

GROOVING



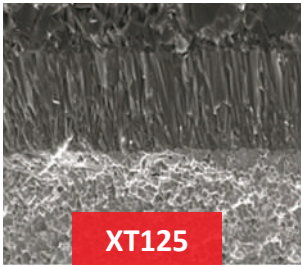
GROOVING INDEX

Grooving	85-100
Grade Information	88-89
Cutting Speed Recommendation	90-91
XTGP	92-94
XGM-MGMN	95-96
XGDB-XGJ-XDT	97-99



GRADE INFORMATION

GROOVING



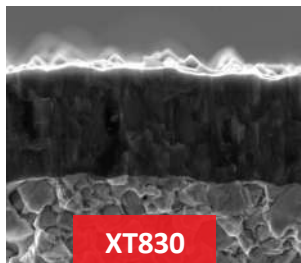
XT125

2-4 μ AlCrN+AlCrSiN PVD Coated, Combining with ultra fine particles substrates with High-Toughness, suitable for all materials in light & medium load Milling. Suitable for Steels, Stainless Steel & High-Temperature high hardness alloys.(Less Chromium & Nickel)



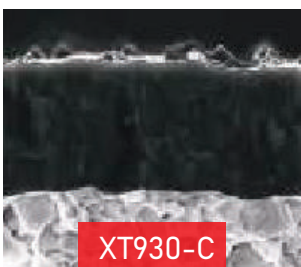
XT310

PVD coating with optimal thermal resistance & added strength. Tough carbide substrate designed for demanding application. Suitable for all materials from steels to superalloys.



XT830

PVD coating with optimal thermal resistance & added strength. Tough carbide substrate designed for demanding application. Suitable for all materials from steels to superalloys.

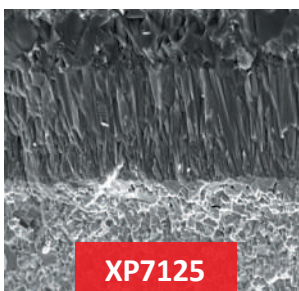


XT930-C

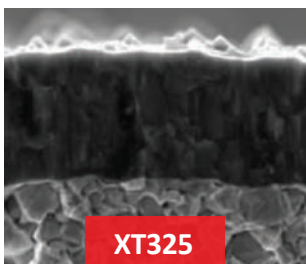
P15-P35 | M15-M35 | H05-H15

Ultra fine grade with Nano coating for high heat resistance and toughness. Special AlTIMEN coating gives it a bronze shade and higher temperature resistance! The first choice for general-purpose machining of stainless steel. It can be used for supplementary machining of soft steels.

GRADE INFORMATION



Special structure of Al_2O_3 settled layer has the best thermal barrier performance, high speed dry cutting, ensure resistance to plastic deformation of blade matrix.



PVD coating with optimal thermal resistance & added strength. Tough carbide substrate designed for demanding application. Suitable for all materials from steels to superalloys.

GROOVING

Cutting Speed Recommendation

XTGP-P/GT/R

GROOVING

Workpiece Material	Hardness HB	Coated Carbide			
		XT830	XT930	XP7125	
P	Non Alloyed Steel 0.15%-0.45%C	150 - 250	80-180	110-190	80-150
	Low Alloy Steel Tempered	250 - 300	60-150	110-180	70-120
	High Alloy Steel Tempered	350	50-120	70-160	60 - 100
	Corrosion Resistant Steel Annealed	200	50-200	120-200	90-160
M	Annealed Pearlitic	200	50-200	120-200	100-180
	Quenched Austenitic	180	50-180	100-170	80-150
	Quenched Duplex	230-260	50-100	70-110	70-110
	Hardened Martensitic	330	50-80	60-90	60-90
K	Grey Cast Iron	180	100-200	90-180	100-180
	Spheroidal	160	100-180	100-160	80-150
	Malleable Pearlitic	130	80-160	80-150	70-110

Cutting Speed Recommendation

XGDB-XGJ-XDT-XGM-MGMN

Workpiece Material	Hardness HB	Coated Carbide					
		XT125	XT310	XT325	XT930-C	XP7125	
P	Non Alloyed Steel 0.15%-0.45%C	150 - 250	80-180	80-180	80-200	110-190	80-220
	Low Alloy Steel Tempered	250 - 300	60-150	60-160	60-170	110-180	70-140
	High Alloy Steel Tempered	350	50-120	50-120	50-110	100-180	50-150
	Corrosion Resistant Steel Annealed	200	50-200			120-200	90-160
M	Annealed Pearlitic	200	50-200	50-150	50-150	120-200	100-180
	Quenched Austenitic	180	50-180	50-120	50-120	100-170	80-150
	Quenched Duplex	230-260	70-110			70-110	
	Hardened Martensitic	330	60-90			60-90	
K	Grey Cast Iron	180	100-200	100-200	80-200	90-180	
	Spheroidal	160	100-180	100-180	100-180	100-160	80-150
	Malleable Pearlitic	130	80-160	80-160	80-150	80-150	70-110

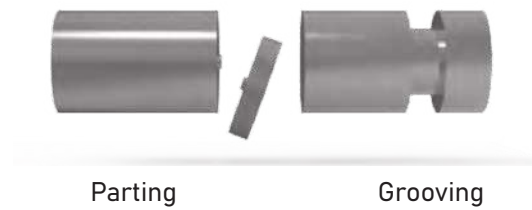
XTGP

CHIPBREAKER OVERVIEW

■ ■ P-Medium Cutting Chipbreaker



- Insert with narrow negative chamfer
- Suitable for all steel materials with high strength
- Suitable for all application
- For steel and gray cast iron



■ ■ GT-Grooving and Turning



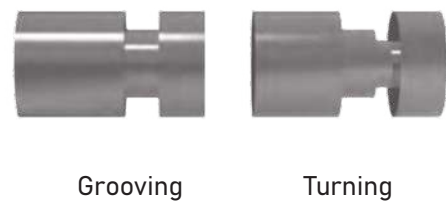
- For grooving and turning
- Suitable for all steel and stainless steel material
- Very good chip control



■ ■ R-Radius Grooves



- Insert for radius grooves
- For copy turning
- Suitable for all steel and cast iron materials



XTGP



DESIGNATION	INSERT WIDTH	Insert Length	CORNER RADIUS	XT830	XT930	XP7125	FEED RATE
XTGP2002-P	2	24	0.2	●	○	○	0.05-0.16
XTGP2002-GT	2	24	0.2	●	●	○	0.05-0.12
XTGP2010-R	2	24	1.0	●	●	○	0.08-0.25
XTGP3002-P	3	24	0.2	●	○	○	0.11-0.20
XTGP3003-GT	3	24	0.3	●	○	○	0.06-0.16
XTGP3015-R	3	24	1.5	●	●	○	0.11-0.30
XTGP4003-P	4	24	0.3	●	○	○	0.13-0.22
XTGP4004-GT	4	24	0.4	●	●	○	0.11-0.21
XTGP4020-R	4	24	2.0	●	●	○	0.15-0.36
XTGP5004-P	5	24	0.4	●	○	○	0.16-0.31
XTGP5004-GT	5	24	0.4	●	○	○	0.11-0.23
XTGP5025-R	5	24	2.5	●	○	○	0.17-0.30
XTGP6004-P	6	24	0.4	●	○	○	0.16-0.35
XTGP6004-GT	6	24	0.4	●	●	○	0.13-0.25
XTGP6030-R	6	24	3.0	●	●	○	0.14-0.40

● STOCKABLE ○ NON STOCKABLE

HOLDER SPECIFICATION

HOLDER DESIGNATION	HOLDER TYPE -ORIENTATION	SHANK DIA	OAL	TMAX	"APPLICABLE INSERT"	AVAILABILITY
XTGMEL-16-J-02T13	EXTERNAL-LEFT HAND	16	110	13	XTGP20 ...	○
XTGMEL-20-K-02T13	EXTERNAL-LEFT HAND	20	125	13	XTGP20 ...	●
XTGMEL-25-K-02T13	EXTERNAL-LEFT HAND	25	125	13	XTGP20 ...	●
XTGMEL-25-K-02T20	EXTERNAL-LEFT HAND	25	125	20	XTGP20 ...	○
XTGMEL-20-K-03T13	EXTERNAL-LEFT HAND	20	125	13	XTGP30 ...	●
XTGMEL-20-K-03T25	EXTERNAL-LEFT HAND	20	125	25	XTGP30 ...	○
XTGMEL-25-K-03T13	EXTERNAL-LEFT HAND	25	125	13	XTGP30...	●
XTGMEL-25-K-03T25	EXTERNAL-LEFT HAND	25	125	25	XTGP30 ...	●
XTGMEL-20-K-04T15	EXTERNAL-LEFT HAND	20	125	15	XTGP40 ...	○
XTGMEL-20-K-04T25	EXTERNAL-LEFT HAND	20	125	25	XTGP00 ...	○
XTGMEL-25-K-04T15	EXTERNAL-LEFT HAND	25	125	15	XTGP40 ...	○
XTGMEL-25-K-04T25	EXTERNAL-LEFT HAND	25	125	25	XTGP40 ...	●
XTGMEL-25-M-05T25	EXTERNAL-LEFT HAND	25	125	25	XTGP50 ...	●
XTGMEL-25-M-06T25	EXTERNAL-LEFT HAND	25	150	25	XTGP60 ...	○
XTGMEL-32-M-06T32	EXTERNAL-LEFT HAND	32	150	32	XTGP60 ...	○
XTGMER-16-J-02T13	EXTERNAL-LEFT HAND	16	150	13	XTGP20 ...	○
XTGMER-20-K-02T13	EXTERNAL-RIGHT HAND	20	110	13	XTGP20 ...	●
XTGMER-25-K-02T13	EXTERNAL-RIGHT HAND	25	125	13	XTGP20 ...	●
XTGMER-25-K-02T20	EXTERNAL-RIGHT HAND	25	125	20	XTGP20 ...	○
XTGMER-20-K-03T13	EXTERNAL-RIGHT HAND	20	125	25	XTGP30...	●
XTGMER-20-K-03T25	EXTERNAL-RIGHT HAND	25	125	13	XTGP30...	○
XTGMER-25-K-03T13	EXTERNAL-RIGHT HAND	25	125	25	XTGP30...	●
XTGMER-25-K-03T25	EXTERNAL-RIGHT HAND	25	125	15	XTGP30...	●
XTGMER-20-K-04T15	EXTERNAL-RIGHT HAND	20	125	25	XTGP40 ...	○
XTGMER-20-K-04T25	EXTERNAL-RIGHT HAND	20	125	15	XTGP40 ...	○
XTGMER-25-K-04T15	EXTERNAL-RIGHT HAND	25	125	25	XTGP40 ...	●
XTGMER-25-K-04T25	EXTERNAL-RIGHT HAND	25	125	25	XTGP40 ...	●
XTGMER-25-M-05T25	EXTERNAL-RIGHT HAND	25	150	25	XTGP50...	○
XTGMER-25-M-06T25	EXTERNAL-RIGHT HAND	25	150	25	XTG P60...	○
XTGMER-32-M-06T32	EXTERNAL-RIGHT HAND	32	150	32	XTGP60 ...	○

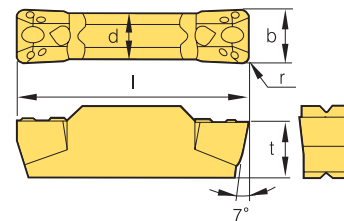
● STOCKABLE ○ NON STOCKABLE

GROOVING

XGM-MGMN

DESIGNATION		b	r	l	d	t	XT310	XT125	XP7125	XT930-C
MGMN150-G	XGM150-P	1.5	0.15	16	1.2	3.5	●			○
MGMN200-T	XGM02002-N	2.0	0.2	16	1.6	3.5	●	●	●	●
	XGM02520-N	2.5	0.2	18.5	2.0	3.85	●	●	●	●
MGMN300-T	XGM03004-N	3.0	0.4	21	2.35	4.8	●	●	●	●
MGMN400-T	XGM04004-N	4.0	0.4	21	3.3	4.8	●	●	●	●
MGMN500-T	XGM05008-N	5.0	0.8	26	4.1	5.8	●	●	●	●
	XGM12010-R	2.0	1.0	16	1.55	3.5	○			●
	XGM3015-R	3.0	1.5	21	2.35	4.8	○			●
	XGM4020-R	4.0	2.0	21	3.3	4.8	○			●

● STOCKABLE ○ NON STOCKABLE



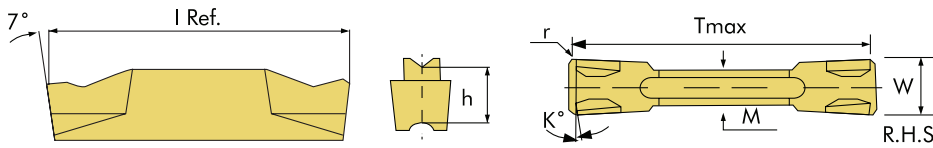
GROOVING

MGEHR / L

DESIGNATION	H=h	W	L	S	T-max	INSERTS	SCREW	WRENCH	AVAILABILITY
MGEHR/L2020-02	20	20	125	20.25	15	MGMN200	M5X16N	L4.0	●
MGEHR/L2525-02	25	25	150	25.25	15				○
MGEHR/L2020-03	20	20	125	20.4	19	MGMN300	M6X20N	L5.0	●
MGEHR/L2525-03	25	25	150	25.4	19				●
MGEHR/L2020-04	20	20	125	20.4	19	MGMN400			●
MGEHR/L2525-04	25	25	150	25.4	19				○
MGEHR/L2525-05	25	25	150	25.5	24	MGMN500			●

● STOCKABLE ○ NON STOCKABLE

Insert Details



XGDB: Double ended inserts for parting and grooving with “C” type chip breaker

Description	W+/-0.05	r	M	l	K	h	Feed range(mm/rev)	XT110	XT310	XT325
XGDB02	2.0	0.20	1.7	20	0-15	4.7	0.05-018	●	●	●
XGDB03	3.0	0.20	2.4	20	0-15	4.7	0.05-0.2	●	●	●
XGDB04	4.0	0.30	3.0	20	0-15	4.7	0.05-0.2	●	●	●
XGDB05	5.0	0.30	4	25	0-4	5.2	0.07-0.22			●
XGDB06	6.0	0.30	5	25	0.00	5.20	0.08-0.24			●

● STOCKABLE ○ NON STOCKABLE

XGJ: Double ended inserts for parting and grooving with “J” type chip breaker

Description	W+/-0.05	r	M	l	K	h	Feed range(mm/rev)	XT310	XT325
XGJ02	2.0	0.20	1.70	20	0.15	4.70	0.04-018	●	●
XGJ03	3.0	0.20	2.40	20	0.15	4.70	0.04-0.2	●	●
XGJ04	4.0	0.30	3.0	20	0.15	4.70	0.05-0.2	●	●

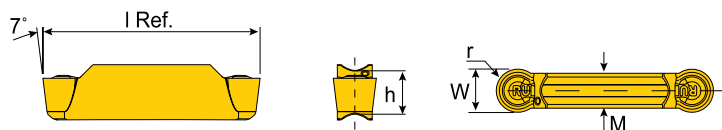
● STOCKABLE ○ NON STOCKABLE

XDT: Double ended inserts for parting and grooving with “T” type chip breaker

Description	W+/-0.05	r	M	l	h	Ap range(mm)	Feed range(mm/rev)	XT110	XT310	XT325
XDT03	3.0	0.20	2.4	20	4.7	0.3-2.0	0.07-0.2	●	●	●
XDT04	4.00	0.30	3.00	20.00	4.7	0.5-2.4	0.09-0.22	●	●	●
XDT05	5.00	0.40	4.00	25.00	5.20	0.5-2.3	0.08-0.23			●

● STOCKABLE ○ NON STOCKABLE

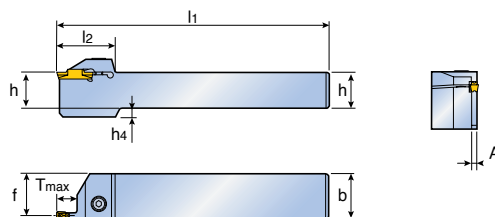
XDT FULL RADIUS: Suitable for Radius grooving and Turning



Description	W+/-0.05	r	M	l	h	R	AP range(mm)	Feed range(mm/rev)	XT325
XDT02-010	2	1	2	20	5	010R	0-1.0	0.05-0.15	●
XDT03-150	3.0	1.50	2	20	5	015R	0-1.50.0	0.08-0.18	●
XDT04-020	4.0	2.00	3.0	20	5	020R	0-2.00.0	0.1-0.2	●
XDT05-025	5	2.50	4	25	5	025R	0-2.5.0	0.1-0.23	●

● STOCKABLE ○ NON STOCKABLE

TTER / L



Designation	H	B	L	F	E	A	Tmax	Inserts	Screw	Wrench	AVAILABILITY
TTER/L 2020-2T08	20	20	125	19.1	33	1.8	8.0	XGDB02 / XGJ02	M5x16N	L-W4	○
TTER/L 2525-2T08	25	25	150	24.1							○
TTER/L 2020-02	20	20	125	19.1	32	12.0	●				
TTER/L 2525-02	25	25	150	24.1			●				
TTER/L 2020-2T17	20	20	125	19.1	37	17.0	●				
TIER/L 2525-2T17	25	25	150	24.1			●				
TTER/L 2020-3T09	20	20	125	18.8	32	2.4	9.0	XGDB03 / XGJ03 / XDT03	M6x16N	L-W5	○
TTER/L 2525-3T09	25	25	150	23.8							○
TTER/L 2020-03	20	20	125	18.8							●
TIER/L 2525-03	25	25	150	23.8							●
TTER/L 2020-3T20	20	20	125	18.8	38	20.0	●				
TTER/L 2525-3T20	25	25	150	23.8			●				
TIER/L 2020-4T10	20	20	125	18.8	32	10	10	XGDB04 / XGJ04 / XDT04	M6x16N	L-W5	○
TTER/L 2525-4T10	25	25	150	23.8							○
TTER/L 2020-04	20	20	125	18.8	33	3.0	15.0	XGDB04 / XGJ04 / XDT04	M6x16N	L-W5	●
TTER/L 2525-04	25	25	150	23.8							●
TTER/L 2020-4T25	20	20	125	18.8	45	25.0	25.0	XGDB04 / XGJ04 / XDT04	M6x16N	L-W5	●
TTER/L 2525-4T25	25	25	150	23.8							●

GROOVING

● STOCKABLE ○ NON STOCKABLE

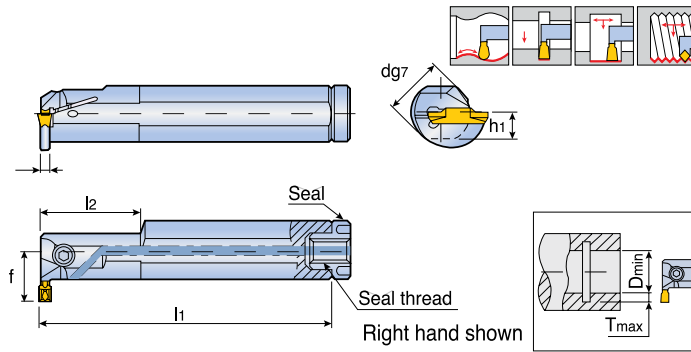
Holder For Swiss Machines



Description	Stock		Dimensions (mm)							Spare Parts		
	R	L	h	b	f2	A	h4	H2	Dmax	Screw	Wrench	Insert
TTER/L12-02T12	●	●	12	12	125	20	12	1	16	M4.0*16	T20	XG...02
TTER/L12-03T12	●	●	12	12	125	20	12	1	16	M4.0*16	T20	XG...03/XD...03
TTER/L16-02T12	●	●	16	16	125	24	16	1	20	M4.0*16	T20	XG...02
TTER/L16-03T12	●	●	16	16	125	24	16	1	20	M4.0*16	T20	XG...03/XD...03

TTIR / L

Internal Grooving Holder



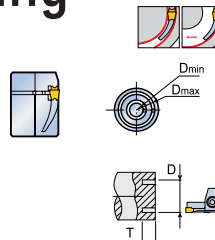
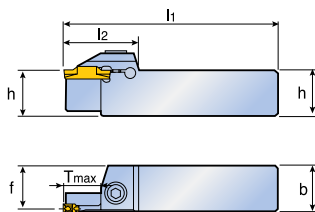
GROOVING

Description	Insert seat size	Size								Inserts	Availability
		D	L1	L2	F	H1	A	T-Max	D-Min		
TTIR/L 16-2C	2	16	125	-	16.5	7.5	1.8	8.5	25	XGDB/ XGJ/ XDT	●
TTIR/L 20-2C		20	160	40	15.8	9.0	1.6	6.0	25		●
TTIR/L 25-2C		25	200		17.5	11.5		5.0	25		●
TTIR/L 32-2C-T8		32	250	24.8	14.0	1.8	8.0	36	○		
TTIR/L 20-3C	3	20	160	40	15.8	9.0	2.1	6.0	25		●
TTIR/L 25-3C		25	200		17.5	11.5		5.1	25		●
TTIR/L 32-3C		32	250	60	20.8	14.0	2.1	4.7	31		○
TTIR/L 20-4C	4	20	160	40	15.8	9.0	2.9	6.0	25		○
TTIR/L 25-4C		25	200		17.5	11.5		5.2	25		●
TTIR/L 32-4C		32	250	60	20.8	14.0	2.9	4.7	31		○
TTIR/L 32-4C-T10		32	250		27.0	15.0	3.0	10	40		○
TTIR/L 25-5C	5	25	200	40	17.3	11.5	3.9	5.2	31		●
TTIR/L 32-5C		32	250		20.8	14.0		4.7	31		○
TTIR/L 32-5C-T10		32	250	60	27.0	15.0	3.85	10	40		○

● STOCKABLE ○ NON STOCKABLE

TTFR / L-RN (RENEWED TYPE)

Deep Face Grooving and Turning



Descriptio	Insert seat size	Size								Inserts	Availability				
		H	B	L1	F	L2	T-Max	D-Min	D-Max						
TTFR/L 20-21-30-3T10RN	3	20	20	140	19.0	31	10	21	30	XGDB/ XGJ/ XDT	○				
TTFR/L 20-24-35-3T10RN								24	35		○				
TTFR/L 20-29-40-3T10RN								29	40		○				
TTFR/L 20-34-50-3T10RN								34	50		○				
TTFR/L 20-44-70-3T15RN								44	70		○				
TTFR/L 20-64-100-3T10RN						64	100	○							
TTFR/L 25-30-3 RN						25	25	150	24.0		38	10	24	35	○
TTFR/L 25-35-3 RN													29	40	○
TTFR/L 25-40-3 RN													34	50	○
TTFR/L 25-50-3 RN													44	70	○
TTFR/L 25-70-3 RN	64	100	○												
TTFR/L 20-19-30-4T10RN	4	20	20	140	18.6					31	10	19	30	○	
TTFR/L 20-22-36-4T10 RN												22	36	○	
TTFR/L 20-28-42-4T16 RN												28	42	○	
TTFR/L 20-34-50-4T16 RN												34	50	○	
TTFR/L 20-42-70-4T16 RN												42	70	○	
TTFR/L 20-62-120-4T16 RN						62	120	○							
TTFR/L 20-112-200-4T16 RN						112	200	○							
TTFR/L 25-30-4 RN						25	25	150	23.6	39	20	10	22	36	○
TTFR/L 25-36-4 RN												28	42	○	
TTFR/L 25-42-4 RN												34	50	○	
TTFR/L 25-50-4 RN	42	70	○												
TTFR/L 25-70-4 RN	62	120	○												
TTFR/L 25-120-4 RN	112	200	○												
TTFR/L 25-200-4 RN	200	0	○												
TTFR/L 25-60-5T15 RN	5	25	150	23.1	41					15	50	80	○		
TTFR/L 25-60-5 RN											49	25	50	80	○
TTFR/L 25-80-5T15 RN											41	15	70	110	○
TTFR/L 25-80-5 RN						49	25	70	110		○				
TTFR/L 25-110-5 RN					100	150	○								
TTFR/L 25-150-5 RN					140	200	○								
TTFR/L 25-200-5 RN					200	○									

● STOCKABLE ○ NON STOCKABLE

GROOVING