with CAMFIX Exchangeable Shanks



Designation	SS	L	f ₁
C3 MAHD	32	50.00	18.5
C4 MAHD	40	46.50	22.1
C5 MAHD	50	47.00	23.0
C6 MAHD	63	50.00	29.0
C8 MAHD	80	60.00	37.5

For tools, see pages: CGPAD (B23) • DGAD-B-D (D23) • DGAD/HGAD (D22) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGPAD (B12) • PCADR/L (B55) • TGAD (D39) • TGPAD (B15).

Spare Parts



Designation	Lower Locking Screw	Key	Side Locking Screw	Upper Locking Screw	Key 1	Sealing Screw	Cooling Nozzle	Nozzle	Nozzle Screw
C#-MAHD	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 14H/22H ⁽³⁾	EZ 125	EZA 125	SR 76-1022

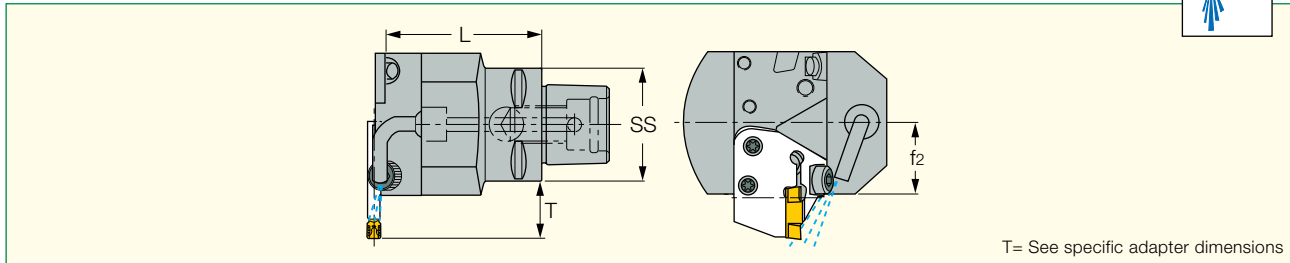
⁽¹⁾ For CGPAD, HGPAD, TGPAD and HFPAD adapters. Supplied with the tools.

⁽²⁾ For DGAD, HGAD and PCADR/L adapters. Supplied in the attached plastic bag.

⁽³⁾ Used to prevent chips from entering the upper locking screw hole.

C#-MAHPD

Perpendicular Holders for Parting, Grooving, Turning and Facing Adapters with CAMFIX Exchangeable Shanks



Designation	SS	L	f ₂
C4 MAHPD	40	46.00	25.00
C5 MAHPD	50	46.00	26.00
C6 MAHPD	63	47.00	33.00
C8 MAHPD	80	42.00	42.00

For tools, see pages: CGPAD (B23) • DGAD-B-D (D23) • DGAD/HGAD (D22) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGPAD (B12) • PCADR/L (B55) • TGAD (D39) • TGPAD (B15).

Spare Parts



Designation	Lower Locking Screw	Key	Side Locking Screw	Upper Locking Screw	Key 1	Sealing Screw	Cooling Nozzle	Nozzle Screw	Nozzle	Pipe
C4 MAHPD	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 14H/22H ⁽³⁾	EZ 125	SR 76-1022	EZA-21414	
C5 MAHPD	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 14H/22H ⁽³⁾	EZ 125	SR 76-1022	EZA-21414	
C6 MAHPD	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 14H/22H ⁽³⁾	EZ 125	SR 76-1022	EZA-21414	
C8 MAHPD	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 14H/22H ⁽³⁾	EZ 125			EZP 5

⁽¹⁾ For CGPAD, HGPAD, TGPAD and HFPAD adapters. Supplied with the tools.

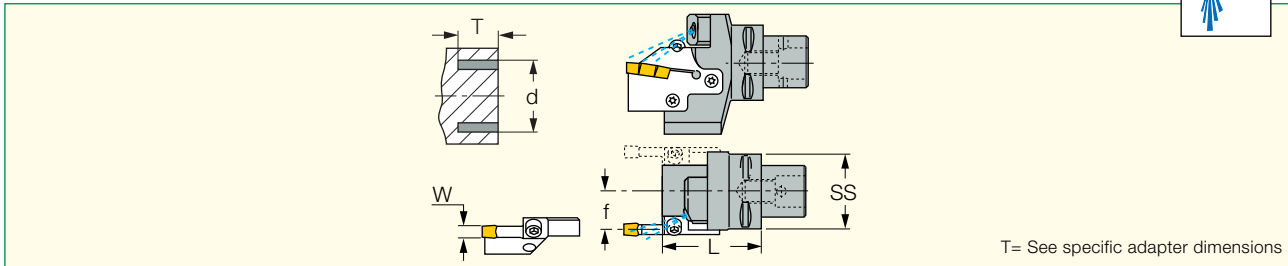
⁽²⁾ For DGAD, HGAD and PCADR/L adapters. Supplied in the attached plastic bag.

⁽³⁾ Used to prevent chips from entering the upper locking screw hole.

EXCHANGEABLEHEADS • CAMFIX

C#-GHAD-8

Holders for Grooving, Turning and Facing Adapters with CAMFIX Exchangeable Shanks



Designation	SS	L	f	W	d Range	T range
C5 GHAD-8	50	65.00	26.00	8.00	80-510	15-25
C6 GHAD-8	63	65.00	32.50	8.00	80-510	15-25

For tools, see pages: GADR/L-8 (B28) • GAFG-R/L-8 (E42).

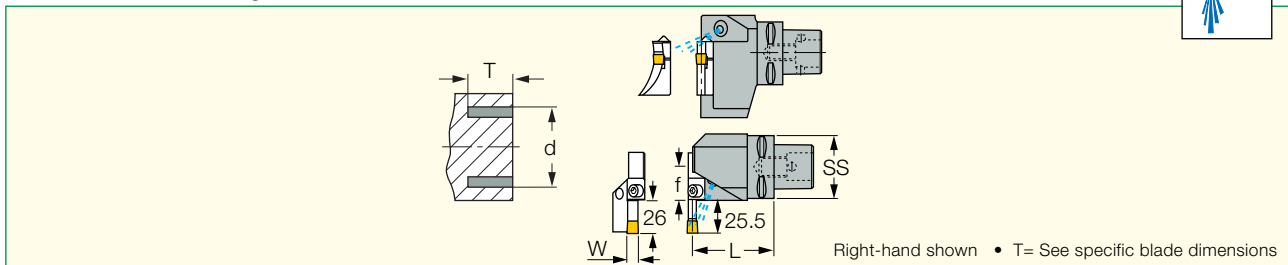
Spare Parts



Designation	Screw	Key	Screw 1	Key 1	Screw 2	Nozzle Body	Cooling Nozzle
C#-GHAD-8	SR 14-519	T-20/5	SR M6X25DIN912 UNB.	HW 5.0	SR 76-1022	EZA 125	EZ 125

C#-GHAPR/L-8

Perpendicular Holders for Grooving, Turning and Facing Adapters with CAMFIX Exchangeable Shanks



Designation	SS	L	f	W	d Range	T range
C5 GHAPR/L-8	50	64.00	26.00	8.00	80-510	15-25
C6 GHAPR/L-8	63	75.00	33.00	8.00	80-510	15-25

For tools, see pages: GADR/L-8 (B28) • GAFG-R/L-8 (E42).

Spare Parts

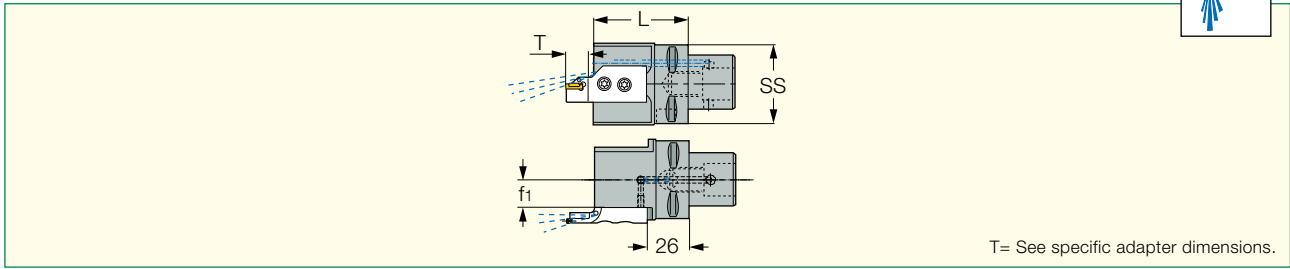


Designation	Screw	Key	Screw 1	Key 1	Screw 2	Cooling Nozzle
C5 GHAPR/L-8	SR 14-519	T-20/5	SR M6X25DIN912	HW 5.0	SR M6X8	EZ 125
C6 GHAPR/L-8	SR 14-519	T-20/5	SR M6X25DIN912	HW 5.0		EZ 125

EXCHANGEABLEHEADS • CAMFIX

C#-HAD

Holders for Internal Facing Adapters with CAMFIX Exchangeable, Tapered Shanks



T= See specific adapter dimensions.

Designation	SS	L	f ₁
C4 HAD	40	60.00	18.0
C5 HAD	50	60.00	18.0
C6 HAD	63	60.00	18.0

For tools, see pages: HFAER/L-4T (E24) • HFAER/L-5T, 6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5T, 6T (E32) • HGAER/L-3 (E24) • HGAIR/L-3 (E30).

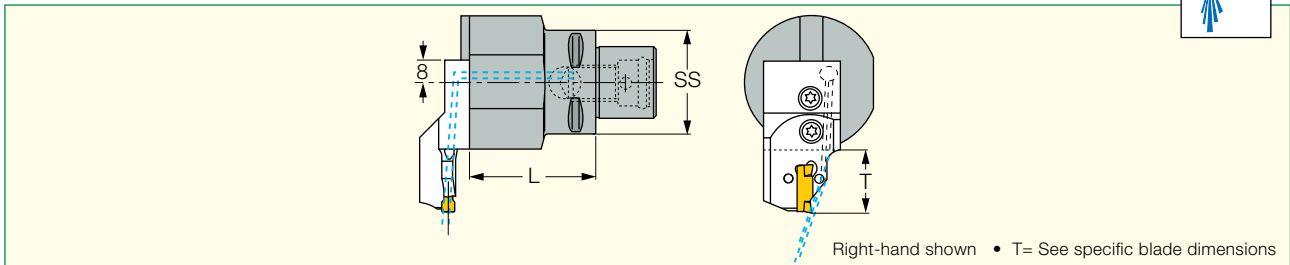
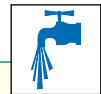
Spare Parts



Designation	Side Locking Screw	Key	Screw	Key 1
C4 HAD	SR 14-519	T-20/3	SR M4X6DIN912	HW 3.0
C5 HAD	SR 14-519	T-20/3	SR M4X6DIN912	HW 3.0
C6 HAD	SR 14-519	T-20/3	SR M5X6DIN913	HW 2.0

C#-HAPR/L

Perpendicular Holders for Internal Facing Adapters with CAMFIX Exchangeable, Tapered Shanks



Right-hand shown • T= See specific blade dimensions

Designation	SS	L
C4 HAPR/L	40	50.00
C5 HAPR	50	50.00
C6 HAPR/L	63	50.00

For tools, see pages: HFAER/L-4T (E24) • HFAER/L-5T, 6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5T, 6T (E32) • HGAER/L-3 (E24) • HGAIR/L-3 (E30).

Spare Parts

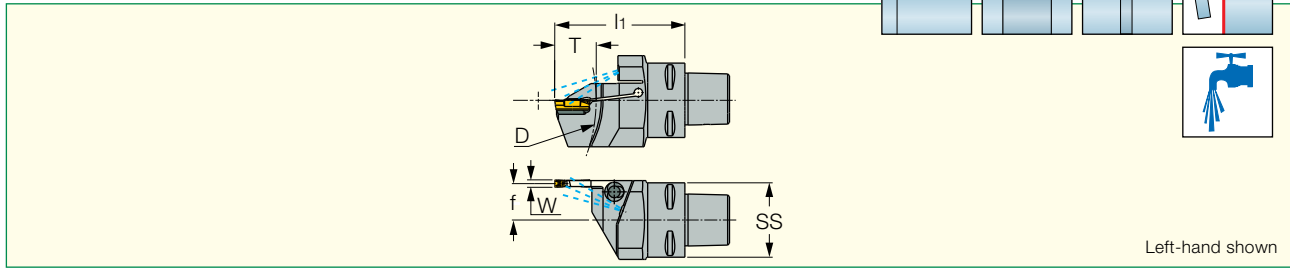
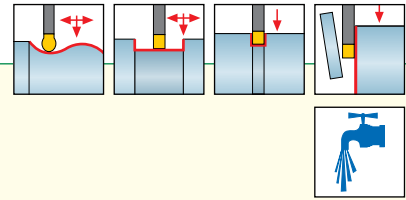


Designation	Screw	Key
C4 HAPR/L	SR 14-519	T-20/3
C5 HAPR	SR 14-519	T-15/3
C6 HAPR/L	SR 14-519	T-20/3

HELI-GRIP • CAMFIX

C#-HELIR/L

External Holders for Turning, Grooving and Parting with CAMFIX
(ISO 26623-1 standard) Exchangeable, Tapered Shanks



Designation	W _{min}	W _{max}	f	l ₁	SS	D _{max} ⁽¹⁾	Inserts
C4 HELIR/L 3T20	3.00	3.18	20.0	65.00	40	40.0	GRIP 3, HGN 3
C5 HELIR/L 3T20	3.00	3.18	25.3	65.00	50	40.0	GRIP 3, HGN 3
C6 HELIR/L 3T20	3.00	3.18	31.8	65.00	63	40.0	GRIP 3, HGN 3
C4 HELIR/L 4T25	4.00	4.76	19.6	70.00	40	50.0	GRIP 4, DGN 4
C5 HELIR/L 4T25	4.00	4.76	24.9	70.00	50	50.0	GRIP 4, DGN 4
C6 HELIR/L 4T25	4.00	4.76	31.4	70.00	63	50.0	GRIP 4, DGN 4
C5 HELIR/L 5T25	5.00	5.00	24.4	70.00	50	50.0	GRIP 5, DGN 5
C6 HELIR/L 5T25	5.00	5.00	30.9	70.00	63	50.0	GRIP 5, DGN 5
C6 HELIR/L 6T30	6.00	6.35	30.4	85.00	63	60.0	GRIP 6, DGN 6

• The depth of cut (T) for grooving is limited by the part diameter D. For grooving depth capacity, see table below.

⁽¹⁾ Maximum parting diameter.

For inserts, see pages: GRIP (B14) • GRIP (Full Radius) (B14) • DGN/DGNC/DGNM-C (D24) • HGN-C (D30) • DGR/L-C DGRC/LC-C (D24) • DGN/DGNM-J/JS/JT (D25) • HGN-J (D30) • DGR/L-J/JS (D26) • DGN-UT/UA (D27) • DGN-W (D25) • HGN-UT (D31).

Spare Parts



Designation	Screw	Key	Cooling Nozzle
C#-HELIR/L	SR M6X16DIN912	HW 5.0	EZ 104

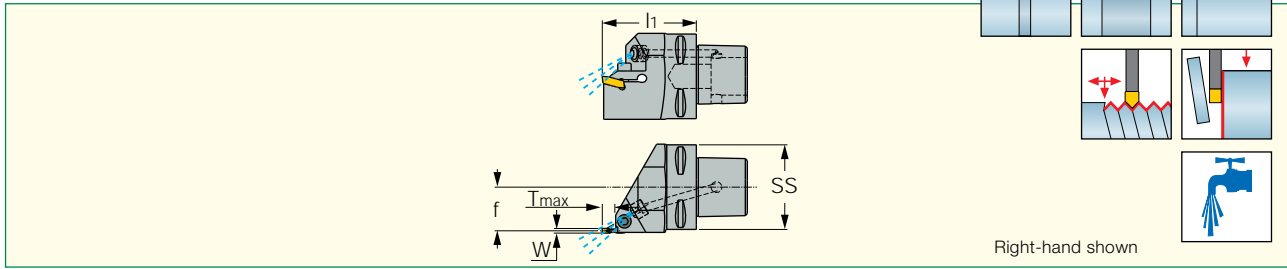
Grooving Depth Capacity

Designation	D																						
	∞	∞	∞	∞	1151	384	231	167	131	109	94	83	—	—	—	—	—	—	—	—			
C4 HELIR/L 3T20	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	1127	376	227	163	128	107	—	—			
C4 HELIR/L 4T25	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	1301	434	261	188	148	122	105	—	—		
C5 HELIR/L 3T20	∞	∞	∞	∞	1277	426	257	185	145	120	103	91	82	—	—	—	—	—	—	—			
C5 HELIR/L 4T25	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	1301	434	261	188	148	122	105	—	—	
C5 HELIR/L 5T25	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	1301	434	261	188	148	122	105	—	—		
C6 HELIR/L 3T20	∞	787	394	264	199	161	136	118	105	95	87	81	—	—	—	—	—	—	—	—	—		
C6 HELIR/L 4T25	∞	∞	∞	∞	∞	∞	∞	1957	653	393	282	221	182	156	137	122	111	102	—	—	—		
C6 HELIR/L 5T25	∞	∞	∞	∞	∞	∞	∞	1957	653	393	282	221	182	156	137	122	111	102	—	—	—		
C6 HELIR/L 6T30	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	1879	627	377	271	212	175	150	131	118	107	99
Depth T	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	

CUT-GRIP • CAMFIX

C#-GHDR/L

External Grooving, Turning and Parting Toolholders, with CAMFIX
(ISO 26623-1 standard) Exchangeable, Tapered Shanks



Designation	W _{min}	W _{max}	SS	T _{max-r}	l ₁	f
C4 GHDR/L-3	2.80	4.00	40	9.00	55.00	20.0
C5 GHDR/L-3	2.80	4.00	50	9.00	55.00	24.0
C6 GHDR/L-3	2.80	4.00	63	9.00	55.00	32.0
C4 GHDR/L-4	4.00	5.00	40	10.00	55.00	20.0
C5 GHDR/L-4	4.00	5.00	50	10.00	55.00	24.0
C6 GHDR/L-4	4.00	5.00	63	10.00	55.00	32.0
C5 GHDR/L-5	5.00	6.40	50	12.00	55.00	24.0
C6 GHDR/L-5	5.00	6.40	63	12.00	55.00	32.0
C6 GHDR/L-8 ⁽¹⁾	7.00	8.40	63	25.00	70.00	30.0

• When using GPV and TIP inserts, toolholder tip must be modified according to insert profile to ensure clearance.

⁽¹⁾ Used with GIF 8, GIA 8, GIPA 8, GDMM, GIDA, GDMY, GDMF, GDMU inserts.

For inserts, see pages: GDMF (B29) • GDMM-CC (E46) • GDMN (B31) • GDMU (B31) • GDMY (B30) • GDMY (Full Radius) (B33) • GDMY-F (B34) • GIA-K (Long Pocket) (B44) • GIA-K (W=3-6) (B44) • GIF (B42) • GIF (Full Radius) (B43) • GIF (Long Pocket) (B43) • GIF-E (W=4-6 Full Radius) (B37) • GIF-E (W=4-6) (B35) • GIF-E (W=8,10 Full Radius) (B38) • GIF-E (W=8,10) (B35) • GIM-C (D48) • GIM-J (D49) • GIM-J-RA/LA (D49) • GIM-UT (D51) • GIM-UT-RA/LA (D51) • GIM-W (D50) • GIM-W-RA/LA (D50) • GIMF (B29) • GIMN (B31) • GIMY (B30) • GIMY (Full Radius) (B32) • GIMY-F (B34) • GIP (B41) • GIP (Full Radius) (B42) • GIP-E (B36) • GIP-E (Full Radius) (B38) • GIP-UN (B50) • GIPA (Full Radius W=3-6) (B47) • GIPA (W=3-6) (B46) • GIPA/GIDA 8 (Full Radius) (B48) • GIPY (B46) • GITM (B45) • GITM (Full Radius) (B45) • GPV (B50) • For TIP threading inserts, refer to ISCAR full ISCAR TURNING & THREADING TOOLS catalog.

Spare Parts

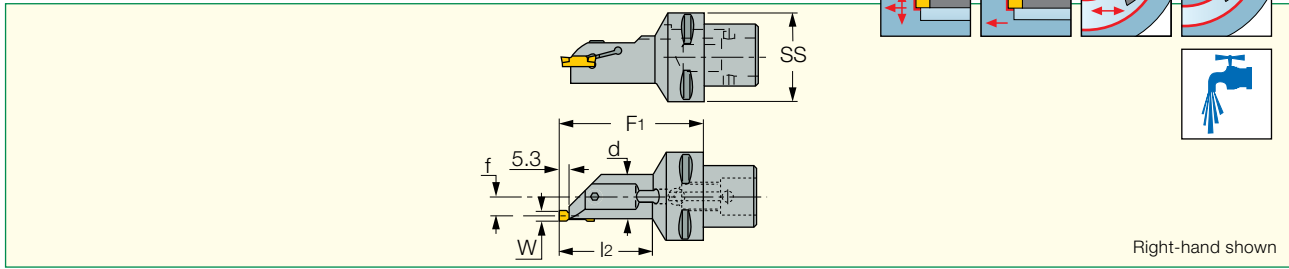
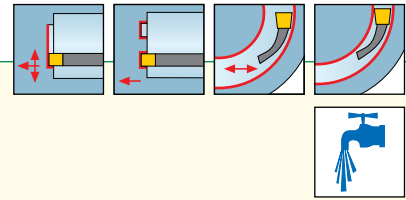


Designation	Screw	Key	Cooling Nozzle
C4 GHDR/L-3	SR M5X20DIN912	HW 4.0	EZ 104
C5 GHDR/L-3	SR M5X25DIN912	HW 4.0	EZ 104
C6 GHDR/L-3	SR M5X25DIN912	HW 4.0	EZ 125
C4 GHDR/L-4	SR M6X25DIN912	HW 5.0	EZ 104
C5 GHDR/L-4	SR M6X25DIN912	HW 5.0	EZ 104
C6 GHDR/L-4	SR M6X25DIN912	HW 5.0	EZ 125
C5 GHDR/L-5	SR M6X25DIN912	HW 5.0	EZ 104
C6 GHDR/L-5	SR M6X25DIN912	HW 5.0	EZ 125
C6 GHDR/L-8	SR M6X25DIN912	HW 5.0	EZ 146

EXCHANGEABLEHEADS • CAMFIX

C#-HFIR/L-MC

Boring Bars for Internal Grooving and Turning with CAMFIX
(ISO 26623-1 standard) Exchangeable, Tapered Shanks



Designation	W _{min}	W _{max}	SS	f	l ₂	F ₁	d
C4 HFIR/L-MC	3.00	6.00	40	11.30	52.0	80.0	25.00
C5 HFIR/L-MC	3.00	6.00	50	11.30	52.0	80.0	25.00

• DGN & GRIP 4.. - 6.. inserts can be used only with right-hand tools, HGPL 4.. - 6.. inserts with left-hand tools. • After initial groove, no limitation to widening groove outward or toward center. • For user guide, see pages E7, E33, E52-68.

For inserts, see pages: HFPR/L (E35) • HFPR/L (Full Radius) (E35) • GRIP (B14) • GRIP (Full Radius) (B14) • DGN/DGNC/DGNM-C (D24) • DGN/DGNM-J/JS/JT (D25) • DGN-UT/JA (D27) • DGN-W (D25) • HGPL (E39).

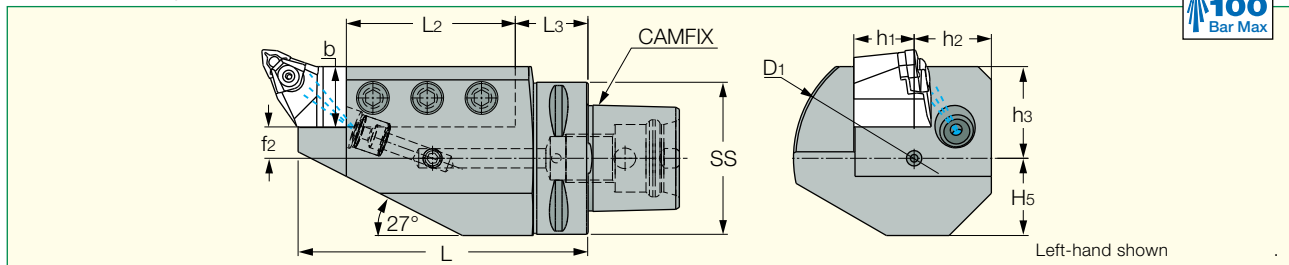
Spare Parts



Designation	Screw	Key	Cooling Nozzle
C#-HFIR/L-MC	SR M5X16DIN912	HW 4.0	EZ 83

C#-ASHR/L

Holders with CAMFIX (ISO 26623-1 Standard) Exchangeable Shanks
for External Square-Shank Tools



Designation	SS	L	L ₂	L ₃	f ₂	h ₁	b	h ₂	h ₃	H ₅	D ₁
C4 ASHR/L 16 1	40	104.00	70.00	34.00	16.00	16.0	16.0	20.0	23.0	20.50	60.0
C5 ASHR/L 20 1	50	98.00	63.50	24.50	10.00	20.0	20.0	33.0	30.0	29.00	90.0
C6 ASHR/L 20-1	63	100.00	63.50	36.50	20.00	20.0	20.0	33.0	30.0	29.00	90.0
C6 ASHR/L 25 1	63	120.00	70.00	30.00	13.00	25.0	25.0	32.0	38.0	32.00	100.0
C8 ASHR/L 32-1	80	140.00	95.00	35.00	8.00	32.0	32.0	32.0	40.0	40.00	110.0

Spare Parts



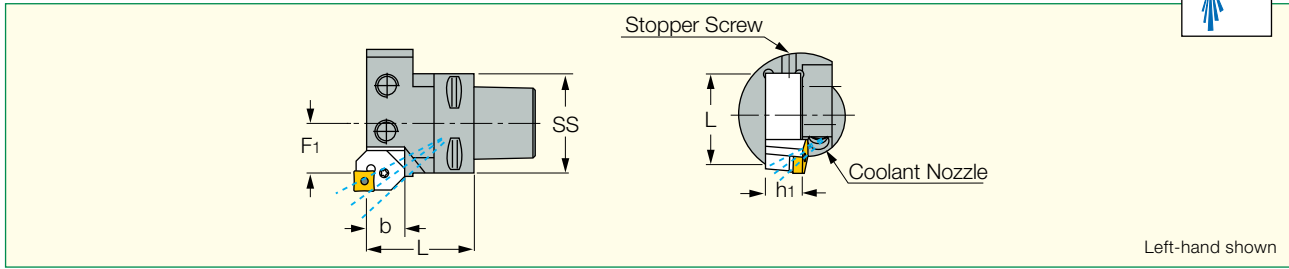
Designation	Screw	Key	Cooling Nozzle	Wrench
C5 ASHR/L 20 1	SR M10X25DIN915 45H	HW 5.0*	SATZ-M10X1-M5	
C6 ASHR/L 20-1	SR M10X25DIN915 45H	HW 5.0*	SATZ-M10X1-M5	
C6 ASHR/L 25 1	SR M12X30 DIN915 45H	HW 6.0*	SATZ-M12X1-M6	WRENCH NOZZLE HP M12*
C8 ASHR/L 32-1	SR M12X30 DIN915 45H	HW 6.0*	SATZ-M12X1-M6	WRENCH NOZZLE HP M12*

* Optional, should be ordered separately

EXCHANGEABLEHEADS • CAMFIX

C#-ADE

Holders with CAMFIX Exchangeable Shanks for External, Square-Shank Tools



Left-hand shown

Designation	SS	F ₁	h ₁	L
C3 ADE 16R/L	32	25.0	16.0	45.00
C4 ADE-20R/L	40	25.0	20.0	49.20
C5 ADE-20R/L	50	25.0	20.0	55.20

Use the tools with "AD" suffix. Regular tools should be shortened.

Spare Parts



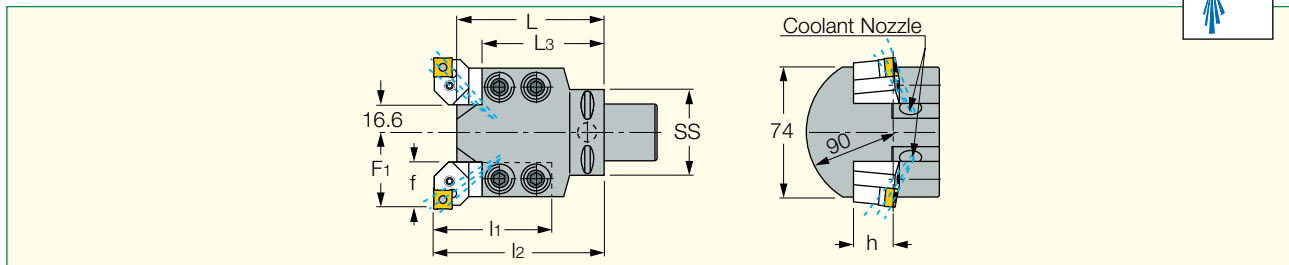
Designation	Screw	Key	Screw 1	Key 1	Screw 2	Cooling Nozzle
C3 ADE 16R/L	SR M10X20DIN915 45H	HW 3.0*	SR M6X6DIN916 45H	HW 5.0*	SR M6X8DIN916 45H	SATZ-M8X1-M3
C4 ADE-20R/L	SR M10X20DIN912 12.9	HW 4.0*	SR M8X10DIN913 45H ⁽¹⁾	HW 8.0*		EZ 125
C5 ADE-20R/L	SR M10X16	HW 4.0*	SR M8X10DIN916 45H ⁽¹⁾	HW 8.0*		EZ 125

* Optional, should be ordered separately

⁽¹⁾ Stopper screw

C#-ADES

Holders with CAMFIX Exchangeable Shanks for External, Square-Shank Tools



Designation	SS	F ₁	l ₂	L	L ₃	h	f	l ₁
C4 ADES-20 ⁽¹⁾	40	41.6	98.0	85.00	71.00	20.0	25.00	67.00
C5 ADES-20 ⁽¹⁾	50	41.6	98.0	85.00	71.00	20.0	25.00	67.00

⁽¹⁾ Use the tools with "AD" suffix. Regular tools should be shortened.

Spare Parts

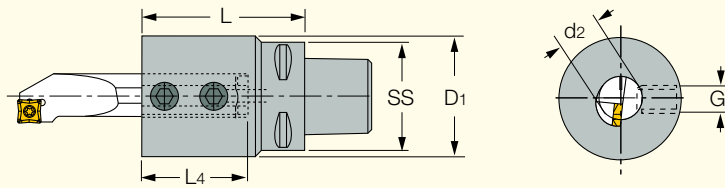


Designation	Screw	Key	Screw 1	Cooling Nozzle
C4 ADES-20	SR M10X20DIN912	HW 8.0	SR M6X6	EZ 125
C5 ADES-20	SR M10X20DIN912	HW 8.0	SR M6X6DIN916	EZ 125

EXCHANGEABLEHEADS • CAMFIX

C#-ADI

Holders for boring bars with CAMFIX Exchangeable Shanks



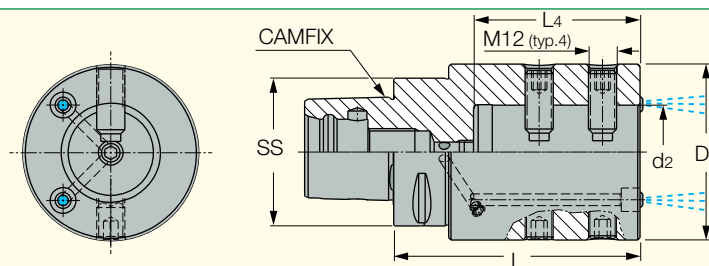
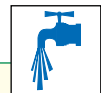
Designation	Dimensions							
	SS	L	L4	d2	D1	G1	Screw	Key
C3 ADI 10	32	50.00	20.0	10.00	36.0	M6	SR M6X10 DIN1835B	HW 3.0*
C3 ADI 12	32	50.00	21.5	12.00	36.0	M8	SR M8X10 DIN1835-B	HW 4.0*
C3 ADI 16	32	50.00	29.5	16.00	36.0	M8	SR M8X10 DIN1835-B	HW 4.0*
C4 ADI 10	40	50.00	20.0	10.00	36.0	M6	SR M6X10 DIN1835B	HW 3.0*
C4 ADI 12	40	50.00	24.0	12.00	36.0	M8	SR M8X10 DIN1835-B	HW 4.0*
C4 ADI 16	40	50.00	32.0	16.00	36.0	M8	SR M8X10 DIN1835-B	HW 4.0*
C4 ADI 20	40	70.00	49.0	20.00	55.0	M12	SR M10X12 DIN1835-B	HW 5.0*
C4 ADI 25	40	70.00	45.0	25.00	54.0	M12	SR M12X16 DIN1835-B	HW 6.0*
C5 ADI 10	50	60.00	26.0	10.00	36.0	M6	SR M6X10 DIN1835B	HW 3.0*
C5 ADI 12	50	60.00	26.0	12.00	36.0	M8	SR M8X10 DIN1835-B	HW 4.0*
C5 ADI 16	50	60.00	32.0	16.00	36.0	M8	SR M8X10 DIN1835-B	HW 4.0*
C5 ADI 20	50	75.00	49.0	20.00	55.0	M12	SR M10X12 DIN1835-B	HW 5.0*
C5 ADI 25	50	85.00	60.0	25.00	60.0	M12	SR M12X16 DIN1835-B	HW 6.0*
C5 ADI 32	50	100.00	76.0	32.00	68.0	M12	SR M12X16 DIN1835-B	HW 6.0*
C6 ADI 12	60	65.00	36.0	12.00	36.0	M8	SR M8X10 DIN1835-B	HW 4.0*
C6 ADI 16	60	65.00	36.0	16.00	36.0	M8	SR M8X10 DIN1835-B	HW 4.0*
C6 ADI 20	60	65.00	40.0	20.00	36.0	M10	SR M10X12 DIN1835-B	HW 5.0*
C6 ADI 25	60	76.00	51.0	25.00	54.0	M12	SR M12X16 DIN1835-B	HW 6.0*
C6 ADI 32	60	100.00	76.0	32.00	68.0	M12	SR M12X16 DIN1835-B	HW 6.0*
C6 ADI 40	60	100.00	76.0	40.00	98.0	M12	SR M12X16 DIN1835-B	HW 6.0*
C6 ADI 50	60	115.00	76.0	50.00	98.0	M12	SR M12X16 DIN1835-B	HW 6.0*
C8 ADI 12	80	70.00	36.0	12.00	36.0	M8	SR M8X10 DIN1835-B	HW 4.0*
C8 ADI 16	80	70.00	36.0	16.00	36.0	M8	SR M8X10 DIN1835-B	HW 4.0*
C8 ADI 20	80	70.00	40.0	20.00	36.0	M10	SR M10X12 DIN1835-B	HW 5.0*
C8 ADI 25	80	80.00	51.0	25.00	54.0	M12	SR M12X16 DIN1835-B	HW 6.0*
C8 ADI 32	80	110.00	86.0	32.00	68.0	M12	SR M12X16 DIN1835-B	HW 6.0*
C8 ADI 40	80	115.00	86.0	40.00	98.0	M12	SR M12X16 DIN1835-B	HW 6.0*
C8 ADI 50	80	115.00	86.0	50.00	98.0	M12	SR M12X16 DIN1835-B	HW 6.0*

(1) Use the tools with "AD" suffix. Regular tools should be shortened.

For tools, see pages: SXCIB (B128).

C#-ABB

Adapters with CAMFIX Exchangeable Shanks for Boring Bars with Reducer Sleeves



Designation	SS	d2	D1	L	L4
C4 ABB 25-60	40	25.00	63.0	100.00	60.0
C5 ABB-25-60	50	25.00	63.0	100.00	60.0
C6 ABB-25-60	63	25.00	63.0	100.00	60.0
C6 ABB-40-70	63	40.00	75.0	105.00	71.0
C8 ABB 25-60	80	25.00	63.0	100.00	60.0
C8 ABB 40-72	80	40.00	75.0	105.00	71.0

For tools, see pages: SXCIB (B128).

Spare Parts



Designation	Screw	Screw 1	Screw 2	Key	Cooling Nozzle	Wrench
C4 ABB 25-60	SR M10X12 DIN1835-B ⁽²⁾	SR M10X20DIN915 45H ⁽³⁾	SR M10X6DIN913 ⁽¹⁾	HW 5.0*	SATZ-M12X1-M6	WRENCH NOZZLE HP M12*
C5 ABB-25-60	SR M10X12 DIN1835-B ⁽²⁾	SR M10X20DIN915 45H ⁽³⁾	SR M10X6DIN913 ⁽¹⁾	HW 5.0*	SATZ-M12X1-M6	WRENCH NOZZLE HP M12*
C6 ABB-25-60	SR M10X12 DIN1835-B ⁽²⁾	SR M10X20DIN915 45H ⁽³⁾	SR M10X6DIN913 ⁽¹⁾	HW 5.0*	SATZ-M12X1-M6	WRENCH NOZZLE HP M12*
C6 ABB-40-70	SR M12X16 DIN1835-B ⁽²⁾	SR M12X30 DIN915 45H ⁽³⁾	SR M10X6DIN913 ⁽¹⁾	HW 6.0*	SATZ-M12X1-M6	WRENCH NOZZLE HP M12*
C8 ABB 25-60	SR M10X12 DIN1835-B ⁽²⁾	SR M10X20DIN915 45H ⁽³⁾	SR M10X6DIN913 ⁽¹⁾	HW 5.0*	SATZ-M12X1-M6	WRENCH NOZZLE HP M12*
C8 ABB 40-72	SR M12X16 DIN1835-B ⁽²⁾	SR M12X30 DIN915 45H ⁽³⁾	SR M10X6DIN913 ⁽¹⁾	HW 6.0*	SATZ-M12X1-M6	WRENCH NOZZLE HP M12*

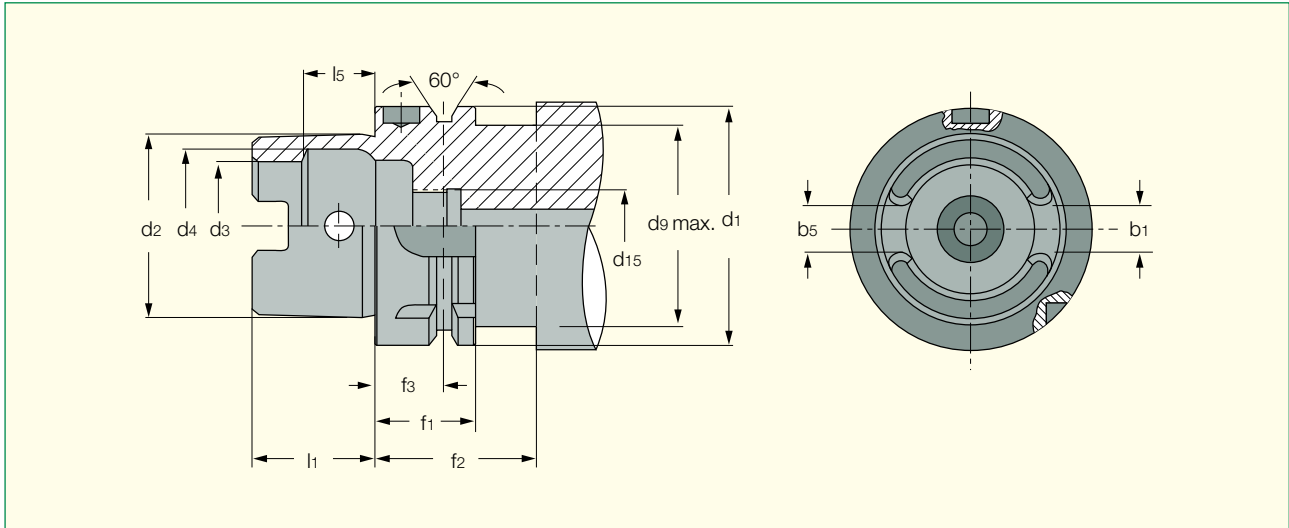
* Optional, should be ordered separately

⁽²⁾ Used on A-type sleeves

⁽¹⁾ Rear stopper screw

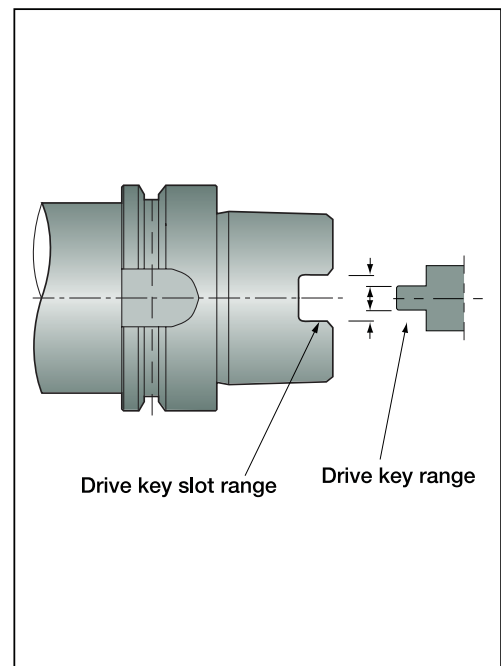
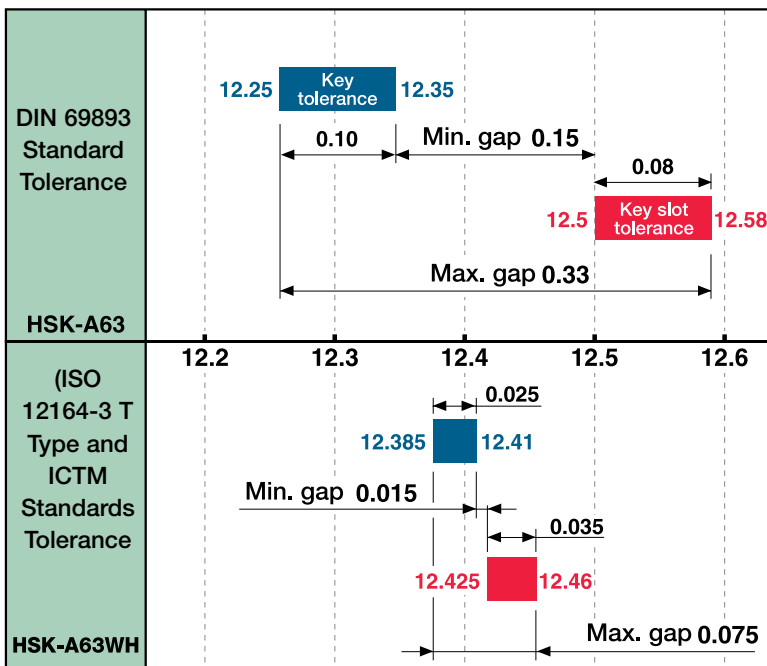
⁽³⁾ Used on B-type sleeves

HSK-T (ISO 12164-3 T Type and ICTM Standards)



HSK-A WH	d_1 h10	d_2	d_3 H10	d_4 H11	$d_9 \text{ max}$	d_{15}	l_1 -0.2	l_5 Js10	$b_1 \pm 0.04$	$b_5 \pm 0.035$	f_1 -0.1	$f_2 \text{ min}$	$f_3 \pm 0.1$
63	63	48	34	40	62	M18X1	32	18.13	12.54	12.425	26	30	18
100	100	75	53	63	99	M24X1.5	50	28.56	20.02	19.91	29	34	20

HSK A vs. HSK A...WH Tolerance

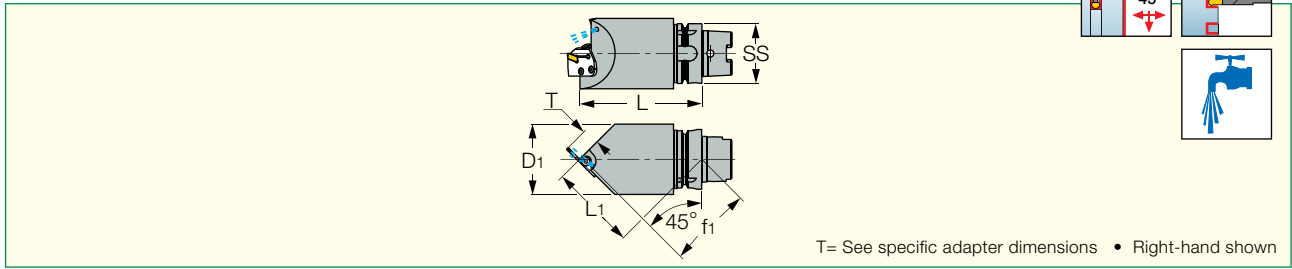


For more details on HSK A... WH Standard refer to ISCAR MILLING TOOLS catalog.

EXCHANGEABLEHEADS • MODULAR-GRIP

HSK A63WH-MAHDR-45

Holders for MODULAR-GRIP, Parting, Grooving and Facing Adapters with HSK A63WH Tapered Shanks



Designation	SS	L	L ₁	f ₁	D ₁
HSK A63WH-MAHDR-45	63	130.00	91.9	89.0	75.0

• A cooling tube must be used with all coolant through HSK spindles (should be ordered separately) • Complies with the ICTM and HSK-T standards

For tools, see pages: CGPAD (B23) • DGAD-B-D (D23) • DGAD/HGAD (D22) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGPAD (B12) • PCADR/L (B55) • TGAD (D39) • TGPAD (B15).

Spare Parts

Designation	Lower Locking Screw	Key	Side Locking Screw	Upper Locking Screw	Key 1	Sealing Screw	Cooling Nozzle
HSK A63WH-MAHDR-45	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20DIN7984 ⁽¹⁾	HW 4.0	SR M6X6DIN551 ⁽³⁾	EZ 83

⁽¹⁾ For CGPAD, HGPAD, TGPAD and HFPAD adapters. Supplied with the tools.

⁽²⁾ For DGAD, HGAD and PCADR/L adapters supplied in the attached plastic bag.

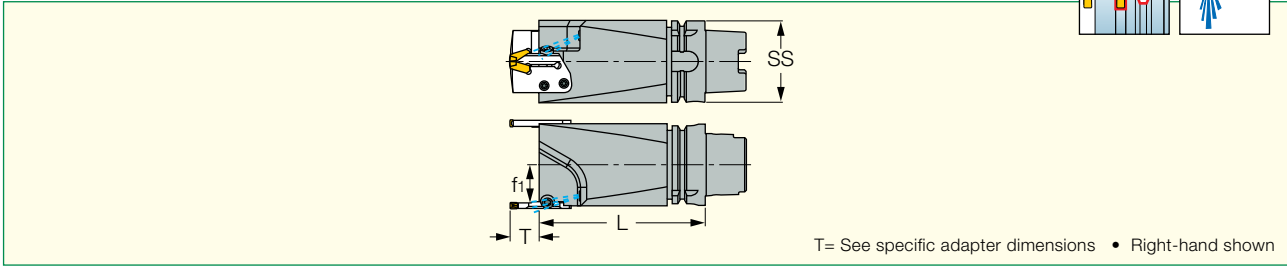
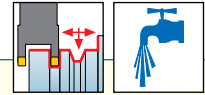
⁽³⁾ Used to prevent chips from entering the upper locking screw hole when it is not used for the adaptation. Supplied in the attached plastic bag.



EXCHANGEABLEHEADS • MODULARGRIP

HSK A63WH-MAHDOR

Holders for Parting, Grooving, Turning and Facing Adapters with HSK Exchangeable Shanks



Designation	SS	f ₁	L
HSK A63WH-MAHDOR	63	29.0	130.00

• A cooling tube must be used with all coolant through HSK spindles (should be ordered separately). • Complies with the ICTM and HSK-T standards.

For tools, see pages: CGPAD (B23) • DGAD-B-D (D23) • DGAD/HGAD (D22) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGPAD (B12) • PCADR/L (B55) • TGAD (D39) • TGPAD (B15).

Spare Parts



Designation	Lower Locking Screw	Key	Side Locking Screw	Upper Locking Screw	Key 1	Sealing Screw	Cooling Nozzle
HSK A63WH-MAHDOR	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 ⁽³⁾	EZ 125

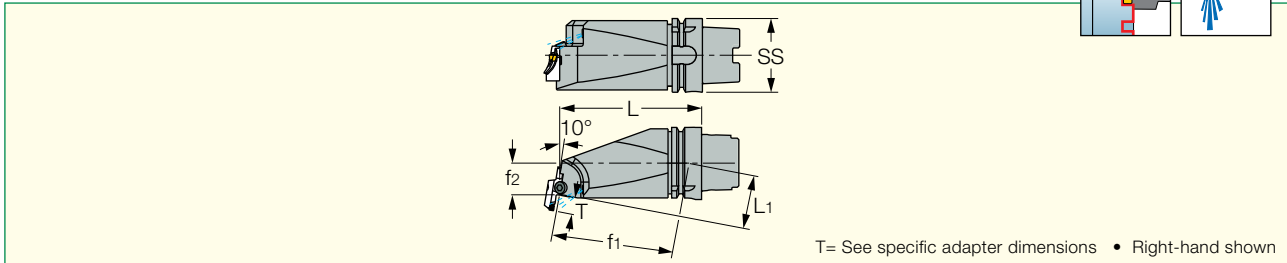
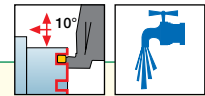
⁽¹⁾ For CGPAD, HGPAD, TGPAD and HFPAD adapters. Supplied with the tools.

⁽²⁾ For DGAD, HGAD and PCADR/L adapters supplied in the attached plastic bag.

⁽³⁾ Used to prevent chips from entering the upper locking screw hole when it is not used for the adaptation. Supplied in the attached plastic bag.

HSK A63WH-MAHUR/L

Holders for Parting, Grooving, Turning and Facing Adapters with HSK-T Shanks. 10° Mounting on Mill-Turn Machines



Designation	SS	f ₁	f ₂	L	L ₁
HSK A63WH-MAHUR/L-10	63	113.1	29.00	130.00	49.4

• A cooling tube must be used with all coolant through HSK spindles (should be ordered separately) • Complies with the ICTM and HSK-T standards

For tools, see pages: CGPAD (B23) • DGAD-B-D (D23) • DGAD/HGAD (D22) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGPAD (B12) • PCADR/L (B55) • TGAD (D39) • TGPAD (B15).

Spare Parts



Designation	Lower Locking Screw	Key	Side Locking Screw	Upper Locking Screw	Key 1	Sealing Screw	Cooling Nozzle
HSK A63WH-MAHUR/L-10	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 ⁽³⁾	EZ 125

⁽¹⁾ For CGPAD, HGPAD, TGPAD and HFPAD adapters. Supplied with the tools.

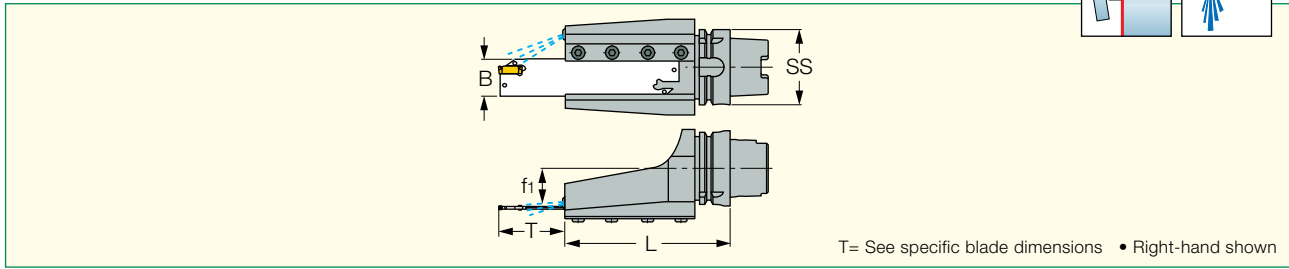
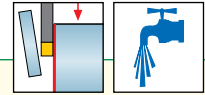
⁽²⁾ For DGAD, HGAD and PCADR/L adapters supplied in the attached plastic bag.

⁽³⁾ Used to prevent chips from entering the upper locking screw hole when it is not used for the adaptation. Supplied in the attached plastic bag.

EXCHANGEABLEHEADS

HSK A63WH-TBK-R/L

Blocks with HSK Exchangeable, Tapered Shanks for Parting and Grooving Blades



Designation	SS	f ₁	L	B ₁ ⁽¹⁾
HSK A63WH-TBK-32R/L	63	32.0	138.00	32.0

• A cooling tube must be used with all coolant through HSK spindles (should be ordered separately). • Complies with the ICTM and HSK-T standards.

⁽¹⁾ Blade size B₁, has to fit this dimension.

For tools, see pages: CGHN-DG (B24) • CGHR/L-P8DG (B25) • DGFH (B13) • DGFHR/L (D11) • DGFHR/L-B-D..(R/L) (D13) • HGFB (B12) • PCHBR/L (B56) • TGFH/R/L (B66) • TGFHR/L (D35).

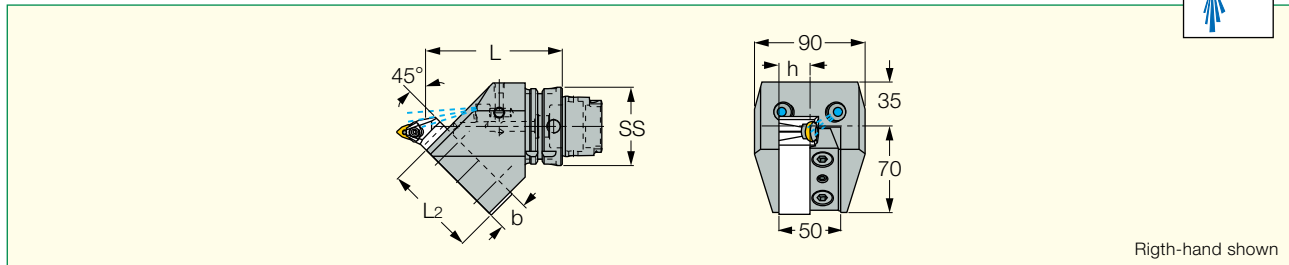
Spare Parts



Designation	Side Clamp	Screw	Key	Cooling Nozzle
HSK A63WH-TBK-R/L	BK 32-9 WEDG	SR M6X16DIN912	HW 5.0	EZ 125

HSK A63WH-ASHN-45

Square Shank Tool Adapters with HSK Exchangeable Shanks for 45° Mounting on Turn-Mill Machines



Designation	SS	L	L ₂	h	b
HSK A63WH-ASHN-25-45	63	110.00	72.00	25.0	25.0

• A cooling tube must be used with all coolant through HSK spindles (should be ordered separately). • For using left-hand toolholder, the position of clamping spacer must be changed. • Complies with the HSK-T and ICTM standards.

Spare Parts

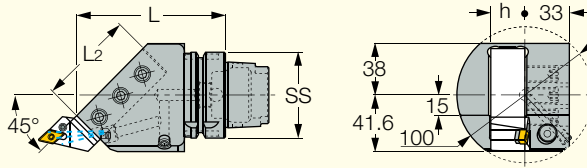


Designation	Screw	Screw 1	Cooling Nozzle
HSK A63WH-ASHN-25-45	SR M10X25DIN912 12.9	SR M8X20X1.25DIN916 45H	SATZ-M12X1-M6

EXCHANGEABLEHEADS

HSK A63WH-ASHR/L-45

Square Shank Tool Adapters with HSK-T Exchangeable Shanks for 45°
Mounting on Turn-Mill Machines



A left-hand tool in a right-hand adapter are shown

Designation	SS	L	L ₂	L ₃	h
HSK A63WH-ASHR/L-25-45	63	110.00	70.00	30.00	25.0

• A cooling tube must be used with all coolant through HSK spindles (should be ordered separately). • Complies with the HSK-T and ICTM standards.

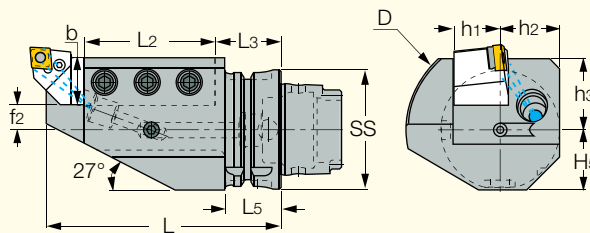
Spare Parts



Designation	Cooling Nozzle	Screw
HSK A63WH-ASHR/L-45	EZ 104	SR M12X30 DIN915 45H

HSK A-WH-ASHR/L-1

Square Shank Tool Adapters with HSK Exchangeable Shanks for Turn-Mill Machines



Left-hand shown

Designation	SS	h ₁	b	f ₂	L	L ₅	L ₂	L ₃	h ₂	h ₃	H ₅	D
HSK A63WH-ASHR/L-25-1	63	25.0	25.0	13.00	125.00	30.00	70.00	35.00	32.0	38.0	32.00	100.00
HSK A100WH-ASHR/L-32-1	100	32.0	32.0	8.00	145.00	34.00	90.00	45.00	35.0	40.0	44.00	100.00

• Complies with the HSK-T (ISO 12164-3) and ICTM standards. • A cooling tube must be used with all coolant through HSK spindles (should be ordered separately).

Spare Parts



Designation	Screw	Key	Cooling Nozzle	Wrench
HSK A-WH-ASHR/L-1	SR M12X30 DIN915 45H	HW 6.0*	SATZ-M12X1-M6	WRENCH NOZZLE HP M12*

* Optional, should be ordered separately

Coolant Nozzle Adjustment Instructions:

In order to adjust the coolant nozzle and/or redirect the coolant, follow these steps:

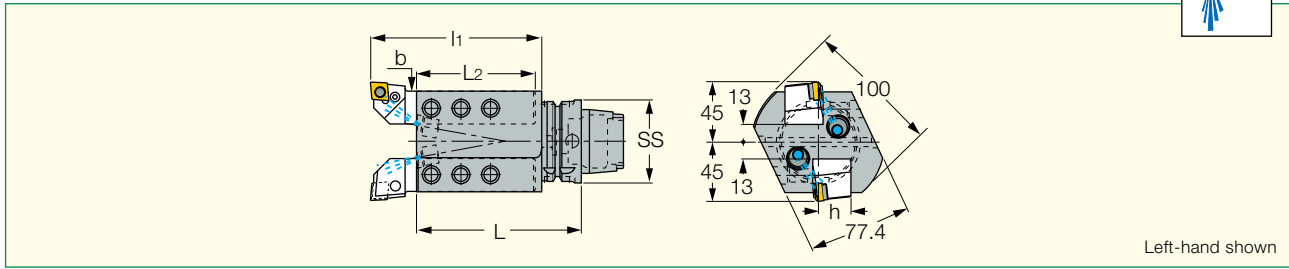
- Open the nut by turning it approximately three-quarters of a turn counterclockwise.
- Adjust the coolant nozzle so it will direct the coolant to the area of the cutting edge.
- Close the nut by turning it approximately three-quarters of a turn clockwise.
- The special (WRENCH NOZZLE HP) key should be used.



EXCHANGEABLEHEADS

HSK A63WH-ASHR/L-2

Twin Square Shank Tool Adapters with HSK Exchangeable Shanks Used on Turn-Mill Machines



Designation	SS	L	L ₁	L ₂	h	b
HSK A63WH-ASHR/L-25-2 ⁽¹⁾	63	125.00	160.00	95.00	25.0	25.0

• Complies with the HSK-T and ICTM standards. • A cooling tube must be used with all coolant through HSK spindles (should be ordered separately).

⁽¹⁾ The 20x20 square shanks can be locked with a spacer. The spacer is not supplied.

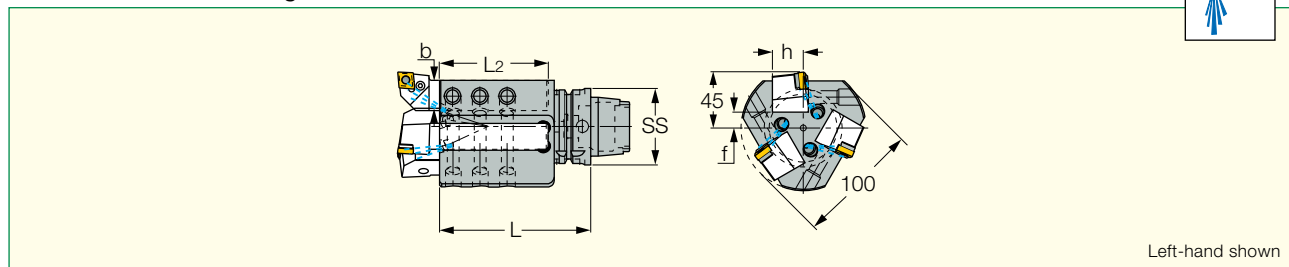
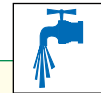
Spare Parts



Designation	Cooling Nozzle	Screw
HSK A63WH ASHL 25 2	SATZ-M12X1-M6	SR M12X30 DIN915 45H
HSK A63WH ASHR 25 2	EZ 146	SR M12X30 DIN915 45H

HSK A63WH-ASHR/L-3

Triple Square Shank Tool Adapters with HSK Exchangeable Shanks for 45° Mounting on Turn-Mill Machines



Designation	SS	L	L ₂	F	h	b
HSK A63WH-ASHR/L-25-3	63	125.00	90.00	45.0	25.0	25.0

• Complies with the HSK-T and ICTM standards. • A cooling tube must be used with all coolant through HSK spindles (should be ordered separately).

Spare Parts

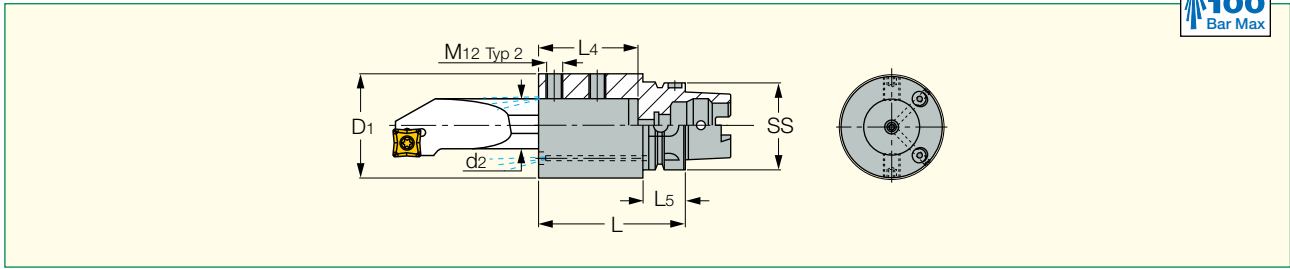


Designation	Screw	Cooling Nozzle
HSK A63WH-ASHR/L-3	SR M12X30 DIN915 45H	EZ 83

EXCHANGEABLE HEADS

HSK A-WH ABB

Adapters with HSK Exchangeable Shanks for Boring Bars with Reduction Sleeves



Designation	SS	d ₂	L	D ₁	L ₄
HSK A63WH-ABB-40	63	40.00	105.00	75.0	71.0
HSK A100WH-ABB-40	100	40.00	115.00	82.0	71.0
HSK A100WH-ABB-50	100	50.00	125.00	92.0	83.0

• Complies with the HSK-T (ISO 12164-3) and ICTM standards. • A cooling tube must be used with all coolant through HSK spindles (should be ordered separately). • For SC reduction sleeves, see page ..

Spare Parts



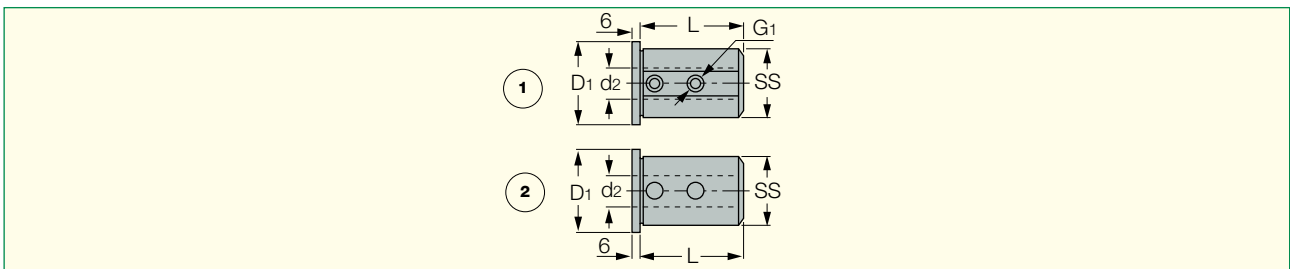
Designation	Screw	Screw 1	Key	Screw 2	Cooling Nozzle	Wrench
HSK A-WH ABB	SR M12X16 DIN1835-B	SR M12X30 DIN915 45H ⁽¹⁾	HW 6.0*	SR M10X6DIN913	SATZ-M12X1-M6	WRENCH NOZZLE HP M12*

* Optional, should be ordered separately

⁽¹⁾ Used on B type sleeves

SC-T (sleeves)

Reduction Sleeves for Bars, Used in Holders with Exchangeable Adaptation



Designation	SS	d ₂	D ₁	L	G ₁	Fig.
SC 25T6A	25.00	6.00	31.0	56.00	M6	1
SC 25T8A	25.00	8.00	31.0	56.00	M8	1
SC 25T10A	25.00	10.00	31.0	56.00	M8	1
SC 25T12A	25.00	12.00	31.0	56.00	M8	1
SC 25T16B	25.00	16.00	31.0	56.00	-	2
SC 25T20B	25.00	20.00	31.0	56.00	-	2
SC 40T6A	40.00	6.00	46.0	60.00	M6	1
SC 40T8A	40.00	8.00	46.0	60.00	M6	1
SC 40T10A	40.00	10.00	46.0	60.00	M8	1
SC 40T12A	40.00	12.00	46.0	60.00	M8	1
SC 40T16B	40.00	16.00	46.0	60.00	-	2
SC 40T20B	40.00	20.00	46.0	60.00	-	2
SC 40T25B	40.00	25.00	46.0	60.00	-	2
SC 40T32B	40.00	32.00	46.0	60.00	-	2
SC 50T6A	50.00	6.00	56.0	70.00	M6	1
SC 50T8A	50.00	8.00	56.0	70.00	M8	1
SC 50T10A	50.00	10.00	56.0	70.00	M8	1
SC 50T12A	50.00	12.00	56.0	70.00	M8	1
SC 50T16B	50.00	16.00	56.0	80.00	-	2
SC 50T20B	50.00	20.00	56.0	80.00	-	2
SC 50T25B	50.00	25.00	56.0	80.00	-	2
SC 50T32B	50.00	32.00	56.0	80.00	-	2

• 1 - A Type • 2 - B Type

Spare Parts

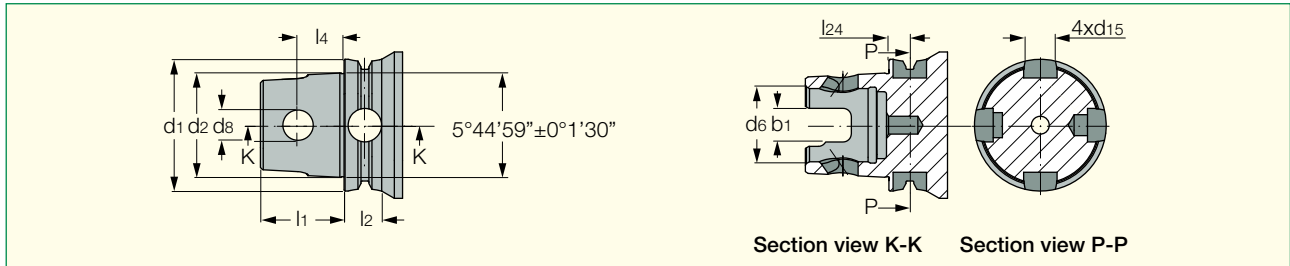


Designation	Screw	Key
SC 25T6A	SR M6X6DIN916 45H	HW 3.0*
SC 25T8A	SR M8X6DIN916 45H	HW 4.0*
SC 25T10A	SR M8X6DIN916 45H	HW 4.0*
SC 25T12A	SR M8X6DIN916 45H	HW 4.0*
SC 40T6A	SR M6X10 DIN1835B	HW 3.0*
SC 40T8A	SR M8X10 DIN1835-B	HW 4.0*
SC 40T10A	SR M8X10 DIN1835-B	HW 4.0*
SC 40T12A	SR M8X10 DIN1835-B	HW 4.0*
SC 50T6A	SR M6X6DIN916 45H	HW 3.0*
SC 50T8A	SR M8X6DIN916 45H	HW 4.0*
SC 50T10A	SR M8X6DIN916 45H	HW 4.0*
SC 50T12A	SR M8X6DIN916 45H	HW 4.0*

* Optional, should be ordered separately

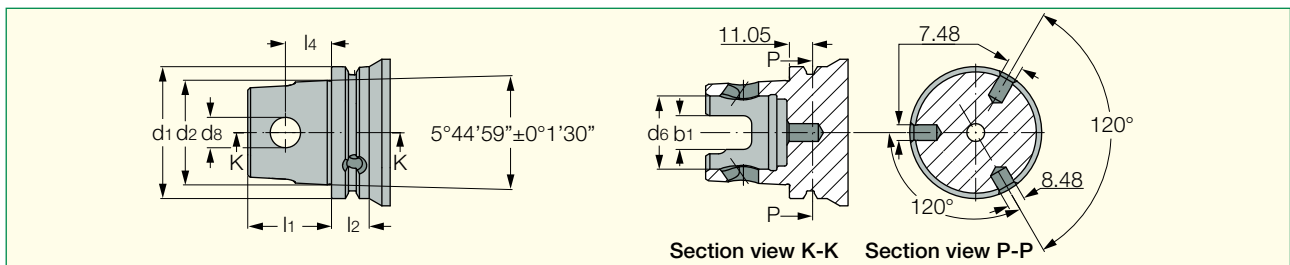
EXCHANGEABLEHEADS IM (ISO 26622-1 and Mazak XMZ Standards)

IM ISO 26622-1 Standard



IM UT	d ₁ -0.1	d ₂ ±0.0075	d ₆	d ₈	d ₁₅ H11	l ₁ -0.1	l ₂ min	l ₄	l ₂₄	b ₁
32	32	23.9975	17.65 +0.1	7.5	-	20	10	10.8	-	8.9
40	40	29.9975	21 +0.1	9.5	9	25	12	13.6	5.95	10
50	50	39.9975	28.2 +0.15	12.5	12	32	18	17.2	8.95	14
63	63	49.9975	35.2 +0.15	14.5	16	40	20	22.4	9.95	16
80	80	63.9975	48 +0.15	18.5	16	45	22	24.9	10.95	20

IM 63 XMZ Mazak Standard for Integrex Series 4/54



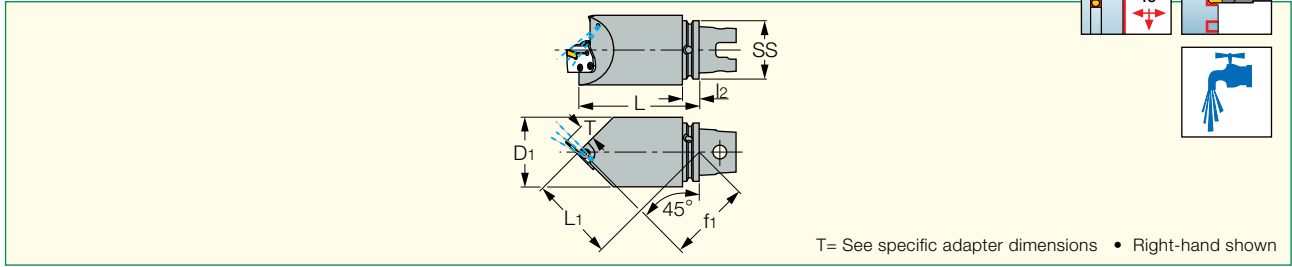
IM XMZ	d ₁ -0.1	d ₂ ±0.0075	d ₆	d ₈	l ₁ -0.1	l ₂ min	l ₄	b ₁ +0.15
63	63	49.9975	35.2 +0.15	14.5	40	18	22.4	16

IM63 XMZ is MAZAK's modification for their turn-mill machines, based on MAZAK KM63 XMZ standard, with 3 holes added on the V-flange located 120° from each other.

EXCHANGEABLE HEADS • MODULAR GRIP

IM63 XMZ MAHDR-45

Holders for All GRIP Adapters with ISO 26622-1 XMZ Tapered Shank, 45° Mounting on Mazak Integrex Machines



Designation	SS	L	L ₁	f ₁	D ₁	l ₂
IM63 XMZ MAHDR-45	63	130.00	91.9	89.0	75.0	18.0

For tools, see pages: CGPAD (B23) • DGAD-B-D (D23) • DGAD/HGAD (D22) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGPAD (B12) • PCADR/L (B55) • TGAD (D39) • TGPAD (B15).

Spare Parts



Designation	Lower Locking Screw	Key	Screw	Key 1	Cooling Nozzle
IM63 XMZ MAHDR-45	SR M5-04451	T-20/5	SR M6X20DIN7984 ⁽¹⁾	HW 5.0	EZ 83

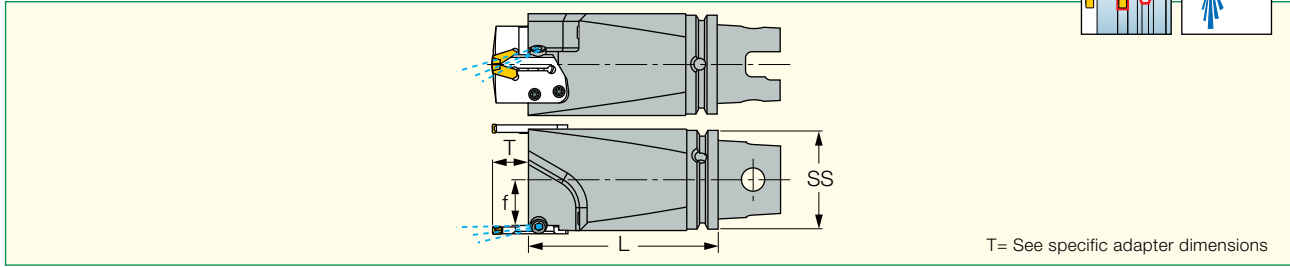
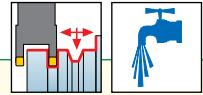
⁽¹⁾ For CGPAD, HGPAD, TGPAD and FGPAD adapters.



EXCHANGEABLEHEADS • MODULAR-GRIP

IM63 XMZ MAHDOR

Holders for Parting, Grooving and Turning Adapters with ISO 26622-1 XMZ Tapered Shank for Mazak Integrex Machines



Designation	SS	f	L
IM63 XMZ MAHDOR	63	29.00	130.00

For tools, see pages: CGPAD (B23) • DGAD-B-D (D23) • DGAD/HGAD (D22) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGPAD (B12) • PCADR/L (B55) • TGAD (D39) • TGPAD (B15).

Spare Parts



Designation	Lower Locking Screw	Key	Side Locking Screw	Upper Locking Screw	Key 1	Sealing Screw	Cooling Nozzle
IM63 XMZ MAHDOR	SR 16-212	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 ⁽³⁾	EZ 125

⁽¹⁾ For CGPAD, HGPAD, TGPAD and HFPAD adapters. Supplied with the tools.

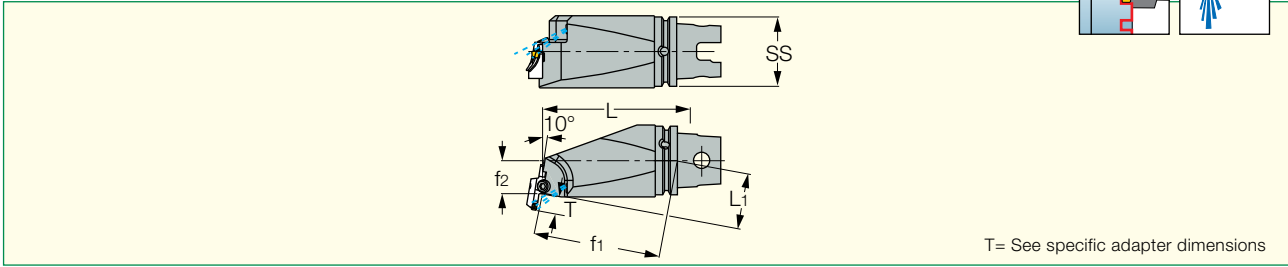
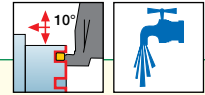
⁽²⁾ For DGAD, HGAD and PCADR/L adapters. Supplied in the attached plastic bag.

⁽³⁾ Used to prevent chips from entering the upper locking screw hole when it is not used for the adaptation. Supplied in the attached plastic bag.

EXCHANGEABLEHEADS • MODULAR-GRIP

IM63 XMZ MAHUR/L

Holders for Parting, Grooving, and Turning Adapters with ISO 26622-1 XMZ Tapered Shanks for Mazak Integrex Machines



T= See specific adapter dimensions

Designation	SS	f ₁	f ₂	L	L ₁
IM63 XMZ MAHUR/L-10	63	113.1	29.00	130.00	49.4

For tools, see pages: CGPAD (B23) • DGAD-B-D (D23) • DGAD/HGAD (D22) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGPAD (B12) • PCADR/L (B55) • TGAD (D39) • TGPAD (B15).

Spare Parts



Designation	Lower Locking Screw	Key	Side Locking Screw	Upper Locking Screw	Key 1	Sealing Screw	Cooling Nozzle
IM63 XMZ MAHUR/L-10	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 ⁽³⁾	EZ 125

⁽¹⁾ For CGPAD, HGPAD, TGPAD and HFPAD adapters. Supplied with the tools.

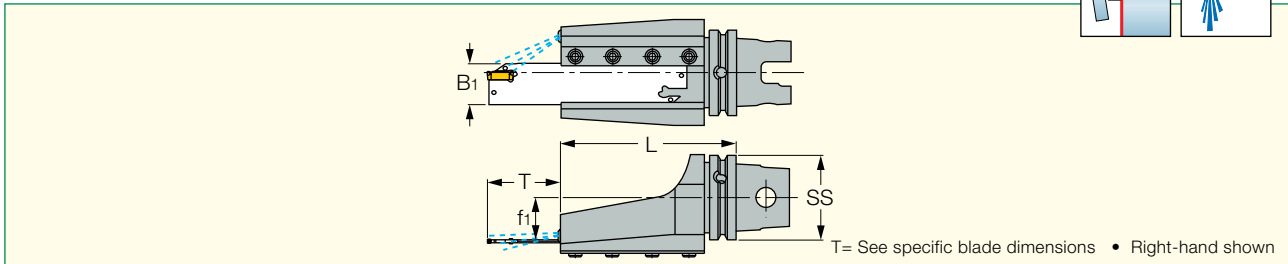
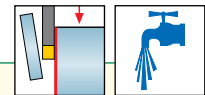
⁽²⁾ For DGAD, HGAD and PCADR/L adapters supplied in the attached plastic bag.

⁽³⁾ Used to prevent chips from entering the upper locking screw hole when it is not used for the adaptation. Supplied in the attached plastic bag.

EXCHANGEABLEHEADS • ISCAR-GRIP

IM63 XMZ TBK

Blocks for Parting and Grooving Blades with ISO 26622-1 XMZ Tapered Shanks for Mazak Integrex Machines



Designation	SS	f ₁	L	B ₁
IM63 XMZ TBK-32R/L	63	29.0	130.00	32.0

For tools, see pages: CGHN-DG (B24) • CGHR/L-P8DG (B25) • DGFH (B13) • DGFHR/L (D11) • DGFHR/L-B-D..(R/L) (D13) • HGFH (B12) • PCHBR/L (B56) • TGFH/R/L (B66) • TGFHR/L (D35).

Spare Parts

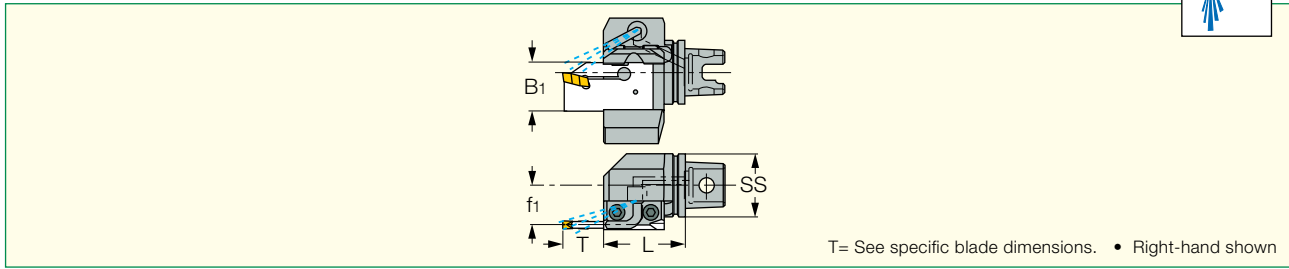


Designation	Side Clamp	Screw	Key	Cooling Nozzle
IM63 XMZ TBK	BK 32-9 WEDG	SR M6X16DIN912	HW 5.0	EZ 125

EXCHANGEABLEHEADS • ISCAR-GRIP

IM-TBU

Blocks with ISO 26622-1(*) Tapered Shank for Parting and Grooving Blades



T= See specific blade dimensions. • Right-hand shown

Designation	SS	L	f ₁	B ₁
IM40 TBU-32R/L	40	51.00	23.0	32.0
IM50 TBU-32R/L	50	61.00	30.0	32.0
IM63 TBU-32R/L	63	63.00	38.0	32.0

• (*) Tools with orientation holes in the flange groove can be supplied on request

For tools, see pages: CGHN-S (B23) • TGHN-S (B16).

Spare Parts

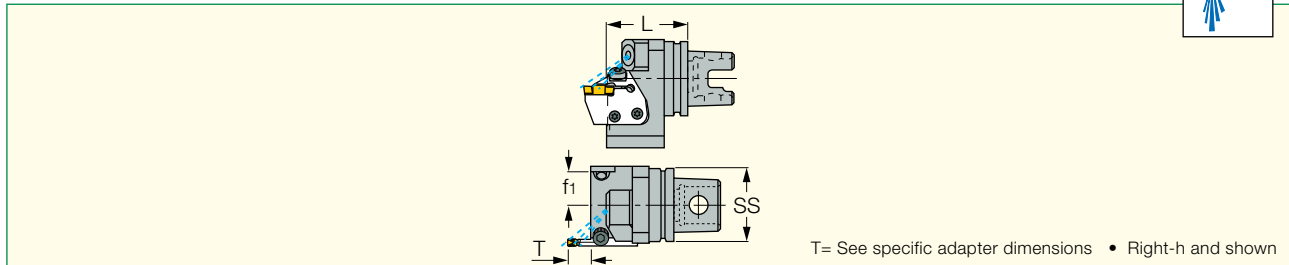


Designation	Top Clamp	Screw	Key	Screw 1	Pipe	Cooling Nozzle
IM-TBU	BKU 176 307	SR M6X25DIN912	HW 5.0	SR M6X6	EZP 5	EZ 125

MODULAR-GRIP • EXCHANGEABLEHEADS

IM-MAHD

Holders for Parting, Grooving, Turning and Facing Adapters with ISO 26622-1(*) Tapered Shank



T= See specific adapter dimensions • Right-h and shown

Designation	SS	L	f ₁
IM40 MAHD	40	43.00	18.0
IM50 MAHD	50	47.00	23.0
IM63 MAHD	63	47.00	29.0

• (*) Tools with orientation holes in the flange groove can be supplied on request

For tools, see pages: CGPAD (B23) • DGAD-B-D (D23) • DGAD/HGAD (D22) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGPAD (B12) • PCADR/L (B55) • TGAD (D39) • TGPAD (B15).

Spare Parts



Designation	Lower Locking Screw	Key	Side Locking Screw	Upper Locking Screw	Key 1	Sealing Screw	Nozzle Screw	Nozzle	Cooling Nozzle
IM40 MAHD	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 ⁽³⁾	SR 76-1022	EZA 125	EZ 125
IM50 MAHD	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 ⁽³⁾	SR 76-1022	EZA 125*	EZ 125
IM63 MAHD	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 ⁽³⁾	SR 76-1022	EZA 125	EZ 125

* Optional, should be ordered separately

⁽¹⁾ For CGPAD, HGPAD, TGPAD and HFPAD adapters. Supplied with the tools.

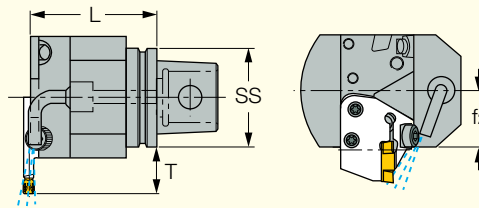
⁽²⁾ For DGAD, HGAD and PCADR/L adapters supplied in the attached plastic bag.

⁽³⁾ Used to prevent chips from entering the upper locking screw hole when it is not used for the adaptation. Supplied in the attached plastic bag.

MODULAR-GRIP • EXCHANGEABLEHEADS

IM-MAHPD

Perpendicular Holders for Parting, Grooving, Turning and Facing Adapters with ISO 26622-1(*) Tapered Shank



T= See specific adapter dimensions • Right-hand shown

Designation	SS	L	f ₂
IM40 MAHPD	40	44.00	25.00
IM50 MAHPD	50	45.00	26.00
IM63 MAHPD	63	45.00	33.00

• (*) Tools with orientation holes in the flange groove can be supplied on request

For tools, see pages: CGPAD (B23) • DGAD-B-D (D23) • DGAD/HGAD (D22) • HFPAD-3 (E20) • HFPAD-4 (E21) • HFPAD-5 (E21) • HFPAD-6 (E22) • HGPAD (B12) • PCADR/L (B55) • TGAD (D39) • TGPAD (B15).

Spare Parts



Designation	Lower Locking Screw	Key	Side Locking Screw	Upper Locking Screw	Key 1	Sealing Screw	Pipe	Cooling Nozzle
IM-MAHPD	SR M5-04451	T-20/5	SR 14-519 ⁽²⁾	SR M6X20-XT ⁽¹⁾	HW 5.0	SR M6X6DIN551 ⁽³⁾	EZP 5	EZ 125

⁽¹⁾ For CGPAD, HGPAD, TGPAD and HFPAD adapters. Supplied with the tools.

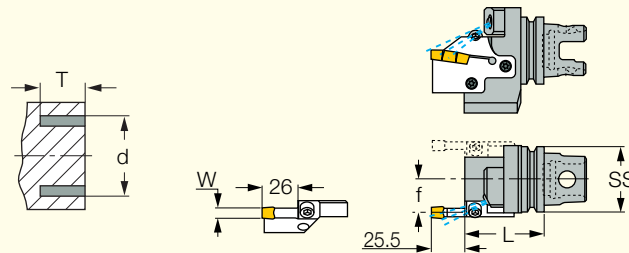
⁽²⁾ For DGAD, HGAD and PCADR/L adapters supplied in the attached plastic bag.

⁽³⁾ Used to prevent chips from entering the upper locking screw hole when it is not used for the adaptation. Supplied in the attached plastic bag.

EXCHANGEABLEHEADS • ISCAR-GRIP

IM-GHAD-8

Holders for Grooving, Turning and Facing Adapters with ISO 26622-1(*) Tapered Shank



T= See specific adapter dimensions

Designation	SS	L	f	W	d Range	T range
IM50 GHAD-8	50	60.00	26.00	8.00	80-510	15-25
IM63 GHAD-8	63	60.00	32.50	8.00	80-510	15-25

• (*) Tools with orientation holes in the flange groove can be supplied on request

For tools, see pages: GADR/L-8 (B28) • GAFG-R/L-8 (E42).

Spare Parts

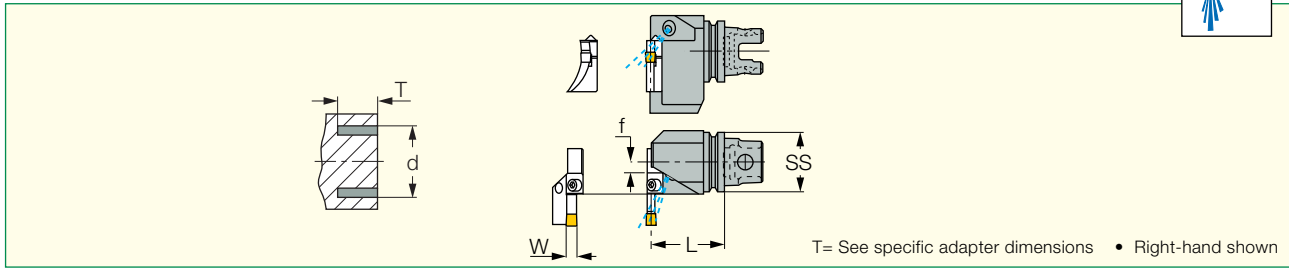


Designation	Screw	Key	Screw 1	Key 1	Screw 2	Cooling Nozzle	Cooling Nozzle 1
IM-GHAD-8	SR 14-519	T-20/5	SR M6X25DIN912	HW 5.0	SR 76-1022	EZA 125	EZ 125

EXCHANGEABLEHEADS • ISCAR-GRIP

IM-GHAPR/L-8

Perpendicular Holders for Grooving, Turning and Facing Adapters with ISO 26622-1(*)
Tapered Shank



T= See specific adapter dimensions • Right-hand shown

Designation	SS	L	f	W	d Range	T range
IM50 GHAPR/L-8	50	60.00	26.00	8.00	80-510	15-25
IM63 GHAPL-8	63	75.00	33.00	8.00	80-510	15-25

• (*) Tools with orientation holes in the flange groove can be supplied on request

For tools, see pages: GADR/L-8 (B28) • GAFG-R/L-8 (E42).

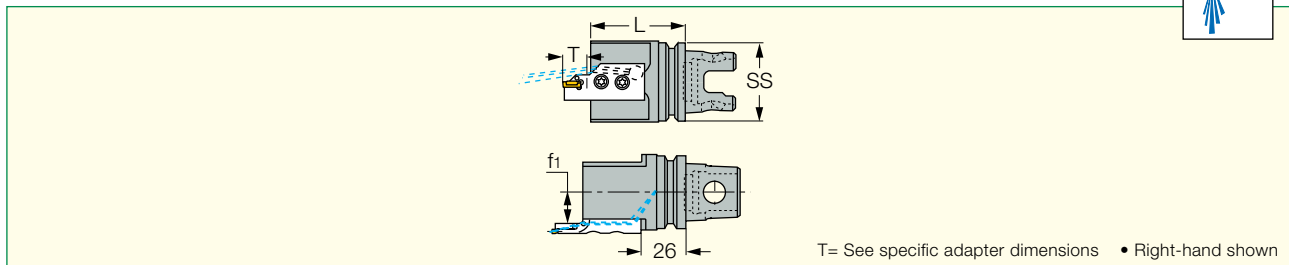
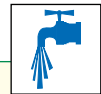
Spare Parts



Designation	Screw	Key	Screw 1	Key 1	Cooling Nozzle
IM-GHAPR/L-8	SR 14-519	T-20/5	SR M6X25DIN912	HW 5.0	EZ 125

IM-HAD

Holders for Internal Facing Adapters with ISO 26622-1(*) Tapered Shank



T= See specific adapter dimensions • Right-hand shown

Designation	SS	L	f ₁
IM40 HAD	40	60.00	18.0
IM50 HAD	50	60.00	18.0

• (*) Tools with orientation holes in the flange groove can be supplied on request

For tools, see pages: HFAER/L-4T (E24) • HFAER/L-5,6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5,6T (E32) • HGAER/L-3 (E24) • HGAIR/L-3 (E30).

Spare Parts

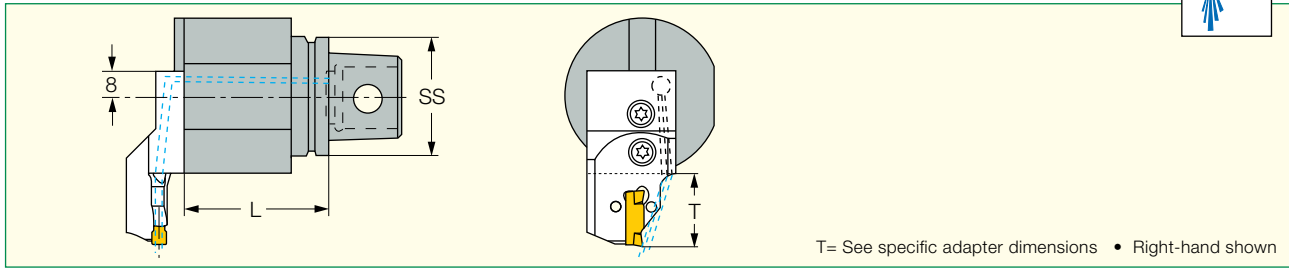


Designation	Side Locking Screw	Key	Screw	Key 1	Screw 1
IM-HAD	SR 14-519	T-20/3	SR M5X10DIN916	HW 3.0	SR M4X6DIN912

EXCHANGEABLEHEADS • ISCAR-GRIP

IM-HAPR/L

Perpendicular Holders for Internal Facing Adapters with ISO 26622-1(*) Tapered Shank



T= See specific adapter dimensions • Right-hand shown

Designation	SS	L
IM40 HAPR/L	40	50.00
IM50 HAPR	50	50.00

(*) Tools with orientation holes in the flange groove can be supplied on request

For tools, see pages: HFAER/L-4T (E24) • HFAER/L-5,6T (E25) • HFAIR/L-4T (E30) • HFAIR/L-5,6T (E32) • HGAER/L-3 (E24) • HGAIR/L-3 (E30).

Spare Parts

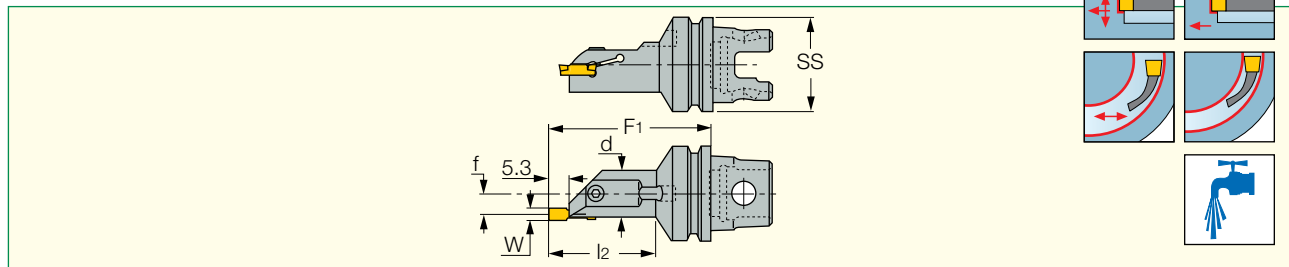
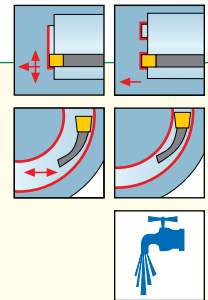


Designation	Screw	Key
IM-HAPR/L	SR 14-519	T-20/3

HELIFACE

IM-HFIR/L-MC

Tools for Internal Grooving and Turning with ISO 26622-1(*) Tapered Shank



Designation	SS	F1	d	f	l2	W min	W max
IM40 HFIR/L-MC	40	80.0	25.00	11.30	52.0	3.00	6.00
IM50 HFIR-MC	50	80.0	25.00	11.30	52.0	3.00	6.00

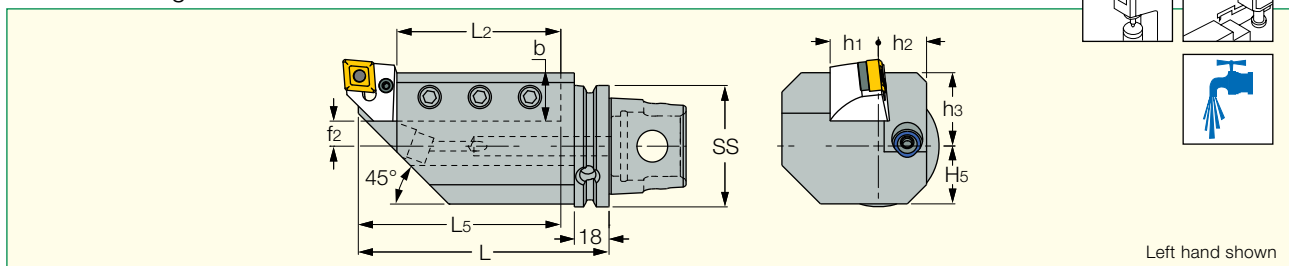
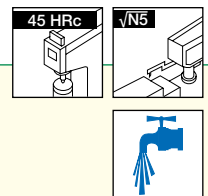
Spare Parts



Designation	Cooling Nozzle	Key	Screw
IM-HFIR/L-MC	EZ 83	HW 4.0	SR M5X16DIN912

IM63 XMZ-ASHR/L-1

Square Shank Tool Adapters with ISO 26622-1 XMZ Tapered Shank for Mazak Integrex Machines



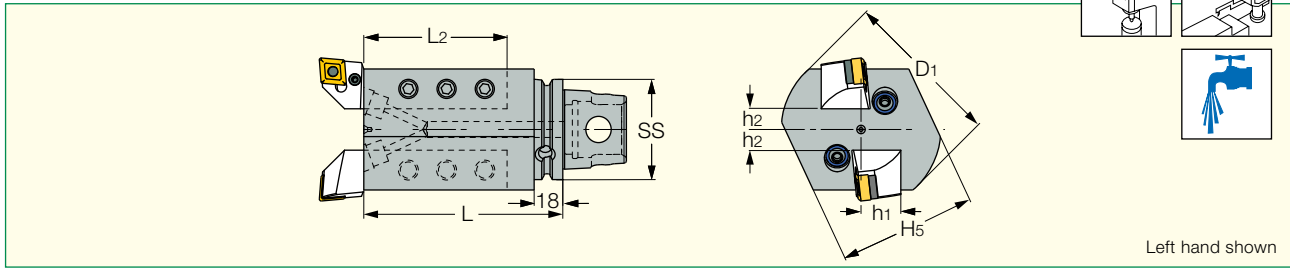
Left hand shown

Designation	SS	b	h1	h2	D1	f2	h3	H5	L	L5	L3
IM63 XMZ ASHR/L 20-1	63	20.0	20.0	25.0	80.0	10.00	30.0	30.00	100.00	75.00	55.00
IM63 XMZ ASHR/L 25-1	63	25.0	25.0	25.0	102.0	13.00	38.0	30.00	130.00	105.00	85.00

EXCHANGEABLE HEADS

IM63 XMZ-ASHR/L-2

Twin Square Shank Tool Adapters with ISO 26622-1 XMZ Tapered Shank for Mazak Integrex Machines

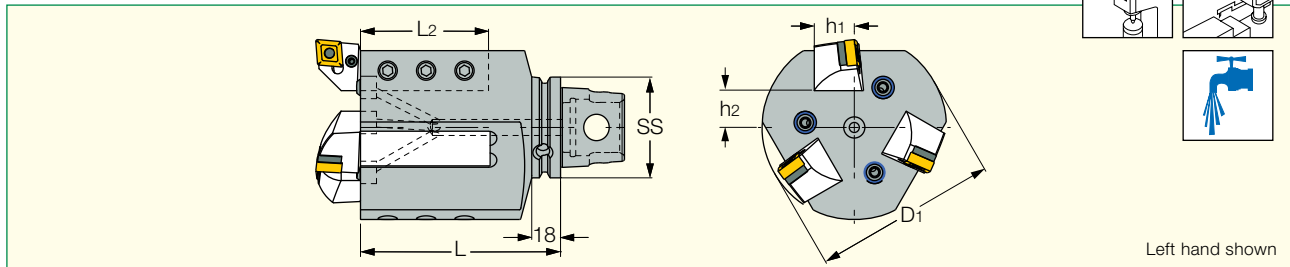


Left hand shown

Designation	SS	h ₁	H ₅	D ₁	h ₂	L	L ₂	Clamping Screw
IM63 XMZ ASHR/L 20-2	63	20.0	71.00	80.0	10.0	85.00	60.00	M10X20
IM63 XMZ ASHR/L 25-2	63	25.0	87.00	100.0	13.0	85.00	60.00	M12X20

IM63 XMZ-ASHR/L-3

Triple Square Shank Tool Adapters with ISO 26622-1 XMZ Tapered Shank for Mazak Integrex Machines

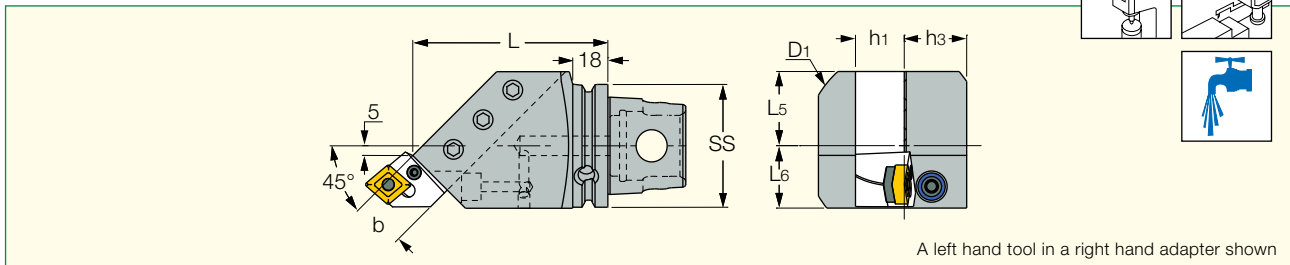


Left hand shown

Designation	SS	h ₁	D ₁	h ₂	L	L ₂	Clamping Screw
IM63 XMZ ASHR/L 25-3	63	25.0	115.0	23.0	125.00	80.00	M12X25

IM63 XMZ-ASHR/L-45

Square Shank Tool Adapter with ISO 26622-1 XMZ Tapered Shank for Mazak Integrex Machines



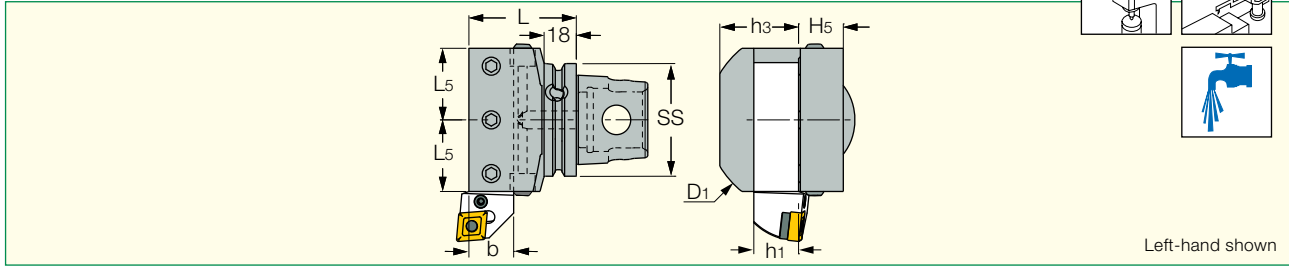
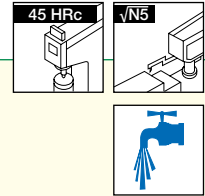
A left hand tool in a right hand adapter shown

Designation	SS	h ₁	h ₃	b	D ₁	L ₅	L ₆	L	Clamping Screw
IM63 XMZ ASHR/L 20-45	63	20.0	32.0	20.0	80.0	30.00	32.00	85.00	M10X30
IM63 XMZ ASHR/L 25-45	63	25.0	32.0	25.0	102.0	38.00	32.00	100.00	M12X30

EXCHANGEABLE HEADS

IM63 XMZ-ADE

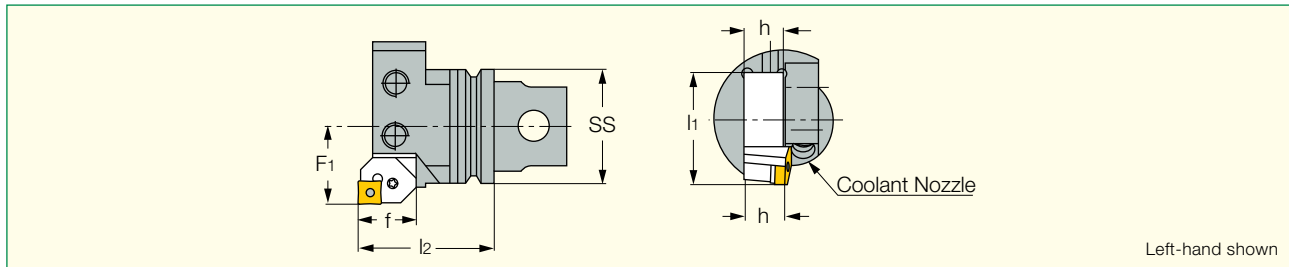
Radial Square Shank Tool Adapters with ISO 26622-1 XMZ Tapered Shanks for Mazak Integrex Machines



Designation	SS	L ₅	h ₁	D ₁	h ₃	H ₅	L	b	Clamping Screw
IM63 XMZ ADE 20	63	30.00	20.0	80.0	35.0	25.00	60.00	20.0	M10X25
IM63 XMZ ADE 25	63	40.00	25.0	102.0	44.0	25.00	60.00	25.0	M12X25

IM-ADE

Holders with ISO 26622-1 Tapered Shank, for External Square-Shank Tools



Designation	SS	F ₁	l ₂	F	h	l ₁
IM40 ADE-20R/L ⁽¹⁾	40	27.0	54.0	25.0	20.0	67.00
IM50 ADE-20R/L ⁽¹⁾	50	35.0	60.0	20.0	20.0	67.00

• Tools with orientation holes in the flange groove can be supplied on request

⁽¹⁾ Use the tools with AD suffix. Regular tools should be shortened.

Spare Parts

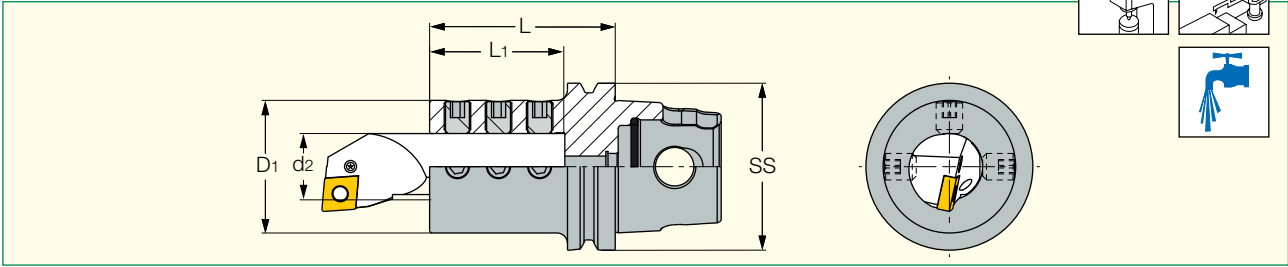
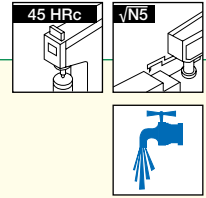


Designation	Screw	Key	Screw 1	Key 1	Cooling Nozzle
IM40 ADE-20R/L	SR M10X16 HW 8.0	SR M8X10DIN916 45H HW 4.0	SATZ-M10X1-M5		
IM50 ADE-20R/L	SR M10X16 HW 8.0	SR M8X10DIN916 45H HW 4.0	EZ 125		

EXCHANGEABLEHEADS

IM63 XMZ-ADI

Screw Clamp Holders for Boring Bars with ISO 26622-1 XMZ Tapered Shanks for Mazak Integrex Machines



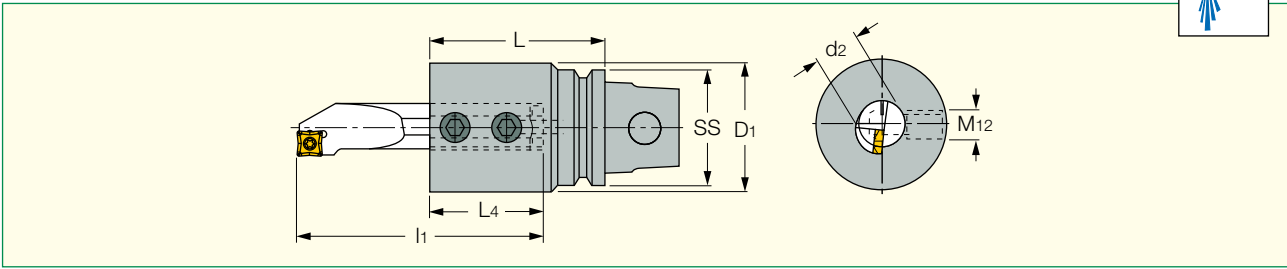
Designation	SS	d ₂	D ₁	L	L ₁	Clamping Screw
IM63 XMZ ADI 06 60	63	6.00	34.0	60.00	36.0	M6X10
IM63 XMZ ADI 08 60	63	8.00	34.0	60.00	36.0	M8X10
IM63 XMZ ADI 10 60	63	10.00	34.0	60.00	36.0	M8X10
IM63 XMZ ADI 12 60	63	12.00	36.0	60.00	36.0	M8X10
IM63 XMZ ADI 16 65	63	16.00	40.0	65.00	51.0	M10X12
IM63 XMZ ADI 20 70	63	20.00	44.0	70.00	51.0	M10X12
IM63 XMZ ADI 25 70	63	25.00	50.0	70.00	51.0	M10X12
IM63 XMZ ADI 32 80	63	32.00	56.0	80.00	66.0	M12X12
IM63 XMZ ADI 40 105	63	40.00	63.0	105.00	66.0	M12X12

For tools, see pages: SXCIB (B128).

EXCHANGEABLE HEADS

IM-ADI

Holders for Boring Bars with ISO 26622-1 Tapered Shank



Designation	SS	L	L4	d2	I1	D1
IM40 ADI-20 ⁽¹⁾	40	70.00	49.0	20.00	100.00	55.0
IM40 ADI-25 ⁽¹⁾	40	80.00	60.0	25.00	120.00	60.0
IM50 ADI-20 ⁽¹⁾	50	76.00	49.0	20.00	100.00	55.0
IM50 ADI-25 ⁽¹⁾	50	85.00	60.0	25.00	120.00	60.0

• Tools with orientation holes in the flange groove can be supplied on request

⁽¹⁾ Use the tools with AD suffix. Regular tools should be shortened.

For tools, see pages: SXCIB (B128).

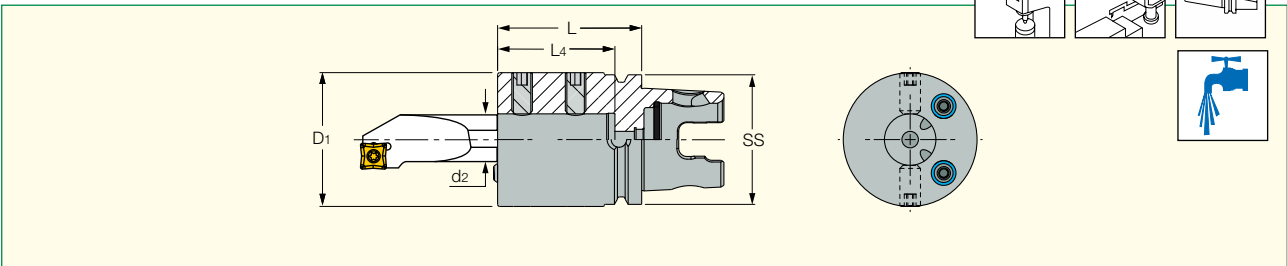
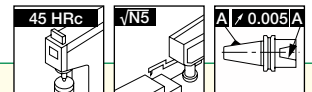
Spare Parts



Designation	Screw	Key
IM40 ADI-20	SR M12X20DIN913 45H HW 6.0	
IM40 ADI-25	SR M12X20DIN913 45H HW 6.0	
IM50 ADI-20	SR M12X20DIN916 45H HW 6.0	
IM50 ADI-25	SR M12X20DIN913 45H HW 6.0	

IM63 XMZ-ABB

Adapters with ISO 26622-1 XMZ Tapered Shanks for Boring Bars with Reduction Sleeves, Used on Mazak Integrex Machines



Designation	SS	d2	L	L4	D1	Clamping Screw
IM63 XMZ ABB 25 70	63	25.00	70.00	57.0	65.0	M10X20
IM63 XMZ ABB 40 70	63	40.00	105.00	66.0	80.0	M12X20

For tools, see pages: SXCIB (B128).

EXCHANGEABLE HEADS



MATERIAL GROUPS

According to DIN / ISO 513 and VDI 3323

ISO	Material	Condition	Tensile Strength [N/mm ²]	K _{C1} ⁽¹⁾ [N/mm ²]	m _c ⁽²⁾	Hardness HB	Material No.	
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	1350	0.21	125	1
		>= 0.25 %C	Annealed	650	1500	0.22	190	2
		< 0.55 %C	Quenched and tempered	850	1675	0.24	250	3
		>= 0.55 %C	Annealed	750	1700	0.24	220	4
			Quenched and tempered	1000	1900	0.24	300	5
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	1775	0.24	200	6
				930	1675	0.24	275	7
			Quenched and tempered	1000	1725	0.24	300	8
				1200	1800	0.24	350	9
	High alloy steel, cast steel, and tool steel		Annealed	680	2450	0.23	200	10
			Quenched and tempered	1100	2500	0.23	325	11
M	Stainless steel and cast steel	Ferritic/martensitic	680	1875	0.21	200	12	
		Martensitic	820	1875	0.21	240	13	
		Austenitic	600	2150	0.20	180	14	
K	Grey cast iron (GG)	Pearlitic/ferritic		1150	0.20	180	15	
		Pearlitic/martensitic		1350	0.28	260	16	
	Ductile cast iron (nodular) (GGG)	Ferritic		1225	0.25	160	17	
		Pearlitic		1350	0.28	250	18	
	Malleable cast iron	Ferritic		1225	0.25	130	19	
		Pearlitic		1420	0.3	230	20	
N	Aluminum-wrought alloy	Not cureable		700	0.25	60	21	
		Cured		800	0.25	100	22	
	Aluminum-cast, alloyed	<=12% Si	Not cureable		700	0.25	75	23
			Cured		700	0.25	90	24
		>12% Si	High temperature		750	0.25	130	25
	Copper alloys	>1% Pb	Free cutting		700	0.27	110	26
			Brass		700	0.27	90	27
			Electrolitic copper		700	0.27	100	28
	Non-metallic		Duroplastics, fiber plastics					29
			Hard rubber					30
S	High temp. alloys	Fe based	Annealed		2600	0.24	200	31
			Cured		3100	0.24	280	32
		Ni or Co based	Annealed		3300	0.24	250	33
			Cured		3300	0.24	350	34
	Titanium and Ti alloys		Cast		3300	0.24	320	35
				RM 400	1700	0.23		36
			Alpha+beta alloys cured	RM 1050	2110	0.22		37
H	Hardened steel		Hardened		4600		55 HRc	38
			Hardened		4700		60 HRc	39
	Chilled cast iron		Cast		4600		400	40
	Cast iron		Hardened		4500		55 HRc	41

Steel Stainless Steel Cast Iron

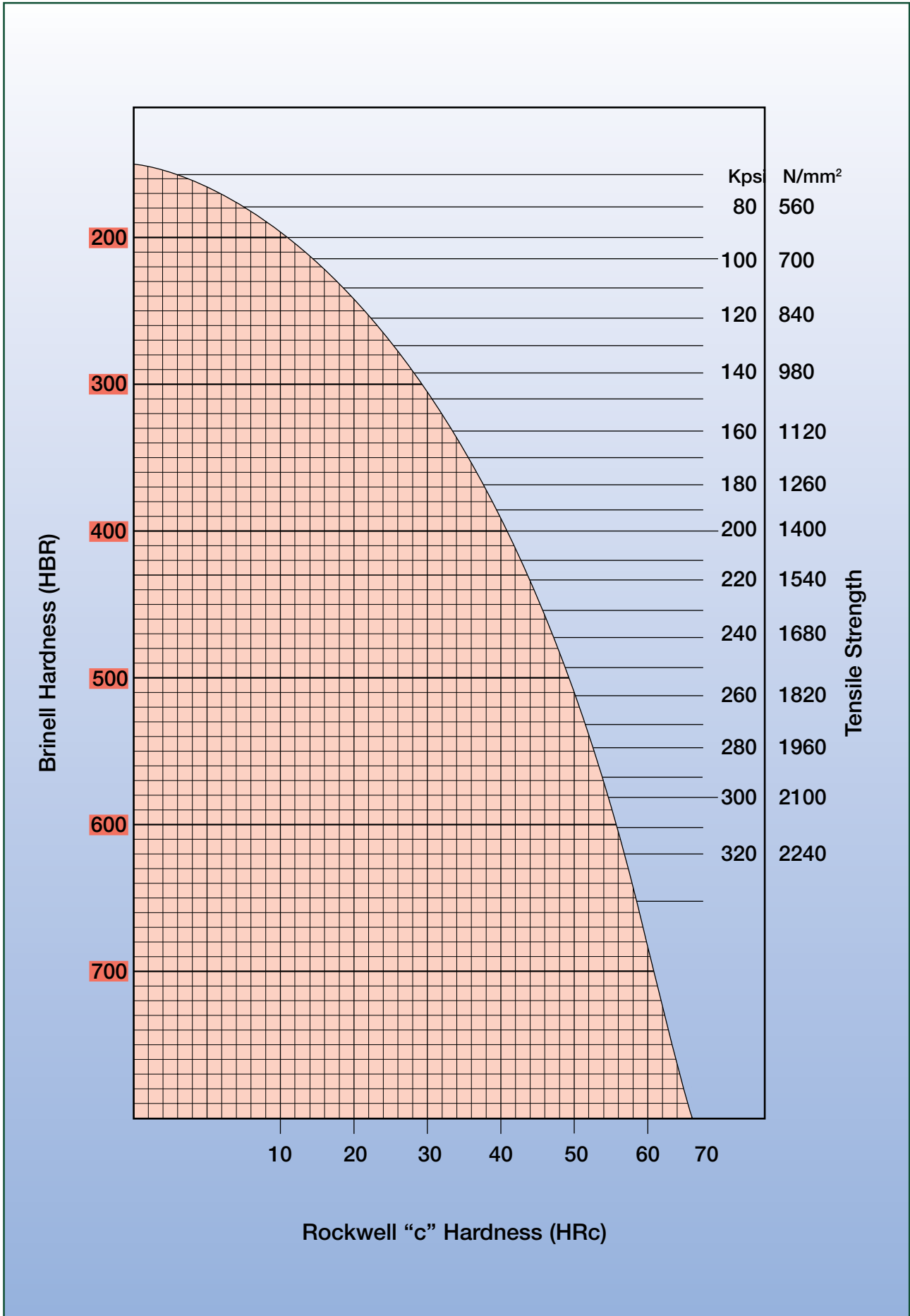
Nonferrous High Temp. Alloys Hardened Steel

⁽¹⁾ Specific cutting force for 1 mm² chip section.

⁽²⁾ Chip thickness factor.

MATERIAL GROUPS

Hardness Conversion Table



ISCAR Groove Turn Grades Chart

Grades	ISO	Coating Layers
IC228	P25-P50 S25-S30 K20-K50 M30-M40	TiN TiCN TiN
IC328	P25-P50 M30-M40 S25-S30	TiN TiCN TiN
IC354	P20-P40 M10-M30	TiCN TiN
IC528	P25-P45	TiN TiCN TiN
S.T. IC806	S15-S25	TiN TiAlN
S.T. IC807 IC907	P10-P30 M05-M20 S05-S20 H05-H15	TiN TiAlN
S.T. IC808 IC908	P15-P30 M20-M30 K20-K40 S05-S20 H05-H15	TiN TiAlN
S.T. IC830 IC928	P20-P50 M20-M30 K15-K40 S15-S40	TiN TiAlN
IC1008	P20-P50 M20-M40 K15-K40 H20-H30	TiN TiAlN
IC418	K10-K25	Al ₂ O ₃ TiC
IC428	K05-K20 P05-P15 H15-H25	TiN Al ₂ O ₃ TiCN
S.T. IC5010	K10-K25	TiN Al ₂ O ₃ TiCN
S.T. IC8250	P10-P35 M05-M20	TiN Al ₂ O ₃ TiCN

S.T. SUMO TEC ■ PVD COATED ■ CVD COATED

ISCAR Groove Turn Grades Chart

Recommended Applications	PARTING	GROOVING	FACING
A TiN PVD coated tough grade. Used for grooving and threading a wide range of workpiece materials, at low cutting speeds.		■	
A TiN/TiCN PVD coated tough grade. Used for milling, grooving, parting and drilling a wide range of workpiece materials, at low to medium cutting speeds.	■		
A TiN/TiCN PVD coated, tough grade. Used for general applications in parting and grooving carbon, alloy and stainless steel at medium to high cutting speeds.	■	■	■
A tough submicron substrate, TiN/TiCN/TiN PVD coated. Used for grooving and drilling a wide range of workpiece materials, at low to medium cutting speeds.		■	
A tough submicron substrate, TiAlN PVD coated grade followed by a special SUMO TEC surface treatment. Suitable for turning inconel at low to medium cutting speeds.		■	
A tough submicron substrate, TiAlN PVD coated grade. Suitable for turning heat resistant alloys, austenitic stainless steel and hard steel at low to medium cutting speeds.	■	■	
A tough submicron substrate, TiAlN PVD coated grade. Designed for machining heat resistant alloys, austenitic stainless steel, hard alloys and carbon steel at medium to high cutting speeds, interrupted cut and unfavorable conditions. Excellent notch wear and built-up edge resistance.	■	■	■
A PVD TiAlN coated tough grade. Suitable for milling stainless steel, high temperature alloys and other alloy steels. Recommended for interrupted cut and heavy operations.	■	■	■
A tough submicron substrate, TiAlN/TiN PVD coated grade. Used for parting and grooving high temperature alloys, stainless and hardened steel, at low to medium speeds and for interrupted cuts.		■	
A TiC/Al ₂ O ₃ multilayer, CVD coated grade. Used for grooving and turning grey and nodular cast iron at medium to high cutting speeds. Can be used for interrupted cuts and heavy machining.		■	
A TiC/Al ₂ O ₃ multilayer, CVD coated grade. Used for grooving and turning grey and nodular cast iron at medium to high cutting speeds.	■	■	■
A TiCN/Al ₂ O ₃ /TiN multilayer, CVD coated grade. Used for turning grey and nodular cast iron at medium to high cutting speeds.		■	■
A tough substrate with a cobalt enriched layer combined with MTCVD TiCN and a thick alpha Al ₂ O ₃ CVD coating. Recommended for general use machining of steel in a wide range of conditions, featuring high toughness and wear resistance.		■	■

■ Standard ■ Semi-Standard

ISCAR Groove Turn Grades Chart

Grades	ISO	Coating Layers
IC20N	P05-P25 M05-M15	
IC30N	P10-P30 M10-M20 H10-H25	
IC08	M10-M30 N10-N25 S10-S30	
IC20	M10-M25 K10-K20 N05-N25 S05-S20 H05-H15	
IB05S	S05	
IB50	K01-K10 H01-H10	
IB55	K05-K15 H10-H25	
ID5	N01-N10	

■ CERMET
 ■ UNCOATED
 ■ CBN
 ■ PCD

ISCAR Groove Turn Grades Chart







Recommended Applications	PARTING	GROOVING	FACING
A cermet grade, used for grooving and turning applications. Recommended for semi-finishing and finishing operations when excellent surface finish is required. Wear resistant, prevents built-up edge.		■	
A cermet grade. Provides excellent resistance to wear and plastic deformation even at high cutting speeds and medium feeds. Useful for turning and milling of semi-finishing and finishing applications.	■		
An uncoated, fine grain carbide grade. Used for stainless steel and high temperature alloys at low to medium cutting speeds.	■	■	■
An uncoated carbide grade. Used for semi-finishing, finishing and semi-roughing of aluminum, cast iron and stainless steel. Used at low to medium speeds and feeds.	■	■	■
Super fine grain PCBN with a very high CBN content for machining ferrous sintered metals.			
A 50% CBN brazed tip, used for finishing hardened steel (45-65 HRc) and nodular cast iron in continuous cutting.		■	
A 55% CBN brazed tip, used for finishing hardened steel (45-65 HRc) in continuous cutting.		■	
A PCD brazed tip, suitable for machining aluminum (Si < 12%) and copper alloys and general cutting of nonferrous materials.		■	

■ Standard ■ Semi-Standard

ISCAR MATERIAL GROUPS

According to VDI 3323 Standard







Mtl. No.			
	USA AISI/SAE	GERMANY Werkstoff DIN	Great Britain BS EN
1		1.0028 Ust 34-2 (S250G1T)	
1		1.0034 RSt 34-2 (S250G2T)	1449 34/20HR; 1449 34/20HS; 1449 34/20CR; 1449 34/20CS
1		1.0035 St185 (Fe 310-0); St 33	Fe 310-0; 1449 15HR; 1449 15HS
1	A 570 Gr. 33; A 570 Gr. 36	1.0036 S235JRG1; (Fe 360 B); Ust 37-2	Fe 360 B; 4360-40 B
1		1.0037 S235JR (Fe 360 B); St 37-2	Fe 360 B; 4360-40 B
1	A 570 Gr. 40	1.0044 S275JR (Fe 430 B); St44-2	Fe 430 B FN; 1449 43/25 HR; 1449 43/25HS; 4360-43 B
1		1.0045 S355JR	4360-50 B
1	A 570 Gr.50; A 572 Gr.50	1.0050 E295 (Fe 490-2); St 50-2	Fe 490-2 FN; 4360- 50 B
1	A 572 Gr. 65	1.0060 E335 (Fe 590-2); St 60-2	Fe 60-2; 4360-55 E; 4360-55 C
1		1.0112 P235S	1501-164-360B LT20
1		1.0114 S235JU; St 37-3 U	4360-40C
1		1.0130 P265S	1501-164-400B LT 20
1		1.0143 S275J0; St 44-3 U	4360-43C
1	A 573 Gr. 70; A 611 Gr.D	1.0144 S275J2G3 (Fe 430 D 1); St 44-3	Fe 430 D1 FF; 4360- 43 C; 4360-43 D
1		1.0149 S275JOH; RoSt 44-2	4360-43C
1		1.0226 DX51D; St 02 Z	Z2
1	M 1010	1.0301 C10	040 A 10; 045 M 10; 1449 10 CS
1	A 621 (1008)	1.0330 DC 01; St 2; St 12	1449 4 CR; 1449 3 CS
1	A 619 (1008)	1.0333 Ust 3 (DC03G1); Ust 13	1449 2 CR;1449 3 CR

 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
A 34-2		Fe 330; Fe 330 B FU		SS 330	
A 34-2 NE		Fe 330 B FN			St2sp; St2ps
A 33	1300	Fe 320	Fe 310-0		St0
	1311; 1312	FE37BFU	AE 235 B; Fe 360 B		16D; 18Kp; St3Kp
E 24-2	1311	Fe 360 B; 1449 37/23 HR	AE 235 B; Fe 360 B	STKM 12 A; STKM 12 AC	
E 28-2	1412	Fe 430 B; Fe 430 B FN	AE 275 B; Fe 430 B FN	SM 400 A; SM 400 B; SM 400 C	St4ps; St4sp
E 36-2	2172	Fe 510 B	AE 355 B		
A 50-2	1550; 2172	Fe 490	a 490-2; Fe 490-2 FN	SS 490	ST5ps; ST5sp
A 60-2	1650	Fe 60-2; Fe 590	A 590-2; Fe 590-2 FN	SM 570	St6ps; St6sp
A37AP		Fe 360 C	AE 235 C		
E 24-3		Fe 360 C	AE 235 C		
A 42 AP			SPH 265		
E 28-3	1414-01	Fe 430 D	AE 275 D		
E 28-3; E 28-4	1411; 1412; 1414	Fe 430 B; Fe 430 C (FN); Fe 430 D (FF)	AE 275 D; Fe 430 D1 FF	SM 400 A; SM 400 B; SM 400 C	St4kp; St4ps; St4sp
	1412-04	Fe 430 C	Fe 430 C		
GC	1151 10	FeP 02 G	FeP 02 G		
AF 34 C 10; XC 10		C 10; 1 C 10	F.1511; F.151.A	S 10C	10
TC	1142	FeP 00; FeP 01	AP 11	SPHD	15 kp
E		FeP 02	AP 02	SPCD	

ISCAR MATERIAL GROUPS




According to VDI 3323 Standard







Mtl. No.			
	USA AISI/SAE	GERMANY Werkstoff DIN	Great Britain BS EN
1	A 621 (1008)	1.0334	UStW 23 (DD12G1)
1	A 622 (1008)	1.0335	DD13; StW 24
1	A 620 (1008)	1.0338	DC04; St 4; St 14
1	A 516 Gr. 65; 55 A 515 Gr. 65; 55 A 414 Gr. C; A 442 Gr.55	1.0345	P235GH/H I
1	(M) 1020; M 1023	1.0402	C22
1	1020	1.0402	C22
1	1020; 1023	1.0402	C22
1		1.0425	P265GH/H II
1	A27 65-35	1.0443	GS-45
1		1.0539	S355NH;StE 335
1		1.0545	S355N; StE 355
1		1.0546	S355NL;TStE 355
1		1.0547	S355JOH
1		1.0549	S355 NLH;TStE 355
1		1.0553	S355JO;St 52-3U
1	A 633 Gr.C; A 588	1.0562	P355N; StE 355
1		1.0565	P355NH; WStE 355
1		1.0566	P355NL1; TStE 355
1	1	1.0570	S355J2G3; St 52-3
1	1213	1.0715	9 SMn 28 (1SMn30)

 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
S C		FeP 12	AP 12	SPHE	10kp
3 C		FeP 13	AP 13	SPHE	08kp
ES	1147	FeP 04	AP 04	SPCE	08jU; JUA
A 37 CP; A 37 AP	1331; 1330	FeE235; Fe 360 1 KW; Fe 360 1KG; Fe 360 2 KW; Fe 360 2 KG	A 37 RC I; RA II	SGV 410; SGV 450; SGV 480; SPV 450; SPV 480	
AF 42 C 20; XC 25; 1 C 22	1450	C 20; C 21; C 25	1 C 22; F.112	S20C	20
CC20	1450	C20; C21	F.112	S22 C	20
AF 42 C 20; XC 25; 1 C 22	1450	C 20;C 21;C 25	1 C 22F.112	S 20 C; S 22 C	
A 42 CP; A 42 AP	1431; 1430; 1432	Fe 410 1KW; Fe 410 1KG; Fe 410 1KT; Fe 410 2KW; Fe 410 2KG	A 42 RC I; A 42 RC II	SPV 315; SPV 355; SG 295; SGV 410; SGV 450; SGV 480	16K; 20K
E 23-45 M	1305				
TSE 355-4	2134-04	Fe 510 B	Fe 355 KGN		
E 355 R	2334-01	FeE 355 KG	AE 355 KG		
E 355 FP	2135-01	FeE 355 KT	AE 355 KT		
TSE 355-3	2172-04	Fe 510 C	Fe 510 C		
	2135	Fe 510 D	FeE 355 KTM		
E 36-3		Fe 510 C			
FeE 355 KG N; E 355 R/FP; A 510 AP	2106	FeE 355 KG; FeE 355 KW	AEE 355 KG; AEE 355 DD	SM 490 A; SM 490 B; SM 490 C; SM 490 YA; SM 490YB	15GF
A 510 AP	2106	FeE 355-2			
A 510 FP	2107-01	FeE 355-3			
E 36-3; E 36-4	2132; 2133; 2134; 2174	17GS; 17G1S	AE 355 D; Fe 510 D1 FF	SM 490 A; SM 490 B; SM 490 C; SM 490 YA; SM 490YB	17GS; 17G1S
S 250	1912	CF SMn 28	F.2111 - 11 SMn 28	SUM 22	

ISCAR MATERIAL GROUPS



According to VDI 3323 Standard







Mtl. No.				
	USA AISI/SAE	Werkstoff	DIN	Great Britain BS EN
1	1213	1.0715	9 SMn 28	230 M 07
1	12 L 13	1.0718	9 SMnPb 28 (11SMnPb30)	
1	1108; 1109	1.0721	10 S 20	10S20
1	11 L 08	1.0722	10 SPb 20	
1	11 L 08	1.0722	10 SPb 20	
1	1215	1.0736	9 SMn 36 11SMn37)	
1	12 L 14	1.0737	9 SMnPb 36 (11SMnPb37)	
1		1.0972	S315MC; QStE 300 TM	1501-40F30
1		1.0976	S355MC; QStE 360 TM	1501-43F35
1		1.0982	S460MC; QStE 460 TM	1501-50F45
1		1.0984	S500MC; QStE 500 TM	
1		1.0986	S500MC; QStE 500 TM	1501 - 60F55
1	1010	1.1121	CK 10; (C10E)	040 A 10
1		1.1121	St 37-1	4360 40 A
1	1015	1.1141	CK 15; (C15E)	040 A 15; 080 M 15 32C
1	1020; 1023	1.1151	C22E; CK 22	055 M 15; (070 M 20)
1		1.2083		
1	A572-60	1.8900	StE 380	4360 55 E
1	A36		St 44-2	4360 43 A
1			StE 320-3Z	1 501 160
2	(M) 1025	1.0406	C 25	070 M 26
2		1.0416	GS-38	
2	A 537 Cl.1; A 414 Gr. G; A 612	1.0473	P355GH; 19 Mn 6	
2	1035	1.0501	C35	080 A 32; 080 A 35; 080 M 36; 1449 40 CS
2	1045	1.0503	CF 45; (C45G)	060 A 47; 080 M 46

 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
S 250	1912	CF 9 SMn 28	11 SMn 28	SUM 22	
S 250 Pb	1914	CF 9 SMnPb 28	F.2112-11 SMnPb 28	SUM 22 L; SUM 23 L; SUM 24 L	
10S20; 10 F 2		CF 10 S 20	F. 2121 - 10 S 20		
10PbF 2		CF 10 SPb 20	F.2122-10 SPb 20		
10 PbF 2		CF 10 SPb 20	10 SPb 20		
S 300		CF 9 Mn 36	F.2113 - 12 SMn 35	SUM 25	
S 300 Pb	1926	CF 9 SMnPb 36	F.2114- 12 SMnPb 35		
E 315 D					
E 355 D	2642	FeE 355TM			
E 490 D	2662	FeE 490 TM			
E 560 D		FeE 560 TM			
XC 10	1265	C 10; 2 C 10; 2 C 15	F-1510-C 10 K	S 9 CK; S 10 C	08;10
	1300				
XC 12; XC 15; XC 18	1370	C 15; C 16	F.1110-C 15 K; F.1511-C 16 K	S 15; S 15 CK	15
2 C 22; XC 18; XC 25	1450	C 20; C 25	F.1120-C 25 K	S 20 C; S 20 CK; S 22 C	20
	2314				
	2145	FeE390KG		S25C	
NFA 35-501 E 28	1411				
	1421				
1 C 25		C 25; 1 C 25			
20-400 M	1306				
A 52 CP	2101; 2102	Fe E 355-2	A 52 RC I, RA II	SGV 410; SGV 450; SGV 480	
1 C 35; AF 55 C 35; XC 38	1572; 1550	C 35; 1 C 35	F.113	S 35 C	35
XC 42 H 1 TS	1672	C 43; C 46		S 45 C	45

ISCAR MATERIAL GROUPS




According to VDI 3323 Standard







Mtl. No.				
	USA AISI/SAE	Werkstoff	GERMANY DIN	Great Britain BS EN
2	1040	1.0511	C40	080 M 40
2		1.0540	C 50	
2	A27 70-36	1.0551	GS-52	A2
2	A148 80-40	1.0553	GS-60	A3
2	A738	1.0577	S355J2G4 (Fe 510 D 2)	Fe 510 D2 FF; 1501 Gr.224-460; 1501 Gr. 224-490
2	1140	1.0726	35 S 20	212 M 36 8M
2	1146	1.0727	45 S 20 (46S20)	
2	1035; 1041	1.1157	40Mn4	150 M 36 15
2	1025	1.1158	C25E; CK 25	(070 M 25)
2	1536	1.1166	34Mn5	
2	1330	1.1170	28Mn6	(150 M 28); (150 M 18) 14A
2		1.1178	C30E; CK 30	080M30
2	1035	1.1180	C35R; Cm 35	080 A 35
2	1035; 1038	1.1181	C35E; CK 35	080 A 35; (080 M 36)
2	1035	1.1181	C35E; CK 35	080 A 35; (080 M 36)
2	1035	1.1183	Cf 35 (C35G)	080 A 35
2	1042	1.1191	GS- Ck 45	080 A 46
2	1049; 1050	1.1206	C50E; CK 50	080 M 50
2	1050; 1055	1.1213	Cf 53; (C53G)	070 M 55
2	4520	1.5423	22Mo4	1503-245-420
3	A 516 Gr.70; A 515 Gr. 70; A 414 Gr.F; A 414 Gr.G	1.0481	P295GH; 17 Mn 4	1501 Gr. 224

 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
1 C 40; AF 60 C 40		C40; 1 C 40	F.114.A		
	1674	C 50	1 C 50		
280-480 M	1505				
320-560 M	1606				
A 52 FP	2107		A 52 RB II; AE 355 D		
35MF 6	1957		F.210.G		
45 MF 4	1973				
35 M 5; 40 M 5					40G
2 C 25; XC 25		C25	F.1120 - C 25 K	S 25 C; S 28 C	25
			TO.B	SMn 433 H	
20 M 5; 28 Mn 6		C 28 Mn	28 Mn 6	SCMn 1	30G
XC 32		C 30	2 C 30		
3 C 35; XC 32	1572		F.1135-C 35 K-1		
2 C 35; XC 32; XC 38 H 1	1550; 1572	C 35	F.1130-C 35 K	S 35 C	35
XC 38	1572	C36		S35C	
XC 38 H 1 TS	1572	C 36; C 38		S 35 C	35
XC 45	1660	C45	F-1140		
2 C 50; XC 48 H 1; XC 50 H1	1674	C 50			50
XC 48 H TS	1674	C 53		S 50 C	50
		16 Mo 5 KG; 16 Mo 5 KW	F.2602- 16 Mo 5	SB 450 M; SB 480 M	
A 48 CP; A 48 AP		Fe 510 KG; Fe 510 KT; Fe 510 KW; Fe 510-2 KG; Fe 510-2KT; Fe 510-2KW; FeE 295	A 47 RC I; RA II	SG 365; SGV 410; SGV 450; SGV 480	14G2

ISCAR MATERIAL GROUPS




According to VDI 3323 Standard







Mtl. No.					
	USA AISI/SAE	GERMANY Werkstoff	DIN	Great Britain BS EN	
3	1043	1.0503	C35	060 A 47; 080 M 46; 1449 50 HS, 1449 50 CS	
3	1074	1.0614	C 76 D; D 75-2		
3	1086	1.0616	C 86 D; D 85-2		
3	1095	1.0618	C 92 D; D 95-2		
3	1036; 1330	1.1165	30Mn5	120 M 36; (150 M 28)	
3	1335	1.1167	36Mn5	150 M 36	
3	1040	1.1186	C40E; CK 40	060 A 40; 080 A 40; 080 M 40	
3	1045	1.1191	C45E; CK 45	080 M 46; 060 A 47	
3	1049	1.1201	C45R; Cm 45	080 M 46	
3		1.7242	18 CrMo 4		
3	A 387 Gr. 12 Cl	1.7337	16 CrMo 4 4		
3		1.7362	12 CrMo 19 5	3606-625	
3	A572-60		17 MnV 6	436055 E	
4	1055	1.0535	C55	070 M 55	
4	1060	1.0601	C60	060 A 62; 1449 HS; 1449 CS	43D
4	107	1.0603	C67	080 A 67; 1449 70 HS	
4	1074; 1075	1.0605	C75	1449 80 HS	
4	1055	1.1203	C55E; CK 55	060 A 57; 070 M 55	
4	1055	1.1209	C55R; Cm 55	070 M 55	
4	1060; 1064	1.1221	C60E; CK 60	060 A 62	43D
4	1070	1.1231	Ck 67; (C67E)	060 A 67	
4	1074; 1075; 1078	1.1248	CK 75; (C75E)	060 A 78	
4	1086	1.1269	CK 85 (C85E)		

 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
1 C 45; AF 65 C 45	1672; 1650	C 45; 1 C 45	F.114	S 45 C	45
XC 75					
XC 80		C 85			
XC 90					
35 M 5			F.8211-30 Mn 5; f.8311-AM 30 Mn 5	SMn 433 H; SCMn 2	27ChGSNMDTL 30GSL
40 M 5	2120		F. 1203-36 Mn 6; F. 8212-36 Mn 5	ssmN 438 (H); SCMn 3	35G2; 35GL
2 C 40; XC 42 H 1		C 40		S 40 C	
2 C 45; XC 42 H 1; XC 45; XC 48 H 1	1672	C 45; C 46	F.1140-C 45 K; F.1142-C48 K	S 45 C; S 48 C	45
3 C 45; XC 42 H 1; XC 48 H 1	1660	C 45	F.1145-C 45K-1; F.1147C 48 K-1	S 50 C	
		A 18 CrMo 4 5 KW			15ChM
Z 10 CD 5.05		16 CrMo 20 5			
NFA 35-501 E 36	2142				
1 C 55; AF 70 C 55	1655	C 55; 1 C 55		S 55 C	55
1 C 60; AF 70 C 55		C 60; 1 C 60		S 58 C	60(G)
XC 65		C 67			
		C 75			75
2 C 55; XC 55 H 1	1655	C 55	F.1150-C 55 K	S 55 C	55
3 C 55; XC 55 H 1		C 55	F.1155-C 55K-1		
2 C 60; XC 60 H 1	1665; 1678	C 60		S 58 C	60; 60G; 60GA
XC 68	1770	C70			65GA; 68GA; 70
XC 75	1774	C 75			75(A)
XC 90		C 90			85(A)

ISCAR MATERIAL GROUPS

According to VDI 3323 Standard







Mtl. No.					
	USA AISI/SAE	GERMANY Werkstoff	DIN	Great Britain BS	EN
4	1095	1.1274	Ck 101 (C101E)		
4	W 112	1.1663	C 125 W		
4					
5		1.0070	E360 (Fe 690-2); St 70-2	Fe 690-2 FN	
5		1.7238	49 CrMo 4		
5		1.7701	51 CrMoV 4		
6	A 284 Gr.D; A 573 Gr.58; A 570 Gr 36; A 570 Gr C; A 611 Gr. C	1.0116	S235J2G3 (Fe 360 D 1); St 37-3	Fe 360 D1 FF; 1449 37/23 CR; 4360- 40 D	
6	5120	1.0841	St 52-3	150 M 19	
6	9255	1.0904	55 Si 7	250A53	45
6	9254	1.0904	55 Si 7	250 A 53	
6	9262	1.0961	60SiCr7		
6	L3	1.2067	100Cr6	BL3	
6	L1	1.2108	90 CrSi 5		
6	L2	1.2210	115CrV3		
6		1.2241	51CrV4		
6		1.2311	40 CrMnMo 7		
6	4135	1.2330	35 CrMo 4	708 A 37	
6		1.2419	105WCr6	105WC 13	
6	0 1	1.2510	100 MnCrW 4	BO1	
6	S1	1.2542	45 WCrV7	BS1	
6	S1	1.2550	60WCrV7		
6	L6	1.2713	55NiCrMoV6		
6	L 6	1.2721	50NiCr13		
6	O2	1.2842	90MnCrV8	BO2	
6	E 50100	1.3501	100 Cr 2		
6	52100	1.3505	100Cr6	2 S 135; 535 A 99	31
6		1.5024	46Si7		
6	9255	1.5025	51Si7		
6	9255	1.5026	55Si7	251 a 58	

 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
XC 100	1870	C 100	F-5117	SUP 4	
Y2 120					
	2223				
A 70-2	1655	Fe 70-2; Fe 690	A 690-2; Fe 690-2 FN		
		51 CrMoV 4			
E 24-3; E 24-4	1312; 1313	Fe 360 D1 FF; Fe 360 C FN; Fe 360 D FF; Fe 37-2	AE 235 D; Fe 360 D1 FF		St3kp; St3ps; St3sp; 16D
20 MC 5	2172	Fe 52	F-431		
55S7	2085	55Si8	56Si7		
55 S 7	2090				
60SC6		60SiCr8	60SiCr8		
Y100C6			100Cr6		
	2092	105WCr 5			
100C3		107CrV3KU			
		35 cRmO 8 KU			
34 CD 4	2234	35CrMo4	34CrMo4	SCM435TK	
105WC13	2140	10WCr6	105WCr5		ChWG
8 MO 8	2140	10WCr6	105WCr5	SKS31	
	2710	45 WCrV8 KU	45WCrSi8		5ChW25F
55WC20	2710	58WCr9KU			
55NCDV7			F.520.S	SKT4	5ChNM
55 NCV 6	2550		f-528		
90 MV8					
100 C 6	2258	100Cr6	F.1310 - 100 Cr 6	SUJ2	SchCh 15
45 S 7; Y 46 7; 46 SI 7			F. 1451 - 46 SI 7		
51 S 7; 51 Si 7	2090	48 Si 7; 50 Si 7	F.1450-50 Si 7		
55 S 7	2085; 2090	55 Si 7	F.1440 - 56 Si 7		55S2

ISCAR MATERIAL GROUPS




According to VDI 3323 Standard







Mtl. No.				
	USA AISI/SAE	GERMANY Werkstoff	DIN	Great Britain BS EN
6	9260	1.5027	60Si7	251 A 60; 251 H 60
6	9260 H	1.5028	65Si7	
6		1.5120	38 MnSi 4	
6	A 204 Gr.A; 4017	1.5415	16Mo3; 15 Mo 3	1503-243 B
6	4419	1.5419	20Mo4	1503-243-430
6	A 350-LF 5	1.5622	14Ni6	
6	3415	1.5732	1 NiCr10	
6	3310; 3314	1.5752	14NiCr14	655M13 36A
6		1.6587	17CrNiMo6	820A16
6		1.6657	14NiCrMo134	
6	5015	1.7015	15 Cr 3	523 M 15
6	5132	1.7033	34Cr4	530A32 18B
6	5140	1.7035	41C r4	530M40 18
6	5140	1.7045	42Cr41	530 A 40
6	5115	1.7131	16MnCr5	527 M 17
6		1.7139	16MnCr5	
6	5155	1.7176	55Cr3	527 A 60 48
6	4135; 4137	1.7220	34CrMo4	708 Aa 37
6	4142	1.7223	41CrMo4	
6	4140	1.7225	42CrMo4	708 M 0
6		1.7228	55NiCrMoV6G	823M30 33
6		1.7262	15CrMo5	
6		1.7321	20 mOcR 4	
6	ASTM A182 F12	1.7335	13CrMo4 4	1501-620Gr27
6	A 182-F11; A 182-F12	1.7335	13 CrMo 4 4	1 501 620 Gr. 27
6	ASTM A 182 F22	1.7380	10CrMo9 10	1501-622gR31; 1501-622gR45
6	A182 F22	1.7380	10 CrMo 9 10	1501-622
6		1.7715	14MoV6 3	1503-660-440

 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
60 S 7		60 Si 7	F. 1441 - 60 Si 7		60S2
60 S 7				50 P 7; SUP 6	
15 D 3	2912	16Mo3 KG; 16Mo3KW	F. 2601 - 16 Mo 3		
	2512	G 20 Mo 5; G 22 Mo5		SCPH 11	
16N6		14 Ni 6 KG; 14 Ni 6 KT	F.2641 - 15 Ni 6		
14 NC 11		16NiCr11	15NiCr11	SNC415(H)	
12NC15				SNC815(H)	
18NCD6			14NiCrMo13		
			14NiCrMo131		
12 C 3				SCr415(H)	15Ch
32C4		34Cr4(KB)	35Cr4	SCr430(H)	35Ch
42C4		41Cr4	42Cr4	SCr440(H)	
42 C 4 TS	2245	41Cr4	42Cr4	SCr440	
16 MC 5	2511	16MnCr5	16MnCr5		
	2127				
55 C 3	2253			SUP9(A)	50ChGA
35 CD 4	2234				35ChM
		41CrMo4	42CrMo4	SNB 22-1	40ChFA
42 CD 4	2244				
	2512	653M31			
12 CD 4	2216		12CrMo4		
	2625				
		14CrMo4 5	14CrMo45		
15 CD 4.5	2216		12CrMo4	SCM415(H)	12ChM; 15ChM
12 CD 9.10	2218	12CrMo9, 12CrMo10	TU.H		
			13MoCrV6		

ISCAR MATERIAL GROUPS




According to VDI 3323 Standard







Mtl. No.					
	USA AISI/SAE	GERMANY Werkstoff	DIN	Great Britain BS	EN
6	A355A	1.8509	41CrAlMo 7	905 M 39	41B
7	A570.36	1.0038	S235JRG2 (Fe 360 B); RSt 37-2	Fe 360 B FU; 1449 27/23 CR; 4360- 40 B	
7	3135	1.5710	36NiCr6	640A35	111A
7		1.5755	31 NiCr 14	653 M 31	
7	8620	1.6523	2 NiCrMo2	805M20	362
7	8740	1.6546	40 NiCrMo 22	311-Tyre 7	
7	4340	1.6565	40NiCrMo6	817 M 40	24
7	4130	1.7218	25CrMo4	CDS 110	
7		1.7733	24 CrMoV 5 5		
7		1.7755	GS-45 CrMOV 10 4		
7		1.8070	21 CrMoV 5 11		
8	C 45 W	1.173	C 45 W3		
8	4142	1.2332	47 CrMo 4	708 M 40	19A
8	A128 (A)	1.3401	G-X120 Mn 12		
8	3435	1.5736	36 NiCr 10		
8	9840	1.6511	36CrNiMo4	816M40	110
8		1.7361	32 CeMo12	722 M 24	40B
8	6150	1.8159	50 CrV 4	735 A 50	47
8		1.8161	58 CrV 4		
8		1.8515	32 CrMo 12	722 M 24	40B
8		1.8523	39CrMoV13 9	897M39	40C
9		1.4882	X 50 CrMnNiNbN 21 9		
9		1.5864	35 niCr 18		
9			31 NiCrMo 13 4	830 m 31	
10	A 619	1.0347	DC03; RRRSt; RRRSt 13	1449 3 CR; 1449 2 CR	
10	M 1015; M 1016; M 1017	1.0401	C15	080 M 15; 080 M 15; 1449 17 CS	
10		1.0723	15 S22; 15 S 20	210 A 15; 210 M 15	

 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
40 CAD 6.12	2940	41CrAlMo7	41CrAlMo7		
E 24-2NE	1312	Fe 360 B FN	AE 235 B FN; AE 235 B FU; Fe 360 B FN; Fe 360 B FU		St3ps; St3sp
35NC6				SNC236	
18 NC 13					
20 NCD 2	2506	20NiCrMo2	20NiCrMo2	SNCM220(H)	20ChGNM
		40NiCrMo2(KB)	40NiCrMo2	SNCM240	38ChGNM
35 NCD 6	2541	35NiCrMo6(KB)		SNCM 447	38Ch2N2MA
25 CD 4	2225	25CrMo4(KB)	55Cr3	SCM420; SCM430	20ChM; 30ChM
20 CDV 6		21 CrMoV 5 11			
		35 NiCr 9			
XC 48					
42 CD 4	2244	42CrMo4	42CrMo4	SCM (440)	
Z 120 M 12	2183	GX120Mn12	F. 8251-AM-X120Mn12	SCMnH 1; SCMn H 11	110G13L
30 NC 11					
40NCD3		36NiCrMo4(KB)	35NiCrMo4	SUP10	40ChN2MA
30 CD 12	2240	30CrMo12	F.124.A		
50CrV4	2230	50CrV4	51CrV4		50ChGFA
30 CD 12	2240	32CrMo12	F.124.A		
		36CrMoV12			
Z 50 CMNNb 21.09					
	2534		f-1270		
E		Fep 02	AP 02		08JU
AF 37 C12; XC 18	1350	C15; C16; 1 C 15	F.111	S 15 C	
	1922		F.210.F	SUM 32	

ISCAR MATERIAL GROUPS




According to VDI 3323 Standard







Mtl. No.				
	USA AISI/SAE	GERMANY Werkstoff DIN	Great Britain BS EN	
10	D 3	1.2080	X 210 Cr 12	BD 3
10	420	1.2083	X 42 Cr 13	
10		1.2085	X 33 CrS 16	
10		1.2162	21 MnCr 5	
10	L2	1.2210	115 Cr V3	
10		1.2311	40 CrMnMo7	
10	P20+S	1.2312	40CrMnMoS 8.6	
10		1.2316	X36CrMo17	X38CrMo16
10	H 11	1.2343	x 38 CrMoV 5 1	BH 11
10		1.234	X 38 CrMoV 5 1	
10	H 13	1.2344	X 40 CrMoV 5 1	BH 13
10	A 2	1.2363	X100 CrMoV 5 1	BA 2
10		1.236	X 100 CrMo V5-1	
10	D 2	1.2379	X 155 CrVMo 12 1	BD2
10		1.238	X 155 CrVMo 12 1	
10	HNV3	1.2379	X210Cr12G	BD2
10	D 4 (D 6)	1.2436	X 210 CrW 12	BD6
10		1.244	X 210 CrW 12	
10	O1	1.251	100 MnCrW 4	B0 1
10	H 21	1.2581	X 30 WCrV 9 3	BH 21
10		1.2601	X 165 CrMoV 12	
10	H 12	1.2606	X 37 CrMoW 5 1	BH 12
10		1.277	X 45 NiCrMo 4	
10	O2	1.284	90 MnCrV 8	B0 2
10	D3	1.3343	S 6-5-2	BM2
10	ASTM A353	1.5662	X8Ni9	1501-509; 1501-510
10	ASM A353	1.5662	X8Ni9	502-650
10	2517	1.568	12Ni19	12Ni19
10	2515	1.5680	12 Ni 19	
10		1.713	16 MnCr 5	
10		1.276	X 19 NiCrMo 4	
11		1.3202	S 12-1-4-5	BT 15

 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
Z 200 C 12					
Z40 C14	2314			SUS 420 J 2	
Z35V CD 17.S					
20 MC 5					
100 C3		107 CrV3 KU	F.520 L		
40 CMD 8		35 cRmO 8 KU			
40CMD8S					
Z 38 CDV 5		X 37 CrMoV 5 1 KU			4Ch5MFS
Z 38 CDV 5		X 37 CrMoV 51 KU			
Z 40 CDV 5	2242	X40CrMoV511KU	F-5318	SKD61	4Ch5MF1S
Z 100 CDV 5	2260	X100CrMoV51KU	F-5227	SKD12	
Z 160 CDV 12	2310	X165CrMoW12KU	X160CrMoW12KU	SKD11	
Z 160 CDV 12		X 155 CrVMo 12 1 KU			
Z160CDV12	2736				
Z 200 CD 12	2312	X215CrW 12 1 KU	F-5213		
90 MnWRv5		95MnWCr 5 KU	95 MnCrW 5		
Z 30 WCV 9		X30WCrV 9 3 KU	F-526	SKD5	3Ch2W8F
	2310				
Z 35 CWDV 5		X 35 CrMoW 05 KU	F.537		5ChNM
45 NCD 16		40 NiCrMoV 8 KU			
90 MV 8		90 MnVCr 8 KU			
Z200C12	2715	X210Cr13KU	X210Cr12	SUH3	R6M5
		14 Ni 6 KG; 14 Ni 6 KT	XBNiO9		
9 Ni		X10Ni9	F-2645	SL9N60(53)	
Z18N5					
Z 18 N 5					
16 MC 5					
		HS 12-1-5-5	12-1-5-5		

ISCAR MATERIAL GROUPS




According to VDI 3323 Standard







Mtl. No.				
	USA AISI/SAE	GERMANY Werkstoff DIN	Great Britain BS	EN
11		1.3207	S 10-4-3-10	BT42
11	T 15	1.3243	S 6-5-2-5	
11		1.3246	S 7-4-2-5	
11		1.3247	S 2-10-1-8	BM 42
11	M 42	1.3249	S 2-9-2-8	BM 34
11	T 4	1.3255	S 18-1-2-5	BT 4
11	M 2	1.3343	S6-5-2	BM2
11	M 7	1.3348	S2-9-2	
11	T 1	1.3355	S 18-0-1	BT 1
11	HNV 3	1.4718	X45CrSi 9 3	401S45 52
11	422	1.4935	x20 CrMoWV 12 1	
12	403	1.4000	X6Cr13	403 S 17
12		1.4001	X6Cr14	
12	(410S)	1.4001	X7 Cr 13	(403 S 7)
12	405	1.4002	X6CrA12	405S17
12	405	1.4002	X6 CrAl 13	405 S 17
12	416	1.4005	X12CrS 13	416 S 21
12	410; CA-15	1.4006	(G-)X10 Cr 13	410S21 56A
12	430	1.4016	X8Cr17	Z8C17
12	430	1.4016	X6 Cr 17	430 S 15 60
12		1.4027	G-X20Cr14	420C29
12	420	1.4028	X30 Cr 13	420 S 45
12		1.4086	G-X120Cr29	452C11
12	430 F	1.4104	X12CrMoS17	420 S 37
12	440B	1.4112	X90 CrMoV 18	
12	434	1.4113	X6CrMo 17	434 S 17
12		1.4340	G-X40CrNi27 4	
12	S31500	1.4417	X2CrNiMoSi19 5	
12	S31500	1.4417	X2 CrNoMoSi 18 5 3	

 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
Z130WKCDV					
KCV 06-05-05-04-02	2723	HS 6-5-2-5	6-5-2-5	SKH55	R6M5K5
Z110 WKCDV 07-05-04	7-4-2-5	HS 7-4-2-5	M 35		
Z110 DKCWV 09-08-04	2-10-1-8	HS 2-9-1-8	M 41		
			2-9-2-8		R6M5
Z 80 WKCVC 18-05-04-0					
Z 85 WDCV	2722	HS 6 5 2	F-5604	SKH 51	
Z 100 DCWV 09-04-02-	2782	HS 2 9 2	F-5607		
Z 80 WCV 18-4-01					R18
Z45CS9		X45CrSi8	F322	SUH1	40Ch9S2
Z 6 C 13	2301	X6Cr13	F.3110	SUS403	08Ch13
			F8401		08Ch13
Z 8 C 13	2301				08Ch13
Z8CA12		X6CrAl13			
Z6CA13	2302	X6CrAl13			
Z11 CF 13	2380	X12 CrSC13	F-3411	SUS 416	
Z10 C 13	2302	X12Cr13	F.3401	SUS410	12Ch13
430S15	2320	X8Cr17	F.3113		12Ch17
Z 8 C 17	2320	X8Cr17	F3113	SUS430	12Ch17
Z20C13M					20Ch13L
Z 30 C 13	2304				20Ch13
Z 10 CF 17	2383	X10CrS17	F.3117	SUS430F	
Z 8 CD 17.01	2325	X8CrMo17		SUS434	
	2376				
	2376				

ISCAR MATERIAL GROUPS




According to VDI 3323 Standard







Mtl. No.					
	USA AISI/SAE	GERMANY Werkstoff	DIN	Great Britain BS	EN
12		1.4418	X4 CrNiMo16 5		
12	XM 8; 430 Ti; 439	1.4510			
12	430Ti	1.4510	X6 CrTi 17		
12		1.4511	X 6 CrNb 17		
12	409	1.4512	X 6 CrTi 12; (X2CrTi12)	LW 19; 409 S 19	
12		1.4720	X20CrMo13		
12	405	1.4724	X10CrA113	403S17	
12	430	1.4742	X10CrA118	439S15	60
12	HNV6	1.4747	X80CrNiSi20	443S65	59
12	446	1.4749	x18 cRn 28		
12	446	1.4762	X10CrA124		
12	EV 8	1.4871	X 53 CrMnNiN 21 9	349 S 54	
12	302		x12 CrNi 18 9	302 S 31	
12	429		X10 CrNi 15		
13	420	1.4021	X20Cr13	420S37	
13	420	1.4031	X40 Cr 13		
13		1.4034	X46Cr13	420 S 45	
13	431	1.4057	X20CrNi172	431 S 29	57
13	CA6-NM	1.4313	G-X4 CrNi 13 4	425 C 11	
13		1.4544		S. 524; S. 526	
13	348	1.4546	X5CrNiNb 18-10	347 S 31; 2 S. 130; 2 S. 143; 2 S. 144; 2 S. 145; S.525; S.527	
13		1.4922	x20cRmV12-1		
13		1.4923	X22 CrMoV12 1		
14	304	1.4301	X 5 CrNi 18 9	304 S 15	
14	303	1.4305	X10 CrNiS 18 9	303 S 21	58M
14	304L	1.4306	X2CrNi18 9	304S12	
14	304L	1.4306	X2 CrNi 18 10	304 S 11	
14	CF-8	1.4308	X6 CrNi 18 9	304 C 15	58E
14	301	1.4310	X12CrN i17 7	301 S 21	
14	304 LN	1.4311	X2 CrNiN 18 10	304 S 62	
14		1.4312	G-X10CrNi18 8	302C25	
14	305	1.4312	X8 CrNi 18 12	305 s 19	

 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
Z6CND16-04-01	2387				
Z 4 CT 17		X 6 CrTi 17	F.3115 -X 5 CrTi 17	SUS 430 LX	08 Ch17T
Z 4 CT 17					08Ch17T
Z 4 CNb 17		X 6 CrNb 17	F.3122-X 5 CrNb 17	SUS 430 LK	
Z 3 CT 12		X 6 CrTi 12		SUH 409	
Z10C13		X10CrA112	F.311		10Ch13SJ
Z10CAS18		X8Cr17	F.3113	SUS430	15Ch13SJ
Z80CSN20.02		X80CrSiNi20	F.320B	SUH4	
Z10CAS24	2322	X16Cr26		SUH446	
Z 52 CMN 21.09		X53CrMnNiN21 9		SUH35, SUH36	55Ch20G9AN4
Z 10 CN 18-09	2330				
Z 20 C 13	2303	14210			20Ch13
Z 40 C 14	-2304				40Ch13
Z40 C 14		X40Cr14	F.3405	SUS420J2	
Z 15 CN 16.02	2321	X16CrNi16	F.3427	SUS431	20Ch17N2
Z 4 CND 13-04 M	2385	(G)X6CrNi304		SCS5	
		X 6 CrNiTi 18 11			08Ch 18N12T
		X 6 CrNiNb 18 11			
	2317	x20cRmOnl 12 01			
Z 5 CN 18.09	2332; 2333				08Ch18N10
Z 8 CNF 18-09	2346	X10CrNiS18.09	F.3508	SUS303	30Ch18N11
Z2CrNi18 10	2352	x2cRn18 11	F.3503	SCS19	
Z 3 CN 19-11	2352	X2CrNi18 11			
Z 6 CN 18-10 M	2333			SUS304L	
Z 12 CN 17.07	2331	X2CrNi18 07	F.3517		
Z 2 CN18.10	2371	X2CrNi18 10		SUS304LN	
Z10CN18.9M					10Ch18N9L
					10Ch18N9L

ISCAR MATERIAL GROUPS




According to VDI 3323 Standard







Mtl. No.				
	USA AISI/SAE	Werkstoff	DIN	Great Britain BS EN
14	304	1.4350	X5CrNi18 9	304S15 58E
14	S32304	1.4362	X2 CrNiN 23 4	
14	202	1.4371	X3 CrMnNiN 188 8 7	284 S 16
14	316	1.4401	X 5 CrNiMo 17 12 2; (X4 CrNiMo 17 -12-2)	316 S 13; 316 S 17; 316 S 19; 316 S 31; 316 S 33
14	316L	1.4404	X2 CrNiMo 17 13 2; (X2 CrNiMo 17-12-2); GX 2 CrNiMoN 18-10	316 S 11; 316 S 13; 316 S 14; 316 S 31; 316 S 42; S.537; 316 C 12; T.75; S. 161
14	316LN	1.4406	X2 CrNiMoN 17 12 2; (X2CrNiMoN 18-10)	316 S 61; 316 S 63
14	CF-8M	1.4408	GX 5 CrNiMoN 7 12 2; G-X 6 CrNiMo 18 10	316 C 16 (LT 196); ANC 4 B
14		1.4410	G-X10CrNiMo18 9	
14	316 Ln	1.4429	X2 CrNiMo 17 -13-3	316 S 62
14	316L	1.4435	X2 CrNiMo18 14 3	316 S 11; 316 S 13; 316 S 14; 316 S 31; LW 22; LWCF 22
14	316	1.4436	X 5 CrNiMo 17 13 3; (X4CRNIMO 17-13-3)	316 S 19; 316 S 31; 316 S 33; LW 23; LWCF 23
14	317L	1.4438	X2 CrNiMo 18 16 4; (X2CrNiMo 18-15-4)	317 S 12
14	(s31726)	1.4439	X2 CrNiMoN 17 13 5	
14		1.444	X 2 CrNiMo 18 13	
14	317	1.4449	X5 CrNiMo 17 13 3	317 S 16
14	329	1.4460	X 4 CrNiMo 27 5 2; (X3CrNiMo27-5-2)	
14	329	1.4460	X8CrNiMo27 5	

 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
Z6CN18.09	2332	X5CrNi18 10	F.3551	SUS304	
Z 2 CN 23-04 AZ	2327				
Z 8 CMN 18- 08-05					
Z 3 CND 17 -11-01; Z 6 CND 17-11; Z 6 CND 17-11-02; Z 7 CND 17-11-02; Z 7 CND 17-12-02	2347	X 5 CrNiMo 17 12	F.3534-X 5 CrNiMo 17 12 2	SUS 316	
Z 2 CND 17-12; Z 2 CND 18-13; Z 3 CND 17-11-02; Z 3 CND 17-12-02 FF; Z 3 CND 18-12-03; Z 3 CND 19.10 M	2348	X 2 CrNiMo 17 12; G-X 2 CrNiMo 19 11	F.3533 - X 2 CrNiMo 17 13 2; F.3537 - X 2 CrNiMo 17 13 3	SUS 316 L	
Z2 CND 17-12 AZ		X 2 CrNiMoN 17 12	F.3542-X 2 CrNiMoN 17 12 2	SUS316LN	07 Ch 18N
	2343		F.8414-AM-X 7 CrNiMo 20 10	SCS 14	10G2S2MSL
Z5CND20.12M	2328				
Z 2 CND 17-13 Az	2375	X 2 CrNiMoN 17 13	F.3543-X 2 CrNiMoN 17 13 3	SUS 316 LN	
Z 3 CND 17-12-03; Z 3 CND 18-14-03	2375	X2CrNiMoN 17 13	F.3533-X 2 CrNiMo 17 13 2	SUS 316 L	O3 Ch 17N14M3
Z 6 CND 18-12-03; Z 7 CND 18-12-03	2343	X 5 CrNiMo 117 13; X 8 cRnlmO 17 13	F.3543-X 5 CrNiMo 17 12 2 F.3538-X 5 CrNiMo 17 13 3	SUS 316	
Z 2 CND 19-15-04; z 3 cnd 19-15-04	2367	X2CrNiMo18 16	f.3539-x 2 cRnlmO 18 16 4	SUS317L	
Z 3 CND 18-14-06 AZ					
		X 5 CrNiMo 18 15		SUS 317	
(Z 3 CND 25-07 Az); Z 5 CND 27-05 Az	2324		F.3309-X 8 CrNiMo 17 12 2; F.3552-X 8 CrNiMo 18 16 4	SUS 329 J 1	
	2324				

ISCAR MATERIAL GROUPS




According to VDI 3323 Standard







Mtl. No.	 USA AISI/SAE		 GERMANY Werkstoff DIN		 Great Britain BS EN	
	14			1.4462	X2CrNiMoN22 5 3	318 S 13
14			1.4500	G-X7NiCrMoCuNb25 20		
14	17-7PH		1.4504		316S111	
14	443 444		1.4521	X2CrMoTi18-2		
14	UNS N 08904		1.4539	X1NiCrMoCuN25-20-5		
14	CN-7M		1.4539	(G-)X1 NiCrMoCu 25 20 5		
14	321		1.4541	Z 6 CrNiTi 18-10	321 S 31; 321 S 51 (1010; 1105); LW 24; LWCF 24	
14	630		1.4542	X5 CrNiCuNb 17 4; (X5 CrNiChNb 16-4)		
14	15-5PH		1.4545	Z7 CNU15.05		
14	S31254		1.4547	X1 CrNiMoN 20 18 7		
14	347		1.4550	X6 CrNiNb 18 10	347 S 17	58F
14			1.4552	G-X7CrNiNb18 9		
14	17-7PH		1.4568		316S111	
14	316Ti		1.4571	X6 CrNiMoTi 17 12 2	320 S 31	
14	316 Ti		1.4571	x 6 CrNiMoTi 17 12 2	320 S 31	58J
14			1.4581	G-X 5 CrNiMoNb	318 C 17	
14	318		1.4583	X 10CrNiMoNb 18 12	303 S 21	
14			1.4585	G-X7CrNiMoCuNb18 18		
14			1.4821	X20CrNiSi25 4		
14			1.4823	G-X40CrNiSi27 4		
14	309		1.4828	X15CrNiSi20 12	309 S 24	58C
14	309S		1.4833	X6 CrNi 22 13	309 S 13	
14	310 S		1.4845	X12 CrNi 25 21	310S24	
14	321		1.4878	X6 CrNiTi 18 9	32 1 S 20	58B

 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
Z 3 CND 22-05 Az; (Z 2 CND 24 -08 Az); (Z 3 CND 25-06-03 Az)	2377			SUS 329 J3L	
23NCDU25.20M					
		Z8CNA17-07	X2CrNiMo1712		
	2326		F.3123-X 2 CrMoTiNb 18 2	SUS 444	
Z 2 NCDU 25-20	2562				
Z1 NCDU 25-02 M	2564				
Z 6 CNT 18-10	2337	X 6 CrNiTi 18 11	F.3523 - X 6 CrNiTi 18 10	SUS 321	06Ch18N10T; 08Ch18N10T; 09Ch18N10T; 12Ch18N10T
Z 7 CNU 15-05; Z 7 CNU 17-04				SCS 24; SUS 630	
	2378				
Z 6 CNNb 18.10	2338	X6CrNiNb18 11	F.3552	SUS347	08Ch18N12B
Z4CNNb19.10M					
		Z8CNA17-07	X2CrNiMo1712		09Ch17NJU1
Z 6 CNDT 17-12002	2350				10Ch17N13M2T
Z 6 NDT 17.12	2350	X6CrNiMoTi17 12	F.3535		10Ch17N13M2T
Z 4 CNDNb 18.12 M					
Z15CNS20.12		x15cRnIsI2 12			
		X6CrNiMoTi17 12			
Z20CNS25.04					
Z15CNS20.12			F.8414	SCS17	20Ch20N14S2
Z 15 CN 24-13					
Z 12 CN 25-20	2361	X6CrNi25 20	F.331	SUH310	20Ch23N18
Z 6 CNT 18-12 (B)	2337	X6CrNiTi18 11	F.3553	SUS321	

ISCAR MATERIAL GROUPS




According to VDI 3323 Standard







Mtl. No.			
	USA AISI/SAE	GERMANY Werkstoff DIN	Great Britain BS EN
14	Ss30415	1.4891 X5 CrNiNb 18 10	
14	S30815	1.4893 X8 CrNiNb 11	
14	304H	1.4948 X6 CrNi 18 11	304 S 51
14	660	1.4980 X5 NiCrTi 25 15	
14			
14			
14	S31753	X5 NiCrN 35 25 X2 CrNiMoN 18 13 4	
14		X2 CrNiMoN 25 22 7	
15	CLASS20	0.6010 GG10	
15	A48-20B	0.6010 GG-10	
15	NO 25 B	0.6015 GG 15	Grade 150
15	CLASS25	0.6015 GG15	GRADE150
15	A48 25 B	0.6015 GG 15	Grade 150
15	A48-30B	0.6020 GG-20	Grade 220
15	NO 30 B	0.6020 GG 20	Grade 220
15	A436 Type 2	0.6660 GGL-NiCr202	L-NiCuCr202
15	60-40-18	0.7040 GGG 40	SNG 420/12
15	No 20 B		
16	CLASS30	0.6020 GG20	GRADE220
16	A48-40 B	0.6025 EN- GJL-250 (GG25)	Grade260
16	CLASS45	0.6030 GG30	GRADE300
16	A48-45 B	0.6030	Grade 300
16	A48-50	0.6035 GG-35	GRADE 350
16	A48-60 B	0.6040 GG40	GRADE400
16		1.4829 X 12 CrNi 22 12	
16			
16			
17		0.7033 GGG-35.3	350/22 L 40
17	60/40/18	0.7043 GGG-40.3	370/7
17	80-55-06	0.7050 EN- GJS-800-7 (GGG50)	SNG500/7
17	65-45-12	0.7050 GGG-50	SNG 500/7
17		0.7652 GGG-NiMn 13 7	S-NiMn 137
17	A43D2	0.7660 GGG-NiCr 20 2	Grade S6

 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
	2372				
	2368				
Z 5 CN 18-09	2333				
Zz 8 nctv 25-15 b ff	2570				
Ft10D	110	G10			SCh10
FT 10 D	0110-00				SCh10
FT 15 D	0115-00	G 15	FG 15	FC150	SCh15
Ft15D	115	G 15	FG 15		SCh15
Ft 15 D	01 15-00	G14	FG15		SCh15
Ft 20 D	0120-00				SCh20
Ft 20 D	120	G 20		FC200	SCh20
L-NC 202	0523-00				
FCS 400-12	0717-02	GS 370-17	FGE 38-17	FCD400	VCh42-12
Ft 10 D	110			FC100	
Ft20D	120	G 20	FG 20		
Ft 25 D	125	G 25	FG 25	FC250	VCh60-2
Ft30D	130	G 30	FG 30	FC300	SCh20
Ft 30 D	01 30-00				SCh30
Ft35D	135	G 35	FG 35	FC350	SCh30
Ft 40 D	140				SCh40
					SCh25
FGS 370/17	0717-15				VCh42-12
FGS 370/17	0717-15				VCh50-2
FGS 500/7	0727-02	GGG 50		FCD500	VCh50-2
FGS 500-7	0727-02				
S-Mn 137	0772-00				
S-NC 202	0776-00				

ISCAR MATERIAL GROUPS




According to VDI 3323 Standard







Mtl. No.			
	USA AISI/SAE	GERMANY Werkstoff DIN	Great Britain BS EN
17			GGG 40.3 SNG 370/17
18		0.7060	GGG60 SNG600/3
18	80/55/06	0.7060	GGG-60 600/3
18	100/70/03	0.7070	GGG-70 SNG700/2
18	A48 40 B		
19		0.8055	GTW55
19	32510	0.8135	GTS-35-10 B 340/12
19	A47-32510	0.8135	GTS-35-10 B 340/2
19	A220-40010	0.8145	GTS-45-06 P 440/7
19			GTS-35 B 340/12
19			8 290/6
19	32510		GTS-35 B340/12
20		0.8035	GTM-35 W340/3
20		0.8040	GTW-40 W410/4
20		0.8045	
20		0.8065	GTMW-65
20	A220-50005	0.8155	GTS-55-04 P 510/4
20	50005	0.8155	GTS-55-04 P510/4
20	70003	0.8165	GTS-65-02 P 570/3
20	90001	0.8170	GTS-70-02 P 690/2
20	A220-90001	0.8170	GTS-70-02
20	1022; 1518	1.1133	20Mn5 120 M 19
20	400 10		GTS-45 P440/7
20	70003		GTS-65 P 570/3
21	Al99	3.0205	
21	1000	3.0255	Al99.5 L31; L34; L36
21		3.3315	AlMg1
22		3.1325	AlCuMg 1
22		3.1655	AlCuSiPb
22		3.2315	AlMgSi1
22	7050	3.4345	AlZnMgCuO,5 L 86
22		3.437	AlZnMgCu 1,5
23		3.2381	G-AlSi 10 Mg
23		3.2382	GD-AlSi10Mg

 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
FGS 370-17	0717-12			FC250	
FGS600-3	07 32-03	GGG 60	GGG 60		
FGS 600/3	0727-03			FCD600	
FGS 700-2	07 37-01	GGG 70	GGG 70	FCD700	
			GTW 55		
MN35-10	810		GTS 35		KCh35-10
Mn 35-10	0815-00				KCh35-10
Mn 450-6	0852-00	GMN 45		FCMW370	
	0810-00				
MN 32-8	814			AC4A	
MN 35-10	08 15			FCMW330	
MB35-7	852		GTM 35		
MB40-10		GMB40	GTM 40		
		GMB45	GTM 45		KCh55-4
			GTW 65		KCh55-4
Mn 550-4	0854-00				KCh60-3
MP 50-5	854	GMN 55		FCMP490	KCh70-2
Mn 650-3	0856-00	GMN 65		FCMP590	KCh70-2
Mn 700-2	0862-00	GMN 70		FCMP690	KCh70-2
Mn 700-2	0864-00				20G
20 M 5	2132	G 22 Mn 3; 20 Mn 7	F.1515-20 Mn 6	SMnC 420	
	08 52				
MP 60-3	858			FCMP540	AD0
A59050C					D1
					AD35
					AK9
AZ 4 GU/9051		811-04			
					AK12

ISCAR MATERIAL GROUPS




According to VDI 3323 Standard







Mtl. No.				
	USA AISI/SAE	GERMANY Werkstoff DIN	Great Britain BS EN	
23	A360.2	3.2383	G-AISi0Mg(Cu)	LM9
23		3.2581	G-AISi12	
23		3.3561	G-AlMg 5	
23	ZE 41	3.5101	G-MgZn4sE1Zr1	MAG 5
23	EZ 33	3.5103	MgSE3Zn27r1	MAG 6
23	AZ 81	3.5812	G-MgAl8Zn1	NMAG 1
23	AZ 91	3.5912	G-MgAl9Zn1	MAG 7
23	A356-72			2789; 1973
23	356,1			LM25
23	A413.2		G-AISi12	LM 6
23	A413.1		G-AISi 12 (Cu)	LM 20
23	A413.0		GD-AISi12	
23	A380.1		GD-AISi8Cu3	LM24
24		2.1871	G-AlCu 4 TiMg	
24		3.1754	G-AlCu5Ni1,5	
24		3.2163	G-AISi9Cu3	
24	4218 B	3.2371	G-AISi 7 Mg	
24	SC64D	3.2373	G-AISi9MGWA	
24		3.2373	G-AISi 9 Mg	
24	QE 22	3.5106	G-MgAg3SE2Zr1	mag 12
24	GD-AISi12		G-ALMG5	LM5
26	C93200	2.1090	G-CuSn 7 5 pb	
26	c 83600	2.1096	G-CuSn5ZnPb	LG 2
26	C 83600	2.1098	G-CuSn 2 Znpb	
26	C23000	2.1182	G-CuPb15Sn	LB1
26	C 93800	2.1182	G-CuPb15Sn	
27		2.0240	CuZn 15	
27	C27200	2.0321	CuZn 37	cz 108
27	C27700	2.0321	CuZn 37	cz 108
27		2.0590	G-CuZn40Fe	
27	C 86500	2.0592	G-CuZn 35 Al 1	U-Z 36 N 3
27	C 86200	2.0596	G-CuZn 34 Al 2	HTB 1
27	C 18200	2.1293	CuCrZr	CC 102

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					AK8
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ISCAR MATERIAL GROUPS




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Mtl. No.				
	USA AISI/SAE	GERMANY Werkstoff DIN	Great Britain BS EN	
28		2.0060	E-Cu57	
28		2.0375	CuZn36Pb3	
28	C 63000	2.0966	CuAl 10 Ni 5 Fe 4	Ca 104
28	B-148-52	2.0975	G-CuAl 10 Ni	
28	c 90700	2.1050	G-CuSn 10	CT1
28	C 90800	2.1052	G-CuSn 12	pb 2
28	C 81500	2.1292	G-CuCrF 35	CC1-FF
28		2.4764	CoCr20W15Ni	
31	N 08800	1.4558	X 2 NiCrAlTi 32 20	NA 15
31	N 08031	1.4562	X 1 NiCrMoCu 32 28 7	
31	N 08028	1.4563	X 1 NiCrMoCuN 31 27 4	
31	N 08330	1.4864	X 12 NiCrSi 36 16	NA 17
31	330	1.4864	X12 NiCrSi 36 16	NA 17
31		1.4865	G-X40NiCrSi38 18	330 C 40
31		1.4958	X 5 NiCrAlTi 31 20	
31	AMS 5544	LW2.4668	NiCr19NbMo	
32		1.4977	X 40 CoCrNi 20 20	
33	Monel 400	2.4360	NiCu30Fe	NA 13
33	5390A	2.4603		
33	Hastelloy C-4	2.4610	NiMo16Cr16Ti	
33	Nimonic 75	2.4630	NiCr20Ti	HR 5,203-4
33		2.4630	NiCr20Ti	HR5,203-4
33	Inconel 690	2.4642	NiC29Fe	
33	Inconel 625	2.4856	NiCr22Mo9Nb	NA 21
33	5666	2.4856	NiCr22Mo9Nb	
33	Incoloy 825	2.4858	NiCr21Mo	NA 16
34	Monel k-500	2.4375	NiCu30 Al	NA 18
34	4676	2.4375	NiCu30Al	3072-76
34		2.4631	NiCr20TiAl	Hr40; 601
34	Inconel 718	2.4668	NiCr19FeNbMo	
34	Inconel 751	2.4694	NiCr16fE7TiAl	
34		2.4955	NiFe25Cr20NbTi	
34	5383	LM2.4668	NiCr19Fe19NbMo	HR8
34	5391	LW2 4670	S-NiCr13A16MoNb	3146-3

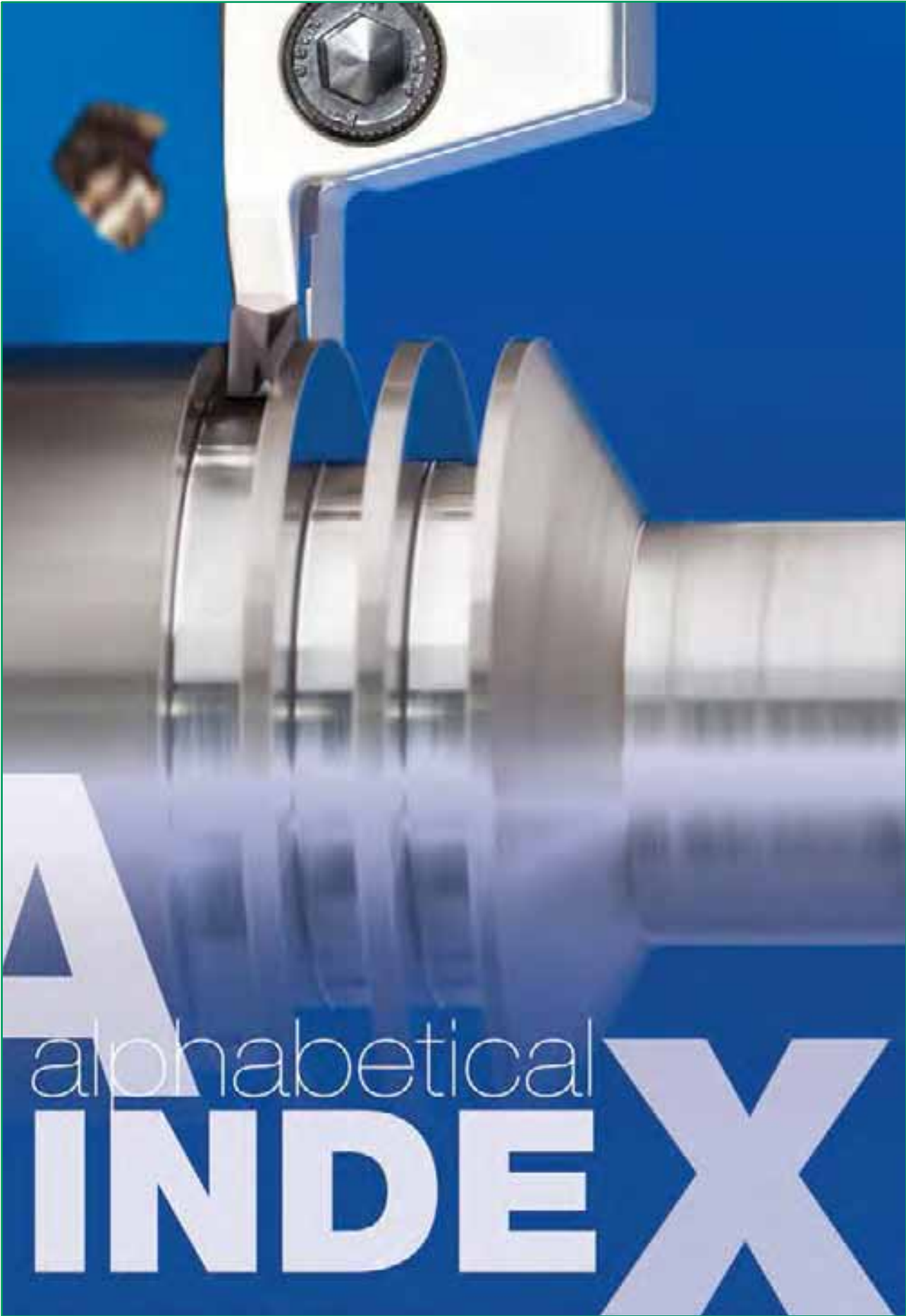
 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
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Z 42 CNKDWNb					
NU 30					
NC22FeD					
NC 20 T					
NC20T					
Nnc 30 Fe					
NC 22 FeDNb					
Inconel 625					
NC 21 Fe DU					KhN38VT
NU 30 AT					
NC20TA					KhN77TYuR
NC 19 Fe Nb					
NC19eNB					
NC12AD					

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Mtl. No.				
	USA AISI/SAE	GERMANY Werkstoff DIN	Great Britain BS EN	
34	5660	LW2.4662	NiFe35Cr14MoTi	
34	5537C	LW2.4964	CoCr20W15Ni	
34	AMS 5772		CoCr22W14Ni	
35	Inconel X-750	2.4669	NiCr15Fe7TiAl	
35	Hastelloy B	2.4685	G-NiMo28	
35	Hastelloy C	2.4810	G-NiMo30	
35	AMS 5399	2.4973	NiCr19Co11MoTi	
35		3.7115	TiAl5Sn2	
36	R 50250	3.7025	Ti 1	2 TA 1
36	R 52250	3.7225	Ti 1 pd	TP 1
36	AMS 5397	LW2.4674	NiCo15Cr10MoAlTi	
37		3.7124	TiCu2	2 TA 21-24
37	R 54620	3.7145	TiAl6Sn2Zr4Mo2Si	
37		3.7165	TiAl6V4	TA 10-13; TA 28
37		3.7185	TiAl4Mo4Sn2	TA 45-51; TA 57
37		3.7195	TiAl 3 V 2.5	
37			TiAl4Mo4Sn4Si0.5	
37	AMS R54520		TiAl5Sn2.5	TA14/17
37	AMS R56400		TiAl6V4	TA10-13/TA28
37	AMS R56401		TiAl6V4ELI	TA11
38	W 1	1.1545	C 105 W1	BW 1A
38	W210	1.1545	C105W1	BW2
38		1.2762	75 CrMoNiW 6 7	
38	440C	1.4125	X105 CrMo 17	
38		1.6746	32 nlcRmO 14 5	832 M 31
40	Ni- Hard 2	0.9620	G-X 260 NiCr 4 2	Grade 2 A
40	Ni- Hard 1	0.9625	G-X 330 Ni Cr 4 2	Grade 2 B
40	Ni-Hard 4	0.9630	G-X 300 CrNiSi 9 5 2	
40		0.9640	G-X 300 CrMoNi 15 2 1	
40	A 532 III A 25% Cr	0.9650	G-X 260 Cr 27	Grade 3 D
40	A 532 III A 25% Cr	0.9655	G-X 300 CrNMo 27 1	Grade 3 E
40	310	1.4841	X15 CrNiSi 25 20	314 S31
41		0.9635	G-X 300 CrMo 15 3	
41		0.9645	G-X 260 CrMoNi 20 2 1	

 France AFNOR	 Sweden SS	 Italy UNI	 Spain UNE	 Japan JIS	 Russia GOST
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Quality Standard

ISCAR has been certified by the prestigious Standards Institution, as being in full compliance with Quality and Environmental & Occupational Health and Safety Management Standards -
AS 9100 Rev C
ISO 9001:2008
ISO 14001:2004
OHSAS 18001:2007

In addition, completed products are inspected before shipping, to ensure delivery of the finest quality goods. Quality control facilities include the metallurgical laboratory, raw metal testing, an online testing procedure and a machining center for tool performance testing and final product inspection. Only the finest products are packaged for entry into ISCAR's inventory.



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