MPLUS

SUPPLEMENTARY PRODUCT LINE FOR SPECIFIC APPLICATIONS

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MPLUS TOOLING

SUPPLEMENTARY PRODUCT LINE FOR SPECIFIC APPLICATIONS

MITSUBISHI MATERIALS

GENERAL CATALOGUE C010
2025 – 2027

TARGETED, COMPACT, HANDY.

Mitsubishi Materials' wide product portfolio is now shown in catalogues that represent individual application areas, offering users fast and easy access to targeted product information.

There is now a set of catalogues in small, practical sizes that comprise the following five volumes:

- **TURNING TOOLS**
- **DRILLING TOOLS**
- **SOLID MILLING TOOLS**
- **INDEXABLE MILLING TOOLS**
- **MPLUS**

EASY HANDLING

HIGHER FLEXIBILITY

INDIVIDUAL APPLICATION AREAS

The slipcase provided enables easy storage and offers the required space for all future catalogues, including the product news brochures that will be published within the life cycle of the catalogue. Each new product news brochure published within the catalogue cycle will completely replace the previous version. Therefore, please dispose of old versions when new ones are supplied to ensure that the collection is up to date.

NOTES:
- With this publication, all previous general catalogues and product news brochures lose their validity.
- The product news catalogues are released twice a year, in April and October.
- The new general catalogue can be ordered only as a set of five. Order number: **C010E**

DIGITAL VERSION

For the digital version of the catalogue, please scan the QR code or visit our mediastore: www.mhg-mediastore.net

Visit also:
www.mmc-carbide.com

MPLUS

COOPERATION – OVERCOMING BOUNDARIES

MPlus is a complementary product line that enriches the existing product range.

A wide range of supplementary tools in cooperation with partners across Europe that meet specific customer needs.

Outstanding tools and sophisticated tooling solutions for the metalworking industry.

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INDEX

TURNING TOOLS

INDEXABLE MILLING TOOLS

DRILLING TOOLS

MINI-EY-SERIES

PRECISION GROOVING SYSTEM

Mplus...

MINI-EY-IC

WITH INTERNAL COOLANT

The advanced Mini-EY-IC series with internal coolant supply provides a positive step in usability. The improved coolant supply reduces heat generation as well as enabling longer tool life. Optimised chip control and higher cutting parameters, plus increased wear resistance means greater efficiencies can be achieved.

PRODUCT RANGE

- Insert width: 2 mm and 3 mm
- Holder size: 12 x 12, 16 x 16, 20 x 20
- Hand: R/L
- Max. cut off diameter: Ø 25 mm, 32 mm, 42 mm

APPLICATION

- External grooving and cut off

FEATURES

- Higher cutting parameters
- Cost effective double sided inserts
- Sizes 12 & 16 with clamping screw axis tilted at 115° for easy, on machine access
- Internal coolant supply

LONGER TOOL LIFE

EXCELLENT SURFACES

IMPROVED CHIP CONTROL

INCREASED WEAR RESISTANCE

WITH INTERNAL COOLANT

MINI-EY

WITH EXTERNAL COOLANT

The Mini-EY is designed for Swiss-type lathes as a precision grooving system. A range of suitable insert grades and chipbreakers makes it usable for steels, stainless steels, cast irons and difficult-to-cut materials. Complete with economical double sided inserts.

PRODUCT RANGE

- Insert width: 1.5 mm – 3.0 mm
- Holder size: 10 x 10, 12 x 12, 16 x 16
- Hand: R/L
- Max. cut off diameter: Ø 25 mm, 32 mm

APPLICATION

- External grooving and cut off

FEATURES

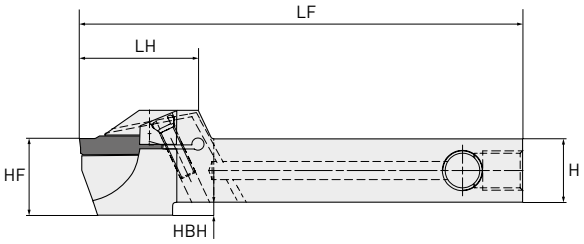
- Cost effective double sided Inserts
- Designed for Swiss-type lathes

MINI-EY-IC

WITH INTERNAL COOLANT SUPPLY

00° type mono block holder

Insert	GY2M○○○○○○○○○	-GS -GM	Insert	GY2M○○○○○○○○○	-GS -GM
Insert	GY2M○○○○○○○○○	-GU	Insert	GY2M○○○○○○○○○	-GU
Insert	GY2G○○○○○○○○○	-MF	Insert	GY2M○○○○○R/L○○	-GM



Right hand tool holder shown.

Order number	Stock	Seat size	CW	Hand	CDX	CUTDIA	H	B	LF	LH	HF	HBH
EYHL1212D125-IC	●	D	2.0	L	12.5	25	12	12	110	30	16	4
EYHR1212D125-IC	●			R	12.5	25	12	12	110	30	16	4
EYHL1212F125-IC	●	F	3.0	L	12.5	25	12	12	110	30	16	4
EYHR1212F125-IC	●			R	12.5	25	12	12	110	30	16	4
EYHL1616D160-IC	●	D	2.0	L	16.0	32	16	16	110	33.5	16	—
EYHR1616D160-IC	●			R	16.0	32	16	16	110	33.5	16	—
EYHL1616F160-IC	●	F	3.0	L	16.0	32	16	16	110	33.5	16	—
EYHR1616F160-IC	●			R	16.0	32	16	16	110	33.5	16	—
EYHL2020F210-IC	●			L	21.0	42	20	20	125	37	20	—
EYHR2020F210-IC	●			R	21.0	42	20	20	125	37	20	—

1/1

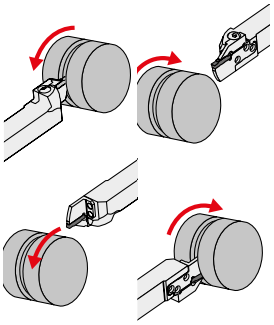
1. When using insert widths 2.39 mm and 2.50 mm with E type seat sizes, in F type holders, the centre height will differ.
2. Dimensions shown are when the gauge insert is used. If other insert geometries are used then LF, LH and HF values may vary.
3. Size 12 holder without socket.
4. Sizes 12 & 16 with clamping screw axis tilted at 115° for easy on machine access.

14 Vc

● : Inventory maintained. □ : Produced to order only.

MINI-EY-IC

CUTTING MODE AND INSERTS

Holder number	Cutting mode *(Right hand holder shown)*	Insert Geometry / Insert number	
EYH○1212D125-IC		GY2M0300F030N-GU GY2M0200D020N-GU GY2M0200D020N-GS	
EYH○1212F125-IC		GY2M0300F020N-GS GY2M0200D020N-GM GY2M0300F030N-GM	
EYH○1616D160-IC		GY2M0200D020R05-GM GY2M0200D020L05-GM GY2M0300F030R05-GM	 (Gauge insert)
EYH○1616F160-IC		GY2M0300030L05-GM	
EYH○2020F210-IC			

1. ○ = R/L

SPARE PARTS

Holder number				
	Clamp screw	**Wrench**	**Plug**	**Adaptor**
EYH○1212D125-IC	TS406 (Clamp Torque: 3.5 Nm)	TKY15R	Plug-M08-100-05	—
EYH○1212F125-IC				
EYH○1616D160-IC			Plug-G1/8-05	Socket-G1/8
EYH○1616F160-IC				
EYH○2020F210-IC				

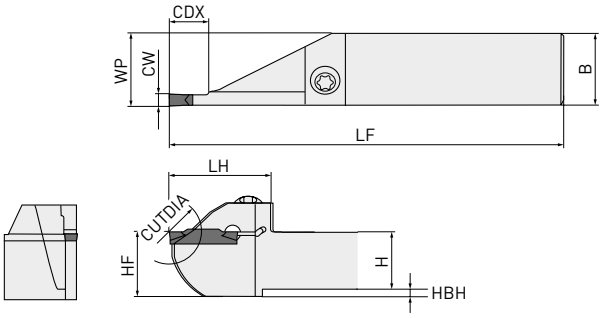
* Wrench for Clamp screw
1. ○ = R/L

MINI-EY

WITH EXTERNAL COOLANT SUPPLY

00° type mono block holder

Insert	GY2M○○○○○○○○○	-GS -GM	Insert	GY2M○○○○○○○○○	-GS -GM
Insert	GY2M○○○○○○○○○	-GU	Insert	GY2M○○○○○○○○○	-GU
Insert	GY2G○○○○○○○○○	-MF	Insert	GY2M○○○○○R/L○○	-GM



Right hand tool holder shown.

Order number	Stock	Seat size	CW	Hand	CDX	CUTDIA	H	B	LF	LH	HF	HBH
EYHR1212C125	●	C	1.5	R	12.5	25	12	12	110	20	16	4
EYHL1212C125	●			L	12.5	25	12	12	110	20	16	4
EYHR1010D125	●	D	2.0	R	12.5	25	10	10	110	20	14	4
EYHL1010D125	●			L	12.5	25	10	10	110	20	14	4
EYHR1212D125	●			R	12.5	25	12	12	110	20	16	4
EYHL1212D125	●			L	12.5	25	12	12	110	20	16	4
EYHR1212F125	●	F	3.0	R	12.5	25	12	12	110	20	16	4
EYHL1212F125	●			L	12.5	25	12	12	110	20	16	4
EYHR1616C135	●	C	1.5	R	13.5	27	16	16	110	22	16	—
EYHL1616C135	●			L	13.5	27	16	16	110	22	16	—
EYHR1616D160	●	D	2.0	R	16	32	16	16	110	22	16	—
EYHL1616D160	●			L	16	32	16	16	110	22	16	—
EYHR1616F160	●	F	3.0	R	16	32	16	16	110	22	16	—
EYHL1616F160	●			L	16	32	16	16	110	22	16	—

1/1

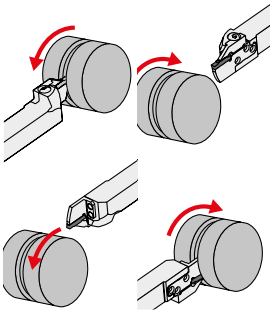
1. When using insert widths 2.39 mm and 2.50 mm with E type seat sizes, in F type holders, the centre height will differ.
2. Dimensions shown are when the gauge insert is used. If other insert geometries are used then LF, LH and HF values may vary.

14 Vc

● : Inventory maintained. □ : Produced to order only.

MINI-EY

CUTTING MODE AND INSERTS

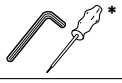
Holder number	Cutting mode *(Right hand holder shown)*	Insert Geometry / Insert number
EYH○1212C125		GY2M0300F030N-GU GY2M0200D020N-GU GY2M0200D020N-GS GY2M0300F020N-GS GY2M0200D020N-GM GY2M0300F030N-GM GY2M0200D020R05-GM GY2M0200D020L05-GM GY2M0300F030R05-GM GY2M0300F030L05-GM
EYH○1616C135		
EYH○1010D125		
EYH○1212D125		
EYH○1616D160		
EYH○1212F125		
EYH○1616F160		




(Gauge insert)


1. ○ = R/L

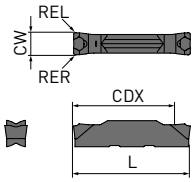
SPARE PARTS

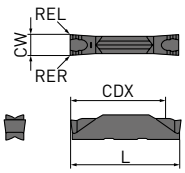
Holder number	 Clamp screw	 Wrench
EYH○1212C125	TS406 (Clamp Torque: 3.5 Nm)	TKY15R
EYH○1616C135		
EYH○1010D125		
EYH○1212D125		
EYH○1616D160		
EYH○1212F125		
EYH○1616F160		

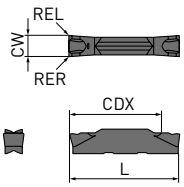
* Wrench for Clamp screw
1. ○ = R/L

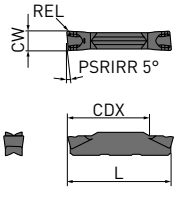
GY INSERTS

Order number	VP10RT	VP20RT	MY5015	MP9015	MP9025	NX2525	Seat size	Grooving width	Tolerance	RE	CDX	L	Geometry
FOR GROOVING / CUTTING OFF													
GY2M0200D020N-GU	●	●				●	D	2.00	±0.03	0.2	19.7	20.70	GU Breaker (For gummy steel)
GY2M0239E020N-GU	●	●				●	E	2.39	±0.03	0.2	19.8	20.70	
GY2M0250E020N-GU	●	●				●	E	2.50	±0.03	0.2	19.5	20.70	
GY2M0300F030N-GU	●	●				●	F	3.00	±0.03	0.3	19.3	20.70	
GY2M0318F030N-GU	●	●				●	F	3.18	±0.03	0.3	19.3	20.70	
GY2M0150C010N-GS	●	●				●	C	1.50	±0.03	0.1	13.4	14.70	GS Breaker (Low feeds)
GY2M0200D020N-GS	●	●				●	D	2.00	±0.03	0.2	18.7	20.70	
GY2M0239E020N-GS	●	●				●	E	2.39	±0.03	0.2	18.5	20.70	
GY2M0250E020N-GS	●	●				●	E	2.50	±0.03	0.2	18.5	20.70	
GY2M0300F020N-GS	●	●				●	F	3.00	±0.03	0.2	18.5	20.70	
GY2M0318F020N-GS	●	●				●	F	3.18	±0.03	0.2	18.5	20.70	
GY2M0150C020N-GM	●	●		●	●	●	C	1.50	±0.03	0.2	13.9	14.70	GM Breaker (Medium feeds)
GY2M0200D020N-GM	●	●	●	●	●	●	D	2.00	±0.03	0.2	19.4	20.70	
GY2M0239E020N-GM	●	●	●	●	●	●	E	2.39	±0.03	0.2	19.4	20.70	
GY2M0250E020N-GM	●	●	●	●	●	●	E	2.50	±0.03	0.2	19.4	20.70	
GY2M0300F030N-GM	●	●	●	●	●	●	F	3.00	±0.03	0.3	19.4	20.70	
GY2M0318F030N-GM	●	●	●	●	●	●	F	3.18	±0.03	0.3	19.4	20.70	
FOR CUTTING OFF													
GY2M0200D020R05-GM	●	●					D	2.00	±0.03	0.2	19.5	20.80	R/L05-GM Breaker
GY2M0200D020L05-GM	●	●					D	2.00	±0.03	0.2	19.5	20.80	
GY2M0250E020R05-GM	●	●					E	2.50	±0.03	0.2	19.5	20.825	
GY2M0250E020L05-GM	●	●					E	2.50	±0.03	0.2	19.5	20.825	
GY2M0300F030R05-GM	●	●					F	3.00	±0.03	0.3	19.5	20.85	
GY2M0300F030L05-GM	●	●					F	3.00	±0.03	0.3	19.5	20.85	









Right hand insert shown.

1. When using insert widths 2.39 mm and 2.50 mm with E type seat sizes, in F type holders, the centre height will differ.

● : Inventory maintained. □ : Produced to order only.

MINI-EY

RECOMMENDED CUTTING CONDITIONS

	Material	Hardness	Grade	Vc
P	Mild steel	<160 HB	VP20RT	165 (100 – 220)
			VP10RT	170 (110 – 230)
			MY5015	220 (140 – 300)
			NX2525	150 (90 – 210)
	Carbon steel Alloy steel	160 – 280 HB	VP20RT	130 (80 – 180)
			VP10RT	140 (90 – 190)
			MY5015	180 (110 – 250)
			NX2525	120 (70 – 170)
		>280 HB	VP20RT	100 (60 – 140)
			VP10RT	110 (70 – 150)
			MY5015	100 (90 – 210)
			NX2525	95 (55 – 135)
M	Stainless steel	<270 HB	VP20RT	100 (60 – 140)
			VP10RT	110 (70 – 150)
K	Gray cast iron	Tensile Strength <300 MPa	VP20RT	130 (80 – 180)
			VP10RT	280 (90 – 190)
			MY5015	220 (140 – 300)
	Ductile cast iron	Tensile Strength <800 MPa	VP20RT	100 (60 – 140)
			VP10RT	110 (70 – 150)
			MY5015	100 (90 – 210)
S	Heat resistant alloy Titanium alloy	—	VP20RT	45 (30 – 60)
			VP10RT	55 (40 – 70)
			MP9015	70 (40 – 100)
			MP9025	60 (30 – 90)

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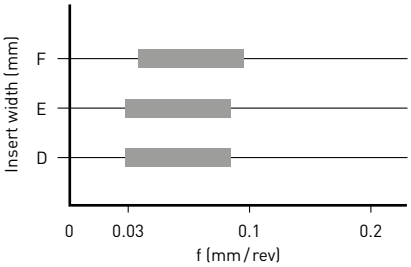
1. VP20RT is the first recommended grade for materials other than hardened steel.
2. For VP10RT, VP20RT and MY5015, wet cutting is recommended.

MINI-EY

RECOMMENDED CUTTING CONDITIONS

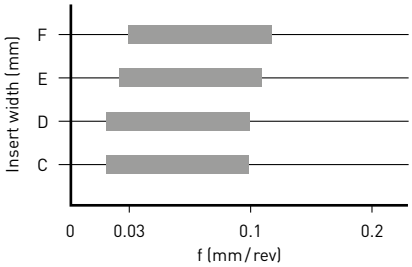
GU Breaker

Grooving, Cutting off



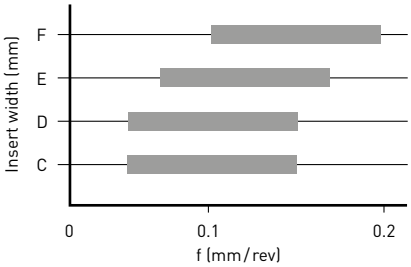
GS Breaker

Grooving, Cutting off



GM Breaker

Grooving, Cutting off

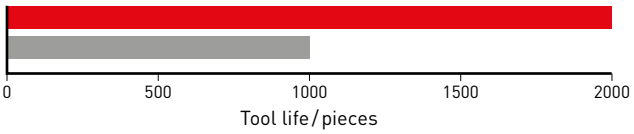


: 1st recommended area

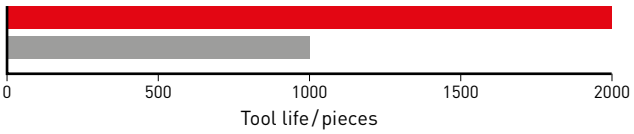
Seat size	C	D	E	F
Insert width (mm)	1.50	2.00	2.39	3.00
	—	2.24	2.50	3.18
	—	—	2.74	3.24

APPLICATION EXAMPLE

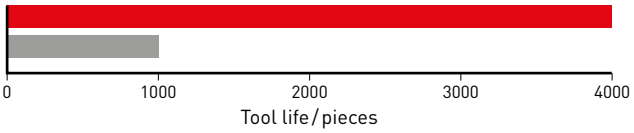
Material	1.4021
Tool	GY2G0300F020N-MF VP20RT
Vc (m/min)	160
f (mm/rev)	0.22
Cutting mode	Semi finishing
Coolant	Internal coolant
Machine	Multi spindle machine MS32
Results	Tool life was doubled compared to the conventional tool.



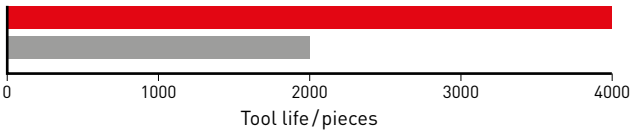
Material	1.4305
Tool	GY2M0200D020N-GM VP20RT
Vc (m/min)	160
f (mm/rev)	0.08/0.04
Cutting mode	Cutting off
Coolant	Internal coolant
Machine	Swiss Type Machine
Results	Tool life was doubled compared to the conventional tool.



Material	1.4021
Tool	GY2G0300F020N-MF VP20RT
Vc (m/min)	160
f (mm/rev)	0.18/0.07
Cutting mode	Finish cutting
Coolant	Internal coolant
Machine	Multi spindle machine MS32
Results	Tool life was 4 times longer than the conventional tool.



Material	1.4305
Tool	GY2M0200D020N-GM VP20RT
Vc (m/min)	120
f (mm/rev)	0.08/0.04
Cutting mode	Cutting off
Coolant	Internal coolant
Machine	Swiss type machine
Results	Tool life was doubled compared to the conventional tool.

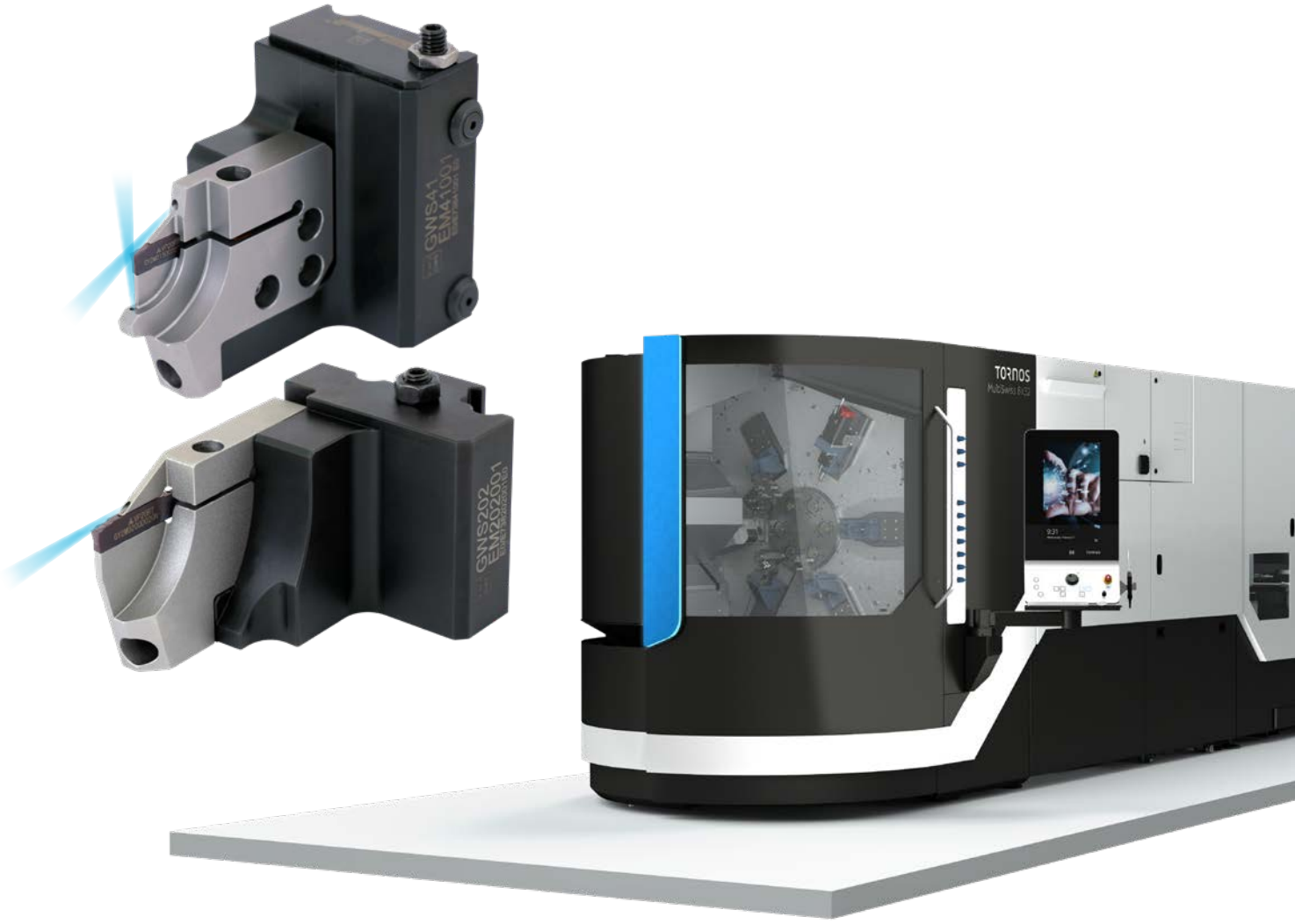


■ : Mini-EY-IC ■ : Conventional Tool

NEW

G80A

PARTING OFF SYSTEM FOR TORNOS MULTI-SPINDLE MACHINES



In cooperation with

Göltenbodt®
Innovation and Precision.

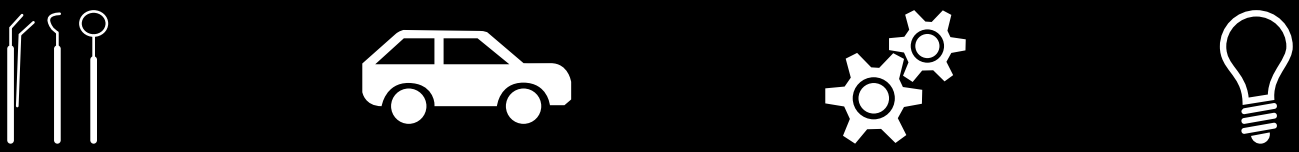
TORNOS

Mplus...

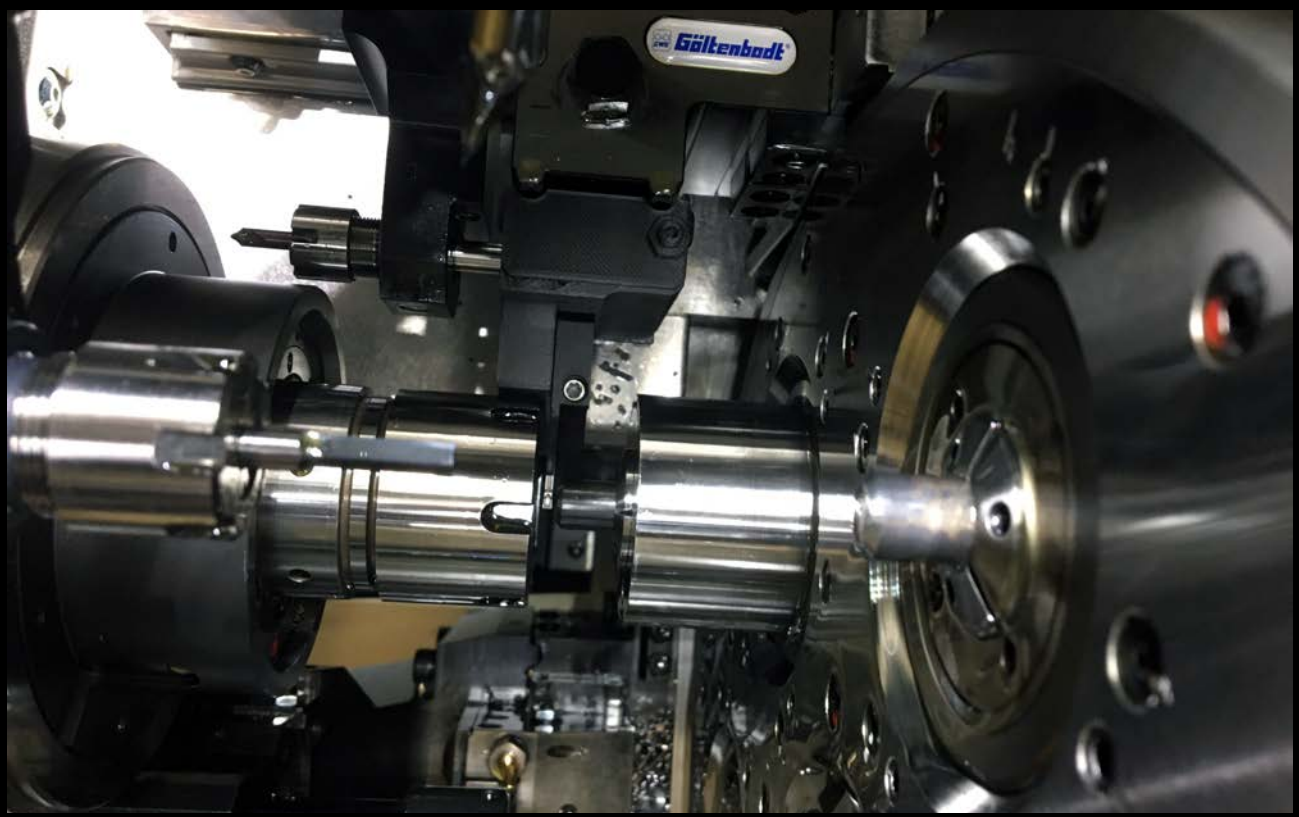
PARTING OFF IN SERIES

MODULAR – PERFORMANCE – UNCOMPROMISING

Regardless of the industry, it is the deep knowledge of the details that ultimately makes the difference and distinguishes the best from the rest. Whether it is in the medical or automotive industries, general mechanical engineering or the consumer goods industry, the components should be designed using the least space, weight or resources for the same function.



This means, small parts have to be produced in an efficient and precise way, as it has been done for many years on multi-spindle machines. Completely independent of any component details, one of the key elements in the whole machining process is reliable parting off.



The new G80A parting-off system, also includes the details that offer added performance, reliability and efficiency. The targeted internal coolant supply makes the process even more reliable and enables longer tool life.

Easy handling both when changing inserts and when setting the centre height are added features. The grooving modules are specially designed for the conditions on the machine, which significantly increases stability.

PARTING OFF SYSTEM FOR TORNOS MULTI-SPINDLE MACHINES

FOR THE LIMITED SPACE IN MULTI-SPINDLE MACHINES

Reliable parting off with modular tools specially designed for Swiss multi-spindle machines in cooperation with Göltenbodt. Efficientand reliable processing is realised due to the optimized internal through coolant supply for parting off widths from 1.5 mm.

Product range

- Quick change adapter system GWS41
- Quick change adapter system GWS202
- Modules for GY indexable inserts
- GY indexable inserts

Characteristics

- Designed for the limited space between the main and counter spindle
- Secure and accurate clamping of the indexable insert
- Optimised through coolant supply

SPECIALLY DESIGNED FEATURES FOR EFFICIENCY AND EASE OF USE

BENEFITS

- High process reliability
- Internal coolant supply optimised for long tool life
- Small grooving width for maximum material utilisation

G80A

PARTING OFF SYSTEM FOR TORNOS MULTI-SPINDLE MACHINES

Internal coolant supply up to 8 Mpa
for optimal coolant on the cutting edge.

Stability based on the proven
Göltenbodt GWS column guide system.
Quick change, easy centre height
setting and precision in one system.

Accessible and strong clamping
of the indexable insert.

Optimal stability and function by
individual alignment of the components
and with regards to the limited space in
these type of machines.

G80A

PARTING OFF SYSTEM FOR TORNOS MULTI-SPINDLE MACHINES

Designed respectively for the current Tornos Multi-Swiss machines the following combinations are available.

Multi-Swiss 6 x 16 | Multi-Swiss 8 x 26 | Multi-Swiss 6 x 32

6 x 16

8 x 26
6 x 32

Göltenbodt system GWS41 (page 8+7)

Modul G80A w = 1.5 – w = 2.0

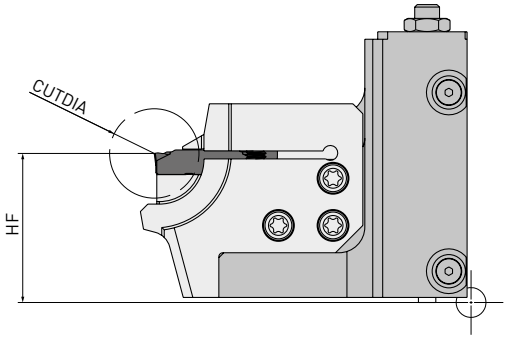
Göltenbodt system GWS202 (page 9+9)

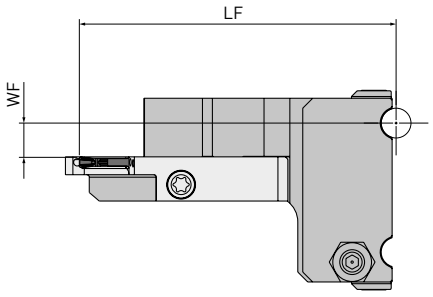
Modul G80A w = 2.0

Wide variety of GY-grooving inserts for applications in different materials

G80A

QUICK CHANGE TYPE ADAPTERS GWS41





Order number	Stock	Hand	GWS system	Suitable for machine	CUTDIA	LF X-Axis	HF Y-Axis	WF Z-Axis
EM41001	●	R	41	MS 6 x 16	16	63.8*	30	7.15 (cw = 1.5) / 6.9 (cw = 2.0)

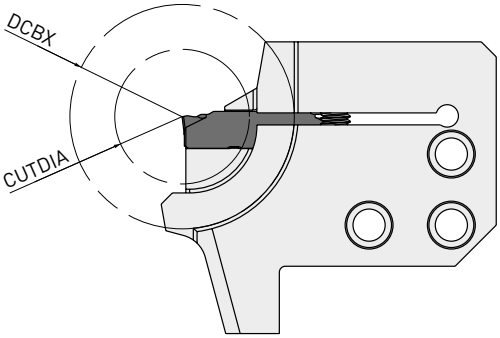
1/1

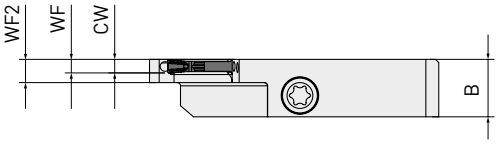
1. Module shown only for dimensional visualisation.
* Spindle nut diameter max. 30 mm.

● : Inventory maintained.

G80A

MODULE FOR QUICK CHANGE ADAPTER GWS41





Order number	Stock	Hand	GWS system	Suitable for machine	CUTDIA	DCBX	Seat size	CW	WF	WF2	B	IK
G80A-EM410RL16GYC2-E	●	R	41	MS 6x16	16	30	C	1.5	1.85	3.6	8.9	FF1 / SF2
G80A-EM410RL16GYD2-E	●	R	41	MS 6x16	16	30	D	2.0	2.1	3.6	8.9	FF1 / SF2

1/1

1. For modules with flank cooling (FF), tool presetting must be carried out using the incident light method.
2. Rake face coolant requires no specific presetting method.

SPARE PARTS

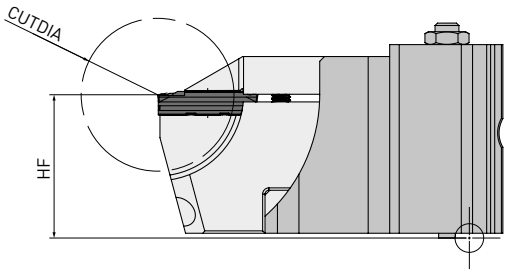
Tool holder	Screw	Wrench
EM41001	TS43 (3.5 Nm)*	TKY15W-E
G80A-EM410RL16GYC2-E	TS406 (3.5 Nm)*	
G80A-EM410RL16GYD2-E		

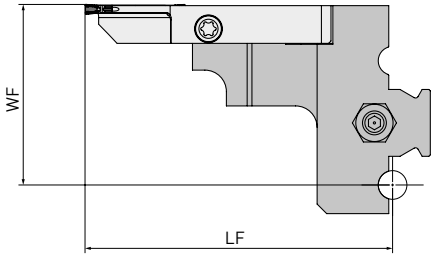
* Recommended to use a torque screwdriver with a Torx 15 bit.

● : Inventory maintained.

G80A

QUICK CHANGE ADAPTERS GWS202





Order number	Stock	Hand	GWS system	Suitable for machine	CUTDIA	LF X-Axis	HF Y-Axis	WF Z-Axis
EM202001	●	L	202	MS 8x26 / MS 6x32	32*	64.4	30	37.8 (cw = 2.0)

1/1

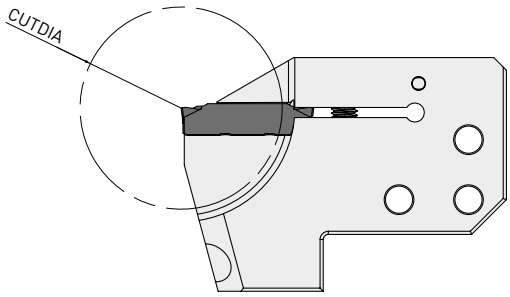
1. Module shown only for dimensional visuilasation.
* Spindle nut diameter max. 66 mm.

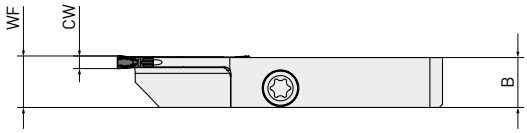
Gültenbodt Innovation and Precision.

● : Inventory maintained.

G80A

MODULE FOR QUICK CHANGE ADAPTER GWS202





Order number	Stock	Hand	GWS system	Suitable for machine	CUTDIA	Seat size	CW	WF	B	IK
G80A-EM202LL32GYD1-E	●	L	41	MS 8x26 / MS 6x32	32	D	2.0	8.15	7.9	SF1

1/1

1. Rake face coolant requires no specific presetting method.

SPARE PARTS

Tool holder	Screw	Wrench
EM202001	TS43 (3.5 Nm)*	TKY15W-E
G80A-EM202LL32GYD1-E	TS406 (3.5 Nm)*	

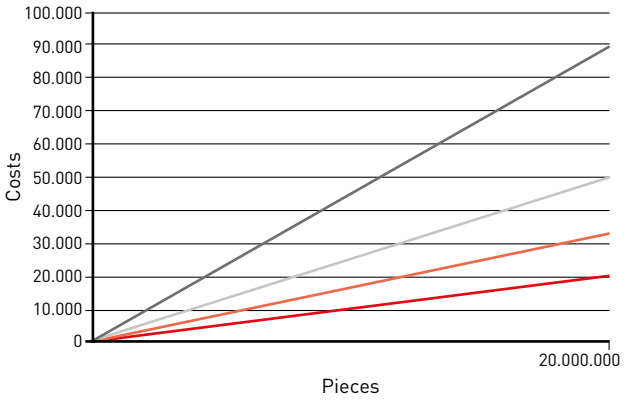
* Recommended to use a torque screwdriver with a Torx 15 bit.

● : Inventory maintained.

G80A

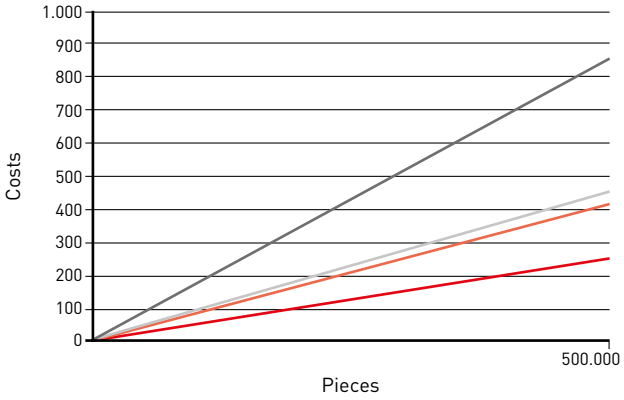
PERFORMANCE COMPARISON 1

Material	NiCr23Fe
Tool	GWS41 – G80A
Vc (m/min)	47
f (mm/rev)	0.02
Lot size	20.000.000
Efficiency increase	Approx. 55.000 €/batch tooling cost reduction
Results	10.000 m less material consumption due to smaller grooving width.



PERFORMANCE COMPARISON 2

Material	100Cr6
Tool	GWS41 – G80A
Vc (m/min)	117
f (mm/rev)	0.03
Lot size	50.000
Efficiency increase	Approx. 430 €/Lot
Results	Positive environmental influence enabled by producing less scrap material.

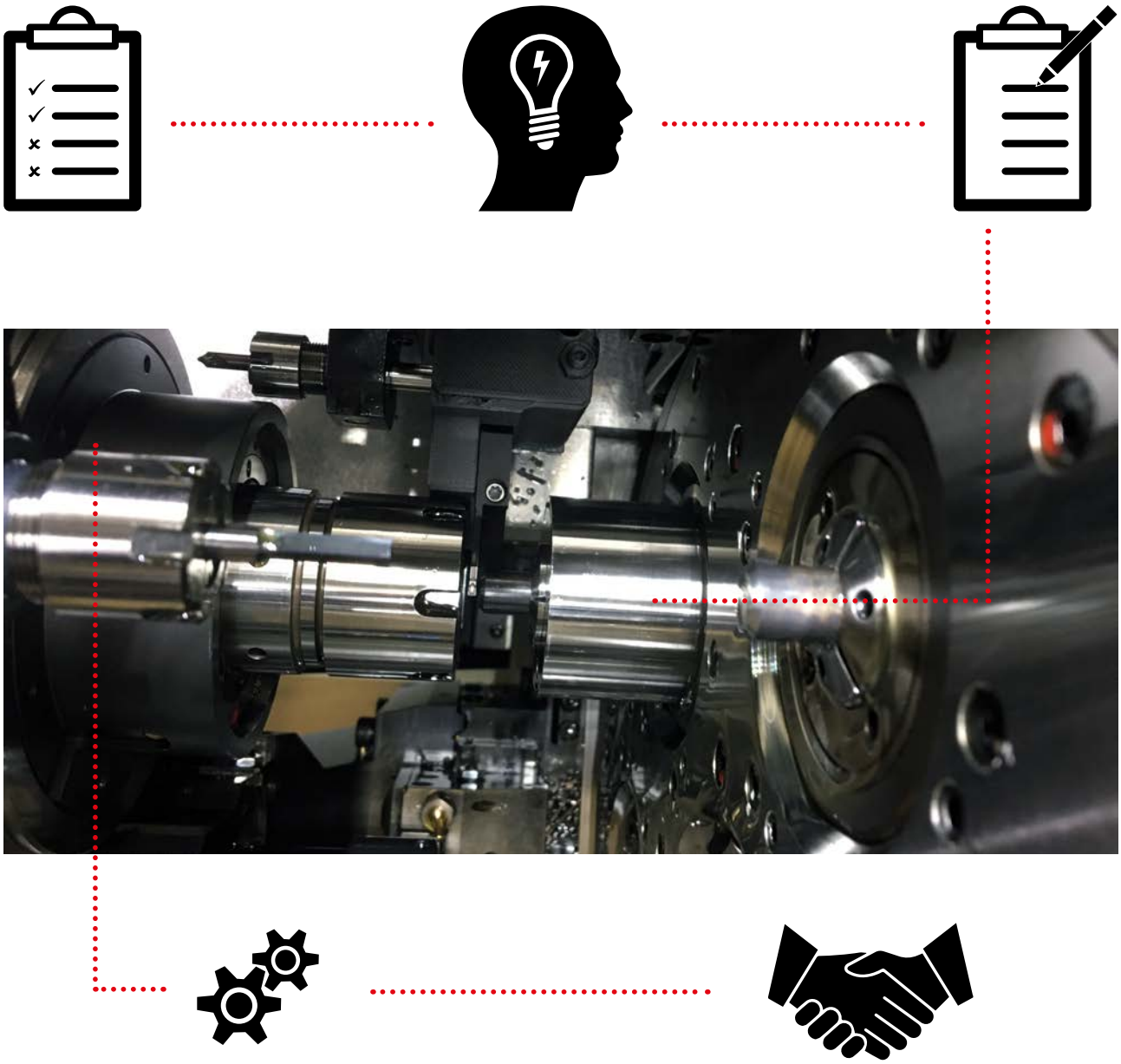


: Mplus tool
: Conventional tool
: Mplus tool including tool change
: Conventional tool including tool change

G80A

SPECIAL SOLUTIONS

Not all types of machines are mentioned in the overview on page 21. Technical support regarding fitment of the G80A type tool or a custom solution can be offered for other types of machines.



Please contact the local Mitsubishi Materials supplier for special analysis of the situation. If a tailored solution is required, collision tests are carried out both using CAD and on site using an additively manufactured tool model before the final tool is produced. After successful testing, a final solution will be offered.

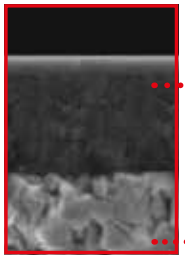
G80A

GY-GROOVING INSERTS

INSERT GRADES

P		M		K		S		N	
NX2525	●								
MY5015	◕			MY5015	◕	MP9015	◕		
VP10RT	◕	VP10RT	◕	VP10RT	◕	MP9025	◕	RT9020	●
VP20RT	✣	VP20RT	✣	VP20RT	✣		✣		◕

MP9000 SERIES



The high Al-rich (Al, Ti)N single layer coating provides stabilization of the high hardness phase and succeeds in dramatically improving wear, crater and welding resistance.

High Al-rich (Al, Ti)N Single Layer Coating

Special Cemented Carbide Substrate

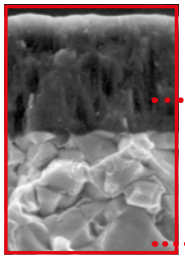
VP20RT (1st Recommendation)

PVD coated grade suitable for a wide range of applications. The combination of a special tough cemented carbide substrate with MIRACLE coating provides an excellent balance of wear and fracture resistance.

MIRACLE coating

Carbide substrate (HRA90.5)

VP10RT (2nd Recommendation)



PVD coated grade with a cemented carbide substrate harder than VP20RT. For use on difficult-to-cut materials and for extending tool life.

MIRACLE coating

Carbide substrate (HRA92.0)

MY5015

CVD coated grade with excellent wear resistance even at high temperatures. Providing longer tool life when machining cast and ductile cast irons.
Also suitable for high speed continuous cutting of steels.

CVD coating

Carbide substrate

RT9010

First recommended grade for titanium alloys.

NX2525

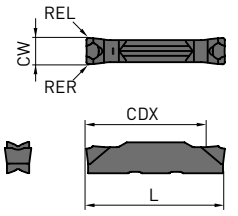
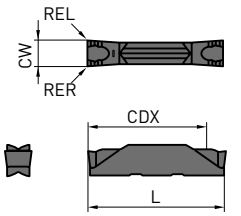
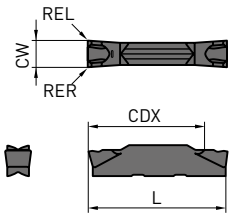
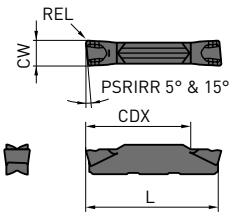
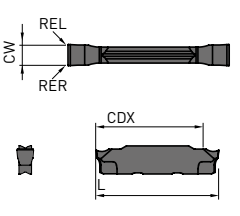
NX2525, a cermet grade for finish machining of steels and for good surface finishes at lower cutting speeds.

Cutting conditions: ●: Stable cutting ◕: General cutting ✣: Unstable cutting

G80A

A WIDE SELECTION OF INSERTS

PARTING OFF

GU Chipbreaker (For mild steel)	GS Chipbreaker (Low feeds)	GM Chipbreaker (Medium feeds)	R/L05-/R15-GS-GM Breaker (Medium feeds)	GL Breaker (For aluminium alloys)
				
				

Right hand tool holder shown.

GROOVING / CUTTING OFF

Order number	RT9010	VP10RT	VP20RT	MY5015	NX2525	MP9015	MP9025	Seat size	CW	Tolerance	RE R/L	CDX	L
GY2M0200D020N-GU		●	●		●			D	2.00	±0.03	0.2	19.7	20.70
GY2M0150C010N-GS		●	●					C	1.50	±0.03	0.1	13.4	14.70
GY2G0150C003R15-GS		●	●					C	1.50	±0.02	0.03	13.17	15.20
GY2G0150C010R08-GS		●	●					C	1.50	±0.02	0.1	13.17	15.20
GY2G0150C010R15-GS		●	●					C	1.50	±0.02	0.1	13.17	15.20
GY2M0200D020N-GS		●	●		●			D	2.00	±0.03	0.2	18.7	20.70
GY2G0200D003R15-GS		●	●					D	2.00	±0.03	0.03	18.85	21.30
GY2G0200D010R15-GS		●	●					D	2.00	±0.03	0.1	18.85	21.30
GY2G0200D020R08-GS		●	●					D	2.00	±0.03	0.2	18.85	21.30
GY2M0150C020N-GM		●	●		●	●	●	C	1.50	±0.03	0.2	13.9	14.70
GY2M0200D020N-GM		●	●	●	●	●	●	D	2.00	±0.03	0.2	19.4	20.70
GY2M0200D020R05-GM		●	●					D	2.00	±0.03	0.2	19.5	20.80
GY2M0200D020L05-GM		●	●					D	2.00	±0.03	0.2	19.5	20.80
GY1M0200D020L05-GM		★	●					D	2.00	±0.03	0.2	—	20.80
GY1M0200D020N-GM		●	●	●		●	●	D	2.00	±0.03	0.2	—	20.70
GY1M0200D020R05-GM		●	●					D	2.00	±0.03	0.2	—	20.80
GY2G0200D005N-GL	●							D	2.00	±0.02	0.05	19.5	21.05

1/1

● : Inventory maintained.

G80A

RECOMMENDED CUTTING CONDITIONS

	Material	Hardness	Grade	Vc
P	Mild steel	<160HB	VP20RT	160 (100 – 220)
			VP10RT	170 (110 – 230)
			MY5015	220 (140 – 300)
			NX2525	150 (90 – 210)
	Carbon steel Alloy steel	160 – 280HB	VP20RT	130 (80 – 180)
			VP10RT	140 (90 – 190)
			MY5015	180 (110 – 250)
			NX2525	120 (70 – 170)
		≥280HB	VP20RT	100 (60 – 140)
			VP10RT	110 (70 – 150)
			MY5015	150 (90 – 210)
			NX2525	95 (55 – 135)
M	Stainless steel	≤270HB	VP20RT	100 (60 – 140)
			VP10RT	110 (70 – 150)
K	Gray cast iron	Tensile strength ≤300MPa	VP20RT	130 (80 – 180)
			VP10RT	140 (90 – 190)
			MY5015	220 (140 – 300)
	Ductile cast iron	Tensile strength ≤800MPa	VP20RT	100 (60 – 140)
			VP10RT	110 (70 – 150)
			MY5015	150 (90 – 210)
S	Heat resistant alloy Titanium alloy	—	MP9015	70 (40 – 100)
			MP9025	60 (30 – 90)
			VP20RT	45 (30 – 60)
			VP10RT	55 (40 – 70)

1/1

1. **VP20RT** is the first recommended grade for materials other than hardened steel.
2. For VP10RT, VP20RT, MP9015, MP9025 and MY5015, wet cutting is recommended.

RECOMMENDED FEED RATE (MM/REV)

CW	Breaker			
	GU	GS	GM	GL
1.5	—	0.025 – 0.130	0.05 – 0.15	—
2.0	0.03 – 0.08	0.025 – 0.130	0.05 – 0.15	0.02 – 0.08

ISO PSC
TOOL HOLDERS

WIDE RANGE OF PSC HOLDERS
FOR MULTIPLE APPLICATIONS

Mplus...

ISO PSC TOOL HOLDERS

WIDE RANGE PSC HOLDERS FOR MULTIPLE OPERATIONS

The new ISO PSC Holder series is taking advantage of the latest technology, materials and geometries. Due to the wide variety of tools available, this series offers a solution for nearly every application – ranging from multi-purpose, through to turning, milling and profiling tool holders and boring bars.

PRODUCT RANGE
- D-Type Holder
- P-Type Holder
- S-Type Holder
- P-Type Boring Bar
- S-Type Boring Bar
- External and internal threading
- Top clamp holder for ceramic inserts

AVAILABILITY
- All turning applications

FEATURES
- High fracture resistance
- Stable cutting and burr prevention
- Internal coolant supply
- Stable insert clamping
- Highly wear resistant body

OPTIMISATION OF TOOL LIFE

BETTER SURFACE FINISHES

HIGHER PROCESS RELIABILITY

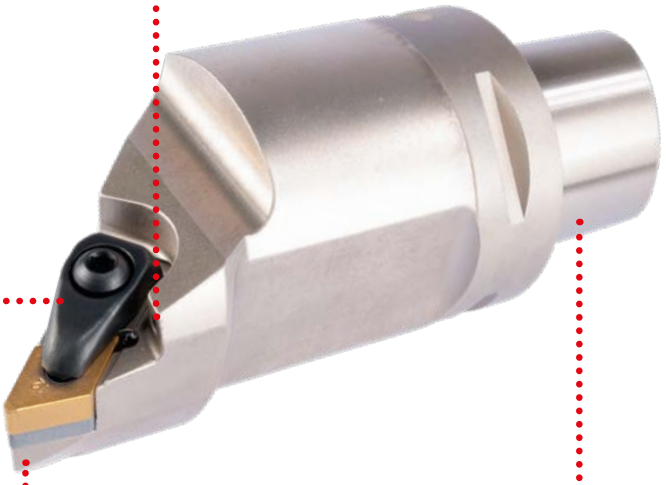
INCREASED PRODUCTIVITY

BENEFITS

- Optimisation of tool life
- Better surface finishes
- Higher process reliability
- Increased productivity

ISO PSC TOOL HOLDERS

ISO PSC Holder with through coolant to the cutting edge for optimum cooling, chip evacuation and long tool life.



Stable clamping.

High strength tool body material and coating for long tool life.

The polygonal shape of ISO PSC Holder ensures stable clamping and perfect positioning and also prevents torsional movement or deflection.

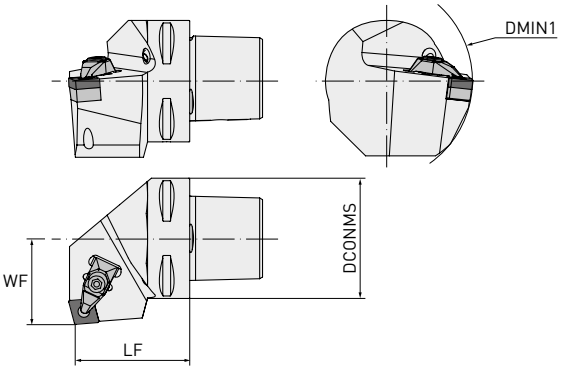
INDEX

NOTES: We reserve the right to make changes to any item compared to the information and illustrations shown in this catalogue, e.g. with regard to technical data, construction, equipment provided, material and external appearance. All dimensions are in millimetres. You will find the latest version of this catalogue on our microsite: europe.mmc-carbide.com

DCKN 75°

MULTI-PURPOSE TOOL HOLDER EQUIPPED WITH RHOMBIC NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -6°
GAMP: -6°



Order number	Stock	Hand	DCONMS	DMIN1	LF	WF	WT	Insert
PSC40-DCKNL27050-12	□	L	40	110	50	27	0.42	CN○○1204○○
PSC40-DCKNR27050-12	●	R	40	110	50	27	0.42	
PSC50-DCKNL35060-12	□	L	50	110	60	35	0.80	
PSC50-DCKNR35060-12	□	R	50	110	60	35	0.80	
PSC63-DCKNL45065-12	□	L	63	110	65	45	1.10	
PSC63-DCKNR45065-12	□	R	63	110	65	45	1.10	
PSC63-DCKNL45065-16	●	L	63	125	65	45	1.10	CN○○1606○○
PSC63-DCKNR45065-16	●	R	63	125	65	45	1.10	
PSC80-DCKNL55080-19	●	L	80	125	80	55	2.74	CN○○1906○○
PSC80-DCKNR55080-19	●	R	80	125	80	55	2.74	

SPARE PARTS

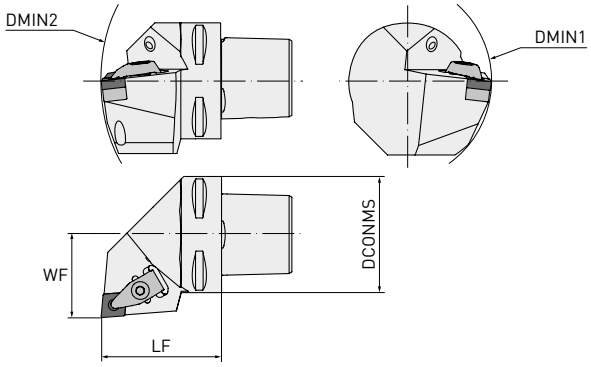
Tool holder type						
PSC40-DCKNL27050-12	MP1766	MPICSN-442	MP2712	MP1696	MP4295	MP5004
PSC40-DCKNR27050-12	MP1766	MPICSN-442	MP2712			
PSC50-DCKNL35060-12	MP1766	MPICSN-442	MP2712			
PSC50-DCKNR35060-12	MP1766	MPICSN-442	MP2712			
PSC63-DCKNL45065-12	MP1766	MPICSN-442	MP2712			
PSC63-DCKNR45065-12	MP1766	MPICSN-442	MP2712			
PSC63-DCKNL45065-16	MP1768	MPICSN-533	MP2716			
PSC63-DCKNR45065-16	MP1768	MPICSN-533	MP2716			
PSC80-DCKNL55080-19	MP1770	MPICSN-633	MP2719			
PSC80-DCKNR55080-19	MP1770	MPICSN-633	MP2719			

● : Inventory maintained. □ : Produced to order only.

DCLN 95°

MULTI-PURPOSE TOOL HOLDER EQUIPPED WITH RHOMBIC NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -6°
GAMP: -6°



Order number	Stock	Hand	DCONMS	DMIN1	DMIN2	LF	WF	WT	Insert
PSC40-DCLNL27050-12	●	L	40	110	140	50	27	0.42	CN○○1204○○
PSC40-DCLNR27050-12	●	R	40	110	110	50	27	0.42	
PSC50-DCLNL35060-12	●	L	50	110	165	60	35	0.80	
PSC50-DCLNR35060-12	●	R	50	110	165	60	35	0.80	
PSC63-DCLNL45065-12	●	L	63	110	190	65	45	1.10	
PSC63-DCLNR45065-12	●	R	63	110	190	65	45	1.10	
PSC80-DCLNL55080-12	●	L	80	110	250	80	55	2.74	
PSC80-DCLNR55080-12	●	R	80	110	250	80	55	2.74	
PSC50-DCLNL35060-16	●	L	50	125	165	60	35	0.80	CN○○1606○○
PSC50-DCLNR35060-16	●	R	50	125	165	60	35	0.80	
PSC63-DCLNL45065-16	●	L	63	125	190	65	45	1.10	
PSC63-DCLNR45065-16	●	R	63	125	190	65	45	1.10	
PSC80-DCLNL55080-16	●	L	80	125	250	80	55	2.74	
PSC80-DCLNR55080-16	●	R	80	125	250	80	55	2.74	
PSC63-DCLNL45065-19	●	L	63	125	190	65	45	1.10	CN○○1906○○
PSC63-DCLNR45065-19	●	R	63	125	190	65	45	1.10	
PSC80-DCLNL55080-19	●	L	80	125	250	80	55	2.74	
PSC80-DCLNR55080-19	●	R	80	125	250	80	55	2.74	

● : Inventory maintained.

DCLN 95°

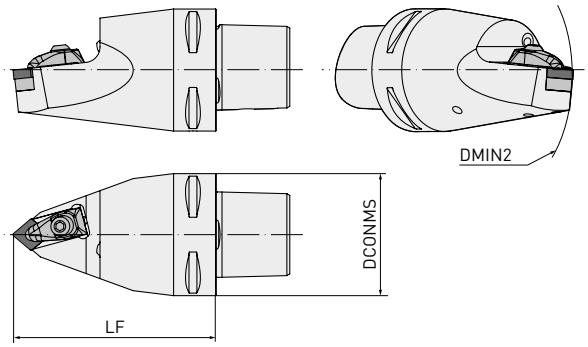
SPARE PARTS

Tool holder type						
PSC40-DCLNL27050-12	MP1766	MPICSN-442	MP2712			
PSC40-DCLNR27050-12	MP1766	MPICSN-442	MP2712			
PSC50-DCLNL35060-12	MP1766	MPICSN-442	MP2712			
PSC50-DCLNR35060-12	MP1766	MPICSN-442	MP2712			
PSC63-DCLNL45065-12	MP1766	MPICSN-442	MP2712			
PSC63-DCLNR45065-12	MP1766	MPICSN-442	MP2712			
PSC80-DCLNL55080-12	MP1766	MPICSN-442	MP2712			
PSC80-DCLNR55080-12	MP1766	MPICSN-442	MP2712			
PSC50-DCLNL35060-16	MP1768	MPICSN-533	MP2716	MP1696	MP4295	MP5004
PSC50-DCLNR35060-16	MP1768	MPICSN-533	MP2716			
PSC63-DCLNL45065-16	MP1768	MPICSN-533	MP2716			
PSC63-DCLNR45065-16	MP1768	MPICSN-533	MP2716			
PSC80-DCLNL55080-16	MP1768	MPICSN-533	MP2716			
PSC80-DCLNR55080-16	MP1768	MPICSN-533	MP2716			
PSC63-DCLNL45065-19	MP1770	MPICSN-633	MP2719			
PSC63-DCLNR45065-19	MP1770	MPICSN-633	MP2719			
PSC80-DCLNL55080-19	MP1770	MPICSN-633	MP2719			
PSC80-DCLNR55080-19	MP1770	MPICSN-633	MP2719			

DCMN 50°

TOOL HOLDER FOR MULTI-TASK MACHINING EQUIPPED WITH RHOMBIC NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -6°
GAMP: -6°



Order number	Stock	DCONMS	DMIN2	LF	WT	Insert
PSC63-DCMNN00115-12	●	63	110	115	1.7	CN○○1204○○
PSC80-DCMNN00150-16	●	80	115	150	3.3	CN○○1606○○

1/1

SPARE PARTS

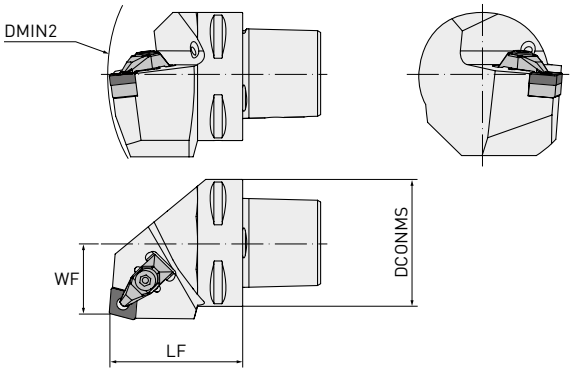
Tool holder type						
						
PSC63-DCMNN00115-12	MP1766	MPICSN-442	MP2712	MP1696	MP4295	MP5004
PSC80-DCMNN00150-16	MP1768	MPICSN-533	MP2716			

● : Inventory maintained.

DCRN 75°

MULTI-PURPOSE TOOL HOLDER EQUIPPED WITH RHOMBIC NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -6°
GAMP: -6°



Order number	Stock	Hand	DCONMS	DMIN2	WF	LF	WT	Insert
PSC50-DCRNL27060-12	□	L	50	165	27	60	0.80	CN○○1204○○
PSC50-DCRNR27060-12	□	R	50	165	27	60	0.80	
PSC63-DCRNL35065-12	□	L	63	190	35	65	1.40	
PSC63-DCRNR35065-12	□	R	63	190	35	65	1.40	
PSC63-DCRNL35065-16	●	L	63	190	35	65	1.40	CN○○1606○○
PSC63-DCRNR35065-16	□	R	63	190	35	65	1.40	
PSC80-DCRNL55080-16	●	L	80	250	55	80	2.74	
PSC80-DCRNR55080-16	□	R	80	250	55	80	2.74	
PSC63-DCRNL35065-19	●	L	63	190	35	65	1.40	CN○○1906○○
PSC63-DCRNR35065-19	●	R	63	190	35	65	1.40	
PSC80-DCRNL55080-19	●	L	80	250	55	80	2.74	
PSC80-DCRNR55080-19	●	R	80	250	55	80	2.74	

SPARE PARTS

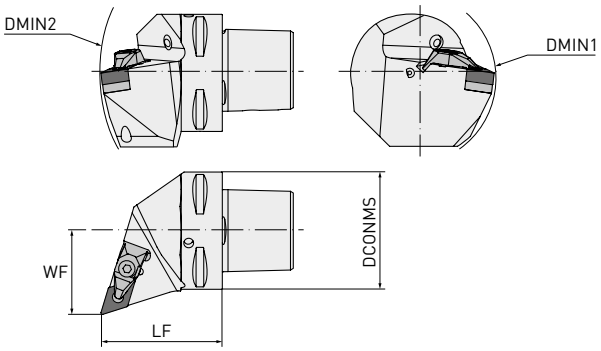
Tool holder type						
PSC50-DCRNL27060-12	MP1766	MPICSN-442	MP2712	MP1696	MP4295	MP5004
PSC50-DCRNR27060-12	MP1766	MPICSN-442	MP2712			
PSC63-DCRNL35065-12	MP1766	MPICSN-442	MP2712			
PSC63-DCRNR35065-12	MP1766	MPICSN-442	MP2712			
PSC63-DCRNL35065-16	MP1768	MPICSN-533	MP2716			
PSC63-DCRNR35065-16	MP1768	MPICSN-533	MP2716			
PSC80-DCRNL55080-16	MP1768	MPICSN-533	MP2716			
PSC80-DCRNR55080-16	MP1768	MPICSN-533	MP2716			
PSC63-DCRNL35065-19	MP1770	MPICSN-633	MP2719			
PSC63-DCRNR35065-19	MP1770	MPICSN-633	MP2719			
PSC80-DCRNL55080-19	MP1770	MPICSN-633	MP2719			
PSC80-DCRNR55080-19	MP1770	MPICSN-633	MP2719			

● : Inventory maintained. □ : Produced to order only.

DDHN 107° 30'

TURNING AND PROFILING TOOL HOLDER EQUIPPED WITH RHOMBIC NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -6°
GAMP: -7°



Order number	Stock	Hand	DCONMS	DMIN1	DMIN2	WF	LF	WT	Insert
PSC40-DDHNL27055-15	●	L	40	110	145	27	55	0.43	DN○○1506○○
PSC40-DDHNR27055-15	□	R	40	110	145	27	55	0.43	
PSC50-DDHNL35060-15	●	L	50	110	165	35	60	0.80	
PSC50-DDHNR35060-15	●	R	50	110	165	35	60	0.80	
PSC63-DDHNL45065-15	●	L	63	110	190	45	65	1.10	
PSC63-DDHNR45065-15	●	R	63	110	190	45	65	1.10	
PSC80-DDHNL55080-15	●	L	80	110	250	55	80	2.74	
PSC80-DDHNR55080-15	●	R	80	110	250	55	80	2.74	

1/1

SPARE PARTS

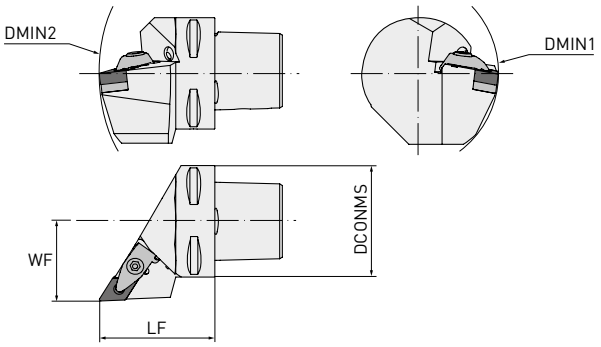
Tool holder type						
						
PSC40-DDHNL27055-15	MP1766	MPIDSN-432	MP2712	MP1696	MP4295	MP5004
PSC40-DDHNR27055-15						
PSC50-DDHNL35060-15						
PSC50-DDHNR35060-15						
PSC63-DDHNL45065-15						
PSC63-DDHNR45065-15						
PSC80-DDHNL55080-15						
PSC80-DDHNR55080-15						

● : Inventory maintained. □ : Produced to order only.

DDJN 93°

TURNING AND PROFILING TOOL HOLDER EQUIPPED WITH RHOMBIC NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -6°
GAMP: -7°



Order number	Stock	Hand	DCONMS	DMIN1	DMIN2	WF	LF	WT	Insert
PSC40-DDJNL27050-11	●	L	40	60	140	27	50	0.42	DN○○1104○○
PSC40-DDJNR27050-11	●	R	40	60	140	27	50	0.42	
PSC40-DDJNL27055-15	●	L	40	110	145	27	55	0.42	DN○○1506○○
PSC40-DDJNR27055-15	●	R	40	110	145	27	55	1.10	
PSC50-DDJNL35060-11	●	L	50	65	165	35	60	0.80	DN○○1104○○
PSC50-DDJNR35060-11	●	R	50	65	165	35	60	0.80	
PSC50-DDJNL35060-15	●	L	50	110	165	35	60	0.80	DN○○1506○○
PSC50-DDJNR35060-15	●	R	50	110	165	35	60	0.80	
PSC63-DDJNL45065-15	●	L	63	110	190	45	65	1.10	
PSC63-DDJNR45065-15	●	R	63	110	190	45	65	1.10	
PSC80-DDJNL55080-15	●	L	80	110	250	55	80	2.74	
PSC80-DDJNR55080-15	●	R	80	110	250	55	80	2.74	

1/1

SPARE PARTS

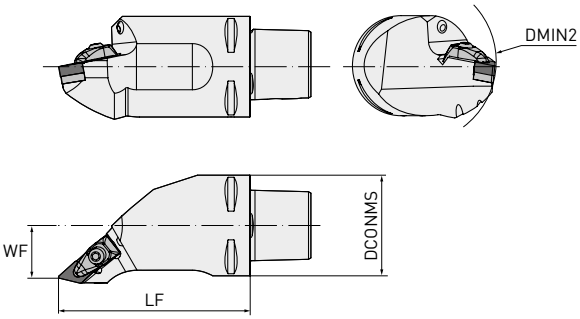
Tool holder type						
PSC40-DDJNL27050-11	MP1764	MPIDSN-322	MP2708	MP1695	MP4294	MP5004
PSC40-DDJNR27050-11	MP1764	MPIDSN-322	MP2708	MP1695	MP4294	
PSC40-DDJNL27055-15	MP1766	MPIDSN-432	MP2712	MP1696	MP4295	
PSC40-DDJNR27055-15	MP1766	MPIDSN-432	MP2712	MP1696	MP4295	
PSC50-DDJNL35060-11	MP1764	MPIDSN-322	MP2708	MP1695	MP4294	
PSC50-DDJNR35060-11	MP1764	MPIDSN-322	MP2708	MP1695	MP4294	
PSC50-DDJNL35060-15	MP1766	MPIDSN-432	MP2712	MP1696	MP4295	
PSC50-DDJNR35060-15	MP1766	MPIDSN-432	MP2712	MP1696	MP4295	
PSC63-DDJNL45065-15	MP1766	MPIDSN-432	MP2712	MP1696	MP4295	
PSC63-DDJNR45065-15	MP1766	MPIDSN-432	MP2712	MP1696	MP4295	
PSC80-DDJNL55080-15	MP1766	MPIDSN-432	MP2712	MP1696	MP4295	
PSC80-DDJNR55080-15	MP1766	MPIDSN-432	MP2712	MP1696	MP4295	

● : Inventory maintained.

DDMN 48°

TOOL HOLDER FOR MULTI-TASK MACHINING EQUIPPED WITH RHOMBIC NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -5°
GAMP: -9°



Order number	Stock	Hand	DCONMS	DMIN1	DMIN2	WF	LF	WT	Insert
PSC63-DDMNL33120-15	●	L	63	63	130	33	120	2.30	DN○○1506○○
PSC63-DDMNR33120-15	●	R							

1/1

SPARE PARTS

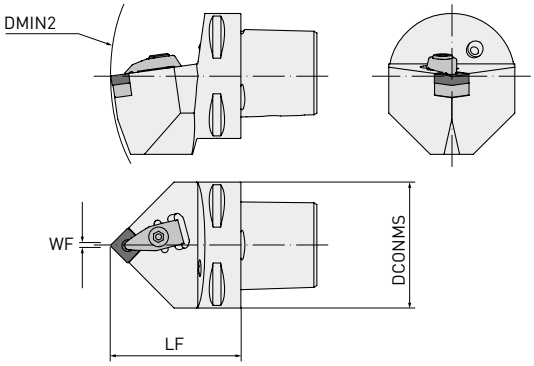
Tool holder type						
						
PSC63-DDMNL33120-15	MP1766	MPIDSN-432	MP2712	MP1696	MP4295	MP5004
PSC63-DDMNR33120-15						

● : Inventory maintained.

DSDN 45°

TOOL HOLDER FOR EXTERNAL TURNING AND CHAMFERING EQUIPPED WITH SQUARE NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -6°
GAMP: -6°



Order number	Stock	DCONMS	DMIN2	WF	LF	WT	Insert
PSC40-DSDNN00050-12	●	40	140	0.3	50	0.35	SN○○1204○○
PSC50-DSDNN00060-12	●	50	165	0.3	60	0.75	
PSC63-DSDNN00065-12	●	63	190	0.3	65	1.07	
PSC50-DSDNN00065-19	●	50	170	0.5	65	0.80	SN○○1906○○
PSC63-DSDNN00070-19	●	63	195	0.5	70	1.26	

1/1

SPARE PARTS

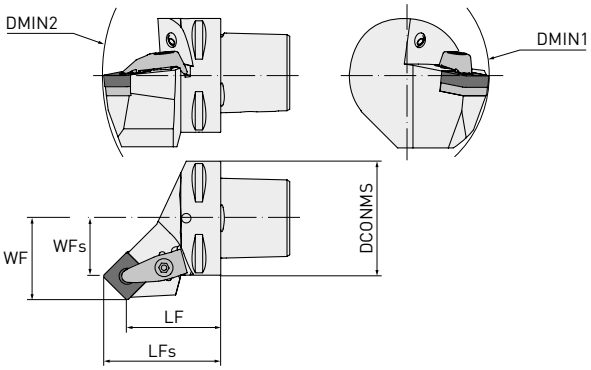
Tool holder type						
PSC40-DSDNN00050-12	MP1766	MPISSN-442	MP2712	MP1696	MP4295	MP5004
PSC50-DSDNN00060-12	MP1766	MPISSN-442	MP2712			
PSC63-DSDNN00065-12	MP1766	MPISSN-442	MP2712			
PSC50-DSDNN00065-19	MP1770	MPISSN-633	MP2719			
PSC63-DSDNN00070-19	MP1770	MPISSN-633	MP2719			

● : Inventory maintained.

DSSN 45°

TOOL HOLDER FOR EXTERNAL TURNING AND CHAMFERING EQUIPPED WITH DOUBLE-SIDED SQUARE NEGATIVE INSERTS

GAMF: -8°
GAMP: 0°



Order number	Stock	Hand	DCONMS	DMIN1	DMIN2	WF	WFs	LF	LFs	WT	Insert
PSC40-DSSNL27042-12	●	L	40	110	140	27	18.7	42	50.3	0.35	SN○○1204○○
PSC40-DSSNR27042-12	●	R	40	110	140	27	18.7	42	50.3	0.35	
PSC50-DSSNL35052-12	●	L	50	110	165	35	26.7	52	60.3	0.70	
PSC50-DSSNR35052-12	●	R	50	110	165	35	26.7	52	60.3	0.70	
PSC63-DSSNL45056-12	●	L	63	110	190	45	36.7	56	64.3	1.12	
PSC63-DSSNR45056-12	●	R	63	110	190	45	36.7	56	64.3	1.12	

1/1

SPARE PARTS

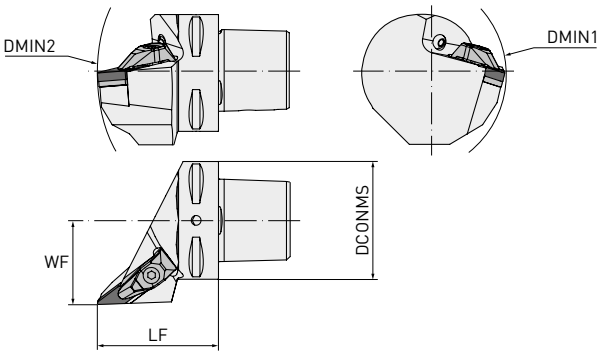
Tool holder type						
PSC40-DSSNL27042-12	MP1766	MPISSN-442	MP2712	MP1696	MP4295	MP5004
PSC40-DSSNR27042-12						
PSC50-DSSNL35052-12						
PSC50-DSSNR35052-12						
PSC63-DSSNL45056-12						
PSC63-DSSNR45056-12						

● : Inventory maintained.

DVJN 93°

TOOL HOLDER FOR VERY SPECIFIC OPERATIONS EQUIPPED WITH RHOMBIC NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -4°
GAMP: -13°



Order number	Stock	Hand	DCONMS	DMIN1	DMIN2	WF	LF	WT	Insert
PSC40-DVJNL27062-16	●	L	40	60	152	27	62	0.45	VN○○1604○○
PSC40-DVJNR27062-16	●	R	40	60	152	27	62	0.45	
PSC50-DVJNL35065-16	●	L	50	65	170	35	65	0.79	
PSC50-DVJNR35065-16	□	R	50	65	170	35	65	0.79	
PSC63-DVJNL45065-16	●	L	63	81	190	45	65	1.10	
PSC63-DVJNR45065-16	●	R	63	81	190	45	65	1.10	
PSC80-DVJNL55080-16	●	L	80	100	250	55	80	2.74	
PSC80-DVJNR55080-16	●	R	80	100	250	55	80	2.74	

1/1

SPARE PARTS

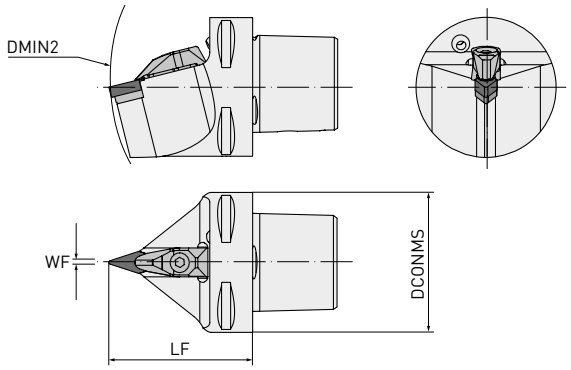
Tool holder type						
PSC40-DVJNL27062-16	MP1764	MPIVSN-322	MP2708	MP1695	MP4294	MP5004
PSC40-DVJNR27062-16						
PSC50-DVJNL35065-16						
PSC50-DVJNR35065-16						
PSC63-DVJNL45065-16						
PSC63-DVJNR45065-16						
PSC80-DVJNL55080-16						
PSC80-DVJNR55080-16						

● : Inventory maintained. □ : Produced to order only.

DVVN 72° 30'

PROFILING TOOLHOLDER EQUIPPED WITH RHOMBIC NEGATIVE DOUBLE-SIDED INSERTS

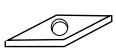
GAMF: -4°
GAMP: -13°



Order number	Stock	DCONMS	DMIN2	WF	LF	WT	Insert
PSC40-DVVNN00062-16	□	40	152	0.6	62	0.43	VN○○1604○○
PSC50-DVVNN00065-16	□	50	170	0.6	65	0.80	
PSC63-DVVNN00065-16	□	63	190	0.6	65	1.07	
PSC80-DVVNN00080-16	□	80	250	0.6	80	2.32	

1/1

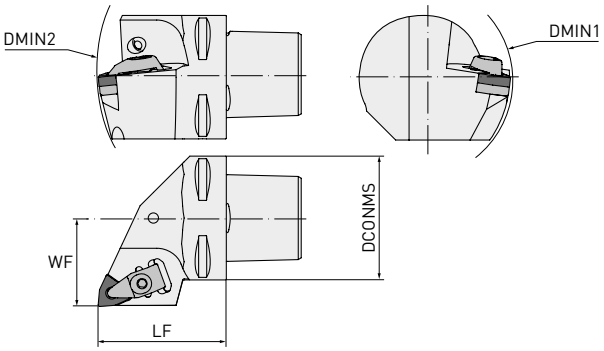
SPARE PARTS

Tool holder type						
PSC40-DVVNN00062-16	MP1764	MPIVSN-322	MP2708	MP1695	MP4294	MP5004
PSC50-DVVNN00065-16						
PSC63-DVVNN00065-16						
PSC80-DVVNN00080-16						

● : Inventory maintained. □ : Produced to order only.

DWLN 95°

MULTI-PURPOSE TOOL HOLDER EQUIPPED WITH TRIGONAL NEGATIVE DOUBLE-SIDED INSERTS



GAMF: -6°
GAMP: -6°

Order number	Stock	Hand	DCONMS	DMIN1	DMIN2	WF	LF	WT	Insert
PSC40-DWLNL27050-06	●	L	40	60	140	27	50	0.42	WN○○0604○○
PSC40-DWLNR27050-06	●	R	40	60	140	27	50	0.42	
PSC50-DWLNL35060-06	●	L	50	65	165	35	60	0.80	
PSC50-DWLNR35060-06	●	R	50	65	165	35	60	0.80	
PSC40-DWLNL27050-08	●	L	40	110	140	27	50	0.42	WN○○0804○○
PSC40-DWLNR27050-08	●	R	40	110	140	27	50	0.42	
PSC50-DWLNL35060-08	●	L	50	110	165	35	60	0.80	
PSC50-DWLNR35060-08	●	R	50	110	165	35	60	0.80	
PSC63-DWLNL45065-08	●	L	63	110	190	45	65	1.10	
PSC63-DWLNR45065-08	●	R	63	110	190	45	65	1.10	
PSC80-DWLNL55080-08	●	L	80	110	250	55	80	2.74	
PSC80-DWLNR55080-08	●	R	80	110	250	55	80	2.74	

1/1

SPARE PARTS

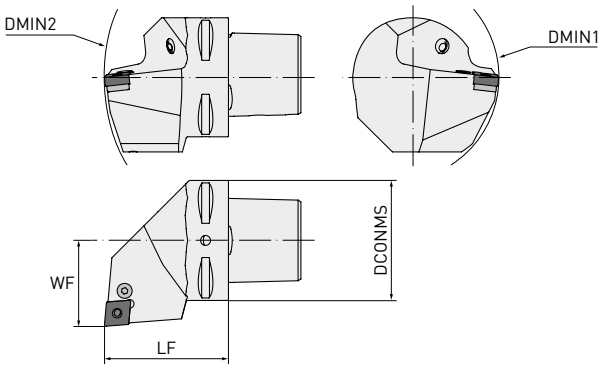
Tool holder type						
PSC40-DWLNL27050-06	MP1764	MPIWSN-322	MP2708	MP1695	MP4294	MP5004
PSC40-DWLNR27050-06	MP1764	MPIWSN-322	MP2708	MP1695	MP4294	
PSC50-DWLNL35060-06	MP1764	MPIWSN-322	MP2708	MP1695	MP4294	
PSC50-DWLNR35060-06	MP1764	MPIWSN-322	MP2708	MP1695	MP4294	
PSC40-DWLNL27050-08	MP1766	MPIWSN-433	MP2712	MP1696	MP4295	
PSC40-DWLNR27050-08	MP1766	MPIWSN-433	MP2712	MP1696	MP4295	
PSC50-DWLNL35060-08	MP1766	MPIWSN-433	MP2712	MP1696	MP4295	
PSC50-DWLNR35060-08	MP1766	MPIWSN-433	MP2712	MP1696	MP4295	
PSC63-DWLNL45065-08	MP1766	MPIWSN-433	MP2712	MP1696	MP4295	
PSC63-DWLNR45065-08	MP1766	MPIWSN-433	MP2712	MP1696	MP4295	
PSC80-DWLNL55080-08	MP1766	MPIWSN-433	MP2712	MP1696	MP4295	
PSC80-DWLNR55080-08	MP1766	MPIWSN-433	MP2712	MP1696	MP4295	

● : Inventory maintained.

PCLN 95°

MULTI-PURPOSE TOOL HOLDER EQUIPPED WITH RHOMBIC NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -6°
GAMP: -6°



Order number	Stock	Hand	DCONMS	DMIN1	DMIN2	WF	LF	WT	Insert
PSC40-PCLNL27050-12	●	L	40	110	140	27	50	0.42	CN○○1204○○
PSC40-PCLNR27050-12	●	R	40	110	140	27	50	0.42	
PSC50-PCLNL35060-12	●	L	50	110	165	35	60	0.80	
PSC50-PCLNR35060-12	●	R	50	110	165	35	60	0.80	
PSC63-PCLNL45065-12	●	L	63	110	190	45	65	1.10	
PSC63-PCLNR45065-12	●	R	63	110	190	45	65	1.10	
PSC80-PCLNL55080-12	●	L	80	110	250	55	80	2.74	
PSC80-PCLNR55080-12	●	R	80	110	250	55	80	2.74	
PSC50-PCLNL35060-16	●	L	50	125	165	35	60	0.80	CN○○1606○○
PSC50-PCLNR35060-16	●	R	50	125	165	35	60	0.80	
PSC63-PCLNL45065-16	●	L	63	125	190	45	65	1.10	
PSC63-PCLNR45065-16	●	R	63	125	190	45	65	1.10	
PSC80-PCLNL55080-16	●	L	80	125	250	55	80	2.74	
PSC80-PCLNR55080-16	●	R	80	125	250	55	80	2.74	
PSC63-PCLNL45065-19	●	L	63	125	190	45	65	1.10	CN○○1906○○
PSC63-PCLNR45065-19	●	R	63	125	190	45	65	1.10	
PSC80-PCLNL55080-19	●	L	80	125	250	55	80	2.74	
PSC80-PCLNR55080-19	●	R	80	125	250	55	80	2.74	

● : Inventory maintained.

PCLN 95°

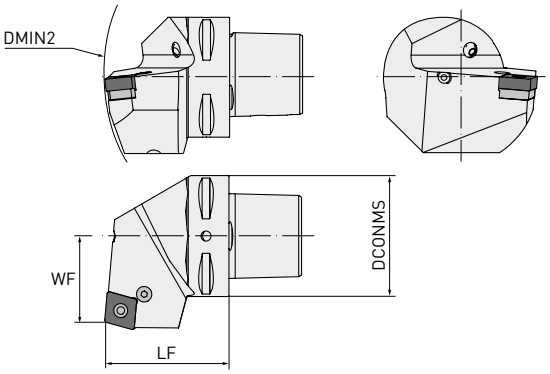
SPARE PARTS

Tool holder type					
PSC40-PCLNL27050-12	MP8012	MP1608	MP5003	MP3612	MP4112
PSC40-PCLNR27050-12	MP8012	MP1608	MP5003	MP3612	MP4112
PSC50-PCLNL35060-12	MP8012	MP1608	MP5003	MP3612	MP4112
PSC50-PCLNR35060-12	MP8012	MP1608	MP5003	MP3612	MP4112
PSC63-PCLNL45065-12	MP8012	MP1608	MP5003	MP3612	MP4112
PSC63-PCLNR45065-12	MP8012	MP1608	MP5003	MP3612	MP4112
PSC80-PCLNL55080-12	MP8012	MP1608	MP5003	MP3612	MP4112
PSC80-PCLNR55080-12	MP8012	MP1608	MP5003	MP3612	MP4112
PSC50-PCLNL35060-16	MP8016	MP1618	MP5003	MP3616	MP4115
PSC50-PCLNR35060-16	MP8016	MP1618	MP5003	MP3616	MP4115
PSC63-PCLNL45065-16	MP8016	MP1618	MP5003	MP3616	MP4115
PSC63-PCLNR45065-16	MP8016	MP1618	MP5003	MP3616	MP4115
PSC80-PCLNL55080-16	MP8016	MP1618	MP5003	MP3616	MP4115
PSC80-PCLNR55080-16	MP8016	MP1618	MP5003	MP3616	MP4115
PSC63-PCLNL45065-19	MP8019	MP1610	MP5004	MP3619	MP4119
PSC63-PCLNR45065-19	MP8019	MP1610	MP5004	MP3619	MP4119
PSC80-PCLNL55080-19	MP8019	MP1610	MP5004	MP3619	MP4119
PSC80-PCLNR55080-19	MP8019	MP1610	MP5004	MP3619	MP4119

PCRN 75°

MULTI-PURPOSE TOOL HOLDER EQUIPPED WITH RHOMBIC NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -6°
GAMP: -6°



Order number	Stock	Hand	DCONMS	DMIN2	WF	LF	WT	Insert
PSC63-PCRNL35065-16	●	L	63	190	35	65	1.40	CN○○1606○○
PSC63-PCRNR35065-16	●	R						
PSC63-PCRNL35065-19	●	L						CN○○1906○○
PSC63-PCRNR35065-19	●	R						

1/1

SPARE PARTS

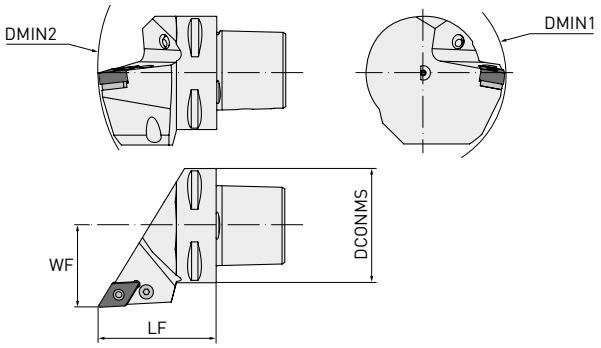
Tool holder type					
PSC63-PCRNL35065-16	MP8016	MP1618	MP5003	MP3616	MP4115
PSC63-PCRNR35065-16	MP8016	MP1618	MP5003	MP3616	MP4115
PSC63-PCRNL35065-19	MP8019	MP1610	MP5004	MP3619	MP4119
PSC63-PCRNR35065-19	MP8019	MP1610	MP5004	MP3619	MP4119

● : Inventory maintained.

PDJN 93°

TURNING AND PROFILING TOOL HOLDER EQUIPPED WITH RHOMBIC NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -6°
GAMP: -7°



Order number	Stock	Hand	DCONMS	DMIN1	DMIN2	WF	LF	WT	Insert
PSC40-PDJNL27055-15	●	L	40	110	145	27	55	0.43	DN○○1506○○
PSC40-PDJNR27055-15	●	R	40	110	145	27	55	0.43	
PSC50-PDJNL35060-15	●	L	50	110	165	35	60	0.80	
PSC50-PDJNR35060-15	●	R	50	110	165	35	60	0.80	
PSC63-PDJNL45065-15	□	L	63	110	190	45	65	1.10	
PSC63-PDJNR45065-15	●	R	63	110	190	45	65	1.10	
PSC80-PDJNL55080-15	●	L	80	110	250	55	80	2.74	
PSC80-PDJNR55080-15	●	R	80	110	250	55	80	2.74	

1/1

SPARE PARTS

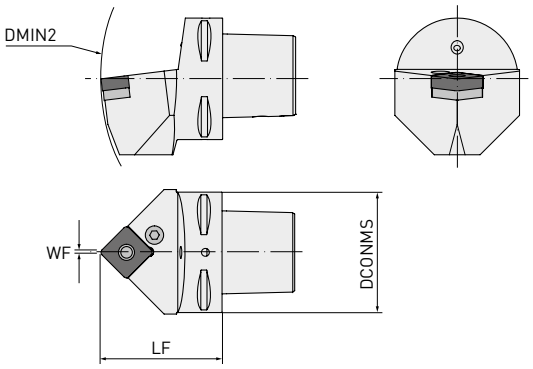
Tool holder type					
					
PSC40-PDJNL27055-15	MP8415	MP1638	MP5003	MP3715	MP4112
PSC40-PDJNR27055-15					
PSC50-PDJNL35060-15					
PSC50-PDJNR35060-15					
PSC63-PDJNL45065-15					
PSC63-PDJNR45065-15					
PSC80-PDJNL55080-15					
PSC80-PDJNR55080-15					

● : Inventory maintained. □ : Produced to order only.

PSDN 45°

TOOL HOLDER FOR EXTERNAL TURNING AND CHAMFERING EQUIPPED WITH SQUARE NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -6°
GAMP: -6°



Order number	Stock	DCONMS	DMIN2	WF	LF	WT	Insert
PSC63-PSDNN00065-12	□	63	190	0.3	65	1.07	SN○○1204○○
PSC63-PSDNN00065-15	□	63	190	0.5	65	1.07	SN○○1506○○
PSC63-PSDNN00065-19	□	63	195	0.5	65	1.07	SN○○1906○○

1/1

SPARE PARTS

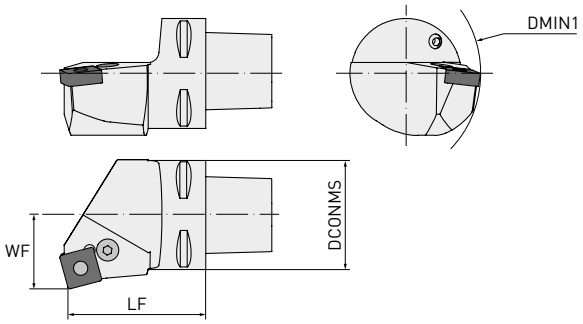
Tool holder type					
PSC63-PSDNN00065-12	MP8012	MP1608	MP5003	MP3512	MP4112
PSC63-PSDNN00065-15	MP8016	MP1618	MP5003	MP3515	MP4115
PSC63-PSDNN00065-19	MP8019	MP1610	MP5004	MP3519	MP4119

● : Inventory maintained. □ : Produced to order only.

PSKN 75°

TOOL HOLDER FOR FACE TURNING EQUIPPED WITH SQUARE NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -6°
GAMP: -6°



Order number	Stock	Hand	DCONMS	DMIN1	WF	LF	WT	Insert
PSC63-PSKNL45065-12	●	L	63	110	45	65	1.10	SN○○1204○○
PSC63-PSKNR45065-12	●	R	63	110	45	65	1.10	
PSC63-PSKNL45065-19	□	L	63	125	45	65	1.10	SN○○1906○○
PSC63-PSKNR45065-19	□	R	63	125	45	65	1.10	
PSC80-PSKNL55080-19	□	L	80	125	55	80	2.74	
PSC80-PSKNR55080-19	□	R	80	125	55	80	2.74	
PSC80-PSKNL55080-25	□	L	80	150	55	80	2.74	SN○○2507○○
PSC80-PSKNR55080-25	□	R	80	150	55	80	2.74	

1/1

SPARE PARTS

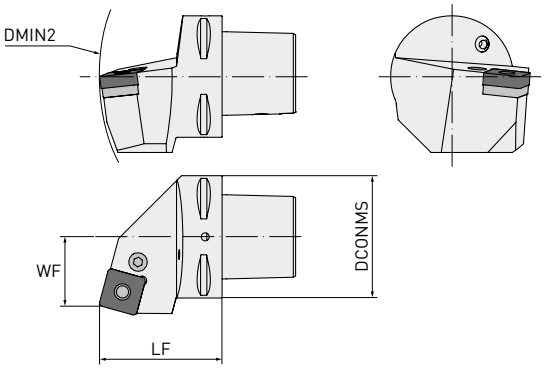
Tool holder type					
PSC63-PSKNL45065-12	MP8012	MP1608	MP5003	MP3512	MP4112
PSC63-PSKNR45065-12	MP8012	MP1608	MP5003	MP3512	MP4112
PSC63-PSKNL45065-19	MP8019	MP1610	MP5004	MP3519	MP4119
PSC63-PSKNR45065-19	MP8019	MP1610	MP5004	MP3519	MP4119
PSC80-PSKNL55080-19	MP8019	MP1610	MP5004	MP3519	MP4119
PSC80-PSKNR55080-19	MP8019	MP1610	MP5004	MP3519	MP4119
PSC80-PSKNL55080-25	MP8025	MP1612	MP5005	MP3525	MP4125
PSC80-PSKNR55080-25	MP8025	MP1612	MP5005	MP3525	MP4125

● : Inventory maintained. □ : Produced to order only.

PSRN 75°

TOOL HOLDER FOR FACE TURNING EQUIPPED WITH SQUARE NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -6°
GAMP: -6°



Order number	Stock	Hand	DCONMS	DMIN2	WF	LF	WT	Insert
PSC63-PSRNL35065-19	□	L	63	190	35	65	1.40	SN○○1906○○
PSC63-PSRNR35065-19	□	R	63	190	35	65	1.40	
PSC80-PSRNL45080-19	□	L	80	250	45	80	2.80	
PSC80-PSRNR45080-19	□	R	80	250	45	80	2.80	

1/1

SPARE PARTS

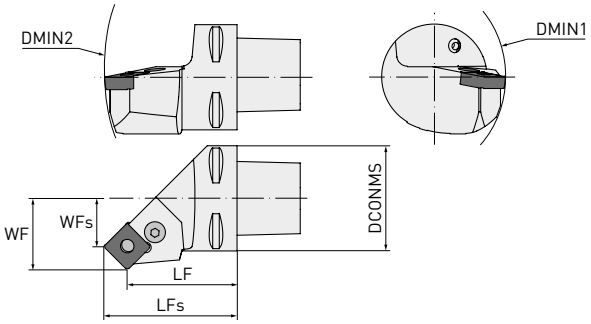
Tool holder type					
PSC63-PSRNL35065-19	MP8019	MP1610	MP5004	MP3519	MP4119
PSC63-PSRNR35065-19					
PSC80-PSRNL45080-19					
PSC80-PSRNR45080-19					

● : Inventory maintained. □ : Produced to order only.

PSSN 45°

TOOL HOLDER FOR EXTERNAL TURNING AND CHAMFERING EQUIPPED WITH SQUARE NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -8°
GAMP: 0°



Order number	Stock	Hand	DCONMS	DMIN1	DMIN2	WF	WFs	LF	LFs	WT	Insert
PSC63-PSSNL45052-19	●	L	63	125	190	45	32.5	52	64.5	1.13	SN○○1906○○
PSC63-PSSNR45052-19	●	R									

1/1

SPARE PARTS

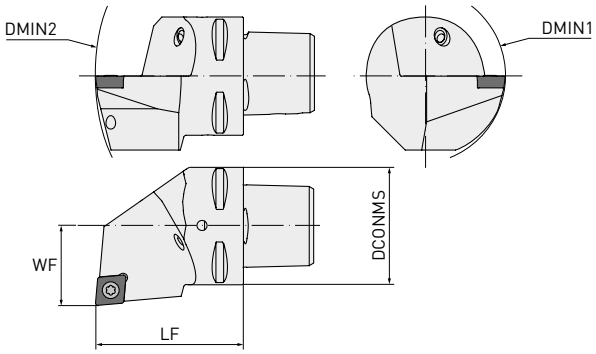
Tool holder type					
PSC63-PSSNL45052-19	MP8019	MP1610	MP5004	MP3519	MP4119
PSC63-PSSNR45052-19					

● : Inventory maintained.

SCLC 95°

MULTI-PURPOSE TOOL HOLDER EQUIPPED WITH RHOMBIC POSITIVE INSERTS

GAMF: 0°
GAMP: 0°



Order number	Stock	Hand	DCONMS	DMIN1	DMIN2	WF	LF	WT	Insert
PSC40-SCLCL27050-09	●	L	40	80	140	27	50	0.42	CC○○09T3○○
PSC40-SCLCR27050-09	●	R	40	80	140	27	50	0.42	
PSC50-SCLCL35060-09	●	L	50	80	165	35	60	0.80	
PSC50-SCLCR35060-09	●	R	50	80	165	35	60	0.80	
PSC40-SCLCL27050-12	●	L	40	110	140	27	50	0.42	CC○○1204○○
PSC40-SCLCR27050-12	●	R	40	110	140	27	50	0.42	
PSC50-SCLCL35060-12	●	L	50	110	165	35	60	0.80	
PSC50-SCLCR35060-12	●	R	50	110	165	35	60	0.80	
PSC63-SCLCL45065-12	●	L	63	110	190	45	65	1.10	
PSC63-SCLCR45065-12	●	R	63	110	190	45	65	1.10	

1/1

SPARE PARTS

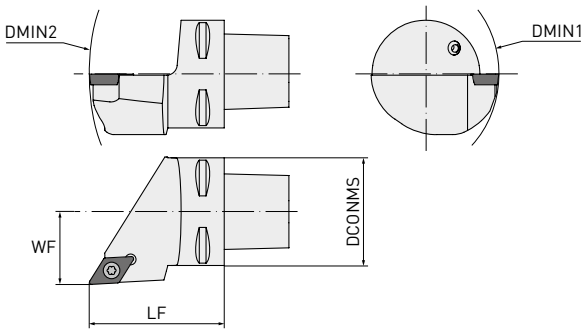
Tool holder type				
PSC40-SCLCL27050-09	MP1240	MP5515		
PSC40-SCLCR27050-09	MP1240	MP5515		
PSC50-SCLCL35060-09	MP1240	MP5515		
PSC50-SCLCR35060-09	MP1240	MP5515		
PSC40-SCLCL27050-12	MP1540	MP5517	MP3614	MP1760
PSC40-SCLCR27050-12	MP1540	MP5517		
PSC50-SCLCL35060-12	MP1540	MP5517		
PSC50-SCLCR35060-12	MP1540	MP5517		
PSC63-SCLCL45065-12	MP1540	MP5517		
PSC63-SCLCR45065-12	MP1540	MP5517		

● : Inventory maintained.

SDJC 93°

MULTI-PURPOSE TOOL HOLDER EQUIPPED WITH RHOMBIC POSITIVE INSERTS

GAMF: 0°
GAMP: 0°



Order number	Stock	Hand	DCONMS	DMIN1	DMIN2	WF	LF	WT	Insert
PSC40-SDJCL27050-11	●	L	40	110	140	27	50	0.42	DC○○11T3○○
PSC40-SDJCR27050-11	●	R	40	110	140	27	50	0.42	
PSC50-SDJCL35060-11	●	L	50	110	165	35	60	0.80	
PSC50-SDJCR35060-11	●	R	50	110	165	35	60	0.80	
PSC63-SDJCL45065-11	●	L	63	110	190	45	65	1.10	
PSC63-SDJCR45065-11	●	R	63	110	190	45	65	1.10	

1/1

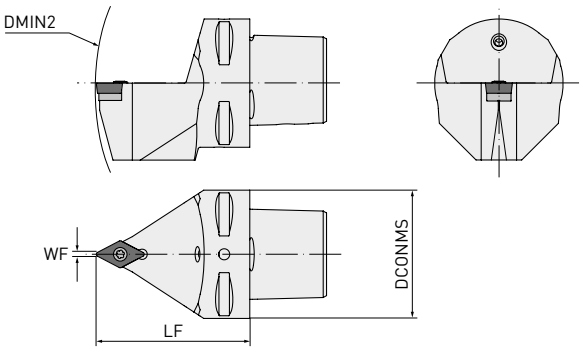
SPARE PARTS

Tool holder type				
PSC40-SDJCL27050-11	MP1335	MP5516	MP3714	MP1750
PSC40-SDJCR27050-11				
PSC50-SDJCL35060-11				
PSC50-SDJCR35060-11				
PSC63-SDJCL45065-11				
PSC63-SDJCR45065-11				

● : Inventory maintained.

SDNC 62° 30'

MULTI-PURPOSE PROFILING TOOL HOLDER EQUIPPED WITH RHOMBIC POSITIVE INSERTS



GAMF: 0°
GAMP: 0°

Order number	Stock	DCONMS	DMIN2	WF	LF	WT	Insert
PSC40-SDNCN00050-11	●	40	140	0.5	50	0.35	DC○○11T3○○
PSC50-SDNCN00060-11	●	50	165	0.5	60	0.75	

1/1

SPARE PARTS

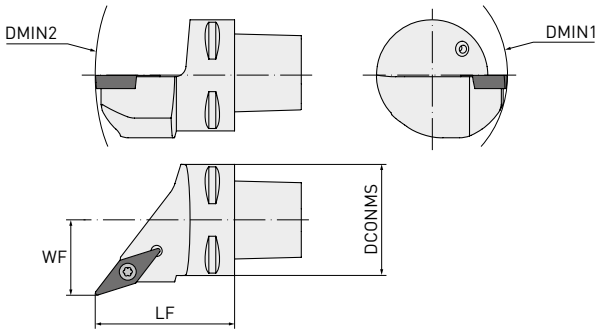
Tool holder type				
				
PSC40-SDNCN00050-11 PSC50-SDNCN00060-11	MP1335	MP5516	MP3714	MP1750

● : Inventory maintained.

SVHC 107° 30'

MULTI-PURPOSE PROFILING TOOL HOLDER EQUIPPED WITH RHOMBIC POSITIVE INSERTS

GAMF: 0°
GAMP: 0°



Order number	Stock	Hand	DCONMS	DMIN1	DMIN2	WF	LF	WT	Insert
PSC40-SVHCL27050-11	●	L	40	80	140	27	50	0.42	VC○○1103○○
PSC40-SVHCR27050-11	●	R	40	80	140	27	50	0.42	
PSC40-SVHCL27050-16	●	L	40	110	140	27	50	0.42	VC○○1604○○
PSC40-SVHCR27050-16	●	R	40	110	140	27	50	0.42	
PSC50-SVHCL35060-16	●	L	50	110	165	35	60	0.80	
PSC50-SVHCR35060-16	●	R	50	110	165	35	60	0.80	
PSC63-SVHCL45065-16	●	L	63	110	190	45	65	1.10	
PSC63-SVHCR45065-16	●	R	63	110	190	45	65	1.10	

1/1

SPARE PARTS

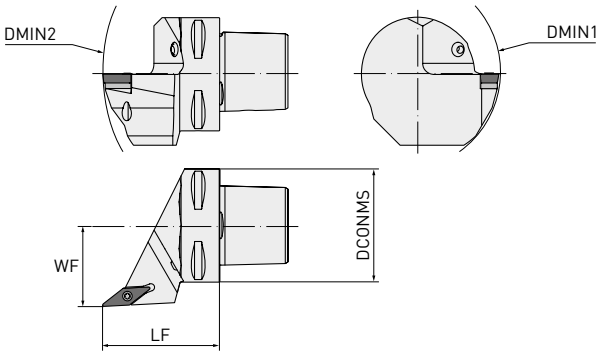
Tool holder type				
PSC40-SVHCL27050-11	MP1225	MP5507		
PSC40-SVHCR27050-11	MP1225	MP5507		
PSC40-SVHCL27050-16	MP1335	MP5516	MP3718	MP1750
PSC40-SVHCR27050-16	MP1335	MP5516		
PSC50-SVHCL35060-16	MP1335	MP5516		
PSC50-SVHCR35060-16	MP1335	MP5516		
PSC63-SVHCL45065-16	MP1335	MP5516		
PSC63-SVHCR45065-16	MP1335	MP5516		

● : Inventory maintained.

SVJC 93°

MULTI-PURPOSE PROFILING TOOL HOLDER EQUIPPED WITH RHOMBIC POSITIVE INSERTS

GAMF: 0°
GAMP: 0°



Order number	Stock	Hand	DCONMS	DMIN1	DMIN2	WF	LF	WT	Insert
PSC40-SVJCL27050-11	●	L	40	80	145	27	50	0.42	VC○○1103○○
PSC40-SVJCR27050-11	●	R	40	80	145	27	50	0.42	
PSC40-SVJCL27050-16	●	L	40	110	145	27	50	0.42	VC○○1604○○
PSC40-SVJCR27050-16	●	R	40	110	145	27	50	0.42	
PSC50-SVJCL35060-16	●	L	50	110	165	35	60	0.80	
PSC50-SVJCR35060-16	●	R	50	110	165	35	60	0.80	
PSC63-SVJCL45065-16	●	L	63	110	190	45	65	1.10	
PSC63-SVJCR45065-16	●	R	63	110	190	45	65	1.10	

1/1

SPARE PARTS

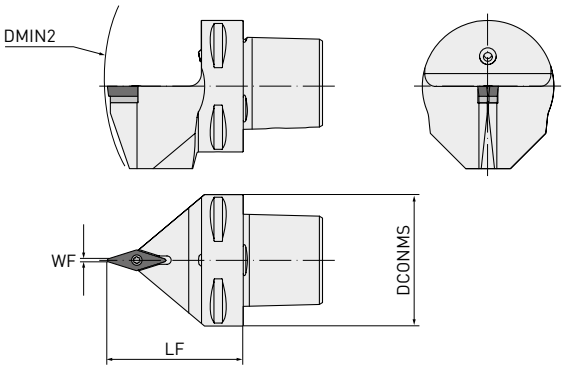
Tool holder type				
PSC40-SVJCL27050-11	MP1225	MP5507		
PSC40-SVJCR27050-11	MP1225	MP5507		
PSC40-SVJCL27050-16	MP1335	MP5516	MP3718	MP1750
PSC40-SVJCR27050-16	MP1335	MP5516	MP3718	MP1750
PSC50-SVJCL35060-16	MP1335	MP5516	MP3718	MP1750
PSC50-SVJCR35060-16	MP1335	MP5516	MP3718	MP1750
PSC63-SVJCL45065-16	MP1335	MP5516	MP3718	MP1750
PSC63-SVJCR45065-16	MP1335	MP5516	MP3718	MP1750

● : Inventory maintained.

SVVC 72° 30'

MULTI-PURPOSE PROFILING TOOL HOLDER EQUIPPED WITH RHOMBIC POSITIVE INSERTS

GAMF: 0°
GAMP: 0°



Order number	Stock	DCONMS	DMIN2	WF	LF	WT	Insert
PSC40-SVVCN00050-11	□	40	140	0.3	50	0.35	VC○○1103○○
PSC40-SVVCN00050-16	□	40	140	0.6	50	0.35	
PSC50-SVVCN00060-16	□	50	165	0.6	60	0.75	VC○○1604○○
PSC63-SVVCN00065-16	□	63	190	0.6	65	1.07	

SPARE PARTS

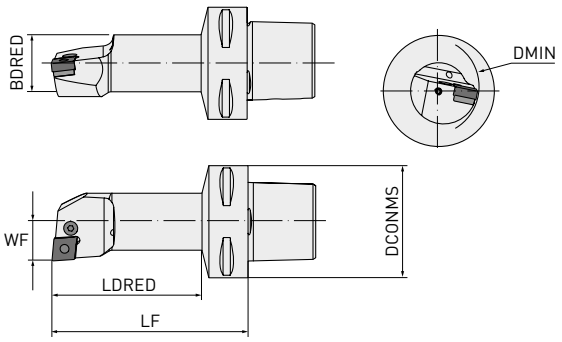
Tool holder type				
PSC40-SVVCN00050-11	MP1225	MP5507		
PSC40-SVVCN00050-16	MP1335	MP5516	MP3718	MP1750
PSC50-SVVCN00060-16	MP1335	MP5516	MP3718	MP1750
PSC63-SVVCN00065-16	MP1335	MP5516	MP3718	MP1750

● : Inventory maintained. □ : Produced to order only.

PCLN 95°

BORING BAR FOR INTERNAL TURNING EQUIPPED WITH RHOMBIC NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -6°



Order number	Stock	Hand	DCONMS	DMIN	BDRED	WF	LF	LDRED	GAMP	WT	Insert
PSC40-PCLNL13080-09	●	L	40	25	20	13	80	58	-11°	0.40	CN○○0903○○
PSC40-PCLNR13080-09	●	R	40	25	20	13	80	58	-11°	0.40	
PSC50-PCLNL13080-09	●	L	50	25	20	13	80	56	-11°	0.57	
PSC50-PCLNR13080-09	●	R	50	25	20	13	80	56	-11°	0.57	
PSC40-PCLNL17090-12	●	L	40	32	25	17	90	69	-11°	0.48	CN○○1204○○
PSC40-PCLNR17090-12	●	R	40	32	25	17	90	69	-11°	0.48	
PSC40-PCLNL22110-12	●	L	40	40	32	22	110	89	-11°	0.75	
PSC40-PCLNR22110-12	●	R	40	40	32	22	110	89	-11°	0.75	
PSC40-PCLNL27120-12	●	L	40	50	40	27	120	100	-11°	1.13	
PSC40-PCLNR27120-12	●	R	40	50	40	27	120	100	-11°	1.13	
PSC50-PCLNL17090-12	●	L	50	32	25	17	90	67	-11°	0.70	
PSC50-PCLNR17090-12	●	R	50	32	25	17	90	67	-11°	0.70	
PSC50-PCLNL22110-12	●	L	50	40	32	22	110	88	-11°	0.93	
PSC50-PCLNR22110-12	●	R	50	40	32	22	110	88	-11°	0.93	
PSC50-PCLNL27140-12	●	L	50	50	40	27	140	119	-10°	1.47	
PSC50-PCLNR27140-12	●	R	50	50	40	27	140	119	-10°	1.47	
PSC50-PCLNL35100-12	●	L	50	63	50	35	100	81	-7°	1.48	
PSC50-PCLNR35100-12	●	R	50	63	50	35	100	81	-7°	1.48	
PSC63-PCLNL17100-12	●	L	63	32	25	17	100	74	-11°	1	
PSC63-PCLNR17100-12	●	R	63	32	25	17	100	74	-11°	1	
PSC63-PCLNL22110-12	●	L	63	40	32	22	110	84	-11°	1.26	
PSC63-PCLNR22110-12	●	R	63	40	32	22	110	84	-11°	1.26	
PSC50-PCLNL35150-16	●	L	50	63	50	35	150	131	-11°	2.25	CN○○1606○○
PSC50-PCLNR35150-16	●	R	50	63	50	35	150	131	-11°	2.25	
PSC63-PCLNL27140-16	●	L	63	50	40	27	140	115	-11°	1.78	
PSC63-PCLNR27140-16	●	R	63	50	40	27	140	115	-11°	1.78	
PSC63-PCLNL35175-16	●	L	63	63	50	35	175	152	-11°	2.85	
PSC63-PCLNR35175-16	●	R	63	63	50	35	175	152	-11°	2.85	

● : Inventory maintained.

PCLN 95°

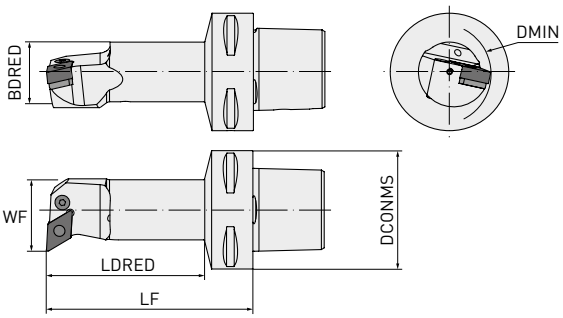
SPARE PARTS

Tool holder type					
PSC40-PCLNL13080-09	MP8005	MP1605	MP5002		
PSC40-PCLNR13080-09	MP8005	MP1605	MP5002		
PSC50-PCLNL13080-09	MP8005	MP1605	MP5002		
PSC50-PCLNR13080-09	MP8005	MP1605	MP5002		
PSC40-PCLNL17090-12	MP8212	MP1626	MP5025		
PSC40-PCLNR17090-12	MP8212	MP1626	MP5025		
PSC40-PCLNL22110-12	MP8312	MP1648	MP5003	MP3612	MP4112
PSC40-PCLNR22110-12	MP8312	MP1648	MP5003	MP3612	MP4112
PSC40-PCLNL27120-12	MP8012	MP1608	MP5003	MP3612	MP4112
PSC40-PCLNR27120-12	MP8012	MP1608	MP5003	MP3612	MP4112
PSC50-PCLNL17090-12	MP8212	MP1626	MP5025		
PSC50-PCLNR17090-12	MP8212	MP1626	MP5025		
PSC50-PCLNL22110-12	MP8312	MP1648	MP5003	MP3612	MP4112
PSC50-PCLNR22110-12	MP8312	MP1648	MP5003	MP3612	MP4112
PSC50-PCLNL27140-12	MP8012	MP1608	MP5003	MP3612	MP4112
PSC50-PCLNR27140-12	MP8012	MP1608	MP5003	MP3612	MP4112
PSC50-PCLNL35100-12	MP8012	MP1608	MP5003	MP3612	MP4112
PSC50-PCLNR35100-12	MP8012	MP1608	MP5003	MP3612	MP4112
PSC63-PCLNL17100-12	MP8212	MP1626	MP5025		
PSC63-PCLNR17100-12	MP8212	MP1626	MP5025		
PSC63-PCLNL22110-12	MP8312	MP1648	MP5003	MP3612	MP4112
PSC63-PCLNR22110-12	MP8312	MP1648	MP5003	MP3612	MP4112
PSC50-PCLNL35150-16	MP8016	MP1618	MP5003	MP3616	MP4115
PSC50-PCLNR35150-16	MP8016	MP1618	MP5003	MP3616	MP4115
PSC63-PCLNL27140-16	MP8016	MP1618	MP5003	MP3616	MP4115
PSC63-PCLNR27140-16	MP8016	MP1618	MP5003	MP3616	MP4115
PSC63-PCLNL35175-16	MP8016	MP1618	MP5003	MP3616	MP4115
PSC63-PCLNR35175-16	MP8016	MP1618	MP5003	MP3616	MP4115

PDUN 93°

BORING BAR FOR INTERNAL TURNING AND PROFILING WITH RHOMBIC NEGATIVE DOUBLE-SIDED INSERTS

GAMF: -6°



Order number	Stock	Hand	DCONMS	DMIN	BDRED	WF	LF	LDRED	GAMP	WT	Insert
PSC40-PDUNL17090-11	●	L	40	32	25	17	90	69	-11°	0.48	DN○○1104○○
PSC40-PDUNR17090-11	●	R	40	32	25	17	90	69	-11°	0.48	
PSC40-PDUNL22110-11	●	L	40	40	32	22	110	89	-10°	0.75	
PSC40-PDUNR22110-11	●	R	40	40	32	22	110	89	-10°	0.75	
PSC50-PDUNL17090-11	●	L	50	32	25	17	90	67	-11°	0.70	
PSC50-PDUNR17090-11	●	R	50	32	25	17	90	67	-11°	0.70	
PSC50-PDUNL22110-11	●	L	50	40	32	22	110	88	-10°	0.93	
PSC50-PDUNR22110-11	●	R	50	40	32	22	110	88	-10°	0.93	
PSC63-PDUNL17100-11	●	L	63	32	25	17	100	74	-11°	1	
PSC63-PDUNR17100-11	●	R	63	32	25	17	100	74	-11°	1	
PSC40-PDUNL27080-15	●	L	40	50	40	27	80	60	-11°	0.74	DN○○1506○○
PSC40-PDUNR27080-15	●	R	40	50	40	27	80	60	-11°	0.74	
PSC40-PDUNL27120-15	●	L	40	50	40	27	120	100	-11°	1.13	
PSC40-PDUNR27120-15	●	R	40	50	40	27	120	100	-11°	1.13	
PSC50-PDUNL27140-15	●	L	50	50	40	27	140	119	-11°	1.47	
PSC50-PDUNR27140-15	●	R	50	50	40	27	140	119	-11°	1.47	
PSC50-PDUNL35150-15	●	L	50	63	50	35	150	131	-10°	2.25	
PSC50-PDUNR35150-15	●	R	50	63	50	35	150	131	-10°	2.25	
PSC63-PDUNL22110-15	●	L	63	40	32	22	110	84	-12°	1.26	
PSC63-PDUNR22110-15	●	R	63	40	32	22	110	84	-12°	1.26	
PSC63-PDUNL27140-15	●	L	63	50	40	27	140	115	-11°	1.78	
PSC63-PDUNR27140-15	●	R	63	50	40	27	140	115	-11°	1.78	
PSC63-PDUNL35175-15	●	L	63	63	50	35	175	152	-10°	2.85	
PSC63-PDUNR35175-15	●	R	63	63	50	35	175	152	-10°	2.85	

● : Inventory maintained.

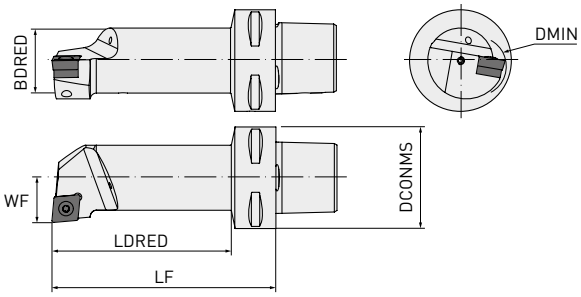
PDUN 93°

SPARE PARTS

Tool holder type					
PSC40-PDUNL17090-11	MP8009	MP1606	MP5025	MP3711	MP4109
PSC40-PDUNR17090-11	MP8009	MP1606	MP5025	MP3711	MP4109
PSC40-PDUNL22110-11	MP8009	MP1606	MP5025	MP3711	MP4109
PSC40-PDUNR22110-11	MP8009	MP1606	MP5025	MP3711	MP4109
PSC50-PDUNL17090-11	MP8009	MP1606	MP5025	MP3711	MP4109
PSC50-PDUNR17090-11	MP8009	MP1606	MP5025	MP3711	MP4109
PSC50-PDUNL22110-11	MP8009	MP1606	MP5025	MP3711	MP4109
PSC50-PDUNR22110-11	MP8009	MP1606	MP5025	MP3711	MP4109
PSC63-PDUNL17100-11	MP8009	MP1606	MP5025	MP3711	MP4109
PSC63-PDUNR17100-11	MP8009	MP1606	MP5025	MP3711	MP4109
PSC40-PDUNL27080-15	MP8415	MP1638	MP5003	MP3715	MP4112
PSC40-PDUNR27080-15	MP8415	MP1638	MP5003	MP3715	MP4112
PSC40-PDUNL27120-15	MP8415	MP1638	MP5003	MP3715	MP4112
PSC40-PDUNR27120-15	MP8415	MP1638	MP5003	MP3715	MP4112
PSC50-PDUNL27140-15	MP8415	MP1638	MP5003	MP3715	MP4112
PSC50-PDUNR27140-15	MP8415	MP1638	MP5003	MP3715	MP4112
PSC50-PDUNL35150-15	MP8415	MP1638	MP5003	MP3715	MP4112
PSC50-PDUNR35150-15	MP8415	MP1638	MP5003	MP3715	MP4112
PSC63-PDUNL22110-15	MP8415	MP1638	MP5003	MP3715	MP4112
PSC63-PDUNR22110-15	MP8415	MP1638	MP5003	MP3715	MP4112
PSC63-PDUNL27140-15	MP8415	MP1638	MP5003	MP3715	MP4112
PSC63-PDUNR27140-15	MP8415	MP1638	MP5003	MP3715	MP4112
PSC63-PDUNL35175-15	MP8415	MP1638	MP5003	MP3715	MP4112
PSC63-PDUNR35175-15	MP8415	MP1638	MP5003	MP3715	MP4112

SCLC 95°

MULTI-PURPOSE BORING BAR EQUIPPED WITH RHOMBIC POSITIVE INSERTS



GAMF: 0°

Order number	Stock	Hand	DCONMS	DMIN	BDRED	WF	LF	LDRED	GAMP	WT	Insert
PSC40-SCLCL11070-09	●	L	40	20	16	11	70	47	-12°	0.33	CC○○09T3○○
PSC40-SCLCR11070-09	●	R	40	20	16	11	70	47	-12°	0.33	
PSC40-SCLCL13080-09	●	L	40	25	20	13	80	58	-8°	0.40	
PSC40-SCLCR13080-09	●	R	40	25	20	13	80	58	-8°	0.40	
PSC40-SCLCL17090-09	●	L	40	32	25	17	90	69	-6°	0.48	
PSC40-SCLCR17090-09	●	R	40	32	25	17	90	69	-6°	0.48	
PSC50-SCLCL11070-09	●	L	50	20	16	11	70	46	-12°	0.50	
PSC50-SCLCR11070-09	●	R	50	20	16	11	70	46	-12°	0.50	
PSC50-SCLCL13080-09	●	L	50	25	20	13	80	56	-8°	0.57	
PSC50-SCLCR13080-09	●	R	50	25	20	13	80	56	-8°	0.57	
PSC50-SCLCL17090-09	●	L	50	32	25	17	90	67	-6°	0.70	
PSC50-SCLCR17090-09	●	R	50	32	25	17	90	67	-6°	0.70	
PSC50-SCLCL35100-09	●	L	50	63	49.7	35	100	81	-4°	1.48	
PSC50-SCLCR35100-09	●	R	50	63	49.7	35	100	81	-4°	1.48	
PSC40-SCLCL22110-12	●	L	40	40	32	22	110	89	-10°	0.75	CC○○1204○○
PSC40-SCLCR22110-12	●	R	40	40	32	22	110	89	-10°	0.75	
PSC50-SCLCL22110-12	●	L	50	40	32	22	110	88	-10°	0.93	
PSC50-SCLCR22110-12	●	R	50	40	32	22	110	88	-10°	0.93	
PSC50-SCLCL27140-12	●	L	50	50	40	27	140	119	-8°	1.47	
PSC50-SCLCR27140-12	●	R	50	50	40	27	140	119	-8°	1.47	
PSC50-SCLCL35100-12	●	L	50	63	49.7	35	100	80	-5°	1.48	
PSC50-SCLCR35100-12	●	R	50	63	49.7	35	100	80	-5°	1.48	

● : Inventory maintained.

SCLC 95°

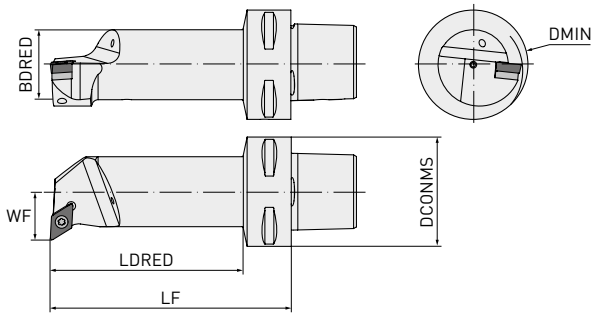
SPARE PARTS

Tool holder type				
PSC40-SCLCL11070-09	MP1440	MP5515		
PSC40-SCLCR11070-09	MP1440	MP5515		
PSC40-SCLCL13080-09	MP1440	MP5515		
PSC40-SCLCR13080-09	MP1440	MP5515		
PSC40-SCLCL17090-09	MP1240	MP5515		
PSC40-SCLCR17090-09	MP1240	MP5515		
PSC50-SCLCL11070-09	MP1440	MP5515		
PSC50-SCLCR11070-09	MP1440	MP5515		
PSC50-SCLCL13080-09	MP1440	MP5515		
PSC50-SCLCR13080-09	MP1440	MP5515		
PSC50-SCLCL17090-09	MP1240	MP5515		
PSC50-SCLCR17090-09	MP1240	MP5515		
PSC50-SCLCL35100-09	MP1240	MP5515		
PSC50-SCLCR35100-09	MP1240	MP5515		
PSC40-SCLCL22110-12	MP1540	MP5517	MP3614	MP1760
PSC40-SCLCR22110-12	MP1540	MP5517	MP3614	MP1760
PSC50-SCLCL22110-12	MP1540	MP5517	MP3614	MP1760
PSC50-SCLCL27140-12	MP1540	MP5517	MP3614	MP1760
PSC50-SCLCL35100-12	MP1540	MP5517	MP3614	MP1760
PSC50-SCLCR22110-12	MP1540	MP5517	MP3614	MP1760
PSC50-SCLCR27140-12	MP1540	MP5517	MP3614	MP1760
PSC50-SCLCR35100-12	MP1540	MP5517	MP3614	MP1760

SDUC 93°

MULTI-PURPOSE PROFILING BORING BAR EQUIPPED WITH RHOMBIC POSITIVE INSERTS

GAMF: 0°



Order number	Stock	Hand	DCONMS	DMIN	BDRED	WF	LF	LDRED	GAMP	WT	Insert
PSC40-SDUCL11070-07	●	L	40	20	16	11	70	47	-8°	0.33	DC○○0702○○
PSC40-SDUCR11070-07	●	R	40	20	16	11	70	47	-8°	0.33	
PSC50-SDUCL11070-07	●	L	50	20	16	11	70	46	-8°	0.50	
PSC50-SDUCR11070-07	●	R	50	20	16	11	70	46	-8°	0.50	
PSC40-SDUCL13080-11	●	L	40	25	20	13	80	58	-6°	0.40	DC○○11T3○○
PSC40-SDUCR13080-11	●	R	40	25	20	13	80	58	-6°	0.40	
PSC40-SDUCL17090-11	●	L	40	32	25	17	90	69	-6°	0.48	
PSC40-SDUCR17090-11	●	R	40	32	25	17	90	69	-6°	0.48	
PSC40-SDUCL22110-11	●	L	40	40	32	22	110	89	-6°	0.75	
PSC40-SDUCR22110-11	●	R	40	40	32	22	110	89	-6°	0.75	
PSC40-SDUCL27080-11	●	L	40	50	40	27	80	60	-6°	0.74	
PSC40-SDUCR27080-11	●	R	40	50	40	27	80	60	-6°	0.74	
PSC50-SDUCL13080-11	●	L	50	25	20	13	80	56	-6°	0.57	
PSC50-SDUCR13080-11	●	R	50	25	20	13	80	56	-6°	0.57	
PSC50-SDUCL17090-11	●	L	50	32	25	17	90	67	-6°	0.70	
PSC50-SDUCR17090-11	●	R	50	32	25	17	90	67	-6°	0.70	
PSC50-SDUCL22110-11	●	L	50	40	32	22	110	88	-6°	0.93	
PSC50-SDUCR22110-11	●	R	50	40	32	22	110	88	-6°	0.93	
PSC50-SDUCL35100-11	●	L	50	63	49.7	35	100	81	-4°	1.48	
PSC50-SDUCR35100-11	●	R	50	63	49.7	35	100	81	-4°	1.48	

● : Inventory maintained.

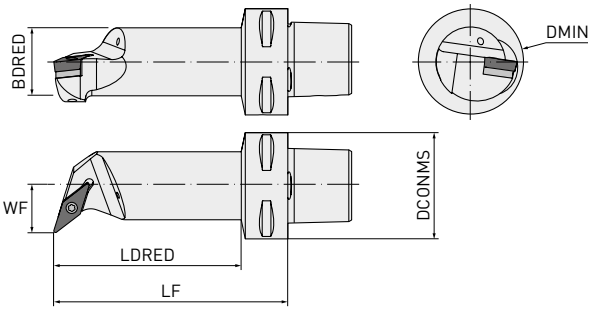
SDUC 93°

SPARE PARTS

Tool holder type				
PSC40-SDUCL11070-07	MP1225	MP5507		
PSC40-SDUCR11070-07	MP1225	MP5507		
PSC50-SDUCL11070-07	MP1225	MP5507		
PSC50-SDUCR11070-07	MP1225	MP5507		
PSC40-SDUCL13080-11	MP1240	MP5515		
PSC40-SDUCR13080-11	MP1240	MP5515		
PSC40-SDUCL17090-11	MP1240	MP5515		
PSC40-SDUCR17090-11	MP1240	MP5515		
PSC40-SDUCL22110-11	MP1335	MP5516	MP3714	MP1750
PSC40-SDUCR22110-11	MP1335	MP5516	MP3714	MP1750
PSC40-SDUCL27080-11	MP1335	MP5516	MP3714	MP1750
PSC40-SDUCR27080-11	MP1335	MP5516	MP3714	MP1750
PSC50-SDUCL13080-11	MP1240	MP5515		
PSC50-SDUCR13080-11	MP1240	MP5515		
PSC50-SDUCL17090-11	MP1240	MP5515		
PSC50-SDUCR17090-11	MP1240	MP5515		
PSC50-SDUCL22110-11	MP1335	MP5516	MP3714	MP1750
PSC50-SDUCR22110-11	MP1335	MP5516	MP3714	MP1750
PSC50-SDUCL35100-11	MP1335	MP5516	MP3714	MP1750
PSC50-SDUCR35100-11	MP1335	MP5516	MP3714	MP1750

SVQC 107° 30'

MULTI-PURPOSE PROFILING BORING BAR EQUIPPED WITH RHOMBIC POSITIVE INSERTS



GAMF: 0°
GAMP: -8°

Order number	Stock	Hand	DCONMS	DMIN	BDRED	WF	LF	LDRED	WT	Insert
PSC63-SVQCL22120-16	●	L	63	40	32	22	120	94	1.28	VC○○1604○○
PSC63-SVQCR22120-16	●	R	63	40	32	22	120	94	1.28	
PSC63-SVQCL27145-16	●	L	63	50	40	27	145	120	1.78	
PSC63-SVQCR27145-16	●	R	63	50	40	27	145	120	1.78	
PSC63-SVQCL35175-16	●	L	63	63	50	35	175	152	2.85	
PSC63-SVQCR35175-16	●	R	63	63	50	35	175	152	2.85	

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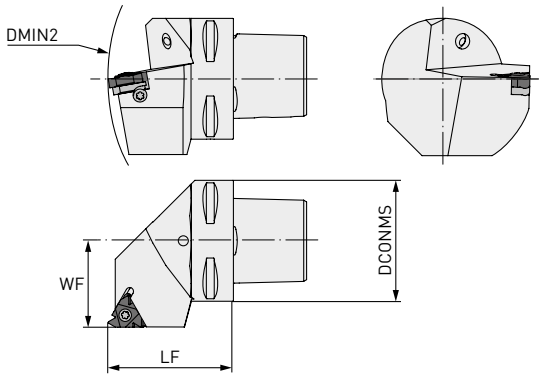
SPARE PARTS

Tool holder type				
PSC63-SVQCL22120-16	MP1335	MP5516	MP3718	MP1750
PSC63-SVQCL27145-16				
PSC63-SVQCL35175-16				
PSC63-SVQCR22120-16				
PSC63-SVQCR27145-16				
PSC63-SVQCR35175-16				

● : Inventory maintained.

EXTERNAL THREADING 90°

MULTI-PURPOSE THREADING TOOL HOLDER FOR NEGATIVE THREADING INSERTS



Order number	Stock	Hand	DCONMS	DMIN2	WF	LF	WT	Insert
PSC40-SEL27050-16	□	L	40	140	27	50	0.42	MMT16E○○
PSC40-SER27050-16	●	R	40	140	27	50	0.42	
PSC50-SEL35060-16	□	L	50	165	35	60	0.80	
PSC50-SER35060-16	●	R	50	165	35	60	0.80	
PSC63-SEL45065-16	□	L	63	190	45	65	1.10	
PSC63-SER45065-16	●	R	63	190	45	65	1.10	
PSC40-SEL27050-22	□	L	40	140	27	50	0.42	MMT22E○○
PSC40-SER27050-22	●	R	40	140	27	50	0.42	
PSC50-SEL35060-22	□	L	50	165	35	60	0.80	
PSC50-SER35060-22	●	R	50	165	35	60	0.80	
PSC63-SEL45065-22	□	L	63	190	45	65	1.10	
PSC63-SER45065-22	●	R	63	190	45	65	1.10	

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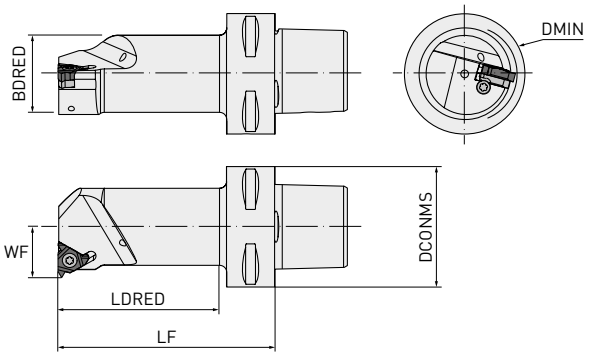
SPARE PARTS

Tool holder type				
PSC40-SEL27050-16	MPSA3	MP5510	MPYI3	MPSY3
PSC40-SER27050-16	MPSA3	MP5510	MPYE3	MPSY3
PSC50-SEL35060-16	MPSA3	MP5510	MPYI3	MPSY3
PSC50-SER35060-16	MPSA3	MP5510	MPYE3	MPSY3
PSC63-SEL45065-16	MPSA3	MP5510	MPYI3	MPSY3
PSC63-SER45065-16	MPSA3	MP5510	MPYE3	MPSY3
PSC40-SEL27050-22	MPSA4	MP5520	MPYI4	MPSY4
PSC40-SER27050-22	MPSA4	MP5520	MPYE4	MPSY4
PSC50-SEL35060-22	MPSA4	MP5520	MPYI4	MPSY4
PSC50-SER35060-22	MPSA4	MP5520	MPYE4	MPSY4
PSC63-SEL45065-22	MPSA4	MP5520	MPYI4	MPSY4
PSC63-SER45065-22	MPSA4	MP5520	MPYE4	MPSY4

● : Inventory maintained. □ : Produced to order only.

INTERNAL THREADING 90°

MULTI-PURPOSE THREADING TOOL HOLDER FOR NEGATIVE THREADING INSERTS



Order number	Stock	Hand	DCONMS	DMIN	WF	LF	BDRED	LDRED	WT	Insert
PSC40-SIL12060-16	□	L	40	20	12	60	15.5	37	0.30	
PSC40-SIR12060-16	●	R	40	20	12	60	15.5	37	0.30	
PSC40-SIL14060-16	□	L	40	25	14	60	18.5	38	0.34	
PSC40-SIR14060-16	●	R	40	25	14	60	18.5	38	0.34	
PSC40-SIL17070-16	□	L	40	32	17	70	24.5	48	0.41	
PSC40-SIR17070-16	●	R	40	32	17	70	24.5	48	0.41	
PSC40-SIL22090-16	□	L	40	40	22	90	32	69	0.65	
PSC40-SIR22090-16	●	R	40	40	22	90	35	69	0.65	
PSC40-SIL27080-16	□	L	40	50	27	80	39.5	60	0.76	
PSC40-SIR27080-16	●	R	40	50	27	80	39.5	60	0.76	
PSC50-SIL12060-16	□	L	50	20	12	60	15.5	35	0.49	
PSC50-SIR12060-16	●	R	50	20	12	60	15.5	35	0.49	
PSC50-SIL14060-16	□	L	50	25	14	60	18.5	36	0.51	
PSC50-SIR14060-16	●	R	50	25	14	60	18.5	36	0.51	
PSC50-SIL17070-16	□	L	50	32	17	70	24.5	47	0.59	MMT16I○○
PSC50-SIR17070-16	●	R	50	32	17	70	24.5	47	0.59	
PSC50-SIL22090-16	□	L	50	40	22	90	24.5	68	0.82	
PSC50-SIR22090-16	●	R	50	40	22	90	24.5	68	0.82	
PSC50-SIL27105-16	□	L	50	50	27	105	40	84	1.20	
PSC50-SIR27105-16	●	R	50	50	27	105	40	84	1.20	
PSC63-SIL14070-16	□	L	63	25	14	70	18.5	42	0.90	
PSC63-SIR14070-16	●	R	63	25	14	70	18.5	42	0.90	
PSC63-SIL17075-16	□	L	63	32	17	75	24.5	48	0.97	
PSC63-SIR17075-16	●	R	63	32	17	75	24.5	48	0.97	
PSC63-SIL22090-16	□	L	63	40	22	90	32	64	1.14	
PSC63-SIR22090-16	●	R	63	40	22	90	32	64	1.14	
PSC63-SIL27105-16	□	L	63	50	27	105	40	80	1.20	
PSC63-SIR27105-16	●	R	63	50	27	105	40	80	1.20	
PSC40-SIL15065-22	□	L	40	25	15	65	18.5	42	0.35	
PSC40-SIR15065-22	●	R	40	25	15	65	18.5	42	0.35	MMT22I○○
PSC40-SIL19070-22	□	L	40	32	19	70	25	48	0.42	
PSC40-SIR19070-22	●	R	40	32	19	70	25	48	0.42	

● : Inventory maintained. □ : Produced to order only.

INTERNAL THREADING 90°

Order number	Stock	Hand	DCONMS	DMIN	WF	LF	BDRED	LDRED	WT	Insert
PSC40-SIL22090-22	□	L	40	40	22	90	31.5	69	0.65	
PSC40-SIR22090-22	●	R	40	40	22	90	31.5	69	0.65	
PSC40-SIL27080-22	□	L	40	50	27	80	39.5	60	0.76	
PSC40-SIR27080-22	●	R	40	50	27	80	39.5	60	0.76	
PSC50-SIL15065-22	□	L	50	25	15	65	18.5	41	0.35	
PSC50-SIR15065-22	●	R	50	25	15	65	18.5	41	0.35	
PSC50-SIL19070-22	□	L	50	32	19	70	25	48	0.60	
PSC50-SIR19070-22	●	R	50	32	19	70	25	48	0.60	
PSC50-SIL22090-22	□	L	50	40	22	90	31.5	68	0.82	MMT22I○○
PSC50-SIR22090-22	●	R	50	40	22	90	31.5	68	0.82	
PSC50-SIL27105-22	□	L	50	50	27	105	40	84	1.20	
PSC50-SIR27105-22	●	R	50	50	27	105	40	84	1.20	
PSC63-SIL19075-22	□	L	63	32	19	75	25	48	0.97	
PSC63-SIR19075-22	●	R	63	32	19	75	25	48	0.97	
PSC63-SIL22090-22	□	L	63	40	22	90	31.5	64	1.14	
PSC63-SIR22090-22	●	R	63	40	22	90	31.5	64	1.14	
PSC63-SIL27105-22	□	L	63	50	27	105	40	80	1.50	
PSC63-SIR27105-22	●	R	63	50	27	105	40	80	1.50	

SPARE PARTS

Tool holder type			 	
PSC40-SIL12060-16	MPSN3	MP5510	—	
PSC40-SIR12060-16	MPSN3	MP5510	—	
PSC40-SIL14060-16	MPSA3T	MP5510	MPYE3	MPSY3
PSC40-SIR14060-16	MPSA3T	MP5510	MPYI3	MPSY3
PSC40-SIL17070-16	MPSA3	MP5510	MPYE3	MPSY3
PSC40-SIR17070-16	MPSA3	MP5510	MPYI3	MPSY3
PSC40-SIL22090-16	MPSA3	MP5510	MPYE3	MPSY3
PSC40-SIR22090-16	MPSA3	MP5510	MPYI3	MPSY3
PSC40-SIL27080-16	MPSA3	MP5510	MPYE3	MPSY3
PSC40-SIR27080-16	MPSA3	MP5510	MPYI3	MPSY3
PSC50-SIL12060-16	MPSN3	MP5510	—	
PSC50-SIR12060-16	MPSN3	MP5510	—	
PSC50-SIL14060-16	MPSA3T	MP5510	MPYE3	MPSY3
PSC50-SIR14060-16	MPSA3T	MP5510	MPYI3	MPSY3
PSC50-SIL17070-16	MPSA3	MP5510	MPYE3	MPSY3
PSC50-SIR17070-16	MPSA3	MP5510	MPYI3	MPSY3
PSC50-SIL22090-16	MPSA3	MP5510	MPYE3	MPSY3
PSC50-SIR22090-16	MPSA3	MP5510	MPYI3	MPSY3
PSC50-SIL27105-16	MPSA3	MP5510	MPYE3	MPSY3
PSC50-SIR27105-16	MPSA3	MP5510	MPYI3	MPSY3
PSC63-SIL14070-16	MPSA3T	MP5510	MPYE3	MPSY3
PSC63-SIR14070-16	MPSA3T	MP5510	MPYI3	MPSY3

● : Inventory maintained. □ : Produced to order only.

INTERNAL THREADING 90°

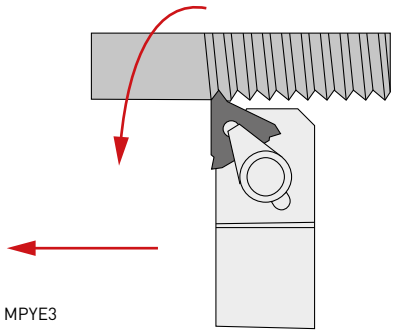
SPARE PARTS

Tool holder type			 	
PSC63-SIL17075-16	MPSA3	MP5510	MPYE3	MPSY3
PSC63-SIR17075-16	MPSA3	MP5510	MPYI3	MPSY3
PSC63-SIL22090-16	MPSA3	MP5510	MPYE3	MPSY3
PSC63-SIR22090-16	MPSA3	MP5510	MPYI3	MPSY3
PSC63-SIL27105-16	MPSA3	MP5510	MPYE3	MPSY3
PSC63-SIR27105-16	MPSA3	MP5510	MPYI3	MPSY3
PSC40-SIL15065-22	MPSN4	MP5520	—	
PSC40-SIR15065-22	MPSN4	MP5520	—	
PSC40-SIL19070-22	MPSA4	MP5520	MPYE4	MPSY4
PSC40-SIR19070-22	MPSA4	MP5520	MPYI4	MPSY4
PSC40-SIL22090-22	MPSA4	MP5520	MPYE4	MPSY4
PSC40-SIR22090-22	MPSA4	MP5520	MPYI4	MPSY4
PSC40-SIL27080-22	MPSA4	MP5520	MPYE4	MPSY4
PSC40-SIR27080-22	MPSA4	MP5520	MPYI4	MPSY4
PSC50-SIL15065-22	MPSN4	MP5520	—	
PSC50-SIR15065-22	MPSN4	MP5520	—	
PSC50-SIL19070-22	MPSA4	MP5520	MPYE4	MPSY4
PSC50-SIR19070-22	MPSA4	MP5520	MPYI4	MPSY4
PSC50-SIL22090-22	MPSA4	MP5520	MPYE4	MPSY4
PSC50-SIR22090-22	MPSA4	MP5520	MPYI4	MPSY4
PSC50-SIL27105-22	MPSA4	MP5520	MPYE4	MPSY4
PSC50-SIR27105-22	MPSA4	MP5520	MPYI4	MPSY4
PSC63-SIL19075-22	MPSA4	MP5520	MPYE4	MPSY4
PSC63-SIR19075-22	MPSA4	MP5520	MPYI4	MPSY4
PSC63-SIL22090-22	MPSA4	MP5520	MPYE4	MPSY4
PSC63-SIR22090-22	MPSA4	MP5520	MPYI4	MPSY4
PSC63-SIL27105-22	MPSA4	MP5520	MPYE4	MPSY4
PSC63-SIR27105-22	MPSA4	MP5520	MPYI4	MPSY4

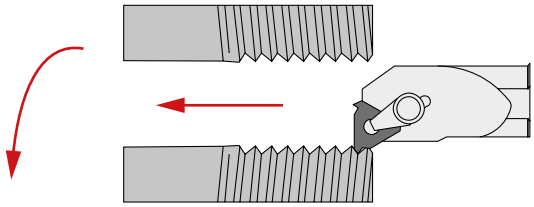
THREADING

HELIX CHART

RIGHT HAND THREAD / TOOL

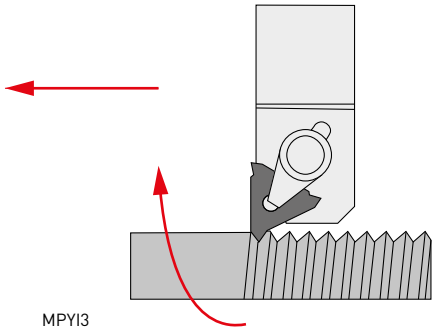


MPYE3

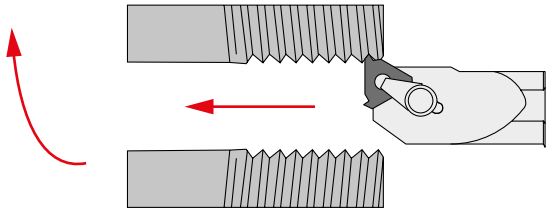


MPYE3

LEFT HAND THREAD / TOOL



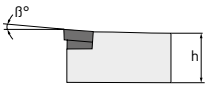
MPYI3

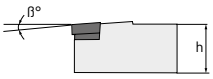


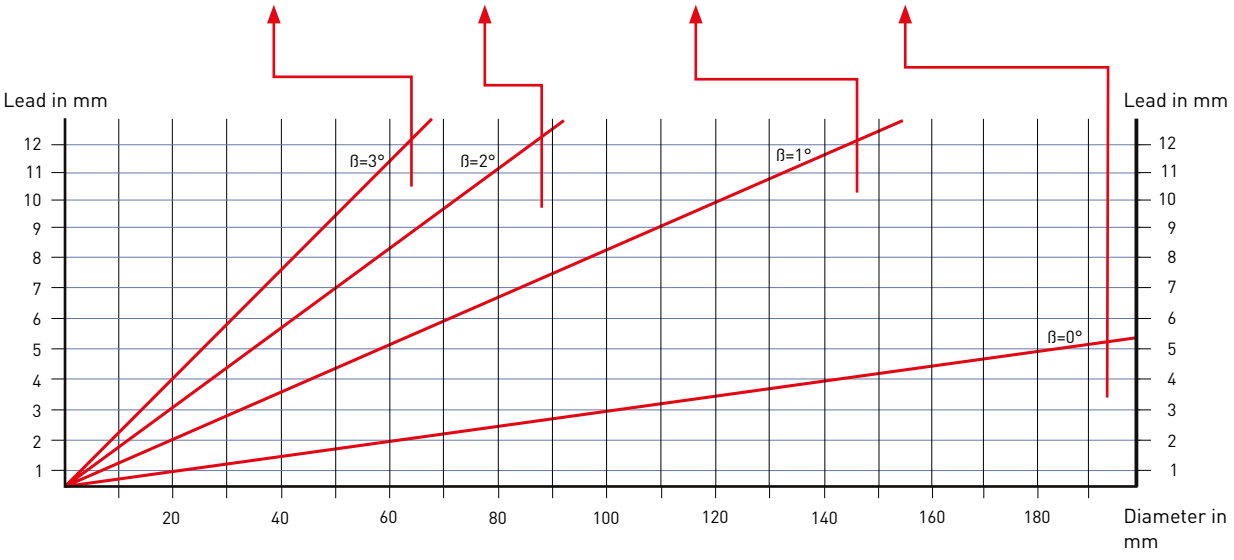
MPYI3

SHIM TO GIVE CORRECT HELIX

Insert size	+3º	+2º	+1º	0º
MMT16E	MP3424P3	MP3424P2	MP3424P1	MPYE3
MMT16I	MP3425P3	MP3425P2	MP3425P1	MPYI3
Insert size	**-3º**	**-2º**	**-1º**	**0º**
MMT16E	MP3424M3	MP3424M2	MP3424M1	MPYE3
MMT16I	MP3425M3	MP3425M2	MP3425M1	MPYI3

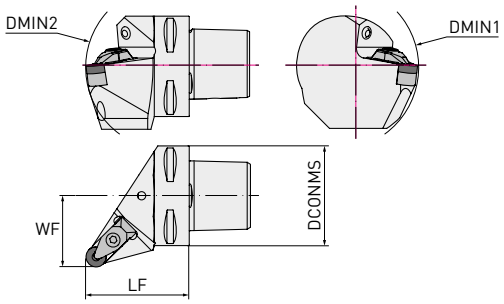






DRSN

PROFILING MULTI-PURPOSE TURNING TOOL HOLDER EQUIPPED WITH ROUND NEGATIVE DOUBLE-SIDED CARBIDE INSERTS



GAMF: -6°
GAMP: -6°

Order number	Stock	Hand	DCONMS	DMIN1	DMIN2	LF	WF	WT	Insert
PSC40-DRSNR27050-12	●	L	40	110	140	50	27	0.42	RNMG1204○○
PSC40-DRSNL27050-12	●	R	40	110	140	50	27	0.42	
PSC50-DRSNR35060-12	●	L	50	110	165	60	35	0.80	
PSC50-DRSNL35060-12	●	R	50	110	165	60	35	0.80	
PSC63-DRSNR45065-12	●	L	63	110	190	65	45	1.10	
PSC63-DRSNL45065-12	●	R	63	110	190	65	45	1.10	

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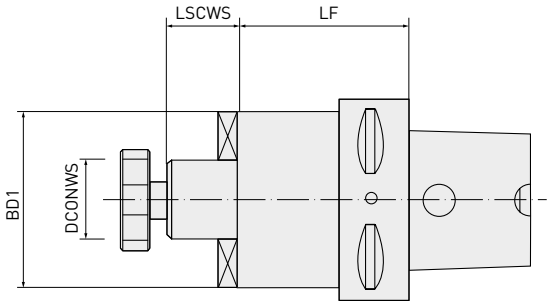
SPARE PARTS

Tool holder type						
PSC40-DRSNR27050-12	MPIRSN42	MP1766	MP1696	MP2712	MP4295	MP5004
PSC40-DRSNL27050-12	MPIRSN42					
PSC50-DRSNR35060-12	MPIRSN42					
PSC50-DRSNL35060-12	MPIRSN42					
PSC63-DRSNR45065-12	MPIRSN42					
PSC63-DRSNL45065-12	MPIRSN42					

● : Inventory maintained.

MA TYPE ADAPTOR

SHELL MILL ADAPTOR
FOR CUTTERS WITH DRIVE SLOT – DIN 138



Order number	Stock	PSC	DCONWS	LF	LSCWS	BD1
PSC63-MA-16063	●	63	16	63	17	37
PSC63-MA-22100	●	63	22	100	19	47
PSC63-MA-27100	●	63	27	100	21	58
PSC63-MA-32100	●	63	32	100	24	63

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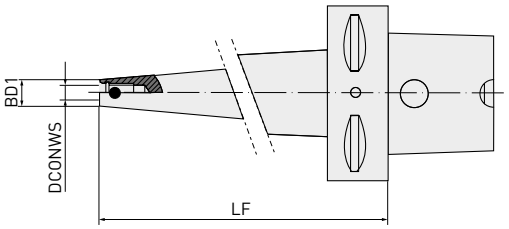
SPARE PARTS

Tool holder type			
PSC63-MA-16063	MP10008	MP86016	MP11103
PSC63-MA-22100	MP10010	MP86022	MP11004
PSC63-MA-27100	MP10012	MP86027	MP11005
PSC63-MA-32100	MP10016	MP86032	MP11005

● : Inventory maintained.

MS TYPE SCREWED SHANK

ADAPTOR FOR SCREW IN TYPE MILLING CUTTERS



Order number	Stock	PSC	LF	DCONWS	BD1
PSC63-MS-10090	●	63	90	M10	18
PSC63-MS-12100	●	63	100	M12	21
PSC63-MS-16100	●	63	100	M16	29

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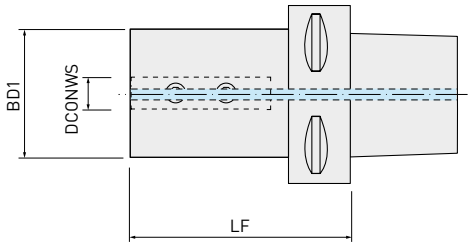
● : Inventory maintained.

B-TYPE BORING BAR HOLDER

BORING BAR HOLDERS
PSC ISO 26623-1



Order number	Stock	PSC	DCONWS	LF	BD1
PSC40-B-08050	●	50	08	50	44
PSC40-B-10050	●	40	10	50	44
PSC40-B-12050	●	40	12	50	44
PSC40-B-16050	●	40	16	50	44
PSC40-B-20050	●	40	20	50	44
PSC40-B-25060	●	40	25	60	50
PSC50-B-08052	●	50	08	52	44
PSC50-B-10052	●	50	10	52	44
PSC50-B-12052	●	50	12	52	44
PSC50-B-16052	●	50	16	52	44
PSC50-B-20052	●	50	20	52	50
PSC50-B-25060	●	50	25	60	55
PSC63-B-08060	●	63	08	60	44
PSC63-B-10060	●	63	10	60	44
PSC63-B-12060	●	63	12	60	44
PSC63-B-16060	●	63	16	60	44
PSC63-B-20060	●	63	20	60	50
PSC63-B-25072	●	63	25	72	55
PSC63-B-32075	●	63	32	75	55
PSC63-B-40085	●	63	40	85	65
PSC80-B-16085	□	80	16	85	44
PSC80-B-20085	□	80	20	85	50
PSC80-B-25085	□	80	25	85	55
PSC80-B-32085	□	80	32	85	72
PSC80-B-40095	□	80	40	95	65
PSC80-B-50100	□	80	50	100	75

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● : Inventory maintained. □ : Produced to order only.

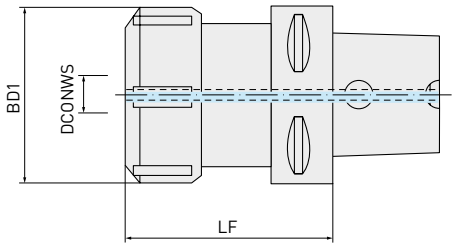
B-TYPE BORING BAR HOLDER

SPARE PARTS

Tool holder type	
PSC40-B-08050	MP14206
PSC40-B-10050	MP14208
PSC40-B-12050	MP14208
PSC40-B-16050	MP14210
PSC40-B-20050	MP14210
PSC40-B-25060	MP14210
PSC50-B-08052	MP14206
PSC50-B-10052	MP14208
PSC50-B-12052	MP14208
PSC50-B-16052	MP14210
PSC50-B-20052	MP14210
PSC50-B-25060	MP14210
PSC63-B-08060	MP14206
PSC63-B-10060	MP14208
PSC63-B-12060	MP14208
PSC63-B-16060	MP14210
PSC63-B-20060	MP14210
PSC63-B-25072	MP14210
PSC63-B-32075	MP14210
PSC63-B-40085	MP14210
PSC80-B-16085	MP14210
PSC80-B-20085	MP14210
PSC80-B-25085	MP14210
PSC80-B-32085	MP17110
PSC80-B-40095	MP14210
PSC80-B-50100	MP14210

C-TYPE COLLET CHUCKS

COLLET CHUCKS FOR DIN 6499 (ERC) COLLETS FOR TOOLS WITH CYLINDRICAL SHANK DIN 1835-A



Order number	Stock	PSC	LF	DCONWS	BD1
PSC40-C-16060	□	40	60	0.5 – 10	28
PSC40-C-20060	□	40	60	1.0 – 13	34
PSC40-C-25060	□	40	60	1.0 – 16	42
PSC40-C-32060	□	40	60	2.0 – 20	50
PSC50-C-16060	□	50	60	0.5 – 10	28
PSC50-C-16100	□	50	100	0.5 – 10	28
PSC50-C-20060	□	50	60	1.0 – 13	34
PSC50-C-20100	□	50	100	1.0 – 13	34
PSC50-C-25060	□	50	60	1.0 – 16	42
PSC50-C-25100	□	50	100	1.0 – 16	42
PSC50-C-32060	□	50	60	2.0 – 20	50
PSC50-C-32100	□	50	100	2.0 – 20	50
PSC50-C-40060	□	50	65	3.0 – 30	63
PSC50-C-40100	□	50	100	3.0 – 30	63
PSC63-C-16060	□	63	60	0.5 – 10	28
PSC63-C-16100	□	63	100	0.5 – 10	28
PSC63-C-20060	□	63	60	1.0 – 13	34
PSC63-C-20100	□	63	100	1.0 – 13	34
PSC63-C-25060	□	63	60	1.0 – 16	42
PSC63-C-25100	□	63	100	1.0 – 16	42
PSC63-C-32060	□	63	60	2.0 – 20	50
PSC63-C-32100	□	63	100	2.0 – 20	50
PSC63-C-40070	□	63	70	3.0 – 30	63
PSC63-C-40120	□	63	120	3.0 – 30	63
PSC80-C-32070	□	80	70	2.0 – 20	50
PSC80-C-32160	□	80	160	2.0 – 20	50
PSC80-C-40070	□	80	70	3.0 – 30	63
PSC80-C-40160	□	80	160	3.0 – 30	63

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● : Inventory maintained. □ : Produced to order only.

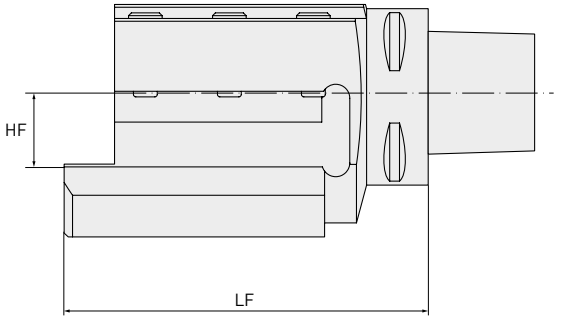
C-TYPE COLLET CHUCKS

SPARE PARTS

Tool holder type			
PSC40-C-16060	MPERC16○○	MP45316	MP50216
PSC40-C-20060	MPERC20○○	MP45320	MP50220
PSC40-C-25060	MPERC25○○	MP45325	MP50225
PSC40-C-32060	MPERC32○○	MP45332	MP50232
PSC50-C-16060	MPERC16○○	MP45316	MP50216
PSC50-C-16100	MPERC16○○	MP45316	MP50216
PSC50-C-20060	MPERC20○○	MP45320	MP50220
PSC50-C-20100	MPERC20○○	MP45320	MP50220
PSC50-C-25060	MPERC25○○	MP45325	MP50225
PSC50-C-25100	MPERC25○○	MP45325	MP50225
PSC50-C-32060	MPERC32○○	MP45332	MP50232
PSC50-C-32100	MPERC32○○	MP45332	MP50232
PSC50-C-40060	MPERC40○○	MP45340	MP50240
PSC50-C-40100	MPERC40○○	MP45340	MP50240
PSC63-C-16060	MPERC16○○	MP45316	MP50216
PSC63-C-16100	MPERC16○○	MP45316	MP50216
PSC63-C-20060	MPERC20○○	MP45320	MP50220
PSC63-C-20100	MPERC20○○	MP45320	MP50220
PSC63-C-25060	MPERC25○○	MP45325	MP50225
PSC63-C-25100	MPERC25○○	MP45325	MP50225
PSC63-C-32060	MPERC32○○	MP45332	MP50232
PSC63-C-32100	MPERC32○○	MP45332	MP50232
PSC63-C-40070	MPERC40○○	MP45340	MP50240
PSC63-C-40120	MPERC40○○	MP45340	MP50240
PSC80-C-32070	MPERC32○○	MP45332	MP50232
PSC80-C-32160	MPERC32○○	MP45332	MP50232
PSC80-C-40070	MPERC40○○	MP45340	MP50240
PSC80-C-40160	MPERC40○○	MP45340	MP50240

TA-TYPE ADAPTOR

ADAPTOR WITH AXIAL MOUNTING
ADAPTOR FOR SQUARE TURNING TOOL HOLDER
LEFT/RIGHT HAND



Order number	Stock	PSC	HF	LF
PSC50-TA-20098L	●	50	20	98
PSC50-TA-20098R	●	50	20	98
PSC63-TA-20100L	●	63	20	100
PSC63-TA-20100R	●	63	20	100
PSC63-TA-25130L	●	63	25	130
PSC63-TA-25130R	●	63	25	130
PSC63-TA-32134L	●	63	32	134
PSC63-TA-32134R	●	63	32	134
PSC80-TA-32140L	□	80	32	140
PSC80-TA-32140R	□	80	32	140

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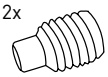
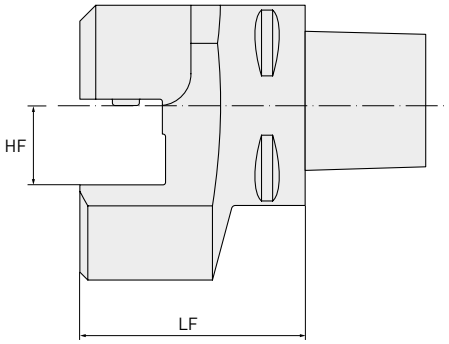
SPARE PARTS

Tool holder type	2x 	
PSC50-TA-20098L	MP17010	MP29716
PSC50-TA-20098R	MP17010	
PSC63-TA-20100L	MP17110	
PSC63-TA-20100R	MP17110	
PSC63-TA-25130L	MP17012	
PSC63-TA-25130R	MP17012	
PSC63-TA-32134L	MP17012	
PSC63-TA-32134R	MP17012	
PSC80-TA-32140L	MP17012	
PSC80-TA-32140R	MP17012	

● : Inventory maintained. □ : Produced to order only.

TR-TYPE ADAPTOR

RADIAL MOUNTING - MULTI-PURPOSE ADAPTOR FOR SQUARE TOOL HOLDERS



Order number	Stock	PSC	HF	LF
PSC50-TR-20058	●	50	20	58
PSC63-TR-25071	●	63	25	71
PSC63-TR-32071	●	63	32	71
PSC80-TR-32085	□	80	32	85

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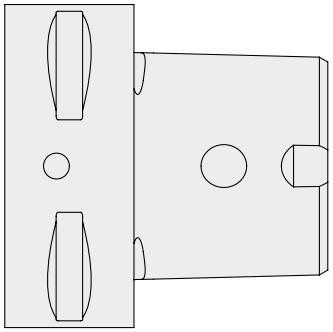
SPARE PARTS

Tool holder type			
PSC50-TR-20058	MP17112	MP29716	MP29726
PSC63-TR-25071	MP17012		
PSC63-TR-32071	MP17012		
PSC80-TR-32085	MP17012		

● : Inventory maintained. □ : Produced to order only.

AC-TYPE CAPS

AUTOMATIC CAPS



Order number	Stock	Automatic cap
PSC40-AC	●	40
PSC50-AC	●	50
PSC63-AC	●	63
PSC80-AC	●	80

1/1

● : Inventory maintained.

NEW

415SD

FIRST CHOICE FOR HIGH-FEED MACHINING OF TITANIUM ALLOYS

Mplus...

415SD

FOR HIGH-FEED EFFICIENT MACHINING

HIGH-FEED MILLING CUTTER CONCEPT FOR STABILITY AND HIGH PERFORMANCE

- Unevenly spaced cutting edges reduce vibrations, especially in long overhang applications.
- Fine and extra fine pitch types enable a highly efficient cutting performance.
- Carefully selected steel for the tool body is capable of safely absorbing machining forces. In addition, the nickel coating increases wear and corrosion protection.
- The insert location in the holder combined with the ideal geometry and a precisely positioned coolant outlet achieves maximum stability and machining performance.

CUTTING PERFORMANCE

The approach angle of 15° achieves an APMX of 2 mm, which enables a high removal rate but with low radial forces.

TARGETED APPLICATIONS

The use of different diameters and the precise positioning of the coolant nozzles enables perfect chip removal as well as reducing and dissipating the high temperatures that occur at the cutting edge.

SAFE, PRECISE AND RELIABLE

Exact positioning, secure insert clamping with large contact surfaces offers the possibility of high-performance and efficient high-feed machining of stainless steels and heat resistant materials.

415SD

INSERTS FOR HIGH-FEED EFFICIENT MACHINING

THE PVD-COATED, HIGH-PERFORMANCE GRADE MP9130 FOCUSES ON TITANIUM MACHINING

- High-feed face milling including radial, plunge and ramping operations.
- Ideal for machining components that require a long overhang.
- Highly suitable for low power machines and low rigidity component clamping.

L-BREAKER

Ideal for applications that require low cutting resistance.

M-BREAKER

First recommendation - ideal combination of cutting edge stability and low cutting resistance.

R-BREAKER

High cutting edge stability, for heavy interrupted machining or difficult cutting conditions.

Highest productivity even when applications require low cutting resistance.

- Low power consumption.
- Designed to achieve low radial cutting forces.
- Process reliability and long tool life, especially when machining difficult-to-cut materials.
- Stable and robust 4-edge insert for efficient, high-feed milling.

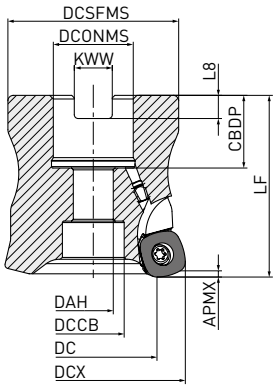
415SD

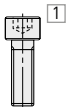
HIGH-FEED CUTTER

P K S

415SD
GAMP: 9°
GAMF: 5° – 6°

1



DCX	Set bolt		Geometry
Ø 50, Ø 52	HSC10035	1	
Ø 63, Ø 66	HSC12035		

Right hand tool holder only.

ARBOR TYPE

Order number	Stock	APMX	DC	DCONMS	DCX	LF	RMPX	WT	ZEFP		Type	
415SD-050A04AR-E	●	2	33.4	22	50	50	3°	0.4	4	●	1	SDMT12
415SD-050A05AR-E	●	2	33.4	22	50	50	3°	0.4	5	●	1	
415SD-052A04AR-E	●	2	35.4	22	52	50	3°	0.4	4	●	1	
415SD-052A06AR-E	●	2	35.4	22	52	50	3°	0.4	6	●	1	
415SD-063X05AR-E	●	2	46.5	27	63	50	2°	0.7	5	●	1	
415SD-063X07AR-E	●	2	46.5	27	63	50	2°	0.7	7	●	1	
415SD-066X05AR-E	●	2	49.4	27	66	50	1.9°	0.7	5	●	1	
415SD-066X07AR-E	●	2	49.4	27	66	50	1.9°	0.7	7	●	1	

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1. Please refer to page 92, for maximum depth of cut (APMX).

92

● : Inventory maintained.

415SD

HIGH-FEED CUTTER

MOUNTING DIMENSIONS

Order number	CBDP	DAH	DCCB	DCONMS	DCSFMS	DCX	KWW	L8	Type
415SD-050A04AR-E	20	11	17	22	47	50	10.4	6.3	1
415SD-050A05AR-E	20	11	17	22	47	50	10.4	6.3	1
415SD-052A04AR-E	20	11	17	22	47	52	10.4	6.3	1
415SD-052A06AR-E	20	11	17	22	47	52	10.4	6.3	1
415SD-063X05AR-E	22	13	19	27	60	63	12.4	7.0	1
415SD-063X07AR-E	22	13	19	27	60	63	12.4	7.0	1
415SD-066X05AR-E	22	13	19	27	60	66	12.4	7.0	1
415SD-066X07AR-E	22	13	19	27	60	66	12.4	7.0	1

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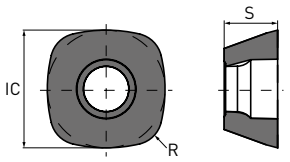
INSERTS

Order number	Class	MP9130	MV1020	MV1030	IC	S	RE	Shape
SDMT125530ZEN-L	L	●	●	●	12.25	5.56	3.0	
SDMT125530ZEN-M	M	●	●	●	12.25	5.56	3.0	
SDMT125530ZSN-R	R	●	●	●	12.25	5.56	3.0	



1/1

● : Inventory maintained.

415SD

HIGH-FEED CUTTER

SPARE PARTS

Tool holder					
	Clamp screw	**Flag wrench**	**Coolant nozzle**	**Standard L wrench**	**Anti-seize lubricant**
415SD	TPS43	TIP15W-E	HSD04004H12	HKY20R	MK1KS

1. Clamp torque (N • m): TPS43 = 3.5

COOLANT NOZZLES ARE AVAILABLE WITH VARYING DIAMETERS FOR ADJUSTING COOLANT PRESSURE

			← Standard →	
	≤ 1 Mpa (≤ 20 l/min.)	**≥ 3 Mpa (≥ 25 l/min.)**	**≥ 5 Mpa (≥ 30 l/min.)**	**≥ 7 Mpa (≥ 50 l/min.)**
Nozzle Dia.	Ø 0.6 mm	Ø 0.8 mm	Ø 1.2 mm	Ø 1.6 mm
Order number	HSD04004H06	HSD04004H08	HSD04004H12	HSD04004H16

415SD

RECOMMENDED CUTTING CONDITIONS

CORRECTION FACTOR BY OVERHANG LENGTH

	DCX	Overhang length	Adjustment value		
			Vc	ap	fz
Arbor type	50 – 66	<2.5xDCX	100%	100%	100%
		3.0xDCX	85%	100%	90%
		4.0xDCX	80%	80%	80%
		5.0xDCX	75%	75%	60%
		6.0xDCX	70%	70%	40%

CUTTING SPEED / WET CUTTING

	Material	Properties	Cutting conditions	Grade	APMX	Vc		
						ae ≤ 0.5 DC	ae ≤ 0.75 DC	ae = DC
S	Titanium alloy	—	● ◐ ✲	MP9130	≤ 1	55 (40 – 70)	50 (35 – 65)	45 (30 – 60)
				MP9130	≤ 2	55 (40 – 70)	50 (35 – 65)	45 (30 – 60)

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CUTTING SPEED / DRY CUTTING

	Material	Properties	Cutting conditions	Grade	APMX	Vc		
						ae ≤ 0.5 DC	ae ≤ 0.75 DC	ae = DC
P	Mild steel	≤ 180 HB	● ◐ ✲	MV1020	≤ 2	220 (170 – 270)	220 (170 – 270)	220 (170 – 270)
				MV1030	≤ 2	140 (80 – 200)	140 (80 – 200)	140 (80 – 200)
	Carbon steel, Alloy steel	180 – 280 HB	● ◐ ✲	MV1020	≤ 2	200 (150 – 250)	200 (150 – 250)	200 (150 – 250)
				MV1030	≤ 2	120 (60 – 180)	120 (60 – 180)	120 (60 – 180)
		280 – 350 HB		MV1020	≤ 2	150 (100 – 200)	150 (100 – 200)	150 (100 – 200)
				MV1030	≤ 2	90 (30 – 150)	90 (30 – 150)	90 (30 – 150)
K	Ductile cast iron	Tensile strength ≤ 450 MPa	● ◐ ✲	MV1020	≤ 2	200 (150 – 250)	200 (150 – 250)	200 (150 – 250)
				MV1030	≤ 2	140 (80 – 200)	140 (80 – 200)	140 (80 – 200)
		Tensile strength ≤ 800 MPa		MV1020	≤ 2	180 (130 – 230)	180 (130 – 230)	180 (130 – 230)
				MV1030	≤ 2	140 (80 – 200)	140 (80 – 200)	140 (80 – 200)

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Cutting conditions: ●: Stable cutting ◐: General cutting ✲: Unstable cutting

415SD

RECOMMENDED CUTTING CONDITIONS

DEPTH OF CUT / FEED PER TOOTH

Material		Properties	Cutting conditions	Coolant	Grade	ae ≤ 0.5 DC			ae ≤ 0.75 DC			ae = DC		
							ap	fz		ap	fz		ap	fz
P	Mild steel	≤ 180 HB	●		MV1020	L	≤ 1	0.9 (0.4 – 1.2)	L	≤ 1	0.8 (0.4 – 1.1)	L	≤ 1	0.8 (0.4 – 1.0)
			●		MV1030	L	≤ 1	0.9 (0.4 – 1.2)	L	≤ 1	0.8 (0.4 – 1.1)	L	≤ 1	0.8 (0.4 – 1.0)
			●		MV1020	L	≤ 2	0.8 (0.4 – 1.2)	L	≤ 2	0.7 (0.4 – 1.1)	L	≤ 2	0.7 (0.4 – 1.0)
			●		MV1030	L	≤ 2	0.8 (0.4 – 1.2)	L	≤ 2	0.7 (0.4 – 1.1)	L	≤ 2	0.7 (0.4 – 1.0)
			◐		MV1020	L	≤ 1	—	L	≤ 1	—	L	≤ 1	—
			◐		MV1030	L	≤ 1	—	L	≤ 1	—	L	≤ 1	—
			◐		MV1020	L	≤ 2	—	L	≤ 2	—	L	≤ 2	—
			◐		MV1030	L	≤ 2	—	L	≤ 2	—	L	≤ 2	—
			●		MV1020	M	≤ 1	1.2 (0.4 – 1.8)	M	≤ 1	1.1 (0.4 – 1.6)	M	≤ 1	1.1 (0.4 – 1.6)
			●		MV1030	M	≤ 1	1.2 (0.4 – 1.8)	M	≤ 1	1.1 (0.4 – 1.6)	M	≤ 1	1.1 (0.4 – 1.6)
			●		MV1020	M	≤ 2	1.1 (0.4 – 1.8)	M	≤ 2	1.0 (0.4 – 1.6)	M	≤ 2	1.0 (0.4 – 1.6)
			●		MV1030	M	≤ 2	1.1 (0.4 – 1.8)	M	≤ 2	1.0 (0.4 – 1.6)	M	≤ 2	1.0 (0.4 – 1.6)
			◐		MV1020	M	≤ 1	1.0 (0.4 – 1.7)	M	≤ 1	1.0 (0.4 – 1.5)	M	≤ 1	1.0 (0.4 – 1.5)
			◐		MV1030	M	≤ 1	1.0 (0.4 – 1.7)	M	≤ 1	1.0 (0.4 – 1.5)	M	≤ 1	1.0 (0.4 – 1.5)
			◐		MV1020	M	≤ 2	0.9 (0.4 – 1.7)	M	≤ 2	0.9 (0.4 – 1.5)	M	≤ 2	0.9 (0.4 – 1.5)
			◐		MV1030	M	≤ 2	0.9 (0.4 – 1.7)	M	≤ 2	0.9 (0.4 – 1.5)	M	≤ 2	0.9 (0.4 – 1.5)
			✲		MV1020	M	≤ 1	1.0 (0.4 – 1.7)	M	≤ 1	1.0 (0.4 – 1.5)	M	≤ 1	1.0 (0.4 – 1.5)
			✲		MV1030	M	≤ 1	1.0 (0.4 – 1.7)	M	≤ 1	1.0 (0.4 – 1.5)	M	≤ 1	1.0 (0.4 – 1.5)
			✲		MV1020	M	≤ 2	0.9 (0.4 – 1.7)	M	≤ 2	0.9 (0.4 – 1.5)	M	≤ 2	0.9 (0.4 – 1.5)
			✲		MV1030	M	≤ 2	0.9 (0.4 – 1.7)	M	≤ 2	0.9 (0.4 – 1.5)	M	≤ 2	0.9 (0.4 – 1.5)
			●		MV1020	R	≤ 1	1.5 (0.4 – 2.1)	R	≤ 1	1.4 (0.4 – 1.9)	R	≤ 1	1.4 (0.4 – 1.9)
			●		MV1030	R	≤ 1	1.5 (0.4 – 2.1)	R	≤ 1	1.4 (0.4 – 1.9)	R	≤ 1	1.4 (0.4 – 1.9)
			●		MV1020	R	≤ 2	1.4 (0.4 – 2.1)	R	≤ 2	1.3 (0.4 – 1.9)	R	≤ 2	1.3 (0.4 – 1.9)
			●		MV1030	R	≤ 2	1.4 (0.4 – 2.1)	R	≤ 2	1.3 (0.4 – 1.9)	R	≤ 2	1.3 (0.4 – 1.9)
			◐		MV1020	R	≤ 1	1.4 (0.4 – 2.0)	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.2 (0.4 – 1.7)
			◐		MV1030	R	≤ 1	1.4 (0.4 – 2.0)	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.2 (0.4 – 1.7)
			◐		MV1020	R	≤ 2	1.3 (0.4 – 2.0)	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.1 (0.4 – 1.7)
			◐		MV1030	R	≤ 2	1.3 (0.4 – 2.0)	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.1 (0.4 – 1.7)
			✲		MV1020	R	≤ 1	1.4 (0.4 – 2.0)	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.2 (0.4 – 1.7)
			✲		MV1030	R	≤ 1	1.4 (0.4 – 2.0)	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.2 (0.4 – 1.7)
			✲		MV1020	R	≤ 2	1.3 (0.4 – 2.0)	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.1 (0.4 – 1.7)
			✲		MV1030	R	≤ 2	1.3 (0.4 – 2.0)	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.1 (0.4 – 1.7)

Cutting conditions: ●: Stable cutting ◐: General cutting ✲: Unstable cutting

415SD – DEPTH OF CUT / FEED PER TOOTH

Material		Properties	Cutting conditions	Coolant	Grade	ae ≤ 0.5 DC			ae ≤ 0.75 DC			ae = DC		
							ap	fz		ap	fz		ap	fz
P	Carbon steel, Alloy steel	180 – 280 HB	●		MV1020	L	≤ 1	0.7 (0.4 – 1.1)	L	≤ 1	0.7 (0.4 – 1.0)	L	≤ 1	0.7 (0.4 – 1.0)
			●		MV1030	L	≤ 1	0.7 (0.4 – 1.1)	L	≤ 1	0.7 (0.4 – 1.0)	L	≤ 1	0.7 (0.4 – 1.0)
			●		MV1020	L	≤ 2	—	L	≤ 2	—	L	≤ 2	—
			●		MV1030	L	≤ 2	—	L	≤ 2	—	L	≤ 2	—
			◐		MV1020	L	≤ 1	—	L	≤ 1	—	L	≤ 1	—
			◐		MV1030	L	≤ 1	—	L	≤ 1	—	L	≤ 1	—
			◐		MV1020	L	≤ 2	—	L	≤ 2	—	L	≤ 2	—
			◐		MV1030	L	≤ 2	—	L	≤ 2	—	L	≤ 2	—
			●		MV1020	M	≤ 1	1.0 (0.4 – 1.7)	M	≤ 1	1.0 (0.4 – 1.5)	M	≤ 1	1.0 (0.4 – 1.5)
			●		MV1030	M	≤ 1	1.0 (0.4 – 1.7)	M	≤ 1	1.0 (0.4 – 1.5)	M	≤ 1	1.0 (0.4 – 1.5)
			●		MV1020	M	≤ 2	0.9 (0.4 – 1.7)	M	≤ 2	0.9 (0.4 – 1.5)	M	≤ 2	0.9 (0.4 – 1.5)
			●		MV1030	M	≤ 2	0.9 (0.4 – 1.7)	M	≤ 2	0.9 (0.4 – 1.5)	M	≤ 2	0.9 (0.4 – 1.5)
			◐		MV1020	M	≤ 1	0.9 (0.4 – 1.5)	M	≤ 1	0.8 (0.4 – 1.4)	M	≤ 1	0.8 (0.4 – 1.3)
			◐		MV1030	M	≤ 1	0.9 (0.4 – 1.5)	M	≤ 1	0.8 (0.4 – 1.4)	M	≤ 1	0.8 (0.4 – 1.3)
			◐		MV1020	M	≤ 2	0.8 (0.4 – 1.5)	M	≤ 2	0.7 (0.4 – 1.4)	M	≤ 2	0.7 (0.4 – 1.3)
			◐		MV1030	M	≤ 2	0.8 (0.4 – 1.5)	M	≤ 2	0.7 (0.4 – 1.4)	M	≤ 2	0.7 (0.4 – 1.3)
			✲		MV1020	M	≤ 1	0.9 (0.4 – 1.5)	M	≤ 1	0.8 (0.4 – 1.4)	M	≤ 1	0.8 (0.4 – 1.3)
			✲		MV1030	M	≤ 1	0.9 (0.4 – 1.5)	M	≤ 1	0.8 (0.4 – 1.4)	M	≤ 1	0.8 (0.4 – 1.3)
			✲		MV1020	M	≤ 2	0.8 (0.4 – 1.5)	M	≤ 2	0.7 (0.4 – 1.4)	M	≤ 2	0.7 (0.4 – 1.3)
			✲		MV1030	M	≤ 2	0.8 (0.4 – 1.5)	M	≤ 2	0.7 (0.4 – 1.4)	M	≤ 2	0.7 (0.4 – 1.3)
			●		MV1020	R	≤ 1	1.4 (0.4 – 2.0)	R	≤ 1	1.2 (1.0 – 1.8)	R	≤ 1	1.2 (0.4 – 1.7)
			●		MV1030	R	≤ 1	1.4 (0.4 – 2.0)	R	≤ 1	1.2 (1.0 – 1.8)	R	≤ 1	1.2 (0.4 – 1.7)
			●		MV1020	R	≤ 2	1.3 (0.4 – 2.0)	R	≤ 2	1.1 (1.0 – 1.8)	R	≤ 2	1.1 (0.4 – 1.7)
			●		MV1030	R	≤ 2	1.3 (0.4 – 2.0)	R	≤ 2	1.1 (1.0 – 1.8)	R	≤ 2	1.1 (0.4 – 1.7)
			◐		MV1020	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.1 (0.8 – 1.6)	R	≤ 1	1.1 (0.4 – 1.6)
			◐		MV1030	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.1 (0.8 – 1.6)	R	≤ 1	1.1 (0.4 – 1.6)
			◐		MV1020	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.0 (0.8 – 1.6)	R	≤ 2	1.0 (0.4 – 1.6)
			◐		MV1030	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.0 (0.8 – 1.6)	R	≤ 2	1.0 (0.4 – 1.6)
			✲		MV1020	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.1 (0.8 – 1.6)	R	≤ 1	1.1 (0.4 – 1.6)
			✲		MV1030	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.1 (0.8 – 1.6)	R	≤ 1	1.1 (0.4 – 1.6)
			✲		MV1020	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.0 (0.8 – 1.6)	R	≤ 2	1.0 (0.4 – 1.6)
			✲		MV1030	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.0 (0.8 – 1.6)	R	≤ 2	1.0 (0.4 – 1.6)

Cutting conditions: ●: Stable cutting ◐: General cutting ✲: Unstable cutting

415SD – DEPTH OF CUT / FEED PER TOOTH

Material		Properties	Cutting conditions	Coolant	Grade	ae ≤ 0.5 DC			ae ≤ 0.75 DC			ae = DC		
							ap	fz		ap	fz		ap	fz
P	Carbon steel, Alloy steel	280 – 350 HB	●		MV1020	L	≤ 1	0.6 (0.4 – 0.9)	L	≤ 1	0.6 (0.4 – 0.8)	L	≤ 1	0.6 (0.4 – 0.8)
			●		MV1030	L	≤ 1	0.6 (0.4 – 0.9)	L	≤ 1	0.6 (0.4 – 0.8)	L	≤ 1	0.6 (0.4 – 0.8)
			●		MV1020	L	≤ 2	0.5 (0.4 – 0.9)	L	≤ 2	0.5 (0.4 – 0.8)	L	≤ 2	0.5 (0.4 – 0.8)
			●		MV1030	L	≤ 2	0.5 (0.4 – 0.9)	L	≤ 2	0.5 (0.4 – 0.8)	L	≤ 2	0.5 (0.4 – 0.8)
			◐		MV1020	L	≤ 1	—	L	≤ 1	—	L	≤ 1	—
			◐		MV1030	L	≤ 1	—	L	≤ 1	—	L	≤ 1	—
			◐		MV1020	L	≤ 2	—	L	≤ 2	—	L	≤ 2	—
			◐		MV1030	L	≤ 2	—	L	≤ 2	—	L	≤ 2	—
			●		MV1020	M	≤ 1	0.9 (0.4 – 1.5)	M	≤ 1	0.8 (0.4 – 1.4)	M	≤ 1	0.8 (0.4 – 1.3)
			●		MV1030	M	≤ 1	0.9 (0.4 – 1.5)	M	≤ 1	0.8 (0.4 – 1.4)	M	≤ 1	0.8 (0.4 – 1.3)
			●		MV1020	M	≤ 2	0.8 (0.4 – 1.5)	M	≤ 2	0.7 (0.4 – 1.4)	M	≤ 2	0.7 (0.4 – 1.3)
			●		MV1030	M	≤ 2	0.8 (0.4 – 1.5)	M	≤ 2	0.7 (0.4 – 1.4)	M	≤ 2	0.7 (0.4 – 1.3)
			◐		MV1020	M	≤ 1	0.9 (0.4 – 1.5)	M	≤ 1	0.8 (0.4 – 1.4)	M	≤ 1	0.7 (0.4 – 1.2)
			◐		MV1030	M	≤ 1	0.9 (0.4 – 1.5)	M	≤ 1	0.8 (0.4 – 1.4)	M	≤ 1	0.7 (0.4 – 1.2)
			◐		MV1020	M	≤ 2	0.8 (0.4 – 1.5)	M	≤ 2	0.7 (0.4 – 1.4)	M	≤ 2	0.6 (0.4 – 1.2)
			◐		MV1030	M	≤ 2	0.8 (0.4 – 1.5)	M	≤ 2	0.7 (0.4 – 1.4)	M	≤ 2	0.6 (0.4 – 1.2)
			✲		MV1020	M	≤ 1	0.9 (0.4 – 1.5)	M	≤ 1	0.8 (0.4 – 1.4)	M	≤ 1	0.7 (0.4 – 1.2)
			✲		MV1030	M	≤ 1	0.9 (0.4 – 1.5)	M	≤ 1	0.8 (0.4 – 1.4)	M	≤ 1	0.7 (0.4 – 1.2)
			✲		MV1020	M	≤ 2	0.8 (0.4 – 1.5)	M	≤ 2	0.7 (0.4 – 1.4)	M	≤ 2	0.6 (0.4 – 1.2)
			✲		MV1030	M	≤ 2	0.8 (0.4 – 1.5)	M	≤ 2	0.7 (0.4 – 1.4)	M	≤ 2	0.6 (0.4 – 1.2)
			●		MV1020	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.1 (0.4 – 1.6)	R	≤ 1	1.1 (0.8 – 1.6)
			●		MV1030	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.1 (0.4 – 1.6)	R	≤ 1	1.1 (0.8 – 1.6)
			●		MV1020	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.0 (0.4 – 1.6)	R	≤ 2	1.0 (0.8 – 1.6)
			●		MV1030	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.0 (0.4 – 1.6)	R	≤ 2	1.0 (0.8 – 1.6)
			◐		MV1020	R	≤ 1	1.1 (0.4 – 1.8)	R	≤ 1	1.0 (0.4 – 1.6)	R	≤ 1	1.0 (0.4 – 1.5)
			◐		MV1030	R	≤ 1	1.1 (0.4 – 1.8)	R	≤ 1	1.0 (0.4 – 1.6)	R	≤ 1	1.0 (0.4 – 1.5)
			◐		MV1020	R	≤ 2	1.0 (0.4 – 1.8)	R	≤ 2	0.9 (0.4 – 1.6)	R	≤ 2	0.9 (0.4 – 1.5)
			◐		MV1030	R	≤ 2	1.0 (0.4 – 1.8)	R	≤ 2	0.9 (0.4 – 1.6)	R	≤ 2	0.9 (0.4 – 1.5)
			✲		MV1020	R	≤ 1	1.1 (0.4 – 1.8)	R	≤ 1	1.0 (0.4 – 1.6)	R	≤ 1	1.0 (0.4 – 1.5)
			✲		MV1030	R	≤ 1	1.1 (0.4 – 1.8)	R	≤ 1	1.0 (0.4 – 1.6)	R	≤ 1	1.0 (0.4 – 1.5)
			✲		MV1020	R	≤ 2	1.0 (0.4 – 1.8)	R	≤ 2	0.9 (0.4 – 1.6)	R	≤ 2	0.9 (0.4 – 1.5)
			✲		MV1030	R	≤ 2	1.0 (0.4 – 1.8)	R	≤ 2	0.9 (0.4 – 1.6)	R	≤ 2	0.9 (0.4 – 1.5)

Cutting conditions: ●: Stable cutting ◐: General cutting ✲: Unstable cutting

415SD – DEPTH OF CUT / FEED PER TOOTH

Material		Properties	Cutting conditions	Coolant	Grade	ae ≤ 0.5 DC			ae ≤ 0.75 DC			ae = DC		
							ap	fz		ap	fz		ap	fz
K	Ductile cast iron	Tensile strength ≤ 350 MPa	●		MV1020	L	≤ 1	0.9 (0.4 – 1.2)	L	≤ 1	0.8 (0.4 – 1.1)	L	≤ 1	0.8 (0.4 – 1.1)
			●		MV1030	L	≤ 1	0.9 (0.4 – 1.2)	L	≤ 1	0.8 (0.4 – 1.1)	L	≤ 1	0.8 (0.4 – 1.1)
			●		MV1020	L	≤ 2	0.8 (0.4 – 1.2)	L	≤ 2	0.7 (0.4 – 1.1)	L	≤ 2	0.7 (0.4 – 1.1)
			●		MV1030	L	≤ 2	0.8 (0.4 – 1.2)	L	≤ 2	0.7 (0.4 – 1.1)	L	≤ 2	0.7 (0.4 – 1.1)
			◐		MV1020	L	≤ 1	—	L	≤ 1	—	L	≤ 1	—
			◐		MV1030	L	≤ 1	—	L	≤ 1	—	L	≤ 1	—
			◐		MV1020	L	≤ 2	—	L	≤ 2	—	L	≤ 2	—
			◐		MV1030	L	≤ 2	—	L	≤ 2	—	L	≤ 2	—
			●		MV1020	M	≤ 1	1.2 (0.4 – 1.8)	M	≤ 1	1.1 (0.4 – 1.6)	M	≤ 1	1.1 (0.4 – 1.6)
			●		MV1030	M	≤ 1	1.2 (0.4 – 1.8)	M	≤ 1	1.1 (0.4 – 1.6)	M	≤ 1	1.1 (0.4 – 1.6)
			●		MV1020	M	≤ 2	1.1 (0.4 – 1.8)	M	≤ 2	1.0 (0.4 – 1.6)	M	≤ 2	1.0 (0.4 – 1.6)
			●		MV1030	M	≤ 2	1.1 (0.4 – 1.8)	M	≤ 2	1.0 (0.4 – 1.6)	M	≤ 2	1.0 (0.4 – 1.6)
			◐		MV1020	M	≤ 1	1.1 (0.4 – 1.7)	M	≤ 1	1.0 (0.4 – 1.5)	M	≤ 1	0.9 (0.4 – 1.5)
			◐		MV1030	M	≤ 1	1.1 (0.4 – 1.7)	M	≤ 1	1.0 (0.4 – 1.5)	M	≤ 1	0.9 (0.4 – 1.5)
			◐		MV1020	M	≤ 2	1.0 (0.4 – 1.7)	M	≤ 2	0.9 (0.4 – 1.5)	M	≤ 2	0.8 (0.4 – 1.5)
			◐		MV1030	M	≤ 2	1.0 (0.4 – 1.7)	M	≤ 2	0.9 (0.4 – 1.5)	M	≤ 2	0.8 (0.4 – 1.5)
			✲		MV1020	M	≤ 1	1.1 (0.4 – 1.7)	M	≤ 1	1.0 (0.4 – 1.5)	M	≤ 1	0.9 (0.4 – 1.5)
			✲		MV1030	M	≤ 1	1.1 (0.4 – 1.7)	M	≤ 1	1.0 (0.4 – 1.5)	M	≤ 1	0.9 (0.4 – 1.5)
			✲		MV1020	M	≤ 2	1.0 (0.4 – 1.7)	M	≤ 2	0.9 (0.4 – 1.5)	M	≤ 2	0.8 (0.4 – 1.5)
			✲		MV1030	M	≤ 2	1.0 (0.4 – 1.7)	M	≤ 2	0.9 (0.4 – 1.5)	M	≤ 2	0.8 (0.4 – 1.5)
			●		MV1020	R	≤ 1	1.5 (0.4 – 2.1)	R	≤ 1	1.4 (0.4 – 1.9)	R	≤ 1	1.3 (1.1 – 1.9)
			●		MV1030	R	≤ 1	1.5 (0.4 – 2.1)	R	≤ 1	1.4 (0.4 – 1.9)	R	≤ 1	1.3 (1.1 – 1.9)
			●		MV1020	R	≤ 2	1.4 (0.4 – 2.1)	R	≤ 2	1.3 (0.4 – 1.9)	R	≤ 2	1.2 (1.1 – 1.9)
			●		MV1030	R	≤ 2	1.4 (0.4 – 2.1)	R	≤ 2	1.3 (0.4 – 1.9)	R	≤ 2	1.2 (1.1 – 1.9)
			◐		MV1020	R	≤ 1	1.4 (1.0 – 2.0)	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.2 (0.4 – 1.7)
			◐		MV1030	R	≤ 1	1.4 (1.0 – 2.0)	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.2 (0.4 – 1.7)
			◐		MV1020	R	≤ 2	1.3 (1.0 – 2.0)	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.1 (0.4 – 1.7)
			◐		MV1030	R	≤ 2	1.3 (1.0 – 2.0)	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.1 (0.4 – 1.7)
			◐		MV1020	R	≤ 1	1.4 (1.0 – 2.0)	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.2 (0.4 – 1.7)
			◐		MV1030	R	≤ 1	1.4 (1.0 – 2.0)	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.2 (0.4 – 1.7)
			◐		MV1020	R	≤ 2	1.3 (1.0 – 2.0)	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.1 (0.4 – 1.7)
			◐		MV1030	R	≤ 2	1.3 (1.0 – 2.0)	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.1 (0.4 – 1.7)

Cutting conditions: ●: Stable cutting ◐: General cutting ✲: Unstable cutting

415SD – DEPTH OF CUT / FEED PER TOOTH

Material		Properties	Cutting conditions	Coolant	Grade	ae ≤ 0.5 DC			ae ≤ 0.75 DC			ae = DC		
							ap	fz		ap	fz		ap	fz
K	Ductile cast iron	Tensile strength ≤ 800 MPa	●		MV1020	L	≤ 1	0.9 (0.4 – 1.2)	L	≤ 1	0.8 (0.4 – 1.1)	L	≤ 1	0.8 (0.4 – 1.1)
			●		MV1030	L	≤ 1	0.9 (0.4 – 1.2)	L	≤ 1	0.8 (0.4 – 1.1)	L	≤ 1	0.8 (0.4 – 1.1)
			●		MV1020	L	≤ 2	0.8 (0.4 – 1.2)	L	≤ 2	0.7 (0.4 – 1.1)	L	≤ 2	0.7 (0.4 – 1.1)
			●		MV1030	L	≤ 2	0.8 (0.4 – 1.2)	L	≤ 2	0.7 (0.4 – 1.1)	L	≤ 2	0.7 (0.4 – 1.1)
			◐		MV1020	L	≤ 1	—	L	≤ 1	—	L	≤ 1	—
			◐		MV1030	L	≤ 1	—	L	≤ 1	—	L	≤ 1	—
			◐		MV1020	L	≤ 2	—	L	≤ 2	—	L	≤ 2	—
			◐		MV1030	L	≤ 2	—	L	≤ 2	—	L	≤ 2	—
			●		MV1020	M	≤ 1	1.2 (0.4 – 1.8)	M	≤ 1	1.1 (0.4 – 1.6)	M	≤ 1	1.1 (0.4 – 1.6)
			●		MV1030	M	≤ 1	1.2 (0.4 – 1.8)	M	≤ 1	1.1 (0.4 – 1.6)	M	≤ 1	1.1 (0.4 – 1.6)
			●		MV1020	M	≤ 2	1.1 (0.4 – 1.8)	M	≤ 2	1.0 (0.4 – 1.6)	M	≤ 2	1.0 (0.4 – 1.6)
			●		MV1030	M	≤ 2	1.1 (0.4 – 1.8)	M	≤ 2	1.0 (0.4 – 1.6)	M	≤ 2	1.0 (0.4 – 1.6)
			◐		MV1020	M	≤ 1	1.1 (0.4 – 1.7)	M	≤ 1	1.0 (0.4 – 1.5)	M	≤ 1	0.9 (0.4 – 1.5)
			◐		MV1030	M	≤ 1	1.1 (0.4 – 1.7)	M	≤ 1	1.0 (0.4 – 1.5)	M	≤ 1	0.9 (0.4 – 1.5)
			◐		MV1020	M	≤ 2	1.0 (0.4 – 1.7)	M	≤ 2	0.9 (0.4 – 1.5)	M	≤ 2	0.8 (0.4 – 1.5)
			◐		MV1030	M	≤ 2	1.0 (0.4 – 1.7)	M	≤ 2	0.9 (0.4 – 1.5)	M	≤ 2	0.8 (0.4 – 1.5)
			✲		MV1020	M	≤ 1	1.1 (0.4 – 1.7)	M	≤ 1	1.0 (0.4 – 1.5)	M	≤ 1	0.9 (0.4 – 1.5)
			✲		MV1030	M	≤ 1	1.1 (0.4 – 1.7)	M	≤ 1	1.0 (0.4 – 1.5)	M	≤ 1	0.9 (0.4 – 1.5)
			✲		MV1020	M	≤ 2	1.0 (0.4 – 1.7)	M	≤ 2	0.9 (0.4 – 1.5)	M	≤ 2	0.8 (0.4 – 1.5)
			✲		MV1030	M	≤ 2	1.0 (0.4 – 1.7)	M	≤ 2	0.9 (0.4 – 1.5)	M	≤ 2	0.8 (0.4 – 1.5)
			●		MV1020	R	≤ 1	1.5 (0.4 – 2.1)	R	≤ 1	1.4 (0.4 – 1.9)	R	≤ 1	1.3 (1.1 – 1.9)
			●		MV1030	R	≤ 1	1.5 (0.4 – 2.1)	R	≤ 1	1.4 (0.4 – 1.9)	R	≤ 1	1.3 (1.1 – 1.9)
			●		MV1020	R	≤ 2	1.4 (0.4 – 2.1)	R	≤ 2	1.3 (0.4 – 1.9)	R	≤ 2	1.2 (1.1 – 1.9)
			●		MV1030	R	≤ 2	1.4 (0.4 – 2.1)	R	≤ 2	1.3 (0.4 – 1.9)	R	≤ 2	1.2 (1.1 – 1.9)
			◐		MV1020	R	≤ 1	1.4 (1.0 – 2.0)	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.2 (0.4 – 1.7)
			◐		MV1030	R	≤ 1	1.4 (1.0 – 2.0)	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.2 (0.4 – 1.7)
			◐		MV1020	R	≤ 2	1.3 (1.0 – 2.0)	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.1 (0.4 – 1.7)
			◐		MV1030	R	≤ 2	1.3 (1.0 – 2.0)	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.1 (0.4 – 1.7)
			✲		MV1020	R	≤ 1	1.4 (1.0 – 2.0)	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.2 (0.4 – 1.7)
			✲		MV1030	R	≤ 1	1.4 (1.0 – 2.0)	R	≤ 1	1.2 (0.4 – 1.8)	R	≤ 1	1.2 (0.4 – 1.7)
			✲		MV1020	R	≤ 2	1.3 (1.0 – 2.0)	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.1 (0.4 – 1.7)
			✲		MV1030	R	≤ 2	1.3 (1.0 – 2.0)	R	≤ 2	1.1 (0.4 – 1.8)	R	≤ 2	1.1 (0.4 – 1.7)
S	Titanium alloy	—	●	💧	MP9130	L	≤ 1	0.7 (0.5 – 0.9)	L	≤ 1	0.6 (0.4 – 0.7)	L	≤ 1	0.5 (0.3 – 0.6)
			●	💧	MP9130	L	≤ 2	0.6 (0.4 – 0.8)	L	≤ 2	0.5 (0.3 – 0.6)	L	≤ 2	0.4 (0.2 – 0.5)
			◐	💧	MP9130	M	≤ 1	0.7 (0.5 – 0.9)	M	≤ 1	0.6 (0.4 – 0.7)	M	≤ 1	0.5 (0.3 – 0.6)
			◐	💧	MP9130	M	≤ 2	0.6 (0.4 – 0.8)	M	≤ 2	0.5 (0.3 – 0.6)	M	≤ 2	0.4 (0.2 – 0.5)
			◐	💧	MP9130	R	≤ 1	0.8 (0.6 – 1.0)	R	≤ 1	0.7 (0.4 – 0.9)	R	≤ 1	0.6 (0.4 – 0.8)
			◐	💧	MP9130	R	≤ 2	0.7 (0.5 – 0.9)	R	≤ 2	0.6 (0.3 – 0.8)	R	≤ 2	0.5 (0.3 – 0.7)
			✲	💧	MP9130	R	≤ 1	0.7 (0.5 – 0.9)	R	≤ 1	0.6 (0.4 – 0.7)	R	≤ 1	0.5 (0.3 – 0.6)
			✲	💧	MP9130	R	≤ 2	0.6 (0.4 – 0.8)	R	≤ 2	0.5 (0.3 – 0.6)	R	≤ 2	0.4 (0.2 – 0.5)

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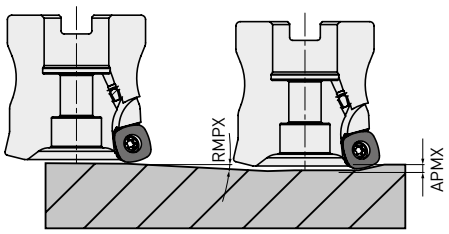
Cutting conditions: ●: Stable cutting ◐: General cutting ✲: Unstable cutting

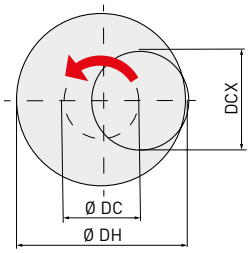
415SD

MAXIMUM CAPACITIES BY MODE

RAMPING



HELICAL DRILLING



- How to derive a locus of the centre of the tool.

$$ØDC = ØDH - DCX$$

ØDC	ØDH	DCX
Locus of the centre of the tool	Desired hole diameter	Cutting Diameter Maximum

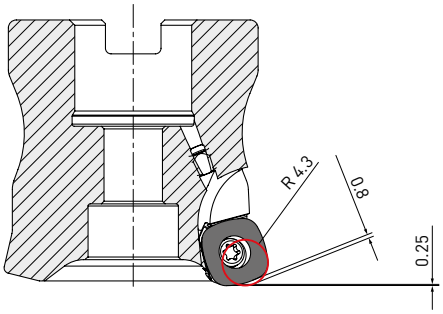
- For the depth of cut per pass, refer to the cutting conditions above for helical drilling.
- Set the machine spindle revolution so that the tool is rotating and cutting in a down cut direction.

- When ramping and helical cutting, please apply a lower feed (60 % of the calculated feed rate or less).
- The long chips generated can disperse, ensure that adequate safety precautions are taken.

Tool holder type	DCX	DC	APMX	Ramping	Helical drilling	
				RMPX	DH	
					Min.	Max.
ARBOR TYPE						
41SD-050A04AR-E	50	33.4	2	3	84	97
41SD-050A05AR-E	50	33.4	2	3	84	97
41SD-052A04AR-E	52	35.4	2	3	88	101
41SD-052A06AR-E	52	35.4	2	3	88	101
41SD-063A05AR-E	63	46.5	2	2	110	123
41SD-063A07AR-E	63	46.5	2	2	110	123
41SD-066A05AR-E	66	49.4	2	1.9	116	129
41SD-066A07AR-E	66	49.4	2	1.9	116	129

NOTE FOR PROGRAMMING

When using 415SD (Mplus), please programme as an RE = 4.3 radius cutter. The approximate uncut portions for the programme are as follows.



ARM

MULTI-FUNCTIONAL HIGH FEED CUTTER FOR MOULD & DIE MACHINING

Mplus...

ARM

MULTI-FUNCTIONAL HIGH FEED CUTTER FOR MOULD & DIE MACHINING

ARM is a multifunctional high-performance cutter that provides process stability even at high feed rates. Its individual design as well as the advanced technical features promise high material removal rates combined with effective chip control.

P M K H

PRODUCT RANGE

ARM07:

• Arbor type:	DC Ø	40 mm
• Shank type:	DC Ø	16 – 32 mm
• Weldon type:	DC Ø	16 – 32 mm
• Screw in type:	DC Ø	16 – 42 mm

ARM09:

• Arbor type:	DC Ø	40 – 66 mm
• Shank type:	DC Ø	25 – 35 mm
• Weldon type:	DC Ø	25 – 32 mm
• Screw in type:	DC Ø	25 – 42 mm

ARM11:

• Arbor type:	DC Ø	50 – 80 mm
• Shank type:	DC Ø	32 mm
• Screw in type:	DC Ø	32 – 35 mm

APPLICATION

- Mould & die machining
- Roughing
- High feed cutting
- Face milling
- Copying
- Helical milling
- Pocketing

ARM

MULTI-FUNCTIONAL HIGH FEED CUTTER FOR MOULD & DIE MACHINING

IDEAL FOR DEEP CAVITIES
- Internal coolant holes for air blow increases reliability due to effective chip disposal
- Ideal for high volume machining

HIGH PRODUCTIVITY FOR ROUGHING APPLICATIONS
- Time saving when machining high hardness plastic injection moulds and forging dies
- Ideal for high feed machining path strategies

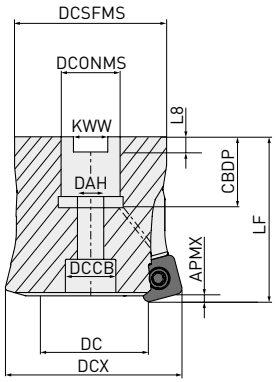
COST EFFICIENT SOLUTION
- Economical 4 cutting edges
- Reinforced cutting edge geometry
- Versatile VP15TF grade for varied applications
- The micro-grain substrate and Miracle coating provide excellent welding resistance

BENEFITS
- High metal removal rates
- Near nett shape material remaining
- Porcess stability and security
- High rigidity for high feed rates
- Long tool life in both soft and hard materials
- Economic cost/performance ratio due to 4 cutting edges
- For high volume roughing
- Proven performance for machining of plastic injection moulds
- Versatile range of cutters available

ARM

HIGH FEED MILLING CUTTER FOR MOULD & DIE

P M K H



Right hand tool holder only.

ARBOR TYPE

Order number	Stock	CICT	DCX	DC	LF	DCONMS	CBDP	DAH	DCSFMS	KWW	L8	APMX	DCCB		Inserts
ARM09-040A05R	●	5	40	22.9	40	16	18	9	38.5	8.4	5.6	1.4	12	●	
ARM09-042A05R	●	5	42	24.9	40	16	18	9	38.5	8.4	5.6	1.4	12	●	
ARM09-050A06R	●	6	50	33	40	22	20	11	49	10.4	6.3	1.4	17	●	SPMX094506
ARM09-052A07R	●	7	52	35	40	22	20	11	49	10.4	6.3	1.4	17	●	
ARM09-066A08R	●	8	66	48.9	50	27	22	13	60	12.4	7	1.4	19	●	
ARM11-050A05R	●	5	50	29.4	40	22	20	11	49	10.4	6.3	1.8	17	●	
ARM11-052A05R	●	5	52	31.4	40	22	20	11	49	10.4	6.3	1.8	17	●	
ARM11-063A06R	●	6	63	42.4	50	27	22	13	60	12.4	7	1.8	19	●	SPMX115506
ARM11-066A07R	●	7	66	45.4	50	27	22	13	60	12.4	7	1.8	19	●	
ARM11-080A08R	●	8	80	59.3	50	27	22	13	64	12.4	7	1.8	19	●	

1/1

106 Vc

SET BOLT

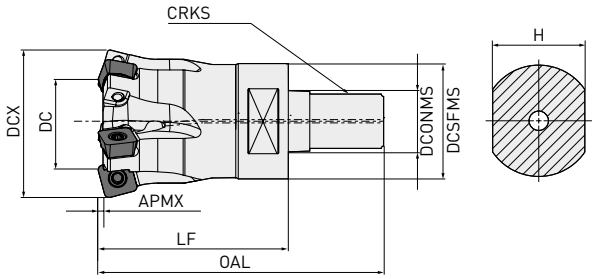
DCX	Set bolt	Geometry
Ø 40–42	M8-C	
Ø 50–52	M10-C	
Ø 63–80	M12-C	

● : Inventory maintained.

ARM

HIGH FEED MILLING CUTTER FOR MOULD & DIE

P M K H



Right hand tool holder only.

SCREW-IN TYPE

Order number	Stock	CICT	DCX	DC	LF	DCONMS	DCSFMS	OAL	H	CRKS	APMX		Inserts
ARM07R162AM08	●	2	16	4	23	8.5	14	40	12	M8	0.6	●	SPMX073505
ARM07R203AM10	●	3	20	7.5	30	10.5	18	48	15	M10	1.2	●	
ARM07R254AM12	●	4	25	12.5	35	12.5	21	56	19	M12	1.2	●	
ARM07R325AM16	●	5	32	19.5	43	17	29	66	22	M16	1.2	●	
ARM09R252AM12	●	2	25	8	35	12.5	21	56	19	M12	1.4	●	SPMX094506
ARM09R324AM16	●	4	32	15	43	17	29	66	22	M16	1.4	●	
ARM09R354AM16	●	4	35	17.9	43	17	29	66	22	M16	1.4	●	
ARM09R425AM16	●	5	42	24.9	43	17	29	66	22	M16	1.4	●	
ARM11R323AM16	●	3	32	11.7	43	17	29	66	22	M16	1.8	●	SPMX115506
ARM11R353AM16	●	3	35	14.6	43	17	29	66	22	M16	1.8	●	

1/1

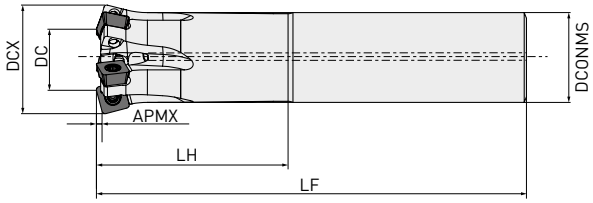
106 Vc

● : Inventory maintained.

ARM

HIGH FEED MILLING CUTTER FOR MOULD & DIE

P M K H



CYLINDRICAL SHANK

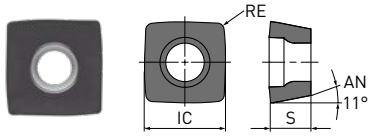
Order number	Stock	CICT	DCX	DCONMS	DC	LF	LH	APMX		Inserts
ARM07R162SA16S	●	2	16	16	4	85	25	0.6	●	SPMX073505
ARM07R203SA20S	●	3	20	20	7.5	130	30	1.2	●	
ARM07R254SA25S	●	4	25	25	12.5	140	40	1.2	●	
ARM07R325SA32S	●	5	32	32	19.5	150	50	1.2	●	
ARM09R252SA25S	●	2	25	25	8	140	40	1.4	●	SPMX094506
ARM09R324SA32S	●	4	32	32	15	150	50	1.4	●	
ARM09R354SA32S	●	4	35	32	17.9	150	50	1.4	●	
ARM11R323SA32S	●	3	32	32	11.7	150	50	1.8	●	SPMX115506

1/1

106 Vc

● : Inventory maintained.

INSERTS

Order number	Class	Honing*	VP15TF	VP10H	IC	S	RE	Shape
SPMX073505ZNEN-FT	M	E	●	●	7.0	3.5	0.5	
SPMX073505ZNSN-FT	M	S	●	●	7.0	3.5	0.5	
SPMX094506ZNEN-FT	M	E	●	●	9.7	4.4	0.6	
SPMX094506ZNSN-FT	M	S	●	●	9.7	4.4	0.6	
SPMX115506ZNEN-FT	M	E	●	●	11.6	5.4	0.6	
SPMX115506ZNSN-FT	M	S	●	●	11.6	5.4	0.6	

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* Honing:
E: Round,
S: Chamfer + Hone

SPARE PARTS

Insert type	Clamp screw	Wrench
SPMX073505	TPS3	TIP10W
SPMX094506	TPS4 - C	TIP15W - C
SPMX115506	TPS43 - C	TIP15W - C

● : Inventory maintained.

ARM

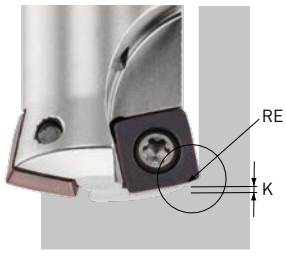
RECOMMENDED CUTTING CONDITIONS

	Material	Hardness	Insert	Grade	Standard milling				High feed milling			
					Vc	fz	ap	ae	Vc	fz	ap	ae
P	Mild steel	<180HB	SPMX073505	VP15TF	170 (120 – 220)	1.0	0.3/0.8	100%/DC	200	1.0	0.4	100%/DC
			SPMX094506			1.2	0.5/1	100%/DC		1.4	0.5	100%/DC
			SPMX115506			1.5	0.8/1.5	100%/DC		1.4	0.8	100%/DC
	Carbon steel Alloy steel	180 – 280HB	SPMX073505	VP15TF	150 (100 – 200)	0.9	0.3/0.5	100%/DC	200			100%/DC
			SPMX094506			1	0.5/0.7	100%/DC		1.2	0.5	100%/DC
			SPMX115506			1.2	0.6/1.5	100%/DC		1.2	0.8	100%/DC
		280 – 350HB	SPMX073505	VP15TF	120 (80 – 150)	0.9	0.3/0.5	100%/DC	180	0.9	0.3	100%/DC
			SPMX094506			1	0.5/0.7	100%/DC		1.2	0.4	100%/DC
			SPMX115506			1.2	0.5/1	100%/DC		1.2	0.6	100%/DC
	Alloy tool steel	<350HB	SPMX073505	VP15TF	120 (80 – 140)	0.75	0.3/0.5	100%/DC	180	0.75	0.3	100%/DC
			SPMX094506			1	0.5/0.7	100%/DC		0.8	0.4	100%/DC
			SPMX115506			1	0.5/1	100%/DC		0.8	0.6	100%/DC
	Pre-hardened steel	35 – 45HRC	SPMX073505	VP15TF	100 (70 – 130)	0.75	0.25/0.4	100%/DC	150	0.75	0.3	100%/DC
			SPMX094506			0.8	0.4/0.6	100%/DC		0.8	0.4	100%/DC
			SPMX115506			0.8	0.4/0.8	100%/DC		0.8	0.5	100%/DC
			SPMX073505	VP10H	120 (90 – 150)	0.75	0.25/0.4	100%/DC	150	0.75	0.3	100%/DC
			SPMX094506			0.8	0.4/0.6	100%/DC		0.8	0.4	100%/DC
			SPMX115506			0.8	0.4/0.8	100%/DC		0.8	0.5	100%/DC
M	Stainless steel	<200HB	SPMX073505	VP15TF	100 (60 – 120)	0.3	0.4/0.8	100%/DC	—	—	—	—
			SPMX094506			0.4	0.5/1	100%/DC		—	—	—
			SPMX115506			0.4	0.6/1.5	100%/DC		—	—	—
	PH, Duplex	>200HB	SPMX073505	VP15TF	70 (50 – 90)	0.3	0.25/0.4	100%/DC	—	—	—	—
			SPMX094506			0.4	0.3/0.5	100%/DC		—	—	—
			SPMX115506			0.4	0.4/0.8	100%/DC		—	—	—
K	Gray cast iron	<200HB	SPMX073505	VP15TF	150 (100 – 200)	1.0	0.3/0.6	100%/DC	—	—	—	—
			SPMX094506			1.2	0.5/0.8	100%/DC		—	—	—
			SPMX115506			1.2	0.6/1.5	100%/DC		—	—	—
	Ductile cast iron	<450MPa	SPMX073505	VP15TF	120 (80 – 160)	0.8	0.25/0.5	100%/DC	—	—	—	—
			SPMX094506			1	0.4/0.6	100%/DC		—	—	—
			SPMX115506			1	0.5/0.8	100%/DC		—	—	—
H	Hardened steel	40 – 55HRC	SPMX073505	VP15TF	70 (50 – 90)	0.5	0.25/0.4	100%/DC	120	0.5	0.25	100%/DC
			SPMX094506			0.6	0.3/0.5	100%/DC		0.6	0.3	100%/DC
			SPMX115506			0.6	0.3/0.6	100%/DC		0.6	0.4	100%/DC
			SPMX073505	VP10H	90 (70 – 120)	0.5	0.25/0.4	100%/DC	120	0.5	0.25	100%/DC
			SPMX094506			0.6	0.3/0.5	100%/DC		0.6	0.3	100%/DC
			SPMX115506			0.6	0.3/0.6	100%/DC		0.6	0.4	100%/DC

1/1

NOTE FOR PROGRAMMING

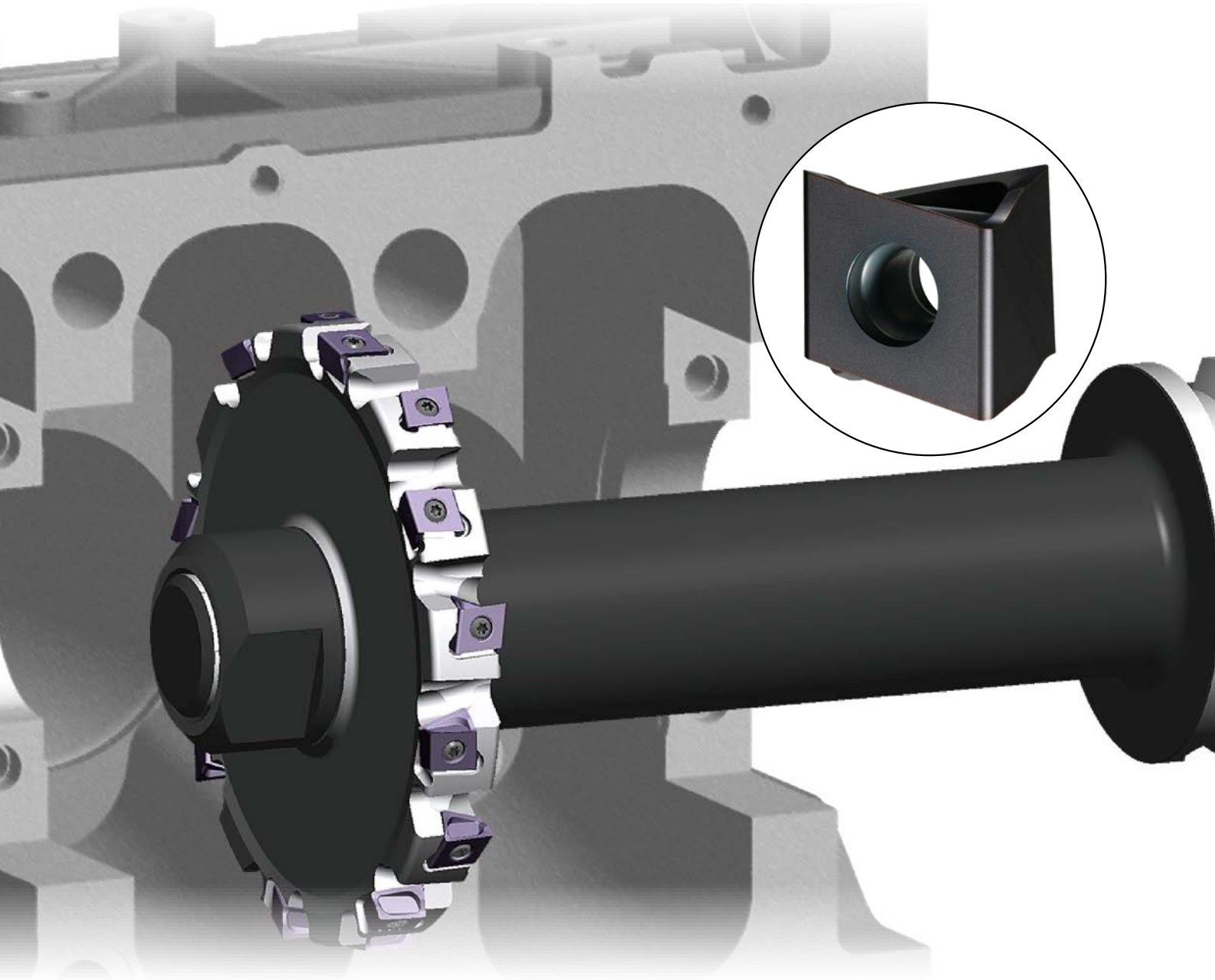
When using ARM cutters, please program as an RE radius cutter.
The approximate uncut portions for the program are as follows:



Insert size	RE	K
07	1.7	0.82
09	2.3	1.6
11	2.695	2.1

SIDE AND FACE MILLING CUTTER SERIES

SIDE AND FACE MACHINING WITH LOW CUTTING RESISTANCE VERTICAL MOUNT DOUBLE-SIDED INSERTS FOR DCV SERIES

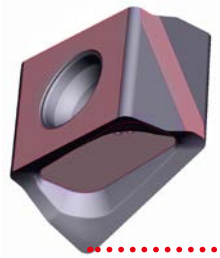


DCV3 / DCV4 / DCV5

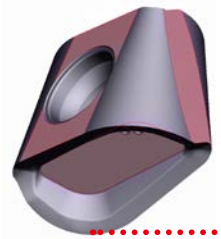
EXCHANGEABLE INSERTS

ECONOMICAL INSERT DESIGN
Tangential type insert with 4 cutting edges.

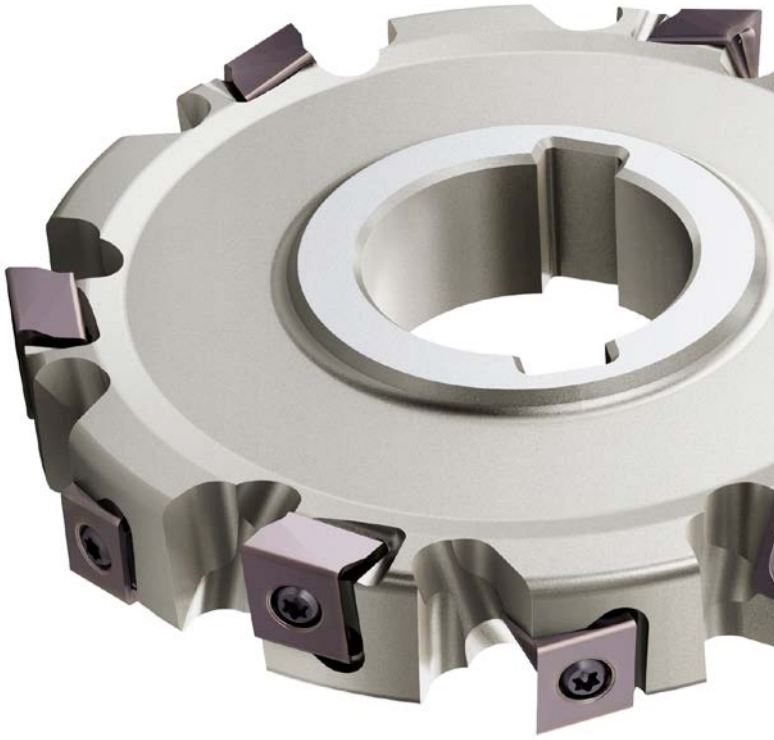
SECURE CLAMPING
Special seating surfaces enusre all different insert radius sizes are securely clamped.



Corner radius R 0.4 mm

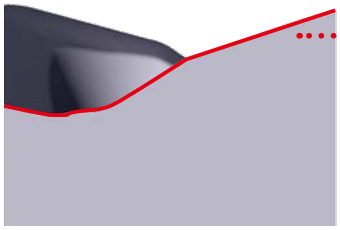


Corner radius R 4.0 mm for DCV3
Corner radius R 5.0 mm for DCV4
Corner radius R 7.0 mm for DCV5

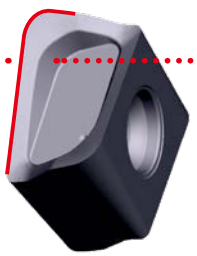


Cutter body with inserts: GAMF: + 8° GAMP: + 3°

LOW CUTTING RESISTANCE INSERT → PREFERRED SHARPNESS



Tough cutting edge
(Convex curve)

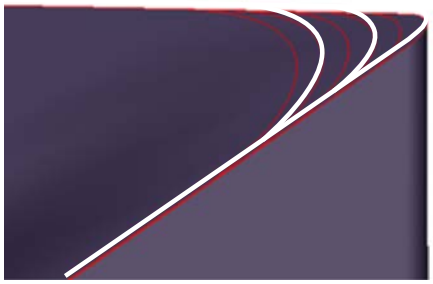


Double-phased helical rake angles

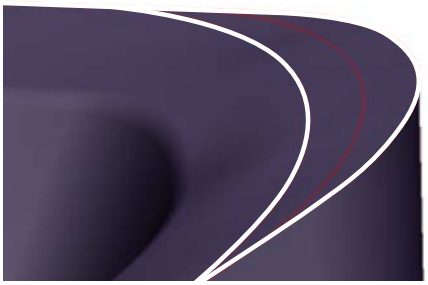
HIGH PRECISION CORNER RADIUS

PRECISION INSERTS FOR FORMING ACCURATE CORNER RADII IN THE WORKPIECE.

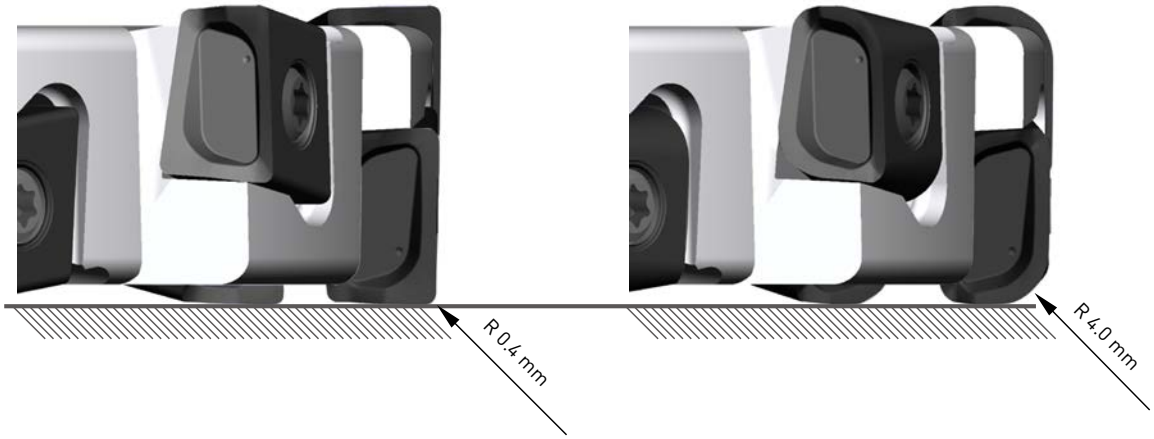
R 0.4 – R 3.0 mm



R 3.0 – R 7.0 mm

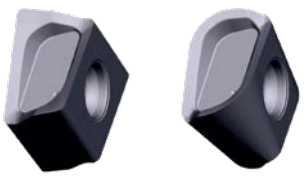


CONSISTENT GEOMETRY
Cutting width and diameter do not change even when different corner radius inserts are used.

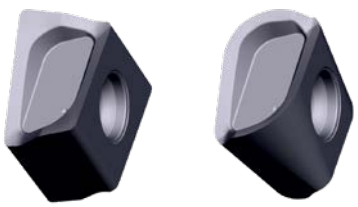


LARGE VARIETY OF CORNER RADII AVAILABLE

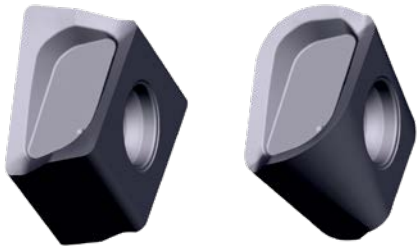
DCV3 = R 0.4 – R 4.0 mm



DCV4 = R 0.4 – R 5.0 mm



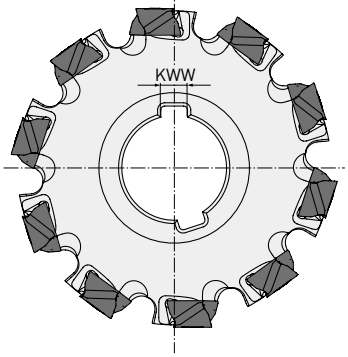
DCV5 = R 0.4 – R 7.0 mm

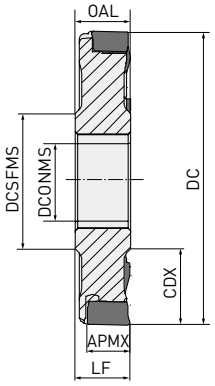


DCV3

90° KAPR | R | PF

P K





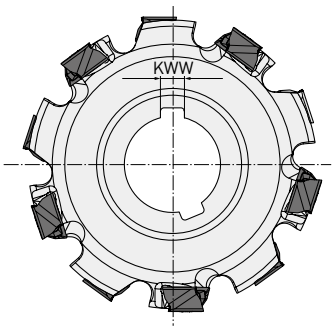
Max. APMX: 8.6 mm

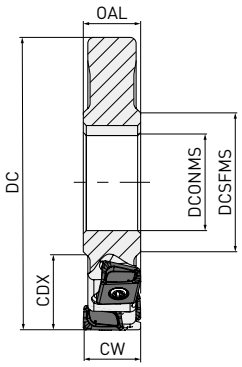
HALF SIDE

DC	ZNF	LF = OAL	CDX	DCONMS	DCSFMS	KWW		
80 – 99.9	8	≥12	20.0	27	40	7	—	LNGU09
100 – 124.9	10		27.0	32	46	8	—	
125 – 160.0	12		35.0	40	55	10	—	

1/1

121 Vc





Largest width CW: 17.2 mm

FULL SIDE

DC	ZNF	ZNP	LF = OAL	CW	CDX	DCONMS	DCSFMS	KWW		
80 – 99.9	4	8	≥12	12-17.2	20.0	27	40	7	—	LNGU09
100 – 124.9	5	10		12-17.2	27.0	32	46	8	—	
125 – 160.0	6	12		12-17.2	35.0	40	55	10	—	

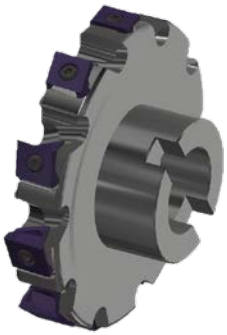
1/1

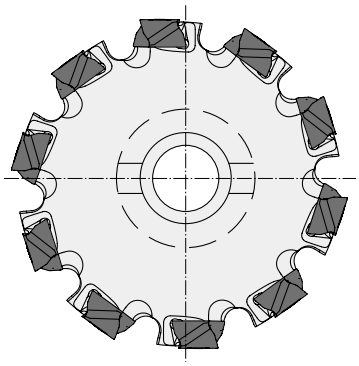
1. Multi level designs available for each size. Please contact our technical department (MMC Hartmetall GmbH - special@mmchg.de) for details of any geometry not shown.

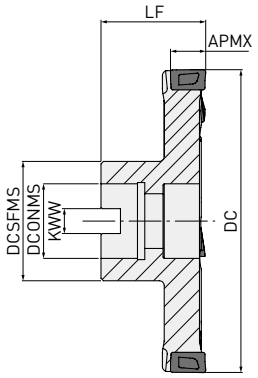
121 Vc

DCV3

P K







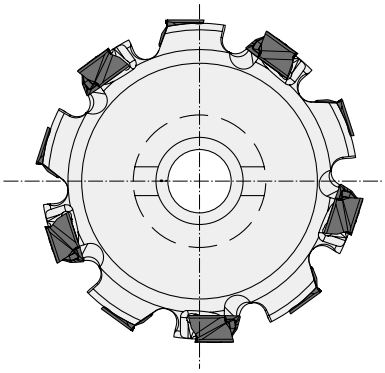
Max. APMX: 8.6 mm

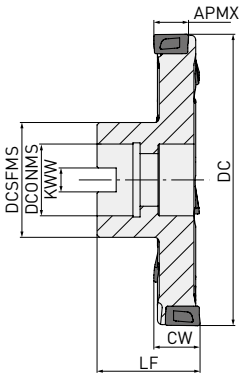
HALF SIDE ARBOR

DC	ZEFP	LF	CDX	DCONMS	DCSFMS	KWW		
80 – 99.9	8	50	20.0	27	40	12.4	—	
100 – 124.9	10	60	27.0	32	46	14.4	—	LNGU09
125 – 160.0	12	60	35.0	40	55	16.4	—	

1/1

121 Vc





FULL SIDE ARBOR

Largest width CW: 17.2 mm

DC	ZEFP	LF	CW	CDX	DCONMS	DCSFMS	KWW		
80 – 99.9	8	50	12-17.2	20.0	27	40	12.4	—	
100 – 124.9	10	60	12-17.2	27.0	32	46	14.4	—	LNGU09
125 – 160.0	12	60	12-17.2	35.0	40	55	16.4	—	

1/1

1. Multi level designs available for each size. Please contact our technical department (MMC Hartmetall GmbH - special@mmchg.de) for details of any geometry not shown.

121 Vc

DCV3

SPARE PARTS

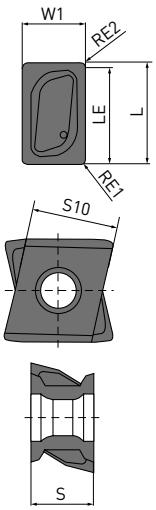
Tool holder type		TQ (Nm)		
	Clamp screw	Clamp torque	Wrench	Anti-seize lubricant
DCV3 LNGU0906○○PNE○M	TS304	1.5	TKY08W	MK1KS

INSERT

Order number	VP15TF	Hand	Class	Honing	L	LE	S	S10	RE1	W1
LNGU090604PNER-M	●	R	G	E	9	8.6	6	8.5	0.4	6
LNGU090608PNER-M	●	R	G	E	9	8.6	6	8.5	0.8	6
LNGU090612PNER-M	●	R	G	E	9	8.6	6	8.5	1.2	6
LNGU090616PNER-M	●	R	G	E	9	8.6	6	8.5	1.6	6
LNGU090620PNER-M	●	R	G	E	9	8.6	6	8.5	2	6
LNGU090624PNER-M	●	R	G	E	9	8.6	6	8.5	2.4	6
LNGU090630PNER-M	●	R	G	E	9	8.6	6	8.5	3	6
LNGU090640PNER-M	●	R	G	E	9	8.6	6	8.5	4	6
LNGU090604PNEL-M	●	L	G	E	9	8.6	6	8.5	0.4	6
LNGU090608PNEL-M	●	L	G	E	9	8.6	6	8.5	0.8	6
LNGU090612PNEL-M	●	L	G	E	9	8.6	6	8.5	1.2	6
LNGU090616PNEL-M	●	L	G	E	9	8.6	6	8.5	1.6	6
LNGU090620PNEL-M	●	L	G	E	9	8.6	6	8.5	2	6
LNGU090624PNEL-M	●	L	G	E	9	8.6	6	8.5	2.4	6
LNGU090630PNEL-M	●	L	G	E	9	8.6	6	8.5	3	6
LNGU090640PNEL-M	●	L	G	E	9	8.6	6	8.5	4	6

Shape

Geometry
Right hand insert shown



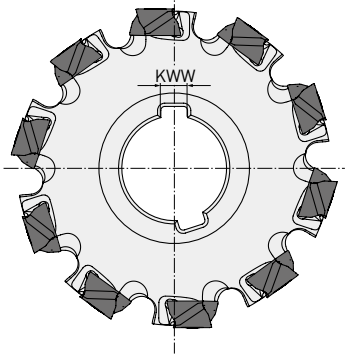
1/1

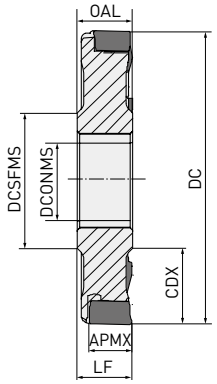
(10 inserts in one case)

● : Inventory maintained. □ : Produced to order only.

DCV4

P K





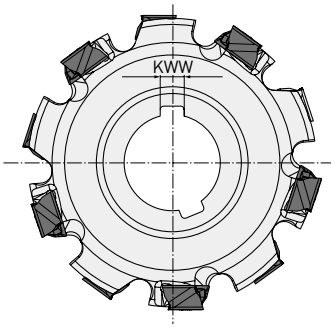
Max. APMX: RE1 < 3.0 mm 12.2 mm
RE1 > 3.0 mm 11.4 mm

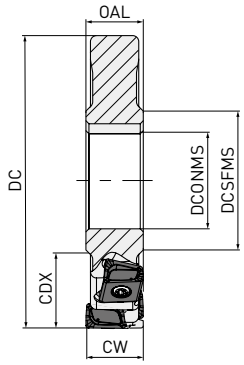
HALF SIDE

DC	ZEFP	LF = OAL	CDX	DCONMS	DCSFMS	KWW		
80 – 99.9	8	18	20.0	27	40	7	—	LNGU13
100 – 124.9	10		27.0	32	46	8	—	
125 – 159.9	12		35.0	40	55	10	—	
160 – 200	14		52.5	40	55	10	—	

1/1

121 Vc





Largest width CW: 24 mm

FULL SIDE

DC	ZEFP	CW	CDX	DCONMS	DCSFMS	KWW		
80 – 99.9	4	18–24	20.0	27	40	7	—	LNGU13
100 – 124.9	5	18–24	27.0	32	46	8	—	
125 – 159.9	6	18–24	35.0	40	55	10	—	
160 – 200	7	18–24	52.5	40	55	10	—	

1/1

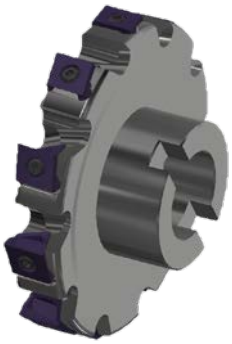
1. Multi level designs available for each size. Please contact our technical department (MMC Hartmetall GmbH - special@mmchg.de) for details of any geometry not shown.

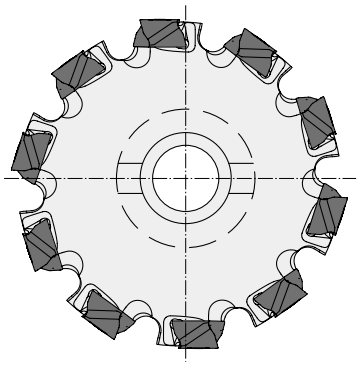
121 Vc

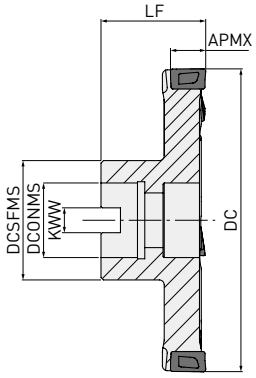
DCV4

90° KAPR | R | PF

P K







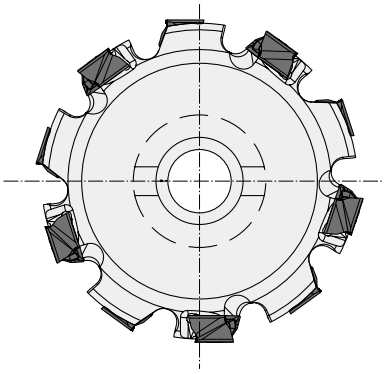
HALF SIDE ARBOR

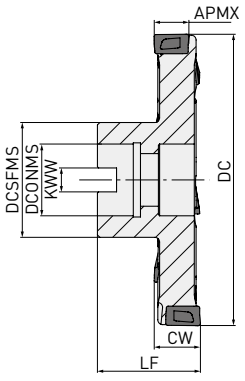
Max. APMX: RE1 < 3.0 mm 12.2 mm
RE1 > 3.0 mm 11.4 mm

DC	ZEFP	LF	CDX	DCONMS	DCSFMS	KWW		
80 – 99.9	8 – 10	50	20	27	40	12.4	—	LNGU13
100 – 124.9	10 – 12	60	27	32	46	14.4	—	
125 – 159.9	12 – 14	60	35	40	55	16.4	—	
160 – 200	14 – 20	70	52.5	40	55	16.4	—	

1/1

121 Vc





Largest width CW: 24 mm

FULL SIDE ARBOR

DC	ZEFP	LF	CW	CDX	DCONMS	DCSFMS	KWW		
80 – 99.9	8 – 10	50	18–24	20	27	40	12.4	—	LNGU13
100 – 124.9	10 – 12	60	18–24	27	32	46	14.4	—	
125 – 159.9	12 – 14	60	18–24	35	40	55	16.4	—	
160 – 200	14 – 20	70	18–24	52.5	40	55	16.4	—	

1/1

1. Multi level designs available for each size. Please contact our technical department (MMC Hartmetall GmbH - special@mmchg.de) for details of any geometry not shown.

121 Vc

DCV4

SPARE PARTS

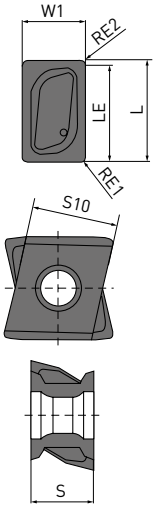
Tool holder type		TQ (Nm)		
	Clamp screw	Clamp torque	Wrench	Anti-seize lubricant
DCV4 LNGU1308○○PNE○-○	TS406	3.5	TKY15T	MK1KS

INSERT

Order number	MP6120	VP15TF	Hand	Class	Honing	L	LE	S	S10	RE1	RE2	W1
LNGU130804PNER-M		●	R	G	E	13.0	12.2	8.0	11.0	0.4	0.8	8.0
LNGU130804PNEL-M		●	L	G	E	13.0	12.2	8.0	11.0	0.4	0.8	8.0
LNGU130808PNER-M		●	R	G	E	13.0	12.2	8.0	11.0	0.8	0.8	8.0
LNGU130808PNEL-M		●	L	G	E	13.0	12.2	8.0	11.0	0.8	0.8	8.0
LNGU130812PNER-M		●	R	G	E	13.0	12.2	8.0	11.0	1.2	0.8	8.0
LNGU130812PNEL-M		●	L	G	E	13.0	12.2	8.0	11.0	1.2	0.8	8.0
LNGU130816PNER-M		●	R	G	E	13.0	12.2	8.0	11.0	1.6	0.8	8.0
LNGU130816PNEL-M		●	L	G	E	13.0	12.2	8.0	11.0	1.6	0.8	8.0
LNGU130820PNER-M		●	R	G	E	13.0	12.2	8.0	11.0	2.0	0.8	8.0
LNGU130820PNEL-M		●	L	G	E	13.0	12.2	8.0	11.0	2.0	0.8	8.0
LNGU130824PNER-M		●	R	G	E	13.0	12.2	8.0	11.0	2.4	0.8	8.0
LNGU130824PNEL-M		●	L	G	E	13.0	12.2	8.0	11.0	2.4	0.8	8.0
LNGU130830PNER-M		●	R	G	E	13.0	11.4	8.0	11.0	3.0	1.6	8.0
LNGU130830PNEL-M		●	L	G	E	13.0	11.4	8.0	11.0	3.0	1.6	8.0
LNGU130840PNER-M		●	R	G	E	13.0	11.4	8.0	11.0	4.0	1.6	8.0
LNGU130840PNEL-M		●	L	G	E	13.0	11.4	8.0	11.0	4.0	1.6	8.0
LNGU130850PNER-M		●	R	G	E	13.0	11.4	8.0	11.0	5.0	1.6	8.0
LNGU130850PNEL-M		●	L	G	E	13.0	11.4	8.0	11.0	5.0	1.6	8.0
LNGU130804PNER-R	●	●	R	G	E	13.0	12.2	8.0	11.0	0.4	0.8	8.0
LNGU130804PNEL-R	●	●	L	G	E	13.0	12.2	8.0	11.0	0.4	0.8	8.0
LNGU130808PNER-R	●	●	R	G	E	13.0	12.2	8.0	11.0	0.8	0.8	8.0
LNGU130808PNEL-R	●	●	L	G	E	13.0	12.2	8.0	11.0	0.8	0.8	8.0
LNGU130812PNER-R	●	●	R	G	E	13.0	12.2	8.0	11.0	1.2	0.8	8.0
LNGU130812PNEL-R	●	●	L	G	E	13.0	12.2	8.0	11.0	1.2	0.8	8.0
LNGU130816PNER-R	●	●	R	G	E	13.0	12.2	8.0	11.0	1.6	0.8	8.0
LNGU130816PNEL-R	●	●	L	G	E	13.0	12.2	8.0	11.0	1.6	0.8	8.0
LNGU130820PNER-R	●	●	R	G	E	13.0	12.2	8.0	11.0	2.0	0.8	8.0
LNGU130820PNEL-R	●	●	L	G	E	13.0	12.2	8.0	11.0	2.0	0.8	8.0
LNGU130824PNER-R	●	●	R	G	E	13.0	12.2	8.0	11.0	2.4	0.8	8.0
LNGU130824PNEL-R	●	●	L	G	E	13.0	12.2	8.0	11.0	2.4	0.8	8.0
LNGU130830PNER-R	●	●	R	G	E	13.0	11.4	8.0	11.0	3.0	1.6	8.0
LNGU130830PNEL-R	●	●	L	G	E	13.0	11.4	8.0	11.0	3.0	1.6	8.0
LNGU130840PNER-R	●	●	R	G	E	13.0	11.4	8.0	11.0	4.0	1.6	8.0
LNGU130840PNEL-R	●	●	L	G	E	13.0	11.4	8.0	11.0	4.0	1.6	8.0
LNGU130850PNER-R	●	●	R	G	E	13.0	11.4	8.0	11.0	5.0	1.6	8.0
LNGU130850PNEL-R	●	●	L	G	E	13.0	11.4	8.0	11.0	5.0	1.6	8.0

Shape

Geometry
Right hand insert shown



1/1

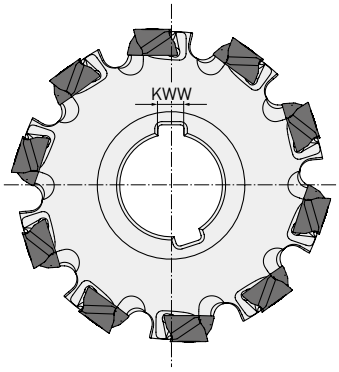
(10 inserts in one case)

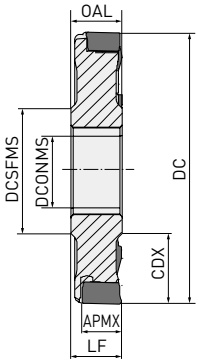
● : Inventory maintained. □ : Produced to order only.

DCV5

90° KAPR

P K





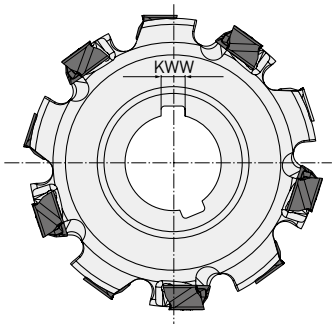
Max. APMX: RE1 < 3.0 mm 16.2 mm
RE1 > 3.0 mm 15.4 mm

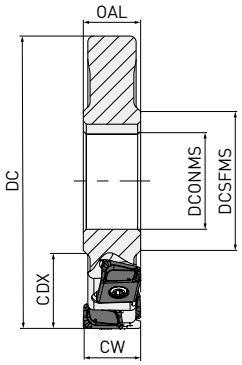
HALF SIDE

DC	ZEFP	LF = OAL	CDX	DCONMS	DCSFMS	KWW		
100 – 124.9	8	23	27.0	32	46	8	—	LNGU17
125 – 159.9	10		35.0	40	55	10	—	
160 – 199.9	12		52.5	40	55	10	—	
200 – 250	16		65.0	50	70	12	—	

1/1

121 Vc





Largest width CW: 32 mm

FULL SIDE

DC	ZEFP	CW	CDX	DCONMS	DCSFMS	KWW		
100 – 124.9	8	23 – 32	27.0	32	46	8	—	LNGU17
125 – 159.9	10		35.0	40	55	10	—	
160 – 199.9	12		52.5	40	55	10	—	
200 – 250	16		65.0	50	70	12	—	

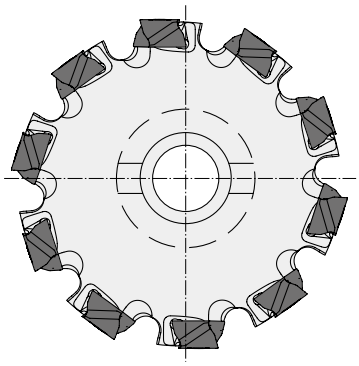
1/1

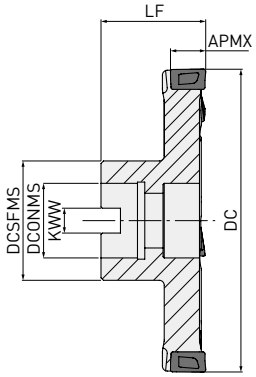
1. Multi level designs available for each size. Please contact our technical department (MMC Hartmetall GmbH - special@mmchg.de) for details of any geometry not shown.

121 Vc

DCV5

P K



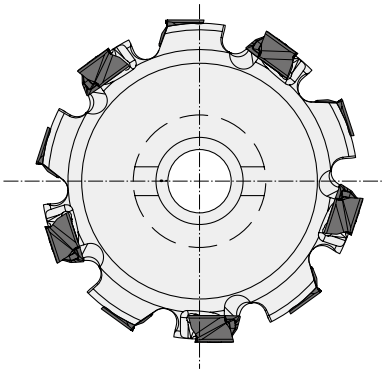


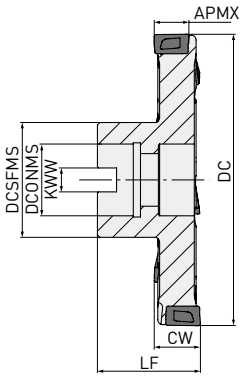
Max. APMX: RE1 < 3.0 mm 16.2 mm
RE1 > 3.0 mm 15.4 mm

HALF SIDE ARBOR

DC	ZEFP	LF	CDX	DCONMS	DCSFMS	KWW		
100 – 124.9	8 – 10	50	27	32	46	14.4	—	LNGU17
125 – 159.9	10 – 12	60	35	40	55	16.4	—	
160 – 199.9	12 – 14	60	52.5	40	55	16.4	—	
200 – 250.0	14 – 20	70	65	40	70	16.4	—	

1/1





Largest width CW: 32 mm

FULL SIDE ARBOR

DC	ZEFP	LF	CW	CDX	DCONMS	DCSFMS	KWW		
100 – 124.9	8 – 10	60	23 – 32	27	32	46	14.4	—	LNGU17
125 – 159.9	10 – 12	60		35	40	55	16.4	—	
160 – 199.9	12 – 14	70		52.5	40	55	16.4	—	
200 – 250.0	14 – 20	70		65	40	70	16.4	—	

1/1

1. Multi level designs available for each size. Please contact our technical department (MMC Hartmetall GmbH - special@mmchg.de) for details of any geometry not shown.

121 Vc

DCV5

SPARE PARTS

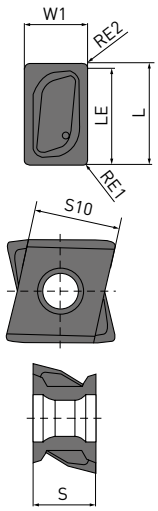
Tool holder type		TQ (Nm)		
	Clamp screw	Clamp torque	Wrench	Anti-seize lubricant
DCV5 LNGU1710○○PNE○R	TS53	7.5	TKY25T	MK1KS

INSERT

Order number	MP6120	VP15TF	Hand	Class	Honing	L	LE	S	S10	RE1	RE2	W1	D1
LNGU171004PNER-R	●	●	R	G	E	17.0	16.2	10.0	13.0	0.4	0.8	10.0	5.5
LNGU171004PNEL-R	●	●	L	G	E	17.0	16.2	10.0	13.0	0.4	0.8	10.0	5.5
LNGU171008PNER-R	●	●	R	G	E	17.0	16.2	10.0	13.0	0.8	0.8	10.0	5.5
LNGU171008PNEL-R	●	●	L	G	E	17.0	16.2	10.0	13.0	0.8	0.8	10.0	5.5
LNGU171012PNER-R	●	●	R	G	E	17.0	16.2	10.0	13.0	1.2	0.8	10.0	5.5
LNGU171012PNEL-R	●	●	L	G	E	17.0	16.2	10.0	13.0	1.2	0.8	10.0	5.5
LNGU171016PNER-R	●	●	R	G	E	17.0	16.2	10.0	13.0	1.6	0.8	10.0	5.5
LNGU171016PNEL-R	●	●	L	G	E	17.0	16.2	10.0	13.0	1.6	0.8	10.0	5.5
LNGU171020PNER-R	●	●	R	G	E	17.0	16.2	10.0	13.0	2.0	0.8	10.0	5.5
LNGU171020PNEL-R	●	●	L	G	E	17.0	16.2	10.0	13.0	2.0	0.8	10.0	5.5
LNGU171024PNER-R	●	●	R	G	E	17.0	16.2	10.0	13.0	2.4	0.8	10.0	5.5
LNGU171024PNEL-R	●	●	L	G	E	17.0	16.2	10.0	13.0	2.4	0.8	10.0	5.5
LNGU171030PNER-R	●	●	R	G	E	17.0	15.4	10.0	13.0	3.0	1.6	10.0	5.5
LNGU171030PNEL-R	●	●	L	G	E	17.0	15.4	10.0	13.0	3.0	1.6	10.0	5.5
LNGU171040PNER-R	●	●	R	G	E	17.0	15.4	10.0	13.0	4.0	1.6	10.0	5.5
LNGU171040PNEL-R	●	●	L	G	E	17.0	15.4	10.0	13.0	4.0	1.6	10.0	5.5
LNGU171050PNER-R	●	●	R	G	E	17.0	15.4	10.0	13.0	5.0	1.6	10.0	5.5
LNGU171050PNEL-R	●	●	L	G	E	17.0	15.4	10.0	13.0	5.0	1.6	10.0	5.5
LNGU171060PNER-R	●	●	R	G	E	17.0	15.4	10.0	13.0	6.0	1.6	10.0	5.5
LNGU171060PNEL-R	●	●	L	G	E	17.0	15.4	10.0	13.0	6.0	1.6	10.0	5.5
LNGU171070PNER-R	●	●	R	G	E	17.0	15.4	10.0	13.0	7.0	1.6	10.0	5.5
LNGU171070PNEL-R	●	●	L	G	E	17.0	15.4	10.0	13.0	7.0	1.6	10.0	5.5

Shape

Geometry
Right hand insert shown

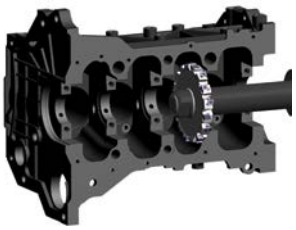


1/1

(10 inserts in one case)

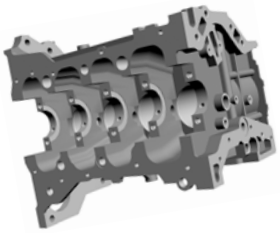
● : Inventory maintained. □ : Produced to order only.

APPLICATION EXAMPLES

Tool	DCV4 Ø 300 mm	DCV4 Ø 160 mm
Insert (Grade)	LNGU130804PNER-M (VP15TF)	LNGU130804PNER-M (VP15TF)
Workpiece	Brake caliper (DIN GGG40.3) 	Cylinder block (DIN GG25) 
n (min^{-1})	120	500
Vc (m/min)	113	201
fz (mm/t.)	0.09 – 0.24	0.14
Vf (mm/min)	150 – 400	500
ap (mm)	1.0 – 2.0	1.0
Cutting mode	Dry cutting	Dry cutting
Machine	Machining centre	Horizontal
Results	Approximately 2 x longer tool life than conventional products. Excellent dimensional accuracy and surface finish. Improved machining efficiency gave a 30 % reduction in tooling costs.	1.5 x better machining efficiency than conventional products. Approximately double tool life. Stable cutting with minimal sound and provided a good surface finish. Improved machining efficiency and longer tool life.

1. The above application examples are customer's application examples, and can differ from the recommended conditions.

UNIQUE SIDE CUTTER SERIES

Taking advantage of the latest technology, materials and cutter geometry.

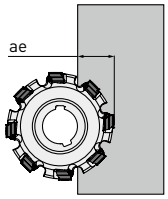
CLASSIFIED

	DCV3	DCV4	DCV5
Material	P K	P K	P K
Low cutting resistance	◎	◎	◎
Toughness	◎	◎	◎
Insert shape		Vertical	Vertical
ZNF		Double sided insert	Double sided insert
ZNP	4	4	4
Half side Max. depth of cut APMX	RE < 4.0 mm 8.6 mm	RE < 3.0 mm 12.2 mm	RE < 3.0 mm 16.2 mm
	RE ⩾ 3.0mm 11.4 mm	RE ⩾ 3.0mm 11.4 mm	RE ⩾ 3.0 mm 15.4 mm
Full side Max. cutting dia DC	Ø 300 mm	Ø 400 mm	Ø 660 mm

DCV3 / DCV4 / DCV5

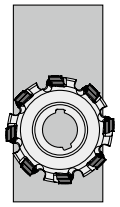
RECOMMENDED CUTTING CONDITIONS

SHOULDER MILLING

	Material	Hardness	Grade	Vc	ap	ae	fz	Cutting mode
P	Steel	≤180HB	MP6120 VP15TF	150 (130 – 180)	≤APMX	<10% <30% ≤50%	0.10 (0.08 – 0.15)	
P	Carbon steel/ Alloy steel	180 – 280HB	MP6120 VP15TF	150 (130 – 180)	≤2.0	≤50%	0.12 (0.08 – 0.20)	
					≤4.0	<10%	0.12 (0.08 – 0.20)	
					≤4.0	≤50%	0.10 (0.08 – 0.15)	
					≤APMX	<10%	0.10 (0.08 – 0.15)	
					≤APMX	≤50%	0.10 (0.08 – 0.12)	
K	Cast iron	Tensile strength ≤ 350MPa	VP15TF	150 (130 – 180)	≤2.0	≤50%	0.12 (0.08 – 0.20)	
					≤4.0	<10%	0.12 (0.08 – 0.20)	
					≤4.0	≤50%	0.10 (0.08 – 0.15)	
					≤APMX	<10%	0.10 (0.08 – 0.15)	
					≤APMX	≤50%	0.10 (0.08 – 0.12)	
K	Gray cast iron	Tensile strength ≤ 450MPa	VP15TF	130 (110 – 160)	≤2.0	≤50%	0.12 (0.08 – 0.20)	
					≤4.0	<10%	0.12 (0.08 – 0.20)	
					≤4.0	≤50%	0.10 (0.08 – 0.15)	
					≤APMX	<10%	0.10 (0.08 – 0.15)	
					≤APMX	≤50%	0.10 (0.08 – 0.12)	
	Ductile cast iron	Tensile strength ≤ 800MPa	VP15TF	130 (110 – 160)	≤2.0	≤50%	0.12 (0.08 – 0.20)	
					≤4.0	<10%	0.12 (0.08 – 0.20)	
					≤4.0	≤50%	0.10 (0.08 – 0.15)	
					≤APMX	<10%	0.10 (0.08 – 0.15)	
					≤APMX	≤50%	0.10 (0.08 – 0.12)	

1/1

FACE MILLING

	Material	Hardness	Grade	Vc	ap	fz	Cutting mode
P	Steel	≤180HB	MP6120 VP15TF	150 (130 – 180)	≤APMX	0.10 (0.08 – 0.15)	
P	Carbon steel/ Alloy steel	180 – 280HB	MP6120 VP15TF	150 (130 – 180)	≤2.0	0.12 (0.08 – 0.20)	
					≤4.0	0.10 (0.08 – 0.15)	
					≤APMX	0.10 (0.08 – 0.12)	
K	Cast iron	Tensile strength ≤ 350MPa	VP15TF	150 (130 – 180)	≤2.0	0.12 (0.08 – 0.20)	
					≤4.0	0.10 (0.08 – 0.15)	
					≤APMX	0.10 (0.08 – 0.12)	
K	Gray cast iron	Tensile strength ≤ 450MPa	VP15TF	150 (130 – 180)	≤2.0	0.12 (0.08 – 0.20)	
					≤4.0	0.10 (0.08 – 0.15)	
					≤APMX	0.10 (0.08 – 0.12)	
	Ductile cast iron	Tensile strength ≤ 800MPa	VP15TF	130 (110 – 160)	≤2.0	0.12 (0.08 – 0.20)	
					≤4.0	0.10 (0.08 – 0.15)	
					≤APMX	0.10 (0.08 – 0.12)	

1/1

LSE445

GENERAL FACE MILLING SERIES WITH 20° POSITIVE INSERTS FOR RELIABLE AND EFFICIENT MACHINING

Mplus...

LSE445

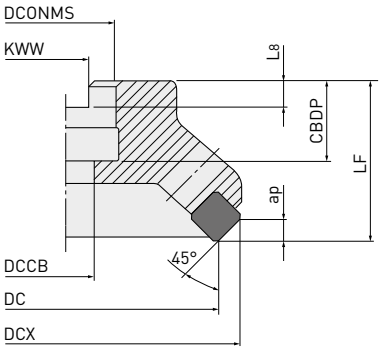
45° FACE MILLING GENERAL CUTTING

P M K N

C H: 45°
A.R: +19° T: +13°
RR: -2° I : +15°

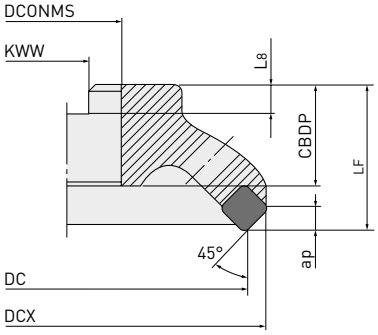
1

Ø 63
Ø 80
Ø 100



2

Ø 125
Ø 160



ARBOR TYPE

Order number	Stock R	Stock L	ZEFP	DC	DCX	LF	DCONMS	CBDP	DCCB	KWW	L8	WT	APMX		Type
LSE445-063A05R/L-E	●	□	5	63	76.5	40	22	20	11	10.4	6.4	0.8	5.5	—	1
LSE445-080A06R/L-E	●	□	6	80	93.5	50	27	22	13.5	12.4	7.0	1.0	5.5	—	1
LSE445-100A07R/L-E	●	□	7	100	113.5	50	32	25	17.5	14.4	8.0	1.4	5.5	—	1
LSE445-125B09R/L-E	□	□	9	125	138.5	50	40	32	—	16.4	9.0	2.0	5.5	—	2
LSE445-160B11R/L-E	□	□	11	160	173.5	50	40	32	—	16.4	9.0	3.0	5.5	—	2

1/1

125 Vc

SPARE PARTS

Tool holder number	Shim *1	Shim screw	Wedge	Clamp screw	Wrench	Wrench
LSE445 -063A05R/L-E	STBE445NF	CS300890T	CWSE445TR	LS10T	TKY25T	TKY08F
LSE445 -080A04R/L-E						
LSE445-100A07R/L-E				LS15T		
LSE445-125B09R/L-E						
LSE445 -160B11R/L-E						

*1 Clamp Torque (N • m) : LS10T= 8.5. LS15T= 8.5. CS300890T= 1.0

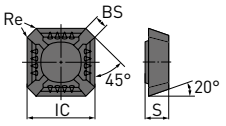
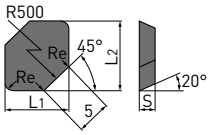
● : Inventory maintained. □ : Produced to order only.

LSE445 – INSERTS

		F7010	F7030	MC5020	VP15TF	NX2525	NX4545	UTi20T	HTi10
P	Steel	●	◕		◕	●	◕	◕	
M	Stainless steel	◕	◕		◕	◕	◕	◕	
K	Cast iron			◕	✱	●		✱	◕
N	Non-ferrous metal								◕

Cutting conditions:
●: Stable cutting ◕: General cutting ✱: Unstable cutting

Honing:
E: Round F: Sharp S: Chamfer + Hone T: Chamfer Z: Strong

Order number	Class	Honing	F7010	F7030	MC5020	VP15TF	NX2525	NX4545	UTi20T	HTi10	IC	S	BS	RE	Shape
SEEN1203AFFN1	E	F								●	12.7	3.18	1.4	1.0	
SEEN1203AFEN1	E	E				●					12.7	3.18	1.4	1.0	
SEEN1203AFTN1	E	T	●				●		●		12.7	3.18	1.4	1.0	
SEEN1203AFTN3	E	T	●					●	★		12.7	3.18	1.4	—	
SEEN1203AFSN1	E	S		●	●						12.7	3.18	1.4	1.0	
SEEN1203AFSN3	E	S		●							12.7	3.18	1.4	—	
SEEN1203AFZN1	E	Z					●				12.7	3.18	1.4	1.0	
Inserts with breaker															
SEER1203AFEN-JS	E	E	●	●	●	●					12.7	3.18	1.4	1.0	
SEER1204AFEN-JS	E	E	●								12.7	3.18	1.4	1.0	
Wiper inserts															
WEC42AFTR5C	C	T					●				—	3.18	5	1.0	 

LSE445

RECOMMENDED CUTTING CONDITIONS

	Material	Hardness	Grade	Vc	fz
P	Mild steel	<180HB	F7030	300 (200 – 360)	0.2 (0.1 – 0.3)
			NX4545		
			UTi20T	240 (170 – 300)	
			UP20M		
	Carbon steel Alloy steel	180 – 280HB	F7030	250 (170 – 300)	0.2 (0.1 – 0.3)
			NX4545		
			UTi20T	200 (140 – 240)	
			UP20M		
		280 – 350HB	UTi20T	140 (100 – 170)	0.15 (0.1 – 0.2)
M	Stainless steel	<200HB	UP20M	200 (140 – 240)	0.2 (0.1 – 0.3)
			UTi20T		
K	Cast iron	Tensile Strength <450MPa	MC5020	200 (130 – 240)	0.2 (0.1 – 0.3)
			F5010		
			F5020		
			HTi10	160 (110 – 190)	
			UTi20T		
N	Aluminium alloy	—	MD220	1000 (200 – 1500)	0.15 (0.05 – 0.25)
			HTi10	1000 (700 – 1200)	0.12 (0.05 – 0.2)

1/1

1. Revolution (min^{-1}) = (1000 x Cutting speed)÷(3.14 x ØD1).
2. Table feed (mm/min) = Feed per tooth×Number of teeth x Cutter revolution.

RRD

ROUND INSERT TYPE CUTTERS
VERSATILE PERFORMANCE AND LONG TOOL LIFE

Mplus...

RRD

PRODUCT FEATURES

- Round insert type cutter for mould & die machining
- Versatile range of insert grades for machining up to 60 HRC
- Large range of cutters available, arbor, screw-in, shank and Weldon types
- Wide range of insert sizes, R2.5, 3.5, 5.0, 6.0 and 8.0

RRD

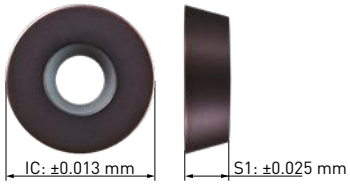
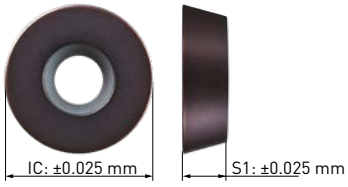
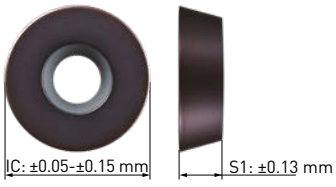
ROUND INSERT TYPE CUTTERS

RRD CUTTERS

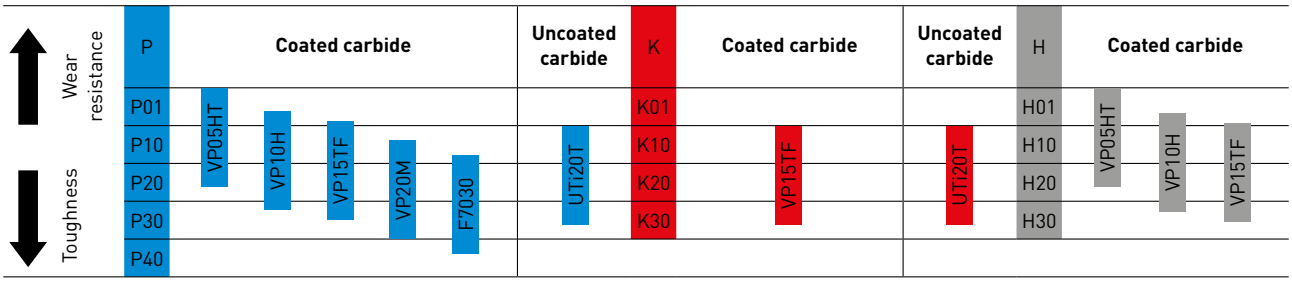
STRAIGHT SHANK	WELDON SHANK	SCREW-IN	ARBOR
			

FEATURES

Inserts are available in 3 different tolerances to suit all applications.

RDHX	RDZX	RDMX
• Ground (H Tolerance) • For high precision • For semi-finishing and finishing	• Precision sintered (E Tolerance) • For universal use • Economical insert with long tool life	• Sintered (M Tolerance) • For universal use • For roughing and semi-finishing
		

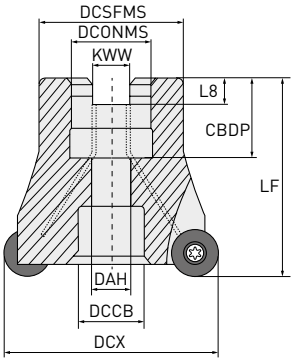
GRADE OVERVIEW



RRD N

P K H

1



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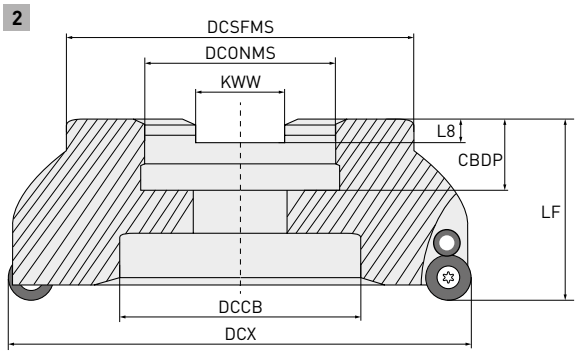

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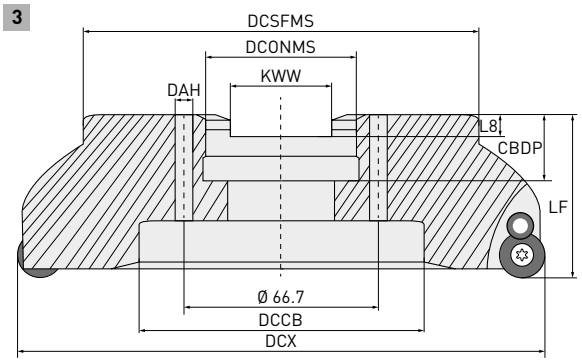


Right hand tool holder only.

ARBOR TYPE (Neutral)

Order number	Stock	APMX	DCX	DC	LF	DCONMS	CBDP	DAH	DCSFMS	KWW	L8	DCCB	ZEFP			
RRD050N-042A06R	●	5	42	32	44	16	18	9	33	8.4	5.7	15	6	●	1	RDH/M/Z 1003M0◌
RRD050N-052A07R	●	5	52	42	50	22	20	11	44	10.4	6.3	18	7	●	1	
RRD060N-042A05R	●	6	42	30	42	16	18	9	33	8.4	5.7	15	5	●	1	
RRD060N-050A05R	●	6	50	38	50	22	20	11	44	10.4	6.3	18	5	●	1	RDH/M/Z 12T3M0◌
RRD060N-052A05R	●	6	52	40	50	22	20	11	44	10.4	6.3	18	5	●	1	
RRD060N-063A06R	●	6	63	51	50	22	20	11	44	10.4	6.3	18	6	●	1	
RRD080N-050A04R	●	8	50	34	50	22	20	11	44	10.4	6.3	18	4	●	1	
RRD080N-052A04R	●	8	52	36	50	22	20	11	4	10.4	6.3	18	4	●	1	
RRD080N-052A05R	●	8	52	36	50	22	20	11	4	10.4	6.3	18	5	●	1	
RRD080N-063A05R	●	8	63	47	50	22	20	11	4	10.4	6.3	18	5	●	1	
RRD080N-066A05R	●	8	66	50	50	27	22	13.5	53	12.4	7.2	20	5	●	1	RDH/M/Z 1604M0◌
RRD080N-080A06R	●	8	80	64	52	27	22	13.5	64	12.4	7.2	20	6	●	1	
RRD080N-100A07R	●	8	100	84	52	32	29	—	72	14.4	8	46	7	—	2	
RRD080N-125B08R	●	8	125	109	52	40	30	—	82	16.4	9	58	8	—	2	
RRD080N-160C09R	□	8	160	144	52	40	29	14	90	16.4	9	92	9	—	3	

140 Vc

● : Inventory maintained. □ : Produced to order only.

RRD N

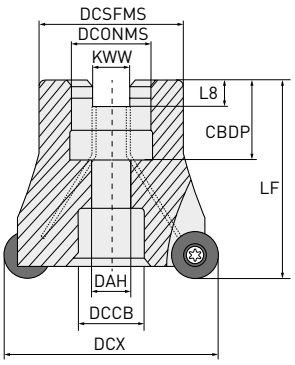
SPARE PARTS

Order number		RE					
			Shim	**Shim screw**	**Clamp screw**	**Insert clamp screw**	**Wrench**
RRD050N-	042A06R	5	—	—	B-TS35	—	TKY15F
	052A07R						
RRD060N-	042A05R	6				TS1001	
	050A05R						
	052A05R						
	063A06R						
RRD080N-	050A04R	8	KS-12	B-TS45	214	—	TKY20F
	052A04R						
	052A05R						
	063A05R						
	066A05R						
	080A06R						
	100A07R						
	125B08R						
	160C09R						

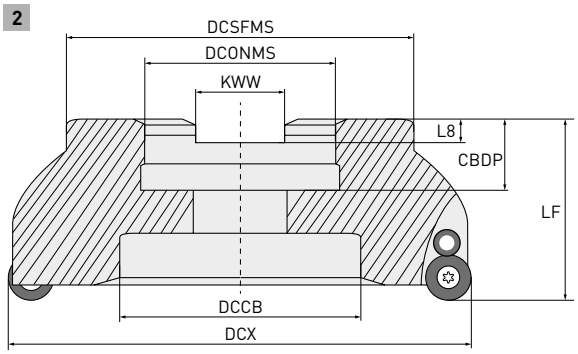
RRD P

P K H

1



2



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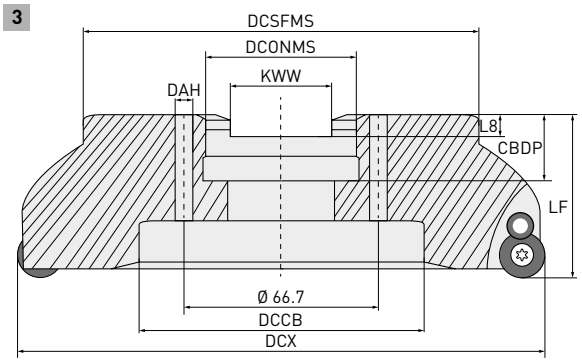


Right hand tool holder only.

ARBOR TYPE (Positive)

Order number	Stock	APMX	DCX	DC	LF	DCONMS	CBDP	DAH	DCSFMS	KWW	L8	DCCB	ZEFP		Typ	
RRD060P-050A05R	●	6	50	38	50	22	20	11	44	10.4	6.3	18	5	●	1	
RRD060P-052A05R	●	6	52	40	50	22	20	11	44	10.4	6.3	18	5	●	1	
RRD060P-063A06R	●	6	63	51	50	22	20	11	44	10.4	6.3	18	6	●	1	RDH/M/Z 12T3M0E
RRD060P-066A06R	●	6	66	54	52	27	22	13.5	53	12.4	7.2	20	6	●	1	
RRD060P-080A07R	●	6	80	68	50	27	22	13.5	64	12.4	7.2	20	7	●	1	
RRD080P-050A04R	●	8	50	34	50	22	20	11	44	10.4	6.3	18	4	●	1	
RRD080P-063A05R	●	8	63	47	50	22	20	11	44	10.4	6.3	18	5	●	1	
RRD080P-066A05R	●	8	66	50	50	27	22	13.5	53	12.4	7.2	20	5	●	1	
RRD080P-080A06R	●	8	80	64	52	27	22	13.5	64	12.4	7.2	20	6	●	1	RDH/M/Z 1604M0◌
RRD080P-100A07R	●	8	100	84	52	32	29	—	72	14.4	8	46	7	—	2	
RRD080P-125B08R	●	8	125	109	52	40	30	—	82	16.4	9	58	8	—	2	
RRD080P-160C09R	●	8	160	144	52	40	29	14	90	16.4	9	92	9	—	3	

1/1

140 Vc

● : Inventory maintained. □ : Produced to order only.

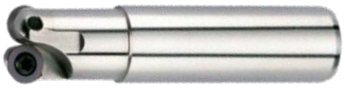
RRD P

SPARE PARTS

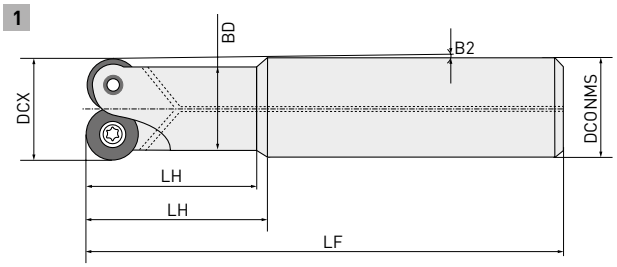
Order number		RE					
			Shim	**Shim screw**	**Clamp screw**	**Insert clamp screw**	**Wrench**
RRD060P-	050A05R	6	—	—	B-TS35	TS1001	TKY15F
	052A05R						
	063A06R						
	066A06R						
	080A07R						
RRD080P-	050A04R	8	KS-12	B-TS45	214	—	TKY20F
	063A05R						
	066A05R						
	080A06R						
	100A07R						
	125B08R						
	160C09R						

RRD

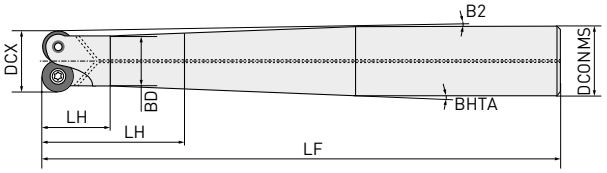
P K H



1



2



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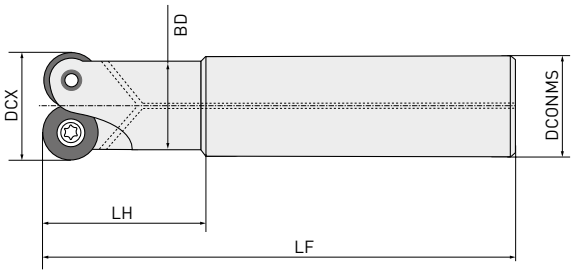

Right hand tool holder only.

STRAIGHT SHANK TYPE

Order number	Stock	APMX	DCX	DCONMS	LF	LU	LH	BD	B2	BHTA	ZEFP		Typ	
RRD025R102S10Z	●	2.5	10	10	75	—	23	—	—	0.89	2	●	4	RDH/Z 0501M0
RRD025R123S12Z	●	2.5	12	12	75	—	23	11	—	—	3	●	4	
RRD025R154S16Z	●	2.5	15	16	80	22	22.5	14	1.4	45	4	●	1	
RRD035R122S10Z	●	3.5	12	10	75	23	—	11	—	—	2	●	3	RDH/M/Z 07T1M0○
RRD035R122S12Z	●	3.5	12	12	75	—	23	11	—	—	2	●	4	
RRD035R122S16Z	□	3.5	12	16	88	15	18.4	11	4	8.37	2	●	2	
RRD035R122S16ZL	●	3.5	12	16	128	15	22.4	11	2.36	3.87	2	●	2	
RRD035R122S16ZM	●	3.5	12	16	109	15	22.4	11	2.36	3.87	2	●	2	
RRD035R152S16Z	□	3.5	15	16	88	18	27.6	14	1	6.52	2	●	2	RDH/M/Z 0702M0○
RRD035R152S16ZM	●	3.5	15	16	108	18	41.4	14	0.59	2.69	2	●	2	
RRD035R152S20Z	●	3.5	15	20	130	20	35.6	14	2.12	4.04	2	●	2	
RRD035R152S20ZM	●	3.5	15	20	150	20	41.7	14	1.64	2.9	2	●	2	
RRD035R152S25Z	□	3.5	15	25	176	20	36.8	14	2.64	3.8	2	●	2	
RRD035R153S12Z	□	3.5	15	12	75	17	—	12.8	—	—	3	●	3	RDH/M/Z 07T1M0○
RRD035R153S16Z	□	3.5	15	16	78	29.5	30	14	1.08	45	3	●	1	
RRD050R202S20Z	●	5	20	20	90	—	31	18	—	—	2	●	4	RDH/M/Z 1003M0○
RRD050R202S20ZM	●	5	20	20	110	—	51	18	—	—	2	●	4	
RRD050R202S25Z	●	5	20	25	136	68.5	69.5	18	2.13	45	2	●	1	
RRD050R202S25ZL	●	5	20	25	176	108.5	109.5	18	1.34	45	2	●	1	
RRD050R202S25ZM	●	5	20	25	156	88.5	89.5	18	1.64	45	2	●	1	

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140 Vc

● : Inventory maintained. □ : Produced to order only.

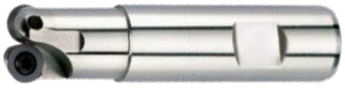
RRD

SPARE PARTS

Order number		RE					
			Shim	**Shim screw**	**Clamp screw**	**Insert clamp screw**	**Wrench**
RRD025R-	102S10Z	2.5	—	—	B-TS20	—	TKY06F
	123S12Z						
	54S16Z						
RRD035R-	122S10Z	3.5	—	—	B-TS253	—	TKY07F
	122S12Z						
	122S16Z						
	122S16ZL						
	122S16ZM						
	152S16Z		—	—	TS25	—	TKY08F
	152S16ZM						
	152S20Z						
	152S20ZM						
	152S25Z						
	153S12Z		—	—	TS253	—	TKY08F
	153S16Z						
RRD050R-	202S20Z	5	—	—	B-TS35	—	TKY15F
	202S20ZM						
	202S25Z						
	202S25ZL						
	202S25ZM						

RRD

P K H



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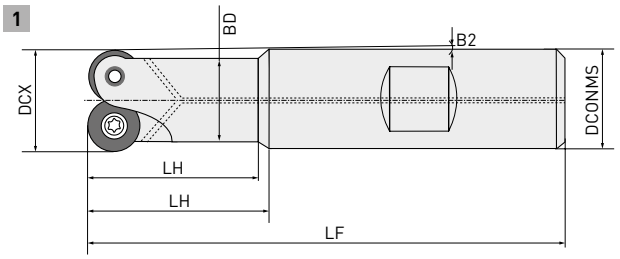

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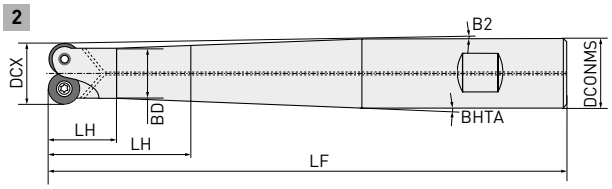

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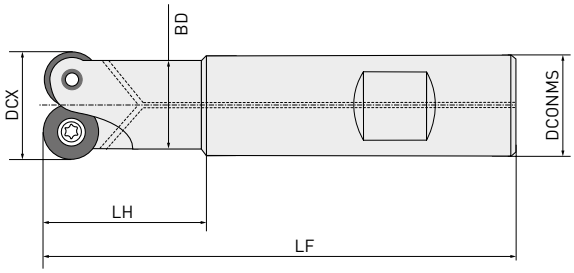

Right hand tool holder only.

WELDON SHANK TYPE

Order number	Stock	APMX	DCX	DCONMS	LF	LU	LH	BD	B2	BHTA	ZEFP		Typ	
RRD035R122S16W	●	3.5	12	16	88	15	18.4	11	4	8.37	2	●	2	RDH/M/Z 07T1M0◌
RRD035R122S16WL	●	3.5	12	16	128	15	22.4	11	2.36	3.87	2	●	2	
RRD035R122S16WM	□	3.5	12	16	108	15	22.4	11	2	3.87	2	●	2	
RRD035R152S16W	□	3.5	15	16	88	18	27.6	12.8	1	6.52	2	●	2	RDH/M/Z 0702M0◌
RRD035R152S16WM	□	3.5	15	16	108	18	41.38	12.8	0.59	2.69	2	●	2	
RRD035R152S20W	□	3.5	15	20	130	20	35.58	12.8	2.12	4.04	2	●	2	
RRD035R152S20WM	□	3.5	15	20	150	20	41.7	12.8	1.64	2.9	2	●	2	
RRD035R152S25W	□	3.5	15	25	176	20	36.8	12.8	3.8	2.65	2	●	2	
RRD035R153S16W	□	3.5	15	16	78	28.4	29.5	12.8	1.08	45	3	●	1	RDH/M/Z 07T1M0◌
RRD050R202S20W	●	5	20	20	90	—	31	18	—	—	2	●	4	RDH/M/Z 1003M0◌
RRD050R202S20WM	●	5	20	20	110	—	51	18	—	—	2	●	4	
RRD050R202S25W	●	5	20	25	136	23	37	18	2.13	4.09	2	●	2	
RRD050R202S25WL	□	5	20	25	176	47.6	23	18	1.34	2.25	2	●	2	
RRD050R202S25WM	□	5	20	25	156	42.7	23	18	1.64	2.9	2	●	2	

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140 Vc

● : Inventory maintained. □ : Produced to order only.

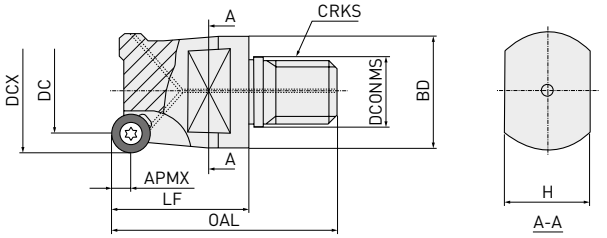
RRD

SPARE PARTS

Order number		RE					
			Shim	Shim screw	Clamp screw	Insert clamp screw	Wrench
RRD035R-	122S16W	3.5	—	—	B-TS253	—	TKY07F
	122S16WL						
	122S16WM						
	152S16W		—	—	TS25	—	TKY08F
	152S16WM						
	152S20W						
	152S20WM						
	152S25W						
	153S16W				TS253		
RRD050R-	202S20W	5	—	—	B-TS35	—	TKY15F
	202S20WM						
	202S25W						
	202S25WL						
	202S25WM						

RRD

P K H



Right hand tool holder only.

SCREW-IN TYPE

Order number	Stock	APMX	DCX	DC	OAL	LF	DCONMS	DCSFMS	CRKS	H	ZEFP		
RRD025R102M5	□	2.5	10	5	35	20	5.5	9.9	M5	6	2	●	RDH/Z 0501M0○
RRD025R123M8	●	2.5	12	7	38	20	8.5	13.5	M8	9	3	●	
RRD025R154M8	●	2.5	15	10	38	20	8.5	13.5	M8	10	4	●	
RRD025R205M10	●	2.5	20	15	44	25	10.5	18	M10	15	5	●	
RRD035R122M8	●	3.5	12	5	46	28	8.5	13.5	M8	9	2	●	RDH/M/Z 07T1M0○
RRD035R153M8	●	3.5	15	8	46	28	8.5	13.5	M8	10	3	●	
RRD035R204M10	●	3.5	20	13	47	28	10.5	18	M10	15	4	●	
RRD035R255M12	●	3.5	25	18	50	28	12.5	21	M12	17	5	●	
RRD035R306M16	●	3.5	30	23	51	28	17	29	M16	22	6	●	
RRD035R357M16	●	3.5	35	28	51	28	17	29	M16	22	7	●	
RRD035R152M8	●	3.5	15	8	46	28	8.5	13.5	M8	10	2	●	RDH/M/Z 0702M0○
RRD035R153M8X	●	3.5	15	8	43	28	8.5	13.5	M8	10	3	●	
RRD050R202M10	●	5	20	10	47	28	10.5	18	M10	15	2	●	RDH/M/Z 1003M0○
RRD050R252M12	●	5	25	15	54	32	12.5	21	M12	17	2	●	
RRD050R253M12	●	5	25	15	54	32	12.5	21	M12	17	3	●	
RRD050R304M12	●	5	30	20	54	32	12.5	21	M12	17	4	●	
RRD050R304M16	●	5	30	20	55	32	17	29	M16	22	4	●	
RRD050R355M16	●	5	35	25	65	42	17	29	M16	22	5	●	
RRD050R426M16	●	5	42	32	65	42	17	29	M16	22	6	●	
RRD060R242M12	●	6	24	12	54	32	12.5	21	M12	17	2	●	RDH/M/Z 12T3M0○
RRD060R353M16	●	6	35	23	65	42	17	29	M16	22	3	●	
RRD060R354M16	●	6	35	23	65	42	17	29	M16	22	4	●	
RRD060R424M16	●	6	42	30	55	32	17	29	M16	24	4	●	
RRD060R425M16	●	6	42	30	65	42	17	29	M16	22	5	●	
RRD080R322M16	●	8	32	16	65	42	17	29	M16	22	2	●	RDH/M/Z 1604M0○

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140 Vc

● : Inventory maintained. □ : Produced to order only.

RRD

SPARE PARTS

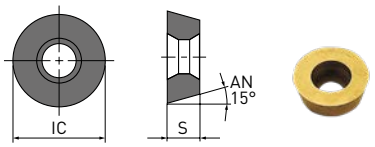
Order number		RE					
			Shim	**Shim screw**	**Clamp screw**	**Insert clamp screw**	**Wrench**
RRD025R-	102M5	2.5	—	—	B-TS20	—	TKY06F
	123M8						
	154M8						
	205M10						
RRD035R-	122M8	3.5	—	—	B-TS253	—	TKY07F
	153M8				TS253		TKY08F
	204M10						
	255M12						
	306M16						
	357M16						
	152M8				TS25		
	153M8X						
RRD050R-	202M10	5	—	—	B-TS35	—	TKY15F
	252M12						
	253M12						
	304M12						
	304M16						
	355M16						
	426M16						
RRD060R-	242M12	6	—	—	B-TS35	—	TKY15F
	353M16						
	354M16					TS1001	
	424M16						
	425M16						
RRD080R-	322M16	8	—	—	214	-	TKY20F

INSERTS

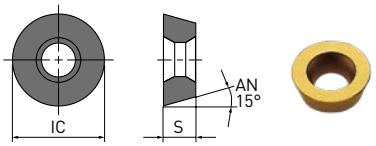
P	Steel	◔	◔	◔	●	●	◔	
K	Cast iron		✱	✱	◔	●	✱	
H	Hardened materials		◔		●	●		

Cutting conditions:
●: Stable cutting ◔: General cutting ✱: Unstable cutting

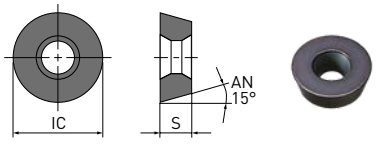
Order number	Class	Honing	F7030	VP15TF	VP20M	VP10H	VP05HT	UTi20T	IC	S	Geometry
RDHX0501M0E	H	E	●	●		●	●		5	1.5	
RDHX0501M0S	H	S	●	●		●			5	1.5	
RDHX07T1M0E	H	E	●	●		●	●		7	1.98	
RDHX07T1M0S	H	S	●	●		●	●		7	1.98	
RDHX0702M0E	H	E	●	●		●	●		7	2.38	
RDHX0702M0S	H	S	●	●		●			7	2.38	
RDHX1003M0E	H	E	●	●		●	●		10	3.18	
RDHX1003M0S	H	S	●	●		●	●		10	3.18	
RDHX12T3M0E	H	E	●	●		●	●		12	3.97	
RDHX12T3M0S	H	S	●	●		●			12	3.97	
RDHX1604M0E	H	E	●	●		●	●		16	4.76	
RDHX1604M0S	H	S	●	●		●			16	4.76	
RDMX07T1M0E	M	E					●		7	1.98	
RDMX07T1M0T	M	T	●		●	●			7	1.98	
RDMX0702M0E	M	E					●		7	2.38	
RDMX0702M0T	M	T	●		●	●		□	7	2.38	
RDMX1003M0E	M	E					●		10	3.18	
RDMX1003M0S	M	S		●		●			10	3.18	
RDMX1003M0T	M	T	●		●	●		●	10	3.18	
RDMX12T3M0E	M	E					●		12	3.97	
RDMX12T3M0S	M	S		●		●			12	3.97	
RDMX12T3M0T	M	T	●		●	●		●	12	3.97	
RDMX1604M0E	M	E					●		16	4.76	
RDMX1604M0S	M	S		●		●			16	4.76	
RDMX1604M0T	M	T	●		●	●		●	16	4.76	
RDZX0501M0E	Z	E		●					5	1.50	
RDZX07T1M0E	Z	E		●					7	1.98	
RDZX0702M0E	Z	E		●					7	2.38	
RDZX1003M0E	Z	E		●					10	3.18	
RDZX1003M0S	Z	S	●	●					10	3.18	
RDZX12T3M0E	Z	E		●					12	3.97	
RDZX12T3M0S	Z	S	●	●					12	3.97	
RDZX1604M0E	Z	E		●					16	4.76	
RDZX1604M0S	Z	S	●	●					16	4.76	



IC: ±0.013 mm S: ±0.025 mm



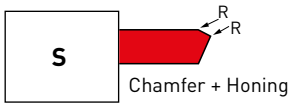
IC: ±0.05-±0.15 mm S: ±0.15 mm

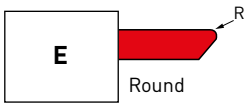


IC: ±0.025 mm S: ±0.025 mm

1/1

CUTTING EDGE PREPARATION





For roughing

For roughing and finishing

For finishing

● : Inventory maintained. □ : Produced to order only.

RRD

RECOMMENDED CUTTING CONDITIONS

CUTTING CONDITIONS FOR ROUGHING (ae = 50 % of Ø)

	Material	Hardness	Grade	Vc	Ø 10 – 15 mm		Ø 20 mm		Ø 24 – 25 mm		Ø 30 – 42 mm		Ø 50 – 80 mm		Ø 100 – 160 mm	
					ap	fz	ap	fz	ap	fz	ap	fz	ap	fz	ap	fz
P	Mild steel	<180HB	F7030 VP15TF	(250 – 320)	–0.2	0.25	–0.5	0.45	–1.0	0.35	–1.0	0.40	–1.0	0.50	–1.5	0.60
				(240 – 300)	0.2–0.3	0.20	0.5–1.0	0.25	1.0–2.0	0.30	1.5–2.0	0.32	1.0–1.5	0.40	1.5–2.5	0.45
				(200 – 280)	0.3–0.5	0.12	1.0–1.5	0.15	2.0–2.5	0.20	2.0–3.0	0.25	1.5–3.0	0.35	2.5–5.0	0.35
	Carbon steel Alloy steel	180 – 350HB	F7030 VP15TF	(220 – 300)	–0.2	0.20	–0.5	0.40	–1.0	0.30	–1.0	0.40	–1.0	0.50	–1.5	0.55
				(200 – 290)	0.2–0.3	0.15	0.5–1.0	0.20	1.0–1.5	0.25	1.5–2.0	0.30	1.0–1.5	0.38	1.5–2.5	0.40
				(160 – 250)	0.3–0.5	0.10	1.0–1.5	0.10	1.5–2.0	0.22	2.0–3.0	0.22	1.5–3.0	0.30	2.5–4.5	0.32
K	Cast iron	Tensile Strength <450MPa	VP15TF VP20M VP10H	(200 – 250)	–0.1	0.15	–0.5	0.18	–1.0	0.20	–1.0	0.25	–1.0	0.30	–1.5	0.35
				(180 – 230)	0.1–0.2	0.10	0.5–1.0	0.10	1.0–1.5	0.15	1.5–2.0	0.18	1.0–1.5	0.25	1.5–2.5	0.22
				(160 – 200)	0.2–0.25	0.10	1.0–1.5	0.10	1.5–2.0	0.12	2.0–3.0	0.15	1.5–3.0	0.18	2.5–4.5	0.20
H	Hardened steel	–52HRC –58HRC –60HRC	VP15TF VP10H VP05HT	(140 – 200)	–0.1	0.12	–0.1	0.14	–0.1	0.15	–0.1	0.18	–0.1	0.18	–0.1	0.20
				(110 – 180)	0.1–0.15	0.10	0.1–0.20	0.12	0.1–0.30	0.12	0.1–0.30	0.14	0.1–0.30	0.14	0.1–0.30	0.15
				(100 – 170)	0.1–0.15	0.10	0.1–0.20	0.10	0.1–0.30	0.10	0.1–0.30	0.12	0.1–0.30	0.12	0.1–0.30	0.12

1/1

1. When using a full width of cut please reduce the cutting conditions by 20 %.
2. When using a long overhang please reduce the feed rate by 20 %.

CUTTING CONDITIONS FOR FINISHING (ae = 20 % of Ø)

	Material	Hardness	Grade	Vc	Ø 10 – 15 mm		Ø 20 mm		Ø 24 – 25 mm		Ø 30 – 42 mm		Ø 50 – 80 mm		Ø 100 – 160 mm	
					ap	fz	ap	fz	ap	fz	ap	fz	ap	fz	ap	fz
P	Mild steel	<180HB	F7030 VP15TF	(260 – 360)	–0.1	0.15	–0.15	0.20	–0.15	0.25	–0.15	0.30	–0.15	0.32	–0.3	0.35
				(240 – 320)	0.1–0.2	0.15	0.1–0.2	0.15	0.1–0.2	0.18	0.1–0.3	0.20	0.1–0.3	0.22	0.2–0.3	0.25
				(220 – 280)	0.2–0.24	0.10	0.1–0.30	0.15	0.1–0.30	0.18	0.1–0.30	0.20	0.2–0.30	0.20	0.3–0.40	0.20
	Carbon steel Alloy steel	180 – 350HB	F7030 VP15TF	(250 – 350)	–0.1	0.12	–0.1	0.15	–0.1	0.18	–0.1	0.25	–0.1	0.28	–0.15	0.30
				(230 – 310)	0.1–0.15	0.12	0.1–0.30	0.15	0.1–0.30	0.15	0.1–0.30	0.20	0.1–0.3	0.22	0.15–0.3	0.25
				(210 – 270)	0.15–0.2	0.10	0.15–0.30	0.12	0.15–0.30	0.15	0.15–0.30	0.15	0.2–0.3	0.18	0.2–0.3	0.18
K	Cast iron	Tensile Strength <450MPa	VP15TF VP20M VP10H	(200 – 300)	–0.1	0.15	–0.1	0.18	–0.1	0.20	–0.1	0.22	–0.1	0.25	–0.15	0.30
				(200 – 280)	0.1–0.2	0.10	0.1–0.30	0.10	0.1–0.3	0.15	0.1–0.3	0.15	0.1–0.3	0.20	0.15–0.3	0.22
				(180 – 240)	0.2–0.25	0.10	0.2–0.40	0.10	0.2–0.4	0.12	0.2–0.4	0.12	0.2–0.4	0.15	0.2–0.4	0.18
H	Hardened steel	–52HRC –58HRC –60HRC	VP15TF VP10H VP05HT	(150 – 200)	–0.1	0.15	–0.1	0.14	–0.1	0.15	–0.1	0.18	–0.1	0.18	–0.1	0.20
				(120 – 180)	0.1–0.15	0.10	0.1–0.20	0.12	0.1–0.30	0.12	0.1–0.30	0.14	0.1–0.30	0.14	0.1–0.30	0.15
				(100 – 180)	0.1–0.15	0.10	0.1–0.20	0.10	0.1–0.30	0.10	0.1–0.30	0.12	0.1–0.30	0.12	0.1–0.30	0.12

1/1

1. When using a full width of cut please reduce the cutting conditions by 20 %.
2. When using a long overhang please reduce the feed rate by 20 %.

TAFS,TAFM,TAFL

INDEXABLE INSERT DRILL
LOW DRILLING NOISE AND TOUGH BODY

Mplus...

TAFS,TAFM,TAFL

INDEXABLE INSERT DRILL

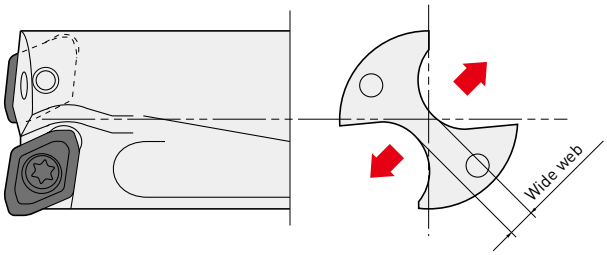
FEATURES

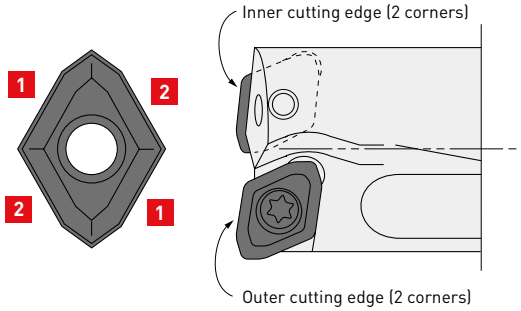
Tough body

- The wide web design reduces chattering.
- Lower cutting noise.
- High insert seat rigidity for reliable insert location.

Economical insert

- Economical four corner use.





1 Inner edge

2 Outer edge

TAFS,TAFM,TAFL

CUTTING PERFORMANCE

CHIP GEOMETRY

U1 Breaker

Material	Mild steel
Drill diameter (mm)	Ø 25
Vc (m/min)	200
f (mm/rev)	0.10

U2 Breaker

Material	DIN X5CrNi189
Drill diameter (mm)	Ø 25
Vc (m/min)	150
f (mm/rev)	0.10

U3 Breaker

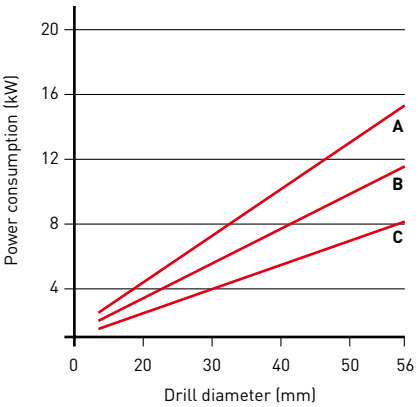
Material	DIN Ck45
Drill diameter (mm)	Ø 25
Vc (m/min)	150
f (mm/rev)	0.14

U3 Breaker

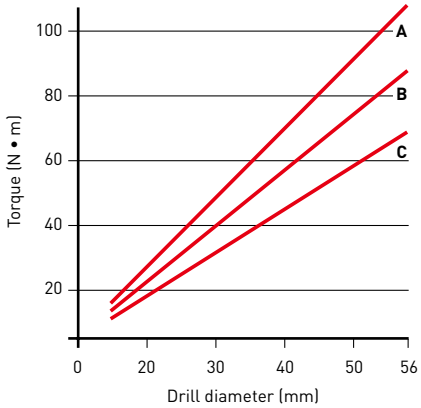
Material	DIN 42CrMo4
Drill diameter (mm)	Ø 25
Vc (m/min)	150
f (mm/rev)	0.12

CUTTING RESISTANCE

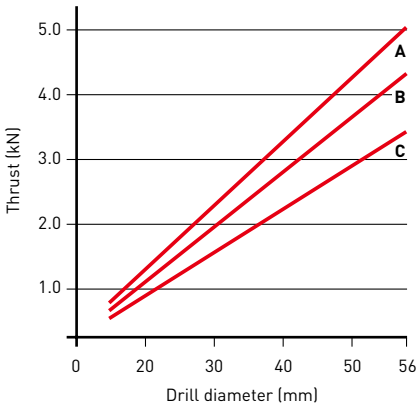
POWER CONSUMPTION



TORQUE



THRUST

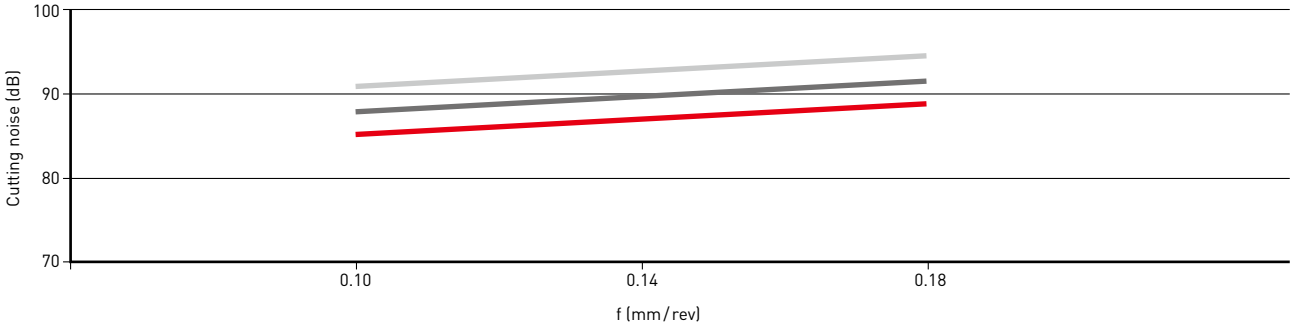


1. Workpiece: DIN X5CrNi189 (220HB) Cutting speed: 150 m/min Insert: U2 Breaker

A: f = 0.15 mm/rev **B**: f = 0.1 mm/rev **C**: f = 0.06 mm/rev

TAFS,TAFM,TAFL

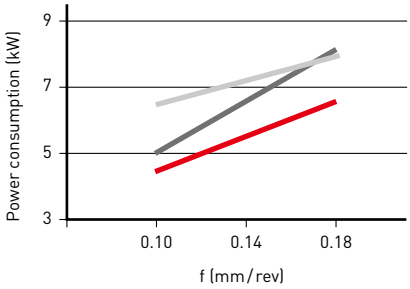
CUTTING NOISE



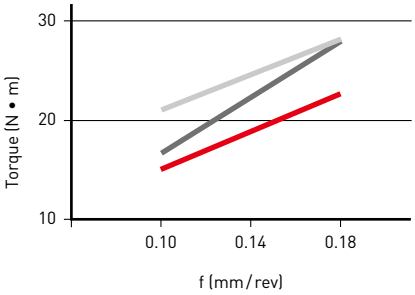
1. Workpiece: DIN 42CrMo4 (200 – 220 HB) Drill diameter (mm): Ø 25 Cutting speed: 150 m/min Insert: U2 Breaker

CUTTING RESISTANCE

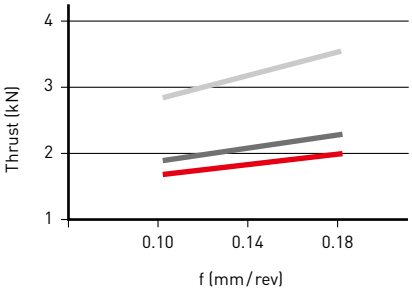
POWER CONSUMPTION



TORQUE

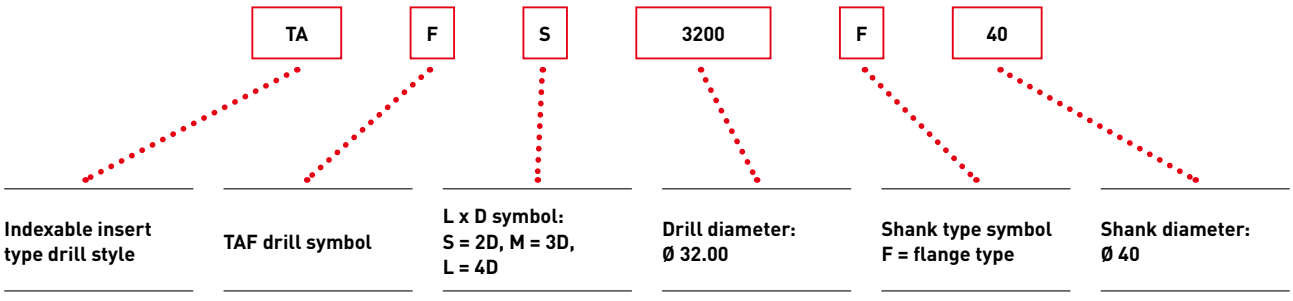


THRUST



1. Workpiece: DIN 42CrMo4 (200 – 220 HB) Drill diameter (mm): Ø 25 Cutting speed: 150 m/min Insert: U3 Breaker

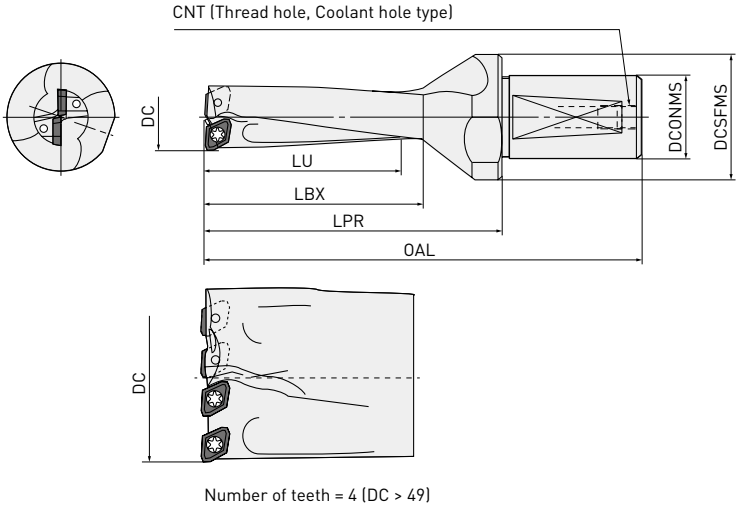
IDENTIFICATION



■ : TAF ■ A ■ B : Conventional

TAFS,TAFM,TAFL

P M K



Number of teeth = 4 (DC > 49)

Order number	Stock	DC	L/D	ZNF	LU	LBX	LPR	OAL	DCONMS	DCSFMX	CNT	Insert
TAFS1200F20	●		2		24	29	39	82	20	25	PT1/8	
TAFM1200F20	●	12.0	3	2	36	41	51	94	20	25	PT1/8	GCMT040204-UO
TAFL1200F20	●		4		48	53	63	106	20	25	PT1/8	
TAFS1250F20	●		2		25	29	39	82	20	25	PT1/8	
TAFM1250F20	●	12.5	3	2	37.5	41	51	94	20	25	PT1/8	GCMT040204-UO
TAFL1250F20	●		4		50	53	63	106	20	25	PT1/8	
TAFS1300F20	●		2		26	31	41	84	20	25	PT1/8	
TAFM1300F20	●	13.0	3	2	39	44	54	97	20	25	PT1/8	GCMT040204-UO
TAFL1300F20	●		4		52	57	67	110	20	25	PT1/8	
TAFS1350F20	●		2		27	31	41	84	20	25	PT1/8	
TAFM1350F20	●	13.5	3	2	40.5	44	54	97	20	25	PT1/8	GCMT040204-UO
TAFL1350F20	●		4		54	57	67	110	20	25	PT1/8	
TAFS1400F20	●		2		28	33	43	86	20	25	PT1/8	
TAFM1400F20	●	14.0	3	2	42	47	57	100	20	25	PT1/8	GCMT040204-UO
TAFL1400F20	●		4		56	61	71	114	20	25	PT1/8	
TAFS1450F20	●		2		29	33	43	86	20	25	PT1/8	
TAFM1450F20	●	14.5	3	2	43.5	47	57	100	20	25	PT1/8	GCMT040204-UO
TAFL1450F20	●		4		58	61	71	114	20	25	PT1/8	
TAFS1500F20	●		2		30	35	45	88	20	25	PT1/8	
TAFM1500F20	●	15.0	3	2	45	50	60	103	20	25	PT1/8	GPMT060204-UO
TAFL1500F20	●		4		60	65	75	118	20	25	PT1/8	
TAFS1550F20	●		2		31	35	45	88	20	25	PT1/8	
TAFM1550F20	●	15.5	3	2	46.5	50	60	103	20	25	PT1/8	GPMT060204-UO
TAFL1550F20	●		4		62	65	75	118	20	25	PT1/8	
TAFS1600F25	●		2		32	38	57	107	25	35	PT1/8	
TAFM1600F25	●	16.0	3	2	48	54	73	123	25	35	PT1/8	GPMT060204-UO
TAFL1600F25	●		4		64	70	89	139	25	35	PT1/8	
TAFS1650F25	●	16.5	2	2	33	38	57	107	25	35	PT1/8	GPMT060204-UO
TAFM1650F25	●		3		49.5	54	73	123	25	35	PT1/8	

● : Inventory maintained. □ : Produced to order only.

TAFS,TAFM,TAFL

Order number	Stock	DC	L/D	ZNF	LU	LBX	LPR	OAL	DCONMS	DCSFMX	CNT	Insert
TAFS1700F25	●	17.0	2	2	34	41	59	109	25	35	PT1/8	GPMT060204-UO
TAFM1700F25	●		3		51	58	76	126	25	35	PT1/8	
TAFL1700F25	●		4		68	75	93	143	25	35	PT1/8	
TAFS1750F25	●	17.5	2	2	35	41	59	109	25	35	PT1/8	GPMT060204-UO
TAFM1750F25	●		3		52.5	58	76	126	25	35	PT1/8	
TAFL1750F25	●		4		70	75	93	143	25	35	PT1/8	
TAFS1800F25	●	18.0	2	2	36	43	61	111	25	35	PT1/8	GPMT070204-UO
TAFM1800F25	●		3		54	61	79	129	25	35	PT1/8	
TAFL1800F25	●		4		72	79	97	147	25	35	PT1/8	
TAFS1850F25	●	18.5	2	2	37	43	61	111	25	35	PT1/8	GPMT070204-UO
TAFM1850F25	●		3		55.5	61	79	129	25	35	PT1/8	
TAFS1900F25	●	19.0	2	2	38	46	63	113	25	35	PT1/8	GPMT070204-UO
TAFM1900F25	●		3		57	65	82	132	25	35	PT1/8	
TAFL1900F25	●		4		76	84	101	151	25	35	PT1/8	
TAFS1950F25	●	19.5	2	2	39	46	63	113	25	35	PT1/8	GPMT070204-UO
TAFM1950F25	●		3		58.5	65	82	132	25	35	PT1/8	
TAFS2000F25	●	20.0	2	2	40	48	65	115	25	35	PT1/8	GPMT070204-UO
TAFM2000F25	●		3		60	68	85	135	25	35	PT1/8	
TAFL2000F25	●		4		80	88	105	155	25	35	PT1/8	
TAFS2050F25	●	20.5	2	2	41	48	65	115	25	35	PT1/8	GPMT070204-UO
TAFM2050F25	●		3		61.5	68	85	135	25	35	PT1/8	
TAFS2100F25	●	21.0	2	2	42	50	67	117	25	35	PT1/8	GPMT070204-UO
TAFM2100F25	●		3		63	71	88	138	25	35	PT1/8	
TAFL2100F25	●		4		84	92	109	159	25	35	PT1/8	
TAFS2150F25	●	21.5	2	2	43	50	67	117	25	35	PT1/8	GPMT070204-UO
TAFM2150F25	●		3		64.5	71	88	138	25	35	PT1/8	
TAFS2200F25	●	22.0	2	2	44	53	69	119	25	35	PT1/8	GPMT070204-UO
TAFM2200F25	●		3		66	75	91	141	25	35	PT1/8	
TAFL2200F25	●		4		88	97	113	163	25	35	PT1/8	
TAFS2250F25	●	22.5	2	2	45	53	69	119	25	35	PT1/8	GPMT070204-UO
TAFM2250F25	●		3		67.5	75	91	141	25	35	PT1/8	
TAFS2300F25	●	23.0	2	2	46	55	71	121	25	35	PT1/8	GPMT090304-UO
TAFM2300F25	●		3		69	78	94	144	25	35	PT1/8	
TAFL2300F25	●		4		92	101	117	167	25	35	PT1/8	
TAFS2350F25	●	23.5	2	2	47	55	71	121	25	35	PT1/8	GPMT090304-UO
TAFM2350F25	●		3		70.5	78	94	144	25	35	PT1/8	
TAFL2350F25	●		4		94	101	117	167	25	35	PT1/8	
TAFS2400F25	●	24.0	2	2	48	58	73	123	25	35	PT1/8	GPMT090304-UO
TAFM2400F25	●		3		72	82	97	147	25	35	PT1/8	
TAFL2400F25	●		4		96	106	121	171	25	35	PT1/8	
TAFS2450F25	●	24.5	2	2	49	58	73	123	25	35	PT1/8	GPMT090304-UO
TAFM2450F25	●		3		73.5	82	97	147	25	35	PT1/8	
TAFS2500F32	●	25.0	2	2	50	60	75	130	32	42	PT1/8	GPMT090304-UO
TAFM2500F32	●		3		75	85	100	155	32	42	PT1/8	
TAFL2500F25	●		4		100	110	125	180	25	35	PT1/8	
TAFL2500F32	●		4		100	110	125	180	32	42	PT1/8	
TAFS2550F32	●	25.5	2	2	51	60	75	130	32	42	PT1/8	GPMT090304-UO
TAFM2550F32	●		3		76.5	85	100	155	32	42	PT1/8	
TAFS2600F32	●	26.0	2	2	52	62	77	132	32	42	PT1/8	GPMT090304-UO
TAFM2600F32	●		3		78	88	103	158	32	42	PT1/8	
TAFL2600F32	●		4		104	114	129	184	32	42	PT1/8	

● : Inventory maintained. □ : Produced to order only.

TAFS,TAFM,TAFL

Order number	Stock	DC	L/D	ZNF	LU	LBX	LPR	OAL	DCONMS	DCSFMX	CNT	Insert
TAFS2650F32	●	26.5	2	2	53	62	77	132	32	42	PT1/8	GPMT090304-U○
TAFM2650F32	●		3		79.5	88	103	158	32	42	PT1/8	
TAFL2650F32	●		4		106	114	129	184	32	42	PT1/8	
TAFS2700F32	●	27.0	2	2	54	65	79	134	32	42	PT1/8	GPMT090304-U○
TAFM2700F32	●		3		81	92	106	161	32	42	PT1/8	
TAFL2700F32	●		4		108	119	133	188	32	42	PT1/8	
TAFS2750F32	●	27.5	2	2	55	65	79	134	32	42	PT1/8	GPMT090304-U○
TAFM2750F32	●		3		82.5	92	106	161	32	42	PT1/8	
TAFS2800F32	●	28.0	2	2	56	67	81	136	32	42	PT1/8	GPMT11T308-U○
TAFM2800F32	●		3		84	95	109	164	32	42	PT1/8	
TAFL2800F32	●		4		112	123	137	192	32	42	PT1/8	
TAFS2850F32	●	28.5	2	2	57	67	81	136	32	42	PT1/8	GPMT11T308-U○
TAFM2850F32	●		3		85.5	95	109	164	32	42	PT1/8	
TAFL2850F40	●		4		114	123	137	202	40	50	PT1/8	
TAFS2900F32	●	29.0	2	2	58	70	83	138	32	42	PT1/8	GPMT11T308-U○
TAFM2900F32	●		3		87	99	112	167	32	42	PT1/8	
TAFL2900F32	●		4		116	128	141	196	32	42	PT1/8	
TAFS2950F32	●	29.5	2	2	59	70	83	138	32	42	PT1/8	GPMT11T308-U○
TAFM2950F32	●		3		88.5	99	112	167	32	42	PT1/8	
TAFS3000F32	●	30.0	2	2	60	72	90	145	32	50	PT1/8	GPMT11T308-U○
TAFS3000F40	●		2		60	72	90	155	40	50	PT1/4	
TAFM3000F32	●		3		90	102	120	175	32	50	PT1/8	
TAFM3000F40	●		3		90	102	120	185	40	50	PT1/4	
TAFL3000F32	●		4		120	132	150	205	32	42	PT1/8	
TAFL3000F40	●		4		120	132	150	215	40	50	PT1/4	
TAFS3050F40	●	30.5	2	2	61	72	90	155	40	50	PT1/4	GPMT11T308-U○
TAFM3050F40	●		3		91.5	102	120	185	40	50	PT1/4	
TAFS3100F32	●	31.0	2	2	62	74	92	147	32	50	PT1/8	GPMT11T308-U○
TAFS3100F40	●		2		62	74	92	157	40	50	PT1/4	
TAFM3100F32	●		3		93	105	123	178	32	50	PT1/8	
TAFM3100F40	●		3		93	105	123	188	40	50	PT1/4	
TAFL3100F32	●		4		124	135	154	209	32	42	PT1/8	
TAFL3100F40	●		4		124	136	154	219	40	50	PT1/4	
TAFS3200F32	●	32.0	2	2	64	77	94	149	32	50	PT1/8	GPMT11T308-U○
TAFS3200F40	●		2		64	77	94	159	40	50	PT1/4	
TAFM3200F32	●		3		96	109	126	181	32	50	PT1/8	
TAFM3200F40	●		3		96	109	126	191	40	50	PT1/4	
TAFL3200F32	●		4		128	141	158	213	32	42	PT1/8	
TAFL3200F40	●		4		128	141	158	223	40	50	PT1/4	
TAFS3300F32	●	33.0	2	2	66	79	96	151	32	50	PT1/8	GPMT11T308-U○
TAFS3300F40	●		2		66	79	96	161	40	50	PT1/4	
TAFM3300F32	●		3		99	112	129	184	32	50	PT1/8	
TAFM3300F40	●		3		99	112	129	194	40	50	PT1/4	
TAFL3300F32	●		4		132	145	162	217	32	42	PT1/8	
TAFL3300F40	●		4		132	145	162	227	40	50	PT1/4	
TAFS3400F32	●	34.0	2	2	68	82	98	153	32	50	PT1/8	GPMT11T308-U○
TAFS3400F40	●		2		68	82	98	163	40	50	PT1/4	
TAFM3400F32	●		3		102	116	132	187	32	50	PT1/8	
TAFM3400F40	●		3		102	116	132	197	40	50	PT1/4	
TAFL3400F32	●		4		136	150	166	231	32	42	PT1/8	
TAFL3400F40	●		4		136	150	166	231	40	50	PT1/4	

TAFS,TAFM,TAFL

Order number	Stock	DC	L/D	ZNF	LU	LBX	LPR	OAL	DCONMS	DCSFMX	CNT	Insert
TAFS3500F32	●	35.0	2	2	70	84	100	155	32	50	PT1/8	GPMT140408-U○
TAFS3500F40	●		2		70	84	100	165	40	50	PT1/4	
TAFM3500F32	●		3		105	119	135	190	32	50	PT1/8	
TAFM3500F40	●		3		105	119	135	200	40	50	PT1/4	
TAFL3500F32	●		4		140	154	170	235	32	42	PT1/8	
TAFL3500F40	●		4		140	154	170	235	40	50	PT1/4	
TAFS3600F32	□	36.0	2	2	72	86	102	157	32	50	PT1/8	GPMT140408-U○
TAFS3600F40	□		2		72	86	102	167	40	50	PT1/4	
TAFM3600F32	□		3		108	122	138	193	32	50	PT1/8	
TAFM3600F40	□		3		108	122	138	203	40	50	PT1/4	
TAFL3600F32	□		4		144	158	174	229	32	42	PT1/8	
TAFL3600F40	□		4		144	158	174	239	40	50	PT1/4	
TAFS3700F32	□	37.0	2	2	74	89	104	159	32	50	PT1/8	GPMT140408-U○
TAFS3700F40	□		2		74	89	104	169	40	50	PT1/4	
TAFM3700F32	□		3		111	126	141	196	32	50	PT1/8	
TAFM3700F40	□		3		111	126	141	206	40	50	PT1/4	
TAFL3700F32	□		4		148	163	178	233	32	42	PT1/8	
TAFL3700F40	□		4		148	163	178	243	40	50	PT1/4	
TAFS3750F32	□	37.5	2	2	75	89	104	159	32	50	PT1/8	GPMT140408-U○
TAFS3750F40	□		2		75	89	104	169	40	50	PT1/4	
TAFM3750F32	□		3		112.5	126	141	196	32	50	PT1/8	
TAFM3750F40	□		3		112.5	126	141	206	40	50	PT1/4	
TAFL3750F32	□		4		150	163	178	233	32	42	PT1/8	
TAFL3750F40	□		4		150	163	178	243	40	50	PT1/4	
TAFS3800F32	□	38.0	2	2	76	91	106	161	32	50	PT1/8	GPMT140408-U○
TAFS3800F40	□		2		76	91	106	171	40	50	PT1/4	
TAFM3800F32	□		3		114	129	144	199	32	50	PT1/8	
TAFM3800F40	□		3		114	129	144	209	40	50	PT1/4	
TAFL3800F32	□		4		152	167	182	247	32	42	PT1/8	
TAFL3800F40	□		4		152	167	182	247	40	50	PT1/4	
TAFS3900F32	□	39.0	2	2	78	94	108	163	32	50	PT1/8	GPMT140408-U○
TAFS3900F40	□		2		78	94	108	173	40	50	PT1/4	
TAFM3900F32	□		3		117	133	147	202	32	50	PT1/8	
TAFM3900F40	□		3		117	133	147	212	40	50	PT1/4	
TAFL3900F32	□		4		156	172	186	251	32	42	PT1/8	
TAFL3900F40	□		4		156	172	186	251	40	50	PT1/4	
TAFS4000F32	□	40.0	2	2	80	96	110	165	32	50	PT1/8	GPMT140408-U○
TAFS4000F40	□		2		80	96	110	175	40	50	PT1/4	
TAFM4000F32	□		3		120	136	150	205	32	50	PT1/8	
TAFM4000F40	□		3		120	136	150	215	40	50	PT1/4	
TAFL4000F32	□		4		160	176	190	245	32	42	PT1/8	
TAFL4000F40	□		4		160	176	190	255	40	50	PT1/4	
TAFS4100F40	□	41.0	2	2	82	98	112	177	40	50	PT1/4	GPMT140408-U○
TAFM4100F40	□		3		123	139	153	218	40	50	PT1/4	
TAFL4100F40	□		4		164	180	194	259	40	50	PT1/4	
TAFS4200F40	□	42.0	2	2	84	101	114	179	40	50	PT1/4	GPMT140408-U○
TAFM4200F40	□		3		126	143	156	221	40	50	PT1/4	
TAFL4200F40	□		4		168	185	198	263	40	50	PT1/4	
TAFS4300F40	□	43.0	2	2	86	103	116	181	40	50	PT1/4	GPMT140408-U○
TAFM4300F40	□		3		129	146	159	224	40	50	PT1/4	
TAFL4300F40	□		4		172	189	202	267	40	50	PT1/4	

● : Inventory maintained. □ : Produced to order only.

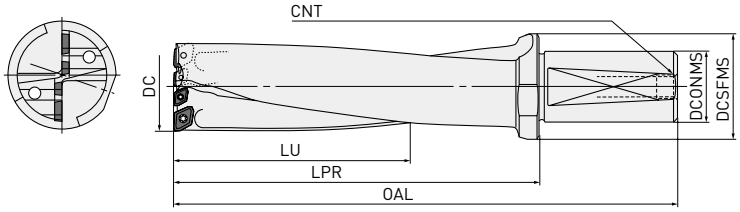
TAFS,TAFM,TAFL

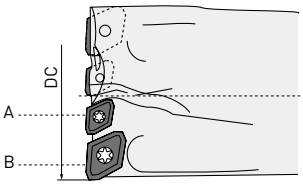
Order number	Stock	DC	L/D	ZNF	LU	LBX	LPR	OAL	DCONMS	DCSFMX	CNT	Insert
TAFS4400F40	□		2		88	106	118	183	40	50	PT1/4	
TAFM4400F40	□	44.0	3	2	132	150	162	227	40	50	PT1/4	GPMT140408-U○
TAFL4400F40	□		4		176	194	206	271	40	50	PT1/4	
TAFS4500F40	□		2		90	108	120	185	40	54	PT1/4	
TAFM4500F40	□	45.0	3	2	135	153	165	230	40	54	PT1/4	GPMT140408-U○
TAFL4500F40	□		4		180	198	210	275	40	54	PT1/4	
TAFS4600F40	□		2		92	110	122	187	40	54	PT1/4	
TAFM4600F40	□	46.0	3	2	138	156	168	233	40	54	PT1/4	GPMT140408-U○
TAFL4600F40	□		4		184	202	214	279	40	54	PT1/4	
TAFS4700F40	□		2		94	113	124	189	40	54	PT1/4	
TAFM4700F40	□	47.0	3	2	141	160	171	236	40	54	PT1/4	GPMT140408-U○
TAFL4700F40	□		4		188	207	218	283	40	54	PT1/4	
TAFS4800F40	□		2		96	115	126	191	40	54	PT1/4	
TAFM4800F40	□	48.0	3	2	144	163	174	239	40	54	PT1/4	GPMT140408-U○
TAFL4800F40	□		4		192	211	222	287	40	54	PT1/4	
TAFS4900F40	□		2		98	118	133	198	40	58	PT1/4	
TAFM4900F40	□	49.0	3	4	147	167	182	247	40	58	PT1/4	GPMT090304-U○
TAFL4900F40	□		4		196	216	231	296	40	58	PT1/4	
TAFS5000F40	□		2		100	120	135	200	40	58	PT1/4	
TAFM5000F40	□	50.0	3	4	150	170	185	250	40	58	PT1/4	GPMT090304-U○
TAFL5000F40	□		4		200	220	235	300	40	58	PT1/4	
TAFS5100F40	□		2		102	122	137	202	40	58	PT1/4	
TAFM5100F40	□	51.0	3	4	153	173	188	253	40	58	PT1/4	GPMT090304-U○
TAFL5100F40	□		4		204	224	239	304	40	58	PT1/4	
TAFS5200F40	□		2		104	125	139	204	40	58	PT1/4	
TAFM5200F40	□	52.0	3	4	156	177	191	256	40	58	PT1/4	GPMT090304-U○
TAFL5200F40	□		4		208	229	243	308	40	58	PT1/4	
TAFS5300F40	□		2		106	127	141	206	40	63	PT1/4	
TAFM5300F40	□	53.0	3	4	159	180	194	259	40	63	PT1/4	GPMT090304-U○
TAFL5300F40	□		4		212	233	247	312	40	63	PT1/4	
TAFS5400F40	□		2		108	128	143	208	40	63	PT1/4	
TAFM5400F40	□	54.0	3	4	162	182	197	262	40	63	PT1/4	GPMT090304-U○
TAFL5400F40	□		4		216	236	251	316	40	63	PT1/4	
TAFS5500F40	□		2		110	130	145	210	40	63	PT1/4	
TAFM5500F40	□	55.0	3	4	165	185	200	265	40	63	PT1/4	GPMT090304-U○
TAFL5500F40	□		4		220	240	255	320	40	63	PT1/4	
TAFS5600F40	□		2		112	132	147	212	40	63	PT1/4	
TAFM5600F40	□	56.0	3	4	168	188	203	268	40	63	PT1/4	GPMT090304-U○
TAFL5600F40	□		4		224	244	259	324	40	63	PT1/4	

TAFS,TAFM,TAFL

INCREASED RIGIDITY TYPE DESIGN

P M K





Order number	Stock	DC	L/D	ZNF	DCONMS	DCSFMS	CNT	OAL	LPR	LU	Inner/ Outer type	Insert
TAFS5000F40-E	□		2	4	40	58	PT1/4	200	135	120	A	GPMT090304-UO
											B	GPMT11T308-UO
TAFM5000F40-E	□	50.0	3	4	40	58	PT1/4	250	185	170	A	GPMT090304-UO
											B	GPMT11T308-UO
TAFL5000F40-E	□		4	4	40	58	PT1/4	300	235	220	A	GPMT090304-UO
											B	GPMT11T308-UO
TAFS5100F40-E	□		2	4	40	58	PT1/4	202	137	122	A	GPMT090304-UO
											B	GPMT11T308-UO
TAFM5100F40-E	□	51.0	3	4	40	58	PT1/4	253	188	173	A	GPMT090304-UO
											B	GPMT11T308-UO
TAFL5100F40-E	□		4	4	40	58	PT1/4	304	239	224	A	GPMT090304-UO
											B	GPMT11T308-UO
TAFS5200F40-E	□		2	4	40	58	PT1/4	204	139	125	A	GPMT090304-UO
											B	GPMT11T308-UO
TAFM5200F40-E	□	52.0	3	4	40	58	PT1/4	256	191	177	A	GPMT090304-UO
											B	GPMT11T308-UO
TAFL5200F40-E	□		4	4	40	58	PT1/4	308	243	229	A	GPMT090304-UO
											B	GPMT11T308-UO
TAFS5300F40-E	□		2	4	40	63	PT1/4	206	141	127		
TAFM5300F40-E	□	53.0	3	4	40	63	PT1/4	259	194	180	A	GPMT11T308-UO
TAFL5300F40-E	□		4	4	40	63	PT1/4	312	247	233		
TAFS5400F40-E	□		2	4	40	63	PT1/4	208	134	128		
TAFM5400F40-E	□	54.0	3	4	40	63	PT1/4	262	197	182	A	GPMT11T308-UO
TAFL5400F40-E	□		4	4	40	63	PT1/4	316	251	236		
TAFS5500F40-E	□		2	4	40	63	PT1/4	210	145	130		
TAFM5500F40-E	□	55.0	3	4	40	63	PT1/4	265	200	185	A	GPMT11T308-UO
TAFL5500F40-E	□		4	4	40	63	PT1/4	320	255	240		
TAFS5600F40-E	□		2	4	40	63	PT1/4	212	147	132		
TAFM5600F40-E	□	56.0	3	4	40	63	PT1/4	268	203	188	A	GPMT11T308-UO
TAFL5600F40-E	□		4	4	40	63	PT1/4	324	259	244		

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● : Inventory maintained. □ : Produced to order only.

TAFS,TAFM,TAFL

SPARE PARTS

Tool holder type	Clamp screw	Wrench
GCMT040204-U○	TS2	1 TKY06F
GPMT060204-U○	TS2	1 TKY06F
GPMT070204-U○	TS25	1 TKY08F
GPMT090304-U○	TS3	1 TKY08F
GPMT11T308-U○	TS4	2 TKY15D
GPMT140408-U○	TS5	2 TKY25D
GPMT090304-U○	TS3	1 TKY08F

INSERTS

Order number	VP15TF	UP20M	GP20M	UE6020	US735	L	W1	IC	S	RE	Drill diameter	Shape
U1												
GCMT040204-U1		●				5.0	4.7	—	2.38	0.4	Ø 12 – 14.5	
GPMT060204-U1		●		●	●	—	—	5.56	2.38	0.4	Ø 15 – 17.5	
GPMT070204-U1		●		●	●	—	—	6.35	2.38	0.4	Ø 18 – 22.5	
GPMT090304-U1		●		●	●	—	—	7.94	3.18	0.4	Ø 23 – 27.5	
GPMT090304-U1		●		●	●	—	—	7.94	3.18	0.4	Ø 49 – 56	
GPMT11T308-U1		●		●	●	—	—	9.525	3.97	0.8	Ø 28 – 34	
GPMT140408-U1		●		●	●	—	—	12.70	4.76	0.8	Ø 35 – 48	
U2												
GCMT040204-U2	●		●			5.0	4.7	—	2.38	0.4	Ø 12 – 14.5	
GPMT060204-U2	●	●		●	●	—	—	5.56	2.38	0.4	Ø 15 – 17.5	
GPMT070204-U2	●	●		●	●	—	—	6.35	2.38	0.4	Ø 18 – 22.5	
GPMT090304-U2	●	●		●	●	—	—	7.94	3.18	0.4	Ø 23 – 27.5	
GPMT090304-U2	●	●		●	●	—	—	7.94	3.18	0.4	Ø 49 – 56	
GPMT11T308-U2	●	●		●	●	—	—	9.525	3.97	0.8	Ø 28 – 34	
GPMT140408-U2	●	●		●	●	—	—	12.70	4.76	0.8	Ø 35 – 48	
U3												
GPMT060204-U3		●		●	●	—	—	5.56	2.38	0.4	Ø 15 – 17.5	
GPMT070204-U3		●		●	●	—	—	6.35	2.38	0.4	Ø 18 – 22.5	
GPMT090304-U3		●		●	●	—	—	7.94	3.18	0.4	Ø 23 – 27.5	
GPMT090304-U3		●		●	●	—	—	7.94	3.18	0.4	Ø 49 – 56	
GPMT11T308-U3		●		●	●	—	—	9.525	3.97	0.8	Ø 28 – 34	
GPMT140408-U3		●		●	●	—	—	12.70	4.76	0.8	Ø 35 – 48	

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● : Inventory maintained. □ : Produced to order only.

TAFS,TAFM,TAFL

CHIPBREAKER RECOMMENDATION

	Material	1st recommendation		2nd recommendation	
		GCMT	GPMT	GCMT	GPMT
P	Mild steel	U1	U1		
				U2	U2
					U3
	Carbon steel Alloy steel Alloy tool steel			U1	U1
		U2	U2		U2
					U3
M	Stainless steel			U1	U1
		U2	U2		
					U3
K	Gray cast iron Ductile cast iron			U1	U1
		U2	U3		U2

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INSERT GRADE RECOMMENDATION

	Material	Grade			
		1st recommendation		2nd recommendation	
		GCMT	GPMT	GCMT	GPMT
P	Mild steel			VP15TF	VP15TF
		UP20M	UP20M		
				GP20M	
					UE6020
					US735
	Carbon steel Alloy steel Alloy tool steel	VP15TF	VP15TF		
				UP20M	UP20M
		GP20M	UE6020	GP20M	VP15TF
					US735
M	Stainless steel	VP15TF	VP15TF		
				UP20M	UP20M
		GP20M	US735	GP20M	
					UE6020
K	Gray cast iron Ductile cast iron	VP15TF			
				UP20M	UP20M
		GP20M			UE6020
					US735
					VP15TF

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TAFS,TAFM,TAFL

RECOMMENDED CUTTING CONDITIONS

	Material	Hardness	Vc L/D = 2, 3 Ø 12 – Ø 14.5	Vc L/D = 2, 3 Ø 15 –	Vc L/D = 4 Ø 16 –		Vc Drill diameter Ø 12 – Ø 14.5	Ø 15 – Ø 22.5	Ø 23 – Ø 34	Ø 35 – Ø 48	Ø 49 – Ø 56
P	Mild steel	≤180HB	150 (100 – 200)	200 (150 – 300)	140 (100 – 200)	U1	0.06 (0.04 – 0.10)	0.07 (0.04 – 0.10)	0.08 (0.04 – 0.10)	0.10 (0.04 – 0.12)	0.08 (0.04 – 0.10)
						U2	0.06 (0.04 – 0.10)	0.08 (0.04 – 0.12)	0.10 (0.04 – 0.12)	0.12 (0.04 – 0.14)	0.10 (0.04 – 0.12)
						U3	—	0.08 (0.04 – 0.12)	0.10 (0.04 – 0.12)	0.12 (0.04 – 0.14)	0.10 (0.04 – 0.12)
	Carbon steel	180 – 280 HB	120 (80 – 160)	150 (120 – 180)	100 (80 – 120)	U1	0.06 (0.04 – 0.10)	0.09 (0.06 – 0.12)	0.12 (0.08 – 0.14)	0.15 (0.08 – 0.18)	0.12 (0.08 – 0.14)
						U2	0.06 (0.04 – 0.10)	0.12 (0.06 – 0.14)	0.14 (0.08 – 0.18)	0.17 (0.08 – 0.20)	0.14 (0.08 – 0.18)
						U3	—	0.12 (0.06 – 0.14)	0.14 (0.08 – 0.18)	0.17 (0.08 – 0.20)	0.14 (0.08 – 0.18)
	Alloy steel	180 – 280 HB	120 (80 – 160)	150 (120 – 180)	100 (80 – 120)	U1	0.06 (0.04 – 0.10)	0.08 (0.06 – 0.10)	0.09 (0.06 – 0.12)	0.11 (0.06 – 0.14)	0.09 (0.06 – 0.12)
						U2	0.06 (0.04 – 0.10)	0.10 (0.06 – 0.12)	0.12 (0.08 – 0.16)	0.14 (0.08 – 0.18)	0.12 (0.08 – 0.16)
						U3	—	0.10 (0.06 – 0.12)	0.12 (0.08 – 0.16)	0.14 (0.08 – 0.18)	0.12 (0.08 – 0.16)
M	Stainless steel	≤200HB	100 (80 – 120)	150 (120 – 200)	110 (80 – 140)	U1	0.07 (0.04 – 0.10)	0.07 (0.04 – 0.10)	0.08 (0.04 – 0.10)	0.10 (0.04 – 0.12)	0.08 (0.04 – 0.10)
						U2	0.07 (0.04 – 0.10)	0.08 (0.04 – 0.12)	0.10 (0.04 – 0.14)	0.12 (0.04 – 0.16)	0.10 (0.04 – 0.14)
						U3	—	0.08 (0.04 – 0.12)	0.10 (0.04 – 0.14)	0.12 (0.04 – 0.16)	0.10 (0.04 – 0.14)
K	Cast iron	Tensile strength ≤350MPa	120 (80 – 160)	150 (120 – 180)	140 (110 – 160)	U1	0.07 (0.06 – 0.10)	0.07 (0.06 – 0.10)	0.10 (0.04 – 0.14)	0.10 (0.06 – 0.14)	0.10 (0.06 – 0.14)
						U2	0.07 (0.06 – 0.10)	0.15 (0.10 – 0.18)	0.20 (0.10 – 0.25)	0.20 (0.10 – 0.25)	0.20 (0.10 – 0.25)
						U3	—	0.15 (0.10 – 0.18)	0.20 (0.10 – 0.25)	0.20 (0.10 – 0.25)	0.20 (0.10 – 0.25)
	Ductile cast iron	Tensile strength ≤450MPa	120 (80 – 150)	150 (120 – 180)	100 (80 – 120)	U1	0.06 (0.04 – 0.10)	0.07 (0.06 – 0.10)	0.10 (0.06 – 0.14)	0.10 (0.06 – 0.14)	0.10 (0.06 – 0.14)
						U2	0.06 (0.04 – 0.10)	0.12 (0.08 – 0.14)	0.15 (0.08 – 0.20)	0.18 (0.08 – 0.20)	0.15 (0.08 – 0.20)
						U3	—	0.12 (0.08 – 0.14)	0.15 (0.08 – 0.20)	0.18 (0.08 – 0.20)	0.15 (0.08 – 0.20)

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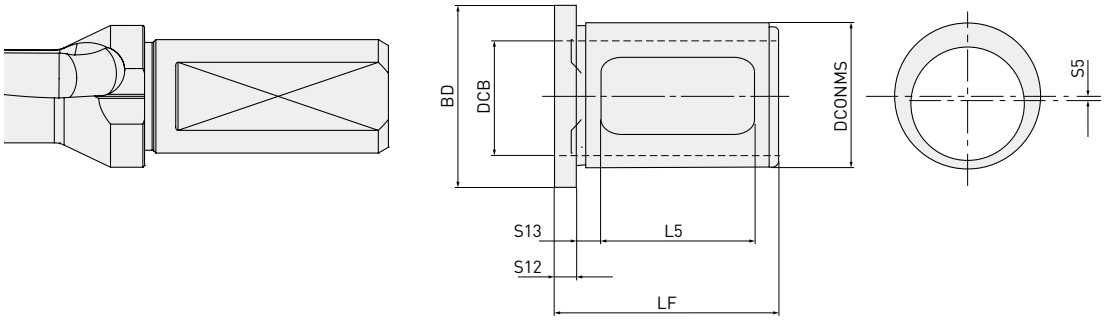
1. When using drills for l/d= 4, the feed should be reduced to 80 % of the above recommendations.

TAFS,TAFM,TAFL

JUST FIT SLEEVE [JFS]

A sleeve for the shank of the drill to allow the cutting diameter to be increased.



Order number	Set order number	Stock	DCB	DCONMS	BD	LF	L5	* Increase (S5x2)	Suitable TAF type drill
JFS2520-10	JFS-1	●	20	25	33	43	30	0.1	TAFS/M/L1200F20 – TAFS/M/L1550F20
JFS2520-20		●	20	25	33	43	30	0.2	
JFS2520-30		●	20	25	33	43	30	0.3	
JFS2520-40		●	20	25	33	43	30	0.4	
JFS2520-50		●	20	25	33	43	30	0.5	
JFS3225-10	JFS-2	●	25	32	40	50	34	0.1	TAFS/M/L1600F25 - TAFS/M/L2450F25
JFS3225-20		●	25	32	40	50	34	0.2	
JFS3225-30		●	25	32	40	50	34	0.3	
JFS3225-40		●	25	32	40	50	34	0.4	
JFS3225-50		●	25	32	40	50	34	0.5	
JFS4032-10	JFS-3	●	32	40	48	55	40	0.1	TAFS/M/L2500F32 - TAFS/M/L2950F32
JFS4032-20		●	32	40	48	55	40	0.2	
JFS4032-30		●	32	40	48	55	40	0.3	
JFS4032-40		●	32	40	48	55	40	0.4	
JFS4032-50		●	32	40	48	55	40	0.5	
JFS5040-10	JFS-4	●	40	50	68	65	50	0.1	AFS/M/L2850F40 - TAFS/M/L5600F40 TAFS/M/L5○00F40-E
JFS5040-20		●	40	50	68	65	50	0.2	
JFS5040-30		●	40	50	68	65	50	0.3	
JFS5040-40		●	40	50	68	65	50	0.4	
JFS5040-50		●	40	50	68	65	50	0.5	

1/1

* Increase: Size of the increased cutting diameter.

● : Inventory maintained. □ : Produced to order only.

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GUIDELINE FOR SELECTING A JUST FIT SLEEVE

Desired = (Drill Ø + Increase of JFS) + 0.1 mm
(Eg.) Desired diameter is 20.3 mm (oversize is taken as 0.1 mm).

Ø 20.3=(TAFS/M/L2000F25+JFS3225-20)+0.1

- TAFS/M/L2000F25: 20 mm Drill
- JFS3225-20: Using JFS an increase of 0.2 mm
- 0.1: Oversize

Tool selected
Drill: TAFM2000F25
Just Fit Sleeve [JFS]: JFS3225-20

1. Oversize can vary due to the cutting conditions used, please use the above as a guideline.

ORDERING THE JUST FIT SLEEVE

PURCHASING METHOD 1

Oversize can vary due to the cutting conditions used. Therefore it is recommended to purchase as a set. When placing an order, please use the Set order number. (5 sleeves/set)

PURCHASING METHOD 2

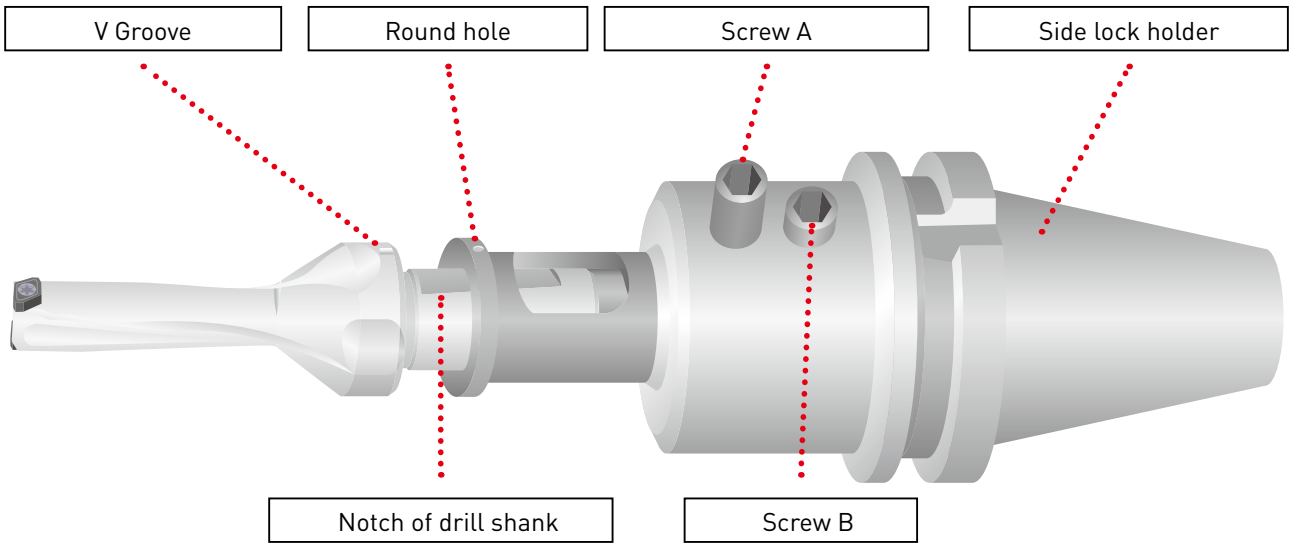
It is possible to order individually. When placing an order, please use the individual order number.

APPLICATION OF JUST FIT SLEEVE

When inserting the drill into the side lock holder, align the V groove on the outer peripheral edge of the drill flange, as well as the round holes of the outer peripheral edge of the sleeve flange and the screws of the side lock holder for fixing the drill. (If the drill does not have a V groove, align the notch of the drill shank with the round holes of the sleeve.)

Insert screws A of the side lock holder directly to the open window of the sleeve and fix the drill.
Tighten screw B to a degree so as not to damage the sleeve.

- Fine adjustments cannot be made for the diameter of the sleeve.
- Cannot be used with collect chuck type holders.



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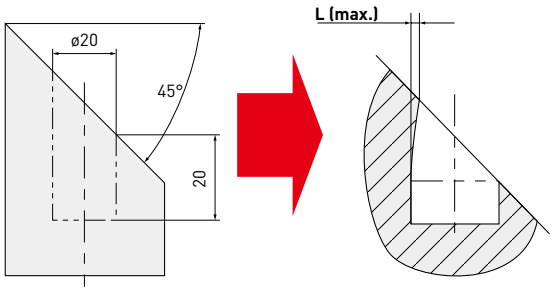
APPLICATION EXAMPLES

ANGLED FACE DRILLING

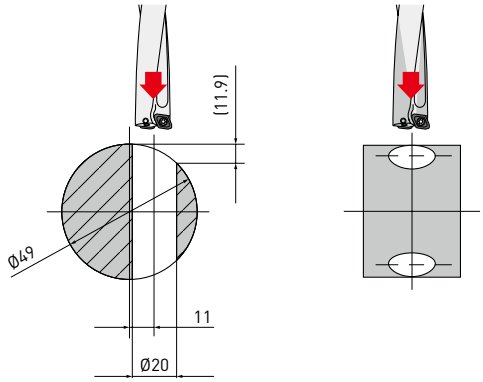
Material	DIN 42CrMo4 (180 – 280 HB)
Tool	Ø 20 (3 x D)
Vc (m/min)	80
f (mm/rev)	0.08

Tool	L (mm)	L (max.)
TAF	0.11	Good
Conventional A	0.17	Good
Conventional B	0.13	Inner and outer cutting edge fractures



ROUND WORKPIECE DRILLING

Material	DIN Ck50 (120 HB – 180 HB)
Tool	Ø 20 (3 x D)
Vc (m/min)	50, 80, 100
f (mm/rev)	0.08 Initial cutting 0.05

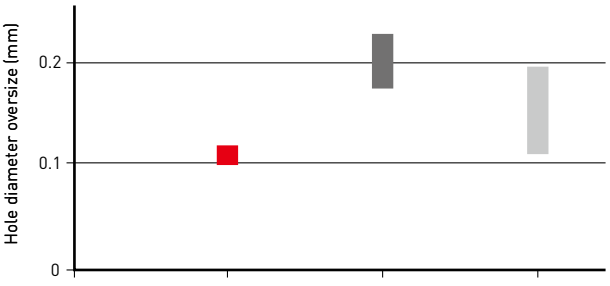


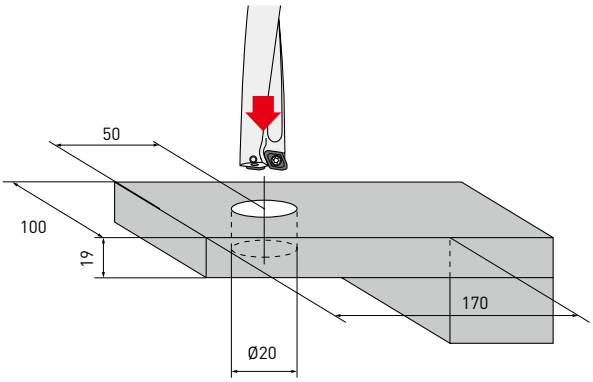
1. The inner cutting edge of a conventional drill fractured.

THROUGHOLE DRILLING

Material	DIN Ck50 (120 – 180 HB)
Tool	Ø 20 (3 x D)
Vc (m/min)	80
f (mm/rev)	0.08

Drill oversize (to measured drill diameter)





■ : TAF ■ A ■ B : Conventional

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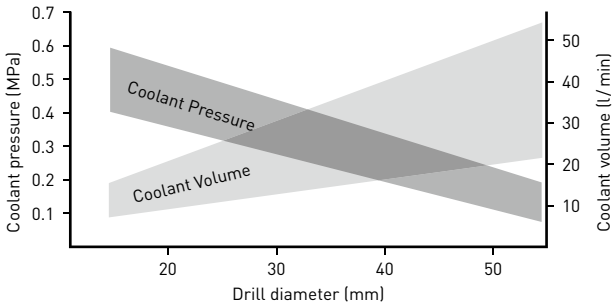
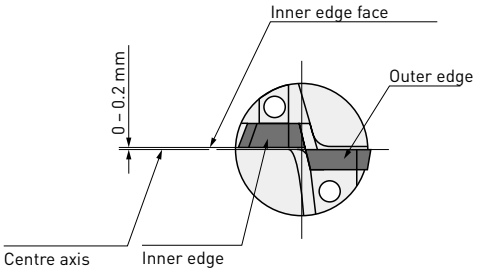
APPLICATIONS

- Please ensure the highest rigidity possible exists in both machine set up and workholding.
- Refer to the following graph on the right for coolant pressure and volume. Coolant is an important factor in the efficient use of these drills.
- Cannot be used for stack drilling.
  In common with many indexable insert drills, these drills produce a round disc on exit which unless evacuated may cause the drill to fracture.



USE ON A LATHE

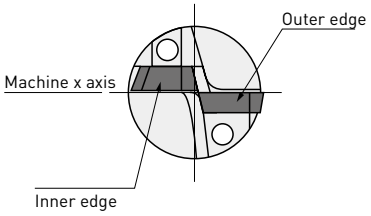
The inner cutting edge must be positioned between 0 – 0.2 mm over centre.

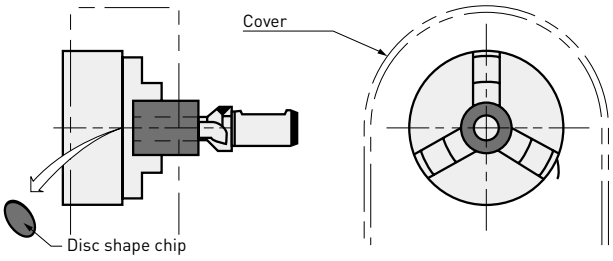


To adjust the hole diameter by off-setting the drill, the outer cutting edge and machine axis must be set parallel.

When producing an oversize hole.
The drill offset should be no more than 2 % of the diameter. It is not possible to produce an undersized hole.

When through hole drilling on a lathe the disc produced by the drill exiting the workpiece may be expelled at high velocity. To reduce the danger of injury or damage a cover guard is highly recommended.





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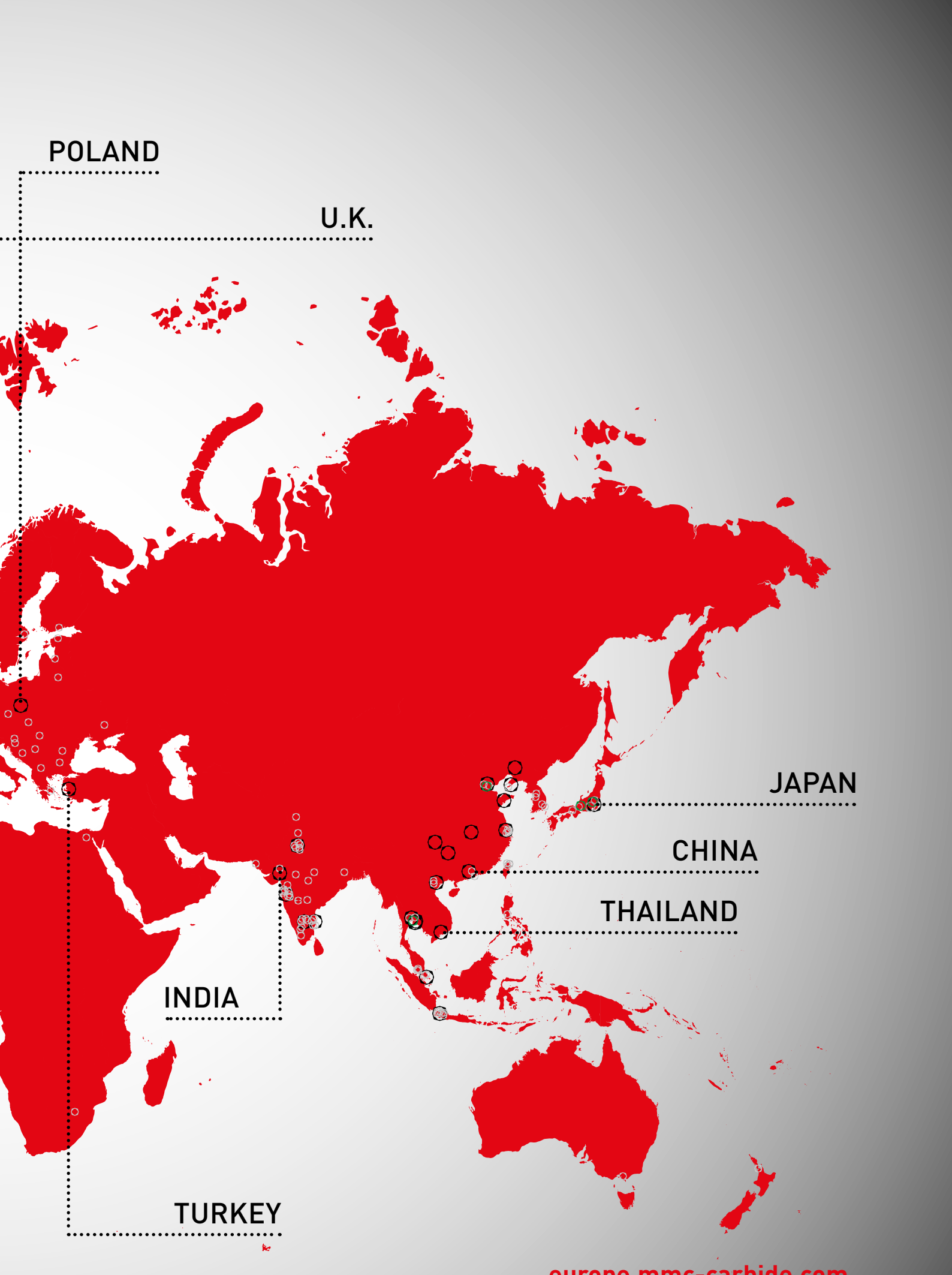

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GERMANY
MITSUBISHI MATERIALS TOOLS EUROPE GMBH
Comeniusstr. 2 . 40670 Meerbusch
Phone +49 2159 91890 . Fax +49 2159 918966
Email admin@mmchg.de

UK Office
MMC HARDMETAL UK LTD
1 Centurion Court, Centurion Way
Tamworth, B77 5PN
Phone +44 1827 312312
Email sales@mitsubishicarbide.co.uk

UK Deliveries / Returns
Unit 4 B5K Business Park, Quartz Close
Tamworth, B77 4GR

SPAIN
MITSUBISHI MATERIALS ESPAÑA, S.A.
Calle Emperador 2 . 46136 Museros / Valencia
Phone +34 96 1441711
Email comercial@mmevalencia.es

FRANCE
MMC METAL FRANCE S.A.R.L.
6, Rue Jacques Monod . 91400 Orsay
Phone +33 1 69 35 53 53 . Fax +33 1 69 35 53 50
Email mmfsales@mmc-metal-france.fr

POLAND
MMC HARDMETAL POLAND SP. Z O.O
Al. Armii Krajowej 61 . 50 - 541 Wroclaw
Phone +48 71335 1620 . Fax +48 71335 1621
Email sales@mitsubishicarbide.com.pl

ITALY
MMC ITALIA S.R.L.
Viale Certosa 144 . 20156 Milano
Phone +39 0293 77031 . Fax +39 0293 589093
Email info@mmc-italia.it

TURKEY
MITSUBISHI MATERIALS TOOLS EUROPE GMBH ALMANYA İZMİR MERKEZ ŞUBESİ
Adalet Mahallesi Anadolu Caddesi No: 41-1 . 15001 35530 Bayraklı / İzmir
Phone +90 232 5015000 . Fax +90 232 5015007
Email info@mmchg.com.tr

europe.mmc-carbide.com

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