





Solid drilling and bore machining

1 HSS drilling

2 Solid carbide drilling

3 Indexable insert drilling

4 Reaming and Countersinking

5 Spindle Tooling

Threading

6 Taps and thread formers

7 Circular and Thread Milling

8 Thread turning

Turning

9 Turning Tools

10 Multifunctional Tools –
EcoCut and FreeTurn

11 Grooving Tools

11

12 Miniature turning tools

Milling

13 HSS Milling Cutters

14 Solid Carbide milling cutters

15 Milling tools with indexable
inserts

Catalogue –
Clamping technology

16 Adaptors and Accessories

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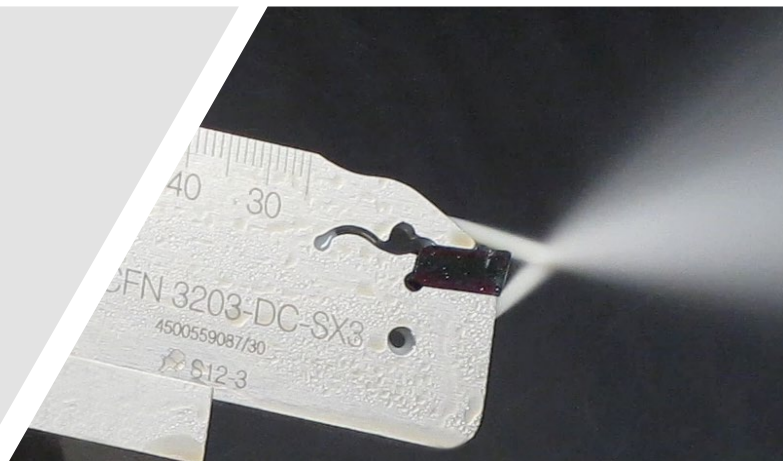
CERATIZIT \ Performance

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 of the DirectCooling blade

- ▲ The best machining results, even with reduced pump output
Highest flow volume of all thro' coolant blades on the market
- ▲ User friendly
Reinforced blades without sealing screw
- ▲ Process-secure spare part for easy handling and a long service life
Single-piece sealing screw made from steel (for standard blades)



Symbol explanation



Grooving



Main Application



Turning



Extended application



Face turning



Repeatability



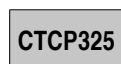
Axial grooving



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

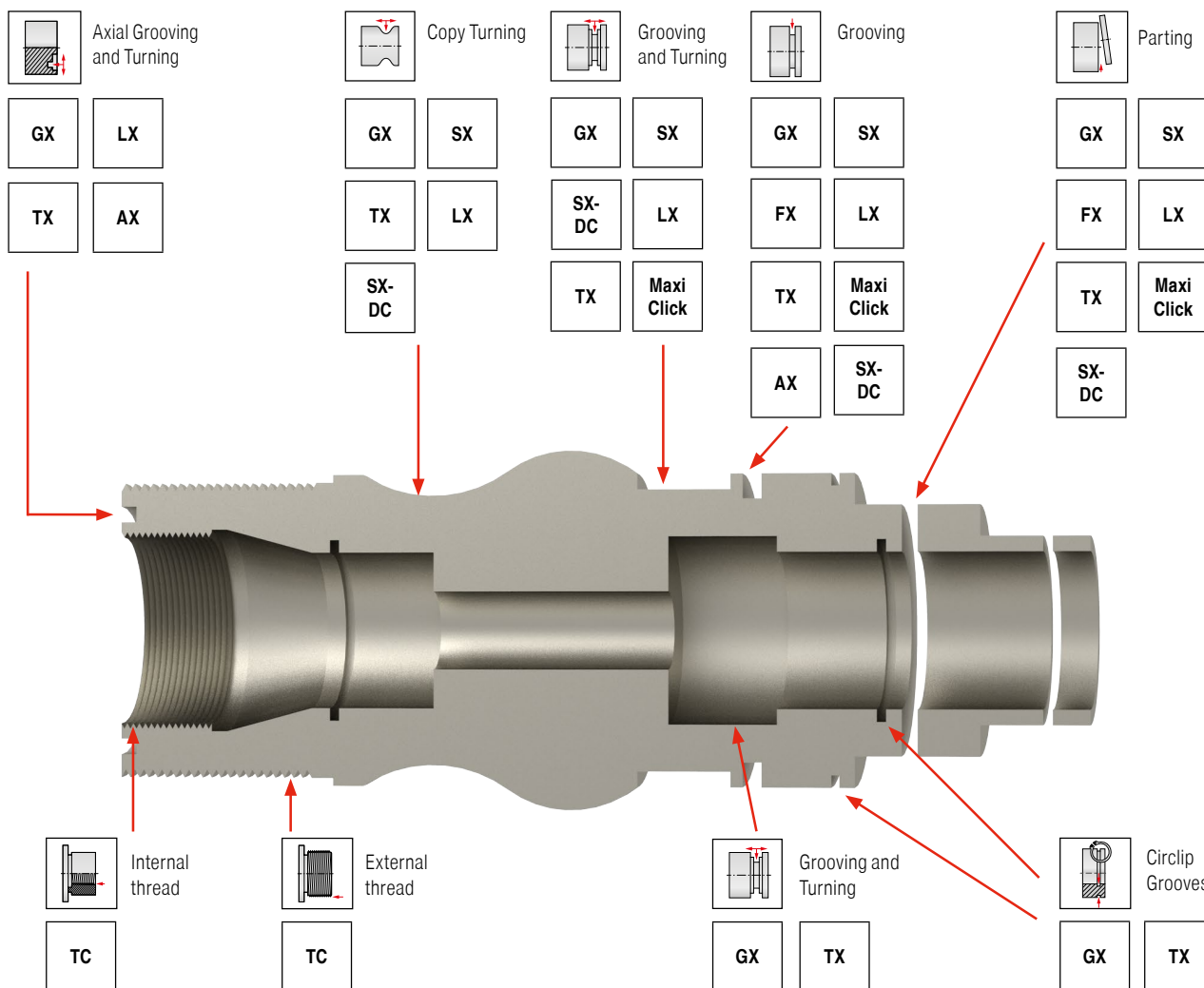


○ Smooth cut
○ Irregular cutting depth
○ Interrupted cut



Carbide Grade

Toolfinder – System Overview

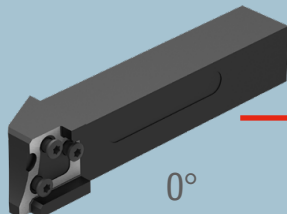


System Description

Page No.

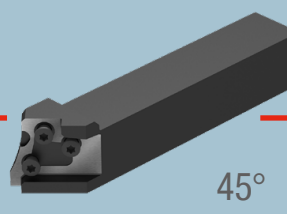
SX	The single edged SX grooving system is even more versatile with the -M3 chip breaker. Besides grooving / parting with the -F2, -M2, or -27P chip breakers, the SX -M3 type also allows copying turning operations with the highest chip control. With this additional option, the SX grooving system can cover all areas of grooving making it a universal grooving tool. Available as a Modular or Mono system.	8-21
SX-DC	Our tried-and-tested single-edged SX grooving system is now available with targeted DirectCooling (DC) thro' coolant supply. The coolant is guided through two coolant holes – one above and one below the grooving insert – straight to the point where it will be most effective: the cutting edge itself.	14-20
FX	A single-edged grooving system with a variety of specialized chip geometries. From fine machining in unstable parts through to high-performance machining under stable conditions. Available as a Modular or Mono system.	22-29
GX	Double edged grooving system for grooving, parting off, turning and for producing circlip grooves. Available in sizes GX09, GX16 and GX24. Available as a Modular or Mono system.	30-60
TX	Three-edged system for parting, grooving, axial grooving, radial grooving, and fine turning. Positive ground cutting geometries, with a very soft cut with minimum cutting forces. Universally applicable for almost all materials. Available as a Monosystem.	61-70
LX	Single edged system for extreme applications starting from a cutting width of 8.0 mm. The LX system is for use in stable conditions. Available as a Modular or Mono system	71-74
AX	Double-edged Axial grooving system for grooving and groove turning with high precision. Due to the three different depths (5 mm, 10 mm and 15 mm) stable tools are available for each application.	75-78
TC	Double-edged thread turning system for the production of external and internal threads. Advantage is the use without pitch angle correction and in narrow or difficult areas of application. Available as a Modular or Mono system.	79-87
Maxi Click	Five-edged grooving system for grooving and parting	88-92

Toolfinder – External Machining



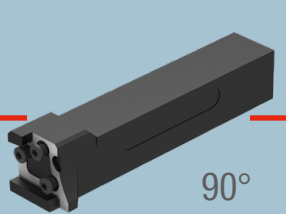
93

0°



94

45°

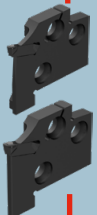


95

90°

ModularClamp

GX 09



38



39

GX 16

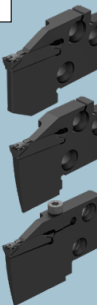


38



39

GX 24



53



55



56

GX 09

Circlip grooves



35

Cutting width
CW = 0,5–3,15 mm (H13)

Grooving and Turning

-F2  30

Standard  31

-M40  32

Radius grooves

Standard  36

CRE = 0,8–1,2 mm

Cutting width
CW = 2,0–3,5 mm

GX 16

Circlip grooves



35

Cutting width
CW = 0,5–5,15 mm (H13)

Grooving and Turning

-F2  30

Standard  31

-M40  32

-M1  33

-27P  37

CRE = 0,8–3,0 mm

Cutting width
CW = 2,0–6,0 mm

GX 24

Radial, axial and deep axial grooving and parting, face turning and turning

-F2  46

-E  47

-M1  48

-M40  49

-27P  51

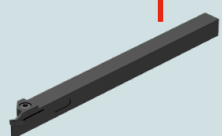
-M3  50

-27P  52

CRE = 1,5–4,0 mm

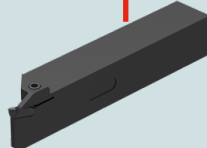
Cutting width
CW = 2,0–6,0 mm

GX 09



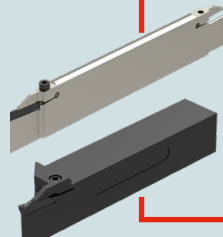
42

GX 16

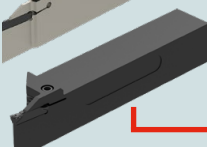


43

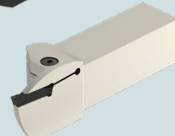
GX 24



57

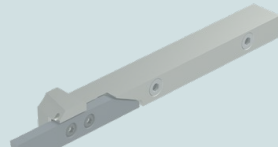


58



60

MonoClamp



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

0° **96** **96** **0°** **90°**

SX **FX** **LX** **TC** **AX**

13 **27** **73** **84** **76**

SX **FX** **LX** **TC** **AX** **TX** **Maxi Click**

Parting, Grooving and Turning

-F2 **8** **-27P** **11**

Parting and Grooving

-M1 **9** **-M3** **12**

-M2 **10** **CRE = 1,5 – 3,0 mm**

Cutting width
CW = 2,0 – 6,0 mm

Parting and Grooving

-F1 **22**

-M1 **23+24**

-27P **25**

-R2 **26**

Cutting width
CW = 2,2 – 9,7 mm

Deep Parting and Grooving

-M2 **71**

-M3 **72**

Cutting width
CW = 8,0 – 10,0 mm

Thread turning

Full profile

60° **79+80**

55° **82**

Partial profile

60° **81**

55° **83**

Axial Grooving and Turning

-F50 **75**

Groove width
CW = 3,0 mm

Parting **61**

Circlip Grooves **62**

Corner undercut **63**

Fine and copy turning **64**

Axial grooving **65**

-F2 5 mm **88**

-F2 10 mm **89**

-F3 10 mm **90**

Cutting width
CW = 1,0 – 2,5 mm

SX **SX-DC** **FX** **LX** **TC** **AX** **TX** **Maxi Click**

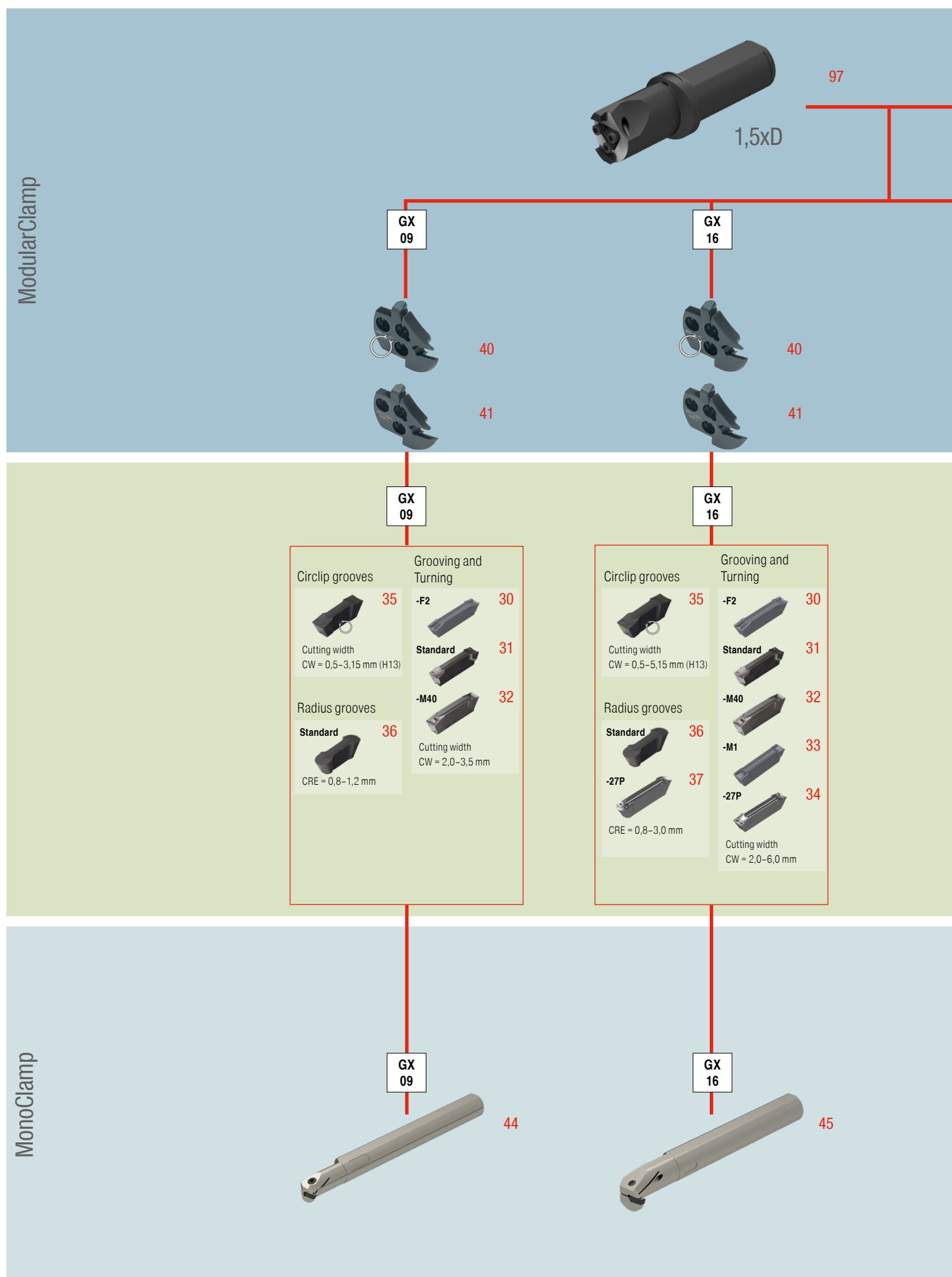
20+21 **14+15** **16-19** **28** **29** **74** **85** **77** **78** **66** **67** **68** **69** **91** **92**

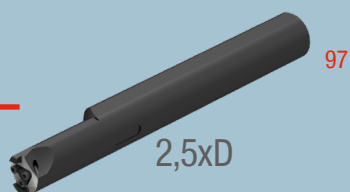
98 **99** **100**

0° **0°** **90°** **45°**

* These articles can be found in → Catalogue – Clamping technology, Chapter 16

Toolfinder – Internal Machining





GX
24



TC



GX
24

Radial, axial and deep axial grooving and parting, face turning and turning

-M1	48	-M3	50
-M40	49	-27PF	52
-E	47		CRE = 1,5 - 4,0 mm
-F2	46		
-27P	51		
Cutting width CW = 2,0 - 6,0 mm			

TC

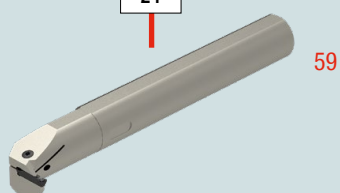
Thread turning

Partial profile 60°	81
Full profile 60°	80
Full profile 55°	82
Partial profile 55°	83

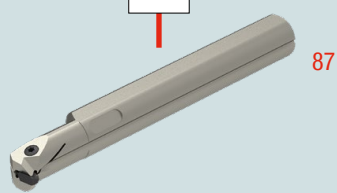
TX

Parting	61
Circlip Grooving Inserts	62
For corner relief	63
Fine and copy turning	64
Axial grooving	65

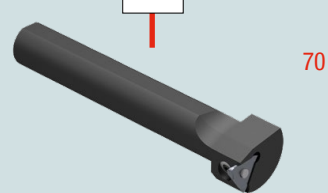
GX
24



TC

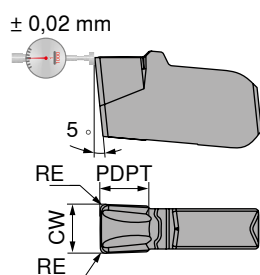
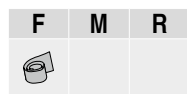
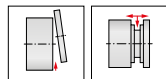


TX

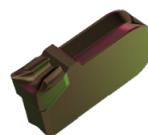


Insert SX

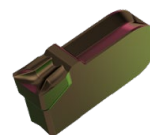
▲ High Precision polished geometry



-F2
CTCP325



-F2
CTCP335



-F2
CTPP345



-F2
CTP1340



Designation	CW mm	RE 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								○

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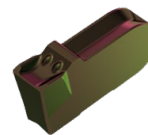
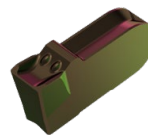
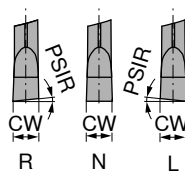
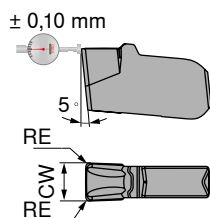
Internal machining

External machining

		→ 13	→ 14-19	→ 20+21				

Insert SX

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

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

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		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		825	625
SX E6.00 N 0.40	N	6	0,4		-SX6	926		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									○

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

Internal machining

External machining



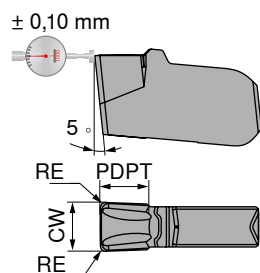
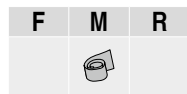
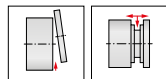
→ 13

→ 14–19

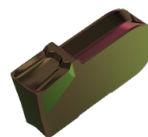
→ 20+21

Insert SX

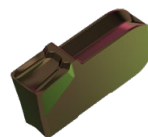
▲ All purpose geometry for parting, grooving & turning.



-M2
CTCP325



-M2
CTCP335



-M2
CTPP345



-M2
CTP1340



Designation	CW $\pm 0,05$ mm	RE $\pm 0,05$ 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								○

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Internal machining

External machining



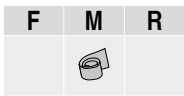
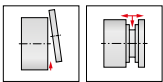
→ 13

→ 14-19

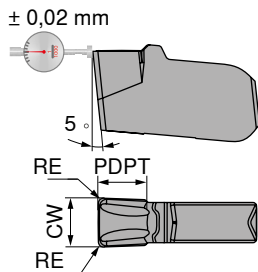
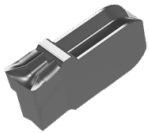
→ 20+21

Insert SX

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



-27P
H216T



70 349 ...

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

122
123
124

P	
M	
K	●
N	●
S	○
H	
O	○

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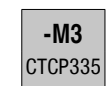
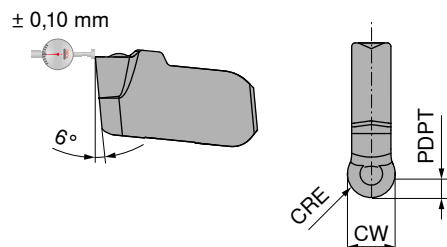
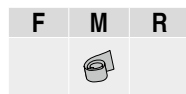
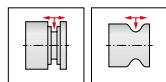
Internal machining

External machining

		→ 13	→ 14-19	→ 20+21				

Radius Grooving Insert SX

- ▲ for grooving and copy turning
- ▲ very good chip control



Designation	CW $\pm 0,05$ 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						○

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Internal machining

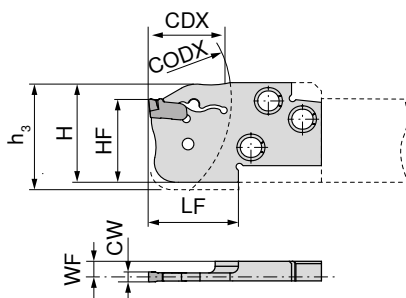
External machining



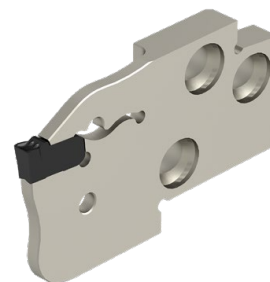
		→ 13	→ 14-19	→ 20+21			

ModularClamp MSS – Radial grooving module SX

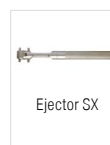
▲ for parting, grooving and finish turning



Illustrations show right-hand versions



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 20-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
E32 R/L 35-SX3	32	3	4,70	37	38		96	35	SX .3..	032	032
E32 R/L 35-SX4	32	4	4,30	37	38		96	35	SX .4..	132	132



Ejector SX

Spare parts for grooving inserts

SX .2..	SX 2-3	836
SX .3..	SX 2-3	836
SX .4..	SX 4-6	837

70 950 ...



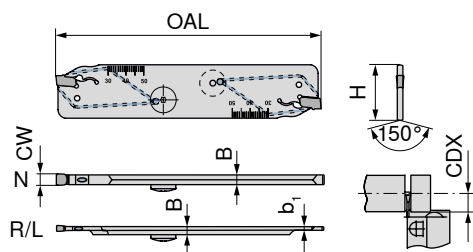
→ 8-12

→ 93-95

→ 96

 Please order SX assembly key separately if required.

MonoClamp – Radial Blade SX-DC Standard



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 L 3202-DC-SX2	2	32	2,4	1,6	150	26	SX .2..	L	702
XLCF R 2602-DC-SX2	2	26	2,4	1,6	110	25	SX .2..	R	512
XLCF R 3202-DC-SX2	2	32	2,4	1,6	150	26	SX .2..	R	502
XLCF N 2603-DC-SX3	3	26	2,5		110	35	SX .3..	N	613
XLCF N 3203-DC-SX3	3	32	2,5		150	50	SX .3..	N	603
XLCF N 2604-DC-SX4	4	26	3,3		110	40	SX .4..	N	614
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

Spare parts for grooving inserts

		80 950 ...		70 950 ...		70 950 ...
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



→ 8-12

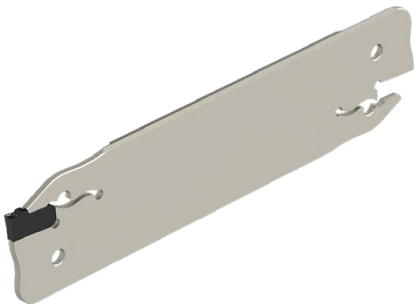
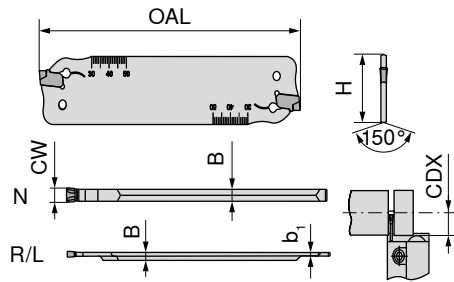
→ 98

→ Chapter 16

→ Chapter 16

Please order SX assembly key separately if required.

MonoClamp – Radial Blade SX Standard



70 884 ...

Designation	CW mm	H mm	B mm	b ₁ mm	OAL mm	CDX mm	for grooving inserts	R/L/N	
XLCF L 2602-SX2	2	26	2,4	1,5	110	25	SX .2..	L	212
XLCF L 3202-SX2	2	32	2,4	1,5	150	25	SX .2..	L	202
XLCF R 2602-SX2	2	26	2,4	1,5	110	25	SX .2..	R	012
XLCF R 3202-SX2	2	32	2,4	1,5	150	25	SX .2..	R	002
XLCF N 2603-SX3	3	26	2,4		110	35	SX .3..	N	113
XLCF N 3203-SX3	3	32	2,4		150	50	SX .3..	N	103
XLCF N 2604-SX4	4	26	3,2		110	40	SX .4..	N	114
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

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
SX .5..	SX 4-6	837
SX .6..	SX 4-6	837

11



→ 8-12

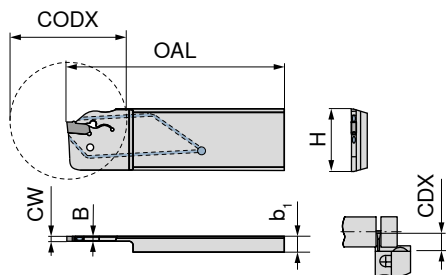
→ 99+100

→ Chapter 16

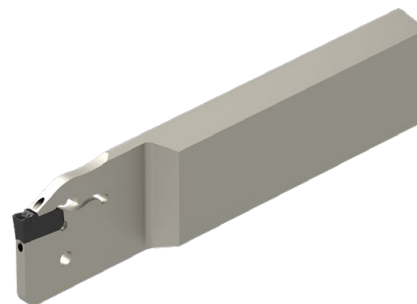
→ Chapter 16

 Please order SX assembly key separately if required.

MonoClamp – Radial Blade SX-DC reinforced



Illustrations show right-hand versions



Designation	CW mm	H mm	B mm	b ₁ mm	OAL mm	CODX mm	CDX mm	for grooving inserts	R/L/N
XLCF L 2608-DC-SX3	3	26	2,5	8	110	66	33	SX .3..	L
XLCF L 3208-DC-SX3	3	32	2,5	8	110	66	33	SX .3..	L
XLCF R 2608-DC-SX3	3	26	2,5	8	110	66	33	SX .3..	R
XLCF R 3208-DC-SX3	3	32	2,5	8	110	66	33	SX .3..	R

70 879 ...

713

703

513

503

Spare parts
for grooving inserts
SX .3..



Ejector SX

70 950 ...

SX 2-3

836



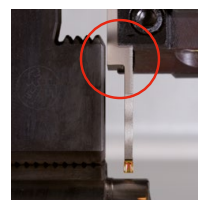
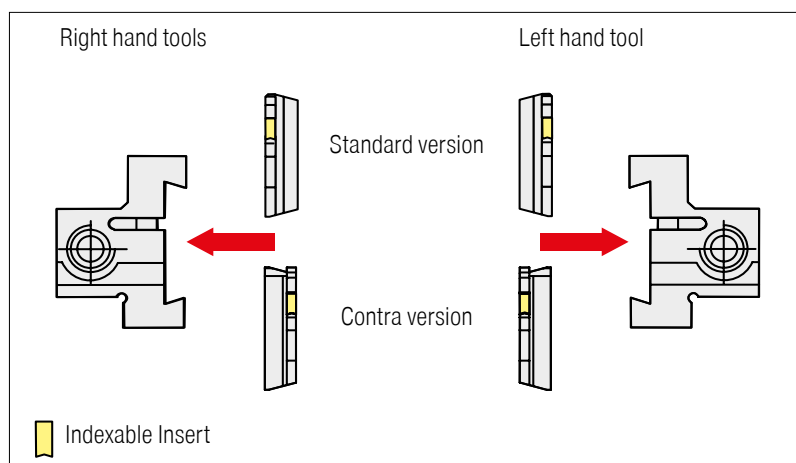
→ 8-12

→ 98

→ Chapter 16

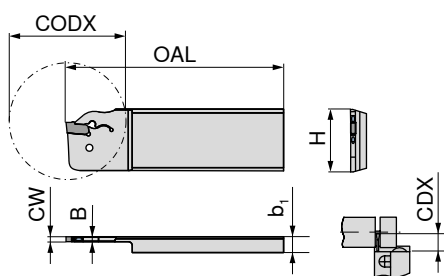
→ Chapter 16

Correct Tool Selection

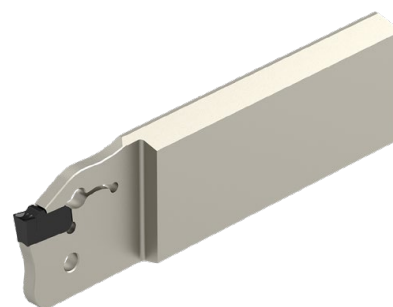


1 Please order SX assembly key separately if required.

MonoClamp – Radial Blade SX reinforced



Illustrations show right-hand versions



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-SX2	2	26	1,5	8	110	44	22	SX 2..	L	212 ¹⁾
XLCF L 2608-SX3	3	26	2,5	8	110	44	22	SX 3..	L	213 ¹⁾
XLCF L 3208-SX3	3	32	2,5	8	110	66	33	SX 3..	L	203
XLCF L 3208-SX4	4	32	3,4	8	110	66	33	SX 4..	L	204
XLCF R 2608-SX2	2	26	1,5	8	110	44	22	SX 2..	R	012 ¹⁾
XLCF R 2608-SX3	3	26	2,5	8	110	44	22	SX 3..	R	013 ¹⁾
XLCF R 3208-SX3	3	32	2,5	8	110	66	33	SX 3..	R	003
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

SX 2..	SX 2-3	836
SX 3..	SX 2-3	836
SX 4..	SX 4-6	837

70 950 ...



→ 8-12

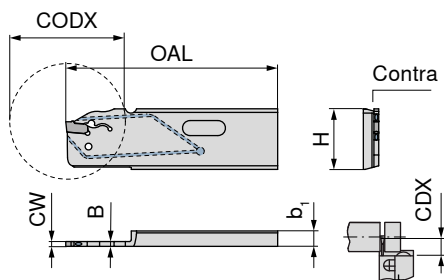
→ 99+100

→ Chapter 16

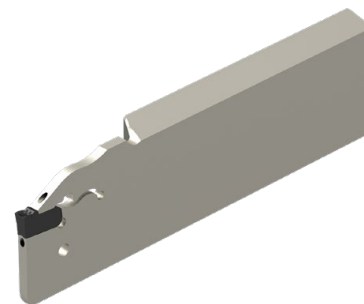
→ Chapter 16

1 Please order SX assembly key separately if required.

MonoClamp – SX-DC reinforced Contra radial blade



Illustrations show right-hand versions



Designation	CW mm	H mm	B mm	b ₁ mm	OAL mm	CODX mm	CDX mm	for grooving inserts	R/L/N
XLCF L 3208C-DC-SX3	3	32	2,5	8	110	66	33	SX.3..	L
XLCF R 3208C-DC-SX3	3	32	2,5	8	110	66	33	SX.3..	R

70 877 ...

703

503

Spare parts
for grooving inserts
SX.3..



Ejector SX

70 950 ...

SX 2-3

836



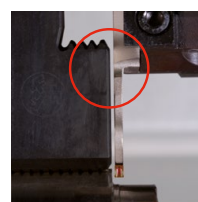
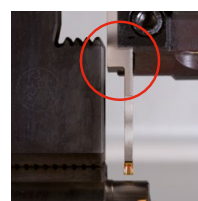
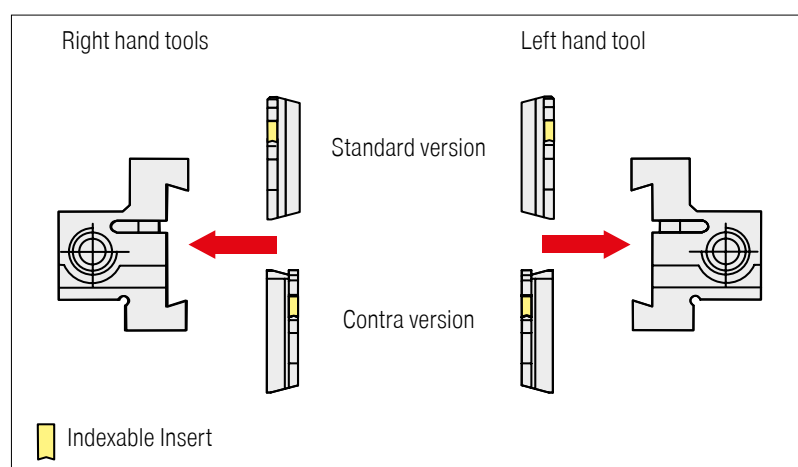
→ 8-12

→ 98

→ Chapter 16

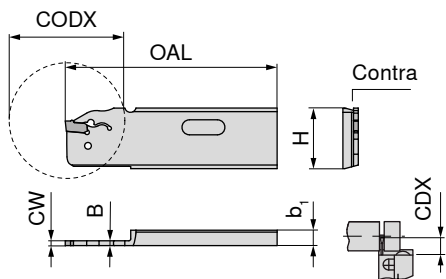
→ Chapter 16

Correct Tool Selection

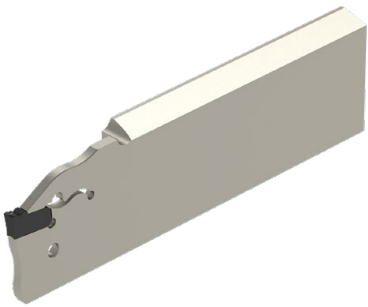


Please order SX assembly key separately if required.

MonoClamp – SX reinforced Contra radial blade



Illustrations show right-hand versions



Designation	CW mm	H mm	B mm	b ₁ mm	OAL mm	CODX mm	CDX mm	for grooving inserts	R/L/N
XLCF L 3208C-SX3	3	32	2,5	8	110	66	33	SX .3..	L
XLCF R 3208C-SX3	3	32	2,5	8	110	66	33	SX .3..	R

70 877 ...

203

003



Ejector SX

70 950 ...

Spare parts
for grooving inserts
SX .3..

SX 2-3

836



→ 8-12

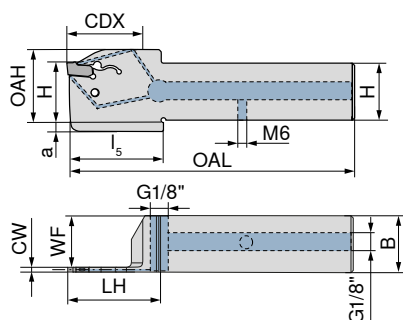
→ 99+100

→ Chapter 16

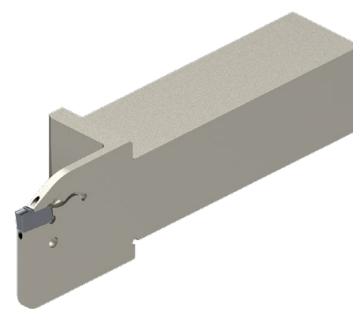
→ Chapter 16

 Please order SX assembly key separately if required.

MonoClamp – Radial Monoholder SX-DC



Illustrations show right-hand versions



												Left-hand	Right-hand
												70 847 ...	70 847 ...
Designation	H mm	B mm	CW mm	WF mm	OAL mm	LH mm	l _s mm	OAH mm	CDX mm	a mm	for grooving inserts		
E12 R/L 0022-1212X-K-DC-SX2	12	12	2	11,2	71	27	28	22	22	5	SX .2..	21201	21200
E16 R/L 0026-1616X-K-DC-SX2	16	16	2	15,2	87	32	33	26	26	4	SX .2..	21601	21600
E20 R/L 0026-2020X-K-DC-SX2	20	20	2	19,2	102	32	33	31	26	5	SX .2..	22001	22000
E25 R/L 0033-2525X-K-DC-SX2	25	25	2	24,2	126	41	42	36	33	5	SX .2..	22501	22500
E16 R/L 0026-1616X-K-DC-SX3	16	16	3	14,8	87	32	33	26	26	4	SX .3..	31601	31600
E20 R/L 0026-2020X-K-DC-SX3	20	20	3	18,8	102	32	33	31	26	5	SX .3..	32001	32000
E25 R/L 0026-2525X-K-DC-SX3	25	25	3	23,8	117	33		31	26		SX .3..	32501	32500
E25 R/L 0033-2525X-K-DC-SX3	25	25	3	23,8	126	41	42	36	33	5	SX .3..	32601	32600
E20 R/L 0033-2020X-K-DC-SX4	20	20	4	18,3	109	39	40	32	33	5	SX .4..	42001	42000
E25 R/L 0033-2525X-K-DC-SX4	25	25	4	23,3	126	41	42	36	33	5	SX .4..	42501	42500
E25 R/L 0040-2525X-K-DC-SX4	25	25	4	23,3	133	48	49	38	40	6	SX .4..	42601	42600
E25 R/L 0040-2525X-K-DC-SX5	25	25	5	22,9	133	48	49	38	40	6	SX .5..	52501	52500
E25 R/L 0040-2525X-K-DC-SX6	25	25	6	22,4	133	48	49	38	40	6	SX .6..	62501	62500

Spare parts
for grooving inserts

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



Ejector SX

70 950 ...

Coolant screw
plug

70 950 ...



Grubscrew

70 950 ...

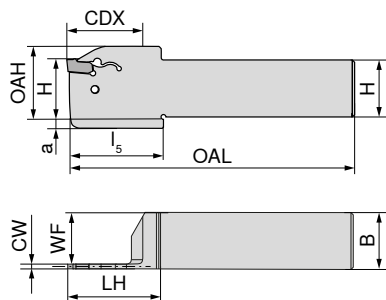


→ 8-12

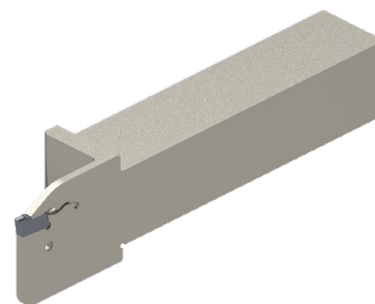


Please order SX assembly key separately if required.

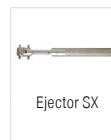
MonoClamp – Radial Monoholder SX



Illustrations show right-hand versions



Designation	H mm	B mm	CW mm	WF mm	OAL mm	LH mm	I 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	11,2	125	27	28	22	22	5	SX .2..	21201	21200
E16 R/L 0026-1616K-K-SX2	16	16	2	15,2	125	33	33	26	26	4	SX .2..	21601	21600
E20 R/L 0026-2020K-K-SX2	20	20	2	19,2	125	33	33	31	26	5	SX .2..	22001	22000
E25 R/L 0033-2525M-K-SX2	25	25	2	24,2	150	42	42	36	33	5	SX .2..	22501	22500
E16 R/L 0026-1616K-K-SX3	16	16	3	14,8	125	33	33	26	26	4	SX .3..	31601	31600
E20 R/L 0026-2020K-K-SX3	20	20	3	18,8	125	31	33	31	26	5	SX .3..	32001	32000
E25 R/L 0026-2525M-K-SX3	25	25	3	23,8	150	33		31	26		SX .3..	32501	32500
E25 R/L 0033-2525M-K-SX3	25	25	3	23,8	150	42	42	36	33	5	SX .3..	32601	32600
E20 R/L 0033-2020K-K-SX4	20	20	4	18,3	125	40	40	32	33	5	SX .4..	42001	42000
E25 R/L 0033-2525M-K-SX4	25	25	4	23,3	150	42	42	36	33	5	SX .4..	42501	42500
E25 R/L 0040-2525M-K-SX4	25	25	4	23,3	150	49	49	38	40	6	SX .4..	42601	42600
E25 R/L 0040-2525M-K-SX5	25	25	5	22,9	150	49	49	38	40	6	SX .5..	52501	52500
E25 R/L 0040-2525M-K-SX6	25	25	6	22,4	150	49	49	38	40	6	SX .6..	62501	62500



Ejector SX

Spare parts
for grooving inserts

	Left-hand 70 950 ...	Right-hand 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

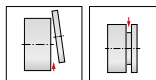


→ 8-12

 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

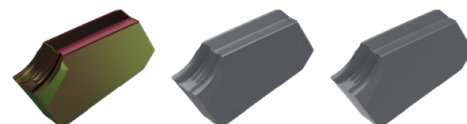
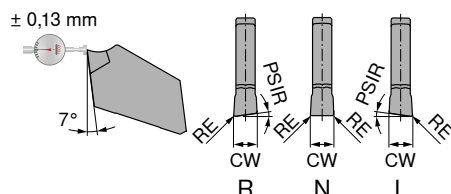
-F1
CTCP325



-F1
CTPP345



-F1
CTP1340



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 8-F1	R	3,1	0,20	8°	-FX 3.1		857	
FX 3.1 R 5-F1	R	3,1	0,20	5°	-FX 3.1		853	653
P						●	●	●
M						○	●	●
K						●		●
N								○
S						○	○	●
H								
O								○

→ v_c Page 102

→ Application recommendation on page 110

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

Internal machining

External machining



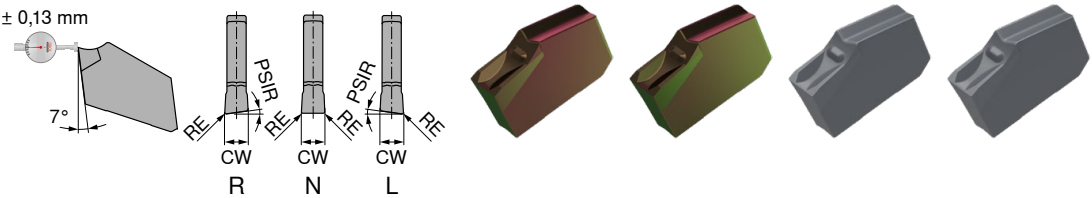
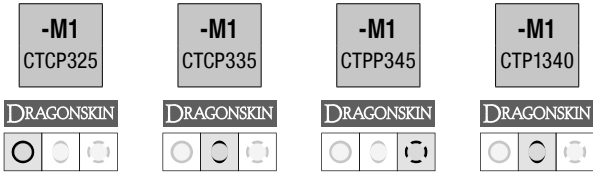
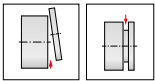
→ 27

→ 29

→ 28

Insert FX

▲ narrow version



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									○

→ v_c Page 102

→ Application recommendation on page 110

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

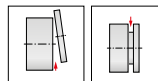
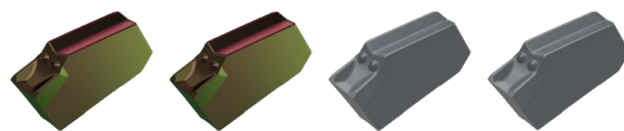
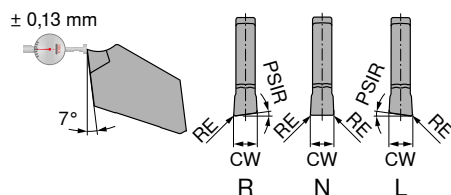
Internal machining

External machining



Insert FX

▲ wide version

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

Designation	IH	CW $\pm 0,05$ mm	RE $\pm 0,05$ 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
FX 5.1 R 6-M1	R	5,1	0,25	6°	-FX 5.1			816	
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



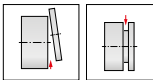
→ 27

→ 29

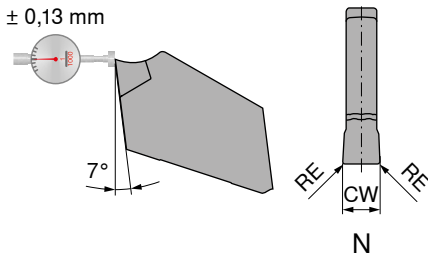
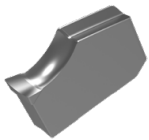
→ 28

Insert FX

- ▲ Insert with highly positive cutting edge geometry and sharp cutting edge
- ▲ Reduced built-up edge



-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
FX 3.1 N 0.15	N	3,1	0,15	-FX 3.1
FX 4.1 N 0.15	N	4,1	0,15	-FX 4.1

650
652
654

P	
M	
K	●
N	●
S	○
H	
O	○

→ v_c Page 102
→ Application recommendation on page 110

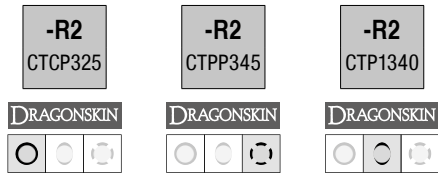
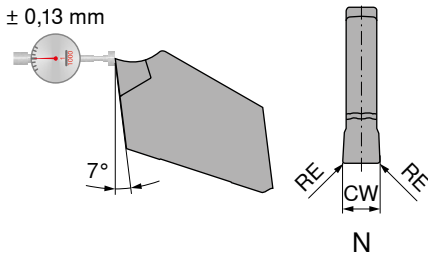
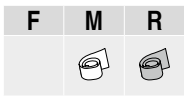
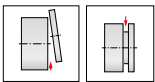
Internal machining

External machining

		→ 27	→ 29	→ 28				

Insert FX

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



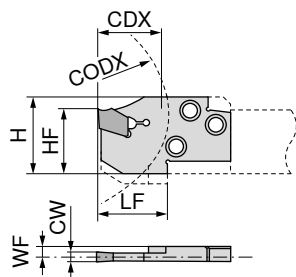
Designation	IH	CW mm -0,1	RE +/-0,05 mm	for tool holder	70 335 ...	70 335 ...	70 335 ...
FX 3.1 N 0.40-R2	N	3,1	0,4	-FX 3.1	902	852	652
FX 4.1 N 0.50-R2	N	4,1	0,5	-FX 4.1	908	858	658
P					●	●	●
M					○	●	●
K					●		●
N							○
S					○	○	●
H							
O							○

→ v_c Page 102
→ Application recommendation on page 110

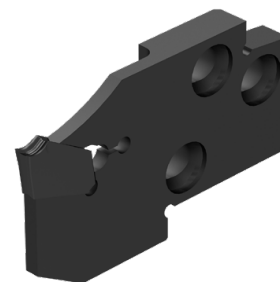
Internal machining	External machining
	→ 27 → 29 → 28

ModularClamp MSS – Radial grooving module FX short/long

▲ For parting and grooving



Illustrations show right-hand versions



Designation	HF mm	CW mm	WF mm	LF mm	H mm	CODX mm	CDX mm	for grooving inserts	Left-hand	Right-hand
									70 876 ...	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 25-FX 4.1	25	4,1	4,30	27	30	75	25	FX 4.1 ..	225	225
E25 R/L 25-FX 5.1	25	5,1	3,90	27	30	75	25	FX 5.1 ..	325	325
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 3.1	25	3,1	4,70	37	30	75	35	FX 3.1 ..	525	525
E25 R/L 35-FX 4.1	25	4,1	4,30	37	30	75	35	FX 4.1 ..	625	625
E25 R/L 35-FX 5.1	25	5,1	3,90	37	30	75	35	FX 5.1 ..	725	725
E25 R/L 35-FX 6.5	25	6,5	3,30	37	30	75	35	FX 6.5 ..	825	825
E32 R/L 32-FX 3.1	32	3,1	4,70	34	38	96	32	FX 3.1 ..	032	032
E32 R/L 32-FX 4.1	32	4,1	4,30	34	38	96	32	FX 4.1 ..	132	132
E32 R/L 32-FX 5.1	32	5,1	3,90	34	38	96	32	FX 5.1 ..	232	232
E32 R/L 32-FX 6.5	32	6,5	3,30	34	38	96	32	FX 6.5 ..	332	332
E32 R/L 45-FX 3.1	32	3,1	4,70	47	38	96	45	FX 3.1 ..	432	432
E32 R/L 45-FX 4.1	32	4,1	4,30	47	38	96	45	FX 4.1 ..	532	532
E32 R/L 45-FX 5.1	32	5,1	3,90	47	38	96	45	FX 5.1 ..	632	632
E32 R/L 45-FX 6.5	32	6,5	3,30	47	38	96	45	FX 6.5 ..	732	732

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



Ejector

70 950 ...



→ 22-26

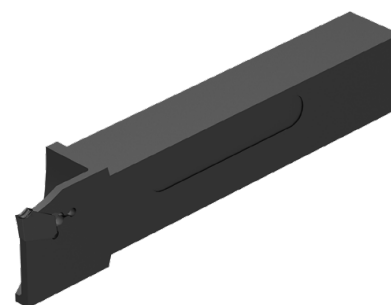
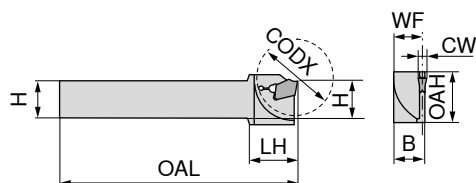
→ 93-95

→ 96

MonoClamp – Radial Monoholder FX

Scope of supply:

Blade and ejector



Illustrations show right-hand versions

Designation	H mm	B mm	OAL mm	LH mm	OAH mm	CW mm	WF mm	CODX mm	for grooving inserts	Left-hand	Right-hand
										70 837 ...	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 1212 M-FX2.2	12	12	150	19,4	21	2,2	11,18	30	FX 2.2 ..	103	103
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
XLCE R/L 1612 H-FX3.1	16	12	100	21,4	25	3,1	10,80	35	FX 3.1 ..	106	106
XLCE R/L 2016 K-FX3.1	20	16	125	26,4	26	3,1	14,80	40	FX 3.1 ..	107	107
XLCE R/L 2520 M-FX3.1	25	20	150	35,2	34	3,1	18,80	50	FX 3.1 ..	108	108
XLCE R/L 2016 K-FX4.1	20	16	125	26,4	26	4,1	14,40	40	FX 4.1 ..	109	109
XLCE R/L 2520 M-FX4.1	25	20	150	35,2	34	4,1	18,40	50	FX 4.1 ..	110	110



Spare parts

for grooving inserts

FX 2.2 ..	375
FX 3.1 ..	376
FX 4.1 ..	376

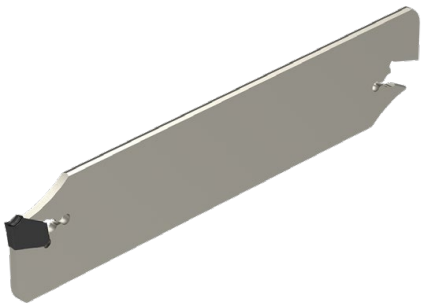
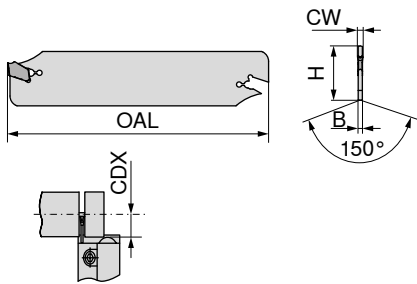


→ 22-26

MonoClamp – Radial Blade FX

Scope of supply:

Blade and ejector



							70 832 ...
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

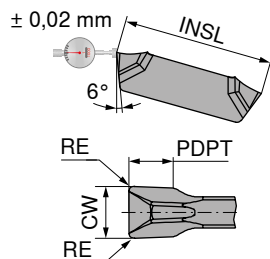
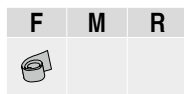
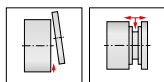


→ 22-26

→ 99+100

Insert GX 09/16

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



-F2
CTP1340



70 360 ...

Designation	INSL mm	CW mm	RE 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	○

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→ Application recommendation on page 104

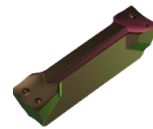
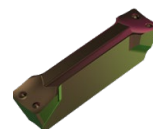
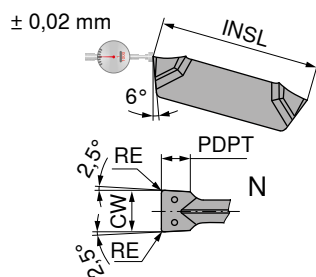
Internal machining

External machining

→ 40+41	→ 44+45	→ 38+39	→ 42+43					

Insert GX 09/16 – Standard

▲ Suitable for parting thin-walled workpieces



Designation	INSL mm	CW mm	RE 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 0.60	16	4,0	0,6	3,5	GX 16-3	918		
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 102

→ Application recommendation on page 104

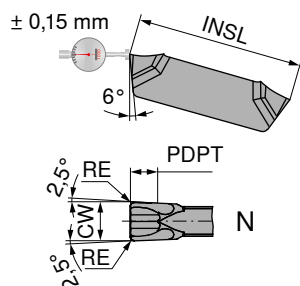
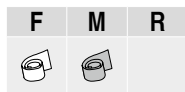
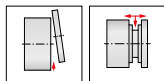
Internal machining

External machining

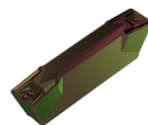
→ 40+41	→ 44+45	→ 38+39	→ 42+43					

Insert GX 09/16

▲ Very good swarf control



-M40
CTCP325



-M40
CTPP345



-M40
CTP1340



Designation	INSL mm	CW mm	RE mm	PDPT mm	for tool holder
GX 09-1 E2.00 N 0.20	9	2	0,2	1,5	GX 09-1
GX 09-2 E3.00 N 0.30	9	3	0,3	2,0	GX 09-2
GX 16-1 E2.00 N 0.20	16	2	0,2	2,5	GX 16-1
GX 16-2 E3.00 N 0.30	16	3	0,3	3,0	GX 16-2
GX 16-3 E4.00 N 0.40	16	4	0,4	3,5	GX 16-3
GX 16-3 E5.00 N 0.40	16	5	0,4	3,5	GX 16-3
GX 16-4 E6.00 N 0.50	16	6	0,5	4,0	GX 16-4

70 351 ...	70 351 ...	70 351 ...
986	886	686
994	894	694
902	802	602
910	810	610
918	818	618
926	826	626
930	830	630

P	●	●	●
M	○	●	●
K	●	○	●
N	○	○	○
S	○	○	●
H			
O			○

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Internal machining

External machining

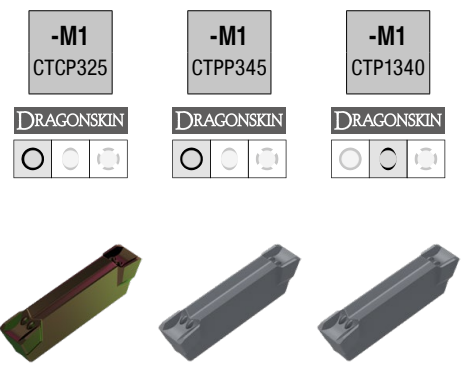
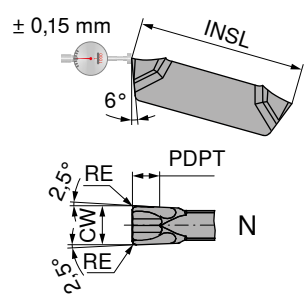
→ 40+41	→ 44+45	→ 38+39	→ 42+43					

Insert GX 16

▲ Very good swarf control



F	M	R



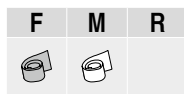
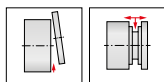
Designation	INSL mm	CW mm +/-0,05	RE mm +/-0,05	PDPT mm	for tool holder	70 362 ...	70 362 ...	70 362 ...
GX 16-1 E2.00 N 0.20	16	2	0,2	2,0	GX 16-1		800	600
GX 16-2 E3.00 N 0.20	16	3	0,2	2,5	GX 16-2	902	802	602
GX 16-3 E4.00 N 0.30	16	4	0,3	3,0	GX 16-3	904		604
P						●	●	●
M						○	●	●
K						●		●
N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

→ v_c Page 102
→ Application recommendation on page 105

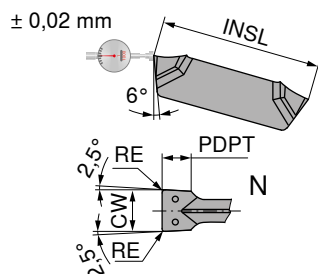
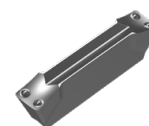
Internal machining		External machining						
→ 40+41	→ 45	→ 38+39	→ 43					

Insert GX 16

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



-27P
H216T



70 350 ...

Designation	INSL mm	CW mm	RE mm	PDPT mm	for tool holder
GX 16-1 E2.00 N 0.20	16	2	0,2	2,5	GX 16-1
GX 16-2 E3.00 N 0.30	16	3	0,3	3,0	GX 16-2
GX 16-3 E4.00 N 0.40	16	4	0,4	3,5	GX 16-3
GX 16-4 E6.00 N 0.50	16	6	0,5	4,0	GX 16-4

650
658
670
678

P	
M	
K	●
N	●
S	○
H	
O	○

→ v_c Page 102

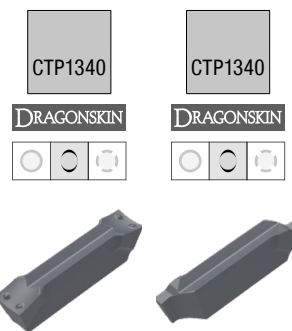
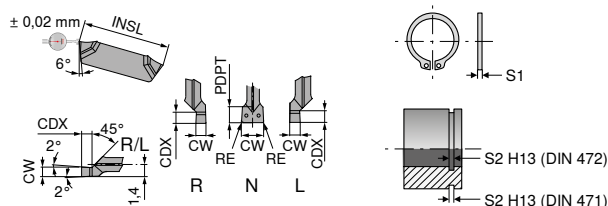
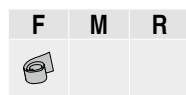
→ Application recommendation on page 104

Internal machining

External machining

→ 40+41	→ 45	→ 38+39	→ 43					

Circlip groove insert GX 09/16 – Standard



Designation	IH	INSL mm	S ₁ mm	S ₂ mm	CW mm	RE mm	CDX mm	PDPT mm	for tool holder
GX 09-1 S0.60 L	L	9	0,40	0,50	0,60		0,75		R/L 02-GX 09-1
GX 09-1 S0.80 L	L	9	0,60	0,70	0,80		0,94		R/L 02-GX 09-1
GX 09-1 S0.90 L	L	9	0,70	0,80	0,90		1,04		R/L 02-GX 09-1
GX 09-1 S1.00 L	L	9	0,80	0,90	1,00		1,14		R/L 02-GX 09-1
GX 09-1 S1.20 L	L	9	1,00	1,10	1,20		1,34		R/L 02-GX 09-1
GX 09-1 S1.40 L	L	9	1,20	1,30	1,40		1,53		R/L 02-GX 09-1
GX 09-1 S1.70 L	L	9	1,50	1,60	1,70		1,82		R/L 02-GX 09-1
GX 16-2 S0.60 L	L	16	0,40	0,50	0,60		0,75		R/L 03-GX 16-2
GX 16-2 S0.80 L	L	16	0,60	0,70	0,80		0,94		R/L 03-GX 16-2
GX 16-2 S0.90 L	L	16	0,70	0,80	0,90		1,04		R/L 03-GX 16-2
GX 16-2 S1.00 L	L	16	0,80	0,90	1,00		1,14		R/L 03-GX 16-2
GX 16-2 S1.20 L	L	16	1,00	1,10	1,20		1,34		R/L 03-GX 16-2
GX 16-2 S1.40 L	L	16	1,20	1,30	1,40		1,53		R/L 03-GX 16-2
GX 16-2 S1.70 L	L	16	1,50	1,60	1,70		1,82		R/L 03-GX 16-2
GX 16-2 S1.95 L	L	16	1,75	1,85	1,95		2,07		R/L 03-GX 16-2
GX 16-2 S2.25 L	L	16	2,00	2,15	2,25		2,36		R/L 03-GX 16-2
GX 09-1 S1.95 N	N	9	1,75	1,85	1,95	0,1		2,0	GX 09-1
GX 09-1 S2.25 N	N	9	2,00	2,15	2,25	0,1		2,0	GX 09-1
GX 09-2 S2.75 N	N	9	2,50	2,65	2,75	0,1		2,0	GX 09-2
GX 09-2 S3.25 N	N	9	3,00	3,15	3,25	0,1		2,0	GX 09-2
GX 16-2 S2.75 N	N	16	2,50	2,65	2,75	0,1		3,0	GX 16-2
GX 16-2 S3.25 N	N	16	3,00	3,15	3,25	0,1		3,0	GX 16-2
GX 16-3 S4.25 N	N	16	4,00	4,15	4,25	0,2		3,5	GX 16-3
GX 16-4 S5.25 N	N	16	5,00	5,15	5,25	0,2		4,0	GX 16-4
GX 09-1 S0.60 R	R	9	0,40	0,50	0,60		0,75		R/L 02-GX 09-1
GX 09-1 S0.80 R	R	9	0,60	0,70	0,80		0,94		R/L 02-GX 09-1
GX 09-1 S0.90 R	R	9	0,70	0,80	0,90		1,04		R/L 02-GX 09-1
GX 09-1 S1.00 R	R	9	0,80	0,90	1,00		1,14		R/L 02-GX 09-1
GX 09-1 S1.20 R	R	9	1,00	1,10	1,20		1,34		R/L 02-GX 09-1
GX 09-1 S1.40 R	R	9	1,20	1,30	1,40		1,53		R/L 02-GX 09-1
GX 09-1 S1.70 R	R	9	1,50	1,60	1,70		1,82		R/L 02-GX 09-1
GX 16-2 S0.60 R	R	16	0,40	0,50	0,60		0,75		R/L 03-GX 16-2
GX 16-2 S0.80 R	R	16	0,60	0,70	0,80		0,94		R/L 03-GX 16-2
GX 16-2 S0.90 R	R	16	0,70	0,80	0,90		1,04		R/L 03-GX 16-2
GX 16-2 S1.00 R	R	16	0,80	0,90	1,00		1,14		R/L 03-GX 16-2
GX 16-2 S1.20 R	R	16	1,00	1,10	1,20		1,34		R/L 03-GX 16-2
GX 16-2 S1.40 R	R	16	1,20	1,30	1,40		1,53		R/L 03-GX 16-2
GX 16-2 S1.70 R	R	16	1,50	1,60	1,70		1,82		R/L 03-GX 16-2
GX 16-2 S1.95 R	R	16	1,75	1,85	1,95		2,07		R/L 03-GX 16-2
GX 16-2 S2.25 R	R	16	2,00	2,15	2,25		2,36		R/L 03-GX 16-2

P	•	•
M	•	•
K	•	•
N	○	○
S	•	•
H		
O	○	○

→ v_s Page 102

→ Application recommendation on page 105

**Attention – applies only to internal machining:**

Right-hand insert → left-hand module or monobloc boring bar

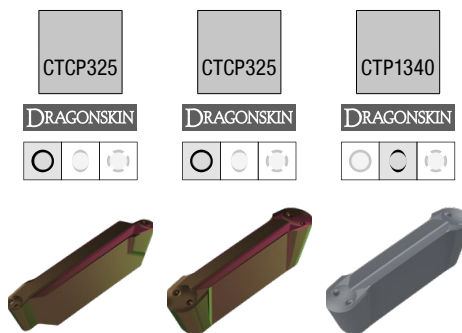
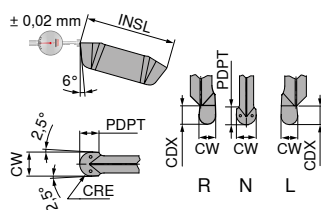
Left-hand insert → right-hand module or monobloc boring bar

Internal machining

External machining

→ 40+41	→ 44+45	→ 38+39	→ 42+43						

Radius groove insert GX 09/16



Designation	IH	INSL mm	CW mm	CRE mm	PDPT mm	CDX mm	for tool holder	70 354 ...	70 354 ...	70 354 ...
GX 09-1 R0.80 L	L	9	1,6	0,8		1,78	R/L 02-GX 09-1	988		
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 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 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 09-1 R0.80 R	R	9	1,6	0,8		1,78	R/L 02-GX 09-1	984		
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 102

→ 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

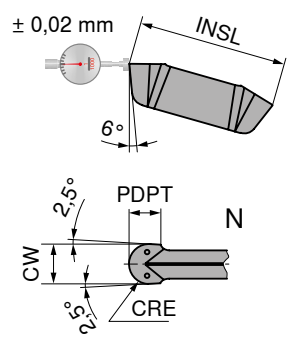
Internal machining

External machining

→ 40+41	→ 44+45	→ 38+39	→ 42+43						

Radius groove insert GX 16

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



70 354 ...

Designation	INSL mm	CW $\pm 0,02$ 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

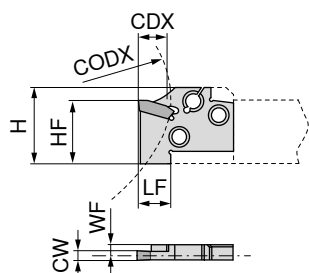
P	
M	
K	●
N	●
S	○
H	
O	○

→ v_c Page 102
→ Application recommendation on page 105

Internal machining		External machining							
→ 40+41	→ 45	→ 38+39	→ 43						

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



Illustrations show right-hand versions



Designation	CW mm	WF mm	LF mm	HF mm	H mm	CODX mm	CDX mm	for grooving inserts	Left-hand	Right-hand
									70 871 ...	70 870 ...
E12 R/L 02-GX 09-1	<1,95	3,15	8	12	14,5	36	2	GX 09-1 ..R/L	112	112
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
E32 R/L 03-GX 16-2	<2,75	4,90	13	32	38,0	96	3	GX 16-2 ..R/L	132	132



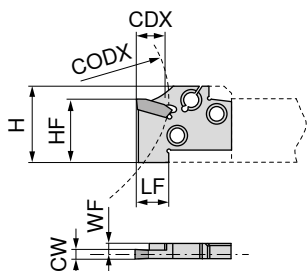
→ 30-37

→ 93-95

→ 96

ModularClamp MSS – Radial grooving module GX 09/16

- ▲ For grooving and turning
- ▲ For circlip grooves ≤ 5.25 mm
- ▲ For radius grooves up to ≤ 3.0 mm
- ▲ For external recessing



Illustrations show right-hand versions



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 ...
E12 R/L 07-GX 09-1	2,00 - 2,75	3,15	8	12	14,5	36	7	GX 09-1 ..N	012	012
E12 R/L 07-GX 09-2	2,76 - 3,75	3,15	8	12	14,5	36	7	GX 09-2 ..N	112	112
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	3,15	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
E32 R/L 12-GX 16-2	2,76 - 3,75	4,90	13	32	38,0	96	12	GX 16-2 ..N	132	132
E32 R/L 12-GX 16-3	3,76 - 5,00	4,43	13	32	38,0	96	12	GX 16-3 ..N	232	232
E32 R/L 12-GX 16-4	5,01 - 6,50	3,80	13	32	38,0	96	12	GX 16-4 ..N	332	332



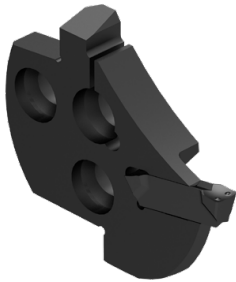
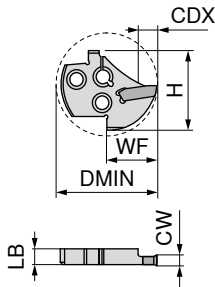
→ 30-37

→ 93-95

→ 96

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

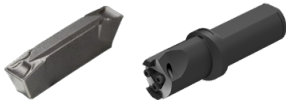
- ▲ For circlip grooves ≤ 2.75 mm
- ▲ For radius grooves up to ≤ 1.2 mm



Illustrations show right-hand versions

Designation	CW mm	LB mm	WF mm	H mm	CDX mm	DMIN mm	for grooving inserts	Left-hand	Right-hand
								70 886 ...	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

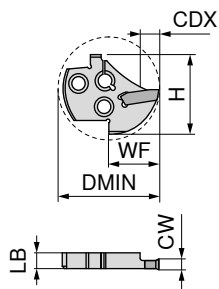
 Right hand module → left hand insert only
Left hand module → right hand insert only



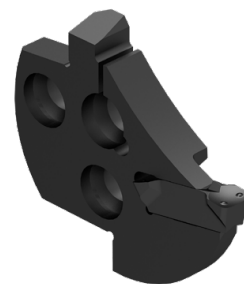
→ 30-37	→ 97								
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ModularClamp MSS – Radial Grooving module 09/16 for Internal machining

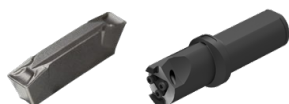
- ▲ For circlip grooves ≤ 5.25 mm
- ▲ For radius grooves up to ≤ 3.0 mm



Illustrations show right-hand versions



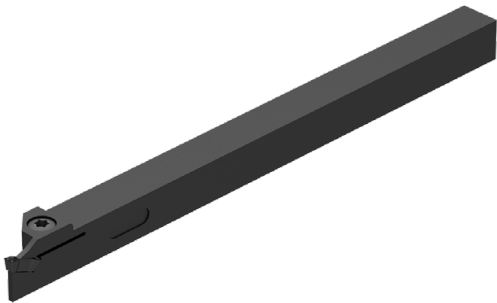
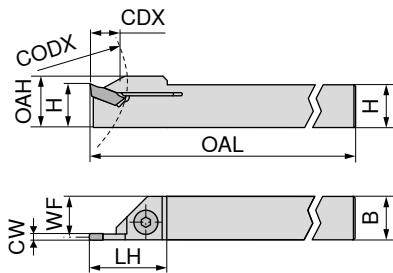
Designation	CW mm	LB mm	WF mm	H mm	CDX mm	DMIN mm	for grooving inserts	Left-hand	Right-hand
								70 881 ...	70 880 ...
I16 R/L 04-GX 09-1	2,00 - 2,75	3,8	10,0	16,4	4	20	GX 09-1 ..N	017	017
I16 R/L 04-GX 09-2	2,76 - 3,75	3,8	10,0	16,4	4	20	GX 09-2 ..N	117	117
I20 R/L 05-GX 09-1	2,00 - 2,75	3,8	12,0	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



→ 30-37

→ 97

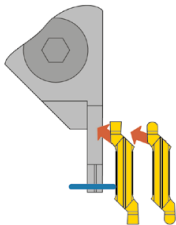
MonoClamp – Radial Monoholder GX 09



Illustrations show right-hand versions

Designation	H mm	B mm	CW mm	WF mm	OAH mm	OAL mm	LH mm	CODX mm	CDX mm	for grooving inserts GX 09 ..	Left-hand	Right-hand
											70 863 ...	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.



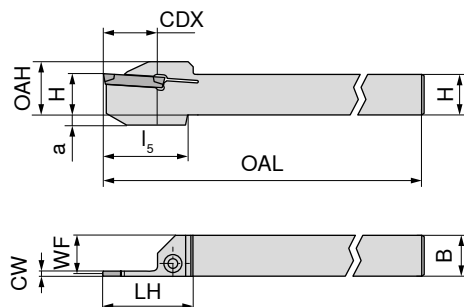
Spare parts
for grooving inserts
GX 09 ..

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



→ 30-36

MonoClamp – Radial Monoholder GX 16



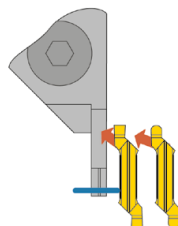
Illustrations show right-hand versions



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	Left-hand 70 889 ...	Right-hand 70 888 ...
E12 R/L 0012-1212K-GX16-1	12	12	2,00 - 2,75	11,35	17	125	26	24	4	12	GX 16-1	212	212
E12 R/L 0012-1212K-GX16-2	12	12	2,76 - 3,75	11,00	17	125	26	24	4	12	GX 16-2	312	312
E16 R/L 0012-1616K-GX16-1	16	16	2,00 - 2,75	15,35	21	125	26	24	4	12	GX 16-1	216	216
E16 R/L 0012-1616K-GX16-2	16	16	2,76 - 3,75	15,00	21	125	26	24	4	12	GX 16-2	316	316
E16 R/L 0012-1616K-GX16-3	16	16	3,76 - 5,00	14,53	21	125	26	24	4	12	GX 16-3	416	416
E20 R/L 0012-2020K-GX16-1	20	20	2,00 - 2,75	19,35	25	125	26			12	GX 16-1	220	220
E20 R/L 0012-2020K-GX16-2	20	20	2,76 - 3,75	19,00	25	125	26			12	GX 16-2	320	320
E20 R/L 0012-2020K-GX16-3	20	20	3,76 - 5,00	18,53	25	125	26			12	GX 16-3	420	420
E25 R/L 0012-2525M-GX16-2	25	25	2,76 - 3,75	24,00	30	150	26			12	GX 16-2	325	325
E25 R/L 0012-2525M-GX16-3	25	25	3,76 - 5,00	23,53	30	150	26			12	GX 16-3	425	425



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

Spare parts
for grooving inserts

			80 950 ...	70 950 ...
GX 16-1	T15	113	M3,5x14	160
GX 16-2	T15	113	M3,5x14	160
GX 16-3	T15	113	M3,5x14	160

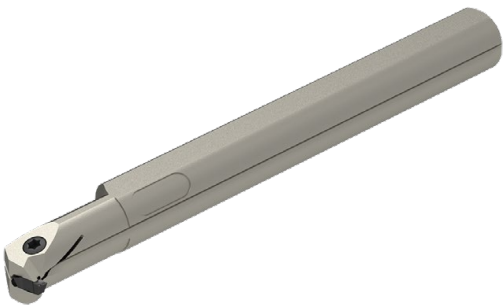
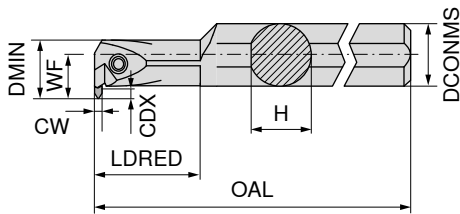


→ 30-37

Key D

Clamping screw

MonoClamp – Radial Mono-boring bars GX 09

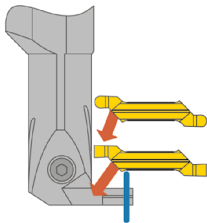


Illustrations show right-hand versions

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



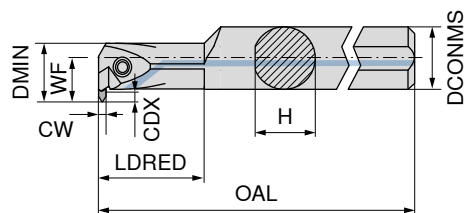
Spare parts
for grooving inserts
GX 09 ..

T15	80 950 ...	113	M3,5x12,5	70 950 ...	441
					



→ 30-36

MonoClamp – Radial Mono-boring bars GX 16



Illustrations show right-hand versions

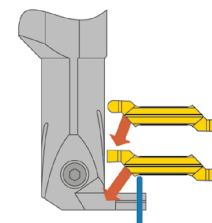
Designation	H mm	DCONMS mm	DMIN mm	CW mm	CDX mm	WF mm	OAL mm	LDRED mm	for grooving inserts	Left-hand 70 893 ...	Right-hand 70 892 ...
I16 R/L 90-2.0D-GX16-1	15,25	16	20,5	2,00 - 2,75	5,0	13,5	150	32	GX 16-1	516	516
I16 R/L 90-2.0D-GX16-2	15,25	16	20,5	2,76 - 3,75	5,0	13,5	150	32	GX 16-2	616	616
I20 R/L 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.



Spare parts for grooving inserts

		80 950 ...	70 950 ...
GX 16-1	T15	113	403
GX 16-2	T15	113	403
GX 16-3	T15	113	403



Key D



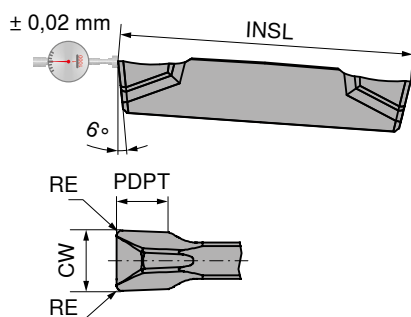
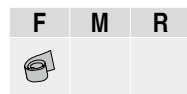
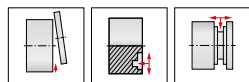
Clamping screw



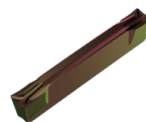
→ 30-37

Insert GX 24

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



-F2
CTCP325



-F2
CTPP345



-F2
CTP1340



Designation	INSL mm	CW mm +/-0,02	RE mm +/-0,05	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 102

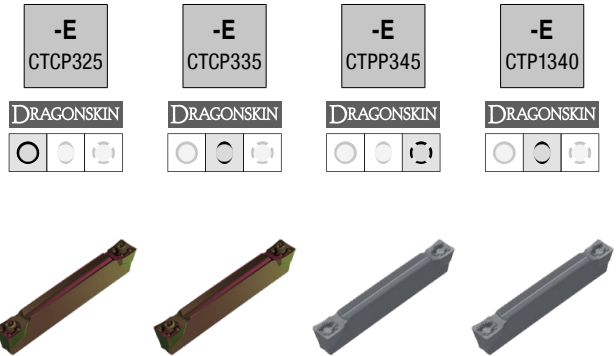
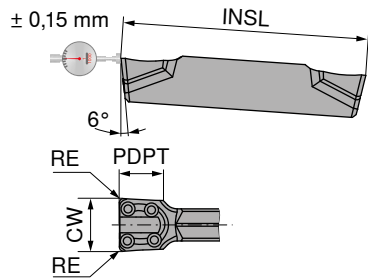
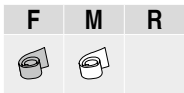
→ Application recommendation on page 104

Internal machining

External machining



Insert GX 24



Designation	INSL mm	CW mm	RE 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 102
→ Application recommendation on page 104

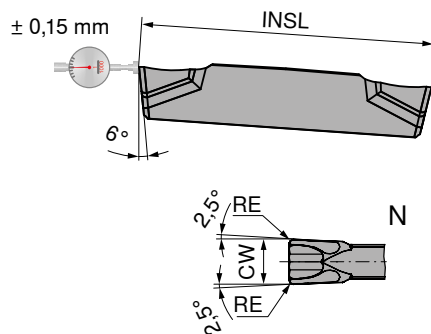
Internal machining

External machining



Insert GX 24

▲ Very good swarf control



-M1
CTCP325



-M1
CTPP345



-M1
CTP1340



Designation	INSL mm	CW mm	RE mm	for tool holder
GX 24-1 E2.00 N 0.20	24	2	0,2	GX 24-1
GX 24-2 E3.00 N 0.20	24	3	0,2	GX 24-2
GX 24-3 E4.00 N 0.30	24	4	0,3	GX 24-3

70 363 ...	70 363 ...	70 363 ...
900	800	600
902	802	602
904	804	604

P	●	●	●
M	○	●	●
K	●	●	●
N	○	○	○
S	○	○	●
H			
O			○

→ v_c Page 102

→ Application recommendation on page 105

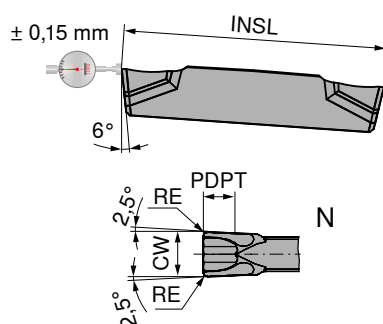
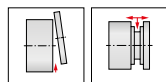
Internal machining

External machining



Insert GX 24

▲ Very good swarf control

-M40
CTCP325-M40
CTPP345-M40
CTP1340

Designation	INSL mm	CW mm	RE 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								○

→ v_s Page 102

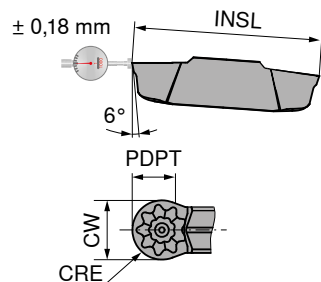
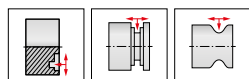
→ Application recommendation on page 104

Internal machining

External machining

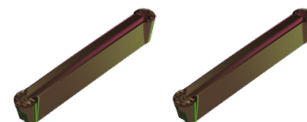


Radius groove insert GX 24



-M3
CTCP325

-M3
CTCP335



Designation	INSL mm	CW $\pm 0,05$ mm	CRE mm	PDPT mm	for tool holder
GX 24-2 R1.50 N	24,4	3	1,5	1,5	GX 24-2
GX 24-3 R2.00 N	24,4	4	2,0	2,5	GX 24-3
GX 24-3 R2.50 N	24,4	5	2,5	3,0	GX 24-3
GX 24-4 R3.00 N	24,4	6	3,0	4,0	GX 24-4

70 354 ...

70 354 ...

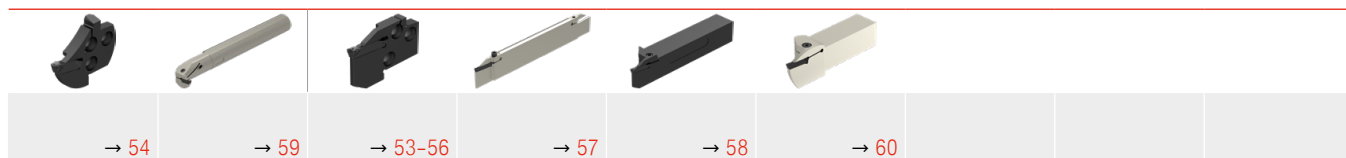
P	●	●
M	○	○
K	●	●
N		
S	○	
H		
O		

→ v_c Page 102

→ Application recommendation on page 105

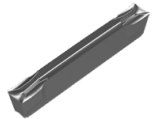
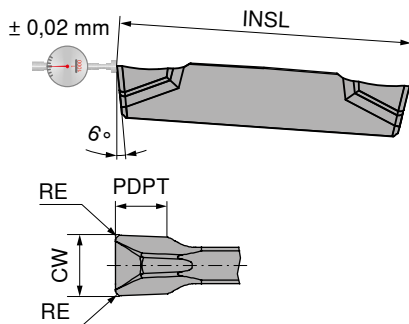
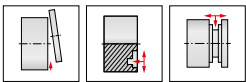
Internal machining

External machining



Insert GX 24

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



70 350 ...

Designation	INSL mm	CW mm	RE mm	PDPT mm	for tool holder
GX 24-2 E3.00 N 0.30	24	3	0,3	2,5	GX 24-2
GX 24-3 E4.00 N 0.40	24	4	0,4	3,0	GX 24-3
GX 24-3 E5.00 N 0.40	24	5	0,4	3,5	GX 24-3
GX 24-4 E6.00 N 0.50	24	6	0,5	4,0	GX 24-4

682
684
686
688

P	
M	
K	●
N	●
S	○
H	
O	○

→ v_c Page 102
→ Application recommendation on page 104

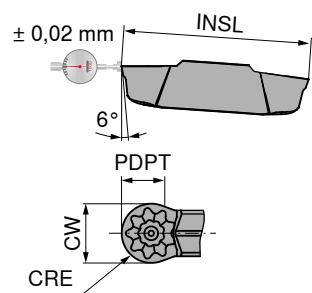
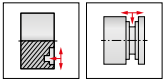
Internal machining

External machining



Radius grooving insert GX 24

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



70 353 ...

Designation	INSL mm	CW $\pm 0,02$ 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	○

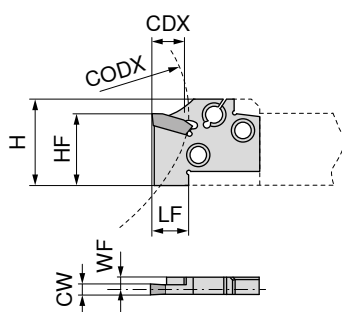
→ v_c Page 102
→ Application recommendation on page 105

Internal machining		External machining					
→ 54	→ 59	→ 53-56	→ 57	→ 58	→ 60		

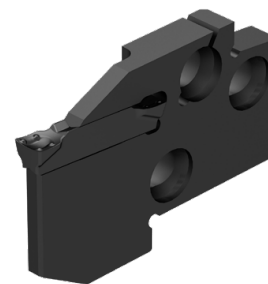
ModularClamp MSS – Radial grooving module GX 24

▲ For deep radial parting and grooving

▲ For turning



Illustrations show right-hand versions



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	3,85	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	3,00	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
E32 R 21-GX 24-2	3	4,95	22	32	38	48	21	GX 24-2		13200
E32 R/L 21-GX 24-3	4/5	4,43	22	32	38	96	21	GX 24-3	232	232
E32 R/L 21-GX 24-4	6	3,80	22	32	38	96	21	GX 24-4	332	332



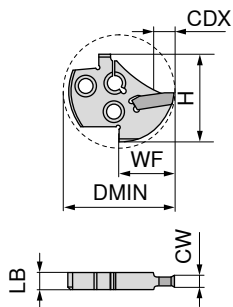
→ 46-52

→ 93-95

→ 96

ModularClamp MSS – Radial Grooving module GX 24 for Internal machining

▲ for grooving and turning

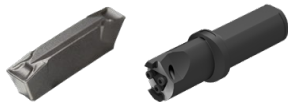


Neutral

70 880 ...

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
I40 N 19-GX 24-3	3,76 - 5,00	6,2	33,5	40,7	19	60	GX 24-3 ..N
I40 N 19-GX 24-4	5,01 - 6,50	6,2	33,5	40,7	19	60	GX 24-4 ..N

340
440
540

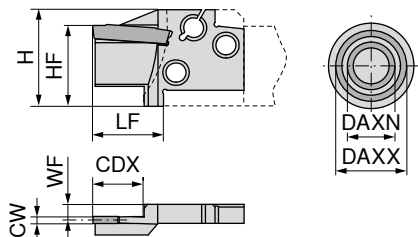


→ 46-52

→ 97

ModularClamp MSS – Axial grooving module GX 24 short

- ▲ For axial grooving
- ▲ For face turning



Illustrations show right-hand versions



Designation	DAXN mm	DAXX mm	CW mm	WF mm	LF mm	HF mm	H mm	CDX mm	for grooving inserts	Left-hand	Right-hand
										70 891 ...	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
E32 R/L 15-GX 24-3 A	70	100	4/5	4,43	22	32	38	15	GX 24-3	300	300
E32 R/L 15-GX 24-3 A	100	150	4/5	4,43	22	32	38	15	GX 24-3	302	302
E32 R/L 15-GX 24-3 A	150	300	4/5	4,43	22	32	38	15	GX 24-3	304	304
E32 R/L 15-GX 24-4 A	70	100	6	3,80	22	32	38	15	GX 24-4	306	306
E32 R/L 15-GX 24-4 A	100	150	6	3,80	22	32	38	15	GX 24-4	308	308
E32 R/L 15-GX 24-4 A	150	300	6	3,80	22	32	38	15	GX 24-4	310	310
E32 R/L 15-GX 24-4 A	300	900	6	3,80	22	32	38	15	GX 24-4	312	312



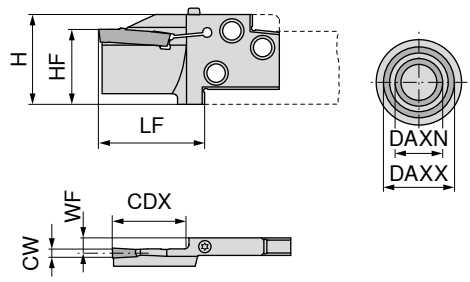
→ 46-52

→ 93-95

→ 96

ModularClamp MSS – Axial grooving module GX 24 long

- ▲ For axial grooving
- ▲ For face turning



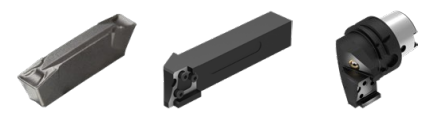
Illustrations show right-hand versions



Designation	DAXN mm	DAXX mm	CW mm	WF mm	LF mm	HF mm	H mm	CDX mm	for grooving inserts	Left-hand	Right-hand
										70 895 ...	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

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

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

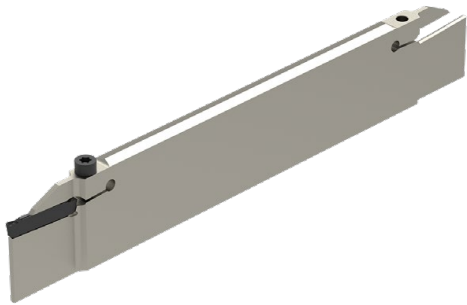
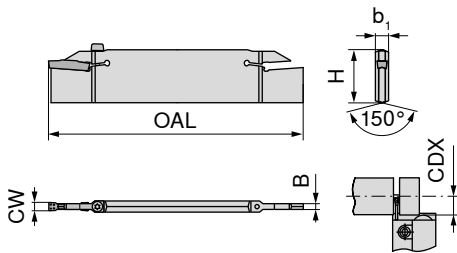


→ 46-52	→ 93-95	→ 96						
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MonoClamp – Radial Blade GX 24

Scope of supply:

Blade incl. clamping screw and tightening wrench



70 834 ...

Designation	CW mm	H mm	B mm	b ₁ mm	OAL mm	CDX mm	for grooving inserts	
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

80 950 ...

70 950 ...

Spare parts for grooving inserts

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

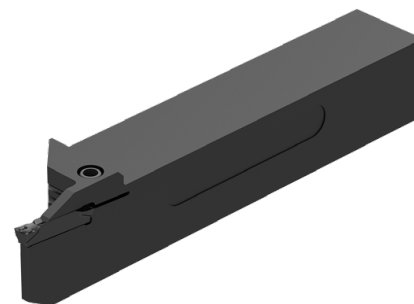
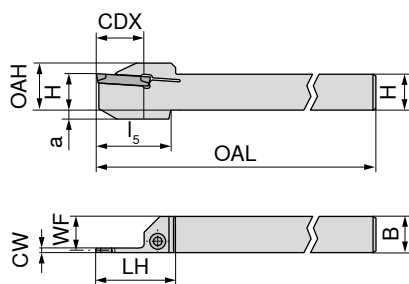


→ 46-52

→ 99+100

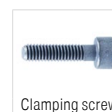
→ Chapter 16

MonoClamp – Radial Monoholder GX 24



Illustrations show right-hand versions

Designation	H mm	B mm	CW mm	WF mm	OAH mm	OAL mm	LH mm	I ₅ mm	CDX mm	a mm	for grooving inserts	Left-hand	Right-hand
												70 863 ...	70 862 ...
E16 R/L 0021-1616K-GX24-1	16	16	2,00 - 2,75	15,20	21	125	35	32	21	4	GX 24-1	160	160
E16 R/L 0021-1616K-GX24-2	16	16	2,76 - 3,75	15,00	21	125	35	32	21	4	GX 24-2	016	016
E20 R/L 0021-2020K-GX24-1	20	20	2,00 - 2,75	19,20	25	125	35		21		GX 24-1	200	200
E20 R/L 0021-2020K-GX24-2	20	20	2,76 - 3,75	19,00	25	125	35		21		GX 24-2	020	020
E20 R/L 0021-2020K-GX24-3	20	20	3,76 - 5,00	18,53	25	125	35		21		GX 24-3	120	120
E25 R/L 0021-2525M-GX24-2	25	25	2,76 - 3,75	24,00	30	150	35		21		GX 24-2	025	025
E25 R/L 0021-2525M-GX24-3	25	25	3,76 - 5,00	23,53	30	150	35		21		GX 24-3	125	125
E25 R/L 0021-2525M-GX24-4	25	25	5,01 - 6,50	22,90	30	150	35		21		GX 24-4	225	225
E32 R/L 0021-3225P-GX24-2	32	25	2,76 - 3,75	24,00	37	170	35		21		GX 24-2	032	032
E32 R/L 0021-3225P-GX24-3	32	25	3,76 - 5,00	23,53	37	170	35		21		GX 24-3	132	132
E32 R/L 0021-3225P-GX24-4	32	25	5,01 - 6,50	22,90	37	170	35		21		GX 24-4	232	232

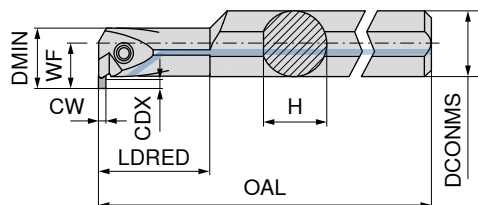
Spare parts
for grooving inserts

		80 950 ...	70 950 ...
GX 24-1	T20	114	204
GX 24-2	T20	114	204
GX 24-3	T20	114	204
GX 24-4	T20	114	204



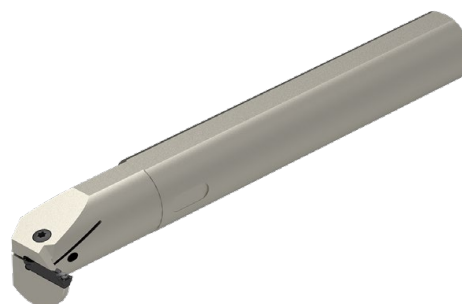
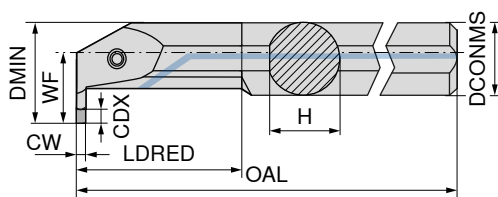
→ 46-52

MonoClamp – Radial Mono-boring bars GX 24



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-GX24-2	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

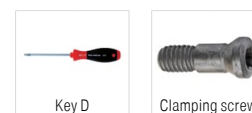
MonoClamp – Radial Mono-boring bars GX 24



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

Spare parts
for grooving inserts

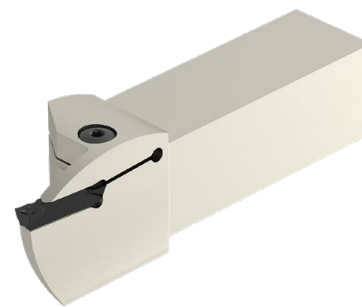
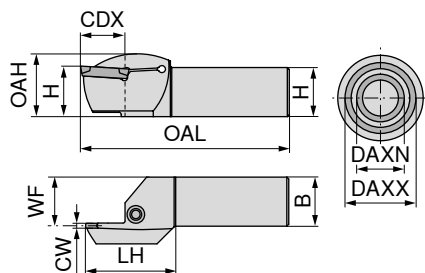
GX 24-2	114	404
GX 24-3	114	404
GX 24-4	114	404



80 950 ... 70 950 ...



MonoClamp – Axial Monoholder GX24

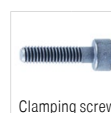


Illustrations show right-hand versions

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	40	45	32	115	45	12	GX 24-2	200	200
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	40	45	32	115	45	12	GX 24-3	230	230
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 0020-2525X-GX24-4	25	25	6	23,2	40	50	32	115	45	20	GX 24-4	260	260
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

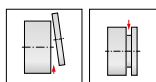
		80 950 ...	70 950 ...
GX 24-2	T15 - IP	128	M5x18 865
GX 24-3	T15 - IP	128	M5x18 865
GX 24-4	T15 - IP	128	M5x18 865



→ 46-52

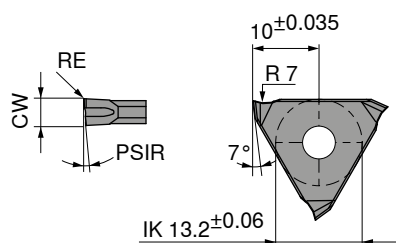
TX grooving insert for grooving and parting off

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

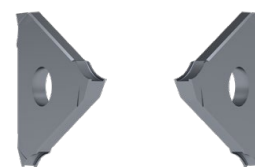


CWX500

CWX500



Illustrations show right-hand versions



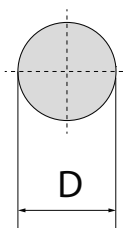
Designation	CW _{-0.05} mm	RE mm	PSIR	for tool holder	Left-hand 73 302 ...	Right-hand 73 301 ...
TX R/L 0518.00.1	1,99	0,1	5°	R/L 207 ... / 780 ... 1	204	204
TX R/L 0521.00.2	2,29	0,1	5°	R/L 207 ... / 780 ... 2	206	206
TX R/L 0526.00.2	2,79	0,1	5°	R/L 207 ... / 780 ... 2	208	208
P					●	●
M					●	●
K					●	●
N					●	●
S					●	●
H					○	○
O					●	●

→ v_c Page 103

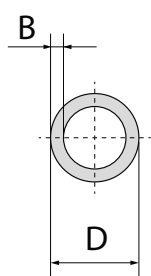
Grooving depth

Full material

Pipe



max. 10 mm



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

Internal machining

External machining



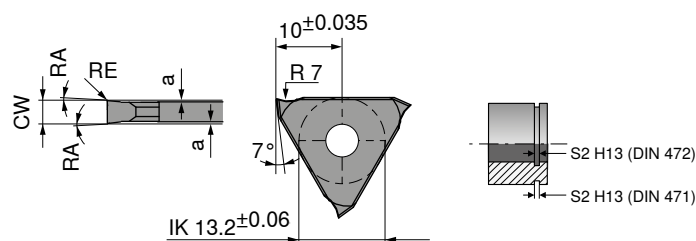
→ 66-68

TX insert for circlip grooves

▲ For circlip grooves according to DIN 471 / 472



CWX500



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 103

Internal machining

External machining



→ 70

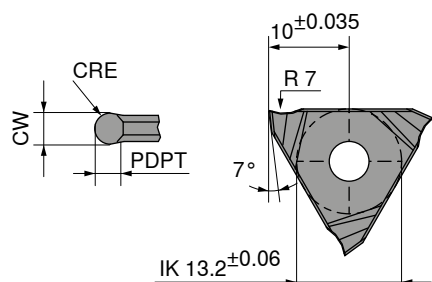
→ 66-69

Radial TX insert for corner recessing

▲ Full radius for cutting width 0.5–5.0 mm



CWX500



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 103

11

Internal machining

External machining



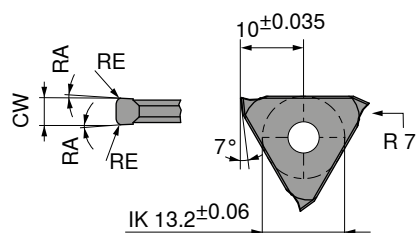
→ 70

→ 66-69

TX insert for fine and copy turning



CWX500



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 0300.08.2	3,0	0,8	3	R/L 207 ... / 738 ... / 660 ... 2	214
TX N 0300.02.2	3,0	0,2	3	R/L 207 ... / 738 ... / 660 ... 2	210
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
TX N 0400.08.3	4,0	0,8	3	R/L 207 ... / 738 ... / 660 ... 3	218

P	●
M	●
K	●
N	●
S	●
H	○
O	●

→ v_c Page 103

Internal machining

External machining

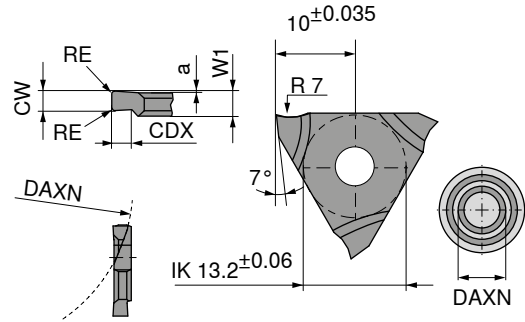


→ 70

→ 66-68

TX insert for axial grooving

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



Illustrations show right-hand versions



Left-hand

Right-hand

Designation	CW mm	W1 mm	CDX mm	a mm	DAXN mm	RE mm	for tool holder
TX R/L 2015.2.2	1,5	2,7	2,0	0,2	20	0,2	R/L 207 ... 2
TX R/L 3020.2.2	2,0	2,7	3,0	0,2	30	0,2	R/L 207 ... 2
TX R/L 3030.2.3	3,0	3,7	3,0	0,2	30	0,2	R/L 207 ... 3
TX R/L 3040.2.4	4,0	4,3	3,5	0,2	30	0,2	R/L 207 ... 4
TX R/L 3050.2.4	5,0	5,3	3,5	0,2	30	0,2	R/L 207 ... 4

73 306 ...

73 305 ...

P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H	○	○
O	●	●

→ v_c Page 103

Internal machining

External machining

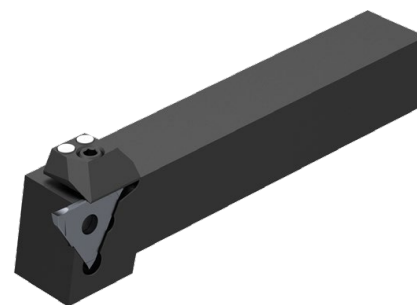
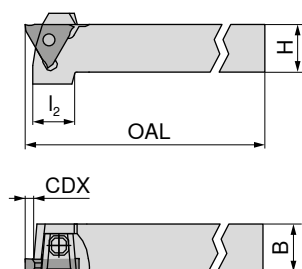


→ 66

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

▲ For radial and axial grooving

▲ Cutting width 0.5 – 6.3 mm



Illustrations show right-hand versions

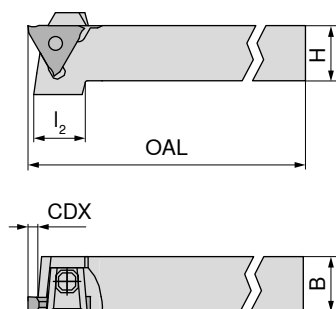
Designation	H mm	B mm	OAL mm	l ₂ mm	CDX mm	for grooving inserts	Left-hand	Right-hand
							73 501 ...	73 500 ...
R/L 207.1212.1	12	12	100	24	4	TX R/N/L ...1	112	112
R/L 207.1616.1	16	16	125	22	4	TX R/N/L ...1	116	116
R/L 207.2020.1	20	20	125	21	4	TX R/N/L ...1	120	120
R/L 207.2525.1	25	25	150		4	TX R/N/L ...1	125	125
R/L 207.3232.1	32	32	170		4	TX R/N/L ...1	132	132
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 207.3232.2	32	32	170		6	TX R/N/L ...2	232	232
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/L 207.3232.3	32	32	170		6	TX R/N/L ...3	332	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
R/L 207.3232.4	32	32	170		6	TX R/N/L ...4	432	432

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

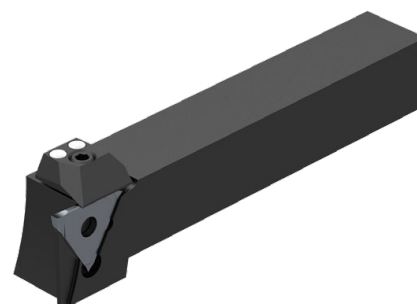


→ 61-65

- ▲ For radial parting and grooving
- ▲ Cutting width 1,9 – 6,3 mm



Illustrations show right-hand versions



							Left-hand	Right-hand
							73 503 ...	73 502 ...
Designation	H mm	B $\pm 0,1$ mm	OAL mm	I ₂ mm	CDX mm	for grooving inserts		
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 780.3232.2	32	32	170		8	TX R/N/L ...2	132	132
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 780.3232.3	32	32	170		8	TX R/N/L ...3	232	232
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
R/L 780.3232.4	32	32	170		8	TX R/N/L ...4	332	332

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

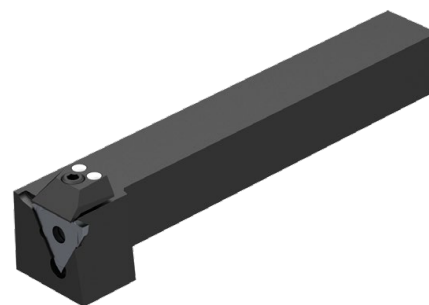
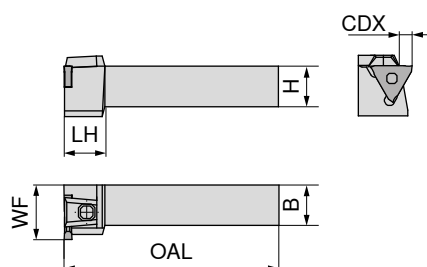


→ 61-63

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

▲ For radial grooving

▲ Cutting width 0,5 – 6,3 mm



Illustrations show right-hand versions

Designation	H mm	B _{+/-0,1} mm	OAL mm	LH mm	WF _{+/-0,07} mm	CDX mm	for grooving inserts	Left-hand	Right-hand
								73 505 ...	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

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

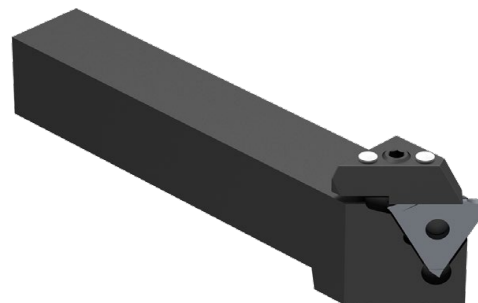
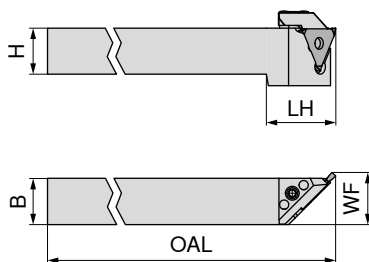


→ 62-64

MonoClamp – Tool holder TX 45°

▲ For recessing

▲ Cutting width 1,9 – 6,3 mm



Illustrations show right-hand versions

Designation	H mm	B mm	OAL mm	WF mm	LH mm	for grooving inserts	Left-hand	Right-hand
							73 507 ...	73 506 ...
R/L 618.2020.2	20	20	125	21,5	30	TX R/N/L ...2	120	120
R/L 618.2525.2	25	25	150	26,5		TX R/N/L ...2	125	125
R/L 618.3232.2	32	32	170	33,5		TX R/N/L ...2	132	132
R/L 618.2020.3	20	20	125	21,5	30	TX R/N/L ...3	220	220
R/L 618.2525.3	25	25	150	26,5		TX R/N/L ...3	225	225
R/L 618.3232.3	32	32	170	33,5		TX R/N/L ...3	232	232
R/L 618.2020.4	20	20	125	21,5	30	TX R/N/L ...4	320	320
R/L 618.2525.4	25	25	150	26,5		TX R/N/L ...4	325	325
R/L 618.3232.4	32	32	170	33,5		TX R/N/L ...4	332	332

Spare parts for grooving inserts

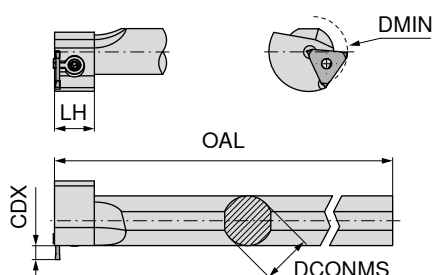
		70 950 ...	73 950 ...	73 950 ...	73 950 ...	73 950 ...
TX R/N/L ...2	SW3	176	001	005	028	030
TX R/N/L ...2	SW3	176			028	030
TX R/N/L ...3	SW3	176	001	005	028	030
TX R/N/L ...3	SW3	176			028	030
TX R/N/L ...4	SW3	176		007	028	030
TX R/N/L ...4	SW3	176	002		028	030



→ 62+63

MonoClamp – Radial Boring bar TX

- ▲ For radial internal grooving
- ▲ Cutting width 0,5 – 6,3 mm



Illustrations show right-hand versions



Designation	DCONMS mm	DMIN mm	OAL mm	LH mm	CDX mm	for grooving inserts	Left-hand	Right-hand
							73 511 ...	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
R/L 660.0025.4	25	46	170	20	2	TX R/N/L ...4	425	425
R/L 660.0032.4	32	46	200	20	2	TX R/N/L ...4	432	432
R/L 660.0040.4	40	46	250		2	TX R/N/L ...4	440	440

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

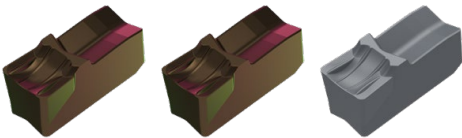
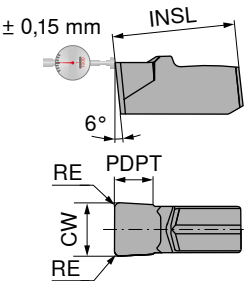
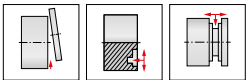
	73 950 ...	70 950 ...	73 950 ...
TX R/N/L ...1	011	SW3	176
TX R/N/L ...2	011	SW3	176
TX R/N/L ...3	011	SW3	176
TX R/N/L ...4	011	SW3	176



→ 62-64

Insert LX

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



Designation	INSL mm	CW mm -/+0,08	RE mm -/+0,1	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 102
→ Application recommendation on page 109

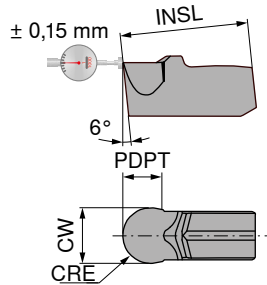
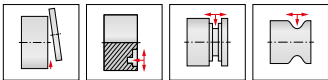
Internal machining

External machining

							
→ 73	→ 73	→ 74					

Radial Grooving Insert LX

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

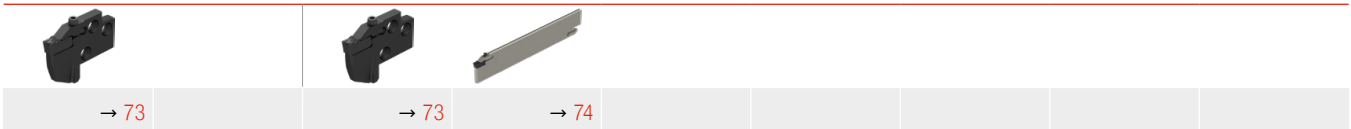


Designation	INSL mm	CW mm $\pm 0,08$	CRE mm	PDPT mm	for tool holder	70 337 ...	70 337 ...	70 337 ...
LXR 4.00N-M3	19	8	4	5	E32 N ..-LX	908	518	618
P						●	●	●
M						○	○	●
K						●	●	●
N								○
S						○		●
H								
O								○

→ v_c Page 102
→ Application recommendation on page 109

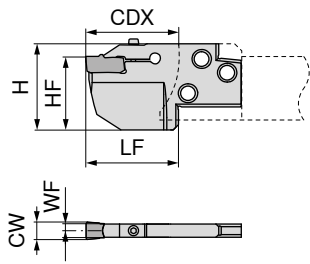
Internal machining

External machining



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



Neutral

70 835 ...

Designation	CW mm	WF mm	LF mm	HF mm	H mm	CDX (1) mm	CDX (2) mm	CDX (3) mm	for grooving inserts	
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

Spare parts
for grooving inserts
LX ..

 Key D	 Clamping screw
80 950 ...	70 950 ...
T20	114 M4x18 204





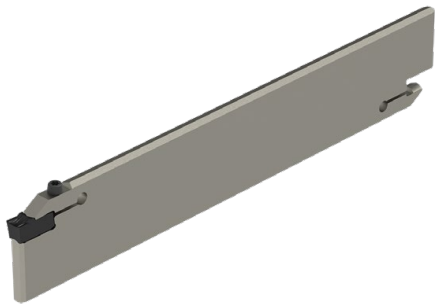
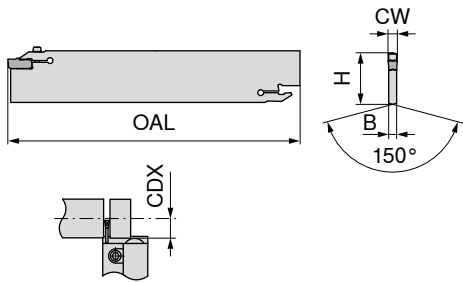
→ 71+72

→ 93-95

MonoClamp – Blade LX

Scope of supply:

Blade incl. clamping screw and tightening wrench



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

Spare parts
for grooving inserts
LX ..

	 Key D	 Clamping screw	
	80 950 ...	70 950 ...	
T20	114	M4x18	204



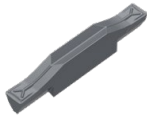
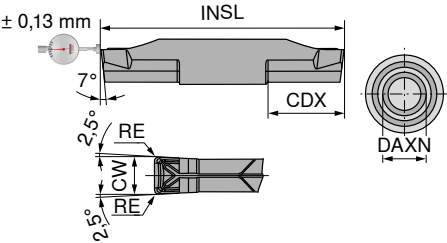
→ 71+72	→ 99+100	→ Chapter 16						
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Grooving insert AX

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



-F50
CTP1340



Designation	IH	INSL mm	CW mm	RE 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
AX 10 E3.00 N 0.30	N	34	3	0,3	10	20	E.. R/L.. -AX 10
AX 15 E3.00 N 0.30	N	44	3	0,3	15	30	E.. R/L.. -AX 15

70 327 ...

P	●
M	●
K	●
N	○
S	●
H	
O	○

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→ Application recommendation on page 110

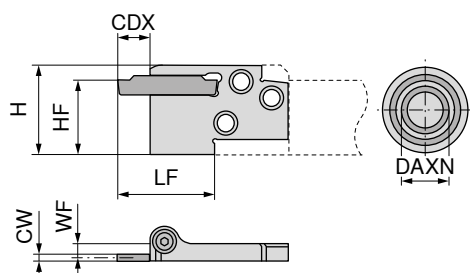
Internal machining

External machining

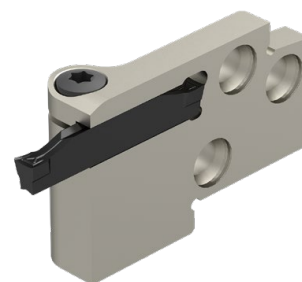
		→ 76	→ 77	→ 78				

ModularClamp MSS – Axial grooving module AX

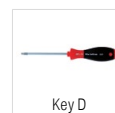
▲ for axial grooving and turning



Illustrations show right-hand versions



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.

Article no.	Key D	Clamping screw
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

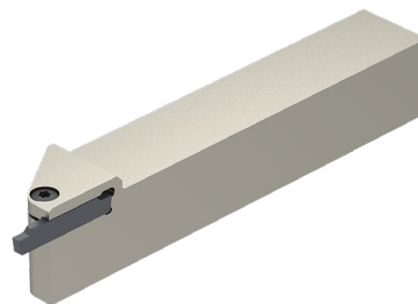
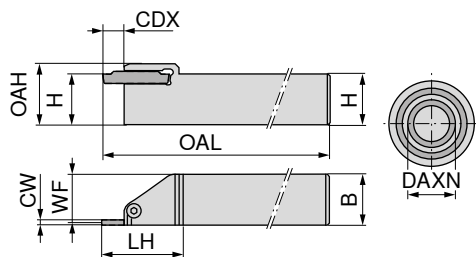


→ 75

→ 93-95

→ 96

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



Illustrations show right-hand versions

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

Spare parts for Article no.

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



Key D

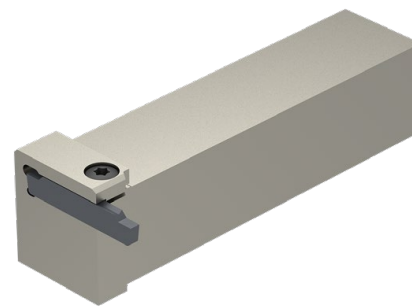
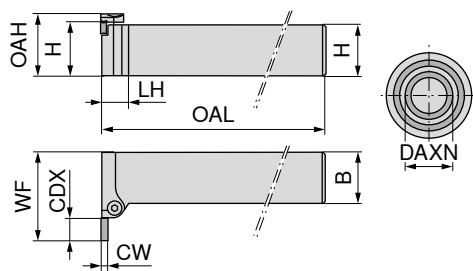


Clamping screw

80 950 ...

70 950 ...

→ 75

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

Illustrations show right-hand versions

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



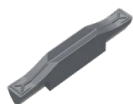
Key D



Clamping screw

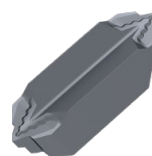
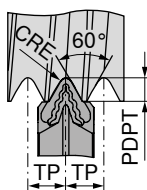
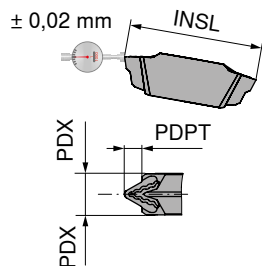
**Spare parts
for Article no.**

		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

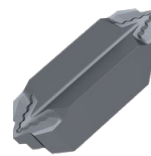


→ 75

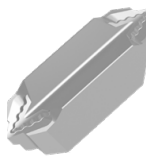
Threading inserts TC full profile – External thread 60°



70 357 ...

010
012
014
016
018

70 357 ...

110
112
114
116
118

70 357 ...

610
612
614
616
618

Designation	Size	TP mm	INSL mm	PDPT mm	PDX mm	CRE mm	for tool holder			
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			
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			
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			
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			
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			
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			
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			
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			
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			
TC 16-3 E 3.5 ISO	TC 16-3 ...	3,50	16	2,21	3,10	0,44	E25 N TC 16-3			
TC 16-3 E 4.0 ISO	TC 16-3 ...	4,00	16	2,53	3,10	0,50	E25 N TC 16-3			
TC 16-3 E 5.0 ISO	TC 16-3 ...	5,00	16	3,16	3,10	0,63	E25 N TC 16-3			
P								•	•	
M								•	•	
K								•	•	•
N										•
S								○	•	
H								○		
O										○

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→ Application recommendation on page 111

Internal machining

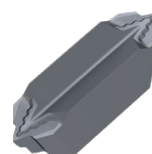
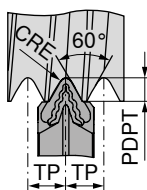
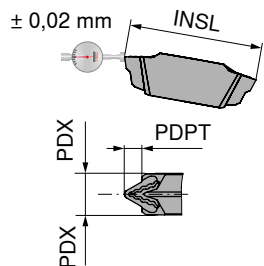
External machining



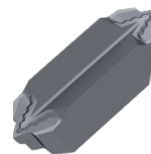
→ 84

→ 85

Threading inserts TC full profile – Internal thread 60°



70 358 ...



70 358 ...



70 358 ...

Designation	Size	TP mm	INSL mm	PDPT mm	PDX mm	CRE mm	for tool holder
TC 16-1 1.0 ISO	TC 16-1 ...	1,00	16	0,59	1,05	0,06	I32 R/L TC 16-1
TC 16-1 1.25 ISO	TC 16-1 ...	1,25	16	0,74	1,05	0,07	I32 R/L TC 16-1
TC 16-1 1.5 ISO	TC 16-1 ...	1,50	16	0,89	1,05	0,09	I32 R/L TC 16-1
TC 16-2 1.75 ISO	TC 16-2 ...	1,75	16	1,02	2,15	0,11	I32 R/L TC 16-2
TC 16-2 2.0 ISO	TC 16-2 ...	2,00	16	1,17	2,15	0,13	I32 R/L TC 16-2
TC 16-2 3.0 ISO	TC 16-2 ...	3,00	16	1,76	2,15	0,19	I32 R/L TC 16-2

P	•	•	
M	•	•	
K	•	•	•
N			•
S	•	○	
H		○	
O			○

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→ Application recommendation on page 111

Internal machining

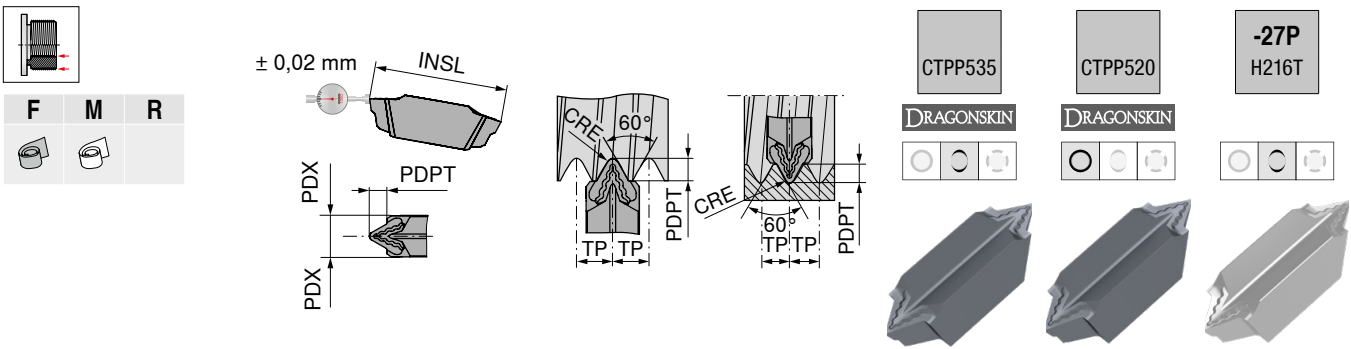
External machining



→ 86

→ 87

Threading inserts TC partial profile 60°



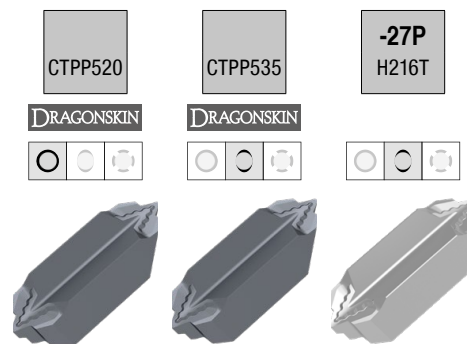
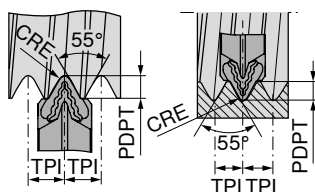
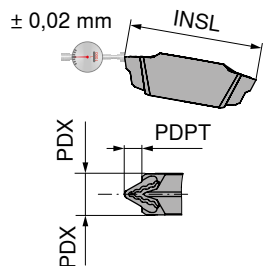
Designation	Size	TP mm	INSL mm	PDPT mm	PDX mm	CRE mm	for tool holder	70 355 ...	70 355 ...	70 355 ...
TC 16-1 EI A 60	TC 16-1 ...	0,5 - 1,5	16	1,27	1,05	0,03	E/I.. R/L TC 16-1	110	010	610
TC 16-2 EI G 60	TC 16-2 ...	1,75 - 3,0	16	2,49	2,15	0,11	E/I.. R/L/N TC 16-2	130	030	630
TC 16-2 EI AG 60	TC 16-2 ...	0,5 - 3,0	16	2,57	2,15	0,03	E/I.. R/L/N TC 16-2	132	032	632
TC 16-3 EI N 60	TC 16-3 ...	3,5 - 5,0	16	4,11	3,10	0,22	E/I.. N TC 16-3	150	050	650
P								•	•	
M								•	•	
K								•	•	•
N										•
S								•	○	
H									○	
O										○

→ v_c Page 102

→ Application recommendation on page 111

Internal machining		External machining							
→ 86	→ 87	→ 84	→ 85						

Threading inserts TC full profile 55°



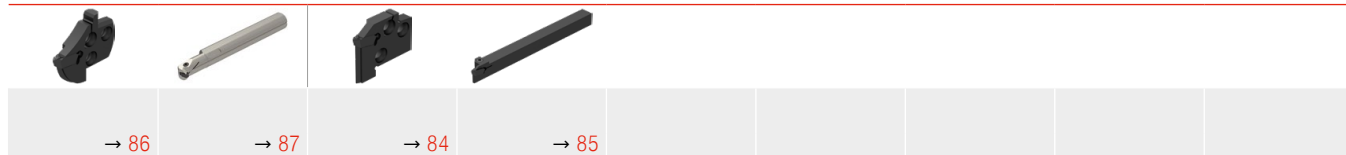
Designation	Size	TPI 1/"	INSL mm	PDPT mm	PDX mm	CRE mm	for tool holder	70 359 ...	70 359 ...	70 359 ...
TC 16-1 EI 28 W	TC 16-1 ...	28	16	0,60	1,05	0,12	E/L.. R/L TC 16-1	010	110	
TC 16-1 EI 20 W	TC 16-1 ...	20	16	0,84	1,05	0,17	E/L.. R/L TC 16-1	016		
TC 16-1 EI 19 W	TC 16-1 ...	19	16	0,88	1,05	0,17	E/L.. 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/L.. R/L TC 16-1	022		
TC 16-2 EI 14 W	TC 16-2 ...	14	16	1,20	2,15	0,23	E/L.. 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/L.. 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/L.. R/L/N TC 16-2	034	134	634
P								•	•	
M								•	•	
K								•	•	•
N										•
S								○	•	
H								○		
O										○

→ v_c Page 102

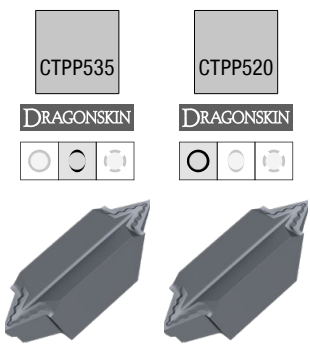
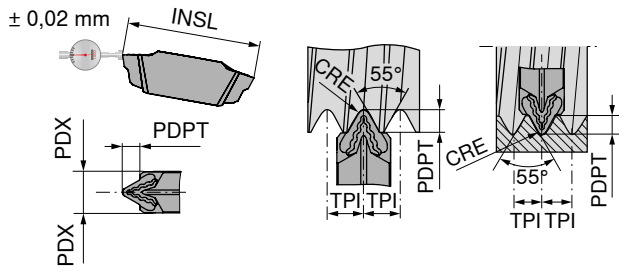
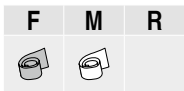
→ Application recommendation on page 111

Internal machining

External machining



Threading inserts TC partial profile 55°

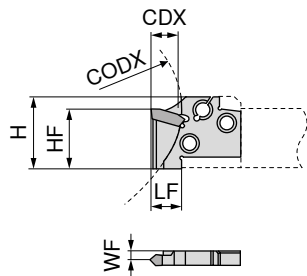


Designation	Size	TPI 1/"	INSL mm	PDPT mm	PDX mm	CRE mm	for tool holder	70 356 ...	70 356 ...
TC 16-1 EI A 55	TC 16-1 ...	28 - 16	16	1,39	1,05	0,12	E/L.. R/L TC 16-1	110	010
TC 16-2 EI AG 55	TC 16-2 ...	28 - 8	16	2,91	2,15	0,12	E/L.. R/L/N TC 16-2	132	032
TC 16-2 EI G 55	TC 16-2 ...	14 - 8	16	2,78	2,15	0,23	E/L.. R/L/N TC 16-2	130	030
TC 16-3 EI N 55	TC 16-3 ...	7 - 5	16	4,34	3,10	0,46	E/L.. N TC 16-3	150	050
P								•	•
M								•	•
K								•	•
N									
S								•	○
H									○
O									

→ v_c Page 102
→ Application recommendation on page 111

Internal machining		External machining							
→ 86	→ 87	→ 84	→ 85						

ModularClamp MSS – Threading module TC for external threads



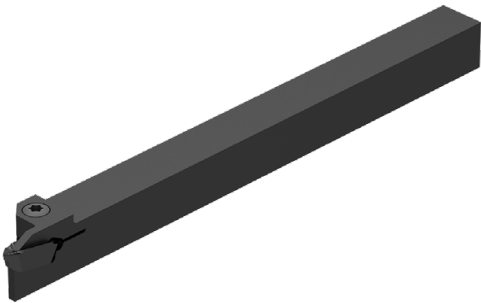
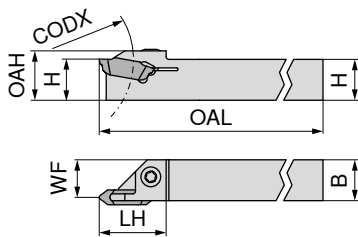
Illustrations show right-hand versions

Designation	TP mm	TPI 1/"	WF mm	HF mm	LF mm	H mm	CODX mm	CDX mm	for grooving inserts	Left-hand	Neutral	Right-hand
										70 872 ...	70 872 ...	70 872 ...
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
E25 N TC 16-3	3,5 - 5,0	7 - 5	3,10	13	25	30		12	TC 16-3 ...		425	



→ 79-83	→ 93-95	→ 96						
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MonoClamp – Monoholder TC – external thread



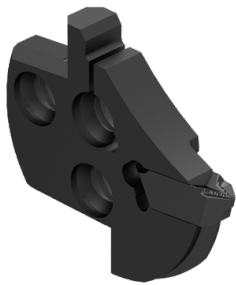
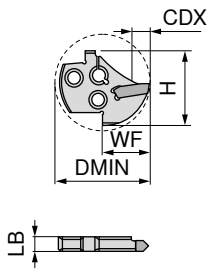
Illustrations show right-hand versions

Designation	TP mm	TPI 1/"	H mm	B mm	OAL mm	LH mm	OAH mm	WF mm	CODX mm	for grooving inserts	Left-hand		Right-hand	
											70 883 ...		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
Spare parts for grooving inserts TC16-1/2..											Key D		Clamping screw	
											80 950 ...		70 950 ...	
											T15	113	M4x11	442

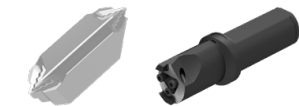


→ 79-83										
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ModularClamp MSS – Threading module TC for internal threads

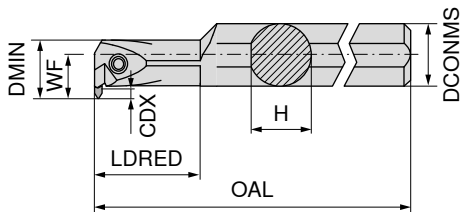


Designation	TP mm	TPI 1/''	LB mm	WF mm	H mm	DMIN mm	CDX mm	for grooving inserts	Left-hand	Neutral	Right-hand
									70 887 ...	70 887 ...	70 887 ...
I32 R/L TC 16-1	0,5 - 1,5	28 - 16	6,2	5,2	32,2	40	7	TC 16-1 ...	132		032
I32 R/L TC 16-2	1,75 - 3,0	14 - 8	6,2	4,1	32,2	40	7	TC 16-2 ...	332		232
I32 N TC 16-3	3,5 - 5,0	7 - 5	6,2	3,1	32,2	40	7	TC 16-3 ...		432	



→ 79-83	→ 97										
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MonoClamp – Monobloc boring bar TC – internal thread



Illustrations show right-hand versions

Designation	WF mm	DCONMS mm	H mm	OAL mm	LDRED mm	CDX mm	DMIN mm	for grooving inserts	Left-hand	Right-hand
									70 857 ...	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

Spare parts
for Article no.

70 857 016 / 70 856 016	T15	80 950 ...	113	M4x14	70 950 ...	403
70 857 020 / 70 856 020	T20		114	M5x18		404
70 857 025 / 70 856 025	T25		115	M6x20		405



Key D



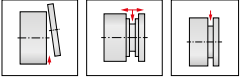
Clamping screw



→ 79-83

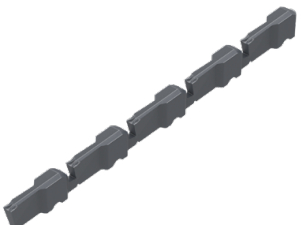
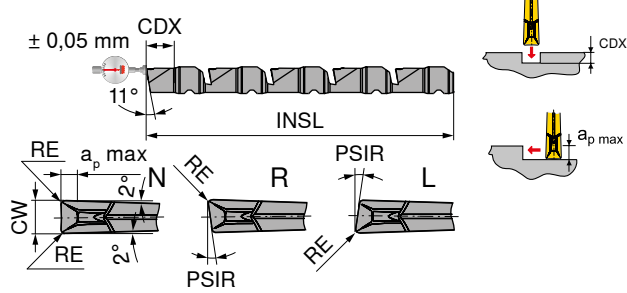
MaxiClick – Insert – cutting depth 5 mm

▲ 5 cutting edges



-F2
CTP1340

DRAGONSKIN



70 338 ...

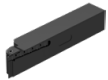
Designation	IH	CW mm	RE mm	PSIR	INSL mm	a _p max mm	CDX mm	for tool holder	
MC 05-5-1.00 L 07-F2	L	1,0	0,1	7°	59,2		5	MC 05 R/L	250
MC 05-5-1.50 L 07-F2	L	1,5	0,1	7°	59,2		5	MC 05 R/L	260
MC 05-5-1.00 N 0.10-F2	N	1,0	0,1		59,2	0,5	5	MC 05 R/L	210
MC 05-5-1.50 N 0.10-F2	N	1,5	0,1		59,2	1,0	5	MC 05 R/L	220
MC 05-5-1.00 R 07-F2	R	1,0	0,1	7°	59,2		5	MC 05 R/L	230
MC 05-5-1.50 R 07-F2	R	1,5	0,1	7°	59,2		5	MC 05 R/L	240

P	●
M	●
K	●
N	○
S	●
H	
O	○

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→ Application recommendation on page 107

Internal machining

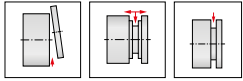
External machining



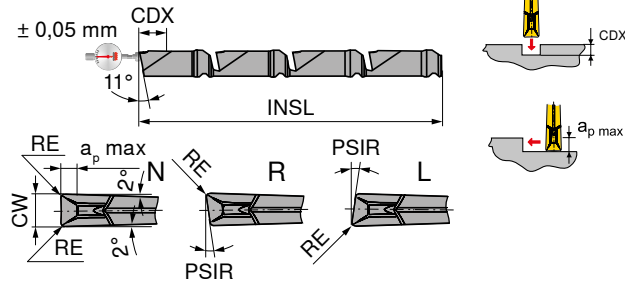
→ 91

MaxiClick – Insert – cutting depth 10 mm

▲ 4 cutting edges

-F2
CTP1340

DRAGONSKIN



70 339 ...

Designation	IH	CW mm	RE mm	PSIR	INSL mm	a _{p max} mm	CDX mm	for tool holder	
MC 10-4-1.50 L 07-F2	L	1,5	0,1	7°	59,2		10	MC 10 R/L	270
MC 10-4-2.00 L 07-F2	L	2,0	0,1	7°	59,2		10	MC 10 R/L	280
MC 10-4-2.50 L 07-F2	L	2,5	0,1	7°	59,2		10	MC 10 R/L	290
MC 10-4-1.50 N 0.10-F2	N	1,5	0,1		59,2	1,0	10	MC 10 R/L	210
MC 10-4-2.00 N 0.10-F2	N	2,0	0,1		59,2	1,5	10	MC 10 R/L	220
MC 10-4-2.50 N 0.10-F2	N	2,5	0,1		59,2	2,0	10	MC 10 R/L	230
MC 10-4-1.50 R 07-F2	R	1,5	0,1	7°	59,2		10	MC 10 R/L	240
MC 10-4-2.00 R 07-F2	R	2,0	0,1	7°	59,2		10	MC 10 R/L	250
MC 10-4-2.50 R 07-F2	R	2,5	0,1	7°	59,2		10	MC 10 R/L	260
P									●
M									●
K									●
N									○
S									●
H									
O									○

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→ Application recommendation on page 107

11

Internal machining

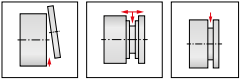
External machining



→ 92

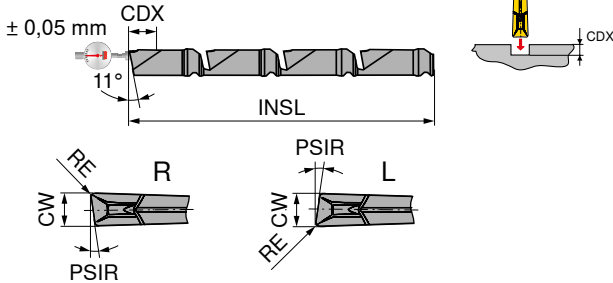
MaxiClick – Insert – cutting depth 10 mm

▲ 4 cutting edges



-F3
CTP1340

DRAGONSKIN



70 340 ...

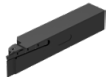
Designation	IH	CW mm	RE mm	PSIR	INSL mm	CDX mm	for tool holder	
MC 10-4-1.50 L 12-F3	L	1,5	0,1	12°	59,2	10	MC 10 R/L	270
MC 10-4-2.00 L 12-F3	L	2,0	0,1	12°	59,2	10	MC 10 R/L	280
MC 10-4-2.50 L 12-F3	L	2,5	0,1	12°	59,2	10	MC 10 R/L	290
MC 10-4-1.50 R 12-F3	R	1,5	0,1	12°	59,2	10	MC 10 R/L	240
MC 10-4-2.00 R 12-F3	R	2,0	0,1	12°	59,2	10	MC 10 R/L	250
MC 10-4-2.50 R 12-F3	R	2,5	0,1	12°	59,2	10	MC 10 R/L	260
P								●
M								●
K								●
N								○
S								●
H								
O								○

→ v_c Page 102

→ Application recommendation on page 107

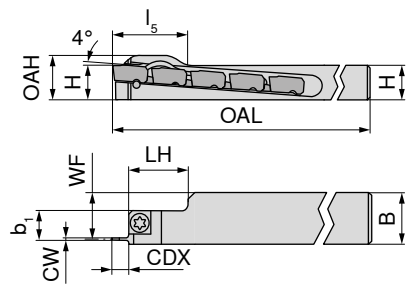
Internal machining

External machining



→ 92

MaxiClick – Toolholder – cutting depth 5 mm



Illustrations show right-hand versions

Designation	H mm	OAH mm	B mm	CW mm	CDX mm	WF mm	OAL mm	LH mm	l ₅ mm	for grooving inserts	Left-hand 70 873 ...		Right-hand 70 873 ...	
MC 05 R/L -1010K	10	13	10	1,00 - 1,50	5	8,5	125	23	27	MC 05		210		110
MC 05 R/L -1212K	12	15	12	1,00 - 1,50	5	10,5	125	23	27	MC 05		212		112
MC 05 R/L -1616K	16	19	16	1,00 - 1,50	5	14,5	125	23	20	MC 05		216		116
MC 05 R/L -2020K	20	23	20	1,00 - 1,50	5	18,8	125	23	20	MC 05		220		120
MC 05 R/L -2525M	25	28	25	1,00 - 1,50	5	23,5	150	23	21	MC 05		225		125

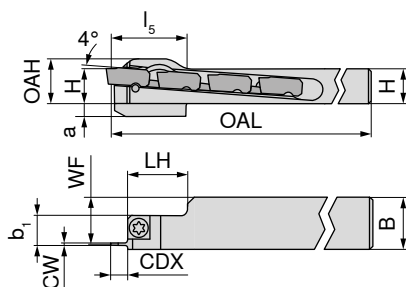
Spare parts
for grooving inserts
MC 05

 Key-T		 Clamping screw	
70 950 ...		70 950 ...	
T15	738	M4x11	174

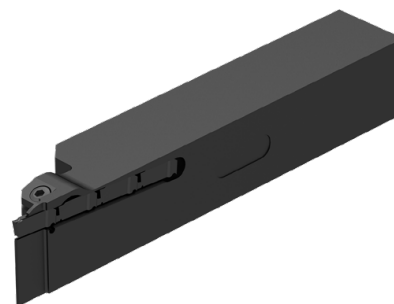


→ 88									
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MaxiClick – Toolholder – cutting depth 10 mm

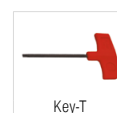


Illustrations show right-hand versions



Designation	H mm	OAH mm	B mm	a mm	CW mm	CDX mm	WF mm	OAL mm	LH mm	l ₅ mm	for grooving inserts	Left-hand 70 874 ...	Right-hand 70 874 ...
MC 10 R/L -1010K	10	13	10		1,50 - 2,50	10	8,5	125	28		MC 10	210	110
MC 10 R/L -1010K-S	10	13	10	6	1,50 - 2,50	10	8,5	125	28	27	MC 10	410 ¹⁾	310 ¹⁾
MC 10 R/L -1212K	12	15	12		1,50 - 2,50	10	10,5	125	28		MC 10	212	112
MC 10 R/L -1212K-S	12	15	12	4	1,50 - 2,50	10	10,5	125	28	27	MC 10	412 ¹⁾	312 ¹⁾
MC 10 R/L -1616K	16	19	16		1,50 - 2,50	10	14,5	125	28	20	MC 10	216	116
MC 10 R/L -2020K	20	23	20		1,50 - 2,50	10	18,8	125	28	20	MC 10	220	120
MC 10 R/L -2525M	25	28	25		1,50 - 2,50	10	23,5	150	28	21	MC 10	225	125

1) -S = strengthened variant



Key-T



Clamping screw

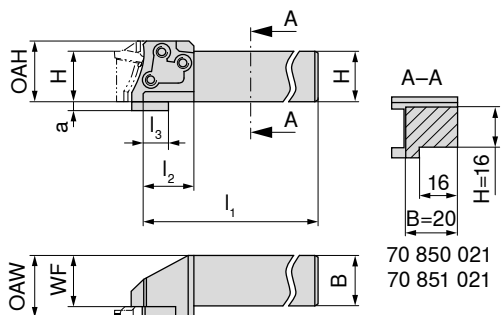
Spare parts
for grooving inserts

MC 10	T15	70 950 ... 738	M4x11	70 950 ... 174
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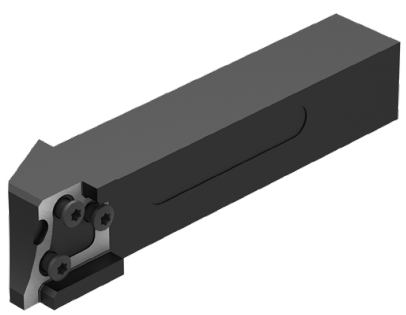


→ 89+90

ModularClamp MSS – Tool holder 0°



Illustrations show right-hand versions



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 ...
E12 R/L 00-1212E	12	12	15,25	14,5	11,75	70	12		E12 R/L ...	012	012
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 ...	021 ¹⁾	021 ¹⁾
E20 R/L 00-2020J	20	20	24,25	24,0	20,15	110	20		E20 R/L ...	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

Spare parts
for Article no.

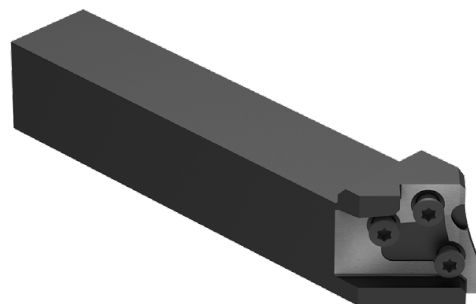
Article no.	Key D	Clamping screw
70 851 012 / 70 850 012	T08	M2,5x10
70 851 016 / 70 850 016	T15	M3,5x12,5
70 851 021 / 70 850 021	T15	M4x14
70 851 020 / 70 850 020	T15	M4x14
70 851 025 / 70 850 025	T20	M5x18
70 851 032 / 70 850 032	T25	M6x20

Module Overview



→ 4+5

Figure 1 shows two schematic diagrams of test specimens. Diagram (a) shows a specimen with a vertical crack of height H and a 45-degree angled crack. The overall height is OAH . Diagram (b) shows a specimen with a vertical crack of height B and a 45-degree angled crack. The overall height is OAW . The width of the specimen is WF . The length of the specimen is l_1 , and the length of the crack is l_2 .



									Left-hand	Right-hand
									70 853 ...	70 852 ...
Designation	H mm	B mm	OAW mm	OAH mm	WF mm	I ₁ mm	I ₂ mm	for modules		
E20 R/L 45-2020J	20	20	21,5	24	14,5	110	20	E20 R/L ...	020	020
E25 R/L 45-2525L	25	25	26,0	30	18,0	140	25	E25 R/L ...	025	025



For right hand holder → left hand module only
For left hand holder → right hand module only



Key D



Clamping screw



Clamping screw

**Spare parts
for Article no.**

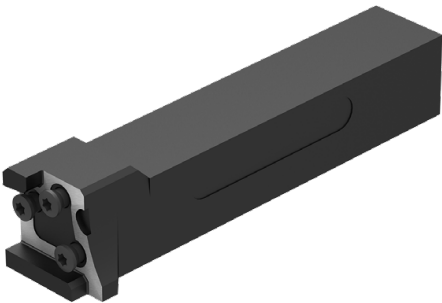
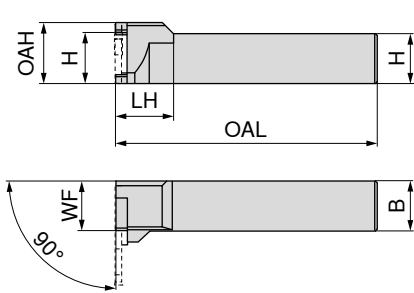
70 853 020 / 70 852 020	T15	113	M4x11	442	M4x14	403
70 853 025 / 70 852 025	T20	114	M5x13,5	513	M5x18	404

Module Overview



→ 4+5

ModularClamp MSS – Tool holder 90°



Illustrations show right-hand versions

Designation	H mm	B mm	OAH mm	WF mm	OAL mm	LH mm	for modules	Left-hand		Right-hand	
								70 855 ...		70 854 ...	
E20 R/L 90-2020J	20	20	24	20	110	20	E20 R/L ...	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	

1 For right hand holder → left hand module only
For left hand holder → right hand module only

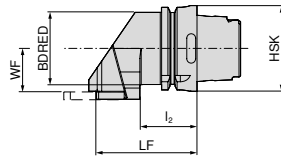
Spare parts for Article no.					Key D		Clamping screw	
					80 950 ...		70 950 ...	
70 855 020 / 70 854 020	T15	113	M4x14	403				
70 855 025 / 70 854 025	T20	114	M5x18	404				
70 855 032 / 70 854 032	T25	115	M6x20	405				

Module Overview



→ 4+5

ModularClamp MSS – HSK-T Base Holder 0°



Illustrations show right-hand versions

ISO designation	Adapter	LF mm	I ₂ mm	BDRED mm	WF mm	for Grooving Module	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
HSK T63 E32 R/L 00	HSK-T 63	74	42	53	38,7	E32 R/L...	532	532
HSK T100 E32 R/L 00	HSK-T 100	77	45	88	48,7	E32 R/L...	732	732

Spare parts
for Article no.

74 580 525 / 74 581 525	05600	05500	114	404	05700
74 580 532 / 74 581 532	05600	05500	115	405	05700
74 580 732 / 74 581 732	05600	05500	115	405	05700



Protection plugs

70 950 ...



Nozzle

70 950 ...



Key D

80 950 ...



Clamping screw

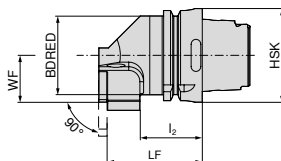
70 950 ...



Hollow key with
nose

70 950 ...

ModularClamp MSS – 90° HSK-T Base Holder



Illustrations show right-hand versions

ISO designation	Adapter	LF mm	I ₂ mm	BDRED mm	WF mm	for Grooving Module	Left-hand 74 583 ...	Right-hand 74 582 ...
HSK T63 E32 R/L 90	HSK-T 63	63,7	42	53	31,5	E32 R/L...	532	532
HSK T100 E32 R/L 90	HSK-T 100	73,7	45	88	50,0	E32 R/L...	732	732

Spare parts
for Article no.

74 582 532 / 74 583 532	05600	05500	115	405	05700
74 582 732 / 74 583 732	05600	05500	115	405	05700



Protection plugs

70 950 ...



Nozzle

70 950 ...



Key D

80 950 ...



Clamping screw

70 950 ...

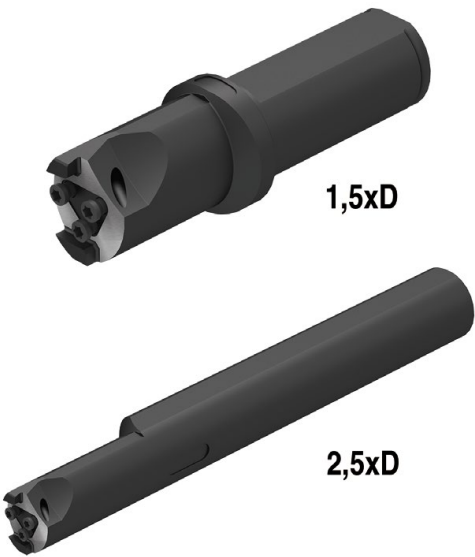
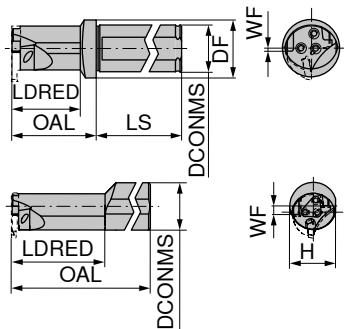


Hollow key with
nose

70 950 ...

ModularClamp MSS – Boring bars GX / TC

▲ With internal coolant supply



Illustrations show right-hand versions

	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

11

Spare parts for modules				Key D	Clamping screw
				80 950 ...	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

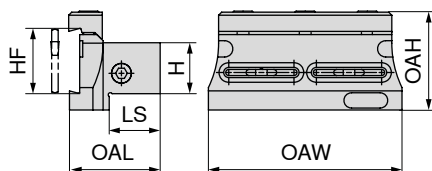


→ 6+7

Split clamping block for blades DC

Scope of supply:

Complete clamping block, but without blade



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

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

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

Clamping block for blades GX/LX/FX/SX

Scope of supply:

Clamping block complete, but without blade and coolant set



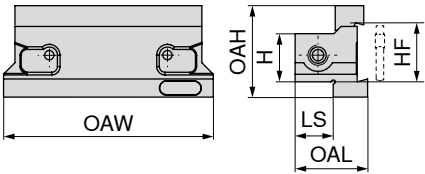
								70 830 ...
Designation	H mm	HF mm	OAH mm	LS mm	OAL mm	OAW mm	for blades	
SBN 2020-26-K	20	26	39	20	33,0	90	XLC.. 26..	020
SBN 2520-32-K	25	32	48	20	36,0	110	XLC.. 32..	025
SBN 3229-32-K	32	32	48	29	44,5	120	XLC.. 32..	032
SBN 3229-46-K	32	46	70	29	52,0	150	XLC.. 46..	132
SBN 4037-46-K	40	46	70	37	60,0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

						Key I	Cooling agent set	clamping screw
						70 950 ...	70 950 ...	70 950 ...
Spare parts for blades								
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:

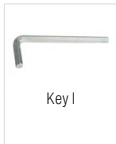
Clamping block complete, but without blade and coolant set



								70 831 ...
Designation	H mm	HF mm	OAH mm	LS mm	OAL mm	OAW mm	for blades	
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

Spare parts
for blades

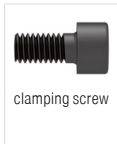
XLC.. 26..	SW5	265	278	M6x25	269
XLC.. 32..	SW5	265	278	M6x25	269



Key I



Cooling agent set



clamping screw

70 950 ...

70 950 ...

70 950 ...

Material examples for cutting data tables

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

* Tensile strength

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

	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		
	CTCP325	CTCP335	CTPP345	CTPP520	CTPP535	CTP1340	H216T (SX/FX/GX)	H216T (TC)
Index	v _c in m/min.							
P.1.1	220	184	135	236	180	177		
P.1.2	194	160	119	204	152	149		
P.1.3	171	138	105	174	126	123		
P.1.4	163	131	100	165	118	115		
P.1.5	151	120	93	150	105	102		
P.2.1	198	164	122	209	157	153		
P.2.2	161	129	99	162	116	112		
P.2.3	151	120	93	150	105	102		
P.2.4	121	92	74	113	73	70		
P.3.1	149	127	101	185	119	112		
P.3.2	96	89	80	131	88	76		
P.3.3	44	51	59	76	58	39		
P.4.1	149	127	101	185	119	112		
P.4.2	123	108	90	158	103	94		
M.1.1	149	127	101	185	119	112		
M.2.1	96	89	80	131	88	76		
M.3.1	133	116	94	169	109	102		
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	100	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	38	
S.1.2	30		30	30	25	30	28	
S.2.1	20		25	20	15	20	28	
S.2.2	15			15	15	15	24	
S.2.3	15			18	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				30				
H.1.2				25				
H.1.3								
H.1.4								
H.2.1				25				
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								



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

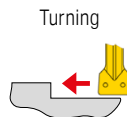
Index	CWX500		
	v_c m/min.	f mm/rev.	Cooling
P.1.1	160	0,03–0,1	Emulsion
P.1.2	140	0,03–0,1	Emulsion
P.1.3	110	0,03–0,1	Emulsion
P.1.4	110	0,03–0,1	Emulsion
P.1.5	90	0,03–0,1	Emulsion
P.2.1	110	0,03–0,1	Emulsion
P.2.2	90	0,03–0,1	Emulsion
P.2.3	90	0,03–0,07	Emulsion
P.2.4	80	0,03–0,06	Emulsion
P.3.1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



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. $\pm 20\%$ according to the usage conditions.

GX – Depths of cut and feed rates

GX Standard / GX-E



GX Standard / GX-E	Depth of Cut a_p in mm						
	0,5	1,0	1,5	2,0	2,5	3,0	3,5
Cutting width in mm	Feed rate f in mm/rev.						
2	0,10–0,15	0,05–0,15	0,05–0,12	0,05–0,10			
3	0,10–0,17	0,05–0,17	0,05–0,17	0,05–0,15	0,05–0,12		
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	
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	
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

GX Standard / GX-E
Feed rate f in mm/rev.
0,05–0,20
0,10–0,25
0,10–0,25
0,10–0,30
0,15–0,35



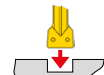
When axial grooving reduce feed by 40%.

GX-F2

Turning



Parting / Grooving



GX-F2	Depth of Cut a_p in mm								
	0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50
Cutting width in mm	Feed rate f in mm/rev.								
2	0,03–0,15	0,03–0,15	0,03–0,15	0,03–0,10					
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			
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		
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	
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

GX-F2
Feed rate f in mm/rev.
0,05–0,15
0,075–0,20
0,10–0,25
0,10–0,30
0,15–0,325



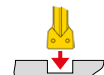
When axial grooving reduce feed by 40%.

GX-M40

Turning



Parting / Grooving



GX-M40	Depth of Cut a_p in mm							
	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0
Cutting width in mm	Feed rate f in mm/rev.							
2	0,10–0,20	0,05–0,20	0,05–0,17	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			
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		
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	
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

GX-M40
Feed rate f in mm/rev.
0,05–0,15
0,075–0,20
0,10–0,25
0,10–0,30
0,15–0,325



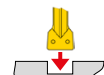
When axial grooving reduce feed by 40%.

GX-27P

Turning



Parting / Grooving



GX-27P	Depth of Cut a_p in mm							
	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0
Cutting width in mm	Feed rate f in mm/rev.							
2	0,05–0,23	0,05–0,23	0,05–0,23	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			
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		
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	
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

GX-27P
Feed rate f in mm/rev.
0,05–0,20
0,05–0,25
0,05–0,30
0,10–0,35
0,10–0,40

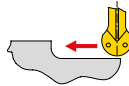


When axial grooving reduce feed by 40%.

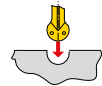
GX – Depths of cut and feed rates

GX-M3

Turning



Parting / Grooving

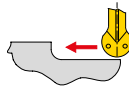


GX-M3	Depth of Cut a_p in mm							
	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0
Radius RE in mm	Feed rate f in mm/rev.							
1,5	0,15–0,35	0,15–0,35	0,15–0,30					
2	0,15–0,40	0,15–0,40	0,15–0,40	0,15–0,30				
2,5	0,15–0,50	0,15–0,50	0,15–0,50	0,15–0,40	0,15–0,35			
3	0,20–0,70	0,20–0,70	0,20–0,70	0,20–0,60	0,20–0,50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

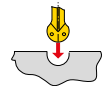
GX-M3
Feed rate f in mm/rev.
0,05–0,20
0,10–0,25
0,10–0,25
0,10–0,35

GX-27P Full Radius

Turning



Parting / Grooving



GX-27P Full Radius	Depth of Cut a_p in mm							
	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 Full 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

11

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

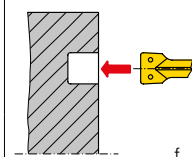
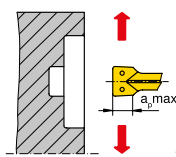


GX circlip grooves	
Cutting width in mm	Feed rate f in mm/rev.
0,60–1,70	0,02–0,09
1,95–2,25	0,05–0,10
2,75–3,25	0,05–0,12

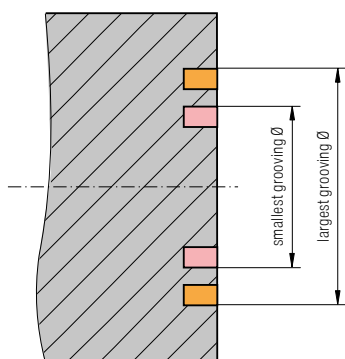
Feed guide and machining instructions for axial grooving and face turning with GX 24 axial

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

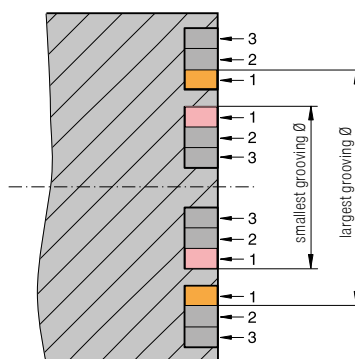
Axial grooving



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!

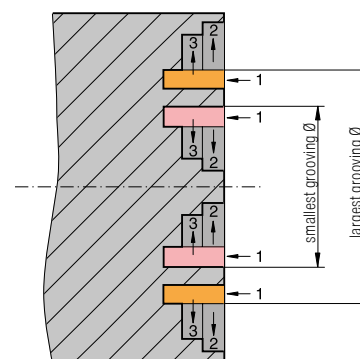
Axial grooving – Groove widening



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

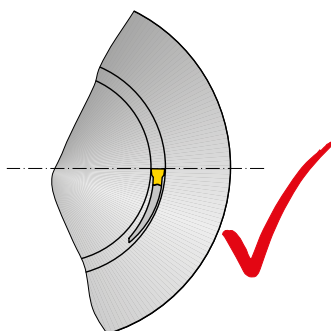


Groove widening by face turning in the diameter range above and below the values specified for the Axial grooving module and Axial monoholder are possible.

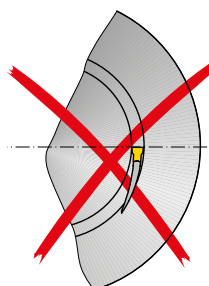
Important: Only the first groove must lie within the diameter range of the module.



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

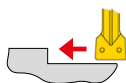


Incorrect Axial mono holder

MaxiClick – Depths of cut and feed rates

MaxiClick 05

Turning



	Depth of Cut a_p in mm		
MaxiClick 05	0,25	0,50	0,75
Cutting width in mm	Feed rate f in mm/rev.		
1	0,02–0,15	0,02–0,10	
1,5	0,02–0,20	0,02–0,20	0,02–0,14

Parting / Grooving



MaxiClick 05
Feed rate f in mm/rev.
0,03–0,10
0,03–0,11

MaxiClick 10

Turning



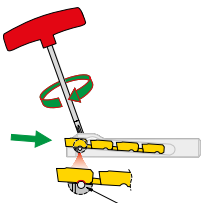
	Depth of Cut a_p in mm				
MaxiClick 10	0,50	0,75	1,00	1,25	1,50
Cutting width in mm	Feed rate f in mm/rev.				
1,5	0,02–0,20	0,02–0,15	0,02–0,10		
2	0,02–0,20	0,02–0,20	0,02–0,14	0,02–0,10	
2,5	0,02–0,20	0,02–0,20	0,02–0,17	0,02–0,13	0,02–0,10

Parting / Grooving

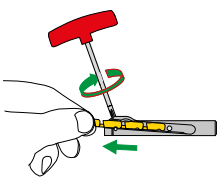


MaxiClick 10
Feed rate f in mm/rev.
0,03–0,11
0,03–0,12
0,03–0,15

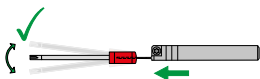
MaxiClick – System function



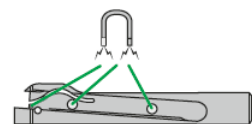
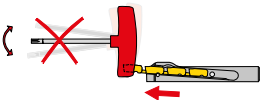
Correct insert location in the seat



Withdraw cutting insert



Worn-out cutting edge is broken off towards the left or right side

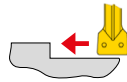


Magnets prevent the cutting insert from falling out of the tool holder during positioning

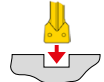
SX – Depths of cut and feed rates

SX-F2

Turning



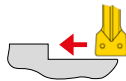
Parting / Grooving



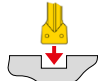
SX-F2	Depth of Cut a_p in mm									SX-F2
	0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,25	2,50	
Cutting width in mm	Feed rate f in mm/rev.									Feed rate f in mm/rev.
2	0,03–0,15	0,03–0,15	0,03–0,15	0,03–0,10						0,05–0,15
3	0,04–0,17	0,04–0,17	0,04–0,17	0,04–0,15	0,04–0,13	0,04–0,12				0,075–0,20
4	0,05–0,20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



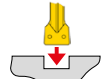
SX-M2	Depth of Cut a_p in mm								SX-M2
	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	
Cutting width in mm	Feed rate f in mm/rev.								Feed rate f in mm/rev.
2	0,05–0,17	0,05–0,13	0,05–0,10						0,05–0,15
3	0,07–0,20	0,07–0,20	0,07–0,18	0,07–0,15					0,075–0,20
4	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,22	0,10–0,18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



SX-27P	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	
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

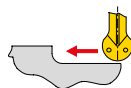
Parting / Grooving



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-M3

Turning



SX-M3	Depth of Cut a_p in mm							
Radius in mm	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0
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		

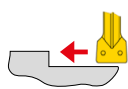
Parting / Grooving



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

LX-M2

Turning



LX-M2	Depth of Cut a_p in mm							
Cutting width in mm	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0
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	
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

Parting / Grooving



LX-M2
Feed rate f in mm/rev.
0,20–0,50
0,20–0,50

LX-M3

Turning



LX-M3	Depth of Cut a_p in mm							
Radius in mm	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0
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

Parting / Grooving



LX-M3
Feed rate f in mm/rev.
0,15–0,35

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AX/FX – Depths of cut and feed rates

AX-F50

Face turning



AX-F50	Depth of Cut a_p in mm			
	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 16-2EI-G60				TC 16-3EI-N60			
	TC 16-1EI-A60																
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 16-2EI-G60				TC 16-3EI-N60			
	TC 16-1EI-A60																
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

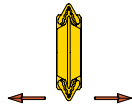
Partial profile 55° external and internal thread

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

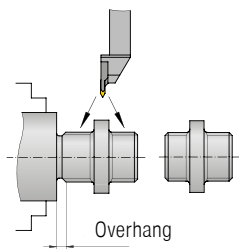
Internal	TC 16-2EI-G55							TC 16-3EI-N55		
	14	12	11	10	9	8	7	6	5	
TPI	14	12	11	10	9	8	7	6	5	
Number/cuts	8-12	9-14	10-15	11-18	12-20	12-20	12-20	12-20	14-22	
Thread profile depth in mm	1,22	1,46	1,56	1,80	2,03	2,31	2,40	2,89	3,56	

Comparison threading system with TC and conventional

TC

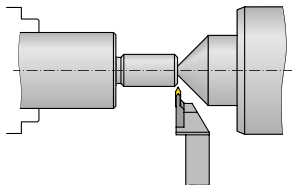


- ▲ Neutral configuration of insert makes operation in both directions possible
- ▲ Only one threading insert per pitch for partial profile and Whitworth thread; only two threading inserts (internal – external) per pitch for ISO threads
- ▲ Reduced stock holding
- ▲ good chip formation due to chip breaker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

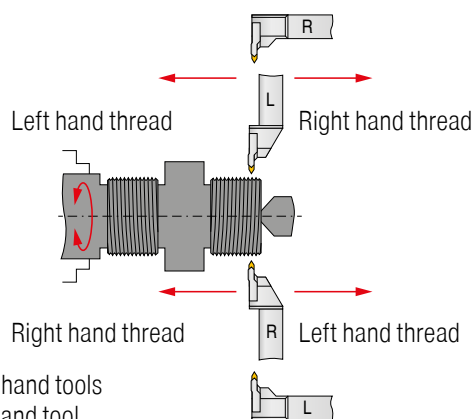


Greater efficiency through:

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

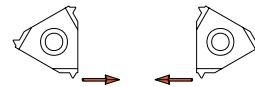


- ▲ Very good access to workpiece, therefore use of tailstock also possible with small thread diameters

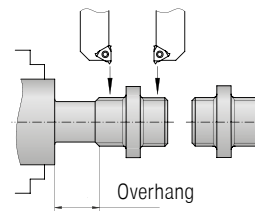


- ▲ ease of use, as the tools have no pitch angle correction they can be used in both directions

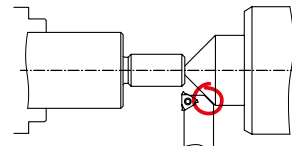
Conventional



- ▲ 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)



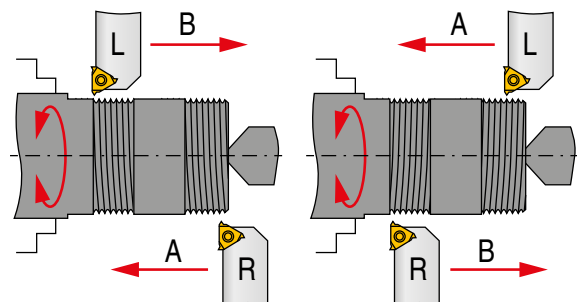
- ▲ For this machining method 2 tools are required
- ▲ additional material and stability loss with large overhang



- ▲ poor accessibility
- ▲ Collision danger

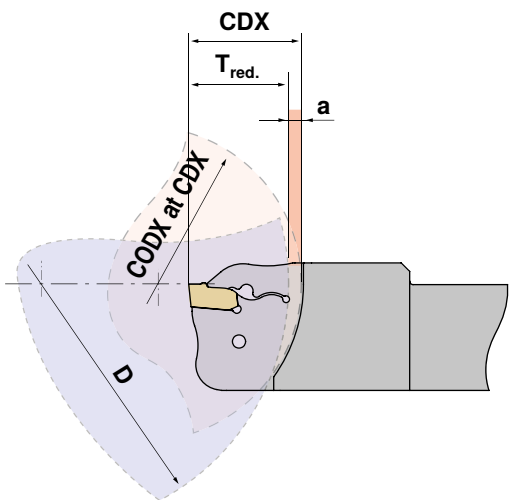
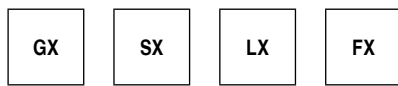
Right hand thread

Left hand thread



- ▲ 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



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

	Reduction a (mm) of the maximum grooving depth (CDX)																	
Size		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																		

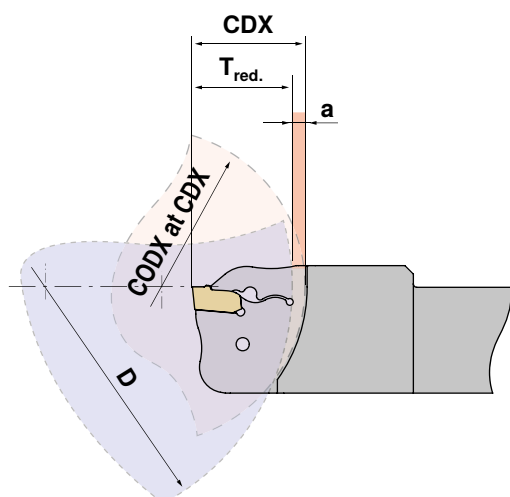
Calculation example:

E25R21-GX24-3
 Size 25 CDX = 21 mm, Ø 75 mm

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

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

$$CDX - a = T_{red.}$$

$$33 - 1,5 = 31,5 \text{ mm}$$

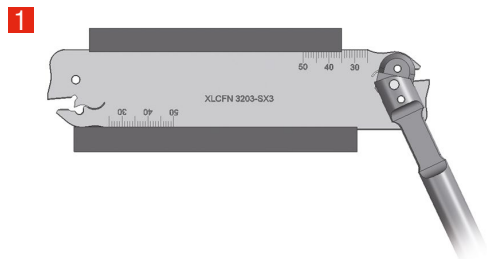
Clamping Method – SX-System

System function – inserting and removing the cutting inserts

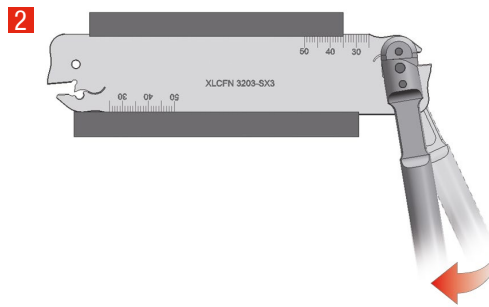
Precision system for internal and external grooving.

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

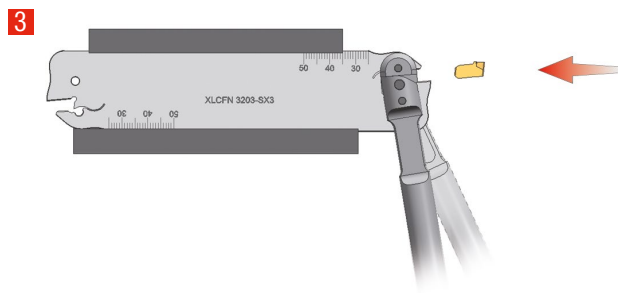
With this alternate system the material always remains in its flexible range and provides a substantial increase in tool life.



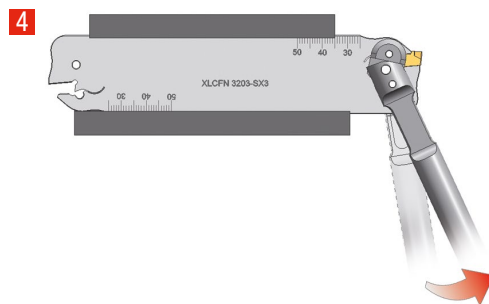
1 Locate wrench into blade with pins located in two holes



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.

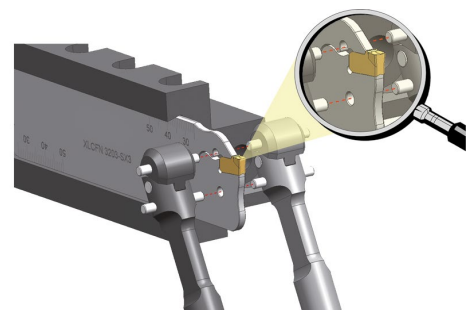


4 Moving the key forward causes the insert seat to close and clamp the insert.



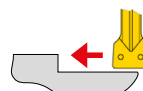
When changing the inserts, always maintain tension on the key!

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



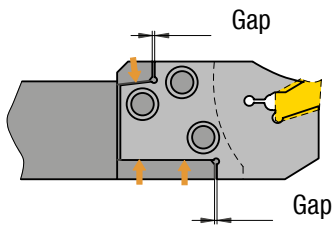
Maximum blade projection when turning

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



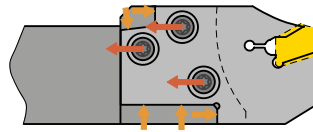
Clamping function – ModularClamp-Module

Module unclamped

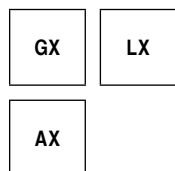
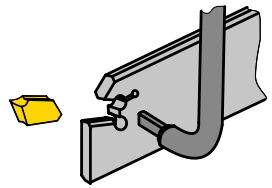


- ▲ Gap between module and support face for axial clamping

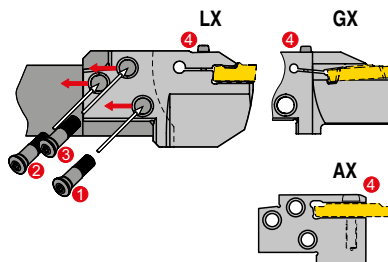
Module clamped



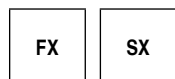
- ▲ Axial clamping with support face
- ▲ Connection free from play, therefore maximum stability



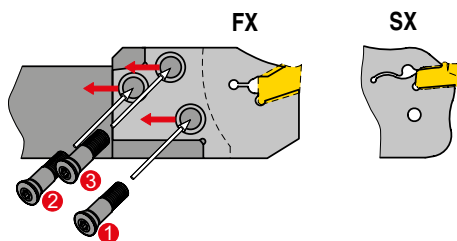
Active insert clamping



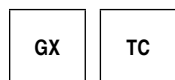
Clamping screws 1, 2 and 3 are used to clamp the modules.
The insert is clamped in the module via the additional screw 4.



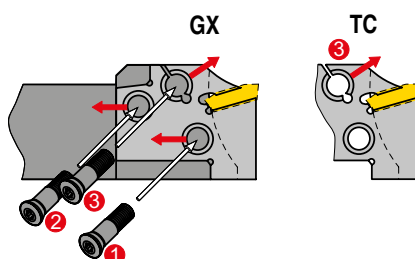
Self clamping of the insert



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



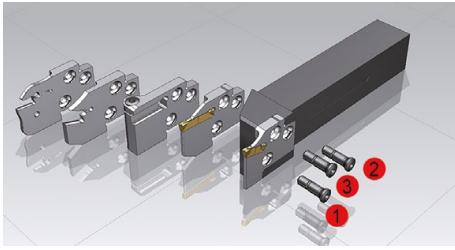
Active insert clamping



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

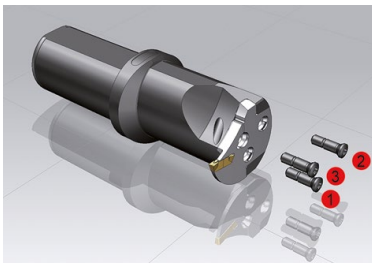
ModularClamp – Tool holder



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

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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

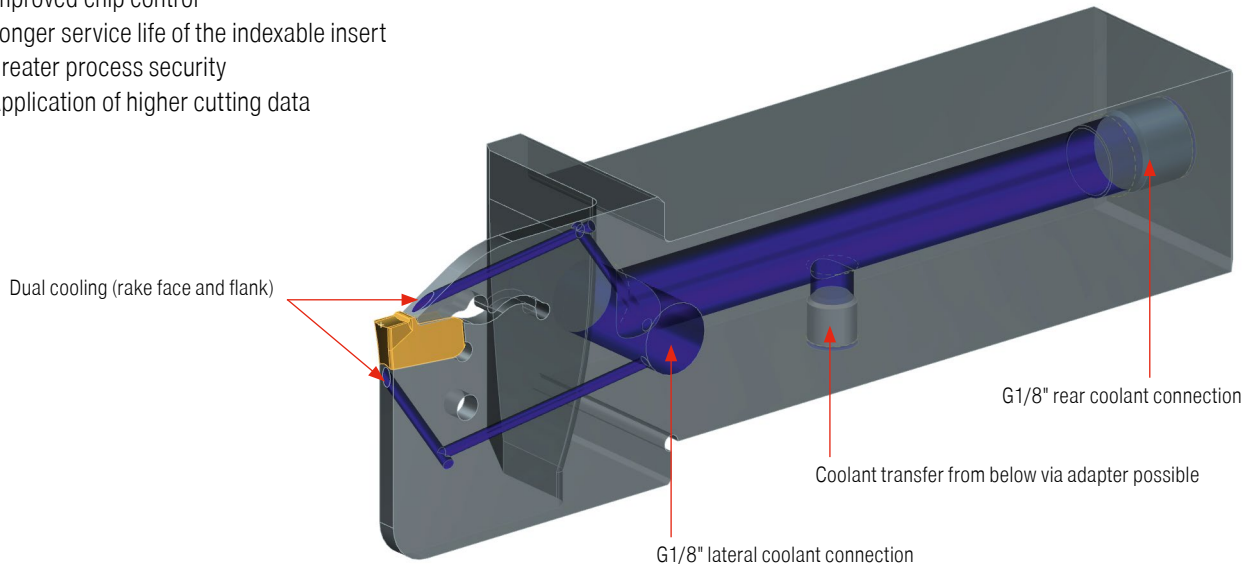
Advantages due to DirectCooling

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)

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

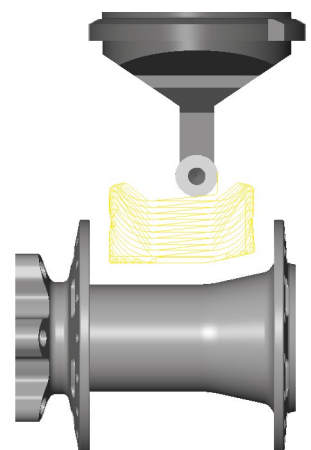
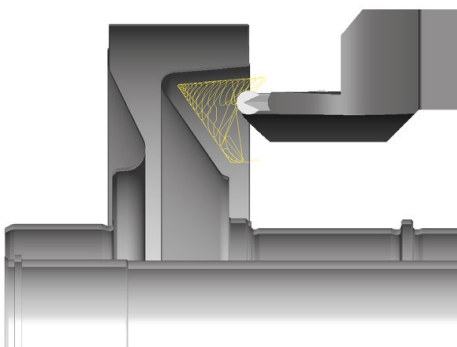
- ▲ Less wear and longer tool life due to softer entry and exit
- ▲ Smaller angle of engagement = less vibration
- ▲ Up to 40% higher feed rate values possible
- ▲ Broad field of application in austenitic steels, heat-resistant steels, Inconel and nickel-base alloys as well as long-chipping ductile materials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

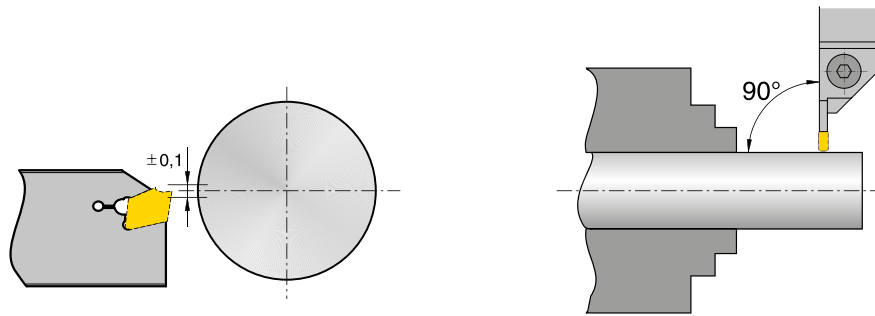
Possible applications

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

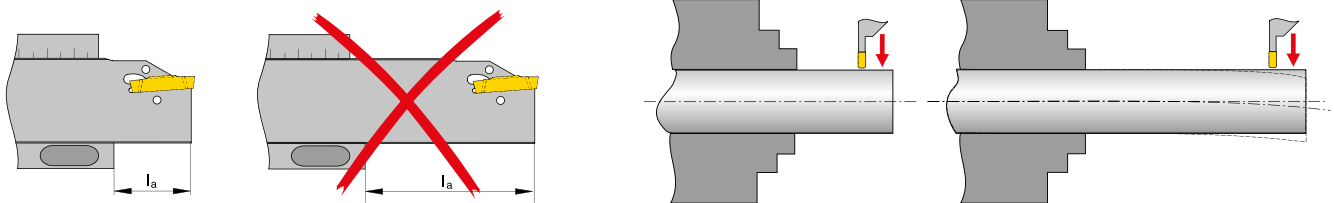


General references

Tool position

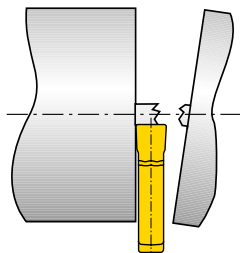


Tool overhang

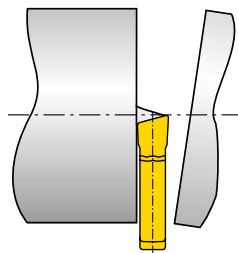


As a rule of thumb: Overhang l_a should not be greater than $8 \times s$ (Groove width).

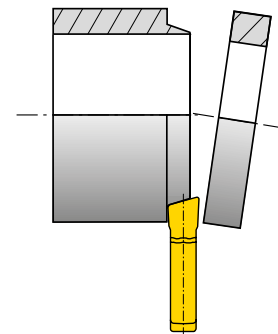
References for Parting off



From $\varnothing 5$ mm on, reduce feed "f" by approx. 50%. No parting across centre (risk of breakage).



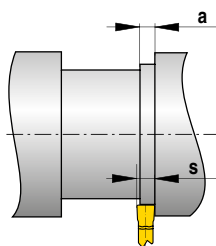
For parting pip-free, use R or L inserts. In order to minimize lateral deflection reduce feed by approx. 20–50 %.



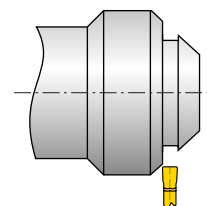
In order to prevent ring formation, use R or L inserts. Reduce feed "f" because of lateral deflection by approx. 20 % – 50%.

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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.

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	Remedy measures
↓			↓	↑		↓	↓	↑	↓	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 ↓	General criteria	
				↓		↑	↑			Groove width		
⌘				⌘		⌘	⌘			Tool clamping		
⌘				⌘		⌘	⌘			Work piece clamping		
⌘				⌘			↓			Overhang		
⌘		⌘		⌘	⌘		⌘			Tip height		
	●	●	●		●		●	●		Cooling lubricant		

raise, increase
large influenceraise, increase
small influenceavoid, reduce
large influenceavoid, 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	
a, b	a, b		a, b	a, b		a, b	a, b	a, b		a, b	Feed	a – over the flanks
												b – Alternating flanks
↑	↓	↓		↓	↓	↓	↓	↓	↑	↔	Feed (Cutting depth)	
↓	↑	↑		↔	↔	↑	↔	↑	↓	↓	Number of passes	
				●	●	●					Spring cut (Air cut)	
			●			●	●			●	Chip groove	
↑	↓	↑									Tool Material	↑ Wear resistance
				●	●	●						↓ toughness
				●	●	●					Full profile	
											Partial profile	
	↔					↔	↔				Stable tool holder / insert	
	↔					↔	↔				Stable workpiece	
	↓					↓	↓				Overhang	
↔	↔	↔			↔	↔	↔				Tip height	
●	●	●	●	●		●					Cooling lubricant	

↑

raise, increase
large influence

↑

raise, increase
small influence

↓

avoid, reduce
large influence

↓

avoid, reduce
small influence

↔

check, optimise

●

use

↑ raise, increase
large influence

↑ raise, increase
small influence

↓ avoid, reduce
large influence

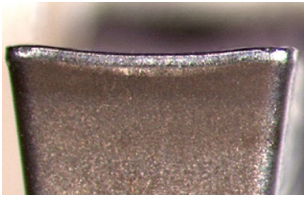
↓ avoid, reduce
small influence

~ 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.

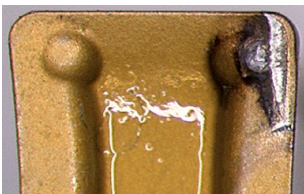
Cause

- ▲ 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.

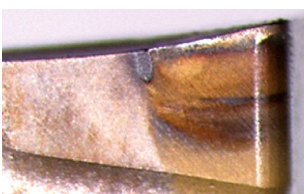
Cause

- ▲ 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

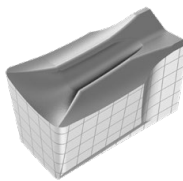
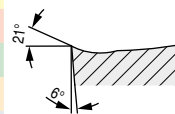
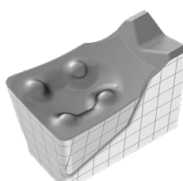
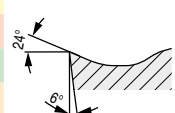
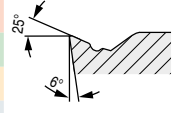
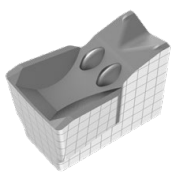
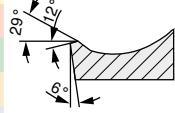
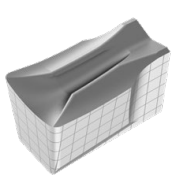
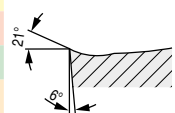
- ▲ Oxidation at the cutting edge
- ▲ Too high a temperature at the edge

Remedy

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

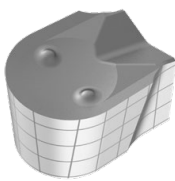
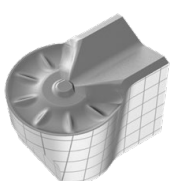
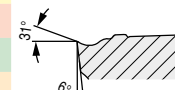
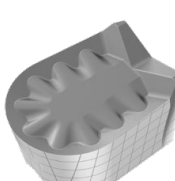
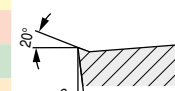
Chip breakers / Applications

System GX

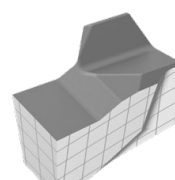
		smooth cut	irregular cut	interrupted cut	Model	f in mm/rev.
						
-F2 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ first choice for stainless materials		CTCP325	CTP1340	CTPP345		0,05–0,15
		CTP1340	CTP1340/CTPP345	CTPP345		
		CTCP325	CTP1340			
		CTP1340	CTP1340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

Chip breakers / Applications

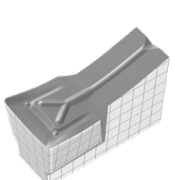
System GX

		smooth cut	irregular cut	interrupted cut	Model	f in mm/rev.
						
Standard – Radius		CTCP325	CTCP325/CTP1340	CTP1340		0,05–0,20
		CTP1340	CTP1340	CTP1340		
		CTCP325	CTCP325/CTP1340	CTP1340		
		CTP1340	CTP1340			
		CTCP325				
		CTP1340	CTP1340			
-M3 – Radius		CTCP325	CTCP325/CTCP335	CTCP335		0,07–0,20
		CTCP335	CTCP335			
		CTCP325	CTCP325/CTCP335	CTCP335		
		CTCP325				
		CTCP325				
-27P – Radius						0,05–0,30
		H216T	H216T	H216T		
		H216T	H216T	H216T		
		H216T	H216T			
		H216T				

Circlip grooving

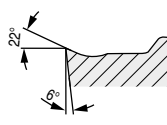
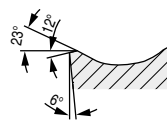
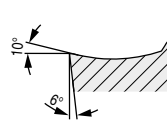
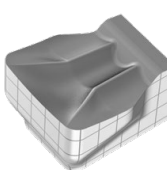
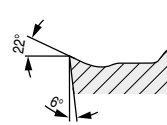
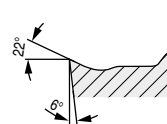
Standard		CTP1340	CTP1340	CTP1340		0,05–0,30
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340			

System AX

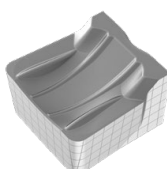
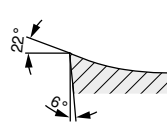
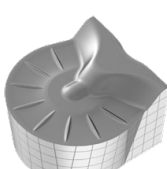
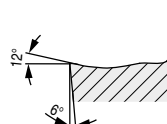
-F50		CTP1340	CTP1340	CTP1340		0,025–0,125
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340			

Chip breakers / Applications

System SX

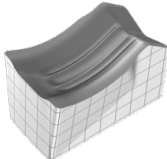
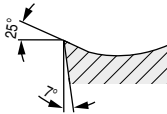
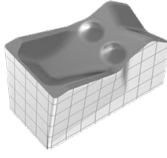
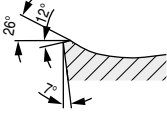
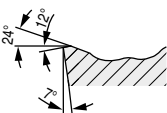
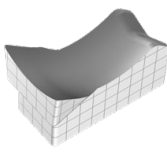
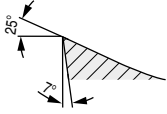
		smooth cut	irregular cut	interrupted cut	Model	f in mm/rev.
						
-F2		CTCP325	CTCP325/CTP1340	CTPP345		0,05-0,15
		CTP1340	CTP1340/CTPP345	CTPP345		
		CTCP325	CTCP325/CTP1340	CTP1340		
		CTP1340	CTP1340	CTPP345		
		CTCP325				
		CTP1340	CTP1340			
-M1		CTCP325	CTCP335/CTP1340	CTPP345		0,10-0,20
		CTP1340	CTP1340	CTPP345		
		CTCP325	CTCP325/CTP1340	CTP1340		
		CTP1340	CTP1340	CTPP345		
		CTCP325				
		CTP1340	CTP1340			
-M2		CTCP325	CTCP335/CTP1340	CTPP345		0,075-0,20
		CTP1340	CTP1340	CTPP345		
		CTCP325	CTCP325/CTP1340	CTP1340		
		CTP1340	CTP1340	CTPP345		
		CTCP325				
		CTP1340	CTP1340			
-27P						0,05-0,25
		H216T	H216T	H216T		
		H216T	H216T	H216T		
		H216T	H216T			
		H216T				
-M3 – Radius		CTCP335	CTCP335/CTP1340	CTP1340		0,05-0,20
		CTP1340	CTP1340	CTP1340		
		CTCP335	CTCP335/CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTCP325				
		CTP1340	CTP1340			

System LX

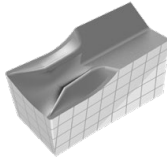
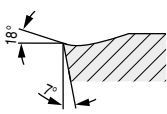
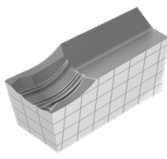
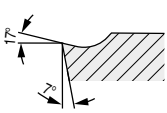
-M2		CTCP325	CTCP335/CTP1340	CTCP335		0,20-0,50
		CTCP335	CTP1340	CTP1340		
		CTCP325	CTCP325	CTCP335		
		CTP1340	CTP1340	CTP1340		
		CTCP325				
		CTP1340	CTP1340			
-M3 – Radius		CTCP325	CTCP335/CTP1340	CTCP335		0,15-0,35
		CTCP335	CTCP335/CTP1340	CTP1340		
		CTCP325	CTCP325/CTCP335	CTCP335		
		CTP1340	CTP1340	CTP1340		
		CTCP325				
		CTP1340	CTP1340			

Chip breakers / Applications

System FX

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

System MC

-F2 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ first choice for stainless materials		CTP1340	CTP1340	CTP1340		0,05-0,10
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340			
-F3 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ reduced burrs / edge build up		CTP1340	CTP1340	CTP1340		0,02-0,06
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340			

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	25	R	00	33	2525	M	K	DC	SX3
Application E = external I = internal	Size (25 mm)	Holder version R=Right Handed L=Left Handed	Approach angle 0°	Groove depth (33 mm)	Shank type 25x25mm	Shank length M = (sh. ISO)	Insert clamping K = Key	Cooling system DC = DirectCooling	Grooving system/width (3 mm)



Compilation

Basic holder

E25 R 00 - 2525L

Module

E25 R 12 - GX 16-2

Grooving insert

GX 16-2 E3.00 N 0.50

Grades Overview

CTCP325

- ▲ Carbide, TiCN-Al₂O₃-coated
- ▲ ISO | **P25** | M20 | **K30** | S25
- ▲ The wear-resistant solution for steel and cast iron materials at high cutting speeds

CTCP335

- ▲ Carbide, TiCN-Al₂O₃-coated
- ▲ ISO | **P35** | M30 | **K35**
- ▲ The reliable choice for machining steel and cast iron materials

CTPP345

- ▲ Carbide, TiAlTaN-coated
- ▲ ISO | **P45** | **M40** | S40
- ▲ The reliable solution for steel materials and austenitic steels under unstable conditions

CTP1340

- ▲ Carbide, TiAlTaN-coated
- ▲ ISO | **P30** | **M25** | **K30** | N30 | **S30** | O30
- ▲ The universal high-performance grade for steel materials, austenitic steel, cast iron materials and heat-resistant alloys

CTPP520

- ▲ Carbide, TiAlTaN-coated
- ▲ ISO | **P20** | **M15** | **K25** | S25 | H5
- ▲ The wear-resistant grade for wet machining of steels

CTPP535

- ▲ Carbide, AlTiN-coated
- ▲ ISO | **P35** | **M30** | **K25** | **S30**
- ▲ The tough thread turning grade for universal application

H216T

- ▲ Carbide, uncoated
- ▲ ISO | **K15** | **N15** | S15 | O5
- ▲ The uncoated carbide grade for machining aluminium and other non-ferrous metals
- ▲ Also highly suitable for HSC machining

CWX500

- ▲ Carbide, TiAlN-coated
- ▲ ISO | **K30**
- ▲ The universal carbide grade for almost all materials

Grade designation		ISO application range						Steel P	Stainless steel M	Cast iron K	Non ferrous metals N	Heat resistant S	hardened materials H	Non metal materials O				
		05		15		25									35		45	
		01	10	20	30	40	50											
Grooving																		
CTCP325	DRAGONSkin																	
CTCP335	DRAGONSkin																	
CTPP345	DRAGONSkin																	
CTP1340	DRAGONSkin																	
H216T																		
TC thread																		
CTPP520	DRAGONSkin																	
CTPP535	DRAGONSkin																	
H216T																		

● Main Application ○ Extended application

wear-resistant $v_c +$ $v_c -$ tough