

New products for machining technicians

NEW -M7



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

→ Page 18

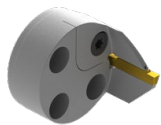
NEW -M8



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

→ Page 19

NEW MaxiChange – Exchangeable head system



As the MaxiChange exchangeable head system is modular, it is extremely flexible and can be used for a variety of applications thanks to the wide selection of exchangeable heads. On top of these advantages, the MaxiChange GX also includes a grooving function for internal and external machining as well as axial and radial machining.

For radial grooving GX 16 → Page 48

For axial grooving GX 24 → Page 65



Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
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	Metric Catalog	Circular and Thread Milling	7
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		Multifunction	10
		Parting and Grooving	11
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CERATIZIT \ Performance

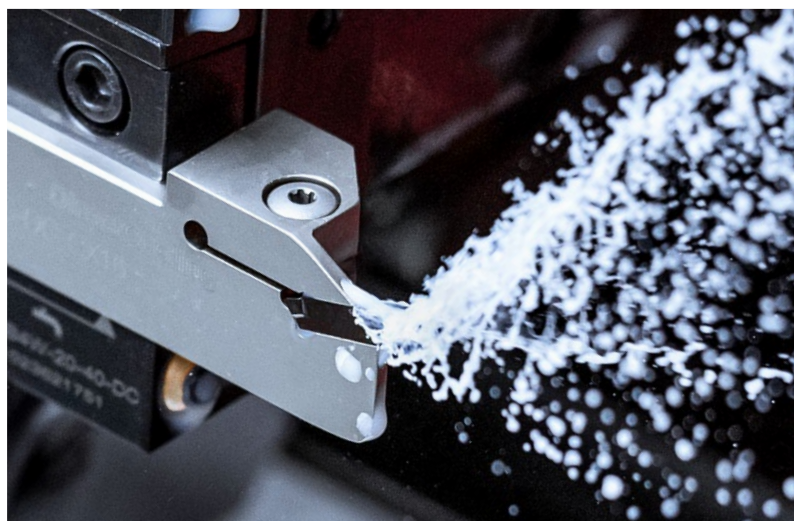
Premium quality tools for high performance.

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 due to DirectCooling



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



cuttingtools.us/en/direct-cooling

Symbol explanation

	Grooving		Internal machining		DirectCooling
	Parting		Internal thread		Internal coolant supply
	Grooving and Turning		External thread		Repeatability
	Copy Turning	F	Fine Machining	-F2	Chip groove
	Axial Grooving and Turning	M	Medium Machining	CTPP345	Carbide Grade
	Circlip Grooves	R	Rough Machining		Smooth cut
			Main Application		Irregular cutting depth
			Extended application		Interrupted cut

System overview

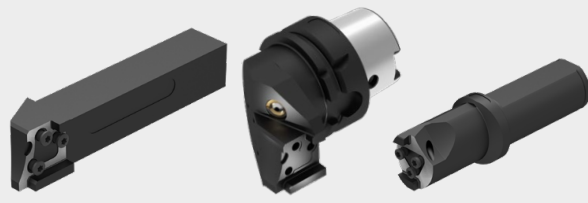


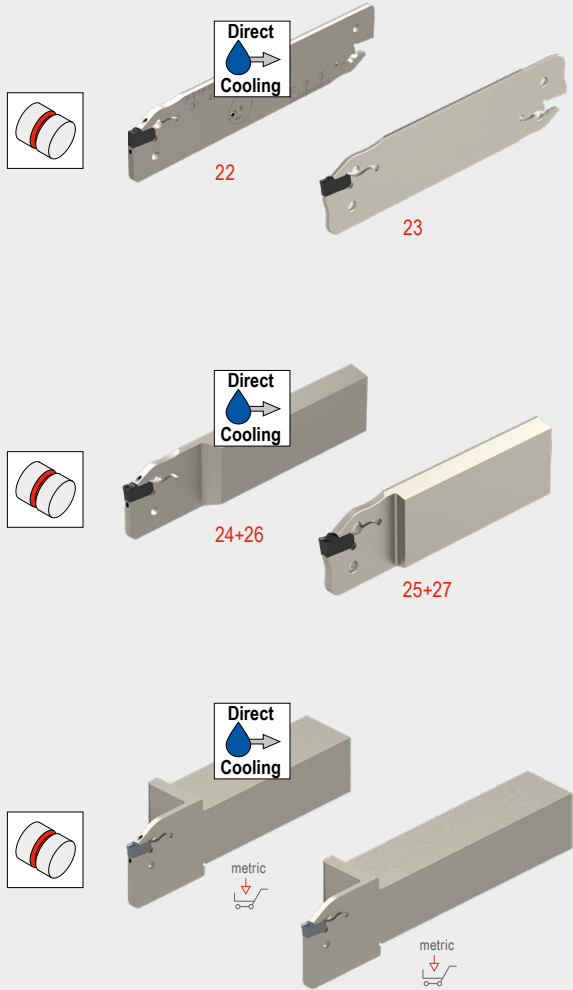
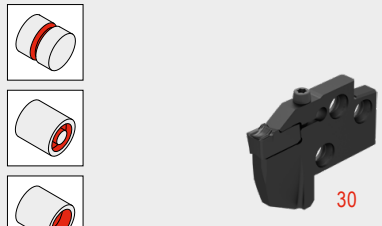
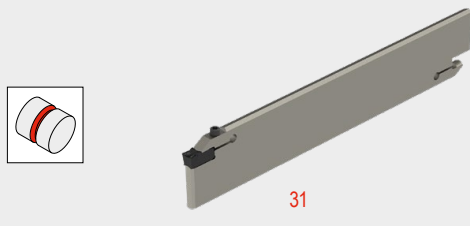
No. of cutting edges	System	Grooving	Parting	Grooving and Turning	Copy Turning	Axial Grooving and Turning	Circlip Grooves	Internal machining	External machining		Internal machining		Axial machining		Page No.
									CW	CDX max.	DMIN	CDX max.	DAXN	CDX max.	
1	SX								.078–.236" 2–6 mm	2.362" 60 mm					14–27
	LX								.314–.393" 8–10 mm	3.149" 80 mm	7.874" 200 mm	1.339" 34 mm	19.685" 500 mm	1.535" 39 mm	28–31
2	GX 09								.078–.138" 2–3.5 mm	.275" 7 mm	.630" 16 mm	.236" 6 mm			32–48
	GX 16								.078–.236" 2–6 mm	.472" 12 mm	.807" 20.5 mm	.433" 11 mm			32–48
	GX 24								.078–.236" 2–6 mm	.827" 21 mm	1.654" 42 mm	.748" 19 mm	1.772" 45 mm	.984" 25 mm	49–65
3	TX								.020–.203" 0.5–5.15 mm	.314" 8 mm	1.811" 46 mm	.078" 2 mm	.787" 20 mm	.118" 3 mm	66–74





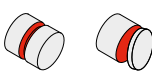


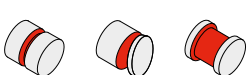






















metric



Additional metric items are available in our Online-Shop at cuttingtools.ceratizit.com and in the metric main catalog.

































Toolfinder

	ModularClamp	MonoClamp
System	 <p>0° / 45° / 90° 75-79</p> <p>0° 80</p> <p>1.5xD / 2.5xD 81+82</p>	 <p>83-88</p> <p>→ Chapter 16</p> <p>metric</p>
SX	 <p>21</p>	 <p>Direct Cooling</p> <p>22</p> <p>23</p> <p>Direct Cooling</p> <p>24+26</p> <p>25+27</p> <p>Direct Cooling</p> <p>metric</p> <p>metric</p>
LX	 <p>30</p>	 <p>31</p>

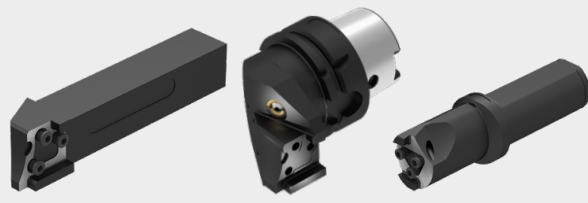

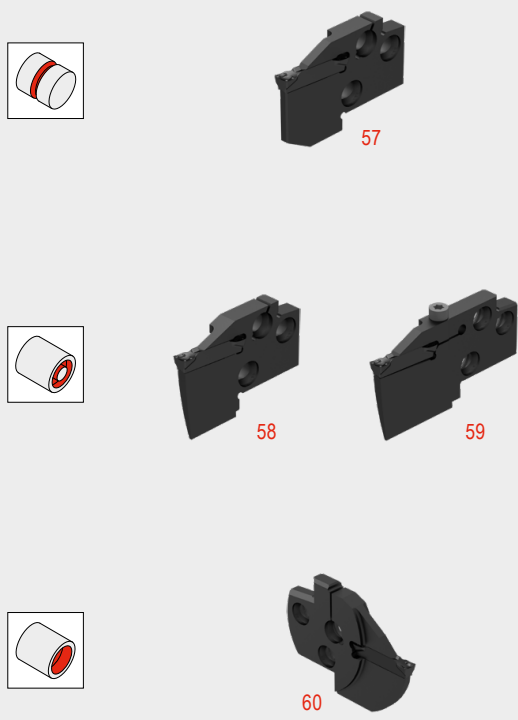

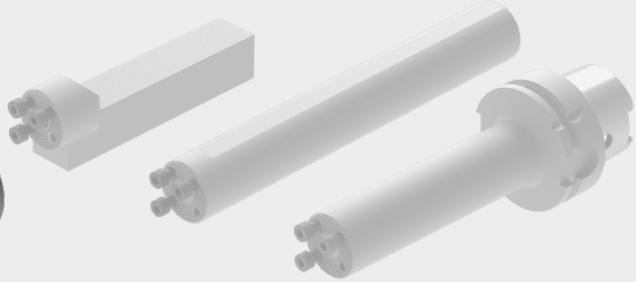
System	Chip groove	Groove width	Grooving	Parting	Grooving and Turning	Copy Turning	Axial Grooving and Turning	Circclip Grooves	Fine Machining	Medium Machining	Rough Machining	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Non-metal materials	Page No.	
												P	M	K	N	S	H	O		
SX		-F2	.078"-.157" 2-4 mm									●	●	●	○	●		○	14	
		-M1	.078"-.236" 2-6 mm										●	●	●	○	●		○	15
		-M2	.078"-.236" 2-6 mm										●	●	●	○	●		○	16
		-M3	CRE .059"-.118" 1.5-3.0 mm										●	●	●	○	●		○	17
		NEW -M7	.078"-.236" 2-6 mm										●	●	●	○	●		○	18
		NEW -M8	.078"-.236" 2-6 mm										●	●	●	○	●		○	19
		-27P	.078"-.157" 2-4 mm												●	●	○		○	20
LX		-M2	.314"-.393" 8-10 mm									●	●	●	○	●		○	28	
		-M3	CRE .157" 4.0 mm									●	●	●	○	●		○	29	

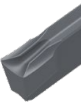






















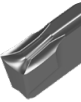








Toolfinder

	ModularClamp	MonoClamp
System	 <p>0° / 45° / 90° 75-79</p> <p>0° 80</p> <p>1.5xD / 2.5xD 81+82</p>	 <p>metric</p> <p>metric</p>
GX 09	 <p>40 41</p> <p>42 43</p>	 <p>44+45</p> <p>46+47</p>
GX 16	 <p>40 41</p> <p>42 43</p>	 <p>Direct Cooling</p> <p>metric</p> <p>metric</p> <p>metric</p>
MaxiChange		
<p>→ Page 12+13 Here you will find a detailed system overview.</p>  <p>48</p> <p>→ Chapter 9 – Turning Tools Here you will find the suitable base adaptors.</p>		


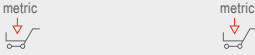
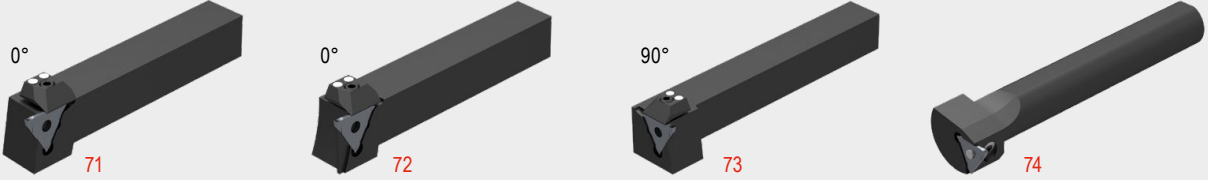
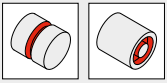



System	Chip groove	Groove width	Grooving	Parting	Grooving and Turning	Copy Turning	Axial Grooving and Turning	Circlip Grooves	Fine Machining	Medium Machining	Rough Machining	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Non-metal materials	Page No.	
												P	M	K	N	S	H	O		
GX 09 GX 16		-F2	.078"-.196" 2-5 mm									●	●	●	○	●		○	32	
		Standard	.078"-.236" 2-6 mm						 			●	●	●	○	●		○	33	
		-M40	.078"-.236" 2-6 mm						 				●	●	●	○	●		○	34
		Standard	CRE .031"-.118" 0.8-3.0 mm						 				●	●	●	○	●		○	38
		Standard	.039"-.167" 1-4.25 mm										●	●	●	○	●		○	37
GX 16		-M1	.078"-.157" 2-4 mm						 			●	●	●	○	●		○	35	
		-27P	.078"-.236" 2-6 mm						 				●	●	○			○	36	
		-27P	CRE .059"-.098" 1.5-2.5 mm						 					●	●	○			○	39

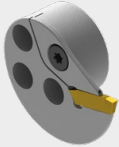
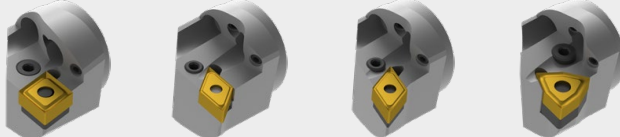
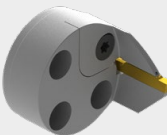

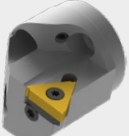

Toolfinder

	ModularClamp	MonoClamp
System	 <p>0° / 45° / 90° 75-79</p> <p>0° 80</p> <p>1.5xD / 2.5xD 81+82</p>	 <p>85-88</p> <p>metric</p> <p>metric</p>
	GX 24	 <p>57</p> <p>58</p> <p>59</p> <p>60</p>
MaxiChange		
<p>→ Page 12+13 Here you will find a detailed system overview.</p>  <p>NEW</p> <p>65</p>		 <p>→ Chapter 9 – Turning Tools Here you will find the suitable base adaptors.</p>

System	Chip groove	Groove width	Grooving	Parting	Grooving and Turning	Copy Turning	Axial Grooving and Turning	Circclip Grooves	Fine Machining		Medium Machining		Rough Machining		Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Non-metal materials	Page No.	
									F	M	M	R	P	M									K
GX 24		-F2	.118"-.236" 3-6 mm												●	●	●	○	●		○	49	
		-E	.118"-.236" 3-6 mm												●	●	●	○	●		○	50	
		-M1	.079"-.157" 2-4 mm												●	●	●	○	●		○	51	
		-M40	.118"-.236" 3-6 mm												●	●	●	○	●		○	52	
		-M3	CRE .059"-.118" 1.5-3.0 mm												●	○	●		○				53
		-M33	CRE .059"-.118" 1.5-3.0 mm												●	○	●		○				54
		-27P	.118"-.236" 3-6 mm														●	●	○		○		55
		-27PF	CRE .118"-.157" 3-4 mm													●	●	○		○			56

Toolfinder

		MonoClamp			
System					
TX					
					

		MaxiChange			
System overview		<p>→ Chapter 9 – Turning Tools</p> <p>Exchangeable heads</p>			
	<p>Exchangeable heads</p> <p>For radial grooving</p> <p>NEW</p> <p>GX 16</p> 	<p>For negative inserts</p> <p>PCLN 95° PDUN 93° PDQN 107,5° PWLN 95°</p> 			
	<p>For axial grooving</p> <p>NEW</p> <p>GX 24</p> 	<p>For positive inserts</p> <p>SCLC 95° SDUC 93° SDQC 107,5°</p> 		<p>For internal thread</p> 	
		<p>SVPC 117,5° SVUC 93° SVQC 107,5°</p> 			

System	Chip groove	Groove width	Grooving	Parting	Grooving and Turning	Copy Turning	Axial Grooving and Turning	Circlip Grooves	Fine Machining	Medium Machining	Rough Machining	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Non-metal materials	Page No.	
									F	M	R	P	M	K	N	S	H	O		
TX		1.99–2.79 mm										●	●	●	●	●	○	●	66	
		0.57–5.29 mm										●	●	●	●	●	○	●	67	
		CRE 0.25–2.5 mm											●	●	●	●	●	○	●	68
		1.5–4.0 mm											●	●	●	●	●	○	●	69
		1.5–3.0 mm											●	●	●	●	●	○	●	70

MaxiChange

→ Chapter 9 – Turning Tools
Tool holder

PSC

HSK-T

Vibration damped

Actively vibration-damped

Square shank holder

0°

90°

Cylindrical shank

Actively vibration-damped

→ cuttingtools.ceratizit.com

VertiClamp
→ catalogue:
sliding head

MaxiClick

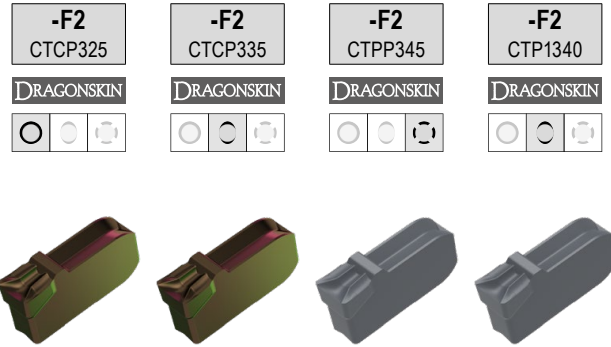
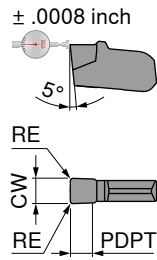
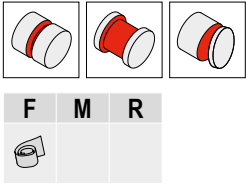
System FX

System AX

System TC

Insert SX

▲ High precision ground geometry



Designation	CW ± 0.02 inch	RE ± 0.05 inch	PDPT inch	for tool holder	70 346 ...			
					923	523	822 823 824	622 623 624
SX E2.00 N 0.20	0.079	0.008	0.059	-SX2				
SX E3.00 N 0.30	0.118	0.012	0.079	-SX3				
SX E4.00 N 0.40	0.157	0.016	0.098	-SX4				
P					●	●	●	●
M					○	○	●	●
K					●	●		●
N								○
S					○		○	●
H								
O								○

→ v_c Page 90+91
→ Application recommendation on page 92+93

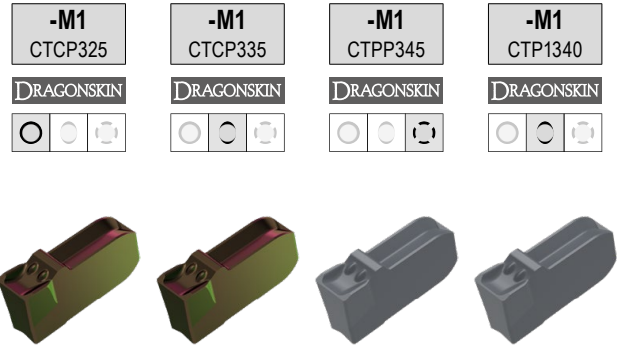
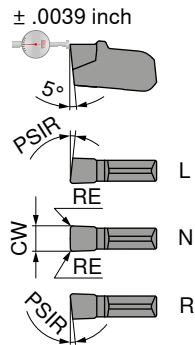
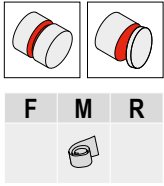
Internal machining

External machining



Insert SX

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



Designation	IH	CW +/-0.05 inch	RE +/-0.05 inch	PSIR	for tool holder	70 342 ...			
SX E2.00 L 6	L	0.079	0.008	6°	-SX2				612
SX E3.00 L 6	L	0.118	0.008	6°	-SX3	913			613
SX E4.00 L 6	L	0.157	0.012	6°	-SX4				614
SX E2.00 N 0.20	N	0.079	0.008		-SX2	922	52200	822	622
SX E3.00 N 0.20	N	0.118	0.008		-SX3	923	523	823	623
SX E4.00 N 0.30	N	0.157	0.012		-SX4	924	524	824	624
SX E5.00 N 0.30	N	0.197	0.012		-SX5	925	52500	825	625
SX E6.00 N 0.40	N	0.236	0.016		-SX6	926	52600	826	626
SX E2.00 R 6	R	0.079	0.008	6°	-SX2				602
SX E3.00 R 6	R	0.118	0.008	6°	-SX3	903			603
SX E4.00 R 6	R	0.157	0.012	6°	-SX4				604
P						●	●	●	●
M						○	○	●	●
K						●	●		●
N									○
S						○		○	●
H									
O									○

→ v_c Page 90+91
→ Application recommendation on page 92+93

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

→ Page 107
Here you will find further information.

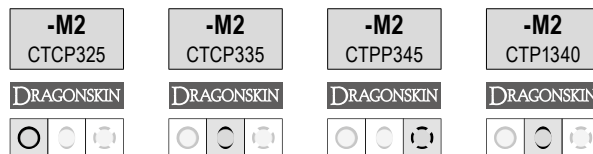
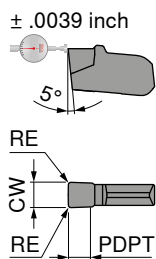
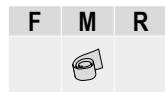
Internal machining

External machining



Insert SX

▲ All purpose geometry for parting, grooving & turning.



Designation	CW ± 0.05 inch	RE ± 0.05 inch	PDPT inch	for tool holder	70 343 ...	70 343 ...	70 343 ...	70 343 ...
					922	522	822	622
SX E2.00 N 0.20	0.079	0.008	0.059	-SX2	922	522	822	622
SX E3.00 N 0.30	0.118	0.012	0.079	-SX3	923	523	823	623
SX E4.00 N 0.40	0.157	0.016	0.098	-SX4	924	524	824	624
SX E5.00 N 0.40	0.197	0.016	0.106	-SX5	925	525	825	625
SX E6.00 N 0.50	0.236	0.020	0.118	-SX6	926	526	826	626
P					●	●	●	●
M					○	○	●	●
K					●	●		●
N								○
S					○		○	●
H								
O								○

→ v_c Page 90+91
→ Application recommendation on page 92+93

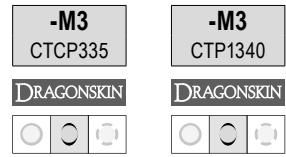
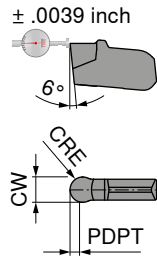
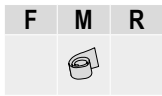
Internal machining

External machining



Radius Grooving Insert SX

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



Designation	CW ± 0.05 inch	CRE inch	PDPT inch	for tool holder	70 344 ...	
					531	631
SX R1.50 N	0.118	0.059	0.059	-SX3	531	631
SX R2.00 N	0.157	0.079	0.079	-SX4	532	632
SX R2.50 N	0.197	0.098	0.098	-SX5	533	633
SX R3.00 N	0.236	0.118	0.118	-SX6		634
P					●	●
M					○	●
K					●	●
N						○
S						●
H						
O						○

→ v_c Page 90+91
→ Application recommendation on page 94+95

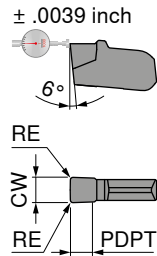
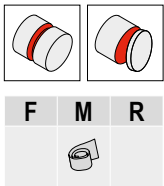
Internal machining

External machining



Insert SX

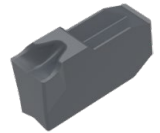
▲ For grooving and parting off in steel at medium to high feed rates



NEW

-M7
CTP1340

DRAGONSKIN



70 347 ...

Designation	CW ± 0.05 inch	RE ± 0.05 inch	PDPT inch	for tool holder	
SX E2.00 N 0.20	0.079	0.008	0.059	-SX2	62200
SX E3.00 N 0.20	0.118	0.008	0.079	-SX3	62300
SX E4.00 N 0.30	0.157	0.012	0.098	-SX4	62400
SX E5.00 N 0.30	0.197	0.012	0.106	-SX5	62500
SX E6.00 N 0.40	0.236	0.016	0.118	-SX6	62600

P	●
M	●
K	●
N	○
S	●
H	
O	○

→ v_c Page 90+91
→ Application recommendation on page 92+93

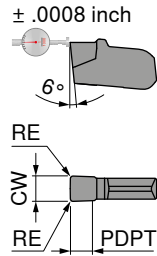
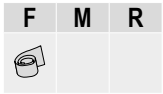
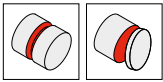
Internal machining

External machining



Insert SX

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



NEW

-M8
CTP1340

DRAGONSKIN



70 348 ...

Designation	CW ± 0.05 inch	RE ± 0.05 inch	PDPT inch	for tool holder	
SX E2.00 N 0.20	0.079	0.008	0.059	-SX2	62200
SX E3.00 N 0.20	0.118	0.008	0.079	-SX3	62300
SX E4.00 N 0.30	0.157	0.012	0.098	-SX4	62400
SX E5.00 N 0.30	0.197	0.012	0.106	-SX5	62500
SX E6.00 N 0.40	0.236	0.016	0.118	-SX6	62600

P	●
M	●
K	●
N	○
S	●
H	
O	○

→ v_c Page 90+91
→ Application recommendation on page 92+93

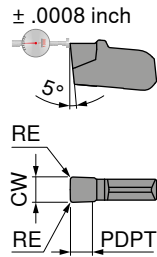
Internal machining

External machining



Insert SX

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



-27P
H216T



70 349 ...

Designation	CW ± 0.02 inch	RE ± 0.05 inch	PDPT inch	for tool holder	
SX E2.00 N 0.20	0.079	0.008	0.079	-SX2	122
SX E3.00 N 0.30	0.118	0.012	0.098	-SX3	123
SX E4.00 N 0.40	0.157	0.016	0.118	-SX4	124

P	
M	
K	●
N	●
S	○
H	
O	○

→ v_c Page 90+91
→ Application recommendation on page 92+93

Internal machining

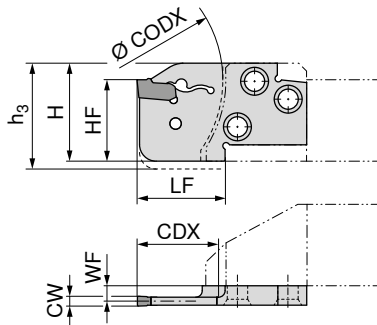
External machining



ModularClamp MSS – Radial grooving module SX

▲ for parting, grooving and finish turning

Scope of supply:
Grooving module only



Illustrations show right-hand versions




Designation	HF inch	CW inch	WF inch	LF inch	H inch	h ₃ inch	CODX inch	CDX inch	for grooving inserts	Left-hand	Right-hand
										70 897 ...	70 896 ...
E20 R/L 20-SX2	0.787	0.079	0.141	0.866	0.945	1.063	2.362	0.787	SX .2..	020	020
E20 R/L 20-SX3	0.787	0.118	0.126	0.866	0.945	1.063	2.362	0.787	SX .3..	120	120
E25 R/L 20-SX2	0.984	0.079	0.200	0.866	1.181		2.953	0.787	SX .2..	025	025
E25 R/L 25-SX3	0.984	0.118	0.185	1.063	1.181		2.953	0.984	SX .3..	125	125
E25 R/L 35-SX3	0.984	0.118	0.185	1.457	1.181		2.953	1.378	SX .3..	225	225
E25 R/L 25-SX4	0.984	0.157	0.169	1.063	1.181		2.953	0.984	SX .4..	325	325
E25 R/L 35-SX4	0.984	0.157	0.169	1.457	1.181		2.953	1.378	SX .4..	425	425



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

 Please order SX assembly key separately if required.



→ 14-20

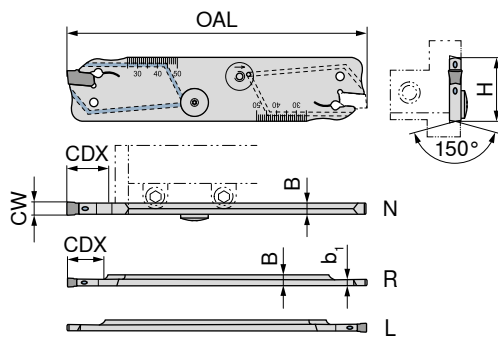
→ 75-79

→ 80

MonoClamp – Radial Blade SX-DC Standard

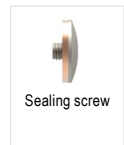
Scope of supply:

Blade incl. 1 sealing screw



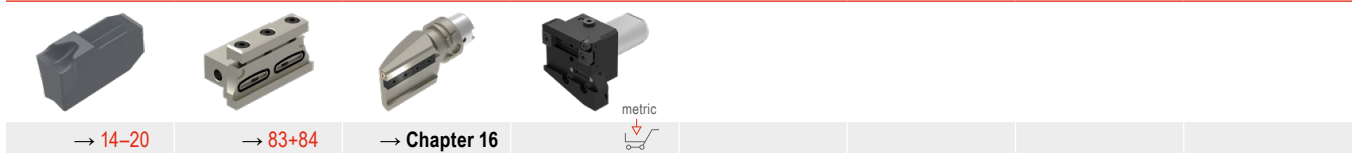
70 884 ...	
XLCF L 2602-DC-SX2	712
XLCF R 2602-DC-SX2	512
XLCF N 2603-DC-SX3	613
XLCF N 2604-DC-SX4	614
XLCF L 3202-DC-SX2	702
XLCF R 3202-DC-SX2	502
XLCF N 3203-DC-SX3	603
XLCF N 3204-DC-SX4	604
XLCF N 3205-DC-SX5	605
XLCF N 3206-DC-SX6	606

Designation	R/L/N	CW inch	H inch	B inch	b ₁ inch	OAL inch	CDX inch	for grooving inserts
XLCF L 2602-DC-SX2	L	0.079	1.024	0.094	0.063	4.331	0.984	SX 2..
XLCF R 2602-DC-SX2	R	0.079	1.024	0.094	0.063	4.331	0.984	SX 2..
XLCF N 2603-DC-SX3	N	0.118	1.024	0.098		4.331	1.378	SX 3..
XLCF N 2604-DC-SX4	N	0.157	1.024	0.130		4.331	1.575	SX 4..
XLCF L 3202-DC-SX2	L	0.079	1.260	0.094	0.063	5.906	1.024	SX 2..
XLCF R 3202-DC-SX2	R	0.079	1.260	0.094	0.063	5.906	1.024	SX 2..
XLCF N 3203-DC-SX3	N	0.118	1.260	0.098		5.906	1.969	SX 3..
XLCF N 3204-DC-SX4	N	0.157	1.260	0.130		5.906	1.969	SX 4..
XLCF N 3205-DC-SX5	N	0.197	1.260	0.169		5.906	2.165	SX 5..
XLCF N 3206-DC-SX6	N	0.236	1.260	0.205		5.906	2.362	SX 6..



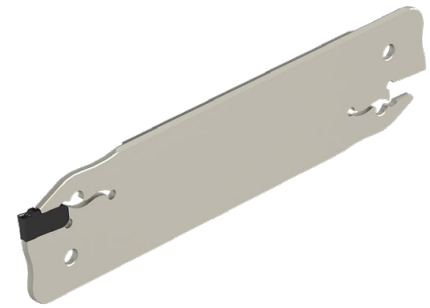
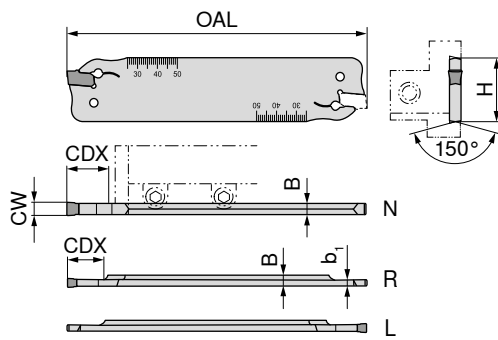
80 950 ...		70 950 ...		70 950 ...	
Spare parts for grooving inserts					
SX 2..	T15 - IP	128	SX 2-3	836	M4 x 3
SX 3..	T15 - IP	128	SX 2-3	836	M4 x 3
SX 4..	T15 - IP	128	SX 4-6	837	M4 x 3
SX 5..	T15 - IP	128	SX 4-6	837	M4 x 3
SX 6..	T15 - IP	128	SX 4-6	837	M4 x 3

Please order SX assembly key separately if required.



MonoClamp – Radial Blade SX Standard

Scope of supply:
Blade only



70 884 ...

Designation	R/L/N	CW inch	H inch	B inch	b ₁ inch	OAL inch	CDX inch	for grooving inserts	
XLCF L 2602-SX2	L	0.079	1.024	0.094	0.059	4.331	0.984	SX 2..	212
XLCF R 2602-SX2	R	0.079	1.024	0.094	0.059	4.331	0.984	SX 2..	012
XLCF N 2603-SX3	N	0.118	1.024	0.094		4.331	1.378	SX 3..	113
XCLF N 2604-SX4	N	0.157	1.024	0.126		4.331	1.575	SX 4..	114
XLCF L 3202-SX2	L	0.079	1.260	0.094	0.059	5.906	0.984	SX 2..	202
XLCF R 3202-SX2	R	0.079	1.260	0.094	0.059	5.906	0.984	SX 2..	002
XLCF N 3203-SX3	N	0.118	1.260	0.094		5.906	1.969	SX 3..	103
XLCF N 3204-SX4	N	0.157	1.260	0.126		5.906	1.969	SX 4..	104
XLCF N 3205-SX5	N	0.197	1.260	0.165		5.906	2.165	SX 5..	105
XLCF N 3206-SX6	N	0.236	1.260	0.205		5.906	2.362	SX 6..	106




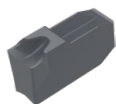
Insert mounting
key SX

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

 Please order SX assembly key separately if required.



→ 14–20



→ 85–88



→ Chapter 16



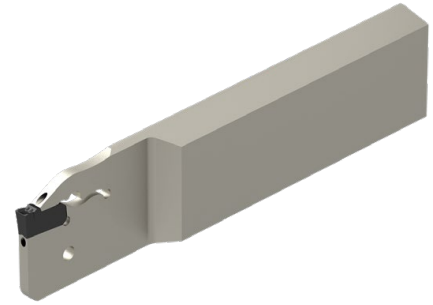
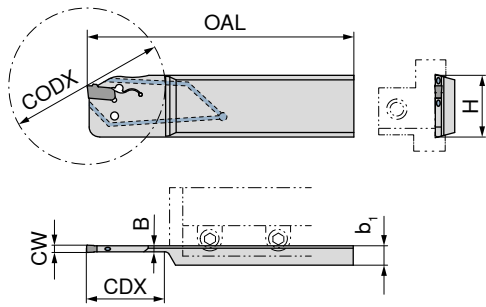
metric



MonoClamp – Radial Blade SX-DC reinforced

Scope of supply:

Blade only



Illustrations show right-hand versions

Designation	R/L/N	CW inch	H inch	B inch	b ₁ inch	OAL inch	CODX inch	CDX inch	for grooving inserts
XLCF L 2608-DC-SX3	L	0.118	1.024	0.098	0.315	4.331	2.598	1.299	SX .3..
XLCF R 2608-DC-SX3	R	0.118	1.024	0.098	0.315	4.331	2.598	1.299	SX .3..
XLCF L 3208-DC-SX3	L	0.118	1.260	0.098	0.315	4.331	2.598	1.299	SX .3..
XLCF R 3208-DC-SX3	R	0.118	1.260	0.098	0.315	4.331	2.598	1.299	SX .3..

70 879 ...

713

513

703

503



Insert mounting key SX

70 950 ...

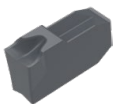
Spare parts for grooving inserts

SX .3..

SX 2-3

836

Please order SX assembly key separately if required.



→ 14-20



→ 83+84



→ Chapter 16



metric

Correct Tool Selection

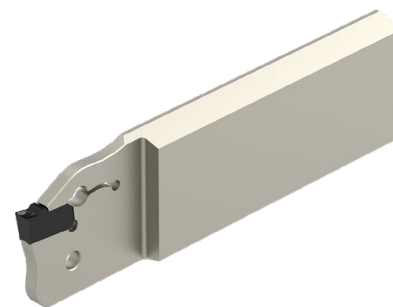
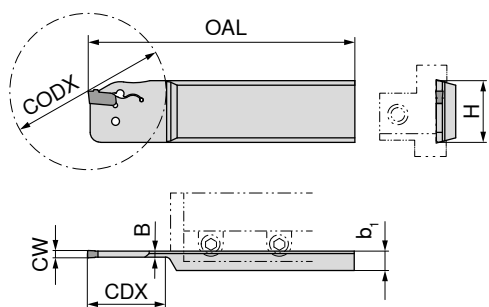
Right hand tool		Left hand tool		Standard version	Contra version
	Standard version				
	Contra version				

Grooving insert

MonoClamp – Radial Blade SX reinforced

Scope of supply:

Blade only



Illustrations show right-hand versions

Designation	R/L/N	CW inch	H inch	B inch	b ₁ inch	OAL inch	CODX inch	CDX inch	for grooving inserts	70 879 ...
XLCF L 2608-SX3	L	0.118	1.024	0.098	0.315	4.331	1.732	0.866	SX .3..	213 ¹⁾
XLCF R 2608-SX3	R	0.118	1.024	0.098	0.315	4.331	1.732	0.866	SX .3..	013 ¹⁾
XLCF L 3208-SX3	L	0.118	1.260	0.098	0.315	4.331	2.598	1.299	SX .3..	203
XLCF R 3208-SX3	R	0.118	1.260	0.098	0.315	4.331	2.598	1.299	SX .3..	003
XLCF L 3208-SX4	L	0.157	1.260	0.134	0.315	4.331	2.598	1.299	SX .4..	204
XLCF R 3208-SX4	R	0.157	1.260	0.134	0.315	4.331	2.598	1.299	SX .4..	004

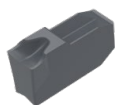
1) can be used in both directions



Spare parts for grooving inserts

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

Please order SX assembly key separately if required.



→ 14-20



→ 85-88



→ Chapter 16

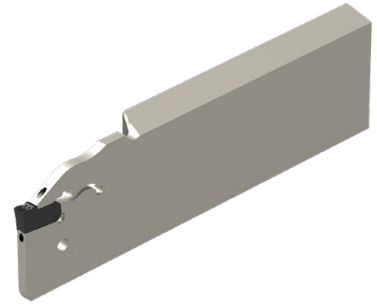
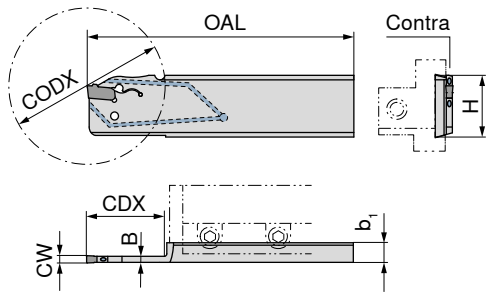


metric

MonoClamp – SX-DC reinforced Contra radial blade

Scope of supply:

Blade only



Illustrations show right-hand versions

70 877 ...

Designation	R/L/N	Version	CW inch	H inch	B inch	b ₁ inch	OAL inch	CODX inch	CDX inch	for grooving inserts
XLCF L 3208C-DC-SX3	L	Contra	0.118	1.260	0.098	0.315	4.331	2.598	1.299	SX .3..
XLCF R 3208C-DC-SX3	R	Contra	0.118	1.260	0.098	0.315	4.331	2.598	1.299	SX .3..

703
503



Insert mounting key SX

70 950 ...

Spare parts for grooving inserts

SX .3..

SX 2-3

836

Please order SX assembly key separately if required.



→ 14-20



→ 83+84



→ Chapter 16



metric

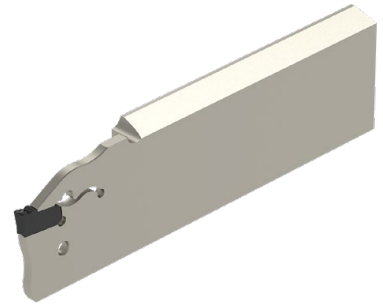
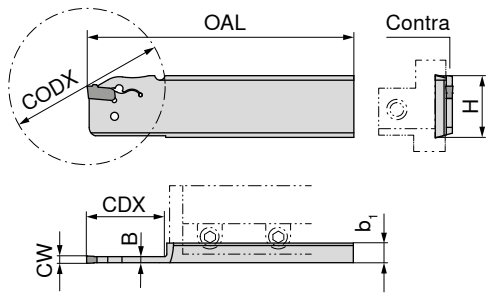
Correct Tool Selection

Right hand tool		Left hand tool		Standard version	Contra version
	Standard version				
	Contra version				

Grooving insert

MonoClamp – SX reinforced Contra radial blade

Scope of supply:
Blade only



Illustrations show right-hand versions

Designation	R/L/N	Version	CW inch	H inch	B inch	b ₁ inch	OAL inch	CODX inch	CDX inch	for grooving inserts	70 877 ...
XLCF L 3208C-SX3	L	Contra	0.118	1.260	0.098	0.315	4.331	2.598	1.299	SX 3..	203
XLCF R 3208C-SX3	R	Contra	0.118	1.260	0.098	0.315	4.331	2.598	1.299	SX 3..	003



Spare parts
for grooving inserts

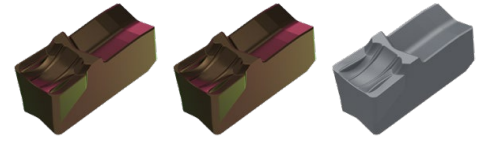
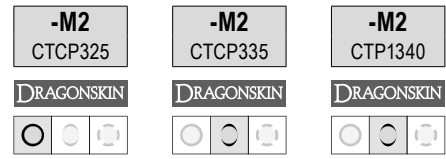
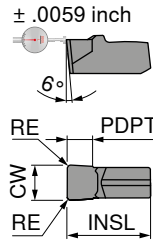
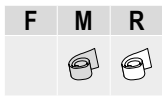
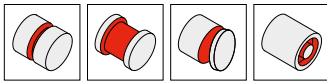
SX 3..	SX 2-3	70 950 ...	836
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Please order SX assembly key separately if required.

→ 14-20	→ 85-88	→ Chapter 16	metric				

Insert LX

- ▲ Grooving width 0.315 and 0.394 inch
- ▲ Axial grooving from Ø 19.7 inch onwards
- ▲ Internal grooving and turning, from Ø 7.9 inch onwards



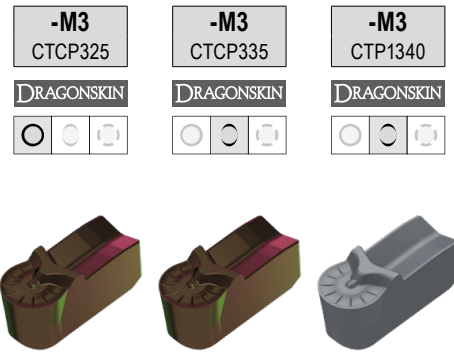
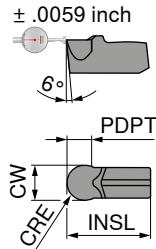
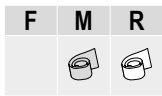
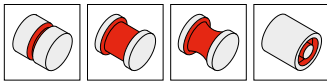
Designation	INSL inch	CW $_{-0.08}$ inch	RE $_{+0.1}$ inch	PDPT inch	for tool holder	70 337 ...		
						928	578	682
LXE 8.00N0.80-M2	0.748	0.315	0.031	0.197	E32 N ..-LX	928	578	682
LXE 10.00N0.80-M2	0.748	0.394	0.031	0.197	E32 N ..-LX	932	582	678
P						●	●	●
M						○	○	●
K						●	●	●
N								○
S						○		●
H								
O								○

→ v_c Page 90+91
→ Application recommendation on page 94+95

Internal machining			External machining		
→ 30			→ 30	→ 31	

Radial Grooving Insert LX

- ▲ Grooving width 0.315 inch
- ▲ Axial grooving from Ø 19.7 inch
- ▲ Internal grooving and turning, from Ø 7.9 inch



Designation	INSL inch	CW inch -/+0.08	CRE inch	PDPT inch	for tool holder	70 337 ...	70 337 ...	70 337 ...
LXR 4.00N-M3	0.748	0.315	0.157	0.197	E32 N ..-LX	908	518	618
P						●	●	●
M						○	○	●
K						●	●	●
N								○
S						○		●
H								
O								○

→ v_c Page 90+91
→ Application recommendation on page 94+95

Internal machining

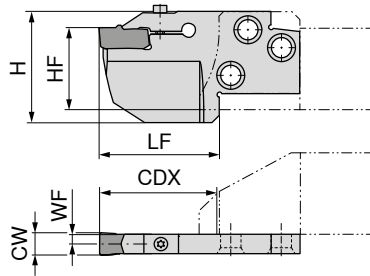
External machining



ModularClamp MSS – Axial and radial grooving module LX

- ▲ Grooving width 0.315 and 0.94 inch
- ▲ Axial grooving from Ø 19.7 inch onwards
- ▲ Internal grooving and turning, from Ø 7.9 inch onwards

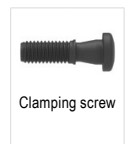
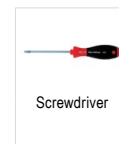
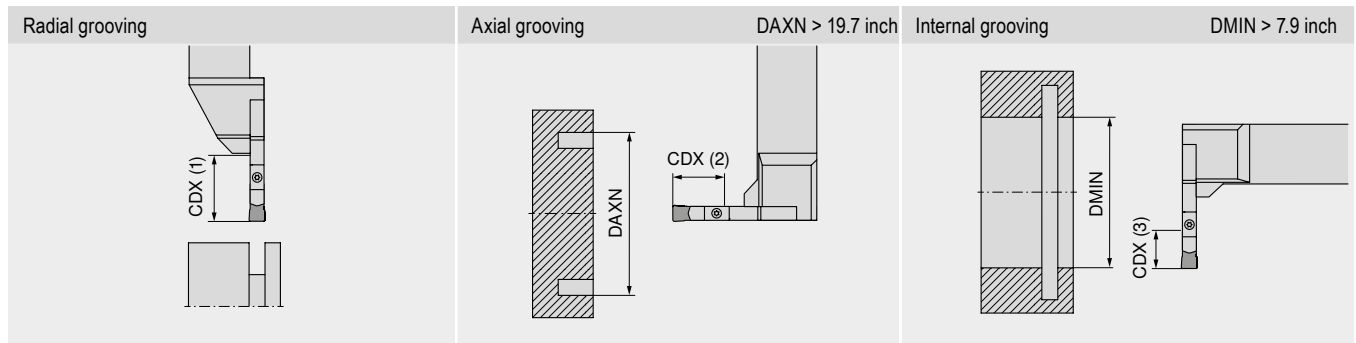
Scope of supply:
Grooving module only



Neutral

70 835 ...

Designation	CW inch	WF inch	LF inch	HF inch	H inch	CDX (1) inch	CDX (2) inch	CDX (3) inch	for grooving inserts	
E32 N 25-LX	0.315/0.394	0.134	1.063	1.260	1.732	0.984	0.748	0.551	LX ..	032
E32 N 32-LX	0.315/0.394	0.134	1.339	1.260	1.732	1.260	1.024	0.827	LX ..	132
E32 N 45-LX	0.315/0.394	0.134	1.850	1.260	1.732	1.772	1.535	1.339	LX ..	232



80 950 ...

70 950 ...

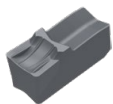
Spare parts
for grooving inserts
LX ..

T20

114

M4x18

204



→ 28+29



→ 75-79



→ 80

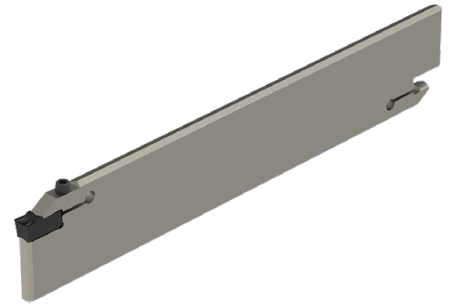
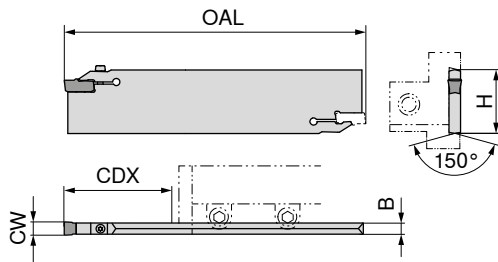


→ 81-82

MonoClamp – Blade LX

Scope of supply:

Blade incl. key and clamping screw

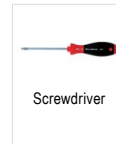


Designation	H inch	B inch	OAL inch	CW inch	CDX inch	for grooving inserts
XLCEN 4608-LX	1.811	0.268	9.843	0.315/0.394	3.150	LX ..

70 833 ...

108

**Spare parts
for grooving inserts**
LX ..



80 950 ...

114

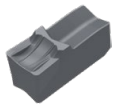


70 950 ...

204

T20

M4x18



→ 28+29



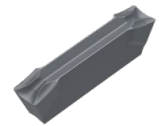
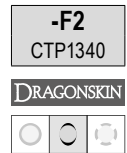
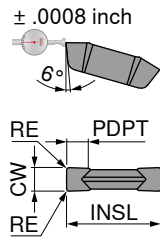
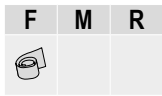
→ 85-88



→ Chapter 16

Insert GX 09/16

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



70 360 ...

Designation	INSL inch	CW ± 0.02 inch	RE ± 0.05 inch	PDPT inch	for tool holder	
GX 09-1 E2.00 N 0.20	0.354	0.079	0.008	0.059	GX 09-1	600
GX 09-1 E2.50 N 0.20	0.354	0.098	0.008	0.059	GX 09-1	602
GX 09-2 E3.00 N 0.30	0.354	0.118	0.012	0.079	GX 09-2	604
GX 16-1 E2.00 N 0.20	0.630	0.079	0.008	0.098	GX 16-1	650
GX 16-2 E3.00 N 0.30	0.630	0.118	0.012	0.118	GX 16-2	652
GX 16-3 E4.00 N 0.40	0.630	0.157	0.016	0.138	GX 16-3	654
GX 16-3 E5.00 N 0.40	0.630	0.197	0.016	0.138	GX 16-3	656

P	●
M	●
K	●
N	○
S	●
H	
O	○

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→ Application recommendation on page 96+97

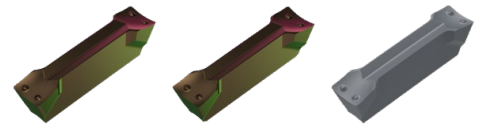
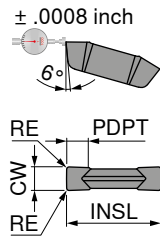
Internal machining

External machining



Insert GX 09/16 – Standard

▲ Suitable for parting thin-walled workpieces



Designation	INSL inch	CW ± 0.02 inch	RE ± 0.05 inch	PDPT inch	for tool holder	70 350 ...		
GX 09-1 E2.00 N 0.20	0.354	0.079	0.008	0.059	GX 09-1	984		634
GX 09-1 E2.50 N 0.20	0.354	0.098	0.008	0.059	GX 09-1	988		638
GX 09-2 E3.00 N 0.30	0.354	0.118	0.012	0.079	GX 09-2	992		642
GX 16-1 E2.00 N 0.20	0.630	0.079	0.008	0.098	GX 16-1	900	500	600
GX 16-1 E2.50 N 0.20	0.630	0.098	0.008	0.098	GX 16-1	904	504	604
GX 16-2 E3.00 N 0.30	0.630	0.118	0.012	0.118	GX 16-2	908	508	608
GX 16-2 E3.00 N 0.50	0.630	0.118	0.020	0.118	GX 16-2	910		
GX 16-2 E3.50 N 0.30	0.630	0.138	0.012	0.118	GX 16-2	912	512	612
GX 16-3 E4.00 N 0.40	0.630	0.157	0.016	0.138	GX 16-3	916	516	616
GX 16-3 E5.00 N 0.40	0.630	0.197	0.016	0.138	GX 16-3	924	524	624
GX 16-4 E6.00 N 0.50	0.630	0.236	0.020	0.157	GX 16-4	928		628
GX 16-4 E6.00 N 0.80	0.630	0.236	0.031	0.157	GX 16-4	930		
P						●	●	●
M						○	○	●
K						●	●	●
N								○
S						○		●
H								
O								○

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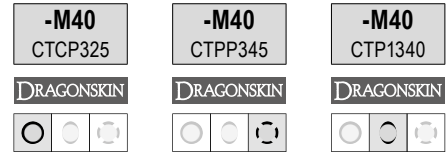
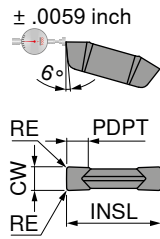
Internal machining

External machining



Insert GX 09/16

▲ Very good chip control



Designation	INSL inch	CW ± 0.05 inch	RE ± 0.05 inch	PDPT inch	for tool holder	70 351 ...		
						986	886	686
GX 09-1 E2.00 N 0.20	0.354	0.079	0.008	0.059	GX 09-1	986	886	686
GX 09-2 E3.00 N 0.30	0.354	0.118	0.012	0.079	GX 09-2	994	894	694
GX 16-1 E2.00 N 0.20	0.630	0.079	0.008	0.098	GX 16-1	902	802	602
GX 16-2 E3.00 N 0.30	0.630	0.118	0.012	0.118	GX 16-2	910	810	610
GX 16-3 E4.00 N 0.40	0.630	0.157	0.016	0.138	GX 16-3	918	818	618
GX 16-3 E5.00 N 0.40	0.630	0.197	0.016	0.138	GX 16-3	926	826	626
GX 16-4 E6.00 N 0.50	0.630	0.236	0.020	0.157	GX 16-4	930	830	630
P						●	●	●
M						○	●	●
K						●	○	●
N						○	○	○
S						○	○	●
H								
O								○

→ v_c Page 90+91
→ Application recommendation on page 96+97

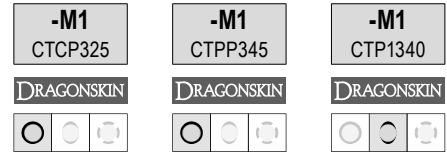
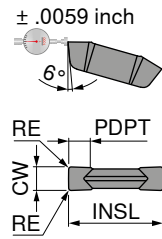
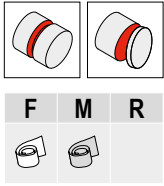
Internal machining

External machining



Insert GX 16

▲ Very good chip control



Designation	INSL inch	CW ± 0.05 inch	RE ± 0.05 inch	PDPT inch	for tool holder	70 362 ...		
						902	800	600
GX 16-1 E2.00 N 0.20	0.630	0.079	0.008	0.079	GX 16-1			
GX 16-2 E3.00 N 0.20	0.630	0.118	0.008	0.098	GX 16-2	902	800	600
GX 16-3 E4.00 N 0.30	0.630	0.157	0.012	0.118	GX 16-3	904	802	602
P						●	●	●
M						○	●	●
K						●		●
N								○
S						○	○	●
H								
O								○

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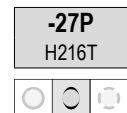
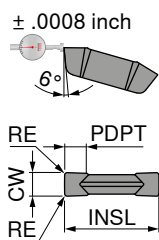
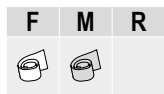
Internal machining

External machining



Insert GX 16

- ▲ Insert with highly positive cutting edge geometry and sharp cutting edge, polished chip breaker
- ▲ ground periphery



70 350 ...

Designation	INSL inch	CW ± 0.02 inch	RE ± 0.05 inch	PDPT inch	for tool holder	
GX 16-1 E2.00 N 0.20	0.630	0.079	0.008	0.098	GX 16-1	650
GX 16-2 E3.00 N 0.30	0.630	0.118	0.012	0.118	GX 16-2	658
GX 16-3 E4.00 N 0.40	0.630	0.157	0.016	0.138	GX 16-3	670
GX 16-4 E6.00 N 0.50	0.630	0.236	0.020	0.157	GX 16-4	678

P	
M	
K	●
N	●
S	○
H	
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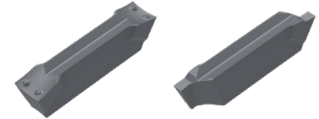
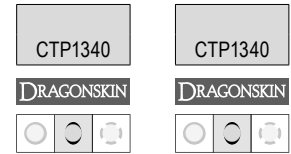
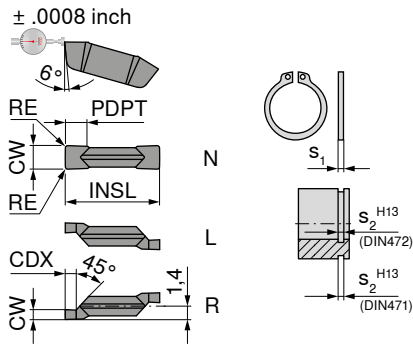
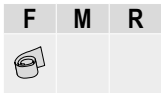
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Internal machining

External machining



Circlip groove insert GX 09/16 – Standard



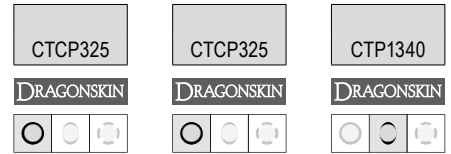
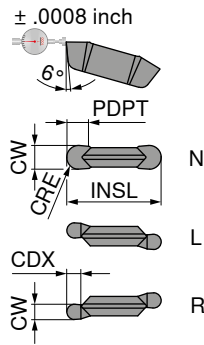
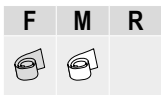
Designation	IH	INSL inch	s ₁ inch	s ₂ inch	CW _{+/-0.02} inch	RE _{+/-0.05} inch	CDX inch	PDPT inch	for tool holder	70 352 ...	
										684	686
GX 09-1 S1.00 L	L	0.354	0.031	0.035	0.039		0.045		R/L 02-GX 09-1		684
GX 09-1 S1.20 L	L	0.354	0.039	0.043	0.047		0.053		R/L 02-GX 09-1		686
GX 09-1 S1.40 L	L	0.354	0.047	0.051	0.055		0.060		R/L 02-GX 09-1		688
GX 09-1 S1.70 L	L	0.354	0.059	0.063	0.067		0.072		R/L 02-GX 09-1		690
GX 09-1 S1.95 N	N	0.354	0.069	0.073	0.077	0.004		0.079	GX 09-1	692	
GX 09-1 S2.25 N	N	0.354	0.079	0.085	0.089	0.004		0.079	GX 09-1	694	
GX 09-2 S2.75 N	N	0.354	0.098	0.104	0.108	0.004		0.079	GX 09-2	696	
GX 09-2 S3.25 N	N	0.354	0.118	0.124	0.128	0.004		0.079	GX 09-2	698	
GX 09-1 S1.00 R	R	0.354	0.031	0.035	0.039		0.045		R/L 02-GX 09-1		676
GX 09-1 S1.20 R	R	0.354	0.039	0.043	0.047		0.053		R/L 02-GX 09-1		678
GX 09-1 S1.40 R	R	0.354	0.047	0.051	0.055		0.060		R/L 02-GX 09-1		680
GX 09-1 S1.70 R	R	0.354	0.059	0.063	0.067		0.072		R/L 02-GX 09-1		682
GX 16-2 S0.60 L	L	0.630	0.016	0.020	0.024		0.030		R/L 03-GX 16-2		607
GX 16-2 S0.80 L	L	0.630	0.024	0.028	0.031		0.037		R/L 03-GX 16-2		609
GX 16-2 S0.90 L	L	0.630	0.028	0.031	0.035		0.041		R/L 03-GX 16-2		611
GX 16-2 S1.00 L	L	0.630	0.031	0.035	0.039		0.045		R/L 03-GX 16-2		612
GX 16-2 S1.20 L	L	0.630	0.039	0.043	0.047		0.053		R/L 03-GX 16-2		614
GX 16-2 S1.40 L	L	0.630	0.047	0.051	0.055		0.060		R/L 03-GX 16-2		616
GX 16-2 S1.70 L	L	0.630	0.059	0.063	0.067		0.072		R/L 03-GX 16-2		618
GX 16-2 S1.95 L	L	0.630	0.069	0.073	0.077		0.081		R/L 03-GX 16-2		620
GX 16-2 S2.25 L	L	0.630	0.079	0.085	0.089		0.093		R/L 03-GX 16-2		622
GX 16-2 S2.75 N	N	0.630	0.098	0.104	0.108	0.004		0.118	GX 16-2	624	
GX 16-2 S3.25 N	N	0.630	0.118	0.124	0.128	0.004		0.118	GX 16-2	626	
GX 16-3 S4.25 N	N	0.630	0.157	0.163	0.167	0.008		0.138	GX 16-3	628	
GX 16-2 S0.60 R	R	0.630	0.016	0.020	0.024		0.030		R/L 03-GX 16-2		695
GX 16-2 S0.80 R	R	0.630	0.024	0.028	0.031		0.037		R/L 03-GX 16-2		697
GX 16-2 S0.90 R	R	0.630	0.028	0.031	0.035		0.041		R/L 03-GX 16-2		699
GX 16-2 S1.00 R	R	0.630	0.031	0.035	0.039		0.045		R/L 03-GX 16-2		600
GX 16-2 S1.20 R	R	0.630	0.039	0.043	0.047		0.053		R/L 03-GX 16-2		602
GX 16-2 S1.40 R	R	0.630	0.047	0.051	0.055		0.060		R/L 03-GX 16-2		604
GX 16-2 S1.70 R	R	0.630	0.059	0.063	0.067		0.072		R/L 03-GX 16-2		606
GX 16-2 S1.95 R	R	0.630	0.069	0.073	0.077		0.081		R/L 03-GX 16-2		608
GX 16-2 S2.25 R	R	0.630	0.079	0.085	0.089		0.093		R/L 03-GX 16-2		610
P										●	●
M										●	●
K										●	●
N										○	○
S										●	●
H											
O										○	○

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→ Application recommendation on page 98+99

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



Radius groove insert GX 09/16 – Standard



Designation	IH	INSL inch	CW ± 0.02 inch	CRE inch	PDPT inch	CDX inch	for tool holder	70 354 ...	70 354 ...	70 354 ...
GX 09-1 R1.00 N	N	0.354	0.079	0.039	0.039		GX 09-1		992	
GX 09-1 R1.20 N	N	0.354	0.094	0.047	0.047		GX 09-1		996	
GX 16-2 R0.80 L	L	0.630	0.063	0.031		0.070	R/L 03-GX 16-2	912		
GX 16-2 R1.00 L	L	0.630	0.079	0.039		0.086	R/L 03-GX 16-2	916		
GX 16-2 R1.20 L	L	0.630	0.094	0.047		0.102	R/L 03-GX 16-2	920		
GX 16-2 R1.50 N	N	0.630	0.118	0.059	0.059		GX 16-2		924	624
GX 16-3 R2.00 N	N	0.630	0.157	0.079	0.079		GX 16-3		928	628
GX 16-3 R2.50 N	N	0.630	0.197	0.098	0.098		GX 16-3		932	632
GX 16-4 R3.00 N	N	0.630	0.236	0.118	0.118		GX 16-4		936	636
GX 16-2 R0.80 R	R	0.630	0.063	0.031		0.070	R/L 03-GX 16-2	900		
GX 16-2 R1.00 R	R	0.630	0.079	0.039		0.086	R/L 03-GX 16-2	904		
GX 16-2 R1.20 R	R	0.630	0.094	0.047		0.102	R/L 03-GX 16-2	908		
P								●	●	●
M								○	○	●
K								●	●	●
N										○
S								○	○	●
H										
O										○

→ v_c Page 90+91
→ Application recommendation on page 98+99

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

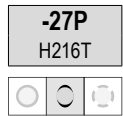
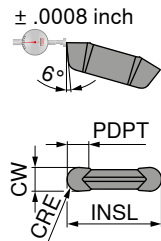
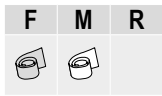
Internal machining

External machining



Radius groove insert GX 16

- ▲ Insert with highly positive cutting edge geometry and sharp cutting edge, polished chip breaker
- ▲ ground periphery



70 354 ...

Designation	INSL inch	CW ^{+0.02} inch	CRE inch	PDPT inch	for tool holder	
GX 16-2 R1.50 N	0.630	0.118	0.059	0.059	GX 16-2	674
GX 16-3 R2.00 N	0.630	0.157	0.079	0.079	GX 16-3	678
GX 16-3 R2.50 N	0.630	0.197	0.098	0.098	GX 16-3	682

P	
M	
K	●
N	●
S	○
H	
O	○

→ v_c Page 90+91
→ Application recommendation on page 98+99

Internal machining

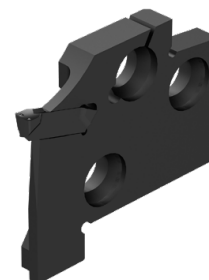
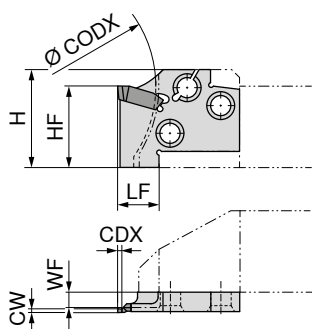
External machining



ModularClamp MSS – Radial grooving module GX 09/16

- ▲ For circlip grooves ≤ 0.1083 inch
- ▲ For radius grooves up to ≤ 0.0472 inch
- ▲ For external recessing

Scope of supply:
Grooving module only



Illustrations show right-hand versions

Designation	CW inch	WF inch	LF inch	HF inch	H inch	CODX inch	CDX inch	for grooving inserts	Left-hand	Right-hand
									70 871 ...	70 870 ...
E16 R/L 02-GX 09-1	<0.077	0.124	0.315	0.630	0.768	1.890	0.079	GX 09-1 ..R/L	116	116
E20 R/L 03-GX 16-2	<0.108	0.134	0.512	0.787	0.945	2.362	0.118	GX 16-2 ..R/L	120	120
E25 R/L 03-GX 16-2	<0.108	0.193	0.512	0.984	1.181	2.953	0.118	GX 16-2 ..R/L	125	125



→ 32-39



→ 75-79

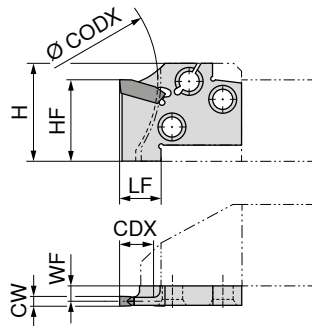


→ 80

ModularClamp MSS – Radial grooving module GX 09/16

- ▲ For grooving and turning
- ▲ For circlip grooves ≤ 0.2067 inch
- ▲ For radius grooves up to ≤ 0.0984 inch
- ▲ For external recessing

Scope of supply:
Grooving module only



Illustrations show right-hand versions

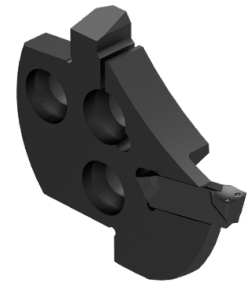
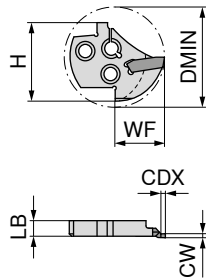
Designation	CW inch	WF inch	LF inch	HF inch	H inch	CODX inch	CDX inch	for grooving inserts	Left-hand	Right-hand
									70 866 ...	70 865 ...
E16 R/L 07-GX 09-1	0.079 - 0.108	0.124	0.315	0.630	0.768	1.890	0.276	GX 09-1 ..N	016	016
E16 R/L 07-GX 09-2	0.109 - 0.148	0.110	0.315	0.630	0.768	1.890	0.276	GX 09-2 ..N	116	116
E20 R/L 12-GX 16-1	0.079 - 0.108	0.148	0.512	0.787	0.945	2.362	0.472	GX 16-1 ..N	020	020
E20 R/L 12-GX 16-2	0.109 - 0.148	0.134	0.512	0.787	0.945	2.362	0.472	GX 16-2 ..N	120	120
E20 R/L 12-GX 16-3	0.148 - 0.197	0.115	0.512	0.787	0.945	2.362	0.472	GX 16-3 ..N	220	220
E25 R/L 12-GX 16-1	0.079 - 0.108	0.207	0.512	0.984	1.181	2.953	0.472	GX 16-1 ..N	025	025
E25 R/L 12-GX 16-2	0.109 - 0.148	0.193	0.512	0.984	1.181	2.953	0.472	GX 16-2 ..N	125	125
E25 R/L 12-GX 16-3	0.148 - 0.197	0.174	0.512	0.984	1.181	2.953	0.472	GX 16-3 ..N	225	225
E25 R/L 12-GX 16-4	0.197 - 0.256	0.150	0.512	0.984	1.181	2.953	0.472	GX 16-4 ..N	325	325



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

- ▲ For circlip grooves ≤ 0.1083 inch
- ▲ For radius grooves up to ≤ 0.0472 inch

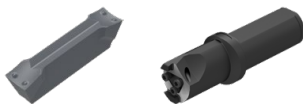
Scope of supply:
Grooving module only



Illustrations show right-hand versions

Designation	CW inch	LB inch	WF inch	H inch	CDX inch	DMIN inch	for grooving inserts	Left-hand	Right-hand
								70 886 ...	70 885 ...
I16 R/L 02-GX 09-1	<0.077	0.150	0.394	0.646	0.079	0.787	GX 09-1 ..R/L	016	016
I20 R/L 02-GX 09-1	<0.077	0.150	0.472	0.799	0.079	0.984	GX 09-1 ..R/L	020	020
I25 R/L 02-GX 09-1	<0.077	0.150	0.610	0.980	0.079	1.260	GX 09-1 ..R/L	025	025
I32 R/L 03-GX 16-2	<0.108	0.232	0.787	1.268	0.118	1.575	GX 16-2 ..R/L	032	032
I40 R/L 03-GX 16-2	<0.108	0.232	0.965	1.559	0.118	1.969	GX 16-2 ..R/L	040	040

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



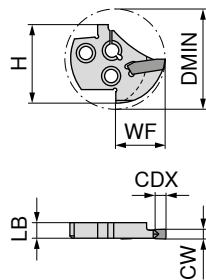
→ 32-39

→ 81+82

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

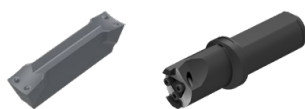
- ▲ For circlip grooves ≤ 0.2067 inch
- ▲ For radius grooves up to ≤ 0.0984 inch

Scope of supply:
Grooving module only



Illustrations show right-hand versions

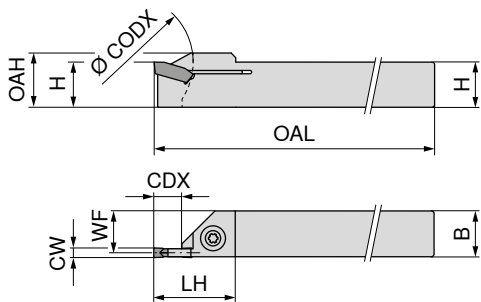
Designation	CW inch	LB inch	WF inch	H inch	CDX inch	DMIN inch	for grooving inserts	Left-hand	Right-hand
								70 881 ...	70 880 ...
I16 R/L 04-GX 09-1	0.079 - 0.108	0.150	0.394	0.646	0.157	0.787	GX 09-1 ..N	017	017
I16 R/L 04-GX 09-2	0.109 - 0.148	0.150	0.394	0.646	0.157	0.787	GX 09-2 ..N	117	117
I20 R/L 05-GX 09-1	0.079 - 0.108	0.150	0.472	0.799	0.197	0.984	GX 09-1 ..N	021	021
I20 R/L 05-GX 09-2	0.109 - 0.148	0.150	0.472	0.799	0.197	0.984	GX 09-2 ..N	121	121
I25 R/L 06-GX 09-1	0.079 - 0.108	0.150	0.610	0.980	0.236	1.260	GX 09-1 ..N	026	026
I25 R/L 06-GX 09-2	0.109 - 0.148	0.150	0.610	0.980	0.236	1.260	GX 09-2 ..N	126	126
I32 R/L 09-GX 16-1	0.079 - 0.108	0.232	0.787	1.268	0.354	1.575	GX 16-1 ..N	033	033
I32 R/L 09-GX 16-2	0.109 - 0.148	0.232	0.787	1.268	0.354	1.575	GX 16-2 ..N	133	133
I32 R/L 09-GX 16-3	0.148 - 0.197	0.232	0.787	1.268	0.354	1.575	GX 16-3 ..N	233	233
I32 R/L 09-GX 16-4	0.197 - 0.256	0.232	0.787	1.268	0.354	1.575	GX 16-4 ..N	333	333
I40 R/L 10-GX 16-1	0.079 - 0.108	0.232	0.965	1.559	0.394	1.969	GX 16-1 ..N	041	041
I40 R/L 10-GX 16-2	0.109 - 0.148	0.232	0.965	1.559	0.394	1.969	GX 16-2 ..N	141	141
I40 R/L 10-GX 16-3	0.148 - 0.197	0.232	0.965	1.559	0.394	1.969	GX 16-3 ..N	241	241
I40 R/L 10-GX 16-4	0.197 - 0.256	0.232	0.965	1.559	0.394	1.969	GX 16-4 ..N	341	341



→ 32-39

→ 81+82

MonoClamp – Radial Monoholder GX 09

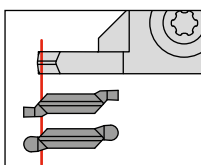


Illustrations show right-hand versions

Designation	H inch	B inch	CW inch	WF inch	OAH inch	OAL inch	LH inch	CODX inch	CDX inch	for grooving inserts GX 09 ..	Left-hand	Right-hand
											78 863 ...	78 862 ...
E10 R/L 00-06-GX09-E	0.375	0.375	0.079 - 0.138	0.349	0.472	6.000	0.709	1.181	0.270		03800 ¹⁾	03800 ¹⁾

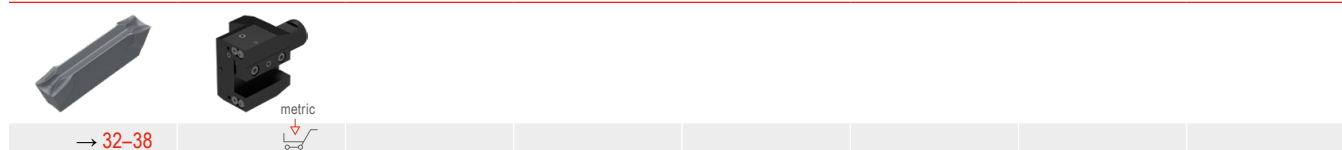
1) Not ex-stock

i 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 ..

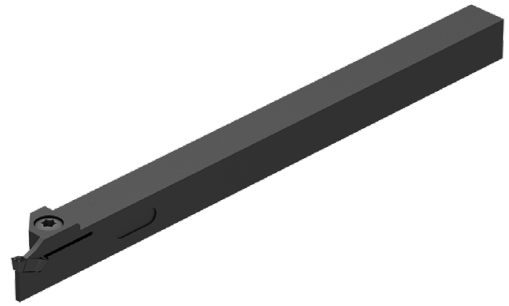
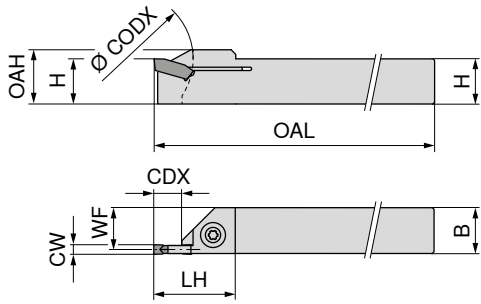
	Screwdriver	Clamping screw
	80 950 ...	70 950 ...
T15	113	M4x11
		442



MonoClamp – Radial Monoholder GX 09

Scope of supply:

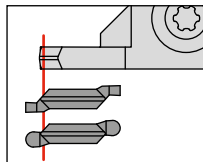
Mono holder incl. Torx key and clamping screw



Illustrations show right-hand versions

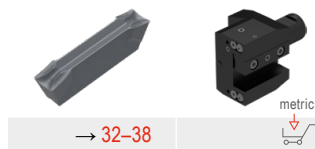
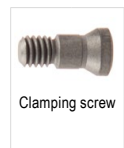
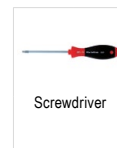
Designation	H mm	B mm	CW mm	WF mm	OAH mm	OAL mm	LH mm	CODX mm	CDX mm	for grooving inserts GX 09 ..	Left-hand	Right-hand
											70 863 ...	70 862 ...
E10 R/L 00-1010M-GX09	10	10	2.00 - 3.50	9.35	12	150	18	30	7	GX 09 ..	010	010

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



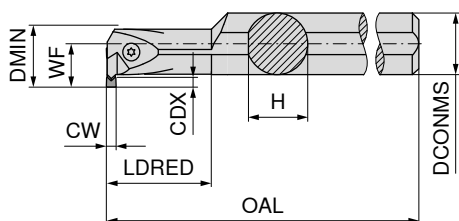
Spare parts for grooving inserts

GX 09 ..	T15	80 950 ...	113	M4x11	70 950 ...	442
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→ 32-38

MonoClamp – Radial Mono-boring bars GX 09



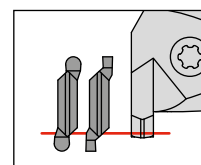
Illustrations show right-hand versions

Designation	H inch	DCONMS inch	DMIN inch	CW inch	CDX inch	WF inch	OAL inch	LDRED inch	for grooving inserts GX 09 ..	Left-hand	Right-hand
										78 859 ...	78 858 ...
I12 R/L 90-2.5D-GX09-E	0.600	0.625	0.630	0.079 - 0.148	0.118	0.433	6.000	1.181		06300 ¹⁾	06300

1) Not ex-stock

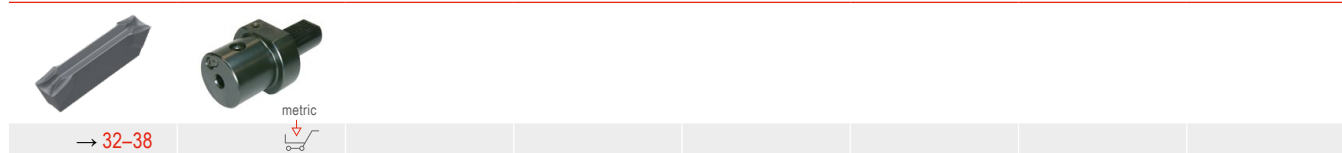
1 Right hand boring bar → left hand insert only
Left hand boring bar → right hand insert only

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



Spare parts
for grooving inserts
GX 09 ..

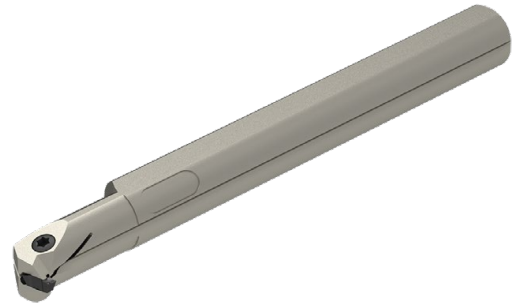
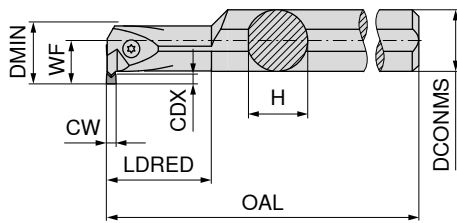
	Screwdriver	Clamping screw
	80 950 ...	70 950 ...
T15	113	441
	M3.5x12.5	



MonoClamp – Radial Mono-boring bars GX 09

Scope of supply:

Boring bar incl. key and clamping screw

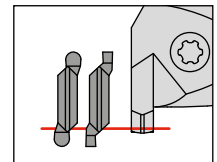


Illustrations show right-hand versions

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

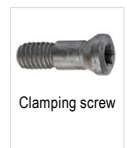
1 Right hand boring bar → left hand insert only
Left hand boring bar → right hand insert only

1 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
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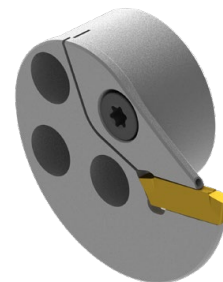
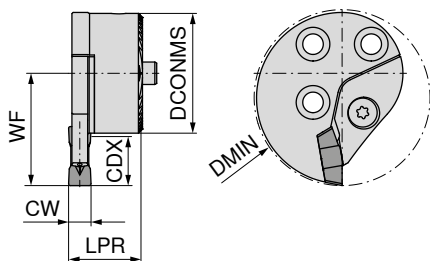


MaxiChange-GX – GX-DC 16 exchangeable grooving head

▲ For grooving and turning

Scope of supply:

Exchangeable grooving head with clamping claw and clamping screw



Illustrations show right-hand versions

Designation	DCONMS mm	CW mm	WF mm	LPR mm	DMIN mm	CDX mm	for grooving inserts	NEW	
								Left-hand	Right-hand
WK25 R/L 14-DC GX 16-S2	25	2	27	14.00	41	14	GX 16-1 ..N	84 188 ...	84 189 ...
WK25 R/L 14-DC GX 16-S3	25	3	27	14.75	41	14	GX 16-2 ..N	22500	22500
WK25 R/L 14-DC GX 16-S4/5	25	4/5	27	15.75	41	14	GX 16-3 ..N	32500	32500
WK32 R/L 13-DC GX 16-S4/5	32	4/5	30	17.75	47	13	GX 16-3 ..N	42500	42500
WK32 R/L 13-DC GX 16-S6	32	6	30	19.35	47	13	GX 16-3 ..N	43200	43200
								63200	63200

Clamping claw	O-Ring	Clamping screw	Guide pin
84 950 ...	84 950 ...	84 950 ...	84 950 ...

Spare parts for Article no.

84 189 22500	50400	2x1	50300	M4X4/T15	50000	D3H6X10	53000
84 188 22500	50500	2x1	50300	M4X4/T15	50000	D3H6X10	53000
84 189 32500	50600	2x1	50300	M4X4/T15	50000	D3H6X10	53000
84 188 32500	50700	2x1	50300	M4X4/T15	50000	D3H6X10	53000
84 189 42500	50800	2x1	50300	M4X4/T15	50000	D3H6X10	53000
84 188 42500	50900	2x1	50300	M4X4/T15	50000	D3H6X10	53000
84 189 43200	51000	2x1	50300	M5X5.5/T15	50100	D4H6X10	53100
84 188 43200	51100	2x1	50300	M5X5.5/T15	50100	D4H6X10	53100
84 189 63200	51200	2x1	50300	M5X5.5/T15	50100	D4H6X10	53100
84 188 63200	51300	2x1	50300	M5X5.5/T15	50100	D4H6X10	53100

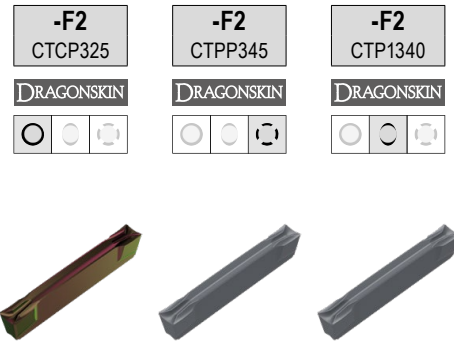
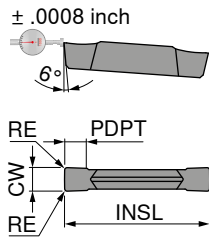
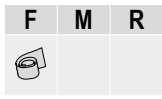
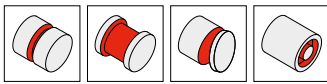


→ 32-39

→ Chapter 9

Insert GX 24

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



Designation	INSL inch	CW ± 0.02 inch	RE ± 0.05 inch	PDPT inch	for tool holder	70 350 ...		
						962	862	662
GX 24-2 E3.00 N 0.30	0.945	0.118	0.012	0.098	GX 24-2	962	862	662
GX 24-2 E3.50 N 0.30	0.945	0.138	0.012	0.098	GX 24-2		864	
GX 24-3 E4.00 N 0.40	0.945	0.157	0.016	0.118	GX 24-3	966	866	666
GX 24-3 E5.00 N 0.40	0.945	0.197	0.016	0.138	GX 24-3	970	870	671
GX 24-4 E6.00 N 0.50	0.945	0.236	0.020	0.157	GX 24-4		872	672
P						●	●	●
M						○	●	●
K						●		●
N								○
S						○	○	●
H								
O								○

→ v_c Page 90+91
→ Application recommendation on page 96+97

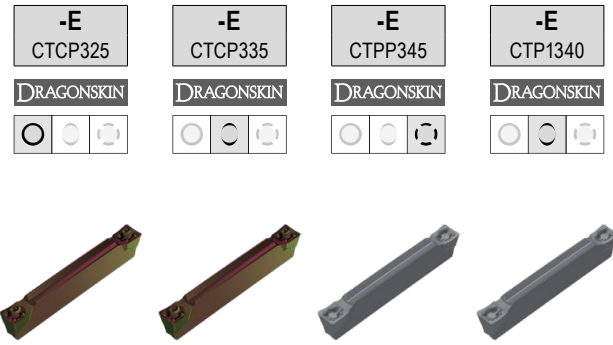
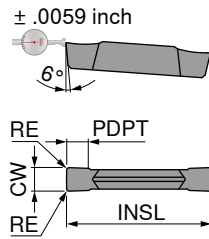
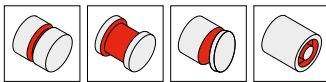
Internal machining

External machining



Insert GX 24

- ▲ Universal application
- ▲ First choice for axial grooving



Designation	INSL inch	CW ± 0.05 inch	RE ± 0.05 inch	PDPT inch	for tool holder	70 350 ...		70 350 ...		70 350 ...		70 350 ...	
GX 24-2 E3.00 N 0.30	0.945	0.118	0.012	0.098	GX 24-2	932	532	832	632				
GX 24-3 E4.00 N 0.40	0.945	0.157	0.016	0.118	GX 24-3	936	536	836	636				
GX 24-3 E5.00 N 0.40	0.945	0.197	0.016	0.118	GX 24-3	940	540	840	640				
GX 24-4 E6.00 N 0.50	0.945	0.236	0.020	0.138	GX 24-4	944	544	844	644				
P						●	●	●	●				
M						○	○	●	●				
K						●	●						
N													○
S						○		○	●				
H													
O													○

→ v_c Page 90+91
→ Application recommendation on page 96+97

Internal machining

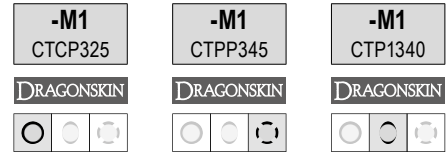
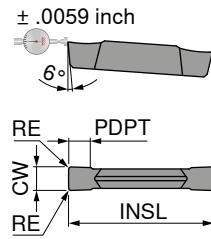
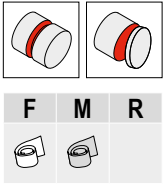


External machining



Insert GX 24

▲ Very good chip control



Designation	INSL inch	CW ± 0.05 inch	RE ± 0.05 inch	for tool holder	70 363 ...		
					900 902 904	800 802 804	600 602 604
GX 24-1 E2.00 N 0.20	0.945	0.079	0.008	GX 24-1	●	●	●
GX 24-2 E3.00 N 0.20	0.945	0.118	0.008	GX 24-2	○	●	●
GX 24-3 E4.00 N 0.30	0.945	0.157	0.012	GX 24-3	●	○	●
P					●	●	●
M					○	●	●
K					●	○	●
N					○	○	○
S					○	○	●
H							
O							○

→ v_c Page 90+91
→ Application recommendation on page 98+99

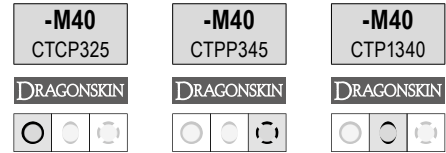
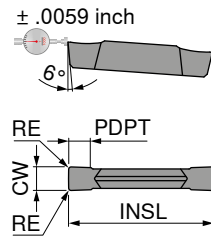
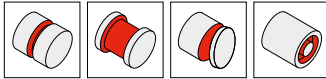
Internal machining

External machining



Insert GX 24

▲ Very good chip control



Designation	INSL inch	CW inch	RE inch	PDPT inch	for tool holder	70 364 ...		
						900	800	600
GX 24-2 E3.00 N 0.30	0.945	0.118	0.012	0.138	GX 24-2	902	802	602
GX 24-3 E4.00 N 0.40	0.945	0.157	0.016	0.157	GX 24-3	904	804	604
GX 24-3 E5.00 N 0.40	0.945	0.197	0.016	0.157	GX 24-3	906	806	606
GX 24-4 E6.00 N 0.50	0.945	0.236	0.020	0.157	GX 24-4			
P						●	●	●
M						○	●	●
K						●	●	●
N								○
S						○	○	●
H								
O								○

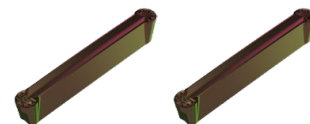
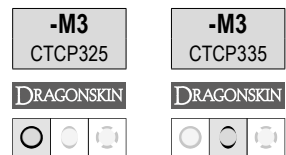
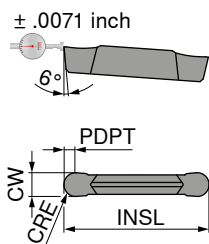
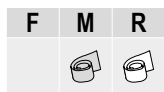
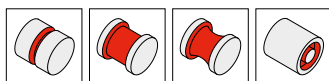
→ v_c Page 90+91
→ Application recommendation on page 96+97

Internal machining

External machining



Radius groove insert GX 24



Designation	INSL inch	CW ± 0.05 inch	CRE inch	PDPT inch	for tool holder	70 354 ...	
GX 24-2 R1.50 N	0.961	0.118	0.059	0.059	GX 24-2	952	552
GX 24-3 R2.00 N	0.961	0.157	0.079	0.098	GX 24-3	954	554
GX 24-3 R2.50 N	0.961	0.197	0.098	0.118	GX 24-3	956	556
GX 24-4 R3.00 N	0.961	0.236	0.118	0.157	GX 24-4	958	558
P						●	●
M						○	○
K						●	●
N							
S						○	
H							
O							

→ v_c Page 90+91
→ Application recommendation on page 98+99

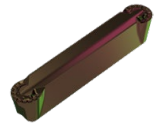
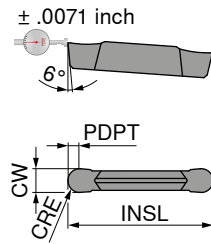
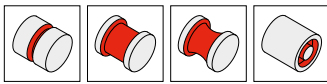
Internal machining

External machining



Radius groove insert GX 24

▲ Suitable for the machining of tough and ductile materials



70 365 ...

Designation	INSL inch	CW ± 0.05 inch	CRE inch	PDPT inch	for tool holder	
GX 24-2 R1.50 N	0.961	0.118	0.059	0.059	GX 24-2	95200
GX 24-3 R2.00 N	0.961	0.157	0.079	0.098	GX 24-3	95400
GX 24-3 R2.50 N	0.961	0.197	0.098	0.118	GX 24-3	95600
GX 24-4 R3.00 N	0.961	0.236	0.118	0.157	GX 24-4	95800

P	●
M	○
K	●
N	○
S	○
H	
O	

→ v_c Page 90+91
→ Application recommendation on page 98+99

Internal machining

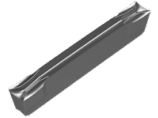
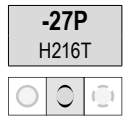
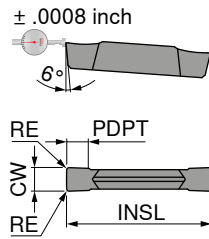


External machining



Insert GX 24

- ▲ Insert with highly positive cutting edge geometry and sharp cutting edge, polished chip breaker
- ▲ ground periphery



70 350 ...

Designation	INSL inch	CW ± 0.02 inch	RE ± 0.05 inch	PDPT inch	for tool holder	
GX 24-2 E3.00 N 0.30	0.945	0.118	0.012	0.098	GX 24-2	682
GX 24-3 E4.00 N 0.40	0.945	0.157	0.016	0.118	GX 24-3	684
GX 24-3 E5.00 N 0.40	0.945	0.197	0.016	0.138	GX 24-3	686
GX 24-4 E6.00 N 0.50	0.945	0.236	0.020	0.157	GX 24-4	688

P	
M	
K	●
N	●
S	○
H	
O	○

→ v_c Page 90+91
→ Application recommendation on page 96+97

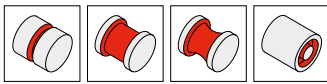
Internal machining

External machining

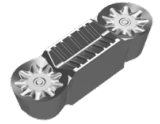
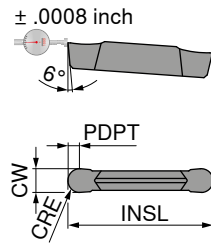


Radius grooving insert GX 24

- ▲ Insert with highly positive cutting edge geometry and sharp cutting edge, polished chip breaker
- ▲ ground periphery



-27PF
H216T



70 353 ...

Designation	INSL inch	CW ^{+0.02} inch	CRE inch	PDPT inch	for tool holder	
GX 24-4 R3.00 N	1.000	0.236	0.118	0.157	GX 24-4	500
GX 24-5 R4.00 N	1.000	0.315	0.157	0.197	GX 24-5	506

P	
M	
K	●
N	●
S	○
H	
O	○

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Internal machining

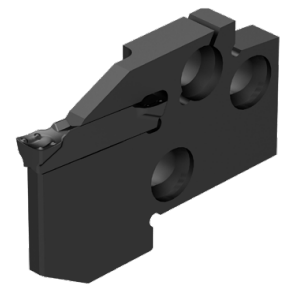
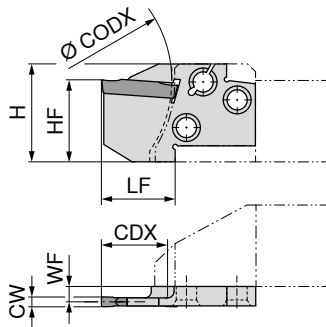
External machining



ModularClamp MSS – Radial grooving module GX 24

- ▲ For deep radial parting and grooving
- ▲ For turning

Scope of supply:
Grooving module only

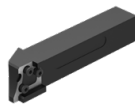


Illustrations show right-hand versions

Designation	CW inch	WF inch	LF inch	HF inch	H inch	CODX inch	CDX inch	for grooving inserts	Left-hand	Right-hand
									70 868 ...	70 867 ...
E20 R/L 21-GX 24-1	0.079 - 0.108	0.142	0.866	0.787	0.945	2.362	0.827	GX 24-1	020	020
E20 R/L 21-GX 24-2	0.118	0.134	0.866	0.787	0.945	2.362	0.827	GX 24-2	120	120
E20 R/L 21-GX 24-3	0.157/0.197	0.115	0.866	0.787	0.945	1.181	0.827	GX 24-3	22000	22000
E25 R/L 21-GX 24-1	0.079 - 0.108	0.201	0.866	0.984	1.181	2.953	0.827	GX 24-1	025	025
E25 R/L 21-GX 24-2	0.118	0.193	0.866	0.984	1.181	2.953	0.827	GX 24-2	125	125
E25 R/L 21-GX 24-3	0.157/0.197	0.174	0.866	0.984	1.181	2.953	0.827	GX 24-3	225	225
E25 R/L 21-GX 24-4	0.236	0.150	0.866	0.984	1.181	2.953	0.827	GX 24-4	325	325
E25 R/L 21-GX 24-5	0.315	0.116	0.906	0.984	1.181	2.953	0.827	GX 24-5	425	425



→ 49-56



→ 75-79

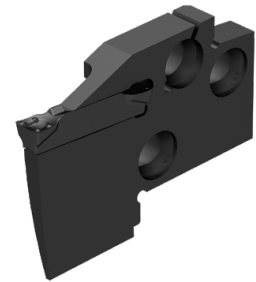
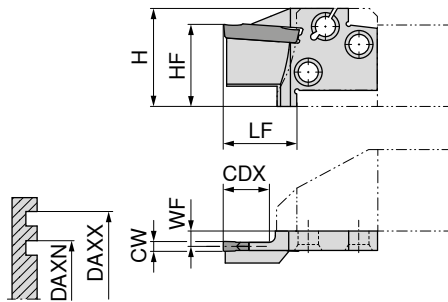


→ 80

ModularClamp MSS – Axial grooving module GX 24 short

- ▲ For axial grooving
- ▲ For face turning

Scope of supply:
Grooving module only



Illustrations show right-hand versions

Designation	DAXN inch	DAXX inch	CW inch	WF inch	LF inch	HF inch	H inch	CDX inch	for grooving inserts	Left-hand	Right-hand
										70 891 ...	70 890 ...
E20 R/L 14-GX 24-2 A	1.969	2.756	0.118	0.134	0.866	0.787	0.945	0.551	GX 24-2	100	100
E20 R/L 14-GX 24-2 A	2.756	3.937	0.118	0.134	0.866	0.787	0.945	0.551	GX 24-2	102	102
E20 R/L 14-GX 24-2 A	3.937	5.906	0.118	0.134	0.866	0.787	0.945	0.551	GX 24-2	104	104
E25 R/L 15-GX 24-2 A	1.969	2.756	0.118	0.193	0.866	0.984	1.181	0.591	GX 24-2	200	200
E25 R/L 15-GX 24-2 A	2.756	3.937	0.118	0.193	0.866	0.984	1.181	0.591	GX 24-2	202	202
E25 R/L 15-GX 24-2 A	3.937	5.906	0.118	0.193	0.866	0.984	1.181	0.591	GX 24-2	204	204
E25 R/L 15-GX 24-3 A	1.969	2.756	0.157/0.197	0.174	0.866	0.984	1.181	0.591	GX 24-3	206	206
E25 R/L 15-GX 24-3 A	2.756	3.937	0.157/0.197	0.174	0.866	0.984	1.181	0.591	GX 24-3	208	208
E25 R/L 15-GX 24-3 A	3.937	5.906	0.157/0.197	0.174	0.866	0.984	1.181	0.591	GX 24-3	210	210
E25 R/L 15-GX 24-3 A	5.906	11.811	0.157/0.197	0.174	0.866	0.984	1.181	0.591	GX 24-3	212	212
E25 R/L 15-GX 24-4 A	1.969	2.756	0.236	0.150	0.866	0.984	1.181	0.591	GX 24-4	214	214
E25 R/L 15-GX 24-4 A	2.756	3.937	0.236	0.150	0.866	0.984	1.181	0.591	GX 24-4	216	216
E25 R/L 15-GX 24-4 A	3.937	5.906	0.236	0.150	0.866	0.984	1.181	0.591	GX 24-4	218	218
E25 R/L 15-GX 24-4 A	5.906	11.811	0.236	0.150	0.866	0.984	1.181	0.591	GX 24-4	220	220



→ 49-56



→ 75-79

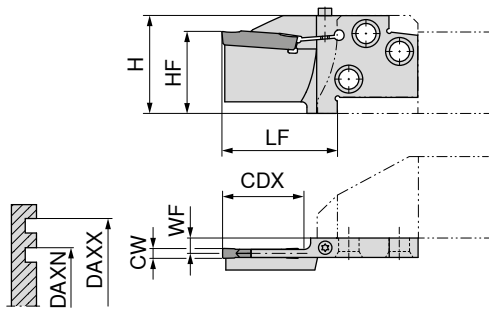


→ 80

ModularClamp MSS – Axial grooving module GX 24 long

- ▲ For axial grooving
- ▲ For face turning

Scope of supply:
Grooving module only

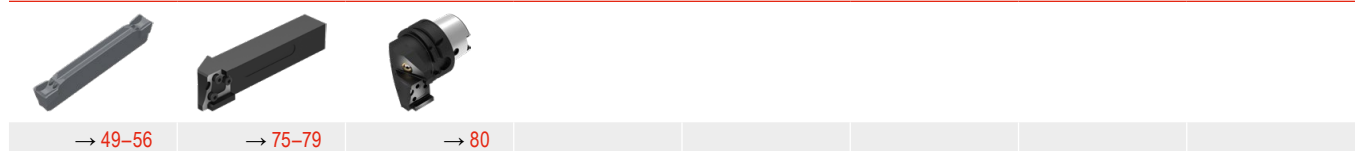


Illustrations show right-hand versions

Designation	DAXN inch	DAXX inch	CW inch	WF inch	LF inch	HF inch	H inch	CDX inch	for grooving inserts	Left-hand	Right-hand
										70 895 ...	70 894 ...
E25 R/L 21-GX 24-3 AS	1.969	2.756	0.157/0.197	0.178	1.378	0.984	1.181	0.827	GX 24-3	200	200
E25 R/L 21-GX 24-3 AS	2.756	3.937	0.157/0.197	0.178	1.378	0.984	1.181	0.827	GX 24-3	202	202
E25 R/L 21-GX 24-3 AS	3.937	5.906	0.157/0.197	0.178	1.378	0.984	1.181	0.827	GX 24-3	204	204
E25 R/L 21-GX 24-3 AS	5.906	11.811	0.157/0.197	0.178	1.378	0.984	1.181	0.827	GX 24-3	206	206
E25 R/L 25-GX 24-4 AS	1.969	2.756	0.236	0.154	1.378	0.984	1.181	0.984	GX 24-4	210	210
E25 R/L 25-GX 24-4 AS	2.756	3.937	0.236	0.154	1.378	0.984	1.181	0.984	GX 24-4	212	212
E25 R/L 25-GX 24-4 AS	3.937	5.906	0.236	0.154	1.378	0.984	1.181	0.984	GX 24-4	214	214
E25 R/L 25-GX 24-4 AS	5.906	11.811	0.236	0.154	1.378	0.984	1.181	0.984	GX 24-4	216	216

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

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



→ 49-56

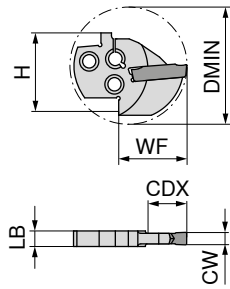
→ 75-79

→ 80

ModularClamp MSS – Radial Grooving module GX 24 for Internal machining

▲ for grooving and turning

Scope of supply:
Grooving module only



Neutral

70 880 ...

Designation	CW inch	LB inch	WF inch	H inch	CDX inch	DMIN inch	for grooving inserts	
I40 N 19-GX 24-2	0.109 - 0.148	0.244	1.319	1.602	0.748	2.362	GX 24-2 ..N	340
I40 N 19-GX 24-3	0.148 - 0.197	0.244	1.319	1.602	0.748	2.362	GX 24-3 ..N	440
I40 N 19-GX 24-4	0.197 - 0.256	0.244	1.319	1.602	0.748	2.362	GX 24-4 ..N	540



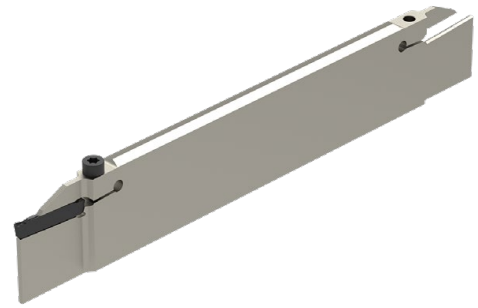
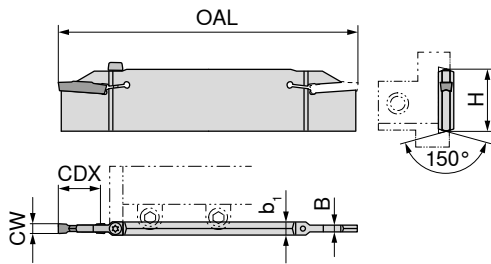
→ 49-56

→ 81+82

MonoClamp – Radial Blade GX 24

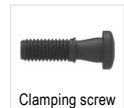
Scope of supply:

Blade incl. key and clamping screw



70 834 ...

Designation	CW inch	H inch	B inch	b ₁ inch	OAL inch	CDX inch	for grooving inserts	
XLCF N 3203-GX24-1S	0.079	1.260	0.041	0.244	7.087	0.827	GX 24-1	102
XLCF N 3203-GX24-2S	0.118	1.260	0.083	0.244	7.087	0.827	GX 24-2	103
XLCF N 3204-GX24-3S	0.157/0.197	1.260	0.120	0.244	7.087	0.827	GX 24-3	104
XLCF N 3206-GX24-4S	0.236	1.260	0.165	0.244	7.087	0.827	GX 24-4	106



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



→ 49-56

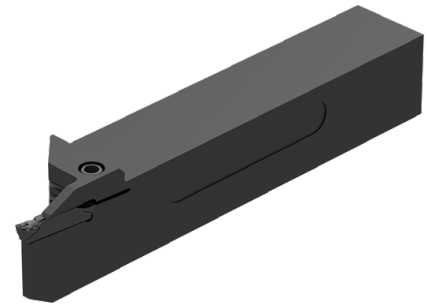
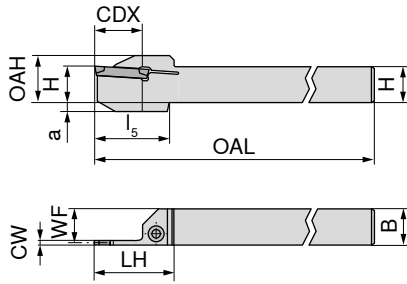


→ 85-88



→ Chapter 16

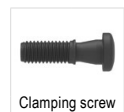
MonoClamp – Radial Monoholder GX 24



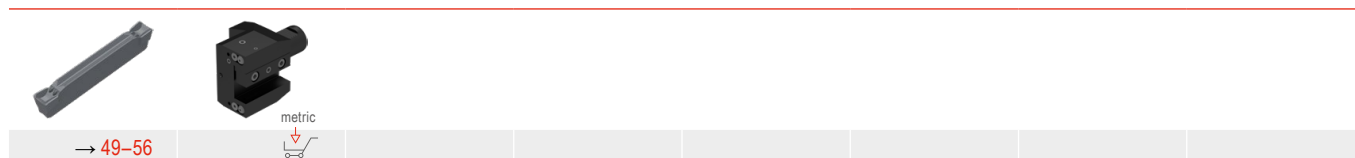
Illustrations show right-hand versions

Designation	H inch	B inch	CW inch	WF inch	OAH inch	OAL inch	LH inch	l ₅ inch	CDX inch	a mm	for grooving inserts	Left-hand	Right-hand
												78 863 ...	78 862 ...
E 16 R/L 0021-10C-GX24-2-E	0.625	0.625	0.109 - 0.148	0.586	0.822	5.000	1.378	1.260	0.827	4.1148	GX 24-2	26300 ¹⁾	26300 ¹⁾
E 20 R/L 0021-12C-GX24-2-E	0.750	0.750	0.109 - 0.148	0.711	0.947	5.000	1.378		0.827		GX 24-2	27500	27500
E 20 R/L 0021-12C-GX24-3-E	0.750	0.750	0.148 - 0.197	0.692	0.947	5.000	1.378		0.827		GX 24-3	37500 ¹⁾	37500 ¹⁾
E 25 R/L 0021-16D-GX24-2-E	1.000	1.000	0.109 - 0.148	0.961	1.197	6.000	1.378		0.827		GX 24-2	20000	20000
E 25 R/L 0021-16D-GX24-3-E	1.000	1.000	0.148 - 0.197	0.942	1.197	6.000	1.378		0.827		GX 24-3	30000 ¹⁾	30000
E 25 R/L 0021-16D-GX24-4-E	1.000	1.000	0.197 - 0.256	0.917	1.197	6.000	1.378		0.827		GX 24-4	40000 ¹⁾	40000
E 32 R/L 0021-85D-GX24-2-E	1.250	1.000	0.109 - 0.148	0.961	1.447	6.000	1.378		0.827		GX 24-2	22500 ¹⁾	22500 ¹⁾
E 32 R/L 0021-85D-GX24-3-E	1.250	1.000	0.148 - 0.197	0.942	1.447	6.000	1.378		0.827		GX 24-3	32500 ¹⁾	32500 ¹⁾
E 32 R/L 0021-85D-GX24-4-E	1.250	1.000	0.197 - 0.256	0.917	1.447	6.000	1.378		0.827		GX 24-4	42500 ¹⁾	42500 ¹⁾

1) Not ex-stock



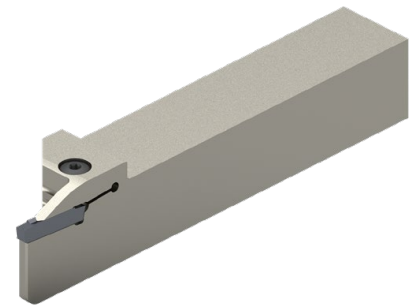
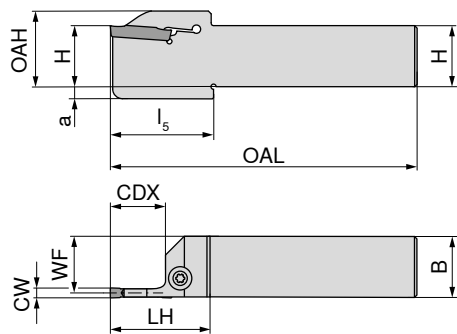
Spare parts for grooving inserts		80 950 ...	70 950 ...
		GX 24-2	T20
GX 24-3	T20	114	M4x18 204
GX 24-4	T20	114	M4x18 204



MonoClamp – Radial Monoholder GX 24

Scope of supply:

Mono holder incl. key and clamping screw



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
												70 845 ...	70 845 ...
E16 R/L 0021S2-1616K-S-GX24	16	16	2	15.2	22	125	39	40	21	4	GX 24-1 E2..	21601	21600
E16 R/L 0021S3-1616K-S-GX24	16	16	3	14.8	22	125	39	40	21	4	GX 24-2 E3..	31601	31600
E20 R/L 0021S2-2020K-S-GX24	20	20	2	19.2	26	125	40		21		GX 24-1 E2..	22001	22000
E20 R/L 0021S3-2020K-S-GX24	20	20	3	18.8	26	125	40		21		GX 24-2 E3..	32001	32000
E20 R/L 0021S4-2020K-S-GX24	20	20	4	18.3	26	125	40		21		GX 24-3 E4..	42001	42000
E20 R/L 0021S5-2020K-S-GX24	20	20	5	18.0	26	125	40		21		GX 24-3 E5..	52001	52000
E25 R/L 0021S3-2525M-S-GX24	25	25	3	23.8	31	150	40		21		GX 24-2 E3..	32501	32500
E25 R/L 0021S4-2525M-S-GX24	25	25	4	23.3	31	150	40		21		GX 24-3 E4..	42501	42500
E25 R/L 0021S5-2525M-S-GX24	25	25	5	23.0	31	150	40		21		GX 24-3 E5..	52501	52500
E25 R/L 0021S6-2525M-S-GX24	25	25	6	22.5	31	150	40		21		GX 24-4 E6..	62501	62500



80 950 ...

70 950 ...

Spare parts for grooving inserts

GX 24-1 E2..	T15 - IP	128	M5x18 - 15IP	865
GX 24-2 E3..	T15 - IP	128	M5x18 - 15IP	865
GX 24-3 E4..	T15 - IP	128	M5x18 - 15IP	865
GX 24-3 E5..	T15 - IP	128	M5x18 - 15IP	865
GX 24-4 E6..	T15 - IP	128	M5x18 - 15IP	865



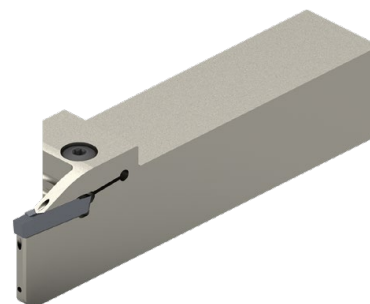
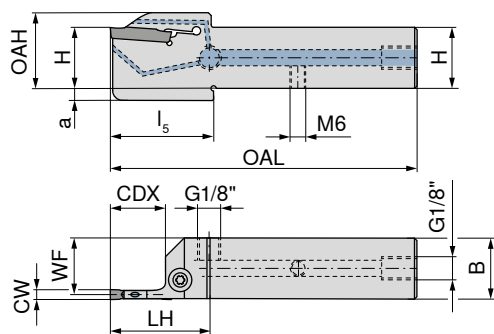
→ 49-56



MonoClamp – Radial Monoholder GX-DC 24

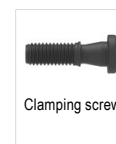
Scope of supply:

Mono holder incl. key and clamping screw



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
												70 844 ...	70 844 ...
E16 R/L 0021S2-1616X-S-DC-GX24	16	16	2	15.2	22	94	39	40	21	4	GX 24-1 E2..	21601	21600
E16 R/L 0021S3-1616X-S-DC-GX24	16	16	3	14.8	22	94	39	40	21	4	GX 24-2 E3..	31601	31600
E20 R/L 0021S2-2020X-S-DC-GX24	20	20	2	19.2	26	109	40		21		GX 24-1 E2..	22001	22000
E20 R/L 0021S3-2020X-S-DC-GX24	20	20	3	18.8	26	109	40		21		GX 24-2 E3..	32001	32000
E20 R/L 0021S4-2020X-S-DC-GX24	20	20	4	18.3	26	109	40		21		GX 24-3 E4..	42001	42000
E20 R/L 0021S5-2020X-S-DC-GX24	20	20	5	18.0	26	109	40		21		GX 24-3 E5..	52001	52000
E25 R/L 0021S3-2525X-S-DC-GX24	25	25	3	23.8	31	124	40		21		GX 24-2 E3..	32501	32500
E25 R/L 0021S4-2525X-S-DC-GX24	25	25	4	23.3	31	124	40		21		GX 24-3 E4..	42501	42500
E25 R/L 0021S5-2525X-S-DC-GX24	25	25	5	23.0	31	124	40		21		GX 24-3 E5..	52501	52500
E25 R/L 0021S6-2525X-S-DC-GX24	25	25	6	22.5	31	124	40		21		GX 24-4 E6..	62501	62500



**Spare parts
for grooving inserts**

		80 950 ...		70 950 ...
GX 24-1 E2..	T15 - IP	128	M5x18 - 15IP	865
GX 24-2 E3..	T15 - IP	128	M5x18 - 15IP	865
GX 24-3 E4..	T15 - IP	128	M5x18 - 15IP	865
GX 24-3 E5..	T15 - IP	128	M5x18 - 15IP	865
GX 24-4 E6..	T15 - IP	128	M5x18 - 15IP	865



→ 49-56

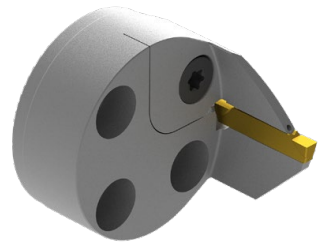
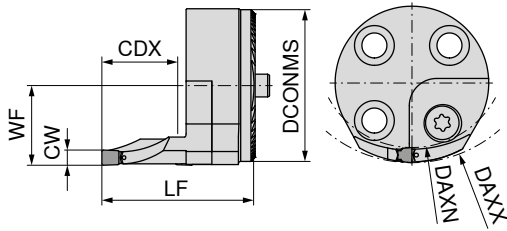


MaxiChange-GX – GX-DC 24 axial exchangeable grooving head

▲ For axial grooving

Scope of supply:

Exchangeable grooving head with clamping claw and clamping screw



Illustrations show right-hand versions

Designation	DCONMS mm	DAXN mm	DAXX mm	CW mm	WF mm	LF mm	CDX mm	for grooving inserts	NEW	
									Left-hand 84 186 ...	Right-hand 84 187 ...
WK40 R/L 20-DC GX 24-S3 D50-70	40	50	70	3	21	40	20	GX 24-2 ..N	34000	34000
WK40 R/L 20-DC GX 24-S3 D70-100	40	70	100	3	21	40	20	GX 24-2 ..N	34100	34100
WK40 R/L 20-DC GX 24-S3 D100-150	40	100	150	3	21	40	20	GX 24-2 ..N	34200	34200
WK40 R/L 20-DC GX 24-S3 D150-300	40	150	300	3	21	40	20	GX 24-2 ..N	34300	34300
WK40 R/L 20-DC GX 24-S4 D50-70	40	50	70	4	21	40	20	GX 24-3 ..N	44000	44000
WK40 R/L 20-DC GX 24-S4 D70-100	40	70	100	4	21	40	20	GX 24-3 ..N	44100	44100
WK40 R/L 20-DC GX 24-S4 D100-150	40	100	150	4	21	40	20	GX 24-3 ..N	44200	44200
WK40 R/L 20-DC GX 24-S4 D150-300	40	150	300	4	21	40	20	GX 24-3 ..N	44300	44300



Clamping claw

84 950 ...



O-Ring

84 950 ...



Clamping screw

84 950 ...



Guide pin

84 950 ...

Spare parts for Article no.

84 187 34000	51400	2x1	50300	M6x0.5X5/T25	50200	D4H6X12	53200
84 186 34000	51800	2x1	50300	M6x0.5X5/T25	50200	D4H6X12	53200
84 187 34100	51500	2x1	50300	M6x0.5X5/T25	50200	D4H6X12	53200
84 186 34100	51900	2x1	50300	M6x0.5X5/T25	50200	D4H6X12	53200
84 187 34200	51600	2x1	50300	M6x0.5X5/T25	50200	D4H6X12	53200
84 186 34200	52000	2x1	50300	M6x0.5X5/T25	50200	D4H6X12	53200
84 187 34300	51700	2x1	50300	M6x0.5X5/T25	50200	D4H6X12	53200
84 186 34300	52100	2x1	50300	M6x0.5X5/T25	50200	D4H6X12	53200
84 187 44000	52200	2x1	50300	M6x0.5X5/T25	50200	D4H6X12	53200
84 186 44000	52600	2x1	50300	M6x0.5X5/T25	50200	D4H6X12	53200
84 187 44100	52300	2x1	50300	M6x0.5X5/T25	50200	D4H6X12	53200
84 186 44100	52700	2x1	50300	M6x0.5X5/T25	50200	D4H6X12	53200
84 187 44200	52400	2x1	50300	M6x0.5X5/T25	50200	D4H6X12	53200
84 186 44200	52800	2x1	50300	M6x0.5X5/T25	50200	D4H6X12	53200
84 187 44300	52500	2x1	50300	M6x0.5X5/T25	50200	D4H6X12	53200
84 186 44300	52900	2x1	50300	M6x0.5X5/T25	50200	D4H6X12	53200

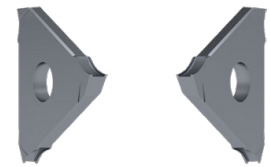
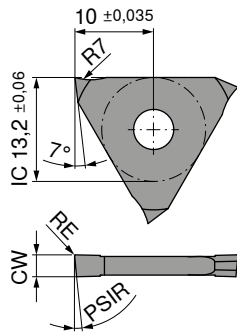
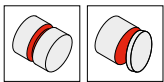


→ 49-56

→ Chapter 9

TX grooving insert for grooving and parting off

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



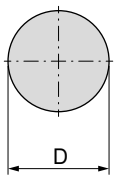
Illustrations show right-hand versions

Designation	CW _{-0,05} mm	RE mm	PSIR	for tool holder	Left-hand		Right-hand	
					73 302 ...	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					●		●	

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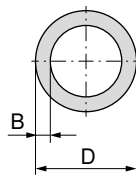
Grooving depth

Full material



max. 10 mm

Pipe



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

Internal machining



→ 74

External machining



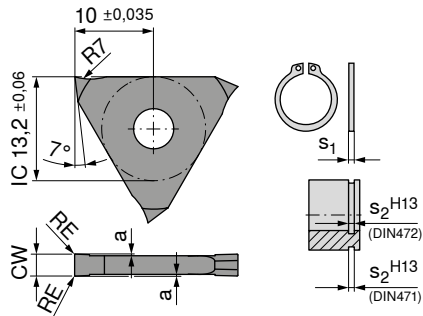
→ 71–73

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	a _{±0.02} mm	for tool holder	
TX N 0050.00.1	0.50	0.57	0.05	0.07	R/L ...1	204
TX N 0060.00.1	0.60	0.67	0.05	0.07	R/L ...1	206
TX N 0070.00.1	0.70	0.77	0.05	0.08	R/L ...1	208
TX N 0080.00.1	0.80	0.87	0.05	0.08	R/L ...1	210
TX N 0090.00.1	0.90	0.97	0.05	0.08	R/L ...1	212
TX N 0100.00.1	1.00	1.07	0.10	0.09	R/L ...1	214
TX N 0110.00.1	1.10	1.24	0.10	0.15	R/L ...1	216
TX N 0130.00.1	1.30	1.44	0.10	0.15	R/L ...1	218
TX N 0160.00.1	1.60	1.74	0.10	0.20	R/L ...1	220
TX N 0185.00.1	1.85	1.99	0.10	0.20	R/L ...1	222
TX N 0215.00.2	2.15	2.29	0.10	0.20	R/L ...2	224
TX N 0265.00.2	2.65	2.79	0.10	0.20	R/L ...2	226
TX N 0315.00.3	3.15	3.29	0.10	0.20	R/L ...3	228
TX N 0415.00.4	4.15	4.29	0.10	0.20	R/L ...4	230
TX N 0515.00.4	5.15	5.29	0.10	0.20	R/L ...4	232

P	●
M	●
K	●
N	●
S	●
H	○
O	●

11

→ v_c Page 91

Internal machining

External machining

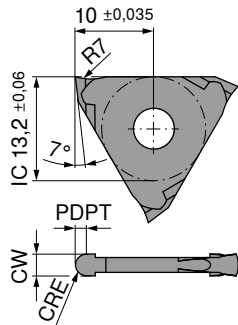


Radial TX insert for corner recessing

▲ 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	●

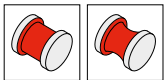
→ v_c Page 91

Internal machining

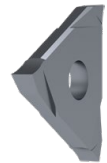
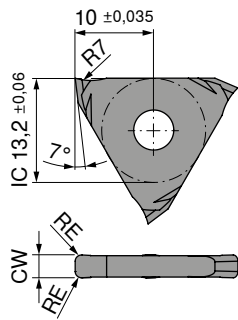
External machining



TX insert for fine and copy turning



CWX500



Neutral

73 303 ...

Designation	CW ^{+0,03} mm	RE mm	for tool holder
TX N 0150.02.1	1.5	0.2	R/L 207 ... / 738 ... / 660 ... 1
TX N 0200.02.1	2.0	0.2	R/L 207 ... / 738 ... / 660 ... 1
TX N 0200.04.1	2.0	0.4	R/L 207 ... / 738 ... / 660 ... 1
TX N 0300.02.2	3.0	0.2	R/L 207 ... / 738 ... / 660 ... 2
TX N 0300.06.2	3.0	0.6	R/L 207 ... / 738 ... / 660 ... 2
TX N 0300.08.2	3.0	0.8	R/L 207 ... / 738 ... / 660 ... 2
TX N 0400.02.3	4.0	0.2	R/L 207 ... / 738 ... / 660 ... 3
TX N 0400.08.3	4.0	0.8	R/L 207 ... / 738 ... / 660 ... 3
TX N 0400.12.3	4.0	1.2	R/L 207 ... / 738 ... / 660 ... 3

204
206
208
210
212
214
216
218
220

P	●
M	●
K	●
N	●
S	●
H	○
O	●

→ v_c Page 91

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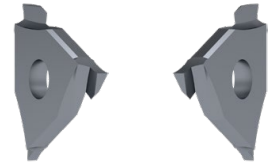
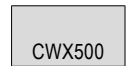
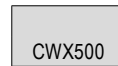
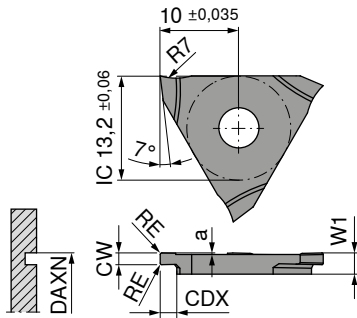
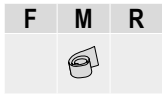
Internal machining

External machining



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

Designation	CW mm	W1 mm	CDX mm	a mm	DAXN mm	RE mm	for tool holder	Left-hand		Right-hand	
								73 306 ...		73 305 ...	
TX R/L 2015.2.2	1.5	2.7	2	0.2	20	0.2	R/L 207 ... 2	204		204	
TX R/L 3020.2.2	2.0	2.7	3	0.2	30	0.2	R/L 207 ... 2	206		206	
TX R/L 3030.2.3	3.0	3.7	3	0.2	30	0.2	R/L 207 ... 3	208		208	
P								●		●	
M								●		●	
K								●		●	
N								●		●	
S								●		●	
H								○		○	
O								●		●	

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Internal machining

External machining



→ 71+72

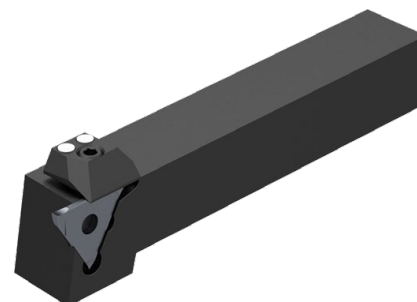
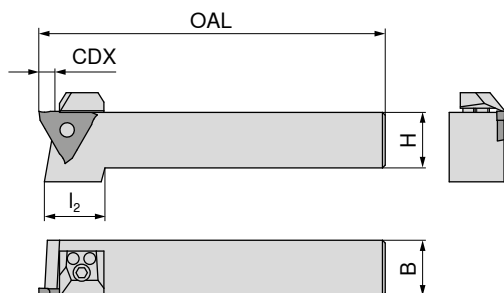
MonoClamp – Radial/Axial TX Grooving Holder 0° 6 mm cutting depth

▲ For radial and axial grooving

▲ Cutting width 0.5–6.3 mm

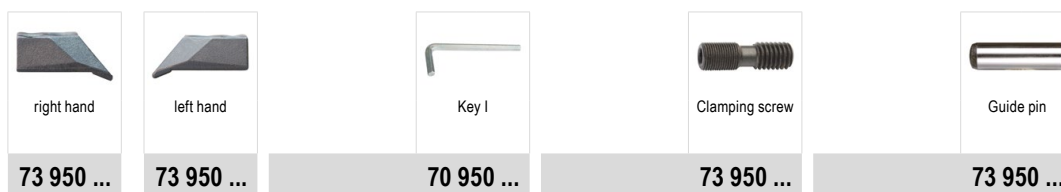
Scope of supply:

Grooving holder only



Illustrations show right-hand versions

Designation	H mm	B $_{+0.1}$ 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 207.1212.2	12	12	100	24	6	TX R/N/L ...2	212	212
R/L 207.1616.2	16	16	125	22	6	TX R/N/L ...2	216	216
R/L 207.2020.2	20	20	125	21	6	TX R/N/L ...2	220	220
R/L 207.2525.2	25	25	150		6	TX R/N/L ...2	225	225
R/L 207.1212.3	12	12	100	24	6	TX R/N/L ...3	312	312
R/L 207.1616.3	16	16	125	22	6	TX R/N/L ...3	316	316
R/L 207.2020.3	20	20	125	21	6	TX R/N/L ...3	320	320
R/L 207.2525.3	25	25	150		6	TX R/N/L ...3	325	325
R 207.3232.3	32	32	170		6	TX R/N/L ...3		332
R/L 207.1616.4	16	16	125	22	6	TX R/N/L ...4	416	416
R/L 207.2020.4	20	20	125	21	6	TX R/N/L ...4	420	420
R/L 207.2525.4	25	25	150		6	TX R/N/L ...4	425	425



Spare parts for grooving inserts	73 950 ...	73 950 ...	70 950 ...	73 950 ...	73 950 ...
	TX R/N/L ...1	020		176	028
TX R/N/L ...1		024	176	028	030
TX R/N/L ...2		024	176	028	030
TX R/N/L ...2	020		176	028	030
TX R/N/L ...3		024	176	028	030
TX R/N/L ...3	020		176	028	030
TX R/N/L ...4	022		176	028	030
TX R/N/L ...4		026	176	028	030



→ 66–70

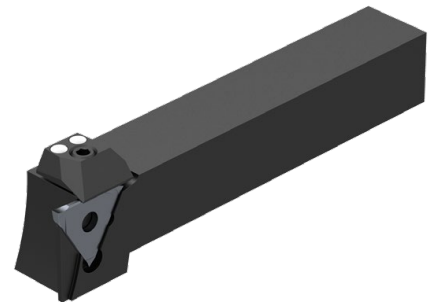
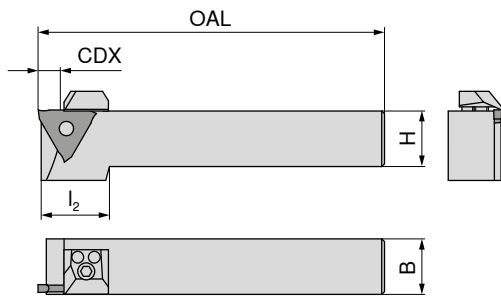


11

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

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

Scope of supply:
Grooving holder only



Illustrations show right-hand versions

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

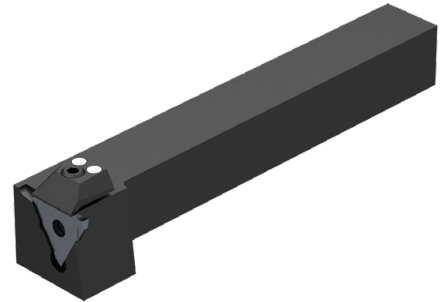
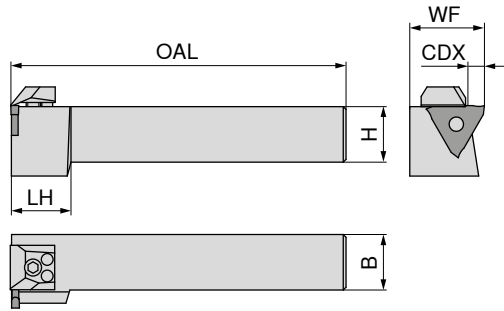
Spare parts for grooving inserts	right hand	left hand	Key I	Clamping screw	Guide pin
	73 950 ...	73 950 ...	70 950 ...	73 950 ...	73 950 ...
TX R/N/L ...2	020	024	176	028	030
TX R/N/L ...2			176	028	030
TX R/N/L ...3	020	024	176	028	030
TX R/N/L ...3			176	028	030
TX R/N/L ...4	022	026	176	028	030
TX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



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

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

Scope of supply:
Grooving holder only



Illustrations show right-hand versions

Designation	H mm	B $_{+0.1}$ mm	OAL mm	LH mm	WF $_{\pm 0.07}$ 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

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



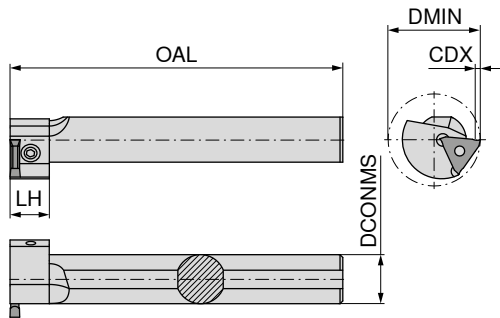
→ 66-70



MonoClamp – Radial Boring bar TX

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

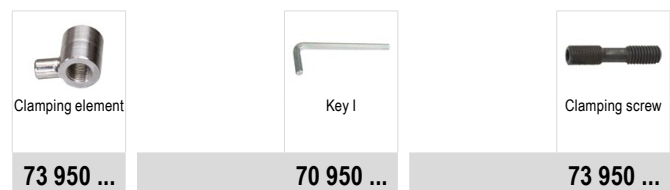
Scope of supply:
Boring bar only



Illustrations show right-hand versions

Designation	DCONMS _{gr} 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

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



Spare parts
for grooving inserts

TX R/N/L ...1	011	SW3	176	M6x30	009
TX R/N/L ...2	011	SW3	176	M6x30	009
TX R/N/L ...3	011	SW3	176	M6x30	009



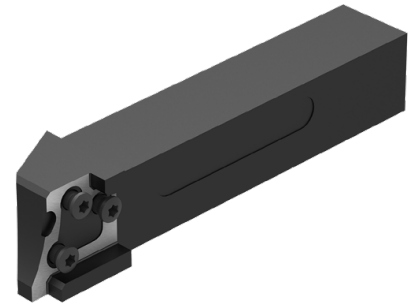
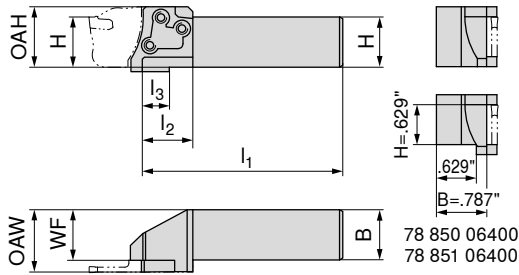
→ 66–69



ModularClamp MSS – Tool holder 0°

Scope of supply:

Base holder incl. clamping screw

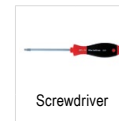


Illustrations show right-hand versions

Designation	H inch	B inch	OAW inch	OAH inch	WF inch	l ₁ inch	l ₂ inch	l ₃ inch	for modules	Left-hand	Right-hand
										78 851 ...	78 850 ...
E12 R/L 00-08-E	0.500	0.500	0.650	0.598	0.512	3.000	0.472		E12 R/L ...	05000 ¹⁾	05000 ¹⁾
E16 R/L 00-10-E	0.625	0.625	0.787	0.763	0.650	3.500	0.630		E16 R/L ...	06300 ¹⁾	06300
E 20 R/L 00-10-E	0.625	0.787	0.955	0.955	0.793	3.500	0.787		E20 R/L ...	06400 ¹⁾	06400 ¹⁾
E 20 R/L 00-12-E	0.750	0.750	0.955	0.907	0.793	4.500	0.787	0.393	E20 R/L ...	07500	07500
E 25 R/L 00-16-E	1.000	1.000	1.236	1.197	1.020	5.500	0.984		E25 R/L ...	10000	10000
E 32 R/L 00-20-E	1.250	1.000	1.236	1.486	1.020	6.500	1.260	0.630	E32 R/L ...	12500 ¹⁾	12500
E 32 R/L 00-85-E	1.250	1.250	1.496	1.528	1.279	7.000	1.260	0.630	E32 R/L ...	12600	12600 ¹⁾

1) Not ex-stock

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



Spare parts for Article no.	T	80 950 ...	70 950 ...
		Quantity	Quantity
78 851 05000	T08	110	440
78 850 05000	T08	110	440
78 850 06300	T15	113	441
78 851 06300	T15	113	441
78 850 06400	T15	113	403
78 851 06400	T15	113	403
78 850 07500	T15	113	403
78 851 07500	T15	113	403
78 851 10000	T20	114	404
78 850 10000	T20	114	404
78 851 12500	T25	115	405
78 850 12500	T25	115	405
78 851 12600	T25	115	405
78 850 12600	T25	115	405



SX

→ 21



LX

→ 30



GX 09 / GX 16

→ 40+41



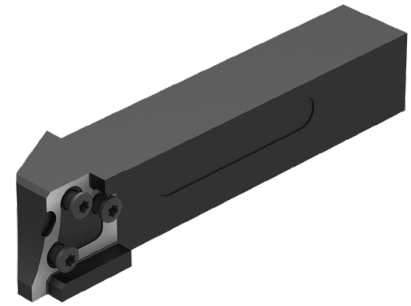
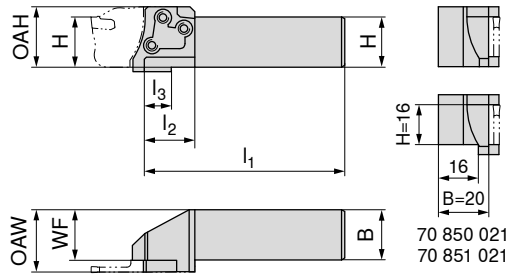
GX 24

→ 57-59

ModularClamp MSS – Tool holder 0°

Scope of supply:

Base holder incl. clamping screw



Illustrations show right-hand versions

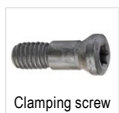
Designation	H mm	B mm	OAW mm	OAH mm	WF mm	l ₁ mm	l ₂ mm	l ₃ mm	for modules	Left-hand	Right-hand
										70 851 ...	70 850 ...
E16 R/L 00-1616G	16	16	19.25	19.5	15.75	90	16		E16 R/L ...	016	016
E20 R/L 00-1620G	16	20	24.25	24.0	20.15	90	20		E20 R/L/N ...	021 ¹⁾	021 ¹⁾
E20 R/L 00-2020J	20	20	24.25	24.0	20.15	110	20		E20 R/L/N ...	020	020
E25 R/L 00-2525L	25	25	31.00	30.0	25.50	140	25		E25 R/L ...	025	025
E32 R/L 00-3225N	32	25	31.00	38.0	25.50	160	32		E32 R/L ...	032	032
E32 L 00-3232N	32	32	38.00	38.8	32.50	180	32	16	E32 R/L ...	13200	
E32 R 00-3232Q	32	32	38.00	38.8	32.50	180	32	16	E32 R/L ...		13200

1) see drawing

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



Screwdriver



Clamping screw

**Spare parts
for Article no.**

Article no.	Part	80 950 ...	70 950 ...
70 851 016 / 70 850 016	T15	113	M3.5x12.5 441
70 851 021 / 70 850 021	T15	113	M4x14 403
70 851 020 / 70 850 020	T15	113	M4x14 403
70 851 025 / 70 850 025	T20	114	M5x18 404
70 851 032 / 70 850 032	T25	115	M6x20 405



SX

→ 21



LX

→ 30



GX 09 / GX 16

→ 40+41



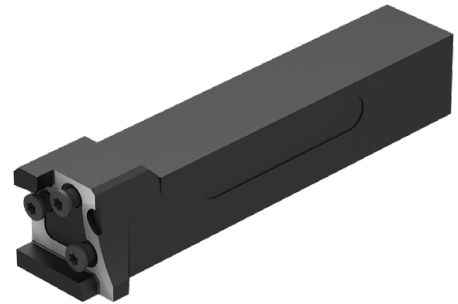
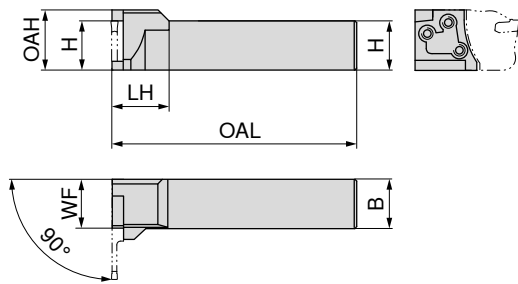
GX 24

→ 57-59

ModularClamp MSS – Tool holder 90°

Scope of supply:


Base holder incl. clamping screw

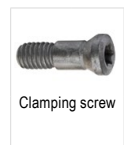
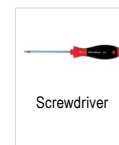


Illustrations show right-hand versions

Designation	H inch	B inch	OAH inch	WF inch	OAL inch	LH inch	for modules	Left-hand	Right-hand
								78 855 ...	78 854 ...
E20 R/L 90-12-E	0.750	0.750	0.907	0.787	4.500	0.783	E20 R/L ...	07500	07500 ¹⁾
E25 R/L 90-16-E	1.000	1.000	1.197	1.000	5.500	1.098	E25 R/L ...	10000	10000
E32 R/L 90-85-E	1.250	1.000	1.486	1.260	6.500	1.339	E32 R/L ...	12500 ¹⁾	12500 ¹⁾
E32 R/L 90-20-E	1.250	1.250	1.528	1.260	8.000	1.339	E32 R/L ...	12600 ¹⁾	12600

1) Not ex-stock

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



Spare parts for Article no.

Article no.	80 950 ...	70 950 ...
78 854 07500 / 78 855 07500	T15	113
78 854 10000 / 78 855 10000	T20	114
78 854 12500 / 78 855 12500	T25	115
78 854 12600 / 78 855 12600	T25	115



SX

→ 21



LX

→ 30



GX 09 / GX 16

→ 40+41



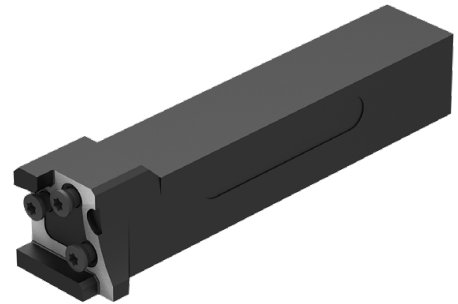
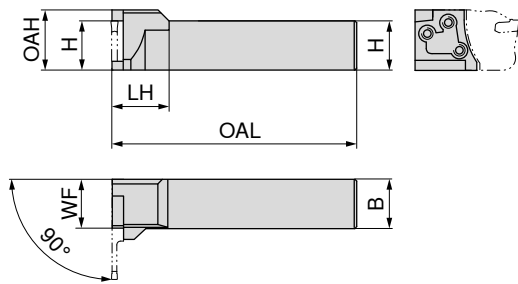
GX 24

→ 57-59

ModularClamp MSS – Tool holder 90°

Scope of supply:

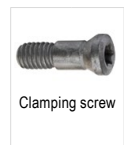
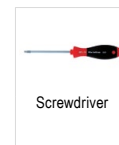
Base holder incl. clamping screw



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/N ...	020	020
E25 R/L 90-2525L	25	25	30	25	140	28	E25 R/L ...	025	025
E32 R/L 90-3225N	32	25	38	32	160	34	E32 R/L ...	032	032

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



**Spare parts
for Article no.**

Article no.	80 950 ...	70 950 ...
70 854 020 / 70 855 020	T15	113 M4x14
70 854 025 / 70 855 025	T20	114 M5x18
70 854 032 / 70 855 032	T25	115 M6x20



SX

→ 21



LX

→ 30



GX 09 / GX 16

→ 40+41



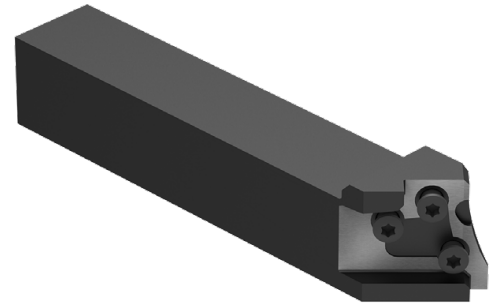
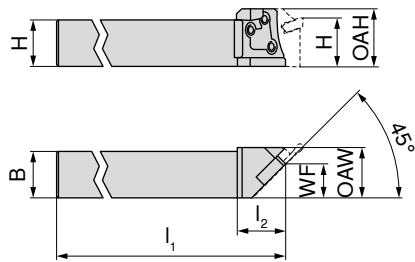
GX 24

→ 57-59

ModularClamp MSS – Tool holder 45°

Scope of supply:

Base holder incl. clamping screw



Illustrations show right-hand versions

Designation	H inch	B inch	OAW inch	OAH inch	WF inch	I ₁ inch	I ₂ inch	for modules	Left-hand	Right-hand
									78 853 ...	78 852 ...
E20 R/L 45-12-E	0.750	0.750	0.846	0.984	0.571	4.500	0.787	E20 R/L ...	07500 ¹⁾	07500 ¹⁾
E25 R/L 45-12-E	1.000	1.000	1.024	1.197	0.709	5.500	0.984	E25 R/L ...	10000 ¹⁾	10000

1) Not ex-stock

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

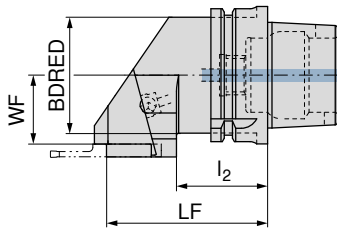
Spare parts for Article no.		80 950 ...	Screwdriver	70 950 ...	Clamping screw	70 950 ...	Clamping screw
78 852 10000 / 78 853 10000	T20	114	M5x13.5	513	M5x18	404	

Image	SX	LX	GX 09 / GX 16	GX 24
	→ 21	→ 30	→ 40+41	→ 57-59

ModularClamp MSS – HSK-T Base Holder 0°

Scope of supply:

Base holder incl. clamping screw



Illustrations show right-hand versions

Designation	Adapter	LF mm	l ₂ mm	BDRED mm	WF mm	for modules	Left-hand	Right-hand
							74 581 ...	74 580 ...
HSK T63 E25 R/L 00	HSK-T 63	67	42	53	38.7	E25 R/L...	525	525

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

Spare parts for Article no.
74 580 525 / 74 581 525

70 950 ...	70 950 ...	80 950 ...	70 950 ...	70 950 ...
05600	05500	114	404	05700

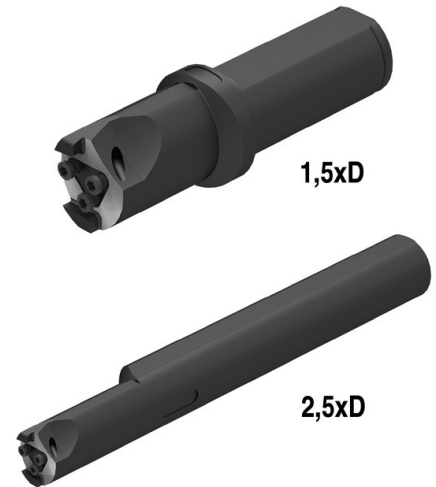
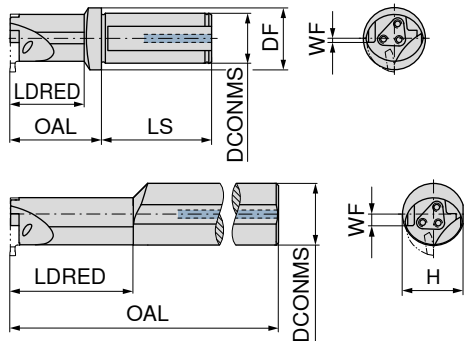
SX	LX	GX 09 / GX 16	GX 24				
→ 21	→ 30	→ 40+41	→ 57-59				

ModularClamp MSS – Boring bars GX

▲ with through coolant

Scope of supply:

Boring bar incl. clamping screw



Illustrations show right-hand versions

	Designation	DCONMS inch	DF inch	WF inch	H inch	OAL inch	LDRED inch	LS inch	for modules	Left-hand	Right-hand
										78 861 ...	78 860 ...
≤ 1,5xD	I16 R/L 90-1.5 D-E	0.750	1.000	0.039	0.728	1.260	0.945	2.000	I 16 R/L	07500 ¹⁾	07500 ¹⁾
	I20 R/L 90-1.5 D-E	0.750	1.000	0.039	0.953	1.457	1.181	2.000	I 20 R/L	07600	07600 ¹⁾
	I25 R/L 90-1.5 D-E	1.000	1.260	0.059	1.216	1.811	1.496	2.250	I 25 R/L	10000 ¹⁾	10000 ¹⁾
	I32 R/L 90-1.5 D-E	1.250	1.575	0.079	1.425	2.323	1.890	2.500	I 32 R/L	12500 ¹⁾	12500
	I40 R/L 90-1.5 D-E	1.500	1.969	0.098	1.941	2.835	2.362	3.000	I 40 R/L/N	15000 ¹⁾	15000 ¹⁾
≤ 2,5xD	I16 R/L 90-2.5 D-E	0.750	1.000	0.177	0.728	7.000	1.575	2.000	I 16 R/L	27500 ¹⁾	27500 ¹⁾
	I20 R/L 90-2.5 D-E	1.000	1.000	0.236	0.953	8.000	1.969	2.000	I 20 R/L	20000 ¹⁾	20000
	I25 R/L 90-2.5 D-E	1.250	1.260	0.276	1.216	10.000	2.480	2.250	I 25 R/L	22500 ¹⁾	22500 ¹⁾
	I32 R/L 90-2.5 D-E	1.500	1.969	0.374	1.425	12.000	3.150	2.500	I 32 R/L	25000 ¹⁾	25000 ¹⁾
	I40 R/L 90-2.5 D-E	2.000	1.575	0.433	1.941	14.000	3.937	3.000	I 40 R/L/N	20100 ¹⁾	20100 ¹⁾

1) Not ex-stock

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

Spare parts for modules		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	

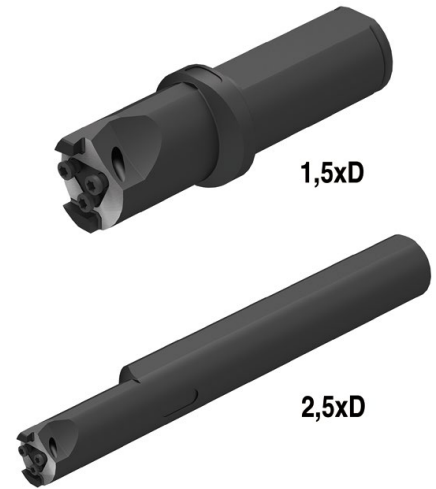
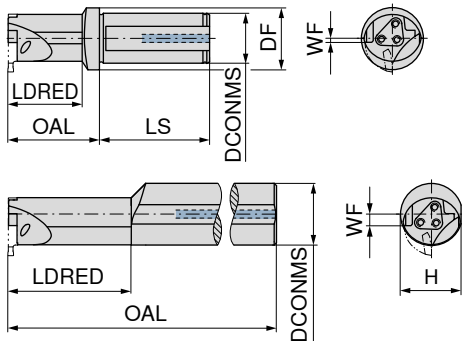


ModularClamp MSS – Boring bars GX

▲ with through coolant

Scope of supply:

Boring bar incl. clamping screw



Illustrations show right-hand versions

	Designation	DCONMS mm	DF mm	WF mm	H mm	OAL mm	LDRED mm	LS mm	for modules	Left-hand	Right-hand
										70 861 ...	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

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

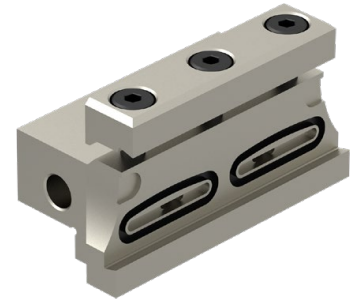
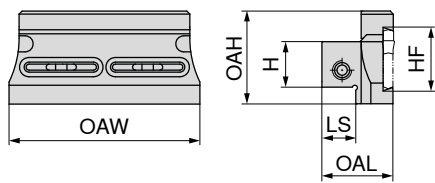
Spare parts for modules		80 950 ...		70 950 ...	
I 16 R/L	T08	110	M2.5x10	440	
I 20 R/L	T10	112	M3x11	444	
I 25 R/L	T15	113	M3.5x12.5	441	
I 32 R/L	T20	114	M4.5x17	445	
I 40 R/L/N	T20	114	M5x18	404	



Split clamping block for blades DC

Scope of supply:

Complete clamping block, but without blade and coolant set



Designation	H	HF	OAH	LS	OAL	OAW	for blades	78 829 ...
	inch	inch	inch	inch	inch	inch		
SBN 12-26-DC-E	0.750	1.024	1.690	0.700	1.487	3.230	XLC.. 26..	07500
SBN 16-32-DC-E	1.000	1.260	1.910	0.950	1.752	3.740	XLC.. 32..	10000
SBN 20-32-DC-E	1.250	1.260	2.037	1.200	2.000	3.740	XLC.. 32..	12500

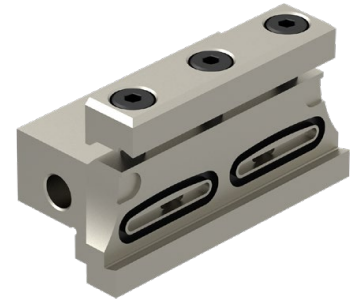
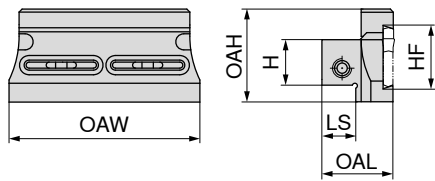
Spare parts for Article no.	Coolant screw plug	70 950 ...	Clamping rail	70 950 ...	clamping screw	70 950 ...
78 829 07500	G 1/8"	294	CU70	290	M6x12	861
78 829 10000	G 1/8"	294	CU85	291	M6x12	861
78 829 12500	G 1/8"	294	CU85	291	M6x12	861

Spare parts for Article no.	O-Ring	70 950 ...	O-Ring	70 950 ...
78 829 07500	19x2,5	293		
78 829 10000			23x2.5	292
78 829 12500			23x2.5	292

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.	Coolant screw plug		Clamping rail		clamping screw	
	70 950 ...	70 950 ...	70 950 ...	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.	Key I		O-Ring		O-Ring	
	70 950 ...	70 950 ...	70 950 ...	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

Scope of supply:

Clamping block complete, but without blade and coolant set



Designation	H	HF	OAH	LS	OAL	OAW	for blades	78 830 ...
	inch	inch	inch	inch	inch	inch		
SBN 12-26K-E	0.750	1.024	1.535	0.700	1.369	3.540	XLC.. 26..	07500
SBN 16-32K-E	1.000	1.260	1.890	0.950	1.647	4.330	XLC.. 32..	10000
SBN 20-32K-E	1.250	1.260	1.890	1.200	1.909	4.720	XLC.. 32..	12500
SBN 20-46K-E	1.250	1.811	2.756	1.200	2.106	5.910	XLC.. 46..	12600 ¹⁾
SBN 24-46K-E	1.500	1.811	2.756	1.450	2.362	5.910	XLC.. 46..	15000

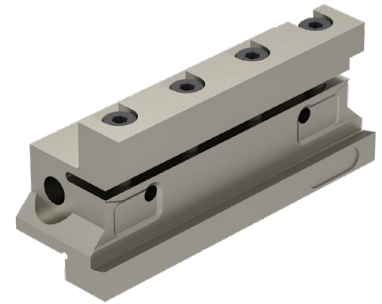
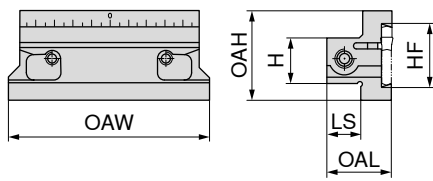
1) Not ex-stock

Spare parts for blades			70 950 ...		
			Key I	Cooling agent set	clamping screw
XLC.. 26..	SW5	265	278	M6x25	269
XLC.. 32..	SW5	265	278	M6x25	269
XLC.. 46..	SW6	266	279	M8x35	282

Clamping block for blades

Scope of supply:

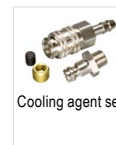
Clamping block complete, but without blade and coolant set



Designation	H mm	HF mm	OAH mm	LS mm	OAL mm	OAW mm	for blades	70 830 ...
SBN 2020-26-K	20	26	39	20	33.0	90	XLC.. 26..	020
SBN 2520-32-K	25	32	48	20	36.0	110	XLC.. 32..	025
SBN 3229-32-K	32	32	48	29	44.5	120	XLC.. 32..	032
SBN 3229-46-K	32	46	70	29	52.0	150	XLC.. 46..	132
SBN 4037-46-K	40	46	70	37	60.0	150	XLC.. 46..	140

Spare parts for blades

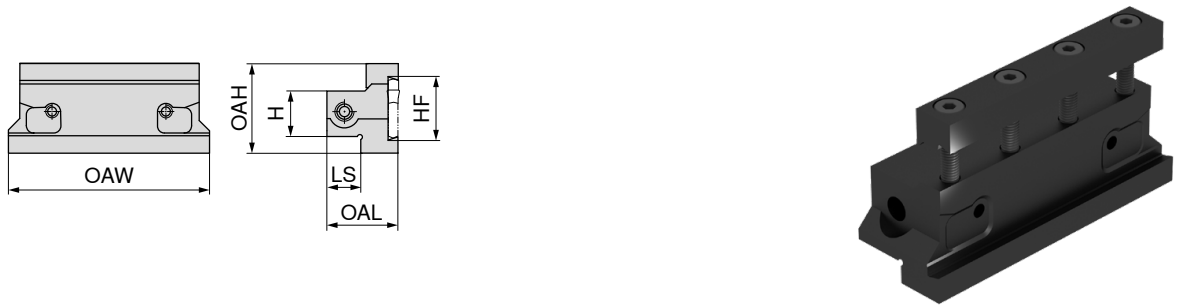
		70 950 ...	70 950 ...	70 950 ...
XLC.. 26..	SW5	265	278	M6x25 269
XLC.. 32..	SW5	265	278	M6x25 269
XLC.. 46..	SW6	266	279	M8x35 282



Split clamping block for blades

Scope of supply:

Clamping block complete, but without blade and coolant set



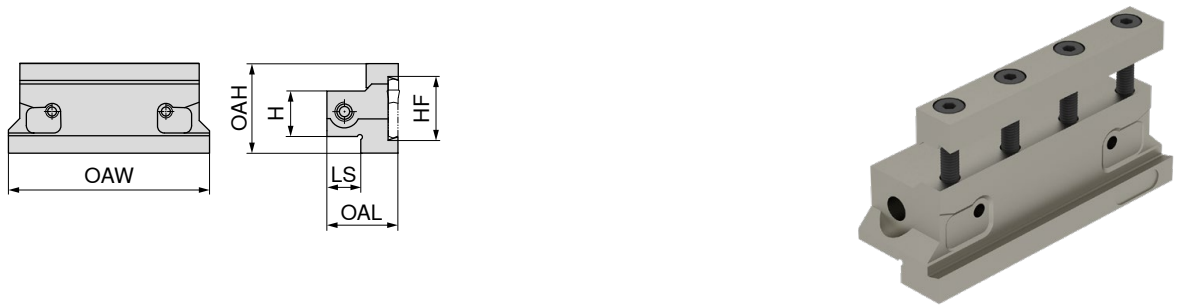
Designation	H inch	HF inch	OAH inch	LS inch	OAL inch	OAW inch	for blades	78 831 ...
SBN 12-26KS-E	0.750	1.024	1.688	0.700	1.369	3.540	XLC.. 26..	07500
SBN 16-32KS-E	1.000	1.260	1.929	0.950	1.647	4.330	XLC.. 32..	10000
SBN 20-32KS-E	1.250	1.260	2.044	1.200	1.909	4.720	XLC.. 32..	12500

Spare parts for blades	Key I		Cooling agent set		clamping screw	
	70 950 ...	70 950 ...	70 950 ...	70 950 ...	70 950 ...	70 950 ...
XLC.. 26..	SW5	265	278	M6x25	269	269
XLC.. 32..	SW5	265	278	M6x25	269	269

Split clamping block for blades

Scope of supply:

Clamping block complete, but without blade and coolant set



Designation	H mm	HF mm	OAH mm	LS mm	OAL mm	OAW mm	for blades	70 831 ...
SBN 2020-26-KS	20	26	39	20	35.0	90	XLC.. 26..	020
SBN 2520-32-KS	25	32	48	20	38.0	110	XLC.. 32..	025
SBN 3229-32-KS	32	32	48	29	46.5	120	XLC.. 32..	032

Spare parts for blades	Key I		Cooling agent set		clamping screw	
	70 950 ...	70 950 ...	70 950 ...	70 950 ...	70 950 ...	70 950 ...
XLC.. 26..	SW5	265	278	M6x25	269	
XLC.. 32..	SW5	265	278	M6x25	269	


Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment	Tensile strength lbf/in ² / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0.15 % C Annealed	60900 lbf/in ² / 125 HB	1.0401	1015	1.0301	1010
		P.1.2	< 0.45 % C Annealed	92800 lbf/in ² / 190 HB	1.1191	1045	1.0737	12L14
		P.1.3	< 0.45 % C Tempered	121800 lbf/in ² / 250 HB	1.1191	1045	1.0503	1043
		P.1.4	< 0.75 % C Annealed	132000 lbf/in ² / 270 HB	1.1223	1060	1.0535	1055
		P.1.5	< 0.75 % C Tempered	146500 lbf/in ² / 300 HB	1.1223	1060	1.1274	1095
	Low-alloy steel	P.2.1	Annealed	88500 lbf/in ² / 180 HB	1.7131	5115	1.6523	8620
		P.2.2	Tempered	134900 lbf/in ² / 275 HB	1.7131	5115	1.6582	4340
		P.2.3	Tempered	146500 lbf/in ² / 300 HB	1.7225	4142	1.7131	5115
		P.2.4	Tempered	174000 lbf/in ² / 375 HB	1.7225	4142	1.7223	4140
	High-alloy steel and high-alloy tool steel	P.3.1	Annealed	98600 lbf/in ² / 200 HB	1.4021	420	1.2379	D2
		P.3.2	Hardened and tempered	159500 lbf/in ² / 300 HB	1.2343	H11	1.3343	M2
		P.3.3	Hardened and tempered	188500 lbf/in ² / 400 HB	1.2343	H11	1.2363	A2
	Stainless steel	P.4.1	Ferritic / martensitic Annealed	98600 lbf/in ² / 200 HB	1.4016	430	1.4125	440C
		P.4.2	Martensitic Tempered	117500 lbf/in ² / 250 HB	1.4112	S44003	1.4021	420
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic Quenched	88500 lbf/in ² / 200 HB	1.4301	304	1.4401	316
		M.2.1	Austenitic Tempered	300 HB	1.4841	314	1.4568	17-7 PH
		M.3.1	Austenitic / ferritic (Duplex)	113100 lbf/in ² / 230 HB	1.4462	S32205	1.4410	S32750
K	Grey cast iron	K.1.1	Pearlitic / ferritic	88500 lbf/in ² / 180 HB	0.6010	A48-20B	0.6025	A48-40 B
		K.1.2	Pearlitic (martensitic)	127600 lbf/in ² / 260 HB	0.6030	A48-45B	0.6040	A48-60 B
	Spherulitic graphite cast iron	K.2.1	Ferritic	78300 lbf/in ² / 160 HB	0.7040	60-40-18	0.7050	65-45-12
		K.2.2	Pearlitic	122600 lbf/in ² / 250 HB	0.7070	100-70-03	0.7660	A439 Type D2
	Malleable iron	K.3.1	Ferritic	63800 lbf/in ² / 130 HB	0.8035	GTW-35-04		
		K.3.2	Pearlitic	113100 lbf/in ² / 230 HB	0.8170	70003		
N	Aluminium wrought alloy	N.1.1	Non-hardenable	60 HB	3.0255	A91060	3.0255	A91060
		N.1.2	Hardenable	49300 lbf/in ² / 100 HB	3.1355	2024	3.1355	2024
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable	36300 lbf/in ² / 75 HB	3.2581	A04130 / A413-0	3.2581	A04130 / A413-0
		N.2.2	≤ 12 % Si, hardenable	43500 lbf/in ² / 90 HB	3.2134	G-AlSi5Cu1Mg		
		N.2.3	> 12 % Si, non-hardenable	63800 lbf/in ² / 130 HB		G-AlSi17Cu4Mg		
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %	54400 lbf/in ² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0380	C37700
		N.3.2	CuZn, CuSnZn	43500 lbf/in ² / 90 HB	2.0331	CuZn15	2.0331	C34000
		N.3.3	CuSn, lead-free copper and electrolytic copper	49300 lbf/in ² / 100 HB	2.0060	E-Cu57		
Magnesium alloys	N.4.1	Magnesium and magnesium alloys	70 HB	3.5612	MgAl6Zn			
S	Heat-resistant alloys	S.1.1	Fe - basis Annealed	98600 lbf/in ² / 200 HB	1.4864	X12NiCrSi 36-16	1.4864	330
		S.1.2	Fe - basis Annealed	137800 lbf/in ² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4980	S66286
		S.2.1	Ni or Co basis Annealed	121800 lbf/in ² / 250 HB	2.4856	Inconel 625	2.4812	Hastelloy C
		S.2.2	Ni or Co basis Annealed	171100 lbf/in ² / 350 HB	2.4952	Nimonic 80A	2.4668	Inconel 718
		S.2.3	Ni or Co basis Cast	156600 lbf/in ² / 320 HB	2.4674	Nimocast PK24	2.4670	Nimocast 713
	Titanium alloys	S.3.1	Pure titanium	5800 lbf/in ²	3.7025	Ti99,8		
		S.3.2	Alpha + beta alloys	152300 lbf/in ²	3.7165	TiAl6V4		
S.3.3		Beta alloys	203100 lbf/in ² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr			
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	≤ 21800 lbf/in ²				
		O.1.2	Plastics, thermoplastic	≤ 14500 lbf/in ²				
		O.2.1	Aramid fibre-reinforced	≤ 145000 lbf/in ²				
		O.2.2	Glass/carbon-fibre reinforced	≤ 145000 lbf/in ²				
		O.3.1	Graphite					

* Tensile Strength at Rupture (Rm)


Cutting data values for grooving inserts

Index	System SX, LX, GX							● 1st choice ○ suitable				
	CTCP325	CTCP335	CTPP345	CTPP520	CTPP535	CTP1340	H216T	CWX500				
	DRAGONSKIN							v _c (ft/min)	f (inch/rev)	Emulsion	Compressed air	MQL
P.1.1	730	620	450	780	600	600						
P.1.2	650	530	400	680	500	500		470	0.0012-0.0039	●		
P.1.3	570	470	350	580	420	420		370	0.0012-0.0039	●		
P.1.4	550	430	330	550	400	380		370	0.0012-0.0039	●		
P.1.5	500	400	320	500	350	330		300	0.0012-0.0039	●		
P.2.1	660	550	400	700	530	520		370	0.0012-0.0039	●		
P.2.2	530	430	330	530	380	370		300	0.0012-0.0039	●		
P.2.3	500	400	320	500	350	330		300	0.0012-0.0028	●		
P.2.4	400	300	250	380	250	240		270	0.0012-0.0024	●		
P.3.1	500	430	330	620	400	370		270	0.0012-0.0028	●		
P.3.2	320	300	270	430	300	250		200	0.0012-0.0028	●		
P.3.3	150	170	200	250	200	140		170	0.0012-0.0028	●		
P.4.1	500	430	330	620	400	370		330	0.0012-0.0024	●		
P.4.2	420	370	300	530	350	320		300	0.0012-0.0024	●		
M.1.1	500	430	330	620	400	370		370	0.0008-0.0024	●		
M.2.1	320	300	270	430	300	270		300	0.0008-0.0024	●		
M.3.1	450	380	320	570	370	330		240	0.0008-0.0024	●		
K.1.1	570	450		470	550	500	470	470	0.0012-0.0039	●		
K.1.2	500	380		380	500	420	380	330	0.0012-0.0039	●		
K.2.1	530	430		600	480	470	500	300	0.0012-0.0039	●		
K.2.2	480	350		380	520	400	370	270	0.0012-0.0039	●		
K.3.1	700	500		430	630	570	570	470	0.0012-0.0039	●		
K.3.2	470	380		370	480	400	470	400	0.0012-0.0039	●		
N.1.1						990	1320	1090	0.002-0.0047	●		
N.1.2						660	1320	1030	0.002-0.0047	●		
N.2.1						990	1490	900	0.002-0.0047	●		
N.2.2						660	1490	760	0.002-0.0047	●		
N.2.3						500	1650	470	0.002-0.0047	●		
N.3.1						990	1410	800	0.002-0.0047	●		
N.3.2						990	1320	660	0.002-0.0047	●		
N.3.3						660	910	600	0.002-0.0047	●		
N.4.1						660	750	600	0.002-0.0047	●		
S.1.1	120			140	100	120	140	200	0.0008-0.0028	●		
S.1.2	100		100	100	90	100	100	170	0.0008-0.0031	●		
S.2.1	70		90	70	50	70	100	200	0.0008-0.0035	●		
S.2.2	50			50	50	50	90	170	0.0008-0.0039	●		
S.2.3	50			70	50	50	70	140	0.0008-0.0043	●		
S.3.1				420	290	290	300	200	0.0008-0.0047	●		
S.3.2				170	120	140	190	140	0.0008-0.0051	●		
S.3.3				120	90	100	140	100	0.0008-0.0055	●		
H.1.1				50				170	0.0004-0.0028	●		
H.1.2				50								
H.1.3												
H.1.4												
H.2.1				50								
H.3.1				140								
O.1.1						430	430	600	0.002-0.0047	●		
O.1.2								600	0.002-0.0047	●		
O.2.1							350	500	0.002-0.0047	●		
O.2.2								370	0.002-0.0047	●		
O.3.1								570	0.0012-0.0039	●		


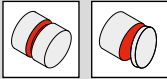
 The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. ±20% according to the usage conditions.


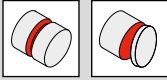
Cutting data values for grooving inserts


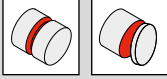
Index	System SX, LX, GX							● 1st choice ○ suitable				
	CTCP325	CTCP335	CTPP345	CTPP520	CTPP535	CTP1340	H216T	CWX500				
	DRAGONSKIN							v _c (m/min)	f (mm/rev)	Emulsion	Compressed air	MQL
v _c (m/min)												
P.1.1	220	185	135	235	180	180		160	0.03–0.10	●		
P.1.2	195	160	120	205	150	150		140	0.03–0.10	●		
P.1.3	170	140	105	175	125	125		110	0.03–0.10	●		
P.1.4	165	130	100	165	120	115		110	0.03–0.10	●		
P.1.5	150	120	95	150	105	100		90	0.03–0.10	●		
P.2.1	200	165	120	210	160	155		110	0.03–0.10	●		
P.2.2	160	130	100	160	115	110		90	0.03–0.10	●		
P.2.3	150	120	95	150	105	100		90	0.03–0.07	●		
P.2.4	120	90	75	115	75	70		80	0.03–0.06	●		
P.3.1	150	130	100	185	120	110		80	0.03–0.07	●		
P.3.2	95	90	80	130	90	75		60	0.03–0.07	●		
P.3.3	45	50	60	75	60	40		50	0.03–0.07	●		
P.4.1	150	130	100	185	120	110		100	0.03–0.06	●		
P.4.2	125	110	90	160	105	95		90	0.03–0.06	●		
M.1.1	150	130	100	185	120	110		110	0.02–0.06	●		
M.2.1	95	90	80	130	90	80		90	0.02–0.06	●		
M.3.1	135	115	95	170	110	100		70	0.02–0.06	●		
K.1.1	170	135		140	165	150	140	140	0.03–0.10	●		
K.1.2	150	115		115	150	125	115	100	0.03–0.10	●		
K.2.1	160	130		180	145	140	150	90	0.03–0.10	●		
K.2.2	145	105		115	155	120	110	80	0.03–0.10	●		
K.3.1	210	150		130	190	170	170	140	0.03–0.10	●		
K.3.2	140	115		110	145	120	140	120	0.03–0.10	●		
N.1.1						300	400	330	0.05–0.12	●		
N.1.2						200	400	310	0.05–0.12	●		
N.2.1						300	450	270	0.05–0.12	●		
N.2.2						200	450	230	0.05–0.12	●		
N.2.3						150	500	140	0.05–0.12	●		
N.3.1						300	425	240	0.05–0.12	●		
N.3.2						300	400	200	0.05–0.12	●		
N.3.3						200	275	180	0.05–0.12	●		
N.4.1						200	225	180	0.05–0.12	●		
S.1.1	35			40	30	35	40	60	0.02–0.07	●		
S.1.2	30		30	30	25	30	30	50	0.02–0.08	●		
S.2.1	20		25	20	15	20	30	60	0.02–0.09	●		
S.2.2	15			15	15	15	25	50	0.02–0.10	●		
S.2.3	15			20	15	15	20	40	0.02–0.11	●		
S.3.1				125	85	85	90	60	0.02–0.12	●		
S.3.2				50	35	40	55	40	0.02–0.13	●		
S.3.3				35	25	30	40	30	0.02–0.14	●		
H.1.1				15				50	0.01–0.07	●		
H.1.2				15								
H.1.3												
H.1.4												
H.2.1				15								
H.3.1				40								
O.1.1						130	130	180	0.05–0.12	●		
O.1.2								180	0.05–0.12	●		
O.2.1						105	105	150	0.05–0.12	●		
O.2.2								110	0.05–0.12	●		
O.3.1								170	0.03–0.10	●		

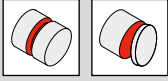
 The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. ±20% according to the usage conditions.

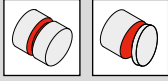
SX – Depths of cut and feed rates

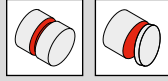
SX-F2									
Groove width CW (inch)	 Turning							 Parting / Grooving	
	Depth of cut a_p (inch)							Parting / Grooving	
	.020	.003	.040	.050	.060	.070	.080	f (inch/rev)	
.080	.0012-.0059	.0012-.0059	.0012-.0059	.0012-.0039				.0020-.0059	
.120	.0016-.0067	.0016-.0067	.0016-.0067	.0016-.0059	.0016-.0051	.0016-.0047		.0028-.0079	
.160	.0020-.0079	.0020-.0079	.0020-.0079	.0020-.0079	.0020-.0079	.0020-.0067	.0020-.0059	.0039-.0098	

SX-27P									
Groove width CW (inch)	 Turning							 Parting / Grooving	
	Depth of cut a_p (inch)							Parting / Grooving	
	.020	.040	.060	.080	.100	.120	f (inch/rev)		
.080	.0029-.0091	.0020-.0091	.0020-.0091	.0020-.0079			.0020-.0079		
.120	.0020-.0098	.0020-.0098	.0020-.0098	.0020-.0098	.0020-.0079		.0020-.0098		
.160	.0039-.0118	.0039-.0118	.0039-.0118	.0039-.0118	.0039-.0118	.0039-.0098	.0020-.0118		


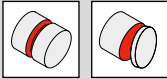
SX-M2									
Groove width CW (inch)	 Turning							 Parting / Grooving	
	Depth of cut a_p (inch)							Parting / Grooving	
	.020	.040	.060	.080	.100	.120	f (inch/rev)		
.080	.0020-.0067	.0020-.0051	.0020-.0039				.0020-.0059		
.120	.0028-.0079	.0028-.0079	.0028-.0071	.0028-.0059			.0028-.0079		
.160	.0039-.0098	.0039-.0098	.0039-.0098	.0039-.0087	.0039-.0071		.0039-.0098		
.200	.0047-.0106	.0047-.0106	.0047-.0106	.0047-.0098	.0047-.0087		.0039-.0118		
.240	.0059-.0118	.0059-.0118	.0059-.0118	.0059-.0118	.0059-.0098	.0059-.0079	.0059-.0138		


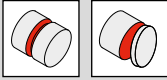
SX-M1		
Groove width CW (inch)	 Parting / Grooving	
	f (inch/rev)	
	.080	.0020-.0059
.120	.0039-.0079	
.160	.0039-.0098	
.200	.0059-.0118	
.240	.0059-.0138	


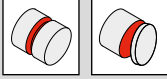
SX-M7		
Groove width CW (inch)	 Parting / Grooving	
	f (inch/rev)	
	.080	.0039-.0079
.120	.0039-.0079	
.160	.0039-.0079	
.200	.0059-.0098	
.240	.0059-.0098	

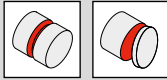
SX-M8		
Groove width CW (inch)	 Parting / Grooving	
	f (inch/rev)	
	.080	.0019-.0079
.120	.0019-.0079	
.160	.0019-.0059	
.200	.0019-.0059	
.240	.0019-.0059	

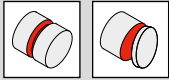
SX – Depths of cut and feed rates

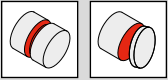
SX-F2									
Groove width CW (mm)	 Turning Depth of cut a_p (mm)							 Parting / Grooving	
	0.50	0.75	1.00	1.25	1.50	1.75	2.00	f (mm/rev)	
	Feed rate f (mm/rev.)							f (mm/rev)	
2	0.03–0.15	0.03–0.15	0.03–0.15	0.03–0.10				0.05–0.15	
3	0.04–0.17	0.04–0.17	0.04–0.17	0.04–0.15	0.04–0.13	0.04–0.12		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-27P									
Groove width CW (mm)	 Turning Depth of cut a_p (mm)							 Parting / Grooving	
	0.5	1.0	1.5	2.0	2.5	3.0	f (mm/rev)		
	Feed rate f (mm/rev.)							f (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	0.10–0.30	0.10–0.25	0.05–0.30	


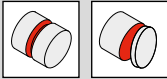
SX-M2									
Groove width CW (mm)	 Turning Depth of cut a_p (mm)							 Parting / Grooving	
	0.5	1.0	1.5	2.0	2.5	3.0	f (mm/rev)		
	Feed rate f (mm/rev.)							f (mm/rev)	
2	0.05–0.17	0.05–0.13	0.05–0.10					0.05–0.15	
3	0.07–0.20	0.07–0.20	0.07–0.18	0.07–0.15				0.075–0.20	
4	0.10–0.25	0.10–0.25	0.10–0.25	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	


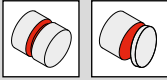
SX-M1		
Groove width CW (mm)	 Parting / Grooving	
	f (mm/rev)	
	2	0.05–0.15
3	0.10–0.20	
4	0.10–0.25	
5	0.15–0.30	
6	0.15–0.35	


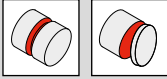
SX-M7		
Groove width CW (mm)	 Parting / Grooving	
	f (mm/rev)	
	2	0.10–0.20
3	0.10–0.20	
4	0.10–0.20	
5	0.15–0.25	
6	0.15–0.25	

SX-M8		
Groove width CW (mm)	 Parting / Grooving	
	f (mm/rev)	
	2	0.05–0.20
3	0.05–0.20	
4	0.05–0.15	
5	0.05–0.15	
6	0.05–0.15	


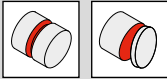
SX/LX – Depths of cut and feed rates


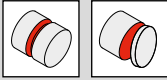
SX-M3								
Radius CRE (inch)	 Turning						 Parting / Grooving	
	Depth of cut a_p (inch)						Parting / Grooving	
	.020	.040	.060	.080	.100	.120	f (inch/rev)	
Feed rate f (inch/rev.)								
.060	.0059–.0138	.0059–.0138	.0059–.0118					.0022–.0079
.080	.0059–.0157	.0059–.0157	.0059–.0157	.0059–.0118				.0039–.0010
.100	.0059–.0197	.0059–.0197	.0059–.0197	.0059–.0157	.0059–.0138			.0039–.0010
.120	.0079–.0276	.0079–.0276	.0079–.0276	.0079–.0236	.0079–.0197	.0079–.0157		.0039–.0014


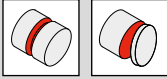
LX-M2									
Groove width CW (inch)	 Turning							 Parting / Grooving	
	Depth of cut a_p (inch)							Parting / Grooving	
	.020	.040	.060	.080	.100	.120	.140	.160	f (inch/rev)
Feed rate f (inch/rev.)									
.320	.0067–.0177	.0067–.0177	.0067–.0177	.0067–.0177	.0067–.0157	.0067–.0146	.0067–.0138		.0080–.0020
.400	.0079–.0197	.0079–.0197	.0079–.0197	.0079–.0197	.0079–.0181	.0079–.0165	.0079–.0150	.0079–.0138	.0080–.0020

LX-M3									
Radius CRE (inch)	 Turning							 Parting / Grooving	
	Depth of cut a_p (inch)							Parting / Grooving	
	.020	.040	.060	.080	.100	.120	.140	.160	f (inch/rev)
Feed rate f (inch/rev.)									
.160	.0098–.0315	.0098–.0315	.0098–.0315	.0098–.0315	.0098–.0315	.0098–.0276	.0098–.0236	.0098–.0197	.0060–.0014


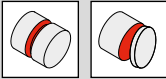

SX/LX – Depths of cut and feed rates


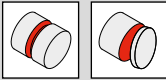

SX-M3								
Radius CRE (mm)	 Turning Depth of cut a_p (mm)						 Parting / Grooving	
	0.5	1.0	1.5	2.0	2.5	3.0	f (mm/rev)	
	Feed rate f (mm/rev.)						f (mm/rev)	
1.5	0.15–0.35	0.15–0.35	0.15–0.30				0.05–0.20	
2	0.15–0.40	0.15–0.40	0.15–0.40	0.15–0.30			0.10–0.25	
2.5	0.15–0.50	0.15–0.50	0.15–0.50	0.15–0.40	0.15–0.35		0.10–0.25	
3	0.20–0.70	0.20–0.70	0.20–0.70	0.20–0.60	0.20–0.50	0.20–0.40	0.10–0.35	


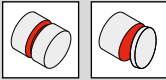

LX-M2										
Groove width CW (mm)	 Turning Depth of cut a_p (mm)								 Parting / Grooving	
	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	f (mm/rev)	
	Feed rate f (mm/rev.)								f (mm/rev)	
8	0.17–0.45	0.17–0.45	0.17–0.45	0.17–0.45	0.17–0.40	0.17–0.37	0.17–0.35		0.20–0.50	
10	0.20–0.50	0.20–0.50	0.20–0.50	0.20–0.50	0.20–0.46	0.20–0.42	0.20–0.38	0.20–0.35	0.20–0.50	


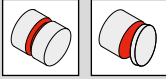

LX-M3										
Radius CRE (mm)	 Turning Depth of cut a_p (mm)								 Parting / Grooving	
	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	f (mm/rev)	
	Feed rate f (mm/rev.)								f (mm/rev)	
4	0.25–0.80	0.25–0.80	0.25–0.80	0.25–0.80	0.25–0.80	0.25–0.70	0.25–0.60	0.25–0.50	0.15–0.35	

GX – Depths of cut and feed rates


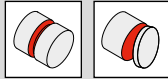

GX Standard / GX-E											
Groove width CW (inch)	 Turning Depth of cut a_p (inch)								 Parting / Grooving		 Axial grooving
	.020	.040	.060	.080	.100	.120	.140			f (inch/rev)	f (inch/rev)
	Feed rate f (inch/rev)								f (inch/rev)		f (inch/rev)
.040	.0039-.0059	.0020-.0059	.0020-.0047	.0020-.0039						.0020-.0079	When axial grooving reduce feed by 40%.
.060	.0039-.0067	.0020-.0067	.0020-.0067	.0020-.0059	.0020-.0047					.0039-.0098	
.080	.0039-.0079	.0028-.0079	.0028-.0079	.0028-.0079	.0028-.0067	.0028-.0059				.0039-.0098	
.100	.0039-.0098	.0039-.0098	.0028-.0098	.0028-.0098	.0028-.0087	.0028-.0079				.0039-.0118	
.120	.0059-.0118	.0059-.0118	.0059-.0118	.0059-.0118	.0059-.0118	.0059-.0098	.0059-.0087			.0059-.0138	


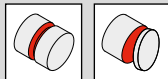

GX-M40												
Groove width CW (inch)	 Turning Depth of cut a_p (inch)								 Parting / Grooving		 Axial grooving	
	.020	.040	.060	.080	.100	.120	.140	.160			f (inch/rev)	f (inch/rev)
	Feed rate f (inch/rev)								f (inch/rev)		f (inch/rev)	
.040	.0039-.0079	.0020-.0079	.0020-.0067	.0020-.0059						.0020-.0059	When axial grooving reduce feed by 40%.	
.060	.0039-.0087	.0039-.0087	.0039-.0083	.0039-.0079	.0039-.0067					.0028-.0079		
.080	.0039-.0098	.0039-.0098	.0039-.0098	.0039-.0098	.0039-.0087	.0039-.0067				.0039-.0098		
.100	.0039-.0118	.0039-.0118	.0039-.0118	.0039-.0118	.0039-.0106	.0039-.0091	.0039-.0079			.0039-.0118		
.120	.0039-.0138	.0039-.0138	.0039-.0138	.0039-.0138	.0039-.0126	.0039-.0106	.0039-.0091	.0039-.0079		.0059-.0128		


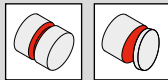

GX-F2													
Groove width CW (inch)	 Turning Depth of cut a_p (inch)									 Parting / Grooving		 Axial grooving	
	.020	.030	.040	.050	.060	.070	.080	.090	.100			f (inch/rev)	f (inch/rev)
	Feed rate f (inch/rev)									f (inch/rev)		f (inch/rev)	
.040	.0012-.0059	.0012-.0059	.0012-.0059	.0012-.0039							.0020-.0059	When axial grooving reduce feed by 40%.	
.060	.0016-.0067	.0016-.0067	.0016-.0067	.0016-.0059	.0016-.0051	.0016-.0047					.0028-.0079		
.080	.0020-.0079	.0020-.0079	.0020-.0079	.0020-.0079	.0020-.0079	.0020-.0067	.0020-.0059				.0039-.0098		
.100	.0028-.0079	.0028-.0079	.0028-.0079	.0028-.0079	.0028-.0079	.0028-.0079	.0028-.0067	.0028-.0059			.0039-.0118		
.120	.0039-.0091	.0039-.0091	.0039-.0091	.0039-.0091	.0039-.0091	.0039-.0091	.0039-.0091	.0039-.0075	.0039-.0059		.0059-.0128		


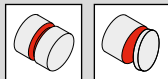

GX-27P												
Groove width CW (inch)	 Turning Depth of cut a_p (inch)							 Parting / Grooving		 Axial grooving		
	.020	.040	.060	.080	.100	.120	.140	.160			f (inch/rev)	f (inch/rev)
	Feed rate f (inch/rev)							f (inch/rev)		f (inch/rev)		
.040	.0020-.0091	.0020-.0091	.0020-.0091	.0020-.0079						.0020-.0079	When axial grooving reduce feed by 40%.	
.060	.0020-.0098	.0020-.0098	.0020-.0098	.0020-.0098	.0020-.0079					.0020-.0098		
.080	.0039-.0118	.0039-.0118	.0039-.0118	.0039-.0118	.0039-.0118	.0039-.0098				.0020-.0118		
.100	.0039-.0138	.0039-.0138	.0039-.0138	.0039-.0138	.0039-.0138	.0039-.0126	.0039-.0118			.0039-.0138		
.120	.0039-.0157	.0039-.0157	.0039-.0157	.0039-.0157	.0039-.0157	.0039-.0142	.0039-.0130	.0039-.0118		.0039-.0157		

GX – Depths of cut and feed rates

GX Standard / GX-E										
Groove width CW (mm)	 Turning Depth of cut a_p (mm)							 Parting / Grooving		 Axial grooving
	0.5	1.0	1.5	2.0	2.5	3.0	3.5	f (mm/rev)		f (mm/rev)
	Feed rate f (mm/rev.)							f (mm/rev)		f (mm/rev)
2	0.10–0.15	0.05–0.15	0.05–0.12	0.05–0.10				0.05–0.20		When axial grooving reduce feed by 40%.
3	0.10–0.17	0.05–0.17	0.05–0.17	0.05–0.15	0.05–0.12			0.10–0.25		
4	0.10–0.20	0.07–0.20	0.07–0.20	0.07–0.20	0.07–0.17	0.07–0.15		0.10–0.25		
5	0.10–0.25	0.10–0.25	0.07–0.25	0.07–0.25	0.07–0.22	0.07–0.20		0.10–0.30		
6	0.15–0.30	0.15–0.30	0.15–0.30	0.15–0.30	0.15–0.30	0.15–0.25	0.15–0.22	0.15–0.35		

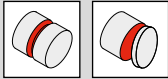

GX-M40											
Groove width CW (mm)	 Turning Depth of cut a_p (mm)							 Parting / Grooving		 Axial grooving	
	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	f (mm/rev)		f (mm/rev)
	Feed rate f (mm/rev.)							f (mm/rev)		f (mm/rev)	
2	0.10–0.20	0.05–0.20	0.05–0.17	0.05–0.15					0.05–0.15		When axial grooving reduce feed by 40%.
3	0.10–0.22	0.10–0.22	0.10–0.21	0.10–0.20	0.10–0.17			0.075–0.20			
4	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.22	0.10–0.17		0.10–0.25			
5	0.10–0.30	0.10–0.30	0.10–0.30	0.10–0.30	0.10–0.27	0.10–0.23	0.10–0.20	0.10–0.30			
6	0.10–0.35	0.10–0.35	0.10–0.35	0.10–0.35	0.10–0.32	0.10–0.27	0.10–0.23	0.10–0.20	0.15–0.325		


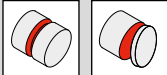
GX-F2												
Groove width CW (mm)	 Turning Depth of cut a_p (mm)							 Parting / Grooving		 Axial grooving		
	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	f (mm/rev)		f (mm/rev)
	Feed rate f (mm/rev.)							f (mm/rev)		f (mm/rev)		
2	0.03–0.15	0.03–0.15	0.03–0.15	0.03–0.10						0.05–0.15		When axial grooving reduce feed by 40%.
3	0.04–0.17	0.04–0.17	0.04–0.17	0.04–0.15	0.04–0.13	0.04–0.12			0.075–0.20			
4	0.05–0.20	0.05–0.20	0.05–0.20	0.05–0.20	0.05–0.20	0.05–0.17	0.05–0.15		0.10–0.25			
5	0.07–0.20	0.07–0.20	0.07–0.20	0.07–0.20	0.07–0.20	0.07–0.20	0.07–0.17	0.07–0.15	0.10–0.30			
6	0.10–0.23	0.10–0.23	0.10–0.23	0.10–0.23	0.10–0.23	0.10–0.23	0.10–0.23	0.10–0.19	0.10–0.15	0.15–0.325		


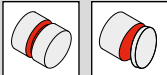
GX-27P											
Groove width CW (mm)	 Turning Depth of cut a_p (mm)							 Parting / Grooving		 Axial grooving	
	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	f (mm/rev)		f (mm/rev)
	Feed rate f (mm/rev.)							f (mm/rev)		f (mm/rev)	
2	0.05–0.23	0.05–0.23	0.05–0.23	0.05–0.20					0.05–0.20		When axial grooving reduce feed by 40%.
3	0.05–0.25	0.05–0.25	0.05–0.25	0.05–0.25	0.05–0.20			0.05–0.25			
4	0.10–0.30	0.10–0.30	0.10–0.30	0.10–0.30	0.10–0.30	0.10–0.25		0.05–0.30			
5	0.10–0.35	0.10–0.35	0.10–0.35	0.10–0.35	0.10–0.35	0.10–0.32	0.10–0.30	0.10–0.35			
6	0.10–0.40	0.10–0.40	0.10–0.40	0.10–0.40	0.10–0.40	0.10–0.36	0.10–0.33	0.10–0.30	0.10–0.40		


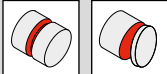
11

GX – Depths of cut and feed rates

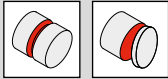

GX-M1		GX circlip grooving	
Groove width CW (inch)		Groove width CW (mm)	
	Parting / Grooving		Grooving
	Feed rate f (inch/rev.)		Feed rate f (inch/rev.)
.080	.0020–.0059	.0240–.0670	.0008–.0036
.120	.0039–.0079	.0760–.0880	.0020–.0040
.160	.0039–.0098	.1080–.1270	.0020–.0050


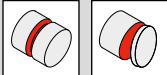
GX Standard / GX-27P / GX-27PF										
Radius CRE (inch)	 Turning									
	Depth of cut a_p (inch)								Parting / Grooving	
	.020	.040	.060	.080	.100	.120	.140	.160	f (inch/rev)	
	Feed rate f (inch/rev.)									
.030									.0020–.0059	
.040									.0020–.0059	
.050									.0020–.0059	
.060	.0039–.0177	.0020–.0177	.0020–.0157						.0020–.0059	
.080	.0059–.0197	.0039–.0197	.0039–.0197	.0039–.0157					.0030–.0079	
.100	.0059–.0236	.0039–.0236	.0039–.0236	.0039–.0197	.0039–.0177				.0039–.0098	
.120	.0098–.0276	.0079–.0276	.0059–.0276	.0059–.0276	.0059–.0256	.0059–.0236	.0059–.0217		.0039–.0118	
.160	.0098–.0315	.0079–.0315	.0059–.0315	.0059–.0315	.0059–.0315	.0059–.0315	.0059–.0295	.0059–.0276	.0059–.0138	


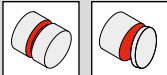
GX-M3									
Radius CRE (inch)	 Turning								
	Depth of cut a_p (inch)							Parting / Grooving	
	.020	.040	.060	.080	.100	.120			f (inch/rev)
	Feed rate f (inch/rev.)								
.060	.0059–.0138	.0059–.0138	.0059–.0118						.0020–.0079
.080	.0059–.0157	.0059–.0157	.0059–.0157	.0059–.0118					.0039–.0098
.100	.0059–.0197	.0059–.0197	.0059–.0197	.0059–.0157	.0059–.0138				.0039–.0098
.120	.0079–.0276	.0079–.0276	.0079–.0276	.0079–.0236	.0079–.0197	.0079–.0157			.0039–.0138


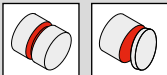
GX-M33									
Radius CRE (inch)	 Turning								
	Depth of cut a_p (inch)							Parting / Grooving	
	.020	.040	.060	.080	.100	.120			f (inch/rev)
	Feed rate f (inch/rev.)								
.060	.0020–.0098	.0020–.0078	.0020–.0059						.0020–.0059
.080	.0020–.0140	.0020–.0118	.0020–.0098	.0020–.0078					.0020–.0078
.100	.0020–.0180	.0039–.0157	.0020–.0014	.0039–.0118	.0039–.0098				.0020–.0098
.120	.0039–.0196	.0039–.0177	.0039–.0157	.0039–.0137	.0039–.0137	.0039–.0098			.0039–.0098

GX – Depths of cut and feed rates

GX-M1		GX circlip grooving	
Groove width CW (mm)			
	Parting / Grooving		Grooving
	Feed rate f (mm/rev.)		Feed rate f (mm/rev.)
2	0.05–0.15	0.60–1.70	0.02–0.09
3	0.10–0.20	1.95–2.25	0.05–0.10
4	0.10–0.25	2.75–3.25	0.05–0.12

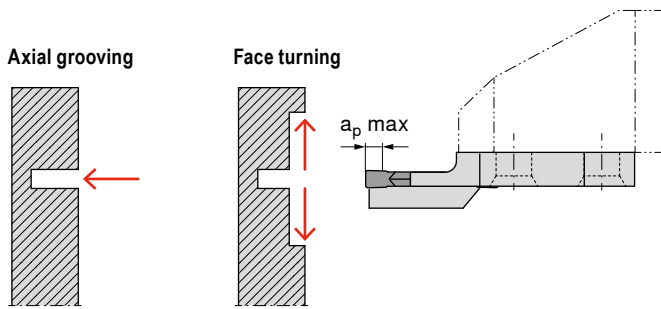
GX Standard / GX-27P / GX-27PF										
Radius CRE (mm)	 Turning									
	Depth of cut a_p (mm)								Parting / Grooving	
	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	f (mm/rev)	
	Feed rate f (mm/rev.)									
0.8									0.05–0.10	
1.0									0.05–0.15	
1.2									0.05–0.15	
1.5	0.10–0.45	0.05–0.45	0.05–0.40						0.05–0.15	
2.0	0.15–0.50	0.10–0.50	0.10–0.50	0.10–0.40					0.075–0.20	
2.5	0.15–0.60	0.10–0.60	0.10–0.60	0.10–0.50	0.10–0.45				0.10–0.25	
3.0	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		0.10–0.30	
4.0	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	0.15–0.35	

GX-M3										
Radius CRE (mm)	 Turning									
	Depth of cut a_p (mm)								Parting / Grooving	
	0.5	1.0	1.5	2.0	2.5	3.0			f (mm/rev)	
	Feed rate f (mm/rev.)									
1.5	0.15–0.35	0.15–0.35	0.15–0.30						0.05–0.20	
2.0	0.15–0.40	0.15–0.40	0.15–0.40	0.15–0.30					0.10–0.25	
2.5	0.15–0.50	0.15–0.50	0.15–0.50	0.15–0.40	0.15–0.35				0.10–0.25	
3.0	0.20–0.70	0.20–0.70	0.20–0.70	0.20–0.60	0.20–0.50	0.20–0.40			0.10–0.35	

GX-M33										
Radius CRE (mm)	 Turning									
	Depth of cut a_p (mm)								Parting / Grooving	
	0.5	1.0	1.5	2.0	2.5	3.0			f (mm/rev)	
	Feed rate f (mm/rev.)									
1.5	0.05–0.25	0.05–0.20	0.05–0.15						0.05–0.15	
2.0	0.05–0.35	0.05–0.30	0.05–0.25	0.05–0.20					0.05–0.20	
2.5	0.10–0.45	0.10–0.40	0.10–0.35	0.10–0.30	0.10–0.25				0.05–0.25	
3.0	0.10–0.50	0.10–0.45	0.10–0.40	0.10–0.35	0.10–0.30	0.10–0.25			0.10–0.25	

GX 24 – Axial grooving and face turning

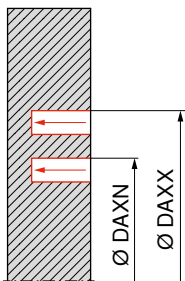
Approximate feed rates



Designation	Axial grooving		Face turning			
	f		f		a _p max.	
	(inch/rev)	(mm/rev)	(inch/rev)	(mm/rev)	(inch)	(mm)
GX 24-2 E 3.00 ..	.0019–.0057	0.05–0.15	.0019–.0078	0.05–0.20	0.100	2.5
GX 24-3 E 4.00 ..	.0019–.0057	0.05–0.15	.0019–.0098	0.05–0.25	0.120	3.0
GX 24-3 E 5.00 ..	.0019–.0057	0.05–0.15	.0039–.0098	0.10–0.25	0.120	3.0
GX 24-4 E 6.00 ..	.0019–.0078	0.05–0.20	.0039–.0117	0.10–0.30	0.140	3.5

Processing notes

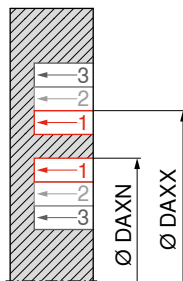
Axial grooving



It is only possible to plunge within the fixed diameter range of the axial grooving module or monoholder (1.9685 – 2.7559 inch / 50 – 70 mm).

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

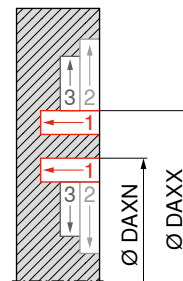
Axial grooving – Groove widening



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.

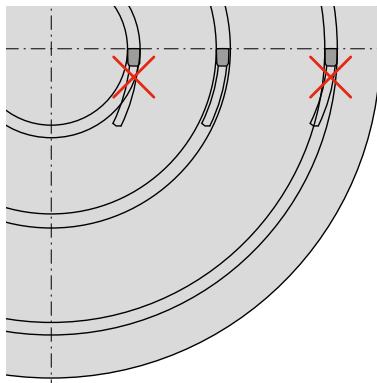
Important: Only the first groove must lie within the diameter range of the axial grooving module or axial monoholder. The depth of the widening groove must not be larger than the depth of the original groove.

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.



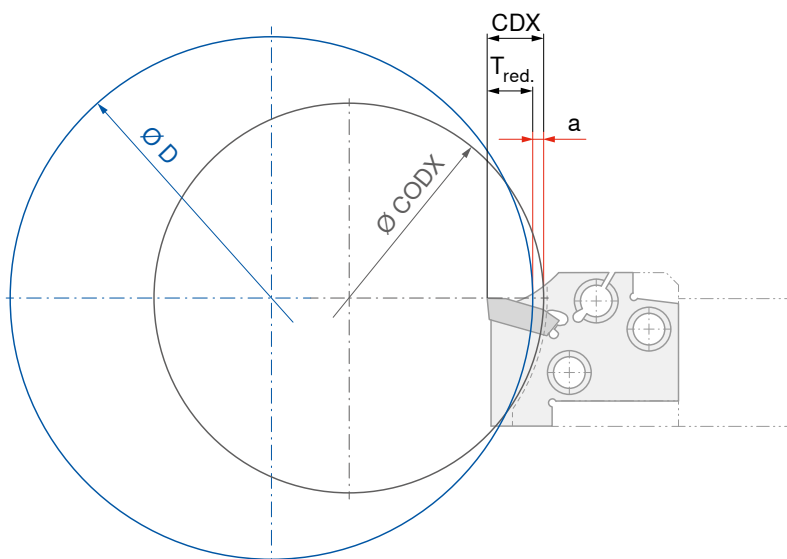
Attention: The diameter of face grooves must lie within the diameter range indicated on the axial grooving module and axial monoholder. Not following this range will result in the tool being damaged or destroyed.

ModularClamp – Grooving depth reduction

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.

		Reduction "a" of the maximum grooving depth (CDX)															
		.020" 0.5 mm	.040" 1.0 mm	.060" 1.5 mm	.080" 2.0 mm	.100" 2.5 mm	.120" 3.0 mm	.140" 3.5 mm	.160" 4.0 mm	.180" 4.5 mm	.200" 5.0 mm	.220" 5.5 mm	.240" 6.0 mm	.260" 6.5 mm	.280" 7.0 mm	.300" 7.5 mm	.320" 8.0 mm
Size	E12	1.38" 35 mm	1.57" 40 mm	1.77" 45 mm	2.36" 60 mm	2.95" 75 mm	4.53" 115 mm	9.84" > 250 mm									
	E16	1.97" 50 mm	2.17" 55 mm	2.36" 60 mm	2.76" 70 mm	3.15" 80 mm	3.94" 100 mm	5.12" 130 mm	7.87" 200 mm	> 16.54"							
	E20	2.36" 60 mm	2.56" 65 mm	2.76" 70 mm	2.95" 75 mm	3.35" 85 mm	3.74" 95 mm	4.33" 110 mm	5.12" 130 mm	6.50" 165 mm	8.66" 220 mm	> 12.99"					
	E25	2.95" 75 mm	3.15" 80 mm	3.35" 85 mm	3.54" 90 mm	3.94" 100 mm	4.33" 110 mm	4.92" 125 mm	5.51" 140 mm	6.30" 160 mm	7.48" 190 mm	9.45" 240 mm	12.60" 320 mm	> 19.69"			
	E32	3.74" 95 mm	3.94" 100 mm	4.13" 105 mm	4.33" 110 mm	4.72" 120 mm	4.92" 125 mm	5.31" 135 mm	5.71" 145 mm	6.30" 160 mm	7.09" 180 mm	7.87" 200 mm	8.86" 225 mm	10.63" 270 mm	12.60" 320 mm	15.75" 400 mm	20.87" 530 mm
		Workpiece diameter D															
		Maximum workpiece diameter (CODX) with full penetration depth (CDX)															

Calculation example:



CDX =
maximum plunge depth

CODX =
maximum workpiece Ø with full penetration depth

a =
Reduction amount

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

E25R21-GX24-3

CDX = .826" (21 mm)
Ø CODX = 2.95" (75 mm)
Size 25

Workpiece diameter
D = Ø 3.93" (Ø 100 mm)

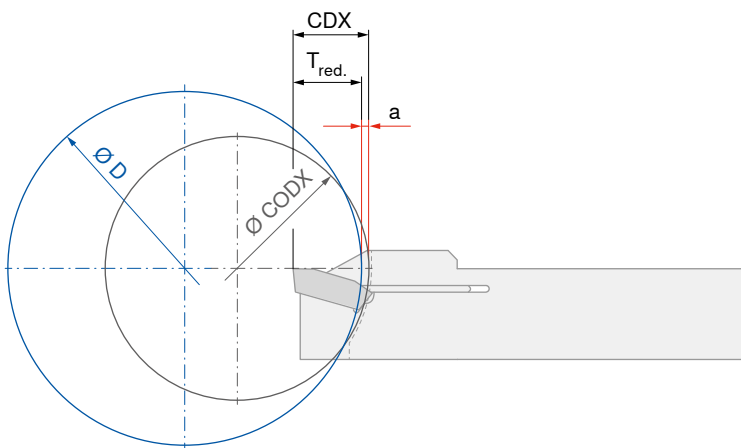
$T_{red.} = CDX - a = .826" - .080" = .746"$
 $T_{red.} = CDX - a = 21 \text{ mm} - 2 \text{ mm} = 19 \text{ mm}$

MonoClamp – Grooving depth reduction

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.

		Reduction "a" of the maximum grooving depth (CDX)									
		.020" 0.5 mm	.040" 1.0 mm	.060" 1.5 mm	.080" 2.0 mm	.100" 2.5 mm	.120" 3.0 mm	.140" 3.5 mm	.160" 4.0 mm	.180" 4.5 mm	
Shank	E12R/L0022...	1.73" 44 mm	2.76" 70 mm	3.15" 80 mm	3.74" 95 mm	4.53" 115 mm	5.91" 150 mm	8.86" 225 mm	> 17.72" > 450 mm		
	E16R/L0026...	2.05" 52 mm	3.54" 90 mm	4.13" 105 mm	4.92" 125 mm	6.10" 155 mm	8.27" 210 mm	12.01" 305 mm	> 23.62" > 600 mm		
	E20R/L0026...	2.05" 52 mm	4.33" 110 mm	4.92" 125 mm	5.51" 140 mm	6.30" 160 mm	7.68" 195 mm	9.45" 240 mm	12.60" 320 mm	18.70" 475 mm	> 37.40" > 950 mm
	E20R/L0033...	2.60" 66 mm	4.33" 110 mm	4.92" 125 mm	5.51" 140 mm	6.30" 160 mm	7.68" 195 mm	9.45" 240 mm	12.60" 320 mm	18.70" 475 mm	> 37.40" > 950 mm
	E25R/L0026...	2.05" 52 mm	5.51" 140 mm	6.30" 160 mm	7.48" 190 mm	9.25" 235 mm	12.20" 310 mm	18.31" 465 mm	> 36.61" > 930 mm		
	E25R/L0033...	2.60" 66 mm	6.10" 155 mm	6.89" 175 mm	7.87" 200 mm	9.06" 230 mm	10.83" 275 mm	13.39" 340 mm	17.72" 450 mm	26.57" 675 mm	> 53.15" > 1350 mm
	E25R/L0040...	3.15" 80 mm	6.10" 155 mm	6.89" 175 mm	7.87" 200 mm	9.06" 230 mm	10.83" 275 mm	13.39" 340 mm	17.72" 450 mm	26.57" 675 mm	> 53.15" > 1350 mm
		Workpiece diameter D									
		Maximum workpiece diameter (CODX) with full penetration depth (CDX)									

Calculation example:



CDX =
maximum plunge depth

CODX =
maximum workpiece \varnothing with full penetration depth

a =
Reduction amount

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

E25R0033...
 $CDX = 1.30"$ (33 mm)
 $\varnothing CODX = 2.60"$ (66 mm)

Workpiece diameter
 $D = \varnothing 7.87"$ ($\varnothing 200$ mm)

$$T_{red.} = CDX - a = 1.30" - .060" = 1.24"$$

$$T_{red.} = CDX - a = 33 \text{ mm} - 1.5 \text{ mm} = 31.5 \text{ mm}$$

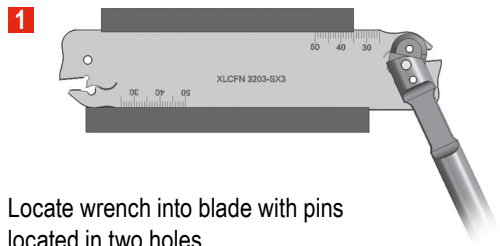
Clamping Method – SX-System

System function – inserting and removing the cutting inserts

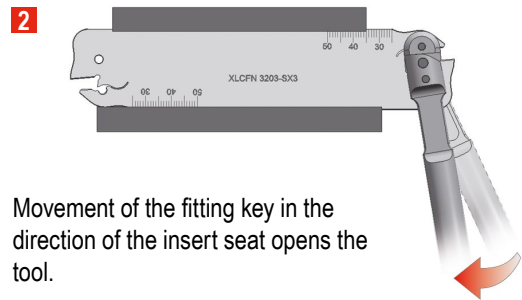
Precision system for internal and external grooving.

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

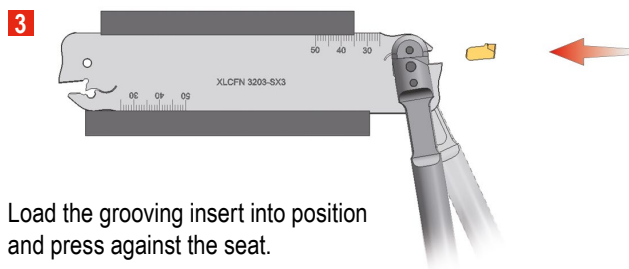
With this alternate system the material always remains in its flexible range and provides a substantial increase in tool life.



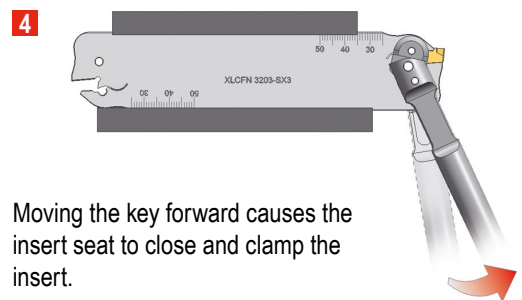
1 Locate wrench into blade with pins located in two holes.




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

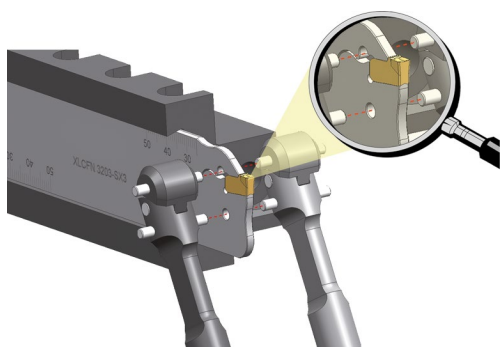


3 Load the grooving insert into position and press against the seat.



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!



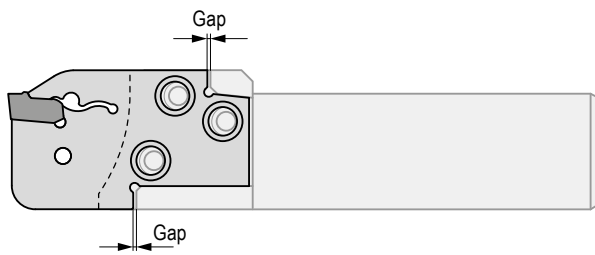
The clamp is designed so that the wrench can be inserted from both sides of the blade according to the accessibility.



Maximum blade projection when turning

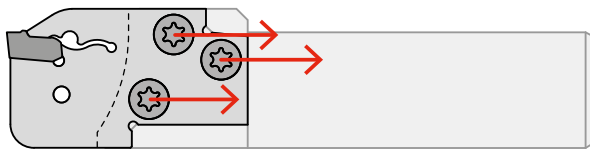
Blade	max. overhang	
SX 2 – SX 3	.984 inch	25 mm
SX 4 – SX 5	1.181 inch	30 mm
SX 6	1.378 inch	35 mm

Clamping function – ModularClamp-Module



Module unclamped

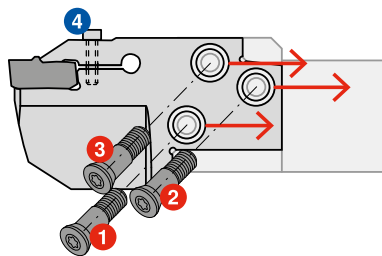
- ▲ Gap between module and support face for axial clamping



Module clamped

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

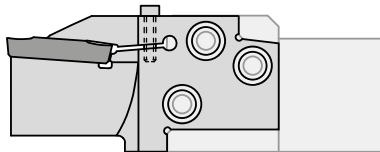
System
LX



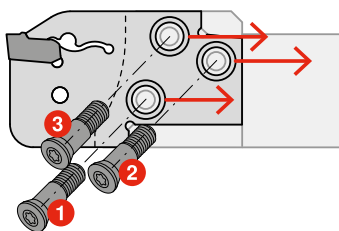
Active insert clamping

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

GX 24



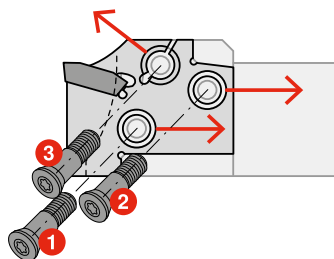
System
SX



Self clamping of the insert

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

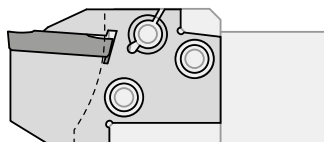
System
GX 09 / GX 16



Active insert clamping

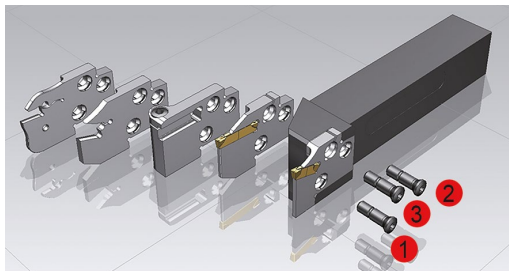
Clamping screws 1 and 2 are used for clamping the module.
Important: first tighten clamp screws 1 and 2.
Then clamp the insert with screw 3.

GX 24




Torque Moment ModularClamp Module Screws

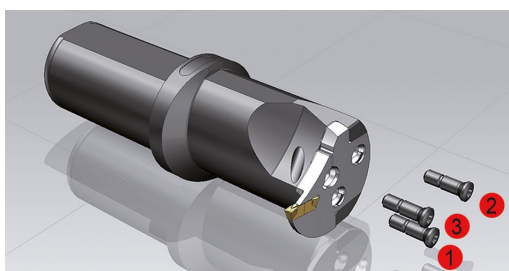
ModularClamp – Tool holder




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

 Tighten screws to the correct Torque moment in this order.

ModularClamp – Boring bar



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

 Tighten screws to the correct Torque moment in this order.

Tightening torque for the insert clamping

Recommended tightening torque

Grooving systems	Screw	Torx	Torque moment	
			Nm	in.lbs
GX / AX / LX	M3.5	T15	3.2	28.3
	M4.0	T15/T20	4.0	35.4
	M5.0	T20	5.0	44.3

Advantages due to DirectCooling

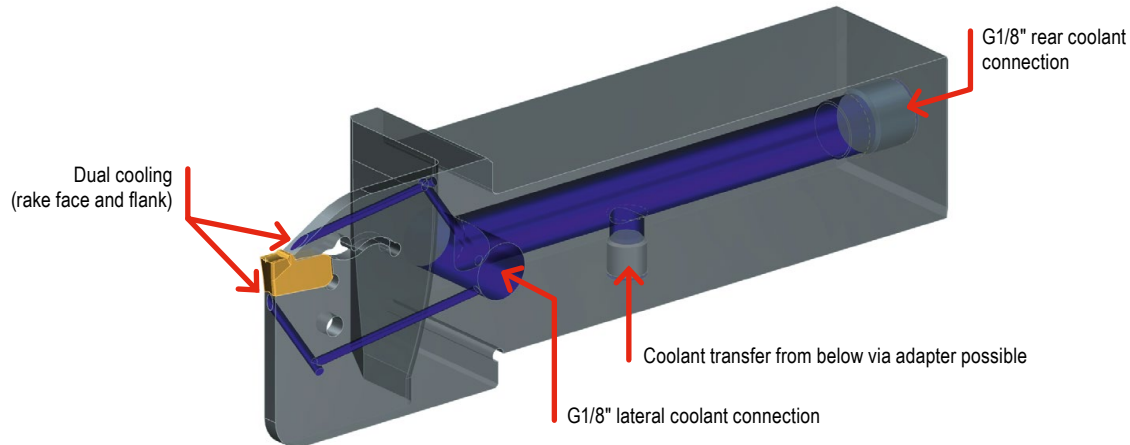
Internal coolant supply with groove machining has a decisively positive effect on your turning process.

In our CERATIZIT grooving range, the following grooving systems have an internal coolant supply:

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

Advantages due to DirectCooling

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

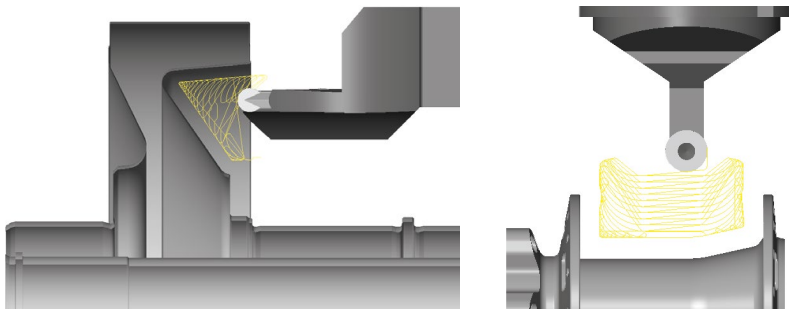


Advantages of the trochoidal turning strategy

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

Trochoidal turning with support of the following CAM systems:

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

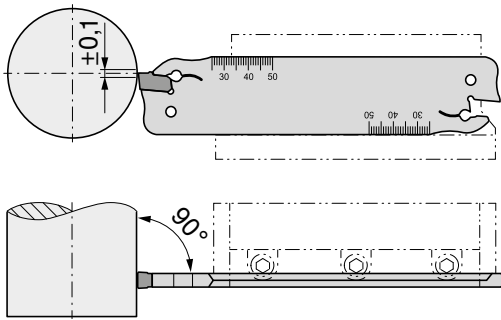


Possible applications

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

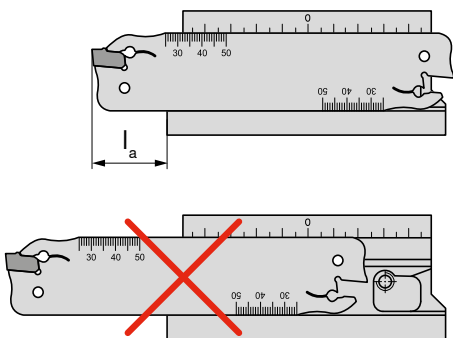
General references

Tool position

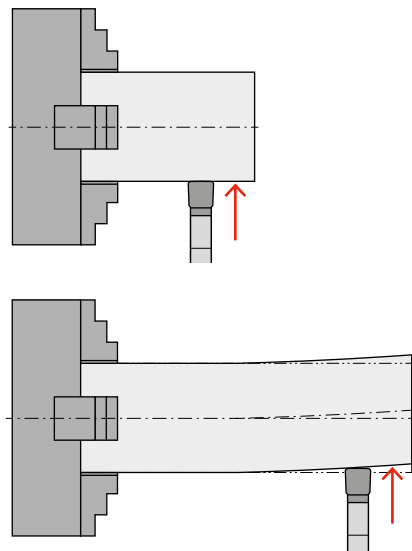


Tool overhang

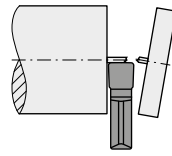
1 As a rule of thumb: Overhang l_a should not be greater than $8 \times CW$ (Groove width).



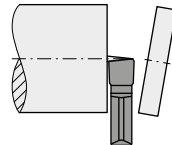
Workpiece overhang



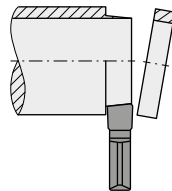
References for Parting off



From $\varnothing 0.1969$ inch ($\varnothing 5$ mm) on, reduce feed "f" by approx. 50 %. No parting across centre (risk of breakage).

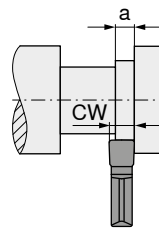


For parting pip-free, use R or L inserts. In order to minimize lateral deflection reduce feed by approx. 20–50 %.

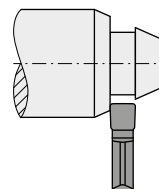


In order to prevent ring formation, use R or L inserts. Reduce feed "f" because of lateral deflection by approx. 20–50 %.

References for grooving



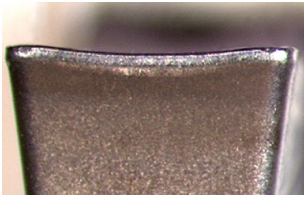
When grooving with an axial displacement the width "a" should amount to at least 70 % of the grooving width "CW".



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

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.

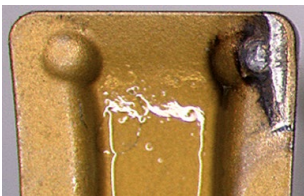
Cause

- ▲ 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.

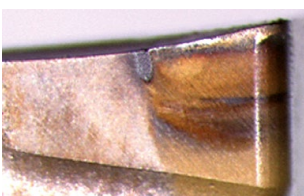
Cause

- ▲ 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.




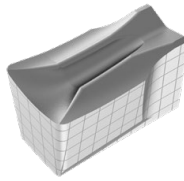
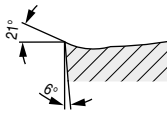
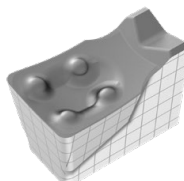
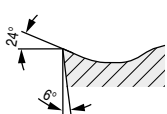

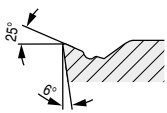

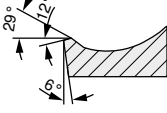
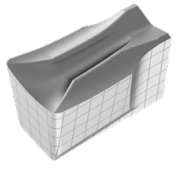
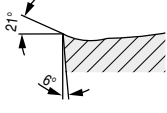
Cause

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

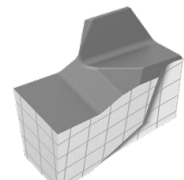
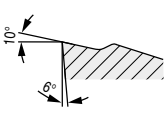
Remedy

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




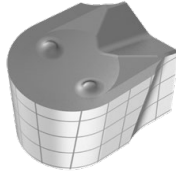
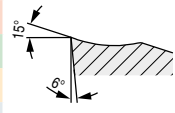
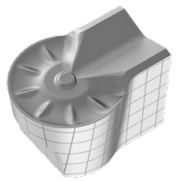
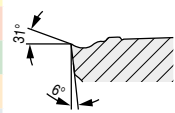
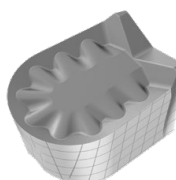
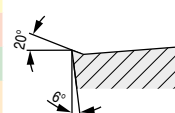
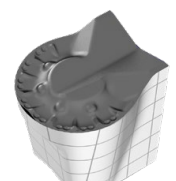
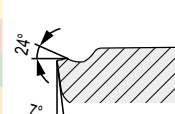
Chip breakers / Applications




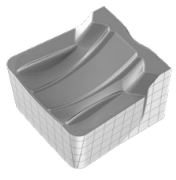
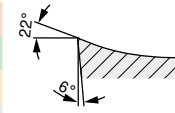
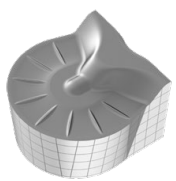
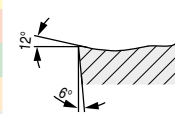
System GX		Smooth cut	irregular cut	interrupted cut	Model	Feed f
						
-F2 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ first choice for stainless materials		CTCP325	CTP1340	CTPP345		.002–.006 inch/rev 0.05–0.15 mm/rev
		CTP1340	CTP1340/CTPP345	CTPP345		
		CTCP325	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		.002–.007 inch/rev 0.05–0.17 mm/rev
		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		.003–.008 inch/rev 0.075–0.20 mm/rev
		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		.004–.008 inch/rev 0.1–0.20 mm/rev
		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						.002–.010 inch/rev 0.05–0.25 mm/rev
		H216T	H216T	H216T		
		H216T	H216T	H216T		
		H216T	H216T			
		H216T				

Circlip grooving




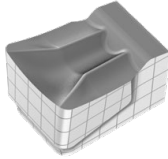
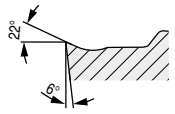

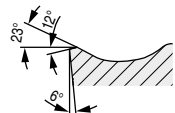

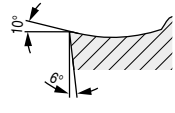
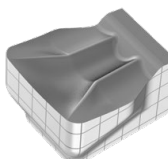
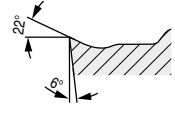

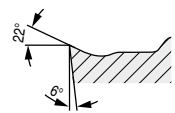
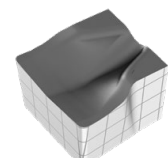
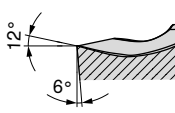
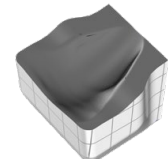
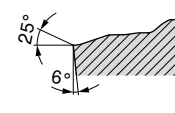
Standard ▲ positive geometry ▲ honed cutting edge ▲ low feed rates ▲ small corner radius ▲ Circlip grooves		CTP1340	CTP1340	CTP1340		.002–.012 inch/rev 0.05–0.30 mm/rev
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTP1340	CTP1340			

Chip breakers / Applications

System GX		Smooth cut	irregular cut	interrupted cut	Model	Feed f
						
Standard – Radius ▲ positive geometry ▲ honed cutting edge ▲ low-medium feed rates ▲ low cutting forces ▲ Radius grooving/copy turning		CTCP325	CTCP325/CTP1340	CTP1340		.0018–.008 inch/rev 0.05–0.20 mm/rev
		CTP1340	CTP1340	CTP1340		
		CTCP325	CTCP325/CTP1340	CTP1340		
		CTCP325				
		CTP1340	CTP1340			
		CTCP325	CTP1340			
-M3 – Radius ▲ stable geometry ▲ medium-high feed rates ▲ high surface quality ▲ Radius grooving/copy turning		CTCP325	CTCP325/CTCP335	CTCP335		.003–.008 inch/rev 0.07–0.20 mm/rev
		CTCP335	CTCP335			
		CTCP325	CTCP325/CTCP335	CTCP335		
		CTCP325				
		CTCP325				
		CTCP325				
-27P – Radius ▲ very positive geometry ▲ ground periphery ▲ sharp cutting edge ▲ polished chip breaker ▲ first choice for non-ferrous metals						.002–.012 inch/rev 0.05–0.30 mm/rev
		H216T	H216T	H216T		
		H216T	H216T	H216T		
		H216T	H216T			
		H216T				
		H216T				
-M33 ▲ Radius grooving & copy turning ▲ Finishing geometry ▲ Specially for tough and ductile steels ▲ Low - medium feed rates ▲ High surface quality		CTCP325	CTCP325	CTCP325		.002–.008 inch/rev 0.05–0.20 mm/rev
		CTCP325	CTCP325	CTCP325		
		CTCP325	CTCP325	CTCP325		

System LX		Smooth cut	irregular cut	interrupted cut	Model	Feed f
						
-M2 ▲ stable geometry ▲ medium feed rates ▲ universal application ▲ good chip control		CTCP325	CTCP335/CTP1340	CTCP335		.008–.020 inch/rev 0.20–0.50 mm/rev
		CTCP335	CTP1340	CTP1340		
		CTCP325	CTCP325	CTCP335		
		CTCP325				
		CTP1340	CTP1340	CTP1340		
		CTCP325	CTP1340			
-M3 – Radius ▲ stable geometry ▲ medium-high feed rates ▲ high surface quality ▲ Radius grooving/copy turning		CTCP325	CTCP335/CTP1340	CTCP335		.002–.014 inch/rev 0.15–0.35 mm/rev
		CTCP335	CTCP335/CTP1340	CTP1340		
		CTCP325	CTCP325/CTCP335	CTCP335		
		CTCP325				
		CTP1340	CTP1340	CTP1340		
		CTCP325	CTP1340			

Chip breakers / Applications

System SX		Smooth cut	irregular cut	interrupted cut	Model	Feed f
						
-F2 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ first choice for stainless materials		CTCP325	CTCP325/CTP1340	CTPP345		.002–.006 inch/rev 0.05–0.15 mm/rev
		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	CTCP335/CTP1340	CTPP345		.004–.008 inch/rev 0.10–0.20 mm/rev
		CTP1340	CTP1340	CTPP345		
		CTCP325	CTCP325/CTP1340	CTP1340		
		CTP1340	CTP1340	CTPP345		
		CTCP325				
		CTP1340	CTP1340			
-M2 ▲ stable geometry ▲ medium feed rates ▲ universal application ▲ good chip control		CTCP325	CTCP335/CTP1340	CTPP345		.003–.008 inch/rev 0.075–0.20 mm/rev
		CTP1340	CTP1340	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						.002–.010 inch/rev 0.05–0.25 mm/rev
		H216T	H216T	H216T		
		H216T	H216T	H216T		
		H216T	H216T			
		H216T				
-M3 – Radius ▲ stable geometry ▲ medium-high feed rates ▲ high surface quality ▲ Radius grooving / Copy turning		CTCP335	CTCP335/CTP1340	CTP1340		.002–.008 inch/rev 0.05–0.20 mm/rev
		CTP1340	CTP1340	CTP1340		
		CTCP335	CTCP335/CTP1340	CTP1340		
		CTP1340	CTP1340	CTP1340		
		CTP1340				
		CTP1340	CTP1340			
-M7 ▲ Grooving & parting off ▲ First choice for steel ▲ Medium – high feed rates ▲ Good chip control ▲ Positive geometry		CTP1340	CTP1340			.004–.008 inch/rev 0.10–0.20 mm/rev
		CTP1340	CTP1340			
		CTP1340	CTP1340			
		CTP1340	CTP1340			
		CTP1340	CTP1340			
		CTP1340	CTP1340			
-M8 ▲ Grooving & parting off ▲ Ground cutting edge ▲ Good chip control ▲ First choice for stainless steel ▲ Low feeds		CTP1340	CTP1340			.001–.006 inch/rev 0.03–0.15 mm/rev
		CTP1340	CTP1340			
		CTP1340	CTP1340			
		CTP1340	CTP1340			
		CTP1340	CTP1340			
		CTP1340	CTP1340			

Example of Coding Grooving Tools

Grooving insert

GX	24	2	E	3.00	N	0.30
Grooving system (GX)	Insert length (24 mm / .945 inch)	Width class of the holder / module or support surface (2 mm / .0787 inch)	Type of insert, application	Groove width (3.0 mm / .118 inch)	Insert seat N = Neutral L = Left R = Right	Corner radius size (0.3 mm / .012 inch)

Module

E	25	R	21	GX	24	2
Application E = External I = Internal	Size (25 mm / .984 inch)	Module version R = Right L = Left	Maximum groove depth (21 mm / .827 inch)	Grooving system (GX)	Insert length (24 mm / .945 inch)	Width class 2

Basic holder (mm)

E	25	R	00	2525	L
Application E = External I = Internal	Size 25 mm	Holder version R = Right L = Left	Approach angle 0°	Shank type 25x25mm	Shank length L = (see ISO)

Basic holder (inch)

E	25	R	00	16	E
Application E = External I = Internal	Size .984 inch (25 mm)	Holder version R = Right L = Left	Approach angle 0°	Shank height 16/16's or 1.00 inch	Combination metric-inch E = end F = front EF = end+front

Monobloc tool holder (mm)

E	25	R	00	21	S3	2525	X	S	DC	GX24
Application E = External I = Internal	Size 25 mm	Holder version R = Right L = Left	Approach angle 0°	Groove depth (21 mm)	Groove width (3.0 mm)	Shank type 25x25 mm	Shank length X = (see ISO)	Insert clamping S = Key	Cooling system DC = DirectCooling	Grooving system

Monobloc tool holder (inch)

E	25	R	00	21	16	D	GX24	2	E
Application E = External I = Internal	Size .984 inch (25 mm)	Holder version R = Right L = Left	Approach angle 0°	Groove depth .827 inch (21 mm)	Shank height 16/16's or 1.00 inch	Tool length D = 6.000 inch	Grooving system	Width class 2	Combination metric-inch E = end F = front EF = end+front

Grooving insert
GX 24-2 E3.00 N 0.30

Module
E25 R 21-GX 24-2

Basic holder (mm)
E25 R 00 - 2525L

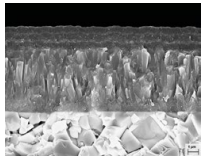
Basic holder (inch)
E25 R 00-16-E

Monobloc tool holder (mm)
E25 R 0021S3-2525X-S-DC-GX24

Monobloc tool holder (inch)
E25 R 0021-16D-GX24-2-E

Grade description

CTCP325



ISO | P25 | M20 | K30 | S25



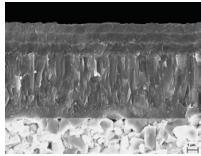
Specifications:

Composition: Co 7.0%; mixed carbide 8.1%; WC balance | grain size: 1-2 µm | Hardness: HV₃₀ 1470 | Layer system: CVD TiCN-Al₂O₃ Multilayer

Recommended use:

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

CTCP335



ISO | P35 | M30 | K35



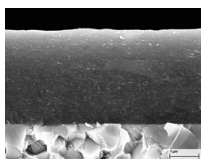
Specifications:

Composition: Co 10.5%; mixed carbide 1.9%; WC balance | grain size: 1 µm | Hardness: HV₃₀ 1370 | Layer system: CVD TiCN-Al₂O₃ Multilayer

Recommended use:

The reliable choice for machining steel and cast iron materials.

CTP1340



ISO | P30 | K30 | N30 | S30 | O30



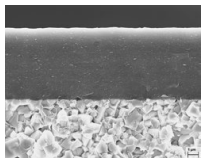
Specifications:

Composition: Co 9.0%; mixed carbide 0.75%; WC balance | grain size: 0.7-1 µm | Hardness: HV₃₀ 1590 | Layer system: PVD TiAlTaN

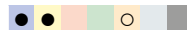
Recommended use:

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

CTPP345



ISO | P45 | M40 | S40



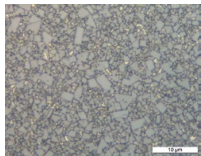
Specifications:

Composition: Co 12.5%; mixed carbide 2.0%; WC balance | grain size: 1-1.5 µm | Hardness: HV₃₀ 1350 | Layer system: PVD TiAlTaN

Recommended use:

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

H216T



ISO | K15 | N15 | S15 | O10



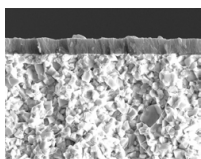
Specification:

Composition: Co 6.0%; WC balance | Grain size: 1 µm | Hardness: HV₃₀ 1630

Recommended application:

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

CWX500



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



Specification:

Composition: Co 10.0%; Others 0.7 %, WC balance | Grain size: 1 µm | Hardness: HV₃₀ 1660

Recommended application:

The universal carbide grade for almost all materials

Application

