MILLING

Contents

MILLING

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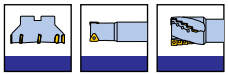


Cutter Page

Tool Selection Guide

Face Mill

Series			MILL·RUSH 3P TF90	MILL·RUSH 6N TF90	MILL·RUSH SCRM90TN	CHASEMILL TFM90AX 2S-TFM90AP TFM90AP	CHASE2MILL TFM90AN
							
Pages			E24-E25	E26-E27	E28	E29-E31	E32
Approach Angle			90°	90°	90°	90°	90°
Max. Depth of Cut(mm)			4.7-15	6.2-9.2	13	5.75-16.1	11.1-15
Diameter Range(mm)			Ø32-Ø250	Ø40-Ø250	Ø50-Ø200	Ø32-Ø200	Ø40-Ø200
Insert			3PK(H)T 0603 3PK(H)T 1004 3PK(H)T 1505 3PK(H)T 1906	6NGU 0604 6NGU 0905	TNMX 1806	AXMT 0602 APCT 0602 APK(C)T 09T3 APK(C)T 1204 APKT 1705	ANMX 1106/1607 ANHX 1106/1607
Application	Facing		●	●	●	●	●
	Shouldering		●	●	●	●	●
	Slotting		●	●	●	●	●
	Ramping		●			●	○
	Helical Ramping		●			●	○
	Side Slotting						
	Profiling						
	Plunging		○	○		○	○
	Step Down Milling		○	○		○	○
	Counter Boring		○	○		○	○
	Drill Mill						

Tool Selection Guide

Face Mill

CHASEALU	CHASE2 QUAD	CHASE2 QUAD	CHASE2 QUAD	LIONMILL	LIONMILL
TFM90XE	**TFM90SNS**	**TFM90SNS-QC**	**TQ90SNS**	**LM90TP**	**LM90SE**
					
E33	E34	E35	E36	E37	E38
90°	90°	90°	90°	90°	90°
16	1	1	1	18	17
Ø40-Ø125	Ø50-Ø250	Ø50-Ø400	Ø250-Ø400	Ø80-Ø315	Ø125-Ø315
XECT 1605	SNEX 1204 SNET 1205	SNEX 1204 SNET 1205	SNEX 1204 SNET 1205	TPKN 2204	SEKX 2107
●	●	●	●	●	●
●	○	○	○	●	●
●				●	○
●					
●					
●				○	
○					

● Recommended, ○ Suitable

Tool Selection Guide

Face Mill

Series			CHASE 2 QUAD TFM90SN TFM88SN	CHASE 2 QUAD TFM75SN	LIONMILL LM75SP	CHASEMILL TFM75AP	LIONMILL LM60SC
							
Pages			E39	E40	E41	E42	E43-E44
Approach Angle			90°, 88°	75°	75°	75°	60°
Max. Depth of Cut(mm)			6.7	9.5	9.5-12.5	3.9	13-18
Diameter Range(mm)			Ø50-Ø200	Ø50-Ø250	Ø80-Ø315	Ø80-Ø125	Ø125-Ø500
Insert			SNGX 1306	SNMX 1306 ENTN-M SNGX 1306 ENTN-M	SPKN 1203 SPKN 1504	APKT 1705	SCKN 2107 SCKN 2708
Application	Facing		●	●	●	●	●
	Shouldering		●	●	●		●
	Slotting		○	○	○	○	○
	Ramping						
	Helical Ramping						
	Side Slotting						
	Profiling						
	Plunging						
	Step Down Milling						
	Counter Boring						
	Drill Mill						

Tool Selection Guide

Face Mill

HEXA 2 MILL	CHASE 2 HEPTA	CHASE 2 HEPTA	CHASE 2 HEPTA	CHASE 2 HEPTA	CHASE 2 QUAD
TFM55AHNS	**14D-F45XN-06**	**14D-F45XN-09**	**14D-F45XNW**	**14D-F45XNW-QC**	**TFM45SN**
					
E45	E46	E47	E48	E49	E50
55°	45°	45°	45°	45°	45°
5	3.5	5	5	1	7
Ø50-Ø160	Ø50-Ø160	Ø63-Ø250	Ø80-Ø315	Ø250-Ø400	Ø50-Ø250
HNC(M)X 0504	XNMU 0605 XNHU 0605	XNMU 0906 XNHU 0906	XNHU 0906	XNHU 0906	SNMX 1306 ANTR SNGX 1306 ANTN
●	●	●	●	●	●
●	●	●	●	●	●
○	○	○	○	○	○
			○	○	○

● Recommended, ○ Suitable

Tool Selection Guide

Face Mill

Series			CHASE 2 QUAD TFM45SN-QC	CHASE 2 QUAD TFM45SNS	CHASE 2 QUAD TFM45SNW	CHASE 2 QUAD TQ45SNW	CHASE 2 MILL TFM45AN
							
Pages			E51	E52-E53	E54	E55	E56
Approach Angle			45°	45°	45°	45°	45°
Max. Depth of Cut(mm)			7	8.8	8.8	8.8	8.4
Diameter Range(mm)			Ø250-Ø400	Ø63-Ø315	Ø80-Ø250	Ø200-Ø400	Ø50-Ø160
Insert			SNMX 1306 ANTR SNGX 1306 ANTN	SNMX 1607 SNHX 1606	SNHX 1606	SNHX 1606	ANHX 1607
Application	Facing		●	●	●	●	●
	Shouldering		●	●	●	●	
	Slotting		○	○	○	○	○
	Ramping		○				
	Helical Ramping						
	Side Slotting						
	Profiling						
	Plunging						
	Step Down Milling						
	Counter Boring						
	Drill Mill						

Tool Selection Guide

Face Mill

HEXA 2 MILL	HEXA 2 MILL	HEXA 2 MILL	CHASE OCTO	CHASE OCTO	LION MILL
TFM45HNS	**TFM45HN**	**TQ45HN**	**TFM43OFS**	**TFM43ZOFW**	**LM45SD**
					
E57	E58	E59	E60	E60	E61
45°	45°	45°	43°	43°	45°
6.1	6.1	6.1	3.5	5	6.5-8.7
Ø63-Ø250	Ø80-Ø315	Ø250-Ø400	Ø32-Ø125	Ø63-Ø200	Ø80-Ø250
HNHX1006	HNHX1006	HNHX1006	OFCW 05T3 OFCT 05T3 OFMT 05T3 RFMT 1404	OFCN 0704 OFMR 0704 OFCR 0704 RFMR 1904	SDKN 1203 SDKN 1504
●	●	●	●	●	●
●	●	●			●
○	○	○	○	○	○

● Recommended, ○ Suitable

Tool Selection Guide

Face Mill

Series			LIONMILL	HEXA2MILL	CHASE2MOLD	CHASEMOLD	CHASEMOLD
			LM45SE	TFM15HNS	TFMRNS	TFMRX	TFMRY
							
Pages			E62	E63	E64-E65	E66-E67	E68-E71
Approach Angle			45°	15°	-	-	-
Max. Depth of Cut(mm)			6.5-8.7	2	5-8	5-10	5-10
Diameter Range(mm)			Ø80-Ø250	Ø80-Ø125	Ø32-Ø200	Ø50-Ø160	Ø32-Ø250
Insert			SEKN 1203 SEKN 1504	HNHX1006	RNMU 1004 RNMU 1205 RNMU 1606	RXM(H)X 1003 RXM(H)X 12T3 RXMX 1604 RXMX 2006	RYM(H)X 0803 RYM(H)X 1004 RYM(H)X 1205 RYM(H)X 1606 RYMX 2007
Application	Facing		●	●	●	●	●
	Shouldering		●		●	●	●
	Slotting		○		●	●	●
	Ramping				●	●	●
	Helical Ramping				●	●	●
	Side Slotting						
	Profiling				●	●	●
	Plunging				○	○	○
	Step Down Milling				○		
	Counter Boring						
	Drill Mill						

Tool Selection Guide

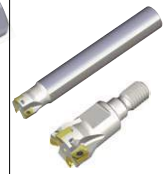
Face Mill

CHASE2 PLUNGE	CHASESPEED	CHASE2 FEED	CHASE2 FEED	CHASE2 FEED	CHASE2 FEED
TPM-...R-PL09	**TFMRN-12CH**	**TFMBL-06**	**TFMBL-09**	**TFMBL-12**	**TFMXD**
					
E72	E73	E74	E75	E76	E77
-	-	-	-	-	-
9	6.0	1	1.5	2	1.0-2.0
Ø40-Ø100	Ø50-Ø80	Ø32-Ø66	Ø32-Ø100	Ø50-Ø125	Ø50-Ø125
PLNG 0904	RNGX 1207 CH	BLMP 0603	BLMP 0904	BLMP 1205	XDMX 08T3 XDMX 1305
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
○	●	●	●	●	●
○	●	●	●	●	●
	●	○	○	○	○
●	○	○	○	○	○
○		○	○	○	○
●		○	○	○	○

● Recommended, ○ Suitable

Tool Selection Guide

End Mill & Modular

Series			MILL·RUSH 3P TE90	MILL·RUSH 6N TE90	CHASEMILL TE90AX-06	CHASEMILL 2S-TE90AP-09	CHASEMILL TE90AP-12
							
Pages			E78-E81	E82-E83	E84-E85	E86-E87	E88-E89
Approach Angle			90°	90°	90°	90°	90°
Max. Depth of Cut(mm)			4.7-15	6.2-9.2	5.75	8.8	12
Diameter Range(mm)			Ø12-Ø50	Ø25-Ø40	Ø8-Ø40	Ø10-Ø40	Ø16-Ø42
Insert			3PK(H)T 0603 3PK(H)T 1004 3PK(H)T 1505 3PK(H)T 1906	6NGU 0604 6NGU 0905	AXMT 0602 AXCT 0602	APKT 09T3 APCT 09T3	APKT 1204 APCT 1204
Application	Facing		●	●	●	●	●
	Shouldering		●	●	●	●	●
	Slotting		●	●	●	●	●
	Ramping		●		●	●	●
	Helical Ramping		●		●	●	●
	Chamfering						
	Profiling						
	Plunging		○	○	○	○	○
	Step Down Milling		○	○	○	○	○
	Counter Boring		○	○	○	○	○
	Drill Mill						

Tool Selection Guide

End Mill & Modular

CHASEMILL	CHASE2MILL	CHASEALU	CHASEQUAD	CHASEQUAD	CHASEQUAD
TE90AP-17	**TE90AN-11/16**	**TE90XE**	**TSF**	**TDM**	**TCF**
					
E90-E91	E92-E93	E94-E95	E96	E97	E98
90°	90°	90°	90°	90°	15°-45°
16.1	11-15	16.1	18-60	12-40	-
Ø20-Ø40	Ø25-Ø50	Ø25-Ø40	Ø12-Ø50	Ø12-Ø50	Ø8.3-Ø38.9
APKT 1705	ANMX 1106/1607 ANHX 1106/1607	XECT 1605	XOMT 0602 SPMG/MT 0904 SPMG/MT 1104 SPMG/MT 1405	XOMT 0602 SPMG/MT 0904 SPMG/MT 1104 SPMG/MT 1405	SPMT 1104 SPMG 1104
●	●	●	●	●	●
●	●	●	●	●	
●	●	●	●	●	
●	○	●	○	●	
●	○	●	○	●	
					●
○	○		○	●	
○	○	●	○	●	
○	○	○	○	●	
				●	

● Recommended, ○ Suitable

Tool Selection Guide

End Mill & Modular

Series			CHASE2MOLD TERNS 	CHASEMOLD TERD/TERX 	CHASEMOLD TERY 	CHASE2PLUNGE TPM-PL09 	FINEBALL TNF 
Pages			E99-E100	E101-E102	E103-E105	E106	E107-E109
Approach Angle			-	-	-	-	-
Max. Depth of Cut(mm)			5-8	2.5-10	4-10	9	-
Diameter Range(mm)			Ø25-Ø50	Ø8-Ø50	Ø16-Ø50	Ø25-Ø42	Ø8-Ø32
Insert			RNMU 1004 RNMU 1205 RNMU 1606	RXM(H)X 1003 RXM(H)X 12T3 RXMX 1604 RXMX 2006	RYM(H)X 0803 RYM(H)X 1004 RYM(H)X 1205 RYM(H)X 1606 RYMX 2007	PLNG 0904	NFB NFR
Application	Facing		●	●	●	●	●
	Shouldering		●	●	●	●	●
	Slotting		●	●	●	●	●
	Ramping		●	●	●	○	●
	Helical Ramping		●	●	●	○	●
	Side Slotting						
	Profiling		●	●	●		●
	Plunging		○	○	○	●	●
	Step Down Milling		○			○	●
	Counter Boring					●	●
	Drill Mill						●

Tool Selection Guide

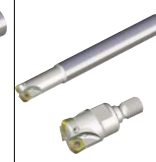
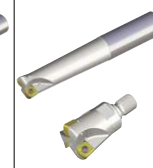
End Mill & Modular

FINEBALL	CHASESPEED	DUETBALL	TRIOBALL	TRIOBALL	CHASE2BALL
TNFR 	**TERP-12CH** 	**2F** 	**3F-W** 	**3F-CN** 	**TDB50X** 
E110-E112	E113	E114-E115	E116	E116	E117-E118
-	-	-	-	-	-
-	6.0	11.8-21.4	16-25	25	59-69
Ø8-Ø25	Ø32-Ø40	Ø16-Ø32	Ø32-Ø50	Ø50	Ø50
NFR	RPGX 1204 CH	2FB APKT 09T3	3FB CNHX 1311 CNHX 1606	3FB500C-M 3FB500P-M CNHX 1606	6RBE 50-M
●	●	●	●	●	●
●	●				
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	○	○	○	○	○
●		○	○	○	○
●					
●					

● Recommended, ○ Suitable

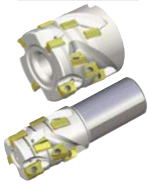
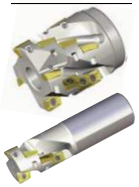
Tool Selection Guide

End Mill & Modular

Series			CHASE 2 FEED TEBL-06	CHASE 2 FEED TEBL-09	CHASE 2 FEED TEBL-12	CHASE 2 FEED TEXD-08	CHASE 2 FEED TEXD-13
							
Pages			E119-E120	E121-E122	E123	E124	E125
Approach Angle			-	-	-	-	-
Max. Depth of Cut(mm)			1.0	1.5	2.0	1.0	2.0
Diameter Range(mm)			Ø16-Ø42	Ø25-Ø42	Ø32-Ø42	Ø20-Ø42	Ø32-Ø42
Insert			BLMP 0603	BLMP 0904	BLMP 1205	XDMX 08T3	XDMX 1305
Application	Facing		●	●	●	●	●
	Shouldering		●	●	●	●	●
	Slotting		●	●	●	●	●
	Ramping		●	●	●	●	●
	Helical Ramping		●	●	●	●	●
	Side Slotting						
	Profiling		○	○	○	○	○
	Plunging		○	○	○	○	○
	Step Down Milling		○	○	○	○	○
	Counter Boring		○	○	○	○	○
	Drill Mill						

Tool Selection Guide

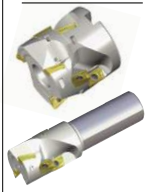
Extended Flute Cutter

Series			CHASE2MILL TES-AN11 TEF-AN11	CHASE2MILL TES-AN16 TEF-AN16	CHASEMILL TEF-AX06	CHASEMILL 2S-TEF-AP09	CHASEMILL TES-AP12 TEF-AP12
							
Pages			E126	E127	E128	E129	E130
Approach Angle			90°	90°	90°	90°	90°
Max. Depth of Cut(mm)			40-60	42-69	16-26	26-42	34-56
Diameter Range(mm)			Ø32-Ø80	Ø40-Ø100	Ø16-Ø25	Ø20-Ø32	Ø25-Ø63
Insert			ANMX 1106 ANHX 1106	ANMX 1607 ANHX 1607	AXMT 0602 AXCT 0602	APKT 09T3 APCT 09T3	APKT 1204
Application	Facing		○	○	○	○	○
	Shouldering		●	●	●	●	●
	Slotting		●	●	●	●	●
	Ramping						
	Helical Ramping		○	○	○	○	○
	Side Slotting						
	Profiling						
	Plunging						
	Step Down Milling						
	Counter Boring						
	Drill Mill						

● Recommended, ○ Suitable

Tool Selection Guide

Extended Flute Cutter

			CHASEMILL	CHASEQUAD			
Series			**TES-AP17** **TEF-AP17** 	**TES** **TEF** 			
Pages			E131	E132			
Approach Angle			90°	90°			
Max. Depth of Cut(mm)			30-88	25-60			
Diameter Range(mm)			Ø32-Ø100	Ø32-Ø100			
Insert			APKT 1705	SPMT(G) 1104 SPMT(G) 1405			
Application	Facing		○	○			
	Shouldering		●	●			
	Slotting		●	●			
	Ramping						
	Helical Ramping		○				
	Side Slotting						
	Profiling						
	Plunging			○			
	Step Down Milling						
	Counter Boring			○			
	Drill Mill						

Tool Selection Guide

Slotting Cutter

Series			TOPSLOT TSM-TS16	TOPSLOT TSM-SL	TOPSLOT TSM-FD-Z	TOPSLOT TSM-FD-ZN08	TOPSLOT TSM-FD -S/W-ZN08
							
Pages			E133-E134	E135-E136	E137-E138	E139	E140
Approach Angle			-	-	-		-
Max. Depth of Cut(mm)			1.2-6	3-6	3-10	10-12	10-14
Diameter Range(mm)			Ø32-Ø80	Ø25-Ø63	Ø63-Ø250	Ø80-Ø125	Ø100-Ø250
Insert			TS16	SLOT	ZNHT...	ZNHU 080	ZNHU 080
Application	Facing		○	○	○	○	○
	Shouldering		○	○	○	○	○
	Slotting		●	●	●	●	●
	Ramping						
	Helical Ramping						
	Side Slotting		●	●	●	●	●
	Profiling						
	Plunging						
	Step Down Milling						
	Counter Boring						
	Drill Mill						

● Recommended, ○ Suitable

Tool Selection Guide

Slotting Cutter

Series			TOPSLOT TSM-FD-ZN11	TOPSLOT TSM-FD-S/W-ZN11	TOPSLOT TSM-FD-S/W-ZN14	TOPSLOT TSM-FF-Z	TOPSLOT TSM-FF-ZN08
							
Pages			E141	E142	E143	E144	E145
Approach Angle			-	-	-	-	-
Max. Depth of Cut(mm)			14-20	14-20	20-26	3-10	10-12
Diameter Range(mm)			Ø125	Ø100-Ø315	Ø125-Ø315	Ø80-Ø160	Ø63-Ø125
Insert			ZNHU 110	ZNHU 110	ZNHU 140	ZNHT...	ZNHU 080
Application	Facing		○	○	○	○	○
	Shouldering		○	○	○	○	○
	Slotting		●	●	●	●	●
	Ramping						
	Helical Ramping						
	Side Slotting		●	●	●	●	●
	Profiling						
	Plunging						
	Step Down Milling						
	Counter Boring						
	Drill Mill						

Tool Selection Guide

Slotting Cutter

TOPSLOT	TOPSLOT	TOPSLOT	TOPSLOT	TSC Slotting Cutter	
TSM-FF-S/W-ZN08 	**TSM-FF-ZN11** 	**TSM-FF-S/W-ZN11** 	**TSM-FF-S/W-ZN14** 	**TSC** 	
E146	E147	E148	E149	E150-E152	
-	-	-	-	-	
10-14	14-20	14-20	20-26	1.6-4.52	
Ø100-Ø200	Ø63-Ø125	Ø100-Ø315	Ø125-Ø315	Ø75-Ø160	
ZNHU 080	ZNHU 110	ZNHU 110	ZNHU 140	TIMC TIMJ TIPV	
○	○	○	○		
○	○	○	○		
●	●	●	●	●	
●	●	●	●		

● Recommended, ○ Suitable

Grades

Grades	ISO	Charactristics & Applications
K10	K05 - K15 N05 - N15 S05 - S15	• General machining of cast iron, aluminum alloys and non-ferrous materials
P30	P25 - P35	• General machining of steel
CT7000	P15 - P25 M15 - M25	• Finish milling of steel and stainless steel
TT6080	K05 - K25 H05 - H25	• General machining for gray and ductile cast iron • Finish and medium machining of hardened steel
TT7080	P05 - P25 K05 - K25	• General milling of steel • Heavy interrupted cutting of cast iron
TT8020	P30 - P50 M30 - M50 S30 - S50	• Interrupted and rough machining of steel and stainless steel • Low speed and interrupted machining of heat-resistant alloy
TT8080	P30 - P50 M30 - M50 S30 - S50	• Interrupted and rough machining of steel and stainless steel • Low speed and interrupted machining of heat-resistant alloy
TT9030	P20 - P40 M20 - M40 S20 - S40	• General machining of steel, stainless steel and heat-resistant alloy
TT9080	P20 - P40 M20 - M40 S20 - S40	• General machining of steel, stainless steel and heat-resistant alloy
TT2510	P05 - P25 H05 - H25	• High speed milling of pre-hardened steel and hardened steel
TT5515	P10 - P30 M10 - M30 K10 - K30 S10 - S30 H10 - H30	• High speed milling of steel and hardened steel • General milling of stainless steel, cast iron and heat-resistant alloy
TT5525	P20 - P40 M20 - M40 S20 - S40	• General machining of steel, stainless steel and heat-resistant alloy
TT6800	K05 - K25 H05 - H25	• General machining for gray and ductile cast iron • Finish and medium machining of hardened steel
TT7800	P30 - P45 M30 - M45	• Rough milling & high speed drilling of carbon & alloy steel • Medium speed milling of stainless steel

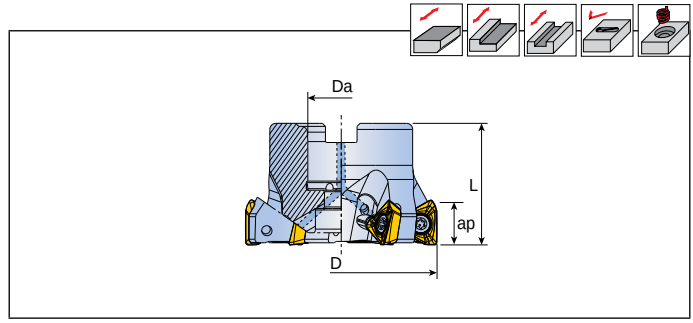
Milling Cutters

Contents

3P TF90-06/10/15

MILL•RUSH

Face Mill

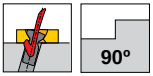


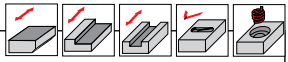
Designation		Dimension (mm)						Arbor Style	Kg	Mounting Bolt	Insert
		D	Da	Da(")	L	ap					
3P TF90-632-16R-06	6	32	16	-	32	4.7	●	A	0.1	SH M8x1.25x25	3PKT 0603...R-M 3PHT 0603...R-AL
732-16R-06	7	32	16	-	32	4.7	●	A	0.1	SH M8x1.25x25	
735-16R-06	7	35	16	-	35	4.7	●	A	0.1	SH M8x1.25x30	
840-16R-06	8	40	16	-	40	4.7	●	A	0.2	SH M8x1.25x30	
840-22R-06	8	40	22	-	40	4.7	●	A	0.2	SH M10x1.5x30	
3P TF90-540-16R-10	5	40	16	-	40	7	●	A	0.3	SH M8x1.25x30	3PK(H)T 1004...R-M 3PK(H)T 1004...R-ML 3PHT 1004...R-AL
640-16R-10	6	40	16	-	40	7	●	A	0.3	SH M8x1.25x30	
650-22R-10	6	50	22	-	40	7	●	A	0.4	SH M10x1.5x30	
750-22R-10	7	50	22	-	40	7	●	A	0.4	SH M10x1.5x30	
863-22R-10	8	63	22	-	40	7	●	A	0.5	SH M10x1.5x30	
963-22R-10	9	63	22	-	40	7	●	A	0.5	SH M10x1.5x30	
3P TF90-450-22R-15	4	50	22	-	40	11	●	A	0.3	SH M10x1.5x30	3PK(H)T 1505...R-M 3PK(H)T 1505...R-ML 3PHT 1505...R-AL
550-22R-15	5	50	22	-	40	11	●	A	0.3	SH M10x1.5x30	
463-22R-15-B	4	63	22	-	40	11	●	A	0.5	SH M10x1.5x30	
663-22R-15	6	63	22	-	40	11	●	A	0.5	SH M10x1.5x30	
480-27R-15-B	4	80	27	-	50	11	●	A	1.0	SH M12x1.75x35	
780-27R-15	7	80	27	25.4	50	11	●	A	1.0	SH M12x1.75x35	
880-27R-15	8	80	27	25.4	50	11	●	A	1.0	SH M12x1.75x35	
6100-32R-15-B	6	100	32	-	50	11	●	A	1.8	LH M16x2x35	
8100-32R-15	8	100	32	31.75	50	11	●/x	A/B	1.9	LH M16x2x35/-	
10100-32R-15	10	100	32	31.75	50	11	●/x	A/B	1.9	LH M16x2x35/-	
7125-40R-15-B	7	125	40	-	63	11	●	A	3.0	SH M20x2.5x40	
10125-40R-15	10	125	40	38.1	63	11	●/x	A/B	3.1	SH M20x2.5x40/-	
12125-40R-15	12	125	40	38.1	63	11	●/x	A/B	3.1	SH M20x2.5x40/-	
12160-40R-15	12	160	40	50.8	63	11	x	C/B	4.4	-	
15160-40R-15	15	160	40	50.8	63	11	x	C/B	4.4	-	
15200-60R-15	15	200	60	47.625	63	11	x	C	6.0	-	
18200-60R-15	18	200	60	-	63	11	x	C	5.8	-	

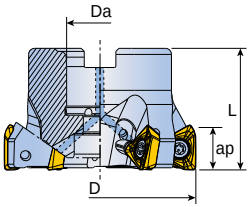
3P TF90-19

MILL•RUSH

Face Mill







Designation		Dimension (mm)						Arbor Style	Kg	Mounting Bolt	Insert
		D	Da	Da(")	L	ap					
3P TF90-463-22R-19	4	63	22	-	40	15	●	A	0.4	SH M10x1.5x30	3PK(H)T 1906...R-M 3PKT 1906...R-ML 3PHT 1906...R-AL
663-22R-19	6	63	22	-	40	15	●	A	0.9	SH M10x1.5x30	
480-27R-19	4	80	27	25.4	50	15	●	A	0.9	SH M12x1.75x35	
780-27R-19	7	80	27	25.4	50	15	●	A	1.0	SH M12x1.75x35	
6100-32R-19	6	100	32	31.75	50	15	●/x	A/B	1.8	LH M16x2x35/-	
8100-32R-19	8	100	32	31.75	50	15	●/x	A/B	2.6	LH M16x2x35/-	
8125-40R-19	8	125	40	38.1	63	15	●/x	A/B	3.0	SH M20x2.5x40/-	
10125-40R-19	10	125	40	38.1	63	15	●/x	A/B	3.1	SH M20x2.5x40/-	
8160-40R-19	8	160	40	50.8	63	15	x	C/B	4.2	-	
12160-40R-19	12	160	40	50.8	63	15	x	C/B	4.3	-	
10200-60R-19	10	200	60	47.625	63	15	x	C	6.0	-	
14200-60R-19	14	200	60	47.625	63	15	x	C	6.0	-	
12250-60R-19	12	250	60	-	63	15	x	C	10.5	-	
16250-60R-19	16	250	60	-	63	15	x	C	10.5	-	

- Ordering example: Metric cutter 3P TF90-780-27R-15, Inch-bore cutter 3P TF90-780-25.4R-15
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

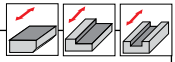
Spare parts

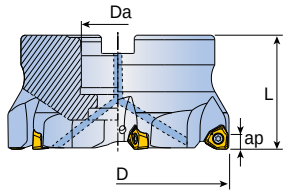
Designation	Screw	Wrench			
					
3P TF90-06	TS 20043I/HG-P	TD6P			
3P TF90-10	TS 25C065I/HG	TD8			
3P TF90-15	TS 40B100I	TD15			
3P TF90-19	TS 45120I	T-T20			

6N TF90-06

MILL RUSH

Face Mill





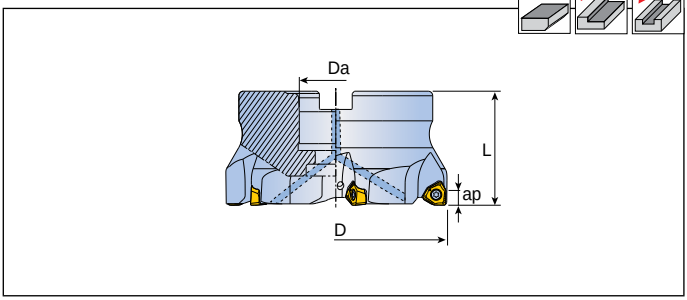
90°

Designation		Dimension (mm)						Arbor Style	Kg	Mounting Bolt	Insert
		D	Da	Da(")	L	ap					
6N TF90-440-16R-06	4	40	16	-	40	6.2	●	A	0.3	SH M8x1.25x30	6NGU 0604...R-M 6NGU 0604...R-ML 6NGU 0604...R-AL
450-22R-06	4	50	22	-	40	6.2	●	A	0.4	LH M10x1.5x25	
650-22R-06	6	50	22	-	40	6.2	●	A	0.4	LH M10x1.5x25	
463-22R-06	4	63	22	-	40	6.2	●	A	0.5	LH M10x1.5x25	
663-22R-06	6	63	22	-	40	6.2	●	A	0.5	LH M10x1.5x25	
763-22R-06	7	63	22	-	40	6.2	●	A	0.5	LH M10x1.5x25	
580-27R-06	5	80	27	25.4	50	6.2	●	A	1.0	SH M12x1.75x35	
780-27R-06	7	80	27	25.4	50	6.2	●	A	1.0	SH M12x1.75x35	
980-27R-06	9	80	27	25.4	50	6.2	●	A	1.0	SH M12x1.75x35	
6100-32R-06	6	100	32	31.75	50	6.2	●/x	A/B	1.9	SH M16x2x35/-	
8100-32R-06	8	100	32	31.75	50	6.2	●/x	A/B	1.9	SH M16x2x35/-	
11100-32R-06	11	100	32	31.75	50	6.2	●/x	A/B	1.9	SH M16x2x35/-	
7125-40R-06	7	125	40	38.1	63	6.2	●/x	A/B	3.2	SH M20x2.5x40/-	
11125-40R-06	11	125	40	38.1	63	6.2	●/x	A/B	3.2	SH M20x2.5x40/-	
14125-40R-06	14	125	40	38.1	63	6.2	●/x	A/B	3.2	SH M20x2.5x40/-	

6N TF90-09

MILL CRUSH

Face Mill



Designation		Dimension (mm)						Arbor Style	Kg	Mounting Bolt	Insert
		D	Da	Da(")	L	ap					
6N TF90-450-22R-09	4	50	22	-	40	9.2	●	A	0.3	LH M10x1.5x25	6NGU 0905...R-M 6NGU 0905...R-ML 6NGU 0905...R-AL
550-22R-09	5	50	22	-	40	9.2	●	A	0.4	LH M10x1.5x25	
463-22R-09	4	63	22	-	40	9.2	●	A	0.5	LH M10x1.5x25	
663-22R-09	6	63	22	-	40	9.2	●	A	0.5	LH M10x1.5x25	
763-22R-09	7	63	22	-	40	9.2	●	A	0.5	LH M10x1.5x25	
580-27R-09	5	80	27	25.4	50	9.2	●	A	1.0	SH M12x1.75x35	
780-27R-09	7	80	27	25.4	50	9.2	●	A	1.1	SH M12x1.75x35	
980-27R-09	9	80	27	25.4	50	9.2	●	A	1.1	SH M12x1.75x35	
6100-32R-09	6	100	32	31.75	50	9.2	●/x	A/B	1.9	LH M16x2x35/-	
8100-32R-09	8	100	32	31.75	50	9.2	●/x	A/B	1.8	LH M16x2x35/-	
11100-32R-09	11	100	32	31.75	50	9.2	●/x	A/B	1.9	LH M16x2x35/-	
7125-40R-09	7	125	40	38.1	63	9.2	●/x	A/B	3.1	SH M20x2.5x40/-	
11125-40R-09	11	125	40	38.1	63	9.2	●/x	A/B	3.1	SH M20x2.5x40/-	
14125-40R-09	14	125	40	38.1	63	9.2	●/x	A/B	3.2	SH M20x2.5x40/-	
12160-40R-09	12	160	40	50.8	63	9.2	x	C/B	4.3	-	
16160-40R-09	16	160	40	50.8	63	9.2	x	C/B	4.3	-	
14200-60R-09	14	200	60	-	63	9.2	x	C	5.9	-	
18200-60R-09	18	200	60	-	63	9.2	x	C	5.9	-	
18250-60R-09	18	250	60	-	63	9.2	x	C	10.7	-	
22250-60R-09	22	250	60	-	63	9.2	x	C	10.8	-	

- Ordering example: Metric cutter 6N TF90-580-27R-09, Inch-bore cutter 6N TF90-580-25.4R-09
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

E158 | Cutting Condition E219 | Arbor Style E234-E235

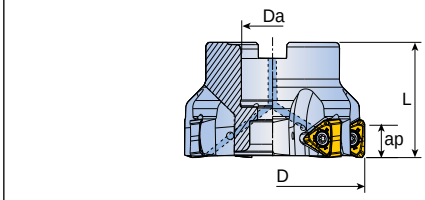
Spare parts

Designation	Screw	Wrench			
6N TF90-06	TS 30085I/HG	TD9			
6N TF90-09	TS 40B100I		T-T15		

SCRM90TN-18

MILL RUSH

Face Mill



Designation		Dimension (mm)					Arbor Style		Kg	Mounting Bolt	Insert
		D	Da	Da(")	L	ap					
SCRM90TN 450-16R-18	4	50	16	-	40	13	●	A	0.3	SH M8x1.25x30	TNMX 1806 PNTR-M
563-22R-18	5	63	22	-	40	13	●	A	0.5	SH M10x1.5x30	
580-27R-18	5	80	27	25.4	50	13	●	A	1.1	SH M12x1.75x35	
780-27R-18	7	80	27	25.4	50	13	●	A	1.1	SH M12x1.75x35	
6100-32R-18-B	6	100	32	31.75	50	13	●/x	A/B	2.0	SH M16x2x35/-	
8100-32R-18	8	100	32	31.75	50	13	●/x	A/B	2.0	SH M16x2x35/-	
7125-40R-18-B	7	125	40	38.1	63	13	●/x	A/B	3.4	SH M20x2.5x40/-	
10125-40R-18	10	125	40	38.1	63	13	●/x	A/B	3.3	SH M20x2.5x40/-	
10160-40R-18	10	160	40	50.8	63	13	x	C	4.5	-	
14160-40R-18	14	160	40	50.8	63	13	x	C	4.5	-	
16200-60R-18	16	200	60	47.625	63	13	x	C	6.2	-	

- Ordering example: Metric cutter SCRM90TN 580 27R-18, Inch-bore cutter SCRM90TN 580-25.4R-18
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

E189 Cutting Condition E219 Arbor Style E234-E235

Spare parts

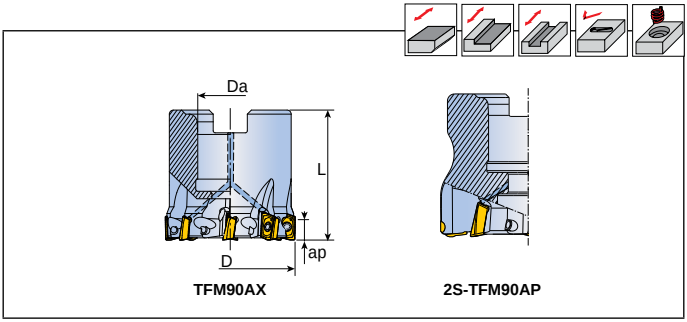
Designation	Screw	Wrench			
					
SCRM90TN-18	TS 40B100I	T-T15			

TFM90AX/2S-TFM90AP

CHASEMILL

Face Mill

90º



Designation			Dimension (mm)					Arbor Style		Kg	Mounting Bolt	Insert
			D	Da	Da(")	L	ap					
TFM90AX	**832-16R-06**	8	32	16	-	32	5.75	●	A	0.1	SH M8x1.25x25	AXMT 0602 PER-EM AXMT 0602...R-EM AXMT 0602R-HF AXCT 0602...R-AL
	1040-16R-06	10	40	16	-	40	5.75	●	A	0.2	SH M8x1.25x25	
	1040-22R-06	10	40	22	-	40	5.75	●	A	0.2	SH M10x1.5x30	
2S-TFM90AP	**540-16R-09**	5	40	16	-	40	8.8	●	A	0.3	SH M8x1.25x30	APKT 09T3 PER-EM/M APKT 09T3...R-EM APCT 09T3 PER-ML APCT 09T3 PER-AL APKT 09T3R-HF
	640-16R-09	6	40	16	-	40	8.8	●	A	0.2	SH M8x1.25x30	
	550-22R-09-B	5	50	22	-	40	8.8	●	A	0.3	SH M10x1.5x30	
	650-22R-09	6	50	22	-	40	8.8	●	A	0.3	SH M10x1.5x30	
	750-22R-09	7	50	22	-	40	8.8	●	A	0.3	SH M10x1.5x30	
	863-22R-09	8	63	22	-	40	8.8	●	A	0.5	SH M10x1.5x30	
	1080-27R-09	10	80	27	25.4	50	8.8	●	A	1.1	SH M12x1.75x35	

- Ordering example: Metric cutter 2S-TFM90AP 1080-27R-09, Inch-bore cutter 2S-TFM90AP 1080-25.4R-09
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

E161,E164 | Ramping Data E200-E204 | Cutting Condition E220-E221 | Arbor Style E234-E235

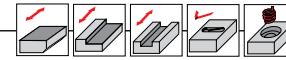
Spare parts

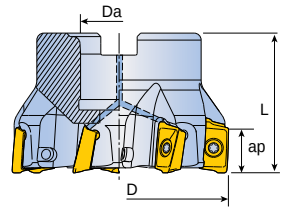
Designation	Screw	Wrench		
TFM90AX	TS 18041I/HG	TD6P		
2S-TFM90AP	TS 25055I/HG(Ø10-30),TS 25055I/HG(Ø32-)	TD8		

TFM90AP-12

CHASEMILL

Face Mill





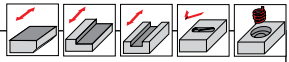
90°

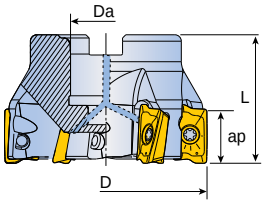
Designation			Dimension (mm)					Arbor Style	Kg	Mounting Bolt	Insert
			D	Da	Da(")	L	ap				
TFM90AP	**440-16R-12**	4	40	16	-	40	12	●	A	0.2	SH M8x1.25x25	APKT 1204 PER-EM/ EL/EML APKT 1204 PER-SM APKT 120R-EM APCT 1204R-ML APCT 1204R-AL APKT 1204R-HF
	540-16R-12	5	40	16	-	40	12	●	A	0.2	SH M8x1.25x25	
	550-22R-12	5	50	22	-	40	12	●	A	0.3	SH M10x1.5x30	
	650-22R-12	6	50	22	-	40	12	●	A	0.3	SH M10x1.5x30	
	563-22R-12	5	63	22	-	40	12	●	A	0.5	SH M10x1.5x30	
	663-22R-12	6	63	22	-	40	12	●	A	0.5	SH M10x1.5x30	
	763-22R-12	7	63	22	-	40	12	●	A	0.5	SH M10x1.5x30	
	680-27R-12	6	80	27	-	50	12	●	A	1.0	SH M12x1.75x30	
	880-27R-12	8	80	27	25.4	50	12	●	A	1.0	SH M12x1.75x30	

TFM90AP-17

CHASEMILL

Face Mill





90°

Designation			Dimension (mm)					Arbor Style	Kg	Mounting Bolt	Insert
			D	Da	Da(")	L	ap				
TFM90AP	**440-16R-17**	4	40	16	-	40	16.1	●	A	0.3	SH M8x1.25x30	APKT 1705 PER-M APKT 1705 PER -EM/EL/EML APKT 1705 PER-SM APKT 1705...R-EM APKT 1705 PER-AL
	350-22R-17-B	3	50	22	-	40	16.1	●	A	0.4	SH M10x1.5x30	
	450-22R-17-B	4	50	22	-	40	16.1	●	A	0.3	SH M10x1.5x30	
	550-22R-17	5	50	22	-	40	16.1	●	A	0.4	SH M10x1.5x30	
	463-22R-17-B	4	63	22	-	40	16.1	●	A	0.5	SH M10x1.5x30	
	663-22R-17	6	63	22	25.4	40	16.1	●	A	0.5	SH M10x1.5x30	
	480-27R-17-B	4	80	27	-	50	16.1	●	A	0.8	SH M12x1.75x35	
	680-27R-17	6	80	27	-	50	16.1	●	A	0.9	SH M12x1.75x35	
	780-27R-17	7	80	27	25.4	50	16.1	●	A	0.9	SH M12x1.75x35	
	6100-32R-17-B	6	100	32	-	50	16.1	●	A	1.3	LH M16x2x35	
	8100-32R-17	8	100	32	31.75	50	16.1	●/x	A/B	1.5	LH M16x2x35/-	
	7125-40R-17-B	7	125	40	-	63	16.1	●	A	2.9	SH M20x2.5x40	
	8125-40R-17	8	125	40	-	63	16.1	●	A	3.0	SH M20x2.5x40	
	9125-40R-17	9	125	40	38.1	63	16.1	●/x	A/B	3.1	SH M20x2.5x40	
	8160-40R-17-B	8	160	40	-	63	16.1	x	C	4.1	-	
	10160-40R-17	10	160	40	50.8	63	16.1	x	C/B	4.2	-	
	12200-60R-17	12	200	60	47.625	63	16.1	x	C	6.1	-	

- Ordering example: Metric cutter TFM90AP 663-22R-17, Inch-bore cutter TFM90AP 663-25.4R-17
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

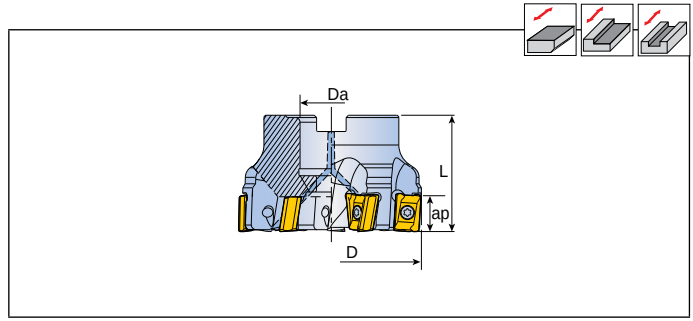
Spare parts

Designation	Screw	Wrench		
				
TFM90AP-12	TS 35A070I/HG(Ø16-25),TS 35A088I/HG(Ø32-)	TD10P		
TFM90AP-17(Ø40-Ø63)	TS 40093I/HG		T-T15	
TFM90AP-17(Ø80-)	TS 40120I/HG		T-T15	

TFM90AN-11/16

CHASE2MILL

Face Mill



90°

Designation			Dimension (mm)						Arbor Style	Kg	Mounting Bolt	Insert
			D	Da	Da(")	L	ap					
TFM90AN	**440-16R-11**	4	40	16	-	40	11.1	●	A	0.2	SH M8x1.25x30	ANMX 110608R-M ANHX 1106...R-M/AL
	450-22R-11	4	50	22	-	40	11.1	●	A	0.3	SH M10x1.5x30	
	650-22R-11	6	50	22	-	40	11.1	●	A	0.3	SH M10x1.5x30	
	563-22R-11	5	63	22	-	40	11.1	●	A	0.6	SH M10x1.5x30	
	763-22R-11	7	63	22	25.4	40	11.1	●	A	0.6	SH M10x1.5x30/LH M12x1.75x30	
	880-27R-11	8	80	27	25.4	50	11.1	●	A	1.1	SH M12x1.75x35	
	1080-27R-11	10	80	27	25.4	50	11.1	●	A	1.1	SH M12x1.75x35	
	9100-32R-11	9	100	32	-	50	11.1	●	A	2.0	SH M16x2x35	
	12100-32R-11	12	100	32	-	50	11.1	●	A	2.0	SH M16x2x35	
	10125-40R-11	10	125	40	-	63	11.1	●	A	3.3	SH M20x2.5x40	
	14125-40R-11	14	125	40	-	63	11.1	●	A	3.4	SH M20x2.5x40	
TFM90AN	**350-22R-16**	3	50	22	-	40	15	●	A	0.4	SH M10x1.5x30	ANMX 160708R-M ANHX 160...R-M/AL ANHX 160708R-ML/MR/SM
	450-22R-16	4	50	22	-	40	15	●	A	0.4	SH M10x1.5x30	
	463-22R-16	4	63	22	-	40	15	●	A	0.5	SH M10x1.5x30	
	663-22R-16	6	63	22	-	40	15	●	A	0.5	SH M10x1.5x30	
	580-27R-16	5	80	27	25.4	50	15	●	A	0.8	SH M12x1.75x35	
	780-27R-16	7	80	27	25.4	50	15	●	A	0.9	SH M12x1.75x35	
	5100-32R-16	5	100	32	31.75	50	15	●/x	A/B	1.3	SH M16x2x35/-	
	8100-32R-16	8	100	32	31.75	50	15	●/x	A/B	1.5	SH M16x2x35/-	
	7125-40R-16	7	125	40	38.1	63	15	●/x	A/B	3.9	SH M20x2.5x40/-	
	10125-40R-16	10	125	40	38.1	63	15	●/x	C/B	3.7	SH M20x2.5x40/-	
	8160-40R-16	8	160	40	50.8	63	15	x	C	5.0	-	
	12160-40R-16	12	160	40	-	63	15	x	C	5.3	-	
	14200-60R-16	14	200	60	-	63	15	x	C	7.0	-	

- Ordering example: Metric cutter TFM90AN 763-22R-11, Inch-bore cutter TFM90AN 763-25.4R-11
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole
  SH M10x1.5x30-C: Bolt with hole

E160 Ramping Data E199 Cutting Condition E219-E220 Arbor Style E234-E235

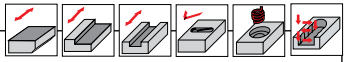
Spare parts

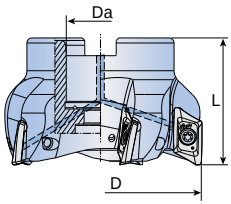
Designation	Screw	Wrench			
TFM90AN-11	TS 35A088I/HG	TD10P			
TFM90AP-16	TS 40120I		T-T15		

TFM90XE-16

CHASEALU

Face Mill





90°

Designation		Dimension (mm)				Max RPM	Kg	Mounting Bolt	Insert
		D	Da	L					
TFM90XE 340-16R-16	3	40	16	50	●	30,000	0.2	SH M8 x 1.25 x 35-C	XECT 1605...R-AL XECT 1605...WR-AL
450-22R-16	4	50	22	50	●	27,000	0.3	SH M10 x 1.5 x 30-C	
563-22R-16	5	63	22	50	●	24,000	0.5	SH M10 x 1.5 x 30-C	
580-27R-16	5	80	27	50	●	21,000	0.9	LH M12 x 1.75 x 30-C	
6100-32R-16	6	100	32	63	●	19,000	1.6	SH M16 x 2 x 35-C	
7125-40R-16	7	125	40	63	●	17,000	2.5	SH M20 x 2.5 x 40-C	

• Cutter body for 'XECT 16' insert with corner radius more than 3.2mm should be modified accordingly body "R"=insert "R"-0.3mm

E192 | Ramping Data E205-E206 | Cutting Condition E222 | Arbor Style E234-E235

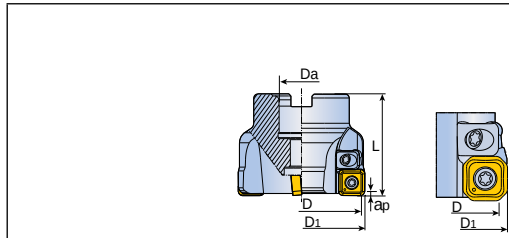
Spare parts

Designation	Screw	Wrench			
TFM90XE-16	TS 40093I/HG	T-T15			

TFM90SNS-12

CHASE 2 QUAD

Face Mill



Designation		Dimension (mm)					Arbor Style	Kg	Mounting Bolt	Insert
		D	D1	Da	L	ap				
TFM90SNS 350-22R-12	3	43.35	50	22	50	1	A	0.5	SH M10x1.5x40	SNEX 1204-W SNEX 1204P-W SNEX 1204R-CBN/T22 SNET 1205-W
463-22R-12	4	56.35	63	22	50	1	A	0.7	SH M10x1.5x40	
680-27R-12	6	73.35	80	27	50	1	A	1.0	SH M12x1.75x35	
8100-32R-12	8	93.35	100	32	63	1	A	2.0	SH M16x2x30	
12100-32R-12	12	93.35	100	32	63	1	A	2.0	SH M16x2x30	
10125-40R-12	10	118.35	125	40	63	1	B	2.9	-	
16125-40R-12	16	118.35	125	40	63	1	B	2.9	-	
12160-40R-12	12	153.35	160	40	63	1	C	4.4	-	
20160-40R-12	20	153.35	160	40	63	1	C	4.4	-	
16200-60R-12	16	193.35	200	60	63	1	C	6.0	-	
24200-60R-12	24	193.35	200	60	63	1	C	6.0	-	
30250-60R-12	30	243.35	250	60	63	1	C	10.8	-	

• Recommend to very stable machining condition at cast iron & steel

E181 Cutting Condition E222 Arbor Style E234-E235 Technical Guide TE9-TE10

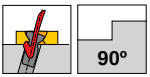
Spare parts

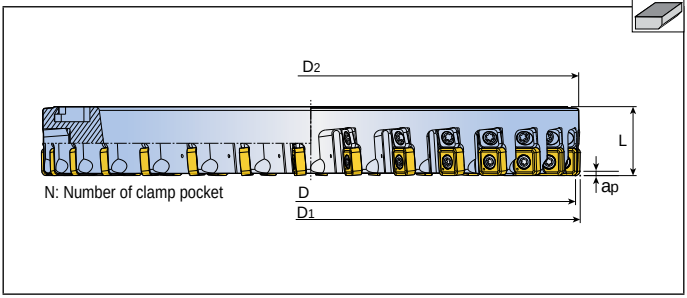
Designation	Screw	Adj. Wedge	Adj. Screw	Wrench	
TFM90SNS-12	TS 35C110I	AJS 1010R	AWS 0620	T-T15	

TFM90SNS-12-QC

CHASE 2 QUAD

Face Mill: New Quick Change Type Cutter





Designation		Dimension (mm)						Kg	Adaptor	Insert
		D	D1	D2	L	N	ap			
TFM90SNS 20250-12-QC	20	243.35	250	248.59	32	4	1	3.6	TQCA D250	SNEX 1204-W SNEX 1204P-W SNEX 1204R-CBN/T22 SNET 1205-W
30250-12-QC	30	243.35	250	248.59	32	4	1	3.6	TQCA D250	
24315-12-QC	24	308.35	315	313	38	4	1	8.1	TQCA D315	
36315-12-QC	36	308.35	315	313	38	4	1	8.1	TQCA D315	
28355-12-QC	28	348.35	355	353	38	8	1	9.2	TQCA D355	
42355-12-QC	42	348.35	355	353	38	8	1	9.2	TQCA D355	
32400-12-QC	32	393.35	400	398	38	8	1	10.5	TQCA D400	
48400-12-QC	48	393.35	400	398	38	8	1	10.6	TQCA D400	

• Recommend to very stable machining condition at cast iron & steel

E181 Cutting Condition E222 Technical Guide TE8-TE10

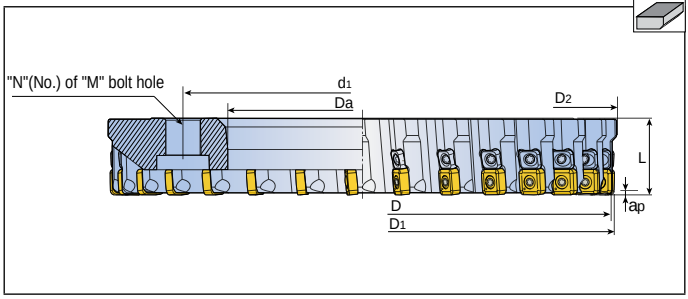
Spare parts

Designation	Screw	Adj. Wedge	Adj. Screw	Wrench	
TFM90SNS-12-QC	TS 35C110I	AJS 1010R	AWS 0620	T-T15	

TQ90SNS-12

CHASE 2 QUAD

Face Mill: Quick Change Type Cutter



90°

Designation		Dimension (mm)									Kg	Adapter	Insert
		D	D1	D2	Da	d1	L	M	N	ap			
TQ90SNS 20250R-12	20	243.35	250	253	133.35	177.8	38	M16	4	1	7.5	QA 10 K/M	SNEX 1204-W SNEX 1204P-W SNEX 1204R-CBN/T22 SNET 1205-W
30250R-12	30	243.35	250	253	133.35	177.8	38	M16	4	1	7.5	QA 10 K/M	
24315R-12	24	308.35	315	317	146.05	215.9	38	M20	4	1	14.0	QA 12 K/M	
36315R-12	36	308.35	315	317	146.05	215.9	38	M20	4	1	14.0	QA 12 K/M	
28355R-12	28	348.35	355	357	215.9	260.4	38	M20	6	1	12.8	QA 14 K/M	
42355R-12	42	348.35	355	357	215.9	260.4	38	M20	6	1	12.8	QA 14 K/M	
32400R-12	32	393.35	400	402	254	304.8	38	M20	6	1	16.0	QA 16 K/M	
48400R-12	48	393.35	400	402	254	304.8	38	M20	6	1	16.0	QA 16 K/M	

• Recommend to very stable machining condition at cast iron & steel

E181 Cutting Condition E222 Technical Guide TE6-TE10

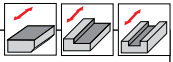
Spare parts

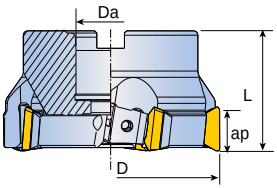
Designation	Screw	Adj. Wedge	Adj. Screw	Wrench	
TQ90SNS	TS 35C110I	AJS 1010R	AWS 0620	T-T15	

LM90TP-22

LIONMILL

Face Mill





90°

Designation		Dimension (mm)				Arbor Style	Kg	Mounting Bolt	Insert
		D	Da	L	ap				
LM90TP 480-25.4R-22	4	80	25.40	50	16	A	1.2	SH M12x1.75x35	TPKN 2204 PD...
5100-31.75R-22	5	100	31.75	55	16	A	2.2	SH M16x2x35	
6125-38.1R-22	6	125	38.10	63	16	B	3.0	-	
8160-50.8R-22	8	160	50.80	63	16	B	4.7	-	
10200-47.625R-22	10	200	47.625	63	16	C	6.4	-	
12250-47.625R-22	12	250	47.625	63	16	C	10.7	-	
14315-47.625R-22	14	315	47.625	63	16	D	16.7	-	

• Metric bore cutter is available upon request

E189 | Cutting Condition E230 | Arbor Style E234-E235

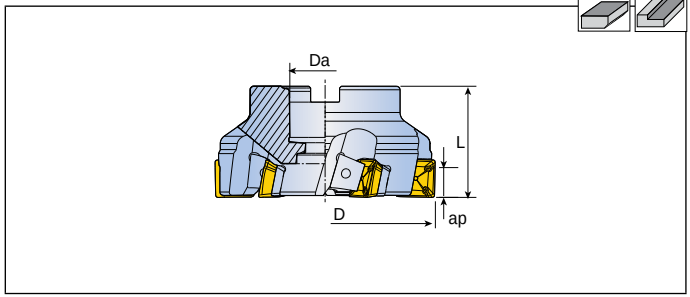
Spare parts

Designation	Carbide Shim	Wedge	Shim Screw	Wedge Screw	Wrench	Shim Screw Wrench
				(1)		(2)
LM90TP-22	TSTP 22N	WPA 8	TS 40B100I	TS 80200W TS 80160W(1)	T-W4	T-T15

• (1)TS 80160W is for D80 cutter • The shim screw wrench T-T15(2) shall be ordered separately

LM90SE-21

Face Mill



90°

Designation		Dimension (mm)					Arbor Style	Kg	Insert
		D	Da	Da(")	L	ap			
LM90SE 6125-40R-21	6	125	40	38.1	63	17	A/B	3.4	SEKX 2107 PETR-M
8160-40R-21	8	160	40	50.8	63	17	C/B	5.3	
10200-60R-21	10	200	60	47.625	80	17	C	9.6	
12200-60R-21	12	200	60	47.625	80	17	C	9.5	
12250-60R-21	12	250	60	47.625	80	17	C	16.4	
14250-60R-21	14	250	60	47.625	80	17	C	16.4	
12315-60R-21	12	315	60	47.625	80	17	D	21.0	
16315-60R-21	16	315	60	47.625	80	17	D	20.7	

• Ordering example : Metric bore cutter LM90SE 6125-40R-21, Inch-bore cutter LM90SE 6125-38.1R-21

E179 | Cutting Condition E229 | Arbor Style E234-E235

Spare parts

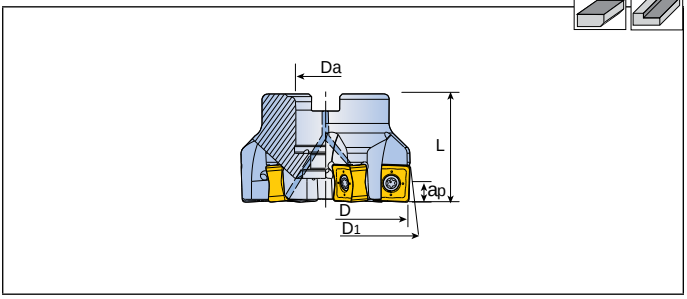
Designation	Shim	Shim Screw	Wedge	Wedge Screw	Wedge Screw Wrench	Shim Screw Wrench (1)
LM90SE-21	TSSE 21N-ST	TS 50C130I/HG	WPA 8-SE16	TS 80160W	T-W4	T-T20
				TS 80200W		

• The shim screw wrench(1) shall be ordered separately • Wedge screw TS 80160W : Diameter 125 – 200 mm
TS 80200W : Diameter 250 – 315 mm

TFM90SN/TFM88SN-13

CHASE 2 QUAD

Face Mill



Designation		Dimension (mm)						Arbor Style	Kg	Mounting Bolt	Insert
		D	D1	Da	Da(")	L	ap				
TFM90SN 550-22R-13	5	50	50.7	22	-	40	6.7	●	A	0.3	SH M10x1.5x30	SNGX 130608-M/MM/ML SNGX 130612-M/MM/ML SNGX 130616-M/MM SNGX 130620-M SNGX 130608-CE SNGX 1306 PNTN-W
663-22R-13	6	63	63.7	22	-	40	6.7	●	A	0.5	SH M10x1.5x30	
780-27R-13	7	80	80.7	27	25.4	50	6.7	●	A	1.2	SH M12x1.75x35	
980-27R-13*	9	80	80.7	27	25.4	50	6.7	●	A	1.2	SH M12x1.75x35	
8100-32R-13	8	100	100.8	32	31.75	50	6.7	●/x	A/B	1.9	SH M16x2x30/-	
13100-32R-13*	13	100	100.8	32	31.75	50	6.7	●/x	A/B	1.9	SH M16x2x30/-	
10125-40R-13	10	125	125.8	40	38.1	63	6.7	x	B	2.8	-	
16125-40R-13*	16	125	125.8	40	-	63	6.7	x	B	2.8	-	
TFM88SN 550-22R-13	5	50	51.2	22	-	40	6.7	●	A	0.3	SH M10x1.5x30	SNGX 1306 ZN-M/ML SNGX 1306C08 ZN-M SNGX 1306 ZNTN-W
663-22R-13	6	63	64.2	22	-	40	6.7	●	A	0.5	SH M10x1.5x30	
780-27R-13	7	80	81.2	27	25.4	50	6.7	●	A	1.2	SH M12x1.75x35	
980-27R-13*	9	80	81.2	27	25.4	50	6.7	●	A	1.2	SH M12x1.75x35	
8100-32R-13	8	100	101.2	32	31.75	50	6.7	●/x	A/B	1.9	SH M16x2x30/-	
11100-32R-13*	11	100	101.2	32	31.75	50	6.7	●/x	A/B	1.9	SH M16x2x30/-	
10125-40R-13	10	125	126.1	40	38.1	63	6.7	x	B	2.8	-	
14125-40R-13*	14	125	126.1	40	-	63	6.7	x	B	2.8	-	
12160-40R-13	12	160	161.1	40	50.8	63	6.7	x	C	4.2	-	
18160-40R-13*	18	160	161.1	40	-	63	6.7	x	C	4.2	-	
14200-60R-13	14	200	201.1	60	47.625	63	6.7	x	C	6.0	-	
22200-60R-13*	22	200	201.1	60	-	63	6.7	x	C	6.0	-	

- *: Fine pitch cutter for cast iron
- Ordering example: Metric cutter TFM90SN 780-27R-13, Inch-bore cutter TFM90SN 780-25.4R-13
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

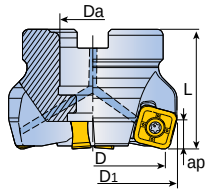
Spare parts

Designation	Screw	Wrench			
					
TFM90SN	TS 40B100I	T-T15			
TFM88SN	TS 40B100I	T-T15			

TFM75SN-13

CHASE 2 QUAD

Face Mill



75°

Designation		Dimension (mm)						Arbor Style	Kg	Mounting Bolt	Insert
		D	D1	Da	Da(")	L	ap				
TFM75SN 450-22R-13	4	50	55.4	22	-	40	9.5	•	A	0.4	LH M10x1.5x25	SNGX 1306 ENTN-M SNMX 1306 ENTN-M SNMX 1306 XTN
650-22R-13	6	50	55.4	22	-	40	9.5	•	A	0.4	LH M10x1.5x25	
663-22R-13	6	63	68.4	22	-	40	9.5	•	A	0.6	LH M10x1.5x25	
863-22R-13	8	63	68.4	22	-	40	9.5	•	A	0.6	LH M10x1.5x25	
580-25.4R-13B	5	80	85.4	-	25.4	50	9.5	•	A	1.3	LH M12x1.75x30	
780-27R-13	7	80	85.4	27	-	50	9.5	•	A	1.3	LH M12x1.75x30	
1080-27R-13	10	80	85.4	27	-	50	9.5	•	A	1.3	LH M12x1.75x30	
6100-31.75R-13B	6	100	105.4	-	31.75	50	9.5	X	B	1.9	-	
8100-32R-13	8	100	105.4	32	-	50	9.5	•	A	1.9	LH M16x2x35	
8125-38.1R-13B	8	125	130.3	-	38.1	63	9.5	X	B	3.2	-	
12100-32R-13	12	100	105.4	32	-	50	9.5	•	A	2.0	LH M16x2x35	
10125-40R-13	10	125	130.3	40	-	63	9.5	•	A	3.2	SH M20x2.5x40	
16125-40R-13	16	125	130.4	40	-	63	9.5	•	A	3.3	SH M20x2.5x40	
12160-40R-13	12	160	165.3	40	-	63	9.5	X	C	4.7	-	
12160-50.8R-13B	12	160	165.3	-	50.8	63	9.5	X	B	4.7	-	
20160-40R-13	20	160	165.4	40	-	63	9.5	X	C	4.8	-	
16200-60R-13	16	200	205.3	60	-	63	9.5	X	C	6.4	-	
22200-60R-13	22	200	205.4	60	-	63	9.5	X	C	6.4	-	
20250-60R-13	20	250	255.3	60	-	63	9.5	X	C	11.7	-	

• Mounting bolts supplied do not have coolant through facility.
If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
Ex) SH M10x1.5x30: Bolt without hole.
SH M10x1.5x30-C: Bolt with hole

E182 | Cutting Condition E223 | Arbor Style E234-E235

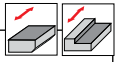
Spare parts

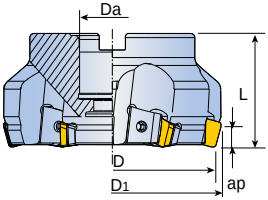
Designation	Screw	Wrench			
TFM75SN	TS 40B100I	T-T15			

LM75SP-12/15

LIONMILL

Face Mill





75°

Designation		Dimension (mm)					Arbor Style	Kg	Mounting Bolt	Insert
		D	D1	Da	L	ap				
LM75SP	**580-25.4 R-12**	5	80	85.4	25.4	50	9.5	A	1.5	SH M12x1.75x35	SPKN 1203 ED...
	6100-31.75R-12	6	100	105.4	31.75	55	9.5	A	2.4	LH M16x2x35	
	8125-38.1R-12	8	125	130.4	38.1	63	9.5	B	3.2	-	
	10160-50.8R-12	10	160	165.4	50.8	63	9.5	B	5.0	-	
	12200-47.625R-12	12	200	205.4	47.625	63	9.5	C	6.9	-	
	16250-47.625R-12	16	250	255.4	47.625	63	9.5	C	11.3	-	
	20315-47.625R-12	20	315	320.4	47.625	63	9.5	D	17.6	-	
LM75SP	**580-25.4R-15**	5	80	86.97	25.4	55	12.5	A	1.5	SH M12x1.75x35	SPKN 1504 ED...
	5100-31.75R-15	5	100	106.96	31.75	55	12.5	A	2.4	LH M16x2x35	
	8125-38.1R-15	8	125	131.95	38.1	63	12.5	B	3.1	-	
	10160-50.8R-15	10	160	166.94	50.8	63	12.5	B	5.0	-	
	12200-47.625R-15	12	200	206.94	47.625	63	12.5	C	6.9	-	
	16250-47.625R-15	16	250	256.93	47.625	63	12.5	C	10.78	-	
	20315-47.625R-15	20	315	321.93	47.625	63	12.5	D	16.88	-	

• Metric bore cutter is available upon request

E186 | Cutting Condition E229 | Arbor Style E234-E235

Spare parts

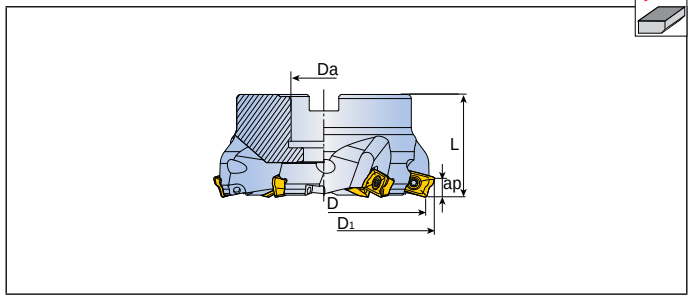
Designation	Carbide Shim	Wedge	Shim Screw	Wedge Screw	Wrench	Shim Screw Wrench
LM75SP-12	TSSP 12N	WPA 8	TS 40B100I	TS 80200W TS 80160W(1)	T-W4	T-T15
LM75SP-15	TSSP 15N	WPA 8	TS 40B100I			

• (1) TS 80160W is for D80 cutter • The shim screw wrench T-T15(2) shall be ordered separately

TFM75AP-17

CHASEMILL

Face Mill



75°

Designation			Dimension (mm)						Arbor Style	Kg	Mounting Bolt	Insert
			D	D1	Da	Da(")	L	ap				
TFM75AP	**580-27R-17**	5	80	87.82	27	25.4	50	3.9	A	0.8	SH M12x1.75x35	APKT 1705 PER-M APKT 1705 PER-EM
	6100-32R-17	6	100	107.82	32	31.75	50	3.9	B	1.3	-	
	7125-40R-17	7	125	132.82	40	38.1	63	3.9	B	3.5	-	

- Cutter for the other corner of APKT inserts
- Ordering example: Metric cutter TFM75AP 580-27R-17, Inch-bore cutter TFM75AP 580-25.4R-17

E163 Cutting Condition E221 Arbor Style E234-E235

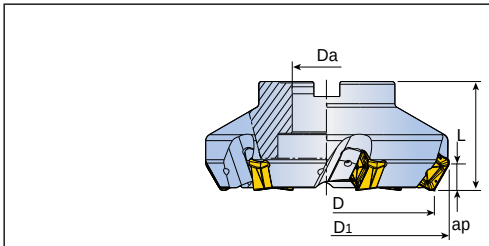
Spare parts

Designation	Screw	Wrench			
TFM75AP-17	TS 40120I/HG	T-T15			

LM60SC-21

LIONMILL

Face Mill



60°

Designation		Dimension (mm)						Arbor Style	Kg	Insert
		D	D1	Da	Da(")	L	ap			
LM60SC 5125-40R-21	5	125	141.2	40	38.1	63	13	B	4.1	SCKN 2107 DDTR-HE
8125-40R-21	8	125	141.2	40	38.1	63	13	B	4.1	SCKN 2107 DDTR-HS
8160-40R-21	8	160	176.1	40	50.8	63	13	C/B	6.5	
10160-40R-21	10	160	176.1	40	50.8	63	13	C/B	6.4	
10200-60R-21	10	200	216.1	60	47.625	80	13	C	11.8	
12200-60R-21	12	200	216.1	60	47.625	80	13	C	11.8	
12250-60R-21	12	250	266	60	47.625	80	13	C	19.2	
14250-60R-21	14	250	266	60	47.625	80	13	C	19.1	
16250-60R-21	16	250	266	60	47.625	80	13	C	19.1	
12315-60R-21	12	315	331	60	47.625	80	13	D	25.0	
16315-60R-21	16	315	331	60	47.625	80	13	D	25.0	
18315-60R-21	18	315	331	60	47.625	80	13	D	25.0	

• Ordering example: Metric-bore cutter LM60SC 5125-40R-21, inch-bore cutter LM60SC 5125-38.1R-21

E178 | Cutting Condition E228 | Arbor Style E234-E235

Spare parts

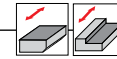
Designation	Shim	Shim Screw	Wedge	Wedge Screw	Wedge Screw Wrench	Shim Screw Wrench (1)
LM60SC-21	TSSC 21R-ST	TS 50C130I/HG	WSC 8R-21	TS 80200W	T-W4	T-T20

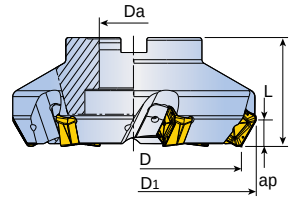
• The shim screw wrench(1) shall be ordered separately

LM60SC-27

LIONMILL

Face Mill





60°

Designation		Dimension (mm)						Arbor Style	Kg	Insert
		D	D1	Da	Da(")	L	ap			
LM60SC 5125-40R-27	5	125	146	40	38.1	63	18	B	4.6	SCKN 2708 DDTR-HE
6160-40R-27	6	160	181	40	50.8	80	18	C/B	8.7	SCKN 2708 DDTR-HS
8160-40R-27	8	160	181	40	50.8	80	18	C/B	8.4	
8200-60R-27	8	200	220.9	60	47.625	80	18	C	12.4	
10200-60R-27	10	200	220.9	60	47.625	80	18	C	12.3	
10250-60R-27	10	250	270.8	60	47.625	80	18	C	19.9	
12250-60R-27	12	250	270.8	60	47.625	80	18	C	19.8	
12315-60R-27	12	315	335.8	60	47.625	80	18	D	26.0	
15315-60R-27	15	315	335.8	60	47.625	80	18	D	25.9	
15400-60R-27*	15	400	420.9	60	47.625	80	18	D	44.0	
19400-60R-27*	19	400	420.9	60	47.625	80	18	D	43.0	
18500-60R-27*	18	500	520.9	60	47.625	80	18	D	65.0	
24500-60R-27*	24	500	520.9	60	47.625	80	18	D	64.0	

- Ordering example: Metric-bore cutter LM60SC 5125-40R-27, inch-bore cutter LM60SC 5125-38.1R-27
- *: Available upon request

Spare parts

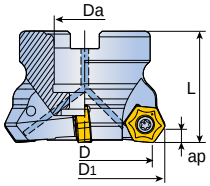
Designation	Shim	Shim Screw	Wedge	Wedge Screw	Wedge Screw Wrench	Shim Screw Wrench
LM60SC-27	TSSC 27R-ST	TS 60A130I	WSC 8R	TS 80200W	T-W4	BLD T25/M7+SW6-T1

- The shim screw wrench(1) shall be ordered separately

TFM55AHNS-05

HEXA2MILL

Face Mill



Designation		Dimension (mm)						Arbor Style	Kg	Mounting Bolt	Insert
		D	D1	Da	Da(")	L	ap				
TFM55AHNS450-22R-05B	4	50	58.16	22	-	40	5	●	A	0.4	SH M10x1.5x30	HNM(C)X 050410-MM HNCX 050410R-MP HNCX 050410R-L HNCX 050610-MR HNCX 05R-W
650-22R-05	6	50	58.16	22	-	40	5	●	A	0.4	SH M10x1.5x30	
563-22R-05B	5	63	71.16	22	-	40	5	●	A	0.6	SH M10x1.5x30	
863-22R-05	8	63	71.16	22	-	40	5	●	A	0.5	SH M10x1.5x30	
680-27R-05B	6	80	88.16	27	25.4	50	5	●	A	1.3	SH M12x1.75x35	
880-27R-05	8	80	88.16	27	-	50	5	●	A	1.2	SH M12x1.75x35	
1080-27R-05	10	80	88.16	27	-	50	5	●	A	1.2	SH M12x1.75x35	
7100-32R-05B	7	100	108.16	32	31.75	50	5	●/x	A/B	2.0	SH M16x2x35 / -	
10100-32R-05	10	100	108.16	32	-	50	5	●	A	2.0	SH M16x2x35	
12100-32R-05	12	100	108.16	32	-	50	5	●	A	2.0	SH M16x2x35	
10125-40R-05B	10	125	133.16	40	38.1	63	5	●/x	A/B	3.2	SH M20x2.5x40 / -	
12125-40R-05	12	125	133.16	40	-	63	5	●	A	3.4	SH M20x2.5x40	
16125-40R-05	16	125	133.16	40	-	63	5	●	A	3.2	SH M20x2.5x40	
12160 -40R-05B	12	160	168.16	40	50.8	63	5	x	C/B	4.7	-	
12160 -40R-05	20	160	168.16	40	50.8	63	5	x	C/B	4.9	-	

- Ordering example: Metric-bore cutter TFM55AHNS 680-27R-05B, inch-bore cutter TFM55AHNS 680-25.4R-05B
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

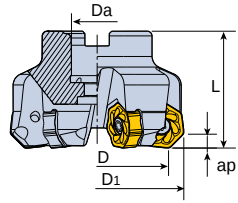
Spare parts

Designation	Screw	Wrench			
					
TFM55AHNS	TS 40B100I	T-T15			

14D-F45XN-06

CHASE2 HEPTA

Face Mill



45°

Designation		Dimension (mm)					Arbor Style	Kg	Mounting Bolt	Insert
		D	D1	Da	L	ap				
14D-F45XN 550-22R-06	5	50	59.1	22	40	3.5	A	0.4	LH M10x1.5x25	XNMU 0605 ANR-M XNHU 0605 ANN-MM XNHU 0605 ANN-ML
563-22R-06	5	63	72.1	22	50	3.5	A	0.8	SH M10x1.5x25	
763-22R-06	7	63	72.1	22	50	3.5	A	0.8	SH M10x1.5x25	
680-27R-06	6	80	89.1	27	50	3.5	A	1.4	SH M12x1.75x35	
980-27R-06	9	80	89.1	27	50	3.5	A	1.4	SH M12x1.75x35	
7100-32R-06	7	100	109.1	32	50	3.5	A	2.1	SH M16x2x35	
11100-32R-06	11	100	109.1	32	50	3.5	A	2.1	SH M16x2x35	
10125-40R-06	10	125	134.1	40	63	3.5	A	3.6	SH M20x2.5x40	
14125-40R-06	14	125	134.1	40	63	3.5	A	3.6	SH M20x2.5x40	
12160-40R-06	12	160	169.1	40	63	3.5	C	4.7	-	
16160-40R-06	16	160	169.1	40	63	3.5	C	4.9	-	
18160-40R-06	18	160	169.1	40	63	3.5	C	5.0	-	

E193 Cutting Condition E227 Arbor Style E234-E235

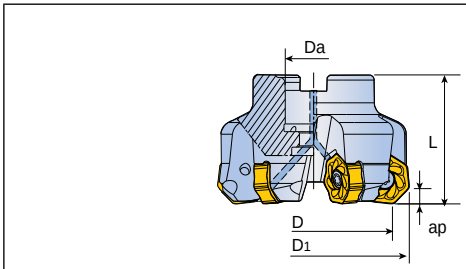
Spare parts

Designation	Screw	Wrench			
14D-F45XN-06	TS 40B100I	T-T15			

14D-F45XN-09

CHASE 2 HEPTA

Face Mill



Designation			Dimension (mm)						Arbor Style		Kg	Mounting Bolt	Insert
			D	D1	Da	Da(")	L	ap					
14D-F45XN	**563-22R-09**	5	63	74.9	22	-	50	5	●	A	0.9	SH M10x1.5x25	XNMU 0906 ANTR-M
	663-22R-09	6	63	74.9	22	-	50	5	●	A	0.9	SH M10x1.5x25	XNMU 0906 ANTN-ML
	680-27R-09	6	80	91.9	27	25.4	50	5	●	A	1.4	SH M12x1.75x35	XNHU 0906 ANTN-MM
	780-27R-09	7	80	91.9	27	-	50	5	●	A	1.5	SH M12x1.75x35	XNHU 0906 ANTN-ML
	7100-32R-09	7	100	112	32	31.75	55	5	●	A	2.4	SH M16x2x35	XNHU 0906 ANTN-W
	9100-32R-09	9	100	112	32	-	55	5	●	A	2.5	SH M16x2x35	XNHU 0906 ANTN-CE
	8125-40R-09	8	125	137	40	38.1	63	5	●/x	A/B	3.5	SH M20x2.5x40/-	
	10125-40R-09	10	125	137	40	-	63	5	●	A	3.6	SH M20x2.5x40	
	12125-40R-09	12	125	137	40	-	63	5	●	A	3.4	SH M20x2.5x40	
	10160-40R-09	10	160	172	40	50.8	63	5	x	C/B	4.8	-	
	12160-40R-09	12	160	172	40	-	63	5	x	C	4.8	-	
	14160-40R-09	14	160	172	40	-	63	5	x	C	4.8	-	
	12200-60R-09	12	200	212	60	47.625	63	5	x	C	6.8	-	
	16200-60R-09	16	200	212	60	-	63	5	x	C	6.9	-	
	16250-60R-09	16	250	262	60	-	63	5	x	C	11.5	-	
	20250-60R-09	20	250	262	60	-	63	5	x	C	11.5	-	

- Ordering example: Metric-bore cutter 14D-F45XN 680-27R-09, inch-bore cutter 14D-F45XN 680-25.4R-09
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

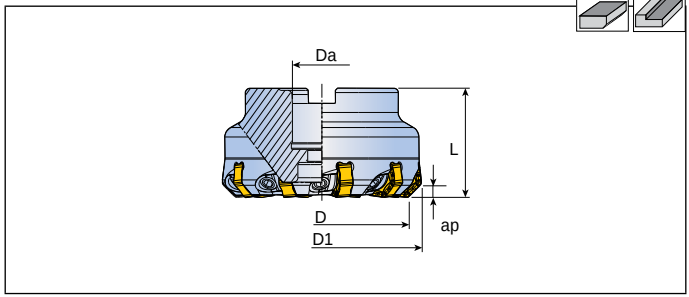
Spare parts

Designation	Screw	Wrench			
					
14D-F45XN-09	TS 50C130I/HG	T-T20			

14D-F45XNW-09

CHASE 2 HEPTA

Face Mill



45°

Designation		Dimension (mm)					Arbor Style	Kg	Mounting Bolt	Insert
		D	D1	Da	L	ap				
14D-F45XNW 1080-27R-09	10	80	91.9	27	50	5	A	1.8	SH M12x1.75x35	XNHU 0906 ANTN-MM
14100-32R-09	14	100	112	32	55	5	A	2.9	SH M16x2x35	XNHU 0906 ANTN-CE
18125-40R-09	18	125	137	40	63	5	B	3.8	-	
22160-40R-09	22	160	172	40	63	5	C	5.6	-	
28200-60R-09	28	200	212	60	63	5	C	7.9	-	
36250-60R-09	36	250	262	60	63	5	C	12.7	-	
44315-60R-09	44	315	327	60	63	5	D	19.9	-	

E194 Cutting Condition E227 Arbor Style E234-E235

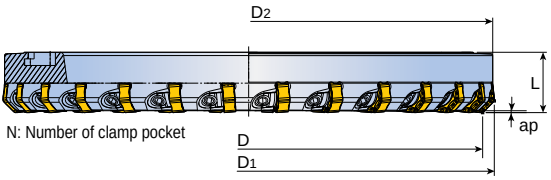
Spare parts

Designation	Wedge	Wedge Screw	Wrench		
14D-F45XNW-09	WFZ 8H	WS 8	T-W4		

14D-F45XNW-09-QC

CHASE 2 HEPTA

Face Mill: New Quick Change Type Cutter



45°

Designation		Dimension (mm)						Kg	Adapter	Insert
		D	D1	D2	L	N	ap			
14D-F45XNW-28250-09-QC	28	250	262	258.9	32	4	1	4.7	TQCA D250	XNHU 0906 ANTN-MM XNHU 0906 ANTN-CE
-36315-09-QC	36	315	327	313	38	4	1	9.2	TQCA D315	
-42355-09-QC	42	355	367	353	38	8	1	10.6	TQCA D355	
-46400-09-QC	46	400	412	398	38	8	1	12.1	TQCA D400	

• Recommend to very stable machining condition at cast iron & steel

E194 Cutting Condition E227 Technical Guide TE8

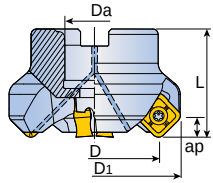
Spare parts

Designation	Wedge	Wedge Screw	Wrench		
14D-F45XNW-09-QC	WFZ 8H	WS 8	T-W4		

TFM45SN-13

CHASE 2 QUAD

Face Mill



Designation		Dimension (mm)						Arbor Style		Kg	Mounting Bolt	Insert
		D	D1	Da	Da(")	L	ap					
TFM45SN 450-22R-13	4	50	64.7	22	-	40	7	●	A	0.5	LH M10x1.5x25	SNGX 1306 ANTN-M SNMX 1306 ANTN-M SNGX 1306 ANTN-ML SNGX 1306 ANN-AL SNMX 1306 ANTR-MP SNGX 1306 ANTN-W SNMX 1306 XTN
650-22R-13	6	50	64.7	22	-	40	7	●	A	0.5	LH M10x1.5x25	
663-22R-13	6	63	77.7	22	-	40	7	●	A	0.7	LH M10x1.5x25	
863-22R-13	8	63	77.7	22	-	40	7	●	A	0.7	LH M10x1.5x25	
480-27R-13B	4	80	94.8	27	25.4	50	7	●	A	1.4	LH M12x1.75x30	
780-27R-13	7	80	94.8	27	-	50	7	●	A	1.5	LH M12x1.75x30	
1080-27R-13	10	80	94.8	27	-	50	7	●	A	1.5	LH M12x1.75x30	
5100-32R-13B	5	100	114.8	32	31.75	50	7	●/x	A/B	2.1	LH M16x2x35/-	
8100-32R-13	8	100	114.8	32	-	50	7	●	A	2.2	LH M16x2x35	
12100-32R-13	12	100	114.8	32	-	50	7	●	A	2.2	LH M16x2x35	
6125-40R-13B	6	125	139.8	40	38.1	63	7	●/x	A/B	3.8	SH M20x2.5x40/-	
10125-40R-13	10	125	139.8	40	-	63	7	●	A	3.8	SH M20x2.5x40	
16125-40R-13	16	125	139.6	40	-	63	7	●	A	3.8	SH M20x2.5x40	
8160-40R-13B	8	160	174.8	40	50.8	63	7	x	C/B	4.9	-	
12160-40R-13	12	160	174.8	40	-	63	7	x	C	4.9	-	
20160-40R-13	20	160	174.5	40	-	63	7	x	C	5.0	-	
10200-60R-13B	10	200	214.8	60	47.625	63	7	x	C	6.5	-	
18200-60R-13	18	200	214.8	60	-	63	7	x	C	6.6	-	
26200-60R-13	26	200	214.3	60	-	63	7	x	C	7.0	-	
12250-47.625R-13	12	250	264.8	-	47.625	63	7	x	C	12.9	-	
20250-60R-13	20	250	264.8	60	-	63	7	x	C	12.9	-	

• Mounting bolts supplied do not have coolant through facility.
If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
Ex) SH M10x1.5x30: Bolt without hole.
SH M10x1.5x30-C: Bolt with hole

E182 | Cutting Condition E223 | Arbor Style E234-E235

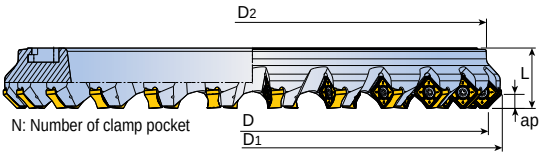
Spare parts

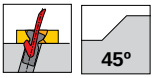
Designation	Screw	Wrench			
					
TFM45SN-13	TS 40B100I	T-T15			

TFM45SN-13-QC

CHASE 2 QUAD

Face Mill: New Quick Change Type Cutter





Designation		Dimension (mm)						Kg	Adaptor	Insert
		D	D1	D2	L	N	ap			
TFM45SN 12250-13-QC	12	250	264.8	248	32	4	7	3.5	TQCA D250	SNGX 1306 ANTN-M SNMX 1306 ANTN-M SNGX 1306 ANTN-ML SNGX 1306 ANN-AL SNMX 1306 ANTR-MP SNGX 1306 ANTN-W SNMX 1306 XTN
24250-13-QC	24	250	264.7	248	32	4	7	3.7	TQCA D250	
14315-13-QC	14	315	329.8	313	38	4	7	8.1	TQCA D315	
30315-13-QC	30	315	329.7	313	38	4	7	8.2	TQCA D315	
16355-13-QC	16	355	369.8	353	38	8	7	9.3	TQCA D355	
34355-13-QC	34	355	369.7	353	38	8	7	9.4	TQCA D355	
18400-13-QC	18	400	414.8	398	38	8	7	10.6	TQCA D400	
38400-13-QC	38	400	414.7	398	38	8	7	10.7	TQCA D400	

• Recommend to very stable machining condition at cast iron & steel

E182 Cutting Condition E223 Technical Guide TE8

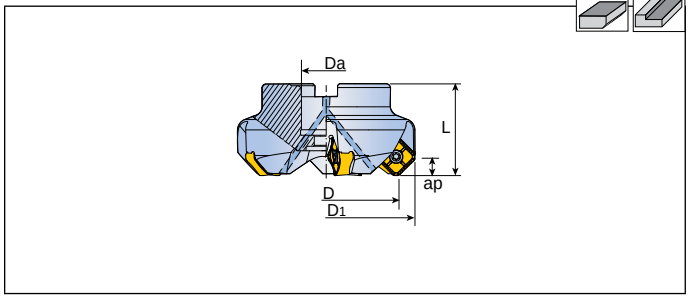
Spare parts

Designation	Screw	Wrench			
					
TFM45SN-13-QC	TS 40B100I	T-T15			

TFM45SNS-16

CHASE 2 QUAD

Face Mill



Designation		Dimension (mm)						Arbor Style		Kg	Mounting Bolt	Insert
		D	D1	Da	Da(")	L	ap					
TFM45SNS 463-22R-16	4	63	81.1	22	-	50	8.8	●	A	1.0	LH M10x1.5x25	SNMX 1607 ANTN-M
580-27R-16	5	80	98.2	27	25.4	50	8.8	●	A	1.5	LH M12x1.75x30	SNHX 1606 ANN-MM
7100-32R-16	7	100	118.2	32	31.75	50	8.8	●/x	A/B	2.3	LH M16x2.0x35/-	
8125-40R-16	8	125	143.2	40	38.1	63	8.8	●/x	A/B	4.0	SH M20x2.5x40/-	
10125-40R-16	10	125	143.2	40	-	63	8.8	●	A	4.0	SH M20x2.5x40	
10160-40R-16	10	160	178.2	40	50.8	63	8.8	x	C/B	5.4	-	
12160-40R-16	12	160	178.2	40	-	63	8.8	x	C	5.4	-	
12200-60R-16	12	200	218.2	60	47.625	63	8.8	x	C	7.5	-	
14250-60R-16	14	250	268.2	60	-	63	8.8	x	C	13	-	

- Ordering example: Metric cutter TFM45SNS 7100-32R-16, inch-bore cutter TFM45SNS 7100-31.75R-16
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

E184 | Cutting Condition E223 | Arbor Style E234-E235

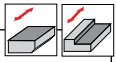
Spare parts

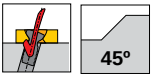
Designation	Screw	Wrench			
TFM45SNS-16	TS 45120I	T-T20			

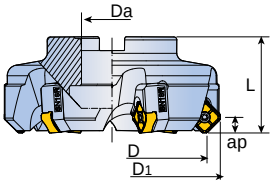
TFM45SNS-16B-CA

CHASE 2 QUAD

Face Mill







Designation		Dimension (mm)					Arbor Style	Kg	Insert
		D	D1	Da	L	ap			
TFM45SNS 6125-40R-16B-CA	6	125	143.2	40	63	8.8	B	4.0	SNMX 1607 ANTN-M SNHX 1606 ANN-MM
8160-40R-16B-CA	8	160	178.2	40	63	8.8	C	5.9	
10200-60R-16B-CA	10	200	218.2	60	63	8.8	C	8.1	
14250-60R-16-CA	14	250	268.2	60	63	8.8	C	13.3	
14315-60R-16B-CA	14	315	333.2	60	80	8.8	D	24.0	

E184 Cutting Condition E223 Arbor Style E234-E235

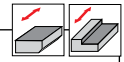
Spare parts

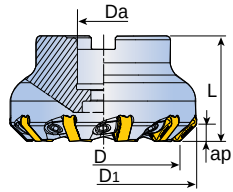
Designation	Screw	Cartridge	Cartridge Screw	Wrench	
TFM45SNS-16B-CA	TS 45120I	TCT23-SN16R	TS 60170I	T-T20	

TFM45SNW-16

CHASE 2 QUAD

Face Mill





45°

Designation		Dimension (mm)					Arbor Style	Kg	Mounting Bolt	Insert
		D	D1	Da	L	ap				
TFM45SNW 1080-27R-16	10	80	98.2	27	55	8.8	A	1.9	LH M12x1.75x35	SNHX 1606 ANN-MM
14100-32R-16	14	100	118.2	32	63	8.8	A	3.2	SH M16x2.0x35	
18125-40R-16	18	125	143.2	40	63	8.8	B	3.9	-	
22160-40R-16	22	160	178.2	40	63	8.8	C	5.7	-	
26200-60R-16	26	200	218.2	60	63	8.8	C	7.8	-	
32250-60R-16	32	250	268.2	60	63	8.8	C	13.5	-	

E184 Cutting Condition E223 Arbor Style E234-E235

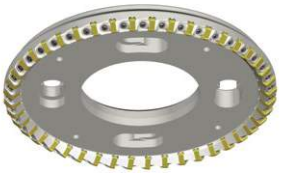
Spare parts

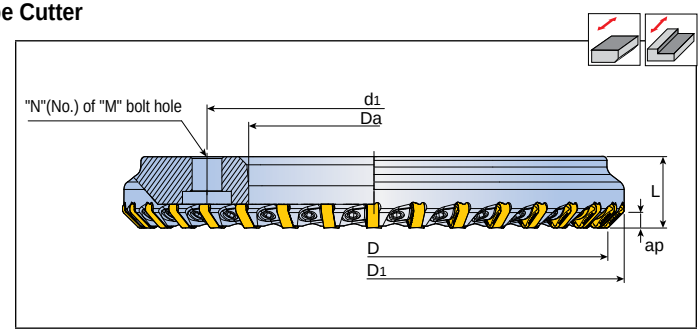
Designation	Wedge	Wedge Screw	Wrench		
					
TFM45SNW	WFZ 8H-SN	WS 8	T-W4		

TQ45SNW-16

CHASE2QUAD

Face Mill: Quick Change Type Cutter





45°

Designation		Dimension (mm)								Kg	Adapter	Insert
		D	D1	Da	d1	L	M	N	ap			
TQ45SNW	**26200R-16**	26	200	218.2	63.5	114.3	38	M16	4	8.8	6.3	QA 08 K/M	SNHX 1606 ANN-MM
	34250R-16	34	250	268.2	133.35	177.8	38	M16	4	8.8	7.9	QA 10 K/M	
	44315R-16	44	315	333.2	146.05	215.9	38	M20	4	8.8	13.2	QA 12 K/M	
	50355R-16	50	355	373.2	215.90	260.4	38	M20	6	8.8	13.0	QA 14 K/M	
	58400R-16	58	400	418.2	254.0	304.8	38	M20	6	8.8	15.7	QA 16 K/M	

• Recommend to very stable machining condition at cast iron & steel

E184 Cutting Condition E223 Technical Guide TE6-TE7

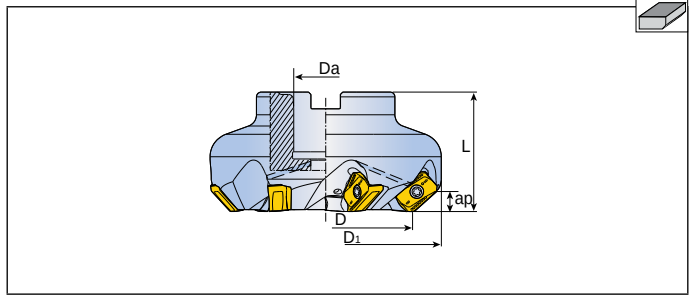
Spare parts

Designation	Wedge	Wedge Screw	Wrench		
TQ45SNW	WFZ 8H-SN	WS 8	T-W4		

TFM45AN-16

CHASE 2 MILL

Face Mill



45°

Designation		Dimension (mm)					Arbor Style		Mounting Bolt	Insert
		D	D1	Da	L	ap		Kg		
TFM45AN 450-22R-16	4	50	67.8	22	40	8.4	●	A	0.6	LH M10x1.5x25	ANHX 1607 ANR-M
663-22R-16	6	63	80.6	22	40	8.4	●	A	0.9	LH M10x1.5x25	
780-27R-16	7	80	97.5	27	50	8.4	●	A	1.6	SH M12x1.75x35	
8100-32R-16	8	100	117.5	32	50	8.4	●	A	2.5	LH M16x2x35	
9125-40R-16	9	125	142.6	40	63	8.4	●	A	4.3	SH M20x2.5x40	
10160-40R-16	10	160	177.7	40	63	8.4	x	B	5.8	-	

- 90º Inserts can not be mounted
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

E159 | Cutting Condition E220 | Arbor Style E234-E235

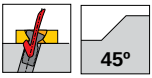
Spare parts

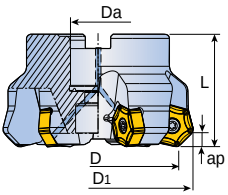
Designation	Screw	Wrench			
TFM45AN	TS 40120I	T-T15			

TFM45HNS-10

HEXA2MILL

Face Mill: Angled Screw Clamp Type Cutter





Designation		Dimension (mm)						Arbor Style		Mounting Bolt	Insert
		D	D1	Da	Da(")	L	ap				
TFM45HNS 563-22R-10	5	63	77	22	-	50	6.1	●	A	0.8	SH M10x1.5x25	HNHX1006 ANTN-M HNHX1006 ANTN-ML HNHX1006 ANTN-MM HNHX1006 ANTN-W HNHX1006 ANTN-CE
663-22R-10F	6	63	77	22	-	50	6.1	●	A	0.9	SH M10x1.5x25	
680-27R-10	6	80	94	27	25.4	55	6.1	●	A	1.6	SH M12x1.75x35	
780-27R-10F	7	80	94	27	-	55	6.1	●	A	1.6	SH M12x1.75x35	
7100-32R-10	7	100	114	32	31.75	63	6.1	●/x	A/B	2.7	SH M16x2x35	
9100-32R-10F	9	100	114	32	31.75	63	6.1	●/x	A/B	2.8	SH M16x2x35	
8125-40R-10	8	125	139	40	38.1	63	6.1	x	B	3.4	-	
10125-40R-10	10	125	139	40	38.1	63	6.1	x	B	3.4	-	
12125-40R-10F	12	125	139	40	-	63	6.1	x	B	3.4	-	
10160-40R-10	10	160	174	40	50.8	63	6.1	x	C/B	4.8	-	
12160-40R-10	12	160	174	40	50.8	63	6.1	x	C/B	4.8	-	
14160-40R-10F	14	160	174	40	-	63	6.1	x	C	4.9	-	
12200-60R-10	12	200	214	60	47.625	63	6.1	x	C	6.9	-	
16200-60R-10F	16	200	214	60	-	63	6.1	x	C	7.0	-	
16250-60R-10	16	250	264	60	47.625	63	6.1	x	C	11.8	-	
20250-60R-10F	20	250	264	60	-	63	6.1	x	C	12.0	-	

- Ordering example: Metric cutter TFM45HNS 680-27R-10 inch-bore cutter TFM45HNS 680-25.4R-10
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

E168 Cutting Condition E227 Arbor Style E234-E235

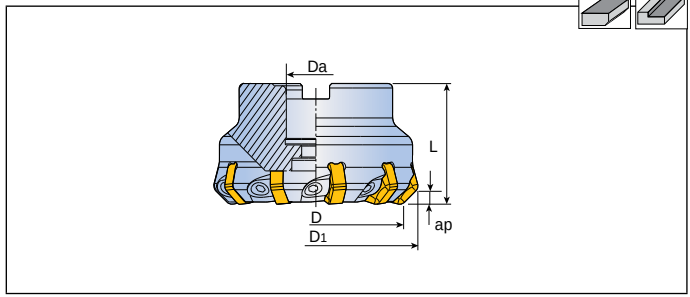
Spare parts

Designation	Screw	Wrench			
					
TFM45HNS	TS 50C130I/HG	T-T20			

TFM45HN-10

HEXA2MILL

Face Mill: Wedge Clamp Fine Pitch Type Cutter



Designation		Dimension (mm)					Arbor Style	Kg	Mounting Bolt	Insert
		D	D1	Da	L	ap				
TFM45HN1080-27R-10	10	80	94	27	55	6.1	A	1.9	SH M12x1.75x35	HNHX1006 ANTN-M HNHX1006 ANTN-ML HNHX1006 ANTN-MM HNHX1006 ANTN-W HNHX1006 ANTN-CE
14100-32R-10	14	100	114	32	63	6.1	A	3.3	SH M16x2x35	
18125-40R-10	18	125	139	40	63	6.1	B	3.9	-	
22160-40R-10	22	160	174	40	63	6.1	C	5.6	-	
28200-60R-10	28	200	214	60	63	6.1	C	7.9	-	
36250-60R-10	36	250	264	60	63	6.1	C	13.1	-	
44315-60R-10	44	315	329	60	63	6.1	D	21.2	-	

E168 Cutting Condition E227 Arbor Style E234-E235

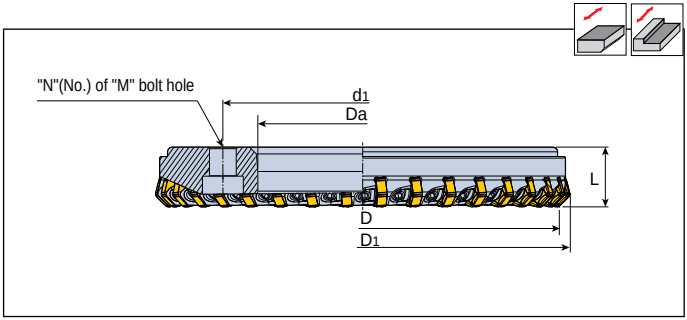
Spare parts

Designation	Wedge	Wedge Screw	Wrench		
TFM45HN	WFZ 8H	WS 8	T-W4		

TQ45HN-10

HEXA2MILL

Face Mill: Closed Type Cutter



45°

Designation		Dimension (mm)							Kg	Adapter	Insert
		D	D1	Da	d1	L	M	N			
TQ45HN	**36250R-10**	36	250	264	133.35	177.8	38	M16	4	8.8	QA 10 K/M	HNHX1006 ANTN-M HNHX1006 ANTN-ML HNHX1006 ANTN-MM HNHX1006 ANTN-W HNHX1006 ANTN-CE
	44315R-10	44	315	329	146.05	215.9	38	M20	4	15.1	QA 12 K/M	
	52355R-10	52	355	369	215.9	260.4	38	M20	6	14.2	QA 14 K/M	
	58400R-10	58	400	414	254	304.8	38	M20	6	18.0	QA 16 K/M	

• Recommend to very stable machining condition at cast iron & steel

E168 Cutting Condition E227 Technical Guide TE6-TE7

Spare parts

Designation	Wedge	Wedge Screw	Wrench		
TQ45HN	WFZ 8H	WS 8	T-W4		

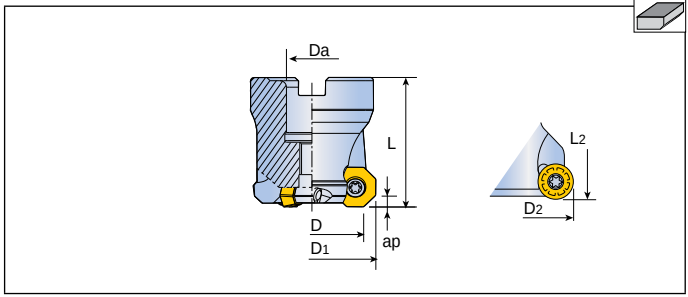
TFM43OFS-05/TFM43ZOFW-07

CHASEOCTO

Face Mill

TFM43OFS

TFM43ZOFW



Designation			Dimension (mm)								Arbor Style	Kg	Mounting Bolt	Insert
			D	D1	D2	Da	Da(")	L	L2	ap				
TFM43OFS-	**332-16R-05**	3	32	39.6	40.8	16	-	40	40.6	3.5	E	0.3	KTB32B (WS8F)	OFCW 05T3 TN-MR OFCW 05T3 TN-EMR OFCT 05T3 TN-M OFCT 05T3 TN-EM OFMT 05T3 TN-ML OFCT 05T3 TN-AL RFMT 1404-ML
	440-16R-05	4	40	47.5	48.7	16	-	40	40.6	3.5	A	0.4	SH M8x1.25x30	
	550-22R-05	5	50	57.9	59.0	22	-	40	40.6	3.5	A	0.6	SH M10x1.5x30	
	663-22R-05	6	63	71.0	72.0	22	-	40	40.6	3.5	A	1.0	SH M10x1.5x30	
	780-27R-05	7	80	88.0	89.0	27	25.4	50	50.6	3.5	A	1.3	SH M12x1.75x35	
	8100-32R-05	8	100	108.0	109.0	32	31.75	50	50.6	3.5	A	2.6	LH M16x2x35	
	9125-40R-05	9	125	133.0	134.0	40	38.1	63	63.6	3.5	B	3.0	-	
TFM43ZOFW-	**463-22R-07**	4	63	75.1	76.9	22	-	40	40.7	5	A	0.5	LH M10x1.5x25	OFCN 0704 TN-MR OFCN 0704 TN-EMR OFMR 0704 AER-M OFCR 0704 TN-ML OFCR 0704 TN-EML OFMR 0704 TN-AL RFMR 1904-M
	580-27R-07	5	80	92.0	93.8	27	25.4	50	50.7	5	A	1.2	SH M12x1.75x35	
	6100-32R-07	6	100	112.0	113.8	32	31.75	50	50.7	5	B	1.8	-	
	8100-32R-07	8	100	112.0	113.8	32	-	50	50.7	5	B	1.8	-	
	8125-40R-07	8	125	137.0	139.2	40	38.1	63	63.7	5	B	3.0	-	
	10125-40R-07	10	125	137.0	139.2	40	-	63	63.7	5	B	3.0	-	
	10160-40R-07	10	160	172.0	173.8	40	50.8	63	63.7	5	C/B	4.7	-	
	12160-40R-07	12	160	172.0	173.8	40	-	63	63.7	5	C	4.7	-	
	12200-60R-07	12	200	212.0	213.8	60	-	63	63.7	5	C	7.0	-	
	14200-60R-07	14	200	212.0	213.8	60	-	63	63.7	5	C	7.0	-	

• Ordering example : Metric cutter TFM43OFS-780-27R-05, Inch-bore cutter TFM43OFS-780-25.4R-05

E172-E173 | Cutting Condition E228 | Arbor Style E234-E235

Spare parts

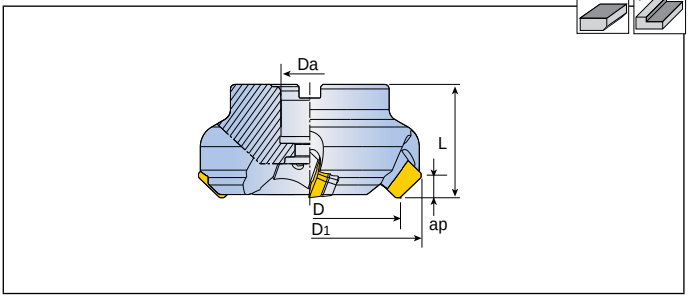
Designation	Wedge Screw	Wedge	Screw	Wrench	
TFM43OFS			TS 40093I	T-T15	
TFM43ZOFW	WS8, WS8S*,WS8M	WFO-8Z		T-W4	

• *WS8S: For TFM43ZOFW-463...only

LM45SD-12/15

LIONMILL

Face Mill



45°

Designation		Dimension (mm)					Arbor Style	Kg	Mounting Bolt	Insert
		D	D1	Da	L	ap				
LM45SD 480-25.4R-12	4	80	93.8	25.4	50	6.5	A	1.6	LH M12x1.75x30	SDKN 1203M... (42 M...)
5100-31.75R-12	5	100	113.8	31.75	60	6.5	A	2.8	LH M16x2x35	
6125-38.1R-12	6	125	138.8	38.1	63	6.5	B	3.5	-	
8160-50.8R-12	8	160	173.9	50.8	63	6.5	B	5.5	-	
10200-47.625R-12	10	200	213.9	47.625	63	6.5	C	7.6	-	
12250-47.625R-12	12	250	263.9	47.625	63	6.5	C	12.6	-	
LM45SD 480-25.4R-15	4	80	93.8	25.4	50	8.7	A	1.6	LH M12x1.75x30	SDKN 1504M... (53 M...)
5100-31.75R-15	5	100	118.6	31.75	60	8.7	A	2.8	LH M16x2x35	
6125-38.1R-15	6	125	143.6	38.1	63	8.7	B	3.5	-	
8160-50.8R-15	8	160	178.6	50.8	63	8.7	B	5.5	-	
10200-47.625R-15	10	200	218.6	47.625	63	8.7	C	7.6	-	
12250-47.625R-15	12	250	268.6	47.625	63	8.7	C	12.6	-	

• Metric bore cutter is available upon request

E178 Cutting Condition E229-E230 Arbor Style E234-E235

Spare parts

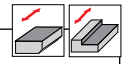
Designation	Carbide Shim	Wedge	Shim Screw	Wedge Screw	Wrench	Shim Screw Wrench
LM45SD-12	TSSDSE 12N	WPA 8	TS 40B100I	TS 80200W TS 80160W(1)	T-W4	T-T15
LM45SD-15	TSSDSE 15N	WPA 8	TS 40B100I		T-W4	T-T15

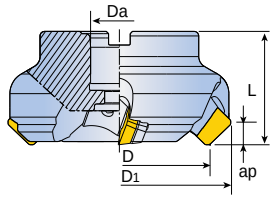
• (1) TS 80160W is for D80 cutter • The shim screw wrench T-T15(2) shall be ordered separately

LM45SE-12/15

LIONMILL

Face Mill





45°

Designation			Dimension (mm)					Arbor Style	Kg	Mounting Bolt	Insert
			D	D1	Da	L	ap				
LM45SE	**480-25.4R-12**	4	80	93.7	25.4	55	6.5	A	1.8	LH M12x1.75x30	SEKN 1203 AF...
	5100-31.75R-12	5	100	113.6	31.75	60	6.5	A	2.8	LH M16x2x35	
	6125-38.1R-12	6	125	138.6	38.1	63	6.5	B	3.4	-	
	8160-50.8R-12	8	160	173.6	50.8	63	6.5	B	5	-	
	10200-47.625R-12	10	200	213.6	47.625	63	6.5	C	7.5	-	
	12250-47.625R-12	12	250	263.6	47.625	63	6.5	C	12.2	-	
LM45SE	**480-25.4R-15**	4	80	97.8	25.4	55	8.7	A	1.8	LH M12x1.75x30	SEKN 1504 AF...
	5100-31.75R-15	5	100	118	31.75	60	8.7	A	2.8	LH M16x2x35	
	6125-38.1R-15	6	125	143	38.1	63	8.7	B	3.5	-	
	8160-50.8R-15	8	160	178	50.8	63	8.7	B	5.7	-	
	10200-47.625R-15	10	200	218	47.625	63	8.7	C	7.8	-	
	12250-47.625R-15	12	250	268	47.625	63	8.7	C	12.8	-	

• Metric bore cutter is available upon request

E179 Cutting Condition E229-E230 Arbor Style E234-E235

Spare parts

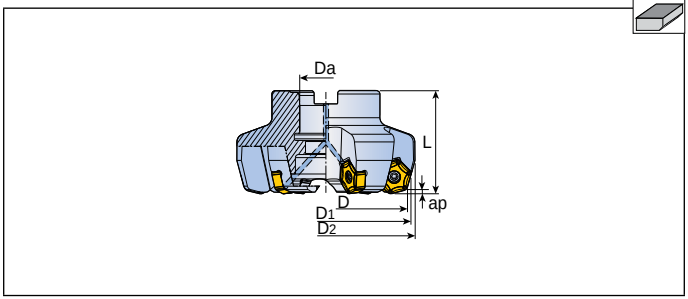
Designation	Carbide Shim	Wedge	Shim Screw	Wedge Screw	Wrench	Shim Screw Wrench
LM45SE-12	TSSDSE 12N	WPA 8	TS 40B100I	TS 80200W TS 80160W(1)	T-W4	T-T15
LM45SE-15	TSSDSE 15N	WPA 8	TS 40B100I		T-W4	T-T15

• (1) TS 80160W is for D80 cutter • The shim screw wrench T-T15(2) shall be ordered separately

TFM15HNS-10

HEXA2MILL

Face Mill



Designation		Dimension (mm)						Arbor Style		Kg	Mounting Bolt	Insert
		D	D1	D2	Da	L	ap					
TFM15HNS 580-27R-10	5	80	85	89	27	55	2	•	A	1.3	SH M12x1.75x35	HNHX1006 ANTN-M
6100-32R-10	6	100	105	109	32	63	2	x	B	1.9	-	
8125-40R-10	8	125	130	134	40	63	2	x	B	2.9	-	

• Mounting bolts supplied do not have coolant through facility.
If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
Ex) SH M10x1.5x30: Bolt without hole.
SH M10x1.5x30-C: Bolt with hole.

E168 | Cutting Condition E227 | Arbor Style E234-E235

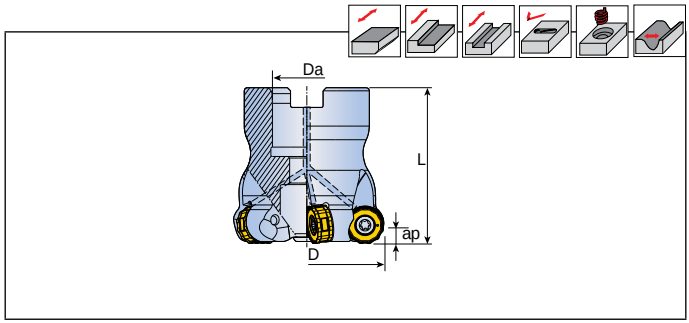
Spare parts

Designation	Screw	Wrench			
TFM15HNS	TS 50C130I/HG	T-T20			

TFMRNS-10/12

CHASE 2 MOLD

Face Mill



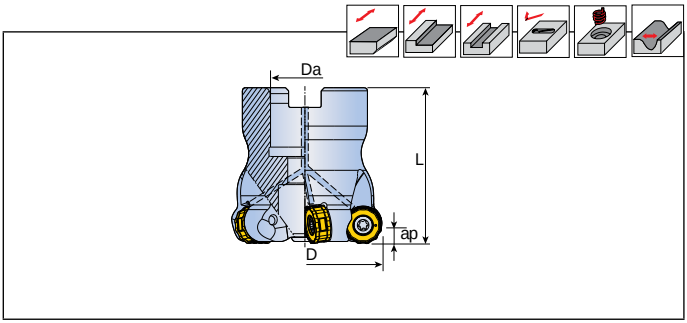
Designation		Dimension (mm)						Mounting Bolt	Insert
		D	Da	L	ap		Kg		
TFMRNS 432-16R-10	4	32	16	40	5	•	0.1	KTB 32B	RNMU 1004-ML RNMU 1004S-M
433-16R-10	4	33	16	40	5	•	0.1	KTB 32B	
540-16R-10	5	40	16	40	5	•	0.2	SH M8x1.25x30	
650-22R-10	6	50	22	50	5	•	0.4	SH M10x1.5x30	
652-22R-10	6	52	22	50	5	•	0.4	SH M10x1.5x30	
440-16R-12	4	40	16	40	6	•	0.2	SH M8x1.25x30	RNMU 1205-ML RNMU 1205S-M
450-22R-12	4	50	22	50	6	•	0.3	SH M10x1.5x30	
550-22R-12	5	50	22	50	6	•	0.3	SH M10x1.5x30	
552-22R-12	5	52	22	50	6	•	0.4	SH M10x1.5x30	
563-22R-12	5	63	22	50	6	•	0.6	SH M10x1.5x30	
663-22R-12	6	63	22	50	6	•	0.6	SH M10x1.5x30	
666-27R-12	6	66	27	50	6	•	0.6	SH M12x1.75x35	
680-27R-12	6	80	27	50	6	•	1.1	SH M12x1.75x35	
780-27R-12	7	80	27	50	6	•	1.0	SH M12x1.75x35	
7100-32R-12	7	100	32	50	6	•	1.5	LH M16x2x35	
8100-32R-12	8	100	32	50	6	•	1.5	LH M16x2x35	

• Mounting bolts supplied do not have coolant through facility.
If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
Ex) SH M10x1.5x30: Bolt without hole.
SH M10x1.5x30-C: Bolt with hole.

TFMRNS-16

CHASE2MOLD

Face Mill



Designation		Dimension (mm)					Kg	Mounting Bolt	Insert
		D	Da	L	ap				
TFMRNS 340-16R-16	3	40	16	55	8	•	0.3	KTB 32B	RNMU 1606-ML RNMU 1606S-M
350-16R-16	3	50	16	50	8	•	0.2	SH M8x1.25x30	
450-16R-16	4	50	16	50	8	•	0.2	SH M8x1.25x30	
452-22R-16	4	52	22	50	8	•	0.3	SH M10x1.5x30	
463-22R-16	4	63	22	50	8	•	0.5	SH M10x1.5x30	
566-27R-16	5	66	27	50	8	•	0.6	LH M12x1.75x30	
580-27R-16	5	80	27	50	8	•	0.9	LH M12x1.75x30	
680-27R-16	6	80	27	50	8	•	0.8	LH M12x1.75x30	
6100-32R-16	6	100	32	50	8	•	1.7	LH M16x2.0x35	
7125-40R-16	7	125	40	63	8	•	3.0	SH M20x2.5x40	
8125-40R-16	8	125	40	63	8	•	2.9	SH M20x2.5x40	
9160-40R-16	9	160	40	63	8	x	3.8	-	
10200-60R-16	10	200	60	63	8	x	5.6	-	

• Mounting bolts supplied do not have coolant through facility.
If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
Ex) SH M10x1.5x30: Bolt without hole.
SH M10x1.5x30-C: Bolt with hole.

E175 | Ramping Data E211-E212 | Cutting Condition E225-E226 | Arbor Style E234-E235

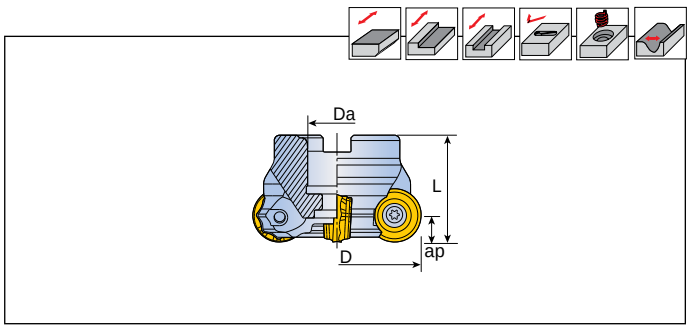
Spare parts

Designation	Screw	Wrench			
TFMRNS-10	TS 35085I/HG	T-T15			
TFMRNS-12	TS 40G110I	T-T15			
TFMRNS-16	TS 50A121I/HG	T-T20			

TFMRX-10/12

CHASEMOLD

Face Mill



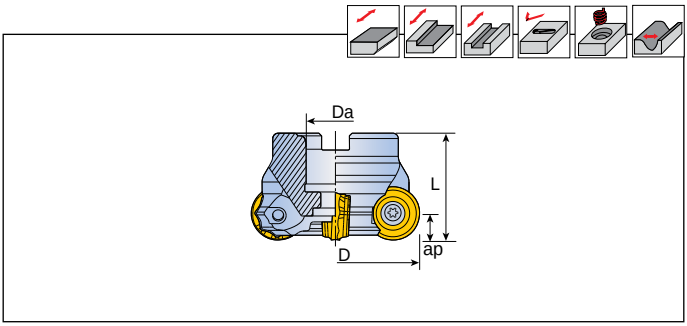
Designation		Dimension (mm)					Arbor Style	Kg	Mounting Bolt	Insert
		D	Da	L	ap					
TFMRX	650-22R-10	6	50	22	40	5	•	A	0.3	SH M10x1.5x30	RXMX 1003M/ML/MR RXHX 1003-AL/ML
	652-22R-10	6	52	22	40	5	•	A	0.3	SH M10x1.5x30	
	450-22R-12	4	50	22	40	6	•	A	0.2	SH M10x1.5x25	RXMX 12T3-M/ML/MR RXHX 12T3-AL/MR
	550-22R-12	5	50	22	40	6	•	A	0.2	SH M10x1.5x25	
	552-22R-12	5	52	22	40	6	•	A	0.3	SH M10x1.5x30	
	563-22R-12	5	63	22	40	6	•	A	0.4	SH M10x1.5x25	
	663-22R-12	6	63	22	40	6	•	A	0.4	SH M10x1.5x25	
	666-27R-12	6	66	27	50	6	•	A	0.6	SH M10x1.5x25	
	680-27R-12	6	80	27	50	6	•	A	0.8	SH M12x1.75x35	
	7100-32R-12	7	100	32	50	6	x	B	1.2	-	

• Mounting bolts supplied do not have coolant through facility.
If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
Ex) SH M10x1.5x30: Bolt without hole. .
SH M10x1.5x30-C: Bolt with hole.

TFMRX-16/20

CHASEMOLD

Face Mill



Designation		Dimension (mm)					Arbor Style	Kg	Mounting Bolt	Insert
		D	Da	L	ap					
TFMRX **350-16R-16**	3	50	16	40	8	•	A	0.2	SH M8x1.25x30	RXMX 1604-M/MR/ML
450-16R-16	4	50	16	40	8	•	A	0.2	SH M8x1.25x30	
452-16R-16	4	52	16	40	8	•	A	0.2	SH M8x1.25x30	
463-22R-16	4	63	22	40	8	•	A	0.4	SH M10x1.5x25	
566-27R-16	5	66	27	50	8	•	A	0.5	SH M12x1.75x35	
580-27R-16	5	80	27	50	8	•	A	0.8	SH M12x1.75x35	
6100-32R-16	6	100	32	50	8	x	B	1.1	-	
7125-40R-16	7	125	40	63	8	x	B	2.4	-	
8160-40R-16	8	160	40	63	8	x	C	3.6	-	
463-22R-20	4	63	22	40	10	•	A	0.3	LH M10x1.5x25	RXMX 2006-M/MR
580-27R-20	5	80	27	50	10	•	A	0.8	LH M12x1.75x30	
6100-32R-20	6	100	32	50	10	x	B	1.0	-	
7125-40R-20	7	125	40	63	10	x	B	2.5	-	
8160-40R-20	8	160	40	63	10	x	C	3.7	-	

• Mounting bolts supplied do not have coolant through facility.
If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
Ex) SH M10x1.5x30: Bolt without hole.
SH M10x1.5x30-C: Bolt with hole.

E176 | Ramping Data E213-E214 | Cutting Condition E226 | Arbor Style E234-E235

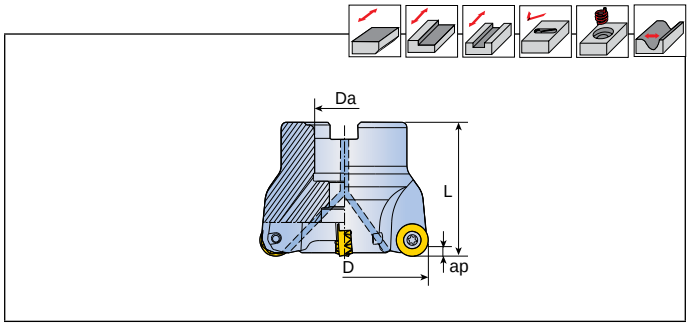
Spare parts

Designation	Screw	Wrench			
TFMRX-10	TS 35070I/HG	T-T15			
TFMRX-12	TS 35085I/HG	T-T15			
TFMRX-16	TS 45A100I/HG	T-T20			
TFMRX-20	TS 50115I/HG	T-T20			

TFMRY-08/10

CHASEMOLD

Face Mill



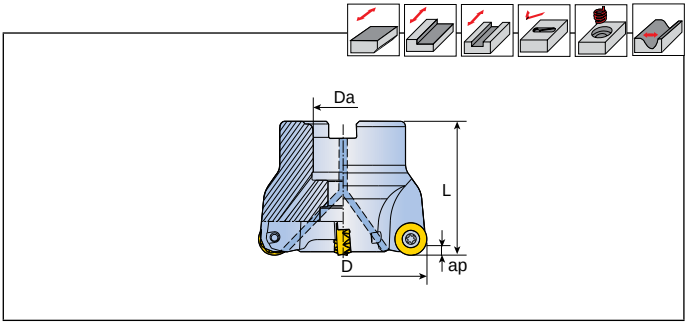
Designation		R		Dimension (mm)				Arbor Style	Kg	Mounting Bolt	Insert
				D	Da	L	ap				
TFMRY	532-16R-08	4	5	32	16	40	4	• A	0.12	SH M8x1.25x30	RYMX 08-M/ML/MM/MR RYHX 08-ML/MR/AL
	640-16R-08	4	6	40	16	40	4	• A	0.22	SH M8x1.25x30	
	432-16R-10	5	4	32	16	40	5	• A	0.12	SH M8x1.25x30	RYMX 10-M/ML/MM/MR RYHX 10-ML/MR/AL
	540-16R-10	5	5	40	16	40	5	• A	0.22	SH M8x1.25x30	
	640-16R-10	5	6	40	16	40	5	• A	0.23	SH M8x1.25x30	
	650-22R-10	5	6	50	22	50	5	• A	0.33	SH M10x1.5x30	
	652-22R-10	5	6	52	22	50	5	• A	0.36	SH M10x1.5x30	
	766-27R-10	5	7	66	27	50	5	• A	0.68	SH M12x1.75x30	

• Mounting bolts supplied do not have coolant through facility
If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
Ex) SH M10x1.5x30: Bolt without hole.
SH M10x1.5x30-C: Bolt with hole.

TFMRY-12

CHASEMOLD

Face Mill



Designation		R		Dimension (mm)				Arbor Style		Kg	Mounting Bolt	Insert
				D	Da	L	ap					
TFMRY	332-16R-12	6	3	32	16	40	6	•	A	0.12	KTB 32B	RYMX 12-M/ML/MM/MR RYHX 12-ML/MM/MR/AL
	440-16R-12	6	4	40	16	40	6	•	A	0.15	SH M8x1.25x30	
	450-22R-12	6	4	50	22	50	6	•	A	0.33	SH M10x1.5x30	
	550-22R-12	6	5	50	22	50	6	•	A	0.33	SH M10x1.5x30	
	552-22R-12	6	5	52	22	50	6	•	A	0.34	SH M10x1.5x30	
	463-22R-12	6	4	63	22	50	6	•	A	0.57	SH M10x1.5x30	
	563-22R-12	6	5	63	22	50	6	•	A	0.58	SH M10x1.5x30	
	663-22R-12	6	6	63	22	50	6	•	A	0.58	SH M10x1.5x30	
	763-22R-12	6	7	63	22	50	6	•	A	0.71	SH M10x1.5x30	
	666-27R-12	6	6	66	27	50	6	•	A	0.62	LH M12x1.75x30	
	766-27R-12	6	7	66	27	50	6	•	A	0.62	LH M12x1.75x30	
	680-27R-12	6	6	80	27	50	6	•	A	0.90	LH M12x1.75x30	
	780-27R-12	6	7	80	27	50	6	•	A	0.92	LH M12x1.75x30	
	880-27R-12	6	8	80	27	50	6	•	A	0.98	LH M12x1.75x30	
	7100-32R-12	6	7	100	32	50	6	•	A	1.29	LH M16x2x35	
	8100-32R-12	6	8	100	32	50	6	•	A	1.37	LH M16x2x35	
	8125-40R-12	6	8	125	40	63	6	•	A	3.00	SH M20x2.5x40	
	9125-40R-12	6	9	125	40	63	6	•	A	2.99	SH M20x2.5x40	

• Mounting bolts supplied do not have coolant through facility.
If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
Ex) SH M10x1.5x30: Bolt without hole.
SH M10x1.5x30-C: Bolt with hole.

E177 | Ramping Data E215-E216 | Cutting Condition E226 | Arbor Style E234-E235

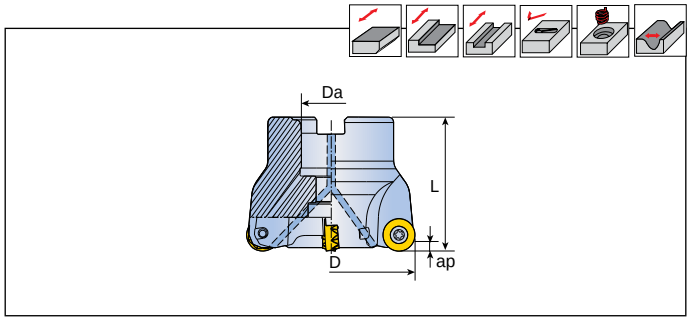
Spare parts

Designation	Screw	Wrench			
					
TFMRY-08	TS 30A60I/HG	TD 9			
TFMRY-10	TS 35085/HG	T-T15			
TFMRY-12	TS 40093I	T-T15			

TFMRY-16

CHASEMOLD

Face Mill



Designation		R		Dimension (mm)					Fig.	Kg	Mounting Bolt	Insert
				D	d	H	ap					
TFMRY	350-16R-16	8	3	50	16	50	8	•	A	0.3	SH M8x1.25x35	RYMX 16-M/MM/ ML/MR RYHX 16-ML/AL
	450-16R-16	8	4	50	16	50	8	•	A	0.3	SH M8x1.25x35	
	450-22R-16	8	4	50	22	50	8	•	A	0.3	SH M10x1.5x30	
	452-22R-16	8	4	52	22	50	8	•	A	0.3	SH M10x1.5x30	
	463-22R-16	8	4	63	22	50	8	•	A	0.5	SH M10x1.5x30	
	463H-22R-16*	8	4	63	22	50	8	•	A	0.5	SH M10x1.5x30	
	566-27R-16	8	5	66	27	50	8	•	A	0.6	LH M12x1.75x30	
	580-27R-16	8	5	80	27	50	8	•	A	0.8	LH M12x1.75x30	
	580H-27R-16*	8	5	80	27	50	8	•	A	0.8	LH M12x1.75x30	
	680-27R-16	8	6	80	27	50	8	•	A	0.8	LH M12x1.75x30	
	6100-32R-16	8	6	100	32	50	8	•	A	1.2	LH M16x2x35	
	6100H-32R-16*	8	6	100	32	50	8	•	A	1.2	LH M16x2x35	
	7125-40R-16	8	7	125	40	63	8	•	A	2.7	SH M20x2.5x40	
	7125H-40R-16*	8	7	125	40	63	8	•	A	2.6	SH M20x2.5x40	
	8125-40R-16	8	8	125	40	63	8	•	A	2.7	SH M20x2.5x40	
	8160H-40R-16*	8	8	160	40	63	8	x	C	3.3	-	

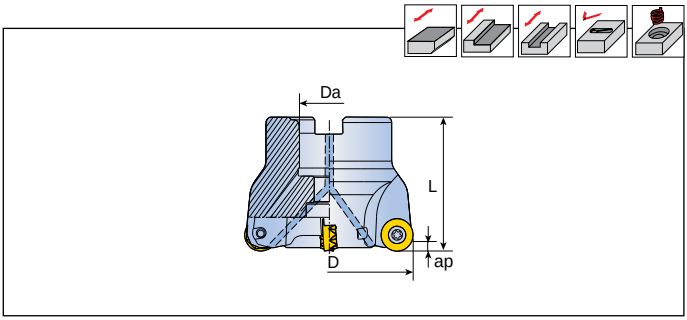
• Mounting bolts supplied do not have coolant through facility.
If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
Ex) SH M10x1.5x30: Bolt without hole.
SH M10x1.5x30-C: Bolt with hole.

• *Carbide shim type

TFMRY-20

CHASEMOLD

Face Mill



Designation	R		Dimension (mm)					Fig.	Kg	Mounting Bolt	Insert
			D	d	H	ap					
463-22R-20	10	4	63	22	50	10	•	A	0.5	SH M10x1.5x30	RYMX 2007-M/ML/MR
580-27R-20	10	5	80	27	50	10	•	A	0.8	LH M12x1.75x30	
5100H-32R-20*	10	5	100	32	50	10	•	A	1.1	LH M16x2x35	
6100-32R-20	10	6	100	32	50	10	•	A	1.2	LH M16x2x35	
5125H-40R-20*	10	5	125	40	63	10	•	A	2.7	SH M20x2.5x40	
7125-40R-20	10	7	125	40	63	10	•	A	2.5	SH M20x2.5x40	
6160H-40R-20*	10	6	160	40	63	10	X	C	2.7	-	
8160-40R-20	10	8	160	40	63	10	X	C	3.8	-	
8200H-60R-20*	10	8	200	60	63	10	X	C	5.3	-	
9250H-60R-20*	10	9	250	60	63	10	X	C	9.3	-	

- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.
- *Carbide shim type

E177 Ramping Data E216-E217 Cutting Condition E226 Arbor Style E234-E235

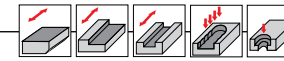
Spare parts

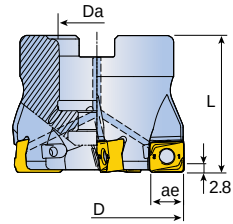
Designation	Shim	Shim Screw	Screw	Wrench	
TFMRY-16			TS 50115I	T-T20	
TFMRY-20			TS 60A130I	SW6-T, BLD T25/M7	
TFMRY...H-16	TSRY 16NS	TS 8050088S	TS 50115I	T-T20	
TFMRY...H-20	TSRY 20NS	TS 9060011S	TS 60A130I	SW6-T, BLD T25/M7	

TPM-PL09

CHASE 2 PLUNGE

Plunge Mill





90°

Designation			Dimension (mm)				Kg	Mounting Bolt	Insert
			D	Da	L	ae			
TPM	**440-16R-PL09**	4	40	16	40	9	0.2	SH M8x1.25x30	PLNG 090408R-M PLNG 090408R-ML
	550-22R-PL09	5	50	22	40	9	0.3	SH M10x1.5x30	
	552-22R-PL09	5	52	22	40	9	0.4	SH M10x1.5x30	
	663-22R-PL09	6	63	22	40	9	0.5	SH M10x1.5x30	
	763-22R-PL09	7	63	22	40	9	0.5	SH M10x1.5x30	
	666-22R-PL09	6	66	22	40	9	0.6	SH M10x1.5x30	
	766-22R-PL09	7	66	22	40	9	0.6	SH M10x1.5x30	
	880-27R-PL09	8	80	27	50	9	1.0	LH M12x1.75x30	
	10100-32R-PL09	10	100	32	50	9	2.0	LH M16x2x35	

- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.
- Coolant through type

E174 Cutting Condition E224 Arbor Style E234-E235

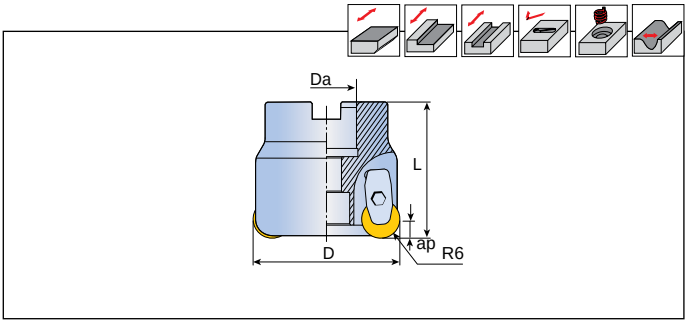
Spare parts

Designation	Screw	Wrench			
TPM-PL09	TS 30085I/HG	TD 9			

TFMRN-12CH

CHASESPEED

Face Mill



Designation			Dimension (mm)					Mounting Bolt	Insert
			D	Da	L	ap	Kg		
TFMRN	350-22R-12CH	3	50	22	50	6	0.4	SH M10x1.5x30	RNGX 1207 CH
	450-22R-12CH	4	50	22	50	6	0.3	SH M10x1.5x30	
	463-22R-12CH	4	63	22	50	6	0.5	SH M10x1.5x30	
	580-27R-12CH	5	80	27	50	6	0.9	SH M12x1.75x35	

E175 Cutting Condition E226 Abbor Style E234-E235

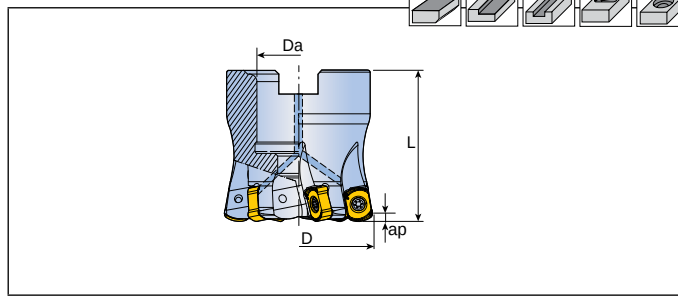
Spare parts

Designation	Clamp	Screw	Spring	Wrench	
TFMRN-12CH	CCL 5M	DLS 4	DSP 4	T-W 3	

TFMBL-06

CHASE 2 FEED

Face Mill



Designation			Dimension (mm)				Kg	Mounting Bolt	Insert
			D	Da	L	ap			
TFMBL	**432-16R-06**	4	32	16	40	1	0.1	SH M8x1.25x25	BLMP 0603R-M BLMP 0603R-MM BLMP 0603R-ML
	532-16R-06	5	32	16	40	1	0.1	SH M8x1.25x25	
	640-16R-06	6	40	16	40	1	0.2	SH M8x1.25x25	
	640-22R-06	6	40	22	40	1	0.2	SH M10x1.5x30	
	650-22R-06	6	50	22	50	1	0.4	SH M10x1.5x30	
	750-22R-06	7	50	22	50	1	0.4	SH M10x1.5x30	
	850-22R-06	8	50	22	50	1	0.4	SH M10x1.5x30	
	752-22R-06	7	52	22	40	1	0.4	SH M10x1.5x30	
	852-22R-06	8	52	22	40	1	0.4	SH M10x1.5x30	
	763-22R-06	7	63	22	50	1	0.6	SH M10x1.5x30	
	863-22R-06	8	63	22	50	1	0.6	SH M10x1.5x30	
	963-22R-06	9	63	22	50	1	0.6	SH M10x1.5x30	
	966-27R-06	9	66	27	50	1	0.7	SH M12x1.75x35	

- Coolant through type
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

E165 | Ramping Data E207 | Cutting Condition E224 | Arbor Style E234-E235

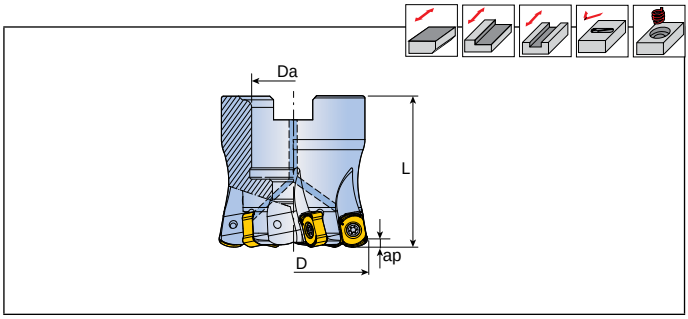
Spare parts

Designation	Screw	Wrench			
TFMBL-06	TS 25064I/HG-P	TD 8P			

TFMBL-09

CHASE2FEED

Face Mill



Designation			Dimension (mm)				Kg	Mounting Bolt	Insert
			D	Da	L	ap			
TFMBL	**432-16R-09**	4	32	16	40	1.5	0.1	KTB 32B	BLMP 0904R-M BLMP 0904R-MM BLMP 0904R-ML
	440-16R-09	4	40	16	40	1.5	0.2	SH M8x1.25x25	
	540-16R-09	5	40	16	40	1.5	0.2	SH M8x1.25x25	
	550-22R-09	5	50	22	50	1.5	0.4	SH M10x1.5x30	
	650-22R-09	6	50	22	50	1.5	0.4	SH M10x1.5x30	
	750-22R-09	7	50	22	50	1.5	0.4	SH M10x1.5x30	
	652-22R-09	6	52	22	40	1.5	0.4	SH M10x1.5x30	
	752-22R-09	7	52	22	40	1.5	0.4	SH M10x1.5x30	
	663-22R-09	6	63	22	50	1.5	0.6	SH M10x1.5x30	
	763-22R-09	7	63	22	50	1.5	0.6	SH M10x1.5x30	
	863-22R-09	8	63	22	50	1.5	0.6	SH M10x1.5x30	
	766-27R-09	7	66	27	50	1.5	0.7	SH M12x1.75x35	
	866-27R-09	8	66	27	50	1.5	0.8	SH M12x1.75x35	
	780-27R-09	7	80	27	50	1.5	1.2	SH M12x1.75x35	
	880-27R-09	8	80	27	50	1.5	1.2	SH M12x1.75x35	
	980-27R-09	9	80	27	50	1.5	1.2	SH M12x1.75x35	
	1080-27R-09	10	80	27	50	1.5	1.2	SH M12x1.75x35	
	8100-32R-09	8	100	32	60	1.5	2.3	SH M16x2.0x35	
	9100-32R-09	9	100	32	60	1.5	2.3	SH M16x2.0x35	
	10100-32R-09	10	100	32	60	1.5	2.3	SH M16x2.0x35	
	11100-32R-09	11	100	32	60	1.5	2.3	SH M16x2.0x35	
	12100-32R-09	12	100	32	60	1.5	2.3	SH M16x2.0x35	
	12125-40R-09	12	125	40	60	1.5	2.7	SH M20x2.5x40	
	14125-40R-09	14	125	40	60	1.5	2.7	SH M20x2.5x40	

- Coolant through type
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

E165 | Ramping Data E208 | Cutting Condition E224 | Arbor Style E234-E235

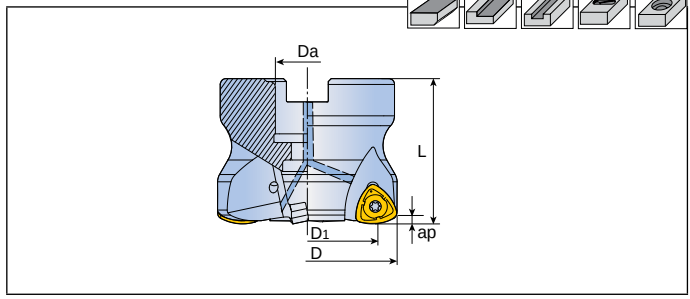
Spare parts

Designation	Screw	Wrench			
TFMBL-09	TS 35A088I/HG	TD 10P			

TFMBL-12

CHASE 2 FEED

Face Mill



Designation		Dimension (mm)					Kg	Mounting Bolt	Insert
		D	D1	Da	L	ap			
TFMBL	**350-22R-12**	3	50	33.3	22	40	2	0.3	SH M10x1.5x30	BLMP 1205R-M
	450-22R-12	4	50	33.3	22	40	2	0.3	SH M10x1.5x30	
	452-22R-12	4	52	35.3	22	40	2	0.3	SH M10x1.5x30	
	463-22R-12	4	63	46.0	22	50	2	0.8	SH M10x1.5x30	
	563-22R-12	5	63	46.0	22	50	2	0.8	SH M10x1.5x30	
	566-22R-12	5	66	49.0	22	50	2	0.8	SH M10x1.5x30	
	580-25.4R-12	5	80	63.2	25.4	60	2	1.4	SH M12x1.75x30	
	580-27R-12	5	80	63.2	27	60	2	1.4	SH M12x1.75x30	
	580-32R-12	5	80	63.1	32	60	2	1.4	SH M16x2x35	
	6100-32R-12	6	100	83.0	32	60	2	2.2	SH M16x2x35	
	7125-40R-12	7	125	108.0	40	60	2	2.8	SH M20x2.5x40	

- Coolant through type
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

E166 | Ramping Data E209 | Cutting Condition E224 | Arbor Style E234-E235

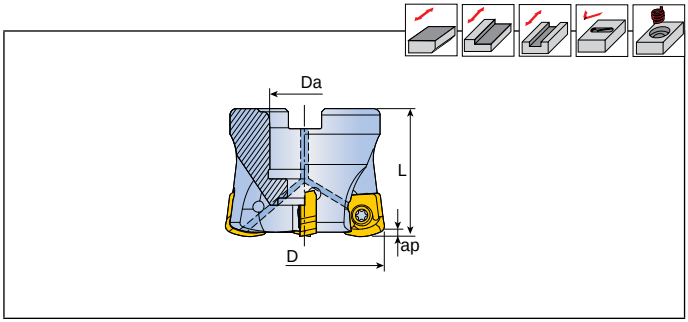
Spare parts

Designation	Screw	Wrench			
TFMBL-12	TS 40120I	T-T15			

TFMXD-08/13

CHASE2FEED

Face Mill



Designation		Dimension (mm)					Kg	Mounting Bolt	Insert
		D	Da	Da(")	L	ap			
TFMXD 550-22R-08	5	50	22	-	40	1	0.3	SH M10x1.5x30	XDMX 08T310R-M XDMX 08T310R-MR
TFMXD 350-22R-13	3	50	22	-	40	2	0.3	SH M10x.5x0	XDMX 130515R-MM XDMX 130515R-MR
450-22R-13	4	50	22	-	40	2	0.3	SH M10x1.5x30	
463-22R-13	4	63	22	-	50	2	1.0	SH M10x1.5x30	
580-27R-13	5	80	27	25.4	60	2	1.4	SH M12x1.75x35	
580-32R-13	5	80	32	31.75	60	2	1.3	SH M16x2.0x35	
6100-32R-13	6	100	32	31.75	60	2	2.0	SH M16x2.0x35	
6125-40R-13	6	125	40	38.1	60	2	2.7	SH M20x2.5x40	

- Coolant through type
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

E191 Ramping Data E210 Cutting Condition E225 Arbor Style E234-E235

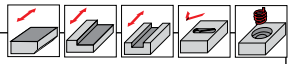
Spare parts

Designation	Screw	Wrench			
TFMXD-08	TS 25A075I/HG	TD 8P			
TFMXD-13	TS 40120I	T-T15			

3P TE90-06

End Mill

90°



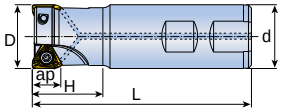


Fig.1

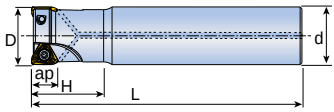


Fig.2

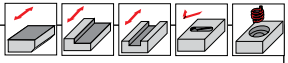
Designation		Dimension (mm)					Fig.	Insert
		D	d	L	H	ap		
3P TE90-112-12-06-L80	1	12	12	80	20	4.7	2	3PKT 0603...R-M 3PHT 0603...R-AL
114-12-06-L80	1	14	12	80	20	4.7	2	
216-W16-06	2	16	16	90	25	4.7	1	
216-16-06-L110	2	16	16	110	25	4.7	2	
216-16-06-L150	2	16	16	150	25	4.7	2	
317-16-06-L110	3	17	16	110	25	4.7	2	
318-W16-06	3	18	16	90	25	4.7	1	
318-16-06-L150	3	18	16	150	25	4.7	2	
319-16-06-L150	3	19	16	150	25	4.7	2	
320-W20-06	3	20	20	105	25	4.7	1	
420-W20-06	4	20	20	105	25	4.7	1	
320-20-06-L160	3	20	20	160	25	4.7	2	
420-19-06-L160	4	20	19	160	25	4.7	2	
421-20-06-L160	4	21	20	160	25	4.7	2	
422-W20-06	4	22	20	110	25	4.7	1	
425-W20-06	4	25	20	115	25	4.7	1	
525-W20-06	5	25	20	115	25	4.7	1	
525-W25-06	5	25	25	115	25	4.7	1	
630-W25-06	6	30	25	130	30	4.7	1	
632-W25-06	6	32	25	130	30	4.7	1	
732-W25-06	7	32	25	130	30	4.7	1	
840-W32-06	8	40	32	130	30	4.7	1	

• Coolant through type

3P TE90-10

MILL•RUSH

End Mill



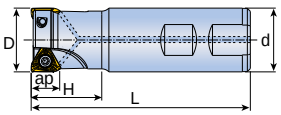


Fig.1

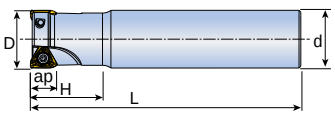
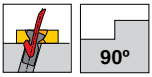


Fig.2

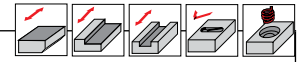


Designation		Dimension (mm)						Fig.	Insert
		D	d	L	H	ap			
3P TE90-116-W16-10	1	16	16	90	20	7	●	1	3PK(H)T 1004...R-M 3PK(H)T 1004...R-ML 3PHT 1004...R-AL
220-W20-10	2	20	20	90	25	7	●	1	
220-19-10-L170	2	20	19	170	30	7	x	2	
220-20-10-L170	2	20	20	170	40	7	x	2	
221-20-10-L200	2	21	20	200	30	7	x	2	
222-W20-10	2	22	20	100	25	7	●	1	
225-25-10-L210	2	25	25	210	40	7	x	2	
325-W20-10	3	25	20	100	30	7	●	1	
325-W25-10	3	25	25	100	30	7	●	1	
325-24-10-L210	3	25	24	210	35	7	x	2	
325-25-10-L210	3	25	25	210	40	7	x	2	
226-25-10-L250	2	26	25	250	30	7	x	2	
330-W25-10	3	30	25	110	35	7	●	1	
232-W25-10	2	32	25	110	35	7	●	1	
332-W25-10	3	32	25	110	35	7	●	1	
332-32-10-L250	3	32	32	250	60	7	x	2	
432-W32-10	4	32	32	110	40	7	●	1	
532-W32-10	5	32	32	110	40	7	●	1	
333-32-10-L250	3	33	32	250	35	7	x	2	
440-32-10-L200	4	40	32	200	40	7	x	2	
540-W32-10	5	40	32	115	40	7	●	1	
640-W32-10	6	40	32	115	40	7	●	1	

3P TE90-15/19

MILL•RUSH

End Mill



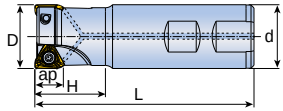


Fig.1

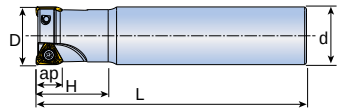


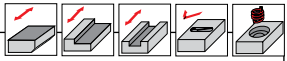
Fig.2

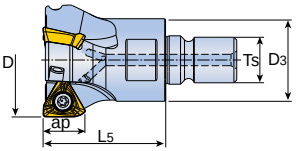
Designation		Dimension (mm)						Fig.	Insert
		D	d	L	H	ap			
3P TE90-232-W32-15	2	32	32	110	40	11	●	1	3PK(H)T 1505...R-M 3PK(H)T 1505...R-ML 3PHT 1505...R-AL
232-32-15-L250	2	32	32	250	60	11	x	2	
332-W25-15	3	32	25	100	40	11	●	1	
332-W25-15-L155	3	32	25	155	35	11	x	2	
332-W32-15	3	32	32	110	40	11	●	1	
332-32-15-L150	3	32	32	150	40	11	x	2	
332-32-15-L250	3	32	32	250	60	11	x	2	
233-32-15-L200	2	33	32	200	40	11	x	2	
233-32-15-L250	2	33	32	250	40	11	x	2	
335-W32-15	3	35	32	110	40	11	●	1	
340-W32-15	3	40	32	110	40	11	●	1	
340-32-15-L200	3	40	32	200	40	11	x	2	
440-W32-15	4	40	32	110	40	11	●	1	
3P TE90-240-32-19-L250	2	40	32	250	45	15	x	2	3PK(H)T 1906...R-M 3PKT 1906...R-ML 3PHT 1906...R-AL
340-W32-19	3	40	32	115	45	15	●	1	
340-32-19-L200	3	40	32	200	45	15	x	2	
450-W32-19	4	50	32	115	45	15	●	1	

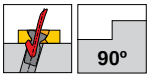
3P TE90-...-M...-06/10/15/19

MILL•RUSH

Modular







Designation		Dimension (mm)					Insert
		D	D3	L5	Ts	ap	
3P TE90-216-M08-06	2	16	13	23	8	4.7	3PKT 0603...R-M 3PHT 0603...R-AL
320-M10-06	3	20	18	35	10	4.7	
420-M10-06	4	20	18	35	10	4.7	
425-M12-06	4	25	21	35	12	4.7	
525-M12-06	5	25	21	35	12	4.7	
632-M16-06	6	32	29	43	16	4.7	
732-M16-06	7	32	29	43	16	4.7	
735-M16-06	7	35	29	43	16	4.7	
3P TE90-220-M10-10	2	20	18	35	10	7	3PK(H)T 1004...R-M 3PK(H)T 1004...R-ML 3PHT 1004...R-AL
325-M12-10	3	25	21	35	12	7	
326-M12-10	3	26	21	35	12	7	
432-M16-10	4	32	29	43	16	7	
532-M16-10	5	32	29	43	16	7	
535-M16-10	5	35	29	43	16	7	
540-M16-10	5	40	29	43	16	7	
640-M16-10	6	40	29	43	16	7	
642-M16-10	6	42	29	43	16	7	
3P TE90-232-M16-15	2	32	29	43	16	11	3PK(H)T 1505...R-M 3PK(H)T 1505...R-ML 3PHT 1505...R-AL
332-M16-15	3	32	29	43	16	11	
340-M16-15	3	40	29	43	16	11	
440-M16-15	4	40	29	43	16	11	
3P TE90-340-M16-19	3	40	29	43	16	15	3PK(H)T 1906...R-M 3PKT 1906...R-ML 3PHT 1906...R-AL

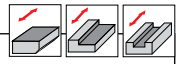
• Matched with T-FLEXTEC: see part G • Coolant through type

Spare parts

Designation	Screw	Wrench			
					
3P TE90-06	TS 20043I/HG-P	TD6P			
3P TE90-10	TS 25C065I/HG	TD8			
3P TE90-15	TS 40B100I	TD15			
3P TE90-19	TS 45120I	T-T20			

6N TE90-06/09

End Mill



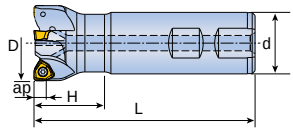


Fig.1

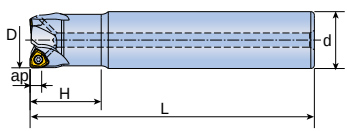


Fig.2

Designation		Dimension (mm)					Fig.	Insert
		D	d	L	H	ap		
6N TE90-225-W25-06	2	25	25	100	30	6.2	1	6NGU 0604...R-M 6NGU 0604...R-ML 6NGU 0604...R-AL
225-25-06 -L150	2	25	25	150	30	6.2	2	
232-W32-06	2	32	32	110	40	6.2	1	
232-32-06 -L160	2	32	32	160	40	6.2	2	
332-W32-06	3	32	32	110	40	6.2	1	
332-32-06 -L160	3	32	32	160	40	6.2	2	
340-W32-06	3	40	32	115	40	6.2	1	
340-32-06-L200	3	40	32	200	40	6.2	2	
440-W32-06	4	40	32	115	40	6.2	1	
6N TE90-232-W32-09	2	32	32	110	40	9.2	1	6NGU 0905...R-M 6NGU 0905...R-ML 6NGU 0905...R-AL
232-32-09-L160	2	32	32	160	60	9.2	2	
340-W32-09	3	40	32	120	40	9.2	1	
340-32-09-L200	3	40	32	200	40	9.2	2	
440-W32-09	4	40	32	120	40	9.2	1	

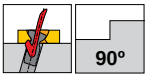
• Coolant through type

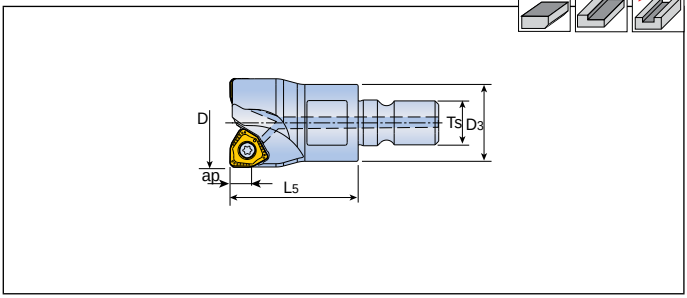
Contents

6N TE90-...-M...-06/09

MILL RUSH

Modular





Designation		Dimension (mm)					Insert
		D	D3	L5	Ts	ap	
6N TE90-225-M12-06	2	25	21	35	12	6.2	6NGU 0604...R-M 6NGU 0604...R-ML 6NGU 0604...R-AL
332-M16-06	3	32	29	43	16	6.2	
440-M16-06	4	40	29	43	16	6.2	
6N TE90-232-M16-09	2	32	29	43	16	9.2	6NGU 0905...R-M 6NGU 0905...R-ML 6NGU 0905...R-AL
340-M16-09	3	40	29	43	16	9.2	
440-M16-09	4	40	29	43	16	9.2	

• Matched with T-FLEXTEC: see part G • Coolant through type

E158 Cutting Condition E219

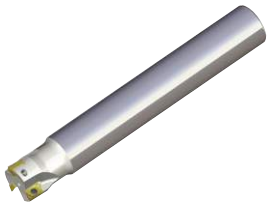
Spare parts

Designation	Screw	Wrench			
6N TE90...-06	TS 30085I/HG	TD9			
6N TE90...-09	TS 40B100I	TD15			

TE90AX-06

CHASEMILL

End Mill



90°

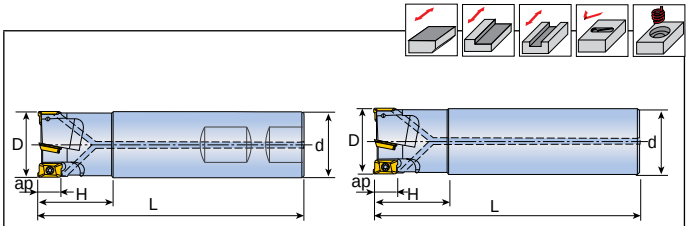


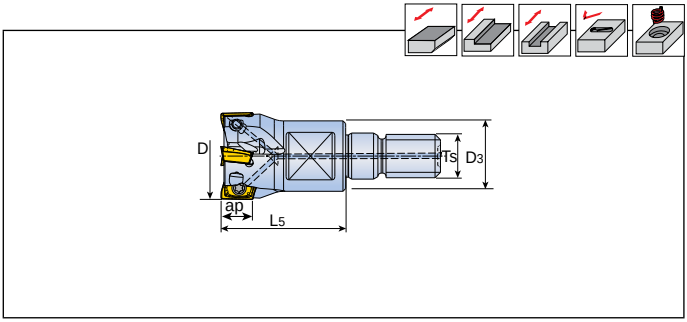
Fig.1 Fig.2

Designation		Dimension (mm)						Fig.	Insert
		D	d	L	H	ap			
TE90AX 108-08-06-C	1	8	8	80	17	5.75	●	2	AXMT 0602 PER- EM AXMT 0602...R-EM AXMT 0602R-HF AXCT 0602...R-AL
210-09-06-L120	2	10	9	120	17	5.75	x	2	
210-10-06	2	10	10	80	17	5.75	x	2	
210-10-06-C	2	10	10	80	17	5.75	●	2	
211-10-06	2	11	10	80	17	5.75	x	2	
212-12-06	2	12	12	80	18	5.75	x	2	
212-12-06-C	2	12	12	80	18	5.75	●	2	
212-12-06-L	2	12	12	130	18	5.75	x	2	
212-11-06-L120	2	12	11	120	20	5.75	x	2	
312-12-06	3	12	12	80	18	5.75	x	2	
312-12-06-C	3	12	12	80	18	5.75	●	2	
313-12-06-C	3	13	12	90	20	5.75	●	2	
314-12-06	3	14	12	80	18	5.75	x	2	
415-12-06	4	15	12	80	18	5.75	x	2	
316-16-06	3	16	16	110	20	5.75	x	2	
316-16-06-C	3	16	16	110	20	5.75	●	2	
316-16-06-L	3	16	16	150	20	5.75	x	2	
416-W16-06	4	16	16	90	20	5.75	x	1	
416-W16-06-C	4	16	16	90	20	5.75	●	1	
417-16-06	4	17	16	90	20	5.75	x	2	
418-W16-06	4	18	16	90	20	5.75	x	1	
418-W16-06-C	4	18	16	90	20	5.75	●	1	
418-16-06-L	4	18	16	150	20	5.75	x	2	
419-W16-06	4	19	16	90	20	5.75	x	1	
420-20-06	4	20	20	160	25	5.75	x	2	
420-W20-06-C	4	20	20	160	25	5.75	●	1	
520-19-06-L	5	20	19	160	25	5.75	x	1	
520-W20-06	5	20	20	105	25	5.75	x	1	
520-W20-06-C	5	20	20	105	25	5.75	●	1	
521-20-06	5	21	20	105	25	5.75	x	2	
725-W20-06	7	25	20	115	25	5.75	x	1	
725-W20-06-C	7	25	20	115	25	5.75	●	1	
725-W25-06	7	25	25	120	30	5.75	x	1	
832-W25-06	8	32	25	130	32	5.75	x	1	
832-W25-06-C	8	32	25	130	32	5.75	●	1	
1040-W32-06	10	40	32	140	40	5.75	x	1	
1040-W32-06-C	10	40	32	140	40	5.75	●	1	

TE90AX ...-M...-06

CHASEMILL

Modular



90°

Designation			Dimension (mm)					Insert
			D	D3	L5	Ts	ap	
TE90AX	**210-M06-06**	2	10	9.68	23	6	5.5	AXMT 0602 PER-EM AXMT 0602...R-EM AXMT 0602R-HF AXCT 0602...R-AL
	312-M06-06	3	12	9.68	23	6	5.5	
	416-M08-06	4	16	13	23	8	5.5	
	520-M10-06	5	20	18	30	10	5.5	
	725-M12-06	7	25	21	35	12	5.5	
	832-M16-06	8	32	29	43	16	5.5	
	1040-M16-06	10	40	29	43	16	5.5	

- Matched with T-FLEXTEC: see part G • Coolant through type
- Cutter body for 'AXMT 06' insert with corner radius more than 1.0mm should be modified accordingly Body "R"=Insert "R"-0.1mm

E164 Ramping Data E200,E203 Cutting Condition E220

Spare parts

Designation	Screw	Wrench			
TE90AX-06	TS 18041I/HG	TD6P			

2S-TE90AP-09

End Mill

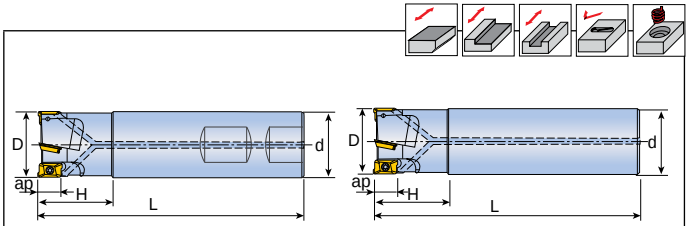


Fig.1 Fig.2

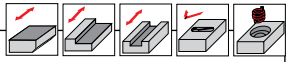
90°

Designation		Dimension (mm)						Fig.	Insert
		D	d	L	H	ap			
2S-TE90AP 110-W10-09	1	10	10	80	23.5	8.8	x	1	APKT 09T3 PER-EM/M APKT 09T3...R-EM APCT 09T3 PER-ML APCT 09T3 PER-AL APKT 09T3R-HF
110-W10-09-C	1	10	10	80	23.5	8.8	●	1	
112-W12-09	1	12	12	80	23.0	8.8	x	1	
112-W16-09-C	1	12	16	80	21.7	8.8	●	1	
114-W12-09	1	14	12	80	25.0	8.8	x	1	
216-15-09-L	2	16	15	170	30.0	8.8	x	2	
216-W16-09	2	16	16	90	22.1	8.8	x	1	
216-W16-09-C	2	16	16	90	22.1	8.8	●	1	
216-16-09-L	2	16	16	145	27.1	8.8	x	2	
217-16-09-L	2	17	16	180	25.0	8.8	x	2	
218-W16-09	2	18	16	90	25.0	8.8	x	1	
218-W16-09-C	2	18	16	90	25.0	8.8	●	1	
220-19-09-L	2	20	19	170	25.0	8.8	x	2	
220-20-09-L	2	20	20	170	37.1	8.8	x	2	
320-W20-09	3	20	20	110	27.1	8.8	x	1	
320-W20-09-C	3	20	20	110	27.1	8.8	●	1	
221-20-09-L	2	21	20	200	25.0	8.8	x	2	
322-W20-09	3	22	20	110	30.0	8.8	x	1	
322-W20-09-C	3	22	20	110	30.0	8.8	●	1	
225-24-09-L	2	25	24	210	28.0	8.8	x	2	
225-25-09-L	2	25	25	210	37.1	8.8	x	2	
325-W20-09	3	25	20	110	30.0	8.8	x	1	
325-W20-09-C	3	25	20	110	30.0	8.8	●	1	
325-W25-09	3	25	25	110	26.6	8.8	x	1	
425-W20-09-C	4	25	20	110	30.0	8.8	●	1	
226-25-09-L	2	26	25	250	28.0	8.8	x	2	
430-W25-09	4	30	25	130	32.0	8.8	x	1	
430-W25-09-C	4	30	25	130	30.0	8.8	●	1	
232-32-09-L	2	32	32	250	62.0	8.8	x	2	
432-W25-09	4	32	25	130	32.0	8.8	x	1	
432-W25-09-C	4	32	25	130	32.0	8.8	●	1	
532-W25-09-C	5	32	25	130	32.0	8.8	●	1	
333-32-09-L	3	33	32	250	40.0	8.8	x	2	
240-32-09-L	2	40	32	250	32.0	8.8	x	2	
540-W32-09	5	40	32	130	32.0	8.8	x	1	
540-W32-09-C	5	40	32	130	32.0	8.8	●	1	
640-W32-09	6	40	32	130	32.0	8.8	x	1	

2S-TE90AP ...-M...-09

CHASEMILL

Modular



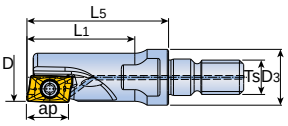


Fig.1

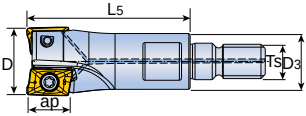


Fig.2

90°

Designation		Dimension (mm)						Fig.	Insert
		D	D3	L5	L1	Ts	ap		
2S-TE90AP 110-M06-09	1	10	9.7	33	19	6	8.8	1	APKT 09T3 PER-EM/M APKT 09T3...R-EM APCT 09T3 PER-ML APCT 09T3 PER-AL APKT 09T3R-HF
112-M08-09	1	12	13	33	25	8	8.8	1	
216-M08-09	2	16	13	38	-	8	8.8	2	
320-M10-09	3	20	18	38	-	10	8.8	2	
325-M12-09	3	25	21	38	-	12	8.8	2	
425-M12-09	4	25	21	38	-	12	8.8	2	
432-M16-09	4	32	29	38	-	16	8.8	2	
532-M16-09	5	32	29	38	-	16	8.8	2	
540-M16-09	5	40	29	43	-	16	8.8	2	
640-M16-09	6	40	29	43	-	16	8.8	2	

- Matched with T-FLEXTEC: see part G
- Coolant through type
- Cutter body for 'APKT09' insert with corner radius more than 2.4mm should be modified accordingly body "R"=insert "R"-0.2mm

E161 Ramping Data E201,E204 Cutting Condition E221

Spare parts

Designation	Screw	Wrench			
					
2S-TE90AP-09	TS 25055I/HG	TD8			

TE90AP-12

CHASEMILL

End Mill

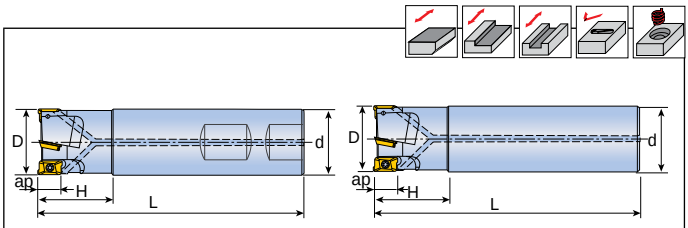


Fig.1 Fig.2

90°

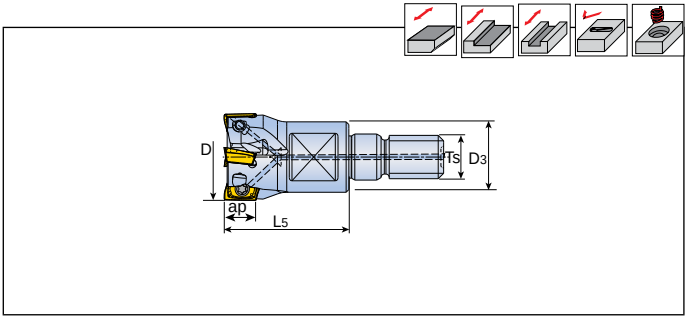
Designation		Dimension (mm)					Fig.	Insert
		D	d	L	H	ap		
TE90AP 116-W16-12-C	1	16	16	85	26	12	1	APKT 1204 PER-EM/ EL/EML APKT 1204 PER-SM APKT 1204...R-EM APCT 1204...R-ML APCT 1204...R-AL APKT 1204R-HF
218-W20-12-C	2	18	20	85	26	12	1	
220-19-12-L	2	20	19	170	30	12	2	
220-W20-12-C	2	20	20	90	30	12	1	
220-W20-12-L-C	2	20	20	125	30	12	1	
220-20-12-L	2	20	20	170	30	12	2	
220-20-12-L200	2	20	20	200	30	12	2	
221-20-12-L200	2	21	20	200	30	12	2	
221-20-12-L250	2	21	20	250	30	12	2	
225-24-12-L	2	25	24	200	40	12	2	
225-W25-12-L-C	2	25	25	145	40	12	1	
225-25-12-L	2	25	25	210	40	12	2	
225-25-12-L200	2	25	25	200	40	12	2	
325-W25-12-C	3	25	25	100	40	12	1	
226-25-12-L200	2	26	25	200	40	12	2	
226-25-12-L250	2	26	25	250	40	12	2	
232-25-12-L	2	32	25	250	40	12	2	
332-W25-12-L-C	3	32	25	155	35	12	1	
332-W32-12-C	3	32	32	110	40	12	1	
332-32-12-L	3	32	32	250	40	12	2	
332-32-12-L150	3	32	32	150	40	12	2	
432-W25-12-C	4	32	25	100	40	12	1	
233-32-12-L200	2	33	32	200	40	12	2	
233-32-12-L250	2	33	32	250	40	12	2	
333-32-12-L200	3	33	32	200	40	12	2	
333-32-12-L250	3	33	32	250	40	12	2	
435-W25-12	4	35	25	100	40	12	1	
440-W32-12-C	4	40	32	115	45	12	1	
440-32-12-L	4	40	32	250	40	12	2	
540-W32-12-C	5	40	32	115	45	12	1	

• Coolant through type

TE90AP...-M...-12

CHASEMILL

Modular



90°

Designation		Dimension (mm)					Insert
		D	D3	L5	Ts	ap	
TE90AP 116-M08-12	1	16	13	35	8	12	APKT 1204 PER-EM/ EL/ EML APKT 1204 PER-SM APKT 1204...R-EM APCT 1204...R-ML APCT 1204...R-AL APKT 1204R-HF
220-M10-12	2	20	18	35	10	12	
325-M12-12	3	25	21	35	12	12	
432-M16-12	4	32	29	43	16	12	
540-M16-12	5	40	29	43	16	12	
542-M16-12	5	42	29	43	16	12	

- Matched with T-FLEXTEC: see part G
- Coolant through type
- Cutter body for 'APKT 12' insert with with corner radius more than 1.6mm should be modified accordingly body "R"=Insert "R"-0.5mm

E162 Ramping Data E202,E204 Cutting Condition E221

Spare parts

Designation	Screw	Wrench			
TE90AP-12(Ø16-Ø25)	TS 35A070I/HG	TD10P			
TE90AP-12Ø32-)	TS 35A088I/HG	TD10P			

TE90AP-17

CHASEMILL

End Mill

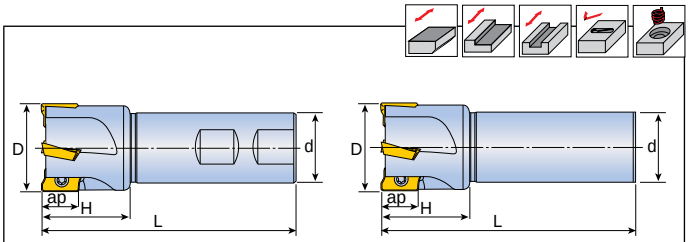


Fig.1 Fig.2

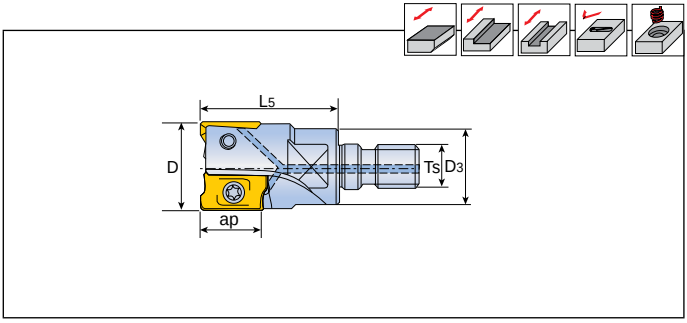
90°

Designation		Dimension (mm)						Fig.	Insert
		D	d	L	H	ap			
TE90AP 120-W20-17	1	20	20	90	32	16.1	x	1	APKT 1705 PER-M APKT 1705 PER-EM/ EL/EML APKT 1705 PER-SM APKT 1705...R-EM APKT 1705 PER-AL
120-W20-17-C	1	20	20	90	32	16.1	●	1	
225-24-17-L	2	25	24	210	40	16.1	x	2	
225-W25-17	2	25	25	100	39	16.1	x	1	
225-W25-17-C	2	25	25	100	39	16.1	●	1	
225-25-17-L	2	25	25	210	40	16.1	x	2	
226-25-17-L200	2	26	25	200	40	16.1	●	2	
226-25-17-L250	2	26	25	250	40	16.1	●	2	
232-32-17-L	2	32	32	250	65	16.1	x	2	
233-32-17-L250	2	33	32	250	40	16.1	●	2	
233-32-17-L300	2	33	32	300	40	16.1	●	2	
332-W32-17	3	32	32	110	40	16.1	x	1	
332-W32-17-C	3	32	32	110	40	16.1	●	1	
332-32-17-L	3	32	32	200	65	16.1	x	2	
333-32-17-L200	3	33	32	200	55	16.1	●	2	
333-32-17-L250	3	33	32	250	55	16.1	●	2	
240-32-17-L	2	40	32	250	54	16.1	x	2	
340-W32-17	3	40	32	110	40	16.1	x	1	
340-32-17-L	3	40	32	200	54	16.1	x	2	
440-W32-17	4	40	32	115	45	16.1	x	1	
440-W32-17-C	4	40	32	115	45	16.1	●	1	
440-32-17-L	4	40	32	200	57	16.1	x	2	

TE90AP...-M...-17

CHASEMILL

Modular



90°

Designation		Dimension (mm)					Insert
		D	D3	L5	Ts	ap	
TE90AP 120-M10-17	1	20	18	43	10	16.1	APKT 1705 PER-M APKT 1705 PER-EM /EL/EML APKT 1705 PER-SM APKT 1705...R-EM APKT 1705 PER-AL
225-M12-17	2	25	21	43	12	16.1	
232-M16-17	2	32	29	43	16	16.1	
332-M16-17	3	32	29	43	16	16.1	
340-M16-17	3	40	29	43	16	16.1	
440-M16-17	4	40	29	43	16	16.1	

- Matched with T-FLEXTEC: see part G • Coolant through type
- Cutter body for 'APKT 17' insert with corner radius more than 1.6mm should be modified accordingly Body "R"=Insert "R"-0.8mm

E163 Ramping Data E202 Cutting Condition E221

Spare parts

Designation	Screw	Wrench			
TE90AP-17(Ø20-Ø25)	TS 40085I/HG	TD15			
TE90AP-17(Ø32-Ø63)	TS 40093I/HG	TD15			
TE90AP-17(Ø80-)	TS 40120I/HG	TD15			

TE90AN-11/16

CHASE 2 MILL

End Mill

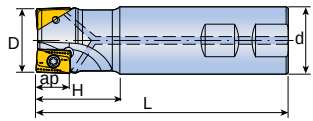


Fig.1

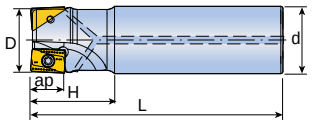


Fig.2

90°

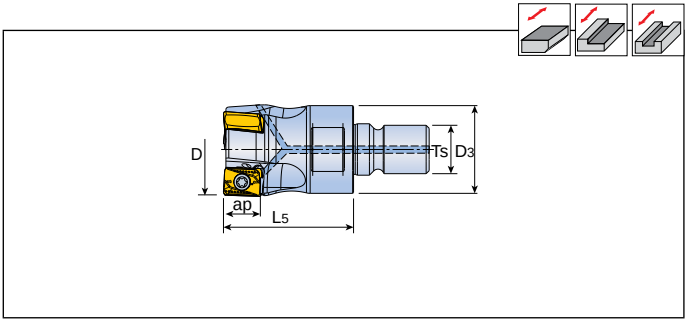
Designation		Dimension (mm)					Fig.	Insert
		D	d	L	H	ap		
TE90AN 225-24-11-L	2	25	24	200	40	11.1	2	ANMX 110608R-M ANHX 1106...R-M/AL
225-W25-11	2	25	25	100	40	11.1	1	
225-25-11-L	2	25	25	200	40	11.1	2	
226-25-11-L	2	26	25	200	40	11.1	2	
332-W32-11	3	32	32	110	40	11.1	1	
332-32-11-L	3	32	32	200	40	11.1	2	
233-32-11-L	2	33	32	250	40	11.1	2	
333-32-11-L	3	33	32	200	40	11.1	2	
340-32-11-L	3	40	32	250	40	11.1	2	
440-W32-11	4	40	32	115	40	11.1	1	
440-32-11-L	4	40	32	200	40	11.1	2	
TE90AN 232-W32-16	2	32	32	110	30	15	1	ANMX 160708R-M ANHX 160708R-SM ANHX 1607...R-M/AL ANHX 160708R-ML/MR
232-32-16	2	32	32	150	45	15	2	
232-32-16-L250	2	32	32	250	40	15	2	
233-32-16-L200	2	33	32	200	55	15	2	
340-W32-16	3	40	32	115	35	15	1	
340-32-16	3	40	32	150	45	15	2	
340-32-16-L250	3	40	32	250	45	15	2	
450-32-16	4	50	32	150	50	15	2	

• Coolant through type

TE90AN...-M...-11/16

CHASE 2 MILL

Modular



90°

Designation		Dimension (mm)					Insert
		D	D3	L5	Ts	ap	
TE90AN225-M12-11	2	25	21	35	12	11.1	ANMX 110608R-M ANHX 1106...R-M/AL/SML
332-M16-11	3	32	29	43	16	11.1	
440-M16-11	4	40	29	43	16	11.1	
TE90AN232-M16-16	2	32	29	43	16	15	ANMX 160708R-M ANHX 160708R-SM/SML ANHX 1607...R-M/AL ANHX 160708R-ML/MR
340-M16-16	3	40	29	43	16	15	

• Matched with T-FLEXTEC: see part G • Coolant through type

E160 Ramping Data E199 Cutting Condition E220

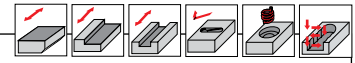
Spare parts

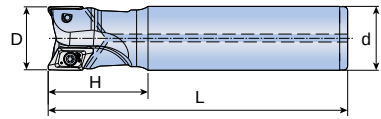
Designation	Screw	Wrench			
TE90AN-11	TS 35A088I/HG	TD10P			
TE90AN-16	TS 40120I	TD15			

TE90XE-16

CHASEALU

End Mill





90°

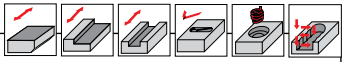
Designation		Dimension (mm)				Max RPM	Insert
		D	d	L	H		
TE90XE 225-25-16	2	25	25	125	55	38,000	XECT 1605...R-AL
225-25-16-L170	2	25	25	170	70	38,000	XECT 1605...WR-AL
232-32-16	2	32	32	150	50	34,000	
232-32-16-L200	2	32	32	200	80	34,000	
332-32-16	3	32	32	150	50	34,000	
332-32-16-L200	3	32	32	200	80	34,000	
340-32-16	3	40	32	170	55	30,000	
340-32-16-L250	3	40	32	250	55	30,000	

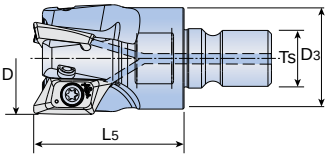
• Coolant through type

TE90XE...-M...-16

CHASEALU

Modular





90°

Designation		Dimension (mm)				Max RPM	Insert
		D	D3	L5	Ts		
TE90XE 225-M12-16	2	25	21	43	12	38,000	XECT 1605...R-AL
232-M16-16	2	32	29	43	16	34,000	
332-M16-16	3	32	29	43	16	34,000	
340-M16-16	3	40	29	43	16	30,000	

- Matched with T-FLEXTEC: see part G • Coolant through type
- Cutter body for 'XECT 16' insert with corner radius more than 3.2mm should be modified accordingly body "R"=insert "R"-0.3mm

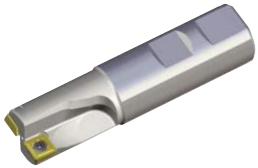
E192 | Ramping Data E205-E206 | Cutting Condition E222

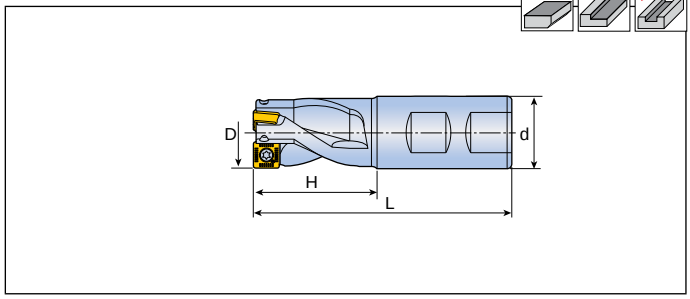
Spare parts

Designation	Screw	Wrench			
TE90XE...-16(Ø25)	TS 40085I/HG	T-T15			
TE90XE...-16(Ø32-)	TS 40093I/HG	T-T15			

TSF-06/09/11/14

End Mill





90°

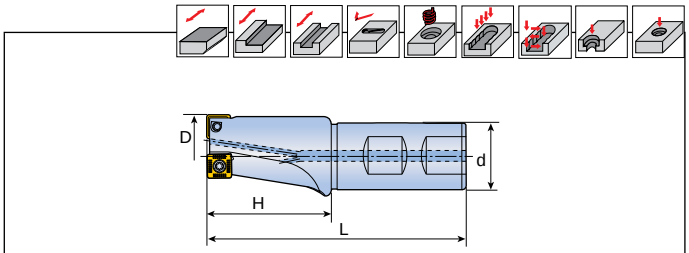
Designation		Dimension (mm)					Fig.	Max. Drilling depth, Cd	End Milling depth, ap	Insert
		D	d	L	H					
TSF- **112-W16-06**	1	12	16	80	27	x	1	18	5.6	XOMT 060204
216-W20-06	2	16	20	90	27	x	1	18	5.6	
320-W20-06	3	20	20	100	25	x	1	18	5.6	
222-W25-09	2	22	25	100	40	x	1	28	9.0	SPMG 090408-EM
225-W25-09	2	25	25	100	40	x	1	28	9.0	SPMT 090408-EM
332-W32-11	3	32	32	115	55	x	1	39	10.7	SPMG 110408-EM
440-W32-11	4	40	32	125	55	x	1	39	10.7	SPMT 110408-EM
445-W32-14	4	45	32	130	70	x	1	50	13.4	SPMG 140508-EM
450-W32-14	4	50	32	140	80	x	1	60	13.4	SPMT 140508-EM

E185 Cutting Condition E222

Spare parts

Designation	Screw	Wrench			
TSF (Ø12)	TS 22046I	TD7			
TSF (Ø16-Ø20)	TS 22052I/HG	TD7			
TSF (Ø22-Ø25)	TS 35088I	TD10			
TSF (Ø32-Ø40)	TS 40093I	TD15			
TSF (Ø45-Ø50)	TS 50A121I/HG	TD20			

End Mill



90°

Designation		Dimension (mm)				Fig.	Max. Drilling depth, Cd	End Milling depth, ap	Insert
		D	d	L	H				
TDM- 112-W16-06	1	12	16	80	20	2	12	5.6	XOMT 060204
216-W20-06	2	16	20	90	25	2	16	5.6	
218-W20-06	2	18	20	90	25	2	16	5.6	
220-W25-06	2	20	25	100	40	2	20	5.6	
222-W25-06	2	22	25	110	47	2	25	5.6	
225-W25-09	2	25	25	110	50	2	30	9.0	SPMG 090408-EM
228-W32-09	2	28	32	125	60	2	38	9.0	SPMT 090408-EM
232-W32-11	2	32	32	125	60	2	38	10.7	SPMG 110408-EM
240-W32-11	2	40	32	125	60	2	38	10.7	SPMT 110408-EM
245-W32-14	2	45	32	130	66	2	40	13.4	SPMG 140508-EM
250-W32-14	2	50	32	150	66	2	40	13.4	SPMT 140508-EM

• Coolant through type

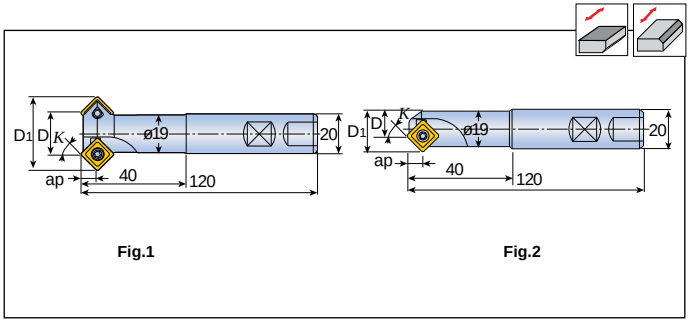
E185 Cutting Condition E222

Spare parts

Designation	Screw	Wrench			
TDM (Ø12)	TS 22046I	TD7			
TDM (Ø16-Ø20)	TS 22052I/HG	TD7			
TDM (Ø22-Ø25)	TS 35088I	TD10			
TDM (Ø32-Ø40)	TS 40093I	TD15			
TDM (Ø45-Ø50)	TS 50A121I/HG	TD20			

TCF-11

End Mill



45°

Designation		Dimension (mm)				Fig.	Application Range(mm)	Insert
		K	D	D1	ap			
TCF 15-D25-11	2	75°	25	30.5	10.1	1	Ø26.3 - Ø30.0	SPMT 110408-EM SPMG 110408-EM
30-D25-11	2	60°	25	35.5	8.9	1	Ø26.3 - Ø34.0	
45-D07-11	1	45°	7	21.5	7.2	2	Ø8.3 - Ø20.9	
45-D19-11	2	45°	19	33.4	7.2	1	Ø20.3 - Ø32.9	
45-D25-11	3	45°	25	39.4	7.2	1	Ø26.3 - Ø38.9	

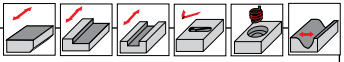
E185 Cutting Condition E222

Spare parts

Designation	Screw	Wrench			
TCF-11	TS 40093I	TD15			

TERNS-10/12/16

End Mill



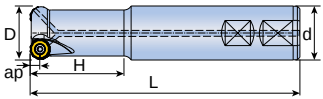


Fig.1

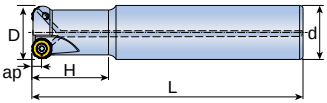


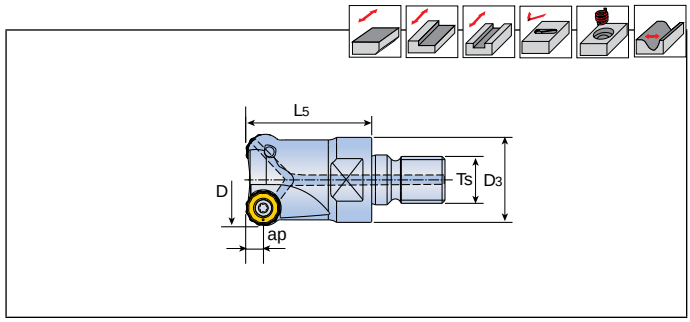
Fig.2

Designation		Dimension (mm)					Fig.	Insert
		D	d	L	H	ap		
TERNS 225-25-10-L160	2	25	25	160	60	5	2	RNMU 1004-ML RNMU 1004S-M
225-32-10-L250	2	25	32	250	40	5	2	
325-25-10-L160	3	25	25	160	60	5	2	
226-25-10-L200	2	26	25	200	80	5	2	
332-32-10-L180	3	32	32	180	70	5	2	
332-32-10-L250	3	32	32	250	100	5	2	
432-32-10-L180	4	32	32	180	70	5	2	
432-32-10-L250	4	32	32	250	100	5	2	
433-32-10-L200	4	33	32	200	80	5	2	
433-32-10-L250	4	33	32	250	100	5	2	
232-32-12-L150	2	32	32	150	50	6	2	RNMU 1205-ML RNMU 1205S-M
232-32-12-L200	2	32	32	200	60	6	2	
232-32-12-L	2	32	32	250	50	6	2	
332-W32-12	3	32	32	160	60	6	1	
332-32-12-L200	3	32	32	200	70	6	2	
332-32-12-L250	3	32	32	250	60	6	2	
233-32-12-L200	2	33	32	200	50	6	2	
233-32-12-L250	2	33	32	250	60	6	1	
333-32-12-L200	3	33	32	200	70	6	2	
333-32-12-L250	3	33	32	250	60	6	2	
340-W32-12	3	40	32	160	50	6	1	
340-32-12-L250	3	40	32	250	50	6	2	
440-W32-12	4	40	32	160	50	6	1	
440-32-12-L250	4	40	32	250	60	6	2	
450-32-12-L200	4	50	32	200	70	6	2	
550-32-12-L250	5	50	32	250	60	6	2	
240-32-16-L160	2	40	32	160	50	8	1	RNMU 1606-ML RNMU 1606S-M
240-32-16-L180	2	40	32	180	70	8	2	
240-32-16-L250	2	40	32	250	100	8	2	

• Coolant through type

TERNS...-M...-10/12/16

Modular



Designation		Dimension (mm)					Insert
		D	D3	L5	Ts	ap	
TERNS 225-M12-10	2	25	21	35	12	5	RNMU 1004-ML RNMU 1004S-M
325-M12-10	3	25	21	35	12	5	
432-M16-10	4	32	29	43	16	5	
542-M16-10	5	42	29	43	16	5	
232-M16-12	2	32	29	43	16	6	RNMU 1205-ML RNMU 1205S-M
332-M16-12	3	32	29	43	16	6	
233-M16-12	2	33	29	43	16	6	
333-M16-12	3	33	29	43	16	6	
340-M16-12	3	40	29	43	16	6	
440-M16-12	4	40	29	43	16	6	
240-M16-16	2	40	29	43	16	8	RNMU 1606-ML RNMU 1606S-M
340-M16-16	3	40	29	43	16	8	

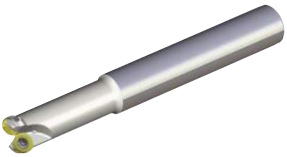
• Matched with T-FLEXTEC: see part G • Coolant through type

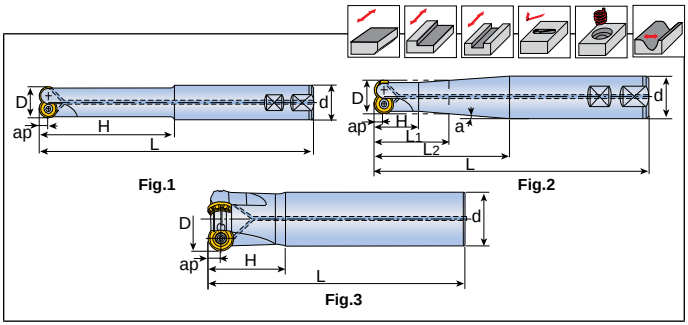
E175 Ramping Data E211-E212 Cutting Condition E225-E226

Spare parts

Designation	Screw	Wrench			
TERNS-10	TS 35085I/HG	TD 15			
TERNS-12	TS 40G110I	T-T15			
TERNS-16	TS 50A121I/HG	TD 20			

End Mill



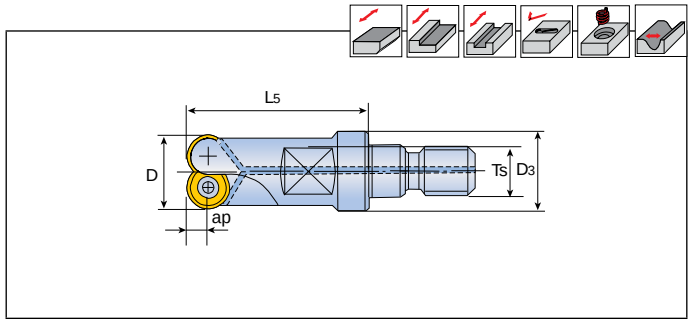


Designation			Dimension (mm)								Fig.	Insert
			D	d	L	H	L_1	L_2	a°	ap		
TERD	**108-W10-05**	1	8	10	80	20	-	-	-	2.5	1	RDMX 0501-M
	210-W12-05	2	10	12	80	30	-	-	-	2.5	1	
	212-W12-05	2	12	12	100	40	-	-	-	2.5	1	
	212-16-05-L	2	12	16	200	20	34	60	2.0	2.5	2	
	215-W20-07	2	15	20	140	40	-	-	-	3.5	1	RDMX 0702-M
	215-20-07-L	2	15	20	200	25	34	60	3.5	3.5	2	
	217-16-07-L160	2	17	16	160	25	-	-	-	3.5	3	
	217-16-07-L200	2	17	16	200	25	-	-	-	3.5	3	
TERX	**220-W20-10**	2	20	20	160	60	-	-	-	5	1	RXMX 1003-M/ML/MR RXHX 1003-AL/MR
	220-25-10-L	2	20	25	250	46	60	80	4.0	5	2	
	221-20-10-L160	2	21	20	160	30	-	-	-	5	3	
	221-20-10-L200	2	21	20	200	30	-	-	-	5	3	
	225-W25-10	2	25	25	160	60	-	-	-	5	1	
	225-32-10-L	2	25	32	250	30	50	80	6.8	5	2	
	226-25-10-L200	2	26	25	200	30	-	-	-	5	3	
	226-25-10-L250	2	26	25	250	30	-	-	-	5	3	
	226-25-10-L300	2	26	25	200	30	-	-	-	5	3	
	325-W25-10	3	25	25	160	60	-	-	-	5	1	
	432-W32-10	4	32	32	160	60	-	-	-	5	1	
	225-W25-12	2	25	25	160	60	-	-	-	6	1	RXMX 12T3-M/ML/MR RXHX 12T3-AL/MR
	226-25-12-L250	2	26	25	250	40	-	-	-	6	3	
	232-32-12-L	2	32	32	250	50	-	-	-	6	3	
	332-W32-12	3	32	32	160	64	-	-	-	6	1	
	233-32-12-L200	2	33	32	200	40	-	-	-	6	3	
	233-32-12-L250	2	33	32	250	40	-	-	-	6	3	
	233-32-12-L300	2	33	32	300	40	-	-	-	6	3	
	235-32-12-L250	2	35	32	250	40	-	-	-	6	3	
	340-32-12-L250	3	40	32	250	40	-	-	-	6	3	
	440-W32-12	4	40	32	160	50	-	-	-	6	1	
	240-W32-16	2	40	32	160	50	-	-	-	8	1	RXMX 1604-M/ML/MR
	340-32-16-L250	3	40	32	250	50	-	-	-	8	3	
	350-32-20	3	50	32	160	50	-	-	-	10	3	RXMX 2006-M/MR
	350-40-20	3	50	40	200	60	-	-	-	10	3	
	350-42-20	3	50	42	200	60	-	-	-	10	3	

• Coolant through type

TERD/TERX...-M-...

Modular



	Designation		Dimension (mm)					Insert
			D	D3	L5	Ts	ap	
TERD	**108-M06-05**	1	8	9.7	28	6	2.5	RDMX 0501-M
	210-M06-05	2	10	9.7	28	6	2.5	
	210-M08-05	2	10	13	28	8	2.5	
	212-M08-05	2	12	13	28	8	2.5	
	312-M08-05	3	12	13	28	8	2.5	
	215-M08-07	2	15	13	23	8	3.5	RDMX 0702-M
	220-M08-07	2	20	13	30	8	3.5	
	320-M08-07	3	20	13	30	8	3.5	
TERX	**220-M10-10**	2	20	18	30	10	5.0	RXMX 1003-M/ML/MR RXHX 1003-AL/MR
	225-M12-10	2	25	21	35	12	5.0	
	325-M12-10	3	25	21	35	12	5.0	
	430-M16-10	4	30	29	43	16	5.0	
	432-M16-10	4	32	29	43	16	5.0	
	435-M16-10	4	35	29	43	16	5.0	
	542-M16-10	5	42	29	43	16	5.0	
	224-M12-12	2	24	21	35	12	6.0	RXMX 12T3-M/ML/MR RXHX 12T3-AL/MR
	232-M16-12	2	32	29	43	16	6.0	
	332-M16-12	3	32	29	43	16	6.0	
	335-M16-12	3	35	29	43	16	6.0	
	340-M16-12	3	40	29	43	16	6.0	
	442-M16-12	4	42	29	43	16	6.0	
	232-M16-16	2	32	29	43	16	8.0	RXMX 1604-M/ML/MR
	240-M16-16	2	40	29	43	16	8.0	
	342-M16-16	3	42	29	43	16	8.0	

• Matched with T-FLEXTEC: see part G • Coolant through type

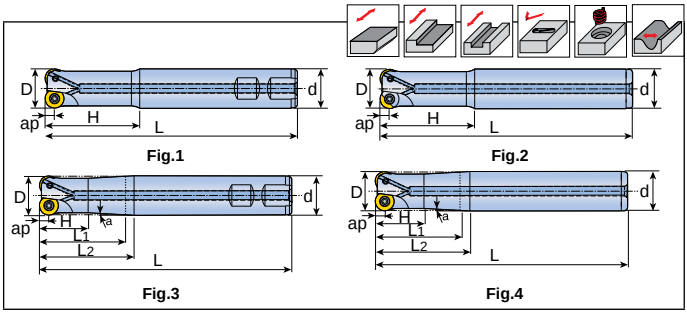
E176 | Ramping Data E213-E214 | Cutting Condition E226

Spare parts

Designation	Screw	Wrench			
TERD-05	TS 20038I	TD 6			
TERD-07	SO 25050I	TD 7			
TERX-10	TS 35070I/HG	TD 15			
TERX-12	TS 35085I/HG	TD 15			
TERX-16	TS 45A100I/HG	TD 20			
TERX-20	TS 50115I/HG	TD 20			

TERY

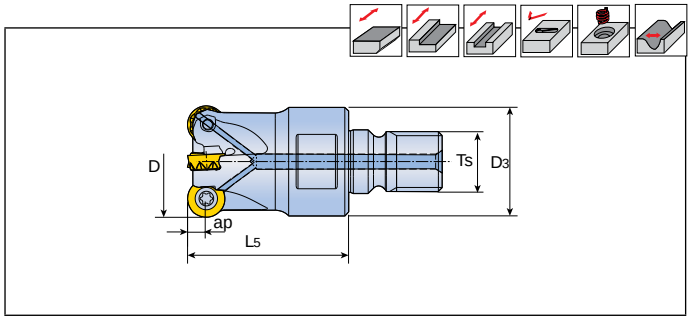
End Mill



	Designation	R		Dimension (mm)								Fig.	Insert
				D	d	L	H	L_1	L_2	a^o	ap		
TERY	**216-W20-08-L**	4	2	16	20	110	25	45	55	4.1	4	3	RYMX 08-M/ML/MM/MR
	217-16-08-L130	4	2	17	16	130	30	-	-	-	4	2	RYHX 08-ML/MR/AL
	218-16-08-L150	4	2	18	16	150	30	-	-	-	4	2	
	320-W20-08	4	3	20	20	150	40	-	-	-	4	1	
	320-20-08-L110	4	3	20	20	110	60	-	-	-	4	2	
	321-20-08-L150	4	3	21	20	150	40	-	-	-	4	1	
	425-W25-08	4	4	25	25	150	40	-	-	-	4	2	
	426-25-08-L150	4	4	26	25	150	40	-	-	-	4	1	
	532-W32-08	4	5	32	32	160	60	-	-	-	4	1	
	220-W20-10	5	2	20	20	160	60	-	-	-	5	4	RYMX 10-M/ML/MM/MR
	220-25-10-L	5	2	20	25	250	36	60	80	3.5	5	2	RYHX 10-ML/MR/AL
	221-20-10-L200	5	2	21	20	200	30	-	-	-	5	1	
	225-32-10-L	5	2	25	25	160	60	-	-	-	5	4	
	225-W25-10	5	2	25	32	250	36	53	80	5.0	5	1	
	325-W25-10	5	3	25	25	160	60	-	-	-	5	2	
	226-25-10-L200	5	2	26	25	200	30	-	-	-	5	2	
	326-25-10-L200	5	3	26	25	200	60	-	-	-	5	1	
	432-W32-10	5	4	32	32	160	60	-	-	-	5	1	
	225-W25-12	6	2	25	25	160	60	-	-	-	6	2	RYMX 12-M/ML/MM/MR
	226-25-12-L200	6	2	26	25	200	60	-	-	-	6	2	RYHX 12-ML/MMMR/AL
	232-32-12-L	6	2	32	32	250	50	-	-	-	6	1	
	332-W32-12	6	3	32	32	105	35	-	-	-	6	1	
	332-W32-12-S	6	3	32	32	160	64	-	-	-	6	2	
	233-32-12-L250	6	2	33	32	250	40	-	-	-	6	1	
	333-32-12-L200	6	3	33	32	200	60	-	-	-	6	1	
	340-W32-12	6	3	40	32	105	35	-	-	-	6	1	
	340-W32-12-S	6	3	40	32	160	50	-	-	-	6	1	
	340-32-12-L250	6	3	40	32	250	50	-	-	-	6	1	
	440-W32-12	6	4	40	32	105	35	-	-	-	6	2	
	440-W32-12-S	6	4	40	32	150	35	-	-	-	6	2	
	240-W32-16	8	2	40	32	160	50	-	-	-	8	1	RYMX 16-M/MM/ML/MR
	340-32-16-L250	8	3	40	32	250	50	-	-	-	8	2	RYHX 16-ML/AL
	350-32-20	10	3	50	32	160	50	-	-	-	10	2	RYMX 2007-M/ML/MR
	350-40-20	10	3	50	40	200	60	-	-	-	10	2	

• Coolant through type

Modular

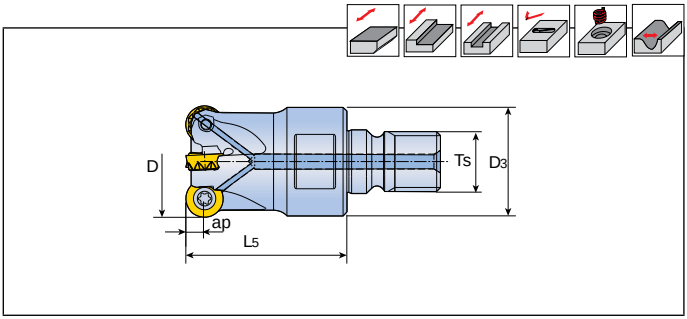


	Designation	R		Dimension (mm)					Insert
				D	D3	L5	Ts	ap	
TERY	216-M08-08	4	2	16	13	23	8	4	RYMX 08-M/ML/MM/ MR RYHX 08-ML/MR/AL
	218-M08-08	4	2	18	13	23	8	4	
	220-M10-08	4	2	20	18	30	10	4	
	320-M10-08	4	3	20	18	30	10	4	
	425-M12-08	4	4	25	21	35	12	4	
	530-M16-08	4	5	30	29	43	16	4	
	532-M16-08	4	5	32	29	43	16	4	
	540-M16-08	4	5	40	29	43	16	4	
	640-M16-08	4	6	40	29	43	16	4	
	220-M10-10	5	2	20	18	30	10	5	RYMX 10-M/ML/MM/ MR RYHX 10-ML/MR/AL
	225-M12-10	5	2	25	21	35	12	5	
	325-M12-10	5	3	25	21	35	12	5	
	430-M16-10	5	4	30	29	43	16	5	
	432-M16-10	5	4	32	29	43	16	5	
	435-M16-10	5	4	35	29	43	16	5	
	542-M16-10	5	5	42	29	43	16	5	
	642-M16-10	5	6	42	29	43	16	5	

• Matched with T-FLEXTEC: see part G • Coolant through type

TERY...-M...-12/16

Modular



	Designation	R		Dimension (mm)					Insert
				D	D3	L5	Ts	ap	
TERY	225-M12-12	6	2	25	21	35	12	6	RYMX 12-M/ML/MM/MR RYHX 12-ML/MM/MR/AL
	232-M16-12	6	2	32	29	43	16	6	
	332-M16-12	6	3	32	29	43	16	6	
	335-M16-12	6	3	40	29	43	16	6	
	340-M16-12	6	4	42	29	43	16	6	
	440-M16-12	6	2	32	29	43	16	6	
	442-M16-12	6	2	40	29	43	16	6	
	232-M16-16	8	3	42	29	43	16	8	RYMX 16-M/MM/ML/MR RYHX 16-ML/AL
	240-M16-16	8	2	40	29	43	16	8	
	342-M16-16	8	3	42	29	43	16	8	

• Matched with T-FLEXTEC: see part G • Coolant through type

E177 Ramping Data E215-E217 Cutting Condition E226

Spare parts

Designation	Screw	Wrench		
				
TERY-08	TS 30A60I	TD 9		
TERY-10	TS 35070I/HG(UnderD21), TS 25085I/HG	T-T15		
TERY-12	TS 40093I	T-T15		
TERY-16	TS 50115I	T-T20		
TERY-20	TS 60A130I	T-T25		

TPM-PL09/TPM...-...M-PL09

CHASE 2 PLUNGE

End Mill & Modular

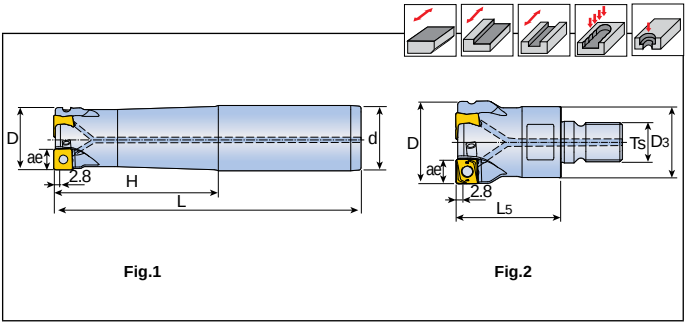


Fig.1 Fig.2

Designation			Dimension (mm)								Fig.	Insert
			D	D3	d	L	L5	H	Ts	ae		
TPM	**225-25-PL09**	2	25	-	25	200		120	-	9	1	PLNG 090408R-M
	226-25-PL09	2	26	-	25	200		50	-	9	1	PLNG 090408R-ML
	330-32-PL09	3	30	-	32	250		150	-	9	1	
	332-32-PL09	3	32	-	32	250		150	-	9	1	
	333-32-PL09	3	33	-	32	250		50	-	9	1	
	440-32-PL09	4	40	-	32	250		50	-	9	1	
TPM	**225-M12-PL09**	2	25	21	-	-	35	-	12	9	2	PLNG 090408R-M
	332-M16-PL09	3	32	29	-	-	43	-	16	9	2	PLNG 090408R-ML
	335-M16-PL09	3	35	29	-	-	43	-	16	9	2	
	440-M16-PL09	4	40	29	-	-	43	-	16	9	2	
	442-M16-PL09	4	42	29	-	-	43	-	16	9	2	

• Matched with T-FLEXTEC: see part G • Coolant through type

E174 Cutting Condition E224

Spare parts

Designation	Screw	Wrench			
TPM-09	TS 30085I/HG	TD 9			

TNF

Steel Shank Type

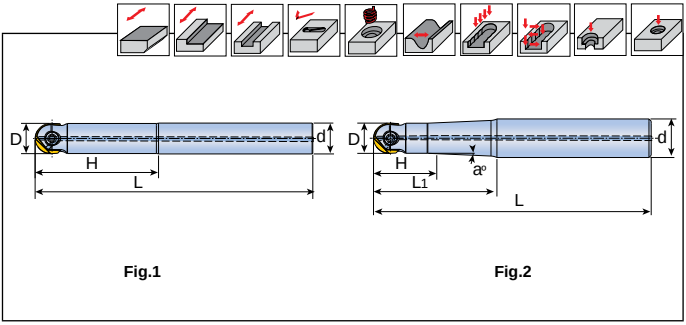


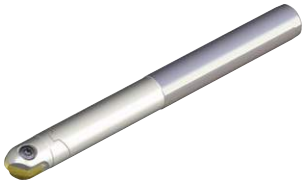
Fig.1 Fig.2

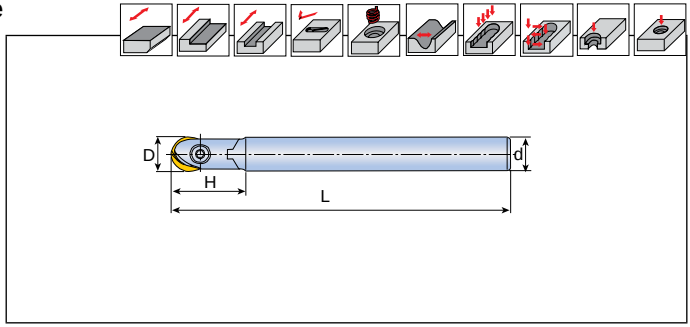
Designation	Dimension (mm)						Fig.	Insert
	D	d	L	H	L1	aº		
TNF 080-08S	8	8	90	20	-	-	1	NFB 080-SM
080-12S	8	12	100	10	20	9.5°	2	NFB 080-FM
080-12M	8	12	130	10	50	3°	2	NFR 080A-R...
100-10S	10	10	90	30	-	-	1	NFB 100-SM
100-12S	10	12	110	15	25	5°	2	NFB 100-FM
100-16M	10	16	130	15	60	3.5°	2	NFR 100A-R...
								NFR 110A-R...
120-12S	12	12	110	30	-	-	1	NFB 120-SM
120-12M	12	12	180	60	-	-	1	NFB 120-FM
120-16M	12	16	140	25	60	2.4°	2	NFR 120A-R..
120-20L	12	20	180	40	80	5°	2	NFR 130A-R....
160-16M	16	16	130	40	-	-	1	NFB 160-SM
160-16L	16	16	200	100	-	-	1	NFB 160-FM
160-20M	16	20	160	25	60	2.5°	2	NFR 160A-R...
160-25L	16	25	220	55	100	5°	2	NFR 170A-R...
200-20S	20	20	110	40	-	-	1	NFB 200-SM
200-20M	20	20	150	50	-	-	1	NFB 200-FM
200-20L	20	20	220	70	-	-	1	NFR 200A-R...
200-25M	20	25	180	40	80	2.5°	2	NFR 210A-R...
200-25L	20	25	220	45	110	1.5°	2	
250-25S	25	25	125	40	-	-	1	NFB 250-SM
250-25M	25	25	170	70	-	-	1	NFB 250-FM
250-32M	25	32	200	32	90	3°	2	NFR 250A-R...
250-32L	25	32	250	40	130	1.5°	2	NFR 260A-R...
300-32S	30	32	140	55	-	-	1	NFB 300-SM/FM
300-32M	30	32	190	75	-	-	1	NFB 320-SM/FM
300-32L	30	32	250	65	100	1°	2	NFR 300A-R...
300-32XL	30	32	300	150	-	-	1	NFR 320A-R...
300-32-L220	30	32	220	55	100	1°	2	
320-32L	32	32	250	60	-	-	1	NFB 320-SM
								NFB 320-FM
								NFR 320A-R...

• Coolant through type

TNF...-CT-L...

Tungsten Carbide Shank Type



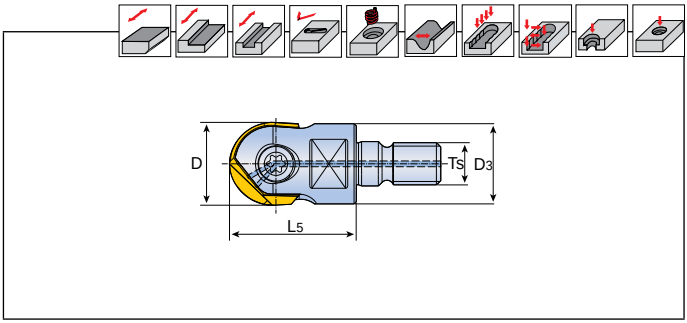


Designation	Dimension (mm)				Insert
	D	d	L	H	
TNF 080-08-CT-L100	8	8	100	30	NFB 080-SM
080-10-CT-L140	8	10	140	75	NFB 080-FM
080-08-CT-L160	8	8	160	80	NFR 080A-R...
100-10-CT-L100	10	10	100	35	NFB 100-SM
100-10-CT-L140	10	10	140	75	NFB 100-FM
100-10-CT-L200	10	10	200	70	NFR 100A-R...
100-10-CT-L220	10	10	220	140	NFR 110A-R...
120-12-CT-L120	12	12	120	50	NFB 120-SM
120-12-CT-L160	12	12	160	90	NFB 120-FM
120-12-CT-L200	12	12	200	70	NFR 120A-R...
120-12-CT-L220	12	12	220	150	NFR 130A-R...
160-16-CT-L120	16	16	120	60	NFB 160-SM
160-16-CT-L160	16	16	160	80	NFB 160-FM
160-16-CT-L200	16	16	200	70	NFR 160A-R...
160-16-CT-L220	16	16	220	150	NFR 170A-R...
200-20-CT-L200	20	20	200	70	NFB 200-SM
200-20-CT-L220	20	20	220	120	NFB 200-FM
200-20-CT-L300	20	20	300	220	NFR 200A-R...
					NFR 210A-R...
250-25-CT-L200	25	25	200	70	NFB 250-SM
250-25-CT-L220	25	25	220	120	NFB 250-FM
250-25-CT-L300	25	25	300	220	NFR 250A-R...
					NFR 260A-R...
300-32-CT-L200	30	32	200	70	NFB 300-SM/FM
300-32-CT-L250	30	32	250	150	NFB 320-SM/FM
300-32-CT-L350	30	32	350	230	NFB 300A-R...
					NFB 320A-R...
320-32-CT-L300	32	32	300	220	NFB 320-SM/FM
					NFB 320A-R...

TNF...-M...

FINEBALL

Modular



Designation	Dimension (mm)				Insert
	D	D_3	L_5	Ts	
TNF 100-M06	10	9.7	20	6	NFB 100-SM/FM NFB 100A-R... NFR 110A-R...
120-M06	12	11.5	23	6	NFB 120-SM/FM
120-M08	12	13	23	8	NFR 120A-R... NFR 130A-R...
160-M08	16	13	30	8	NFB 160-SM/FM NFR 160A-R... NFR 170A-R...
200-M10	20	19	30	10	NFB 200-SM/FM NFR 200A-R... NFR 210A-R...
250-M12	25	24	35	12	NFB 250-SM/FM
250-M16	25	29	43	16	NFR 250A-R... NFR 260A-R...
300-M16	30	29	43	16	NFB 300-SM/FM NFB 320-SM/FM NFR 300A-R... NFR 320A-R...
320-M16	32	29.5	43	16	NFB 320-SM/FM NFB 320A-FM

• Matched with T-FLEXTEC: see part G • Coolant through type

E169-E171 Cutting Condition E230

Spare parts

Designation	Screw	Wrench			
TNF 080	TS 25F080A	TD 8			
TNF 100	TS 30F100A	TD 10			
TNF 120	TS 40F120A	TD 15			
TNF 160	TS 50F160A	T-T20			
TNF 200	TS 60F200A	SW6-T, BLD T25/M7			
TNF 250	TS 70F250A	SW6-T, BLD T25/M7			
TNF 300, TNF 320	TS 80F300A	T-T30			

TNFR

Steel Shank Type

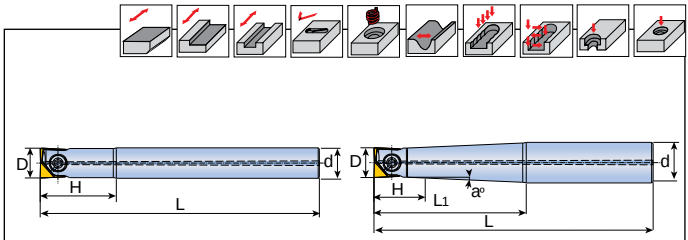


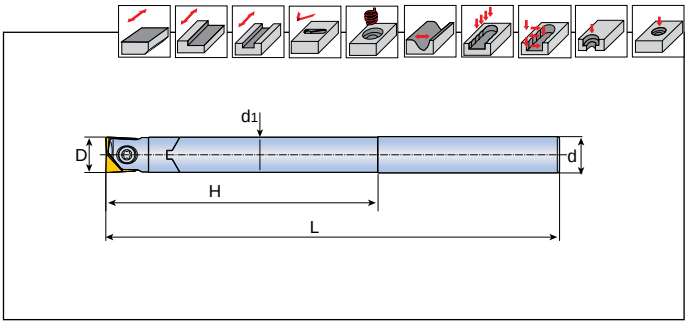
Fig.1 Fig.2

Designation	Dimension (mm)						Fig.	Insert
	D	d	L	H	L1	aº		
TNFR 080-12S	8	12	100	10	22	9°	2	NFR 080A-R...
080-12M	8	12	130	10	50	2.8°	2	
100-12S	10	12	110	15	25	5°	2	NFR 100A-R...
100-16M	10	16	150	15	50	3.5°	2	NFR 110A-R...
120-12S	12	12	110	30	-	-	1	NFR 120A-R...
120-16M	12	16	160	18	60	2.5°	2	NFR 130A-R...
160-16S	16	16	130	50	-	-	1	NFR 160A-R...
160-16M	16	16	170	70	-	-	1	NFR 170A-R...
160-16L	16	16	200	100	-	-	1	
200-20S	20	20	140	60	-	-	1	NFR 200A-R...
200-20M	20	20	180	80	-	-	1	NFR 210A-R...
200-20L	20	20	250	120	-	-	1	
250-25S	25	25	150	70	-	-	1	NFR 250A-R...
250-25M	25	25	200	100	-	-	1	NFR 260A-R...
250-25L	25	25	250	120	-	-	1	

• Coolant through type

TNFR...-CT-...

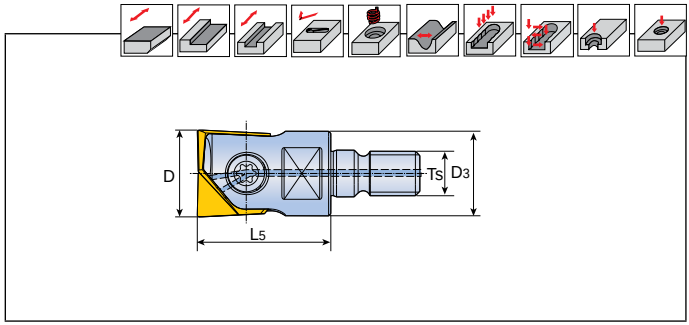
Tungsten Carbide Shank Type



Designation	Dimension (mm)					Insert
	D	d	d1	L	H	
TNFR 080-08-CT-L140	8	8	7.8	140	75	NFR 080A-R
100-10-CT-L140	10	10	9.5	140	75	NFR 100A-R
						NFR 110A-R
120-12-CT-L160	12	12	11.5	160	95	NFR 120A-R
						NFR 130A-R
160-16-CT-L200	16	16	15.5	200	120	NFR 160A-R
						NFR 170A-R
200-20-CT-L250	20	20	19.5	250	160	NFR 200A-R
						NFR 210A-R
250-25-CT-L300	25	25	24.5	300	200	NFR 250A-R
						NFR 260A-R

TNFR...-M...

Modular



Designation	Dimension (mm)				Insert
	D	D3	L5	Ts	
TNFR 100-M06	10	9.7	20	6	NFR 100A-R NFR 110A-R
120-M06	12	11.5	23	6	NFR 120A-R
120-M08	12	13	23	8	NFR 130A-R
160-M08	16	13	30	8	NFR 160A-R NFR 170A-R
200-M10	20	19	30	10	NFR 200A-R NFR 210A-R
250-M12	25	24	35	12	NFR 250A-R NFR 260A-R

• Matched with T-FLEXTEC: see part G • Coolant through type

E170-E171 Cutting Condition E230

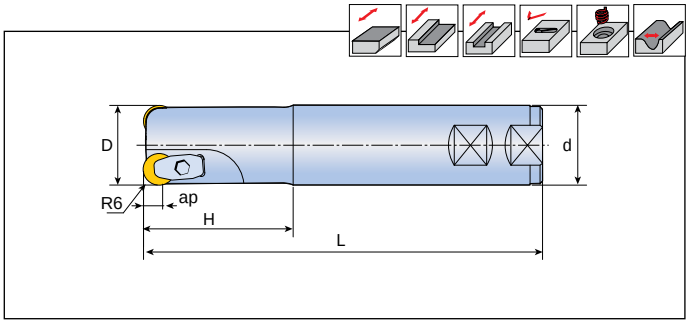
Spare parts

Designation	Screw	Wrench			
					
TNFR 080	TS 25F080A	TD 8			
TNFR 100	TS 30F100A	TD 10			
TNFR 120	TS 40F120A	TD 15			
TNFR 160	TS 50F160A	T-T20			
TNFR 200	TS 60F200A	SW6-T, BLD T25/M7			
TNFR 250	TS 70F250A	SW6-T, BLD T25/M7			

TERP-12CH

CHASESPEED

End Mill



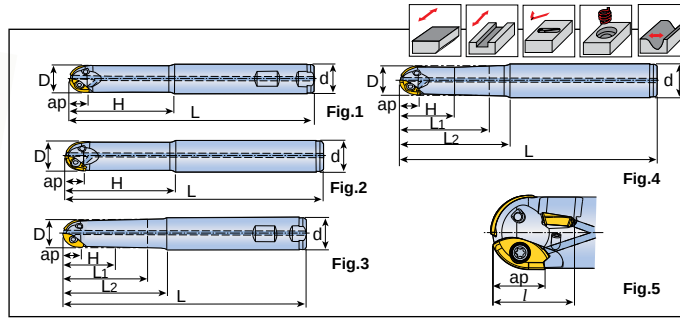
Designation		Dimension (mm)					Insert
		D	d	L	H	ap	
TERP 232-W32-12CH	2	32	32	140	75	6	RPGX 1204 CH
340-W32-12CH	3	40	32	140	40	6	

E175 Cutting Condition E226

Spare parts

Designation	Clamp	Screw	Spring	Wrench	
TERP-12CH	CCL 5M	DLS 4-18L	DSP 4	L-W 3	

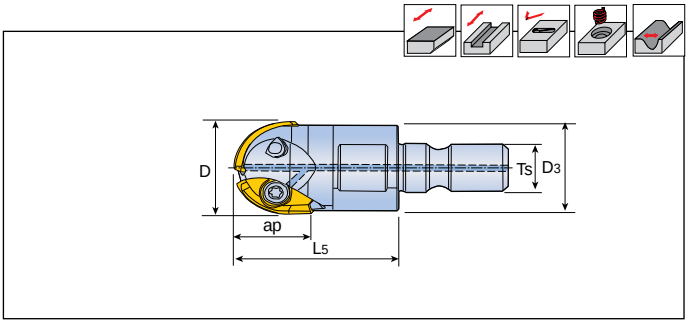
End Mill



Designation		Dimension (mm)								Fig.	Insert			
		D	d	L	H	L_1	L_2	ap	*l*		Ball		Periphery	
2F	16-11-W20-L120	16	20	120	27	35.5	60	11.8	-	3		2	-	-
	16-11-20-L130	16	20	130	35	45.9	60	11.8	-	4		2	-	-
	16-11-20-L200	16	20	200	35	45.9	60	11.8	-	4	2FB160-M	2	-	-
	16-20-W20-L120-P	16	20	120	35	41.8	60	11.8	20.5	5		2	APKT 09T3	1
	16-20-25-L200-P	16	25	200	40	43.4	65	11.8	20.5	5		2	APKT 09T3	1
	20-13-W25-L105	20	25	105	45	-	-	13.6	-	1		2	-	-
	20-13-W25-L150	20	25	150	40	45.7	65	13.6	-	3		2	-	-
	20-13-20-L220	20	20	220	70	-	-	13.6	-	2		2	-	-
	20-13-25-L160	20	25	160	45	54.5	75	13.6	-	4		2	-	-
	20-13-25-L220	20	25	220	60	65.7	85	13.6	-	4	2FB200-M	2	-	-
	20-22-25-L125-P	20	25	125	40	45.7	65	13.6	22.3	5		2	APKT 09T3	1
	20-22-25-L200-P	20	25	200	70	74.3	90	13.6	22.3	5		2	APKT 09T3	1
	20-22-32-L250-P	20	32	250	70	72.3	100	13.6	22.3	5		2	APKT 09T3	1
	25-17-W25-L150	25	25	150	60	-	-	17.7	-	1		2	-	-
	25-17-32-L150	25	32	150	50	55.7	75	17.7	-	4		2	-	-
	25-17-32-L200	25	32	200	55	61.6	85	17.7	-	4		2	-	-
	25-17-32-L300	25	32	300	70	80	120	17.7	-	4		2	-	-
	25-35-25-L200-P	25	25	200	87.55	-	-	17.7	35.1	5	2FB250-M	2	APKT 09T3	2
	25-35-32-L200-P	25	32	200	100	-	-	17.7	35.1	5		2	APKT 09T3	2
	25-35-32-L250-P	25	32	250	110	-	-	17.7	35.1	5		2	APKT 09T3	2
	25-43-32-L300-P	25	32	300	120	-	-	17.7	43.7	5		2	APKT 09T3	3
	30-20-W32-L180	30	32	180	86.13	-	-	20.0	-	1		2	-	-
	30-20-30-L250	30	30	250	104.56	-	-	20.0	-	2		2	-	-
	30-20-32-L200	30	32	200	86.13	-	-	20.0	-	2		2	-	-
	30-20-32-L300	30	32	300	126.13	-	-	20.0	-	2	2FB300-M	2	-	-
	30-43-32-L200-P	30	32	200	85.58	-	-	20.0	43.7	5		2	APKT 1204	2
	30-43-32-L250-P	30	32	250	125.58	-	-	20.0	43.7	5		2	APKT 1204	2
	30-51-32-L300-P	30	32	300	145.58	-	-	20.0	55.3	5		2	APKT 1204	3
	32-21-W32-L200	32	32	200	100	-	-	21.4	-	1		2	-	-
	32-21-32-L180	32	32	180	100	-	-	21.4	-	2		2	-	-
	32-21-32-L300	32	32	300	130	-	-	21.4	-	1	2FB320-M	2	-	-
	32-44-32-L200-P	32	32	200	83.68	-	-	21.4	44.7	5		2	APKT 1204	2
	32-44-32-L250-P	32	32	250	123.68	-	-	21.4	44.7	5		2	APKT 1204	2
	32-44-32-L300-P	32	32	300	143.68	-	-	21.4	44.7	5		2	APKT 1204	2

• Coolant through type

Modular



	Designation		Dimension (mm)					Insert
			D	D3	L5	Ts	ap	
2F	**16-11-M08**	2	16	13	25	8	11.8	2FB160-M
	20-13-M10	2	20	18	30	10	13.6	2FB200-M
	25-17-M12	2	25	21	35	12	17.7	2FB250-M
	30-20-M16	2	30	29	43	16	20.0	2FB300-M
	32-21-M16	2	32	29	43	16	21.4	2FB320-M

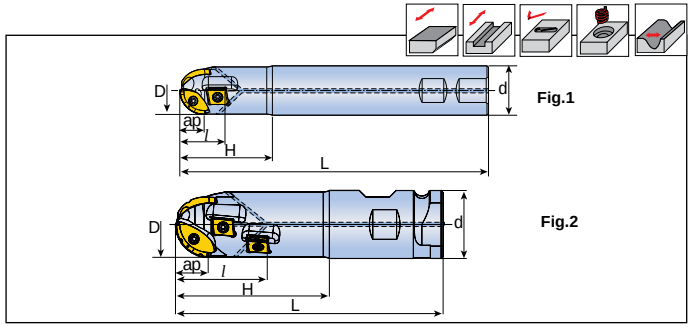
• Matched with T-FLEXTEC: see part G • Coolant through type

E156 E161-E162 Cutting Condition E230

Spare parts

Designation	Screw		Wrench		
	Ball	Periphery	Ball	Periphery	
2FB160-M/APKT 09T3	TS 25064I	TS 25055I/HG	TD 8	TD 8	
2FB200-M/APKT 09T3	TS 30085I/HG	TS 25055I/HG	TD 9	TD 8	
2FB250-M/APKT 09T3	TS 30085I/HG	TS 25055I/HG	TD 15	TD 8	
2FB300-M/APKT 1204	TS 40A115I	TS 35A088I/HG	TD 15	TD 10P	
2FB320-M/APKT 1204	TS 40A115I	TS 35A088I/HG	TD 15	TD 10P	

End Mill



Designation		Dimension (mm)						Fig.	Insert					
		D	d	L	H	*l*	ap		Ball1		Ball2		Periphery	
3F	**32-39-W32-150**	32	32	150	60	39	16	1	3FB320C-M	1	3FB320P-M	2	CNHX 131108T	2
	32-39-W32-200	32	32	200	60	39	16	1	3FB320C-M	1	3FB320P-M	2	CNHX 131108T	2
	32-39-W32-250	32	32	250	60	39	16	1	3FB320C-M	1	3FB320P-M	2	CNHX 131108T	2
	50-54-W40-150	50	40	150	70	54	25	1	3FB500C-M	1	3FB500P-M	2	CNHX 160608T	2
	50-80-W50-200	50	50	200	110	80	25	1	3FB500C-M	1	3FB500P-M	2	CNHX 160608T	4
	50-80-W50-250	50	50	250	110	80	25	1	3FB500C-M	1	3FB500P-M	2	CNHX 160608T	4
3F	**50-68-CN50.8-200**	50	50.8	200	115	68	25	2	3FB500C-M	1	3FB500P-M	2	CNHX 160608T	3
	50-94-CN50.8-250	50	50.8	250	165	94	25	2	3FB500C-M	1	3FB500P-M	2	CNHX 160608T	5

• Coolant through type • When machining over 'ap', please calculate Z=1

E156,E166 Cutting Condition E231

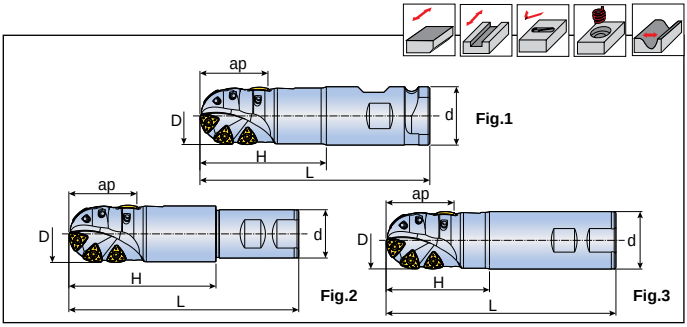
Spare parts

Designation	Screw	Wrench			
					
3F 320	TS 40093I	TD 15			
3F 500	TS 50115I	T-T20			

TDB50X-CN/-W

CHASE2BALL

End Mill



Designation		Dimension (mm)					Fig.	Insert
		D	d	L	H	ap		
TDB50X 59-CN50.8-L200	6	50	50.8	200	110	59	1	6RBE 50-M
69-CN50.8-L250	7	50	50.8	250	160	69	1	
TDB50X 59-W40-L200	6	50	40	200	128	59	2	
69-W40-L250	7	50	40	250	178	69	2	
59-W42-L200	6	50	42	200	128	59	2	
69-W42-L250	7	50	42	250	178	69	2	
59-W50-L200	6	50	50	200	90	59	3	
69-W50-L250	7	50	50	250	140	69	3	

E159 Cutting Condition E231

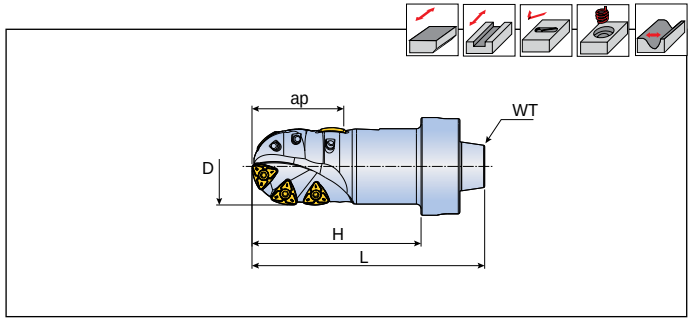
Spare parts

Designation	Screw	Wrench			
					
TDB50X	TS50B106I/HG	T-T20			

TDB50X-WT

CHASE 2 BALL

End Mill



Designation		Dimension (mm)					Insert
		D	L	WT	H	ap	
TDB50X	**59-WT30-L150**	50	150	30	109	59	6RBE 50-M
	69-WT30-L150	50	200	30	159	69	

E159 Cutting Condition E231

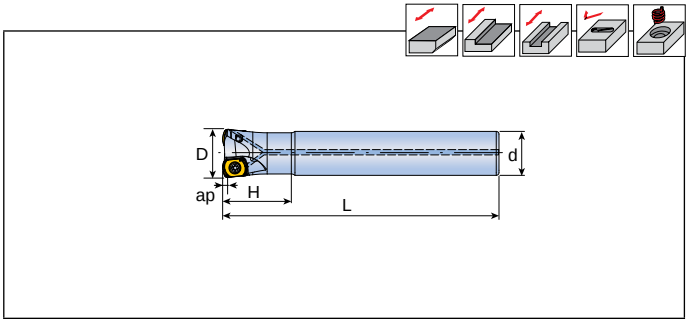
Spare parts

Designation	Screw	Wrench			
TDB50X	TS50B106I/HG	T-T20			

TEBL-06

CHASE2FEED

End Mill



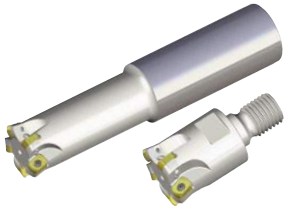
Designation		Dimension (mm)					Insert
		D	d	L	H	ap	
TEBL	216-15-06-L150	2	16	15	150	40	0.7	BLMP 0603R-M BLMP 0603R-MM BLMP 0603R-ML
	216-16-06	2	16	16	150	40	0.7	
	216-16-06-S	2	16	16	100	30	0.7	
	217-16-06-S	2	17	16	100	30	0.7	
	217-16-06	2	17	16	150	40	0.7	
	217-16-06-L200	2	17	16	200	20	0.7	
	218-16-06	2	18	16	150	25	0.7	
	220-20-06-L200	2	20	20	200	80	1.0	
	320-19-06-L180	3	20	19	180	80	1.0	
	320-20-06-S	3	20	20	130	50	1.0	
	320-20-06	3	20	20	160	80	1.0	
	321-20-06-S	3	21	20	150	20	1.0	
	321-20-06-L200	3	21	20	200	20	1.0	
	325-25-06-L220	3	25	25	220	50	1.0	
	425-24-06-L180	4	25	24	180	60	1.0	
	425-25-06-S	4	25	25	140	60	1.0	
	425-25-06	4	25	25	180	60	1.0	
	425-25-06-L250	4	25	25	250	40	1.0	
	326-25-06-L200	3	26	25	200	30	1.0	
	326-25-06-L250	3	26	25	250	30	1.0	
	426-25-06-S	4	26	25	150	30	1.0	
	426-25-06-L200	4	26	25	200	30	1.0	
	426-25-06-L250	4	26	25	250	30	1.0	
	530-32-06-S	5	30	32	150	70	1.0	
	530-32-06-L200	5	30	32	200	120	1.0	
	432-32-06-S	4	32	32	150	70	1.0	
	532-32-06-S	5	32	32	150	70	1.0	
	532-32-06-L200	5	32	32	200	120	1.0	
	433-32-06-L220	4	33	32	220	40	1.0	
	433-32-06-L300	4	33	32	300	50	1.0	
	533-32-06-S	5	33	32	150	30	1.0	
	533-32-06-L200	5	33	32	200	40	1.0	
	533-32-06-L250	5	33	32	250	40	1.0	
	435-32-06-L200	4	35	32	200	50	1.0	
	435-32-06-L300	4	35	32	300	50	1.0	
	535-32-06-L200	5	35	32	200	50	1.0	
	535-32-06-L300	5	35	32	300	50	1.0	

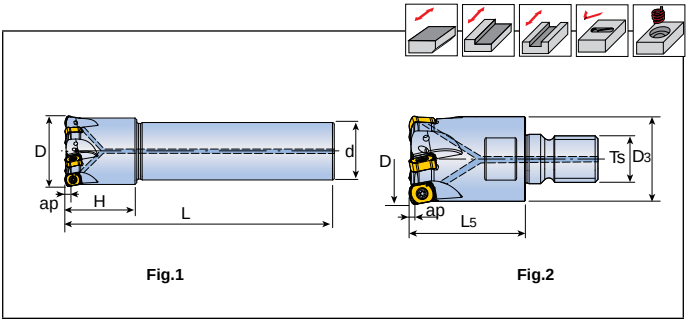
• Coolant through type

TEBL-06/TEBL...-M...-06

CHASE2FEED

End Mill & Modular





Designation			Dimension (mm)								Fig.	Insert
			D	D3	d	L	L5	H	Ts	ap		
TEBL	**540-32-06-L220**	5	40	-	32	220	-	40	-	1.0	1	BLMP 0603R-M BLMP 0603R-MM BLMP 0603R-ML
	640-32-06-S	6	40	-	32	150	-	40	-	1.0	1	
	640-32-06-L220	6	40	-	32	220	-	40	-	1.0	1	
TEBL	**216-M08-06**	2	16	13	-	-	25	-	08	0.7	2	BLMP 0603R-M BLMP 0603R-MM BLMP 0603R-ML
	217-M08-06	2	17	13	-	-	25	-	08	0.7	2	
	218-M08-06	2	18	13	-	-	25	-	08	0.7	2	
	220-M10-06	2	20	18	-	-	30	-	10	1.0	2	
	320-M10-06	3	20	18	-	-	30	-	10	1.0	2	
	321-M10-06	3	21	18	-	-	30	-	10	1.0	2	
	322-M10-06	3	22	18	-	-	30	-	10	1.0	2	
	325-M12-06	3	25	21	-	-	35	-	12	1.0	2	
	425-M12-06	4	25	21	-	-	35	-	12	1.0	2	
	326-M12-06	3	26	21	-	-	35	-	12	1.0	2	
	432-M16-06	4	32	29	-	-	40	-	16	1.0	2	
	532-M16-06	5	32	29	-	-	40	-	16	1.0	2	
	435-M16-06	4	35	29	-	-	43	-	16	1.0	2	
	535-M16-06	5	35	29	-	-	43	-	16	1.0	2	
	640-M16-06	6	40	29	-	-	43	-	16	1.0	2	
	542-M16-06	5	42	29	-	-	43	-	16	1.0	2	
	642-M16-06	6	42	29	-	-	43	-	16	1.0	2	

• Matched with T-FLEXTEC: see part G • Coolant through type

E165 Ramping Data E207 Cutting Condition E224

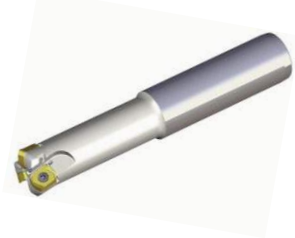
Spare parts

Designation	Screw	Wrench			
					
TEBL-06	TS 25064I/HG-P	TD 8P			

TEBL-09

CHASE 2 FEED

End Mill



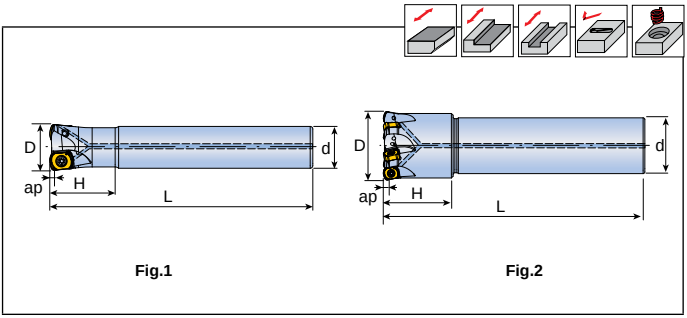


Fig.1 Fig.2

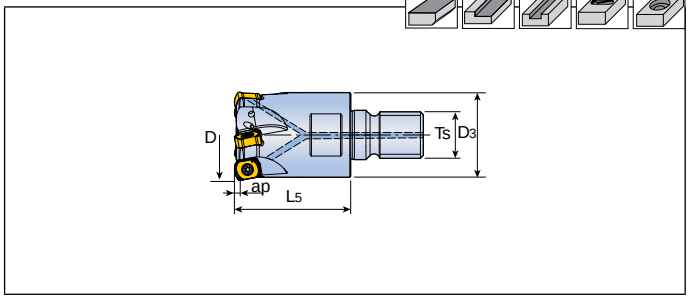
Designation		Dimension (mm)					Fig.	Insert
		D	d	L	H	ap		
TEBL 225-25-09-L150	2	25	25	150	70	1.5	1	BLMP 0904R-M BLMP 0904R-MM BLMP 0904R-ML
225-25-09-L200	2	25	25	200	100	1.5	1	
325-25-09-L150	3	25	25	150	70	1.5	1	
325-25-09-L200	3	25	25	200	110	1.5	1	
326-25-09-L150	3	26	25	150	30	1.5	1	
326-25-09-L220	3	26	25	220	30	1.5	1	
330-32-09-L160	3	30	32	160	70	1.5	1	
330-32-09-L220	3	30	32	220	120	1.5	1	
332-32-09-L160	3	32	32	160	70	1.5	1	
332-32-09-L220	3	32	32	220	120	1.5	1	
432-32-09-L160	4	32	32	160	70	1.5	1	
432-32-09-L220	4	32	32	220	120	1.5	1	
433-32-09-L180	4	33	32	180	30	1.5	1	
433-32-09-L250	4	33	32	250	30	1.5	1	
440-32-09-L180	4	40	32	180	40	1.5	2	
440-32-09-L250	4	40	32	250	40	1.5	2	
540-32-09-L180	5	40	32	180	40	1.5	2	
540-32-09-L250	5	40	32	250	40	1.5	2	

• Coolant through type

TEBL...-M...-09

CHASE2FEED

Modular



Designation		Dimension (mm)					Insert
		D	D3	L5	Ts	ap	
TEBL 225-M12-09	2	25	21	35	12	1.5	BLMP 0904R-M BLMP 0904R-MM BLMP 0904R-ML
325-M12-09	3	25	21	35	12	1.5	
326-M12-09	3	26	21	35	12	1.5	
330-M16-09	3	30	29	43	16	1.5	
332-M16-09	3	32	29	43	16	1.5	
432-M16-09	4	32	29	43	16	1.5	
433-M16-09	4	33	29	43	16	1.5	
335-M16-09	3	35	29	43	16	1.5	
435-M16-09	4	35	29	43	16	1.5	
440-M16-09	4	40	29	43	16	1.5	
540-M16-09	5	40	29	43	16	1.5	
542-M16-09	5	42	29	43	16	1.5	

• Matched with T-FLEXTEC: see part G • Coolant through type

E165 Ramping Data E208 Cutting Condition E224

Spare parts

Designation	Screw	Wrench			
TEBL-09	TS 35A088I/HG	TD 10P			

TEBL-12/TEBL...-M...-12

CHASE2FEED

End Mill & Modular

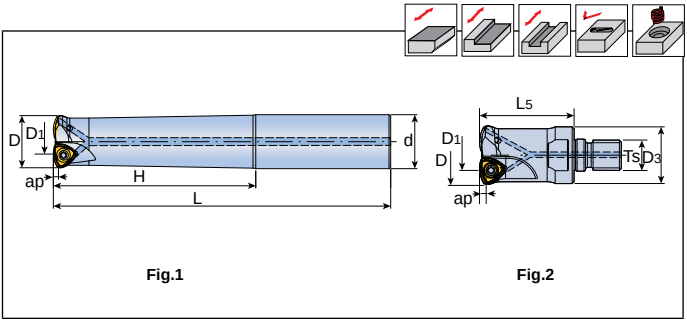


Fig.1 Fig.2

	Designation		Dimension (mm)									Fig.	Insert
			D	D1	d	D3	L	L5	H	Ts	ap		
TEBL	**232-32-12-S**	2	32	15.4	32	-	150		70	-	2	1	BLMP 1205R-M
	232-32-12	2	32	15.4	32	-	200		45	-	2	1	
	232-32-12-L	2	32	15.4	32	-	200		120	-	2	1	
	233-32-12-L250	2	33	16.4	32	-	250		45	-	2	1	
	340-32-12-S	3	40	23.1	32	-	150		30	-	2	1	
	340-42-12-S	3	40	23.1	42	-	150		70	-	2	1	
	340-32-12-L	3	40	23.1	32	-	200		30	-	2	1	
	240-42-12-XL	2	40	23.1	42	-	300		120	-	2	1	
TEBL	**232-M16-12**	2	32	15.4	-	30	-	50	-	12	2	2	BLMP 1205R-M
	235-M16-12	2	35	18.4	-	30	-	50	-	16	2	2	
	340-M16-12	3	40	23.1	-	30	-	50	-	16	2	2	
	342-M16-12	3	42	25.1	-	30	-	50	-	16	2	2	

• Matched with T-FLEXTEC: see part G • Coolant through type

E166 Ramping Data E209 Cutting Condition E224

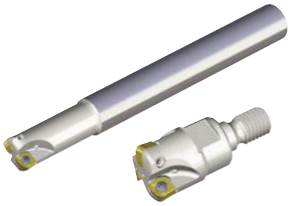
Spare parts

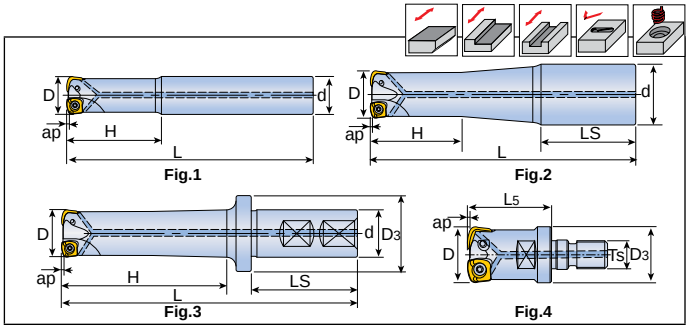
Designation	Screw	Wrench			
TEBL-12	TS 40120I	TD 15			

TEXD-08/TEXD...-M...-08

CHASE 2 FEED

End Mill & Modular





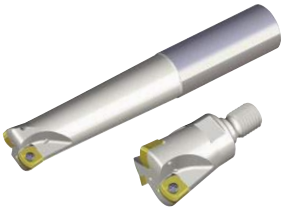
Designation			Dimension (mm)									Fig.	Insert
			D	D3	d	L	L5	H	LS	Ts	ap		
TEXD	**220-20-08-L**	2	20	-	20	180	-	50	130	-	1	1	XDMX 08T310R-M
	225-25-08-L	2	25	-	25	200	-	60	140	-	1	1	XDMX 08T310R-MR
	325-25-08	3	25	-	25	200	-	60	140	-	1	1	
	225-32-08-L	2	25	-	32	250	-	60	160	-	1	2	
	220-W25F-08-L	2	20	40	25	141	-	72	56	-	1	3	
	225-W25F-08-L	2	25	40	25	156	-	87	56	-	1	3	
	221-20-08-L200	2	21	-	20	200	-	30	170	-	1	1	
	226-25-08-L200	2	26	-	25	200	-	30	170	-	1	1	
	226-25-08-L250	2	26	-	25	250	-	30	220	-	1	1	
TEXD	**220-M10-08**	2	20	18	-	-	30		-	10	1	4	XDMX 08T310R-M
	225-M12-08	2	25	21	-	-	35		-	12	1	4	XDMX 08T310R-MR
	325-M12-08	3	25	21	-	-	35		-	12	1	4	
	332-M16-08	3	32	29	-	-	43		-	16	1	4	
	440-M16-08	4	40	29	-	-	43		-	16	1	4	

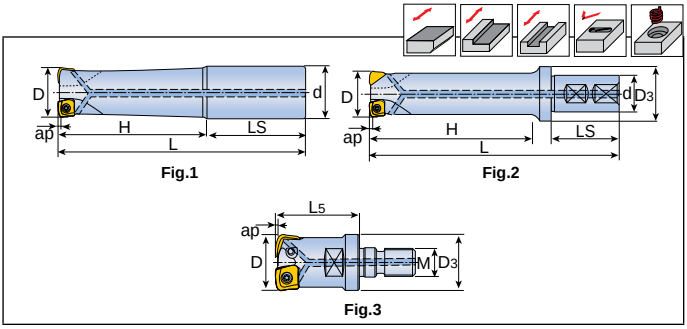
• Matched with T-FLEXTEC: see part G • Coolant through type

TEXD-13/TEXD...-M...-13

CHASE 2 FEED

End Mill & Modular





Designation			Dimension (mm)									Fig.	Insert
			D	d	D3	L	L5	H	LS	M	ap		
TEXD	**232-W25F-13-L**	2	32	25	40	166	-	97	56	-	2	2	XDMX 130515R-MM
	232-32-13-L	2	32	32	-	200	-	120	80	-	2	1	XDMX 130515R-MR
	340-32-13-L	3	40	32	-	200	-	50	150	-	2	1	
	340-W32F-13-L	3	40	32	48	220	-	140	60	-	2	2	
	340-W32F-13-XL	3	40	32	48	270	-	190	60	-	2	2	
	240-42-13-XL	2	40	42	-	300	-	120	180	-	2	1	
	233-32-13-L200	2	33	32	-	200	-	45	155	-	2	1	
	233-32-13-L250	2	33	32	-	250	-	45	205	-	2	1	
	233-32-13-L300	2	33	32	-	300	-	45	255	-	2	1	
	235-32-13-L250	2	35	32	-	250	-	45	205	-	2	1	
	340-32-13-L250	3	40	32	-	250	-	45	210	-	2	1	
TEXD	**232-M16-13**	2	32	-	29	-	50	-	-	M16	2	3	XDMX 130515R-MM
	340-M16-13	3	40	-	29	-	50	-	-	M16	2	3	XDMX 130515R-MR

• Matched with T-FLEXTEC: see part G • Coolant through type

E191 Ramping Data E210 Cutting Condition E225

Spare parts

Designation	Screw	Wrench			
TEXD-08	TS 25A075I/HG	TD 8P			
TEXD-13	TS 40120I	T-T15			

TES/TEF-AN11

Extended Flute Cutter

90°

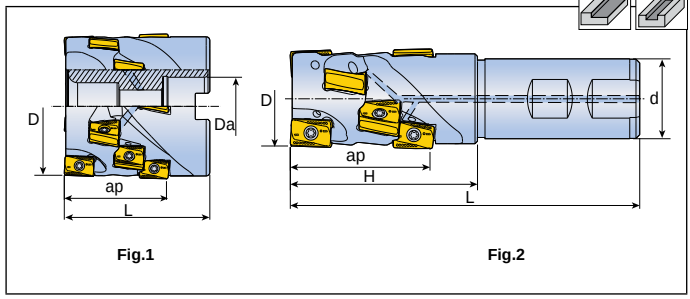


Fig.1 Fig.2

	Designation	No. of Insert	Dimension (mm)						Kg	Fig.	Mounting Bolt	Insert
			D	Da	d	L	H	ap				
TES	D50-40-22R-AN11	3	50	22	-	60	-	40	0.6	1	SH M10x1.5x40	ANMX 110608R-M ANHX 110608R-M/AL
	D63-60-27R-AN11	4	63	27	-	80	-	60	1.3	1	SH M12x1.75x60	
	D80-60-32R-AN11	5	80	32	-	80	-	60	2.3	1	SH M16x2x60	
TEF	D32-40-W32-AN11	2	32	-	32	110	48	40	-	2	-	ANMX 110608R-M ANHX 110608R-M/AL
	D40-40-W32-AN11	3	40	-	32	125	50	40	-	2	-	

- Coolant through type
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

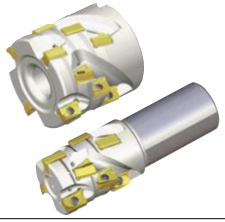
E160 Cutting Condition E223 Arbor Style E234-E235

Spare parts

Designation	Screw	Wrench			
TES/TEF-AN11	TS 35A088I/HG	TD 10P			

TES/TEF-AN16

Extended Flute Cutter



90°

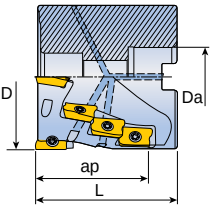


Fig.1

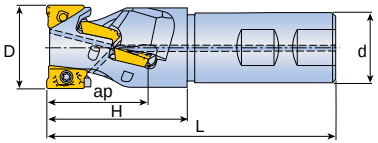


Fig.2

	Designation		No. of Insert	Dimension (mm)						Kg	Fig.	Mounting Bolt	Insert
				D	Da	d	L	H	ap				
TES	D50-42-22R-AN16	2	6	50	22	-	65	-	42	0.7	1	SH M10x1.5x40	ANMX 160708R-M ANHX 160708R-SM ANHX 1607...R-M/AL ANHX 160708R-ML/MR
	D63-42-27R-AN16	3	9	63	27	-	70	-	42	1.1	1	SH M12x1.75x50	
	D63-56-27R-AN16	3	12	63	27	-	80	-	56	1.3	1	SH M12x1.75x50	
	D80-56-32R-AN16	4	16	80	32	-	80	-	56	2.2	1	SH M16x2x50	
	D100-69-40R-AN16	5	25	100	40	-	100	-	69	4.5	1	SH M20x2.5x60	
TEF	D40-42-W32-AN16	2	6	40	-	32	120	55	42	-	2	-	ANMX 160708R-M ANHX 160708R-SM ANHX 1607...R-M/AL ANHX 160708R-ML/MR
	D40-56-W32-AN16	2	8	40	-	32	140	75	56	-	2	-	
	D50-56-W40-AN16	3	12	50	-	40	140	70	56	-	2	-	

- Coolant through type
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

E160 Cutting Condition E223 Arbor Style E234-E235

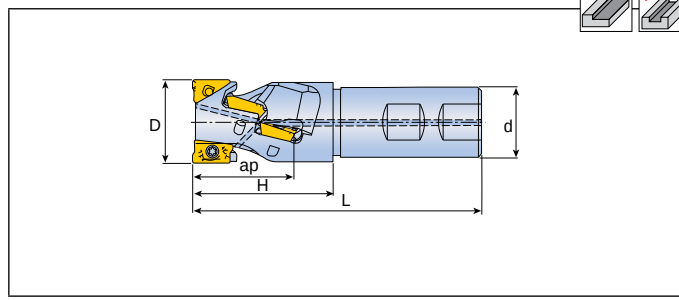
Spare parts

Designation	Screw	Wrench			
TES/TEF-AN16	TS 40120I/HG	T-T15			

TEF-AX06

CHASEMILL

Extended Flute Cutter



90°

Designation		No. of Insert	Dimension (mm)						Insert
			D	d	L	H	ap		
TEF	D16-16-W16-AX06	2	6	16	16	80	28	16	x	AXMT 0602 PER-EM AXCT 0602...R-AL
	D20-21-W20-AX06	3	12	20	20	85	33	21	●	
	D25-26-W25-AX06	4	20	25	25	95	38	26	●	

E164 Cutting Condition E223

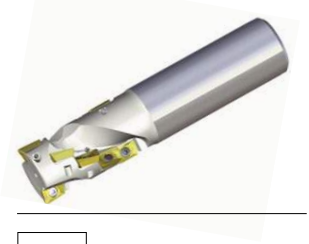
Spare parts

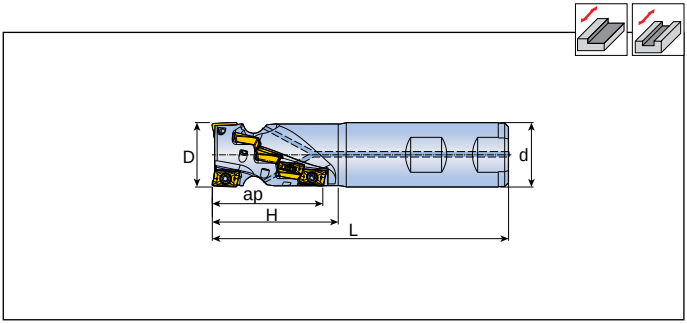
Designation	Screw	Wrench			
TEF-AX06	TS 18041 I/HG	TD6P			

2S-TEF-AP09

CHASEMILL

Extended Flute Cutter





90°

	Designation		No. of Insert	Dimension (mm)					Insert
				D	d	L	H	ap	
2S-TEF	D20-25-W20-AP09	1	3	20	20	110	38	26	APKT 09T3 PER-EM APCT 09T3 PER-ML APCT 09T3 PER-AL
	D25-42-W25-AP09	2	10	25	25	115	48	42	
	D32-42-W32-AP09	2	10	32	32	120	51	42	

• Coolant through type

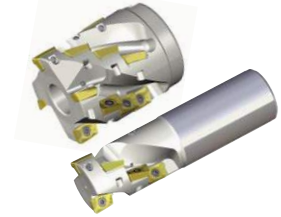
E161 Cutting Condition E223

Spare parts

Designation	Screw	Wrench			
2S-TEF-AP09	TS 25055I/HG	TD8			

TES/TEF-AP12

Extended Flute Cutter



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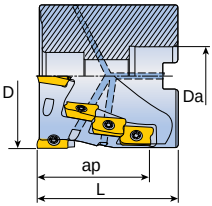


Fig.1

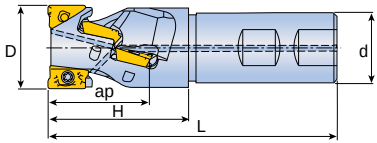


Fig.2

	Designation		No. of Insert	Dimension (mm)					Kg	Fig.	Mounting Bolt	Insert
				D	Da/d	L	*l*	ap				
TES	**D50-45-22R-AP12**	4	16	50	22	65	-	45	0.6	1	SH M10x1.5x40	APKT 1204 PER-EM/EL /EML APKT 1204 PER-SM
	D63-56-27R-AP12	5	25	63	27	75	-	56	1.2	1	SH M10x1.5x50	
TEF	**D25-34-W25-AP12**	2	6	25	25	120	47	34	-	2	-	APKT 1204 PER-EM/EL /EML APKT 1204 PER-SM
	D32-45-W32-AP12	2	8	32	32	120	58	45	-	2	-	
	D40-45-W32-AP12	3	12	40	32	140	65	45	-	2	-	

- Coolant through type
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

E162 Cutting Condition E223 Arbor Style E234-E235

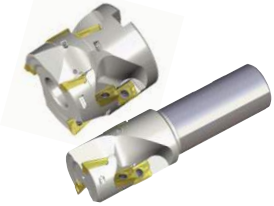
Spare parts

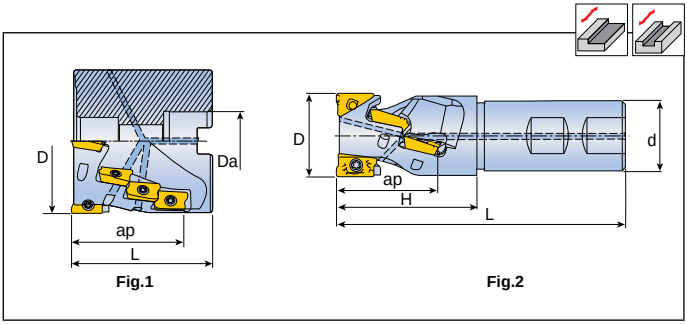
Designation	Screw	Wrench			
					
TES /TEF-AP12(Ø16-Ø25)	TS 35A070I/HG	TD10P			
TES /TEF-AP12(Ø32-)	TS 35A088I/HG	TD10P			

TES-AP17/TEF-AP17

CHASEMILL

Extended Flute Cutter





90°

	Designation		No. of Insert	Dimension (mm)						Kg	Fig.	Mounting Bolt	Insert
				D	Da / d	Da(")	L	H	ap				
TES	D50-44-22-AP17	2	6	50	22	-	60	-	44	0.5	1	SH M10x1.5x40	APKT 1705 PER-M
	D63-44-27-AP17	3	9	63	27	25.4	63	-	44	0.9	1	SH M12x1.75x40	APKT 1705 PER-EM /EL/EML
	D80-58-32-AP17	4	16	80	32	31.75	75	-	58	1.9	1	SH M16x2x50	APKT 1705 PER-SM
	D100-88-40-AP17	5	30	100	40	38.1	110	-	88	4.8	1	SH M20x2.5x80	APKT 1705 PER-AL
TEF	D32-30-W32-AP17	2	4	32	32	-	120	50	30	-	2	-	APKT 1705 PER-M
	D40-44-W32-AP17	2	6	40	32	-	140	65	44	-	2	-	APKT 1705 PER-EM/ EL/EML
													APKT 1705 PER-SM
													APKT 1705 PER-AL

- Coolant through type
- Ordering example : Metric cutter TES D63-44-27-AP17, Inch-bore cutter TES D63-44-25.4-AP17
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

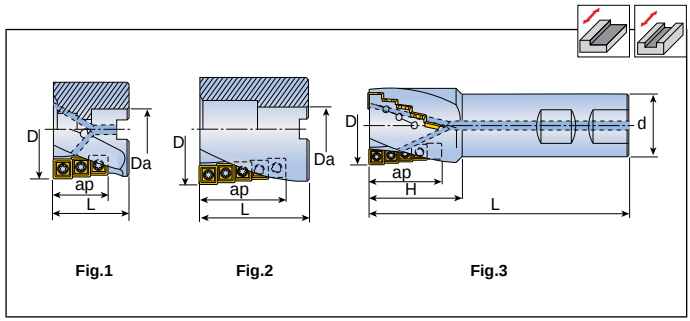
E163 Cutting Condition E223 Arbor Style E234-E235

Spare parts

Designation	Screw	Wrench			
TES-AP17	TS 40093I/HG	T-T15			
TEF-AP17	TS 40093I/HG	TD 15			

Extended Flute Cutter

90°



Designation		No. of Insert	Dimension (mm)						Fig.	Mounting Bolt	Insert
			D	Da / d	Da(")	L	H	ap			
TES	**D50-29-22-11**	3	50	22	-	52	-	29.0	1	SH M10x1.5x30	SPMG(T) 110408-EM
	D63-35-27-11	4	63	27	25.40	55	-	35.0	1	SH M12x1.75x35	
	D80-47-32-14	4	80	32	31.75	65	-	47.0	1	SH M16x2x40	SPMG(T)140508-EM
	D100-60-40-14	5	100	40	38.10	88	-	60.0	2	-	
TEF	**D32-23-W32-09**	2	32	32	-	120	40	23.8	3	-	SPMG(T) 090408-EM
	D40-38-W32-11	2	40	32		130	60	38.9	3	-	SPMG(T)110408-EM
	D50-48-W40-11	3	50	40		140	70	48.4	3	-	
	D50-48-W42-11	3	50	42		140	70	48.4	3	-	

- Fig1 & Fig3: Coolant through type
- Ordering example: Metric cutter TES D63-35-27-11, Inch-bore cutter TES D63-35-25.4-11
- Mounting bolts supplied do not have coolant through facility.
  If the application demands a coolant through cutter, the mounting bolt with coolant through holes needs to be ordered seperately.
  Ex) SH M10x1.5x30: Bolt without hole.
  SH M10x1.5x30-C: Bolt with hole.

E185 | Cutting Condition E223 | Arbor Style E234-E235

Spare parts

Designation	Screw	Wrench			
TES(Ø50-Ø63)	TS 40093I	TD 15			
TES(Ø80-Ø100)	TS 50A121I/HG	T-T20			
TEF(Ø32)	TS 35088I	TD 10			
TEF(Ø40-Ø50)	TS 40093I	TD 15			

TSM...-W...-TS16

TOPSLOT

Slotting Cutter: End mill

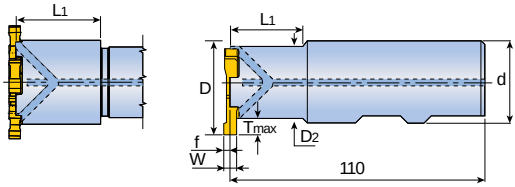


Fig.1 Fig.2

Designation		Dimension (mm)					Fig.	Kg	Insert
		D	D2	d	L1	W			
TSM **D32-W25-3Z-TS16**	3	32.2	21.7	25	52.3	1.20-4.0	2	0.34	TS16-1.2~4.0
D32-W25-3Z-B-TS16	3	32.2	21.7	25	52.3	4.01-6.0	2	0.46	TS16-4.01~6.5
D40-W25-4Z-TS16	4	40.0	29.7	25	30.0	1.20-4.0	1	0.44	TS16-1.2~4.0
D40-W25-4Z-B-TS16	4	40.0	29.7	25	30.0	4.01-6.0	1	0.53	TS16-4.01~6.5
D50-W32-6Z-TS16	6	50.0	39.7	25	30.0	1.20-4.0	1	0.75	TS16-1.2~4.0

• f, Tmax refer to insert data

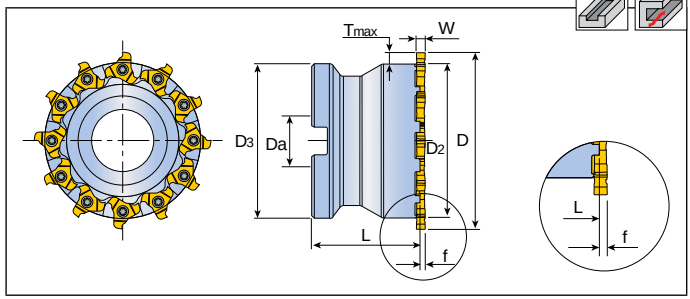
Spare parts

Designation	Screw	Wrench			
					
TSM D32-W25-3Z-TS16	TS 40097I-N3.5	TD 15			
TSM D32-W25-3Z-B-TS16	TS 40097I	TD 15			
TSM D40-W25-4Z-TS16	TS 40097I-N3.5	TD 15			
TSM D40-W25-4Z-B-TS16	TS 40097I	TD 15			
TSM D50-W32-6Z-TS16	TS 40097I-N3.5	TD 15			

TSM...R-TS16

TOPSLOT

Slotting Cutter: Flange Type



Designation		Dimension (mm)						Kg	Arbor Style	Insert
		D	Da	D2	D3	L	W			
TSM	**D50-22R-6Z-TS16**	6	50	22	39.7	39.7	39	1.20-4.0	0.24	A	TS16-1.20~4.0
	D50-22R-6Z-B-TS16	6	50	22	39.7	39.7	39	4.01-6.0	0.24	A	TS16-4.01~6.5
	D63-22R-8Z-TS16	8	63	22	52.7	40.0	39	1.20-4.0	0.40	A	TS16-1.20~4.0
	D63-22R-8Z-B-TS16	8	63	22	52.7	40.0	39	4.01-6.0	0.27	A	TS16-4.01~6.5
	D80-27R-11Z-TS16	11	80	27	69.7	69.7	49	1.20-4.0	0.40	B	TS16-1.20~4.0
	D80-27R-11Z-B-TS16	11	80	27	69.7	69.7	49	4.01-6.0	0.95	B	TS16-4.01~6.5

• f, Tmax refer to insert data

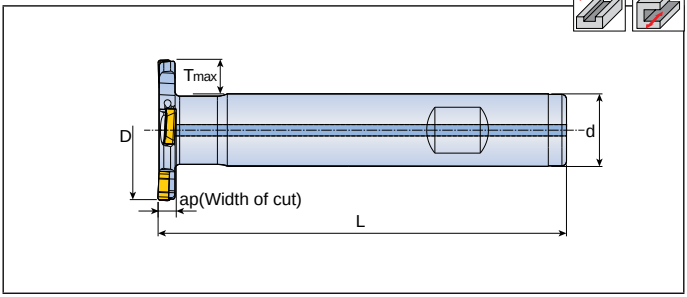
E190 Cutting Condition E232 Arbor Style E234-E235

Spare parts

Designation	Screw	Wrench			
					
TSM D50-22R-6Z-TS16	TS 40097I-N3.5	TD 15			
TSM D50-22R-6Z-B-TS16	TS 40097I	TD 15			
TSM D63-22R-8Z-TS16	TS 40097I-N3.5	TD 15			
TSM D63-22R-8Z-B-TS16	TS 40097I	TD 15			
TSM D80-27R-11Z-TS16	TS 40097I-N3.5	TD 15			
TSM D80-27R-11Z-B-TS16	TS 40097I	TD 15			

TSM...-W...-SL

Slotting Cutter: End Mill



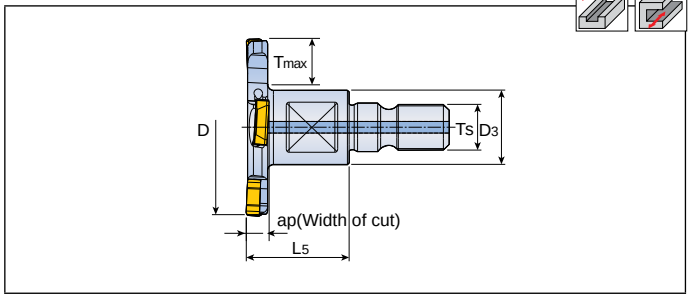
Designation		ap (mm)		Dimension (mm)				Insert
				D	d	L	Tmax	
TSM	D25-03-W12-SL18	3	1+1	25	12	90	6.5	SLOT 018-...
	D32-03-W16-SL18	3	2+2	32	16	90	8.0	
	D40-03-W16-SL18	3	3+3	40	16	105	12.0	
	D50-03-W20-SL18	3	4+4	50	20	110	15.0	
	D63-03-W20-SL18	3	5+5	63	20	110	21.5	
	D25-04-W12-SL23	4	1+1	25	12	90	6.5	SLOT 023-...
	D32-04-W16-SL23	4	2+2	32	16	90	8.0	
	D40-04-W16-SL23	4	3+3	40	16	105	12.0	
	D50-04-W20-SL23	4	4+4	50	20	110	15.0	
	D63-04-W20-SL23	4	5+5	63	20	110	21.5	
	D25-05-W12-SL28	5	1+1	25	12	90	6.5	SLOT 028-...
	D32-05-W16-SL28	5	2+2	32	16	90	8.0	
	D40-05-W16-SL28	5	3+3	40	16	105	12.0	
	D50-05-W20-SL28	5	4+4	50	20	110	15.0	
	D63-05-W20-SL28	5	5+5	63	20	110	21.5	
	D25-06-W12-SL33	6	1+1	25	12	90	6.5	SLOT 033-...
	D32-06-W16-SL33	6	2+2	32	16	90	8.0	
	D40-06-W16-SL33	6	3+3	40	16	105	12.0	
	D50-06-W20-SL33	6	4+4	50	20	110	15.0	
	D63-06-W20-SL33	6	5+5	63	20	110	21.5	

• Coolant through type

TSM...-M...-SL

TOPSLOT

Slotting Cutter: Modular



Designation	ap (mm)		Dimension (mm)					Insert
			D	D3	L5	Ts	Tmax	
TSM D25-03-M08-SL18	3	1+1	25	13	18	8	6	SLOT 018-...
D32-03-M08-SL18	3	2+2	32	13	18	8	9	
D40-03-M08-SL18	3	3+3	40	13	18	8	13	
D50-03-M10-SL18	3	4+4	50	18	18	10	15	
D63-03-M10-SL18	3	5+5	63	18	18	10	22	
D25-04-M08-SL23	4	1+1	25	13	18	8	6	SLOT 023-...
D32-04-M08-SL23	4	2+2	32	13	18	8	9	
D40-04-M08-SL23	4	3+3	40	13	18	8	13	
D50-04-M10-SL23	4	4+4	50	18	18	10	15	
D63-04-M10-SL23	4	5+5	63	18	18	10	22	
D25-05-M08-SL28	5	1+1	25	13	18	8	6	SLOT 028-...
D32-05-M08-SL28	5	2+2	32	13	18	8	9	
D40-05-M08-SL28	5	3+3	40	13	18	8	13	
D50-05-M10-SL28	5	4+4	50	18	18	10	15	
D63-05-M10-SL28	5	5+5	63	18	18	10	22	
D25-06-M08-SL33	6	1+1	25	13	18	8	6	SLOT 033-...
D32-06-M08-SL33	6	2+2	32	13	18	8	9	
D40-06-M08-SL33	6	3+3	40	13	18	8	13	
D50-06-M10-SL33	6	4+4	50	18	18	10	15	
D63-06-M10-SL33	6	5+5	63	18	18	10	22	

• Matched with T-FLEXTEC: see part G • Coolant through type

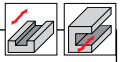
E180 Cutting Condition E231

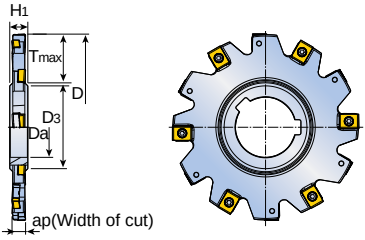
Spare parts

Designation	Screw	Wrench	L-Wrench		
TSM...-03...-SL18	TS 25B024I/HG	TD7P	L-T7P		
TSM...-04...-SL23	TS 25B031I/HG	TD7P	L-T7P		
TSM...-05...-SL28	TS 25B042I/HG	TD7P	L-T7P		
TSM...-06...-SL33	TS 25B053I/HG	TD7P	L-T7P		

TSM...FD...-Z

Slotting Cutter: Fixed Pocket Disk Type

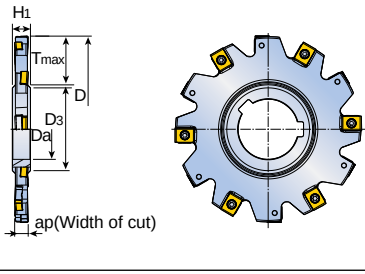




Designation	ap (mm)		Dimension (mm)					Kg	Insert
			D	Da	D3	H1	Tmax		
TSM 063FD-03-22N-Z018	3	4+4	63	22	34	8	12.0	0.1	ZNHT 018--...
080FD-03-22N-Z018	3	5+5	80	22	34	8	20.5	0.1	
100FD-03-27N-Z018	3	6+6	100	27	41	12	26.0	0.2	
125FD-03-40N-Z018	3	7+7	125	40	55	12	31.5	0.3	
160FD-03-40N-Z018	3	9+9	160	40	55	12	49.0	0.4	
063FD-04-22N-Z023	4	4+4	63	22	34	8	12.0	0.1	ZNHT 023-...
080FD-04-22N-Z023	4	5+5	80	22	34	8	21.0	0.1	
100FD-04-27N-Z023	4	6+6	100	27	41	12	27.0	0.2	
125FD-04-40N-Z023	4	7+7	125	40	55	12	32.0	0.4	
160FD-04-40N-Z023	4	9+9	160	40	55	12	50.0	0.6	
063FD-05-22N-Z028	5	4+4	63	22	34	8	13.0	0.1	ZNHT 028-...
080FD-05-22N-Z028	5	5+5	80	22	34	8	21.0	0.2	
100FD-05-27N-Z028	5	6+6	100	27	41	12	27.0	0.3	
125FD-05-40N-Z028	5	7+7	125	40	55	12	33.0	0.4	
160FD-05-40N-Z028	5	9+9	160	40	55	12	50.0	0.7	
063FD-06-22N-Z033	6	4+4	63	22	34	8	13.0	0.1	ZNHT 033-...
080FD-06-22N-Z033	6	5+5	80	22	34	8	21.5	0.2	
100FD-06-27N-Z033	6	6+6	100	27	41	12	27.0	0.3	
125FD-06-40N-Z033	6	7+7	125	40	55	12	33.0	0.5	
160FD-06-40N-Z033	6	9+9	160	40	55	12	50.0	0.8	
200FD-06-50N-Z033	6	10+10	200	50	69	12	63.0	1.2	
250FD-06-50N-Z033	6	12+12	250	50	69	12	88.0	2.0	
080FD-07-22N-Z038	7	4+4	80	22	34	12	20.0	0.2	ZNHT 038-...
100FD-07-27N-Z038	7	5+5	100	27	41	12	26.5	0.3	
125FD-07-40N-Z038	7	6+6	125	40	55	12	32.0	0.5	
160FD-07-40N-Z038	7	8+8	160	40	55	12	49.5	0.8	
200FD-07-50N-Z038	7	9+9	200	50	69	12	62.5	1.3	
250FD-07-50N-Z038	7	12+12	250	50	69	12	87.5	2.1	

TSM...FD...-Z

Slotting Cutter: Fixed Pocket Disk Type



Designation		ap (mm)		Dimension (mm)					Kg	Insert
				D	Da	D3	H1	Tmax		
TSM	080FD-08-22N-Z043	8	4+4	80	22	34	12	20.5	0.2	ZNHT 043-...
	100FD-08-27N-Z043	8	5+5	100	27	41	12	27.0	0.3	
	125FD-08-40N-Z043	8	6+6	125	40	55	12	32.5	0.9	
	160FD-08-40N-Z043	8	8+8	160	40	55	12	50.0	0.9	
	200FD-08-50N-Z043	8	9+9	200	50	69	12	63.0	1.4	
	250FD-08-50N-Z043	8	12+12	250	50	69	12	88.0	2.3	
	100FD-09-27N-Z048	9	5+5	100	27	41	12	27.5	0.4	ZNHT 048-...
	125FD-09-40N-Z048	9	6+6	125	40	55	12	33.0	0.6	
	160FD-09-40N-Z048	9	8+8	160	40	55	12	50.5	1.0	
	200FD-09-50N-Z048	9	9+9	200	50	69	12	63.5	1.6	
	250FD-09-50N-Z048	9	12+12	250	50	69	12	88.5	2.6	
	100FD-10-27N-Z053	10	5+5	100	27	41	12	28.0	0.4	ZNHT 053-...
	125FD-10-40N-Z053	10	6+6	125	40	55	12	33.5	0.6	
	160FD-10-40N-Z053	10	8+8	160	40	55	12	51.0	1.1	
	200FD-10-50N-Z053	10	9+9	200	50	69	12	64.0	1.8	
	250FD-10-50N-Z053	10	12+12	250	50	69	12	89.0	2.9	

• Arbor: SCA

E195 Cutting Condition E232

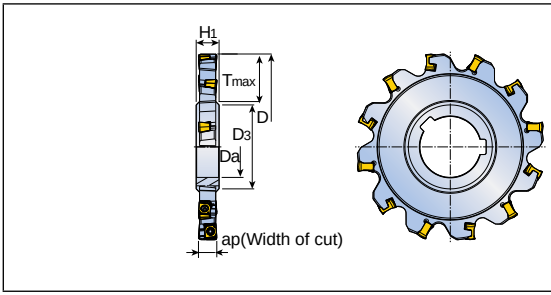
Spare parts

Designation	Screw	Wrench	Designation	Screw	Wrench
TSM-Z018	TS 25B024I/HG	TD7P/L-T7P	**TSM-Z038**	TS 40K051I	T-T15/L-T15
TSM-Z023	TS 25B031I/HG	TD7P/L-T7P	**TSM-Z043**	TS 40K061I	T-T15/L-T15
TSM-Z028	TS 25B042I/HG	TD7P/L-T7P	**TSM-Z048**	TS 40K0701I	T-T15/L-T15
TSM-Z033	TS 25B053I/HG	TD7P/L-T7P	**TSM-Z053**	TS 40K0801I	T-T15/L-T15

TSM...FD...-ZN08

TOPSLOT

Slotting Cutter: Fixed Pocket Disk Type



Designation	ap (mm)		Dimension (mm)					Kg	Insert
			D	Da	D3	L	Tmax		
TSM **080FD-10-27N-ZN08**	10.0	4+4	80	27	41	15	15.5	0.3	ZNHU 080-...
100FD-10-27N-ZN08	10.0	5+5	100	27	41	15	25.5	0.5	
125FD-10-40N-ZN08	10.0	6+6	125	40	55	15	31.0	0.7	
080FD-12-27N-ZN08	12.0	4+4	80	27	41	15	16.5	0.3	
100FD-12-27N-ZN08	12.0	5+5	100	27	41	15	26.5	0.5	
125FD-12-40N-ZN08	12.0	6+6	125	40	55	15	32.0	0.8	

• Arbor: SCA

E196 Cutting Condition E232

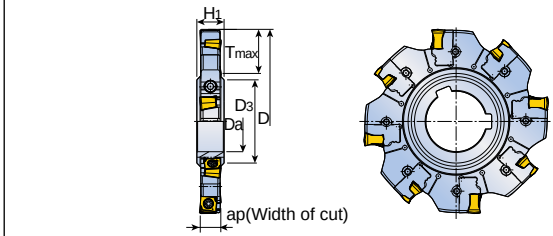
Spare parts

Designation	Screw	Wrench			
TSM...FD...-ZN08	TS 30085I/HG	TD9			

TSM...FD-S/W...-ZN08

TOPSLOT

Slotting Cutter: Adjustable Disk Type



	Designation	ap (mm)		Dimension (mm) D	Da	D3	H1	Tmax	Kg	Insert
TSM	100FD-S-27N-ZN08	10-12	4+4	100	27	41	15	26.5	0.4	ZNHU 080-...
	125FD-S-40N-ZN08		5+5	125	40	55	15	31.5	0.7	
	160FD-S-40N-ZN08		6+6	160	40	55	15	48.5	1.1	
	200FD-S-50N-ZN08		8+8	200	50	69	15	61.5	1.8	
	250FD-S-50N-ZN08		9+9	250	50	69	15	87.5	2.8	
	100FD-W-27N-ZN08	12-14	4+4	100	27	41	15	27.0	0.5	
	125FD-W-40N-ZN08		5+5	125	40	55	15	31.5	0.8	
	160FD-W-40N-ZN08		6+6	160	40	55	15	49.5	1.3	
	200FD-W-50N-ZN08		8+8	200	50	69	15	62.5	2.1	
	250FD-W-50N-ZN08		9+9	250	50	69	15	87.5	3.4	

- Cutters are set at the minimum width of cut range, unless specific width is not ordered
- Arbor: SCA

E196 | Cutting Condition E232 | Technical Guide TE11-TE12

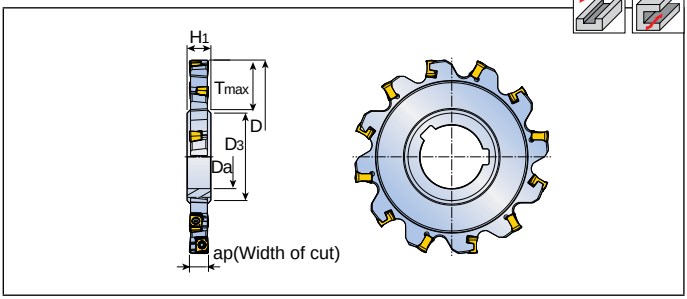
Spare parts

Designation	Right Cartridge	Left Cartridge	Cartridge Screw	Adjust Screw	Insert Screw
TSM...FD-S/W...-ZN08	TCT-SR-ZN08 TCT-WR-ZN08	TCT-SL-ZN08 TCT-WL-ZN08	TS 50G120C	SA M8-6.0	TS 30085I/HG
	Wrench	L-Wrench			
	TD9	L-W3			

TSM...FD...-ZN11

TOPSLOT

Slotting Cutter: Fixed Pocket Disk Type



Designation		ap (mm)		Dimension (mm)					Kg	Insert
				D	Da	D3	H1	Tmax		
TSM	125FD-14-40N-ZN11	14.0	6+6	125	40	55	15	34.5	0.9	ZNHU 110-...
	125FD-17-40N-ZN11	17.0	6+6	125	40	55	18	34.5	1.1	
	125FD-20-40N-ZN11	20.0	6+6	125	40	55	20	34.5	1.3	

• Arbor: SCA

E196 Cutting Condition E232

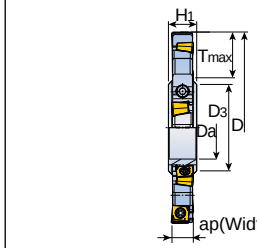
Spare parts

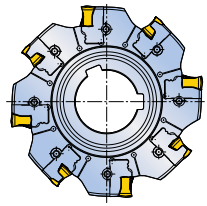
Designation	Screw	Wrench			
TSM...FD...-ZN11	TS 40120I/HG	T-T15			

TSM...FD-S/W...-ZN11

TOPSLOT

Slotting Cutter: Adjustable Disk Type





Designation		ap (mm)		Dimension (mm)					Kg	Insert
				D	Da	D3	H1	Tmax		
TSM	100FD-S-27N-ZN11	14-17	3+3	100	27	41	18	28.0	0.6	ZNHU 110-...
	125FD-S-40N-ZN11		4+4	125	40	55	18	31.0	1.0	
	160FD-S-40N-ZN11		6+6	160	40	55	18	48.5	1.6	
	200FD-S-50N-ZN11		7+7	200	50	69	18	61.5	2.6	
	250FD-S-50N-ZN11		9+9	250	50	69	18	86.5	4.2	
	315FD-S-60N-ZN11		12+12	315	60	85	18	110.0	6.8	
	100FD-W-27N-ZN11	17-20	3+3	100	27	41	22	28.0	0.8	
	125FD-W-40N-ZN11		4+4	125	40	55	22	31.0	1.2	
	160FD-W-40N-ZN11		6+6	160	40	55	22	48.5	2.0	
	200FD-W-50N-ZN11		7+7	200	50	69	22	61.5	3.2	
	250FD-W-50N-ZN11		9+9	250	50	69	22	86.5	5.2	
	315FD-W-60N-ZN11		12+12	315	60	85	22	110.0	8.5	

- Cutters are set at the minimum width of cut range, unless specific width is not ordered
- Arbor: SCA

E196 Cutting Condition E232 Technical Guide TE11-TE12

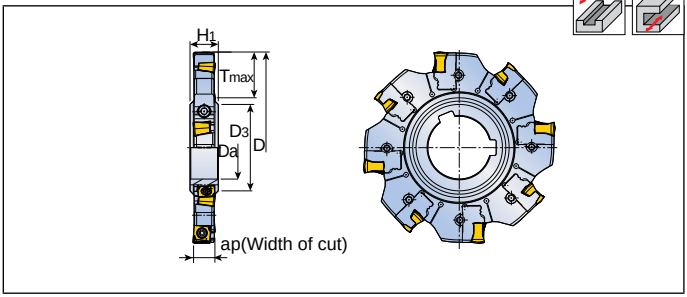
Spare parts

Designation	Right Cartridge	Left Cartridge	Cartridge Screw	Adjust Screw	Insert Screw
					
TSM...FD-S/W...-ZN11	TCT-SR-ZN11 TCT-WR-ZN11	TCT-SL-ZN11 TCT-WL-ZN11	TS 70B160C	SA M8-9.0	TS 40120I/HG
	Wrench	L-Wrench			
					
	T-T15	L-W4			

TSM...FD-S/W...-ZN14

TOPSLOT

Slotting Cutter: Adjustable Disk Type



Designation		ap (mm)		Dimension (mm)					Kg	Insert
				D	Da	D3	H1	Tmax		
TSM	125FD-S-40N-ZN14	20-23	3+3	125	40	55	24.5	32.0	1.4	ZNHU 140-...
	160FD-S-40N-ZN14		5+5	160	40	55	24.5	49.0	2.4	
	200FD-S-50N-ZN14		6+6	200	50	69	24.5	62.5	3.9	
	250FD-S-50N-ZN14		8+8	250	50	69	24.5	87.0	6.3	
	315FD-S-60N-ZN14		10+10	315	60	85	24.5	111.5	10.2	
	125FD-W-40N-ZN14	23-26	3+3	125	40	55	27.5	32.0	1.6	
	160FD-W-40N-ZN14		5+5	160	40	55	27.5	49.0	2.7	
	200FD-W-50N-ZN14		6+6	200	50	69	27.5	62.5	4.3	
	250FD-W-50N-ZN14		8+8	250	50	69	27.5	87.0	7.1	
	315FD-W-60N-ZN14		10+10	315	60	85	27.5	111.5	11.6	

- Cutters are set at the minimum width of cut range, unless specific width is not ordered
- Arbor: SCA

E196 Cutting Condition E232 Technical Guide TE11-TE12

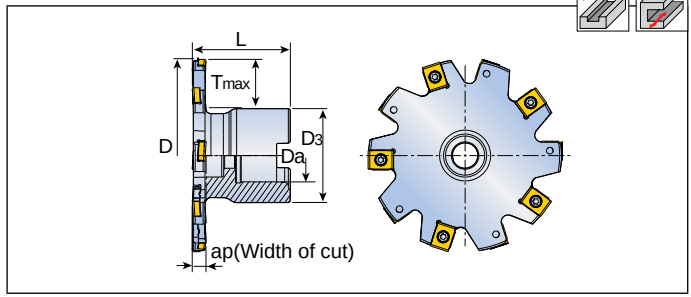
Spare parts

Designation	Right Cartridge	Left Cartridge	Cartridge Screw	Adjust Screw	Insert Screw
					
TSM...FD-S/W...-ZN14	TCT-SR-ZN14	TCT-SL-ZN14	TS 70B160C	SA M8-9.0	TS 40120I/HG
	Wrench	L-Wrench			
					
	T-T15	L-W4			

TSM...FF...-Z

TOPSLOT

Slotting Cutter: Fixed Pocket Flange Type



Designation	ap (mm)		Dimension (mm)					Fig.	Kg	Mounting Bolt	Insert
			D	Da	D3	L	Tmax				
TSM 080FF-03-22R-Z018	3	5+5	80	22	40	50	20.0	A	0.4	SH M10x1.5x35	ZNHT 018-...
100FF-03-27R-Z018	3	6+6	100	27	48	50	26.0	A	0.6	SH M12x1.75x35	
080FF-04-22R-Z023	4	5+5	80	22	40	50	20.0	A	0.4	SH M10x1.5x35	ZNHT 023-...
100FF-04-27R-Z023	4	6+6	100	27	48	50	26.0	A	0.6	SH M12x1.75x35	
080FF-05-22R-Z028	5	5+5	80	22	40	50	20.0	A	0.5	SH M10x1.5x35	ZNHT 028-...
100FF-05-27R-Z028	5	6+6	100	27	48	50	26.0	A	0.7	SH M12x1.75x35	
080FF-06-22R-Z033	6	5+5	80	22	40	50	20.0	A	0.6	SH M10x1.5x35	ZNHT 033-...
100FF-06-27R-Z033	6	6+6	100	27	48	50	26.0	A	0.7	SH M12x1.75x35	
125FF-06-40R-Z033	6	7+7	125	40	70	50	25.0	B	1.2	-	
160FF-06-40R-Z033	6	9+9	160	40	70	50	43.0	B	1.5	-	
080FF-07-22R-Z038	7	4+4	80	22	40	50	20.0	A	0.5	SH M10x1.5x40	ZNHT 038-...
100FF-07-27R-Z038	7	5+5	100	27	48	50	25.5	A	0.7	SH M12x1.75x35	
125FF-07-40R-Z038	7	6+6	125	40	70	50	24.5	B	1.2	-	
160FF-07-40R-Z038	7	8+8	160	40	70	50	42.0	B	1.5	-	
080FF-08-22R-Z043	8	4+4	80	22	40	50	20.0	A	0.5	SH M10x1.5x35	ZNHT 043-...
100FF-08-27R-Z043	8	5+5	100	27	48	50	25.5	A	0.8	SH M12x1.75x35	
125FF-08-40R-Z043	8	6+6	125	40	70	50	24.5	B	1.2	-	
160FF-08-40R-Z043	8	8+8	160	40	70	50	42.0	B	1.6	-	
100FF-09-27R-Z048	9	5+5	100	27	48	50	26.0	A	0.8	SH M12x1.75x35	ZNHT 048-...
125FF-09-40R-Z048	9	6+6	125	40	70	50	24.5	B	1.3	-	
160FF-09-40R-Z048	9	8+8	160	40	70	50	42.0	B	1.7	-	
100FF-10-27R-Z053	10	5+5	100	27	48	50	26.0	A	0.8	SH M12x1.75x35	ZNHT 053-..
125FF-10-40R-Z053	10	6+6	125	40	70	50	24.5	B	1.4	-	
160FF-10-40R-Z053	10	8+8	160	40	70	50	42.0	B	1.9	-	

E195 Cutting Condition E232 Arbor Style E234-E235

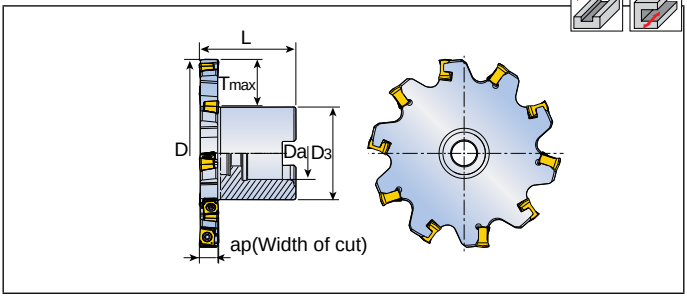
Spare parts

Designation	Screw	Wrench	Designation	Screw	Wrench
TSM-Z018	TS 25B024I/HG	TD7P/L-T7P	**TSM-Z038**	TS 40K051I	T-T15/L-T15
TSM-Z023	TS 25B031I/HG	TD7P/L-T7P	**TSM-Z043**	TS 40K061I	T-T15/L-T15
TSM-Z028	TS 25B042I/HG	TD7P/L-T7P	**TSM-Z048**	TS 40K0701I	T-T15/L-T15
TSM-Z033	TS 25B053I/HG	TD7P/L-T7P	**TSM-Z053**	TS 40K0801I	T-T15/L-T15

TSM...FF...-ZN08

TOPSLOT

Slotting Cutter: Fixed Pocket Flange Type



Designation	ap (mm)		Dimension (mm)					Fig.	Kg	Mounting Bolt	Insert
			D	Da	D3	L	Tmax				
TSM 063FF-10-22R-ZN08	10.0	3+3	63	22	40	50	15	A	0.4	SH M10x1.5x35	ZNHU 080-...
080FF-10-22R-ZN08	10.0	4+4	80	22	40	50	24	A	0.5	SH M10x1.5x35	
100FF-10-27R-ZN08	10.0	5+5	100	27	48	50	26	A	0.8	SH M12x1.75x35	
125FF-10-32R-ZN08	10.0	6+6	125	32	58	50	34	B	1.1	-	
063FF-12-22R-ZN08	12.0	3+3	63	22	40	50	15	A	0.4	SH M10x1.5x35	
080FF-12-22R-ZN08	12.0	4+4	80	22	40	50	24	A	0.5	SH M10x1.5x35	
100FF-12-27R-ZN08	12.0	5+5	100	27	48	50	26	A	0.9	SH M12x1.75x35	
125FF-12-32R-ZN08	12.0	6+6	125	32	58	50	34	B	1.2	-	

E196 Cutting Condition E232 Arbor Style E234-E235

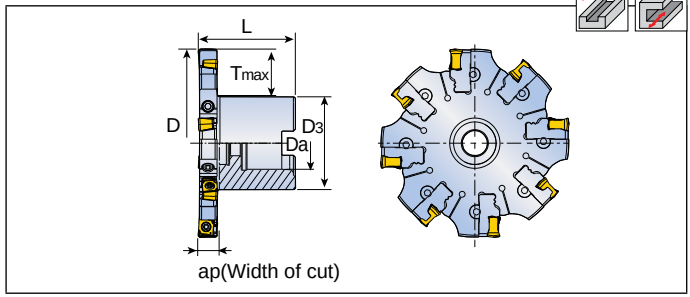
Spare parts

Designation	Screw	Wrench			
TSM...FF...-ZN08	TS 30085I/HG	TD9			

TSM...FF-S/W...-ZN08

TOPSLOT

Slotting Cutter: Adjustable Flange Type



Designation		ap (mm)		Dimension (mm) D	Da	D3	L	Tmax	Fig.	Kg	Mounting Bolt	Insert
TSM	100FF-S-27R-ZN08	10-12	4+4	100	27	48	50	25	A	0.8	SH M12x1.75x35	ZNHU 080-...
	125FF-S-32R-ZN08		5+5	125	32	58	50	31.5	B	1.1	-	
	160FF-S-40R-ZN08		6+6	160	40	70	50	43	B	1.8	-	
	200FF-S-40R-ZN08		8+8	200	40	90	50	53	C	2.9	-	
	100FF-W-27R-ZN08	12-14	4+4	100	27	48	50	25	A	0.9	SH M12x1.75x35	
	125FF-W-32R-ZN08		5+5	125	32	58	50	31.5	B	1.2	-	
	160FF-W-40R-ZN08		6+6	160	40	70	50	43	B	2.0	-	
	200FF-W-40R-ZN08		8+8	200	40	90	50	53	C	3.2	-	

• Cutters are set at the minimum width of cut range, unless specific width is not ordered

E196 Cutting Condition E232 Arbor Style E234-E235 Technical Guide TE11-TE12

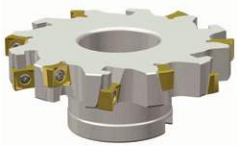
Spare parts

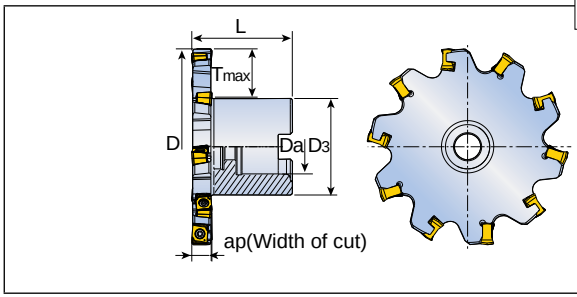
Designation	Right Cartridge	Left Cartridge	Cartridge Screw	Adjust Screw	Insert Screw
					
TSM...FF-S/W...-ZN08	TCT-SR-ZN08 TCT-WR-ZN08	TCT-SL-ZN08 TCT-WL-ZN08	TS 50G120C	SA M8-6.0	TS 30085I/HG
	Wrench	L-Wrench			
					
	TD9	L-W3			

TSM...FF...-ZN11

TOPSLOT

Slotting Cutter: Fixed Pocket Flange Type





Designation	ap (mm)		Dimension (mm)					Fig.	Kg	Mounting Bolt	Insert
			D	Da	D3	L	Tmax				
TSM 063FF-14-22R-ZN11	14.0	3+3	63	22	40	50	15	A	0.4	SH M10x1.5x35	ZNHU 110-...
080FF-14-22R-ZN11	14.0	4+4	80	22	40	50	24	A	0.5	SH M10x1.5x35	
100FF-14-27R-ZN11	14.0	5+5	100	27	48	50	26	A	1.0	SH M12x1.75x35	
125FF-14-32R-ZN11	14.0	6+6	125	32	58	50	34	B	1.3	-	
080FF-17-22R-ZN11	17.0	4+4	80	22	40	50	24	A	0.6	SH M10x1.5x35	
100FF-17-27R-ZN11	17.0	5+5	100	27	48	50	26	A	1.0	SH M12x1.75x35	
125FF-17-32R-ZN11	17.0	6+6	125	32	58	50	34	B	1.5	-	
080FF-20-22R-ZN11	20.0	4+4	80	22	40	50	24	A	0.7	SH M10x1.5x35	
100FF-20-27R-ZN11	20.0	5+5	100	27	48	50	26	A	1.1	SH M12x1.75x35	
125FF-20-32R-ZN11	20.0	6+6	125	32	58	50	34	B	1.6	-	

E196 Cutting Condition E232 Arbor Style E234-E235

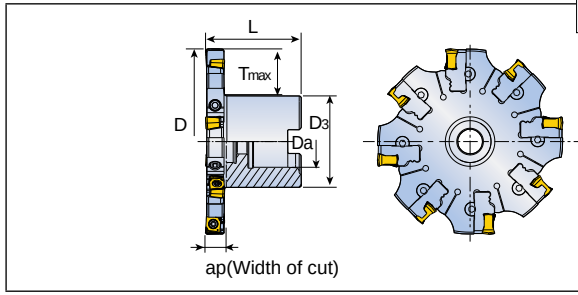
Spare parts

Designation	Insert Screw	Wrench			
TSM...FF...-ZN11	TS 40120I/HG	T-T15			

TSM...FF-S/W...-ZN11

TOPSLOT

Slotting Cutter: Adjustable Flange Type



Designation		ap (mm)		Dimension (mm) D	Da	D3	L	Tmax	Fig.	Kg	Mounting Bolt	Insert
TSM	100FF-S-27R-ZN11	14-17	3+3	100	27	48	50	25.0	A	0.9	SH M12x1.75x35	ZNHU 110-...
	125FF-S-32R-ZN11		4+4	125	32	58	50	31.5	B	1.3	-	
	160FF-S-40R-ZN11		6+6	160	40	70	50	43.0	B	2.2	-	
	200FF-S-40R-ZN11		7+7	200	40	90	50	53.0	C	3.9	-	
	250FF-S-60R-ZN11		9+9	250	60	130	50	55.0	C	6.2	-	
	315FF-S-60R-ZN11		12+12	315	60	130	50	90.0	C	8.9	-	
	100FF-W-27R-ZN11	17-20	3+3	100	27	48	50	25.0	A	1.0	SH M12x1.75x35	
	125FF-W-32R-ZN11		4+4	125	32	58	50	31.5	B	1.5	-	
	160FF-W-40R-ZN11		6+6	160	40	70	50	43.0	B	2.2	-	
	200FF-W-40R-ZN11		7+7	200	40	90	50	53.0	C	4.1	-	
	250FF-W-60R-ZN11		9+9	250	60	130	50	55.0	C	6.9	-	
	315FF-W-60R-ZN11		12+12	315	60	130	50	90.0	C	10.2	-	

• Cutters are set at the minimum width of cut range, unless specific width is not ordered

E196 | Cutting Condition E232 | Arbor Style E234-E235 | Technical Guide TE11-TE12

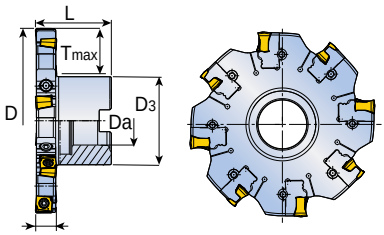
Spare parts

Designation	Right Cartridge	Left Cartridge	Cartridge Screw	Adjust Screw	Insert Screw
TSM...FD-S/W...-ZN11	TCT-SR-ZN11 TCT-WR-ZN11	TCT-SL-ZN11 TCT-WL-ZN11	TS 70B160C	SA M8-9.0	TS 40120I/HG
	Wrench	L-Wrench			
	T-T15	L-W4			

TSM...FF-S/W...-ZN14

TOPSLOT

Slotting Cutter: Adjustable Flange Type



Designation	ap (mm)		Dimension (mm)					Fig.	Kg	Insert
			D	Da	D3	L	Tmax			
TSM 125FF-S-32R-ZN14	20-23	3+3	125	32	58	50	32.5	A	2.6	ZNHU 140-...
160FF-S-40R-ZN14		5+5	160	40	70	50	43.0	A	2.8	
200FF-S-40R-ZN14		6+6	200	40	90	50	53.0	B	4.6	
250FF-S-60R-ZN14		8+8	250	60	130	50	58.0	B	7.2	
315FF-S-60R-ZN14		10+10	315	60	130	50	90.0	B	11.3	
125FF-W-32R-ZN14	23-26	3+3	125	32	58	50	32.5	A	1.8	
160FF-W-40R-ZN14		5+5	160	40	70	50	43.0	A	3.0	
200FF-W-40R-ZN14		6+6	200	40	90	50	53.0	B	5.0	
250FF-W-60R-ZN14		8+8	250	60	130	50	58.0	B	7.5	
315FF-W-60R-ZN14		10+10	315	60	130	50	90.0	B	12.2	

• Cutters are set at the minimum width of cut range, unless specific width is not ordered

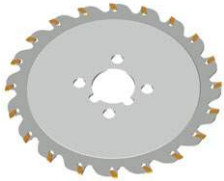
E196 Cutting Condition E232 Arbor Style E234-E235 Technical Guide TE11-TE12

Spare parts

Designation	Right Cartridge	Left Cartridge	Cartridge Screw	Adjust Screw	Insert Screw
					
TSM...FD-S/W...-ZN14	TCT-SR-ZN14	TCT-SL-ZN14	TS 70B160C	SA M8-9.0	TS 40120I/HG
	Wrench	L-Wrench			
					
	T-T15	L-W4			

TSC

Slotting Cutter



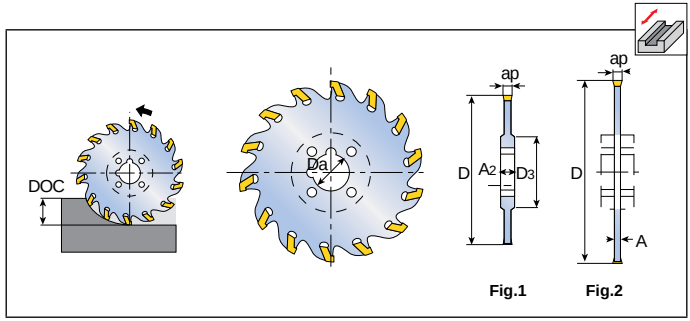


Fig.1 Fig.2

Designation		ap (mm)		Dimension (mm)						Fig.	Insert Seat Size	Insert
				D	Da	D3	A	A2	DOC			
TSC	75-1.6-22A	1.6	8	75	22.0	39	-	2.4	18	1	1	TIMC TIMJ TIPV
	100-1.6-22A	1.6	10	100	22.0	39	-	2.4	30	1	1	
	125-1.6-27A	1.6	12	125	27.0	64	-	2.4	30	1	1	
	75-2-22A	2.0-2.3	8	75	22.0	39	-	2.4	18	1	2	
	100-2-22A	2.0-2.3	10	100	22.0	39	-	2.4	30	1	2	
	125-2-27A	2.0-2.3	12	125	27.0	64	-	2.4	30	1	2	
	100-2.4-22K	2.3-2.5	10	100	22.0	46	1.9	-	26	2	2	
	125-2.4-32K	2.3-2.5	12	125	32.0	55	1.9	-	34	2	2	
	160-2.4-32K	2.3-2.5	16	160	32.0	55	1.9	-	52	2	2	
	100-3-22K	2.8-3.58	6	100	22.0	-	2.4	-	26	2	4	
	125-3-32K	2.8-3.53	8	125	32.0	-	2.4	-	34	2	4	
	160-3-40K	2.8-3.53	10	160	40.0	-	2.4	-	39	2	4	
	100-4-22K	3.54-4.52	6	100	22.0	-	3.2	-	27	2	4	
	125-4-32K	3.54-4.52	8	125	32.0	-	3.2	-	34	2	4	
	160-4-40K	3.54-4.52	10	160	40.0	-	3.2	-	39	2	4	

E187-E188 Cutting Condition E232-E233 Technical Guide TE13

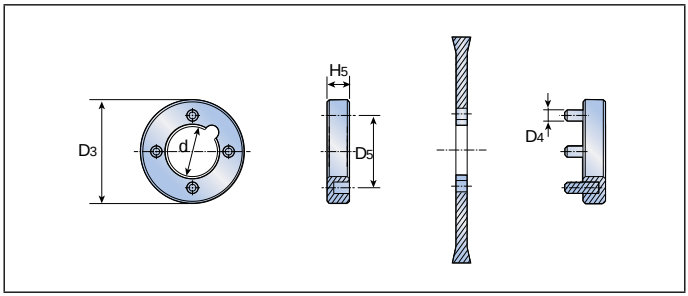
Spare parts

Designation	Drive Flage Set	Drive Shank			
					
TSC-22K	TR22-46	TW32-40			
TSC-32K	TR32-55	TW32-55			
TSC-40K	TR40-88	TW40-88			

• Extractor(ESG 1) supplied with each cutter • Flange set should be ordered separately

TR

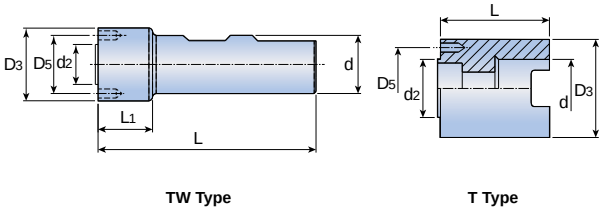
Slotting Cutter: Flange Set



Designation		Dimension (mm)				
		d	D3	D5	D4	H5
TR	**22-46**	22	46	32	5	10
	32-55	32	55	45	6	10
	40-80	40	80	63	11	12

TW/T

Slotting Cutter: Drive Shank



TW Type T Type

Designation		Dimension (mm)						
		d	D3	d2	D5	L1	L	Screw
TW	32-40	32	40	22	32	30	120	SR76-963
T	32-55	32	55	32	45	-	60	SR76-943
	40-80	40	80	40	63	-	60	SR76-944

Milling Inserts

Contents

Insert Designation System

S	P	K	N
1	2	3	4

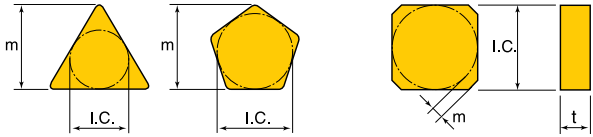
1 Shape

											Special
A	B	C	H	L	O	P	R	S	T	W	X

2 Clearance Angle

B	C	D	E	F	G	N	P
5º	7º	15º	20º	25º	30º	0º	11º

3 Tolerance



Class	Tolerance (mm)			I.C. Dimesion (mm)					
	m	t	I.C.	6.35	9.525	12.7	15.875	19.05	25.4
A	±0.005	±0.025	±0.025	●	●	●	●	●	●
E	±0.025	±0.025	±0.025	●	●	●	●	●	●
F	±0.005	±0.025	±0.013	●	●	●	●	●	●
G	±0.025	±0.130	±0.025	●	●	●	●	●	●
H	±0.013	±0.025	±0.013	●	●	●	●	●	●
K	±0.013	±0.025	±0.05	●	●				
			±0.08			●			
			±0.10				●	●	
			±0.13						●
M	±0.08	±0.130	±0.05	●	●				
	±0.13		±0.08			●			
	±0.15		±0.10				●	●	
	±0.18		±0.13						●

4 Chipformer and Clamp Type

								Special
A	F	G	M	N	R	T	W	X

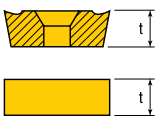
Insert Designation System

12	03	08 ED	T	R	-	
5	6	7	8	9	10	

5 Cutting Edge Length

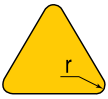
I.C(mm)	C	R,S	T	H	O
5.56			09		
6.35	06	06	11		
7.94	08		13		
9.525	09	09	16		
12.7	12	12	22	05	05
15.875	16	15	27	09	
17.94					07
19.05	19	19	33	10	
25.4	25	25			

6 Thickness



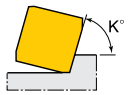
01	1.59mm
02	2.38mm
03	3.18mm
T3	3.97mm
04	4.76mm
05	5.56mm
06	6.35mm
07	7.94mm
09	9.52mm

7 Corner Radius



02R	0.2mm
04R	0.4mm
05R	0.5mm
08R	0.8mm
10R	1.0mm
12R	1.2mm
15R	1.5mm
16R	1.6mm
24R	2.4mm
32R	3.2mm
40R	4.0mm

7 Parallel Land



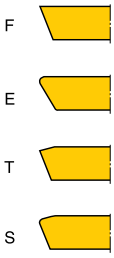
A=45º D=60º
E=75º F=85º
P=90º Z=Special

Entering Angle

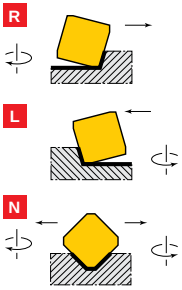
B= 5º F=25º
C= 7º G=30º
D=15º N= 0º
E=20º P=11º
Z=Special

Clearance Angle of Wiper

8 Edge Condition



9 Hand of Tool



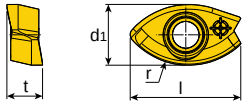
10 Manufacturer's Option

AL	Aluminum
WC	Wiper Crown
MR	Medium Rough
M	Medium
L	Light
ML	Medium Light
E□□	Economical

2FB

DUETBALL

Insert



Size	Dimension (mm)					
	l	d1	t	ap	r	
160-M	12.4	6.8	3.7	8.0	8.0	
200-M	14.9	8.2	4.8	10.0	10.0	
250-M	18.9	10.2	5.9	12.5	12.5	
300-M	22.1	11.8	6.9	15.0	15.0	
320-M	23.9	12.8	7.5	16.0	16.0	

M

E114-E115

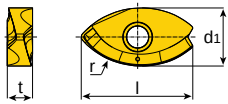
Insert	Designation		Recommended Machining Conditions		Coated									Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	2FB	**160-M**	0.07-0.30	2.0-6.5	●		●	●	●				●	
		200-M	0.08-0.35	3.0-8.0	●		●	●	●				●	
		250-M	0.08-0.35	3.5-10.0	●		●	●	●				●	
		300-M	0.08-0.40	4.0-12.5	●		●	●	●				●	
		320-M	0.08-0.40	4.5-13.0	●		●	●	●				●	

●: Standard Item

3FB

TRIOBALL

Insert



Size	Dimension (mm)					
	l	d1	t	ap	r	
320C-M	23	12.0	5.2	16	16	
500C-M	36	18.6	7.0	25	25	
320P-M	21	9.9	5.2	16	16	
500P-M	32.9	15.3	7.0	25	25	

M

E116

Insert	Designation		Recommended Machining Conditions		Coated									Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	3FB	**320C-M**	0.08-0.15	4.5-13.0	●		●		●				●	
		500C-M	0.15-0.30	7.5-20.0	●		●		●				●	
	3FB	**320P-M**	0.08-0.15	4.5-13.0	●		●		●				●	
		500P-M	0.08-0.30	7.5-20.0	●		●		●				●	

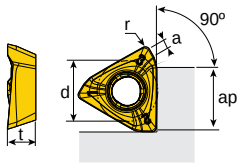
●: Standard Item

TaeguTec

Contents

3PK(H)T

Insert



Size	Dimension (mm)					
	d	t	ap	a	r	
06	5.3	2.8	4.7	0.6-1.2	0.2-0.8	
10	6.9	4.0	7.0	0.5-1.3	0.4-1.6	
15	10.7	5.0	11.0	0.5-2.0	0.4-2.4	
19	13.5	6.0	15.0	0.5-2.0	0.4-3.2	


M


ML


AL


E24-E25

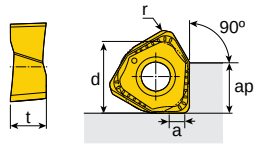

E78-E81

Insert	Designation		Recommended Machining Conditions		Cermet	Coated							Uncoated
			Fz (mm/tooth)	ap (mm)	CT7000	TT9080	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	**3PKT**	**060302R-M**	0.04-0.10	1.0-4.0		●	●	●					●	
		060304R-M	0.04-0.10	1.0-4.0		●	●	●				●	●	
		060308R-M	0.04-0.10	1.0-4.0		●	●	●				●	●	
		100404R-M	0.05-0.12	2.0-6.0		●	●	●		●	●	●	●	
		100408R-M	0.05-0.12	2.0-6.0		●	●	●		●	●	●	●	
		100416R-M	0.05-0.12	2.0-6.0		●							●	
		150508R-M	0.07-0.17	3.0-9.0		●	●	●	●	●	●	●	●	
		150516R-M	0.07-0.17	3.0-9.0		●				●			●	
		150524R-M	0.07-0.17	3.0-12.0		●							●	
		190608R-M	0.09-0.22	4.5-12.0		●	●	●	●	●	●	●	●	
		190616R-M	0.09-0.22	4.5-12.0		●	●	●		●			●	
		190624R-M	0.09-0.22	4.5-12.0		●							●	
		190632R-M	0.09-0.22	4.5-12.0		●							●	
	3PHT	**100404R-M**	0.05-0.12	2.0-6.0	●	●								
		100408R-M	0.05-0.12	2.0-6.0	●	●								
		150504R-M	0.07-0.17	3.0-9.0		●								
		150508R-M	0.07-0.17	3.0-9.0	●	●								
		150516R-M	0.07-0.17	3.0-9.0	●	●								
		190608R-M	0.09-0.22	4.5-12.0		●								
	**3PKT**	**100404R-ML**	0.04-0.10	2.0-6.0		●	●	●				●		
		100408R-ML	0.04-0.10	2.0-6.0		●	●	●						
		150508R-ML	0.05-0.12	3.0-9.0		●	●	●				●		
		190608R-ML	0.06-0.14	4.5-12.0		●	●	●				●		
	3PHT	**100408R-ML**	0.04-0.10	2.0-6.0		●	●							
		150508R-ML	0.05-0.12	3.0-9.0		●	●							
	**3PHT**	**060304R-AL**	0.07-0.22	1.0-4.0										●
		100404R-AL	0.10-0.40	2.0-6.0										●
		100408R-AL	0.10-0.40	2.0-6.0										●
		150504R-AL	0.10-0.50	3.0-9.0										●
		150508R-AL	0.10-0.50	3.0-9.0										●
		190604R-AL	0.15-0.50	4.5-12.0										●
		190608R-AL	0.15-0.50	4.5-12.0										●

●: Standard Item

6NGU

Insert



Size	Dimension (mm)					
	d	t	ap	a	r	
06	9.26	4.76	6.2	1.2-2.4	0.4-1.6	
09	13.05	6.70	9.2	1.2-2.2	0.4-1.6	

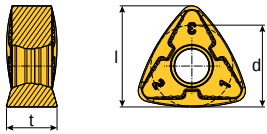
Insert	Designation		Recommended Machining Conditions		Coated								Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	**6NGU**	**060404R-M**	0.08-0.15	1.5-5.0	●	●			●		●	●	
		060405R-M	0.08-0.15	1.5-5.0	●							●	
		060408R-M	0.08-0.15	1.5-5.0	●	●	●	●	●	●	●	●	
		060410R-M	0.08-0.15	1.5-5.0	●							●	
		060416R-M	0.08-0.15	1.5-5.0	●	●			●		●	●	
		090504R-M	0.10-0.20	2.5-7.5	●						●	●	
		090508R-M	0.10-0.20	2.5-7.5	●	●	●	●	●	●	●	●	
		090516R-M	0.10-0.20	2.5-7.5	●	●		●	●	●	●	●	
	**6NGU**	**060404R-ML**	0.05-0.10	1.5-5.0	●	●					●		
		060405R-ML	0.05-0.10	1.5-5.0	●								
		060408R-ML	0.05-0.10	1.5-5.0	●	●	●		●		●		
		060416R-ML	0.05-0.10	1.5-5.0	●	●					●		
		090504R-ML	0.05-0.10	2.5-7.5	●	●					●		
		090508R-ML	0.05-0.10	2.5-7.5	●	●	●		●		●		
		090516R-ML	0.05-0.10	2.5-7.5	●	●					●		
	**6NGU**	**060404R-AL**	0.10-0.40	1.5-5.0									●
		060408R-AL	0.10-0.40	1.5-5.0									●
		090504R-AL	0.10-0.40	2.5-7.5									●
		090508R-AL	0.10-0.40	2.5-7.5									●

●: Standard Item

6RBE 50-M

CHASE 2 BALL

Insert



Size	Dimension (mm)					
	d	t	l			
6RBE 50-M	13	8	16			

M

E117-E118

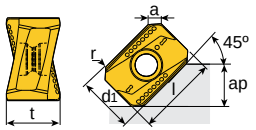
Insert	Designation	Recommended Machining Conditions		Coated									Uncoated
		Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	**6RBE 50-M**	0.10-0.80	1.0-5.0	●		●	●	●		●	●	●	

●: Standard Item

ANHX 1607 ANR-M

CHASE 2 MILL

Insert



Size	Dimension (mm)					
	l	d1	t	ap	a	r
16	16	11	10.4	8.2	1.6	1.0

• Only for 45º cutter

M

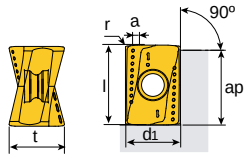
E56

Insert	Designation	Recommended Machining Conditions		Coated								Uncoated
		Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**ANHX 1607 ANR-M**	0.15-0.3	2.5-7.0			●		●	●		●	

●: Standard Item

ANM(H)X

Insert



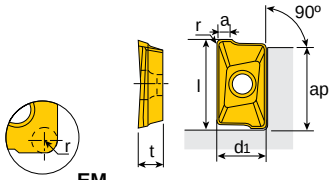
Size	Dimension (mm)					
	l	d_1	t	ap	a	r
11	12	9.2	8.5	11	0.7-1.5	0.4-1.6
16	16	11.0	10.4-10.9	15	0.6–1.7	0.4-2.4

Insert	Designation		Recommended Machining Conditions		Coated									Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	**ANMX**	**110608R-M**	0.10-0.20	3.0-9.0	●		●							
		160708R-M	0.10-0.20	4.5-12.0	●		●							
	ANHX	**110604R-M**	0.08-0.15	3.0-9.0	●		●					●	●	
		110608R-M	0.08-0.15	3.0-9.0	●		●	●	●	●	●	●	●	
		110616R-M	0.08-0.15	3.0-9.0	●		●						●	
		160704R-M	0.10-0.20	4.5-12.0	●	●	●			●	●	●	●	
		160708R-M	0.10-0.20	4.5-12.0	●	●	●	●	●	●	●	●	●	
		160716R-M	0.10-0.20	4.5-12.0	●		●			●	●	●	●	
		160724R-M	0.10-0.20	4.5-12.0	●		●		●	●	●	●	●	
	**ANHX**	**160708R-ML**	0.06-0.12	4.5-12.0			●	●	●					
	**ANHX**	**160708R-MR**	0.13-0.25	4.5-12.0			●		●				●	
	**ANHX**	**110604R-AL**	0.10-0.40	3.0-9.0										●
		110608R-AL	0.10-0.40	3.0-9.0										●
		160704R-AL	0.10-0.40	4.5-12.0										●
		160708R-AL	0.10-0.40	4.5-12.0										●
	**ANHX**	**160708R-SM**	0.10-0.20	4.5-12.0	●		●		●			●		

●: Standard Item

APK(C)T 09

Insert



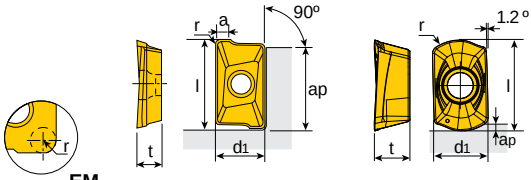
Size	Dimension (mm)					
	l	d1	t	ap	a	r
09	10.5	6.20	3.8	8.8	0.5-1.79	0.4-3.2
09(HF)	10.7	5.94	3.9	1.0	-	5.25

Insert	Designation	Recommended Machining Conditions		Cermet	Coated								Uncoated
		Fz (mm/tooth)	ap (mm)	CT7000	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	**APKT 09T3 PER-EM**	0.05-0.10	2.5-7.5	●	●	●	●	●	●	●	●	●	●	●
	09T305R-EM	0.05-0.10	2.5-7.5					●						
	09T308R-EM	0.05-0.10	2.5-7.5		●	●	●	●		●	●	●	●	
	09T316R-EM	0.05-0.10	2.5-7.5		●	●	●	●		●		●	●	
	09T320R-EM	0.05-0.10	2.5-7.5		●		●						●	
	09T332R-EM	0.05-0.10	2.5-7.5		●		●						●	
	09T3 PER-M	0.05-0.10	2.5-7.5					●		●		●	●	
	**APKT 09T3R-HF**	0.30-0.80	0.1-1.0		●		●						●	
	**APCT 09T3 PER-ML**	0.05-0.10	3.0-7.5		●		●	●		●		●		
	**APCT 09T3 PER-AL**	0.05-0.35	2.5-7.5											●

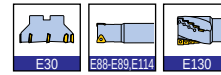
●: Standard Item

APK(C)T 12

Insert



Size	Dimension (mm)					
	l	d1	t	ap	a	r
12	13.3-14.6	8.3	4.5-4.9	11.8-12.5	0.9-2.1	0.4-4.0
12(HF)	14.2	8.0	5.0	1.2	-	8.35

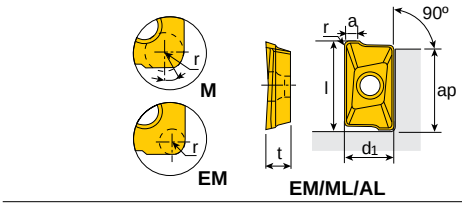


Insert	Designation	Recommended Machining Conditions		Coated								Uncoated
		Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	**APKT 1204 PER-EM**	0.07-0.14	3.5-10.0	●	●	●	●	●	●	●	●	●	
	120404R-EM	0.07-0.14	3.5-10.0		●		●		●			●	
	120416R-EM	0.07-0.14	3.5-10.0	●	●	●	●	●	●		●	●	
	120424R-EM	0.07-0.14	3.5-10.0		●	●	●					●	
	120430R-EM	0.07-0.14	3.5-10.0	●	●	●	●	●	●		●	●	
	120432R-EM	0.07-0.14	3.5-10.0	●		●		●	●		●	●	
	120440R-EM	0.07-0.14	3.5-10.0	●		●						●	
	**APKT 1204 PER-SM**	0.07-0.14	3.5-10.0	●		●		●			●		
	**APKT 1204 PER-EML**	0.04-0.08	3.5-10.0	●		●							
	**APKT 1204 PER-EL**	0.03-0.05	3.5-10.0	●	●	●	●						
	120430R-EL	0.03-0.06	3.5-10.0	●		●							
	**APKT 1204R-HF**	0.10-0.80	0.2-1.0	●								●	
	**APCT 120430R-ML**	0.04-0.08	3.5-10.0	●		●							
	120432R-ML	0.04-0.08	3.5-10.0	●		●							
	120440R-ML	0.04-0.08	3.5-9.5	●		●							
	**APCT 1204 PER-AL**	0.10-0.50	3.5-10.0										●
	120404R-AL	0.10-0.50	3.5-10.0										●
	120416R-AL	0.10-0.50	3.5-10.0										●

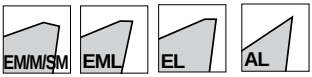
●: Standard Item

APKT 17

Insert



Size	Dimension (mm)					
	l	d1	t	ap	a	r
17	18.5	10.7	5.56	16.1	0.9-3.17	0.4-6.4
17(AL)	17.6	10.7	5.27	16.1	3.15	0.8

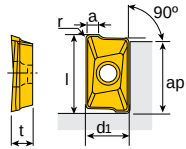


Insert	Designation		Recommended Machining Conditions		Coated									Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	**APKT**	**1705 PER-EM**	0.09-0.18	4.5-13.0	●	●	●	●	●	●	●	●	●	●
		170504R-EM	0.09-0.18	4.5-13.0	●		●	●		●		●	●	
		170510R-EM	0.09-0.17	4.5-13.0	●	●	●		●	●		●	●	
		170516R-EM	0.09-0.17	4.5-13.0	●	●	●	●		●		●	●	
		170524R-EM	0.09-0.17	4.5-13.0	●	●	●	●	●	●		●	●	
		170530R-EM	0.09-0.17	4.5-13.0	●	●	●	●		●			●	
		170532R-EM	0.09-0.17	4.5-13.0	●	●	●	●	●	●		●	●	
		170535R-EM	0.09-0.17	4.5-13.0	●	●	●	●				●	●	
		170540R-EM	0.10-0.20	4.5-13.0	●	●		●					●	
		170548R-EM	0.09-0.17	4.5-13.0	●	●	●	●	●	●		●	●	
		170550R-EM	0.10-0.20	4.5-13.0		●		●					●	
		170564R-EM	0.09-0.18	4.5-13.0	●	●	●	●		●		●	●	
	**APKT**	**1705 PER-M**	0.09-0.18	4.5-13.0				●		●		●	●	●
		170516R-M	0.15-0.30	4.5-13.0				●						
		170532R-M	0.10-0.20	4.5-13.0				●		●		●	●	
		170548R-M	0.10-0.20	4.5-13.0				●						
	**APKT**	**1705 PER-SM**	0.09-0.17	4.5-13.0	●		●		●			●		
	**APKT**	**1705 PER-EML**	0.07-0.14	4.5-13.0	●		●			●				
	**APKT**	**1705 PER-EL**	0.05-0.10	4.5-13.0	●	●	●	●	●					
	**APKT**	**1705 PER-AL**	0.10-0.50	4.5-13.0										●

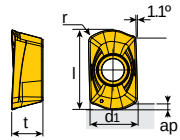
●: Standard Item

AXMT 06/AXCT 06

Insert



EM/AL



HF

Size	Dimension (mm)					
	l	d1	t	ap	a	r
6	6.7	4.15	2.6	5.5	0.83-1.0	0.2-2.0
6(HF)	6.7	4.04	2.6	0.5	-	3.0

EM AL

E29 E84-E85 E128

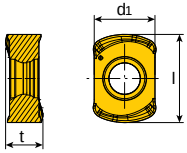
Insert	Designation	Recommended Machining Conditions		Coated									Uncoated
		Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	**AXMT 0602 PER-EM**	0.04-0.08	1.5-5.0	●	●	●	●					●	
	060204R-EM	0.07-0.13	1.5-5.0	●	●	●	●			●	●	●	
	060208R-EM	0.07-0.13	1.5-5.0	●	●	●	●			●	●	●	
	060216R-EM	0.07-0.13	1.5-5.0	●	●	●	●					●	
	060220R-EM	0.07-0.13	1.5-5.0	●		●							
	**AXMT 0602R-HF**	0.30-0.70	0.2-0.5	●		●						●	
	**AXCT 060202R-AL**	0.10-0.20	1.5-5.0										●
	060204R-AL	0.10-0.20	1.5-5.0										●
	060208R-AL	0.10-0.20	1.5-5.0										●

●: Standard Item

BLMP 06/09

CHASE2FEED

Insert



Size	Dimension (mm)					
	l	d1	t	ap		
06	9.0	6.39	3.73	1.0		
09	11.9	9.18	4.80	1.5		

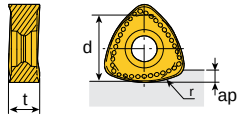
Insert	Designation	Recommended Machining Conditions		Coated								Uncoated
		Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	**BLMP 0603R-M**	0.30-2.50	0.1-1.0	●		●	●	●				●	
	0904R-M	0.30-3.50	0.1-1.5	●		●	●	●				●	
	**BLMP 0603R-MM**	0.20-2.00	0.1-1.0	●		●	●					●	
	0904R-MM	0.20-3.00	0.1-1.5	●		●	●					●	
	**BLMP 0603R-ML**	0.10-0.80	0.1-1.0	●		●	●						
	0904R-ML	0.30-0.80	0.1-1.5	●		●	●						

●: Standard Item

BLMP 12

CHASE 2 FEED

Insert



Size	Dimension (mm)					
	d	t	ap	r		
12	12	5.5	2	15		

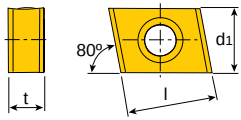
Insert	Designation		Recommended Machining Conditions		Coated									Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	**BLMP**	**1205R-M**	0.40-4.50	0.5-2.0	●		●		●	●			●	

●: Standard Item

CNHX

TRIOBALL

Insert



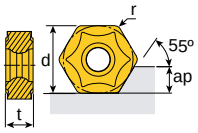
Size	Dimension (mm)					
	l	d1	t			
131108T	12.7	11	5.4			
160608T	16.0	12	6.4			

Insert	Designation		Recommended Machining Conditions		Coated								Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**CNHX**	**131108T**	0.17 - 0.55	1.2 - 5.5					●				
		160608T	0.20 - 0.60	1.2 - 5.5					●				

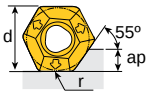
●: Standard Item

HNC(M)X 05

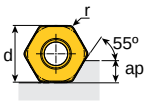
Insert



MM/MP/L



W



MR

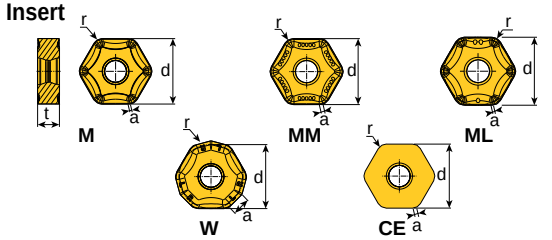
Size	Dimension (mm)					
	d	t	ap	r		
05	12.7	5.0	5.0	1.0		
05(W)	12.7	5.56	5.0	250		

Insert	Designation	Recommended Machining Conditions		Ceramic	Coated							Uncoated
		Fz (mm/tooth)	ap (mm)	AS10	TT9080	TT9030	TT8080	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	**HNCX 050410-L**	0.05-0.20	1.5-4.0		●		●				●		
	**HNCX 050410R-MP**	0.05-0.20	1.5-4.0		●				●		●		
	**HNCX 050410-MM**	0.05-0.20	1.5-4.0		●	●			●	●	●		
	HNMX 050410-MM	0.07-0.20	1.5-4.0		●	●	●			●	●	●	
	**HNCX 050610-MR**	0.13-0.25	1.5-4.0	●									
	**HNCX 05R-W**	0.05-0.15	0.1-1.0		●	●					●		
	05L-W	0.05-0.15	0.1-1.0		●	●					●		

●: Standard Item

HNHX/HNCF/HNEN 10

Insert



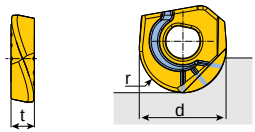
Size	Dimension (mm)					
	d	t	ap	a	r	
HNHX10	19.05	6.35	6.1	1.0	1.0	
HNHX10-W	19.05	6.35	6.1	4.85	250	
HNCF10	19.05	5.80	8.0	0.6	1.0	
HNCF10-WC	19.337	5.80	8.0	-	400	
HNEN10-T	19.05	5.80	8.0	0.6	1.0	

Insert	Designation	Recommended Machining Conditions		Ceramic	Cermet	Coated						Uncoated
		Fz (mm/tooth)	ap (mm)	AS10	CT7000	TT9080	TT8080	TT7800	TT7080	TT6800	TT6080	K10
	**HNHX 1006 ANTN-M**	0.10-0.20	1.5-5.0			●	●	●	●	●	●	
	**HNHX 1006 ANTN-MM**	0.125-0.25	1.5-5.0			●			●	●	●	
	**HNHX 1006 ANTN-ML**	0.10-0.20	1.5-5.0				●			●	●	
	**HNHX 1006 ANTN-W**	0.10-0.20	0.1-1.0		●	●					●	
	**HNHX 1006 ANTN-CE**	0.125-0.25	1.5-5.0	●								
	**HNCF 100510-MR**	0.125-0.25	2.0-6.5							●	●	
	**HNCF 100510-EM**	0.10-0.25	2.0-6.5							●	●	
	**HNCF 100510-ML**	0.10-0.20	2.0-6.5							●	●	
	**HNCF 100510-WC**	0.05-0.15	0.1-1.0							●	●	
	**HNEN 100510 T**	0.125-0.25	2.0-6.5	●								

●: Standard Item

NFB

Insert



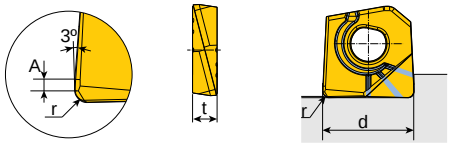
Size	Dimension (mm)					
	d	t	r			
080	8	2.2	4.0			
100	10	2.7	5.0			
120	12	3.2	6.0			
160	16	4.2	8.0			
200	20	5.2	10.0			
250	25	6.2	12.5			
300	30	7.2	15.0			
320	32	7.2	16.0			

Insert	Designation	Recommended Machining Conditions		Coated									Uncoated
		Fz (mm/tooth)	ap (mm)	TT9080	TT8080	TT7800	TT7080	TT6800	TT6080	TT5525	TT5515	TT2510	K10
  Straight cutting edge	**NFB 080-FM**	0.05-0.20	0.05-0.3							●	●	●	
	100-FM	0.05-0.20	0.05-0.3							●	●	●	
	120-FM	0.08-0.30	0.05-0.5							●	●	●	
	160-FM	0.08-0.30	0.05-0.5							●	●	●	
	200-FM	0.08-0.30	0.10-1.0							●	●	●	
	250-FM	0.08-0.40	0.15-1.0							●	●	●	
	300-FM	0.08-0.40	0.15-1.0							●	●	●	
	320-FM	0.08-0.40	0.15-1.0							●	●	●	
  Helical cutting edge	**NFB 080-SM**	0.05-0.25	1.20-3.2							●	●	●	
	100-SM	0.05-0.25	1.50-4.0							●	●	●	
	120-SM	0.08-0.35	1.80-4.8							●	●	●	
	160-SM	0.08-0.35	2.40-6.4							●	●	●	
	200-SM	0.08-0.35	3.00-8.0							●	●	●	
	250-SM	0.08-0.45	3.75-10.0							●	●	●	
	300-SM	0.08-0.45	4.50-12.0							●	●	●	
	320-SM	0.08-0.45	4.80-12.8							●	●	●	

●: Standard Item

NFR

Insert



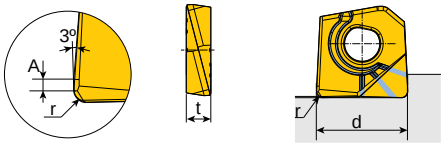
Size	Dimension (mm)					
	d	t	r			
080	8	2.2	0.3-1.0			
100	10	2.7	0.3-2.0			
110	11	2.7	0.3-2.0			
120	12	3.2	0.3-2.0			
130	13	3.2	0.3-2.0			
160	16	4.2	0.3-3.0			
170	17	4.2	1.0-2.0			

E107-E112

Insert	Designation	Recommended Machining Conditions		Coated									Uncoated
		Fz (mm/tooth)	ap (mm)	TT9080	TT8080	TT7800	TT7080	TT6800	TT6080	TT5525	TT5515	TT2510	K10
	**NFR 080A-R03**	0.05-0.12	0.05-0.2							●	●	●	
	080A-R05	0.05-0.12	0.05-0.2							●	●	●	
	080A-R06	0.05-0.12	0.05-0.2							●	●	●	
	080A-R10	0.05-0.12	0.05-0.2							●	●	●	
	100A-R03	0.05-0.12	0.05-0.3							●	●	●	
	100A-R05	0.05-0.12	0.05-0.3							●	●	●	
	100A-R08	0.05-0.12	0.05-0.3							●	●	●	
	100A-R10	0.05-0.12	0.05-0.3							●	●	●	
	100A-R15	0.05-0.12	0.05-0.3							●	●	●	
	100A-R20	0.05-0.12	0.05-0.3							●	●	●	
	110A-R10	0.05-0.12	0.05-0.3							●	●	●	
	110A-R20	0.05-0.12	0.05-0.3							●	●	●	
	120A-R03	0.08-0.15	0.07-0.3							●	●	●	
	120A-R05	0.08-0.15	0.07-0.3							●	●	●	
	120A-R10	0.08-0.15	0.07-0.3							●	●	●	
	120A-R15	0.08-0.15	0.07-0.3							●	●	●	
	120A-R20	0.08-0.15	0.07-0.3							●	●	●	
	130A-R10	0.08-0.15	0.07-0.3							●	●	●	
	130A-R20	0.08-0.15	0.07-0.3							●	●	●	
	160A-R03	0.08-0.15	0.08-0.5							●	●	●	
	160A-R05	0.08-0.15	0.08-0.5							●	●	●	
	160A-R10	0.08-0.15	0.08-0.5							●	●	●	
	160A-R13	0.08-0.15	0.08-0.5							●	●	●	
	160A-R15	0.08-0.15	0.08-0.5							●	●	●	
	160A-R20	0.08-0.15	0.08-0.5							●	●	●	
	160A-R30	0.08-0.15	0.08-0.5							●	●	●	
	170A-R10	0.08-0.15	0.08-0.5							●	●	●	
	170A-R20	0.08-0.15	0.08-0.5							●	●	●	

●: Standard Item

Insert



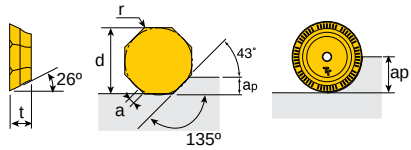
Size	Dimension (mm)					
	d	t	r			
200	20	5.2	0.3-3.0			
210	21	5.2	1.0-2.0			
250	25	6.2	0.3-3.0			
260	26	6.2	1.0-2.0			
300	30	7.1	1.0-2.0			
320	32	7.1	1.0-2.0			

Insert	Designation	Recommended Machining Conditions		Coated									Uncoated
		Fz (mm/tooth)	ap (mm)	TT9080	TT8080	TT7800	TT7080	TT6800	TT6080	TT5525	TT5515	TT2510	K10
	**NFR 200A-R03**	0.08-0.15	0.1-0.7							●	●	●	
	200A-R05	0.08-0.15	0.1-0.7							●	●	●	
	200A-R10	0.08-0.15	0.1-0.7							●	●	●	
	200A-R15	0.08-0.15	0.1-0.7							●	●	●	
	200A-R16	0.08-0.15	0.1-0.7							●	●	●	
	200A-R20	0.08-0.15	0.1-0.7							●	●	●	
	200A-R30	0.08-0.15	0.1-0.7							●	●	●	
	210A-R10	0.08-0.15	0.1-0.7							●	●	●	
	210A-R20	0.08-0.15	0.1-0.7							●	●	●	
	250A-R03	0.08-0.15	0.1-1.0							●	●	●	
	250A-R05	0.08-0.15	0.1-1.0							●	●	●	
	250A-R10	0.08-0.15	0.1-1.0							●	●	●	
	250A-R15	0.08-0.15	0.1-1.0							●	●	●	
	250A-R20	0.08-0.15	0.1-1.0							●	●	●	
	250A-R30	0.08-0.15	0.1-1.0							●	●	●	
	260A-R10	0.08-0.15	0.1-1.0							●	●	●	
	260A-R20	0.08-0.15	0.1-1.0							●	●	●	
	300A-R05	0.08-0.20	0.1-1.0							●	●	●	
	300A-R10	0.08-0.20	0.1-1.0							●	●	●	
	300A-R20	0.08-0.20	0.1-1.0							●	●	●	
	320A-R10	0.08-0.20	0.1-1.0							●	●	●	
	320A-R20	0.08-0.20	0.1-1.0							●	●	●	

●: Standard Item

OFCN 07/OFMR 07/OFCR 07/RFMR 19

Insert



Size	Dimension (mm)					
	d	t	ap	a	r	
OF... 05	17.94	5.0-5.1	5.0	1.3-2.2	0.8	
RFMR 14	19.00	5.3	9.5	-	-	

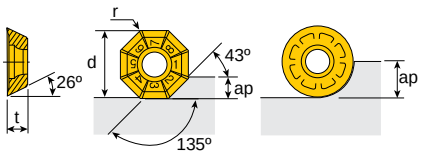
Insert	Designation	Recommended Machining Conditions		Cermet	Coated							Uncoated
		Fz (mm/tooth)	ap (mm)	CT7000	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**OFCN 0704 TN-MR**	0.80-0.20	1.5-4.0	●				●		●		●	●
	**OFCN 0704 TN-EMR**	0.08-0.15	1.5-4.0		●		●	●	●	●		●	
	**OFMR 0704 AER-M**	0.10-0.19	1.5-4.0		●	●	●	●	●	●		●	●
	**OFCR 0704 TN-ML**	0.05-0.15	1.5-4.0					●		●		●	●
	**OFCR 0704 TN-EML**	0.08-0.15	1.5-4.0		●	●	●	●	●	●		●	
	**OFMR 0704 TN-AL**	0.08-0.15	1.5-4.0										●
	**RFMR 1904 M**	0.07-0.14	2.5-8.0		●	●		●		●		●	

●: Standard Item

OFCW(T) 05/OFMT 05/RFMT 14

CHASEOCTO

Insert



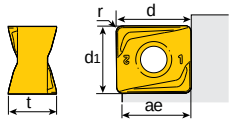
Size	Dimension (mm)					
	d	t	ap	r		
OF... 05	12.7	3.76-3.86	3.5	0.5-0.8		
RFMT 14	14.0	4.53	7.0	-		

Insert	Designation		Recommended Machining Conditions		Cermet	Coated							Uncoated
			Fz (mm/tooth)	ap (mm)	CT7000	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**OFCW**	**05T3 TN-MR**	0.04-0.08	1.0-3.0					●		●		●	●
		05T3 TN-EMR	0.08-0.15	1.0-3.0	●	●	●		●				●	
	**OFCT**	**05T3 TN-M**	0.08-0.15	1.0-3.0					●		●		●	●
		05T3 TN-EM	0.05-0.10	1.0-3.0		●	●	●	●	●	●	●	●	
	**OFCT**	**05T3 TN-AL**	0.10-0.50	1.0-3.0										●
	**OFMT**	**05T3 TN-ML**	0.06-0.12	1.0-3.0		●	●	●	●	●	●		●	●
	**RFMT**	**1404 ML**	0.14-0.27	2.0-6.0		●			●		●		●	

●: Standard Item

PLNG

Insert



Size	Dimension (mm)					
	d	d_1	t	ae	r	
09	10	9	6.47	9	0.8	

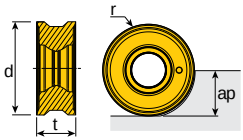
Insert	Designation	Recommended Machining Conditions		Coated								Uncoated
		Fz (mm/tooth)	ae (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	**PLNG 090408R-M**	0.10-0.80	2.5-7.5	●		●		●				●	
	**PLNG 090408R-ML**	0.10-0.50	2.5-7.5	●			●						

●: Standard Item

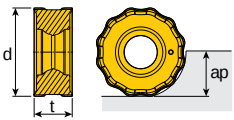
RNMU

CHASE2MOLD

Insert

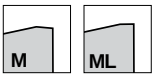


ML



M

Size	Dimension (mm)					
	r	d	t	ap		
10	5	10	4.5	5		
12	6	12	5.0	6		
16	8	16	6.3	8		



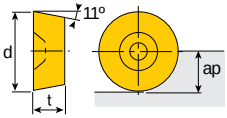
Insert	Designation	Recommended Machining Conditions		Coated								Uncoated
		Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	**RNMU 1004-ML**	0.05-0.30	1.5-4.0	●		●	●	●				●	
	1205-ML	0.05-0.35	1.5-5.0	●		●	●	●				●	
	1606-ML	0.05-0.40	2.0-6.5	●		●	●	●				●	
	**RNMU 1004S-M**	0.05-0.35	1.5-4.0	●		●	●	●				●	
	1205S-M	0.05-0.40	1.5-5.0	●		●	●	●				●	
	1606S-M	0.05-0.45	2.0-6.5	●		●	●	●				●	

●: Standard Item

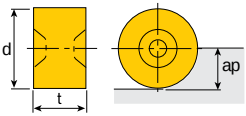
RP(N)GX 12

CHASESPEED

Insert



RPGX



RNGX

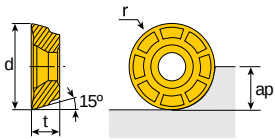
Size	Dimension (mm)					
	d	t	ap			
RPGX 12	12.7	4.76	6			
RNGX 12	12.7	7.94	6			

Insert	Designation	Recommended Machining Conditions		Ceramic	Coated						Uncoated
		Fz (mm/tooth)	ap (mm)	AS20	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**RPGX 1204-CH**	0.10-0.20	1.5-5.0	●									
	**RNGX 1207-CH**	0.10-0.20	1.5-5.0	●									

●: Standard Item

RXM(H)X/RDMX

Insert



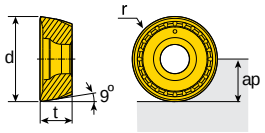
Size	Dimension (mm)					
	r	d	t	ap		
05	2.5	5	1.5	2.5		
07	3.5	7	2.38	3.5		
10	5.0	10	3.18	5.0		
12	6.0	12	3.97	6.0		
16	8.0	16	4.76	8.0		
20	10.0	20	5.85	10.0		

Insert	Designation	Recommended Machining Conditions		Coated								Uncoated
		Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**RDMX 0501-M**	0.04-0.25	0.5-2.0	●	●	●	●		●		●	
	0702-M	0.05-0.25	1.0-3.0	●	●	●	●		●		●	
	**RXMX 1003-M**	0.10-0.30	1.5-4.0	●		●	●		●	●	●	
	12T3-M	0.10-0.50	1.8-5.0	●	●	●	●	●	●	●	●	
	1604-M	0.10-0.50	2.0-6.5	●	●	●	●	●	●		●	
	2006-M	0.10-0.50	3.0-8.0	●	●	●	●	●				
	**RXMX 1003-ML**	0.05-0.30	1.5-4.0	●	●	●	●					
	12T3-ML	0.05-0.45	1.5-5.0	●	●		●	●				
	1604-ML	0.10-0.45	2.0-6.5	●		●	●					
	**RXMX 1003-MR**	0.05-0.30	1.5-4.0	●	●	●			●			
	12T3-MR	0.05-0.35	1.5-5.0	●	●		●		●		●	
	1604-MR	0.10-0.40	2.0-6.5	●	●		●		●			
	2006-MR	0.10-0.40	3.0-8.0	●	●		●	●				
	RXHX 1003-MR	0.05-0.30	1.5-4.0	●			●		●			
	12T3-MR	0.05-0.35	1.5-5.0	●			●		●			
	**RXHX 1003-AL**	0.10-0.80	1.5-4.0									●
	12T3-AL	0.10-0.80	1.5-5.0									●

●: Standard Item

RYM(H)X

Insert



Size	Dimension (mm)					
	r	d	t	ap		
08	4	8	3.2	4		
10	5	10	4.0	5		
12	6	12	4.8	6		
16	8	16	6.1	8		
20	10	20	7.0	10		

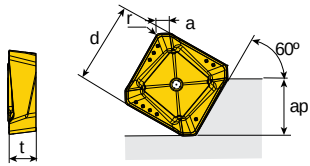
Insert	Designation	Recommended Machining Conditions		Coated									Uncoated
		Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	**RYMX 0803-M**	0.05-0.25	1.0-3.5	●		●		●	●		●	●	
	1004-M	0.10-0.30	1.5-4.0	●		●	●	●	●		●	●	
	1205-M	0.10-0.50	1.5-5.0	●		●	●	●	●		●	●	
	1205-6M	0.10-0.50	1.5-5.0	●								●	
	1606-M	0.10-0.50	2.0-6.5	●		●	●	●	●		●	●	
	1606-7M	0.10-0.50	2.0-6.5	●								●	
	2007-M	0.10-0.50	3.0-8.0	●		●	●	●	●		●	●	
	**RYMX 0803-MM**	0.07-0.30	1.0-3.5	●		●	●						
	1004-MM	0.07-0.35	1.5-4.0	●		●	●						
	1205-MM	0.10-0.40	1.5-5.0	●		●	●	●					
	1205-6MM	0.10-0.40	1.5-5.0	●									
	1606-MM	0.10-0.45	2.0-6.5	●		●	●						
	1606-7MM	0.10-0.45	2.0-6.5	●									
	RYHX 1205-MM	0.10-0.40	3.0-8.0	●			●						
	**RYMX 0803-ML**	0.05-0.25	1.0-3.5	●		●		●					
	1004-ML	0.05-0.30	1.5-4.0	●		●	●	●					
	1205-ML	0.05-0.35	1.5-5.0	●		●	●	●					
	1205-6ML	0.05-0.35	1.5-5.0	●									
	1606-ML	0.05-0.40	2.0-6.5	●		●	●	●					
	1606-7ML	0.05-0.40	2.0-6.5	●									
	2007-ML	0.10-0.50	3.0-8.0	●		●	●	●					
	RYHX 0803-ML	0.05-0.25	1.0-3.5	●		●	●						
	1004-ML	0.05-0.30	1.5-4.0			●	●						
	1205-ML	0.05-0.35	1.5-5.0			●	●						
	1606-ML	0.10-0.40	2.0-6.5			●	●						
	**RYMX 0803-MR**	0.05-0.30	1.0-3.5	●				●	●	●	●	●	
	1004-MR	0.05-0.35	1.5-4.0	●		●			●	●	●	●	
	1205-MR	0.05-0.35	1.5-5.0	●		●			●	●	●	●	
	1606-MR	0.05-0.40	2.0-6.5	●		●		●	●	●	●	●	
	2007-MR	0.10-0.45	1.0-3.5	●				●			●	●	
	RYHX 0803-MR	0.05-0.30	1.5-4.0	●						●	●	●	
	1004-MR	0.05-0.35	1.5-5.0	●						●	●	●	
	1205-MR	0.05-0.35	2.0-6.5	●						●	●	●	
	**RYHX 1004-AL**	0.10-0.80	1.5-4.0										●
	1205-AL	0.10-0.80	1.5-5.0										●
	1606-AL	0.10-0.80	2.0-6.5										●

●: Standard Item

SCKN 21/27

LIONMILL

Insert



Size	Dimension (mm)					
	d	t	ap	a	r	
21-HE	20.8	7	13	2	1.5	
21-HS	21	6.95	13	2	1.5	
27-HE	26.8	8.95	18	2	2	
27-HS	27	8.9	18	2	2	

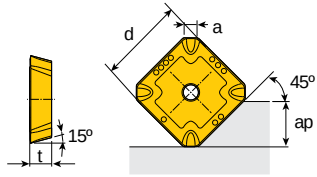
Insert	Designation		Recommended Machining Conditions		Coated								Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**SCKN**	**2107 DDTR-HE**	0.13-0.25	3.5-10.5					●	●	●		
		2708 DDTR-HE	0.15-0.30	5.0-14.5					●	●	●		
	**SCKN**	**2107 DDTR-HS**	0.13-0.25	3.5-10.5					●				
		2708 DDTR-HS	0.13-0.25	5.0-14.5					●				

●: Standard Item

SDKN 12/15

LIONMILL

Insert



Size	Dimension (mm)					
	d	t	ap	a		
12	12.7	3.18	6.4	2.00		
15	15.875	4.76	8.5	1.89		

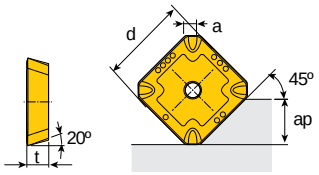
Insert	Designation		Recommended Machining Conditions		Coated								Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**SDKN**	**1203 MT-HPN**	0.10-0.25	1.5-6.0						●			
		1504 MT-HPN	0.10-0.25	1.5-8.0						●			
	**SDKN**	**1203 MT-GPN**	0.10-0.25	1.5-6.0						●			
		1504 MT-GPN	0.10-0.25	1.5-8.0						●			

●: Standard Item

SEKN 12/15

LIONMILL

Insert



Size	Dimension (mm)					
	d	t	ap	a		
12	12.7	3.18	6.3	2.08		
15	15.875	4.76	8.4	2.06		

E62

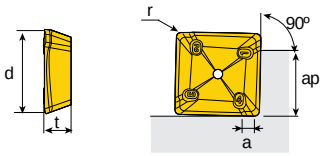
Insert	Designation		Recommended Machining Conditions		Coated								Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**SEKN**	**1203 AFTN-HPN**	0.10-0.25	1.5-6.0						●			
		1504 AFTN-HPN	0.10-0.25	1.5-8.0						●			
	**SEKN**	**1203 AFTN-GPN**	0.10-0.25	1.5-6.0						●			
		1504 AFTN-GPN	0.10-0.25	1.5-8.0						●			

●: Standard Item

SEKX 21

LIONMILL

Insert



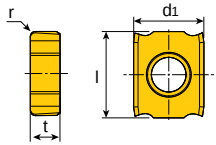
Size	Dimension (mm)					
	d	t	ap	a	r	
21 PETR-M	21.85	7	17	2	1.2	

E38

Insert	Designation		Recommended Machining Conditions		Coated								Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**SEKX**	**2107 PETR-M**	0.10-0.22	5.5-13.0					●			●	

●: Standard Item

Insert



Size	Dimension (mm)					
	l	d1	t	r		
018	8	6.5	1.8	0.4		
023	8	6.5	2.3	0.4		
028	8	6.5	2.8	0.4		
033	8	6.5	3.3	0.4		

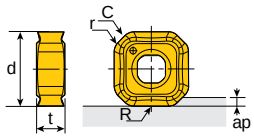
E135-E136

Insert	Designation		Recommended Machining Conditions		Coated								Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**SLOT**	**018-04**	0.05-0.08	-	●		●					●	
		023-04	0.05-0.08	-	●		●					●	
		028-04	0.05-0.08	-	●		●					●	
		033-04	0.06-0.10	-	●		●					●	

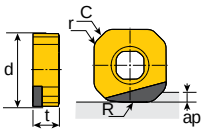
●: Standard Item

SNEX(T) 12

Insert



P-W



CBN

Size	Dimension (mm)					
	d	t	ap	r	R	C
1204 P-W	12.7	4.76	1.0	2.0	450	2.5
1204-W	12.7	4.76	0.5	2.0	800	-
1205-W	12.7	5.56	1.0	2.0	450	2.5
1204R-CBN	12.7	4.76	0.5	0.8	250	1.5

E34-E36

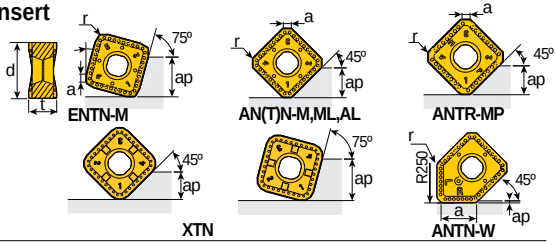
Insert	Designation		Recommended Machining Conditions		Cermet	Ceramic	CBN	Coated				Uncoated
			Fz (mm/tooth)	ap (mm)	CT3000	AS10	KB90	TT9080	TT9030	TT6800	TT6080	K10
	**SNEX**	**1204 P-W**	0.07-0.15	0.3-0.8							●	●
	**SNEX**	**1204-W**	0.07-0.15	0.3-0.8							●	
	**SNET**	**1205-W**	0.07-0.15	0.3-0.8	●			●			●	
	**SNEX**	**1204R-CBN**	0.08-0.12	0.3-0.8			●					
		1204R-CBN-T22	0.08-0.12	0.3-0.8			●					

●: Standard Item

SNG(M)X 13

CHASE 2 QUAD

Insert



Size	Dimension (mm)					
	d	t	ap	a	r	
13 ENTN-M	13.5	7.0	9.5	2.2	0.4	
13 ANTN-M	13.5	6.8	7.0	2.2	0.4	
13 ANTN-ML	13.5	6.8	7.0	2.2	0.4	
13 ANN-AL	13.5	6.8	7.0	2.2	0.4	
13 ANTR-MP	13.5	6.8	6.0	2.2	0.4	
13 ANTN-W	13.5	6.8	-	7.5	1.2	
13 XTN(75º)	13.5	6.8	9.6	1.4	0.4	
13 XTN(45º)	13.5	6.8	6.35	1.4	0.4	

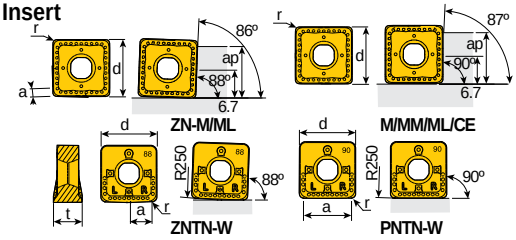
Insert	Designation	Recommended Machining Conditions		Coated								Uncoated
		Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	TT2510	K10
	**SNGX 1306 ENTN-M**	0.10-0.20	2.5-8.0	●		●		●		●	●		
	SNMX 1306 ENTN-M	0.10-0.20	2.5-8.0	●		●		●		●	●	●	
	**SNGX 1306 ANTN-M**	0.10-0.20	2.0-6.0	●		●		●	●	●	●		
	1306 ANTN-ML	0.13-0.25	2.0-6.0			●					●		
	SNMX 1306 ANTN-M	0.10-0.20	2.0-6.0	●		●		●	●	●	●	●	
	**SNGX 1306 ANN-AL**	0.10-0.35	2.0-6.0										●
	**SNMX 1306 ANTR-MP**	0.10-0.20	2.0-6.0	●		●		●			●		
	**SNMX 1306 XTN**	0.10-0.20	2.5-6.5	●		●				●	●	●	
	**SNGX 1306 ANTN-W**	0.10-0.20	0.2-1.0	●							●		

●: Standard Item

SNG(M)X 13

CHASE 2 QUAD

Insert



Size	Dimension (mm)					
	d	t	ap	a	r	
13	13.5	6.8-7.0	10-12	1.2-5.3	0.4-1.6	
13 PNTN-W	13.5	6.8	-	11.5	1.0	


M/CE


W/MM


ML

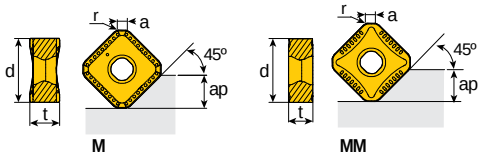
Insert	Designation		Recommended Machining Conditions		Ceramic	Coated							Uncoated
			Fz (mm/tooth)	ap (mm)	AS10	TT9080	TT9030	TT8080	TT7800	TT7080	TT6800	TT6080	K10
	**SNGX**	**1306 ZN-M**	0.10-0.20	3.5-10.0		●		●		●	●	●	
	**SNGX**	**1306 ZN-ML**	0.13-0.25	3.5-10.0							●		
		1306C08 ZN-M	0.10-0.20	3.5-10.0		●				●	●	●	
		130608-MM	0.08-0.15	3.5-10.0				●					
		130612-MM	0.08-0.15	3.5-10.0							●		
		130616-MM	0.08-0.15	3.5-10.0				●	●				
		130608-ML	0.13-0.25	3.5-10.0							●		
		130612-ML	0.13-0.25	3.5-10.0							●		
	**SNGX**	**130608-M**	0.10-0.20	3.5-10.0		●					●	●	
		130612-M	0.10-0.20	3.5-10.0		●				●	●	●	
		130616-M	0.10-0.20	3.5-10.0		●		●	●	●		●	
		130620-M	0.01-0.20	3.5-10.0		●				●	●	●	
	**SNGX**	**130608-CE**	0.13-0.25	3.5-10.0	●								
	**SNGX**	**1306 ZNTN-W**	0.10-0.20	0.2-1.0		●						●	
		1306 PNTN-W	0.01-0.20	0.2-1.0		●						●	

●: Standard Item

SNM(H)X 16

CHASE 2 QUAD

Insert



Size	Dimension (mm)					
	d	t	ap	a	r	
SNMX 16	16.7	7.8	8.8	2.4	0.8	
SNHX 16	16.7	6.4	8.8	2.4	0.8	

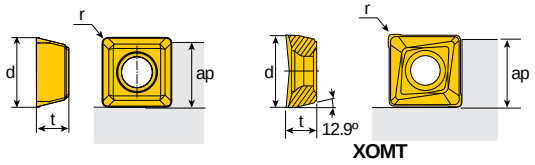
Insert	Designation	Recommended Machining Conditions		Coated								Uncoated
		Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**SNMX 1607 ANTN-M**	0.13-0.25	2.5-7.5	●		●		●	●		●	
	**SNHX 1606 ANN-MM**	0.10-0.20	2.5-7.5						●	●	●	

●: Standard Item

TaeguTec

Contents

Insert



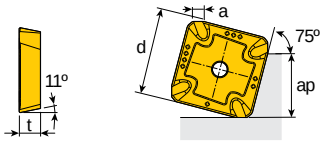
Size	Dimension (mm)					
	d	t	ap	r		
06	6.16	2.56	5.6	0.4		
09	9.8	4.3	9.0	0.8		
11	11.5	4.8	10.7	0.8		
14	14.2	5.2	13.4	0.8		

Insert	Designation		Recommended Machining Conditions		Cermet	Coated							Uncoated
			Fz (mm/tooth)	ap (mm)	CT7000	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**SPMG**	**090404-EM**	0.8-0.15	2.5-7.5					●					
		090408-EM	0.8-0.15	2.5-7.5		●			●		●		●	
		110408-EM	0.8-0.15	3.0-8.5		●	●		●		●		●	
		140508-EM	0.1-0.18	4.0-11.0		●			●		●		●	
	**SPMT**	**090408-EM**	0.83-0.17	2.5-7.5		●	●		●		●	●	●	
		110408-EM	0.73-0.15	3.0-8.5		●	●		●		●	●	●	
		140508-EM	0.07-0.14	4.0-11.0				●	●	●	●		●	
	**XOMT**	**060204**	0.03-0.06	1.5-4.5			●		●					

●: Standard Item

SPKN 12/15

Insert



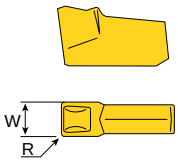
Size	Dimension (mm)					
	d	t	ap	a		
12	12.7	3.18	8	1.2-1.6		
15	15.875	4.76	12	1.4-1.6		

Insert	Designation		Recommended Machining Conditions		Coated								Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**SPKN**	**1203 EDTR-HPN**	0.10-0.25	1.5-7.0						●			
		1504 EDTR-HPN	0.10-0.25	1.5-10.0						●			
	**SPKN**	**1203 EDR-HPN**	0.10-0.25	1.5-7.0				●				●	
		1504 EDR-HPN	0.10-0.25	1.5-10.0				●				●	
	**SPKN**	**1203 EDTR-GPN**	0.10-0.25	1.5-7.0						●			
		1504 EDTR-GPN	0.10-0.25	1.5-10.0						●			

●: Standard Item

TIMC

Slotting Insert



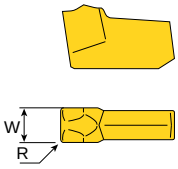
Size	Dimension (mm)					
	Seat Size	W±0.1	R			
TIMC 1.6	1	1.6	0.16			
TIMC 2	2	2.2	0.20			
TIMC 2.4	2	2.4	0.20			
TIMC 3	4	3.1	0.20			
TIMC 4	4	4.1	0.25			
TIMC 4.8	4	4.8	0.28			

Insert	Designation		Recommended Machining Conditions		Coated								Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7220	TT7080	TT6030	TT5100	K10
	**TIMC**	**1.6**	0.04-0.12	-				●			●		●
		2	0.05-0.13	-				●	●		●	●	●
		2.4	0.06-0.15	-							●		●
		3	0.06-0.18	-				●	●		●	●	●
		4	0.08-0.20	-				●	●		●	●	●
		4.8	0.08-0.20	-				●				●	

●: Standard Item

TIMJ

Slotting Insert



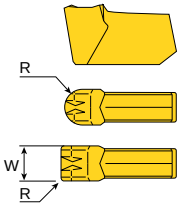
Size	Dimension (mm)					
	Seat Size	W±0.1	R			
TIMJ 2	2	2.2	0.20			
TIMJ 2.4	2	2.4	0.20			
TIMJ 3	4	3.1	0.20			
TIMJ 4	4	4.1	0.25			
TIMJ 4.8	4	4.8	0.28			

Insert	Designation		Recommended Machining Conditions		Coated								Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7220	TT7080	TT6030	TT5100	K10
	**TIMJ**	**2**	0.04-0.12	-				●			●	●	●
		2.4	0.05-0.13	-				●			●		●
		3	0.05-0.15	-				●			●	●	●
		4	0.05-0.18	-				●			●	●	●
		4.8	0.05-0.18	-				●			●		●

●: Standard Item

TIPV

Slotting Insert



Size	Dimension (mm)			
	Seat Size	W±0.1	R	
TIPV...E ...	4	3.0-4.5	0.4-2.0	
TIPV 1.85-2.15	2	1.85-2.15	0.1-0.2	
TIPV 2.65-4.15	4	2.65-4.15	0.15-0.20	

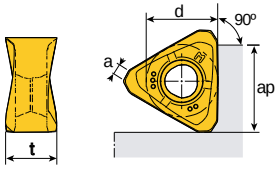
Insert	Designation		Recommended Machining Conditions		Coated									Uncoated	
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7220	TT7080	TT6030	TT5100		K10	
	**TIPV**	**3.00E 0.40**	0.06-0.18	-							●	●		●	
		4.00E 0.40	0.08-0.20	-							●	●		●	
		4.50E 0.40	0.08-0.20	-							●	●		●	
		3.00E 1.50	0.06-0.18	-							●	●		●	
		4.00E 2.00	0.08-0.20	-							●	●		●	
		1.85 0.10	0.05-0.13	-							●	●		●	
		2.00 0.20	0.05-0.13	-							●	●		●	
		2.15 0.15	0.05-0.13	-							●	●		●	
		2.65 0.15	0.06-0.18	-							●	●		●	
		3.00 0.20	0.06-0.18	-							●	●		●	
		3.18 0.20	0.06-0.18	-							●	●		●	
		4.00 0.20	0.08-0.20	-							●	●		●	
		4.15 0.15	0.08-0.20	-							●	●		●	

●: Standard Item

TNMX 18

MILL RUSH

Insert



Size	Dimension (mm)					
	d	t	ap	a		
18	11.65	8	13	1.4		

E28

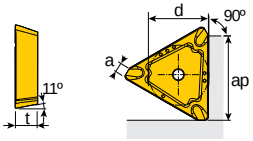
Insert	Designation	Recommended Machining Conditions		Coated								Uncoated
		Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**TNMX 1806 PNTR-M**	0.07-0.15	1.0-11.0	●				●	●		●	

●: Standard Item

TPKN 22

LIONMILL

Insert



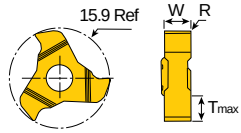
Size	Dimension (mm)					
	d	t	ap	a		
22	12.7	4.76	16	1.41-1.7		

E37

Insert	Designation	Recommended Machining Conditions		Coated								Uncoated
		Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**TPKN 2204 PDTR-HPN**	0.10-0.25	1.5-13.0						●			
	**TPKN 2204 PDR-HPN**	0.10-0.25	1.5-13.0				●				●	
	**TPKN 2204 PDTR-GPN**	0.10-0.25	1.5-13.0						●			

●: Standard Item

Insert



Size	Dimension (mm)			Size	Dimension (mm)		
	W	R	Tmax		W	R	Tmax
1.2	1.2	0.05	4.6	**3.0**	3.0	0.20	4.8
1.4	1.4	0.10	4.8	**3.25**	3.25	0.15	4.8
1.5	1.5	0.10	4.8	**4.0**	4.0	0.20	4.8
1.7	1.7	0.10	4.8	**4.25**	4.25	0.15	4.8
1.95	1.95	0.15	4.8	**5.0**	5.0	0.20	4.8
2.0	2.0	0.20	4.8	**5.25**	5.25	0.15	4.8
2.25	2.25	0.15	4.8	**6.0**	6.0	0.20	4.8
2.75	2.75	0.15	4.8				

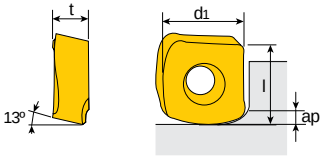
Insert	Designation		Recommended Machining Conditions			Coated								Uncoated
			Fz (mm/tooth)	ap (mm)	f (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**TS16-**	**1.2-R0.05**	0.02-0.08	1.20	0.5	●								
		1.4-R0.1	0.02-0.10	1.40	0.5	●								
		1.5-R0.1	0.03-0.12	1.50	0.5	●								
		1.7-R0.1	0.03-0.12	1.70	0.5	●								
		1.95-R0.15	0.04-0.15	1.95	0.5	●								
		2.0-R0.2	0.04-0.15	2.00	0.5	●								
		2.25-R0.15	0.04-0.15	2.25	0.75	●								
		2.75-R0.15	0.04-0.20	2.75	1.39	●								
		3.0-R0.2	0.04-0.20	3.00	1.39	●								
		3.25-R0.15	0.04-0.20	3.25	1.39	●								
		4.0-R0.2	0.05-0.25	4.00	2.43	●								
		4.25-R0.15	0.05-0.25	4.25	0.95	●								
		5.0-R0.2	0.05-0.30	5.00	2.15	●								
		5.25-R0.15	0.05-0.30	5.25	2.15	●								
		6.0-R0.2	0.05-0.30	6.00	3.15	●								

●: Standard Item

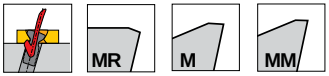
XDMX 08/13

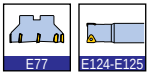
CHASE2FEED

Insert



Size	Dimension (mm)					
	d1	l	t	ap		
08	8.1	8.1	3.97	1		
13	12.9	12.9	5.56	2		



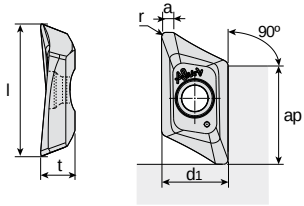


Insert	Designation	Recommended Machining Conditions		Coated								Uncoated		
		Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10		
	**XDMX 08T310R-M**	0.10-0.80	0.2-1.0	●		●		●	●					
	**XDMX 08T310R-MR**	0.10-0.80	0.2-1.0	●		●			●					
	**XDMX 130515R-MM**	0.10-1.50	0.3-2.0	●		●		●	●					
	**XDMX 130515R-MR**	0.10-1.50	0.3-2.0	●		●			●					

●: Standard Item

XECT 16

Insert



Size	Dimension (mm)					
	l	d1	t	ap	a	r
16	18.4-22.24	11.23	5.4-5.9	13-16	0.3-1.3	0.4-5.0

E33 E94-E95

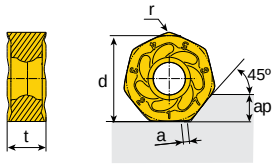
Insert	Designation		Recommended Machining Conditions		Coated								Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**XECT**	**160504R-AL**	0.10-0.80	4.5-13.0									●
		160508R-AL	0.10-0.80	4.5-13.0									●
		160512R-AL	0.10-0.80	4.5-12.5									●
		160516R-AL	0.10-35.0	4.5-12.0									●
		160520R-AL	0.10-35.0	4.0-12.0									●
		160524R-AL	0.10-35.0	4.0-11.5									●
		160530R-AL	0.10-35.0	4.0-11.5									●
		160532R-AL	0.10-35.0	4.0-11.5									●
		160540R-AL	0.10-35.0	3.5-10.5									●
		160550R-AL	0.10-35.0	3.5-10.5									●

●: Standard Item

XNM(H)U 06

CHASE2HEPTA

Insert



Size	Dimension (mm)					
	d	t	a	r	ap	
06	13.7	6.2	1.0	1.0	3.5	

M MM ML

E46

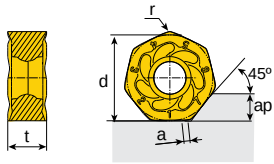
Insert	Designation	Recommended Machining Conditions		Ceramic	Coated							Uncoated
		Fz (mm/tooth)	ap (mm)	AS10	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**XNMU 0605 ANR-M**	0.10-0.20	1.0-3.0		●					●		●	
	**XNHU 0605 ANN-MM**	0.10-0.20	1.0-3.5		●						●	●	
	**XNHU 0605 ANN-ML**	0.10-0.20	1.0-3.5		●		●					●	

●: Standard Item

XNM(H)U 09

CHASE2 HEPTA

Insert



Size	Dimension (mm)					
	d	t	a	r	ap	
09	18.5	6.35-7.4	1.0	1.0	4.5	
09-CE	18.5	6.35-7.4	1.0	1.0	5.0	

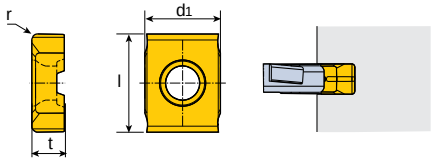

Insert	Designation	Recommended Machining Conditions		Ceramic	Coated							Uncoated
		Fz (mm/tooth)	ap (mm)	AS10	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**XNMU 0906 ANTR-M**	0.10-0.20	1.5-4.0		●				●	●	●	●	
	**XNMU 0906 ANTN-ML**	0.13-0.25	1.5-4.0		●		●		●	●			
	XNHU 0906 ANTN-ML	0.13-0.25	1.5-4.0		●						●	●	
	**XNHU 0906 ANTN-MM**	0.13-0.25	1.5-4.0		●				●		●	●	
	**XNHU 0906 ANTN-CE**	0.135-0.25	1.5-4.0	●									
	**XNHU 0906 ANTN-W**	0.10-0.20	0.1-1.0									●	

●: Standard Item

TaeguTec

Contents

Insert

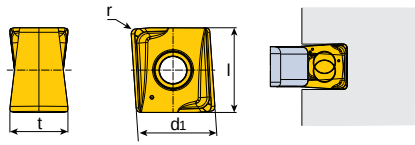


Size	Dimension (mm)					
	l	d1	t	r		
018	10	7.5	1.8	0.2-0.8		
023	10	7.5	2.3	0.2-0.8		
028	10	7.5	2.8	0.2-0.8		
033	10	7.5	3.3	0.2-0.8		
038	13	10	3.8	0.4-0.8		
043	13	10	4.3	0.4-0.8		
048	13	10	4.8	0.4-0.8		
053	13	10	5.3	0.4-0.8		

Insert	Designation		Recommended Machining Conditions		Coated								Uncoated
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10
	**ZNHT**	**018-04**	0.05-0.08	-	●		●		●	●		●	
		018-08	0.05-0.08	-	●		●						
		023-04	0.05-0.08	-	●		●		●	●		●	
		023-08	0.05-0.08	-	●		●						
		028-04	0.05-0.10	-	●		●		●	●		●	
		028-08	0.05-0.10	-	●		●						
		033-04	0.05-0.12	-	●		●		●	●		●	
		033-08	0.05-0.12	-	●		●		●				
		038-04	0.05-0.12	-	●		●		●			●	
		038-08	0.05-0.12	-	●		●		●	●		●	
		043-04	0.05-0.15	-	●		●		●			●	
		043-08	0.05-0.15	-	●		●		●	●		●	
		048-04	0.05-0.15	-	●		●		●			●	
		048-08	0.05-0.15	-	●		●		●	●		●	
		053-04	0.05-0.15	-	●		●		●			●	
		053-08	0.05-0.15	-	●		●		●	●		●	
	**ZNHT**	**018-04-ML**	0.05-0.08	-			●					●	
		023-04-ML	0.05-0.08	-			●					●	
		028-04-ML	0.05-0.08	-			●					●	
		033-04-ML	0.05-0.12	-			●					●	
		038-04-ML	0.05-0.12	-			●					●	
		043-04-ML	0.05-0.12	-			●					●	
		048-04-ML	0.05-0.12	-			●					●	
		053-04-ML	0.05-0.12	-			●					●	
	**ZNHT**	**018-02-AL**	0.10-0.35	-									●
		023-02-AL	0.10-0.35	-									●
		028-02-AL	0.10-0.35	-									●
		033-02-AL	0.10-0.35	-									●
		038-04-AL	0.10-0.35	-									●
		043-04-AL	0.10-0.35	-									●
		048-04-AL	0.10-0.35	-									●
		053-04-AL	0.10-0.35	-									●
		053-08-AL	0.10-0.35	-									●

●: Standard Item

Insert



Size	Dimension (mm)					
	l	d1	t	r		
080	7.6	10.7	6.36-6.49	0.8		
110	10.6	13.0	8.38-8.42	0.8		
140	14	13.0	9.59-9.65	0.8		

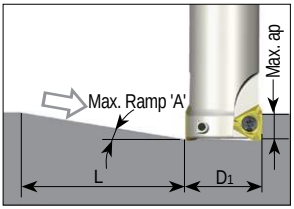
None ML

E139-E149

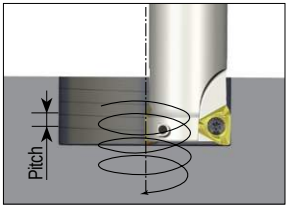
Insert	Designation		Recommended Machining Conditions		Coated								Uncoated	
			Fz (mm/tooth)	ap (mm)	TT9080	TT9030	TT8080	TT8020	TT7800	TT7080	TT6800	TT6080	K10	
	**ZNHU**	**080-08**	0.08-0.16	-	●		●		●	●	●	●		
		110-08	0.10-0.20	-	●		●		●	●	●	●		
		140-08	0.11-0.21	-	●		●		●	●	●	●		
	**ZNHU**	**080-08-ML**	0.05-0.10	-	●		●					●		
		110-08-ML	0.06-0.12	-	●		●							
		140-08-ML	0.06-0.12	-	●		●							

●: Standard Item

Straight Ramping



Helical Ramping



3PK(H)T 06

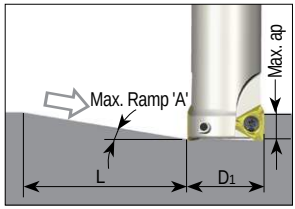
Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A°)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø12	3.7	4.7	73	19.5	24	1.3 2.1
Ø14	2.8	4.7	96	23.5	28	1.2 1.8
Ø16	2.3	4.7	117	27.5	32	1.2 1.7
Ø17	2.0	4.7	135	29.5	34	1.2 1.6
Ø18	2.0	4.7	135	31.5	36	1.3 1.7
Ø20	1.6	4.7	168	35.5	40	1.2 1.5
Ø21	1.5	4.7	180	37.5	42	1.2 1.5
Ø22	1.5	4.7	180	39.5	44	1.2 1.5
Ø25	1.5	4.7	180	45.5	50	1.4 1.7
Ø30	1.2	4.7	224	55.5	60	1.4 1.7
Ø32	1.2	4.7	224	59.5	64	1.5 1.8
Ø35	1.0	4.7	269	65.5	70	1.4 1.6
Ø40	0.7	4.7	385	75.5	80	1.2 1.3

3PK(H)T 10

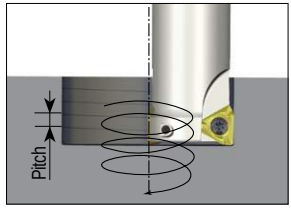
Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A°)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø16	7.0	7.0	57	24.7	32	2.8 5.2
Ø20	3.3	7.0	121	33.9	40	2.1 3.1
Ø21	3.2	7.0	125	35.9	42	2.2 3.1
Ø22	3.2	7.0	125	37.9	44	2.4 3.3
Ø25	2.8	7.0	143	43.5	50	2.4 3.3
Ø26	2.6	7.0	154	45.9	52	2.4 3.1
Ø30	2.0	7.0	201	53.9	60	2.2 2.8
Ø32	1.8	7.0	223	57.5	64	2.1 2.7
Ø33	1.7	7.0	236	59.9	66	2.1 2.6
Ø40	1.3	7.0	309	73.7	80	2.0 2.4
Ø50	1.0	7.0	401	93.7	100	2.0 2.3
Ø63	0.8	7.0	502	119.7	126	2.1 2.3

Ramping Data

Straight Ramping



Helical Ramping



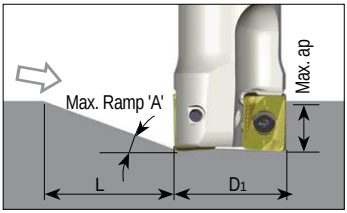
3PK(H)T 15

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A°)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø32	3.2	11.0	197	53.5		3.2
					64	4.8
Ø33	3.1	11.0	203	55.5		3.3
					66	4.8
Ø35	3.1	11.0	203	59.5		3.5
					70	5.1
Ø40	2.0	11.0	315	70.1		2.8
					80	3.7
Ø50	1.5	11.0	420	90.1		2.8
					100	3.5
Ø63	1.1	11.0	573	116.1		2.7
					126	3.2
Ø80	0.8	11.0	788	150.3		2.6
					160	3.0
Ø100	0.6	11.0	1051	190.5		2.5
					200	2.8
Ø125	0.5	11.0	1261	240.3		2.7
					250	2.9
Ø160	0.3	11.0	2102	310.3		2.1
					320	2.2
Ø200	0.2	11.0	3153	390.3		1.8
					400	1.9

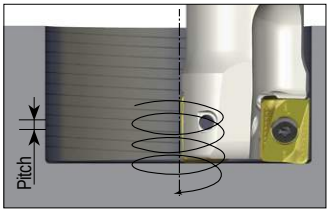
3PK(H)T 19

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A°)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø40	3.6	15.0	239	66.7		4.5
					80	6.7
Ø50	2.2	15.0	391	87.9		3.9
					100	5.1
Ø63	1.7	15.0	506	113.9		4
					126	5
Ø80	1.3	15.0	661	147.9		4.1
					160	4.8
Ø100	1.0	15.0	860	187.9		4.1
					200	4.7
Ø125	0.8	15.0	1075	237.9		4.2
					250	4.7
Ø160	0.6	15.0	1433	307.9		4.1
					320	4.5
Ø200	0.4	15.0	2150	387.9		3.5
					400	3.7
Ø250	0.3	15.0	2866	487.9		3.3
					500	3.5

Straight Ramping



Helical Ramping



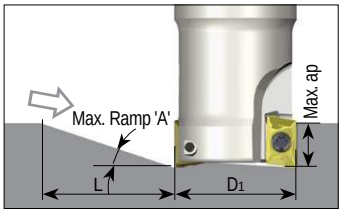
ANH(M)X 11

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A^o)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø25	1.5	11.0	420	30		0.3
					50	1.7
Ø26	1.4	11.0	450	32		0.4
					52	1.7
Ø32	1.1	11.0	573	44		0.6
					64	1.6
Ø33	1.0	11.0	631	46		0.6
					66	1.5
Ø40	0.8	11.0	788	60		0.7
					80	1.5
Ø50	0.6	11.0	1051	80		0.8
					100	1.4
Ø63	0.4	11.0	1576	106		0.8
					126	1.2
Ø80	0.3	11.0	2102	140		0.8
					160	1.1
Ø100	0.2	11.0	3153	180		0.7
					200	0.9
Ø125	0.2	11.0	3153	230		1.0
					250	1.2

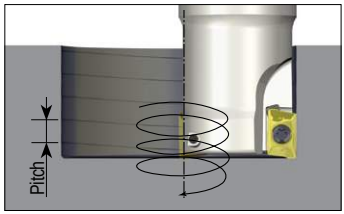
ANH(M)X 16

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A^o)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø32	1.2	15.0	716	44		0.7
					64	1.8
Ø33	1.0	15.0	560	46		0.6
					66	1.5
Ø40	0.9	15.0	955	60		0.8
					80	1.7
Ø50	0.8	15.0	1075	80		1.1
					100	1.9
Ø63	0.6	15.0	1433	106		1.2
					126	1.8
Ø80	0.45	15.0	1911	140		1.3
					160	1.7
Ø100	0.35	15.0	2457	180		1.3
					200	1.6
Ø125	0.25	15.0	3439	230		1.2
					250	1.5
Ø160	0.15	15.0	5732	300		1.0
					320	1.1
Ø200	0.1	15.0	8599	380		0.8
					400	0.9

Straight Ramping



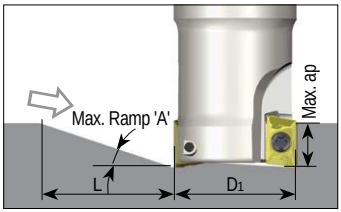
Helical Ramping



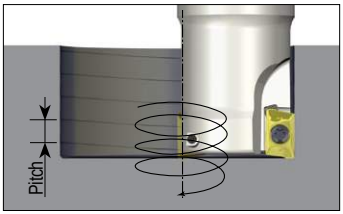
AXMT 06

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A°)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø8	1.5	5.0	191	9		0.1
					16	0.6
Ø10	5.0	5.0	57	13		0.7
					20	2.3
Ø11	5.5	5.0	52	15		1.0
					22	2.8
Ø12	6.0	5.0	48	17		1.4
					24	3.4
Ø13	5.5	5.0	52	19		1.5
					26	3.3
Ø14	5.0	5.0	57	21		1.6
					28	3.3
Ø15	4.5	5.0	64	23		1.7
					30	3.1
Ø16	4.0	5.0	72	25		1.7
					32	3.0
Ø17	3.9	5.0	73	27		1.8
					34	3.1
Ø18	5.0	5.0	57	29		2.6
					36	4.2
Ø19	5.0	5.0	57	31		2.8
					38	4.4
Ø20	3.0	5.0	95	33		1.8
					40	2.8
Ø21	6.0	5.0	48	35		3.9
					42	5.9
Ø25	2.0	5.0	143	43		1.7
					50	2.3
Ø32	1.5	5.0	191	57		1.7
					64	2.2
Ø40	1.2	5.0	239	73		1.8
					80	2.2

Straight Ramping



Helical Ramping



APKT 09

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A^o)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø10	7.5	9.0	68	14		1.4
					20	3.5
Ø12	7.3	9.0	70	16		1.4
					24	4.1
Ø14	6.0	9.0	86	18		1.1
					28	3.9
Ø16	4.9	9.0	105	21.08		1.2
					32	3.7
Ø17	4.4	9.0	117	23.08		1.2
					34	3.5
Ø18	4.0	9.0	129	25.08		1.3
					36	3.4
Ø20	3.4	9.0	152	29.08		1.4
					40	3.2
Ø21	3.1	9.0	166	31.08		1.5
					42	3.0
Ø22	2.8	9.0	184	33.08		1.4
					44	2.9
Ø25	1.8	9.0	287	39.08		1.2
					50	2.1
Ø26	2.0	9.0	258	41.08		1.4
					52	2.4
Ø30	2.2	9.0	234	49.08		2.0
					60	3.1
Ø32	2.0	9.0	258	53.08		2.0
					64	3.0
Ø33	1.7	9.0	303	55.08		1.7
					66	2.6
Ø40	1.5	9.0	344	69.08		2.0
					80	2.8
Ø50	1.1	9.0	469	89.08		2.0
					100	2.6
Ø63	0.8	9.0	645	115.08		1.9
					126	2.3
Ø80	0.5	9.0	1032	149.08		1.6
					160	1.9

APKT 12

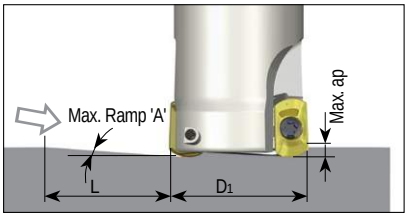
Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A^o)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø16	12.5	12.0	54	17.5		0.5
					32	9.5
Ø18	9.7	12.0	70	20.9		1.3
					36	8.2
Ø20	6.8	12.0	101	24.9		1.6
					40	6.4
Ø21	6.2	12.0	111	26.9		1.7
					42	6.1
Ø25	8.0	12.0	85	34.9		3.7
					50	9.4
Ø26	7.5	12.0	91	36.9		3.8
					52	9.1
Ø32	5.0	12.0	137	48.9		3.9
					64	7.5
Ø33	4.6	12.0	149	50.9		3.8
					66	7.1
Ø40	3.5	12.0	196	64.9		4.1
					80	6.5
Ø50	2.5	12.0	275	84.9		4.8
					100	5.8
Ø63	1.7	12.0	405	110.9		4.5
					126	5.0
Ø80	1.3	12.0	529	144.9		4.6
					160	4.8

APKT 17

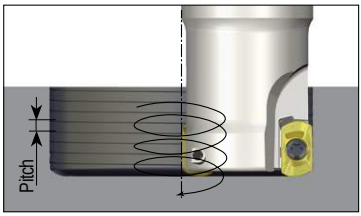
Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A^o)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø20	8.0	16.1	115	22		0.7
					40	7.5
Ø25	5.0	16.1	184	30.6		1.3
					50	5.8
Ø26	4.0	16.1	230	32.6		1.2
					52	4.9
Ø32	9.0	16.1	102	44.6		5.3
					64	13.5
Ø33	9.0	16.1	102	46.6		5.7
					66	13.9
Ø40	5.0	16.1	184	60.6		4.8
					80	9.3
Ø50	4.4	16.1	209	80.6		6.3
					100	10.3
Ø63	3.2	16.1	288	106.6		6.5
					126	9.4
Ø80	2.3	16.1	401	140.6		6.5
					160	8.6
Ø100	1.8	16.1	513	180.6		6.8
					200	8.4
Ø125	1.4	16.1	659	230.6		6.9
					250	8.1
Ø160	1.0	16.1	923	300.6		6.5
					320	7.5
Ø200	0.7	16.1	1318	380.6		5.9
					400	6.5

Ramping Data

Straight Ramping



Helical Ramping



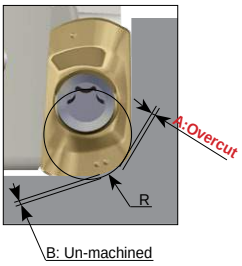
AXMT 0602R-HF

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A^o)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø8	0.3	0.5	96	14		0.1
					16	0.1
Ø11	0.5	0.5	57	14		0.1
					20	0.2
Ø13	1.0	0.5	29	18		0.3
					22	0.5
Ø15	2.3	0.5	12	18		0.5
					24	0.5
Ø17	4.5	0.5	6	18		0.5
					26	0.5
Ø19	3.5	0.5	8	18		0.5
					28	0.5
Ø21	3.0	0.5	10	26		0.5
					30	0.5
Ø32	2.8	0.5	10	26		0.5
					32	0.5
Ø17	2.5	0.5	11	26		0.5
					34	0.5
Ø18	2.3	0.5	12	26		0.5
					36	0.5
Ø19	2.2	0.5	13	26		0.5
					38	0.5
Ø20	1.9	0.5	15	34		0.5
					40	0.5
Ø21	1.7	0.5	17	34		0.5
					42	0.5
Ø25	1.4	0.5	20	44		0.5
					50	0.5
Ø32	1.0	0.5	29	58		0.5
					64	0.5
Ø40	0.7	0.5	41	74		0.5
					80	0.5

Programming Technical Data

When CNC programming specify tools with 'R' for the each insert, this will result un-machined material thickness of approximately 'B' mm along the corner.

When applying CNC program with 'R', over-cut area is 'A' mm. To avoid over-cut, please add to set up roughing stock'A' mm. For other program R data, please refer to diagram below.



	R Program	A Over cut	B Un-machined Material Thickness
AXMT 0602R-HF	0.9	0	0.22
	1.0	0.01	0.19
	1.5	0.16	0.05
	2.0	0.35	0
APKT 09T3R-HF	1.5	0	0.47
	1.7	0	0.29
	2.0	0.04	0.3
	2.5	0.18	0.15
	3.0	0.36	0.04
APKT 1204R-HF	2	0	0.57
	2.5	0.07	0.42
	3	0.21	0.28
	3.5	0.39	0.15
	4	0.58	0.06

:Recommended program 'R'

APKT 09T3R-HF

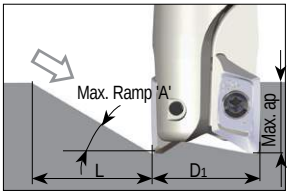
Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A^o)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø30	1.8	1.0	32	50		1.0
					60	1.0
Ø32	1.6	1.0	36	54		1.0
					64	1.0
Ø33	1.5	1.0	38	56		1.0
					66	1.0
Ø40	1.2	1.0	48	70		1.0
					80	1.0
Ø50	0.9	1.0	64	90		1.0
					100	1.0
Ø63	0.5	1.0	115	116		1.0
					126	1.0
Ø80	0.4	1.0	143	150		1.0
					160	1.0
Ø16	3.8	1.0	15	22		1.0
					32	1.0
Ø17	3.5	1.0	16	24		1.0
					34	1.0
Ø18	3.4	1.0	17	26		1.0
					36	1.0
Ø20	3.0	1.0	19	30		1.0
					40	1.0
Ø21	2.3	1.0	25	32		1.0
					42	1.0
Ø22	2.0	1.0	29	34		1.0
					44	1.0
Ø25	2.1	1.0	27	40		1.0
					50	1.0
Ø26	2.0	1.0	29	42		1.0
					52	1.0

APKT 1204R-HF

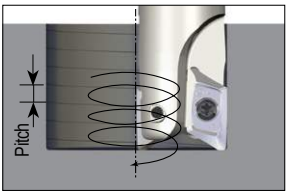
Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A^o)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø16	3.8	1.2	18	21		0.8
					32	1.2
Ø18	4.0	1.2	17	24		1.1
					36	1.2
Ø20	4.0	1.2	17	27		1.2
					40	1.2
Ø21	3.5	1.2	20	29		1.2
					42	1.2
Ø25	2.5	1.2	27	37		1.2
					50	1.2
Ø26	2.3	1.2	30	39		1.2
					52	1.2
Ø32	1.7	1.2	40	51		1.2
					64	1.2
Ø33	1.7	1.2	40	53		1.2
					66	1.2
Ø40	1.5	1.2	46	67		1.2
					80	1.2
Ø50	1.1	1.2	63	86		1.2
					100	1.2
Ø63	1.0	1.2	69	112		1.2
					126	1.2
Ø80	0.8	1.2	86	146		1.2
					160	1.2

Ramping Data

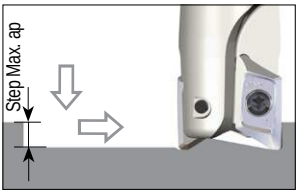
Straight Ramping



Helical Ramping



Step Milling



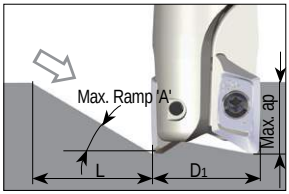
XECT16 0.4R-1.6R

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down			Step Down
	Max. Ramp (A°)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.	Max. ap
Ø25	22.0	16.0	40	29.1		4.4	4.2
					50	13.6	4.2
Ø32	16.5	16.0	54	43.1		8.8	4
					64	13.6	4
Ø40	11.5	16.0	79	59.1		10.4	4
					80	13.6	4
Ø50	9.5	16.0	96	79.1		13.0	4
					100	13.6	4
Ø63	7.0	16.0	130	105.1		13.6	4
					126	13.6	4
Ø80	5.0	16.0	183	139.1		13.6	4
					160	13.6	4
Ø100	3.5	16.0	262	179.1		12.9	4
					200	13.6	4
Ø125	2.5	16.0	367	229.1		12.1	4
					250	13.6	4

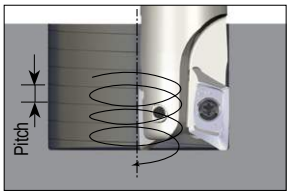
XECT16 2.0R

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down			Step Down
	Max. Ramp (A°)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.	Max. ap
Ø25	22.0	15.5	38	29.1		4.4	3.7
					50	13.2	3.7
Ø32	16.0	15.5	54	43.1		8.5	3.5
					64	13.2	3.5
Ø40	11.0	15.5	80	59.1		9.9	3.5
					80	13.2	3.5
Ø50	9.0	15.5	98	79.1		12.3	3.5
					100	13.2	3.5
Ø63	6.5	15.5	136	105.1		12.8	3.5
					126	13.2	3.5
Ø80	4.5	15.5	197	139.1		12.4	3.5
					160	13.2	3.5
Ø100	3.0	15.5	296	179.1		11.1	3.5
					200	13.2	3.5
Ø125	2.0	15.5	444	229.1		9.7	3.5
					250	11.7	3.5

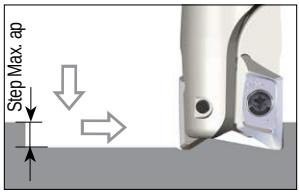
Straight Ramping



Helical Ramping



Step Milling



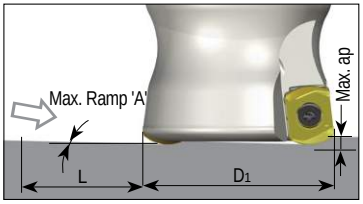
XECT16 3.0R-3.2R

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down			Step Down
	Max. Ramp (A°)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.	Max. ap
Ø25	21.0	14.5	38	29.1		4.2	2.5
					50	12.3	2.5
Ø32	15.0	14.5	54	43.1		7.9	3
					64	12.3	3
Ø40	10.0	14.5	82	59.1		9.0	3
					80	12.3	3
Ø50	8.0	14.5	103	79.1		10.9	3
					100	12.3	3
Ø63	6.0	14.5	138	105.1		11.8	3
					126	12.3	3
Ø80	4.0	14.5	207	139.1		11.0	3
					160	12.3	3
Ø100	2.5	14.5	332	179.1		9.2	3
					200	11.7	3
Ø125	1.5	14.5	554	229.1		7.3	3
					250	8.7	3

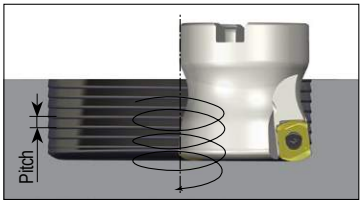
XECT16 4.0R-5.0R

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down			Step Down
	Max. Ramp (A°)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.	Max. ap
Ø25	18.5	14.5	43	29.1		3.7	2.3
					50	12.3	2.3
Ø32	13.5	14.5	60	43.1		7.1	2.5
					64	12.3	2.5
Ø40	8.5	14.5	97	59.1		7.6	2.5
					80	12.3	2.5
Ø50	7.0	14.5	118	79.1		9.5	2.5
					100	12.3	2.5
Ø63	5.5	14.5	151	105.1		10.8	2.5
					126	12.3	2.5
Ø80	3.5	14.5	237	139.1		9.7	2.5
					160	12.3	2.5
Ø100	2.5	14.5	332	179.1		9.2	2.5
					200	11.7	2.5
Ø125	1.5	14.5	554	229.1		7.3	2.5
					250	8.7	2.5

Straight Ramping



Helical Ramping



BLMP 06

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A^o)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø16	3.0	0.7	13	23		0.7
					32	0.7
Ø17	2.7	0.7	15	25		0.7
					34	0.7
Ø18	2.5	0.7	16	27		0.7
					36	0.7
Ø20	1.5	1.0	38	31		0.8
					40	1.0
Ø21	1.5	1.0	38	33		0.8
					42	1.0
Ø25	1.4	1.0	41	41		1.0
					50	1.0
Ø26	1.3	1.0	44	43		1.0
					52	1.0
Ø30	1.1	1.0	52	51		1.0
					60	1.0
Ø32	1.0	1.0	57	55		1.0
					64	1.0
Ø33	1.0	1.0	57	57		1.0
					66	1.0
Ø40	0.9	1.0	64	71		1.0
					80	1.0
Ø50	0.6	1.0	96	91		1.0
					100	1.0
Ø63	0.5	1.0	115	117		1.0
					126	1.0

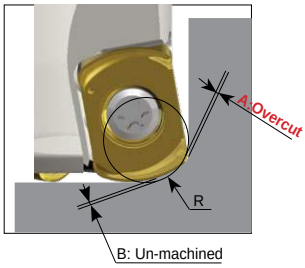
BLMP 09

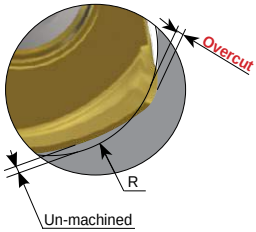
Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A^o)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø25	2.2	1.5	39	42		1.5
					50	1.5
Ø26	2.2	1.5	39	44		1.5
					52	1.5
Ø30	2.0	1.5	43	52		1.5
					60	1.5
Ø32	2.0	1.5	43	56		1.5
					64	1.5
Ø33	2.0	1.5	43	58		1.5
					66	1.5
Ø40	1.5	1.5	57	72		1.5
					80	1.5
Ø42	1.5	1.5	57	76		1.5
					84	1.5
Ø50	1.0	1.5	86	92		1.5
					100	1.5
Ø52	1.0	1.5	86	96		1.5
					104	1.5
Ø63	0.9	1.5	96	118		1.5
					126	1.5
Ø66	0.9	1.5	96	124		1.5
					132	1.5
Ø80	0.8	1.5	107	152		1.5
					160	1.5
Ø100	0.7	1.5	123	192		1.5
					200	1.5

Programming Technical Data

When CNC programming specify tools with 'R' for the each insert, this will result un-machined material thickness of approximately 'B' mm along the corner.

When applying CNC program with 'R', over-cut area is 'A' mm. To avoid over-cut, please add to set up roughing stock 'A' mm. For other program R data, please refer to diagram below.



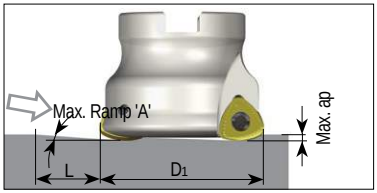


	R Program	A Over cut	B Un-machined Material Thickness
BLMP 06	2.0	0	0.42
	2.5	0.12	0.26
	3.0	0.29	0.17
BLMP 09	2.5	0	0.61
	3.0	0.09	0.45
	3.5	0.24	0.30
	4.0	0.41	0.17
	3.0	0.36	0.04

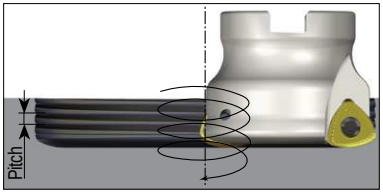
:Recommended program 'R'

Ramping Data

Straight Ramping



Helical Ramping



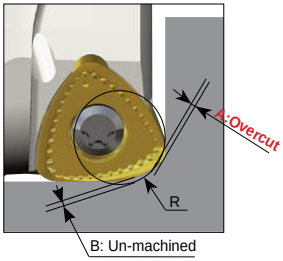
BLMP 12

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A°)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø32	2.0	2.0	57	41.6		0.9
					64	2.0
Ø33	2.0	2.0	57	43.6		1.0
					66	2.0
Ø35	1.8	2.0	64	47.6		1.1
					70	2.0
Ø40	1.5	2.0	76	57.6		1.2
					80	2.0
Ø42	1.3	2.0	88	61.6		1.2
					84	2.0
Ø50	1.1	2.0	104	77.6		1.4
					100	2.0
Ø52	1.0	2.0	115	81.6		1.4
					104	2.0
Ø63	0.8	2.0	143	103.6		1.5
					126	2.0
Ø66	0.7	2.0	164	109.6		1.4
					132	2.0
Ø80	0.5	2.0	229	137.6		1.3
					160	1.9
Ø100	0.4	2.0	287	177.6		1.4
					200	1.9
Ø125	0.4	2.0	382	227.6		1.4
					250	1.7

Programming Technical Data

When CNC programming specify tools with 'R' for the each insert, this will result un-machined material thickness of approximately 'B' mm along the corner.

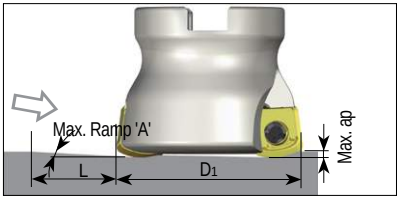
When applying CNC program with 'R', over-cut area is 'A' mm. To avoid over-cut, please add to set up roughing stock 'A' mm. For other program R data, please refer to diagram below.



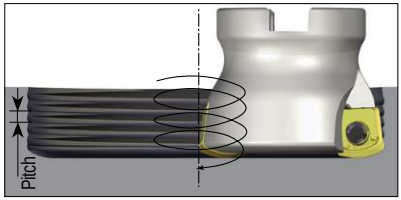
	R Program	A Over cut	B Un-machined Material Thickness
BLMP 12	3.0	0	1.15
	3.5	0	1.00
	4.0	0.03	0.84
	4.5	0.14	0.70
	5.0	0.29	0.57

:Recommended program 'R'

Straight Ramping



Helical Ramping



XDMX 08

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A°)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø20	1.5	1.0	38	26		0.4
					40	1.0
Ø25	0.9	1.0	64	36		0.5
					50	1.0
Ø32	0.5	1.0	115	50		0.4
					64	0.7
Ø40	0.4	1.0	143	66		0.5
					80	0.7
Ø50	0.3	1.0	191	86		0.5
					100	0.7

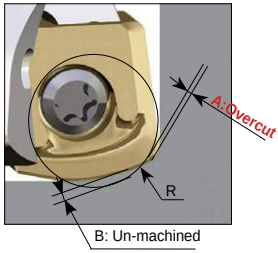
XDMX 13

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A°)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø32	2.5	2.0	46	40		0.9
					64	1.0
Ø40	1.7	2.0	67	56		1.3
					80	1.9
Ø50	1.3	2.0	88	76		1.6
					100	1.9
Ø63	0.8	2.0	143	102		1.5
					126	2.3
Ø80	0.5	2.0	229	136		1.3
					160	1.9
Ø100	0.4	2.0	287	176		1.4
					200	1.9
Ø125	0.2	2.0	573	226		0.9
					250	1.2

Programming Technical Data

When CNC programming specify tools with 'R' for the each insert, this will result un-machined material thickness of approximately 'B' mm along the corner.

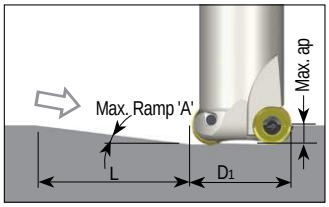
When applying CNC program with 'R', over-cut area is 'A' mm. To avoid over-cut, please add to set up roughing stock 'A' mm. For other program R data, please refer to diagram below.



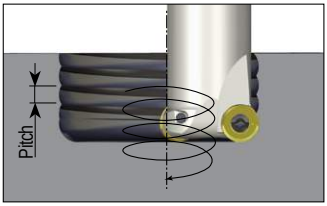
	R Program	A Over cut	B Un-machined Material Thickness
XDMX 08	2.8	0	0.49
	3.0	0.01	0.44
	3.5	0.14	0.31
	4.0	0.32	0.19
XDMX 13	3.0	0	0.87
	3.5	0.01	0.72
	4.0	0.12	0.58
	4.5	0.27	0.45
	5.0	0.45	0.33
	6.0	0.83	0.14

:Recommended program 'R'

Straight Ramping



Helical Ramping



RNMU 1004S-M ,RNMU 1004-ML: 8 Corners

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A^o)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø25	1.1	5.0	261	33		0.4
					50	1.3
Ø26	1.1	5.0	261	35		0.5
					52	1.3
Ø32	0.9	5.0	318	47		0.6
					64	1.3
Ø33	0.9	5.0	318	49		0.7
					66	1.4
Ø40	0.9	5.0	318	63		1.0
					80	1.7
Ø42	0.9	5.0	318	67		1.0
					84	1.8
Ø50	0.7	5.0	409	83		1.1
					100	1.6
Ø52	0.8	5.0	358	87		1.3
					104	1.9

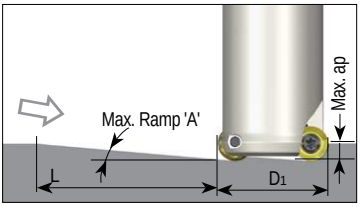
RNMU 1205S-M ,RNMU 1205-ML: 8 Corners

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A^o)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø32	1.4	6.0	246	42		0.7
					64	2.1
Ø33	1.4	6.0	246	44		0.7
					66	2.2
Ø40	1.3	6.0	265	58		1.1
					80	2.4
Ø50	1.0	6.0	344	78		1.3
					100	2.3
Ø52	1.0	6.0	344	82		1.4
					104	2.4
Ø63	1.0	6.0	344	104		1.9
					126	2.9
Ø66	1.0	6.0	344	110		2.0
					132	3.1
Ø80	0.9	6.0	382	138		2.4
					160	3.4
Ø100	0.7	6.0	491	178		2.5
					200	3.3

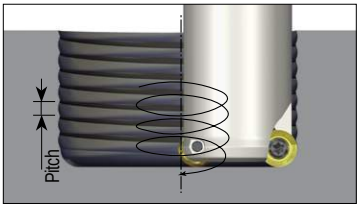
RNMU 1606S-M: 8 Corners

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (A°)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø40	1.4	8.0	328	52		0.8
					80	2.6
Ø42	1.4	8.0	328	56		0.9
					84	2.7
Ø50	1.3	8.0	353	72		1.3
					100	3.0
Ø52	1	8.0	459	76		1.1
					104	2.4
Ø63	1	8.0	459	98		1.6
					126	2.9
Ø66	1	8.0	459	104		1.8
					132	3.1
Ø80	1	8.0	459	132		2.4
					160	3.7
Ø100	0.9	8.0	510	172		3.0
					200	4.2
Ø125	0.9	8.0	510	222		4.1
					250	5.2

Straight Ramping



Helical Ramping



RDMX-05

Cutter Dia.(D1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (Aº)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø8	7	2.5	20	8.5		0.2
					16	2.1
Ø10	14	2.5	10	12		1.3
					20	2.1
Ø12	9	2.5	16	16		1.7
					24	2.1

RDMX-07

Cutter Dia.(D1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (Aº)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø15	17	3.5	11	18		2.4
					30	3.0
Ø16	15	3.5	13	20		2.9
					32	3.0
Ø17	14.5	3.5	14	22		1.6
						3.4
Ø20	14	3.5	14		34	3.0
				28		3.0
Ø25	8	3.5	25		40	3.0
				38		3.0
Ø30	5	3.5	40		50	3.0
				48		3.0
Ø32	5	3.5	40		60	3.0
				52		3.0

RXM(H)X-10

Cutter Dia.(D1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (Aº)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø20	20	5.0	14	22		1.9
					40	4.3
Ø25	15	5.0	19	32		5.0
					50	4.3
Ø32	12	5.0	24	46		1.6
					64	4.3
Ø42	8	5.0	36	66		4.3
					84	4.3
Ø50	6.5	5.0	44	82		4.3
					100	4.3
Ø52	6	5.0	48	86		4.3
					104	4.3

RXM(H)X-12

Cutter Dia.(D1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (Aº)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø25	20	6.0	16	28		2.9
					50	5.1
Ø32	15	6.0	22	42		5.1
					64	5.1
Ø35	8	6.0	43	48		4.9
					70	5.1
Ø40	15	6.0	22	58		5.1
					80	5.1
Ø42	7.5	6.0	46	62		5.1
					84	5.1
Ø50	7.5	6.0	46	78		5.1
					100	5.1
Ø52	6	6.0	57	82		5.1
					104	5.1
Ø63	5	6.0	69	104		5.1
					126	5.1
Ø66	5	6.0	69	110		5.1
					132	5.1
Ø80	4	6.0	86	138		5.1
					160	5.1
Ø100	2	6.0	172	178		5.1
					200	5.1
Ø125	2	6.0	172	228		5.1
					250	5.1

RXMX-16

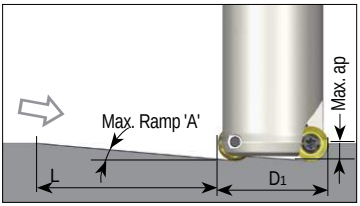
Cutter Dia.(D1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (Aº)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø32	20	8.0	22	34		1.9
					64	6.8
Ø40	15	8.0	30	50		7.1
					80	6.8
Ø42	14	8.0	32	54		8.0
					84	6.8
Ø50	13	8.0	35	70		6.8
					100	6.8
Ø52	10	8.0	45	74		6.8
					104	6.8
Ø80	6	8.0	76	130		6.8
					160	6.8
Ø100	4	8.0	114	170		6.8
					200	6.8
Ø125	3.5	8.0	131	220		6.8
					250	6.8

RXMX-20

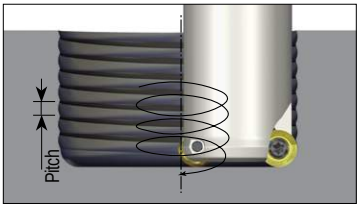
Cutter Dia.(D1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp (Aº)	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch/Rev.
Ø50	16	10.0	35	62		9.2
					100	8.5
Ø63	11.5	10.0	49	88		8.5
					126	8.5
Ø80	9	10.0	63	122		8.5
					160	8.5
Ø100	7.5	10.0	76	162		8.5
					200	8.5
Ø125	5.5	10.0	104	212		8.5
					250	8.5
Ø160	4	10.0	143	282		8.5
					320	8.5

Ramping Data

Straight Ramping



Helical Ramping



RYM(H)X-08

Cutter Dia.(D1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp Angle	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch
Ø16	2.5	4.0	92	18		0.2
					32	1.9
Ø17	2.5	4.0	92	20		0.3
					34	2.0
Ø18	2.5	4.0	92	22		0.5
					36	2.1
Ø20	4.0	4.0	57	26		1.1
					40	3.4
Ø21	4.0	4.0	57	28		1.3
					42	3.4
Ø25	4.0	4.0	57	36		2.1
					50	3.4
Ø26	4.0	4.0	57	38		2.2
					52	3.4
Ø32	4.0	4.0	57	50		3.4
					64	3.4
Ø40	7.0	4.0	33	66		3.4
					80	3.4

RYMX-10

Cutter Dia.(D1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp Angle	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch
Ø20	4.5	5.0	64	22		0.4
					40	4.2
Ø21	4.5	5.0	64	24		0.6
					42	4.4
Ø25	5.0	5.0	57	32		1.6
					50	4.3
Ø26	5.0	5.0	57	34		1.9
					52	4.3
Ø32	5.0	5.0	57	46		3.3
					64	4.3
Ø35	5.0	5.0	57	52		4.0
					70	4.3
Ø40	5.0	5.0	57	62		4.3
					80	4.3
Ø42	5.0	5.0	57	66		4.3
					84	4.3
Ø50	6.5	5.0	44	82		4.3
					100	4.3
Ø52	6.0	5.0	48	86		4.3
					104	4.3
Ø66	4.5	5.0	64	114		4.3
					132	4.3

RYMX-12

Cutter Dia.(D1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp Angle	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch
Ø25	6.0	6.0	57	28		0.8
					50	5.1
Ø26	6.0	6.0	57	30		1.1
					52	5.1
Ø32	12.0	6.0	28	42		5.1
					64	5.1
Ø33	12.0	6.0	28	44		5.1
					66	5.1
Ø35	12.0	6.0	28	48		5.1
					70	5.1
Ø40	10.0	6.0	34	58		5.1
					80	5.1
Ø42	12.0	6.0	28	62		5.1
					84	5.1
Ø50	9.0	6.0	38	78		5.1
					100	5.1
Ø52	8.0	6.0	43	82		5.1
					104	5.1
Ø55	8.0	6.0	43	88		5.1
					110	5.1
Ø63	7.0	6.0	49	104		5.1
					126	5.1
Ø66	6.5	6.0	53	110		5.1
					132	5.1
Ø80	4.5	6.0	76	138		5.1
					160	5.1
Ø100	3.5	6.0	98	178		5.1
					200	5.1
Ø125	2.5	6.0	137	228		5.1
					250	5.1

RYMX-16

Cutter Dia.(D1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp Angle	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch
Ø32	8.0	8.0	57	34		0.7
					64	6.8
Ø40	9.5	8.0	48	50		4.5
					80	6.8
Ø42	9.0	8.0	51	54		5.1
					84	6.8
Ø50	9.0	8.0	51	70		6.8
					100	6.8
Ø52	9.0	8.0	51	74		6.8
					104	6.8
Ø63	8.5	8.0	54	96		6.8
					126	6.8
Ø66	8.5	8.0	54	102		6.8
					132	6.8
Ø80	6.0	8.0	76	130		6.8
					160	6.8
Ø100	5.0	8.0	91	170		6.8
					200	6.8
Ø125	3.5	8.0	131	220		6.8
					250	6.8
Ø160	3.5	8.0	131	290		6.8
					320	6.8

RYMX-20

Cutter Dia.(D_1)	Straight Ramp Down			Helical Ramp Down		
	Max. Ramp Angle	Max. ap (mm)	Min. Length (L)	Min. Dia.	Max. Dia.	Max. Pitch
Ø50	8.0	10.0	71	62		4.5
					100	8.5
Ø63	12.5	10.0	45	88		8.5
					126	8.5
Ø80	8.5	10.0	67	122		8.5
					160	8.5
Ø100	6.5	10.0	88	162		8.5
					200	8.5
Ø125	4.5	10.0	127	212		8.5
					250	8.5
Ø160	4.0	10.0	143	282		8.5
					320	8.5
Ø200	2.5	10.0	229	362		8.5
					400	8.5
Ø250	2.4	10.0	239	462		8.5
					500	8.5

Recommended Cutting Condition

MILL•RUSH - 3P TE90 and 3P TF90 Using 3PK(H)T 06 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85-175	-3.0	180-300	TT7080, TT7800,TT9080	0.07 - 0.12
High Carbon Steel	175-225	-3.0	130-280	TT7080, TT7800,TT9080	0.07 - 0.12
Alloyed Steel	275-325	-3.0	120-250	TT7080, TT9080, TT8080, TT7800	0.05 - 0.12
Tool Steel	-	-3.0	80-200	TT2510,TT7080, TT9080, TT8080	0.05 - 0.12
Stainless 300 Series	-	-3.0	80-170	TT8080, TT8020, TT9080	0.05 - 0.12
Stainless 400 Series	-	-3.0	100-210	TT9080, TT8080, TT8020	0.07 - 0.12
High-Temp Alloy Inconel	-	-2.0	30-100	TT8080, TT9080	0.05 - 0.10
Titanium Alloy	-	-2.0	30-80	TT8080, TT9080	0.05 - 0.10
Gray Cast Iron	190-220	-4.0	150-400	TT6800, TT6080	0.07 - 0.14
Nodular Cast Iron	140-200	-3.0	100-250	TT6080	0.07 - 0.12
Aluminum	-	-4.0	350-500	K10	0.07 - 0.22

• Reduce Speed by 20% for Face Mills when slotting

MILL•RUSH - 3P TE90 and 3P TF90 Using 3PK(H)T10 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 5.0	180 - 300	TT7080, TT7800, TT9080	0.08 - 0.20
High Carbon Steel	175 - 225	- 5.0	130 - 280	TT7080, TT7800, TT9080	0.08 - 0.20
Alloy Steel	275 - 325	- 5.0	120 - 250	TT7080, TT9080, TT8080, TT7800	0.08 - 0.18
Tool Steel	-	- 5.0	80 - 200	TT2510,TT7080, TT9080, TT8080	0.08 - 0.18
Stainless 300 Series	-	- 3.0	80 - 170	TT8080, TT8020, TT9080	0.05 - 0.15
Stainless 400 Series	-	- 3.0	100 - 210	TT9080, TT8080,TT8020	0.05 - 0.18
High Temp. Super Alloy	-	- 3.0	30 - 100	TT8080, TT9080	0.05 - 0.15
Titanium Alloy	-	- 3.0	30 - 80	TT8080, TT9080	0.05 - 0.15
Gray Cast Iron	190 - 220	- 6.0	150 - 400	TT6800, TT6080	0.08 - 0.20
Nodular Cast Iron	140 - 200	- 6.0	100 - 250	TT6080	0.08 - 0.18
Aluminum	-	- 6.0	400 - 600	K10	0.10 - 0.40

• Reduce Speed by 20% for Face Mills when slotting

MILL•RUSH - 3P TE90 and 3P TF90 Using 3PK(H)T15 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 9.0	180 - 300	TT7080, TT7800, TT9080	0.10 - 0.25
High Carbon Steel	175 - 225	- 9.0	130 - 280	TT7080, TT7800, TT9080	0.10 - 0.25
Alloy Steel	275 - 325	- 9.0	120 - 250	TT7080, TT9080, TT8080, TT7800	0.10 - 0.20
Tool Steel	-	- 9.0	80 - 200	TT2510,TT7080, TT9080, TT8080	0.10 - 0.20
Stainless 300 Series	-	- 5.0	80 - 170	TT8080, TT8020, TT9080	0.08 - 0.18
Stainless 400 Series	-	- 5.0	100 - 210	TT9080, TT8080,TT8020	0.08 - 0.20
High Temp. Super Alloy	-	- 5.0	30 - 100	TT8080, TT9080	0.08 - 0.18
Titanium Alloy	-	- 5.0	30 - 80	TT8080, TT9080	0.08 - 0.18
Gray Cast Iron	190 - 220	- 10.0	150 - 400	TT6800, TT6080	0.10 - 0.25
Nodular Cast Iron	140 - 200	- 10.0	100 - 250	TT6080	0.10 - 0.22
Aluminum	-	- 10.0	350 - 500	K10	0.10 - 0.50

• Reduce Speed by 20% for Face Mills when slotting

MILL•RUSH - 3P TE90 and 3P TF90 Using 3PK(H)T19 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 12.0	180 - 300	TT7080, TT7800, TT9080	0.10 - 0.30
High Carbon Steel	175 - 225	- 12.0	130 - 280	TT7080, TT7800, TT9080	0.10 - 0.30
Alloy Steel	275 - 325	- 12.0	120 - 250	TT7080, TT9080, TT8080, TT7800	0.10 - 0.25
Tool Steel	-	- 12.0	80 - 200	TT2510,TT7080, TT9080, TT8080	0.10 - 0.25
Stainless 300 Series	-	- 7.0	80 - 170	TT8080, TT8020, TT9080	0.08 - 0.20
Stainless 400 Series	-	- 7.0	100 - 210	TT9080, TT8080,TT8020	0.08- 0.25
High Temp. Super Alloy	-	- 7.0	30 - 100	TT8080, TT9080	0.08 - 0.20
Titanium Alloy	-	- 7.0	30 - 80	TT8080, TT9080	0.08 - 0.20
Gray Cast Iron	190 - 220	- 13.0	150 - 400	TT6800, TT6080	0.12 - 0.30
Nodular Cast Iron	140 - 200	- 13.0	100 - 250	TT6080	0.12 - 0.25
Aluminum	-	- 13.0	400 - 600	K10	0.15 - 0.50

• Reduce Speed by 20% for Face Mills when slotting

Recommended Cutting Condition

MILL RUSH - 6N TE90 and 6N TF90 Using 6NGU 06 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 4.5	180 - 300	TT7080, TT7800, TT9080	0.10 - 0.20
High Carbon Steel	175 - 225	- 4.5	130 - 280	TT7080, TT7800, TT9080	0.10 - 0.20
Alloy Steel	275 - 325	- 4.5	120 - 250	TT7080, TT9080, TT8080, TT7800	0.10 - 0.18
Tool Steel	-	- 4.5	80 - 200	TT2510,TT7080, TT9080, TT8080	0.10 - 0.18
Stainless 300 Series	-	- 2.5	80 - 170	TT8080, TT8020, TT9080	0.08 - 0.15
Stainless 400 Series	-	- 2.5	100 - 210	TT9080, TT8080,TT8020	0.08 - 0.18
High Temp. Super Alloy	-	- 2.5	30 - 100	TT8080, TT9080	0.08 - 0.15
Titanium Alloy	-	- 2.5	30 - 80	TT8080, TT9080	0.08 - 0.15
Gray Cast Iron	190 - 220	- 5.0	150 - 400	TT6800, TT6080	0.10 - 0.22
Nodular Cast Iron	140 - 200	- 5.0	100 - 250	TT6080	0.10 - 0.20
Aluminum	-	- 5.0	400 - 600	K10	0.10 - 0.40

• Reduce Speed by 20% for Face Mills when slotting

MILL RUSH - 6N TE90 and 6N TF90 Using 6NGU 09 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 7.0	180 - 300	TT7080, TT7800, TT9080	0.10 - 0.25
High Carbon Steel	175 - 225	- 7.0	130 - 280	TT7080, TT7800, TT9080	0.10 - 0.25
Alloy Steel	275 - 325	- 7.0	120 - 250	TT7080, TT9080, TT8080, TT7800	0.10 - 0.20
Tool Steel	-	- 7.0	80 - 200	TT2510,TT7080, TT9080, TT8080	0.10 - 0.20
Stainless 300 Series	-	- 4.0	80 - 170	TT8080, TT8020, TT9080	0.08 - 0.17
Stainless 400 Series	-	- 4.0	100 - 210	TT9080, TT8080,TT8020	0.08 - 0.20
High Temp. Super Alloy	-	- 4.0	30 - 100	TT8080, TT9080	0.08 - 0.17
Titanium Alloy	-	- 4.0	30 - 80	TT8080, TT9080	0.08 - 0.17
Gray Cast Iron	190 - 220	- 8.0	150 - 400	TT6800, TT6080	0.10 - 0.25
Nodular Cast Iron	140 - 200	- 8.0	100 - 250	TT6080	0.10 - 0.20
Aluminum	-	- 8.0	400 - 600	K10	0.10 - 0.40

• Reduce Speed by 20% for Face Mills when slotting

MILL RUSH - SCRM90TN Using TNMX 18 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 6.0	200 - 300	TT7080, TT7800	0.10 - 0.23
High Carbon Steel	175 - 225	- 6.0	130 - 280	TT7080, TT7800	0.10 - 0.23
Alloy Steel	275 - 325	- 6.0	120 - 250	TT7080, TT9080	0.10 - 0.23
Tool Steel	-	- 6.0	80 - 180	TT7080, TT9080	0.06 - 0.20
Stainless 300 Series	-	- 4.0	80 - 170	TT9080	0.10 - 0.15
Stainless 400 Series	-	- 4.0	100 - 210	TT9080	0.10 - 0.18
Gray Cast Iron	190 - 220	- 6.0	150 - 300	TT6080	0.10 - 0.20
Aluminum	140 - 200	- 6.0	100 - 250	TT6080	0.10 - 0.20

• Reduce Speed by 20% for Face Mills when slotting

CHASE2MILL -TE90AN and TFM90AN Using ANH(M)X 11 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 9.0	180 - 300	TT7080, TT7800, TT9080	0.10 - 0.25
High Carbon Steel	175 - 225	- 9.0	130 - 280	TT7080, TT7800, TT9080	0.10 - 0.25
Alloy Steel	275 - 325	- 9.0	120 - 250	TT7080, TT9080, TT8080, TT7800	0.10 - 0.20
Tool Steel	-	- 9.0	80 - 200	TT2510,TT7080, TT9080, TT8080	0.10 - 0.20
Stainless 300 Series	-	- 6.0	80 - 170	TT8080, TT8020, TT9080	0.10 - 0.18
Stainless 400 Series	-	- 6.0	100 - 210	TT9080, TT8080,TT8020	0.10 - 0.20
High Temp. Super Alloy	-	- 6.0	30 - 100	TT8080, TT9080	0.10 - 0.18
Titanium Alloy	-	- 6.0	30 - 80	TT8080, TT9080	0.10 - 0.18
Gray Cast Iron	190 - 220	- 10.0	150 - 400	TT6800, TT6080	0.10 - 0.30
Nodular Cast Iron	140 - 200	- 10.0	100 - 250	TT6080	0.10 - 0.25
Aluminum	-	- 10.0	400 - 600	K10	0.10 - 0.40

• Reduce Speed by 20% for Face Mills when slotting

Recommended Cutting Condition

CHASE2MILL - TE90AN and TFM90AN Using ANH(M)X 16 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 12.0	180 - 300	TT7080, TT7800, TT9080	0.10 - 0.27
High Carbon Steel	175 - 225	- 12.0	130 - 280	TT7080, TT7800, TT9080	0.10 - 0.27
Alloy Steel	275 - 325	- 12.0	120 - 250	TT7080, TT9080, TT8080, TT7800	0.10 - 0.25
Tool Steel	-	- 12.0	80 - 200	TT2510,TT7080, TT9080, TT8080	0.10 - 0.25
Stainless 300 Series	-	- 8.0	80 - 170	TT8080, TT8020, TT9080	0.08 - 0.20
Stainless 400 Series	-	- 8.0	100 - 210	TT9080, TT8080,TT8020	0.10 - 0.25
High Temp. Super Alloy	-	- 8.0	30 - 100	TT8080, TT9080	0.08 - 0.20
Titanium Alloy	-	- 8.0	30 - 80	TT8080, TT9080	0.08 - 0.20
Gray Cast Iron	190 - 220	- 13.0	150 - 400	TT6800, TT6080	0.10 - 0.35
Nodular Cast Iron	140 - 200	- 13.0	100 - 250	TT6080	0.10 - 0.30
Aluminum	-	- 13.0	400 - 600	K10	0.10 - 0.40

• Reduce Speed by 20% for Face Mills when slotting

CHASE2MILL - TFM45AN Using ANHX 16 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 6.0	180 - 300	TT7080, TT7800	0.10 - 0.30
High Carbon Steel	175 - 225	- 6.0	130 - 280	TT7080, TT7800	0.10 - 0.30
Alloy Steel	275 - 325	- 6.0	120 - 250	TT7080, TT8080, TT7800	0.10 - 0.27
Tool Steel	-	- 6.0	80 - 200	TT7080, TT8080	0.10 - 0.27
Stainless 300 Series	-	- 4.0	80 - 170	TT8080	0.10 - 0.22
Stainless 400 Series	-	- 4.0	100 - 210	TT8080	0.10 - 0.25
High Temp. Super Alloy	-	- 4.0	30 - 100	TT8080	0.10 - 0.22
Titanium Alloy	-	- 4.0	30 - 80	TT8080	0.10 - 0.22
Gray Cast Iron	190 - 220	- 7.0	150 - 400	TT6080	0.10 - 0.40
Nodular Cast Iron	140 - 200	- 7.0	100 - 250	TT6080	0.10 - 0.35

• Reduce Speed by 20% for Face Mills when slotting

CHASEMILL - TE90AX, TFM90AX Using AXM(C)T 0602 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	1.0 - 3.0	180 - 300	TT9030, TT8080, TT2510	0.07 - 0.10
High Carbon Steel	175 - 225	1.0 - 3.0	130 - 280	TT9030, TT8080, TT2510	0.07 - 0.10
Alloy Steel	275 - 325	1.0 - 3.0	120 - 250	TT9030, TT8080, TT2510	0.05 - 0.10
Tool Steel	-	1.0 - 3.0	80 - 200	TT9080, TT8080, TT2510	0.05 - 0.10
Stainless 300 Series	-	1.0 - 3.0	80 - 170	TT8080, TT8020, TT9030	0.05 - 0.10
Stainless 400 Series	-	1.0 - 3.0	100 - 210	TT9030, TT8080,TT8020	0.07 - 0.10
High Temp. Super Alloy	-	1.0 - 2.0	30 - 100	TT8080, TT9030	0.05 - 0.08
Titanium Alloy	-	1.0 - 2.0	30 - 80	TT8080, TT9030	0.05 - 0.08
Gray Cast Iron	190 - 220	1.0 - 4.0	150 - 400	TT6080	0.07 - 0.12
Nodular Cast Iron	140 - 200	1.0 - 3.0	100 - 250	TT6080	0.07 - 0.10
Aluminum	-	1.0 - 4.0	350 - 500	K10	0.07 - 0.20

• Recommended cutting conditions are just for reference.
• The recommended cutting conditions always refer to optimum conditions.
If machine rigidity, workpiece clamping, or overall length is not ideal, these cutting conditions should be altered accordingly.

CHASEMILL - AXMT 0602R-HF Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Carbon Steel / Alloy Steel	- 375	0.4	100 - 180	TT9080, TT8080,TT2510	0.7 - 0.8
Prehardened Steel / Die and mold Steel	375 - 480	0.4	100 - 180	TT8080, TT9080,TT2510	0.5 - 0.6
Hardened Steel	480 -	0.3	80 - 130	TT8080, TT9080,TT2510	0.4 - 0.5
Stainless Steel	-	0.4	90 - 180	TT8080, TT9080	0.6 - 0.7
Cast Iron	140 - 220	0.5	130 - 230	TT9080, TT8080	0.7 - 0.8

• Reduce Speed by 20% for Face Mills when slotting

Recommended Cutting Condition

CHASEMILL - 2S-TE90AP, 2S-TFM90AP Using APK(C)T 09 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 7.0	180 - 300	TT7080, TT7800, TT9080,TT2510	0.07 - 0.18
High Carbon Steel	175 - 225	- 7.0	130 - 280	TT7080, TT7800, TT9080,TT2510	0.07 - 0.18
Alloy Steel	275 - 325	- 7.0	120 - 250	TT7080, TT9080, TT8080, TT7800,TT2510	0.07 - 0.15
Tool Steel	-	- 7.0	80 - 200	TT7080, TT9080, TT8080, TT2510	0.07 - 0.15
Stainless 300 Series	-	- 4.0	80 - 170	TT8080, TT8020, TT9080	0.05 - 0.12
Stainless 400 Series	-	- 4.0	100 - 210	TT9080, TT8080,TT8020	0.05 - 0.15
High Temp. Super Alloy	-	- 4.0	30 - 100	TT8080, TT9080	0.05 - 0.12
Titanium Alloy	-	- 4.0	30 - 80	TT8080, TT9080	0.05 - 0.12
Gray Cast Iron	190 - 220	- 8.0	150 - 400	TT6800, TT6080	0.07 - 0.12
Nodular Cast Iron	140 - 200	- 8.0	100 - 250	TT6080	0.07 - 0.10
Aluminum	-	- 8.0	350 - 500	K10	0.10 - 0.30

• Reduce Speed by 20% for Face Mills when slotting

CHASEMILL - APKT 09T3R-HF Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Carbon Steel / Alloy Steel	- 375	0.5 - 0.7	100 - 180	TT9080, TT8080	0.7 - 1.0
Prehardened Steel / Die and mold Steel	375 - 480	0.3 - 0.6	100 - 180	TT8080, TT9080	0.5 - 0.7
Hardened Steel	480 -	0.3 - 0.6	80 - 150	TT9080, TT8080	0.4 - 0.6
Stainless Steel	-	0.5 - 0.7	90 - 150	TT8080, TT9080	0.6 - 1.0
Cast Iron	140 - 220	0.5 - 0.8	120 - 220	TT9080, TT8080	0.7 - 1.0

• Reduce Speed by 20% for Face Mills when slotting

CHASEMILL - TE90AP, TFM90AP Using APK(C)T 12 and APKT 17 Insert

Material	Hardness (HB)	Speed (m/min)	Best grades	APK(C)T 12 Insert		APKT 17 Insert	
				D.O.C (mm)	Feed(mm/tooth)	D.O.C (mm)	Feed(mm/tooth)
Low Carbon Steel	85 - 175	180 - 300	TT7080, TT7800, TT9080, TT2510	- 10.0	0.10 - 0.20	- 12.0	0.10 - 0.25
High Carbon Steel	175 - 225	130 - 280	TT7080, TT7800, TT9080, TT2510	- 10.0	0.10 - 0.20	- 12.0	0.10 - 0.25
Alloy Steel	275 - 325	120 - 250	TT7080, TT9080, TT8080, TT7800, TT2510	- 10.0	0.10 - 0.18	- 12.0	0.10 - 0.22
Tool Steel	-	80 - 200	TT7080, TT9080, TT8080, TT2510	- 10.0	0.10 - 0.18	- 12.0	0.10 - 0.22
Stainless 300 Series	-	80 - 170	TT8080, TT8020, TT9080	- 7.0	0.08 - 0.15	- 8.0	0.08 - 0.18
Stainless 400 Series	-	100 - 210	TT9080, TT8080,TT8020	- 7.0	0.08 - 0.18	- 8.0	0.08 - 0.20
High Temp. Super Alloy	-	30 - 100	TT8080, TT9080	- 7.0	0.08 - 0.15	- 8.0	0.08 - 0.18
Titanium Alloy	-	30 - 80	TT8080, TT9080	- 7.0	0.08 - 0.15	- 8.0	0.08 - 0.18
Gray Cast Iron	190 - 220	150 - 400	TT6800, TT6080	- 11.0	0.10 - 0.25	- 11.0	0.10 - 0.30
Nodular Cast Iron	140 - 200	100 - 250	TT6080	- 11.0	0.10 - 0.25	- 11.0	0.10 - 0.25
Aluminum	-	400 - 600	K10	- 11.0	0.10 - 0.40	- 11.0	0.15 - 0.50

• Reduce Speed by 20% for Face Mills when slotting

CHASEMILL - APKT 1204R-HF Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Carbon Steel / Alloy Steel	- 375	0.5 - 0.8	100 - 180	TT9080	0.7 - 1.2
Prehardened Steel / Die and mold Steel	375 - 480	0.3 - 0.7	100 - 180	TT9080	0.5 - 0.8
Hardened Steel	480 -	0.3 - 0.6	80 - 150	TT9080	0.4 - 0.6
Stainless Steel	-	0.5 - 0.7	90 - 150	TT9080	0.6 - 1.0
Cast Iron	140 - 220	0.5 - 1.0	120 - 220	TT9080	0.7 - 1.2

• Reduce Speed by 20% for Face Mills when slotting

Recommended Cutting Condition

CHASEALU - TE90XE and TFM90XE using XECT 16 Insert

Material			Hardness (HB)	Speed (m/min)	Best grades	Feed (mm/tooth)
Aluminum-wrought alloy		Not cureable	60	300 - 5000	K10	0.15 - 0.35
		Cured	100	200 - 2000	K10	0.10 - 0.25
Aluminum-cast alloy	<=12% Si	Not cureable	75	200 - 2000	K10	0.15 - 0.30
		Cured	90	200 - 1500	K10	0.10 - 0.25
	>12% Si	High temperature	130	200 - 1000	K10	0.07 - 0.15
Copper alloys	>1% Pb	Free cutting	110	200 - 800	K10	0.07 - 0.15
		Brass	90	300 - 1000	K10	0.10 - 0.15
		Electrolitic copper	100	300 - 800	K10	0.10 - 0.15
Non-metallic		Duroplastics, fiber plastics	-	100 - 500	K10	0.10 - 0.15
		Hard rubber	-	100 - 300	K10	0.10 - 0.15

CHASEQUAD - Spot Face, Counterbore, Plunging, and Drill - Mill series TSF and TDM using XOMT 06, SPMG(T) 09, SPMG(T) 11 & SPMG(T) 14 Inserts

Material	Hardness (HB)	Speed (m/min)	Best grades	XOMT 06		SPMG(T) 09		SPMG(T) 11		SPMG(T) 14	
				Feed(mm/tooth)	D.O.C (mm)	Feed(mm/tooth)	D.O.C (mm)	Feed(mm/tooth)	D.O.C (mm)	Feed(mm/tooth)	D.O.C (mm)
Low Carbon Steel	85 - 175	180 - 300	TT7080, TT7800, TT9080	0.05 - 0.15	- 4.5	0.07 - 0.18	- 7.2	0.09-0.20	- 8.0	0.10 - 0.25	- 10.4
High Carbon Steel	175 - 225	130 - 280	TT7080, TT7800, TT9080	0.05 - 0.15	- 4.5	0.07 - 0.18	- 7.2	0.09-0.20	- 8.0	0.10 - 0.25	- 10.4
Alloy Steel	275 - 325	120 - 250	TT7080, TT9080, TT8080, TT7800	0.05 - 0.15	- 4.5	0.07 - 0.18	- 7.2	0.09-0.20	- 8.0	0.10 - 0.25	- 10.4
Tool Steel	-	80 - 200	TT7080, TT9080, TT8080	0.04 - 0.13	- 4.5	0.06 - 0.15	- 7.2	0.08-0.17	- 8.0	0.09 - 0.20	- 10.4
Stainless 300 Series	-	80 - 170	TT8080, TT8020, TT9080	0.03 - 0.08	- 2.7	0.05 - 0.10	- 4.3	0.06-0.12	- 4.8	0.08 - 0.15	- 6.2
Stainless 400 Series	-	100 - 210	TT9080, TT8080,TT8020	0.04 - 0.15	- 2.7	0.06 - 0.15	- 4.3	0.08-0.17	- 4.8	0.09 - 0.20	- 6.2
Gray Cast Iron	190 - 220	150 - 400	TT6800, TT6080	0.05 - 0.15	- 4.5	0.06 - 0.16	- 7.2	0.07-0.19	- 8.0	0.08 - 0.20	- 10.4
Nodular Cast Iron	140 - 200	100 - 250	TT6080	0.04 - 0.15	- 4.5	0.05 - 0.16	- 7.2	0.06-0.19	- 8.0	0.07 - 0.20	- 10.4

• Reduce Feed by 25% for Face Mills 18mm and under at D.O.C > 3.8mm

CHASE2QUAD - TFM90SNS, TQ90SNS-Using SNEX 1204 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Gray Cast Iron	190 - 220	under 1.0 (recom.: 0.5)	150 - 280	TT6080 , K10	0.08 - 0.20
Nodular Cast Iron	140 - 200	under 1.0 (recom.: 0.5)	130 - 250	TT6080 , K10	0.08 - 0.20
Gray / Ductile / Nodular Cast Iron	140 - 200	under 0.5	400 - 800	KB90	0.08 - 0.15
Alloy Steel	275 - 325	under 1.0 (recom.: 0.5	135 - 200	TT9080	0.08 - 0.20
Carbon Steel	85 - 225	under 1.0 (recom.: 0.5)	150 - 350	TT9080	0.10 - 0.20

• Recommended cutting conditions are just for reference.
• The recommended cutting conditions always refer to optimum conditions.
If machine rigidity, workpiece clamping, or overall length is not ideal, these cutting conditions should be altered accordingly.

CHASE2QUAD - TFM88/90SN Using SNGX 13 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 9.6	180 - 300	TT7080, TT7800, TT9080	0.10 - 0.25
High Carbon Steel	175 - 225	- 9.6	130 - 280	TT7080, TT7800, TT9080	0.10 - 0.25
Alloy Steel	275 - 325	- 9.6	120 - 250	TT7080, TT9080, TT8080, TT7800	0.10 - 0.25
Tool Steel	-	- 9.6	80 - 200	TT7080, TT9080, TT8080	0.10 - 0.20
Stainless 300 Series	-	- 5.8	80 - 170	TT8080, TT8020, TT9080	0.08 - 0.13
Stainless 400 Series	-	- 5.8	100 - 210	TT9080, TT8080,TT8020	0.10 - 0.22
Gray Cast Iron	190 - 220	- 9.6	150 - 400	TT6800, TT6080	0.10 - 0.25
Nodular Cast Iron	140 - 200	- 9.6	100 - 250	TT6080	0.10 - 0.25
Gray / Nodular Cast Iron	140 - 200	- 4.6	400 - 800	AS10	0.08 - 0.20

• Reduce Speed by 20% for Face Mills when slotting

Recommended Cutting Condition

CHASE 2 QUAD - TFM75SN Using SNG(M)X 13 Inserts

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 7.2	180 - 300	TT7800, TT9080	0.10 - 0.23
High Carbon Steel	175 - 225	- 7.2	130 - 280	TT7800, TT9080	0.10 - 0.23
Alloy Steel	275 - 325	- 7.2	120 - 250	TT9080, TT8080, TT7800	0.10 - 0.23
Tool Steel	-	- 7.2	80 - 200	TT9080, TT8080,TT2510	0.10 - 0.20
Stainless 300 Series	-	- 4.3	80 - 170	TT8080, TT9080	0.08 - 0.13
Stainless 400 Series	-	- 4.3	100 - 210	TT9080, TT8080,TT8020	0.10 - 0.22
Gray Cast Iron	190 - 220	- 7.2	150 - 400	TT6800, TT6080	0.10 - 0.23
Nodular Cast Iron	140 - 200	- 7.2	100 - 250	TT6080	0.10 - 0.23

• Reduce speed by 20% when channel milling • In order of preference, uncoated carbide reduce speed 20%

CHASE 2 QUAD - TFM45SN Using SNG(M)X 13 Inserts

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 4.8	180 - 300	TT7080, TT7800, TT9080	0.10 - 0.25
High Carbon Steel	175 - 225	- 4.8	130 - 280	TT7080, TT7800, TT9080	0.10 - 0.25
Alloy Steel	275 - 325	- 4.8	120 - 250	TT7080, TT9080, TT8080, TT7800	0.10 - 0.25
Tool Steel	-	- 4.8	80 - 200	TT7080, TT9080, TT8080	0.10 - 0.22
Stainless 300 Series	-	- 2.9	80 - 170	TT8080, TT9080	0.08 - 0.15
Stainless 400 Series	-	- 2.9	100 - 210	TT9080, TT8080	0.10 - 0.23
Gray Cast Iron	190 - 220	- 4.8	150 - 400	TT6800, TT6080	0.10 - 0.25
Nodular Cast Iron	140 - 200	- 4.8	100 - 250	TT6080	0.10 - 0.25
Aluminum	-	- 4.8	400 - 600	K10	0.10 - 0.35

• Reduce speed by 20% when channel milling • In order of preference, uncoated carbide reduce speed 20%

CHASE 2 QUAD - TFM45SNS/TFM45SNW/TQ45SNW Using SNMX/SNHX 16 Inserts

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 7.0	180 - 300	TT7080, TT7800, TT9080	0.10 - 0.30
High Carbon Steel	175 - 225	- 7.0	130 - 280	TT7080, TT7800, TT9080	0.10 - 0.30
Alloy Steel	275 - 325	- 7.0	120 - 250	TT7080, TT9080, TT8080, TT7800	0.10 - 0.30
Tool Steel	-	- 7.0	80 - 200	TT7080, TT9080, TT8080	0.10 - 0.25
Stainless 300 Series	-	- 4.2	80 - 170	TT8080, TT8020, TT9080	0.08 - 0.18
Stainless 400 Series	-	- 4.2	100 - 210	TT9080, TT8080,TT8020	0.10 - 0.26
Gray Cast Iron	190 - 220	- 7.0	150 - 400	TT6800, TT6080	0.10 - 0.30
Nodular Cast Iron	140 - 200	- 7.0	100 - 250	TT6080	0.10 - 0.30

EXT. Flute Mills Overcut Shell Mills Series - TEF, TES Using Inserts SDMT 05, SPMT 09, SPMT 11, SPMT 14, AXM(C)T 06, APK(C)T 09, APKT 12, APKT 17, ANM(H)X 11 & ANM(H)X 16 Inserts

Material	Hardness (HB)	Radial WOC(mm)	Speed (m/min)	Best grades	Feed (mm/tooth)					
					D32	D40	D50	D63	D80	D100
Low Carbon Steel	85-175	0.5-DIA/2	210-300	TT7080, TT8020	0.12-0.60	0.15-0.75	0.15-0.85	0.15-1.20	0.15-1.40	0.15-1.60
High Carbon Steel	175-225	0.5-DIA/2	120-210	TT7080, TT8020	0.12-0.60	0.15-0.75	0.15-0.85	0.15-1.20	0.15-1.40	0.15-1.60
Alloy Steel	275-325	0.5-DIA/2	90-180	TT8020, TT7080	0.10-0.40	0.12-0.55	0.12-0.75	0.12-1.05	0.12-1.24	0.12-1.40
Tool Steel	200-250	0.5-DIA/2	75-140	TT8020, TT7080	0.10-0.40	0.12-0.55	0.12-0.75	0.12-1.05	0.12-1.24	0.12-1.40
Stainless 300 Series	-	0.5-DIA/2	120-180	TT8020, TT7080	0.10-0.40	0.12-0.55	0.12-0.75	0.12-1.05	0.12-1.24	0.12-1.40
Stainless 400 Series	-	0.5-DIA/2	120-210	TT8020, TT7080	0.12-0.60	0.15-0.75	0.15-0.85	0.15-1.20	0.15-1.40	0.15-1.60
High Temp. Super Alloy	-	0.5-DIA/2	22-45	TT8020, TT7080	0.10-0.40	0.12-0.55	0.12-0.75	0.12-1.05	0.12-1.24	0.12-1.40
Titanium Alloy	-	0.5-DIA/2	36-54	TT8020	0.10-0.40	0.12-0.55	0.12-0.75	0.12-1.05	0.12-1.24	0.12-1.40
Gray Cast Iron	190-220	0.5-DIA/2	120-210	TT6080	0.60-0.12	0.15-0.75	0.15-0.85	0.15-1.20	0.15-1.40	0.15-1.60
Nodular Cast Iron	140-200	0.5-DIA/2	120-210	TT6080	0.12-0.60	0.15-0.75	0.15-0.85	0.15-1.20	0.15-1.40	0.15-1.60
Aluminum	-	0.5-DIA/2	450+	K10	0.25-1.00	0.25-1.00	0.25-1.25	0.25-1.50	0.25-1.75	0.25-2.00

• Feed adjusted to compensate for radial chip thinning

• Decrease speed 20% when width of cut (WOC) exceeds DIA/1.3 (3/4 of cutter DIA) or consider using single stage End Mills or Face Mills - TE90AP, TFM90AP: Insert APKT1705 in multiple passes to desired depth

Recommended Cutting Condition

CHASE2 PLUNGE - TPM Using PLNG09 Insert

Material	Hardness (HB)	Speed (m/min)	Best Grades	Feed (mm/tooth)
Carbon Steel	85 - 225	130-300	TT9080, TT7800,TT2510	0.05 -0.30
Alloy Steel	275 - 375	120-250	TT9080, TT8080, TT7800,TT2510	0.05 - 0.30
Alloy Steel	375 - 480	60-140	TT9080, TT7800,TT2510	0.05 - 0.30
Pre-Hardened Steel	250 - 470	50-200	TT9080, TT7800,TT2510	0.05 - 0.20
Hardened Steel	480 -	50-110	TT9080,TT2510	0.05 - 0.20
Stainless 300 Series	-	80-170	TT8080, TT8020, TT9080	0.05 - 0.25
Stainless 400 Series	-	100-210	TT9080, TT8080,TT8020	0.05 - 0.23
High Temp. Alloy	-	30-100	TT8080, TT9080	0.03 - 0.20
Inconel	-	20-60	TT8080, TT9080	0.03 - 0.15
Titanium Alloy	-	30-80	TT8080, TT9080	0.05 - 0.30
Cast Iron	140 - 220	150-400	TT9080	0.05 - 0.40

CHASE2 FEED - TEBL and TFMBL Using BLMP 06 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Carbon Steel	85 - 225	0.3 - 1.0	130 - 300	TT9080, TT7800, TT2510	0.5 - 3.0
Alloy Steel	275 - 375	0.3 - 0.8	120 - 250	TT9080, TT8080, TT7800, TT2510	0.4 - 2.5
Alloy Steel	375 - 480	0.3 - 0.8	60 - 140	TT9080, TT7800, TT2510	0.3 - 2.0
Pre-Hardened Steel	250 - 470	0.3 - 0.8	50 - 200	TT9080, TT7800, TT2510	0.3 - 1.5
Hardened Steel	480 -	0.3 - 0.8	50 - 110	TT9080, TT2510	0.3 - 1.2
Stainless 300 Series	-	0.3 - 0.8	80 - 170	TT8080, TT8020, TT9080	0.3 - 1.5
Stainless 400 Series	-	0.3 - 0.8	100 - 210	TT9080, TT8080, TT8020	0.4 - 2.0
High Temp. Alloy	-	0.3 - 0.7	30 - 100	TT8080, TT9080	0.3 - 1.2
Inconel	-	0.3 - 0.7	20 - 60	TT8080, TT9080	0.3 - 1.0
Titanium Alloy	-	0.3 - 0.7	30 - 80	TT8080, TT9080	0.3 - 1.2
Cast Iron	140 - 220	0.3 - 1.0	150 - 400	TT9080	0.5 - 2.0

CHASE2 FEED - TEBL and TFMBL Using BLMP 09 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Carbon Steel	85 - 225	0.3-1.5	130-300	TT9080, TT7800,TT2510	0.5 - 4.0
Alloy Steel	275 - 375	0.3-1.3	120-250	TT9080, TT8080, TT7800,TT2510	0.4 - 3.0
Alloy Steel	375 - 480	0.3-1.3	60-140	TT9080, TT7800,TT2510	0.3 - 2.5
Pre-Hardened Steel	250 -470	0.3-1.2	50-200	TT9080, TT7800,TT2510	0.3 - 2.5
Hardened Steel	480 -	0.3-1.2	50-110	TT9080,TT2510	0.3 - 2.0
Stainless 300 Series	-	0.3-1.3	80-170	TT8080, TT8020, TT9080	0.3 - 2.0
Stainless 400 Series	-	0.3-1.2	100-210	TT9080, TT8080, TT8020	0.4 - 2.5
High Temp. Alloy	-	0.3-1.2	30-100	TT8080, TT9080	0.3 - 1.5
Inconel	-	0.3-1.2	20-60	TT8080, TT9080	0.3 - 1.5
Titanium Alloy	-	0.3-1.2	30-80	TT8080, TT9080	0.3 - 1.6
Cast Iron	140 - 220	0.3-1.5	150-400	TT9080	0.3 - 3.0

CHASE2 FEED - TEBL and TFMBL Using BLMP 12 Insert

Material	Hardness (HB)	Speed (m/min)	Best grades	RBEX 50		BLMP 12	
				D.O.C (mm)	Feed(mm/tooth)	D.O.C (mm)	Feed(mm/tooth)
Carbon Steel	85 - 225	130 - 300	TT9080, TT7080, TT7800,TT2510	0.3 - 3.0	0.5 - 4.5	0.3 - 2.0	0.5 - 4.5
Alloy Steel	275 - 375	120 - 250	TT9080, TT7080, TT8080, TT7800,TT2510	0.3 - 2.4	0.5 - 4.0	0.3 - 1.6	0.5 - 4.0
Alloy Steel	375 - 480	60 - 140	TT9080, TT6080,TT2510	0.3 - 2.4	0.5 - 3.5	0.3 - 1.6	0.5 - 3.5
Pre-Hardened Steel	250 - 470	50 - 200	TT9080, TT7080, TT8080, TT7800,TT2510	0.3 - 2.0	0.3 - 3.0	0.3 - 1.6	0.3 - 3.0
Hardened Steel	480 -	50 - 110	TT9080, TT6080,TT2510	0.3 - 2.0	0.3 - 2.5	0.3 - 1.6	0.3 - 2.5
Stainless Steel	-	80 - 210	TT8080, TT8020, TT9080	0.3 - 2.0	0.5 - 3.5	0.3 - 1.6	0.5 - 3.5
High Temp. Super Alloy	-	30 - 100	TT8080, TT9080	0.3 - 1.5	0.3 - 2.0	0.3 - 1.2	0.3 - 2.0
Titanium Alloy	-	30 - 80	TT8080, TT9080	0.3 - 1.5	0.3 - 2.0	0.3 - 1.2	0.3 - 2.0
Cast Iron	140 - 220	150 - 400	TT6800, TT6080	0.3 - 3.0	0.5 - 3.5	0.3 - 2.0	0.5 - 3.5

Recommended Cutting Condition

CHASE 2 FEED - XDMX 08 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Carbon Steel	85 - 225	0.3 - 1.0	130 - 300	TT9080, TT7080, TT7800	0.5 - 3.0
Alloy Steel	275 - 375	0.3 - 0.8	120 - 250	TT9080, TT7080, TT8080, TT7800	0.4 - 2.5
Alloy Steel	375 - 480	0.3 - 0.8	60 - 140	TT9080, TT6080	0.3 - 2.0
Pre-Hardened Steel	250 - 470	0.3 - 0.8	50 - 200	TT9080, TT7080, TT8080, TT7800	0.3 - 1.5
Hardened Steel	480 -	0.3 - 0.8	50 - 110	TT9080, TT6080	0.3 - 1.2
Stainless Steel	-	0.3 - 0.8	80 - 210	TT8080, TT8020, TT9080	0.3 - 2.0
High Temp. Super Alloy	-	0.3 - 0.6	30 - 100	TT8080, TT9080	0.3 - 1.0
Titanium Alloy	-	0.3 - 0.6	30 - 80	TT8080, TT9080	0.3 - 1.2
Cast Iron	140 - 220	0.3 - 1.0	150 - 400	TT6800, TT6080	0.5 - 2.0

CHASE 2 FEED - XDMX 13 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Carbon Steel	85 - 225	0.3 - 2.0	130 - 300	TT9080, TT7080, TT7800	0.5 - 4.5
Alloy Steel	275 - 375	0.3 - 1.6	120 - 250	TT9080, TT7080, TT8080, TT7800	0.5 - 4.0
Alloy Steel	375 - 480	0.3 - 1.6	60 - 140	TT9080, TT6080	0.5 - 3.5
Pre-Hardened Steel	250 - 470	0.3 - 1.6	50 - 200	TT9080, TT7080, TT8080, TT7800	0.3 - 3.0
Hardened Steel	480 -	0.3 - 1.6	50 - 110	TT9080, TT6080	0.3 - 2.5
Stainless Steel	-	0.3 - 1.6	80 - 210	TT8080, TT8020, TT9080	0.5 - 3.5
High Temp. Super Alloy	-	0.3 - 1.4	30 - 100	TT8080, TT9080	0.3 - 2.0
Titanium Alloy	-	0.3 - 1.4	30 - 80	TT8080, TT9080	0.3 - 2.0
Cast Iron	140 - 220	0.3 - 2.0	150 - 400	TT6800, TT6080	0.5 - 3.5

CHASE 2 MOLD - RNMU 10

Material	Hardness (HB)	Speed (m/min)	Best grades	Feed (mm/tooth)					
				RNMU 1004-ML	RNMU 1004S-M				
					Max. ap(1mm)	Max. ap(2mm)	Max. ap(3mm)	Max. ap(4mm)	Max. ap(5mm)
Low Carbon Steel	85 - 175	180 - 300	TT7800, TT9080,TT2510	0.07 - 0.55	0.07 - 0.50	0.07 - 0.40	0.07 - 0.30	0.07 - 0.25	0.07 - 0.20
High Carbon Steel	175 - 225	130 - 280	TT7800, TT9080,TT2510	0.06 - 0.50	0.07 - 0.45	0.07 - 0.35	0.07 - 0.30	0.07 - 0.25	0.07 - 0.20
Alloy Steel	275 - 375	120 - 250	TT9080, TT8080, TT8020, TT7800,TT2510	0.05 - 0.45	0.07 - 0.45	0.07 - 0.35	0.07 - 0.30	0.07 - 0.25	0.07 - 0.20
Alloy Steel	375 - 480	60 - 140	TT9080, TT8080,TT2510	0.05 - 0.40	0.07 - 0.45	0.07 - 0.40	0.07 - 0.30	0.07 - 0.25	0.07 - 0.20
Tool Steel	250 - 470	50 - 200	TT9080, TT7800, TT8080,TT2510	0.05 - 0.35	0.07 - 0.40	0.07 - 0.35	0.07 - 0.30	0.07 - 0.25	0.07 - 0.20
Tool Steel	480 -	50 - 110	TT9080, TT7800, TT8080,TT2510	0.05 - 0.30	0.07 - 0.35	0.07 - 0.35	0.07 - 0.30	0.07 - 0.25	0.07 - 0.20
Stainless 300 Series	-	80 - 170	TT8080, TT8020, TT9080	0.07 - 0.45	0.07 - 0.50	0.07 - 0.40	0.07 - 0.30	0.07 - 0.25	0.07 - 0.20
Stainless 400 Series		100 - 210	TT9080, TT8080,TT8020	0.07 - 0.45	0.07 - 0.50	0.07 - 0.40	0.07 - 0.30	0.07 - 0.25	0.07 - 0.20
High Temp. Super Alloy		30 - 100	TT8080, TT8020, TT9080	0.05 - 0.35	0.07 - 0.30	0.07 - 0.30	0.07 - 0.30	0.07 - 0.25	0.07 - 0.20
Inconel	-	20 - 60	TT8080, TT8020, TT9080	0.05 - 0.30	0.07 - 0.30	0.07 - 0.30	0.07 - 0.30	0.07 - 0.25	0.07 - 0.20
Titanium Alloy	-	30 - 80	TT8080, TT8020, TT9080	0.05 - 0.40	0.07 - 0.40	0.07 - 0.35	0.07 - 0.30	0.07 - 0.25	0.07 - 0.20
Cast Iron	140 - 220	150 - 400	TT9080, TT7800	0.12 - 0.50	0.07 - 0.50	0.07 - 0.40	0.07 - 0.30	0.07 - 0.25	0.07 - 0.20

CHASE 2 MOLD - RNMU 12

Material	Hardness (HB)	Speed (m/min)	Best grades	Feed (mm/tooth)					
				RNMU 1205-ML	RNMU 1205S-M				
					Max. ap(2mm)	Max. ap(3mm)	Max. ap(4mm)	Max. ap(5mm)	Max. ap(6mm)
Low Carbon Steel	85 - 175	180 - 300	TT7800, TT9080,TT2510	0.13 - 0.60	0.13 - 0.60	0.13 - 0.55	0.13 - 0.50	0.13 - 0.40	0.13 - 0.25
High Carbon Steel	175 - 225	130 - 280	TT7800, TT9080,TT2510	0.13 - 0.55	0.13 - 0.55	0.13 - 0.50	0.13 - 0.45	0.13 - 0.30	0.13 - 0.25
Alloy Steel	275 - 375	120 - 250	TT9080,TT8080,TT8020, TT7800,TT2510	0.13 - 0.50	0.13 - 0.50	0.13 - 0.45	0.13 - 0.35	0.13 - 0.30	0.13 - 0.25
Alloy Steel	375 - 480	60 - 140	TT9080, TT8080,TT2510	0.13 - 0.40	0.13 - 0.40	0.13 - 0.40	0.13 - 0.35	0.13 - 0.30	0.13 - 0.25
Tool Steel	250 - 470	50 - 200	TT9080, TT7800, TT8080,TT2510	0.10 - 0.35	0.10 - 0.35	0.10 - 0.35	0.10 - 0.30	0.10 - 0.30	0.10 - 0.25
Tool Steel	480 -	50 - 110	TT9080, TT7800, TT8080,TT2510	0.10 - 0.30	0.10 - 0.30	0.10 - 0.30	0.10 - 0.25	0.10 - 0.25	0.10 - 0.25
Stainless 300 Series	-	80 - 170	TT8080, TT8020, TT9080	0.13 - 0.50	0.13 - 0.50	0.13 - 0.50	0.13 - 0.40	0.13 - 0.30	0.13 - 0.25
Stainless 400 Series		100 - 210	TT9080, TT8080, TT8020	0.13 - 0.50	0.13 - 0.50	0.13 - 0.50	0.13 - 0.40	0.13 - 0.30	0.13 - 0.25
High Temp. Super Alloy		30 - 100	TT8080, TT8020, TT9080	0.10 - 0.35	0.10 - 0.35	0.10 - 0.30	0.10 - 0.30	0.10 - 0.25	0.10 - 0.25
Inconel	-	20 - 60	TT8080, TT8020, TT9080	0.10 - 0.30	0.10 - 0.30	0.10 - 0.30	0.10 - 0.30	0.10 - 0.25	0.10 - 0.25
Titanium Alloy	-	30 - 80	TT8080, TT8020, TT9080	0.10 - 0.40	0.10 - 0.40	0.10 - 0.40	0.10 - 0.35	0.10 - 0.30	0.10 - 0.25
Cast Iron	140 - 220	150 - 400	TT9080, TT 7800	0.13 - 0.50	0.13 - 0.50	0.13 - 0.50	0.13 - 0.45	0.13 - 0.35	0.13 - 0.25

Recommended Cutting Condition

CHASE2MOLD - RNMU 16

Material	Hardness (HB)	Speed (m/min)	Best grades	Feed (mm/tooth)				
				RNMU 1606-ML	RNMU 1606S-M			
					Max. ap(2mm)	Max. ap(4mm)	Max. ap(6mm)	Max. ap(8mm)
Low Carbon Steel	85 - 175	180 - 300	TT7800, TT9080,TT2510	0.10 - 0.80	0.10 - 0.80	0.10 - 0.60	0.10 - 0.40	0.10 - 0.35
High Carbon Steel	175 - 225	130 - 280	TT7800, TT9080,TT2510	0.10 - 0.70	0.10 - 0.70	0.10 - 0.60	0.10 - 0.40	0.10 - 0.35
Alloy Steel	275 - 375	120 - 250	TT9080, TT8080, TT8020, TT7800,TT2510	0.10 - 0.70	0.10 - 0.70	0.10 - 0.60	0.10 - 0.45	0.10 - 0.35
Alloy Steel	375 - 480	60 - 140	TT9080, TT8080,TT2510	0.10 - 0.60	0.10 - 0.60	0.10 - 0.50	0.10 - 0.40	0.10 - 0.35
Tool Steel	250 - 470	50 - 200	TT9080, TT7800, TT8080,TT2510	0.10 - 0.50	0.10 - 0.60	0.10 - 0.50	0.10 - 0.40	0.10 - 0.35
Tool Steel	480 -	50 - 110	TT9080, TT7800, TT8080,TT2510	0.10 - 0.45	0.10 - 0.60	0.10 - 0.50	0.10 - 0.40	0.10 - 0.35
Stainless 300 Series	-	80 - 170	TT8080, TT8020, TT9080	0.10 - 0.70	0.10 - 0.70	0.10 - 0.60	0.10 - 0.40	0.10 - 0.35
Stainless 400 Series		100 - 210	TT9080, TT8080,TT8020	0.10 - 0.70	0.10 - 0.70	0.10 - 0.60	0.10 - 0.40	0.10 - 0.35
High Temp. Super Alloy		30 - 100	TT8080, TT8020, TT9080	0.10 - 0.50	0.10 - 0.50	0.10 - 0.45	0.10 - 0.40	0.10 - 0.35
Inconel	-	20 - 60	TT8080, TT8020, TT9080	0.10 - 0.40	0.10 - 0.50	0.10 - 0.45	0.10 - 0.40	0.10 - 0.35
Titanium Alloy	-	30 - 80	TT8080, TT8020, TT9080	0.10 - 0.60	0.10 - 0.70	0.10 - 0.60	0.10 - 0.40	0.10 - 0.35
Cast Iron	140 - 220	150 - 400	TT9080, TT7800	0.10 - 0.80	0.10 - 0.80	0.10 - 0.60	0.10 - 0.40	0.10 - 0.35

CHASEMOLD - RDMX, RXMX, RXHX, RYMX, RYHX Inserts

Material	Hardness (HB)	Speed (m/min)	Best grades	Feed (mm/tooth)						
				D05	D07	D8	D10	D12	D16	D20
				Max. ap(2.5mm)	Max. ap(3.5mm)	Max. ap(4mm)	Max. ap(5mm)	Max. ap(6mm)	Max. ap(8mm)	Max. ap(10mm)
Low Carbon Steel	85 - 175	180 - 300	TT7080, TT7800, TT9080,TT2510	0.08 - 0.25	0.09 - 0.26	0.10 - 0.30	0.12 - 0.44	0.13 - 0.60	0.16 - 0.65	0.20 - 0.70
High Carbon Steel	175 - 225	130 - 280	TT7080, TT7800, TT9080,TT2510	0.08 - 0.25	0.09 - 0.26	0.10 - 0.30	0.12 - 0.40	0.13 - 0.55	0.16 - 0.60	0.20 - 0.65
Alloy Steel	275 - 375	120 - 250	TT9080, TT7080, TT8080, TT7800,TT2510	0.07 - 0.23	0.09 - 0.23	0.10 - 0.25	0.12 - 0.34	0.13 - 0.50	0.15 - 0.55	0.15 - 0.55
Alloy Steel	375 - 480	60 - 140	TT9080, TT6080,TT2510	0.07 - 0.20	0.09 - 0.30	0.10 - 0.40	0.12 - 0.35	0.13 - 0.40	0.15 - 0.41	0.15 - 0.41
Tool Steel	250 - 470	50 - 200	TT9080, TT7080, TT8080, TT7800,TT2510	0.07 - 0.20	0.09 - 0.30	0.10 - 0.40	0.10 - 0.32	0.10 - 0.35	0.10 - 0.40	0.10 - 0.40
Tool Steel	480 -	50 - 110	TT9080, TT6080,TT2510	0.05 - 0.15	0.09 - 0.20	0.10 - 0.35	0.10 - 0.25	0.10 - 0.30	0.10 - 0.30	0.10 - 0.30
Stainless 300 Series	-	80 - 170	TT8080, TT8020, TT9080	0.07 - 0.25	0.09 - 0.30	0.10 - 0.40	0.12 - 0.45	0.13 - 0.50	0.15 - 0.55	0.15 - 0.55
Stainless 400 Series	-	100 - 210	TT9080, TT8080,TT8020	0.07 - 0.35	0.09 - 0.30	0.10 - 0.40	0.12 - 0.45	0.13 - 0.50	0.15 - 0.55	0.15 - 0.55
High Temp. Super Alloy	-	30 - 100	TT8080, TT9080	0.05 - 0.17	0.09 - 0.25	0.10 - 0.35	0.10 - 0.30	0.10 - 0.35	0.10 - 0.40	0.10 - 0.40
Titanium Alloy	-	30 - 80	TT8080, TT9080	0.05 - 0.25	0.09 - 0.32	0.10 - 0.38	0.10 - 0.35	0.10 - 0.40	0.10 - 0.65	0.10 - 0.65
Cast Iron	140 - 220	150 - 400	TT6800, TT6080	0.08 - 0.30	0.09 - 0.40	0.10 - 0.50	0.12 - 0.44	0.13 - 0.50	0.15 - 0.65	0.15 - 0.65
Aluminum	-	400 - 1500	K10	-	-	-	0.20 - 0.60	0.20 - 0.60	0.20 - 0.60	0.20 - 0.60

CHASESPEED - TFMRN & TERP using RPGX, RNGX Inserts

Material	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Inconel	1.0 -	800 - 1000	AS20	0.1- 0.15
Ductile Cast Iron	1.0 - 4.0	600 - 800		0.1 - 0.3

HEXA2MILL - TFM55AHNS Using HNM(C)X 05, HNCX-W Inserts

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Gray Cast Iron	190 - 220	- 4.0	180 - 350	TT6080, TT6800	0.10 - 0.25
Nodular Cast Iron	140 - 190	- 4.0	150 - 280	TT6080, TT6800	0.10 - 0.25
Nodular Cast Iron	190 - 280	- 4.0	130 - 250	TT6080, TT6800	0.10 - 0.22
Low Carbon Steel	85 - 175	- 3.5	150 - 300	TT9080, TT8080	0.10 - 0.20
High Carbon Steel	175 - 225	- 3.5	130 - 230	TT9080, TT8080	0.10 - 0.20
Alloy Steel	275 - 325	- 3.5	120 - 200	TT9080, TT8080	0.10 - 0.20
Stainless 400 Series	-	- 3.5	100 - 180	TT9080, TT8080	0.08 - 0.15
Gray / Nodular Cast Iron	140 - 200	- 2.0	400 - 800	AS10	0.08 - 0.15

• Reduce speed by 20% when channel milling • In order of preference, uncoated carbide reduce speed 20%

Recommended Cutting Condition

HEXA2MILL - TFM45HN, TFM45HNS,TQ45HN Using HNHX 10 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Gray Cast Iron	190 - 220	- 6.0	150 - 350	TT6080, TT6800	0.15 - 0.40
Nodular Cast Iron	140 - 190	- 6.0	130 - 280	TT6080, TT6800	0.15 - 0.40
Nodular Cast Iron	190 - 280	- 6.0	130 - 250	TT6080, TT6800	0.15 - 0.33
Low Carbon Steel	85 - 175	- 4.5	150 - 300	TT9080, TT7800	0.15 - 0.30
High Carbon Steel	175 - 225	- 4.5	130 - 230	TT9080, TT7800	0.15 - 0.30
Alloy Steel	275 - 325	- 4.5	120 - 200	TT9080, TT7800	0.15 - 0.30
Gray / Nodular Cast Iron	140 - 220	- 3.0	400 - 800	AS10	0.12 - 0.25

• Reduce speed by 20% when channel milling • In order of preference, uncoated carbide reduce speed 20%

HEXA2MILL - TFM15HNS Using HNHX 10-M Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Gray Cast Iron	190 - 220	- 2.0	150 - 350	TT6080, TT6800	- 2.0
Nodular Cast Iron	140 - 190	- 2.0	130 - 280	TT6080, TT6800	- 2.0
Nodular Cast Iron	190 - 280	- 2.0	130 - 250	TT6080, TT6800	- 1.5
Low Carbon Steel	85 - 175	- 1.5	150 - 300	TT9080, TT7800	- 1.0
High Carbon Steel	175 - 225	- 1.5	130 - 230	TT9080, TT7800	- 1.0
Alloy Steel	275 - 325	- 1.5	120 - 200	TT9080, TT7800	- 1.0

• Reduce speed by 20% when channel milling • In order of preference, uncoated carbide reduce speed 20%

CHASE2HEPTA - 14D-F45XN, 14D-F45XNW Using XNMU,XNHU 09 Inserts

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Gray Cast Iron	190 - 220	- 4.5	150 - 380	TT6080, TT6800	0.15 - 0.45
Nodular Cast Iron	140 - 190	- 4.5	130 - 300	TT6080, TT6800	0.15 - 0.45
Nodular Cast Iron	190 - 280	- 4.5	130 - 270	TT6080, TT6800	0.15 - 0.40
Low Carbon Steel	85 - 175	- 4.0	150 - 300	TT9080, TT7800	0.15 - 0.40
High Carbon Steel	175 - 225	- 4.0	130 - 250	TT9080, TT7800	0.15 - 0.40
Alloy Steel	275 - 325	- 4.0	120 - 200	TT9080, TT7800	0.15 - 0.35
Gray / Nodular Cast Iron	140 - 220	- 3.0	400 - 800	AS10	0.10 - 0.25

• Reduce speed by 20% when channel milling • In order of preference, uncoated carbide reduce speed 20%

CHASE2HEPTA - 14D-F45XN Using XNMU 06, XNHU 06 Inserts

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Gray Cast Iron	190 - 220	- 3.0	150 - 380	TT6080, TT6800	0.10 - 0.40
Nodular Cast Iron	140 - 190	- 3.0	130 - 300	TT6080, TT6800	0.10 - 0.40
Nodular Cast Iron	190 - 280	- 3.0	130 - 270	TT6080, TT6800	0.10 - 0.35
Low Carbon Steel	85 - 175	- 3.0	150 - 300	TT9080, TT7080	0.10 - 0.35
High Carbon Steel	175 - 225	- 3.0	130 - 250	TT9080, TT7080	0.10 - 0.35
Alloy Steel	275 - 325	- 3.0	120 - 200	TT9080, TT7080	0.10 - 0.30

Recommended Cutting Condition

CHASEOCTO - TFM43OFS

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 2.8	180 - 300	TT7080, TT7800, TT9080	0.10 - 0.20
High Carbon Steel	175 - 225	- 2.8	130 - 280	TT7080, TT7800, TT9080	0.10 - 0.20
Alloy Steel	275 - 325	- 2.8	120 - 250	TT7080, TT9080, TT8080, TT7800	0.10 - 0.20
Tool Steel	-	- 2.8	80 - 200	TT7080, TT9080, TT8080	0.08 - 0.18
Stainless 300 Series	-	- 1.7	80 - 170	TT8080, TT8020, TT9080	0.07 - 0.13
Stainless 400 Series	-	- 1.7	100 - 210	TT9080, TT8080,TT8020	0.08 - 0.20
High Temp. Super Alloy	-	- 1.7	30 - 100	TT8080, TT9080	0.07 - 0.13
Titanium Alloy	-	- 1.7	30 - 80	TT8080, TT9080	0.07 - 0.13
Gray Cast Iron	190 - 220	- 2.8	150 - 400	TT6800, TT6080	0.10 - 0.20
Nodular Cast Iron	140 - 200	- 2.8	100 - 250	TT6080	0.10 - 0.20
Aluminum	-	- 2.8	500 -	K10	0.10 - 1.00

• Reduce speed by 20% when channel milling • In order of preference, uncoated carbide reduce speed 20%

CHASEOCTO - TFM43ZOFW

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 4.0	180 - 300	TT7080, TT7800, TT9080	0.12 - 0.30
High Carbon Steel	175 - 225	- 4.0	130 - 280	TT7080, TT7800, TT9080	0.12 - 0.30
Alloy Steel	275 - 325	- 4.0	120 - 250	TT7080, TT9080, TT8080, TT7800	0.12 - 0.30
Tool Steel	-	- 4.0	80 - 200	TT7080, TT9080, TT8080	0.10 - 0.25
Stainless 300 Series	-	- 2.4	80 - 170	TT8080, TT8020, TT9080	0.08 - 0.15
Stainless 400 Series	-	- 2.4	100 - 210	TT9080, TT8080,TT8020	0.10 - 0.26
High Temp. Super Alloy	-	- 2.4	30 - 100	TT8080, TT9080	0.08 - 0.15
Titanium Alloy	-	- 2.4	30 - 80	TT8080, TT9080	0.08 - 0.15
Gray Cast Iron	190 - 220	- 4.0	150 - 400	TT6800, TT6080	0.10 - 0.22
Nodular Cast Iron	140 - 200	- 4.0	100 - 250	TT6080	0.10 - 0.22
Aluminum	-	- 4.0	500 -	K10	0.10 - 1.00

• Reduce speed by 20% when channel milling • In order of preference, uncoated carbide reduce speed 20%

LIONMILL - LM60SC Using SCKN 21 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 10.0	120 - 250	TT7800, TT7080	0.20 - 0.60
High Carbon Steel	175 - 225	- 10.0	100 - 200	TT7800, TT7080	0.20 - 0.60
Alloy Steel	275 - 325	- 10.0	80 - 160	TT7800, TT7080	0.20 - 0.60
Stainless Steel	-	- 6.0	90 - 170	TT7080	0.15 - 0.40
Cast Iron	14 - 220	- 10.0	80 - 180	TT6800, TT7800	0.20 - 0.50

• Reduce speed by 20% when channel milling

LIONMILL - LM60SC Using SCKN 27 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	-14.0	100 - 230	TT7800, TT7080	0.25 - 0.70
High Carbon Steel	175 - 225	-14.0	90 - 180	TT7800, TT7080	0.25 - 0.70
Alloy Steel	275 - 325	-14.0	70 - 150	TT7800, TT7080	0.25 - 0.70
Stainless Steel	-	- 9.0	80 - 160	TT7080	0.15 - 0.45
Cast Iron	14 - 220	--14.0	70 - 170	TT6800, TT7800	0.25 - 0.60

• Reduce speed by 20% when channel milling

Recommended Cutting Condition

LIONMILL - LM90SE cutter Using SEKX 21 insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	-14.0	100 - 230	TT7800	0.20 - 0.60
High Carbon Steel	175 - 225	-14.0	90 - 180	TT7800	0.20 - 0.60
Alloyed Steel	275 - 325	-14.0	70 - 150	TT7800	0.20 - 0.60
Cast Iron	14 - 220	-14.0	70 - 170	TT6080, TT7800	0.20 - 0.50

LIONMILL - LM75SP Using SPKN 12 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 7.5	180 - 300	TT7080	0.10 - 0.20
High Carbon Steel	175 - 225	- 7.5	130 - 280	TT7080	0.10 - 0.20
Alloy Steel	275 - 325	- 7.5	120 - 250	TT7080	0.10 - 0.20
Tool Steel	-	- 7.5	80 - 200	TT7080	0.05 - 0.15
Stainless 300 Series	-	- 4.0	80 - 170	TT8020	0.10 - 0.15
Stainless 400 Series	-	- 4.0	100 - 210	TT8020	0.10 - 0.18
High Temp. Super Alloy	-	- 4.0	30 - 100	TT8020	0.10 - 0.15
Titanium Alloy	-	- 4.0	30 - 80	TT8020	0.10 - 0.15
Gray Cast Iron	190 - 220	- 7.5	150 - 400	TT6080	0.10 - 0.20
Nodular Cast Iron	140 - 200	- 7.5	100 - 250	TT6080	0.10 - 0.20

• Reduce speed by 20% when channel milling

LIONMILL - LM75SP Using SPKN 15 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 10.0	180 - 300	TT7080	0.10 - 0.20
High Carbon Steel	175 - 225	- 10.0	130 - 280	TT7080	0.10 - 0.20
Alloy Steel	275 - 325	- 10.0	120 - 250	TT7080	0.10 - 0.20
Tool Steel	-	- 10.0	80 - 200	TT7080	0.05 - 0.15
Stainless 300 Series	-	- 6.0	80 - 170	TT8020	0.10 - 0.15
Stainless 400 Series	-	- 6.0	100 - 210	TT8020	0.10 - 0.18
High Temp. Super Alloy	-	- 6.0	30 - 100	TT8020	0.10 - 0.15
Titanium Alloy	-	- 6.0	30 - 80	TT8020	0.10 - 0.15
Gray Cast Iron	190 - 220	- 10.0	150 - 400	TT6080	0.10 - 0.20
Nodular Cast Iron	140 - 200	- 10.0	100 - 250	TT6080	0.10 - 0.20

• Reduce speed by 20% when channel milling

LIONMILL - LM45SD, LM45SE Using SDKN 12, SEKN 12 Inserts

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 5.0	180 - 300	TT7080	0.10 - 0.23
High Carbon Steel	175 - 225	- 5.0	130 - 280	TT7080	0.10 - 0.23
Alloy Steel	275 - 325	- 5.0	120 - 250	TT7080	0.10 - 0.23
Tool Steel	-	- 5.0	80 - 200	TT7080	0.05 - 0.17

• Reduce speed by 20% when channel milling

Recommended Cutting Condition

LIONMILL - LM45SD, LM45SE Using SDKN 15, SEKN 15 Inserts

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 7.0	180 - 300	TT7080	0.10 - 0.23
High Carbon Steel	175 - 225	- 7.0	130 - 280	TT7080	0.10 - 0.23
Alloy Steel	275 - 325	- 7.0	120 - 250	TT7080	0.10 - 0.23
Tool Steel	-	- 7.0	80 - 200	TT7080	0.05 - 0.17

• Reduce speed by 20% when channel milling

LIONMILL - LM90TP Using TPKN 22 Insert

Material	Hardness (HB)	D.O.C (mm)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	- 14.5	180 - 300	TT7080	0.10 - 0.20
High Carbon Steel	175 - 225	- 14.5	130 - 280	TT7080	0.10 - 0.20
Alloy Steel	275 - 325	- 14.5	120 - 250	TT7080	0.10 - 0.20
Tool Steel	-	- 14.5	80 - 200	TT7080	0.05 - 0.18
Stainless 300 Series	-	- 8.0	80 - 170	TT8020	0.10 - 0.15
Stainless 400 Series	-	- 8.0	100 - 210	TT8020	0.10 - 0.18
High Temp. Super Alloy	-	- 8.0	30 - 100	TT8020	0.10 - 0.15
Titanium Alloy	-	- 8.0	30 - 80	TT8020	0.10 - 0.15
Gray Cast Iron	190 - 220	- 14.5	150 - 400	TT6080	0.10 - 0.20
Nodular Cast Iron	140 - 200	- 14.5	100 - 250	TT6080	0.10 - 0.20

• Reduce speed by 20% when channel milling

FINEBALL - NFB & NFR Inserts

Material	Hardness (HB)	Max Axial D.O.C.(mm)	Speed (m/min)	Best grades	Feed (mm/tooth)						
					D8	D10	D12	D16	D20	D25	D30(32)
High Carbon Steel/Alloy steel	180-280	≤0.03D	180-270	TT5515,TT5525,TT2510	0.15	0.20	0.20	0.25	0.25	0.30	0.35
Prehardened Steel	400-480	≤0.03D	150-250	TT5515,TT5525,TT2510	0.15	0.15	0.20	0.20	0.25	0.25	0.30
High Hardened Steel	480-830	≤0.02D	100-230	TT5515,TT5525,TT2510	0.08	0.08	0.10	0.125	0.15	0.20	0.25
Stainless steel	135-200	≤0.035D	100-250	TT5515,TT5525,TT2510	0.10	0.15	0.20	0.20	0.25	0.25	0.30
High Temp. Super Alloy	-	≤0.03D	30-100	TT5515,TT5525,TT2510	0.08	0.08	0.10	0.12	0.15	0.18	0.20
Titanium Alloy	-	≤0.03D	30-80	TT5515,TT5525,TT2510	0.08	0.08	0.10	0.12	0.15	0.18	0.20
Cast Iron	140-220	≤0.05D	150-400	TT5515,TT5525,TT2510	0.20	0.20	0.25	0.30	0.30	0.35	0.40
Aluminum, Copper Alloy	-	≤0.05D	200-500	TT5515,TT5525,TT2510	0.25	0.25	0.35	0.35	0.35	0.40	0.45

• Recommended cutting conditions are just for reference in general machining.
• For carbide shank the feed rate & D.O.C. can be increased 20 - 30% compared to steel shank.

DUETBALL - 2F Using 2FB Insert

Material	Hardness (HB)	Speed (m/min)	Best grades	Feed (mm/tooth)		
				Deep Shouldering	Shouldering	Full Slotting
Low Carbon Steel	85 - 175	200 - 350	TT9080, TT7800,TT2510	0.15 - 0.6	0.2 - 0.9	0.1 - 0.5
High Carbon Steel	175 - 225	180 - 320	TT9080, TT7800,TT2510	0.1 - 0.5	0.15 - 0.85	0.05 - 0.4
Alloy Steel	275 - 325	120 - 250	TT9080, TT7800,TT2510	0.1 - 0.5	0.15 - 0.8	0.05 - 0.4
Tool Steel	200 - 250	100 - 200	TT9080, TT7800,TT2510	0.15 - 0.5	0.2 - 0.7	0.1 - 0.35
Stainless 300 Series	-	180 - 280	TT8080, TT8020	0.08 - 0.6	0.12 - 0.75	0.05 - 0.4
Stainless 400 Series	-	200 - 300	TT8080, TT8020	0.1 - 0.6	0.15 - 0.8	0.05 - 0.35
High Temp. Super Alloy	-	20 - 80	TT8080, TT8020	0.05 - 0.4	0.1 - 0.6	0.08 - 0.4
Titanium Alloy	-	40 - 110	TT9080, TT8080	0.05 - 0.6	0.1 - 0.8	0.08 - 0.65
Gray Cast Iron	190 - 220	240 - 380	TT9080, TT7800	0.15 - 0.5	0.2 - 0.9	0.1 - 0.45
Nodular Cast Iron	140 - 200	180 - 280	TT9080, TT7800	0.1 - 0.45	0.2 - 0.8	0.1 - 0.35

Recommended Cutting Condition

TRIOBALL - 3F Using 3FB...P-M, 3FB...C-M Inserts

Material	Hardness (HB)	Speed (m/min)	Best grades	Feed (mm/tooth)		
				Deep Shouldering	Shouldering	Full Slotting
Low Carbon Steel	85 - 175	180 - 300	TT9080, TT7800,T2510	0.15 - 0.45	0.20 - 0.50	0.1 - 0.30
High Carbon Steel	175 - 225	130 - 280	TT9080, TT7800,T2510	0.10 - 0.35	0.15 - 0.40	0.08 - 0.20
Alloy Steel	275 - 375	120 - 250	TT9080,TT8080, TT7800,TT2510	0.10 - 0.30	0.15 - 0.35	0.05 - 0.25
Alloy Steel	375 - 480	60 - 140	TT9080,TT8080, TT7800,TT2510	0.10 - 0.30	0.15 - 0.35	0.05 - 0.25
Tool Steel	250 - 470	50 - 200	TT9080, TT7800, TT8080,TT2510	0.08 - 0.30	0.12 - 0.30	0.05 - 0.25
Tool Steel	480 -	50 - 110	TT9080, TT7800, TT8080,TT2510	0.08 - 0.25	0.10 - 0.30	0.05 - 0.25
Stainless Steel	-	80 - 210	TT8080, TT9080, TT7800	0.08 - 0.30	0.12 - 0.45	0.05 - 0.25
High Temp. Super Alloy	-	30 - 100	TT8080, TT9080	0.05 - 0.20	0.10 - 0.30	0.08 - 0.15
Titanium Alloy	-	30 - 80	TT8080, TT9080	0.05 - 0.20	0.10 - 0.30	0.08 - 0.25
Cast Iron	140 - 220	150 - 400	TT9080, TT7800	0.10 - 0.35	0.20 - 0.50	0.10 - 0.30

CHASE2BALL - TDB50X Using 6RBE 50-M Inserts

Material	Hardness (HB)	Speed (m/min)	Best grades	Feed (mm/tooth)		
				Side deep cutting	Side cutting	Grooving
Low Carbon Steel	85 - 175	200 - 350	TT9080, TT7800	0.15 - 0.5	0.2 - 0.9	0.1 - 0.3
High Carbon Steel	175 - 225	180 - 320	TT9080	0.1 - 0.45	0.15 - 0.8	0.05 - 0.25
Alloy Steel	275 - 325	120 - 250	TT9080, TT6800	0.1 - 0.45	0.15 - 0.65	0.05 - 0.3
Tool Steel	200 - 250	100 - 200	TT9080	0.15 - 0.45	0.2 - 0.5	0.1 - 0.4
Stainless 300 Series		180 - 280	TT8020	0.08 - 0.25	0.12 - 0.35	0.05 - 0.25
Stainless 400 Series		200 - 300	TT8020	0.1 - 0.3	0.15 - 0.45	0.05 - 0.25
High Temp. Super Alloy		20 - 80	TT8020	0.05 - 0.2	0.1 - 0.3	0.08 - 0.15
Titanium Alloy		40 - 110	TT8020	0.05 - 0.2	0.1 - 0.3	0.08 - 0.15
Gray Cast Iron	190-220	240 - 380	TT6080, TT6800	0.15 - 0.4	0.2 - 0.5	0.1 - 0.3
Nodular Cast Iron	140-220	180 - 280	TT6080, TT6800	0.1 - 0.35	0.2 - 0.5	0.1 - 0.15

Operating Guidelines for TOPSLOT - TSM Using SLOT Insert

Material	Hardness (HB)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	150 - 300	TT9080, TT8080	0.05 - 0.12
High Carbon Steel	175 - 225	130 - 280	TT9080, TT8080	0.05 - 0.12
Alloy Steel	275 - 325	120 - 250	TT9080, TT8080	0.05 - 0.12
Tool Steel	-	80 - 200	TT9080, TT8080	0.05 - 0.10
Stainless 300 Series	-	80 - 170	TT8080, TT9080	0.05 - 0.10
Stainless 400 Series	-	100 - 210	TT9080, TT8080	0.05 - 0.12
High Temp. Alloy	-	30 - 100	TT8080, TT9080	0.05 - 0.10
Inconel	-	20 - 60	TT8080, TT9080	0.05 - 0.10
Titanium Alloy	-	30 - 80	TT8080, TT9080	0.05 - 0.10
Gray Cast Iron	190 - 220	150 - 400	TT6080	0.10 - 0.20
Nodular Cast Iron	140 - 200	100 - 250	TT6080	0.10 - 0.20

Recommended Cutting Condition

Operating Guidelines for TOPSLOT - TSM Using ZNHT and ZNHU Inserts

Material	Hardness (HB)	Speed (m/min)	Best grades	Feed (mm/tooth)	
				ZNHT	ZNHU
Low Carbon Steel	85 - 175	180 - 300	TT7080, TT7800, TT9080	0.05 - 0.15	0.08 - 0.30
High Carbon Steel	175 - 225	130 - 280	TT7080, TT7800, TT9080	0.05 - 0.15	0.08 - 0.30
Alloy Steel	275 - 325	120 - 250	TT7080, TT9080, TT8080, TT7800	0.05 - 0.15	0.08 - 0.25
Tool Steel	-	80 - 200	TT7080, TT9080, TT8080	0.05 - 0.12	0.08 - 0.25
Stainless 300 Series	-	80 - 170	TT8080, TT9080	0.05 - 0.10	0.07 - 0.20
Stainless 400 Series	-	100 - 210	TT9080, TT8080	0.05 - 0.12	0.07 - 0.20
High Temp. Super Alloy	-	30 - 100	TT8080, TT9080	0.05 - 0.10	0.07 - 0.15
Titanium Alloy	-	30 - 80	TT8080, TT9080	0.05 - 0.10	0.07 - 0.15
Gray Cast Iron	190 - 220	150 - 400	TT6080	0.10 - 0.20	0.12 - 0.25
Nodular Cast Iron	140 - 200	100 - 250	TT6080	0.10 - 0.20	0.10 - 0.20
Aluminum	-	500 -	K10	0.15 - 0.35	0.15 - 0.35

Operating Guidelines for TOPSLOT - TSM Using TS16 Inserts

Material	Hardness (HB)	Speed (m/min)	Best grades	Feed (mm/tooth)
Low Carbon Steel	85 - 175	180-300	TT9080	0.05-0.20
High Carbon Steel	175 - 225	150-280	TT9080	0.05-0.20
Alloy Steel	275 - 325	140-250	TT9080	0.05-0.20
Tool Steel	-	100-200	TT9080	0.05-0.15
Stainless 300 Series	-	100-170	TT9080	0.05-0.15
Stainless 400 Series	-	120-210	TT9080	0.05-0.20
High Temp. Super Alloy	-	40-100	TT9080	0.05-0.15
Titanium Alloy	-	20-60	TT9080	0.05-0.15
Gray Cast Iron	-	40-80	TT9080	0.05-0.15
Nodular Cast Iron	190 - 220	180-400	TT9080	0.10-0.25
Aluminum	140 - 200	120-250	TT9080	0.10-0.30

Operating Guidelines for TSC Slotting Cutters

Material		Hardness (HB)	Speed (m/min)	Best grades
Carbon Steel	0.2%C	150	171 - 232	TT8020, TT5100
	0.45%C	190	120 - 201	TT8020, TT5100
	0.83%C	250	90 - 171	TT8020, TT5100
Alloy Steel		up to 200	120 - 181	TT8020, TT5100
		200 - 250	101 - 161	TT8020, TT5100
		275 - 325	81 - 131	TT8020, TT5100
		325 - 375	70 - 111	TT8020, TT5100
		375 - 425	55 - 96	TT8020, TT5100
		425 - 475	46 - 81	TT8020, TT5100
Stainless Steel	Ferritic	135 - 175	171 - 221	TT8020, TT5100
		175 - 225	131 - 201	TT8020, TT5100
	Martensitic	275 - 325	101 - 151	TT8020, TT5100
		375 - 425	46 - 70	TT8020, TT5100
	Austenitic	135 - 175	101 - 151	TT8020, TT5100
Cast Iron	Carbon	up to 150	90 - 161	TT8020, TT5100
		150 - 200	76 - 131	TT8020, TT5100
	Alloyed	200 - 250	61 - 110	TT8020, TT5100
		250 - 300	46 - 81	TT8020, TT5100

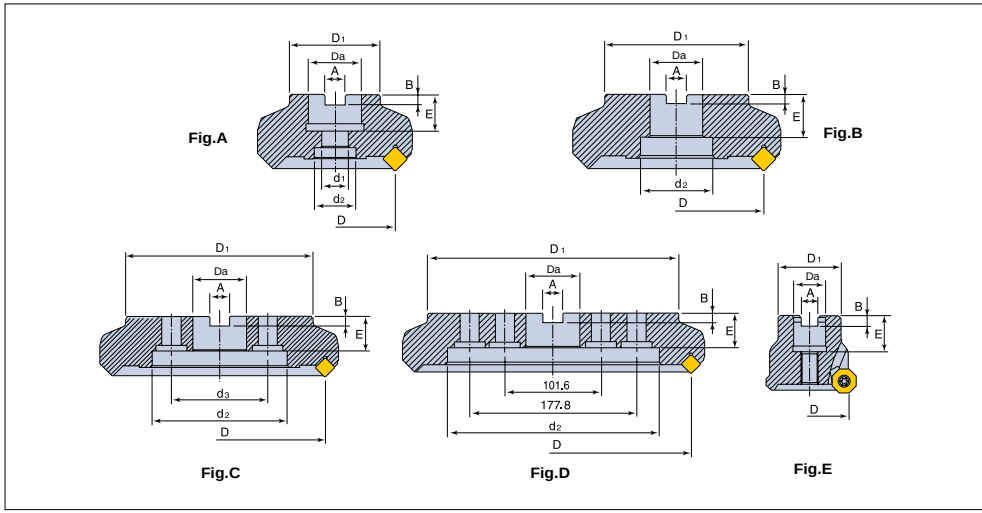
Recommended Cutting Condition

Operating Guidelines for TSC Slotting Cutters

Material		Hardness (HB)	Speed (m/min)	Best grades
Malleable Iron	Ferritic	110 - 145	80 - 110	K10
	Pearlitic	200 - 250	70 - 96	K10
Cast Iron, Low Tensile, Grey		180	110 - 140	K10
Cast Iron, High Tensile, Grey, Alloy		250	70 - 100	K10
Nodular Iron	Ferritic	160	70 - 110	K10
	Pearlitic	250	55 - 80	K10
Chilled Cast Iron		400	10 - 20	K10
Nickel Base Alloys Inconel 600 Hastelloy C		175 - 225	15 - 37	K10
Titanium Alloys 6AL4V		300 - 350	27 - 55	K10
Wrought Aluminum 2024, 6061, 7075		30 - 80	380 - 777	K10
Cast Aluminum 308, 356,380		50 - 100	305 - 625	K10

Mounting Reference

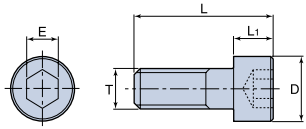
Metric Arbor Style



Dimension (mm)										Fig.	Arbor
D	Da	A	B	E	D1		d1	d2	d3		
					For Mold & Die	For General					
32	16	8.4	5.6	20	30	-	-	-	-	E	SEM16
32	16	8.4	5.6	20	30	-	9	13.5	-	A	SEM16
40	16	8.4	5.6	20	38	-	9	13.5	-	A	SEM16
40	16	8.4	5.6	20	38	-	9	13.5	-	A	SEM22
50	22	10.4	6.3	22	47	-	11	17	-	A	SEM22
63	22	10.4	6.3	22	47	-	11	17	-	A	SEM22
80	27	12.4	7	28	58	70	13	22	-	A	SEM27
100	32	14.4	8	26	66	85	18	26	-	A	SEM32
100	32	14.4	8	26	66	85	-	46	-	B	SEM32
125	40	16.4	9	32	85	-	-	56	-	B	SEM40
160	40	16.4	9	32	110	-	-	90	66.7	C	FM40
200	60	25.7	14	40	130	-	-	132	101.6	C	FM60
250	60	25.7	14	40	160	-	-	150	101.6	C	FM60
315	60	25.7	14	40	220	-	-	220	-	D	-

• For Face Mill arbors, please refer to TaeguTec tooling system(part G)

Mounting Bolt



SH Type

Designation	Dimension (mm)					Cutter Size
	D	L	L1	T	E	
SH M8X1.25X30(-C)	13	38	8	8	6	40
SH M10X1.5X30(-C)	16	40	10	10	8	50, 63
SH M12X1.75X35(-C)	18	47	12	12	10	80
SH M16X2X35(-C)	24	51	16	16	14	100

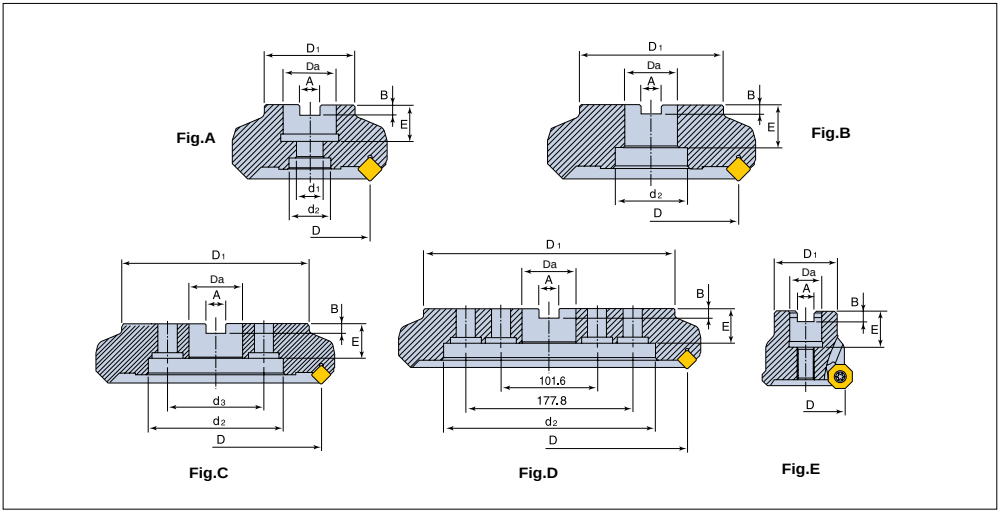
LH Type

Designation	Dimension (mm)					Cutter Size
	D	L	L1	T	E	
LH M10X1.5X25(-C)	16	31.5	6.5	10	8	50, 63
LH M12X1.75X30(-C)	18	36.9	6.9	12	10	80
LH M16X2X35(-C)	24	45	16	16	14	100

• "-C": Bolt with hole for internal coolant

Mounting Reference

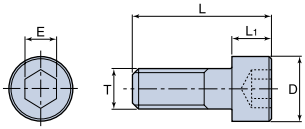
Inch Arbor Style



Dimension (mm)									Fig.	Arbor
D	Da	A	B	E	D_1	d_1	d_2	d_3		
32	16	8.4	5.6	20	30	-	-	-	E	SEM16
32	16	8.4	5.6	20	30	9	13.5	-	A	SEM16
40	16	8.4	5.6	20	38	9	13.5	-	A	SEM16
40	22	10.4	6.3	22	38	11	17	-	A	SEM22
50	22	10.4	6.3	22	47	11	17	-	A	SEM22
63	22	10.4	6.3	22	47	13	17	-	A	SEM22
80	25.4	9.526	6	26	70	18	22	-	A	FMA25.4
100	31.75	12.7	8	32	80	-	26	-	A	FMA31.75
100	31.75	12.7	8	32	80	-	46	-	B	FMA31.75
125	38.1	15.875	10	38	80	-	56	-	B	FMA38.1
160	50.8	19.05	11	38	100	-	72	101.6	B	FMA50.8
200	47.625	25.4	14	38	130	-	132	101.6	C	FMA47.625
250	47.625	25.4	14	38	160	-	150	-	C	FMA47.625
315	47.625	25.4	14	38	220	-	224	-	D	-

• For Face Mill arbors, please refer to TaeguTec tooling system(part G)

Mounting Bolt



SH Type

Designation	Dimension (mm)					Cutter Size
	D	L	L_1	T	E	
SH M8X1.25X30(-C)	13	38	8	8	6	40
SH M10X1.5X30(-C)	16	40	10	10	8	50, 63
SH M12X1.75X35(-C)	18	47	12	12	10	80
SH M16X2X35(-C)	24	51	16	16	14	100

LH Type

Designation	Dimension (mm)					Cutter Size
	D	L	L_1	T	E	
LH M10X1.5X25(-C)	16	31.5	6.5	10	8	50, 63
LH M12X1.75X30(-C)	18	36.9	6.9	12	10	80
LH M16X2X35(-C)	24	45	16	16	14	100

• "-C": Bolt with hole for internal coolant