

MILLING



MILLING



contents

Tool Selection Guides

Face Mills	E4
End Mills & Modular Heads	E12
High Feed End Mills & Modular Heads	E17
Extended Flute Cutters	E18
Slotting Cutters	E20
Milling Inserts	E23
Slotting Inserts	E32
Tailor-made Inserts	E33

Grades

E34

Milling Cutters

Face Mills	E38
High Feed Face Mills	E92
End Mills & Modular Heads	E101
High Feed End Mills & Modular Heads	E160
Extended Flute Cutters	E176
Slotting Cutters	E189
MAXI-SLOT	E205

Guide to Icons



➤ Entering Angle



➤ Angled Screw



➤ Insert Page



➤ Cutting Condition Page



➤ Ramping Data Page



➤ Arbor Style Page



➤ Technical Data Page



➤ Cutter Page



















Milling Inserts

Insert Designation System	E212
Inserts	E214
Tailor-made Inserts	E269
Recommended Cutting Conditions	E271
Mounting Reference	E274
Technical Data	E276
Ramping Data	E286

Tool Selection Guide

Face mills

Series		TANGSFEEED	MILLRUSH	MILL2RUSH	MILL2RUSH	CHASEMILL
		4T-TF90	3P TF90	6N TF90	SCRM90TN	TFM90AX 2S-TFM90AP TFM90AP
						
Pages		E38	E39-E41	E42-E44	E45-E46	E47-E50
Approach angle		90°	90°	90°	90°	90°
Max. depth of cut(mm)		8.3-12.5	4.7-15	4.1-9.2	13-15	5.5-17.9
Diameter range(mm)		Ø40-Ø200	Ø32-Ø250	Ø40-Ø250	Ø50-Ø250	Ø32-Ø200
Insert		LPK(H)U 0904 LPKU 1407	3PK(H)T 0603 3PK(H)T 1004 3PK(H)T 1505 3PK(H)T 1906	6NKG 0403 6NGU 0604 6NGU 0905	TNMX 1806 TNM(G)X 2207	AXM(C)T 0602 APK(C)T 09T3 APK(C)T 1204 APK(C)T 1705 APKT1907
Application	Facing		●	●	●	●
	High feed milling					○
	Shouldering		●	●	●	●
	Slotting		●	●	●	●
	Straight ramping		●	●		●
	Helical ramping		●	●		●
	Slanted shoulder & chamfer					
	Side slotting					
	Profiling					○
	Step down					
Counter boring						

Tool Selection Guide

Face mills

<i>CHASE2MILL</i>	<i>CHASE4MILL</i>	<i>CHASE8MILL</i>	<i>CHASE4ALU</i>	<i>CHASE4FINISH</i>	<i>CHASE2QUAD</i>
TFM90AN	4N TF90	8D-TF90	TFM90XEV	For Finishing 4W-TF90	For Finishing TFM90SNS
					
E51-E52	E53-E54	E55-E56	E57	E58	E59
90°	90°	90°	90°	-	90°
11-15	3.5-13.8	5.0-8.0	16-21	0.5	1.0
Ø40-Ø200	Ø32-Ø100	Ø32-Ø160	Ø40-Ø200	Ø50-Ø160	Ø50-Ø250
ANM(H)X 1106 ANM(H)X 1607	4NKT 0402 4NK(H)T 0603 4NK(H)T 0904 4NKT 1106 4NKT 1407	SQKU 0703 SQK(H)U 1206	XEVT 1605 XEVT 2206	4WHU 1207	SNEX 1204 SNET 1205
●	●	●	●	●	●
	○				
●	●	●	●		
●	●	●	●		
●	●		●		
●	●		●		
	○				
	●		●		

● Recommended, ○ Suitable

Tool Selection Guide

Face mills

Series		CHASE2QUAD	LIONMILL	LIONMILL	CHASE2QUAD	CHASE2QUAD
		For Finishing				
		TQ90SNS	LM90TP	LM90SE	TFM90SN TFM88SN	TFM75SN
Pages		E60	E61	E62	E63-E64	E65
Approach angle		90°	90°	90°	90°, 88°	75°
Max. depth of cut(mm)		1.0	17.6	17.0	12.0	9.5
Diameter range(mm)		Ø250-Ø400	Ø80-Ø315	Ø125-Ø315	Ø50-Ø200	Ø50-Ø250
Insert		SNEX 1204 SNET 1205	TPKN 2204	SEKX 2107	SNGX 1306 SNGX 1306 ZN	SNM(G)X 1306 EN SNMX 1306 XTN
Application	Facing		●	●	●	●
	High feed milling					
	Shouldering			●	●	●
	Slotting					
	Straight ramping					
	Helical ramping					
	Slanted shoulder & chamfer					●
	Side slotting					
	Profiling					
	Step down					
Counter boring						

Tool Selection Guide

















Face mills

LIONMILL	CHASEMILL	CHASE10MILL	LIONMILL	CHASE12MILL	CHASE2HEPTA
LM75SP	TFM75AP	TFM65PT	LM60SC	12D-TF45	14D-F45XN
					
E66	E67	E68	E69-E70	E71-E72	E73-E74
75°	75°	65°	60°	45°	45°
9.5-12.5	3.9	3.3-6.5	13.0-18.0	3.0-5.0	3.5-5.0
Ø80-Ø315	Ø80-Ø125	Ø40-Ø125	Ø125-Ø315	Ø50-Ø250	Ø50-Ø250
SPKN 1203 SPKN 1504	APKT 1705 PER-M APKT 1705 PER-EM	PTKU 0503 PTKU 1006	SCKN 2107 SCKN 2708	HXK(H)U 0605 HXK(H)U 1007	XNM(H)U 0605 XNM(H)U 0906
●	●	●	●	●	●
●		●	●	●	●

● Recommended, ○ Suitable

Tool Selection Guide

Face mills

Series		CHASE ² HEPTA	CHASE ² HEPTA	CHASE ^{HE} PTA	CHASE ² QUAD	CHASE ² QUAD	
		14D-F45XNH	14D-F45XNW	7S-F45	TFM45SN	TFM45SNS	
							
Pages		E75	E76	E77	E78	E79	
Approach angle		45°	45°	45°	45°	45°	
Max. depth of cut(mm)		3.5-5.0	5.0	3.2	7.0	8.8	
Diameter range(mm)		Ø63-Ø125	Ø80-Ø315	Ø32-Ø125	Ø40-Ø250	Ø63-Ø250	
Insert		XNM(H)U 0605 XNM(H)U 0906	XNHU 0906	7EMT 0604	SNM(G)X 1306 AN SNMX 1306 XTN	SNMX 1607 SNHX 1606	
Application	Facing		●	●	●	●	●
	High feed milling						
	Shouldering						
	Slotting						
	Straight ramping				●		
	Helical ramping				●		
	Slanted shoulder & chamfer		●	●	●	●	●
	Side slotting						
	Profiling						
	Step down						
Counter boring							

Tool Selection Guide

















Face mills

CHASE2QUAD	CHASE2QUAD	CHASE2MILL	LIONMILL	LIONMILL	CHASE2MOLD
TFM45SNS-CA	TFM45SNW TQ45SNW	TFM45AN	LM45SD	LM45SE	TFMRNS
					
E80	E81	E82	E83	E84	E85-E86
45°	45°	45°	45°	45°	-
8.8	8.8	8.4	6.5-8.7	6.5-8.7	5.0-8.0
Ø125-Ø315	Ø80-Ø355	Ø50-Ø160	Ø80-Ø315	Ø80-Ø250	Ø32-Ø200
SNMX 1607 SNHX 1606	SNHX 1606	ANHX 1607 ANR-M	SDKN 1203 SDKN 1504	SEKN 1203 SEKN 1504	RNMU 1004 RNMU 1205 RNMU 1606
●	●	●	●	●	●
					●
					●
●	●		●	●	
					●

● Recommended, ○ Suitable





Tool Selection Guide

Face mills

Series		CHASEMOLD	CHASESPEED	CHASESPEED	CERAMICSPEED	CERAMICSPEED
		TFMRY	TFMRN	TFMRP	TFMBN-09CH	TFMBN-12
Series						
Pages		E87-E89	E90	E91	E92	E93
Approach angle		-	-	-	-	-
Max. depth of cut(mm)		4.0-10.0	6.3	6.3	1.5	2.5
Diameter range(mm)		Ø32-Ø250	Ø50-Ø80	Ø50	Ø40-Ø50	Ø50-Ø80
Insert		RYM(H)X 0803 RYM(H)X 1004 RYM(H)X 1205 RYM(H)X 1606 RYMX 2007	RNGN 1207 FL	RPGN 1204 FL	BNGX 0904	BNGX 1207
Application	Facing		●	●	●	●
	High feed milling				●	●
	Shouldering					
	Slotting					
	Straight ramping		●	●	●	●
	Helical ramping		●	●	●	●
	Slanted shoulder & chamfer					
	Side slotting					
	Profiling		●	●	●	●
	Step down					
Counter boring						

Tool Selection Guide

















Face mills

<i>CHASE10MILL</i>	<i>CHASE4FEED</i>	<i>CHASE2FEED</i>	<i>CHASEFEED</i>		
TFMPT	TFMBL	TFMBL-13	TFMSB		
					
E94	E95-E96	E97-E98	E99-E100		
25°	-	-	-		
1.5-3.0	1.0-2.0	2.0	1.0-2.0		
Ø40-Ø200	Ø32-Ø200	Ø40-Ø250	Ø32-Ø250		
PTKU 0503 PTKU 1006	BLMP 0603 BLMP 0904 BLMP 1105	BLMP 1306	SBMT 0603 SBMT 0904 SBMT 1306		
●	●	●	●		
●	●	●	●		
●	●	●	●		
●	●	●	●		
●	●	●	●		

● Recommended, ○ Suitable

Tool Selection Guide

End mills & modular heads

		<i>MILLSPEED</i>	<i>TANGSPEED</i>	<i>MILLRUSH</i>	<i>MILL2RUSH</i>	<i>MILL2RUSH</i>
Series		2S-TE90CV 	4T-TE90 	3P-TE90 	6N TE90 	SCRM90TN 
Pages		E101-E102	E103-E104	E105-E110	E111-E112	E113
Approach angle		90°	90°	90°	90°	90°
Max. depth of cut(mm)		5.0	4.6-8.3	3.5-15.0	4.1-9.2	13.0
Diameter range(mm)		Ø6-Ø20	Ø10-Ø40	Ø8-Ø50	Ø20-Ø40	Ø35-Ø40
Insert		CVK(H)T 0502	LPK(H)U 0502 LPK(H)U 0904	3PKT 0402 3PK(H)T 0603 3PK(H)T 1004 3PK(H)T 1505 3PK(H)T 1906	6NKU 0403 6NGU 0604 6NGU 0905	TNMX 1806
Application	Facing 	●	●	●	●	●
	High feed milling 	○				
	Shouldering 	●	●	●	●	●
	Slotting 	●	●	●	●	●
	Straight ramping 	●	●	●		
	Helical ramping 	●	●	●		
	Slanted shoulder & chamfer 					
	Profiling 	○				
	Plunging 					
	Step down 					
	Counter boring 					

Tool Selection Guide

End mills & modular heads

<i>CHASEMILL</i>	<i>CHASEMILL</i>	<i>CHASE2MILL</i>	<i>CHASE4MILL</i>	<i>CHASE8MILL</i>	<i>CHASEALU</i>
MTE90AX-06-L	TE90AX 2S-TE90AP TE90AP	TE90AN	4N TE90	8D-TE90	TE90XEV-HSK63A
					
E114	E115-E123	E124-E125	E126-E131	E132-E133	E134
90°	90°	90°	90°	90°	90°
5.5	5.5-17.9	11.0-15.0	3.5-13.8	5.0	16
Ø8-Ø30	Ø8-Ø42	Ø25-Ø50	Ø8-Ø40	Ø16-Ø40	Ø25-Ø50
AXCT 06-L	AXM(C)T 0602 APK(C)T 09T3 APK(C)T 1204 APK(C)T 1705 APKT 1907	ANM(H)X 1106 ANM(H)X 1607	4NKT 0402 4NK(H)T 0603 4NK(H)T 0904 4NKT 1106 4NKT 1407	SQKU 0703	XEVT 1605
●	●	●	●	●	●
	○		○		
●	●	●	●	●	●
●	●	●	●	●	●
	●	●	●		●
	●	●	●		●
	○		○		
			●		●

● Recommended, ○ Suitable

Tool Selection Guide

End mills & modular heads

Series		CHASE ^{ALU}	MILL ^{RUSH}	CHASE ^{QUAD}	CHASE ^{QUAD}	CHASE ^{QUAD}	
		TE90XEV	3P-TCF	TSF	TDM	TCF	
							
Pages		E135	E136-E137	E138	E139	E140	
Approach angle		90°	30°-60°	90°	90°	45°-75°	
Max. depth of cut(mm)		16-21	-	5.6-13.4	12-40	-	
Diameter range(mm)		Ø25-Ø40	Ø3.3-Ø31	Ø12-Ø50	Ø12-Ø50	Ø8.3-Ø38.9	
Insert		XEVT 1605 XEVT 2206	3PKT 0402 3PK(H)T 0603 3PK(H)T 1004	XOMT 0602 SPMG(T) 0904 SPMG(T) 1104 SPMG(T) 1405	XOMT 0602 SPMG(T) 0904 SPMG(T) 1104 SPMG(T) 1405	SPMG(T) 1104	
Application	Facing		●		●	●	
	High feed milling						
	Shouldering		●		●	●	
	Slotting		●		●	●	
	Straight ramping		●			●	
	Helical ramping		●			●	
	Slanted shoulder & chamfer			●			●
	Profiling						
	Plunging				●	●	
	Step down		●			●	
	Counter boring				●	●	
	Drill mill					●	

Tool Selection Guide













End mills & modular heads

<i>CHASE</i> HEPTA	<i>CHASE</i> 2MOLD	<i>CHASE</i> MOLD	<i>FINE</i> BALL	<i>FINE</i> BALL	<i>CHASE</i> SPEED
7S-E45	TERNS	TERY	TNF	TNFR	TERP
					
E141	E142-E143	E144-E146	E147-E149	E150-E152	E153-E154
45°	-	-	-	-	-
3.2	5.0-8.0	4.0-10.0	-	-	4.7-6.3
Ø32-Ø50	Ø25-Ø50	Ø16-Ø50	Ø6-Ø32	Ø6-Ø32	Ø20-Ø40
7EMT 0604	RNMU 1004 RNMU 1205 RNMU 1606	RYM(H)X 0803 RYM(H)X 1004 RYM(H)X 1205 RYM(H)X 1606 RYM(H)X 2007	NFB (NFR)	NFR	RPGN 0903 FL RPGN 1204 FL
●	●	●		●	●
				●	
				●	
●	●	●	●	●	●
●	●	●	●	●	●
●					
	●	●	●	○	●
			(○)	●	
				●	
				●	
				●	

● Recommended, ○ Suitable

Tool Selection Guide

End mills & modular heads

Series		<i>DUETBALL</i>	<i>TRIOBALL</i>	<i>CHASE2BALL</i>	<i>CHASE2BALL</i>	
		2F	3F	TDB50X	TDB50X-WT	
Pages		E155-E156	E157	E158	E159	
Approach angle		-	-	-	-	
Max. depth of cut(mm)		11.8-55.3	39-94	59-69	59-69	
Diameter range(mm)		Ø16-Ø32	Ø32-Ø50	Ø50	Ø50	
Insert		2FB APKT 09T3 APKT 1204	3FB CNHX 1311 CNHX 1606	6RBE 50-M	6RBE 50-M	
Application	Facing					
	High feed milling					
	Shouldering					
	Slotting					
	Straight ramping		●	●	●	●
	Helical ramping		●	●	●	●
	Slanted shoulder & chamfer					
	Profiling		●	●	●	●
	Plunging					
	Step down					
	Counter boring					
	Drill mill					

Tool Selection Guide


















High feed end mills & modular heads

<i>NANRUSH</i>	<i>CERAMICSPEED</i>	<i>CHASE10MILL</i>	<i>CHASE4FEED</i>	<i>CHASE2FEED</i>	<i>CHASEFEED</i>
THFN	TEBN-09CH	TEPT	TEBL	TEBL-13	TESB
					
E160-E161	E162	E163	E164-E171	E172	E173-E175
20°	-	25 °	-	-	-
0.3-0.5	1.5	1.5-3.0	0.5-2.0	2.0	1.0-2.0
Ø6-Ø8	Ø25-Ø40	Ø20-Ø40	Ø8-Ø42	Ø32-Ø42	Ø16-Ø42
HFN 060 HFN 080	BNGX 0904	PTKU 0503 PTKU 1006	BLMP 0402 BLMP 0603 BLMP 0904 BLMP 1105	BLMP 1306	SBMT 0603 SBMT 0904 SBMT 1306
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●

● Recommended, ○ Suitable





Tool Selection Guide

Extended flute cutters

Series		TANGSPEED	TANGSPEED	CHASEVQUAD	MILLRUSH	MILL2RUSH
		4T-TEF	4T-TES	4S-TEF 4S-TES	3P TEF 3P TES	TEF-TN TES-TN
						
Pages		E176	E177	E178-E179	E180-E181	E182-E183
Approach angle		90°	90°	90°	90°	90°
Max. depth of cut(mm)		15-51	34-56	52-77.9	20-83	48-71
Diameter range(mm)		Ø16-Ø40	Ø50-Ø100	Ø32-Ø80	Ø20-Ø100	Ø50-Ø100
Insert		LPK(H)U 0502 LPK(H)U 0904	LPKU 1407	SVK(H)T 1145	3PK(H)T 0603 3PK(H)T 1004 3PK(H)T 1505 3PK(H)T 1906	TNMX 1806
Application	Facing					
	High feed milling					
	Shouldering		●	●	●	●
	Slotting		●	●	●	●
	Trochoidal milling		●	●	●	
	Straight ramping					
	Helical ramping					
	Slanted shoulder & chamfer					
	Profiling					
	Plunging					
	Step down					
Counter boring						

Tool Selection Guide

Extended flute cutters

<i>CHASE2MILL</i>	<i>CHASEMILL</i>	<i>CHASEMILL</i>	<i>CHASEQUAD</i>		
<p>TEF-AN TES-AN</p> 	<p>TEF-AX 2S-TEF-AP TEF-AP</p> 	<p>TES-AP</p> 	<p>TEF TES</p> 		
E184-E185	E186	E187	E188		
90°	90°	90°	90°		
40-69	16-45	45-88	23.8-48.4		
Ø32-Ø100	Ø16-Ø40	Ø50-Ø100	Ø32-Ø80		
ANM(H)X 1106 ANM(H)X 1607	AXM(C)T 0602 APK(C)T 09T3 APK(C)T 1204 APK(C)T 1705	APK(C)T 1204 APK(C)T 1705	SPMG(T) 0904 SPMG(T) 1104 SPMG(T) 1405		
●	●	●	●		
●	●	●	●		
	●	●			

● Recommended, ○ Suitable







Tool Selection Guide

Slotting cutters

Series		TOP SLOT	TOP SLOT	TOP SLOT	TOP SLOT	TOP SLOT
		TSM-TS16	TSM-SL	TSM-FD-Z	TSM-FD-ZN	TSM-FD-S/W-ZN
						
Pages		E189-E190	E191-E192	E193-E194	E195	E196-E198
Approach angle		-	-	-	-	-
Max. width of cut(mm)		1.2-6.0	3-6	3-10	10-20	10-26
Diameter range(mm)		Ø32.2-Ø80	Ø25-Ø63	Ø63-Ø250	Ø80-Ø125	Ø100-Ø315
Insert		TS16	SLOT	ZNHT	ZNHU 080 ZNHU 110	ZNHU 080 ZNHU 110 ZNHU 140
Application	Facing		●			
	Shouldering					
	Slotting					
	T slotting		●	●		
	Side slotting		●	●	●	●
	Internal groove milling		●	●		
	Bottom shouldering		●	●	●	●
	Slitting				●	●
	External threading					
	Internal threading					

Tool Selection Guide













Slotting cutters

TOP SLOT	TOP SLOT	TOP SLOT	TSC Slotting Cutter	MAXI SLOT	MAXI SLOT
TSM-FF-Z	TSM-FF-ZN	TSM-FF-S/W-ZN	TSC	TR-S	TR-F
					
E199	E200	E201-E203	E204	E205	E206
-	-	-	-	-	-
3-10	10-20	10-26	1.6-4.52	3-10	8-10
Ø80-Ø160	Ø63-Ø125	Ø100-Ø315	Ø75-Ø160	Ø24.7-Ø39.7	Ø24.25-Ø39.25
ZNHT	ZNHU 080 ZNHU 110	ZNHU 080 ZNHU 110 ZNHU 140	TIMC TIMJ TIPV	-	-
					●
					●
●	●	●		●	
●	●	●	●	●	
●	●	●		●	●
			●		

● Recommended, ○ Suitable

















Tool Selection Guide

Slotting cutters

Series						
	TR-T-W55 TR-T-M60					
						
Pages	E207					
Approach angle	-					
Max. width of cut(mm)	7.7-9.5					
Diameter range(mm)	Ø24.7-Ø39.7					
Insert	-					
Application	Facing					
	Shouldering					
	Slotting					
	T slotting					
	Side slotting					
	Internal groove milling					
	Bottom shouldering					
	Slitting					
	External threading		●			
	Internal threading		●			

Tool Selection Guide




Milling inserts

		<i>MILLSPEED</i>	<i>TANGSPEED</i>	<i>MILLRUSH</i>	<i>MILL2RUSH</i>	<i>MILL2RUSH</i>	
Series		CVK(H)T 0502	LPK(H)U 0502 LPK(H)U 0904 LPKU 1407	3PKT 0402 3PK(H)T 0603 3PK(H)T 1004 3PK(H)T 1505 3PK(H)T 1906	6NKU 0403 6NGU 0604 6NGU 0905	TNMX 1806 TNM(G)X 2207	
							
Material		P M K S H	P M K S H	P M K N S H	P M K N S H	P M K S H	
Pages		E235	E238	E216-E217	E221-E222	E261	
Approach angle		90°	90°	90°	90°	90°	
Max. depth of cut(mm)		0.5-5	4.6-12.5	3.5-15	4.1-9.2	13-15	
Application	Facing		●	●	●	●	●
	High feed milling		○				
	Shouldering		●	●	●	●	●
	Slotting		●	●	●	●	●
	Straight ramping		●	●	●		
	Helical ramping		●	●	●		
	Slanted shoulder & chamfer						
	Profiling		○				
	Plunging						
	Step down						
	Counter boring						

● Recommended, ○ Suitable

Tool Selection Guide

Milling inserts

		CHASEMILL	CHASEMILL	CHASEMILL	CHASE2MILL	CHASE4MILL	
Series		AXCT 0602-L	AXM(C)T 0602 APK(C)T 09T3 APK(C)T 1204 APK(C)T 1705 APKT 1907	APCT 12-PCD35	ANM(H)X 1106 ANM(H)X 1607	4NKT 0402 4NK(H)T 0603 4NK(H)T 0904 4NKT 1106 4NKT 1407	
							
Material		P M S	P M K N S H	N	P M K N S H	P M K N S H	
Pages		E230	E225-E231	E226	E224	E218-E219	
Approach angle		90°	90°	90°	90°	90°	
Max. depth of cut(mm)		5.5	0.5-17.9	3.5	11-15	0.5-13.8	
Application	Facing		●	●	●	●	●
	High feed milling			○			○
	Shouldering		●	●	●	●	●
	Slotting		●	●	●	●	●
	Straight ramping			●		●	●
	Helical ramping			●		●	●
	Slanted shoulder & chamfer						
	Profiling			○			○
	Plunging						
	Step down						●
	Counter boring						

Tool Selection Guide

















Milling inserts

<i>CHASE</i> 3MILL	<i>CHASE</i> ALU	<i>CHASE</i> 4FINISH	<i>CHASE</i> 2QUAD	<i>LION</i> MILL	<i>LION</i> MILL
SQKU 0703 SQK(H)U 1206	XEVT 1605 XEVT 2206	4WHU 1207	SNEX 1204 SNET 1205	TPKN 2204	SEKX 2107
					
P M K	N	P M K N S H P	K	P M K	P K
E257	E264	E220	E251	E262	E249
90°	90°	90°	90°	90°	90°
5.0-8.0	14-21	0.5	1.0	17.6	17
●	●	●	●	●	●
●	●			●	●
●	●			●	
	●				
	●				
	●				

● Recommended, ○ Suitable



Tool Selection Guide

Milling inserts

		CHASE VQUAD	CHASE 2QUAD	CHASE 2QUAD	LION MILL	CHASE MILL
Series		<u>SVK(H)T 1145</u>	<u>SNGX 1306... SNGX 1306 ZN</u>	<u>SNM(G)X 1306 EN... SNMX 1306 XTN</u>	<u>SPKN 1203 SPKN 1504</u>	<u>APKT 1705</u>
						
Material		P M K S H	P M K	P M K	P M K	P M K N S H
Pages		E258	E253	E252	E256	E228
Approach angle		90°	90°, 88°	75°	75°	75°
Max. depth of cut(mm)		9-10	10-12	9.5	9.5-12.5	3.9
Application	Facing 		●	●	●	●
	High feed milling 					
	Shouldering 	●	●			
	Slotting 	●				
	Straight ramping 					
	Helical ramping 					
	Slanted shoulder & chamfer 				●	●
	Profiling 					
	Plunging 					
	Step down 					
	Counter boring 					

Tool Selection Guide

















Milling inserts

CHASE10MILL	LIONMILL	CHASE12MILL	CHASE2HEPTA	CHASEHEPTA	CHASE2QUAD
PTKU 0503 PTKU 1006	SCKN 2107 SCKN 2708	HXK(H)U 0605 HXK(H)U 1007	XNM(H)U 0605 XNM(H)U 0906	7EMT 0604	SNM(G)X 1306 AN... SNMX 1306 XTN
					
P M K	P K	P K	P M K	P M K	P M K N
E242	E248	E237	E265-E266	E223	E252
65°	60°	45°	45°	45°	45°
3.3-6.5	13-18	3.0-5.0	1.0-5.0	3.2	6-7
●	●	●	●	●	●
				●	
				●	
●	●	●	●	●	●

● Recommended, ○ Suitable







Tool Selection Guide

Milling inserts

		CHASE2QUAD	CHASE2MILL	LIONMILL	CHASE2MOLD	CHASEMOLD
Series		SNMX 1607 SNHX 1606	ANHX 1607	SDKN 1203 SDKN 1504 SEKN 1203 SEKN 1504	RNMU 1004 RNMU 1205 RNMU 1606	RYM(H)X 0803 RYM(H)X 1004 RYM(H)X 1205 RYM(H)X 1606 RYMX 2007
						
Material		P M K	P M K N S	P	P M K S H	P M K S H
Pages		E254	E223	E248-E249	E244	E245-E246
Approach angle		45°	45°	45°	-	-
Max. depth of cut(mm)		8.8	8.4	6.5-8.7	5-8	4-10
Application	Facing		●	●	●	●
	High feed milling					
	Shouldering					
	Slotting					
	Straight ramping					●
	Helical ramping					●
	Slanted shoulder & chamfer		●		●	
	Profiling					●
	Plunging					
	Step down					
	Counter boring					

Tool Selection Guide














Milling inserts

CHASE SPEED	CERAMIC SPEED	CERAMIC SPEED	CHASE 10 MILL	CHASE 4 FEED	CHASE 2 FEED
RNGN 1207 FL RPGN 0903 FL RPGN 1204 FL	BNGX 0904	BNGX 1207	PTKU 0503 PTKU 1006	BLMP 0402 BLMP 0603 BLMP 0904 BLMP 1105	BLMP 1306
					
S	S	S	P M K	P M K S H	P M K S H
E243	E234	E234	E242	E232	E233
-	-	-	25°	-	-
4.7-6.3	1.5	2.5	1.5-3.0	0.5-2.0	2.0
●	●	●	●	●	●
	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●

● Recommended, ○ Suitable





Tool Selection Guide

Milling inserts

		<i>CHASEFEED</i>	<i>MILLRUSH</i>	<i>CHASEQUAD</i>	<i>NANRUSH</i>	<i>FINEBALL</i>
Series		SBMT 0603 SBMT 0904 SBMT 1306	3PKT 0402 3PK(H)T 0603 3PK(H)T 1004	SPMG(T) 0904 SPMG(T) 1104 SPMG(T) 1405 XOMT 0602	HFN 060 HFN 080	NFB
						
Material		P M K S H	P M K N S H	P M K	P M K S H	P M K S H
Pages		E247	E216	E255	E236	E239
Approach angle		-	30°-60°	15°-45°, 90°	20°	-
Max. depth of cut(mm)		1.0-2.0	-	-	0.3-0.5	-
Application	Facing		●	●	●	
	High feed milling		●		●	
	Shouldering				●	
	Slotting				●	
	Straight ramping		●		●	●
	Helical ramping		●		●	●
	Slanted shoulder & chamfer			●	●	
	Profiling		●			●
	Plunging				●	
	Step down				●	
	Counter boring				●	
	Drill mill				●	

Tool Selection Guide


















Milling inserts

<i>FINEBALL</i>	<i>DUETBALL</i>	<i>TRIOBALL</i>	<i>CHASE2BALL</i>		
NFR	2FB	3FB	6RBE		
					
P M K S H	P M K S H	P M K S H	P M K S H		
E240-E241	E214	E215	E222		
-	-	-	-		
-	11.8-44.7	39-94	59-69		
●					
●					
●					
●	●	●	●		
●	●	●	●		
○	●	●	●		
●					
●					
●					
●					

● Recommended, ○ Suitable

Tool Selection Guide


Slotting inserts

Series	TOP SLOT	TOP SLOT	TOP SLOT	TOP SLOT	TSC slotting cutter
	TS16	SLOT	ZNHT	ZNHU	TIMC TIMJ TIPV
					
Material	P M K S H	P M K	P M K N	P M K	P M K N
Pages	E263	E250	E267	E268	E259-E260
Approach angle	-	-	-	-	-
Max. depth of cut(mm)	4.8	*	*	*	
Application	Facing 	●			
	Shouldering 				
	Slotting 				
	Straight ramping 				
	Helical ramping 				
	Side slotting 	●	●	●	●
	Profiling 				
	Plunging 				
	Step down 				
	Counter boring 				
	Drill mill 				
	Slitting 			●	●

● * Marked: For CDX, refer to the cutter page

Tool Selection Guide

Tailor-made inserts

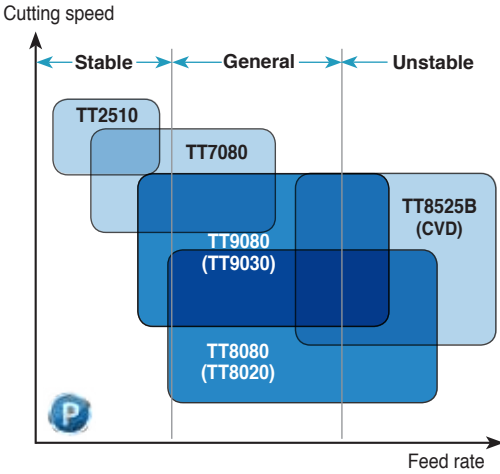
Tailor-made Insert					
LNC PMIN SNA SNB 					
P M K N S H E269-E270					
-					
●					
●					
●					
●					

● Recommended, ○ Suitable

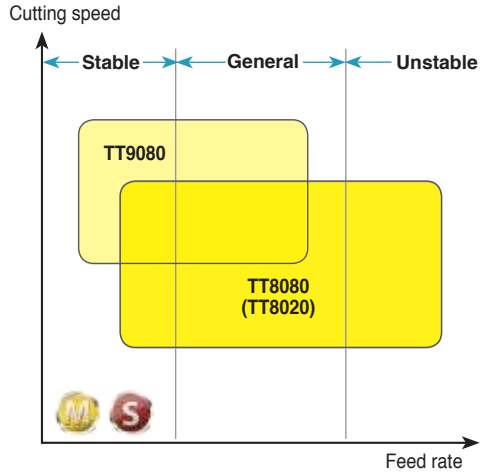
Grades

Selection guide for milling grades

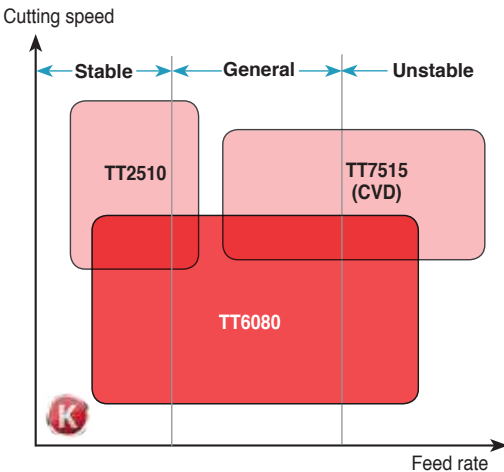
For steel



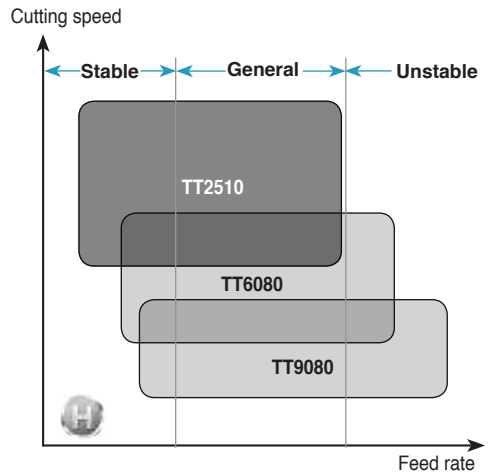
For stainless steel & super alloy



For cast iron



For hardened material



Grades

Carbide grades

Grades	ISO	Characteristics & applications
K10 Carbide	K05 – K15 N05 – N15 S05 – S15	• General machining of cast iron, aluminum alloys and non-ferrous materials
TT2510 PVD coated	P05 – P25 H05 – H25	• High speed milling of pre-hardened steel and hardened steel
TT6080 PVD coated	K05 – K25 H05 – H25	• General machining for gray and ductile cast iron • Finish and medium machining of hardened steel
TT7080 PVD coated	P05 – P25 K05 – K25	• General milling of steel • Heavy interrupted cutting of cast iron
TT9080 PVD coated	P20 – P40 M20 – M40 S20 – S40	• General machining of steel, stainless steel and heat-resistant alloy
TT9030 PVD coated	P20 – P40 M20 – M40 S20 – S40	• General machining of steel, stainless steel and heat-resistant alloy
TT8080 PVD coated	P30 – P50 M30 – M50 S30 – S50	• Interrupted and rough machining of steel and stainless steel • Low speed and interrupted machining of heat-resistant alloy
TT8020 PVD coated	P30 – P50 M30 – M50 S30 – S50	• Interrupted and rough machining of steel and stainless steel • Low speed and interrupted machining of heat-resistant alloy
TT5515 PVD coated	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 PVD coated	P20 – P40 M20 – M40 S20 – S40	• General machining of steel, stainless steel and heat-resistant alloy
TT7515 CVD coated	K05 – K25 H05 – H25	• General machining for gray and ductile cast iron • Finish and medium machining of hardened steel
TT8525B CVD coated	P30 – P45 M30 – M45	• Rough milling & high speed drilling of carbon & alloy steel • Medium speed milling of stainless steel

Grades

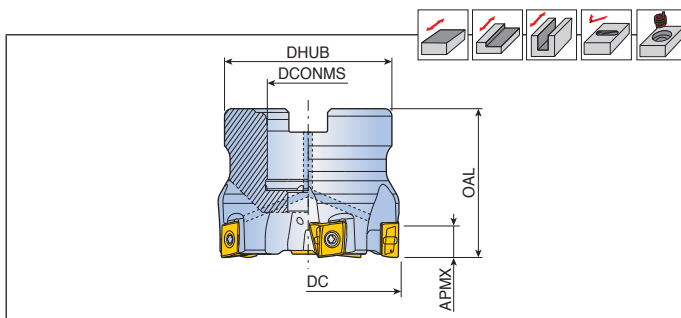
Cermet, ceramic and CBN grades

Grades	ISO	Characteristics & applications
CT7000 cermet	P15 – P25 M15 – M25	<ul style="list-style-type: none"> • Finish milling of steel and stainless steel
AS10 Ceramic	K20 – K30	<ul style="list-style-type: none"> • General milling of cast iron
TC3030 Ceramic	S25 – S35	<ul style="list-style-type: none"> • High feed milling of super alloy • SiAlON ceramic grade
TB7015 CBN	H25 – H35 K10 – K20	<ul style="list-style-type: none"> • Machining of hardened steel • High speed machining of cast iron

Milling Cutters



Face mills



Designation		Dimension (mm)					Coolant hole	Arbor style		Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
4T-TF90-640-16R-09	6	40	16	38	40	8.3	●	A	0.3	SH M8x30	LPK(H)U 0904...
550-22R-09	5	50	22	45	40	8.3	●	A	0.4	SH M10x30	
750-22R-09	7	50	22	45	40	8.3	●	A	0.4	SH M10x30	
663-22R-09	6	63	22	47	40	8.3	●	A	0.5	SH M10x30	
1063-22R-09	10	63	22	47	40	8.3	●	A	0.5	SH M10x30	
4T-TF90-440-16R-14	4	40	16	38	40	12.5	●	A	0.3	SH M8x30	LPKU 1407...
450-22R-14	4	50	22	45	40	12.5	●	A	0.3	SH M10x30	
650-22R-14	6	50	22	45	40	12.5	●	A	0.3	SH M10x30	
563-22R-14	5	63	22	47	40	12.5	●	A	0.5	SH M10x30	
863-22R-14	8	63	22	47	40	12.5	●	A	0.5	SH M10x30	
780-27R-14	7	80	27	58	50	12.5	●	A	1.0	SH M12x35	
1080-27R-14	10	80	27	58	50	12.5	●	A	1.2	SH M12x35	
8100-32R-14	8	100	32	85	50	12.5	●	A	2.0	SH M16x35	
12100-32R-14	12	100	32	85	50	12.5	●	A	2.1	SH M16x35	
10125-40R-14	10	125	40	85	63	12.5	●	A	3.1	SH M20x40	
14125-40R-14	14	125	40	85	63	12.5	●	A	3.3	SH M20x40	
12160-40R-14	12	160	40	110	63	12.5	x	C	4.1	-	
16160-40R-14	16	160	40	110	63	12.5	x	C	4.3	-	
14200-60R-14	14	200	60	130	63	12.5	x	C	5.7	-	
18200-60R-14	18	200	60	130	63	12.5	x	C	5.8	-	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

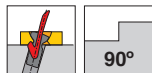
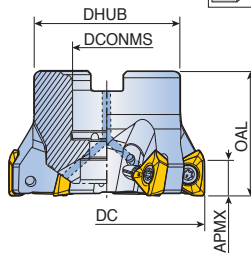
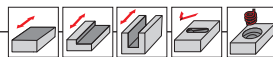
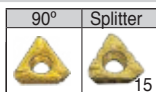
Designation	Screw	Wrench	Wrench handle	
4T-TF90-09	TS 30D082-P	TBLD T08P-W4	THND 4W	-
4T-TF90-14	TS 40G110I	TBLD T15-W6	-	SW6-T

 E271-E273	 E274-E275	 E288-E289
---------------	---------------	---------------

3P TF90-06/10/15



Face mills



Designation		Dimension (mm)					Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
3P TF90- 632-16R-06	6	32	16	30	32	4.7	●	A	0.1	SH M8x30	3PK(H)T 0603...
732-16R-06	7	32	16	30	32	4.7	●	A	0.1	SH M8x30	E216
735-16R-06	7	35	16	30	35	4.7	●	A	0.1	SH M8x30	
840-16R-06	8	40	16	38	40	4.7	●	A	0.2	SH M8x30	
840-22R-06	8	40	22	38	40	4.7	●	A	0.2	SH M10x30	
3P TF90- 540-16R-10	5	40	16	38	40	7	●	A	0.3	SH M8x30	3PK(H)T 1004...
640-16R-10	6	40	16	38	40	7	●	A	0.3	SH M8x30	E216
650-22R-10	6	50	22	45	40	7	●	A	0.4	SH M10x30	
750-22R-10	7	50	22	45	40	7	●	A	0.4	SH M10x30	
663-22R-10	6	63	22	45	40	7	●	A	0.5	SH M10x30	
863-22R-10	8	63	22	47	40	7	●	A	0.5	SH M10x30	
963-22R-10	9	63	22	47	40	7	●	A	0.5	SH M10x30	
3P TF90- 450-22R-15	4	50	22	45	40	11	●	A	0.3	SH M10x30	3PK(H)T 1505...
550-22R-15	5	50	22	45	40	11	●	A	0.3	SH M10x30	E216-217
463-22R-15-B	4	63	22	47	40	11	●	A	0.5	SH M10x30	
663-22R-15	6	63	22	47	40	11	●	A	0.5	SH M10x30	
480-27R-15-B	4	80	27	58	50	11	●	A	1.0	SH M12x35	
780-27R-15	7	80	27	58	50	11	●	A	1.0	SH M12x35	
880-27R-15	8	80	27	58	50	11	●	A	1.0	SH M12x35	
6100-32R-15-B	6	100	32	85	50	11	●	A	1.8	LH M16x35	
8100-32R-15	8	100	32	85	50	11	●	A	1.9	LH M16x35	
10100-32R-15	10	100	32	85	50	11	●	A	1.9	LH M16x35	
7125-40R-15-B	7	125	40	85	63	11	●	A	3.0	SH M20x40	
10125-40R-15	10	125	40	85	63	11	●	A	3.1	SH M20x40	
12125-40R-15	12	125	40	85	63	11	●	A	3.1	SH M20x40	
12160-40R-15	12	160	40	110	63	11	x	C	4.4	-	
15160-40R-15	15	160	40	110	63	11	x	C	4.4	-	
15200-60R-15	15	200	60	130	63	11	x	C	6.0	-	
18200-60R-15	18	200	60	130	63	11	x	C	5.8	-	

Cutting Condition
E271-E273

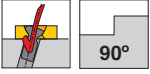
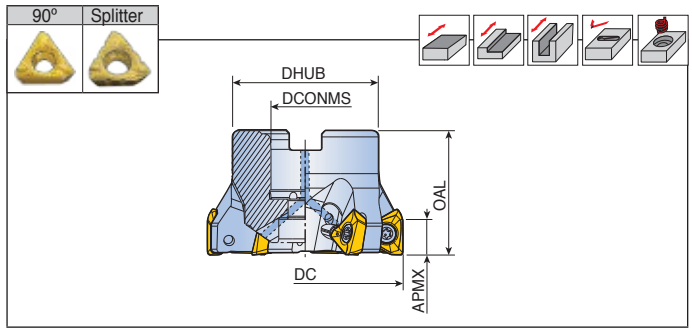
Arbor Style
E274-E275

Ramping Data
E291-E292

3P TF90-15/19



Face mills (Inch bore)



Designation		Dimension (mm)					Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
3P TF90-780-25.4R-15	7	80	25.4	70	50	11	●	A	1.0	SH M12x35	3PK(H)T 1505...
880-25.4R-15	8	80	25.4	70	50	11	●	A	1.0	SH M12x35	E216-217
8100-31.75R-15	8	100	31.75	80	50	11	x	B	1.9	-	
10100-31.75R-15	10	100	31.75	80	50	11	x	B	1.9	-	
10125-38.1R-15	10	125	38.1	80	63	11	x	B	3.1	-	
12125-38.1R-15	12	125	38.1	80	63	11	x	B	3.1	-	
12160-50.8R-15	12	160	50.8	100	63	11	x	B	4.4	-	
15160-50.8R-15	15	160	50.8	100	63	11	x	B	4.4	-	
15200-47.625R-15	15	200	47.625	130	63	11	x	C	6.0	-	
3P TF90-480-25.4R-19	4	80	25.4	70	50	15	●	A	0.9	SH M12x35	3PK(H)T 1906...
780-25.4R-19	7	80	25.4	70	50	15	●	A	1.0	SH M12x35	E216-217
6100-31.75R-19	6	100	31.75	80	50	15	x	B	1.8	-	
8100-31.75R-19	8	100	31.75	80	50	15	x	B	2.6	-	
8125-38.1R-19	8	125	38.1	80	63	15	x	B	3.0	-	
10125-38.1R-19	10	125	38.1	80	63	15	x	B	3.1	-	
8160-50.8R-19	8	160	50.8	100	63	15	x	B	4.2	-	
12160-50.8R-19	12	160	50.8	100	63	15	x	B	4.3	-	
10200-47.625R-19	10	200	47.625	130	63	15	x	C	6.0	-	
14200-47.625R-19	14	200	47.625	130	63	15	x	C	6.0	-	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

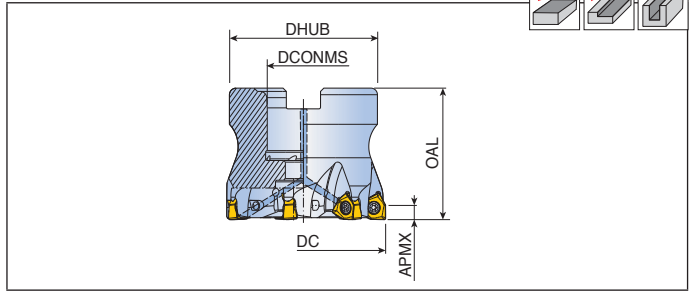
Designation	Screw	Wrench			
3P TF90-06	TS 200431/HG-P	TD 6P	-		
3P TF90-10	TS 25C0651/HG	TD 8	-		
3P TF90-15	TS 40B1001	TD 15	-		
3P TF90-19	TS 451201	-	T-T20		



6N TF90-04



Face mills



Designation		Dimension (mm)					Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
6N TF90-540-16R-04	5	40	16	38	40	4.1	●	A	0.2	SH M8x30	6NKU 0403... E222
740-16R-04	7	40	16	38	40	4.1	●	A	0.2	SH M8x30	
750-22R-04	7	50	22	45	40	4.1	●	A	0.3	LH M10x25	
950-22R-04	9	50	22	45	40	4.1	●	A	0.3	LH M10x25	
863-22R-04	8	63	22	47	40	4.1	●	A	0.5	LH M10x25	
1063-22R-04	10	63	22	47	40	4.1	●	A	0.5	LH M10x25	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

Designation	Screw	Wrench			
6N TF90-04	TS 25064I	TD 8			

Cutting Condition

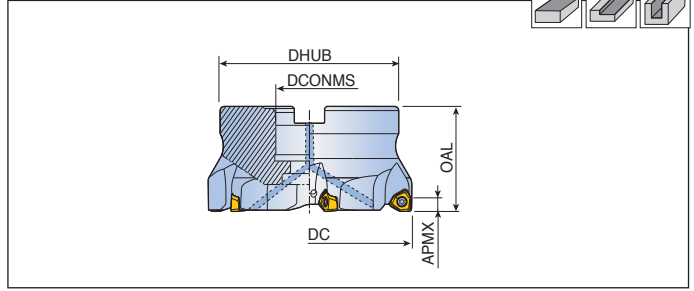
E271-E273

Arbor Style

E274-E275

6N TF90-06/09

Face mills



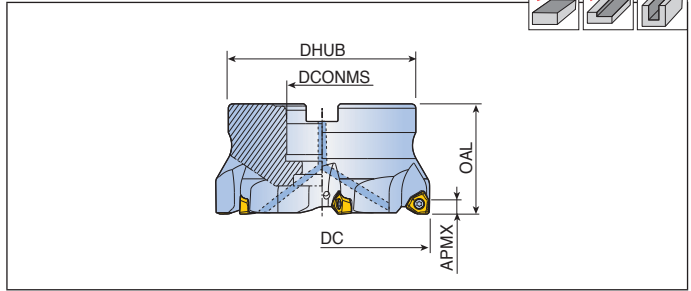
Designation		Dimension (mm)					Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
6N TF90-440-16R-06	4	40	16	38	40	6.2	●	A	0.3	SH M8x30	6NGU 0604...
450-22R-06	4	50	22	45	40	6.2	●	A	0.4	LH M10x25	E221
650-22R-06	6	50	22	45	40	6.2	●	A	0.4	LH M10x25	
463-22R-06	4	63	22	47	40	6.2	●	A	0.5	LH M10x25	
663-22R-06	6	63	22	47	40	6.2	●	A	0.5	LH M10x25	
763-22R-06	7	63	22	47	40	6.2	●	A	0.5	LH M10x25	
580-27R-06	5	80	27	58	50	6.2	●	A	1.0	SH M12x35	
780-27R-06	7	80	27	58	50	6.2	●	A	1.0	SH M12x35	
980-27R-06	9	80	27	58	50	6.2	●	A	1.0	SH M12x35	
6100-32R-06	6	100	32	85	50	6.2	●	A	1.9	SH M16x35	
8100-32R-06	8	100	32	85	50	6.2	●	A	1.9	SH M16x35	
11100-32R-06	11	100	32	85	50	6.2	●	A	1.9	SH M16x35	
7125-40R-06	7	125	40	85	63	6.2	●	A	3.2	SH M20x40	
11125-40R-06	11	125	40	85	63	6.2	●	A	3.2	SH M20x40	
14125-40R-06	14	125	40	85	63	6.2	●	A	3.2	SH M20x40	
6N TF90-450-22R-09	4	50	22	45	40	9.2	●	A	0.3	LH M10x25	6NGU 0905...
550-22R-09	5	50	22	45	40	9.2	●	A	0.4	LH M10x25	E221
463-22R-09	4	63	22	47	40	9.2	●	A	0.5	LH M10x25	
663-22R-09	6	63	22	47	40	9.2	●	A	0.5	LH M10x25	
763-22R-09	7	63	22	47	40	9.2	●	A	0.5	LH M10x25	
580-27R-09	5	80	27	58	50	9.2	●	A	1.0	SH M12x35	
780-27R-09	7	80	27	58	50	9.2	●	A	1.1	SH M12x35	
980-27R-09	9	80	27	58	50	9.2	●	A	1.1	SH M12x35	
6100-32R-09	6	100	32	85	50	9.2	●	A	1.9	LH M16x35	
8100-32R-09	8	100	32	85	50	9.2	●	A	1.8	LH M16x35	
11100-32R-09	11	100	32	85	50	9.2	●	A	1.9	LH M16x35	
7125-40R-09	7	125	40	85	63	9.2	●	A	3.1	SH M20x40	
11125-40R-09	11	125	40	85	63	9.2	●	A	3.1	SH M20x40	
14125-40R-09	14	125	40	85	63	9.2	●	A	3.2	SH M20x40	
12160-40R-09	12	160	40	110	63	9.2	x	C	4.3	-	
16160-40R-09	16	160	40	110	63	9.2	x	C	4.3	-	
14200-60R-09	14	200	60	130	63	9.2	x	C	5.9	-	
18200-60R-09	18	200	60	130	63	9.2	x	C	5.9	-	
18250-60R-09	18	250	60	160	63	9.2	x	C	10.7	-	
22250-60R-09	22	250	60	160	63	9.2	x	C	10.8	-	



6N TF90-06/09



Face mills (Inch bore)



Designation		Dimension (mm)					Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
6N TF90-580-25.4R-06	5	80	25.4	70	50	6.2	●	A	1.0	SH M12x35	6NGU 0604...
780-25.4R-06	7	80	25.4	70	50	6.2	●	A	1.0	SH M12x35	E221
980-25.4R-06	9	80	25.4	70	50	6.2	●	A	1.0	SH M12x35	
6100-31.75R-06	6	100	31.75	80	50	6.2	x	B	1.9	-	
8100-31.75R-06	8	100	31.75	80	50	6.2	x	B	1.9	-	
11100-31.75R-06	11	100	31.75	80	50	6.2	x	B	1.9	-	
7125-38.1R-06	7	125	38.1	80	63	6.2	x	B	3.2	-	
6N TF90-580-25.4R-09	5	80	25.4	58	50	9.2	●	A	1.0	SH M12x35	6NGU 0905...
780-25.4R-09	7	80	25.4	58	50	9.2	●	A	1.1	SH M12x35	E221
980-25.4R-09	9	80	25.4	58	50	9.2	●	A	1.1	SH M12x35	
6100-31.75R-09	6	100	31.75	80	50	9.2	x	B	1.9	-	
8100-31.75R-09	8	100	31.75	80	50	9.2	x	B	1.8	-	
11100-31.75R-09	11	100	31.75	80	50	9.2	x	B	1.9	-	
7125-38.1R-09	7	125	38.1	80	63	9.2	x	B	3.1	-	
11125-38.1R-09	11	125	38.1	80	63	9.2	x	B	3.1	-	
14125-38.1R-09	14	125	38.1	80	63	9.2	x	B	3.2	-	
12160-50.8R-09	12	160	50.8	100	63	9.2	x	B	4.3	-	
16160-50.8R-09	16	160	50.8	100	63	9.2	x	B	4.3	-	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

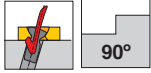
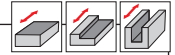
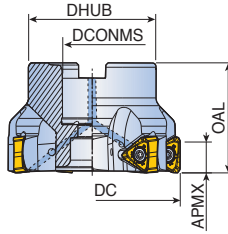
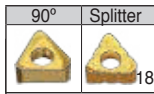
Designation	Screw	Wrench			
6N TF90-06	TS 30085I/HG	TD 9	-		
6N TF90-09	TS 40B100I	-	T-T15		



SCRM90TN-18/22



Face mills

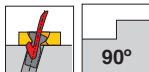
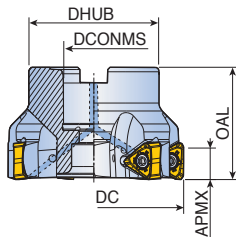
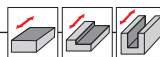
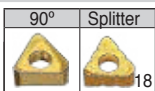


Designation	⊕	Dimension (mm)					Coolant hole	Arbor style	kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
SCRM90TN 450-16R-18	4	50	16	38	40	13	●	A	0.3 SH M8x30	TNMX 1806... E261	
563-22R-18	5	63	22	47	40	13	●	A	0.5 SH M10x30		
580-27R-18	5	80	27	58	50	13	●	A	1.1 SH M12x35		
780-27R-18	7	80	27	58	50	13	●	A	1.1 SH M12x35		
6100-32R-18-B	6	100	32	85	50	13	●	A	2.0 SH M16x35		
8100-32R-18	8	100	32	85	50	13	●	A	2.0 SH M16x35		
7125-40R-18-B	7	125	40	85	63	13	●	A	3.4 SH M20x40		
10125-40R-18	10	125	40	85	63	13	●	A	3.3 SH M20x40		
10160-40R-18	10	160	40	110	63	13	x	C	4.5 -		
14160-40R-18	14	160	40	110	63	13	x	C	4.5 -		
16200-60R-18	16	200	60	130	63	13	x	C	6.2 -		
SCRM90TN 350-16R-22	3	50	16	38	40	15	●	A	0.3 SH M8x30	TNM(G)X 2207... E261	
463-22R-22	4	63	22	47	40	15	●	A	0.4 SH M10x30		
580-27R-22	5	80	27	58	50	15	●	A	0.9 SH M12x35		
6100-32R-22	6	100	32	85	50	15	●	A	1.8 SH M16x35		
8125-40R-22	8	125	40	85	63	15	●	A	3.0 SH M20x40		
10160-40R-22	10	160	40	110	63	15	x	C	4.2 -		
12200-60R-22	12	200	60	130	63	15	x	C	6 -		
14250-60R-22	14	250	60	160	63	15	x	C	10.6 -		



SCRM90TN

Face mills (Inch bore)



Designation		Dimension (mm)					Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
SCRM90TN 580-25.4R-18	5	80	25.4	70	50	13	●	A	1.1	SH M12x35	TNMX 1806... E261
780-25.4R-18	7	80	25.4	70	50	13	●	A	1.1	SH M12x35	
6100-31.75R-18-B	6	100	31.75	80	50	13	x	B	2.0	-	
8100-31.75R-18	8	100	31.75	80	50	13	x	B	2.0	-	
7125-38.1R-18-B	7	125	38.1	80	63	13	x	B	3.4	-	
10125-38.1R-18	10	125	38.1	80	63	13	x	B	3.3	-	
10160-50.8R-18	10	160	50.8	100	63	13	x	B	4.5	-	
14160-50.8R-18	14	160	50.8	100	63	13	x	B	4.5	-	
16200-47.625R-18	16	200	47.625	130	63	13	x	C	6.2	-	
SCRM90TN 580-25.4R-22	5	80	25.4	70	50	15	●	A	0.9	SH M12x35	
6100-31.75R-22	6	100	31.75	80	50	15	x	B	1.8	-	
8125-38.1R-22	8	125	38.1	80	63	15	x	B	3.0	-	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

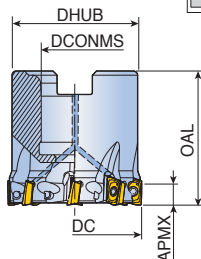
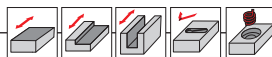
Designation	Screw	Wrench			
SCRM90TN-18	TS 40B100I	T-T15			
SCRM90TN-22	TS 45I20I	T-T20			



TFM90AX-06/2S-TFM90AP-09



Face mills



Designation	⚙️	Dimension (mm)						Coolant hole	Arbor style	⚖️ Kg	Mounting bolt	Insert	
		DC	DCONMS	DHUB	OAL	APMX							
TFM90AX	⚙️	832-16R-06	8	32	16	30	32	5.5	●	A	0.1	SH M8x25	AXM(C)T 0602...
		1040-16R-06	10	40	16	38	40	5.5	●	A	0.2	SH M8x25	🔗 E230-E231
		1040-22R-06	10	40	22	38	40	5.5	●	A	0.2	SH M10x30	
2S-TFM90AP	⚙️	540-16R-09	5	40	16	38	40	8.8	●	A	0.3	SH M8x30	APK(C)T 09T3...
		640-16R-09	6	40	16	38	40	8.8	●	A	0.2	SH M8x30	🔗 E225, E230
		550-22R-09-B	5	50	22	45	40	8.8	●	A	0.3	SH M10x30	
		650-22R-09	6	50	22	45	40	8.8	●	A	0.3	SH M10x30	
		750-22R-09	7	50	22	45	40	8.8	●	A	0.3	SH M10x30	
		863-22R-09	8	63	22	47	40	8.8	●	A	0.5	SH M10x30	
		1080-27R-09	10	80	27	58	50	8.8	●	A	1.1	SH M12x35	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

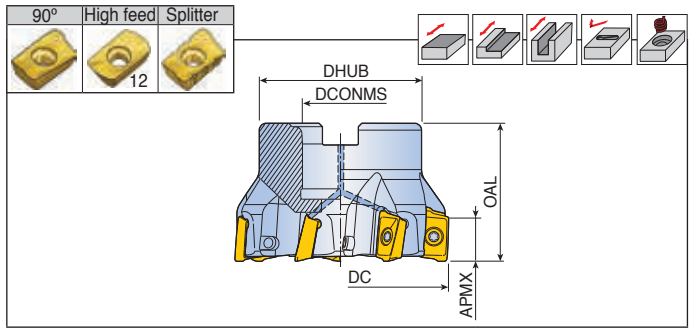
Designation	Screw	Wrench			
TFM90AX	TS 180411/HG	TD 6P			
2S-TFM90AP	TS 250751/HG	TD 8			

 E271-E273	 E274-E275	 E314-E320
---------------	---------------	---------------

TFM90AP-12/17



Face mills



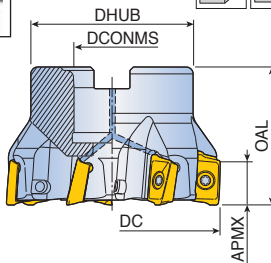
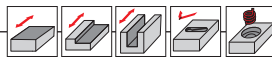
Designation		Dimension (mm)					Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
TFM90AP 440-16R-12	4	40	16	38	40	12	●	A	0.2 SH M8x25	APK(C)T 1204...	
540-16R-12	5	40	16	38	40	12	●	A	0.2 SH M8x25	E226, E230	
550-22R-12	5	50	22	45	40	12	●	A	0.3 SH M10x30		
650-22R-12	6	50	22	45	40	12	●	A	0.3 SH M10x30		
563-22R-12	5	63	22	47	40	12	●	A	0.5 SH M10x30		
663-22R-12	6	63	22	47	40	12	●	A	0.5 SH M10x30		
763-22R-12	7	63	22	47	40	12	●	A	0.5 SH M10x30		
680-27R-12	6	80	27	58	50	12	●	A	1.0 SH M10x25		
880-27R-12	8	80	27	58	50	12	●	A	1.0 SH M10x25		
TFM90AP 440-16R-17	4	40	16	38	40	16.1	●	A	0.3 SH M8x30	APK(C)T 1705...	
350-22R-17-B	3	50	22	45	40	16.1	●	A	0.4 SH M10x30	E227-E228	
450-22R-17-B	4	50	22	45	40	16.1	●	A	0.3 SH M10x30		
550-22R-17	5	50	22	45	40	16.1	●	A	0.4 SH M10x30		
463-22R-17-B	4	63	22	47	40	16.1	●	A	0.5 SH M10x30		
663-22R-17	6	63	22	47	50	16.1	●	A	0.5 SH M10x30		
480-27R-17-B	4	80	27	58	50	16.1	●	A	0.8 SH M12x35		
680-27R-17	6	80	27	58	50	16.1	●	A	0.9 SH M12x35		
780-27R-17	7	80	27	58	50	16.1	●	A	0.9 SH M12x35		
6100-32R-17-B	6	100	32	85	50	16.1	●	A	1.3 LH M16x35		
8100-32R-17	8	100	32	85	50	16.1	●	A	1.5 LH M16x35		
7125-40R-17-B	7	125	40	85	63	16.1	●	A	2.9 SH M20x40		
8125-40R-17	8	125	40	85	63	16.1	●	A	3.0 SH M20x40		
9125-40R-17	9	125	40	85	63	16.1	●	A	3.1 SH M20x40		
8160-40R-17-B	8	160	40	110	63	16.1	x	C	4.1 -		
10160-40R-17	10	160	40	110	63	16.1	x	C	4.2 -		
12200-60R-17	12	200	60	130	63	16.1	x	C	6.1 -		

 E271-E273	 E274-E275	 E314-E320
---------------	---------------	---------------

TFM90AP-12/17



Face mills (Inch bore)



Designation		Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX						
TFM90AP 880-25.4R-12	8	80	25.4	70	50	12	●	A	1.0	SH M12x30	APK(C)T 1204... E226, E230	
TFM90AP 663-25.4R-17	6	63	25.4	45	40	16.1	●	A	0.5	LM M12x30	APK(C) T 1705...	
780-25.4R-17	7	80	25.4	70	50	16.1	●	A	0.9	SH M12x35	E227-E228	
8100-31.75R-17	8	100	31.75	80	50	16.1	x	B	1.5	-		
9125-38.1R-17	9	125	38.1	80	63	16.1	x	B	3.1	-		
10160-50.8R-17	10	160	50.8	100	63	16.1	x	B	4.2	-		

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

Designation	Screw	Wrench			
TFM90AP-12	TS 35A088I/HG	TD 10P	-		
TFM90AP-17 (Ø40-Ø63)	TS 40093I/HG	-	T-T15		
TFM90AP-17 (Ø80-)	TS 40120I/HG	-	T-T15		

E271-E273

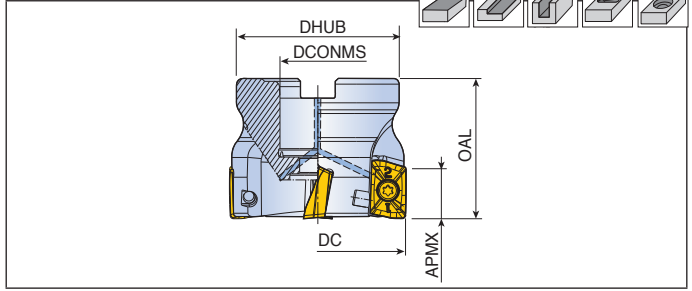
E274-E275

E314-E320

2S-TFM90AP-19



Face mills



Designation		Dimension (mm)					Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
2S-TFM90AP 350-22R-19	3	50	22	45	45	17.9	●	A	0.3	LH M10x35	APKT 1907...
463-22R-19	4	63	22	47	40	17.9	●	A	0.7	SH M10x30	E229
463-27R-19	4	63	27	58	50	17.9	●	A	0.7	SH M12x35	
680-27R-19	6	80	27	58	50	17.9	●	A	1.1	SH M12x35	
7100-32R-19	7	100	32	85	50	17.9	●	A	1.9	SH M16x35	
6125-40R-19	6	125	40	85	63	17.9	●	A	3.0	SH M20x40	
8125-40R-19	8	125	40	85	63	17.9	●	A	3.0	SH M20x40	
10160-40R-19	10	160	40	110	63	17.9	x	C	4.2	-	
12200-60R-19	12	200	60	130	63	17.9	x	C	6.0	-	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

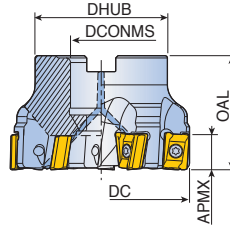
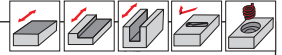
Designation	Screw	Wrench			
	2S-TFM90AP-19	TS 50115I	T-T20		

 E271-E273	 E274-E275	 E314-E320
---------------	---------------	---------------

TFM90AN-11/16



Face mills

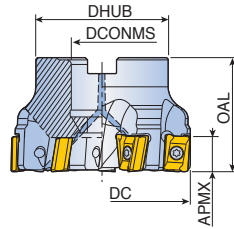
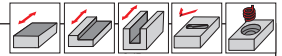


Designation		Dimension (mm)					Coolant hole	Arbor style	Kg	Mounting bolt	Insert	
		DC	DCONMS	DHUB	OAL	APMX						
TFM90AN 440-16R-11	4	40	16	38	40	11	●	A	0.2	SH M8x30	ANM(H)X 1106... E224	
450-22R-11	4	50	22	45	40	11	●	A	0.3	SH M10x30		
650-22R-11	6	50	22	45	40	11	●	A	0.3	SH M10x30		
563-22R-11	5	63	22	47	40	11	●	A	0.6	SH M10x30		
763-22R-11	7	63	22	47	40	11	●	A	0.6	SH M10x30		
880-27R-11	8	80	27	58	50	11	●	A	1.1	SH M12x35		
1080-27R-11	10	80	27	58	50	11	●	A	1.1	SH M12x35		
9100-32R-11	9	100	32	85	50	11	●	A	2.0	SH M16x35		
12100-32R-11	12	100	32	85	50	11	●	A	2.0	SH M16x35		
10125-40R-11	10	125	40	85	63	11	●	A	3.3	SH M20x40		
14125-40R-11	14	125	40	85	63	11	●	A	3.4	SH M20x40		
TFM90AN 350-22R-16	3	50	22	45	40	15	●	A	0.4	SH M10x30		ANM(H)X 1607... E224
450-22R-16	4	50	22	45	40	15	●	A	0.4	SH M10x30		
463-22R-16	4	63	22	47	40	15	●	A	0.5	SH M10x30		
663-22R-16	6	63	22	47	40	15	●	A	0.5	SH M10x30		
580-27R-16	5	80	27	58	50	15	●	A	0.8	SH M12x35		
780-27R-16	7	80	27	58	50	15	●	A	0.9	SH M12x35		
5100-32R-16	5	100	32	85	50	15	●	A	1.3	SH M16x35		
8100-32R-16	8	100	32	85	50	15	●	A	1.5	SH M16x35		
7125-40R-16	7	125	40	85	63	15	●	A	3.9	SH M20x40		
10125-40R-16	10	125	40	85	63	15	●	A	3.7	SH M20x40		
8160-40R-16	8	160	40	110	63	15	x	C	5.0	-		
12160-40R-16	12	160	40	110	63	15	x	C	5.3	-		
14200-60R-16	14	200	60	130	63	15	x	C	7.0	-		

Cutting Condition E271-E273	Arbor Style E274-E275	Ramping Data E321
--------------------------------	--------------------------	----------------------

TFM90AN-11/16

Face mills (Inch bore)



Designation	⚙️	Dimension (mm)					Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
TFM90AN 880-25.4R-11	8	80	25.4	70	50	11	●	A	1.1	SH M12x35	ANM(H)X 1106... E224
TFM90AN 580-25.4R-16	5	80	25.4	70	50	15	●	A	0.8	SH M12x35	ANM(H)X 1607... E224
780-25.4R-16	7	80	25.4	70	50	15	●	A	0.9	SH M12x35	
5100-31.75R-16	5	100	31.75	80	50	15	x	B	1.3	-	
8100-31.75R-16	8	100	31.75	80	50	15	x	B	1.5	-	
7125-38.1R-16	7	125	38.1	80	63	15	x	B	3.9	-	
10125-38.1R-16	10	125	38.1	80	63	15	x	B	3.7	-	

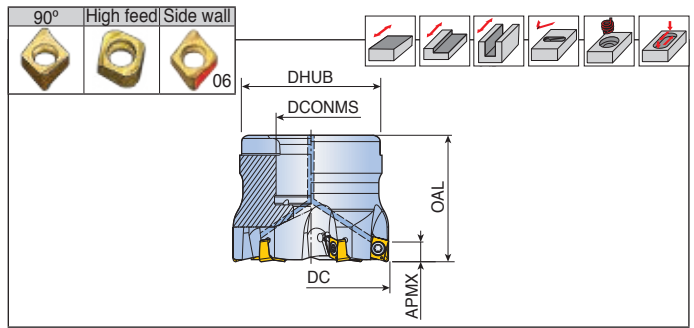
• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

Designation	Screw	Wrench			
TFM90AN-11	TS 35A088/HG	TD 10P	-		
TFM90AN-16	TS 40120I	-	T-T15		

 E271-E273	 E274-E275	 E321
---------------	---------------	----------

Face mills



Designation		Dimension (mm)					Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
4N TF90-832-16R-04	8	32	16	30	32	3.5	●	A	0.1	SH M8x25	4NKT 0402....
1040-16R-04	10	40	16	38	40	3.5	●	A	0.2	SH M8x25	E218-E219
4N TF90-432-16R-06	4	32	16	30	32	6.0	●	A	0.1	SH M8x25	4NK(H)T 0603....
532-16R-06	5	32	16	30	32	6.0	●	A	0.1	SH M8x25	E218-E219
540-16R-06	5	40	16	38	40	6.0	●	A	0.3	SH M8x25	
640-16R-06	6	40	16	38	40	6.0	●	A	0.3	SH M8x25	
650-22R-06	6	50	22	45	40	6.0	●	A	0.4	SH M10x30	
750-22R-06	7	50	22	47	40	6.0	●	A	0.4	SH M10x30	
763-22R-06	7	63	22	47	40	6.0	●	A	0.6	SH M10x30	
863-22R-06	8	63	22	47	40	6.0	●	A	0.6	SH M10x30	
4N TF90-540-16R-09	5	40	16	38	40	8.0	●	A	0.3	SH M8x25	4NK(H)T 0904....
650-22R-09	6	50	22	45	40	8.0	●	A	0.3	LH M10x25	E218-E219
763-22R-09	7	63	22	47	40	8.0	●	A	0.5	LH M10x25	
980-27R-09	9	80	27	58	50	8.0	●	A	1.1	SH M12x35	

- Cutter body for '4NKT 040212R-HF' insert should be modified with body corner radius 1.2 mm
- Cutter body for '4NKT 060320R-HF' and '4NHT 060320R-F' inserts should be modified with body corner radius 2.0 mm
- Cutter body for '4NKT 090432R-HF' insert should be modified with body corner radius 3.2 mm
- Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

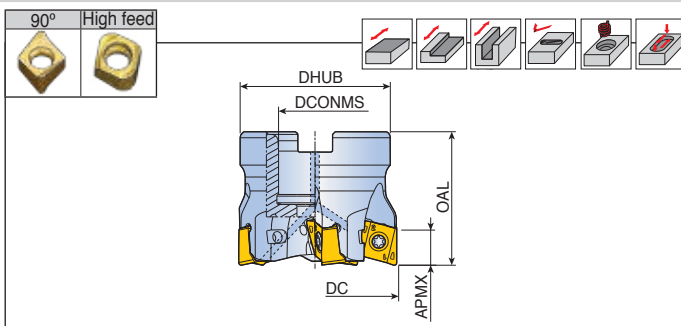
Designation	Screw	Wrench		Wrench handle
4N TF90-04	TS 18041/HG	TD 6P	-	-
4N TF90-06	TS 30B068I/HG	TD 8	-	-
4N TF90-09	TS 35A088I/HG	-	TBLD T10P-W6	THND 6W

 E271-E273	 E274-E275	 E293-E313
---------------	---------------	---------------

4N TF90-11/14



Face mills



Designation	Z	Dimension (mm)					Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
4N TF90- 440-16R-11	4	40	16	38	40	10.5	●	A	0.2	SH M8x30	4NKT 1106... E218-E219
450-22R-11	4	50	22	45	40	10.5	●	A	0.3	LH M10x25	
550-22R-11	5	50	22	45	40	10.5	●	A	0.3	LH M10x25	
463-22R-11	4	63	22	47	40	10.5	●	A	0.6	LH M10x25	
663-22R-11	6	63	22	47	40	10.5	●	A	0.5	LH M10x25	
480-27R-11	4	80	27	58	50	10.5	●	A	1.1	SH M12x35	
680-27R-11	6	80	27	58	50	10.5	●	A	1.0	SH M12x35	
880-27R-11	8	80	27	58	50	10.5	●	A	1.0	SH M12x35	
9100-32R-11	9	100	32	85	50	10.5	●	A	1.9	SH M16x35	
4N TF90- 450-22R-14	4	50	22	45	45	13.8	●	A	0.4	SH M10x25	4NKT 1407... E218-E219
463-22R-14	4	63	22	47	45	13.8	●	A	0.6	SH M10x25	
663-22R-14	6	63	22	47	45	13.8	●	A	0.6	SH M10x25	
580-27R-14	5	80	27	58	50	13.8	●	A	1.0	SH M12x35	
780-27R-14	7	80	27	58	50	13.8	●	A	1.0	SH M12x35	
8100-32R-14	8	100	32	85	50	13.8	●	A	1.9	SH M16x35	

- Cutter body for '4NKT 110640R-HF' insert should be modified with body corner radius 4.0 mm
- Cutter body for '4NKT 140750R-HF' insert should be modified with body corner radius 5.0 mm
- Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

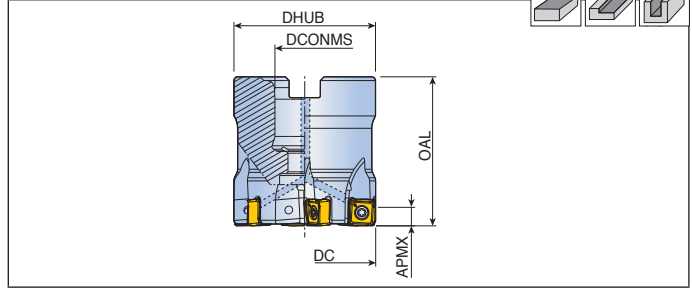
Spare parts

Designation	Screw	Wrench	Wrench handle		
4N TF90-11	TS 400931/HG	TBLD T15-W6	SW6-T		
4N TF90-14	TS 50A1211/HG	TBLD T20-W6	SW6-T		

Cutting Condition E271-E273	Arbor Style E274-E275	Ramping Data E293-E313
--------------------------------	--------------------------	---------------------------

8D-TF90-07

Face mills



Designation	RPM	Dimension (mm)					Coolant hole	Arbor style	kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
8D-TF90-432-16R-07	4	32	16	30	32	5.0	•	A	0.1	SH M8x25	SQKU 0703... E257
640-16R-07	6	40	16	38	40	5.0	•	A	0.3	SH M8x25	
650-22R-07	6	50	22	45	40	5.0	•	A	0.4	SH M10x30	
850-22R-07	8	50	22	45	40	5.0	•	A	0.4	SH M10x30	
763-22R-07	7	63	22	47	40	5.0	•	A	0.5	SH M10x30	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

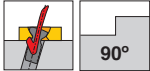
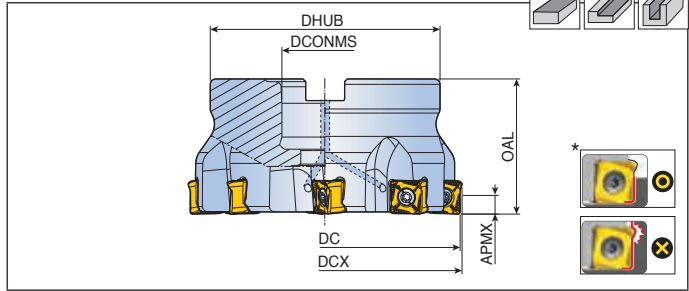
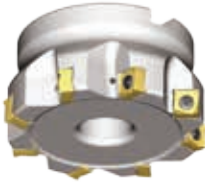
Spare parts

Designation	Screw	Wrench			
8D-TF90-07	TS 25D060/HG-P	TD 7P			



8D-TF90-12

Face mills



Designation		Dimension (mm)						Coolant hole	Arbor style		Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX					
8D-TF90-340-16R-12	3	40	41.3	16	38	40	8.5**	●	E	0.3	KTB 32B	SQK(H)U 1206... E257
440-16R-12	4	40	41.3	16	38	40	8.5**	●	E	0.3	KTB 32B	
450-22R-12	4	50	51.3	22	45	40	8.5**	●	A	0.3	SH M10x30	
650-22R-12	6	50	51.3	22	45	40	8.5**	●	A	0.4	SH M10x30	
563-22R-12	5	63	64.3	22	47	40	8.5**	●	A	0.5	SH M10x30	
863-22R-12	8	63	64.3	22	47	40	8.5**	●	A	0.6	SH M10x30	
680-27R-12	6	80	81.3	27	58	50	8.5**	●	A	1.1	SH M12x35	
980-27R-12	9	80	81.3	27	58	50	8.5**	●	A	1.2	SH M12x35	
1180-27R-12	11	80	81.3	27	58	50	8.5**	●	A	1.2	SH M12x35	
8100-32R-12	8	100	101.3	32	66	50	8.5**	●	A	1.6	SH M16x35	
11100-32R-12	11	100	101.3	32	66	50	8.5**	●	A	1.7	SH M16x35	
14100-32R-12	14	100	101.3	32	66	50	8.5**	●	A	1.7	SH M16x35	
10125-40R-12	10	125	126.3	40	85	63	8.5**	●	A	3.4	SH M20x40	
18125-40R-12	18	125	126.3	40	85	63	8.5**	●	A	3.5	SH M20x40	
12160-40R-12	12	160	161.3	40	110	63	8.5**	x	C	4.7	-	
22160-40R-12	22	160	161.3	40	110	63	8.5**	x	C	4.9	-	

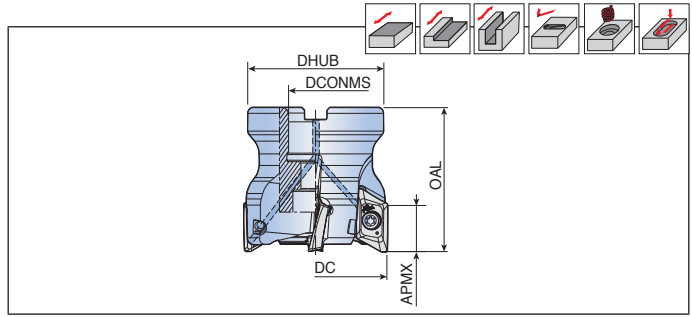
- DC: Cutting diameter
- DCX: Cutting diameter maximum
- Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)
- * Multi-Step milling is not recommended over the APMX
- ** When applying SQHU insert, APMX is 8.0mm.

Spare parts

Designation	Screw	Wrench	Wrench handle		
8D-TF90-12	TS 40M100/HG	TBLD T15-W6	SW6-T		



Face mills



Designation		Dimension (mm)					Coolant hole	Arbor style	Max RPM	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX						
TFM90XEV 340-16R-16	3	40	16	38	50	16	●	A	41,200	0.2	SH M8x35-C	XEVT 1605...
450-22R-16	4	50	22	45	50	16	●	A	36,800	0.3	SH M10x30-C	
563-22R-16	5	63	22	47	50	16	●	A	32,700	0.5	SH M10x30-C	
580-27R-16	5	80	27	58	50	16	●	A	29,000	0.9	LH M12x30-C	
680-27R-16	6	80	27	58	50	16	●	A	29,000	0.8	LH M12x30-C	
6100-32R-16	6	100	32	66	63	16	●	A	26,000	1.6	SH M16x35-C	
7125-40R-16	7	125	40	85	63	16	●	A	23,200	2.5	SH M20x40-C	
8160-40R-16	8	160	40	110	63	16	x	C	20,000	3.8	-	
10200-60R-16	10	200	60	130	63	16	x	C	18,300	5.3	-	
TFM90XEV 350-22R-22	3	50	22	45	55	21	●	A	31,400	0.4	SH M10x30-C	XEVT 2206...
463-22R-22	4	63	22	47	55	21	●	A	28,000	0.6	SH M10x30-C	
580-27R-22	5	80	27	58	55	21	●	A	24,800	1.0	LH M12x30-C	
6100-32R-22	6	100	32	85	63	21	●	A	22,200	2.1	SH M16x35-C	
7125-40R-22	7	125	40	85	63	21	●	A	19,900	2.8	SH M20x40-C	
10200-60R-22	10	200	60	124	63	21	x	C	15,700	5.9	-	

• Cutter body for inserts with corner radii more than 3.2mm (XEVT 16) and 3.0mm (XEVT 22) should be modified as follows: body "RE"=insert "RE"-0.3mm

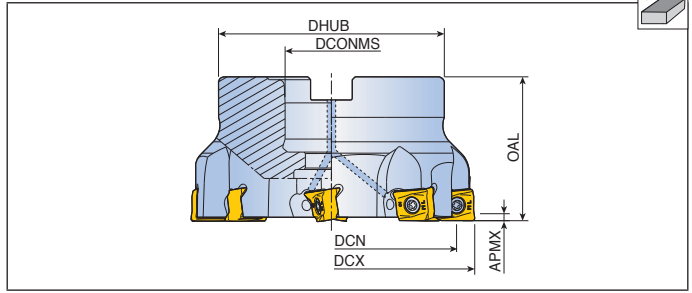
Spare parts

Designation	Screw	Wrench			
TFM90XEV-16	TS 400931/HG	T-T15			
TFM90XEV-22	TS 501151	T-T20			



4W-TF90-12

Face mills for finishing



Designation	Z	Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DCX	DCN	DCONMS	DHUB	OAL	APMX					
4W-TF90-550-22R-12	5	50	38.9	22	45	40	0.5	●	A	0.4	SH M10x30-C	4WHU
663-22R-12	6	63	50.9	22	47	40	0.5	●	A	0.5	SH M10x30-C	1207...
880-27R-12	8	80	66.9	27	58	50	0.5	●	A	1.1	SH M12x35-C	E220
8100-32R-12	8	100	86.9	32	66	50	0.5	●	A	1.6	SH M16x35-C	
10125-40R-12	10	125	110.9	40	85	63	0.5	●	A	3.1	SH M20x40-C	
10160-40R-12	10	160	145.9	40	110	63	0.5	x	C	4.1	-	

• DCN: Cutting diameter minimum • DCX: Cutting diameter maximum

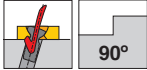
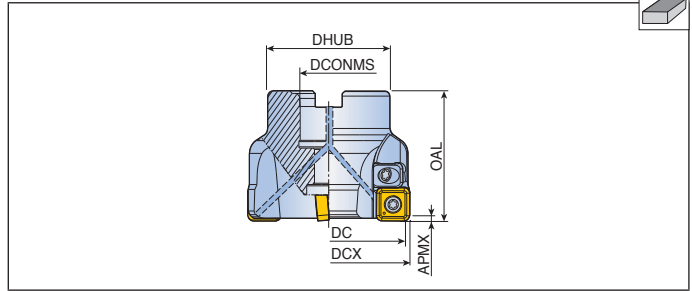
Spare parts

Designation	Screw	Wrench	Wrench handle		
4W-TF90-12	TS 40A115I	TBLD T15-W6	SW6-T		



TFM90SNS-12

Face mills for finishing



Designation	Z	Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFM90SNS 350-22R-12	3	50	43.35	22	45	50	1.0	●	A	0.5	SH M10x40	SNEX 1204... SNET 1205... E251
463-22R-12	4	63	56.35	22	47	50	1.0	●	A	0.7	SH M10x40	
680-27R-12	6	80	73.35	27	58	50	1.0	●	A	1.0	SH M12x35	
8100-32R-12	8	100	93.35	32	66	63	1.0	●	A	2.0	SH M16x30	
12100-32R-12	12	100	93.35	32	66	63	1.0	●	A	2.0	SH M16x30	
10125-40R-12	10	125	118.35	40	85	63	1.0	x	B	2.9	-	
16125-40R-12	16	125	118.35	40	85	63	1.0	x	B	2.9	-	
12160-40R-12	12	160	153.35	40	110	63	1.0	x	C	4.4	-	
20160-40R-12	20	160	153.35	40	110	63	1.0	x	C	4.4	-	
16200-60R-12	16	200	193.35	60	130	63	1.0	x	C	6.0	-	
24200-60R-12	24	200	193.35	60	130	63	1.0	x	C	6.0	-	
30250-60R-12	30	250	243.35	60	160	63	1.0	x	C	10.8	-	

- Recommend to very stable machining condition at cast iron & steel
- Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

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

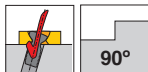
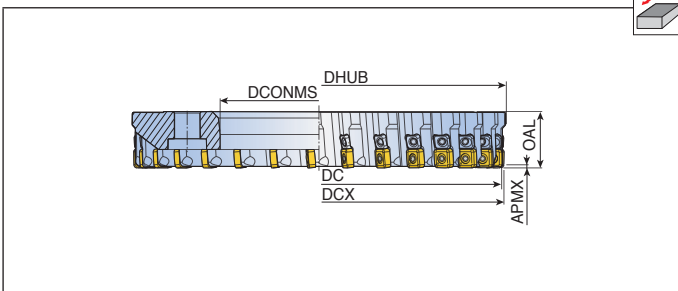
E271-E273

E274-E275

E279-E280

TQ90SNS-12

Quick change type face mills for finishing

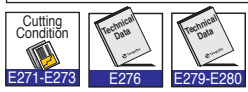


Designation		Dimension (mm)							Adaptor	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX			
TQ90SNS 20250R-12	20	250	243.35	133.35	253	38	1.0	7.5	QA 10 K/M	SNEX 1204...
30250R-12	30	250	243.35	133.35	253	38	1.0	7.5	QA 10 K/M	SNEX 1205...
36315R-12	36	315	308.35	146.05	317	38	1.0	14.0	QA 12 K/M	E251
32400R-12	32	400	393.35	254	402	38	1.0	16.0	QA 16 K/M	

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

Spare parts

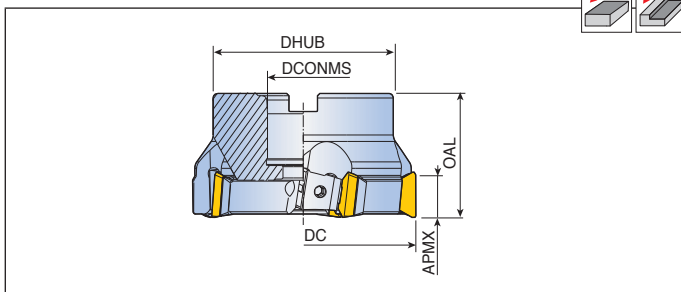
Designation	Screw	Adj. wedge	Adj. screw	Wrench	
TQ90SNS-12	TS 35C110I	AJS 1010R	AWS 0620	T-T15	



LM90TP-22



Face mills



Designation		Dimension (mm)					Arbor style	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX				
LM90TP 480-25.4R-22	4	80	25.4	70	50	17.6	A	1.2	SH M12x35	TPKN 2204... E262
5100-31.75R-22	5	100	31.75	80	55	17.6	A	2.2	SH M16x35	
6125-38.1R-22	6	125	38.1	80	63	17.6	B	3.0	-	
8160-50.8R-22	8	160	50.8	100	63	17.6	B	4.7	-	
10200-47.625R-22	10	200	47.625	130	63	17.6	C	6.4	-	
12250-47.625R-22	12	250	47.625	160	63	17.6	C	10.7	-	
14315-47.625R-22	14	315	47.625	220	63	17.6	D	16.7	-	

• Metric bore cutter is available upon request

Spare parts

Designation	Carbide shim	Wedge	Shim screw	Wedge screw	Wrench	Shim screw wrench
LM90TP-22	 TSTP 22N	 WPA 8	 TS 40B100l	 TS 80200W TS 80160W ⁽¹⁾	 T-W 4	 T-T15 ⁽²⁾



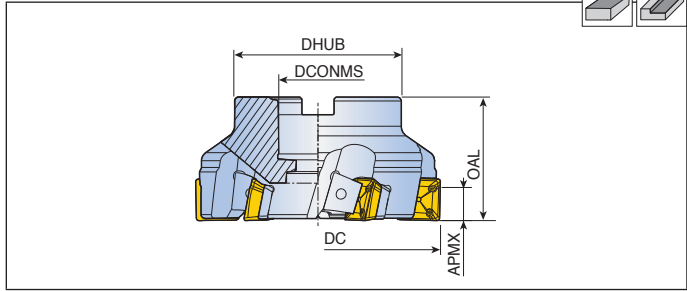
- ⁽¹⁾TS 80160W is for D80 cutter
- The shim screw wrench T-T15⁽²⁾ shall be ordered separately



LM90SE-21



Face mills



Designation		Dimension (mm)					Arbor style	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX				
LM90SE6125-40R-21	6	125	40	85	63	17.0	A	3.4	SH M20x40	SEKX 2107...
8160-40R-21	8	160	40	110	63	17.0	C	5.3	-	E249
10200-60R-21	10	200	60	130	80	17.0	C	9.6	-	
12200-60R-21	12	200	60	130	80	17.0	C	9.5	-	
12250-60R-21	12	250	60	160	80	17.0	C	16.4	-	
14250-60R-21	14	250	60	160	80	17.0	C	16.4	-	
12315-60R-21	12	315	60	220	80	17.0	D	21.0	-	
LM90SE6125-38.1R-21	6	125	38.1	85	63	17.0	B	3.4	-	
8160-50.8R-21	8	160	50.8	110	63	17.0	B	5.3	-	
10200-47.625R-21	10	200	47.625	130	80	17.0	C	9.6	-	

Spare parts

Designation	Shim	Shim screw	Wedge	Wedge screw	Wedge screw wrench	Shim screw wrench
LM90SE-21	TSSE 21N-ST	TS 50C130//HG	WPA 8-SE16	TS 80160W TS 80200W	T-W 4	T-T20 ⁽¹⁾

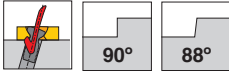
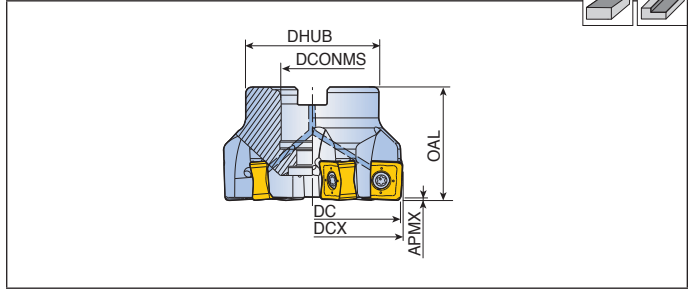
Cutting Condition
 Arbor Style
 E271-E273 E274-E275

- 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



Face mills



Designation		Dimension (mm)							Coolant hole	Arbor style	Kg	Mounting bolt	Insert	
		DC	DCX	DCONMS	DHUB	OAL	APMX							
TFM90SN	550-22R-13	5	50	50.7	22	45	40	12.0	●	A	0.3	SH M10x30	SNGX 1306 ... E253	
	663-22R-13	6	63	63.7	22	47	40	12.0	●	A	0.5	SH M10x30		
	780-27R-13	7	80	80.7	27	70	50	12.0	●	A	1.2	SH M12x35		
	980-27R-13*	9	80	80.7	27	70	50	12.0	●	A	1.2	SH M12x35		
	8100-32R-13	8	100	100.8	32	85	50	12.0	●	A	1.9	SH M16x30		
	13100-32R-13*	13	100	100.8	32	85	50	12.0	●	A	1.9	SH M16x30		
	10125-40R-13	10	125	125.8	40	85	63	12.0	x	B	2.8	-		
16125-40R-13*	16	125	125.8	40	85	63	12.0	x	B	2.8	-			
TFM88SN	550-22R-13	5	50	51.2	22	45	40	12.0	●	A	0.3	SH M10x30	SNGX 1306 ZN... E253	
	663-22R-13	6	63	64.2	22	47	40	12.0	●	A	0.5	SH M10x30		
	780-27R-13	7	80	81.2	27	70	50	12.0	●	A	1.2	SH M12x35		
	980-27R-13*	9	80	81.2	27	70	50	12.0	●	A	1.2	SH M12x35		
	8100-32R-13	8	100	101.2	32	85	50	12.0	●	A	1.9	SH M16x30		
	11100-32R-13*	11	100	101.2	32	85	50	12.0	●	A	1.9	SH M16x30		
	10125-40R-13	10	125	126.1	40	85	63	12.0	x	B	2.8	-		
	14125-40R-13*	14	125	126.1	40	85	63	12.0	x	B	2.8	-		
	12160-40R-13	12	160	161.1	40	110	63	12.0	x	C	4.2	-		
	18160-40R-13*	18	160	161.1	40	110	63	12.0	x	C	4.2	-		
	14200-60R-13	14	200	201.1	60	130	63	12.0	x	C	6.0	-		
	22200-60R-13*	22	200	201.1	60	130	63	12.0	x	C	6.0	-		



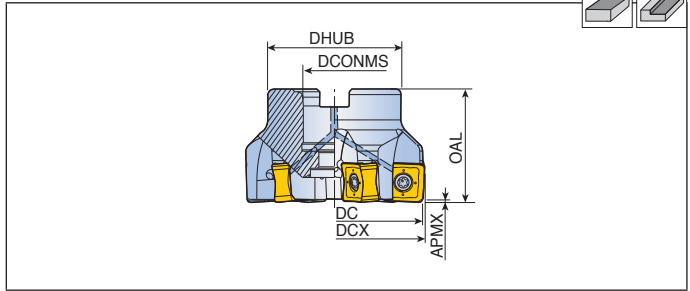
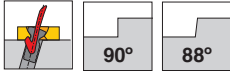
- *: Fine pitch cutter for cast iron
- Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)



TFM90SN/TFM88SN-13



Face mills (Inch bore)



Designation		Dimension (mm)						Coolant hole	Arbor style		Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX					
TFM90SN 780-25.4R-13	7	80	80.7	25.4	70	50	12.0	●	A	1.2	SH M12x35	SNGX
8100-31.75R-13	8	100	100.8	31.75	80	50	12.0	x	B	1.9	-	1306 ...
10125-38.1R-13	10	125	125.8	38.1	80	63	12.0	x	B	2.8	-	E253
TFM88SN 780-25.4R-13	7	80	81.2	25.4	70	50	12.0	●	A	1.2	SH M12x35	SNGX
980-25.4R-13*	9	80	81.2	25.4	70	50	12.0	●	A	1.2	SH M12x35	1306 ZN...
8100-31.75R-13	8	100	101.2	31.75	80	50	12.0	x	B	1.9	-	E253
11100-31.75R-13*	11	100	101.2	31.75	80	50	12.0	x	B	1.9	-	
10125-38.1R-13	10	125	126.1	38.1	80	63	12.0	x	B	2.8	-	
12160-50.8R-13	12	160	161.1	50.8	100	63	12.0	x	B	4.2	-	

- *: Fine pitch cutter for cast iron
- Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

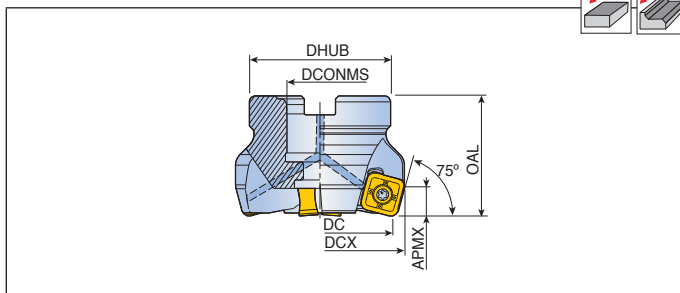
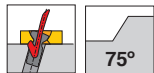
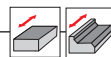
Spare parts

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



TFM75SN-13

Face mills



Designation		Dimension (mm)							Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX						
TFM75SN 450-22R-13	4	50	55.4	22	45	40	9.5	●	A	0.4	LH M10x25	SNM(G)X 1306 EN... SNMX 1306 XTN... E252	
650-22R-13	6	50	55.4	22	45	40	9.5	●	A	0.4	LH M10x25		
663-22R-13	6	63	68.4	22	47	40	9.5	●	A	0.6	LH M10x25		
863-22R-13	8	63	68.4	22	47	40	9.5	●	A	0.6	LH M10x25		
780-27R-13	7	80	85.4	27	70	50	9.5	●	A	1.3	LH M12x30		
1080-27R-13	10	80	85.4	27	70	50	9.5	●	A	1.3	LH M12x30		
8100-32R-13	8	100	105.4	32	85	50	9.5	●	A	1.9	LH M16x35		
12100-32R-13	12	100	105.4	32	85	50	9.5	●	A	2.0	LH M16x35		
10125-40R-13	10	125	130.3	40	85	63	9.5	●	A	3.2	SH M20x40		
16125-40R-13	16	125	130.4	40	85	63	9.5	●	A	3.2	SH M20x40		
12160-40R-13	12	160	165.3	40	110	63	9.5	x	C	4.7	-		
20160-40R-13	20	160	165.4	40	110	63	9.5	x	C	4.8	-		
16200-60R-13	16	200	205.3	60	130	63	9.5	x	C	6.4	-		
22200-60R-13	22	200	205.4	60	130	63	9.5	x	C	6.4	-		
20250-60R-13	20	250	255.3	60	160	63	9.5	x	C	11.7	-		
TFM75SN 580-25.4R-13B	5	80	85.4	25.4	70	50	9.5	●	A	1.3	LH M12x30		
1080-25.4R-13	10	80	85.4	25.4	70	50	9.5	●	A	1.5	LH M12x30		
6100-31.75R-13B	6	100	105.4	31.75	80	50	9.5	x	B	1.9	-		
8125-38.1R-13B	8	125	130.3	38.1	80	63	9.5	x	B	3.2	-		
12160-50.8R-13B	12	160	165.3	50.8	100	63	9.5	x	B	4.7	-		

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

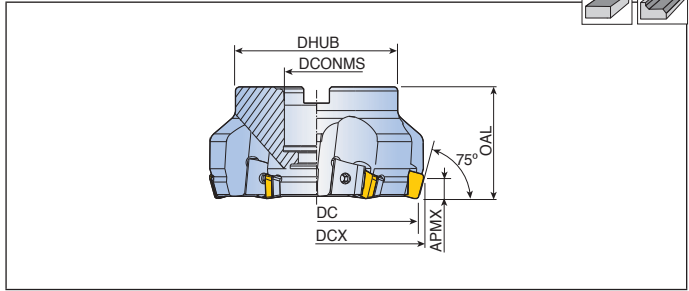
Designation	Screw	Wrench			
	TFM75SN	TS 40B100I	T-T15		



LM75SP-12/15



Face mills



Designation		Dimension (mm)						Arbor style	Kg	Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX				
LM75SP580-25.4 R-12	5	80	85.4	25.4	70	50	9.5	A	1.5	SH M12x35	SPKN 1203...
6100-31.75R-12	6	100	105.4	31.75	80	55	9.5	A	2.4	LH M16x35	E256
8125-38.1R-12	8	125	130.4	38.1	80	63	9.5	B	3.2	-	-
10160-50.8R-12	10	160	165.4	50.8	100	63	9.5	B	5.0	-	-
12200-47.625R-12	12	200	205.4	47.625	130	63	9.5	C	7.4	-	-
16250-47.625R-12	16	250	255.4	47.625	160	63	9.5	C	10.8	-	-
LM75SP580-25.4R-15	5	80	86.97	25.4	70	55	12.5	A	1.5	SH M12x35	SPKN 1504...
5100-31.75R-15	5	100	106.96	31.75	80	55	12.5	A	2.4	LH M16x35	E256
8125-38.1R-15	8	125	131.95	38.1	80	63	12.5	B	3.1	-	-
10160-50.8R-15	10	160	166.94	50.8	100	63	12.5	B	5.0	-	-
12200-47.625R-15	12	200	206.94	47.625	130	63	12.5	C	6.9	-	-
16250-47.625R-15	16	250	256.93	47.625	160	63	12.5	C	10.8	-	-
20315-47.625R-15	20	315	321.93	47.625	220	63	12.5	D	17.4	-	-

• Metric bore cutter is available upon request

Spare parts

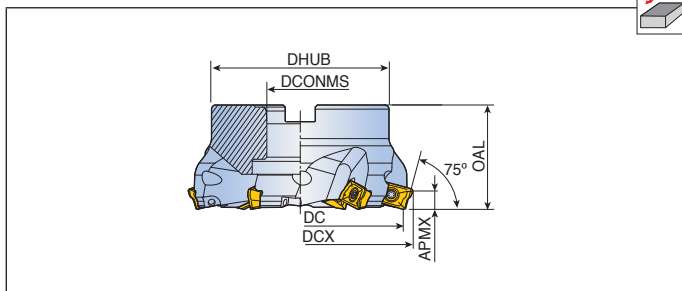
Designation	Carbide shim	Wedge	Shim screw	Wedge screw	Wrench	
LM75SP-12	TSSP 12N	WPA 8	TS 40B100I	TS 80200W	T-W 4	T-T15
LM75SP-15	TSSP 15N	WPA 8	TS 40B100I	TS 80160W ⁽¹⁾	T-W 4	T-T15



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

TFM75AP-17

Face mills



Designation		Dimension (mm)						Arbor style	Kg	Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX				
TFM75AP 580-27R-17	5	80	87.82	27	58	50	3.9	A	0.8	SH M12x35	APKT 1705
6100-32R-17	6	100	107.82	32	85	50	3.9	B	1.3	-	PER-M
7125-40R-17	7	125	132.82	40	85	63	3.9	B	3.5	-	APKT 1705
TFM75AP 580-25.4R-17	5	80	87.82	25.4	70	50	3.9	A	0.8	SH M12x35	PER-EM
6100-31.75R-17	6	100	107.82	31.75	80	50	3.9	B	1.3	-	E228
7125-38.1R-17	7	125	132.82	38.1	80	63	3.9	B	3.5	-	

• Cutter for the other corner of APKT inserts

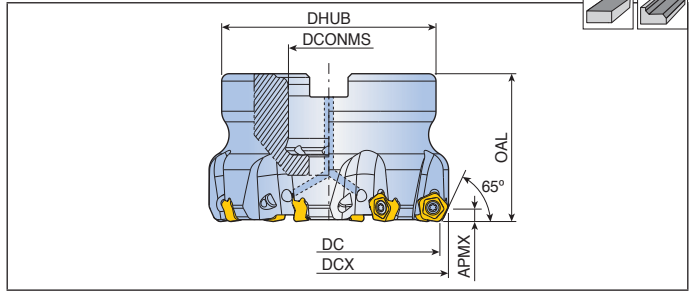
Spare parts

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



TFM65PT-05/10

Face mills



Designation		Dimension (mm)						Coolant hole	Arbor style	kg	Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX					
TFM65PT 640-16R-05	6	40	43.7	16	38	40	3.3	●	A	0.3	SH M8x25	PTKU 0503...
750-22R-05	7	50	53.7	22	45	40	3.3	●	A	0.4	SH M10x30	E242
863-22R-05	8	63	66.7	22	58	40	3.3	●	A	0.7	SH M10x30	
TFM65PT 680-27R-10	6	80	87.4	27	70	50	6.5	●	A	1.2	LH M12x30	PTKU 1006...
8100-32R-10	8	100	107.4	32	85	50	6.5	●	A	1.9	LH M16x35	E242
9125-40R-10	9	125	132.4	40	85	63	6.5	●	A	3.2	SH M20x40	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

Designation	Screw	Wrench		Wrench handle	
TFM65PT-05	TS 25D060/HG-P	TD 7P	-	SW6-T	
TFM65PT-10	TS 50D130/HG-P	-	TBLD T20P-W6	SW6-T	

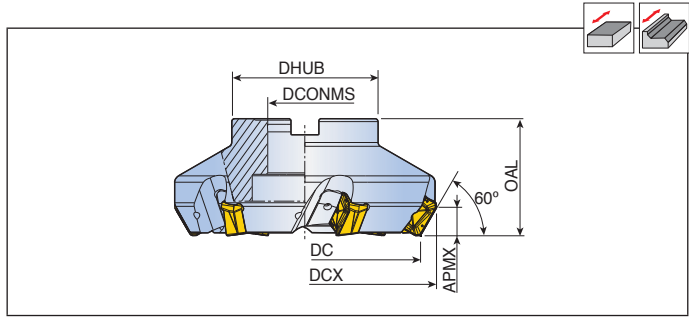
Cutting Condition
E271-E273

Arbor Style
E274-E275

LM60SC-21



Face mills



Designation		Dimension (mm)							Arbor style	Kg	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX				
LM60SC 5125-40R-21	5	125	141.2	40	85	63	13.0	B	4.1	SCKN 2107... E248	
8160-40R-21	8	160	176.1	40	110	63	13.0	C	6.5		
10160-40R-21	10	160	176.1	40	110	63	13.0	C	6.4		
10200-60R-21	10	200	216.1	60	130	80	13.0	C	11.8		
12200-60R-21	12	200	216.1	60	130	80	13.0	C	11.8		
12250-60R-21	12	250	266	60	160	80	13.0	C	19.2		
14250-60R-21	14	250	266	60	160	80	13.0	C	19.1		
16250-60R-21	16	250	266	60	160	80	13.0	C	19.1		
12315-60R-21	12	315	331	60	220	80	13.0	D	25.0		
16315-60R-21	16	315	331	60	220	80	13.0	D	25.0		
LM60SC 5125-38.1R-21	5	125	141.2	38.1	80	63	13.0	B	4.1		
10160-50.8R-21	10	160	176.1	50.8	100	63	13.0	B	6.4		
10200-47.625R-21	10	200	216.1	47.625	130	80	13.0	C	11.8		
12250-47.625R-21	12	250	266	47.625	160	80	13.0	C	19.2		
16250-47.625R-21	16	250	266	47.625	160	80	13.0	C	19.1		

Spare parts

Designation	Shim	Shim screw	Wedge	Wedge screw	Wrench	
LM60SC-21	TSSC 21R-ST	TS 50C130I/HG	WSC 8R-21	TS 80200W	T-W 4	T-T20

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



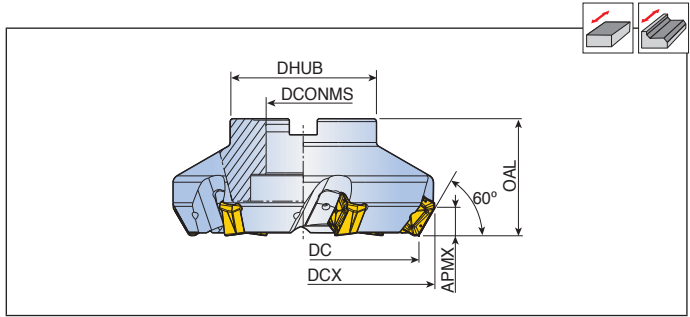
E271-E273

E274-E275

LM60SC-27



Face mills



Designation		Dimension (mm)							Arbor style	Kg	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX				
LM60SC 5125-40R-27	5	125	146	40	85	63	18.0	B	4.6	SCKN 2708... E248	
6160-40R-27	6	160	181	40	110	80	18.0	C	8.7		
8160-40R-27	8	160	181	40	110	80	18.0	C	8.4		
8200-60R-27	8	200	220.9	60	130	80	18.0	C	12.4		
10200-60R-27	10	200	220.9	60	130	80	18.0	C	12.3		
10250-60R-27	10	250	270.8	60	160	80	18.0	C	19.9		
12250-60R-27	12	250	270.8	60	160	80	18.0	C	19.8		
12315-60R-27	12	315	335.8	60	220	80	18.0	D	26.0		
15315-60R-27	15	315	335.8	60	220	80	18.0	D	25.9		
LM60SC 12250-47.625R-27	12	250	270.8	47.625	160	80	18.0	C	19.8		
12315-47.625R-27	12	315	335.8	47.625	220	80	18.0	D	26.0		

Spare parts

Designation	Shim	Shim screw	Wedge	Wedge screw	Wrench		Wrench handle
LM60SC-27	TSSC 27R-TS	TS 60A130I	WSC 8R	TS 80200W	T-W 4	BLD T25	SW6-T

• The wrench⁽¹⁾ & wrench handle⁽²⁾ shall be ordered separately



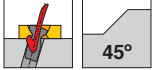
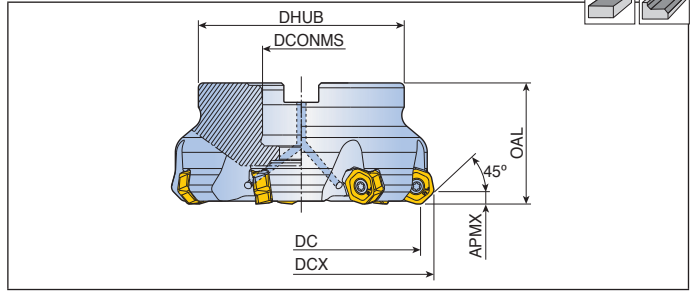
E271-E273



E274-E275

12D-TF45-06

Face mills



Designation	Z	Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX					
12D-TF45-450-22R-06	4	50	60.8	22	45	40	3.0	●	A	0.5	LH M10x25	HXK(H)U
650-22R-06	6	50	60.8	22	45	40	3.0	●	A	0.5	LH M10x25	0605...
563-22R-06	5	63	73.8	22	47	40	3.0	●	A	0.7	LH M10x25	E237
763-22R-06	7	63	73.8	22	47	40	3.0	●	A	0.7	LH M10x25	
680-27R-06	6	80	90.8	27	70	50	3.0	●	A	1.5	SH M12x35	
1080-27R-06	10	80	90.8	27	70	50	3.0	●	A	1.5	SH M12x35	
7100-32R-06	7	100	110.8	32	85	50	3.0	●	A	2.2	SH M16x35	
12100-32R-06	12	100	110.8	32	85	50	3.0	●	A	2.2	SH M16x35	
10125-40R-06	10	125	135.8	40	85	63	3.0	●	A	3.6	SH M20x40	
16125-40R-06	16	125	135.8	40	85	63	3.0	●	A	3.6	SH M20x40	
12160-40R-06	12	160	170.8	40	110	63	3.0	x	C	4.9	-	
20160-40R-06	20	160	170.8	40	110	63	3.0	x	C	4.9	-	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

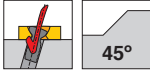
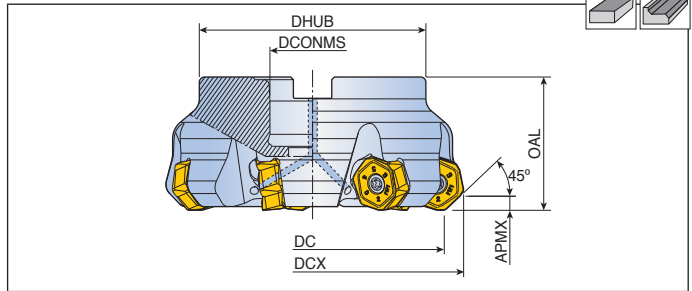
Spare parts

Designation	Screw	Wrench	Wrench handle		
12D-TF45-06	TS 40B100I	TBLD T15-W6	SW6-T		



12D-TF45-10

Face mills



Designation	⊕	Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX					
12D-TF45-563-22R-10	5	63	77.5	22	47	50	5.0	●	A	0.9	SH M10x30	HXK(H)U 1007...
763-22R-10	7	63	77.5	22	47	50	5.0	●	A	0.9	SH M10x30	
680-27R-10	6	80	94.5	27	70	50	5.0	●	A	1.6	SH M12x35	E237
980-27R-10	9	80	94.5	27	70	50	5.0	●	A	1.6	SH M12x35	
7100-32R-10	7	100	114.5	32	85	50	5.0	●	A	2.4	LH M16x35	
11100-32R-10	11	100	114.5	32	85	50	5.0	●	A	2.4	LH M16x35	
8125-40R-10	8	125	139.5	40	85	63	5.0	●	A	4.1	SH M20x40	
10125-40R-10	10	125	139.5	40	85	63	5.0	●	A	4.0	SH M20x40	
14125-40R-10	14	125	139.5	40	85	63	5.0	●	A	4.0	SH M20x40	
10160-40R-10	10	160	174.5	40	110	63	5.0	x	C	5.6	-	
16160-40R-10	16	160	174.5	40	110	63	5.0	x	C	5.6	-	
14200-60R-10	14	200	214.5	60	130	63	5.0	x	C	7.9	-	
21200-60R-10	21	200	214.5	60	130	63	5.0	x	C	7.9	-	
16250-60R-10	16	250	264.5	60	160	63	5.0	x	C	12.4	-	
26250-60R-10	26	250	264.5	60	160	63	5.0	x	C	12.4	-	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

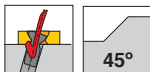
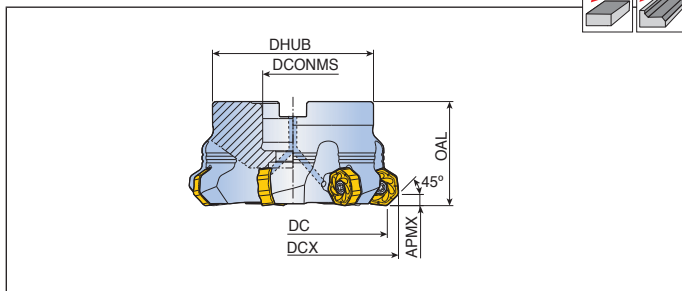
Spare parts

Designation	Screw	Wrench	Wrench handle		
12D-TF45-10	TS 50C130I/HG	TBLD T20-W6	SW6-T		



14D-F45XN-06

Face mills



Designation		Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX					
14D-F45XN 550-22R-06	5	50	59.1	22	45	40	3.5	●	A	0.4	LH M10x25	XNM(H)U 0605... E265
563-22R-06	5	63	72.1	22	47	50	3.5	●	A	0.8	SH M10x35	
763-22R-06	7	63	72.1	22	47	50	3.5	●	A	0.8	SH M10x35	
680-27R-06	6	80	89.1	27	70	50	3.5	●	A	1.4	SH M12x35	
980-27R-06	9	80	89.1	27	70	50	3.5	●	A	1.4	SH M12x35	
7100-32R-06	7	100	109.1	32	85	50	3.5	●	A	2.1	SH M16x35	
11100-32R-06	11	100	109.1	32	85	50	3.5	●	A	2.1	SH M16x35	
10125-40R-06	10	125	134.1	40	85	63	3.5	●	A	3.6	SH M20x40	
14125-40R-06	14	125	134.1	40	85	63	3.5	●	A	3.6	SH M20x40	
12160-40R-06	12	160	169.1	40	110	63	3.5	x	C	4.7	-	
16160-40R-06	16	160	169.1	40	110	63	3.5	x	C	4.9	-	
18160-40R-06	18	160	169.1	40	110	63	3.5	x	C	5.0	-	
14D-F45XN 763-25.4R-06	7	63	72.1	25.4	47	50	3.5	●	A	0.8	SH M12x30	
980-25.4R-06	9	80	89.1	25.4	70	50	3.5	●	A	1.4	SH M12x35	
11100-31.75R-06	11	100	109.1	31.75	80	50	3.5	●	A	1.9	LH M16x35	
14125-38.1R-06	14	125	134.1	38.1	80	63	3.5	x	B	3.9	-	

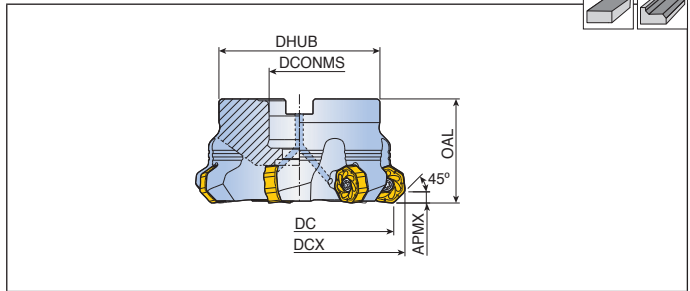
• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

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



Face mills



Designation		Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX					
14D-F45XN 563-22R-09	5	63	74.9	22	47	50	5.0	●	A	0.9	SH M10x35	XNM(H)U 0906... E266
663-22R-09	6	63	74.9	22	47	50	5.0	●	A	0.9	SH M10x35	
680-27R-09	6	80	91.9	27	70	50	5.0	●	A	1.4	SH M12x35	
780-27R-09	7	80	91.9	27	70	50	5.0	●	A	1.5	SH M12x35	
7100-32R-09	7	100	112	32	85	55	5.0	●	A	2.4	SH M16x35	
9100-32R-09	9	100	112	32	85	55	5.0	●	A	2.5	SH M16x35	
8125-40R-09	8	125	137	40	85	63	5.0	●	A	3.5	SH M20x40	
10125-40R-09	10	125	137	40	85	63	5.0	●	A	3.6	SH M20x40	
12125-40R-09	12	125	137	40	85	63	5.0	●	A	3.4	SH M20x40	
10160-40R-09	10	160	172	40	110	63	5.0	x	C	4.8	-	
12160-40R-09	12	160	172	40	110	63	5.0	x	C	4.8	-	
14160-40R-09	14	160	172	40	110	63	5.0	x	C	4.8	-	
12200-60R-09	12	200	212	60	130	63	5.0	x	C	6.8	-	
16200-60R-09	16	200	212	60	130	63	5.0	x	C	6.9	-	
16250-60R-09	16	250	262	60	160	63	5.0	x	C	11.5	-	
20250-60R-09	20	250	262	60	160	63	5.0	x	C	11.5	-	
14D-F45XN 680-25.4R-09	6	80	91.9	25.4	70	50	5.0	●	A	1.4	SH M12x35	
7100-31.75R-09	7	100	112	31.75	80	55	5.0	●	A	2.4	SH M16x35	
8125-38.1R-09	8	125	137	38.1	80	63	5.0	x	B	3.5	-	
10160-50.8R-09	10	160	172	50.8	100	63	5.0	x	B	4.8	-	
12200-47.625R-09	12	200	212	47.625	130	63	5.0	x	C	6.8	-	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

Designation	Screw	Wrench			
	14D-F45XN-09	TS 50C130/HG	T-T20		

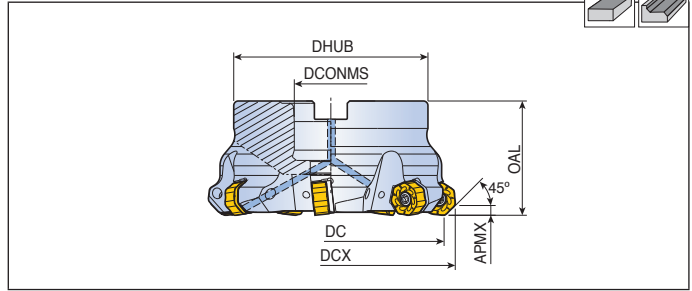


E271-E273

E274-E275

14D-F45XNH-06/09

Shim type face mills



Designation		Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX					
14D-F45XNH 763-22R-06	7	63	72.2	22	47	40	3.5	●	A	0.7	SH M10x25	XNM(H)U 0605...
780-27R-06	7	80	89.2	27	70	50	3.5	●	A	1.5	SH M12x35	
880-27R-06	8	80	89.2	27	70	50	3.5	●	A	1.5	SH M12x35	
7100-32R-06	7	100	109.2	32	85	50	3.5	●	A	2.2	SH M16x35	
8100-32R-06	8	100	109.2	32	85	50	3.5	●	A	2.2	SH M16x35	
11125-40R-06	11	125	134.2	40	85	63	3.5	●	A	3.5	SH M20x40	
14D-F45XNH 563-22R-09	5	63	75.1	22	47	40	5.0	●	A	0.6	SH M10x35	XNM(H)U 0906...
680-27R-09	6	80	92.1	27	70	50	5.0	●	A	1.5	SH M12x35	
7100-32R-09	7	100	112.1	32	85	50	5.0	●	A	2.2	SH M16x35	
9125-40R-09	9	125	137.0	40	85	63	5.0	●	A	3.6	SH M20x40	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

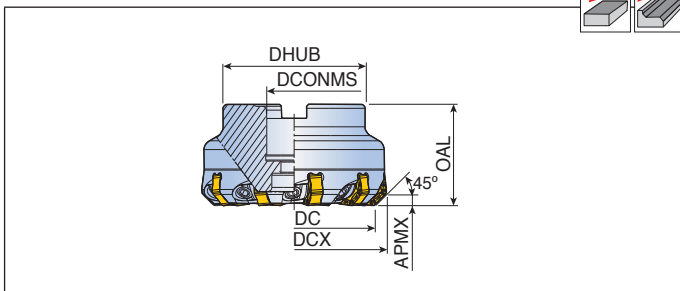
Spare parts

Designation	Screw 	Shim 	Shim screw 	Wrench 	Wrench handle
14D-F45XNH-06	TS 35C110I	TSXN 06N	TS 5035062S-B	TBLD T15-W6	SW6-T
14D-F45XNH-09	TS 50C130I/HG	TSXN 09N	TS 8050088S	TBLD T20-W6	SW6-T



14D-F45XNW-09

Face mill



Designation		Dimension (mm)						Arbor style	Kg	Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX				
14D-F45XNW 1080-27R-09	10	80	91.9	27	70	50	5.0	A	1.5	SH M12x35	XNHU 0906... E266
14100-32R-09	14	100	112	32	85	55	5.0	A	2.9	SH M16x35	
18125-40R-09	18	125	137	40	85	63	5.0	B	3.8	-	
18160-40R-09	18	160	172	40	110	63	5.0	C	5.6	-	
22160-40R-09	22	160	172	40	110	63	5.0	C	5.6	-	
28200-60R-09	28	200	212	60	130	63	5.0	C	7.9	-	
36250-60R-09	36	250	262	60	160	63	5.0	C	12.7	-	
44315-60R-09	44	315	327	60	220	63	5.0	D	19.9	-	

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

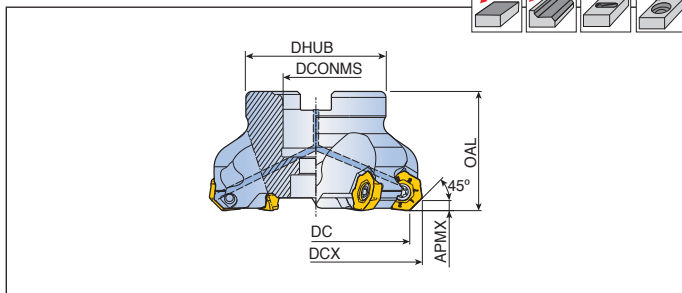
Spare parts

Designation	Wedge	Wedge screw	Wrench		
14D-F45XNW-09	WFZ 8H	WS 8	T-W 4		



7S-F45-06

Face mills



Designation	⊕	Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX					
7S-F45 332-16R-06	3	32	40.4	16	38	40	3.2	●	E	0.2	KTB 32B	7EMT 0604... E223
440-16R-06	4	40	48.5	16	38	40	3.2	●	A	0.3	SH M8x30	
550-22R-06	5	50	58.5	22	45	40	3.2	●	A	0.4	LH M10x25	
663-22R-06	6	63	71.5	22	47	40	3.2	●	A	0.5	LH M10x25	
780-27R-06	7	80	88.5	27	70	50	3.2	●	A	1.3	LH M12x30	
8100-32R-06	8	100	108.5	32	85	50	3.2	●	A	1.9	LH M16x35	
9125-40R-06	9	125	133.5	40	85	63	3.2	●	A	3.3	SH M20x40	
7S-F45 780-25.4R-06	7	80	88.5	25.4	70	50	3.2	●	A	1.3	LH M12x30	
8100-31.75R-06	8	100	108.5	31.75	80	50	3.2	●	A	1.8	LH M16x35	
9125-38.1R-06	9	125	133.5	38.1	80	63	3.2	x	B	2.8	-	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M8x1.25x30-C)

Spare parts

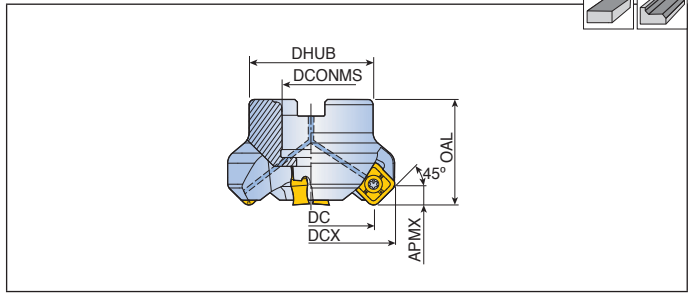
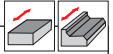
Designation	Screw	Wrench			
7S-F45-06	TS 40093I/HG	T-T15			

 E271-E273	 E274-E275	 E327
---------------	---------------	----------

TFM45SN-13



Face mills



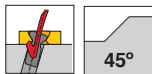
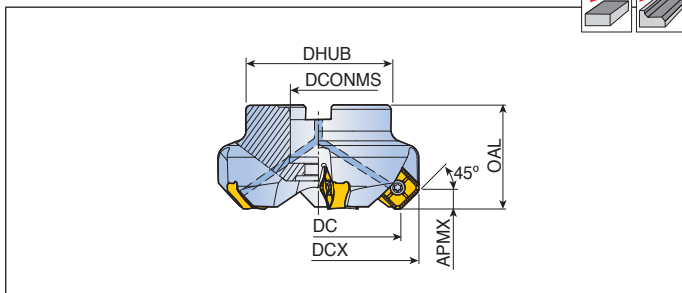
Designation	⊕	Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX					
TFM45SN 440-16R-13	4	40	54.7	16	38	40	7.0	●	A	0.3	LH M10x25	SNM(G)X 1306 AN... SNMX 1306 XTN E252
450-22R-13	4	50	64.7	22	45	40	7.0	●	A	0.5	LH M10x25	
650-22R-13	6	50	64.7	22	45	40	7.0	●	A	0.5	LH M10x25	
663-22R-13	6	63	77.7	22	47	40	7.0	●	A	0.7	LH M10x25	
863-22R-13	8	63	77.7	22	47	40	7.0	●	A	0.7	LH M10x25	
480-27R-13B	4	80	94.8	27	70	50	7.0	●	A	1.4	LH M12x30	
780-27R-13	7	80	94.8	27	70	50	7.0	●	A	1.5	LH M12x30	
1080-27R-13	10	80	94.8	27	70	50	7.0	●	A	1.5	LH M12x30	
5100-32R-13B	5	100	114.8	32	85	50	7.0	●	A	2.1	LH M16x35	
8100-32R-13	8	100	114.8	32	85	50	7.0	●	A	2.2	LH M16x35	
12100-32R-13	12	100	114.8	32	85	50	7.0	●	A	2.2	LH M16x35	
6125-40R-13B	6	125	139.8	40	85	63	7.0	●	A	3.8	SH M20x40	
10125-40R-13	10	125	139.8	40	85	63	7.0	●	A	3.8	SH M20x40	
16125-40R-13	16	125	139.6	40	85	63	7.0	●	A	3.8	SH M20x40	
8160-40R-13B	8	160	174.8	40	110	63	7.0	x	C	4.9	-	
12160-40R-13	12	160	174.8	40	110	63	7.0	x	C	4.9	-	
20160-40R-13	20	160	174.5	40	110	63	7.0	x	C	5.0	-	
10200-60R-13B	10	200	214.8	60	130	63	7.0	x	C	6.5	-	
18200-60R-13	18	200	214.8	60	130	63	7.0	x	C	6.6	-	
26200-60R-13	26	200	214.3	60	130	63	7.0	x	C	7.0	-	
20250-60R-13	20	250	264.8	60	160	63	7.0	x	C	12.9	-	
TFM45SN 480-25.4R-13B	4	80	94.8	25.4	70	50	7.0	●	A	1.4	LH M12x30	
5100-31.75R-13B	5	100	114.8	31.75	80	50	7.0	x	B	2.1	-	
6125-38.1R-13B	6	125	139.8	38.1	80	63	7.0	x	B	3.8	-	
10125-38.1R-13	10	125	139.8	38.1	80	63	7.0	x	B	3.4	-	
8160-50.8R-13B	8	160	174.8	50.8	100	63	7.0	x	B	4.9	-	
12160-50.8R-13	12	160	174.8	50.8	100	63	7.0	x	B	5.0	-	
10200-47.625R-13B	10	200	214.8	47.625	130	63	7.0	x	C	6.5	-	
12250-47.625R-13B	12	250	264.8	47.625	160	63	7.0	x	C	12.9	-	



• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

TFM45SNS-16

Face mills



Designation		Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX					
TFM45SNS 463-22R-16	4	63	81.1	22	47	50	8.8	●	A	1.0	LH M10x25	SNMX 1607... SNHX 1606... E254
580-27R-16	5	80	98.2	27	70	50	8.8	●	A	1.5	LH M12x30	
7100-32R-16	7	100	118.2	32	85	50	8.8	●	A	2.3	LH M16x35	
8125-40R-16	8	125	143.2	40	85	63	8.8	●	A	4.0	SH M20x40	
10125-40R-16	10	125	143.2	40	85	63	8.8	●	A	4.0	SH M20x40	
10160-40R-16	10	160	178.2	40	110	63	8.8	x	C	5.4	-	
12160-40R-16	12	160	178.2	40	110	63	8.8	x	C	5.4	-	
12200-60R-16	12	200	218.2	60	130	63	8.8	x	C	7.5	-	
14250-60R-16	14	250	268.2	60	160	63	8.8	x	C	13	-	
TFM45SNS 580-25.4R-16	5	80	98.2	25.4	70	50	8.8	●	A	1.5	LH M12x30	
7100-31.75R-16	7	100	118.2	31.75	80	50	8.8	x	B	2.3	-	
8125-38.1R-16	8	125	143.2	38.1	80	63	8.8	x	B	4.0	-	
10160-50.8R-16	10	160	178.2	50.8	100	63	8.8	x	B	5.4	-	
12200-47.625R-16	12	200	218.2	47.625	130	63	8.8	x	C	7.5	-	

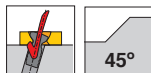
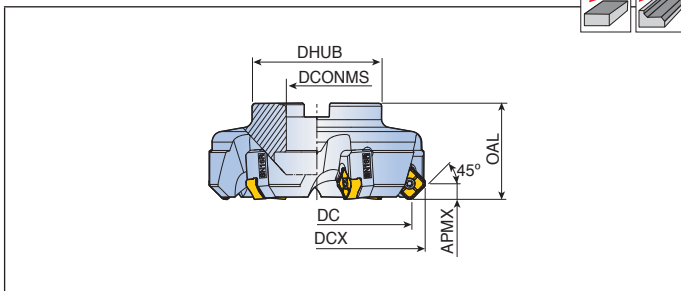
• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

Designation	Screw	Wrench			
TFM45SN-13	TS 40B100I	T-T15			
TFM45SNS-16	TS 45120I	T-T20			



Face mills



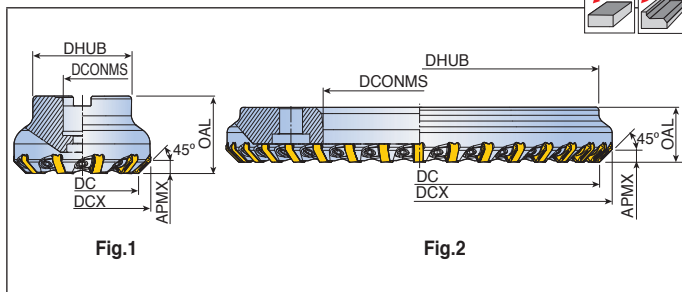
Designation		Dimension (mm)						Arbor style	Kg	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX			
TFM45SNS 6125-40R-16B-CA	6	125	143.2	40	85	63	8.8	B	4.0	SNMX 1607...
8160-40R-16B-CA	8	160	178.2	40	110	63	8.8	C	5.9	SNHX 1606...
10200-60R-16B-CA	10	200	218.2	60	130	63	8.8	C	8.1	E254
14250-60R-16B-CA	14	250	268.2	60	160	63	8.8	C	13.3	
14315-60R-16B-CA	14	315	333.2	60	220	80	8.8	D	24.0	

Spare parts

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



Face mills



Designation		Dimension (mm)						Fig.	Arbor style	Kg	Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX					
TFM45SNW 1080-27R-16	10	80	98.2	27	70	55	8.8	1	A	1.9	LH M12x30	SNHX 1606...
14100-32R-16	14	100	118.2	32	85	63	8.8	1	A	3.2	SH M16x35	E254
18125-40R-16	18	125	143.2	40	85	63	8.8	1	B	3.9	-	-
22160-40R-16	22	160	178.2	40	110	63	8.8	1	C	5.7	-	-
26200-60R-16	26	200	218.2	60	130	63	8.8	1	C	7.8	-	-
32250-60R-16	32	250	268.2	60	160	63	8.8	1	C	13.5	-	-

Designation		Dimension (mm)						Fig.	Kg	Adapter	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX				
TQ45SNW 26200R-16	26	200	218.2	63.5	200	38	8.8	2	6.3	QA 08 K/M	SNHX 1606...
34250R-16	34	250	268.2	133.35	248	38	8.8	2	7.9	QA 10 K/M	E254
44315R-16	44	315	333.2	146.05	313	38	8.8	2	13.2	QA 12 K/M	-
50355R-16	50	355	373.2	215.90	353	38	8.8	2	13.0	QA 14 K/M	-

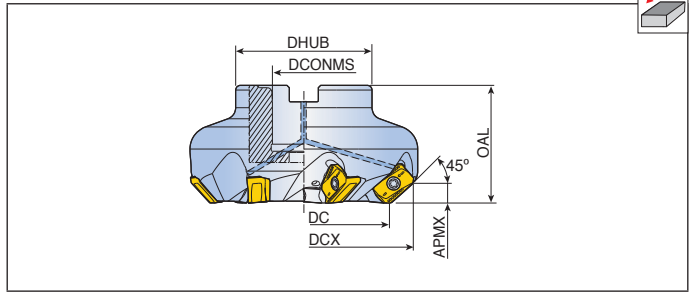
• Recommend to very stable machining condition at cast iron & steel

Spare parts

Designation	Wedge 	Wedge screw 	Wrench 		
TFM45SNW	WFZ 8H-SN	WS 8	T-W 4		
TQ45SNW	WFZ 8H-SN	WS 8	T-W 4		



Face mills



Designation		Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX					
TFM45AN 450-22R-16	4	50	67.8	22	45	40	8.4	●	A	0.6	LH M10x25	ANHX 1607 ANR-M E223
663-22R-16	6	63	80.6	22	47	40	8.4	●	A	0.9	LH M10x25	
780-27R-16	7	80	97.5	27	58	50	8.4	●	A	1.6	SH M12x35	
8100-32R-16	8	100	117.5	32	85	50	8.4	●	A	2.5	LH M16x35	
9125-40R-16	9	125	142.6	40	85	63	8.4	●	A	4.3	SH M20x40	
10160-40R-16	10	160	177.7	40	110	63	8.4	x	C	5.8	-	

- 90° Inserts can not be mounted
- Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

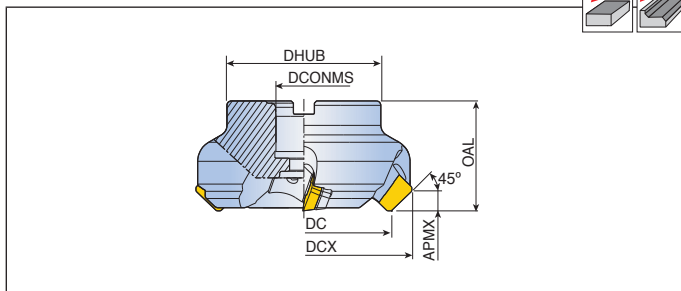
Spare parts

Designation	Screw	Wrench			
	TFM45AN	TS 40120I	T-T15		



LM45SD-12/15

Face mills (Inch bore)



Designation		Dimension (mm)						Arbor style	Kg	Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX				
LM45SD 480-25.4R-12	4	80	93.8	25.4	70	50	6.5	A	1.6	LH M12x30	SDKN 1203...
5100-31.75R-12	5	100	113.8	31.75	80	60	6.5	A	2.8	LH M16x35	E248
6125-38.1R-12	6	125	138.8	38.1	80	63	6.5	B	3.5	-	-
8160-50.8R-12	8	160	173.9	50.8	100	63	6.5	B	5.5	-	-
10200-47.625R-12	10	200	213.9	47.625	130	63	6.5	C	7.6	-	-
12250-47.625R-12	12	250	263.9	47.625	160	63	6.5	C	12.6	-	-
LM45SD 6125-38.1R/L-15	6	125	143.6	38.1	80	63	8.7	B	3.5	-	SDKN 1504...
8160-50.8R/L-15	8	160	178.6	50.8	100	63	8.7	B	5.5	-	E248
10200-47.625R-15	10	200	218.6	47.625	130	63	8.7	C	7.6	-	-
12250-47.625R/L-15	12	250	268.6	47.625	160	63	8.7	C	12.6	-	-
14315-47.625R/L-15	14	315	333.54	47.625	220	63	6.7	D	18.7	-	-

• Metric bore cutter is available upon request

Spare parts

Designation	Carbide shim	Wedge	Shim screw	Wedge screw	Wrench	
LM45SD-12	TSSDSE 12N	WPA 8	TS 40B100I	TS 80200W ⁽¹⁾	T-W 4	T-T15
LM45SD-15	TSSDSE 15N	WPA 8	TS 40B100I	TS 80160W ⁽¹⁾	T-W 4	T-T15

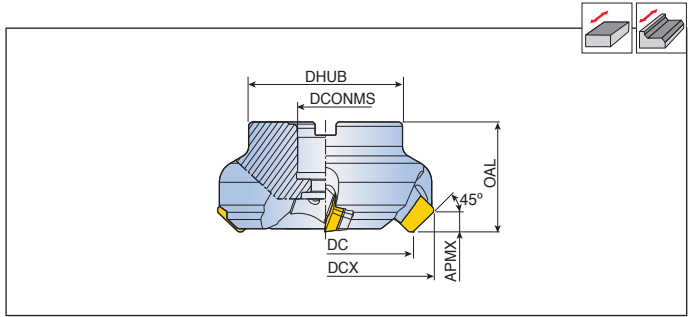


- ⁽¹⁾ TS 80160W is for D80 cutter
- The shim screw wrench T-T15⁽²⁾ shall be ordered separately

LM45SE-12/15



Face mills (Inch bore)



Designation		Dimension (mm)						Arbor style		Mounting bolt	Insert
		DC	DCX	DCONMS	DHUB	OAL	APMX				
LM45SE 480-25.4R-12	4	80	93.7	25.4	70	55	6.5	A	1.8	LH M12x30	SEKN 1203...
5100-31.75R-12	5	100	113.6	31.75	80	60	6.5	A	2.8	LH M16x35	E249
6125-38.1R-12	6	125	138.6	38.1	80	63	6.5	B	3.4	-	
8160-50.8R-12	8	160	173.6	50.8	100	63	6.5	B	5	-	
10200-47.625R-12	10	200	213.6	47.625	130	63	6.5	C	7.5	-	
12250-47.625R-12	12	250	263.6	47.625	160	63	6.5	C	12.2	-	
LM45SE 480-25.4R-15	4	80	97.8	25.4	70	55	8.7	A	1.8	LH M12x30	SEKN 1504...
5100-31.75R-15	5	100	118	31.75	80	60	8.7	A	2.8	LH M16x35	E249
6125-38.1R-15	6	125	143	38.1	80	63	8.7	B	3.5	-	
8160-50.8R-15	8	160	178	50.8	100	63	8.7	B	5.7	-	
10200-47.625R-15	10	200	218	47.625	130	63	8.7	C	7.8	-	
12250-47.625R-15	12	250	268	47.625	160	63	8.7	C	12.8	-	

• Metric bore cutter is available upon request

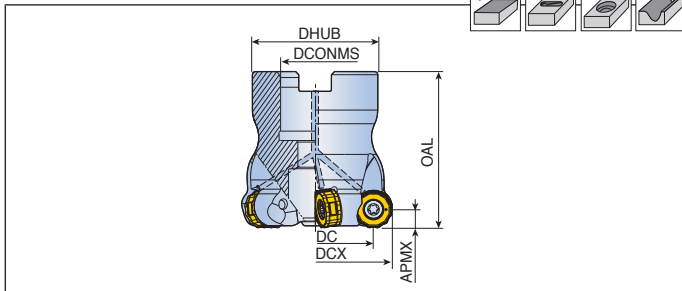
Spare parts





Designation	Carbide shim	Wedge	Shim screw	Wedge screw	Wrench	
LM45SE-12	TSSDSE 12N	WPA 8	TS 40B100I	TS 80200W	T-W 4	T-T15
LM45SE-15	TSSDSE 15N	WPA 8	TS 40B100I	TS 80160W ⁽¹⁾	T-W 4	T-T15



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

Face mills



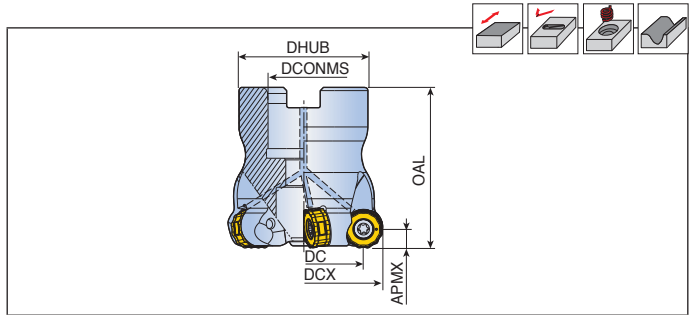
Designation		Dimension (mm)						Coolant hole	Arbor style	 Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMRNS 432-16R-10	4	32	22	16	30	40	5.0	•	E	0.1	KTB 32B	RNMU 1004...
433-16R-10	4	33	23	16	30	40	5.0	•	E	0.1	KTB 32B	 E244
540-16R-10	5	40	30	16	38	40	5.0	•	A	0.2	SH M8x30	
650-22R-10	6	50	40	22	45	50	5.0	•	A	0.4	SH M10x30	
652-22R-10	6	52	42	22	45	50	5.0	•	A	0.4	SH M10x30	
TFMRNS 440-16R-12	4	40	28	16	38	40	6.0	•	A	0.2	SH M8x30	RNMU 1205...
450-22R-12	4	50	38	22	45	50	6.0	•	A	0.3	SH M10x30	 E244
550-22R-12	5	50	40	22	45	50	6.0	•	A	0.3	SH M10x30	
552-22R-12	5	52	40	22	45	50	6.0	•	A	0.4	SH M10x30	
563-22R-12	5	63	51	22	47	50	6.0	•	A	0.6	SH M10x30	
663-22R-12	6	63	51	22	47	50	6.0	•	A	0.6	SH M10x30	
666-27R-12	6	66	54	27	58	50	6.0	•	A	0.6	SH M12x35	
680-27R-12	6	80	68	27	58	50	6.0	•	A	1.1	SH M12x35	
780-27R-12	7	80	68	27	58	50	6.0	•	A	1.0	SH M12x35	
7100-32R-12	7	100	88	32	66	50	6.0	•	A	1.5	LH M16x35	
8100-32R-12	8	100	88	32	66	50	6.0	•	A	1.5	LH M16x35	

 Cutting Condition E271-E273	 Arbor Style E274-E275	 Ramping Data E339
--	---	---

TFMRNS-16



Face mills



Designation		Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMRNS 350-16R-16	3	50	34	16	38	50	8.0	●	A	0.2	SH M8x30	RNMU 1606... E244
450-16R-16	4	50	34	16	38	50	8.0	●	A	0.2	SH M8x30	
452-22R-16	4	52	36	22	45	50	8.0	●	A	0.3	SH M10x30	
463-22R-16	4	63	47	22	47	50	8.0	●	A	0.5	SH M10x30	
566-27R-16	5	66	50	27	58	50	8.0	●	A	0.6	LH M12x30	
580-27R-16	5	80	64	27	58	50	8.0	●	A	0.9	LH M12x30	
680-27R-16	6	80	64	27	58	50	8.0	●	A	0.8	LH M12x30	
6100-32R-16	6	100	84	32	66	50	8.0	●	A	1.7	LH M16x35	
7125-40R-16	7	125	109	40	85	63	8.0	●	A	3.0	SH M20x40	
8125-40R-16	8	125	109	40	85	63	8.0	●	A	2.9	SH M20x40	
9160-40R-16	9	160	144	40	110	63	8.0	x	C	3.8	-	
10200-60R-16	10	200	184	60	130	63	8.0	x	C	5.6	-	

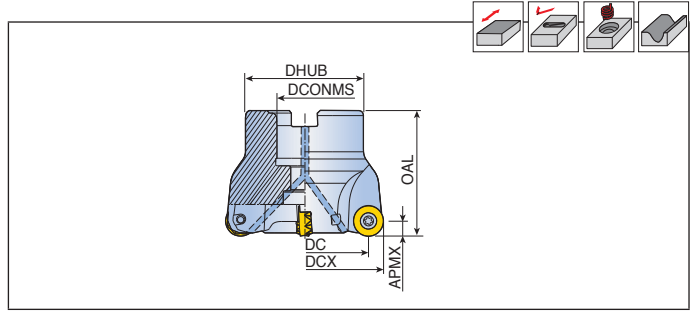
• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

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			

 E271-E273	 E274-E275	 E340
---------------	---------------	----------

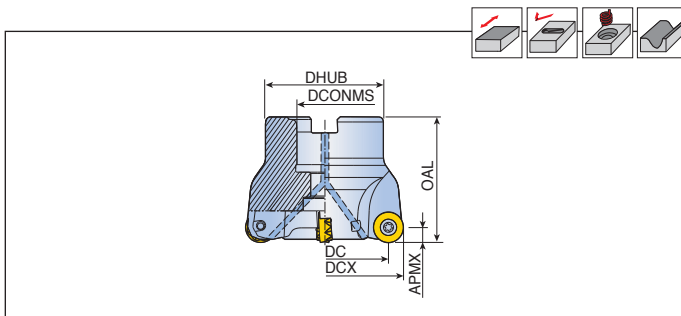
Face mills



Designation		Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMRY 532-16R-08	5	32	24	16	30	40	4.0	●	A	0.12	SH M8x30	RYM(H)X 0803... E245-E246
640-16R-08	6	40	32	16	38	40	4.0	●	A	0.22	SH M8x30	
TFMRY 432-16R-10	4	32	22	16	30	40	5.0	●	A	0.12	SH M8x30	RYM(H)X 1004... E245-E246
540-16R-10	5	40	30	16	38	40	5.0	●	A	0.22	SH M8x30	
640-16R-10	6	40	30	16	38	40	5.0	●	A	0.23	SH M8x30	E245-E246
650-22R-10	6	50	40	22	45	50	5.0	●	A	0.33	SH M10x30	
652-22R-10	6	52	42	22	45	50	5.0	●	A	0.36	SH M10x30	RYM(H)X 1205... E245-E246
763-22R-10	7	63	53	22	47	50	5.0	●	A	0.57	SH M10x30	
766-27R-10	7	66	56	27	58	50	5.0	●	A	0.68	LH M12x30	
TFMRY 332-16R-12	3	32	20	16	30	50	6.0	●	E	0.12	KTB 32B	RYM(H)X 1205... E245-E246
440-16R-12	4	40	28	16	38	40	6.0	●	A	0.15	SH M8x30	
442-16R-12	4	42	30	16	38	40	6.0	●	A	0.21	SH M8x30	E245-E246
450-22R-12	4	50	38	22	45	50	6.0	●	A	0.33	SH M10x30	
550-22R-12	5	50	38	22	45	50	6.0	●	A	0.33	SH M10x30	RYM(H)X 1205... E245-E246
552-22R-12	5	52	40	22	45	50	6.0	●	A	0.34	SH M10x30	
463-22R-12	4	63	51	22	47	50	6.0	●	A	0.57	SH M10x30	RYM(H)X 1205... E245-E246
563-22R-12	5	63	51	22	47	50	6.0	●	A	0.58	SH M10x30	
663-22R-12	6	63	51	22	47	50	6.0	●	A	0.58	SH M10x30	RYM(H)X 1205... E245-E246
763-22R-12	7	63	51	22	47	50	6.0	●	A	0.71	SH M10x30	
666-27R-12	6	66	54	27	58	50	6.0	●	A	0.62	LH M12x30	RYM(H)X 1205... E245-E246
766-27R-12	7	66	54	27	58	50	6.0	●	A	0.62	LH M12x30	
680-27R-12	6	80	68	27	58	50	6.0	●	A	0.90	LH M12x30	RYM(H)X 1205... E245-E246
780-27R-12	7	80	68	27	58	50	6.0	●	A	0.92	LH M12x30	
880-27R-12	8	80	68	27	58	50	6.0	●	A	0.98	LH M12x30	RYM(H)X 1205... E245-E246
7100-32R-12	7	100	88	32	66	50	6.0	●	A	1.29	LH M16x35	
8100-32R-12	8	100	88	32	66	50	6.0	●	A	1.37	LH M16x35	RYM(H)X 1205... E245-E246
8125-40R-12	8	125	113	40	85	63	6.0	●	A	3.00	SH M20x40	
9125-40R-12	9	125	113	40	85	63	6.0	●	A	2.99	SH M20x40	RYM(H)X 1205... E245-E246

Cutting Condition E271-E273	Arbor Style E274-E275	Ramping Data E341-E342
--------------------------------	--------------------------	---------------------------

Face mills



Designation		Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMRY 350-16R-16	3	50	34	16	38	50	8.0	●	A	0.3	SH M8x35	RYM(H)X 1606... E245-E246
450-16R-16	4	50	34	16	38	50	8.0	●	A	0.3	SH M8x35	
450-22R-16	4	50	34	22	45	50	8.0	●	A	0.3	SH M10x30	
452-22R-16	4	52	36	22	45	50	8.0	●	A	0.3	SH M10x30	
463-22R-16	4	63	47	22	47	50	8.0	●	A	0.5	SH M10x30	
463H-22R-16*	4	63	47	22	47	50	8.0	●	A	0.5	SH M10x30	
566-27R-16	5	66	50	27	58	50	8.0	●	A	0.6	LH M12x30	
580-27R-16	5	80	64	27	58	50	8.0	●	A	0.8	LH M12x30	
580H-27R-16*	5	80	64	27	58	50	8.0	●	A	0.8	LH M12x30	
680-27R-16	6	80	64	27	58	50	8.0	●	A	0.8	LH M12x30	
6100-32R-16	6	100	84	32	66	50	8.0	●	A	1.2	LH M16x35	
6100H-32R-16*	6	100	84	32	66	50	8.0	●	A	1.2	LH M16x35	
7125-40R-16	7	125	109	40	85	63	8.0	●	A	2.7	SH M20x40	
7125H-40R-16*	7	125	109	40	85	63	8.0	●	A	2.6	SH M20x40	
8125-40R-16	8	125	109	40	85	63	8.0	●	A	2.7	SH M20x40	
8160H-40R-16*	8	160	144	40	110	63	8.0	x	C	3.3	-	
TFMRY 580-25.4R-16	5	80	64	25.4	70	50	8.0	●	A	1.0	SH M12x35	

- *: Carbide shim type
- Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

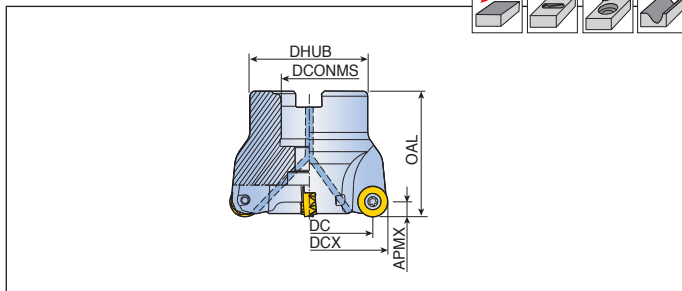
Spare parts

Designation	Shim	Shim screw	Screw	Wrench	
TFMRY-08	-	-	TS 30A60I/HG	TD 9	-
TFMRY-10	-	-	TS 35085/HG	-	T-T15
TFMRY-12	-	-	TS 40093I	-	T-T15
TFMRY-16	-	-	TS 50115I	-	T-T20
TFMRY...H-16	TSRY 16NS	TS 8050088S	TS 50A140I	-	T-T20



TFMRY-20

Face mills



Designation		Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMRY 463-22R-20	4	63	43	22	47	50	10.0	●	A	0.5	SH M10x30	RYMX 2007...
580-27R-20	5	80	60	27	58	50	10.0	●	A	0.8	LH M12x30	
5100H-32R-20*	5	100	80	32	66	50	10.0	●	A	1.1	LH M16x35	E245-E246
6100-32R-20	6	100	80	32	66	50	10.0	●	A	1.2	LH M16x35	
5125H-40R-20*	5	125	105	40	85	63	10.0	●	A	2.7	SH M20x40	
7125-40R-20	7	125	105	40	85	63	10.0	●	A	2.5	SH M20x40	
6160H-40R-20*	6	160	140	40	110	63	10.0	x	C	2.7	-	
8160-40R-20	8	160	140	40	110	63	10.0	x	C	3.8	-	
8200H-60R-20*	8	200	180	60	130	63	10.0	x	C	5.3	-	
9250H-60R-20*	9	250	230	60	160	63	10.0	x	C	9.3	-	

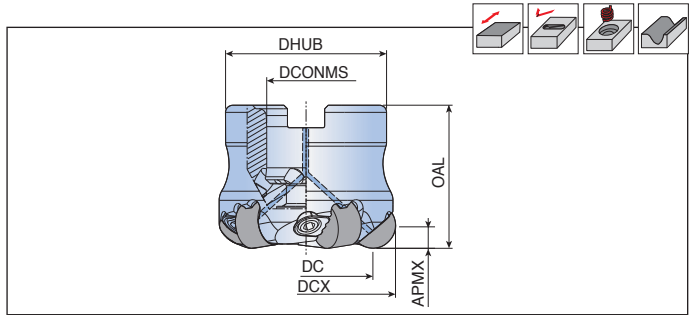
- *: Carbide shim type
- Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

Designation	Shim 	Shim screw 	Screw 	Wrench 	Wrench handle
TFMRY-20	-	-	TS 60A130I	BLD T25/M7	SW6-T
TFMRY...H-20	TSRY 20NS	TS 9060011S	TS 60A165I	BLD T25/M7	SW6-T

 E271-E273	 E274-E275	 E343
---------------	---------------	----------

Face mills



Designation		Dimension (mm)						Air hole ⁽¹⁾	Arbor style	Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMRN 450-22R-1207	4	50	37.3	22	45	40	6.3	●	A	0.4	SH M10x30	RNGN 1207
550-22R-1207	5	50	37.3	22	45	40	6.3	●	A	0.4	SH M10x30	FL...
463-22R-1207	4	63	50.3	22	47	40	6.3	●	A	0.6	SH M10x30	E243
663-22R-1207	6	63	50.3	22	47	40	6.3	●	A	0.6	SH M10x30	
763-22R-1207	7	63	50.3	22	47	40	6.3	●	A	0.6	SH M10x30	
580-27R-1207	5	80	67.3	27	58	50	6.3	●	A	1.1	SH M12x35	
780-27R-1207	7	80	67.3	27	58	50	6.3	●	A	1.1	SH M12x35	
880-27R-1207	8	80	67.3	27	58	50	6.3	●	A	1.1	SH M12x35	

- Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)
- ⁽¹⁾ Use only air (Coolant is prohibited)

Spare parts

Designation	Wedge 	Screw 	Wrench 		
TFMRN-12	WFZ 6-C	WS 6	T-W 3		

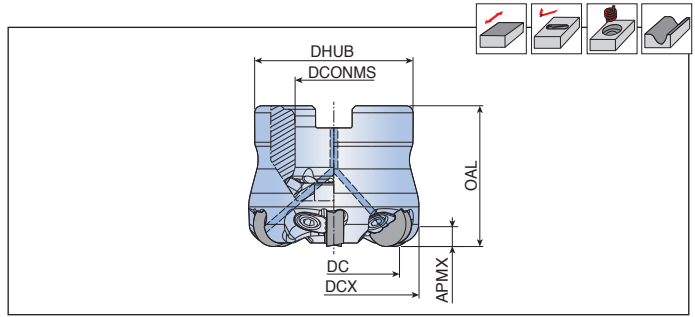
Cutting Condition
E271-E273

Arbor Style
E274-E275

TFMRP-12



Face mills



Designation		Dimension (mm)						Air hole ⁽¹⁾	Arbor style	Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMRP 450-22R-12	4	50	37.3	22	45	40	6.3	●	A	0.3	LH M10x25	RPGN 1204 FL... E243
	6	50	37.3	22	45	40	6.3	●	A	0.3	LH M10x25	

- Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)
- ⁽¹⁾ Use only air (Coolant is prohibited)

Spare parts

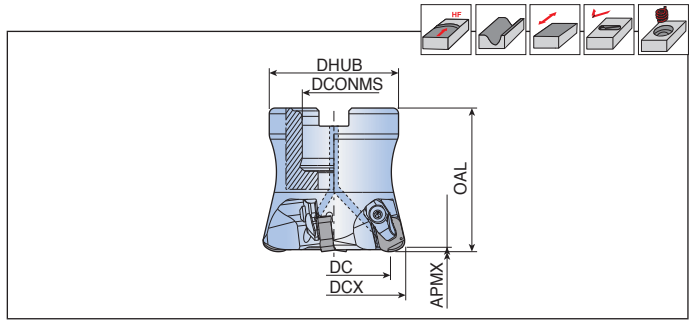
Designation	Wedge	Screw	Wrench		
TFMRP-12	WFZ 6-C	WS 6	T-W 3		

Cutting Condition
 E271-E273

Arbor Style
 E274-E275

TFMBN-09CH

High feed face mills



Designation		Dimension (mm)						Air hole ⁽¹⁾	Arbor style		Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMBN 440-16R-09CH	4	40	29.4	16	38	40	1.5	●	A	0.2	SH M8x30	BNGX 0904... E234
350-22R-09CH	3	50	39.4	22	45	40	1.5	●	A	0.5	SH M10x30	
550-22R-09CH	5	50	39.4	22	45	40	1.5	●	A	0.4	SH M10x30	

- Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)
- ⁽¹⁾ Use only air (Coolant is prohibited)

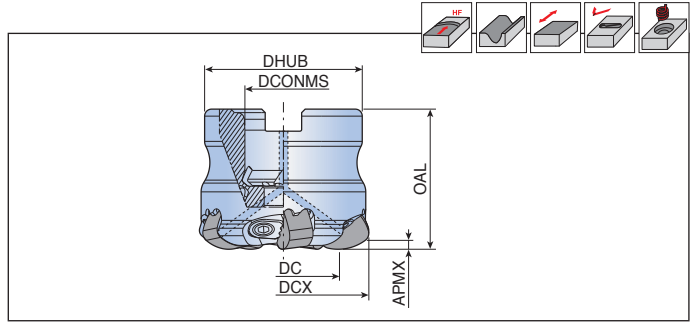
Spare parts

Designation	Clamp 	Screw 	Snap ring 	Wrench 	
TFMBN-09CH	CCL-3S	CLS-35A120	CSR 1.25	L-W 2	

 Cutting Condition E271-E273	 Arbor Style E274-E275	 Ramping Data E344
------------------------------------	------------------------------	--------------------------

TFMBN-12

High feed face mills



Designation		Dimension (mm)						Air hole ⁽¹⁾	Arbor style	Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMBN 450-22R-12	4	50	32.8	22	45	40	2.5	●	A	0.3	SH M10x30	BNGX 1207... E234
550-22R-12	5	50	32.8	22	45	40	2.5	●	A	0.3	SH M10x30	
663-22R-12	6	63	45.7	22	47	40	2.5	●	A	0.4	SH M10x30	
763-22R-12	7	63	45.7	22	47	40	2.5	●	A	0.4	SH M10x30	
780-27R-12	7	80	62.6	27	70	50	2.5	●	A	1.2	SH M12x35	
880-27R-12	8	80	62.6	27	70	50	2.5	●	A	1.2	SH M12x35	

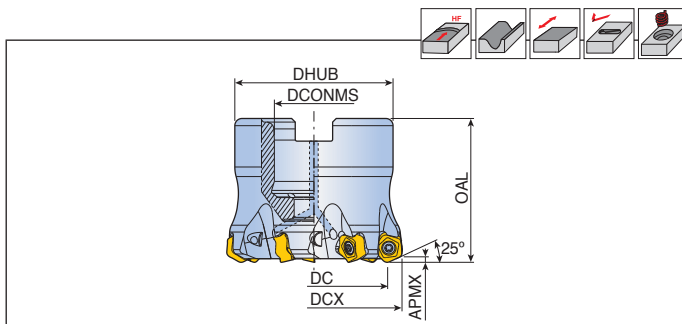
- Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)
- ⁽¹⁾ Use only air (Coolant is prohibited)

Spare parts

Designation	Wedge 	Screw 	Wrench 		
TFMBN-12	WFZ 6-C	WS 6	T-W 3		

 Cutting Condition E271-E273	 Arbor Style E274-E275	 Ramping Data E345
------------------------------------	------------------------------	--------------------------

High feed face mills



Designation		Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMPT 640-16R-05	6	40	31.8	16	38	40	1.5	●	A	0.3	SH M8x25	PTKU 0503...
750-22R-05	7	50	41.8	22	45	40	1.5	●	A	0.4	LH M10x25	E242
752-22R-05	7	52	43.8	22	45	40	1.5	●	A	0.3	LH M10x25	
863-22R-05	8	63	54.8	22	58	50	1.5	●	A	0.8	SH M10x30	
866-27R-05	8	66	57.8	27	58	50	1.5	●	A	0.7	SH M12x35	
TFMPT 450-22R-10	4	50	33.4	22	45	40	3.0	●	E	0.3	TCS10-40	PTKU 1006...
563-22R-10	5	63	46.4	22	58	50	3.0	●	A	0.8	SH M10x30	E242
566-22R-10	5	66	49.4	22	58	50	3.0	●	A	0.8	SH M10x30	
680-27R-10	6	80	63.4	27	70	60	3.0	●	A	1.4	SH M12x30	
8100-32R-10	8	100	83.4	32	85	60	3.0	●	A	2.3	SH M16x35	
9125-32R-10	9	125	108.4	32	85	60	3.0	●	A	3.1	SH M16x35	
10160-40R-10	10	160	143.4	40	110	60	3.0	x	C	4.1	-	
12200-60R-10	12	200	183.4	60	130	60	3.0	x	C	5.7	-	
TFMPT 680-25.4R-10	6	80	63.4	25.4	70	60	3.0	●	A	1.5	SH M12x35	
8100-31.75R-10	8	100	83.4	31.75	80	60	3.0	x	B	2.0	-	
9125-38.1R-10	9	125	108.4	38.1	80	60	3.0	x	B	2.6	-	
10160-50.8R-10	10	160	143.4	50.8	100	60	3.0	x	B	4.2	-	

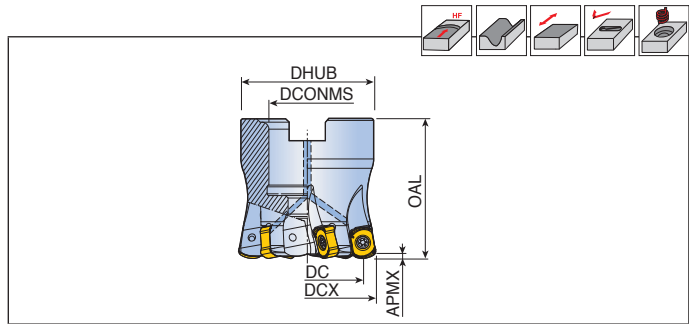
• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

Designation	Screw	Wrench		Wrench handle	
TFMPT-05	TS 25D060/HG-P	TD7P	-	-	
TFMPT-10	TS 50D130/HG-P	-	TBLD T20P-W6	SW6-T	

 E271-E273	 E274-E275	 E328-E329
---------------	---------------	---------------

High feed face mills

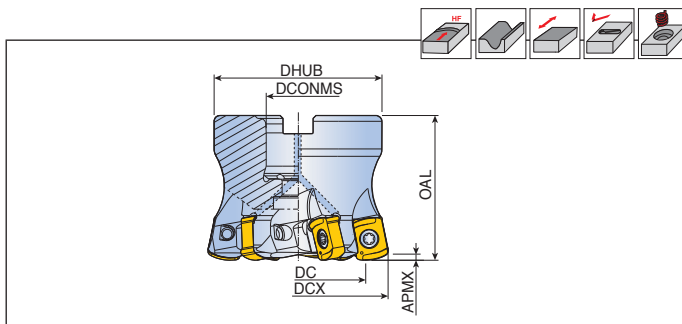


Designation		Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMBL 432-16R-06	4	32	24.3	16	30	40	1.0	●	A	0.1	SH M8x25	BLMP 0603... E232
532-16R-06	5	32	24.3	16	30	40	1.0	●	A	0.1	SH M8x25	
640-16R-06	6	40	32.2	16	38	40	1.0	●	A	0.2	SH M8x25	
640-22R-06	6	40	32.2	22	38	40	1.0	●	A	0.2	SH M10x30	
650-22R-06	6	50	42.2	22	45	50	1.0	●	A	0.4	SH M10x30	
750-22R-06	7	50	42.2	22	45	50	1.0	●	A	0.4	SH M10x30	
850-22R-06	8	50	42.2	22	45	50	1.0	●	A	0.4	SH M10x30	
752-22R-06	7	52	44.2	22	45	40	1.0	●	A	0.4	SH M10x30	
852-22R-06	8	52	44.2	22	45	40	1.0	●	A	0.4	SH M10x30	
763-22R-06	7	63	55.5	22	47	50	1.0	●	A	0.6	SH M10x30	
863-22R-06	8	63	55.5	22	47	50	1.0	●	A	0.6	SH M10x30	
963-22R-06	9	63	55.5	22	47	50	1.0	●	A	0.6	SH M10x30	
966-27R-06	9	66	58.5	27	58	50	1.0	●	A	0.7	SH M12x35	
TFMBL 432-16R-09	4	32	21.6	16	30	40	1.5	●	E	0.1	KTB 32B	BLMP 0904... E232
440-16R-09	4	40	29.6	16	38	40	1.5	●	A	0.2	SH M8x25	
540-16R-09	5	40	29.6	16	38	40	1.5	●	A	0.2	SH M8x25	
550-22R-09	5	50	39.6	22	45	50	1.5	●	A	0.4	SH M10x30	
650-22R-09	6	50	39.6	22	45	50	1.5	●	A	0.4	SH M10x30	
750-22R-09	7	50	39.6	22	45	50	1.5	●	A	0.4	SH M10x30	
652-22R-09	6	52	41.6	22	45	40	1.5	●	A	0.4	SH M10x30	
752-22R-09	7	52	41.6	22	45	40	1.5	●	A	0.4	SH M10x30	
663-22R-09	6	63	52.6	22	47	50	1.5	●	A	0.6	SH M10x30	
763-22R-09	7	63	52.6	22	47	50	1.5	●	A	0.6	SH M10x30	
863-22R-09	8	63	52.6	22	47	50	1.5	●	A	0.6	SH M10x30	
766-27R-09	7	66	55.6	27	58	50	1.5	●	A	0.7	SH M12x35	
866-27R-09	8	66	55.6	27	58	50	1.5	●	A	0.8	SH M12x35	
780-27R-09	7	80	69.6	27	70	50	1.5	●	A	1.2	SH M12x35	
880-27R-09	8	80	69.6	27	70	50	1.5	●	A	1.2	SH M12x35	
980-27R-09	9	80	69.6	27	70	50	1.5	●	A	1.2	SH M12x35	
1080-27R-09	10	80	69.6	27	70	50	1.5	●	A	1.2	SH M12x35	
8100-32R-09	8	100	89.6	32	85	60	1.5	●	A	2.3	SH M16x35	
9100-32R-09	9	100	89.6	32	85	60	1.5	●	A	2.3	SH M16x35	
10100-32R-09	10	100	89.6	32	85	60	1.5	●	A	2.3	SH M16x35	
11100-32R-09	11	100	89.6	32	85	60	1.5	●	A	2.3	SH M16x35	
12100-32R-09	12	100	89.6	32	85	60	1.5	●	A	2.3	SH M16x35	
12125-40R-09	12	125	114.6	40	85	60	1.5	●	A	2.7	SH M20x40	
14125-40R-09	14	125	114.6	40	85	60	1.5	●	A	2.7	SH M20x40	

TFMBL-11



High feed face mills



Designation	⚙️	Dimension (mm)						Coolant hole	Arbor style	⚖️ Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMBL 440-16R-11	4	40	24.4	16	30	40	2.0	●	E	0.2	KTB 32B	BLMP 1105... E232
450-22R-11	4	50	34.4	22	45	40	2.0	●	A	0.3	LH M10x25	
550-22R-11	5	50	34.4	22	45	40	2.0	●	A	0.3	LH M10x25	
552-22R-11	5	52	36.4	22	45	40	2.0	●	A	0.3	LH M10x25	
563-22R-11	5	63	48.4	22	58	50	2.0	●	A	0.7	SH M10x30	
663-22R-11	6	63	48.4	22	58	50	2.0	●	A	0.7	SH M10x30	
666-22R-11	6	66	50.3	22	58	50	2.0	●	A	0.8	SH M10x30	
666-27R-11	6	66	50.3	27	58	50	2.0	●	A	0.7	SH M12x35	
680-27R-11	6	80	64.3	27	70	60	2.0	●	A	1.4	SH M12x30	
780-27R-11	7	80	64.3	27	70	60	2.0	●	A	1.4	SH M12x30	
6100-32R-11	6	100	84.3	32	85	60	2.0	●	A	2.2	SH M16x35	
7100-32R-11	7	100	84.3	32	85	60	2.0	●	A	2.2	SH M16x35	
8125-32R-11	8	125	109.3	32	85	60	2.0	●	A	2.5	SH M20x40	
10125-40R-11	10	125	109.3	40	85	60	2.0	●	A	2.7	SH M20x40	
10160-40R-11	10	160	144.3	40	110	60	2.0	x	C	3.9	-	
12200-60R-11	12	200	184.3	60	130	60	2.0	x	C	5.8	-	
TFMBL 680-25.4R-11	6	80	64.3	25.4	70	60	2.0	●	A	1.4	SH M12x35	
6100-31.75R-11	6	100	84.3	31.75	80	60	2.0	x	B	1.8	-	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

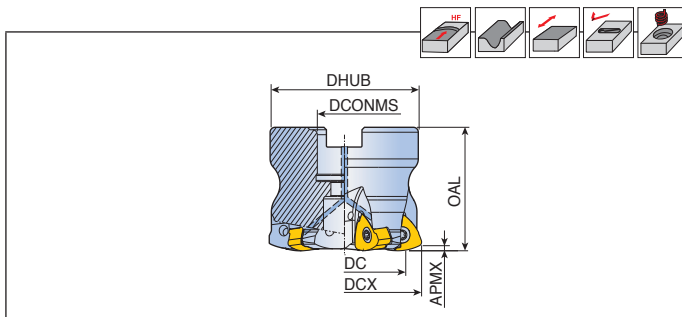
Designation	Screw	Wrench		Wrench handle	
TFMBL-06	TS 250641/HG-P	TD 8P	-	-	
TFMBL-09	TS 35A0881/HG	TD 10P	-	-	
TFMBL-11	TS 50A1211/HG	-	TBLD T20-W6	SW6-T	

 E271-E273	 E274-E275	 E334
---------------	---------------	----------

TFMBL-13



High feed face mills



Designation		Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMBL 340-16R-13	3	40	20.7	16	30	50	2.0	●	A	0.2	KTB 32B	BLMP 1306... E233
350-22R-13	3	50	31.0	22	45	40	2.0	●	A	0.3	LH M10x25	
450-22R-13	4	50	31.0	22	45	40	2.0	●	A	0.3	LH M10x25	
452-22R-13	4	52	32.2	22	45	40	2.0	●	A	0.3	SH M10x30	
463-22R-13	4	63	45.8	22	60	50	2.0	●	A	0.8	SH M10x30	
563-22R-13	5	63	45.8	22	60	50	2.0	●	A	0.8	SH M10x30	
463-27R-13	4	63	45.8	27	58	50	2.0	●	A	0.7	SH M12x30	
466-22R-13	4	66	45.9	22	60	50	2.0	●	A	0.8	SH M10x30	
566-22R-13	5	66	45.9	22	60	50	2.0	●	A	0.8	SH M10x30	
566-27R-13	5	66	45.9	27	58	50	2.0	●	A	0.7	SH M12x30	
580-27R-13	5	80	59.8	27	70	60	2.0	●	A	1.4	SH M12x30	
680-27R-13	6	80	59.8	27	70	60	2.0	●	A	1.4	SH M12x30	
580-32R-13	5	80	59.8	32	76	60	2.0	●	A	1.4	SH M16x35	
5100-32R-13	5	100	79.7	32	76	60	2.0	●	A	1.9	SH M16x35	
6100-32R-13	6	100	79.7	32	76	60	2.0	●	A	2.0	SH M16x35	
7100-32R-13	7	100	79.7	32	76	60	2.0	●	A	2.0	SH M16x35	
6125-32R-13	6	125	104.5	32	85	60	2.0	●	A	3.0	SH M16x35	
7125-40R-13	7	125	104.5	40	85	60	2.0	●	A	2.9	SH M20x35	
7160-40R-13	7	160	139.5	40	110	60	2.0	x	C	3.6	-	
8160-40R-13	8	160	139.5	40	110	60	2.0	x	C	3.6	-	
9160-40R-13	9	160	139.5	40	110	60	2.0	x	C	3.8	-	
8200-60R-13	8	200	179.5	60	130	60	2.0	x	C	5.4	-	
9200-60R-13	9	200	179.5	60	130	60	2.0	x	C	5.3	-	
11200-60R-13	11	200	179.5	60	130	60	2.0	x	C	5.5	-	
9250-60R-13	9	250	229.5	60	160	60	2.0	x	C	10.6	-	
10250-60R-13	10	250	229.5	60	160	60	2.0	x	C	10.6	-	
12250-60R-13	12	250	229.5	60	160	60	2.0	x	C	10.7	-	

Cutting Condition
E271-E273

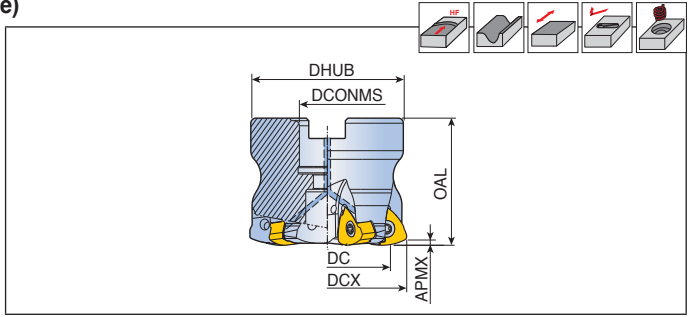
Arbor Style
E274-E275

Ramping Data
E335

TFMBL-13



High feed face mills (Inch bore)



Designation	⚙️	Dimension (mm)						Coolant hole	Arbor style	K _g	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMBL 580-25.4R-13	5	80	59.8	25.4	70	60	2.0	•	A	1.3	SH M12x30	BLMP 1306... E233
580-31.75R-13	5	80	59.8	31.75	76	60	2.0	•	A	1.3	SH M16x35	
6100-31.75R-13	6	100	79.7	31.75	76	60	2.0	•	A	1.9	SH M16x35	
7125-38.1R-13	7	125	104.5	38.1	80	60	2.0	x	B	3.0	-	

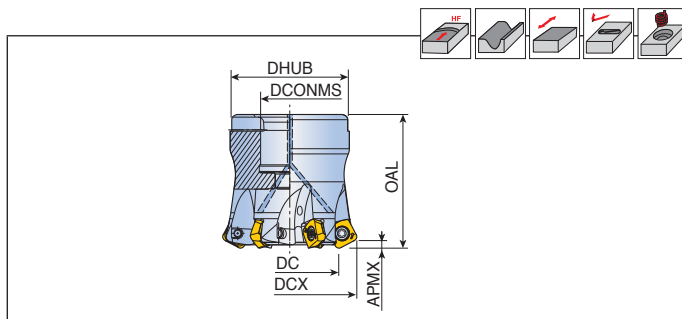
• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

Designation	Screw	Wrench			
	TFMBL-13	TS 50B106I/HG	T-T20		

E271-E273	E274-E275	E335
-----------	-----------	------

High feed face mills



Designation		Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMSB 532-16R-06	5	32	21.7	16	30	40	1.0	●	A	0.1	SH M8x25	SBMT 0603... E247
640-16R-06	6	40	29.7	16	38	40	1.0	●	A	0.2	SH M8x25	
750-22R-06	7	50	39.7	22	45	50	1.0	●	A	0.4	SH M10x35	
863-22R-06	8	63	52.7	22	47	50	1.0	●	A	0.6	SH M10x35	
TFMSB 432-16R-09	4	32	17.4	16	30	40	1.2	●	E	0.1	KTB 32B	SBMT 0904... E247
440-16R-09	4	40	25.5	16	38	40	1.2	●	A	0.2	SH M8x25	
540-16R-09	5	40	25.5	16	38	40	1.2	●	A	0.2	SH M8x25	
450-22R-09	4	50	35.5	22	45	50	1.2	●	A	0.4	SH M10x30	
550-22R-09	5	50	35.5	22	45	50	1.2	●	A	0.4	SH M10x30	
650-22R-09	6	50	35.5	22	45	50	1.2	●	A	0.4	SH M10x30	
750-22R-09	7	50	35.5	22	45	50	1.2	●	A	0.4	SH M10x30	
652-22R-09	6	52	37.5	22	45	50	1.2	●	A	0.4	SH M10x30	
752-22R-09	7	52	37.5	22	45	50	1.2	●	A	0.4	SH M10x30	
663-22R-09	6	63	48.4	22	58	50	1.2	●	A	0.8	SH M10x30	
763-22R-09	7	63	48.4	22	58	50	1.2	●	A	0.8	SH M10x30	
763-22R-09	7	63	48.4	27	58	50	1.2	●	A	0.7	SH M12x35	
863-22R-09	8	63	48.4	22	58	50	1.2	●	A	0.8	SH M10x30	
866-22R-09	8	66	51.5	22	58	50	1.2	●	A	0.8	SH M10x30	
780-27R-09	7	80	65.8	27	70	60	1.2	●	A	1.4	SH M12x35	
880-27R-09	8	80	65.8	27	70	60	1.2	●	A	1.4	SH M12x35	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M8x1.25x25-C)

Spare parts

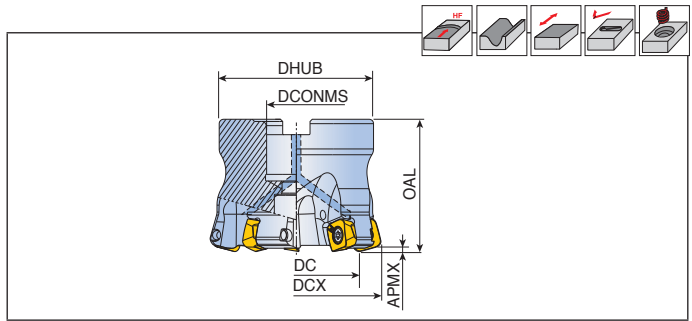
Designation	Screw	Wrench			
TFMSB-06	TS 25064I/HG-P	TD 8P			
TFMSB-09	TS 35A088I/HG	TD 10P			
TFMSB 750-22R-09	TS 35A070I/HG	TD 10P			
TFMSB 752-22R-09	TS 35A070I/HG	TD 10P			



TFMSB-13



High feed face mills



Designation		Dimension (mm)						Coolant hole	Arbor style	Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMSB 350-22R-13	3	50	29.3	22	45	40	2.0	●	A	0.3	LH M10x25	SBMT 1306... E247
450-22R-13	4	50	29.3	22	45	40	2.0	●	A	0.2	LH M10x25	
452-22R-13	4	52	31.3	22	45	40	2.0	●	A	0.3	LH M10x25	
552-22R-13	5	52	31.3	22	45	40	2.0	●	A	0.2	LH M10x25	
463-22R-13	4	63	42.4	22	58	50	2.0	●	A	0.6	SH M10x30	
563-22R-13	5	63	42.4	22	58	50	2.0	●	A	0.5	SH M10x30	
463-27R-13	4	63	42.4	27	58	50	2.0	●	A	0.5	SH M12x35	
566-27R-13	5	66	45.3	27	58	50	2.0	●	A	0.6	SH M12x35	
580-27R-13	5	80	59.4	27	70	60	2.0	●	A	1.3	SH M12x35	
680-27R-13	6	80	59.4	27	70	60	2.0	●	A	1.3	SH M12x35	
580-32R-13	5	80	59.4	32	76	60	2.0	●	A	1.3	SH M16x35	
6100-32R-13	6	100	79.4	32	76	60	2.0	●	A	1.9	SH M16x35	
7125-40R-13	7	125	104.7	40	85	60	2.0	●	A	2.5	SH M20x40	
8160-40R-13	8	160	139.4	40	110	60	2.0	x	C	3.5	-	
9200-60R-13	9	200	179.4	60	130	60	2.0	x	C	5.1	-	
10250-60R-13	10	250	229.4	60	160	60	2.0	x	C	9.1	-	
TFMSB 463-25.4R-13	4	63	42.4	25.4	58	50	2.0	●	A	0.5	SH M12x35	
580-25.4R-13	5	80	59.4	25.4	70	60	2.0	●	A	1.3	SH M12x35	
580-31.75R-13	5	80	59.4	31.75	76	60	2.0	●	A	1.3	SH M16x35	
7125-38.1R-13	7	125	104.7	38.1	80	60	2.0	x	B	2.2	-	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

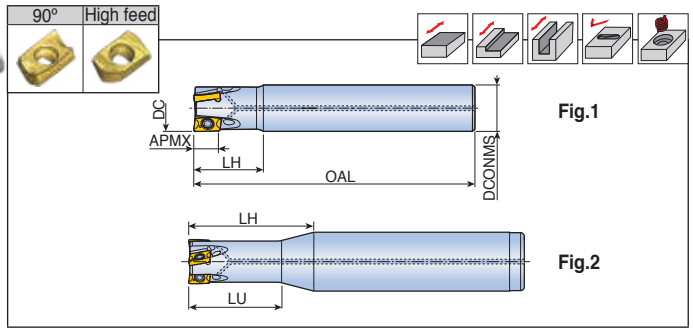
Designation	Screw	Wrench			
	TFMSB-13	TS 501151	T-T20		

Cutting Condition E271-E273	Arbor Style E274-E275	Ramping Data E338
--------------------------------	--------------------------	----------------------

2S-TE90CV-05



End mills



Designation	✱	Dimension (mm)						Coolant hole	Fig.	Insert
		DC	DCONMS	OAL	LH	LU	APMX			
2S-TE90CV-106-06-05	1	6	6	60	12	-	5.0	●	1	CVK(H)T 0502... E235
106-06-05-L50	1	6	6	50	10	-	5.0	●	1	
208-07-05	2	8	7	80	12	-	5.0	●	1	
208-08-05	2	8	8	80	12	-	5.0	●	1	
208-08-05-L50	2	8	8	50	10	-	5.0	●	1	
208-12-05	2	8	12	80	25	18	5.0	●	2	
209-08-05	2	9	8	80	12	-	5.0	●	1	
210-10-05	2	10	10	80	15	-	5.0	●	1	
212-12-05	2	12	12	80	15	-	5.0	●	1	
310-09-05	3	10	9	80	12	-	5.0	●	1	
310-10-05	3	10	10	80	15	-	5.0	●	1	
310-10-05-L55	3	10	10	55	12	-	5.0	●	1	
310-16-05-L90	3	10	16	90	34	22	5.0	●	2	
311-10-05	3	11	10	80	12	-	5.0	●	1	
312-12-05	3	12	12	80	15	-	5.0	●	1	
412-11-05	4	12	11	80	12	-	5.0	●	1	
412-12-05	4	12	12	80	15	-	5.0	●	1	
412-12-05-L60	4	12	12	60	14	-	5.0	●	1	
412-16-05-L100	4	12	16	100	34	26	5.0	●	2	
413-12-05	4	13	12	80	12	-	5.0	●	1	
414-12-05	4	14	12	80	10	-	5.0	●	1	
514-14-05-L90	5	14	14	90	15	-	5.0	●	1	

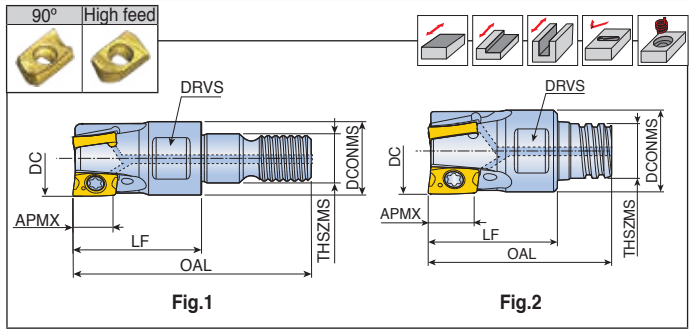


• Cutter body for 'HF' insert should be modified with body corner radius 1.8 mm

2S-TE90CV-M(S)-05



Modular heads



Designation	Hex	Dimension (mm)							Coolant hole	Fig.	Insert
		DC	DCONMS	LF	OAL	THSZMS	APMX	DRVS			
2S-TE90CV- 208-M04-05	2	8	7.8	10	21.5	M04	5.0	6	●	1	CVK(H)T 0502... E235
310-M06-05	3	10	9.7	17	31.5	M06	5.0	8	●	1	
412-M06-05	4	12	11	17	31.5	M06	5.0	8	●	1	
516-M08-05	5	16	13	23	40.5	M08	5.0	10	●	1	
620-M10-05	6	20	18	23	43.0	M10	5.0	15	●	1	
720-M10-05	7	20	18	23	43.0	M10	5.0	15	●	1	
2S-TE90CV- 208-S05-05	2	8	7.6	10	16.7	S05	5.0	5.5	●	2	
310-S06-05	3	10	9.6	15	21.3	S06	5.0	8	●	2	
412-S08-05	4	12	11.5	16	23.5	S08	5.0	10	●	2	

- Cutter body for 'HF' insert should be modified with body corner radius 1.8 mm
- Matched with T-FLEXTEC holder(Fig.1) & MAXI-RUSH holder(Fig.2)

Spare parts

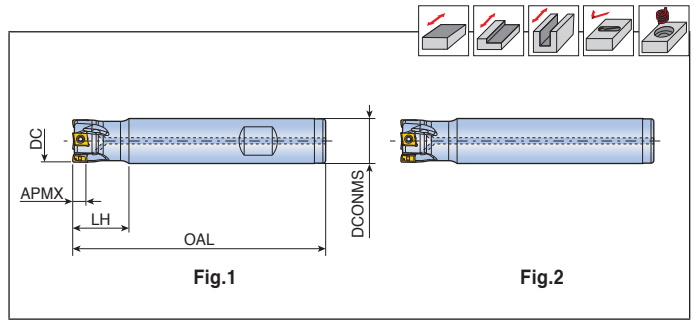
Designation	Screw	Wrench			
	2S-TE90CV-05	TS 18033/HG-P	TD 6P		

Cutting Condition
E271-E273

Ramping Data
E286-E287

4T-TE90-05/09

End mills



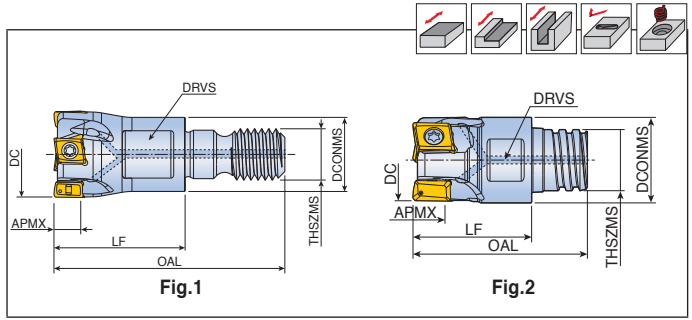
Designation	Flutes	Dimension (mm)					Coolant hole	Fig.	Insert
		DC	DCONMS	OAL	LH	APMX			
4T-TE90-210-10-05	2	10	10	80	15	4.6	●	2	LPK(H)U 0502... E238
211-10-05	2	11	10	80	15	4.6	●	2	
212-12-05	2	12	12	80	15	4.6	●	2	
312-12-05	3	12	12	80	15	4.6	●	2	
313-12-05	3	13	12	80	15	4.6	●	2	
316-W16-05	3	16	16	90	20	4.6	●	1	
416-W16-05	4	16	16	90	20	4.6	●	1	
420-W20-05	4	20	20	100	25	4.6	●	1	
520-W20-05	5	20	20	100	25	4.6	●	1	
625-W25-05	6	25	25	110	30	4.6	●	1	
832-W25-05	8	32	25	110	20	4.6	●	1	
4T-TE90-220-W20-09	2	20	20	100	30	8.3	●	1	LPK(H)U 0904... E238
220-20-09-L170	2	20	20	170	30	8.3	●	2	
320-W20-09	3	20	20	100	30	8.3	●	1	
325-W25-09	3	25	25	100	30	8.3	●	1	
325-25-09-L200	3	25	25	200	30	8.3	●	2	
425-W25-09	4	25	25	100	30	8.3	●	1	
425-25-09-L120	4	25	25	120	30	8.3	●	2	
332-W32-09	3	32	32	110	35	8.3	●	1	
332-32-09-L210	3	32	32	210	35	8.3	●	2	
532-W32-09	5	32	32	110	35	8.3	●	1	
532-32-09-L130	5	32	32	130	35	8.3	●	2	
440-W32-09	4	40	32	115	30	8.3	●	1	
440-32-09-L150	4	40	32	150	30	8.3	●	2	
640-W32-09	6	40	32	115	30	8.3	●	1	



4T-TE90-M(S)-05/09



Modular heads



Designation	♻️	Dimension (mm)							Coolant hole	Fig.	Insert
		DC	DCONMS	LF	OAL	THSZMS	APMX	DRVS			
4T-TE90-210-M06-05	2	10	9.7	17	31.5	M06	4.6	8	●	1	LPK(H)U 0502... E238
312-M06-05	3	12	11	17	31.5	M06	4.6	8	●	1	
416-M08-05	4	16	13	23	40.5	M08	4.6	10	●	1	
520-M10-05	5	20	18	23	43	M10	4.6	15	●	1	
625-M12-05	6	25	21	27	49	M12	4.6	17	●	1	
832-M16-05	8	32	29	27	52	M16	4.6	25	●	1	
4T-TE90-210-S06-05	2	10	9.6	15	21.3	S06	4.6	8	●	2	LPK(H)U 0904... E238
312-S08-05	3	12	11.5	16	23.5	S08	4.6	10	●	2	
416-S10-05	4	16	15.2	20	31.3	S10	4.6	13	●	2	
4T-TE90-220-M10-09	2	20	18	30	50	M10	8.3	15	●	1	LPK(H)U 0904... E238
320-M10-09	3	20	18	30	50	M10	8.3	15	●	1	
425-M12-09	4	25	21	35	57	M12	8.3	17	●	1	
532-M16-09	5	32	29	43	68	M16	8.3	25	●	1	
640-M16-09	6	40	29	43	68	M16	8.3	25	●	1	

• Matched with T-FLEXTEC holder(Fig.1) & MAXI-RUSH holder(Fig.2)

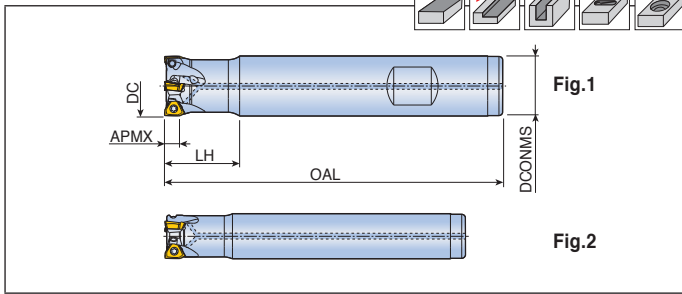
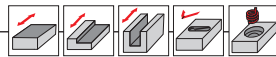
Spare parts

Designation	Screw	Wrench		Wrench handle	
4T-TE90-05 (Ø10,Ø11)	TS 18041I/SG-P	TD 6P	-	-	
4T-TE90-05 (Ø12-Ø40)	TS 18049/HG-P	TD 6P	-	-	
4T-TE90-09	TS 30D082-P	-	TBLD T08P-W4	THND 4W	



3P-TE90-04

End mills

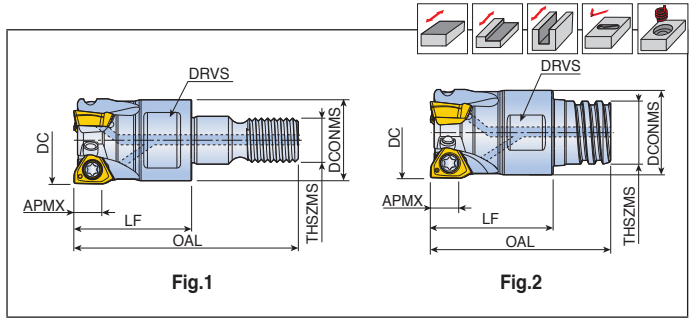


Designation	✳	Dimension (mm)					Coolant hole	Fig.	Insert
		DC	DCONMS	OAL	LH	APMX			
3P-TE90-108-08-04	1	8	8	80	17	3.5	●	2	3PKT 0402...
210-10-04	2	10	10	80	17	3.5	●	2	E216
210-09-04-L	2	10	9	120	10	3.5	●	2	
211-10-04	2	11	10	80	11	3.5	●	2	
212-11-04-L	2	12	11	120	11	3.5	●	2	
212-12-04	2	12	12	80	18	3.5	●	2	
212-12-04-L	2	12	12	120	18	3.5	●	2	
312-12-04	3	12	12	80	18	3.5	●	2	
313-12-04	3	13	12	90	11	3.5	●	2	
314-12-04	3	14	12	90	12	3.5	●	2	
316-16-04	3	16	16	110	20	3.5	●	2	
416-W16-04	4	16	16	90	20	3.5	●	1	



3P-TE90-M(S)-04



Modular heads



Designation	⊕	Dimension (mm)							Coolant hole	Fig.	Insert
		DC	DCONMS	LF	OAL	THSZMS	APMX	DRVS			
3P-TE90-210-M06-04	2	10	9.7	17	31.5	M06	3.5	8	•	1	3PKT 0402... E216
312-M06-04	3	12	11	17	31.5	M06	3.5	8	•	1	
416-M08-04	4	16	13	23	40.5	M08	3.5	10	•	1	
3P-TE90-210-S06-04	2	10	9.6	15	21.3	S06	3.5	8	•	2	
312-S08-04	3	12	11.5	16	23.5	S08	3.5	10	•	2	
416-S10-04	4	16	15.2	20	31.3	S10	3.5	13	•	2	

• Matched with T-FLEXTEC holder (Fig.1) & MAXI-RUSH holder (Fig.2)

Spare parts

Designation	Screw	Wrench			
					
3P-TE90-04 (ø8)	TS 18033/HG-P	TD 6P			
3P-TE90-04 (ø10-)	TS 180411/HG	TD 6P			

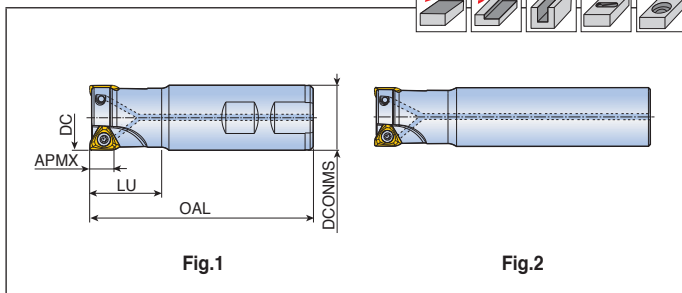
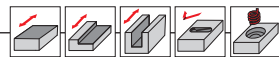

 Cutting Condition
 E271-E273


 Ramping Data
 E290

3P TE90-06



End mills



Designation		Dimension (mm)					Coolant hole	Fig.	Insert
		DC	DCONMS	OAL	LU	APMX			
3P TE90-112-12-06-L80	1	12	12	80	20	4.7	●	2	3PK(H)T 0603... E216
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	

Cutting Condition
E271-E273

Ramping Data
E291

3P TE90-10



End mills



90°

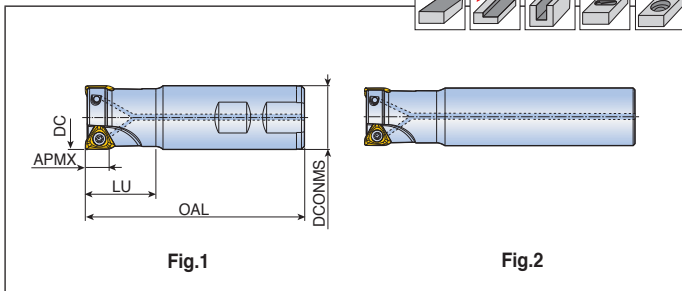
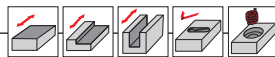


Fig.1

Fig.2

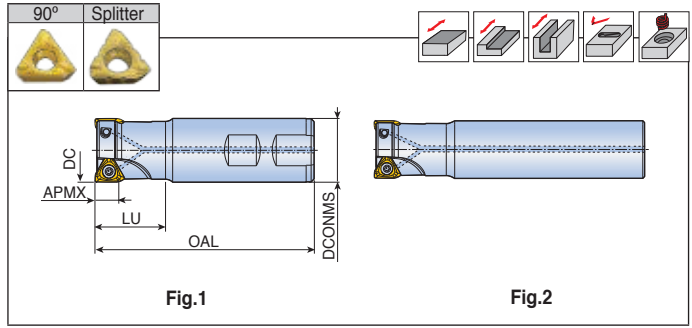
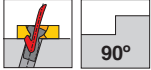
Designation	✄	Dimension (mm)					Coolant hole	Fig.	Insert
		DC	DCONMS	OAL	LU	APMX			
3P TE90-116-W16-10	1	16	16	90	20	7.0	●	1	3PK(H)T 1004... E216
220-W20-10	2	20	20	90	25	7.0	●	1	
220-19-10-L170	2	20	19	170	30	7.0	x	2	
220-20-10-L170	2	20	20	170	40	7.0	x	2	
221-20-10-L200	2	21	20	200	30	7.0	x	2	
222-W20-10	2	22	20	100	25	7.0	●	1	
225-25-10-L210	2	25	25	210	40	7.0	x	2	
325-W20-10	3	25	20	100	30	7.0	●	1	
325-W25-10	3	25	25	100	30	7.0	●	1	
325-24-10-L210	3	25	24	210	35	7.0	x	2	
325-25-10-L210	3	25	25	210	40	7.0	x	2	
226-25-10-L250	2	26	25	250	30	7.0	x	2	
330-W25-10	3	30	25	110	35	7.0	●	1	
232-W25-10	2	32	25	110	35	7.0	●	1	
332-W25-10	3	32	25	110	35	7.0	●	1	
332-32-10-L250	3	32	32	250	60	7.0	x	2	
432-W32-10	4	32	32	110	40	7.0	●	1	
532-W32-10	5	32	32	110	40	7.0	●	1	
333-32-10-L250	3	33	32	250	35	7.0	x	2	
440-32-10-L200	4	40	32	200	40	7.0	x	2	
540-W32-10	5	40	32	115	40	7.0	●	1	
640-W32-10	6	40	32	115	40	7.0	●	1	

Cutting Condition E271-E273 Ramping Data E291

3P TE90-15/19



End mills

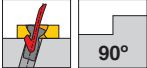
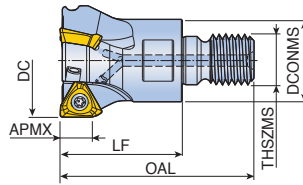
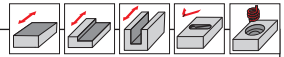
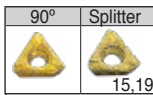


Designation	Symmetry	Dimension (mm)					Coolant hole	Fig.	Insert
		DC	DCONMS	OAL	LU	APMX			
3P TE90-232-W32-15	2	32	32	110	40	11.0	●	1	3PK(H)T 1505... E216-E217
232-32-15-L250	2	32	32	250	60	11.0	x	2	
332-W25-15	3	32	25	100	40	11.0	●	1	
332-W25-15-L155	3	32	25	155	35	11.0	x	2	
332-W32-15	3	32	32	110	40	11.0	●	1	
332-32-15-L150	3	32	32	150	40	11.0	x	2	
332-32-15-L250	3	32	32	250	60	11.0	x	2	
233-32-15-L200	2	33	32	200	40	11.0	x	2	
233-32-15-L250	2	33	32	250	40	11.0	x	2	
335-W32-15	3	35	32	110	40	11.0	●	1	
340-W32-15	3	40	32	110	40	11.0	●	1	
340-32-15-L200	3	40	32	200	40	11.0	x	2	
440-W32-15	4	40	32	110	40	11.0	●	1	3PK(H)T 1906... E216-E217
3P TE90-240-32-19-L250	2	40	32	250	45	15.0	x	2	
340-W32-19	3	40	32	115	45	15.0	●	1	
340-32-19-L200	3	40	32	200	45	15.0	x	2	
450-W32-19	4	50	32	115	45	15.0	●	1	



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

Modular heads



Designation		Dimension (mm)						Coolant hole	Insert
		DC	DCONMS	LF	OAL	THSZMS	APMX		
3P TE90-216-M08-06	2	16	13	23	40.5	M08	4.7	●	3PK(H)T 0603...
320-M10-06	3	20	18	35	55	M10	4.7	●	E216
420-M10-06	4	20	18	35	55	M10	4.7	●	
425-M12-06	4	25	21	35	57	M12	4.7	●	
525-M12-06	5	25	21	35	57	M12	4.7	●	
632-M16-06	6	32	29	43	68	M16	4.7	●	
732-M16-06	7	32	29	43	68	M16	4.7	●	
735-M16-06	7	35	29	43	68	M16	4.7	●	
3P TE90-220-M10-10	2	20	18	35	55	M10	7.0	●	3PK(H)T 1004...
325-M12-10	3	25	21	35	57	M12	7.0	●	E216
326-M12-10	3	26	21	35	57	M12	7.0	●	
432-M16-10	4	32	29	43	68	M16	7.0	●	
532-M16-10	5	32	29	43	68	M16	7.0	●	
535-M16-10	5	35	29	43	68	M16	7.0	●	
540-M16-10	5	40	29	43	68	M16	7.0	●	
640-M16-10	6	40	29	43	68	M16	7.0	●	
642-M16-10	6	42	29	43	68	M16	7.0	●	
3P TE90-232-M16-15	2	32	29	43	68	M16	11.0	●	3PK(H)T 1505...
332-M16-15	3	32	29	43	68	M16	11.0	●	E216-E217
340-M16-15	3	40	29	43	68	M16	11.0	●	
440-M16-15	4	40	29	43	68	M16	11.0	●	
3P TE90-340-M16-19	3	40	29	43	68	M16	15.0	●	3PK(H)T 1906...
									E216-E217

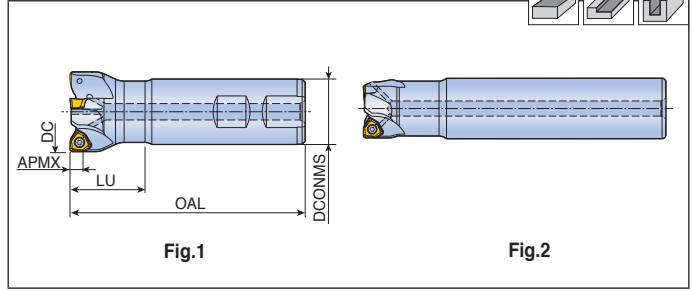
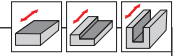
• Matched with T-FLEXTEC holder

Spare parts

Designation	Screw	Wrench			
3P TE90-06	TS 20043I/HG-P	TD 6P	-		
3P TE90-10	TS 25C065I/HG	TD 8	-		
3P TE90-15	TS 40B100I	TD 15	-		
3P TE90-19	TS 45120I	-	T-T20		



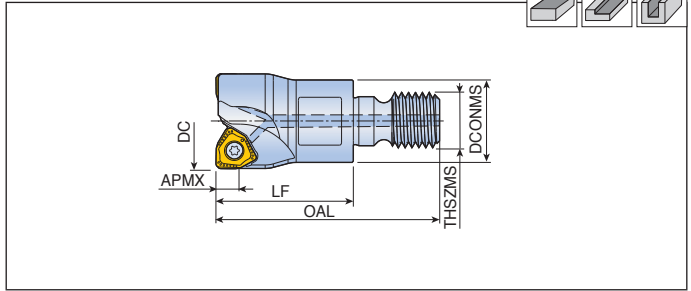
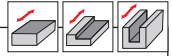
End Mills



Designation	⌀	Dimension (mm)					Coolant hole	Fig.	Insert
		DC	DCONMS	OAL	LU	APMX			
6N TE90-320-W20-04	3	20	20	90	30	4.1	•	1	6NКУ 0403... E222
320-20-04-L160	3	20	20	160	30	4.1	•	2	
425-25-04-L170	4	25	25	170	30	4.1	•	2	
525-W25-04	5	25	25	100	35	4.1	•	1	
532-32-04-L200	5	32	32	200	40	4.1	•	2	
632-W32-04	6	32	32	110	40	4.1	•	1	
6N TE90-225-W25-06	2	25	25	100	30	6.2	•	1	6NGU 0604... E221
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... E221
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	



Modular heads



Designation		Dimension (mm)						Coolant hole	Insert
		DC	DCONMS	LF	OAL	THSZMS	APMX		
6N TE90-320-M10-04	3	20	18	35	55	M10	4.1	●	6NKU 0403...
525-M12-04	5	25	21	35	57	M12	4.1	●	E222
632-M16-04	6	32	29	43	68	M16	4.1	●	
6N TE90-225-M12-06	2	25	21	35	57	M12	6.2	●	6NGU 0604...
332-M16-06	3	32	29	43	68	M16	6.2	●	E221
440-M16-06	4	40	29	43	68	M16	6.2	●	
6N TE90-232-M16-09	2	32	29	43	68	M16	9.2	●	6NGU 0905...
340-M16-09	3	40	29	43	68	M16	9.2	●	E221
440-M16-09	4	40	29	43	68	M16	9.2	●	

• Matched with T-FLEXTEC holder

Spare parts

Designation	Screw	Wrench			
6N TE90-04	TS 25064I	TD 8			
6N TE90-06	TS 30085I/HG	TD 9			
6N TE90-09	TS 40B100I	TD15			



SCRM90TN-18/SCRM90TN-M-18



End Mills & Modular heads

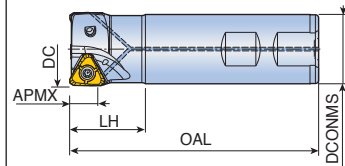
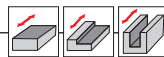
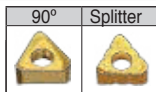


Fig.1

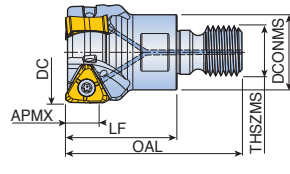


Fig.2

Designation		Dimension (mm)							Coolant hole	Fig.	Insert
		DC	DCONMS	OAL	LH	LF	THSZMS	APMX			
SCRM90TN 235-W32-18	2	35	32	115	35	-	-	13.0	●	1	TNMX 1806... E261
340-W32-18	3	40	32	115	35	-	-	13.0	●	1	
SCRM90TN 235-M16-18	2	35	29	68	-	43	M16	13.0	●	2	
340-M16-18	3	40	29	68	-	43	M16	13.0	●	2	

• Matched with T-FLEXTEC holder

Spare parts

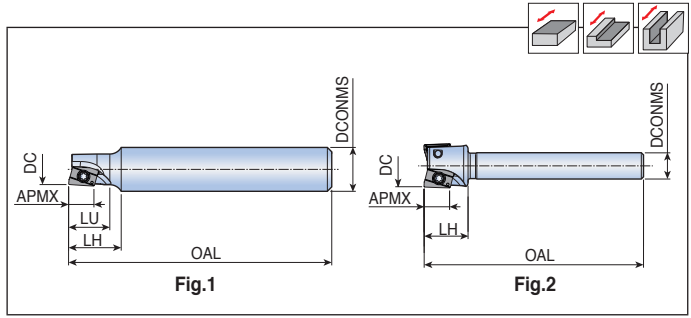
Designation	Screw 	Wrench 			
SCRM90TN-18	TS 40B100I	T-T15			



MTE90AX-06-L



End mills



Designation	Flutes	Dimension (mm)						Fig.	Insert
		DC	DCONMS	OAL	LU	LH	APMX		
MTE90AX 108-10-06-L60	1	8	10	60	9	12	5.5	1	AXCT 06-L... E230
210-05-06-L40	2	10	5	40	-	10	5.5	2	
210-06-06-L50	2	10	6	50	-	10	5.5	2	
210-07-06-L50	2	10	7	50	-	10	5.5	2	
210-10-06-L50	2	10	10	50	10	12	5.5	1	
212-10-06-L50	2	12	10	50	-	10	5.5	2	
214-10-06-L50	2	14	10	50	-	10	5.5	2	
315-05-06-L40	3	15	5	40	-	10	5.5	2	
316-07-06-L50	3	16	7	50	-	10	5.5	2	
316-10-06-L50	3	16	10	50	-	10	5.5	2	
320-07-06-L50	3	20	7	50	-	10	5.5	2	
320-10-06-L50	3	20	10	50	-	10	5.5	2	
530-10-06-L50	5	30	10	50	-	10	5.5	2	

Spare parts

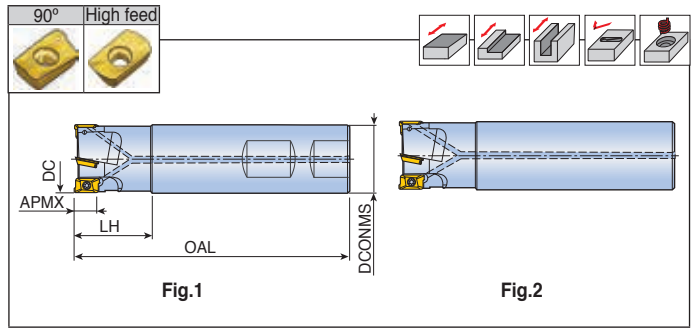
Designation	Screw	Wrench			
	MTE90AX-06-L	TS 18041/HG	TD 6P		



TE90AX-06



End mills



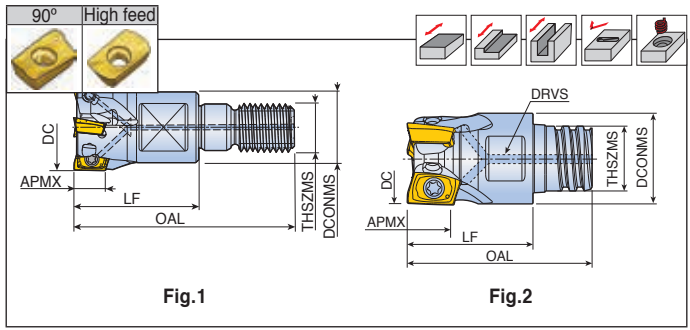
Designation	⌀	Dimension (mm)					Coolant hole	Fig.	Insert
		DC	DCONMS	OAL	LH	APMX			
TE90AX 108-08-06-C	1	8	8	80	17	5.5	●	2	AXM(C)T 0602 ... E230-E231
210-09-06-L120	2	10	9	120	17	5.5	x	2	
210-10-06-C	2	10	10	80	17	5.5	●	2	
211-10-06	2	11	10	80	17	5.5	x	2	
212-12-06-C	2	12	12	80	18	5.5	●	2	
212-12-06-L	2	12	12	130	18	5.5	x	2	
212-11-06-L120	2	12	11	120	20	5.5	x	2	
312-12-06-C	3	12	12	80	18	5.5	●	2	
313-12-06-C	3	13	12	90	20	5.5	●	2	
314-12-06	3	14	12	80	18	5.5	x	2	
415-12-06	4	15	12	80	18	5.5	x	2	
316-16-06-C	3	16	16	110	20	5.5	●	2	
316-16-06-L	3	16	16	150	20	5.5	x	2	
416-W16-06-C	4	16	16	90	20	5.5	●	1	
417-16-06	4	17	16	90	20	5.5	x	2	
418-W16-06-C	4	18	16	90	20	5.5	●	1	
418-16-06-L	4	18	16	150	20	5.5	x	2	
419-W16-06	4	19	16	90	20	5.5	x	1	
420-20-06	4	20	20	160	25	5.5	x	2	
420-W20-06-C	4	20	20	160	25	5.5	●	1	
520-19-06-L	5	20	19	160	25	5.5	x	1	
520-W20-06-C	5	20	20	105	25	5.5	●	1	
521-20-06	5	21	20	105	25	5.5	x	2	
725-W20-06-C	7	25	20	115	25	5.5	●	1	
725-W25-06	7	25	25	120	30	5.5	x	1	
832-W25-06-C	8	32	25	130	32	5.5	●	1	
1040-W32-06-C	10	40	32	140	40	5.5	●	1	



TE90AX-M(S)-06



Modular heads



Designation		Dimension (mm)							Coolant hole	Fig.	Insert
		DC	DCONMS	LF	OAL	THSZMS	APMX	DRVS			
TE90AX 210-M06-06	2	10	9.7	17	31.5	M06	5.5	8	●	1	AXM(C)T 0602... E230-E231
312-M06-06	3	12	11	17	31.5	M06	5.5	8	●	1	
416-M08-06	4	16	13	23	40.5	M08	5.5	10	●	1	
520-M10-06	5	20	18	23	43	M10	5.5	15	●	1	
725-M12-06	7	25	21	27	49	M12	5.5	17	●	1	
832-M16-06	8	32	29	27	52	M16	5.5	25	●	1	
1040-M16-06	10	40	29	27	52	M16	5.5	25	●	1	
TE90AX 210-S06-06	2	10	9.6	15	21.3	S06	5.5	8	●	2	
312-S08-06	3	12	11.5	16	23.5	S08	5.5	10	●	2	
416-S10-06	4	16	15.2	20	31.3	S10	5.5	13	●	2	

- Matched with T-FLEXTEC holder(Fig.1) & MAXI-RUSH holder(Fig.2)
- Cutter body for 'AXMT 06' insert with corner radius more than 1.0mm should be modified accordingly
body "RE"=Insert "RE"-0.1mm

Spare parts

Designation	Screw	Wrench			
TE90AX-06	TS 18041/HG	TD 6P			

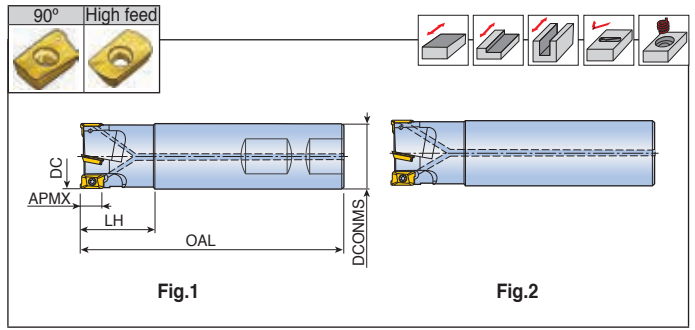
Cutting Condition
E271-E273

Ramping Data
E314,E318

2S-TE90AP-09



End mills



Designation	⊕	Dimension (mm)					Coolant hole	Fig.	Insert
		DC	DCONMS	OAL	LH	APMX			
2S-TE90AP 110-W10-09-C	1	10	10	80	25	8.8	●	1	APK(C)T 09T3... E225, E230
112-W12-09	1	12	12	80	25	8.8	x	1	
112-W16-09-C	1	12	16	80	26	8.8	●	1	
114-W12-09	1	14	12	80	25	8.8	x	1	
216-15-09-L	2	16	15	170	30	8.8	x	2	
216-W16-09-C	2	16	16	90	25	8.8	●	1	
216-16-09-L	2	16	16	145	30	8.8	x	2	
217-16-09-L	2	17	16	180	25	8.8	x	2	
218-W16-09-C	2	18	16	90	25	8.8	●	1	
220-19-09-L	2	20	19	170	25	8.8	x	2	
220-20-09-L	2	20	20	170	40	8.8	x	2	
320-W20-09-C	3	20	20	110	30	8.8	●	1	
221-20-09-L	2	21	20	200	25	8.8	x	2	
322-W20-09-C	3	22	20	110	30	8.8	●	1	
225-24-09-L	2	25	24	210	28	8.8	x	2	
225-25-09-L	2	25	25	210	40	8.8	x	2	
325-W20-09-C	3	25	20	110	30	8.8	●	1	
325-W25-09	3	25	25	110	30	8.8	x	1	
425-W20-09-C	4	25	20	110	30	8.8	●	1	
226-25-09-L	2	26	25	250	40	8.8	x	2	
430-W25-09-C	4	30	25	130	32	8.8	●	1	
232-32-09-L	2	32	32	250	65	8.8	x	2	
432-W25-09-C	4	32	25	130	32	8.8	●	1	
532-W25-09-C	5	32	25	130	32	8.8	●	1	
333-32-09-L	3	33	32	250	40	8.8	x	2	
240-32-09-L	2	40	32	250	32	8.8	x	2	
540-W32-09-C	5	40	32	130	32	8.8	●	1	
640-W32-09	6	40	32	130	32	8.8	x	1	



2S-TE90AP-M-09



Modular heads

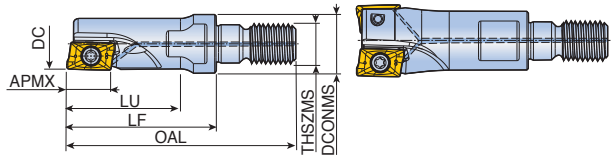
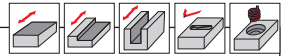
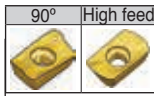


Fig.1

Fig.2



Designation	⌀	Dimension (mm)							Coolant hole	Fig.	Insert
		DC	DCONMS	LF	OAL	LU	THSZMS	APMX			
2S-TE90AP 110-M06-09	1	10	9.7	33	47.5	19	M06	8.8	●	1	APK(C)T 09T3... E225, E230
112-M08-09	1	12	13	33	50.5	25	M08	8.8	●	1	
216-M08-09	2	16	13	38	50.5	-	M08	8.8	●	2	
320-M10-09	3	20	18	38	58	-	M10	8.8	●	2	
325-M12-09	3	25	21	38	60	-	M12	8.8	●	2	
425-M12-09	4	25	21	38	60	-	M12	8.8	●	2	
432-M16-09	4	32	29	38	63	-	M16	8.8	●	2	
532-M16-09	5	32	29	38	63	-	M16	8.8	●	2	
540-M16-09	5	40	29	43	68	-	M16	8.8	●	2	
640-M16-09	6	40	29	43	68	-	M16	8.8	●	2	

- Matched with T-FLEXTEC holder
- Cutter body for 'APKT09' insert with corner radius more than 2.4mm should be modified accordingly
body "RE"=Insert "RE"-0.2mm

Spare parts

Designation	Screw	Wrench			
2S-TE90AP-09	TS 25055/HG	TD 8			

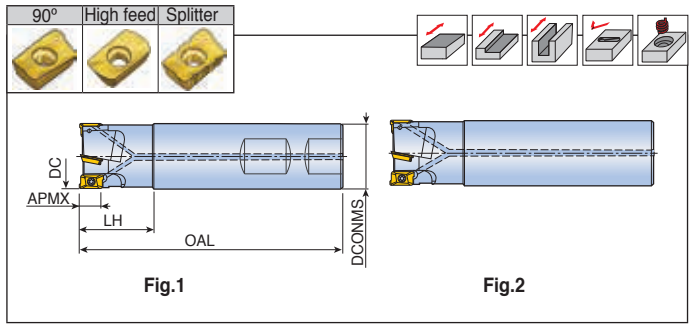
Cutting Condition
E271-E273

Ramping Data
E315, E319

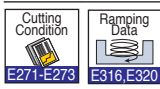
TE90AP-12



End mills



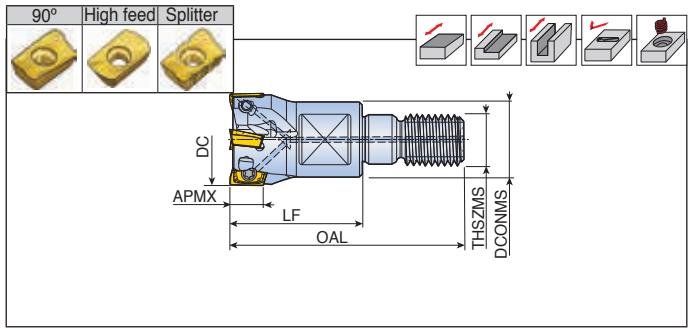
Designation	Flutes	Dimension (mm)					Coolant hole	Fig.	Insert
		DC	DCONMS	OAL	LH	APMX			
TE90AP 116-W16-12-C	1	16	16	85	26	12.0	●	1	APK(C)T 1204.... E226,E230
218-W20-12-C	2	18	20	85	26	12.0	●	1	
220-19-12-L	2	20	19	170	30	12.0	●	2	
220-W20-12-C	2	20	20	90	30	12.0	●	1	
220-W20-12-L-C	2	20	20	125	30	12.0	●	1	
220-20-12-L	2	20	20	170	30	12.0	●	2	
220-20-12-L200	2	20	20	200	30	12.0	●	2	
221-20-12-L200	2	21	20	200	30	12.0	●	2	
221-20-12-L250	2	21	20	250	30	12.0	●	2	
225-24-12-L	2	25	24	200	40	12.0	●	2	
225-W25-12-L-C	2	25	25	145	40	12.0	●	1	
225-25-12-L	2	25	25	210	40	12.0	●	2	
225-25-12-L200	2	25	25	200	40	12.0	●	2	
325-W25-12-C	3	25	25	100	40	12.0	●	1	
226-25-12-L200	2	26	25	200	40	12.0	●	2	
226-25-12-L250	2	26	25	250	40	12.0	●	2	
232-25-12-L	2	32	25	250	40	12.0	●	2	
332-W25-12-L-C	3	32	25	155	35	12.0	●	1	
332-W32-12-C	3	32	32	110	40	12.0	●	1	
332-32-12-L	3	32	32	250	40	12.0	●	2	
332-32-12-L150	3	32	32	150	40	12.0	●	2	
432-W25-12-C	4	32	25	100	40	12.0	●	1	
233-32-12-L200	2	33	32	200	40	12.0	●	2	
233-32-12-L250	2	33	32	250	40	12.0	●	2	
333-32-12-L200	3	33	32	200	40	12.0	●	2	
333-32-12-L250	3	33	32	250	40	12.0	●	2	
435-W25-12	4	35	25	100	40	12.0	●	1	
440-W32-12-C	4	40	32	115	45	12.0	●	1	
440-32-12-L	4	40	32	250	40	12.0	●	2	
540-W32-12-C	5	40	32	115	45	12.0	●	1	



TE90AP-M-12



Modular heads



Designation	⊕	Dimension (mm)						Coolant hole	Insert
		DC	DCONMS	LF	OAL	THSZMS	APMX		
TE90AP 116-M08-12	1	16	13	35	52.5	M08	12.0	●	APK(C)T 1204...
220-M10-12	2	20	18	35	55	M10	12.0	●	⊕ E226, E230
325-M12-12	3	25	21	35	57	M12	12.0	●	
432-M16-12	4	32	29	43	68	M16	12.0	●	
540-M16-12	5	40	29	43	68	M16	12.0	●	
542-M16-12	5	42	29	43	68	M16	12.0	●	

- Matched with T-FLEXTEC holder
- Cutter body for 'APKT 12' insert with corner radius more than 1.6mm should be modified accordingly
body "RE"=Insert "RE"-0.5mm

Spare parts

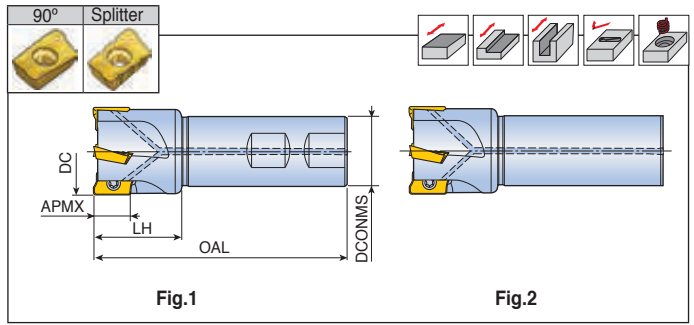
Designation	Screw	Wrench			
TE90AP-12 (Ø16-Ø26)	TS 35A070/HG	TD 10P			
TE90AP-12 (Ø32-)	TS 35A088/HG	TD 10P			

Cutting Condition
E271-E273

Ramping Data
E316, E320

TE90AP-17

End mills



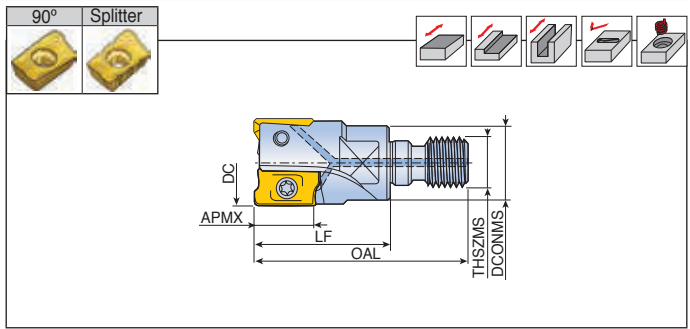
Designation	⌀	Dimension (mm)					Coolant hole	Fig.	Insert
		DC	DCONMS	OAL	LH	APMX			
TE90AP 120-W20-17-C	1	20	20	90	32	16.1	●	1	APK(C)T 1705... E227-E228
225-24-17-L	2	25	24	210	40	16.1	x	2	
225-W25-17-C	2	25	25	100	39	16.1	●	1	
225-25-17-L	2	25	25	210	40	16.1	x	2	
226-25-17-L200	2	26	25	200	40	16.1	●	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-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	57	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-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



Modular heads



Designation	⊕	Dimension (mm)						Coolant hole	Insert
		DC	DCONMS	LF	OAL	THSZMS	APMX		
TE90AP 120-M10-17	1	20	18	43	63	M10	16.1	●	APK(C)T 1705... E227-E228
225-M12-17	2	25	21	43	65	M12	16.1	●	
232-M16-17	2	32	29	43	68	M16	16.1	●	
332-M16-17	3	32	29	43	68	M16	16.1	●	
340-M16-17	3	40	29	43	68	M16	16.1	●	
440-M16-17	4	40	29	43	68	M16	16.1	●	

- Matched with T-FLEXTEC holder
- Cutter body for 'APKT 17' insert with corner radius more than 1.6mm should be modified accordingly
body "RE"=Insert "RE"-0.8mm

Spare parts

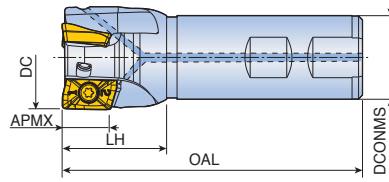
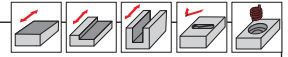
Designation	Screw	Wrench			
TE90AP-17 (Ø20-Ø25)	TS 40085I/HG	TD 15			
TE90AP-17 (Ø26-Ø63)	TS 40093I/HG	TD 15			



2S-TE90AP-19



End mills



Designation		Dimension (mm)					Coolant hole	Insert
		DC	DCONMS	OAL	LH	APMX		
2S-TE90AP 340-W32-19	3	40	32	115	40	17.9	●	APKT 1907... E229

Spare parts

Designation	Screw	Wrench			
2S-TE90AP-19	TS 50115I	TD 20			



TE90AN-11/16



End mills

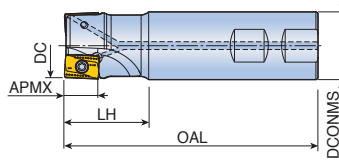
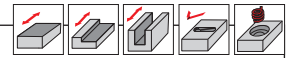


Fig.1

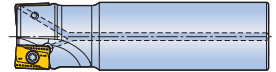


Fig.2



Designation		Dimension (mm)					Coolant hole	Fig.	Insert
		DC	DCONMS	OAL	LH	APMX			
TE90AN 225-24-11-L	2	25	24	200	40	11.0	●	2	ANM(H)X 1106... E224
225-W25-11	2	25	25	100	40	11.0	●	1	
225-25-11-L	2	25	25	200	40	11.0	●	2	
226-25-11-L	2	26	25	200	40	11.0	●	2	
332-W32-11	3	32	32	110	40	11.0	●	1	
332-32-11-L	3	32	32	200	40	11.0	●	2	
233-32-11-L	2	33	32	250	40	11.0	●	2	
333-32-11-L	3	33	32	200	40	11.0	●	2	
340-32-11-L	3	40	32	250	40	11.0	●	2	
440-W32-11	4	40	32	115	40	11.0	●	1	
440-32-11-L	4	40	32	200	40	11.0	●	2	
TE90AN 232-W32-16	2	32	32	110	30	15.0	●	1	ANM(H)X 1607... E224
232-32-16	2	32	32	150	45	15.0	●	2	
232-32-16-L250	2	32	32	250	40	15.0	●	2	
233-32-16-L200	2	33	32	200	55	15.0	●	2	
340-W32-16	3	40	32	115	35	15.0	●	1	
340-32-16	3	40	32	150	45	15.0	●	2	
340-32-16-L250	3	40	32	250	45	15.0	●	2	
450-32-16	4	50	32	150	50	15.0	●	2	

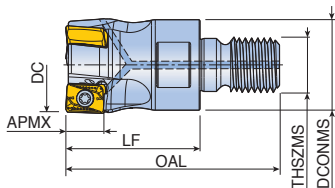
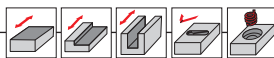
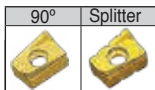
Cutting Condition
 E271-E273

Ramping Data
 E321

TE90AN-M-11/16



Modular heads



Designation	⊕	Dimension (mm)						Coolant hole	Insert
		DC	DCONMS	LF	OAL	THSZMS	APMX		
TE90AN 225-M12-11	2	25	21	35	57	M12	11.0	●	ANM(H)X 1106...
332-M16-11	3	32	29	43	68	M16	11.0	●	⊕ E224
440-M16-11	4	40	29	43	68	M16	11.0	●	
TE90AN 232-M16-16	2	32	29	43	68	M16	15.0	●	ANM(H)X 1607...
340-M16-16	3	40	29	43	68	M16	15.0	●	⊕ E224

• Matched with T-FLEXTEC holder

Spare parts

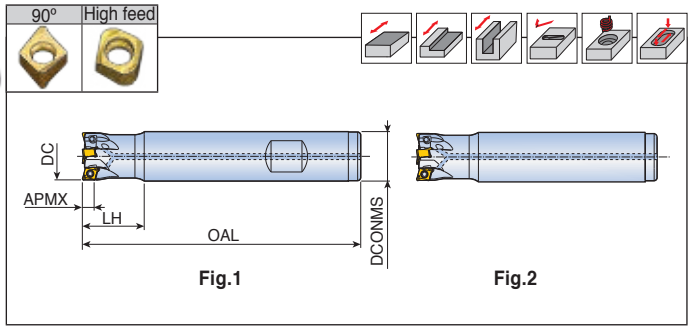
Designation	Screw	Wrench			
TE90AN-11	TS 35A088I/HG	TD 10P			
TE90AN-16	TS 40120I	TD 15			



4N TE90-04



End mills



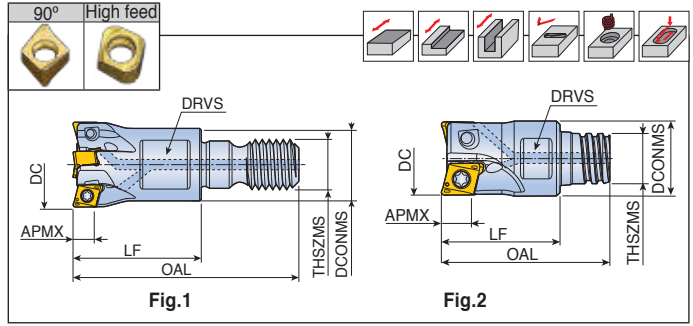
Designation	⌀	Dimension (mm)					Coolant hole	Fig.	Insert
		DC	DCONMS	OAL	LH	APMX			
4N TE90-108-08-04	1	8	8	80	17	3.5	●	2	4NKT 0402... E218-E219
210-10-04	2	10	10	80	17	3.5	●	2	
211-10-04	2	11	10	80	17	3.5	●	2	
212-12-04	2	12	12	80	18	3.5	●	2	
312-12-04	3	12	12	80	18	3.5	●	2	
313-12-04	3	13	12	90	20	3.5	●	2	
316-16-04	3	16	16	90	20	3.5	●	2	
416-W16-04	4	16	16	90	20	3.5	●	1	
420-20-04-L	4	20	20	160	25	3.5	●	2	
520-W20-04	5	20	20	105	25	3.5	●	1	
725-W25-04	7	25	25	120	30	3.5	●	1	
832-W25-04	8	32	25	130	35	3.5	●	1	
1040-W32-04	10	40	32	140	40	3.5	●	1	

• Cutter body for '4NKT 040212R-HF' insert should be modified with body corner radius 1.2 mm



4N TE90-M(S)-04

Modular heads



Designation	Z	Dimension (mm)							Coolant hole	Fig.	Insert
		DC	DCONMS	LF	OAL	THSZMS	APMX	DRVS			
4N TE90- 210-M06-04	2	10	9.7	17	31.5	M06	3.5	8	●	1	4NKT 0402... E218-E219
211-M06-04	2	11	9.7	17	31.5	M06	3.5	8	●	1	
312-M06-04	3	12	11	17	31.5	M06	3.5	8	●	1	
313-M06-04	3	13	11	17	31.5	M06	3.5	8	●	1	
416-M08-04	4	16	13	23	40.5	M08	3.5	10	●	1	
520-M10-04	5	20	18	23	43	M10	3.5	15	●	1	
725-M12-04	7	25	21	27	49	M12	3.5	17	●	1	
4N TE90- 210-S06-04	2	10	9.6	15	21.3	S06	3.5	8	●	2	
312-S08-04	3	12	11.5	16	23.5	S08	3.5	10	●	2	
416-S10-04	4	16	15.2	20	31.3	S10	3.5	13	●	2	

- Cutter body for '4NKT 040212R-HF' insert should be modified with body corner radius 1.2 mm
- Matched with T-FLEXTEC holder(Fig.1) & MAXI-RUSH holder(Fig.2)

Spare parts

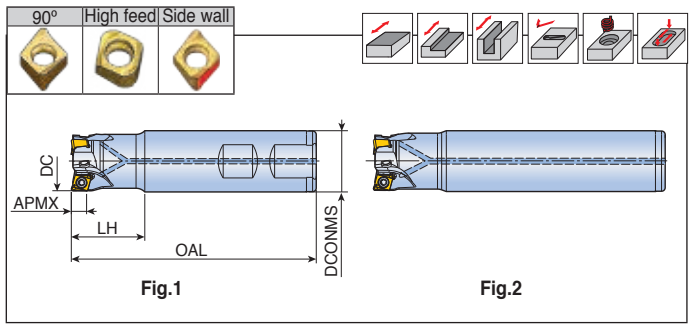
Designation	Screw	Wrench			
4N TE90-04	TS 18041/HG	TD 6P			



4N TE90-06



End mills



Designation	Flutes	Dimension (mm)					Coolant hole	Fig.	Insert
		DC	DCONMS	OAL	LH	APMX			
4N TE90-216-15-06-L150	2	16	15	150	25	6.0	●	2	4NK(H)T 0603.....
216-W16-06	2	16	16	90	25	6.0	●	1	E218-E219
216-16-06-L100	2	16	16	100	25	6.0	●	2	
216-16-06-L150	2	16	16	150	25	6.0	●	2	
217-16-06	2	17	16	90	25	6.0	●	2	
217-16-06-L200	2	17	16	200	25	6.0	●	2	
218-W16-06	2	18	16	90	25	6.0	●	1	
218-16-06-L150	2	18	16	150	25	6.0	●	2	
220-19-06-L160	2	20	19	160	25	6.0	●	2	
220-W20-06	2	20	20	90	25	6.0	●	1	
220-20-06-L110	2	20	20	110	25	6.0	●	2	
220-20-06-L160	2	20	20	160	25	6.0	●	2	
320-W20-06	3	20	20	90	25	6.0	●	1	
320-20-06-L110	3	20	20	110	25	6.0	●	2	
221-20-06-L200	2	21	20	200	25	6.0	●	2	
325-W25-06	3	25	25	100	30	6.0	●	1	
325-25-06-L120	3	25	25	120	30	6.0	●	2	
325-25-06-L200	3	25	25	200	30	6.0	●	2	
326-25-06-L200	3	26	25	200	30	6.0	●	2	
425-W25-06	4	25	25	100	30	6.0	●	1	
425-25-06-L120	4	25	25	120	30	6.0	●	2	
432-W32-06	4	32	32	110	35	6.0	●	1	
432-32-06-L130	4	32	32	130	35	6.0	●	2	
432-32-06-L210	4	32	32	210	35	6.0	●	2	
433-32-06-L220	4	33	32	220	35	6.0	●	2	
532-W32-06	5	32	32	110	35	6.0	●	1	
532-32-06-L130	5	32	32	130	35	6.0	●	2	
540-W32-06	5	40	32	110	40	6.0	●	1	
540-32-06-L150	5	40	32	150	40	6.0	●	2	
540-32-06-L250	5	40	32	250	40	6.0	●	2	
640-W32-06	6	40	32	110	35	6.0	●	1	
640-32-06-L150	6	40	32	150	35	6.0	●	2	

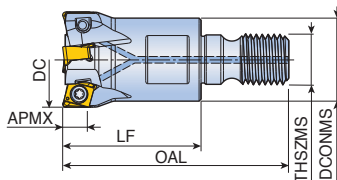
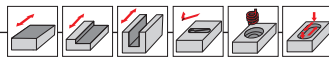
• Cutter body for '4NKT 060320R-HF' and '4NHT 060320R-F' inserts should be modified with body corner radius 2.0 mm



4N TE90-M-06



Modular heads



Designation		Dimension (mm)						Coolant hole	Insert
		DC	DCONMS	LF	OAL	THSZMS	APMX		
4N TE90-216-M08-06	2	16	13	23	40.5	M08	6.0	●	4NK(H)T 0603... E218-E219
217-M08-06	2	17	13	23	40.5	M08	6.0	●	
220-M10-06	2	20	18	35	55	M10	6.0	●	
320-M10-06	3	20	18	35	55	M10	6.0	●	
321-M10-06	3	21	18	35	55	M10	6.0	●	
325-M12-06	3	25	21	35	57	M12	6.0	●	
425-M12-06	4	25	21	35	57	M12	6.0	●	
426-M12-06	4	26	21	35	57	M12	6.0	●	
432-M16-06	4	32	29	43	68	M16	6.0	●	
532-M16-06	5	32	29	43	68	M16	6.0	●	
533-M16-06	5	33	29	43	68	M16	6.0	●	
535-M16-06	5	35	29	43	68	M16	6.0	●	
540-M16-06	5	40	29	43	68	M16	6.0	●	
640-M16-06	6	40	29	43	68	M16	6.0	●	

- Cutter body for '4NKT 060320R-HF' and '4NHT 060320R-F' inserts should be modified with body corner radius 2.0 mm
- Matched with T-FLEXTEC holder

Spare parts

Designation	Screw	Wrench			
	4N TE90-06	TS 30B068/HG	TD 8		



4N TE90-09/11/14



End mills

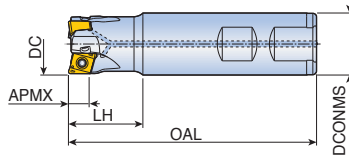
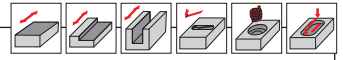
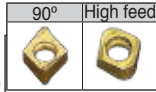


Fig.1



Fig.2

Designation	✱	Dimension (mm)					Coolant hole	Fig.	Insert
		DC	DCONMS	OAL	LH	APMX			
4N TE90-220-W20-09	2	20	20	100	30	8.0	●	1	4NK(H)T 0904.. E218-E219
220-20-09-L170	2	20	20	170	30	8.0	●	2	
225-W25-09	2	25	25	100	30	8.0	●	1	
225-25-09-L200	2	25	25	200	40	8.0	●	2	
325-W25-09	3	25	25	100	30	8.0	●	1	
325-25-09-L210	3	25	25	210	30	8.0	●	2	
332-W32-09	3	32	32	110	40	8.0	●	1	
332-32-09-L250	3	32	32	250	40	8.0	●	2	
432-W25-09	4	32	25	130	35	8.0	●	1	
432-25-09-L200	4	32	25	200	40	8.0	●	2	
432-W32-09	4	32	32	110	40	8.0	●	1	
440-W32-09	4	40	32	115	40	8.0	●	1	
440-32-09-L250	4	40	32	250	40	8.0	●	2	
540-W32-09	5	40	32	115	40	8.0	●	1	
4N TE90-225-W25-11	2	25	25	100	30	10.5	●	1	4NKT 1106.. E218-E219
225-25-11-L200	2	25	25	200	40	10.5	●	2	
332-W32-11	3	32	32	110	40	10.5	●	1	
440-W32-11	4	40	32	115	40	10.5	●	1	
440-32-11-L200	4	40	32	200	40	10.5	●	2	
4N TE90-232-W32-14	2	32	32	110	40	13.8	●	1	4NKT 1407.. E218-E219
232-32-14	2	32	32	150	45	13.8	●	2	
232-32-14-L250	2	32	32	250	40	13.8	●	2	
340-W32-14	3	40	32	115	40	13.8	●	1	
340-32-14	3	40	32	115	40	13.8	●	2	

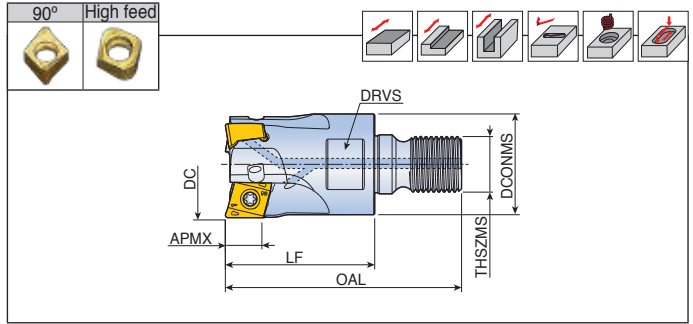


- Cutter body for '4NKT 090432R-HF' insert should be modified with body corner radius 3.2mm
- Cutter body for '4NKT 110640R-HF' insert should be modified with body corner radius 4.0 mm
- Cutter body for '4NKT 140750R-HF' insert should be modified with body corner radius 5.0 mm

4N TE90-M-09/11/14



Modular heads



Designation	Insert	Dimension (mm)							Coolant hole	Insert
		DC	DCONMS	LF	OAL	THSZMS	APMX	DRVS		
4N TE90-220-M10-09	2	20	18	30	50	M10	8.0	15	●	4NK(H)T 0904...
325-M12-09	3	25	21	35	57	M12	8.0	17	●	E218-E219
432-M16-09	4	32	29	43	68	M16	8.0	25	●	
540-M16-09	5	40	29	43	68	M16	8.0	25	●	
4N TE90-225-M12-11	2	25	21	35	57	M12	10.5	17	●	4NKT 1106...
332-M16-11	3	32	29	43	68	M16	10.5	25	●	E218-E219
440-M16-11	4	40	29	43	68	M16	10.5	25	●	
4N TE90-232-M16-14	2	32	29	43	68	M16	13.8	25	●	4NKT 1407...
340-M16-14	3	40	29	43	68	M16	13.8	25	●	E218-E219

- Cutter body for '4NKT 090432R-HF' insert should be modified with body corner radius 3.2 mm
- Cutter body for '4NKT 110640R-HF' insert should be modified with body corner radius 4.0 mm
- Cutter body for '4NKT 140750R-HF' insert should be modified with body corner radius 5.0 mm
- Matched with T-FLEXTEC holder

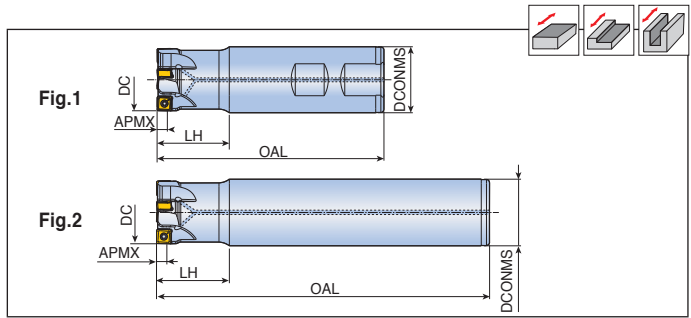
Spare parts

Designation	Screw	Wrench	Wrench handle		
4N TE90-09	TS 35A088/HG	TBLD T10P-W6	THND 6W		
4N TE90-11	TS 40093/HG	TBLD T15-W6	THND 6W		
4N TE90-14	TS 50A121/HG	TBLD T20-W6	THND 6W		



8D-TE90-07

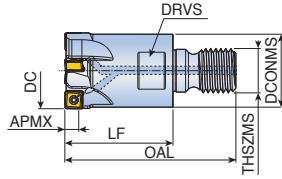
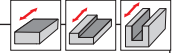
End mills



Designation		Dimension (mm)					Coolant hole	Fig.	Insert
		DC	DCONMS	LH	OAL	APMX			
8D-TE90- 216-W16-07	2	16	16	20	90	5.0	●	1	SQKU 0703... E257
216-16-07-L110	2	16	16	20	110	5.0	●	2	
217-16-07-L110	2	17	16	20	110	5.0	●	2	
220-W20-07	2	20	20	25	90	5.0	●	1	
220-20-07-L160	2	20	20	25	160	5.0	●	2	
320-W20-07	3	20	20	25	90	5.0	●	1	
221-20-07-L160	2	21	20	25	160	5.0	●	2	
325-W25-07	3	25	25	30	100	5.0	●	1	
325-25-07-L160	3	25	25	30	160	5.0	●	2	
425-W25-07	4	25	25	30	100	5.0	●	1	
326-25-07-L160	3	26	25	30	160	5.0	●	2	
432-W32-07	4	32	32	35	110	5.0	●	1	
432-32-07-L200	4	32	32	35	200	5.0	●	2	
632-W32-07	6	32	32	35	110	5.0	●	1	
433-32-07-L200	4	33	32	35	200	5.0	●	2	
540-W32-07	5	40	32	40	110	5.0	●	1	
840-W32-07	8	40	32	40	110	5.0	●	1	

8D-TE90-M-07

Modular heads



Designation		Dimension (mm)							Coolant hole	Insert
		DC	DCONMS	LF	OAL	THSZMS	APMX	DRVS		
8D-TE90-216-M08-07	2	16	14	23	40.5	M08	5.0	10	●	SQKU 0703...
320-M10-07	3	20	18	30	50	M10	5.0	15	●	E257
325-M12-07	3	25	22	35	57	M12	5.0	17	●	
432-M16-07	4	32	29	43	68	M16	5.0	25	●	
540-M16-07	5	40	29	43	68	M16	5.0	25	●	

• Matched with T-FLEXTEC holder

Spare parts

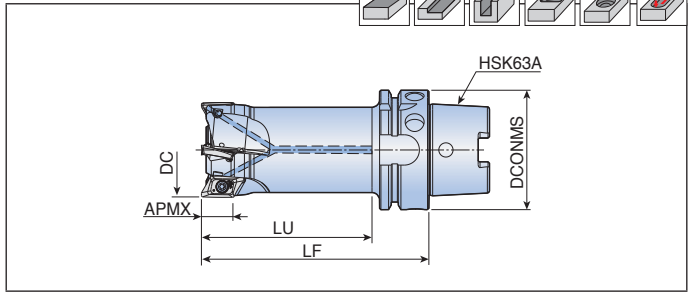
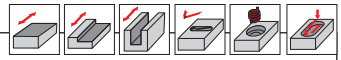
Designation	Screw	Wrench			
8D-TE90-07	TS 25D060/HG-P	TD 7P			



TE90XEV-HSK63A-16



End mills for HSK toolholder



Designation		Dimension (mm)						Coolant hole	Max RPM	Insert
		DC	DCONMS	LF	LU	APMX				
TE90XEV 225-100-HSK63A-16	2	25	63	100	70	16	●	52,000	XEVT 1605... E264	
232-125-HSK63A-16	2	32	63	125	95	16	●	46,000		
332-90-HSK63A-16	3	32	63	90	60	16	●	46,000		
340-105-HSK63A-16	3	40	63	105	75	16	●	41,200		
450-105-HSK63A-16	4	50	63	105	75	16	●	36,800		
450-120-HSK63A-16	4	50	63	120	90	16	●	36,800		

• Cutter body for inserts with corner radii more than 3.2mm (XEVT 16) should be modified as follows:
body "RE"=insert "RE"-0.3mm

Spare parts

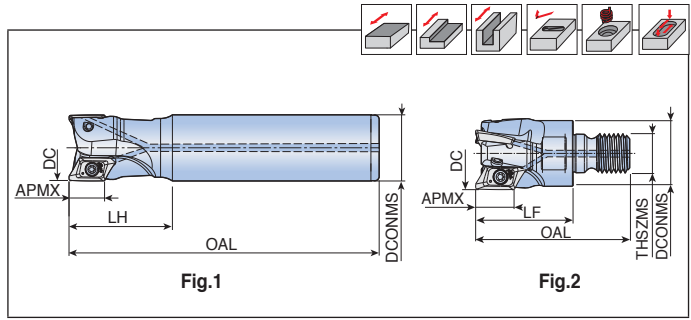
Designation	Screw	Wrench			
TE90XEV-16 (-Ø25)	TS 40085I/HG	T-T15			
TE90XEV-16 (Ø32-)	TS 40093I/HG	T-T15			



TE90XEV-16/22



End mills & Modular heads



Designation		Dimension (mm)							Coolant hole	Fig.	Max RPM	Insert
		DC	DCONMS	OAL	THSZMS	LF	LH	APMX				
TE90XEV 225-25-16	2	25	25	125	-	-	55	16	●	1	52,000	XEVT 1605...
225-25-16-L170	2	25	25	170	-	-	70	16	●	1	52,000	
232-32-16	2	32	32	150	-	-	50	16	●	1	46,000	
232-32-16-L200	2	32	32	200	-	-	80	16	●	1	46,000	
332-32-16	3	32	32	150	-	-	50	16	●	1	46,000	
332-32-16-L200	3	32	32	200	-	-	80	16	●	1	46,000	
340-32-16	3	40	32	170	-	-	55	16	●	1	41,200	
340-32-16-L250	3	40	32	250	-	-	55	16	●	1	41,200	
TE90XEV 225-M12-16	2	25	21	65	M12	43	-	16	●	2	52,000	XEVT 2206...
232-M16-16	2	32	29	68	M16	43	-	16	●	2	46,000	
332-M16-16	3	32	29	68	M16	43	-	16	●	2	46,000	
340-M16-16	3	40	29	68	M16	43	-	16	●	2	41,200	
TE90XEV 232-32-22	2	32	32	160	-	-	100	21	●	1	37,500	
340-40-22	3	40	40	160	-	-	80	21	●	1	35,100	

- Matched with T-FLEXTEC holder
- Cutter body for inserts with corner radii more than 3.2mm (XEVT 16) and 3.0mm (XEVT 22) should be modified as follows:
body "RE"=insert "RE"-0.3mm

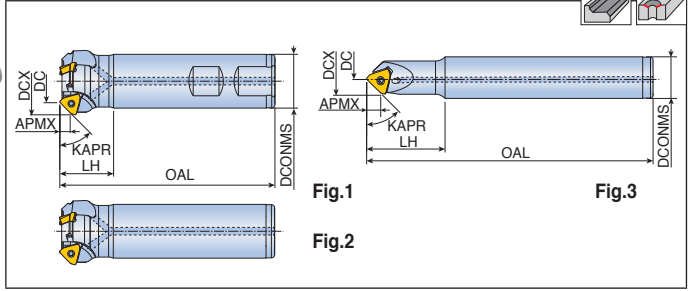
Spare parts

Designation	Screw	Wrench			
TE90XEV-16 (-Ø25)	TS 40085I/HG	T-T 15			
TE90XEV-16 (Ø32-)	TS 40093I/HG	T-T 15			
TE90XEV-22 (-Ø32)	TS 50105I	T-T 20			
TE90XEV-22 (Ø40-)	TS 50115I	T-T 20			



3P-TCF-06/10

End mills for chamfering



Designation		Dimension (mm)							Fig.	Application range	Insert
		KAPR	DC	DCX	DCONMS	OAL	LH	APMX			
3P-TCF 45-309-12-06	3	45°	9	16.7	12	100	17	3.0	2	Ø10.3-Ø14.4	3PK(H)T 0603...
60-320-W25-10	3	60°	20	27.3	25	100	25	5.9	1	Ø21.3-Ø26.2	3PK(H)T 1004...
45-320-W25-10	3	45°	20	31.2	25	100	25	4.8	1	Ø21.3-Ø28.9	E216
30-320-W25-10	3	30°	20	34.5	25	100	25	3.3	1	Ø21.3-Ø31.0	E216
3P-TCF 45-D2-16-10-L110	1	45°	2	13.3	16	110	30	4.7	3	Ø3.3-Ø10.6	3PK(H)T 1004... E216

• Coolant through type

Spare parts

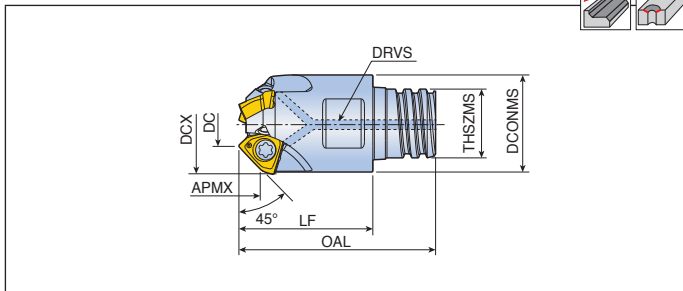
Designation	Screw	Wrench			
3P-TCF-06	TS 20043I/HG-P	TD 6P			
3P-TCF-10	TS 25C065I/HG	TD 8			



3P-TCF-S-04



Modular heads for chamfering



Designation		Dimension (mm)								Application range	Insert
		DC	DCX	DCONMS	LF	OAL	THSZMS	APMX	DRVS		
3P-TCF 45-306-S08-04	3	6	12.3	11.6	16	23.5	S08	2.5	10	Ø7.3-Ø10.5	3PKT 0402... E216

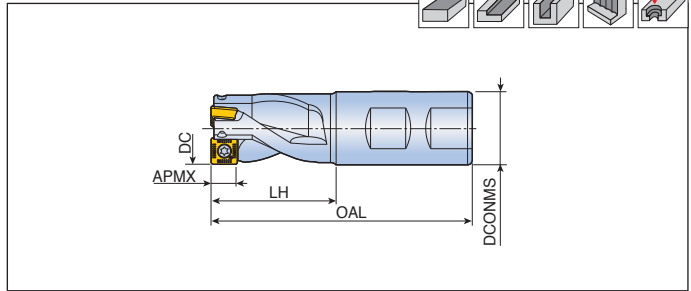
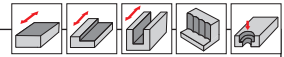
• Matched with MAXI-RUSH holder • Coolant through type

Spare parts

Designation	Screw	Wrench			
	3P-TCF-S-04	TS 18033/HG-P	TD 6P		



End mills



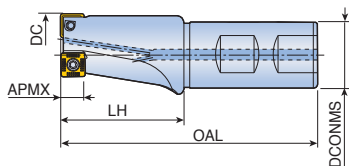
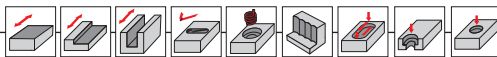
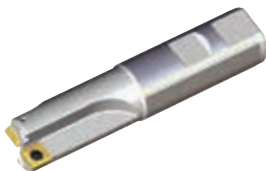
Designation		Dimension (mm)					Insert
		DC	DCONMS	OAL	LH	APMX	
TSF 112-W16-06	1	12	16	80	27	5.6	XOMT 0602...
216-W20-06	2	16	20	90	27	5.6	E255
320-W20-06	3	20	20	100	25	5.6	
TSF 222-W25-09	2	22	25	100	40	9.0	SPMG(T) 0904...
225-W25-09	2	25	25	100	40	9.0	E255
TSF 332-W32-11	3	32	32	115	55	10.7	SPMG(T) 1104...
440-W32-11	4	40	32	125	55	10.7	E255
TSF 445-W32-14	4	45	32	130	70	13.4	SPMG(T) 1405...
450-W32-14	4	50	32	140	80	13.4	E255

Spare parts

Designation	Screw	Wrench			
TSF (Ø12)	TS 22046I	TD 7			
TSF (Ø16-Ø20)	TS 22052I/HG	TD 7			
TSF (Ø22-Ø25)	TS 35088I	TD 10			
TSF (Ø32-Ø40)	TS 40093I	TD 15			
TSF (Ø45-Ø50)	TS 50A121I/HG	TD 20			



End mills



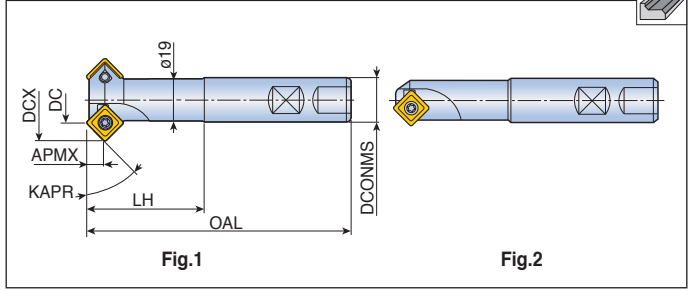
Designation		Dimension (mm)					Coolant hole	Max. drilling depth (mm)	Insert
		DC	DCONMS	OAL	LH	APMX			
TDM 112 W16-06	1	12	16	80	20	5.6	●	12	XOMT 0602...
216 W20-06	2	16	20	90	25	5.6	●	16	E255
218 W20-06	2	18	20	90	25	5.6	●	16	
220 W25-06	2	20	25	100	40	5.6	●	20	
222 W25-06	2	22	25	110	47	5.6	●	25	
TDM 225 W25-09	2	25	25	110	50	9.0	●	30	SPMG(T) 0904...-EM
228 W32-09	2	28	32	125	60	9.0	●	38	E255
TDM 232 W32-11	2	32	32	125	60	10.7	●	38	SPMG(T) 1104...-EM
240 W32-11	2	40	32	125	60	10.7	●	38	E255
TDM 245 W32-14	2	45	32	130	66	13.4	●	40	SPMG(T) 1405...-EM
250 W32-14	2	50	32	150	66	13.4	●	40	E255

Spare parts

Designation	Screw	Wrench			
TDM (Ø12)	TS 22046I	TD 7			
TDM (Ø16-Ø22)	TS 22052I/HG	TD 7			
TDM (Ø25-Ø28)	TS 35088I	TD 10			
TDM (Ø32-Ø40)	TS 40093I	TD 15			
TDM (Ø45-Ø50)	TS 50A121I/HG	TD 20			



End mills



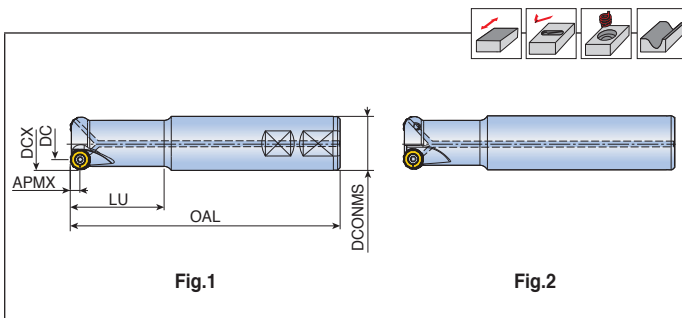
Designation	Inserts	Dimension (mm)							Fig.	Application range(mm)	Insert
		KAPR	DCX	DC	DCONMS	OAL	LH	APMX			
TCF 15 D25-11	2	75°	30.5	25	20	120	40	10.1	1	Ø26.3-Ø30.0	SPMT(G) 1104...EM E255
30 D25-11	2	60°	35.5	25	20	120	40	8.9	1	Ø26.3-Ø34.0	
45 D07-11	1	45°	21.5	7	20	120	40	7.2	2	Ø8.3-Ø20.9	
45 D19-11	2	45°	33.4	19	20	120	40	7.2	1	Ø20.3-Ø32.9	
45 D25-11	3	45°	39.4	25	20	120	40	7.2	1	Ø26.3-Ø38.9	

Spare parts

Designation	Screw	Wrench			
	TCF-11	TS 400931	TD 15		



End mills

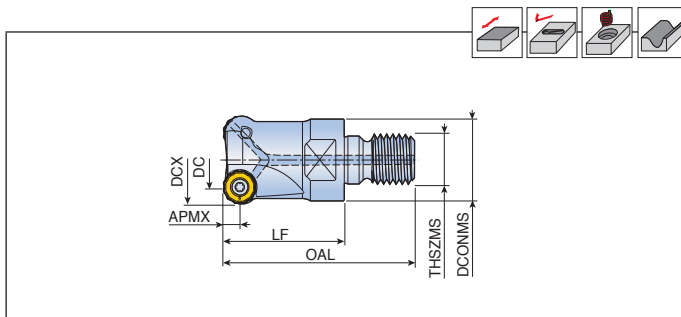


Designation		Dimension (mm)							Coolant hole	Fig.	Insert
		DCX	DC	DCONMS	OAL	LU	APMX				
TERNS 225-25-10-L160	2	25	15	25	160	60	5.0	●	2	RNMU 1004... 	
225-32-10-L250	2	25	15	32	250	40	5.0	●	2		
325-25-10-L160	3	25	15	25	160	60	5.0	●	2		
226-25-10-L200	2	26	16	25	200	80	5.0	●	2		
332-32-10-L180	3	32	22	32	180	70	5.0	●	2		
332-32-10-L250	3	32	22	32	250	100	5.0	●	2		
432-32-10-L180	4	32	22	32	180	70	5.0	●	2		
432-32-10-L250	4	32	22	32	250	100	5.0	●	2		
433-32-10-L200	4	33	23	32	200	80	5.0	●	2		
433-32-10-L250	4	33	23	32	250	100	5.0	●	2		
TERNS 232-32-12-L150	2	32	20	32	150	50	6.0	●	2	RNMU 1205... 	
232-32-12-L200	2	32	20	32	200	60	6.0	●	2		
232-32-12-L	2	32	20	32	250	50	6.0	●	2		
332-W32-12	3	32	20	32	160	60	6.0	●	1		
332-32-12-L200	3	32	20	32	200	70	6.0	●	2		
332-32-12-L250	3	32	20	32	250	60	6.0	●	2		
233-32-12-L200	2	33	21	32	200	50	6.0	●	2		
233-32-12-L250	2	33	21	32	250	50	6.0	●	2		
333-32-12-L200	3	33	21	32	200	70	6.0	●	2		
333-32-12-L250	3	33	21	32	250	60	6.0	●	2		
340-W32-12	3	40	28	32	160	50	6.0	●	1		
340-32-12-L250	3	40	28	32	250	50	6.0	●	2		
440-W32-12	4	40	28	32	160	50	6.0	●	1		
440-32-12-L250	4	40	28	32	250	60	6.0	●	2		
450-32-12-L200	4	50	38	32	200	70	6.0	●	2		
550-32-12-L250	5	50	38	32	250	60	6.0	●	2		
TERNS 240-W32-16-L160	2	40	24	32	160	50	6.0	●	1	RNMU 1606... 	
240-32-16-L180	2	40	24	32	180	70	8.0	●	2		
240-32-16-L250	2	40	24	32	250	100	8.0	●	2		
340-32-16-L180	3	40	24	32	180	70	8.0	●	2		
340-32-16-L250	3	40	24	32	250	100	8.0	●	2		



TERNS-M

Modular heads



Designation		Dimension (mm)							Coolant hole	Insert
		DCX	DC	DCONMS	LF	OAL	THSZMS	APMX		
TERNS 225-M12-10	2	25	15	21	35	57	M12	5.0	●	RNMU 1004...
325-M12-10	3	25	15	21	35	57	M12	5.0	●	E244
432-M16-10	4	32	22	29	43	68	M16	5.0	●	
542-M16-10	5	42	32	29	43	68	M16	5.0	●	
TERNS 232-M16-12	2	32	20	29	43	68	M16	6.0	●	RNMU 1205...
332-M16-12	3	32	20	29	43	68	M16	6.0	●	E244
233-M16-12	2	33	21	29	43	68	M16	6.0	●	
333-M16-12	3	33	21	29	43	68	M16	6.0	●	
340-M16-12	3	40	28	29	43	68	M16	6.0	●	
440-M16-12	4	40	28	29	43	68	M16	6.0	●	
TERNS 240-M16-16	2	40	24	29	43	68	M16	8.0	●	RNMU 1606...
340-M16-16	3	40	24	29	43	68	M16	8.0	●	E244

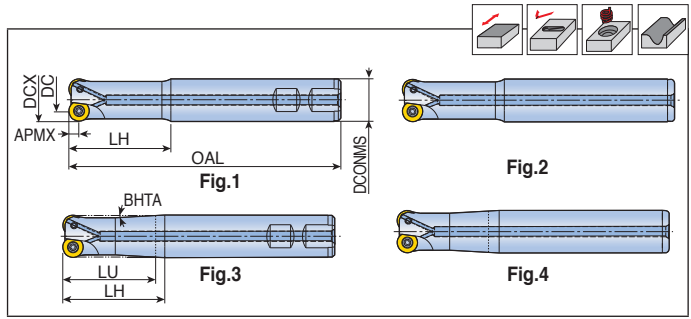
• Matched with T-FLEXTEC holder

Spare parts

Designation	Screw	Wrench			
TERNS-10	TS 35085/HG	TD 15	-		
TERNS-12	TS 40G110I	-	T-T15		
TERNS-16	TS 50A1211/HG	TD 20	-		



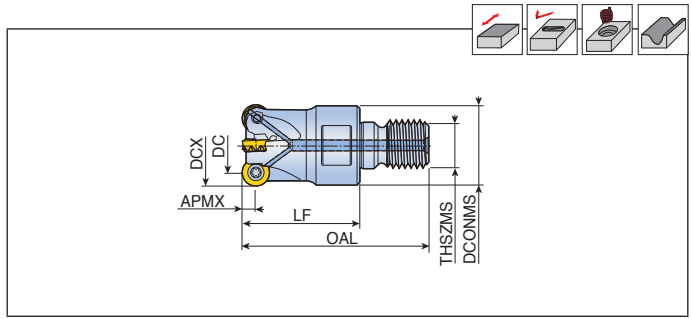
End mills



Designation	⊕	Dimension (mm)								Coolant hole	Fig.	Insert
		DCX	DC	DCONMS	OAL	LU	LH	BHTA	APMX			
TERY 216-W20-08-L	2	16	8	20	110	45	55	4.1	4.0	●	3	RYM(H)X 0803... E245-E246
217-16-08-L130	2	17	9	16	130	-	30	-	4.0	●	2	
218-16-08-L150	2	18	10	16	150	-	30	-	4.0	●	2	
320-W20-08	3	20	12	20	150	-	43	-	4.0	●	1	
320-20-08-L110	3	20	12	20	110	-	60	-	4.0	●	2	
321-20-08-L150	3	21	13	20	150	-	40	-	4.0	●	2	
425-W25-08	4	25	17	25	150	-	43	-	4.0	●	1	
426-25-08-L150	4	26	18	25	150	-	40	-	4.0	●	2	
532-W32-08	5	32	24	32	160	-	60	-	4.0	●	1	
TERY 220-W20-10	2	20	10	20	160	-	60	-	5.0	●	1	
220-25-10-L	2	20	10	25	250	60	80	3.5	5.0	●	4	
221-20-10-L200	2	21	11	20	200	-	30	-	5.0	●	2	
225-32-10-L	2	25	15	32	250	53	80	5.0	5.0	●	4	
225-W25-10	2	25	15	25	160	-	60	-	5.0	●	1	
325-W25-10	3	25	15	25	160	-	60	-	5.0	●	1	
226-25-10-L200	2	26	16	25	200	-	30	-	5.0	●	2	
326-25-10-L200	3	26	16	25	200	-	60	-	5.0	●	2	
432-W32-10	4	32	22	32	160	-	60	-	5.0	●	1	
TERY 225-W25-12	2	25	13	25	160	-	60	-	6.0	●	1	RYM(H)X 1205... E245-E246
226-25-12-L200	2	26	14	25	200	-	60	-	6.0	●	2	
232-32-12-L	2	32	20	32	250	-	50	-	6.0	●	2	
332-W32-12	3	32	20	32	160	-	64	-	6.0	●	1	
332-W32-12-S	3	32	20	32	105	-	35	-	6.0	●	1	
233-32-12-L250	2	33	21	32	250	-	40	-	6.0	●	2	
333-32-12-L200	3	33	21	32	200	-	60	-	6.0	●	2	
340-W32-12	3	40	28	32	160	-	50	-	6.0	●	1	
340-W32-12-S	3	40	28	32	105	-	35	-	6.0	●	1	
340-32-12-L250	3	40	28	32	250	-	50	-	6.0	●	2	
TERY 240-W32-16	2	40	24	32	160	-	50	-	8.0	●	1	RYM(H)X 1606... E245-E246
340-32-16-L250	3	40	24	32	250	-	50	-	8.0	●	2	
TERY 350-32-20	3	50	30	32	160	-	50	-	10.0	●	2	RYM(H)X 2007... E245-E246
350-40-20	3	50	30	40	200	-	60	-	10.0	●	2	



Modular heads



Designation	⌀	Dimension (mm)							Coolant hole	Insert
		DCX	DC	DCONMS	LF	OAL	THSZMS	APMX		
TERY 225-M12-12	2	25	13	21	35	57	M12	6.0	●	RYM(H)X 1205... E245-E246
232-M16-12	2	32	20	29	43	68	M16	6.0	●	
332-M16-12	3	32	20	29	43	68	M16	6.0	●	
335-M16-12	3	35	23	29	43	68	M16	6.0	●	
340-M16-12	3	40	28	29	43	68	M16	6.0	●	
440-M16-12	4	40	28	29	43	68	M16	6.0	●	
442-M16-12	4	42	30	29	43	68	M16	6.0	●	
TERY 232-M16-16	2	32	16	29	43	68	M16	8.0	●	RYM(H)X 1606... E245-E246
240-M16-16	2	40	24	29	43	68	M16	8.0	●	
342-M16-16	3	42	26	29	43	68	M16	8.0	●	

• Matched with T-FLEXTEC holder

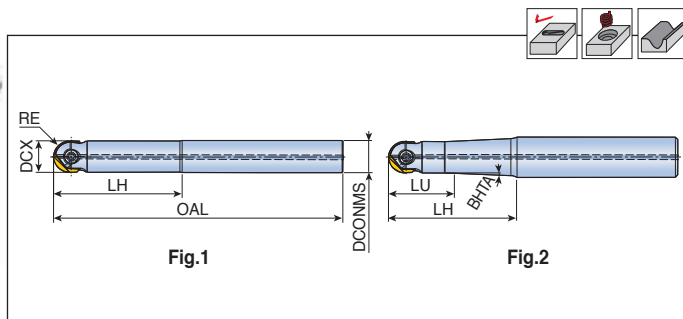
Spare parts

Designation	Screw	Wrench		Wrench handle
TERY-08	TS 30A060I/HG	TD 9	-	
TERY-10	TS 35070I/HG(UnderD21), TS 35085I/HG	TD 15	-	
TERY-12	TS 40093I	TD 15	-	
TERY-16	TS 50115I	TD 20	-	
TERY-20	TS 60A130I	-	BLD T25/M7	SW6-T

Cutting Condition
E271-E273

Ramping Data
E342-E343

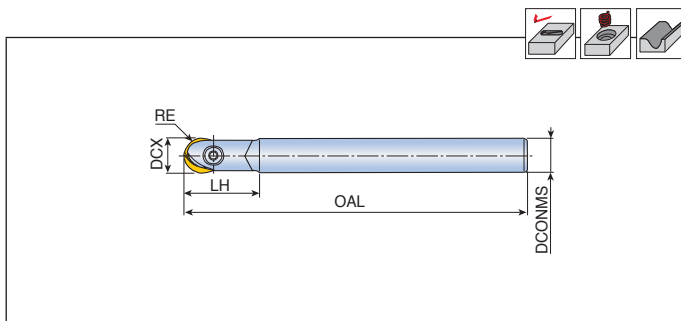
End mills



Designation	Dimension (mm)							Coolant hole	Fig.	Insert
	DCX	RE	DCONMS	OAL	LH	LU	BHTA			
TNF 060-10M	6	3	10	80	30	15	7.5°	●	2	NFB 060... NFR 060A...
060-30-L80	6	3	10	80	30	-	-	●	1	NFR 060A...
080-08S	8	4	8	90	20	-	-	●	1	NFB 080...
080-12S	8	4	12	100	20	10	9.5°	●	2	NFR 080A...
080-12M	8	4	12	130	50	10	3°	●	2	
100-10S	10	5	10	90	30	-	-	●	1	NFB 100...
100-12S	10	5	12	110	25	15	5°	●	2	NFR 100A...
100-16M	10	5	16	130	60	15	3.5°	●	2	NFR 110A...
120-12S	12	6	12	110	30	-	-	●	1	NFB 120...
120-12M	12	6	12	180	60	-	-	●	1	NFR 120A...
120-16M	12	6	16	140	60	25	2.4°	●	2	NFR 130A...
120-20L	12	6	20	180	80	40	5°	●	2	
160-16M	16	8	16	130	40	-	-	●	1	NFB 160...
160-16L	16	8	16	200	100	-	-	●	1	NFR 160A...
160-20M	16	8	20	160	60	25	2.5°	●	2	NFR 170A...
160-25L	16	8	25	220	100	55	5°	●	2	
200-20S	20	10	20	110	40	-	-	●	1	NFB 200...
200-20M	20	10	20	150	50	-	-	●	1	NFR 200A...
200-20L	20	10	20	220	70	-	-	●	1	NFR 210A...
200-25M	20	10	25	180	80	40	2.5°	●	2	
250-25L	20	10	25	220	110	45	1.5°	●	2	
250-25S	25	12.5	25	125	40	-	-	●	1	NFB 250...
250-25M	25	12.5	25	170	70	-	-	●	1	NFR 250A...
250-32M	25	12.5	32	200	90	32	3°	●	2	NFR 260A...
250-32L	25	12.5	32	250	130	40	1.5°	●	2	
300-32S	30	15	32	140	55	-	-	●	1	NFB 300...
300-32M	30	15	32	190	75	-	-	●	1	NFB 320...
300-32L	30	15	32	250	100	65	1°	●	2	NFR 300A...
300-32XL	30	15	32	300	150	-	-	●	1	NFR 320A...
300-32-L220	30	15	32	220	100	55	1°	●	2	
320-32L	32	16	32	250	60	-	-	●	1	NFB 320... NFR 320A...
										E239-E241

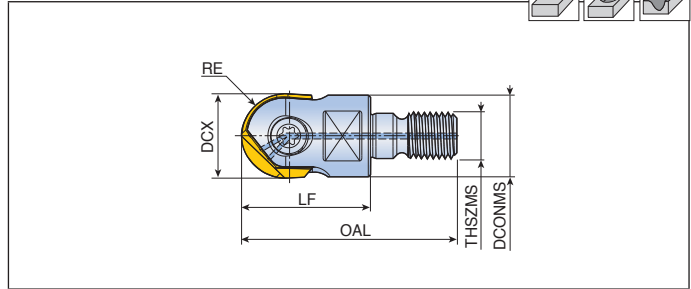
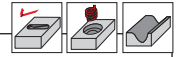


End mills-carbide shank



Designation	Dimension (mm)					Insert
	DCX	RE	DCONMS	OAL	LH	
TNF 060-06-CT-L60	6	3	6	60	15	NFB 060... NFR 060A...
060-06-CT-L80	6	3	6	80	20	
060-06-CT-L92	6	3	6	92	35	
060-06-CT-L120	6	3	6	120	65	
060-06-CT-L140	6	3	6	140	25	
080-08-CT-L100	8	4	8	100	30	NFB 080... NFR 080A...
080-10-CT-L140	8	4	10	140	75	
080-08-CT-L160	8	4	8	160	80	
100-10-CT-L100	10	5	10	100	35	NFB 100... NFR 100A... NFR 110A...
100-10-CT-L140	10	5	10	140	75	
100-10-CT-L200	10	5	10	200	70	
100-10-CT-L220	10	5	10	220	140	
120-12-CT-L120	12	6	12	120	50	NFB 120... NFR 120A... NFR 130A...
120-12-CT-L160-S	12	6	12	160	30	
120-12-CT-L160	12	6	12	160	90	
120-12-CT-L200	12	6	12	200	70	
120-12-CT-L220	12	6	12	220	150	
160-16-CT-L120	16	8	16	120	60	NFB 160... NFR 160A... NFR 170A...
160-16-CT-L160-S	16	8	16	160	70	
160-16-CT-L160	16	8	16	160	80	
160-16-CT-L200	16	8	16	200	70	
160-16-CT-L220	16	8	16	220	150	
200-20-CT-L200	20	10	20	200	70	NFB 200... NFR 200A... NFR 210A...
200-20-CT-L110	20	10	20	110	40	
200-20-CT-L220	20	10	20	220	120	
200-20-CT-L300	20	10	20	300	220	
250-25-CT-L200	25	12.5	25	200	70	NFB 250... NFR 250A... NFR 260A...
250-25-CT-L220-S	25	12.5	25	220	80	
250-25-CT-L220	25	12.5	25	220	120	
250-25-CT-L300	25	12.5	25	300	220	
300-32-CT-L200	30	15	32	200	70	NFB 300... NFB 320... NFR 300A... NFR 320A...
300-32-CT-L250-S	30	15	32	250	80	
300-32-CT-L250	30	15	32	250	150	
300-32-CT-L350-S	30	15	32	350	80	E239-E241
300-32-CT-L350	30	15	32	350	230	
320-32-CT-L300	32	16	32	300	220	NFB 320... NFR 320A...

Modular heads



Designation	Dimension (mm)						Coolant hole	Insert
	DCX	RE	DCONMS	OAL	LF	THSZMS		
TNF 100-M06	10	5	9.7	34.5	20	M06	●	NFB 100... NFR 100A... NFR 110A...
120-M06	12	6	11.5	37.5	23	M06	●	NFB 120...
120-M08	12	6	13	40.5	23	M08	●	NFR 120A... NFR 130A...
160-M08	16	8	13	47.5	30	M08	●	NFB 160... NFR 160A... NFR 170A...
200-M10	20	10	19	50	30	M10	●	NFB 200... NFR 200A... NFR 210A...
250-M12	25	12.5	24	57	35	M12	●	NFB 250...
250-M16	25	12.5	29	68	43	M16	●	NFR 250A... NFR 260A...
300-M16	30	15	29	68	43	M16	●	NFB 300... NFB 320... NFR 300A... NFR 320A...
320-M16	32	16	29.5	68	43	M16	●	NFB 320... NFR 320A...



• Matched with T-FLEXTEC holder

Spare parts

Designation	Screw	Wrench			Wrench handle
TNF 060	TS 20F060A	TD 6	-	-	-
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	-	-	BLD T25/M7	SW6-T
TNF 250	TS 70F250A	-	-	BLD T25/M7	SW6-T
TNF 300, TNF 320	TS 80F300A	-	T-T30	-	-



End mills

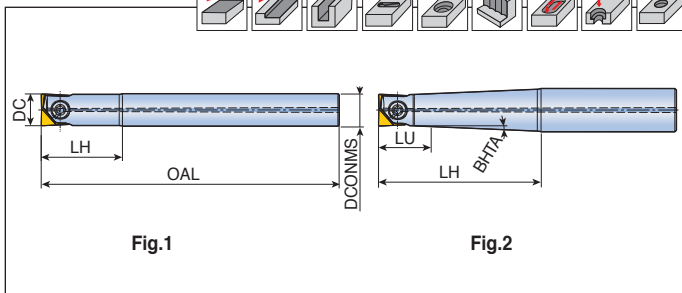
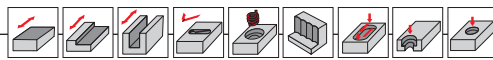


Fig.1

Fig.2

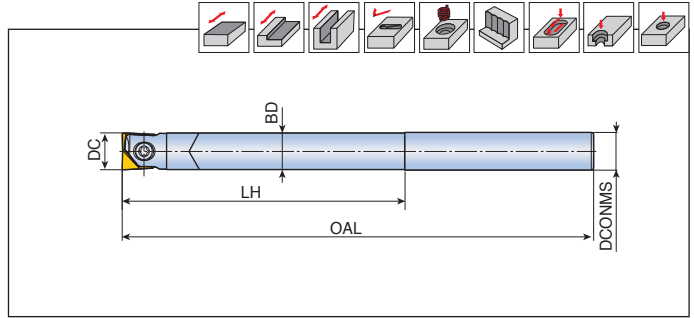
Designation	Dimension (mm)						Coolant hole	Fig.	Insert
	DC	DCONMS	OAL	LH	LU	BHTA			
TNFR 060-10M	6	10	80	30	15	9°	●	2	NFR 060A...
080-12S	8	12	100	22	10	9°	●	2	NFR 080A...
080-12M	8	12	130	50	10	2.8°	●	2	
100-12S	10	12	110	25	15	5°	●	2	NFR 100A...
100-16M	10	16	150	50	15	3.5°	●	2	NFR 110A...
120-12S	12	12	110	30	-	-	●	1	NFR 120A...
120-16M	12	16	160	60	18	2.5°	●	2	NFR 130A...
160-16S	16	16	130	50	-	-	●	1	NFR 160A...
160-16M	16	16	170	70	-	-	●	1	NFR 170A...
160-16L	16	16	200	100	-	-	●	1	
200-20S	20	20	140	60	-	-	●	1	NFR 200A...
200-20M	20	20	180	80	-	-	●	1	NFR 210A...
200-20L	20	20	250	120	-	-	●	1	
250-25S	25	25	150	70	-	-	●	1	NFR 250A...
250-25M	25	25	200	100	-	-	●	1	NFR 260A...
250-25L	25	25	250	120	-	-	●	1	
300-32S	30	32	140	55	-	-	●	1	NFR 300A
300-32M	30	32	190	75	-	-	●	1	NFR 320A
300-32L	30	32	250	100	65	1°	●	2	
320-32L	32	32	250	60	-	-	●	1	NFR 320A E240-E241



TNFR-CT-L



End mills-carbide shank



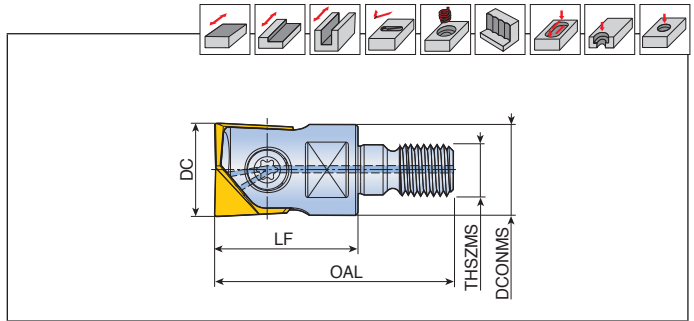
Designation	Dimension (mm)					Insert
	DC	DCONMS	BD	OAL	LH	
TNFR 060-06-CT-L60	6	6	5.8	60	15	NFR 060A...
060-06-CT-L80	6	6	5.8	80	20	
080-08-CT-L140	8	8	7.8	140	75	NFR 080A...
100-10-CT-L140	10	10	9.7	140	75	NFR 100A... NFR 110A...
120-12-CT-L160	12	12	11.7	160	95	NFR 120A... NFR 130A...
160-16-CT-L200	16	16	15.5	200	120	NFR 160A... NFR 170A...
200-20-CT-L250	20	20	19.5	250	160	NFR 200A... NFR 210A...
250-25-CT-L300	25	25	24.5	300	200	NFR 250A... NFR 260A...
300-32-CT-L350	30	32	29.5	350	230	NFR 300A... NFR 320A...
320-32-CT-L350	32	32	31.5	350	230	NFR 320A... E240-E241



TNFR-M



Modular heads



Designation	Dimension (mm)					Coolant hole	Insert
	DC	DCONMS	LF	OAL	THSZMS		
TNFR 100-M06	10	9.7	20	34.5	M06	●	NFR 100A... NFR 110A...
120-M06	12	11.5	23	37.5	M06	●	NFR 120A...
120-M08	12	13	23	40.5	M08	●	NFR 130A...
160-M08	16	13	30	47.5	M08	●	NFR 160A... NFR 170A...
200-M10	20	19	30	50	M10	●	NFR 200A... NFR 210A...
250-M12	25	24	35	57	M12	●	NFR 250A... NFR 260A...
300-M16	30	29	43	68	M16	●	NFR 300A NFR 320A
320-M16	32	29.5	43	68	M16	●	NFR 320A E240-E241

• Matched with T-FLEXTEC holder

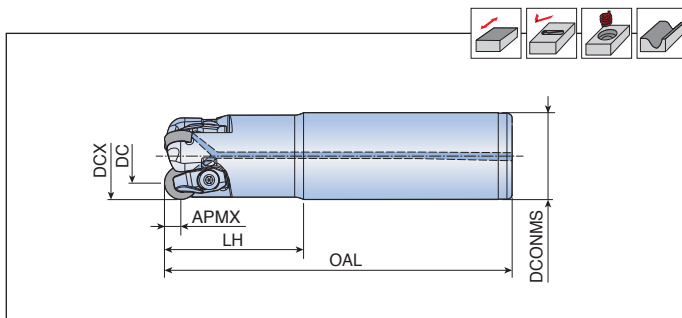
Spare parts

Designation	Screw	Wrench			Wrench handle	
TNFR 060	TS 20F060A	TD 6	-	-	-	
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	-	-	BLD T25/M7	SW6-T	
TNFR 250	TS 70F250A	-	-	BLD T25/M7	SW6-T	
TNFR 300, TNFR 320	TS 80F300A	-	T-T30	-	-	



TERP-09

End mills



Designation		Dimension (mm)						Air hole ⁽¹⁾	Insert
		DCX	DC	DCONMS	OAL	LH	APMX		
TERP 220-20-09FL-L80	2	20	10.6	20	80	30	4.7	●	RPGN 0903 FL...
325-25-09FL-L100	3	25	15.6	25	100	40	4.7	●	E243
432-32-09FL-L120	4	32	22.5	32	120	40	4.7	●	

• ⁽¹⁾ Use only air (Coolant is prohibited)

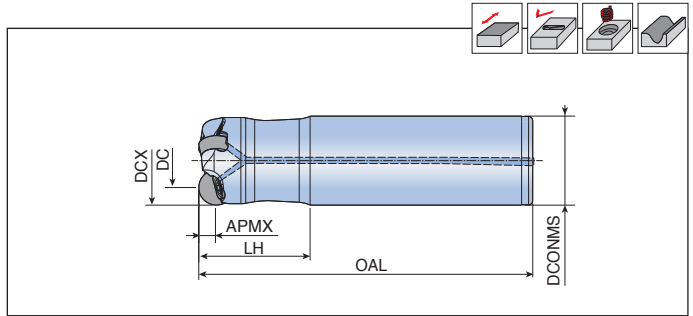
Spare parts

Designation	Clamp 	Screw 	Snap ring 	Wrench 	
TERP-09	CCL-3S-F	CLS-35A120	CSR 1.25	L-W 2	



TERP-12

End mills



Designation	✂	Dimension (mm)						Air hole ⁽¹⁾	Insert
		DCX	DC	DCONMS	OAL	LH	APMX		
TERP 332-32-12-L120	3	32	19.3	32	120	40	6.3	●	RPGN 1204 FL...
440-32-12-L120	4	40	27.3	32	120	40	6.3	●	E243

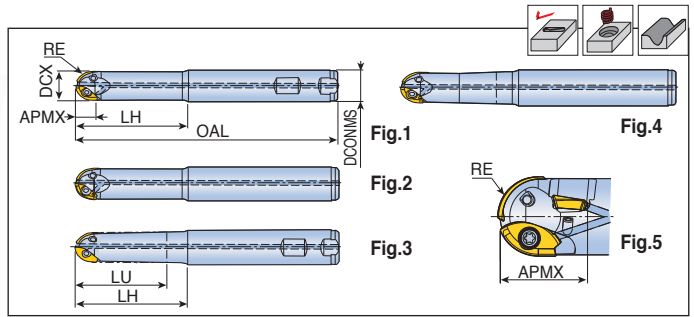
⁽¹⁾ Use only air (Coolant is prohibited)

Spare parts

Designation	Clamp	Screw	Wrench		
TERP-12	WFZ 6-C	WS 6	T-W 3		



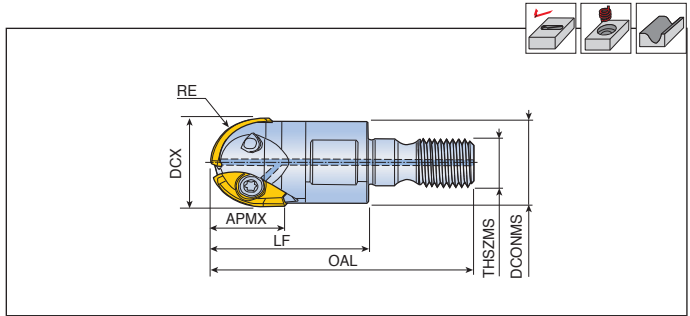
End mills



Designation	Dimension (mm)							Coolant hole	Fig.	Insert			
	DCX	RE	DCONMS	OAL	LU	LH	APMX			Ball	Periphery		
2F 16-11-W20-L120	16	8	20	120	35.5	60	11.8	●	3	2FB160	2	-	-
16-11-20-L130	16	8	20	130	45.9	60	11.8	●	4		2	-	-
16-11-20-L200	16	8	20	200	45.9	60	11.8	●	4	E214	2	-	-
16-20-W20-L120-P	16	8	20	120	41.8	60	20.5	X	5	E214	2	APKT 09T3	1
16-20-25-L200-P	16	8	25	200	43.4	65	20.5	X	5		2	E225	1
20-13-W25-L105	20	10	25	105	-	45	13.6	●	1	2FB200	2	-	-
20-13-W25-L150	20	10	25	150	45.7	65	13.6	●	3		2	-	-
20-13-20-L220	20	10	20	220	-	70	13.6	●	2	E214	2	-	-
20-13-25-L160	20	10	25	160	58.4	75	13.6	●	4		2	-	-
20-13-25-L220	20	10	25	220	65.7	85	13.6	●	4	E214	2	-	-
20-22-25-L125-P	20	10	25	125	45.7	65	22.3	●	5		2	-	-
20-22-25-L200-P	20	10	25	200	74.3	90	22.3	●	5	E214	2	APKT 09T3	1
20-22-32-L250-P	20	10	32	250	72.3	100	22.3	●	5		2	E225	1
25-17-W25-L150	25	12.5	25	150	-	60	17.7	●	1	2FB250	2	-	-
25-17-32-L150	25	12.5	32	150	55.7	75	17.7	●	4		2	-	-
25-17-32-L200	25	12.5	32	200	61.6	85	17.7	●	4	E214	2	-	-
25-17-32-L300	25	12.5	32	300	80	120	17.7	●	4		2	-	-
25-35-25-L200-P	25	12.5	25	200	-	87.5	35.1	●	5	E214	2	-	2
25-35-32-L200-P	25	12.5	32	200	-	100	35.1	●	5		2	APKT 09T3	2
25-35-32-L250-P	25	12.5	32	250	-	110	35.1	●	5	E214	2	E225	2
25-43-32-L300-P	25	12.5	32	300	-	120	43.7	●	5		2	-	3
30-20-W32-L180	30	15	32	180	-	86.1	20.0	●	1	2FB300	2	-	-
30-20-30-L250	30	15	30	250	-	104.6	20.0	●	2		2	-	-
30-20-32-L200	30	15	32	200	-	86.1	20.0	●	2	E214	2	-	-
30-20-32-L300	30	15	32	300	-	126.1	20.0	●	2		2	-	-
30-43-32-L160-P	30	15	32	160	-	66	43.7	●	5	E214	2	-	2
30-43-32-L200-P	30	15	32	200	-	85.6	43.7	●	5		2	APKT 1204	2
30-43-32-L250-P	30	15	32	250	-	125.6	43.7	●	5	E214	2	E226	2
30-51-32-L300-P	30	15	32	300	-	146	55.3	●	5		2	-	3
32-21-W32-L200	32	16	32	200	-	100	21.4	●	1	2FB320	2	-	-
32-21-32-L180	32	16	32	180	-	100	21.4	●	2		2	-	-
32-21-32-L300	32	16	32	300	-	130	21.4	●	2	E214	2	-	-
32-44-32-L160-P	32	16	32	160	-	66.4	44.7	●	5		2	-	2
32-44-32-L200-P	32	16	32	200	-	83.7	44.7	●	5	E214	2	APKT 1204	2
32-44-32-L250-P	32	16	32	250	-	123.7	44.7	●	5		2	E226	2
32-44-32-L300-P	32	16	32	300	-	143.7	44.7	●	5	2	-	2	



Modular heads



Designation		Dimension (mm)							Coolant hole	Insert
		DCX	RE	DCONMS	LF	OAL	THSZMS	APMX		
2F 16-11-M08	2	16	8	13	25	42.5	M08	11.8	●	2FB160...
20-13-M10	2	20	10	18	30	50	M10	13.6	●	2FB200...
25-17-M12	2	25	12.5	21	35	57	M12	17.7	●	2FB250...
30-20-M16	2	30	15	29	43	68	M16	20.0	●	2FB300...
32-21-M16	2	32	16	29	43	68	M16	21.4	●	2FB320...
										E214

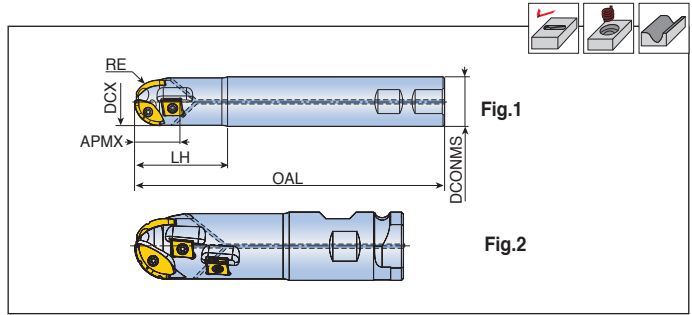
• Matched with T-FLEXTEC holder

Spare parts

Designation	Screw		Wrench		
	Ball	Periphery	Ball	Periphery	
2FB160/APKT 09T3	TS 25064I	TS 25055I/HG	TD 8	TD 8	
2FB200/APKT 09T3	TS 30085I/HG	TS 25055I/HG	TD 9	TD 8	
2FB250/APKT 09T3	TS 35085I/HG	TS 25055I/HG	TD 15	TD 8	
2FB300/APKT 1204	TS 40A100I	TS 35A088I/HG	TD 15	TD 10P	
2FB320/APKT 1204	TS 40A115I	TS 35A088I/HG	TD 15	TD 10P	



End mills



Designation	Dimension (mm)						Fig.	Insert					
	DCX	RE	DCONMS	OAL	LH	APMX		Ball1	Ball2	Periphery			
3F 32-39-W32-150	32	16	32	150	60	39	1	3FB320C-M	1	3FB320P-M	2	CNHX 131108T	2
32-39-W32-200	32	16	32	200	60	39	1	E215	1	E215	2	E235	2
32-39-W32-250	32	16	32	250	60	39	1		1		2		2
50-54-W40-150	50	25	40	150	70	54	1		1		2		2
50-80-W50-200	50	25	50	200	110	80	1	3FB500C-M	1	3FB500P-M	2	CNHX 160608T	4
50-80-W50-250	50	25	50	250	110	80	1	E215	1	E215	2	E235	4
3F 50-68-CN50.8-200	50	25	50.8	200	115	68	2		1		2		3
50-94-CN50.8-250	50	25	50.8	250	165	94	2		1		2		5

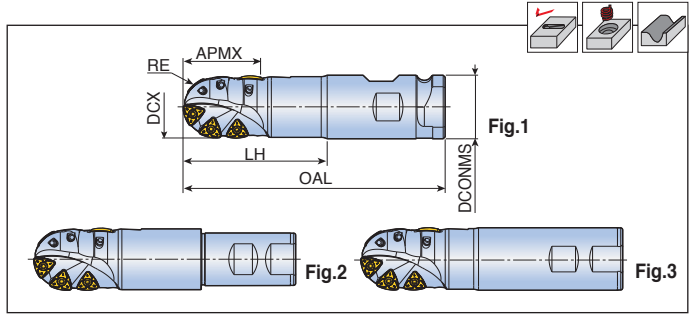
• When machining over 'APMX', please calculate Z=1 • Coolant through type

Spare parts

Designation	Screw	Wrench			
3F 32	TS 40093I	TD 15	-		
3F 50	TS 50115I	-	T-T20		



End mills



Designation		Dimension (mm)						Fig.	Insert
		DCX	RE	DCONMS	OAL	LH	APMX		
TDB50X 59-CN50.8-L200	6	50	25	50.8	200	110	59	1	6RBE 50-M... E222
69-CN50.8-L250	7	50	25	50.8	250	160	69	1	
TDB50X 59-W40-L200	6	50	25	40	200	128	59	2	
69-W40-L250	7	50	25	40	250	178	69	2	
59-W42-L200	6	50	25	42	200	128	59	2	
69-W42-L250	7	50	25	42	250	178	69	2	
59-W50-L200	6	50	25	50	200	90	59	3	
69-W50-L250	7	50	25	50	250	140	69	3	

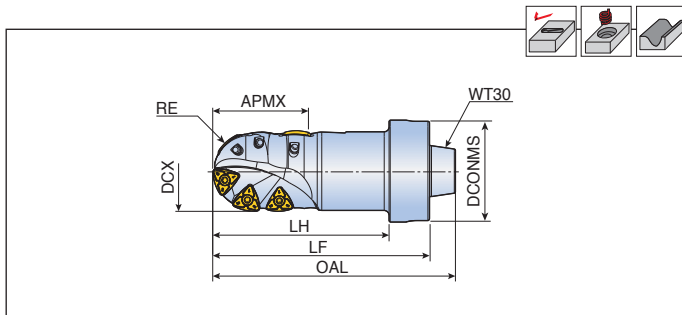
Spare parts

Designation	Screw	Wrench			
	TDB50X	 TS50B106/HG	 T-T20		



TDB50X-WT

End mills



Designation		Dimension (mm)							Insert
		DCX	RE	DCONMS	OAL	LH	LF	APMX	
TDB50X 59-WT30-L150	6	50	25	63	150	109	134	59	6RBE 50-M...
69-WT30-L200	7	50	25	63	200	159	184	69	E222

Spare parts

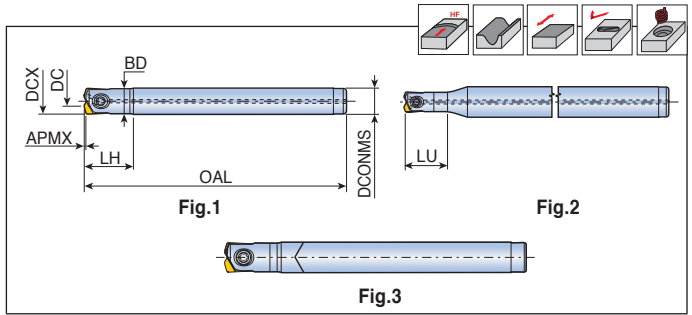
Designation	Screw	Wrench			
TDB50X-WT	TS50B106I/HG	T-T20			



THFN/THFN-CT



High feed end mills



Designation	Flutes	Dimension (mm)									Coolant hole	Fig.	Insert
		DCX	DC	DCONMS	BD	OAL	LH	LU	APMX				
THFN 060-06-L80	2	6	3	6	5.8	80	13	-	0.3	●	1	HFN 060...	
060-10-L120	2	6	3	10	5.8	120	-	13	0.3	●	2		
080-08-L80	2	8	4	8	7.6	80	18	-	0.5	●	1	HFN 080...	
080-12-L140	2	8	4	12	7.6	140	-	18	0.5	●	2		
THFN 060-06-CT-L80	2	6	3	6	5.8	80	20	-	0.3	x	3	HFN 060...	
060-06-CT-L140	2	6	3	6	5.8	140	25	-	0.3	x	3		
080-08-CT-L80	2	8	4	8	7.6	80	20	-	0.5	x	3	HFN 080...	
080-08-CT-L160	2	8	4	8	7.6	160	30	-	0.5	x	3	E236	

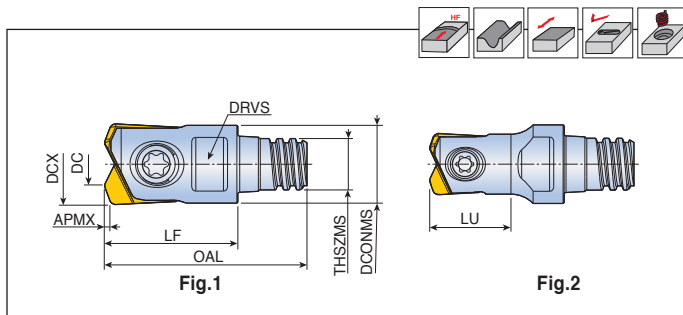
• THFN-CT is carbide shank end mill

Cutting Condition
E271-E273

Ramping Data
E330

THFN-S

High feed modular heads



Designation	Z	Dimension (mm)									Coolant hole	Fig.	Insert
		DCX	DC	DCONMS	LF	LU	OAL	THSZMS	APMX	DRVS			
THFN 060-S05	2	6	3	7.6	13	7.8	19.7	S05	0.3	5.5	x	2	HFN 060...
THFN 080-S05	2	8	4	7.6	13	-	19.7	S05	0.5	5.5	x	1	HFN 080... E236

• Matched with MAXI-RUSH holder

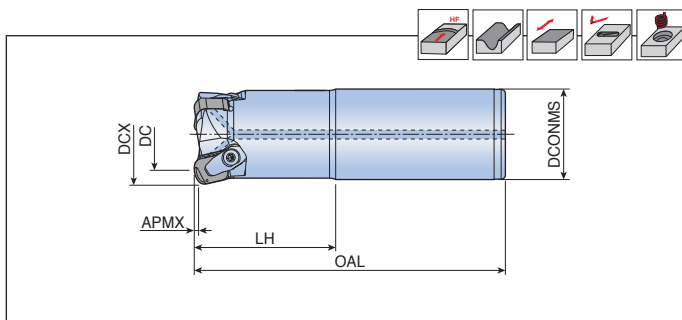
Spare parts

Designation	Screw	Wrench		Wrench handle	
THFN 060	TS 20F060A	TD 6	-	-	
THFN 080	TS 25F080A	-	TBLD T08-W4	THND 4W	

 E271-E273	 E330
---------------	----------

TEBN-09CH

High feed end mills



Designation		Dimension (mm)						Air hole ⁽¹⁾	Insert
		DCX	DC	DCONMS	OAL	LH	APMX		
TEBN 225-25-09CH-L100	2	25	14.8	25	100	40	1.5	x	BNGX 0904... E234
325-25-09CH-L100	3	25	14.8	25	100	40	1.5	x	
332-32-09CH-L120	3	32	21.5	32	120	40	1.5	●	
440-32-09CH-L120	4	40	29.4	32	120	40	1.5	●	

⁽¹⁾ Use only air (Coolant is prohibited)

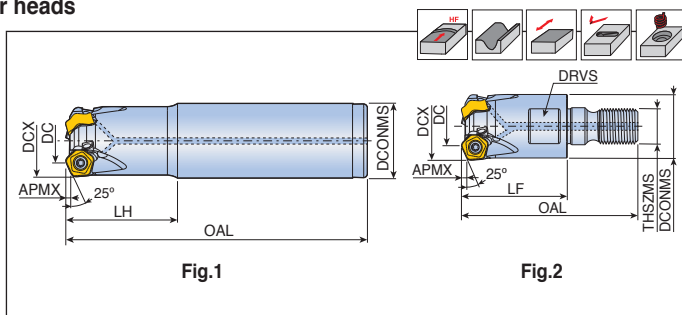
Spare parts

Designation	Clamp 	Screw 	Snap ring 	Wrench 	
TEBN-09CH	CCL-3S	CLS-35A120	CSR 1.25	L-W 2	

 Cutting Condition	 Ramping Data
E271-E273	E344

TEPT-05/10

High feed end mills & modular heads



Designation		Dimension (mm)									Coolant hole	Fig.	Insert
		DCX	DC	DCONMS	LF	OAL	THSZMS	LH	DRVS	APMX			
TEPT 320-20-05-L150	3	20	11.9	20	-	150	-	50	-	1.5	●	1	PTKU 0503... E242
425-25-05-L150	4	25	16.8	25	-	150	-	50	-	1.5	●	1	
426-25-05-L200	4	26	17.8	25	-	200	-	30	-	1.5	●	1	
532-32-05-L200	5	32	23.8	32	-	200	-	50	-	1.5	●	1	
533-32-05-L200	5	33	24.8	32	-	200	-	30	-	1.5	●	1	
640-32-05-L200	6	40	31.8	32	-	200	-	30	-	1.5	●	1	
TEPT 320-M10-05	3	20	11.9	18	30	50	M10	-	15	1.5	●	2	
425-M12-05	4	25	16.8	21	35	57	M12	-	17	1.5	●	2	
532-M16-05	5	32	23.8	29	43	68	M16	-	25	1.5	●	2	
640-M16-05	6	40	31.8	29	43	68	M16	-	25	1.5	●	2	
TEPT 340-32-10-L200	3	40	23.5	32	-	200	-	40	-	3.0	●	1	PTKU 1006... E242
TEPT 340-M16-10	3	40	23.5	29	43	68	M16	-	25	3.0	●	2	

• Matched with T-FLEXTEC holder

Spare parts

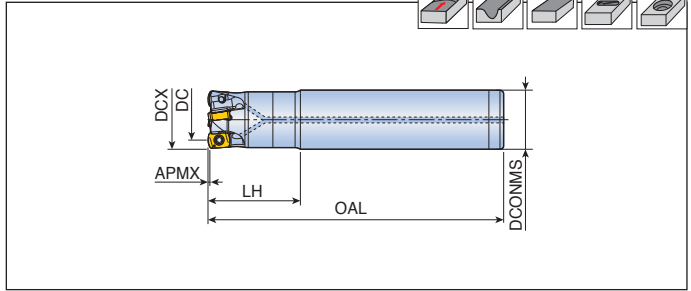
Designation	Screw	Wrench		Wrench handle	
TEPT-05	TS 25D060/HG-P	TD 7P	-	-	
TEPT-10	TS 50D130/HG-P	-	TBLD T20P-W6	THND 6W	



TEBL-04



High feed end mills



Designation	⌀	Dimension (mm)						Coolant hole	Insert
		DCX	DC	DCONMS	OAL	LH	APMX		
TEBL 108-08-04-L80	1	8	3.8	8	80	20	0.5	●	BLMP 0402... E232
210-10-04-L100	2	10	5.7	10	100	20	0.5	●	
211-10-04-L100	2	11	6.6	10	100	20	0.5	●	
312-12-04-L110	3	12	7.6	12	110	20	0.5	●	
313-12-04-L110	3	13	8.6	12	110	20	0.5	●	
416-16-04-L150	4	16	11.6	16	150	25	0.5	●	
417-16-04-L200	4	17	12.6	16	200	25	0.5	●	
520-20-04-L200	5	20	15.5	20	200	25	0.5	●	
521-20-04-L200	5	21	16.5	20	200	25	0.5	●	

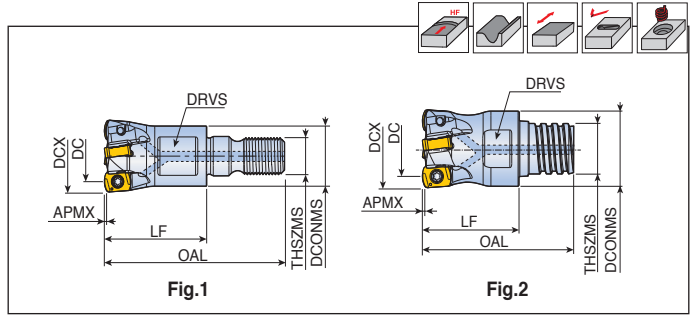
Cutting Condition
E271-E273

Ramping Data
E331

TEBL-M(S)-04



High feed modular heads



Designation		Dimension (mm)								Coolant hole	Fig.	Insert
		DCX	DC	DCONMS	LF	OAL	THSZMS	APMX	DRVS			
TEBL 210-M06-04	2	10	5.7	9.7	17	31.5	M06	0.5	8	●	1	BLMP 0402... E232
211-M06-04	2	11	6.6	9.7	17	31.5	M06	0.5	8	●	1	
312-M06-04	3	12	7.6	11	17	31.5	M06	0.5	8	●	1	
313-M06-04	3	13	8.6	11	17	31.5	M06	0.5	8	●	1	
416-M08-04	4	16	11.6	13	23	40.5	M08	0.5	10	●	1	
417-M08-04	4	17	12.6	13	23	40.5	M08	0.5	10	●	1	
520-M10-04	5	20	15.5	18	23	43	M10	0.5	15	●	1	
725-M12-04	7	25	20.6	21	27	49	M12	0.5	17	●	1	
832-M16-04	8	32	27.5	29	27	52	M16	0.5	25	●	1	
TEBL 210-S06-04	2	10	5.6	9.6	15	21.3	S06	0.5	8	●	2	
312-S08-04	3	12	7.6	11.5	16	23.5	S08	0.5	10	●	2	
416-S10-04	4	16	11.6	15.2	20	31.3	S10	0.5	13	●	2	

• Matched with T-FLEXTEC holder(Fig.1) & MAXI-RUSH holder(Fig.2)

Spare parts

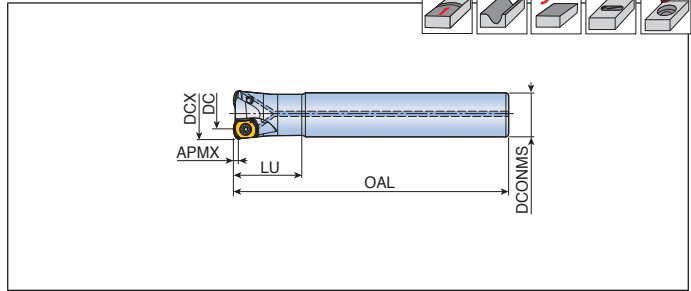
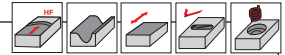
Designation	Screw	Wrench			
TEBL-04	TS 180411/HG	T 6P			



TEBL-06



High feed end mills



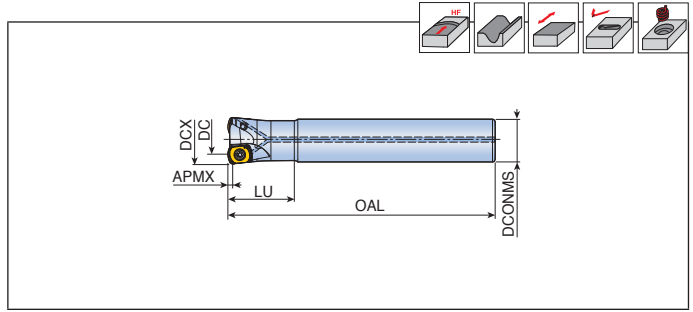
Designation		Dimension (mm)						Coolant hole	Insert
		DCX	DC	DCONMS	OAL	LU	APMX		
TEBL 216-15-06-L150	2	16	9.4	15	150	40	0.7	●	BLMP 0603... E232
216-16-06	2	16	9.4	16	150	40	0.7	●	
216-16-06-S	2	16	9.4	16	100	30	0.7	●	
217-16-06	2	17	10.1	16	150	40	0.7	●	
217-16-06-S	2	17	10.1	16	100	30	0.7	●	
217-16-06-L200	2	17	10.1	16	200	20	0.7	●	
218-16-06	2	18	11.1	16	150	25	0.7	●	
220-20-06-L200	2	20	12.4	20	200	80	1.0	●	
320-19-06-L180	3	20	12.4	19	180	80	1.0	●	
320-20-06	3	20	12.4	20	160	80	1.0	●	
320-20-06-S	3	20	12.4	20	130	50	1.0	●	
420-20-06-S	4	20	12.4	20	130	50	1.0	●	
321-20-06-S	3	21	13.4	20	150	20	1.0	●	
321-20-06-L200	3	21	13.4	20	200	20	1.0	●	
325-25-06-L220	3	25	17.3	25	220	50	1.0	●	
425-24-06-L180	4	25	17.3	24	180	60	1.0	●	
425-25-06	4	25	17.3	25	180	60	1.0	●	
425-25-06-S	4	25	17.3	25	140	60	1.0	●	
525-25-06-S	5	25	17.3	25	140	60	1.0	●	
425-25-06-L250	4	25	17.3	25	250	40	1.0	●	
326-25-06-L200	3	26	18.3	25	200	30	1.0	●	
326-25-06-L250	3	26	18.3	25	250	30	1.0	●	
426-25-06-S	4	26	18.3	25	150	30	1.0	●	
426-25-06-L200	4	26	18.3	25	200	30	1.0	●	
426-25-06-L250	4	26	18.3	25	250	30	1.0	●	
530-32-06-S	5	30	22.3	32	150	70	1.0	●	
530-32-06-L200	5	30	22.3	32	200	120	1.0	●	
432-32-06-S	4	32	24.3	32	150	70	1.0	●	
532-32-06-S	5	32	24.3	32	150	70	1.0	●	
532-32-06-L200	5	32	24.3	32	200	120	1.0	●	
433-32-06-L220	4	33	25.3	32	220	40	1.0	●	
433-32-06-L300	4	33	25.3	32	300	50	1.0	●	
533-32-06-S	5	33	25.3	32	150	30	1.0	●	
533-32-06-L200	5	33	25.3	32	200	40	1.0	●	
533-32-06-L250	5	33	25.3	32	250	40	1.0	●	



TEBL-06



High feed end mills



Designation		Dimension (mm)						Coolant hole	Insert
		DCX	DC	DCONMS	OAL	LU	APMX		
TEBL 435-32-06-L200	4	35	27.3	32	200	50	1.0	●	BLMP 0603... E232
435-32-06-L300	4	35	27.3	32	300	50	1.0	●	
535-32-06-L200	5	35	27.3	32	200	50	1.0	●	
535-32-06-L300	5	35	27.3	32	300	50	1.0	●	
540-32-06-L220	5	40	32.2	32	220	40	1.0	●	
640-32-06-S	6	40	32.2	32	150	40	1.0	●	
640-32-06-L220	6	40	32.2	32	220	40	1.0	●	

Spare parts

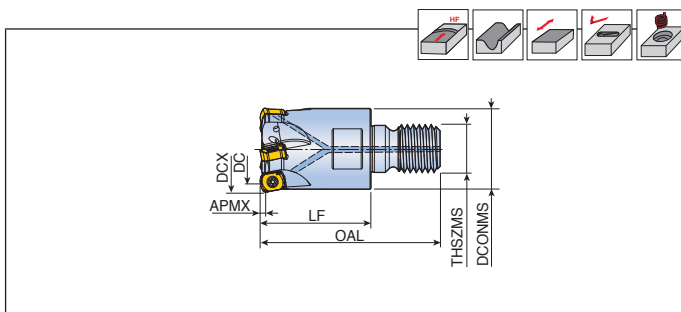
Designation	Screw	Wrench			
TEBL-06	TS 25064I/HG-P	TD 8P			



TEBL-M-06



High feed modular heads



Designation		Dimension (mm)							Coolant hole	Insert
		DCX	DC	DCONMS	LF	OAL	THSZMS	APMX		
TEBL 216-M08-06	2	16	9.4	13	25	42.5	M08	0.7	●	BLMP 0603... E232
217-M08-06	2	17	10.1	13	25	42.5	M08	0.7	●	
218-M08-06	2	18	11.1	13	25	42.5	M08	0.7	●	
220-M10-06	2	20	12.4	18	30	50	M10	1.0	●	
320-M10-06	3	20	12.4	18	30	50	M10	1.0	●	
321-M10-06	3	21	13.4	18	30	50	M10	1.0	●	
322-M10-06	3	22	14.4	18	30	50	M10	1.0	●	
325-M12-06	3	25	17.3	21	35	57	M12	1.0	●	
425-M12-06	4	25	17.3	21	35	57	M12	1.0	●	
326-M12-06	3	26	18.3	21	35	57	M12	1.0	●	
426-M12-06	4	26	18.3	21	35	57	M12	1.0	●	
530-M16-06	5	30	22.3	29	40	65	M16	1.0	●	
432-M16-06	4	32	24.3	29	40	65	M16	1.0	●	
532-M16-06	5	32	24.3	29	40	65	M16	1.0	●	
433-M16-06	4	33	25.3	29	40	65	M16	1.0	●	
533-M16-06	5	33	25.3	29	40	65	M16	1.0	●	
435-M16-06	4	35	27.3	29	43	68	M16	1.0	●	
535-M16-06	5	35	27.3	29	43	68	M16	1.0	●	
640-M16-06	6	40	32.2	29	43	68	M16	1.0	●	
542-M16-06	5	42	34.2	29	43	68	M16	1.0	●	
642-M16-06	6	42	34.2	29	43	68	M16	1.0	●	

• Matched with T-FLEXTEC holder

Spare parts

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



TEBL-09

High feed end mills

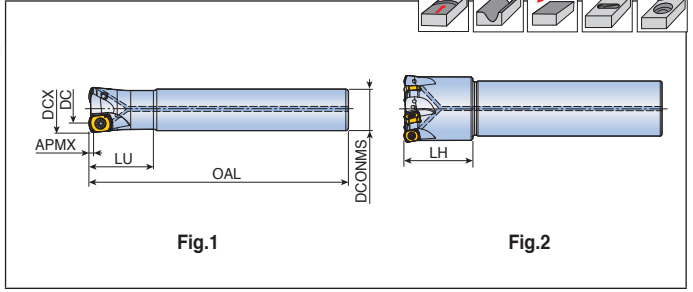
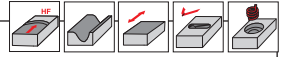


Fig.1

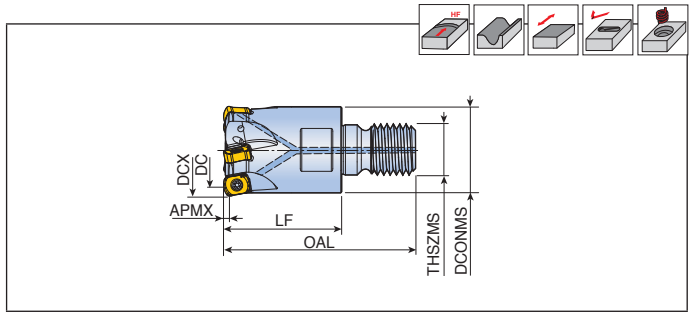
Fig.2

Designation	Z	Dimension (mm)							Coolant hole	Fig.	Insert
		DCX	DC	DCONMS	OAL	LU	LH	APMX			
TEBL 225-25-09-L150	2	25	14.7	25	150	70	-	1.5	●	1	BLMP 0904... E232
225-25-09-L200	2	25	14.7	25	200	100	-	1.5	●	1	
325-25-09-L150	3	25	14.7	25	150	70	-	1.5	●	1	
325-25-09-L200	3	25	14.7	25	200	110	-	1.5	●	1	
326-25-09-L150	3	26	15.7	25	150	30	-	1.5	●	1	
326-25-09-L220	3	26	15.7	25	220	30	-	1.5	●	1	
330-32-09-L160	3	30	19.6	32	160	70	-	1.5	●	1	
330-32-09-L220	3	30	19.6	32	220	120	-	1.5	●	1	
332-32-09-L160	3	32	21.6	32	160	70	-	1.5	●	1	
332-32-09-L220	3	32	21.6	32	220	120	-	1.5	●	1	
432-32-09-L160	4	32	21.6	32	160	70	-	1.5	●	1	
432-32-09-L220	4	32	21.6	32	220	120	-	1.5	●	1	
433-32-09-L180	4	33	22.6	32	180	30	-	1.5	●	1	
433-32-09-L250	4	33	22.6	32	250	30	-	1.5	●	1	
440-32-09-L180	4	40	29.6	32	180	-	40	1.5	●	2	
440-32-09-L250	4	40	29.6	32	250	-	40	1.5	●	2	
540-32-09-L180	5	40	29.6	32	180	-	40	1.5	●	2	
540-32-09-L250	5	40	29.6	32	250	-	40	1.5	●	2	



TEBL-M-09

High feed modular heads



Designation	⌀	Dimension (mm)								Coolant hole	Insert
		DCX	DC	DCONMS	LF	OAL	THSZMS	APMX			
TEBL 225-M12-09	2	25	14.7	21	35	57	M12	1.5	●	BLMP 0904... E232	
325-M12-09	3	25	14.7	21	35	57	M12	1.5	●		
326-M12-09	3	26	15.7	21	35	57	M12	1.5	●		
330-M16-09	3	30	19.6	29	43	68	M16	1.5	●		
332-M16-09	3	32	21.6	29	43	68	M16	1.5	●		
432-M16-09	4	32	21.6	29	43	68	M16	1.5	●		
433-M16-09	4	33	22.6	29	43	68	M16	1.5	●		
335-M16-09	3	35	24.6	29	43	68	M16	1.5	●		
435-M16-09	4	35	24.6	29	43	68	M16	1.5	●		
440-M16-09	4	40	29.6	29	43	68	M16	1.5	●		
540-M16-09	5	40	29.6	29	43	68	M16	1.5	●		
542-M16-09	5	42	31.6	29	43	68	M16	1.5	●		

• Matched with T-FLEXTEC holder

Spare parts

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

Cutting Condition
E271-E273

Ramping Data
E333

TEBL-11

High feed end mills & modular heads

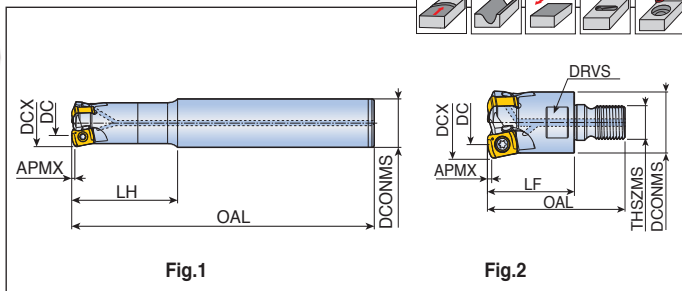
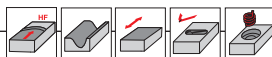


Fig.1

Fig.2

Designation	Flutes	Dimension (mm)									Coolant hole	Fig.	Insert
		DCX	DC	DCONMS	OAL	THSZMS	LH	LF	DRVS	APMX			
TEBL 230-32-11-L150	2	30	14.7	32	150	-	70	-	-	2.0	●	1	BLMP 1105... E232
232-32-11-L150	2	32	16.6	32	150	-	70	-	-	2.0	●	1	
232-32-11-L200	2	32	16.6	32	200	-	70	-	-	2.0	●	1	
332-32-11-L200	3	32	16.6	32	200	-	70	-	-	2.0	●	1	
233-32-11-L200	2	33	17.6	32	200	-	40	-	-	2.0	●	1	
233-32-11-L250	2	33	17.6	32	250	-	50	-	-	2.0	●	1	
333-32-11-L250	3	33	17.6	32	250	-	50	-	-	2.0	●	1	
335-32-11-L200	3	35	19.5	32	200	-	40	-	-	2.0	●	1	
340-32-11-L150	3	40	24.4	32	150	-	40	-	-	2.0	●	1	
340-32-11-L200	3	40	24.4	32	200	-	40	-	-	2.0	●	1	
440-32-11-L200	4	40	24.4	32	200	-	40	-	-	2.0	●	1	
TEBL 230-M16-11	2	30	14.7	29	68	M16	-	43	25	2.0	●	2	
232-M16-11	2	32	16.6	29	68	M16	-	43	25	2.0	●	2	
233-M16-11	2	33	17.6	29	68	M16	-	43	25	2.0	●	2	
335-M16-11	3	35	19.5	29	68	M16	-	43	25	2.0	●	2	
340-M16-11	3	40	24.4	29	68	M16	-	43	25	2.0	●	2	
342-M16-11	3	42	26.4	29	68	M16	-	43	25	2.0	●	2	

• Matched with T-FLEXTEC holder

Spare parts

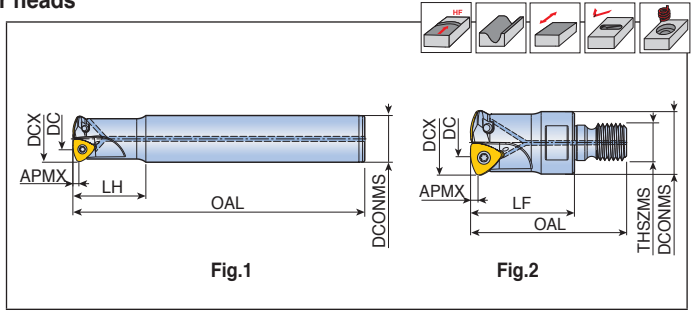
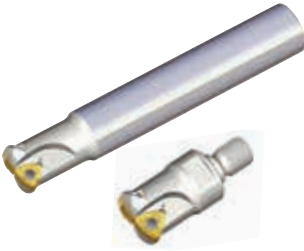
Designation	Screw	Wrench	Wrench handle		
TEBL-11	TS 50A121I/HG	TBLD T20-W6	THND 6W		



TEBL-13



High feed end mills & Modular heads



Designation		Dimension (mm)								Coolant hole	Fig.	Insert
		DCX	DC	DCONMS	OAL	THSZMS	LH	LF	APMX			
TEBL 232-32-13-L150	2	32	12.9	32	150	-	50	-	2.0	●	1	BLMP 1306... E233
232-32-13-L200	2	32	12.9	32	200	-	80	-	2.0	●	1	
232-32-13-L	2	32	12.9	32	200	-	120	-	2.0	●	1	
233-32-13-L200	2	33	14.3	32	200	-	50	-	2.0	●	1	
233-32-13-L250	2	33	14.3	32	250	-	50	-	2.0	●	1	
235-32-13-L200	2	35	16.1	32	200	-	30	-	2.0	●	1	
240-42-13-XL	2	40	20.7	42	300	-	120	-	2.0	●	1	
340-32-13-L150	3	40	20.7	32	150	-	40	-	2.0	●	1	
340-32-13-L200	3	40	20.7	32	200	-	70	-	2.0	●	1	
340-42-13-S	3	40	20.7	42	150	-	70	-	2.0	●	1	
TEBL 232-M16-13	2	32	12.9	30	75	M16	-	50	2.0	●	2	
233-M16-13	2	33	14.3	30	75	M16	-	50	2.0	●	2	
235-M16-13	2	35	16.1	30	75	M16	-	50	2.0	●	2	
340-M16-13	3	40	20.7	30	75	M16	-	50	2.0	●	2	
342-M16-13	3	42	22.6	30	75	M16	-	50	2.0	●	2	

• Matched with T-FLEXTEC holder

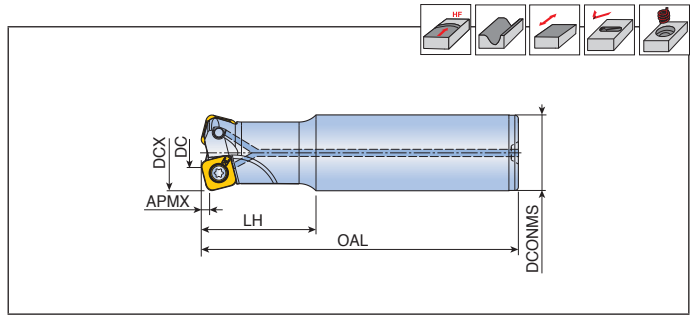
Spare parts

Designation	Screw	Wrench			
	TEBL-13	TS50B106I/HG	T-T20		



TESB-06/09

High feed end mills

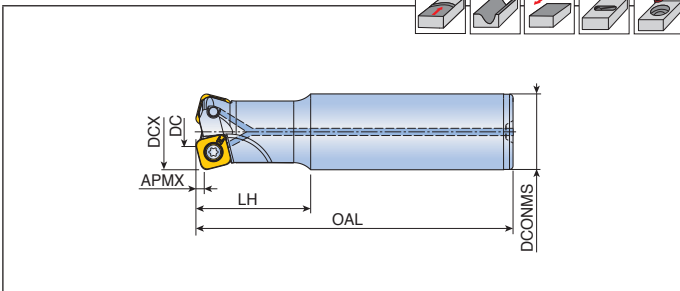
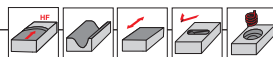


Designation		Dimension (mm)						Coolant hole	Insert
		DCX	DC	DCONMS	OAL	LH	APMX		
TESB 216-16-06-L150	2	16	5.9	16	150	40	1.0	●	SBMT 0603... 247
217-16-06-L200	2	17	6.8	16	200	20	1.0	●	
320-20-06-L160	3	20	9.8	20	160	50	1.0	●	
420-20-06-L130	4	20	9.8	20	130	50	1.0	●	
321-20-06-L200	3	21	10.7	20	200	20	1.0	●	
425-25-06-L180	4	25	14.8	25	180	60	1.0	●	
525-25-06-L140	5	25	14.8	25	140	60	1.0	●	
532-32-06-L200	5	32	21.8	32	200	80	1.0	●	
TESB 225-25-09-L150	2	25	10.8	25	150	70	1.2	●	
225-25-09-L200	2	25	10.8	25	200	70	1.2	●	
325-25-09-L150	3	25	10.8	25	150	70	1.2	●	
325-25-09-L200	3	25	10.8	25	200	70	1.2	●	
226-25-09-L200	2	26	11.7	25	200	30	1.2	●	
226-25-09-L250	2	26	11.7	25	250	30	1.2	●	
326-25-09-L150	3	26	11.7	25	150	30	1.2	●	
326-25-09-L200	3	26	11.7	25	200	30	1.2	●	
326-25-09-L250	3	26	11.7	25	250	30	1.2	●	
330-32-09-L200	3	30	15.5	32	200	70	1.2	●	
332-32-09-L160	3	32	17.4	32	160	70	1.2	●	
332-32-09-L200	3	32	17.4	32	200	70	1.2	●	
332-32-09-L300	3	32	17.4	32	300	70	1.2	●	
432-32-09-L160	4	32	17.4	32	160	70	1.2	●	
432-32-09-L220	4	32	17.4	32	220	70	1.2	●	
233-32-09-L250	2	33	18.4	32	250	30	1.2	●	
333-32-09-L250	3	33	18.4	32	250	30	1.2	●	
333-32-09-L300	3	33	18.4	32	300	30	1.2	●	
433-32-09-L180	4	33	18.4	32	180	30	1.2	●	
433-32-09-L250	4	33	18.4	32	250	30	1.2	●	
335-32-09-L250	3	35	20.4	32	250	30	1.2	●	
440-32-09-L250	4	40	25.4	32	250	40	1.2	●	
440-32-09-L300	4	40	25.4	32	300	40	1.2	●	
540-32-09-L180	5	40	25.4	32	180	40	1.2	●	
540-32-09-L250	5	40	25.4	32	250	40	1.2	●	



TESB-13

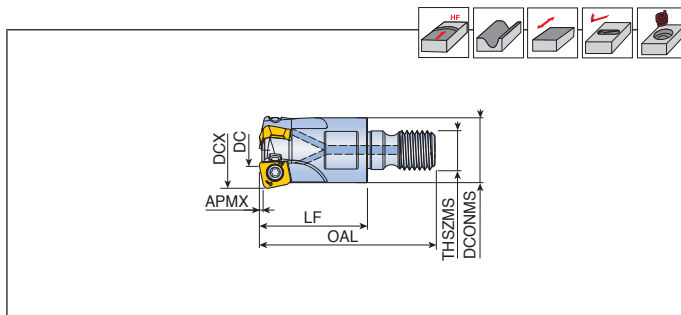
High feed end mills



Designation		Dimension (mm)						Coolant hole	Insert
		DCX	DC	DCONMS	OAL	LH	APMX		
TESB 232-32-13-L150	2	32	11.6	32	150	50	2.0	●	SBMT 1306...
232-32-13-L200	2	32	11.6	32	200	80	2.0	●	E247
233-32-13-L200	2	33	12.6	32	200	30	2.0	●	
233-32-13-L250	2	33	12.6	32	250	50	2.0	●	
235-32-13-L200	2	35	14.6	32	200	30	2.0	●	
340-32-13-L150	3	40	19.5	32	150	30	2.0	●	
340-32-13-L200	3	40	19.5	32	200	30	2.0	●	
342-32-13-L200	3	42	21.5	32	200	30	2.0	●	

Cutting Condition: E271-E273
Ramping Data: E338

High feed modular heads



Designation		Dimension (mm)							Coolant hole	Insert
		DCX	DC	DCONMS	LF	OAL	THSZMS	APMX		
TESB 216-M08-06	2	16	5.9	13	25	42.5	M08	1.0	●	SBMT 0603...
320-M10-06	3	20	9.8	18	30	50	M10	1.0	●	E247
425-M12-06	4	25	14.8	21	35	57	M12	1.0	●	
532-M16-06	5	32	21.8	29	40	65	M16	1.0	●	
TESB 225-M12-09	2	25	10.8	21	35	57	M12	1.2	●	SBMT 0904...
325-M12-09	3	25	10.8	21	35	57	M12	1.2	●	E247
332-M16-09	3	32	17.4	29	43	68	M16	1.2	●	
432-M16-09	4	32	17.4	29	43	68	M16	1.2	●	
435-M16-09	4	35	20.4	29	43	68	M16	1.2	●	
440-M16-09	4	40	25.4	29	43	68	M16	1.2	●	
540-M16-09	5	40	25.4	29	43	68	M16	1.2	●	
542-M16-09	5	42	27.4	29	43	68	M16	1.2	●	
TESB 232-M16-13	2	32	11.6	29	50	75	M16	2.0	●	SBMT 1306...
233-M16-13	2	33	12.6	29	50	75	M16	2.0	●	E247
340-M16-13	3	40	19.5	29	50	75	M16	2.0	●	
342-M16-13	3	42	21.5	29	50	75	M16	2.0	●	

• Matched with T-FLEXTEC holder

Spare parts

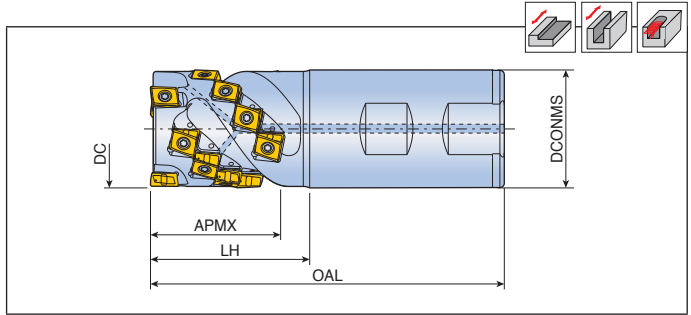
Designation	Screw	Wrench			
TESB-06	TS 250648I/HG-P	TD 8P	-		
TESB-09	TS 35A088I/HG	TD 10P	-		
TESB-13	TS 50115I	-	T-T20		



4T-TEF-05/09



Extended flute cutters



Designation		No. of insert	Dimension (mm)					Coolant hole	Insert
			DC	DCONMS	OAL	LH	APMX		
4T-TEF D16-15-W16-05	2	8	16	16	80	28	15	●	LPK(H)U
	3	18	20	20	85	33	23	●	0502...
	4	28	25	25	95	35	27	●	E238
4T-TEF D25-36-W25-09	2	10	25	25	100	43	36	●	LPK(H)U
	3	15	32	32	105	44	36	●	0904...
	3	18	32	32	115	52	43	●	E238
	3	18	40	40	125	54	43	●	
	3	21	40	40	135	64	51	●	

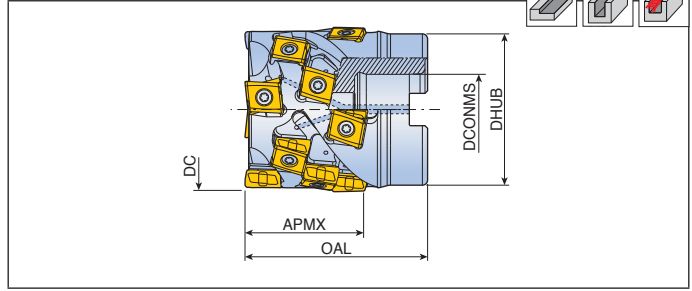
Spare parts

Designation	Screw	Wrench		Wrench handle	
4T-TEF-05	TS 18049/HG-P	TD 6P	-	-	
4T-TEF-09	TS 30D082-P	-	TBLD T08P-W4	THND 4W	



4T-TES-14

Extended flute cutters



Designation	No. of insert	Dimension (mm)						Coolant hole	kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
4T-TES D50-34-22R-14	3	9	50	22	45	55	34	●	0.5	SH M10x40	LPKU 1407... E238
D50-45-22R-14	3	12	50	22	45	65	45	●	0.6	SH M10x50	
D63-45-27R-14	4	16	63	27	58	70	45	●	1.1	SH M12x50	
D63-56-27R-14	4	20	63	27	58	80	56	●	1.3	SH M12x60	
D80-56-32R-14	5	25	80	32	74	85	56	●	2.3	SH M16x60	
D100-56-40R-14	6	30	100	40	94	90	56	●	4.1	SH M20x60	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

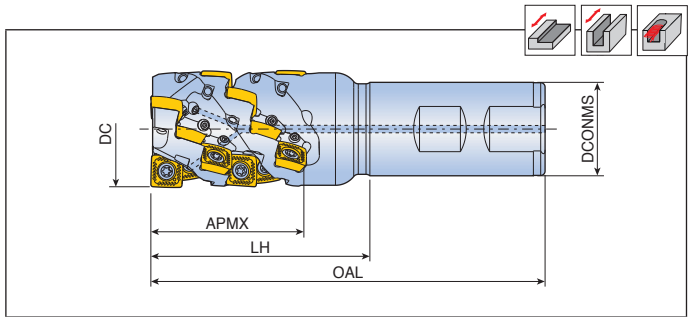
Spare parts

Designation	Screw	Wrench	Wrench handle		
4T-TES-14	TS 40G110I	TBLD T15-W6	SW6-T		



4S-TEF-11V

Extended flute cutters



Designation		No. of insert	Dimension (mm)					Coolant hole	Insert
			DC	DCONMS	OAL	LH	APMX		
4S-TEF- D32-52-W32-11V-2F	2	12	32	32	135	70	52	●	SVK(H)T 1145... E258
D40-52-W32-11V-3F	3	18	40	32	135	75	52	●	
D40-60-W32-11V-3F	3	21	40	32	180	85	60	●	
D50-52-W40-11V-4F	4	24	50	40	145	75	52	●	
D50-77-W40-11V-4F	4	36	50	40	170	100	77.9	●	

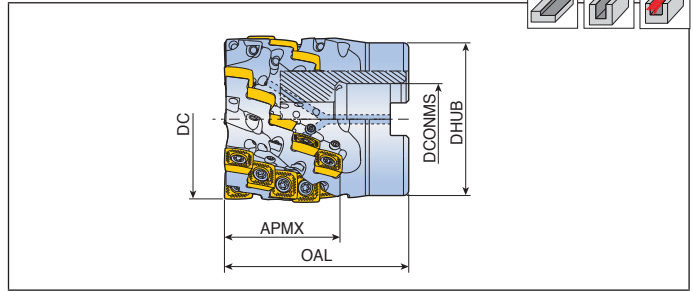
Spare parts

Designation	Screw	Wrench	Wrench handle	Coolant Nozzle	
4S-TEF-11V	 TS 400931/HG	 TBLD T15-W6	 THND 6W	 SS 3003-06C	



4S-TES-11V

Extended flute cutters



Designation	No. of inserts	Dimension (mm)					Coolant hole	Arbor style	Kg	Mounting bolt	Insert	
		DC	DCONMS	DHUB	OAL	APMX						
4S-TES-D40-27-16R-11V-3F	3	9	40	16	38	55	27	•	A	0.3	SH M8x40	SVK(H)T 1145... E258
D50-43-22R-11V-4F	4	20	50	22	45	65	43	•	A	0.6	SH M10x50	
D50-69-22R-11V-4F	4	32	50	22	45	90	69	•	A	0.8	SH M10x80	
D63-60-27R-11V-5F	5	35	63	27	58	85	60	•	A	1.2	SH M12x60	
D63-69-27R-11V-5F	5	40	63	27	58	93	69	•	A	1.4	SH M12x80	
D80-76-32R-11V-6F	6	54	80	32	76	100	76	•	A	2.6	SH M16x80	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

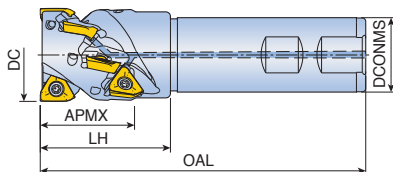
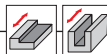
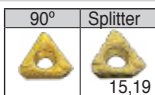
Spare parts

Designation	Screw	Wrench	Wrench handle	Coolant Nozzle	
4S-TES-11V	TS 40093I/HG	TBLD T15-W6	SW6-T	SS 3003-06C	



3P TEF-06/10/15/19

Extended flute cutters



Designation		No. of insert	Dimension (mm)					Coolant hole	Insert	
			DC	DCONMS	OAL	LH	APMX			
3P TEF D20-20-W20-06		2	10	20	20	85	33	20	x	3PK(H)T 0603...
D25-24-W25-06		3	18	25	25	95	39	24	●	
D32-32-W32-06		4	32	32	32	105	43	32	●	
3P TEF D32-42-W32-10		2	14	32	32	120	56	42	●	3PK(H)T 1004...
D40-42-W32-10		3	21	40	32	130	56	42	●	
3P TEF D40-40-W32-15		2	8	40	32	140	56	40	●	3PK(H)T 1505...
3P TEF D50-55-W40-19		2	8	50	40	150	75	55	●	3PK(H)T 1906...
										E216-E217

Spare parts

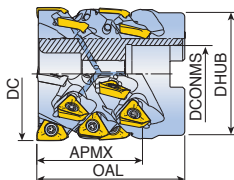
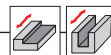
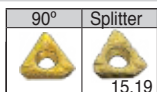
Designation	Screw	Wrench			
3P TEF-06	TS 20043I/HG-P	TD 6P	-		
3P TEF-10	TS 25C065I/HG	TD 8	-		
3P TEF-15	TS 40B100I	TD 15	-		
3P TEF-19	TS 45120I	-	T-T20		



3P TES-10/15/19



Extended flute cutters



Designation	No. of insert	Dimension (mm)						Coolant hole	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
3P TES D50-48-22R-10	4	32	50	22	45	65	48	●	0.6	SH M10x50	3PK(H)T 1004...
D63-54-27R-10	4	36	63	27	58	75	54	●	1.2	SH M12x50	
3P TES D50-40-22R-15-2F	2	8	50	22	45	65	40	●	0.6	SH M10x50	3PK(H)T 1505...
D50-40-22R-15	3	12	50	22	45	65	40	●	0.6	SH M10x50	
D63-50-27R-15	4	20	63	27	58	70	50	●	1.0	SH M12x50	
D80-60-32R-15	4	24	80	32	77	75	60	●	2.0	SH M16x50	
D100-78-40R-15-4F	4	32	100	40	96	110	78	●	5.0	SH M20x80	3PK(H)T 1906... E216-E217
3P TES D63-42-27R-19	3	9	63	27	58	70	42	●	1.0	SH M12x50	
D63-42-27R-19-4F	4	12	63	27	58	70	42	●	1.0	SH M12x50	
D80-56-32R-19	4	16	80	32	76	75	56	●	1.7	SH M16x50	
D100-83-40R-19-4F	4	24	100	40	96	110	83	●	4.4	SH M20x80	
D100-83-40R-19	5	30	100	40	96	110	83	●	4.5	SH M20x80	
D100-83-40R-19-6F	6	36	100	40	96	110	83	●	4.6	SH M20x80	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

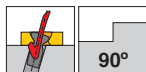
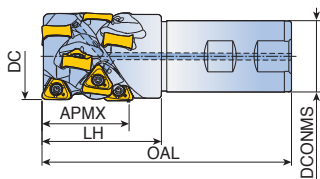
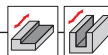
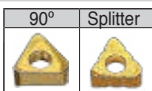
Spare parts

Designation	Screw	Wrench			
3P TES-10	TS 25C065I/HG	TD 8	-		
3P TES-15	TS 40B100I	TD 15	-		
3P TES-19	TS 45120I	-	T-T20		



TEF-TN18

Extended flute cutters



Designation	⊙	No. of insert	Dimension (mm)					Coolant hole	Insert
			DC	DCONMS	OAL	LH	APMX		
TEF D50-48-W40-TN18-2F	2	8	50	40	140	67	48	●	TNMX 1806...
D50-48-W40-TN18	3	12	50	40	140	67	48	●	E261

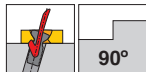
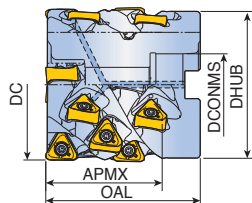
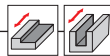
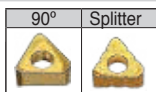
Spare parts

Designation	Screw	Wrench			
	TEF-TN18	 TS 40B100I	 T-T15		



TES-TN18

Extended flute cutters



Designation		No. of insert	Dimension (mm)					Coolant hole		Mounting bolt	Insert
			DC	DCONMS	DHUB	OAL	APMX				
TES D63-48-27R-TN18-2F		2	8	63	27	60	70	48	● 1.2	SH M12x50	TNMX 1806... E261
D63-48-27R-TN18		3	12	63	27	60	70	48	● 1.1	SH M12x50	
D80-60-32R-TN18		4	20	80	32	76	80	60	● 2.2	SH M16x60	
D100-71-40R-TN18-4F		4	24	100	40	96	100	71	● 4.5	SH M20x70	
D100-71-40R-TN18		5	30	100	40	96	100	71	● 4.4	SH M20x70	
D100-71-40R-TN18-6F		6	36	100	40	96	100	71	● 4.4	SH M20x70	

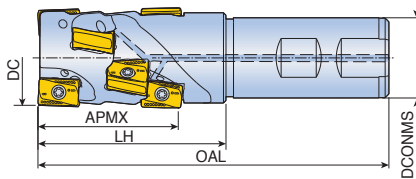
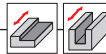
Spare parts

Designation	Screw	Wrench			
	TES-TN18	 TS 40B100I	 T-T15		



TEF-AN11/16

Extended flute cutters



Designation		No. of insert	Dimension (mm)					Coolant hole	Insert
			DC	DCONMS	OAL	LH	APMX		
TEF D32-40-W32-AN11	2	8	32	32	110	48	40	●	ANM(H)X 1106...
D40-40-W32-AN11	3	12	40	32	125	50	40	●	E224
TEF D40-42-W32-AN16	2	6	40	32	120	55	42	●	ANM(H)X 1106...
D40-56-W32-AN16	2	8	40	32	140	75	56	●	1607...
D50-56-W40-AN16	3	12	50	40	140	70	56	●	E224

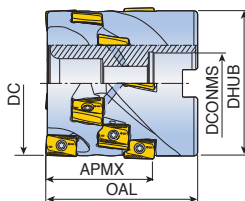
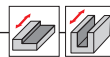
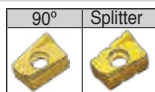
Spare parts

Designation	Screw	Wrench			
TEF-AN11	TS 35A088/HG	TD 10P	-		
TEF-AN16	TS 40120/HG	-	T-T15		



TES-AN11/16

Extended flute cutters



Designation	No. of insert	Dimension (mm)						Coolant hole	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
TES D50-40-22R-AN11	3	12	50	22	45	60	40	●	0.6	SH M10x40	ANM(H)X 1106...
D63-60-27R-AN11	4	24	63	27	60	80	60	●	1.3	SH M12x60	E224
D80-60-32R-AN11	5	30	80	32	76	80	60	●	2.3	SH M16x60	
TES D50-42-22R-AN16	2	6	50	22	47	65	42	●	0.7	SH M10x40	
D63-42-27R-AN16	3	9	63	27	60.5	70	42	●	1.1	SH M12x50	E224
D63-56-27R-AN16	3	12	63	27	60.5	80	56	●	1.3	SH M12x50	
D80-56-32R-AN16	4	16	80	32	76.5	80	56	●	2.2	SH M16x50	
D100-69-40R-AN16	5	25	100	40	96.4	100	69	●	4.5	SH M20x60	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

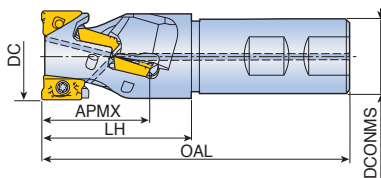
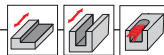
Spare parts

Designation	Screw	Wrench			
TES-AN11	TS 35A088I/HG	TD 10P	-		
TES-AN16	TS 40120I/HG	-	T-T15		



TEF-AP(AX)

Extended flute cutters



Designation		No. of insert	Dimension (mm)						Coolant hole	Insert
			DC	DCONMS	OAL	LH	APMX			
TEF D16-16-W16-AX06	2	6	16	16	80	28	16	x	AXM(C)T 0602...	
	3	12	20	20	85	33	21	●	E231	
	4	20	25	25	95	38	26	●		
2S-TEF D20-25-W20-AP09	1	3	20	20	110	38	26	●	APK(C)T 09T3...	
	2	10	25	25	115	48	42	●	E225	
	2	10	32	32	120	51	42	●		
TEF D25-34-W25-AP12	2	6	25	25	120	47	34	●	APK(C)T 1204...	
	2	8	32	32	120	58	45	●	E226	
	3	12	40	32	140	65	45	●		
TEF D32-30-W32-AP17	2	4	32	32	120	50	30	●	APK(C)T 1705...	
	2	6	40	32	140	65	44	●	E227-E228	

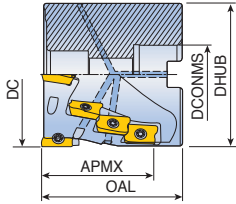
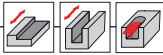
Spare parts

Designation	Screw	Wrench			
TEF-AX06	TS 18041 I/HG	TD 6P			
2S-TEF-AP09	TS 25055I/HG	TD 8			
TEF-AP12 (Ø16-Ø25)	TS 35A070I/HG	TD 10P			
TEF-AP12 (Ø32-)	TS 35A088I/HG	TD 10P			
TEF-AP17	TS 40093I/HG	TD 15			



TES-AP12/17

Extended flute cutters



Designation	No. of inserts	Dimension (mm)						Coolant hole	Kg	Mounting bolt	Insert
		DC	DCONMS	DHUB	OAL	APMX					
TESD50-45-22R-AP12	4	16	50	22	47	65	45	●	0.6	SH M10x40	APK(C)T 1204...
D63-56-27R-AP12	5	25	63	27	60	75	56	●	1.2	SH M10x50	E226
TESD50-44-22-AP17	2	6	50	22	48.2	60	44	●	0.5	SH M10x40	APK(C)T 1705...
D63-44-27-AP17	3	9	63	27	60.8	63	44	●	0.9	SH M12x40	E227-E228
D63-44-27-AP17-4F	4	12	63	27	60.8	63	44	●	0.9	SH M12x40	
D80-58-32-AP17	4	16	80	32	78.4	75	58	●	1.9	SH M16x50	
D100-88-40-AP17-4F	4	24	100	40	97.4	110	88	●	4.4	SH M20x80	
D100-88-40-AP17	5	30	100	40	97.4	110	88	●	4.8	SH M20x80	

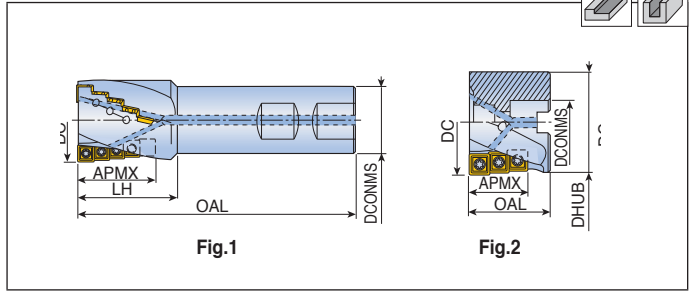
• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

Designation	Screw	Wrench			
TES-AP12	TS 35A088I/HG	TD 10P	-		
TES-AP17	TS 40093I/HG	-	T-T15		



Extended flute cutters



Designation		No. of insert	Dimension (mm)					Coolant hole	Fig.	Insert	
			DC	DCONMS	OAL	LH	APMX				
TEF D32-23-W32-09		2	6	32	32	120	40	23.8	●	1	SPMG(T) 090408-EM
D40-38-W32-11		2	8	40	32	130	60	38.9	●	1	SPMG(T)110408-EM
D50-48-W40-11		3	15	50	40	140	70	48.4	●	1	E255
D50-48-W42-11		3	15	50	42	140	70	48.4	●	1	

Designation		No. of insert	Dimension (mm)					Coolant hole	Fig.	Mounting bolt	Insert	
			DC	DCONMS	DHUB	OAL	APMX					
TES D50-29-22-11		3	9	50	22	47.3	52	29.0	●	2	SH M10x30	SPMG(T) 110408-EM
D63-35-27-11		4	16	63	27	60.5	55	35.0	●	2	SH M12x35	SPMG(T)140508-EM E255
D80-47-32-14		4	16	80	32	77.2	65	47.0	●	2	SH M16x40	

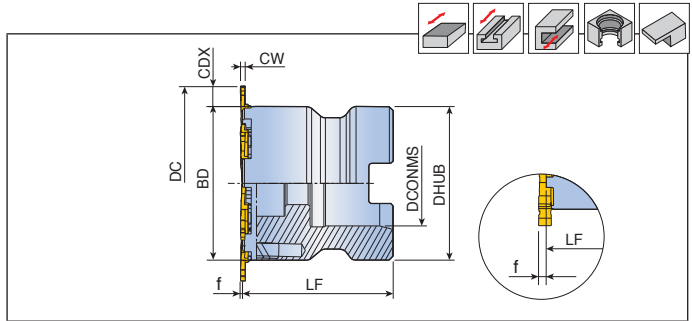
• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

Spare parts

Designation	Screw	Wrench			
TEF (Ø32)	TS 350881	TD 10	-		
TEF (Ø40-Ø50)	TS 400931	TD 15	-		
TES (Ø50-Ø63)	TS 400931	TD 15	-		
TES (Ø80)	TS 50A1211/HG	-	T-T20		



Slotting cutters: Flange type



Designation	CW (mm)		Dimension (mm)					Arbor style	Kg	Insert
			DC	DCONMS	DHUB	BD	LF			
TSM D50-22R-6Z-TS16	1.20-4.0	6	50	22	39.7	39.7	39	A	0.24	TS16-1.20-4.0
D50-22R-6Z-B-TS16	4.01-6.0	6	50	22	39.7	39.7	39	A	0.24	TS16-4.01-6.0
D63-22R-8Z-TS16	1.20-4.0	8	63	22	40.0	52.7	39	A	0.40	TS16-1.20-4.0
D63-22R-8Z-B-TS16	4.01-6.0	8	63	22	40.0	52.7	39	A	0.27	TS16-4.01-6.0
D80-27R-11Z-TS16	1.20-4.0	11	80	27	69.7	69.7	49	B	0.40	TS16-1.20-4.0
D80-27R-11Z-B-TS16	4.01-6.0	11	80	27	69.7	69.7	49	B	0.95	TS16-4.01-6.0
										E263

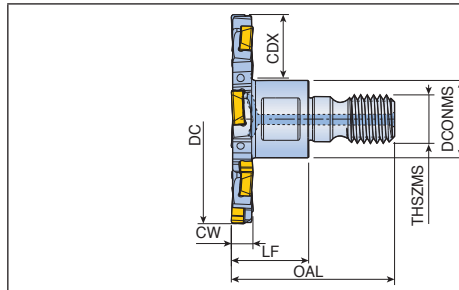
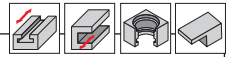
• f, CDX: Please refer to insert data

Spare parts

Designation	Screw 	Wrench 	Wrench handle 		
TSM D50-22R-6Z-TS16	TS 400971-N3.5	BLD T15/S7	SW6-T		
TSM D50-22R-6Z-B-TS16	TS 400971	BLD T15/S7	SW6-T		
TSM D63-22R-8Z-TS16	TS 400971-N3.5	BLD T15/S7	SW6-T		
TSM D63-22R-8Z-B-TS16	TS 400971	BLD T15/S7	SW6-T		
TSM D80-27R-11Z-TS16	TS 400971-N3.5	BLD T15/S7	SW6-T		
TSM D80-27R-11Z-B-TS16	TS 400971	BLD T15/S7	SW6-T		



Slotting cutters: modular heads



Designation	CW (mm)		Dimension (mm)							Coolant hole	Insert
			DC	DCONMS	LF	OAL	THSZMS	CDX			
TSM D25-03-M08-SL18	3	1+1	25	13	18	35.5	M08	6	●	SLOT 018...	
D32-03-M08-SL18	3	2+2	32	13	18	35.5	M08	9	●	E250	
D40-03-M08-SL18	3	3+3	40	13	18	35.5	M08	13	●	●	
D50-03-M10-SL18	3	4+4	50	18	18	38	M10	15	●	●	
D63-03-M10-SL18	3	5+5	63	18	18	38	M10	22	●	●	
TSM D25-04-M08-SL23	4	1+1	25	13	18	35.5	M08	6	●	SLOT 023...	
D32-04-M08-SL23	4	2+2	32	13	18	35.5	M08	9	●	E250	
D40-04-M08-SL23	4	3+3	40	13	18	35.5	M08	13	●	●	
D50-04-M10-SL23	4	4+4	50	18	18	38	M10	15	●	●	
D63-04-M10-SL23	4	5+5	63	18	18	38	M10	22	●	●	
TSM D25-05-M08-SL28	5	1+1	25	13	18	35.5	M08	6	●	SLOT 028...	
D32-05-M08-SL28	5	2+2	32	13	18	35.5	M08	9	●	E250	
D40-05-M08-SL28	5	3+3	40	13	18	35.5	M08	13	●	●	
D50-05-M10-SL28	5	4+4	50	18	18	38	M10	15	●	●	
D63-05-M10-SL28	5	5+5	63	18	18	38	M10	22	●	●	
TSM D25-06-M08-SL33	6	1+1	25	13	18	35.5	M08	6	●	SLOT 033...	
D32-06-M08-SL33	6	2+2	32	13	18	35.5	M08	9	●	E250	
D40-06-M08-SL33	6	3+3	40	13	18	35.5	M08	13	●	●	
D50-06-M10-SL33	6	4+4	50	18	18	38	M10	15	●	●	
D63-06-M10-SL33	6	5+5	63	18	18	38	M10	22	●	●	

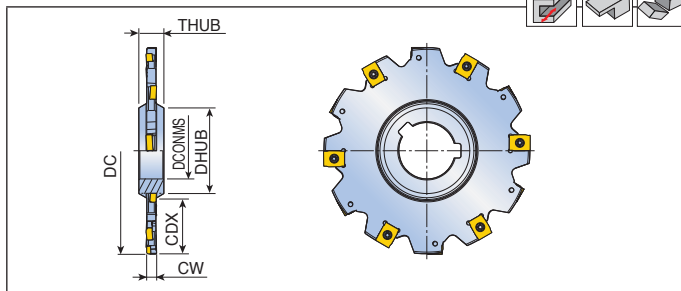
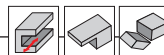
• Matched with T-FLEXTEC holder

Spare parts

Designation	Screw	Wrench			
TSM...-03...-SL18	TS 25B024I/HG	TD 7P	L-T7P		
TSM...-04...-SL23	TS 25B031I/HG	TD 7P	L-T7P		
TSM...-05...-SL28	TS 25B042I/HG	TD 7P	L-T7P		
TSM...-06...-SL33	TS 25B053I/HG	TD 7P	L-T7P		



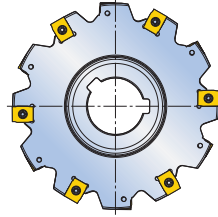
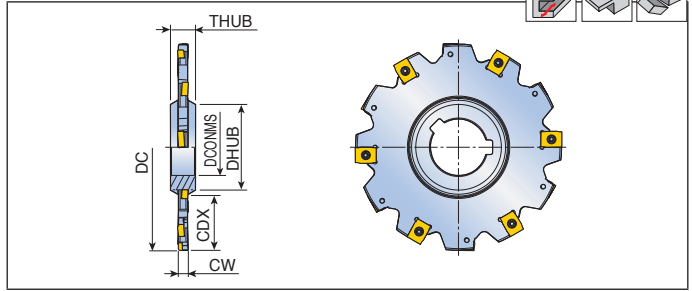
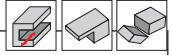
Slotting cutters: Fixed pocket disk type



Designation	CW (mm)		Dimension (mm)						Insert
			DC	DCONMS	DHUB	OAL	CDX		
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	
TSM 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	
TSM 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	
TSM 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	
TSM 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	1.9	



Slotting cutters: Fixed pocket disk type



Designation	CW (mm)		Dimension (mm)					Kg	Insert
			DC	DCONMS	DHUB	OAL	CDX		
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	E267
125FD-08-40N-Z043	8	6+6	125	40	55	12	32.5	0.5	
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	
TSM 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	E267
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	
TSM 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	E267
160FD-10-40N-Z053	10	8+8	160	40	55	12	51.0	1.3	
200FD-10-50N-Z053	10	9+9	200	50	69	12	64.0	2.0	
250FD-10-50N-Z053	10	12+12	250	50	69	12	89.0	3.2	

• Arbor: SCA

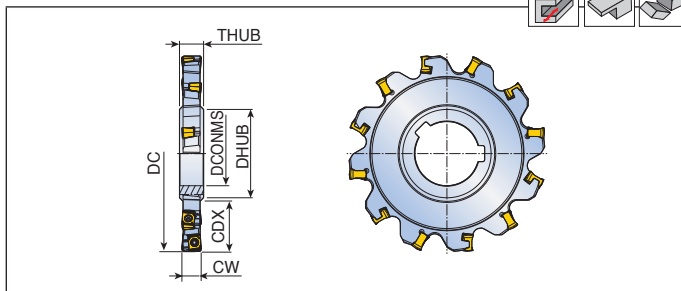
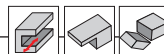
Spare parts

Designation	Screw	Wrench		Designation	Screw	Wrench	
TSM-Z018	TS 25B024I/HG	TD 7P	L-T7P	TSM-Z038	TS 40K0535I	T-T15	L-T15
TSM-Z023	TS 25B031I/HG	TD 7P	L-T7P	TSM-Z043	TS 40K065I	T-T15	L-T15
TSM-Z028	TS 25B042I/HG	TD 7P	L-T7P	TSM-Z048	TS 40K075I	T-T15	L-T15
TSM-Z033	TS 25B053I/HG	TD 7P	L-T7P	TSM-Z053	TS 40K085I	T-T15	L-T15



TSM FD-N-ZN08/11

Slotting cutters: Fixed pocket disk type



Designation	CW (mm)		Dimension (mm)						Insert
			DC	DCONMS	DHUB	OAL	CDX		
TSM 080FD-10-27N-ZN08	10.0	4+4	80	27	41	15	15.5	0.3	ZNHU 080... E268
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	
TSM 125FD-14-40N-ZN11	14.0	6+6	125	40	55	15	34.5	0.9	ZNHU 110... E268
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	

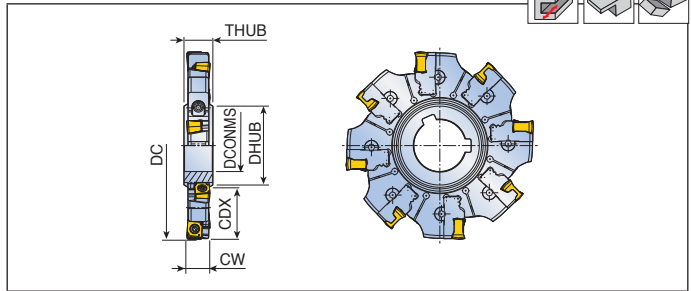
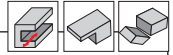
• Arbor: SCA

Spare parts

Designation	Screw	Wrench			
TSM...FD...-ZN08	TS 30085I/HG	TD 9	-		
TSM...FD...-ZN11	TS 40120I/HG	-	T-T15		



Slotting cutters: Adjustable disk type



Designation	CW (mm)		Dimension (mm)						Insert
			DC	DCONMS	DHUB	OAL	CDX		
TSM 100FD-S-27N-ZN08	10-12	4+4	100	27	41	15	26.5	0.4	ZNHU 080... E268
125FD-S-40N-ZN08	10-12	5+5	125	40	55	15	31.5	0.7	
160FD-S-40N-ZN08	10-12	6+6	160	40	55	15	48.5	1.1	
200FD-S-50N-ZN08	10-12	8+8	200	50	69	15	61.5	1.8	
250FD-S-50N-ZN08	10-12	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	12-14	5+5	125	40	55	15	31.5	0.8	
160FD-W-40N-ZN08	12-14	6+6	160	40	55	15	49.5	1.3	
200FD-W-50N-ZN08	12-14	8+8	200	50	69	15	62.5	2.1	
250FD-W-50N-ZN08	12-14	9+9	250	50	69	15	87.5	3.4	

• Width of cut is set at the smallest unless a specific width is requested • Arbor: SCA

Spare parts

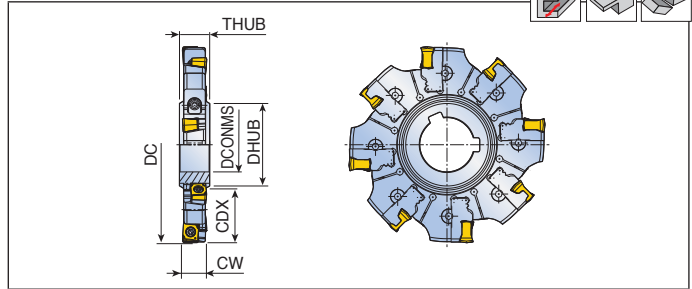
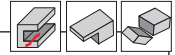
Designation	Right cartridge	Left cartridge	Wedge	Adjust screw	Insert screw
TSM...FD-S/W...-ZN08					
	TCT-SR-ZN08 TCT-WR-ZN08	TCT-SL-ZN08 TCT-WL-ZN08	WFZ 5	SA M8-6.0	TS 30085/HG
	Wedge screw	Wrench	L-Wrench	Wedge Wrench	
	WS 5	TD 9	L-W 3	F-W 2.5	



TSM FD-S/W-ZN11



Slotting cutters: Adjustable disk type



Designation	CW (mm)		Dimension (mm)					Kg	Insert
			DC	DCONMS	DHUB	OAL	CDX		
TSM 100FD-S-27N-ZN11	14-17	3+3	100	27	41	18	28.0	0.6	ZNHU 110... E268
125FD-S-40N-ZN11	14-17	4+4	125	40	55	18	31.0	1.0	
160FD-S-40N-ZN11	14-17	6+6	160	40	55	18	48.5	1.6	
200FD-S-50N-ZN11	14-17	7+7	200	50	69	18	61.5	2.6	
250FD-S-50N-ZN11	14-17	9+9	250	50	69	18	86.5	4.2	
100FD-W-27N-ZN11	17-20	3+3	100	27	41	22	28.0	0.8	
125FD-W-40N-ZN11	17-20	4+4	125	40	55	22	31.0	1.2	
160FD-W-40N-ZN11	17-20	6+6	160	40	55	22	48.5	2.0	
200FD-W-50N-ZN11	17-20	7+7	200	50	69	22	61.5	3.2	
250FD-W-50N-ZN11	17-20	9+9	250	50	69	22	86.5	5.2	
315FD-W-60N-ZN11	17-20	12+12	315	60	85	22	110.0	8.5	

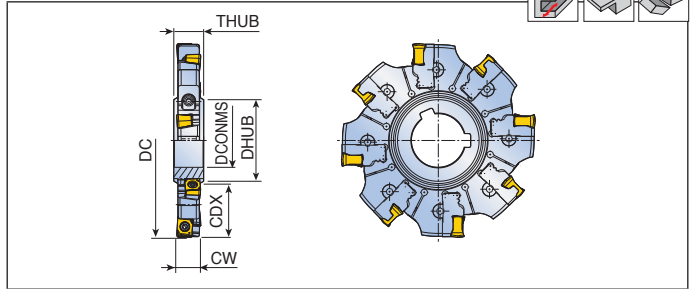
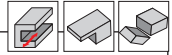
• Width of cut is set at the smallest unless a specific width is requested • Arbor: SCA

Spare parts

Designation	Right cartridge	Left cartridge	Wedge	Adjust screw	Insert screw
TSM...FD-S/W...-ZN11					
	TCT-SR-ZN11 TCT-WR-ZN11	TCT-SL-ZN11 TCT-WL-ZN11	WFZ 6	SA M8-9.0	TS 40120I/HG
	Wedge screw	Wrench	L-Wrench	Wedge Wrench	
	WS 6	T-T15	L-W 4	T-W 3	



Slotting cutters: Adjustable disk type



Designation	CW (mm)		Dimension (mm)					Kg	Insert
			DC	DCONMS	DHUB	OAL	CDX		
TSM 125FD-S-40N-ZN14	20-23	3+3	125	40	55	24.5	32.0	1.4	ZNHU 140...
160FD-S-40N-ZN14	20-23	5+5	160	40	55	24.5	49.0	2.4	
200FD-S-50N-ZN14	20-23	6+6	200	50	69	24.5	62.5	3.9	
250FD-S-50N-ZN14	20-23	8+8	250	50	69	24.5	87.0	6.3	
315FD-S-60N-ZN14	20-23	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	23-26	5+5	160	40	55	27.5	49.0	2.7	
200FD-W-50N-ZN14	23-26	6+6	200	50	69	27.5	62.5	4.3	
250FD-W-50N-ZN14	23-26	8+8	250	50	69	27.5	87.0	7.1	
315FD-W-60N-ZN14	23-26	10+10	315	60	85	27.5	111.5	11.6	

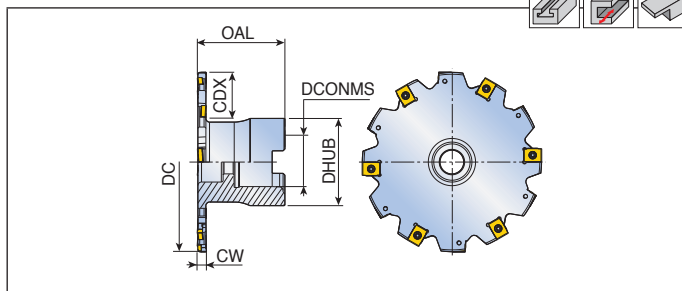
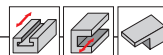
• Width of cut is set at the smallest unless a specific width is requested • Arbor: SCA

Spare parts

Designation	Right cartridge	Left cartridge	Wedge	Adjust screw	Insert screw
TSM...FD-S/W...-ZN14					
	TCT-SR-ZN14	TCT-SL-ZN14	WFZ 6	SA M8-9.0	TS 40120/HG
	Wedge screw	Wrench	L-Wrench	Wedge Wrench	
	WS 6	T-T15	L-W 4	T-W 3	



Slotting cutters: Fixed pocket flange type



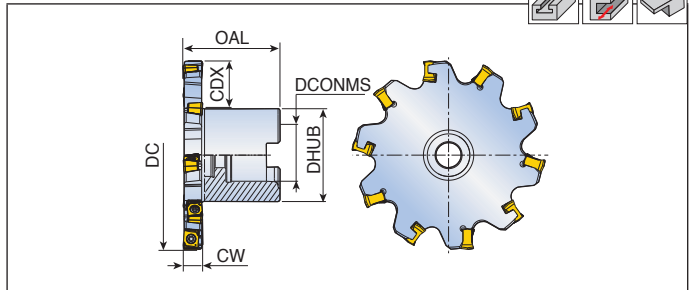
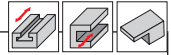
Designation	CW (mm)		Dimension (mm)					Arbor style	Kg	Mounting bolt	Insert
			DC	DCONMS	DHUB	OAL	CDX				
TSM 080FF-03-22R-Z018	3	5+5	80	22	40	50	20.0	A	0.4	SH M10x35	ZNHT 018...
100FF-03-27R-Z018	3	6+6	100	27	48	50	26.0	A	0.6	SH M12x35	
080FF-04-22R-Z023	4	5+5	80	22	40	50	20.0	A	0.4	SH M10x35	ZNHT 023...
100FF-04-27R-Z023	4	6+6	100	27	48	50	26.0	A	0.6	SH M12x35	
080FF-05-22R-Z028	5	5+5	80	22	40	50	20.0	A	0.5	SH M10x35	ZNHT 028...
100FF-05-27R-Z028	5	6+6	100	27	48	50	26.0	A	0.7	SH M12x35	
080FF-06-22R-Z033	6	5+5	80	22	40	50	20.0	A	0.5	SH M10x35	ZNHT 033...
100FF-06-27R-Z033	6	6+6	100	27	48	50	26.0	A	0.7	SH M12x35	E267
125FF-06-40R-Z033	6	7+7	125	40	70	50	25.0	B	1.1	-	
160FF-06-40R-Z033	6	9+9	160	40	70	50	43.0	B	1.4	-	
080FF-07-22R-Z038	7	4+4	80	22	40	50	20.0	A	0.5	SH M10x40	ZNHT 038...
100FF-07-27R-Z038	7	5+5	100	27	48	50	25.5	A	0.7	SH M12x35	E267
125FF-07-40R-Z038	7	6+6	125	40	70	50	24.5	B	1.1	-	
160FF-07-40R-Z038	7	8+8	160	40	70	50	42.0	B	1.4	-	
080FF-08-22R-Z043	8	4+4	80	22	40	50	20.0	A	0.5	SH M10x35	ZNHT 043...
100FF-08-27R-Z043	8	5+5	100	27	48	50	25.5	A	0.8	SH M12x35	E267
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	1.5	-	
100FF-09-27R-Z048	9	5+5	100	27	48	50	26.0	A	0.7	SH M12x35	ZNHT 048...
125FF-09-40R-Z048	9	6+6	125	40	70	50	24.5	B	1.2	-	E267
160FF-09-40R-Z048	9	8+8	160	40	70	50	42.0	B	1.6	-	
100FF-10-27R-Z053	10	5+5	100	27	48	50	26.0	A	0.8	SH M12x35	ZNHT 053...
125FF-10-40R-Z053	10	6+6	125	40	70	50	24.5	B	1.4	-	E267
160FF-10-40R-Z053	10	8+8	160	40	70	50	42.0	B	1.7	-	

Spare parts

Designation	Screw		Wrench		Designation	Screw		Wrench	
TSM-Z018	TS 25B024I/HG		TD 7P	L-T7P	TSM-Z038	TS 40K0535I		T-T15	L-T15
TSM-Z023	TS 25B031I/HG		TD 7P	L-T7P	TSM-Z043	TS 40K065I		T-T15	L-T15
TSM-Z028	TS 25B042I/HG		TD 7P	L-T7P	TSM-Z048	TS 40K075I		T-T15	L-T15
TSM-Z033	TS 25B053I/HG		TD 7P	L-T7P	TSM-Z053	TS 40K085I		T-T15	L-T15



Slotting cutters: Fixed pocket flange type



Designation	CW (mm)		Dimension (mm)					Arbor style	Kg	Mounting bolt	Insert
			DC	DCONMS	SDHUB	OAL	CDX				
TSM 063FF-10-22R-ZN08	10.0	3+3	63	22	40	50	15	A	0.4	SH M10x35	ZNHU 080...
080FF-10-22R-ZN08	10.0	4+4	80	22	40	50	24	A	0.5	SH M10x35	
100FF-10-27R-ZN08	10.0	5+5	100	27	48	50	26	A	0.8	SH M12x35	
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 M10x35	
080FF-12-22R-ZN08	12.0	4+4	80	22	40	50	24	A	0.5	SH M10x35	
100FF-12-27R-ZN08	12.0	5+5	100	27	48	50	26	A	0.9	SH M12x35	ZNHU 110...
125FF-12-32R-ZN08	12.0	6+6	125	32	58	50	34	B	1.2	-	
TSM 063FF-14-22R-ZN11	14.0	3+3	63	22	40	50	15	A	0.4	SH M10x35	
080FF-14-22R-ZN11	14.0	4+4	80	22	40	50	24	A	0.5	SH M10x35	
100FF-14-27R-ZN11	14.0	5+5	100	27	48	50	26	A	1.0	SH M12x35	
125FF-14-32R-ZN11	14.0	6+6	125	32	58	50	34	B	1.3	-	
160FF-14-40R-ZN11	14.0	6+6	160	40	70	50	43	B	2.5	-	
080FF-17-22R-ZN11	17.0	4+4	80	22	40	50	24	A	0.6	SH M10x35	
100FF-17-27R-ZN11	17.0	5+5	100	27	48	50	26	A	1.0	SH M12x35	
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 M10x35	
100FF-20-27R-ZN11	20.0	5+5	100	27	48	50	26	A	1.1	SH M12x35	
125FF-20-32R-ZN11	20.0	6+6	125	32	58	50	34	B	1.6	-	

Spare parts

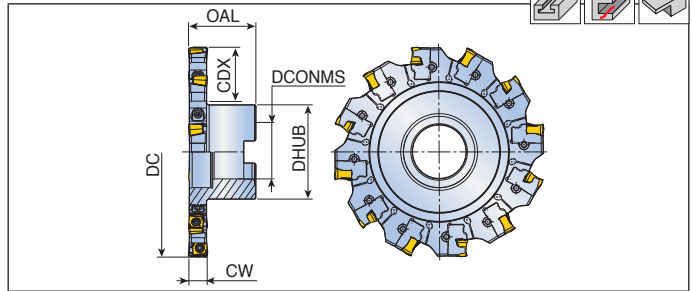
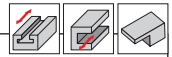
Designation	Screw	Wrench			
TSM...FF...-ZN08	TS 30085I/HG	TD 9	-		
TSM...FF...-ZN11	TS 40120I/HG	-	T-T15		



TSM FF-S/W-ZN08



Slotting cutters: Adjustable flange type



Designation	CW (mm)	✂	Dimension (mm)					Arbor style	Kg	Mounting bolt	Insert
			DC	DCONMS	DHUB	OAL	CDX				
TSM 100FF-S-27R-ZN08	10-12	4+4	100	27	48	50	25	A	0.8	SH M12x35	ZNHU 080...
125FF-S-32R-ZN08	10-12	5+5	125	32	58	50	31.5	B	1.1	-	E268
160FF-S-40R-ZN08	10-12	6+6	160	40	70	50	43	B	1.8	-	-
200FF-S-40R-ZN08	10-12	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 M12x35	-
125FF-W-32R-ZN08	12-14	5+5	125	32	58	50	31.5	B	1.2	-	-
160FF-W-40R-ZN08	12-14	6+6	160	40	70	50	43	B	2.0	-	-
200FF-W-40R-ZN08	12-14	8+8	200	40	90	50	53	C	3.2	-	-

• Width of cut is set at the smallest unless a specific width is requested

Spare parts

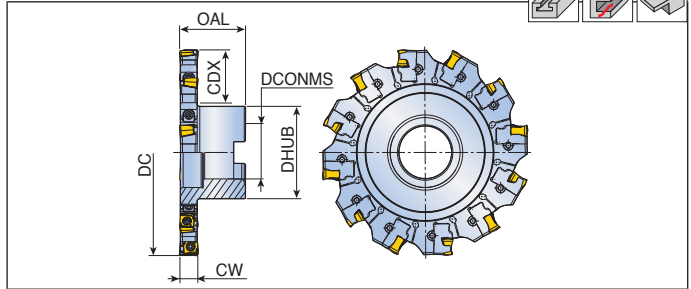
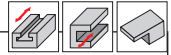
Designation	Right cartridge	Left cartridge	Wedge	Adjust screw	Insert screw
TSM...FF-S/W...-ZN08					
	TCT-SR-ZN08 TCT-WR-ZN08	TCT-SL-ZN08 TCT-WL-ZN08	WFZ 5	SA M8-6.0	TS 300851/HG
	Wedge screw	Wrench	L-Wrench	Wedge Wrench	
	WS 5	TD 9	L-W 3	F-W 2.5	



TSM FF-S/W-ZN11



Slotting cutters: Adjustable flange type



Designation	CW (mm)		Dimension (mm)					Arbor style	Kg	Mounting bolt	Insert
			DC	DCONMS	DHUB	OAL	CDX				
TSM 100FF-S-27R-ZN11	14-17	3+3	100	27	48	50	25.0	A	0.9	SH M12x35	ZNHU 110... E268
125FF-S-32R-ZN11	14-17	4+4	125	32	58	50	31.5	B	1.3	-	
160FF-S-40R-ZN11	14-17	6+6	160	40	70	50	43.0	B	2.2	-	
200FF-S-40R-ZN11	14-17	7+7	200	40	90	50	53.0	C	3.9	-	
250FF-S-60R-ZN11	14-17	9+9	250	60	130	50	55.0	C	6.2	-	
315FF-S-60R-ZN11	14-17	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 M12x35	
125FF-W-32R-ZN11	17-20	4+4	125	32	58	50	31.5	B	1.5	-	
160FF-W-40R-ZN11	17-20	6+6	160	40	70	50	43.0	B	2.2	-	
200FF-W-40R-ZN11	17-20	7+7	200	40	90	50	53.0	C	4.1	-	
250FF-W-60R-ZN11	17-20	9+9	250	60	130	50	55.0	C	6.9	-	
315FF-W-60R-ZN11	17-20	12+12	315	60	130	50	90.0	C	10.2	-	

• Width of cut is set at the smallest unless a specific width is requested

Spare parts

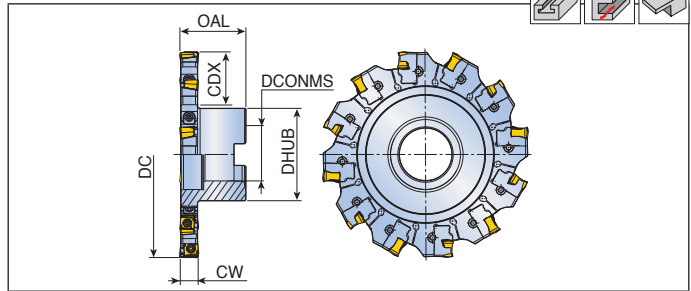
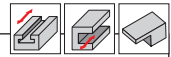
Designation	Right cartridge	Left cartridge	Wedge	Adjust screw	Insert screw
TSM...FD-S/W...-ZN11					
	TCT-SR-ZN11 TCT-WR-ZN11	TCT-SL-ZN11 TCT-WL-ZN11	WFZ 6	SA M8-9.0	TS 40120I/HG
	Wedge screw	Wrench	L-Wrench	Wedge Wrench	
	WS 6	T-T15	L-W 4	T-W 3	



TSM FF-S/W-ZN14



Slotting cutters: Adjustable flange type



Designation	CW (mm)		Dimension (mm)					Arbor style	Kg	Insert
			DC	DCONMS	DHUB	OAL	CDX			
TSM 125FF-S-32R-ZN14	20-23	3+3	125	32	58	50	32.5	B	2.6	ZNHU 140... E268
160FF-S-40R-ZN14	20-23	5+5	160	40	70	50	43.0	B	2.8	
200FF-S-40R-ZN14	20-23	6+6	200	40	90	50	53.0	C	4.6	
250FF-S-60R-ZN14	20-23	8+8	250	60	130	50	58.0	C	7.2	
315FF-S-60R-ZN14	20-23	10+10	315	60	130	50	90.0	C	11.3	
125FF-W-32R-ZN14	23-26	3+3	125	32	58	50	32.5	B	1.8	
160FF-W-40R-ZN14	23-26	5+5	160	40	70	50	43.0	B	3.0	
200FF-W-40R-ZN14	23-26	6+6	200	40	90	50	53.0	C	5.0	
250FF-W-60R-ZN14	23-26	8+8	250	60	130	50	58.0	C	7.5	
315FF-W-60R-ZN14	23-26	10+10	315	60	130	50	90.0	C	12.2	

• Width of cut is set at the smallest unless a specific width is requested

Spare parts

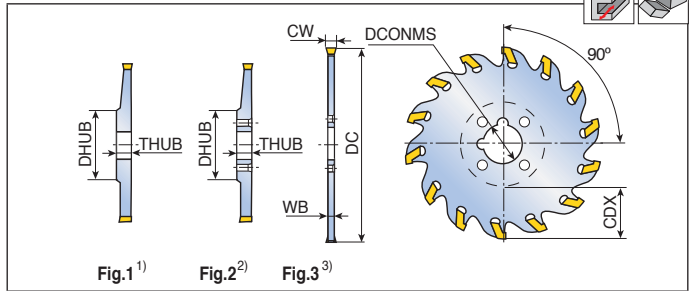
Designation	Right cartridge	Left cartridge	Wedge	Adjust screw	Insert screw
TSM...FD-S/W...-ZN14					
	TCT-SR-ZN14	TCT-SL-ZN14	WFZ 6	SA M8-9.0	TS 40120I/HG
	Wedge screw	Wrench	L-Wrench	Wedge Wrench	
	WS 6	T-T15	L-W 4	T-W 3	

 E271-E273	 E274-E275	 E281-E283
---------------	---------------	---------------



TSC

Slotting cutters



Designation	CW (mm)		Dimension (mm)						Fig.	Insert seat size	Insert
			DC	DCONMS	DHUB	WB	THUB	CDX			
TSC 75 1.6 22A	1.6	8	75	22.0	39	1.24	2.4	17	1	1	TIMC TIMJ TIPV E259-E260
100 1.6 22A	1.6	10	100	22.0	39	1.24	2.4	30	1	1	
125 1.6 27A	1.6	12	125	27.0	64	1.24	2.4	30	1	1	
75 2 22A	2.0-2.3	8	75	22.0	39	1.6	2.4	17	1	2	
100 2 22A	2.0-2.3	10	100	22.0	39	1.6	2.4	30	1	2	
125 2 27A	2.0-2.3	12	125	27.0	64	1.6	2.4	30	1	2	
100 2.4 22K	2.3-2.5	10	100	22.0	46	1.9	2.4	26	2	2	
125 2.4 32K	2.3-2.5	12	125	32.0	55	1.9	2.4	34	2	2	
160 2.4 32K	2.3-2.5	16	160	32.0	55	1.9	2.4	52	2	2	
100 3 22K	2.8-3.58	6	100	22.0	-	2.4	-	26	3	4	
125 3 32K	2.8-3.53	8	125	32.0	-	2.4	-	34	3	4	
160 3 40K	2.8-3.53	10	160	40.0	-	2.4	-	39	3	4	
100 4 22K	3.54-4.52	6	100	22.0	-	3.2	-	27	3	4	
125 4 32K	3.54-4.52	8	125	32.0	-	3.2	-	34	3	4	
160 4 40K	3.54-4.52	10	160	40.0	-	3.2	-	39	3	4	

• ¹⁾ Arbor type, ²⁾ Drive shank, ³⁾ Drive flange+Drive shank

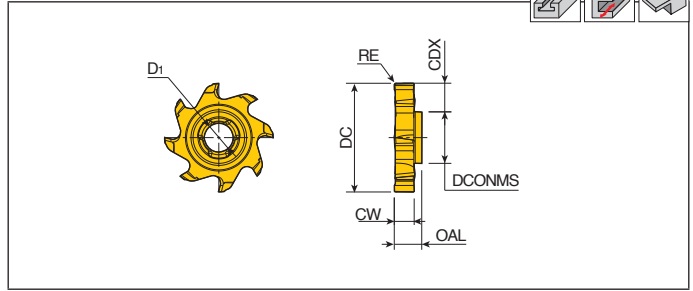
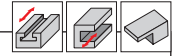
Spare parts

Designation	Drive flange set	Drive shank			
TSC-2.4-22K	-	TW32-40			
TSC-2.4-32K	-	T32-55			
TSC-22K	TR22-46	TW32-40			
TSC-32K	TR32-55	T32-55			
TSC-40K	TR40-80	T40-80			



- Extractor(ESG 0.5 or ESG 1) supplied with each cutter
- Flange set and shank should be ordered separately

Interchangeable solid carbide slot milling heads

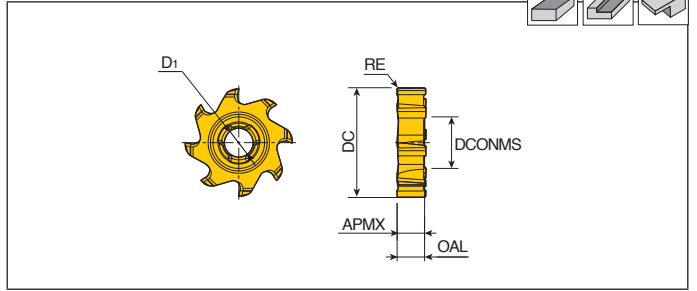
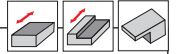


Designation	Feed (mm/tooth)	Dimension (mm)								Grade
		DC	CW	CDX	NOF	RE	D1	DCONMS	OAL	
TR13-S-24.7-3.0R0.4	0.02-0.15	24.7	3	5.5	6	0.4	7.5	13	8	●
24.7-4.0R0.4	0.02-0.15	24.7	4	5.5	6	0.4	7.5	13	8	●
24.7-5.0R0.4	0.02-0.15	24.7	5	5.5	6	0.4	7.5	13	8	●
24.7-6.0R0.4	0.02-0.15	24.7	6	5.5	6	0.4	7.5	13	8	●
24.7-7.0R0.4	0.02-0.15	24.7	7	5.5	6	0.4	7.5	13	8	●
24.7-8.0R0.4	0.02-0.15	24.7	8	5.5	6	0.4	7.5	13	8	●
TR15-S-31.7-3.0R0.4	0.022-0.18	31.7	3	8	8	0.4	8.4	15	8	●
31.7-4.0R0.4	0.022-0.18	31.7	4	8	8	0.4	8.4	15	8	●
31.7-5.0R0.4	0.022-0.18	31.7	5	8	8	0.4	8.4	15	8	●
31.7-6.0R0.4	0.022-0.18	31.7	6	8	8	0.4	8.4	15	8	●
31.7-7.0R0.4	0.022-0.18	31.7	7	8	8	0.4	8.4	15	8	●
31.7-8.0R0.4	0.022-0.18	31.7	8	8	8	0.4	8.4	15	8	●
TR17-S-39.7-4.0R0.4	0.025-0.20	39.7	4	11	10	0.4	9.8	17	10	●
39.7-5.0R0.4	0.025-0.20	39.7	5	11	10	0.4	9.8	17	10	●
39.7-6.0R0.4	0.025-0.20	39.7	6	11	10	0.4	9.8	17	10	●
39.7-7.0R0.4	0.025-0.20	39.7	7	11	10	0.4	9.8	17	10	●
39.7-8.0R0.4	0.025-0.20	39.7	8	11	10	0.4	9.8	17	10	●
39.7-9.0R0.4	0.025-0.20	39.7	9	11	10	0.4	9.8	17	10	●
39.7-10.0R0.4	0.025-0.20	39.7	10	11	10	0.4	9.8	17	10	●



● NOF: Number of flutes ● Standard items

Interchangeable solid carbide facing heads



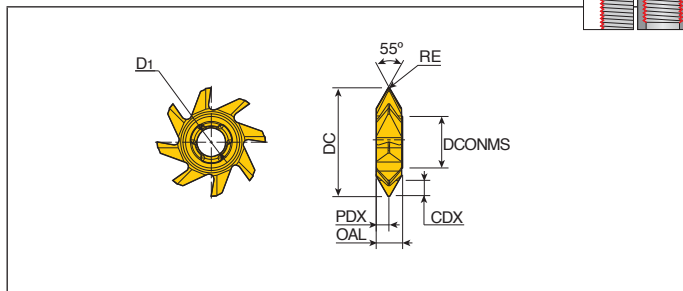
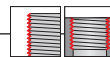
Designation	Feed (mm/tooth)	Dimension (mm)							Grade
		DC	APMX	NOF	RE	D1	DCONMS	OAL	
TR13-F-25-8.0-R0.4	0.04-0.15	24.25	8	6	0.4	7.5	13	8	●
15-F-32-8.0-R0.4	0.04-0.15	31.25	8	8	0.4	8.4	15	8	●
17-F-40-10.0-R0.4	0.04-0.15	39.25	10	10	0.4	9.8	17	10	●



● NOF: Number of flutes
●: Standard items

TR-T-W55

Interchangeable solid carbide threading heads - 55° partial profile



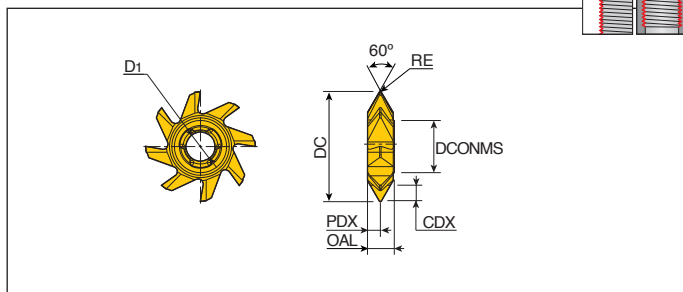
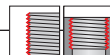
Designation	TPI	Dimension (mm)										Grade
		DC	DMIN	PDX	RE	D1	CDX	OAL	ZEFP	DCONMS	TT5525	
TR13-T-24.7-W55-3T	5-3	24.7	36	2.2	0.5	7.5	3.5	7.7	6	13	●	
15-T-31.7-W55-4T	6-4	31.7	46	3.7	0.5	8.4	4.7	7.7	8	15	●	
17-T-39.7-W55-3T	4-3	39.7	57	4.5	0.8	9.8	6.2	9.5	10	17	●	

- TPI: Threads per inch
- ZEFP: Peripheral effective cutting edge count

●: Standard items

TR-T-M60

Interchangeable solid carbide threading heads - 60° partial profile



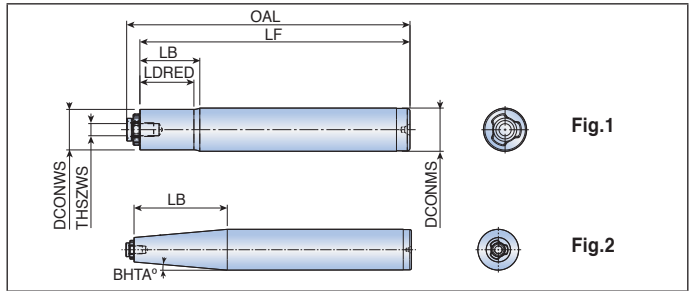
Designation	TP (mm)	TPI	Dimension (mm)										Grade
			DC	DMIN	PDX	RE	D1	CDX	OAL	ZEFP	DCONMS	TT5525	
TR13-T-24.7-M60-5P	3-5	5-3	24.7	36	2.2	0.2	7.5	3.5	7.7	6	13	●	
15-T-31.7-M60-6P	4-6	6-4	31.7	46	3.7	0.3	8.4	4.7	7.7	8	15	●	
17-T-39.7-M60-8P	6-8	4-3	39.7	57	4.5	0.4	9.8	6.2	9.5	10	17	●	



- TP: Threads pitch, TPI: Threads per inch
- ZEFP: Peripheral effective cutting edge count

●: Standard items

Slotting & threading holders



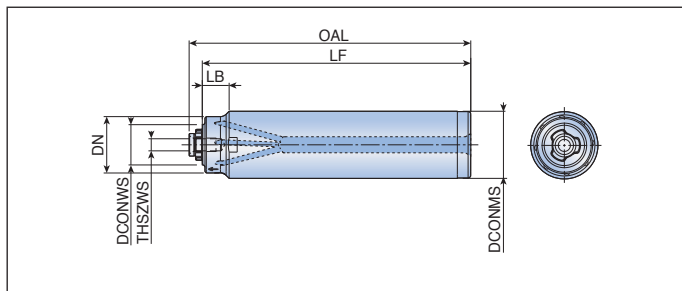
Designation	Dimension (mm)								Coolant hole	Fig.	Carbide head
	DCONMS	DCONWS	LB	LF	OAL	THSZWS	LDRED	BHTA°			
TR13-16-L100	16	13	16.6	100	104.35	M4x0.5	13.0	-	x	1	TR-S.. TR-T.. E205, E207
15-16-L100	16	15	18.2	100	104.90	M5x0.5	16.0	-	x	1	
15-16-L130	16	15	18.2	130	134.90	M5x0.5	16.0	-	x	1	
17-20-L140	20	17	23.8	140	146.00	M6x0.5	20.2	-	x	1	
15-25-TC170	25	15	57.2	170	174.90	M5x0.5	-	5	x	2	

Spare parts

Designation	Screw	Wrench	Wrench handle		
TR13	TS 40T098/HG-P	BLD IP15/S7	SW6-T		
TR15	TS 50T110/HG-P	BLD IP20/S7	SW6-T		
TR17	TS 60T130/HG-P	BLD IP20/S7	SW6-T		

TR-F-C

Facing holders



Designation	Dimension (mm)							Coolant hole	Carbide head
	DCONMS	DCONWS	LB	LF	OAL	THSZWS	DN		
TR13-20-L100-F-C	20	13	10	100	104.35	M4x0.5	16	●	TR-F..... E206
13-25-L100-F-C	25	13	12.5	100	104.35	M4x0.5	16	●	
15-25-L100-F-C	25	15	10	100	104.90	M5x0.5	21	●	
15-32-L110-F-C	32	15	13.5	110	114.90	M5x0.5	21	●	
17-32-L140-F-C	32	17	10	140	146.00	M6x0.5	28	●	
17-42-L140-F-C	42	17	15	140	146.00	M6x0.5	28	●	

Spare parts

Designation	Screw	Wrench	Wrench handle		
TR13	TS 40T098/HG-P	BLD IP15/S7	SW6-T		
TR15	TS 50T110/HG-P	BLD IP20/S7	SW6-T		
TR17	TS 60T130/HG-P	BLD IP20/S7	SW6-T		



Milling Inserts



Insert Designation System



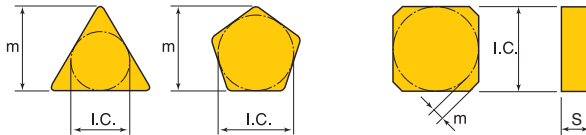
1 Shape

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

2 Clearance angle

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

3 Tolerance



Class	Tolerance (mm)			I.C. Dimension (mm)					
	m	S	I.C.	6.35	9.52	12.70	15.87	19.05	25.40
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	±0.130	±0.130	±0.05	•	•				
			±0.08			•			
			±0.10				•	•	
			±0.13						•

4 Chipformer and clamp type

								Special
A	F	G	M	N	R	T	W	X

Insert Designation System



5 Cutting edge length(mm)

I.C(mm)	C	R,S	T	H	O
	5.56				
6.35	06	06	11		
7.94	08		13		
9.52	09	09	16		
12.70	12	12	22	05	05
15.87	16	15	27	09	
25.40	25	25			

6 Thickness(mm)

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

7 Corner radius(mm)

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

7 Parallel land

$A=45^\circ$ $D=60^\circ$
 $E=75^\circ$ $F=85^\circ$
 $P=90^\circ$ $Z=Special$

Entering angle

$B=5^\circ$ $F=25^\circ$
 $C=7^\circ$ $G=30^\circ$
 $D=15^\circ$ $N=0^\circ$
 $E=20^\circ$ $P=11^\circ$
 $Z=Special$

Clearance angle of wiper

8 Edge condition

F

E

T

S

9 Hand of tool

R

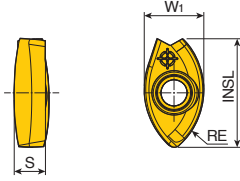
L

N

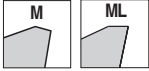
10 Manufacturer's option

AL	Aluminum
WC	Wiper crown
MR	Medium rough
M	Medium
L	Light
ML	Medium light
E□□	Economical

Inserts



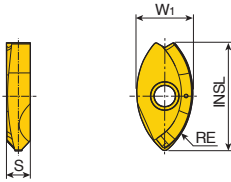
Size	Dimension (mm)					
	INSL	W1	S	APMX	RE	
160	12.4	6.8	3.7	8.0	8.0	
200	14.9	8.2	4.8	10.0	10.0	
250	18.9	10.2	5.9	12.5	12.5	
300	22.1	11.8	6.8	15.0	15.0	
320	23.9	12.8	7.5	16.0	16.0	



Insert	Designation	Recommended machining conditions		Coated								Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	2FB 160-M	2.0-6.5	0.30-0.07	●		●	●	●						
	200-M	3.0-8.0	0.35-0.08	●		●	●	●				●		
	250-M	3.5-10.0	0.35-0.08	●		●	●					●		
	300-M	4.0-12.5	0.40-0.08	●		●	●					●		
	320-M	4.5-13.0	0.40-0.08	●		●	●					●		
	2FB 160-ML	2.0-6.5	0.28-0.05	●		●	●							
	200-ML	3.0-8.0	0.32-0.07	●		●	●							
	250-ML	3.5-10.0	0.32-0.07	●		●								

● : Standard items





Size	Dimension (mm)					
	INSL	W1	S	APMX	RE	
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	

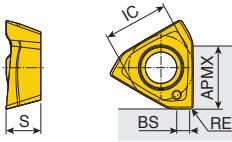


Insert	Designation	Recommended machining conditions		Coated								Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	3FB 320C-M	4.5-13.0	0.15-0.08	●		●					●			
	500C-M	7.5-20.0	0.30-0.15	●		●		●			●			
	3FB 320P-M	4.5-13.0	0.15-0.08	●		●					●			
	500P-M	7.5-20.0	0.30-0.08	●		●					●			

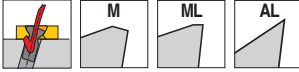
●: Standard items



Inserts



Size	Dimension (mm)					
	IC	S	APMX	BS	RE	
04	3.9	2.1	3.5	0.5-0.7	0.2-0.4	
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	

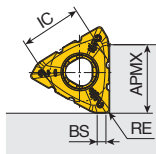


Insert	Designation	Recommended machining conditions		Material												
		ap (mm)	Feed (mm/tooth)	Cermet		Coated						Uncoated				
				CT7000	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10			
	3PKT 040202R-M	0.5-3.0	0.08-0.04		●	●										
	040204R-M	0.5-3.0	0.08-0.04		●	●										
	060302R-M	1.0-4.0	0.10-0.04		●	●	●							●		
	060304R-M	1.0-4.0	0.10-0.04		●	●	●							●		
	060308R-M	1.0-4.0	0.10-0.04		●	●	●							●		
	100404R-M	2.0-6.0	0.12-0.05		●	●	●		●	●	●	●				
	100408R-M	2.0-6.0	0.12-0.05		●	●	●		●	●	●	●				
	100416R-M	2.0-6.0	0.12-0.05		●									●		
	150508R-M	3.0-9.0	0.17-0.07		●	●	●		●	●	●	●				
	150516R-M	3.0-9.0	0.17-0.07		●				●					●		
	150524R-M	3.0-12.0	0.17-0.07		●									●		
	190608R-M	4.5-12.0	0.22-0.09		●	●	●	●	●	●	●	●				
	190616R-M	4.5-12.0	0.22-0.09		●	●	●		●					●		
	190624R-M	4.5-12.0	0.22-0.09		●									●		
190632R-M	4.5-12.0	0.22-0.09		●									●			
	3PHT 100404R-M	2.0-6.0	0.12-0.05	●	●											
	100408R-M	2.0-6.0	0.12-0.05	●	●											
	150504R-M	3.0-9.0	0.17-0.07		●											
	150508R-M	3.0-9.0	0.17-0.07	●	●											
	150516R-M	3.0-9.0	0.17-0.07	●	●											
	190608R-M	4.5-12.0	0.22-0.09	●	●											
	3PKT 100404R-ML	2.0-6.0	0.10-0.04		●	●	●						●			
	100408R-ML	2.0-6.0	0.10-0.04		●	●	●									
	150508R-ML	3.0-9.0	0.12-0.05		●	●	●						●			
	190608R-ML	4.5-12.0	0.14-0.06		●	●	●						●			
	3PHT 100408R-ML	2.0-6.0	0.10-0.04		●	●										
	150508R-ML	3.0-9.0	0.12-0.05		●	●										
	3PHT 060304R-AL	1.0-4.0	0.22-0.07												●	
	100404R-AL	2.0-6.0	0.40-0.10												●	
	100408R-AL	2.0-6.0	0.40-0.10												●	
	150504R-AL	3.0-9.0	0.50-0.10												●	
	150508R-AL	3.0-9.0	0.50-0.10												●	
	190604R-AL	4.5-12.0	0.50-0.15												●	
190608R-AL	4.5-12.0	0.50-0.15												●		

● : Standard items



Splitter Inserts



Size	Dimension (mm)				
	IC	S	APMX	BS	RE
15	10.7	5.0	11.0	1.6	0.8
19	13.5	6.0	15.0	2.0	0.8

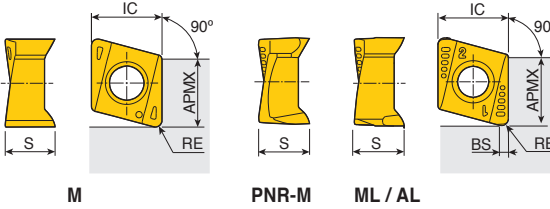


Insert	Designation	Recommended machining conditions		Material									
		ap (mm)	Feed (mm/tooth)	Cermet	Coated						Uncoated		
				CT7000	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10
	3PKT 150508-SM2	3.0-9.0	0.17-0.07	●	●		●						
	190608-SM2	4.5-12.0	0.22-0.09		●	●		●			●		
	3PKT 150508-SM3	3.0-9.0	0.17-0.07		●	●		●			●		
	190608-SM3	4.5-12.0	0.22-0.09		●	●		●			●		



●: Standard items

Inserts



Size	Dimension (mm)				
	IC	S	APMX	BS	RE
04	4.0	3.1	3.5	-	0.2-0.8
06	6.6	4.2-5.0	5.8-6.2	0.6-1.0	0.4-2.0
09	8.6	5.7-6.3	8.0	0.8-1.2	0.4-1.6
11	10.7	8.1	9.9-10.5	1.0	0.8
14	14.0	9.2-9.4	13.5-13.8	1.25	0.8

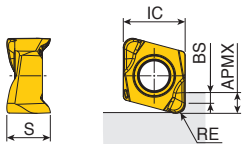


Insert	Designation	Recommended machining conditions		Coated							Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	4NKT 040202R-M	0.5-3.0	0.08-0.04	●	●								
	040204R-M	1.0-3.0	0.12-0.06	●	●				●				
	040208R-M	1.0-3.0	0.12-0.06	●	●								
	060304R-M	0.5-5.0	0.15-0.07	●	●				●				
	060308R-M	1.0-5.0	0.15-0.07	●	●				●	●			
	060312R-M	1.0-5.0	0.15-0.07	●	●								
	060316R-M	2.0-4.5	0.15-0.07	●	●				●	●	●		
	060320R-M	2.0-4.5	0.15-0.07	●	●					●			
	090408R-M	2.5-7.0	0.15-0.07	●	●				●	●	●		
	090416R-M	2.5-7.0	0.15-0.07	●	●					●			
	110608R-M	3.5-10.0	0.18-0.09	●	●					●			
	110616R-M	2.5-9.5	0.18-0.09	●									
110624R-M	2.5-9.5	0.18-0.09	●										
140708R-M	4.0-12.0	0.18-0.09	●	●		●	●		●				
	4NKT 110608 PNR-M	3.5-10.0	0.18-0.09	●	●		●						
	140708 PNR-M	4.0-12.0	0.18-0.09	●	●		●						
	4NKT 060304R-ML	0.5-5.0	0.10-0.05	●	●				●				
	060308R-ML	1.0-5.0	0.10-0.05	●	●				●	●			
	060312R-ML	1.0-5.0	0.10-0.05	●	●					●			
	060316R-ML	2.0-4.5	0.10-0.05	●	●				●	●			
	060320R-ML	2.0-4.5	0.12-0.05	●	●					●			
	4NHT 060304R-ML	0.5-5.0	0.13-0.05	●									
	060308R-ML	1.0-5.0	0.13-0.05	●	●								
	090404R-ML	2.5-7.0	0.10-0.04	●									
	090408R-ML	2.5-7.0	0.10-0.04	●	●								
	4NHT 060304R-AL	1.0-5.0	0.40-0.10									●	
	060308R-AL	1.0-5.0	0.40-0.10									●	
	090404R-AL	2.5-7.0	0.50-0.10									●	
	090408R-AL	2.5-7.0	0.50-0.10									●	
	110608R-AL	3.5-10.0	0.50-0.10									●	
	140708R-AL	4.0-12.0	0.50-0.10									●	



● : Standard items

Inserts



Size	Dimension (mm)					
	IC	S	APMX	BS	RE	
05R	6.6	4.9	2.3	1.8	0.5	
10R	6.6	4.7	2.1	1.1	1.0	
15R	6.6	4.5	3.3	1.8	1.5	
20R	6.6	4.3	3.0	1.1	2.0	



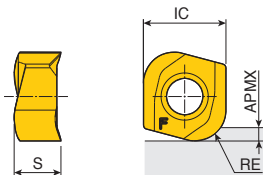
Insert	Designation	Recommended machining conditions		Coated							Uncoated			
		ap (mm)	Feed (mm/tooth)	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510		K10	
	4NHT 060305R-F	0.2-2.0	1.15-0.07	●							●			
	060310R-F	0.2-1.8	1.15-0.07	●							●			
	060315R-F	0.2-3.0	1.15-0.07	●							●			
	060320R-F	0.2-2.7	1.15-0.07	●							●			



● : Standard items

4NKT-HF

High feed inserts



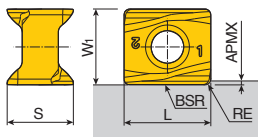
Size	Dimension (mm)					
	IC	S	APMX	RE		
04-HF	4.0	2.65	0.5	1.2		
06-HF	6.6	3.85	1.0	2.0		
09-HF	8.6	4.76	1.5	3.2		
11-HF	10.7	6.56	2.0	4.0		
14-HF	14.0	7.34	3.0	5.0		

Insert	Designation	Recommended machining conditions		Coated							Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT8080	TT8525B	TT7515	TT7080	TT6080	TT2510		K10	
	4NKT 040212R-HF	0.2-0.4	0.60-0.10	●							●		
	060320R-HF	0.2-0.6	0.80-0.20	●	●	●					●		
	090432R-HF	0.3-0.8	1.00-0.20	●									
	110640R-HF	0.3-1.2	1.20-0.30	●									
	140750R-HF	0.3-1.5	1.50-0.30	●		●							

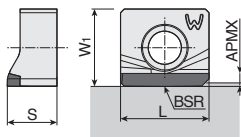


● : Standard items

Inserts



ML/AL



PCD / CBN

Size	Dimension (mm)					
	L	W1	S	APMX	RE	BSR
12-ML/AL	12	10.5	9.08	0.5	0.8	1000
12-PCD	12	10.5	6.74	0.5	-	1000
12-CBN	12	10.63	6.71	0.5	-	1000

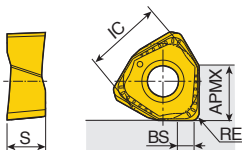


Insert	Designation	Recommended machining conditions		Cermet		Coated			Uncoated	PCD	CBN
		ap (mm)	Feed (mm/tooth)	CT7000	TT9080	TT9030	TT6080	TT2510	K10	TD810	TB7015
	4WHU 1207-ML	0.25-0.5	0.25-0.10		●		●	●			
	4WHU 1207-ML	0.25-0.5	0.25-0.10	●							
	4WHU 1207-AL	0.25-0.5	0.25-0.10						●		
	4WHU 1207-PCD	0.25-0.5	0.25-0.10							●	
	4WHU 1207-CBN	0.25-0.5	0.25-0.10								●



●: Standard items

Inserts



Size	Dimension (mm)					
	IC	S	APMX	BS	RE	
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	

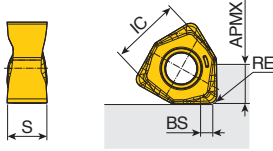


Insert	Designation	Recommended machining conditions		Coated							Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	6NGU 060404R-M	1.5-5.0	0.15-0.08	●	●			●		●	●		
	060405R-M	1.5-5.0	0.15-0.08	●							●		
	060408R-M	1.5-5.0	0.15-0.08	●	●	●	●	●		●	●		
	060410R-M	1.5-5.0	0.15-0.08	●						●	●		
	060416R-M	1.5-5.0	0.15-0.08	●	●			●		●	●		
	090504R-M	2.5-7.5	0.20-0.10	●	●			●		●	●		
	090508R-M	2.5-7.5	0.20-0.10	●	●	●	●	●	●	●	●		
	090516R-M	2.5-7.5	0.20-0.10	●	●		●	●	●	●	●		
	6NGU 060404R-ML	1.5-5.0	0.10-0.05	●	●					●			
	060405R-ML	1.5-5.0	0.10-0.05	●									
	060408R-ML	1.5-5.0	0.10-0.05	●	●	●		●		●			
	060416R-ML	1.5-5.0	0.10-0.05	●	●					●			
	090504R-ML	2.5-7.5	0.10-0.05	●	●					●			
	090508R-ML	2.5-7.5	0.10-0.05	●	●	●		●		●			
	090516R-ML	2.5-7.5	0.10-0.05	●	●					●			
		6NGU 060404R-AL	1.5-5.0	0.40-0.10									
060408R-AL		1.5-5.0	0.40-0.10										●
090504R-AL		2.5-7.5	0.40-0.10										●
090508R-AL		2.5-7.5	0.40-0.10										●

●: Standard items



Inserts



Size	Dimension (mm)					
	IC	S	APMX	BS	RE	
04	7	3.9	4.1	0.85-1.25	0.4-0.8	



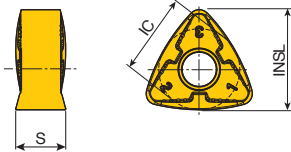
Insert	Designation	Recommended machining conditions		Coated							Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	6NKU 040304R-M	1.0-3.0	0.10-0.05	●	●					●	●		
	040308R-M	1.0-3.0	0.10-0.05	●	●					●	●		



● : Standard items

6RBE

Inserts



Size	Dimension (mm)					
	IC	S	INSL			
6RBE 50	13	8	16			

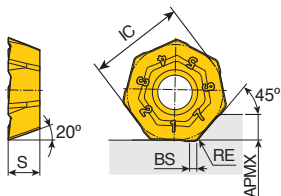


Insert	Designation	Recommended machining conditions		Coated							Uncoated			
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	6RBE 50-M	1.0-5.0	0.80-0.10	●		●	●	●			●	●		



● : Standard items

Inserts



Size	Dimension (mm)					
	IC	S	APMX	BS	RE	
06	12.8	4.2	3.2	1.0	0.8	



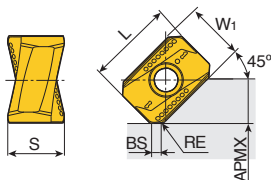
Insert	Designation	Recommended machining conditions		Coated							Uncoated	
		ap (mm)	Feed (mm/tooth)	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10
	7EMT 0604 AETR-M	1.0-2.5	0.15-0.06	●	●			●		●		
	7EMT 0604 AETR-ML	1.0-2.5	0.15-0.06	●	●					●		



●: Standard items

ANHX 1607 ANR-M

Inserts



Size	Dimension (mm)					
	L	W1	S	APMX	BS	RE
16	16	11	10.4	8.4	1.6	1.0



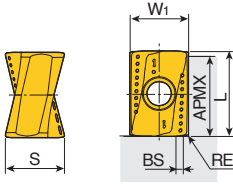
Insert	Designation	Recommended machining conditions		Coated							Uncoated	
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10
	ANHX 1607 ANR-M	2.5-7.0	0.30-0.15	●		●		●	●	●		



● Use only for 45° cutter

●: Standard items

Inserts



Size	Dimension (mm)					
	L	W1	S	APMX	BS	RE
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



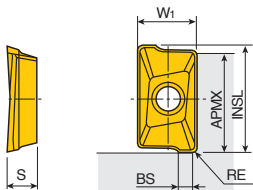
Insert	Designation	Recommended machining conditions		Coated								Uncoated	
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10
	ANMX 110608R-M	3.0-9.0	0.20-0.10	●		●							
	160708R-M	4.5-12.0	0.20-0.10	●		●							
	ANHX 110604R-M	3.0-9.0	0.15-0.08	●		●				●	●		
	110608R-M	3.0-9.0	0.15-0.08	●		●	●	●	●	●	●		
	110616R-M	3.0-9.0	0.15-0.08	●		●							
	160704R-M	4.5-12.0	0.20-0.10	●	●				●	●	●	●	
	160708R-M	4.5-12.0	0.20-0.10	●	●	●	●	●	●	●	●	●	
	160716R-M	4.5-12.0	0.20-0.10	●		●			●	●	●		
	160724R-M	4.5-12.0	0.20-0.10	●		●		●	●	●	●		
	ANHX 160708R-ML	4.5-12.0	0.12-0.06			●	●	●					
	ANHX 160708R-MR	4.5-12.0	0.25-0.13			●		●					
	ANHX 110604R-AL	3.0-9.0	0.40-0.10										●
	110608R-AL	3.0-9.0	0.40-0.10										●
	160704R-AL	4.5-12.0	0.40-0.10										●
	160708R-AL	4.5-12.0	0.40-0.10										●
	ANHX 110608R-SM	3.0-9.0	0.15-0.08	●		●		●		●			
	160708R-SM	4.5-12.0	0.20-0.10	●		●		●	●	●			
	ANHX 110608R-SML	3.0-9.5	0.15-0.06	●		●							
	160708R-SML	4.5-13.5	0.20-0.06	●		●				●			

● : Standard items



APK(C)T 09

Inserts



Size	Dimension (mm)					
	INSL	W1	S	APMX	BS	RE
09	9.7-10.6	6.20	3.8	8.8	0.5-1.79	0.4-3.2
09T3 PER	9.8-9.9	6.20	3.8	8.8	0-1.14	0.4



Insert	Designation	Recommended machining conditions		Cermets										Uncoated
		ap (mm)	Feed (mm/tooth)	CT7000	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10
	APKT 09T3 PER-EM	2.5-7.5	0.10-0.05	●	●	●	●	●	●	●	●	●	●	●
	09T305R-EM	2.5-7.5	0.10-0.05					●						
	09T308R-EM	2.5-7.5	0.10-0.05		●	●	●	●		●		●	●	
	09T316R-EM	2.5-7.5	0.10-0.05		●	●	●	●		●		●	●	
	09T320R-EM	2.5-7.5	0.10-0.05		●		●						●	
	09T332R-EM	2.5-7.5	0.10-0.05		●		●						●	
	09T3 PER-M	2.5-7.5	0.10-0.05					●		●		●	●	
	APCT 09T3 PER-ML	3.0-7.5	0.10-0.05		●		●	●		●		●		
	APCT 09T3 PER-AL	2.5-7.5	0.35-0.05										●	

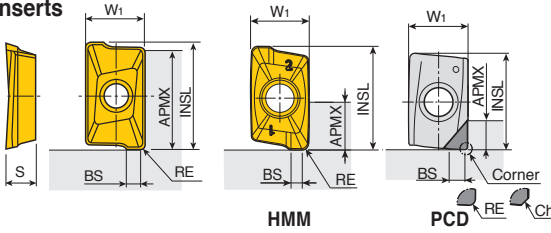


● : Standard items

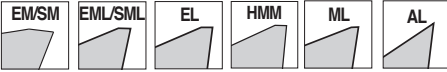
APK(C)T 12



Inserts



Size	Dimension (mm)					
	INSL	W1	S	APMX	BS	RE(ch)
12	13.0-14.6	8.3	4.5-4.9	11.8-12.5	0.9-2.1	0.4-4.0
1204 PER	13.4-14.6	8.3	4.5-4.9	11.8-12.5	0.9-2.1	0.8
1204-HMM	14.6	8.3	4.7	6.5	1.6	0.8
12...R-PCD	13.3	8.2	4.5	3.5	2	0.4
12...C-PCD	13.3	8.2	4.5	3.5	2.1	(0.25)



Insert	Designation	Recommended machining conditions		PCD	Coated								Uncoated	
		ap (mm)	Feed (mm/tooth)		TD830	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510
	APKT 1204 PER-EM	3.5-10.0	0.14-0.07		●	●	●	●	●	●	●	●	●	
	120404R-EM	3.5-10.0	0.14-0.07			●		●			●	●		
	120416R-EM	3.5-10.0	0.14-0.07		●	●	●	●	●			●	●	
	120424R-EM	3.5-10.0	0.14-0.07			●	●	●					●	
	120430R-EM	3.5-10.0	0.14-0.07		●	●	●	●	●			●	●	
	120432R-EM	3.5-10.0	0.14-0.07			●		●				●	●	
	120440R-EM	3.5-10.0	0.14-0.07		●	●							●	
	APKT 1204 PER-SM	3.5-10.0	0.14-0.07		●	●		●			●			
	APKT 1204 PER-SML	3.5-10.5	0.14-0.06		●	●								
	APKT 1204 PER-EML	3.5-10.0	0.08-0.04		●	●								
	APKT 1204 PER-EL	3.5-10.0	0.05-0.03		●	●	●	●						
	APKT 1204 PER-HMM	3.5-6.5	0.12-0.05		●									
	APCT 120430R-ML	3.5-10.0	0.08-0.04		●	●								
	120432R-ML	3.5-10.0	0.08-0.04		●	●								
	120440R-ML	3.5-9.5	0.08-0.04		●	●								
	APCT 1204 PER-AL	3.5-10.0	0.50-0.10										●	
	120404R-AL	3.5-10.0	0.50-0.10										●	
	120416R-AL	3.5-10.0	0.50-0.10										●	
	APCT 120404R-PCD35	0.2-3.0	0.30-0.05	●										
	1204C025-PCD35	0.2-3.0	0.30-0.05	●										

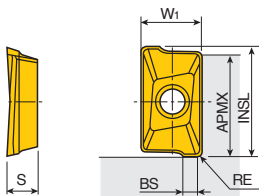


● : Standard items

APCT 17



Inserts



Size	Dimension (mm)					
	INSL	Wt	S	APMX	BS	RE
17-ML	18.5	10.8	5.55	16.1	2.07	0.8
17-AL	18.3-18.5	10.8	5.62	16.1	1.55-2.56	0.8-3.0
17-SAL	18.5	10.8	5.62	16.1	2.56	0.8

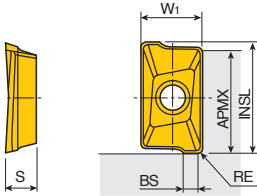


Insert	Designation	Recommended machining conditions		Coated								Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	APCT 1705 PER-ML	4.5-13.0	0.12-0.06	●		●								
	APCT 170530R-AL	4.5-13.0	0.50-0.10										●	
	APCT 1705 PER-SAL	4.5-13.0	0.50-0.10										●	

●: Standard items



Inserts



Size	Dimension (mm)					
	INSL	W1	S	APMX	BS	RE
17	16.8-18.5	10.7	5.56	15-16	0.9-3.17	0.4-6.4
17 PER	18.5-18.9	10.7	5.56-6.5	16	0.9-3.17	0.8



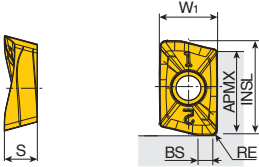
Insert	Designation	Recommended machining conditions		Coated								Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	APKT 1705 PER-EM	4.5-13.0	0.18-0.09	●	●	●	●	●	●	●	●	●	●	
	170504R-EM	4.5-13.0	0.18-0.09	●		●	●		●	●	●			
	170510R-EM	4.5-13.0	0.17-0.09	●	●	●		●	●	●	●			
	170516R-EM	4.5-13.0	0.17-0.09	●	●	●	●	●		●	●			
	170524R-EM	4.5-13.0	0.17-0.09	●	●	●	●	●		●	●			
	170530R-EM	4.5-13.0	0.17-0.09	●	●	●	●	●			●			
	170532R-EM	4.5-13.0	0.17-0.09	●	●	●	●	●		●	●			
	170535R-EM	4.5-13.0	0.17-0.09	●	●					●	●			
	170540R-EM	4.5-13.0	0.20-0.10	●	●		●				●			
	170548R-EM	4.5-13.0	0.17-0.09	●	●	●	●	●	●	●	●			
	170550R-EM	4.5-13.0	0.20-0.10		●		●				●			
170564R-EM	4.5-13.0	0.18-0.09	●	●	●	●	●		●	●				
	APKT 1705 PER-M	4.5-13.0	0.18-0.09				●		●	●	●	●	●	
	170516R-M	4.5-13.0	0.30-0.15				●							
	170532R-M	4.5-13.0	0.20-0.10				●		●	●	●			
	170548R-M	4.5-13.0	0.20-0.10				●							
	APKT 1705 PER-SM	4.5-13.0	0.17-0.09	●		●		●		●				
	APKT 1705 PER-SML	4.5-14.5	0.17-0.06	●		●								
	APKT 1705 PER-EML	4.5-13.0	0.14-0.07	●		●		●						
	APKT 1705 PER-EL	4.5-13.0	0.10-0.05	●	●	●	●	●						

● : Standard items



APKT 19

Inserts



Size	Dimension (mm)					
	INSL	W ₁	S	APMX	BS	RE
19	21	13	7.35	17.9	2.0	1.2

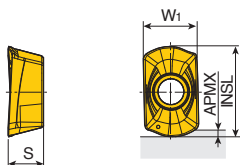


Insert	Designation	Recommended machining conditions		Coated								Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	APKT 190712R-M	5.0-15.0	0.20-0.07	●		●		●	●		●	●		
	APKT 190712R-MR	5.0-15.0	0.25-0.10	●		●		●	●			●		
	APKT 190712R-ML	5.0-15.0	0.20-0.08	●								●		

●: Standard items



High feed inserts



Size	Dimension (mm)				
	INSL	W1	S	APMX	
06	6.7	4.04	2.6	0.5	
09	10.7	5.94	3.9	1.0	
12	14.2	8.0	5.0	1.2	

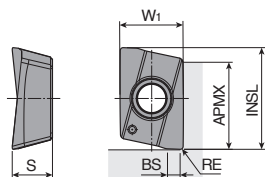
Insert	Designation	Recommended machining conditions		Coated						Uncoated				
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	AXMT 0602R-HF	0.2-0.5	0.70-0.30	●		●								
	APKT 09T3R-HF	0.1-1.0	0.80-0.30	●		●						●		
	1204R-HF	0.2-1.0	0.80-0.10	●		●						●		



● : Standard items

AXCT 06-L

Inserts



Size	Dimension (mm)					
	INSL	W1	S	APMX	BS	RE
06	6.5	4.2	2.6	5.5	0.6-1.0	0-0.4



Insert	Designation	Recommended machining conditions		Coated						Uncoated				
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT5525	K10	
	AXCT 060200R-L	0.1-5.0	0.08-0.03											
	060202R-L	0.2-5.0	0.10-0.03									●		
	060204R-L	0.3-5.0	0.10-0.03									●		

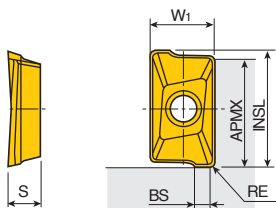


● : Standard items

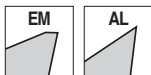
AXMT 06/AXCT 06



Inserts



Size	Dimension (mm)					
	INSL	W1	S	APMX	BS	RE
06-EM	6.7	4.15	2.6	5.5	0-0.76	0.2-2.0
06-AL	6.7	4.20	2.6	5.5	0.23-0.83	0.2-0.8



Insert	Designation	Recommended machining conditions		Coated							Uncoated			
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT5525	TT2510	K10
	AXMT 0602 PER-EM	1.5-5.0	0.08-0.04	●	●	●	●						●	
	060204R-EM	1.5-5.0	0.13-0.07	●	●	●	●				●		●	
	060208R-EM	1.5-5.0	0.13-0.07	●	●	●	●				●		●	
	060216R-EM	1.5-5.0	0.13-0.07	●	●	●	●						●	
	060220R-EM	1.5-5.0	0.13-0.07	●		●								
	AXCT 060202R-AL	1.5-5.0	0.20-0.10											●
	060204R-AL	1.5-5.0	0.20-0.10											●
	060208R-AL	1.5-5.0	0.20-0.10											●

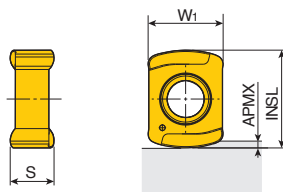


● : Standard items

BLMP



High feed inserts



Size	Dimension (mm)					
	INSL	W1	S	APMX		
04	6.0	4.2	2.5	0.5		
06	9.0	6.39	3.73	1.0		
09	11.9	9.20	4.79	1.5		
11	14.6	11.2	6.54	2.0		



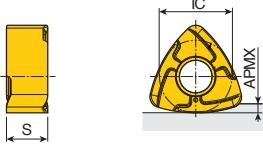
Insert	Designation	Recommended machining conditions		Coated								Uncoated	
		ap (mm)	Feed (mm/tooth)	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	BLMP 0402R-M	0.1-0.5	1.50-0.20	●	●					●			
	0603R-M	0.1-1.0	2.50-0.30	●	●	●	●			●	●		
	0904R-M	0.1-1.5	3.50-0.30	●	●	●	●	●	●	●	●		
	1105R-M	0.3-2.0	4.00-0.30	●	●	●	●				●		
	BLMP 0603R-MM	0.1-1.0	2.00-0.20	●	●	●					●		
	0904R-MM	0.1-1.5	3.00-0.20	●	●	●					●		
	BLMP 0402R-ML	0.1-0.5	0.80-0.10	●	●								
	0603R-ML	0.1-1.0	0.80-0.10	●	●	●							
	0904R-ML	0.1-1.5	0.80-0.30	●	●	●							
	1105R-ML	0.3-2.0	0.40-0.30	●	●								

● : Standard items



BLMP 13

High feed inserts



Size	Dimension (mm)				
	IC	S	APMX		
13	12.3	7	2.0		



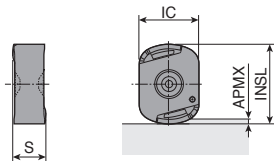
Insert	Designation	Recommended machining conditions		Coated							Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510		K10
	BLMP 1306R-M	0.5-2.0	4.50-0.40	●	●	●	●	●	●	●	●		
	BLMP 1306R-MM	0.5-2.0	4.50-0.40	●	●	●	●				●		
	BLMP 1306R-MR	0.5-2.0	4.50-0.40	●	●	●	●	●	●	●			

●: Standard items



BNGX 09

High feed inserts



Size	Dimension (mm)					
	INSL	IC	S	APMX		
09	12	9	5	1.5		

Insert	Designation	Recommended machining conditions		Coated								Uncoated			
		ap (mm)	Feed (mm/tooth)	TC3030	TC3020	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	BNGX 0904 CH-E04	0.5-1.0	0.35-0.15	●											

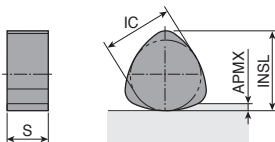


● E04: Honing 0.04-0.05mm

●: Standard items

BNGX 12

High feed inserts



Size	Dimension (mm)					
	INSL	IC	S	APMX		
12	13.6	12	7	2.5		

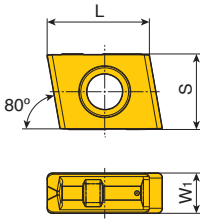
Insert	Designation	Recommended machining conditions		Coated								Uncoated			
		ap (mm)	Feed (mm/tooth)	TC3030	TC3020	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	BNGX 1207-E04	1.0-2.0	0.35-0.15	●											



● E04: Honing 0.04-0.05mm

●: Standard items

Inserts



Size	Dimension (mm)			
	L	S	W ₁	
131108T	12.7	11	5.4	
160608T	16.0	12	6.4	

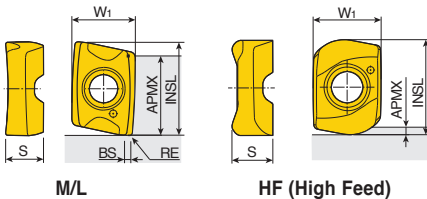
Insert	Designation	Recommended machining conditions		Coated							Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	CNHX 131108T	1.2-5.5	0.55-0.17					●					
	160608T	1.2-5.5	0.60-0.20					●					



●: Standard items

CVK(H)T

Inserts



Size	Dimension (mm)					
	INSL	W ₁	S	APMX	BS	RE
05-M	6.3	4.2	2.6	5.0	0.35	0.2
05-L	6.3	4.1	2.6	5.0	0.30	0.2
05-HF	5.6	4.1	2.5	0.5	-	-

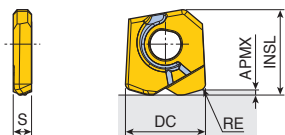


Insert	Designation	Recommended machining conditions		Coated								Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT5525	TT2510	K10
	CVKT 0502PNR-M	0.5-4.0	0.08-0.04	●		●								
	CVHT 0502PNR-L	0.5-4.0	0.07-0.03	●		●					●			
	CVKT 0502R-HF	0.2-0.4	0.70-0.30	●		●						●		




●: Standard items

High feed inserts



Size	Dimension (mm)					
	INSL	DC	S	APMX	RE	
06	5.9	6	1.6	0.3	0.5	
08	8.4	8	1.8	0.5	0.6	

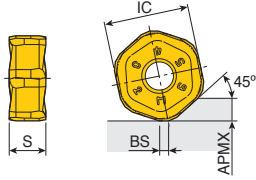
Insert	Designation	Recommended machining conditions		Coated								Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT5515	K10	
	HFN 060-M	0.1-0.2	0.50-0.30											
	080-M	0.2-0.3	0.50-0.30											

●: Standard items

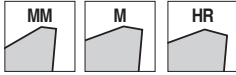


HXK(H)U

Inserts



Size	Dimension (mm)					
	IC	S	APMX	BS		
06-MM	14	6.8	3.0	1.3		
06-M	14	6.8	3.0	1.0		
10-MM	19.05	8.3	5.0	1.6		
10-M/HR	19.05	8.3	5.0	1.0		

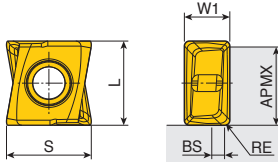


Insert	Designation	Recommended machining conditions		Coated						Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10
	HXHU 0605 ANR-MM	1.0-3.0	0.25-0.10	•							•	
	1007 ANR-MM	2.0-5.0	0.30-0.10								•	
	HXKU 0605 ANR-M	1.0-3.0	0.35-0.10	•				•			•	
	1007 ANR-M	2.0-5.0	0.45-0.10	•				•				
	HXKU 1007 ANR-HR	2.0-5.0	0.60-0.10					•				
		2.0-5.0	0.70-0.10							•		

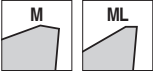
• Standard items



Inserts



Size	Dimension (mm)					
	L	W1	S	APMX	BS	RE
05	5	2.7	5.0	4.6	-	0.4
09	9	4.5	8.6	8.3	0.6	0.4-0.8
14	13.5	6.7	13.5	12.5	0.9	0.8

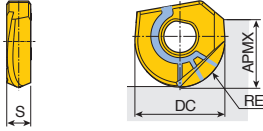


Insert	Designation	Recommended machining conditions		Coated							Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	LPKU 050204 PNR-M	1.0-3.5	0.08-0.04	●		●							
	090404 PNR-M	2.5-6.0	0.15-0.06	●		●	●			●			
	090408 PNR-M	2.5-6.0	0.15-0.06	●		●				●			
	140708 PNR-M	3.5-10.0	0.20-0.10	●		●	●			●			
	LPHU 050204 PNR-ML	1.0-3.5	0.08-0.04				●			●			
	LPHU 090404 PNR-M	2.5-6.0	0.15-0.06			●					●		

●: Standard items



Inserts



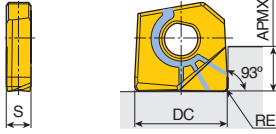
Size	Dimension (mm)					
	DC	S	APMX	RE		
060	6	2.0	4.5-4.8	3.0		
080	8	2.2	6.6-6.9	4.0		
100	10	2.7	8.0-8.2	5.0		
120	12	3.2	9.6-9.7	6.0		
160	16	4.2	12.3-12.7	8.0		
200	20	5.2	14.4-14.7	10.0		
250	25	6.2	16.8-17.4	12.5		
300	30	7.2	18.6-19.2	15.0		
320	32	7.2	18.4-19.2	16.0		

Insert	Designation	Recommended machining conditions		Coated								Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT8080	TT8525B	TT7080	TT7515	TT6080	TT5525	TT5515	TT2510	K10	
 Straight cutting edge	NFB 060-FM	0.05-0.2	0.15-0.05											
	080-FM	0.05-0.3	0.20-0.05						●	●				
	100-FM	0.05-0.3	0.20-0.05						●	●				
	120-FM	0.05-0.5	0.30-0.08						●	●				
	160-FM	0.05-0.5	0.30-0.08						●	●				
	200-FM	0.10-1.0	0.30-0.08						●	●				
	250-FM	0.15-1.0	0.40-0.08						●	●				
	300-FM	0.15-1.0	0.40-0.08						●	●				
 Helical cutting edge	NFB 060-SM	0.80-2.5	0.20-0.05								●	●		
	080-SM	1.20-3.2	0.25-0.05						●	●	●			
	100-SM	1.50-4.0	0.25-0.05						●	●	●			
	120-SM	1.80-4.8	0.35-0.08						●	●	●			
	160-SM	2.40-6.4	0.35-0.08						●	●	●			
	200-SM	3.00-8.0	0.35-0.08						●	●	●			
	250-SM	3.75-10.0	0.45-0.08						●	●	●			
	300-SM	4.50-12.0	0.45-0.08						●	●	●			
	320-SM	4.80-12.8	0.45-0.08						●	●	●			

● : Standard items



Inserts



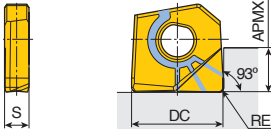
Size	Dimension (mm)				
	DC	S	APMX	RE	
060	6	2.0	2.5	0.3-1.0	
080	8	2.2	3.4	0.3-1.0	
100	10	2.7	4.0	0.3-2.0	
110	11	2.7	4.4	0.3-2.0	
120	12	3.2	5.0	0.3-2.0	
130	13	3.2	5.4	0.3-2.0	
160	16	4.2	6.9	0.3-3.0	
170	17	4.2	7.4	1.0-2.0	

Insert	Designation	Recommended machining conditions		Coated							Uncoated			
		ap (mm)	Feed (mm/tooth)	TT9080	TT8080	TT8525B	TT7080	TT7515	TT6080	TT5525	TT5515	TT2510	K10	
	NFR 060A-R03	0.05-0.15	0.10-0.05								●			
	060A-R05	0.10-0.15	0.10-0.05								●			
	060A-R10	0.10-0.15	0.10-0.05								●			
	080A-R03	0.05-0.2	0.12-0.05							●	●	●		
	080A-R05	0.05-0.2	0.12-0.05							●	●	●		
	080A-R06	0.05-0.2	0.12-0.05							●	●	●		
	080A-R10	0.05-0.2	0.12-0.05							●	●	●		
	100A-R03	0.05-0.3	0.12-0.05							●	●	●		
	100A-R05	0.05-0.3	0.12-0.05							●	●	●		
	100A-R08	0.05-0.3	0.12-0.05							●	●	●		
	100A-R10	0.05-0.3	0.12-0.05							●	●	●		
	100A-R15	0.05-0.3	0.12-0.05							●	●	●		
	100A-R20	0.05-0.3	0.12-0.05								●	●		
	110A-R10	0.05-0.3	0.12-0.05							●	●	●		
	110A-R20	0.05-0.3	0.12-0.05							●	●	●		
	120A-R03	0.07-0.3	0.15-0.08							●	●	●		
	120A-R05	0.07-0.3	0.15-0.08							●	●	●		
	120A-R10	0.07-0.3	0.15-0.08							●	●	●		
	120A-R15	0.07-0.3	0.15-0.08							●	●	●		
	120A-R20	0.07-0.3	0.15-0.08							●	●	●		
	130A-R10	0.07-0.3	0.15-0.08							●	●	●		
	130A-R20	0.07-0.3	0.15-0.08							●	●	●		
	160A-R03	0.08-0.5	0.15-0.08							●	●	●		
	160A-R05	0.08-0.5	0.15-0.08							●	●	●		
	160A-R10	0.08-0.5	0.15-0.08							●	●	●		
	160A-R13	0.08-0.5	0.15-0.08								●	●		
	160A-R15	0.08-0.5	0.15-0.08							●	●	●		
	160A-R20	0.08-0.5	0.15-0.08							●	●	●		
160A-R30	0.08-0.5	0.15-0.08							●	●	●			
170A-R10	0.08-0.5	0.15-0.08								●	●			
170A-R20	0.08-0.5	0.15-0.08								●				

● : Standard items



Inserts



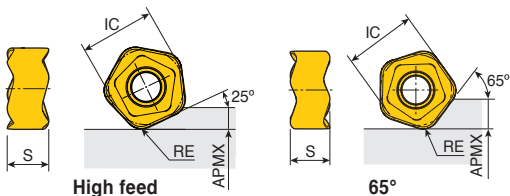
Size	Dimension (mm)				
	DC	S	APMX	RE	
200	20	5.2	8.7-9.2	0.3-3.0	
210	21	5.2	9.2	1.0-2.0	
250	25	6.2	10.6	0.3-3.0	
260	26	6.2	11	1.0-2.0	
300	30	7.1	12.7	1.0-2.0	
320	32	7.1	13.6	1.0-2.0	

Insert	Designation	Recommended machining conditions		Coated							Uncoated			
		ap (mm)	Feed (mm/tooth)	TT9080	TT8080	TT8525B	TT7080	TT7515	TT6080	TT5525	TT5515	TT2510	K10	
	NFR 200A-R03	0.1-0.7	0.15-0.08							●	●	●		
	200A-R05	0.1-0.7	0.15-0.08							●	●	●		
	200A-R10	0.1-0.7	0.15-0.08							●	●	●		
	200A-R15	0.1-0.7	0.15-0.08							●	●	●		
	200A-R16	0.1-0.7	0.15-0.08							●	●	●		
	200A-R20	0.1-0.7	0.15-0.08							●	●	●		
	200A-R30	0.1-0.7	0.15-0.08							●	●	●		
	210A-R10	0.1-0.7	0.15-0.08							●	●	●		
	210A-R20	0.1-0.7	0.15-0.08							●	●	●		
	250A-R03	0.1-1.0	0.15-0.08							●	●	●		
	250A-R05	0.1-1.0	0.15-0.08							●	●	●		
	250A-R10	0.1-1.0	0.15-0.08							●	●	●		
	250A-R15	0.1-1.0	0.15-0.08							●	●	●		
	250A-R20	0.1-1.0	0.15-0.08							●	●	●		
	250A-R30	0.1-1.0	0.15-0.08							●	●	●		
	260A-R10	0.1-1.0	0.15-0.08							●	●	●		
	260A-R20	0.1-1.0	0.15-0.08							●	●	●		
	300A-R05	0.1-1.0	0.20-0.08							●	●	●		
	300A-R10	0.1-1.0	0.20-0.08								●	●		
	300A-R20	0.1-1.0	0.20-0.08								●	●		
320A-R10	0.1-1.0	0.20-0.08							●	●	●			
320A-R20	0.1-1.0	0.20-0.08								●	●			

● : Standard items



Inserts



Size	Dimension (mm)				
	IC	S	APMX	RE	
05(HF)	7.1	3.8	1.5	1.5	
05(65°)	7.1	3.8	3.3	1.5	
10(HF)	14.2	7.7	3.0	3.0	
10(65°)	14.2	7.7	6.5	3.0	



Insert	Designation	Recommended machining conditions		Coated								Uncoated	
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080		
													K10
	PTKU 0503R-M (High feed)	0.2-1.5	1.20-0.20	●		●							
	1006R-M (High feed)	0.3-2.0	2.00-0.30	●		●	●						
	PTKU 0503R-M (65°)	1.0-3.0	0.20-0.07	●		●							
	1006R-M (65°)	1.5-5.0	0.25-0.10	●		●	●						

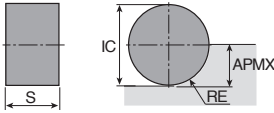
● : Standard items



RNGN 12-FL



Inserts



Size	Dimension (mm)				
	RE	IC	S	APMX	
12	6.35	12.7	7.94	6.3	

Insert	Designation	Recommended machining conditions		Ceramic		Coated						Uncoated		
		ap (mm)	Feed (mm/tooth)	TC3020	TC3030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	RNGN 1207 FL-E	0.5-3.0	0.25-0.10	●	●									
	1207 FL-E04	0.5-3.0	0.25-0.10	●	●									
	1207 FL-T6	0.5-3.0	0.25-0.10	●	●									

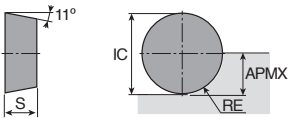


● : Standard items

RPGN 09/12-FL



Inserts



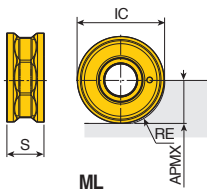
Size	Dimension (mm)				
	RE	IC	S	APMX	
09	4.76	9.52	3.18	4.7	
12	6.35	12.7	4.76	6.3	

Insert	Designation	Recommended machining conditions		Ceramic		Coated						Uncoated		
		ap (mm)	Feed (mm/tooth)	TC3020	TC3030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	RPGN 0903 FL-E04	0.5-1.5	0.15-0.07	●	●									
	1204 FL-E	0.5-2.0	0.20-0.07	●	●									
	1204 FL-E04	0.5-2.0	0.20-0.07	●	●									
	1204 FL-T6	0.5-2.0	0.20-0.07	●	●									

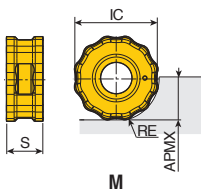


● : Standard items

Inserts

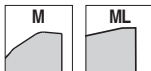


ML



M

Size	Dimension (mm)					
	RE	IC	S	APMX		
10	5	10	4.5	5.0		
12	6	12	5.0	6.0		
16	8	16	6.3	8.0		

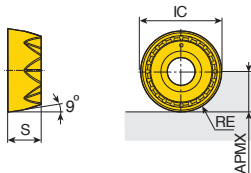


Insert	Designation	Recommended machining conditions		Coated								Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	RNMU1004-ML	1.5-4.0	0.30-0.05	●		●	●	●						
	1205-ML	1.5-5.0	0.35-0.05	●		●	●	●						
	1606-ML	2.0-6.5	0.40-0.05	●		●	●	●						
	RNMU1004S-M	1.5-4.0	0.35-0.05	●		●	●	●						
	1205S-M	1.5-5.0	0.40-0.05	●		●	●	●						
	1606S-M	2.0-6.5	0.45-0.05	●		●	●	●						

● : Standard items



Inserts



Size	Dimension (mm)				
	RE	IC	S	APMX	
08	4	8	3.2	4.0	
10	5	10	4.0	5.0	
12	6	12	4.8	6.0	
16	8	16	6.1	8.0	
20	10	20	7.0	10.0	

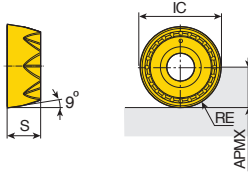


Insert	Designation	Recommended machining conditions		Coated								Uncoated			
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10		
	RYMX 0803-M	1.0-3.5	0.25-0.05	●		●		●	●		●	●			
	1004-M	1.5-4.0	0.30-0.10	●		●	●	●	●		●	●			
	1205-M	1.5-5.0	0.50-0.10	●		●	●	●	●		●	●			
	1205-6M	1.5-5.0	0.50-0.10	●								●			
	1606-M	2.0-6.5	0.50-0.10	●		●	●	●	●		●	●			
	1606-7M	2.0-6.5	0.50-0.10	●				●				●			
	2007-M	3.0-8.0	0.50-0.10	●		●	●	●	●		●	●			
	RYMX 0803-MM	1.0-3.5	0.30-0.07	●		●	●								
	1004-MM	1.5-4.0	0.35-0.07	●		●	●								
	1205-MM	1.5-5.0	0.40-0.10	●		●	●	●							
	1205-6MM	1.5-5.0	0.40-0.10	●							●				
	1606-MM	2.0-6.5	0.45-0.10	●		●	●					●			
	1606-7MM	2.0-6.5	0.45-0.10	●		●	●					●			
	RYHX 1205-MM	3.0-8.0	0.40-0.10	●			●								
	RYMX 0803-ML	1.0-3.5	0.25-0.05	●		●	●	●							
	1004-ML	1.5-4.0	0.30-0.05	●		●	●	●							
	1205-ML	1.5-5.0	0.35-0.05	●		●	●	●							
	1205-6ML	1.5-5.0	0.35-0.05	●		●									
	1606-ML	2.0-6.5	0.40-0.05	●		●	●	●							
	1606-7ML	2.0-6.5	0.40-0.05	●											
	2007-ML	3.0-8.0	0.50-0.10	●		●	●	●	●						
	RYHX 0803-ML	1.0-3.5	0.25-0.05	●		●	●								
	1004-ML	1.5-4.0	0.30-0.05	●		●	●								
	1205-ML	1.5-5.0	0.35-0.05	●		●	●								
	1606-ML	2.0-6.5	0.40-0.10	●		●									
		RYMX 0803-MLL	1.0-3.5	0.25-0.05			●	●							
		1004-MLL	1.5-4.0	0.30-0.05	●		●	●							
1205-MLL		1.5-5.0	0.35-0.05	●		●	●								
RYHX 0803-MLL		1.0-3.5	0.25-0.05			●	●								
1004-MLL		1.5-4.0	0.30-0.05			●									
1205-MLL		1.5-5.0	0.35-0.05	●		●	●								

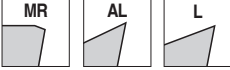


●: Standard items

Inserts



Size	Dimension (mm)				
	RE	IC	S	APMX	
08	4	8	3.2	4.0	
10	5	10	4.0	5.0	
12	6	12	4.8	6.0	
16	8	16	6.1	8.0	
20	10	20	7.0	10.0	

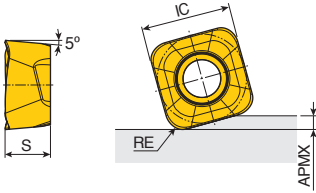


Insert	Designation	Recommended machining conditions		Coated							Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10
	RYMX 0803-MR	1.0-3.5	0.30-0.05	●				●	●	●	●		
	1004-MR	1.5-4.0	0.35-0.05	●		●			●		●		
	1205-MR	1.5-5.0	0.35-0.05	●		●			●		●		
	1606-MR	2.0-6.5	0.40-0.05	●				●	●		●	●	
	2007-MR	3.0-8.0	0.45-0.10	●				●			●	●	
	RYHX 0803-MR	1.5-4.0	0.30-0.05	●								●	
	1004-MR	1.5-5.0	0.35-0.05	●							●		
	1205-MR	2.0-6.5	0.35-0.05	●							●	●	
	RYHX 0803-AL	1.0-3.5	0.80-0.10									●	
	1004-AL	1.5-4.0	0.80-0.10									●	
	1205-AL	1.5-5.0	0.80-0.10									●	
	1606-AL	2.0-6.5	0.80-0.10									●	
	RYHX 0803-L	1.0-3.5	0.25-0.05			●							
	1004-L	1.5-4.0	0.30-0.05	●		●	●						
	1205-L	1.5-5.0	0.35-0.05	●		●	●						

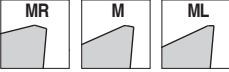
● : Standard items



Inserts



Size	Dimension (mm)					
	IC	S	APMX	RE		
06	6.3	3.16	1.0	1.0		
09	9.0	4.0	1.2	1.5		
13	13.1	6.7	2.0	2.5		

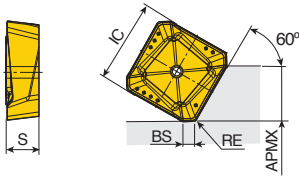


Insert	Designation	Recommended machining conditions		Coated								Uncoated	
		ap (mm)	Feed (mm/tooth)	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510		
	SBMT 060310R-M	0.1-1.0	1.50-0.20	•	•								
	090415R-M	0.1-1.2	2.00-0.20	•	•	•	•	•		•	•		
	130625R-M	0.5-2.0	2.00-0.42	•	•	•	•	•		•	•		
	SBMT 060310R-ML	0.1-1.0	1.20-0.10	•	•								
	090415R-ML	0.1-1.2	1.50-0.10	•	•								
	130625R-ML	0.5-2.0	2.00-0.42	•	•								
	SBMT 090415R-MR	0.1-1.2	2.50-0.30	•			•				•		
	130625R-MR	0.5-2.0	2.00-0.42	•							•		

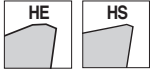


• : Standard items

Inserts



Size	Dimension (mm)					
	IC	S	APMX	BS	RE	
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	



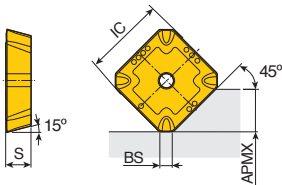
Insert	Designation	Recommended machining conditions		Coated						Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10
	SCKN 2107 DDTR-HE	3.5-10.5	0.25-0.13					●	●	●		
	2708 DDTR-HE	5.0-14.5	0.30-0.15					●	●			
	SCKN 2107 DDTR-HS	3.5-10.5	0.25-0.13					●				
	2708 DDTR-HS	5.0-14.5	0.25-0.13					●				



● : Standard items

SDKN 12/15

Inserts



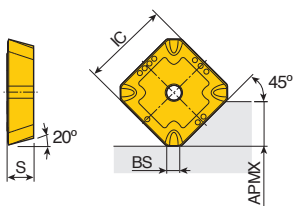
Size	Dimension (mm)					
	IC	S	APMX	BS		
12	12.7	3.18	6.5	2.00		
15	15.875	4.76	8.7	1.89		

Insert	Designation	Recommended machining conditions		Coated						Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10
	SDKN 1203 MT-HPN	1.5-6.0	0.25-0.10					●				
	1504 MT-HPN	1.5-8.0	0.25-0.10					●				
	SDKN 1203 MT-GPN	1.5-6.0	0.25-0.10					●				



● : Standard items

Inserts



Size	Dimension (mm)				
	IC	S	APMX	BS	
12	12.7	3.18	6.5	2.08	
15	15.875	4.76	8.7	2.06	

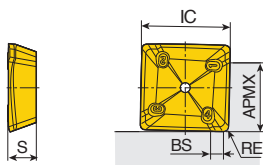
Insert	Designation	Recommended machining conditions		Coated						Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10
	SEKN 1203 AFTN-HPN	1.5-6.0	0.25-0.10					●				
	1504 AFTN-HPN	1.5-8.0	0.25-0.10					●				



●: Standard items

SEKX 21

Inserts



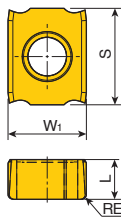
Size	Dimension (mm)				
	IC	S	APMX	BS	RE
21 PETR-M	21.85	7	17	2	1.2

Insert	Designation	Recommended machining conditions		Coated						Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10
	SEKX 2107 PETR-M	5.5-13.0	0.22-0.10					●		●		




●: Standard items

Inserts



Size	Dimension (mm)				
	S	Wi	L	RE	
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	

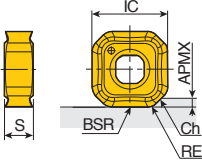
Insert	Designation	Recommended machining conditions		Coated							Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	SLOT 018-04	-	0.08-0.05	●		●				●			
	023-04	-	0.08-0.05	●		●				●			
	028-04	-	0.08-0.05	●		●				●			
	033-04	-	0.10-0.06	●		●				●			

● : Standard items

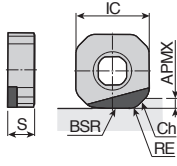


SNEX(T) 12

Inserts



P-W



CBN

Size	Dimension (mm)					
	IC	S	APMX	RE	BSR	Ch
1204 P-W	12.7	4.76	1.0	2.0	450	2.5
1204-W	12.7	4.76	1.0	2.0	800	-
1205-W	12.7	5.56	1.0	2.0	450	2.5
1204R-CBN	12.7	4.76	1.0	0.8	250	1.5

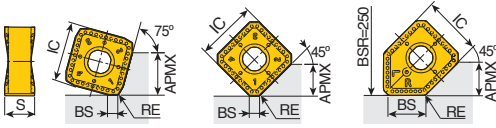


Insert	Designation	Recommended machining conditions		Ct3000	Cermet		CBN		Coated				Uncoated		
		ap (mm)	Feed (mm/tooth)				TB7015	TT9080	TT9030	TT7515	TT6080	TT2510	K10		
	SNEX 1204 P-W	0.3-0.8	0.15-0.07									●	●	●	
	SNEX 1204-W	0.3-0.8	0.15-0.07											●	●
	SNET 1205-W	0.3-0.8	0.15-0.07	●					●						
	SNEX 1204R-CBN	0.3-0.8	0.12-0.08				●								

●: Standard items



Inserts



ENTN/XTN

AN(T)N/XTN

W

Size	Dimension (mm)				
	IC	S	APMX	BS	RE
13 ENTN-M	13.5	7.0	9.5	2.2	0.4
13 ANTN-M/ML/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	7.0	7.5	1.2
13 XTN(75°)	13.5	6.8	9.6	1.4	0.4
13 XTN(45°)	13.5	6.8	6.35	1.4	0.4

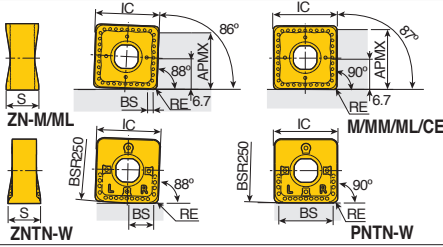


Insert	Designation	Recommended machining conditions		Coated							Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10
	SNGX 1306 ENTN-M	2.5-8.0	0.20-0.10	●		●		●		●	●		
	SNMX 1306 ENTN-M	2.5-8.0	0.20-0.10	●		●		●		●	●		
	SNGX 1306 ANTN-M	2.0-6.0	0.20-0.10	●		●		●	●				
	1306 ANTN-ML	2.0-6.0	0.25-0.13	●		●		●		●			
	SNMX 1306 ANTN-M	2.0-6.0	0.20-0.10	●		●		●	●	●	●		
	SNGX 1306 ANN-AL	2.0-6.0	0.35-0.10									●	
	SNMX 1306 ANTR-MP	2.0-6.0	0.20-0.10	●		●		●		●			
	SNMX 1306 XTN	2.5-6.5	0.20-0.10	●	●			●	●	●	●		
	SNGX 1306 ANTN-W	0.2-1.0	0.20-0.10	●						●			

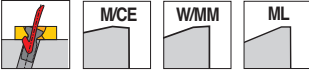
● : Standard items



Inserts



Size	Dimension (mm)					
	IC	S	APMX	BS	RE	
13	13.5	6.8-7.0	10-12	1.2-5.3	0.4-1.6	
13-W	13.5	6.8	10-12	11.5	1.0	



Insert	Designation	Recommended machining conditions		Ceramic							Coated		Uncoated	
		ap (mm)	Feed (mm/tooth)	AS10	TT9080	TT9030	TT8080	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	SNGX 1306 ZN-M	3.5-10.0	0.20-0.10		●		●		●	●	●			
	SNGX 1306 ZN-ML	3.5-10.0	0.25-0.13				●				●			
	1306C08 ZN-M	3.5-10.0	0.20-0.10		●				●	●	●			
	130608-MM	3.5-10.0	0.15-0.08				●							
	130612-MM	3.5-10.0	0.15-0.08								●			
	130616-MM	3.5-10.0	0.15-0.08				●		●					
	130608-ML	3.5-10.0	0.25-0.13							●	●			
	130612-ML	3.5-10.0	0.25-0.13							●				
	SNGX 130608-M	3.5-10.0	0.20-0.10		●				●	●				
	130612-M	3.5-10.0	0.20-0.10		●					●	●			
	130616-M	3.5-10.0	0.20-0.10		●		●	●	●	●	●			
	130620-M	3.5-10.0	0.20-0.10		●				●	●	●			
	SNGX 130608-CE	3.5-10.0	0.25-0.13	●										
	SNGX 1306 ZNTN-W	0.2-1.0	0.20-0.10		●						●			
	1306 PNTN-W	0.2-1.0	0.20-0.10		●						●			

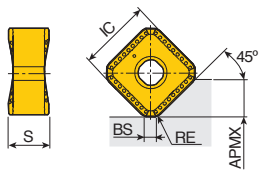


● : Standard items

SNM(H)X 16



Inserts



Size	Dimension (mm)					
	IC	S	APMX	BS	RE	
SNMX 16	16.7	7.8	8.8	2.4	0.8	
SNHX 16	16.7	6.4	8.8	2.4	0.8	

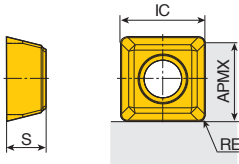


Insert	Designation	Recommended machining conditions		Coated								Uncoated				
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080			K10		
	SNMX 1607 ANTN-M	2.5-7.5	0.25-0.13	●		●		●	●	●						
	SNHX 1606 ANN-MM	2.5-7.5	0.20-0.10						●	●						

● : Standard items



Inserts



Size	Dimension (mm)				
	IC	S	APMX	RE	
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	

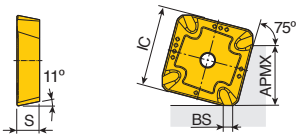


Insert	Designation	Recommended machining conditions		Cermet	Coated							Uncoated	
		ap (mm)	Feed (mm/tooth)	CT7000	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10
	SPMG 090404-EM	2.5-7.5	0.15-0.08					●					
	090408-EM	2.5-7.5	0.15-0.08		●			●		●		●	
	110408-EM	3.0-8.5	0.16-0.09		●	●	●	●		●		●	
	140508-EM	4.0-11.0	0.18-0.10		●		●			●		●	
	SPMT 090408-EM	2.5-7.5	0.15-0.08			●		●		●		●	
	110408-EM	3.0-8.5	0.16-0.09		●	●	●	●		●		●	
	140508-EM	4.0-11.0	0.18-0.10		●		●	●	●	●		●	
	XOMT 060204	1.5-4.5	0.06-0.03			●		●					

●: Standard items



Inserts



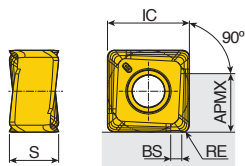
Size	Dimension (mm)					
	IC	S	APMX	BS		
12	12.7	3.18	9.5	1.2-1.6		
15	15.875	4.76	12.5	1.4-1.6		

Insert	Designation	Recommended machining conditions		Coated								Uncoated	
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080		
				K10									
	SPKN 1203 EDTR-HPN	1.5-7.0	0.25-0.10						●				
	1504 EDTR-HPN	1.5-10.0	0.25-0.10						●				
	SPKN 1203 EDR-HPN	1.5-7.0	0.25-0.10			●				●			
	1504 EDR-HPN	1.5-10.0	0.25-0.10			●				●			

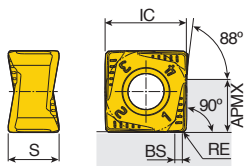
● : Standard items



Inserts



07



12

Size	Dimension (mm)					
	IC	S	APMX	BS	RE	
07	7.0	4.16	5.0	0.9	0.8	
12-MP	12.2	8.06	8.5	1.1	0.8	
12-MMP	12.2	8.06	8.0	1.1	0.8	

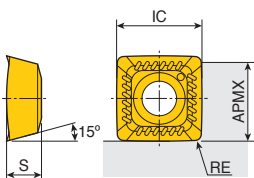


Insert	Designation	Recommended machining conditions		Coated							Uncoated			
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	SQKU 070308 PNR-M	1.0-4.0	0.20-0.10	●		●								
	SQKU 070308 PNR-ML	1.0-4.0	0.20-0.10	●		●								
	SQKU 120608 PNR-MP	2.0-6.5	0.25-0.15	●				●		●	●			
	SQHU 120608 PNR-MMP	2.0-6.5	0.25-0.15	●						●				







●: Standard items

Inserts



Size	Dimension (mm)				
	IC	S	APMX	RE	
114508	11	4.5	10	0.8	
114516	11	4.5	9	1.6	



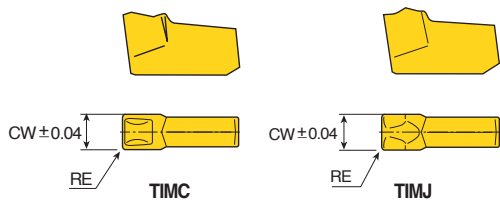
Insert	Designation	Recommended machining conditions		Coated								Uncoated	
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080		
				K10									
	SVKT 114508-M	10.0	0.15-0.04	●		●						●	
	SVKT 114508-ML 114516-ML	10.0 9.0	0.15-0.04 0.15-0.04	●		●							
	SVKT 114508-L	10.0	0.12-0.03	●		●							
	SVHT 114508-L	10.0	0.12-0.03	●		●							

●: Standard items





TIMC/J

Slotting inserts



Size	Dimension (mm)						
	Seat size	CW	RE				
1.6	1	1.6	0.16				
2	2	2.2	0.20				
2.4	2	2.4	0.20				
3	4	3.1	0.20				
4	4	4.1	0.25				
4.8	4	4.8	0.28				

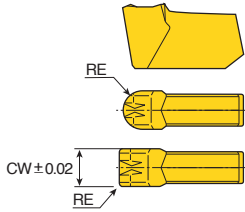
Insert	Designation	Recommended machining conditions		Coated							Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT7220	TT7080	TT6030	TT5100		K10
	TIMC 1.6	-	0.12-0.04	●			●	●		●			●
	2	-	0.13-0.05	●			●	●		●			●
	2.4	-	0.15-0.06	●									
	3	-	0.18-0.06	●			●	●		●	●		
	4	-	0.20-0.08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

●: Standard items




TIPV

Slotting inserts



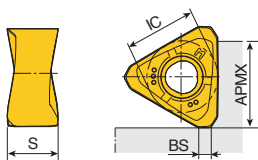
Size	Dimension (mm)		
	Seat size	CW	RE
TIPV...E ...	3, 4	3.0-4.5	0.4-2.0
TIPV 1.85-2.15	2	1.85-2.15	0.1-0.2
TIPV 2.65-4.15	3, 4	2.65-4.15	0.15-0.20

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

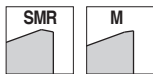
● : Standard items



Inserts



Size	Dimension (mm)				
	IC	S	APMX	BS	
18	11.65	8	13	1.4	
22	12.7	8	15	2.2	

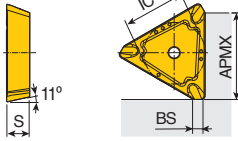


Insert	Designation	Recommended machining conditions		Coated								Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	TNMX 1806 PNTR-M	1.0-11.0	0.15-0.07	●		●		●	●	●	●	●		
	TNMX 1806 PNTR-SMR2	2.7-11.0	0.20-0.10	●		●		●			●			
	TNMX 1806 PNTR-SMR3	2.7-11.0	0.20-0.10	●		●		●			●			
	TNGX 2207 PNTN	1.0-13.0	0.20-0.10	●		●		●	●		●			
	TNMX 2207 PNTN	1.0-13.0	0.20-0.10	●		●		●	●		●	●		

●: Standard items



Inserts



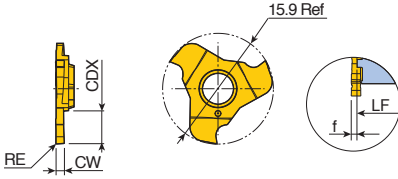
Size	Dimension (mm)						
	IC	S	APMX	BS			
22	12.7	4.76	17.6	1.7-1.8			

Insert	Designation	Recommended machining conditions		Coated						Uncoated			
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	TPKN 2204 PDTR-HPN	1.5-13.0	0.25-0.10						●				
	TPKN 2204 PDR-HPN	1.5-13.0	0.25-0.10				●			●			

● : Standard items



Inserts



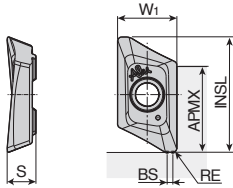
Size	Dimension (mm)			Size	Dimension (mm)		
	CW	RE	CDX		CW	RE	CDX
1.2	1.2	0.05	4.6	3.0	3.0	0.20	4.8
1.4	1.4	0.10	4.8	3.25	3.25	0.15	4.8
1.5	1.5	0.10	4.8	4.0	4.0	0.20	4.8
1.7	1.7	0.10	4.8	4.25	4.25	0.15	4.8
1.95	1.95	0.15	4.8	5.0	5.0	0.20	4.8
2.0	2.0	0.20	4.8	5.25	5.25	0.15	4.8
2.25	2.25	0.15	4.8	6.0	6.0	0.20	4.8
2.75	2.75	0.15	4.8				

Insert	Designation	Recommended machining conditions		f (mm)	Coated								Uncoated			
		CW (mm)	Feed (mm/tooth)		TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080				
	TS16-1.2-R0.05	1.20	0.08-0.02	0.45		●										
	1.4-R0.1	1.40	0.10-0.02	0.45		●										
	1.5-R0.1	1.50	0.12-0.03	0.45		●										
	1.7-R0.1	1.70	0.12-0.03	0.45		●										
	1.95-R0.15	1.95	0.15-0.04	0.45		●										
	2.0-R0.2	2.00	0.15-0.04	0.45		●										
	2.25-R0.15	2.25	0.15-0.04	0.65		●										
	2.75-R0.15	2.75	0.20-0.04	1.35		●										
	3.0-R0.2	3.00	0.20-0.04	1.35		●										
	3.25-R0.15	3.25	0.20-0.04	1.35		●										
	4.0-R0.2	4.00	0.25-0.05	2.36		●										
	4.25-R0.15	4.25	0.25-0.05	0.96		●										
	5.0-R0.2	5.00	0.30-0.05	2.15		●										
	5.25-R0.15	5.25	0.30-0.05	2.15		●										
	6.0-R0.2	6.00	0.30-0.05	3.15		●										



● : Standard items

Inserts



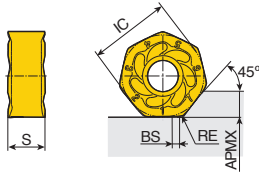
Size	Dimension (mm)					
	INSL	W1	S	APMX	BS	RE
16	18.3-22.2	11.2	5.1-5.5	14-16	0.6-1.5	0.4-5.0
22	22.4-28	13.6	6.8-7.4	18.5-21	1.2-1.7	0.5-6.4

Insert	Designation	Recommended machining conditions		Coated							Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	XEVT 160504R-AL	3.5-12.0	0.4-0.1									●	
	160508R-AL	3.5-12.0	0.4-0.1									●	
	160512R-AL	3.5-12.0	0.4-0.1									●	
	160516R-AL	3.5-12.0	0.4-0.1									●	
	160520R-AL	3.5-12.0	0.4-0.1									●	
	160524R-AL	3.5-12.0	0.4-0.1									●	
	160530R-AL	3.5-12.0	0.4-0.1									●	
	160532R-AL	3.5-12.0	0.4-0.1									●	
	160540R-AL	3.5-12.0	0.4-0.1									●	
	160550R-AL	3.5-12.0	0.4-0.1									●	
	220605R-AL	3.5-18.0	0.6-0.1									●	
	220608R-AL	3.5-18.0	0.6-0.1									●	
	220616R-AL	3.5-18.0	0.6-0.1									●	
	220620R-AL	3.5-18.0	0.6-0.1									●	
	220630R-AL	3.5-18.0	0.6-0.1									●	
	220632R-AL	3.5-18.0	0.6-0.1									●	
	220640R-AL	3.5-18.0	0.6-0.1									●	
	220650R-AL	3.5-18.0	0.6-0.1									●	
	220664R-AL	3.5-18.0	0.6-0.1									●	

● : Standard items



Inserts



Size	Dimension (mm)					
	IC	S	APMX	BS	RE	
06(M, MM, ML)	13.7	6.2	3.5	1.0	1.0	
06-MT	13.7	6.0	4.2	-	0.8	
06-MLW	13.7	6.2	3.5	1.5	0.2	

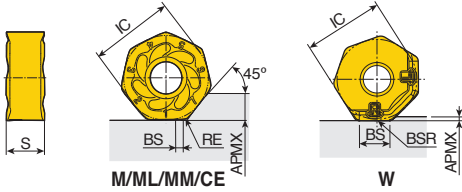


Insert	Designation	Recommended machining conditions		Coated								Uncoated		
		ap (mm)	Feed (mm/tooth)	Ceramic										
				AS10	TT9080	TT9030	TT8080	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	XNMU 0605 ANR-M	1.0-3.0	0.20-0.10		●									
	XNHU 0605 ANN-MM	1.0-3.5	0.20-0.10		●					●	●	●		
	XNHU 0605 ANN-ML	1.0-3.5	0.20-0.10		●		●				●			
	XNMU 060508-MT	1.0-4.2	0.30-0.10					●						
	XNHU 0605 ANR-MLW	0.3-1.0	0.15-0.08					●						

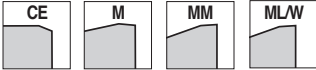


●: Standard items

Inserts



Size	Dimension (mm)					
	IC	S	APMX	BS	RE	BSR
09	18.5	6.35-7.4	5.0	1.0	1.0	-
09-W	18.5	6.35	1.0	7.1	-	250

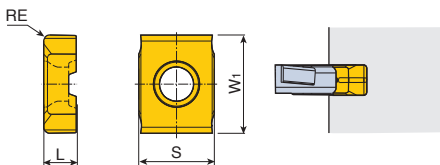


Insert	Designation	Recommended machining conditions		Coated							Uncoated		
		ap (mm)	Feed (mm/tooth)	Coated							Uncoated		
				AS10	TT9080	TT8080	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	XNMU 0906 ANTR-M	1.5-4.0	0.20-0.10	●	●	●	●	●	●	●	●		
	XNMU 0906 ANTN-ML	1.5-4.0	0.25-0.13		●	●	●	●					
	XNHU 0906 ANTN-ML	1.5-4.0	0.25-0.13		●					●			
	XNHU 0906 ANTN-MM	1.5-4.0	0.25-0.13		●	●		●	●	●			
	XNHU 0906 ANTN-CE	1.5-4.0	0.25-0.135	●									
	XNHU 0906 ANTN-W	0.1-1.0	0.20-0.10							●			

● : Standard items



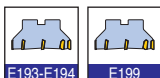
Inserts



Size	Dimension (mm)				
	W ₁	S	L	RE	
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	

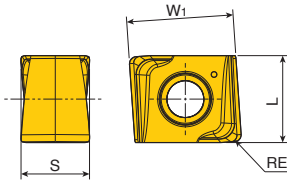


Insert	Designation	Recommended machining conditions		Coated							Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	ZNHT 018-04	-	0.08-0.05	●		●							
	018-08	-	0.08-0.05	●		●							
	023-04	-	0.08-0.05	●		●				●			
	023-08	-	0.08-0.05	●		●							
	028-04	-	0.10-0.15	●		●				●			
	028-08	-	0.10-0.15	●		●							
	033-04	-	0.12-0.05	●		●				●			
	033-08	-	0.12-0.05	●		●							
	038-04	-	0.12-0.05	●		●				●			
	038-08	-	0.12-0.05	●		●							
	043-04	-	0.15-0.05	●		●				●			
	043-08	-	0.15-0.05	●		●							
	048-04	-	0.15-0.05	●		●				●			
	048-08	-	0.15-0.05	●		●							
	053-04	-	0.15-0.05	●		●				●			
053-08	-	0.15-0.05	●		●								
	ZNHT 018-04-ML	-	0.08-0.05			●				●			
	023-04-ML	-	0.08-0.05			●				●			
	028-04-ML	-	0.08-0.05			●				●			
	033-04-ML	-	0.12-0.05			●				●			
	038-04-ML	-	0.12-0.05			●				●			
	043-04-ML	-	0.12-0.05			●				●			
	048-04-ML	-	0.12-0.05			●				●			
	053-04-ML	-	0.12-0.05			●				●			
	ZNHT 018-02-AL	-	0.35-0.10									●	
	023-02-AL	-	0.35-0.10									●	
	028-02-AL	-	0.35-0.10									●	
	033-02-AL	-	0.35-0.10									●	
	038-04-AL	-	0.35-0.10									●	
	043-04-AL	-	0.35-0.10									●	
	048-04-AL	-	0.35-0.10									●	
	053-04-AL	-	0.35-0.10									●	

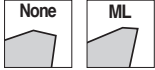


●: Standard items

Inserts



Size	Dimension (mm)				
	L	W ₁	S	RE	
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	



Insert	Designation	Recommended machining conditions		Coated						Uncoated		
		ap (mm)	Feed (mm/tooth)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10
	ZNHU 080-08	-	0.16-0.08	•	•			•	•			
	110-08	-	0.20-0.10	•	•			•	•			
	140-08	-	0.21-0.11	•	•			•	•			
	ZNHU 080-08-ML	-	0.010-0.05	•	•					•		
	110-08-ML	-	0.12-0.06	•	•					•		
	140-08-ML	-	0.12-0.06	•	•							




● : Standard items




Tailor-made Insert

Tangential inserts



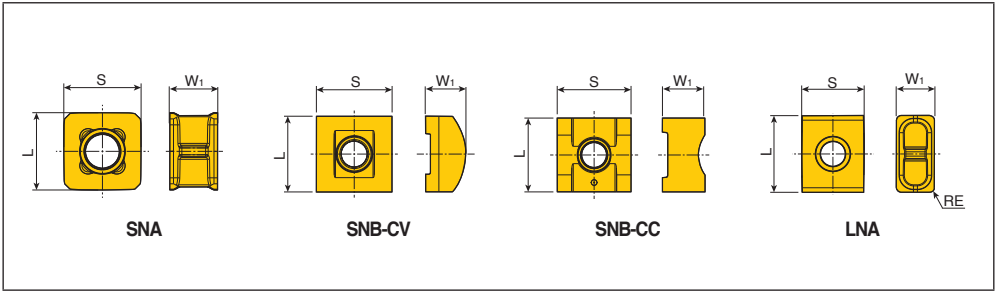
Insert	Designation	Dimension (mm)			
		L	S	W ₁	RE
	LNC 1060-C	10.0	11.5	6.0	chamfer
	LNC 137020-L	13.6	11.6	6.7	2.0
	LNCX 136508 PNR-ML	13.0	10.6	6.5	0.8







Insert	Designation	Dimension (mm)			
		L	S	W ₁	RE
	PMIN 120905-M	12.0	9.7	5.4	2.0
	PMIN 130907-M	13.5	9.7	7.0	2.0
	PMIN 150907-M	15.0	9.9	7.0	2.0
	PMIN 180907-M	18.0	9.7	7.0	2.0

Tailor-made Insert

Tangential inserts



Insert	Designation	Dimension (mm)			
		L	S	W ₁	RE
	SNA 1065-M	10.5	10.5	6.5	-
	SNA 1370-M	13.0	13.0	7.0	-
	SNA 1680-M	16.0	16.0	8.0	-
	SNB 1375-CV	13.0	13.0	7.5	-
	SNB 1685-CV	16.0	16.0	8.5	-
	SNB 1375-CC	13.0	13.0	7.5	-
	SNB 1685-CC	16.0	16.0	8.5	-
	LNA 137008-M	13.5	10.0	6.7	0.8
	LNA 168008-M	16.5	14.0	8.0	0.8

- CV: Convex, CC: Concave
- Various corner radii are available for SNB insert



TRMT
(Form profile cutter)



Recommended Cutting Conditions

Machining data for MAXI-SLOT

ISO	Material		Hardness HB	Vc(m/min)	Feed (mm/tooth)		
	Material	AISI/SAE/ASTM			TR13	TR15	TR17
P	Non-alloy steel	1020	130-180	120-200	0.04-0.12	0.05-0.15	0.06-0.15
	Low alloy steel	4030	260-300	200-300	0.04-0.12	0.05-0.15	0.06-0.15
	Low alloy steel	3135	HRC 35-40	80-120	0.02-0.06	0.03-0.12	0.04-0.12
	High alloy steel	H13	200-220	100-150	0.03-0.07	0.04-0.12	0.04-0.12
M	Martensitic stainless steel	420	200	100-150	0.02-0.06	0.04-0.12	0.04-0.12
	Austenitic stainless steel	304L	200	80-120	0.02-0.06	0.03-0.10	0.03-0.12
K	Gray cast iron	Class 40	250	150-200	0.04-0.12	0.05-0.20	0.05-0.20
	Malleable cast iron	Class 65 45 12	200	130-180	0.04-0.10	0.05-0.18	0.05-0.18
S	High temp. alloys	Inconel 718	HRC 36-40	20-30	0.015-0.10	0.02-0.12	0.02-0.12
		AMS R56400	HRC40-45	30-40	0.015-0.06	0.02-0.12	0.02-0.12

• For more information of material groups, see the materials & grades "material conversion table".

■ Steel
 ■ Stainless steel
 ■ Cast iron
 ■ Nonferrous
 ■ High temp. alloys
 ■ Hardened steel

Machining data for CBN grade

ISO	Material	D.O.C. (mm)	Grade		
			TB7015		
			Cutting speed Vc(m/min)	Feed (mm/tooth)	Cutting edge
P	Bearing steel	< 2	180 - 220	0.05 - 0.25	Chamfer
	Ferrous powder metal	< 2	150 - 300	0.1 - 0.15	Chamfer
K	Grey cast iron HB 200 - 280	< 0.5	500 - 1500	0.1 - 0.3	Chamfer hone
		0.5 - 2.0	500 - 1100	0.1 - 0.25	Chamfer
	Compared graphite iron (CGI)	< 0.5	400 - 600	0.1 - 0.2	Hone
S	Co based > 35 HRC	0.5 - 2.0	150 - 200	0.05 - 0.15	Chamfer
	Ni based > 35 HRC		120 - 150	0.05 - 0.15	Chamfer
	Fe based > 35 HRC		60 - 120	0.05 - 0.15	Chamfer
	Cr based > 35 HRC		50 - 75	0.05 - 0.15	Chamfer
H	Hardened steels > 45 HRC	< 0.5	80 - 180	0.1 - 0.25	Chamfer
	Hardened cast iron	< 2	80 - 200	0.1 - 0.15	Chamfer

• For more information of material groups, see the materials & grades "material conversion table".

■ Steel
 ■ Stainless steel
 ■ Cast iron
 ■ Nonferrous
 ■ High temp. alloys
 ■ Hardened steel

Recommended Cutting Conditions

Machining data

Cutting Speed :Vc(m/min)

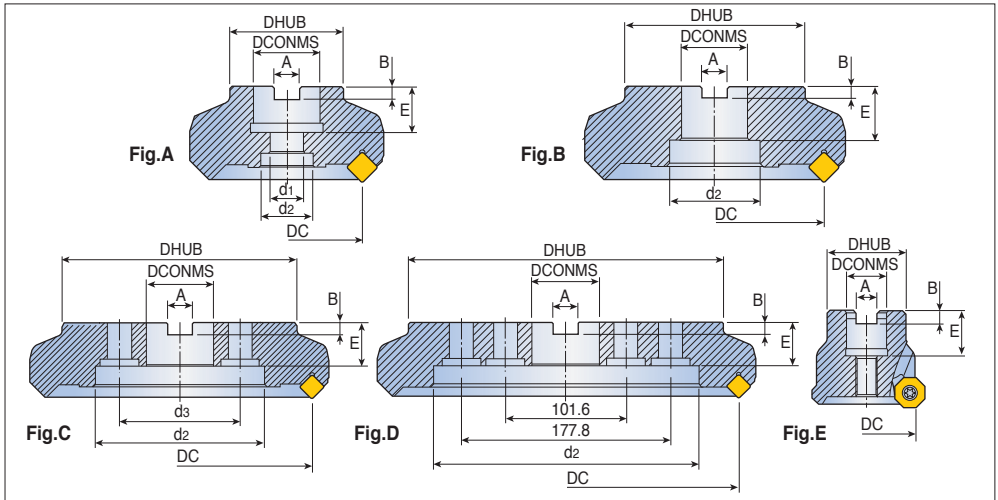
ISO	Material	Condition	Tensile strength (N/mm ²)	Hardness HB	Material No.	Uncoated				
						K10	TT9080	TT9030		
P	Non-alloy steel, cast steel, free cutting steel	< 0.25%C	Annealed	420	125	1		220-370	190-310	
		≥ 0.25%C	Annealed	650	190	2		180-310	160-260	
		< 0.55%C	Quenched and tempered	850	250	3		115-195	105-185	
		≥ 0.55%C	Annealed	750	220	4		130-210	120-200	
			Quenched and tempered	1000	300	5		115-175	95-160	
	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed		600	200	6		175-265	160-250	
				930	275	7		130-215	120-200	
		Quenched and tempered		1000	300	8		105-185	95-175	
				1200	350	9		95-160	80-150	
	High alloy steel, cast steel and tool steel	Annealed		680	200	10		85-155	75-135	
Quenched and tempered			1100	325	11		75-135	65-120		
M	Stainless steel and cast steel	Ferritic / martensitic		680	200	12		115-270	100-250	
		Martensitic		820	240	13		100-230	80-200	
		Austenitic		600	180	14		120-275	110-260	
K	Gray cast iron (GG)	Ferritic			160	15		130-300		
		Pearlitic			250	16		120-280		
	Cast iron nodular (GGG)	Ferritic			180	17		110-220		
		Pearlitic			260	18		100-200		
	Malleable cast iron	Ferritic			130	19		150-250		
	Pearlitic			230	20		100-250			
N	Aluminum - wrought alloy	Not cureable			60	21	550-700			
		Cured			100	22	600-750			
	Aluminum-cast, alloyed	<=12% Si	Not cureable			75	23	800-900		
			Cured			90	24	650-800		
		>12% Si	High temp.			130	25	250-320		
	Copper alloys	>1% Pb	Free cutting			110	26	300-400		
			Brass			90	27	300-400		
			Electrolytic copper			100	28	210-280		
	Non-metallic	Duroplastics, fiber plastics					29	150-250		
		Hard rubber					30	150-250		
S	High temp. alloys	Fe based	Annealed			200	31		40-80	
			Cured			280	32		30-60	
		Ni or Co based	Annealed			250	33		35-70	
			Cured			350	34		30-60	
			Cast			320	35		35-65	
	Titanium, Ti alloys			Rm 400		36		90-130		
		Alpha+beta alloys cured		Rm 1050		37		35-70		
H	Hardened steel	Hardened			55HRC	38		40-75	40-60	
		Hardened			60HRC	39		30-55	30-55	
	Chilled cast iron	Cast			400	40		70-105	60-100	
	Cast iron nodular	Hardened			55HRC	41		50-65	40-60	

• For more information of material groups, see the materials & grades "material conversion table"

■ Steel
 ■ Stainless steel
 ■ Cast iron
 ■ Nonferrous
 ■ High temp. alloys
 ■ Hardened steel

Mounting Reference

Arbor style



Dimension (mm)										Fig.	Arbor
DC	DCONMS	A	B	E	DHUB		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	22	10.4	6.3	22	38	-	11	17	-	A	SEM22
50	22	10.4	6.3	22	40	45	11	17	-	A	SEM22
63	22	10.4	6.3	22	47	-	11	17	-	A	SEM22
80	25.4	9.526	6	26	-	70	13	20	-	A	FMA25.4
80	27	12.4	7	28	58	70	13	22	-	A	SEM27
100	31.75	12.7	8	32	-	80	18	26	-	A	FMA31.75
100	31.75	12.7	8	32	-	80	-	46	-	B	FMA31.75
100	32	14.4	8	26	66	85	18	26	-	A	SEM32
100	32	14.4	8	26	66	85	-	46	-	B	SEM32
125	38.1	15.875	10	38	80	-	-	56	-	B	FMA38.1
125	40	16.4	9	32	85	-	22	32	-	A	SEM40
125	40	16.4	9	32	85	-	-	56	-	B	SEM40
160	40	16.4	9	32	110	-	-	90	66.7	C	FM40
160	50.8	19.05	11	38	100	-	-	72	-	B	FMA50.8
200	47.625	25.4	14	38	130	-	-	132	101.6	C	FMA47.625
200	60	25.7	14	40	130	-	-	132	101.6	C	FM60
250	47.625	25.4	14	38	160	-	-	150	101.6	C	FMA47.625
250	60	25.7	14	40	160	-	-	150	101.6	C	FM60
315	47.625	25.4	14	38	220	-	-	224	-	D	-
315	60	25.7	14	40	220	-	-	220	-	D	-

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

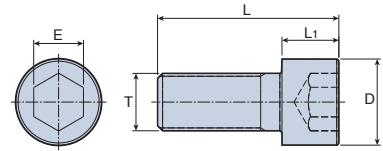
Mounting Reference

Mounting bolt

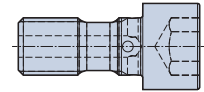
SH type

Designation	Dimension (mm)					Cutter size
	D	L	L ₁	T	E	
SH M8x1.25x25(-C)	13	33	8	8	6	32,40
SH M8x1.25x30(-C)	13	38	8	8	6	32,40
SH M8x1.25x35(-C)	13	43	8	8	6	32,40
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
SH M20x2.5x40(-C)	30	60	20	20	17	125

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



SH

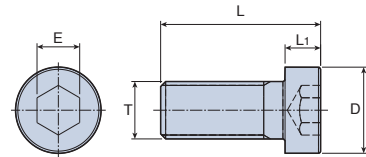


SH-C

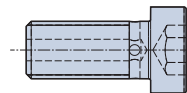
LH type

Description	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	8	80
LH M16x2x35(-C)	24	45	10	16	12	100

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



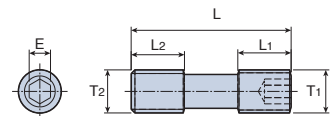
LH



LH-C

KTB, TCS type

Description	Dimension (mm)					
	L	L ₁	L ₂	T ₁	T ₂	E
KTB 32B	30	10	10	M8X1.0	M8X1.25	4
TCS10-40	40	10	15	M10X1.25	M10X1.5	5



KTB, TSC

► Quick change cutter adapter

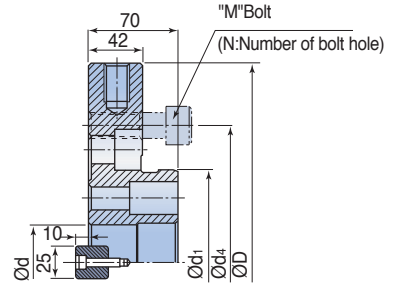
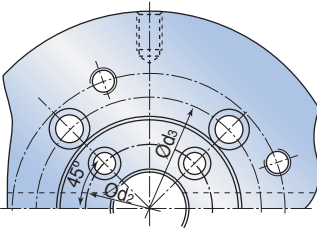
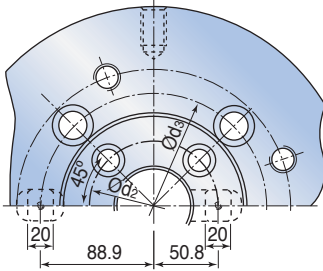


Fig.1

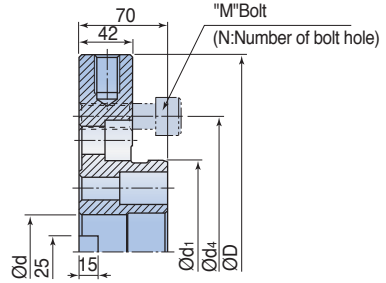


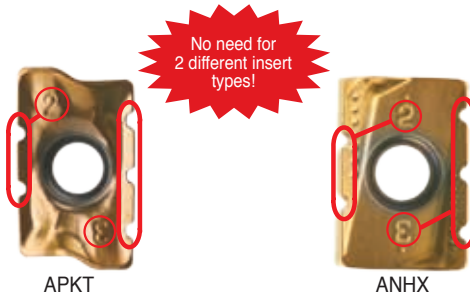
Fig.2

Designation	Dimension (mm)								Weight (Kg)
	D	d	d ₁	d ₂	d ₃	d ₄	M	N	
QA 08 K/M	198	47.625	63.5	101.6	-	114.3	M16x40	4	10
QA 10 K/M	248	60	133.35	101.6	-	177.8	M16x50	4	15
QA 12 K/M	313	60	146.05	101.6	177.8	215.9	M20x50	4	19.7
QA 14 K/M	353	60	215.9	101.6	177.8	260.4	M20x50	6	24
QA 16 K/M	398	60	254.0	101.6	177.8	304.8	M20x50	6	29

- K: Adapter with setting key (Fig.1)
- M: Adapter without setting key (Fig.2)

► How to use splitter

- 3 splitting grooves on one cutting edge and 2 splitting grooves on the opposite side

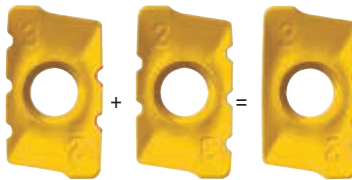


- Full proof configuration-inserts have metal color appearance only on the 3 groove side for simplified mounting

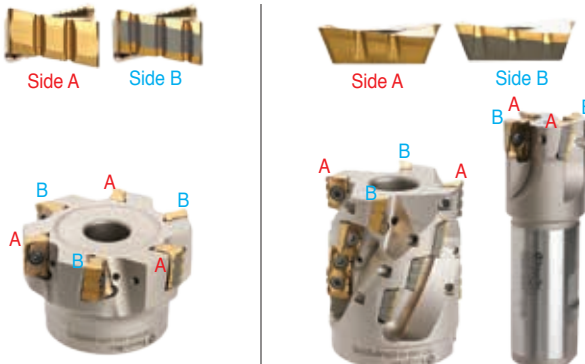


Notice: When insert mounting, ensure they are mounted in a staggered formation i.e. 1st tooth-2 groove side; 2nd tooth-3 groove side and repeat action for the remaining teeth

- Both cutting edges split chip to small pieces for cutting load reduction and create complete cutting edge when combined.

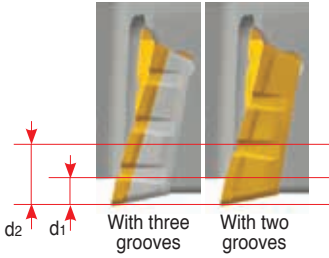


- For optimum machining efficiency, use even numbered flute type cutters

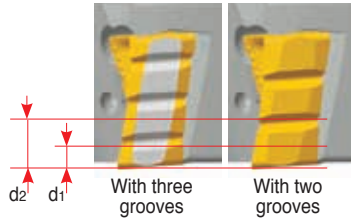


Also applicable to odd numbered flute type cutters

- The splitter inserts effective in axial depth of cuts $\geq d_1$

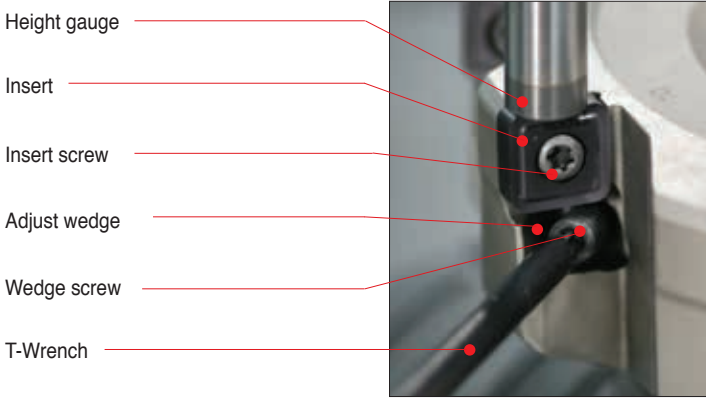


Depth of cut	APKT 17	APKT 12
d ₁	3mm	2.4mm
d ₂	6.5mm	5.2mm



Depth of cut	ANHX 16
d ₁	2.5mm
d ₂	6mm

▶ Setting instructions



1 Move the adjust wedge to its bottom-most position by rotating the wedge screw clockwise.



※Please avoid using too much force.

2 Mount new cutting edge of insert. Make sure that the insert pocket is thoroughly cleaned before mounting insert.



※Please fix the insert screw completely as readjustment is not expected once it is done.

3 Measure the Runout of the cutter when all inserts are mounted and select the highest insert as a reference.



※Please ensure that insert edge does not get damaged during setting. Use optimum dial pressure only.

4 Set the height of cutter, raising the reference insert by turning the wedge screw counter clockwise.



※Increase height by 0.01mm at least from the highest insert.

5 Adjust axial Runout of the remaining inserts with the same process as used with the reference insert.



※Please note that max adjustment height should not exceed 0.1mm(.004")

5 Adjust Runout in the range -2 of 0.005mm rotating the wrench gradually.



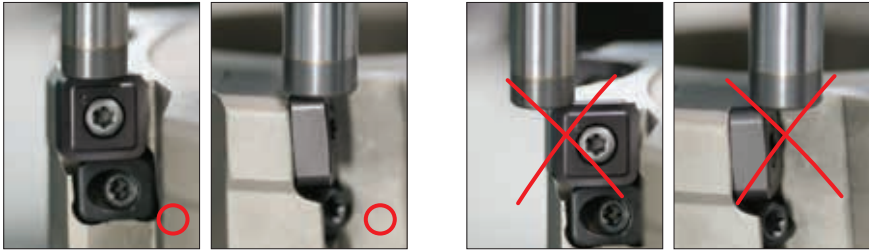
5 If it is beyond the acceptable range, please reset it with the order of **1 - 2 - 5**



6 Runout adjustment is completed.(you don't have to clamp the insert screw anymore once it is fixed.)

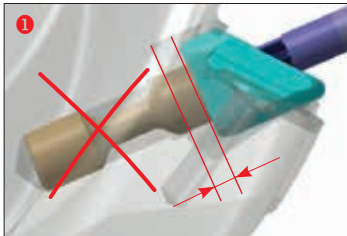


► Gauge user guide

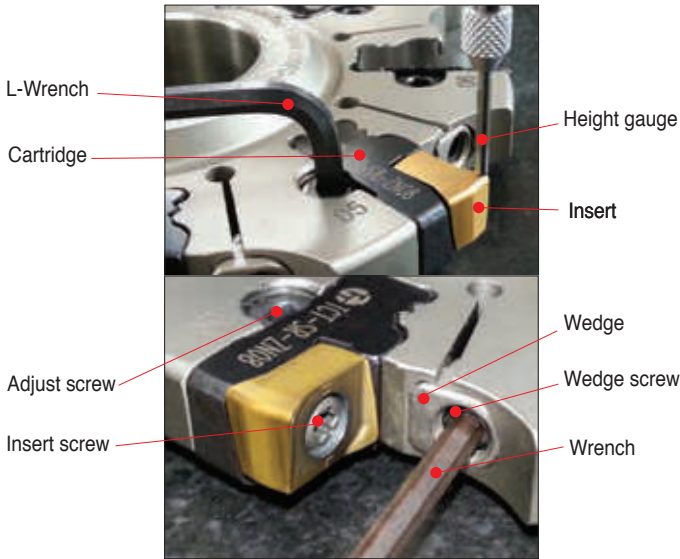


► Special precautions

- While loading a new insert corner, ensure that the adjust wedge is in the bottom-most position
Bottom out the adjust wedge completely before unclamping the insert from cutter
- Clean the insert and pocket thoroughly before mounting fresh insert /corner
- While assembling adjust wedge onto cutter body, please ensure that the adjust wedge is tightened until it reaches the bottom



► TOPSLOT component names



► TOPSLOT setup instructions

■ Disk type



■ Flange type



▶ Setting procedure

■ Disk type

- ① Index unused inserts firmly onto the cartridge.



- ④ Follow the same method about other cartridges. (the same as opposite side)

- ② Unfasten the wedge screw 1 turn counter-clockwise.



- ⑤ After setting all cartridges, sequentially fasten the wedge 100% over two or three times.

- ③ After fastening the wedge around 80%, adjust the cartridge to the desired "X" value after setting the datum zero point.



- When adjusting cartridge to the "X" value, set the location of cartridge higher than "X" value and then adjust the cartridge to the "X" value.
- Clockwise rotation : cartridge descends.
- Counter-clockwise rotation : cartridge ascends.

■ Flange type

- ① For setting of bottom face, repeat disk type steps 1-4. (The datum is bottom plane of flange type cutter.)



- ④ After fastening the wedge around 80%, adjust the cartridge to the desired (A+X) value.



- ② For top face set-up, the use of setting plate is mandatory and the height gauge must be reset to '0' for each insert.



- ⑤ Follow the same method about other cartridges.

- ③ Put the cutter bottom face on the setting plate and unfasten wedge screw 1 turn counter-clockwise



- ⑥ After setting all cartridges, sequentially fasten the wedge 100% over two or three times.

- When adjusting cartridge to the "X" value, set the location of cartridge higher than "X" value and then adjust the cartridge to the "X" value.
- Clockwise rotation : cartridge descends.
- Counter-clockwise rotation : cartridge ascends.

▶ Setting notice

■ Important set-up points

- All adjustments must be done on a plane, flat surface.
- For improved accuracy, remove any foreign substances from the insert and insert pocket surfaces before clamping.
- During reassembly wedges and wedge screws, you must apply lubricant of the friction surface. (Fig.1)
- "X" value must be equal for both top and bottom faces when adjusting the width of slot. (Fig.2)
- Width of cut must be adjusted within the range of the laser marked on the cutter. (Fig.3)
Ex) WIDTH 12-13 / WIDTH 20-23
- When adjusting cartridge to the "X" value, set the location of cartridge higher than "X" value and then adjust the cartridge to the "X" value.

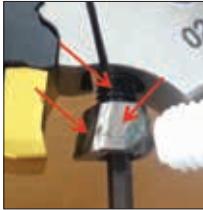


Fig.1 Lubricant



Fig.2 "X" setting



Fig.3 WIDTH

► Narrow width slotting cutters

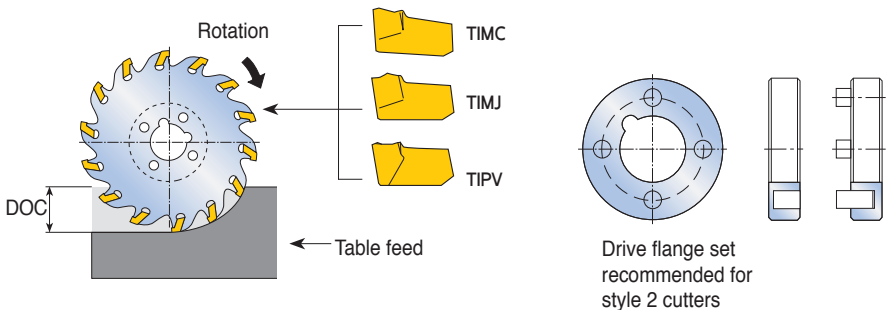


- Metric cutting diameters: 75mm, 100mm, 125mm, 160mm, 250mm
- Cutting width ranges: 1.6mm - 6.35mm
- Geometry: Positive Rake
- Applications: Slotting and sawing
- Materials: Carbon steels, alloy steels, stainless steels, cast iron, aluminum and exotics

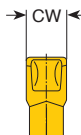
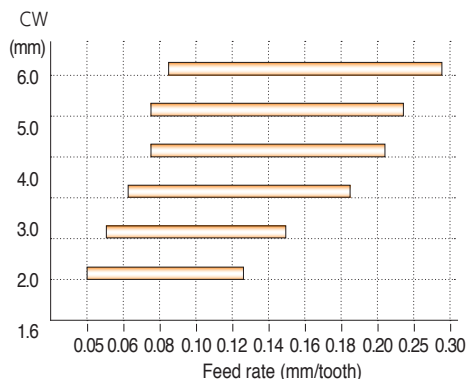
■ Features / Benefits of slotting cutters

- Narrow width applications to 1.6mm
- Simple easy-to-mount inserts
- Secure insert retention self-positioning insert stopper for repeatability
- Drive flange mounting for extra stability
- Minimal radial runout
- Efficient chip evacuation
- Reduced cutting forces
- Improved tool life
- Economical

► Recommended feed rates for - TSC slotting cutters



► Recommended feed rates (Based on insert width)



Feed rates are for radial
D.O.C. => 1/4 the cutter diameter
For radial DOC < 1/4 the cutter diameter
increase feed rates by the following %

DOC/Cutter diameter	1/4	1/6	1/8	1/10	1/20
Increase feed rate by ->	0%	15%	30%	45%	45%

■ Cutter entry

Climb milling enters the workpiece with a thick chip and exits with a thin chip. Honed inserts are recommended.

Conventional milling enters the workpiece with a thin chip and exits with a thick chip.

Sharp inserts are recommended. Climb milling should be used whenever possible, especially when replacing high speed steel slotting cutters. On machines with backlash eliminators, climb milling is preferred.

■ Cutter mounting

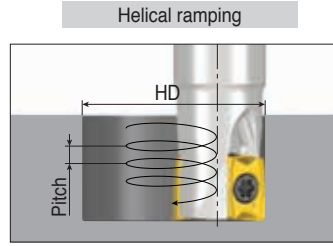
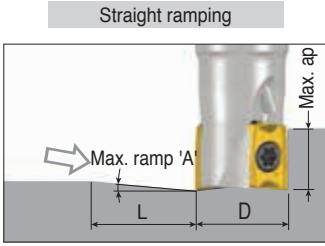
The use of drive flange sets are recommended to prevent denting of arbor drive keys and to provide added stability during increased metal removal rates.

■ Insert mounting

Manually place insert in pocket and seat in place by using a wooden or plastic hammer.

This will ensure self positioning for insert repeatability and minimal radial runout.

Pockets must be clean and free of debris prior to installation.

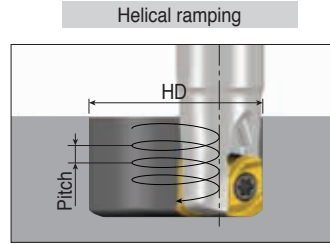
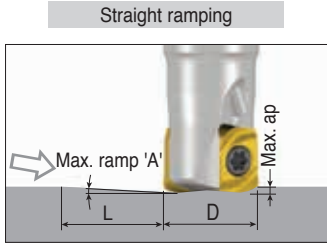


CVK(H)T 05: R0.2

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø6	2.5	5.0	112	8		0.2
					12	0.7
Ø8	2.1	5.0	136	12		0.4
					16	0.8
Ø9	1.7	5.0	164	14		0.4
					18	0.7
Ø10	1.7	5.0	169	16		0.5
					20	0.8
Ø11	1.3	5.0	212	18		0.4
					22	0.7
Ø12	1.3	5.0	220	20		0.5
					24	0.7
Ø13	1.1	5.0	249	22		0.5
					26	0.7
Ø14	1.0	5.0	273	24		0.5
					28	0.7
Ø16	0.9	5	302	28		0.5
					32	0.7
Ø20	0.7	5	382	36		0.6
					40	0.7

Ramping Data

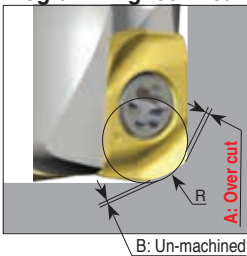


CVKT 05-HF

(unit: mm)

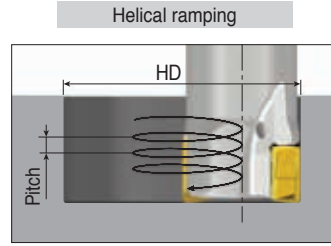
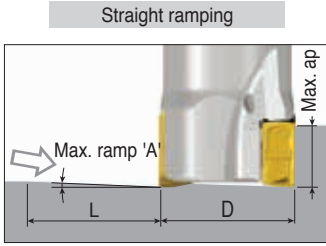
Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø6	0.20	0.5	143	8		0.0
					12	0.1
Ø8	0.45	0.5	64	12		0.1
					16	0.2
Ø9	0.55	0.5	52	14		0.1
					18	0.2
Ø10	0.30	0.5	96	16		0.1
					20	0.1
Ø11	0.35	0.5	82	18		0.1
					22	0.2
Ø12	0.70	0.5	41	20		0.3
					24	0.4
Ø13	0.75	0.5	38	22		0.3
					26	0.5
Ø14	0.85	0.5	34	24		0.4
					28	0.5
Ø16	0.65	0.5	44	28		0.4
					32	0.5
Ø20	0.50	0.5	57	36		0.4
					40	0.5

Programming technical data



	R Program	A Over cut	B Un-machined
CVKT 05-HF	0.8	0	0.21
	0.9	0	0.18
	1.0	0.02	0.14

Yellow background: Recommended program 'R'



LPK(H)U 05

(unit: mm)

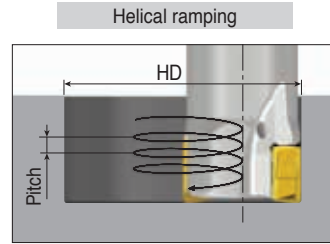
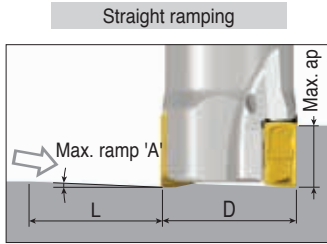
Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø10	1.8	4.6	142	16.8		0.6
					20	0.9
Ø11	1.6	4.6	160	18.8		0.6
					22	0.8
Ø12	1.5	4.6	176	20.8		0.6
					24	0.8
Ø13	1.3	4.6	195	22.8		0.6
					26	0.8
Ø16	1.0	4.6	251	28.8		0.6
					32	0.8
Ø20	0.8	4.6	330	36.8		0.6
					40	0.7
Ø25	0.6	4.6	439	46.8		0.6
					50	0.7
Ø32	0.4	4.6	586	60.8		0.6
					64	0.7

LPK(H)U 09

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø20	1.4	8.3	328	33		1.0
					40	1.5
Ø25	1.1	8.3	432	43		1.0
					50	1.5
Ø32	0.8	8.3	594	57		1.1
					64	1.4
Ø40	0.6	8.3	793	73		1.0
					80	1.3
Ø50	0.4	8.3	1057	93		1.0
					100	1.2
Ø63	0.3	8.3	1359	119		1.0
					126	1.2

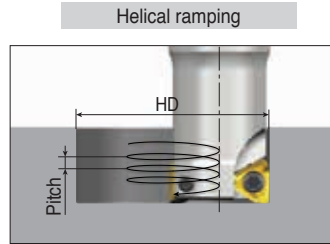
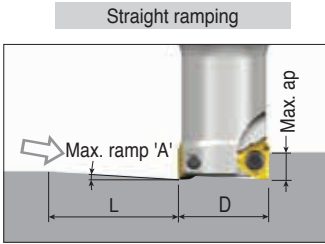
Ramping Data



LPKU 14

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø40	0.9	12.5	754	69		1.5
					80	2.0
Ø50	0.7	12.5	1023	89		1.5
					100	1.9
Ø63	0.5	12.5	1302	115		1.5
					126	1.9
Ø80	0.4	12.5	1790	149		1.5
					160	1.7
Ø100	0.3	12.5	2387	189		1.4
					200	1.6
Ø125	0.2	12.5	2865	239		1.5
					250	1.7
Ø160	0.2	12.5	3581	309		1.6
					320	1.7
Ø200	0.1	12.5	4775	389		1.5
					400	1.6

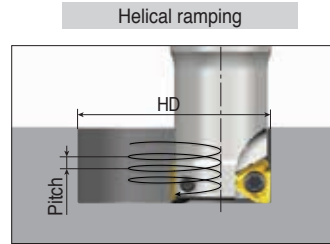
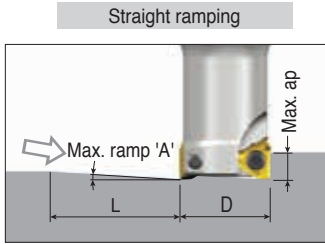


3PKT 04

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø8	2.1	3.5	95	13.2		0.6
					16	0.9
Ø10	2.2	3.5	91	17.2		0.8
					20	1.2
Ø11	3.6	3.5	56	19.2		1.6
					22	2.1
Ø12	3.3	3.5	61	21.2		1.6
					24	2.1
Ø13	2.5	3.5	80	23.2		1.4
					26	1.7
Ø14	2.2	3.5	91	25.2		1.3
					28	1.6
Ø16	1.6	3.5	125	29.2		1.1
					32	1.4

Ramping Data



3PK(H)T 06

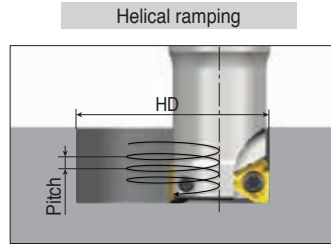
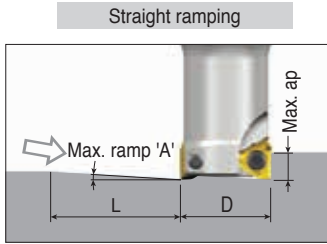
(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	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

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	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



3PK(H)T 15

(unit: mm)

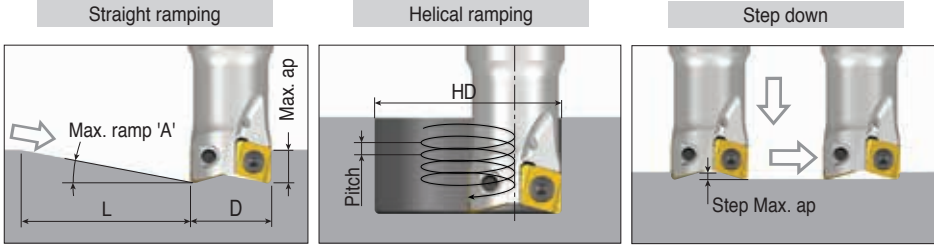
Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø32	3.2	11.0	197	53.5	64	3.2
						4.8
Ø33	3.1	11.0	203	55.5	66	3.3
						4.8
Ø35	3.1	11.0	203	59.5	70	3.5
						5.1
Ø40	2.0	11.0	315	70.1	80	2.8
						3.7
Ø50	1.5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

3PK(H)T 19

(unit: mm)

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

Ramping Data



4NKT 04: R0.2

(unit: mm)

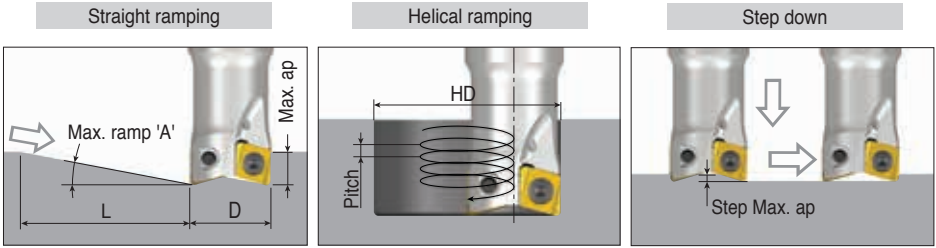
Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø8	4.2	3.5	48	9.9	16	0.4	0.4
				13.9		3.1	
Ø10	4.6	3.5	44	13.9	20	0.8	0.6
				15.9		2.1	
Ø11	5.2	3.5	38	15.9	22	1.2	0.7
				17.9		2.7	
Ø12	4.8	3.5	42	17.9	24	1.3	0.8
				19.9		2.7	
Ø13	5.1	3.5	39	19.9	26	1.6	0.8
				25.9		3.1	
Ø16	4.4	3.5	46	25.9	32	2.0	1.0
				33.9		3.3	
Ø20	3.3	3.5	61	33.9	40	2.1	1.0
				43.9		3.1	
Ø25	2.5	3.5	80	43.9	50	2.2	1.0
				57.9		2.9	
Ø32	1.9	3.5	106	57.9	64	2.3	1.0
				73.9		2.8	
Ø40	1.4	3.5	138	73.9	80	2.3	1.0
						2.7	

4NKT 04: R0.4

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø8	3.7	3.5	54	9.9	16	0.3	0.4
				13.9		2.8	
Ø10	4.2	3.5	48	13.9	20	0.8	0.5
				15.9		2.0	
Ø11	4.8	3.5	42	15.9	22	1.1	0.6
				17.9		2.5	
Ø12	4.5	3.5	44	17.9	24	1.2	0.7
				19.9		2.5	
Ø13	4.7	3.5	43	19.9	26	1.5	0.8
				25.9		2.9	
Ø16	4.1	3.5	49	25.9	32	1.9	0.9
				33.9		3.1	
Ø20	3.1	3.5	65	33.9	40	2.0	0.9
				43.9		2.9	
Ø25	2.3	3.5	85	43.9	50	2.1	0.9
				57.9		2.7	
Ø32	1.7	3.5	115	57.9	64	2.1	0.9
				73.9		2.6	
Ø40	1.3	3.5	149	73.9	80	2.1	0.9
						2.5	

Ramping Data

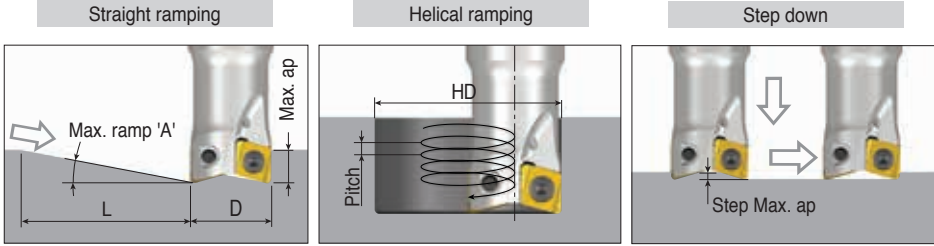


4NKT 04: R0.8

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø8	2.2	3.5	91	9.9		0.2	0.2
					16	1.6	
Ø10	3.0	3.5	67	13.9		0.5	0.4
					20	1.4	
Ø11	3.7	3.5	54	15.9		0.8	0.5
					22	1.9	
Ø12	3.5	3.5	57	17.9		1.0	0.5
					24	2.0	
Ø13	3.9	3.5	51	19.9		1.3	0.6
					26	2.4	
Ø16	3.5	3.5	57	25.9		1.6	0.7
					32	2.6	
Ø20	2.6	3.5	77	33.9		1.7	0.7
					40	2.4	
Ø25	1.9	3.5	103	43.9		1.7	0.7
					50	2.3	
Ø32	1.5	3.5	134	57.9		1.8	0.7
					64	2.2	
Ø40	1.1	3.5	174	73.9		1.8	0.7
					80	2.1	

Ramping Data

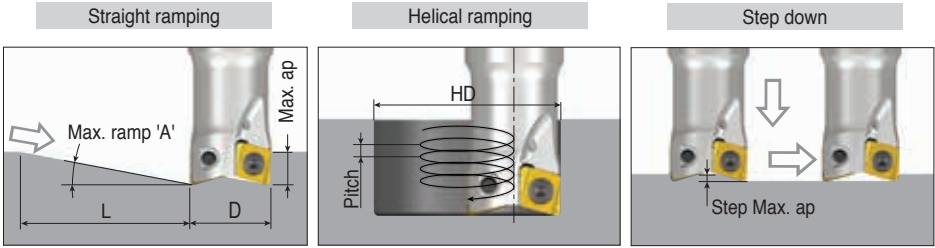


4NKT 06: R0.4

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø16	4.3	6.0	80	21.5	32	1.1	0.9
						3.2	
Ø17	4.3	6.0	80	23.5	34	1.3	1.0
						3.4	
Ø18	4.7	6.0	73	25.5	36	1.6	1.1
						3.9	
Ø20	4.9	6.0	70	29.5	40	2.2	1.3
						4.6	
Ø21	5.0	6.0	69	31.5	42	2.5	1.4
						4.9	
Ø25	4.9	6.0	70	39.5	50	3.3	1.6
						5.7	
Ø26	4.6	6.0	75	41.5	52	3.3	1.6
						5.6	
Ø32	3.5	6.0	98	53.5	64	3.5	1.7
						5.2	
Ø33	3.4	6.0	101	55.5	66	3.6	1.7
						5.2	
Ø35	3.1	6.0	111	59.5	70	3.5	1.7
						5.1	
Ø36	3.0	6.0	115	61.5	72	3.6	1.7
						5.0	
Ø38	2.8	6.0	123	65.5	76	3.6	1.7
						5.0	
Ø40	2.6	6.0	130	69.5	80	3.6	1.7
						4.9	
Ø43	2.4	6.0	143	75.5	86	3.6	1.7
						4.8	
Ø50	2.0	6.0	168	89.5	100	3.8	1.7
						4.8	
Ø63	1.6	6.0	215	115.5	126	3.9	1.7
						4.7	

Ramping Data

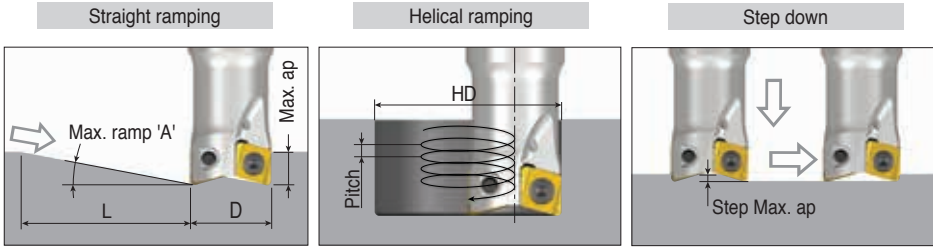


4NKT 06: R0.8

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø16	3.7	6.0	93	21.5		0.9	0.8
					32	2.8	
Ø17	3.8	6.0	90	23.5		1.2	0.8
					34	3.0	
Ø18	4.2	6.0	82	25.5		1.5	1.0
					36	3.5	
Ø20	4.4	6.0	78	29.5		2.0	1.1
					40	4.1	
Ø21	4.6	6.0	75	31.5		2.3	1.2
					42	4.5	
Ø25	4.6	6.0	75	39.5		3.1	1.5
					50	5.4	
Ø26	4.3	6.0	80	41.5		3.1	1.5
					52	5.2	
Ø32	3.2	6.0	107	53.5		3.2	1.5
					64	4.8	
Ø33	3.1	6.0	111	55.5		3.3	1.5
					66	4.8	
Ø35	2.8	6.0	121	59.5		3.3	1.5
					70	4.6	
Ø36	2.7	6.0	125	61.5		3.3	1.5
					72	4.6	
Ø38	2.5	6.0	135	65.5		3.3	1.5
					76	4.5	
Ø40	2.4	6.0	140	69.5		3.4	1.5
					80	4.6	
Ø43	2.2	6.0	153	75.5		3.4	1.5
					86	4.5	
Ø50	1.9	6.0	181	89.5		3.5	1.5
					100	4.4	
Ø63	1.4	6.0	237	115.5		3.5	1.6
					126	4.3	

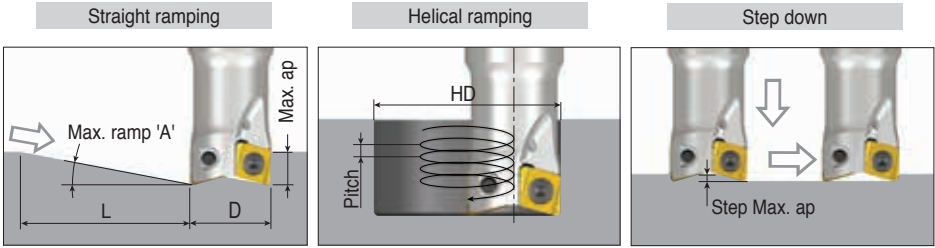
Ramping Data



4NKT 06: R1.2

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø16	3.0	6.0	115	21.5		0.8	0.5
					32	2.2	
Ø17	3.2	6.0	107	23.5		1.0	0.7
					34	2.5	
Ø18	3.6	6.0	95	25.5		1.3	0.8
					36	3.0	
Ø20	3.9	6.0	88	29.5		1.7	1.0
					40	3.6	
Ø21	4.1	6.0	84	31.5		2.0	1.1
					42	4.0	
Ø25	4.2	6.0	82	39.5		2.8	1.3
					50	4.9	
Ø26	3.9	6.0	88	41.5		2.8	1.3
					52	4.7	
Ø32	2.9	6.0	119	53.5		2.9	1.4
					64	4.3	
Ø33	2.8	6.0	123	55.5		2.9	1.4
					66	4.3	
Ø35	2.6	6.0	132	59.5		3.0	1.4
					70	4.2	
Ø36	2.5	6.0	137	61.5		3.0	1.4
					72	4.2	
Ø38	2.3	6.0	146	65.5		3.0	1.4
					76	4.2	
Ø40	2.2	6.0	156	69.5		3.0	1.4
					80	4.1	
Ø43	2.0	6.0	168	75.5		3.1	1.4
					86	4.1	
Ø50	1.7	6.0	202	89.5		3.1	1.4
					100	4.0	
Ø63	1.3	6.0	265	115.5		3.2	1.4
					126	3.8	

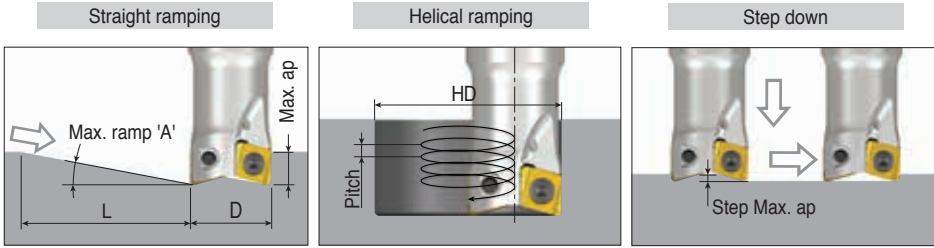


4NKT 06: R1.6

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø16	2.2	6.0	156	21.5	32	0.6	0.4
						1.6	
Ø17	2.4	6.0	143	23.5	34	0.7	0.5
						1.9	
Ø18	2.8	6.0	123	25.5	36	1.0	0.6
						2.3	
Ø20	3.2	6.0	107	29.5	40	1.4	0.8
						3.0	
Ø21	3.4	6.0	101	31.5	42	1.7	0.9
						3.3	
Ø25	3.7	6.0	93	39.5	50	2.5	1.1
						4.3	
Ø26	3.4	6.0	101	41.5	52	2.5	1.1
						4.1	
Ø32	2.5	6.0	135	53.5	64	2.6	1.2
						3.8	
Ø33	2.4	6.0	140	55.5	66	2.6	1.2
						3.8	
Ø35	2.3	6.0	149	59.5	70	2.6	1.2
						3.8	
Ø36	2.2	6.0	156	61.5	72	2.6	1.2
						3.7	
Ø38	2.0	6.0	168	65.5	76	2.6	1.2
						3.6	
Ø40	1.9	6.0	176	69.5	80	2.7	1.2
						3.6	
Ø43	1.8	6.0	191	75.5	86	2.7	1.2
						3.6	
Ø50	1.5	6.0	229	89.5	100	2.8	1.2
						3.5	
Ø63	1.1	6.0	299	115.5	126	2.8	1.2
						3.4	

Ramping Data

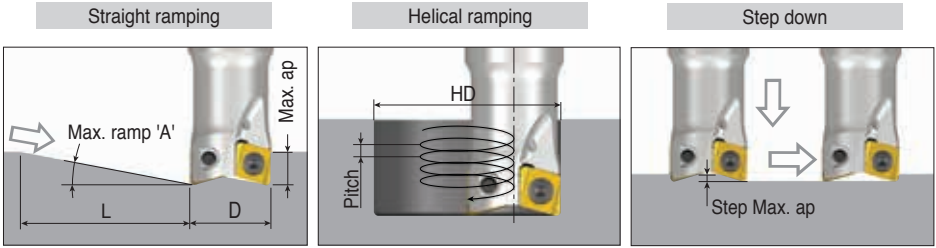


4NKT 06: R2.0

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø16	1.6	6.0	215	21.5		0.4	0.3
					32	1.2	
Ø17	1.8	6.0	191	23.5		0.5	0.3
					34	1.4	
Ø18	2.3	6.0	149	25.5		0.8	0.5
					36	1.9	
Ø20	2.7	6.0	125	29.5		1.2	0.6
					40	2.6	
Ø21	3.0	6.0	115	31.5		1.5	0.7
					42	2.9	
Ø25	3.3	6.0	104	39.5		2.2	1.0
					50	3.8	
Ø26	3.1	6.0	111	41.5		2.2	1.0
					52	3.8	
Ø32	2.3	6.0	149	53.5		2.3	1.0
					64	3.4	
Ø33	2.2	6.0	156	55.5		2.3	1.0
					66	3.4	
Ø35	2.0	6.0	168	59.5		2.3	1.0
					70	3.3	
Ø36	2.0	6.0	172	61.5		2.4	1.0
					72	3.4	
Ø38	1.8	6.0	186	65.5		2.4	1.0
					76	3.3	
Ø40	1.7	6.0	196	69.5		2.4	1.0
					80	3.3	
Ø43	1.3	6.0	265	75.5		2.0	1.0
					86	2.6	
Ø50	1.3	6.0	255	89.5		2.5	1.0
					100	3.1	
Ø63	1.0	6.0	328	115.5		2.6	1.0
					126	3.1	

Ramping Data

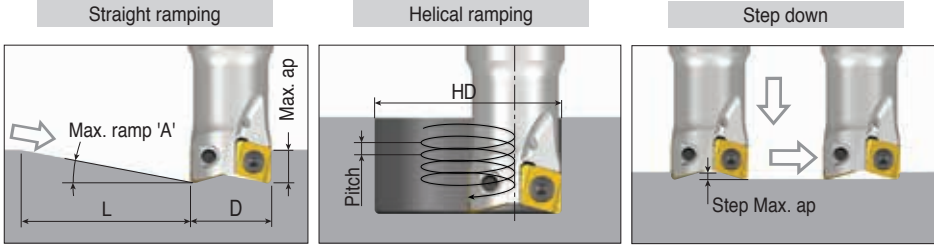


4NHT 06: R0.4

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø16	2.9	6.0	119	21.5		0.7	0.6
					32	2.2	
Ø17	3.0	6.0	115	23.5		0.9	0.6
					34	2.4	
Ø18	3.4	6.0	101	25.5		1.2	0.8
					36	2.9	
Ø20	3.8	6.0	90	29.5		1.7	0.9
					40	3.5	
Ø21	4.0	6.0	86	31.5		2.0	1.0
					42	3.9	
Ø25	4.1	6.0	84	39.5		2.8	1.3
					50	4.8	
Ø26	3.8	6.0	90	41.5		2.7	1.3
					52	4.6	
Ø32	2.8	6.0	123	53.5		2.8	1.3
					64	4.2	
Ø33	2.7	6.0	127	55.5		2.8	1.3
					66	4.2	
Ø35	2.5	6.0	135	59.5		2.9	1.3
					70	4.2	
Ø36	2.4	6.0	140	61.5		2.9	1.3
					72	4.1	
Ø38	2.3	6.0	149	65.5		2.9	1.3
					76	4.1	
Ø40	2.1	6.0	160	69.5		3.0	1.3
					80	4.0	
Ø43	1.9	6.0	176	75.5		3.0	1.3
					86	3.9	
Ø50	1.6	6.0	208	89.5		3.0	1.3
					100	3.8	
Ø63	1.2	6.0	275	115.5		3.1	1.3
					126	3.7	

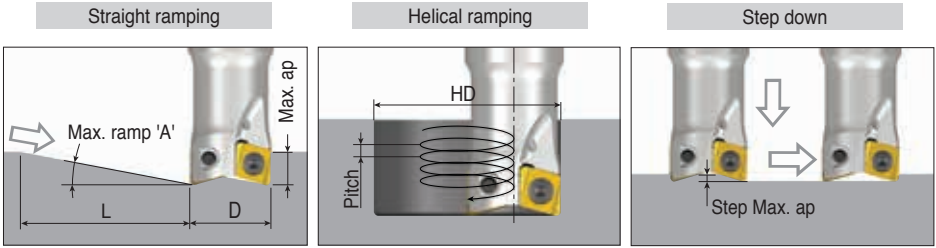
Ramping Data



4NHT 06: R0.8

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø16	2.9	6.0	119	21.5		0.7	0.6
					32	2.2	
Ø17	3.0	6.0	115	23.5		0.9	0.6
					34	2.4	
Ø18	3.5	6.0	98	25.5		1.2	0.8
					36	2.9	
Ø20	3.8	6.0	90	29.5		1.7	0.9
					40	3.5	
Ø21	4.0	6.0	86	31.5		2.0	1.0
					42	3.9	
Ø25	4.1	6.0	84	39.5		2.8	1.3
					50	4.8	
Ø26	3.8	6.0	90	41.5		2.7	1.3
					52	4.6	
Ø32	2.8	6.0	123	53.5		2.8	1.3
					64	4.2	
Ø33	2.7	6.0	127	55.5		2.8	1.3
					66	4.2	
Ø35	2.5	6.0	135	59.5		2.9	1.3
					70	4.2	
Ø36	2.4	6.0	140	61.5		2.9	1.3
					72	4.1	
Ø38	2.3	6.0	149	65.5		2.9	1.3
					76	4.1	
Ø40	2.1	6.0	160	69.5		3.0	1.3
					80	4.0	
Ø43	1.9	6.0	176	75.5		3.0	1.3
					86	3.9	
Ø50	1.6	6.0	208	89.5		3.0	1.3
					100	3.8	
Ø63	1.25	6.0	275	115.5		3.1	1.3
					126	3.7	

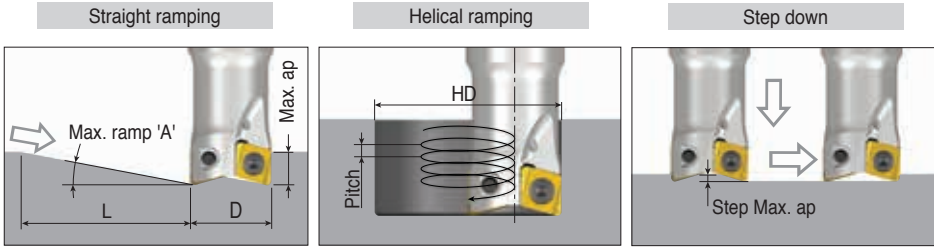


4NHT 06: R0.5-F

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø16	3.5	2.3	38	21.5		0.9	0.8
					32	2.6	
Ø17	3.6	2.3	37	23.5		1.1	0.8
					34	2.9	
Ø18	4.0	2.3	33	25.5		1.4	1.0
					36	3.4	
Ø20	4.3	2.3	31	29.5		1.9	1.2
					40	4.0	
Ø21	4.4	2.3	30	31.5		2.2	1.2
					42	4.3	
Ø25	4.9	2.3	27	39.5		3.3	1.6
					50	5.7	
Ø26	4.6	2.3	29	41.5		3.3	1.6
					52	5.6	
Ø32	3.5	2.3	38	53.5		3.5	1.6
					64	5.2	
Ø33	3.3	2.3	40	55.5		3.5	1.6
					66	5.1	
Ø35	3.1	2.3	42	59.5		3.5	1.6
					70	5.1	
Ø36	3.0	2.3	44	61.5		3.6	1.6
					72	5.0	
Ø38	2.8	2.3	47	65.5		3.6	1.7
					76	5.0	
Ø40	2.6	2.3	51	69.5		3.6	1.7
					80	4.8	
Ø43	2.4	2.3	55	75.5		3.6	1.7
					86	4.8	
Ø50	2.0	2.3	64	89.5		3.8	1.7
					100	4.8	
Ø63	1.7	2.3	78	115.5		4.2	1.7
					126	5.0	

Ramping Data

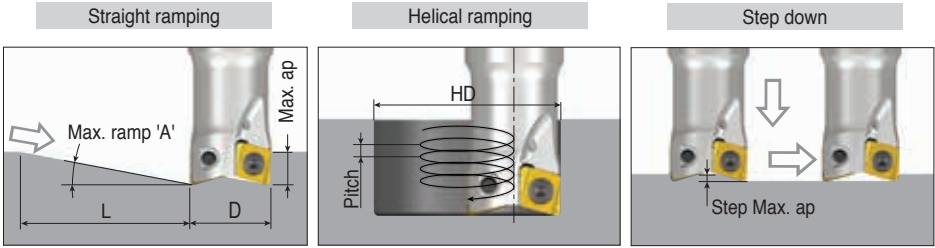


4NHT 06: R0.8-F

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø16	3.1	1.9	35	21.5		0.8	0.7
					32	2.3	
Ø17	3.2	1.9	34	23.5		1.0	0.7
					34	2.5	
Ø18	3.6	1.9	30	25.5		1.3	0.9
					36	3.0	
Ø20	3.9	1.9	28	29.5		1.7	1.0
					40	3.6	
Ø21	4.1	1.9	27	31.5		2.0	1.1
					42	4.0	
Ø25	4.6	1.9	24	39.5		3.1	1.5
					50	5.4	
Ø26	4.4	1.9	25	41.5		3.2	1.5
					52	5.3	
Ø32	3.3	1.9	33	53.5		3.3	1.5
					64	4.9	
Ø33	3.1	1.9	35	55.5		3.3	1.5
					66	4.8	
Ø35	2.9	1.9	38	59.5		3.3	1.5
					70	4.7	
Ø36	2.8	1.9	39	61.5		3.3	1.5
					72	4.7	
Ø38	2.6	1.9	41	65.5		3.4	1.5
					76	4.7	
Ø40	2.4	1.9	44	69.5		3.4	1.5
					80	4.6	
Ø43	2.2	1.9	48	75.5		3.4	1.5
					86	4.5	
Ø50	1.9	1.9	57	89.5		3.5	1.6
					100	4.4	
Ø63	1.4	1.9	75	115.5		3.5	1.6
					126	4.3	

Ramping Data

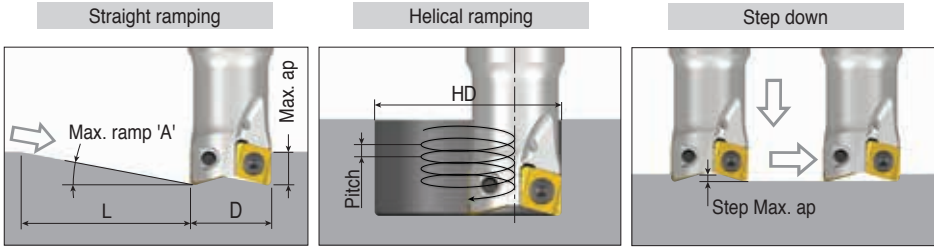


4NHT 06: R1.0-F

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø16	2.7	2.1	44	21.5	32	0.7	0.6
						2.1	
Ø17	2.9	2.1	41	23.5	34	0.9	0.7
						2.3	
Ø18	3.3	2.1	36	25.5	36	1.2	0.8
						2.8	
Ø20	3.6	2.1	33	29.5	40	1.6	1.0
						3.4	
Ø21	3.8	2.1	32	31.5	42	1.9	1.0
						3.7	
Ø25	4.4	2.1	27	39.5	50	3.0	1.4
						5.1	
Ø26	4.2	2.1	29	41.5	52	3.0	1.4
						5.1	
Ø32	3.1	2.1	39	53.5	64	3.1	1.4
						4.6	
Ø33	3.0	2.1	40	55.5	66	3.1	1.4
						4.6	
Ø35	2.8	2.1	43	59.5	70	3.2	1.4
						4.6	
Ø36	2.6	2.1	45	61.5	72	3.1	1.4
						4.4	
Ø38	2.5	2.1	48	65.5	76	3.2	1.5
						4.4	
Ø40	2.3	2.1	51	69.5	80	3.2	1.5
						4.4	
Ø43	2.1	2.1	56	75.5	86	3.3	1.5
						4.3	
Ø50	1.8	2.1	67	89.5	100	3.3	1.5
						4.2	
Ø63	1.4	2.1	86	115.5	126	3.4	1.5
						4.1	

Ramping Data

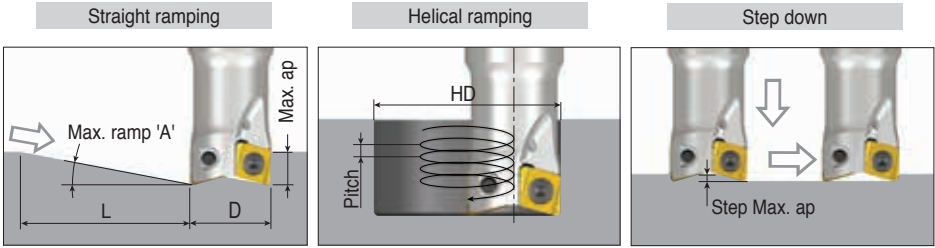


4NHT 06: R1.5-F

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø16	1.9	3.3	97	21.5		0.5	0.4
					32	1.5	
Ø17	2.1	3.3	88	23.5		0.7	0.5
					34	1.7	
Ø18	2.6	3.3	73	25.5		0.9	0.6
					36	2.2	
Ø20	3.0	3.3	63	29.5		1.3	0.8
					40	2.8	
Ø21	3.2	3.3	59	31.5		1.6	0.9
					42	3.1	
Ø25	3.9	3.3	48	39.5		2.6	1.2
					50	4.5	
Ø26	3.7	3.3	51	41.5		2.7	1.2
					52	4.5	
Ø32	2.7	3.3	70	53.5		2.7	1.2
					64	4.0	
Ø33	2.6	3.3	71	55.5		2.8	1.2
					66	4.1	
Ø35	2.4	3.3	77	59.5		2.8	1.3
					70	4.0	
Ø36	2.3	3.3	80	61.5		2.8	1.3
					72	3.9	
Ø38	2.2	3.3	86	65.5		2.8	1.3
					76	3.9	
Ø40	2.1	3.3	90	69.5		2.9	1.3
					80	3.9	
Ø43	1.9	3.3	100	75.5		2.9	1.3
					86	3.8	
Ø50	1.6	3.3	118	89.5		2.9	1.3
					100	3.7	
Ø63	1.2	3.3	151	115.5		3.1	1.3
					126	3.7	

Ramping Data

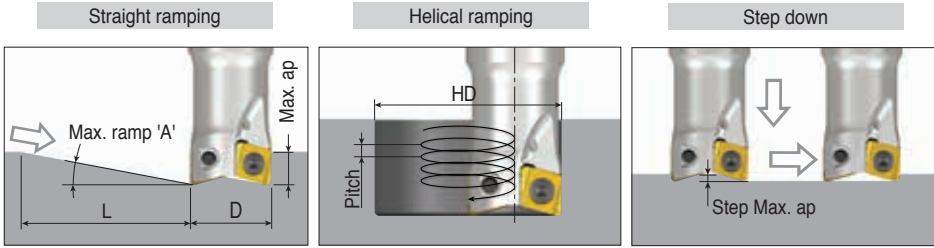


4NHT 06: R2.0-F

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø16	0.8	2.1	142	21.5		0.2	0.1
					32	0.6	
Ø17	1.1	2.1	109	23.5		0.3	0.2
					34	0.9	
Ø18	1.6	2.1	75	25.5		0.6	0.3
					36	1.3	
Ø20	2.1	2.1	57	29.5		0.9	0.5
					40	2.0	
Ø21	2.3	2.1	51	31.5		1.1	0.6
					42	2.3	
Ø25	3.2	2.1	38	39.5		2.2	0.9
					50	3.7	
Ø26	3.0	2.1	40	41.5		2.2	1.0
					52	3.6	
Ø32	2.2	2.1	53	53.5		2.3	1.0
					64	3.4	
Ø33	2.1	2.1	56	55.5		2.3	1.0
					66	3.3	
Ø35	2.0	2.1	60	59.5		2.3	1.0
					70	3.3	
Ø36	1.9	2.1	62	61.5		2.3	1.0
					72	3.3	
Ø38	1.8	2.1	67	65.5		2.3	1.0
					76	3.2	
Ø40	1.7	2.1	71	69.5		2.3	1.0
					80	3.2	
Ø43	1.5	2.1	78	75.5		2.3	1.0
					86	3.1	
Ø50	1.3	2.1	93	89.5		2.4	1.0
					100	3.0	
Ø63	1.0	2.1	120	115.5		2.4	1.0
					126	2.9	

Ramping Data



4NKT 09: R0.8

(unit: mm)

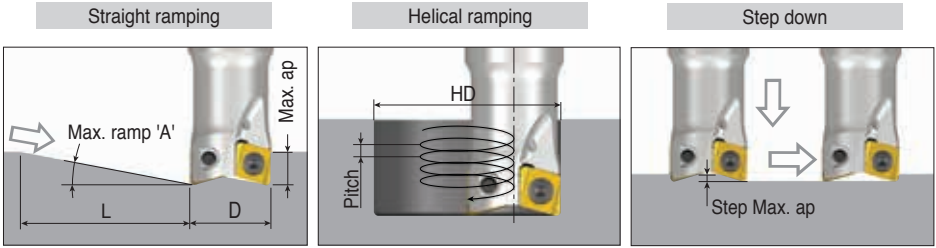
Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø20	3.7	8.0	124	25.5		0.9	1.0
					40	3.5	
Ø25	4.9	8.0	93	35.5		2.4	1.6
					50	5.7	
Ø32	4.9	8.0	93	49.5		4.0	2.1
					64	7.3	
Ø40	3.6	8.0	127	65.5		4.3	2.1
					80	6.7	
Ø50	2.7	8.0	170	85.5		4.5	2.1
					100	6.3	
Ø63	2.0	8.0	224	111.5		4.6	2.1
					126	6.0	
Ø80	1.5	8.0	296	145.5		4.7	2.1
					160	5.8	

4NKT 09: R1.6

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø20	2.7	8.0	167	25.5		0.7	0.7
					40	2.6	
Ø25	4.1	8.0	112	35.5		2.0	1.3
					50	4.8	
Ø32	4.4	8.0	104	49.5		3.6	1.8
					64	6.6	
Ø40	3.1	8.0	148	65.5		3.7	1.8
					80	5.8	
Ø50	2.3	8.0	195	85.5		3.9	1.8
					100	5.5	
Ø63	1.8	8.0	255	111.5		4.1	1.8
					126	5.3	
Ø80	1.3	8.0	340	145.5		4.1	1.8
					160	5.0	

Ramping Data



4NHT 09: R0.4

(unit: mm)

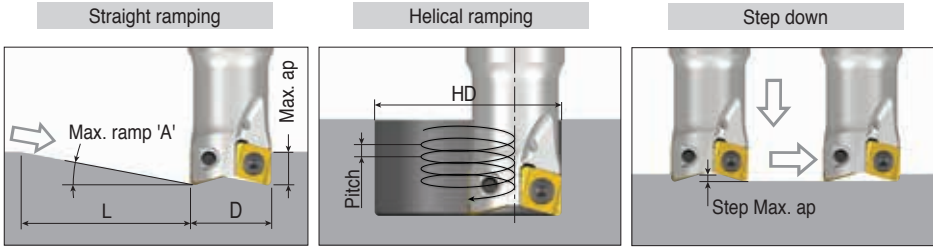
Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø20	2.9	8.0	155	25.5	40	0.8	0.8
						2.7	
Ø25	4.3	8.0	106	35.5	50	2.1	1.3
						5.0	
Ø32	4.5	8.0	102	49.5	64	3.7	1.8
						6.7	
Ø40	3.2	8.0	143	65.5	80	3.8	1.8
						6.0	
Ø50	2.4	8.0	191	85.5	100	4.0	1.8
						5.6	
Ø63	1.8	8.0	255	111.5		4.1	1.8
					126	5.3	
Ø80	1.3	8.0	340	145.5		4.1	1.8
					160	5.0	

4NHT 09: R0.8

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø20	2.9	8.0	155	25.5	40	0.8	0.8
						2.7	
Ø25	4.3	8.0	106	35.5	50	2.1	1.3
						5.0	
Ø32	4.5	8.0	102	49.5	64	3.7	1.8
						6.7	
Ø40	3.2	8.0	143	65.5	80	3.8	1.8
						6.0	
Ø50	2.4	8.0	191	85.5	100	4.0	1.8
						5.6	
Ø63	1.8	8.0	255	111.5		4.1	1.8
					126	5.3	
Ø80	1.3	8.0	340	145.5		4.1	1.8
					160	5.0	

Ramping Data



4NKT 11: R0.8

(unit: mm)

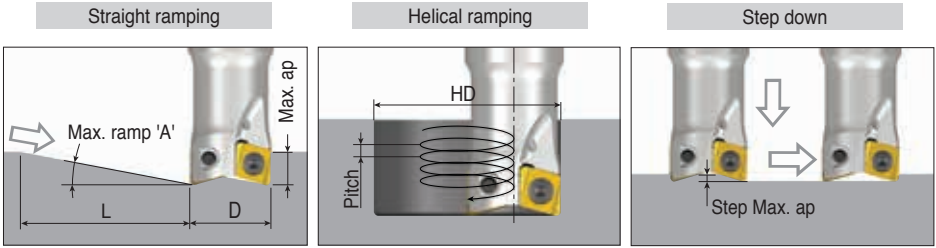
Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø25	5.1	10.3	115	31.5	1.5	1.7	
				50	6.0		
Ø32	5.3	10.3	111	45.5	3.3	2.4	
				64	7.9		
Ø40	5.0	10.3	118	61.5	5.0	2.7	
				80	9.3		
Ø50	3.7	10.3	159	81.5	5.4	2.7	
				100	8.6		
Ø63	2.7	10.3	219	107.5	5.6	2.7	
				126	7.9		
Ø80	2.0	10.3	288	141.5	5.9	2.7	
				160	7.6		

4NKT 14: R0.8

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø32	5.2	13.5	148	39.5	1.8	2.3	
				64	7.8		
Ø40	5.2	13.5	148	55.5	3.8	3.0	
				80	9.7		
Ø50	5.5	13.5	140	75.5	6.6	3.3	
				100	12.8		
Ø63	4.0	13.5	193	101.5	7.2	3.3	
				126	11.8		
Ø80	2.9	13.5	267	135.5	7.5	3.3	
				160	10.8		

Ramping Data



4NKT 11 PNR: R0.8

(unit: mm)

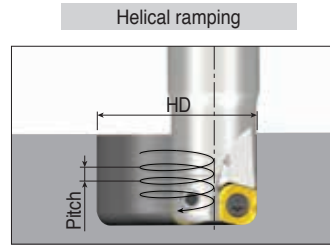
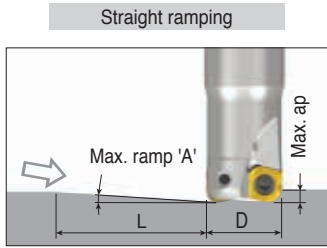
Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø25	4.0	10.3	147	31.5		1.2	1.1
					50	4.7	
Ø32	4.3	10.3	135	45.5		2.7	1.0
					64	6.5	
Ø40	4.5	10.3	131	61.5		4.5	0.9
					80	8.4	
Ø50	3.2	10.3	184	81.5		4.7	0.9
					100	7.5	
Ø63	2.4	10.3	246	107.5		5.0	0.9
					126	7.0	
Ø80	1.8	10.3	328	141.5		5.2	0.9
					160	6.7	

4NKT 14 PNR: R0.8

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø32	4.1	13.5	188	39.5		1.4	1.1
					64	6.1	
Ø40	4.3	13.5	180	55.5		3.1	0.9
					80	8.0	
Ø50	4.7	13.5	163	75.5		5.7	0.9
					100	11.1	
Ø63	3.5	13.5	221	101.5		6.3	0.9
					126	10.3	
Ø80	2.6	13.5	297	135.5		6.7	0.9
					160	9.7	

Ramping Data



4NKT 04-HF: R1.2

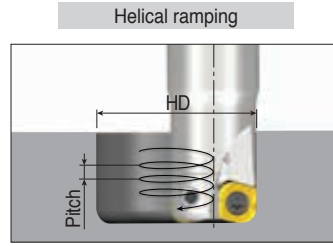
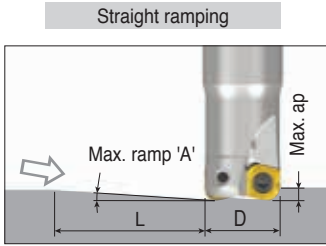
(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø8	0.1	0.5	191	9.9	16	0.0
						0.1
Ø10	0.8	0.5	34	13.9	20	0.2
						0.4
Ø11	1.6	0.5	18	15.9	22	0.4
						0.5
Ø12	1.6	0.5	18	17.9	24	0.4
						0.5
Ø13	2.0	0.5	14	19.9	26	0.5
						0.5
Ø16	1.9	0.5	15	25.9	32	0.5
						0.5
Ø20	2.3	0.5	12	33.9	40	0.5
						0.5
Ø25	1.7	0.5	16	43.9	50	0.5
						0.5
Ø32	1.3	0.5	22	57.9	64	0.5
						0.5
Ø40	1.0	0.5	29	73.9	80	0.5
						0.5

4NKT 06-HF: R2.0

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø16	0.6	1.0	88	21.4	32	0.2
						0.5
Ø17	0.7	1.0	76	23.4	34	0.2
						0.6
Ø18	1.1	1.0	50	25.4	36	0.4
						1.0
Ø20	1.7	1.0	34	29.4	40	0.7
						1.0
Ø21	1.9	1.0	29	31.4	42	0.9
						1.0
Ø25	2.3	1.0	24	39.4	50	1.0
						1.0
Ø26	3.2	1.0	18	41.4	52	1.0
						1.0
Ø32	2.4	1.0	24	53.4	64	1.0
						1.0
Ø40	1.8	1.0	32	69.4	80	1.0
						1.0
Ø50	1.4	1.0	41	89.4	100	1.0
						1.0
Ø63	1.1	1.0	52	115.4	126	1.0
						1.0



4NKT 09-HF: R3.2

(unit: mm)

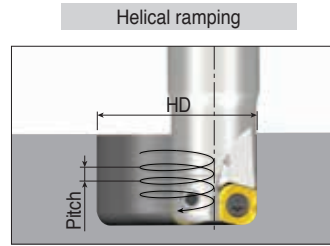
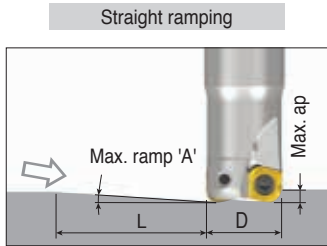
Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø20	0.3	1.5	287	25		0.1
					40	0.3
Ø25	1.2	1.5	69	35		0.6
					50	1.5
Ø32	2.4	1.5	35	49		1.5
					64	1.5
Ø40	2.3	1.5	37	65		1.5
					80	1.5
Ø50	1.7	1.5	49	85		1.5
					100	1.5
Ø63	1.3	1.5	66	111		1.5
					126	1.5
Ø80	1.0	1.5	86	145		1.5
					160	1.5

4NKT 11-HF: R4.0

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø25	0.8	2.0	143	31		0.2
					50	0.9
Ø32	2.0	2.0	57	45		1.2
					64	2.0
Ø40	3.4	2.0	34	61		2.0
					80	2.0
Ø50	2.4	2.0	48	81		2.0
					100	2.0
Ø63	1.8	2.0	64	107		2.0
					126	2.0
Ø80	1.3	2.0	85	141		2.0
					160	2.0

Ramping Data

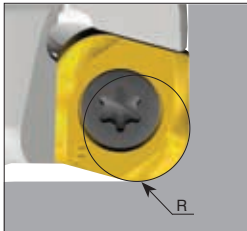


4NKT 14-HF: R5.0

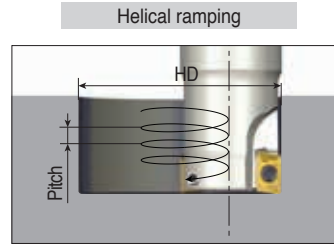
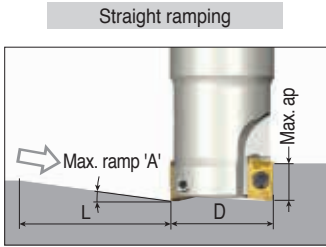
(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø32	1.0	3.0	172	39	64	0.3
						1.5
Ø40	1.8	3.0	96	55	80	1.3
						3.0
Ø50	3.9	3.0	44	75	100	3.0
						3.0
Ø63	2.7	3.0	64	101	126	3.0
						3.0
Ø80	1.9	3.0	88	135	160	3.0
						3.0

Programming technical data



	R Program	A Over cut	B Un-machined
4NKT 040212R-HF	1.2	0	0
4NKT 060320R-HF	2.0	0	0
4NKT 090432R-HF	3.2	0	0
4NKT 110640R-HF	4.0	0	0
4NKT 140750R-HF	5.0	0	0

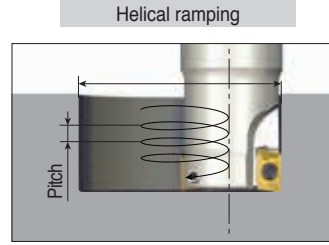
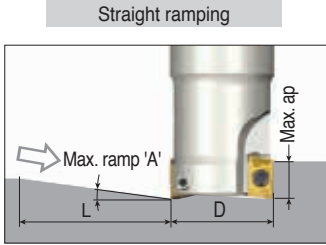


AXMT 06

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø8	1.0	5.0	287	9		0.0
					16	0.4
Ø10	8.0	5.0	36	13		1.1
					20	3.7
Ø11	6.0	5.0	48	15		1.1
					22	3.1
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	4.8	5.0	60	21		1.6
					28	3.1
Ø15	4.3	5.0	67	23		1.6
					30	3.0
Ø16	4.0	5.0	72	25		1.7
					32	3.0
Ø17	3.5	5.0	82	27		1.6
					34	2.8
Ø18	5.0	5.0	57	29		2.6
					36	4.2
Ø19	4.8	5.0	60	31		2.7
					38	4.3
Ø20	4.0	5.0	72	33		2.4
					40	3.7
Ø21	3.5	5.0	82	35		2.3
					42	3.4
Ø25	3.0	5.0	95	43		2.5
					50	3.5
Ø32	2.0	5.0	143	57		2.3
					64	3.0
Ø40	1.5	5.0	191	73		2.3
					80	2.8

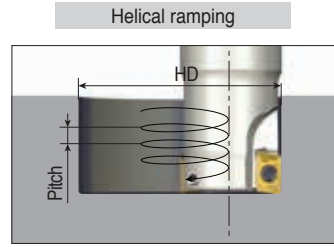
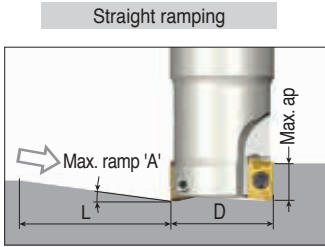
Ramping Data



APKT 09

(unit: mm)

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

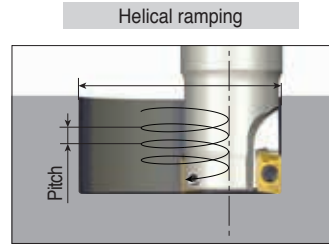
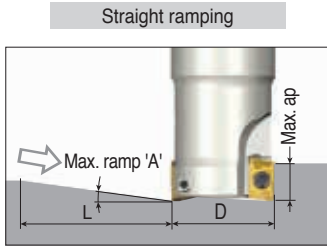


APKT 12

(unit: mm)

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

Ramping Data



APKT 17

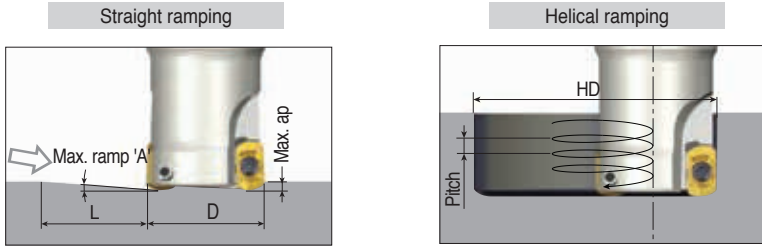
(unit: mm)

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

APKT 19

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø40	6.0	17.5	167	56	80	4.5
						11.2
Ø50	4.0	17.5	250	76	100	4.9
						9.3
Ø63	2.9	17.5	346	102	126	5.3
						8.5
Ø80	2.1	17.5	477	136	160	5.5
						7.8
Ø100	1.6	17.5	627	176	200	5.7
						7.5
Ø125	1.2	17.5	736	226	250	5.6
						7.0
Ø160	0.9	17.5	1115	296	320	5.7
						6.7
Ø200	0.7	17.5	1433	376	400	5.7
						6.5

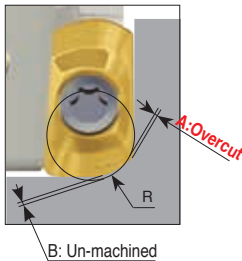


AXMT 0602R-HF

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø8	0.3	0.5	96	14	16	0.1
						0.1
Ø10	0.5	0.5	57	14	20	0.2
						0.3
Ø11	1.0	0.5	29	18	22	0.5
						0.5
Ø12	2.3	0.5	12	18	24	0.5
						0.5
Ø13	4.5	0.5	6	18	26	0.5
						0.5
Ø14	3.5	0.5	8	18	28	0.5
						0.5
Ø15	3.0	0.5	10	26	30	0.5
						0.5
Ø16	2.8	0.5	10	26	32	0.5
						0.5
Ø17	2.5	0.5	11	26	34	0.5
						0.5
Ø18	2.3	0.5	12	26	36	0.5
						0.5
Ø19	2.2	0.5	13	26	38	0.5
						0.5
Ø20	1.9	0.5	15	34	40	0.5
						0.5
Ø21	1.7	0.5	17	34	42	0.5
						0.5
Ø25	1.4	0.5	20	44	50	0.5
						0.5
Ø32	1.0	0.5	29	58	64	0.5
						0.5
Ø40	0.7	0.5	41	74	80	0.5
						0.5

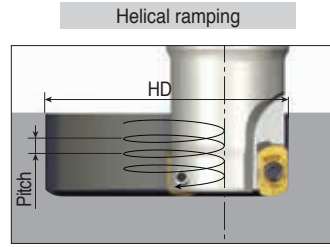
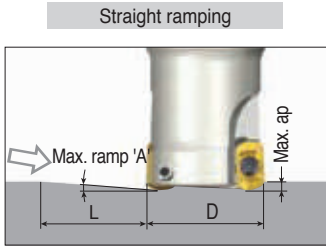
Programming technical data



	R Program	A Over cut	B Un-machined
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
APKT 1204R-HF	3.0	0.36	0.04
	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

Yellow background: Recommended program 'R'

Ramping Data

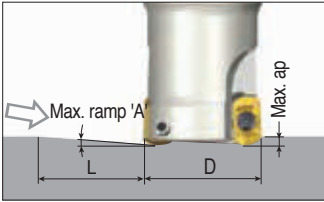


APKT 09T3R-HF

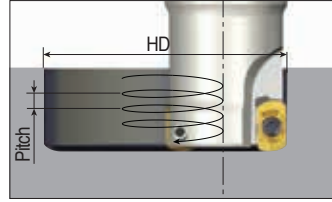
(unit: mm)

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

Straight ramping



Helical ramping

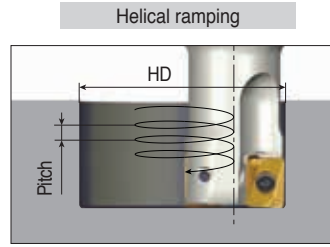
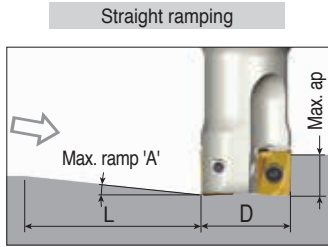


APKT 1204R-HF

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø16	3.8	1.2	18	21	32	0.8
						1.2
Ø18	4.0	1.2	17	24	36	1.1
						1.2
Ø20	4.0	1.2	17	27	40	1.2
						1.2
Ø21	3.5	1.2	20	29	42	1.2
						1.2
Ø25	2.5	1.2	27	37	50	1.2
						1.2
Ø26	2.3	1.2	30	39	52	1.2
						1.2
Ø32	1.7	1.2	40	51	64	1.2
						1.2
Ø33	1.7	1.2	40	53	66	1.2
						1.2
Ø40	1.5	1.2	46	67	80	1.2
						1.2
Ø50	1.1	1.2	63	86	100	1.2
						1.2
Ø63	1.0	1.2	69	112	126	1.2
						1.2
Ø80	0.8	1.2	86	146	160	1.2
						1.2

Ramping Data



ANH(M)X 11

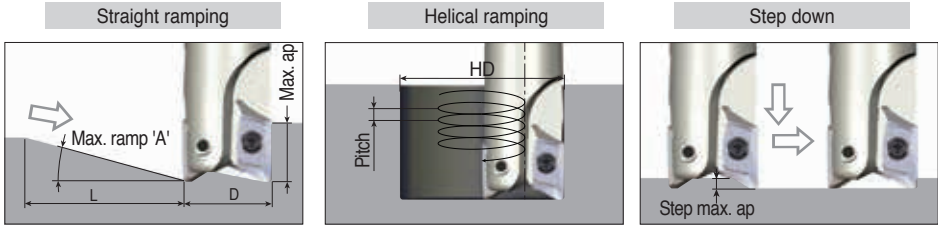
(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø25	1.5	11.0	420	30	50	0.3
						1.7
Ø26	1.4	11.0	450	32	52	0.4
						1.7
Ø32	1.1	11.0	573	44	64	0.6
						1.6
Ø33	1.0	11.0	631	46	66	0.6
						1.5
Ø40	0.8	11.0	788	60	80	0.7
						1.5
Ø50	0.6	11.0	1051	80	100	0.8
						1.4
Ø63	0.4	11.0	1576	106	126	0.8
						1.2
Ø80	0.3	11.0	2102	140	160	0.8
						1.1
Ø100	0.2	11.0	3153	180	200	0.7
						0.9
Ø125	0.2	11.0	3153	230	250	1.0
						1.2

ANH(M)X 16

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø32	1.2	15.0	716	44	64	0.7
						1.8
Ø33	1.0	15.0	560	46	66	0.6
						1.5
Ø40	0.9	15.0	955	60	80	0.8
						1.7
Ø50	0.8	15.0	1075	80	100	1.1
						1.9
Ø63	0.6	15.0	1433	106	126	1.2
						1.8
Ø80	0.45	15.0	1911	140	160	1.3
						1.7
Ø100	0.35	15.0	2457	180	200	1.3
						1.6
Ø125	0.25	15.0	3439	230	250	1.2
						1.5
Ø160	0.15	15.0	5732	300	320	1.0
						1.1
Ø200	0.1	15.0	8599	380	400	0.8
						0.9



XEVT 16: 0.4R-1.6R

(unit: mm)

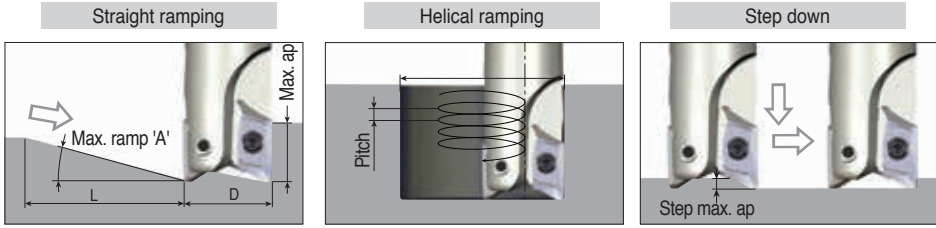
Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø25	23.5	16	37	29.1	50	4.8	4
						13.6	4
Ø32	14.5	16	62	43.1	64	7.7	4
						13.6	4
Ø40	10.0	16	91	59.1	80	9.0	4
						13.6	4
Ø50	7.5	16	122	79.1	100	10.2	4
						13.6	4
Ø63	5.5	16	166	105.1	126	10.8	4
						13.6	4
Ø80	4.5	16	203	139.1	160	12.4	4
						13.6	4
Ø100	3.3	16	278	179.1	200	12.2	4
						13.6	4
Ø125	2.5	16	367	229.1	250	12.1	4
						13.6	4
Ø160	1.5	16	611	299.1	320	9.7	4
						11.2	4
Ø200	1.0	16	917	379.1	400	8.3	4
						9.3	4

XEVT 16: 2.0R

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø25	23.5	15.5	36	29.1	50	4.8	3.5
						13.2	3.5
Ø32	14.5	15.5	60	43.1	64	7.7	3.5
						13.2	3.5
Ø40	10.0	15.5	88	59.1	80	9.0	3.5
						13.2	3.5
Ø50	7.5	15.5	118	79.1	100	10.2	3.5
						13.2	3.5
Ø63	5.5	15.5	161	105.1	126	10.8	3.5
						13.2	3.5
Ø80	4.5	15.5	197	139.1	160	12.4	3.5
						13.2	3.5
Ø100	3.3	15.5	269	179.1	200	12.2	3.5
						13.2	3.5
Ø125	2.5	15.5	355	229.1	250	12.1	3.5
						13.2	3.5
Ø160	1.5	15.5	592	299.1	320	9.7	3.5
						11.2	3.5
Ø200	1.0	15.5	888	379.1	400	8.3	3.5
						9.3	3.5

Ramping Data



XEVT 16: 3.0R-3.2R

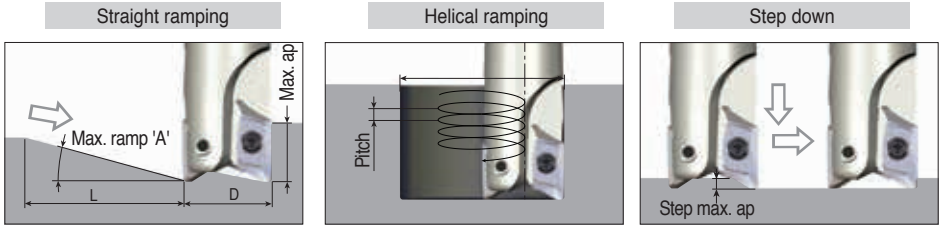
(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø25	22.5	14.5	35	29.1	50	4.5	2.8
						12.3	2.8
Ø32	13.5	14.5	60	43.1	64	7.1	2.8
						12.3	2.8
Ø40	9.0	14.5	92	59.1	80	8.1	2.8
						12.3	2.8
Ø50	6.5	14.5	127	79.1	100	8.8	2.8
						12.3	2.8
Ø63	5.0	14.5	166	105.1	126	9.8	2.8
						12.3	2.8
Ø80	4.0	14.5	207	139.1	160	11.0	2.8
						12.3	2.8
Ø100	3.0	14.5	277	179.1	200	11.1	2.8
						12.3	2.8
Ø125	2.0	14.5	415	229.1	250	9.7	2.8
						11.6	2.8
Ø160	1.1	14.5	756	299.1	320	7.1	2.8
						8.2	2.8
Ø200	0.8	14.5	1039	379.1	400	6.7	2.8
						7.4	2.8

XEVT 16: 4.0R-5.0R

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø25	20.0	14.5	40	29.1	50	4.0	2.4
						12.3	2.4
Ø32	12.0	14.5	68	43.1	64	6.3	2.4
						12.3	2.4
Ø40	7.5	14.5	110	59.1	80	6.7	2.4
						12.3	2.4
Ø50	5.5	14.5	151	79.1	100	7.5	2.4
						12.3	2.4
Ø63	4.5	14.5	184	105.1	126	8.8	2.4
						12.3	2.4
Ø80	3.5	14.5	237	139.1	160	9.6	2.4
						12.3	2.4
Ø100	3.0	14.5	277	179.1	200	11.1	2.4
						12.3	2.4
Ø125	2.0	14.5	415	229.1	250	9.7	2.4
						11.6	2.4
Ø160	1.0	14.5	831	299.1	320	6.5	2.4
						7.5	2.4
Ø200	0.7	14.5	1187	379.1	400	5.8	2.4
						6.5	2.4



XEVT 22: 0.5R-0.8R

(unit: mm)

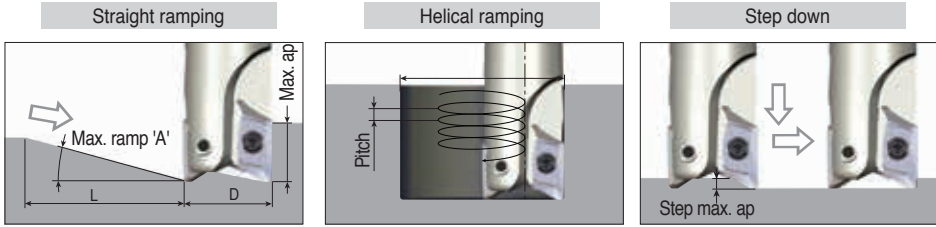
Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø32	20.0	21	58	38.5	64	6.3	4.7
						17.9	4.7
Ø40	14.0	21	84	54.5	80	9.6	4.7
						17.9	4.7
Ø50	9.5	21	126	74.5	100	10.9	4.7
						17.9	4.7
Ø63	7.0	21	171	100.5	126	12.3	4.7
						17.9	4.7
Ø80	5.0	21	240	134.5	160	12.7	4.7
						17.9	4.7
Ø100	3.7	21	325	174.5	200	12.9	4.7
						17.3	4.7
Ø125	2.6	21	463	224.5	250	12.1	4.7
						15.1	4.7
Ø200	1.6	21	752	374.5	400	13.0	4.7
						14.9	4.7

XEVT 22: 1.6R-2.0R

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø32	19.5	20.3	57	38.5	64	6.1	4.2
						17.3	4.2
Ø40	13.5	20.3	85	54.5	80	9.3	4.2
						17.3	4.2
Ø50	9.5	20.3	121	74.5	100	10.9	4.2
						17.3	4.2
Ø63	6.7	20.3	173	100.5	126	11.8	4.2
						17.3	4.2
Ø80	4.7	20.3	247	134.5	160	12.0	4.2
						17.3	4.2
Ø100	3.5	20.3	332	174.5	200	12.2	4.2
						16.3	4.2
Ø125	2.5	20.3	465	224.5	250	11.6	4.2
						14.6	4.2
Ø200	1.5	20.3	776	374.5	400	12.2	4.2
						14.0	4.2

Ramping Data



XEVT 22: 3.0R-4.0R

(unit: mm)

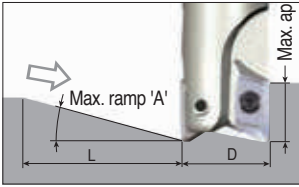
Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø32	18.5	19.5	58	38.5	64	5.8	3.3
				54.5	80	16.6	3.3
Ø40	12.5	19.5	88	74.5	100	8.6	3.3
				100.5	126	16.6	3.3
Ø50	8.5	19.5	131	134.5	160	9.6	3.3
				174.5	200	16.2	3.3
Ø63	5.5	19.5	203	224.5	250	10.2	3.3
				374.5	400	14.9	3.3
Ø80	4.0	19.5	279	174.5	200	10.4	3.3
				224.5	250	14.0	3.3
Ø100	3.0	19.5	372	374.5	400	9.3	3.3
				374.5	400	11.6	3.3
Ø125	2.0	19.5	559	374.5	400	8.1	3.3
				374.5	400	9.3	3.3
Ø200	1.0	19.5	1118	374.5	400	8.1	3.3
				374.5	400	9.3	3.3

XEVT 22: 5.0R

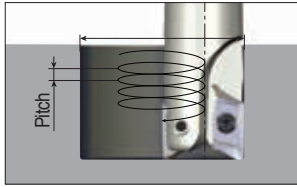
(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø32	17.5	19	60	38.5	64	5.5	2.8
				54.5	80	16.2	2.8
Ø40	11.5	19	93	74.5	100	7.9	2.8
				100.5	126	16.2	2.8
Ø50	7.5	19	144	134.5	160	8.6	2.8
				174.5	200	16.2	2.8
Ø63	5.0	19	217	224.5	250	8.8	2.8
				374.5	400	14.7	2.8
Ø80	3.5	19	311	174.5	200	8.9	2.8
				224.5	250	13.1	2.8
Ø100	2.5	19	435	374.5	400	8.7	2.8
				374.5	400	11.6	2.8
Ø125	1.7	19	641	374.5	400	7.9	2.8
				374.5	400	9.9	2.8
Ø200	0.8	19	1361	374.5	400	6.5	2.8
				374.5	400	7.4	2.8

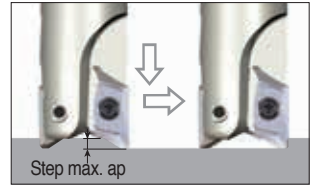
Straight ramping



Helical ramping



Step down

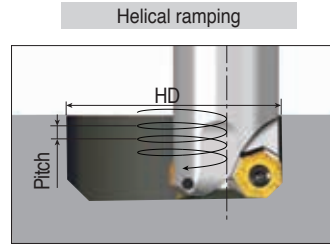
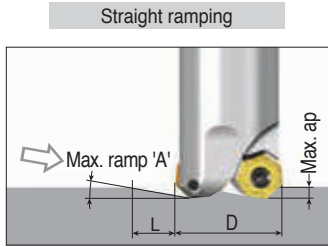


XEVT 22: 6.4R

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down			Step down
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.	Max. ap
Ø32	16	18.2	64	38.5	64	5.0	2.1
						15.5	2.1
Ø40	10	18.2	103	54.5	80	6.8	2.1
						15.5	2.1
Ø50	6.5	18.2	160	74.5	100	7.4	2.1
						15.2	2.1
Ø63	4.5	18.2	231	100.5	126	7.9	2.1
						13.2	2.1
Ø80	3.0	18.2	347	134.5	160	7.6	2.1
						11.2	2.1
Ø100	2.0	18.2	521	174.5	200	6.9	2.1
						9.3	2.1
Ø125	1.5	18.2	695	224.5	250	7.0	2.1
						8.7	2.1
Ø200	0.7	18.2	1490	374.5	400	5.7	2.1
						6.5	2.1

Ramping Data

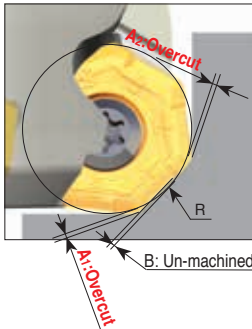


7EMT 06

(unit: mm)

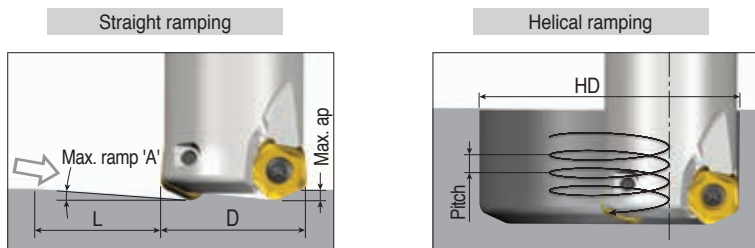
Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø32	29	3.2	6	45.5	64	3.2
						3.2
Ø40	15.5	3.2	12	61.5	80	3.2
						3.2
Ø50	9.5	3.2	19	81.5	100	3.2
						3.2
Ø63	5.5	3.2	33	107.5	126	3.2
						3.2
Ø80	4.0	3.2	46	141.5	160	3.2
						3.2
Ø100	3.0	3.2	61	181.5	200	3.2
						3.2
Ø125	2.0	2.3	66	231.5		3.2
					250	3.2

Programming technical data



	R Program	A Over cut		B Un-machined
		A1	A2	B
7EMT 06	3	0	0	1.77
	4.5	0	0	1.51
	5	0.03	0.02	0.94
	6	0.21	0.19	0.53

Yellow background: Recommended program 'R'

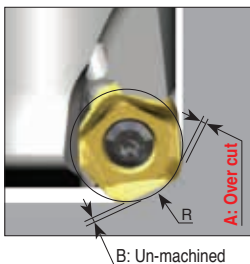


PTKU 05

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø20	1.3	1.5	66	33		0.7
					40	0.9
Ø25	1.1	1.5	78	43		0.8
					50	1.0
Ø26	1.0	1.5	86	45		0.8
					52	0.9
Ø32	1.0	1.5	86	57		1.0
					64	1.1
Ø33	1.0	1.5	86	59		1.0
					66	1.2
Ø40	0.8	1.5	101	73		1.1
					80	1.2
Ø50	0.7	1.5	123	93		1.1
					100	1.2
Ø52	0.7	1.5	123	97		1.2
					104	1.3
Ø63	0.6	1.5	132	119		1.3
					126	1.4
Ø66	0.6	1.5	143	125		1.3
					132	1.4

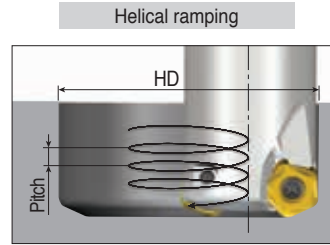
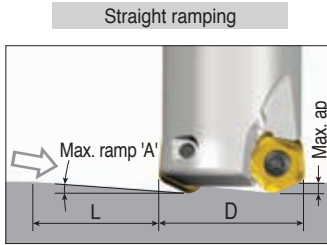
Programming technical data



	R Program	A Over cut	B Un-machined
PTKU 05	2.5	0.00	0.83
	2.7	0.00	0.76
	3.0	0.04	0.66

■ : Recommended program 'R'

Ramping Data

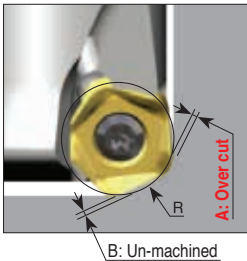


PTKU 10

(unit: mm)

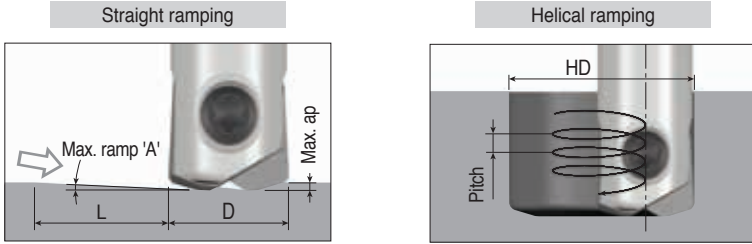
Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø40	1.5	3.0	111	63		1.7
					80	2.2
Ø50	1.9	3.0	88	83		2.8
					100	3.0
Ø63	1.7	3.0	101	109		3.0
					126	3.0
Ø66	2.2	3.0	78	115		3.0
					132	3.0
Ø80	1.5	3.0	115	143		3.0
					160	3.0
Ø100	1.1	3.0	150	183		3.0
					200	3.0
Ø125	0.8	3.0	202	233		3.0
					250	3.0
Ø160	0.6	3.0	265	303		3.0
					320	3.0
Ø200	0.5	3.0	344	383		3.0
					400	3.0

Programming technical data



	R Program	A Over cut	B Un-machined
PTKU 10	5.5	0.00	1.45
	6.0	0.09	1.28
	6.5	0.21	1.11

 : Recommended program 'R'

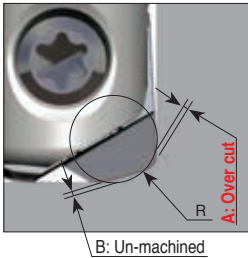


HFN

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø6	2.0	0.3	9	9.6	11	0.3
						0.3
Ø8	2.5	0.5	11	12	15	0.5
						0.5

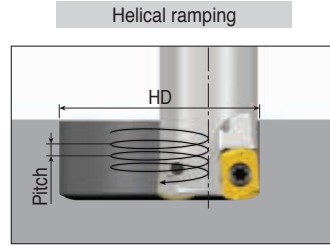
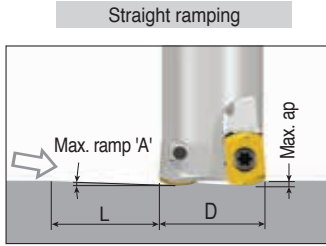
Programming technical data



	R Program	A Over cut	B Un-machined
HFN 060	0.8	0.00	0.21
	1.0	0.03	0.16
HFN 080	0.8	0.00	0.38
	1.0	0.00	0.32
	1.2	0.02	0.27

Yellow background: Recommended program 'R'

Ramping Data

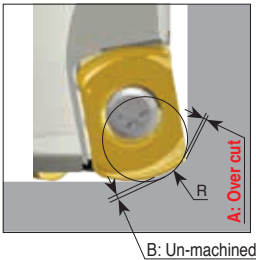


BLMP 04

(unit: mm)

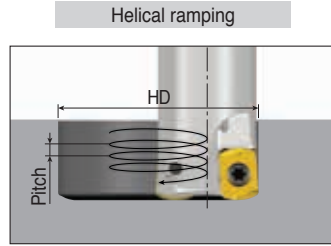
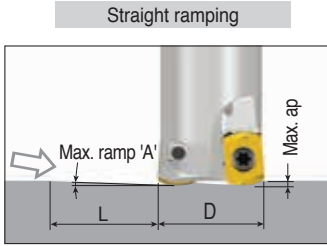
Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø8	0.4	0.5	72	12.6		0.1
					16	0.1
Ø10	0.6	0.5	44	16.6		0.2
					20	0.2
Ø11	0.7	0.5	38	18.6		0.2
					22	0.3
Ø12	1.0	0.5	29	20.6		0.4
					24	0.4
Ø13	1.1	0.5	25	22.6		0.5
					26	0.5
Ø16	1.0	0.5	29	28.6		0.5
					32	0.5
Ø17	1.1	0.5	26	30.6		0.5
					34	0.5
Ø20	1.0	0.5	27	36.6		0.5
					40	0.5
Ø21	0.7	0.5	38	38.6		0.5
					42	0.5
Ø25	0.7	0.5	38	46.6		0.5
					50	0.5
Ø32	0.6	0.5	48	60.6		0.5
					64	0.5

Programming technical data



	R Program	A Over cut	B Un-machined
BLMP 04	0.8	0.00	0.28
	0.9	0.00	0.25
	1.0	0.08	0.22

Yellow background: Recommended program 'R'

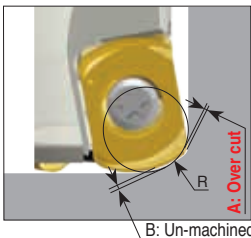


BLMP 06

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø16	2.0	0.7	13	23	32	0.7
				25	34	0.7
Ø17	2.0	0.7	15	27	36	0.7
				31	40	0.8
Ø18	2.3	0.7	16	33	42	1.0
				35	44	1.0
Ø20	1.5	1.0	38	41	50	1.0
				43	52	1.0
Ø21	1.5	1.0	38	51	60	1.0
				55	64	1.0
Ø22	1.5	1.0	38	57	66	1.0
				61	70	1.0
Ø25	1.3	1.0	41	71	80	1.0
				75	84	1.0
Ø26	1.2	1.0	44	91	100	1.0
				95	104	1.0
Ø30	1.0	1.0	52	117	126	1.0
				123	132	1.0
Ø32	0.9	1.0	57			1.0
						1.0
Ø33	0.9	1.0	57			1.0
						1.0
Ø35	0.8	1.0	57			1.0
						1.0
Ø40	0.7	1.0	64			1.0
						1.0
Ø42	0.7	1.0	72			1.0
						1.0
Ø50	0.6	1.0	96			1.0
						1.0
Ø52	0.6	1.0	96			1.0
						1.0
Ø63	0.5	1.0	115			1.0
						1.0
Ø66	0.5	1.0	115			1.0
						1.0

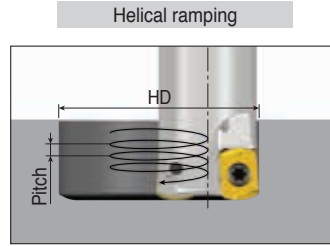
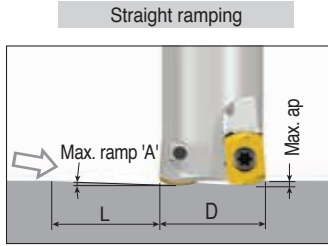
Programming technical data



	R Program	A Over cut	B Un-machined
BLMP 06 (Ø16, Ø17, Ø18)	1.5	0	0.35
	2.0	0.1	0.22
	2.5	0.27	0.1
BLMP 06 (Ø20-)	2.0	0	0.42
	2.5	0.12	0.26
	3.0	0.29	0.17

■ : Recommended program 'R'

Ramping Data

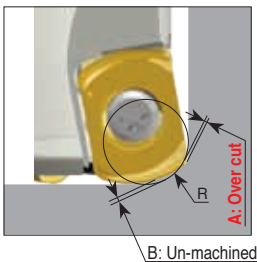


BLMP 09

(unit: mm)

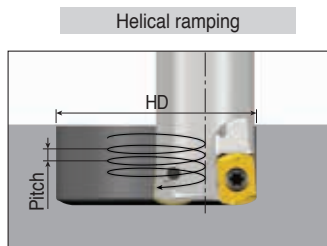
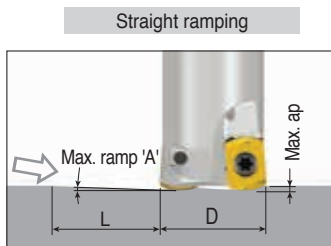
Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø25	2.2	1.5	39	42	50	1.5
						1.5
Ø26	2.2	1.5	39	44	52	1.5
						1.5
Ø30	2.0	1.5	43	52	60	1.5
						1.5
Ø32	2.0	1.5	43	56	64	1.5
						1.5
Ø33	2.0	1.5	43	58	66	1.5
						1.5
Ø35	2.0	1.5	43	60	70	1.5
						1.5
Ø40	1.5	1.5	57	72	80	1.5
						1.5
Ø42	1.5	1.5	57	76	84	1.5
						1.5
Ø50	1.0	1.5	86	92	100	1.5
						1.5
Ø52	1.0	1.5	86	96	104	1.5
						1.5
Ø63	0.9	1.5	96	118	126	1.5
						1.5
Ø66	0.9	1.5	96	124	132	1.5
						1.5
Ø80	0.8	1.5	107	152	160	1.5
						1.5
Ø100	0.7	1.5	123	192	200	1.5
						1.5
Ø125	0.4	1.5	215	240	250	1.5
						1.5

Programming technical data



	R Program	A Over cut	B Un-machined
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'

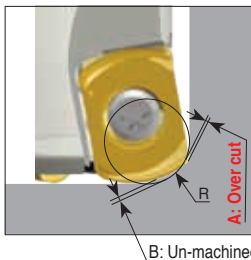


BLMP 11

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø30	0.50	2.0	229	41	60	0.3
						0.7
Ø32	0.50	2.0	229	45	64	0.3
						0.7
Ø33	0.45	2.0	255	47	66	0.3
						0.7
Ø35	0.50	2.0	229	51	70	0.4
						0.8
Ø40	0.55	2.0	208	61	80	0.5
						1.0
Ø42	0.50	2.0	229	65	84	0.5
						1.0
Ø50	0.50	2.0	229	81	100	0.7
						1.2
Ø52	0.45	2.0	255	85	104	0.7
						1.1
Ø63	0.45	2.0	255	107	126	0.9
						1.3
Ø66	0.40	2.0	287	113	132	0.9
						1.2
Ø80	0.35	2.0	328	141	160	1.0
						1.3
Ø100	0.30	2.0	382	181	200	1.1
						1.4
Ø125	0.25	2.0	459	231	250	1.2
						1.5
Ø160	0.20	2.0	573	301	320	1.3
						1.5
Ø200	0.15	2.0	764	381	400	1.3
						1.4

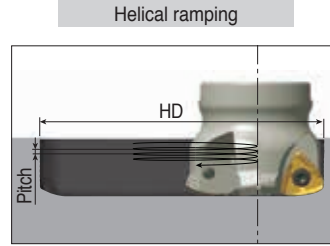
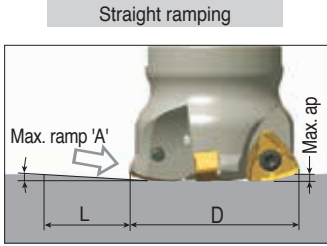
Programming technical data



	R Program	A Over cut	B Un-machined
BLMP 11	2.4	0.00	1.09
	3.0	0.00	0.90
	3.2	0.18	0.85

■ : Recommended program 'R'

Ramping Data

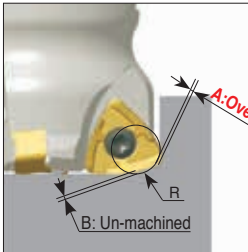


BLMP 13

(unit: mm)

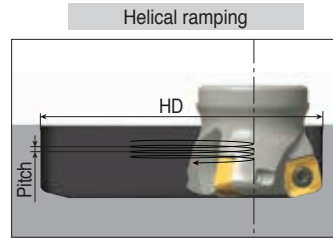
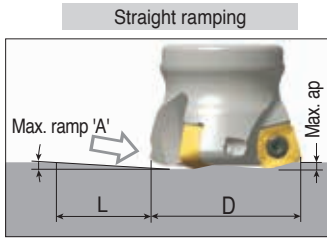
Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø32	0.8	2.0	143	50	64	0.7
						0.9
Ø33	1.1	2.0	104	52	66	1.0
						1.3
Ø35	1.1	2.0	104	56	70	1.1
						1.3
Ø40	1.2	2.0	96	66	80	1.4
						1.7
Ø42	1.1	2.0	104	70	84	1.3
						1.6
Ø50	0.8	2.0	143	86	100	1.2
						1.4
Ø52	0.8	2.0	143	90	104	1.3
						1.5
Ø63	0.6	2.0	191	112	126	1.2
						1.3
Ø66	0.6	2.0	191	118	132	1.2
						1.4
Ø80	0.5	2.0	229	146	160	1.3
						1.4
Ø100	0.4	2.0	287	186	200	1.3
						1.4
Ø125	0.3	2.0	382	236	250	1.2
						1.3
Ø160	0.3	2.0	382	306	320	1.6
						1.7
Ø200	0.2	2.0	573	386	400	1.3
						1.4
Ø250	0.2	2.0	573	486	500	1.7
						1.7

Programming technical data



	R Program	A Over cut	B Un-machined
BLMP 13	3.0	0	1.31
	3.5	0	1.17
	4.0	0.04	1.03
	4.5	0.15	0.89
	5.0	0.3	0.76

 : Recommended program 'R'

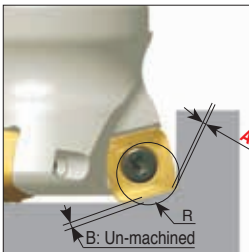


SBMT 06

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø16	2.2	1.0	25.5	22.8	32	0.7
						1.0
Ø17	2.4	1.0	23.4	24.8	34	0.9
						1.0
Ø20	3.2	1.0	17.9	30.8	40	1.0
						1.0
Ø21	3.1	1.0	18.5	32.8	42	1.0
						1.0
Ø25	2.4	1.0	23.4	40.8	50	1.0
						1.0
Ø32	1.8	1.0	31.8	54.8	64	1.0
						1.0
Ø40	1.3	1.0	42.5	70.8	80	1.0
						1.0
Ø50	1.0	1.0	57.3	90.8	100	1.0
						1.0
Ø63	0.7	1.0	76.4	116.8	126	1.0
						1.0

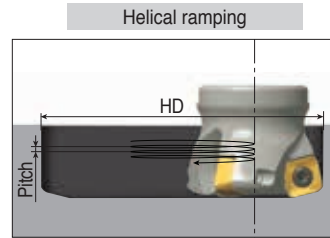
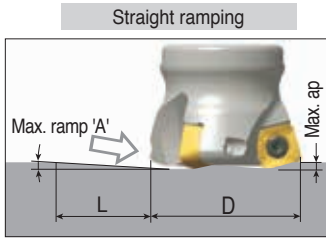
Programming technical data



	R Program	A Over cut	B Un-machined
SBMT 06	1.8	0	0.81
	2.0	0	0.77
	2.2	0.01	0.73

 :Recommended program 'R'

Ramping Data

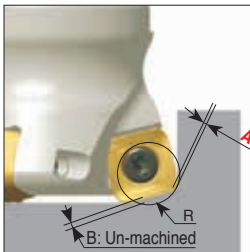


SBMT 09

(unit: mm)

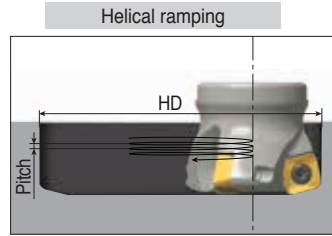
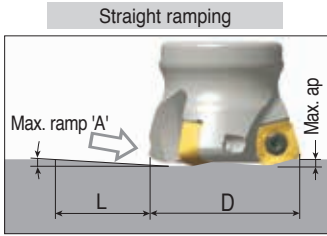
Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø25	1.6	1.2	43	36	50	1
						1.2
Ø26	1.7	1.2	40	38	52	1.1
						1.2
Ø30	3.1	1.2	22	46	60	1.2
						1.2
Ø32	3.9	1.2	18	50	64	1.2
						1.2
Ø33	3.7	1.2	19	52	66	1.2
						1.2
Ø35	3.4	1.2	18	56	70	1.2
						1.2
Ø40	2.8	1.2	25	66	80	1.2
						1.2
Ø42	2.6	1.2	26	70	84	1.2
						1.2
Ø50	2.0	1.2	34	86	100	1.2
						1.2
Ø52	1.9	1.2	38	90	104	1.2
						1.2
Ø63	1.5	1.2	43	112	126	1.2
						1.2
Ø66	1.1	1.2	63	118	132	1.2
						1.2
Ø80	1.2	1.2	63	146	160	1.2
						1.2

Programming technical data



	R Program	A Over cut	B Un-machined
SBMT 09	3.5	0.1	0.81
	3	0	0.9
	2.5	0	0.98
	2	0	1.1

■ :Recommended program 'R'

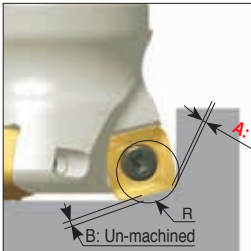


SBMT 13

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø32	7.0	2.0	16	47	64	2.0
				49	66	2.0
Ø33	6.9	2.0	17	53	70	2.0
				63	80	2.0
Ø40	5.3	2.0	22	67	84	2.0
				83	100	2.0
Ø42	4.4	2.0	26	87	104	2.0
				109	126	2.0
Ø50	4.3	2.0	27	143	160	2.0
				183	200	2.0
Ø52	4.0	2.0	29	233	250	2.0
				303	320	2.0
Ø63	2.9	2.0	40	383	400	2.0
				483	500	2.0
Ø80	2.0	2.0	57			2.0
						2.0
Ø100	1.5	2.0	76			2.0
						2.0
Ø125	1.1	2.0	104			2.0
						2.0
Ø160	0.8	2.0	104			2.0
						2.0
Ø200	0.6	2.0	127			2.0
						2.0
Ø250	0.5	2.0	164			2.0
						2.0

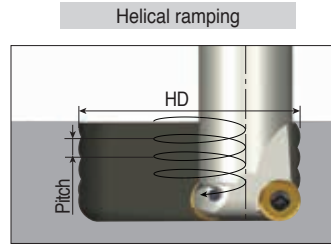
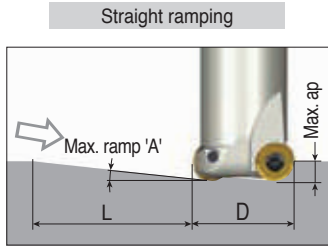
Programming technical data



	R Program	A Over cut	B Un-machined
SBMT 13	4.0	0	1.62
	4.5	0	1.51
	5.0	0.04	1.4
	5.5	0.14	1.29
	6.0	0.28	1.18

■ :Recommended program 'R'

Ramping Data



RNMU 10

(unit: mm)

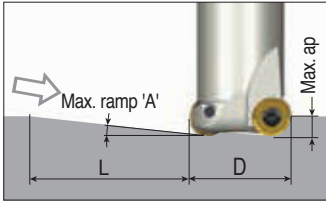
Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø25	1.1	5.0	261	33	50	0.4
						1.3
Ø26	1.1	5.0	261	35	52	0.5
						1.3
Ø32	0.9	5.0	318	47	64	0.6
						1.3
Ø33	0.9	5.0	318	49	66	0.7
						1.4
Ø40	0.9	5.0	318	63	80	1.0
						1.7
Ø42	0.9	5.0	318	67	84	1.0
						1.8
Ø50	0.7	5.0	409	83	100	1.1
						1.6
Ø52	0.8	5.0	358	87	104	1.3
						1.9

RNMU 12

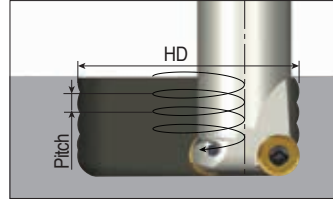
(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø32	1.4	6.0	246	42	64	0.7
						2.1
Ø33	1.4	6.0	246	44	66	0.7
						2.2
Ø40	1.3	6.0	265	58	80	1.1
						2.4
Ø50	1.0	6.0	344	78	100	1.3
						2.3
Ø52	1.0	6.0	344	82	104	1.4
						2.4
Ø63	1.0	6.0	344	104	126	1.9
						2.9
Ø66	1.0	6.0	344	110	132	2.0
						3.1
Ø80	0.9	6.0	382	138	160	2.4
						3.4
Ø100	0.7	6.0	491	178	200	2.5
						3.3

Straight ramping



Helical ramping

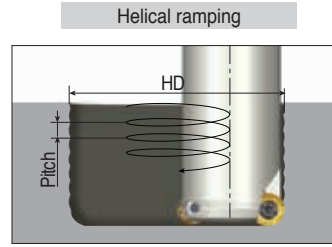
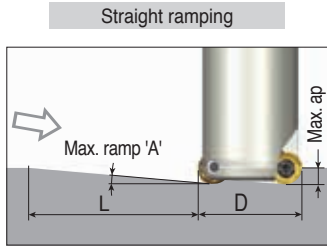


RNMU 16

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø40	1.4	8.0	328	52	80	0.8
						2.6
Ø42	1.4	8.0	328	56	84	0.9
						2.7
Ø50	1.3	8.0	353	72	100	1.3
						3.0
Ø52	1.0	8.0	459	76	104	1.1
						2.4
Ø63	1.0	8.0	459	98	126	1.6
						2.9
Ø66	1.0	8.0	459	104	132	1.8
						3.1
Ø80	1.0	8.0	459	132	160	2.4
						3.7
Ø100	0.9	8.0	510	172	200	3.0
						4.2
Ø125	0.9	8.0	510	222	250	4.1
						5.2

Ramping Data



RYM(H)X-08

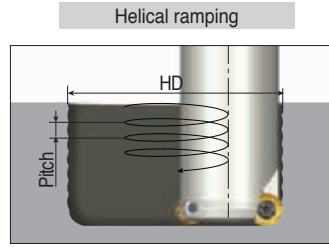
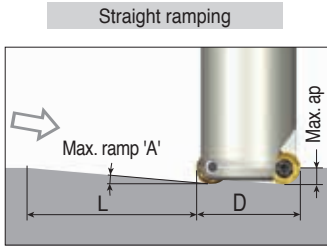
(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø16	2.5	4.0	92	18	32	0.2
						1.9
Ø17	2.5	4.0	92	20	34	0.3
						2.0
Ø18	2.5	4.0	92	22	36	0.5
						2.1
Ø20	4.0	4.0	57	26	40	1.1
						3.4
Ø21	4.0	4.0	57	28	42	1.3
						3.4
Ø25	4.0	4.0	57	36	50	2.1
						3.4
Ø26	4.0	4.0	57	38	52	2.2
						3.4
Ø32	4.0	4.0	57	50	64	3.4
						3.4
Ø40	7.0	4.0	33	66	80	3.4
						3.4

RYMX-10

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø20	4.5	5.0	64	22	40	0.4
						4.2
Ø21	4.5	5.0	64	24	42	0.6
						4.4
Ø25	5.0	5.0	57	32	50	1.6
						4.3
Ø26	5.0	5.0	57	34	52	1.9
						4.3
Ø32	5.0	5.0	57	46	64	3.3
						4.3
Ø35	5.0	5.0	57	52	70	4.0
						4.3
Ø40	5.0	5.0	57	62	80	4.3
						4.3
Ø42	5.0	5.0	57	66	84	4.3
						4.3
Ø50	6.5	5.0	44	82	100	4.3
						4.3
Ø52	6.0	5.0	48	86	104	4.3
						4.3
Ø66	4.5	5.0	64	114	132	4.3
						4.3

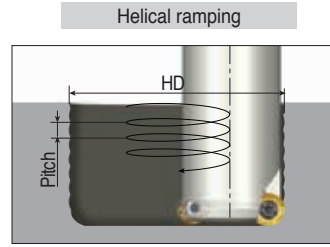
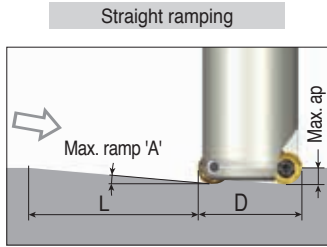


RYM-12

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø25	6.0	6.0	57	28	50	0.8
						5.1
Ø26	6.0	6.0	57	30	52	1.1
						5.1
Ø32	12.0	6.0	28	42	64	5.1
						5.1
Ø33	12.0	6.0	28	44	66	5.1
						5.1
Ø35	12.0	6.0	28	48	70	5.1
						5.1
Ø40	10.0	6.0	34	58	80	5.1
						5.1
Ø42	12.0	6.0	28	62	84	5.1
						5.1
Ø50	9.0	6.0	38	78	100	5.1
						5.1
Ø52	8.0	6.0	43	82	104	5.1
						5.1
Ø55	8.0	6.0	43	88	110	5.1
						5.1
Ø63	7.0	6.0	49	104	126	5.1
						5.1
Ø66	6.5	6.0	53	110	132	5.1
						5.1
Ø80	4.5	6.0	76	138	160	5.1
						5.1
Ø100	3.5	6.0	98	178	200	5.1
						5.1
Ø125	2.5	6.0	137	228	250	5.1
						5.1

Ramping Data



RYMX-16

(unit: mm)

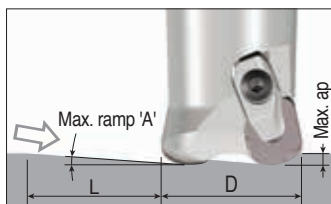
Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø32	8.0	8.0	57	34	64	0.7
				64		6.8
Ø40	9.5	8.0	48	50	80	4.5
				80		6.8
Ø42	9.0	8.0	51	54	84	5.1
				84		6.8
Ø50	9.0	8.0	51	70	100	6.8
				100		6.8
Ø52	9.0	8.0	51	74	104	6.8
				104		6.8
Ø63	8.5	8.0	54	96	126	6.8
				126		6.8
Ø66	8.5	8.0	54	102	132	6.8
				132		6.8
Ø80	6.0	8.0	76	130	160	6.8
				160		6.8
Ø100	5.0	8.0	91	170	200	6.8
				200		6.8
Ø125	3.5	8.0	131	220	250	6.8
				250		6.8
Ø160	3.5	8.0	131	290	320	6.8
				320		6.8

RYMX-20

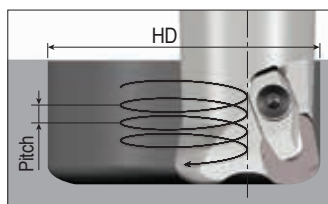
(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø50	8.0	10.0	71	62	100	4.5
				100		8.5
Ø63	12.5	10.0	45	88	126	8.5
				126		8.5
Ø80	8.5	10.0	67	122	160	8.5
				160		8.5
Ø100	6.5	10.0	88	162	200	8.5
				200		8.5
Ø125	4.5	10.0	127	212	250	8.5
				250		8.5
Ø160	4.0	10.0	143	282	320	8.5
				320		8.5
Ø200	2.5	10.0	229	362	400	8.5
				400		8.5
Ø250	2.4	10.0	239	462	500	8.5
				500		8.5

Straight ramping



Helical ramping

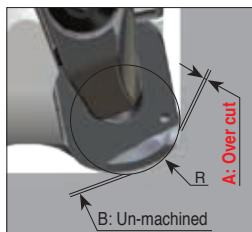


BNGX 09

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø25	1.2	1.5	55	39		0.9
					50	1.1
Ø32	0.6	1.5	132	53		0.6
					64	0.7
Ø40	0.6	1.5	143	69		0.7
					80	0.8
Ø50	0.5	1.5	156	89		0.9
					100	1.0

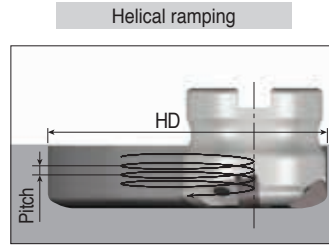
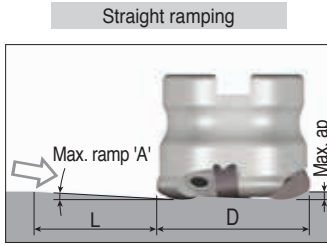
Programming technical data



	R Program	A Over cut	B Un-machined
BNGX 09	3.0	0.00	0.61
	3.4	0.00	0.46
	3.5	0.01	0.43
	4.0	0.12	0.26

3.4 : Recommended program 'R'

Ramping Data

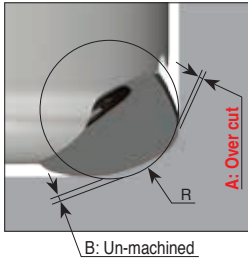


BNGX 12

(unit: mm)

Cutter dia. (D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia. (HD)	Max. dia. (HD)	Max. pitch/rev.
Ø50	0.6	2.5	239	84		1.1
					100	1.0
Ø63	0.5	2.5	287	110		1.1
					126	1.1
Ø80	0.4	2.5	318	144		1.3
					160	1.3

Programming technical data



	R Program	A Over cut	B Un-machined
BNGX 12	4.0	0.00	1.18
	4.5	0.00	1.00
	5.0	0.03	0.84

 : Recommended program 'R'

