New products for machining technicians

→ Page 15

NEW -M7

The new M7 geometry is designed for grooving and parting off.
With medium-high feed rates, its best performance is achieved in steel.

→ Page 16

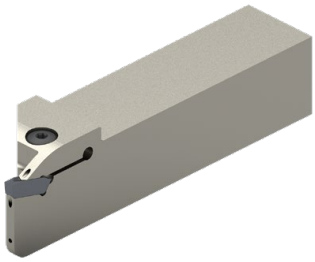
NEW -M8

The ground M8 geometry will become the first choice for the machining of stainless steel. This geometry can only be used for grooving and parting off.

→ Page 57

NEW -M33

M33 geometry is the ideal extension to the existing M3 geometry, which is particularly suitable for finish machining. This geometry is also exceptionally well-suited to the machining of tough and ductile materials.



→ Page 48+49

→ Page 65+66

NEW GX Mono with DirectCooling

The new generation of the GX MonoClamp tool holder is available with and without DirectCooling. The update to the GX Mono holder ensures greater stability, improved performance and process security.

Table of contents

CERATIZIT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **CERATIZIT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Advantages due to DirectCooling

- ▲ Improved chip control
- ▲ Longer service life of the indexable insert
- ▲ Greater process security
- ▲ Application of higher cutting data
- ▲ Reduced wear
- ▲ Universal application

cuttingtools.ceratizit.com/int/en/direct-cooling

Symbol explanation


Grooving


Parting


Grooving and Turning


Copy Turning


Circlip Grooves


Axial Grooving and Turning


Internal thread


External thread


Internal machining


Internal and external thread


External machining


Main Application


Extended application


Repeatability


Int. coolant supply

DirectCooling

F	M	R
		

F: Fine Machining
M: Medium Machining
R: Rough Machining


Smooth cut
Irregular cutting depth
Interrupted cut

-F2
CTPP345
Chip groove
Carbide Grade

System overview

No. of cutting edges	System	Grooving	Parting	Grooving and Turning	Copy Turning	Axial Grooving and Turning	External thread	Internal thread	Circlip Grooves	Internal machining	External machining CW (mm)	External machining CDX (max/mm)	Internal machining DMIN (mm)	Internal machining CDX (max/mm)	Axial machining DAXN (Ø min.)	Axial machining CDX (max/mm)	Page No.
1	SX	●	●	●	●						2 – 6	60					11–26
	FX	●	●								2,2 – 9,7	80					27–34
	LX	●	●	●	●	●					8 – 10	80	200	34	500	39	79–82
2	GX 09	●	●	●	●				●	●	2 – 3,5	7	16	6			35–51
	GX 16	●	●	●	●				●	●	2 – 6	12	20,5	11			35–51
	GX 24	●	●	●	●	●				●	2 – 6	21	42	19	45	25	52–69
	TC						●	●		●			20				87–94
	AX					●					3	15			10	15	83–86
3	TX	●	●	●	●	●			●	●	0,5 – 5,15	8	46	2	20	3	70–78

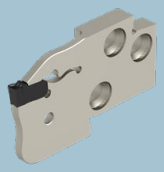
11

Toolfinder

ModularClamp

MonoClamp

SX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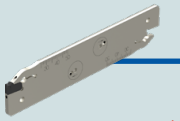
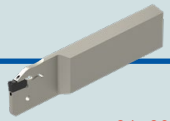
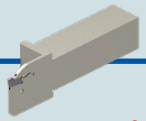
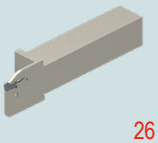
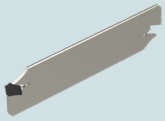
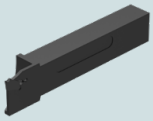



Direct Cooling
19 21+23 25



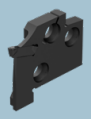
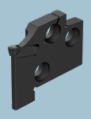

20 22+24 26

FX


32



33 34

GX 09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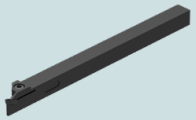
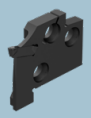
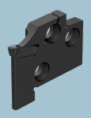

47



45 46


50

GX 16



43 44

NEW

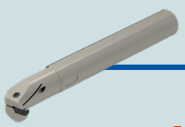
Direct Cooling
48

NEW

49



45 46



51

	Chip groove		Groove width	Grooving	Parting	Grooving and Turning	Copy Turning	Axial Grooving and Turning	Circlip Grooves	Fine Machining F	Medium Machining M	Rough Machining R	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Non-metal materials	Page No.
SX	-F2		2–4										●	●	●	○	●		○	11
	-M1		2–6										●	●	●	○	●		○	12
	-M2		2–6										●	●	●	○	●		○	13
	-M3		CRE 1,5–3,0										●	●	●	○	●		○	14
NEW	-M7		2–6										●	●	●	○	●		○	15
NEW	-M8		2–6										●	●	●	○	●		○	16
	-27P		2–4												●	●	○		○	17
FX	-F1		2,2–4,1										●	●	●	○	●		○	27
	-M1		2,2–9,7										●	●	●	○	●		○	28+29
	-27P		2,2–4,1												●	●	○		○	30
	-R2		3,1–4,1										●	●	●	○	●		○	31
GX 09 / GX 16	-F2	GX09/16	2–5										●	●	●	○	●		○	35
	Standard	GX09/16	2–6										●	●	●	○	●		○	36
	-M40	GX09/16	2–6										●	●	●	○	●		○	37
	-M1	GX16	2–4										●	●	●	○	●		○	38
	-27P	GX16	2–6												●	●	○		○	39
		GX09/16	1–4,25										●	●	●	○	●		○	40
	Standard Radius	GX09/16	CRE 0,8–3,0										●	●	●	○	●		○	41
	-27P Radius	GX16	CRE 1,5–2,5												●	●	○		○	42

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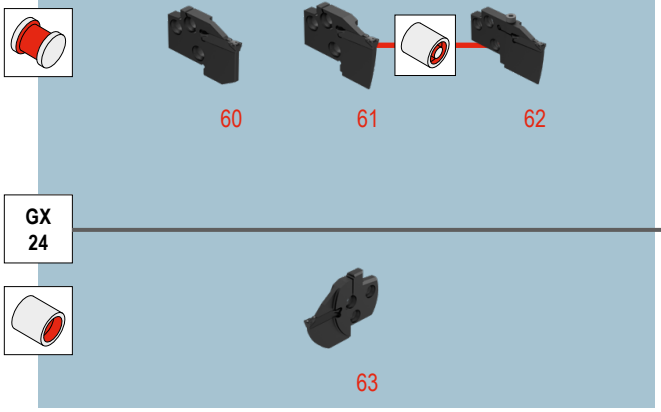
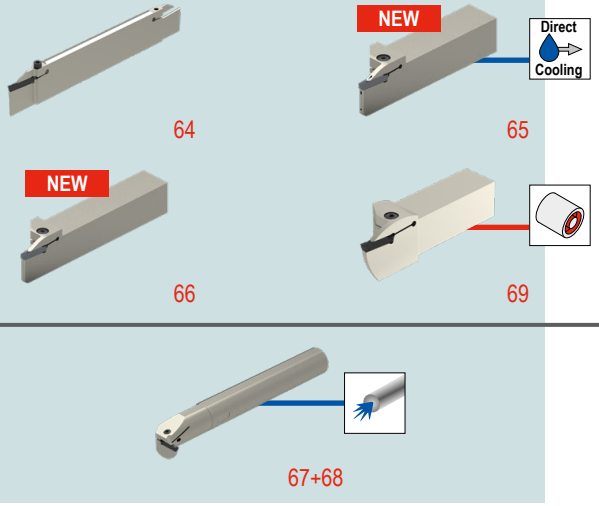
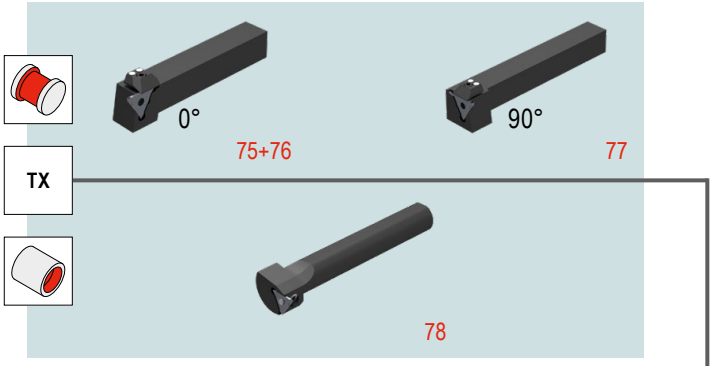
Toolfinder

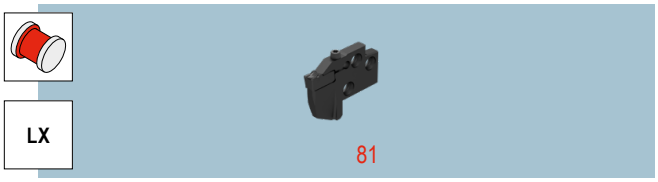
ModularClamp

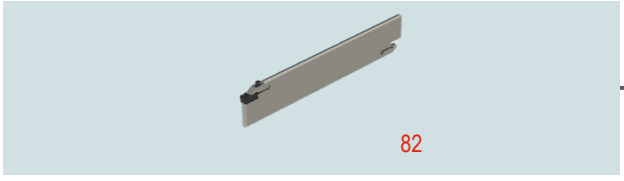


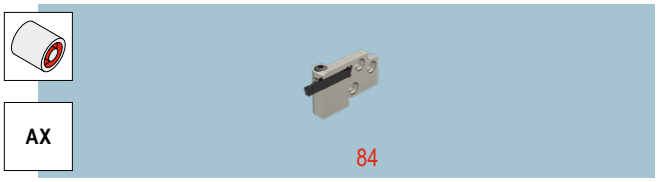
MonoClamp

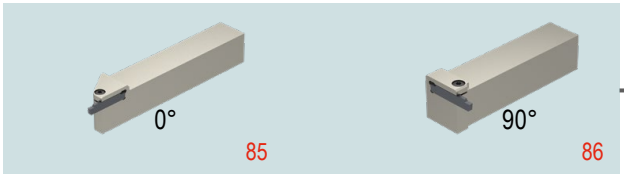


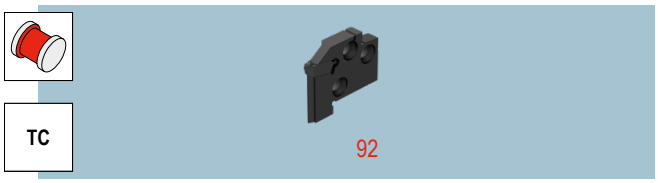












Chip groove			Groove width	Grooving	Parting	Grooving and Turning	Copy Turning	Axial Grooving and Turning	Circlip Grooves	Fine Machining F	Medium Machining M	Rough Machining R	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Non-metal materials	Page No.
GX 24	-F2	GX24	3–6										●	●	●	○	●		○	52
	-E	GX24	3–6										●	●	●	○	●		○	53
	-M1	GX24	2–4										●	●	●	○	●		○	54
	-M40	GX24	3–6										●	●	●	○	●		○	55
	-M3	GX24	CRE 1,5–3,0										●	○	●		○			56
NEW	-M33	GX24	CRE 1,5–3,0										●	○	●		○			57
	-27P	GX24	3–6												●	●	○		○	58
	-27PF	GX24	CRE 3–4												●	●	○		○	59
TX			1,99–2,79										●	●	●	●	●	○	●	70
			0,57–5,29										●	●	●	●	●	○	●	71
			CRE 0,25–2,50										●	●	●	●	●	○	●	72
			1,5–4,0										●	●	●	●	●	○	●	73
			1,5–3,0										●	●	●	●	●	○	●	74
LX	-M2		8–10										●	●	●	○	●		○	79
	-M3		CRE 4,0										●	●	●	○	●		○	80
AX	-F50		3										●	●	●	○	●		○	83

Thread type			Threading										
TC	60°	Full profile											87+88
	60°	Partial profile											89
	55°	Full profile											90
	55°	Partial profile											91

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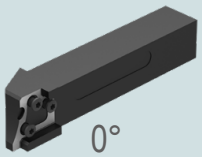
Base holder ModularClamp system

ModularClamp



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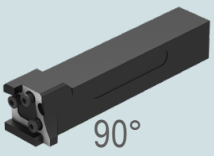

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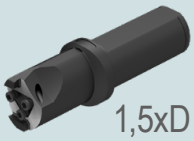

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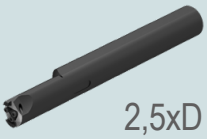

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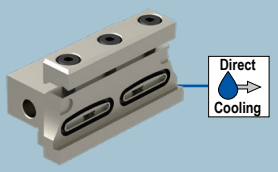
Clamping blocks for blades



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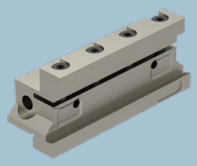
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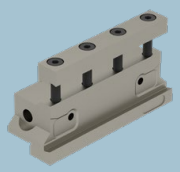
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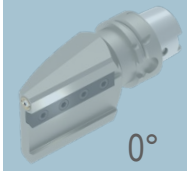
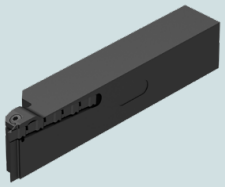


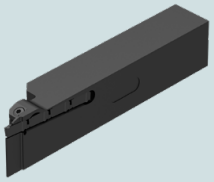
This article can be found in
→ **Clamping technology catalogue, Chapter 16 and in the online shop**

OTHER GROOVING SYSTEMS

MonoClamp

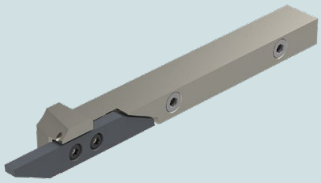
Maxi Click





This article can be found in our online shop at cuttingtools.ceratizit.com

VertiClamp

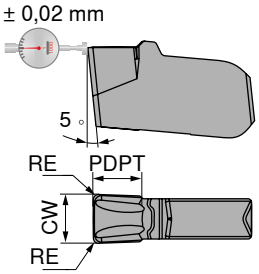


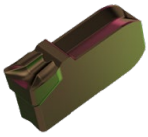
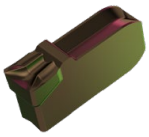
You will find the VertiClamp grooving system in the online shop and
→ in our sliding head tooling catalogue.

Insert SX

▲ High precision ground geometry

F	M	R
		



-F2 CTCP325	-F2 CTCP335	-F2 CTPP345	-F2 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
			

Designation	CW +/-0,02 mm	RE +/-0,05 mm	PDPT mm	for tool holder	70 346 ...	70 346 ...	70 346 ...	70 346 ...
SX E2.00 N 0.20	2	0,2	1,5	-SX2			**822**	**622**
SX E3.00 N 0.30	3	0,3	2,0	-SX3	**923**	**523**	**823**	**623**
SX E4.00 N 0.40	4	0,4	2,5	-SX4			**824**	**624**
P					●	●	●	●
M					○	○	●	●
K					●	●		●
N								○
S					○		○	●
H								
O								○

→ v_c Page 103
→ Application recommendation on page 108

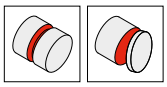
Internal machining | *External machining*

→ 18 | → 19+20 | → 21–24 | → 25+26

11

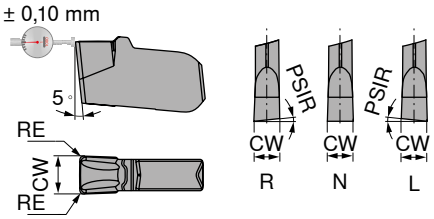
Insert SX

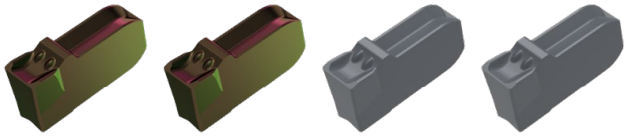
▲ Specially developed geometry with negative edge-chamfers available in right, left and neutral types



F	M	R

-M1 CTCP325	-M1 CTCP335	-M1 CTPP345	-M1 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN





Designation	IH	CW +/-0,05 mm	RE +/-0,05 mm	PSIR	for tool holder	70 342 ...		70 342 ...		70 342 ...		70 342 ...	
SX E2.00 L 6	L	2	0,2	6°	-SX2								**612**
SX E3.00 L 6	L	3	0,2	6°	-SX3		**913**						**613**
SX E4.00 L 6	L	4	0,3	6°	-SX4								**614**
SX E2.00 N 0.20	N	2	0,2		-SX2		**922**		**52200**		**822**		**622**
SX E3.00 N 0.20	N	3	0,2		-SX3		**923**		**523**		**823**		**623**
SX E4.00 N 0.30	N	4	0,3		-SX4		**924**		**524**		**824**		**624**
SX E5.00 N 0.30	N	5	0,3		-SX5		**925**		**52500**		**825**		**625**
SX E6.00 N 0.40	N	6	0,4		-SX6		**926**		**52600**		**826**		**626**
SX E2.00 R 6	R	2	0,2	6°	-SX2								**602**
SX E3.00 R 6	R	3	0,2	6°	-SX3		**903**						**603**
SX E4.00 R 6	R	4	0,3	6°	-SX4								**604**
P							●		●		●		●
M							○		○		●		●
K							●		●				●
N													○
S							○				○		●
H													
O													○

→ v_c Page 103
→ Application recommendation on page 109

Note: reduce feed rate by 20–50 % with R/L version!

You can find more information on page 119

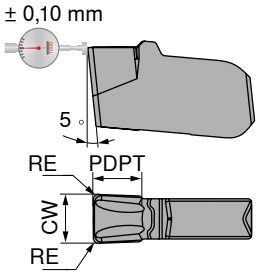
Internal machining *External machining*

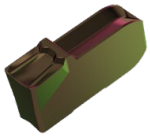
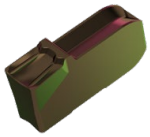
→ 18 → 19+20 → 21–24 → 25+26

Insert SX

▲ All purpose geometry for parting, grooving & turning.

F	M	R
		

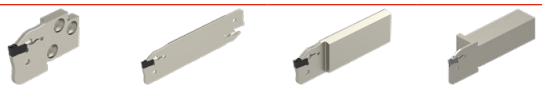


-M2 CTCP325	-M2 CTCP335	-M2 CTPP345	-M2 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
			

Designation	CW +/-0,05 mm	RE +/-0,05 mm	PDPT mm	for tool holder	70 343 ...	70 343 ...	70 343 ...	70 343 ...
SX E2.00 N 0.20	2	0,2	1,5	-SX2	**922**	**522**	**822**	**622**
SX E3.00 N 0.30	3	0,3	2,0	-SX3	**923**	**523**	**823**	**623**
SX E4.00 N 0.40	4	0,4	2,5	-SX4	**924**	**524**	**824**	**624**
SX E5.00 N 0.40	5	0,4	2,7	-SX5	**925**	**525**	**825**	**625**
SX E6.00 N 0.50	6	0,5	3,0	-SX6	**926**	**526**	**826**	**626**
P					●	●	●	●
M					○	○	●	●
K					●	●		●
N								○
S					○		○	●
H								
O								○

→ v_c Page 103
→ Application recommendation on page 108

Internal machining | *External machining*



→ 18 | → 19+20 | → 21–24 | → 25+26

11

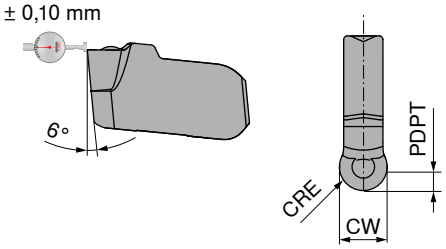
Radius Grooving Insert SX

▲ for grooving and copy turning
▲ very good chip control

F	M	R

-M3
CTCP335
DRAGONSKIN

-M3
CTP1340
DRAGONSKIN



Designation	CW +/-0,05 mm	CRE mm	PDPT mm	for tool holder	70 344 ...		70 344 ...	
SX R3.00 N 1.50	3	1,5	1,5	-SX3	**531**		**631**	
SX R4.00 N 2.00	4	2,0	2,0	-SX4	**532**		**632**	
SX R5.00 N 2.50	5	2,5	2,5	-SX5	**533**		**633**	
SX R6.00 N 3.00	6	3,0	3,0	-SX6			**634**	
P					●		●	
M					○		●	
K					●		●	
N							○	
S							●	
H								
O							○	

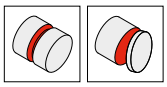
→ v_c Page 103
→ Application recommendation on page 109

Internal machining | *External machining*

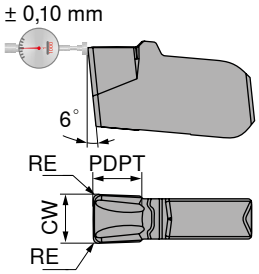
→ 18 | → 19+20 | → 21–24 | → 25+26

Insert SX

▲ For grooving and parting off in steel at medium to high feed rates



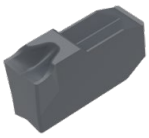
F	M	R



NEW

-M7
CTP1340

DRAGONSKIN



70 347 ...

Designation	CW +/-0,05 mm	RE +/-0,05 mm	PDPT mm	for tool holder	
SX E2.00 N 0.20	2	0,2	1,5	-SX2	**62200**
SX E3.00 N 0.20	3	0,2	2,0	-SX3	**62300**
SX E4.00 N 0.30	4	0,3	2,5	-SX4	**62400**
SX E5.00 N 0.30	5	0,3	2,7	-SX5	**62500**
SX E6.00 N 0.40	6	0,4	3,0	-SX6	**62600**

P	●
M	●
K	●
N	○
S	●
H	
O	○

→ v_c Page 103
→ Application recommendation on page 108

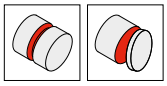
Internal machining | *External machining*

→ 18 | → 19+20 | → 21–24 | → 25+26

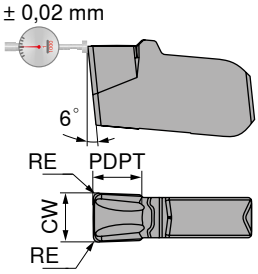
11

Insert SX

▲ Ground geometry
▲ First choice for the grooving and parting off of stainless steel



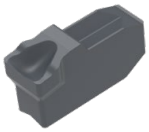
F	M	R



NEW

-M8
CTP1340

DRAGONSKIN



70 348 ...

Designation	CW +/-0,05 mm	RE +/-0,05 mm	PDPT mm	for tool holder	
SX E2.00 N 0.20	2	0,2	1,5	-SX2	**62200**
SX E3.00 N 0.20	3	0,2	2,0	-SX3	**62300**
SX E4.00 N 0.30	4	0,3	2,5	-SX4	**62400**
SX E5.00 N 0.30	5	0,3	2,7	-SX5	**62500**
SX E6.00 N 0.40	6	0,4	3,0	-SX6	**62600**

P	●
M	●
K	●
N	○
S	●
H	
O	○

→ v_c Page 103
→ Application recommendation on page 108

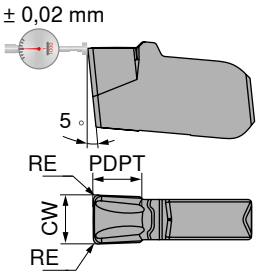
Internal machining | *External machining*

→ 18 | → 19+20 | → 21–24 | → 25+26

Insert SX

▲ Insert with highly positive cutting edge geometry and sharp cutting edge
▲ Specialist for aluminum and other soft long-chipping non-ferrous metals

F	M	R



-27P
H216T

70 349 ...

Designation	CW +/-0,02 mm	RE +/-0,05 mm	PDPT mm	for tool holder	
SX E2.00 N 0.20	2	0,2	2,0	-SX2	**122**
SX E3.00 N 0.30	3	0,3	2,5	-SX3	**123**
SX E4.00 N 0.40	4	0,4	3,0	-SX4	**124**

P	
M	
K	●
N	●
S	○
H	
O	○

→ v_c Page 103
→ Application recommendation on page 109

Internal machining | *External machining*

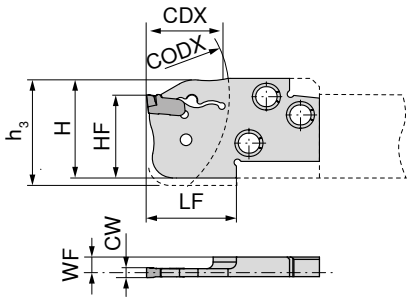
→ 18 | → 19+20 | → 21–24 | → 25+26

11

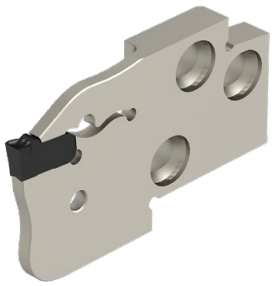
ModularClamp MSS – Radial grooving module SX

▲ for parting, grooving and finish turning

Scope of supply:
Grooving module only



Illustrations show right-hand versions

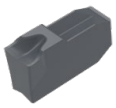
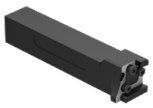


ISO designation	HF mm	CW mm	WF mm	LF mm	H mm	h_3 mm	CODX mm	CDX mm	for grooving inserts	Left-hand 70 897 ...	Right-hand 70 896 ...
E20 R/L 20-SX2	20	2	3,57	22	24	27	60	20	SX .2..	**020**	**020**
E20 R/L 20-SX3	20	3	3,20	22	24	27	60	20	SX .3..	**120**	**120**
E25 R/L 20-SX2	25	2	5,07	22	30		75	20	SX .2..	**025**	**025**
E25 R/L 25-SX3	25	3	4,70	27	30		75	25	SX .3..	**125**	**125**
E25 R/L 35-SX3	25	3	4,70	37	30		75	35	SX .3..	**225**	**225**
E25 R/L 25-SX4	25	4	4,30	27	30		75	25	SX .4..	**325**	**325**
E25 R/L 35-SX4	25	4	4,30	37	30		75	35	SX .4..	**425**	**425**

Ejector SX

70 950 ...

Spare parts for grooving inserts		
SX .2..	SX 2-3	**836**
SX .3..	SX 2-3	**836**
SX .4..	SX 4-6	**837**

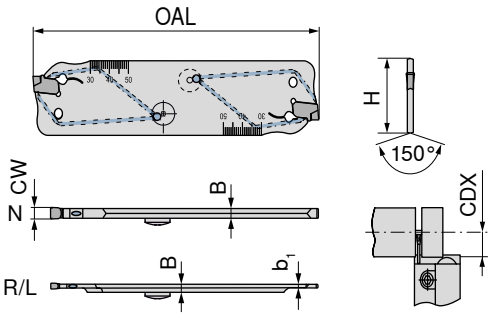

→ 11–17 → 95+96 → 97

Please order SX assembly key separately if required.

MonoClamp – Radial Blade SX-DC Standard

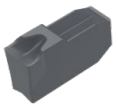
Scope of supply:
Blade incl. 1 sealing screw

Direct Cooling



ISO designation	CW mm	H mm	B mm	b_1 mm	OAL mm	CDX mm	for grooving inserts	R/L/N	70 884 ...
XLCF L 2602-DC-SX2	2	26	2,4	1,6	110	25	SX .2..	L	**712**
XLCF R 2602-DC-SX2	2	26	2,4	1,6	110	25	SX .2..	R	**512**
XLCF N 2603-DC-SX3	3	26	2,5		110	35	SX .3..	N	**613**
XLCF N 2604-DC-SX4	4	26	3,3		110	40	SX .4..	N	**614**
XLCF L 3202-DC-SX2	2	32	2,4	1,6	150	26	SX .2..	L	**702**
XLCF R 3202-DC-SX2	2	32	2,4	1,6	150	26	SX .2..	R	**502**
XLCF N 3203-DC-SX3	3	32	2,5		150	50	SX .3..	N	**603**
XLCF N 3204-DC-SX4	4	32	3,3		150	50	SX .4..	N	**604**
XLCF N 3205-DC-SX5	5	32	4,3		150	55	SX .5..	N	**605**
XLCF N 3206-DC-SX6	6	32	5,2		150	60	SX .6..	N	**606**

	Key D		Ejector SX		Sealing screw	
	80 950 ...		**70 950 ...**		**70 950 ...**	
Spare parts for grooving inserts						
SX .2..	T15 - IP	**128**	SX 2-3	**836**	M4 x 3	**450**
SX .3..	T15 - IP	**128**	SX 2-3	**836**	M4 x 3	**450**
SX .4..	T15 - IP	**128**	SX 4-6	**837**	M4 x 3	**450**
SX .5..	T15 - IP	**128**	SX 4-6	**837**	M4 x 3	**450**
SX .6..	T15 - IP	**128**	SX 4-6	**837**	M4 x 3	**450**



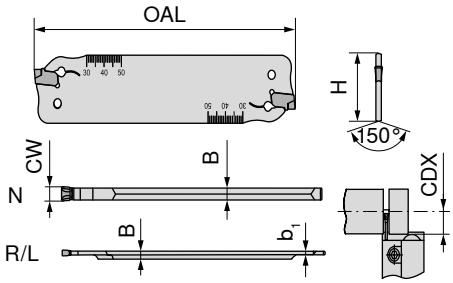

→ 11–17 → 99 → Chapter 16 → Chapter 16

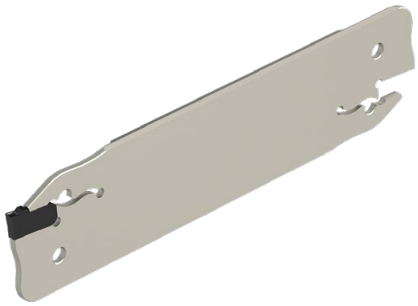
Please order SX assembly key separately if required.

11

MonoClamp – Radial Blade SX Standard

Scope of supply:
Blade only

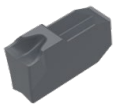




ISO designation	CW mm	H mm	B mm	b_1 mm	OAL mm	CDX mm	for grooving inserts	R/L/N	70 884 ...
XLCF L 2602-SX2	2	26	2,4	1,5	110	25	SX .2..	L	**212**
XLCF R 2602-SX2	2	26	2,4	1,5	110	25	SX .2..	R	**012**
XLCF N 2603-SX3	3	26	2,4		110	35	SX .3..	N	**113**
XCLF N 2604-SX4	4	26	3,2		110	40	SX .4..	N	**114**
XLCF L 3202-SX2	2	32	2,4	1,5	150	25	SX .2..	L	**202**
XLCF R 3202-SX2	2	32	2,4	1,5	150	25	SX .2..	R	**002**
XLCF N 3203-SX3	3	32	2,4		150	50	SX .3..	N	**103**
XLCF N 3204-SX4	4	32	3,2		150	50	SX .4..	N	**104**
XLCF N 3205-SX5	5	32	4,2		150	55	SX .5..	N	**105**
XLCF N 3206-SX6	6	32	5,2		150	60	SX .6..	N	**106**

Ejector SX

Spare parts for grooving inserts		70 950 ...
SX .2..	SX 2-3	**836**
SX .3..	SX 2-3	**836**
SX .4..	SX 4-6	**837**
SX .5..	SX 4-6	**837**
SX .6..	SX 4-6	**837**



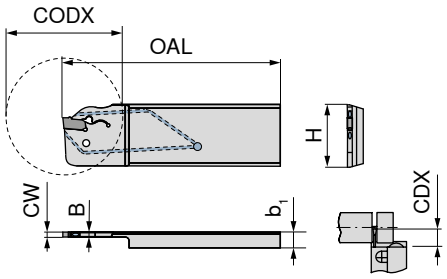

→ 11–17 → 100+101 → Chapter 16 → Chapter 16

Please order SX assembly key separately if required.

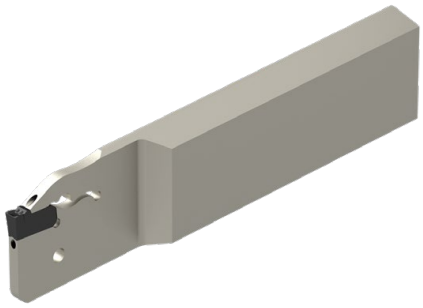
MonoClamp – Radial Blade SX-DC reinforced

Scope of supply:
Blade only

Direct Cooling



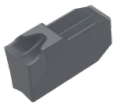
Illustrations show right-hand versions



ISO designation	CW mm	H mm	B mm	b_1 mm	OAL mm	CODX mm	CDX mm	for grooving inserts	R/L/N	70 879 ...
XLCF L 2608-DC-SX3	3	26	2,5	8	110	66	33	SX .3..	L	**713**
XLCF R 2608-DC-SX3	3	26	2,5	8	110	66	33	SX .3..	R	**513**
XLCF L 3208-DC-SX3	3	32	2,5	8	110	66	33	SX .3..	L	**703**
XLCF R 3208-DC-SX3	3	32	2,5	8	110	66	33	SX .3..	R	**503**

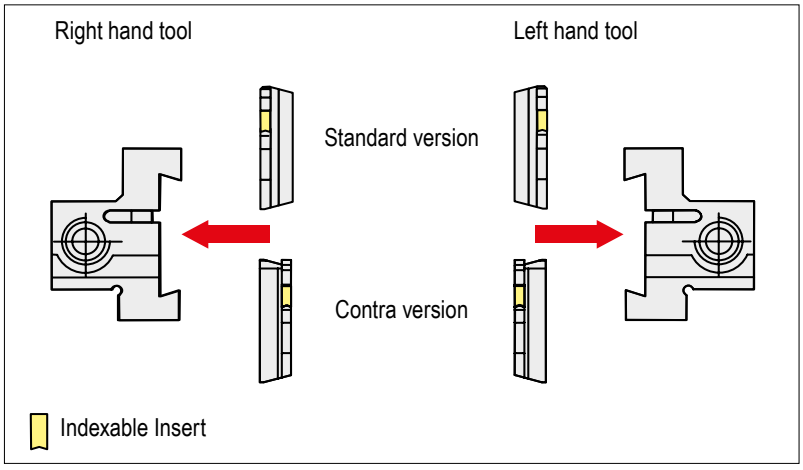
Ejector SX

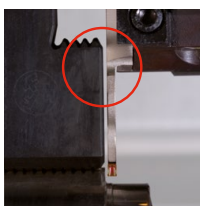
Spare parts for grooving inserts		70 950 ...
SX .3..	SX 2-3	**836**
SX .4..	SX 4-6	**837**




→ 11–17 → 99 → Chapter 16 → Chapter 16

Correct Tool Selection

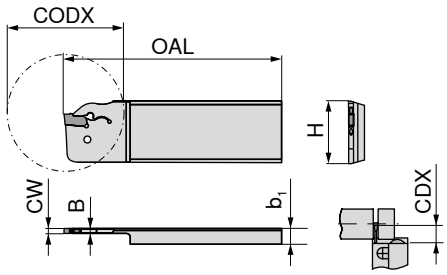


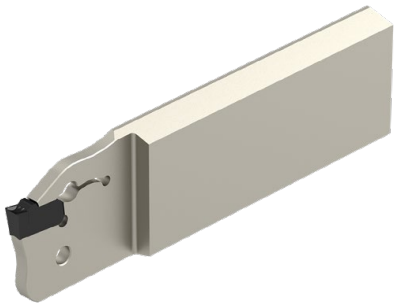


Please order SX assembly key separately if required.

MonoClamp – Radial Blade SX reinforced

Scope of supply:
Blade only





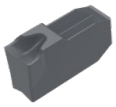
Illustrations show right-hand versions

ISO designation	CW mm	H mm	B mm	b_1 mm	OAL mm	CODX mm	CDX mm	for grooving inserts	R/L/N	70 879 ...
XLCF L 2608-SX3	3	26	2,5	8	110	44	22	SX .3..	L	**213** 1)
XLCF R 2608-SX3	3	26	2,5	8	110	44	22	SX .3..	R	**013** 1)
XLCF L 3208-SX3	3	32	2,5	8	110	66	33	SX .3..	L	**203**
XLCF R 3208-SX3	3	32	2,5	8	110	66	33	SX .3..	R	**003**
XLCF L 3208-SX4	4	32	3,4	8	110	66	33	SX .4..	L	**204**
XLCF R 3208-SX4	4	32	3,4	8	110	66	33	SX .4..	R	**004**

1) can be used in both directions

Ejector SX

Spare parts for grooving inserts		70 950 ...
SX .3..	SX 2-3	**836**
SX .4..	SX 4-6	**837**



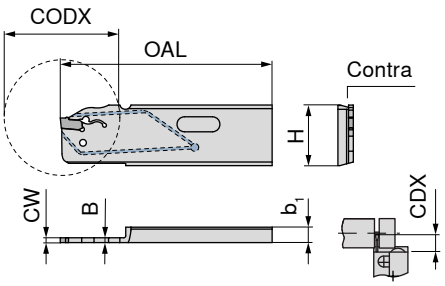

→ 11–17 | → 100+101 | → Chapter 16 | → Chapter 16

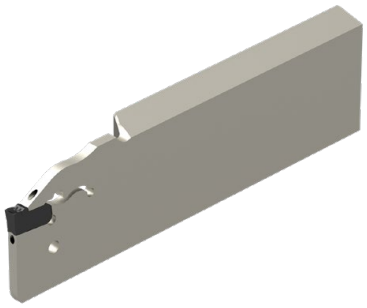
Please order SX assembly key separately if required.

MonoClamp – SX-DC reinforced Contra radial blade

Scope of supply:
Blade only

Direct Cooling





Illustrations show right-hand versions

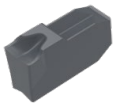
70 877 ...

ISO designation	CW mm	H mm	B mm	b_1 mm	OAL mm	CODX mm	CDX mm	for grooving inserts	Version	R/L/N	
XLCF L 3208C-DC-SX3	3	32	2,5	8	110	66	33	SX .3..	Contra	L	**703**
XLCF R 3208C-DC-SX3	3	32	2,5	8	110	66	33	SX .3..	Contra	R	**503**

Ejector SX

70 950 ...

Spare parts for grooving inserts		
SX .3..	SX 2-3	**836**

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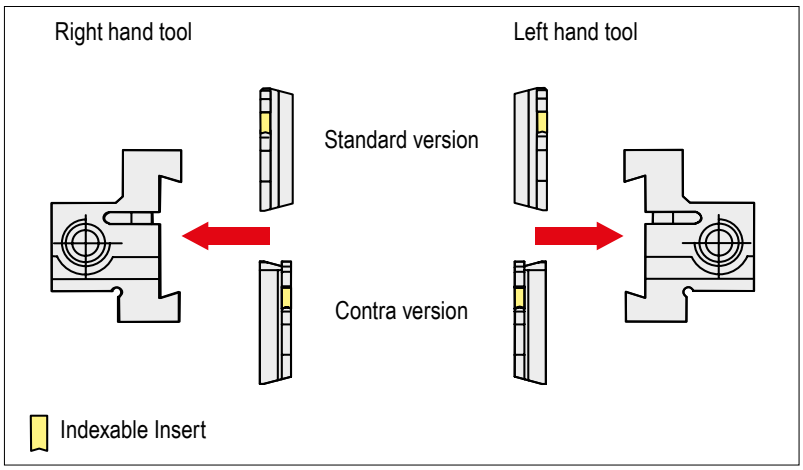
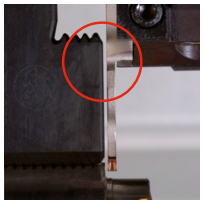
11

Correct Tool Selection

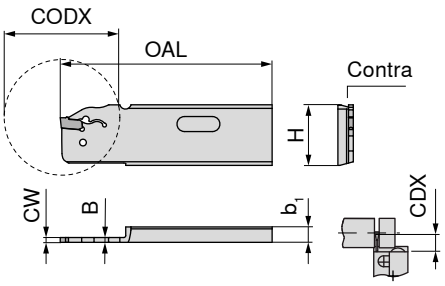




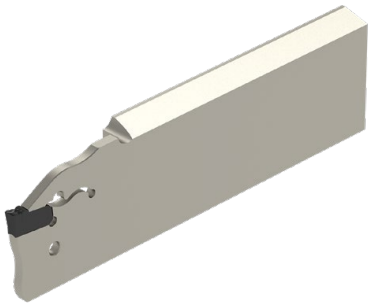
Please order SX assembly key separately if required.

MonoClamp – SX reinforced Contra radial blade

Scope of supply:
Blade only



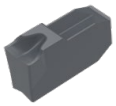
Illustrations show right-hand versions



ISO designation	CW mm	H mm	B mm	b_1 mm	OAL mm	CODX mm	CDX mm	for grooving inserts	Version	R/L/N	70 877 ...
XLCF L 3208C-SX3	3	32	2,5	8	110	66	33	SX .3..	Contra	L	**203**
XLCF R 3208C-SX3	3	32	2,5	8	110	66	33	SX .3..	Contra	R	**003**

Ejector SX

	70 950 ...
Spare parts for grooving inserts	
SX .3..	SX 2-3 **836**



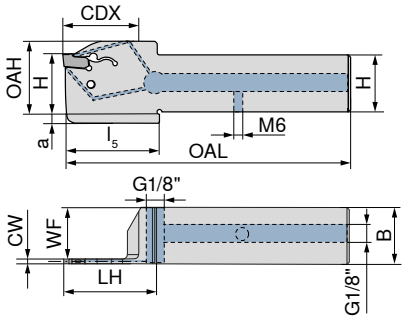

→ 11–17 → 100+101 → Chapter 16 → Chapter 16

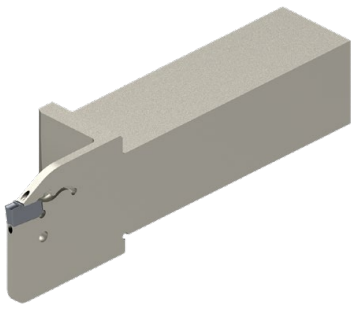
Please order SX assembly key separately if required.

MonoClamp – Radial Monoholder SX-DC

Scope of supply:
Mono holder incl. screw plug and grub screw

Direct Cooling





Illustrations show right-hand versions

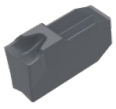
ISO designation	H mm	B mm	CW mm	WF mm	OAL mm	LH mm	l_5 mm	OAH mm	CDX mm	a mm	for grooving inserts	Left-hand 70 847 ...	Right-hand 70 847 ...
E12 R/L 0022-1212X-K-DC-SX2	12	12	2	11,20	71	27	28	22	22	5	SX .2..	**21201**	**21200**
E16 R/L 0026-1616X-K-DC-SX2	16	16	2	15,20	87	32	33	26	26	4	SX .2..	**21601**	**21600**
E16 R/L 0026-1616X-K-DC-SX3	16	16	3	14,75	87	32	33	26	26	4	SX .3..	**31601**	**31600**
E20 R/L 0026-2020X-K-DC-SX2	20	20	2	19,20	102	32	33	31	26	5	SX .2..	**22001**	**22000**
E20 R/L 0026-2020X-K-DC-SX3	20	20	3	18,75	102	32	33	31	26	5	SX .3..	**32001**	**32000**
E20 R/L 0033-2020X-K-DC-SX4	20	20	4	18,30	109	39	40	32	33	5	SX .4..	**42001**	**42000**
E25 R/L 0033-2525X-K-DC-SX2	25	25	2	24,20	126	41	42	36	33	5	SX .2..	**22501**	**22500**
E25 R/L 0026-2525X-K-DC-SX3	25	25	3	23,75	117	33		31	26		SX .3..	**32501**	**32500**
E25 R/L 0033-2525X-K-DC-SX3	25	25	3	23,75	126	41	42	36	33	5	SX .3..	**32601**	**32600**
E25 R/L 0033-2525X-K-DC-SX4	25	25	4	23,30	126	41	42	36	33	5	SX .4..	**42501**	**42500**
E25 R/L 0040-2525X-K-DC-SX4	25	25	4	23,30	133	48	49	38	40	6	SX .4..	**42601**	**42600**
E25 R/L 0040-2525X-K-DC-SX5	25	25	5	22,85	133	48	49	38	40	6	SX .5..	**52501**	**52500**
E25 R/L 0040-2525X-K-DC-SX6	25	25	6	22,35	133	48	49	38	40	6	SX .6..	**62501**	**62500**

Ejector SX


Coolant screw plug


Grubscrew

Spare parts for grooving inserts	Ejector SX 70 950 ...		Coolant screw plug 70 950 ...		Grubscrew 70 950 ...	
SX .2..	SX 2-3	**836**	G 1/8"	**294**	M6x6	**86700**
SX .3..	SX 2-3	**836**	G 1/8"	**294**	M6x6	**86700**
SX .4..	SX 4-6	**837**	G 1/8"	**294**	M6x6	**86700**
SX .5..	SX 4-6	**837**	G 1/8"	**294**	M6x6	**86700**
SX .6..	SX 4-6	**837**	G 1/8"	**294**	M6x6	**86700**

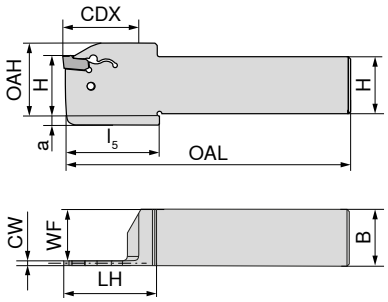


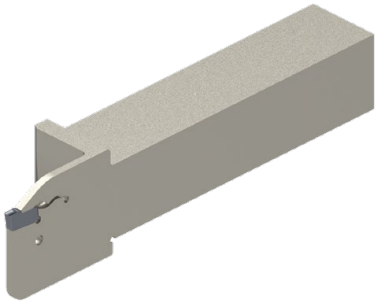

→ 11–17 → **Chapter 16**

Please order SX assembly key separately if required.

MonoClamp – Radial Monoholder SX

Scope of supply:
Mono holder only



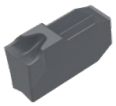


Illustrations show right-hand versions

ISO designation	H mm	B mm	CW mm	WF mm	OAL mm	LH mm	l_5 mm	OAH mm	CDX mm	a mm	for grooving inserts	Left-hand 70 846 ...	Right-hand 70 846 ...
E12 R/L 0022-1212K-K-SX2	12	12	2	11,20	125	27	28	22	22	5	SX .2..	**21201**	**21200**
E16 R/L 0026-1616K-K-SX2	16	16	2	15,20	125	32	33	26	26	4	SX .2..	**21601**	**21600**
E16 R/L 0026-1616K-K-SX3	16	16	3	14,75	125	32	33	26	26	4	SX .3..	**31601**	**31600**
E20 R/L 0026-2020K-K-SX2	20	20	2	19,20	125	32	33	31	26	5	SX .2..	**22001**	**22000**
E20 R/L 0026-2020K-K-SX3	20	20	3	18,75	125	32	33	31	26	5	SX .3..	**32001**	**32000**
E20 R/L 0033-2020K-K-SX4	20	20	4	18,30	125	39	40	32	33	5	SX .4..	**42001**	**42000**
E25 R/L 0033-2525M-K-SX2	25	25	2	24,20	150	41	42	36	33	5	SX .2..	**22501**	**22500**
E25 R/L 0033-2525M-K-SX3	25	25	3	23,75	150	41	42	36	33	5	SX .3..	**32601**	**32600**
E25 R/L 0026-2525M-K-SX3	25	25	3	23,75	150	33		31	26		SX .3..	**32501**	**32500**
E25 R/L 0040-2525M-K-SX4	25	25	4	23,30	150	48	49	38	40	6	SX .4..	**42601**	**42600**
E25 R/L 0033-2525M-K-SX4	25	25	4	23,30	150	41	42	37	33	5	SX .4..	**42501**	**42500**
E25 R/L 0040-2525M-K-SX5	25	25	5	22,85	150	48	49	38	40	6	SX .5..	**52501**	**52500**
E25 R/L 0040-2525M-K-SX6	25	25	6	22,35	150	48	49	38	40	6	SX .6..	**62501**	**62500**

Ejector SX

Spare parts for grooving inserts		70 950 ...
SX .2..	SX 2-3	**836**
SX .3..	SX 2-3	**836**
SX .4..	SX 4-6	**837**
SX .5..	SX 4-6	**837**
SX .6..	SX 4-6	**837**

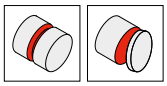


→ 11–17 → **Chapter 16**

Please order SX assembly key separately if required.

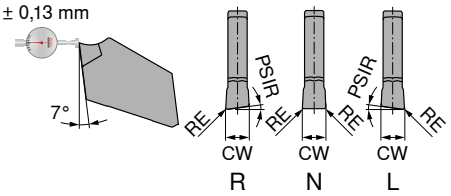
Insert FX

- ▲ Excellent cutting geometry with low cutting forces
- ▲ Very good swarf control also with low feed rates
- ▲ Reduced built-up edge



F	M	R

-F1 CTCP325	-F1 CTPP345	-F1 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	IH	CW $_{-0.1}$ mm	RE $_{+/-0.05}$ mm	PSIR	for tool holder	70 331 ...	70 331 ...	70 331 ...
FX 2.2 L 5-F1	L	2,2	0,15	5°	-FX 2.2		**847**	**647**
FX 3.1 L 5-F1	L	3,1	0,20	5°	-FX 3.1		**851**	**651**
FX 3.1 L 8-F1	L	3,1	0,20	8°	-FX 3.1		**855**	
FX 2.2 N 0.15-F1	N	2,2	0,15		-FX 2.2	**998**	**848**	**648**
FX 3.1 N 0.40-F1	N	3,1	0,40		-FX 3.1	**906**	**856**	**656**
FX 3.1 N 0.20-F1	N	3,1	0,20		-FX 3.1	**902**	**852**	**652**
FX 4.1 N 0.20-F1	N	4,1	0,20		-FX 4.1		**860**	**660**
FX 4.1 N 0.50-F1	N	4,1	0,50		-FX 4.1		**864**	
FX 2.2 R 5-F1	R	2,2	0,15	5°	-FX 2.2		**849**	**649**
FX 3.1 R 5-F1	R	3,1	0,20	5°	-FX 3.1		**853**	**653**
FX 3.1 R 8-F1	R	3,1	0,20	8°	-FX 3.1		**857**	
P						●	●	●
M						○	●	●
K						●		●
N								○
S						○	○	●
H								
O								○

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→ Application recommendation on page 110

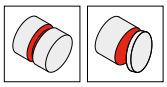
Note: reduce feed rate by 20–50 % with R/L version!

Internal machining *External machining*

→ 32 → 33 → 34

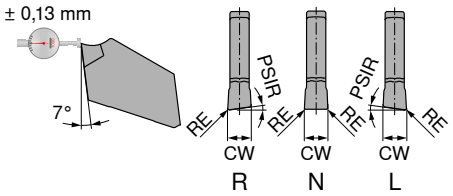
Insert FX

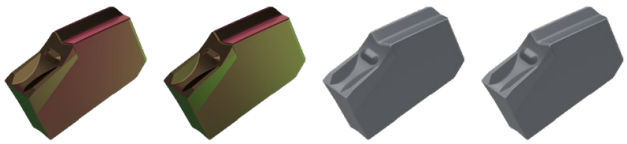
▲ narrow version



F	M	R

-M1 CTCP325	-M1 CTCP335	-M1 CTPP345	-M1 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN





Designation	IH	CW $_{-0.1}$ mm	RE $_{+/-0.05}$ mm	PSIR	for tool holder	70 330 ...		70 330 ...		70 330 ...		70 330 ...	
FX 2.2 L 4-M1	L	2,2	0,1	4°	-FX 2.2				550		800		600
FX 2.2 N 0.10-M1	N	2,2	0,1		-FX 2.2		902		552		802		602
FX 2.2 R 4-M1	R	2,2	0,1	4°	-FX 2.2				554		804		604
P							●		●		●		●
M							○		○		●		●
K							●		●				●
N													○
S							○				○		●
H													
O													○

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→ Application recommendation on page 110

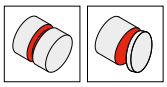
Note: reduce feed rate by 20–50 % with R/L version!

Internal machining *External machining*

→ 32 → 33 → 34

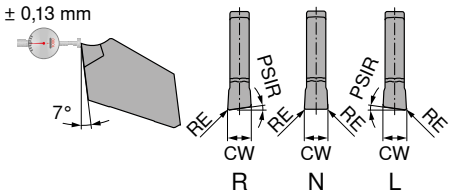
Insert FX

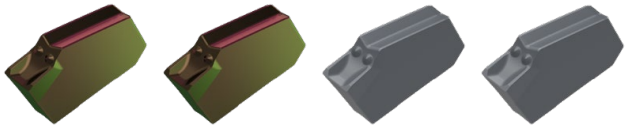
▲ wide version



F	M	R
	▲	

-M1 CTCP325	-M1 CTCP335	-M1 CTPP345	-M1 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN





Designation	IH	CW +/-0,05 mm	RE +/-0,05 mm	PSIR	for tool holder	70 332 ...		70 332 ...		70 332 ...		70 332 ...	
FX 3.1 L 6-M1	L	3,1	0,15	6°	-FX 3.1	**900**		**550**		**800**		**600**	
FX 4.1 L 6-M1	L	4,1	0,20	6°	-FX 4.1			**556**		**806**		**606**	
FX 3.1 N 0.15-M1	N	3,1	0,15		-FX 3.1	**902**		**552**		**802**		**602**	
FX 4.1 N 0.20-M1	N	4,1	0,20		-FX 4.1	**908**		**558**		**808**		**608**	
FX 5.1 N 0.25-M1	N	5,1	0,25		-FX 5.1	**914**		**564**		**814**		**614**	
FX 6.5 N 0.30-M1	N	6,5	0,30		-FX 6.5	**920**		**570**				**620**	
FX 8.2 N 0.40-M1	N	8,2	0,40		XLCEN 4608	**924**		**574**				**624**	
FX 9.7 N 0.40-M1	N	9,7	0,40		XLCEN 4609	**926**		**576**				**626**	
FX 3.1 R 6-M1	R	3,1	0,15	6°	-FX 3.1	**904**		**554**		**804**		**604**	
FX 4.1 R 6-M1	R	4,1	0,20	6°	-FX 4.1			**560**		**810**		**610**	
P						●		●		●		●	
M						○		○		●		●	
K						●		●				●	
N												○	
S						○				○		●	
H													
O												○	

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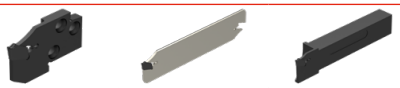
Note: reduce feed rate by 20–50 % with R/L version!

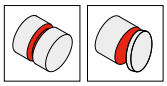
Internal machining *External machining*



→ 32 → 33 → 34

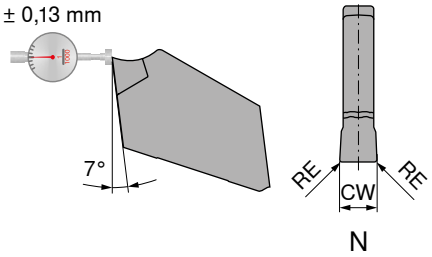
Insert FX

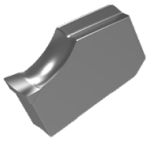
▲ Insert with highly positive cutting edge geometry and sharp cutting edge, polished chip breaker
▲ Reduced built-up edge



F	M	R
		

-27P
H216T





70 334 ...

Designation	IH	CW $_{-0,1}$ mm	RE $_{+/-0,05}$ mm	for tool holder	
FX 2.2 N 0.10	N	2,2	0,10	-FX 2.2	**650**
FX 3.1 N 0.15	N	3,1	0,15	-FX 3.1	**652**
FX 4.1 N 0.15	N	4,1	0,15	-FX 4.1	**654**

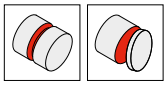
P	
M	
K	●
N	●
S	○
H	
O	○

→ v_c Page 103
→ Application recommendation on page 110

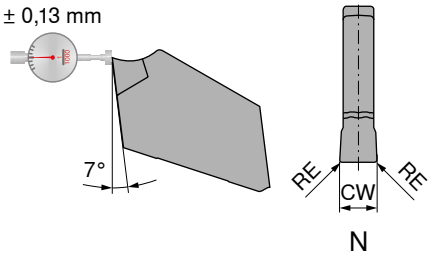
Internal machining		*External machining*						
								
		→ 32	→ 33	→ 34				

Insert FX

▲ Insert with excellent swarf control for a wide range of feed rates
▲ Very stable cutting edge



F	M	R

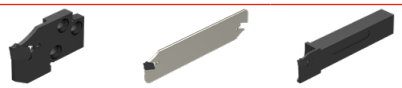


-R2 CTCP325	-R2 CTPP345	-R2 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	IH	CW $_{-0.1}$ mm	RE $_{+/-0,05}$ mm	for tool holder	70 335 ...	70 335 ...	70 335 ...
FX 3.1 N 0.40-R2	N	3,1	0,4	-FX 3.1	**902**	**852**	**652**
FX 4.1 N 0.50-R2	N	4,1	0,5	-FX 4.1	**908**	**858**	**658**
P					●	●	●
M					○	●	●
K					●		●
N							○
S					○	○	●
H							
O							○

→ v_c Page 103
→ Application recommendation on page 110

Internal machining | *External machining*

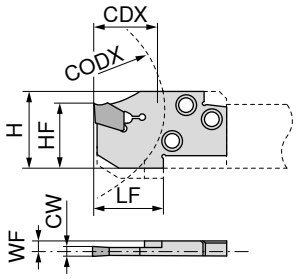


→ 32 | → 33 | → 34

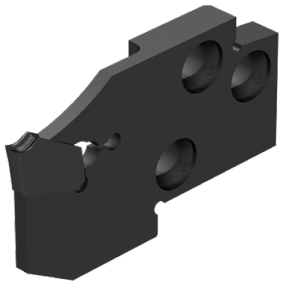
11

ModularClamp MSS – Radial grooving module FX short/long

Scope of supply:
Grooving module only



Illustrations show right-hand versions

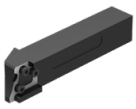


ISO designation	HF mm	CW mm	WF mm	LF mm	H mm	CODX mm	CDX mm	for grooving inserts	Left-hand 70 876 ...	Right-hand 70 875 ...
E20 R/L 20-FX 2.2	23	2,2	3,58	22	27	60	20	FX 2.2 ..	**020**	**020**
E20 R/L 20-FX 3.1	23	3,1	3,20	22	27	60	20	FX 3.1 ..	**120**	**120**
E20 R/L 20-FX 4.1	23	4,1	2,80	22	27	60	20	FX 4.1 ..	**220**	**220**
E25 R/L 20-FX 2.2	25	2,2	5,08	22	30	75	20	FX 2.2 ..	**025**	**025**
E25 R/L 25-FX 3.1	25	3,1	4,70	27	30	75	25	FX 3.1 ..	**125**	**125**
E25 R/L 35-FX 3.1	25	3,1	4,70	37	30	75	35	FX 3.1 ..	**525**	**525**
E25 R/L 25-FX 4.1	25	4,1	4,30	27	30	75	25	FX 4.1 ..	**225**	**225**
E25 R/L 35-FX 4.1	25	4,1	4,30	37	30	75	35	FX 4.1 ..	**625**	**625**
E25 R/L 25-FX 5.1	25	5,1	3,90	27	30	75	25	FX 5.1 ..	**325**	**325**
E25 R/L 35-FX 5.1	25	5,1	3,90	37	30	75	35	FX 5.1 ..	**725**	**725**
E25 R/L 25-FX 6.5	25	6,5	3,30	27	30	75	25	FX 6.5 ..	**425**	**425**
E25 R/L 35-FX 6.5	25	6,5	3,30	37	30	75	35	FX 6.5 ..	**825**	**825**

Ejector

70 950 ...

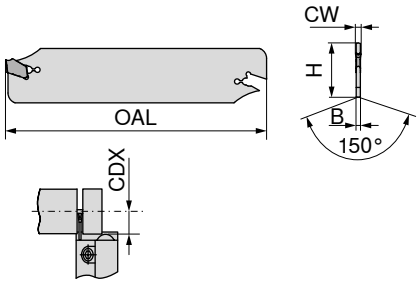
Spare parts for grooving inserts	
FX 2.2 ..	**375**
FX 3.1 ..	**376**
FX 4.1 ..	**376**
FX 5.1 ..	**376**
FX 6.5 ..	**376**

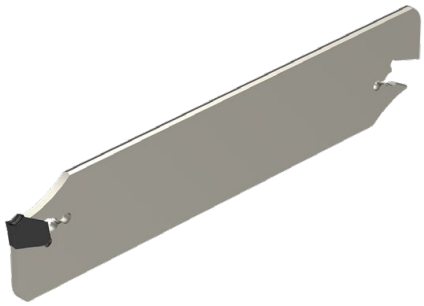


→ 27–31 → 95+96 → 97

MonoClamp – Radial Blade FX

Scope of supply:
Blade and ejector





70 832 ...

ISO designation	H mm	B mm	OAL mm	CW mm	CDX mm	for grooving inserts	
XLCEN 2602 J 22 FX	26	1,65	110	2,2	25	FX 2.2 ..	**101**
XLCFN 2603 J 31 FX	26	2,40	110	3,1	35	FX 3.1 ..	**102**
XLCFN 2604 J 41 FX	26	3,20	110	4,1	40	FX 4.1 ..	**103**
XLCEN 3202 M 22 FX	32	1,65	150	2,2	30	FX 2.2 ..	**004**
XLCFN 3203 M 31 FX	32	2,40	150	3,1	50	FX 3.1 ..	**104**
XLCFN 3204 M 41 FX	32	3,20	150	4,1	50	FX 4.1 ..	**105**
XLCFN 3205 M 51 FX	32	4,00	150	5,1	55	FX 5.1 ..	**106**
XLCFN 3206 M 65 FX	32	5,20	150	6,5	55	FX 6.5 ..	**107**
XLCEN 4608 S 82 FX	46	6,80	250	8,2	80	FX 8.2 ..	**108**
XLCEN 4609 S 97 FX	46	8,00	250	9,7	80	FX 9.7 ..	**109**

Ejector

70 950 ...

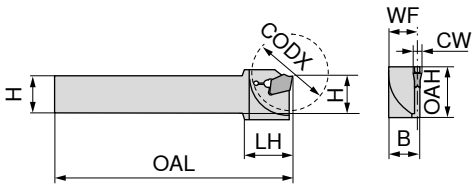
Spare parts for grooving inserts	
FX 2.2 ..	**375**
FX 3.1 ..	**376**
FX 4.1 ..	**376**
FX 5.1 ..	**376**
FX 6.5 ..	**376**
FX 8.2 ..	**377**
FX 9.7 ..	**377**

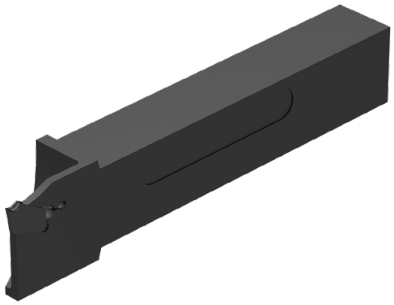



→ 27–31 | → 100+101 | → **Chapter 16** | → **Chapter 16**

MonoClamp – Radial Monoholder FX

Scope of supply:
Mono holder incl. ejector





Illustrations show right-hand versions

ISO designation	H mm	B mm	OAL mm	LH mm	OAH mm	CW mm	WF mm	CODX mm	for grooving inserts	Left-hand 70 837 ...	Right-hand 70 836 ...
XLCE R/L 1010 M-FX2.2	10	10	150	19,4	21	2,2	9,18	30	FX 2.2 ..	**101**	**101**
XLCE R/L 1212 F-FX2.2	12	12	80	21,0	21	2,2	11,18	30	FX 2.2 ..	**102**	**102**
XLCE R/L 1414 M-FX2.2	14	14	150	19,4	21	2,2	13,18	30	FX 2.2 ..	**104**	**104**
XLCE R/L 1612 H-FX2.2	16	12	100	21,0	21	2,2	11,18	30	FX 2.2 ..	**105**	**105**
XLCF R/L 1612 H-FX3.1	16	12	100	21,4	25	3,1	10,80	35	FX 3.1 ..	**106**	**106**
XLCF R/L 2016 K-FX3.1	20	16	125	26,4	26	3,1	14,80	40	FX 3.1 ..	**107**	**107**
XLCF R/L 2016 K-FX4.1	20	16	125	26,4	26	4,1	14,40	40	FX 4.1 ..	**109**	**109**
XLCF R/L 2520 M-FX3.1	25	20	150	35,2	34	3,1	18,80	50	FX 3.1 ..	**108**	**108**
XLCF R/L 2520 M-FX4.1	25	20	150	35,2	34	4,1	18,40	50	FX 4.1 ..	**110**	**110**

Ejector

70 950 ...

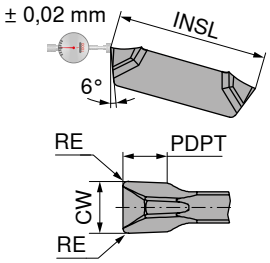
Spare parts for grooving inserts	
FX 2.2 ..	**375**
FX 3.1 ..	**376**
FX 4.1 ..	**376**

→ 27–31 → **Chapter 16**

Insert GX 09/16

▲ Insert with ground periphery
▲ Suitable also for parting off tubes and thin-walled workpieces

F	M	R



-F2
CTP1340

DRAGONSKIN

70 360 ...

Designation	INSL mm	CW +/-0,02 mm	RE +/-0,05 mm	PDPT mm	for tool holder	
GX 09-1 E2.00 N 0.20	9	2,0	0,2	1,5	GX 09-1	**600**
GX 09-1 E2.50 N 0.20	9	2,5	0,2	1,5	GX 09-1	**602**
GX 09-2 E3.00 N 0.30	9	3,0	0,3	2,0	GX 09-2	**604**
GX 16-1 E2.00 N 0.20	16	2,0	0,2	2,5	GX 16-1	**650**
GX 16-2 E3.00 N 0.30	16	3,0	0,3	3,0	GX 16-2	**652**
GX 16-3 E4.00 N 0.40	16	4,0	0,4	3,5	GX 16-3	**654**
GX 16-3 E5.00 N 0.40	16	5,0	0,4	3,5	GX 16-3	**656**

P	●
M	●
K	●
N	○
S	●
H	
O	○

→ v_c Page 103
→ Application recommendation on page 105

11

Internal machining *External machining*

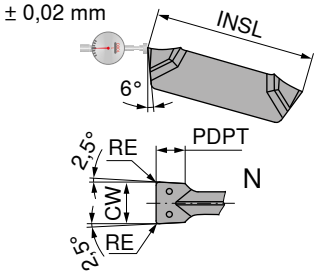



→ 45+46 → 50+51 → 43+44 → 47–49

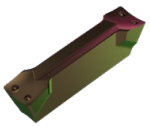
Insert GX 09/16 – Standard

▲ Suitable for parting thin-walled workpieces

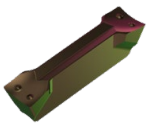
F	M	R
		



CTCP325 DRAGONSKIN



CTCP335 DRAGONSKIN



CTP1340 DRAGONSKIN

Designation	INSL mm	CW +/-0,02 mm	RE +/-0,05 mm	PDPT mm	for tool holder	70 350 ...	70 350 ...	70 350 ...
GX 09-1 E2.00 N 0.20	9	2,0	0,2	1,5	GX 09-1	**984**		**634**
GX 09-1 E2.50 N 0.20	9	2,5	0,2	1,5	GX 09-1	**988**		**638**
GX 09-2 E3.00 N 0.30	9	3,0	0,3	2,0	GX 09-2	**992**		**642**
GX 16-1 E2.00 N 0.20	16	2,0	0,2	2,5	GX 16-1	**900**	**500**	**600**
GX 16-1 E2.50 N 0.20	16	2,5	0,2	2,5	GX 16-1	**904**	**504**	**604**
GX 16-2 E3.00 N 0.30	16	3,0	0,3	3,0	GX 16-2	**908**	**508**	**608**
GX 16-2 E3.00 N 0.50	16	3,0	0,5	3,0	GX 16-2	**910**		
GX 16-2 E3.50 N 0.30	16	3,5	0,3	3,0	GX 16-2	**912**	**512**	**612**
GX 16-3 E4.00 N 0.40	16	4,0	0,4	3,5	GX 16-3	**916**	**516**	**616**
GX 16-3 E5.00 N 0.40	16	5,0	0,4	3,5	GX 16-3	**924**	**524**	**624**
GX 16-4 E6.00 N 0.50	16	6,0	0,5	4,0	GX 16-4	**928**		**628**
GX 16-4 E6.00 N 0.80	16	6,0	0,8	4,0	GX 16-4	**930**		
P						●	●	●
M						○	○	●
K						●	●	●
N								○
S						○		●
H								
O								○

→ v_c Page 103
→ Application recommendation on page 105

Internal machining

→ 45+46

→ 50+51

External machining

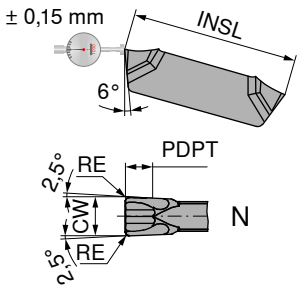
→ 43+44

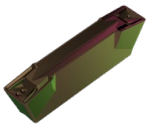
→ 47–49

Insert GX 09/16

▲ Very good swarf control

F	M	R
		



-M40 CTCP325	-M40 CTPP345	-M40 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		

Designation	INSL mm	CW +/-0,05 mm	RE +/-0,05 mm	PDPT mm	for tool holder	70 351 ...	70 351 ...	70 351 ...
GX 09-1 E2.00 N 0.20	9	2	0,2	1,5	GX 09-1	**986**	**886**	**686**
GX 09-2 E3.00 N 0.30	9	3	0,3	2,0	GX 09-2	**994**	**894**	**694**
GX 16-1 E2.00 N 0.20	16	2	0,2	2,5	GX 16-1	**902**	**802**	**602**
GX 16-2 E3.00 N 0.30	16	3	0,3	3,0	GX 16-2	**910**	**810**	**610**
GX 16-3 E4.00 N 0.40	16	4	0,4	3,5	GX 16-3	**918**	**818**	**618**
GX 16-3 E5.00 N 0.40	16	5	0,4	3,5	GX 16-3	**926**	**826**	**626**
GX 16-4 E6.00 N 0.50	16	6	0,5	4,0	GX 16-4	**930**	**830**	**630**
P						●	●	●
M						○	●	●
K						●		●
N								○
S						○	○	●
H								
O								○

→ v_c Page 103
→ Application recommendation on page 105

Internal machining | *External machining*

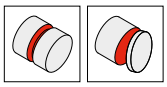



→ 45+46 | → 50+51 | → 43+44 | → 47–49

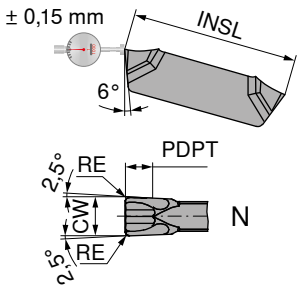
11

Insert GX 16

▲ Very good swarf control



F	M	R
		



-M1 CTCP325	-M1 CTPP345	-M1 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		

Designation	INSL mm	CW +/-0,05 mm	RE +/-0,05 mm	PDPT mm	for tool holder	70 362 ...	70 362 ...	70 362 ...
GX 16-1 E2.00 N 0.20	16	2	0,2	2,0	GX 16-1		**800**	**600**
GX 16-2 E3.00 N 0.20	16	3	0,2	2,5	GX 16-2	**902**	**802**	**602**
GX 16-3 E4.00 N 0.30	16	4	0,3	3,0	GX 16-3	**904**		**604**
P						●	●	●
M						○	●	●
K						●		●
N								○
S						○	○	●
H								
O								○

→ v_c Page 103
→ Application recommendation on page 106

Internal machining | *External machining*

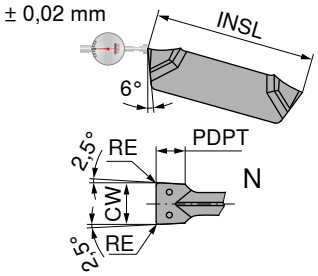



→ 45+46 | → 51 | → 43+44 | → 48+49

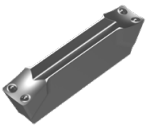
Insert GX 16

▲ Insert with highly positive cutting edge geometry and sharp cutting edge
▲ ground periphery

F	M	R
		



-27P
H216T



70 350 ...

Designation	INSL mm	CW +/-0,02 mm	RE +/-0,05 mm	PDPT mm	for tool holder	
GX 16-1 E2.00 N 0.20	16	2	0,2	2,5	GX 16-1	**650**
GX 16-2 E3.00 N 0.30	16	3	0,3	3,0	GX 16-2	**658**
GX 16-3 E4.00 N 0.40	16	4	0,4	3,5	GX 16-3	**670**
GX 16-4 E6.00 N 0.50	16	6	0,5	4,0	GX 16-4	**678**

P	
M	
K	●
N	●
S	○
H	
O	○

→ v_c Page 103
→ Application recommendation on page 105

Internal machining *External machining*

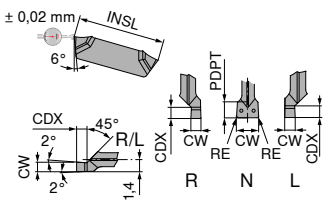


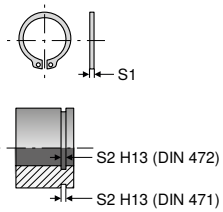

→ 45+46 | → 51 | → 43+44 | → 48+49

11

Circlip groove insert GX 09/16 – Standard

F	M	R
		





Designation	IH	INSL mm	s_1 mm	s_2 mm	CW +/-0,02 mm	RE +/-0,05 mm	CDX mm	PDPT mm	for tool holder	70 352 ...	70 352 ...
GX 09-1 S1.00 L	L	9	0,80	0,90	1,00		1,14		R/L 02-GX 09-1		**684**
GX 09-1 S1.20 L	L	9	1,00	1,10	1,20		1,34		R/L 02-GX 09-1		**686**
GX 09-1 S1.40 L	L	9	1,20	1,30	1,40		1,53		R/L 02-GX 09-1		**688**
GX 09-1 S1.70 L	L	9	1,50	1,60	1,70		1,82		R/L 02-GX 09-1		**690**
GX 09-1 S1.95 N	N	9	1,75	1,85	1,95	0,1		2,0	GX 09-1	**692**	
GX 09-1 S2.25 N	N	9	2,00	2,15	2,25	0,1		2,0	GX 09-1	**694**	
GX 09-2 S2.75 N	N	9	2,50	2,65	2,75	0,1		2,0	GX 09-2	**696**	
GX 09-2 S3.25 N	N	9	3,00	3,15	3,25	0,1		2,0	GX 09-2	**698**	
GX 09-1 S1.00 R	R	9	0,80	0,90	1,00		1,14		R/L 02-GX 09-1		**676**
GX 09-1 S1.20 R	R	9	1,00	1,10	1,20		1,34		R/L 02-GX 09-1		**678**
GX 09-1 S1.40 R	R	9	1,20	1,30	1,40		1,53		R/L 02-GX 09-1		**680**
GX 09-1 S1.70 R	R	9	1,50	1,60	1,70		1,82		R/L 02-GX 09-1		**682**
GX 16-2 S0.60 L	L	16	0,40	0,50	0,60		0,75		R/L 03-GX 16-2		**607**
GX 16-2 S0.80 L	L	16	0,60	0,70	0,80		0,94		R/L 03-GX 16-2		**609**
GX 16-2 S0.90 L	L	16	0,70	0,80	0,90		1,04		R/L 03-GX 16-2		**611**
GX 16-2 S1.00 L	L	16	0,80	0,90	1,00		1,14		R/L 03-GX 16-2		**612**
GX 16-2 S1.20 L	L	16	1,00	1,10	1,20		1,34		R/L 03-GX 16-2		**614**
GX 16-2 S1.40 L	L	16	1,20	1,30	1,40		1,53		R/L 03-GX 16-2		**616**
GX 16-2 S1.70 L	L	16	1,50	1,60	1,70		1,82		R/L 03-GX 16-2		**618**
GX 16-2 S1.95 L	L	16	1,75	1,85	1,95		2,07		R/L 03-GX 16-2		**620**
GX 16-2 S2.25 L	L	16	2,00	2,15	2,25		2,36		R/L 03-GX 16-2		**622**
GX 16-2 S2.75 N	N	16	2,50	2,65	2,75	0,1		3,0	GX 16-2	**624**	
GX 16-2 S3.25 N	N	16	3,00	3,15	3,25	0,1		3,0	GX 16-2	**626**	
GX 16-3 S4.25 N	N	16	4,00	4,15	4,25	0,2		3,5	GX 16-3	**628**	
GX 16-2 S0.60 R	R	16	0,40	0,50	0,60		0,75		R/L 03-GX 16-2		**695**
GX 16-2 S0.80 R	R	16	0,60	0,70	0,80		0,94		R/L 03-GX 16-2		**697**
GX 16-2 S0.90 R	R	16	0,70	0,80	0,90		1,04		R/L 03-GX 16-2		**699**
GX 16-2 S1.00 R	R	16	0,80	0,90	1,00		1,14		R/L 03-GX 16-2		**600**
GX 16-2 S1.20 R	R	16	1,00	1,10	1,20		1,34		R/L 03-GX 16-2		**602**
GX 16-2 S1.40 R	R	16	1,20	1,30	1,40		1,53		R/L 03-GX 16-2		**604**
GX 16-2 S1.70 R	R	16	1,50	1,60	1,70		1,82		R/L 03-GX 16-2		**606**
GX 16-2 S1.95 R	R	16	1,75	1,85	1,95		2,07		R/L 03-GX 16-2		**608**
GX 16-2 S2.25 R	R	16	2,00	2,15	2,25		2,36		R/L 03-GX 16-2		**610**
P										●	●
M										●	●
K										●	●
N										○	○
S										●	●
H											
O										○	○

→ v_c Page 103
→ Application recommendation on page 105

Attention - applies only to internal machining:
Right-hand insert → left-hand module or monobloc boring bar
Left-hand insert → right-hand module or monobloc boring bar

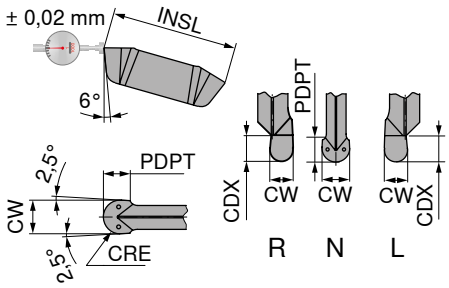
Internal machining *External machining*

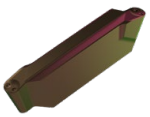



→ 45+46 → 50+51 → 43+44 → 47+49

Radius groove insert GX 09/16

F	M	R
		



CTCP325	CTCP325	CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		

Designation	IH	INSL mm	CW +/-0,02 mm	CRE mm	PDPT mm	CDX mm	for tool holder	70 354 ...	70 354 ...	70 354 ...
GX 09-1 R1.00 N	N	9	2,0	1,0	1,0		GX 09-1		**992**	
GX 09-1 R1.20 N	N	9	2,4	1,2	1,2		GX 09-1		**996**	
GX 16-2 R0.80 L	L	16	1,6	0,8		1,78	R/L 03-GX 16-2	**912**		
GX 16-2 R1.00 L	L	16	2,0	1,0		2,18	R/L 03-GX 16-2	**916**		
GX 16-2 R1.20 L	L	16	2,4	1,2		2,58	R/L 03-GX 16-2	**920**		
GX 16-2 R1.50 N	N	16	3,0	1,5	1,5		GX 16-2		**924**	**624**
GX 16-3 R2.00 N	N	16	4,0	2,0	2,0		GX 16-3		**928**	**628**
GX 16-3 R2.50 N	N	16	5,0	2,5	2,5		GX 16-3		**932**	**632**
GX 16-4 R3.00 N	N	16	6,0	3,0	3,0		GX 16-4		**936**	**636**
GX 16-2 R0.80 R	R	16	1,6	0,8		1,78	R/L 03-GX 16-2	**900**		
GX 16-2 R1.00 R	R	16	2,0	1,0		2,18	R/L 03-GX 16-2	**904**		
GX 16-2 R1.20 R	R	16	2,4	1,2		2,58	R/L 03-GX 16-2	**908**		
P								●	●	●
M								○	○	●
K								●	●	●
N										○
S								○	○	●
H										
O										○

→ v_c Page 103
→ Application recommendation on page 105

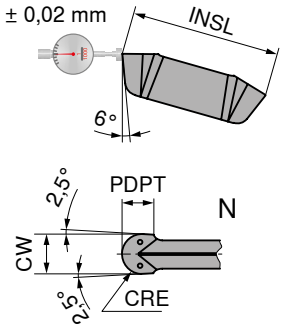
Attention - applies only to internal machining:
Right-hand insert → left-hand module or monobloc boring bar
Left-hand insert → right-hand module or monobloc boring bar

Internal machining		*External machining*	
			
→ 45+46	→ 50+51	→ 43+44	→ 47–49

Radius groove insert GX 16

▲ Insert with highly positive cutting edge geometry and sharp cutting edge
▲ ground periphery

F	M	R
		



-27P
H216T

70 354 ...

Designation	INSL mm	CW +/-0,02 mm	CRE mm	PDPT mm	for tool holder	
GX 16-2 R1.50 N	16	3	1,5	1,5	GX 16-2	**674**
GX 16-3 R2.00 N	16	4	2,0	2,0	GX 16-3	**678**
GX 16-3 R2.50 N	16	5	2,5	2,5	GX 16-3	**682**

P	
M	
K	●
N	●
S	○
H	
O	○

→ v_c Page 103
→ Application recommendation on page 106

Internal machining | *External machining*

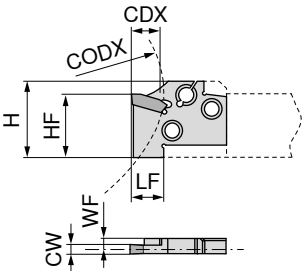



→ 45+46 | → 51 | → 43+44 | → 48

ModularClamp MSS – Radial grooving module GX 09/16

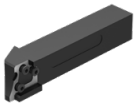
▲ For circlip grooves ≤ 2,75 mm
▲ For radius grooves up to ≤ 1,2 mm
▲ For external recessing

Scope of supply:
Grooving module only



Illustrations show right-hand versions

ISO designation	CW mm	WF mm	LF mm	HF mm	H mm	CODX mm	CDX mm	for grooving inserts	Left-hand 70 871 ...	Right-hand 70 870 ...
E16 R/L 02-GX 09-1	<1,95	3,15	8	16	19,5	48	2	GX 09-1 ..R/L	**116**	**116**
E20 R/L 03-GX 16-2	<2,75	3,40	13	20	24,0	60	3	GX 16-2 ..R/L	**120**	**120**
E25 R/L 03-GX 16-2	<2,75	4,90	13	25	30,0	75	3	GX 16-2 ..R/L	**125**	**125**

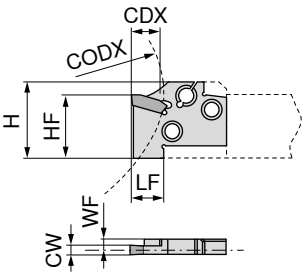

→ 35–42 → 95+96 → 97

11

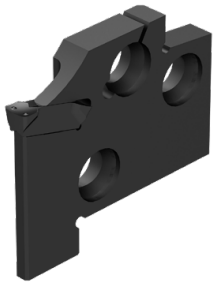
ModularClamp MSS – Radial grooving module GX 09/16

- ▲ For grooving and turning
- ▲ For circlip grooves ≤ 5,25 mm
- ▲ For radius grooves up to ≤ 2,5 mm
- ▲ For external recessing

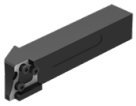
Scope of supply:
Grooving module only



Illustrations show right-hand versions



ISO designation	CW mm	WF mm	LF mm	HF mm	H mm	CODX mm	CDX mm	for grooving inserts	Left-hand 70 866 ...	Right-hand 70 865 ...
E16 R/L 07-GX 09-1	2,00 - 2,75	3,15	8	16	19,5	48	7	GX 09-1 ..N	**016**	**016**
E16 R/L 07-GX 09-2	2,76 - 3,75	2,80	8	16	19,5	48	7	GX 09-2 ..N	**116**	**116**
E20 R/L 12-GX 16-1	2,00 - 2,75	3,75	13	20	24,0	60	12	GX 16-1 ..N	**020**	**020**
E20 R/L 12-GX 16-2	2,76 - 3,75	3,40	13	20	24,0	60	12	GX 16-2 ..N	**120**	**120**
E20 R/L 12-GX 16-3	3,76 - 5,00	2,93	13	20	24,0	60	12	GX 16-3 ..N	**220**	**220**
E25 R/L 12-GX 16-1	2,00 - 2,75	5,25	13	25	30,0	75	12	GX 16-1 ..N	**025**	**025**
E25 R/L 12-GX 16-2	2,76 - 3,75	4,90	13	25	30,0	75	12	GX 16-2 ..N	**125**	**125**
E25 R/L 12-GX 16-3	3,76 - 5,00	4,43	13	25	30,0	75	12	GX 16-3 ..N	**225**	**225**
E25 R/L 12-GX 16-4	5,01 - 6,50	3,80	13	25	30,0	75	12	GX 16-4 ..N	**325**	**325**

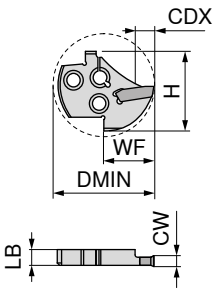




→ 35–42 → 95+96 → 97

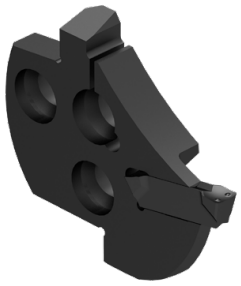
ModularClamp MSS – Radial Grooving module GX 09/16 for Internal machining

▲ For circlip grooves ≤ 2,75 mm
▲ For radius grooves up to ≤ 1,2 mm

Scope of supply:
Grooving module only



Illustrations show right-hand versions



ISO designation	CW mm	LB mm	WF mm	H mm	CDX mm	DMIN mm	for grooving inserts	Left-hand 70 886 ...	Right-hand 70 885 ...
I16 R/L 02-GX 09-1	<1,95	3,8	10,0	16,4	2	20	GX 09-1 ..R/L	**016**	**016**
I20 R/L 02-GX 09-1	<1,95	3,8	12,0	20,3	2	25	GX 09-1 ..R/L	**020**	**020**
I25 R/L 02-GX 09-1	<1,95	3,8	15,5	24,9	2	32	GX 09-1 ..R/L	**025**	**025**
I32 R/L 03-GX 16-2	<2,75	5,9	20,0	32,2	3	40	GX 16-2 ..R/L	**032**	**032**
I40 R/L 03-GX 16-2	<2,75	5,9	24,5	39,6	3	50	GX 16-2 ..R/L	**040**	**040**

Right hand module → left hand insert only
Left hand module → right hand insert only


→ 35–42 → 98

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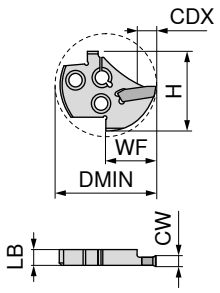
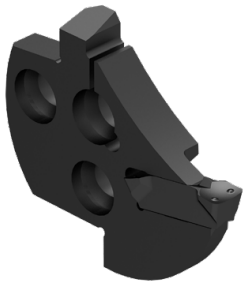
ModularClamp MSS – Radial Grooving module 09/16 for Internal machining

▲ For circlip grooves ≤ 5,25 mm
▲ For radius grooves up to ≤ 2,5 mm

Scope of supply:
Grooving module only



Illustrations show right-hand versions

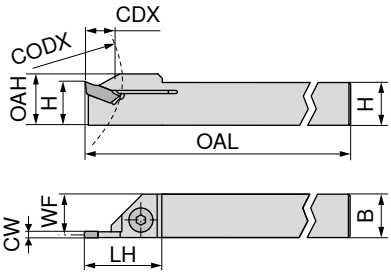


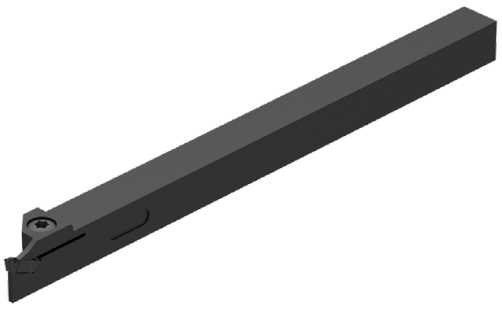
ISO designation	CW mm	LB mm	WF mm	H mm	CDX mm	DMIN mm	for grooving inserts	Left-hand 70 881 ...	Right-hand 70 880 ...
I16 R/L 04-GX 09-1	2,00 - 2,75	3,8	10,0	16,4	4	20	GX 09-1 ..N	**017**	**017**
I16 R/L 04-GX 09-2	2,76 - 3,75	3,8	10,0	16,4	4	20	GX 09-2 ..N	**117**	**117**
I20 R/L 05-GX 09-1	2,00 - 2,75	3,8	12,0	20,3	5	25	GX 09-1 ..N	**021**	**021**
I20 R/L 05-GX 09-2	2,76 - 3,75	3,8	12,0	20,3	5	25	GX 09-2 ..N	**121**	**121**
I25 R/L 06-GX 09-1	2,00 - 2,75	3,8	15,5	24,9	6	32	GX 09-1 ..N	**026**	**026**
I25 R/L 06-GX 09-2	2,76 - 3,75	3,8	15,5	24,9	6	32	GX 09-2 ..N	**126**	**126**
I32 R/L 09-GX 16-1	2,00 - 2,75	5,9	20,0	32,2	9	40	GX 16-1 ..N	**033**	**033**
I32 R/L 09-GX 16-2	2,76 - 3,75	5,9	20,0	32,2	9	40	GX 16-2 ..N	**133**	**133**
I32 R/L 09-GX 16-3	3,76 - 5,00	5,9	20,0	32,2	9	40	GX 16-3 ..N	**233**	**233**
I32 R/L 09-GX 16-4	5,01 - 6,50	5,9	20,0	32,2	9	40	GX 16-4 ..N	**333**	**333**
I40 R/L 10-GX 16-1	2,00 - 2,75	5,9	24,5	39,6	10	50	GX 16-1 ..N	**041**	**041**
I40 R/L 10-GX 16-2	2,76 - 3,75	5,9	24,5	39,6	10	50	GX 16-2 ..N	**141**	**141**
I40 R/L 10-GX 16-3	3,76 - 5,00	5,9	24,5	39,6	10	50	GX 16-3 ..N	**241**	**241**
I40 R/L 10-GX 16-4	5,01 - 6,50	5,9	24,5	39,6	10	50	GX 16-4 ..N	**341**	**341**


→ 35–42 → 98

MonoClamp – Radial Monoholder GX 09

Scope of supply:
Mono holder incl. Torx key and clamping screw

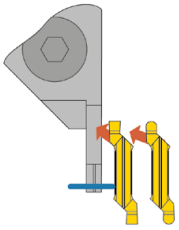




Illustrations show right-hand versions

ISO designation	H mm	B mm	CW mm	WF mm	OAH mm	OAL mm	LH mm	CODX mm	CDX mm	for grooving inserts	Left-hand 70 863 ...	Right-hand 70 862 ...
E10 R/L 00-1010M-GX09	10	10	2,00 - 3,50	9,35	12	150	18	30	7	GX 09 ..	**010**	**010**

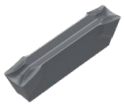
When using 'R' or 'L' tools the tool must be modified at the end face to ensure cutting clearance.




Key D


Clamping screw

Spare parts for grooving inserts		Key D 80 950 ...		Clamping screw 70 950 ...
GX 09 ..	T15	**113**	M4x11	**442**



→ 35–41 → **Chapter 16**

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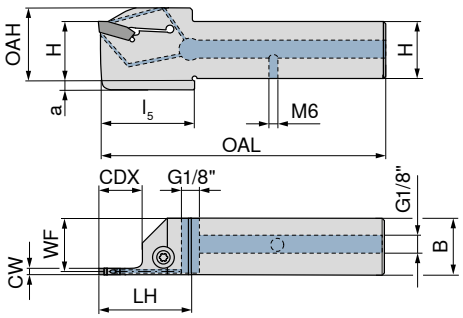
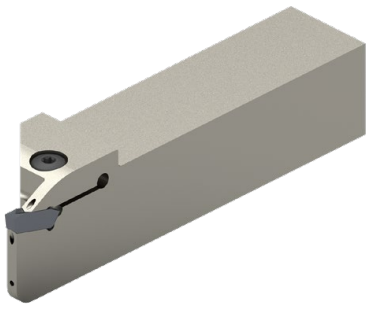
MonoClamp – Radial Monoholder GX-DC 16

Scope of supply:
Mono holder incl. Torx key and clamping screw

Direct Cooling





Illustrations show right-hand versions

ISO designation	H mm	B mm	CW mm	WF mm	OAH mm	OAL mm	LH mm	l_5 mm	a mm	CDX mm	for grooving inserts	NEW Left-hand 70 842 ...	NEW Right-hand 70 842 ...
E16 R/L 0013S2-1616X-S-DC-GX16	16	16	2	15,20	21	90	35	36	4	13	GX 16-1 E2..	**21601**	**21600**
E16 R/L 0013S3-1616X-S-DC-GX16	16	16	3	14,85	21	90	35	36	4	13	GX 16-2 E3..	**31601**	**31600**
E16 R/L 0013S4-1616X-S-DC-GX16	16	16	4	14,40	21	90	35	36	4	13	GX 16-3 E4..	**41601**	**41600**
E16 R/L 0013S5-1616X-S-DC-GX16	16	16	5	14,00	21	90	35	36	4	13	GX 16-3 E5..	**51601**	**51600**
E20 R/L 0013S2-2020X-S-DC-GX16	20	20	2	19,20	25	104	35			13	GX 16-1 E2..	**22001**	**22000**
E20 R/L 0013S3-2020X-S-DC-GX16	20	20	3	18,85	25	104	35			13	GX 16-2 E3..	**32001**	**32000**
E20 R/L 0013S4-2020X-S-DC-GX16	20	20	4	18,40	25	104	35			13	GX 16-3 E4..	**42001**	**42000**
E20 R/L 0013S5-2020X-S-DC-GX16	20	20	5	18,00	25	104	35			13	GX 16-3 E5..	**52001**	**52000**
E25 R/L 0013S3-2525X-S-DC-GX16	25	25	3	23,85	30	119	35			13	GX 16-2 E3..	**32501**	**32500**
E25 R/L 0013S4-2525X-S-DC-GX16	25	25	4	23,40	30	119	35			13	GX 16-3 E4..	**42501**	**42500**
E25 R/L 0013S5-2525X-S-DC-GX16	25	25	5	23,00	30	119	35			13	GX 16-3 E5..	**52501**	**52500**


Key D

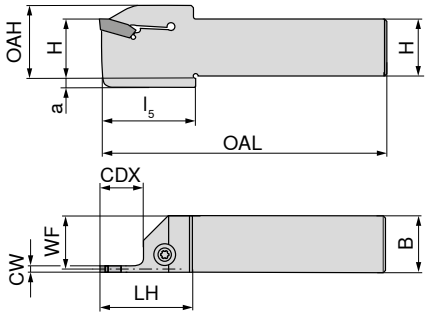

Clamping screw

Spare parts for grooving inserts	Key D 80 950 ...		Clamping screw 70 950 ...	
GX 16-1 E2..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 16-2 E3..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 16-3 E4..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 16-3 E5..	T15 - IP	**128**	M5x18 - 15IP	**865**


→ 35–42 → **Chapter 16**

MonoClamp – Radial Monoholder GX 16

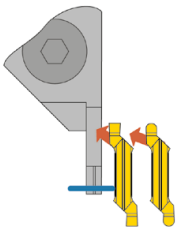
Scope of supply:
Mono holder incl. Torx key and clamping screw



Illustrations show right-hand versions

ISO designation	H mm	B mm	CW mm	WF mm	OAH mm	OAL mm	LH mm	l_5 mm	a mm	CDX mm	for grooving inserts	NEW Left-hand 70 843 ...	NEW Right-hand 70 843 ...
E12 R/L 0013S2-1212K-S-GX16	12	12	2	11,20	17	125	25	26	4	13	GX 16-1 E2..	**21201**	**21200**
E12 R/L 0013S3-1212K-S-GX16	12	12	3	10,85	17	125	25	26	4	13	GX 16-2 E3..	**31201**	**31200**
E16 R/L 0013S2-1616K-S-GX16	16	16	2	15,20	21	125	25	26	4	13	GX 16-1 E2..	**21601**	**21600**
E16 R/L 0013S3-1616K-S-GX16	16	16	3	14,85	21	125	25	26	4	13	GX 16-2 E3..	**31601**	**31600**
E16 R/L 0013S4-1616K-S-GX16	16	16	4	14,40	21	125	25	26	4	13	GX 16-3 E4..	**41601**	**41600**
E16 R/L 0013S5-1616K-S-GX16	16	16	5	14,00	21	125	25	26	4	13	GX 16-3 E5..	**51601**	**51600**
E20 R/L 0013S2-2020K-S-GX16	20	20	2	19,20	25	125	25			13	GX 16-1 E2..	**22001**	**22000**
E20 R/L 0013S3-2020K-S-GX16	20	20	3	18,85	25	125	25			13	GX 16-2 E3..	**32001**	**32000**
E20 R/L 0013S4-2020K-S-GX16	20	20	4	18,40	25	125	25			13	GX 16-3 E4..	**42001**	**42000**
E20 R/L 0013S5-2020K-S-GX16	20	20	5	18,00	25	125	25			13	GX 16-3 E5..	**52001**	**52000**
E25 R/L 0013S3-2525M-S-GX16	25	25	3	23,85	30	150	25			13	GX 16-2 E3..	**32501**	**32500**
E25 R/L 0013S4-2525M-S-GX16	25	25	4	23,40	30	150	25			13	GX 16-3 E4..	**42501**	**42500**
E25 R/L 0013S5-2525M-S-GX16	25	25	5	23,00	30	150	25			13	GX 16-3 E5..	**52501**	**52500**

When using 'R' or 'L' tools the tool must be modified at the end face to ensure cutting clearance.



11


Key D

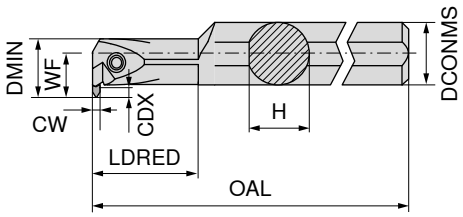

Clamping screw

Spare parts for grooving inserts		80 950 ...		70 950 ...
GX 16-1 E2..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 16-2 E3..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 16-3 E4..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 16-3 E5..	T15 - IP	**128**	M5x18 - 15IP	**865**

→ 35–42 → **Chapter 16**

MonoClamp – Radial Mono-boring bars GX 09

Scope of supply:
Boring bar incl. key and clamping screw

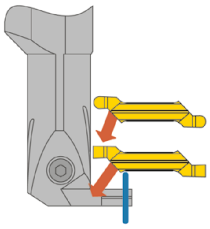


Illustrations show right-hand versions

ISO designation	H mm	DCONMS mm	DMIN mm	CW mm	CDX mm	WF mm	OAL mm	LDRED mm	for grooving inserts	Left-hand 70 859 ...	Right-hand 70 858 ...
I12 R/L 90-2,5D-GX09	15,25	16	16	2,00 - 3,75	3	11	150	30	GX 09 ..	**012**	**012**

Right hand boring bar → left hand insert only
Left hand boring bar → right hand insert only

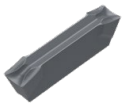
When using „R“ or „L“ tools the insert support seat requires modification to prevent the insert fouling.




Key D


Clamping screw

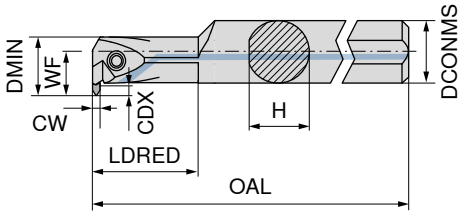
Spare parts for grooving inserts				
GX 09 ..	T15	**113**	M3,5x12,5	**441**



→ 35–41 → **Chapter 16**

MonoClamp – Radial Mono-boring bars GX 16

Scope of supply:
Boring bar incl. key and clamping screw

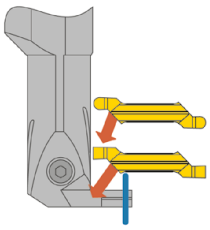


Illustrations show right-hand versions

ISO designation	H mm	DCONMS mm	DMIN mm	CW mm	CDX mm	WF mm	OAL mm	LDRED mm	for grooving inserts	Left-hand 70 893 ...	Right-hand 70 892 ...
I16 R/L 90-2.0D-GX16-1	15,25	16	20,5	2,00 - 2,75	5,0	13,5	150	32	GX 16-1	**516**	**516**
I16 R/L 90-2.0D-GX16-2	15,25	16	20,5	2,76 - 3,75	5,0	13,5	150	32	GX 16-2	**616**	**616**
I20 R/L 90-2.0D-GX16-2	19,00	20	25,0	2,76 - 3,75	5,5	15,5	180	40	GX 16-2	**620**	**620**
I25 R/L 90-2.0D-GX16-2	24,00	25	32,0	2,76 - 3,75	8,0	20,5	200	50	GX 16-2	**625**	**625**
I25 R/L 90-2.0D-GX16-3	24,00	25	32,0	3,76 - 5,00	10,0	22,5	200	50	GX 16-3	**725**	**725**
I32 R/L 90-2.0D-GX16-2	31,00	32	42,0	2,76 - 3,75	11,0	27,5	250	64	GX 16-2	**632**	**632**
I32 R/L 90-2.0D-GX16-3	31,00	32	42,0	3,76 - 5,00	11,0	27,5	250	64	GX 16-3	**732**	**732**

Right hand boring bar → left hand insert only
Left hand boring bar → right hand insert only

When using „R“ or „L“ tools the insert support seat requires modification to prevent the insert fouling.



11


Key D

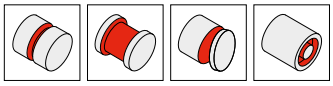

Clamping screw

Spare parts for grooving inserts		80 950 ...		70 950 ...
GX 16-1	T15	**113**	M4x14	**403**
GX 16-2	T15	**113**	M4x14	**403**
GX 16-3	T15	**113**	M4x14	**403**

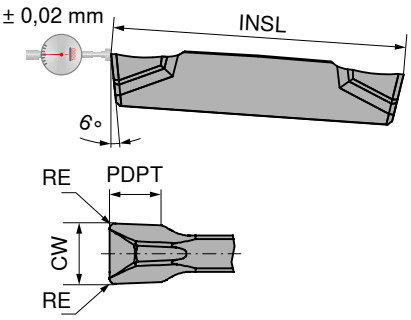
→ 35–42 → **Chapter 16**

Insert GX 24

▲ Insert with ground periphery
▲ Suitable also for parting off tubes and thin-walled workpieces



F	M	R



-F2 CTCP325	-F2 CTPP345	-F2 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	INSL mm	CW +/-0,02 mm	RE +/-0,05 mm	PDPT mm	for tool holder	70 350 ...	70 350 ...	70 350 ...
GX 24-2 E3.00 N 0.30	24	3,0	0,3	2,5	GX 24-2	**962**	**862**	**662**
GX 24-2 E3.50 N 0.30	24	3,5	0,3	2,5	GX 24-2		**864**	
GX 24-3 E4.00 N 0.40	24	4,0	0,4	3,0	GX 24-3	**966**	**866**	**666**
GX 24-3 E5.00 N 0.40	24	5,0	0,4	3,5	GX 24-3	**970**	**870**	**671**
GX 24-4 E6.00 N 0.50	24	6,0	0,5	4,0	GX 24-4		**872**	**672**
P						●	●	●
M						○	●	●
K						●		●
N								○
S						○	○	●
H								
O								○

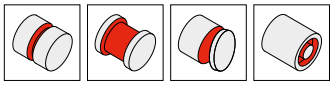
→ v_c Page 103
→ Application recommendation on page 105

Internal machining | *External machining*

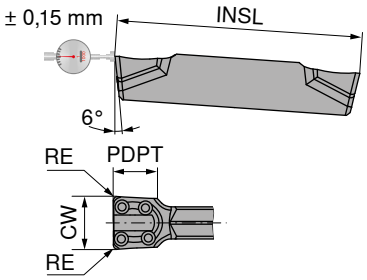
→ 63 | → 67+68 | → 60–62 | → 64 | → 65+66 | → 69

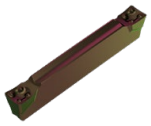
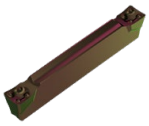
Insert GX 24

▲ Universal application
▲ First choice for axial grooving



F	M	R
		



-E CTCP325	-E CTCP335	-E CTPP345	-E CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
			

Designation	INSL mm	CW +/-0,05 mm	RE +/-0,05 mm	PDPT mm	for tool holder	70 350 ...		70 350 ...		70 350 ...		70 350 ...	
GX 24-2 E3.00 N 0.30	24	3	0,3	2,5	GX 24-2	**932**		**532**		**832**		**632**	
GX 24-3 E4.00 N 0.40	24	4	0,4	3,0	GX 24-3	**936**		**536**		**836**		**636**	
GX 24-3 E5.00 N 0.40	24	5	0,4	3,0	GX 24-3	**940**		**540**		**840**		**640**	
GX 24-4 E6.00 N 0.50	24	6	0,5	3,5	GX 24-4	**944**		**544**		**844**		**644**	
P						●		●		●		●	
M						○		○		●		●	
K						●		●				●	
N												○	
S						○				○		●	
H													
O												○	

→ v_c Page 103
→ Application recommendation on page 105

Internal machining | *External machining*



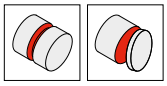



→ 63 | → 67+68 | → 60–62 | → 64 | → 65+66 | → 69

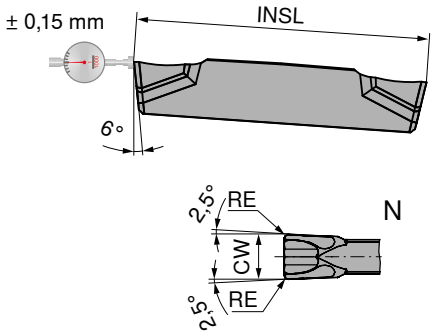
11

Insert GX 24

▲ Very good swarf control



F	M	R



-M1 CTCP325	-M1 CTPP345	-M1 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	INSL mm	CW +/-0,05 mm	RE +/-0,05 mm	for tool holder	70 363 ...	70 363 ...	70 363 ...
GX 24-1 E2.00 N 0.20	24	2	0,2	GX 24-1	**900**	**800**	**600**
GX 24-2 E3.00 N 0.20	24	3	0,2	GX 24-2	**902**	**802**	**602**
GX 24-3 E4.00 N 0.30	24	4	0,3	GX 24-3	**904**	**804**	**604**
P					●	●	●
M					○	●	●
K					●		●
N							○
S					○	○	●
H							
O							○

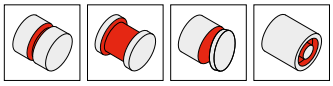
→ v_c Page 103
→ Application recommendation on page 106

Internal machining | *External machining*

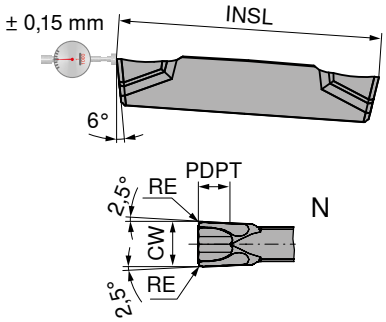
→ 63 | → 67+68 | → 60–63 | → 64 | → 65+66 | → 69

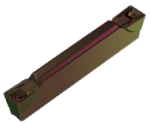
Insert GX 24

▲ Very good swarf control



F	M	R
		



-M40 CTCP325	-M40 CTPP345	-M40 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		

Designation	INSL mm	CW +/-0,05 mm	RE +/-0,05 mm	PDPT mm	for tool holder	70 364 ...		70 364 ...		70 364 ...	
GX 24-2 E3.00 N 0.30	24	3	0,3	3,5	GX 24-2	**900**		**800**		**600**	
GX 24-3 E4.00 N 0.40	24	4	0,4	4,0	GX 24-3	**902**		**802**		**602**	
GX 24-3 E5.00 N 0.40	24	5	0,4	4,0	GX 24-3	**904**		**804**		**604**	
GX 24-4 E6.00 N 0.50	24	6	0,5	4,0	GX 24-4	**906**		**806**		**606**	
P						●		●		●	
M						○		●		●	
K						●				●	
N										○	
S						○		○		●	
H											
O										○	

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→ Application recommendation on page 105

Internal machining | *External machining*

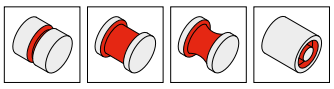




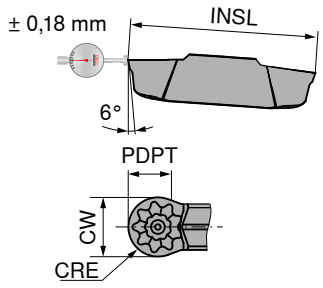

→ 63 | → 67+68 | → 60–63 | → 64 | → 65–66 | → 69

11

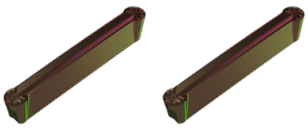
Radius groove insert GX 24



F	M	R



-M3 CTCP325	-M3 CTCP335
DRAGONSKIN	DRAGONSKIN



Designation	INSL mm	CW +/-0,05 mm	CRE mm	PDPT mm	for tool holder	70 354 ...		70 354 ...	
GX 24-2 R1.50 N	24,4	3	1,5	1,5	GX 24-2	**952**		**552**	
GX 24-3 R2.00 N	24,4	4	2,0	2,5	GX 24-3	**954**		**554**	
GX 24-3 R2.50 N	24,4	5	2,5	3,0	GX 24-3	**956**		**556**	
GX 24-4 R3.00 N	24,4	6	3,0	4,0	GX 24-4	**958**		**558**	
P						●		●	
M						○		○	
K						●		●	
N									
S						○			
H									
O									

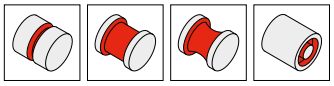
→ v_c Page 103
→ Application recommendation on page 106

Internal machining | *External machining*

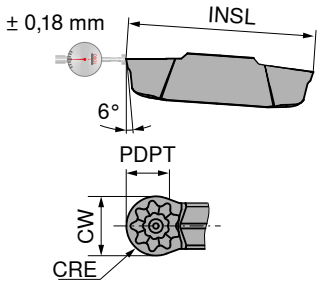
→ 63 | → 67+68 | → 60–63 | → 64 | → 65+66 | → 69

Radius groove insert GX 24

▲ Suitable for the machining of tough and ductile materials



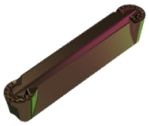
F	M	R
		



NEW

-M33
CTCP325

DRAGONSKIN



70 365 ...

Designation	INSL mm	CW +/-0,05 mm	CRE mm	PDPT mm	for tool holder	
GX 24-2 R1.50 N	24,4	3	1,5	1,5	GX 24-2	**95200**
GX 24-3 R2.00 N	24,4	4	2,0	2,5	GX 24-3	**95400**
GX 24-3 R2.50 N	24,4	5	2,5	3,0	GX 24-3	**95600**
GX 24-4 R3.00 N	24,4	6	3,0	4,0	GX 24-4	**95800**

P	●
M	○
K	●
N	
S	○
H	
O	

→ v_c Page 103
→ Application recommendation on page 106

Internal machining *External machining*



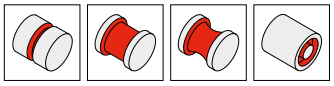



→ 63 | → 67+68 | → 60–63 | → 64 | → 65+66 | → 69

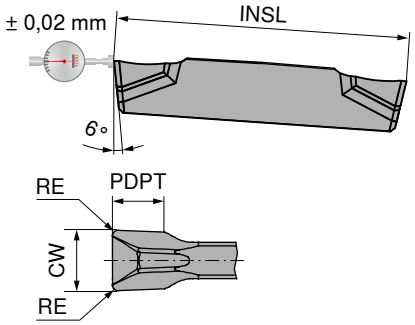
11

Insert GX 24

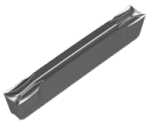
▲ Insert with highly positive cutting edge geometry and sharp cutting edge
▲ ground periphery



F	M	R
		



-27P
H216T



70 350 ...

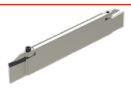
Designation	INSL mm	CW +/-0,02 mm	RE +/-0,05 mm	PDPT mm	for tool holder	
GX 24-2 E3.00 N 0.30	24	3	0,3	2,5	GX 24-2	**682**
GX 24-3 E4.00 N 0.40	24	4	0,4	3,0	GX 24-3	**684**
GX 24-3 E5.00 N 0.40	24	5	0,4	3,5	GX 24-3	**686**
GX 24-4 E6.00 N 0.50	24	6	0,5	4,0	GX 24-4	**688**

P	
M	
K	●
N	●
S	○
H	
O	○

→ v_c Page 103
→ Application recommendation on page 105

Internal machining | *External machining*

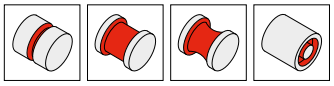


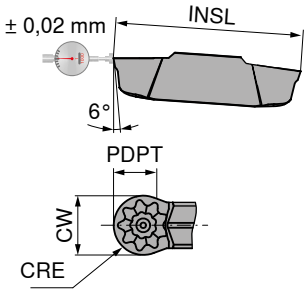
→ 63 | → 67+68 | → 60–63 | → 64 | → 65+66 | → 69

Radius grooving insert GX 24

▲ Insert with highly positive cutting edge geometry and sharp cutting edge
▲ ground periphery



F	M	R
		



-27PF
H216T

70 353 ...

Designation	INSL mm	CW +/-0,02 mm	CRE mm	PDPT mm	for tool holder	
GX 24-4 R3.00 N	25,4	6	3	4	GX 24-4	**500**
GX 24-5 R4.00 N	25,4	8	4	5	GX 24-5	**506**

P	
M	
K	●
N	●
S	○
H	
O	○

→ v_c Page 103
→ Application recommendation on page 106

Internal machining | *External machining*





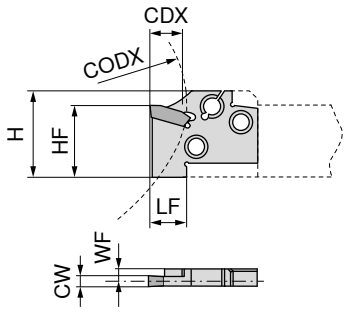

→ 63 | → 67+68 | → 60–63 | → 64 | → 65+66 | → 69

11

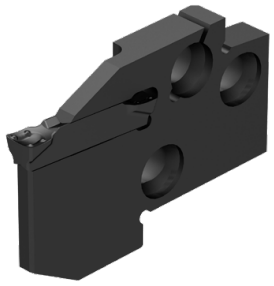
ModularClamp MSS – Radial grooving module GX 24

▲ For deep radial parting and grooving
▲ For turning

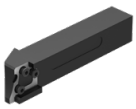
Scope of supply:
Grooving module only



Illustrations show right-hand versions



ISO designation	CW mm	WF mm	LF mm	HF mm	H mm	CODX mm	CDX mm	for grooving inserts	Left-hand 70 868 ...	Right-hand 70 867 ...
E20 R/L 21-GX 24-1	2,00 - 2,75	3,60	22	20	24	60	21	GX 24-1	**020**	**020**
E20 R/L 21-GX 24-2	3	3,40	22	20	24	60	21	GX 24-2	**120**	**120**
E20 R/L 21-GX 24-3	4/5	2,93	22	20	24	30	21	GX 24-3	**22000**	**22000**
E25 R/L 21-GX 24-1	2,00 - 2,75	5,10	22	25	30	75	21	GX 24-1	**025**	**025**
E25 R/L 21-GX 24-2	3	4,90	22	25	30	75	21	GX 24-2	**125**	**125**
E25 R/L 21-GX 24-3	4/5	4,43	22	25	30	75	21	GX 24-3	**225**	**225**
E25 R/L 21-GX 24-4	6	3,80	22	25	30	75	21	GX 24-4	**325**	**325**
E25 R/L 21-GX 24-5	8	2,95	22	25	30	75	21	GX 24-5	**425**	**425**

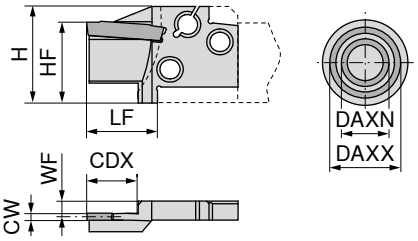




→ 52–59 → 95+96 → 97

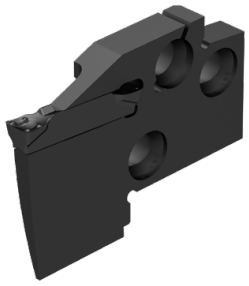
ModularClamp MSS – Axial grooving module GX 24 short

▲ For axial grooving
▲ For face turning

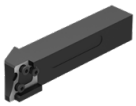
Scope of supply:
Grooving module only



Illustrations show right-hand versions



ISO designation	DAXN mm	DAXX mm	CW mm	WF mm	LF mm	HF mm	H mm	CDX mm	for grooving inserts	Left-hand 70 891 ...	Right-hand 70 890 ...
E20 R/L 14-GX 24-2 A	50	70	3	3,40	22	20	24	14	GX 24-2	**100**	**100**
E20 R/L 14-GX 24-2 A	70	100	3	3,40	22	20	24	14	GX 24-2	**102**	**102**
E20 R/L 14-GX 24-2 A	100	150	3	3,40	22	20	24	14	GX 24-2	**104**	**104**
E25 R/L 15-GX 24-2 A	50	70	3	4,90	22	25	30	15	GX 24-2	**200**	**200**
E25 R/L 15-GX 24-2 A	70	100	3	4,90	22	25	30	15	GX 24-2	**202**	**202**
E25 R/L 15-GX 24-2 A	100	150	3	4,90	22	25	30	15	GX 24-2	**204**	**204**
E25 R/L 15-GX 24-3 A	50	70	4/5	4,43	22	25	30	15	GX 24-3	**206**	**206**
E25 R/L 15-GX 24-3 A	70	100	4/5	4,43	22	25	30	15	GX 24-3	**208**	**208**
E25 R/L 15-GX 24-3 A	100	150	4/5	4,43	22	25	30	15	GX 24-3	**210**	**210**
E25 R/L 15-GX 24-3 A	150	300	4/5	4,43	22	25	30	15	GX 24-3	**212**	**212**
E25 R/L 15-GX 24-4 A	50	70	6	3,80	22	25	30	15	GX 24-4	**214**	**214**
E25 R/L 15-GX 24-4 A	70	100	6	3,80	22	25	30	15	GX 24-4	**216**	**216**
E25 R/L 15-GX 24-4 A	100	150	6	3,80	22	25	30	15	GX 24-4	**218**	**218**
E25 R/L 15-GX 24-4 A	150	300	6	3,80	22	25	30	15	GX 24-4	**220**	**220**

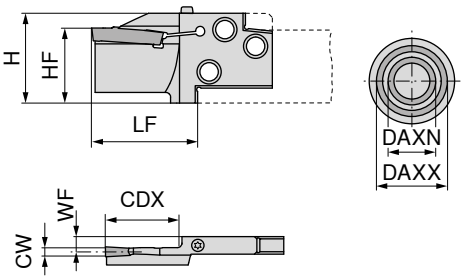

→ 52–59 → 95+96 → 97

11

ModularClamp MSS – Axial grooving module GX 24 long

▲ For axial grooving
▲ For face turning

Scope of supply:
Grooving module only



Illustrations show right-hand versions

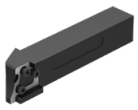
ISO designation	DAXN mm	DAXX mm	CW mm	WF mm	LF mm	HF mm	H mm	CDX mm	for grooving inserts	Left-hand 70 895 ...	Right-hand 70 894 ...
E25 R/L 21-GX 24-3 AS	50	70	4/5	4,53	35	25	30	21	GX 24-3	**200**	**200**
E25 R/L 21-GX 24-3 AS	70	100	4/5	4,53	35	25	30	21	GX 24-3	**202**	**202**
E25 R/L 21-GX 24-3 AS	100	150	4/5	4,53	35	25	30	21	GX 24-3	**204**	**204**
E25 R/L 21-GX 24-3 AS	150	300	4/5	4,53	35	25	30	21	GX 24-3	**206**	**206**
E25 R/L 25-GX 24-4 AS	50	70	6	3,90	35	25	30	25	GX 24-4	**210**	**210**
E25 R/L 25-GX 24-4 AS	70	100	6	3,90	35	25	30	25	GX 24-4	**212**	**212**
E25 R/L 25-GX 24-4 AS	100	150	6	3,90	35	25	30	25	GX 24-4	**214**	**214**
E25 R/L 25-GX 24-4 AS	150	300	6	3,90	35	25	30	25	GX 24-4	**216**	**216**

Axial modules version „GX 24 long“ can be clamped on both sides.


Key D


Clamping screw

Spare parts for grooving inserts		80 950 ...		70 950 ...
GX 24-3	T15	**113**	M3,5x14	**160**
GX 24-4	T15	**113**	M3,5x14	**160**

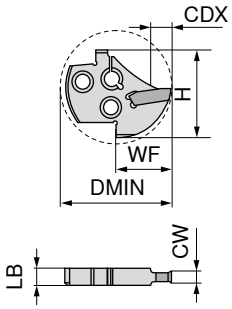




→ 52–59 → 95+96 → 97

ModularClamp MSS – Radial Grooving module GX 24 for Internal machining

▲ for grooving and turning

Scope of supply:
Grooving module only



Neutral

70 880 ...

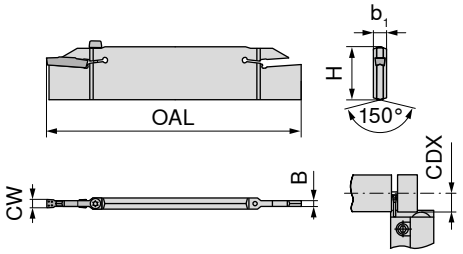
ISO designation	CW mm	LB mm	WF mm	H mm	CDX mm	DMIN mm	for grooving inserts	
I40 N 19-GX 24-2	2,76 - 3,75	6,2	33,5	40,7	19	60	GX 24-2 ..N	**340**
I40 N 19-GX 24-3	3,76 - 5,00	6,2	33,5	40,7	19	60	GX 24-3 ..N	**440**
I40 N 19-GX 24-4	5,01 - 6,50	6,2	33,5	40,7	19	60	GX 24-4 ..N	**540**

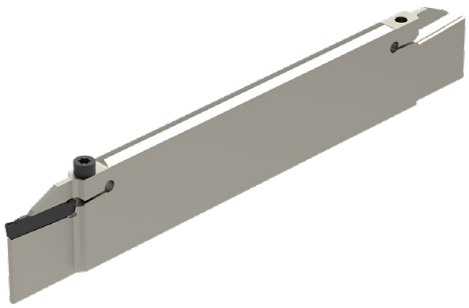
→ 52–59 → 98

11

MonoClamp – Radial Blade GX 24

Scope of supply:
Blade incl. key and clamping screw





ISO designation	CW mm	H mm	B mm	b_1 mm	OAL mm	CDX mm	for grooving inserts	70 834 ...
XLCF N 3203-GX24-1S	2	32	1,05	6,2	180	21	GX 24-1	**102**
XLCF N 3203-GX24-2S	3	32	2,10	6,2	180	21	GX 24-2	**103**
XLCF N 3204-GX24-3S	4/5	32	3,05	6,2	180	21	GX 24-3	**104**
XLCF N 3206-GX24-4S	6	32	4,20	6,2	180	21	GX 24-4	**106**


Key D


Clamping screw

Spare parts for grooving inserts		80 950 ...		70 950 ...
GX 24-1	T15	**113**	M3,5x14	**160**
GX 24-2	T15	**113**	M3,5x14	**160**
GX 24-3	T15	**113**	M3,5x14	**160**
GX 24-4	T15	**113**	M3,5x14	**160**


→ 52–59

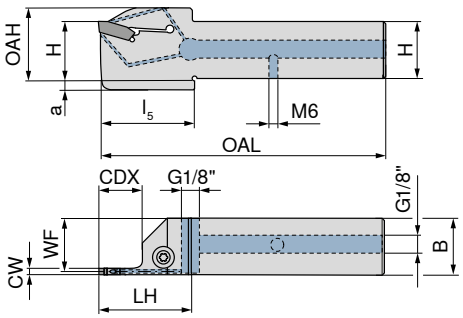

→ 100+101

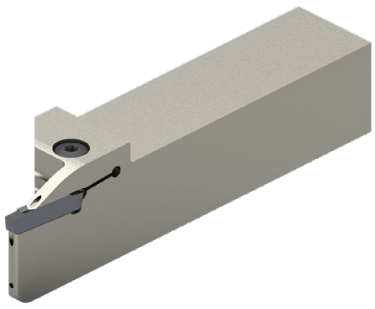

→ **Chapter 16**

MonoClamp – Radial Monoholder GX-DC 24

Scope of supply:
Mono holder incl. key and clamping screw

Direct Cooling





Illustrations show right-hand versions

ISO designation	H mm	B mm	CW mm	WF mm	OAH mm	OAL mm	LH mm	l_5 mm	CDX mm	a mm	for grooving inserts	NEW Left-hand 70 844 ...	NEW Right-hand 70 844 ...
E16 R/L 0021S2-1616X-S-DC-GX24	16	16	2	15,2	22	94	39	40	21	4	GX 24-1 E2..	**21601**	**21600**
E16 R/L 0021S3-1616X-S-DC-GX24	16	16	3	14,8	22	94	39	40	21	4	GX 24-2 E3..	**31601**	**31600**
E20 R/L 0021S2-2020X-S-DC-GX24	20	20	2	19,2	26	109	40		21		GX 24-1 E2..	**22001**	**22000**
E20 R/L 0021S3-2020X-S-DC-GX24	20	20	3	18,8	26	109	40		21		GX 24-2 E3..	**32001**	**32000**
E20 R/L 0021S4-2020X-S-DC-GX24	20	20	4	18,3	26	109	40		21		GX 24-3 E4..	**42001**	**42000**
E20 R/L 0021S5-2020X-S-DC-GX24	20	20	5	18,0	26	109	40		21		GX 24-3 E5..	**52001**	**52000**
E25 R/L 0021S3-2525X-S-DC-GX24	25	25	3	23,8	31	124	40		21		GX 24-2 E3..	**32501**	**32500**
E25 R/L 0021S4-2525X-S-DC-GX24	25	25	4	23,3	31	124	40		21		GX 24-3 E4..	**42501**	**42500**
E25 R/L 0021S5-2525X-S-DC-GX24	25	25	5	23,0	31	124	40		21		GX 24-3 E5..	**52501**	**52500**
E25 R/L 0021S6-2525X-S-DC-GX24	25	25	6	22,5	31	124	40		21		GX 24-4 E6..	**62501**	**62500**


Key D


Clamping screw

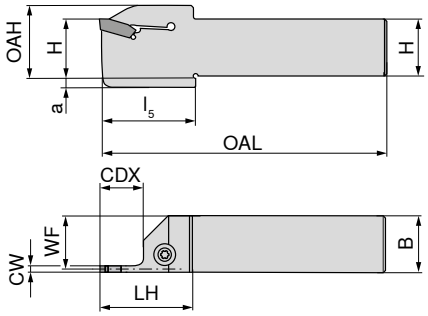
Spare parts for grooving inserts		80 950 ...		70 950 ...	
GX 24-1 E2..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-2 E3..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-3 E4..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-3 E5..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-4 E6..	T15 - IP	**128**	M5x18 - 15IP	**865**

→ 52–59 → **Chapter 16**

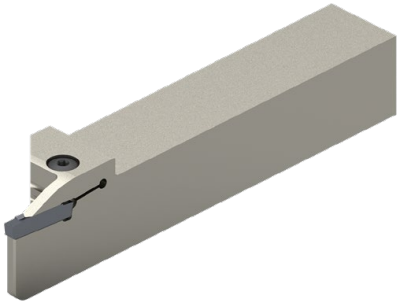
11

MonoClamp – Radial Monoholder GX 24

Scope of supply:
Mono holder incl. key and clamping screw



Illustrations show right-hand versions



ISO designation	H mm	B mm	CW mm	WF mm	OAH mm	OAL mm	LH mm	l_5 mm	CDX mm	a mm	for grooving inserts	NEW Left-hand 70 845 ...	NEW Right-hand 70 845 ...
E16 R/L 0021S2-1616K-S-GX24	16	16	2	15,2	22	125	39	40	21	4	GX 24-1 E2..	**21601**	**21600**
E16 R/L 0021S3-1616K-S-GX24	16	16	3	14,8	22	125	39	40	21	4	GX 24-2 E3..	**31601**	**31600**
E20 R/L 0021S2-2020K-S-GX24	20	20	2	19,2	26	125	40		21		GX 24-1 E2..	**22001**	**22000**
E20 R/L 0021S3-2020K-S-GX24	20	20	3	18,8	26	125	40		21		GX 24-2 E3..	**32001**	**32000**
E20 R/L 0021S4-2020K-S-GX24	20	20	4	18,3	26	125	40		21		GX 24-3 E4..	**42001**	**42000**
E20 R/L 0021S5-2020K-S-GX24	20	20	5	18,0	26	125	40		21		GX 24-3 E5..	**52001**	**52000**
E25 R/L 0021S3-2525M-S-GX24	25	25	3	23,8	31	150	40		21		GX 24-2 E3..	**32501**	**32500**
E25 R/L 0021S4-2525M-S-GX24	25	25	4	23,3	31	150	40		21		GX 24-3 E4..	**42501**	**42500**
E25 R/L 0021S5-2525M-S-GX24	25	25	5	23,0	31	150	40		21		GX 24-3 E5..	**52501**	**52500**
E25 R/L 0021S6-2525M-S-GX24	25	25	6	22,5	31	150	40		21		GX 24-4 E6..	**62501**	**62500**


Key D

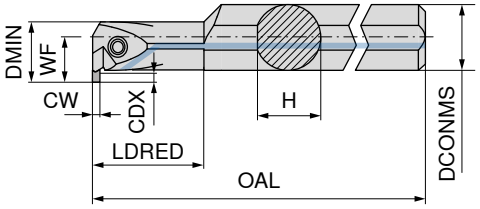

Clamping screw

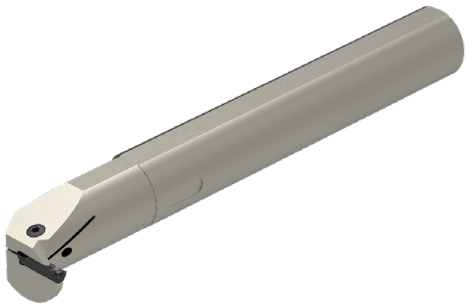
Spare parts for grooving inserts		80 950 ...		70 950 ...
GX 24-1 E2..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-2 E3..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-3 E4..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-3 E5..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-4 E6..	T15 - IP	**128**	M5x18 - 15IP	**865**


→ 52–59 → **Chapter 16**

MonoClamp – Radial Mono-boring bars GX 24

Scope of supply:
Boring bar incl. key and clamping screw



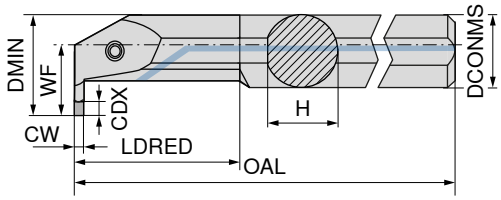


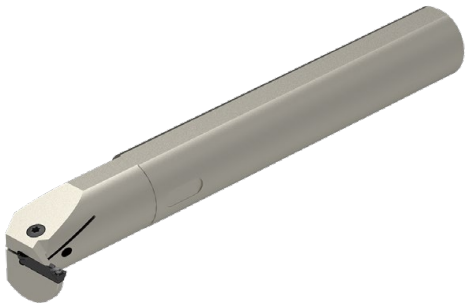
										Left-hand	Right-hand
										70 895 ...	**70 894 ...**
ISO designation	H mm	DCONMS mm	DMIN mm	CW mm	CDX mm	WF mm	OAL mm	LDRED mm	for grooving inserts		
I32 R/L 90-2.0D-GX24-2	31,0	32	42	2,76 - 3,75	11	27,5	250	64	GX 24-2	**132**	**132**
I32 R/L 90-2.0D-GX24-3	31,0	32	42	3,76 - 5,00	11	27,5	250	64	GX 24-3	**232**	**232**
I40 R/L 90-2.0D-GX24-3	38,5	40	53	3,76 - 5,00	12	32,5	300	80	GX 24-3	**240**	**240**

→ 52–59 → **Chapter 16**

MonoClamp – Radial Mono-boring bars GX 24

Scope of supply:
Boring bar incl. key and clamping screw





ISO designation	H mm	DCONMS mm	DMIN mm	CW mm	CDX mm	WF mm	OAL mm	LDRED mm	for grooving inserts	Left-hand 70 895 ...	Right-hand 70 894 ...
I32 R/L 90-2.0D-GX24-4	31,0	32	47	5,01 - 6,50	17,5	30,4	250	64	GX 24-4	**332**	**332**
I40 R/L 90-2.0D-GX24-4	38,5	40	57	5,01 - 6,50	17,5	34,4	300	80	GX 24-4	**340**	**340**


Key D — **80 950 ...**

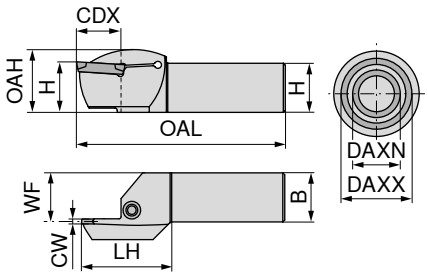

Clamping screw — **70 950 ...**

Spare parts for grooving inserts		
GX 24-2	**114**	**404**
GX 24-3	**114**	**404**
GX 24-4	**114**	**404**

→ 52–59 → **Chapter 16**

MonoClamp – Axial Monoholder GX24

Scope of supply:
Mono holder incl. key and clamping screw



Illustrations show right-hand versions

ISO designation	H mm	B mm	CW mm	WF mm	DAXN mm	DAXX mm	OAH mm	OAL mm	LH mm	CDX mm	for grooving inserts	Left-hand 70 904 ...	Right-hand 70 903 ...
E25 R/L 0012-2525X-GX24-2	25	25	3	24,7	45	50	32	115	45	12	GX 24-2	**202**	**202**
E25 R/L 0016-2525X-GX24-2	25	25	3	24,7	50	60	32	115	45	16	GX 24-2	**204**	**204**
E25 R/L 0019-2525X-GX24-2	25	25	3	24,7	60	75	32	115	45	19	GX 24-2	**206**	**206**
E25 R/L 0019-2525X-GX24-2	25	25	3	24,7	75	100	32	115	45	19	GX 24-2	**208**	**208**
E25 R/L 0022-2525X-GX24-2	25	25	3	24,7	100	130	32	115	45	22	GX 24-2	**210**	**210**
E25 R/L 0022-2525X-GX24-2	25	25	3	24,7	130	180	32	115	45	22	GX 24-2	**212**	**212**
E25 R/L 0022-2525X-GX24-2	25	25	3	24,7	180	300	32	115	45	22	GX 24-2	**214**	**214**
E25 R/L 0012-2525X-GX24-3	25	25	4+5	24,2	45	50	32	115	45	12	GX 24-3	**232**	**232**
E25 R/L 0020-2525X-GX24-3	25	25	4+5	24,2	50	60	32	115	45	20	GX 24-3	**234**	**234**
E25 R/L 0020-2525X-GX24-3	25	25	4+5	24,2	60	75	32	115	45	20	GX 24-3	**236**	**236**
E25 R/L 0022-2525X-GX24-3	25	25	4+5	24,2	75	100	32	115	45	22	GX 24-3	**238**	**238**
E25 R/L 0022-2525X-GX24-3	25	25	4+5	24,2	100	150	32	115	45	22	GX 24-3	**240**	**240**
E25 R/L 0022-2525X-GX24-3	25	25	4+5	24,2	150	300	32	115	45	22	GX 24-3	**242**	**242**
E25 R/L 0022-2525X-GX24-4	25	25	6	23,2	50	70	32	115	45	22	GX 24-4	**262**	**262**
E25 R/L 0025-2525X-GX24-4	25	25	6	23,2	70	100	32	115	45	25	GX 24-4	**264**	**264**
E25 R/L 0025-2525X-GX24-4	25	25	6	23,2	100	150	32	115	45	25	GX 24-4	**266**	**266**
E25 R/L 0025-2525X-GX24-4	25	25	6	23,2	150	300	32	115	45	25	GX 24-4	**268**	**268**


Key D


Clamping screw

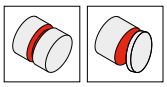
Spare parts for grooving inserts		80 950 ...		70 950 ...
GX 24-2	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-3	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-4	T15 - IP	**128**	M5x18 - 15IP	**865**

→ 52–59 → **Chapter 16**

11

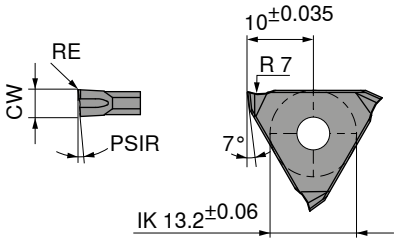
TX grooving insert for grooving and parting off

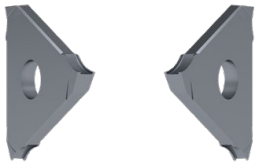
▲ Cutting depth 5.0 mm
▲ Cutting width 1.99–2.79 mm



F	M	R

CWX500 CWX500





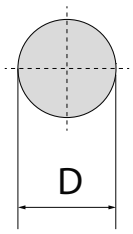
Illustrations show right-hand versions

ISO designation	CW -0,05 mm	RE mm	PSIR	for tool holder	Left-hand 73 302 ...	Right-hand 73 301 ...
TX R/L 0518.00.1	1,99	0,1	5°	R/L 207 .. . / 780 .. . 1	**204**	**204**
TX R/L 0521.00.2	2,29	0,1	5°	R/L 207 .. . / 780 .. . 2	**206**	**206**
TX R/L 0526.00.2	2,79	0,1	5°	R/L 207 .. . / 780 .. . 2	**208**	**208**
P					●	●
M					●	●
K					●	●
N					●	●
S					●	●
H					○	○
O					●	●

→ v_c Page 104

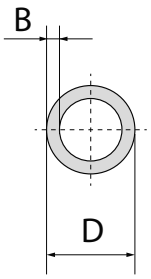
Grooving depth

Full material



max. 10 mm

Pipe



D ≤ 50 mm: Wall thickness B = approx. 5 mm
D ≥ 50 mm: Wall thickness B = approx. 4 mm

Internal machining

→ 78

External machining

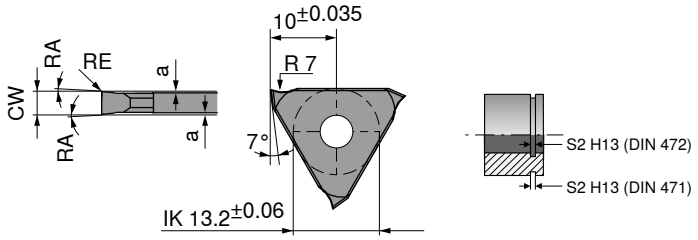
→ 75–77

TX insert for circlip grooves

▲ For circlip grooves according to DIN 471 / 472

CWX500

F	M	R
		



Neutral

73 300 ...

Designation	s_2 mm	CW $_{-0,05}$ mm	RE mm	RA °	a $_{+/-0,02}$ mm	for tool holder	
TX N 0050.00.1	0,50	0,57	0,05	1	0,07	R/L .. .1	**204**
TX N 0060.00.1	0,60	0,67	0,05	1	0,07	R/L .. .1	**206**
TX N 0070.00.1	0,70	0,77	0,05	1	0,08	R/L .. .1	**208**
TX N 0080.00.1	0,80	0,87	0,05	1	0,08	R/L .. .1	**210**
TX N 0090.00.1	0,90	0,97	0,05	1	0,08	R/L .. .1	**212**
TX N 0100.00.1	1,00	1,07	0,10	1	0,09	R/L .. .1	**214**
TX N 0110.00.1	1,10	1,24	0,10	3	0,15	R/L .. .1	**216**
TX N 0130.00.1	1,30	1,44	0,10	3	0,15	R/L .. .1	**218**
TX N 0160.00.1	1,60	1,74	0,10	3	0,20	R/L .. .1	**220**
TX N 0185.00.1	1,85	1,99	0,10	3	0,20	R/L .. .1	**222**
TX N 0215.00.2	2,15	2,29	0,10	3	0,20	R/L .. .2	**224**
TX N 0265.00.2	2,65	2,79	0,10	3	0,20	R/L .. .2	**226**
TX N 0315.00.3	3,15	3,29	0,10	3	0,20	R/L .. .3	**228**
TX N 0415.00.4	4,15	4,29	0,10	3	0,20	R/L .. .4	**230**
TX N 0515.00.4	5,15	5,29	0,10	3	0,20	R/L .. .4	**232**

P	●
M	●
K	●
N	●
S	●
H	○
O	●

→ v_c Page 104

11

Internal machining

→ 78

External machining

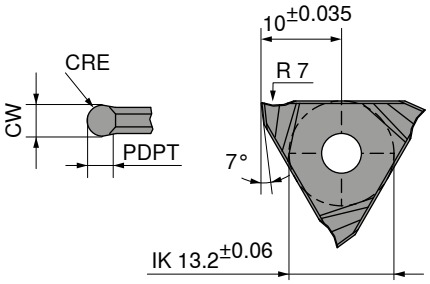
→ 75–77

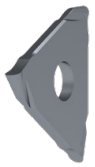
Radial TX insert for corner recessing

▲ Full radius for cutting width 0.5–5.0 mm

CWX500

F	M	R
	▲	





Neutral

73 304 ...

Designation	CRE mm	CW +/-0.05 mm	PDPT mm	for tool holder	
TX N 0002.05.1	0,25	0,5	0,20	R/L .. .1	**212**
TX N 0005.10.1	0,50	1,0	0,35	R/L .. .1	**214**
TX N 0006.12.1	0,60	1,2	0,40	R/L .. .1	**216**
TX N 0008.16.1	0,80	1,6	0,55	R/L .. .1	**218**
TX N 0010.20.2	1,00	2,0	0,70	R/L .. .2	**204**
TX N 0012.25.2	1,25	2,5	0,85	R/L .. .2	**220**
TX N 0015.30.3	1,50	3,0	1,00	R/L .. .3	**206**
TX N 0020.40.4	2,00	4,0	1,20	R/L .. .4	**208**
TX N 0025.50.4	2,50	5,0	1,50	R/L .. .4	**210**

P	●
M	●
K	●
N	●
S	●
H	○
O	●

→ v_c Page 104

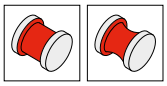
Internal machining

→ 78

External machining

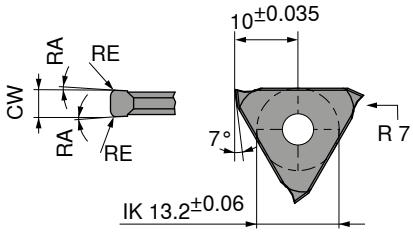
→ 75–77

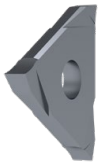
TX insert for fine and copy turning



CWX500

F	M	R
		





Neutral

73 303 ...

Designation	CW +0,03 mm	RE mm	RA °	for tool holder	
TX N 0150.02.1	1,5	0,2	3	R/L 207 .. . / 738 .. . / 660 .. . 1	**204**
TX N 0200.02.1	2,0	0,2	3	R/L 207 .. . / 738 .. . / 660 .. . 1	**206**
TX N 0200.04.1	2,0	0,4	3	R/L 207 .. . / 738 .. . / 660 .. . 1	**208**
TX N 0300.06.2	3,0	0,6	3	R/L 207 .. . / 738 .. . / 660 .. . 2	**212**
TX N 0300.02.2	3,0	0,2	3	R/L 207 .. . / 738 .. . / 660 .. . 2	**210**
TX N 0300.08.2	3,0	0,8	3	R/L 207 .. . / 738 .. . / 660 .. . 2	**214**
TX N 0400.08.3	4,0	0,8	3	R/L 207 .. . / 738 .. . / 660 .. . 3	**218**
TX N 0400.02.3	4,0	0,2	3	R/L 207 .. . / 738 .. . / 660 .. . 3	**216**
TX N 0400.12.3	4,0	1,2	3	R/L 207 .. . / 738 .. . / 660 .. . 3	**220**

P	●
M	●
K	●
N	●
S	●
H	○
O	●

→ v_c Page 104

11

Internal machining

→ 78

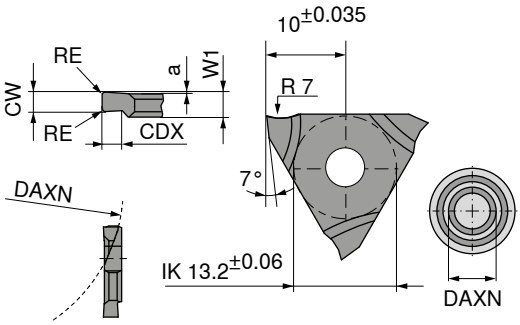
External machining

→ 75–77

TX insert for axial grooving

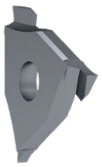
▲ Up to cutting depth 3.5 mm
▲ Cutting width 1.5–5.0 mm
▲ Groove-Ø external D_a ≥ 20 mm

F	M	R
		



Illustrations show right-hand versions

CWX500



CWX500

ISO designation	CW mm	W1 mm	CDX mm	a mm	DAXN mm	RE mm	for tool holder	Left-hand 73 306 ...	Right-hand 73 305 ...
TX R/L 2015.2.2	1,5	2,7	2	0,2	20	0,2	R/L 207 .. . 2	**204**	**204**
TX R/L 3020.2.2	2,0	2,7	3	0,2	30	0,2	R/L 207 .. . 2	**206**	**206**
TX R/L 3030.2.3	3,0	3,7	3	0,2	30	0,2	R/L 207 .. . 3	**208**	**208**
P								●	●
M								●	●
K								●	●
N								●	●
S								●	●
H								○	○
O								●	●

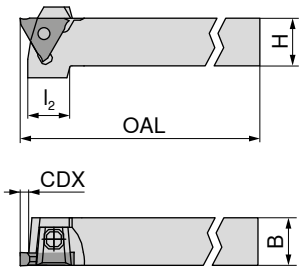
→ v_c Page 104

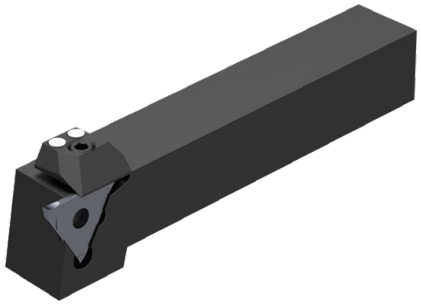
Internal machining	*External machining*
	
	→ 75+76

MonoClamp – Radial/Axial TX Grooving Holder 0°, 6 mm cutting depth

▲ For radial and axial grooving
▲ Cutting width 0.5–6.3 mm

Scope of supply:
Grooving holder only

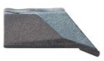


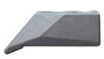


Illustrations show right-hand versions

ISO designation	H mm	B +/-0,1 mm	OAL mm	l_2 mm	CDX mm	for grooving inserts	Left-hand 73 501 ...	Right-hand 73 500 ...
R/L 207.1212.1	12	12	100	24	4	TX R/N/L ...1	**112**	**112**
R/L 207.1616.1	16	16	125	22	4	TX R/N/L ...1	**116**	**116**
R/L 207.2020.1	20	20	125	21	4	TX R/N/L ...1	**120**	**120**
R/L 207.2525.1	25	25	150		4	TX R/N/L ...1	**125**	**125**
R/L 207.1212.2	12	12	100	24	6	TX R/N/L ...2	**212**	**212**
R/L 207.1616.2	16	16	125	22	6	TX R/N/L ...2	**216**	**216**
R/L 207.2020.2	20	20	125	21	6	TX R/N/L ...2	**220**	**220**
R/L 207.2525.2	25	25	150		6	TX R/N/L ...2	**225**	**225**
R/L 207.1212.3	12	12	100	24	6	TX R/N/L ...3	**312**	**312**
R/L 207.1616.3	16	16	125	22	6	TX R/N/L ...3	**316**	**316**
R/L 207.2020.3	20	20	125	21	6	TX R/N/L ...3	**320**	**320**
R/L 207.2525.3	25	25	150		6	TX R/N/L ...3	**325**	**325**
R 207.3232.3	32	32	170		6	TX R/N/L ...3		**332**
R/L 207.1616.4	16	16	125	22	6	TX R/N/L ...4	**416**	**416**
R/L 207.2020.4	20	20	125	21	6	TX R/N/L ...4	**420**	**420**
R/L 207.2525.4	25	25	150		6	TX R/N/L ...4	**425**	**425**

11


right hand


left hand


Key I


Clamping screw


Guide pin

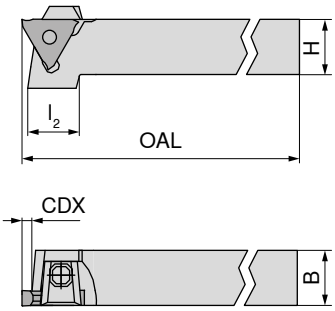
Spare parts for grooving inserts	right hand 73 950 ...	left hand 73 950 ...	Key I 70 950 ...	Clamping screw 73 950 ...	Guide pin 73 950 ...
TX R/N/L ...1	**020**		SW3 **176**	M6x20 **028**	Ø 4x18 **030**
TX R/N/L ...1		**024**	SW3 **176**	M6x20 **028**	Ø 4x18 **030**
TX R/N/L ...2		**024**	SW3 **176**	M6x20 **028**	Ø 4x18 **030**
TX R/N/L ...2	**020**		SW3 **176**	M6x20 **028**	Ø 4x18 **030**
TX R/N/L ...3		**024**	SW3 **176**	M6x20 **028**	Ø 4x18 **030**
TX R/N/L ...3	**020**		SW3 **176**	M6x20 **028**	Ø 4x18 **030**
TX R/N/L ...4	**022**		SW3 **176**	M6x20 **028**	Ø 4x18 **030**
TX R/N/L ...4		**026**	SW3 **176**	M6x20 **028**	Ø 4x18 **030**

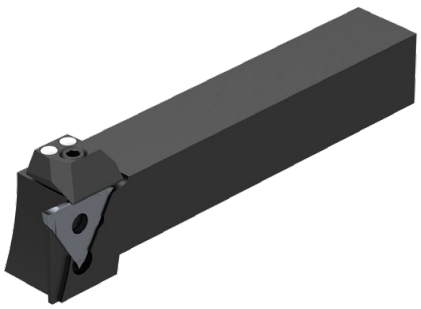
→ 70–74 → **Chapter 16**

MonoClamp – Radial TX Grooving holder 0° 8 mm cutting depth

▲ For radial parting and grooving
▲ Cutting width 1.9–6.3 mm

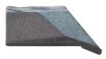
Scope of supply:
Grooving holder only

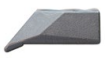




Illustrations show right-hand versions

ISO designation	H mm	B +/-0,1 mm	OAL mm	l_2 mm	CDX mm	for grooving inserts	Left-hand 73 503 ...	Right-hand 73 502 ...
R/L 780.2020.2	20	20	125	24	8	TX R/N/L ...2	**120**	**120**
R/L 780.2525.2	25	25	150		8	TX R/N/L ...2	**125**	**125**
R/L 780.2020.3	20	20	125	24	8	TX R/N/L ...3	**220**	**220**
R/L 780.2525.3	25	25	150		8	TX R/N/L ...3	**225**	**225**
R/L 780.2020.4	20	20	125	24	8	TX R/N/L ...4	**320**	**320**
R/L 780.2525.4	25	25	150		8	TX R/N/L ...4	**325**	**325**


right hand **73 950 ...**


left hand **73 950 ...**


Key I **70 950 ...**


Clamping screw **73 950 ...**


Guide pin **73 950 ...**

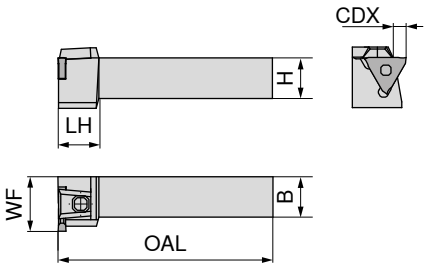
Spare parts for grooving inserts												
TX R/N/L ...2	**020**			SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...2			**024**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...3	**020**			SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...3			**024**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...4	**022**			SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...4			**026**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**

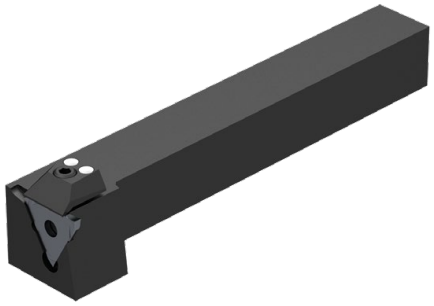

→ 70–74 → **Chapter 16**

MonoClamp – Radial TX Grooving holder 90° 6 mm cutting depth

▲ For radial grooving
▲ Cutting width 0.5–6.3 mm

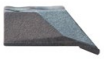
Scope of supply:
Grooving holder only

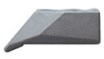




Illustrations show right-hand versions

ISO designation	H mm	B +/-0,1 mm	OAL mm	LH mm	WF +/-0,07 mm	CDX mm	for grooving inserts	Left-hand 73 505 ...	Right-hand 73 504 ...
R/L 738.2020.1	20	20	150	20	27	4	TX R/N/L ...1	**120**	**120**
R/L 738.2525.1	25	25	150		32	4	TX R/N/L ...1	**125**	**125**
R/L 738.2020.2	20	20	150	20	27	6	TX R/N/L ...2	**220**	**220**
R/L 738.2525.2	25	25	150		32	6	TX R/N/L ...2	**225**	**225**
R/L 738.2020.3	20	20	150	20	27	6	TX R/N/L ...3	**320**	**320**
R/L 738.2525.3	25	25	150		32	6	TX R/N/L ...3	**325**	**325**
R/L 738.2020.4	20	20	150	20	27	6	TX R/N/L ...4	**420**	**420**
R/L 738.2525.4	25	25	150		32	6	TX R/N/L ...4	**425**	**425**


right hand


left hand


Key I


Clamping screw


Guide pin

Spare parts for grooving inserts												
TX R/N/L ...1	**020**			SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...1			**024**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...2			**024**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...2	**020**			SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...3			**024**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...3	**020**			SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...4	**022**			SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...4			**026**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**

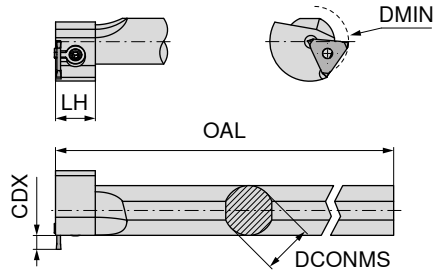
→ 70–74 → **Chapter 16**

11

MonoClamp – Radial Boring bar TX

▲ For radial internal grooving
▲ Cutting width 0.5–6.3 mm

Scope of supply:
Boring bar only



Illustrations show right-hand versions

ISO designation	DCONMS $_{g7}$ mm	DMIN mm	OAL mm	LH mm	CDX mm	for grooving inserts	Left-hand 73 511 ...	Right-hand 73 510 ...
R/L 660.0025.1	25	46	170	20	2	TX R/N/L ...1	**125**	**125**
R/L 660.0032.1	32	46	200	20	2	TX R/N/L ...1	**132**	**132**
R/L 660.0040.1	40	46	250		2	TX R/N/L ...1	**140**	**140**
R/L 660.0025.2	25	46	170	20	2	TX R/N/L ...2	**225**	**225**
R/L 660.0032.2	32	46	200	20	2	TX R/N/L ...2	**232**	**232**
R/L 660.0040.2	40	46	250		2	TX R/N/L ...2	**240**	**240**
R/L 660.0025.3	25	46	170	20	2	TX R/N/L ...3	**325**	**325**
R/L 660.0032.3	32	46	200	20	2	TX R/N/L ...3	**332**	**332**
R/L 660.0040.3	40	46	250		2	TX R/N/L ...3	**340**	**340**

Bore-Ø$_{min.}$ in mm	46	50	60	80	100	for grooving insert
CDX$_{max.}$ (mm)	2	3	4	4,5	5	TX R/N/L ...1
	2	3	4	4,5	5	TX R/N/L ...2
	2	3	4	4,5	5	TX R/N/L ...3
	2	3	4	4,5	5	TX R/N/L ...4


Clamping element


Key I

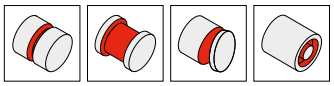

Clamping screw

Spare parts for grooving inserts	Clamping element 73 950 ...	Key I 70 950 ...		Clamping screw 73 950 ...	
TX R/N/L ...1	**011**	SW3	**176**	M6x30	**009**
TX R/N/L ...2	**011**	SW3	**176**	M6x30	**009**
TX R/N/L ...3	**011**	SW3	**176**	M6x30	**009**

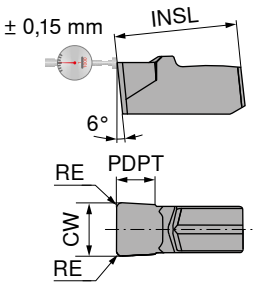

→ 70–73 → **Chapter 16**

Insert LX

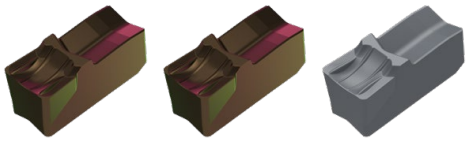
▲ Grooving width 8 and 10 mm
▲ Axial grooving from Ø 500 mm onwards
▲ Internal grooving and turning, from Ø 200 mm onwards



F	M	R



-M2 CTCP325	-M2 CTCP335	-M2 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	INSL mm	CW -/+0,08 mm	RE +/-0,1 mm	PDPT mm	for tool holder	70 337 ...		70 337 ...		70 337 ...	
LXE 8.00N0.80-M2	19	8	0,8	5	E32 N ..-LX	**928**		**578**		**682**	
LXE 10.00N0.80-M2	19	10	0,8	5	E32 N ..-LX	**932**		**582**		**678**	
P						●		●		●	
M						○		○		●	
K						●		●		●	
N										○	
S						○				●	
H											
O										○	

→ v_c Page 103
→ Application recommendation on page 109

Internal machining

→ 81

External machining

→ 81

→ 82

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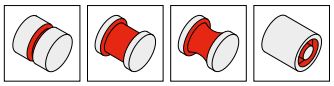
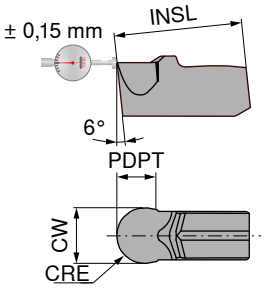
Radial Grooving Insert LX

- ▲ Grooving width 8 mm
- ▲ Axial grooving from Ø 500 mm
- ▲ Internal grooving and turning, from Ø 200 mm



F	M	R



-M3 CTCP325	-M3 CTCP335	-M3 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	INSL mm	CW -/+0,08 mm	CRE mm	PDPT mm	for tool holder	70 337 ...	70 337 ...	70 337 ...
LXR 4.00N-M3	19	8	4	5	E32 N ..-LX	**908**	**518**	**618**
P						●	●	●
M						○	○	●
K						●	●	●
N								○
S						○		●
H								
O								○

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→ Application recommendation on page 109

Internal machining

→ 81

External machining

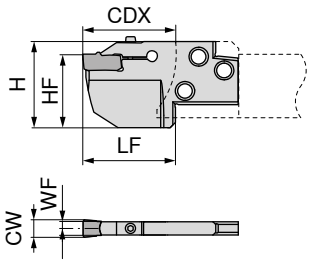
→ 81

→ 82

ModularClamp MSS – Axial and radial grooving module LX

▲ Grooving width 8 and 10 mm
▲ Axial grooving from Ø 500 mm onwards
▲ Internal grooving and turning, from Ø 200 mm onwards

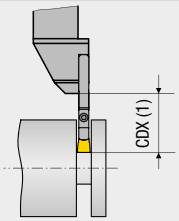
Scope of supply:
Grooving module only



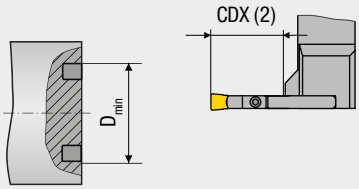
Neutral

ISO designation	CW mm	WF mm	LF mm	HF mm	H mm	CDX (1) mm	CDX (2) mm	CDX (3) mm	for grooving inserts	70 835 ...
E32 N 25-LX	8 / 10	3,4	27	32	44	25	19	14	LX ..	**032**
E32 N 32-LX	8 / 10	3,4	37	32	44	32	26	21	LX ..	**132**
E32 N 45-LX	8 / 10	3,4	47	32	44	45	39	34	LX ..	**232**

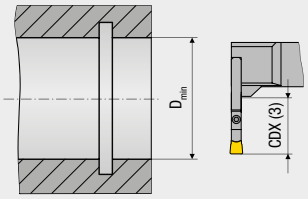
Radial grooving



Axial grooving D_{min} > 500 mm



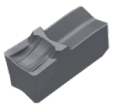
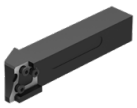
Internal grooving D_{min} > 200 mm



Key D **80 950 ...**

Clamping screw **70 950 ...**

Spare parts for grooving inserts				
LX ..	T20	**114**	M4x18	**204**

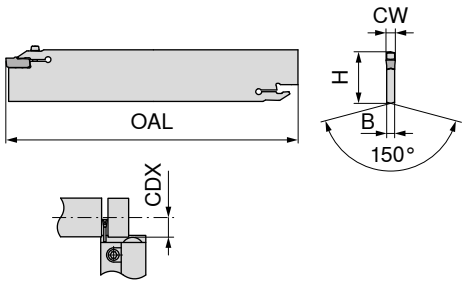



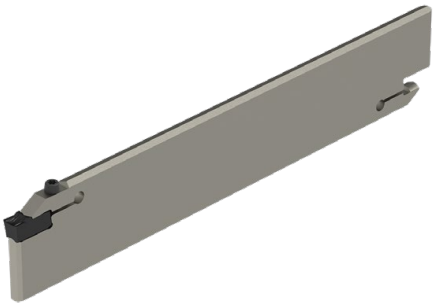
→ 79+80 → 95+96 → 95 → 98

11

MonoClamp – Blade LX

Scope of supply:
Blade incl. key and clamping screw





ISO designation	H mm	B mm	OAL mm	CW mm	CDX mm	for grooving inserts	70 833 ...
XLCEN 4608-LX	46	6,8	250	8/10	80	LX ..	**108**

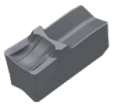
Key D

80 950 ...

Clamping screw

70 950 ...

Spare parts for grooving inserts				
LX ..	T20	**114**	M4x18	**204**



→ 79+80 → 100+101 → **Chapter 16**

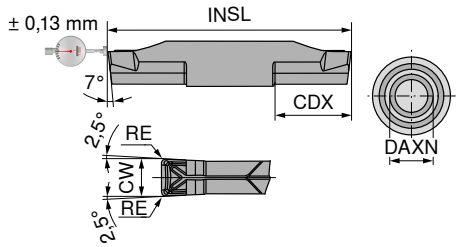
Grooving insert AX

▲ very good chip control
▲ DAXN minimum groove diameter refers to the outside diameter

F	M	R
		

-F50
CTP1340

DRAGONSKIN



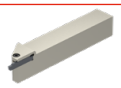
70 327 ...

Designation	IH	INSL mm	CW +/-0,02 mm	RE +/-0,05 mm	CDX mm	DAXN mm	for tool holder	
AX 05 E3.00 N 0.30	N	24	3	0,3	5	10	E.. R/L.. -AX 05	**005**
AX 10 E3.00 N 0.30	N	34	3	0,3	10	20	E.. R/L.. -AX 10	**010**
AX 15 E3.00 N 0.30	N	44	3	0,3	15	30	E.. R/L.. -AX 15	**015**

P	●
M	●
K	●
N	○
S	●
H	
O	○

→ v_c Page 103
→ Application recommendation on page 110

Internal machining | *External machining*

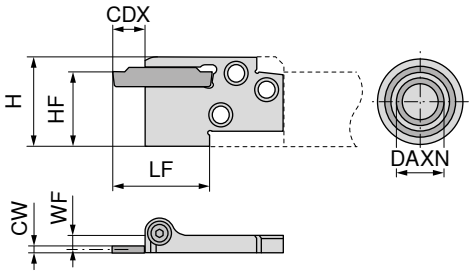

→ 84 → 85 → 86

11

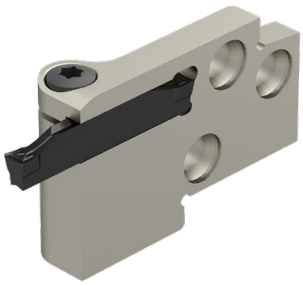
ModularClamp MSS – Axial grooving module AX

▲ for axial grooving and turning

Scope of supply:
Grooving module only



Illustrations show right-hand versions

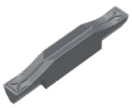


ISO designation	HF mm	CW mm	WF mm	LF mm	H mm	DAXN mm	CDX mm	for grooving inserts	Left-hand 70 827 ...	Right-hand 70 828 ...
E16 R/L 05-AX 05	16	3	2,5	24,0	20,5	10	5	AX05	**016**	**016**
E20 R/L 05-AX 05	20	3	3,1	28,0	25,0	10	5	AX05	**020**	**020**
E25 R/L 05-AX 05	25	3	4,6	27,5	30,0	10	5	AX05	**025**	**025**
E20 R/L 10-AX 10	20	3	3,1	33,0	25,0	20	10	AX10	**120**	**120**
E25 R/L 10-AX 10	25	3	4,6	32,5	30,0	20	10	AX10	**125**	**125**
E20 R/L 15-AX 15	20	3	3,1	44,0	25,0	30	15	AX15	**220**	**220**
E25 R/L 15-AX 15	25	3	4,6	43,5	30,0	30	15	AX15	**225**	**225**

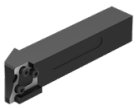
Key D

Clamping screw

Spare parts for Article no.		80 950 ...		70 950 ...
70 827 016 / 70 828 016	T15	**113**	M3,5x12,5	**441**
70 827 020 / 70 828 020	T15	**113**	M4x14	**403**
70 827 025 / 70 828 025	T20	**114**	M5x18	**404**
70 827 120 / 70 828 120	T15	**113**	M4x14	**403**
70 827 125 / 70 828 125	T20	**114**	M5x18	**404**
70 827 220 / 70 828 220	T15	**113**	M4x14	**403**
70 827 225 / 70 828 225	T20	**114**	M5x18	**404**



→ 83

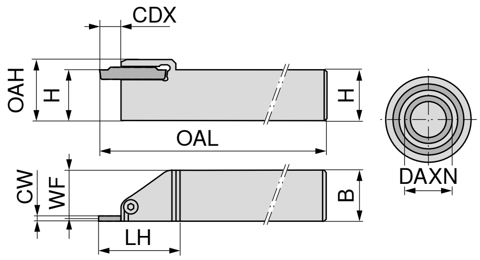


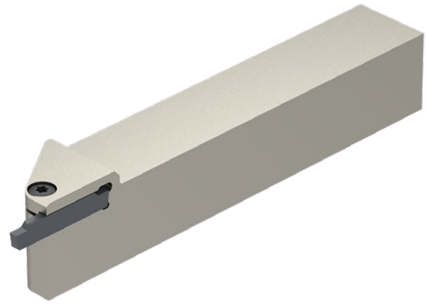
→ 95+96

→ 97

MonoClamp – Axial AX Grooving Holder 0°, up to 15 mm groove depth

Scope of supply:
Grooving holder incl. key and clamping screw





Illustrations show right-hand versions

ISO designation	H mm	B mm	OAL mm	LH mm	OAH mm	CDX mm	CW mm	WF mm	DAXN mm	for grooving inserts	Left-hand 70 823 ...	Right-hand 70 824 ...
E20 R/L 0005-2020-AX 05	20	20	140	28	25	5	3	18,7	10	AX05	**02000**	**02000**
E20 R/L 0010-2020-AX 10	20	20	140	38	25	10	3	18,7	20	AX10	**12000**	**12000**
E20 R/L 0015-2020-AX 15	20	20	140	49	25	15	3	18,7	30	AX15	**22000**	**22000**
E25 R/L 0005-2525-AX 05	25	25	160	28	30	5	3	23,7	10	AX05	**02500**	**02500**
E25 R/L 0010-2525-AX 10	25	25	160	38	30	10	3	23,7	20	AX10	**12500**	**12500**
E25 R/L 0015-2525-AX 15	25	25	160	49	30	15	3	23,7	30	AX15	**22500**	**22500**


Key D


Clamping screw

Spare parts for Article no.	Key D	80 950 ...	Clamping screw	70 950 ...
70 824 02000 / 70 823 02000	T20	**106**	M5x18	**404**
70 824 12000 / 70 823 12000	T20	**106**	M5x18	**404**
70 824 22000 / 70 823 22000	T20	**106**	M5x18	**404**
70 824 02500 / 70 823 02500	T20	**106**	M5x18	**404**
70 824 12500 / 70 823 12500	T20	**106**	M5x18	**404**
70 824 22500 / 70 823 22500	T20	**106**	M5x18	**404**

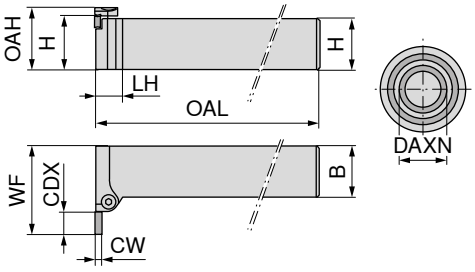
11

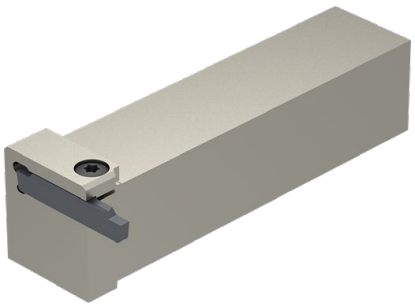

→ 83


→ **Chapter 16**

MonoClamp – Axial AX Grooving Holder 90°, up to 15 mm groove depth

Scope of supply:
Grooving holder incl. key and clamping screw





Illustrations show right-hand versions

											Left-hand	Right-hand
											70 825 ...	**70 826 ...**
ISO designation	H mm	B mm	WF mm	OAH mm	OAL mm	LH mm	CDX mm	DAXN mm	CW mm	for grooving inserts		
E20 R/L 9005-2020-AX 05	20	20	28	25	110	12	5	10	3	AX05	**02000**	**02000**
E20 R/L 9010-2020-AX 10	20	20	38	25	110	13	10	20	3	AX10	**12000**	**12000**
E20 R/L 9015-2020-AX 15	20	20	49	25	110	13	15	30	3	AX15	**22000**	**22000**
E25 R/L 9005-2525-AX 05	25	25	33	30	140	12	5	10	3	AX05	**02500**	**02500**
E25 R/L 9010-2525-AX 10	25	25	43	30	110	13	10	20	3	AX10	**12500**	**12500**
E25 R/L 9015-2525-AX 15	25	25	49	30	140	13	15	30	3	AX15	**22500**	**22500**


Key D

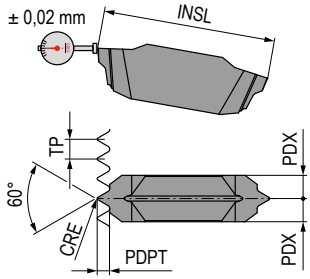

Clamping screw

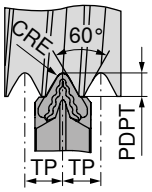
Spare parts for Article no.		**80 950 ...**		**70 950 ...**
70 825 02000 / 70 826 02000	T15	**105**	M4x14	**403**
70 825 12000 / 70 826 12000	T20	**106**	M5x18	**404**
70 825 22000 / 70 826 22000	T20	**106**	M5x18	**404**
70 825 02500 / 70 826 02500	T15	**105**	M4x14	**403**
70 825 12500 / 70 826 12500	T20	**106**	M5x18	**404**
70 825 22500 / 70 826 22500	T20	**106**	M5x18	**404**

→ 83 → **Chapter 16**

Threading inserts TC full profile – External thread 60°

F	M	R





CTPP520	CTPP535	-27P H216T
DRAGONSKIN	DRAGONSKIN	

Designation	Size	TP mm	INSL mm	PDPT mm	PDX mm	CRE mm	for tool holder	70 357 ...		70 357 ...		70 357 ...	
TC 16-1 E 0.5 ISO	TC 16-1 ...	0,50	16	0,32	1,05	0,06	E.. R/L TC 16-1	**010**		**110**		**610**	
TC 16-1 E 0.75 ISO	TC 16-1 ...	0,75	16	0,48	1,05	0,09	E.. R/L TC 16-1	**012**		**112**		**612**	
TC 16-1 E 1.0 ISO	TC 16-1 ...	1,00	16	0,64	1,05	0,12	E.. R/L TC 16-1	**014**		**114**		**614**	
TC 16-1 E 1.25 ISO	TC 16-1 ...	1,25	16	0,80	1,05	0,15	E.. R/L TC 16-1	**016**		**116**		**616**	
TC 16-1 E 1.5 ISO	TC 16-1 ...	1,50	16	0,95	1,05	0,18	E.. R/L TC 16-1	**018**		**118**		**618**	
TC 16-2 E 1.75 ISO	TC 16-2 ...	1,75	16	1,10	2,15	0,22	E.. R/L/N TC 16-2	**030**		**130**		**630**	
TC 16-2 E 2.0 ISO	TC 16-2 ...	2,00	16	1,26	2,15	0,25	E.. R/L/N TC 16-2	**032**		**132**		**632**	
TC 16-2 E 2.5 ISO	TC 16-2 ...	2,50	16	1,58	2,15	0,32	E.. R/L/N TC 16-2	**034**		**134**		**634**	
TC 16-2 E 3.0 ISO	TC 16-2 ...	3,00	16	1,89	2,15	0,38	E.. R/L/N TC 16-2	**036**		**136**		**636**	
P								●		●			
M								●		●			
K								●		●		●	
N												●	
S								○		●			
H								○					
O												○	

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→ Application recommendation on page 111

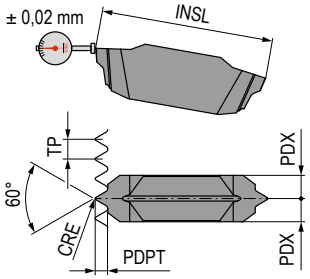
Internal machining *External machining*

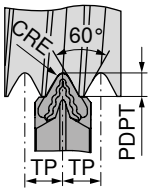

→ 92 → 93

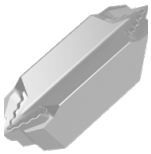
11

Threading inserts TC full profile – Internal thread 60°

F	M	R
		





CTPP520	CTPP535	-27P H216T
DRAGONSKIN	DRAGONSKIN	
		
		

Designation	Size	TP mm	INSL mm	PDPT mm	PDX mm	CRE mm	for tool holder	70 358 ...		70 358 ...		70 358 ...	
TC 16-1 I 1.0 ISO	TC 16-1 ...	1,00	16	0,59	1,05	0,06	I32 R/L TC 16-1	**014**		**114**		**614**	
TC 16-1 I 1.25 ISO	TC 16-1 ...	1,25	16	0,74	1,05	0,07	I32 R/L TC 16-1	**016**					
TC 16-1 I 1.5 ISO	TC 16-1 ...	1,50	16	0,89	1,05	0,09	I32 R/L TC 16-1	**018**		**118**		**618**	
TC 16-2 I 1.75 ISO	TC 16-2 ...	1,75	16	1,02	2,15	0,11	I32 R/L TC 16-2	**030**					
TC 16-2 I 2.0 ISO	TC 16-2 ...	2,00	16	1,17	2,15	0,13	I32 R/L TC 16-2	**032**		**132**		**632**	
TC 16-2 I 3.0 ISO	TC 16-2 ...	3,00	16	1,76	2,15	0,19	I32 R/L TC 16-2	**036**		**136**		**636**	
P								●		●			
M								●		●			
K								●		●		●	
N												●	
S								○		●			
H								○					
O												○	

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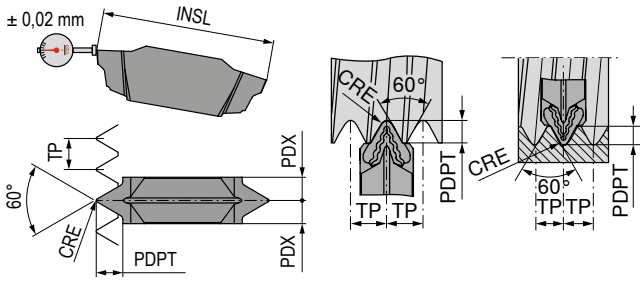
→ Application recommendation on page 111

Internal machining | *External machining*

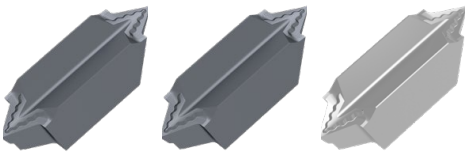
→ 94

Threading inserts TC partial profile 60°

F	M	R



CTPP520	CTPP535	-27P H216T
DRAGONSKIN	DRAGONSKIN	



Designation	Size	TP mm	INSL mm	PDPT mm	PDX mm	CRE mm	for tool holder	70 355 ...		70 355 ...		70 355 ...	
TC 16-1 EI A 60	TC 16-1 ...	0,5 - 1,5	16	1,27	1,05	0,03	E/I.. R/L TC 16-1	**010**		**110**		**610**	
TC 16-2 EI AG 60	TC 16-2 ...	0,5 - 3,0	16	2,57	2,15	0,03	E/I.. R/L/N TC 16-2	**032**		**132**		**632**	
TC 16-2 EI G 60	TC 16-2 ...	1,75 - 3,0	16	2,49	2,15	0,11	E/I.. R/L/N TC 16-2	**030**		**130**		**630**	
P								●		●			
M								●		●			
K								●		●		●	
N												●	
S								○		●			
H								○					
O												○	

→ v_c Page 103
→ Application recommendation on page 111

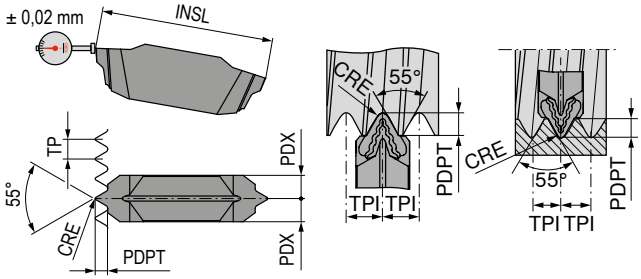
Internal machining | *External machining*

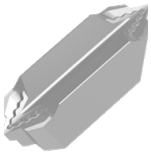
→ 94 | → 92 | → 93

11

Threading inserts TC full profile 55°

F	M	R
		



CTPP520	CTPP535	-27P H216T
DRAGONSKIN	DRAGONSKIN	
		

Designation	Size	TPI 1/"	INSL mm	PDPT mm	PDX mm	CRE mm	for tool holder	70 359 ...		70 359 ...		70 359 ...	
TC 16-1 EI 28 W	TC 16-1 ...	28	16	0,60	1,05	0,12	E/I.. R/L TC 16-1	**010**		**110**			
TC 16-1 EI 20 W	TC 16-1 ...	20	16	0,84	1,05	0,17	E/I.. R/L TC 16-1	**016**					
TC 16-1 EI 19 W	TC 16-1 ...	19	16	0,88	1,05	0,17	E/I.. R/L TC 16-1	**018**		**118**		**618**	
TC 16-1 EI 16 W	TC 16-1 ...	16	16	1,05	1,05	0,21	E/I.. R/L TC 16-1	**022**					
TC 16-2 EI 14 W	TC 16-2 ...	14	16	1,20	2,15	0,23	E/I.. R/L/N TC 16-2	**030**		**130**		**630**	
TC 16-2 EI 12 W	TC 16-2 ...	12	16	1,40	2,15	0,27	E/I.. R/L/N TC 16-2			**132**			
TC 16-2 EI 11 W	TC 16-2 ...	11	16	1,53	2,15	0,30	E/I.. R/L/N TC 16-2	**034**		**134**		**634**	
P								●		●			
M								●		●			
K								●		●		●	
N												●	
S								○		●			
H								○					
O												○	

→ v_c Page 103
→ Application recommendation on page 111

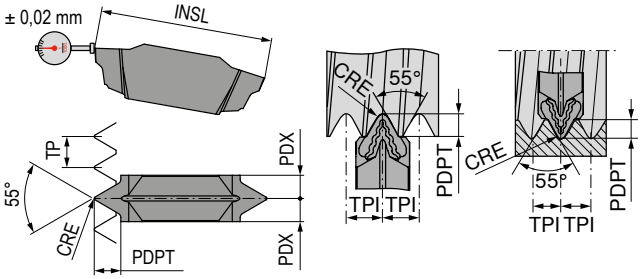
Internal machining | *External machining*



→ 94 | → 92 | → 93

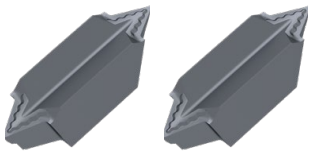
Threading inserts TC partial profile 55°

F	M	R
		



CTPP520 DRAGONSKIN

CTPP535 DRAGONSKIN



Designation	Size	TPI 1/"	INSL mm	PDPT mm	PDX mm	CRE mm	for tool holder	70 356 ...		70 356 ...	
TC 16-1 EI A 55	TC 16-1 ...	28 - 16	16	1,39	1,05	0,12	E/I.. R/L TC 16-1	**010**		**110**	
TC 16-2 EI AG 55	TC 16-2 ...	28 - 8	16	2,91	2,15	0,12	E/I.. R/L/N TC 16-2	**032**		**132**	
TC 16-2 EI G 55	TC 16-2 ...	14 - 8	16	2,78	2,15	0,23	E/I.. R/L/N TC 16-2	**030**		**130**	
P								●		●	
M								●		●	
K								●		●	
N											
S								○		●	
H								○			
O											

→ v_c Page 103
→ Application recommendation on page 111

Internal machining | *External machining*

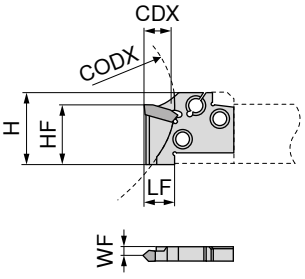


→ 94 | → 92 | → 93

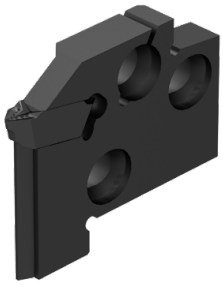
11

ModularClamp MSS – Threading module TC for external threads

Scope of supply:
Grooving module only

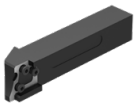


Illustrations show right-hand versions



										Left-hand	Neutral	Right-hand
										70 872 ...	**70 872 ...**	**70 872 ...**
ISO designation	TP mm	TPI 1/"	WF mm	HF mm	LF mm	H mm	CODX mm	CDX mm	for grooving inserts			
E20 R/L TC 16-1	0,5 - 1,5	28 - 16	3,45	13	20	24	60	8	TC 16-1 ...	**120**		**020**
E20 N TC 16-2	1,75 - 3,0	14 - 8	2,20	13	20	24		12	TC 16-2 ...		**220**	
E25 R/L TC 16-1	0,5 - 1,5	28 - 16	5,20	13	25	30	75	8	TC 16-1 ...	**125**		**025**
E25 R/L TC 16-2	1,75 - 3,0	14 - 8	4,10	13	25	30	75	10	TC 16-2 ...	**325**		**225**

→ 87–91

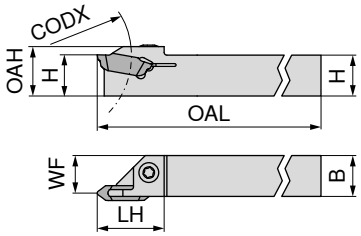


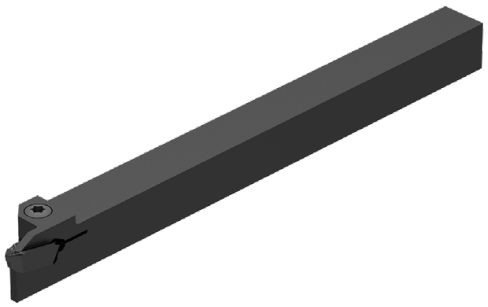
→ 95+96

→ 97

MonoClamp – Monoholder TC – external thread

Scope of supply:
Mono holder incl. key and clamping screw





Illustrations show right-hand versions

ISO designation	TP mm	TPI 1/"	H mm	B mm	OAL mm	LH mm	OAH mm	WF mm	CODX mm	for grooving inserts	Left-hand 70 883 ...		Right-hand 70 882 ...	
E12 R/L 00-1212 TC16	0,5 - 3	28 - 8	12	12	150	20	14,5	11	30	TC16-1/2..		**012**		**012**


Key D


Clamping screw

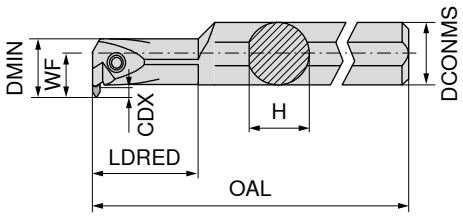
Spare parts for grooving inserts		80 950 ...		70 950 ...	
TC16-1/2..	T15	**113**	M4x11	**442**

→ 87–91 → **Chapter 16**

11

MonoClamp – Monobloc boring bar TC – internal thread

Scope of supply:
Boring bar incl. key and clamping screw



Illustrations show right-hand versions

ISO designation	WF mm	DCONMS mm	H mm	OAL mm	LDRED mm	CDX mm	DMIN mm	for grooving inserts	Left-hand 70 857 ...	Right-hand 70 856 ...
I16 R/L 90-2D TC16	14,0	20	18	180	32	4	20	TC16-1/2..	**016**	**016**
I20 R/L 90-2D TC16	17,5	25	23	200	40	5	25	TC16-..	**020**	**020**
I25 R/L 90-2D TC16	22,0	32	30	250	50	6	32	TC16-..	**025**	**025**


Key D

80 950 ...


Clamping screw

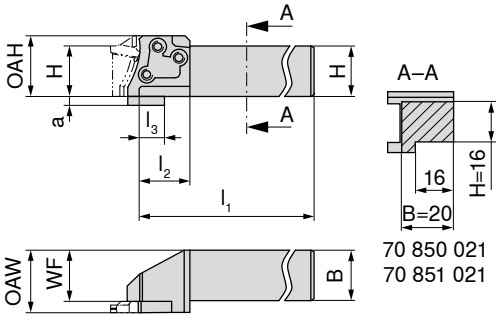
70 950 ...

Spare parts for Article no.				
70 857 016 / 70 856 016	T15	**113**	M4x14	**403**
70 857 020 / 70 856 020	T20	**114**	M5x18	**404**
70 857 025 / 70 856 025	T25	**115**	M6x20	**405**

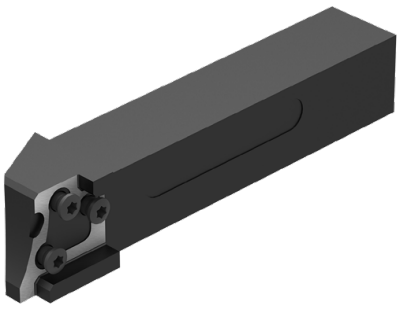

→ 87–91 → **Chapter 16**

ModularClamp MSS – Tool holder 0°

Scope of supply:
Base holder incl. clamping screw



Illustrations show right-hand versions



ISO designation	H mm	B mm	OAW mm	OAH mm	WF mm	l_1 mm	l_2 mm	l_3 mm	for modules	Left-hand 70 851 ...	Right-hand 70 850 ...
E16 R/L 00-1616G	16	16	19,25	19,5	15,75	90	16		E16 R/L ...	**016**	**016**
E20 R/L 00-1620G	16	20	24,25	24,0	20,15	90	20		E20 R/L/N ...	**021** [1]	**021** [1]
E20 R/L 00-2020J	20	20	24,25	24,0	20,15	110	20		E20 R/L/N ...	**020**	**020**
E25 R/L 00-2525L	25	25	31,00	30,0	25,50	140	25		E25 R/L ...	**025**	**025**
E32 R/L 00-3225N	32	25	31,00	38,0	25,50	160	32		E32 R/L ...	**032**	**032**
E32 L 00-3232N	32	32	38,00	38,8	32,50	180	32	16	E32 R/L ...	**13200**	
E32 R 00-3232Q	32	32	38,00	38,8	32,50	180	32	16	E32 R/L ...		**13200**

1) see view A-A

for right hand holder → use right hand (or neutral) module
for left hand holder → use left hand (or neutral) module

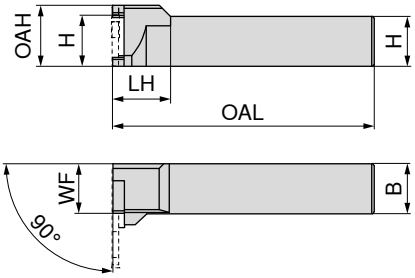
Spare parts for Article no.	Key D 80 950 ...		Clamping screw 70 950 ...	
70 851 016 / 70 850 016	T15	**113**	M3,5x12,5	**441**
70 851 021 / 70 850 021	T15	**113**	M4x14	**403**
70 851 020 / 70 850 020	T15	**113**	M4x14	**403**
70 851 025 / 70 850 025	T20	**114**	M5x18	**404**
70 851 032 / 70 850 032	T25	**115**	M6x20	**405**

Module Overview

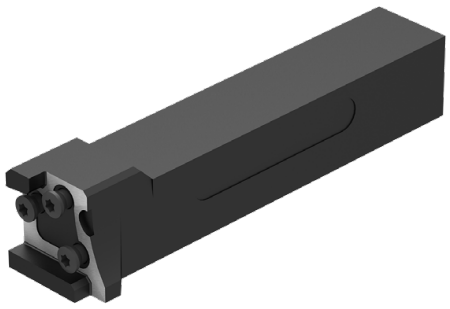
→ 6+8

ModularClamp MSS – Tool holder 90°

Scope of supply:
Base holder incl. clamping screw



Illustrations show right-hand versions



ISO designation	H mm	B mm	OAH mm	WF mm	OAL mm	LH mm	for modules	Left-hand 70 855 ...	Right-hand 70 854 ...
E20 R/L 90-2020J	20	20	24	20	110	20	E20 R/L/N ...	**020**	**020**
E25 R/L 90-2525L	25	25	30	25	140	28	E25 R/L ...	**025**	**025**
E32 R/L 90-3225N	32	25	38	32	160	34	E32 R/L ...	**032**	**032**

for right hand holder → use left hand (or neutral) module
for left hand holder → use right hand (or neutral) module


Key D


Clamping screw

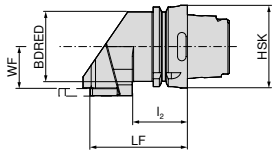
Spare parts for Article no.		Key D 80 950 ...		Clamping screw 70 950 ...
70 855 020 / 70 854 020	T15	**113**	M4x14	**403**
70 855 025 / 70 854 025	T20	**114**	M5x18	**404**
70 855 032 / 70 854 032	T25	**115**	M6x20	**405**

Module Overview

→ 6+8

ModularClamp MSS – HSK-T Base Holder 0°

Scope of supply:
Base holder incl. clamping screw



Illustrations show right-hand versions

ISO designation	Adapter	LF mm	l_2 mm	BDRED mm	WF mm	for modules	Left-hand 74 581 ...	Right-hand 74 580 ...
HSK T63 E25 R/L 00	HSK-T 63	67	42	53	38,7	E25 R/L...	**525**	**525**

for right hand holder → use right hand module
for left hand holder → use left hand module

Spare parts for Article no.	 Protection plugs 70 950 ...	 Nozzle 70 950 ...	 Key D 80 950 ...	 Clamping screw 70 950 ...	 Hollow key with nose 70 950 ...
74 580 525 / 74 581 525	**05600**	**05500**	**114**	**404**	**05700**

Module Overview

→ 6+8

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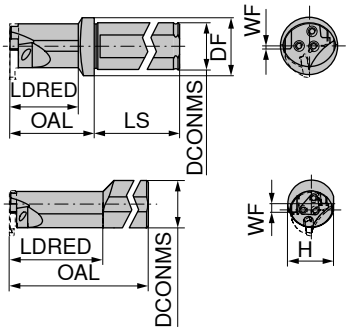
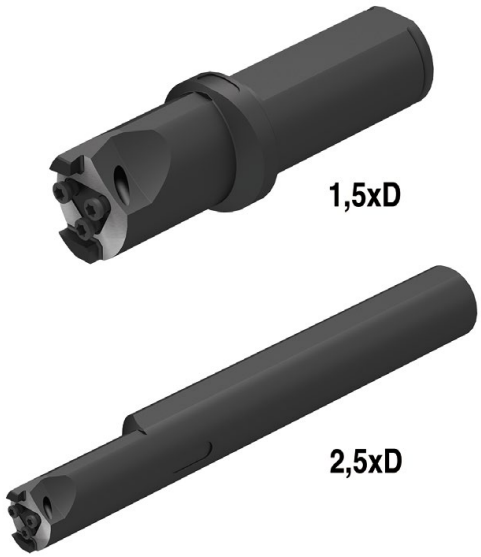
ModularClamp MSS – Boring bars GX / TC

▲ with thro' coolant

Scope of supply:
Boring bar incl. clamping screw





Illustrations show right-hand versions

	ISO designation	DCONMS mm	DF mm	WF mm	H mm	OAL mm	LDRED mm	LS mm	for modules	Left-hand 70 861 ...	Right-hand 70 860 ...
≤ 1,5xD	I16 R/L 90-1,5 D-N	20	25	1,0		32	24	50	I 16 R/L	017	017
	I20 R/L 90-1,5 D-N	20	25	1,0		37	30	50	I 20 R/L	021	021
	I25 R/L 90-1,5 D-N	25	32	1,5		46	38	56	I 25 R/L	026	026
	I32 R/L 90-1,5 D-N	32	40	2,0		59	48	60	I 32 R/L	033 1)	033 1)
	I40 R/L 90-1,5 D-N	40	50	2,5		72	60	70	I 40 R/L/N	041	041
≤ 2,5xD	I16 R/L 90-2,5 D-N	20		4,5	19,0	180	40		I 16 R/L	117	117
	I20 R/L 90-2,5 D-N	25		6,0	24,0	200	50		I 20 R/L	121	121
	I25 R/L 90-2,5 D-N	32		7,0	31,0	250	63		I 25 R/L	126	126
	I32 R/L 90-2,5 D-N	40		9,5	38,0	300	80		I 32 R/L	133 1)	133 1)
	I40 R/L 90-2,5 D-N	50		11,5	48,5	350	100		I 40 R/L/N	141	141

1) with 2 clamping surfaces


Key D


Clamping screw

Spare parts for modules		Key D 80 950 ...		Clamping screw 70 950 ...	
I 16 R/L	T08	110	M2,5x10	440
I 20 R/L	T10	112	M3x11	444
I 25 R/L	T15	113	M3,5x12,5	441
I 32 R/L	T20	114	M4,5x17	445
I 40 R/L/N	T20	114	M5x18	404

Module Overview

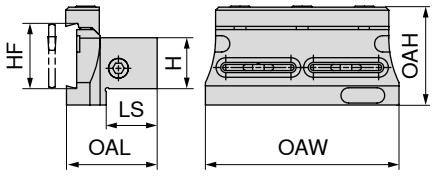
→ 6+8

for right hand holder → use right hand (or neutral) module
for left hand holder → use left hand (or neutral) module

Split clamping block for blades DC

Scope of supply:
Complete clamping block, but without blade

Direct Cooling



Designation	H mm	HF mm	OAH mm	LS mm	OAL mm	OAW mm	for blades	70 829 ...
SBN 2020-26-DC	20	26	43,0	20	40,0	82	XLC.. 26..	**020**
SBN 2020-32-DC	20	32	43,0	20	40,0	95	XLC.. 32..	**120**
SBN 2525-32-DC	25	32	48,5	25	44,5	95	XLC.. 32..	**025**
SBN 3232-32-DC	32	32	52,0	32	51,0	95	XLC.. 32..	**032**


Coolant screw plug


Clamping rail


clamping screw

Spare parts for Article no.		70 950 ...		70 950 ...		70 950 ...
70 829 020	G 1/8"	**294**	CU70	**290**	M6x12	**861**
70 829 120	G 1/8"	**294**	CU85	**291**	M6x12	**861**
70 829 025	G 1/8"	**294**	CU85	**291**	M6x12	**861**
70 829 032	G 1/8"	**294**	CU85	**291**	M6x12	**861**


Key I


O-Ring


O-Ring

Spare parts for Article no.		70 950 ...		70 950 ...		70 950 ...
70 829 020	SW5	**265**	19x2,5	**293**		
70 829 120	SW5	**265**	19x2,5	**293**	23x2,5	**292**
70 829 025	SW5	**265**			23x2,5	**292**
70 829 032	SW5	**265**			23x2,5	**292**

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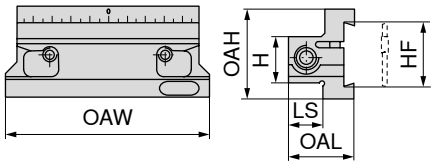
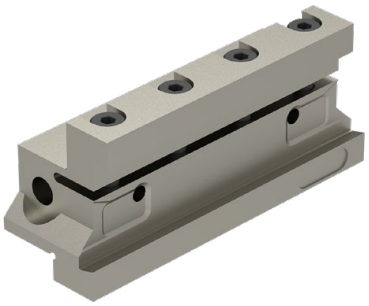
Clamping block for blades GX/LX/FX/SX

Scope of supply:
Clamping block complete, but without blade and coolant set





Designation	H mm	HF mm	OAH mm	LS mm	OAL mm	OAW mm	for blades	70 830 ...
SBN 2020-26-K	20	26	39	20	33,0	90	XLC.. 26..	**020**
SBN 2520-32-K	25	32	48	20	36,0	110	XLC.. 32..	**025**
SBN 3229-32-K	32	32	48	29	44,5	120	XLC.. 32..	**032**
SBN 3229-46-K	32	46	70	29	52,0	150	XLC.. 46..	**132**
SBN 4037-46-K	40	46	70	37	60,0	150	XLC.. 46..	**140**


Key I

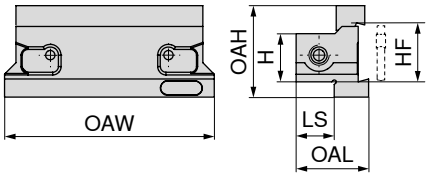

Cooling agent set


clamping screw

Spare parts for blades		70 950 ...		70 950 ...		70 950 ...
XLC.. 26..	SW5	**265**		**278**	M6x25	**269**
XLC.. 32..	SW5	**265**		**278**	M6x25	**269**
XLC.. 46..	SW6	**266**		**279**	M8x35	**282**

Split clamping block for blades GX/LX/FX/SX

Scope of supply:
Clamping block complete, but without blade and coolant set



Designation	H mm	HF mm	OAH mm	LS mm	OAL mm	OAW mm	for blades	70 831 ...
SBN 2020-26-KS	20	26	39	20	35,0	90	XLC.. 26..	**020**
SBN 2520-32-KS	25	32	48	20	38,0	110	XLC.. 32..	**025**
SBN 3229-32-KS	32	32	48	29	46,5	120	XLC.. 32..	**032**


Key I


Cooling agent set


clamping screw

Spare parts for blades		70 950 ...		70 950 ...		70 950 ...
XLC.. 26..	SW5	**265**		**278**	M6x25	**269**
XLC.. 32..	SW5	**265**		**278**	M6x25	**269**

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Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength N/mm²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0,15 % C	Annealed	420 N/mm² / 125 HB	1.0401	C15	1.1141	Ck15
		P.1.2	< 0,45 % C	Annealed	640 N/mm² / 190 HB	1.1191	C45E	1.0718	9SMnPb28
		P.1.3		Tempered	840 N/mm² / 250 HB	1.1191	C45E	1.0535	C55
		P.1.4	< 0,75 % C	Annealed	910 N/mm² / 270 HB	1.1223	C60R	1.0535	C55
		P.1.5		Tempered	1010 N/mm² / 300 HB	1.1223	C60R	1.0727	45S20
	Low-alloy steel	P.2.1		Annealed	610 N/mm² / 180 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.2		Tempered	930 N/mm² / 275 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.3		Tempered	1010 N/mm² / 300 HB	1.7225	42CrMo4	1.3505	100Cr6
		P.2.4		Tempered	1200 N/mm² / 375 HB	1.7225	42CrMo4	1.3505	100Cr6
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	680 N/mm² / 200 HB	1.4021	X20Cr13	1.4034	X46Cr13
		P.3.2		Hardened and tempered	1100 N/mm² / 300 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
		P.3.3		Hardened and tempered	1300 N/mm² / 400 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	680 N/mm² / 200 HB	1.4016	X6Cr17	1.2316	X36CrMo16
		P.4.2	Martensitic	Tempered	1010 N/mm² / 300 HB	1.4112	X90CrMoV18	1.2316	X36CrMo16
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	610 N/mm² / 180 HB	1.4301	X5CrNi18-10	1.4571	X6CrNiMoTi17-12-2
		M.2.1	Austenitic	Tempered	300 HB	1.4841	X15CrNiSi25-21	1.4539	X1NiCrMoCu25-20-5
		M.3.1	Austenitic / ferritic (Duplex)		780 N/mm² / 230 HB	1.4462	X2CrNiMoN22-5-3	1.4501	X2CrNiMoCuWN25-7-4
K	Grey cast iron	K.1.1	Pearlitic / ferritic		350 N/mm² / 180 HB	0.6010	GG-10	0.6025	GG-25
		K.1.2	Pearlitic (martensitic)		500 N/mm² / 260 HB	0.6030	GG-30	0.6045	GG-45
	Spherulitic graphite cast iron	K.2.1	Ferritic		540 N/mm² / 160 HB	0.7040	GGG-40	0.7060	GGG-60
		K.2.2	Pearlitic		845 N/mm² / 250 HB	0.7070	GGG-70	0.7080	GGG-80
	Malleable iron	K.3.1	Ferritic		440 N/mm² / 130 HB	0.8035	GTW-35-04	0.8045	GTW-45
		K.3.2	Pearlitic		780 N/mm² / 230 HB	0.8165	GTS-65-02	0.8170	GTS-70-02
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	Al99,5	3.3315	AlMg1
		N.1.2	Hardenable	Age-hardened	340 N/mm² / 100 HB	3.1355	AlCuMg2	3.2315	AlMgSi1
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		250 N/mm² / 75 HB	3.2581	G-AlSi12	3.2163	G-AlSi9Cu3
		N.2.2	≤ 12 % Si, hardenable	Age-hardened	300 N/mm² / 90 HB	3.2134	G-AlSi5Cu1Mg	3.2373	G-AlSi9Mg
		N.2.3	> 12 % Si, non-hardenable		440 N/mm² / 130 HB		G-AlSi17Cu4Mg		G-AlSi18CuNiMg
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		375 N/mm² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0410	CuZn44Pb2
		N.3.2	CuZn, CuSnZn		300 N/mm² / 90 HB	2.0331	CuZn15	2.4070	CuZn28Sn1As
		N.3.3	CuSn, lead-free copper and electrolytic copper		340 N/mm² / 100 HB	2.0060	E-Cu57	2.0590	CuZn40Fe
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn	3.5312	MgAl3Zn
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	680 N/mm² / 200 HB	1.4864	X12NiCrSi 36-16	1.4865	G-X40NiCrSi38-18
		S.1.2		Age-hardened	950 N/mm² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4876	X10NiCrAlTi32-20
		S.2.1	Ni or Co basis	Annealed	840 N/mm² / 250 HB	2.4631	NiCr20TiAl (Nimonic80A)	3.4856	NiCr22Mo9Nb
		S.2.2		Age-hardened	1180 N/mm² / 350 HB	2.4668	NiCr19Nb5Mo3 (Inconel 718)	2.4955	NiFe25Cr20NbTi
		S.2.3		Cast	1080 N/mm² / 320 HB	2.4765	CoCr20W15Ni	1.3401	G-X120Mn12
	Titanium alloys	S.3.1	Pure titanium		400 N/mm²	3.7025	Ti99,8	3.7034	Ti99,7
		S.3.2	Alpha + beta alloys	Age-hardened	1050 N/mm² / 320 HB	3.7165	TiAl6V4	Ti-6246	Ti-6Al-2Sn-4Zr-6Mo
		S.3.3	Beta alloys		1400 N/mm² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr	R56410	Ti-10V-2Fe-3Al
H	Hardened steel	H.1.1		Hardened and tempered	46–55 HRC				
		H.1.2		Hardened and tempered	56–60 HRC				
		H.1.3		Hardened and tempered	61–65 HRC				
		H.1.4		Hardened and tempered	66–70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 150 N/mm²				
		O.1.2	Plastics, thermoplastic		≤ 100 N/mm²				
		O.2.1	Aramid fibre-reinforced		≤ 1000 N/mm²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 1000 N/mm²				
		O.3.1	Graphite						

*** Tensile strength**

Cutting data values for grooving inserts GX/LX/FX/SX/AX/TC

Index	DRAGONSKIN							
	CTCP325	CTCP335	CTPP345	CTPP520	CTPP535	CTP1340	H216T (SX/FX/GX)	H216T (TC)
	v_c in m/min.							
P.1.1	220	185	135	235	180	180		
P.1.2	195	160	120	205	150	150		
P.1.3	170	140	105	175	125	125		
P.1.4	165	130	100	165	120	115		
P.1.5	150	120	95	150	105	100		
P.2.1	200	165	120	210	160	155		
P.2.2	160	130	100	160	115	110		
P.2.3	150	120	95	150	105	100		
P.2.4	120	90	75	115	75	70		
P.3.1	150	130	100	185	120	110		
P.3.2	95	90	80	130	90	75		
P.3.3	45	50	60	75	60	40		
P.4.1	150	130	100	185	120	110		
P.4.2	125	110	90	160	105	95		
M.1.1	150	130	100	185	120	110		
M.2.1	95	90	80	130	90	80		
M.3.1	135	115	95	170	110	100		
K.1.1	170	135		140	165	150	140	140
K.1.2	150	115		115	150	125	115	115
K.2.1	160	130		180	145	140	150	150
K.2.2	145	105		115	155	120	110	110
K.3.1	210	150		130	190	170	170	170
K.3.2	140	115		110	145	120	140	140
N.1.1						300	400	450
N.1.2						200	400	450
N.2.1						300	450	300
N.2.2						200	450	300
N.2.3						150	500	225
N.3.1						300	425	190
N.3.2						300	400	290
N.3.3						200	275	290
N.4.1						200	225	290
S.1.1	35			40	30	35	40	
S.1.2	30		30	30	25	30	30	
S.2.1	20		25	20	15	20	30	
S.2.2	15			15	15	15	25	
S.2.3	15			20	15	15	20	
S.3.1				125	85	85	90	
S.3.2				50	35	40	55	
S.3.3				35	25	30	40	
H.1.1				15				
H.1.2				15				
H.1.3								
H.1.4								
H.2.1				15				
H.3.1				40				
O.1.1						130	130	290
O.1.2								
O.2.1						105	105	290
O.2.2								
O.3.1								

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The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data values for TX grooving inserts

Index	CWX500		● 1st choice ○ suitable		
	v_c (m/min)	f (mm/rev)	Emulsion	Compressed air	MMS
P.1.1	160	0,03–0,10	●		
P.1.2	140	0,03–0,10	●		
P.1.3	110	0,03–0,10	●		
P.1.4	110	0,03–0,10	●		
P.1.5	90	0,03–0,10	●		
P.2.1	110	0,03–0,10	●		
P.2.2	90	0,03–0,10	●		
P.2.3	90	0,03–0,07	●		
P.2.4	80	0,03–0,06	●		
P.3.1	80	0,03–0,07	●		
P.3.2	60	0,03–0,07	●		
P.3.3	50	0,03–0,07	●		
P.4.1	100	0,03–0,06	●		
P.4.2	90	0,03–0,06	●		
M.1.1	110	0,02–0,06	●		
M.2.1	90	0,02–0,06	●		
M.3.1	70	0,02–0,06	●		
K.1.1	140	0,03–0,10	●		
K.1.2	100	0,03–0,10	●		
K.2.1	90	0,03–0,10	●		
K.2.2	80	0,03–0,10	●		
K.3.1	140	0,03–0,10	●		
K.3.2	120	0,03–0,10	●		
N.1.1	330	0,05–0,12	●		
N.1.2	310	0,05–0,12	●		
N.2.1	270	0,05–0,12	●		
N.2.2	230	0,05–0,12	●		
N.2.3	140	0,05–0,12	●		
N.3.1	240	0,05–0,12	●		
N.3.2	200	0,05–0,12	●		
N.3.3	180	0,05–0,12	●		
N.4.1	180	0,05–0,12	●		
S.1.1	60	0,02–0,07	●		
S.1.2	50	0,02–0,08	●		
S.2.1	60	0,02–0,09	●		
S.2.2	50	0,02–0,10	●		
S.2.3	40	0,02–0,11	●		
S.3.1	60	0,02–0,12	●		
S.3.2	40	0,02–0,13	●		
S.3.3	30	0,02–0,14	●		
H.1.1	50	0,01–0,07	●		
H.1.2					
H.1.3					
H.1.4					
H.2.1					
H.3.1					
O.1.1	180	0,05–0,12	●		
O.1.2	180	0,05–0,12	●		
O.2.1	150	0,05–0,12	●		
O.2.2	110	0,05–0,12	●		
O.3.1	170	0,03–0,10	●		

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

GX – Depths of cut and feed rates

GX Standard / GX-E

Turning

Parting / Grooving

	Depth of Cut a_p in mm							
GX Standard / GX-E	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**GX Standard / GX-E**
Cutting width in mm	Feed rate f in mm/rev.							Feed rate f in mm/rev.
2	0,10–0,15	0,05–0,15	0,05–0,12	0,05–0,10				0,05–0,20
3	0,10–0,17	0,05–0,17	0,05–0,17	0,05–0,15	0,05–0,12			0,10–0,25
4	0,10–0,20	0,07–0,20	0,07–0,20	0,07–0,20	0,07–0,17	0,07–0,15		0,10–0,25
5	0,10–0,25	0,10–0,25	0,07–0,25	0,07–0,25	0,07–0,22	0,07–0,20		0,10–0,30
6	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,25	0,15–0,22	0,15–0,35

When axial grooving reduce feed by 40%.

GX-F2

Turning

Parting / Grooving

	Depth of Cut a_p in mm								
GX-F2	**0,50**	**0,75**	**1,00**	**1,25**	**1,50**	**1,75**	**2,00**	**2,25**	**2,50**	**GX-F2**
Cutting width in mm	Feed rate f in mm/rev.									Feed rate f in mm/rev.
2	0,03–0,15	0,03–0,15	0,03–0,15	0,03–0,10						0,05–0,15
3	0,04–0,17	0,04–0,17	0,04–0,17	0,04–0,15	0,04–0,13	0,04–0,12				0,075–0,20
4	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,17	0,05–0,15			0,10–0,25
5	0,07–0,20	0,07–0,20	0,07–0,20	0,07–0,20	0,07–0,20	0,07–0,20	0,07–0,17	0,07–0,15		0,10–0,30
6	0,10–0,23	0,10–0,23	0,10–0,23	0,10–0,23	0,10–0,23	0,10–0,23	0,10–0,23	0,10–0,19	0,10–0,15	0,15–0,325

When axial grooving reduce feed by 40%.

GX-M40

Turning

Parting / Grooving

	Depth of Cut a_p in mm								
GX-M40	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**	**GX-M40**
Cutting width in mm	Feed rate f in mm/rev.								Feed rate f in mm/rev.
2	0,10–0,20	0,05–0,20	0,05–0,17	0,05–0,15					0,05–0,15
3	0,10–0,22	0,10–0,22	0,10–0,21	0,10–0,20	0,10–0,17				0,075–0,20
4	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,22	0,10–0,17			0,10–0,25
5	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,27	0,10–0,23	0,10–0,20		0,10–0,30
6	0,10–0,35	0,10–0,35	0,10–0,35	0,10–0,35	0,10–0,32	0,10–0,27	0,10–0,23	0,10–0,20	0,15–0,325

When axial grooving reduce feed by 40%.

GX-27P

Turning

Parting / Grooving

	Depth of Cut a_p in mm								
GX-27P	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**	**GX-27P**
Cutting width in mm	Feed rate f in mm/rev.								Feed rate f in mm/rev.
2	0,05–0,23	0,05–0,23	0,05–0,23	0,05–0,20					0,05–0,20
3	0,05–0,25	0,05–0,25	0,05–0,25	0,05–0,25	0,05–0,20				0,05–0,25
4	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,25			0,05–0,30
5	0,10–0,35	0,10–0,35	0,10–0,35	0,10–0,35	0,10–0,35	0,10–0,32	0,10–0,30		0,10–0,35
6	0,10–0,40	0,10–0,40	0,10–0,40	0,10–0,40	0,10–0,40	0,10–0,36	0,10–0,33	0,10–0,30	0,10–0,40

When axial grooving reduce feed by 40%.

GX – Depths of cut and feed rates

GX-M3

Turning

Parting / Grooving

	Depth of Cut a_p in mm							
GX-M3	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Radius RE in mm	Feed rate f in mm/rev.							
1,5	0,15–0,35	0,15–0,35	0,15–0,30					
2	0,15–0,40	0,15–0,40	0,15–0,40	0,15–0,30				
2,5	0,15–0,50	0,15–0,50	0,15–0,50	0,15–0,40	0,15–0,35			
3	0,20–0,70	0,20–0,70	0,20–0,70	0,20–0,60	0,20–0,50	0,20–0,40		

GX-M3
Feed rate f in mm/rev.
0,05–0,20
0,10–0,25
0,10–0,25
0,10–0,35

GX-M33

Turning

Parting / Grooving

	Depth of Cut a_p in mm							
GX–M33	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Radius RE in mm	Feed rate f in mm/rev.							
1,5	0,05–0,25	0,05–0,20	0,05–0,15					
2	0,05–0,35	0,05–0,30	0,05–0,25	0,05–0,20				
2,5	0,10–0,45	0,10–0,40	0,10–0,35	0,10–0,30	0,10–0,25			
3	0,10–0,50	0,10–0,45	0,10–0,40	0,10–0,35	0,10–0,30	0,10–0,25		

GX-M33
Feed rate f in mm/rev.
0,05–0,15
0,05–0,20
0,05–0,25
0,10–0,25

GX-27P /-27PF Radius

Turning

Parting / Grooving

	Depth of Cut a_p in mm							
GX-27P /-27PF Radius	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Radius RE in mm	Feed rate f in mm/rev.							
1,5	0,10–0,45	0,05–0,45	0,05–0,40					
2	0,15–0,50	0,10–0,50	0,10–0,50	0,10–0,40				
2,5	0,15–0,60	0,10–0,60	0,10–0,60	0,10–0,50	0,10–0,45			
3	0,25–0,70	0,20–0,70	0,15–0,70	0,15–0,70	0,15–0,65	0,15–0,60	0,15–0,55	
4	0,25–0,80	0,20–0,80	0,15–0,80	0,15–0,80	0,15–0,80	0,15–0,80	0,15–0,75	0,15–0,70

GX-27P /-27PF Radius
Feed rate f in mm/rev.
0,05–0,15
0,075–0,20
0,10–0,25
0,10–0,30
0,15–0,35

GX-M1

Parting / Grooving

GX-M1	
Cutting width in mm	Feed rate f in mm/rev.
2	0,05–0,15
3	0,10–0,20
4	0,10–0,25

GX Radius grooving inserts

Parting / Grooving

GX Radius grooving insert	
Radius RE in mm	Feed rate f in mm/rev.
0,80	0,05–0,10
1,00	0,05–0,15
1,20	0,05–0,15

GX circlip grooving

Grooving

GX circlip grooves	
Cutting width in mm	Feed rate f in mm/rev.
0,60–1,70	0,02–0,09
1,95–2,25	0,05–0,10
2,75–3,25	0,05–0,12

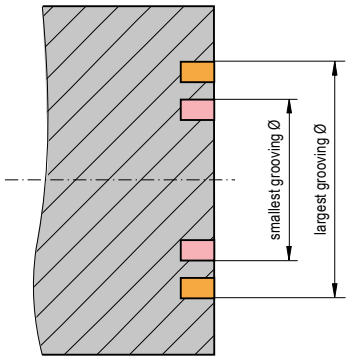
Feed guide and machining instructions for axial grooving and face turning with GX 24 axial

Approximate feed rates

GX

Designation	f in mm/rev.	f in mm/rev.	$a_p$max mm
GX 24-2 E 3.00 ..	0,05–0,15	0,05–0,20	2,5
GX 24-3 E 4.00 ..	0,05–0,15	0,05–0,25	3,0
GX 24-3 E 5.00 ..	0,05–0,15	0,10–0,25	3,0
GX 24-4 E 6.00 ..	0,05–0,20	0,10–0,30	3,5

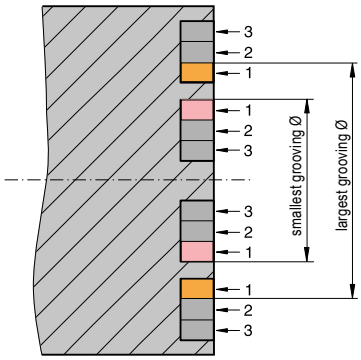
Axial grooving



It is only possible to plunge within the fixed diameter range of the axial grooving module or monoholder (e.g. 50 - 70 mm).

Important: The indicated diameter range is always valid for the external diameter of the groove!

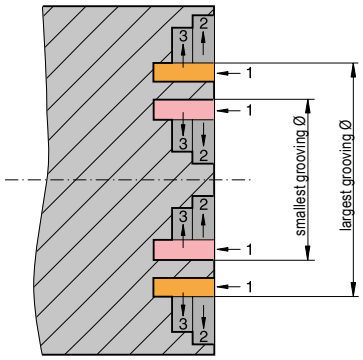
Axial grooving – Groove widening



In case of face turning it is possible to widen the groove above and below the diameter range indicated on the Axial grooving module or monoholder.

Important: Only the first groove must lie within the diameter range of the axial grooving module or axial monoholder. The depth of the widening groove must not be larger than the depth of the original groove.

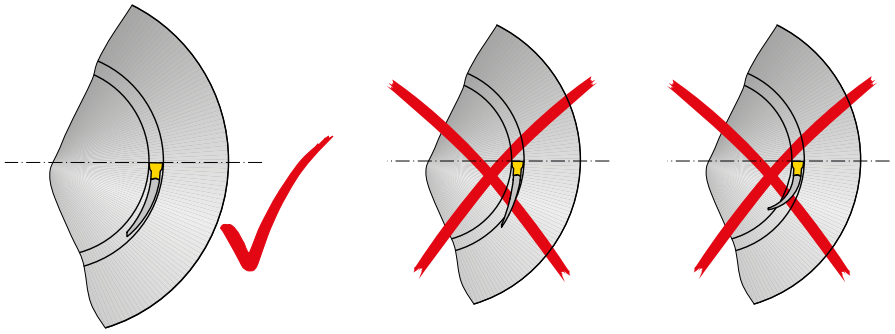
Axial grooving and face turning



Groove widening by face turning in the diameter range above and below the values specified for the Axial grooving module and Axial monoholder are possible.

Important: Only the first groove must lie within the diameter range of the module.

Attention: The diameter of face grooves must lie within the diameter range indicated on the axial grooving module and axial monoholder. Not following this range will result in the tool being damaged or destroyed.



Correct Axial mono holder

Incorrect Axial mono holder

11

SX – Depths of cut and feed rates

SX-F2

Turning

Parting / Grooving

	Depth of Cut a_p in mm									
SX -F2	**0,50**	**0,75**	**1,00**	**1,25**	**1,50**	**1,75**	**2,00**	**2,25**	**2,50**	**SX -F2**
Cutting width in mm	Feed rate f in mm/rev.									Feed rate f in mm/rev.
2	0,03–0,15	0,03–0,15	0,03–0,15	0,03–0,10						0,05–0,15
3	0,04–0,17	0,04–0,17	0,04–0,17	0,04–0,15	0,04–0,13	0,04–0,12				0,075–0,20
4	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,17	0,05–0,15			0,10–0,25

SX-M2

Turning

Parting / Grooving

	Depth of Cut a_p in mm							
SX-M2	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**	**SX-M2**
Cutting width in mm	Feed rate f in mm/rev.								Feed rate f in mm/rev.
2	0,05–0,17	0,05–0,13	0,05–0,10						0,05–0,15
3	0,07–0,20	0,07–0,20	0,07–0,18	0,07–0,15					0,075–0,20
4	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,22	0,10–0,18				0,10–0,25
5	0,12–0,27	0,12–0,27	0,12–0,27	0,12–0,25	0,12–0,22				0,10–0,30
6	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,25	0,15–0,20			0,15–0,35

SX-27P

Turning

Parting / Grooving

	Depth of Cut a_p in mm							
SX-27P	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**	**SX-27P**
Cutting width in mm	Feed rate f in mm/rev.								Feed rate f in mm/rev.
2	0,05–0,23	0,05–0,23	0,05–0,23	0,05–0,20					0,05–0,20
3	0,05–0,25	0,05–0,25	0,05–0,25	0,05–0,25	0,05–0,20				0,05–0,25
4	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,25			0,05–0,30

SX/LX – Depths of cut and feed rates

SX-M1

Parting / Grooving

SX–M1	
Cutting width in mm	Feed rate f in mm/rev.
2	0,05–0,15
3	0,10–0,20
4	0,10–0,25
5	0,15–0,30
6	0,15–0,35

SX-M7

Parting / Grooving

SX–M7	
Cutting width in mm	Feed rate f in mm/rev.
2	0,10–0,20
3	0,10–0,20
4	0,10–0,20
5	0,15–0,25
6	0,15–0,25

SX-M8

Parting / Grooving

SX–M8	
Cutting width in mm	Feed rate f in mm/rev.
2	0,05–0,20
3	0,05–0,20
4	0,05–0,15
5	0,05–0,15
6	0,05–0,15

SX-M3

Turning

Parting / Grooving

	Depth of Cut a_p in mm								
SX–M3	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**	**SX–M3**
Radius in mm	Feed rate f in mm/rev.								Feed rate f in mm/rev.
1,5	0,15–0,35	0,15–0,35	0,15–0,30						0,05–0,20
2	0,15–0,40	0,15–0,40	0,15–0,40	0,15–0,30					0,10–0,25
2,5	0,15–0,50	0,15–0,50	0,15–0,50	0,15–0,40	0,15–0,35				0,10–0,25
3	0,20–0,70	0,20–0,70	0,20–0,70	0,20–0,60	0,20–0,50	0,20–0,40			0,10–0,35

LX-M2

Turning

Parting / Grooving

	Depth of Cut a_p in mm								
LX–M2	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**	**LX–M2**
Cutting width in mm	Feed rate f in mm/rev.								Feed rate f in mm/rev.
8	0,17–0,45	0,17–0,45	0,17–0,45	0,17–0,45	0,17–0,40	0,17–0,37	0,17–0,35		0,20–0,50
10	0,20–0,50	0,20–0,50	0,20–0,50	0,20–0,50	0,20–0,46	0,20–0,42	0,20–0,38	0,20–0,35	0,20–0,50

LX-M3

Turning

Parting / Grooving

	Depth of Cut a_p in mm								
LX–M3	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**	**LX–M3**
Radius in mm	Feed rate f in mm/rev.								Feed rate f in mm/rev.
4	0,25–0,80	0,25–0,80	0,25–0,80	0,25–0,80	0,25–0,80	0,25–0,70	0,25–0,60	0,25–0,50	0,15–0,35

AX/FX – Depths of cut and feed rates

AX-F50

Face turning

	Depth of Cut a_p in mm			
AX-F50	**0,5**	**1,0**	**1,5**	**2,3**
Size	Feed rate f in mm/rev.			
AX 05	0,03–0,10	0,03–0,10		
AX 10	0,03–0,13	0,03–0,13	0,03–0,135	
AX 15	0,03–0,15	0,03–0,15	0,03–0,15	0,03–0,15

Axial grooving

1. Plunging	
Feed rate f in mm/rev.	Feed rate f in mm/rev.
0,025–0,080	0,025–0,20
0,025–0,065	0,05–0,25
0,025–0,050	0,05–0,30

FX-F1

Parting / Grooving

FX-F1	
Cutting width in mm	Feed rate f in mm/rev.
2,2	0,025–0,10
3,1	0,05–0,15
4,1	0,05–0,20

FX-M1

Parting / Grooving

FX-M1	
Cutting width in mm	Feed rate f in mm/rev.
2,20	0,05–0,15
3,10	0,08–0,18
4,10	0,10–0,20
5,10	0,15–0,28
6,50	0,15–0,33
8,20	0,20–0,40
9,70	0,20–0,40

FX-27P

Parting / Grooving

FX-27P	
Cutting width in mm	Feed rate f in mm/rev.
2,20	0,01–0,10
3,10	0,015–0,125
4,10	0,05–0,15

FX-R2

Grooving

FX-R2	
Cutting width in mm	Feed rate f in mm/rev.
3,10	0,10–0,275
4,10	0,15–0,35

TC – Reference values for profile depth and number of passes

All listed values are guide values for steel machining

Metric ISO 60° external thread

Pitch in mm	0,5	0,75	1,0	1,25	1,5	1,75	2,0	2,5	3,0	3,5	4,0	4,5	5,0
Number/cuts	4–6	4–7	4–8	5–9	6–10	7–11	8–12	9–14	10–18	10–18	12–20	12–20	12–20
Thread profile depth in mm	0,32	0,48	0,64	0,8	0,95	1,10	1,26	1,58	1,89	2,21	2,53	2,84	3,16

Metric ISO 60° internal thread

Pitch in mm	0,5	0,75	1,0	1,25	1,5	1,75	2,0	2,5	3,0	3,5	4,0	4,5	5,0
Number/cuts	4–6	4–7	4–8	5–9	6–10	7–11	8–12	9–14	10–18	10–18	12–20	12–20	12–20
Thread profile depth in mm	0,30	0,45	0,59	0,74	0,89	1,02	1,17	1,46	1,76	2,02	2,35	2,64	2,93

Whitworth 55° external and internal thread

TPI	28	26	24	20	19	18	16	14	12	11	10	9	8	7	6	5
Number/cuts	5–8	5–8	5–9	5–9	6–10	6–10	7–11	8–12	9–14	9–14	10–17	10–18	10–18	12–20	12–20	12–20
Thread profile depth in mm	0,60	0,65	0,70	0,84	0,88	0,93	1,05	1,20	1,40	1,53	1,68	1,87	2,11	2,41	2,81	3,37

Partial profile 60° external and internal thread

External	TC 16–2EI–AG60																
	TC 16–1EI–A60									TC 16–2EI–G60				TC 16–3EI–N60			
Pitch in mm	0,5	0,75	1,0	1,25	1,5	1,75	2,0	2,5	3,0	1,75	2,0	2,5	3,0	3,5	4,0	4,5	5,0
Number/cuts	4–6	4–7	5–9	6–10	7–11	8–12	9–14	10–15	12–19	8–12	9–14	10–15	12–20	12–20	13–21	14–22	14–22
Thread profile depth in mm	0,33	0,52	0,71	0,90	1,09	1,28	1,47	1,84	2,22	1,23	1,42	1,79	2,17	2,45	2,83	3,21	3,59

Internal	TC 16–2EI–AG60																
	TC 16–1EI–A60									TC 16–2EI–G60				TC 16–3EI–N60			
Pitch in mm	0,5	0,75	1,0	1,25	1,5	1,75	2,0	2,5	3,0	1,75	2,0	2,5	3,0	3,5	4,0	4,5	5,0
Number/cuts	4–6	4–7	5–9	6–10	7–11	8–12	9–14	10–15	12–19	8–12	9–14	10–15	12–20	12–20	13–21	14–22	14–22
Thread profile depth in mm	0,27	0,44	0,60	0,76	0,92	1,09	1,25	1,57	1,90	1,04	1,20	1,52	1,85	2,07	2,40	2,72	3,05

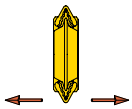
Partial profile 55° external and internal thread

External	TC 16–2EI–AG55												
	TC 16–1EI–A55												
TPI	28	26	24	20	19	18	16	14	12	11	10	9	8
Number/cuts	5–8	5–8	6–9	6–9	7–12	7–12	8–14	9–14	10–16	10–16	11–18	12–20	12–20
Thread profile depth in mm	0,66	0,72	0,79	0,95	1,01	1,07	1,21	1,39	1,63	1,79	1,97	2,20	2,48

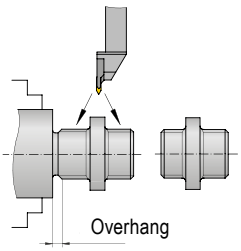
Internal	TC 16–2EI–G55						TC 16–3EI–N55		
TPI	14	12	11	10	9	8	7	6	5
Number/cuts	8–12	9–14	10–15	11–18	12–20	12–20	12–20	12–20	14–22
Thread profile depth in mm	1,22	1,46	1,56	1,80	2,03	2,31	2,40	2,89	3,56

Comparison threading system with TC and conventional

TC

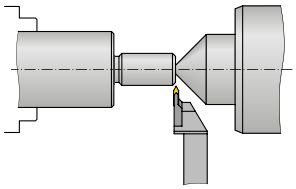


- Neutral configuration of insert makes operation in both directions possible
- Only one threading insert per pitch for partial profile and Whitworth thread; only two threading inserts (internal – external) per pitch for ISO threads
- Reduced stock holding
- good chip formation due to chip breaker with rake angle + 10 °

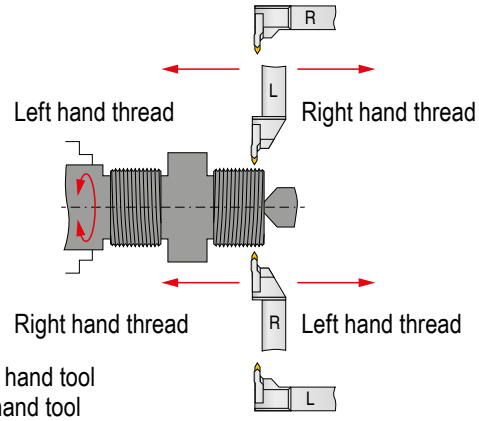


Greater efficiency through:

- shorter operating time
- Less tool changing
- High stability wih small overhang
- Material saving
- Thread turning between shoulders
- Fewer tools and indexable inserts



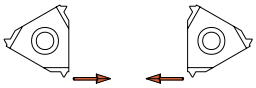
- Very good access to workpiece, therefore use of tailstock also possible with small thread diameters



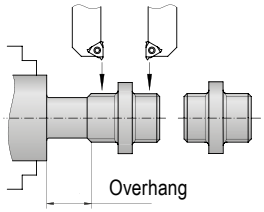
R = Right hand tool
L = Left hand tool

- ease of use, as the tools have no pitch angle correction they can be used in both directions

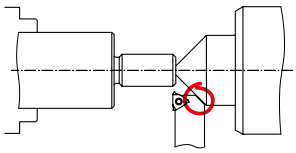
Conventional



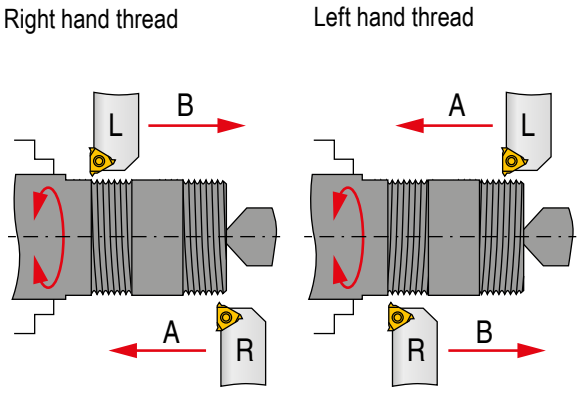
- Right-hand and left-hand version of indexable insert, therefore operation only in one direction
- For every pitch 4 threading inserts are necessary (right – left, internal – external)



- For this machining method 2 tools are required
- additional material and stability loss with large overhang



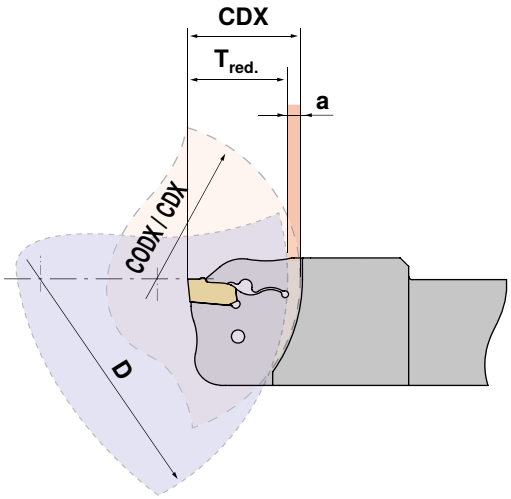
- poor accessibility
- Collision danger



- With conventional thread turning the correction of the helix angle is necessary, therefore a high degree of application know-how is required
- Can only be operated in one direction

ModularClamp

GX | SX | LX | FX



The ModularClamp grooving modules are matched according to size on a particular workpiece diameter CODX. If the diameter of the workpiece is greater than CODX of the grooving Modules, this reduces the achievable penetration depth by the dimension „a“. The extent of reduction can be determined with the following table.

CDX maximum plunge depth in mm
CODX maximum workpiece Ø with full penetration depth in mm
a Reduction amount in mm

$T_{red.} = CDX - a$

Grooving depth reduction

Size	Reduction a (mm) of the maximum grooving depth (CDX)																
		0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0
E12	35	40	45	60	75	115	>250										
E16	50	55	60	70	80	100	130	200	>420								
E20	60	65	70	75	85	95	110	130	165	220	>330						
E25	75	80	85	90	100	110	125	140	160	190	240	320	>500				
E32	95	100	105	110	120	125	135	145	160	180	200	225	270	320	400	530	>800
	Workpiece diameter D (mm)																

Maximum workpiece diameter (CODX) with full penetration depth (CDX) in mm

Calculation example:

E25R**21**-GX24-3

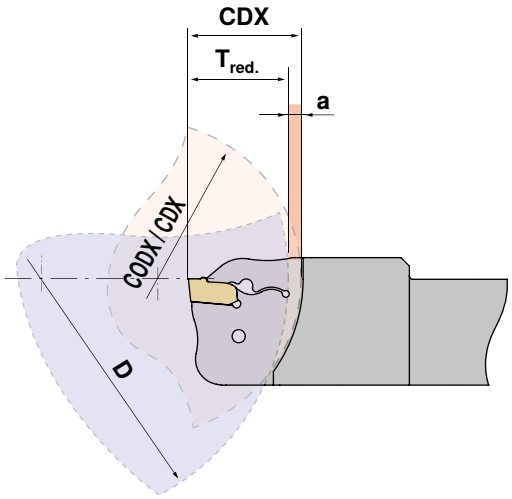
Size 25 — CDX = 21 mm, Ø 75 mm

D = Ø 100 mm — CDX - a = $T_{red.}$ 21 - 2 = 19 mm

11

MonoClamp

SX



Depending on the groove width and shank size, the MonoClamp tools are designed for use with a specific workpiece diameter CODX. If the workpiece diameter is larger than the CODX of the grooving module, the achievable groove depth is reduced by the dimension „a“. The extent of the reduction is determined using the following table.

CDX maximum plunge depth in mm
CODX maximum workpiece Ø with full penetration depth in mm
a Reduction amount in mm

$T_{red.} = CDX - a$

Grooving depth reduction

	Reduction a (mm) of the maximum grooving depth (CDX)																
Shank	0	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5	5,5	6	6,5	7	7,5	8
E12R/L0022...	44	70	80	95	115	150	225	>450									
E16R/L0026...	52	90	105	125	155	210	305	>600									
E20R/L0026...	52	110	125	140	160	195	240	320	475	>950							
E20R/L0033...	66	110	125	140	160	195	240	320	475	>950							
E25R/L0026...	52	140	160	190	235	310	465	>930									
E25R/L0033...	66	155	175	200	230	275	340	450	675	>1350							
E25R/L0040...	80	155	175	200	230	275	340	450	675	>1350							
	Workpiece diameter D (mm)																

Maximum workpiece diameter (CODX) with full penetration depth (CDX) in mm

Calculation example:

E25R0033...

CDX = 33 mm, Ø 66 mm

D = Ø 200 mm

CDX - a = $T_{red.}$
33 - 1,5 = 31,5 mm

Clamping Method – SX-System

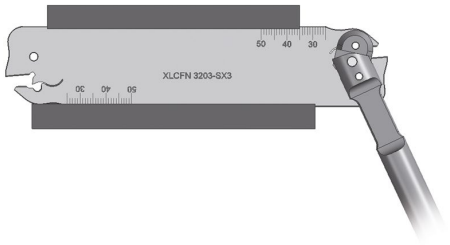
System function – inserting and removing the cutting inserts

Precision system for internal and external grooving.

The key has been designed in such a way that it will not stress the material beyond its ‘elastic limit’.

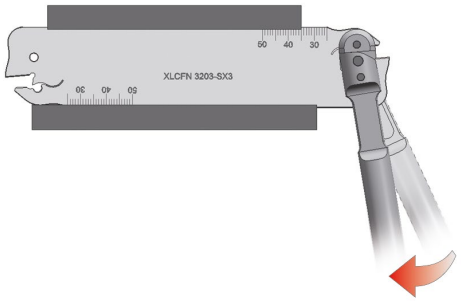
With this alternate system the material always remains in its flexible range and provides a substantial increase in tool life.

1



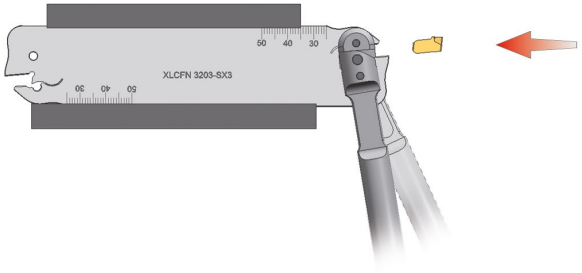
Locate wrench into blade with pins located in two holes

2



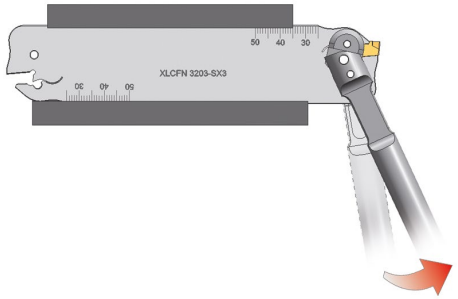
Movement of the fitting key in the direction of the insert seat opens the tool.

3



Load the grooving insert into position and press against the seat.

4

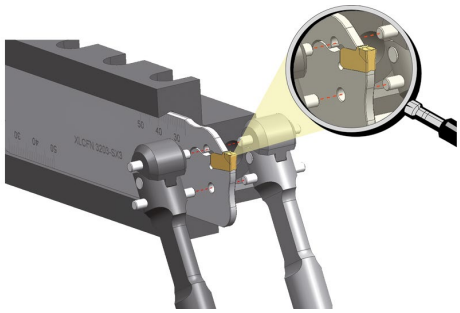


Moving the key forward causes the insert seat to close and clamp the insert.

11

When changing the inserts, always maintain tension on the key!

The clamp is designed so that the wrench can be inserted from both sides of the blade according to the accessibility.

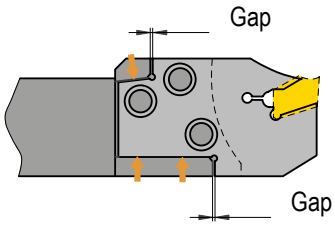


Maximum blade projection when turning

Blade	max. overhang
SX 2 – SX 3	25 mm
SX 4 – SX 5	30 mm
SX 6	35 mm

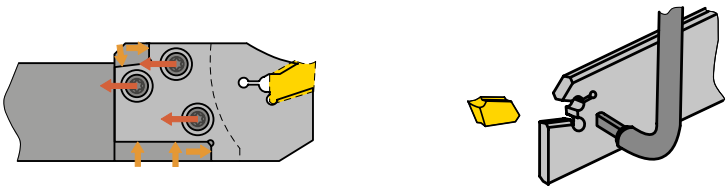
Clamping function – ModularClamp-Module

Module unclamped



▲ Gap between module and support face for axial clamping

Module clamped

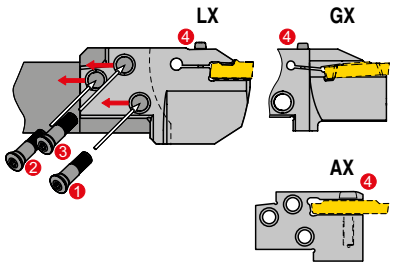


▲ Axial clamping with support face

▲ Connection free from play, therefore maximum stability

GX LX AX

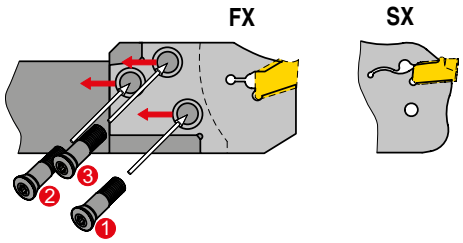
Active insert clamping



Clamping screws 1, 2 and 3 are used to clamp the modules.
The insert is clamped in the module via the additional screw 4.

FX SX

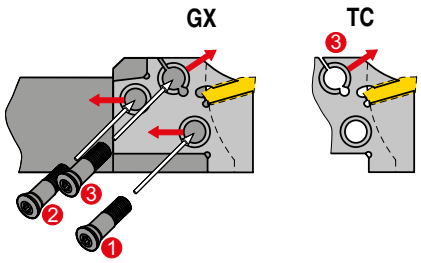
Self clamping of the insert



Clamping screws 1, 2 and 3 are used for clamping the module.
The insert is self-clamping.

GX TC

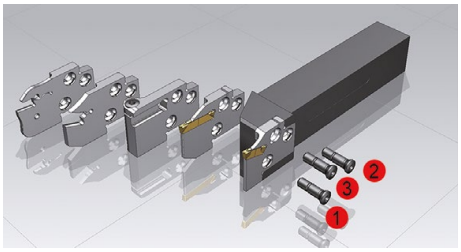
Active insert clamping



Clamping screws 1 and 2 are used for clamping the module.
Important: first tighten clamp screws 1 and 2.
Then clamp the insert with screw 3.

Torque Moment ModularClamp Module Screws

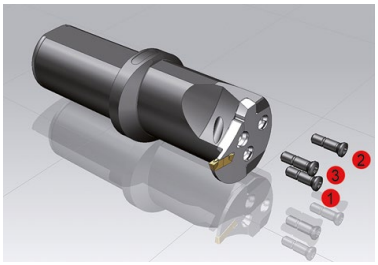
ModularClamp – Tool holder



Tighten screws to the correct Torque moment in this order.

ModularClamp – Tool holder	Screw	Torx	Torque moment	
			Nm	in.lbs
E12..	M2,5x10	T08	1,2	10,6
E16..	M3,5x12,5	T15	3,2	28,3
E20..	M4x14	T15	4,0	35,4
E25..	M5x18	T20	5,0	44,3
E32..	M6x20	T25	6,0	53,1

ModularClamp – Boring bar



Tighten screws to the correct Torque moment in this order.

ModularClamp – Boring bar	Screw	Torx	Torque moment	
			Nm	in.lbs
I16..	M2,5x10	T08	1,2	10,6
I20..	M3x11	T10	2,0	17,7
I25..	M3,5x12,5	T15	3,2	28,3
I32..	M4,5x17	T20	4,0	35,4
I40..	M5x18	T20	5,0	44,3

11

Tightening torque for the insert clamping

Recommended tightening torque

Grooving systems	Screw	Torx	Torque moment	
			Nm	in.lbs
GX / AX / LX	M3,5	T15	3,2	28,3
	M4,0	T15/T20	4,0	35,4
	M5,0	T20	5,0	44,3

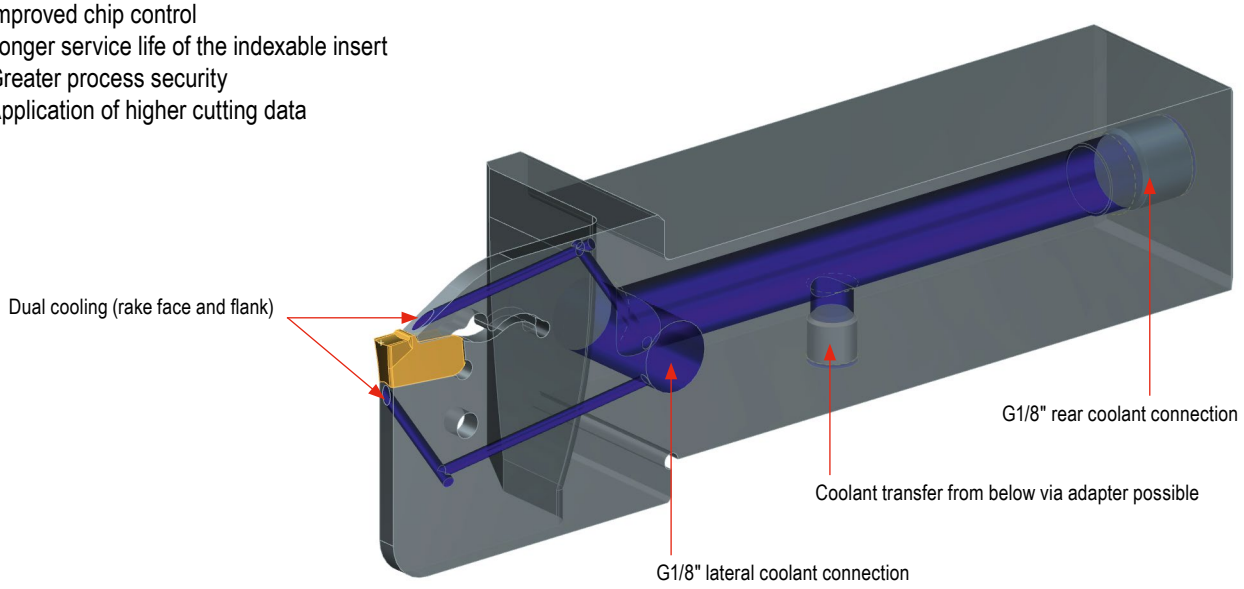
Advantages due to DirectCooling

Internal coolant supply with groove machining has a decisively positive effect on your turning process.
In our CERATIZIT grooving range, the following grooving systems have an internal coolant supply:

- **SX** Grooving holder (single tool)
- **GX** Grooving holder (single tool)

Advantages due to DirectCooling

- Improved chip control
- Longer service life of the indexable insert
- Greater process security
- Application of higher cutting data



Advantages of the trochoidal turning strategy

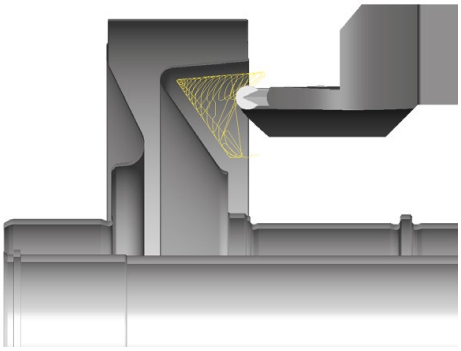
- Less wear and longer tool life due to softer entry and exit
- Smaller angle of engagement = less vibration
- Up to 40% higher feed rate values possible
- Broad field of application in austenitic steels, heat-resistant steels, Inconel and nickel-base alloys as well as long-chipping ductile materials
- Savings on tools

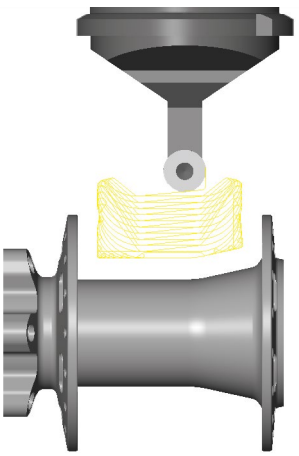
Trochoidal turning with support of the following CAM systems:

- hyperMill – High-performance turning
- Esprit CAM – ProfitTurning
- SolidCAM – Turning
- EdgeCAM – Waveform turning
- MasterCAM – Dynamic turning

Possible applications

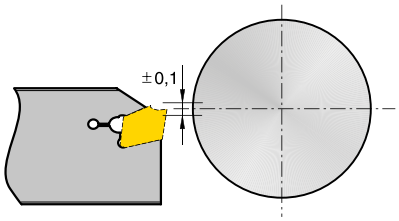
- Radial and axial recesses and grooves
- Rough machining – high-speed turning with button insert

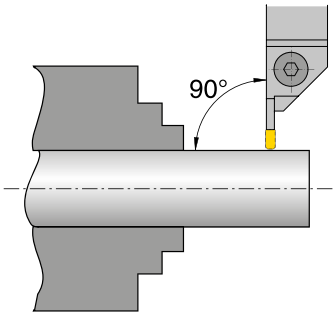




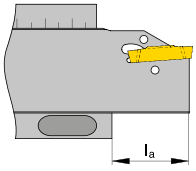
General references

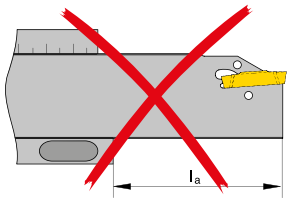
Tool position

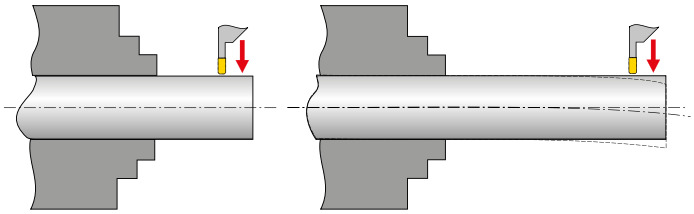




Tool overhang

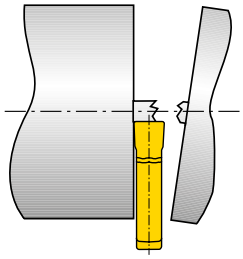




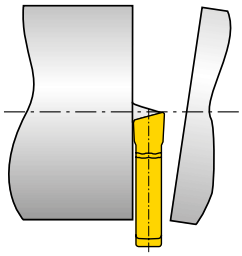


As a rule of thumb: Overhang l_a should not be greater than 8 x s (Groove width).

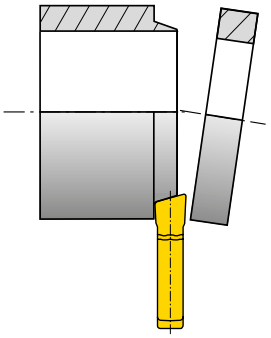
References for Parting off



From Ø 5 mm on, reduce feed “f“ by approx. 50%. No parting across centre (risk of breakage).

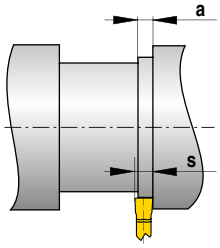


For parting pip-free, use R or L inserts. In order to minimize lateral deflection reduce feed by approx. 20%–50%.

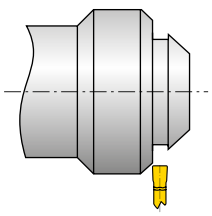


In order to prevent ring formation, use R or L inserts. Reduce feed “f“ because of lateral deflection by approx. 20%–50%.

References for grooving



When grooving with an axial displacement the width **„a“** should amount to at least 70 % of the grooving width **„s“**.



When grooving oblique surfaces the feed should be reduced by approx. 20%–50% until fully engaged.

11

Trouble shooting guide for grooving FX/SX/GX/LX

Type of problem											
Type of wear				Work piece problems				Swarf control			
Edge breakage	Built-up edge	Wear on clearance face	Plastic deformation	Vibration	Formation of pips and burrs	Chattered surface	Surface quality	Chip too long (snarl chip)	Chip too short (fragmented chip)		
	↑	↓	↓	↓			↑	↓		Cutting speed	Cutting data
↓			↓	↑		↓	↓	↑	↓	Feed rate	
↓		↓	↓		↓	↓	↓			Feed rate at centre (-R -F -M ↑ ↓)	
↑	↓		~	~	↓	↓	↓	↓	↑	Chip groove	Insert selection
					●					R/L execution	
↑		↑	↑	↓	↓	↓	↑			Corner radius (larger ↑ / smaller ↓)	
↓		↑	↑							Tool Material (Wear resistance ↑ / toughness ↓)	
				↓		↑	↑			Groove width	
~				~		~	~			Tool clamping	General criteria
~				~		~	~			Work piece clamping	
~				~			↓			Overhang	
~		~		~	~		~			Tip height	
	●	●	●		●		●	●		Cooling lubricant	

Remedy measures

↑ raise, increase large influence
↑ raise, increase small influence
↓ avoid, reduce large influence
↓ avoid, reduce small influence
~ check, optimise
● use

Trouble shooting guide for TC threading

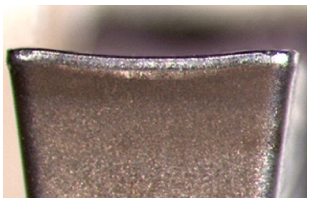
Type of problem												
Type of wear				Workpiece				Swarf control				
Wear on clearance face	Break out cut	Plastic deformation	Built-up edge	Formation of a shoulder at the external thread Ø	Profile	Surface quality	Chatter marks, vibrations	Chip too thick	Chip too thin	Chip shape (snarl chip)		
↓		↓	↑			↑	↓				Cutting speed	Cutting data
a, b	a, b		a, b	a, b		a, b	a, b	a, b		a, b	Feed (a – over the flanks; b – Alternating flanks)	Cutting data
↑	↓	↓		↓	↓	↓	↓	↓	↑	~	Feed (Cutting depth)	Cutting data
↓	↑	↑		~	~	↑	~	↑	↓	↓	Number of passes	Cutting data
				●	●	●					Spring cut (Air cut)	Cutting data
			●			●	●			●	Chip groove	Indexable insert selection
↑	↓	↑									Tool Material (Wear resistance ↑ toughness ↓)	Indexable insert selection
				●	●	●					Full profile	Indexable insert selection
											Partial profile	Indexable insert selection
	~					~	~				Stable tool holder / insert	Various criteria
	~					~	~				Stable workpiece	Various criteria
	↓					↓	↓				Overhang	Various criteria
~	~	~			~	~	~				Tip height	Various criteria
●	●	●	●	●		●					Cooling lubricant	Various criteria

Remedy measures

↑ raise, increase large influence
↑ raise, increase small influence
↓ avoid, reduce large influence
↓ avoid, reduce small influence
~ check, optimise
● use

Wear causes

Wear on clearance face



Abrasion on the flank, normal wear after a given operation time

Cause

- ▲ cutting speed too high
- ▲ grade with too low wear resistance
- ▲ insufficient coolant

Remedy

- ▲ Reduce the cutting speed
- ▲ select a more wear resistant grade
- ▲ Improve/check coolant feed

Edge chipping

Excessive mechanical stress on the cutting edge causing carbide particles to break out.

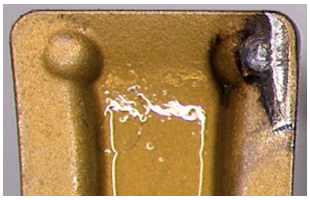
Cause

- ▲ too hard grade
- ▲ vibration
- ▲ too high feed and depth of cut
- ▲ chip impact

Remedy

- ▲ use tougher grade
- ▲ use negative geometry with chip breaker
- ▲ reduce overhang, check center height
- ▲ stabilize the cutting edge

Cratering



The outgoing hot chip causes cratering of the insert on the clamping surface.

Cause

- ▲ too high cutting speed, feed, or both
- ▲ too low rake angle
- ▲ grade with too low wear resistance
- ▲ incorrectly supplied cooling

Remedy

- ▲ Reduce cutting speed and / or feed
- ▲ Check coolant flow and / or increase pressure
- ▲ Use harder grade

Plastic deformation

Large mechanical load produces high temperature machining, this can lead to plastic deformation.

Cause

- ▲ too high operating temperature, thus softening the base material
- ▲ unsuitable grade
- ▲ inadequate coolant supply

Remedy

- ▲ Reduce the cutting speed
- ▲ select a more wear resistant grade
- ▲ use coolant

Built-up edge

Weld deposits of material on the cutting edge occurs when the chip does not flow caused by low average temperature.

Cause

- ▲ too low cutting speed
- ▲ too low rake angle
- ▲ Incorrect grade
- ▲ lack of cooling / lubrication

Remedy

- ▲ Increase the cutting speed
- ▲ Increase rake angle
- ▲ Use TiN coating
- ▲ increase coolant strength

Notch wear

Contraction at maximum cutting depth.

Cause

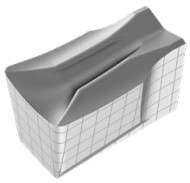
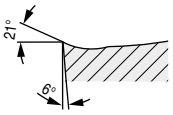
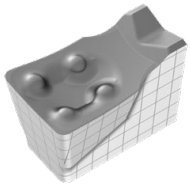
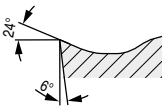
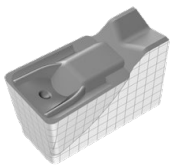
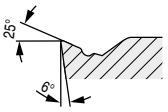
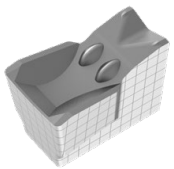
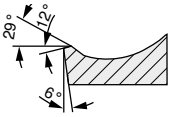
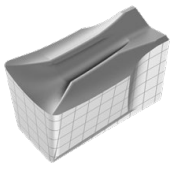
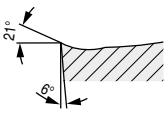
- ▲ Oxidation at the cutting edge
- ▲ Too high a temperature at the edge

Remedy

- ▲ Use different cutting depths
- ▲ Reduce cutting speed
- ▲ Improve/check coolant feed

Chip breakers / Applications

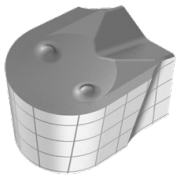
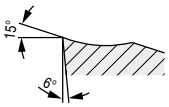
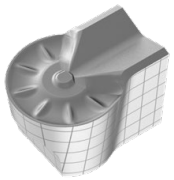
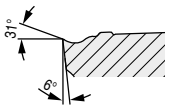
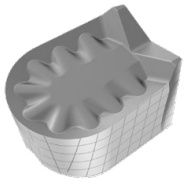
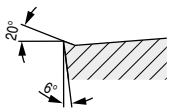
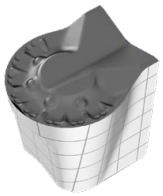
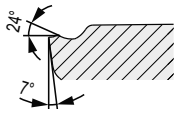
System GX

		Smooth cut	irregular cut	interrupted cut	Model	f in mm/rev.
-F2 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ first choice for stainless materials		**CTCP325** **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	**CTP1340** **CTP1340/CTPP345** **CTP1340** **CTP1340** CTP1340	**CTPP345** **CTPP345** CTPP345 		0,05–0,15
-Standard / -E ▲ positive geometry ▲ low-medium feed rates ▲ low cutting forces ▲ universal application ▲ first choice for axial grooving		**CTCP325** **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	**CTCP335/CTP1340** **CTP1340/CTPP345** **CTCP335/CTP1340** **CTP1340** CTP1340	**CTPP345** **CTPP345** CTP1340 CTPP345 		0,05–0,17
-M40 ▲ stable geometry ▲ medium feed rates ▲ universal application ▲ good chip control		**CTCP325** **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	**CTP1340** **CTP1340/CTPP345** **CTCP325/CTP1340** **CTP1340** CTP1340	**CTPP345** **CTPP345** CTP1340 CTPP345 		0,075–0,20
-M1 ▲ very stable cutting edge ▲ medium-high feed rates ▲ for intterrupted cut ▲ for high tensile materials ▲ first choice for parting off		**CTCP325** **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	**CTP1340** **CTP1340/CTPP345** **CTCP325/CTP1340** **CTP1340** CTP1340	**CTPP345** **CTPP345** CTP1340 CTPP345 		0,1–0,20
-27P ▲ very positive geometry ▲ ground periphery ▲ sharp cutting edge ▲ polished chip breaker ▲ first choice for non-ferrous metals		 **H216T** **H216T** H216T H216T	 **H216T** **H216T** H216T 	 **H216T** **H216T** 		0,05–0,25

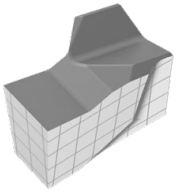
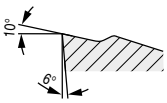
11

Chip breakers / Applications

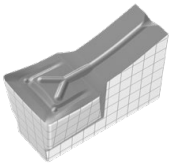
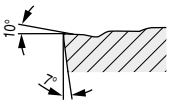
System GX

		Smooth cut	irregular cut	interrupted cut	Model	f in mm/rev.
Standard – Radius ▲ positive geometry ▲ honed cutting edge ▲ low-medium feed rates ▲ low cutting forces ▲ Radius grooving/copy turning		**CTCP325** **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	**CTCP325/CTP1340** **CTP1340** **CTCP325/CTP1340** **CTP1340** CTP1340	CTP1340 CTP1340 CTP1340 		0,05–0,20
-M3 – Radius ▲ stable geometry ▲ medium-high feed rates ▲ high surface quality ▲ Radius grooving/copy turning		**CTCP325** CTCP335 **CTCP325** CTCP325 CTCP325	**CTCP325/CTCP335** CTCP335 **CTCP325/CTCP335** 	**CTCP335** **CTCP335** 		0,07–0,20
-27P – Radius ▲ very positive geometry ▲ ground periphery ▲ sharp cutting edge ▲ polished chip breaker ▲ first choice for non-ferrous metals		 **H216T** **H216T** H216T H216T	 **H216T** **H216T** H216T 	 **H216T** **H216T** 		0,05–0,30
M33 ▲ Radius grooving & copy turning ▲ Finishing geometry ▲ Specially for tough and ductile steels ▲ Low - medium feed rates ▲ High surface quality		**CTCP325** CTCP325 **CTCP325** 	**CTCP325** CTCP325 **CTCP325** 	CTCP325 CTCP325 CTCP325 		0,05 - 0,20

Circlip grooving

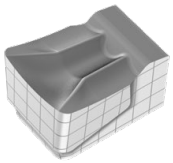
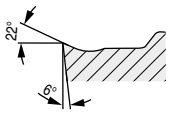
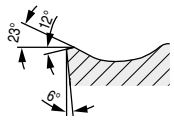
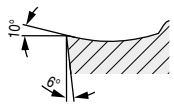
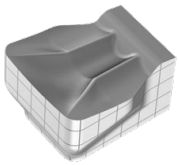
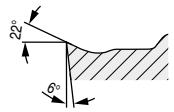
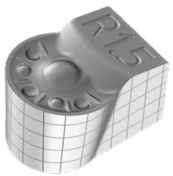
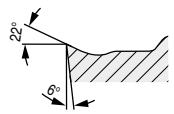
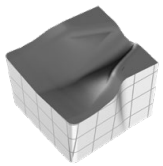
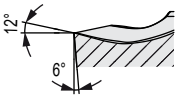
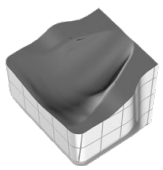
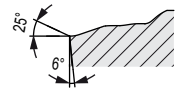
Standard ▲ positive geometry ▲ honed cuttign edge ▲ low feed rates ▲ small corner radius ▲ Circlip grooves		**CTP1340** **CTP1340** **CTP1340** CTP1340 **CTP1340** CTP1340	**CTP1340** **CTP1340** **CTP1340** CTP1340 **CTP1340** CTP1340	CTP1340 CTP1340 CTP1340 CTP1340 CTP1340 		0,05–0,30

System AX

-F50 ▲ positive geometry ▲ honed cuttign edge ▲ low feed rates ▲ small corner radius ▲ Circlip grooves		**CTP1340** **CTP1340** **CTP1340** CTP1340 **CTP1340** CTP1340	**CTP1340** **CTP1340** **CTP1340** CTP1340 **CTP1340** CTP1340	CTP1340 CTP1340 CTP1340 CTP1340 CTP1340 		0,025–0,125

Chip breakers / Applications

System SX

		Smooth cut	irregular cut	interrupted cut	Model	f in mm/rev.
-F2 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ first choice for stainless materials		**CTCP325** **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	**CTCP325/CTP1340** **CTP1340/CTPP345** **CTCP325/CTP1340** **CTP1340** CTP1340	**CTPP345** **CTPP345** **CTP1340** CTPP345 CTP1340		0,05–0,15
-M1 ▲ very stable cutting edge ▲ medium-high feed rates ▲ for intterrupted cut ▲ for high tensile materials ▲ first choice for parting off		CTCP325 **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	CTCP335/CTP1340 **CTP1340** **CTCP325/CTP1340** **CTP1340** CTP1340	CTPP345 **CTPP345** CTP1340 CTPP345 CTP1340		0,10–0,20
-M2 ▲ stable geometry ▲ medium feed rates ▲ universal application ▲ good chip control		CTCP325 **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	CTCP335/CTP1340 **CTP1340** **CTCP325/CTP1340** **CTP1340** CTP1340	CTPP345 **CTPP345** CTP1340 CTPP345 CTP1340		0,075–0,20
-27P ▲ very positive geometry ▲ ground periphery ▲ sharp cutting edge ▲ polished chip breaker ▲ first choice for non-ferrous metals		 **H216T** **H216T** H216T H216T	 **H216T** **H216T** H216T 	 **H216T** **H216T** 		0,05–0,25
-M3 – Radius ▲ stable geometry ▲ medium-high feed rates ▲ high surface quality ▲ Radius grooving / Copy turning		**CTCP335** **CTP1340** **CTCP335** **CTP1340** CTP1340	**CTCP335/CTP1340** **CTP1340** **CTCP335/CTP1340** **CTP1340** CTP1340	**CTP1340** **CTP1340** **CTP1340** CTP1340 		0,05–0,20
M7 ▲ Grooving & parting off ▲ First choice for steel ▲ Medium - high feed rates ▲ Good chip control ▲ Positive geometry		**CTP1340** **CTP1340** **CTP1340** CTP1340 **CTP1340** CTP1340	**CTP1340** **CTP1340** **CTP1340** CTP1340 CTP1340 CTP1340	 		0,10 - 0,20
M8 ▲ Grooving & parting off ▲ Ground cutting edge ▲ Good chip control ▲ First choice for stainless steel ▲ Low feeds		**CTP1340** **CTP1340** **CTP1340** CTP1340 **CTP1340** CTP1340	**CTP1340** **CTP1340** **CTP1340** CTP1340 CTP1340 CTP1340	 		0,03 - 0,15

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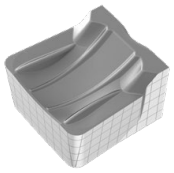
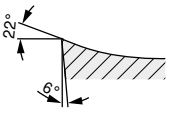
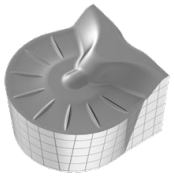
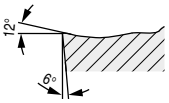
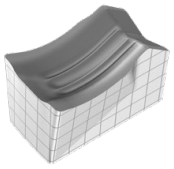
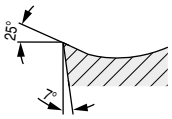
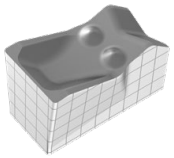
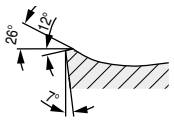
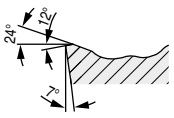
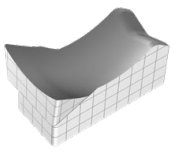
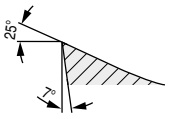
Chip breakers / Applications

System LX

		Smooth cut	irregular cut	interrupted cut	Model	f in mm/rev.
-M2 ▲ stable geometry ▲ medium feed rates ▲ universal application ▲ good chip control		**CTCP325** CTCP335 **CTCP325** **CTP1340** CTCP325 CTP1340	**CTCP335/CTP1340** **CTP1340** **CTCP325** **CTP1340** CTP1340	**CTCP335** CTP1340 **CTCP335** CTP1340 		0,20–0,50
-M3 – Radius ▲ stable geometry ▲ medium-high feed rates ▲ high surface quality ▲ Radius grooving/copy turning		**CTCP325** CTCP335 **CTCP325** **CTP1340** CTCP325 CTP1340	**CTCP335/CTP1340** **CTCP335/CTP1340** **CTCP325/CTCP335** **CTP1340** CTP1340	**CTCP335** CTP1340 **CTCP335** CTP1340 		0,15–0,35

System FX

-F1 ▲ very positive geometry ▲ low-medium feed rates ▲ low cutting forces ▲ good chip control ▲ low cutting edge build up		**CTCP325** **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	**CTCP325/CTP1340** **CTP1340/CTPP345** **CTCP325/CTP1340** **CTP1340** CTP1340	**CTPP345** **CTPP345** CTP1340 CTPP345 		0,05–0,15
-M1 ▲ very stable cutting edge ▲ medium-high feed rates ▲ for intterrupted cut ▲ for high tensile materials ▲ first choice for parting off		**CTCP325** **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	**CTCP335/CTP1340** **CTP1340/CTPP345** **CTCP325/CTP1340** **CTP1340** CTP1340	**CTPP345** **CTPP345** CTP1340 CTPP345 		0,08–0,20
-R2 ▲ very stable cutting edge ▲ high feed rates ▲ good chip control		**CTCP325** **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	**CTCP325/CTP1340** **CTP1340/CTPP345** **CTCP325/CTP1340** **CTP1340** CTP1340	**CTPP345** **CTPP345** CTP1340 CTPP345 		0,10–0,27
-27P ▲ very positive geometry ▲ ground periphery ▲ sharp cutting edge ▲ polished chip breaker ▲ first choice for non-ferrous metals		 **H216T** **H216T** H216T H216T	 **H216T** **H216T** H216T 	 **H216T** **H216T** 		0,03–0,13

Example of Coding Grooving Tools

Grooving insert

GX	16	2	E	3.00	N	0.50
Grooving system (GX)	Insert length (16 mm)	Width class of the holder / module or support surface (2 mm)	Type of insert, application	Groove width (3.0 mm)	Insert seat N=Neutral L=Left Handed R=Right Handed	Corner radius size (0.5 mm)

Module

E	25	R	12	GX	16	2
Application E = external I = internal	Size (25 mm)	Module version R=Right Handed L=Left Handed	Maximum groove depth (12 mm)	Grooving system (GX)	Insert size (16 mm)	Width class 2

Basic holder

E	25	R	00	2525	L
Application E = external I = internal	Size (25 mm)	Holder version R=Right Handed L=Left Handed	Approach angle 0°	Shank type 25x25mm	Shank length L = (sh. ISO)

Monobloc tool holder

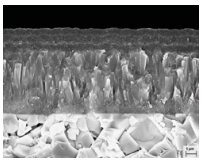
E	20	R	00	21	S3	2020	X	S	DC	GX24
Application E = external I = internal	Size (20 mm)	Holder version R=Right Handed L=Left Handed	Approach angle 0°	Groove depth (21 mm)	Groove width (3 mm)	Shank type 20x20 mm	Shank length X = (sh. ISO)	Insert clamping S = Key	Cooling system DC = DirectCooling	Grooving system/width (3 mm)

Summary

Grooving insert	Module	Basic holder	Monobloc tool holder
GX 16-2 E3.00 N 0.50	E25 R 12 - GX 16-2	E25 R 00 - 2525L	E20 R/L 0021S3-2020X-S-DC-GX24

Grade description

CTCP325

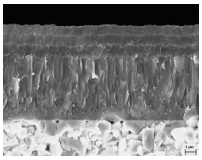


ISO | **P25** | M20 | **K30** | S25

Specifications:
Composition: Co 7.0%; mixed carbide 8.1%; WC balance | grain size: 1-2 µm |
Hardness: HV_{30} 1470 | Layer system: CVD TiCN-Al_2O_3 Multilayer

Recommended use:
The wear-resistant solution for steel and cast iron materials at high cutting speeds

CTCP335

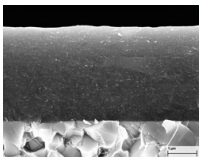


ISO | **P35** | M30 | **K35**

Specifications:
Composition: Co 10.5%; mixed carbide 1.9%; WC balance | grain size: 1 µm | Hardness: HV_{30} 1370 |
Layer system: CVD TiCN-Al_2O_3 Multilayer

Recommended use:
The reliable choice for machining steel and cast iron materials.

CTP1340

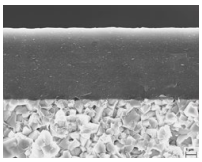


ISO | **P30** | **K30** | N30 | **S30** | O30

Specifications:
Composition: Co 9.0%; mixed carbide 0.75%; WC balance | grain size: 0.7–1 µm | Hardness: HV_{30} 1590 |
Layer system: PVD TiAlTaN

Recommended use:
The universal high-performance grade for steels, austenitic steel, cast iron materials and heat-resistant alloys

CTPP345

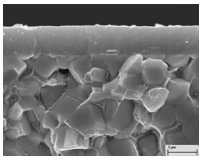


ISO | **P45** | **M40** | **S40**

Specifications:
Composition: Co 12.5%; mixed carbide 2.0%; WC balance | grain size: 1-1.5 µm | Hardness: HV_{30} 1350 |
Layer system: PVD TiAlTaN

Recommended use:
The reliable solution for steel and austenitic steels in unstable conditions.

CTPP520

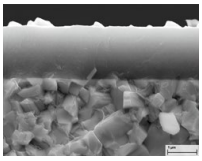


ISO | **P20** | **M25** | S25 | H05

Specification:
Composition: Co 6.0%; WC balance | Grain size: 1 µm | Hardness: HV_{30} 1650 | Layer system: PVD AlTiN

Recommended use:
The wear-resistant thread turning grade for high cutting speeds.

CTPP535

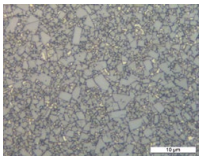


ISO | **P35** | **M30** | **K25** | **S30**

Specification:
Composition: Co 10%; Others 1.2%; WC balance | Grain size: 0.7 µm | Hardness: HV_{30} 1600 |
Layer system: PVD AlTiN

Recommended use:
The tough thread turning grade for universal application.

H216T

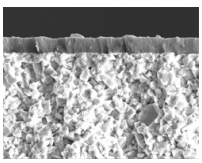


ISO | K15 | **N15** | S15 | O10

Specification:
Composition: Co 6.0%; WC balance | Grain size: 1 µm | Hardness: HV_{30} 1630

Recommended application:
The uncoated carbide grade for the machining of aluminium and other non-ferrous metals

CWX500

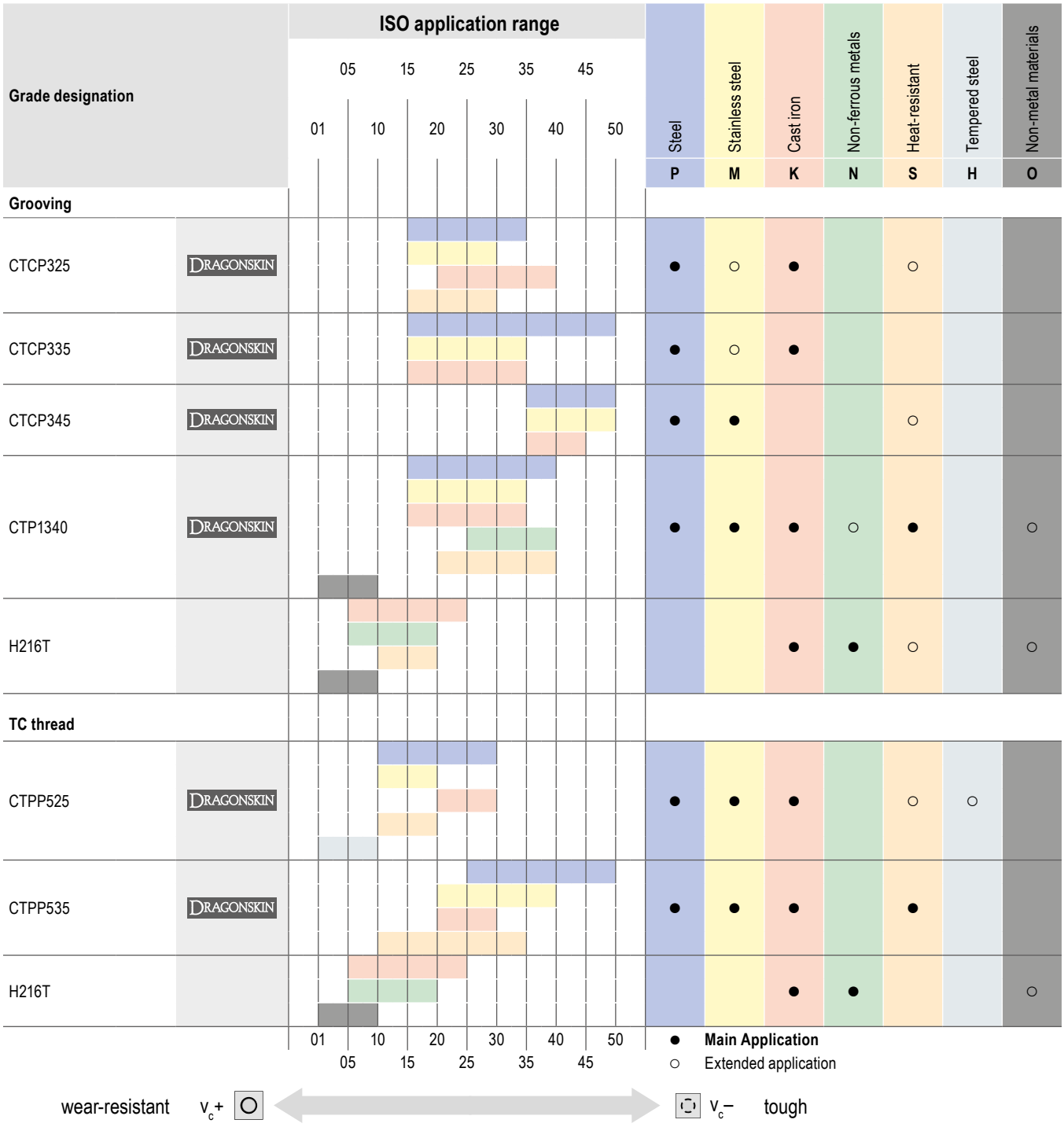


ISO | **P30** | **M30** | **K35** | **N35** | **S15** | H05 | **O10**

Specification:
Composition: Co 10.0%; Others 0.7 %, WC balance | Grain size: 1 µm | Hardness: HV_{30} 1660

Recommended application:
The universal carbide grade for almost all materials

Application



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