Milling Insert

Face Milling Cutters

Cutters for Molds

Cutters for Molds

Milling Cutters for Aluminum

Side Milling Cutters

Milling Cutter for Cast iron at high feed

Detail Information of Milling Cutter and Arbor

Gear Tools

E

MILLING

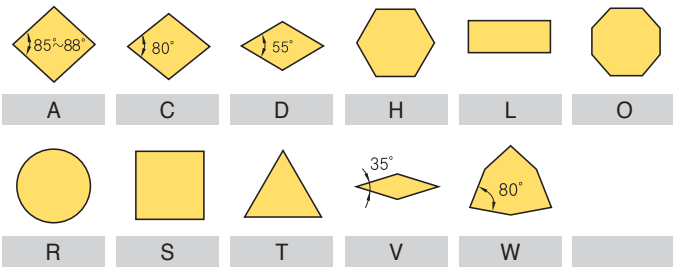
Milling tools that provide the best quality and improve productivity for every customer needs.

S P K R 12

1	2	3	4	5
Insert Shape	Relief Angle	Tolerance	Cross Section Type	Cutting Edge Length, Diameter of Inscribed circle

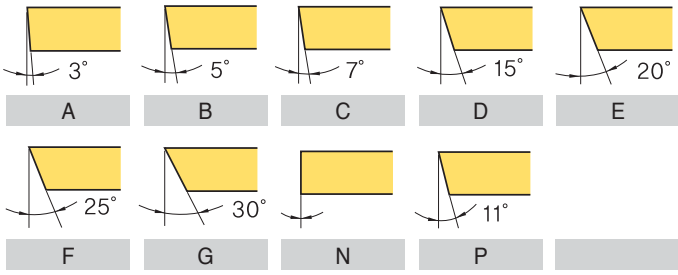
1 Insert Shape

S P K R 12 03 ED 08 S R - MX



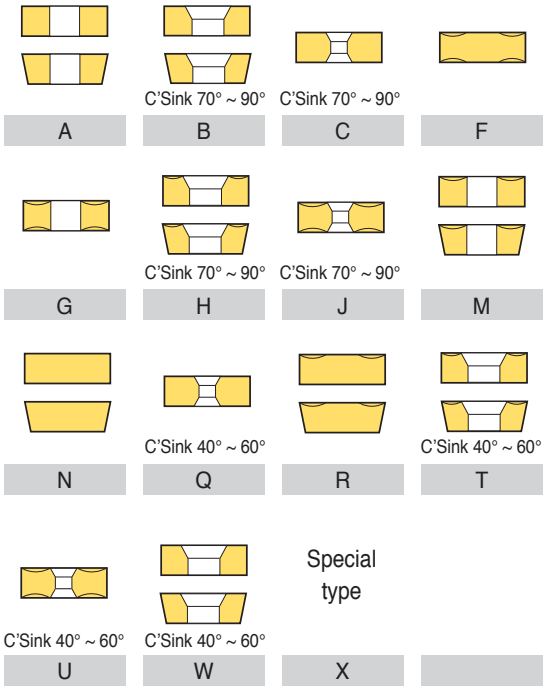
2 Relief Angle

S P K R 12 03 ED 08 S R - MX



4 Cross Section Type

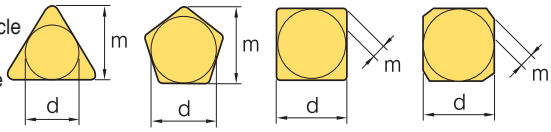
S P K R 12 03 ED 08 S R - MX



3 Tolerance

S P K R 12 03 ED 08 S R - MX

d : Inscribed Circle
t : Thickness
m : refer to figure



(mm)

Class	d	m	t
A	±0.025	±0.005	±0.025
C	±0.025	±0.013	±0.025
H	±0.013	±0.013	±0.025
E	±0.025	±0.025	±0.025
G	±0.025	±0.025	±0.13
J	±0.05 ~ ±0.15	±0.005	±0.025
K	±0.05 ~ ±0.15	±0.013	±0.025
L	±0.05 ~ ±0.15	±0.025	±0.025
M	±0.05 ~ ±0.15	±0.08 ~ ±0.20	±0.13
U	±0.08 ~ ±0.25	±0.13 ~ ±0.38	±0.13

■ Tolerance on C,E,H,M,O,P,R,S,T,W Insert Shape (exceptional case)

d	Tolerance on d		Tolerance on m	
	J,K,L,M,N	U	M,N	U
6.35	±0.05	±0.08	±0.08	±0.13
9.525	±0.05	±0.08	±0.08	±0.13
12.7	±0.08	±0.13	±0.13	±0.20
15.875	±0.10	±0.18	±0.15	±0.27
19.05	±0.10	±0.18	±0.15	±0.27
25.4	±0.13	±0.25	±0.18	±0.38

Tolerance on D Insert Shape (exceptional case)

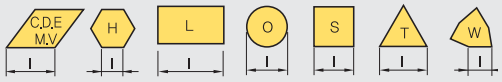
d	Tolerance on d	Tolerance on m
6.35	±0.05	±0.11
9.525	±0.05	±0.11
12.7	±0.08	±0.15
15.875	±0.10	±0.18
19.05	±0.10	±0.18

5 Cutting Edge Length, Diameter of Inscribed circle

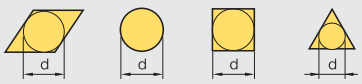
S P K R 12 03 ED 08 S R - MX

■ Metric system

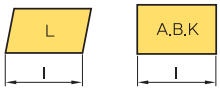
※ Decimal integer constant



■ Inch system



· Use 1/32″ unit for a insert having smaller I.C under 1/4″
· Use 1/8″ unit for a insert having larger I.C over 1/4″



※ In case of rectangular and rhombic insert indicate cutting edge length instead of inscribed circle.

■ Cross over chart for "Metric" and "Inch" system

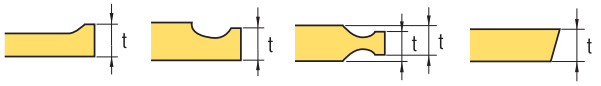
	06	09	11	16	22	27	33	44
	03	05	06	09	12	15	19	25
55°	04	06	07	11	15	19	23	31
80°	03	05	06	09	12	16	19	25
Inscribed circle	5/32″	7/32″	1/4″	3/8″	1/2″	5/8″	3/4″	1″
Inch system	5	7	2(8)	3	4	5	6	8

03 ED 08 S R - MX

6	7	8	9	10
Height of Cutting Edge	Nose Radius (Nose R)	Edge Preparation	Hand	Chip Breaker for Milling

6 Height of Cutting Edge

S P K R 12 03 ED 08 S R - MX

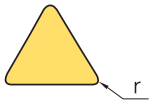


Symbol		Height of cutting edge(t)	
Metric	Inch	mm	Inch
01	1(2)	1.59	1/16
T0	1.125	1.79	9/128
T1	1.2	1.98	5/64
02	1.5(3)	2.38	3/32
T2	1.75	2.78	7/64
03	2	3.18	1/8
T3	2.5	3.97	5/32
04	3	4.76	3/16
05	3.5	5.56	7/32
06	4	6.35	1/4
07	5	7.94	5/16
09	6	9.52	3/8
11	7	11.11	7/16
12	8(16)	12.70	1/2

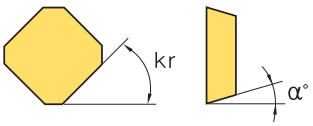
( ) Symbol for small size insert

7 Nose Radius (Nose R)

S P K R 12 03 ED 08 S R - MX



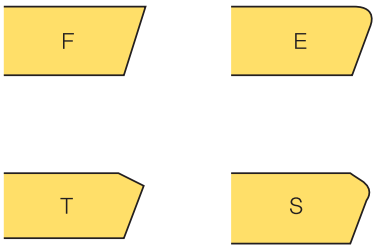
r		Symbol		r		Symbol	
mm	Inch	mm	Inch	mm	Inch	mm	Inch
00	0	0.0		12	3	1.2	3/64
02		0.2		15		1.5	
04	1	0.4	1/64	16	4	1.6	4/64
05		0.5		24	6	2.4	6/64
08	2	0.8	2/64	32	8	3.2	8/64
10		1.0		40		4.0	



Parallel Land	Relief Angle	
kr	α°	
A - 45°	A - 3°	F - 25°
D - 60°	B - 5°	G - 30°
E - 75°	C - 7°	N - 0°
F - 85°	D - 15°	P - 11°
P - 90°	E - 20°	
Z - Special		

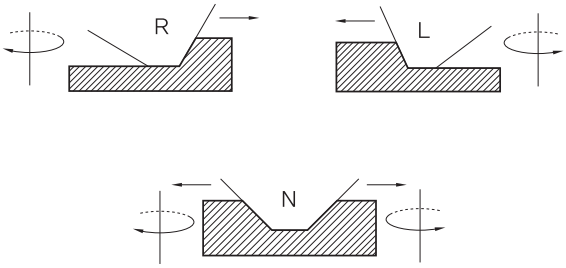
8 Edge Preparation

S P K R 12 03 ED 08 S R - MX



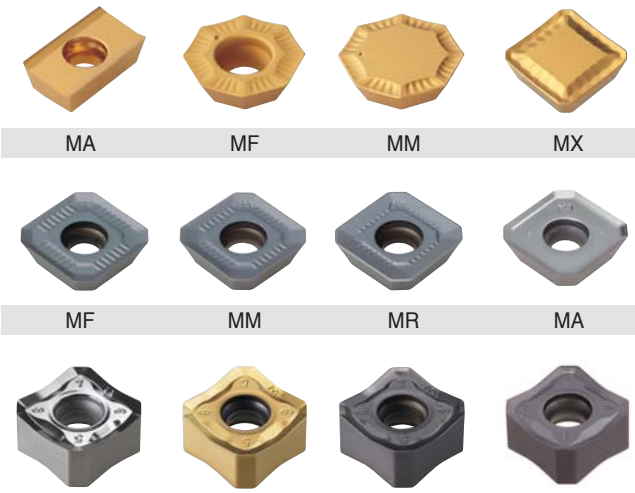
9 Hand

S P K R 12 03 ED 08 S R - MX



10 Chip Breaker for Milling

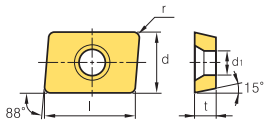
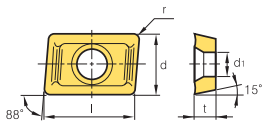
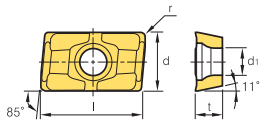
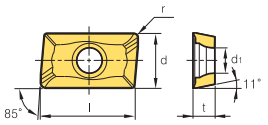
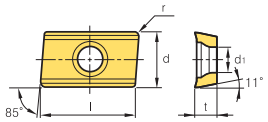
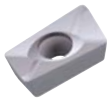
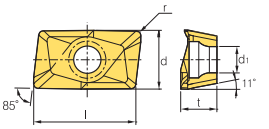
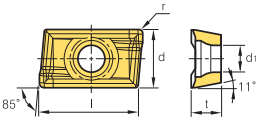
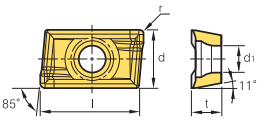
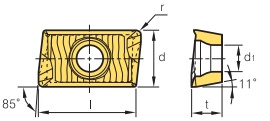
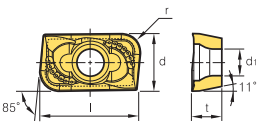
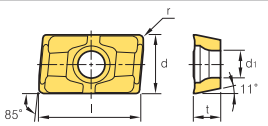
S P K R 12 03 ED 08 S R - MX



Workpiece		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01
Steel	P	●	◐	◐	✱	◐	◐	✱			✱	✱	◐		
Stainless steel	M			◐	✱			✱	✱		✱	✱			
Cast iron	K									●	✱	✱		◐	●
Non-ferrous metal	N														◐
Heat resistant alloy, Titanium alloy	S							✱			✱	✱			
Hardened steel	H										◐	✱			

Machining types

● Continuous cutting
◐ General cutting
✱ Interrupted cutting

Inserts	Designation	Cermet		Coated									Uncoated			Dimensions (mm)					Geometries	Available tools
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	l	d	t	r	d_1		
ADKA 	150308R															15.0	9.525	3.18	0.8	4.5		-
	150308SR															15.0	9.525	3.18	0.8	4.5		
	150308TR		●													15.0	9.525	3.18	0.8	4.5		
ADLT 	150308R			●							●					15.0	9.525	3.18	0.8	4.5		E228
	150308SR					●										15.0	9.525	3.18	0.8	4.5		
	150308TR		●													15.0	9.525	3.18	0.8	4.5		
APFT-X22 	1604PDSR-X22					●										16.4	9.525	4.76	0.8	4.4		E120 E132
	1604PDTR-X22															16.4	9.525	4.76	0.8	4.4		
APKT 	1604PDSR			●		●				●						16.4	9.525	4.76	0.8	4.4		E120 E132
APKT-MA 	1604PDFR-MA														●	16.4	9.525	4.76	0.2	4.4		E120 E132
APKT-MA2 	1604PDFR-MA2														●	16.5	9.56	5.76	0.8	4.5		E120 E132
	160416FR-MA2															16.5	9.56	5.76	1.6	4.5		
	160432FR-MA2															16.5	9.56	5.76	3.2	4.5		
APKT-MA3 	1604PDFR-MA3													●	●	16.4	9.525	5.0	0.8	4.4		E120 E132
	160420FR-MA3															16.0	9.525	5.0	2.0	4.4		
APKT-MF 	1604PDSR-MF			●							●					16.4	9.525	5.0	0.8	4.4		E120 E132 E139
APKT-MM 	1604PDSR-MM			●	●	●		●	●	●	●					16.4	9.525	5.2	0.8	4.4		E120 E132 E139
APKT-MM1 	160432R-MM1			●												16.4	9.525	4.76	3.2	4.4		E120 E132
APKT-X22 	1604PDSR-X22			●												16.4	9.525	4.76	0.8	4.4		E120 E132
	1604PDTR-X22															16.4	9.525	4.76	0.8	4.4		

● : Stock item

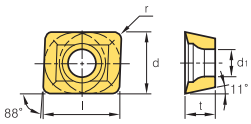
Workpiece		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	HD1
P	Steel	●	◓	◓	✠	◓	◓	✠			✠	✠	◓		
M	Stainless steel			◓	✠			✠	✠		✠	✠			
K	Cast iron									●	✠	✠		◓	●
N	Non-ferrous metal														◓
S	Heat resistant alloy, Titanium alloy							✠			✠	✠			
H	Hardened steel										◓	✠			

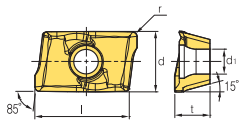
Machining types

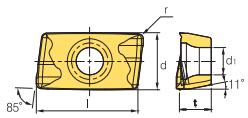
● Continuous cutting
◓ General cutting
✠ Interrupted cutting

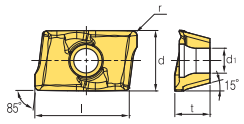
Inserts	Designation	Cermet		Coated									Uncoated			Dimensions (mm)				
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	HD1	l	d	t	r	d_1
APLT 	070304R										●					7.5	6.35	3.18	0.4	2.8
APMT-MA (New) 	0602PDFR-MA														●	6	4.24	2.6	0.4	2.0
	060208PDFR-MA															6	4.24	2.6	0.8	2.0
	0903PDFR-MA														●	9.4	6.21	3.6	0.4	2.8
	090308PDFR-MA															9.4	6.21	3.6	0.8	2.8
	11T3PDFR-MA														●	11.2	6.467	3.6	0.5	2.9
	11T308PDFR-MA															11.2	6.467	3.6	0.8	2.9
	160404PDFR-MA															16.4	9.41	5.76	0.4	4.5
	1604PDFR-MA														●	16.4	9.41	5.76	0.8	4.5
	180604PDFR-MA															17.4	10.98	6.35	0.4	4.5
	1806PDFR-MA														●	17.4	10.98	6.35	0.8	4.5
	180612PDFR-MA															17.4	10.98	6.35	1.2	4.5
	180616PDFR-MA															17.4	10.98	6.35	1.6	4.5
	180620PDFR-MA															17.4	10.98	6.35	2.0	4.5
	180624PDFR-MA															17.4	10.98	6.35	2.4	4.5
	180630R-MA															17.4	10.98	6.35	3.0	4.5
APMT-MF 	11T3PDSR-MF			●	●	●		●			●	●				11.2	6.467	3.6	0.5	2.85
	1604PDSR-MF			●	●	●		●			●	●				16.4	9.41	5.76	0.8	4.5
	1806PDSR-MF				●			●			●	●				17.4	10.98	6.35	0.8	4.5
	180612PDSR-MF															17.4	10.98	6.35	1.2	4.5
APMT-ML (New) 	0903PDER-ML										●	●				9.4	6.21	3.6	0.4	2.8
	090308PDER-ML															9.4	6.21	3.6	0.8	2.8
	11T3PDER-ML										●	●				11.2	6.467	3.6	0.5	2.9
	11T308PDER-ML															11.2	6.467	3.6	0.8	2.9
	160404PDER-ML															16.4	9.41	5.76	0.4	4.5
	1604PDER-ML										●	●				16.4	9.41	5.76	0.8	4.5
	180604PDER-ML															17.4	10.98	6.35	0.4	4.5
	1806PDER-ML										●	●				17.4	10.98	6.35	0.8	4.5
	180612PDER-ML															17.4	10.98	6.35	1.2	4.5
	180616PDER-ML															17.4	10.98	6.35	1.6	4.5
	180620PDER-ML															17.4	10.98	6.35	2.0	4.5
	180624PDER-ML															17.4	10.98	6.35	2.4	4.5
	180630R-ML															17.4	10.98	6.35	3.0	4.5
APMT-MM 	060202PDSR-MM				●	●		●			●	●				6	4.24	2.6	0.2	2.0
	0602PDSR-MM				●	●		●	●	●	●	●				6	4.24	2.6	0.4	2.0
	060208PDSR-MM				●	●		●			●	●				6	4.24	2.6	0.8	2.0
	060212R-MM				●	●					●	●				6	4.24	2.6	1.2	2.0
	060216R-MM					●					●	●				6	4.24	2.6	1.6	2.0
	0903PDSR-MM				●	●	●	●			●	●				9.4	6.21	3.6	0.4	2.8
	090306PDSR-MM															9.4	6.21	3.6	0.6	2.8
	090308PDSR-MM				●	●		●			●	●				9.4	6.21	3.6	0.8	2.8
	090312R-MM							●			●	●				9.4	6.21	3.6	1.2	2.8
	090316R-MM				●	●					●	●				9.4	6.21	3.6	1.6	2.8
	090320R-MM					●					●	●				9.2	6.21	3.6	2.0	2.8
	090331R-MM															9.2	6.21	3.6	3.1	2.8
	090332R-MM										●	●				9.2	6.21	3.6	3.2	2.8

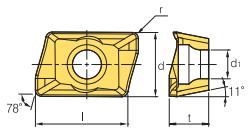
Geometries

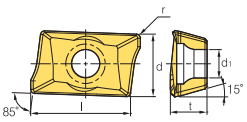












Available tools

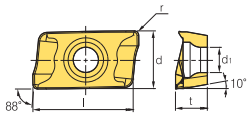
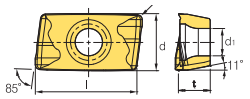
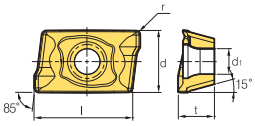
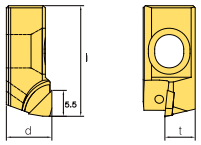
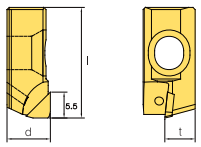
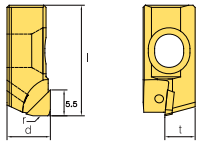
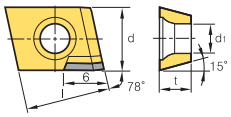
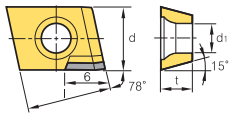
Inserts	Available tools
APLT	E228
APMT-MA	E116~E119 E121~E131 E133~E136 E137~E142 E144~E146 E149~E152 E154~E157
APMT-MF	E116~E142 E145~E146 E148~E149 E151~E152 E155~E156 E157
APMT-ML	E117~E119 E121 E124~E126 E128~E131 E129~E131 E133~E134 E137~E139 E139~E142 E154~E157
APMT-MM	E116~E142 E144~E157

● : Stock item

Workpiece		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	H01	DP150	DP200
Steel	P	●	⬌	⬌	✱	⬌	⬌	✱			✱	✱			
Stainless steel	M			⬌	✱			✱	✱		✱	✱			
Cast iron	K									●	✱	✱	●		
Non-ferrous metal	N												⬌	●	●
Heat resistant alloy, Titanium alloy	S							✱			✱	✱			
Hardened steel	H										⬌	✱			

Machining types

● Continuous cutting
⬌ General cutting
✱ Interrupted cutting

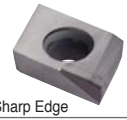
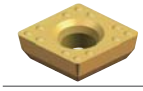
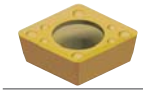
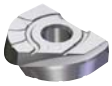
Inserts	Designation	CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	H01	DP150	DP200	l	d	t	r	d_1	C	Geometries	Available tools
APMT-MM 	11T3PDSR-MM			●	●	●	●	●	●	●	●	●				11.2	6.467	3.6	0.5	2.85	-		E116~E142 E144~E157
	11T308PDSR-MM			●	●	●		●	●		●	●				11.2	6.467	3.6	0.8	2.85	-		
	11T312PDSR-MM			●	●	●		●	●		●	●				11.2	6.467	3.6	1.2	2.85	-		
	11T316R-MM			●	●	●					●	●				11.0	6.467	3.6	1.6	2.85	-		
	11T318R-MM															11.0	6.467	3.6	1.8	2.85	-		
	11T324R-MM				●	●		●			●	●				11.0	6.467	3.6	2.4	2.85	-		
	1604PDSR-MM			●	●	●		●	●	●	●	●				16.4	9.41	5.76	0.8	4.5	-		
	160410PDSR-MM			●				●			●	●				16.4	9.41	5.76	1.0	4.5	-		
	160416PDSR-MM			●	●	●		●			●	●				16.4	9.41	5.76	1.6	4.5	-		
	160424R-MM				●	●		●			●	●				16	9.41	5.76	2.4	4.5	-		
	160430R-MM										●	●				16	9.41	5.76	3.0	4.5	-		
	160432R-MM			●	●	●		●			●	●				16	9.41	5.76	3.2	4.5	-		
	160450R-MM										●	●				16	9.41	5.76	5.0	4.5	-		
	160464R-MM										●	●				16	9.41	5.76	6.4	4.5	-		
	1806PDSR-MM			●	●	●		●	●	●	●	●				17.4	10.98	6.35	0.8	4.5	-		
	180612PDSR-MM			●	●	●		●			●	●				17.4	10.98	6.35	1.2	4.5	-		
	180616PDSR-MM				●			●			●	●				17.4	10.98	6.35	1.6	4.5	-		
	180620PDSR-MM															17.4	10.98	6.35	2.0	4.5	-		
	180624PDSR-MM				●	●					●	●				17.4	10.98	6.35	2.4	4.5	-		
	180630R-MM										●	●				16.7	10.98	6.35	3.0	4.5	-		
	180632R-MM				●	●		●			●	●				16.7	10.98	6.35	3.2	4.5	-		
	180640R-MM							●			●	●				16.7	10.98	6.35	4.0	4.5	-		
	180648R-MM										●	●				16.7	10.98	6.35	4.8	4.5	-		
	180650R-MM										●	●				16.7	10.98	6.35	5.0	4.5	-		
	180660R-MM															16.7	10.98	6.35	6.0	4.5	-		
	180664R-MM										●	●				16.7	10.98	6.35	6.4	4.5	-		
BAMPR-XAF New 	BAMPR-XAF													●		25.5	10.5	7	-	-	-		E106~E108
BAMPR-XAW New 	BAMPR-XAW													●		25.5	10	7	-	-	-		E106~E108
BAMPR-XAWR New 	BAMPR-XAWR															25.5	10	7	-	-	-		E107 E108
CDEW-NAF  strengthened Edge	1204R-NAF														●	12.7	9.525	4.76	-	4.4	-		E105
	1204L-NAF															12.7	9.525	4.76	-	4.4	-		
CDEW-NAW  strengthened Edge Wiper Insert	1204R-NAW														●	12.7	9.525	4.76	-	4.4	-		E105
	1204L-NAW															12.7	9.525	4.76	-	4.4	-		

● : Stock item

Workpiece		CN2000	CN30	PC2005	PC2010	PC2015	PC210F	PC3500	PC3600	PC9530	PC6510	PC5300	G10	H01	DP200
Steel	P	●	⬌	●	⬌	✱	✱	⬌	⬌			✱			
Stainless steel	M				●	⬌	⬌			✱		✱			
Cast iron	K			●	⬌	✱	✱				●	✱	⬌	●	
Non-ferrous metal	N					●	●							⬌	●
Heat resistant alloy, Titanium alloy	S					●	●					✱			
Hardened steel	H			●	⬌	✱	✱					⬌			

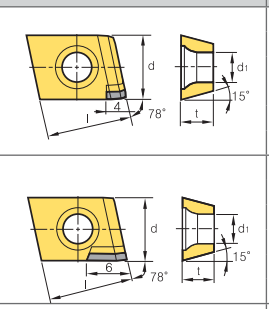
Machining types

- ● Continuous cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Inserts	Designation	CN2000	CN30	PC2005	PC2010	PC2015	PC210F	PC3500	PC3600	PC9530	PC6510	PC5300	G10	H01	DP200	l	d	t	r	d_1	C	Available tools
CDEW-XAW  Sharp Edge Wiper Insert	1204R-XAW														●	12.7	9.525	4.76	-	4.4	-	E105
	1204L-XAW															12.7	9.525	4.76	-	4.4	-	
CDEW-XAF  Sharp Edge	1204R-XAF														●	12.7	9.525	4.76	-	4.4	-	E105
	1204L-XAF															12.7	9.525	4.76	-	4.4	-	
CDEW-XCF  Sharp Edge	1204R-XCF												●			12.7	9.525	4.76	-	4.4	-	E105
	1204L-XCF															12.7	9.525	4.76	-	4.4	-	
CNHQ 	1005-C0.5															10	10	5.4	-	4.7	0.5	E285
	1305-C0.5															12.7	10	5.4	-	4.7	0.5	E286
	1606-C0.5															16	12	6.4	-	5.9	0.5	
CPMH 	120408-MM							●								12.9	12.7	4.76	0.8	5.5	-	E261
CPMT 	060204-MM							●								6.4	6.35	2.38	0.4	2.75	2.75	E261
	080308-MM							●								8.1	7.938	3.40	0.8	3.18	3.18	
	09T308-MM							●								9.7	9.525	3.97	0.8	4.4	4.4	
HECN 	090408FN															9.0	15.875	4.76	0.8	-	-	E311
	090408SN															9.0	15.875	4.76	0.8	-	-	
	090408TN															9.0	15.875	4.76	0.8	-	-	
	110412FN															11.0	19.05	4.76	1.2	-	-	
	110412TN															11.0	19.05	4.76	1.2	-	-	
HPEN 	090408FN															9.0	15.875	4.76	0.8	-	-	E312
	090408SN															9.0	15.875	4.76	0.8	-	-	
	090408EN															9.0	15.875	4.76	0.8	-	-	
	110412FN															11.0	19.05	4.76	1.2	-	-	
HPEN-WC 	090408-WC															9.0	15.875	4.76	0.8	-	-	E312
	110412-WC															11.0	19.05	4.76	1.2	-	-	
LBH 	080						●									7.0	8	2.4	4	-	-	E239~E241
	100						●									8.5	10	2.6	5	-	-	
	120						●									10.0	12	3	6	-	-	
	160						●									12.0	16	4	8	-	-	
	200						●									15.0	20	5	10	-	-	
	250						●									18.5	25	6	12.5	-	-	
	300						●									22.5	30	7	15	-	-	
	320						●									23.5	32	7	16	-	-	
LBH-KF New 	080-KF															7.0	8	2.4	4			E238
	100-KF					●										8.5	10	2.6	5			E239
	120-KF					●										10.0	12	3	6			
	130-KF					●										20.5	13	3	6.5			
	160-KF					●										12.0	16	4	8			
	170-KF					●										12.5	17	4	8.5			
	200-KF					●										15.0	20	5	10			
	210-KF					●										15.5	21	5	10.5			
	250-KF					●										18.5	25	6	12.5			
	300-KF					●										22.5	30	7	15			
	320-KF															23.5	32	7	16			

Dimensions (mm)

Geometries

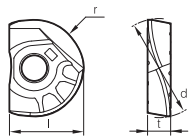
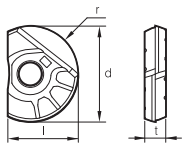
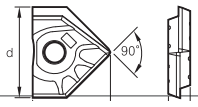
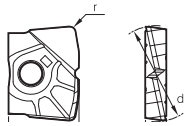
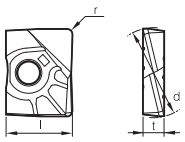
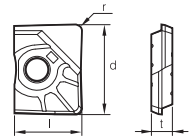


● : Stock item

Workpiece		CN2000	CN30	PC2005	PC2010	PC2015	PC210F	PC3500	PC3600	PC9530	PC6510	PC5300	ST30A	G10	H01
Steel	P	●	General cutting	●	General cutting	Interrupted cutting	Interrupted cutting	General cutting	General cutting			Interrupted cutting	General cutting		
Stainless steel	M				●	General cutting	General cutting			Interrupted cutting		Interrupted cutting			
Cast iron	K			●	General cutting	Interrupted cutting	Interrupted cutting				●	Interrupted cutting		General cutting	●
Non-ferrous metal	N					●	●								General cutting
Heat resistant alloy, Titanium alloy	S					●	●					Interrupted cutting			
Hardened steel	H			●	General cutting	Interrupted cutting	Interrupted cutting					General cutting			

Machining types

- ● Continuous cutting
- General cutting
- Interrupted cutting

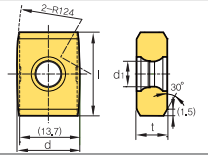
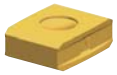
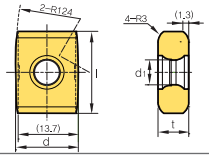
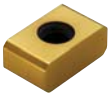
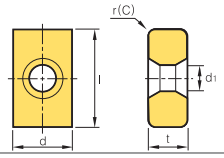
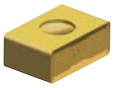
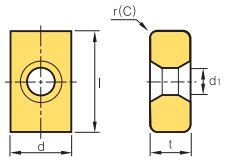
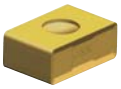
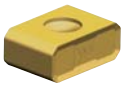
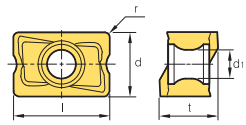
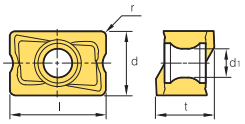
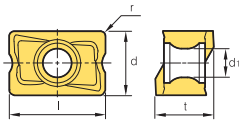
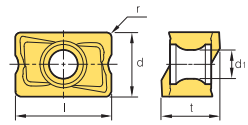
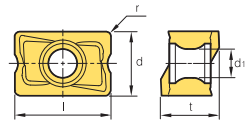
Inserts	Designation	CN2000	CN30	PC2005	PC2010	PC2015	PC210F	PC3500	PC3600	PC9530	PC6510	PC5300	ST30A	G10	H01	l	d	t	r	d_1	Geometries	Available tools
		Cermet		Coated									Uncoated			Dimensions (mm)						
LBH-KH (New)	080-KH				●											7.0	8	2.4	4			E238 E239
	100-KH			●	●											8.5	10	2.6	5			
	120-KH			●	●											10.0	12	3	6			
	130-KH				●											20.5	13	3	6.5			
	160-KH			●	●											12.0	16	4	8			
	170-KH			●	●											12.5	17	4	8.5			
	200-KH			●	●											15.0	20	5	10			
	210-KH				●											15.5	21	5	10.5			
	250-KH			●	●											18.5	25	6	12.5			
	260-KH				●											19.0	26	6	13			
	300-KH			●	●											22.5	30	7	15			
	320-KH															23.5	32	7	16			
LBS	080															18.5	25	6	12.5	-		E239~E241
	090															19.0	26	6	13	-		
	100															22.5	30	7	15	-		
	110															23.0	31	7	15.5	-		
	120															23.5	32	7	16	-		
	130															7.0	8	2.4	4	-		
	160															7.5	9	2.4	4.5	-		
	170															8.5	10	2.6	5	-		
	200															9.0	11	2.6	5.5	-		
	210															10.0	12	3	6	-		
	250															10.5	13	3	6.5	-		
	260															12.0	16	4	8	-		
	300															12.5	17	4	8.5	-		
	310															15.0	20	5	10	-		
	320															15.5	21	5	10.5	-		
LCF	160-D90						●									13.7	16	4	-	-		E239~E241
	200-D90						●									17.0	20	5	-	-		
	250-D90															21.5	25	6	-	-		
LFH	100						●									8.5	10	2.6	1.0	-		E239~E241
	120						●									10.0	12	3	1.0	-		
	160						●									12.0	16	4	1.5	-		
	200															15.0	20	5	1.5	-		
	250															18.5	25	6	2.0	-		
	300															22.5	30	7	2.0	-		
	320															23.5	32	7	2.0	-		
LRH	100-R05						●									8.5	10	2.6	0.5	-	 LRH Type	E239~E241
	100-R10						●									8.5	10	2.6	1.0	-		
	100-R20															8.5	10	2.6	2.0	-		
	110-R05															9.0	11	2.6	0.5	-		
	120-R05						●									10.0	12	3	0.5	-		
	120-R10						●									10.0	12	3	1.0	-		
	120-R20															10.0	12	3	2.0	-		
	130-R05															10.5	13	3	0.5	-		
	160-R05						●									12.0	16	4	0.5	-		
	160-R10						●									12.0	16	4	1.0	-		
	160-R20						●									12.0	16	4	2.0	-		
	160-R30						●									12.0	16	4	3.0	-		
	170-R05															12.5	17	4	0.5	-		
	200-R05						●									15.0	20	5	0.5	-		
	200-R10						●									15.0	20	5	1.0	-		
	200-R20						●									15.0	20	5	2.0	-		
	200-R30						●									15.0	20	5	3.0	-		
LR Special type	210-R05															15.5	21	5	0.5	-	 LR Type	
	250-R05															18.5	25	6	0.5	-		
	250-R10						●									18.5	25	6	1.0	-		
	250-R20															18.5	25	6	2.0	-		
	250-R30						●									18.5	25	6	3.0	-		
	260-R05															19.0	26	6	0.5	-		
	300-R10						●									22.5	30	7	1.0	-		
	300-R20						●									22.5	30	7	2.0	-		
	300-R30						●									22.5	30	7	3.0	-		
	310-R05															23.0	31	7	0.5	-		
	320-R10						●									23.5	32	7	1.0	-		
	320-R20						●									23.5	32	7	2.0	-		
	320-R30						●									23.5	32	7	3.0	-		

●: Stock item

Workpiece			CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01
	Steel	P	●	◐	◐	✱	◐	◐	✱			✱	✱	◐		
	Stainless steel	M			◐	✱			✱	✱		✱	✱			
	Cast iron	K									●	✱	✱		◐	●
	Non-ferrous metal	N														◐
	Heat resistant alloy, Titanium alloy	S							✱			✱	✱			
	Hardened steel	H										◐	✱			

Machining types

- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

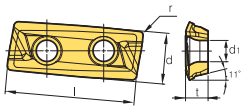
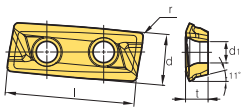
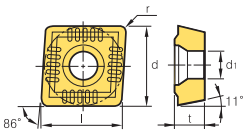
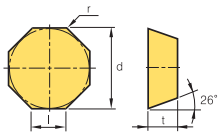
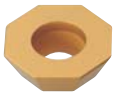
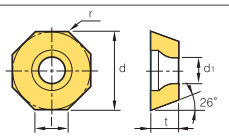
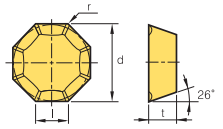
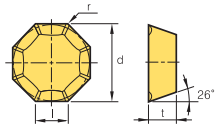
Inserts	Designation	Cermet		Coated									Uncoated			Dimensions (mm)					Geometries	Available tools
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	l	d	t	r	d1		
LNCS 	1907-C1.5-WC															19.05	14.3	7	-	5.8		E316 E317
LNCS 	1907-R3.0-WC															19.05	14.3	7	-	5.8		E316 E317
LNE 	324-R0.8															15.9	9.525	6.35	0.8	4.4		E300
	324-C1.0															15.9	9.525	6.35	1.0	4.4		
KEL-MF 	150608-MF															15.88	15.23	6.35	0.8	-		E300
	150608-ML															15.88	15.23	6.35	0.8	-		
KEL-QNN 	1506QNN-MF															15.88	15.23	6.35	0.8	-		E300
	1506QNN-ML															15.88	15.23	6.35	0.8	-		
KEL-ANN 	1506ANN-MF															15.88	15.23	6.35	0.8	-		E300
	1506ANN-ML															15.88	15.23	6.35	0.8	-		
LNM(E)X-MF 	LNMX 100605PNR-MF					●				●	●	●				10.0	6.5	6.5	0.5	3.5		E70 E71 E74 E75 E78~82
	100608PNR-MF					●				●	●					10.0	6.5	6.5	0.8	3.5		
	LNEX 100605PNR-MF					●				●	●	●				10.0	6.5	6.5	0.5	3.5		
	100608PNR-MF					●				●	●					10.0	6.5	6.5	0.8	3.5		
LNM(E)X-MF 	LNMX 151004PNR-MF					●				●						15.0	10.0	10.0	0.4	4.5		E70 E71 E74 E75 E78~82
	151008PNR-MF					●				●	●	●				15.0	10.0	10.0	0.8	4.5		
	151016PNR-MF															15.0	10.0	10.0	1.6	4.5		
	LNEX 151004PNR-MF					●				●						15.0	10.0	10.0	0.4	4.5		
	151008PNR-MF									●	●	●				15.0	10.0	10.0	0.8	4.5		
	151016PNR-MF					●				●						15.0	10.0	10.0	1.6	4.5		
LNM(E)X-MM 	LNMX 100605PNR-MM					●		●	●	●	●	●				10.0	6.5	6.5	0.5	3.5		E70~E84
	100608PNR-MM					●	●				●					10.0	6.5	6.5	0.8	3.5		
	100605PNL-MM					●										10.0	6.5	6.5	0.5	3.5		
	LNEX 100605PNR-MM					●		●		●	●	●				10.0	6.5	6.5	0.5	3.5		
	100608PNR-MM					●				●						10.0	6.5	6.5	0.8	3.5		
	100605PNL-MM									●	●					10.0	6.5	6.5	0.5	3.5		
LNM(E)X-MM 	LNMX 151004PNR-MM									●						15.0	10.0	10.0	0.4	4.5		E70~E84
	151008PNR-MM					●	●	●	●	●	●	●				15.0	10.0	10.0	0.8	4.5		
	151016PNR-MM					●										15.0	10.0	10.0	1.6	4.5		
	151008PNL-MM															15.0	10.0	10.0	0.8	4.5		
	LNEX 151004PNR-MM							●								15.0	10.0	10.0	0.4	4.5		
	151008PNR-MM					●				●	●	●				15.0	10.0	10.0	0.8	4.5		
	151016PNR-MM									●	●					15.0	10.0	10.0	1.6	4.5		
	151008PNL-MM					●										15.0	10.0	10.0	0.8	4.5		
LNEX-MA 	LNEX 100605PNR-MA														●	10.0	6.5	6.5	0.5	3.5		E70~E75 E78~E82
	151004PNR-MA														●	15.0	10.0	10.0	0.4	4.5		
	151008PNR-MA														●	15.0	10.0	10.0	0.8	4.5		

● : Stock item

Workpiece		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01
Steel	P	●	◐	◐	✱	◐	◐	✱			✱	✱	◐		
Stainless steel	M			◐	✱			✱	✱		✱	✱			
Cast iron	K									●	✱	✱		◐	●
Non-ferrous metal	N														◐
Heat resistant alloy, Titanium alloy	S							✱			✱	✱			
Hardened steel	H										◐	✱			

Machining types

● Continuous cutting
◐ General cutting
✱ Interrupted cutting

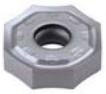
Inserts	Designation	CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	l	d	t	r	d_1	Geometries	Available tools
		Cermet		Coated									Uncoated			Dimensions (mm)						
LXET-MA New 	250404PEFR-32-MA															25	10.775	4.76	0.4	4.5		E277~ E279
	2504PEFR-32-MA															25	10.775	4.76	0.8	4.5		
	250412PEFR-32-MA															25	10.775	4.76	1.2	4.5		
	250416PEFR-32-MA															25	10.775	4.76	1.6	4.5		
	250404PEFR-40-MA															25	10.618	4.76	0.4	4.5		
	2504PEFR-40-MA															25	10.618	4.76	0.8	4.5		
	250412PEFR-40-MA															25	10.618	4.76	1.2	4.5		
	250416PEFR-40-MA															25	10.618	4.76	1.6	4.5		
	340504PEFR-50-MA															34	13.765	5.56	0.4	5.56		
	3405PEFR-50-MA															34	13.765	5.56	0.8	5.56		
	340512PEFR-50-MA															34	13.765	5.56	1.2	5.56		
	340516PEFR-50-MA															34	13.765	5.56	1.6	5.56		
	340504PEFR-63-MA															34	13.803	5.56	0.4	5.56		
	3405PEFR-63-MA															34	13.803	5.56	0.8	5.56		
	340512PEFR-63-MA															34	13.803	5.56	1.2	5.56		
	340516PEFR-63-MA															34	13.803	5.56	1.6	5.56		
LXET-ML New 	250404PEER-32-ML															25	10.775	4.76	0.4	4.5		E277~ E279
	2504PEER-32-ML															25	10.775	4.76	0.8	4.5		
	250412PEER-32-ML															25	10.775	4.76	1.2	4.5		
	250416PEER-32-ML															25	10.775	4.76	1.6	4.5		
	250404PEER-40-ML															25	10.618	4.76	0.4	4.5		
	2504PEER-40-ML															25	10.618	4.76	0.8	4.5		
	250412PEER-40-ML															25	10.618	4.76	1.2	4.5		
	250416PEER-40-ML															25	10.618	4.76	1.6	4.5		
	340504PEER-50-ML															34	13.765	5.56	0.4	5.56		
	3405PEER-50-ML															34	13.765	5.56	0.8	5.56		
	340512PEER-50-ML															34	13.765	5.56	1.2	5.56		
	340516PEER-50-ML															34	13.765	5.56	1.6	5.56		
	340504PEER-63-ML															34	13.803	5.56	0.4	5.56		
	340508PEER-63-ML															34	13.803	5.56	0.8	5.56		
	340512PEER-63-ML															34	13.803	5.56	1.2	5.56		
	340516PEER-63-ML															34	13.803	5.56	1.6	5.56		
MPMT 	090308							●								9.5	9.525	3.18	0.8	4.5		-
	120408					●		●								12.7	12.7	4.76	0.8	5.5		
OFCN 	0704SN			●		●		●		●						7.4	18	4.86	0.5	-		E48
	0704FN															7.4	18	4.86	0.5	-		
	070408SN				●											7.4	18	4.86	0.8	-		
	070408FN															7.4	18	4.86	0.8	-		
	070408TN															7.4	18	4.86	0.8	-		
OFCW 	05T3SN															5.2	12.7	3.85	0.5	4.4		E48
	05T3FN															5.2	12.7	3.85	0.5	4.4		
	05T308FN															5.2	12.7	3.85	0.8	4.4		
OFKR-MA 	0704FN-MA														●	7.4	18	4.76	0.5	-		E48
	0704EN-MA															7.4	18	4.76	0.5	-		
OFKR-MF 	0704SN-MF			●	●											7.4	18	4.76	0.5	-		E48
	070408SN-MF			●												7.4	18	4.76	0.8	-		

● : Stock item

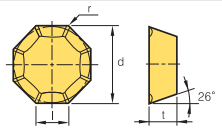
Workpiece		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01
Steel	P	●	⬌	●	⬌	✱	✱	⬌	⬌			✱	⬌		
Stainless steel	M				●	⬌	⬌				✱	✱			
Cast iron	K			●	⬌	✱	✱				●	✱		⬌	●
Non-ferrous metal	N					●	●								⬌
Heat resistant alloy, Titanium alloy	S					●	●					✱			
Hardened steel	H			●	⬌	✱	✱					⬌			

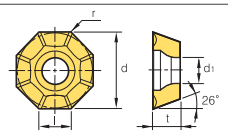
Machining types

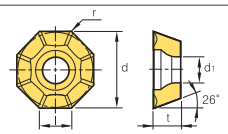
- ● Continuous cutting
- ⬌ General cutting
- ✱ Interrupted cutting

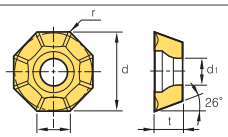
Inserts	Designation	CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	l	d	t	r	d_1	a	W	g	Available tools
		Cermet		Coated									Uncoated			Dimensions (mm)								
OFKR-MM 	0704SN-MM			●	●			●	●	●	●					7.4	18	4.76	0.5	-	-	-	-	E48
	070408SN-MM			●												7.4	18	4.76	0.8	-	-	-	-	
OFKT-MA 	05T3FN-MA														●	5.2	12.7	3.97	0.5	4.4	-	-	-	E47
	05T3EN-MA															5.2	12.7	3.97	0.5	4.4	-	-	-	E48
	0704FN-MA														●	7.4	18	4.76	0.5	5.8	-	-	-	
	0704EN-MA															7.4	18	4.76	0.5	5.8	-	-	-	
OFKT-MF 	05T3SN-MF			●	●					●						5.2	12.7	3.97	0.5	4.4	-	-	-	E47
	05T308SN-MF															5.2	12.7	3.97	0.8	5.8	-	-	-	
OFKT-MM 	05T3SN-MM			●	●	●			●							5.2	12.7	3.97	0.5	4.4	-	-	-	E47
	05T308SN-MM															5.2	12.7	3.97	0.8	4.4	-	-	-	E48
	0704SN-MM			●												7.4	18	4.76	0.5	5.5	-	-	-	
ONHX-MF 	060608-MF					●				●	●	●				6.6	16.0	6.0	0.8	5.6	-	-	-	E100
	080608-MF										●	●				8.4	20.2	6.0	0.8	5.6	-	-	-	E101
	0606ANN-MF					●				●	●	●				6.6	16.0	6.0	0.8	5.6	1.03	-	-	
	0806ANN-MF									●	●	●				8.4	20.2	6.0	0.8	5.6	1.53	-	-	
ONHX-ML New 	060608-ML										●	●				6.6	16.0	6.0	0.8	5.6	-	-	-	E100
	080608-ML										●	●				8.4	20.2	6.0	0.8	5.6	-	-	-	E101
ONHX-MM 	060608-MM					●				●	●	●				6.6	16.0	6.0	0.8	5.6	-	-	-	E100
	080608-MM					●				●	●	●				8.4	20.2	6.0	0.8	5.6	-	-	-	E101
	0606ANN-MM										●	●				6.6	16.0	6.0	0.8	5.6	1.03	-	-	
	0806ANN-MM										●	●				8.4	20.2	6.0	0.8	5.6	1.53	-	-	
ONHX-MA 	060608-MA														●	6.6	16.0	6.0	0.8	5.6	-	-	-	E100
	080608-MA														●	8.4	20.2	6.0	0.8	5.6	-	-	-	E101
ONHX-W 	060608-W					●			●	●	●					6.5	16.0	6.0	0.8	5.6	-	-	-	E100
	080608-W					●					●					8.2	20.2	6.0	0.8	5.6	-	-	-	E101
ONMX-MF 	060608-MF				●	●				●	●	●				6.6	16.0	6.0	0.8	5.6	-	-	-	E100
	080608-MF									●	●	●				8.4	20.2	6.0	0.8	5.6	-	-	-	E101
	0606ANN-MF									●	●	●				6.6	16.0	6.0	0.8	5.6	1.03	-	-	
	0806ANN-MF					●				●	●	●				8.4	20.2	6.0	0.8	5.6	1.53	-	-	
ONMX-MM 	060608-MM				●	●				●	●	●				6.6	16.0	6.0	0.8	5.6	-	-	-	E100
	080608-MM				●	●				●	●	●				8.4	20.2	6.0	0.8	5.6	-	-	-	E101
	0606ANN-MM					●				●	●	●				6.6	16.0	6.0	0.8	5.6	1.03	-	-	
	0806ANN-MM					●				●	●	●				8.4	20.2	6.0	0.8	5.6	1.53	-	-	
ORG 	265				●											10	7	3.0	0.3	3.5	-	2.65	2.8	E252
	325				●											10	7	3.0	0.3	3.5	-	3.25	2.8	
	405				●											15	12	4.5	0.5	4.5	-	4.05	4.5	
	470				●											15	12	4.5	0.5	4.5	-	4.70	4.5	

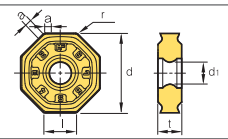
Geometries

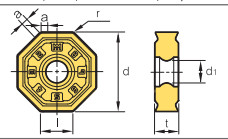


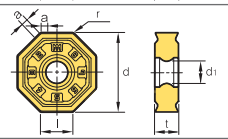


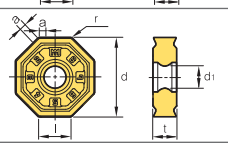


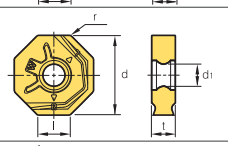


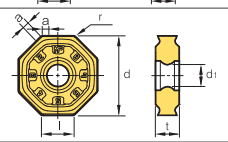


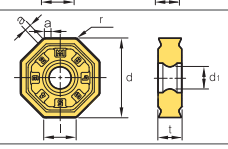


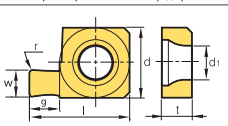










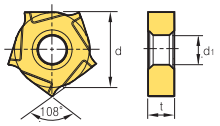
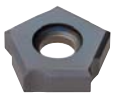
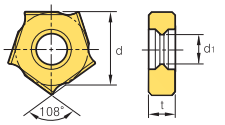
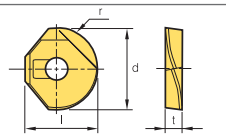
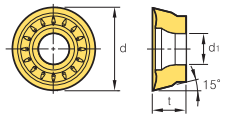
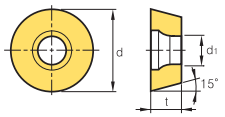
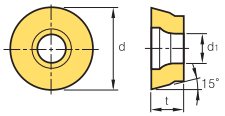
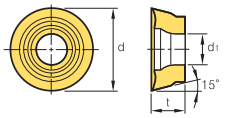
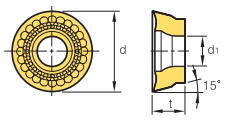


●: Stock item

Workpiece		CN2000	CN30	NCM325	NCM335	PC3500	PC210F	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01
Steel	P	●	◐	◐	✱	◐		✱			✱	✱	◐		
Stainless steel	M			◐	✱			✱	✱		✱	✱			
Cast iron	K									●	✱	✱		◐	●
Non-ferrous metal	N						●								◐
Heat resistant alloy, Titanium alloy	S							✱			✱	✱			
Hardened steel	H										◐	✱			

Machining types

- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

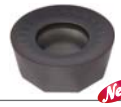
Inserts	Designation	Cermet		Coated									Uncoated			Dimensions (mm)							Geometries	Available tools
		CN2000	CN30	NCM325	NCM335	PC3500	PC210F	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	l	d	t	r	d_1	a	Cutter width		
PNEJ 	1223N					●										-	12.7	2.3	-	5.0	-	4.0		E291 E292
	1225N															-	12.7	2.5	-	5.0	-	4.5		
	1230N															-	12.7	3.0	-	5.0	-	5.0		
	1235N					●					●					-	12.7	3.5	-	5.0	-	6.0		
	1240N					●					●					-	12.7	4.0	-	5.0	-	7.0		
	1245N			●		●					●					-	12.7	4.5	-	5.0	-	8.0		
	1250N															-	12.7	5.0	-	5.0	-	9.0		
	1255N					●					●					-	12.7	5.5	-	5.0	-	10.0		
	1260N															-	12.7	6.0	-	5.0	-	11.0		
	1265N				●	●					●					-	12.7	6.5	-	5.0	-	12.0		
	1270N															-	12.7	7.0	-	5.0	-	13.0		
	1275N				●						●					-	12.7	7.5	-	5.0	-	14.0		
	1285N															-	12.7	8.5	-	5.0	-	16.0		
PNEJ-C 	1223N-C03															-	12.7	2.3	-	5.0	-	4.0	 ※ C03 : Chamfer 0.3mm C05 : Chamfer 0.5mm	E291 E292
	1230N-C03															-	12.7	3.0	-	5.0	-	5.0		
	1235N-C03															-	12.7	3.5	-	5.0	-	6.0		
	1240N-C05															-	12.7	4.0	-	5.0	-	7.0		
	1245N-C05															-	12.7	4.5	-	5.0	-	8.0		
	1250N-C05															-	12.7	5.0	-	5.0	-	9.0		
	1255N-C05															-	12.7	5.5	-	5.0	-	10.0		
	1260N-C05															-	12.7	6.0	-	5.0	-	11.0		
	1265N-C05															-	12.7	6.5	-	5.0	-	12.0		
	1270N-C05															-	12.7	7.0	-	5.0	-	13.0		
	1275N-C05															-	12.7	7.5	-	5.0	-	14.0		
RC 	16						●									15.8	16	3.5	8	-	-	-		E243
	20						●									17.8	20	4	10	-	-	-		
	25						●									22.0	25	5	12.5	-	-	-		
	30															26.8	30	6	15	-	-	-		
	32						●									27.8	32	6	16	-	-	-		
RDCT-MA 	10T3M0-MA														●	-	10	3.97	-	3.85	-	-		E187 E188 E193 E194 E198
	1204M0-MA															-	12	4.76	-	4.5	-	-		
RDHW 	0501M0F															-	5	1.59	-	2.3	-	-		E191 E192 E197
	0501M0E															-	5	1.59	-	2.3	-	-		
	0501M0S															-	5	1.59	-	2.3	-	-		
	06T1M0F															-	6	1.98	-	2.5	-	-		
	06T1M0E								●							-	6	1.98	-	2.5	-	-		
	06T1M0S															-	6	1.98	-	2.5	-	-		
	0702M0F															-	7	2.38	-	2.8	-	-		
	0702M0E								●							-	7	2.38	-	2.8	-	-		
	0702M0S															-	7	2.38	-	2.8	-	-		
	0803M0F															-	8	3.18	-	3.4	-	-		
	0803M0E								●							-	8	3.18	-	3.4	-	-		
	0803M0S															-	8	3.18	-	3.4	-	-		
RDHW 	1605M0F															-	16	5.56	-	5.5	-	-		E189 E190 E195 E196 E198
	1605M0E															-	16	5.56	-	5.5	-	-		
	1605M0S															-	16	5.56	-	5.5	-	-		
	2006M0F															-	20	6.35	-	5.5	-	-		
	2006M0E															-	20	6.35	-	5.5	-	-		
	2006M0S															-	20	6.35	-	5.5	-	-		
RDKT-MF 	10T3M0-MF							●	●		●					-	10	3.97	-	3.85	-	-		E187 E188 E193 E194 E198
	1204M0-MF					●		●	●		●					-	12	4.76	-	4.5	-	-		
	1605M0-MF															-	16	5.56	-	5.5	-	-		
RDKT-ML 	1605M0-ML															-	16	5.56	-	5.5	-	-		E189 E195 E198

● : Stock item

Workpiece		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	PC130	ST30A	G10	H01
Steel	P	●	⬤	⬤	✖	⬤	⬤	✖			✖	✖	⬤	⬤		
Stainless steel	M			⬤	✖			✖	✖		✖	✖				
Cast iron	K									●	✖	✖			⬤	●
Non-ferrous metal	N															⬤
Heat resistant alloy, Titanium alloy	S							✖			✖	✖				
Hardened steel	H										⬤	✖				

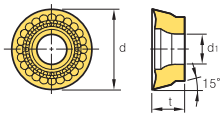
Machining types

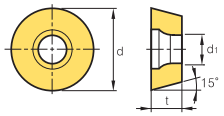
- ● Continuous cutting
- ⬤ General cutting
- ✖ Interrupted cutting

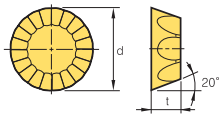
Inserts	Designation	CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	PC130	ST30A	G10	H01	l	d	t	r	d_1	a	Available tools
RDKT-MM 	10T3M0-MM			●	●	●		●	●	●	●						-	10	3.97	-	3.85	-	E187~ E190 E193~ E198
	1204M0-MM			●	●	●		●	●	●	●						-	12	4.76	-	4.5	-	
	1605M0-MM					●		●									-	16	5.56	-	5.5	-	
	2006M0-MM					●		●									-	20	6.35	-	5.5	-	
RDKW 	0501M0E					●											-	5	1.59	-	2.3	-	E191 E192 E197
	06T1M0E					●											-	6	1.98	-	2.5	-	
	0702M0E					●											-	7	2.38	-	2.8	-	
	0803M0E					●											-	8	3.18	-	3.4	-	
REKR-MM 	170400-MM																-	17.8	4.76	-	-	-	E48
New RPCT-MA 	10T3M0-MA															●	-	10	3.97	-	4.0	-	E199~ E207
	1204M0-MA															●	-	12	4.76	-	4.5	-	
	1606M0-MA															●	-	16	6.35	-	5.5	-	
	2007M0-MA															●	-	20	7.00	-	7.0	-	
New RPET-ML 	0803M0E-ML										●	●					-	8	3.18	-	3.4	-	E199~ E207
	103TM0E-ML										●	●					-	10	3.97	-	4.0	-	
	1204M0E-ML										●	●					-	12	4.76	-	4.5	-	
	1606M0E-ML										●	●					-	16	6.35	-	5.5	-	
	New 2007M0E-ML										●	●					-	20	7.00	-	7.0	-	
RPMT-MF 	0803M0E-MF						●				●	●					-	8	3.18	-	3.4	-	E199~ E207
	10T3M0E-MF						●				●	●					-	10	3.97	-	4.0	-	
	1204M0E-MF						●				●	●					-	12	4.76	-	4.5	-	
	1606M0E-MF						●				●	●					-	16	6.35	-	5.5	-	
	New 2007M0E-MF						●				●	●					-	20	7.00	-	7.0	-	
RPMT-MM 	0803M0S-MM						●				●	●					-	8	3.18	-	3.4	-	E199~ E207
	10T3M0S-MM						●				●	●					-	10	3.97	-	4.0	-	
	1204M0S-MM						●				●	●					-	12	4.76	-	4.5	-	
	1606M0S-MM						●				●	●					-	16	6.35	-	5.5	-	
	2007M0S-MM						●				●	●					-	20	7.00	-	7.0	-	
New RPMW 	0803M0E1						●				●	●					-	8	3.18	-	3.4	-	E199~ E207
	10T3M0E1						●				●	●					-	10	3.97	-	4.0	-	
	1204M0S1						●				●	●					-	12	4.76	-	4.5	-	
	1204M0S2										●	●					-	12	4.76	-	4.5	-	
	1606M0S1						●				●	●					-	16	6.35	-	5.5	-	
	2007M0S1						●				●	●					-	20	7.00	-	7.0	-	
SDCN 	42R																-	12.7	3.18	-	-	3.5	E309~ E310
	42L																-	12.7	3.18	-	-	3.5	
	53R																-	15.875	4.76	-	-	5.0	
	53L																-	15.875	4.76	-	-	5.0	
	42M														●		-	12.7	3.18	-	-	1.5	E34 E35 E44 E45 E309 E310
	42M-G															●	-	12.7	3.18	-	-	1.5	
	42MT	●	●		●								●	●			-	12.7	3.18	-	-	1.5	
	42MT-RH																-	12.7	3.18	-	-	1.5	
	42MT-S20								●								-	12.7	3.18	-	-	1.5	
	53M														●		-	15.875	4.76	-	-	1.5	
	53M-G															●	-	15.875	4.76	-	-	1.5	
	53MT	●	●	●	●	●							●	●			-	15.875	4.76	-	-	1.5	
	53MT-RH																-	15.875	4.76	-	-	1.5	
	53MT-S20								●								-	15.875	4.76	-	-	1.5	
	1203AEEN																-	12.7	3.18	-	-	1.5	
	1203AEEN-RH																-	12.7	3.18	-	-	1.43	
	1203AESN																-	12.7	3.18	-	-	1.5	
	1203AESN-RH																-	12.7	3.18	-	-	1.43	
	1504AEEN									●	●						-	15.875	4.76	-	-	1.5	
	1504AEEN-RH																-	15.875	4.76	-	-	1.43	
	1504AESN									●							-	15.875	4.76	-	-	1.5	
	1504AESN-RH																-	15.875	4.76	-	-	1.43	

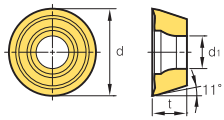
Dimensions (mm)

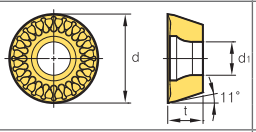
Geometries

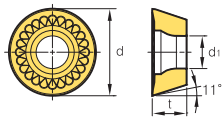


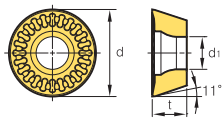


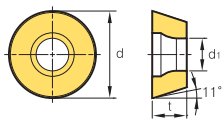


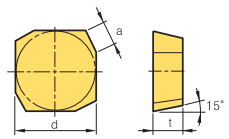


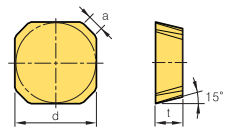












▶**Cutting edge geometry**
- G : Light Side, Sharpe Edge
- S20 : STS
- RH : Strengthened Edge

▶**Sub-cutting edge geometry**
- M : AEFN
- MT : AETN

● : Stock item

Workpiece		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	PD2000	ST30A	H01
Steel	P	●	◐	◐	✱	◐	◐	✱			✱	✱		◐	
Stainless steel	M			◐	✱			✱	✱		✱	✱			
Cast iron	K									●	✱	✱			●
Non-ferrous metal	N												●		◐
Heat resistant alloy, Titanium alloy	S							✱			✱	✱			
Hardened steel	H										◐	✱			

Machining types

- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

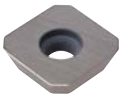
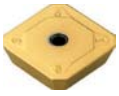
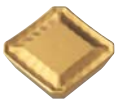
Inserts	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Coated PD2000	Uncoated ST30A	Uncoated H01	l	d	t	r	d1	a	b	Available tools
SDET-MA	09M402R-MA												●		●	-	9.525	3.923	0.2	4.0	1.2	-	E181 ~E186
	09M404R-MA															-	9.525	3.923	0.4	4.0	1.2	-	
	09M405R-MA															-	9.525	3.923	0.5	4.0	1.2	-	
	130504R-MA														●	-	13.5	5.56	0.4	5.56	2.2	-	
SDET-MF	09M405R-MF															-	9.525	4	0.5	4	1.2	-	E181 ~E186
	130508R-MF															-	13.5	5.56	0.8	5.56	2.2	-	
SDET-MM	09M405R-MM															-	9.525	4	0.5	4	1.2	-	E181 ~E186
	130508R-MM															-	13.5	5.56	0.8	5.56	2.2	-	
SDKN-CM	42MT-CM		●													-	12.7	3.18	-	-	1.5	-	E34 E44
SDKN-MU	1203AESN-MU						●									-	12.7	3.18	-	-	2.08	-	E34 E35 E44 E45
	1504AESN-MU						●									-	15.875	4.76	-	-	2.10	-	
SDKN-SU	1203AESN-SU						●	●			●	●				-	12.7	3.18	-	-	2.08	-	E34 E35 E44 E45
	1504AESN-SU						●				●	●				-	15.875	4.76	-	-	2.10	-	
SDKR-MX	1203AESN-MX															-	12.7	3.18	-	-	1.46	-	E34 E35 E44 E45
	1203AETN-MX															-	12.7	3.18	-	-	1.46	-	
	1203AEN-MX			●												-	12.7	3.18	-	-	1.46	-	
	1504AESN-MX				●											-	15.875	4.76	-	-	1.45	-	
	1504AETN-MX															-	15.875	4.76	-	-	1.45	-	
	1504AEN-MX			●												-	15.875	4.76	-	-	1.45	-	
SDMT-MM	090308-MM					●					●					-	9.525	3.18	0.8	4.4	-	-	E214 E228
SDXT-MA	09M405R-MA														●	-	9.525	4.0	0.5	4.0	1.2	-	E181 ~E186
	130508R-MA														●	-	13.5	5.56	0.8	5.56	2.2	-	
SDXT-MF	09M403R-MF															-	9.525	4.0	0.3	4.0	1.2	-	E181 ~E186
	09M403L-MF															-	9.525	4.0	0.3	4.0	1.2	-	
	09M404R-MF															-	9.525	4.0	0.4	4.0	1.2	-	
	09M404L-MF															-	9.525	4.0	0.4	4.0	1.2	-	
	09M405R-MF			●	●				●	●	●	●				-	9.525	4.0	0.5	4.0	1.2	-	
	09M405L-MF															-	9.525	4.0	0.5	4.0	1.2	-	
	130508R-MF			●	●				●	●	●	●				-	13.5	5.56	0.8	5.56	2.2	-	
SDXT-MM	09M405R-MM			●	●	●		●	●	●	●	●				-	9.525	4.0	0.5	4.0	1.2	-	E181 ~E186
	09M405L-MM															-	9.525	4.0	0.5	4.0	1.2	-	
	130508R-MM			●	●	●		●	●	●	●	●				-	13.5	5.56	0.8	5.56	2.2	-	
	130508L-MM															-	13.5	5.56	0.8	5.56	2.2	-	
	130538-MM															-	13.5	5.56	3.8	5.56	2.2	-	

● : Stock item

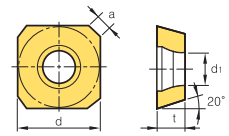
Workpiece		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC130	ST30A	G10	H01
Steel	P	●	◐	◐	✱	◐	◐	✱			✱	◐	◐		
Stainless steel	M			◐	✱			✱	✱		✱				
Cast iron	K									●	✱			◐	●
Non-ferrous metal	N														◐
Heat resistant alloy, Titanium alloy	S							✱			✱				
Hardened steel	H										◐				

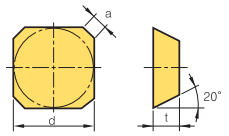
Machianing types

● Continuous cutting
◐ General cutting
✱ Interrupted cutting

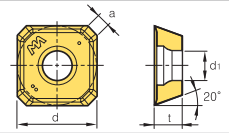
Inserts	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC130	Uncoated ST30A	Uncoated G10	Uncoated H01	l	d	t	r	d_1	a	Available tools
SECA 	1204AFSN			●	●											-	12.7	4.76	-	5.56	2.66	-
	1204AFTN		●			●			●							-	12.7	4.76	-	5.56	2.66	
	1204AFFN															-	12.7	4.76	-	5.56	2.66	
	1204AFEN															-	12.7	4.76	-	5.56	2.66	
	1504AFSN															-	15.875	4.76	-	5.5	2.8	
	1504AFTN															-	15.875	4.76	-	5.5	2.8	
	1504AFFN															-	15.875	4.76	-	5.5	2.8	
SECN 	1203AFFN													●	●	-	12.7	3.18	-	-	2.36	E36 E37
	1203AFTN	●	●										●			-	12.7	3.18	-	-	2.36	
	1203AFEN															-	12.7	3.18	-	-	2.36	
	1203AFSN			●	●											-	12.7	3.18	-	-	2.36	
	1203AFEN-RH								●	●						-	12.7	3.18	-	-	2.36	
	1203AFSN-RH															-	12.7	3.18	-	-	2.36	
	1203AFTN-S20								●							-	12.7	3.18	-	-	2.36	
	1504AFFN													●		-	15.875	4.76	-	-	2.4	
	1504AFTN		●				●						●			-	15.875	4.76	-	-	2.4	
	1504AFEN															-	15.875	4.76	-	-	2.4	
	1504AFSN			●	●											-	15.875	4.76	-	-	2.4	
	1504AFEN-RH															-	15.875	4.76	-	-	2.4	
	1504AFSN-RH									●						-	15.875	4.76	-	-	2.4	
	1504AFTN-S20															-	15.875	4.76	-	-	2.4	
SEET-MA 	0903AGFN-MA														●	-	9.525	3.18	-	3.4	2.11	E175 ~E180
	14M4AGFN-MA														●	-	14.0	4.0	-	4.4	2.64	
SEET-MF 	0903AGSN-MF			●					●		●					-	9.525	3.18	-	3.4	2.11	E175 ~E180
	14M4AGSN-MF			●	●				●	●	●					-	14.0	4.0	-	4.4	2.64	
SEET-MM 	0903AGSN-MM			●							●					-	9.525	3.18	-	3.4	2.11	E175 ~E180
	14M4AGSN-MM			●	●	●			●		●					-	14.0	4.0	-	4.4	2.64	
SEEW 	0903AGTN															-	9.525	3.18	-	3.4	2.11	E175 ~E180
	14M4AGTN		●													-	14.0	4.0	-	4.4	2.64	
SEEW-W 	14M4AGFN-W															-	14.0	4.0	-	4.4	8.5	E175 E176 E178 E179 E180
	14M4AGSN-W															-	14.0	4.0	-	4.4	8.5	
	14M4AGTN-W															-	14.0	4.0	-	4.4	8.5	
SEKN-SU 	1203AFSN-SU							●	●							-	12.7	3.18	-	1.98	-	E36 E37
	1504AFSN-SU							●	●							-	15.875	4.76	-	2.04	-	
SEKR-MF1 	1203AFSN-MF1															-	12.7	3.18	-	2.3	-	E36 E37

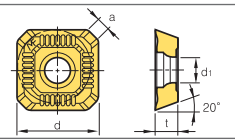
Geometries

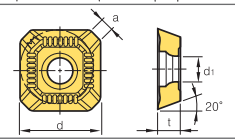


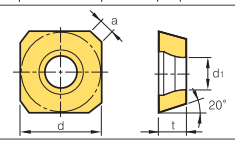


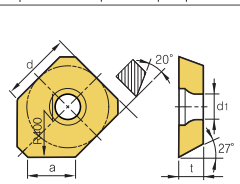
▶Shape of Edge
· S20 : STS
· RH : Strengthened Edge, STS

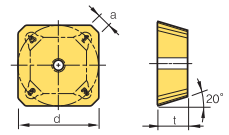


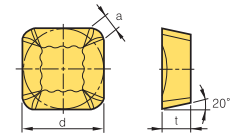










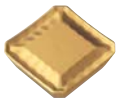
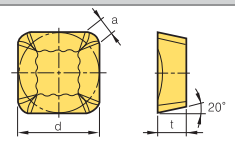
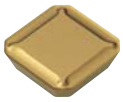
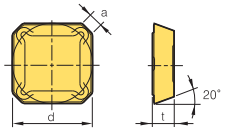
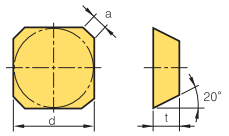
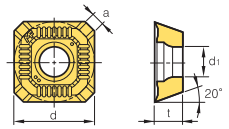
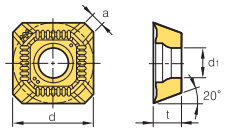
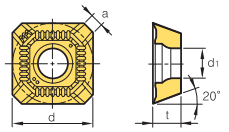
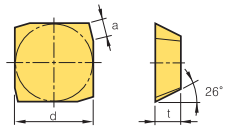
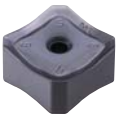
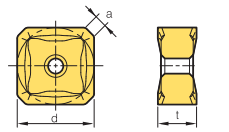
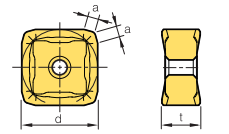


● : Stock item

Workpiece		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	PC130	G10	H01
Steel	P	●	◐	◐	✱	◐	◐	✱			✱	✱	◐		
Stainless steel	M			◐	✱			✱	✱		✱	✱			
Cast iron	K									●	✱	✱		◐	●
Non-ferrous metal	N														◐
Heat resistant alloy, Titanium alloy	S							✱			✱	✱			
Hardened steel	H										◐	✱			

Machining types

- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

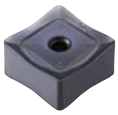
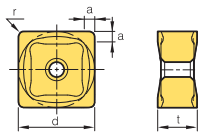
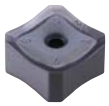
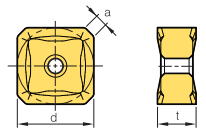
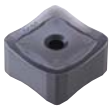
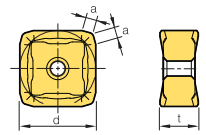
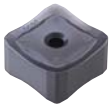
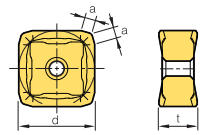
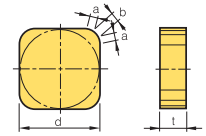
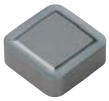
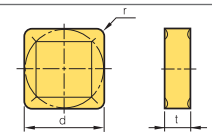
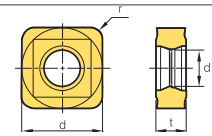
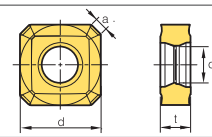
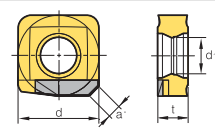
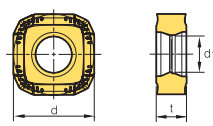
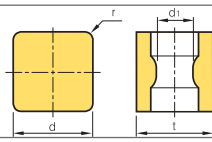
Inserts	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Coated PC130	Uncoated G10	Uncoated H01	Dimensions (mm) l	d	t	d_1	a	b	Dimensions	Available tools
SEKR-MX 	1203AFSN-MX		●	●	●				●				●			-	12.7	3.18	-	2.3	-		E36 E37
	1204AFSN-MX			●	●											-	12.7	4.76	-	2.3	-		
	1504AFSN-MX				●				●							-	15.875	4.76	-	2.4	-		
SEKR-X35 	1203AFSN-X35															-	12.7	3.18	-	2.361	-		E36
	1203AFFN-X35															-	12.7	3.18	-	2.361	-		
	1204AFFN-X35															-	12.7	4.76	-	2.361	-		
SEMN 	1204AZ			●												-	12.7	4.76	-	2.0	-		E36
SEXT-MF 	0903AGSN-MF										●	●				-	9.525	3.18	3.4	2.11	-		E175 ~E180
	14M4AGSN-MF			●		●					●	●				-	14.0	4.0	4.4	2.64	-		
SEXT-MM 	0903AGSN-MM					●				●	●	●				-	9.525	3.18	3.4	2.11	-		E175 ~E180
	14M4AGSN-MM			●	●	●			●	●	●	●				-	14.0	4.0	4.4	2.64	-		
SEXT-MR 	0903AGSN-MR															-	9.525	3.18	3.4	2.11	-		E175 ~E180
	14M4AGSN-MR			●		●			●		●					-	14.0	4.0	4.4	2.64	-		
SFCN 	1203EFR													●	●	-	12.7	3.18	-	2.5	-		E38
SNC(M)F-MF 	SNCF 1206ANN-MF															-	12.7	6.6	-	2	-		E95 E96
	1507ANN-MF									●						-	15.875	7.35	-	2.1	-		
	SNMF 1206ANN-MF															-	12.7	6.6	-	2	-		
	1507ANN-MF															-	15.875	7.35	-	2.1	-		
	SNCF 1206ENN-MF									●						-	12.7	6.6	-	1.8	-		E97 E98
	1507ENN-MF					●				●						-	15.875	7.35	-	1.8	-		
	SNMF 1206ENN-MF					●										-	12.7	6.6	-	1.8	-		
	1507ENN-MF															-	15.875	7.35	-	1.8	-		

● : Stock item

Workpiece		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01
Steel	P	●	◐	◐	✱	◐	◐	✱			✱	✱	◐		
Stainless steel	M			◐	✱			✱	✱		✱	✱			
Cast iron	K									●	✱	✱		◐	●
Non-ferrous metal	N														◐
Heat resistant alloy, Titanium alloy	S							✱			✱	✱			
Hardened steel	H										◐	✱			

Machining types

● Continuous cutting
◐ General cutting
✱ Interrupted cutting

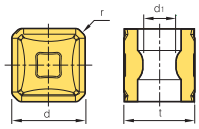
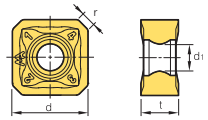
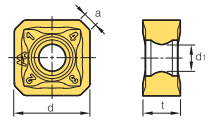
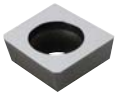
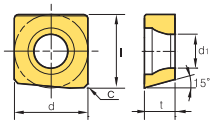
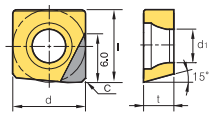
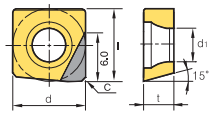
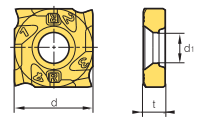
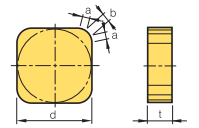
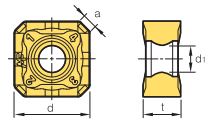
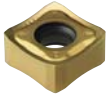
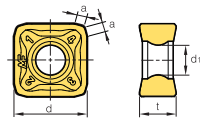
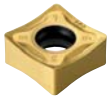
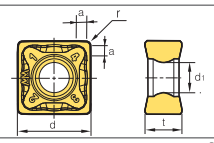
Inserts	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	l	d	t	r	d_1	a	b	Dimensions	Available tools
																Dimensions (mm)								
SNC(M)F-MF 	SNCF 1206QNN-MF					●				●						-	12.7	6.6	0.8	-	1	-		E99
	SNMF 1206QNN-MF					●										-	12.7	6.6	0.8	-	1	-		
SNC(M)F-MM 	SNCF 1206ANN-MM					●										-	12.7	6.6	-	-	2	-		E95
	1507ANN-MM					●		●								-	15.875	7.35	-	-	2.1	-		E96
	SNMF 1206ANN-MM															-	12.7	6.6	-	-	2	-		
	1507ANN-MM					●										-	15.875	7.35	-	-	2.1	-		
SNC(M)F-MM 	SNCF 1206ENN-MM					●		●								-	12.7	6.6	-	-	1.8	-		E97
	1507ENN-MM							●								-	15.875	7.35	-	-	1.8	-		E98
	SNMF 1206ENN-MM					●										-	12.7	6.6	-	-	1.8	-		
	1507ENN-MM					●										-	15.875	7.35	-	-	1.8	-		
SNC(M)F-MM 	SNCF 1206QNN-MM					●		●		●						-	12.7	6.6	0.8	-	1	-		E99
	SNMF 1206QNN-MM					●										-	12.7	6.6	0.8	-	1	-		
SNCN 	1204ENN			●									●	●		-	12.7	4.76	-	-	1.4	1.0		E39
	1504ENN												●			-	15.875	4.76	-	-	1.4	1.0		E307
																								E308
SNEF 	435									●						-	12.7	4.76	2.0	-	-	-		E313
	535															-	15.875	4.76	2.0	-	-	-		
SNEU-MF 	120420-MF									●						-	12.7	4.76	2.0	5.7	(2.3)	-		E315
SNEU-MF 	1204ANN-MF															-	12.7	4.76	-	5.7	(2.0)	-		E315
SNEU-TBW 	1204-TBW															-	12.7	4.76	-	5.7	(2.1)	-		E315
SNEU-WMF 	1204R-WMF															-	12.7	4.76	-	5.7	-	-		E315
SNEX 	101010									●						-	10	10	1.0	4.6	-	-		E282
	1010ZNN															-	10	10	(1.0)	4.6	-	-		

●: Stock item

Workpiece		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	G10	H01	DP200
Steel	P	●	⬌	⬌	✱	⬌	⬌	✱			✱	✱			
Stainless steel	M			⬌	✱			✱	✱		✱	✱			
Cast iron	K									●	✱	✱	⬌	●	
Non-ferrous metal	N													⬌	●
Heat resistant alloy, Titanium alloy	S							✱			✱	✱			
Hardened steel	H										⬌	✱			

Machining types

- ● Continuous cutting
- ⬌ General cutting
- ✱ Interrupted cutting

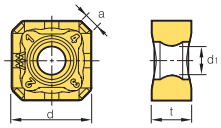
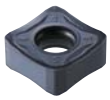
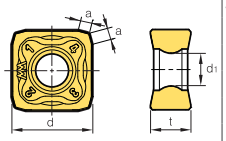
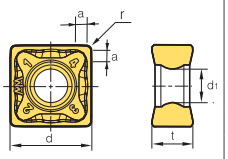
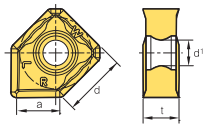
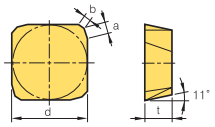
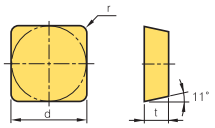
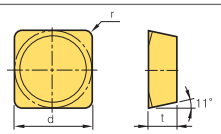
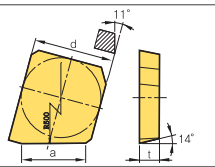
Inserts	Designation	Cermet		Coated									Uncoated		PCD	Dimensions (mm)							Geometries	Available tools
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	G10	H01	DP200	l	d	t	r	d1	a	b		
SNEX-CU1 	101010-CU1									●						-	10	10	1.0	4.6	-	-		E304
	1010ZNN-CU1									●						-	10	10	(1.0)	4.6	-	-		
	121212-CU1									●						-	12.7	12.7	1.2	5.6	-	-		
	1212ZNN-CU1															-	12.7	12.7	(1.2)	5.6	-	-		
SNEX-MA 	1206ANN-MA													●		-	12.7	6.35	-	4.5	2.36	-		E85 ~E94
	1206ENN-MA					●				●				●		-	12.7	6.35	-	5.2	1.82	-		
	1206QNN-MA															-	12.7	6.35	-	5.2	1.39	-		
	120612-MA													●		-	12.7	6.35	1.2	5.2	-	-		
New SNEX-ML 	1206ANN-ML										●	●				-	12.7	6.35	-	4.5	-	-		E85 ~E94
	1206ENN-ML										●	●				-	12.7	6.35	-	4.5	2.36	-		
	1206QNN-ML										●	●				-	12.7	6.35	-	4.5	1.82	-		
	120612-ML										●	●				-	12.7	6.35	1.2	4.5	1.39	-		
	1507ANN-ML										●	●				-	15.875	7.94	-	5.6	3.16	-		
	1507ENN-ML										●	●				-	15.875	7.94	-	5.6	2.66	-		
SNEW 	09T3ADFR													●		9.525	9.525	3.97	-	4.4	-	-		E109
SNEW-NAF  XAW: Wiper Insert	09T3ADTR-NAF														●	9.525	9.525	3.97	-	4.4	-	-		E109
	09T3ADTR-NAW														●	9.525	9.525	3.97	-	4.4	-	-		
SNEW-XAF  NAW: Wiper Insert	09T3ADTR-XAF														●	9.525	9.525	3.97	-	4.4	-	-		E109
	09T3ADTR-XAW														●	9.525	9.525	3.97	-	4.4	-	-		
New SNHT-WX 	1102308R/L-WX										●					-	11	2.30	-	4	-	-		E296 E297
	110308R/L-WX										●					-	11	3.00	-	4	-	-		
	120308R/L-WX															-	12.7	3.25	-	5	-	-		
	1203508R/L-WX										●					-	12.7	3.50	-	5	-	-		
	120408R/L-WX															-	12.7	4.00	-	5	-	-		
	1204508R/L-WX										●					-	12.7	4.54	-	5	-	-		
	120508R/L-WX															-	12.7	5.00	-	5	-	-		
	1205408R/L-WX										●					-	12.7	5.47	-	5	-	-		
	120608R/L-WX															-	12.7	6.00	-	5	-	-		
	1206508R/L-WX															-	12.7	6.50	-	5	-	-		
	120708R/L-WX															-	12.7	7.00	-	5	-	-		
	1207508R/L-WX															-	12.7	7.5	-	5	-	-		
SNKN 	1204ENN									●						-	12.7	4.76	-	-	1.4	1.0		E39 E307 E308
	1504ENN			●												-	15.875	4.76	-	-	1.4	1.0		
SNM(E)X-MF 	SNMX 1206ANN-MF					●	●			●	●	●				-	12.7	6.35	-	4.5	2.36	-		E85 E86 E90
	1507ANN-MF					●				●	●	●				-	15.875	7.94	-	5.6	3.15	-		
	SNEX 1206ANN-MF					●	●			●	●	●				-	12.7	6.35	-	4.5	2.36	-		
	1507ANN-MF					●				●	●	●				-	15.875	7.94	-	5.6	3.15	-		
SNM(E)X-MF 	SNMX 1206ENN-MF					●				●	●	●				-	12.7	6.35	-	4.5	1.82	-		E85 ~E88
	1507ENN-MF					●				●	●	●				-	15.875	7.94	-	5.6	2.66	-		
	SNEX 1206ENN-MF									●	●	●				-	12.7	6.35	-	4.5	1.82	-		
	1507ENN-MF					●				●	●	●				-	15.875	7.94	-	5.6	2.66	-		
SNM(E)X-MF 	SNMX 1206QNN-MF					●				●	●	●				-	12.7	6.35	-	5.2	2.36	-		E93 E94
	120612-MF															-	12.7	6.35	1.2	5.2	-	-		
	SNEX 1206QNN-MF					●				●	●	●				-	12.7	6.35	-	5.2	2.36	-		
	120612-MF															-	12.7	6.35	1.2	5.2	-	-		

●: Stock item

Workpiece		CN2000	CN30	NCM325	NCM335	NC5330	PC3500	PC3600	PC9530	PC6510	PC5300	PC5400	PC130	ST30A	G10	H01
Steel	P	●	⬌	⬌	✠	●	⬌	⬌			✠	✠	⬌	⬌		
Stainless steel	M			⬌	✠				✠		✠	✠				
Cast iron	K					⬌				●	✠	✠			⬌	●
Non-ferrous metal	N															⬌
Heat resistant alloy, Titanium	S										✠	✠				
Hardened steel	H										⬌	✠				

Machining types

- ● Continuous cutting
- ⬌ General cutting
- ✠ Interrupted cutting

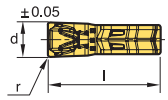
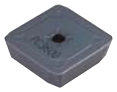
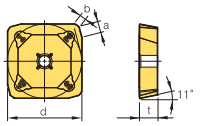
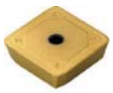
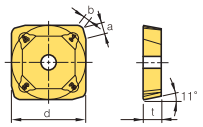
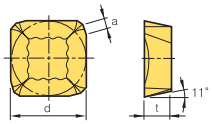
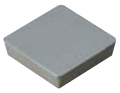
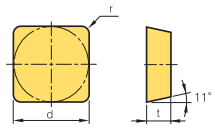
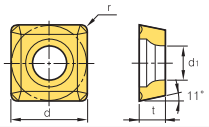
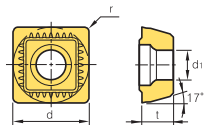
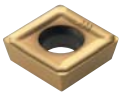
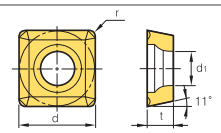
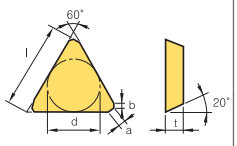
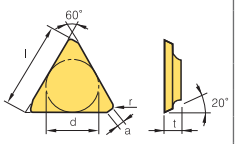
Inserts	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Coated PC130	Uncoated ST30A	Uncoated G10	Uncoated H01	Dimensions (mm) l	d	t	r	d_1	a	b	Geometries	Available tools
SNM(E)X-MM 	SNMX 1206ANN-MM			●		●	●	●	●	●	●	●					-	12.7	6.35	-	4.5	2.36	-		E85 ~E88
	1507ANN-MM						●	●		●	●	●					-	15.875	7.94	-	5.6	3.15	-		
	SNEX 1206ANN-MM			●			●	●	●	●	●	●					-	12.7	6.35	-	4.5	2.36	-		
	1507ANN-MM						●			●	●	●					-	15.875	7.94	-	5.6	3.15	-		
SNM(E)X-MM 	SNMX 1206ENN-MM						●	●		●	●	●					-	12.7	6.35	-	5.2	1.82	-		E89 ~E92
	1507ENN-MM						●	●		●	●	●					-	15.875	7.94	-	5.6	2.66	-		
	SNEX 1206ENN-MM						●	●		●	●	●					-	12.7	6.35	-	5.2	1.82	-		
	1507ENN-MM						●			●	●	●					-	15.875	7.94	-	5.6	2.66	-		
SNM(E)X-MM 	SNMX 1206QNN-MM						●			●	●	●					-	12.7	6.35	-	4.5	2.36	-		E93 E94
	120612-MM						●			●							-	12.7	6.35	1.2	4.5	-	-		
	SNEX 1206QNN-MM						●			●	●	●					-	12.7	6.35	-	4.5	2.36	-		
	120612-MM									●							-	12.7	6.35	1.2	4.5	-	-		
SNEX-W 	1206ANN-W						●			●	●						-	12.7	6.35	-	4.5	7.6	-		E85 E86
SPCN 	1203EDR		●	●	●								●	●	●	●	-	12.7	3.18	-	-	1.4	1.0		E40 E41
	1203EDR-RH									●	●						-	12.7	3.18	-	-	1.4	1.0		
	1203EDL													●	●	●	-	12.7	3.18	-	-	1.4	1.0		
	1203EDR-G															●	-	12.7	3.18	-	-	1.4	1.0		
	1203EDR-RN	●															-	12.7	3.18			1.4	1.0		
	1203EDER-RH																-	12.7	3.18	-	-	1.63	0.8		
	1203EDSR-RH						●			●							-	12.7	3.18	-	-	1.63	0.8		
	1203EDTR-RH																-	12.7	3.18	-	-	1.63	0.8		
	1203EDR-S20								●								-	12.7	3.18	-	-	1.4	1.0		
	1204EDR																-	12.7	4.76	-	-	1.4	1.0		
	150412T																-	15.875	4.76	1.2	-	-	-		
	1504EDR		●	●										●	●		-	15.875	4.76	-	-	1.4	1.0	 SPCN150412T	
	1504EDR-RH																	15.875	4.76	-	-	1.4	1.0		
	1504EDSR				●												-	15.875	4.76	-	-	1.4	1.0		
	1504EDL									●				●			-	15.875	4.76	-	-	1.4	1.0		
	1504EDR-G															●	-	15.875	4.76	-	-	1.4	1.0		
	1504EDR-RN	●															-	15.875	4.76	-	-	1.4	1.0		
	1504EDER-RH									●	●						-	15.875	4.76	-	-	1.64	0.8		
	1504EDSR-RH									●							-	15.875	4.76	-	-	1.64	0.8		
	1504EDTR-RH						●										-	15.875	4.76	-	-	1.64	0.8		
	1504EDR-S20								●								-	15.875	4.76	-	-	1.4	1.0		
SPEN-WC 	120416-WC																-	12.7	4.76	1.6	-	-	-		E314
	150412-WC																-	15.875	4.76	1.2	-	-	-		
	150416-WC																-	15.875	4.76	1.6	-	-	-		
	150420-WC									●							-	15.875	4.76	2.0	-	-	-		
	190424-WC																-	19.05	4.76	2.4	-	-	-		
SPEX 	1203EDR-1																-	12.7	3.18	-	-	10.2	-		E40 E41
	1203EDL-1																-	12.7	3.18	-	-	10.2	-		
	1504EDR-1																-	15.875	4.76	-	-	10.2	-		
	1504EDL-1																-	15.875	4.76	-	-	10.2	-		

● : Stock item

Workpiece		CN2000	CN30	NCM325	NCM335	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	PC130	ST30A	G10	H01
Steel	P	●	◐	◐	✱	●	◐	◐	✱			✱	✱	◐	◐		
Stainless steel	M			◐	✱				✱	✱		✱	✱				
Cast iron	K					◐					●	✱	✱			◐	●
Non-ferrous metal	N																◐
Heat resistant alloy, Titanium alloy	S								✱			✱	✱				
Hardened steel	H											◐	✱				

Machining types

- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

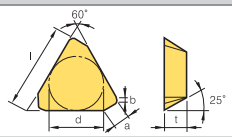
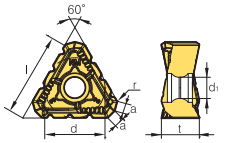
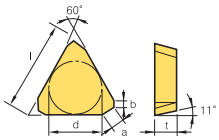
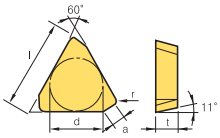
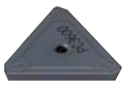
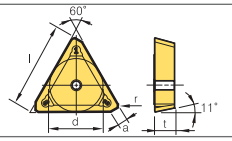
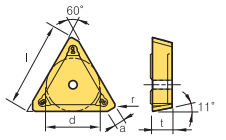
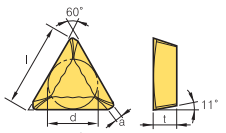
Inserts	Designation	CN2000	CN30	NCM325	NCM335	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	PC130	ST30A	G10	H01	l	d	t	r	d_1	a	b	Geometries	Available tools
		Cermet		Coated											Uncoated			Dimensions (mm)								
SPFN 	200-N																	8.8	2.2	-	0.2	-	-	-		E293
	300-N																	9.8	3.0	-	0.2	-	-	-		
	400-N																	9.8	4.0	-	0.25	-	-	-		
SPKN-MU New 	1203EDSR-MU							●										-	12.7	3.18	-	-	0.86	1.87		E40 E41
	1504EDSR-MU							●										-	15.875	4.76	-	-	0.84	1.92		
SPKN-SU 	1203EDSR-SU							●	●			●	●					-	12.7	3.18	-	-	1.66	0.92		E40 E41
	1203EDSL-SU							●										-	12.7	3.18	-	-	1.66	0.92		
	1504EDSR-SU							●	●			●	●					-	15.875	4.76	-	-	1.62	0.93		
	1504EDSL-SU							●										-	15.875	4.76	-	-	1.62	0.93		
SPKR-MX 	1203EDSR-MX			●	●		●											-	12.7	3.18	-	-	1.4	-		E40 E41
	1203EDSL-MX			●														-	12.7	3.18	-	-	1.4	-		
	1504EDR-MX			●														-	15.875	4.76	-	-	1.45	-		
	1504EDSR-MX				●		●											-	15.875	4.76	-	-	1.45	-		
SPMN 	120308														●			-	12.7	3.18	0.8	-	-	-		E256
SPMT 	060304			●														-	6.35	3.18	0.4	2.8	-	-		E228 E245 E246
SPMT-KC 	110408-KC						●								●	●		-	11.5	4.8	0.8	4.5	-	-		E256
SPMT-MM 	120408-MM						●		●			●						-	12.7	4.76	0.8	5.6	-	-		E153 E228 E245 E246
	120508-MMN																	-	12.7	5.56	0.8	5.6	-	-		
TEC(E)N 	TECN 22R															●		11.0	6.35	3.18	-	-	1.0	0.5		E46
	22TR		●											●	●			11.0	6.35	3.18	0.8	-	0.5	-		
	32R															●		16.5	9.525	3.18	-	-	1.0	0.5		
	32R-G																	16.5	9.525	3.18	-	-	1.0	0.5		
	32TR		●		●									●	●			16.5	9.525	3.18	0.8	-	0.5	-		
	32TR-S20									●								16.5	9.525	3.18	0.8	-	0.5	-		
	43R-G																	22.0	12.7	4.76	-	-	2.0	0.5		
	43TR-Z																	22.0	12.7	4.76	0.8	-	1.5	-		
	43TR													●				22.0	12.7	4.76	0.8	-	1.5	-		
	TEEN 32TR																	16.5	9.525	3.18	0.8	-	0.5	-		
TEEN 	43R-Z																	22.0	12.7	4.76	-	-	2.0	0.5	▶hape of Edge · G : Light side, Sharp edge · S20 : STS · ZH : Hole added	
	43TR-Z																	22.0	12.7	4.76	0.8	-	1.5	-		
	43TR-ZH																	22.0	12.7	4.76	0.8	-	1.5	-		
	43R															●		22.0	12.7	4.76	-	-	2.0	0.5		
	43R-G																●	22.0	12.7	4.76	-	-	2.0	0.5		
	43TR	●	●	●	●						●				●			22.0	12.7	4.76	0.8	-	1.5	-		
	43TR-S20																	22.0	12.7	4.76	0.8	-	1.5	-		

● : Stock item

Workpiece			CN2000	CN30	NCM325	NCM335	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	PC130	ST30A	G10	H01
	Steel	P	●	◐	◐	✱	●	◐	◐	✱			✱	✱	◐	◐		
	Stainless steel	M			◐	✱				✱	✱		✱	✱				
	Cast iron	K					◐					●	✱	✱			◐	●
	Non-ferrous metal	N																◐
	Heat resistant alloy, Titanium alloy	S								✱			✱	✱				
	Hardened steel	H											◐	✱				

Machining types

- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Cermet		Coated											Uncoated			Dimensions (mm)							Geometries	Available tools
		CN2000	CN30	NCM325	NCM335	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	PC130	ST30A	G10	H01	l	d	t	r	d_1	a	b		
TFCN 	2203PFR																●	22.0	12.7	3.18	-	-	2.42	0.71		E42
	2203PFL																	22.0	12.7	3.18	-	-	2.42	0.71		
TNMX 	2710AZNR-NM				●	●	●			●		●						27	15.875	10	0.8	5.6	2.63	-		E52
	2710AZNL-NM																	27	15.875	10	0.8	5.6	2.63	-		E53
TPCN 	1103PPN		●												●	●		11.0	6.35	3.18	-	-	0.7	0.7		E43
	1103PPTN																	11.0	6.35	3.18	-	-	0.7	0.7		E289
	1603PDR			●														16.5	9.525	3.18	-	-	1.2	0.7		E290
	1603PPN		●	●							●					●		16.5	9.525	3.18	-	-	1.2	1.2		
	1603PPR		●	●										●	●	●		16.5	9.525	3.18	-	-	1.2	1.0		
	1603PPR-RH																	16.5	9.525	3.18	-	-	1.2	1.0		
	1603PPR-G																●	16.5	9.525	3.18	-	-	1.2	1.0		
	1603PPSR				●													16.5	9.525	3.18	-	-	1.2	1.0		
	1603PPTN																	16.5	9.525	3.18	-	-	1.2	1.2		
	1603PPTR																	16.5	9.525	3.18	-	-	1.2	1.0		
	1603PPR-RH																	16.5	9.525	3.18	-	-	1.2	1.0		
	1603PDER-RH							●			●							16.5	9.525	3.18	0.8	-	1.5	-		
	1603PDSR-RH										●							16.5	9.525	3.18	0.8	-	1.5	-		
	1603PDR-S20									●								16.5	9.525	3.18	-	-	1.2	0.7		
	1603PDR-RN																	16.5	9.525	3.18	-	-	1.5	1.1		
	2204PDR		●	●										●	●	●		22.0	12.7	4.76	-	-	1.4	0.7		
	2204PDR-RH																	22.0	12.7	4.76	-	-	1.4	0.7		
	2204PDR-RN	●																22.0	12.7	4.76	-	-	1.42	0.52		
	2204PDR-G																●	22.0	12.7	4.76	-	-	1.4	0.7		
	2204PDL														●			22.0	12.7	4.76	-	-	1.4	0.7		
	2204PDSR				●													22.0	12.7	4.76	-	-	1.4	0.7		
	2204PDTR																	22.0	12.7	4.76	-	-	1.4	0.7		
	2204PPN																	22.0	12.7	4.76	-	-	1.2	1.2		
	2204PPTN																	22.0	12.7	4.76	-	-	1.2	1.2		
	2204PDR-RH																	22.0	12.7	4.76	0.8	-	1.8	-		
	2204PDER-RH										●	●						22.0	12.7	4.76	0.8	-	1.8	-		
	2204PDSR-RH							●			●							22.0	12.7	4.76	0.8	-	1.8	-		
	2204PDR-S20									●								22.0	12.7	4.76	-	-	1.4	0.7		
TPKN-MU 	2204PDSR-MU							●										22.0	12.7	4.76	0.8	-	1.96	-		E43
TPKN-SU 	1603PDSL-SU																	16.5	9.525	3.18	1.0	-	1.70	-		E43
	1603PDSR-SU							●	●									16.5	9.525	3.18	1.0	-	1.70	-		
	2204PDSL-SU							●										22.0	12.7	4.76	1.0	-	1.91	-		
	2204PDSR-SU							●	●			●	●					22.0	12.7	4.76	1.0	-	1.91	-		
TPKR-MX 	1603PDSN-MX																	16.5	9.525	3.18	-	-	1.2	1.2		E43
	1603PDSR-MX									●								16.5	9.525	3.18	-	-	1.2	0.7		
	1603PPR-MX			●														16.5	9.525	3.18	-	-	1.2	1.0		
	1603PPSN-MX			●														16.5	9.525	3.18	-	-	1.2	1.2		
	1603PPSR-MX				●													16.5	9.525	3.18	-	-	1.2	1.0		
	2204PDR-MX			●														22.0	12.7	4.76	1.0	-	1.4	-		
	2204PDSR-MX			●	●													22.0	12.7	4.76	1.0	-	1.4	-		
	2204PPR-MX																	22.0	12.7	4.76	1.0	-	1.4	-		

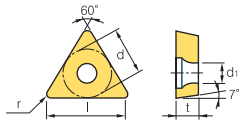
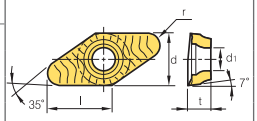
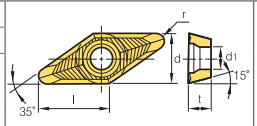
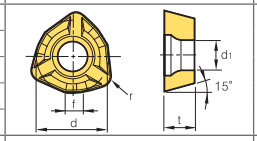
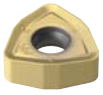
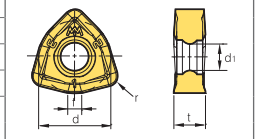
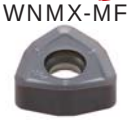
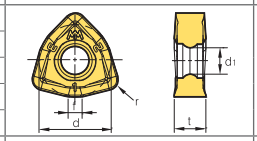
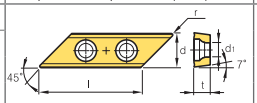
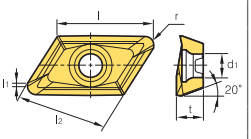
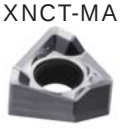
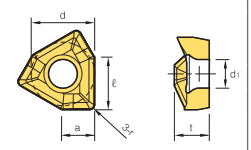
●: Stock item

※TPC(K)N □□□□P~N → For FC·HC
□□□□P~R → For Cutter(face)

Workpiece		CN2000	CN30	NCM325	NCM335	PC3500	PC3545	PC9530	PC6510	PC5300	PC5400	PD2000	ST30A	G10	H01
Steel	P	●	◐	◐	✱	◐	✱			✱	✱		◐		
Stainless steel	M			◐	✱		✱	✱		✱	✱				
Cast iron	K								●	✱	✱			◐	●
Non-ferrous metal	N											●			◐
Heat resistant alloy, Titanium alloy	S						✱			✱	✱				
Hardened steel	H									◐	✱				

Machining types

● Continuous cutting
◐ General cutting
✱ Interrupted cutting

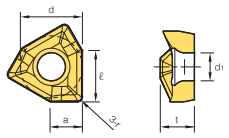
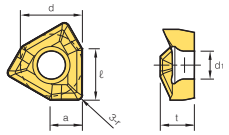
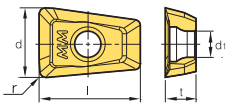
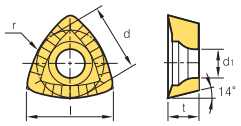
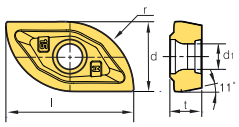
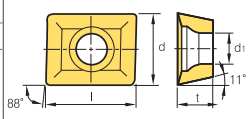
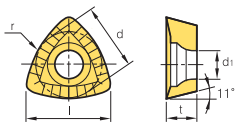
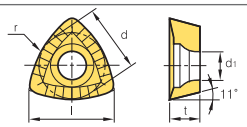
Inserts	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Coated PD2000	Uncoated ST30A	Uncoated G10	Uncoated H01	l	l2	l1	d	t	r	d1	a	f	Geometries	Available tools
																Dimensions (mm)										
TWX-KC 	16R-KC					●										16.5	-	-	9.52	3.97	0.8	4.45	-	-		E258
	22R-KC					●										22.0	-	-	12.7	4.76	0.8	4.45	-	-		
VCKT-MA 	220530N-MA															15.6	-	-	12.7	5.56	3.0	5.6	-	-		E269 E270
VDKT-MA 	11T210N-MA														●	8.8	-	-	6.35	2.87	1.0	2.8	-	-		E270 E271
	11T220N-MA															6.7	-	-	6.35	2.87	2.0	2.8	-	-		
WDKT-MH 	080316ZDSR-MH					●	●	●	●	●	●					-	-	-	8.0	3.18	1.6	3.3	-	1.8		E223 ~E227
	10T320ZDSR-MH					●	●	●	●	●	●					-	-	-	10.0	3.97	2.0	4.3	-	2.3		
	130520ZDSR-MH					●	●	●	●	●	●					-	-	-	13.5	5.56	2.0	5.56	-	3.1		
	150625ZDSR-MH					●	●	●	●	●	●					-	-	-	15.0	6.35	2.5	5.56	-	3.4		
WNMX-MM 	060312ZNN-MM New									●	●					-	-	-	6.35	3.18	1.2	2.86	-	1.2		E213 ~E222
	09T316ZNN-MM					●	●	●		●	●					-	-	-	9.525	3.97	1.6	3.6	-	1.7		
	130520ZNN-MM					●	●	●		●	●					-	-	-	12.7	5.56	2.0	4.7	-	2.5		
	160720ZNN-MM New									●	●					-	-	-	16.0	7.0	2.0	5.8	-	3.0		
New WNMX-MF 	060312ZNN-MF									●	●					-	-	-	6.35	3.18	1.2	2.86	-	1.2		E213 ~E222
	09T316ZNN-MF									●	●					-	-	-	9.525	3.97	1.6	3.6	-	1.7		
	130520ZNN-MF									●	●					-	-	-	12.7	5.56	2.0	4.7	-	2.5		
	160720ZNN-MF									●	●					-	-	-	16.0	7.0	2.0	5.8	-	3.0		
XCET-KC 	310404ER-KC					●							●	●		30.9	-	-	9.525	4.5	0.4	4.4	-	-		E257
XEKT-MA 	19M504FR-MA											●			●	18	16.4	1.4	-	5	0.4	4.4	-	-		E272 ~E282
	19M508FR-MA											●			●	18	16.4	1.0	-	5	0.8	4.4	-	-		
	19M512FR-MA											●			●	18	16.4	0.6	-	5	1.2	4.4	-	-		
	19M516FR-MA														●	17.5	16.4	0.5	-	5	1.6	4.4	-	-		
	19M518FR-MA															17.5	16.4	0.5	-	5	1.8	4.4	-	-		
	19M520FR-MA											●			●	17.5	16.4	0.5	-	5	2.0	4.4	-	-		
	19M530FR-MA														●	17	16.4	0.7	-	5	3.0	4.4	-	-		
	19M532FR-MA											●			●	17	16.4	0.5	-	5	3.2	4.4	-	-		
	19M540FR-MA											●			●	16.5	16.4	0.5	-	5	4.0	4.4	-	-		
	19M550FR-MA											●			●	16	16.4	0.4	-	5	5.0	4.4	-	-		
	250604FR-MA														●	24.5	21.9	1.5	-	6.35	0.4	6.0	-	-		
	250608FR-MA														●	24.5	21.9	1.2	-	6.35	0.8	6.0	-	-		
	250612FR-MA														●	24.5	21.9	0.8	-	6.35	1.2	6.0	-	-		
	250616FR-MA															24.5	21.9	0.4	-	6.35	1.6	6.0	-	-		
	250620FR-MA														●	24	21.9	0.5	-	6.35	2.0	6.0	-	-		
	250630FR-MA															23.7	21.9	0.6	-	6.35	3.0	6.0	-	-		
	250632FR-MA														●	23.7	21.9	0.4	-	6.35	3.2	6.0	-	-		
	250640FR-MA															22.8	21.9	1.2	-	6.35	4.0	6.0	-	-		
	250650FR-MA														●	22.7	21.9	0.4	-	6.35	5.0	6.0	-	-		
New XNCT-MA 	080508PNFR-MA														●	8.2	-	-	10.0	5.5	0.8	4.5	2.9	-		E67 ~E69

● : Stock item

Workpiece		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	HD1
Steel	P	●	◐	◐	✱	◐	◐	✱			✱	✱	◐		
Stainless steel	M			◐	✱			✱	✱		✱	✱			
Cast iron	K									●	✱	✱		◐	●
Non-ferrous metal	N														◐
Heat resistant alloy, Titanium alloy	S							✱			✱	✱			
Hardened steel	H										◐	✱			

Machining types

● Continuous cutting
◐ General cutting
✱ Interrupted cutting

Inserts	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated HD1	l	l2	l1	d	t	r	d1	a	Geometries	Available tools
XNKT-ML 	060405PNER-ML						●			●	●	●				5.7	-	-	6.5	4.0	0.5	3.4	1.8		E66 ~E69
	080508PNER-ML						●			●	●	●				8.2	-	-	10.0	5.5	0.8	4.5	2.9		
XNKT-MM 	060405PNSR-MM						●			●	●	●				5.7	-	-	6.5	4.0	0.5	3.4	1.8		E66 ~E69
	080508PNSR-MM						●			●	●	●				8.2	-	-	10.0	5.5	0.8	4.5	2.9		
	080812PNSR-MM															8.2	-	-	10.0	5.5	1.2	4.5	2.9		
	080516PNSR-MM															8.2	-	-	10.0	5.5	1.6	4.5	2.9		
	080520PNSR-MM															8.2	-	-	10.0	5.5	2.0	4.5	2.9		
XPMT-MM 	0802ER-MM					●					●					8.5	-	-	5.9	2.38	0.8		-		E249 E250
	1003ER-MM					●					●					10.5	-	-	7.25	3.18	0.8		-		
	13T3ER-MM					●					●					13.1	-	-	9	3.97	0.8		-		
	1604ER-MM					●					●					16.5	-	-	11.5	4.76	0.8		-		
	1805ER-MM					●					●					18	-	-	12.4	5.56	0.8		-		
	2006ER-MM					●					●					20.5	-	-	14.1	6.35	0.8		-		
	2507ER-MM					●					●					25.5	-	-	17.6	7.94	0.8		-		
ZDMT-R-MM 	080310R-MM					●					●					8.4	-	-	6.73	3.2	10	2.8	-		E246
	110312.5R-MM					●					●					10.6	-	-	8.5	3.65	12.5	2.8	-		
	130416R-MM					●					●					13.2	-	-	10.5	4.76	16	4.4	-		
ZPET-MM  Internal	080M-MM															16	-	-	8.0	3.5	8	2.9	-		E244 E245
	090M-MM															17.7	-	-	7.2	4.3	9	3.4	-		
	100M-MM					●					●					19	-	-	10.4	4.5	10	3.4	-		
	110M-MM															22.2	-	-	11.4	4.8	11	4.5	-		
	125M-MM					●					●					24	-	-	12.9	5.3	12.5	4.5	-		
	130M-MM															25.7	-	-	13.4	5.3	13	4.5	-		
	140M-MM															27.2	-	-	14.3	6.3	14	5.6	-		
	150M-MM					●					●					28	-	-	15.4	7	15	5.6	-		
	160M-MM					●					●					28.5	-	-	16.4	7	16	5.6	-		
	200M-MM					●										38	-	-	20.7	8	20	6.6	-		
	250M-MM															48	-	-	25.9	9.5	25	8.6	-		
ZPET-MM  External	080S-MM															15	-	-	6.6	3.1	8	2.9	-		
	090S-MM															15.5	-	-	7.4	3.7	9	3.4	-		
	100S-MM					●					●					15.5	-	-	8.4	3.8	10	3.4	-		
	110S-MM															18.1	-	-	9	4.4	11	4.5	-		
	125S-MM					●					●					20.5	-	-	10.7	4.5	12.5	4.5	-		
	130S-MM															22.2	-	-	11	4.4	13	4.5	-		
	140S-MM															24.1	-	-	11.2	5.7	14	5.6	-		
	150S-MM					●					●					25	-	-	12.4	6.5	15	5.6	-		
	160S-MM					●					●					26	-	-	13.4	6.5	16	5.6	-		
	200S-MM					●										32	-	-	16.7	7	20	6.6	-		
	250S-MM															40	-	-	20.7	8.5	25	8.6	-		
ZPMT-MM 	1504PPSR-MM					●		●			●					15.9	-	-	12.7	4.76	-	5.6	-		E153 E228
	1505PPSR-MMN															15.9	-	-	12.7	5.76	-	5.6	-		
ZPMT-R-MM 	160520R-MM					●					●					16.1	-	-	12.7	5.56	20	5.6	-		E246
	160525R-MM					●					●					16.9	-	-	12.7	5.56	25	5.6	-		
	160531.5R-MM					●					●					17.6	-	-	12.7	5.56	31.5	5.6	-		
ZPMT-R-MR 	160525R-MR															17.6	-	-	12.7	5.56	25	5.6	-		E246

●: Stock item

Type	Cutter	Designation	Shape	A.A	Diameter range	Features	Application					Page
							Facing	Shouldering	Slotting	Copying	Ramping, Helical	
Cutters for face milling	Mill-max	ADN(M) 4000/5000+		45°	Ø80~Ø315	Excellent cutting edge strength and chip flow	●					E34 E35
		AE(M) 4000/5000		45°	Ø80~Ø315	Low cutting load and good machinability	●					E36 E37
		EF(M) 4000	Al 	75°	Ø80~Ø315	High rake angle to prevents welding	●					E38
		EN(M) 4000		75°	Ø80~Ø315	Economical because double sided inserts applied	●					E39
		EPN(M) 4000/5000+		75°	Ø80~Ø315	Double posi rake angle and low cutting force	●					E40 E41
		PF(M) 4000	Al 	90°	Ø80~Ø315	High rake angle and good machinability	●	●	●			E42
		PPN(M) 4000		90°	Ø80~Ø315	Double posi rake angle and low cutting force	●	●	●			E43
	Turbo Mill	ADS 4000/5000		45°	Ø50~Ø63	Anti-vibration	●					E44 E45
		PES 2000/3000/ 4000		90°	Ø20~Ø63	High rake angle, Cutting efficiency	●	●	●			E46
	Double Mill	AFO(M)4000		45°	Ø80~Ø125	High rake angle low cutting force Economical (8 corners available)	●					E47 E48
		AFO(M)5000			Ø80~Ø315							
	Power Buster	PBAC(M)5000		45°	Ø80~Ø315	Double sided Insert High depth High Feed Roughing	●					E52
		PBZC(M)5000		80°	Ø80~Ø315		●					E53

Al Cutter for Aluminum

Type	Cutter	Designation	Shape	A.A	Diameter range	Features	Application: Facing	Shouldering	Slotting	Copying	Ramping, Helical	Page
Cutters for face milling	Aero Mill	APD(M) A Type, B Type	Al 	90°	Ø80~Ø315	Aluminum cutter body suitable for high speed machining, Both cemented carbides and PCD inserts are available, G2.5 balance possible	●					E105 E106
	Aero Mill Plus	APD(M)-PB New	Al  Al	90°	Ø80~Ø315	Prevent overload to the spindle bearings through weight reduction of the Al alloy body and enable high-speed processing.	●					E107 E108
	Aero Mill Mini	MAPDS New		90°	Ø40~Ø63	Available with small Machining center-Carbide, PCD insert Application-Balancing class G2.5	●					E109
		MAPD New	Al 	90°	Ø32~Ø40		●					E109
	Rich Mill	RM8AC(M)4000 RMH8AC(M)4000 New		45°	Ø50~Ø400	8 corners available Double sided insert for steel, cast iron, stainless steel, aluminum	●					E85 E86
		RM8AC(M)5000 RMH8AC(M)5000 New			Ø80~Ø400		●					E87 E88
		RM8EC(M)4000 RMH8EC(M)4000 New		75°	Ø50~Ø400	8 corners available Double sided insert for steel, cast iron	●					E89 E90
		RM8EC(M)5000 RM8HEC(M)5000 New			Ø80~Ø400		●					E91 E92
		RM8QC(M)4000 RMH8QC(M)4000 New		88°	Ø63~Ø200	8 corners available Reduced cutting interruption at cast Iron	●					E93 E94
		RMT8A(M) 4000/5000		45°	Ø80~Ø315	Easy insert change and good machinability due to latch clamping system 8 corners available Excellent surface finish	●					E95 E96
		RMT8E(M) 4000/5000		75°	Ø80~Ø315		●					E97 E98
		RMT8Q(M)		88°	Ø80~Ø315		●					E99
		RM16AC(M) 6000/8000		45°	Ø63~Ø400	16 corners available. Wiper inserts can be applied for good surface finish Strong insert and powerful clamping	●					E100 E101
Cutters for molds	Rich Mill	RM3PC(M)3000 New		90°	Ø40~Ø80	Perfect perpendicularity Strong clamping	●	●	●		●	E66 E67
		RM3PC(M)4000 New			Ø40~Ø125							

Al Cutter for Aluminum

Type	Cutter	Designation	Shape	A.A	Diameter range	Features	Application: Facing	Shouldering	Slotting	Copying	Ramping, Helical	Page
Cutters for molds	Rich Mill	RM4PC(M)3000		90°	Ø40~Ø100	4corners available. High rake angle insert reduces cutting force. Excellent insert rigidity.	●	●	●		●	E70 E71
		RM4PC(M)4000			Ø50~Ø160							
		RM4ZCM3000 New		90°	Ø40~Ø52	In vertical machining, the maximum cutting depth for RM4Z3000: 9.00mm, RM4Z4000: 14.0mm	●	●	●		●	E83
		RM4ZC(M)4000 New			Ø63~Ø100							
	Alpha Mill	AMC(M) 1000S/1500S/ 2000S		90°	Ø32~Ø100	3 dimensional shape and high rake angle lowers cutting load and ensures better chip evacuation. Inner coolant system for better chip control increases tool life. Wide size range of inserts enlarges application range. Various types of Alpha Mills available for high depth of cut and high feed machining.	●	●	●	●	●	E116 ~E118
		AMC(M) 3000S/3000S-K /4000S		90°	Ø40~Ø200		●	●	●	●	●	E119 ~E121
		AMC(M) 1000SE 2000SE 3000SE		75°	Ø40~Ø100		●					E122 E123
		AMC(M) 2000M 3000M 4000M		90°	Ø50~Ø125		●	●	●	●	●	E124 E125 E126
	Future Mill	FMAC(M)3000		45°	Ø50~Ø125	Accurate inserts and cutter, Excellent chip flow	●					E175 E176
		FMAC(M)4000			Ø50~Ø200							
		FMAC(M)3000A		45°	Ø63~Ø125	Excellent in high speed cutting and tapping center, low power machine due to light aluminum body	●					E177 E178
		FMAC(M)4000A			Ø63~Ø315							
		FMPC(M)3000		90°	Ø50~Ø100	4 corners available various inserts can be applied to machine for different types of workpiece	●	●	●			E181 E182
		FMPC(M)4000			Ø63~Ø125							
		FMPC(M)3000A		90°	Ø63~Ø100	Excellent in high speed cutting and tapping center, low power machine due to light aluminum body	●	●	●			E183 E184
		FMPC(M)4000A			Ø63~Ø315							
		FMRC(M)3000		-	Ø40~Ø100	4~8 corners available Double contact faces between insert & seat part of cutter for stable clamping Excellent rotating-free machining	●				●	E187 E188
		FMRC(M)4000			Ø50~Ø125							
		FMRC(M)5000		-	Ø50~Ø125		●				●	E189 E190
		FMRC(M)6000			Ø63~Ø160							

Type	Cutter	Designation	Shape	A.A	Diameter range	Features	Application					Page
							Facing	Shouldering	Slotting	Copying	Ramping, Helical	
Cutters for molds	Future Mill P-positive	FMRC(M) New 3000 4000 5000 6000		-	Ø40~Ø250	Stable clamping system enables stable machining and productivity. Varied product line-up ensures wide application range. Optimal shape and grade with high hardness for hard-to-cut material machining.	●				●	E199 ~E202
	HRM	HRMC(M)13		15°	Ø50~Ø80	Powerful clamping by double clamping system 3 corners available high feed cutting with low cutting load	●	●	●	●	●	E223
		HRMC(M)15			Ø63~Ø160							
	HRMD	HRMDC(M)09		14°	Ø40~Ø100	Double side insert with 6 corner High feed cutting with strong simple screw-on clamp	●	●	●	●	●	E213 ~E215
		HRMDC(M)13			Ø50~Ø125							
		HRMDC(M)16 New			Ø80~Ø315							
	BT/HSK Tooling System	BT30/40/50		90°	Ø10~Ø50	BT/HSK one solid type has been accepted to increase the precision Inner coolant system can also make it possible to evacuate the chip effectively High feed and high depth	●	●	●	●	●	E144 ~E146
		HSK63										E147 ~E149
		BT30/40/50		90°	Ø16~Ø100		●	●	●			E150 ~E152
		HSK63/100										E154 ~E157
		BT30/40/50-MAT		90°	Ø12~Ø40	Alpha Mill, Rich Mill, FMR, Laser Mill, HRM(D), Pro-A, Pro-X Modular head M06~M16 applicable	●	●	●	●	●	E158
		HSK63/100-MAT										E159
		BT50 HAT4000		90°	Ø50~Ø80	Head only replacement possible and higher efficiency by self assembly head	●	●	●			E153
Cutters for aluminum	Pro-A Mill	PAC(M) 2000/4000	Al 	90°	Ø40~Ø100	Buffed insert controls chip flow without built-up edge	●	●	●	●	●	E269
	Pro-X Mill	PAXC(M)5000	Al 	90°	Ø40~Ø125	Powerful clamping Excellent body rigidity for rectangular and curve machining	●	●	●	●	●	E272 E273
		PAXC(M)6000			Ø50~Ø125							
	Pro-L Mill	PALC(M)	Al 	90°	Ø63	High helix and high depth of cut High perpendicularity Low cutting load	●	●	●	●	●	E277

Al Cutter for Aluminum

Type	Cutter		Designation	Shape	A.A	Diameter range	Features	Application					Page
								Facing	Shouldering	Slotting	Copying	Ramping, Helical	
High feed cutter for cast iron	High feed cutter		ANH 4000/5000		45°	Ø100~Ø450	Excellent cutting strength Good chip flow	●					E307 E308
			CDH 4000/5000		65°	Ø100~Ø450	Double positive rake angle Minimized cutting load	●					E309 E310
			DEH 5000		60°	Ø100~Ø450	For aluminum & aluminum alloy. Hexagonal insert available.	●					E311
			DPH 5000		60°	Ø100~Ø450	Hexagonal insert available Economical cutter	●					E312
			PNH 4000/5000		90°	Ø125~Ø450	Wiper insert available Double negative rake angle Excellent surface finish	●					E313
			PPH 4000		90°	Ø125~Ø450	Square insert and wiper insert available Excellent surface finish	●					E314
	Shave Mill		SVM(M)4000		90°	Ø80~Ø315	Exclusive adjusting device of cutting edge adjusts run-out easily.	●					E315
	Shave Mill Ultra		SVUM6000		90°	Ø80~Ø315	Good rigidity and economical due to Screw on Simple type	●					E316
	Shave Mill Ultra		SVUM6000-B		90°	Ø80~Ø315	Easy to handle the run-out due to Korloy exclusive high toughness cutting edge special parts	●					E317
Indexable side cutter	Tangential type	Full-side cutter	TAFCP		-	Ø100~Ø315	Various cutting depth can be possible because of adjustable length control. Medium to Roughing based on strengthened edge		●	●			E285
			TAFCB		-	Ø100~Ø315		●	●	●			E285
		Half-side cutter	TAHCP		-	Ø100~Ø315			●	●			E286
			TAHCB		-	Ø100~Ø315		●	●	●			E286

Type	Cutter		Designation	Shape	A.A	Diameter range	Features	Application					Page
								Facing	Shouldering	Slotting	Copying	Ramping, Helical	
Indexable side cutter	Radial type	Full-side cutter	RAFCP		-	Ø100~Ø315	Wide range of machining width with only one side cutter due to adjustable cutting edge height Suitable for medium and finishing in narrow width side cutting due to good chip evacuation by 3-dimensional chip breaker		●	●			E287
			RAFCB		-	Ø100~Ø315		●	●	●			E287
		Half-side cutter	RAHCP		-	Ø100~Ø315			●	●			E288
			RAHCB		-	Ø100~Ø315		●	●	●			E288
Side cutter	Full-side cutter		FC		-	Ø80~Ø315	Good chip evacuation with low cutting load Effective cutting		●	●			E289
	Half-side cutter		HC		-	Ø100~Ø315	Good chip evacuation with low cutting load Effective cutting		●	●			E290
	-		SPP(M)		-	Ø80~Ø200	Economical by using pentagonal insert Suitable for narrow & deep grooving			●			E291
			SPB(M)		-	Ø80~Ø200	Economical by using pentagonal insert Suitable for narrow & deep grooving			●			E292
			SPS		-	Ø50~Ø200	For narrow and deep width grooving			●			E293
	Full-side cutter		RM4PFCB		-	Ø80~Ø160	4 corner usage with double-sided insert can be economical			●			E72 E73
			RM4PFCP		-	Ø80~Ø160				●			E76 E77
	Half-side cutter		RM4PHCB		-	Ø80~Ø160	4 corner usage with double-sided insert can be economical			●			E74 E75
			RM4PHCP		-	Ø80~Ø160				●			E78 E79
	Wind Mill		WFSB(M) New		-	Ø100~Ø250	The nose R shape of insert ensures long toollife. Wide applications with various widths and corner R sizes.	●	●	●			E296
			WFSP(M) New		-	Ø100~Ø250			●	●			E297

Type	Cutter	Designation	Shape	A.A	Diameter range	Features	Application					Page
							Facing	Shouldering	Slotting	Copying	Ramping, Helical	
Cutters for face milling	Turbo Mill	ADS 4000/5000		45°	Ø50~Ø63	Uneven insert spacing prevents chattering	●					E44 E45
		PES 2000/3000/4000		90°	Ø20~Ø63	Good machinability due to the high rake angle	●	●	●			E46
Cutters for molds	Rich Mill	RM3PS3000 New		90°	Ø20~Ø40	Perfect perpendicularity Strong clamping	●	●	●		●	E68 E69
		RM3PS4000 New			Ø32~Ø63							
		RM4PS3000		90°	Ø14~Ø50	4 corners available High rake angle insert reduces cutting force Excellent insert rigidity	●	●	●		●	E80
		RM4PS4000			Ø32~Ø63		●	●	●		●	E81
		RM4ZS3000 New		90°	Ø25~Ø40	In vertical machining, the maximum cutting width : 9.0mm	●	●	●		●	E84
	Alpha Mill	AMS 1000S/1500S 2000S/3000S 3000S-K/4000S		90°	Ø10~Ø63	The combination of a 3 dimensional curve design & high rake angle helps chip-evacuation effectively with a low cutting force Inner coolant system The various range of inserts can provide the widened choice High depth and high feed can be available during operation	●	●	●	●	●	E127 ~E134
		AMS 1000SE/2000SE 3000SE		75°	Ø25~Ø63		●					E135 E136
		AMS 1000M/1500M 2000M/4000M		90°	Ø16~Ø50		●	●	●	●	●	E137 E138
		AMS 1000MH/1500MH 2000MH/3000MH		90°	Ø14~Ø40		●	●	●	●	●	E139
	Future Mill	FMAS3000		45°	Ø25~Ø63	For precision machining Excellent chip evacuation	●					E179 E180
		FMAS4000			Ø50~Ø63							
		FMPS3000		90°	Ø25~Ø63	4 corners available Strong cutting edge with low cutting load	●					E185 E186
		FMPS4000			Ø40~Ø63							
		FMRS 1000/1500/2000 2500/3000/4000 5000/6000		-	Ø8~Ø63	2 touch clamping system, convenient insert change	●	●	●	●	●	E191 ~196

Type	Cutter	Designation	Shape	A.A	Diameter range	Features	Application					Page
							Facing	Shouldering	Slotting	Copying	Ramping, Helical	
Cutters for molds	Future Mill P-positive	FMRS New 2500/3000 4000/5000 6000		-	Ø17~Ø50	P-positive relief angle ensures high rigidity and high machinability in die steel and high-resistant alloy machining. Flat clearance face of insert prevents interference and revolution while machining. Optimal grades and chip breakers for various workpieces	●	●	●	●	●	E203 ~E206
	HRM	HRMS 08/10/13/15		15°	Ø20~Ø63	Powerful clamping by double clamping system 3 corners available High feed cutting with low cutting load	●	●	●	●	●	E224 E225 E226
	HRMD	HRMDS 06 New 09/13		14°	Ø16~Ø63	6 conners available, High feed, multi-function, Only one screw can show comfortable application	●	●	●	●	●	E216 ~E220
	Tank Mill	THE		90°	Ø25~Ø50	Right-hand helix angle employed for good chip evacuation. Special surface treatment prevents body breaking and improves rigidity. Strong cutting edge	●	●				E228
	Laser Mill	LBE□□ LRE□□		-	Ø8~Ø32	Indexable ball endmill for precise mold. Rigid holder with simple design finishing MQL is available	●	●	●	●		E239 ~E242
		LBE□□-C LRE□□-C		-	Ø8~Ø32	Indexable ball endmill for precise mold. Rigid holder with simple design finishing MQL is available Carbide shank	●	●	●			E239 E241
	Mach Mill	BFE		-	Ø16~Ø32	Upgraded cutting performance with S type curve design V clamping application	●	●	●	●		E243
		GBE		-	Ø16~Ø50	Helical design of edge can reduce the force during operation. Safe application to prevent rotation guarantee the increased tool life	●	●	●	●		E244
		BRE		-	Ø20~Ø63	Flute type chip-pocket can make chip-evacuation Customized edge design can prevent the breakage of holder's body	●	●	●	●		E246
	HAVE	Multi Edge New		90°	Ø16~Ø50	Tools for Z axis feed plunge machining to cut faster and more effectively in vertical machining Machining with whole diameter	●	●	●		●	E249
		Single Edge New										E250
	O-Ring Cutter	ORC New		90°	Ø11~Ø46	For grooving the seat of an O-Ring in a plastic mold Superior surface roughness and cutting performance compared to HSS and brazed tool	–	–	–	–	–	E252

Type	Cutter	Designation	Shape	A.A	Diameter range	Features	Application: Facing	Shouldering	Slotting	Copying	Ramping, Helical	Page
Cutters for molds	Chamfer tool	CE		75° 60° 45° 30°	Ø25~Ø30 Ø25~Ø35 Ø7~Ø39 Ø25~Ø42	For Back & Front high quality champering and various Chamfering angle machining	●					E256
				30° 45° 60°	Ø5~Ø35 Ø5~Ø48 Ø5~Ø57	Various chamfer Degrees available Effective long chamfer cutting available	●	●	●			E257
				45°	~Ø28	Center Ring, Grooving, Chamfer Ring	●	●	●		●	E258
		CCT New		30° 45° 60°	Ø3~Ø16	Centering, Countersinking, Chamfering						E260
		CET New		30° 45° 60°	Ø4~Ø16	Countersinking, Chamfering, Shouldering	●	●	●		●	E259
	T-Cutter	TFE		90°	Ø21~Ø50	For slotting	●	●	●	●	●	E261
Cutters for aluminum	Pro-A Mill	PAS 2000/4000	Al 	90°	Ø12~Ø42 Ø32~Ø40	Polished face increases chip flow and reduces built-up edge	●	●	●	●	●	E278
	Pro-X Mill	PAXS 5000/6000	Al 	90°	Ø20~Ø40 Ø25~Ø40	Square shoulder and conter machining	●	●	●	●	●	E279
	Pro-L Mill	PALS-HR New	Al 	90°	Ø32~Ø63	High helix and high depth of cut High perpendicularity Low cutting load	●	●	●	●	●	E270
		PALS-HM New	Al 		Ø63		●	●	●	●	●	E274 E275
Thread milling	-	TM		-	Ø32~Ø50	For internal and external threading	●					D49

Al Cutter for Aluminum

FMRM type
E197, 198, 207

LBE-MHD type
E241

PAM type
E271

PAXM type
E276

AMM type
E140, 141, 142

RM4PM type
E82

RM4ZM type
E84

HRMM type
E227

HRMDM type
E221, 222

GBEM type
E245

Steel Shank type
E281

Carbide Shank type
E282

BT Arbors type
E158

HSK Arbors type
E159

ADN(M)4000

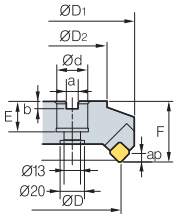


Fig. 1

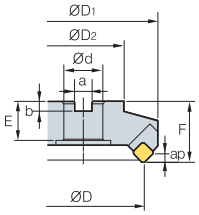


Fig. 2

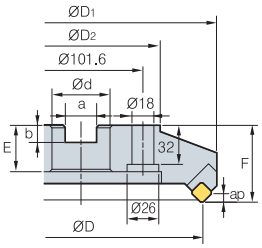


Fig. 3

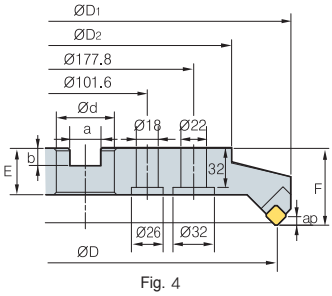


Fig. 4

AA 45°
- AR : 15°
- RR : –4°

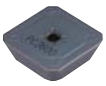
(mm)

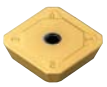
Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
ADN (ADNM)	4080R/L	4	80	105	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	6	1.9	1
	4100R/L	5	100	125	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	6	2.5	2
	4125R/L	6	125	149	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	6	4.3	2
	4160R/L	8	160	183	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	6	6.4	2
	4200R/L	10	200	223	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	6	8.7	3
	4250R/L	12	250	273	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	6	14.0	3
	4315R/L	14	315	338	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	6	21.0	4

( )Metric Size

Available Inserts


SDCN


SDKN-MU


SDKN-SU


SDKR-MX

Designation		Cermet		Coated								Uncoated			page
		CN2000	CN30	NCM325	NCM335	PC130	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SDCN	42M													●		E13
	42M-G														●	
	42MT	●	●		●	●							●			
	42MT-RH															
	42MT-S20								●							
	1203AEEN															
	1203AEEN-RH															
	1203AESN															
	1203AESN-RH															
SDKN	1203AESN-MU						●									E14
	1203AESN-SU						●	●			●	●				
SDKR	1203AESN-MX															E14
	1203AETN-MX															
	1203AEN-MX			●												

Available Arbors

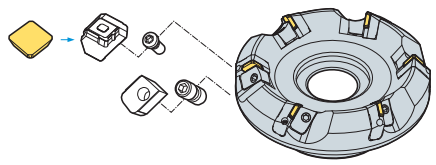
Designation		General Arbor	NC Arbors	
			ADN	ADNM
ADN(M)	4080R/L	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4 -□□	FMC27
	4100R/L	NT*□□ (M/U)-FMA31.75 - □□	BT**□□-FMA31.75 -□□	FMC32
	4125R/L	NT*□□ (M/U)-FMA38.1 - □□	BT**□□-FMA38.1 -□□	FMB40
	4160R/L	NT*□□ (M/U)-FMA50.8 - □□	BT**□□-FMA50.8 -□□	FMB40
	4200R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625 -□□	FMB60
	4250R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625 -□□	FMB60
	4315R/L	KCP-8***(Center Ring plug)		

*□□–NT Number **□□–BT Number ***Over Milling 5

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	190 ~ 320	0.05 ~ 0.20	NCM325
	161 ~ 270	0.05 ~ 0.20	PC3600
	80 ~ 140	0.05 ~ 0.20	ST30A
M	90 ~ 150	0.05 ~ 0.20	PC9530
K	140 ~ 230	0.05 ~ 0.30	PC6510
	50 ~ 90	0.05 ~ 0.30	G10

Assembling



Parts

Specification	Locator	Wedge	Wedge Screw	Locator Screw	Wrench
Ø80~Ø315	LADN4R/L	WEPN4R/L	DHA0821F	LTX0514	HW40

Available Inserts E13, E14 Available Arbors and bolt E318 ~ E320

ADN(M)5000+

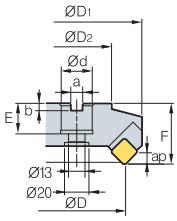


Fig. 1

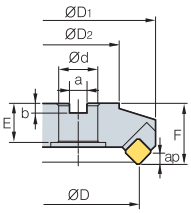


Fig. 2

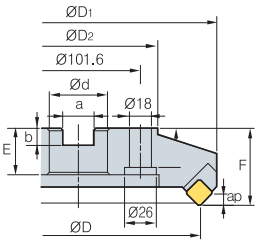


Fig. 3

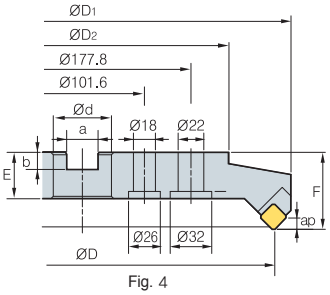


Fig. 4

AA 45°
- AR : 15°
- RR : −4°

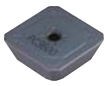
(mm)

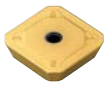
Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig
ADN (ADNM)	5080R/L+	4	80	107	65	25.4(27)	9.5(12.4)	6(7)	25(22)	63	8	2.4	1
	5100R/L+	5	100	126	75	31.75(32)	12.7(14.4)	8(8)	32(28)	63	8	3.0	2
	5125R/L+	6	125	150	100	38.1(40)	15.9(16.4)	10(9)	38(30)	63	8	4.7	2
	5160R/L+	8	160	185	120	50.8(40)	19.0(16.4)	11(9)	38(30)	63	8	6.5	2
	5200R/L+	10	200	225	140	47.625(60)	25.4(25.7)	14(14)	38(38)	63	8	8.7	3
	5250R/L+	12	250	275	220	47.625(60)	25.4(25.7)	14(14)	38(38)	63	8	15.5	3
	5315R/L+	14	315	340	280	47.625(60)	25.4(25.7)	14(14)	38(38)	63	8	23.7	4

( )Metric Size

Available Inserts


SDCN


SDKN-MU


SDKN-SU


SDKR-MX

Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3600	Coated PC130	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
SDCN	53M													●		E13
	53M-G														●	
	53MT	●	●	●	●			●					●			
	53MT-RH					●										
	53MT-S20								●							
	1504AEEN															
	1504AEEN-RH															
	1504AESN															
	1504AESN-RH															
SDKN	1504AESN-MU						●									E14
	1504AESN-SU						●				●	●				
SDKR	1504AESN-MX				●											E14
	1504AETN-MX															
	1504AEN-MX			●												

Available Arbors

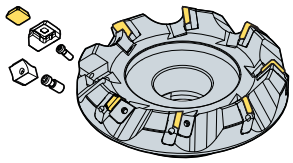
Designation		General Arbor	NC Arbors ADN	NC Arbors ADNM
ADN(M)	5080R/L+	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4 -□□	FMC27
	5100R/L+	NT*□□ (M/U)-FMA31.75 -□□	BT**□□-FMA31.75 -□□	FMC32
	5125R/L+	NT*□□ (M/U)-FMA38.1 -□□	BT**□□-FMA38.1 -□□	FMB40
	5160R/L+	NT*□□ (M/U)-FMA50.8 -□□	BT**□□-FMA50.8 -□□	FMB40
	5200R/L+	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625 -□□	FMB60
	5250R/L+	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625 -□□	FMB60
	5315R/L+	KCP-8***(Center Ring plug)		

*□□–NT Number **□□–BT Number ***Over Milling 5

Recommended cutting condition

Workpiece	Cutting Condition vc(m/min)	Cutting Condition fz(mm/t)	Grades
P	190 ~ 320 161 ~ 270 80 ~ 140	0.05 ~ 0.20 0.05 ~ 0.20 0.05 ~ 0.20	NCM325 PC3600 ST30A
M	90 ~ 150	0.05 ~ 0.20	PC9530
K	140 ~ 230 50 ~ 90	0.05 ~ 0.30 0.05 ~ 0.30	PC6510 G10

Assembling	



Parts

Specification	Locator	Wedge	Wedge Screw	Locator Screw	Wrench
Ø80~Ø315	LADN5R/L	WHPS5R/L	WHX0817 WHX0813*	LTX0514	HW40

Available Inserts E13, E14

Available Arbors and bolt E318 ~ E320

* : Ø80

AE(M)4000

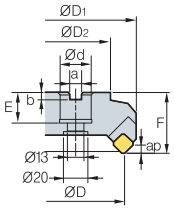


Fig. 1

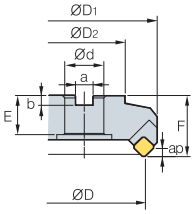


Fig. 2

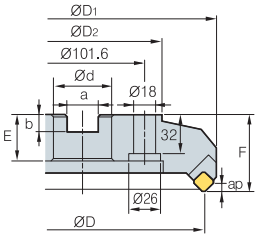


Fig. 3

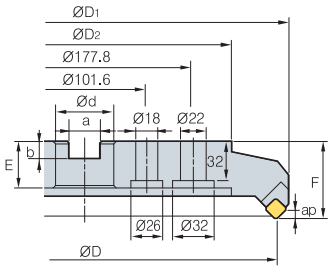


Fig. 4

AA 45°
- AR : 20°
- RR : –3°

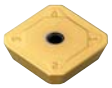
(mm)

Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
AE (AEM)	4080R/L	4	80	103	60	25.4(27)	9.5(12.4)	6(7)	25(22)	50	5.5	1.7	1
	4100R/L	5	100	122	80	31.75(32)	12.7(14.4)	8(8)	32(28)	50	5.5	2.9	2
	4125R/L	6	125	146	100	38.1(40)	15.9(16.4)	10(9)	38(30)	63	5.5	4.4	2
	4160R/L	8	160	181	120	50.8(40)	19.0(16.4)	11(9)	38(30)	63	5.5	6.1	2
	4200R/L	10	200	220	130	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	5.5	8.9	3
	4250R/L	12	250	270	180	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	5.5	15.7	3
	4315R/L	15	315	335	240	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	5.5	25.1	4

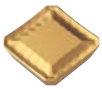
( )Metric Size

Available Inserts


SECN


SEKN-SU


SEKR-MF1


SEKR-MX


SEKR-X35

Designation		Cermet		Coated								Uncoated			page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC130	ST30A	G10	H01	
SECN	1203AFFN													●	●	E15
	1203AFTN	●	●										●			
	1203AFEN															
	1203AFSN			●	●											
	1203AFEN-RH									●	●					
	1203AFSN-RH															
	1203AFTN-S20								●							
SEKN	1203AFSN-SU						●	●								E15
SEKR	1203AFSN-MF1															E16
	1203AFSN-MX		●	●	●				●			●				
	1203AFSN-X35															
	1203AFFN-X35															

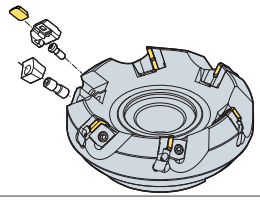
Available Arbors

Designation		General Arbor	NC Arbors	
			ADN	ADNM
AE(M)	4080R/L	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4 -□□	FMC27
	4100R/L	NT*□□ (M/U)-FMA31.75 -□□	BT**□□-FMA31.75 -□□	FMC32
	4125R/L	NT*□□ (M/U)-FMA38.1 -□□	BT**□□-FMA38.1 -□□	FMB40
	4160R/L	NT*□□ (M/U)-FMA50.8 -□□	BT**□□-FMA50.8 -□□	FMB40
	4200R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625 -□□	FMB60
	4250R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625 -□□	FMB60
	4315R/L	KCP-8***(Center Ring plug)		

*□□–NT Number **□□–BT Number ***Over Milling 5

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	190 ~ 320	0.05 ~ 0.20	NCM325
	161 ~ 270	0.05 ~ 0.20	PC3600
	80 ~ 140	0.05 ~ 0.20	ST30A
M	90 ~ 150	0.05 ~ 0.20	PC9530
K	140 ~ 230	0.05 ~ 0.30	PC6510
	50 ~ 90	0.05 ~ 0.30	G10

Assembling	
	

Parts

Specification	Locator	Wedge	Wedge Screw	Locator Screw	Wrench
Ø80~Ø315	LAE4R/L	WAE4R/L	DHA0821F	LTX0512	HW40

Available Inserts E15, E16 Available Arbors and bolt E318 ~ E320

AE(M)5000

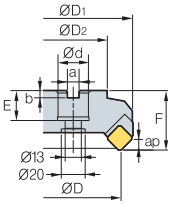


Fig. 1

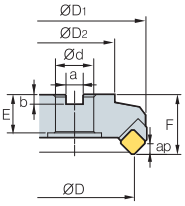


Fig. 2

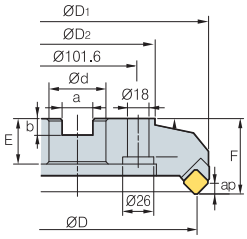


Fig. 3

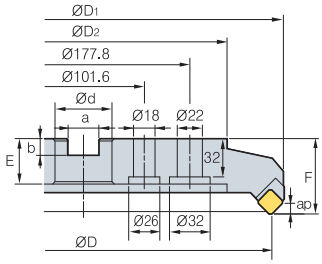


Fig. 4

AA 45°
- AR : 20°
- RR : −3°

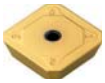
(mm)

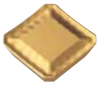
Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
AE (AEM)	5080R/L	4	80	103	60	25.4(27)	9.5(12.4)	6(7)	25(22)	50	7.5	1.7	1
	5100R/L	5	100	122	80	31.75(32)	12.7(14.4)	8(8)	32(28)	50	7.5	2.9	2
	5125R/L	6	125	146	100	38.1(40)	15.9(16.4)	10(9)	38(30)	63	7.5	4.4	2
	5160R/L	8	160	181	120	50.8(40)	19.0(16.4)	11(9)	38(30)	63	7.5	6.1	2
	5200R/L	10	200	220	130	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	7.5	8.9	3
	5250R/L	12	250	270	180	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	7.5	15.7	3
	5315R/L	15	315	335	240	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	7.5	25.1	4

( )Metric Size

Available Inserts


SECN


SEKN-SU


SEKR-MX

Designation		Cermet		Coated								Uncoated			page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC130	ST30A	G10	H01	
SECN	1504AFFN													●		E15
	1504AFTN		●									●	●			
	1504AFEN															
	1504AFSN			●	●											
	1504AFEN-RH															
	1504AFSN-RH									●						
	1504AFTN-S20															
SEKN	1504AFSN-SU						●	●								E15
	1504AFSN-MX			●	●				●							

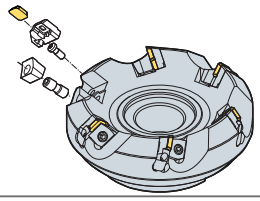
Available Arbors

Designation		General Arbor	NC Arbors	
			AE	AEM
AE(M)	5080R/L	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4-□□	FMC27
	5100R/L	NT*□□ (M/U)-FMA31.75-□□	BT**□□-FMA31.75-□□	FMC32
	5125R/L	NT*□□ (M/U)-FMA38.1-□□	BT**□□-FMA38.1-□□	FMB40
	5160R/L	NT*□□ (M/U)-FMA50.8-□□	BT**□□-FMA50.8-□□	FMB40
	5200R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	5250R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	5315R/L	KCP-8***(Center Ring plug)		

*□□–NT Number **□□–BT Number ***Over Milling 5

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	190 ~ 320	0.05 ~ 0.20	NCM325
	161 ~ 270	0.05 ~ 0.20	PC3600
	80 ~ 140	0.05 ~ 0.20	ST30A
M	90 ~ 150	0.05 ~ 0.20	PC9530
K	140 ~ 230	0.05 ~ 0.30	PC6510
	50 ~ 90	0.05 ~ 0.30	G10

Assembling	
	

Parts

Specification	Locator	Wedge	Wedge Screw	Locator Screw	Wrench
Ø80~Ø315	LAE5R/L	WAE5R/L	DHA0821F	LTX0512	HW40

Available Inserts E15 Available Arbors and bolt E318 ~ E320

EF(M)4000

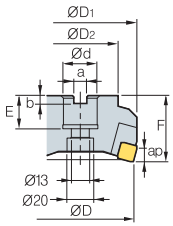


Fig. 1

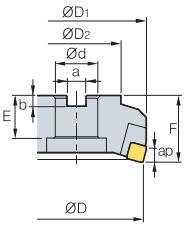


Fig. 2

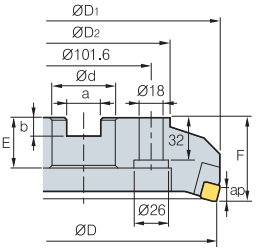


Fig. 3

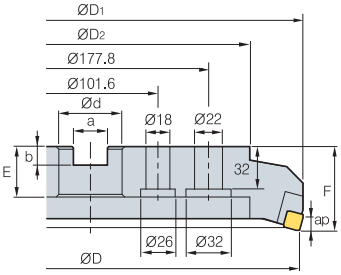


Fig. 4

AA 75°
- AR : 18°
- RR : 11°

(mm)

Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
EF (EFM)	4080R/L	4	80	89	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	8.0	1.5	1
	4100R/L	5	100	108	70	31.75(32)	12.7(14.4)	8(8)	32(28)	50	8.0	2.1	2
	4125R/L	6	125	133	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	8.0	3.8	2
	4160R/L	8	160	168	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	8.0	5.5	2
	4200R/L	10	200	208	130	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	8.0	8.2	3
	4250R/L	12	250	257	180	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	8.0	13.4	3
	4315R/L	16	315	322	240	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	8.0	21.2	4

( )Metric Size

Available Inserts

SFCN

Designation	Cermet		Coated								Uncoated			page
	CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SFCN 1203EFR												●	●		E16

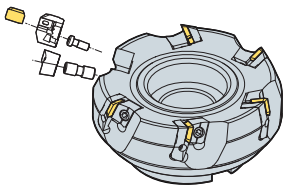
Available Arbors

Designation		General Arbor	NC Arbors	
			EF	EFM
EF(M)	4080R/L	NT*□□ (M/U)-FMA25.4-25 -□□	BT**□□-FMA25.4 -□□	FMC27
	4100R/L	NT*□□ (M/U)-FMA31.75 -□□	BT**□□-FMA31.75 -□□	FMC32
	4125R/L	NT*□□ (M/U)-FMA38.1 -□□	BT**□□-FMA38.1 -□□	FMB40
	4160R/L	NT*□□ (M/U)-FMA50.8 -□□	BT**□□-FMA50.8 -□□	FMB40
	4200R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	4250R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	4315R/L	KCP-8***(Center Ring plug)		

*□□–NT Number **□□–BT Number ***Over Milling 5

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	75 ~ 125	0.05 ~ 0.30	H01

Assembling	

Parts

Specification	 Locator	 Wedge	 Wedge Screw	 Locator Screw	 Wrench
Ø80~Ø315	LEF4R/L LEF4R1*/L1*	WEFR/L	DHA0821F	LTX0512	HW40

* : Ø80~Ø125

Available Inserts E16

Available Arbors and bolt E318 ~ E320

EN(M)4000

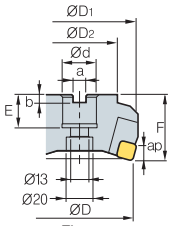


Fig. 1

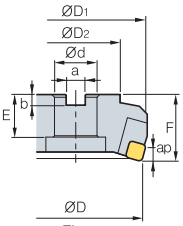


Fig. 2

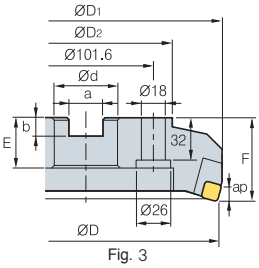


Fig. 3

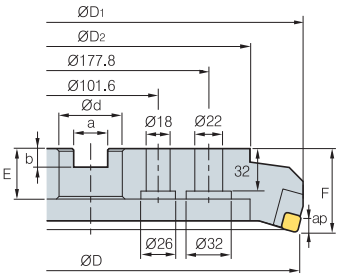


Fig. 4

AA 75°
- AR : –6°
- RR : –5°

(mm)

Designation		⊙	ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig
EN (ENM)	**4080R/L**	5	80	87	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	8.5	1.4	1
	4100R/L	6	100	107	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	8.5	2.1	2
	4125R/L	8	125	132	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	8.5	3.8	2
	4160R/L	10	160	167	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	8.5	5.7	2
	4200R/L	12	200	207	130	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	8.5	8.4	3
	4250R/L	16	250	257	180	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	8.5	13.8	3
	4315R/L	20	315	322	240	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	8.5	21.6	4

( )Metric Size

Available Inserts


SNCN


SNKN

Designation		Cermet		Coated								Uncoated			page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNCN	**1204ENN**															E16
SNKN	**1204ENN**			●						●						E18

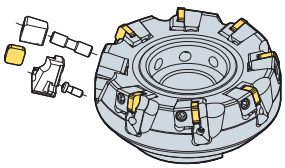
Available Arbors

Designation		General Arbor	NC Arbors	
			EN	ENM
EN(M)	**4080R/L**	NT*□□ (M/U)-FMA25.4-25 -□□	BT**□□ -FMA25.4 -□□	FMC27
	4100R/L	NT*□□ (M/U)-FMA31.75 -□□	BT**□□ -FMA31.75 -□□	FMC32
	4125R/L	NT*□□ (M/U)-FMA38.1 -□□	BT**□□ -FMA38.1 -□□	FMB40
	4160R/L	NT*□□ (M/U)-FMA50.8 -□□	BT**□□ -FMA50.8 -□□	FMB40
	4200R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□ -FMA47.625-□□	FMB60
	4250R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□ -FMA47.625-□□	FMB60
	4315R/L	KCP-8***(Center Ring plug)		

*□□–NT Number **□□–BT Number ***Over Milling 5

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	190 ~ 320 161 ~ 270 80 ~ 140	0.05 ~ 0.20 0.05 ~ 0.20 0.05 ~ 0.20	**NCM325** **PC3600** **ST30A**
M	90 ~ 150	0.05 ~ 0.20	**PC9530**
K	140 ~ 230 50 ~ 90	0.05 ~ 0.30 0.05 ~ 0.30	**PC6510** **G10**

Assembling	

Parts

Specification	Locator	Wedge	Wedge Screw	Locator Screw	Wrench
Ø80~Ø315	LEN4R/L	WENR/L WENR1*/L1*	DHA0830 DHA0825*	LTX0512	HW40

* : Ø80~Ø100

Available Inserts **E16, E18**
Available Arbors and bolt **E318 ~ E320**

EPN(M)4000

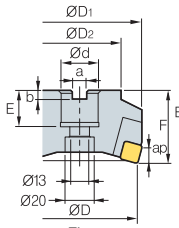


Fig. 1

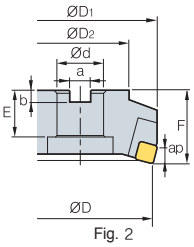


Fig. 2

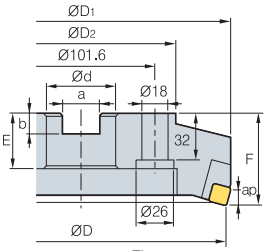


Fig. 3

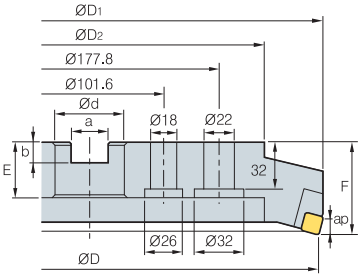


Fig. 4

AA 75°

- AR : 7°
- RR : 0°

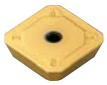
(mm)

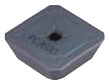
Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig
EPN (EPNM)	4080R/L	5	80	86	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	9	1.4	1
	4100R/L	6	100	107	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	9	2.1	2
	4125R/L	8	125	132	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	9	3.8	2
	4160R/L	10	160	166	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	9	5.7	2
	4200R/L	12	200	206	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	9	8.2	3
	4250R/L	16	250	256	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	9	13.5	3
	4315R/L	20	315	321	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	9	21.1	4

( )Metric Size

Available Inserts


SPCN


SPKN-SU


SPKN-MU


SPKR-MX


SPEX

Designation		Cermet CN2000	Cermet CN30	Coated NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	PC130	Uncoated ST30A	G10	H01	page
SPCN	1203EDR		●	●	●								●	●	●	●	E19
	1203EDL													●	●	●	
	1203EDR-G															●	
	1203EDER-RH									●	●						
	1203EDSR-RH					●				●							
	1203EDTR-RH																
	1203EDR-S20								●								
SPKN	1203EDSR-MU						●										E20
	1203EDSR-SU						●	●			●	●					
	1203EDSL-SU						●										E20
SPKR	1203EDSR-MX			●	●	●											E20
	1203EDSL-MX			●													
SPEX	1203EDR/L-1																E20

Available Arbors

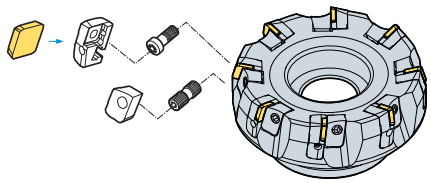
Designation		General Arbor	NC Arbors EPN	NC Arbors EPNM
EPN(M)	4080R/L	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4 -□□	FMC27
	4100R/L	NT*□□ (M/U)-FMA31.75 -□□	BT**□□-FMA31.75 -□□	FMC32
	4125R/L	NT*□□ (M/U)-FMA38.1 -□□	BT**□□-FMA38.1 -□□	FMB40
	4160R/L	NT*□□ (M/U)-FMA50.8 -□□	BT**□□-FMA50.8 -□□	FMB40
	4200R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	4250R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	4315R/L	KCP-8***(Center Ring plug)		

*□□–NT Number **□□–BT Number ***Over Milling 5

Recommended cutting condition

Workpiece	Cutting Condition vc(m/min)	Cutting Condition fz(mm/t)	Grades
P	190 ~ 320	0.05 ~ 0.20	NCM325
	161 ~ 270	0.05 ~ 0.20	PC3600
	80 ~ 140	0.05 ~ 0.20	ST30A
M	90 ~ 150	0.05 ~ 0.20	PC9530
K	140 ~ 230	0.05 ~ 0.30	PC6510
	50 ~ 90	0.05 ~ 0.30	G10

Assembling



Parts

Specification	Locator	Wedge	Wedge Screw	Locator Screw	Wrench
Ø80~Ø315	LEPN4R/L LEPN4R1*/L1*	WEPN4R/L	DHA0821F DHA0817F*	LTX0514	HW40

* : Ø80~Ø100

Available Inserts E19, E20 Available Arbors and bolt E318 ~ E320

EPN(M)5000+

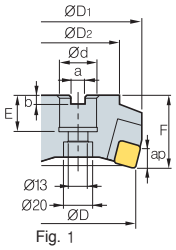


Fig. 1

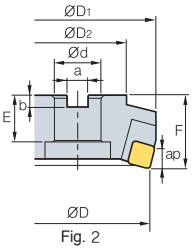


Fig. 2

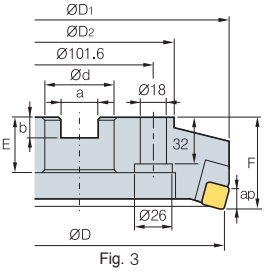


Fig. 3

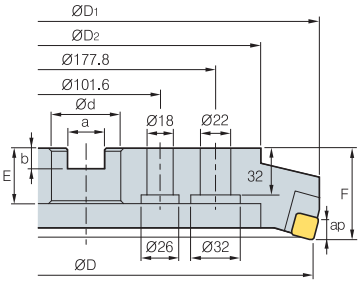


Fig. 4

AA 75°

- AR : 7°
- RR : 0°

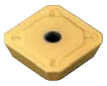
(mm)

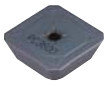
Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
EPN (EPNM)	5080R/L+	5	80	91	60	25.4(27)	9.5(12.4)	6(7)	25(22)	63	12	1.7	1
	5100R/L+	6	100	110	70	31.75(32)	12.7(14.4)	8(8)	32(28)	63	12	2.5	1
	5125R/L+	8	125	134	90	38.1(40)	15.9(16.4)	10(9)	38(30)	63	12	3.8	2
	5160R/L+	10	160	169	110	50.8(40)	19.0(16.4)	11(9)	38(30)	63	12	5.5	2
	5200R/L+	12	200	209	150	47.625(60)	25.4(25.7)	14(14)	38(38)	63	12	8.0	3
	5250R/L+	16	250	259	230	47.625(60)	25.4(25.7)	14(14)	38(38)	63	12	14.8	3
	5315R/L+	20	315	324	270	47.625(60)	25.4(25.7)	14(14)	38(38)	63	12	22.4	4

( )Metric Size

Available Inserts


SPCN


SPKN-SU


SPKN-MU


SPKR-MX


SPEX

Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Coated PC130	Uncoated ST30A	Uncoated G10	Uncoated H01	page
SPCN	150412T																E19
	1504EDR		●	●									●	●	●		
	1504EDSR				●												
	1504EDL									●				●			
	1504EDR-G															●	
	1504EDER-RH									●	●						
	1504EDSR-RH									●							
	1504EDTR-RH					●											
	1504EDR-S20								●								
SPKN	1504EDSR-MU						●										E20
	1504EDSR-SU						●	●			●	●					
	1504EDSL-SU						●										
SPKR	1504EDR-MX			●													E20
	1504EDSR-MX				●	●											
SPEX	1504EDR/L-1																

Available Arbors

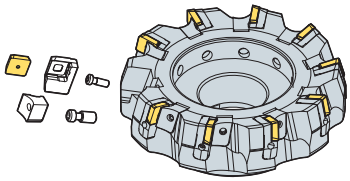
Designation		General Arbor	NC Arbors EPN	NC Arbors EPNM
EPN(M)	5080R/L+	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4-□□	FMC27
	5100R/L+	NT*□□ (M/U)-FMA31.75-□□	BT**□□-FMA31.75-□□	FMC32
	5125R/L+	NT*□□ (M/U)-FMA38.1-□□	BT**□□-FMA38.1-□□	FMB40
	5160R/L+	NT*□□ (M/U)-FMA50.8-□□	BT**□□-FMA50.8-□□	FMB40
	5200R/L+	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	5250R/L+	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	5315R/L+	KCP-8***(Center Ring plug)		

*□□–NT Number **□□–BT Number ***Over Milling 5

Recommended cutting condition

Workpiece	Cutting Condition vc(m/min)	Cutting Condition fz(mm/t)	Grades
P	190 ~ 320 161 ~ 270 80 ~ 140	0.05 ~ 0.20 0.05 ~ 0.20 0.05 ~ 0.20	NCM325 PC3600 ST30A
M	90 ~ 150	0.05 ~ 0.20	PC9530
K	140 ~ 230 50 ~ 90	0.05 ~ 0.30 0.05 ~ 0.30	PC6510 G10

Assembling



Parts

Specification	Locator	Wedge	Wedge Screw	Locator Screw	Wrench
Ø80~315	LEPN5R/L LEPN5R1*/L1*	WHPS5R/L	WHX0817 WHX0813*	LTX0514	HW40

Available Inserts E19, E20
Available Arbors and bolt E318 ~ E320

* : Ø80

PF(M)4000

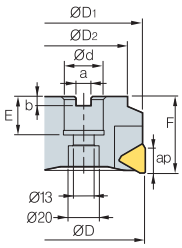


Fig. 1

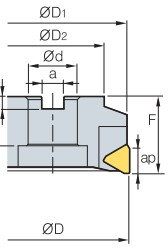


Fig. 2

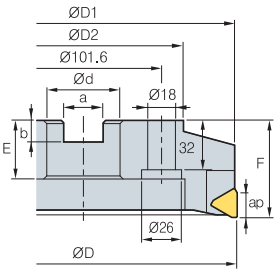


Fig. 3

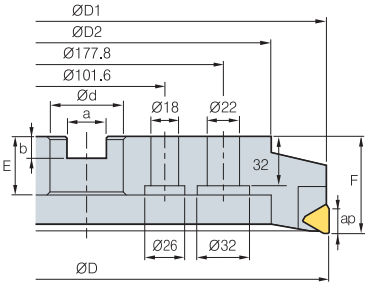


Fig. 4

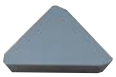
- AR : 15°
- RR : 14°

(mm)

Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
PF (PFM)	4080R/L	4	80	79	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	16	1.2	1
	4100R/L	4	100	97	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	16	1.8	2
	4125R/L	7	125	122	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	16	3.1	2
	4160R/L	9	160	158	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	16	5.6	2
	4200R/L	11	200	197	130	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	16	8.8	3
	4250R/L	15	250	247	180	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	16	16	3
	4315R/L	19	315	311	240	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	16	22	4

( )Metric Size

Available Inserts



TFCN

Designation		Cermet		Coated							Uncoated			page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
TFCN	2203PFR													●		E21
	2203PFL															

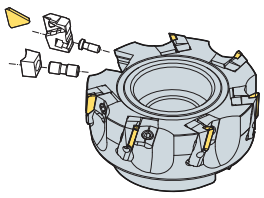
Available Arbors

Designation		General Arbor	NC Arbors	
			PF	PFM
PF(M)	4080R/L	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4 -□□	FMC27
	4100R/L	NT*□□ (M/U)-FMA31.75 -□□	BT**□□-FMA31.75 -□□	FMC32
	4125R/L	NT*□□ (M/U)-FMA38.1 -□□	BT**□□-FMA38.1 -□□	FMB40
	4160R/L	NT*□□ (M/U)-FMA50.8 -□□	BT**□□-FMA50.8 -□□	FMB40
	4200R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	4250R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	4315R/L	KCP-8***(Center Ring plug)		

*□□–NT Number **□□–BT Number ***Over Milling 5

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	190 ~ 320	0.05 ~ 0.20	NCM325
	161 ~ 270	0.05 ~ 0.20	PC3600
	80 ~ 140	0.05 ~ 0.20	ST30A
M	90 ~ 150	0.05 ~ 0.20	PC9530
K	140 ~ 230	0.05 ~ 0.30	PC6510
	50 ~ 90	0.05 ~ 0.30	G10

Assembling	
	

Parts

Specification	Locator	Wedge	Wedge Screw	Locator Screw	Wrench
Ø80 ~ Ø315	LPF4R/L LPF4R1**/L1**	WPFR/L	DHA0821F DHA0817F*	LTX0512	HW40

* : Ø80 ~ Ø100 / ** : Ø80 ~ Ø125

Available Inserts E21
Available Arbors and bolt E318 ~ E320

PPN(M)4000

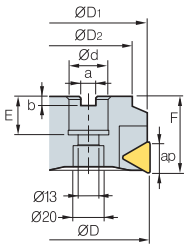


Fig. 1

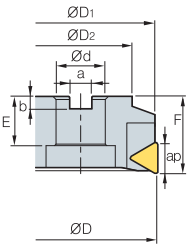


Fig. 2

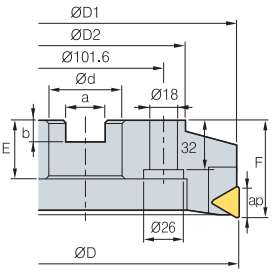


Fig. 3

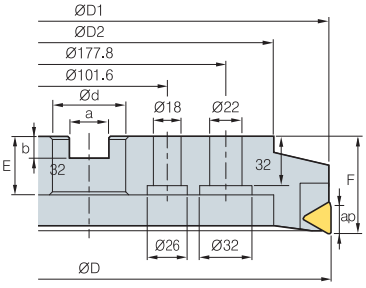


Fig. 4

- AR : 7°
- RR : 0°

(mm)

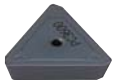
Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig
PPN (PPNM)	4080R/L	5	80	79	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	18	1.3	1
	4100R/L	6	100	99	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	18	1.9	2
	4125R/L	8	125	124	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	18	3.5	2
	4160R/L	10	160	158	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	18	5.6	2
	4200R/L	12	200	198	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	18	8.1	3
	4250R/L	16	250	248	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	18	13.3	3
	4315R/L	20	315	313	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	18	21.4	4

( )Metric Size

Available Inserts


TPCN


TPKN-SU


TPKN-MU


TPKR-MX

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	PC130	ST30A	G10	H01	
TPCN	2204PDR		●	●									●	●	●		E21
	2204PDR-G															●	
	2204PDL													●			
	2204PDSR				●												
	2204PDTR																
	2204PDR-RH																
	2204PDER-RH									●	●						
	2204PDSR-RH					●				●							
	2204PDR-S20								●								
TPKN	2204PDSR-MU						●										E21
	2204PDSR-SU						●	●			●	●					
	2204PDSL-SU						●										E21
TPKR	2204PDR-MX			●													E21
	2204PDSR-MX			●	●												
	2204PPR-MX																

Available Arbors

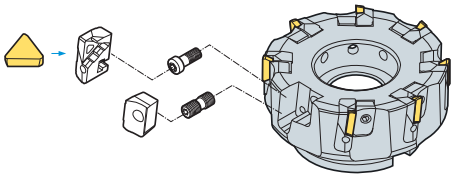
Designation		General Arbor	NC Arbors	
			PPN	PPNM
PPN(M)	4080R/L	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4-□□	FMC27
	4100R/L	NT*□□ (M/U)-FMA31.75-□□	BT**□□-FMA31.75-□□	FMC32
	4125R/L	NT*□□ (M/U)-FMA38.1-□□	BT**□□-FMA38.1-□□	FMB40
	4160R/L	NT*□□ (M/U)-FMA50.8-□□	BT**□□-FMA50.8-□□	FMB40
	4200R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	4250R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	4315R/L	KCP-8***(Center Ring plug)		

*□□–NT Number **□□–BT Number ***Over Milling 5

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	190 ~ 320	0.05 ~ 0.20	NCM325
	161 ~ 270	0.05 ~ 0.20	PC3600
	80 ~ 140	0.05 ~ 0.20	ST30A
M	90 ~ 150	0.05 ~ 0.20	PC9530
K	140 ~ 230	0.05 ~ 0.30	PC6510
	50 ~ 90	0.05 ~ 0.30	G10

Assembling



Parts

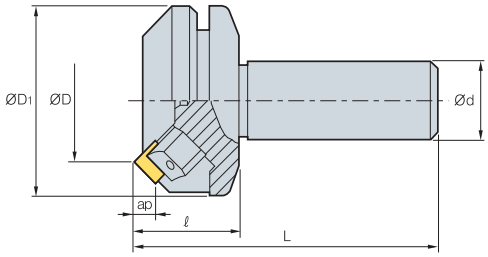
Specification	Locator	Wedge	Wedge Screw	Locator Screw	Wrench
Ø80 ~ Ø315	LPPN4R/L LPPN4R1*/L1*	WPPN4R/L	DHA0821F DHA0817F*	LTX0514	HW40

Available Inserts E21

Available Arbors and bolt E318 ~ E320

* : Ø80 ~ Ø100

ADS4000



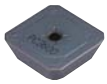
AA 45°
- AR : 15°
- RR : –3°

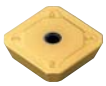
(mm)

Designation			ØD	ØD1	Ød	ℓ	L	ap	kg
ADS	4050R	3	50	75	32	40	120	6.5	1.8
	4050RS42	3	50	75	42	40	120	6.5	2.2
	4063R	4	63	87	32	40	120	6.5	2.3
	4063RS42	4	63	87	42	40	120	6.5	2.7

Available Inserts


SDCN


SDKN-MU

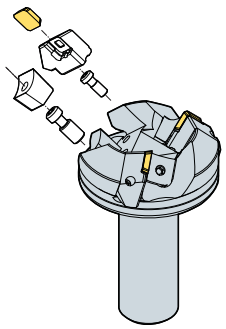

SDKN-SU


SDKR-MX

Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC130	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
SDCN	42M													●		E13
	42M-G														●	
	42MT	●	●		●					●			●			
	42MT-RH															
	42MT-S20								●							
	1203AEEN															
	1203AEEN-RH															
	1203AESN															
	1203AESN-RH															
SDKN	1203AESN-MU						●									E14
	1203AESN-SU						●	●			●	●				
SDKR	1203AESN-MX															E14
	1203AETN-MX															
	1203AEN-MX			●												

Recommended cutting condition

Workpiece	Cutting Condition vc(m/min)	Cutting Condition fz(mm/t)	Grades
P	190 ~ 320 161 ~ 270 80 ~ 140	0.05 ~ 0.20 0.05 ~ 0.20 0.05 ~ 0.20	NCM325 PC3600 ST30A
M	90 ~ 150	0.05 ~ 0.20	PC9530
K	140 ~ 230 50 ~ 90	0.05 ~ 0.30 0.05 ~ 0.30	PC6510 G10

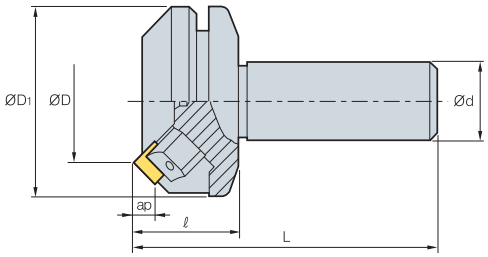
Assembling	

Parts

Specification	Locator	Wedge	Wedge Screw	Locator Screw	Wrench
Ø50~Ø63	LASS4R/L	WASR/L	WTX0817	LTX0512	TW25

Available Inserts E13, E14

ADS5000



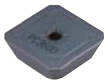
AA 45°
- AR : 15°
- RR : −3°

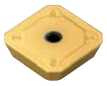
(mm)

Designation			ØD	ØD1	Ød	ℓ	L	ap	kg
ADS	5050R	3	50	75	32	40	120	8.5	1.9
	5050R-S42	3	50	75	42	40	120	8.5	2.3
	5063R	4	63	87	32	40	120	8.5	2.4
	5063R-S42	4	63	87	42	40	120	8.5	2.8

Available Inserts


SDCN


SDKN-MU

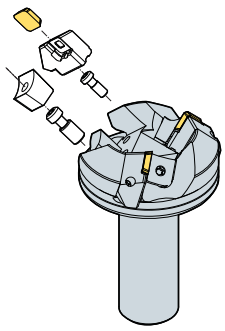

SDKN-SU


SDKR-MX

Designation		Cermet		Coated								Uncoated			page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC130	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SDCN	53M													●		E13
	53M-G														●	
	53MT	●	●	●	●			●					●			
	53MT-RH					●										
	53MT-S20								●							
	1504AEEN															
	1504AEEN-RH									●	●					
	1504AESN															
	1504AESN-RH									●						
SDKN	1504AESN-MU						●									E14
	1504AESN-SU						●				●	●				
SDKR	1504AESN-MX				●											E14
	1504AETN-MX															
	1504AEN-MX			●												

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	190 ~ 320 161 ~ 270 80 ~ 140	0.05 ~ 0.20 0.05 ~ 0.20 0.05 ~ 0.20	NCM325 PC3600 ST30A
M	90 ~ 150	0.05 ~ 0.20	PC9530
K	140 ~ 230 50 ~ 90	0.05 ~ 0.30 0.05 ~ 0.30	PC6510 G10

Assembling	

Parts

Specification	Locator	Wedge	Wedge Screw	Locator Screw	Wrench
Ø50~Ø63	LASS5R/L	WASR/L	WTX0817	LTX0512	TW25

Available Inserts E13, E14

PES2000 / 3000 / 4000

2000/3000 type 4000 type

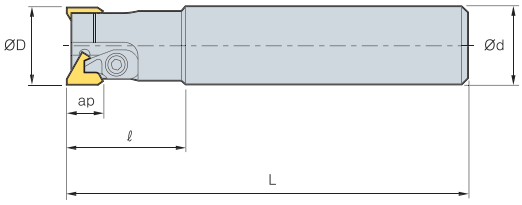


Fig. 1

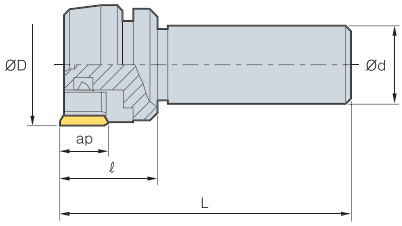
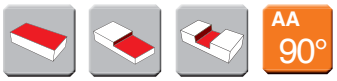


Fig. 2



- AR : 10°~15°
- RR : 2°~–3°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg	Fig
PES	2020R	2	20	20	30	110	8	0.3	1
	2025R	2	25	25	35	120	8	0.5	1
PES	3030R	2	30	32	45	160	13	0.9	1
	3032R	2	32	32	45	160	13	1.0	1
	3033R	2	33	32	45	160	13	1.1	1
	3035R	2	35	32	45	160	13	1.2	1
	3036R	2	36	32	45	160	13	1.3	1
	3040R	2	40	32	45	160	13	1.4	1
PES	4050R	3	50	32	40	120	16.5	1.2	2
	4050R-S42	3	50	42	40	120	16.5	1.5	2
	4063R	4	63	32	40	120	16.5	1.5	2
	4063R-S42	4	63	42	40	120	16.5	1.8	2

Available Inserts

TECN

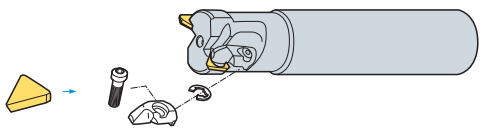
TEEN

	Designation		Cermet		Coated								Uncoated			page
			CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC130	ST30A	G10	H01	
2000 type	TECN	22R													●		E20
		22TR		●									●				
3000 type	TECN	32R													●		E20
		32TR		●		●							●	●			
		32TR-S20								●							
4000 type	TEEN	43R													●		E20
		43R-G														●	
		43TR	●	●	●	●					●			●			
		43TR-S20								●							
		43TR-Z												●			
		43TR-ZH					●			●							

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	190 ~ 320 161 ~ 270 80 ~ 140	0.05 ~ 0.20 0.05 ~ 0.20 0.05 ~ 0.20	NCM325 PC3500 ST30A
M	90 ~ 150	0.05 ~ 0.20	PC9530
K	140 ~ 230 50 ~ 90	0.05 ~ 0.30 0.05 ~ 0.30	PC6510 G10

Assembling



Parts

Specification	Locator	Wedge	Wedge Screw	Locator Screw	Wrench	Wrench	Clamp	Ring
Ø20~Ø25	-	-	-	CHX0407	HW25L	-	CH4R1	ER03
Ø30~40	-	-	-	CHX0510	HW30L	-	CH5R1	ER04
Ø50~Ø63	LPTS4R/L	WPTSR	DHA0815	LTX0512	-	HW40	-	-

Available Inserts E20

AFO(M)4000

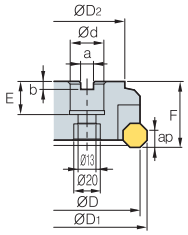


Fig. 1

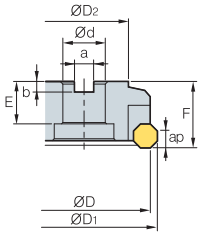


Fig. 2

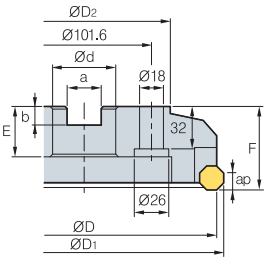


Fig. 3

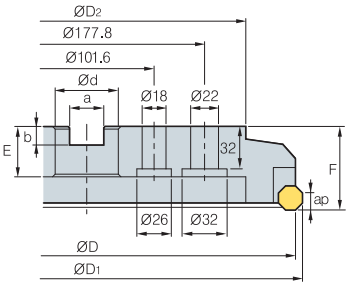


Fig. 4

AA 45°

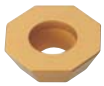
- AR : 15°
- RR : 5°

(mm)

Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig
AFO (AFOM)	4080R/L	5	80	88	60	25.4(27)	9.5(12.4)	6(7)	25(22)	50	6.5	1.4	1
	4100R/L	6	100	108	80	31.75(32)	12.7(14.4)	8(8)	32(28)	50	6.5	2.0	1
	4125R/L	8	125	133	100	38.1(40)	15.9(16.4)	10(9)	38(30)	63	6.5	3.1	1

( )Metric Size

Available Inserts


OFCW


OFKT-MF


OFKT-MM


OFKT-MA

Designation		Cermet		Coated								Uncoated			page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
OFCW	05T3SN															E10
	05T3FN															
	05T308FN															
OFKT	05T3SN-MF			●	●					●						E10
	05T308SN-MF															
	05T3SN-MM			●	●	●			●							
	05T308SN-MM															
	05T3FN-MA													●		
	05T3EN-MA															

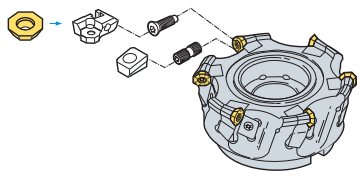
Available Arbors

Designation		General Arbor	NC Arbors	
			AFO	AFOM
AFO(M)	4080R/L	NT*□□(M/U)-FMA25.4-25	BT**□□-FMA25.4-□□	FMC27
	4100R/L	NT*□□(M/U)-FMA31.75-□□	BT**□□-FMA31.75-□□	FMC32
	4125R/L	NT*□□(M/U)-FMA38.1-□□	BT**□□-FMA38.1-□□	FMB40

*□□–NT Number **□□–BT Number ***Over Milling 5

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	190 ~ 320	0.05 ~ 0.20	NCM325
	161 ~ 270	0.05 ~ 0.20	PC3500
	80 ~ 140	0.05 ~ 0.20	ST30A
M	90 ~ 150	0.05 ~ 0.20	PC9530
K	140 ~ 230	0.05 ~ 0.30	PC6510
	50 ~ 90	0.05 ~ 0.30	G10

Assembling	
	

Parts

Specification	Locator	Wedge	Wedge Screw	Screw	Wrench
Ø80~Ø125	LAF04R/L	WAFO4R/L	DHA0815	FTKA0408	TW15S

Available Inserts E10

Available Arbors and bolt E318 ~ E320

AFO(M)5000

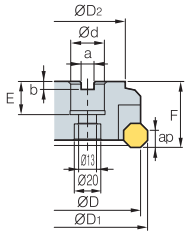


Fig. 1

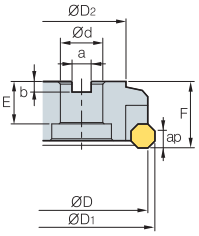


Fig. 2

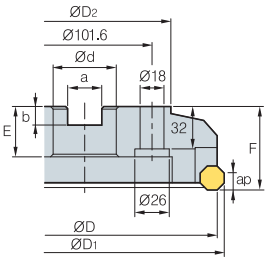


Fig. 3

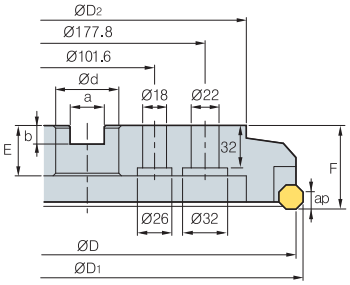


Fig. 4

AA 45°
- AR : 15°
- RR : 5°

(mm)

Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
AFO (AFOM)	5080R/L	5	80	91	60	25.4(27)	9.5(12.4)	6(7)	25(22)	50	9.5	1.4	1
	5100R/L	6	100	111	80	31.75(32)	12.7(14.4)	8(8)	32(28)	50	9.5	2.0	2
	5125R/L	8	125	136	100	38.1(40)	15.9(16.4)	10(9)	38(30)	63	9.5	3.1	2
	5160R/L	10	160	171	120	50.8(40)	19.0(16.4)	11(9)	38(30)	63	9.5	5.2	2
	5200R/L	12	200	211	130	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	9.5	7.5	3
	5250R/L	16	250	261	180	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	9.5	16.1	3
	5315R/L	20	315	326	240	47.625(60)	25.4(25.7)	13.5(14)	38(38)	63	9.5	22.8	4

( )Metric Size

Available Inserts


OFKT-MM


OFKT-MA


OFCN


OFKR-MF


OFKR-MM


OFKR-MA


REKR-MM

Designation		Cermet		Coated								Uncoated			page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
OFCN	0704SN			●		●		●		●						E10
	0704FN															
	070408SN				●											
	070408FN															
OFKR	0704SN-MF			●	●											E10 E11
	070408SN-MF			●												
	0704SN-MM			●	●	●		●	●	●						
	070408SN-MM			●												
	0704FN-MA														●	
	0704EN-MA															
OFKT	0704SN-MM			●												E11
	0704FN-MA														●	
	0704EN-MA															
REKR	170400-MM															E13

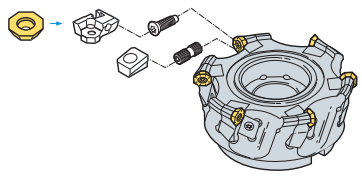
Available Arbors

Designation		General Arbor	NC Arbors	
			AFO	AFOM
AFO(M)	5080R/L	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4-□□	FMC27
	5100R/L	NT*□□ (M/U)-FMA31.75-□□	BT**□□-FMA31.75-□□	FMC32
	5125R/L	NT*□□ (M/U)-FMA38.1-□□	BT**□□-FMA38.1-□□	FMB40
	5160R/L	NT*□□ (M/U)-FMA50.8-□□	BT**□□-FMA50.8-□□	FMB40
	5200R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	5250R/L	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	5315R/L	KCP-8***(Center Ring plug)		

*□□–NT Number **□□–BT Number ***Over Milling 5

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	190 ~ 320	0.05 ~ 0.20	NCM325
	161 ~ 270	0.05 ~ 0.20	PC3500
	80 ~ 140	0.05 ~ 0.20	ST30A
M	90 ~ 150	0.05 ~ 0.20	PC9530
K	140 ~ 230	0.05 ~ 0.30	PC6510
	50 ~ 90	0.05 ~ 0.30	G10

Assembling	

Parts

Specification	Locator	Wedge	Wedge Screw	Locator Screw	Wrench
Ø80 ~ Ø315	LAF05R/L LAF05R*/L-1*	WEFR/L	DHA0821F	LTX0512	HW40

* : Ø80~Ø100

Available Inserts E10, E11, E13 Available Arbors and bolt E318 ~ E320

New serrated edge design increases productivity by reducing insert cutting load

Power Buster

- New tooling utilizing a specially designed serrated edge to increase productivity by reducing the cutting load.
- Double-sided 6 corner insert geometry ensures high rigidity, long tool life and cost efficiency
- The serrated edge divide the chips into smaller pieces. This feature provides excellent chip control, reduces interference of the cutter and ensures good durability of the cutter body.
- AA (approach angle) : 45° and 80° available (same insert used)
- Application : High depth of cut and feed rate(Steel, Cast iron)

Code system

PB	A	C	M	5	250	R/L	-	M
Power Buster	AA	Cutter type	Arbor type	Inscreibed circle of insert	Tool Dia.	Hand		No, of tooth
Power buster	A : 45° Z : 80°	C : Cutter S : Shank	M : Metric I : Inch	5 : 15.875	ØD : 250	R : Right L : Left		No code : Coarse pitch M : Close pitch

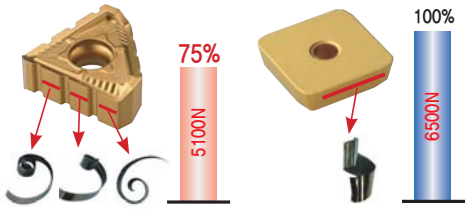
Features of Insert

❶ Major cutting edge(serrated edge)

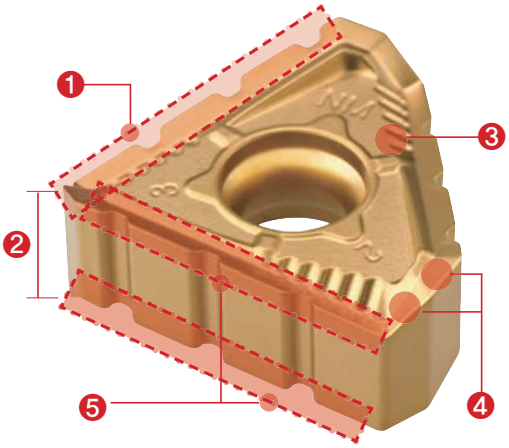
- Low cutting forces
- Ideal for chip control, divides chips into small pieces for proper chip evacuation. Double sided 6 corner insert
- Ideal edge design for Steel and Cast iron rough milling

Comparison of chip control and cutting force

Power Buster	ISO milling insert

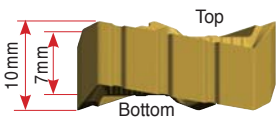


Workpiece : SCM440
Cutting condition : vc=200m/min
ap=8mm
ae=90mm
fz=0.3mm/t



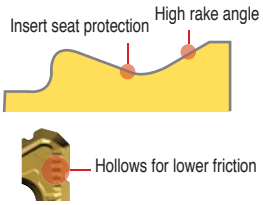
❷ Thicker insert

- Thick insert guarantees high rigidity
- Balanced insert design for stable mounting



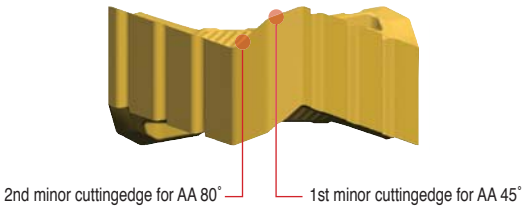
❸ NM Chip breaker

- High rake angle for low cutting force
- Good chip flow at various feed and depth of cut
- Inserts are protected with seats for a precise mounting
- Low friction and good heat evacuation at high depth cut



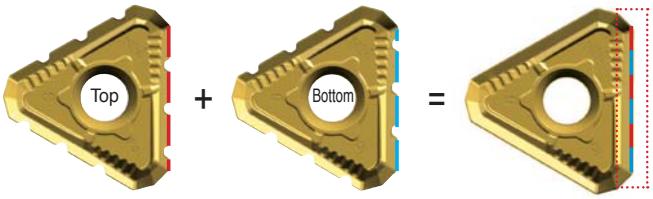
❹ Minor cutting edge

- High rake angle to avoid interference with chip
- Calculated minor cutting edge angel for both AA 45° & 80° cutter



❺ Mirror system

- Cutting edge on the both side of insert covers all overlapped cutting area



Perfected cutting edge by using 2 different side of cutting edge

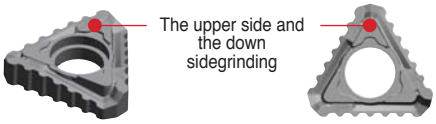
Features of Cutter

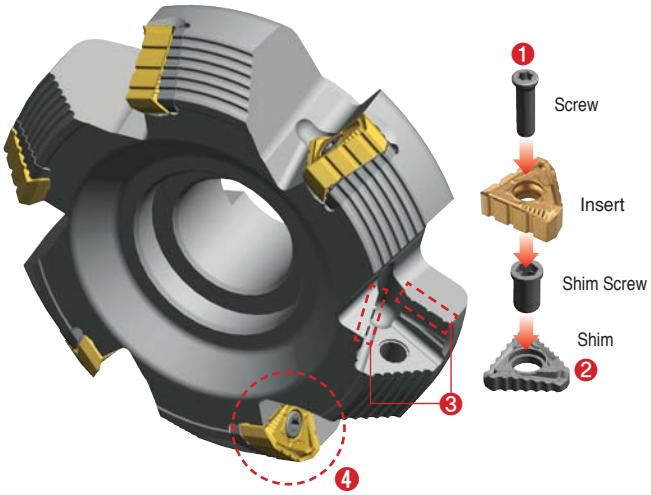
❶ Screw on clamping system

- Simple and strong screw on clamping system

❷ Better rigidity & Stable Assembly system

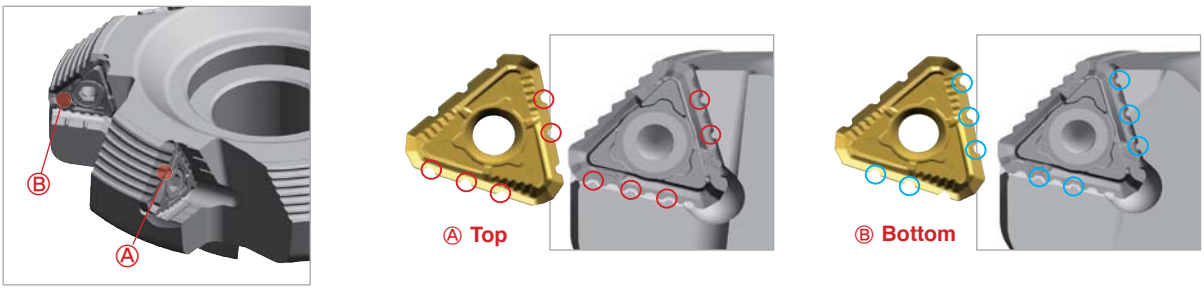
- The shim protects the cutter from insert damage
- High accuracy shim ensures tighter clamping





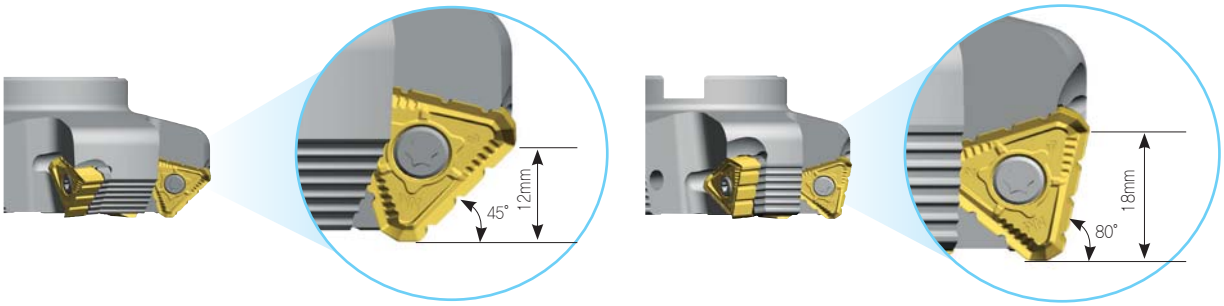
❸ Foolproof System

- Insert serrations match pocket design to prevent improper seating and alignment

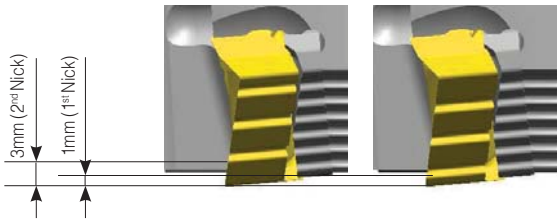


❹ Multi-application system

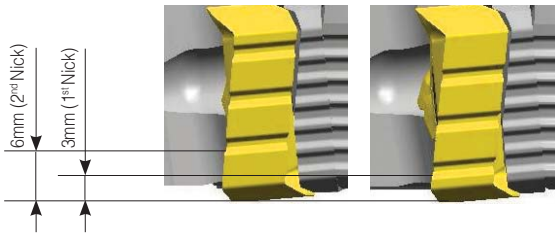
- Same insert for multi use (45˚and 80˚)



The serrations are effective with a depth of cut larger than 1mm

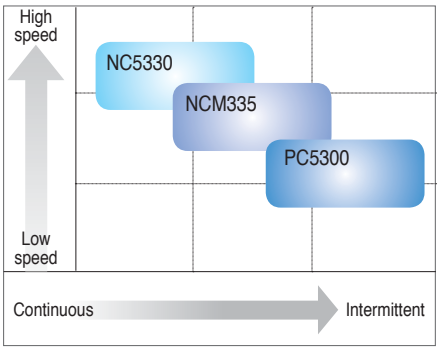


The serrations are effective with a depth of cut larger than 3mm



Recommended cutting condition

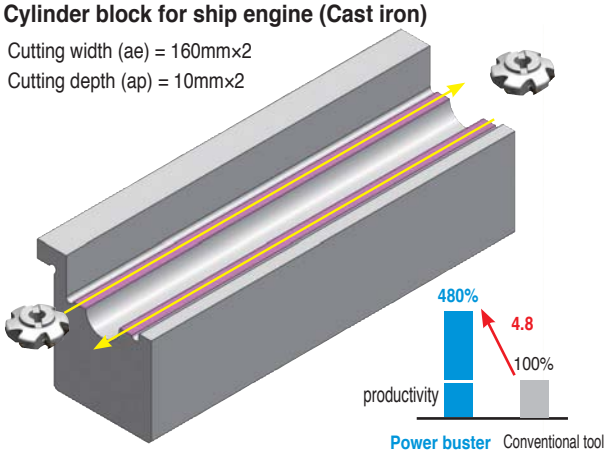
ISO	Workpiece		Material	NC5330	NCM335	PC5300
				fz(mm/t)		
				0.1-0.2-0.3	0.1-0.2-0.3	0.1-0.2-0.3
				vc(m/min)		
P	Carbon steel	-	SUM22, C=0.1~25	400	335	280
		-	C=0.30~55	365	305	255
		-	C=0.55~80	340	285	240
	Low alloy steel (Alloy constituent < 5%)	-	SCM415(H), SCM420, SCM440	280	235	195
		Hardened		165	140	115
	High alloy steel (Alloy constituent > 5%)	annealed	SKD61	210	180	150
		Hardened	SKH51, SKH55	175	145	120
K	Gray cast iron	Low tensile	FC200, FC250	125	-	145
		Hight tensile	FC300, FC350	105	-	120
		Ferric	FCD400, FCD500	80	-	95
		Pearlitic	FCD600, FCD700	75	-	85



Power Buster Test

■ Cylinder block for ship engine (Cast iron)

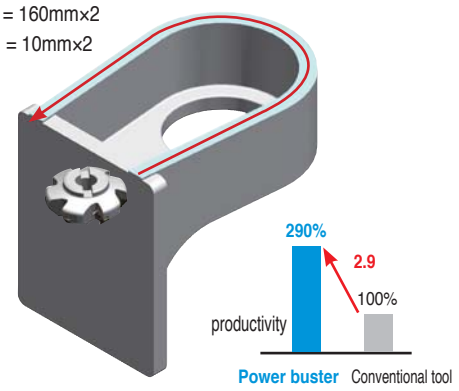
Cutting width (ae) = 160mm×2
Cutting depth (ap) = 10mm×2



Item	Power Buster	Conventional tool
Diameter(ØD)	200mm	200mm
⊙	12 tooth	12 tooth
Grade	NC5330	PVD coating for Cast iron
vc	170m/min	130m/min
fz	0.24mm/t	0.16mm/t
ap	10mm x 2 passes	4mm x 5 passes
min	28.2min/ea	137.5min/ea
4.8 times productivity increased		• One-sided 4 corner insert(Without nick) • AA 45° cutter

■ Heavy machinery part (Alloy steel)

Cutting width (ae) = 160mm×2
Cutting depth (ap) = 10mm×2



Item	Power Buster	Conventional tool
Diameter(ØD)	125mm	100mm
⊙	8 tooth	8 tooth
Grade	NCM335	PVD coating for Cast iron
vc	180m/min	150m/min
fz	0.15mm/t	0.10mm/t
ap	5mm x 2 passes	2.5mm x 4 passes
min	5min/ea	14.7min/ea
2.9 times productivity increased		• Double-sided 8 corner insert(Without nick) • AA 45° cutter

PBAC(M)5000

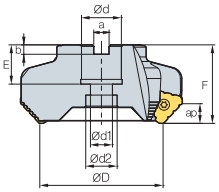


Fig. 1

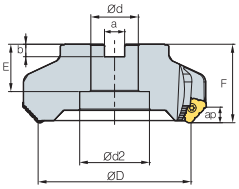


Fig. 2

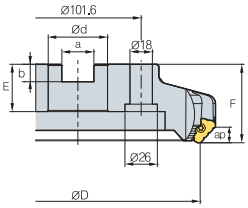


Fig. 3

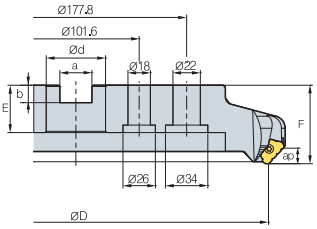


Fig. 4

AA 45°

- AR : −5°
- RR : −11°

(mm)

Designation			⊚	ØD	Ød	Ød1	Ød2	a	b	E	F	ap	Fig.
Coarse pitch	PBAC (PBACM)	5080R/L	4	80	25.4(27)	14	20	9.5(12.4)	6(7)	25(22)	50	12	1
		5100R/L	4	100	31.75(32)	-	45	12.7(14.4)	8(8)	32(28)	50	12	2
		5125R/L	6	125	38.1(40)	-	56	15.9(16.4)	10(9)	38(32)	63	12	2
		5160R/L	8	160	50.8(40)	-	100	19(16.4)	11(9)	38(32)	63	12	2
		5200R/L	10	200	47.625(60)	-	-	25.4(25.7)	14(14)	38(38)	63	12	3
		5250R/L	12	250	47.625(60)	-	-	25.4(25.7)	14(14)	38(38)	63	12	3
		5315R/L	14	315	47.625(60)	-	-	25.4(25.7)	14(14)	38(38)	63	12	4
Close pitch	PBAC (PBACM)	5080R/L-M	6	80	25.4(27)	14	20	9.5(12.4)	6(7)	25(22)	50	12	1
		5100R/L-M	6	100	31.75(32)	-	45	12.7(14.4)	8(8)	32(28)	50	12	2
		5125R/L-M	8	125	38.1(40)	-	56	15.9(16.4)	10(9)	38(32)	63	12	2
		5160R/L-M	10	160	50.8(40)	-	100	19(16.4)	11(9)	38(32)	63	12	2
		5200R/L-M	12	200	47.625(60)	-	-	25.4(25.7)	14(14)	38(38)	63	12	3
		5250R/L-M	14	250	47.625(60)	-	-	25.4(25.7)	14(14)	38(38)	63	12	3
		5315R/L-M	16	315	47.625(60)	-	-	25.4(25.7)	14(14)	38(38)	63	12	4

( )Metric Size

Available Inserts

TNMX-NM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NC5330	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
TNMX	2710AZNR-NM			●	●	●			●		●					E21
	2710AZNL-NM															

Available Arbors

Designation		Available Arbors	
		PBAC	PBACM
PBAC (PBACM)	5080R/L-□	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	5100R/L-□	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	5125R/L-□	BT□□-FMA38.1-□□	BT□□-FMB40-□□
	5160R/L-□	BT□□-FMA50.8-□□	BT□□-FMC40-□□
	5200R/L-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□
	5250R/L-□		
	5315R/L-□		

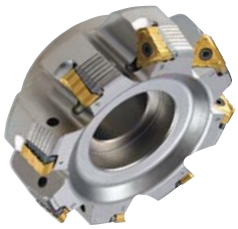
Parts

Specification	Screw	Shim	Shim Screw	Wrench
Ø80~Ø315	FTGA0518	ST53AZR	SHXN0712F	TW20-100

Available Inserts E21

Available Arbors and bolt E318 ~ E320

PBZC(M)5000



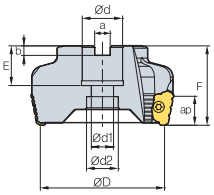


Fig. 1

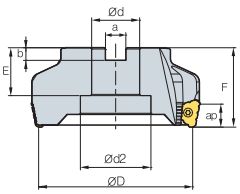


Fig. 2

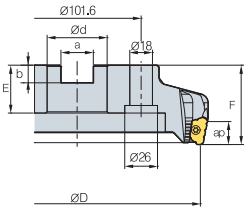


Fig. 3

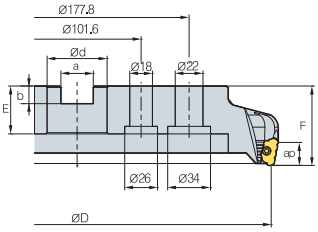


Fig. 4

AA 80°

- AR : −5°
- RR : −12°

(mm)

	Designation			ØD	Ød	Ød1	Ød2	a	b	E	F	ap	Fig.
Coarse pitch	PBZC (PBZCM)	5080R/L	4	80	25.4(27)	14	20	9.5(12.4)	6(7)	25(22)	50	18	1
		5100R/L	4	100	31.75(32)	-	45	12.7(14.4)	8(8)	32(28)	50	18	2
		5125R/L	6	125	38.1(40)	-	56	15.9(16.4)	10(9)	38(32)	63	18	2
		5160R/L	8	160	50.8(40)	-	100	19(16.4)	11(9)	38(32)	63	18	2
		5200R/L	10	200	47.625(60)	-	-	25.4(25.7)	14(14)	38(38)	63	18	3
		5250R/L	12	250	47.625(60)	-	-	25.4(25.7)	14(14)	38(38)	63	18	3
		5315R/L	14	315	47.625(60)	-	-	25.4(25.7)	14(14)	38(38)	63	18	4
Close pitch	PBZC (PBZCM)	5080R/L-M	6	80	25.4(27)	14	20	9.5(12.4)	6(7)	25(22)	50	18	1
		5100R/L-M	6	100	31.75(32)	-	45	12.7(14.4)	8(8)	32(28)	50	18	2
		5125R/L-M	8	125	38.1(40)	-	56	15.9(16.4)	10(9)	38(32)	63	18	2
		5160R/L-M	10	160	50.8(40)	-	100	19(16.4)	11(9)	38(32)	63	18	2
		5200R/L-M	12	200	47.625(60)	-	-	25.4(25.7)	14(14)	38(38)	63	18	3
		5250R/L-M	14	250	47.625(60)	-	-	25.4(25.7)	14(14)	38(38)	63	18	3
		5315R/L-M	16	315	47.625(60)	-	-	25.4(25.7)	14(14)	38(38)	63	18	4

( )Metric Size

Available Inserts

TNMX-NM

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NC5330	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
TNMX	2710AZNR-NM			●	●	●			●		●					E21
	2710AZNL-NM															

Available Arbors

Designation		Available Arbors	
		PBAC	PBACM
PBZC (PBZCM)	5080R/L-□	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	5100R/L-□	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	5125R/L-□	BT□□-FMA38.1-□□	BT□□-FMB40-□□
	5160R/L-□	BT□□-FMA50.8-□□	BT□□-FMC40-□□
	5200R/L-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□
	5250R/L-□		
	5315R/L-□		

Parts

Specification	Screw	Shim	Shim Screw	Wrench
Ø80~Ø315	FTGA0518	ST53AZR	SHXN0712F	TW20-100

Available Inserts E21

Available Arbors and bolt E318 ~ E320

Rich Mill series is one of innovations that provides more available cutting edges by double sided insert and longer tool life for our customers

Rich Mill Series

- Rich Mill series is one of the innovations that provides more available cutting edges with double sided inserts and longer tool life for our customers
- The unique geometry and special cutting edge guarantees low cutting loads and long tool life
- Rich Mill series has a wide application range from steel and stainless steel to cast iron and aluminum
- Applying negative inserts makes it even stronger and provides longer tool life
- Rich Mill series has both screw on clamping system and latch clamping system

Rich Mill Clamping bolt

Socket bolt
(Ø50~Ø125 - Hexagonal socket bolt)

Mounting bolt
(Ø160~Ø250 - Mounting bolt for general face milling)

Rich Mill Series

E 66~67

E 68~69

E 70~71

E 72~75

E 76~79

E 80~81

E 82

E 83

E 84

E 84

E 85~88

E 89~92

E 93~94

E 95~96

E 97~98

E 99

E 100~101

Code system

RM16 A C M 4 100 H R – M

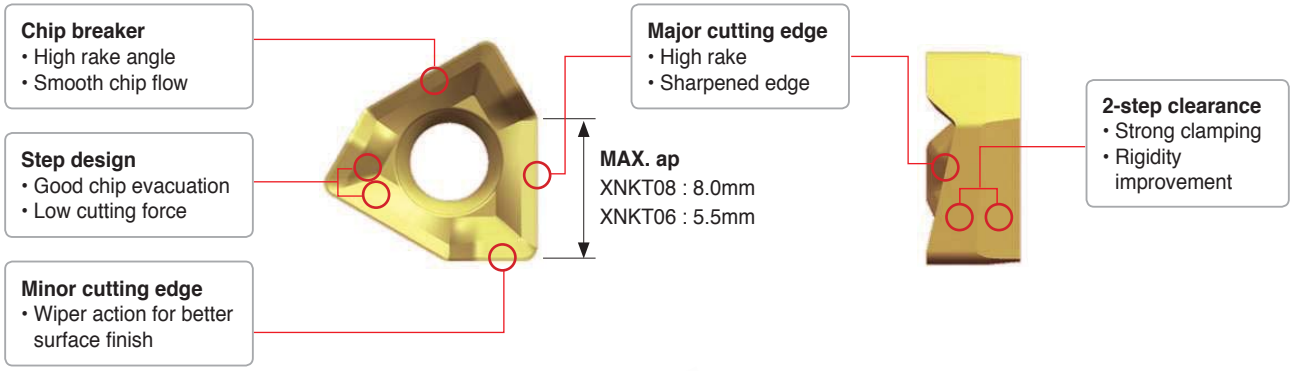
Number of edges	Approach angle	Tool type	Arbors type	Inscreibed circle of insert	Tool Dia.	Coolant type	Hand	Pitch type
RM3 : Number of edges-3	A : 45˚	C : Cutter	M : Metric	3 : 9.525	Ø100	H : Thru-Hole	R : Right	M : Close
RM4 : Number of edges-4	D : 30˚	S : Shank	A : Inch	4 : 12.7		No code : None	L : Left	H : Extra Close
RM8 : Number of edges-8	E : 15˚			5 : 15.875				
RMH8 : Number of edges-8 (Shim)	F : 5˚							
RMT8 : Number of edges-8 (Latch Clamp)	P : 0˚							
RM16 : Number of edges-16	Q : 2˚							
	Z : Plunging							

Rich Mill RM3

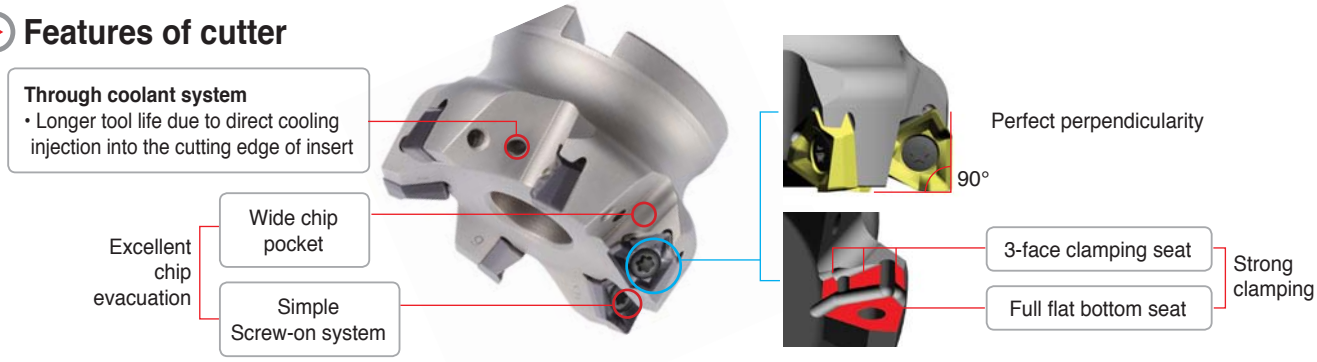
Features

- **High Quality** - True 90 °shouldering operation
- **High Productivity** - Strong thick insert and 3-face clamping ensure stable operation even tough condition.
- **High Economics** - Long tool life due to optimized manufacturing process

Features of insert

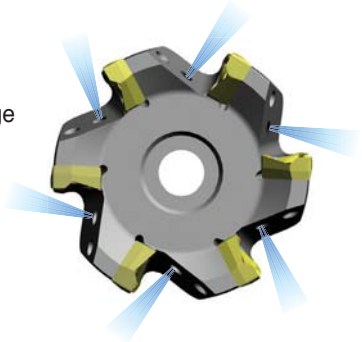


Features of cutter



Through coolant system

- Exclusive through coolant bolt required.
- Effective coolant distribution directly to cutting edge
- Coolant supporting arbor required.



Features of chip breakers

Chip breaker	Insert	Cutting edge	Applications	Features
MA			Aluminum	Superior cutting quality for aluminum due to sharp cutting edge and buffed surface
ML			Light	Superior cutting quality for light and light cutting, difficult-to-cut material machining through the low cutting load of chip breaker
MM			General	Suitable for various cutting due to special shape design for general cutting

Application guideline for grade

Workpiece		P		M	K	N
		Carbon steel	Alloy steel	Stainless steel	Cast iron	Aluminum
Chip breaker	First choice	MM	MM	ML	ML	MA
	Second choice	ML	ML	-	MM	-
Grade	High speed machining	PC3600	PC3600	PC5300	PC6510	H01
	General machining	PC5400	PC5300	PC5400	PC5300	
	Interrupted machining	PC5400	PC5400	PC5400	PC5400	

Recommended cutting condition

■ RM3 3000 type

Workpiece		Grade	Cutting conditions				Cutting conditions			
			vc (m/min)	fz (mm/t)	max ap(mm)	Available inserts	vc (m/min)	fz (mm/t)	max ap(mm)	Available inserts
P	steel	PC3600	160~270	0.25~0.05	5.5	XNKT060405 PNSR-MM	160~270	0.2~0.05	5.5	XNKT060405 PNER-ML
		PC5300	150~240	0.25~0.05	5.5		150~240	0.25~0.05	5.5	
		PC5400	130~210	0.25~0.05	5.5		130~210	0.25~0.05	5.5	
M	Stainless steel	PC5300	90~150	0.2~0.05	5.5		90~150	0.1~0.05	5.5	
		PC5400	70~120	0.2~0.05	5.5		70~120	0.1~0.05	5.5	
K	Cast iron	PC6510	140~230	0.3~0.08	5.5		140~230	0.25~0.08	5.5	
		PC5300	120~200	0.3~0.08	5.5		120~200	0.25~0.08	5.5	

• Maximum cutting condition : vc = 350m/min, fz = 0.5mm/t according to cutting environment

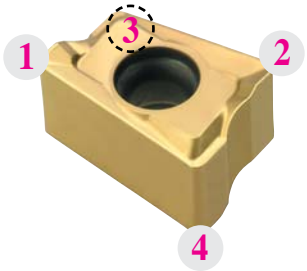
■ RM3 4000 type

Workpiece		Grade	Cutting conditions				Cutting conditions			
			vc (m/min)	fz (mm/t)	max ap(mm)	Available inserts	vc (m/min)	fz (mm/t)	max ap(mm)	Available inserts
P	steel	PC3600	160~270	0.3~0.05	8.0	XNKT080508 PNSR-MM	160~270	0.25~0.05	8.0	XNKT080508 PNER-ML
		PC5300	150~240	0.3~0.05	8.0		150~240	0.25~0.05	8.0	
		PC5400	130~210	0.3~0.05	8.0		130~210	0.25~0.05	8.0	
M	Stainless steel	PC5300	90~150	0.25~0.05	8.0		90~150	0.2~0.05	8.0	
		PC5400	70~120	0.25~0.05	8.0		70~120	0.2~0.05	8.0	
K	Cast iron	PC6510	140~230	0.35~0.08	8.0		140~230	0.3~0.08	8.0	
		PC5300	120~200	0.35~0.08	8.0		120~200	0.3~0.08	8.0	
N	Aluminum	H01	400~1200	0.4~0.1	8.0	XNCT080508PNFR-MA				

• Maximum cutting condition : vc = 350m/min, fz = 0.7mm/t according to cutting environment

Rich Mill RM4

Economical 4 cutting edges by using double-sided insert



- RM4, as a multi functional milling tool, offers economical 4 cutting edges by using an innovative double-sided insert
- Special designed chip breaker consists of high rake angle and strong cutting edge to decrease the cutting load
- RM4 is multi functional tool that can cover facing, side cutting, shouldering, slotting, ramping & helical cutting
- Optimal matching of the special cutting edge geometry with variety of new grades provides consistence & long tool life of insert

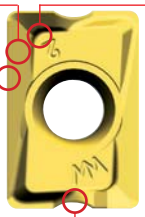
Features

- 4 cutting edges can be used by using double-sided insert
- High rake angle chip breaker and cutting edge can make smooth cutting with low cutting load
- Strong negative insert
- High efficiency, economical, multi functional tool

- Through coolant system Longer tool life due to direct cooling injection into the cutting edge of insert
- Wide chip pocket for better chip evacuation
- Simple screw on system

Inserts

- Double-sided insert using 4cutting edges
- High rake angle chip breaker, cutting edge
- Flexibility of product
- High efficiency, economical, multi functional tool
- Negative insert has strong cutting edge

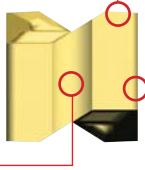


Chip breaker
- High rake angle chip breaker
- Improving chip control

Major cutting edge
- High rake angle chip breaker
- Better surface roughness

Step design
- Improving chip control
- Reducing cutting load

Concave design
- 4 cutting edges
- Minimize interference



Minor cutting edge
- Special design of cutting edge to improve surface roughness

Clearance face
- Strong negative face
- Strong cutting edge

Uses


Facing


Shouldering


Slotting


Ramping


Helical cutting

Chip breaker

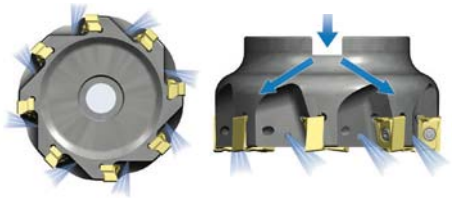
Insert		Cutting edge	Features
Aluminum, Light machining **MA**			With sharp edge application the better productivity has been accomplished, especially for Aluminum or low force cut
Light cutting **MF**			Due to low cutting load, it is good for light cutting and difficult-to-cut material.
General cutting **MM**			It is suitable design for general milling.

Setting configuration

Insert	Setting angle of insert	Features
		High rake chip breaker & positive setting angle for low cutting load - Improving machinability
		Multi applications for facing, shouldering, slotting, ramping, helical cutting, etc

Through coolant system

- By using on exclusive coolant bolt(hexagonal socket bolt) powerful cooling & better chip evacuation can be acquired. To get optimal chip control, the direction of coolant injection has been designed to reach to each cutting edge directly. (through coolant arbor is required.)

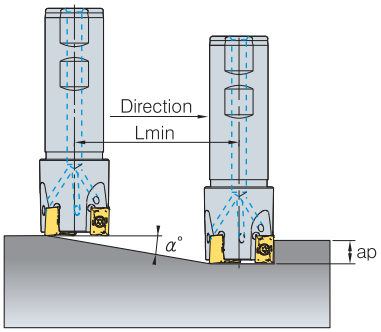


Through coolant system for decreasing cutting heat and good chip evacuation

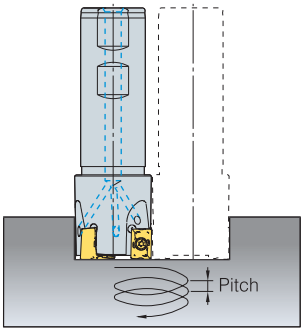
Rich Mill RM4

Ramping and Helical cutting

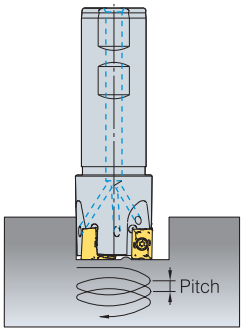
1. Ramping



2. Helical cutting for blind hole



3. Helical cutting for through hole



Designation	1. Ramping			2. Helical cutting for blind hole				3.Helical cutting for through hole	
	D	α°	Lmin	Maximum Hole Diameter	Maximum Pitch	Minimum Hole Diameter	Maximum Pitch	Minimum Hole Diameter	Minimum Pitch
RM4PS3014HR	14	5.0	114	27	3	25	2.5	19	1.0
RM4PS3016HR	16	4.0	143	31	3	29	2.0	23	1.0
RM4PS3018HR	18	4.0	143	35	3	33	3.0	27	2.0
RM4PS3020HR	20	4.0	143	39	4	37	3.0	31	2.0
RM4PS3025HR	25	3.5	163	49	4	47	4.0	41	3.0
RM4PS3032HR	32	3.0	191	63	4.5	61	4.0	55	3.5
RM4PS3040HR	40	2.0	286	79	4	77	3.5	71	3.0
RM4PS3050HR	50	1.5	382	99	3.5	97	3.5	91	3.0
RM4PC(M)3040HR	40	2.0	286	79	4	77	4.0	71	3.0
RM4PC(M)3050HR	50	1.5	382	99	3.5	97	3.5	91	3.0
RM4PC(M)3063HR	63	1.0	573	125	3	123	3.0	117	2.5
RM4PC(M)3080HR	80	1.0	573	159	4	157	4.0	151	3.5
RM4PC(M)3100HR	100	0.5	1146	199	2	197	2.0	191	2.0
RM4PS4032HR	32	2.5	229	62	4	59.5	3.0	49	2.0
RM4PS4040HR	40	2.0	286	78	4	75.5	3.0	65	2.0
RM4PS4050HR	50	2.0	286	98	5	95.5	4.0	85	3.5
RM4PS4063HR	63	2.0	286	124	5	121.5	5.0	111	5.0
RM4PC(M)4050HR	50	2.0	286	98	5	95.5	4.0	85	3.5
RM4PC(M)4063HR	63	2.0	286	124	5	121.5	5.0	111	5.0
RM4PC(M)4080HR	80	1.5	382	158	5	155.5	5.0	145	5.0
RM4PC(M)4100HR	100	1.0	573	198	5	195.5	4.5	185	4.0
RM4PC(M)4125HR	125	1.0	573	248	5	245.5	5.0	235	5.0
RM4PC(M)4160R	160	0.5	1146	318	4	315.5	3.5	305	3.5

The Lmin is when depth of cut is 10.0mm (Lmin = 10/tan α)

Recommended cutting condition

(mm)

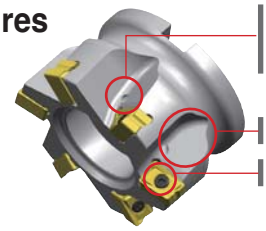
ISO	Grade	LNM(E)X100605PNR-MF		LNM(E)X100605PNR-MM		LNEX100605PNR-MA		Max-ap	LNM(E)X151008PNR-MF		LNM(E)X151008PNR-MM		LNEX151008PNR-MA		Max-ap
		vc(m/min)	fz (mm/t)	vc(m/min)	fz (mm/t)	vc(m/min)	fz (mm/t)		vc(m/min)	fz (mm/t)	vc(m/min)	fz (mm/t)	vc(m/min)	fz (mm/t)	
P	NCM325	-	-	-	-	-	-	9.0	150~300	0.05~0.30	120~300	0.05~0.35	150~300	0.03~0.20	14.0
P	PC3500	150~300	0.05~0.25	120~300	0.05~0.30	150~300	0.03~0.20		150~300	0.05~0.30	120~300	0.05~0.35	150~300	0.03~0.20	
M	PC5300	120~180	0.05~0.25	100~180	0.05~0.30	120~200	0.03~0.20		120~180	0.05~0.30	100~180	0.05~0.3	120~200	0.03~0.20	
K	PC6510	150~300	0.08~0.30	120~300	0.08~0.35	-	-		150~300	0.08~0.35	120~300	0.08~0.35	-	-	

Rich Mill RM4Z

Plunge Mill RM4Z

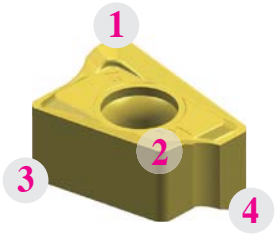
- Rich mill series RM4Z is a plunge mill for high ef ficiency vertical machining such as slotting and pocketing in roughing applications.
- Rich mill series RM4Z is a high ly efficient milling tool for plunging, shouldering and facing. It makes operations more economical with the use of its double-sided 4-corner insert
- Plunge machining reduces lead time for high productivity and precision machining.
- In plunging the max depth of RM4Z 3000 type is 9.0mm and that of RM4Z 4000 type is 14.0mm

Features



Through coolant system
Improving chip control
Cooling inserts increases tool life

Wide chip pocket
Screw on system
Improving chip evacuation

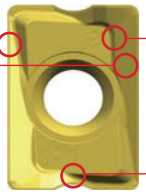


- Double sided insert ··· 4 corner available
- High rake angle chip breaker and cutting edge
- Various available machining types
- High efficiency and economical insert
- Negative type insert - Strong cutting edge

Inserts

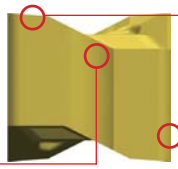
Major cutting edge
- High rake cutting edge
- Sharp cutting edge

Chip breaker
- High rake angle
- Control chip flow



Step design
- Improving chip control
- Reducing cutting load

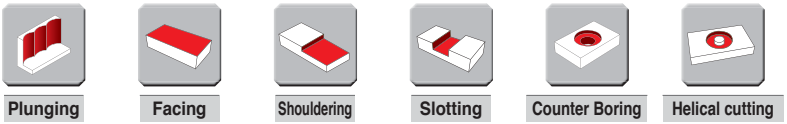
Concave design
- 4 corner available
- Avoiding interference of cutting edges



Minor cutting edge
- Special design for plunge machining

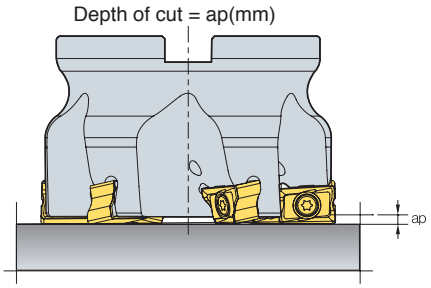
Sides
- Negative type
- Strong cutting edge

Uses

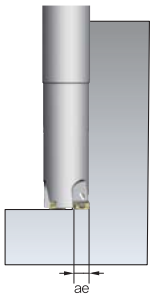


The depth of cut by machining type

- In horizontal machining, Depth of cut = ap(mm)

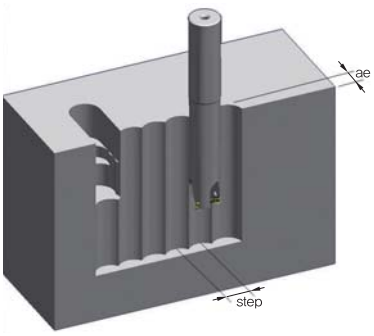


- In plunging, Depth of cut = ae(mm)



RM4Z	Horizontality	Verticality	
	max ap(mm)	max ae(mm)	step
RM4Z 3000	1.5	9	< 0.7D
RM4Z 4000	2.5	14	< 0.7D

Max Step in plunging



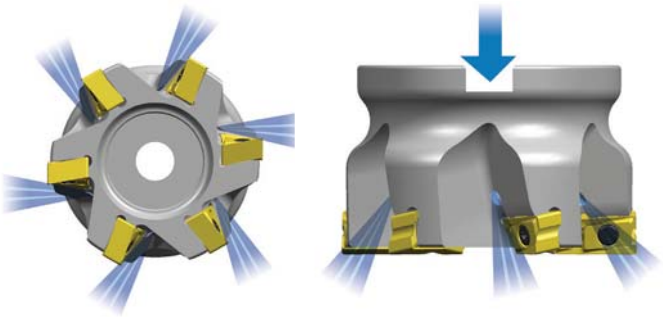
ae	Cutter Diameter(mm)								
	25	32	40	50	52	63	66	80	100
	max step (mm)								
1	9.7	11.1	12.4	14	14.2	15.7	16.1	17.7	19.9
2	13.5	15.4	17.4	19.5	20	22	22.6	24.9	28
3	16.2	18.6	21	23.7	24.2	26.8	27.4	30.3	34.1
4	18.3	21.1	24	27.1	27.7	30.7	31.4	34.8	39.1
5	20	23.2	26.4	30	30.6	34	34.9	38.7	43.5
6	21.3	24.9	28.5	32.4	33.2	36.9	37.9	42.1	47.4
7	22.4	26.4	30.3	34.6	35.4	39.5	40.6	45.2	51
8	23.3	27.7	32	36.6	37.5	41.9	43	48	54.2
9	24	28.7	33.4	38.4	39.3	44	45.2	50.5	57.2
10	-	-	-	-	-	46	47.3	52.9	60
11	-	-	-	-	-	47.8	49.1	55.1	62.5
12	-	-	-	-	-	49.4	50.9	57.1	64.9
13	-	-	-	-	-	50.9	52.4	59	67.2
14	-	-	-	-	-	52.3	53.9	60.7	69.3

Rich Mill RM4Z

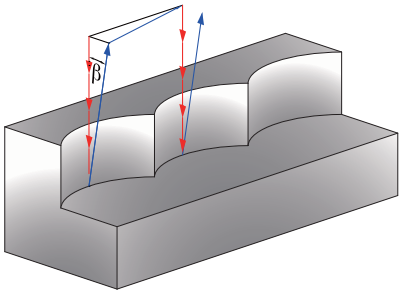
Through coolant system

- Exclusive hexagonal coolant socket bolt provides excellent cooling and chip evacuation.
- Direct coolant injection to cutting edge improves cooling effectiveness
- Coolant type arbor should be used.

∗Coolant bolt is not included, it is for sale



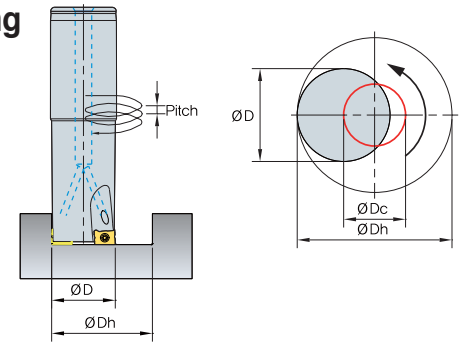
Programming tip



Plunging feed direction
Tool escape
β Escape angle (β ≥ 1°)

- When your tool steps back after plunging, please get over 1° more escape angle.

Helical machining



ØDc = ØDh-ØD

ØDc = Tool center path
ØDh = Desired hole diameter
ØD = Tool Dia.

Designation		Diameter ØD(mm)	Helical data			
			ØDh max(mm)	Max. Pitch(mm)	ØDh min(mm)	Max. Pitch(mm)
RM4ZS	3025HR-L25	25	48	1	30	0.4
	3032HR-L32	32	62	0	43	0.3
	3040HR-L32	40	78	0	59	0.3
RM4ZC	M3040HR	40	78	0	59	0.3
	M3050HR	50	98	0	79	0.3
	M3052HR	52	102	0	83	0.3
RM4ZM	3025HR-M12	25	48	1	30	0.4
	3032HR-M16	32	62	0	43	0.3
	3040HR-M16	40	78	0	59	0.3
RM4ZC	M4063HR	63	124	1	95	0.5
	M4066HR	66	130	1	101	0.5
	M4080HR	80	158	0	129	0.5
	M4100HR	100	198	0	169	0.3

Recommended cutting condition

(mm)

ISO	Grade	LNM(E)X100605PNL-MM				LNM(E)X151008PNL-MM			
		vc(m/min)	fz(mm/t)	∗ max ae(mm)	∗∗ max ap(mm)	vc(m/min)	fz(mm/t)	∗ max ae(mm)	∗∗ max ap(mm)
P	PC3500	100~250	0.05~0.25	9	1.5	120~250	0.05~0.25	14	2.5
M	PC5300	100~250	0.08~0.30			120~250	0.08~0.30		
K	PC6510	80~180	0.05~0.20			100~180	0.05~0.20		

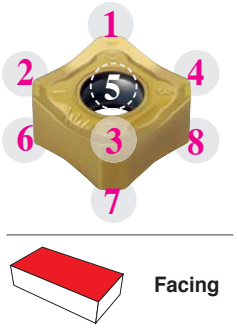
∗ max ae(mm) : (Plunging) max. radial depth of cut

∗∗ max ap(mm) : (Shouldering / Facing) max depth of cut

Rich Mill RM8

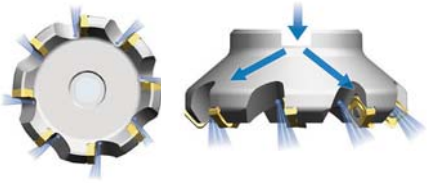
Double sided insert to use 8 cutting edges

- Innovative double sided insert makes it possible to use 8 cutting edges. It is more economical than conventional single sided insert
- The unique geometry and high rake angle of cutting edge guarantees excellent surface finish. Applicable for various workpieces like steel, stainless steel, cast iron, aluminum
- Combined with the innovative geometry and various grades provided the tool offfers durability and excellent tool life
- Various pitches and chip breakers can be applicable for diverse machining.
- Light Rich mill cutter can be useful for high speed machining and low power machine



Through coolant system

- Exclusive coolant bolt is adapted to get better chip evacuation and more powerful cooling. To get optimal chip evacuation, the direction of coolant injection has been designed to reach to each cutting edge directly. Through coolant arbor is required.



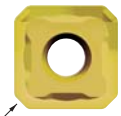
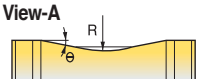
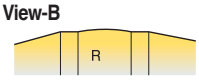
Through coolant system for decreasing cutting heat and good chip evacuation

Chip breaker

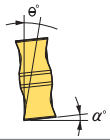
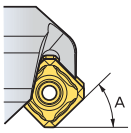
Insert		Cutting edge	Features
For aluminum **MA**			Due to sharp cutting edge and buffed surface, it has good chip flow and welding resistance
Hard-to-cut material **ML**			Chip breaker with low cutting load is optimal for machining hard-to-cut materials.
Light cutting **MF**			Due to low cutting load, it is good for light cutting and difficult-to-cut material

Insert		Cutting edge	Features
General cutting **MM**			It is suitable design for general milling
Wiper **W**			Specialized edge design can be suitable for excellent surface roughness operation

Features of insert

Insert	Cutting edge	Features
 B A	View-A 	High rake chip breaker & positive setting angle for low cutting load
	View-B 	Designed wiper technology in minor cutting edge for improved surface roughness
	Chip breaker 	Low cutting load due to the positive setting and high rake angle chip breaker

Features of cutter

Shape	Cutting edge	Features
		High rake angle makes positive setting angle for low cutting load
		Suitable for facing and chamfering • RM8A A=45° • RM8E A=75° • RM8Q A=88°

Recommended cutting condition

(mm)

ISO	Grade	SNM(E)X1206A(E)NN-MF		SNM(E)X1206A(E)NN-MM		SNEX1206A(E)NN-MA		Max-ap	SNM(E)X1507A(E)NN-MF		SNM(E)X1507A(E)NN-MM		Max-ap
		vc(m/min)	fz (mm/t)	vc(m/min)	fz (mm/t)	vc(m/min)	fz (mm/t)		vc(m/min)	fz (mm/t)	vc(m/min)	fz (mm/t)	
P	NC5330	-	-	150~300	0.10~0.35	150~300	0.10~0.35	RM8A 6.0mm RM8E 9.0mm RM8Q 11.5mm	-	-	150~300	0.10~0.35	RM8A 7.5mm RM8E 11mm
	NCM325	200~300	0.05~0.30	150~300	0.10~0.35	150~300	0.10~0.35		200~300	0.05~0.30	150~300	0.10~0.35	
	PC3500	200~300	0.05~0.30	150~300	0.10~0.35	150~300	0.10~0.35		200~300	0.05~0.30	150~300	0.10~0.35	
M	PC9530	90~150	0.05~0.25	90~150	0.10~0.35	-	-		90~150	0.10~0.30	90~150	0.10~0.35	
	PC5300	90~150	0.05~0.25	90~150	0.10~0.35	-	-		90~150	0.10~0.30	90~150	0.10~0.35	
K	PC6510	150~300	0.08~0.35	150~300	0.10~0.40	150~300	0.10~0.40		150~300	0.08~0.35	150~300	0.10~0.40	
	PC5300	150~300	0.08~0.35	150~300	0.10~0.40	150~300	0.10~0.40		150~300	0.08~0.35	150~300	0.10~0.40	

Rich Mill RMH8

Screw on clamping system

▶ Adopt and stable clamping system

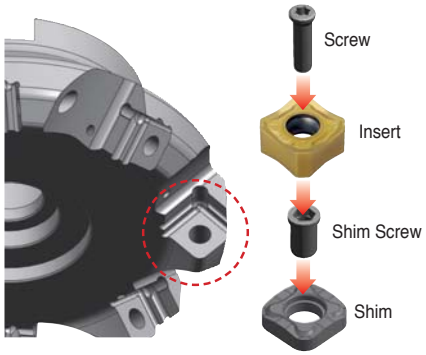
Reinforced rigidity and enhanced clamping power

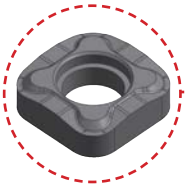
▶ Appling shim system, prevent cutter damage when insert breaks

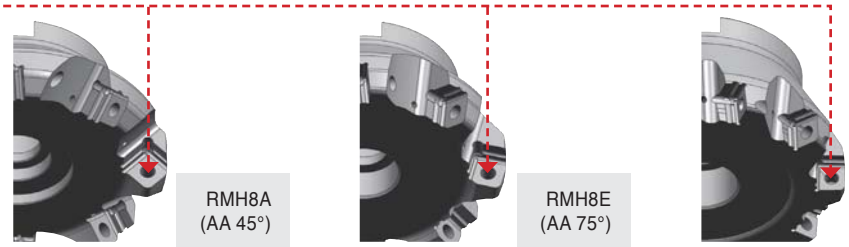
Adopting exchangeable shim

▶ Using various kinds of cutter (Approach angle 45°, 75°, 88°)

▶ Stable clamping power with insert







Rich Mill RMT8

New generation clamping system

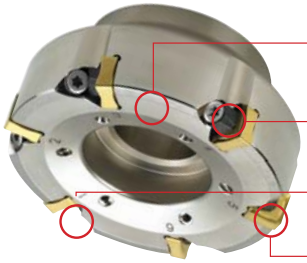
▶ New latch clamping system provides a powerful cutting force and an easy insert change

▶ New grades with chipping resistance provides good surface roughness and better tool life

▶ Due to the specially designed chip breaker, all operations are possible

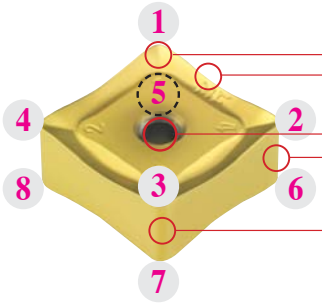
▶ RMT with various pitches can replace conventional ISO milling tool

Features of RMT



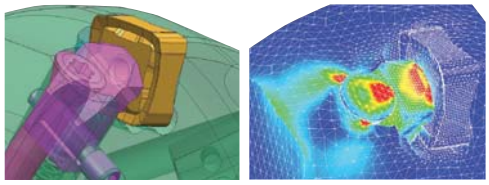
- High rigid cutter body to improve durability
- New latch clamping system ensures the powerful cutting force and easy to insert change
- The 3-dimensional chip pocket design for smooth chip control
- Economical 8 corners with a double-sided insert

Features of RMT insert(using R/L)



- Economical 8 corners
- Low cutting load due to high rake angle chip breaker
- The chamber shape for stable clamping
- Coated grades with improved chipping resistance
- Optimal design of minor cutting edge to use in R/L cutting type good surface roughness

Clamping force analysis



Clamping force analysis

Insert		Cutting edge	Features
Fine finishing MF			Our specialized insert design creates low cutting forces suitable for light cutting, HRSA
Strengthen MM			Suitable geometry design for general milling has wider ranges of machining

Recommended grades and chip breakers

ISO	Grade	MM	MF
P	NCM325		○
	PC5300		○
	PC3545		○
M	PC9530		◎
K	PC6510		◎

◎ : Optimum ○ : Proper

Recommended cutting condition

(mm)

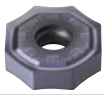
ISO	Grade	MM		MF	
		vc(m/min)	fz (mm/t)	vc(m/min)	fz (mm/t)
P	NC5330	190~310	0.10~0.35	190~310	0.05~0.30
	NCM325	160~270	0.10~0.35	160~270	0.05~0.30
	PC3500	130~210	0.10~0.35	130~210	0.05~0.30
M	PC9530	90~150	0.05~0.30	90~150	0.05~0.30
K	PC6510	140~230	0.10~0.40	140~230	0.08~0.35

Rich Mill RM16

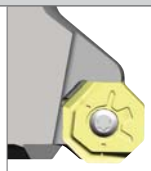
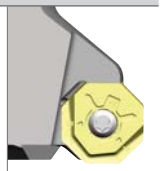
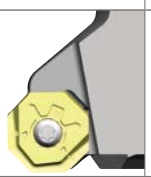
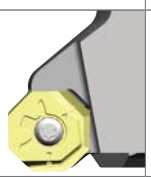
Features

- Economical 16 cutting edges
- Reduces cost in medium cutting
- Wiper insert can be used for good surface roughness
- Optimal matching of the special cutting edge geometry with variety of new grades provides consistence & long tool
- When it is used 16 corners, maximum cutting depth is 5.5mm, but it is used 8 corners, maximum cutting depth is 13mm
- Wiper insert is placed 0.05mm lower than facing insert in cutter
- When feed is bigger than wiper cutting edge length(7mm), 2 wiper inserts are placed in symmetrical position

Chip breaker

Insert		Cutting edge	Features
Aluminum Cutting light **MA**			With sharp edge application, the better productivity has been accomplished, especially for Aluminum cutting.
Light cutting **MF**			Due to low cutting load, it is good for light cutting and difficult-to-cut material.
Hard-to-cut material **ML**			Chip breaker with low cutting load is optimal for machining hard-to-cut materials.
General cutting **MM**			It is suitable design for general milling.
Wiper **W**			It has better surface roughness than MM and MF chip breakers.

Instruction for wiper insert

Hand	Correct setting	Incorrect setting			
Right hand					
Decision	○	×	×	×	×
Left hand					
Decision	○	×	×	×	×

Through coolant system

- Well designed chip pocket for better chip flow
- Through coolant system reduces cutting heat and improves chip evacuation

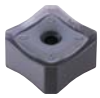
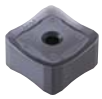
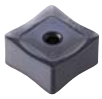
Recommended cutting condition

(mm)

ISO	Grade	ONM(H)X060608-MM		ONM(H)X060608-MF		ONHX060608-W		ONM(H)X080608-MM		ONM(H)X080608-MF		ONHX080608-W	
		vc(m/min)	fz (mm/t)	vc(m/min)	fz (mm/t)	vc(m/min)	fz (mm/t)	vc(m/min)	fz (mm/t)	vc(m/min)	fz (mm/t)	vc(m/min)	fz (mm/t)
P	NCM325	150~300	0.10~0.35	200~300	0.05~0.30	200~300	0.05~0.20	150~300	0.10~0.40	200~300	0.05~0.35	200~300	0.05~0.25
P	PC3500	150~300	0.10~0.35	200~300	0.05~0.30	200~300	0.05~0.20	150~300	0.10~0.40	200~300	0.05~0.35	200~300	0.05~0.25
M	PC6510	120~180	0.10~0.35	100~180	0.05~0.30	100~180	0.05~0.20	120~180	0.10~0.40	100~180	0.05~0.35	100~180	0.05~0.25
K	PC9530	150~300	0.10~0.40	150~300	0.08~0.35	150~300	0.05~0.25	150~300	0.10~0.45	150~300	0.08~0.40	150~300	0.05~0.30

Cutters

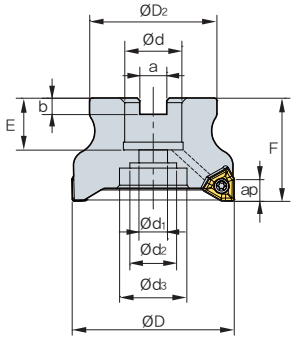
	A.A	Designation	Shape	Cutter Diameter	Application			Features	Page
RM3	90°	RM3PC(M)3000 New		Ø40~Ø80	XNKT060405PNER-ML	XNKT060405PNSR-MM		• Economical 3 corners. • Perfect perpendicularity • Longer tool life due to direct injection into the cutting edge of insert	E66
		RM3PC(M)4000 New		Ø40~Ø125	XNCT080508PNFR-MA XNKT080508PNER-ML XNKT080508PNSR-MM	XNKT080512PNSR-MM XNKT080516PNSR-MM XNKT080520PNSR-MM			E67
RM4	90°	RM4PC(M)3000		Ø40~Ø100	LNEX100605PNR-MF LNMX100605aPNR-MF LNEX100605PNR-MM LNMX100605PNR-MM LNEX100608PNR-MF LNMX100608PNR-MF	LNEX100608PNR-MM LNMX100608PNR-MM LNEX100605PNR-MA LNEX100605PNL-MM LNMX100605PNL-MM		• Economical 4 corners. • Screw on type for slotting, facing.	E70
		RM4PC(M)4000		Ø50~Ø160	LNEX151004PNR-MF LNMX151004PNR-MF LNEX151004PNR-MM LNMX151004PNR-MM LNEX151008PNR-MF LNMX151008PNR-MF LNEX151008PNR-MM LNMX151008PNR-MM	LNEX151016PNR-MF LNMX151016PNR-MF LNEX151016PNR-MM LNMX151016PNR-MM LNEX151004PNR-MA LNEX151008PNR-MA LNEX151008PNL-MM LNMX151008PNL-MM			E71
		RM4ZCM3000 New		Ø40~Ø52	LNEX100605PNL-MM	LNMX100605PNL-MM		• Economical 4 corners. • Optimal insert application for vertical machining	E83
		RM4ZC(M)4000 New		Ø63~Ø100	LNEX151008PNL-MM	LNMX151008PNL-MM			
RM8	45°	RM8AC(M)4000		Ø50~Ø400	SNEX1206ANN-MA SNEX1206ANN-MF SNMX1206ANN-MF SNEX1206ANN-ML SNEX1206ANN-MM SNMX1206ANN-MM	SNEX1206ANN-W SNEX1507ANN-MF SNMX1507ANN-MF SNEX1507ANN-ML SNEX1507ANN-MM SNMX1507ANN-MM		• Economical 8 corners. • Low cutting load and excellent smooth cutting.	E85
		RM8AC(M)5000		Ø80~Ø400					E87
	75°	RM8EC(M)4000		Ø50~Ø400	SNEX1206ENN-MA SNEX1206ENN-MF SNMX1206ENN-MF	SNEX1206ENN-ML SNEX1206ENN-MM SNMX1206ENN-MM			E89
		RM8EC(M)5000		Ø80~Ø400	SNEX1507ENN-MF SNMX1507ENN-MF SNEX1507ENN-ML	SNEX1507ENN-MM SNMX1507ENN-MM			E91
	88°	RM8QC(M)4000		Ø63~Ø200	SNEX1206QNN-MA SNEX1206QNN-MF SNMX1206QNN-MF SNEX1206QNN-ML SNEX1206QNN-MM SNMX1206QNN-MM	SNEX120612-MA SNEX120612-MF SNMX120612-MF SNEX120612-ML SNEX120612-MM SNMX120612-MM			E93
	45°	RMH8AC(M)4000 New		Ø50~Ø400	SNEX1206ANN-MA SNEX1206ANN-MF SNMX1206ANN-MF SNEX1206ANN-ML	SNEX1206ANN-MM SNMX1206ANN-MM SNEX1206ANN-W			E86
		RMH8AC(M)5000 New		Ø80~Ø400	SNEX1507ANN-MF SNMX1507ANN-MF SNEX1507ANN-ML	SNEX1507ANN-MM SNMX1507ANN-MM			E88
	75°	RMH8EC(M)4000 New		Ø50~Ø400	SNEX1206ENN-MA SNEX1206ENN-MF SNMX1206ENN-MF	SNEX1206ENN-ML SNEX1206ENN-MM SNMX1206ENN-MM			E90
		RMH8EC(M)5000 New		Ø80~Ø400	SNEX1507ENN-MF SNMX1507ENN-MF SNEX1507ENN-ML	SNEX1507ENN-MM SNMX1507ENN-MM			E92
	88°	RMH8QC(M)4000 New		Ø63~Ø200	SNEX1206QNN-MA SNEX1206QNN-MF SNMX1206QNN-MF SNEX1206QNN-ML SNEX1206QNN-MM SNMX1206QNN-MM	SNEX120612-MA SNEX120612-MF SNMX120612-MF SNEX120612-ML SNEX120612-MM SNMX120612-MM			E94

	A.A	Designation	Shape	Cutter Diameter	Application			Features	Page
RM8	45°	**RMT8A(M) 4000/5000**		Ø80~Ø315	SNCF1206ANN-MF / MM SNCF1507ANN-MF / MM	SNMF1206ANN-MF / MM SNMF1507ANN-MF / MM		• Economical 8 corners. • Excellent tool life and surface toughness due to low cutting resistance and high rake edge geometry. • Good performance with increased chipping resistance and grade	E95 E96
	75°	**RMT8E(M) 4000/5000**		Ø80~Ø315	SNCF1206ENN-MF / MM SNCF1507ENN-MF / MM	SNMF1206ENN-MF / MM SNMF1507ENN-MF / MM			E97 E98
	88°	**RMT8Q(M)4000**		Ø80~Ø315	SNCF1206QNN-MF	SNMF1206QNN-MF			E99
RM16	45°	**RM16AC(M) 6000/8000**		Ø63~Ø400	ONHX060608-MF / ML / MM ONMX060608-MF / MM ONHX0606ANN-MF / MM ONMX0606ANN-MF / MM ONHX080608-MF / ML / MM ONMX080608-MF / MM	ONHX0806ANN-MF / MM ONMX0806ANN-MF / MM ONHX060608-MA ONHX060608-W ONHX080608-MA ONHX080608-W		• Economical 16 corners. • Wiper insert for surface roughness.	E100 E101

Shanks / Modulars

	A.A	Designation	Shape	Cutter Diameter	Application			Features	Page
RM3	90°	**RM3PS3000** New		Ø20~Ø40	XNKT060405PNER-ML	XNKT060405PNSR-MM		• Economical 3 corners. • Perfect perpendicular shouldering operation multi milling tool	E68
		RM3PS4000 New		Ø32~Ø63	XNKT080508PNER-ML XNKT080508PNSR-MM	XNKT080512PNSR-MM XNKT080516PNSR-MM XNCT080520PNSR-MM			E69
RM4	90°	**RM4PS3000**		Ø14~Ø50	LNEX100605PNR-MF LNMX100605PNR-MF LNEX100605PNR-MM LNMX100605PNR-MM LNEX100608PNR-MF LNMX100608PNR-MF	LNEX100608PNR-MM LNMX100608PNR-MM LNEX100605PNR-MA LNEX100605PNL-MM LNMX100605PNL-MM		• Economical 4 corners. • Screw on type for slotting, facing.	E80
		RM4PS4000		Ø32~Ø63	LNEX151004PNR-MF LNMX151004PNR-MF LNEX151004PNR-MM LNMX151004PNR-MM LNEX151008PNR-MF LNMX151008PNR-MF LNEX151008PNR-MM LNMX151008PNR-MM	LNEX151016PNR-MF LNMX151016PNR-MF LNEX151016PNR-MM LNMX151016PNR-MM LNEX151004PNR-MA LNEX151008PNR-MA LNEX151008PNL-MM LNMX151008PNL-MM			E81
		RM4ZS3000		Ø25~Ø40	LNEX100605PNL-MM	LNMX100605PNL-MM		• Economical 4 corners. • Optimal insert application for vertical machining	E84
		RM4PM3000		Ø14~Ø50	LNEX100605PNR-MF LNMX100605PNR-MF LNEX100605PNR-MM LNMX100605PNR-MM LNEX100608PNR-MF LNMX100608PNR-MF	LNEX100608PNR-MM LNMX100608PNR-MM LNEX100605PNR-MA LNEX100605PNL-MM LNMX100605PNL-MM		• Economical 4 corners. • Screw on type for slotting, facing.	E82
		RM4ZM3000		Ø25~Ø40	LNEX100605PNL-MM	LNMX100605PNL-MM		• Economical 4 corners. • Optimal insert application for vertical machining	E84

RM3PC(M)3000 New



AA 90°
- AR : -5°
- RR : -9°~-6°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	Ød3	a	b	E	F	ap	kg
RM3PCM	3040HR	5	40	35	16	9	14	-	8.4	5.6	16	40	5.5	0.2
	3040HR-M	6	40	35	16	9	14	-	8.4	5.6	16	40	5.5	0.2
	3050HR	6	50	41	22	11	18	-	10.4	6.3	20	40	5.5	0.3
	3050HR-M	7	50	41	22	11	18	-	10.4	6.3	20	40	5.5	0.3
	3063HR	7	63	49	22	11	18	-	10.4	6.3	20	40	5.5	0.49
	3063HR-M	8	63	49	22	11	18	-	10.4	6.3	20	40	5.5	0.49
RM3PC (RM3PCM)	3080HR	8	80	57	25.4(27)	14	25	35	9.5(12.4)	6(7)	25(23)	50	5.5	0.87
	3080HR-M	10	80	57	25.4(27)	14	25	35	9.5(12.4)	6(7)	25(23)	50	5.5	0.88

( )Metric Size

Available Inserts

XNKT-ML

XNKT-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
XNKT	060405PNER-ML						●			●	●	●				E23
	060405PNSR-MM						●			●	●	●				

Available Arbors

Designation		Available Arbors	
		RM3PC	RM3PCM
RM3PC (RM3PCM)	3040HR	-	BT□□-FMC16-□□
	3040HR-M		
	3050HR	-	BT□□-FMC22-□□
	3050HR-M		
	3063HR		
	3063HR-M		
	3080HR	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	3080HR-M		

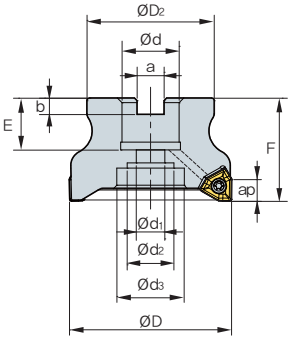
Parts

Specification	Screw	Wrench
Ø40~Ø80	FTNA0306	TW09S

Available Inserts E23

Available Arbors and bolt E318 ~ E320

RM3PC(M)4000 New



- AR : -5°
- RR : -8°~-6°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	Ød3	a	b	E	F	ap	kg
RM3PCM	**4040HR**	3	40	35	16	9	14	-	8.4	5.6	19	40	8.0	0.19
	4040HR-M	4	40	35	16	9	14	-	8.4	5.6	19	40	8.0	0.19
	4050HR	4	50	42	22	11	18	-	10.4	6.3	20	40	8.0	0.28
	4050HR-M	5	50	42	22	11	18	-	10.4	6.3	20	40	8.0	0.29
	4063HR	5	63	49	22	11	18	-	10.4	6.3	20	40	8.0	0.54
	4063HR-M	6	63	49	22	11	18	-	10.4	6.3	20	40	8.0	0.53
RM3PC (RM3PCM)	**4080HR**	5	80	57	25.4(27)	14	20	35	9.5(12.4)	6(7)	25(23)	50	8.0	1.08
	4080HR-M	7	80	57	25.4(27)	14	20	35	9.5(12.4)	6(7)	25(23)	50	8.0	1.06
	4100HR	7	100	67	31.75(32)	18	26	42	12.7(14.4)	8(8)	33(25)	63(50)	8.0	1.68
	4100HR-M	8	100	67	31.75(32)	18	26	42	12.7(14.4)	8(8)	33(25)	63(50)	8.0	1.67
	4125HR	8	125	90	38.1(40)	22	32	52	15.9(16.4)	9(10)	38(29)	63	8.0	3.45
	4125HR-M	10	125	90	38.1(40)	22	32	52	15.9(16.4)	9(10)	38(29)	63	8.0	3.45

( )Metric Size

Available Inserts


XNCT-MA


XNKT-ML


XNKT-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
XNCT	**080508PNFR-MA**															E22 E23
XNKT	**080508PNSR-MM**						●			●	●	●				
	080508PNER-ML						●			●	●	●				
	080512PNSR-MM															
	080516PNSR-MM															
	080520PNSR-MM															

Available Arbors

Designation		Available Arbors	
		RM3PC	RM3PCM
RM3PC (RM3PCM)	**4040HR**	-	BT□□-FMC16-□□
	4050HR	-	BT□□-FMC22-□□
	4063HR		
	4080HR	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	4100HR	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	4125HR	BT□□-FMA38.1-□□	BT□□-FMC40-□□

Parts

Specification	 Screw	 Wrench
Ø40~Ø125	FTNA0408	TW15S

Available Inserts E22, E23

Available Arbors and bolt E318 ~ E320

RM3PS3000 New

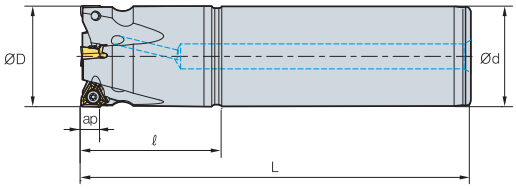


Fig. 1

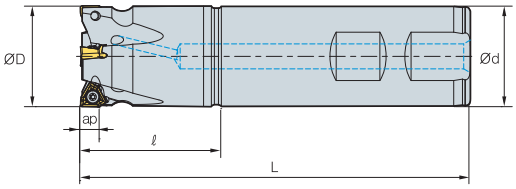


Fig. 2

AA 90°

- AR : -5°
- RR : -16°~ -9°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg	Fig.
RM3PS	3020HR-2S20	2	20	20	35	100	5.5	0.21	2
	3020HR-2L20	2	20	20	35	200	5.5	0.43	1
	3021HR-2S20	2	21	20	30	100	5.5	0.21	2
	3021HR-2L20	2	21	20	30	200	5.5	0.43	1
	3025HR-3S20	2	25	20	35	115	5.5	0.27	2
	3025HR-3L20	2	25	20	35	200	5.5	0.46	1
	3025HR-3S25	3	25	25	40	115	5.5	0.36	2
	3025HR-3L25	3	25	25	40	200	5.5	0.66	1
	3026HR-2S20	2	26	20	35	115	5.5	0.29	2
	3026HR-2L20	2	26	20	35	200	5.5	0.47	1
	3026HR-3S20	3	26	20	35	115	5.5	0.28	2
	3026HR-3L20	3	26	20	35	200	5.5	0.47	1
	3026HR-2S25	2	26	25	35	115	5.5	0.37	2
	3026HR-2L25	2	26	25	35	200	5.5	0.68	1
	3026HR-3S25	3	26	25	35	115	5.5	0.37	2
	3026HR-3L25	3	26	25	35	200	5.5	0.68	1
	3032HR-3S25	3	32	25	42	125	5.5	0.48	2
	3032HR-3L25	3	32	25	42	200	5.5	0.74	1
	3032HR-4S25	4	32	25	42	125	5.5	0.48	2
	3032HR-4L25	4	32	25	42	200	5.5	0.74	1
	3032HR-4S32	4	32	32	42	125	5.5	0.68	2
	3032HR-4L32	4	32	32	42	200	5.5	1.13	1
	3033HR-3S25	3	33	25	42	125	5.5	0.49	2
	3033HR-3L25	3	33	25	42	200	5.5	0.75	1
	3033HR-4S25	4	33	25	42	125	5.5	0.49	2
	3033HR-4L25	4	33	25	42	200	5.5	0.75	1
	3033HR-4S32	4	33	32	42	125	5.5	0.70	2
	3033HR-4L32	4	33	32	42	200	5.5	1.14	1
	3040HR-4S32	4	40	32	45	130	5.5	0.83	2
	3040HR-4L32	4	40	32	45	200	5.5	1.24	1
	3040HR-5S32	5	40	32	45	130	5.5	0.83	2
	3040HR-5L32	5	40	32	45	200	5.5	1.24	1

Available Inserts

XNKT-ML

XNKT-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
XNKT	060405PNER-ML						●			●	●	●				E23
	060405PNSR-MM						●			●	●	●				

Parts

Specification	 Screw	 Wrench
Ø20~Ø40	FTNA0306	TW09S

Available Inserts E23
Available Arbors and bolt E318 ~ E320

RM3PS4000 New

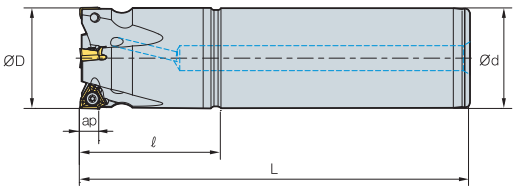


Fig. 1

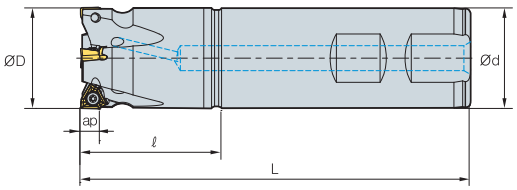


Fig. 2

AA 90°

- AR : -5°
- RR : -11°~-7°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg	Fig.
RM3PS	4032HR-3S32	3	32	32	42	125	8	0.67	2
	4032HR-3L32	3	32	32	42	200	8	1.11	1
	4033HR-3S32	3	33	32	42	125	8	0.68	2
	4033HR-3L32	3	33	32	42	200	8	1.13	1
	4040HR-3S32	3	40	32	42	130	8	0.8	2
	4040HR-3L32	3	40	32	42	200	8	1.21	1
	4040HR-4S32	4	40	32	42	130	8	0.81	2
	4040HR-4L32	4	40	32	42	200	8	1.22	1
	4050HR-4S32	4	50	32	42	135	8	0.99	2
	4050HR-4L32	4	50	32	42	200	8	1.38	1
	4050HR-4S40	4	50	40	42	135	8	1.32	2
	4050HR-4L40	4	50	40	42	200	8	1.94	1
	4050HR-5S32	5	50	32	42	135	8	1.02	2
	4050HR-5L32	5	50	32	42	200	8	1.4	1
	4050HR-5S40	5	50	40	42	135	8	1.35	2
	4050HR-5L40	5	50	40	42	200	8	1.96	1
	4063HR-5S32	5	63	32	42	135	8	1.31	2
	4063HR-5L32	5	63	32	42	200	8	1.7	1
	4063HR-5S40	5	63	40	42	135	8	1.64	2
	4063HR-5L40	5	63	40	42	200	8	2.25	1
	4063HR-6S32	6	63	32	42	135	8	1.31	2
	4063HR-6L32	6	63	32	42	200	8	1.7	1
	4063HR-6S40	6	63	40	42	135	8	1.64	2
	4063HR-6L40	6	63	40	42	200	8	2.26	1

Available Inserts

XNCT-MA

XNKT-ML

XNKT-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
XNCT	080508PNFR-MA															E22 E23
XNKT	080508PNSR-MM						●			●	●	●				
	080508PNER-ML						●			●	●	●				
	080512PNSR-MM															
	080516PNSR-MM															
	080520PNSR-MM															

Parts

Specification	Screw	Wrench
Ø32~Ø63	FTNA0408	TW15S

Available Inserts E22, E23 Available Arbors and bolt E318 ~ E320

RM4PC(M)3000

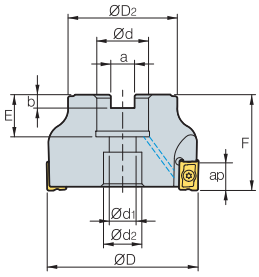


Fig. 1

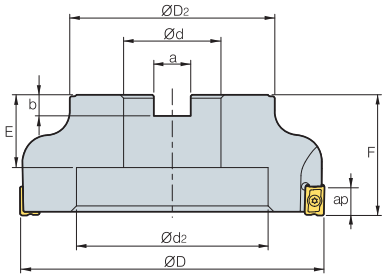


Fig. 2

AA 90°
- AR : −6°
- RR : −19°~−13°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg	Bolt	Fig.
RM4PCM	**3040HR**	4	40	35	16	9	14	8.4	5.6	19	40	9.0	0.24	SB0825	1
	3040HR-M	5	40	35	16	9	14	8.4	5.6	19	40	9.0	0.23	SB0825	1
	3050HR	5	50	42	22	11	18	10.4	6.3	20	40	9.0	0.36	SB1025	1
	3050HR-M	7	50	42	22	11	18	10.4	6.3	20	40	9.0	0.35	SB1025	1
	3063HR	7	63	49	22	11	18	10.4	6.3	20	40	9.0	0.61	SB1025	1
	3063HR-M	9	63	49	22	11	18	10.4	6.3	20	40	9.0	0.6	SB1025	1
RM4PC (RM4PCM)	**3080HR**	8	80	57	25.4(27)	14	20	9.5(12.4)	6.0(7.0)	25(23)	50	9.0	1.25(1.24)	SB1230	1
	3080HR-M	10	80	57	25.4(27)	14	20	9.5(12.4)	6.0(7.0)	25(23)	50	9.0	1.24(1.23)	SB1230	1
	3100HR	9	100	67	31.75(32)	18	26	12.7(14.4)	8.0(8.0)	33(25)	63(50)	9.0	2.46(1.94)	SB1630	1
	3100HR-M	12	100	67	31.75(32)	18	26	12.7(14.4)	8.0(8.0)	33(25)	63(50)	9.0	2.44(1.93)	SB1630	1

( )Metric Size

Available Inserts


LNEX-MF


LNEX-MM


LNEX-MA


LNMX-MF


LNMX-MM

Designation		Cermet		Coated								Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
LNEX	**100605PNR-MF**					●				●	●	●				E09
	100605PNR-MM					●		●		●	●	●				
	100605PNR-MA														●	
	100605PNL-MM					●										
	100608PNR-MF					●				●	●					
	100608PNR-MM					●				●						
LNMX	**100605PNR-MF**					●				●	●	●				
	100605PNR-MM					●		●	●	●	●	●				
	100608PNR-MF					●				●	●					
	100608PNR-MM					●	●				●					
	100605PNL-MM															

Available Arbors

Designation		Available Arbors	
		RM4PC	RM4PCM
RM4PC(M)	**3040HR** **3040HR-M**	-	BT□□-FMC16-□□
	3050HR **3050HR-M** **3063HR** **3063HR-M**	-	BT□□-FMC22-□□
	3080HR **3080HR-M**	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	3100HR **3100HR-M**	BT□□-FMA31.75-□□	BT□□-FMC32-□□

Parts

Specification	 Screw	 Wrench
Ø40~Ø100	FTKA0307	TW09S

Available Inserts E09
Available Arbors and bolt E318 ~ E320

RM4PC(M)4000

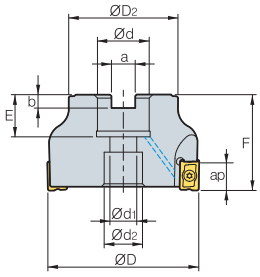


Fig. 1

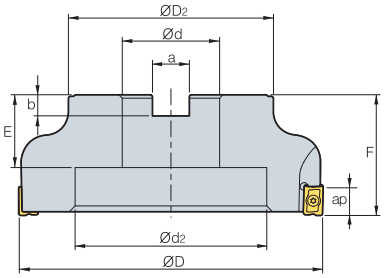


Fig. 2

AA 90°
- AR : −6°
- RR : −19°~−13°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg	Bolt	Fig.
RM4PCM	**4050HR**	3	50	46	22	11	18	10.4	6.3	20	40	14	0.36	SB1025	1
	4050HR-M	4	50	46	22	11	18	10.4	6.3	20	40	14	0.35	SB1025	1
	4063HR	4	63	49	22	11	18	10.4	6.3	20	40	14	0.56	SB1025	1
	4063HR-M	6	63	49	22	11	18	10.4	6.3	20	40	14	0.57	SB1025	1
RM4PC (MM4PCM)	**4080HR**	5	80	57	25.4(27)	14	20	9.5(12.4)	6.0(7.0)	25(23)	50	14	1.18(1.16)	SB1230	1
	4080HR-M	7	80	57	25.4(27)	14	20	9.5(12.4)	6.0(7.0)	25(23)	50	14	1.17(1.14)	SB1230	1
	4100HR	5	100	67	31.75(32)	18	26	12.7(14.4)	8.0(8.0)	33(25)	63(50)	14	2.35(1.84)	SB1630	1
	4100HR-M	8	100	67	31.75(32)	18	26	12.7(14.4)	8.0(8.0)	33(25)	63(50)	14	2.31(1.82)	SB1630	1
	4125HR	7	125	87	38.1(40)	22	32	15.9(16.4)	10(9.0)	35(30)	63	14	3.87(3.79)	SB2040	1
	4125HR-M	10	125	87	38.1(40)	22	32	15.9(16.4)	10(9.0)	35(30)	63	14	3.82(3.70)	SB2040	1
	4160R	8	160	107	50.8(40)	-	100	19(16.4)	11(9.0)	38(32)	63	14	5.0(4.75)	MBA	2
	4160R-M	12	160	107	50.8(40)	-	100	19(16.4)	11(9.0)	38(32)	63	14	4.97(4.71)	MBA	2

( )Metric Size

Available Inserts

LNEX-MF LNEX-MM LNEX-MA LNMX-MF LNMX-MM

Designation		Cermet		Coated								Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
LNEX	**151004PNR-MF**					●				●						E09
	151004PNR-MM							●								
	151004PNR-MA														●	
	151008PNR-MF									●	●	●				
	151008PNR-MM					●				●	●	●				
	151008PNR-MA														●	
	151008PNL-MM					●										
	151016PNR-MF					●				●						
	151016PNR-MM									●	●					
LNMX	**151004PNR-MF**					●				●						
	151004PNR-MM									●						
	151008PNR-MF					●					●	●				
	151008PNR-MM					●	●	●	●	●	●	●				
	151008PNL-MM															
	151016PNR-MF															
	151016PNR-MM					●										

Available Arbors

Designation		Available Arbors	
		RM4PC	RM4PCM
RM4PC(M)	**4050HR** **4050HR-M** **4063HR** **4063HR-M**	-	BT□□-FMC22-□□
	4080HR **4080HR-M**	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	4100HR **4100HR-M**	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	4125HR **4125HR-M**	BT□□-FMA38.1-□□	BT□□-FMB40-□□ BT□□-FMC40-□□
	4160R **4160R-M**	BT□□-FMA50.8-□□	

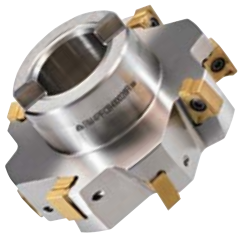
Parts

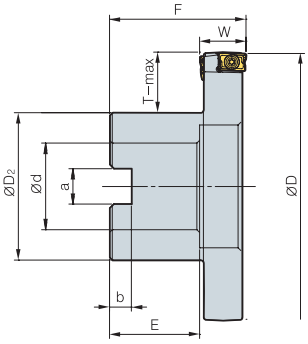
Specification	Screw	Wrench
Ø50~Ø160	FTKA0412B	TW15S

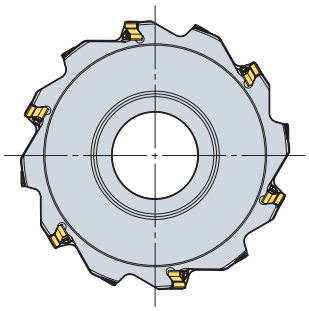
Available Inserts E09

Available Arbors and bolt E318 ~ E320

RM4PFCB3000







(mm)

Designation			ØD	ØD2	Ød	a	b	E	F	W	T-max
RM4PFCB	308015R	10	80	40	25.4	9.5	6	25	50	15	19
	308017R	10	80	40	25.4	9.5	6	25	50	17	19
	310015R	12	100	54	31.75	12.7	8	32	50	15	22
	310017R	12	100	54	31.75	12.7	8	32	50	17	22
	312515R	14	125	70	38.1	15.9	10	38	60	15	26
	312517R	14	125	70	38.1	15.9	10	38	60	17	26
	316015R	16	160	70	38.1	15.9	10	38	60	15	44
	316017R	16	160	70	38.1	15.9	10	38	60	17	44

Available Inserts

LNEX-MM

LNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
LNEX	100605PNR-MM					●		●		●	●	●				E09
	100605PNL-MM									●	●					
LNMX	100605PNR-MM					●		●	●	●	●	●				
	100605PNL-MM					●										

Available Arbors

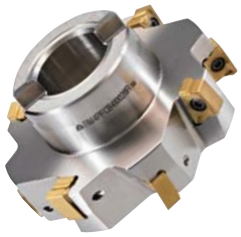
Designation		Available Arbors RM4PFCB	Designation		Available Arbors RM4PFCB
RM4PFCB	308015R 308017R	BT□□-FMA 25.4-□□	RM4PFCB	312515R 312517R 316015R 316017R	BT□□-FMA38.1-□□
	310015R 310017R	BT□□-FMA 31.75-□□			

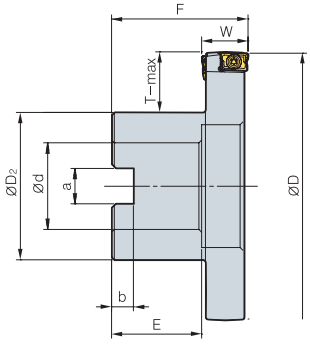
Parts

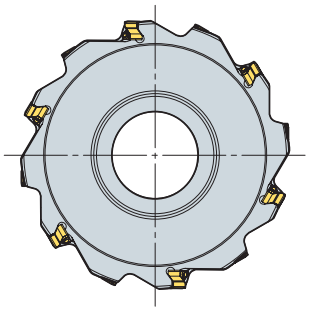
Specification	 Screw	 Wrench
Ø80~Ø160	FTKA0307	TW09S

Available Inserts E09 Available Arbors and bolt E318 ~ E320

RM4PFCB4000







(mm)

Designation		⊚	ØD	ØD2	Ød	a	b	E	F	W	T-max
RM4PFCB	408022R	6	80	40	25.4	9.5	6	25	50	22	19
	408024R	6	80	40	25.4	9.5	6	25	50	24	19
	408026R	6	80	40	25.4	9.5	6	25	50	26	19
	408028R	6	80	40	25.4	9.5	6	25	50	28	19
	410022R	8	100	54	31.75	12.7	8	32	50	22	22
	410024R	8	100	54	31.75	12.7	8	32	50	24	22
	410026R	8	100	54	31.75	12.7	8	32	50	26	22
	410028R	8	100	54	31.75	12.7	8	32	50	28	22
	412522R	10	125	70	38.1	15.9	10	38	60	22	26
	412524R	10	125	70	38.1	15.9	10	38	60	24	26
	412526R	10	125	70	38.1	15.9	10	38	60	26	26
	412528R	10	125	70	38.1	15.9	10	38	60	28	26
	416022R	12	160	70	38.1	15.9	10	38	60	22	44
	416024R	12	160	70	38.1	15.9	10	38	60	24	44
	416026R	12	160	70	38.1	15.9	10	38	60	26	44
	416028R	12	160	70	38.1	15.9	10	38	60	28	44

Available Inserts

LNEX-MM

LNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
LNEX	151008PNR-MM					●				●	●	●				E09
	151008PNL-MM					●										
LNMX	151008PNR-MM					●	●	●	●	●	●	●				
	151008PNL-MM															

Available Arbors

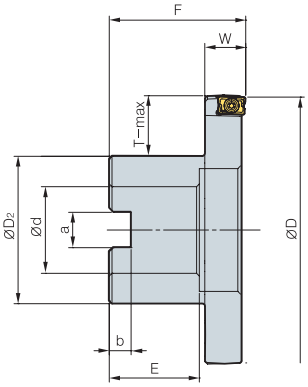
Designation		Available Arbors RM4PFCB	Designation		Available Arbors RM4PFCB
RM4PFCB	408022R 408024R 408026R 408028R	BT□□-FMA 25.4-□□	RM4PFCB	412522R 412524R 412526R 412528R 416022R 416024R 416026R 416028R	BT□□-FMA38.1-□□
	410022R 410024R 410026R 410028R	BT□□-FMA 31.75-□□			

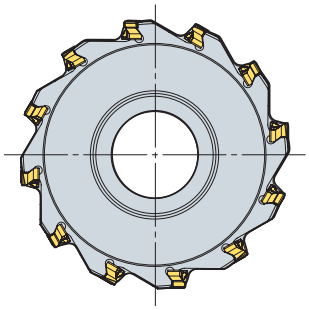
Parts

Specification	 Screw	 Wrench
Ø80~Ø160	FTKA0412B	TW15S

Available Inserts E09 Available Arbors and bolt E318 ~ E320

RM4PHCB3000





(mm)

Designation			ØD	ØD2	Ød	a	b	E	F	W	T-max
RM4PHCB	308015R	10	80	40	25.4	9.5	6	25	50	15	19
	310015R	12	100	54	31.75	12.7	8	32	50	15	22
	312515R	14	125	70	38.1	15.9	10	38	60	15	26
	316015R	16	160	70	38.1	15.9	10	38	60	15	44

Available Inserts


LNEX-MF


LNEX-MM


LNEX-MA


LNMX-MF


LNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
LNEX	100605PNR-MF					●				●	●	●				E09
	100605PNR-MM					●		●		●	●	●				
	100605PNR-MA														●	
	100608PNR-MF					●				●	●					
	100608PNR-MM					●				●						
LNMX	100605PNR-MF					●				●	●	●				
	100605PNR-MM					●		●	●	●	●	●				
	100608PNR-MF					●				●	●					
	100608PNR-MM					●	●				●					

Available Arbors

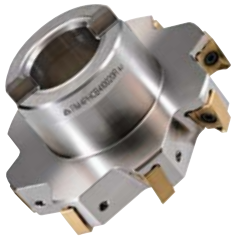
Designation		Available Arbors
		RM4PHCB
RM4PHCB	308015R	BT□□-FMA25.4-□□
	310015R	BT□□-FMA 31.75-□□
	312515R	BT□□-FMA38.1-□□
	316015R	

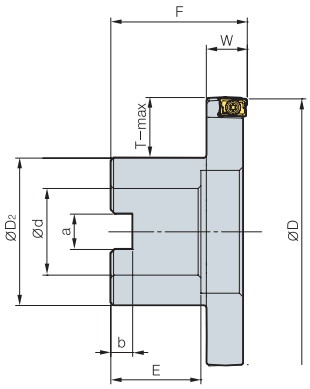
Parts

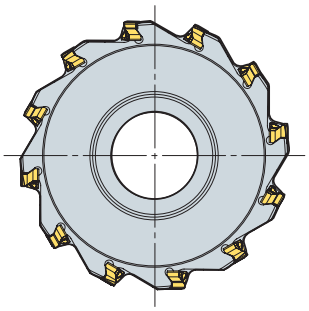
Specification	 Screw	 Wrench
Ø80~Ø160	FTKA0307	TW09S

Available Inserts E09 Available Arbors and bolt E318 ~ E320

RM4PHCB4000







(mm)

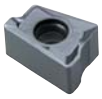
Designation		⊚	ØD	ØD2	Ød	a	b	E	F	W	T-max
RM4PHCB	408020R	6	80	40	25.4	9.5	6	25	50	20	19
	410020R	8	100	54	31.75	12.7	8	32	50	20	22
	412520R	10	125	70	38.1	15.9	10	38	60	20	26
	416020R	12	160	70	38.1	15.9	10	38	60	20	44

Available Inserts


LNEX-MF


LNEX-MM


LNEX-MA


LNMX-MF


LNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
LNEX	151004PNR-MF					●				●						E09
	151004PNR-MM							●								
	151004PNR-MA														●	
	151008PNR-MF									●	●	●				
	151008PNR-MM					●				●	●	●				
	151008PNR-MA														●	
	151016PNR-MF					●				●						
	151016PNR-MM									●	●					
LNMX	151004PNR-MF					●				●						
	151004PNR-MM									●						
	151008PNR-MF					●					●	●				
	151008PNR-MM					●	●	●	●	●	●	●				
	151016PNR-MF															
	151016PNR-MM					●										

Available Arbors

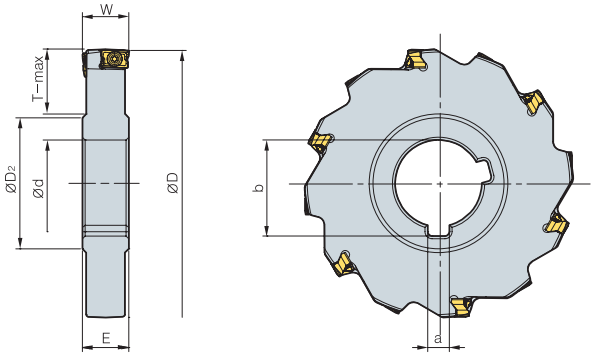
Designation		Available Arbors
		RM4PHCB
RM4PHCB	408020R	BT□□-FMA25.4-□□
	410020R	BT□□-FMA 31.75-□□
	412520R	BT□□-FMA38.1-□□
	416020R	

Parts

Specification	 Screw	 Wrench
Ø80~Ø160	FTKA0412B	TW15S

Available Inserts E09 Available Arbors and bolt E318 ~ E320

RM4PFCP3000



(mm)

Designation			ØD	ØD2	Ød	a	b	E	W	T-max
RM4PFCP	308015R	10	80	41.5	25.4	6.35	28	15	15	17
	308017R	10	80	41.5	25.4	6.35	28	17	17	17
	310015R	12	100	48	31.75	7.94	35.2	15	15	24
	310017R	12	100	48	31.75	7.94	35.2	17	17	24
	312515R	14	125	58	38.1	9.53	42.3	15	15	32
	312517R	14	125	58	38.1	9.53	42.3	17	17	32
	316015R	16	160	58	38.1	9.53	42.3	15	15	49
	316017R	16	160	58	38.1	9.53	42.3	17	17	49

Available Inserts

LNEX-MM

LNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
LNEX	100605PNR-MM					●		●		●	●	●				E09
	100605PNL-MM									●	●					
LNMX	100605PNR-MM					●		●	●	●	●	●				
	100605PNL-MM					●										

Available Arbors

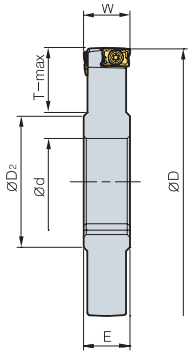
Designation		Available Arbors
		RM4PFCP
RM4PFCP	308015R 308017R	BT□□-SCA 25.4-□□
	310015R 310017R	BT□□-SCA 31.75-□□
	312515R 312517R 316015R 316017R	BT□□-SCA38.1-□□

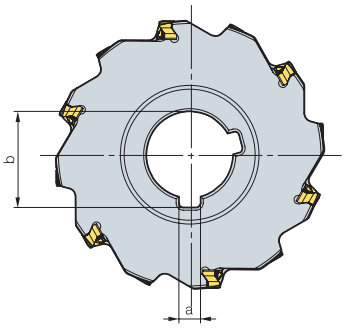
Parts

Specification	 Screw	 Wrench
Ø80~Ø160	FTKA0307	TW09S

Available Inserts E09 Available Arbors and bolt E318 ~ E320

RM4PFCP4000





(mm)

Designation			ØD	ØD2	Ød	a	b	E	W	T-max
RM4PFCP	408022R	6	80	41.5	25.4	6.35	28	22	22	17
	408024R	6	80	41.5	25.4	6.35	28	24	24	17
	408026R	6	80	41.5	25.4	6.35	28	26	26	17
	408028R	6	80	41.5	25.4	6.35	28	28	28	17
	410022R	8	100	48	31.75	7.94	35.2	22	22	24
	410024R	8	100	48	31.75	7.94	35.2	24	24	24
	410026R	8	100	48	31.75	7.94	35.2	26	26	24
	410028R	8	100	48	31.75	7.94	35.2	28	28	24
	412522R	10	125	58	38.1	9.53	42.3	22	22	32
	412524R	10	125	58	38.1	9.53	42.3	24	24	32
	412526R	10	125	58	38.1	9.53	42.3	26	26	32
	412528R	10	125	58	38.1	9.53	42.3	28	28	32
	416022R	12	160	58	38.1	9.53	42.3	22	22	49
	416024R	12	160	58	38.1	9.53	42.3	24	24	49
	416026R	12	160	58	38.1	9.53	42.3	26	26	49
	416028R	12	160	58	38.1	9.53	42.3	28	28	49

Available Inserts

LNEX-MM

LNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
LNEX	151008PNR-MM					●				●	●	●				E09
	151008PNL-MM					●										
LNMX	151008PNR-MM					●	●	●	●	●	●	●				
	151008PNL-MM															

Available Arbors

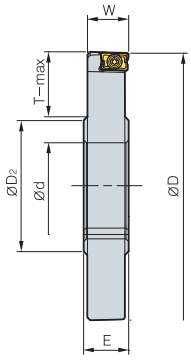
Designation		Available Arbors RM4PFCB	Designation		Available Arbors RM4PFCB
RM4PFCP	408022R	BT□□-SCA 25.4-□□	RM4PFCP	412522R	BT□□-SCA38.1-□□
	408024R			412524R	
	408026R			412526R	
	408028R			412528R	
	410022R	BT□□-SCA 31.75-□□		416022R	
	410024R			416024R	
	410026R			416026R	
	410028R			416028R	

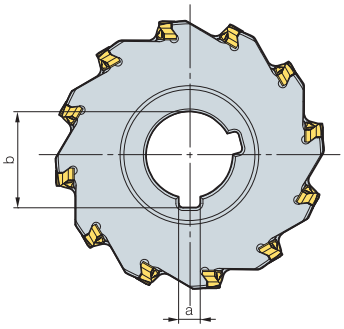
Parts

Specification	 Screw	 Wrench
Ø80~Ø160	FTKA0412B	TW15S

Available Inserts E09 Available Arbors and bolt E318 ~ E320

RM4PHCP3000





(mm)

Designation		⊙	ØD	ØD2	Ød	a	b	E	W	T-max
RM4PHCP	308015R	10	80	41.5	25.4	6.35	28	16.5	15.1	17
	310015R	12	100	48	31.75	7.94	35.2	16.5	15.1	24
	312515R	14	125	58	38.1	9.52	42.3	16.5	15.1	32
	316015R	16	160	58	38.1	9.52	42.3	16.5	15.1	49

Available Inserts


LNEX-MF


LNEX-MM


LNEX-MA


LNMX-MF


LNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
LNEX	100605PNR-MF					●				●	●	●				E09
	100605PNR-MM					●		●		●	●	●				
	100605PNR-MA														●	
	100608PNR-MF					●				●	●					
	100608PNR-MM					●				●						
LNMX	100605PNR-MF					●				●	●	●				
	100605PNR-MM					●		●	●	●	●	●				
	100608PNR-MF					●				●	●					
	100608PNR-MM					●	●				●					

Available Arbors

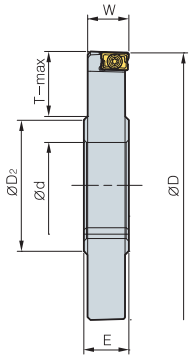
Designation		Available Arbors
		RM4PHCP
RM4PHCP	308015R	BT□□-SCA25.4-□□
	310015R	BT□□-SCA 31.75-□□
	312515R	BT□□-SCA38.1-□□
	316015R	

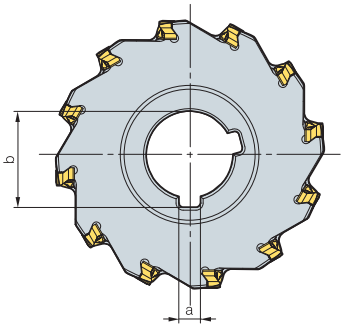
Parts

Specification	 Screw	 Wrench
Ø80~Ø160	FTKA0307	TW09S

Available Inserts E09 Available Arbors and bolt E318 ~ E320

RM4PHCP4000





(mm)

Designation			ØD	ØD2	Ød	a	b	E	W	T-max
RM4PHCP	408020R	6	80	41.5	25.4	6.35	28	22	19.8	17
	410020R	8	100	48	31.75	7.94	35.2	22	19.8	24
	412520R	10	125	58	38.1	9.53	42.3	22	19.8	32
	416020R	12	160	58	38.1	9.53	42.3	22	19.8	49

Available Inserts


LNEX-MF


LNEX-MM


LNEX-MA


LNMX-MF


LNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
LNEX	151004PNR-MF					●				●						E09
	151004PNR-MM							●								
	151004PNR-MA														●	
	151008PNR-MF									●	●	●				
	151008PNR-MM					●				●	●	●				
	151008PNR-MA														●	
	151016PNR-MF					●				●						
	151016PNR-MM									●	●					
LNMX	151004PNR-MF					●				●						
	151004PNR-MM									●						
	151008PNR-MF					●					●	●				
	151008PNR-MM					●	●	●	●	●	●	●				
	151016PNR-MF															
	151016PNR-MM					●										

Available Arbors

Designation		Available Arbors
		RM4PHCP
RM4PHCP	408020R	BT□□-SCA25.4-□□
	410020R	BT□□-SCA 31.75-□□
	412520R	BT□□-SCA38.1-□□
	416020R	

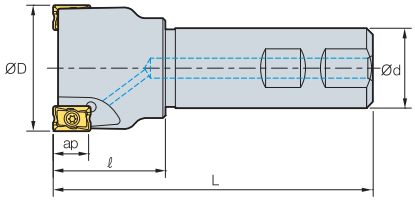
Parts

Specification	 Screw	 Wrench
Ø80~Ø160	FTKA0412B	TW15S

Available Inserts E09

Available Arbors and bolt E318 ~ E320

RM4PS3000



AA 90°
- AR : -6°
- RR : -39°~-16°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
RM4PS	3014HR-S16	1	14	16	23	90	9.0	0.11
	3016HR-S16	1	16	16	25	90	9.0	0.11
	3018HR-S16	2	18	16	23	90	9.0	0.12
	3020HR-S20	2	20	20	30	100	9.0	0.21
	3020HR-S20M	3	20	20	30	100	9.0	0.21
	3025HR-S25	2	25	25	35	115	9.0	0.38
	3025HR-S25M	3	25	25	35	115	9.0	0.38
	3032HR-S32	3	32	32	40	125	9.0	0.69
	3032HR-S32M	4	32	32	40	125	9.0	0.7
	3040HR-S32	4	40	32	42	130	9.0	0.86
	3040HR-S32M	5	40	32	42	130	9.0	0.85
	3040HR-S40	4	40	40	42	130	9.0	1.17
	3040HR-S40M	5	40	40	42	130	9.0	1.17
	3040HR-S42	4	40	42	42	130	9.0	1.26
	3040HR-S42M	5	40	42	42	130	9.0	1.25
	3050HR-S32	5	50	32	45	135	9.0	1.06
	3050HR-S32M	7	50	32	45	135	9.0	1.05
	3050HR-S40	5	50	40	45	135	9.0	1.38
	3050HR-S40M	7	50	40	45	135	9.0	1.37
	3050HR-S42	5	50	42	45	135	9.0	1.48
	3050HR-S42M	7	50	42	45	135	9.0	1.48

Available Inserts


LNEX-MF


LNEX-MM


LNEX-MA


LNMX-MF


LNMX-MM

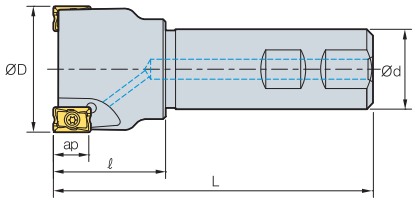
Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
LNEX	100605PNR-MF					●				●	●	●				E09
	100605PNR-MM					●		●		●	●	●				
	100605PNR-MA														●	
	100605PNL-MM									●	●					
	100608PNR-MF					●				●	●					
	100608PNR-MM					●				●						
LNMX	100605PNR-MF					●				●	●	●				
	100605PNR-MM					●		●	●	●	●	●				
	100605PNL-MM					●										
	100608PNR-MF					●				●	●					
	100608PNR-MM					●	●				●					

Parts

Specification	Screw	Wrench
Ø14~Ø50	FTKA0307	TW09S

Available Inserts E09

RM4PS4000



AA 90°

- AR : -6°
- RR : -24°~-14°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
RM4PS	4032HR-S32	2	32	32	40	125	14	0.68
	4040HR-S32	3	40	32	42	125	14	0.83
	4040HR-S32M	4	40	32	43	125	14	0.83
	4040HR-S40	3	40	40	42	125	14	1.14
	4040HR-S42	3	40	42	42	125	14	1.23
	4050HR-S32	3	50	32	45	125	14	1.02
	4050HR-S32M	4	50	32	45	125	14	1.02
	4050HR-S40	3	50	40	45	125	14	1.35
	4050HR-S40M	4	50	40	45	125	14	1.34
	4050HR-S42	3	50	42	45	125	14	1.45
	4050HR-S42M	4	50	42	45	125	14	1.45
	4063HR-S32	4	63	32	45	125	14	1.25
	4063HR-S32M	6	63	32	45	125	14	1.24
	4063HR-S40	4	63	40	45	125	14	1.62
	4063HR-S40M	6	63	40	45	125	14	1.61
	4063HR-S42	4	63	42	45	125	14	1.71
	4063HR-S42M	6	63	42	45	125	14	1.7

Available Inserts


LNEX-MF


LNEX-MM


LNEX-MA


LNMX-MF


LNMX-MM

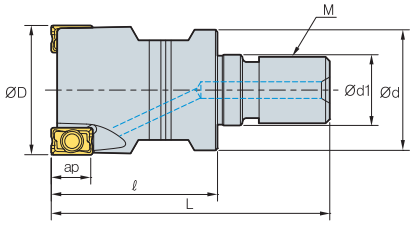
Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
LNEX	151004PNR-MF					●				●						E09
	151004PNR-MM							●								
	151004PNR-MA														●	
	151008PNR-MF									●	●	●				
	151008PNR-MM					●				●	●	●				
	151008PNR-MA														●	
	151016PNR-MF					●				●						
	151016PNR-MM									●	●					
LNMX	151004PNR-MF					●				●						
	151004PNR-MM									●						
	151008PNR-MF					●					●	●				
	151008PNR-MM					●	●	●	●	●	●	●				
	151016PNR-MF															
	151016PNR-MM					●										

Parts

Specification	Screw	Wrench
Ø32~Ø63	FTKA0412B	TW15S

Available Inserts E09

RM4PM3000



AA 90°
- AR : -6°
- RR : -39°~-16°

(mm)

Designation			ØD	Ød	Ød1	ℓ	L	M	ap	kg
RM4PM	3014HR-M06	1	14	12	6.5	25	40	M06	9.0	0.02
	3016HR-M08	1	16	14.5	8.5	25	42	M08	9.0	0.02
	3018HR-M08	2	18	14.5	8.5	25	42	M08	9.0	0.03
	3020HR-M10	2	20	18	10.5	30	51	M10	9.0	0.06
	3025HR-M12	2	25	23	12.5	35	59	M12	9.0	0.11
	3032HR-M16	3	32	28	17	40	67	M16	9.0	0.21
	3040HR-M16	4	40	28	17	40	67	M16	9.0	0.26
	3050HR-M16	5	50	30	17	45	72	M16	9.0	0.41

Available Inserts


LNEX-MF


LNEX-MM


LNEX-MA


LNMX-MF


LNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
LNEX	100605PNR-MF					●				●	●	●				E09
	100605PNR-MM					●		●		●	●	●				
	100605PNR-MA														●	
	100605PNL-MM									●	●					
	100608PNR-MF					●				●	●					
	100608PNR-MM					●				●						
LNMX	100605PNR-MF					●				●	●	●				
	100605PNR-MM					●		●	●	●	●	●				
	100605PNL-MM					●										
	100608PNR-MF					●				●	●					
	100608PNR-MM					●	●				●					

Available Adaptor

Designation		Available Adaptor
RM4PM	3014HR-M06	MAT - M06
	3016HR-M08	MAT - M08
	3018HR-M08	
	3020HR-M10	MAT - M10
	3025HR-M12	MAT - M12
	3032HR-M16	MAT - M16
	3040HR-M16	
	3050HR-M16	

Designation : RM4PM3032HR-M16
Modular Head Threading Measure size(M16)

II

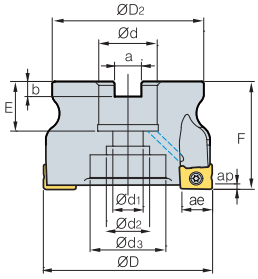
Adaptor Spec. : MAT-M16-035-S32S
Adaptor Threading Measure(M16)

Parts

Specification	Screw	Wrench
Ø14~Ø50	FTKA0307	TW09S

Available Inserts E09 Available Adaptors E281~E282

RM4ZC(M)3000/4000 New



AA 90°

- AR : -11°
- RR : -12°~-10°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	Ød3	a	b	E	F	ap	ae	kg
RM4ZCM	3040HR	4	40	37	16	9	14	-	8.4	5.6	19	40	1.5	9.0	0.21
	3050HR	5	50	47	22	11	18	-	10.4	6.3	20	40	1.5	9.0	0.33
	3052HR	5	52	48	22	11	18	-	10.4	6.3	20	40	1.5	9.0	0.37
	4063HR	5	63	58	22	11	18	-	10.4	6.3	20	40	2.5	14.0	0.56
RM4ZC (RM4ZCM)	4066HR	5	66	61	25.4(27)	14	20	-	9.5(12.4)	6(7)	25	50	2.5	14.0	0.74
	4080HR	6	80	70	25.4(27)	14	20	35	9.5(12.4)	6(7)	25(23)	50	2.5	14.0	1.09
	4100HR	7	100	80	31.75(32)	18	26	42	12.7(14.4)	8(8)	25(33)	63(50)	2.5	14.0	1.71

( )Metric Size

Available Inserts

LNEX-MM

LNMX-MM

Designation			Cermet		Coated									Uncoated			Page
			CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
3000 type	LNEX	100605PNL-MM									●	●					E09
	LNMX	100605PNL-MM					●										
4000 type	LNEX	151008PNL-MM					●										
	LNMX	151008PNL-MM															

Available Arbors

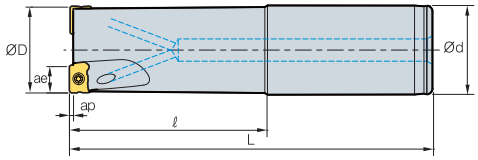
Designation		Available Arbors	
		RM4ZC	RM4ZCM
RM4ZCM	3040HR	BT□□-FMC16-□□ BT□□-SCA16-□□	
	3050HR	BT□□-FMC22-□□	
	3052HR		
RM4ZCM RM4ZC(M)	4063HR	BT□□-FMC22-□□	
	4066HR	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	4080HR		
	4100HR	BT□□-FMA31.75-□□ BT□□-SCA31.75-□□	BT□□-FMC32-□□

Parts

Specification	Screw	Wrench
Ø40~Ø52	FTKA0307	TW09S
Ø63~Ø100	FTKA0412B	TW15S

Available Inserts E09 Available Arbors and bolt E318 ~ E320

RM4ZS3000 New

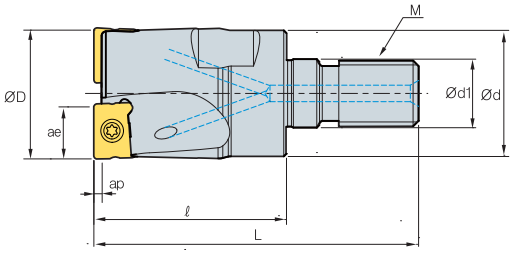


AA 90°
- AR : -11°
- RR : -17°~-14°

(mm)

Designation			ØD	Ød	ℓ	L	ap	ae	kg
RM4ZS	3025HR-L25	2	25	25	120	200	1.5	9.0	0.62
	3032HR-L32	3	32	32	120	210	1.5	9.0	1.13
	3040HR-L32	4	40	32	120	250	1.5	9.0	1.53

RM4ZM3000 New



AA 90°
- AR : −11°
- RR : −17°~−14°

(mm)

Designation			ØD	Ød	Ød1	ℓ	L	M	ap	ae	kg
RM4ZM	3025HR-M12	2	25	23	12.5	35	59	M12	1.5	9.0	0.11
	3032HR-M16	3	32	29	17	40	67	M16	1.5	9.0	0.21
	3040HR-M16	4	40	29	17	40	67	M16	1.5	9.0	0.28

( )Metric Size

Available Inserts

LNEX-MM

LNMX-MM

Designation		Cermet		Coated								Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
LNEX	100605PNL-MM									●	●					E09
LNMX	100605PNL-MM					●										

Parts

Specification	Screw	Wrench
Ø25~Ø40	FTKA0307	TW09S

Available Inserts E09

RM8AC(M)4000

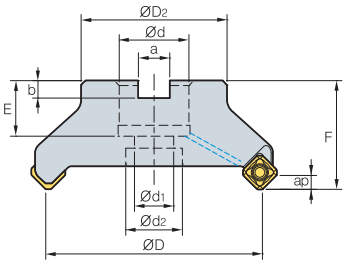


Fig. 1

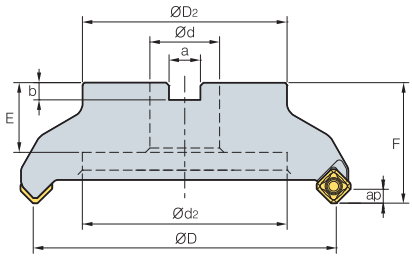


Fig. 2

AA 45°
- AR : -6°
- RR : -9°~-6°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg	Fig.
RM8ACM	4050HR-M	4	50	49	22	11	18	10.4	6.3	20	40	6.0	0.5	1
	4050HR-H	6	50	49	22	11	18	10.4	6.3	20	40	6.0	0.5	1
	4063HR-M	6	63	49	22	11	18	10.4	6.3	20	40	6.0	0.7	1
	4063HR-H	8	63	49	22	11	18	10.4	6.3	20	40	6.0	0.7	1
RM8AC (RM8ACM)	4080HR	5	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	6.0	1.2	1
	4080HR-M	7	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	6.0	1.2	1
	4080HR-H	10	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	6.0	1.3	1
	4100HR	6	100	67	31.75(32)	18	26	12.7(14.4)	8	33(25.5)	63(50)	6.0	1.7	1
	4100HR-M	8	100	67	31.75(32)	18	26	12.7(14.4)	8	33(25.5)	63(50)	6.0	1.7	1
	4100HR-H	12	100	67	31.75(32)	18	26	12.7(14.4)	8	33(25.5)	63(50)	6.0	1.7	1
	4125HR	8	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	36(30)	63	6.0	3.6	1
	4125HR-M	10	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	36(30)	63	6.0	3.6	1
	4125HR-H	16	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	36(30)	63	6.0	3.7	1
	4160R	10	160	107	50.8(40)	-	107	19(16.4)	11(9)	38(32)	63	6.0	4.8	2
	4160R-M	12	160	107	50.8(40)	-	107	19(16.4)	11(9)	38(32)	63	6.0	5.3	2
	4160R-H	20	160	107	50.8(40)	-	107	19(16.4)	11(9)	38(32)	63	6.0	5.4	2
	4200R-M	14	200	130	47.625(60)	-	135	25.4(25.7)	14	38(32)	63	6.0	7.1	2
	4200R-H	24	200	130	47.625(60)	-	135	25.4(25.7)	14	38(32)	63	6.0	7.1	2
	4250R-M	16	250	180	47.625(60)	-	180	25.4(25.7)	14	38(32)	63	6.0	11.9	2
	4250R-H	30	250	180	47.625(60)	-	180	25.4(25.7)	14	38(32)	63	6.0	12.0	2
	4315R	18	315	240	47.625(60)	-	238	25.4(25.7)	14	38	63	6.0	18.8(18.6)	2
	4315R-M	20	315	240	47.625(60)	-	238	25.4(25.7)	14	38	63	6.0	18.8(18.6)	2
	4400R-M	28	400	260	47.625(60)	-	238	25.4(25.7)	14	38	80	6.0	37.7(37.4)	2

( )Metric Size

Available Inserts

SNEX-MF SNEX-ML SNEX-MM SNEX-MA SNEX-W SNMX-MF SNMX-MM

Designation		Cermet		Coated								Uncoated			Page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNEX	1206ANN-MF					●	●			●	●	●				E18 E19
	1206ANN-ML										●	●				
	1206ANN-MM			●		●	●		●	●	●	●				
	1206ANN-MA															
	1206ANN-W					●				●	●					
SNMX	1206ANN-MF					●	●			●	●	●				
	1206ANN-MM			●	●	●	●		●	●	●	●				

Available Arbors

Designation		Available Arbors	
		RM8AC	RM8ACM
RM8ACM	4050HR-□	-	BT□□-FMC22-□□
	4063HR-□		
RM8AC (RM8ACM)	4080HR-□	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	4100HR-□	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	4125HR-□	BT□□-FMA38.1-□□	BT□□-FMB40-□□
	4160R-□	BT□□-FMA50.8-□□	BT□□-FMC40-□□
	4200R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□
	4250R-□		
	4315R-□		
	4400R-□		

Parts

Specification	Screw	Wrench
Ø50~Ø400	FTKA0410	TW15S

Available Inserts E18, E19 Available Arbors and bolt E318 ~ E320

RMH8AC(M)4000 New

Shim type

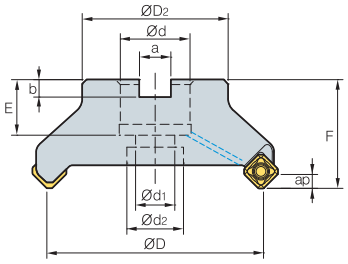


Fig. 1

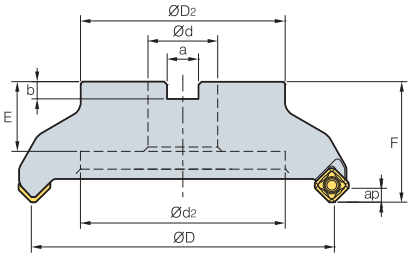


Fig. 2

AA 45°
- AR : -6°
- RR : -9°~-6°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg	Fig.
RMH8AC (RMH8ACM)	4080HR-M	7	80	57	25.4(27)	14	20	9.5(12.4)	25(23)	50	6.0	6.0	1.2	1
	4100HR-M	8	100	67	31.75(32)	18	26	12.7(14.4)	33(25.5)	63(50)	6.0	6.0	1.7	1
	4125HR-M	10	125	87	38.1(40)	22	32	15.9(16.4)	36(30)	63	6.0	6.0	3.6	1
	4160R-M	12	160	107	50.8(40)	-	107	19(16.4)	38(32)	63	6.0	6.0	5.3	2
	4200R-M	14	200	130	47.625(60)	-	135	25.4(25.7)	38(32)	63	6.0	6.0	7.1	2
	4250R-M	16	250	180	47.625(60)	-	180	25.4(25.7)	38(32)	63	6.0	6.0	11.9	2
	4315R-M	20	315	240	47.625(60)	-	238	25.4(25.7)	38	63	6.0	6.0	18.8(18.6)	2
	4400R-M	26	400	260	47.625(60)	-	238	25.4(25.7)	38	80	6.0	6.0	37.7(37.4)	2

( )Metric Size

Available Inserts


SNEX-MF


SNEX-ML


SNEX-MM


SNEX-MA


SNEX-W


SNMX-MF


SNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNEX	1206ANN-MF					●	●			●	●	●				E18 E19
	1206ANN-ML										●	●				
	1206ANN-MM			●		●	●		●	●	●	●				
	1206ANN-MA															
	1206ANN-W					●				●	●					
SNMX	1206ANN-MF					●	●			●	●	●				
	1206ANN-MM			●	●	●	●		●	●	●	●				

Available Arbors

Designation		Available Arbors	
		RMH8AC	RMH8ACM
RMH8AC (RMH8ACM)	4080HR-□	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	4100HR-□	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	4125HR-□	BT□□-FMA38.1-□□	BT□□-FMB40-□□
	4160R-□	BT□□-FMA50.8-□□	BT□□-FMC40-□□
	4200R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□
	4250R-□		
	4315R-□		
	4400R-□		

Parts

Specification	Screw	Shim	Shim Screw	Wrench
Ø80~Ø400	FTKA0412B	SS42RM8	SHXN0609F	TW15S

Available Inserts E18, E19 Available Arbors and bolt E318 ~ E320

RM8AC(M)5000

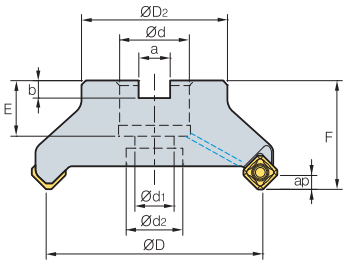


Fig. 1

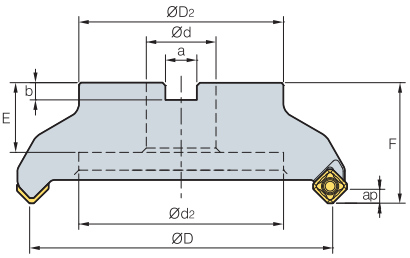


Fig. 2

AA 45°
- AR : -6°
- RR : -9°~-6°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg	Fig.
RM8AC (RM8ACM)	5080HR-M	6	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	7.5	1.2	1
	5100HR-M	7	100	67	31.75(32)	18	26	12.7(14.4)	8.0	33(25)	63(50)	7.5	2.5(1.8)	1
	5125HR-M	8	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	35(30)	63	7.5	3.6	1
	5160R-M	10	160	107	50.8(40)	-	107	19(16.4)	11(9)	38(32)	63	7.5	5(4.56)	2
	5200R-M	12	200	130	47.625(60)	-	135	25.4(25.7)	14.0	38	63	7.5	7.1(6.8)	2
	5250R-M	15	250	180	47.625(60)	-	180	25.4(25.7)	14.0	38	63	7.5	11.9(10.6)	2
	5315R-M	20	315	240	47.625(60)	-	238	25.4(25.7)	14.0	38	63	7.5	19.1(18.9)	2
	5400R-M	28	400	260	47.625(60)	-	238	25.4(25.7)	14.0	38	80	7.5	37.7(37.5)	2

( )Metric Size

Available Inserts


SNEX-MF

SNEX-ML


SNEX-MM


SNMX-MF


SNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNEX	1507ANN-MF					●				●	●	●				E18 E19
	1507ANN-ML										●	●				
	1507ANN-MM					●				●	●	●				
SNMX	1507ANN-MF					●				●	●	●				
	1507ANN-MM					●	●			●	●	●				

Available Arbors

Designation		Available Arbors	
		RM8AC	RM8ACM
RM8AC (RM8ACM)	5080HR-□	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	5100HR-□	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	5125HR-□	BT□□-FMA38.1-□□	BT□□-FMB40-□□
	5160R-□	BT□□-FMA50.8-□□	BT□□-FMC40-□□
	5200R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□
	5250R-□		
	5315R-□		
	5400R-□		

Parts

Specification	 Screw	 Wrench
Ø80~Ø400	FTGA0513	TW20-100

Available Inserts E18, E19 Available Arbors and bolt E318 ~ E320

RMH8AC(M)5000 New

Shim type

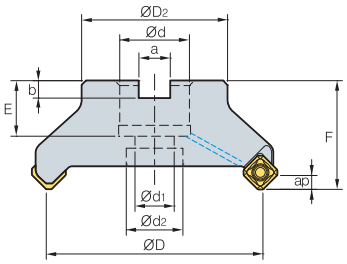


Fig. 1

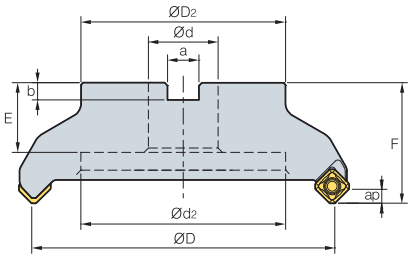


Fig. 2

AA 45°
- AR : -6°
- RR : -9°~-6°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg	Fig.
RMH8AC (RMH8ACM)	5080HR-M	6	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	7.5	1.2	1
	5100HR-M	7	100	67	31.75(32)	18	26	12.7(14.4)	8.0	33(25)	63(50)	7.5	2.5(1.8)	1
	5125HR-M	8	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	36(30)	63	7.5	3.6	1
	5160R-M	10	160	107	50.8(40)	-	107	19(16.4)	11(9)	38(32)	63	7.5	5(4.56)	2
	5200R-M	12	200	130	47.625(60)	-	135	25.4(25.7)	14.0	38(32)	63	7.5	7.1(6.8)	2
	5250R-M	15	250	180	47.625(60)	-	180	25.4(25.7)	14.0	38(32)	63	7.5	11.9(10.6)	2
	5315R-M	20	315	240	47.625(60)	-	238	25.4(25.7)	14.0	38	63	7.5	19.1(18.9)	2
	5400R-M	22	400	260	47.625(60)	-	238	25.4(25.7)	14.0	38	80	7.5	37.7(37.5)	2

( )Metric Size

Available Inserts

SNEX-MF

SNEX-ML

SNEX-MM

SNMX-MF

SNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNEX	1507ANN-MF					●				●	●	●				E18 E19
	1507ANN-ML										●	●				
	1507ANN-MM					●				●	●	●				
SNMX	1507ANN-MF					●				●	●	●				
	1507ANN-MM					●	●			●	●	●				

Available Arbors

Designation		Available Arbors	
		RMH8AC	RMH8ACM
RMH8AC (RMH8ACM)	5080HR-□	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	5100HR-□	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	5125HR-□	BT□□-FMA38.1-□□	BT□□-FMB40-□□
	5160R-□	BT□□-FMA50.8-□□	BT□□-FMC40-□□
	5200R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□
	5250R-□		
	5315R-□		
	5400R-□		

Parts

Specification	Screw	Shim	Shim Screw	Wrench
Ø80~Ø400	FTGA0513	SS53RM8	SHXN0712F	TW20-100

Available Inserts E18, E19 Available Arbors and bolt E318 ~ E320

RM8EC(M)4000

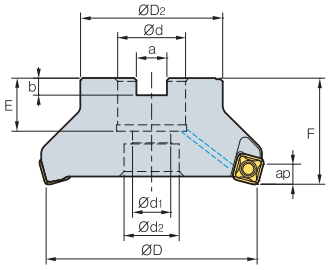


Fig. 1

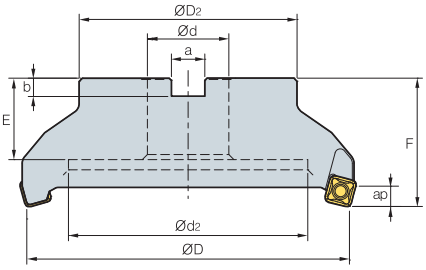


Fig. 2

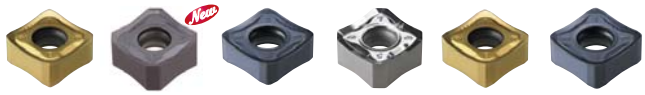
- AR : -6°
- RR : -8°~-6°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg	Fig.
RM8ECM	**4050HR-M**	4	50	49	22	11	18	10.4	6.3	20	40	9.0	0.4	1
	4063HR-M	6	63	49	22	11	18	10.4	6.3	20	40	9.0	0.6	1
RM8EC (RM8ECM)	**4080HR**	5	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	9.0	1.2	1
	4080HR-M	7	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	9.0	1.1	1
	4100HR	6	100	67	31.75(32)	18	26	12.7(14.4)	8	33(25)	63(50)	9.0	1.6	1
	4100HR-M	8	100	67	31.75(32)	18	26	12.7(14.4)	8	33(25)	63(50)	9.0	2.5	1
	4125HR	8	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	35(29)	63	9.0	2.9(3.3)	1
	4125HR-M	10	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	35(29)	63	9.0	3.0	1
	4160R	10	160	107	50.8(40)	-	107	19(16.4)	11(9)	38(32)	63	9.0	4.4	2
	4160R-M	12	160	107	50.8(40)	-	107	19(16.4)	11(9)	38(32)	63	9.0	4.0	2
	4200R-M	16	200	130	47.625(60)	-	135	25.4(25.7)	14	38(32)	63	9.0	5.9	2
	4250R-M	16	250	180	47.625(60)	-	180	25.4(25.7)	14	38	63	9.0	10.9(10.6)	2
	4315R-M	20	315	240	47.625(60)	-	238	25.4(25.7)	14	38	63	9.0	18.1(17.9)	2
	4400R-M	28	400	260	47.625(60)	-	238	25.4(25.7)	14	38	80	9.0	31.8(31.5)	2

( )Metric Size

Available Inserts



SNEX-MF **SNEX-ML** **SNEX-MM** **SNEX-MA** **SNMX-MF** **SNMX-MM**

Designation		Cermet		Coated								Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNEX	**1206ENN-MF**									●	●	●				E18
	1206ENN-ML										●	●				
	1206ENN-MM					●	●			●	●	●				
	1206ENN-MA														●	E19
SNMX	**1206ENN-MF**					●				●	●	●				
	1206ENN-MM					●	●			●	●					

Available Arbors

Designation		Available Arbors	
		RM8EC	RM8ECM
RM8ECM	**4050HR-□**	-	BT□□-FMC22-□□
	4063HR-□		
RM8EC (RM8ECM)	**4080HR-□**	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	4100HR-□	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	4125HR-□	BT□□-FMA38.1-□□	BT□□-FMB40-□□
	4160R-□	BT□□-FMA50.8-□□	BT□□-FMC40-□□
	4200R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□
	4250R-□		
	4315R-□		
	4400R-□		

Parts

Specification	Screw	Wrench
Ø50~Ø400	PTKA0411-R3	TW15S

Available Inserts **E18, E19** Available Arbors and bolt **E318 ~ E320**

RMH8EC(M)4000 New

Shim type

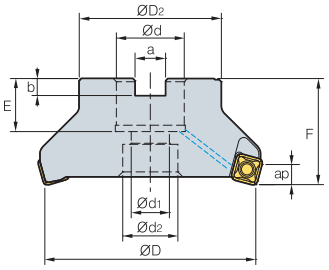


Fig. 1

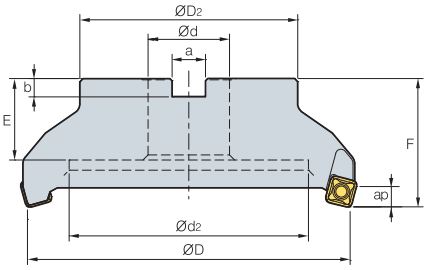


Fig. 2

AA 75°
- AR : -6°
- RR : -8°~-6°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg	Fig.
RMH8EC (RMH8ECM)	4080HR-M	7	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	9.0	1.1	1
	4100HR-M	8	100	67	31.75(32)	18	26	12.7(14.4)	8	33(25.5)	63(50)	9.0	2.5	1
	4125HR-M	10	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	36(30)	63	9.0	3.0	1
	4160R-M	12	160	107	50.8(40)	-	107	19(16.4)	11(9)	38(32)	63	9.0	4.0	2
	4200R-M	16	200	130	47.625(60)	-	135	25.4(25.7)	14	38(32)	63	9.0	5.9	2
	4250R-M	16	250	180	47.625(60)	-	180	25.4(25.7)	14	38(32)	63	9.0	10.9(10.6)	2
	4315R-M	20	315	240	47.625(60)	-	238	25.4(25.7)	14	38	63	9.0	18.1(17.9)	2
	4400R-M	24	400	260	47.625(60)	-	238	25.4(25.7)	14	38	80	9.0	31.8(31.5)	2

( )Metric Size

Available Inserts


SNEX-MF


SNEX-ML


SNEX-MM


SNEX-MA


SNMX-MF


SNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNEX	1206ENN-MF									●	●	●				E18 E19
	1206ENN-ML										●	●				
	1206ENN-MM					●	●			●	●	●				
	1206ENN-MA														●	
SNMX	1206ENN-MF					●				●	●	●				
	1206ENN-MM					●	●			●	●					

Available Arbors

Designation		Available Arbors	
		RMH8EC	RMH8ACM
RMH8EC (RMH8ECM)	4080HR-□	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	4100HR-□	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	4125HR-□	BT□□-FMA38.1-□□	BT□□-FMB40-□□
	4160R-□	BT□□-FMA50.8-□□	BT□□-FMC40-□□
	4200R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□
	4250R-□		
	4315R-□		
	4400R-□		

Parts

Specification	Screw	Shim	Shim Screw	Wrench
Ø80~Ø400	PTKA0411-R3	SS42RM8	SHXN0609F	TW15S

Available Inserts E18, E19 Available Arbors and bolt E318 ~ E320

RM8EC(M)5000

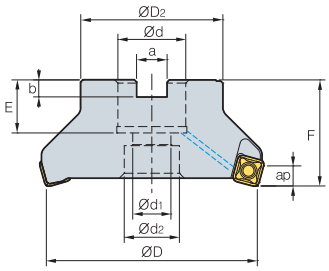


Fig. 1

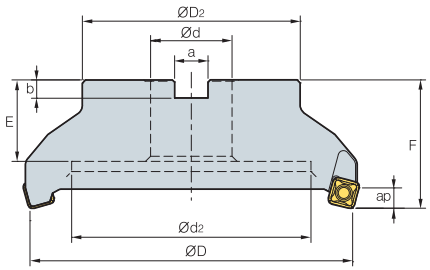


Fig. 2

AA 75°
- AR : -6°
- RR : -8°~-6°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg	Fig.
RM8EC (RM8ECM)	5080HR-M	6	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	11.0	1.1	1
	5100HR-M	7	100	67	31.75(32)	18	26	12.7(14.4)	8.0	33(25)	63(50)	11.0	2.1(1.7)	1
	5125HR-M	8	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	35(30)	63	11.0	3.4(3.3)	1
	5160R-M	10	160	107	50.8(40)	-	107	19(16.4)	11(9)	38(32)	63	11.0	4.4(4.1)	2
	5200R-M	12	200	130	47.625(60)	-	135	25.4(25.7)	14.0	38	63	11.0	6.4(6.1)	2
	5250R-M	15	250	180	47.625(60)	-	180	25.4(25.7)	14.0	38	63	11.0	11.0(10.7)	2
	5315R-M	20	315	240	47.625(60)	-	238	25.4(25.7)	14.0	38	63	11.0	18.0(17.7)	2
	5400R-M	28	400	260	47.625(60)	-	238	25.4(25.7)	14.0	38	80	11.0	35.7(35.4)	2

( )Metric Size

Available Inserts


SNEX-MF

SNEX-ML


SNEX-MM


SNMX-MF


SNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNEX	1507ENN-MF					●				●	●	●				E18 E19
	1507ENN-ML										●	●				
	1507ENN-MM					●				●	●	●				
SNMX	1507ENN-MF					●				●	●	●				
	1507ENN-MM					●	●			●	●	●				

Available Arbors

Designation		Available Arbors	
		RM8EC	RM8ECM
RM8EC (RM8ECM)	5080HR-□	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	5100HR-□	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	5125HR-□	BT□□-FMA38.1-□□	BT□□-FMB40-□□
	5160R-□	BT□□-FMA50.8-□□	BT□□-FMC40-□□
	5200R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□
	5250R-□		
	5315R-□		
	5400R-□		

Parts

Specification	 Screw	 Wrench
Ø80~Ø400	FTGA0513	TW20-100

Available Inserts E18, E19 Available Arbors and bolt E318 ~ E320

RMH8EC(M)5000 New

Shim type

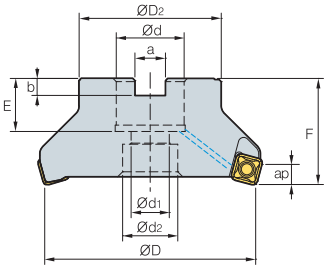


Fig. 1

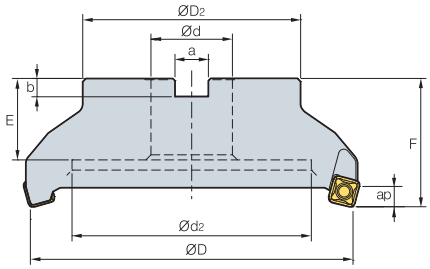


Fig. 2

- AR : -6°
- RR : -8°~-6°

(mm)

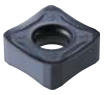
Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg	Fig.
RMH8EC (RMH8ECM)	5080HR-M	6	63	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	11.0	1.1	1
	5100HR-M	7	80	67	31.75(32)	18	26	12.7(14.4)	8.0	33(25.5)	63(50)	11.0	2.1(1.7)	1
	5125HR-M	8	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	36(30)	63	11.0	3.4(3.3)	1
	5160HR-M	10	160	107	50.8(60)	-	107	19(16.4)	11(9)	38(32)	63	11.0	4.4(4.1)	2
	5200R-M	12	200	130	47.625(60)	-	135	25.4(25.7)	14.0	38(32)	63	11.0	6.4(6.1)	2
	5250R-M	15	250	180	47.625(60)	-	180	25.4(25.7)	14.0	38(32)	63	11.0	110(10.7)	2
	5315R-M	20	315	240	47.625(60)	-	238	25.4(25.7)	14.0	38	63	11.0	18.0(17.7)	2
	5400R-H	22	400	260	47.625(60)	-	238	25.4(25.7)	14.0	38	80	11.0	35.7(35.4)	2

( )Metric Size

Available Inserts


SNEX-MF


SNEX-ML


SNEX-MM


SNMX-MF


SNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNEX	1507ENN-MF					●				●	●	●				E18 E19
	1507ENN-ML										●	●				
	1507ENN-MM					●				●	●	●				
SNMX	1507ENN-MF					●				●	●	●				
	1507ENN-MM					●	●			●	●	●				

Available Arbors

Designation		Available Arbors	
		RMH8EC	RMH8ECM
RMH8EC (RMH8ECM)	5080HR-□	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	5100HR-□	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	5125HR-□	BT□□-FMA38.1-□□	BT□□-FMB40-□□
	5160R-□	BT□□-FMA50.8-□□	BT□□-FMC40-□□
	5200R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□
	5250R-□		
	5315R-□		
	5400R-□		

Parts

Specification	 Screw	 Shim	 Shim Screw	 Wrench
Ø80~Ø400	FTGA0513	SS53RM8	SHXN0712F	TW20-100

Available Inserts E18, E19 Available Arbors and bolt E318 ~ E320

RM8QC(M)4000

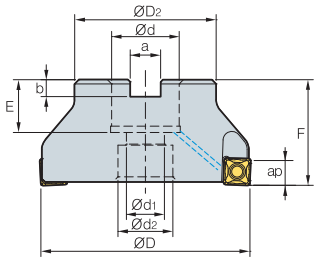


Fig. 1

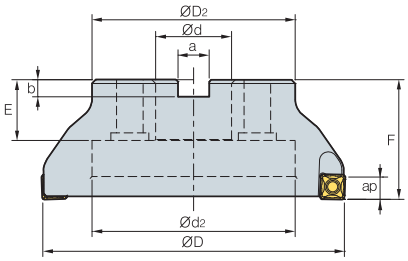


Fig. 2

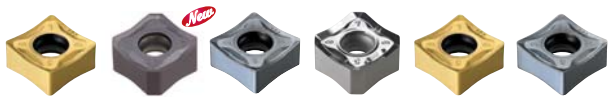
AA 88°
- AR : -6°
- RR : -8°~-6°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg	Fig.
RM8QCM	4063HR-M	6	63	49	22	11	18	10.4	6.3	20	40	11.5	0.6	1
	4063HR-H	8	63	49	22	11	18	10.4	6.3	20	40	11.5	0.6	1
RM8QC (RM8QCM)	4080HR-M	7	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	11.5	1.1	1
	4080HR-H	10	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	11.5	1.0	1
	4100HR-M	8	100	67	31.75(32)	18	26	12.7(14.4)	8	33(25.5)	63(50)	11.5	1.7	1
	4100HR-H	12	100	67	31.75(32)	18	26	12.7(14.4)	8	33(25.5)	63(50)	11.5	1.6	1
	4125HR-M	10	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	36(30)	63	11.5	3.3	1
	4125HR-H	14	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	36(30)	63	11.5	3.3	1
	4160R-M	12	160	107	50.8(40)	-	107	19(16.4)	11(9)	38(32)	63	11.5	3.9	2
	4160R-H	18	160	107	50.8(40)	-	107	19(16.4)	11(9)	38(32)	63	11.5	3.9	2
	4200R-M	14	200	130	47.625(60)	-	135	25.4(25.7)	14	38(32)	63	11.5	6.4	2
	4200R-H	22	200	130	47.625(60)	-	135	25.4(25.7)	14	38(32)	63	11.5	6.4	2

( )Metric Size

Available Inserts



SNEX-MF SNEX-ML SNEX-MM SNEX-MA SNMX-MF SNMX-MM

Designation		Cermet		Coated								Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNEX	1206QNN-MF					●				●	●	●				E17 E18 E19
	1206QNN-ML										●	●				
	1206QNN-MM					●				●	●	●				
	1206QNN-MA														●	
	120612-MF															
	120612-ML										●	●				
	120612-MM									●						
	120612-MA														●	
SNMX	1206QNN-MF					●				●	●	●				
	1206QNN-MM					●				●	●	●				
	120612-MF															
	120612-MM					●				●						

Available Arbors

Designation		Available Arbors	
		RM8QC	RM8QCM
RM8QCM	4063HR-□	-	BT□□-FMC22-□□
RM8QC (RM8QCM)	4080HR-□	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	4100HR-□	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	4125HR-□	BT□□-FMA38.1-□□	BT□□-FMB40-□□
	4160R-□	BT□□-FMA50.8-□□	BT□□-FMC40-□□
	4200R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□

Parts

Specification	Screw	Wrench
Ø63~Ø200	PTKA0411-R3	TW15S

Available Inserts E17, E18, E19 Available Arbors and bolt E318 ~ E320

RMH8QC(M)4000 Neu

Shim type

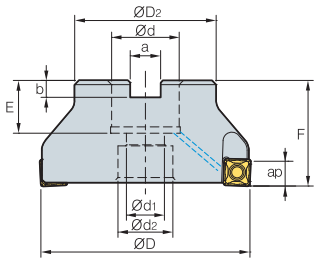


Fig. 1

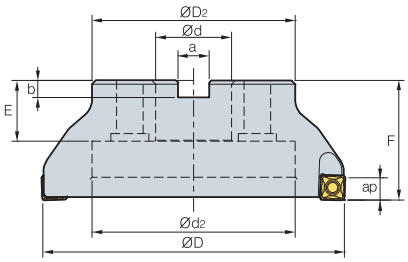


Fig. 2

AA 88°
- AR : -6°
- RR : -8°~-6°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg	Fig.
RMH8QC (RMH8QCM)	4080HR-M	7	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	11.5	1.1	1
	4100HR-M	8	100	67	31.75(32)	18	26	12.7(14.4)	8	33(25.5)	63(50)	11.5	2.5	1
	4125HR-M	10	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	36(30)	63	11.5	3.0	1
	4160R-M	12	160	107	50.8(40)	-	107	19(16.4)	11(9)	38(32)	63	11.5	4.0	2
	4200R-M	16	200	130	47.625(60)	-	135	25.4(25.7)	14	38(32)	63	11.5	5.9	2

( )Metric Size

Available Inserts

SNEX-MF

SNEX-ML

SNEX-MM

SNEX-MA

SNMX-MF

SNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNEX	1206QNN-MF					●				●	●	●				E18
	1206QNN-ML										●	●				
	1206QNN-MM					●				●	●	●				
	1206QNN-MA															
	120612-MF															
	120612-ML										●	●				
	120612-MM									●						
	120612-MA															
SNMX	1206QNN-MF					●				●	●	●				
	1206QNN-MM					●				●	●	●				
	120612-MF															
	120612-MM					●				●						

Available Arbors

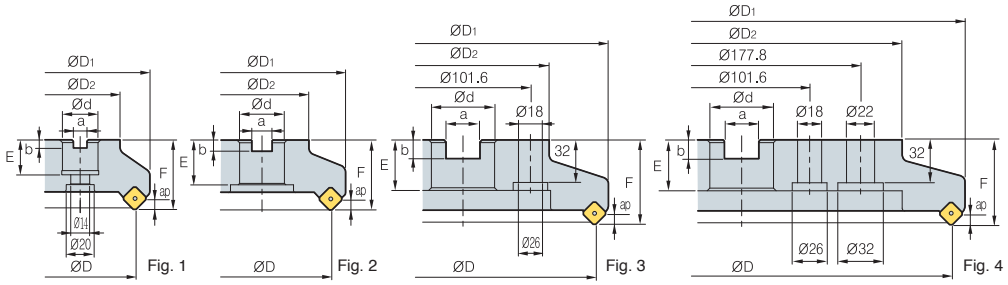
Designation		Available Arbors	
		RMH8AC	RMH8ACM
RMH8QC (RMH8QCM)	4080HR-□	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	4100HR-□	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	4125HR-□	BT□□-FMA38.1-□□	BT□□-FMB40-□□
	4160R-□	BT□□-FMA50.8-□□	BT□□-FMC40-□□
	4200R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□

Parts

Specification	Screw	Shim	Shim Screw	Wrench
Ø80~Ø200	PTKA0411-R3	SS42RM8	SHXN0609F	TW15S

Available Inserts E18 Available Arbors and bolt E318 ~ E320

RMT8A(M)4000



AA 45°
- AR : -6°
- RR : -6°

(mm)

Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
RMT8A (RMT8AM)	4080R	5	80	100	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	4	1.6	1
	4080R-M	6	80	100	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	4	1.6	1
	4100R	6	100	120	70	31.75(32)	12.7(14.4)	8(8)	32(28)	50	4	2.3	2
	4100R-M	8	100	120	70	31.75(32)	12.7(14.4)	8(8)	32(28)	50	4	2.3	2
	4125R	8	125	144	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	4	4.3	2
	4125R-M	10	125	144	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	4	4.3	2
	4160R	10	160	179	110	50.8(40)	19.0(16.4)	11(9)	38(30)	63	4	6.5	2
	4160R-M	14	160	179	110	50.8(40)	19.0(16.4)	11(9)	38(30)	63	4	6.5	2
	4200R	12	200	219	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	4	8.8	3
	4200R-M	18	200	219	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	4	8.8	3
	4250R	16	250	269	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	4	14.1	3
	4250R-M	22	250	269	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	4	14.1	3
	4315R	20	315	334	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	4	22.3	4
	4315R-M	28	315	334	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	4	22.3	4

( )Metric Size

Available Inserts

SNC(M)F-MF

SNC(M)F-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNCF	1206ANN-MF															E16
	1206ANN-MM					●										E17
SNMF	1206ANN-MF															E18
	1206ANN-MM															

Available Arbors

Designation		General Arbor	NC Arbors	
			RMT8A	RMT8AM
RMT8A(M)	☐080R	NT*☐☐ (M/U)-FMA25.4-25	BT**☐☐-FMA25.4 -☐☐	FMC27
	☐100R	NT*☐☐ (M/U)-FMA31.75 -☐☐	BT**☐☐-FMA31.75 -☐☐	FMC32
	☐125R	NT*☐☐ (M/U)-FMA38.1 -☐☐	BT**☐☐-FMA38.1 -☐☐	FMB40
	☐160R	NT*☐☐ (M/U)-FMA50.8 -☐☐	BT**☐☐-FMA50.8 -☐☐	
	☐200R	NT*☐☐ (M/U)-FMA47.625-25, KCP-8***	BT**☐☐-FMA47.625-☐☐	FMB60
	☐250R			
	☐315R	KCP-8***(Center Ring Plug)		

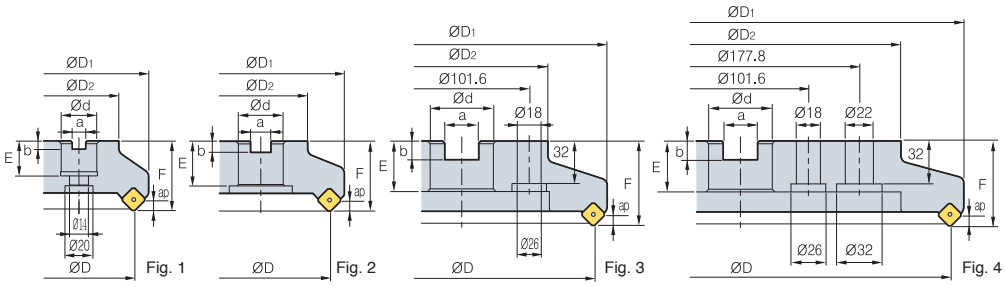
*☐☐–NT Number **☐☐–BT Number ***Over Milling 5

Parts

Specification	Screw	Screw	Spring	Latch	Wrench
Ø80~Ø315	ETKA0523	KHB0417	SPR0315	LTC05SR-RM4	TW20-100

Available Inserts E16, E17, E18 Available Arbors and bolt E318 ~ E320

RMT8A(M)5000



AA 45°
- AR : -6°
- RR : -6°

(mm)

Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
RMT8A (RMT8AM)	5080R	5	80	104	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	6	1.8	1
	5080R-M	6	80	104	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	6	1.8	1
	5100R	6	100	124	70	31.75(32)	12.7(14.4)	8(8)	32(28)	50	6	2.6	2
	5100R-M	8	100	124	70	31.75(32)	12.7(14.4)	8(8)	32(28)	50	6	2.6	2
	5125R	8	125	149	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	6	4.3	2
	5125R-M	10	125	149	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	6	4.3	2
	5160R	10	160	184	110	50.8(40)	19.0(16.4)	11(9)	38(30)	63	6	6.5	2
	5160R-M	14	160	184	110	50.8(40)	19.0(16.4)	11(9)	38(30)	63	6	6.5	2
	5200R	12	200	224	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	6	9.0	3
	5200R-M	18	200	224	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	6	9.0	3
	5250R	16	250	274	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	6	14.4	3
	5250R-M	22	250	274	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	6	14.4	3
	5315R	20	315	339	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	6	22.2	4
	5315R-M	28	315	339	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	6	22.2	4

( )Metric Size

Available Inserts

SNC(M)F-MF

SNC(M)F-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNCF	1507ANN-MF									●						E16
	1507ANN-MM					●		●								E17
SNMF	1507ANN-MF															E18
	1507ANN-MM					●										

Available Arbors

Designation		General Arbor	NC Arbors	
			RMT8A	RMT8AM
RMT8A(M)	☐080R	NT*☐☐(M/U)-FMA25.4-25	BT**☐☐-FMA25.4 -☐☐	FMC27
	☐100R	NT*☐☐(M/U)-FMA31.75 -☐☐	BT**☐☐-FMA31.75	FMC32
	☐125R	NT*☐☐(M/U)-FMA38.1 -☐☐	BT**☐☐-FMA38.1	FMC32
	☐160R	NT*☐☐(M/U)-FMA50.8 -☐☐	BT**☐☐-FMA50.8	
	☐200R	NT*☐☐(M/U)-FMA47.625-25, KCP-8***	BT**☐☐-FMA47.625-☐☐	FMB60
	☐250R			
	☐315R	KCP-8***(Center Ring Plug)		

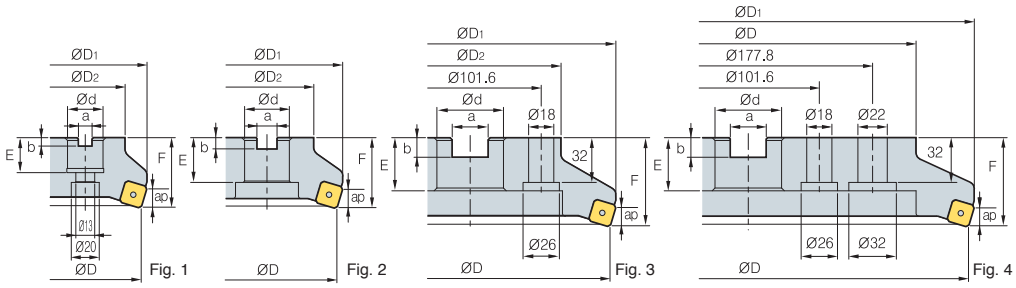
*☐☐–NT Number **☐☐–BT Number ***Over Milling 5

Parts

Specification	Screw	Screw	Spring	Latch	Wrench
Ø80~Ø315	ETKA0625	KHB0417	SPR0415	LTC06SR-RM5	TW20-100

Available Inserts E16, E17, E18 Available Arbors and bolt E318 ~ E320

RMT8E(M)4000



AA 75°
- AR : -6°
- RR : -8°~-6°

(mm)

Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
RMT8E (RMT8EM)	**4080R**	5	80	100	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	5	1.5	1
	4080R-M	6	80	100	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	5	1.5	1
	4100R	6	100	120	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	5	2	2
	4100R-M	8	100	120	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	5	2	2
	4125R	8	125	144	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	5	3.8	2
	4125R-M	10	125	144	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	5	3.8	2
	4160R	10	160	179	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	5	5.8	2
	4160R-M	14	160	179	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	5	5.8	2
	4200R	12	200	219	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	5	7.9	3
	4200R-M	18	200	219	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	5	7.9	3
	4250R	16	250	269	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	5	13.0	3
	4250R-M	22	250	269	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	5	13.0	3
	4315R	20	315	334	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	5	20.5	4
	4315R-M	28	315	334	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	5	20.5	4

( )Metric Size

Available Inserts

SNC(M)F-MF

SNC(M)F-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNCF	**1206ENN-MF**									●						E16
	1206ENN-MM					●		●								E17
SNMF	**1206ENN-MF**					●										E18
	1206ENN-MM					●										

Available Arbors

Designation		General Arbor	NC Arbors	
			RMT8E	RMT8E
RMT8E(M)	□ **080R**	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4 -□□	FMC27
	□ **100R**	NT*□□ (M/U)-FMA31.75 -□□	BT**□□-FMA31.75 -□□	FMC32
	□ **125R**	NT*□□ (M/U)-FMA38.1 -□□	BT**□□-FMA38.1 -□□	FMB40
	□ **160R**	NT*□□ (M/U)-FMA50.8 -□□	BT**□□-FMA50.8 -□□	
	□ **200R** □ **250R**	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	□ **315R**	KCP-8***(Center Ring Plug)		

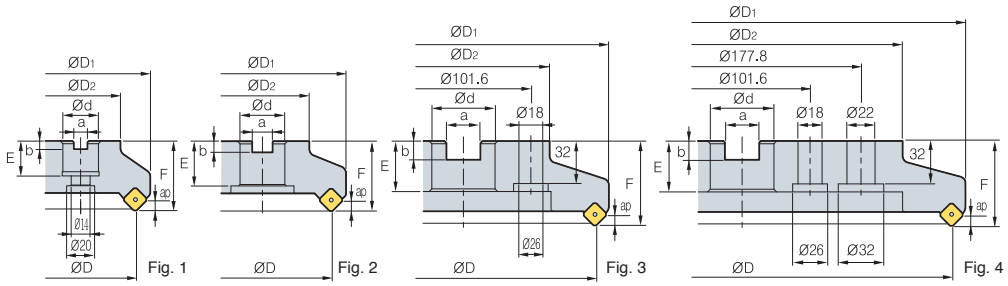
*□□–NT Number **□□–BT Number ***Over Milling 5

Parts

Specification	Screw	Screw	Spring	Latch	Wrench
Ø80~Ø315	ETKA0523	KHB0417	SPR0315	LTC05SR-RM4	TW20-100

Available Inserts **E16, E17, E18** Available Arbors and bolt **E318 ~ E320**

RMT8E(M)5000



AA 75°

- AR : -6°
- RR : -8°~-6°

(mm)

Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
RMT8E (RMT8EM)	**5080R**	5	80	88	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	8	1.4	1
	5080R-M	6	80	88	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	8	1.4	1
	5100R	6	100	108	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	8	1.9	2
	5100R-M	8	100	108	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	8	1.9	2
	5125R	8	125	133	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	8	3.7	2
	5125R-M	10	125	133	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	8	3.7	2
	5160R	10	160	168	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	8	5.7	2
	5160R-M	14	160	168	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	8	5.7	2
	5200R	12	200	208	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	8	7.5	3
	5200R-M	18	200	208	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	8	7.5	3
	5250R	16	250	258	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	8	12.4	3
	5250R-M	22	250	258	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	8	12.4	3
	5315R	20	315	323	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	8	19.9	4
	5315R-M	28	315	323	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	8	19.9	4

( )Metric Size

Available Inserts

SNC(M)F-MF

SNC(M)F-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNCF	**1507ENN-MF**					●				●						E16
	1507ENN-MM							●								E17
SNMF	**1507ENN-MF**															E18
	1507ENN-MM					●										

Available Arbors

Designation		General Arbor	NC Arbors	
			RMT8EM	RMT8EM
RMT8E(M)	□ **080R**	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4 -□□	FMC27
	□ **100R**	NT*□□ (M/U)-FMA31.75 -□□	BT**□□-FMA31.75 -□□	FMC32
	□ **125R**	NT*□□ (M/U)-FMA38.1 -□□	BT**□□-FMA38.1 -□□	FMB40
	□ **160R**	NT*□□ (M/U)-FMA50.8 -□□	BT**□□-FMA50.8 -□□	
	□ **200R**	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	□ **250R**			
	□ **315R**	KCP-8***(Center Ring Plug)	-	-

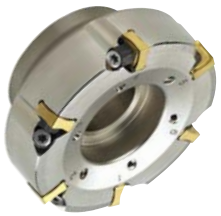
*□□–NT Number **□□–BT Number ***Over Milling 5

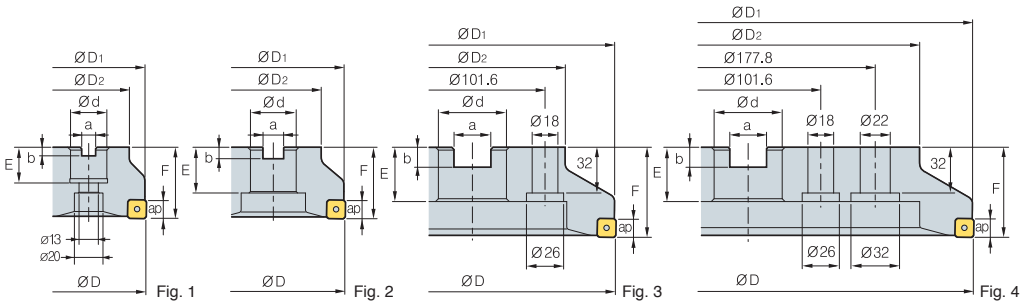
Parts

Specification	Screw	Screw	Spring	Latch	Wrench
Ø80~Ø315	ETKA0625	KHB0417	SPR0415	LTC06SR-RM5	TW20-100

Available Inserts **E16, E17, E18** Available Arbors and bolt **E318 ~ E320**

RMT8Q(M)





AA 88°
• AR : -6°
• RR : -11°~-6°

(mm)

Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
RMT8Q (RMT8QM)	4080R	5	80	79	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	5	1.4	1
	4080R-M	6	80	79	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	5	1.4	1
	4100R	6	100	99	67	31.75(32)		8(8)	32(28)	50	5	1.8	2
	4100R-M	8	100	99	67	31.75(32)		8(8)	32(28)	50	5	1.8	2
	4125R	8	125	124	87	38.1(40)		10(9)	38(30)	63	5	3.6	2
	4125R-M	10	125	124	87	38.1(40)		10(9)	38(30)	63	5	3.6	2
	4160R	10	160	159	107	50.8(40)		11(9)	38(30)	63	5	5.7	2
	4160R-M	14	160	159	107	50.8(40)		11(9)	38(30)	63	5	5.7	2
	4200R	12	200	199	130	47.625(60)		14(14)	38(38)	63	5	7.5	3
	4200R-M	18	200	199	130	47.625(60)		14(14)	38(38)	63	5	7.5	3
	4250R	16	250	249	180	47.625(60)		14(14)	38(38)	63	5	12.5	3
	4250R-M	22	250	249	180	47.625(60)		14(14)	38(38)	63	5	12.5	3
	4315R	20	315	314	240	47.625(60)		14(14)	38(38)	63	5	19.9	4
	4315R-M	28	315	314	240	47.625(60)		14(14)	38(38)	63	5	19.9	4

( )Metric Size

Available Inserts

SNMF-MF

SNMF-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNMF	1206QNN-MF					●										E18
	1206QNN-MM					●										

Available Arbors

Designation		General Arbor	NC Arbors	
			RMT8Q	RMT8QM
RMT8Q(M)	□080R	NT*□□(M/U)-FMA25.4-25	BT**□□-FMA25.4 -□□	FMC27
	□100R	NT*□□ (M/U)-FMA31.75 -□□	BT**□□-FMA31.75 -□□	FMC32
	□125R	NT*□□ (M/U)-FMA38.1 -□□	BT**□□-FMA38.1 -□□	FMB40
	□160R	NT*□□ (M/U)-FMA50.8 -□□	BT**□□-FMA50.8 -□□	
	□200R	NT*□□ (M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□	FMB60
	□250R			
	□315R	KCP-8***(Center Ring Plug)	-	

*□□–NT Number **□□–BT Number ***Over Milling 5

Parts

Specification	Screw	Screw	Spring	Latch	Wrench
Ø80~Ø315	ETKA0523	KHB0417	SPR0315	LTC05SR-RM4	TW20-100

Available Inserts E18 Available Arbors and bolt E318 ~ E320

RM16AC(M)6000

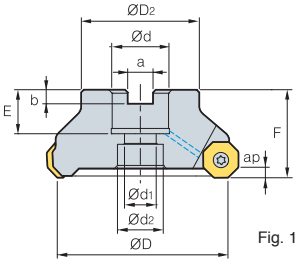


Fig. 1

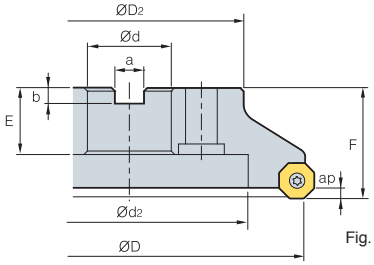


Fig. 2

AA 45°
- AR : -6°
- RR : -6°

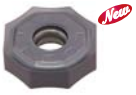
(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg	Fig.
RM16ACM	6063HR-M	5	63	49	22	11	18	10.4	6.3	20	40	4.0	0.7	1
RM16AC	6080HR-M	6	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	4.0	1.2	1
(RM16ACM)	6100HR-M	7	100	67	31.75(32)	18	26	12.7(14.4)	8	33(25)	63(50)	4.0	1.9	1
	6125HR-M	8	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	35(29)	63	4.0	3.5	1
	6160R-M	10	160	107	50.8(40)	-	107	19(16.4)	11(9)	38(32)	63	4.0	4.1	2
	6200R-M	12	200	130	47.625(60)	-	135	25.4(25.7)	14	38(32)	63	4.0	6.1	2
	6250R-M	15	250	180	47.625(60)	-	180	25.4(25.7)	14	38	63	4.0	11.5	2
	6315R-M	20	315	240	47.625(60)	-	238	25.4(25.7)	14	38	63	4.0	18.9	2
	6400R-M	26	400	260	47.625(60)	-	238	25.4(25.7)	14	38	80	4.0	32.7	2

( )Metric Size

Available Inserts


ONHX-MF

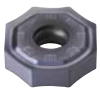


ONHX-ML


ONHX-MM


ONHX-W


ONHX-MA


ONMX-MF


ONMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
ONHX	060608-MM					●				●	●	●				E11
	060608-MF					●				●	●	●				
	060608-ML										●	●				
	060608-MA														●	
	060608-W					●			●	●	●					
	0606ANN-MM										●	●				
	0606ANN-MF					●				●	●	●				
ONMX	060608-MM					●				●	●	●				
	060608-MF					●				●	●	●				
	0606ANN-MM					●				●	●	●				
	0606ANN-MF								●	●	●	●				

Available Arbors

Designation		Available Arbors	
		RM16AC	RM16ACM
RM16AC(M)	6063HR-M		BT□□-FMC22-□□
	6080HR-M	BT□□ - FMA25.4-□□	BT□□-FMC27-□□
	6100HR-M	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	6125HR-M	BT□□-FMA38.1-□□	BT□□-FMB40-□□
	6160R-M	BT□□-FMA50.8-□□	BT□□-FMC40-□□
	6200R-M	BT□□-FMA47.625-□□	BT□□-FMB60-□□
	6250R-M		
	6315R-M		
	6400R-M		

Parts

Specification	Screw	Wrench
Ø63~Ø400	FTGA0513	TW20-100

Available Inserts E11
Available Arbors and bolt E318 ~ E320

RM16AC(M)8000

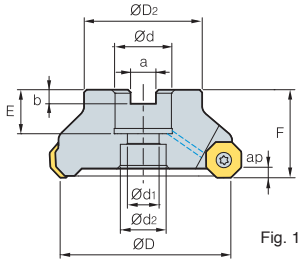


Fig. 1

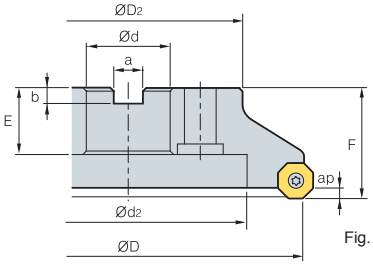


Fig. 2

AA 45°
• AR : -6°
• RR : -6°

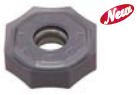
(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg	Fig.
RM16ACM	8063HR-M	5	63	49	22	11	18	10.4	6.3	20	40	5.5	0.7	1
RM16AC	8080HR-M	6	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	5.5	1.2	1
(RM16ACM)	8100HR-M	7	100	67	31.75(32)	18	26	12.7(14.4)	8	33(25)	63(50)	5.5	1.8	1
	8125HR-M	8	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	35(29)	63	5.5	3.5	1
	8160R-M	10	160	107	50.8(40)	-	107	19(16.4)	11(9)	38(32)	63	5.5	4.5	2
	8200R-M	12	200	130	47.625(60)	-	135	25.4(25.7)	14(14)	38(32)	63	5.5	5.8	2
	8250R-M	14	250	180	47.625(60)	-	180	25.4(25.7)	14	38	63	5.5	11.4	2
	8315R-M	18	215	240	47.625(60)	-	238	25.4(25.7)	14	38	63	5.5	18.8	2
	8400R-M	24	400	260	47.625(60)	-	238	25.4(25.7)	14	38	80	5.5	32.7	2

( )Metric Size

Available Inserts

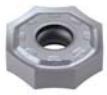

ONHX-MF

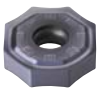


ONHX-ML


ONHX-MM


ONHX-W


ONHX-MA


ONMX-MF


ONMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
ONHX	080608-MM					●				●	●	●				E11
	080608-MF										●	●				
	080608-ML										●	●				
	080608-W					●					●					
	080608-MA														●	
	0806ANN-MM										●	●				
	0806ANN-MF									●	●	●				
ONMX	080608-MM					●			●	●	●	●				
	080608-MF									●	●	●				
	0806ANN-MM					●			●	●	●	●				
	0806ANN-MF					●				●	●	●				

Available Arbors

Designation		Available Arbors	
		RM16AC	RM16ACM
RM16AC(M)	8063HR-M	-	BT□□-FMC22-□□
	8080HR-M	BT□□- FMA25.4-□□	BT□□-FMC27-□□
	8100HR-M	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	8125HR-M	BT□□-FMA38.1-□□	BT□□-FMB40-□□
	8160R-M	BT□□-FMA50.8-□□	BT□□-FMC40-□□
	8200R-M	BT□□-FMA47.625-□□	BT□□-FMB60-□□
	8250R-M		
	8315R-M		
	8400R-M		

Parts

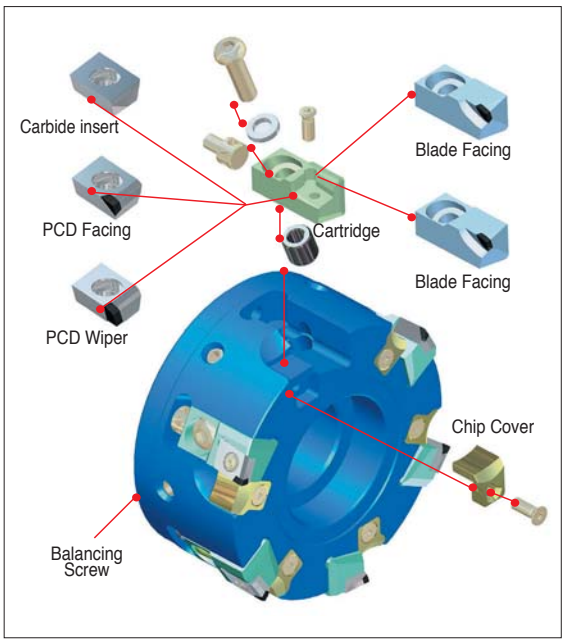
Specification	Screw	Wrench
Ø63~Ø400	FTGA0513	TW20-100

Available Inserts E11
Available Arbors and bolt E318 ~ E320

Lighter tool ensures excellent performance in high speed machining.

Aero Mill

- Excellent machining performance can be acquired especially at the high speeds due to the light aluminum cutter body that is 50% of the weight of a conventional steel cutter body
- High speed milling cutter for precise machining
- Special Aluminum material and high rake angle of insert provide rigid & stable machining
- High tolerance surface finishs can be acquired due to the low cutting load provided from the high rake angle
- Balanceable up to G2.5 level



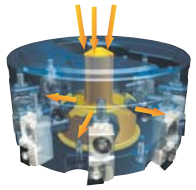
Assembly structure of cutter

- ▶ Increased stability based on cartridge type application
- ▶ Both insert and blade can be available in the same cutter
- ▶ Finishing to roughing can be possible because of wide chip pocket space
- ▶ Roughing and finishing available with carbide, PCD insert application
- ▶ Cutter breakage can be solved by making use of the chip cover

Coolant through system

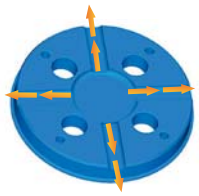
- ▶ Specially designed coolant through system provides coolant from the center of the cutter to the insert enhances the cooling rate and chip evacuation.
- ▶ Direction of coolant has designed to focus directly to the insert cutting edge to maximize chip evacuation and improve tool life
- ▶ Coolant bolt is applicable up to Ø160, coolant cover is applicable from Ø200 and over. Coolant devices are sold seperately for through coolant system, through coolant arbor has to be used

Coolant Bolt



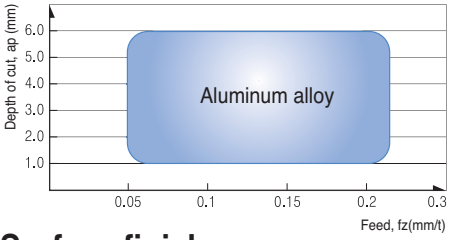
For Ø80~Ø160

Coolant Cover

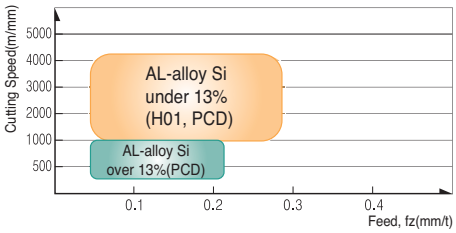


For Ø200 and over

Application range

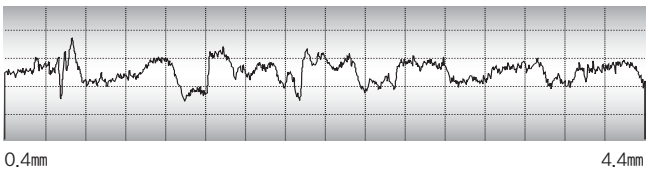


Recommended cutting condition



Surface finish

- **Cutting condition** — **vc** : 1570m/min, **vf** : 3000mm/min, **S** : 5000 rpm, **fz** : 0.1mm/t, **ap** : 0.5mm, **Machine** : PCV620
- **Workpiece** — A6061
- **Designation** — **Cutter** : APD100R-A6Z (6Flutes), **Insert** : CDEW1204R-XCF(H01)



- Rmax : 2.1㎛
- Rz : 1.6㎛
- Ra : 0.3㎛

Max. revolution

Diameter(mm)	Max. revolution(rpm)
Ø80	16,000
Ø100	15,000
Ø125	12,500
Ø160	10,000
Ø200	8,000
Ø250	6,500
Ø315	5,000

Coolant parts

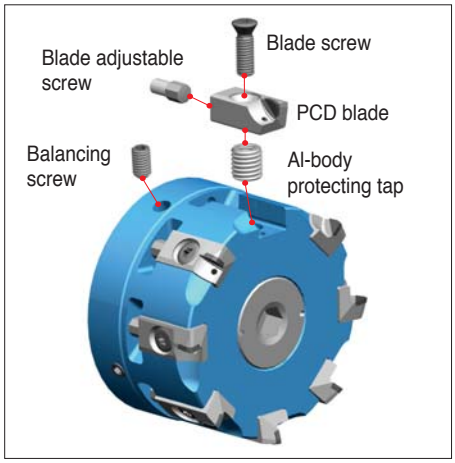
Diameter(mm)	Type	Designation		Shape	Note
Ø80	Coolant Bolt	CBP080-IN/MM			Extra charge
Ø100	Coolant Bolt	CBP100-IN	CBP100-MM-1		
Ø125	Coolant Bolt	CBP125-IN	CBP125-MM-1		
Ø160	Coolant Bolt	CBP160-IN	CBP160-MM		
Ø200	Coolant Cover	CCP200			
Ø250	Coolant Cover	CCP250			
Ø315	Coolant Cover	CCP315			

• Choice : CBP100-IN : APD type, General for unmarked item

Cone Shaped Head Indexable Drill

Aero Mill Plus

- Improve tool life up to 20% with a coolant system that enables direct spray cooling to cutting blades.
- Enable high feed milling by increasing the number of cutting blades by 20% through a simply structured coupling method for clamps
- Reduce setting time up to 40% by applying a spanner adjustment method
- Introduce an aluminum cutter body to provide a superior cutting performance during high speed milling.



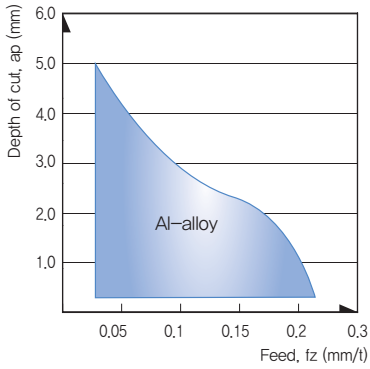
Code system

A	P	D	(M)	300	R	– PB	12Z
Aero-Mill	A.A 90°	Relief Angle	Inch type : None Metric type : M	Diameter(Ø)	Hand(R/L)	Aero-Mill Plus blade type	Number of tooth

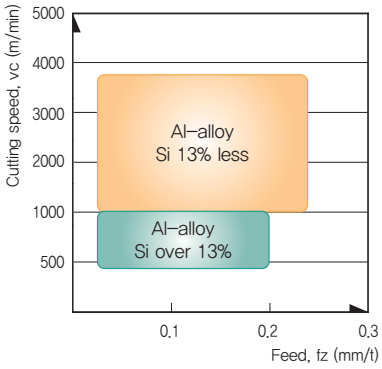
Structure of Aero Mill Plus

- ▶ Prevent overload to the spindle bearings through weight reduction of the Al alloy body and enable high-speed processing.
- ▶ Provide PCD Blade-dedicated cutter design to offer stable tool life and increase of applied blades.
- ▶ Improve the blade life by applying a coolant system that enables direct spray cooling to cutting blades.
- ▶ Adopt a clamping method with simple structure without set screw.
- ▶ Reduce weight and apply a coolant bolt that is exclusively used for Aero-Mill Plus that applies coolant to remove internal chip.

Application range



Recommended cutting speed



Max. RPM

Diameter(mm)	Max. revolution(rpm)
Ø80	20,000
Ø100	18,000
Ø125	16,000
Ø160	13,000
Ø200	10,000
Ø250	8,000
Ø315	7,000

Coolant parts

Diameter(mm)	Type	inch / mm	Designation	Shape	Material	Note
Ø80	Coolant bolt	inch, mm	CB12-AMaP80		Steel	Included
Ø100		inch	CB16-AMP100			
		mm	CB16-AMP100M			
Ø125		inch	CB20-AMP125			
		mm	CB20-AMP125M			
Ø160		inch	CB24-AMP160			
		mm	CB20-AMP125M			
Ø200	Coolant cover	inch, mm	CCV-AMP200		Aluminum	Extra charge
Ø250			CCV-AMP250			
Ø315			CCV-AMP315			

Good performance in small-medium size of operations

Aero Mill Mini

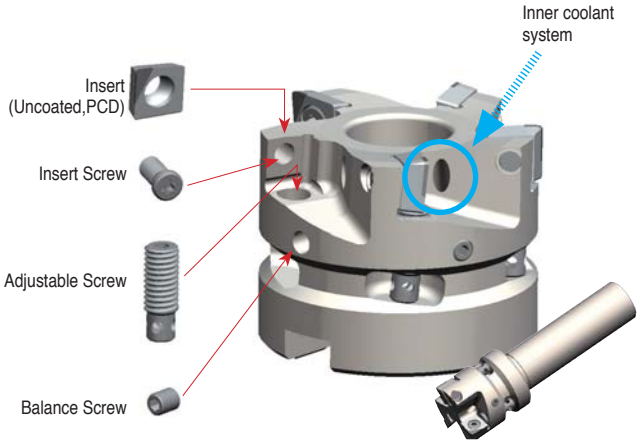
- Good performance in small-medium size of operations
- Good duration of the steel body
- Choice of Uncoated carbide / PCD grades can be applied to various kind of work material
- Balance level : G25

Code system

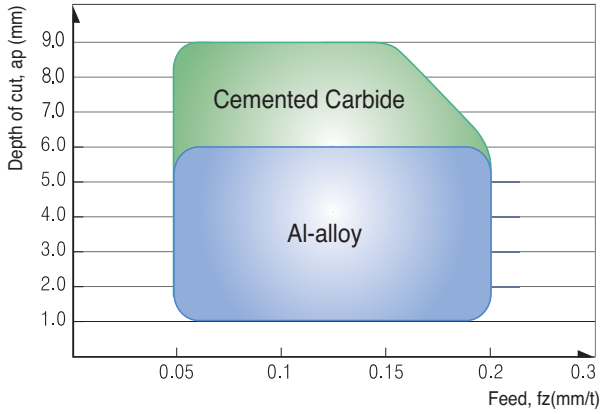
M	A	P	D	(S)	040	H	R - Z4
Mini	Aero Mill	Approach Angle	Insert Clearance Angle	Unmarked : Cutter S : Shank	Diameter(Ø)	H : Coolant	Hand(R/L)	Number of tooth

Structure of Aero Mill Mini

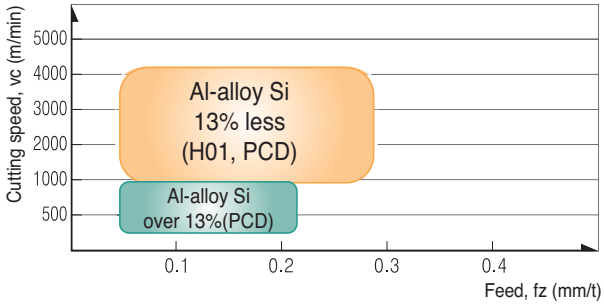
- ▶ Simple and strong design of Screw-on clamping.
- ▶ Adjustable range : ±0.1mm Max
- ▶ Adjustable step : Min. 2 micro meter
- ▶ Wide chip pocket area for Roughing and Aluminum machining.
- ▶ Inner coolant system



Application range



Recommended cutting condition

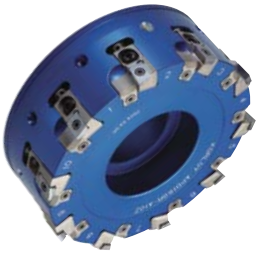


Max. RPM

Diameter	Max. RPM(min^{-1})
Ø32	26,000
Ø40	24,500
Ø50	22,000
Ø63	20,000

APD(M)-A

Cartridge + Insert



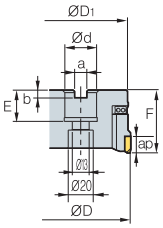


Fig. 1

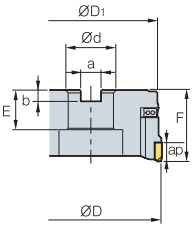


Fig. 2

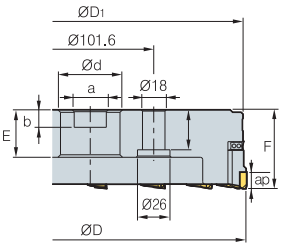


Fig. 3

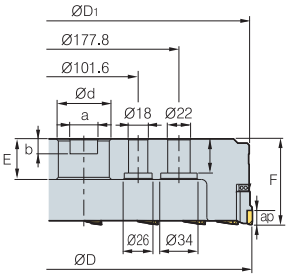


Fig. 4

AA 90°
- AR : 6°
- RR : 5°~9°

(mm)

Designation			ØD	ØD1	Ød	a	b	E	F	ap	Max rpm	kg	Fig.
APD (APDM)	080R/L-A6Z	6	80	76	25.4(27)	9.5(12.4)	6(7)	25(22)	50	10	16000	0.75	1
	100R/L-A6Z	6	100	95	31.75(32)	12.7(14.4)	8(8)	32(28)	50	10	15000	0.95	2
	125R/L-A8Z	8	125	120	38.1(40)	15.9(16.4)	10(9)	38(30)	63	10	12500	1.8	2
	160R/L-A10Z	10	160	155	50.8(40)	19.0(16.4)	11(9)	38(30)	63	10	10000	2.9	2
	200R/L-A12Z	12	200	195	47.625(60)	25.4(25.7)	14(14)	38(38)	63	10	8000	4.0	3
	250R/L-A16Z	16	250	245	47.625(60)	25.4(25.7)	14(14)	38(38)	63	10	6500	6.3	3
	315R/L-A18Z	18	315	310	47.625(60)	25.4(25.7)	14(14)	38(38)	80	10	5000	11.3	4

( )Metric Size

Available Inserts


CDEW-XCF


CDEW-XAF,NAF


CDEW-XAW,NAW

Designation		Cermet			Uncoated				PCD	Page
		CN2000	CN20	CN30	H01	G10	ST30A	ST20	DP200	
CDEW	1204R-XCF				●					E06 E07
	1204L-XCF									
	1204R-XAF								●	
	1204L-XAF									
	1204R-NAF								●	
	1204R-XAW								●	
	1204L-XAW									
	1204R-NAW								●	

Available Arbors

Designation		General Arbor	NC Arbors
APD(M)	080R/L	NT*□□(M/U)-FMA25.4-25	BT**□□-FMA25.4
	100R/L	NT*□□(M/U)-FMA31.75 -□□	BT**□□-FMA31.75
	125R/L	NT*□□(M/U)-FMA38.1 -□□	BT**□□-FMA38.1
	160R/L	NT*□□(M/U)-FMA50.8 - □□	BT**□□-FMA50.8
	200R/L	NT*□□(M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□
	250R/L		
	315R/L	KCP-8***(Center Ring Plug)	-

*□□–NT Number **□□–BT Number ***Over Milling 5

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
Aluminum	1,000 ~ 4,000 500 ~ 2,500	0.05 ~ 0.30 0.05 ~ 0.20	DP200 H01

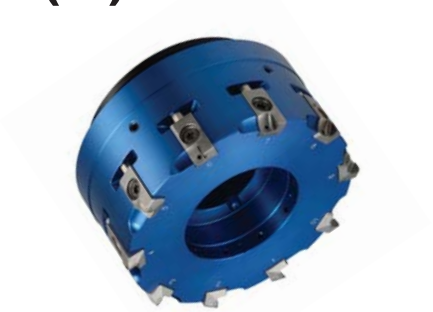
Parts

Specification	Cartridge	Chip cover	Chip cover Screw	Insert Screw	Adjust Screw	Cartridge Screw	Wrench for Insert	Wrench for Cartridge
Ø80~Ø315	LAPDR/L-AJ	CAPDR/L-AJ	PTMA0411	FTNA0411	AZ0514	BHA0619-NYLOK	TW15S	HW50

Available Inserts E06, E07 Available Arbors and bolt E318 ~ E320

APD(M)-PB

Blade



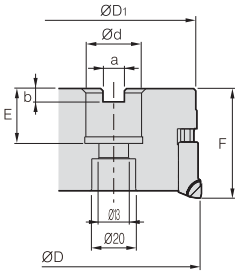


Fig. 1

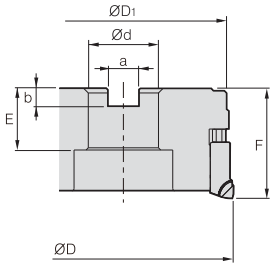


Fig. 2

AA 90°
- AR : 6°
- RR : -4°~1°

(mm)

Designation			MAX	ØD	ØD1	Ød	a	b	E	F	ap	kg	Fig.
APD (APDM)	080R/L-PB6Z	6	10	80	77	25.4(27)	9.5(12.4)	6(7)	23.5	50	5	0.55	1
	080R/L-PB8Z	8	10	80	77	25.4(27)	9.5(12.4)	6(7)	23.5	50	5	0.55	1
	100R/L-PB6Z	6	12	100	97	31.75(32)	12.7(14.4)	8	34(32)	50	5	0.92	2
	100R/L-PB8Z	8	12	100	97	31.75(32)	12.7(14.4)	8	34(32)	50	5	0.92	2
	125R/L-PB8Z	8	14	125	122	38.1(40)	15.9(16.4)	10(9)	40(35)	63	5	1.9	2
	125R/L-PB10Z	10	14	125	122	38.1(40)	15.9(16.4)	10(9)	40(35)	63	5	1.9	2
	160R/L-PB10Z	10	20	160	157	50.8(40)	19.0(16.4)	11(9)	41(35)	63	5	3.3	2
	160R/L-PB12Z	12	20	160	157	50.8(40)	19.0(16.4)	11(9)	41(35)	63	5	3.3	2

( )Metric Size

Available Blades


BAMPR-XAF


BAMPR-XAW


BAMPR-XAWR

Designation	PCD	Page
	DP150	
BAMPR-XAF	●	E06
BAMPR-XAW	●	
BAMPR-XAWR	●	

Available Arbors

Designation		NC Arbors
APD(M)-PB	080R/L-PB□□Z	BT□□-FMA25.4(FMC27)-□□
	100R/L-PB□□Z	BT□□-FMA31.75(FMC32)-□□
	125R/L-PB□□Z	BT□□-FMA38.1(FMB40)-□□
	160R/L-PB□□Z	BT□□-FMA50.8(FMB/FMC40)-□□

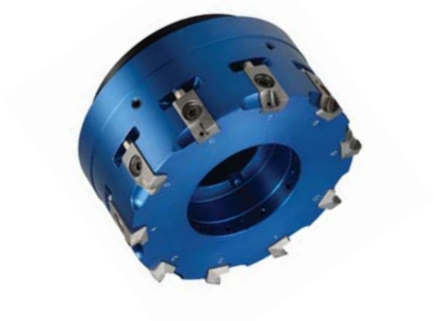
Parts

Specification	 Blade screw	 Blade adjustable screw	 Al-body protecting tap	 Balancing screw	 Wrench for insert	 Wrench for Cartridge
Ø80~Ø160	ETKA0620	AZ0514-SPN6	UZD1010	KHE0610	SPN-6	TW25-100

Available Inserts E06 Available Arbors and bolt E318 ~ E320

APD(M)-PB

Blade



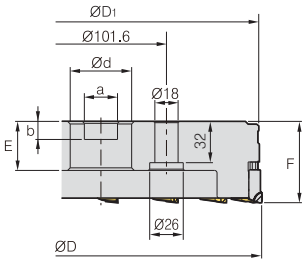


Fig. 3

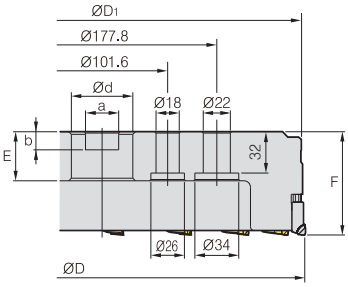


Fig. 4

- AR : -6°
- RR : -39°~-16°

(mm)

Designation			MAX	ØD	ØD1	Ød	a	b	E	F	ap	kg	Fig.
APD (APDM)	**200R/L-PB12Z**	12	26	200	197	47.625(60)	25.4(25.7)	14	40	63	5	4.0	3
	250R/L-PB16Z	16	32	250	247	47.625(60)	25.4(25.7)	14	40	63	5	6.5	3
	315R/L-PB18Z	18	42	315	312	47.625(60)	25.4(25.7)	14	40	63	5	11.3	4

( )Metric Size

Available Blades

BAMPR-XAF

BAMPR-XAW

BAMPR-XAWR

Designation	PCD	Page
	DP150	
BAMPR-XAF	●	E06
BAMPR-XAW	●	
BAMPR-XAWR	●	

Available Arbors

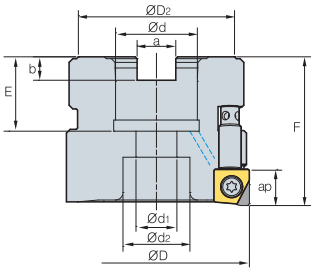
Designation		NC Arbors
APD(M)-PB	**200R/L-PB□□Z**	BT□□-FMA47.625(FMB60)-□□
	250R/L-PB□□Z	
	315R/L-PB□□Z	

Parts

Specification	Blade screw	Blade adjustable screw	Al-body protecting tap	Balancing screw	Wrench for insert	Wrench for cartridge
Ø200~Ø315	ETKA0620	AZ0514-SPN6	UZD1010	KHE0610	SPN-6	TW25-100

Available Inserts **E06** Available Arbors and bolt **E318 ~ E320**

MAPD000HR/L-Z0 New



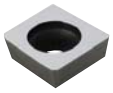
※ PCD ap:5mm

AA 90°
- AR : 6°
- RR : -1°~12°

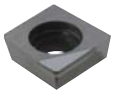
(mm)

Designation			ØD	ØD2	Ød	a	b	E	F	Ød1	Ød2	ap	Max rpm	kg
MAPD	040HR/L-Z4	4	40	34	16	8.4	5.6	18	40	9	14	9.5	24,000	0.24
	050HR/L-Z5	5	50	42	22	10.4	6.3	20	40	11	18	9.5	22,000	0.35
	063HR/L-Z6	6	63	42	22	10.4	6.3	20	40	11	18	9.5	20,000	0.65

Available Inserts



SNEW



SNEW-XAF

Strengthened Edge

SNEW-NAF

Designation		Cermet				Uncoated			PCD	Page
		CN2000	CN20	CN30	H01	G10	ST30A	ST20	DP200	
SNEW	09T3ADFR				●					E18
	09T3ADTR-XAF								●	
	09T3ADTR-NAF								●	

Available Arbors

Designation		NC Arbors
MAPD	040HR/L-Z4	BT** □□-FMC16-□□
	050HR/L-Z5	BT** □□-FMC22-□□
	063HR/L-Z6	BT** □□-FMC22-□□

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
Aluminum	1,000 ~ 4,000	0.05 ~ 0.30	DP200
	500 ~ 2,500	0.05 ~ 0.20	H01

Coolant Bolt (Not included)

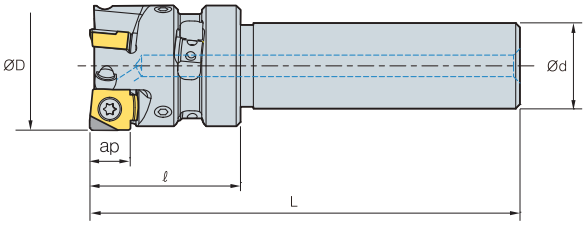
Designation	Applicable cutter	Available Cutters
CB0525	MAPD040HR/L-Z4	Ø40
CB1025	MAPD050HR/L-Z5	Ø50
	MAPD063HR/L-Z6	Ø63

Parts

Specification	Insert Screw	Adjust Screw	Balance Screw	Wrench for Insert	Adjust Wrench
Ø40~Ø63	FTKA0408	AHX0617F-NYLOK	KHD0405	TW15S	HW20L

Available Inserts E18 Available Arbors and bolt E318 ~ E320

MAPDS000HR/L-Z0 New



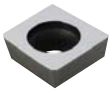
※ PCD ap:5mm

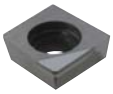
AA 90°
• AR : 6°
• RR : -4°~1°

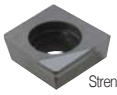
(mm)

Designation			ØD	Ød	ℓ	L	ap	Max rpm	kg
MAPDS	032HR/L-Z3	3	32	20	35	100	9.5	26,000	0.35
	040HR/L-Z4	4	40	20	35	100	9.5	24,500	0.42

Available Inserts


SNEW


SNEW-XAF


Strengthened Edge
SNEW-NAF

Designation		Cermet				Uncoated			PCD	Page
		CN2000	CN20	CN30	H01	G10	ST30A	ST20	DP200	
SNEW	09T3ADFR				●					E18
	09T3ADTR-XAF								●	
	09T3ADTR-NAF								●	

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
Aluminum	1,000 ~ 4,000 500 ~ 2,500	0.05 ~ 0.30 0.05 ~ 0.20	DP200 H01

Parts

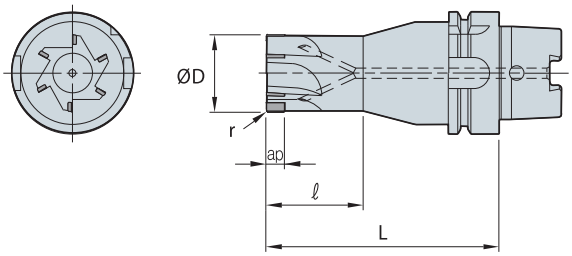
Specification	Insert Screw	Adjust Screw	Balance Screw	Wrench for Insert	Adjust Wrench
Ø32~Ø63	FTKA0408	AHX0617F-NYLOK	KHD0405	TW15S	HW20L

Available Inserts E18
Available Arbors and bolt E318 ~ E320

Code system

PDF	6	032 - HSK63A
PDF FACE CUTTER	Tooth	Diameter / Shank

PCD FACE CUTTER



AA 90°
- AR : 6˚
- RR : 5˚~9˚

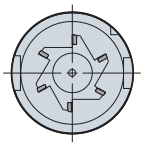
(mm)

	Designation	⊙	ØD	r	ap	ℓ	L
PDF	4032-HSK50A	4	32	0.5	8	50	120
	4040-HSK50A	4	40	0.5	8	50	120
	4032-HSK63A	4	32	0.5	8	50	120
	4040-HSK63A	4	40	0.5	8	50	120
	4050-HSK63A	4	50	0.5	8	50	120
	6063-HSK63A	6	63	0.5	12	-	100
	6063-HSK100A	6	63	0.5	12	-	100

Recommended cutting condition

Workpiece	vc(m/min)	fz(mm/t)	ap(mm)
Al, Brass, Alloy	200~2,000	0.02~0.1	0.05~4.0

Special PCD order sheet



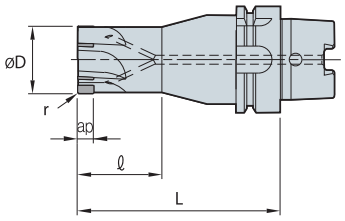


Fig. 1

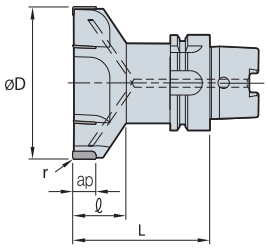


Fig. 2

Designation	Fig.	tooth	Dimensions(mm)					
			ØD	r	ap	ℓ	L	Shank spec.
PDF								

Various applications are available with multi-functional cutters

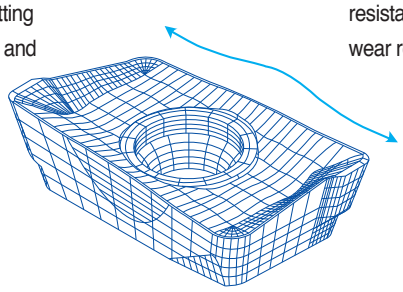
Alpha Mill

- Innovative curve cutting edge and chip-breaker design ensures ideal 90 degree cutting and lower cutting resistance
- Various applications are available with multi-functional cutters. (Facing, Slotting, Square shoulder milling and etc.)
- Improved insert life time with optimized with each application
- Excellent perfomance ensured at large depth of cut operations due to strong cutting edge and low cutting resistance

Alpha Mill Insert

▶ Long tool life at high speed, high feed and deeper cutting by low cutting resistance and strong cutting edge

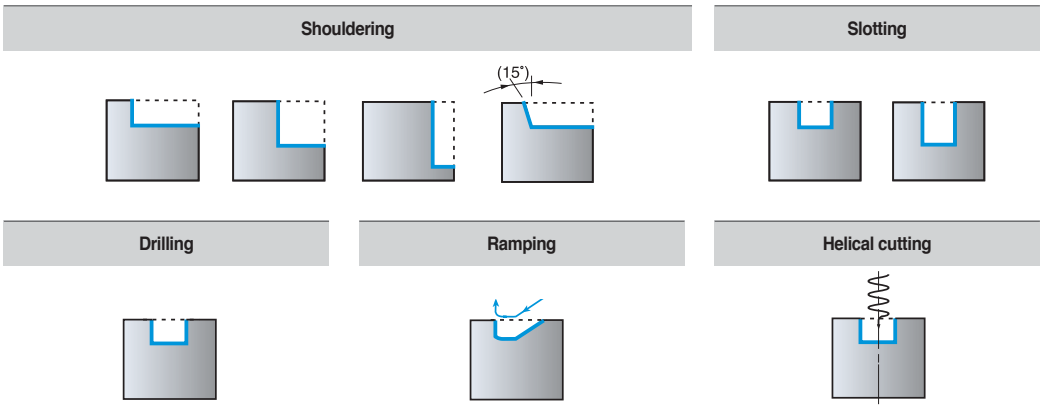
▶ Distinguished features of Alpha-Curve reduce cutting resistance and improve cutting edge strength and wear resistance



▶ Low cutting resistance is realized by KORLOY unique design i.e alpha curve cutting edge and optimal convex and concave design

▶ Highly efficient machining is available by the ideal application of the grade to material

Application example



Alpha Mill APMT-MA, ML

Features

- MA : Sharp edge and buffed surface for aluminum machining improve lubrication.
- ML : Cutting edge and grades for hard-to-cut materials(Ti, STS, Inconel) ensure superb performance in machining.

Features of Chip breakers

Type	Chip breaker	Cutting edge	Features
Al	MA		Optimal cutting edge and buffed surface for aluminum machining ensure high performance in machining.
Hard-to-cut material	ML		Chip breaker with low cutting load is optimal for machining hard-to-cut materials.

Type	Chip breaker	Cutting edge	Features
Light cutting	MF		Chip breaker with low cutting load and harder cutting edge than ML's are optimal for light cutting.
General cutting	MM		Optimal for milling in general ranges

Product constitution

Item description	Type	Nose R	MA	ML
APMT	1000Type	0.4	APMT0602PDFR-MA	-
		0.8	APMT060208PDFR-MA	-
	1500Type	0.4	APMT0903PDFR-MA	APMT0903PDER-ML
		0.8	APMT090308PDFR-MA	APMT090308PDER-ML
	2000Type	0.5	APMT11T3PDFR-MA	APMT11T3PDER-ML
		0.8	APMT11T308PDFR-MA	APMT11T308PDER-ML
	3000Type	0.4	APMT160404PDFR-MA	APMT160404PDER-ML
		0.8	APMT1604PDFR-MA	APMT1604PDER-ML
	4000Type	0.4	APMT180604PDFR-MA	APMT180604PDER-ML
		0.8	APMT1806PDFR-MA	APMT1806PDER-ML
		1.2	APMT180612PDFR-MA	APMT180612PDER-ML
		1.6	APMT180616PDFR-MA	APMT180616PDER-ML
		2.0	APMT180620PDFR-MA	APMT180620PDER-ML
		2.4	APMT180624PDFR-MA	APMT180624PDER-ML
		3.0	APMT180630R-MA	APMT180630R-ML

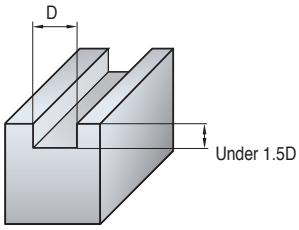
– The inserts can switch to the APMT type holders.

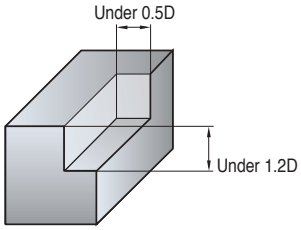
Recommended grades and chip breakers by workpiece

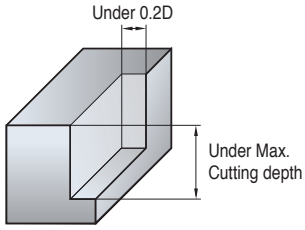
Chip breaker	Cutter edge	Recommended C/B and grade as per workpiece(● : 1st)											
		P				M		K		N		S	
		Low carbon steel Mild steel		High carbon steel Alloy steel		Stainless steel		Cast iron		Aluminum alloy		Ti/Inconel	
		C/B	Grades	C/B	Grades	C/B	Grades	C/B	Grades	C/B	Grades	C/B	Grades
MA		-	-	-	-	-	-	-	-	●	●H01	-	-
ML		-	-	-	-	●	●PC5300 ○PC5400 ○PC3545 ○PC9530	-	-	-	-		●PC5300 ○PC5400 ○PC3545
MF		●	●PC3500 ○PC5300 ○PC5400 ○NCM325 ○NCM335	-	○PC3500 ○PC3545 ○NCM325 ○NCM335	-	●PC5300 ○PC5400 ○PC3545 ○PC9530	-	●PC6510 ○PC5300 ○PC5400	-	-	-	●PC5300 ○PC5400 ○PC3545
MM		-	●PC3500 ○PC5300 ○PC5400 ○NCM325 ○NCM335	●	●PC3500 ○PC5300 ○PC5400 ○NCM325 ○NCM335	-	●PC5300 ○PC5400 ○PC3545 ○PC9530		●PC6510 ○PC5300 ○PC5400	-	-	-	●PC5300 ○PC5400 ○PC3545

Recommended depth of cut

1. Slotting	2. Shouldering	3. Shouldering







Recommended cutting condition(for multi edge type)

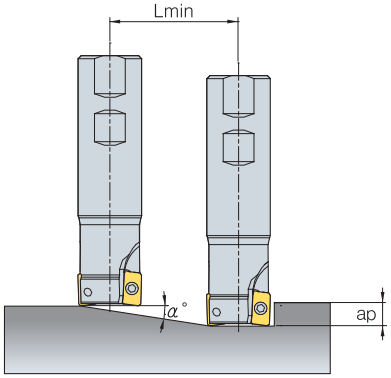
Workpiece	Grades	Fig.	Tool Dia.							
			Ø20, 25		Ø32, 40		Ø50, 63		Ø80, 100	
			vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)
Mild steel, Low carbon steel	NCM325 PC3500	①	80~100	0.05~0.08	100~120	0.05~0.08	100~120	0.05~0.08	100~120	0.05~0.08
		②	100~120	0.08~0.10	120~140	0.08~0.10	120~140	0.08~0.10	120~140	0.08~0.10
		③	100~120	0.10~0.15	140~140	0.10~0.15	120~140	0.10~0.15	130~150	0.10~0.15
High carbon steel, Alloy steel	NCM325 PC3500	①	60~80	0.05	80~100	0.05	80~100	0.05	80~100	0.05
		②	80~100	0.05~0.08	100~120	0.08~0.10	100~120	0.08~0.10	100~120	0.08~0.10
		③	80~100	0.10~0.15	110~130	0.10~0.15	100~120	0.10~0.15	110~130	0.10~0.15
Alloy tool steel	NCM325 PC3500	①	50~70	0.05	70~90	0.05	70~90	0.05	70~90	0.05
		②	60~80	0.05~0.08	90~120	0.05~0.08	100~120	0.05~0.08	100~120	0.05~0.08
		③	90~110	0.12~0.18	100~130	0.10~0.15	100~120	0.10~0.15	110~130	0.10~0.15
Stainless steel	PC5300 PC9530	①	50~70	0.054	70~90	0.05	70~90	0.05	70~90	0.05
		②	60~80	0.05~0.08	90~120	0.05~0.08	100~120	0.05~0.08	100~120	0.05~0.08
		③	90~110	0.10~0.15	100~130	0.10~0.15	110~130	0.10~0.15	110~130	0.10~0.15
Cast iron	PC6510 PC5300	①	70~90	0.10~0.12	70~90	0.10~0.12	90~120	0.10~0.12	90~120	0.10~0.12
		②	80~100	0.12	90~120	0.12	100~140	0.12	100~140	0.12
		③	80~100	0.15~0.2	100~130	0.15~0.20	120~150	0.15~0.20	120~150	0.15~0.20
Aluminum alloy	H01	①	200~800	0.10~0.2	300~900	0.10~0.20	400~1,000	0.10~0.20	400~1,000	0.10~0.20
		②	250~900	0.15~0.3	300~950	0.15~0.3	400~1,000	0.10~0.40	400~1,000	0.10~0.40
		③	250~900	0.15~0.3	300~950	0.15~0.3	400~1,000	0.10~0.40	400~1,000	0.10~0.40
Hardened steel	PC3545 PC5300	①	50~70	0.03	60~90	0.03	60~90	0.03	60~90	0.03
		②	60~80	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08
		③	80~100	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08

Recommended cutting condition(for single edge type)

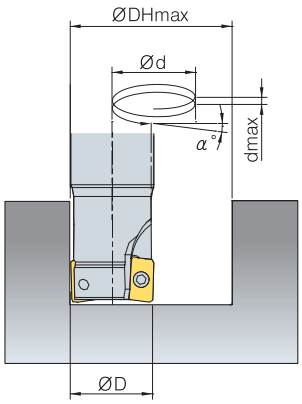
Workpiece	Grades	Fig.	Tool Dia.							
			Ø20, 25		Ø32, 40		Ø50, 63		Ø80, 100	
			vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)
Mild steel, Low carbon steel	NCM325 PC3500	①	60~80	0.05~0.08	80~120	0.05~0.08	120~200	0.05~0.08	150~200	0.05~0.08
		②	80~120	0.08~0.10	120~180	0.08~0.10	180~250	0.08~0.10	200~250	0.08~0.10
		③	80~120	0.10~0.15	120~180	0.10~0.15	180~250	0.10~0.15	200~250	0.10~0.15
High carbon steel, Alloy steel	NCM325 PC3500	①	50~80	0.05	80~110	0.05	100~150	0.05	100~150	0.05
		②	80~100	0.05~0.08	110~150	0.05~0.10	150~200	0.05~0.10	150~200	0.05~0.10
		③	80~100	0.10~0.15	120~150	0.10~0.15	180~200	0.10~0.15	80~200	0.10~0.15
Alloy tool steel	NCM325 PC3500	①	50~70	0.05	80~100	0.05	100~130	0.05	100~130	0.05
		②	70~100	0.05~0.08	100~130	0.05~0.10	130~180	0.05~0.10	130~180	0.05~0.10
		③	70~100	0.10~0.15	100~150	0.10~0.15	130~180	0.10~0.15	130~180	0.10~0.15
Stainless steel	PC5300 PC9530	①	50~70	0.05	80~100	0.05	100~130	0.05	100~130	0.05
		②	70~100	0.05~0.08	100~130	0.05~0.10	130~180	0.05~0.10	130~180	0.05~0.10
		③	70~100	0.10~0.15	100~150	0.10~0.15	130~180	0.10~0.15	130~180	0.10~0.15
Cast iron	PC6510 PC5300	①	80~100	0.08~0.12	80~100	0.15	120~150	0.15	120~150	0.15
		②	100~120	0.12~0.15	100~130	0.15~0.18	150~200	0.15~0.18	150~200	0.15~0.18
		③	100~120	0.15~0.20	100~130	0.15~0.20	150~200	0.15~0.20	150~200	0.15~0.20
Aluminum alloy	H01	①	250~800	0.15~0.20	300~900	0.15~0.20	400~1,000	0.10~0.20	400~1,000	0.10~0.20
		②	250~900	0.20~0.25	350~950	0.20~0.25	400~1,000	0.20~0.30	400~1,000	0.20~0.30
		③	250~900	0.25~0.3	350~950	0.25~0.30	400~1,000	0.30~0.10	400~1,000	0.30~0.40
Hardened steel	PC3545 PC5300	①	50~70	0.03	60~90	0.03	60~90	0.03	60~90	0.03
		②	60~80	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08
		③	80~100	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08

Cutting condition for ramping and helical operation

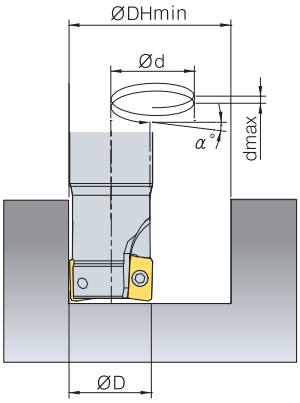
1. Ramping



2. Helical cutting for blind hole



3. Helical cutting for through hole

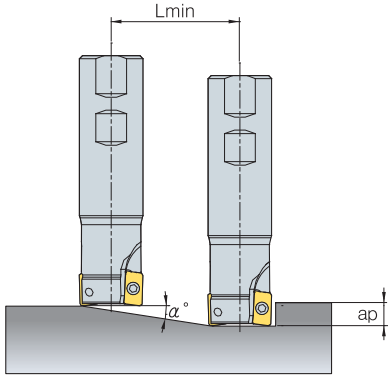


Designation	Tool Dia. ØD(min)	Ramping			Helical cutting for blind hole				Helical cutting for through hole	
		ap	Maximum angle α(°)	Lmin(mm)	Max. desirable hole Dia. ØDHmax(mm)	Max. pitch dmax(mm)	Min. desirable hole Dia. ØDHmin(mm)	Max. pitch dmax(mm)	Min. desirable hole Dia. ØDHmin(mm)	Max. pitch dmax(mm)
AMS1010HS	10		6.5	44	18.8	2.1	17.6	2.0	13	1.5
AMS1011HS	11		5.6	51	20.8	2.0	19.6	1.9	15	1.5
AMS1012HS	12		4.9	58	22.8	2.0	21.6	1.9	17	1.5
AMS1014HS	14		3.9	73	26.8	1.8	25.6	1.8	21	1.4
AMS1015HS	15		3.6	80	28.8	1.8	27.6	1.7	23	1.4
AMS1016HS	16		3.3	87	30.8	1.8	29.6	1.7	25	1.4
AMS1017HS	17		3.0	94	32.8	1.7	31.6	1.7	27	1.4
AMS1018HS	18		2.8	101	34.8	1.7	33.6	1.7	29	1.4
AMS1020HS	20		2.5	115	38.8	1.7	37.6	1.6	33	1.4
AMS1021HS	21	5	2.3	123	40.8	1.7	39.6	1.6	35	1.4
AMS1022HS	22		2.2	130	42.8	1.6	41.6	1.6	37	1.4
AMS1025HS	25		1.9	151	48.8	1.6	47.6	1.6	43	1.4
AMS1026HS	26		1.8	158	50.8	1.6	49.6	1.6	45	1.4
AMS1032HS	32		1.4	201	62.8	1.6	61.6	1.5	57	1.4
AMS1033HS	33		1.4	208	64.8	1.6	63.6	1.5	59	1.4
AMC1032HS	32		1.4	201	62.8	1.6	61.6	1.5	57	1.4
AMC1040HS	40		1.1	258	78.8	1.5	77.6	1.5	73	1.4
AMC1050HS	50		0.9	330	98.8	1.5	97.6	1.5	93	1.4
AMC1063HS	63		0.7	423	124.8	1.5	123.6	1.5	119	1.4
AMS1510HS	10		7.5	68	18.8	2.5	17.4	2.3	11	1.5
AMS1512HS	12		6.5	79	22.8	2.6	21.4	2.4	15	1.7
AMS1513HS	13		5.7	90	24.8	2.5	23.4	2.3	17	1.7
AMS1514HS	14		6.3	82	26.8	2.9	25.4	2.8	19	2.1
AMS1516HS	16		5.0	102	30.8	2.7	29.4	2.6	23	2.0
AMS1517HS	17		4.6	112	32.8	2.6	31.4	2.5	25	2.0
AMS1518HS	18		4.2	122	34.8	2.6	33.4	2.5	27	2.0
AMS1519HS	19		3.9	132	36.8	2.5	35.4	2.4	29	2.0
AMS1520HS	20		3.6	142	38.8	2.5	37.4	2.4	31	2.0
AMS1521HS	21		3.4	152	40.8	2.4	39.4	2.3	33	2.0
AMS1522HS	22		3.2	162	42.8	2.4	41.4	2.3	35	1.9
AMS1524HS	24	9	2.8	182	46.8	2.3	45.4	2.2	39	1.9
AMS1525HS	25		2.7	192	48.8	2.3	47.4	2.2	41	1.9
AMS1528HS	28		2.3	222	54.8	2.2	53.4	2.2	47	1.9
AMS1530HS	30		2.1	242	58.8	2.2	57.4	2.1	51	1.9
AMS1532HS	32		2.0	262	62.8	2.2	61.4	2.1	55	1.9
AMS1535HS	35		1.8	292	68.8	2.1	67.4	2.1	61	1.9
AMS1540HS	40		1.5	342	78.8	2.1	77.4	2.0	71	1.9
AMC15040HS	40		1.5	342	78.8	2.1	77.4	2.0	71	1.9
AMC15050HS	50		1.2	442	98.8	2.0	97.4	2.0	91	1.9
AMC15063HS	63		0.9	572	124.8	2.0	123.4	1.9	117	1.8
AMC15080HS	80		0.7	742	158.8	1.9	157.4	1.9	151	1.8
AMC15100HS	100		0.5	942	198.8	1.9	197.4	1.9	191	1.8

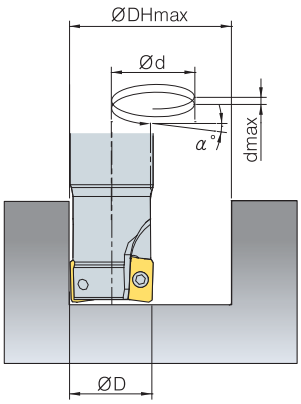
$$Lmin = \frac{ap}{\tan \alpha^\circ} \text{ (mm)}$$

Cutting condition for ramping and helical operation

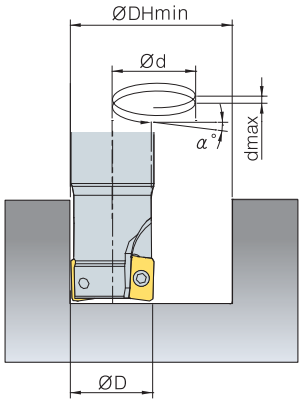
1. Ramping



2. Helical cutting for blind hole



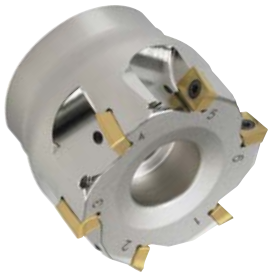
3. Helical cutting for through hole

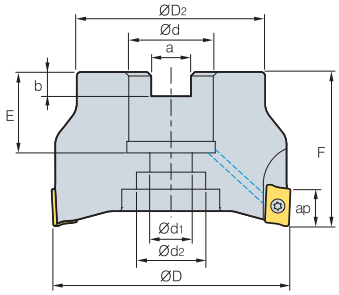


Designation	Tool Dia. ØD(min)	Ramping			Helical cutting for blind hole				Helical cutting for through hole	
		ap	Maximum angle α(°)	Lmin(mm)	Max. desirable hole Dia. ØDHmax(mm)	Max. pitch dmax(mm)	Min. desirable hole Dia. ØDHmin(mm)	Max. pitch dmax(mm)	Min. desirable hole Dia. ØDHmin(mm)	Max. pitch dmax(mm)
AMS2010HS	10	10	16.82	33	18	5.4	16.4	5.0	11	3.3
AMS2012HS	12		11.69	48	22	4.6	20.4	4.2	15	3.1
AMS2014HS	14		7.55	75	26	3.4	24.4	3.2	19	2.5
AMS2016HS	16		10.30	55	30	5.5	28	5.1	23	4.2
AMS2018HS	18		8.23	69	34	4.9	32	4.6	27	3.9
AMS2020HS	20		5.60	102	38	3.7	36	3.5	31	3.0
AMS2022HS	22		5.15	111	42	3.8	40	3.6	35	3.2
AMS2025HS	25		3.92	146	48	3.3	46	3.2	41	2.8
AMS2032HS	32		2.70	212	62	2.9	60	2.8	55	2.6
AMS2040HS	40		1.98	289	78	2.7	76	2.6	71	2.5
AMS2050HS	50		1.48	386	98	2.5	96	2.5	91	2.4
AMS2063HS	63		1.11	514	124	2.4	122	2.4	117	2.3
AMC2050HS	50		0.36	1576	98	0.6	96	0.6	91	0.6
AMC2063HS	63		0.27	2104	124	0.6	122	0.6	117	0.6
AMC2080HS	80		0.21	2784	158	0.6	156	0.6	151	0.5
AMC2100HS	100		0.16	3584	198	0.6	196	0.5	191	0.5
AMS3025HS	25	10	4.72	121	48	4.0	46	3.8	36	3.0
AMS3032HS	32		3.00	191	62	3.2	60	3.1	50	2.6
AMS3040HS	40		2.29	250	78	3.1	76	3.0	66	2.6
AMS3050HS	50		1.64	350	98	2.8	96	2.7	86	2.5
AMS3063HS	63		1.22	470	124	2.6	122	2.6	112	2.4
AMC3040HS	40		1.99	288	78	2.7	76	2.6	66	2.3
AMC3050HS	50		1.67	343	98	2.9	96	2.8	86	2.5
AMC3063HS	63		1.22	470	124	2.6	122	2.6	112	2.4
AMC3080HS	80		0.90	636	158	2.5	156	2.5	146	2.3
AMC3100HS	100		0.69	830	198	2.4	196	2.4	186	2.2
AMS2025MH	25	10	1.50	764	48	1.3	46	1.2	-	-
AMS2032MH	32		1.50	1146	62	1.6	60	1.6	-	-
AMS3040MH	40	16	1.50	1528	78	2.0	76	2.0	-	-
AMS4020HS	20	16	9.5	98	38.8	6.5	37.4	6.2	31	5.2
AMS4021HS	21		5.2	179	40.8	3.7	39.4	3.6	33	3.0
AMS4025HS	25		7.6	122	48.8	6.5	47.4	6.3	41	5.5
AMS4026HS	26		7.1	130	50.8	6.4	49.4	6.2	43	5.4
AMS4032HS	32		3.4	276	62.8	3.7	61.4	3.6	55	3.3
AMS4033HS	33		3.2	288	64.8	3.7	63.4	3.6	57	3.2
AMS4040HS	40		2.5	376	78.8	3.4	77.4	3.4	71	3.1
AMS4050HS	50		1.9	502	98.8	3.2	97.4	3.2	91	3.0
AMS4063HS	63		1.4	665	124.8	3.1	123.4	3.0	117	2.9
AMC4050HS	50		1.9	502	98.8	3.2	97.4	3.2	91	3.0
AMC4063HS	63		1.4	665	124.8	3.1	123.4	3.0	117	2.9
AMC4080HS	80		1.1	878	158.8	2.9	157.4	2.9	151	2.8
AMC4100HS	100		0.8	1128	198.8	2.9	197.4	2.9	191	2.8
AMC4125HS	125		0.6	1442	248.8	2.8	247.4	2.8	241	2.7

$$Lmin = \frac{ap}{\tan \alpha^\circ} \text{ (mm)}$$

AMC(M)1000S





AA 90°

- AR : 9°~13°
- RR : −14°~5°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg
AMCM	1032HS	8	32	30	16	9	14	8.4	5.6	19	40	5.6	0.15
	1040HS-16	10	40	34	16	9	14	8.4	5.6	19	40	5.6	0.24
	1040HS-22	10	40	34	22	11	18	10.4	6.3	21	40	5.6	0.24
	1050HS	12	50	42	22	11	18	10.4	6.3	21	40	5.6	0.36
	1063HS	14	63	49	22	11	18	10.4	6.3	21	40	5.6	0.61

Available Inserts

APMT-MA

APMT-MM

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	0602PDFR-MA														●	E05
	060208PDFR-MA															
	060202PDSR-MM				●	●		●			●	●				
	0602PDSR-MM				●	●		●	●	●	●	●				
	060208PDSR-MM				●	●		●			●	●				
	060212R-MM				●	●					●	●				

Available Arbors

Designation		Ød	NC Arbors
AMCM	1032HS	16	BT□□-FMC16-□□
	1040HS-16		
	1040HS-22	22	BT□□-FMC22-□□
	1050HS		
	1063HS		

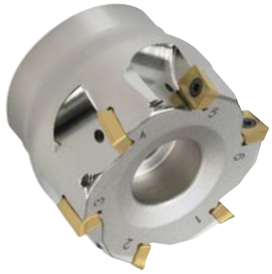
Parts

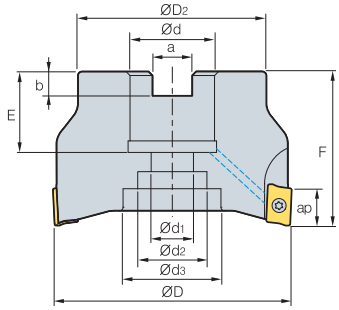
Specification	Screw	Wrench
Ø32~Ø63	FTKA01842	TW06S-A

Available Inserts E05

Available Arbors and bolt E318 ~ E320

AMC(M)1500S





AA 90°

- AR : 9°~13°
- RR : −14°~5°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	Ød3	a	b	E	F	ap	kg
AMCM	15040HS	5	40	34	16	9	14	-	8.4	5.6	19	40	9	0.22
	15050HS	6	50	42	22	11	18	-	10.4	6.3	21	40	9	0.34
	15063HS	8	63	49	22	11	18	-	10.4	6.3	21	40	9	0.57
AMC (AMCM)	15080HS	10	80	57	25.4(27)	14	25	35	9.5(12.4)	6(7)	24(23)	50	9	1.10
	15100HS	12	100	67	31.75(32)	18	26	42	12.7(14.4)	8(8)	32(26)	63	9	2.10

( )Metric Size

Available Inserts

APMT-MA

APMT-ML

APMT-MM

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	0903PDFR-MA														●	E05
	090308PDFR-MA															
	0903PDER-ML										●	●				
	090308PDER-ML															
	0903PDSR-MM				●	●	●	●			●	●				
	090308PDSR-MM				●	●		●			●	●				
	090312R-MM							●			●	●				
	090316R-MM				●	●					●	●				
	090320R-MM					●					●	●				

Available Arbors

Designation		Ød	NC Arbors
AMCM	15040HS	16	BT□□-FMC16-□□
	15050HS 15063HS	22	BT□□-FMC22-□□
	15080HS	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	15100HS	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□

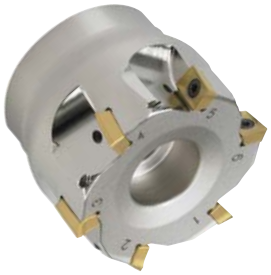
Parts

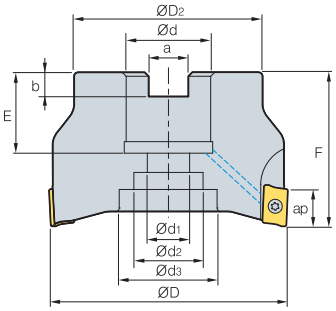
Specification	 Screw	 Wrench
Ø40~Ø100	FTKA02565S	TW08S

Available Inserts E05

Available Arbors and bolt E318 ~ E320

AMC(M)2000S





AA 90°

- AR : 9°~13°
- RR : −14°~5°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	Ød3	a	b	E	F	ap	kg
AMCM	2040HS	5	40	34	16	9	14	-	8.4	5.6	18	40	11	0.22
	2050HS	6	50	42	22	11	18	-	10.4	6.3	20	40	11	0.34
	2063HS	8	63	49	22	11	18	-	10.4	6.3	20	40	11	0.57
AMC (AMCM)	2080HS	8	80	57	25.4(27)	14	25	35	9.5(12.4)	6(7)	25(22)	50	11	1.10
	2100HS	10	100	67	31.75(32)	18	26	42	12.7(14.4)	8(8)	32(28)	63	11	2.10

( )Metric Size

Available Inserts

APMT-MA

APMT-ML

APMT-MM

APMT-MF

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	11T3PDFR-MA														●	E05 E06
	11T308PDFR-MA															
	11T3PDER-ML										●	●				
	11T308PDER-ML															
	11T3PDSR-MM			●	●	●	●	●	●	●	●	●				
	11T3PDSR-MF			●	●	●		●			●	●				
	11T308PDSR-MM			●	●	●		●	●		●	●				
	11T312PDSR-MM			●	●	●		●	●		●	●				
	11T316R-MM			●	●	●					●	●				
	11T318R-MM															
	11T324R-MM				●	●		●			●	●				

Available Arbors

Designation		Ød	NC Arbors
AMC(M)	2040HS	16	BT□□-FMC16-□□
	2050HS 2063HS	22	BT□□-FMC22-□□
	2080HS	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	2100HS	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□

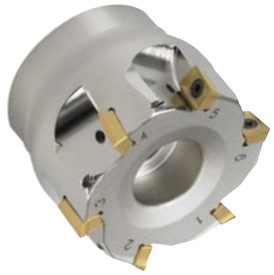
Parts

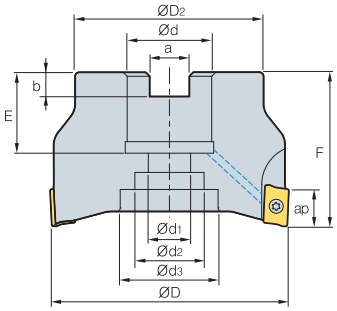
Specification	 Screw	 Wrench
Ø40~Ø100	FTKA02565S	TW08S

Available Inserts E05, E06

Available Arbors and bolt E318 ~ E320

AMC(M)3000S





AA 90°

- AR : 14°
- RR : −12°~8°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	Ød3	a	b	E	F	ap	kg
AMCM	3040HS	4	40	34	16	9	14	-	8.4	5.6	18	40	16	0.18
	3050HS	5	50	42	22	11	18	-	10.4	6.3	20	40	16	0.28
	3063HS	6	63	49	22	11	18	-	10.4	6.3	20	40	16	0.50
AMC (AMCM)	3080HS	7	80	57	25.4(27)	14	25	35	9.5(12.4)	6(7)	25(22)	50	16	1.02
	3100HS	8	100	67	31.75(32)	18	26	42	12.7(14.4)	8(8)	32(28)	63	16	2.05

- It is recommended to use an exclusive holder with the "New" sticker for APMT inserts.

( )Metric Size

Available Inserts

APMT-MA

APMT-ML

APMT-MM

APMT-MF

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	1604PDFR-MA														●	E05 E06
	160404PDFR-MA															
	1604PDER-ML										●	●				
	160404PDER-ML															
	1604PDSR-MM			●	●	●		●	●	●	●	●				
	1604PDSR-MF			●	●	●		●			●	●				
	160410PDSR-MM			●				●			●	●				
	160416PDSR-MM			●	●	●		●			●	●				
	160424R-MM				●	●		●			●	●				
	160430R-MM										●	●				
	160432R-MM			●	●	●		●			●	●				

Available Arbors

Designation		Ød	NC Arbors
AMC(M)	3040HS	16	BT□□-FMC16-□□
	3050HS 3063HS	22	BT□□-FMC22-□□
	3080HS	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	3100HS	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□

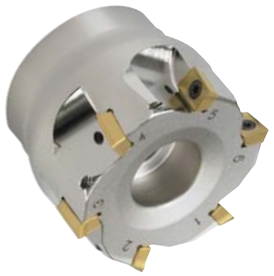
Parts

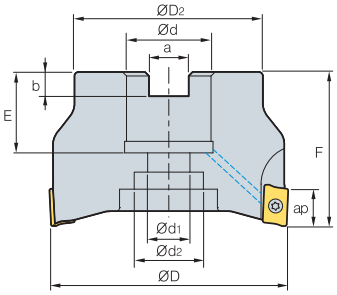
Specification	 Screw	 Wrench
Ø40~Ø100	FTKA0410	TW15S

Available Inserts E05, E06

Available Arbors and bolt E318 ~ E320

AMC(M)3000S-K





AA 90°

- AR : 14°
- RR : −12°~8°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg
AMCM	3040HS-K	4	40	34	16	9	14	8.4	5.6	18	40	16	0.15
	3050HS-K	5	50	42	22	11	18	10.4	6.3	20	40	16	0.24
	3063HS-K	6	63	49	22	11	18	10.4	6.3	20	40	16	0.24
AMC (AMCM)	3080HS-K	7	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(22)	50	16	0.36
	3100HS-K	8	100	67	31.75(32)	18	26	12.7(14.4)	8(8)	32(28)	63	16	0.61

• It is recommended to use an exclusive holder with the "New" sticker for APMT inserts.

( )Metric Size

Available Inserts

APFT-X22 APKT APKT-MF APKT-MM APKT-MM1 APKT-MA APKT-MA2 APKT-MA3 APKT-X22

Designation		Coated NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	PC8110	PD2000	Uncoated ST30A	G10	H01	page
APFT	1604PDSR-X22			●												E04
	1604PDTR-X22															
APKT	1604PDSR	●		●				●								E04 E05
	1604PDSR-MF	●							●		●					
	1604PDSR-MM	●	●	●		●	●	●	●		●					
	160432R-MM1	●														
	1604PDFR-MA											●			●	

Designation		Coated NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	PC8110	PD2000	Uncoated ST30A	G10	H01	page
APKT	1604PDFR-MA2														●	E04 E05
	160416FR-MA2															
	160432FR-MA2															
	1604PDFR-MA3													●	●	
	1604PDSR-X22	●														
	1604PDTR-X22															

Available Arbors

Designation		Ød	NC Arbors
AMC(M)	3040HS-K	16	BT□□-FMC16-□□
	3050HS-K 3063HS-	22	BT□□-FMC22-□□
	3080HS-K	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	3100HS-K	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□

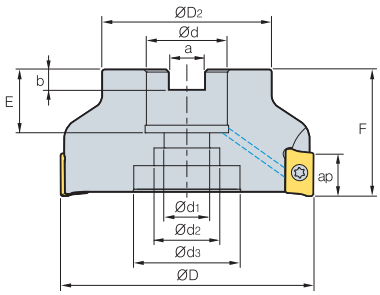
Parts

Specification	Screw	Wrench
Ø40~Ø100	FTKA0410	TW15S

Available Inserts E04, E05

Available Arbors and bolt E318 ~ E320

AMC(M)4000S



AA 90°
• AR : 13°~15°
• RR : −12°~7°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	Ød3	a	b	E	F	ap	kg
AMCM	4050HS	5	50	42	22	11	18	-	10.4	6.3	21	40	17	0.28
	4063HS	6	63	49	22	11	18	-	10.4	6.3	21	40	17	0.50
AMC (AMCM)	4080HS	7	80	57	25.4(27)	14	25	35	9.5(12.4)	6(7)	24(23)	50	17	1.00
	4100HS	8	100	67	31.75(32)	18	26	42	12.7(14.4)	8(8)	32(25)	63(50)	17	2.10
	4125HS	9	125	87	38.1(40)	22	32	52	15.9(16.4)	10(9)	35(29)	63	17	3.30
	4160S	10	160	107	50.8(40)	-	-	100	19(16.4)	11(9)	38(32)	63	17	3.6
	4200S	10	200	108	47.625(60)	-	-	132	25.4(25.7)	14(14)	40(38)	63	17	6

( )Metric Size

Available Inserts

APMT-MA

APMT-ML

APMT-MM

APMT-MF

Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
APMT	1806PDFR-MA															E05 E06
	180604PDFR-MA															
	180612PDFR-MA															
	180616PDFR-MA															
	180620PDFR-MA															
	180624PDFR-MA															
	180630R-MA															
	1806PDER-ML										●	●				
	180604PDER-ML															
	180612PDER-ML															
	180616PDER-ML															

Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
APMT	180620PDER-ML															E05 E06
	180624PDER-ML															
	180630R-ML															
	1806PDSR-MM			●	●	●		●	●	●	●	●				
	1806PDSR-MF				●			●			●	●				
	180612PDSR-MM			●	●	●		●			●	●				
	180616PDSR-MM				●			●			●	●				
	180620PDSR-MM															
	180624PDSR-MM				●	●					●	●				
	180630R-MM										●	●				
	180632R-MM				●	●		●			●	●				

Available Arbors

Designation		Ød	NC Arbors
AMC(M)	4050HS 4063HS	22	BT□□-FMC22-□□
	4080HS	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	4100HS	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□

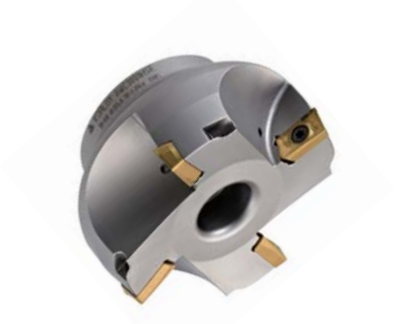
Designation		Ød	NC Arbors
AMC(M)	4125HS	38.1	BT□□-FMA38.1-□□
		40	BT□□-FMC40-□□
	4160S	50.8	BT□□-FMA50.8 -□□
		40	BT□□-FMC40-□□
	4200S	47.625	BT□□-FMA47.625 -□□
		60	BT□□-FMB60-□□

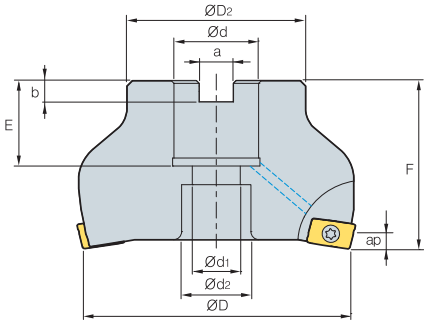
Parts

Specification	Screw	Wrench
Ø50~Ø200	FTKA0410	TW15S

Available Inserts E05, E06
Available Arbors and bolt E318 ~ E320

AMC(M)1000SE / 2000SE





AA 75°
• AR : 45°
• RR : 0°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg
AMCM	1040HSE	4	40	34	16	9	14	8.4	5.6	19	40	2.5	0.26
	1050HSE	5	50	42	22	11	18	104	6.3	21	40	2.5	0.39
AMC (AMCM)	2080HSE	5	80	57	25.4(27)	14	20	9.5(12.4)	6.0(7.0)	25(22)	50	4	1.2
	2100HSE	6	100	67	31.75(32)	18	26	12.7(14.4)	8.0(8.0)	32(28)	63	4	2.33

( )Metric Size

Available Inserts

APMT-MM

APMT-MF

Type	Designation		Cermet		Coated									Uncoated			page
			CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
1000 type	APMT	060202PDSR-MM				●	●		●			●	●				E05 E06
		0602PDSR-MM				●	●		●	●	●	●	●				
		060208PDSR-MM				●	●		●			●	●				
		060212R-MM				●	●					●	●				
2000 type	APMT	11T3PDSR-MM			●	●	●	●	●	●	●	●	●				
		11T3PDSR-MF			●	●	●		●			●	●				
		11T308PDSR-MM			●	●	●		●	●		●	●				
		11T312PDSR-MM			●		●		●	●		●	●				
		11T316R-MM			●	●	●					●	●				
		11T318R-MM															
		11T324R-MM				●	●		●			●	●				

Available Arbors

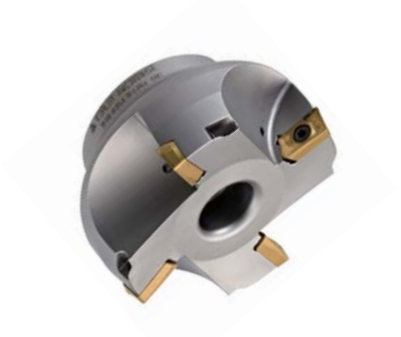
Type	Designation		Ød	NC Arbors
1000 type	AMC(M)	1040HSE	16	BT□□-FMC16-□□
		1050HSE	22	BT□□-FMC22-□□
2000 type	AMC(M)	2080HSE	25.4	BT□□-FMA25.4-□□
			27	BT□□-FMC27-□□
		2100HSE	31.75	BT□□-FMA31.75-□□
			32	BT□□-FMC32-□□

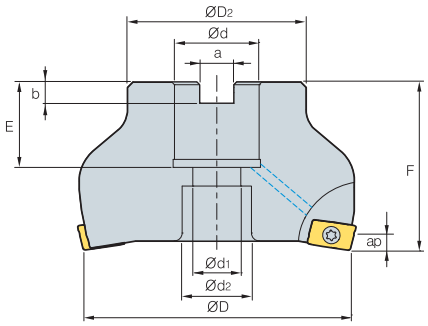
Parts

Specification	 Screw	 Wrench	 Wrench
Ø40~Ø50	FTKA01842	-	TW06S-A
Ø80~Ø100	FTKA02565S	TW08S	-

Available Inserts E05, E06
Available Arbors and bolt E318 ~ E320

AMC(M)3000SE





AA 75°
• AR : 45°
• RR : 0°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg
AMC (AMCM)	3080HSE	4	80	57	25.4(27)	14	20	9.5(12.4)	6.0(7.0)	25(22)	50	6	1.3
	3100HSE	5	100	67	31.75(32)	18	26	12.7(14.4)	8.0(8.0)	32(28)	63	6	2.3

( )Metric Size

Available Inserts

APMT-MM

APMT-MF

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	1604PDSR-MM			●	●	●		●	●	●	●	●				E05 E06
	1604PDSR-MF			●	●	●		●			●	●				
	160410PDSR-MM			●				●			●	●				
	160416PDSR-MM			●	●	●		●			●	●				
	160424R-MM				●	●		●			●	●				
	160430R-MM										●	●				
	160432R-MM			●	●	●		●			●	●				

Available Arbors

Designation		Ød	NC Arbors
AMC(M)	3080HSE	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	3100HSE	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□

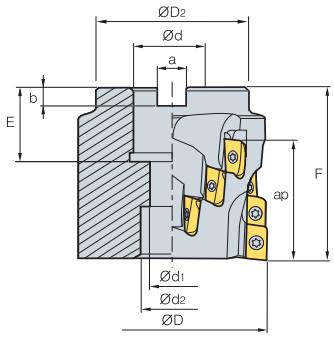
Parts

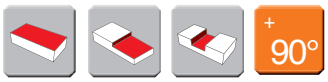
Specification	Screw	Wrench
Ø80~Ø100	FTKA0410	TW08S

Available Inserts E05, E06

Available Arbors and bolt E318 ~ E320

AMC(M)2000M





• AR : 9°
• RR : −9°~−5°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	No. of flute	ap	kg
AMCM	2050M	16	50	40	22	11	18	10.4	6.3	21	58	4	39	0.7
AMC (AMCM)	2063M	16	63	50	25.4(27)	13.5	20	9.5(12.4)	6(7)	25(25)	58	4	39	0.8
	2080M	20	80	60	31.75(32)	-	45	12.7(14.4)	8(8)	35(28)	63	5	39	0.96
	2100M	24	100	80	38.1(40)	-	56	15.9(16.4)	10(9)	38(30)	63	6	39	1.2

( )Metric Size

Available Inserts

APMT-MA

APMT-ML

APMT-MM

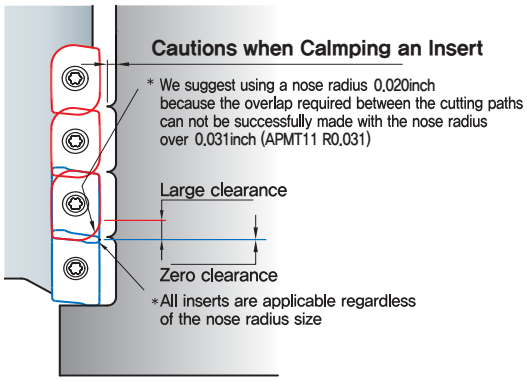
APMT-MF

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC5500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	11T3PDFR-MA														●	E05 E06
	11T308PDFR-MA															
	11T3PDER-ML										●	●				
	11T308PDER-ML															
	11T3PDSR-MM						●									
	11T3PDSR-MF			●	●	●		●			●	●				
	11T308PDSR-MM			●	●	●		●	●		●	●				
	11T312PDSR-MM			●	●			●	●		●	●				
	11T316R-MM			●	●	●					●	●				
	11T318R-MM															
	11T324R-MM				●	●		●			●	●				

Available Arbors

Designation		Ød	NC Arbors	
AMC(M)	2050M	22.225	BT□□-FMA22.225-□□	BT□□-SMA22.225-□□
		22	BT□□-FMC22-□□	BT□□-SMC22-□□
	2063M	25.4	BT□□-FMA25.4 -□□	BT□□-SMA25.4-□□
		27	BT□□-FMC27-□□	BT□□-SMC27-□□
	2080M	31.75	BT□□-FMA31.75-□□	BT□□-SMA31.75-□□
		32	BT□□-FMC32-□□	BT□□-SMC32-□□
	2100M	38.1	BT□□-FMA38.1-□□	BT□□-SMA38.1-□□
		40	BT□□-FMC40-□□	BT□□-SMC40-□□

Caution when insert are screwed

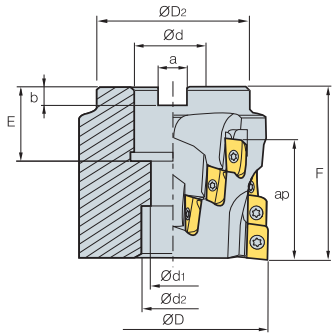


Parts

Specification	Screw	Wrench
Ø50~Ø100	FTKA02565S	TW08S

Available Inserts E05, E06
Available Arbors and bolt E318 ~ E320

AMC(M)3000M



AA 90°

- AR : 9°
- RR : −9°~−5°

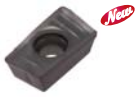
(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	No. of flute	ap	kg
AMC (AMCM)	3063M	16	63	57	25.4(27)	14	20	9.5(12.4)	6(7)	38(38)	85	4	57	1.1
	3080M	20	80	67	31.75(32)	14	26	12.7(14.4)	8(8)	40(40)	100	4	71	2.23
	3100M	30	100	87	38.1(40)	22	32	15.9(16.4)	10(9)	40(40)	100	6	71	3.59

( )Metric Size

Available Inserts

APMT-MA



APMT-ML

APMT-MM

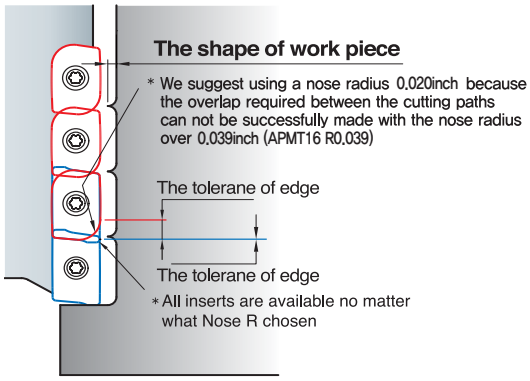
APMT-MF

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	1604PDFR-MA														●	E05 E06
	160404PDFR-MA															
	1604PDER-ML										●	●				
	160404PDER-ML															
	1604PDSR-MM			●	●	●		●	●	●	●	●				
	1604PDSR-MF			●	●	●		●			●	●				
	160410PDSR-MM			●				●			●	●				
	160416PDSR-MM			●	●	●		●			●	●				
	160424R-MM				●	●		●			●	●				
	160430R-MM										●	●				
	160432R-MM			●	●	●		●			●	●				

Available Arbors

Designation		Ød	NC Arbors	
AMC(M)	3063M	25.4	BT□□-FMA25.4-□□	BT□□-SMA25.4-□□
		27	BT□□-FMC27-□□	BT□□-SMC27-□□
	3080M	31.75	BT□□-FMA31.75-□□	BT□□-SMA31.75-□□
		32	BT□□-FMC32-□□	BT□□-SMC32-□□
	3100M	38.1	BT□□-FMA38.1-□□	BT□□-SMA38.1-□□
		40	BT□□-FMC40-□□	BT□□-SMC40-□□

Caution when insert are screwed



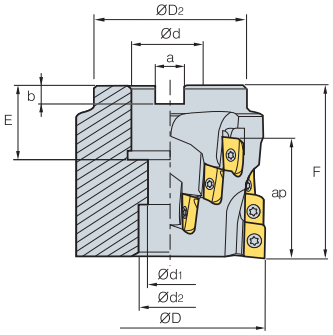
Parts

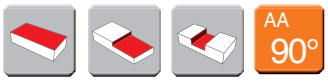
Specification	Screw	Wrench
Ø63~Ø100	FTKA0410	TW15S

Available Inserts E05, E06

Available Arbors and bolt E318 ~ E320

AMC(M)4000M





- AR : 9°
- RR : −9°~−5°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	No. of flute	ap	kg
AMC (AMCM)	4063M	16	63	57	25.4(27)	14	20	9.5(12.4)	6(7)	38(38)	85	4	61.1	1.1
	4080M	20	80	67	31.75(32)	14	26	12.7(14.4)	8(8)	40(40)	100	4	76.1	2.23
	4100M	30	100	87	38.1(40)	22	32	15.9(16.4)	10(9)	40(40)	100	6	76.1	3.59
	4125M	18	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	36(29)	68	6	46.1	4.0

( )Metric Size

Available Inserts

APMT-MA

APMT-ML

APMT-MM

APMT-MF

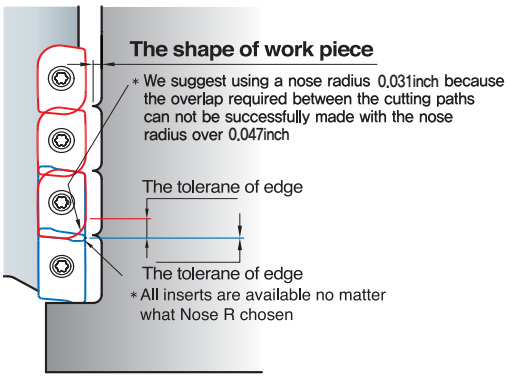
Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
APMT	1806PDFR-MA														●	E05 E06
	180604PDFR-MA															
	180612PDFR-MA															
	180616PDFR-MA															
	180620PDFR-MA															
	180624PDFR-MA															
	180630R-MA															
	1806PDER-ML										●	●				
	180604PDER-ML															
	180612PDER-ML															
	180616PDER-ML															

Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
APMT	180620PDER-ML															E05 E06
	180624PDER-ML															
	180630R-ML															
	1806PDSR-MM			●	●	●		●	●	●	●	●				
	1806PDSR-MF				●			●			●	●				
	180612PDSR-MM			●	●	●		●			●	●				
	180616PDSR-MM				●			●			●	●				
	180620PDSR-MM															
	180624PDSR-MM				●	●					●	●				
	180630R-MM										●	●				
	180632R-MM				●	●		●			●	●				

Available Arbors

Designation		Ød	NC Arbors	
AMC(M)	4063M	25.4	BT□□-FMA25.4-□□	BT□□-SMA25.4-□□
		27	BT□□-FMC27-□□	BT□□-SMC27-□□
	4080M	31.75	BT□□-FMA31.75-□□	BT□□-SMA31.75-□□
		32	BT□□-FMC32-□□	BT□□-SMC32-□□
	4100M	38.1	BT□□-FMA38.1-□□	BT□□-SMA38.1-□□
		40	BT□□-FMC40-□□	BT□□-SMC40-□□
	4125M	38.1	BT□□-FMA38.1-□□	BT□□-SMA38.1-□□
		40	BT□□-FMC40-□□	BT□□-SMC40-□□

Caution when insert are screwed



Parts

Specification	Screw	Wrench
Ø63~Ø125	FTKA0410	TW15S

Available Inserts E05, E06
Available Arbors and bolt E318 ~ E320

AMS1000S

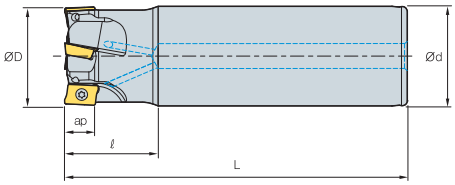


Fig. 1

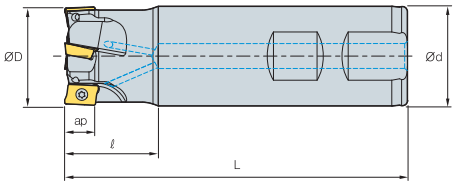


Fig. 2

AA 90°

- AR : 7.5°~13°
- RR : −17°~−6°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg	Fig.
AMS	1010HS	2	10	10	20	80	5.6	0.04	2
	1011HS	2	11	10	20	80	5.6	0.04	2
	1012HS-2	2	12	12	25	80	5.6	0.06	2
	1012HS-2L12	2	12	12	25	120	5.6	0.09	1
	1012HS-3	3	12	12	25	80	5.6	0.06	2
	1014HS-2	2	14	16	25	90	5.6	0.11	2
	1014HS-2L16	2	14	16	25	140	5.6	0.18	1
	1014HS-3	3	14	16	25	90	5.6	0.11	2
	1015HS	3	15	16	25	90	5.6	0.11	2
	1015HS-3L16	3	15	16	25	140	5.6	0.18	1
	1016HS-3	3	16	16	25	90	5.6	0.12	2
	1016HS-3L16	3	16	16	25	160	5.6	0.22	1
	1016HS-4	4	16	16	25	90	5.6	0.12	2
	1017HS	4	17	16	25	90	5.6	0.12	2
	1017HS-3L16	3	17	16	25	160	5.6	0.22	1
	1018HS	4	18	16	25	90	5.6	0.12	2
	1018HS-4L16	4	18	16	25	180	5.6	0.25	1
	1020HS-4	4	20	20	30	110	5.6	0.23	2
	1020HS-4L20	4	20	20	30	200	5.6	0.43	1
	1020HS-5	5	20	20	30	110	5.6	0.23	2
	1021HS	5	21	20	30	110	5.6	0.24	2
	1021HS-4L20	4	21	20	30	200	5.6	0.43	1
	1022HS	5	22	20	30	110	5.6	0.27	2
	1025HS	7	25	25	30	120	5.6	0.39	2
	1026HS	7	26	25	30	120	5.6	0.39	2
	1032HS	8	32	32	35	120	5.6	0.65	2
	1033HS	8	33	32	35	120	5.6	0.65	2

Available Inserts

APMT-MA

APMT-MM

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	0602PDFR-MA														●	E05
	060208PDFR-MA															
	060202PDSR-MM				●			●			●	●				
	0602PDSR-MM				●	●		●	●	●	●	●				
	060208PDSR-MM				●	●		●			●	●				
	060212R-MM				●	●					●	●				
	060216R-MM					●					●	●				

Parts

Specification	 Screw	 Wrench
Ø10~Ø33	FTKA01842	TW06S-A

Available Inserts E05

AMS1500S

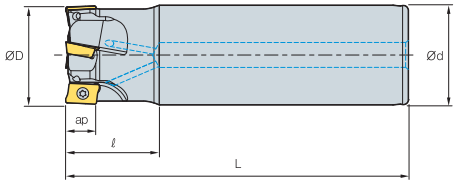


Fig. 1

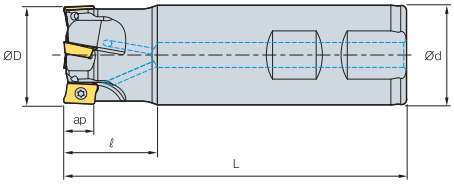


Fig. 2

AA 90°

- AR : 7.5°~12.5°
- RR : −28°~−14°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg	Fig.
AMS	15010HS	1	10	10	25	80	9	0.04	2
	15010HS-1L16	1	10	16	30	160	9	0.21	1
	15012HS	1	12	16	25	80	9	0.10	2
	15012HS-1L16	1	12	16	30	160	9	0.21	1
	15013HS	1	13	16	25	80	9	0.10	2
	15014HS	1	14	16	25	80	9	0.10	2
	15014HS-1L16	1	14	16	30	160	9	0.21	1
	15016HS	2	16	16	30	90	9	0.11	2
	15016HS-2L16	2	16	16	30	160	9	0.21	1
	15017HS	2	17	16	30	90	9	0.12	2
	15017HS-2L16	2	17	16	30	160	9	0.21	1
	15018HS	2	18	16	30	90	9	0.14	2
	15018HS-2L16	2	18	16	30	160	9	0.21	1
	15019HS	2	19	16	30	90	9	0.16	2
	15020HS	2	20	20	30	90	9	0.18	2
	15020HS-2L20	2	20	20	30	160	9	0.34	1
	15020HS-3	3	20	20	30	90	9	0.18	2
	15021HS	2	21	20	30	90	9	0.20	2
	15021HS-2L20	2	21	20	30	160	9	0.34	1
	15021HS-3	3	21	20	30	90	9	0.2	2
	15022HS	3	22	20	30	110	9	0.23	2
	15022HS-3L20	3	22	20	30	180	9	0.38	1
	15024HS	3	24	20	30	110	9	0.30	2
	15024HS-4	4	24	20	30	110	9	0.3	2
	15025HS-3S20	3	25	20	30	110	9	0.35	2
	15025HS	3	25	25	30	110	9	0.35	2
	15025HS-3L25	3	25	25	30	180	9	0.59	1

Available Inserts

APMT-MA

APMT-ML

APMT-MM

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	0903PDFR-MA														●	E05
	090308PDFR-MA															
	0903PDER-ML										●	●				
	090308PDER-ML															
	0903PDSR-MM				●		●	●			●	●				
	090308PDSR-MM				●	●		●			●	●				
	090312R-MM							●			●	●				
	090316R-MM				●	●					●	●				
	090320R-MM					●					●	●				

Parts

Specification	Screw	Wrench	Cutter Dia.
Ø10~Ø25	FTKA02555S FTKA02565S	TW08S	Ø10~Ø14 Ø16~Ø25

Available Inserts E05

AMS1500S

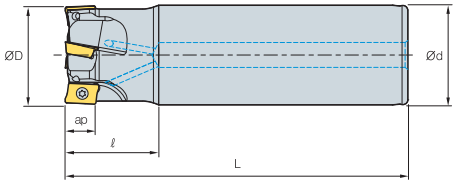


Fig. 1

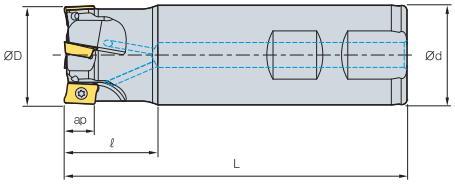


Fig. 2

- AR : 7.5°~12.5°
- RR : −28°~−14°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg	Fig.
AMS	15025HS-4S20	4	25	20	30	110	9	0.25	2
	15025HS-4S25	4	25	25	30	110	9	0.25	2
	15028HS	4	28	25	30	110	9	0.36	2
	15028HS-4L25	4	28	25	30	180	9	0.61	1
	15028HS-5	5	28	25	30	110	9	0.36	2
	15030HS	4	30	25	30	110	9	0.38	2
	15030HS-4L25	4	30	25	30	180	9	0.62	1
	15030HS-5	5	30	25	30	110	9	0.38	2
	15032HS	4	32	32	30	110	9	0.60	2
	15032HS-4L32	4	32	32	30	180	9	1.00	1
	15032HS-5	5	32	32	30	110	9	0.6	2
	15035HS	5	35	32	30	110	9	0.70	2
	15035HS-6	6	35	32	30	110	9	0.7	2
	15040HS-S32	5	40	32	35	130	9	0.80	2
	15040HS-5L32	5	40	32	35	200	9	1.20	1
	15040HS-6S32	6	40	32	35	130	9	0.8	2
	15040HS-S40	5	40	40	35	130	9	1.13	2
	15040HS-6S40	6	40	40	35	130	9	1.13	2
	15040HS-S42	5	40	42	35	130	9	1.23	2
	15040HS-6S42	6	40	42	35	130	9	1.23	2

Available Inserts

APMT-MA

APMT-ML

APMT-MM

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	0903PDFR-MA														●	E05
	090308PDFR-MA															
	0903PDER-ML										●	●				
	090308PDER-ML															
	0903PDSR-MM				●		●	●			●	●				
	090308PDSR-MM				●	●		●			●	●				
	090312R-MM							●			●	●				
	090316R-MM				●	●					●	●				
	090320R-MM					●					●	●				

Parts

Specification	 Screw	 Wrench
Ø25~Ø40	FTKA02565S	TW08S

Available Inserts **E05**

AMS2000S

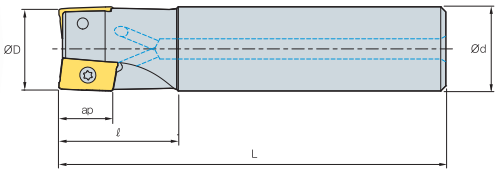


Fig. 1

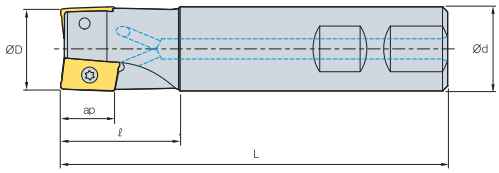


Fig. 2

AA 90°

- AR : 3°~14°
- RR : −25°~−18°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg	Fig.
AMS	2010HS	1	10	10	20	85	11	0.04	2
	2010HS-1L16	1	10	16	30	160	11	0.21	1
	2012HS	1	12	16	25	85	11	0.10	2
	2012HS-1L16	1	12	16	30	160	11	0.21	1
	2014HS	1	14	16	25	90	11	0.12	2
	2014HS-1L16	1	14	16	30	160	11	0.21	1
	2016HS	2	16	16	25	90	11	0.12	2
	2016HS-2L16	2	16	16	30	180	11	0.21	1
	2018HS	2	18	16	25	90	11	0.12	2
	2018HS-2L16	2	18	16	30	180	11	0.21	1
	2020HS	2	20	20	30	100	11	0.21	2
	2020HS-2L20	2	20	20	30	210	11	0.49	1
	2022HS	3	22	20	35	115	11	0.25	2
	2022HS-3L20	3	22	20	35	180	11	0.38	1
	2025HS	3	25	25	35	115	11	0.40	2
	2025HS-3L25	3	25	25	40	180	11	0.59	1
	2032HS	4	32	32	40	125	11	0.70	2
	2032HS-4L32	4	32	32	50	180	11	1.00	1
	2040HS	5	40	32	42	130	11	0.84	2
	2040HS-5L32	5	40	32	50	200	11	1.20	1
	2040HS-S40	5	40	40	42	130	11	1.15	2
	2040HS-S42	5	40	42	42	130	11	2.00	2
	2050HS	6	50	32	45	135	11	1.06	2
	2050HS-S40	6	50	40	45	135	11	1.38	2
	2050HS-S42	6	50	42	45	135	11	1.50	2
	2063HS	8	63	32	45	135	11	1.31	2
	2063HS-S40	8	63	40	45	135	11	1.62	2
	2063HS-S42	8	63	42	45	135	11	1.70	2

Available Inserts

APMT-MA

APMT-ML

APMT-MM

APMT-MF

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	11T3PDFR-MA														●	E05 E06
	11T308PDFR-MA															
	11T3PDER-ML										●	●				
	11T308PDER-ML															
	11T3PDSR-MM						●									
	11T3PDSR-MF			●	●	●		●			●	●				
	11T308PDSR-MM			●	●	●		●	●		●	●				
	11T312PDSR-MM			●	●			●	●		●	●				
	11T316R-MM			●	●	●					●	●				
	11T318R-MM															
	11T324R-MM				●	●		●			●	●				

Parts

Specification	Screw	Wrench	Cutter Dia.
Ø10~Ø63	FTKA02555S FTKA02565S	TW08S	Ø10~Ø14 Ø16~Ø63

Available Inserts **E05, E06**

AMS3000S

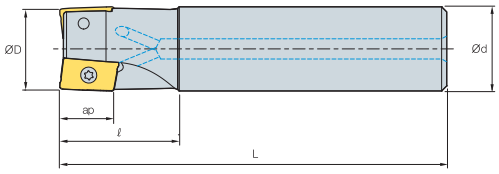


Fig. 1

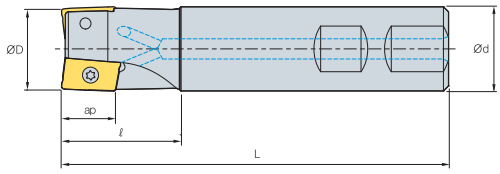


Fig. 2

AA 90°

- AR : 3°~14°
- RR : −18°~−10°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg	Fig.
AMS	3025HS	2	25	25	35	115	16	0.40	2
	3025HS-2M25	2	25	25	35	180	16	0.65	1
	3025HS-2L25	2	25	25	60	220	16	0.75	1
	3032HS	3	32	32	40	125	16	0.69	2
	3032HS-2M32	2	32	32	40	200	16	1.13	1
	3032HS-2L32	2	32	32	65	260	16	1.52	1
	3032HS-3M32	3	32	32	40	200	16	1.12	1
	3032HS-3L32	3	32	32	65	260	16	1.48	1
	3040HS	4	40	32	42	130	16	0.80	2
	3040HS-3M32	3	40	32	42	200	16	1.24	1
	3040HS-3L32	3	40	32	42	260	16	1.61	1
	3040HS-4M32	4	40	32	42	200	16	1.21	1
	3040HS-4L32	4	40	32	42	260	16	1.58	1
	3040HS-S40	4	40	40	42	130	16	1.10	2
	3040HS-S42	4	40	42	42	130	16	1.20	2
	3050HS	5	50	32	45	135	16	1.00	2
	3050HS-S40	5	50	40	45	135	16	1.30	2
	3050HS-S42	5	50	42	45	135	16	1.40	2
	3063HS	6	63	32	45	135	16	1.25	2
	3063HS-S40	6	63	40	45	135	16	1.50	2
	3063HS-S42	6	63	42	45	135	16	1.54	2

Available Inserts

APMT-MA

APMT-ML

APMT-MM

APMT-MF

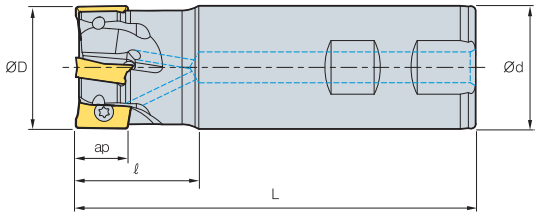
Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	1604PDFR-MA														●	E05 E06
	160404PDFR-MA															
	1604PDER-ML										●	●				
	160404PDER-ML															
	1604PDSR-MM			●	●	●		●	●	●	●	●				
	1604PDSR-MF			●	●	●		●			●	●				
	160410PDSR-MM			●				●			●	●				
	160416PDSR-MM			●	●	●		●			●	●				
	160424R-MM				●	●		●			●	●				
	160430R-MM										●	●				
	160432R-MM			●	●	●		●			●	●				

Parts

Specification	Screw	Wrench	Cutter Dia.
Ø25~Ø63	FTKA0408 FTKA0410	TW15S	Ø25 Ø32~Ø63

Available Inserts **E05, E06**

AMS3000S-K



AA 90°

- AR : 14°
- RR : −18°~−10°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
AMS	3025HS-K	2	25	25	35	115	16	0.4
	3032HS-K	3	32	32	40	125	16	0.69
	3040HS-K	4	40	32	42	130	16	0.8
	3040HS-K-S40	4	40	40	42	130	16	1.1
	3040HS-K-S42	4	40	42	42	130	16	1.2
	3050HS-K	5	50	32	45	135	16	1.0
	3050HS-K-S40	5	50	40	45	135	16	1.3
	3050HS-K-S42	5	50	42	45	135	16	1.4
	3063HS-K	6	63	32	45	135	16	1.25
	3063HS-K-S40	6	63	40	45	135	16	1.5
	3063HS-K-S42	6	63	42	45	135	16	1.54

Available Inserts

APFT-X22 APFT-X28 APKT APKT-MF APKT-MM APKT-MM1 APKT-MA APKT-MA2 APKT-MA3 APKT-X22 APKT-X23 APKT-X24

Designation		Coated											Uncoated			page
		NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	PC8110	PD2000	ST30A	G10	H01	
APMT	1604PDSR-X22			●												E04
	1604PDTR-X22															
APKT	1604PDSR	●		●				●								E04 E05
	1604PDSR-MF	●							●		●					
	1604PDSR-MM	●	●	●		●	●	●	●		●					
	160432R-MM1	●														
	1604PDFR-MA											●			●	
	1604PDFR-MA2														●	
	160416FR-MA2															
	160432FR-MA2															
	1604PDFR-MA3													●	●	
	1604PDSR-X22	●														
	1604PDTR-X22															

Parts

Specification	Screw	Wrench	Cutter Dia.
Ø25~Ø63	FTKA0408 FTKA0410	TW15S	Ø25 Ø32~Ø63

Available Inserts E04, E05

AMS4000S

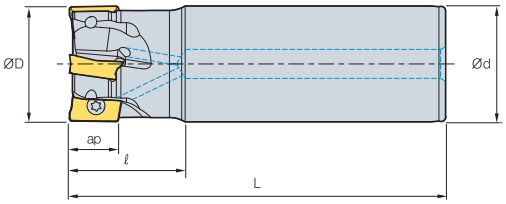


Fig. 1

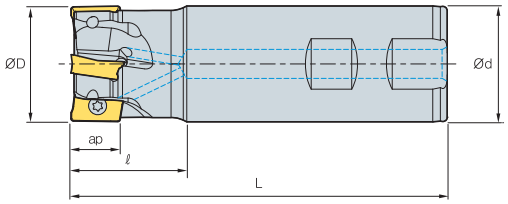


Fig. 2

AA 90°

- AR : 7°~13°
- RR : −20°~−6°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg	Fig.
AMS	4020HS	1	20	20	30	90	17	0.18	2
	4020HS-M	1	20	20	30	160	17	0.17	1
	4021HS	1	21	20	30	90	17	0.19	2
	4021HS-M	1	21	20	30	160	17	0.34	1
	4025HS	2	25	25	40	110	17	0.35	2
	4025HS-2M25	2	25	25	40	180	17	0.58	1
	4025HS-2L25	2	25	25	40	230	17	0.8	1
	4026HS	2	26	25	40	110	17	0.37	2
	4026HS-2M25	2	26	25	40	180	17	0.60	1
	4026HS-2L25	2	26	25	40	230	17	0.82	1
	4032HS	3	32	32	40	125	17	0.65	2
	4032HS-2M32	2	32	32	50	200	17	1.17	1
	4032HS-2L32	2	32	32	50	260	17	1.5	1
	4032HS-3M32	3	32	32	50	200	17	1.10	1
	4032HS-3L32	3	32	32	50	260	17	1.48	1
	4033HS	3	33	32	40	125	17	0.68	2
	4033HS-2M32	2	33	32	50	200	17	1.12	1
	4033HS-2L32	2	33	32	50	260	17	1.55	1
	4033HS-3M32	3	33	32	50	200	17	1.12	1
	4033HS-3L32	3	33	32	50	260	17	1.55	1

Available Inserts

APMT-MA

APMT-ML

APMT-MM

APMT-MF

Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
APMT	1806PDFR-MA														●	E05 E06
	180604PDFR-MA															
	180612PDFR-MA															
	180616PDFR-MA															
	180620PDFR-MA															
	180624PDFR-MA															
	180630R-MA															
	1806PDER-ML										●	●				
	180604PDER-ML															
	180612PDER-ML															
	180616PDER-ML															

Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
APMT	180620PDER-ML															E05 E06
	180624PDER-ML															
	180630R-ML															
	1806PDSR-MM			●	●	●		●	●	●	●	●				
	1806PDSR-MF				●			●			●	●				
	180612PDSR-MM			●	●	●		●			●	●				
	180616PDSR-MM				●			●			●	●				
	180620PDSR-MM															
	180624PDSR-MM				●	●					●	●				
	180630R-MM										●	●				
	180632R-MM				●	●		●			●	●				

Parts

Specification	Screw	Wrench	Cutter Dia.
Ø20~Ø33	FTKA0408 FTKA0410	TW15S	Ø20~Ø25 Ø32~Ø33

Available Inserts **E05, E06**

AMS4000S

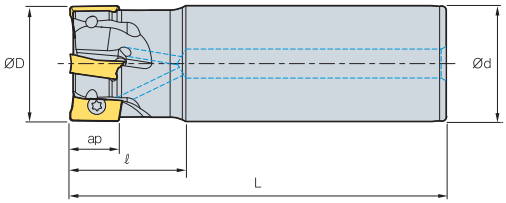


Fig. 1

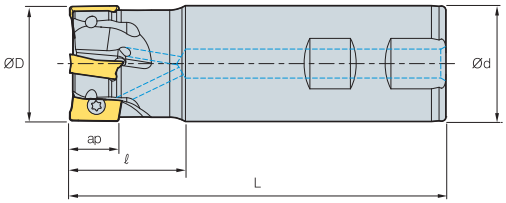


Fig. 2

AA 90°

- AR : 7°~13°
- RR : −20°~−6°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg	Fig.
AMS	4040HS-3M32	3	40	32	50	200	17	1.20	1
	4040HS-3L32	3	40	32	50	260	17	1.60	1
	4040HS-4M32	4	40	32	50	200	17	1.20	1
	4040HS-4L32	4	40	32	50	260	17	1.60	1
	4040HS-S32	4	40	32	40	130	17	0.76	2
	4040HS-S40	4	40	40	40	130	17	1.10	2
	4040HS-S42	4	40	42	40	130	17	1.20	2
	4050HS-S32	5	50	32	40	135	17	0.95	2
	4050HS-S40	5	50	40	40	135	17	1.30	2
	4050HS-S42	5	50	42	40	135	17	1.40	2
	4063HS-S32	6	63	32	40	135	17	1.25	2
	4063HS-S40	6	63	40	40	135	17	1.60	2
	4063HS-S42	6	63	42	40	135	17	1.70	2

Available Inserts

APMT-MA

APMT-ML

APMT-MM

APMT-MF

Designation		Cermet		Coated								Uncoated			page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	1806PDFR-MA															E05 E06
	180604PDFR-MA															
	180612PDFR-MA															
	180616PDFR-MA															
	180620PDFR-MA															
	180624PDFR-MA															
	180630R-MA															
	1806PDER-ML										●	●				
	180604PDER-ML															
	180612PDER-ML															
	180616PDER-ML															

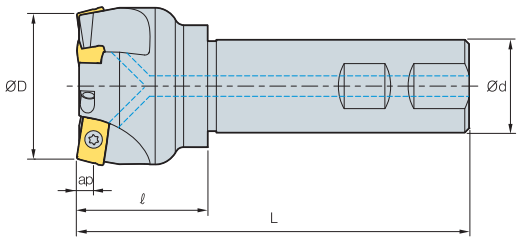
Designation		Cermet		Coated								Uncoated			page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	180620PDER-ML															E05 E06
	180624PDER-ML															
	180630R-ML															
	1806PDSR-MM			●	●	●		●	●	●	●	●				
	1806PDSR-MF				●			●			●	●				
	180612PDSR-MM			●	●	●		●			●	●				
	180616PDSR-MM				●			●			●	●				
	180620PDSR-MM															
	180624PDSR-MM				●	●					●	●				
	180630R-MM										●	●				
	180632R-MM				●	●		●			●	●				

Parts

Specification	 Screw	 Wrench
Ø40~Ø63	FTKA0410	TW15S

Available Inserts E05, E06

AMS1000SE / 2000SE



AA 75°

- AR : −4.5°~−1°
- RR : −3°~0°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
AMS	1025HSE	3	25	25	30	115	2.5	0.41
AMS	2025HSE	2	25	25	30	115	4	0.4
	2032HSE	3	32	32	40	125	4	0.72
	2040HSE	3	40	32	40	130	4	0.86
	2040HSE-S40	3	40	40	40	130	4	1.2
	2040HSE-S42	3	40	42	40	130	4	1.3
	2050HSE	4	50	32	40	135	4	0.98
	2050HSE-S40	4	50	40	40	135	4	1.3
	2050HSE-S42	4	50	42	40	135	4	1.4
	2063HSE	5	63	32	40	135	4	1.24
	2063HSE-S40	5	63	40	40	135	4	1.57
	2063HSE-S42	5	63	42	40	135	4	1.62

Available Inserts

APMT-MF

APMT-MM

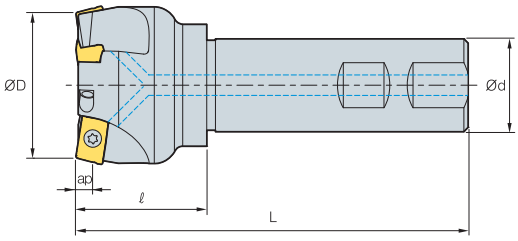
Type	Designation		Cermet		Coated									Uncoated			page
			CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
1000형	APMT	060202PDSR-MM				●	●		●			●	●				E05
		0602PDSR-MM				●	●		●	●	●	●	●				
		060208PDSR-MM				●	●		●			●	●				
		060212R-MM				●	●					●	●				
		060216R-MM					●					●	●				
2000형	APMT	11T3PDSR-MM			●	●	●	●	●	●	●	●	●				
		11T3PDSR-MF			●	●	●		●			●	●				
		11T308PDSR-MM			●	●	●		●	●		●	●				
		11T312PDSR-MM			●		●		●	●		●	●				
		11T316R-MM			●	●	●					●	●				
		11T318R-MM															
		11T324R-MM				●	●		●			●	●				

Parts

Specification	Screw	Wrench	Wrench
Ø25	FTKA01842	-	TW06S-A
Ø25~Ø63	FTKA02565S	TW08S	-

Available Inserts E05

AMS3000SE



AA 75°

- AR : −4.5°~−1°
- RR : −3°~0°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
AMS	3050HSE	3	50	32	45	135	6	1.0
	3050HSE-S40	3	50	40	45	135	6	1.3
	3050HSE-S42	3	50	42	45	135	6	1.4
	3063HSE	4	63	32	45	135	6	1.3
	3063HSE-S40	4	63	40	45	135	6	1.6
	3063HSE-S42	4	63	42	45	135	6	1.7

Available Inserts

APMT-MF

APMT-MM

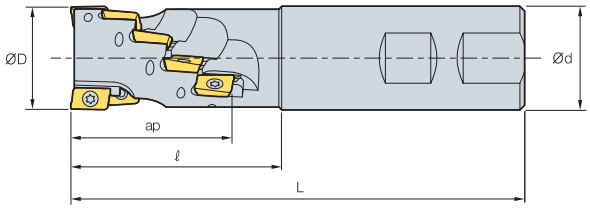
Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	1604PDSR-MM			●	●	●		●	●	●	●	●				E05
	1604PDSR-MF			●	●	●		●			●	●				
	160410PDSR-MM			●		●		●			●	●				
	160416PDSR-MM			●	●	●		●			●	●				
	160424R-MM				●	●		●			●	●				
	160430R-MM										●	●				
	160432R-MM			●	●	●		●			●	●				

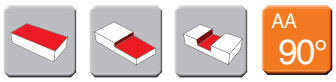
Parts

Specification	Screw	Wrench
Ø50~Ø63	FTKA0410	TW15S

Available Inserts E05

AMS1000M / 1500M





AA 90°

- AR : 7°~9°
- RR : −13°~−10°

(mm)

Designation			ØD	Ød	ℓ	L	No. of flute	ap	kg
AMS	1016M	6	16	16	30	80	2	15.5	0.3
	1020M	12	20	20	32	85	3	20.5	0.3
	1025M	20	25	25	39	95	4	25.5	0.3
AMS	15020M	3	20	20	42	105	1	26.5	0.3
	15025M	8	25	25	50	110	2	35	0.3
	15032M	10	32	32	60	120	2	44	0.3

Available Inserts

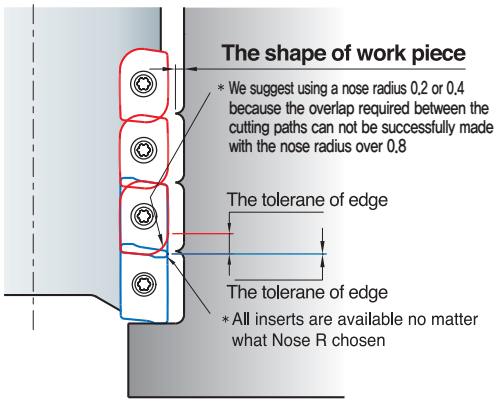
APMT-MA

APMT-ML

APMT-MM

Type	Designation		Cermet		Coated									Uncoated			page
			CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
1000 type	APMT	0602PDFR-MA														●	E05
		060208PDFR-MA															
		060202PDSR-MM				●	●		●			●	●				
		0602PDSR-MM				●	●		●	●	●	●	●				
		060208PDSR-MM				●	●		●			●	●				
		060212R-MM				●	●					●	●				
		060216R-MM					●					●	●				
1500 type	APMT	0903PDFR-MA														●	
		090308PDFR-MA															
		0903PDER-ML										●	●				
		090308PDER-ML															
		0903PDSR-MM				●		●	●			●	●				
		090308PDSR-MM				●	●		●			●	●				
		090312R-MM							●			●	●				
		090316R-MM				●	●					●	●				
		090320R-MM					●					●	●				

Caution when insert are screwed

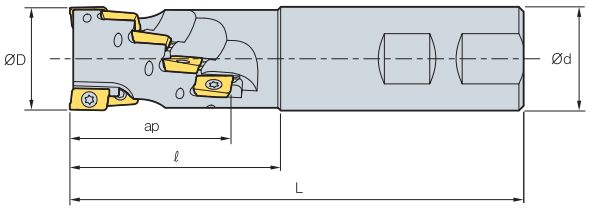


Parts

Specification	Screw	Wrench	Wrench
1000type	FTKA01842	-	TW06S-A
1500type	FTKA02565S	TW08S	-

Available Inserts E05

AMS2000M / 4000M



AA 90°

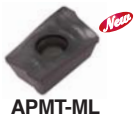
- AR : 7°~9°
- RR : −13°~−10°

(mm)

Designation			ØD	Ød	ℓ	L	No. of flute	ap	kg
AMS	2020M	3	20	20	45	120	1	29.4	0.32
	2025M	8	25	25	55	130	2	38.9	0.40
	2032M	10	32	32	65	140	2	48.5	0.65
	2040M	14	40	40	75	150	2	58	0.75
AMS	4032M	4	32	32	60	130	2	31.6	0.65
	4040M	6	40	40	70	140	2	46	1.11
	4050M-S40	6	50	40	55	125	2	46	1.22
	4050M	8	50	40	70	140	2	61	1.37

Available Inserts

APMT-MA



APMT-ML

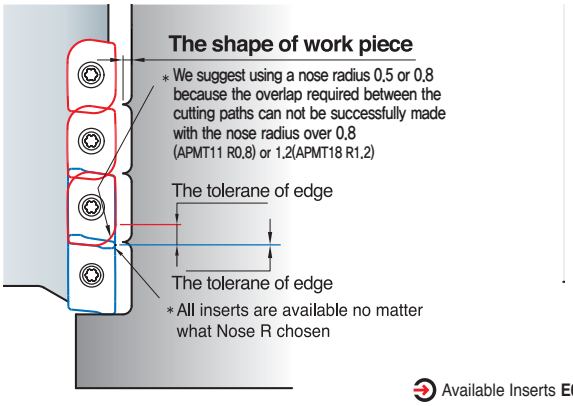
APMT-MM

APMT-MF

Type	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01
2000 type	APMT 11T3PDFR-MA														●
	11T308PDFR-MA														
	11T3PDER-ML										●	●			
	11T308PDER-ML														
	11T3PDSR-MM						●								
	11T3PDSR-MF			●	●	●		●			●	●			
	11T308PDSR-MM			●	●	●		●	●		●	●			
	11T312PDSR-MM			●	●			●	●		●	●			
	11T316R-MM			●	●	●					●	●			
	11T318R-MM														
	11T324R-MM				●	●		●			●	●			
4000 type	APMT 1806PDFR-MA														●
	180604PDFR-MA														
	180612PDFR-MA														
	180616PDFR-MA														
	180620PDFR-MA														
	180624PDFR-MA														

Type	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
4000 type	APMT 180630R-MA															
	1806PDER-ML										●	●				
	180604PDER-ML															
	180612PDER-ML															
	180616PDER-ML															
	180620PDER-ML															
	180624PDER-ML															
	180630R-ML															E05
	1806PDSR-MM			●	●	●		●	●	●	●	●				E06
	1806PDSR-MF				●			●			●	●				
	180612PDSR-MM			●	●	●		●			●	●				
	180616PDSR-MM				●			●			●	●				
	180620PDSR-MM															
	180624PDSR-MM				●	●					●	●				
	180630R-MM										●	●				
	180632R-MM				●	●		●			●	●				

Caution when insert are screwed



Available Inserts E05, E06

Parts

Specification	Screw	Wrench
2000type	FTKA02565S	TW08S
4000type	FTKA0410	TW15S

AMS1000MH / 1500MH / 2000MH / 3000MH

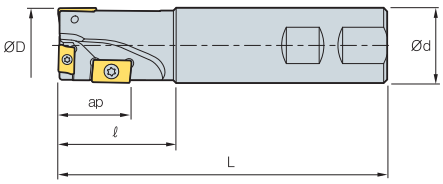


Fig. 1

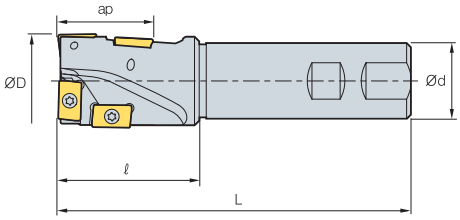


Fig. 2

AA 90°

- AR : 9°~12°
- RR : −12°~−10°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg	APMT 0602	APMT 0903	APM(X)T 11T3 -	APMT 1604	APKT 1604 -	Fig.
AMS	1014MH	3	14	12	30	120	11	0.16	3	-	-	-	-	1
	1016MH	3	16	14	30	140	11	0.20	3	-	-	-	-	1
	1018MH	3	18	16	30	140	11	0.21	3	-	-	-	-	1
AMS	15020MH	3	20	20	35	140	17	0.31	1	2	-	-	-	1
AMS	2025MH	3	25	25	40	130	20	0.45	-	-	3	-	-	1
	2032MH	3	32	32	50	140	30	0.75	-	-	1	2	-	1
AMS	3040MH-K	4	40	32	60	150	40	0.90	-	-	-	-	4	2

Available Inserts

APKT-MF | APKT-MM | APMT-MA | APMT-ML | APMT-MF | APMT-MM

Type	Designation		Coated											Uncoated			page
			NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	PC8110	PD2000	ST30A	G10	H01	
1000 type	APMT	0602PDFR-MA														●	E04 E05 E06
		060208PDFR-MA															
		060202PDSR-MM		●	●		●			●	●						
		0602PDSR-MM		●	●		●	●	●	●	●						
		060208PDSR-MM		●	●		●			●	●						
1500 type	APMT	0903PDFR-MA														●	
		090308PDFR-MA															
		0903PDER-ML								●	●						
		090308PDER-ML															
		0903PDSR-MM		●		●	●			●	●						
		090308PDSR-MM		●	●		●			●	●						
2000 type	APMT	11T3PDFR-MA														●	
		11T308PDFR-MA															
		11T3PDER-ML								●	●						
		11T308PDER-ML															
		11T3PDSR-MM	●	●	●	●	●	●	●	●	●						
		11T3PDSR-MF	●	●	●		●			●	●						
		11T308PDSR-MM	●	●	●		●	●		●	●						
		11T312PDSR-MM	●	●	●		●	●		●	●						
		11T316R-MM	●	●	●					●	●						
		11T318R-MM															
		11T324R-MM		●	●		●			●	●						
3000 type	APMT	1604PDSR-MM	●		●		●	●	●	●	●		●				
		1604PDSR-MF	●		●		●			●	●		●				
	APKT	1604PDSR-MM	●	●	●		●	●	●	●		●					
		1604PDSR-MF	●							●		●					

Parts

Specification	Screw	Wrench	Wrench
1000type	FTKA01842	-	TW06S-A
1500type	FTKA02565S	TW08S	-
2000type	FTKA02565S	TW08S	-
3000type	FTKA0410	TW15S	-

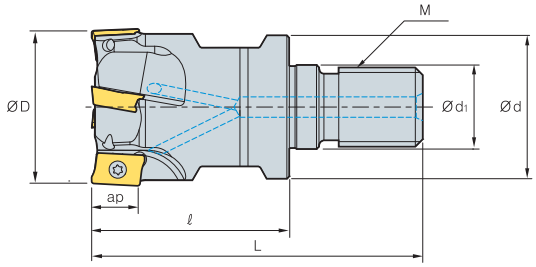
Available Inserts **E04, E05, E06**

Recommended cutting condition

	Drilling	Shouldering	Slotting
vc(m/min)	80~200	80~200	80~200
fz(mm/t)	0.03~0.06	0.05~0.25	0.05~0.20

- Please keep the drill depth under 0.25D when you're drilling
- Please keep the step depth from 0.2 to 0.3mm

AMM1000



AA 90°

- AR : 7.5°~12.5°
- RR : −28°~−6°

(mm)

Designation			ØD	Ød	Ød1	ℓ	L	M	ap	kg
AMM	1012HR-M06	3	12	11	6.5	25	40	M06	5.6	0.02
	1016HR-M08	4	16	14.5	8.5	25	42	M08	5.6	0.03
	1020HR-M10	5	20	18	10.5	30	51	M10	5.6	0.07
	1025HR-M12	7	25	23	12.5	35	59	M12	5.6	0.12
	1032HR-M16	8	32	29	17	40	67	M16	5.6	0.23

Available Inserts

APMT-MA

APMT-MM

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	0602PDFR-MA														●	E05
	060208PDFR-MA															
	060202PDSR-MM				●			●			●	●				
	0602PDSR-MM				●	●		●	●	●	●	●				
	060208PDSR-MM				●	●		●			●	●				
	060212R-MM				●	●					●	●				
	060216R-MM					●					●	●				

Available Adaptor

Designation		Available Adaptor
AMM	1012HR-M06	MAT - M06
	1016HR-M08	MAT - M08
	1020HR-M10	MAT - M10
	1025HR-M12	MAT - M12
	1032HR-M16	MAT - M16

Designation : AMM1032HR-M16
Modular Head Threading Measure size(M16)

II

Adaptor Spec. : MAT-M16-035-S32S
Adaptor Threading Measure(M16)

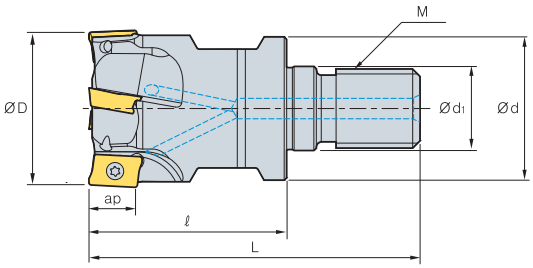
Parts

Specification	Screw	Wrench
Ø12~Ø32	FTKA01842	TW06S-A

Available Inserts E05

Available Adaptors E281~E282

AMM1500



AA 90°

- AR : 7.5°~12.5°
- RR : −28°~−6°

(mm)

Designation			ØD	Ød	Ød1	ℓ	L	M	ap	kg
AMM	15010HR-M06	1	10	9.5	6.5	25	40	M06	9	0.01
	15012HR-M06	1	12	11	6.5	25	40	M06	9	0.02
	15016HR-M08	2	16	14.5	8.5	25	42	M08	9	0.03
	15020HR-M10	2	20	18	10.5	30	51	M10	9	0.06
	15025HR-M12	3	25	23	12.5	35	59	M12	9	0.12
	15032HR-M16	4	32	29	17	40	67	M16	9	0.22

Available Inserts

APMT-MA

APMT-ML

APMT-MM

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	0903PDFR-MA														●	E05
	090308PDFR-MA															
	0903PDER-ML										●	●				
	090308PDER-ML															
	0903PDSR-MM				●	●	●	●			●	●				
	090308PDSR-MM				●	●		●			●	●				
	090312R-MM							●			●	●				
	090316R-MM					●					●	●				
	090320R-MM					●					●	●				

Available Adaptor

Designation		Available Adaptor
AMM	15010HR-M06 15012HR-M06	MAT - M06
	15016HR-M08	MAT - M08
	15020HR-M10	MAT - M10
	15025HR-M12	MAT - M12
	15032HR-M16	MAT - M16

Designation : AMM1032HR-M16
Modular Head Threading Measure size(M16)

II

Adaptor Spec. : MAT-M16-035-S32S
Adaptor Threading Measure(M16)

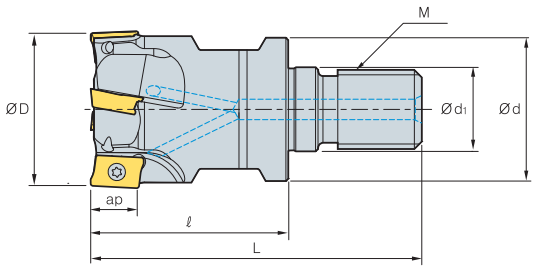
Parts

Specification	Screw	Wrench	Cutter Dia.
Ø10~Ø32	FTKA02555S FTKA02565S	TW08S	Ø10~Ø14 Ø16~Ø32

Available Inserts E05

Available Adaptors E281~E282

AMM2000



AA 90°

- AR : 7.5°~12.5°
- RR : −28°~−6°

(mm)

Designation			ØD	Ød	Ød1	ℓ	L	M	ap	kg
AMM	2016HR-M08	2	16	14.5	8.5	25	42	M08	11	0.04
	2020HR-M10	2	20	18	10.5	30	51	M10	11	0.07
	2025HR-M12	3	25	23	12.5	35	59	M12	11	0.04
	2032HR-M16	4	32	29	17	40	67	M16	11	0.23
	2040HR-M16	5	40	29	17	40	67	M16	11	0.25

Available Inserts

APMT-MA

APMT-ML

APMT-MM

APMT-MF

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	11T3PDFR-MA														●	E05 E06
	11T308PDFR-MA															
	11T3PDER-ML										●	●				
	11T308PDER-ML															
	11T3PDSR-MM			●	●	●	●	●	●	●	●	●				
	11T3PDSR-MF			●	●	●		●			●	●				
	11T308PDSR-MM			●	●	●		●	●		●	●				
	11T312PDSR-MM			●	●	●		●	●		●	●				
	11T316R-MM			●	●	●					●	●				
	11T318R-MM															
	11T324R-MM				●	●		●			●	●				

Available Adaptor

Designation		Available Adaptor
AMM	2016HR-M08	MAT - M08
	2020HR-M10	MAT - M10
	2025HR-M12	MAT - M12
	2032HR-M16	MAT - M16
	2040HR-M16	

Designation : AMM1032HR-M16
Modular Head Threading Measure size(M16)

II

Adaptor Spec. : MAT-M16-035-S32S
Adaptor Threading Measure(M16)

Parts

Specification	Screw	Wrench
Ø16~Ø40	FTKA02565S	TW08S

Available Inserts E05, E06 Available Adaptors E281~E282

Guarantee strong constrain force by 2 side constrain

BT/HSK Tooling System

Code System(Single, Multi edge type)

BT50 HAT 4 063 114 - 4 F

Arbor type	Item Name	Series	Diameter	Length(ap)	No. of flute	Front piece or Total length
BT30/40/50 HSK40/50/63/100	AM HAT RM	1000 Type 1500 Type 2000 Type 3000 Type 4000 Type	063 : Ø63	Length : 114 HS : Coolant + Single	No. of flute : 4 No. of tooth : 4	Front Piece(Y/N) Y : F No code : No L : Long type

Code System(Modular type)

BT50 MAT M16 092

Arbor type	Item category	M Dimensions	Total length(L)
BT30/40/50 HSK40/50/63/100	MAT	M16	092 : 92

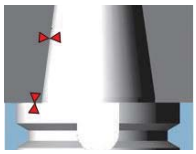
DBT system

(D)BT Arbor Feature

- Guaranteed strong force by 2 side constrain
- Guarantee strengthen cutting at high speed
- Guaranteed superior surface roughness

DBT(Constrain, Increased Surface roughness)

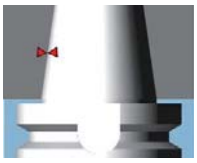
2 side constrain (Taper, 1side)



DBT Workpiece
Ra = 0.3㎛

BT

1 side constrain (Taper)



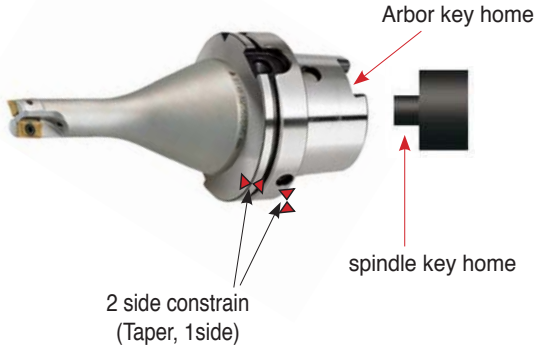
BT Workpiece
Ra = 0.5㎛

HSK system

HSK Arbor Feature

- Guaranteed strong constrain force by 2 side constrain
- Guaranteed strengthened cutting at high speeds
- Guaranteed superior surface roughness
- Guaranteed exactness at axle direction and repeated direction

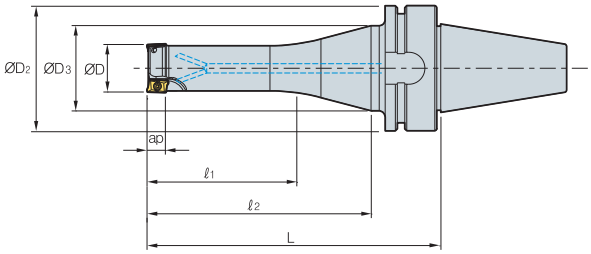
HSK A : HSK T key Tolerance comparison



HSK Tolerance comparison

Arbor type	Max. Tolerance	Min. Tolerance	Available facility
HSK-T	0.075	0.035	Multi-Tasking Machine
HSK-A	0.33	0.08 general	MCT

BT30 AM1000HS / BT40 AM1500HS



AA 90°

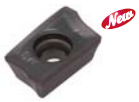
- AR : 7.5°~13°
- RR : −28°~−7°

(mm)

	Designation		ØD	ØD2	ØD3	ℓ1	ℓ2	L	ap
BT30	AM1010HS-2	2	10	46	41	35	83	112	5.6
	AM1012HS-2	2	12	46	41	35	83	112	5.6
	AM1012HS-3	3	12	46	41	35	83	112	5.6
	AM1016HS-3	3	16	46	41	35	83	112	5.6
	AM1016HS-4	4	16	46	41	35	83	112	5.6
	AM1020HS-4	4	20	46	41	45	98	127	5.6
	AM1020HS-5	5	20	46	41	45	98	127	5.6
BT40	AM15016HS-2	2	16	63	50	45	83	117	9
	AM15016HS-2L	2	16	63	50	35	118	152	9
	AM15020HS-2	2	20	63	50	60	98	132	9
	AM15020HS-3	3	20	63	50	60	98	132	9
	AM15020HS-2L	2	20	63	50	50	118	152	9
	AM15025HS-3	3	25	63	50	75	113	147	9
	AM15025HS-4	4	25	63	50	75	113	147	9
	AM15025HS-3L	3	25	63	50	65	133	167	9
	AM15032HS-4	4	32	63	50	80	113	147	9
	AM15032HS-5	5	32	63	50	80	113	147	9
	AM15032HS-4L	4	32	63	50	70	133	167	9
	AM15040HS-5	5	40	63	50	60	98	132	9
	AM15040HS-6	6	40	63	50	60	98	132	9
	AM15040HS-5L	5	40	63	50	50	118	152	9

Available Inserts

APMT-MA



APMT-ML

APMT-MM

Type	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
1000 type	APMT 0602PDFR-MA														●	E05 E06
	060208PDFR-MA															
	060202PDSR-MM							●			●	●				
	0602PDSR-MM				●	●		●	●	●	●	●				
	060208PDSR-MM				●	●		●			●	●				
	060212R-MM				●	●					●	●				
	060216R-MM				●	●					●	●				

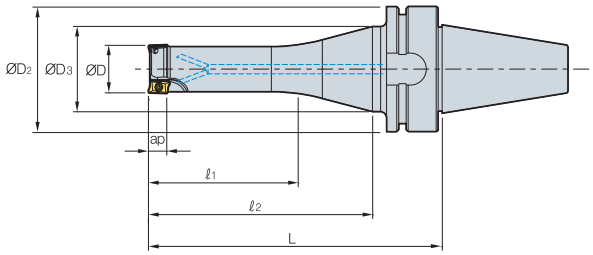
Type	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
1500 type	APMT 0903PDFR-MA														●	E05 E06
	090308PDFR-MA															
	0903PDER-ML										●	●				
	090308PDER-ML															
	0903PDSR-MM				●		●	●			●	●				
	090308PDSR-MM				●	●		●			●	●				
	090312R-MM							●			●	●				
	090316R-MM				●	●					●	●				
	090320R-MM					●					●	●				

Parts

Specification	Screw	Wrench	Wrench	Cutter Dia.
Ø10~Ø20 (1000type)	FTKA01842	-	TW06S-A	Ø10~Ø20
Ø16~Ø40 (1500type)	FTKA02565S	TW08S	-	Ø16~Ø40

Available Inserts E05, E06

BT40 AM2000HS



- AR : 7°~10°
- RR : −20°~−7°

(mm)

Designation			ØD	ØD2	ØD3	ℓ1	ℓ2	L	ap
BT40	AM2016HS-2	2	16	63	50	45	83	117	11
	AM2016HS-2L	2	16	63	50	35	118	152	11
	AM2020HS-2	2	20	63	50	60	98	132	11
	AM2020HS-2L	2	20	63	50	50	118	152	11
	AM2025HS-3	3	25	63	50	75	113	147	11
	AM2025HS-3L	3	25	63	50	65	113	147	11
	AM2032HS-4	4	32	63	50	80	113	147	11
	AM2032HS-4L	4	32	63	50	70	133	167	11
	AM2040HS-5	5	40	63	50	60	98	132	11
	AM2040HS-5L	5	40	63	50	50	118	152	11
	AM2050HS-6	6	50	63	50	60	98	132	11
	AM2050HS-6L	6	50	63	50	50	118	152	11

Available Inserts

APMT-MA

APMT-ML

APMT-MM

APMT-MF

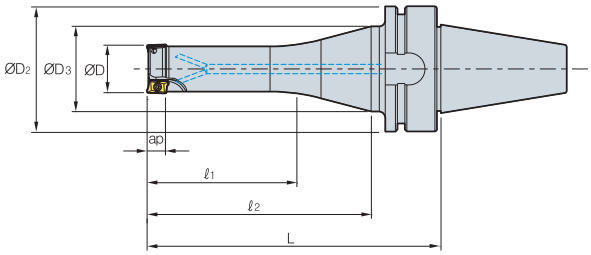
Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	11T3PDFR-MA														●	E05 E06
	11T308PDFR-MA															
	11T3PDER-ML										●	●				
	11T308PDER-ML															
	11T3PDSR-MM			●	●	●	●	●	●	●	●	●				
	11T3PDSR-MF			●	●	●		●			●	●				
	11T308PDSR-MM			●	●	●		●	●		●	●				
	11T312PDSR-MM			●	●	●		●	●		●	●				
	11T316R-MM			●	●	●					●	●				
	11T318R-MM															
	11T324R-MM				●	●		●			●	●				

Parts

Specification	 Screw	 Wrench
Ø16~Ø50	FTKA02565S	TW08S

Available Inserts E05, E06

BT50 AM3000HS / AM4000HS



- AR : 7°~10°
- RR : −20°~−7°

(mm)

Designation		⊙	ØD	ØD2	ØD3	ℓ1	ℓ2	L	ap
BT50	AM3025HS-2	2	25	100	80	65	113	158	16
	AM3025HS-2L	2	25	100	80	55	123	168	16
	AM3032HS-3	3	32	100	80	70	113	158	16
	AM3032HS-3L	3	32	100	80	60	123	168	16
	AM3040HS-4	4	40	100	80	50	98	143	16
	AM3040HS-4L	4	40	100	80	40	108	153	16
	AM3050HS-5	5	50	100	80	50	98	143	16
	AM3050HS-5L	5	50	100	80	40	108	153	16
BT50	AM4020HS-1	1	20	100	80	50	98	143	17
	AM4025HS-2	2	25	100	80	65	113	158	17
	AM4032HS-3	3	32	100	80	70	113	158	17
	AM4032HS-3L	3	32	100	80	60	123	168	17
	AM4040HS-4	4	40	100	80	50	98	143	17
	AM4040HS-4L	4	40	100	80	40	108	153	17
	AM4050HS-5	5	50	100	80	50	98	143	17
	AM4050HS-5L	5	50	100	80	40	108	153	17

Available Inserts

APMT-MA

APMT-ML

APMT-MM

APMT-MF

Type	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01
3000 type	APMT 1604PDFR-MA														●
	160404PDFR-MA														
	1604PDER-ML										●	●			
	160404PDER-ML														
	1604PDSR-MM			●	●	●		●	●	●	●	●			
	1604PDSR-MF			●	●	●		●			●	●			
	160410PDSR-MM			●				●			●	●			
	160416PDSR-MM			●	●	●		●			●	●			
	160424R-MM				●	●		●			●	●			
	160430R-MM										●	●			
	160432R-MM			●	●	●		●			●	●			
4000 type	APMT 1806PDFR-MA														●
	180604PDFR-MA														
	180612PDFR-MA														
	180616PDFR-MA														
	180620PDFR-MA														
	180624PDFR-MA														

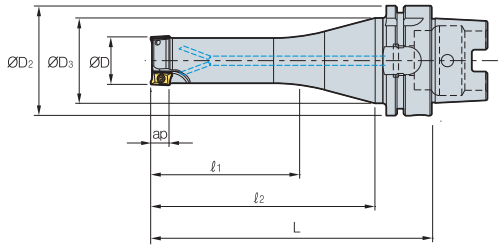
Type	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
40000 type	APMT 180630R-MA															E05 E06
	1806PDER-ML										●	●				
	180604PDER-ML															
	180612PDER-ML															
	180616PDER-ML															
	180620PDER-ML															
	180624PDER-ML															
	180630R-ML															
	1806PDSR-MM			●	●	●		●	●	●	●	●				
	1806PDSR-MF				●			●			●	●				
	180612PDSR-MM			●	●	●		●			●	●				
	180616PDSR-MM				●			●			●	●				
	180620PDSR-MM															
	180624PDSR-MM				●	●					●	●				
	180630R-MM										●	●				
	180632R-MM				●	●		●			●	●				

Parts

Specification	Screw	Wrench	Cutter Dia.
Ø25~Ø50 (3000type)	FTKA0408 FTKA0410	TW15S	Ø25 Ø32~Ø50
Ø20~Ø50 (4000type)	FTKA0408 FTKA0410	TW15S	Ø20~Ø25 Ø32~Ø50

Available Inserts E05, E06

HSK63A AM1000HS / 1500HS



AA 90°

- AR : 7.5°~13°
- RR : −28°~−7°

(mm)

Designation			ØD	ØD2	ØD3	ℓ1	ℓ2	L	ap
HSK63A	AM1010HS-2	2	10	63	53	35	83	116	5.6
	AM1012HS-2	2	12	63	53	35	83	116	5.6
	AM1012HS-3	3	12	63	53	35	83	116	5.6
	AM1016HS-3	3	16	63	53	35	83	116	5.6
	AM1016HS-4	4	16	63	53	35	83	116	5.6
	AM1020HS-4	4	20	63	53	45	98	131	5.6
	AM1020HS-5	5	20	63	53	45	98	131	5.6
HSK63A	AM15016HS-2	2	16	63	53	45	83	116	9
	AM15016HS-2L	2	16	63	53	35	118	151	9
	AM15020HS-2	2	20	63	53	60	98	131	9
	AM15020HS-3	3	20	63	53	60	98	131	9
	AM15020HS-2L	2	20	63	53	50	118	151	9
	AM15025HS-3	3	25	63	53	75	113	146	9
	AM15025HS-4	4	25	63	53	75	113	146	9
	AM15025HS-3L	3	25	63	53	65	133	166	9
	AM15032HS-4	4	32	63	53	80	113	146	9
	AM15032HS-5	5	32	63	53	80	113	146	9
	AM15032HS-4L	4	32	63	53	70	133	166	9
	AM15040HS-5	5	40	63	53	60	98	131	9
	AM15040HS-6	6	40	63	53	60	98	131	9
	AM15040HS-5L	5	40	63	53	50	118	151	9

Available Inserts

APMT-MA

APMT-ML

APMT-MM

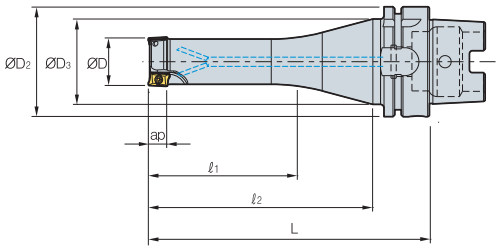
Type	Designation		Cermet		Coated									Uncoated			page
			CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
1000 type	APMT	0602PDFR-MA														●	E05
		060208PDFR-MA															
		060202PDSR-MM				●			●			●	●				
		0602PDSR-MM				●	●		●	●	●	●	●				
		060208PDSR-MM				●	●		●			●	●				
		060212R-MM				●	●					●	●				
		060216R-MM					●					●	●				
1500 type	APMT	0903PDFR-MA														●	
		090308PDFR-MA															
		0903PDER-ML										●	●				
		090308PDER-ML															
		0903PDSR-MM				●		●	●			●	●				
		090308PDSR-MM				●	●		●			●	●				
		090312R-MM							●			●	●				
		090316R-MM				●	●					●	●				
		090320R-MM					●					●	●				

Parts

Specification	Screw	Wrench	Wrench	Cutter Dia.
Ø10~Ø20 (1000type)	FTKA01842	-	TW06S-A	Ø10~Ø20
Ø16~Ø40 (1500type)	FTKA02565S	TW08S	-	Ø16~Ø40

Available Inserts E05

HSK63A AM2000HS



- AR : 7°~10°
- RR : −20°~−7°

(mm)

Designation		⊚	ØD	ØD2	ØD3	ℓ1	ℓ2	L	ap
HSK63A	AM2016HS-2	2	16	63	53	45	83	116	11
	AM2016HS-2L	2	16	63	53	35	118	151	11
	AM2020HS-2	2	20	63	53	60	98	131	11
	AM2020HS-2L	2	20	63	53	50	118	151	11
	AM2025HS-3	3	25	63	53	75	113	146	11
	AM2025HS-3L	3	25	63	53	65	113	146	11
	AM2032HS-4	4	32	63	53	80	113	146	11
	AM2032HS-4L	4	32	63	53	70	133	166	11
	AM2040HS-5	5	40	63	53	60	98	131	11
	AM2040HS-5L	5	40	63	53	50	118	151	11
	AM2050HS-6	6	50	63	53	60	98	131	11
	AM2050HS-6L	6	50	63	53	50	118	151	11

Available Inserts

APMT-MA

APMT-ML

APMT-MM

APMT-MF

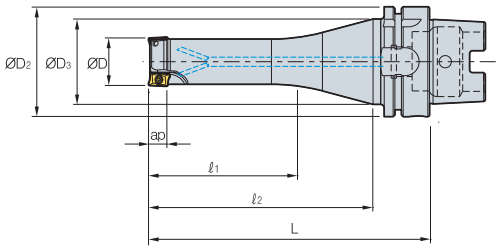
Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	11T3PDFR-MA														●	E05 E06
	11T308PDFR-MA															
	11T3PDER-ML										●	●				
	11T308PDER-ML															
	11T3PDSR-MM			●	●	●	●	●	●	●	●	●				
	11T3PDSR-MF			●	●	●		●			●	●				
	11T308PDSR-MM			●	●	●		●	●		●	●				
	11T312PDSR-MM			●	●	●		●	●		●	●				
	11T316R-MM			●	●	●					●	●				
	11T318R-MM															
	11T324R-MM				●	●		●			●	●				

Parts

Specification	 Screw	 Wrench
Ø16~Ø50	FTKA02565S	TW08S

Available Inserts E05, E06

HSK63A AM3000HS / 4000HS



- AR : 7°~10°
- RR : −20°~−7°

(mm)

Designation			ØD	ØD2	ØD3	ℓ1	ℓ2	L	ap
HSK63A	AM3025HS-2	2	25	63	53	65	113	146	16
	AM3025HS-2L	2	25	63	53	55	123	156	16
	AM3032HS-3	3	32	63	53	70	113	146	16
	AM3032HS-3L	3	32	63	53	60	123	156	16
	AM3040HS-4	4	40	63	53	50	98	131	16
	AM3040HS-4L	4	40	63	53	40	108	141	16
	AM3050HS-5	5	50	63	53	50	98	131	16
	AM3050HS-5L	5	50	63	53	40	108	141	16
HSK63A	AM4020HS-1	1	20	63	53	50	98	131	17
	AM4025HS-2	2	25	63	53	65	113	146	17
	AM4032HS-3	3	32	63	53	70	113	146	17
	AM4032HS-3L	3	32	63	53	60	123	156	17
	AM4040HS-4	4	40	63	53	50	98	131	17
	AM4040HS-4L	4	40	63	53	40	108	141	17
	AM4050HS-5	5	50	63	53	50	98	131	17
	AM4050HS-5L	5	50	63	53	40	108	141	17

Available Inserts

APMT-MA

APMT-ML

APMT-MM

APMT-MF

Type	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01
3000 type	APMT 1604PDFR-MA														●
	160404PDFR-MA														
	1604PDER-ML										●	●			
	160404PDER-ML														
	1604PDSR-MM			●	●	●		●	●	●	●	●			
	1604PDSR-MF			●	●	●		●			●	●			
	160410PDSR-MM			●				●			●	●			
	160416PDSR-MM			●	●	●		●			●	●			
	160424R-MM				●	●		●			●	●			
	160430R-MM										●	●			
	160432R-MM			●	●	●		●			●	●			
4000 type	APMT 1806PDFR-MA														●
	180604PDFR-MA														
	180612PDFR-MA														
	180616PDFR-MA														
	180620PDFR-MA														
	180624PDFR-MA														

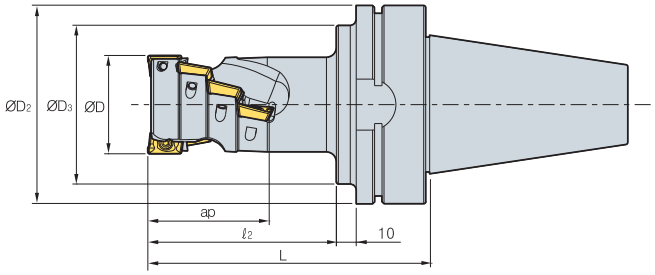
Type	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
4000 type	APMT 180630R-MA															
	1806PDER-ML										●	●				
	180604PDER-ML															
	180612PDER-ML															
	180616PDER-ML															
	180620PDER-ML															
	180624PDER-ML															
	180630R-ML															E05
	1806PDSR-MM			●	●	●		●	●	●	●	●				E06
	1806PDSR-MF				●			●			●	●				
	180612PDSR-MM			●	●	●		●			●	●				
	180616PDSR-MM				●			●			●	●				
	180620PDSR-MM															
	180624PDSR-MM				●	●					●	●				
	180630R-MM										●	●				
	180632R-MM				●	●		●			●	●				

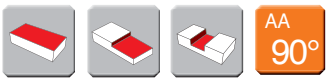
Parts

Specification	Screw	Wrench	Cutter Dia.
Ø25~Ø50 (3000type)	FTKA0408 FTKA0410	TW15S	Ø25 Ø32~Ø50
Ø20~Ø50 (4000type)	FTKA0408 FTKA0410	TW15S	Ø20~Ø25 Ø32~Ø50

Available Inserts **E05, E06**

BT30 / 40 AM1000 / 1500





AA 90°

- AR : −12.5°~13°
- RR : −17°~−6°

(mm)

Designation			ØD	ØD2	ØD3	ℓ1	ℓ2	L	ap
BT30	AM1016015-2	6	16	46	41	30	62	2	15.5
	AM1020020-3	12	20	46	41	32	64	3	20.5
	AM1025025-4	20	25	46	41	39	71	4	25.5
BT40	AM1016015-2	6	16	63	50	30	67	2	15.5
	AM1020020-3	12	20	63	50	32	69	3	20.5
	AM1025025-4	20	25	63	50	39	76	4	25.5
BT30	AM15020026-1	3	20	46	41	42	74	1	26.5
	AM15025035-2	8	25	46	41	50	62	2	35
	AM15032044-2	10	32	46	41	60	92	2	44
BT40	AM15020026-1	3	20	63	50	42	79	1	26.5
	AM15025035-2	8	25	63	50	50	87	2	35
	AM15032044-2	10	32	63	50	60	97	2	44

Available Inserts

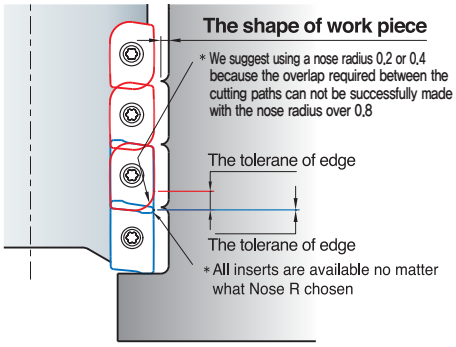
APMT-MA

APMT-ML

APMT-MM

Type	Designation		Cermet		Coated									Uncoated			page
			CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
1000 type	APMT	0602PDFR-MA														●	E05
		060208PDFR-MA															
		060202PDSR-MM				●			●			●	●				
		0602PDSR-MM				●	●		●	●	●	●	●				
		060208PDSR-MM				●	●		●			●	●				
		060212R-MM				●	●					●	●				
		060216R-MM					●					●	●				
1500 type	APMT	0903PDFR-MA														●	
		090308PDFR-MA															
		0903PDER-ML										●	●				
		090308PDER-ML															
		0903PDSR-MM				●		●	●			●	●				
		090308PDSR-MM				●	●		●			●	●				
		090312R-MM							●			●	●				
		090316R-MM				●	●					●	●				
		090320R-MM					●					●	●				

Caution when insert are screwed

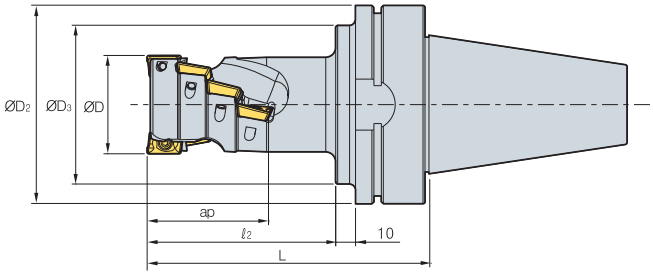


Parts

Specification	Screw	Wrench	Wrench	Cutter Dia.
Ø16~Ø25 (1000type)	FTKA01842	-	TW06S-A	Ø16~Ø25
Ø20~Ø32 (1500type)	FTKA02565S	TW08S	-	Ø20~Ø32

Available Inserts E05

BT30 / 40 AM2000



AA 90°

- AR : −9°
- RR : −13°~−8°

(mm)

Designation		⊚	ØD	ØD2	ØD3	ℓ2	L	No. of flute	ap
BT30	AM2020029-1	3	20	46	41	45	77	1	29.4
	AM2025038-2	8	25	46	45	55	87	2	38.9
	AM2032048-2	10	32	46	45	65	97	2	48.5
	AM2040058-2	14	40	46	45	75	107	2	58
	AM2050039-4	16	50	46	45	58	90	4	39
	AM2063039-4	16	63	46	45	58	90	4	39
	AM2080039-5	20	80	46	45	63	95	5	39
	AM2100039-6	24	100	46	45	63	95	6	39
BT40	AM2020029-1	3	20	63	50	45	82	1	29.4
	AM2025038-2	8	25	63	50	55	92	2	38.9
	AM2032048-2	10	32	63	50	65	102	2	48.5
	AM2040058-2	14	40	63	50	75	112	2	58
	AM2050039-4	16	50	63	50	58	95	4	39
	AM2063039-4	16	63	63	50	58	95	4	39
	AM2080039-5	20	80	63	50	63	100	5	39
	AM2100039-6	24	100	63	50	63	100	6	39

Available Inserts

APMT-MA

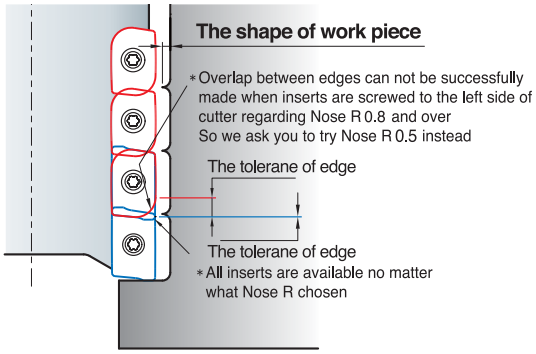
APMT-ML

APMT-MM

APMT-MF

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	11T3PDFR-MA														●	E05 E06
	11T308PDFR-MA															
	11T3PDER-ML										●	●				
	11T308PDER-ML															
	11T3PDSR-MM			●	●	●	●	●	●	●	●	●				
	11T3PDSR-MF			●	●	●		●			●	●				
	11T308PDSR-MM			●	●	●		●	●		●	●				
	11T312PDSR-MM			●	●	●		●	●		●	●				
	11T316R-MM			●	●	●					●	●				
	11T318R-MM															
	11T324R-MM				●	●		●			●	●				

Caution when insert are screwed

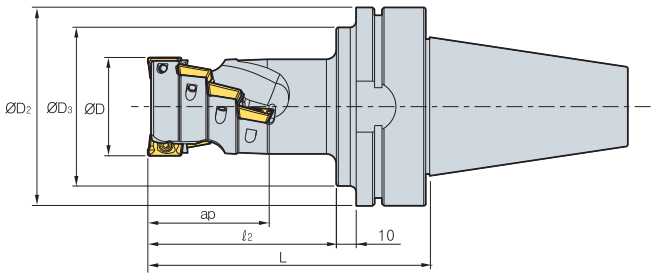


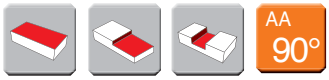
Parts

Specification	 Screw	 Wrench
Ø20~Ø100	FTKA02565S	TW08S

Available Inserts E05, E06

BT50 AM3000 / 4000





AA 90°

- AR : 13°~15°
- RR : −11°~−4°

(mm)

Designation			ØD	ØD2	ØD3	ℓ2	L	No. of flute	ap
BT50	AM3050043-2	6	50	100	80	72	120	2	43
	AM3063057-4	16	63	100	80	86	134	4	57
	AM3080071-4	20	80	100	80	100	148	4	71
	AM3100071-6	30	100	100	80	100	148	6	71
	AM4040046-2	6	40	100	80	75	123	2	46
BT50	AM4050061-2	8	50	100	80	95	143	2	61
	AM4063061-4	16	63	100	80	90	138	4	61
	AM4080076-4	20	80	100	80	105	153	4	76
	AM4100076-6	30	100	100	80	105	153	6	76

Available Inserts

APMT-MA

APMT-ML

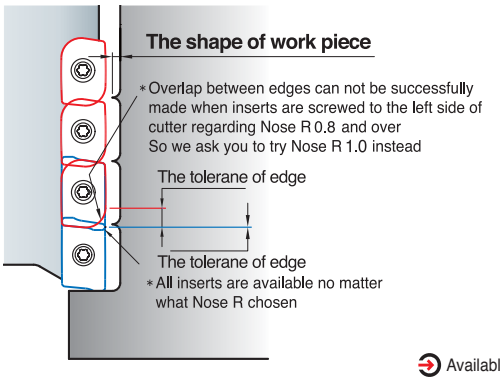
APMT-MM

APMT-MF

Type	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01
3000 type	APMT 1604PDFR-MA														●
	160404PDFR-MA														
	1604PDER-ML										●	●			
	160404PDER-ML														
	1604PDSR-MM			●	●	●		●	●	●	●	●			
	1604PDSR-MF			●	●	●		●			●	●			
	160410PDSR-MM			●				●			●	●			
	160416PDSR-MM			●	●	●		●			●	●			
	160424R-MM				●	●		●			●	●			
	160430R-MM										●	●			
	160432R-MM			●	●	●		●			●	●			
4000 type	APMT 1806PDFR-MA														
	180604PDFR-MA														
	180612PDFR-MA														
	180616PDFR-MA														
	180620PDFR-MA														
	180624PDFR-MA														

Type	Designation	Cermet CN2000	Cermet CN30	Coated NCM325	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
40000 type	APMT 180630R-MA															
	1806PDER-ML													●	●	
	180604PDER-ML															
	180612PDER-ML															
	180616PDER-ML															
	180620PDER-ML															
	180624PDER-ML															
	180630R-ML															E05
	1806PDSR-MM			●	●	●		●	●	●	●	●				E06
	1806PDSR-MF				●			●			●	●				
	180612PDSR-MM			●	●	●		●			●	●				
	180616PDSR-MM				●			●			●	●				
	180620PDSR-MM															
	180624PDSR-MM				●	●					●	●				
	180630R-MM										●	●				
	180632R-MM				●	●		●			●	●				

Caution when insert are screwed

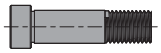


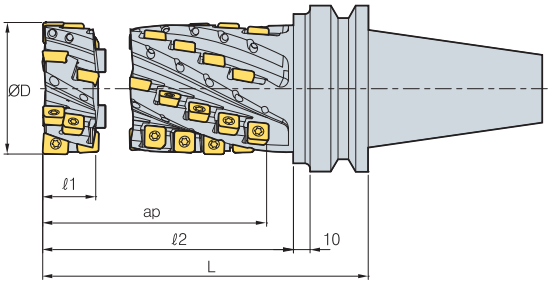
Available Inserts E05, E06

Parts

Specification	Screw	Wrench
Ø50~Ø100 (3000type)	FTKA0410	TW15S
Ø40~Ø100 (4000type)	FTKA0410	TW15S

BT50 HAT4000





(mm)

Designation		SPMT	ZPMT	ØD	ℓ1	ℓ2	L	No. of flute	ap	Application
BT50- (Set)	HAT4050094-2F	10	1	50	32	119	160	2	94	HAT4050032-2F
	HAT4050104-2F	11	1	50	32	129	170	2	104	
	HAT4050114-2F	12	1	50	32	139	180	2	114	
	HAT4063094-4F	20	2	63	32	119	160	4	94	HAT4063032-4F
	HAT4063104-4F	22	2	63	32	129	170	4	104	
	HAT4063114-4F	24	2	63	32	139	180	4	114	
	HAT4080094-4F	20	2	80	33	119	160	4	94	HAT4080033-4F
	HAT4080104-4F	22	2	80	33	129	170	4	104	
	HAT4080114-4F	24	2	80	33	139	180	4	114	
(Front Piece)	HAT4050032-2F	3	1	50	32	-	-	2	-	-
	HAT4063032-4F	6	2	63	32	-	-	4	-	
	HAT4080033-4F	6	2	80	33	-	-	4	-	

Available Inserts

SPMT-MM

ZPMT-MM

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SPMT	120508-MMN															E20
ZPMT	1505PPSR-MMN															E23

Set specification

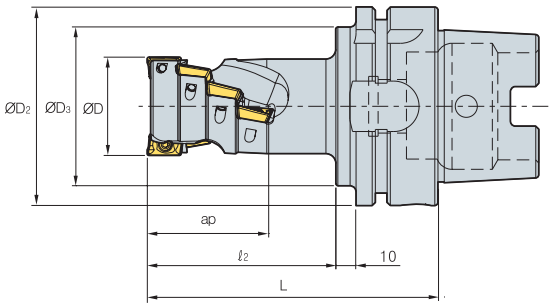
Set Designation	Designation	Front Piece	Clamping Bolt
HAT4050094-2F	HAT4050062-2F	HAT4050032-2F	HSB1255
HAT4050104-2F	HAT4050072-2F		
HAT4050114-2F	HAT4050082-2F		
HAT4063094-4F	HAT4063062-4F	HAT4063032-4F	HSB1670
HAT4063104-4F	HAT4063072-4F		
HAT4063114-4F	HAT4063082-4F		
HAT4080094-4F	HAT4080061-4F	HAT4080033-4F	HSB1682
HAT4080104-4F	HAT4080071-4F		
HAT4080114-4F	HAT4080081-4F		

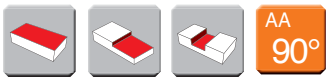
Parts

Specification	 Screw	 Wrench
Ø50~Ø80	ETNA0511	TW20

Available Inserts **E20, E23**

HSK63A AM1000 / 1500





AA 90°

- AR : −12.5°~13°
- RR : −17°~−6°

(mm)

Designation		⊚	ØD	ØD2	ØD3	ℓ2	L	No. of flute	ap
HSK63A	AM1016015-2	6	16	63	53	30	66	2	15.5
	AM1020020-3	12	20	63	53	32	68	3	20.5
	AM1025025-4	20	25	63	53	39	75	4	25.5
HSK63A	AM15020026-1	3	20	63	53	42	78	1	26.5
	AM15025035-2	8	25	63	53	50	86	2	35
	AM15032044-2	10	32	63	53	60	96	2	44

Available Inserts

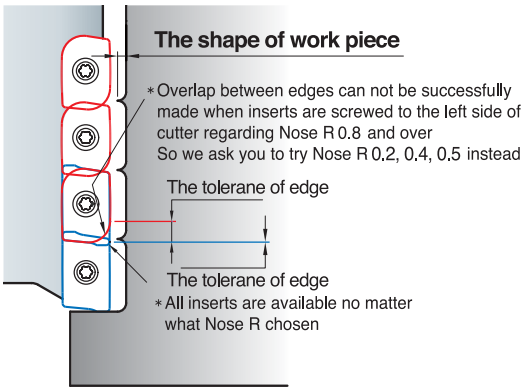
APMT-MA

APMT-ML

APMT-MM

Type	Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NC5330	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
1000 type	APMT	0602PDFR-MA														●	E05
		060208PDFR-MA															
		060202PDSR-MM				●			●			●	●				
		0602PDSR-MM				●	●		●	●	●	●	●				
		060208PDSR-MM				●	●		●			●	●				
		060212R-MM				●	●					●	●				
		060216R-MM					●					●	●				
1500 type	APMT	0903PDFR-MA														●	
		090308PDFR-MA															
		0903PDER-ML										●	●				
		090308PDER-ML															
		0903PDSR-MM				●		●	●			●	●				
		090308PDSR-MM				●	●		●			●	●				
		090312R-MM							●			●	●				
		090316R-MM				●	●					●	●				
		090320R-MM					●					●	●				

Caution when insert are screwed

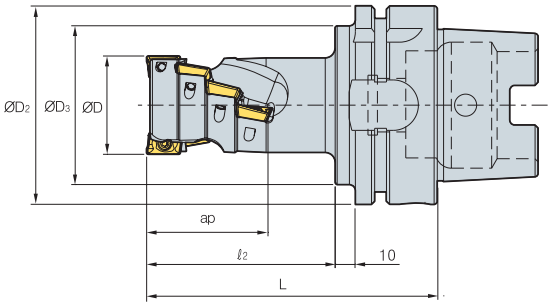


Parts

Specification	Screw	Wrench	Wrench
Ø16~Ø25 (1000type)	FTKA01842	-	TW06S-A
Ø20~Ø32 (1500type)	FTKA02565S	TW08S	-

Available Inserts E05

HSK63A AM2000



AA 90°

- AR : −12.5°~13°
- RR : −17°~−6°

(mm)

Designation		⊚	ØD	ØD2	ØD3	ℓ2	L	No. of flute	ap
HSK63A	AM2020029-1	3	20	63	53	45	81	1	29.4
	AM2025038-2	8	25	63	53	55	91	2	38.9
	AM2032048-2	10	32	63	53	65	101	2	48.5
	AM2040058-2	14	40	63	53	75	111	2	58
	AM2050039-4	16	50	63	53	58	94	4	39
	AM2063039-4	16	63	63	53	58	94	4	39
	AM2080039-5	20	80	63	53	63	99	5	39
	AM2100039-6	24	100	63	53	63	99	6	39

Available Inserts

APMT-MA

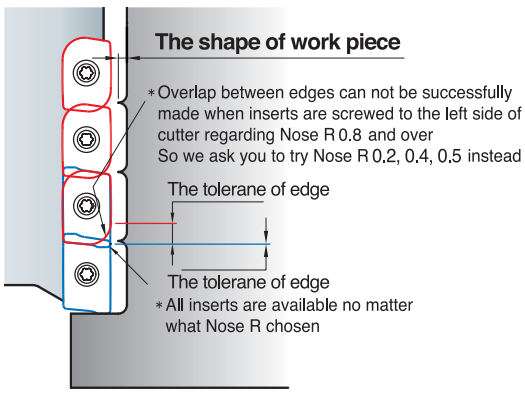
APMT-ML

APMT-MM

APMT-MF

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	11T3PDFR-MA														●	E05 E06
	11T308PDFR-MA															
	11T3PDER-ML										●	●				
	11T308PDER-ML															
	11T3PDSR-MM			●	●	●	●	●	●	●	●	●				
	11T3PDSR-MF			●	●	●		●			●	●				
	11T308PDSR-MM			●	●	●		●	●		●	●				
	11T312PDSR-MM			●	●	●		●	●		●	●				
	11T316R-MM			●	●	●					●	●				
	11T318R-MM															
	11T324R-MM				●	●		●			●	●				

Caution when insert are screwed

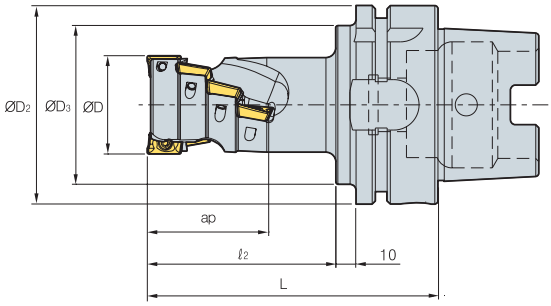


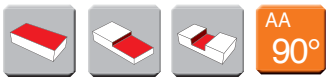
Parts

Specification	Screw	Wrench
Ø20~Ø100	FTKA02565S	TW08S

Available Inserts **E05, E06**

HSK100A AM3000





AA 90°

- AR : −13°~15°
- RR : −11°~−4°

(mm)

Designation			ØD	ØD2	ØD3	ℓ2	L	No. of flute	ap
HSK100A	AM3050043-2	6	50	100	88	72	111	2	43
	AM3063057-4	16	63	100	88	86	125	4	57
	AM3080071-4	20	80	100	88	100	139	4	71
	AM3100071-6	30	100	100	88	100	139	6	71

Available Inserts

APMT-MA

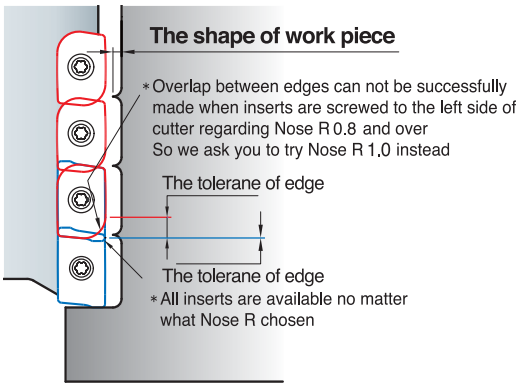
APMT-ML

APMT-MM

APMT-MF

Designation		Cermet		Coated									Uncoated			page
		CN2000	CN30	NCM325	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
APMT	1604PDFR-MA														●	E05 E06
	160404PDFR-MA															
	1604PDER-ML										●	●				
	160404PDER-ML															
	1604PDSR-MM			●	●	●		●	●	●	●	●				
	1604PDSR-MF			●	●	●		●			●	●				
	160410PDSR-MM			●				●			●	●				
	160416PDSR-MM			●	●	●		●			●	●				
	160424R-MM				●	●		●			●	●				
	160430R-MM										●	●				
	160432R-MM			●	●	●		●			●	●				

Caution when insert are screwed

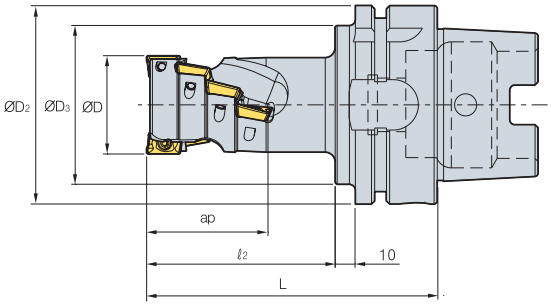


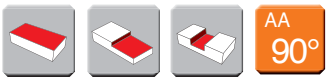
Parts

Specification	Screw	Wrench
Ø50~Ø100	FTKA0410	TW15S

Available Inserts E05, E06

HSK100A AM4000





AA 90°

- AR : −13°~15°
- RR : −11°~−4°

(mm)

Designation			ØD	ØD2	ØD3	ℓ2	L	No. of flute	ap
HSK100A	AM4040046-2	6	40	100	88	75	114	2	46
	AM4050061-2	8	50	100	88	95	134	2	61
	AM4063061-4	16	63	100	88	90	129	4	61
	AM4080076-4	20	80	100	88	105	144	4	76
	AM4100076-6	30	100	100	88	105	144	6	76

Available Inserts

APMT-MA

APMT-ML

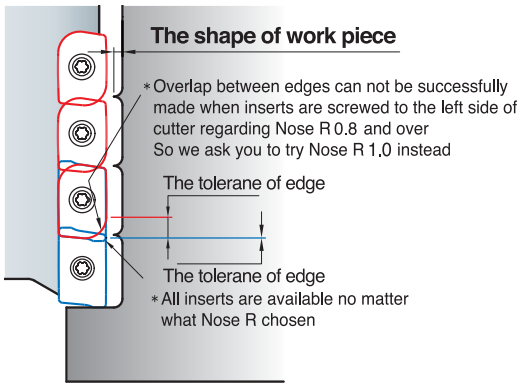
APMT-MM

APMT-MF

Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
APMT	1806PDFR-MA														●	E05 E06
	180604PDFR-MA															
	180612PDFR-MA															
	180616PDFR-MA															
	180620PDFR-MA															
	180624PDFR-MA															
	180630R-MA															
	1806PDER-ML										●	●				
	180604PDER-ML															
	180612PDER-ML															
	180616PDER-ML															

Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	page
APMT	180620PDER-ML															E05 E06
	180624PDER-ML															
	180630R-ML															
	1806PDSR-MM			●	●	●		●	●	●	●	●				
	1806PDSR-MF				●			●			●	●				
	180612PDSR-MM			●	●	●		●			●	●				
	180616PDSR-MM				●			●			●	●				
	180620PDSR-MM															
	180624PDSR-MM				●	●					●	●				
	180630R-MM										●	●				
	180632R-MM				●	●		●			●	●				

Caution when insert are screwed

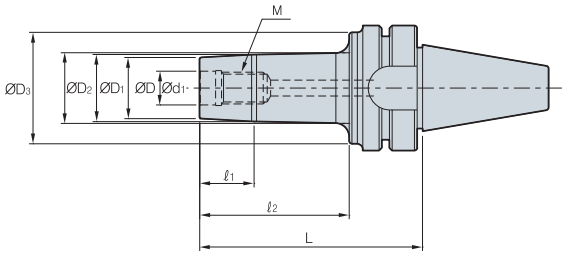


Parts

Specification	Screw	Wrench
Ø40~Ø100	FTKA0410	TW15S

Available Inserts E05, E06

BT30 / BT40 / BT50

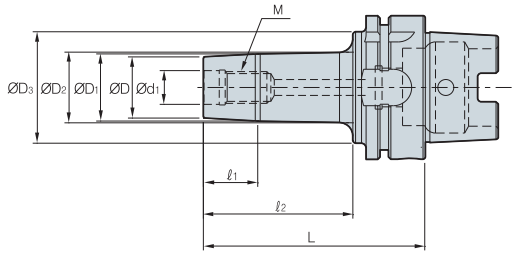


(mm)

Designation		ØD	ØD1	ØD2	ØD3	Ød1	ℓ1	ℓ2	L	M
BT30	MAT-M06-053	11	11.7	13	30	6.5	5	21	53	06×1.0
	MAT-M08-057	14.5	15.7	17.5	35	8.5	7	25	57	08×1.25
	MAT-M10-062	18	19.7	24	38	10.5	7	30	62	10×1.5
	MAT-M12-067	23	24.7	27.5	41	12.5	10	35	67	12×1.75
	MAT-M16-067	29	31.7	33.5	41	17	10	35	67	16×2.0
BT40	MAT-M06-062	11	11.7	14	40	6.5	5	25	62	08×1.0
	MAT-M06-077	11	11.7	14	40	6.5	5	40	77	06×1.0
	MAT-M06-092	11	11.7	14	40	6.5	5	55	92	06×1.0
	MAT-M08-067	14.5	15.7	19	44	8.5	7	30	67	08×1.25
	MAT-M08-082	14.5	15.7	19	44	8.5	7	45	82	08×1.25
	MAT-M08-097	14.5	15.7	19	44	8.5	7	60	97	08×1.25
	MAT-M10-072	18	19.7	23	50	10.5	10	35	72	10×1.5
	MAT-M10-087	18	19.7	23	50	10.5	10	50	87	10×1.5
	MAT-M10-102	18	19.7	23	50	10.5	10	65	102	10×1.5
	MAT-M12-077	23	24.7	30	55	12.5	10	40	77	12×1.75
	MAT-M12-092	23	24.7	30	55	12.5	13	55	92	12×1.75
	MAT-M12-107	23	24.7	30	55	12.5	13	70	107	12×1.75
	MAT-M16-077	29	31.7	37	55	17	13	40	77	16×2.0
	MAT-M16-092	29	31.7	37	55	17	13	55	92	16×2.0
	MAT-M16-107	29	31.7	37	55	17	13	70	107	16×2.0
BT50	MAT-M06-083	11	11.7	15	40	6.5	5	35	83	06×1.0
	MAT-M06-098	11	11.7	15	40	6.5	5	50	98	06×1.0
	MAT-M06-113	11	11.7	15	40	6.5	5	65	113	06×1.0
	MAT-M08-088	14.5	15.7	20	45	8.5	7	40	88	08×1.25
	MAT-M08-103	14.5	15.7	20	45	8.5	7	55	103	08×1.25
	MAT-M08-118	14.5	15.7	20	45	8.5	7	70	118	08×1.25
	MAT-M10-093	18	19.7	25	55	10.5	10	45	93	10×1.5
	MAT-M10-113	18	19.7	25	55	10.5	10	65	113	10×1.5
	MAT-M10-128	18	19.7	25	55	10.5	10	80	128	10×1.5
	MAT-M12-103	23	24.7	33	65	12.5	10	55	103	12×1.75
	MAT-M12-118	23	24.7	33	65	12.5	13	70	118	12×1.75
	MAT-M12-133	23	24.7	33	65	12.5	13	85	133	12×1.75
	MAT-M16-103	29	31.7	41	85	17	13	55	103	16×2.0
	MAT-M16-118	29	31.7	41	85	17	13	70	118	16×2.0
	MAT-M16-133	29	31.7	41	85	17	13	85	133	16×2.0

Available Modular E33

HSK63A/HSK100A



(mm)

Designation		ØD	ØD1	ØD2	ØD3	Ød1	ℓ1	ℓ2	L	M
HSK63A	**MAT-M06-061**	11	11.7	27	40	6.5	5	25	61	06*1.0
	MAT-M06-076	11	11.7	27	40	6.5	5	40	76	06*1.0
	MAT-M06-091	11	11.7	27	40	6.5	5	55	91	06*1.0
	MAT-M08-066	14.5	15.7	30.5	44	8.5	7	30	66	08*1.25
	MAT-M08-081	14.5	15.7	30.5	44	8.5	7	45	81	08*1.25
	MAT-M08-096	14.5	15.7	30.5	44	8.5	7	60	96	08*1.25
	MAT-M10-071	18	19.7	34	50	10.5	10	35	71	10*1.5
	MAT-M10-086	18	19.7	34	50	10.5	10	50	86	10*1.5
	MAT-M10-101	18	19.7	34	50	10.5	10	65	101	10*1.5
	MAT-M12-076	23	24.7	36.5	55	12.5	10	40	76	12*1.75
	MAT-M12-091	23	24.7	36.5	55	12.5	13	55	91	12*1.75
	MAT-M12-106	23	24.7	36.5	55	12.5	13	70	106	12*1.75
	MAT-M16-076	29	31.7	38.5	55	17	13	40	76	16*2.0
	MAT-M16-091	29	31.7	38.5	55	17	13	55	91	16*2.0
	MAT-M16-106	29	31.7	38.5	55	17	13	70	106	16*2.0
HSK100A	**MAT-M06-074**	11	11.7	15	40	6.5	5	35	74	06*1.0
	MAT-M06-089	11	11.7	15	40	6.5	5	50	89	06*1.0
	MAT-M06-104	11	11.7	15	40	6.5	5	65	104	06*1.0
	MAT-M08-079	14.5	15.7	20	45	8.5	7	40	79	08*1.25
	MAT-M08-094	14.5	15.7	20	45	8.5	7	55	94	08*1.25
	MAT-M08-109	14.5	15.7	20	45	8.5	7	70	109	08*1.25
	MAT-M10-084	18	19.7	25	55	10.5	10	45	84	10*1.5
	MAT-M10-104	18	19.7	25	55	10.5	10	65	104	10*1.5
	MAT-M10-119	18	19.7	25	55	10.5	10	80	119	10*1.5
	MAT-M12-094	23	24.7	33	65	12.5	10	55	94	12*1.75
	MAT-M12-109	23	24.7	33	65	12.5	13	70	109	12*1.75
	MAT-M12-124	23	24.7	33	65	12.5	13	85	124	12*1.75
	MAT-M16-094	29	31.7	41	85	17	13	55	94	16*2.0
	MAT-M16-109	29	31.7	41	85	17	13	70	109	16*2.0
	MAT-M16-124	29	31.7	41	85	17	13	85	124	16*2.0

Available Modular **E33**

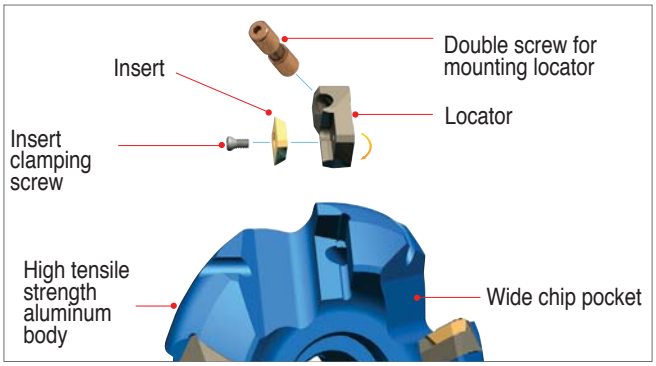
Rigid body employs high tensile aluminum

Future Mill

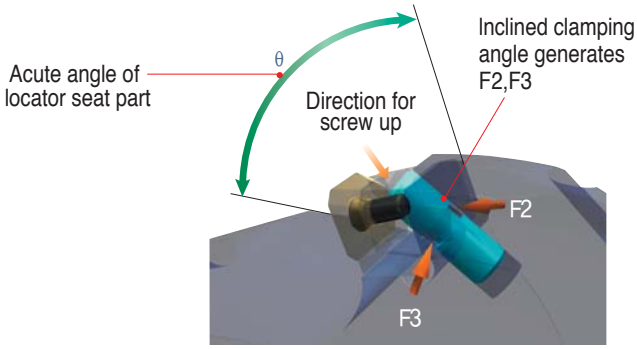
- Light aluminum body(50% of steel body) can be used for high speed cutting, tapping center, and on low power machines
- Easy handling
- It can be used for aluminum alloys, medium cutting of steel, and cast iron
- Rigid body employs high tensile aluminum
- Locators for excellent durability
- Various kinds of chip breaker are available
- Due to the high rake angle, it provides low cutting loads and good surface roughness

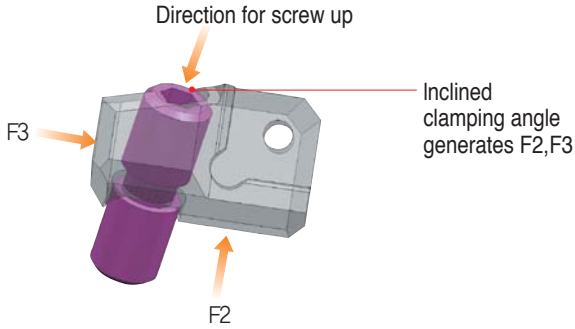
Cutter

- ▶ Strong clamping between aluminum body and locator with double screw provides high efficiency
- ▶ Acute angle of locator seat provides strong clamping
- ▶ Wide chip pocket area provides good chip evacuation
- ▶ High tensile strength aluminum body



Locator

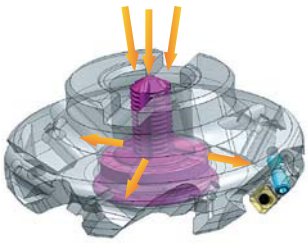




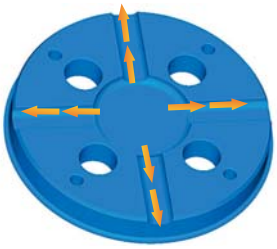
Through coolant system

- ▶ Exclusively designed coolant bolt and cover provide excellent coolant action and chip evacuation for improved tool life
- ▶ Exact coolant direction to cutting area
- ▶ Exclusive coolant bolt and cover are sold separately. Through coolant arbor is requied

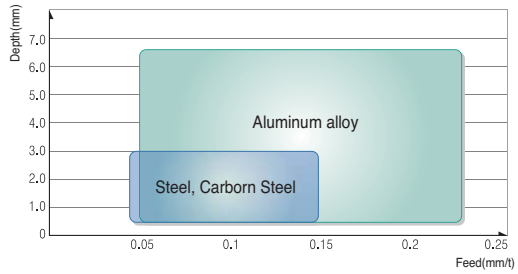
• Bolt : Ø63 ~ Ø160



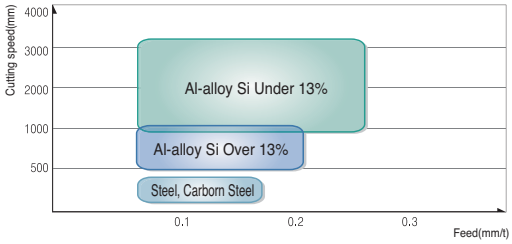
• Cover : Over Ø200



Application range as per workpiece



Cutting speed



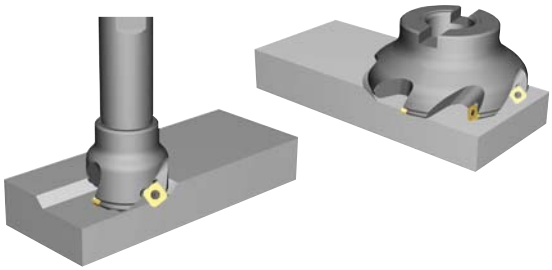
Max. available revolution

Cutter diameter	Max. revolution
Ø63	20,000
Ø80	16,000
Ø100	13,000
Ø125	10,000
Ø160	8,000
Ø200	6,500
Ø250	5,000
Ø315	4,000

Future Mill(FMA)

Features

- ▶ General milling cutter for high productivity
- ▶ Adjustable pitch of cutter and various chip breaker offer wide application range.
- ▶ Light cutter body allows high speed cutting and can be used in low horse power machine
- ▶ Smooth cutting with low cutting load is accomplished with high rake angle



Chip breaker

Type	Chip breaker	Cutting edge	Features of chip breaker
Light cutting	Non C/B		Superior surface roughness at finishing due to ground type cermet insert
	MF 		Superior cutting quality for light and difficult-to-cut material machining through the low cutting load of chip breaker
General cutting	MM 		Suitable for various cutting due to special shape design for general cutting
Roughing	MR 		Tough cutting edge provides stable cutting performance in severe interruption
For aluminum	MA 		Superior cutting quality for aluminum due to sharp cutting edge and buffed surface • SOET-MA: Sharp cutting edge due to high accurate grinding • SOXT-MA: Suitablecutting edge for roughing

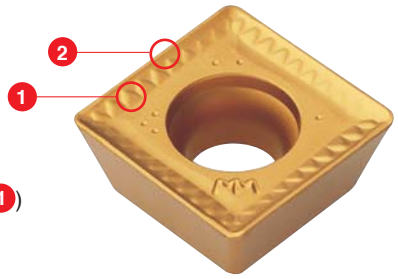
Recommended cutting condition

(mm)

ISO	C/B / Grade	vc(m/min)	MF	MM	MR	MA
			fz(mm/t)	fz(mm/t)	fz(mm/t)	fz(mm/t)
P	NC5330	210~350	0.05 ~ 0.20	0.10 ~ 0.30	0.10 ~ 0.30	-
	NCM325	190~310	0.05 ~ 0.20	0.10 ~ 0.30	0.10 ~ 0.30	-
	PC3500	160~270	0.05 ~ 0.20	0.10 ~ 0.30	0.10 ~ 0.30	-
M	PC9530	90~150	0.05 ~ 0.15	0.10 ~ 0.30	-	-
	NCM335	70~120	0.05 ~ 0.15	0.10 ~ 0.30	-	-
K	PC5300	110~180	0.05 ~ 0.20	0.10 ~ 0.30	-	-
Aluminum	H01	260~440	-	-	-	0.10 ~ 0.35

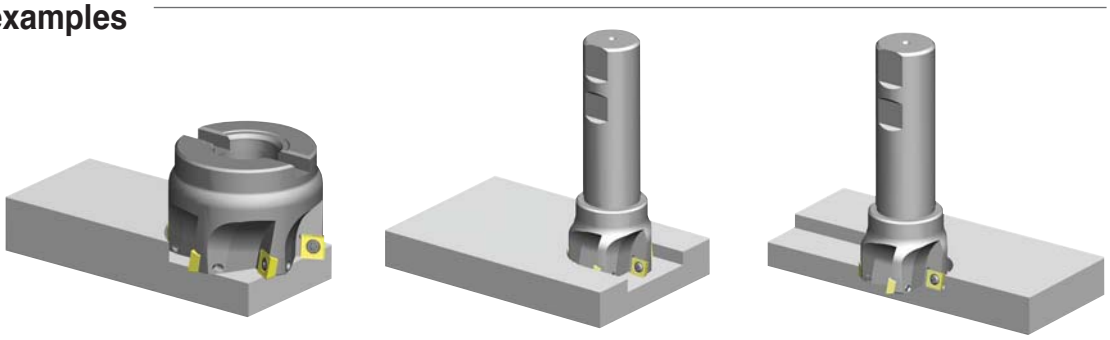
Future Mill(FMP)

Features



- ▶ The strong cutting edge ensures excellent tool life in high feed and high speed, deep depth of cut, with low cutting loads
- ▶ Optimal grades for most workpieces make high efficiency cutting possible
- ▶ Unique chip breaker makes good chip evacuation and lower cutting loads (1)
- ▶ Innovative curve cutting edge lowers cutting load and provides a stronger cutting edge (2)

Machining examples



Features of chip breaker

- ▶ Innovative special cutting edge and chip breaker design ensures ideal 90˚cutting and low cutting load
- ▶ Various applications are available with multi functional cutters (Facing, Slotting, Shouldering)
- ▶ Improved tool life due to special coated grades
- ▶ Superior cutting quality at deep cutting depth through the low cutting load and strong cutting edge

Recommended C/B and grade as per workpiece

Chip breaker		Cutter edge	Recommended C/B and grade as per workpiece (●:1st)									
			Low carbon steel Mild steel		High carbon steel Alloy steel		Stainless steel		Cast iron		Aluminum alloy	
			C/B	Grade	C/B	Grade	C/B	Grade	C/B	Grade	C/B	Grade
Low cutting load type	MF 		●	○NCM325 ○NC5330 ●NCM335		●NCM325 ○NC5330 ○NCM335	●	○NCM325 ○NC5330 ●NCM335	●	●PC6510 ○PC215K	-	-
Reinforced cutting edge type	MM 			○NCM325 ○NC5330 ●NCM335		●NCM325 ○NC5330 ○NCM335		○NCM325 ○NC5330 ●NCM335		●PC6510 ○PC215K	-	-
Sharp cutting edge type	MA 		-	-	-	-	-	-	-	-	●	●H01 ○G10

Recommended cutting condition

(mm)

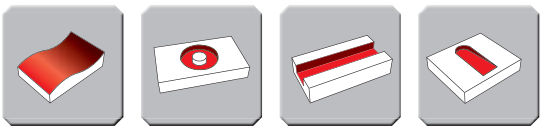
ISO	Cutting Speed vc(m/min)							
	CVD Coated		PVD Coated					Carbide
	NCM325	NCM335	PC3535	PC3545	PC6510	PC8520	PC9530	H01
P	190~310	180~290	160~270	130~210	-	-	-	-
M	110~180	100~160	-	70~120	-	110~180	90~150	-
K	-	-	-	-	180~230	-	-	-
N	-	-	-	-	-	-	-	260~440

Future Mill(FMR)

Features

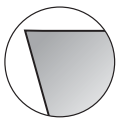
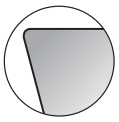
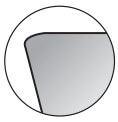
- Wide coverage for medium to roughing, general steel to high hardness mold materials.
- 2 step shape of insert provides strong clamping and can minimize components to replace the shim.
- 4-8 cutting edge available per insert.(Inscribed circle 05, 06, 07, 08, 10, 12, 16, 20)
- Uneven flute spacing prevents vibration on high speed applications and provides more stable machining.
- Precise design of the insert seat prevents insert from chattering.
- Special design of the insert bottom prevents movement and chatter of insert.
- Easy to change cutting edge due to the rotatation prevention design of the insert.

Machining examples



Copying	Helical	Slotting & Side cutting	Ramping

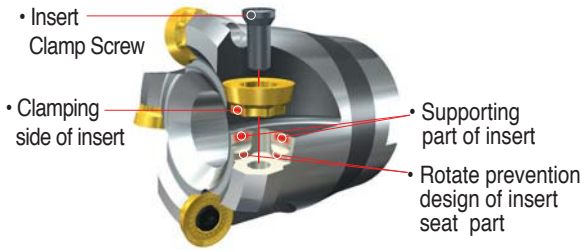
FMR Insert cutting edge shape

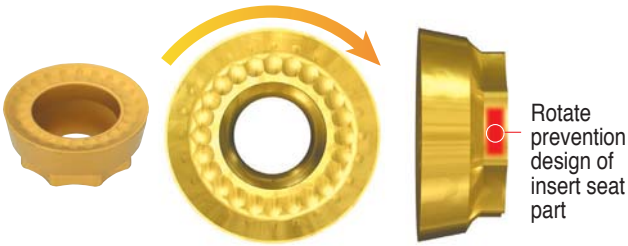
Designation	RDHW□□□□M0F	RDHW□□□□M0E	RDHW□□□□M0S
Cutting edge shape (G calss)			

Chip breakers

Chip breakers			Cutter edge	Features
Finishing	MF			Low cutting resistance chip breaker design guarantees long tool life good performance at finishing and difficult-to-cut material machining
Medium	MM			Suitable for general milling at wide application range
Aluminum	MA			Sharp cutting edge and buffed top face for aluminum machining prevent welding and control chip flow

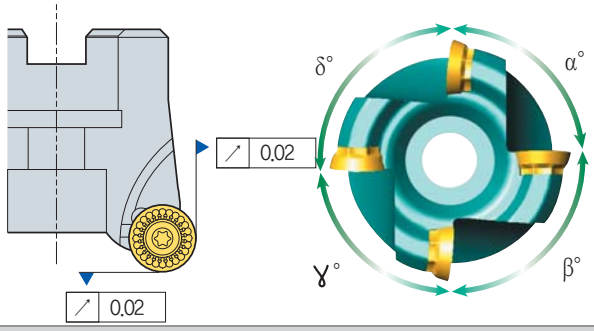
Clamping system



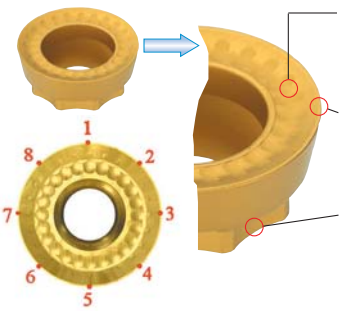


FMR □ 3000 type FMR □ 4000 type	FMR □ 5000 type FMR □ 6000 type

RDKT10T3M0-□□ RDKT1204M0-□□	RDKT1605M0-MM RDKT2006M0-MM



Good surface finish due to the precise design of insert seat part of cutter	Uneven flute spacing prevents vibration at high speed application and provides stable machining



- **Special chip breaker for low cutting load**
  Minimized heat generation due to smooth chip flow
- **Smooth cutting edge preparation**
  Inclined land angle
  Low cutting load and better surface roughness
- **Facial contact through curved face**
  Prevent rotation at high speed cutting
  Stable and tight clamping of insert.
  Good positioning of insert repeatedly

4-8 cutting edge available per insert

Future Mill(FMR)

Chip removal rate (cm³/min)

Workpiece		Grades	Ø8	Ø10	Ø12	Ø15	Ø16	Ø20	Ø21	Ø25	Ø26	Ø32	Ø33	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125	Ø160
P	General structure steel(under 200HB)	PC3500 PC3545 PC5300	4.97	9.94	9.94	14.92	31.83	31.83	47.74	47.74	47.74	71.61	38.19	95.49	119.36	143.23	167.11	190.98	133.69	509.29
			V=250, fz=0.25, ap=0.5, ae=0.5D				V=300, fz=0.4 ap=1.0, ae=0.5D		V=250, fz=0.4, ap=1.5, ae=0.5D											V=200, fz=0.5 ap=4.0, ae=0.5D
	General carbon steel (under 30 HRC)		3.97	7.95	7.95	11.93	25.46	25.46	38.19	38.19	38.19	57.29	38.19	76.39	95.49	114.59	133.69	152.78	133.69	458.36
			V=200, fz=0.25, ap=0.5, ae=0.5D				V=250, fz=0.4 ap=1.0, ae=0.5D		V=200, fz=0.4, ap=1.5, ae=0.5D											V=180, fz=0.5 ap=4.0, ae=0.5D
	High carbon steel, Alloy steel (30~40 HRC)		2.86	5.72	5.72	8.59	22.91	22.91	34.37	34.37	34.37	51.56	34.37	68.75	85.94	103.13	120.32	137.5	120.32	407.43
			V=180, fz=0.20, ap=0.5, ae=0.5D				V=200, fz=0.4 ap=1.0, ae=0.5D		V=180, fz=0.4, ap=1.5, ae=0.5D											V=160, fz=0.5 ap=4.0, ae=0.5D
	High carbon steel, Alloy steel (40~50 HRC)		1.24	2.48	2.48	3.72	11.45	11.45	14.32	17.18	14.32	21.48	14.32	28.64	35.8	42.97	50.13	57.29	50.13	249.55
			V=130, fz=0.15, ap=0.4, ae=0.5D				V=170, fz=0.3 ap=0.9, ae=0.5D		V=150, fz=0.3, ap=1.0, ae=0.5D											V=140, fz=0.4 ap=3.5, ae=0.5D
	Alloy steel (over 50 HRC)		0.95	1.9	1.9	2.86	7.63	7.63	9.54	11.45	9.54	14.32	9.54	19.09	23.87	28.64	33.42	38.19	33.42	152.78
			V=100, fz=0.15, ap=0.4, ae=0.5D				V=130, fz=0.3 ap=0.9, ae=0.5D		V=100, fz=0.3, ap=1.0, ae=0.5D											V=100, fz=0.4 ap=3.0, ae=0.5D
M	Stainless steel	PC5300	2.06	4.13	4.13	6.2	16.55	16.55	12.41	24.82	12.41	18.62	12.41	24.82	31.03	37.24	43.44	49.65	43.44	331.04
			V=130, fz=0.20, ap=0.5, ae=0.5D				V=200, fz=0.2 ap=1.0, ae=0.5D		V=100, fz=0.3, ap=1.0, ae=0.5D											V=130, fz=0.5 ap=4.0, ae=0.5D
K	Cast iron	PC5300	2.86	5.72	5.72	8.59	14.32	14.32	21.48	21.48	21.48	32.22	21.48	42.97	53.71	64.45	75.2	85.94	75.2	366.69
			V=180, fz=0.20, ap=0.5, ae=0.5D				V=180, fz=0.2 ap=1.0, ae=0.5D		V=180, fz=0.2, ap=1.5, ae=0.5D											V=180, fz=0.4 ap=4.0, ae=0.5D

Required machine power(P_{KW} = 0.75 x P_{HP})

▶ **RDKT10□□**

Workpiece		Grades	Ø21	Ø25	Ø26	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100	Cutting condition			
												vc	fz	ap	ae
P	General structure steel(under 200HB)	PC3500 PC3545 PC5300	2.2	2.2	2.2	3.3	4.4	5.5	6.6	7.7	8.8	250	0.4	1.5	0.5D
	General carbon steel (under 30 HRC)		2.1	2.1	2.1	3.1	4.1	5.2	6.2	7.3	8.3	200	0.4	1.5	0.5D
	High carbon steel, Alloy steel (30~40 HRC)		2.2	2.2	2.2	3.3	4.5	5.6	6.7	7.9	9	180	0.4	1.5	0.5D
	High carbon steel, Alloy steel (40~50 HRC)		1.1	1.1	1.1	1.6	2.1	2.6	3.2	3.7	4.2	150	0.3	1.0	0.5D
	Alloy steel(over 50 HRC)		0.7	0.7	0.7	1.1	1.4	1.7	2.1	2.4	2.8	100	0.3	1.0	0.5D
M	Stainless steel	PC5300	0.6	0.6	0.6	0.8	1.2	1.5	1.7	2	2.3	130	0.2	1.5	0.5D
K	Cast iron	PC5300	0.6	0.6	0.6	0.9	1.2	1.5	1.8	2.1	2.4	180	0.2	1.5	0.5D

• The figures in the above chart means Php value.

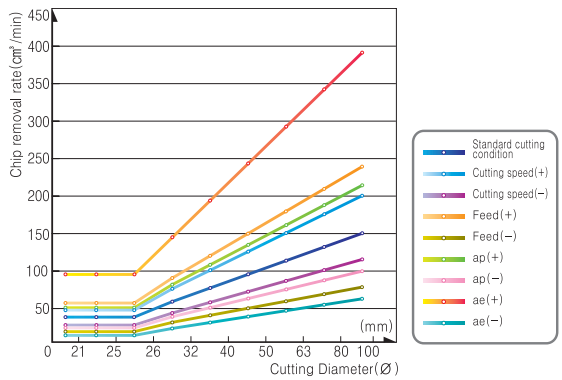
▶ **RDKT12□□**

Workpiece		Grades	Ø32	Ø33	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125	Cutting condition			
											vc	fz	ap	ae
P	General structure steel(under 200HB)	PC3500 PC3545 PC5300	1.7	1.7	2.6	3.5	3.5	4.4	5.3	6.1	200	0.4	1.5	0.5D
	General carbon steel (under 30 HRC)		2	2	3.1	4.1	2.6	5.2	6.2	7.2	180	0.4	1.5	0.5D
	High carbon steel, Alloy steel (30~40 HRC)		2.2	2.2	3.3	4.4	2.8	5.6	6.7	7.8	160	0.4	1.5	0.5D
	High carbon steel, Alloy steel (40~50 HRC)		1	1	1.5	1.6	2.1	2.6	3.1	3.6	140	0.3	1.0	0.5D
	Alloy steel(over 50 HRC)		0.7	0.7	1	1.4	0.8	1.7	2.1	2.4	100	0.3	1.0	0.5D
M	Stainless steel	PC5300	0.5	0.5	0.8	1.1	0.7	1.4	1.7	2	130	0.2	1.5	0.5D
K	Cast iron	PC5300	0.6	0.6	0.9	1.2	0.7	1.5	1.8	2.1	180	0.2	1.5	0.5D

• The figures in the above chart means Php value.

Chip removal rate by cutting condition

• **Used insert : RDKT10□**



▶ **Variation of cutting condition**

Standard	ISO
	vc=200 fz=0.4 ap=1.5 ae=0.5D
Speed (+)	250
Speed (-)	150
Feed (+)	0.6
Feed (-)	0.2
ap (+)	2
ap (-)	1
ae (+)	D
ae (-)	0.2D

Recommended cutting condition

▶ Side milling, Slotting, Ramping, Copying

Workpiece		Hardness	Grades	Cutting speed (m/min)	FMR1000		FMR1500		FMR2000		FMR2500		FMR3000		FMR4000		FMR5000		FMR6000	
					ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)
P	Cabon steel	200HB ≤	PC5300	280	≤ 1.0	≤ 0.4	≤ 1.2	≤ 0.4	≤ 1.5	≤ 0.4	≤ 1.7	≤ 0.4	≤ 2.0	≤ 0.5	≤ 2.4	≤ 0.6	≤ 3.0	≤ 0.7	≤ 4.0	≤ 0.8
			PC5400	245																
		30HRC ≤	PC5300	250	≤ 0.7	≤ 0.4	≤ 1.2	≤ 0.4	≤ 1.5	≤ 0.4	≤ 1.7	≤ 0.4	≤ 2.0	≤ 0.5	≤ 2.4	≤ 0.6	≤ 3.0	≤ 0.7	≤ 4.0	≤ 0.8
			PC5400	210																
	Alloy steel	30~40HRC	PC5300	195	≤ 0.7	≤ 0.2	≤ 0.9	≤ 0.2	≤ 1.2	≤ 0.2	≤ 1.5	≤ 0.2	≤ 1.7	≤ 0.3	≤ 2.0	≤ 0.4	≤ 2.7	≤ 0.5	≤ 3.7	≤ 0.6
			PC5400	170																
	High alloy steel (alloy constituent > 5%)	40~50HRC	PC5300	150	≤ 0.7	≤ 0.2	≤ 0.9	≤ 0.2	≤ 1.2	≤ 0.2	≤ 1.5	≤ 0.2	≤ 1.7	≤ 0.3	≤ 2.0	≤ 0.4	≤ 2.7	≤ 0.5	≤ 3.7	≤ 0.6
			PC5400	130																
		Tensile strength 350MPa ≤	PC5300	120	≤ 0.7	≤ 0.2	≤ 0.9	≤ 0.2	≤ 1.2	≤ 0.2	≤ 1.5	≤ 0.2	≤ 1.7	≤ 0.3	≤ 2.0	≤ 0.4	≤ 2.7	≤ 0.5	≤ 3.7	≤ 0.6
			PC5400	105																
M	Stainless steel	270HB≤	PC5300	130	≤ 0.7	≤ 0.2	≤ 0.9	≤ 0.2	≤ 1.2	≤ 0.2	≤ 1.5	≤ 0.2	≤ 1.7	≤ 0.3	≤ 2.0	≤ 0.4	≤ 2.7	≤ 0.5	≤ 3.7	≤ 0.6
			PC5400	110																
K	Cast iron, Ductile cast iron	Low tensile	PC5300	145	≤ 0.7	≤ 0.4	≤ 1.2	≤ 0.4	≤ 1.5	≤ 0.4	≤ 1.7	≤ 0.4	≤ 2.0	≤ 0.5	≤ 2.4	≤ 0.6	≤ 3.0	≤ 0.7	≤ 4.0	≤ 0.8
			PC5400	110																

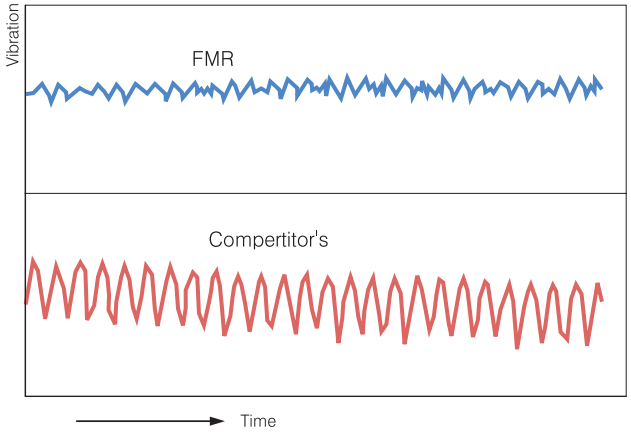
▶ Plunging

Workpiece		Hardness	Grades	Cutting speed (m/min)	FMR1000		FMR1500		FMR2000		FMR2500		FMR3000		FMR4000		FMR5000		FMR6000	
					ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)
P	Cabon steel	200HB ≤	PC5300	280	≤ 2.5	≤ 0.2	≤ 3.0	≤ 0.2	≤ 3.5	≤ 0.2	≤ 4.0	≤ 0.2	≤ 5.0	≤ 0.3	≤ 6.0	≤ 0.4	≤ 8.0	≤ 0.5	≤ 10.0	≤ 0.6
			PC5400	245																
		30HRC ≤	PC5300	250	≤ 2.5	≤ 0.2	≤ 3.0	≤ 0.2	≤ 3.5	≤ 0.2	≤ 4.0	≤ 0.2	≤ 5.0	≤ 0.3	≤ 6.0	≤ 0.4	≤ 8.0	≤ 0.5	≤ 10.0	≤ 0.6
			PC5400	210																
	Alloy steel	30~40HRC	PC5300	195	≤ 2.5	≤ 0.1	≤ 3.0	≤ 0.1	≤ 3.5	≤ 0.1	≤ 4.0	≤ 0.1	≤ 5.0	≤ 0.2	≤ 6.0	≤ 0.3	≤ 8.0	≤ 0.4	≤ 10.0	≤ 0.5
			PC5400	170																
	High alloy steel (alloy constituent > 5%)	40~50HRC	PC5300	150	≤ 2.5	≤ 0.1	≤ 3.0	≤ 0.1	≤ 3.5	≤ 0.1	≤ 4.0	≤ 0.1	≤ 5.0	≤ 0.2	≤ 6.0	≤ 0.3	≤ 8.0	≤ 0.4	≤ 10.0	≤ 0.5
			PC5400	130																
		Tensile strength 350MPa ≤	PC5300	120	≤ 2.5	≤ 0.1	≤ 3.0	≤ 0.1	≤ 3.5	≤ 0.1	≤ 4.0	≤ 0.1	≤ 5.0	≤ 0.2	≤ 6.0	≤ 0.3	≤ 8.0	≤ 0.4	≤ 10.0	≤ 0.5
			PC5400	105																
M	Stainless steel	270HB≤	PC5300	130	≤ 2.5	≤ 0.1	≤ 3.0	≤ 0.1	≤ 3.5	≤ 0.1	≤ 4.0	≤ 0.1	≤ 5.0	≤ 0.2	≤ 6.0	≤ 0.3	≤ 8.0	≤ 0.4	≤ 10.0	≤ 0.5
			PC5400	110																
K	Cast iron, Ductile cast iron	Low tensile	PC5300	145	≤ 2.5	≤ 0.2	≤ 3.0	≤ 0.2	≤ 3.5	≤ 0.2	≤ 4.0	≤ 0.2	≤ 5.0	≤ 0.3	≤ 6.0	≤ 0.4	≤ 8.0	≤ 0.5	≤ 10.0	≤ 0.6
			PC5400	110																

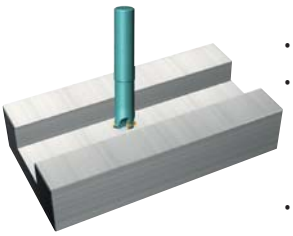
▶ Helical cutting

Workpiece		Hardness	Grades	Cutting speed (m/min)	FMR1000		FMR1500		FMR2000		FMR2500		FMR3000		FMR4000		FMR5000		FMR6000	
					ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)	ap(mm)	fz(mm/t)
P	Cabon steel	200HB ≤	PC5300	280	≤ 1.0	≤ 0.2	≤ 1.0	≤ 0.2	≤ 1.0	≤ 0.2	≤ 1.0	≤ 0.2	≤ 2.0	≤ 0.3	≤ 2.0	≤ 0.4	≤ 4.0	≤ 0.5	≤ 4.0	≤ 0.6
			PC5400	245																
		30HRC ≤	PC5300	250	≤ 0.7	≤ 0.2	≤ 0.7	≤ 0.2	≤ 0.7	≤ 0.2	≤ 0.7	≤ 0.2	≤ 2.0	≤ 0.3	≤ 2.0	≤ 0.4	≤ 4.0	≤ 0.5	≤ 4.0	≤ 0.6
			PC5400	210																
	Alloy steel	30~40HRC	PC5300	195	≤ 0.7	≤ 0.1	≤ 0.7	≤ 0.1	≤ 0.7	≤ 0.1	≤ 0.7	≤ 0.1	≤ 1.7	≤ 0.2	≤ 1.7	≤ 0.3	≤ 3.7	≤ 0.4	≤ 3.7	≤ 0.5
			PC5400	170																
	High alloy steel (alloy constituent > 5%)	40~50HRC	PC5300	150	≤ 0.7	≤ 0.1	≤ 0.7	≤ 0.1	≤ 0.7	≤ 0.1	≤ 0.7	≤ 0.1	≤ 1.7	≤ 0.2	≤ 1.7	≤ 0.3	≤ 3.7	≤ 0.4	≤ 3.7	≤ 0.5
			PC5400	130																
		Tensile strength 350MPa ≤	PC5300	120	≤ 0.7	≤ 0.1	≤ 0.7	≤ 0.1	≤ 0.7	≤ 0.1	≤ 0.7	≤ 0.1	≤ 1.7	≤ 0.2	≤ 1.7	≤ 0.3	≤ 3.7	≤ 0.4	≤ 3.7	≤ 0.5
			PC5400	105																
M	Stainless steel	270HB≤	PC5300	130	≤ 0.7	≤ 0.1	≤ 0.7	≤ 0.1	≤ 0.7	≤ 0.1	≤ 0.7	≤ 0.1	≤ 1.7	≤ 0.2	≤ 1.7	≤ 0.3	≤ 3.7	≤ 0.4	≤ 3.7	≤ 0.5
			PC5400	110																
K	Cast iron, Ductile cast iron	Low tensile	PC5300	145	≤ 1.0	≤ 0.2	≤ 1.0	≤ 0.2	≤ 1.0	≤ 0.2	≤ 1.0	≤ 0.2	≤ 2.0	≤ 0.3	≤ 2.0	≤ 0.4	≤ 4.0	≤ 0.5	≤ 4.0	≤ 0.6
			PC5400	110																

FMR Vibration test



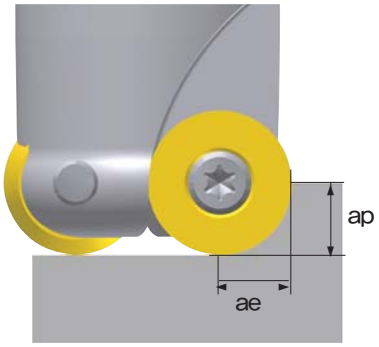
Machining Example



- **Workpiece** STD11
- **Cutting condition** vc = 200m/min
  fz = 0.40mm/t
  ap = 2.0mm
  ae = 4.0mm
- **Designation** FMRS3032RD-S
  RDKT10T3M0-MM
  (PC3500)

Cutting condition formulas for milling

Cutting speed	RPM
$vc = \frac{\pi \times D \times n}{1000}$ (m/min)	$n = \frac{vc \times 1000}{\pi \times D}$ (min^{-1})
Feed(per tooth)	**Feed(per minute)**
$fz = \frac{vf}{Z \times n}$ (mm/t)	$vf = fz \times n \times z$ (mm/min)
Chip removal rate	**Required machine power**
$Q = ap \times ae \times vf$ (cm^3/min)	$Pkw = \frac{Q \times kc}{60 \times 102 \times \eta}$ (kW) $Php = \frac{Pc}{0.75}$ (hp)

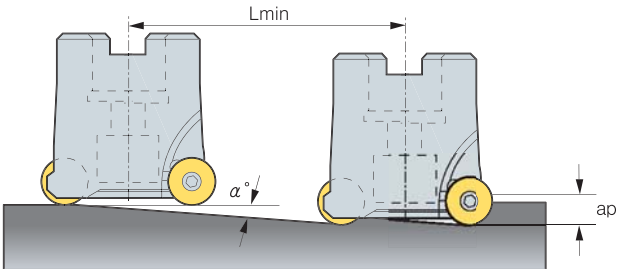


vc	=	Cutting speed(m/min)	**Pkw**	=	Required machine power(kW)
n	=	Revolution per a minute(min^{-1})	**Php**	=	Horsepower requirement(hp)
D	=	Cutting diameter(mm)	**Q**	=	Chip removal amount(cm^3/min)
De	=	Efficient cutting diameter(mm)	**ap**	=	Depth of cut(mm)
vf	=	Feed per a minute(mm/min)	**ae**	=	Width of cut(mm)
fz	=	Feed per tooth(mm/t)	**Kc**	=	Specific cutting resistance(MPa)
z	=	Number of tooth	**η**	=	Mechanical efficiency(%)
Pc	=	Power requirement(kW)			

Feed as per cutting depth

Designation	Chip breaker	Depth of cut (mm)								
		0.2~0.5	0.5~1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
RDHW0501M0	-	0.25	0.15	-	-	-	-	-	-	-
RDHW06T1M0	-	0.30	0.20	0.10	-	-	-	-	-	-
RDHW0702M0	-	0.35	0.25	0.10	0.07	-	-	-	-	-
RDHW0803M0	-	0.40	0.30	0.15	0.01	-	-	-	-	-
RDKT10T3M0 -	MF/MM	-	0.40	0.35	0.30	0.20	-	-	-	-
RDKT1204M0 -	MF/MM	-	0.50	0.45	0.30	0.25	0.22	-	-	-
RDHW1605M0	-	-	0.60	0.50	0.45	0.35	0.30	0.20	0.10	-
RDHW2006M0	-	-	-	0.60	0.50	0.40	0.30	0.25	0.15	0.10
RDKT1605M0 -	MM	-	0.60	0.50	0.45	0.35	0.30	0.20	0.10	-
RDKT2006M0 -	MM	-	-	0.60	0.50	0.40	0.30	0.25	0.15	0.10

Ramping technical data

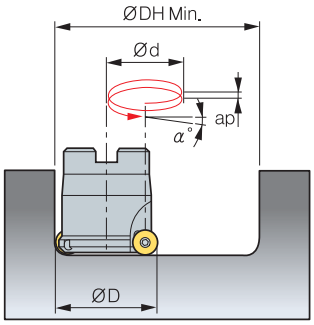


$$L_{min} = \frac{ap}{\tan \alpha^{\circ}} \text{ (mm)}$$

※ Lmin : Min. inclination cutting length
α° : Max. ramping angle
ap : Depth of cut

Section	Tool Dia.	Ramping angle α° (Max)	Cutting length L(mm) by ramping angle									
			ap=1	ap=2	ap=2.5	ap=3	ap=3.5	ap=4	ap=5	ap=6	ap=8	ap=10
FMR1000	08	18.14	3	6	8	-	-	-	-	-	-	-
	10	11.7	5	10	12	-	-	-	-	-	-	-
	12	8.43	7	13	17	-	-	-	-	-	-	-
	15	5.93	10	19	24	-	-	-	-	-	-	-
FMR1500	10	20.67	21	5	7	8	-	-	-	-	-	-
	12	10.05	10	11	14	17	-	-	-	-	-	-
	16	6.12	6	19	23	28	-	-	-	-	-	-
	20	4.36	4	26	33	39	-	-	-	-	-	-
FMR2000	15	9.42	6	12	15	18	21	-	-	-	-	-
	20	5.85	10	20	24	29	34	-	-	-	-	-
FMR2500	16	13.7	4	8	10	12	14	16	-	-	-	-
	20	9.29	6	12	15	18	21	24	-	-	-	-
	25	6.56	9	17	22	26	30	35	-	-	-	-
FMR3000	25	21.8	3	5	6	8	9	10	13	-	-	-
	32	13.24	4	9	11	13	15	17	21	-	-	-
	40	9.09	6	13	16	19	22	25	31	-	-	-
	50	6.52	9	17	22	26	31	35	44	-	-	-
	63	4.76	12	24	30	36	42	48	60	-	-	-
	80	3.52	16	33	41	49	57	65	81	-	-	-
	100	2.69	21	43	53	64	74	85	106	-	-	-
FMR4000	32	15.95	3	7	9	10	12	14	17	21	-	-
	40	10.3	6	11	14	17	19	22	28	33	-	-
	50	7.13	8	16	20	24	28	32	40	48	-	-
	63	5.08	11	22	28	34	39	45	56	67	-	-
	80	3.69	16	31	39	47	54	62	78	93	-	-
	100	2.79	21	41	51	62	72	82	103	123	-	-
	125	2.14	27	54	67	80	94	107	134	161	-	-
FMR5000	40	7.4	8	15	19	23	27	31	38	46	62	-
	50	5.22	11	22	27	33	38	44	55	66	88	-
	63	3.79	15	30	38	45	53	60	75	91	121	-
	80	2.97	19	39	48	58	67	77	96	116	154	-
	100	2.09	27	55	69	82	96	110	137	164	219	-
	125	1.63	35	70	88	105	123	141	176	211	281	-
FMR6000	40	7.44	8	15	19	23	27	31	38	46	61	77
	50	4.97	11	23	29	34	40	46	57	69	92	46
	63	3.69	16	31	39	47	54	62	78	93	124	62
	80	2.72	21	42	53	63	74	84	105	126	168	84
	100	2.12	27	54	68	81	95	108	135	162	216	108
	125	1.57	36	73	91	109	128	146	182	219	292	146

Helical cutting technical data - ØDH Min

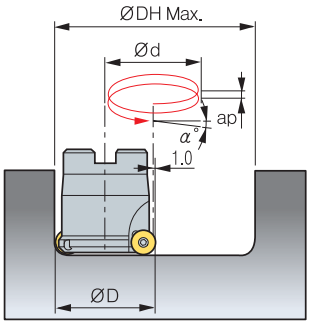


- ØD = Tool Dia.(mm), ØDH Min, Max = Min, Max diameter(mm)
- Ød = Tool Path (mm)
- ØDH Min(Min diameter) = ØD × 2 - Insert size, ØDH Max(Max diameter) = ØD × 2 - 2
- Ød(tool path) = ØDH Min, Max - øD

(mm)

Section	Insert	Tool Dia.	ØDH Min	Ød	Ramping angle (α°)									
					ap=1	ap=2	ap=2.5	ap=3	ap=3.5	ap=4	ap=5	ap=6	ap=8	ap=10
FMR1000	5	08	11	3	6.11	12.35	15.57	-	-	-	-	-	-	-
	5	10	15	5	3.65	7.34	7.34	-	-	-	-	-	-	-
	5	12	19	7	2.61	5.23	5.23	-	-	-	-	-	-	-
	5	15	25	10	1.83	3.65	3.65	-	-	-	-	-	-	-
FMR1500	6	10	14	4	4.57	9.20	9.20	13.95	-	-	-	-	-	-
	6	12	18	6	3.04	6.11	6.11	9.20	-	-	-	-	-	-
	6	16	26	10	1.83	3.65	3.65	5.49	-	-	-	-	-	-
	6	20	34	14	1.30	2.61	2.61	3.92	-	-	-	-	-	-
FMR2000	7	15	23	8	2.28	4.57	4.57	6.88	8.04	-	-	-	-	-
	7	20	33	13	1.40	2.81	2.81	4.22	4.92	-	-	-	-	-
FMR2500	8	16	24	8	2.28	4.57	4.57	6.88	8.04	9.20	-	-	-	-
	8	20	32	12	1.52	3.04	3.04	4.57	5.34	6.11	-	-	-	-
	8	25	42	17	1.07	2.15	2.15	3.22	3.76	4.30	-	-	-	-
FMR3000	10	25	40	15	1.22	2.43	2.43	3.65	4.27	4.88	6.11	-	-	-
	10	32	54	22	0.83	1.66	1.66	2.49	2.91	3.32	4.15	-	-	-
	10	40	70	30	0.61	1.22	1.22	1.83	2.13	2.43	3.04	-	-	-
	10	50	90	40	0.46	0.91	0.91	1.37	1.60	1.83	2.28	-	-	-
	10	63	116	53	0.34	0.69	0.69	1.03	1.21	1.38	1.72	-	-	-
	10	80	150	70	0.26	0.52	0.52	0.78	0.91	1.04	1.30	-	-	-
	10	100	190	90	0.20	0.41	0.41	0.61	0.71	0.81	1.01	-	-	-
FMR4000	12	32	52	20	0.91	1.83	1.83	2.74	3.20	3.65	4.57	5.49	-	-
	12	40	68	28	0.65	1.30	1.30	1.96	2.28	2.61	3.26	3.92	-	-
	12	50	88	38	0.48	0.96	0.96	1.44	1.68	1.92	2.40	2.88	-	-
	12	63	114	51	0.36	0.72	0.72	1.07	1.25	1.43	1.79	2.15	-	-
	12	80	148	68	0.27	0.54	0.54	0.81	0.94	1.07	1.34	1.61	-	-
	12	100	188	88	0.21	0.41	0.41	0.62	0.73	0.83	1.04	1.24	-	-
	12	125	238	113	0.16	0.32	0.32	0.48	0.57	0.65	0.81	0.97	-	-
FMR5000	16	40	64	24	0.76	1.52	1.52	2.28	2.66	3.04	3.81	4.57	6.11	-
	16	50	84	34	0.54	1.07	1.07	1.61	1.88	2.15	2.69	3.22	4.30	-
	16	63	110	47	0.39	0.78	0.78	1.16	1.36	1.55	1.94	2.33	3.11	-
	16	80	144	64	0.29	0.57	0.57	0.86	1.00	1.14	1.43	1.71	2.28	-
	16	100	184	84	0.22	0.43	0.43	0.65	0.76	0.87	1.09	1.30	1.74	-
	16	125	234	109	0.17	0.33	0.33	0.50	0.59	0.67	0.84	1.00	1.34	-
FMR6000	20	50	80	30	0.61	1.22	1.22	1.83	2.13	2.43	3.04	3.65	4.88	6.11
	20	63	106	43	0.42	0.85	0.85	1.27	1.49	1.70	2.12	2.55	3.40	4.25
	20	80	140	60	0.30	0.61	0.61	0.91	1.06	1.22	1.52	1.83	2.43	3.04
	20	100	180	80	0.23	0.46	0.46	0.68	0.80	0.91	1.14	1.37	1.83	2.28
	20	125	230	105	0.17	0.35	0.35	0.52	0.61	0.70	0.87	1.04	1.39	1.74
	20	160	300	140	0.13	0.26	0.26	0.39	0.46	0.52	0.65	0.78	1.04	1.30

Helical cutting technical data - ØDH Max



- ØD = Tool Dia.(mm), ØDH Min, Max = Min, Max diameter(mm)
- Ød = Tool Path (mm)
- ØDH Min(Min diameter) = ØD × 2 - Insert size, ØDH Max(Max diameter) = ØD × 2 - 2
- Ød(tool path) = ØDH Min, Max - ØD

(mm)

Section	Insert	Tool Dia.	ØDH Min	Ød	Ramping angle (α°)									
					ap=1	ap=2	ap=2.5	ap=3	ap=3.5	ap=4	ap=5	ap=6	ap=8	ap=10
FMR1000	5	08	14	6	3.04	6.11	7.65	-	-	-	-	-	-	-
	5	10	18	8	2.28	4.57	5.72	-	-	-	-	-	-	-
	5	12	22	10	1.83	3.65	4.57	-	-	-	-	-	-	-
	5	15	28	13	1.40	2.81	3.51	-	-	-	-	-	-	-
FMR1500	6	10	18	8	2.28	4.57	5.72	6.88	-	-	-	-	-	-
	6	12	22	10	1.83	3.65	4.57	5.49	-	-	-	-	-	-
	6	16	30	14	1.30	2.61	3.26	3.92	-	-	-	-	-	-
	6	20	38	18	1.01	2.03	2.54	3.04	-	-	-	-	-	-
FMR2000	7	15	28	13	1.40	2.81	3.51	4.22	4.92	-	-	-	-	-
	7	20	38	18	1.01	2.03	2.54	3.04	3.55	-	-	-	-	-
FMR2500	8	16	30	14	1.30	2.61	3.26	3.92	4.57	5.23	-	-	-	-
	8	20	38	18	1.01	2.03	2.54	3.04	3.55	4.06	-	-	-	-
	8	25	48	23	0.79	1.59	1.98	2.38	2.78	3.18	-	-	-	-
FMR3000	10	25	48	23	0.79	1.59	1.98	2.38	2.78	3.18	3.97	-	-	-
	10	32	62	30	0.61	1.22	1.52	1.83	2.13	2.43	3.04	-	-	-
	10	40	78	38	0.48	0.96	1.20	1.44	1.68	1.92	2.40	-	-	-
	10	50	98	48	0.38	0.76	0.95	1.14	1.33	1.52	1.90	-	-	-
	10	63	124	61	0.30	0.60	0.75	0.90	1.05	1.20	1.50	-	-	-
	10	80	158	78	0.23	0.47	0.58	0.70	0.82	0.94	1.17	-	-	-
	10	100	198	98	0.19	0.37	0.47	0.56	0.65	0.74	0.93	-	-	-
FMR4000	12	32	62	30	0.61	1.22	1.52	1.83	2.13	2.43	3.04	3.65	-	-
	12	40	78	38	0.48	0.96	1.20	1.44	1.68	1.92	2.40	2.88	-	-
	12	50	98	48	0.38	0.76	0.95	1.14	1.33	1.52	1.90	2.28	-	-
	12	63	124	61	0.30	0.60	0.75	0.90	1.05	1.20	1.50	1.80	-	-
	12	80	158	78	0.23	0.47	0.58	0.70	0.82	0.94	1.17	1.40	-	-
	12	100	198	98	0.19	0.37	0.47	0.56	0.65	0.74	0.93	1.12	-	-
	12	125	248	123	0.15	0.30	0.37	0.45	0.52	0.59	0.74	0.89	-	-
FMR5000	16	40	78	38	0.48	0.96	1.20	1.44	1.68	1.92	2.40	2.88	3.85	-
	16	50	98	48	0.38	0.76	0.95	1.14	1.33	1.52	1.90	2.28	3.04	-
	16	63	124	61	0.30	0.60	0.75	0.90	1.05	1.20	1.50	1.80	2.39	-
	16	80	158	78	0.23	0.47	0.58	0.70	0.82	0.94	1.17	1.40	1.87	-
	16	100	198	98	0.19	0.37	0.47	0.56	0.65	0.74	0.93	1.12	1.49	-
	16	125	248	123	0.15	0.30	0.37	0.45	0.52	0.59	0.74	0.89	1.19	-
FMR6000	20	50	98	48	0.38	0.76	0.95	1.14	1.33	1.52	1.90	2.28	3.04	3.81
	20	63	124	61	0.30	0.60	0.75	0.90	1.05	1.20	1.50	1.80	2.39	2.99
	20	80	158	78	0.23	0.47	0.58	0.70	0.82	0.94	1.17	1.40	1.87	2.34
	20	100	198	98	0.19	0.37	0.47	0.56	0.65	0.74	0.93	1.12	1.49	1.86
	20	125	248	123	0.15	0.30	0.37	0.45	0.52	0.59	0.74	0.89	1.19	1.48
	20	160	318	158	0.12	0.23	0.29	0.35	0.40	0.46	0.58	0.69	0.92	1.16

Future Mill series for mold making

FMR P-positive New

- Stable clamping system enables stable machining and productivity
- Varied product line-up ensures wide application range
- Optimal shape and grade with high hardness for hard-to-cut material machining

Features

- ▶ P-positive relief angle (11˚) ensures high rigidity and high machinability in die steel and high-resistant alloy machining.
- ▶ Flat clearance face of insert prevents interference and revolution while machining.
- ▶ Optimal grades and chip breakers for various workpieces

▶ Chip breaker
- Concave shape ensures wide chip pocket and lowers cutting temperature.

▶ Through-coolant system
- Superb chip evacuation
- Low cutting heat ensures long tool life

▶ Clearance face for preventing rotation
- Prevents rotation in machining.
- Divides corners.
- Prevents interference in high-feed machining.
- Ensures stable clamping.

Usage and features of chip breakers

Chip breaker	Cutting edge	Applications	Features
MA		Aluminum machining	Optimal cutting edge for aluminum machining and buffed surface ensure high machinability.
ML		Titanium & Inconel machining	Excellent results in titanium machining thanks to a high hardness cutting edge and the chip breaker reducing the cutting load
MF		Fine finishing	Chip breaker for low cutting resistance enables fine finishing.
MM		General machining	Optimal for general machining
None C/B		Super hard material machining	Optimal for high hardness die steel and heat resistant alloy

Recommended cutting condition

∗Recommended chip breaker : ● First ○Second

Workpiece			Hardness	Grade	Cutting conditions				Chip breaker					
					vc(m/min)	fz(mm/t)	ap(mm)	ae(mm)	MA	ML	MF	MM	None C/B 1	None C/B 2
P	Low carbon steel		HB80~180	PC5400	100~250	0.12~0.70	0.3~6.0	0.7D~0.1D	-	-	●	○	-	-
P	High carbon steel		HB180~280	PC5400	100~220	0.12~0.70	0.3~6.0	0.7D~0.1D	-	-	●	○	-	-
P	Low alloy steel		Under HRC27	PC3600	180~290	0.20~0.60	0.3~6.0	0.7D~0.1D	-	-	-	●	○	-
P	Low alloy steel		Under HRC27	PC5400 / PC5300	100~200	0.20~0.60	0.3~6.0	0.7D~0.1D	-	-	-	●	○	-
P	Low pre-hardened steel		HRC20~50	PC3600	130~250	0.30~0.50	~ 0.5	0.7D~0.1D	-	-	-	-	●	○
P	Low pre-hardened steel		HRC20~50	PC5300	50~150	0.30~0.50	~ 0.5	0.7D~0.1D	-	-	-	-	●	○
P	High alloy steel		Under HRC27	PC3600	130~250	0.30~0.50	~ 0.5	0.7D~0.1D	-	-	-	●	○	-
P	High alloy steel		Under HRC27	PC5300	100~220	0.30~0.50	~ 0.5	0.7D~0.1D	-	-	-	●	○	-
P	High pre-hardened steel		HRC20~48	PC5300	50~150	0.30~0.50	~ 0.5	0.7D~0.1D	-	-	-	-	●	○
M	Stainless steel		Under HB270	PC5300 / PC5400	100~150	0.20~0.60	0.3~6.0	0.7D~0.1D	-	-	○	●	-	-
K	Gray cast iron, Ductile cast iron		Under 350MPa	PC5300	120~210	0.20~0.60	0.3~6.0	0.7D~0.1D	-	-	○	●	-	-
N	Aluminum		-	H01	300~800	0.30~0.60	0.3~6.0	0.7D~0.1D	●	-	-	-	-	-
S	Heat resistant alloy	Fe	HRC20~30	PC5300 / PC5400	35~60	0.30~0.50	~ 0.5	0.7D~0.1D	-	●	○	-	-	-
S	Heat resistant alloy	Ni or Co	HRC40~45	PC5300 / PC5400	30~50	0.30~0.50	~ 0.5	0.7D~0.1D	-	●	○	-	-	-
S	Titanium		HRC35~45	PC5300 / PC5400	40~70	0.30~0.50	~ 1.5	0.7D~0.1D	-	●	○	-	-	-
H	High hardened materials		Over HRC50	PC5300 / PC5400	30~50	0.30~0.50	~ 0.5	0.7D~0.1D	-	-	-	-	●	○

Feed per tooth according to ap(fz, mm/t)

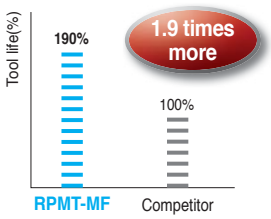
(mm)

Insert	Insert size (d)	Feed per tooth according to ap							
		ap=1	ap=2	ap=3	ap=4	ap=5	ap=6	ap=8	ap=10
RPMT08	8	0.30	0.22	0.18	0.15	-	-	-	-
RPMT10	10	0.40	0.28	0.25	0.20	0.12	-	-	-
RPMT12	12	0.60	0.45	0.35	0.30	0.25	0.20	-	-
RPMT16	16	0.65	0.45	0.40	0.32	0.30	0.28	0.23	-
RPMT20	20	0.70	0.50	0.42	0.35	0.32	0.29	0.25	0.22

Cutting performace

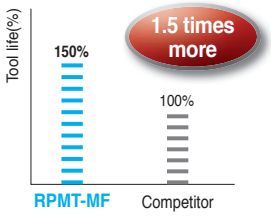
P Alloy steel (E355C Heat treatment, HRC 38~40)

- **Cutting conditions** vc(m/min) = 250
  fz(mm/tooth) = 0.6
  ap(mm) = 1
  wet
- **Tools** **Insert** RPMT1204M0E-MF(PC5300)
  Holder FMRS4032HRP-3L25
- **Result**



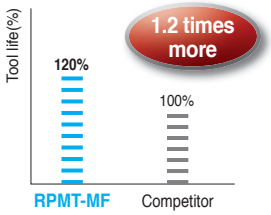
P Low pre-hardened steel (40CrMnNiMo8-6-4 Heat treatment, HRC 30~45)

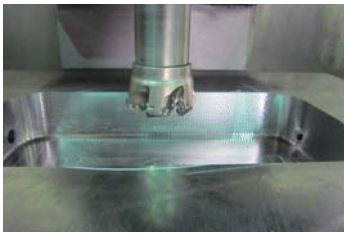
- **Cutting conditions** vc(m/min) = 178
  fz(mm/tooth) = 0.72
  ap(mm) = 1.5
  dry
- **Tools** **Insert** RPMT1606M0S-MM(PC5300)
  Holder FMRCM5063HRP-4
- **Result**



P Low pre-hardened steel (C55E4, HRC 28~33)

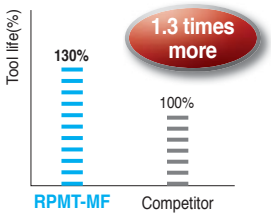
- **Cutting conditions** vc(m/min) = 178
  fz(mm/tooth) = 0.74
  ap(mm) = 0.8
  dry
- **Tools** **Insert** RPMT1204M0E-MF(PC5300)
  Holder FMRCM4063HRP-6
- **Result**



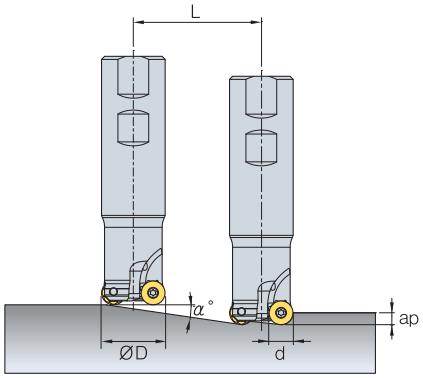


P High pre-hardened steel (X40CrMoV5-1, HRC 50~52)

- **Cutting conditions** vc(m/min) = 50
  fz(mm/tooth) = 0.15
  ap(mm) = 4.0
  dry
- **Tools** **Insert** RPMW1204M0S1(PC5300)
  Holder FMRS4032HRP-3L25
- **Result**

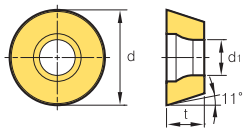


Maximum angle table for Ramping machining



$$L = \frac{ap}{\tan \alpha^\circ} \text{ (mm)}$$

※ L(mm) : Cutting length
α° : Max. ramping angle
ap : Depth of cut

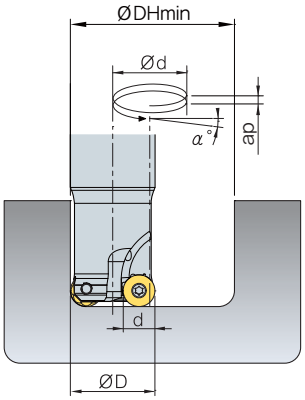


(mm)

Section	Insert size(d)	Tool Dia. (ØD)	Ramping angle α°(max)	Cutting length L(mm) by ap									
				ap=1	ap=2	ap=2.5	ap=3	ap=3.5	ap=4	ap=5	ap=6	ap=8	ap=10
FMR2500	8	17	4.7	12	24	30	36	42	48	-	-	-	-
	8	18	4.1	14	28	34	41	48	55	-	-	-	-
	8	20	15.4	4	7	9	11	13	14	-	-	-	-
	8	21	13.9	4	8	10	12	14	16	-	-	-	-
	8	25	9.8	6	12	14	17	20	23	-	-	-	-
	8	26	9.2	6	12	16	19	22	25	-	-	-	-
FMR3000	10	25	13.8	4	8	10	12	14	16	20	-	-	-
	10	26	12.6	4	9	11	13	16	18	22	-	-	-
	10	32	8.4	7	14	17	20	24	27	34	-	-	-
	10	33	8.0	7	14	18	21	25	29	36	-	-	-
	10	40	5.8	10	20	25	30	34	39	49	-	-	-
	10	50	4.2	14	27	34	41	48	55	68	-	-	-
	10	63	3.1	19	37	47	56	65	75	93	-	-	-
	10	66	2.9	20	40	50	60	69	79	99	-	-	-
FMR4000	12	25	4.5	13	25	32	38	44	51	63	76	-	-
	12	26	4.1	14	28	35	42	49	56	70	84	-	-
	12	32	14.7	4	8	10	11	13	15	19	23	-	-
	12	33	13.8	4	8	10	12	14	16	20	24	-	-
	12	40	9.6	6	12	15	18	21	24	30	36	-	-
	12	50	6.7	9	17	21	26	30	34	43	51	-	-
	12	63	4.8	12	24	30	36	42	48	60	72	-	-
	12	66	4.5	13	26	32	38	45	51	64	77	-	-
	12	80	3.5	17	33	41	50	58	66	83	99	-	-
	12	100	2.6	22	44	55	65	76	87	109	131	-	-
FMR5000	16	40	17.8	3	6	8	9	11	12	16	19	25	-
	16	50	11.3	5	10	13	15	18	20	25	30	40	-
	16	63	7.6	7	15	19	22	26	30	37	45	60	-
	16	66	7.1	8	16	20	24	28	32	40	48	64	-
	16	80	5.3	11	21	27	32	37	43	53	64	85	-
	16	100	4.0	14	29	36	43	51	58	72	87	116	-
	16	125	3.0	19	38	48	58	67	77	96	115	154	-
	16	160	2.2	26	52	65	78	90	103	129	155	207	-
FMR6000	20	50	17.8	3	6	8	9	11	12	16	19	25	31
	20	63	11.1	5	10	13	15	18	20	25	30	41	51
	20	80	7.4	8	15	19	23	27	31	38	46	61	77
	20	100	5.3	11	21	27	32	37	43	53	64	85	107
	20	125	4.0	14	29	36	43	51	58	72	87	116	145
	20	160	2.9	20	40	49	59	69	79	99	119	158	198
	20	200	2.2	26	52	65	78	90	103	129	155	207	258
	20	250	1.7	33	67	84	100	117	134	167	200	267	334

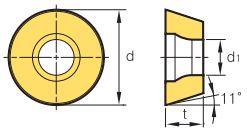
∗ Insert size(d): Please refer page E13, applicable insert drawing.

Minimum hole diameter table for Helical machining(ØDHmin)



- ØD = Tool Dia.(mm)
- Ød(Tool Path, mm) = ØDHmin, max - ØD
- ØDHmin(Minimum hole diameter) = ØD × 2 - Insert size(d)
- ØDHmax(Maximum hole diameter) = ØD×2 - 2
- Ramping angle by ap(α°) = $\tan^{-1}\left(\frac{ap}{\pi \times Ød}\right)$

  Helical angle adjusted by ap cannot exceed maximum angle
- ap = Depth of cut

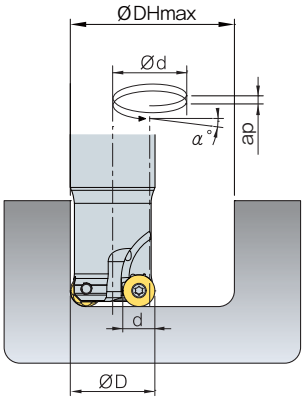


(mm)

Section	Insert size(d)	Tool Dia. (ØD)	Ramping angle α°(max)	ØDH min	Ød	Ramping angle (α°) by ap									
						ap=1	ap=2	ap=2.5	ap=3	ap=3.5	ap=4	ap=5	ap=6	ap=8	ap=10
FMR2500	8	17	4.7	26	9	2.03	4.06	-	-	-	-	-	-	-	-
	8	18	4.1	28	10	1.83	3.65	-	-	-	-	-	-	-	-
	8	20	15.4	32	12	1.52	3.04	3.81	4.57	5.34	6.11	-	-	-	-
	8	21	13.9	34	13	1.40	2.81	3.51	4.22	4.92	5.63	-	-	-	-
	8	25	9.8	42	17	1.07	2.15	2.69	3.22	3.76	4.30	-	-	-	-
	8	26	9.2	44	18	1.01	2.03	2.54	3.04	3.55	4.06	-	-	-	-
FMR3000	10	25	13.8	40	15	1.22	2.43	3.04	3.65	4.27	4.88	-	-	-	-
	10	26	12.6	42	16	1.14	2.28	2.85	3.43	4.00	4.57	-	-	-	-
	10	32	8.4	54	22	0.83	1.66	2.07	2.49	2.91	3.32	-	-	-	-
	10	33	8.0	56	23	0.79	1.59	1.98	2.38	2.78	3.18	-	-	-	-
	10	40	5.8	70	30	0.61	1.22	1.52	1.83	2.13	2.43	-	-	-	-
	10	50	4.2	90	40	0.46	0.91	1.14	1.37	1.60	1.83	-	-	-	-
	10	63	3.1	116	53	0.34	0.69	0.86	1.03	1.21	1.38	-	-	-	-
	10	66	2.9	122	56	0.33	0.65	0.81	0.98	1.14	1.30	-	-	-	-
FMR4000	12	25	4.5	38	13	1.40	2.81	3.51	-	-	-	-	-	-	-
	12	26	4.1	40	14	1.30	2.61	3.26	-	-	-	-	-	-	-
	12	32	14.7	52	20	0.91	1.83	2.28	2.74	3.20	3.65	4.57	5.49	-	-
	12	33	13.8	54	21	0.87	1.74	2.17	2.61	3.04	3.48	4.35	5.23	-	-
	12	40	9.6	68	28	0.65	1.30	1.63	1.96	2.28	2.61	3.26	3.92	-	-
	12	50	6.7	88	38	0.48	0.96	1.20	1.44	1.68	1.92	2.40	2.88	-	-
	12	63	4.8	114	51	0.36	0.72	0.89	1.07	1.25	1.43	1.79	2.15	-	-
	12	66	4.5	120	54	0.34	0.68	0.84	1.01	1.18	1.35	1.69	2.03	-	-
	12	80	3.5	148	68	0.27	0.54	0.67	0.81	0.94	1.07	1.34	1.61	-	-
	12	100	2.6	188	88	0.21	0.41	0.52	0.62	0.73	0.83	1.04	1.24	-	-
FMR5000	16	40	17.8	64	24	0.76	1.52	1.90	2.28	2.66	3.04	3.81	4.57	6.11	-
	16	50	11.3	84	34	0.54	1.07	1.34	1.61	1.88	2.15	2.69	3.22	4.30	-
	16	63	7.6	110	47	0.39	0.78	0.97	1.16	1.36	1.55	1.94	2.33	3.11	-
	16	66	7.1	116	50	0.36	0.73	0.91	1.09	1.28	1.46	1.83	2.19	2.92	-
	16	80	5.3	144	64	0.29	0.57	0.71	0.86	1.00	1.14	1.43	1.71	2.28	-
	16	100	4.0	184	84	0.22	0.43	0.54	0.65	0.76	0.87	1.09	1.30	1.74	-
	16	125	3.0	234	109	0.17	0.33	0.42	0.50	0.59	0.67	0.84	1.00	1.34	-
	16	160	2.2	304	144	0.13	0.25	0.32	0.38	0.44	0.51	0.63	0.76	1.01	-
FMR6000	20	50	17.8	80	30	0.61	1.22	1.52	1.83	2.13	2.43	3.04	3.65	4.88	6.11
	20	63	11.1	106	43	0.42	0.85	1.06	1.27	1.49	1.70	2.12	2.55	3.40	4.25
	20	80	7.4	140	60	0.30	0.61	0.76	0.91	1.06	1.22	1.52	1.83	2.43	3.04
	20	100	5.3	180	80	0.23	0.46	0.57	0.68	0.80	0.91	1.14	1.37	1.83	2.28
	20	125	4.0	230	105	0.17	0.35	0.43	0.52	0.61	0.70	0.87	1.04	1.39	1.74
	20	160	2.9	300	140	0.13	0.26	0.33	0.39	0.46	0.52	0.65	0.78	1.04	1.30
	20	200	2.2	380	180	0.10	0.20	0.25	0.30	0.35	0.41	0.51	0.61	0.81	1.01
	20	250	1.7	480	230	0.08	0.16	0.20	0.24	0.28	0.32	0.40	0.48	0.63	0.79

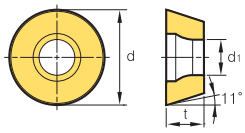
∗ Insert size(d): Please refer page E13, applicable insert drawing.

Maximum hole diameter table for Helical machining(ØDHmax)



- ØD = Tool Dia.(mm)
- Ød(Tool Path, mm) = ØDHmin, max - ØD
- ØDHmin(Minimum hole diameter) = ØD × 2 - Insert size(d)
- ØDHmax(Maximum hole diameter) = ØD×2 - 2
- Ramping angle by ap(α°) = $\tan^{-1}\left(\frac{ap}{\pi \times Ød}\right)$

  Helical angle adjusted by ap cannot exceed maximum angle
- ap = Depth of cut



(mm)

Section	Insert size(d)	Tool Dia. (ØD)	Ramping angle α°(max)	ØDH max	Ød	Ramping angle (α°) by ap									
						ap=1	ap=2	ap=2.5	ap=3	ap=3.5	ap=4	ap=5	ap=6	ap=8	ap=10
FMR2500	8	17	4.7	32	15	1.22	2.43	3.04	3.65	-	-	-	-	-	-
	8	18	4.1	34	16	1.14	2.28	2.85	3.43	-	-	-	-	-	-
	8	20	15.4	38	18	1.01	2.03	2.54	3.04	3.55	4.06	-	-	-	-
	8	21	13.9	40	19	0.96	1.92	2.40	2.88	3.37	3.85	-	-	-	-
	8	25	9.8	48	23	0.79	1.59	1.98	2.38	2.78	3.18	-	-	-	-
	8	26	9.2	50	24	0.76	1.52	1.90	2.28	2.66	3.04	-	-	-	-
FMR3000	10	25	13.8	48	23	0.79	1.59	1.98	2.38	2.78	3.18	-	-	-	-
	10	26	12.6	50	24	0.76	1.52	1.90	2.28	2.66	3.04	-	-	-	-
	10	32	8.4	62	30	0.61	1.22	1.52	1.83	2.13	2.43	-	-	-	-
	10	33	8.0	64	31	0.59	1.18	1.47	1.77	2.06	2.36	-	-	-	-
	10	40	5.8	78	38	0.48	0.96	1.20	1.44	1.68	1.92	-	-	-	-
	10	50	4.2	98	48	0.38	0.76	0.95	1.14	1.33	1.52	-	-	-	-
	10	63	3.1	124	61	0.30	0.60	0.75	0.90	1.05	1.20	-	-	-	-
	10	66	2.9	130	64	0.29	0.57	0.71	0.86	1.00	1.14	-	-	-	-
FMR4000	12	25	4.5	48	23	0.79	1.59	1.98	2.38	2.78	3.18	-	-	-	-
	12	26	4.1	50	24	0.76	1.52	1.90	2.28	2.66	3.04	-	-	-	-
	12	32	14.7	62	30	0.61	1.22	1.52	1.83	2.13	2.43	3.04	3.65	-	-
	12	33	13.8	64	31	0.59	1.18	1.47	1.77	2.06	2.36	2.95	3.54	-	-
	12	40	9.6	78	38	0.48	0.96	1.20	1.44	1.68	1.92	2.40	2.88	-	-
	12	50	6.7	98	48	0.38	0.76	0.95	1.14	1.33	1.52	1.90	2.28	-	-
	12	63	4.8	124	61	0.30	0.60	0.75	0.90	1.05	1.20	1.50	1.80	-	-
	12	66	4.5	130	64	0.29	0.57	0.71	0.86	1.00	1.14	1.43	1.71	-	-
	12	80	3.5	158	78	0.23	0.47	0.58	0.70	0.82	0.94	1.17	1.40	-	-
	12	100	2.6	198	98	0.19	0.37	0.47	0.56	0.65	0.74	0.93	1.12	-	-
FMR5000	16	40	17.8	78	38	0.48	0.96	1.20	1.44	1.68	1.92	2.40	2.88	3.85	-
	16	50	11.3	98	48	0.38	0.76	0.95	1.14	1.33	1.52	1.90	2.28	3.04	-
	16	63	7.6	124	61	0.30	0.60	0.75	0.90	1.05	1.20	1.50	1.80	2.39	-
	16	66	7.1	130	64	0.29	0.57	0.71	0.86	1.00	1.14	1.43	1.71	2.28	-
	16	80	5.3	158	78	0.23	0.47	0.58	0.70	0.82	0.94	1.17	1.40	1.87	-
	16	100	4.0	198	98	0.19	0.37	0.47	0.56	0.65	0.74	0.93	1.12	1.49	-
	16	125	3.0	248	123	0.15	0.30	0.37	0.45	0.52	0.59	0.74	0.89	1.19	-
	16	160	2.2	318	158	0.12	0.23	0.29	0.35	0.40	0.46	0.58	0.69	0.92	-
FMR6000	20	50	17.8	98	48	0.38	0.76	0.95	1.14	1.33	1.52	1.90	2.28	3.04	3.81
	20	63	11.1	124	61	0.30	0.60	0.75	0.90	1.05	1.20	1.50	1.80	2.39	2.99
	20	80	7.4	158	78	0.23	0.47	0.58	0.70	0.82	0.94	1.17	1.40	1.87	2.34
	20	100	5.3	198	98	0.19	0.37	0.47	0.56	0.65	0.74	0.93	1.12	1.49	1.86
	20	125	4.0	248	123	0.15	0.30	0.37	0.45	0.52	0.59	0.74	0.89	1.19	1.48
	20	160	2.9	318	158	0.12	0.23	0.29	0.35	0.40	0.46	0.58	0.69	0.92	1.16
	20	200	2.2	398	198	0.09	0.18	0.23	0.28	0.32	0.37	0.46	0.55	0.74	0.92
	20	250	1.7	498	248	0.07	0.15	0.18	0.22	0.26	0.29	0.37	0.44	0.59	0.74

∗ Insert size(d): Please refer page E13, applicable insert drawing.

FMAC(M)3000

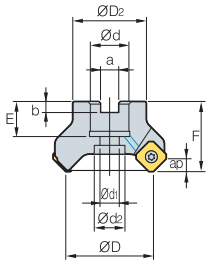


Fig. 1

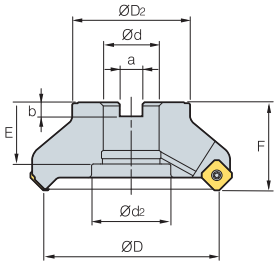


Fig. 2

AA 45°

- AR : 21°
- RR : −17°~−12°

(mm)

Designation			ØD	ØD2	Ød	a	b	E	F	Ød1	Ød2	ap	kg	Fig.
FMACM	3050HR	4	50	42	22	10.4	6.3	20	40	11	17.5	4.0	0.4	1
	3050HR-H	6	50	42	22	10.4	6.3	20	40	11	17.5	4.0	0.4	1
	3063HR	5	63	49	22	10.4	6.3	20	40	11	17.5	4.0	0.5	1
	3063HR-H	8	63	49	22	10.4	6.3	20	40	11	17.5	4.0	0.6	1
FMAC (FMACM)	3080HR	6	80	57	25.4(27)	9.5(12.4)	6(7)	25(23)	50	14	20	4.0	1.1	1
	3080HR-H	10	80	57	25.4(27)	9.5(12.4)	6(7)	25(23)	50	14	20	4.0	1.2	1
	3100HR	7	100	67	31.75(32)	12.7(14.4)	8(8)	35(25.5)	50	(18)	45(26)	4.0	1.7	2(1)
	3100HR-H	12	100	67	31.75(32)	12.7(14.4)	8(8)	35(25.5)	50	(18)	45(26)	4.0	1.7	2(1)
	3125HR	8	125	87	38.1(40)	15.9(16.4)	10(9)	42(29)	63	(22)	55(32)	4.0	3.3(3.5)	2(1)
	3125HR-H	14	125	87	38.1(40)	15.9(16.4)	10(9)	42(29)	63	(22)	55(32)	4.0	3.3(3.5)	2(1)

( )Metric Size

Available Inserts

SEET-MF | SEET-MM | SEET-MA | SEXT-MF | SEXT-MM | SEXT-MR | SEEW | SEEW-W

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SEET	0903AGFN-MA														●	E15 E16
	0903AGSN-MF			●					●		●					
	0903AGSN-MM			●							●					
SEXT	0903AGSN-MF										●	●				
	0903AGSN-MM					●				●	●	●				
	0903AGSN-MR															
SEEW	0903AGTN															

Available Arbors

Designation		Ød	NC Arbors
FMAC(M)	3050HR-□ 3063HR-□	22	BT□□-FMC22-□□
	3080HR-□	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	3100HR-□	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□
	3125HR-□	38.1	BT□□-FMA38.1-□□
		40	BT□□-FMB / FMC40-□□

Parts

Specification	 Screw	 Insert Wrench
Ø50~Ø125	FTKA0307	TW09S

Available Inserts E15, E16 Available Arbors and bolt E318~E320

FMAC(M)4000

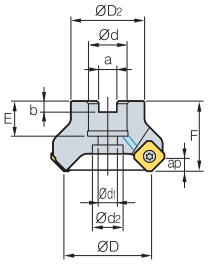


Fig. 1

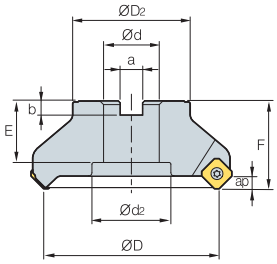


Fig. 2

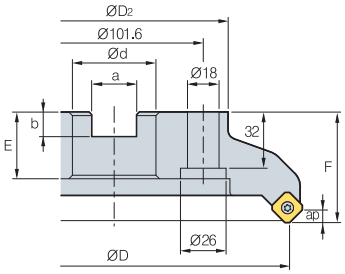


Fig. 3

AA 45°

- AR : 21°
- RR : −17°~−12°

(mm)

Designation			ØD	ØD2	Ød	a	b	E	F	Ød1	Ød2	ap	kg	Fig.
FMACM	4050HR	3	50	42	22	10.4	6.3	20	40	11	18	6.5	0.4	1
	4063HR	4	63	49	22	10.4	6.3	20	40	11	18	6.5	0.6	1
	4063HR-M	5	63	49	22	10.4	6.3	20	40	11	18	6.5	0.6	1
	4063HR-H	6	63	49	22	10.4	6.3	20	40	11	18	6.5	0.6	1
FMAC (FMACM)	4080HR	5	80	57	25.4(27)	9.5(12.4)	6(7)	25(23)	50	14	20	6.5	1.1	1
	4080HR-M	6	80	57	25.4(27)	9.5(12.4)	6(7)	25(23)	50	14	20	6.5	1.1	1
	4080HR-H	8	80	57	25.4(27)	9.5(12.4)	6(7)	25(23)	50	14	20	6.5	1.1	1
	4100HR	5	100	67	31.75(32)	12.7(14.4)	8(8)	33(25)	63(50)	18	26	6.5	2(1.6)	1
	4100HR-M	7	100	67	31.75(32)	12.7(14.4)	8(8)	33(25)	63(50)	18	26	6.5	2(1.6)	1
	4100HR-H	10	100	67	31.75(32)	12.7(14.4)	8(8)	33(25)	63(50)	18	26	6.5	2(1.6)	1
	4125HR	6	125	87	38.1(40)	15.9(16.4)	10(9)	35(29)	63	22	32	6.5	3.1	1
	4125HR-M	8	125	87	38.1(40)	15.9(16.4)	10(9)	35(29)	63	22	32	6.5	3.1	1
	4125HR-H	12	125	87	38.1(40)	15.9(16.4)	10(9)	35(29)	63	22	32	6.5	3.1	1
	4160R	7	160	107	50.8(40)	19.0(16.4)	11(9)	38(35)	63	-	-	6.5	4.8	2
	4160R-M	10	160	107	50.8(40)	19.0(16.4)	11(9)	38(35)	63	-	-	6.5	4.8	2
	4160R-H	16	160	107	50.8(40)	19.0(16.4)	11(9)	38(35)	63	-	-	6.5	4.8	2
	4200R	8	200	130	47.625(60)	25.4(25.7)	14	38(32)	63	-	-	6.5	6.1	3
	4200R-M	12	200	130	47.625(60)	25.4(25.7)	14	38(32)	63	-	-	6.5	6.1	3
	4200R-H	18	200	130	47.625(60)	25.4(25.7)	14	38(32)	63	-	-	6.5	6.1	3

( )Metric Size

Available Inserts

SEET-MF | SEET-MM | SEET-MA | SEXT-MF

SEXT-MM | SEXT-MR | SEEW | SEEW-W

Designation		Cermet		Coated								Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC9530	PC6510	PC5300	PC5400	PC215K	PD2000	ST30A	G10	H01	
SEET	14M4AGFN-MA										●				●	E15 E16
	14M4AGSN-MF			●	●		●	●	●							
	14M4AGSN-MM			●	●	●	●		●							
SEXT	14M4AGSN-MF			●		●			●	●	●					
	14M4AGSN-MM			●	●	●	●	●	●	●						
	14M4AGSN-MR			●		●	●		●							
SEEW	14M4AGTN		●													
	14M4AGFN-W															
	14M4AGSN-W															
	14M4AGTN-W															

Available Arbors

Designation		Ød	NC Arbors
FMAC(M)	4050HR-□ 4063HR-□	22	BT□□-FMC22-□□
	4080HR-□	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	4100HR-□	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□
	4125HR-□	38.1	BT□□-FMA38.1-□□
		40	BT□□-FMB40-□□
	4160R-□	50.8	BT□□-FMA50.8-□□
		40	BT□□-FMB / FMC40-□□
	4200R-□	47.625	BT□□-FMA47.625-□□
		60	BT□□-FMB60-□□

Parts

Specification	Screw	Shim	Shim Screw	Insert Wrench	Shim Screw
Ø50~Ø200	FTGA03512	SS42SAF	SHXN0509F	TW15S	HW35L

Available Inserts E15, E16 Available Arbors and bolt E318~E320

FMAC(M)3000-A

(Aluminum Body)

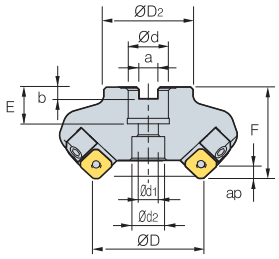


Fig. 1

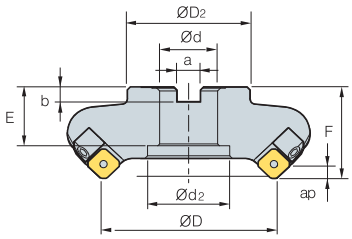


Fig. 2

45°

- AR : 21°
- RR : −16°~−12°

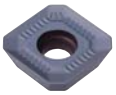
(mm)

Designation			ØD	ØD2	Ød	a	b	E	F	Ød1	Ød2	ap	kg	Fig.
FMACM	3063R-A	3	63	49	22	10.4	6.3	20	40	11	18	4	0.5	1
FMAC (FMACM)	3080R-A	4	80	57	25.4(27)	9.5(12.4)	6(7)	25	50	13.5	20	4	0.6	1
	3100R-A	5	100	67	31.75(32)	12.7(14.4)	8(8)	32	50	-	45	4	0.8	2
	3100R-25.4-A	5	100	67	25.4	9.5	6	25	50	-	38	4	0.9	2
	3125R-A	6	125	87	38.1(40)	15.9(16.4)	10(9)	38	63	-	56	4	1.6	2
	3125R-25.4-A	6	125	70	25.4	9.5	6	25	63	-	38	4	1.7	2

( )Metric Size

Available Inserts


SEET-MF

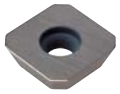

SEET-MM


SEET-MA


SEXT-MF


SEXT-MM


SEXT-MR


SEEW

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SEET	0903AGFN-MA														●	E15 E16
	0903AGSN-MF			●					●		●					
	0903AGSN-MM			●							●					
SEXT	0903AGSN-MF										●	●				
	0903AGSN-MM					●				●	●	●				
	0903AGSN-MR															
SEEW	0903AGTN															

Available Arbors

Designation		Ød	NC Arbors
FMAC(M)	3063R-□	22	BT□□-FMC22-□□
	3080R-□	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	3100R-□	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□
	3125R-□	38.1	BT□□-FMA38.1-□□
		40	BT□□-FMB40-□□

Parts

Specification	Screw	Insert Wrench	Locator Wrench	Locator	Locator Screw
Ø63~Ø125	FTKA0307	TW09S	HW30L	LFMA3R-A	DHA620

Available Inserts E15, E16 Available Arbors and bolt E318~E320

FMAC(M)4000-A

(Aluminum body)

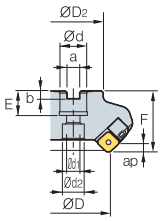


Fig. 1

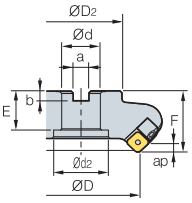


Fig. 2

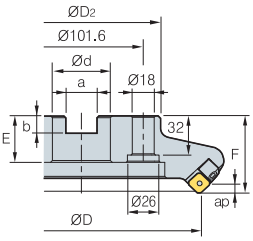


Fig. 3

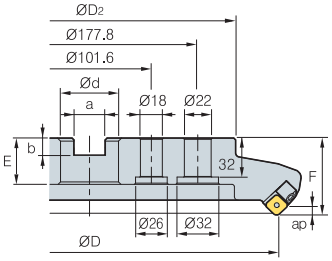


Fig. 4

AA 45°

- AR : 21°
- RR : −16°~−12°

(mm)

Designation			ØD	ØD2	Ød	a	b	E	F	Ød1	Ød2	ap	kg	Fig.
FMACM	4063R-A	3	63	49	22	10.4	6.3	20	50	11	18	6.5	0.6	1
FMAC	4080R-A	4	80	67	25.4(27)	9.5(12.4)	6(7)	25(22)	50	13.5	20	6.5	0.8	1
(FMACM)	4100R-A	5	100	67	31.75(32)	12.7(14.4)	8(8)	32	50	-	45	6.5	1.1	2
	4100R-25.4-A	5	100	67	25.4	9.5	6	25	50	-	38	6.5	1.2	2
	4125R-A	6	125	87	38.1(40)	15.9(16.4)	10(9)	38(35)	63	-	56	6.5	1.7	2
	4125R-25.4-A	6	125	70	25.4	9.5	6	25	63	-	38	6.5	1.8	2
	4160R-A	7	160	107	50.8(40)	19.0(16.4)	11(9)	38(35)	63	-	75	6.5	2.5	2
	4200R-A	8	200	130	47.625(60)	25.4(25.7)	14(14)	38(32)	63	-	-	6.5	3.2	3
	4250R-A	10	250	180	47.625(60)	25.4(25.7)	14(14)	38	63	-	-	6.5	4.1	3
	4315R-A	12	315	240	47.625(60)	25.4(25.7)	14(14)	38	63	-	-	6.5	6.7	4

Note) Through coolant type between Ø50~Ø125

( )Metric Size

Available Inserts

Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Coated PC215K	Coated PD2000	Uncoated ST30A	Uncoated G10	Uncoated H01	Page
SEET	14M4AGFN-MA											●			●	E15 E16
	14M4AGSN-MF			●	●		●	●	●							
	14M4AGSN-MM			●	●	●	●		●							
SEXT	14M4AGSN-MF			●		●			●	●	●					
	14M4AGSN-MM			●	●	●	●	●	●	●						
	14M4AGSN-MR			●		●	●		●							
SEEW	14M4AGTN		●													
	14M4AGFN-W															
	14M4AGSN-W															
	14M4AGTN-W															

Available Arbors

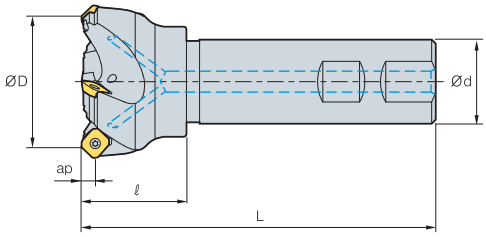
Designation		Ød	NC Arbors
FMAC(M)	4063R-□	22	BT□□-FMC22-□□
	4080R-□	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	4100HR-□	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□
	4125R-□	38.1	BT□□-FMA38.1-□□
		40	BT□□-FMB40-□□
	4160R-□	50.8	BT□□-FMA50.8-□□
		40	BT□□-FMB / FMC40-□□
	4200R-□	47.625	BT□□-FMA47.625-□□
	4250R-□	60	BT□□-FMB60-□□
	4315R-□	60	BT□□-FMB60-□□

Parts

Specification	Screw	Insert Wrench	Locator Wrench	Locator	Locator Screw
Ø63~Ø315	FTGA03510	TW15S	HW40L	LFMA4R-A	DHA0830

Available Inserts E15, E16 Available Arbors and bolt E318~E320

FMAS3000



AA 45°

- AR : 23°
- RR : −17°~−13°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
FMAS	3025HR	2	25	25	35	115	4	0.4
	3032HR	3	32	25	40	125	4	0.5
	3032HR-S32	3	32	32	40	130	4	0.8
	3040HR	3	40	32	40	130	4	0.9
	3040HR-S40	3	40	40	40	140	4	1.3
	3040HR-S42	3	40	42	40	140	4	1.4
	3050HR	4	50	32	40	135	4	1
	3050HR-S40	4	50	40	40	140	4	1.3
	3050HR-S42	4	50	42	40	140	4	1.5
	3063HR	5	63	32	45	135	4	1.2
	3063HR-S40	5	63	40	45	145	4	1.6
	3063HR-S42	5	63	42	45	145	4	1.7

Available Inserts

SEET-MF | SEET-MM | SEET-MA | SEXT-MF | SEXT-MM | SEXT-MR | SEEW | SEEW-W

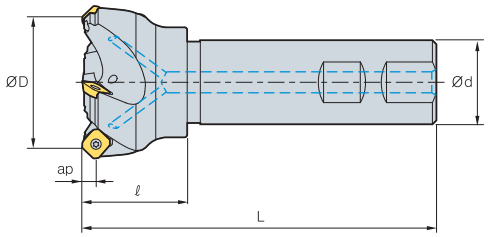
Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SEET	0903AGFN-MA														●	E15 E16
	0903AGSN-MF			●					●		●					
	0903AGSN-MM			●							●					
SEXT	0903AGSN-MF										●	●				
	0903AGSN-MM					●				●	●	●				
	0903AGSN-MR															
SEEW	0903AGTN															

Parts

Specification	Screw	Insert Wrench
Ø25~Ø63	FTKA0307	TW09S

Available Inserts E15, E16

FMAS4000



AA 45°

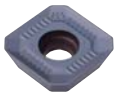
- AR : 23°
- RR : −17°~−13°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
FMAS	4050HR	3	50	32	45	135	6.5	1
	4050HR-S40	3	50	40	45	135	6.5	1.3
	4050HR-S42	3	50	42	45	135	6.5	1.45
	4063HR	4	63	32	45	135	6.5	1.2
	4063HR-S40	4	63	40	45	135	6.5	1.5
	4063HR-S42	4	63	42	45	135	6.5	1.6

Available Inserts


SEET-MF

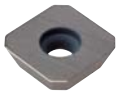

SEET-MM


SEET-MA


SEXT-MF


SEXT-MM


SEXT-MR


SEEW


SEEW-W

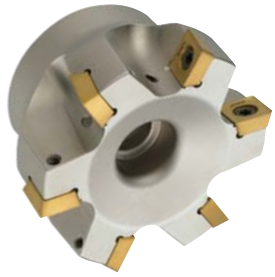
Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC9530	PC6510	PC5300	PC5400	PC215K	PD2000	ST30A	G10	H01	
SEET	14M4AGFN-MA											●			●	E15 E16
	14M4AGSN-MF			●	●		●	●	●							
	14M4AGSN-MM			●	●	●	●		●							
SEXT	14M4AGSN-MF			●		●			●	●	●					
	14M4AGSN-MM			●	●	●	●	●	●	●						
	14M4AGSN-MR			●		●	●		●							
SEEW	14M4AGTN		●													
	14M4AGFN-W															
	14M4AGSN-W															
	14M4AGTN-W															

Parts

Specification	Screw	Shim	Shim Screw	Insert Wrench	Shim Wrench
Ø50~Ø63	FTGA03512	SS42SAF	SHXN0509F	TW15S	HW35L

Available Inserts E15, E16

FMPC(M)3000



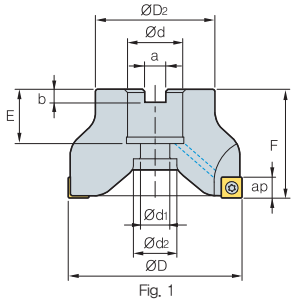


Fig. 1

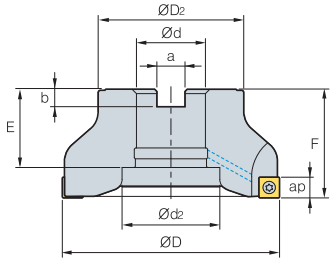


Fig. 2

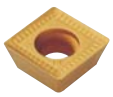
- AR : 10°
- RR : –9°~–8°

(mm)

Designation			ØD	ØD2	Ød	a	b	E	F	Ød1	Ød2	ap	kg	Fig.
FMPCM	3050HS	5	50	40	22	10.4	6.3	20	40	11	18	7	0.3	1
	3063HS	6	63	40	22	10.4	6.3	20	40	11	18	7	0.5	1
FMPC	3080HS	7	80	55	25.4(27)	9.5(12.4)	6(7)	25(22)	50	14	20	7	1.0	1
(FMPCM)	3100HS	8	100	67	31.75(32)	12.7(14.4)	8(8)	36(26)	50	18	45(26)	7	1.5	2(1)

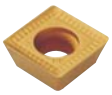
( )Metric Size

Available Inserts


SDET-MF


SDET-MM


SDET-MA


SDXT-MF


SDXT-MM


SDXT-MA

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3545	PD2000	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SDET	09M402R-MA							●							●	E14
	09M405R-MF															
	09M405R-MM															
SDXT	09M405R-MF			●	●				●	●	●	●				
	09M405L-MF															
	09M405R-MM			●	●	●	●		●	●	●	●				
	09M405L-MM															
	09M405R-MA														●	

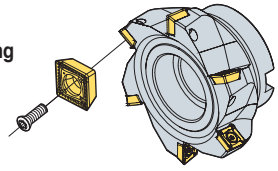
Available Arbors

Designation		Ød	NC Arbors
FMPC(M)	3050HS 3063HS	22	BT□□-FMC22-□□
	3080HS	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	3100HS	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□

Parts

Specification	Screw	Wrench
Ø50~Ø100	FTGA03508	TW15S

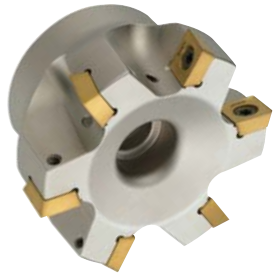
■ Assembling



Available Inserts E14

Available Arbors and bolt E318~E320

FMPC(M)4000



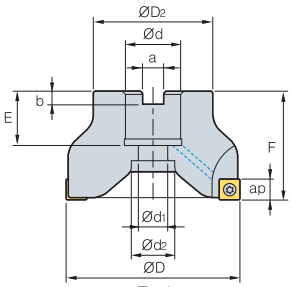


Fig. 1

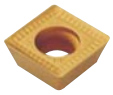
- AR : 10°
- RR : −9°~−8°

(mm)

Designation			ØD	ØD2	Ød	a	b	E	F	Ød1	Ød2	ap	kg	Fig.
FMPCM	4063HS	5	63	49	22	10.4	6.3	20(20)	50(50)	11	18	11	0.4	1
FMPC (FMPCM)	4080HS	6	80	57	25.4(27)	9.5(12.4)	6(7)	25(23)	50(50)	14	20	11	0.9	1
	4100HS	7	100	67	31.75(32)	12.7(14.4)	8(8)	33(25)	63(50)	18	26	11	1.9(1.5)	1
	4125HS	8	125	87	38.1(40)	15.9(16.4)	10(9)	35(29)	63	22	32	11	3.1	1

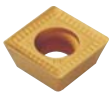
( )Metric Size

Available Inserts


SDET-MF


SDET-MM


SDET-MA


SDXT-MF


SDXT-MM


SDXT-MA

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SDET	130504R-MA														●	E14
	130508R-MF															
	130508R-MM															
SDXT	130508R-MF			●	●				●	●	●	●				
	130508R-MM			●	●	●		●	●	●	●	●				
	130538-MM															
	130508R-MA														●	

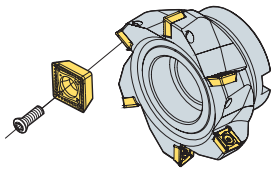
Available Arbors

Designation		Ød	NC Arbors
FMPC(M)	4063HS	22	BT□□-FMC22-□□
	4080HS	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	4100HS	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□
	4125HS	38.1	BT□□-FMA38.1-□□
		40	BT□□-FMB / FMC40-□□

Parts

Specification	 Screw	 Wrench
Ø63~Ø125	FTNC04511	TW20S

■ Assembling

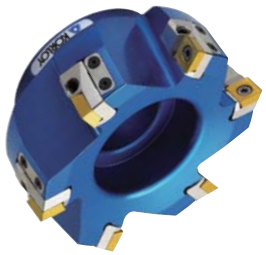


Available Inserts E14

Available Arbors and bolt E318~E320

FMPC(M)3000-A

(Aluminum Body)



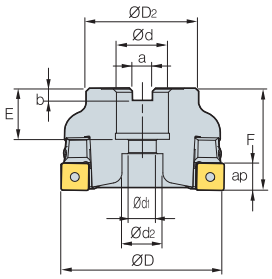


Fig. 1

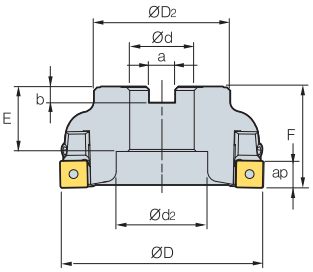


Fig. 2

AA 90°

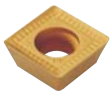
- AR : 10°
- RR : −9°~−7.3°

(mm)

Designation			ØD	ØD2	Ød	a	b	E	F	Ød1	Ød2	ap	kg	Fig.
FMPCM	3063S-A	3	63	40	22	10.4	6.3	20	40	11.0	18	7	0.2	1
FMPC (FMPCM)	3080S-A	4	80	55	25.4(27)	9.5(12.4)	6(7)	25(22)	50	13.5	20	7	0.4	1
	3100S-A	5	100	67	31.75(32)	12.7(14.4)	8(8)	32	50	-	45	7	0.6	2
	3100S-25.4-A	5	100	67	25.4	9.5	6	25	50	-	38	7	0.7	2

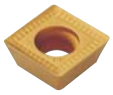
( )Metric Size

Available Inserts


SDET-MF


SDET-MM


SDET-MA


SDXT-MF


SDXT-MM


SDXT-MA

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3545	PD2000	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SDET	09M402R-MA							●							●	E14
	09M405R-MF															
	09M405R-MM															
SDXT	09M405R-MF			●	●				●	●	●	●				
	09M405L-MF															
	09M405R-MM			●	●	●	●		●	●	●	●				
	09M405L-MM															
	09M405R-MA														●	

Available Arbors

Designation		Ød	NC Arbors
FMPC(M)	3063S-□	22	BT□□-FMC22-□□
	3080S-□	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	3100S-□	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□
	3125S-□	38.1	BT□□-FMA38.1-□□
		40	BT□□-FMB / FMC40-□□

Parts

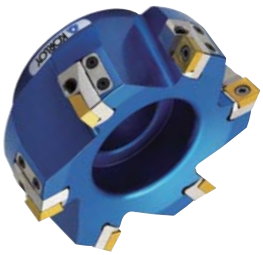
Specification	Screw	Insert Wrench	Locator Wrench	Locator	Locator Screw	Chip cover	Chip cover Screw
Ø63	FTGA03508	TW15S	HW30L	LFMP3R-A	DHA0624	CFMP3R14R1-A	PXMA0306
Ø80~Ø100	FTGA03508	TW15S	HW30L	LFMP3R-A	DHA0624	CFMP3R-A	PXMA0306

Available Inserts E14

Available Arbors and bolt E318~E320

FMPC(M)4000-A

(Aluminum Body)



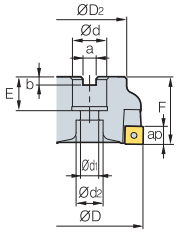


Fig. 1

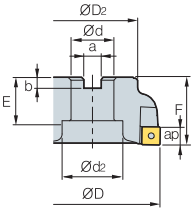


Fig. 2

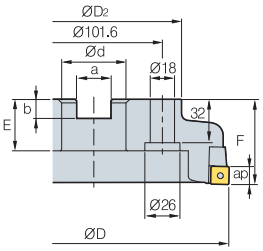


Fig. 3

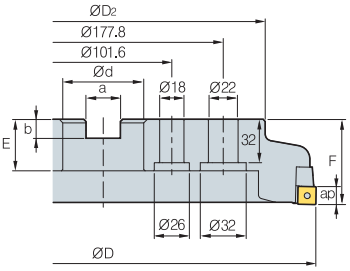


Fig. 4

- AR : 10°
- RR : −9°~−7.3°

(mm)

Designation			ØD	ØD2	Ød	a	b	E	F	Ød1	Ød2	ap	kg	Fig.
FMPCM	**4063S-A**	3	63	49	22	10.4	6.3	20	50	11	18	11	0.6	1
FMPC (FMPCM)	**4080S-A**	4	80	67	25.4(27)	9.5(12.4)	6(7)	25(22)	50	13.5	20	11	0.8	1
	4100S-A	5	100	67	31.75(32)	12.7(14.4)	8(8)	32	50	-	45	11	1.1	2
	4100S-25.4-A	5	100	67	25.4	9.5	6	25	50	-	38	11	1.2	2
	4125S-A	6	125	87	38.1(40)	15.9(16.4)	10(9)	38(35)	63	-	56	11	1.7	2
	4125S-25.4-A	6	125	70	25.4	9.5	6	25	63	-	38	11	1.8	2
	4160S-A	8	160	107	50.8(40)	19.0(16.4)	11(9)	38(35)	63	-	75	11	2.5	2
	4200S-A	10	200	130	47.625(60)	25.4(25.7)	14(14)	38(32)	63	-	-	11	3.2	3
	4250S-A	12	250	180	47.625(60)	25.4(25.7)	14(14)	38	63	-	-	11	4.1	3
	4315S-A	15	315	240	47.625(60)	25.4(25.7)	14(14)	38	63	-	-	11	6.7	4

( )Metric Size

Available Inserts

SDET-MF SDET-MM SDET-MA

SDXT-MF SDXT-MM SDXT-MA

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SDET	130504R-MA														●	E14
	130508R-MF															
	130508R-MM															
SDXT	130508R-MF			●	●				●	●	●	●				
	130508R-MM			●	●	●		●	●	●	●	●				
	130538-MM															
	130508R-MA														●	

Available Arbors

Designation		Ød	NC Arbors
FMPC(M)	**4063S-□**	22	BT□□-FMC22-□□
	4080S-□	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	4100S-□	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□
	4125S-□	38.1	BT□□-FMA38.1-□□
		40	BT□□-FMB40-□□
	4160S-□	50.8	BT□□-FMA50.8-□□
		40	BT□□-FMB / FMC40-□□
	4200S-□ **4250S-□**	47.625	BT□□-FMA47.625-□□
		60	BT□□-FMB60-□□
	4315S-□	60	BT□□-FMB60-□□

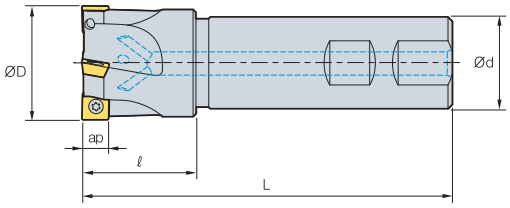
Parts

Specification	Screw	Insert Wrench	Locator Wrench	Locator	Locator Screw	Chip cover	Chip cover Screw
Ø63~Ø80	FTNC04509	TW20S	HW40L	LFMP4R1-A	DHA0825	CFMP3R14R1-A	PXMA0306
Ø100~Ø315	FTNC04509	TW20S	HW40L	LFMP4R-A	DHA0830	CFMP4R-A	PXMA0306

Available Inserts **E14**

Available Arbors and bolt **E318~E320**

FMPS3000



- AR : 10°
- RR : –9°~–8°

(mm)

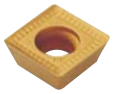
Designation			ØD	Ød	ℓ	L	ap	kg
FMAS	3025HS	2	25	25	35	115	7	0.4
	3032HS	3	32	25	40	125	7	0.5
	3040HS	4	40	32	40	130	7	0.8
	3040HS-S40	4	40	40	45	140	7	1.2
	3040HS-S42	4	40	42	45	140	7	1.3
	3050HS	5	50	32	40	135	7	1
	3050HS-S40	5	50	40	40	140	7	1.3
	3050HS-S42	5	50	42	40	140	7	1.4
	3063HS	6	63	32	45	135	7	1.2
	3063HS-S40	6	63	40	45	145	7	1.6
	3063HS-S42	6	63	42	45	145	7	1.7

Available Inserts


SDET-MF


SDET-MM


SDET-MA


SDXT-MF


SDXT-MM

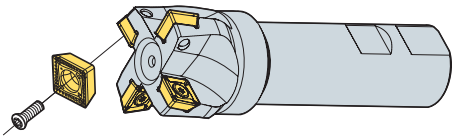

SDXT-MA

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3545	PD2000	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SDET	09M402R-MA							●							●	E14
	09M405R-MF															
	09M405R-MM															
SDXT	09M405R-MF			●	●				●	●	●	●				
	09M405L-MF															
	09M405R-MM			●	●	●	●		●	●	●	●				
	09M405L-MM															
	09M405R-MA														●	

Parts

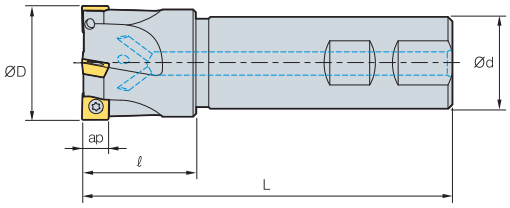
Specification	Screw	Wrench
Ø25~Ø63	FTGA03508	TW15S

■ Assembling



Available Inserts E14

FMPS4000

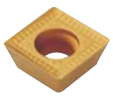


- AR : 10°
- RR : −9°~−8°

(mm)

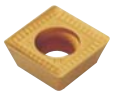
Designation			ØD	Ød	ℓ	L	ap	kg
FMPS	4040HS	3	40	32	40	130	11	1
	4040HS-S40	3	40	40	40	140	11	1.3
	4040HS-S42	3	40	42	40	140	11	1.4
	4050HS	4	50	32	45	135	11	1.5
	4050HS-S40	4	50	40	45	145	11	1.7
	4050HS-S42	4	50	42	45	145	11	1.6
	4063HS	5	63	32	45	135	11	2.1
	4063HS-S40	5	63	40	45	145	11	2.4
	4063HS-S42	5	63	42	45	145	11	2.6

Available Inserts


SDET-MF


SDET-MM


SDET-MA


SDXT-MF


SDXT-MM

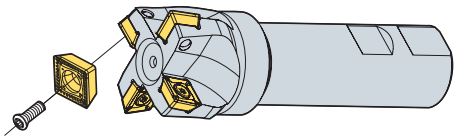

SDXT-MA

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SDET	130504R-MA														●	E14
	130508R-MF															
	130508R-MM															
SDXT	130508R-MF			●	●				●	●	●	●				
	130508R-MM			●	●	●		●	●	●	●	●				
	130538-MM															
	130508R-MA														●	

Parts

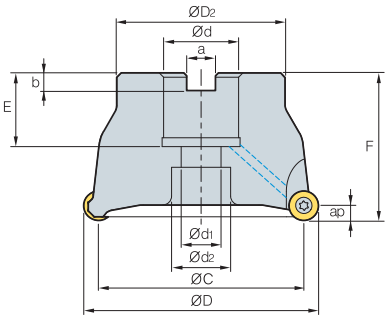
Specification	Screw	Wrench
Ø40~Ø63	FTNC04511	TW20S

■ Assembling



Available Inserts E14

FMRC(M)3000



- AR : 5°
- RR : –5°

(mm)

Designation			ØD	ØC	ØD2	Ød	a	b	E	F	Ød1	Ød2	ap	kg
FMRCM	3040HRD	3	40	30	36	16	8.4	5.6	18	40	9	14	5.0	0.2
	3040HRD-H	4	40	30	36	16	8.4	5.6	18	40	9	14	5.0	0.2
	3050HRD	4	50	40	42	22	10.4	6.3	20	40	11	16.5	5.0	0.3
	3050HRD-H	5	50	40	42	22	10.4	6.3	20	40	11	16.5	5.0	0.3
	3063HRD	5	63	53	49	22	10.4	6.3	20	50	11	16.5	5.0	0.64
	3063HRD-H	6	63	53	49	22	10.4	6.3	20	50	11	16.5	5.0	0.64
FMRC (FMRCM)	3080HRD	6	80	70	57	25.4(27)	9.5(12.4)	6(7.0)	25(22)	50(50)	14	19	5.0	1.1
	3080HRD-H	7	80	70	57	25.4(27)	9.5(12.4)	6(7.0)	25(22)	50(50)	14	19	5.0	1.1
	3100HRD	7	100	90	67	31.75(32)	12.7(14.4)	8(8.0)	32(28)	63(63)	18	26	5.0	2.1
	3100HRD-H	8	100	90	67	31.75(32)	12.7(14.4)	8(8.0)	32(28)	63(63)	18	26	5.0	2.1

Note) It's general that you measure of inner diameter when the diameter of FMRC/FMRCM is Ø40~Ø63

( )Metric Size

Available Inserts

RDKT-MF

RDKT-MM

RDCT-MA

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
RDCT	10T3M0-MA														●	E12 E13
RDKT	10T3M0-MF							●	●		●					
	10T3M0-MM			●	●	●		●	●	●	●					

Available Arbors

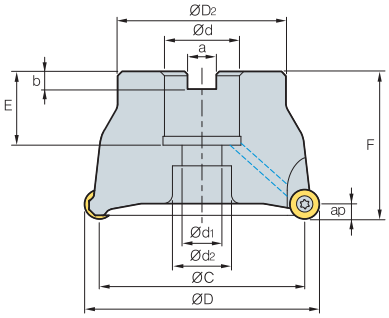
Designation		Ød	Available Adoptor
FMRC(M)	3040HRD 3040HRD-H	16	BT□□-FMC16-□□
	3050HRD 3050HRD-H 3063HRD 3063HRD-H	22	BT□□-FMC22-□□
	3080HRD	25.4	BT□□-FMA / FMB25.4-□□
	3080HRD-H	27	BT□□-FMB / FMC27-□□
	3100HRD	31.75	BT□□-FMA31.75-□□
	3100HRD-H	32	BT□□-FMC32-□□

Parts

Specification	 Screw	 Wrench
Ø40~Ø100	FTGA03508	TW15S

Available Inserts E12, E13 Available Arbors and bolt E318~E320

FMRC(M)4000



- AR : 5°
- RR : –5°

(mm)

Designation			ØD	ØC	ØD2	Ød	a	b	E	F	Ød1	Ød2	ap	kg
FMRCM	4050HRD	4	50	38	42	22	10.4	6.3	20	50	11	18	6.0	0.4
	4063HRD	4	63	51	49	22	10.4	6.3	20	50	11	18	6.0	0.6
	4063HRD-M	5	63	51	49	22	10.4	6.3	20	50	11	18	6.0	0.6
FMRC (FMRCM)	4080HRD	5	80	68	57	25.4(27)	9.5(12.4)	6(7.0)	25(23)	50(50)	14	20	6.0	1.0
	4080HRD-M	6	80	68	57	25.4(27)	9.5(12.4)	6(7.0)	25(23)	50(50)	14	20	6.0	1.0
	4100HRD	6	100	88	67	31.75(32)	12.7(14.4)	8(8.0)	33(25)	63(50)	18	26	6.0	1.9(1.5)
	4100HRD-M	7	100	88	67	31.75(32)	12.7(14.4)	8(8.0)	33(25)	63(50)	18	26	6.0	1.9(1.5)
	4125HRD	7	125	113	87	38.1(40)	15.9(16.4)	10(9.0)	35(29)	63(63)	22	32	6.0	3.0
	4125HRD-M	8	125	113	87	38.1(40)	15.9(16.4)	10(9.0)	35(29)	63(63)	22	32	6.0	3.0

Note) It's general that you measure of inner diameter when the diameter of FMRC/FMRCM is Ø50~Ø63

( )Metric Size

Available Inserts

RDKT-MF

RDKT-MM

RDCT-MA

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
RDCT	1204M0-MA														●	E12 E13
RDKT	1204M0-MF					●		●	●		●					
	1204M0-MM			●	●	●		●	●	●	●					

Available Arbors

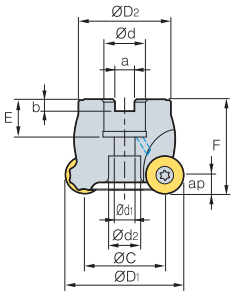
Designation		Ød	NC Arbors
FMRC(M)	4063HRD 4063HRD-M 4080HRD	22	BT□□-FMC22-□□
	4080HRD	25.4	BT□□-FMA / FMB25.4-□□
	4080HRD-M	27	BT□□-FMB / FMC27-□□
	4100HRD	31.75	BT□□-FMA31.75-□□
	4100HRD-M	32	BT□□-FMC32-□□
	4125HRD	38.1	BT□□-FMA / FMB38.1-□□
	4125HRD-M	40	BT□□-FMB / FMC40-□□

Parts

Specification	 Screw	 Wrench
Ø50~Ø125	FTKA0410	TW15S

Available Inserts E12, E13 Available Arbors and bolt E318~E320

FMRC(M)5000



- AR : 5°
- RR : –5°

(mm)

Designation			ØD	ØC	ØD2	Ød	a	b	E	F	Ød1	Ød2	ap	kg
FMRCM	5050HRD	3	50	34	42	22	10.4	6.3	20	50	11	16.5	8.0	0.4
	5063HRD	4	63	47	49	22	10.4	6.3	20	50	11	18	8.0	0.6
	5063HRD-H	5	63	47	49	22	10.4	6.3)	20	50	11	18	8.0	0.6
FMRC (FMRCM)	5080HRD	5	80	64	57	25.4(27)	9.5(12.4)	6(7.0)	25(23)	50(50)	14	20	8.0	0.9
	5080HRD-H	6	80	64	57	25.4(27)	9.5(12.4)	6(7.0)	25(23)	50(50)	14	20	8.0	0.9
	5100HRD	6	100	84	67	31.75(32)	12.7(14.4)	8(8)	33(25)	63(50)	18	26	8.0	1.9(1.4)
	5100HRD-H	7	100	84	67	31.75(32)	12.7(14.4)	8(8)	33(25)	63(50)	18	26	8.0	1.9(1.4)
	5125HRD	7	125	109	87	38.1(40)	15.9(16.4)	10(9)	35(29)	63(63)	22	32	8.0	3
	5125HRD-H	8	125	109	87	38.1(40)	15.9(16.4)	10(9)	35(29)	63(63)	22	32	8.0	3

Note) It's general that you measure of inner diameter when the diameter of FMRC/FMRCM is Ø50~Ø63

( )Metric Size

Available Inserts

RDHW-E,F,S

RDKT-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
RDHW	1605M0E															
	1605M0F															
	1605M0S															E12
RDKT	1605M0-MM					●		●								E13
	1605M0-ML															
	1605M0-MF															

Available Arbors

Designation		Ød	NC Arbors
FMRC(M)	5050HRD 5063HRD 5063HRD-H	22	BT□□-FMC22-□□
	5080HRD	25.4	BT□□-FMA / FMB25.4-□□
	5080HRD-H	27	BT□□-FMB / FMC27-□□
	5100HRD	31.75	BT□□-FMA31.75-□□
	5100HRD-H	32	BT□□-FMC32-□□
	5125HRD	38.1	BT□□-FMA / FMB38.1-□□
	5125HRD-H	40	BT□□-FMB / FMC40-□□

Parts

Specification	 Screw	 Wrench
Ø50~Ø125	FTGA0513-P	TW20-100

Available Inserts E12, E13 Available Arbors and bolt E318~E320

FMRC(M)6000

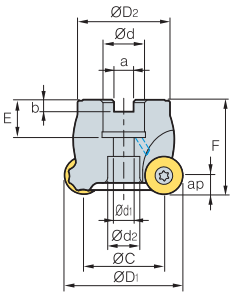


Fig. 1

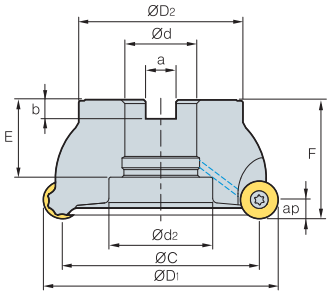


Fig. 2

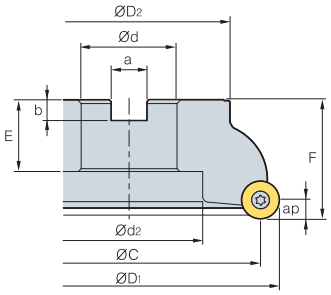


Fig. 3

- AR : 5°
- RR : –5°

(mm)

Designation			ØD	ØC	ØD2	Ød	a	b	E	F	Ød1	Ød2	ap	kg	Fig.
FMRCM	6063HRD	3	63	43	49	22	10.4	6.3	20	50	11	17	10.0	0.5	1
	6063HRD-M	4	63	43	49	22	10.4	6.3	20	50	11	17	10.0	0.5	1
FMRC (FMRCM)	6080HRD	4	80	60	57	25.4(27)	9.5(12.4)	6(7.0)	25(22)	50	14	20	10.0	0.8	1
	6080HRD-M	5	80	60	57	25.4(27)	9.5(12.4)	6(7.0)	25(22)	50	14	20	10.0	0.8	1
	6100HRD	5	100	80	67	31.75(32)	12.7(14.4)	8(8)	32(28)	63	18	26	10.0	1.6	1
	6100HRD-M	6	100	80	67	31.75(32)	12.7(14.4)	8(8)	32(28)	63	18	26	10.0	1.6	1
	6125HRD	6	125	105	87	38.1(40)	15.9(16.4)	10(9)	41(29)	63	- (22)	55(32)	10.0	2.7(2.9)	2(1)
	6125HRD-M	7	125	105	87	38.1(40)	15.9(16.4)	10(9)	41(29)	63	- (22)	55(32)	10.0	2.7(2.9)	2(1)
	6160RD	7	160	140	107	50.8(40)	19(16.4)	11(9)	38(35)	63	-	78	10.0	4.4	3
	6160RD-M	8	160	140	107	50.8(40)	19(16.4)	11(9)	38(35)	63	-	78	10.0	4.4	3

Note) It's general that you measure of inner diameter when the diameter of FMRC/FMRCM is Ø63 - Ø160 is not inner coolant

( )Metric Size

Available Inserts

RDHW-E,F,S

RDKT-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
RDHW	2006M0E															E12
	2006M0F															E13
	2006M0S															
RDKT	2006M0-MM					●		●								

Available Arbors

Designation		Ød	NC Arbors
FMRC(M)	6063HRD 6063HRD-M	22	BT□□-FMC22-□□
	6080HRD	25.4	BT□□-FMA / FMB25.4-□□
	6080HRD-M	27	BT□□-FMB / FMC27-□□
	6100HRD	31.75	BT□□-FMA31.75-□□
	6100HRD-M	32	BT□□-FMC32-□□
	6125HRD	38.1	BT□□-FMA / FMB38.1-□□
	6125HRD-M	40	BT□□-FMB / FMC40-□□
	6160RD	50.8	BT□□-FMA50.8-□□
	6160RD-M	40	BT□□-FMB / FMC40-□□

Parts

Specification	Screw	Wrench
Ø63~Ø160	FTGA0515-P	TW20-100

Available Inserts E12, E13 Available Arbors and bolt E318~E320

FMRS1000 / 1500

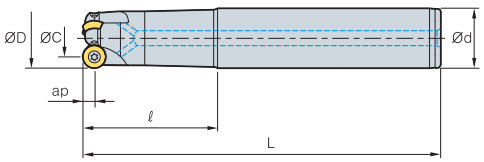


Fig. 1

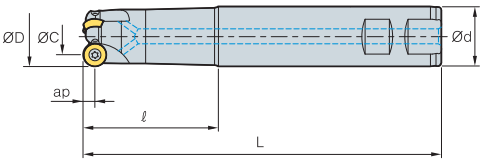


Fig. 2

- AR : 5°
- RR : −5°~−1°

(mm)

Designation			ØD	ØC	Ød	ℓ	L	ap	kg	Fig.
FMRS	1008HRD-M	1	8	5.5	10	30	80	2.5	0.2	1
	1008HRD-L	1	8	5.5	10	50	100	2.5	0.2	1
	1010HRD-M	2	10	5	12	44	100	2.5	0.2	1
	1010HRD-L	2	10	5	12	64	120	2.5	0.2	1
	1012HRD-M	2	12	7	12	44	100	2.5	0.3	1
	1012HRD-L	2	12	7	16	80	160	2.5	0.3	1
	1015HRD-M	3	15	10	16	80	160	2.5	0.3	1
	1015HRD-L	3	15	10	16	100	200	2.5	0.4	1
FMRS	1510HRD-M	1	10	6	12	44	100	3.0	0.2	1
	1510HRD-L	1	10	6	12	64	120	3.0	0.2	1
	1512HRD-M	2	12	6	12	54	110	3.0	0.3	1
	1512HRD-L	2	12	6	16	80	160	3.0	0.3	1
	1516HRD-M	3	16	10	16	60	130	3.0	0.3	1
	1516HRD-L	3	16	10	20	90	180	3.0	0.4	1
	1520HRD-M	3	20	14	20	80	150	3.0	0.4	1
	1520HRD-L	3	20	14	20	90	200	3.0	0.5	1

Available Inserts

RDHW-E,F,S

RDKW

Type	Designation		Cermet		Coated									Uncoated			Page
			CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
1000 type	RDHW	0501M0E								●							E12 E13
		0501M0F															
		0501M0S															
	RDKW	0501M0E					●										
1500 type	RDHW	06T1M0E								●							
		06T1M0F															
		06T1M0S															
	RDKW	06T1M0E					●										

Parts

Specification	Screw	Wrench
Ø8~Ø15 (1000type)	FTNA0203	TW06P
Ø10~Ø20 (1500type)	FTNA02205	TW06P

Available Inserts E12, E13

FMRS2000 / 2500

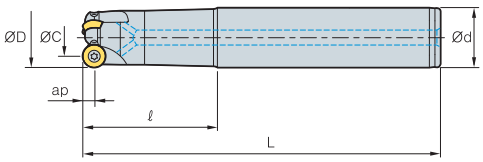


Fig. 1

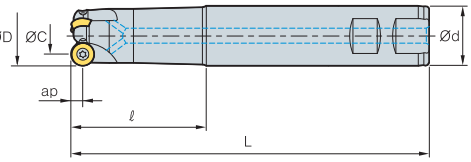


Fig. 2

- AR : 5°
- RR : −5°~−1°

(mm)

Designation			ØD	ØC	Ød	ℓ	L	ap	kg	Fig.
FMRS	2015HRD-S	2	15	8	16	55	115	3.5	0.3	2
	2015HRD-M	2	15	8	20	80	150	3.5	0.4	1
	2015HRD-L	2	15	8	20	90	200	3.5	0.5	1
	2020HRD-S	3	20	14	20	65	125	3.5	0.3	2
	2020HRD-M	3	20	14	20	80	150	3.5	0.4	1
	2020HRD-L	3	20	14	25	90	200	3.5	0.5	1
FMRS	2516HRD-S	2	16	8	16	65	125	4.0	0.3	2
	2516HRD-M	2	16	8	16	80	150	4.0	0.4	1
	2516HRD-L	2	16	8	20	90	200	4.0	0.5	1
	2520HRD-S	2	20	12	20	65	125	4.0	0.4	2
	2520HRD-M	2	20	12	20	80	150	4.0	0.5	1
	2520HRD-L	2	20	12	25	90	200	4.0	0.6	1
	2525HRD-S	3	25	17	25	55	125	4.0	0.5	2
	2525HRD-M	3	25	17	25	90	200	4.0	0.6	1
	2525HRD-L	3	25	17	32	110	250	4.0	0.7	1

Available Inserts

RDHW-E,F,S

RDKW

Type	Designation		Cermet		Coated								Uncoated			Page
			CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
2000 type	RDHW	0702M0E								●							E12 E13
		0702M0F															
		0702M0S															
	RDKW	0702M0E					●										
2500 type	RDHW	0803M0E								●							
		0803M0F															
		0803M0S															
	RDKW	0803M0E					●										

Parts

Specification	 Screw	 Wrench
Ø15~Ø20 (2000type)	FTNA02555	TW07S
Ø16~Ø25 (2500type)	FTNA0305 FTNA0306 (Ø20 over)	TW09S

Available Inserts E12, E13

FMRS3000

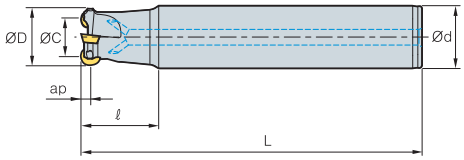


Fig. 1

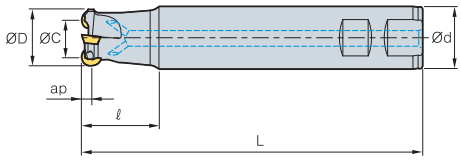


Fig. 2

- AR : 5°
- RR :–8°~–5°

(mm)

Designation			ØD	ØC	Ød	ℓ	L	ap	kg	Fig.
FMRS	3021HRD-M	1	21	11	20	40	150	5	0.4	1
	3021HRD-M2	2	21	11	20	40	150	5	0.4	1
	3021HRD-L	1	21	11	20	50	200	5	0.6	1
	3021HRD-L2	2	21	11	20	50	200	5	0.6	1
	3025HRD-S	2	25	15	25	35	115	5	0.5	2
	3025HRD-M	2	25	15	25	70	200	5	0.7	1
	3025HRD-L	2	25	15	25	100	250	5	1	1
	3026HRD-M	2	26	16	25	70	200	5	0.65	1
	3026HRD-L	2	26	16	25	100	250	5	0.7	1
	3032HRD-S	3	32	22	32	40	125	5	1	2
	3032HRD-M	3	32	22	32	70	200	5	1.3	1
	3032HRD-L	3	32	22	32	150	300	5	1.6	1
	3040HRD-S	4	40	30	32	40	125	5	1.3	2
	3040HRD-M	4	40	30	32	70	200	5	1.5	1
	3040HRD-L	4	40	30	32	150	300	5	1.8	1

Available Inserts

RDKT-MF

RDKT-MM

RDCT-MA

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
RDCT	10T3M0-MA														●	E12 E13
RDKT	10T3M0-MF							●	●		●					
	10T3M0-MM			●	●	●		●	●	●	●					

Parts

Specification	 Screw	 Wrench
Ø21~Ø40	FTGA03508(07)	TW15S

Available Inserts E12, E13

FMRS4000

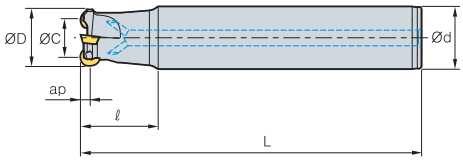


Fig. 1

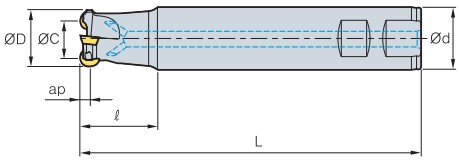


Fig. 2

- AR : 5°
- RR :−8°~−5°

(mm)

Designation			ØD	ØC	Ød	ℓ	L	ap	kg	Fig.
FMRS	4032HRD-S	2	32	20	32	40	125	6	0.8	2
	4032HRD-M	2	32	20	32	70	200	6	1.1	1
	4032HRD-L	2	32	20	32	150	300	6	1.6	1
	4033HRD-S	2	33	21	32	40	125	6	0.9	2
	4033HRD-M	2	33	21	32	70	200	6	1.1	1
	4033HRD-L	2	33	21	32	150	300	6	1.7	1
	4040HRD-S	3	40	28	32	40	125	6	1	2
	4040HRD-M	3	40	28	32	70	200	6	1.6	1
	4040HRD-L	3	40	28	32	150	300	6	1.8	1
	4040HRD-S40	3	40	28	40	40	125	6	1.3	2
	4040HRD-M40	3	40	28	40	70	200	6	2	1
	4040HRD-L40	3	40	28	40	150	300	6	2.4	1
	4040HRD-S42	3	40	28	42	40	125	6	1.6	2
	4040HRD-M42	3	40	28	42	70	200	6	2.4	1
	4040HRD-L42	3	40	28	42	150	300	6	2.8	1
	4050HRD-S	4	50	38	42	50	125	6	1.5	2
	4050HRD-M	4	50	38	42	50	250	6	2.1	1
	4050HRD-L	4	50	38	42	50	300	6	2.7	1
	4050HRD-S40	4	50	38	40	50	150	6	2	2
	4050HRD-M40	4	50	38	40	50	250	6	2.6	1
	4050HRD-L40	4	50	38	40	50	300	6	3.2	1

Available Inserts

RDKT-MF

RDKT-MM

RDCT-MA

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
RDCT	1204M0-MA														●	E12 E13
RDKT	1204M0-MF					●		●	●		●					
	1204M0-MM			●	●	●		●	●	●	●					

Parts

Specification	Screw	Wrench
Ø32~Ø50	FTKA0410	TW15S

Available Inserts E12, E13

FMRS5000

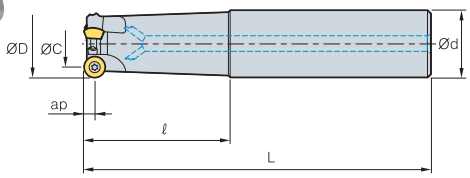


Fig. 1

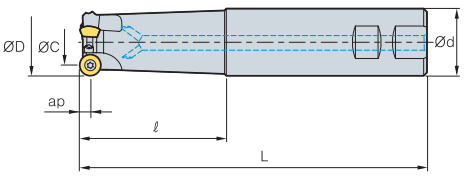


Fig. 2

- AR : 5°
- RR :−8°~−5°

(mm)

Designation			ØD	ØC	Ød	ℓ	L	ap	kg	Fig.
FMRS	5040HRD-S	2	40	24	32	40	125	8	1.4	2
	5040HRD-M	2	40	24	32	70	200	8	1.8	1
	5040HRD-L	2	40	24	32	150	300	8	2.0	1
	5040HRD-S40	2	40	24	40	40	125	8	1.6	2
	5040HRD-M40	2	40	24	40	70	200	8	2.0	1
	5040HRD-L40	2	40	24	40	150	300	8	2.4	1
	5040HRD-S42	2	40	24	42	40	125	8	2.0	2
	5040HRD-M42	2	40	24	42	70	200	8	2.4	1
	5040HRD-L42	2	40	24	42	150	300	8	2.8	1
	5050HRD-S40	3	50	34	40	50	150	8	2.0	2
	5050HRD-M40	3	50	34	40	50	250	8	2.4	1
	5050HRD-L40	3	50	34	40	50	300	8	2.6	1
	5050HRD-S	3	50	34	42	50	150	8	1.5	2
	5050HRD-M	3	50	34	42	50	250	8	1.8	1
	5050HRD-L	3	50	34	42	50	300	8	2.0	1
	5063HRD-S40	4	63	47	40	50	150	8	1.7	2
	5063HRD-M40	4	63	47	40	50	250	8	2.0	1
	5063HRD-L40	4	63	47	40	50	300	8	2.3	1
	5063HRD-S	4	63	47	42	50	150	8	1.6	2
	5063HRD-M	4	63	47	42	50	250	8	1.8	1
	5063HRD-L	4	63	47	42	50	300	8	2.0	1

Available Inserts

RDHW-E,F,S

RDKT-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
RDHW	1605M0E															E12
	1605M0F															E13
	1605M0S															
RDKT	1605M0-MM					●		●								
	1605M0-ML															
	1605M0-MF															

Parts

Specification	Screw	Wrench
Ø40~Ø63	FTGA0513-P	TW20-100

Available Inserts E12, E13

FMRS6000

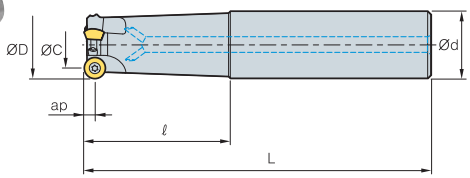


Fig. 1

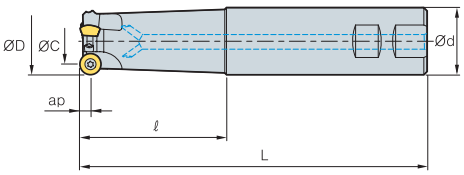


Fig. 2

- AR : 5°
- RR :–8°~–5°

(mm)

Designation			ØD	ØC	Ød	ℓ	L	ap	kg	Fig.
FMRS	6050HRD-S40	3	50	31	40	50	150	10	1.3	2
	6050HRD-S42	3	50	31	42	50	150	10	1.4	2
	6050HRD-M40	3	50	31	40	50	250	10	2.2	1
	6050HRD-M42	3	50	31	42	50	250	10	2.4	1
	6050HRD-L40	3	50	31	40	50	300	10	2.7	1
	6050HRD-L42	3	50	31	42	50	300	10	3.0	1
	6063HRD-S40	4	63	44	40	50	150	10	1.5	2
	6063HRD-S42	4	63	44	42	50	150	10	1.6	2
	6063HRD-M40	4	63	44	40	50	250	10	2.5	1
	6063HRD-M42	4	63	44	42	50	250	10	2.7	1
	6063HRD-L40	4	63	44	40	50	300	10	3.0	1
	6063HRD-L42	4	63	44	42	50	300	10	3.2	1

Available Inserts

RDHW-E,F,S

RDKT-MM

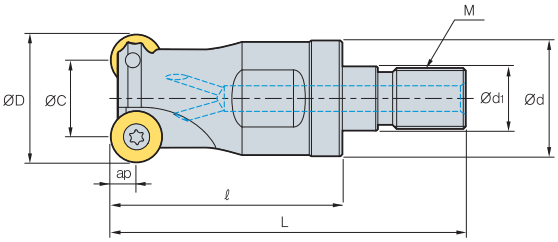
Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
RDHW	2006M0E															E12
	2006M0F															E13
	2006M0S															
RDKT	2006M0-MM					●		●								

Parts

Specification	Screw	Wrench
Ø50~Ø63	FTGA0515-P	TW20-100

Available Inserts E12, E13

FMRM1000 / 1500 / 2000 / 2500



- AR : 0°~5°
- RR : −5°~−1°

(mm)

Designation			ØD	ØC	Ød	Ød1	ℓ	L	M	ap	kg
FMRM	1008HRD-M06	1	8	5.5	9.5	6.5	25	40	M06	2.5	0.02
	1010HRD-M06	2	10	5	9.5	6.5	25	40	M06	2.5	0.02
	1012HRD-M06	2	12	7	11	6.5	25	40	M06	2.5	0.02
	1015HRD-M08	3	15	10	14.5	8.5	30	47	M08	2.5	0.04
	1510HRD-M06	1	10	7	9.5	6.5	25	40	M06	3.0	0.02
	1512HRD-M06	2	12	6	11	6.5	25	40	M06	3.0	0.02
	1516HRD-M08	3	16	10	14.5	8.5	30	47	M08	3.0	0.02
	1520HRD-M10	3	20	14	18	10.5	35	56	M10	3.0	0.07
	2015HRD-M08	2	15	8	14.5	8.5	30	47	M08	3.5	0.04
	2020HRD-M10	3	20	13	18	10.5	35	56	M10	3.5	0.07
	2516HRD-M08	2	16	8	14.5	8.5	30	47	M08	4.0	0.04
	2520HRD-M10	2	20	12	18	10.5	35	56	M10	4.0	0.07
	2525HRD-M12	3	25	17	22.5	12.5	45	69	M12	4.0	0.13

Available Inserts

RDHW-E,F,S

RDKW

Type	Designation		Cermet		Coated									Uncoated			Page
			CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
1000 type	RDHW	0501M0E,F,S								●							E12 E13
	RDKW	0501M0E					●										
1500 type	RDHW	06T1M0E,F,S								●							
	RDKW	06T1M0E					●										
2000 type	RDHW	0702M0E.F,S								●							
	RDKW	0702M0E					●										
2500 type	RDHW	0803M0E,F,S								●							
	RDKW	0803M0E					●										

Available Adaptor

Designation		Available Adaptor	Designation		Available Adaptor
FMRM	008HRD-M06	MAT - M06	FMRM	1520HRD-M10	MAT - M10
	1010HRD-M06			2015HRD-M08	MAT - M08
	1012HRD-M06			2020HRD-M10	MAT - M10
	1015HRD-M08	MAT - M08		2516HRD-M08	MAT - M08
	1510HRD-M06	MAT - M06		2520HRD-M10	MAT - M10
	1512HRD-M06			2525HRD-M12	MAT - M12
	1515HRD-M08	MAT - M08			

Designation : FMRM1008HRD-M06
Modular Head Threading Measure size(M06)

II

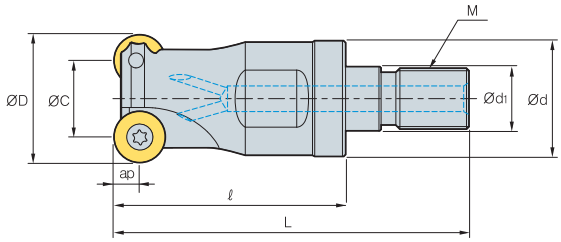
Adaptor Spec. : MAT-M06-020-S10S
Adaptor Threading Measure(M06)

Parts

Specification	Screw	Wrench	Wrench
Ø8~Ø15 (1000type)	FTNA0203	TW06P	-
Ø10~Ø20 (1500type)	FTNA02205	TW06P	-
Ø15~Ø20 (2000type)	FTNA02555	-	TW07S
Ø16~Ø25 (2500type)	FTNA0305	-	TW09S

Available Inserts E12, E13 Available Adaptors E281~E282

FMRM3000 / 4000 / 5000



- AR : 0°~5°
- RR : −8°~−5°

(mm)

Designation			ØD	ØC	Ød	Ød1	ℓ	L	M	ap	kg
FMRM	3021HRD-M10	2	21	11	18	10.5	35	56	M10	5.0	0.1
	3025HRD-M12	2	25	15	22.5	12.5	45	69	M12	5.0	0.15
	3032HRD-M16	3	32	22	29	17	50	77	M16	5.0	0.2
	3042HRD-M16	4	42	32	29	17	50	77	M16	5.0	0.24
	4025HRD-M12	2	25	13	22.5	12.5	45	69	M12	6.0	0.12
	4032HRD-M16	2	32	20	29	17	50	77	M16	6.0	0.22
	4040HRD-M16	3	40	28	29	17	50	77	M16	6.0	0.23
	4042HRD-M16	4	42	28	29	17	50	77	M16	6.0	0.25
	5040HRD-M16	2	40	24	29	17	50	77	M16	8.0	0.25

Available Inserts


RDHW-E,F,S


RDCT-MA


RDKT-MF


RDKT-MM

Type	Designation		Cermet		Coated									Uncoated			Page
			CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
3000 type	RDCT	10T3M0-MA														●	E12 E13
	RDKT	10T3M0-MF							●	●		●					
		10T3M0-MM			●	●	●		●	●	●	●					
4000 type	RDCT	1204M0-MA														●	
	RDKT	1204M0-MF					●		●	●		●					
		1204M0-MM			●	●	●		●	●	●	●					
5000 type	RDHW	1605M0E,F,S															
	RDKT	1605M0-MM					●		●								
		1605M0-ML															

Available Adaptor

Designation		Available Adaptor	Designation		Available Adaptor
FMRM	3021HRD-M10	MAT - M10	FMRM	4025HRD-M12	MAT - M12
	3025HRD-M12	MAT - M12		4032HRD-M16	MAT - M16
	3032HRD-M16	MAT - M16		4040HRD-M16	
	3042HRD-M16			4042HRD-M16	
				5040HRD-M16	MAT - M16

Designation : FMRM1008HRD-M06
Modular Head Threading Measure size(M06)

II

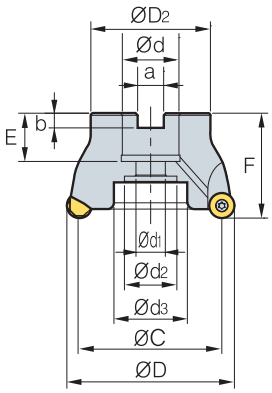
Adaptor Spec. : MAT-M06-020-S10S
Adaptor Threading Measure(M06)

Parts

Specification	Screw	Wrench
Ø21~Ø42 (3000type)	FTGA03508(07)	TW15S
Ø25~Ø42 (4000type)	FTKA0410	TW15S
Ø40 (5000type)	FTGA0513-P	TW20-100

Available Inserts E12, E13 Available Adaptors E281~E282

FMRCM3000 Neu



- AR : −5°
- RR : −4°~ 0°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	d3	a	b	E	F	ap	kg	Insert size
FMRCM	3040HRP-5	5	40	38	16	9	14	-	8.4	5.6	19	40	5	0.22	10
	3050HRP-6	6	50	45	22	11	18	-	10.4	6.3	20	40	5	0.35	10
	3052HRP-6	6	52	45	22	11	18	-	10.4	6.3	20	40	5	0.37	10
	3063HRP-6	6	63	50	22	11	18	-	10.4	6.3	20	40	5	0.55	10
	3063HRP-7	7	63	50	22	11	18	-	10.4	6.3	20	40	5	0.56	10
	3066HRP-7	7	66	50	22	11	18	-	10.4	6.3	20	40	5	0.60	10

Available Inserts


RPCT-MA


RPET-ML


RPMT-MF


RPMT-MM


RPMW

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
RPCT	10T3M0-MA														●	E13
RPET	10T3M0E-ML															
RPMT	10T3M0E-MF						●				●	●				
	10T3M0S-MM						●				●	●				
RPMW	10T3M0E1										●	●				

Available Arbors

Designation		Ød	Available Arbor
FMRCM	3040HRP-5	16	BT□□-FMC16-□□
	3050HRP-6	22	BT□□-FMC22-□□
	3052HRP-6	22	BT□□-FMC22-□□
	3063HRP-6	22	BT□□-FMC22-□□
	3063HRP-7	22	BT□□-FMC22-□□
	3066HRP-7	22	BT□□-FMC22-□□

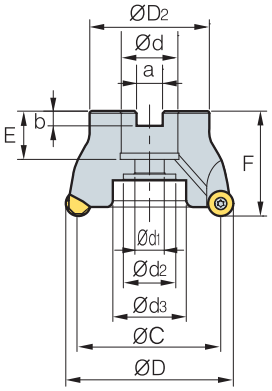
Parts

Specification	Screw	Wrench	Cutter Dia.
Ø40~Ø66	FTGA03508	TW15S	Ø40~Ø66

Available Inserts E13

Available Arbors and bolt E318~E320

FMRC(M)4000 New



- AR : −5°
- RR : −2°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	Ød3	a	b	E	F	ap	kg	Insert size
FMRCM	4050HRP-4	4	50	45	22	11	18	-	10.4	6.3	20	40	6	0.26	12
	4050HRP-5	5	50	45	22	11	18	-	10.4	6.3	20	40	6	0.28	12
	4052HRP-5	5	52	45	22	11	18	-	10.4	6.3	20	40	6	0.30	12
	4063HRP-5	5	63	50	22	11	18	-	10.4	6.3	20	40	6	0.44	12
	4063HRP-6	6	63	50	22	11	18	-	10.4	6.3	20	40	6	0.48	12
	4066HRP-6	6	66	50	22	11	18	-	10.4	6.3	20	40	6	0.50	12
FMRC (FMRCM)	4080HRP-6	6	80	57	25.4(27)	14	25	35	9.5(12.4)	6(7)	24(23)	50	6	0.92	12
	4080HRP-7	7	80	57	25.4(27)	14	25	35	9.5(12.4)	6(7)	24(23)	50	6	0.90	12
	4100HRP-7	7	100	67	31.75(32)	18	26	42	12.7(14.4)	8(8)	32(25)	63(53)	6	1.46	12

( )Metric Size

Available Inserts


RPCT-MA


RPET-ML


RPMT-MF


RPMT-MM


RPMW

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
RPCT	1204M0-MA														●	E13
RPET	1204M0E-ML										●	●				
RPMT	1204M0E-MF						●				●	●				
	1204M0S-MM						●				●	●				
RPMW	1204M0S1										●	●				
	1204M0S2										●	●				

Available Arbors

Designation		Ød	Available Arbor
FMRCM	4050HRP-4	22	BT□□-FMC22-□□
	4050HRP-5		
	4052HRP-5		
	4063HRP-5		
	4063HRP-6		
	4066HRP-6		
FMRC(M)	4080HRP-6	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	4080HRP-7	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	4100HRP-7	31.75	BT□□-FMA31.5-□□
		32	BT□□-FMC32-□□

Parts

Specification	 Screw	 Wrench	 Cutter Dia.
Ø50~Ø100	FTKA0410	TW15S	Ø50~Ø100

Available Inserts E13
Available Arbors and bolt E318~E320

FMRC(M)5000 New

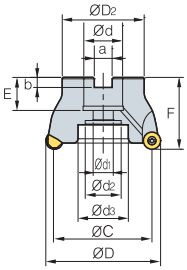


Fig.1

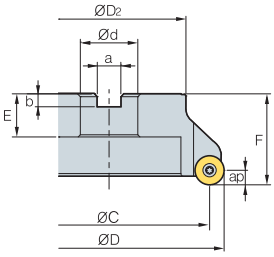


Fig.2

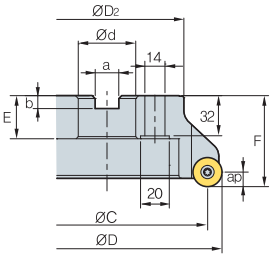


Fig.3

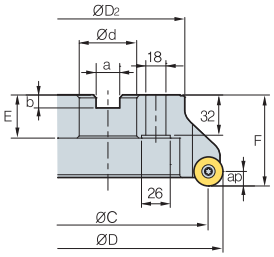


Fig.4

- AR : −5°
- RR : −1°~ 0°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	Ød3	a	b	E	F	ap	kg	Fig.	Insert size
FMRCM	5063HRP-4	4	63	50	22	11	18	-	10.4	6.3	20	40	8	0.43	1	16
	5063HRP-5	5	63	50	22	11	18	-	10.4	6.3	20	40	8	0.44	1	16
	5066HRP-5	5	66	50	22	11	18	-	10.4	6.3	20	40	8	0.48	1	16
FMRC (FMRCM)	5080HRP-5	5	80	57	25.4(27)	14	25	35	9.5(12.4)	6(7)	24(23)	50	8	0.77	1	16
	5080HRP-6	6	80	57	25.4(27)	14	25	35	9.5(12.4)	6(7)	24(23)	50	8	0.82	1	16
	5100HRP-6	6	100	67	31.75(32)	18	26	42	12.7(14.4)	8(8)	32(25)	63(55)	8	1.42	1	16
	5125HRP-7	7	125	87	38.1(40)	22	32	52	15.9(16.4)	10(9)	35(29)	68(63)	8	2.78	1	16
	5125HRP-8	8	125	87	38.1(40)	22	32	52	15.9(16.4)	10(9)	35(29)	68(63)	8	2.79	1	16
	5160RP-8	8	160	107	50.8(40)	-	-	100	19(16.4)	11(9)	38(32)	63	8	4.01	2(3)	16

( )Metric Size

Available Inserts


RPCT-MA


RPET-ML


RPMT-MF


RPMT-MM


RPMW

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
RPCT	1606M0-MA														●	E13
RPET	1606M0E-ML															
RPMT	1606M0E-MF						●				●	●				
	1606M0S-MM						●				●	●				
RPMW	1606M0S1										●	●				

Available Arbors

Designation		Ød	Available Arbor
FMRCM	5063HRP-4	22	BT□□-FMC22-□□
	5063HRP-5		
	5066HRP-5		
FMRC(M)	5080HRP-5	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	5080HRP-6	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	5100HRP-6	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□
	5125HRP-7	38.1	BT□□-FMA38.1-□□
		40	BT□□-FMC40-□□
	5125HRP-8	38.1	BT□□-FMA38.1-□□
		40	BT□□-FMC40-□□
	5160RP-8	50.8	BT□□-FMA50.8-□□
		40	BT□□-FMC40-□□

Parts

Specification	 Screw	 Wrench	 Cutter Dia.
Ø63~Ø160	FTGA0512-P	TW20-100	Ø63~Ø160

Available Inserts E13

Available Arbors and bolt E318~E320

FMRC(M)6000 New

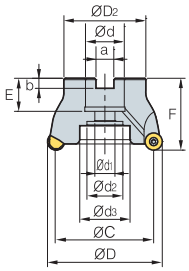


Fig.1

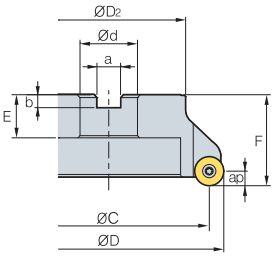


Fig.2

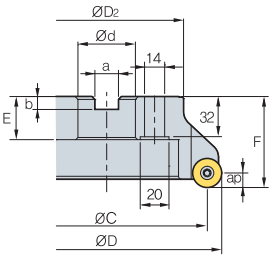


Fig.3

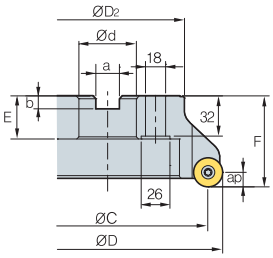


Fig.4

- AR : –5°
- RR : 0°

(mm)

Designation			ØD	ØC	ØD2	Ød	Ød1	Ød2	Ød3	a	b	E	F	ap	kg	Fig.	Insert size
FMRCM	6063HRP-4	4	63	43	50	22	11	18	-	10.4	6.3	20	40	10	0.37	1	20
FMRC (FMRCM)	6080HRP-5	5	80	60	57	25.4(27)	14	25	35	9.5(12.4)	6(7)	24(23)	50	10	0.87	1	20
	6100HRP-5	5	100	80	67	31.75(32)	18	26	42	12.7(14.4)	8(8)	32(25)	63(55)	10	1.31	1	20
	6100HRP-6	6	100	80	67	31.75(32)	18	26	42	12.7(14.4)	8(8)	32(25)	63(55)	10	1.40	1	20
	6125HRP-5	5	125	105	87	38.1(40)	22	32	52	15.9(16.4)	10(9)	35(29)	68(63)	10	2.77	1	20
	6125HRP-7	7	125	105	87	38.1(40)	22	32	52	15.9(16.4)	10(9)	35(29)	68(63)	10	2.89	1	20
	6160RP-6	6	160	140	107	50.8(40)	-	-	100	19(16.4)	11(9)	38(32)	63	10	3.58	2(3)	20
	6160RP-8	8	160	140	107	50.8(40)	-	-	100	19(16.4)	11(9)	38(32)	63	10	3.53	2(3)	20
	6200RP-8	8	200	180	130	47.625(60)	-	-	132	25.4(25.7)	14(14)	38	63	10	5.15	4	20
	6250RP-9	9	250	230	180	47.625(60)	-	-	180	25.4(25.7)	14(14)	38	63	10	9.72	4	20

( )Metric Size

Available Inserts


RPCT-MA


RPET-ML


RPMT-MF


RPMT-MM


RPMW

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
RPCT	2007M0-MA														●	E13
RPET	2007M0E-ML															
RPMT	2007M0E-MF						●				●	●				
	2007M0S-MM						●				●	●				
RPMW	2007M0S1										●	●				

Available Arbors

Designation		Ød	Available Arbor
FMRCM	6063HRP-4	22	BT□□-FMC22-□□
FMRC(M)	6080HRP-5	25.4	BT□□-FMA25.4-□□
		(27)	BT□□-FMC27-□□
	6100HRP-5	31.75	BT□□-FMA31.75-□□
		(32)	BT□□-FMC32-□□
	6100HRP-6	31.75	BT□□-FMA31.75-□□
		(32)	BT□□-FMC32-□□
	6125HRP-5	38.1	BT□□-FMA38.1-□□
		(40)	BT□□-FMC40-□□

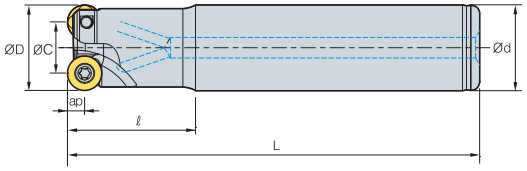
Designation		Ød	Available Arbor
FMRC(M)	6125HRP-7	38.1	BT□□-FMA38.1-□□
		(40)	BT□□-FMC40-□□
	6160RP-6	50.8	BT□□-FMA50.8-□□
		(40)	BT□□-FMC40-□□
	6160RP-8	50.8	BT□□-FMA50.8-□□
		(40)	BT□□-FMC40-□□
	6200RP-8	47.625	BT□□-FMA47.625-□□
		(60)	BT□□-FMC60-□□
	6250RP-9	47.625	BT□□-FMA47.625-□□
		(60)	BT□□-FMC60-□□

Parts

Specification	Screw	Wrench	Cutter Dia.
Ø63~Ø250	FTKA0615-P	TW25-100	Ø63~Ø250

Available Inserts E13 Available Arbors and bolt E318~E320

FMRS2500 New



- AR : −4°
- RR : −4°~−1°

(mm)

Designation			ØD	ØC	Ød	ℓ	L	ap	kg	Insert size
FMRS	2517HRP-2S16	2	17	9	16	35	90	4	0.11	8
	2517HRP-2M16	2	17	9	16	35	150	4	0.20	8
	2517HRP-2L16	2	17	9	16	35	200	4	0.27	8
	2518HRP-2M16	2	18	10	16	35	150	4	0.20	8
	2518HRP-2L16	2	18	10	16	35	200	4	0.28	8
	2520HRP-3S20	3	20	12	20	35	130	4	0.27	8
	2520HRP-3M20	3	20	12	20	100	180	4	0.36	8
	2520HRP-3L20	3	20	12	20	130	250	4	0.50	8
	2521HRP-3S20	3	21	13	20	35	130	4	0.28	8
	2521HRP-3M20	3	21	13	20	35	180	4	0.40	8
	2521HRP-3L20	3	21	13	20	35	250	4	0.55	8
	2525HRP-4S25	4	25	17	25	35	150	4	0.48	8
	2525HRP-4M25	4	25	17	25	60	180	4	0.60	8
	2525HRP-4L25	4	25	17	25	130	250	4	0.81	8
	2526HRP-4S25	4	26	18	25	35	150	4	0.48	8
	2526HRP-4L25	4	26	18	25	130	250	4	0.85	8

Available Inserts


RPET-ML


RPMT-MF


RPMT-MM


RPMW

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
RPET	0803M0E-ML															E13
RPMT	0803M0E-MF						●				●	●				
	0803M0S-MM						●				●	●				
RPMW	0803M0E1										●	●				

Parts

Specification	Screw	Wrench	Cutter Dia.
Ø17~Ø26	FTNA0305 FTNA0306	TW09S	Ø17 Ø18~Ø26

Available Inserts E13

FMRS3000 New

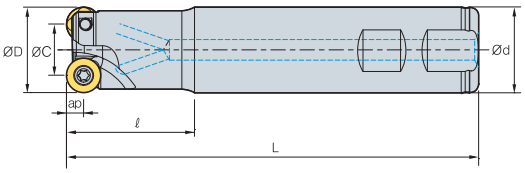


Fig. 1

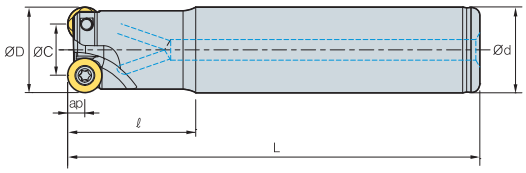


Fig. 2

- AR : −4°
- RR : −1°

(mm)

Designation			ØD	ØC	Ød	ℓ	L	ap	kg	Fig.	Insert size
FMRS	3025HRP-2M20	2	25	15	20	40	170	5	0.40	2	10
	3025HRP-2S25	2	25	15	25	40	120	5	0.39	1	10
	3025HRP-2M25	2	25	15	25	60	160	5	0.52	2	10
	3025HRP-2L25	2	25	15	25	130	250	5	0.80	2	10
	3026HRP-2L25	2	26	16	25	30	200	5	0.69	2	10
	3032HRP-3S32	3	32	22	32	40	125	5	0.68	1	10
	3032HRP-3L32	3	32	22	32	60	200	5	1.08	2	10
	3032HRP-4S32	4	32	22	32	40	125	5	0.66	1	10
	3032HRP-4L25	4	32	22	25	60	200	5	0.74	2	10
	3033HRP-4S32	4	33	23	32	40	125	5	0.67	1	10
	3033HRP-4M32	4	33	23	32	60	180	5	1.00	2	10
	3033HRP-4L32	4	33	23	32	180	300	5	1.64	2	10

Available Inserts


RPCT-MA


RPET-ML


RPMT-MF


RPMT-MM


RPMW

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
RPCT	10T3M0-MA														●	E13
RPET	10T3M0E-ML															
RPMT	10T3M0E-MF						●				●	●				
	10T3M0S-MM						●				●	●				
RPMW	10T3M0E1						●				●	●				

Parts

Specification	Screw	Wrench	Cutter Dia.
Ø25~Ø33	FTGA03507 FTGA03508	TW15S	Ø25~Ø26 Ø32~Ø33

Available Inserts E13

FMRS4000 New

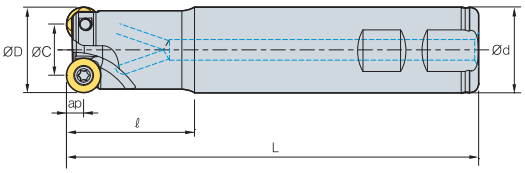


Fig. 1

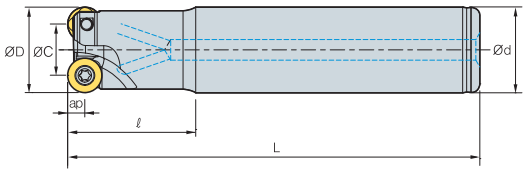


Fig. 2

- AR : −4°
- RR : −2°~ 0°

(mm)

Designation			ØD	ØC	Ød	ℓ	L	ap	kg	Fig.	Insert size
FMRS	4025HRP-2S25	2	25	13	25	60	160	6	0.46	1	12
	4026HRP-2L25	2	26	14	25	60	200	6	0.48	2	12
	4032HRP-2L25	2	32	20	25	40	190	6	0.68	2	12
	4032HRP-2S32	2	32	20	32	50	125	6	0.64	1	12
	4032HRP-2L32	2	32	20	32	50	250	6	1.40	2	12
	4032HRP-3S32	3	32	20	32	50	125	6	0.64	1	12
	4032HRP-3M32	3	32	20	32	60	160	6	0.85	2	12
	4033HRP-3M32	3	33	21	32	60	200	6	1.01	2	12
	4033HRP-3L32	3	33	21	32	60	300	6	1.67	2	12
	4040HRP-3S32	3	40	28	32	35	105	6	0.60	1	12
	4040HRP-3M32	3	40	28	32	50	160	6	0.96	2	12
	4040HRP-4S32	4	40	28	32	35	105	6	0.60	1	12
	4040HRP-4M32	4	40	28	32	35	150	6	0.87	2	12
	4040HRP-4L32	4	40	28	32	35	250	6	1.46	2	12
	4050HRP-4M32	4	50	38	32	50	150	6	1.10	2	12
	4050HRP-4M40	4	50	38	40	50	150	6	1.44	2	12
	4050HRP-4M42	4	50	38	42	50	150	6	1.55	2	12

Available Inserts

RPCT-MA

RPET-ML

RPMT-MF

RPMT-MM

RPMW

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
RPCT	1204M0-MA														●	E13
RPET	1204M0E-ML										●	●				
RPMT	1204M0E-MF						●				●	●				
	1204M0S-MM						●				●	●				
RPMW	1204M0S1										●	●				
	1204M0S2										●	●				

Parts

Specification	Screw	Wrench	Cutter Dia.
Ø25~Ø50	FTKA0408 FTKA0410	TW15S	Ø25~Ø26 Ø32~Ø50

Available Inserts E13

FMRS5000 / 6000 New

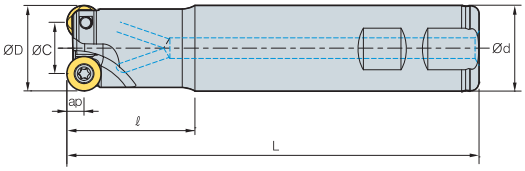


Fig. 1

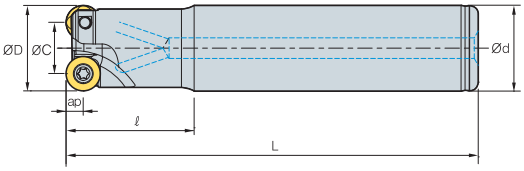


Fig. 2

- AR : −4°
- RR : 0°

(mm)

Designation			ØD	ØC	Ød	ℓ	L	ap	kg	Insert size	Fig.
FMRS	5040HRP-2M32	2	40	24	32	50	160	8	0.92	16	2
	5040HRP-2L32	2	40	24	32	50	250	8	1.45	16	2
	5050HRP-3M40	3	50	34	40	50	160	8	1.48	16	2
	5050HRP-3L40	3	50	34	40	50	300	8	2.86	16	2
	6050HRP-3S32	3	50	30	32	50	160	10	1.06	20	1
	6050HRP-3M32	3	50	30	32	50	200	10	1.30	20	2
	6050HRP-3S40	3	50	30	40	50	125	10	1.45	20	1
	6050HRP-3M40	3	50	30	40	50	200	10	1.85	20	2

Available Inserts


RPCT-MA


RPET-ML


RPMT-MF


RPMT-MM


RPMW

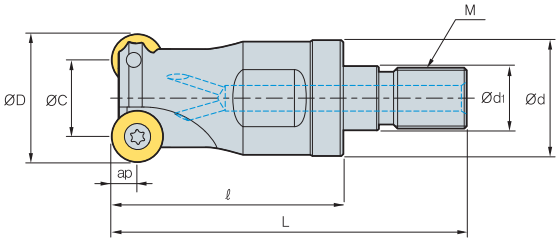
Type	Designation		Cermet		Coated									Uncoated			Page
			CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
5000 type	RPCT	1606M0-MA														●	E13
	RPET	1606M0E-ML															
	RPMT	1606M0E-MF						●				●	●				
		1606M0S-MM						●				●	●				
	RPMW	1606M0S1										●	●				
6000 type	RPCT	2007M0-MA														●	E13
		2007M0E-ML															
	RPMT	2007M0E-MF						●				●	●				
		2007M0S-MM						●				●	●				
	RPMW	2007M0S1										●	●				

Parts

Specification	Screw	Wrench	Cutter Dia.
Ø40~Ø50 (5000type)	FTGA0511-P	TW20-100	Ø40~Ø50
Ø50 (6000type)	FTKA0615-P	TW25-100	Ø50

Available Inserts E13

FMRM2500 / 3000 / 4000 / 5000 New



- AR : −4°
- RR : −4°~ 0°

(mm)

Designation			ØD	ØC	Ød	Ød1	ℓ	L	M	ap	kg	Insert size
FMRM	2517HRP-M08	2	17	9	14.5	8.5	25	42	M08	4	0.03	8
	2521HRP-M10	3	21	13	18	10.5	30	51	M10	4	0.06	8
	2526HRP-M12	4	26	18	23	12.5	35	59	M12	4	0.11	8
	2533HRP-M16	4	33	25	29	17	40	67	M16	4	0.22	8
	2540HRP-M16	5	40	32	29	17	40	67	M16	4	0.26	8
	3026HRP-M12	3	26	16	23	12.5	35	59	M12	5	0.10	10
	3033HRP-M16	3	33	23	29	17	40	67	M16	5	0.20	10
	3035HRP-M16	3	35	25	29	17	40	67	M16	5	0.22	10
	3040HRP-M16	3	40	30	29	17	40	67	M16	5	0.25	10
	3042HRP-M16	3	42	32	29	17	40	67	M16	5	0.27	10
	4026HRP-M12	2	26	14	23	12.5	35	59	M12	6	0.10	12
	4033HRP-M16	3	33	21	29	17	40	67	M16	6	0.21	12
	4035HRP-M16	3	35	23	29	17	40	67	M16	6	0.21	12
	4040HRP-M16	4	40	28	29	17	40	67	M16	6	0.24	12
	4042HRP-M16	4	42	30	29	17	40	67	M16	6	0.25	12
	5040HRP-M16	2	40	24	29	17	40	67	M16	8	0.21	16
	5042HRP-M16	2	42	26	29	17	40	67	M16	8	0.23	16

Available Inserts


RPCT-MA


RPET-ML


RPMT-MF


RPMT-MM


RPMW

Type	Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	Page
2500 type	RPET	0803M0E-ML															
	RPMT	0803M0E-MF						●				●	●				E13
		0803M0S-MM						●				●	●				
	RPMW	0803M0E1						●				●	●				
3000 type	RPCT	10T3M0-MA														●	E13
	RPET	10T3M0E-ML															
	RPMT	10T3M0E-MF						●				●	●				
		10T3M0S-MM						●				●	●				
	RPMW	10T3M0E1						●				●	●				
4000 type	RPCT	1204M0-MA														●	E13
	RPET	1204M0E-ML										●	●				
	RPMT	1204M0E-MF						●				●	●				

Type	Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	Page
4000 type	RPMT	1204M0S-MM						●				●	●				E13
	RPMW	1204M0S1						●				●	●				
		1204M0S2										●	●				
5000 type	RPCT	1606M0-MA														●	E13
	RPET	1606M0E-ML															
	RPMT	1606M0E-MF											●				
		1606M0S-MM											●				
	RPMW	1606M0S1						●				●	●				

Parts

Specification	Screw	Wrench	Wrench	Cutter Dia.
Ø17~Ø40 (2500type)	FTNA0305 FTNA0306	TW09S	-	Ø17 Ø21~Ø40
Ø26~Ø42 (3000type)	FTGA03507 FTGA03508	TW15S	-	Ø26 Ø33~Ø42
Ø26~Ø42 (4000type)	FTKA0408 FTKA0410	TW15S	-	Ø26 Ø33~Ø42
Ø40~Ø42 (5000type)	FTGA0511-P	-	TW20-100	Ø40~Ø42

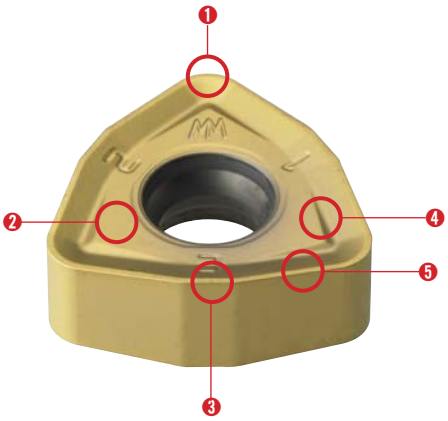
Available Inserts E13 Available Adaptors E281~E282

HRMD is more economical due to the use of 6 cutting edges compared to HRM tool with a 3 edge positive insert

HRMDouble

- HRMD is more economical due to the use of 6 cutting edges compared to HRM tool with a 3 edge positive insert
- High rake angle cutting edge and chip breaker reduces cutting load
- Negative geometry has been designed for rigidity of cutting edge and double sided function
- Simple screw on system and stable support achieves strong clamping force
- Unique insert design for high feed and multifunctional machining
- HRMD insert with symmetrical cutting edge is applicable for both R and L type machining

Features of Insert



❶ Nose-R

- Security of rigid edge in ramping Pocket machining
- Round edge suitable for high feed rates Insert geometry
- Possible to use R/L type machining

❷ Clamping surface

- Design for stable clamping
- Prevention of friction by chip

❸ Minor cutting edge

- Improvement of surface roughness in high feed machining
- Special design for decreasing thrust force
- Symmetrical insert design for R/L type tool

❹ Chip breaker

- Reduction of cutting load due to high rake angle
- Improvement of chip flow and evacuation in various applications
- Prevention of damage on clamping face of insert

❺ Major cutting edge

- Symmetrical design insert for R/L type tool
- Superior cutting performance due to high rake angle cutting edge
- Low cutting resistance in high feed
- Special design for decreasing thrust force

Features of Cutter

Inner coolant system

- Improvement of chip control and evacuation
- Longer tool life due to reduced cutting temperature

Simple screw on system

- Strong clamping of screw on system
- Convenient clamping system
- Wide chip pocket for better chip evacuation

3-surface constrained system

- Strong clamping system
- Stable clamping system against different cutting resistances in various machining applications

Cutter type Code system

HRM D C (M) 13 063 H R-5

- **High Removal Milling**
- **Double Sided Insert**
- **Tool type**: C: Cutter
- **Unit**: Unmarked : Inch; M : Metric
- **Inscreibed circle of insert**: 09 : 09type insert; 13 : 13type insert; 16 : 06type inser
- **Tool Dia.**: 063 : Ø63
- **Coolant type**: No code : None; H : Thru-hole
- **Hand**: R : Right; L : Left
- **No. of tooth**: 5 : 5 teeth

Shank type Code system

HRM D S 09 32 H R-2 S 32

- **High Removal Milling**
- **Double Sided Insert**
- **Inscreibed circle of insert**: 06 : 06type insert; 09 : 09type insert; 13 : 13type insert
- **Tool type**: S: Shank
- **Tool Dia.**: 32 : Ø32
- **Coolant type**: Unmarked : None; H : Thru-hole
- **Hand**: R : Right; L : Left
- **No. of tooth**: 2 : 2 teeth
- **Tool length**: S : Standard type; M : Middle type; L : Long type
- **Shank Dia.**: 32 : Ø32

Modular Head Code system

HRM D M 13 35 H R-M16

- **High Removal Milling**
- **Double Sided Insert**
- **Tool type**: M : Modular
- **Inscreibed circle of insert**: 06 : 06type inser; 09 : 09type insert; 13 : 13type insert
- **Tool Dia.**: 35 : Ø35
- **Coolant type**: Unmarked : None; H : Thru-hole
- **Hand**: R : Right; L : Left
- **M Dimensions**

Modular Adaptor Code system

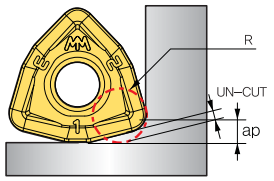
MAT M16-120-S32 S-C

- **Modular Adaptor**
- **M Dimensions**
- **Neck length**: 120
- **Shank Dia.**: S32 : Ø32
- **Neck type**: T : Taper; S : Straight
- **Adaptor material**: Unmarked : Steel; C : Carbide

Corner R programming

Designation	Cutting condition		Approx. R (mm)	
	Max.ap(mm)	Max.fz(mm/t)	Input. R	Uncut
WNMX060312ZNN-MM	1.0	1.2	1.8	0.4
WNMX09T316ZNN-MM	1.5	2.0	2.5	0.6
WNMX130520ZNN-MM	2.0	3.0	3.0	0.8
WNMX160720ZNN-MM	2.5	3.5	3.5	1.2

·Information for uncut part by using "Input.R" for CAM program

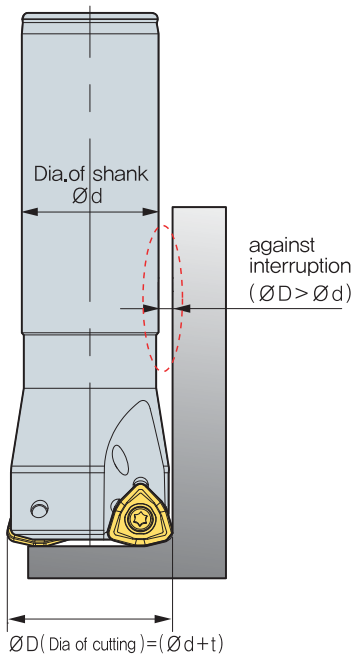


·Uncut part can be changed by poor machine condition or weak clamp of workpiece, etc

Interference prevent system

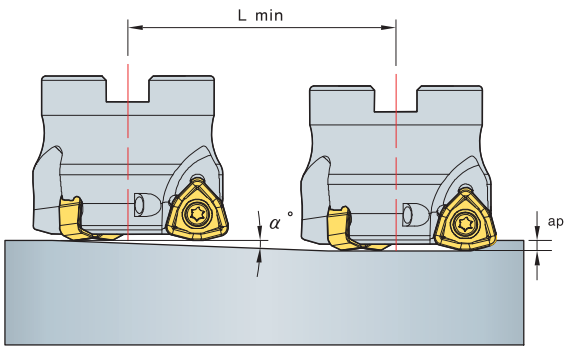
Designation	ØD(mm)	Ød(mm)	t(mm)
HRMDS0617HR-2□16	17	16	1
HRMDS0618HR-2□16	18	16	2
HRMDS0621HR-2□20	21	20	1
HRMDS0626HR-3□25	26	25	1
HRMDS0633HR-4□32	33	32	1
HRMDS0926HR-2□25	26	25	1
HRMDS0933HR-3□32	33	32	1
HRMDS0935HR-4□32	35	32	3
HRMDS0940HR-4□32	40	32	8
HRMDS0950HR-5□32	50	32	18
HRMDS0950HR-5□40	50	40	10
HRMDS0950HR-5□42	50	42	8
HRMDS1333HR-3□32	33	32	1
HRMDS1335HR-4□32	35	32	3
HRMDS1340HR-4□30	40	30	8
HRMDS1350HR-4□32	50	32	18
HRMDS1350HR-4□40	50	40	10
HRMDS1350HR-4□42	50	42	8
HRMDS1363HR-5□32	63	32	31
HRMDS1363HR-5□40	63	40	23
HRMDS1363HR-5□42	63	42	21

•The side clearance prevents to interference between tool and workpiece even in deep hole machining

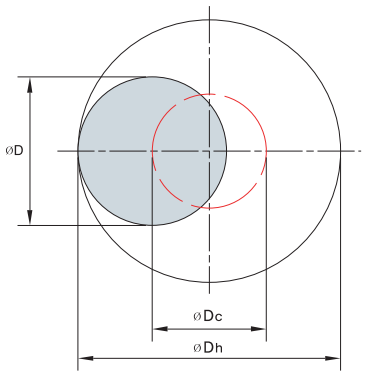


Ramping & Helical cutting technical data

Ramping



Helical cutting



$$L_{min} = \frac{ap}{\tan \alpha^{\circ}} \text{ (mm)}$$

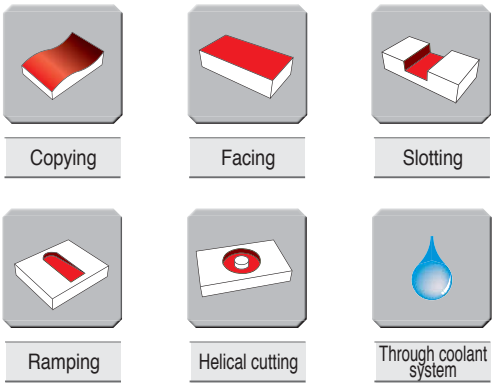
ØDc = ØDh - ØD

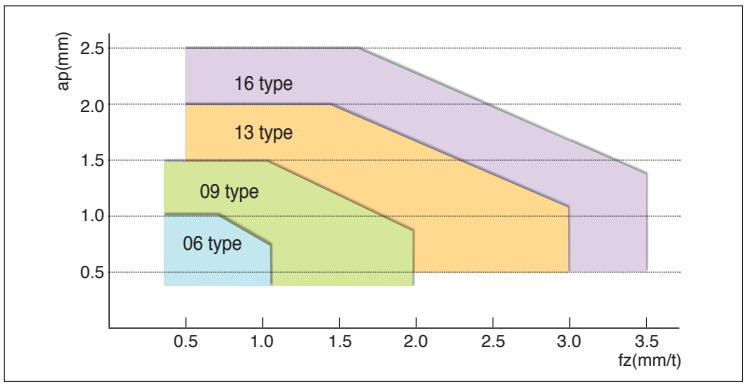
ØDc = Tool pass of tool center
ØDh = Desirable hole diameter on workpiece
ØD = Tool Dia.

• Adjust feed to under 70% of Recommended cutting condition when ramping & helical cutting
• In helical ramping, max. cutting depth per 1 helical revolution of cutter should not exceed max. cutting depth as per insert size
• in ramping, max. cutting depth for 1 ramping process should not exceed max. depth of cut as per used insert size

Designation	Tool Dia. ØD(mm)	Efficient cutting diameter ØDe(mm)	Ramping			Helical ramping	
			Max. ap(mm)	Max. angle α°	Cutting Length Lmin (mm)	Dh Min. Cutting diameter(mm) (mm)	Dh Max. Cutting diameter(mm)
HRMDS0616HR	16	9.5	1	4.8	11	23.8	29.6
HRMDS0617HR	17	10.5	1	4.1	13	25.8	31.6
HRMDS0618HR	18	11.5	1	3.5	16	27.8	33.6
HRMDS0620HR	20	13.5	1	2.5	22	31.8	37.6
HRMDS0621HR	21	14.5	1	2.2	26	33.8	39.6
HRMDS0625HR	25	18.5	1	1.3	44	41.8	47.6
HRMDS0626HR	26	19.5	1	1.2	47	43.8	49.6
HRMDS0632HR	32	25.5	1	0.6	95	55.8	61.6
HRMDS0633HR	33	26.5	1	0.5	114	57.8	63.6
HRMDS0925HR	25	15.4	1.5	5.4	15.8	37.6	46.8
HRMDS0926HR	26	16.4	1.5	5.0	17.0	39.6	48.8
HRMDS0930HR	30	20.4	1.5	3.9	22.0	47.6	56.8
HRMDS0932HR	32	22.3	1.5	3.5	24.5	51.6	60.8
HRMDS0933HR	33	23.3	1.5	3.3	25.8	53.6	62.8
HRMDS0935HR	35	25.4	1.5	3.0	28.3	57.6	66.8
HRMDS0940HR	40	30.2	1.5	2.5	34.5	67.6	76.8
HRMDS0950HR	50	40.2	1.5	1.8	47.0	87.6	96.8
HRMDS1332HR	32	19.3	2	5.7	20.0	47	60
HRMDS1333HR	33	20.3	2	5.4	21.3	49	62
HRMDS1335HR	35	22.3	2	4.8	24.0	53	66
HRMDS1340HR	40	27.2	2	3.7	30.7	63	76
HRMDS1350HR	50	37	2	2.6	44.0	83	96
HRMDS1363HR	63	50	2	1.9	61.3	109	122
HRMDCM09040HR	40	30.2	1.5	2.5	34.5	67.6	76.8
HRMDCM09050HR	50	40.2	1.5	1.8	47.0	87.6	96.8
HRMDCM09063HR	63	53.1	1.5	1.4	63.3	113.6	122.8
HRMDC(M)09080HR	80	70.1	1.5	1.0	84.5	147.6	156.8
HRMDC(M)09100HR	100	90	1.5	0.8	109.5	187.6	196.8
HRMDCM13050HR	50	37	2	2.6	44.0	83	96
HRMDCM13063HR	63	50	2	1.9	61.3	109	122
HRMDC(M)13080HR	80	66.9	2	1.4	84.0	143	156
HRMDC(M)13100HR	100	86.9	2	1.0	110.7	183	196
HRMDC(M)13125HR	125	111.9	2	0.8	144.0	233	246
HRMDC(M)16080HR	80	63.3	2.5	1.4	102	138	156
HRMDC(M)16100HR	100	83.3	2.5	1	143	178	196
HRMDC(M)16125HR	125	108.3	2.5	0.7	204	228	246
HRMDC(M)16160R	160	143.3	2.5	0.5	286	298	316
HRMDC(M)16200R	200	183.3	2.5	0.3	477	378	396
HRMDC(M)16250R	250	233.3	2.5	0.2	716	478	496
HRMDC(M)16315R	315	298.3	2.5	0.1	1432	608	626

Application area





Recommended cutting condition

ISO	Workpiece		Material	Grade	Cutting speed, vc(m/min)
P	Carbon steel	Low carbon steel	SUM22, C=0.1~25	PC5300	280
				PC5400	245
		General carbon steel	C=0.30~55	PC5300	255
				PC5400	220
		High carbon steel	C=0.55~80	PC5300	240
				PC5400	205
	Low alloy steel (Alloy constituent < 5%)	-	SCM415(H), SCM420, SCM440	PC5300	195
				PC5400	170
		Hardened	-	PC5300	115
				PC5400	100
	High alloy steel (Alloy constituent > 5%)	Annealed	SKD61	PC5300	150
				PC5400	130
		Hardened	SKH51, SKH55	PC5300	120
				PC5400	105
M	Stainless steel	Ferritic / Martensitic	SUS410, SUS420, SUS430	PC5300	160
				PC5400	135
		Austenitic	SUS303, SUS304, SUS316	PC5300	130
				PC5400	110
		Duplex(Austenitic / Ferrictic)	F51	PC5300	100
				PC5400	85
K	Gray cast iron	Low tensile	FC200, FC250	PC5300	170
				PC5400	150
		Hight tensile	FC300, FC350	PC5300	150
				PC5400	130
	Ductile cast iron	Ferric	FCD400, FCD500	PC5300	170
				PC5400	150
		Pearlitic	FCD600, FCD700	PC5300	150
				PC5400	130
S	Fe Base	-	Incoloy	PC5300	60
				PC5400	50
	Ni Base	-	Inconel, Nimonic, Hastelloy	PC5300	55
				PC5400	45
	Co base	-	stelite	PC5300	25
				PC5400	20
	Titanium alloys	-	pure Ti	PC5300	130
				PC5400	105
			alloy(TiAl6V4)	PC5300	65
				PC5400	55

Machining Example

Working condition

Work piece : SM45C(H_RC22)
Cutting speed : vc = 283m/min (1,803^{-1})
fz = 1.4mm/tooth
vf = 10,097mm/min
ap = 0.8mm
ae = 35mm
Coolant : Dry, Machining: Copying
Machine : Horizontal MCT
Overhang of tool : 250mm

Tool information : HRMDCM13050HR-4
WNMX130520ZNN-MM(PC3500)

40% Increased productivity
80% Reduced tool cost

Test result In comparing HRMD with our competitor using the same cutting conditions, the cutting speed of HRMD was higher with the same depth of cut (ap×ae), the cycle time was reduced by 40% and the tool life was increased to over 60%. HRMD is economically more efficient due to the use of 6 cutting edges compared to EDNW type with positive insert

Working condition

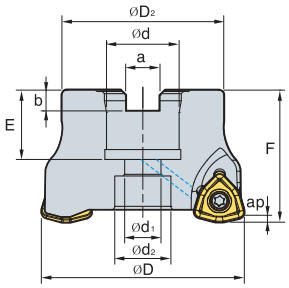
Work piece : STS304
Cutting speed : vc = 130m/min (414-1)
fz = 1.2mm/tooth
vf = 2,981mm/min
ap = 1.0mm
ae = 80mm
Coolant : Wet, Machining : Facing and Slotting
Machine : Vertical MCT
Overhang of tool : 250mm

Tool information : HRMDCM13100HR-6
WNMX130520ZNN-MM(PC3545)

80% Increased productivity
25% Reduced tool cost

Test result In comparing HRMD with our competitor using the same cutting conditions, the cutting speed of HRMD was higher with the same depth of cut (ap×ae), the cycle time was reduced by 80% and the tool life was same, but HRMD is economically more efficient due to the use of 6 cutting edges compared to SDKN type with positive insert

HRMDC(M)09



AA 14°

- AR : −7°
- RR : −12°~−18°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg	Bolt
HRMDCM	09040HR-3	3	40	34	16	9	14	8.4	5.6	19	40	1.5	0.2	SB0825
	09040HR-4	4	40	34	16	9	14	8.4	5.6	19	40	1.5	0.2	
	09050HR-4	4	50	42	22	11	18	10.4	6.3	21	40	1.5	0.3	SB1025
	09050HR-5	5	50	42	22	11	18	10.4	6.3	21	40	1.5	0.3	
	09063HR-5	5	63	49	22	11	18	10.4	6.3	21	40	1.5	0.5	SB1025
	09063HR-6	6	63	49	22	11	18	10.4	6.3	21	40	1.5	0.5	
	09080HR-6	6	80	57	27	14	20	12.4	7	23	50	1.5	1.1	SB1230
	09080HR-7	7	80	57	27	14	20	12.4	7	23	50	1.5	1.1	
	09100HR-7	7	100	67	32	18	26	14.4	8	25	50	1.5	1.7	SB1630
	09100HR-8	8	100	67	32	18	26	14.4	8	25	50	1.5	1.7	
HRMDC	09080HR-6	6	80	57	25.4	14	20	9.5	6	24	50	1.5	1.1	SB1230
	09080HR-7	7	80	57	25.4	14	20	9.5	6	24	50	1.5	1.1	
	09080HR-31.75-6	6	80	67	31.75	18	26	12.7	8	32	63	1.5	1.5	SB1630
	09080HR-31.75-7	7	80	67	31.75	18	26	12.7	8	32	63	1.5	1.5	
	09100HR-7	7	100	67	31.75	18	26	12.7	8	32	63	1.5	2.1	SB1630
	09100HR-8	8	100	67	31.75	18	26	12.7	8	32	63	1.5	2.1	

Available Inserts

WNMX-MF

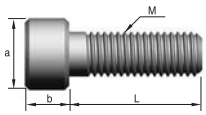
WNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
WNMX	09T316ZNN-MF										●	●				E22
	09T316ZNN-MM					●		●	●		●	●				

Available Arbors

Designation		NC Arbors
HRMDCM	09040HR-□	BT□□-FMC16-□□
		SK□□-FMC16-□□
	09050HR-□	BT□□-FMC22-□□
	09063HR-□	SK□□-FMC22-□□
	09080HR-□	BT□□-FMC27-□□
		SK□□-FMC27-□□
	09100HR-□	BT□□-FMC32-□□
		SK□□-FMC32-□□
HRMDC	09080HR-□	BT□□-FMA25.4-□□
		SK□□-FMA25.4-□□
	09080HR-31.75-□	BT□□-FMA31.75-□□
	09100HR-□	SK□□-FMA31.75-□□

Bolt



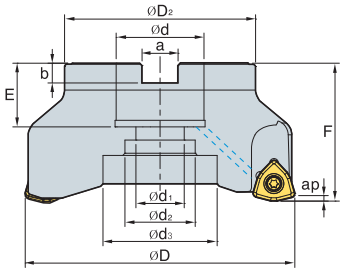
Designation	Dimensions(mm)				
	M	a	b	L	pitch
SB0825	M08	13	8	25	1.25
SB1025	M10	16	10	25	1.5
SB1230	M12	18	12	30	1.75
SB1630	M16	24	16	30	2.0

Parts

Specification	 Screw	 Wrench
Ø40~Ø100	FTKA0307	TW09S

Available Inserts E22 Available Arbors and bolt E318~E320

HRMDC(M)13



AA 14°

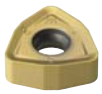
- AR : −7°
- RR : −12°~−4°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	Ød3	a	b	E	F	ap	kg	Bolt
HRMDCM	13050HR-3	3	50	42	22	11	17	-	10.4	6.3	21	40	2	0.3	SB1025
	13050HR-4	4	50	42	22	11	17	-	10.4	6.3	21	40	2	0.3	
	13063HR-4	4	63	49	22	11	18	-	10.4	6.3	21	40	2	0.5	SB1025
	13063HR-5	5	63	49	22	11	18	-	10.4	6.3	21	40	2	0.5	
	13080HR-5	5	80	57	27	14	20	-	12.4	7	23	50	2	1	SB1230
	13080HR-6	6	80	57	27	14	20	-	12.4	7	23	50	2	1	
	13100HR-6	6	100	67	32	18	26	-	14.4	8	25	50	2	1.6	
	13100HR-7	7	100	67	32	18	26	-	14.4	8	25	50	2	1.6	SB1630
	13125HR-7	7	125	87	40	22	32	52	16.4	9	29	63	2	3.2	SB2040
	13125HR-8	8	125	87	40	22	32	52	16.4	9	29	63	2	3.2	MBA-M20
HRMDC	13080HR-5	5	80	57	25.4	14	20	-	9.5	6	24	50	2	1	
	13080HR-6	6	80	57	25.4	14	20	-	9.5	6	24	50	2	1	SB1230
	13080HR-31.75-5	5	80	67	31.75	18	26	-	12.7	8	32	63	2	1.4	
	13080HR-31.75-6	6	80	67	31.75	18	26	-	12.7	8	32	63	2	1.4	SB1630
	13100HR-6	6	100	67	31.75	18	26	-	12.7	8	32	63	2	2.1	
	13100HR-7	7	100	67	31.75	18	26	-	12.7	8	32	63	2	2.1	SB1630
	13125HR-7	7	125	87	38.1	22	32	52	15.9	10	35	63	2	3.3	SB2040
	13125HR-8	8	125	87	38.1	22	32	52	15.9	10	35	63	2	3.3	MBA-M20

Available Inserts

WNMX-MF



WNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
WNMX	130520ZNN-MF										●	●				E22
	130520ZNN-MM					●		●	●		●	●				

Available Arbors

Designation		NC Arbors
HRMDCM	13050HR-□	BT□□-FMC22-□□
		SK□□-FMC22-□□
	13063HR-□	BT□□-FMC22-□□
	13080HR-□	SK□□-FMC27-□□
	13100HR-□	BT□□-FMC32-□□
		SK□□-FMC32-□□
	13125HR-□	BT□□-FMC40-□□
		SK□□-FMC40-□□
HRMDC	13080HR-□	BT□□-FMA25.4-□□
	13080HR-31.75-□	SK□□-FMA25.4-□□
	13100HR-□	BT□□-FMA31.75-□□
		SK□□-FMA31.75-□□
	13125HR-□	BT□□-FMA38.1-□□
		SK□□-FMA38.1-□□

Bolt

Fig. 1

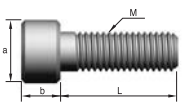
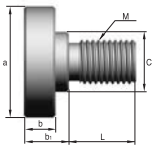


Fig. 2



Designation	Dimensions(mm)							Fig.
	M	a	b	b1	C	L	pitch	
SB1025	M10	16	10	-	-	25	1.5	1
SB1230	M12	18	12	-	-	30	1.75	1
SB1630	M16	24	16	-	-	30	2.0	1
SB2040	M20	30	20	-	-	40	2.5	1
MBA-M20	M20	50	14	20	27	30	2.5	2

Parts

Specification	 Screw	 Wrench
Ø50~Ø125	FTKA0412B	TW15S

Available Inserts E22 Available Arbors and bolt E318~E320

HRMDC(M)16 New

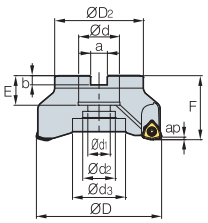


Fig. 1

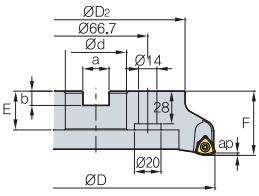


Fig. 2

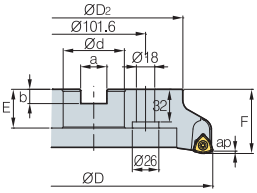


Fig. 3

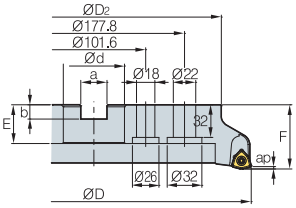


Fig. 4

- AR : −7°
- RR : −12°~−4°

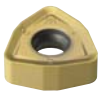
(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	Ød3	a	b	E	F	ap	kg	Bolt	Fig.
HRMDC (HRMDCM)	16080HR-4	4	80	65	25.4(27)	14	20	-	9.5(12.4)	6(7)	25(23)	50	2.5	0.99	SB1230	1
	16080HR-5	5	80	65	25.4(27)	14	20	-	9.5(12.4)	6(7)	25(23)	50	2.5	0.91		
	16100HR-5	5	100	85	31.75(32)	18	26	-	12.7(14.4)	8	33(25)	63(50)	2.5	1.68	SB1630	1
	16100HR-6	6	100	85	31.75(32)	18	26	-	12.7(14.4)	8	33(25)	63(50)	2.5	1.64		
	16125HR-6	6	125	100	38.1(40)	22	32	52	15.9(16.4)	10(9)	36(29)	63	2.5	3.23	SB2040 MBA-M20	1
	16125HR-7	7	125	100	38.1(40)	22	32	52	15.9(16.4)	10(9)	36(29)	63	2.5	3.24		
	16160R-7	7	160	107	50.8(40)	-	90	-	19(16.4)	11(9)	38(32)	63	2.5	3.73	MBA-M24	2
	16160R-8	8	160	107	50.8(40)	-	90	-	19(16.4)	11(9)	38(32)	63	2.5	3.77		
	16200R-8	8	200	145	47.625(60)	-	132	-	25.4(25.7)	14	38	63	2.5	6.48	-	3
	16200R-10	10	200	145	47.625(60)	-	132	-	25.4(25.7)	14	38	63	2.5	6.61		
	16250R-10	10	250	190	47.625(60)	-	190	-	25.4(25.7)	14	38	63	2.5	11.01	-	3
	16250R-12	12	250	190	47.625(60)	-	190	-	25.4(25.7)	14	38	63	2.5	11.04		
	16315R-12	12	315	250	47.625(60)	-	238	-	25.4(25.7)	14	38	63	2.5	18.34	-	4
	16315R-14	14	315	250	47.625(60)	-	238	-	25.4(25.7)	14	38	63	2.5	18.35		

( )Metric Size

Available Inserts

WNMX-MF


WNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
WNMX	160720ZNN-MF										●	●				E22
	160720ZNN-MM										●	●				

Available Arbors

Designation		HRMDC	HRMDCM
HRMDCM	16080HR-4 16080HR-5	BT□□-FMA25.4-□□	BT□□-FMC27-□□
	16100HR-5 16100HR-6	BT□□-FMA31.75-□□	BT□□-FMC32-□□
	16125HR-6 16125HR-7	BT□□-FMA38.1-□□	BT□□-FMB40-□□ BT□□-FMC40-□□
	16160R-7 16160R-8	BT□□-FMA50.8-□□	
	16200R-8 16200R-10 16250R-10 16250R-12 16315R-12 16315R-14	BT□□-FMA47.625-□□	BT□□-FMB60-□□

Bolt

Fig. 1

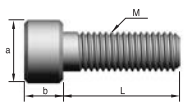
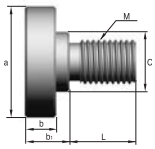


Fig. 2



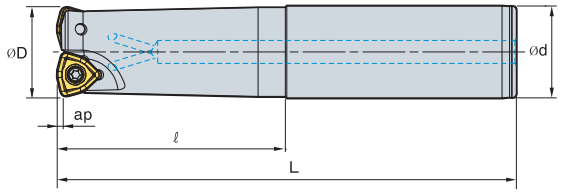
Designation	Dimensions(mm)							Fig.
	M	a	b	b1	C	L	pitch	
SB1025	M10	16	10	-	-	25	1.5	1
SB1230	M12	18	12	-	-	30	1.75	1
SB1630	M16	24	16	-	-	30	2.0	1
SB2040	M20	30	20	-	-	40	2.5	1
MBA-M20	M20	50	14	20	27	30	2.5	2
MBA-M24	M24	65	14	24	37	36	3.0	2

Parts

Specification	 Screw	 Wrench
Ø80~Ø315	FTGA0513-P	TW20-100

Available Inserts E22 Available Arbors and bolt E318~E320

HRMDS06 New



AA 14°

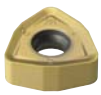
- AR : −7°
- RR : −17°~−25°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
HRMDS	0616HR-2S16	2	16	16	30	110	1.0	0.15
	0616HR-2M16	2	16	16	70	150	1.0	0.20
	0616HR-2L16	2	16	16	100	200	1.0	0.26
	0617HR-2S16	2	17	16	20	110	1.0	0.15
	0617HR-2M16	2	17	16	20	150	1.0	0.21
	0617HR-2L16	2	17	16	20	200	1.0	0.28
	0618HR-2S16	2	18	16	20	110	1.0	0.15
	0618HR-2M16	2	18	16	20	150	1.0	0.21
	0618HR-2L16	2	18	16	20	200	1.0	0.28
	0620HR-2S20	2	20	20	50	130	1.0	0.28
	0620HR-2M20	2	20	20	100	180	1.0	0.38
	0620HR-2L20	2	20	20	130	250	1.0	0.53
	0621HR-2S20	2	21	20	20	130	1.0	0.29
	0621HR-2M20	2	21	20	20	180	1.0	0.40
	0621HR-2L20	2	21	20	20	250	1.0	0.57
	0625HR-3S25	3	25	25	60	140	1.0	0.44
	0625HR-3M25	3	25	25	80	180	1.0	0.57
	0625HR-3L25	3	25	25	120	250	1.0	0.80
	0626HR-3S25	3	26	25	30	140	1.0	0.46
	0626HR-3M25	3	26	25	30	180	1.0	0.60
	0626HR-3L25	3	26	25	30	250	1.0	0.84
	0632HR-4S32	4	32	32	70	150	1.0	0.82
	0632HR-4M32	4	32	32	100	200	1.0	1.10
	0632HR-4L32	4	32	32	180	300	1.0	1.66
	0633HR-4S32	4	33	32	40	200	1.0	1.14
	0633HR-4M32	4	33	32	40	250	1.0	1.43
	0633HR-4L32	4	33	32	40	300	1.0	1.73

Available Inserts

WNMX-MF



WNMX-MM

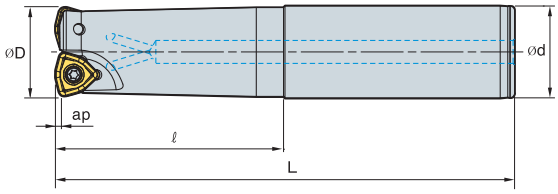
Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
WNMX	060312ZNN-MF										●	●				E22
	060312ZNN-MM										●	●				

Parts

Specification	Screw	Wrench
Ø16~Ø33	ETNA02506	TW07S

Available Inserts E22

HRMDS09



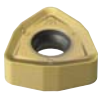
- AR : −7°
- RR : −17°~−25°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
HRMDS	0925HR-2S25	2	25	25	60	140	1.5	0.5
	0925HR-2M25	2	25	25	120	200	1.5	0.6
	0925HR-2L25	2	25	25	180	300	1.5	1
	0926HR-2S25	2	26	25	60	140	1.5	0.5
	0926HR-2M25	2	26	25	60	200	1.5	0.7
	0926HR-2L25	2	26	25	60	300	1.5	1
	0930HR-3S32	3	30	32	70	150	1.5	0.8
	0930HR-3M32	3	30	32	120	200	1.5	1
	0930HR-3L32	3	30	32	180	300	1.5	1.5
	0932HR-3S32	3	32	32	70	150	1.5	0.8
	0932HR-3M32	3	32	32	120	200	1.5	1.1
	0932HR-3L32	3	32	32	180	300	1.5	1.7
	0933HR-3S32	3	33	32	70	150	1.5	0.8
	0933HR-3M32	3	33	32	70	200	1.5	1.1
	0933HR-3L32	3	33	32	70	300	1.5	1.7
	0935HR-4S32	4	35	32	50	150	1.5	0.9
	0935HR-4M32	4	35	32	50	200	1.5	1.1
	0935HR-4L32	4	35	32	50	300	1.5	1.7
	0940HR-4S32	4	40	32	50	150	1.5	0.9
	0940HR-4L32	4	40	32	50	300	1.5	1.8
	0940HR-4S40	4	40	40	60	150	1.5	1.3

Available Inserts

WNMX-MF



WNMX-MM

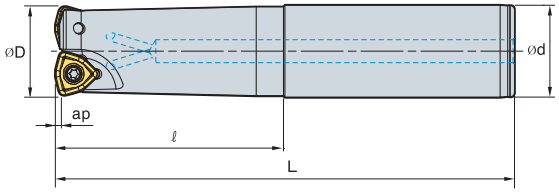
Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
WNMX	09T316ZNN-MF										●	●				E22
	09T316ZNN-MM					●		●	●		●	●				

Parts

Specification	Screw	Wrench
Ø25~Ø40	FTKA0307	TW09S

Available Inserts E22

HRMDS09



AA 14°

- AR : −7°
- RR : −17°~−25°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
HRMDS	0940HR-4M40	4	40	40	130	250	1.5	2.2
	0940HR-4L40	4	40	40	180	300	1.5	2.7
	0940HR-4S42	4	40	42	60	150	1.5	1.4
	0940HR-4M42	4	40	42	130	250	1.5	2.3
	0940HR-4L42	4	40	42	180	300	1.5	2.8
	0950HR-4S32	4	50	32	40	150	1.5	1.1
	0950HR-4M32	4	50	32	40	250	1.5	1.6
	0950HR-4L32	4	50	32	40	300	1.5	2
	0950HR-4S40	4	50	40	40	150	1.5	1.4
	0950HR-4M40	4	50	40	40	250	1.5	2.4
	0950HR-4L40	4	50	40	40	300	1.5	2.9
	0950HR-4S42	4	50	42	40	150	1.5	1.6
	0950HR-4M42	4	50	42	40	250	1.5	2.6
	0950HR-4L42	4	50	42	40	300	1.5	3.1
	0950HR-5S32	5	50	32	40	150	1.5	1.1
	0950HR-5M32	5	50	32	40	250	1.5	1.6
	0950HR-5L32	5	50	32	40	300	1.5	2
	0950HR-5S40	5	50	40	40	150	1.5	1.4
	0950HR-5M40	5	50	40	40	250	1.5	2.4
	0950HR-5L40	5	50	40	40	300	1.5	2.9
	0950HR-5S42	5	50	42	40	150	1.5	1.6
	0950HR-5M42	5	50	42	40	250	1.5	2.6
	0950HR-5L42	5	50	42	40	300	1.5	3.1

Available Inserts

WNMX-MF

WNMX-MM

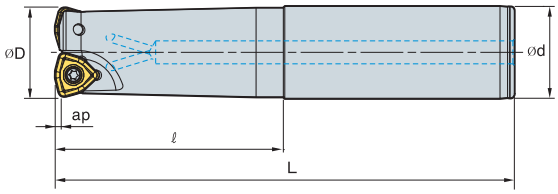
Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
WNMX	09T316ZNN-MF										●	●				E22
	09T316ZNN-MM					●		●	●		●	●				

Parts

Specification	Screw	Wrench
Ø40~Ø50	FTKA0307	TW09S

Available Inserts E22

HRMDS13



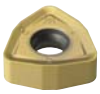
- AR : −7°
- RR : −14°~−16°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
HRMDS	1332HR-2S32	2	32	32	70	150	2	0.8
	1332HR-2M32	2	32	32	120	200	2	1
	1332HR-2L32	2	32	32	180	300	2	1.6
	1333HR-2S32	2	33	32	70	150	2	0.8
	1333HR-2M32	2	33	32	70	200	2	1.1
	1333HR-2L32	2	33	32	70	300	2	1.7
	1335HR-2S32	2	35	32	50	150	2	0.8
	1335HR-2M32	2	35	32	50	200	2	1.1
	1335HR-2L32	2	35	32	50	300	2	1.7
	1340HR-3S32	3	40	32	50	150	2	0.8
	1340HR-3M32	3	40	32	50	250	2	1.4
	1340HR-3L32	3	40	32	50	300	2	1.7
	1340HR-3S40	3	40	40	60	150	2	1.2
	1340HR-3M40	3	40	40	130	250	2	2.1
	1340HR-3L40	3	40	40	180	300	2	2.6
	1340HR-3S42	3	40	42	60	150	2	1.4
	1340HR-3M42	3	40	42	130	250	2	2.3
	1340HR-3L42	3	40	42	180	300	2	2.7
	1350HR-3S32	3	50	32	50	150	2	1.1
	1350HR-3M32	3	50	32	50	250	2	1.7
	1350HR-3L32	3	50	32	50	300	2	2
	1350HR-3S40	3	50	40	50	150	2	1.5
	1350HR-3M40	3	50	40	50	250	2	2.4
	1350HR-3L40	3	50	40	50	300	2	2.9
	1350HR-3S42	3	50	42	50	150	2	1.6
	1350HR-3M42	3	50	42	50	250	2	2.6
	1350HR-3L42	3	50	42	50	300	2	3.1

Available Inserts

WNMX-MF



WNMX-MM

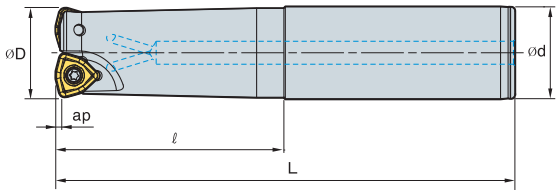
Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
WNMX	130520ZNN-MF										●	●				E22
	130520ZNN-MM					●		●	●		●	●				

Parts

Specification	Screw	Wrench
Ø32~Ø50	FTKA0412B	TW15S

Available Inserts E22

HRMDS13



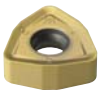
- AR : −7°
- RR : −14°~−16°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
HRMDS	1350HR-4S32	4	50	32	50	150	2	1.1
	1350HR-4M32	4	50	32	50	250	2	1.7
	1350HR-4L32	4	50	32	50	300	2	2
	1350HR-4S40	4	50	40	50	150	2	1.5
	1350HR-4M40	4	50	40	50	250	2	2.4
	1350HR-4L40	4	50	40	50	300	2	2.9
	1350HR-4S42	4	50	42	50	150	2	1.6
	1350HR-4M42	4	50	42	50	250	2	2.6
	1350HR-4L42	4	50	42	50	300	2	3.1
	1363HR-4S32	4	63	32	50	150	2	1.4
	1363HR-4M32	4	63	32	50	250	2	2.1
	1363HR-4L32	4	63	32	50	300	2	2.4
	1363HR-4S40	4	63	40	50	150	2	1.8
	1363HR-4M40	4	63	40	50	250	2	2.8
	1363HR-4L40	4	63	40	50	300	2	3.2
	1363HR-4S42	4	63	42	50	150	2	1.9
	1363HR-4M42	4	63	42	50	250	2	3
	1363HR-4L42	4	63	42	50	300	2	3.5
	1363HR-5S32	5	63	32	50	150	2	1.5
	1363HR-5M32	5	63	32	50	250	2	2
	1363HR-5L32	5	63	32	50	300	2	2.3
	1363HR-5S40	5	63	40	50	150	2	1.8
	1363HR-5M40	5	63	40	50	250	2	2.8
	1363HR-5L40	5	63	40	50	300	2	3.2
	1363HR-5S42	5	63	42	50	150	2	1.9
	1363HR-5M42	5	63	42	50	250	2	3
	1363HR-5L42	5	63	42	50	300	2	3.5

Available Inserts

WNMX-MF



WNMX-MM

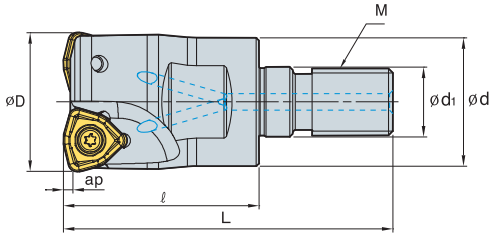
Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
WNMX	130520ZNN-MF										●	●				E23
	130520ZNN-MM					●		●	●		●	●				

Parts

Specification	 Screw	 Wrench
Ø50~Ø63	FTKA0412B	TW15S

Available Inserts E23

HRMDM06 New



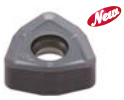
AA 14°

- AR : −7°
- RR : −18°~−25°

(mm)

Designation			ØD	Ød	Ød1	ℓ	L	M	ap	kg
HRMDM	0616HR-M08	2	16	14.5	8.5	25	42	M08	1.0	0.03
	0617HR-M08	2	17	14.5	8.5	25	42	M08	1.0	0.03
	0618HR-M08	2	18	14.5	8.5	25	42	M08	1.0	0.03
	0620HR-M10	2	20	18	10.5	30	51	M10	1.0	0.06
	0621HR-M10	2	21	18	10.5	30	51	M10	1.0	0.07
	0625HR-M12	3	25	23	12.5	35	59	M12	1.0	0.10
	0626HR-M12	3	26	23	12.5	35	59	M12	1.0	0.11
	0632HR-M16	4	32	29	17	40	67	M16	1.0	0.21
	0633HR-M16	4	33	29	17	40	67	M16	1.0	0.22

Available Inserts



WNMX-MF

WNMX-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
WNMX	060312ZNN-MF										●	●				E23
	060312ZNN-MM										●	●				

Available Adaptor

Designation		Available Adaptor	Designation		Available Adaptor
HRMDM	0616HR-M08	MAT- M08	HRMDM	0625HR-M12	MAT- M12
	0617HR-M08	MAT- M08		0626HR-M12	MAT- M12
	0618HR-M08	MAT- M08		0632HR-M16	MAT- M16
	0620HR-M10	MAT- M10		0633HR-M16	MAT- M16
	0621HR-M10	MAT- M10			

Designation : HRMDM0932HR-M16
Modular Head Threading Measure size(M16)

II

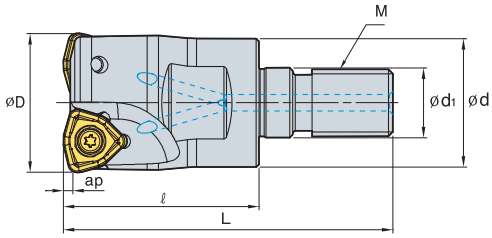
Adaptor Spec. : MAT-M16-035-S32S
Adaptor Threading Measure(M16)

Parts

Specification	Screw	Wrench
Ø16~Ø33	ETNA02506	TW07S

Available Inserts E23 Available Adaptors E281~E282

HRMDM09 / 13



AA 14°

- AR : −7°
- RR : −18°~−25°

(mm)

Designation			ØD	Ød	Ød1	ℓ	L	M	ap	kg
HRMDM	0925HR-M12	2	25	23	12.5	35	59	M12	1.5	0.10
	0926HR-M12	2	26	23	12.5	35	59	M12	1.5	0.11
	0930HR-M16	3	30	29	17	40	67	M16	1.5	0.19
	0932HR-M16	3	32	29	17	40	67	M16	1.5	0.20
	0933HR-M16	3	33	29	17	40	67	M16	1.5	0.21
	0935HR-M16	4	35	29	17	40	67	M16	1.5	0.22
	0940HR-M16	4	40	29	17	40	67	M16	1.5	0.25
	1332HR-M16	2	32	29	17	40	67	M16	2	0.20
	1333HR-M16	2	33	29	17	40	67	M16	2	0.20
	1335HR-M16	2	35	29	17	40	67	M16	2	0.22
	1340HR-M16	3	40	29	17	45	72	M16	2	0.26

Available Inserts

WNMX-MF

WNMX-MM

Type	Designation		Cermet		Coated									Uncoated			Page
			CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
09 type	WNMX	09T316ZNN-MF										●	●				E23
		09T316ZNN-MM					●		●	●		●	●				
13 type	WNMX	130520ZNN-MF										●	●				
		130520ZNN-MM					●		●	●		●	●				

Available Adaptor

Designation		Available Adaptor	Designation		Available Adaptor
HRMDM	0925HR-M12	MAT- M12	HRMDM	0940HR-M16	MAT- M16
	0926HR-M12			1332HR-M16	
	0930HR-M16	MAT- M16		1333HR-M16	
	0932HR-M16			1335HR-M16	
	0933HR-M16			1340HR-M16	
	0935HR-M16				

Designation : HRMDM0932HR-M16
Modular Head Threading Measure size(M16)

II

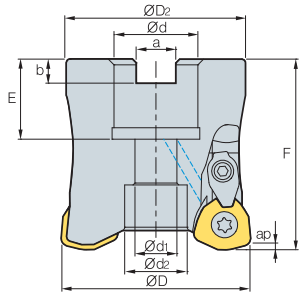
Adaptor Spec. : MAT-M16-035-S32S
Adaptor Threading Measure(M16)

Parts

Specification	Screw	Wrench
Ø25~Ø40 (09type)	FTKA0307	TW09S
Ø32~Ø40 (13type)	FTKA0412B	TW15S

Available Inserts E23 Available Adaptors E281~E282

HRMC(M)13 / 15



AA 15°

- AR : 7°
- RR : −15°~−5°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg	Bolt
HRMC(M)	13050HR-3	3	50	47	22.225(22)	11	16.4	8.0(10.4)	5(6.3)	20(21)	50	2.0	0.4	SB1035
	13050HR-4	4	50	47	22.225(22)	11	16.4	8.0(10.4)	5(6.3)	20(21)	50	2.0	0.4	SB1035
	13063HR-4	4	63	60	22.225(22)	11	17	8.0(10.4)	5(6.3)	20(21)	50	2.0	0.7	SB1035
	13080HR-5	5	80	76	31.75(27)	18(13)	26(20)	12.7(12.4)	8(7)	32(23)	70	2.0	1.6	SB16(12)45
HRMC(M)	15063HR-3	3	63	60	22.225(22)	11	17	8.0(10.4)	5(6.3)	20(21)	50	2.5	0.7	SB1035
	15080HR-4	4	80	76	31.75(27)	18(13)	26(20)	12.7(12.4)	8(7)	32(23)	70	2.5	1.7	SB16(12)45
	15100HR-5	5	100	96	31.75(32)	18	26	12.7(14.4)	8(8)	32(26)	70	2.5	2.8	SB1645
	15100HR-6	6	100	96	31.75(32)	18	26	12.7(14.4)	8(8)	32(26)	70	2.5	3.2	SB1645
	15125HR-6	6	125	98	38.1(40)	22	32	15.9(16.4)	10(9)	35(29)	63	2.5	3.3	SB2040
	15160R-7	7	160	100	50.8(40)	-	72	19.0(16.4)	11(9)	38(35)	63	2.5	4.3	MBA-M24(M20)

( )Metric Size

Available Inserts

WDKT-MH

Type	Designation	Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
13 type	WDKT 130520ZDSR-MH					●		●	●	●	●	●				E22
15 type	WDKT 150625ZDSR-MH					●		●	●	●	●	●				

Available Arbors

Designation		HRMDC	HRMDCM
HRMC(M)	13050HR-3	BT□□-FMA22.225-□□	BT□□- FMC22-□□ SK□□-FMC22-□□
	13050HR-4		
	13063HR-4		
	13080HR-5	BT□□-FMA31.75-□□ SK□□-FMA31.75-□□	BT□□- FMC27-□□ SK□□-FMC27-□□
	15063HR-3	BT□□-FMA22.225-□□	BT□□- FMC22-□□ SK□□-FMC22-□□
	15080HR-4	BT□□-FMA31.75-□□ SK□□-FMA31.75-□□	BT□□- FMC27-□□ SK□□-FMC27-□□
	15100HR-5		BT□□- FMC32-□□ SK□□-FMC32-□□
	15100HR-6		
	15125HR-6	BT□□-FMA38.1-□□ SK□□-FMA38.1-□□	BT□□-FMB40-□□ BT□□-FMC40-□□ SK□□-FMC40-□□
	15160R-7	BT□□-FMA50.8-□□	

Bolt

Fig. 1

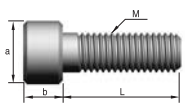
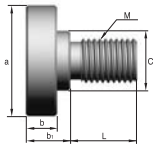


Fig. 2



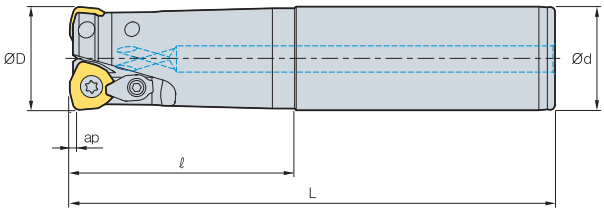
Designation	Dimensions(mm)							Fig.
	M	a	b	b1	C	L	pitch	
SB1035	M10	16	10	-	-	35	1.5	1
SB1245	M12	18	12	-	-	45	1.75	1
SB1645	M16	24	16	-	-	45	2.0	1
SB2040	M20	30	20	-	-	40	2.5	1
MBA-M20	M20	50	14	20	27	30	2.5	2
MBA-M24	M24	65	14	24	37	36	3.0	2

Parts

Specification	Screw	Clamp	Clamp Screw	C-Ring	Wrench
Ø50~Ø80 (13type)	FTGA0513-P	CHH4.5R1	CTX04513H	CR03	TW20-100
Ø63~Ø160 (15type)	FTGA0513-P	CHH5.5R1	CTX0515	CR04	TW20-100

Available Inserts E22 Available Arbors and bolt E318~E320

HRMS 08 / 10



- AR : 7°
- RR : −11°~−5°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
HRMS	0820HR-2S20	2	20	20	50	130	1.0	0.3
	0820HR-2M20	2	20	20	100	180	1.0	0.4
	0820HR-2L20	2	20	20	130	250	1.0	0.5
	0821HR-2S20	2	21	20	50	130	1.0	0.3
	0821HR-2M20	2	21	20	50	180	1.0	0.4
	0821HR-2L20	2	21	20	50	250	1.0	0.5
	1025HR-2S25	2	25	25	60	140	1.5	0.4
	1025HR-2M25	2	25	25	120	200	1.5	0.6
	1025HR-2L25	2	25	25	180	300	1.5	0.9
	1026HR-2S25	2	26	25	60	140	1.5	0.4
	1026HR-2M25	2	26	25	60	200	1.5	0.6
	1026HR-2L25	2	26	25	60	300	1.5	1.0
	1030HR-2S32	2	30	32	70	150	1.5	0.8
	1030HR-2M32	2	30	32	120	200	1.5	1.0
	1030HR-2L32	2	30	32	180	300	1.5	1.5

Available Inserts

WDKT-MH

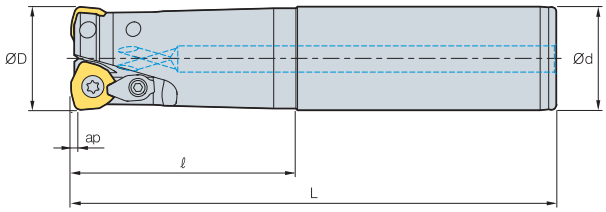
Type	Designation		Cermet		Coated									Uncoated			Page
			CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
08 type	WDKT	080316ZDSR-MH					●		●	●	●	●	●				E22
10 type	WDKT	10T320ZDSR-MH					●		●	●	●	●	●				

Parts

Specification	Screw	Clamp	Clamp Screw	C-Ring	Wrench
Ø20~Ø21 (08type)	FTNA0306	-	-	-	TW09P
Ø25~Ø30 (10type)	FTKA0408	CHH3.5R1	CTX03510	CR03	TW15S

Available Inserts E22

HRMS13



- AR : 7°
- RR : −11°~−5°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
HRMS	1332HR-2S32	2	32	32	70	150	2.0	0.8
	1332HR-2M32	2	32	32	120	200	2.0	1.0
	1332HR-2L32	2	32	32	180	300	2.0	1.6
	1333HR-2S32	2	33	32	70	150	2.0	0.8
	1333HR-2M32	2	33	32	70	200	2.0	1.1
	1333HR-2L32	2	33	32	70	300	2.0	1.7
	1335HR-2S32	2	35	32	50	150	2.0	0.8
	1335HR-2M32	2	35	32	50	200	2.0	1.1
	1335HR-2L32	2	35	32	50	300	2.0	1.7
	1340HR-3S32	3	40	32	50	150	2.0	0.8
	1340HR-3M32	3	40	32	50	250	2.0	1.4
	1340HR-3L32	3	40	32	50	300	2.0	1.7
	1340HR-3S40	3	40	40	60	150	2.0	1.2
	1340HR-3M40	3	40	40	130	250	2.0	2.1
	1340HR-3L40	3	40	40	180	300	2.0	2.6
	1340HR-3S42	3	40	42	60	150	2.0	1.4
	1340HR-3M42	3	40	42	130	250	2.0	2.3
	1340HR-3L42	3	40	42	180	300	2.0	2.7

Available Inserts

WDKT-MH

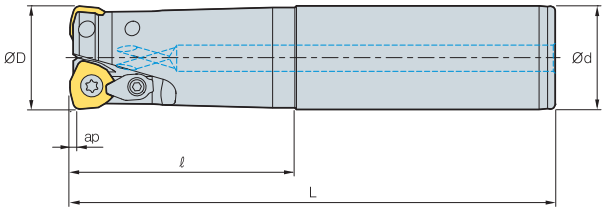
Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
WDKT	130520ZDSR-MH					●		●	●	●	●	●				E22

Parts

Specification	Screw	Clamp	Clamp Screw	C-Ring	Wrench
Ø32,33,35	FTGA0510-P	CHH4.5R1	CTX04513H	CR03	TW20
Ø40	FTGA0512-P	CHH5.5R1	CTX04513H	CR03	TW20

Available Inserts E22

HRMS15



AA 15°

- AR : 7°
- RR : −8°~−6°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
HRMS	1550HR-3S32	3	50	32	50	150	2.5	1.0
	1550HR-3M32	3	50	32	50	250	2.5	1.6
	1550HR-3L32	3	50	32	50	300	2.5	1.9
	1550HR-3S40	3	50	40	50	150	2.5	1.4
	1550HR-3M40	3	50	40	50	250	2.5	2.3
	1550HR-3L40	3	50	40	50	300	2.5	2.8
	1550HR-3S42	3	50	42	50	150	2.5	1.5
	1550HR-3M42	3	50	42	50	250	2.5	2.5
	1550HR-3L42	3	50	42	50	300	2.5	3.0
	1563HR-4S32	4	63	32	50	150	2.5	1.3
	1563HR-4M32	4	63	32	50	250	2.5	1.9
	1563HR-4L32	4	63	32	50	300	2.5	2.2
	1563HR-4S40	4	63	40	50	150	2.5	1.7
	1563HR-4M40	4	63	40	50	250	2.5	2.6
	1563HR-4L40	4	63	40	50	300	2.5	3.1
	1563HR-4S42	4	63	42	50	150	2.5	1.8
	1563HR-4M42	4	63	42	50	250	2.5	2.8
	1563HR-4L42	4	63	42	50	300	2.5	3.3

Available Inserts

WDKT-MH

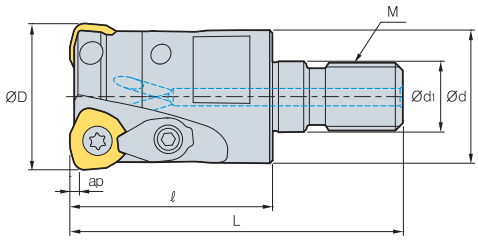
Designation		Cermet		Coated								Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
WDKT	150625ZDSR-MH					●		●	●	●	●	●				E22

Parts

Specification	Screw	Clamp	Clamp Screw	C-Ring	Wrench
Ø50~Ø63	FTGA0513-P	CHH5.5R1	CTX0515	CR04	TW20

Available Inserts E22

HRMM08 / 10 / 13



AA 15°

- AR : 7°
- RR : −11°~−5°

(mm)

Designation			ØD	Ød	Ød1	ℓ	L	M	ap	kg
HRMM	0820HR-M10	2	20	18	10.5	30	51	M10	1	0.06
	0821HR-M10	2	21	18	10.5	30	51	M10	1	0.06
	0825HR-M12	3	25	23	12.5	35	59	M12	1	0.11
	0826HR-M12	3	26	23	12.5	35	59	M12	1	0.11
	0828HR-M12	3	28	23	12.5	35	59	M12	1	0.12
	0832HR-M16	4	32	29	17	40	67	M16	1	0.21
	0833HR-M16	4	33	29	17	40	67	M16	1	0.21
	0835HR-M16	4	35	29	17	40	67	M16	1	0.23
	0840HR-M16	5	40	29	17	40	67	M16	1	0.25
	1025HR-M12	2	25	23	12.5	35	59	M12	1.5	0.1
	1026HR-M12	2	26	23	12.5	35	59	M12	1.5	0.1
	1030HR-M16	2	30	29	17	40	67	M16	1.5	0.2
	1032HR-M16	3	32	29	17	45	72	M16	1.5	0.26
	1035HR-M16	3	35	29	17	45	72	M16	1.5	0.23
	1040HR-M16	4	40	29	17	45	72	M16	1.5	0.27
	1332HR-M16	2	32	29	17	40	67	M16	2	0.17
	1333HR-M16	2	33	29	17	40	67	M16	2	0.17
	1335HR-M16	2	35	29	17	40	67	M16	2	0.19
	1340HR-M16	3	40	29	17	45	72	M16	2	0.24

Available Inserts

WDKT-MH

Type	Designation		Cermet		Coated									Uncoated			Page
			CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
08 type	WDKT	080316ZDSR-MH					●		●	●	●	●	●				E23
10 type	WDKT	10T320ZDSR-MH					●		●	●	●	●	●				
13 type	WDKT	130520ZDSR-MH					●		●	●	●	●	●				

Available Adaptor

Designation		Available Adaptor	Designation		Available Adaptor	Designation		Available Adaptor
HRMM	0820HR-M10	MAT-M10	HRMM	0835HR-M16	MAT-M16	HRMM	1040HR-M16	MAT-M16
	0821HR-M10			0840HR-M16			1332HR-M16	MAT-M16
	0825HR-M12	MAT-M12		1025HR-M12	MAT-M12		1333HR-M16	
	0826HR-M12			1026HR-M12			1335HR-M16	
	0828HR-M12			1030HR-M16	MAT-M16		1340HR-M16	
	0832HR-M16	MAT-M16		1032HR-M16				
	0833HR-M16			1035HR-M16				

Designation : HRMM0820HR-M10
Modular Head Threading Measure size(M10)

II

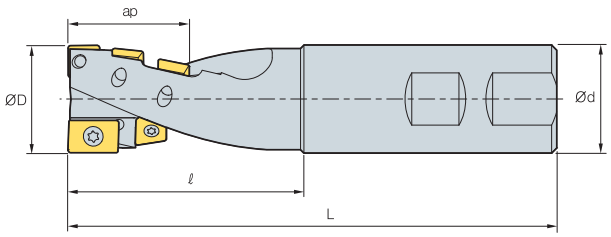
Adaptor Spec. : MAT-M10-030-S20S
Adaptor Threading Measure(M10)

Parts

Specification	Screw	Clamp	Clamp Screw	C-Ring	Wrench	Wrench
Ø20~Ø40 (08type)	FTNA0306	-	-	-	-	-
Ø25~Ø40 (10type)	FTKA0408	CHH3.5R1	CTX03510	CR03	TW15S	-
Ø32,33,35 (13type)	FTGA0510-P	CHH4.5R1	CTX04513H	CR03	-	TW20
Ø40 (13type)	FTGA0512-P	CHH5.5R1	CTX04513H	CR03	-	TW20

Available Inserts E23 Available Adaptors E281~E282

THE



- AR : 5°, 10°
- RR : −5°

(mm)

Designation		ØD	Ød	ℓ	L	ap	No. of flute	kg	Available Inserts	
									Lower cutting edge	External cutting edge
THE	25R	25	25	55	120	25	2	0.4	APLT070304R 1z	SPMT060304 4z
	32R	32	32	70	145	40	2	0.5	ADLT150308R 1z	SDMT090308-MM 5z
	40R	40	42	88	175	54	2	1.3	ZPMT1504PPSR-MM 1z	SPMT120408-MM 5z
	50R	50	42	85	175	54	4	1.4	ZPMT1504PPSR-MM 2z	SPMT120408-MM 10z

Available Inserts


ADLT


APLT


SPMT-MM


SPMT


SDMT-MM


ZPMT-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SPMT	060304			●												E04
SDMT	090308-MM					●					●					E05
SPMT	120408-MM					●		●			●					E14
APLT	070304R										●					E21
ADLT	150308R			●							●					E24
ZPMT	1504PPSR-MM					●		●			●					

Recommended cutting condition

• Grooving

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	90~140	0.05~0.20	PC5300
M	50~90	0.05~0.20	PC5300
K	70~120	0.05~0.25	PC5300

• Side cutting

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	150 ~240	0.05~0.20	PC5300
M	90~150	0.05~0.20	PC5300
K	120~200	0.10~0.25	PC5300

Parts

Specification	Screw	Wrench	Wrench
Ø25	ETNA02506	TW07P	-
Ø32	ETNA0408	-	TW15S
Ø40	ETNA0511	-	TW20S
Ø50	ETNA0511	-	TW20S

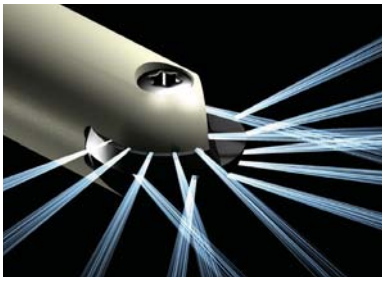
Available Inserts E04, E05, E14, E21, E24

Longer tool life is achieved due to the excellent cutting performance of the insert grade

Laser Mill

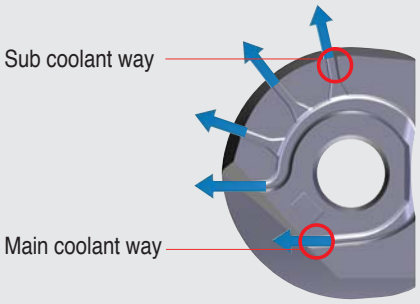
- Long tool life has been achieved due to the excellent cutting performance of the insert grade
- Optimum machining of molds has been achieved with the MQL available system
- Easy clamping with simple screw on system
- Various holder line up: steel shank, carbide shank, modular type
- High accuracy indexable endmills for mold finishing

MQL System

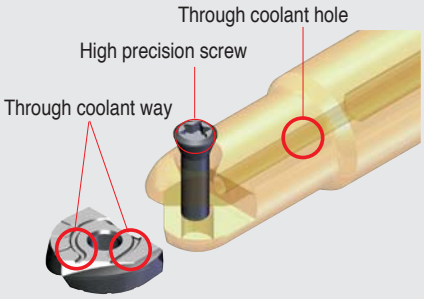


- Environmental friendly system
- Decreased coolant cost
- Lubrication of cutting edge
- Improved chip control property
- Increased tool life & improved surface quality

Clamping system



- **High precision (ground internal diameter)**
  Run-out : 0.02mm
  Accuracy of 'R part : below 0.01
- **Through coolant system**

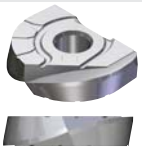
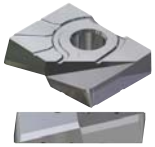
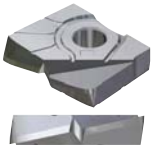
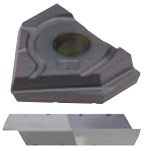
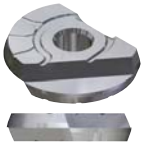
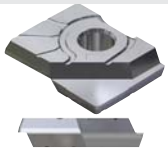


Features

LBE

- Six types of inserts are available with one holder
- Single screw for clamping of insert : Easy clamping system
- Various types of holders
  (Steel shank, Carbide shank, Modular type)
- MQL applicable - environmentally responsible with longer tool life & improved surface quality.

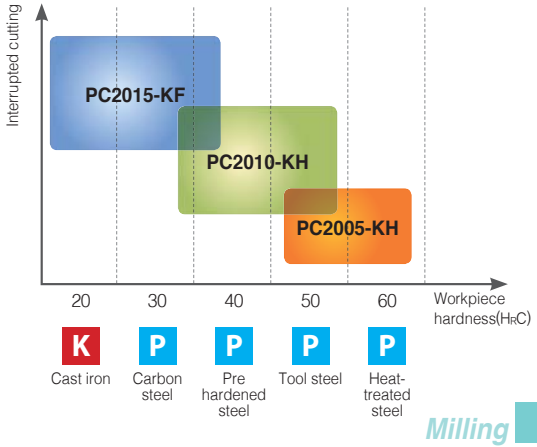
LBS, LR Order-made items

LBH-Ball	LRH-Corner radius	LFH-High feed	LCF-Chamfer	LBS-Ball type	LR-Corner R type
					
• Helical cutting edge • Suitable for harder material with high feed	• Helical cutting edge • Variety of nose -R	• Helical cutting edge • Suitable for high feed	• Straight cutting edge • Center drilling and chamfering	• Straight cutting edge • Suitable for precise	• Straight cutting edge • Variety of nose-R

Features of Laser Mill Grades

PC2005	• Extremely high hardness grade • The harmony between improved blade design and strong chip breaker • Optimized for machining heat-treated steel and high hardness steel
PC2010	• High wear resistance and excellent toughness • The harmony between excellent thermal shock resistance and strong cutting edges. • Optimized for machining tool steel and pre hardened steel
PC2015	• High welding resistance and excellent toughness • The harmony between tough grade and excellent cutting edge design • Optimized for machining carbon steel

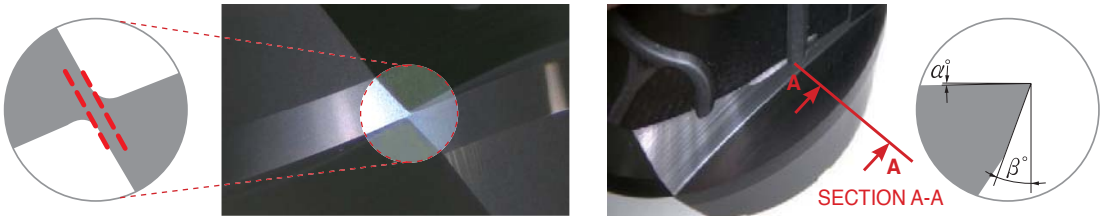
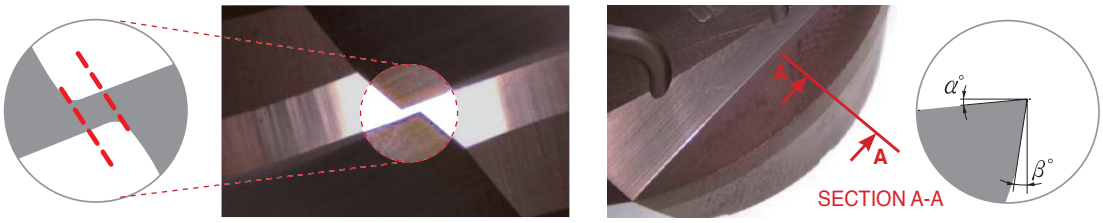
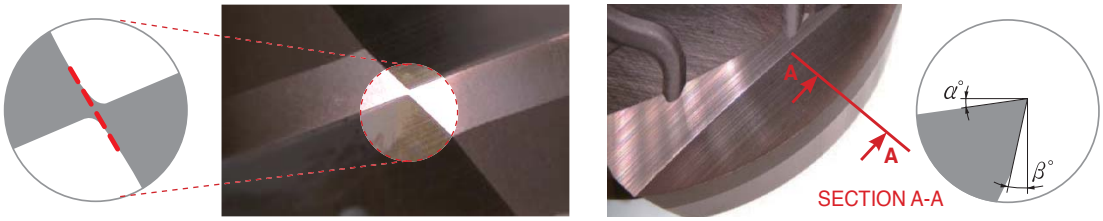
Application Guideline per Workpiece



Features of KF / KH Chip Breaker

▶ **KF** : Exclusive chip breaker for stable machining of carbon steel with its characteristics of high wear resistance at center part and improved blade design.

▶ **KH** : Stronger insert with the combination of rake angle and relief angle that are ideal for machining high hardness workpiece.

Type	Shape comparison
Standard (For general cutting)	
	• Proper to general cutting • Insert shape for uniform performance
KH (For high hardness steel)	
	• Center shaper proper for machining high hardness workpiece and uniformed tool life at center part • Improved cutting edge design by higher rake angle(α˚) • Lower relief angle(ß°) increases strength of cutting edges than universal inserts.
KF (For carbon steel)	
	• Smaller chisel improves wear resistance at center for machining carbon steel. • Improved cutting edge design by higher rake angle(α˚) • Longer tool life and better cutting performance with the use of excellent blade design

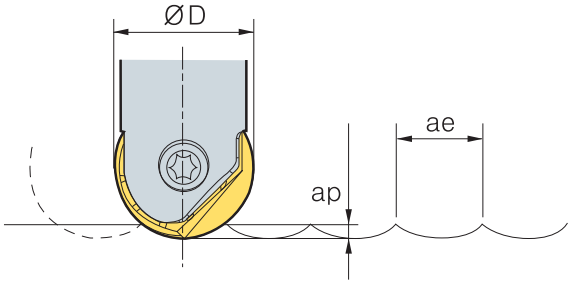
Recommended Cutting Conditions

Workpiece				Grade	Chip breaker	Recommended cutting conditions			
ISO		Material	HB(HRC)			vc(m/min)	fz(mm/t)	ap(mm)	ae(mm)
K	Gray cast iron	GC250	180(8)	PC2015 PC2010 PC2005	KF	130~210	0.2~0.5	0.07D	0.07D
K	Ductile cast iron	GCD600	250(24)						
P	Carbon steel	S20C~S50C	150			170~250	0.2~0.5	0.07D	0.07D
P	Alloy steel	SCM21~SCM5H	270(28)	PC2010 PC2015 PC210F	KH	130~210	0.1~0.3	0.7D	0.7D
P	Pre hardened steel	KP4M	300(32)			100~160	0.1~0.3	0.5D	0.5D
P		NIMAX	370(40)						
P		CENA1	370(40)						
P		NAK80	400(43)						
P		STAVAX	510(52)						
P	High speed tool steel	SKH51~SKH59	550(55)	PC2005 PC2010	KH	80~130	0.1~0.2	0.3D	0.3D
P	Alloy tool steel	STD61(Hot forging)	630(60)			70~120	0.1~0.2	0.3D	0.3D
P		STD11(Cold forging)							

Overhang	vc(m/min)	fz(mm/t)
Under 3D	100%	100%
3D ~ 5D	70%	70%
5D ~ 8D	60%	60%
8D ~ 10D	50%	50%

Cutting condition formula for milling

Practical Cutting speed	RPM
$vc_e = \frac{\pi \times De \times n}{1000}$ (m/min)	$n = \frac{vc_e \times 1000}{\pi \times De}$ (min^{-1})
Feed per tooth	**Feed per minute**
$fz = \frac{vf}{z \times n}$ (mm/t)	$vf = fz \times z \times n$ (mm/min)
Chip removal amount	**Power requirement**
$Q = \frac{ap \times ae \times vf}{1000}$ (cm^3/min)	$Pkw = \frac{Q \times kc}{60 \times 1000 \times \eta}$ (kW) $Php = \frac{Pc}{0.75}$ (hp)



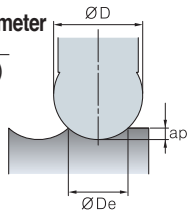
vc = Cutting speed(m/min)	Pkw = Power Requirement (kW)
vc_e = Practical cutting speed(m/min)	Php = Horsepower requirement(hp)
n = Revolution per Minute(min^{-1})	Q = Chip removal amount(cm^3/min)
D = Cutting diameter(mm)	ap = Depth of cut(mm)
De = Actual diameter(mm)	ae = Width of cut(mm)
vf = Feed per minute(mm/min)	kc = Specific cutting resistance(kg/mm^2)
fz = Feed per tooth(mm/t)	η = Mechanical efficiency(%)
z = Number of tooth	

Practical cutting speed calculation formulas

1. Formula of actual diameter

• **Formula : Actual diameter**

$De = 2\sqrt{ap(D-ap)}$



2. θ°Using : Calculating cutting speed at P point (Cutting speed according to depth of cut when ramping)

• **Formula : Practical cutting speed**

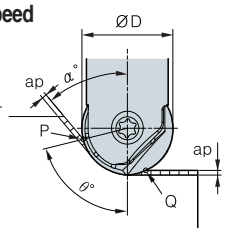
$vc_e = \frac{\pi\ D\sin\theta \times n}{1000}$ (m/min)

$\theta = \cos^{-1}\left(\frac{D-2ap}{D}\right) + (90-\alpha°)$

3. In case of using ap : Calculating cutting speed at Q point

• **Formula : Pratical cutting speed**

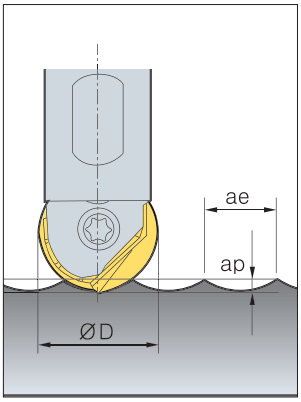
$vc_e = \frac{2\pi n\ \sqrt{ap(D-ap)}}{1000}$



Practical cutting speed calculation formulas

R(mm) \ ae(mm)	h(surface roughness) (μm)									
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
5	0.3	1.0	2.3	4.0	6.3	9.0	12.3	16.0	20.3	25.0
6	0.2	0.8	1.9	3.3	5.2	7.5	10.2	13.3	16.9	20.8
8	0.2	0.6	1.4	2.5	3.9	5.6	7.7	10.0	12.7	15.6
10	0.1	0.5	1.1	2.0	3.1	4.5	6.1	8.0	10.1	12.5
12.5	0.1	0.4	0.9	1.6	2.5	3.6	4.9	6.4	8.1	10.0
15	0.1	0.3	0.8	1.3	2.1	3.0	4.1	5.3	6.8	8.3
16	0.1	0.3	0.7	1.3	2.0	2.8	3.8	5.0	6.3	7.8

• Formula of surface roughness : h(surface finish) = $\frac{(ae)^2}{8R} \times 1000$(μm)



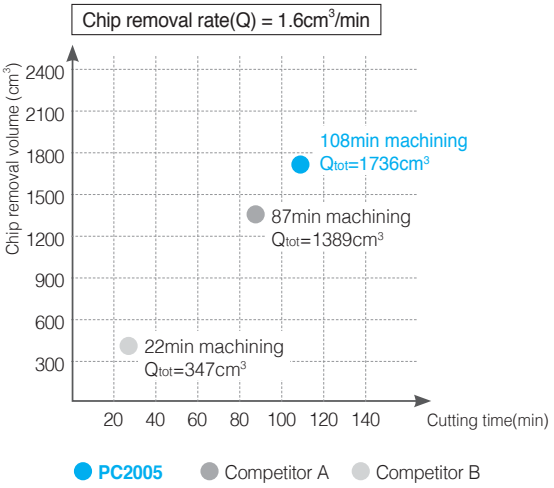
Actual diameter data

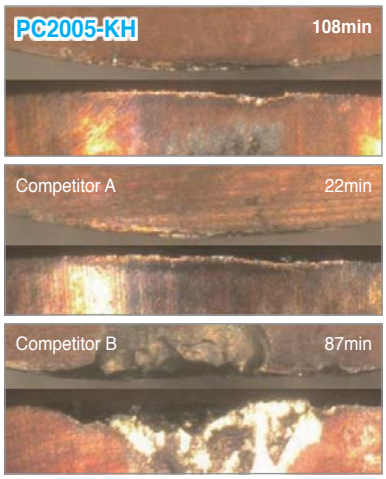
ap \ ØD	Ø08	Ø10	Ø12	Ø16	Ø20	Ø25	Ø30	Ø32
0.1	1.8	2.0	2.2	2.5	2.8	3.2	3.5	3.6
0.2	2.5	2.8	3.1	3.6	4.0	4.5	4.9	5.0
0.3	3.0	3.4	3.7	4.3	4.9	5.4	6.0	6.2
0.5	3.9	4.4	4.8	5.6	6.2	7.0	7.7	7.9
1.0	5.3	6.0	6.6	7.7	8.7	9.8	10.8	11.1
1.5	6.2	7.1	7.9	9.3	10.5	11.9	13.1	13.5
2.0	6.9	8.0	8.9	10.6	12.0	13.6	15.0	15.5
2.5	7.4	8.7	9.7	11.6	13.2	15.0	16.6	17.2
3.0	7.7	9.2	10.4	12.5	14.3	16.2	18.0	18.7
3.5	7.9	9.5	10.9	13.2	15.2	17.3	19.3	20.0
4.0	8.0	9.8	11.3	13.9	16.0	18.3	20.4	21.2
5.0			11.8	14.8	17.3	20.0	22.4	23.2
6.0			12.0	15.5	18.3	21.4	24.0	25.0
7.0				15.9	19.1	22.4	25.4	26.5
8.0				16.0	19.6	23.3	26.5	27.7
10.0					20.0	24.5	28.3	29.7

Performance Test

PC2005 tool life test — High hardness heat-treated steel (X100CrMoV5 1, heat-treated HRC60)

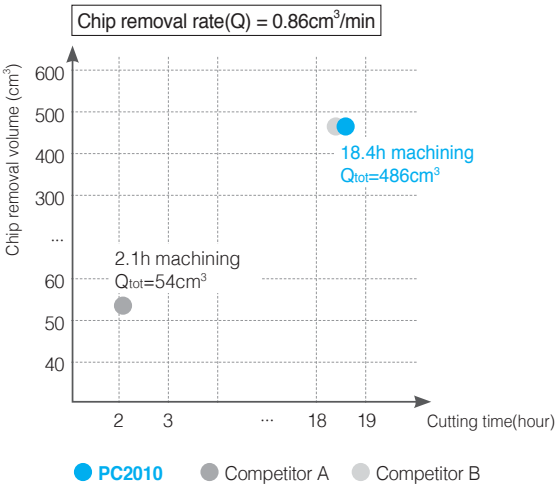
- Cutting conditions
  vc = 140m/min
  fz = 0.15mm/t
  ap = 1.2mm
  ae = 1.2mm
  Dry
- Tools
  Insert LBH120-KH (PC2005)

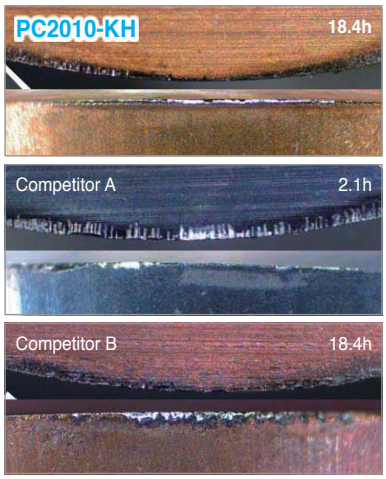




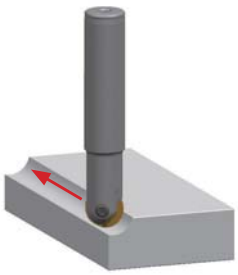
PC2010 tool life test — Pre hardened steel (X40CrMnNiMo8-6-4)

- Cutting conditions
  vc = 276m/min
  fz = 0.15mm/t
  ap = 0.3mm
  ae = 1.2mm
  Dry
- Tools
  Insert LBH120-KH (PC2010)

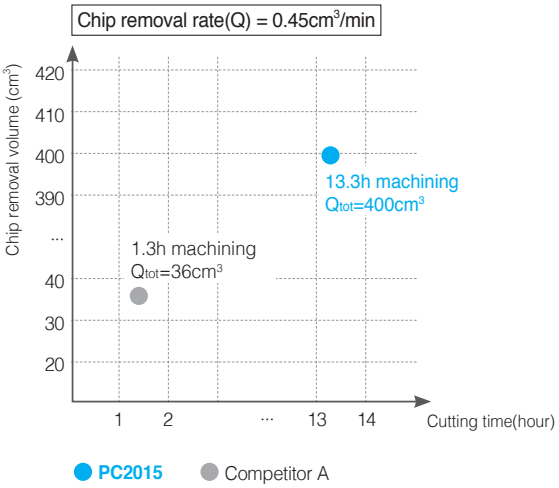




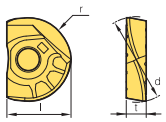
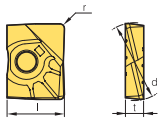
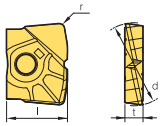
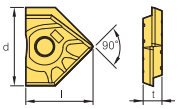
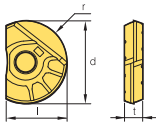
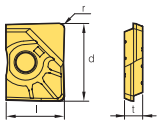
PC2015 tool life test — Carbon steel (C45)



- Cutting conditions
  vc = 250m/min
  fz = 0.35mm/t
  ap = 0.3mm
  ae = 0.3mm
  Dry
- Tools
  Insert LBH120 (PC2015)



Available Inserts

Holders	LBH (Ball type)	LRH (Corner radius type)	LFH (High feed type)	LCF (Chamfer type)	LBS(Ball type)	LR(Corner radius type)
	 R accuracy ±0.005	 Corner R ±0.015			 R accuracy ±0.005	 Corner R ±0.015
LBE080	LBH080 LBH090 LBH080-KF LBH090-KF LBH080-KH LBH090-KH				LBS080 LBS090	
LBE100 **LRE100**	LBH100 LBH110 LBH100-KF LBH110-KF LBH100-KH LBH110-KH	LRH100-R05 LRH100-R20 LRH100-R10 LRH110-R05	LFH100		LBS100 LBS110	LR100-R05 LR100-R20 LR100-R10 LR110-R05
LBE120 **LRE120**	LBH120 LBH130 LBH120-KF LBH130-KF LBH120-KH LBH130-KH	LRH120-R05 LRH120-R20 LRH120-R10 LRH130-R05	LFH120		LBS120 LBS130	LR120-R05 LR120-R20 LR120-R10 LR130-R05
LBE160 **LRE160**	LBH160 LBH170 LBH160-KF LBH170-KF LBH160-KH LBH170-KH	LRH160-R05 LRH160-R30 LRH160-R10 LRH170-R05 LRH160-R20	LFH160	LCF160-D90	LBS160 LBS170	LR160-R05 LR160-R30 LR160-R10 LR170-R05 LR160-R20
LBE200 **LRE200**	LBH200 LBH210 LBH200-KF LBH210-KF LBH200-KH LBH210-KH	LRH200-R05 LRH200-R30 LRH200-R10 LRH210-R05 LRH200-R20	LFH200	LCF200-D90	LBS200 LBS210	LR200-R05 LR200-R30 LR200-R10 LR210-R05 LR200-R20
LBE250 **LRE250**	LBH250 LBH260 LBH250-KF LBH260-KF LBH250-KH LBH260-KH	LRH250-R05 LRH250-R30 LRH250-R10 LRH260-R05 LRH250-R20	LFH250	LCF250-D90	LBS250 LBS260	LR250-R05 LR250-R30 LR250-R10 LR260-R05 LR250-R20
LBE300 **LRE300**	LBH300 LBH310 LBH300-KF LBH310-KF LBH300-KH LBH310-KH	LRH300-R10 LRH300-R30 LRH300-R20 LRH310-R05	LFH300		LBS300 LBS310	LR300-R10 LR300-R30 LR300-R20 LR310-R05
LBE320 **LRE320**	LBH320 LBH320-KF LBH320-KH	LRH320-R10 LRH320-R30 LRH320-R20	LFH320		LBS320	LR320-R10 LR320-R30 LR320-R20

Available Inserts E07, E08

Long tool life due to high hardness grade

GBE

- Indexable Ballnose Endmill for Molds in medium & roughing applications
- Long tool life with high hardness grade
- Helical high accuracy cutting edge
- Optimized mold machining process with our internal coolant system
- Able to adjust to medium processing in middle & big roughing mold process
- Various holders in normal & long style holders

Holder Code System

GBE	300	-	S	32
Product Name	**Machining Dia.**		**Type**	**Shank Dia.**
General Indexable Ball Endmill	Ø16, Ø18, Ø20, Ø22, Ø25, Ø26, Ø28, Ø30, Ø32, Ø40, Ø50		S : Standard shank L : Long shank	32 : Ø32

Internal	External
	
Flank support	Concave bottom

- Ability to handle high accuracy & large depth of cut applications.
  - Run-out : within 0.05mm
  - R accuracy : within 0.05mm
- Various diameters (Ø16,20,25,30,32,40,50)
- Minimal cutting resistance due to Helical cutting edge
- Anti-rotation of insert due to concave bottom & stable setting by flank support
- Long tool life & better processing due to 2 cutting inserts
- Better tool life with new grade

Multi Edge type

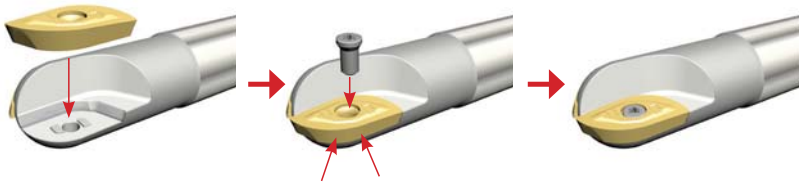
Single Edge type

Modular type

Projection

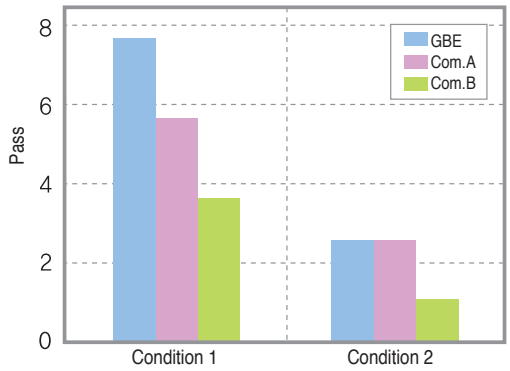
- Various diameters (Ø16,20,25,30,32,40,50)
- Improved chip treatment with internal coolant(cutting edge portion)
- Long tool life & better processing
- Easy insert setting with projection part to prevent vibration during processing

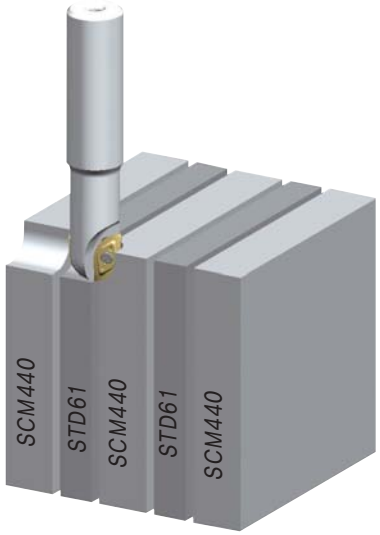
How to set insert



1. Set the insert to the holder projection seat
2. Push the insert into the pocket as shown by red arrows and screw down with wrench

Cutting Performance Test





Cutting condition

Class.	Cutting speed(vc)	Feed(fz)	Depth of cut(ap)	Depth of cut(ae)	Workpiece	Etc.
Condition 1	150m/min	0.15mm/t	5mm	8mm	STD61(HRC50) + SCM440(HRC20)	Dry
Condition 2	100m/min	0.1mm/t	8mm	8mm		

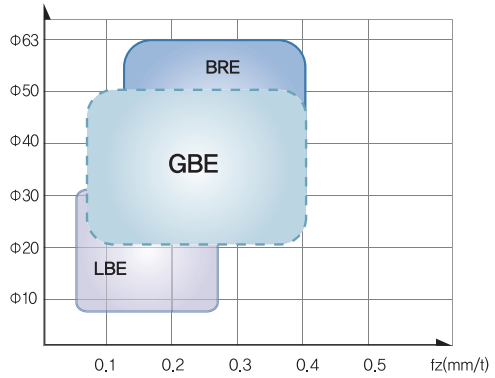
Inserts / Parts

Type	Insert			Parts			
							
				Screw		Wrench	
Dia.	Internal I/S	External I/S	External main I/S	Int./Ext. type	Ext. main type	Int./Ext. type	Ext. main type
Ø16	ZPET080M-MM	ZPET080S-MM	-	FTKA02555S	-	TW08S	-
Ø18	ZPET090M-MM	ZPET090S-MM	-	FTKA0307	-	TW09S	-
Ø20	ZPET100M-MM	ZPET100S-MM	SPMT060304	FTKA0307	ETNA02506	TW09S	TW07P
Ø22	ZPET110M-MM	ZPET110S-MM	SPMT060304	FTKA0408	ETNA02506	TW15S	TW07P
Ø25	ZPET125M-MM	ZPET125S-MM	SPMT060304	FTKA0409	ETNA02506	TW15S	TW07P
Ø26	ZPET130M-MM	ZPET130S-MM	SDMT090308-MM	FTKA0409	ETNA0408	TW15S	TW15S
Ø28	ZPET140M-MM	ZPET140S-MM	SDMT090308-MM	FTGA0511-P	ETNA0408	TW20	TW15S
Ø30	ZPET150M-MM	ZPET150S-MM	SDMT090308-MM	FTGA0511-P	ETNA0408	TW20-100	TW15S
Ø32	ZPET160M-MM	ZPET160S-MM	SDMT090308-MM	FTGA0511-P	ETNA0408	TW20-100	TW15S
Ø40	ZPET200M-MM	ZPET200S-MM	SPMT120408-MM	FTGA0614	ETNA0511	TW20-100	TW20S
Ø50	ZPET250M-MM	ZPET250S-MM	SPMT120408-MM	FTGA0818	ETNA0511	TW25S	TW20S

Recommended cutting condition

Workpiece	Machining type	Hardness (HRC)	vc(m/min)	fz(mm/t)	ap(mm)	ae(mm)
Carbon, Alloy steel	Flank Groove Deep flank	Under 25	160~250 120~200 160~250	0.1~0.5 0.1~0.5 0.1~0.5	0.3~0.5D 0.3~0.5D 1.0~1.5D	0.2~0.3D - 0.1~0.2D
Carbon, Alloy steel	Flank Groove Deep flank	Under 45	120~200 120~160 120~200	0.1~0.5 0.1~0.5 0.1~0.5	0.3~0.5D 0.3~0.5D 1.0~1.5D	0.2~0.3D - 0.1~0.2D
Mold Alloy steel	Flank Groove Deep flank	30~40	120~200 120~160 120~200	0.1~0.3 0.1~0.3 0.1~0.3	0.3~0.5D 0.3~0.5D 1.0~1.5D	0.2~0.3D - 0.1~0.2D
Cast iron(GC, GCD)	Flank Groove Deep flank	20~30	150~300 150~300 150~300	0.2~0.7 0.2~0.7 0.2~0.7	0.3~0.5D 0.3~0.5D 1.0~1.5D	0.2~0.3D - 0.1~0.2D
Heat treatment steel	Flank Groove Deep flank	50~60	40~100 40~100 40~100	0.1~0.3 0.1~0.3 0.1~0.3	0.3~0.5D 0.3~0.5D 1.0~1.5D	0.2~0.3D - 0.1~0.2D

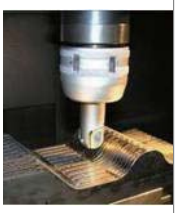
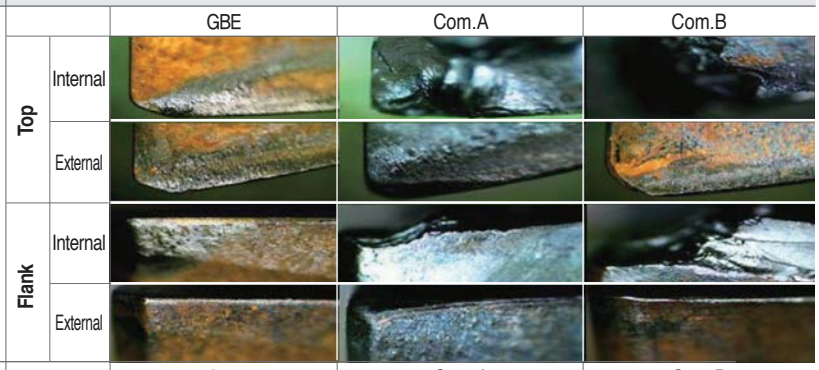
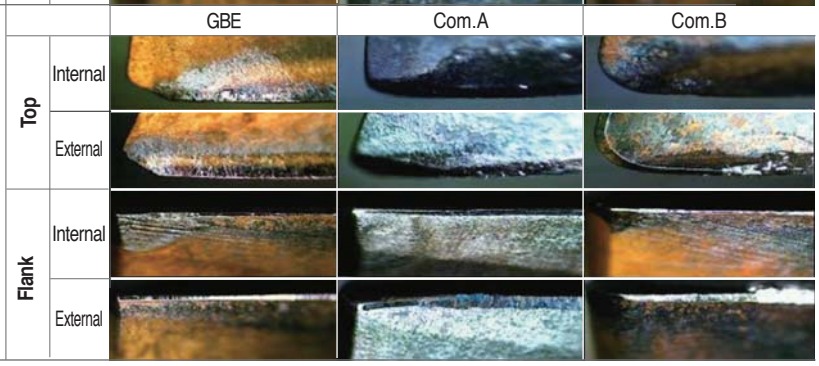
Line-up for Indexable ball Endmill



Type	Application				
	Machining Dignity	Machining Efficiency	Machining Dia. Equivalence	Economical	Flank Machining with LongEdge
Laser Mill	●	○	◐	○	○
GBE	◐	●	◐	◐	●
BRE	○	●	●	●	●

● : Very Good ◐ : Good ○ : Normal

Test Result for wear resistance

Cutting conditioin		Wear resistance photos
 Cutting time : 4 Pass	• Workpiece KP4M(HRC33), Dry • Condition vc = 280m/min fz = 0.25mm/t ap = 5~10mm ae = 5~10mm vf = 1,486mm/min n = 2,971rpm • Tool Holder : GBE300-S32 Insert : ZPET150M-MM(PC3500) ZPET150S-MM(PC3500)	 GBE / Com.A / Com.B Top: Internal, External Flank: Internal, External
 Cutting time : 4 Pass	• Workpiece STD11(HRC20), Dry • Condition vc = 250m/min fz = 0.2mm/t ap = 5mm ae = 5mm vf = 1,062mm/min n = 2,653rpm • Tool Holder : GBE300-S32 Insert : ZPET150M-MM(PC3500) ZPET150S-MM(PC3500)	 GBE / Com.A / Com.B Top: Internal, External Flank: Internal, External

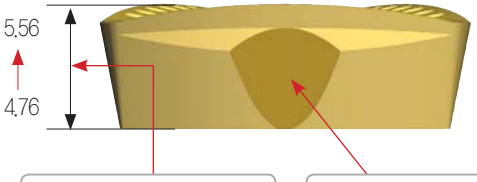
Better tool life and anti-breakage with special surface treatment on the holder

BRE

- Cutting Performance : Good chip control & Superior cutting performance with optimal cutting edge line
- High rigidity body : Better tool life and special surface treatment to strengthen the holder
  Easy to set and good durability with TCRX screw
  Good chip control with our 3D flute design & improved external quality
- Insert : Able to apply in high speed & feed applications due to special grade which has wear & breakage resistance and stable cutting performance with high cutting edge toughness & high rake angle chip breaker

Multi edge holder ISO View

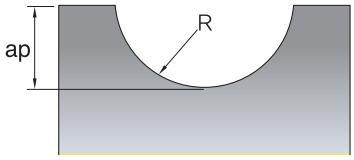
- Good chip flow
- Good heat emission



- Wider insert ensures cutting edge strength
- Better setting force by recess

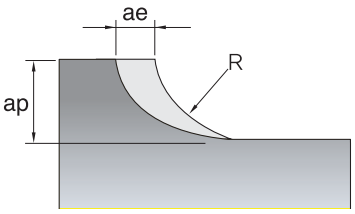
BRE machining type for roughing & Recommended cutting condition

Machining Type 1



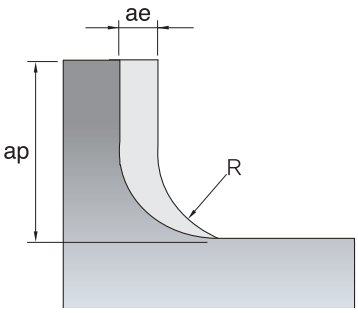
ap=0.3D - 0.5D

Machining Type 2



ae=0.2D - 0.3D ap=0.3D - 0.5D

Machining Type 3



ae=0.1D - 0.5D ap=1.2D - 1.5D

Workpiece	Machining Type	Velocity(m/min)	Feed(mm/t)	Grade
Carbon / Alloy steel	1 2 3	120~220 120~220 100~180	0.1~0.4 0.2~0.4 0.1~0.3	NCM325 NCM325 NCM325
Alloy steel	1 2 3	100~200 100~200 80~160	0.1~0.4 0.2~0.4 0.1~0.3	NCM325 NCM325 NCM325
Tool steel	1 2 3	80~150 80~150 60~120	0.1~0.3 0.15~0.35 0.1~0.3	NCM325 NCM325 NCM325
High hardness material (H_R35-45)	1 2 3	60~120 60~120 50~80	0.1~0.3 0.1~0.3 0.1~0.2	NCM325 NCM325 NCM325
Cast iron	1 2 3	100~180 100~180 80~160	0.2~0.5 0.2~0.5 0.15~0.4	NCM320K NCM320K NCM320K

Steel Shank (Ball Type)

Straight type

LBE 08/10/12/16/20/25/30/32

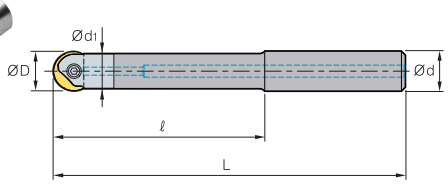


Fig. 1

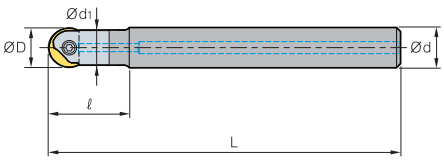


Fig. 2

(mm)

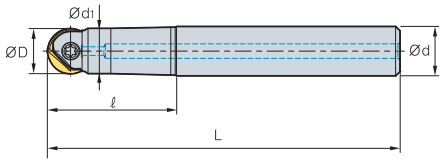
	Designation	Dimensions					Parts		Available Inserts(Ø)	Fig.
		ØD	Ød	Ød1	ℓ	L	Clamp Screw	Wrench		
LBE	080080S-S08C	8, 9	8	7.5	80	136	ETND02506F	TWP07S	8,9	1
	080100S-S08C	8, 9	8	7.5	100	156				1
	080020S-S08C-130	8, 9	8	7.5	20	130	ETND02506F	TWP07S	8,9	2
	080020S-S08C-150	8, 9	8	7.5	20	150				2
	100080S-S10C	10, 11	10	9.5	80	136	ETND0307F	TWP08S	10, 11	1
	100120S-S10C	10, 11	10	9.5	120	176				1
	100023S-S10C-130	10, 11	10	9.5	23	130	ETND0307F	TWP08S	10, 11	2
	100023S-S10C-170	10, 11	10	9.5	23	170				2
	120100S-S12C	12, 13	12	11.5	100	156	ETND03509	TWP10S	12,13	1
	120150S-S12C	12, 13	12	11.5	150	206				1
	120025S-S12C-150	12, 13	12	11.5	25	150	ETND03509	TWP10S	12,13	2
	120025S-S12C-200	12, 13	12	11.5	25	200				2
	160100S-S16C	16, 17	16	15.5	100	160	ETND0413	TWP15S	16,17	1
	160150S-S16C	16, 17	16	15.5	150	210				1
	160030S-S16C-160	16, 17	16	15.5	30	160	ETND0413	TWP15S	16,17	2
	160030S-S16C-210	16, 17	16	15.5	30	210				2
	200120S-S20C	20, 21	20	19.5	120	190	ETKD0516	TWP20	20,21	1
	200170S-S20C	20, 21	20	19.5	170	240				1
	200035S-S20C-190	20, 21	20	19.5	35	190	ETKD0516	TWP20	20,21	2
	200035S-S20C-240	20, 21	20	19.5	35	240				2
	250140S-S25C	25, 26	25	24.5	140	220	ETKD0620	TWP25	25,26	1
	250170S-S25C	25, 26	25	24.5	170	250				1
	250040S-S25C-220	25, 26	25	24.5	40	220	ETKD0620	TWP25	25,26	2
	250040S-S25C-250	25, 26	25	24.5	40	250				2
	300140S-S32C	30, 31	32	29.5	140	230	ETGD0825	TWP40	30,31	1
	300170S-S32C	30, 31	32	29.5	170	260				1
	300050S-S32C-230	30, 31	32	29.5	50	230	ETGD0825	TWP40	30,31	2
	300050S-S32C-260	30, 31	32	29.5	50	260				2
	320140S-S32C	32	32	31.5	140	230	ETGD0825	TWP40	32	1
	320170S-S32C	32	32	31.5	170	260				1
	320050S-S32C-230	32	32	31.5	50	230	ETGD0825	TWP40	32	2
	320050S-S32C-260	32	32	31.5	50	260				2

Available Inserts **E07, E08**

Steel Shank (Ball Type)

Taper type

LBE 08 / 10 / 12 / 16 / 20 / 25 / 30 / 32



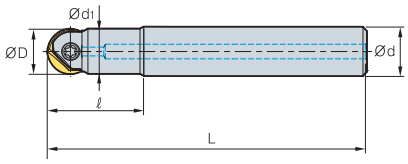
(mm)

Designation		Dimensions					Parts		Available Inserts(Ø)
		ØD	Ød	Ød1	ℓ	L	Clamp Screw	Wrench	
LBE	080035T-S12	8, 9	12	7.5	35	91	ETND02506F	TWP07S	8, 9
	080055T-S12	8, 9	12	7.5	55	111			
	080075T-S12	8, 9	12	7.5	75	131			
	100035T-S12	10, 11	12	9.5	35	91	ETND0307F	TWP08S	10, 11
	100055T-S12	10, 11	12	9.5	55	111			
	100075T-S12	10, 11	12	9.5	75	131			
	120055T-S12	12, 13	12	10.4	55	111	ETND03509	TWP10S	12, 13
	120085T-S16	12, 13	16	11.5	85	145			
	160065T-S16	16, 17	16	14	65	125	ETND0413	TWP15S	16, 17
	160100T-S20	16, 17	20	15.5	100	170			
	200075T-S20	20, 21	20	17.5	75	145	ETKD0516	TWP20	20, 21
	200115T-S25	20, 21	25	19.5	115	195			
	250090T-S25	25, 26	25	22	90	170	ETKD0620	TWP25	25, 26
	250135T-S32	25, 26	32	24.5	135	225			
	300105T-S32	30, 31	32	29.5	105	195	ETGD0825	TWP40	30, 31
	300160T-S32	30, 31	32	29.5	160	250			
	320105T-S32	32	32	29	105	195	ETGD0825	TWP40	32
	320160T-S32	32	32	29	160	250			

Steel Shank (Ball Type)

Straight type

LBE12 / 16 / 20 / 25 / 30 / 32



(mm)

Designation		Dimensions					Parts		Available Inserts(Ø)
		ØD	Ød	Ød1	ℓ	L	Clamp Screw	Wrench	
LBE	120035S-S12	12, 13	12	11.5	35	91	ETND03509	TWP10S	12,13
	160035S-S16	16, 17	16	15.5	35	95	ETND0413	TWP15S	16,17
	200040S-S20	20, 21	20	19.5	40	110	ETKD0516	TWP20	20,21
	250045S-S25	25, 26	25	24.5	40	125	ETKD0620	TWP25	25,26
	300055S-S32	30, 31	32	29.5	55	145	ETGD0825	TWP40	30,31
	320055S-S32	32	32	31.5	55	145	ETGD0825	TWP40	32

Available Inserts **E07, E08**

Carbide Shank (Corner R type)

Straight type

LRE 10/12/16/20/25/30/32

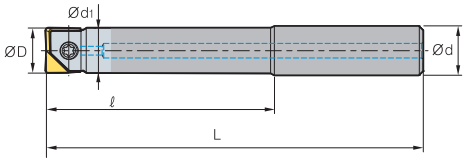


Fig. 1

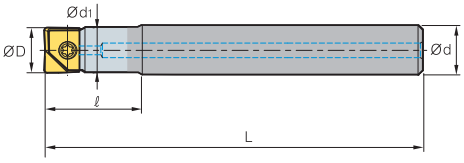


Fig. 2

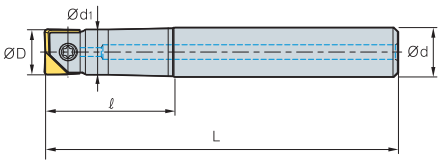
(mm)

Designation		Dimensions					Parts		Available Inserts(Ø)	Fig.
		ØD	Ød	Ød1	ℓ	L	Clamp Screw	Wrench		
LRE	100080S-S10C	10, 11	10	9.5	80	136	ETND0307F	TWP08S	10, 11	1
	100120S-S10C	10, 11	10	9.5	120	176				1
	100023S-S10C-130	10, 11	10	9.5	23	130	ETND0307F	TWP08S	10, 11	2
	100023S-S10C-170	10, 11	10	9.5	23	170				2
	120100S-S12C	12, 13	12	11.5	100	156	ETND03509	TWP10S	12,13	1
	120150S-S12C	12, 13	12	11.5	150	206				1
	120025S-S12C-150	12, 13	12	11.5	25	150	ETND03509	TWP10S	12,13	2
	120025S-S12C-200	12, 13	12	11.5	25	200				2
	160100S-S16C	16, 17	16	15.5	100	160	ETND0413	TWP15S	16,17	1
	160150S-S16C	16, 17	16	15.5	150	210				1
	160030S-S16C-160	16, 17	16	15.5	30	160	ETND0413	TWP15S	16,17	2
	160030S-S16C-210	16, 17	16	15.5	30	210				2
	200120S-S20C	20, 21	20	19.5	120	190	ETKD0516	TWP20	20,21	1
	200170S-S20C	20, 21	20	19.5	170	240				1
	200035S-S20C-190	20, 21	20	19.5	35	190	ETKD0516	TWP20	20,21	2
	200035S-S20C-240	20, 21	20	19.5	35	240				2
	250140S-S25C	25, 26	25	24.5	140	220	ETKD0620	TWP25	25,26	1
	250170S-S25C	25, 26	25	24.5	170	250				1
	250040S-S25C-220	25, 26	25	24.5	40	220	ETKD0620	TWP25	25,26	2
	250040S-S25C-250	25, 26	25	24.5	40	250				2
	300140S-S32C	30, 31	32	29.5	140	230	ETGD0825	TWP40	30,31	1
	300170S-S32C	30, 31	32	29.5	170	260				1
	300050S-S32C-230	30, 31	32	29.5	50	230	ETGD0825	TWP40	30,31	2
	300050S-S32C-260	30, 31	32	29..5	50	260				2
	320140S-S32C	32	32	31.5	140	230	ETGD0825	TWP40	32	1
	320170S-S32C	32	32	31.5	170	260				1
	320050S-S32C-230	32	32	31.5	50	230	ETGD0825	TWP40	32	2
	320050S-S32C-260	32	32	31.5	50	260				2

Steel Shank (Corner R type)

Taper type

LRE 10 / 12



(mm)

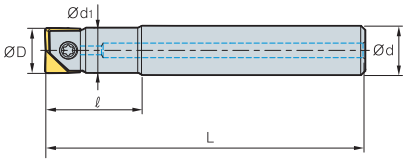
Designation		Dimensions					Parts		Available Inserts(Ø)
		ØD	Ød	Ød1	ℓ	L	Clamp Screw	Wrench	
LRE	100025T-S12	10, 11	12	9.5	25	111	ETND0307F	TWP08S	10,11
	100050T-S12	10, 11	12	9.5	50	150			
	120060T-S16	12, 13	16	11.5	60	160	ETND03509	TWP10S	12,13

● Stock item

Available Inserts E07, E08

Steel Shank (Corner R type)
LRE 12/16/25/30/32

Straight type



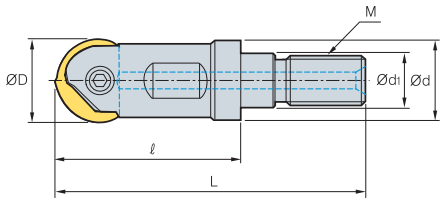
(mm)

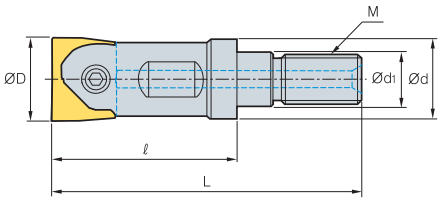
Designation		Dimensions					Parts		Available Inserts(Ø)
		ØD	Ød	Ød1	ℓ	L	Clamp Screw	Wrench	
LRE	120030S-S12	12, 13	12	11.5	30	111	ETND03509	TWP10S	12, 13
	160050S-S16	16, 17	16	15.5	50	131	ETND0413	TWP15S	16, 17
	160060S-S16	16, 17	16	15.5	60	160			
	200060S-S20	20, 21	20	19.5	60	145	ETKD0516	TWP20	20, 21
	200080S-S20	20, 21	20	19.5	80	180			
	250070S-S25	25, 26	25	24.5	70	145	ETKD0620	TWP25	25, 26
	250100S-S25	25, 26	25	24.5	100	225			
	300070S-S32	30, 31	32	29.5	70	160	ETGD0825	TWP40	30, 31
	300100S-S32	30, 31	32	29.5	100	225			
	320080S-S32	32	32	31.5	80	160	ETGD0825	TWP40	32
	320100S-S32	32	32	31.5	100	225			

Available Inserts E07, E08

• T stands for taper type, S stands for straight type

LBE-MHD





(mm)

Designation		Dimensions						Parts		Available Inserts(Ø)
		M	ØD	L	ℓ	Ød	Ød1	Clamp Screw	Wrench	
LBE	100-MHD-M06	M06	10, 11	40	25	9.5	6.5	ETND0307F	TWP08S	10, 11
	120-MHD-M06	M06	12, 13	40	25	11	6.5	ETND03509	TWP10S	12, 13
	160-MHD-M08	M08	16, 17	47	30	14.5	8.5	ETND0413	TWP15S	16, 17
	200-MHD-M10	M10	20, 21	56	35	18	10.5	ETKD0516	TWP20	20, 21
	250-MHD-M12	M12	25, 26	69	45	22.5	12.5	ETKD0620	TWP25	25, 26
	300-MHD-M16	M16	30, 31	77	50	28	17	ETGD0825	TWP40	30, 31
	320-MHD-M16	M16	32	77	50	29	17	ETGD0825	TWP40	32

Designation : LBE320-MHD-M16
Modular Head Threading Measure size(M16)

=

Adaptor Spec. : MAT-M16-035-S32S
Adaptor Threading Measure(M16)

Available Inserts E07, E08

Available Adaptors E281~E282

BFE

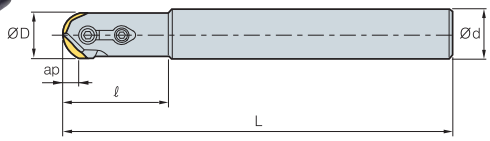


Fig. 1

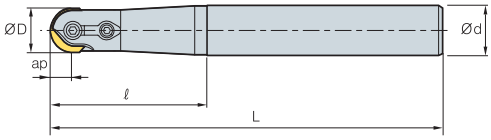
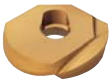


Fig. 2

(mm)

Designation		ØD	Ød	ℓ	L	ap	kg	Fig.	Available Inserts
BFE	16-S	16	16	36	140	8.0	0.2	1	RC16
	16-M	16	20	65	170	8.0	0.3	2	
	16-L	16	25	65	200	8.0	0.5	2	
	20-S	20	20	45	160	10.0	0.4	1	RC20
	20-M	20	25	80	200	10.0	0.6	2	
	20-L	20	25	80	250	10.0	0.8	2	
	25-S	25	25	45	160	12.5	0.7	1	RC25
	25-M	25	32	90	210	12.5	1.1	2	
	25-L	25	32	90	300	12.5	1.7	2	
	30-S	30	32	65	175	15.0	0.9	2	RC30
	30-M	30	32	100	250	15.0	1.4	2	
	30-L	30	32	100	350	15.0	2.0	2	
	32-S	32	32	56	175	16.0	0.9	1	RC32
	32-M	32	32	100	250	16.0	1.4	1	
	32-L	32	32	100	350	16.0	2.0	1	

Available Inserts



RC

Designation		Coated PC210F	Page
RC	16	●	E12
	20	●	
	25	●	
	30		
	32	●	

Recommended cutting condition

Workpiece	Cutting Condition vc(m/min)	Cutting Condition fz(mm/t)
General steel(SS41, SM25C) Over HB180	150 ~ 250	0.10 ~ 0.30
Alloy steel(SM55C, SCM) Under HB300	100 ~ 200	0.10 ~ 0.20
Cast iron Under HB300	100 ~ 200	0.10~ 0.30

Parts

Specification	Screw	Clamp	Clamp Screw	Stopper Ring	Wrench
Ø16	FTGA0513	CBH4.5R1	CTX04513	ER03	TW20
Ø20	FTGA0517	CBH4.5R2	CTX04513	ER03	TW20
Ø25	FTGA0621	CBH5R1	CTX0517	ER04	TW20
Ø30, 32	FTGA0826	CBH6R1	CTX0621	ER05	TW25

Available Inserts E12

GBE (Single Edge)

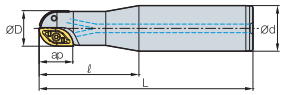


Fig. 1

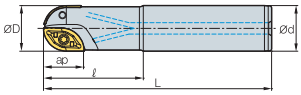


Fig. 2

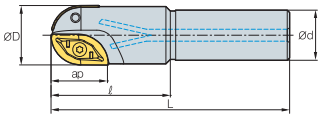


Fig. 2

(mm)

Designation		Dimensions					Available Inserts			Parts				Fig.
		ØD	Ød	ℓ	L	ap	Internal	External	Ext. main	Screw		Wrench		
										Int./Ext. type	Ext. main type	Int./Ext. type	Ext. main type	
GBE	**160-S20**	16	20	50	130	15	ZPET080M-MM	ZPET080S-MM	-	FTKA02555S	-	TW08S	-	1
	160-L20	16	20	90	200	15	ZPET080M-MM	ZPET080S-MM	-	FTKA02555S	-	TW08S	-	1
	180-S20	18	20	60	130	17	ZPET090M-MM	ZPET090S-MM	-	FTKA0307	-	TW09S	-	1
	180-L20	18	20	80	200	17	ZPET090M-MM	ZPET090S-MM	-	FTKA0307	-	TW09S	-	1
	200-S25	20	25	60	140	18	ZPET100M-MM	ZPET100S-MM	-	FTKA0307	-	TW09S	-	1
	200-L25	20	25	80	250	18	ZPET100M-MM	ZPET100S-MM	-	FTKA0307	-	TW09S	-	1
	220-S25	22	25	70	140	21	ZPET110M-MM	ZPET110S-MM	-	FTKA0408	-	TW15S	-	1
	220-L25	22	25	100	250	21	ZPET110M-MM	ZPET110S-MM	-	FTKA0408	-	TW15S	-	1
	250-S32	25	32	70	150	23	ZPET125M-MM	ZPET125S-MM	-	FTKA0409	-	TW15S	-	1
	250-L32	25	32	100	300	23	ZPET125M-MM	ZPET125S-MM	-	FTKA0409	-	TW15S	-	1
	260-S32	26	32	70	150	24.5	ZPET130M-MM	ZPET130S-MM	-	FTKA0409	-	TW15S	-	1
	260-L32	26	32	100	300	24.5	ZPET130M-MM	ZPET130S-MM	-	FTKA0409	-	TW15S	-	1
	280-S32	28	32	70	150	26	ZPET140M-MM	ZPET140S-MM	-	FTGA0511-P	-	TW20	-	1
	280-L32	28	32	120	300	26	ZPET140M-MM	ZPET140S-MM	-	FTGA0511-P	-	TW20	-	1
	300-S32	30	32	70	160	27	ZPET150M-MM	ZPET150S-MM	-	FTGA0511-P	-	TW20-100	-	2
	300-L32	30	32	120	350	27	ZPET150M-MM	ZPET150S-MM	-	FTGA0511-P	-	TW20-100	-	2
	320-S32	32	32	70	160	28	ZPET160M-MM	ZPET160S-MM	-	FTGA0511-P	-	TW20-100	-	2
	320-L32	32	32	120	350	28	ZPET160M-MM	ZPET160S-MM	-	FTGA0511-P	-	TW20-100	-	2
	400-S42	40	42	100	200	37	ZPET200M-MM	ZPET200S-MM	-	FTGA0614	-	TW20-100	-	2
	400-L42	40	42	150	350	37	ZPET200M-MM	ZPET200S-MM	-	FTGA0614	-	TW20-100	-	2
	500-S42	50	42	100	200	47	ZPET250M-MM	ZPET250S-MM	-	FTGA0818	-	TW25-100	-	3
	500-L42	50	42	100	350	47	ZPET250M-MM	ZPET250S-MM	-	FTGA0818	-	TW25-100	-	3

Available Inserts **E23**

GBE-M (Multi Edge)

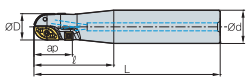


Fig. 1

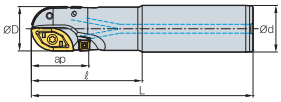


Fig. 2

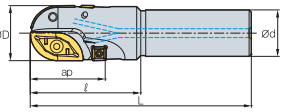
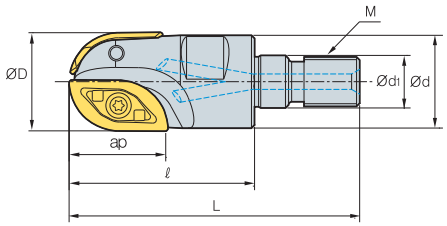


Fig. 3

Designation		Dimensions					Available Inserts			Parts				Fig.
										Screw		Wrench		
		ØD	Ød	ℓ	L	ap	Internal	External	Ext. main	Int./Ext. type	Ext. main type	Int./Ext. type	Ext. main type	
GBE	**200M-S25**	20	25	70	150	28	ZPET100M-MM	ZPET100S-MM	SPMT060304	FTKA0307	ETNA02506	TW09S	TW07P	1
	200M-L25	20	25	70	250	28	ZPET100M-MM	ZPET100S-MM	SPMT060304	FTKA0307	ETNA02506	TW09S	TW07P	1
	220M-S25	22	25	80	150	31	ZPET110M-MM	ZPET110S-MM	SPMT060304	FTKA0408	ETNA02506	TW15S	TW07P	1
	220M-L25	22	25	80	250	31	ZPET110M-MM	ZPET110S-MM	SPMT060304	FTKA0408	ETNA02506	TW15S	TW07P	1
	250M-S32	25	32	80	180	33	ZPET125M-MM	ZPET125S-MM	SPMT060304	FTKA0409	ETNA02506	TW15S	TW07P	1
	250M-L32	25	32	80	300	33	ZPET125M-MM	ZPET125S-MM	SPMT060304	FTKA0409	ETNA02506	TW15S	TW07P	1
	260M-S32	26	32	80	180	39	ZPET130M-MM	ZPET130S-MM	SDMT090308-MM	FTKA0409	ETNA0408	TW15S	TW15S	1
	260M-L32	26	32	80	300	39	ZPET130M-MM	ZPET130S-MM	SDMT090308-MM	FTKA0409	ETNA0408	TW15S	TW15S	1
	280M-S32	28	32	80	180	41	ZPET140M-MM	ZPET140S-MM	SDMT090308-MM	FTGA0511-P	ETNA0408	TW20	TW15S	1
	280M-L32	28	32	80	300	41	ZPET140M-MM	ZPET140S-MM	SDMT090308-MM	FTGA0511-P	ETNA0408	TW20	TW15S	1
	300M-S32	30	32	100	200	41	ZPET150M-MM	ZPET150S-MM	SDMT090308-MM	FTGA0511-P	ETNA0408	TW20-100	TW15S	1
	300M-L32	30	32	100	350	41	ZPET150M-MM	ZPET150S-MM	SDMT090308-MM	FTGA0511-P	ETNA0408	TW20-100	TW15S	1
	320M-S32	32	32	100	200	42	ZPET160M-MM	ZPET160S-MM	SDMT090308-MM	FTGA0511-P	ETNA0408	TW20-100	TW15S	2
	320M-L32	32	32	100	350	42	ZPET160M-MM	ZPET160S-MM	SDMT090308-MM	FTGA0511-P	ETNA0408	TW20-100	TW15S	2
	400M-S42	40	42	100	200	56	ZPET200M-MM	ZPET200S-MM	SPMT120408-MM	FTGA0614	ETNA0511	TW20-100	TW20S	2
	400M-L42	40	42	100	350	56	ZPET200M-MM	ZPET200S-MM	SPMT120408-MM	FTGA0614	ETNA0511	TW20-100	TW20S	2
	500M-S42	50	42	100	200	67	ZPET250M-MM	ZPET250S-MM	SPMT120408-MM	FTGA0818	ETNA0511	TW25-100	TW20S	3
	500M-L42	50	42	100	350	67	ZPET250M-MM	ZPET250S-MM	SPMT120408-MM	FTGA0818	ETNA0511	TW25-100	TW20S	3

Available Inserts **E23**

GBEM



(mm)

Designation		Dimensions							Available Inserts	
		ØD	Ød	Ød1	ℓ	L	M	ap	Internal	External
GBEM	160-M08	16	15	8.5	30	47	M08	15	ZPET080M-MM	ZPET080S-MM
	200-M10	20	18.6	10.5	35	56	M10	18	ZPET100M-MM	ZPET100S-MM
	250-M12	25	23.2	12.5	45	69	M12	23	ZPET125M-MM	ZPET125S-MM
	300-M16	30	27.8	17	50	77	M16	27	ZPET150M-MM	ZPET150S-MM
	320-M16	32	29.8	17	50	77	M16	28	ZPET160M-MM	ZPET160S-MM

Available Inserts


Internal
ZPET-M


External
ZPET-S


Ext. main
SPMT


Ext. main
SPMT-MM

Designation		Coated				Page
		NCM325	PC3500	PC5300	PC3545	
ZPET	080M-MM					E23
	090M-MM		●	●		
	100M-MM		●	●		
	110M-MM		●	●		
	125M-MM		●	●		
	130M-MM		●	●		
	140M-MM		●	●		
	150M-MM		●	●		
	160M-MM		●	●		
	200M-MM		●			
	250M-MM					
ZPET	080S-MM					
	090S-MM		●	●		
	100S-MM		●	●		
	110S-MM					
	125S-MM		●	●		
	130S-MM		●	●		
	140S-MM		●	●		
	150S-MM		●	●		
	160S-MM		●	●		
	200S-MM		●			
	250S-MM					
SPMT	060304	●				E20
SDMT	090308-MM		●	●		E14
SPMT	120408-MM		●	●	●	E20

Parts

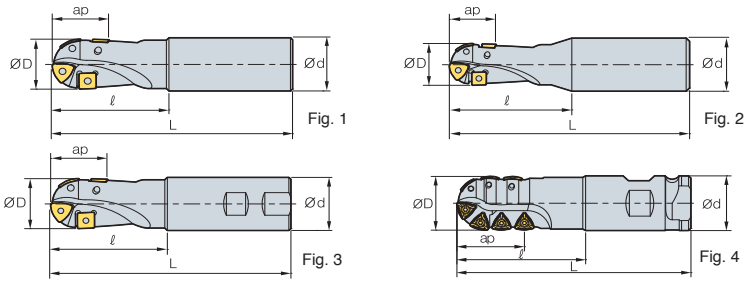
Specification	Screw		Wrench		Cutter Dia.
	Int./Ext. type	Ext. main type	Int./Ext. type	Ext. main type	
Ø16	FTKA02555	–	TW08S	–	Ø16
Ø20	FTKA0307	ETNA02506	TW09S	TW07P	Ø20
Ø25	FTKA0409	ETNA02506	TW15S	TW07P	Ø25
Ø30	FTGA0511-P	ETNA0408	TW20–100	TW15S	Ø30
Ø32	FTGA0511-P	ETNA0408	TW20–100	TW15S	Ø32

Designation : GBEM320-M16
Modular Head Threading Measure size(M16)

Adaptor Spec. : MAT-M16-035-S32S
Adaptor Threading Measure(M16)

Available Inserts **E14, E20, E23** Available Adaptors **E281~E282**

BRE

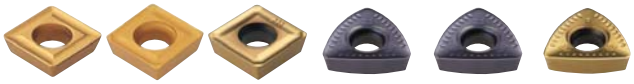


• AR : 0°~10°
• RR : -3°~0°

(mm)

Designation		Dimensions ØD	Ød	ℓ	L	ap	Available Inserts Main	Ext. main	Parts Screw	Wrench	kg	Fig.
BRE	20R-S	20	20	50	125	20	ZDMT080310R-MM	SPMT060304	ETNA02506	TW07P	0.3	1
	20R-M	20	20	75	150	20					0.3	1
	20R-L	20	25	100	200	20					0.3	2
	20R-SL	20	25	65	125	20					0.3	3
	25R-S	25	25	70	150	23	ZDMT110312.5R-MM	SPMT060304	ETNA02506	TW07P	0.5	1
	25R-M	25	25	95	175	23					0.5	1
	25R-L	25	32	100	200	23					0.4	2
	25R-SL	25	25	75	135	23					0.4	3
	32R-S	32	32	85	175	31	ZDMT130416R-MM	SDMT090308-MM	ETNA0408	TW15S	0.9	1
	32R-M	32	32	100	200	31					0.9	1
	32R-L	32	32	150	250	31					0.7	1
	32R-SL	32	32	75	150	31					0.7	3
	40R-S	40	42	85	175	41	ZPMT160520R-MM	SPMT120408-MM SPMT120508-MMN	ETNA0511	TW20-100	1.3	1
	40R-S-40	40	42	85	175	41					1.3	1
	40R-M	40	42	100	200	41					1.3	1
	40R-M-40	40	42	100	200	41					1.3	1
	40R-L	40	42	150	250	41					1.3	1
	40R-L-40	40	42	150	250	41					1.3	1
	40R-SL	40	42	80	160	41					1.3	3
	40R-SL-40	40	42	80	160	41					1.3	3
	50R-S	50	42	100	200	45	ZPMT160525R-MM	SPMT120408-MM SPMT120508-MMN	ETNA0511	TW20-100	2.6	1
	50R-S-40	50	42	100	200	45					2.6	1
	50R-L	50	42	100	300	45					2.6	1
	50R-L-40	50	42	100	300	45					2.6	1
	50R-SL	50	42	100	250	45					2.6	3
	50R-SL-40	50	42	100	250	45					2.6	3
	63R-S	63	42	100	200	52	ZPMT160531.5R-MM	SPMT120408-MM SPMT120508-MMN	ETNA0511	TW20-100	3.0	1
	63R-S-40	63	42	100	200	52					3.0	1
	63R-L	63	42	100	300	52					3.0	1
	63R-L-40	63	42	100	300	52					3.0	1
	63R-SL	63	42	100	250	52					3.0	3
	63R-SL-40	63	42	100	250	52					3.0	3
	40XR-SC40	40	40	110	200	54	ZPMT160520R-MM		ETNA0511	TW20-100	1.4	4
	40XR-LC40	40	40	150	250	54					1.9	4
	50XR-SC50.8	50	50.8	110	200	57	ZPMT160525R-MM ZPMT160525R-MR		ETNA0511	TW20-100	2.3	4
	50XR-LC50.8	50	50.8	150	250	57					3.0	4

Available Inserts



SDMT-MM	SPMT	SPMT-MM	ZDMT-R-MM	ZPMT-R-MM	ZPMT-R-MR

Designation		Coated NCM325	PC3500	PC5300	PC3525	PC3545	PC6510	Page
SDMT	090308-MM		●	●				E14
SPMT	060304	●						E20
	120408-MM		●	●		●		
	120508-MMN							
ZDMT	080310R-MM		●	●				E23
	110312.5R-MM		●	●				
	130416R-MM		●	●				
ZPMT	160520R-MM		●	●				
	160525R-MM		●	●				
	160525R-MR							
	160531.5R-MM		●	●				

Parts

Specification	Screw	Wrench	Wrench
Ø20~Ø50	ETNA02506* ETNA0408** ETNA0511	TW15S** TW20-100	TW07P*

● Stock item

Recommended cutting condition

Machining • Slotting-A • Shouldering(general cutting edge)-B • Shouldering(long cutting edge)-C

Workpiece		Hardness	Cutting Condition vc(m/min)	fz(mm/t)	Machining
P	Carbon steel, Alloy steel (S50, SCM440)	180 ~ 280HB	260(180 ~ 310)	0.125(0.10 ~ 0.15)	A
				0.15(0.10 ~ 0.20)	B
			240(160 ~ 290)	0.10(0.05 ~ 0.15)	C
		280 ~ 380HB	190(130 ~ 230)	0.10(0.05 ~ 0.15)	A
				0.15(0.10 ~ 0.20)	B
			170(120 ~ 200)	0.10(0.05 ~ 0.15)	C
	Pre-Hardened (NAK55)	35 ~ 45HRC	170(110 ~ 190)	0.10(0.05 ~ 0.15)	A
				0.15(0.10 ~ 0.20)	B
			160(110 ~ 180)	0.10(0.05 ~ 0.15)	C
	High alloy steel (STD, STT)	≤300HB	190(130 ~ 230)	0.10(0.05 ~ 0.15)	A
				0.15(0.10 ~ 0.20)	B
			170(120 ~ 200)	0.10(0.05 ~ 0.15)	C
M	Stainless steel (STS4202J)	≤260HB	260(180 ~ 310)	0.10(0.05 ~ 0.15)	A
				0.15(0.10 ~ 0.20)	B
			240(160 ~ 290)	0.10(0.05 ~ 0.15)	C
K	General cast iron (GC250)	Tensile strength ≤350MPa	260(180 ~ 310)	0.15(0.10 ~ 0.20)	A
				0.15(0.10 ~ 0.20)	B
			240(160 ~ 290)	0.10(0.05 ~ 0.15)	C
	Ductile cast iron (GCD450)	Tensile strength 360~500MPa	200(140 ~ 240)	0.10(0.05 ~ 0.15)	A
				0.15(0.10 ~ 0.20)	B
			190(130 ~ 230)	0.10(0.05 ~ 0.15)	C
	Ductile cast iron (GCD450)	Tensile strength 500~800MPa	170(100 ~ 200)	0.10(0.05 ~ 0.15)	A
				0.15(0.10 ~ 0.20)	B
			150(110 ~ 180)	0.10(0.05 ~ 0.15)	C
H	Hardened steel (STD, STT)	45 ~ 60HRC	110(70 ~ 130)	0.15(0.10 ~ 0.20)	A
				0.15(0.10 ~ 0.20)	B
			100(60 ~ 120)	0.10(0.05 ~ 0.15)	C

Available Inserts E14, E20, E23

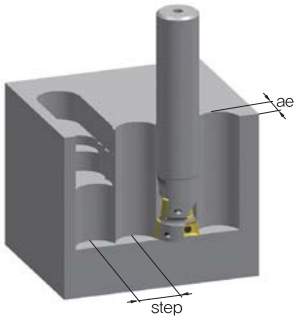
Multifunctional milling tool for mold making

HAVE New

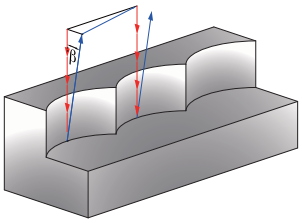
- Tools for Z axis feed plunge machining to cut faster and more effectively in vertical machining
- Machining with whole diameter

Maximum step in vertical machining

ae	Diameter										
	16	17	20	21	25	26	32	33	35	40	50
	max step (mm)										
1	7.7	8	8.7	8.9	9.7	10	11.1	11.3	11.6	12.4	14
2	10.5	10.9	12	12.3	13.5	13.8	15.4	15.7	16.2	17.4	19.5
3	12.4	12.9	14.2	14.6	16.2	16.6	18.6	18.9	19.5	21	23.7
4	13.8	14.4	16	16.4	18.3	18.7	21.1	21.5	22.2	24	27.1
5	14.8	15.4	17.3	17.8	20	20.4	23.2	23.6	24.4	26.4	30
6	15.4	16.2	18.3	18.9	21.3	21.9	24.9	25.4	26.3	28.5	32.4
7	15.8	16.7	19	19.7	22.4	23	26.4	26.9	28	30.3	34.6
8	16	16.9	19.5	20.3	23.3	24	27.7	28.2	29.3	32	36.6
9	15.8	16.9	19.9	20.7	24	24.7	28.7	29.3	30.5	33.4	38.4
10	15.4	16.7	20	20.9	24.4	25.2	29.6	30.3	31.6	34.6	40
11	14.8	16.2	19.9	20.9	24.8	25.6	30.3	31.1	32.4	35.7	41.4
12	13.8	15.4	19.5	20.7	24.9	25.9	30.9	31.7	33.2	36.6	42.7
13	12.4	14.4	19	20.3	24.9	26	31.4	32.2	33.8	37.4	43.8
14	10.5	12.9	18.3	19.7	24.8	25.9	31.7	32.6	34.2	38.1	44.9
15	7.7	10.9	17.3	18.9	24.4	25.6	31.9	32.8	34.6	38.7	45.8
16	-	8	16	17.8	24	25.2	32	32.9	34.8	39.1	46.6
17	-	-	14.2	16.4	23.3	24.7	31.9	32.9	34.9	39.5	47.3
18	-	-	12	14.6	22.4	24	31.7	32.8	34.9	39.7	48
19	-	-	8.7	12.3	21.3	23	31.4	32.6	34.8	39.9	48.5
20	-	-	-	8.9	20	21.9	30.9	32.2	34.6	40	48.9
21	-	-	-	-	18.3	20.4	30.3	31.7	34.2	39.9	49.3
22	-	-	-	-	16.2	18.7	29.6	31.1	33.8	39.7	49.6
23	-	-	-	-	13.5	16.6	28.7	30.3	33.2	39.5	49.8
24	-	-	-	-	9.7	13.8	27.7	29.3	32.4	39.1	49.9
25	-	-	-	-	-	10	26.4	28.2	31.6	38.7	50



Programming in vertical cutting



- - - - - - Vertical machining route
——— Rapid feed
β Angle between tool and Workpiece (β ≥ 1°)

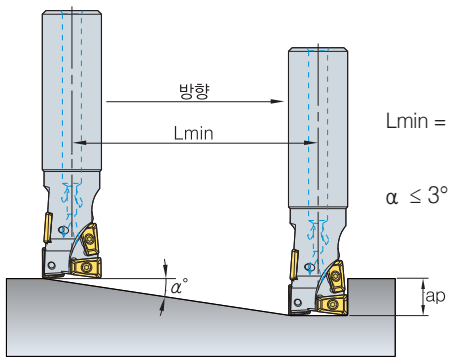
▶ Reduce 30% of feed till 3mm machining

▶ Have the tool be away from the workpiece more than 1°(b) after finishing the machining or when moving the tool to the next step.

Cutting Condition

Designation		Hardness	Grade	Cutting Condition	Ø16,17		Ø20,21		Ø25,26		Ø32,33		Ø35		Ø40		Ø50	
				vc (m/min)	Feed (mm/rev)	Step (mm)	Feed (mm/rev)	Step (mm)	Feed (mm/rev)	Step (mm)	Feed (mm/rev)	Step (mm)	Feed (mm/rev)	Step (mm)	Feed (mm/rev)	Step (mm)	Feed (mm/rev)	Step (mm)
P	Mild steel, Low Carbon steel (SS400)	Under 200HB	PC3500	200 (150~250)	0.03	0.20	0.04	0.30	0.05	0.30	0.05	0.30	0.06	0.30	0.06	0.30	0.07	0.30
P	Carbon steel, Alloy Steel (SM50C, SCM440)	Under 100HRC	PC3500	180 (120~220)	0.03	0.20	0.04	0.30	0.05	0.30	0.05	0.30	0.05	0.30	0.06	0.30	0.06	0.30
M	Stainless steel (STS)	Under 270HB	PC5300	160 (120~200)	0.03	0.15	0.04	0.25	0.05	0.25	0.05	0.25	0.05	0.25	0.06	0.25	0.06	0.25
K	Cast iron (GC, GCD)	350N/mm²	PC5300	200 (150~250)	0.04	0.40	0.05	0.50	0.06	0.50	0.06	0.50	0.06	0.50	0.07	0.50	0.07	0.50
H	Hardened steel	40~55HRC	PC5300	80 (50~120)	0.03	0.15	0.03	0.25	0.04	0.25	0.04	0.25	0.04	0.25	0.04	0.25	0.05	0.25

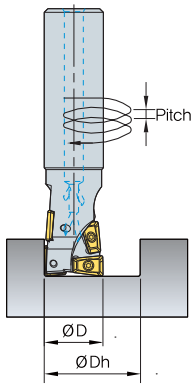
1. Ramping

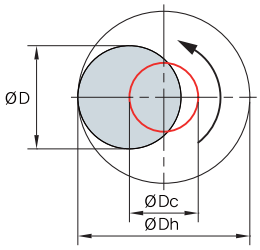


$$L_{min} = \frac{a_p}{\tan \alpha^\circ} \text{ (mm)}$$

$\alpha \leq 3^\circ$

2. Helical Cutting





ØDc = ØDh-ØD

ØDc = Tool pass of tool center
ØDh = Desirable hole diameter on workpiece
ØD = Tool diameter

Cutting Condition for ramping and helical operation

Designation		Hardness	Grade	Cutting Speed vc (m/min)	Ø16,17 ØDh (mm)	ap (mm/t)	fz (mm/t)	max pitch (mm)	Ø20,21 ØDh (mm)	ap (mm/t)	fz (mm/t)	max pitch (mm)	Ø25,26 ØDh (mm)	ap (mm/t)	fz (mm/t)	max pitch (mm)	Ø32,33 ØDh (mm)	ap (mm/t)	fz (mm/t)	max pitch (mm)	Ø35 ØDh (mm)	ap (mm/t)	fz (mm/t)	max pitch (mm)	Ø40 ØDh (mm)	ap (mm/t)	fz (mm/t)	max pitch (mm)	Ø50 ØDh (mm)	ap (mm/t)	fz (mm/t)	max pitch (mm)
P	Mild steel, Low Carbon steel (SS400)	≤ 200HB	PC3500	200 (150~250)	19 ~30	0.5D ~1D	0.15 ~0.12	0.35 ~1.61	23 ~28	0.5D ~1D	0.18 ~0.12	0.35 ~2.07	29 ~47	0.5D ~1D	0.2 ~0.15	0.46 ~2.53	37 ~60	0.5D ~1D	0.25 ~0.2	0.58 ~3.23	41 ~65	0.5D ~1D	0.28 ~0.2	0.69 ~3.46	47 ~75	0.5D ~1D	0.3 ~0.2	0.81 ~4.03	58 ~95	0.5D ~1D	0.35 ~0.25	0.92 ~5.18
P	Carbon steel, Alloy Steel (SM50C,SCM440)	≤ 100HB	PC3500	180 (120~220)	19 ~30	0.5D ~1D	0.15 ~0.1	0.26 ~1.23	23 ~28	0.5D ~1D	0.16 ~0.12	0.26 ~1.58	29 ~47	0.5D ~1D	0.18 ~0.12	0.35 ~1.93	37 ~60	0.5D ~1D	0.2 ~0.15	0.44 ~2.46	41 ~65	0.5D ~1D	0.22 ~0.17	0.53 ~2.63	47 ~75	0.5D ~1D	0.25 ~0.2	0.61 ~3.07	58 ~95	0.5D ~1D	0.28 ~0.25	0.70 ~3.95
M	Stainless steel (STS)	≤ 270HB	PC5300	160 (120~200)	19 ~30	0.2D ~0.5D	0.13 ~0.1	0.18 ~0.84	23 ~28	0.2D ~0.5D	0.15 ~0.12	0.18 ~1.09	29 ~47	0.2D ~0.5D	0.18 ~0.12	0.24 ~1.33	37 ~60	0.2D ~0.5D	0.2 ~0.15	0.24 ~1.33	41 ~65	0.2D ~0.5D	0.22 ~0.17	0.36 ~1.81	47 ~75	0.2D ~0.5D	0.25 ~0.2	0.42 ~2.11	58 ~95	0.2D ~0.5D	58 ~95	0.48 ~2.71
K	Cast iron (GC, GCD)	≤ 350N/mm²	PC5300	200 (150~250)	19 ~30	0.7D ~1D	0.17 ~0.12	0.43 ~2.0	23 ~28	0.7D ~1D	0.2 ~0.12	0.42 ~2.57	29 ~47	0.7D ~1D	0.2 ~0.15	0.57 ~3.14	37 ~60	0.7D ~1D	0.25 ~0.2	0.71 ~3.99	41 ~65	0.7D ~1D	0.28 ~0.2	0.86 ~4.28	47 ~75	0.7D ~1D	0.3 ~0.2	1.0 ~4.99	58 ~95	0.7D ~1D	0.35 ~0.25	1.14 ~6.42
H	Hardened steel	40~55HRC	PC5300	80 (50~120)	19 ~30	0.2D ~0.5D	0.1 ~0.05	0.18 ~0.84	23 ~28	0.2D ~0.5D	0.12 ~0.07	0.18 ~1.09	29 ~47	0.2D ~0.5D	0.13 ~0.1	0.24 ~1.33	37 ~60	0.2D ~0.5D	0.15 ~0.12	0.30 ~1.69	41 ~65	0.2D ~0.5D	0.17 ~0.13	0.36 ~1.81	47 ~75	0.2D ~0.5D	0.18 ~0.15	0.42 ~2.11	58 ~95	0.2D ~0.5D	0.2 ~0.15	0.48 ~2.71

Recommended cutting condition in shouldering

Designation		Hardness	Grade	Cutting Speed vc (m/min)	Ø16,17 max ap (mm)	max ae (mm)	max fz (mm/t)	Ø20,21 max ap (mm)	max ae (mm)	max fz (mm/t)	Ø25,26 max ap (mm)	max ae (mm)	max fz (mm/t)	Ø32,33 max ap (mm)	max ae (mm)	max fz (mm/t)	Ø35 max ap (mm)	max ae (mm)	max fz (mm/t)	Ø40 max ap (mm)	max ae (mm)	max fz (mm/t)	Ø50 max ap (mm)	max ae (mm)	max fz (mm/t)
P	Mild steel, Low Carbon steel (SS400)	≤ 200HB	PC3500	200 (150~250)	17	8	0.25	22	10	0.3	27	13	0.35	35	16	0.4	40	18	0.45	44	20	0.5	55	25	0.6
P	Carbon steel, Alloy Steel (SM50C,SCM440)	≤ 100HB	PC3500	180 (120~220)	17	8	0.2	22	10	0.25	27	13	0.3	35	16	0.35	40	18	0.4	44	20	0.4	55	25	0.5
M	Stainless steel (STS)	≤ 270HB	PC5300	160 (120~200)	17	8	0.2	22	10	0.25	27	13	0.3	35	16	0.35	40	18	0.4	44	20	0.4	55	25	0.5
K	Cast iron (GC, GCD)	≤ 350N/mm²	PC5300	200 (150~250)	17	8	0.25	22	10	0.3	27	13	0.35	35	16	0.4	40	18	0.45	44	20	0.5	55	25	0.6
H	Hardened steel	40~55HRC	PC5300	80 (50~120)	17	5	0.15	22	6	0.2	27	7	0.22	35	8	0.25	40	9	0.3	44	10	0.3	55	14	0.35

Recommended cutting condition in grooving

Designation		Hardness	Grade	Cutting Speed vc (m/min)	Ø16,17 max ap (mm)	max fz (mm/t)	Ø20,21 max ap (mm)	max fz (mm/t)	Ø25,26 max ap (mm)	max fz (mm/t)	Ø32,33 max ap (mm)	max fz (mm/t)	Ø35 max ap (mm)	max fz (mm/t)	Ø40 max ap (mm)	max fz (mm/t)	Ø50 max ap (mm)	max fz (mm/t)
P	Mild steel, Low Carbon steel (SS400)	≤ 200HB	PC3500	200 (150~250)	17	0.15	22	0.18	27	0.2	35	0.25	40	0.27	44	0.3	55	0.35
P	Carbon steel, Alloy Steel (SM50C,SCM440)	≤ 100HB	PC3500	180 (120~220)	17	0.15	22	0.15	27	0.18	35	0.2	40	0.22	44	0.25	55	0.3
M	Stainless steel (STS)	≤ 270HB	PC5300	160 (120~200)	17	0.15	22	0.15	27	0.18	35	0.2	40	0.22	44	0.25	55	0.3
K	Cast iron (GC, GCD)	≤ 350N/mm²	PC5300	200 (150~250)	17	0.15	22	0.18	27	0.2	35	0.25	40	0.27	44	0.3	55	0.35
H	Hardened steel	40~55HRC	PC5300	80 (50~120)	12	0.1	14	0.12	17	0.15	22	0.15	25	0.18	28	0.18	35	0.22

HAVE (Multi Edge) New

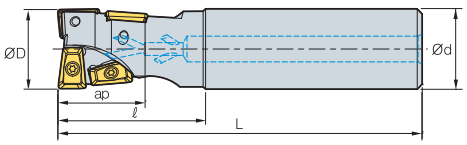


Fig. 1

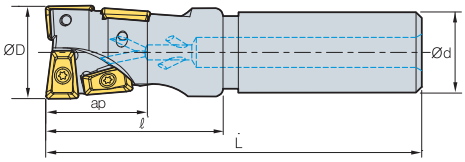


Fig. 2

AA 90°
- AR : 7°~12°
- RR : -12°~-4°

Designation			ØD	Ød	ℓ	L	ap	Available Inserts	kg	Fig.
HAVE	0816HR-S16M	4	16	16	30	120	17.6	XPMT0802ER-MM	0.15	1
	0816HR-L16M					200			0.26	1
	0817HR-S16M	4	17	16	30	120	17.6		0.18	2
	0817HR-L16M					200			0.27	2
	1020HR-S20M	4	20	20	35	130	22	XPMT1003ER-MM	0.26	1
	1020HR-L20M					210			0.44	1
	1021HR-S20M	4	21	20	35	130	22		0.26	2
	1021HR-L20M					210			0.45	2
	1325HR-S25M	4	25	25	45	140	27	XPMT13T3ER-MM	0.41	1
	1325HR-L25M				75	220			0.71	1
	1326HR-S25M	4	26	25	45	140	27		0.45	2
	1326HR-L25M					220			0.68	2
	1632HR-S32M	4	32	32	50	150	35.2	XPMT1604ER-MM	0.72	1
	1632HR-L32M					250			1.32	1
	1633HR-S32M	4	33	32	50	150	35.2		0.76	2
	1633HR-L32M					250			1.27	2
	1835HR-S32M	4	35	32	50	150	40	XPMT1805ER-MM	0.75	1
	1835HR-L32M					230			1.23	1
	2040HR-S32M	4	40	32	55	160	44	XPMT2006ER-MM	0.74	2
	2040HR-L32M					240			1.35	2
	2550HR-S42M	4	50	42	70	170	55	XPMT2507ER-MM	1.53	2
	2550HR-L42M					250			2.60	2

Available Inserts

XPMT-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
XPMT	0802ER-MM					●					●					E23
	1003ER-MM					●					●					
	13T3ER-MM					●					●					
	1604ER-MM					●					●					
	1805ER-MM					●					●					
	2006ER-MM					●					●					
	2507ER-MM					●					●					

Parts

Specification	Screw	Wrench
Ø16~Ø17	FTNA0204	TW06S-A
Ø20~Ø21	FTNA02205	
Ø25~Ø26	FTKA0307	TW09S
Ø32~Ø33	FTKA0408	TW15S
Ø35		
Ø40	FTGA0511-P	TW20S-100
Ø50	FTNA0615	

Available Inserts E23

HAVE (Single Edge) Neu

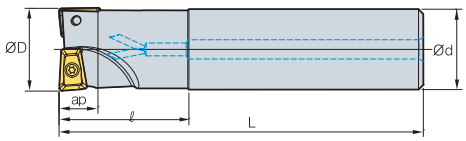


Fig. 1

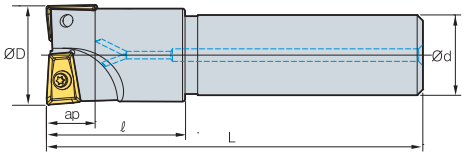


Fig. 2

AA 90°

- AR : 7°~12°
- RR : -12°~-4°

(mm)

Designation			ØD	Ød	ℓ	L	ap	Available Inserts	kg	Fig.
HAVE	0816HR-S16	2	16	16	30	120	7.5	XPMT0802ER-MM	0.16	1
	0816HR-L16					200			0.27	1
	0817HR-S16	2	17	16	30	120	7.5		0.16	2
	0817HR-L16					200			0.27	2
	1020HR-S20	2	20	20	35	130	9.5	XPMT1003ER-MM	0.28	1
	1020HR-L20					210			0.46	1
	1021HR-S20	2	21	20	35	130	9.5		0.28	2
	1021HR-L20					210			0.46	2
	1325HR-S25	2	25	25	45	140	12	XPMT13T3ER-MM	0.44	1
	1325HR-L25					220			0.76	1
	1326HR-S25	2	26	25	45	140	12		0.47	2
	1326HR-L25					220			0.76	2
	1632HR-S32	2	32	32	50	150	15.4	XPMT1604ER-MM	0.77	1
	1632HR-L32					250			1.36	1
	1633HR-S32	2	33	32	50	150	15.4		0.81	2
	1633HR-L32					250			1.41	2
	1835HR-S32	2	35	32	50	150	16.7	XPMT1805ER-MM	0.81	1
	1835HR-L32					230			1.28	1
	2040HR-S32	2	40	32	55	160	19.3	XPMT2006ER-MM	0.95	2
	2040HR-L32					240			1.45	2
	2550HR-S42	2	50	42	70	170	24	XPMT2507ER-MM	1.68	2
	2550HR-L42					250			2.54	2

Available Inserts

XPMT-MM

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
XPMT	0802ER-MM					●					●					E23
	1003ER-MM					●					●					
	13T3ER-MM					●					●					
	1604ER-MM					●					●					
	1805ER-MM					●					●					
	2006ER-MM					●					●					
	2507ER-MM					●					●					

Parts

Specification	Screw	Wrench
Ø16~Ø17	FTNA0204	TW06S-A
Ø20~Ø21	FTNA02205	
Ø25~Ø26	FTKA0307	TW09S
Ø32~Ø33	FTKA0408	TW15S
Ø35		
Ø40	FTGA0511-P	TW20S-100
Ø50	FTNA0615	

Available Inserts E23

High productivity with optimized grade for high speed machining

O-ring Cutter New

- Optimized for grooving the seat of an O-ring in a plastic mold.
- Guarantees superior surface roughness compared to HSS and brazed tool.
- High productivity with optimized grade for high speed machining.
- Reduced time for regrinding and tool alignment.
- Special types are available for quotation.

Holder Code System

ORC – P30

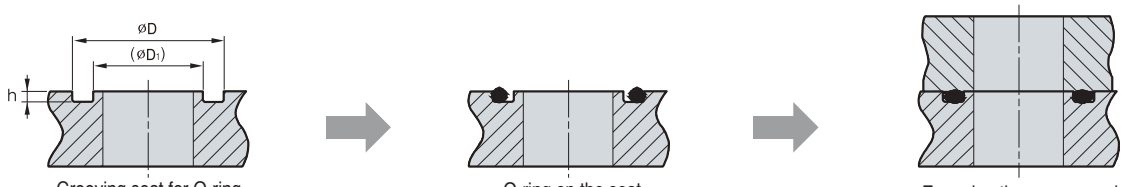
- ORC: O-ring Cutter
- P30: O-ring size

Insert Code System

ORG – 325

- ORG: O-ring Groove (Grooving insert)
- 325: Width of groove (325 : 3.25)

Grooving and assembly of O-ring



Grooving seat for O-ring (O-ring cutter) → O-ring on the seat → Engaging the upper punch and lower punch of a plastic mold

(mm)

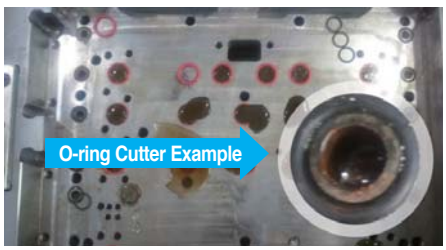
O-ring size	ØD	(ØD1)	h ± 0.05
P08	11.0	5.8	1.40
P09	12.0	6.8	
P10	13.0	7.8	
P11	15.0	8.5	1.80
P12	16.0	9.5	
P14	18.0	11.5	
P15	19.0	12.5	
P16	20.0	13.5	
P18	22.0	15.5	
P20	24.0	17.5	
P21	25.0	18.5	
P22	26.0	19.5	
P24	30.0	20.6	2.70
P25	31.0	21.6	

O-ring size	ØD	(ØD1)	h ± 0.05
P26	32.0	22.6	2.70
P28	34.0	24.6	
P29	35.0	25.6	
P30	36.0	26.6	
P31	37.0	27.6	
P32	38.0	28.6	
P34	40.0	30.6	
P35	41.0	31.6	
P38	44.0	34.6	
G40	46.0	36.6	
G25	30.0	21.8	2.40
G30	35.0	26.8	
G35	40.0	31.8	
G40	45.0	36.8	

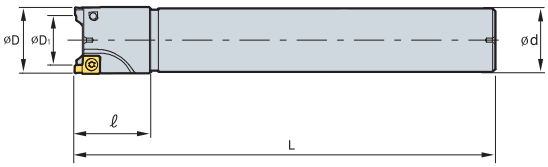
Recommended cutting condition

Workpiece	fz (mm/t)	vc(m/min)
		Coating
		PC3500
Stainless Steel (STS304)	0.03~0.12	60~130
Carbon Steel (SM□□C)	0.05~0.15	80~150
Alloy Steel (SCM)	0.05~0.15	80~150
Hardened Steel (STD, NAK)	0.03~0.12	60~130

Machining Example



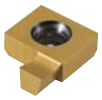
ORC New



(mm)

Designation		⊙	ØD	Ød1	Ød	ℓ	L	Available Inserts	O-Ring size
ORC -	P08	1	11.0	5.7	16	30	150	ORG265	P08
	P09	1	12.0	6.7	16	30	150	ORG265	P09
	P10	1	13.0	7.7	16	30	150	ORG265	P10
	P11	1	15.0	8.5	16	30	150	ORG325	P11
	P12	2	16.0	9.5	16	30	200	ORG325	P12
	P14	2	18.0	11.5	20	30	200	ORG325	P14
	P15	2	19.0	12.5	20	30	200	ORG325	P15
	P16	2	20.0	13.5	20	30	200	ORG325	P16
	P18	2	22.0	15.5	20	30	200	ORG325	P18
	P20	2	24.0	17.5	25	30	200	ORG325	P20
	P21	2	25.0	18.5	25	30	200	ORG325	P21
	P22	2	26.0	19.5	25	30	200	ORG325	P22
	P24	2	30.0	20.6	32	40	250	ORG470	P24
	P25	2	31.0	21.6	32	40	250	ORG470	P25
	P26	2	32.0	22.6	32	40	250	ORG470	P26
	P28	2	34.0	24.6	32	40	250	ORG470	P28
	P29	2	35.0	25.6	32	40	250	ORG470	P29
	P30	2	36.0	26.6	32	40	250	ORG470	P30
	P31	2	37.0	27.6	32	40	250	ORG470	P31
	P32	2	38.0	28.6	32	40	250	ORG470	P32
	P34	2	40.0	30.6	42	40	250	ORG470	P34
	P35	2	41.0	31.6	42	40	250	ORG470	P35
	P38	2	44.0	34.6	42	40	250	ORG470	P38
	P40	2	46.0	36.6	42	40	250	ORG470	P40
ORC -	G25	2	30.0	21.9	32	40	250	ORG405	G25
	G30	2	35.0	26.9	32	40	250	ORG405	G30
	G35	2	40.0	31.9	42	40	250	ORG405	G35
	G40	2	45.0	36.9	42	40	250	ORG405	G40

Available Inserts



ORG

Cutter Designation	Designation		Cermet		Coated									Uncoated			Page
			CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
ORC-P08~P10	ORG	265					●										E11
ORC-P11~P22		325					●										
ORC-P24~P40		470					●										
ORC-G25~G40		405					●										

Parts

Specification	Screw	Wrench
Ø11~Ø26	FTKA0307	TW09S
Ø30~Ø46	FTGA03508	TW15S
Ø30~Ø45		

Available Inserts E11

All applications for chamfers

Chamfer Tool

- All chamfer applications
- Chamfer angles 15°, 30°, 45°, 60° for various customer's needs
- The long cutting edge provides a wide chamfering range

Back & Front Champer Tools

Long Champer Tools

Code System

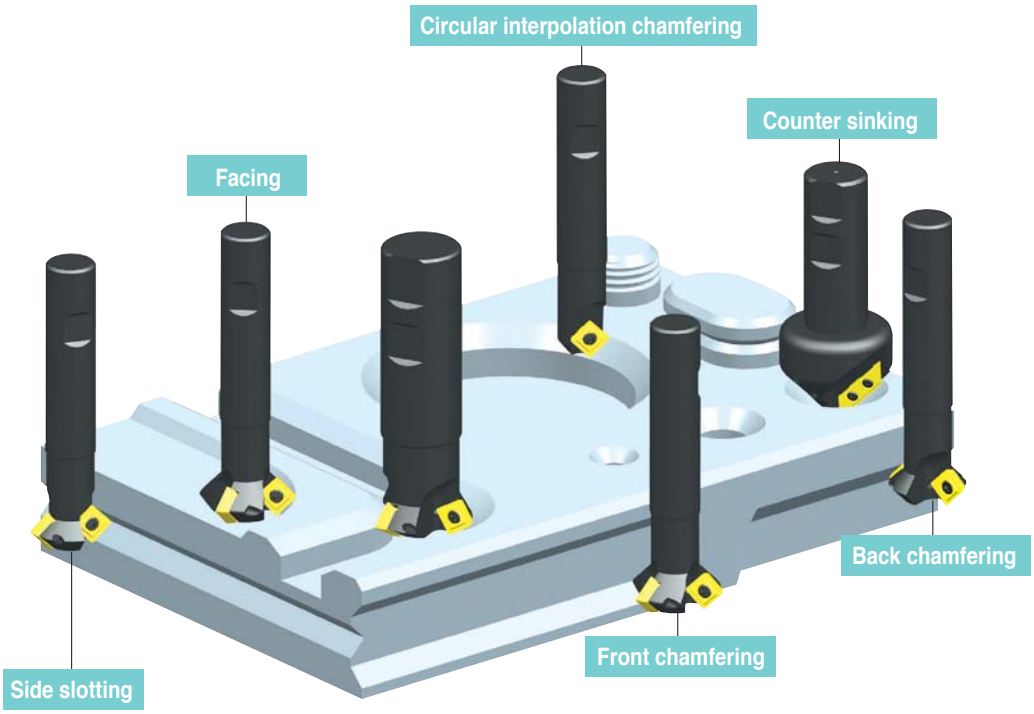
CE 45 – 11 25 R – S 20

Chamfer Endmill	Chamfer angle	Inscribed circle of insert	Min. Cutting Dia.	Hand	Overall length	Shank Dia.
	45°	11 : SPMT110408-KC 12 : SPMN120308 31 : XCET310404ER-KC	Ø25	R: Right L: Left	S : Standard M : Middle L : Long	Ø20

Recommended cutting condition

Workpiece	Grades	ØD(Ø5 ~Ø20)		ØD(Ø25 ~Ø35)	
		vc (m/min)	fz (mm/t)	vc (m/min)	fz (mm/t)
P	PC3500	160~270	0.05~0.25	160~270	0.05~0.25
	PC5300	190~310		190~310	
	ST30A	60~100		60~100	
M	PC5300	100~160	0.05~0.20	100~160	0.10~0.30
	PC3545	70~~120		70~~120	
K	PC5300	110~180	0.10~0.30	110~180	0.30~0.50
	G10	50~90		50~90	

Application example



Multi-functional Chamfer Tool

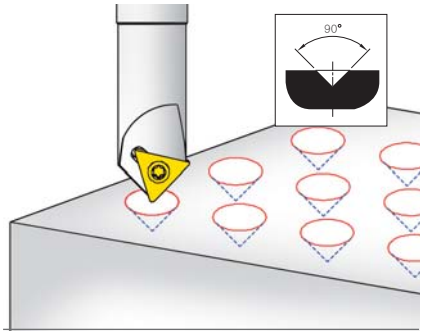
Code System

CE 45 – 16 00 R – S 20

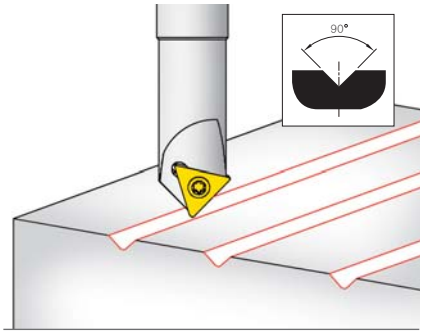
Chamfer Endmill	Chamfer angle	Inscribed circle of insert	Min. Cutting Dia.	Hand	Overall length	Shank Dia.
	45°	16 : TWX16R-KC 22 : TWX22R-KC	Ø0	R : Right L : Left	S : 90,110 L : 200	Ø12 Ø20 Ø25

Application area and Recommended cutting condition

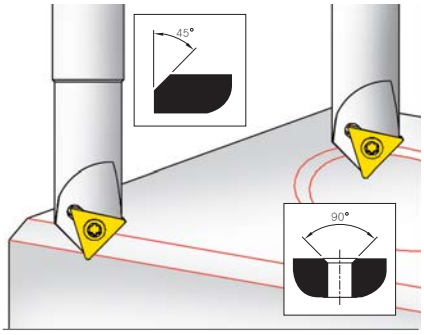
Centering



Grooving



Chamfering



Workpiece	Hardness (HRC)	Centering, Grooving		Chamfering	
		vc (m/min)	fz (mm/t)	vc (m/min)	fz (mm/t)
Mild steel, Carbon steel, Alloy steel	Under HRC 30	80 ~ 200	0.01 ~ 0.04	100 ~ 250	0.04 ~ 0.06
High Carbon steel, Alloy steel	HRC 30~40	150 ~ 250	0.02 ~ 0.06	150 ~ 300	0.05 ~ 0.10
Aluminum, Copper	-	150 ~ 300	0.04 ~ 0.08	150 ~ 350	0.05 ~ 0.10
Cast iron	-	80 ~ 150	0.02 ~ 0.06	100 ~ 250	0.05 ~ 0.10
Stainless steel	-	60 ~ 120	0.01 ~ 0.03	60 ~ 150	0.03 ~ 0.06
HRSA		60 ~ 80	0.01 ~ 0.03	60 ~ 100	0.03 ~ 0.06

Note) Please keep fz. Backtouch & Chipping one caused by wrong fz

Machining Example

Chamfering

Grooving

Centering

Solid Chamfer Tool New

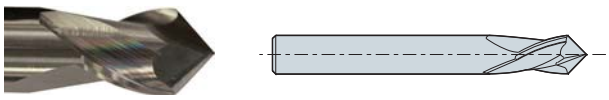
Code System

CCT 090 T - 080 L

Type	Chamfer angle	Cutting Edge	Diameter	Tool length
CCT : Centering & Chamfering Tool CET : Centering & Chamfering Endmill Tool	060 : 60° 090 : 90° 120 : 120°	None : Singel T : Twin	080 : Ø8.0	None : Standard L : Long

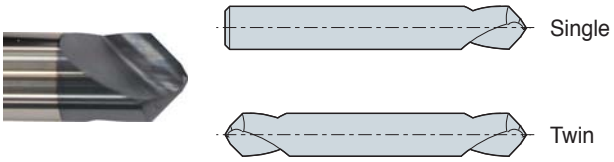
Features

CET(Centering & Chamfering Endmill Tool)



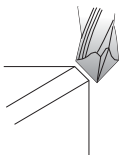
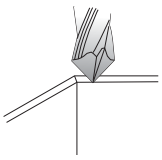
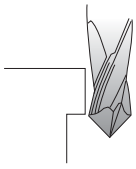
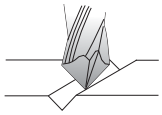
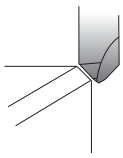
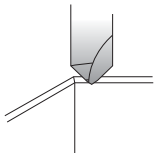
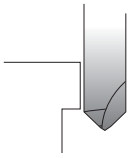
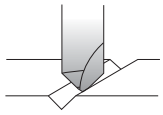
- ▶ For internal chamfering up to 0.5mm
- ▶ Can be applied to side milling and easy to regrinding

CCT(Centering & Chamfering Tool)



- ▶ Chipping resistance realizes machining in high speed due to double point angle
- ▶ Lowers cutting load due to web thinning

CET / CCT Application example

	Centering	Hole Chamfering	Chamfering (External)	Chamfering (Internal)	Side milling	Slot milling
Applications (CET)						
60°	×	●	●	● ~ ▲	●	×
90°	▲	●	●	●	●	● ~ ▲
120°	●	●	●	●	●	●
Applications (CCT)						
60°	●	●	● ~ ▲	▲ ~ ×	×	×
90°	●	●	● ~ ▲	▲ ~ ×	×	×
120°	●	●	●	●	×	●

CE (Back & Front)

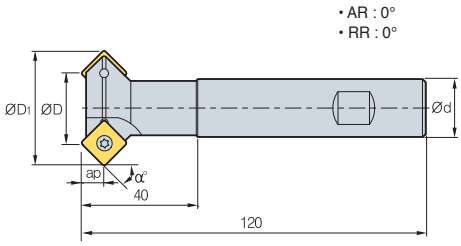


Fig. 1

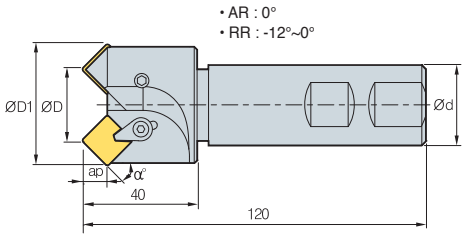


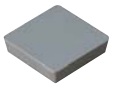
Fig. 2

(mm)

Designation			ØD	ØD1	Ød	ap	Fig.	Available Inserts	α°(Chamfer angle) Front	α°(Chamfer angle) Back	Machining range (Min~Max)	Uses
CE	**15-1125R-S20**	2	25	30.5	20	9.5	1	SPMT110408 - KC	15°	-	Ø25~Ø30	Front chanfering
	30-1125R-S20	2	25	35.5	20	8.5	1		30°	60°	Ø25~Ø35	Front, Back chanfering
	45-1107R-S20	1	7	21.9	20	7.0	1		45°	-	Ø7~Ø21	Front chanfering
	45-1119R-S20	2	19	33.9	20	7.0	1		45°	45°	Ø19~Ø33	Front, Back chanfering
	45-1125R-S20	3	25	39.9	20	7.0	1		45°	45°	Ø25~Ø39	Front, Back chanfering
	60-1125R-S32	3	25	43.3	32	5.0	1		60°	30°	Ø25~Ø42	Front, Back chanfering
	45-1207R-S32	1	7	23.3	32	7.8	2	SPMN120308	45°	-	Ø7~Ø22	Front chanfering
	45-1220R-S32	2	20	37.3	32	7.8	2		45°	-	Ø21~Ø36	Front chanfering
	45-1225R-S32	2	25	42.3	32	7.8	2		45°	-	Ø26~Ø41	Front chanfering
	45-1235R-S32	2	35	52.3	32	7.8	2		45°	-	Ø36~Ø51	Front chanfering

Available Inserts

SPMT-KC



SPMN

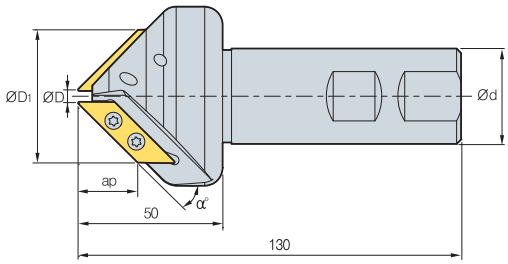
Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	Page
SPMT	**110408-KC**						●						●	●		E20
SPMN	**120308**												●			

Parts

Specification	Screw	Clamp	C-Ring	Wrench	Wrench
Ø7~Ø25	FTKA0408	-	-	TW15S	-
Ø7~Ø35	CHX0617L	CH6R2	CR05	-	HW30L

Available Inserts **E20**

CE (Long Champer)



• AR : -5°~1°
• RR : 0°

(mm)

Designation			ØD	ØD1	Ød	ap	α° (Chamfer angle)	Machining range (Min~Max)	Uses
CE	30-3105R-S32	1	5	35	32	26	30°	Ø5~Ø35	Front Chamfering
	45-3105R-S32	2	5	48	32	21	45°	Ø5~Ø48	Front Chamfering
	60-3105R-S32	2	5	57	32	15	60°	Ø5~Ø57	Front Chamfering

Available Inserts

XCET-KC

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
XCET	310404ER-KC					●							●	●		E22

Parts

Specification	 Screw	 Wrench
Ø5	FTKA03510	TW15S

Available Inserts E22

CE (Multi-functional)

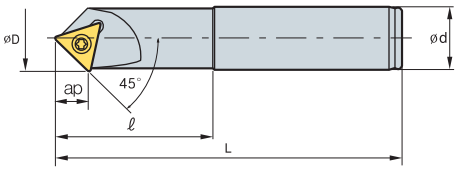


Fig. 1

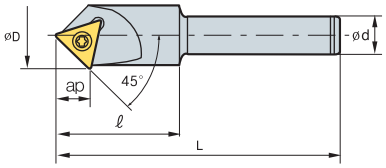


Fig. 2

• AR : -12°~15°
• RR : 0°

(mm)

Designation		ØD	Ød	ℓ	L	ap	Fig.	Available Inserts	Machining range (Min~Max)	Uses
CE	**45-1600R-S12**	22	12	40	90	10	2	TWX16R-KC	Ø0 ~ Ø20	Centering Grooving Chamfering
	45-1600R-S20	22	20	50	110	10	1	TWX16R-KC	Ø0 ~ Ø20	
	45-1600R-L20	22	20	60	200	10	1	TWX16R-KC	Ø0 ~ Ø20	
	45-2200R-S12	29	12	40	90	14	2	TWX22R-KC	Ø0 ~ Ø27	
	45-2200R-S25	29	25	50	110	14	1	TWX22R-KC	Ø0 ~ Ø27	
	45-2200R-L25	29	25	60	200	14	1	TWX22R-KC	Ø0 ~ Ø27	

Available Inserts

TWX-KC

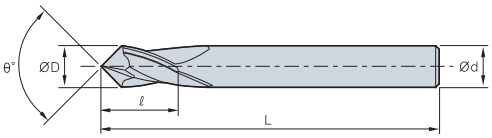
Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
TWX	**16R-KC**					●										E22
	22R-KC					●										

Parts

Specification	 Screw	 Wrench
Ø22~Ø29	FTNA0408	TW15L

Available Inserts E22

CET New



(mm)

Designation		ØD	Ød	ℓ	L	θ°
CET060 -	030	3	3	5.5	50	60°
	040	4	4	7	50	
	060	6	6	10	60	
	080	8	8	13	70	
	100	10	10	16	70	
	120	12	12	18	80	
	160	16	16	24	100	
CET090 -	030	3	3	5.5	50	90°
	040	4	4	7	50	
	060	6	6	10	60	
	080	8	8	13	70	
	100	10	10	16	70	
	120	12	12	18	80	
	160	16	16	24	100	
CET120 -	030	3	3	5.5	50	120°
	040	4	4	7	50	
	060	6	6	10	60	
	080	8	8	13	70	
	100	10	10	16	70	
	120	12	12	18	80	
	160	16	16	24	100	

CCT New

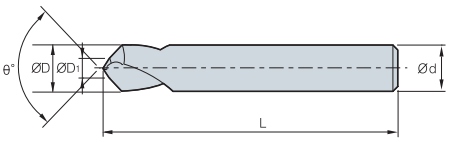


Fig. 1

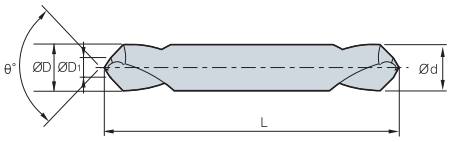
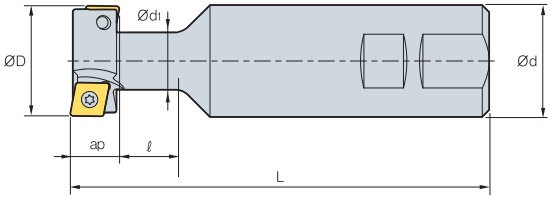


Fig. 2

(mm)

Designation		ØD = Ød	ØD1	L	θ°	Fig.
CCT060 -	030	3	1.0	40	60°	1
	040	4	1.5	40		
	060	6	2.0	50		
	080	8	2.5	60		
	100	10	3.0	70		
	120	12	4.0	80		
	160	16	5.0	100		
CCT060T -	030	3	1.0	40		2
	040	4	1.5	40		
	060	6	2.0	50		
	080	8	2.5	60		
	100	10	3.0	70		
	120	12	4.0	80		
	160	16	5.0	100		
CCT060T -	030L	3	1.0	100		
	040L	4	1.5	100		
	060L	6	2.0	100		
	080L	8	2.5	120		
	100L	10	3.0	120		
	120L	12	4.0	150		
CCT090 -	030	3	1.0	40	90°	1
	040	4	1.5	40		
	060	6	2.0	50		
	080	8	2.5	60		
	100	10	3.0	70		
	120	12	4.0	80		
	160	16	5.0	100		
CCT090T -	030	3	1.0	40		2
	040	4	1.5	40		
	060	6	2.0	50		
	080	8	2.5	60		
	100	10	3.0	70		
	120	12	4.0	80		
	160	16	5.0	100		
CCT090T -	030L	3	1.0	100		
	040L	4	1.5	100		
	060L	6	2.0	100		
	080L	8	2.5	120		
	100L	10	3.0	120		
	120L	12	4.0	150		
CCT120 -	030	3	1.0	40	120°	1
	040	4	1.5	40		
	060	6	2.0	50		
	080	8	2.5	60		
	100	10	3.0	70		
	120	12	4.0	80		
	160	16	5.0	100		
CCT120T -	030	3	1.0	40		2
	040	4	1.5	40		
	060	6	2.0	50		
	080	8	2.5	60		
	100	10	3.0	70		
	120	12	4.0	80		
	160	16	5.0	100		
CCT120T -	030L	3	1.0	100		
	040L	4	1.5	100		
	060L	6	2.0	100		
	080L	8	2.5	120		
	100L	10	3.0	120		
	120L	12	4.0	150		

TFE

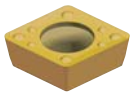


AA 90°
- AR : 5°
- RR : -5°

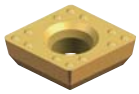
(mm)

Designation		⊙	ØD	Ød	Ød1	ℓ	L	ap	Available Inserts
TFE	2125R/L	2	21	25	10.5	20	109	9	CPMT06
	2525R/L	2	25	25	12.5	21	112	11	CPMT08
	3232R/L	2	32	32	16.5	26	120	14	CPMT09
	4032R/L	2	40	32	20.5	32	130	18	CPMH12
	5032R/L	4	50	32	26.5	38	140	22	CPMH12

Available Inserts



CPMT

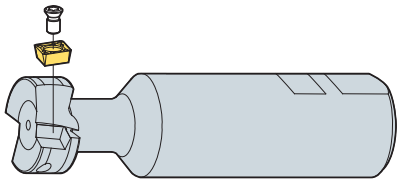


CPMH

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
CPMT	060204-MM					●										E07
	080308-MM					●										
	09T308-MM					●										
CPMH	120408-MM					●										

Parts

Specification	Screw	Wrench
Ø21	FTNA02555	TW08S
Ø25	FTNA0306	TW09S
Ø32	FTNA0407	TW15S
Ø40	PTMA0511A	TW15S
Ø50		

Assembling	

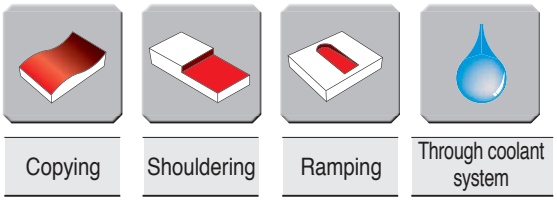
Available Inserts E07

Buffed on top face of insert ensure good chip control and reduces built-up edge

Pro-A Mill

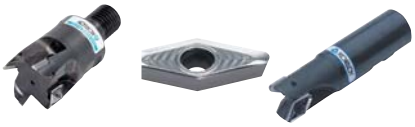
- Buffed top face of insert ensures good chip control and reduces built-up edge
- Small size modular type for aluminum machining
- Various line up of modular system for aluminum machining
- For shouldering, curved surface and ramping
- High rake angle chip breaker ensures excellent surface roughness improved cooling effect, and chip control by through coolant system, even in deep pocket machining

Uses



Copying | Shouldering | Ramping | Through coolant system

Pro-A Mill series

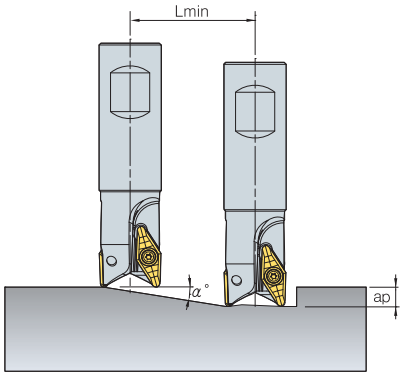
Type	Series	Pro-A mill	Through coolant system
Application of small-sized Aluminum machining	**Pro-A 2000**	 • Modular : Ø12~Ø42 • Shank : Ø12~Ø42 • Insert : VDKT11T210N-MA VDKT11T220N-MA	O
General application of Aluminum machining	**Pro-A 4000**	 • cutter : Ø40~Ø100 • Shank : Ø32~Ø40 • Insert : VCKT220530N-MA	O

Recommended cutting condition

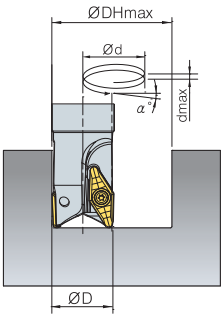
Workpiece		Cutting speed vc(m/min)
Aluminum alloy	Rm < 280 MPa	1000
	Rm > 280 MPa	800
Copper alloy	Long chip	250
Thermo plastic	-	300
Aluminum alloy	Si < 12%	800
Copper alloy	Short chip	400
Magnesium alloy	-	400
Duroplastics	-	150

Pro-A Mill Ramping & Helical cutting technical data

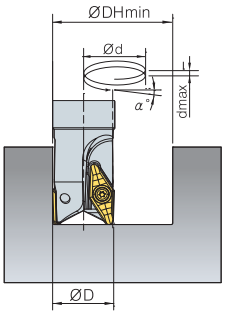
1. Ramping



2. Blind hole Helical cutting



3. Thru hole Helical cutting



Designation	ØD(mm)	Ramping		Blind hole Helical cutting				Thru hole Helical cutting	
		α°(max)	Lmin(mm)	ØDHmax(mm)	dmax(mm)	ØDHmin(mm)	dmax(mm)	ØDHmin(mm)	dmax(mm)
PAS2012HR	12	11.9	38	23	4.8	21	4.4	19	4.0
PAS2016HR	16	12.5	36	31	6.9	29	6.4	27	6.0
PAS2020HR	20	9.7	47	39	6.7	37	6.3	35	6.0
PAS2025HR	25	7.6	60	49	6.5	47	6.3	45	6.0
PAS2032HR	32	5.8	79	63	6.4	61	6.2	59	6.0
PAS2042HR	42	4.3	105	83	6.3	81	6.2	79	6.0
PAS4032HR	32	24.4	22	59	26.8	54	24.5	40	18.2
PAS4040HR	40	18.4	30	75	25.0	70	23.3	56	18.7
PAS4050HR	50	14.0	40	95	23.8	90	22.5	76	19.0
PAS4063HR	63	10.7	53	121	22.8	116	21.9	102	19.2
PAC(M)4080HR	80	8.1	70	155	22.1	150	21.4	136	19.4
PAC(M)4100HR	100	6.3	90	195	21.7	190	21.1	176	19.6

- Lmin : When ap=8mm
- Lmin : Minimum inclination cutting length

$$Lmin = \frac{ap}{\tan \alpha^\circ} \text{ (mm)}$$

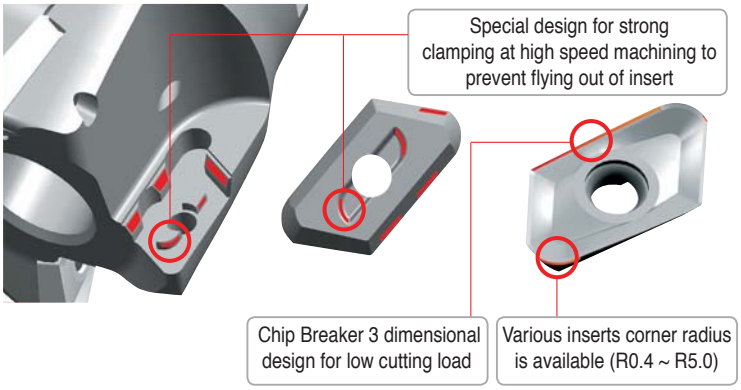
α° : Max. rampig angle
ap : Depth of cut

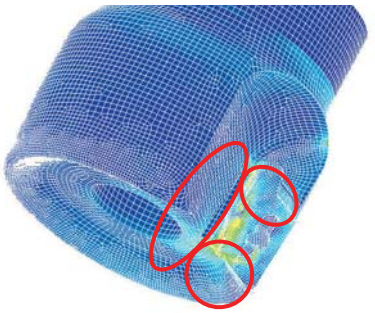
Strong clamping due to the concave design of insert bottom

Pro-X Mill

- Strong clamping due to the concave design of insert bottom
- Good chip flow and less build up edge acheived with the buffed surface of insert
- High rake angle of insert provides good surface finish and low cutting load
- Specially designed for high speed machining of aluminum
- Suitable for square shouldering and curved surface machining

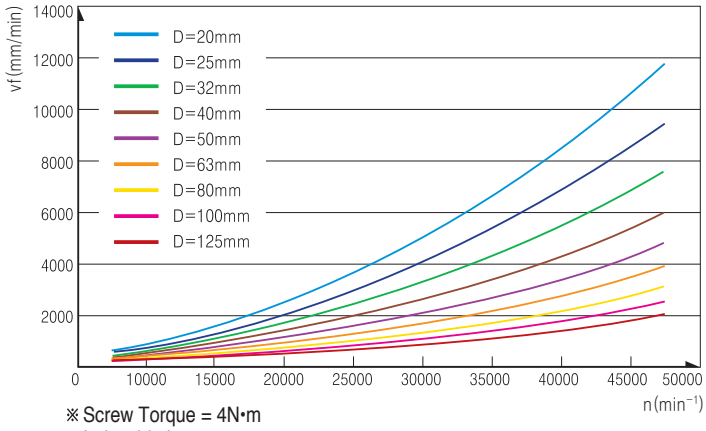
Clamping system for high speed





- Clamping design as per FEM analysis
- Strong clamping of insert

Centrifugal force as per RPM



※ Screw Torque = 4N•m
※ Indexable insert : 6.8g

Marking [• Designation • Max. RPM]

Max. RPM as per cutting diameter

Cutting diameter ØD(mm)	5000 type		6000 type	
	n(min⁻¹)	vc(m/min)	n(min⁻¹)	vc(m/min)
20	14,000	940	-	940
25	28,000	2,559	10,000	2,559
32	25,000	2,894	8,900	2,894
40	22,000	3,240	19,000	3,240
50	20,000	3,611	16,000	3,611
63	18,000	4,055	15,000	4,055
80	16,000	4,572	13,000	4,572
100	14,000	5,118	11,000	5,118
125	13,000	5,731	10,000	5,731

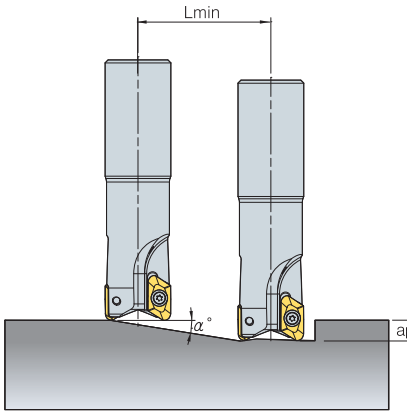
※ In case of actual machining accidental breakage of insert or tool could happen even under the written RPM special cover or door is necessary to prevent damage from broken insert or broken tool

Recommended cutting condition

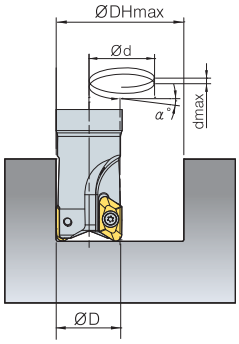
Workpiece		Cutting Speed vc(m/min)	Feed fz(mm/t)
Aluminum alloy	Rm280 < MPa Rm280 > MPa	1200 1000	0.30 0.25
Copper alloy Thermo plastic	Long chipping -	400 350	0.20 0.15
Aluminum alloy	Si <12% Si ≥12%	1000 -	0.25 -
Copper alloy	Short chipping	500	0.20
Magnesium alloy	-	450	0.20
Duroplastics	-	200	0.15

Pro-X Mill Ramping & Helical cutting technical data

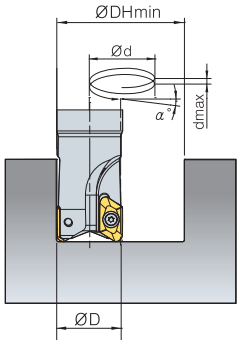
1. Ramping



2. Blind hole Helical cutting



3. Thru hole Helical cutting



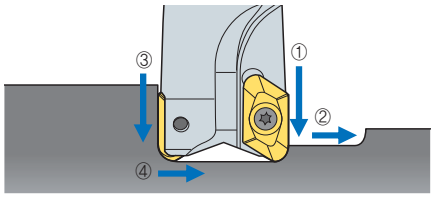
Designation	ØD(mm)	Ramping		Blind hole Helical cutting				Thru hole Helical cutting	
		α°(max)	Lmin(mm)	ØDHmax(mm)	dmax(mm)	ØDHmin(mm)	dmax(mm)	ØDHmin(mm)	dmax(mm)
PAXS5020HR	20	8.4	68	34	5.0	32	4.7	27	4.0
PAXS5025HR	25	13.2	43	44	10.4	42	9.9	34	8.0
PAXS5032HR	32	9.5	60	58	9.7	56	9.3	48	8.0
PAXS5040HR	40	7.1	80	74	9.3	72	9.0	64	8.0
PAXCM5050HR	50	5.4	105	94	9.0	92	8.8	84	8.0
PAXCM5063HR	63	4.2	138	120	8.7	118	8.6	110	8.0
PAXC(M)5080HR	80	3.2	180	154	8.6	152	8.4	144	8.0
PAXC(M)5100HR	100	2.5	230	194	8.4	192	8.3	184	8.0
PAXC(M)5125HR	125	2.0	293	244	8.3	242	8.3	234	8.0
PAXS6025HR	25	9.0	63	44	6.9	42	6.6	38	6.0
PAXS6032HR	32	6.6	87	58	6.7	56	6.5	52	6.0
PAXS6040HR	40	12.1	47	74	15.9	72	15.4	56	12.0
PAXCM6050HR	50	9.0	63	94	14.8	92	14.5	76	12.0
PAXCM6063HR	63	6.7	85	120	14.1	118	13.9	102	12.0
PAXC(M)6080HR	80	5.0	113	154	13.6	152	13.4	136	12.0
PAXC(M)6100HR	100	3.9	147	194	13.2	192	13.1	176	12.0
PAXC(M)6125HR	125	3.0	188	244	13.0	242	12.8	226	12.0

- Lmin : When ap=10mm
- Lmin : Minimum inclination cutting length

$$Lmin = \frac{ap}{\tan \alpha^\circ} \text{ (mm)}$$

α° : Max. rampig angle
ap : Depth of cut

Plunging, Slotting, Drilling technical data



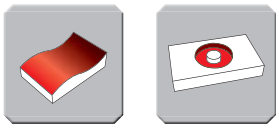
1. When drilling, grooving machining sequence is ① → ② → ③ → ④
2. When drilling, grooving, decrease the feed and cutting speed 30%~50% from the recommended data

• Cutting condition for drilling

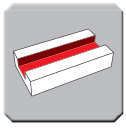
Holder	ap(mm)	
	5000 Type	6000 Type
Ø20	8	-
Ø25	4	11
Ø32	4	6
Ø40~125	4	6

Insert	ap(mm)
XETK19	4
XETK25	6

Uses


Copying

Helical cutting


Slotting & Shouldering

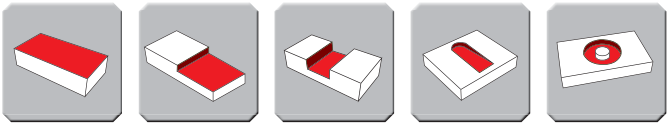

Ramping

New indexable milling tool for the machining of high quality workpieces

Pro-L Mill New

- Improved perpendicularity and lower cutting resistance by composition of clearance face and High Helix edge
- Productivity increase due to more than half as much of Depth of Cut comparing to existing product
- Strong clamping design by adaption of double screw on system
- Improved chip flow due to helical type design of chip pocket and application of coolant system

Uses



Facing | Shouldering | Slotting | Ramping | Helical cutting

Features

Enhanced chip flow and increased tool life by inner coolant system

Strong clamping by 2 screw on system

Set of various Nose-R

Improved perpendicularity and decreased cutting resistance due to application of High Helix

Code System of Shank type

PAL	S	050	H	R	-	3	S	40
Pro-L Mill	Tool type	Tool Dia.	Coolant type	Hand		No. of tooth	Tool length	Shank Dia.
	S: Shank	050 : Ø50	Unmarked : None H : Thru-hole	R : Right L : Left		3 : 3 teeth	S : Standard type M : Middle type L : Long type	40 : Ø40

Code System of Cutter type

PAL	C	M	063	H	R
Pro-L Mill	Tool type	Unit	Tool Dia.	Coolant type	Hand
	C: Cutter	M : Metric	063 : Ø63	Unmarked : None H : Thru-hole	R : Right M : Multi edge

Chip breakers

Usage	Insert's type		Edge type	Features
Al	MA			Application of the edge optimized for Aluminum machining and buffed finish ensure excellent machining quality
Hard-to-cut material	ML			Design of Low cutting resistance Chip Breaker ensures excellent machining quality for light cutting and Hard-to-cut material

Selection of Grade and Chip Breaker

Category	M (Stainless steel)	N (Aluminum alloy)	S (HRSA)
Grade	PC5300 / PC5400	H01	PC5300 / PC5400
MA	–	○	–
ML	○	–	○

Cutting Performance

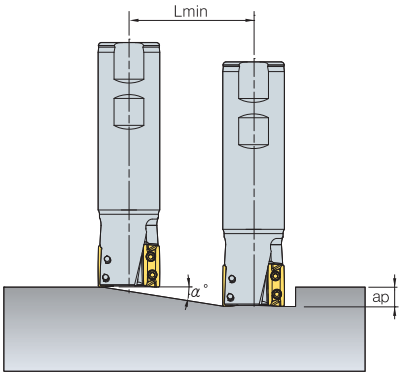
N Al6061 (HRC30)

■ **Cutting condition**

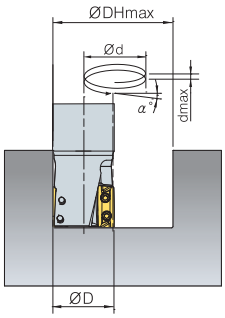
vc = 500m/min
fz = 0.2mm/t
ap = 30 ~ 60mm
ae = 1 ~ 5mm(finishing : 1mm, roughing : 5mm)
z = 3

Pro-L Mill Ramping & Helical cutting technical data

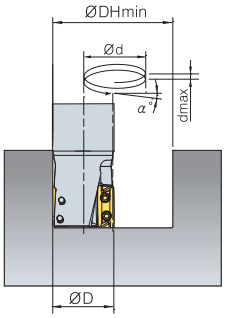
1. Ramping



2. Blind hole Helical cutting



3. Thru hole Helical cutting



Designation	ØD(mm)	Ramping		Blind hole Helical cutting				Thru hole Helical cutting	
		α°(max)	Lmin(mm)	ØDHmax (mm)	dmax (mm)	ØDHmin (mm)	dmax (mm)	ØDHmin (mm)	dmax (mm)
PALS032HR-2S20	32	3.37	170	62	3.6	60	3.5	55	3.2
PALS032HR-2S25	32	3.37	170	62	3.6	60	3.5	55	3.2
PALS032HR-2S32	32	3.37	170	62	3.6	60	3.5	55	3.2
PALS040HR-2S32	40	2.12	270	78	2.9	76	2.8	71	2.6
PALS040HR-2S40	40	2.12	270	78	2.9	76	2.8	71	2.6
PALS040HR-2S42	40	2.12	270	78	2.9	76	2.8	71	2.6
PALS040HR-3S32	40	2.12	270	78	2.9	76	2.8	71	2.6
PALS040HR-3S40	40	2.12	270	78	2.9	76	2.8	71	2.6
PALS040HR-3S42	40	2.12	270	78	2.9	76	2.8	71	2.6
PALS050HR-3S32	50	2.08	275	98	3.6	96	3.5	91	3.3
PALS050HR-3S40	50	2.08	275	98	3.6	96	3.5	91	3.3
PALS050HR-3S42	50	2.08	275	98	3.6	96	3.5	91	3.3
PALS063HR-4S32	63	1.76	325	124	3.8	122	3.8	117	3.6
PALS063HR-4S40	63	1.76	325	124	3.8	122	3.8	117	3.6
PALS063HR-4S42	63	1.76	325	124	3.8	122	3.8	117	3.6
PALS063HM-4S32	63	1.76	325	124	3.8	122	3.8	117	3.6
PALS063HM-4S40	63	1.76	325	124	3.8	122	3.8	117	3.6
PALS063HM-4S42	63	1.76	325	124	3.8	122	3.8	117	3.6
PALCM063HR	63	1.76	325	124	3.8	122	3.8	117	3.6

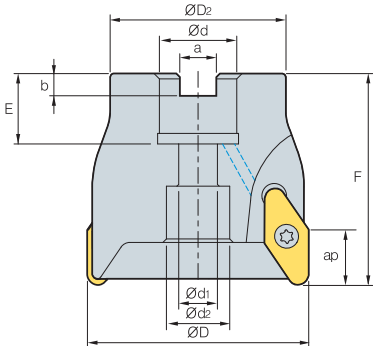
- Lmin : When ap=10mm
- Lmin : Minimum inclination cutting length

  α° : Max. rampig angle

  ap : Depth of cut

$$Lmin = \frac{ap}{\tan \alpha^\circ} \text{ (mm)}$$

PAC(M)2000 / 4000



AA 90°
- AR : 0°
- RR : -3°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg
PACM	**2040HR**	3	40	34	16	9	14	8.4	5.6	18	40	8.7	0.2
	2050HR	4	50	42	22	11	18	10.4	6.3	22	50	8.7	0.4
	2063HR	5	63	49	22	11	18	10.4	6.3	22	50	8.7	0.6
PAC (PACM)	**2080HR**	5	80	57	25.4(27)	14	20	9.5(12.4)	6.0(7.0)	25	50	8.7	0.9
	2100HR	6	100	67	31.75(32)	(18)	44(26)	12.7(14.4)	8.0	37(30)	63	8.7	1.9
PACM	**4040HR**	3	40	32	16	9	11.5	8.4	5.6	20	55	15	0.2
	4050HR	3	50	40	22	11	18	10.4	6.3	20	55	15	0.3
	4063HR	4	63	50	22	11	18	10.4	6.3	20	60	15	0.6
PAC (PACM)	**4080HR**	4	80	60	25.4(27)	14	20	9.5(12.4)	6.0(7.0)	25	60	15	1.0
	4100HR	5	100	80	31.75(32)	(18)	44(26)	12.7(14.4)	8.0	37(26)	60	15	1.6

( ) Metric Size

Available Inserts

VCKT-MA

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
VCKT	**220530N-MA**														●	E23

Available Arbors

Designation		Ød	Available Arbors
PACM	**2040HR**	16	BT□□-FMC16-□□
	2050HR	22	BT□□-FMC22-□□
	2063HR	22	BT□□-FMC22-□□
PAC PAC(M)	**2080HR**	25.4	BT□□-FMC25.4-□□
		27	BT□□-FMC27-□□
	2100HR	31.75	BT□□-FMC31.75-□□
		32	BT□□-FMC32-□□

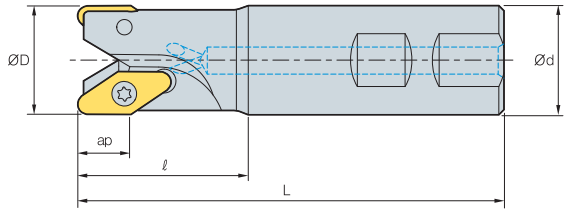
Designation		Ød	Available Arbors
PACM	**4040HR**	16	BT□□-FMC16-□□
	4050HR	22	BT□□-FMC22-□□
	4063HR	22	BT□□-FMC22-□□
PAC PAC(M)	**4080HR**	25.4	BT□□-FMC25.4-□□
		27	BT□□-FMC27-□□
	4100HR	31.75	BT□□-FMC31.75-□□
		32	BT□□-FMC32-□□

Parts

Specification	Screw	Wrench	Arbor Bolt
Ø40~Ø100	FTNC04509(Ø40) FTNC04511	TW 20S	PHMA0834(Ø40)

Available Inserts **E22** Available Arbors and bolt **E318~E320**

PAS2000 / 4000



AA 90°

- AR : 0°~7°
- RR : -21°~-3°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
PAS	2012HR	1	12	16	25	85	8	0.1
	2016HR	2	16	16	25	90	8	0.11
	2020HR	2	20	20	30	100	8	0.2
	2025HR	3	25	25	35	115	8	0.36
	2032HR	4	32	32	40	125	8	0.66
	2042HR	5	42	32	42	130	8	0.84
	4032HR	2	32	32	50	125	15	0.6
	4040HR	3	40	32	50	140	15	0.8
	4040HR-S40	3	40	40	60	150	15	1.2
	4040HR-S42	3	40	42	60	150	15	1.2

Available Inserts

VDKT-MA

VCKT-MA

Type	Designation	Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
2000type	VDKT 11T210N-MA														●	E22
4000type	VCKT 220530N-MA														●	

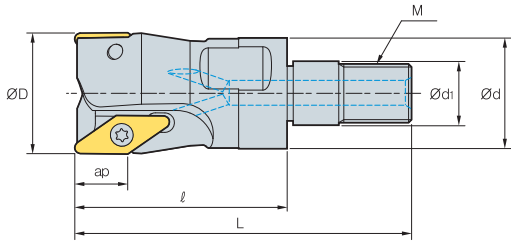
Parts

Specification	Screw	Wrench
Ø12~Ø42 (2000type)	ETNA02505* ETNA02506	TW 07S
Ø32~Ø40 (4000type)	FTNC04509	TW 20S

* PAS2012·2016

Available Inserts E22
Available Arbors and bolt E318~E320

PAM2000



- AR : 7°~10°
- RR : -21°~-9°

(mm)

Designation			ØD	Ød	Ød1	ℓ	L	M	ap	kg
PAM	2012HR-M06	1	12	11.0	6.5	33	48	M06	8	0.02
	2016HR-M08	2	16	14.5	8.5	36	53	M08	8	0.04
	2020HR-M10	2	20	18.0	10.5	36	57	M10	8	0.06
	2025HR-M12	3	25	22.5	12.5	41	65	M12	8	0.1
	2032HR-M16	4	32	28.5	17.0	45	72	M16	8	0.18
	2042HR-M16	5	42	28.5	17.0	45	72	M16	8	0.27

Available Inserts

VDKT-MA

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
VDKT	11T210N-MA														●	E22

Available Adaptors

Designation		Available Adaptors
PAM	2012HR-M06	MAT - M06
	2016HR-M08	MAT - M08
	2020HR-M10	MAT - M10
	2025HR-M12	MAT - M12
	2032HR-M16	MAT - M16
	2042HR-M16	MAT - M16

Designation : PAM2012HR-M06
Modular Head Threading Measure size(M06)

II

Adaptor Spec. : MAT-M06-030-S20S
Adaptor Threading Measure(M06)

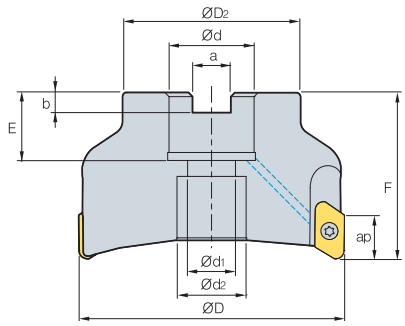
Parts

Specification	Screw	Wrench
Ø12~Ø42	ETNA02505* ETNA02506	TW 07S

Available Inserts E22 Available Adaptors E281~E282

* PAM2012·2016

PAXC(M)5000



AA 90°

- AR : 8°~17.5°
- RR : -9.5°~-5°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	Max rpm	ap	kg
PAXCM	5040HR-A,B	3	40	34	16	9	14	8.4	5.6	19	40	25,800	17	0.15
	5050HR-A,B	4	50	42	22	11	18	10.4	6.3	21	50	23,000	17	0.3
	5063HR-A,B	5(4)	63	49	22	11	18	10.4	6.3	21	50	20,500	17	0.56
PAXC (PAXCM)	5080HR-A,B	5	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	24(23)	50	18,200	17	1.0
	5100HR-A,B	6	100	67	31.75(32)	18	26	12.7(14.4)	8(8)	32(26)	63	16,300	17	2.3
	5125HR-A,B	7	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	35(29)	63	14,600	17	3.2

• A type : Insert NoseR 0.4~3.2, B type : Insert NoseR 4.0~5.0

( )Metric Size

Available Inserts

XEKT-MA

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PD2000	ST30A	G10	H01	
XEKT	19M504FR-MA											●			●	E22
	19M508FR-MA											●			●	
	19M512FR-MA											●			●	
	19M516FR-MA														●	
	19M518FR-MA															
	19M520FR-MA											●			●	
	19M530FR-MA														●	
	19M532FR-MA											●			●	
	19M540FR-MA											●			●	
	19M550FR-MA											●			●	

Available Arbors

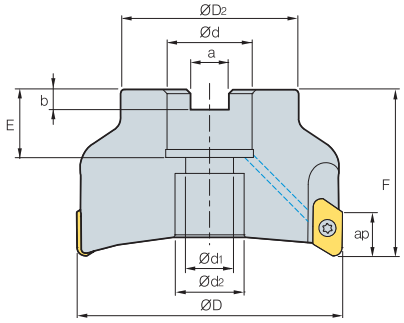
Designation		Ød	Available Arbors
PAXC(M)	5040HR-A,B	16	BT□□-FMC16-□□
	5050HR-A,B	22	BT□□-FMC22-□□
	5063HR-A,B		
	5080HR-A,B	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	5100HR-A,B	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□
	5125HR-A,B	38.1	BT□□-FMA38.1-□□
		40	BT□□-FMC40-□□

Parts

Specification	 Screw	 Wrench
Ø40~Ø125	PTKA0408	TW 15S

Available Inserts E22 Available Arbors and bolt E318~E320

PAXC(M)6000



AA 90°

- AR : 8°~17.5°
- RR : -9.5°~-5°

(mm)

Designation			ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	Max rpm	ap	kg
PAXCM	6050HR-A,B	2	50	42	16	9	14	8.4	5.6	18	50	23,000	23	0.32
	6063HR-A,B	3	63	49	22	11	18	10.4	6.3	21	50	20,500	23	0.53
PAXC (PAXCM)	6080HR-A,B	4	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	18,200	23	0.73
	6100HR-A,B	5	100	67	31.75(32)	18	26	12.7(14.4)	8(8)	32.5(26)	63	16,300	23	1.7
	6125HR-A,B	6	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	35(29)	63	14,600	23	3.06

• A type : Insert NoseR 0.4~3.2, B type : Insert NoseR 4.0~5.0

( )Metric Size

Available Inserts

XEKT-MA

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
XEKT	250604FR-MA														●	E22
	250608FR-MA														●	
	250612FR-MA														●	
	250616FR-MA															
	250620FR-MA														●	
	250630FR-MA															
	250632FR-MA														●	
	250640FR-MA															
	250650FR-MA														●	

Available Arbors

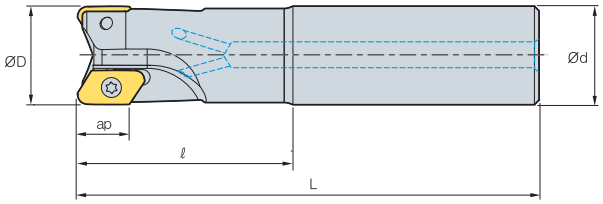
Designation		Ød	Available Arbors
PAXC(M)	6050HR-A,B	16	BT□□-FMC16-□□
	6063HR-A,B	22	BT□□-FMC22-□□
	6080HR-A,B	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	6100HR-A,B	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□
	6125HR-A,B	38.1	BT□□-FMA38.1-□□
		40	BT□□-FMC40-□□

Parts

Specification	Screw	Wrench
Ø50~Ø125	FTGA0513-P	TW 20-100

Available Inserts E22 Available Arbors and bolt E318~E320

PAXS5000



AA 90°

- AR : 5°~10°
- RR : -14°~-5°

(mm)

Designation			ØD	Ød	ℓ	L	Max rpm	ap	kg
PAXS	5020HR-A,B	1	20	20	60	130	15,000	17	0.24
	5025HR-A,B	2	25	25	60	140	32,600	17	0.4
	5025HR-A,B-L200	2	25	25	60	200	32,600	17	0.63
	5032HR-A,B	2	32	32	70	150	28,800	17	0.74
	5032HR-A,B-L220	2	32	32	70	220	28,800	17	1.2
	5040HR-A,B-S32	3	40	32	70	160	25,800	17	1.0
	5040HR-A,B-L220	3	40	32	70	220	25,800	17	1.4
	5040HR-A,B-S40	3	40	40	70	160	25,800	17	1.3
	5040HR-A,B-S42	3	40	42	70	160	25,800	17	1.4

• A type : Insert NoseR 0.4~3.2, B type : Insert NoseR 4.0~5.0

Available Inserts

XEKT-MA

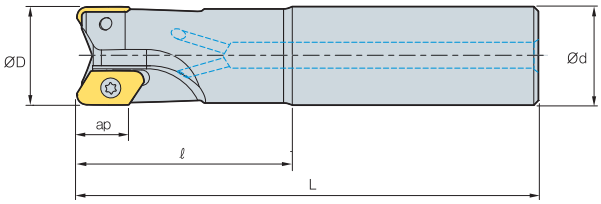
Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PD2000	ST30A	G10	H01	
XEKT	19M504FR-MA											●			●	E22
	19M508FR-MA											●			●	
	19M512FR-MA											●			●	
	19M516FR-MA														●	
	19M518FR-MA															
	19M520FR-MA											●			●	
	19M530FR-MA														●	
	19M532FR-MA											●			●	
	19M540FR-MA											●			●	
	19M550FR-MA											●			●	

Parts

Specification	Screw	Wrench
Ø20~Ø40	PTKA0408	TW 15S

Available Inserts E22

PAXS6000



• AR : 5°~10°
• RR : -14°~-5°

(mm)

Designation			ØD	Ød	ℓ	L	Max rpm	ap	kg
PAXS	6025HR-A,B	1	25	25	60	140	32,600	23	0.42
	6025HR-A,B-L200	1	25	25	60	200	32,600	23	0.63
	6032HR-A,B	1	32	32	70	150	28,800	23	0.72
	6032HR-A,B-L220	1	32	32	70	220	28,800	23	1.14
	6040HR-A,B-S32	2	40	32	70	160	25,800	23	0.88
	6040HR-A,B-L220	2	40	32	70	220	25,800	23	1.23
	6040HR-A,B-S40	2	40	40	70	160	25,800	23	1.2
	6040HR-A,B-S42	2	40	42	70	160	25,800	23	1.3

• A type : Insert NoseR 0.4~3.2, B type : Insert NoseR 4.0~5.0

Available Inserts

XEKT-MA

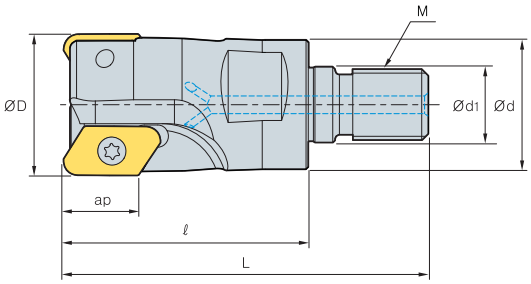
Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
XEKT	250604FR-MA														●	E22
	250608FR-MA														●	
	250612FR-MA														●	
	250616FR-MA															
	250630FR-MA															
	250632FR-MA														●	
	250640FR-MA															
	250650FR-MA														●	

Parts

Specification	 Screw	 Wrench
Ø25~Ø40	FTGA0513-P	TW 20-100

Available Inserts **E22**

PAXM5000



- AR : 6°~8°
- RR : -7°~-5°

(mm)

Designation			ØD	Ød	Ød1	ℓ	L	M	ap	kg
PAXM	5025HR-A,B-M12	2	25	23	12.5	55	79	M12	17	0.12
	5032HR-A,B-M16	2	32	29	17.0	55	82	M16	17	0.2
	5040HR-A,B-M16	3	40	29	17.0	55	82	M16	17	0.4

• A type : Insert NoseR 0.4~3.2, B type : Insert NoseR 4.0~5.0

Available Inserts

XEKT-MA

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PD2000	ST30A	G10	H01	
XEKT	19M504FR-MA											●			●	E22
	19M508FR-MA											●			●	
	19M512FR-MA											●			●	
	19M516FR-MA														●	
	19M518FR-MA															
	19M520FR-MA											●			●	
	19M530FR-MA														●	
	19M532FR-MA											●			●	
	19M540FR-MA											●			●	
	19M550FR-MA											●			●	

Available Adaptors

Designation		Available Adaptors
PAXM	5025HR-A,B-M12	MAT - M12
	5032HR-A,B-M16	MAT - M16
	5040HR-A,B-M16	

Designation : PAXM5025HR-M12
Modular Head Threading Measure size(M12)

II

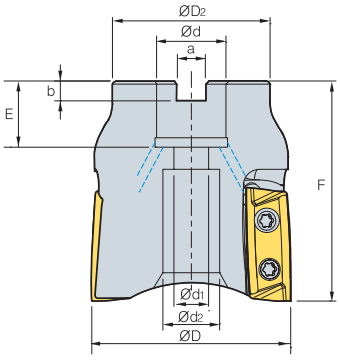
Adaptor Spec. : MAT-M12-030-S25S
Adaptor Threading Measure(M12)

Parts

Specification	Screw	Wrench
Ø25~Ø40	PTKA0407 PTKA0408	TW 15S

Available Inserts E22 Available Adaptors E281~E282

PALCM New



AA 90°

- AR : 16°
- RR : -8°

(mm)

Designation		ØD	ØD2	Ød	Ød1	Ød2	a	b	E	F	ap	kg
PALCM	063HR	4	63	50	22	11	21	10.4	6.3	20	70	34	0.57

Available Inserts

LXET-MA

LXET-ML

Type	Designation		Cermet		Coated									Uncoated			Page
			CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
Ø63	LXET	340504PEFR-63-MA															E10
		3405PEFR-63-MA															
		340512PEFR-63-MA															
		340516PEFR-63-MA															
		340504PEER-63-ML															
		3405PEER-63-ML															
		340512PEER-63-ML															
		340516PEER-63-ML															

Available Arbors

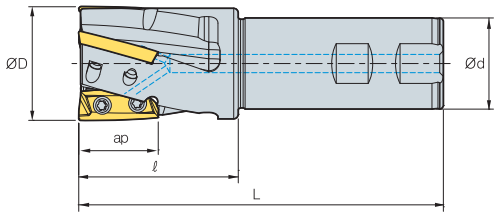
Designation		Ød	Available Arbors
PALCM	063HR	22	BT□□-FMC22-□□

Parts

Specification	Screw	Wrench
Ø63	FTGA0511-P	TW20-100

Available Inserts E10 Available Arbors and bolt E318~E320

PALS (Single Edge) New



AA 90°

- AR: 12°~16°
- RR : -5°~-9°

(mm)

Designation			ØD	Ød	ℓ	L	ap	kg
PALS	032HR-2S20	2	32	20	50	140	25	0.36
	032HR-2S25	2	32	25	50	140	25	0.48
	032HR-2S32	2	32	32	50	140	25	0.71
	040HR-2S32	2	40	32	50	140	25	0.85
	040HR-2S40	2	40	40	50	140	25	1.16
	040HR-2S42	2	40	42	50	140	25	1.26
	040HR-3S32	3	40	32	50	140	25	0.80
	040HR-3S40	3	40	40	50	140	25	1.10
	040HR-3S42	3	40	42	50	140	25	1.20
	050HR-3S32	3	50	32	70	160	34	1.10
	050HR-3S40	3	50	40	70	160	34	1.40
	050HR-3S42	3	50	42	70	160	34	1.50
	063HR-4S32	4	63	32	70	160	34	1.60
	063HR-4S40	4	63	40	70	160	34	1.92
	063HR-4S42	4	63	42	70	160	34	2.00

Available Inserts

LXET-MA

LXET-ML

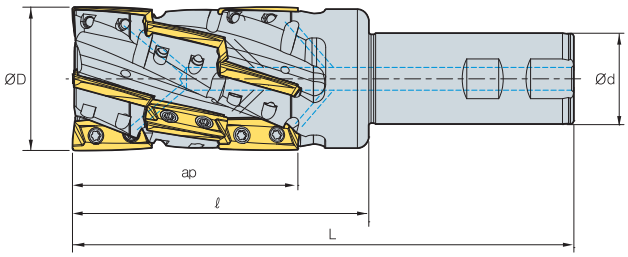
Type	Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	Type	Designation		Cermet CN2000	Cermet CN30	Coated NCM325	Coated NCM335	Coated PC3500	Coated PC3600	Coated PC3545	Coated PC9530	Coated PC6510	Coated PC5300	Coated PC5400	Uncoated ST30A	Uncoated G10	Uncoated H01	Page
Ø32	LXET	250404PEFR-32-MA															Ø50	LXET	340504PEFR-50-MA																E10
		2504PEFR-32-MA																	3405PEFR-50-MA																
		250412PEFR-32-MA																	340512PEFR-50-MA																
		250416PEFR-32-MA																	340516PEFR-50-MA																
		250404PEER-32-ML																	340504PEER-50-ML																
		2504PEER-32-ML																	3405PEER-50-ML																
		250412PEER-32-ML																	340512PEER-50-ML																
		250416PEER-32-ML																	340516PEER-50-ML																
Ø40	LXET	250404PEFR-40-MA															Ø63	LXET	340504PEFR-63-MA																
		2504PEFR-40-MA																	3405PEFR-63-MA																
		250412PEFR-40-MA																	340512PEFR-63-MA																
		250416PEFR-40-MA																	340516PEFR-63-MA																
		250404PEER-40-ML																	340504PEER-63-ML																
		2504PEER-40-ML																	3405PEER-63-ML																
		250412PEER-40-ML																	340512PEER-63-ML																
		250416PEER-40-ML																	340516PEER-63-ML																

Parts

Specification	Screw	Wrench	Wrench
Ø32	FTKA0408	TW15S	-
Ø40	FTKA0410	TW15S	-
Ø50	FTGA0510-P	-	TW20-100
Ø63	FTGA0511-P	-	TW20-100

Available Inserts E10

PALS (Multi Edge) New



AA 90°
- AR : 16°
- RR : -8°

(mm)

Designation			Ød	Ød1	ℓ	L	ap	kg
PALS	063HM-4S32	12	63	32	130	220	96	1.60
	063HM-4S40	12	63	40	130	220	96	1.92
	063HM-4S42	12	63	42	130	220	96	2.00

Available Inserts

LXET-MA

LXET-ML

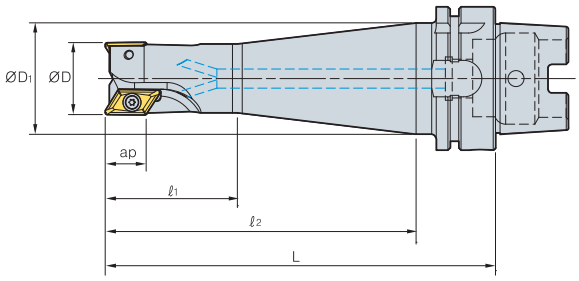
Type	Designation		Cermet		Coated									Uncoated			Page
			CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
Ø63	LXET	340504PEFR-63-MA															E10
		3405PEFR-63-MA															
		340512PEFR-63-MA															
		340516PEFR-63-MA															
		340504PEER-63-ML															
		3405PEER-63-ML															
		340512PEER-63-ML															
		340516PEER-63-ML															

Parts

Specification	 Screw	 Wrench
Ø63	FTGA0511-P	TW20-100

Available Inserts E10

HSK63A/100A PAX5000



AA 90°

- AR : 5°~17.5°
- RR : -14°~-5°

(mm)

Designation			ØD	ØD1	ℓ1	ℓ2	L	ap	kg
HSK63A	PAX5032HR-A, B	2	32	53	58	137	163	17	1.14
HSK100A	PAXCM5080HR-A, B	5	80	-	-	66	95	17	4
	PAXCM5100HR-A, B	6	100	-	-	66	95	17	4.6

- A type : Insert NoseR 0.4~3.2, B type : Insert NoseR 4.0~5.0
- Max Rake Angle & Max rpm can be refered to E242~E243

Available Inserts

XEKT-MA

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PD2000	ST30A	G10	H01	
XEKT	19M504FR-MA											●			●	E22
	19M508FR-MA											●			●	
	19M512FR-MA											●			●	
	19M516FR-MA														●	
	19M518FR-MA															
	19M520FR-MA											●			●	
	19M530FR-MA														●	
	19M532FR-MA											●			●	
	19M540FR-MA											●			●	
	19M550FR-MA											●			●	

Parts

Specification	Screw	Wrench
Ø32~Ø100	PTKA0407 PTKA0408	TW 15S

Available Inserts E22

MAT (Steel Shank type)

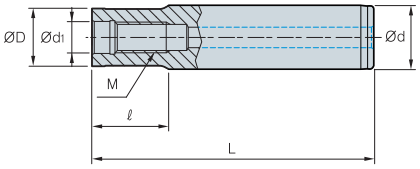


Fig. 1

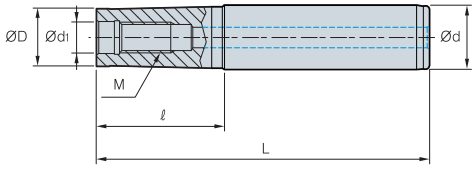


Fig. 2

(mm)

Designation		ØD	Ød	Ød1	ℓ	L	M	Fig.
MAT	M06-020-S10S	9.5	10	6.5	20	70	M06	1
	M6B-020-S12S	11.0	12	6.5	20	76	M06	1
	M6B-040-S12S	11.0	12	6.5	40	96	M06	1
	M08-020-S16S	14.5	16	8.5	20	80	M08	1
	M10-030-S20S	18.0	20	10.5	30	100	M10	1
	M12-030-S25S	22.5	25	12.5	29	110	M12	1
	M16-035-S32S	28.5	32	17.0	35	125	M16	1
	M06-040-S12T	9.5	12	6.5	40	96	M06	2
	M06-065-S16T	9.5	16	6.5	65	125	M06	2
	M6B-065-S16T	11.0	16	6.5	65	125	M06	2
	M6B-080-S16T	11.0	16	6.5	80	140	M06	2
	M08-040-S16T	14.5	16	8.5	40	100	M08	2
	M08-065-S16T	14.5	16	8.5	65	125	M08	2
	M08-080-S20T	14.5	20	8.5	80	150	M08	2
	M08-110-S25T	14.5	25	8.5	110	190	M08	2
	M10-050-S20T	18.0	20	10.5	50	120	M10	2
	M10-070-S20T	18.0	20	10.5	70	140	M10	2
	M10-090-S25T	18.0	25	10.5	90	170	M10	2
	M10-110-S25T	18.0	25	10.5	110	190	M10	2
	M10-130-S32T	18.0	32	10.5	130	220	M10	2
	M12-050-S25T	22.5	25	12.5	50	130	M12	2
	M12-070-S25T	22.5	25	12.5	70	150	M12	2
	M12-090-S25T	22.5	25	12.5	90	170	M12	2
	M12-110-S32T	22.5	32	12.5	110	200	M12	2
	M12-175-S40T	22.5	40	12.5	175	300	M12	2
	M16-055-S32T	28.5	32	17.0	55	145	M16	2
	M16-080-S32T	28.5	32	17.0	80	170	M16	2
	M16-120-S32T	28.5	32	17.0	120	210	M16	2
	M16-175-S40T	28.5	40	17.0	175	300	M16	2

• S : Straight Neck Adaptor • T : Taper Neck Adaptor

FMRM type

E197, 198, 207

LBE-MHD type

E242

PAM type

E271

PAXM type

E276

AMM type

E140, 141, 142

RM4PM type

E82

RM4ZM type

E84

HRMM type

E227

HRMDM type

E221, 222

PAXM type

E276

Applicable Modular E33 (FMRM, LBE, PAM, AMM, RM4PM, RM4ZM, HRMM, PAXM)

MAT-C(Carbide Shank type)

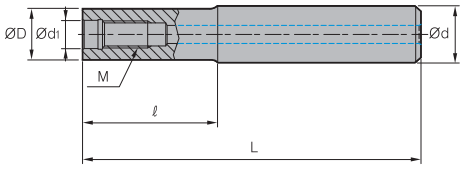


Fig. 1

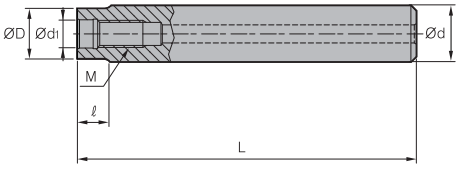


Fig. 2

(mm)

	Designation	ØD	Ød	Ød1	ℓ	L	M	Fig.
MAT	M08-080-S16S-C	14.5	16	8.5	80	150	M08	1
	M08-110-S16S-C	14.5	16	8.5	110	180	M08	1
	M08-150-S16S-C	14.5	16	8.5	150	250	M08	1
	M08-010-S16S-C-150	14.5	16	8.5	10	150	M08	2
	M08-010-S16S-C-180	14.5	16	8.5	10	180	M08	2
	M08-010-S16S-C-250	14.5	16	8.5	10	250	M08	2
	M10-090-S20S-C	18.0	20	10.5	90	170	M10	1
	M10-110-S20S-C	18.0	20	10.5	110	200	M10	1
	M10-175-S20S-C	18.0	20	10.5	175	300	M10	1
	M10-010-S20S-C-170	18.0	20	10.5	10	170	M10	2
	M10-010-S20S-C-200	18.0	20	10.5	10	200	M10	2
	M10-010-S20S-C-300	18.0	20	10.5	10	300	M10	2
	M12-090-S25S-C	22.5	25	12.5	90	170	M12	1
	M12-110-S25S-C	22.5	25	12.5	110	200	M12	1
	M12-175-S25S-C	22.5	25	12.5	175	300	M12	1
	M12-015-S25S-C-170	22.5	25	12.5	15	170	M12	2
	M12-015-S25S-C-200	22.5	25	12.5	15	200	M12	2
	M12-015-S25S-C-300	22.5	25	12.5	15	300	M12	2
	M16-090-S32S-C	28.5	32	17.0	90	180	M16	1
	M16-120-S32S-C	28.5	32	17.0	120	210	M16	1
	M16-175-S32S-C	28.5	32	17.0	175	300	M16	1
	M16-020-S32S-C-180	28.5	32	17.0	20	180	M16	2
	M16-020-S32S-C-210	28.5	32	17.0	20	210	M16	2
	M16-020-S32S-C-300	28.5	32	17.0	20	300	M16	2

FMRM type

E197, 198, 207

LBE-MHD type

E242

PAM type

E271

PAXM type

E276

AMM type

E140, 141, 142

RM4PM type

E82

RM4ZM type

E84

HRMM type

E227

HRMDM type

E221, 222

PAXM type

E276

Applicable Modular **E33** (FMRM, LBE, PAM, AMM, RM4PM, RM4ZM, HRMM, PAXM)

Adjusting side cutter

Code System

P : Plane type

B : Boss type

A : Adjusting side cutter

For half side cutter, minimum width of the cutter will be written only.

Adjusting	Cutter type	Max. width of cutter

R A FC B 125 14 18 – R

Insert clamping way

R : Radial type (Using SDXT)

T : Tangential type (Using CNHQ)

Insert configuration

FC Full side cutter

HC Half side cutter

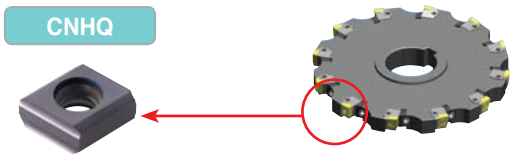
Cutter Dia.

Min. width of cutter

Hand

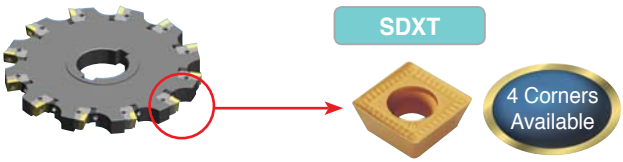
Unmarked	R	L
Neutral	Right	Left
Full side cutter (Plane type)	Half side cutter (Boss type)	

Tangential Type (High rigidity)



- Medium/Roughing
- Excellent performance at medium to roughing range (14~30mm) table operation due to the strong rigidity of the cutter
- Good performance in heavy interruption and deep depth of cut application

Radial Type (Low cutting load)

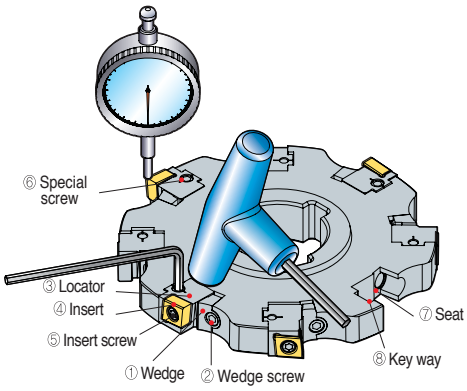


- Medium/Finishing
- Suitable for small width cutting operation (12~24mm)
- 3 dimensional chip breaker provides smooth cutting operation.
- Several chip breakers as per applications are available (MF, MM, FA)
- Economical insert using 4 cutting edges per insert

Insert Features

- ▶ Precise adjustable side cutter can control the width of the cutter by 5㎛ unit
- ▶ Since the width of the cutter is adjustable up to ±1.5mm, single cutter can cover various cutting width
- ▶ Specially designed clamping system of the locator provides excellent rigidity by using elastic deformation of the locator
- ▶ Tangential type clamping system of insert provides enough strength can withstand large width cutting operations
- ▶ 3-dimensional chip breaker of insert provides smooth cutting with low cutting load at medium to finishing range

Operating manual



How to assemble the adjusting side cutter

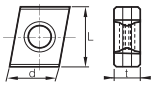
1. Clamp ①wedge slightly on ⑦locator-wedge pocket by using ②wedge screw
2. Put ③locator on ⑦locator-wedge pocket along with the ⑧key-way
3. Tighten the ⑥taper screw little bit to set proper position of locator
4. Tighten the ②wedge screw tightly by using 70~80N.m torque
5. After put the ④insert on insert pocket of ③locator, clamp it with ⑤insert screw by using 40~50N.m torque

How to adjust Run-out & Cutting width

1. Settle the adjusting side cutter after cleaning to the jig for measurement
2. Un-screw the ②Wedge screw first, then tighten ①wedge slightly again by using 8N.m torque
3. Adjusting the height of cutting edge by using a dial gauge to set the width of the cutter
4. Tighten the ②wedge screw tightly by using 70~80N.m torque
5. To finish the setting, tighten the ⑥taper screw for strong clamp

Tangential type

Cutting width as per insert & type of cutter

CNHQ  

(mm)

Designation		Coated NCM325	Coated PC6510	Cutting width for half side cutter (ap)	Cutting width for full side cutter (ap)	L	d	t
CNHQ1005	- C0.5			9.0	14~18	10	10	5.4
	- R0.5							
	- C1.0			8.5	14~17			
	- R1.0							
CNHQ1305	- C0.5			12	18~21 / 21~24	12.7	10	5.4
	- R0.5							
	- C1.0			11.5	18~21 / 21~23			
	- R1.0							
	- C1.5			11	18~21 / 21~22			
	- R1.5							
CNHQ1606	- C0.5			15	24~27 / 27~30	16	12	6.4
	- R0.5							
	- C1.0			14.5	24~27 / 27~29			
	- R1.0							
	- C1.5			14	24~27 / 27~28			
	- R1.5							
	- C2.0			13.5	24~27			
	- R2.0							

Applicable holder E285, E286 Available Arbors and bolt E318~E320

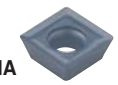
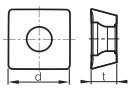
● Stock item

Recommended cutting condition

ISO	Grades	vc(m/min)	fz(mm/t)
P	NCM325	190~310	0.10~0.30
	PC3500	160~270	
M	PC5300	90~150	0.10~0.30
	NCM335	180~290	
K	PC215K	120~200	0.10~0.30
	PC6510	140~230	

Radial type

Cutting width as per insert & type of cutter

MA  MF  MM  

(mm)

Designation		Coated NCM325	NCM335	PC3500	PC3545	PC9530	PC6510	PC5300	Uncoated H01	Cutting width for half side cutter (ap)	Cutting width for full side cutter (ap)	d	t
SDXT	09M405R-MA								●	8	12~14 14~16	9.525	4
	09M405L-MA												
	09M405R-MF	●	●			●	●	●					
	09M405L-MF												
	09M405R-MM	●	●	●		●	●	●					
	09M405L-MM												
SDXT	130508R-MA								●	10.5	16~18 18~20 20~22 22~24	13.5	5.56
	130508L-MA												
	130508R-MF	●	●			●	●	●					
	130508L-MF												
	130508R-MM	●	●	●		●	●	●					
	130508L-MM												

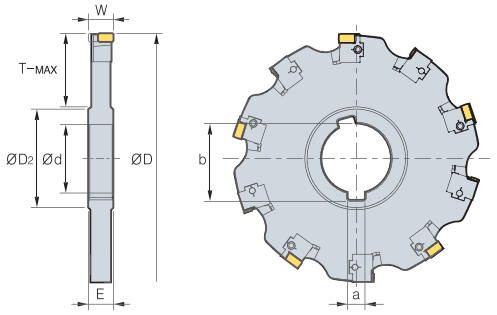
Applicable holder E287, E288 Available Arbors and bolt E318~E320

● Stock item

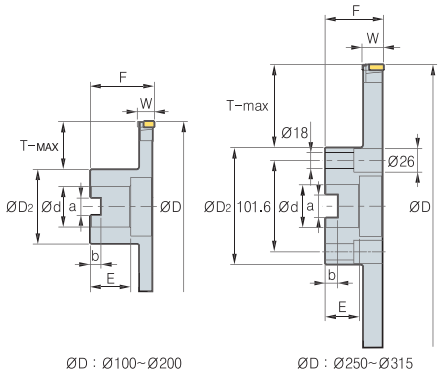
Recommended cutting condition

ISO	Grades	vc(m/min)	fz(mm/t)
P	NCM325	190~310	0.08~0.30
	NCM335	180~290	0.08~0.25
	PC3500	160~270	0.10~0.25
M	PC9530	90~150	0.10~0.25
	PC5300	90~150	
K	PC8110	140~230	0.10~0.25
	PC6510	140~230	

Tangential type (Full side cutter)



• TAFCP(M)



• TAFCB(M)

(mm)

Designation		Ød	E	ØD2	a	b	T-MAX	Designation		Ød	F	ØD2	a	b	E	T-MAX	Designation ØD	W	No. of tooth
TAFCP (M)	**1001418**	31.75(32)	14	48	7.92(8)	35.2	24	TAFCB (M)	**1001418R/L**	31.75(32)	50	54	12.7(14.4)	8	28	21	100	14-18	6
	1251418	38.1(40)	14	56	9.52(10)	42.3	32		**1251418R/L**	38.1(40)	60	70	15.9(16.4)	10	30	25	125	14-18	8
	1601418	38.1(40)	14	56	9.52(10)	42.3	50		**1601418R/L**	38.1(40)	60	70	15.9(16.4)	10	30	43	160	14-18	10
	2001418	50.8(50)	14	72	12.7(12)	55.8	61		**2001418R/L**	50.8(40)	65	90	19.0(16.4)	11	30	53	200	14-18	12
	2501418	50.8(50)	14	72	12.7(12)	55.8	86		**2501418R/L**	47.625(60)	65	130	25.4(25.7)	14	38	58	250	14-18	16
	3151418	50.8(50)	14	72	12.7(12)	55.8	118		**3151418R/L**	47.625(60)	65	130	25.4(25.7)	14	38	90	315	14-18	20
TAFCP (M)	**1001821**	31.75(32)	18	48	7.92(8)	35.2	24	TAFCB (M)	**1001821R/L**	31.75(32)	50	50	12.7(14.4)	8	28	21	100	18-21	6
	1251821	38.1(40)	18	56	9.52(10)	42.3	32		**1251821R/L**	38.1(40)	60	70	15.9(16.4)	10	30	25	125	18-21	8
	1601821	38.1(40)	18	56	9.52(10)	42.3	50		**1601821R/L**	38.1(40)	60	70	15.9(16.4)	10	30	43	160	18-21	10
	2001821	50.8(50)	18	72	12.7(12)	55.8	61		**2001821R/L**	50.8(40)	65	90	19.0(16.4)	11	30	53	200	18-21	12
	2501821	50.8(50)	18	72	12.7(12)	55.8	86		**2501821R/L**	47.625(60)	65	130	25.4(25.7)	14	38	58	250	18-21	16
	3151821	50.8(50)	18	72	12.7(12)	55.8	118		**3151821R/L**	47.625(60)	65	130	25.4(25.7)	14	38	90	315	18-21	20
TAFCP (M)	**1002124**	31.75(32)	21	48	7.92(8)	35.2	24	TAFCB (M)	**1002124R/L**	31.75(32)	50	54	12.7(14.4)	8	28	21	100	21-24	6
	1252124	38.1(40)	21	56	9.52(10)	42.3	32		**1252124R/L**	38.1(40)	60	70	15.9(16.4)	10	30	25	125	21-24	8
	1602124	38.1(40)	21	56	9.52(10)	42.3	50		**1602124R/L**	38.1(40)	60	70	15.9(16.4)	10	30	43	160	21-24	10
	2002124	50.8(50)	21	72	12.7(12)	55.8	61		**2002124R/L**	50.8(40)	65	90	19.0(16.4)	11	30	53	200	21-24	12
	2502124	50.8(50)	21	72	12.7(12)	55.8	86		**2502124R/L**	47.625(60)	65	130	25.4(25.7)	14	38	58	250	21-24	16
	3152124	50.8(50)	21	72	12.7(12)	55.8	118		**3152124R/L**	47.625(60)	65	130	25.4(25.7)	14	38	90	315	21-24	20
TAFCP (M)	**1252427**	38.1(40)	24	56	9.52(10)	42.3	32	TAFCB (M)	**1252427R/L**	38.1(40)	60	70	15.9(16.4)	10	30	25	125	24-27	8
	1602427	38.1(40)	24	56	9.52(10)	42.3	50		**1602427R/L**	38.1(40)	60	70	15.9(16.4)	10	30	43	160	24-27	10
	2002427	50.8(50)	24	72	12.7(12)	55.8	61		**2002427R/L**	50.8(40)	65	90	19.0(16.4)	11	30	53	200	24-27	12
	2502427	50.8(50)	24	72	12.7(12)	55.8	86		**2502427R/L**	47.625(60)	65	130	25.4(25.7)	14	38	58	250	24-27	16
	3152427	50.8(50)	24	72	12.7(12)	55.8	118		**3152427R/L**	47.625(60)	65	130	25.4(25.7)	14	38	90	315	24-27	20
TAFCP (M)	**1252730**	38.1(40)	27	56	9.52(10)	42.3	32	TAFCB (M)	**1252730R/L**	38.1(40)	60	70	15.9(16.4)	10	30	25	125	27-30	8
	1602730	38.1(40)	27	56	9.52(10)	42.3	50		**1602730R/L**	38.1(40)	60	70	15.9(16.4)	10	30	43	160	27-30	10
	2002730	50.8(50)	27	72	12.7(12)	55.8	61		**2002730R/L**	50.8(40)	65	90	19.0(16.4)	11	30	53	200	27-30	12
	2502730	50.8(50)	27	72	12.7(12)	55.8	86		**2502730R/L**	47.625(60)	65	130	25.4(25.7)	14	38	58	250	27-30	16
	3152730	50.8(50)	27	72	12.7(12)	55.8	118		**3152730R/L**	47.625(60)	65	130	25.4(25.7)	14	38	90	315	27-30	20

Available Inserts and Recommended cutting condition **E284**

• The ap (Maximium width of cutter) size written above is the number when using insert having corner size C0.5 or R0.5

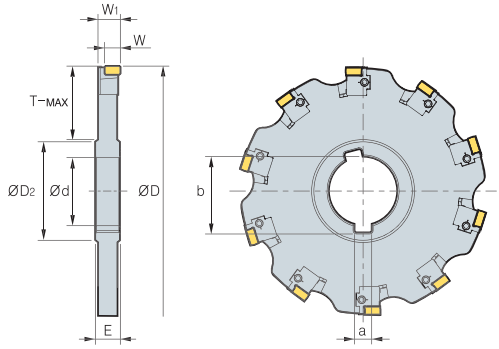
• ( )Metric Size

Parts

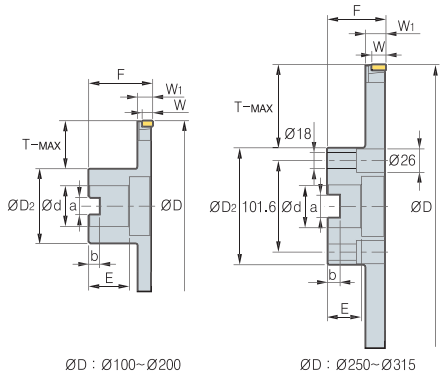
Specification Edge width(TAFCP/B)	Insert	Locator	Wedge	Insert Screw	Wedge Screw	Locator Screw	Insert Wrench	Wedge Wrench	Locator Wrench
□□□1418R/L	CNHQ1005-□□□	LSA-CH10R/L	WSA10N	FTKA0410	DHA0617	SHGA0411	TW15S	HW30	-
□□□1821R/L	CNHQ1305-□□□	LSA-CH13R/L	WSA13N	FTKA0410	DHA0821F	SHGA0411	TW15S	HW40	HW30L
□□□2124R/L	CNHQ1305-□□□	LSA-CH13R/L	WSA13N	FTKA0410	DHA0821F	SHGA0411	TW15S	HW40	HW30L
□□□2427R/L	CNHQ1606-□□□	LSA-CH16R/L	WSA13N	FTGA0513-P	DHA0821F	SHGA0411	TW20S	HW40	HW30L
□□□2730R/L	CNHQ1606-□□□	LSA-CH16R/L	WSA13N	FTGA0513-P	DHA0821F	SHGA0411	TW20S	HW40	HW30L

• Note) The Wedge screw for 1001821, 1002124 cutter is DHA0818F

Tangential type (Half side cutter)



• TAHCP(M)



• TAHCB(M)

(mm)

Designation		Ød	E	ØD2	a	b	T-MAX	Designation		Ød	F	ØD2	a	b	E	T-MAX	Dimensions ØD	W	W1	No. of tooth
TAHCP (M)	**10014R/L**	31.75(32)	14	48	7.92(8)	35.2	24	TAHCB (M)	**10014R/L**	31.75(32)	50	54	12.7(14.4)	8	28	21	100	9	13.25	6
	12514R/L	38.1(40)	14	56	9.52(10)	42.3	32		**12514R/L**	38.1(40)	60	70	15.9(16.4)	10	30	25	125	9	13.25	8
	16014R/L	38.1(40)	14	56	9.52(10)	42.3	50		**16014R/L**	38.1(40)	60	70	15.9(16.4)	10	30	43	160	9	13.25	10
	20014R/L	50.8(50)	14	72	12.7(12)	55.8	61		**20014R/L**	50.8(40)	65	90	19.0(16.4)	11	30	53	200	9	13.25	12
	25014R/L	50.8(50)	14	72	12.7(12)	55.8	86		**25014R/L**	47.625(60)	65	130	25.4(25.7)	14	38	58	250	9	13.25	16
	31514R/L	50.8(50)	14	72	12.7(12)	55.8	118		**31514R/L**	47.625(60)	65	130	25.4(25.7)	14	38	90	315	9	13.25	20
TAHCP (M)	**10018R/L**	31.75(32)	18	48	7.92(8)	35.2	24	TAHCB (M)	**10018R/L**	31.75(32)	50	50	12.7(14.4)	8	28	21	100	12	16.75	6
	12518R/L	38.1(40)	18	56	9.52(10)	42.3	32		**12518R/L**	38.1(40)	60	70	15.9(16.4)	10	30	25	125	12	16.75	8
	16018R/L	38.1(40)	18	56	9.52(10)	42.3	50		**16018R/L**	38.1(40)	60	70	15.9(16.4)	10	30	43	160	12	16.75	10
	20018R/L	50.8(50)	18	72	12.7(12)	55.8	61		**20018R/L**	50.8(40)	65	90	19.0(16.4)	11	30	53	200	12	16.75	12
	25018R/L	50.8(50)	18	72	12.7(12)	55.8	86		**25018R/L**	47.625(60)	65	130	25.4(25.7)	14	38	58	250	12	16.75	16
	31518R/L	50.8(50)	18	72	12.7(12)	55.8	118		**31518R/L**	47.625(60)	65	130	25.4(25.7)	14	38	90	315	12	16.75	20
TAHCP (M)	**10021R/L**	31.75(32)	21	48	7.92(8)	35.2	24	TAHCB (M)	**10021R/L**	31.75(32)	50	54	12.7(14.4)	8	28	21	100	12	19.75	6
	12521R/L	38.1(40)	21	56	9.52(10)	42.3	32		**12521R/L**	38.1(40)	60	70	15.9(16.4)	10	30	25	125	12	19.75	8
	16021R/L	38.1(40)	21	56	9.52(10)	42.3	50		**16021R/L**	38.1(40)	60	70	15.9(16.4)	10	30	43	160	12	19.75	10
	20021R/L	50.8(50)	21	72	12.7(12)	55.8	61		**20021R/L**	50.8(40)	65	90	19.0(16.4)	11	30	53	200	12	19.75	12
	25021R/L	50.8(50)	21	72	12.7(12)	55.8	86		**25021R/L**	47.625(60)	65	130	25.4(25.7)	14	38	58	250	12	19.75	16
	31521R/L	50.8(50)	21	72	12.7(12)	55.8	118		**31521R/L**	47.625(60)	65	130	25.4(25.7)	14	38	90	315	12	19.75	20
TAHCP (M)	**12524R/L**	38.1(40)	24	56	9.52(10)	42.3	32	TAHCB (M)	**12524R/L**	38.1(40)	60	70	15.9(16.4)	10	30	25	125	15	22.75	8
	16024R/L	38.1(40)	24	56	9.52(10)	42.3	50		**16024R/L**	38.1(40)	60	70	15.9(16.4)	10	30	43	160	15	22.75	10
	20024R/L	50.8(50)	24	72	12.7(12)	55.8	61		**20024R/L**	50.8(40)	65	90	19.0(16.4)	11	30	53	200	15	22.75	12
	25024R/L	50.8(50)	24	72	12.7(12)	55.8	86		**25024R/L**	47.625(60)	65	130	25.4(25.7)	14	38	58	250	15	22.75	16
	31524R/L	50.8(50)	24	72	12.7(12)	55.8	118		**31524R/L**	47.625(60)	65	130	25.4(25.7)	14	38	90	315	15	22.75	20
TAHCP (M)	**12527R/L**	38.1(40)	27	56	9.52(10)	42.3	32	TAHCB (M)	**12527R/L**	38.1(40)	60	70	15.9(16.4)	10	30	25	125	15	25.75	8
	16027R/L	38.1(40)	27	56	9.52(10)	42.3	50		**16027R/L**	38.1(40)	60	70	15.9(16.4)	10	30	43	160	15	25.75	10
	20027R/L	50.8(50)	27	72	12.7(12)	55.8	61		**20027R/L**	50.8(40)	65	90	19.0(16.4)	11	30	53	200	15	25.75	12
	25027R/L	50.8(50)	27	72	12.7(12)	55.8	86		**25027R/L**	47.625(60)	65	130	25.4(25.7)	14	38	58	250	15	25.75	16
	31527R/L	50.8(50)	27	72	12.7(12)	55.8	118		**31527R/L**	47.625(60)	65	130	25.4(25.7)	14	38	90	315	15	25.75	20

Available Inserts and Recommended cutting condition **E284**

• The ap (Maximium width of cutter) size written above is the number when using insert having corner size C0.5 or R0.5

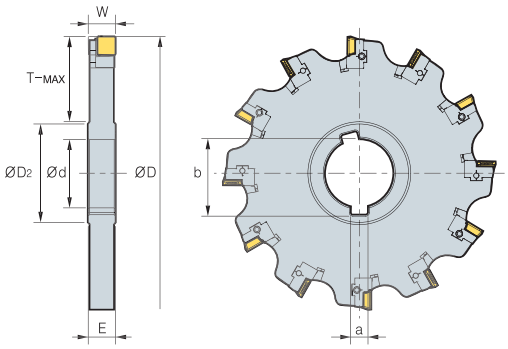
• ( )Metric Size

Parts

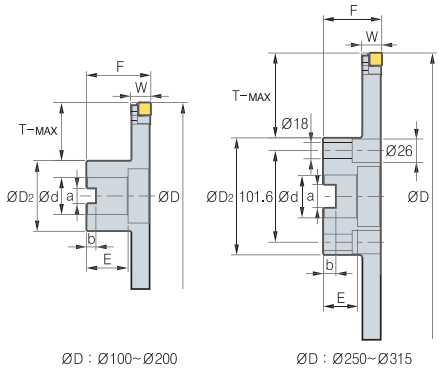
Specification Edge width(TAHCP/B)	Insert	Locator	Wedge	Insert Screw	Wedge Screw	Locator Screw	Insert Wrench	Wedge Wrench	Locator Wrench
□□□1418R/L	CNHQ1005-□□□	LSA-CH10R/L	WSA10N	FTKA0410	DHA0617	SHGA0411	TW15S	HW30	-
□□□1821R/L	CNHQ1305-□□□	LSA-CH13R/L	WSA13N	FTKA0410	DHA0821F	SHGA0411	TW15S	HW40	HW30L
□□□2124R/L	CNHQ1305-□□□	LSA-CH13R/L	WSA13N	FTKA0410	DHA0821F	SHGA0411	TW15S	HW40	HW30L
□□□2427R/L	CNHQ1606-□□□	LSA-CH16R/L	WSA13N	FTGA0513-P	DHA0821F	SHGA0411	TW20S	HW40	HW30L
□□□2730R/L	CNHQ1606-□□□	LSA-CH16R/L	WSA13N	FTGA0513-P	DHA0821F	SHGA0411	TW20S	HW40	HW30L

• Note) The Wedge screw for 10018, 10021 cutter is DHA0818F

Radial type (Full side cutter)



• RAFCP(M)



• RAFCB(M)

(mm)

Designation		Ød	E	ØD2	a	b	T-MAX	Designation		Ød	F	ØD2	a	b	E	T-MAX	Dimensions ØD	W	No. of tooth
RAFCP (M)	**1001214**	31.75(32)	12	48	7.92(8)	35.2	24	RAFCB (M)	**1001214R/L**	31.75(32)	50	54	12.7(14.4)	8	28	21	100	12-14	6
	1251214	38.1(40)	12	56	9.52(10)	42.3	32		**1251214R/L**	38.1(40)	60	70	15.9(16.4)	10	30	25	125	12-14	8
	1601214	38.1(40)	12	56	9.52(10)	42.3	50		**1601214R/L**	38.1(40)	60	70	15.9(16.4)	10	30	43	160	12-14	10
	2001214	50.8(50)	12	72	12.7(12)	55.8	61		**2001214R/L**	50.8(40)	65	90	19.0(16.4)	11	30	53	200	12-14	12
	2501214	50.8(50)	12	72	12.7(12)	55.8	86		**2501214R/L**	47.625(60)	65	130	25.4(25.7)	14	38	58	250	12-14	16
	3151214	50.8(50)	12	72	12.7(12)	55.8	118		**3151214R/L**	47.625(60)	65	130	25.4(25.7)	14	38	90	315	12-14	20
RAFCP (M)	**1001416**	31.75(32)	14	48	7.92(8)	35.2	24	RAFCB (M)	**1001416R/L**	31.75(32)	50	50	12.7(14.4)	8	28	21	100	14-16	6
	1251416	38.1(40)	14	56	9.52(10)	42.3	32		**1251416R/L**	38.1(40)	60	70	15.9(16.4)	10	30	25	125	14-16	8
	1601416	38.1(40)	14	56	9.52(10)	42.3	50		**1601416R/L**	38.1(40)	60	70	15.9(16.4)	10	30	43	160	14-16	10
	2001416	50.8(50)	14	72	12.7(12)	55.8	61		**2001416R/L**	50.8(40)	65	90	19.0(16.4)	11	30	53	200	14-16	12
	2501416	50.8(50)	14	72	12.7(12)	55.8	86		**2501416R/L**	47.625(60)	65	130	25.4(25.7)	14	38	58	250	14-16	16
	3151416	50.8(50)	14	72	12.7(12)	55.8	118		**3151416R/L**	47.625(60)	65	130	25.4(25.7)	14	38	90	315	14-16	20
RAFCP (M)	**1251618**	38.1(40)	16	56	9.52(10)	42.3	32	RAFCB (M)	**1251618R/L**	38.1(40)	60	70	15.9(16.4)	10	30	25	125	16-18	8
	1601618	38.1(40)	16	56	9.52(10)	42.3	50		**1601618R/L**	38.1(40)	60	70	15.9(16.4)	10	30	43	160	16-18	10
	2001618	50.8(50)	16	72	12.7(12)	55.8	61		**2001618R/L**	50.8(40)	65	90	19.0(16.4)	11	30	53	200	16-18	12
	2501618	50.8(50)	16	72	12.7(12)	55.8	86		**2501618R/L**	47.625(60)	65	130	25.4(25.7)	14	38	58	250	16-18	16
	3151618	50.8(50)	16	72	12.7(12)	55.8	118		**3151618R/L**	47.625(60)	65	130	25.4(25.7)	14	38	90	315	16-18	20
RAFCP (M)	**1251820**	38.1(40)	18	56	9.52(10)	42.3	32	RAFCB (M)	**1251820R/L**	38.1(40)	60	70	15.9(16.4)	10	30	25	125	18-20	8
	1601820	38.1(40)	18	56	9.52(10)	42.3	50		**1601820R/L**	38.1(40)	60	70	15.9(16.4)	10	30	43	160	18-20	10
	2001820	50.8(50)	18	72	12.7(12)	55.8	61		**2001820R/L**	50.8(40)	65	90	19.0(16.4)	11	30	53	200	18-20	12
	2501820	50.8(50)	18	72	12.7(12)	55.8	86		**2501820R/L**	47.625(60)	65	130	25.4(25.7)	14	38	58	250	18-20	16
	3151820	50.8(50)	18	72	12.7(12)	55.8	118		**3151820R/L**	47.625(60)	65	130	25.4(25.7)	14	38	90	315	18-20	20
RAFCP (M)	**1252022**	38.1(40)	20	56	9.52(10)	42.3	32	RAFCB (M)	**1252022R/L**	38.1(40)	60	70	15.9(16.4)	10	30	25	125	20-22	8
	1602022	38.1(40)	20	56	9.52(10)	42.3	50		**1602022R/L**	38.1(40)	60	70	15.9(16.4)	10	30	43	160	20-22	10
	2002022	50.8(50)	20	72	12.7(12)	55.8	61		**2002022R/L**	50.8(40)	65	90	19.0(16.4)	11	30	53	200	20-22	12
	2502022	50.8(50)	20	72	12.7(12)	55.8	86		**2502022R/L**	47.625(60)	65	130	25.4(25.7)	14	38	58	250	20-22	16
	3152022	50.8(50)	20	72	12.7(12)	55.8	118		**3152022R/L**	47.625(60)	65	130	25.4(25.7)	14	38	90	315	20-22	20
RAFCP (M)	**1252224**	38.1(40)	22	56	9.52(10)	42.3	32	RAFCB (M)	**1252224R/L**	38.1(40)	60	70	15.9(16.4)	10	30	25	125	22-24	8
	1602224	38.1(40)	22	56	9.52(10)	42.3	50		**1602224R/L**	38.1(40)	60	70	15.9(16.4)	10	30	43	160	22-24	10
	2002224	50.8(50)	22	72	12.7(12)	55.8	61		**2002224R/L**	50.8(40)	65	90	19.0(16.4)	11	30	53	200	22-24	12
	2502224	50.8(50)	22	72	12.7(12)	55.8	86		**2502224R/L**	47.625(60)	65	130	25.4(25.7)	14	38	58	250	22-24	16
	3152224	50.8(50)	22	72	12.7(12)	55.8	118		**3152224R/L**	47.625(60)	65	130	25.4(25.7)	14	38	90	315	22-24	20

Available Inserts and Recommended cutting condition **E284**

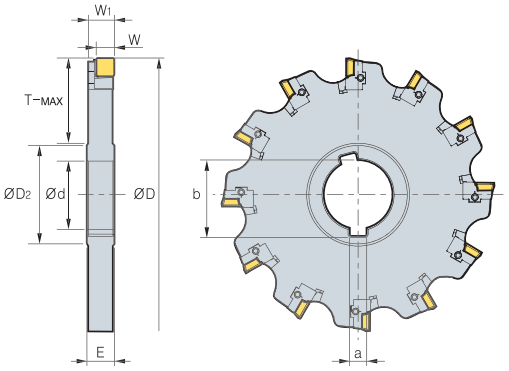
• The ap (Maximium width of cutter) size written above is the number when using insert having corner size C0.5 or R0.5

• ( )Metric Size

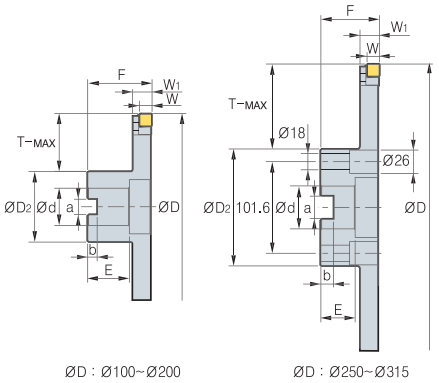
Parts

Specification Edge width(TAFCP/B)	Insert	Locator	Wedge (WSD09N / WSA10N)	Insert Screw	Wedge Screw	Locator Screw	Insert Wrench	Wedge, Locator Wrench
□□□1214R/L	SDXT09M40□R/L	LSD09R/L	WSD09N	FTGA03508	DHA0617	SHGA0409	TW15S	HW30
□□□1416R/L	SDXT09M40□R/L	LSD09R/L	WSD09N	FTGA03508	DHA0617	SHGA0409	TW15S	HW30
□□□1618R/L	SDXT13050□R/L	LSD13R/L	WSA10N	FTNC04509	DHA0617	SHGA0411	TW20S	HW30
□□□1820R/L	SDXT13050□R/L	LSD13R/L	WSA10N	FTNC04509	DHA0617	SHGA0411	TW20S	HW30
□□□2022R/L	SDXT13050□R/L	LSD13R/L	WSA10N	FTNC04509	DHA0617	SHGA0411	TW20S	HW30
□□□2224R/L	SDXT13050□R/L	LSD13R/L	WSA10N	FTNC04509	DHA0617	SHGA0411	TW20S	HW30

Radial type (Half side cutter)



• RAHCP(M)



• RAHCB(M)

(mm)

Designation		Ød	E	ØD2	a	b	T-MAX	Designation		Ød	F	ØD2	a	b	E	T-MAX	Dimensions ØD	W	W1	No. of tooth
RAHCP (M)	10012R/L	31.75(32)	12	48	7.92(8)	35.2	24	RAHCB (M)	10012R/L	31.75(32)	50	54	12.7(14.4)	8	28	21	100	8	11.1	6
	12512R/L	38.1(40)	12	56	9.52(10)	42.3	32		12512R/L	38.1(40)	60	70	15.9(16.4)	10	30	25	125	8	11.1	8
	16012R/L	38.1(40)	12	56	9.52(10)	42.3	50		16012R/L	38.1(40)	60	70	15.9(16.4)	10	30	43	160	8	11.1	10
	20012R/L	50.8(50)	12	72	12.7(12)	55.8	61		20012R/L	50.8(40)	65	90	19.0(16.4)	11	30	53	200	8	11.1	12
	25012R/L	50.8(50)	12	72	12.7(12)	55.8	86		25012R/L	47.625(60)	65	130	25.4(25.7)	14	38	58	250	8	11.1	16
	31512R/L	50.8(50)	12	72	12.7(12)	55.8	118		31512R/L	47.625(60)	65	130	25.4(25.7)	14	38	90	315	8	11.1	20
RAHCP (M)	10014R/L	31.75(32)	14	48	7.92(8)	35.2	24	RAHCB (M)	10014R/L	31.75(32)	50	50	12.7(14.4)	8	28	21	100	8	13.1	6
	12514R/L	38.1(40)	14	56	9.52(10)	42.3	32		12514R/L	38.1(40)	60	70	15.9(16.4)	10	30	25	125	8	13.1	8
	16014R/L	38.1(40)	14	56	9.52(10)	42.3	50		16014R/L	38.1(40)	60	70	15.9(16.4)	10	30	43	160	8	13.1	10
	20014R/L	50.8(50)	14	72	12.7(12)	55.8	61		20014R/L	50.8(40)	65	90	19.0(16.4)	11	30	53	200	8	13.1	12
	25014R/L	50.8(50)	14	72	12.7(12)	55.8	86		25014R/L	47.625(60)	65	130	25.4(25.7)	14	38	58	250	8	13.1	16
	31514R/L	50.8(50)	14	72	12.7(12)	55.8	118		31514R/L	47.625(60)	65	130	25.4(25.7)	14	38	90	315	8	13.1	20
RAHCP (M)	12516R/L	38.1(40)	16	56	9.52(10)	42.3	32	RAHCB (M)	12516R/L	38.1(40)	60	70	15.9(16.4)	10	30	25	125	10.5	15	8
	16016R/L	38.1(40)	16	56	9.52(10)	42.3	50		16016R/L	38.1(40)	60	70	15.9(16.4)	10	30	43	160	10.5	15	10
	20016R/L	50.8(50)	16	72	12.7(12)	55.8	61		20016R/L	50.8(40)	65	90	19.0(16.4)	11	30	53	200	10.5	15	12
	25016R/L	50.8(50)	16	72	12.7(12)	55.8	86		25016R/L	47.625(60)	65	130	25.4(25.7)	14	38	58	250	10.5	15	16
	31516R/L	50.8(50)	16	72	12.7(12)	55.8	118		31516R/L	47.625(60)	65	130	25.4(25.7)	14	38	90	315	10.5	15	20
RAHCP (M)	12518R/L	38.1(40)	18	56	9.52(10)	42.3	32	RAHCB (M)	12518R/L	38.1(40)	60	70	15.9(16.4)	10	30	25	125	10.5	17	8
	16018R/L	38.1(40)	18	56	9.52(10)	42.3	50		16018R/L	38.1(40)	60	70	15.9(16.4)	10	30	43	160	10.5	17	10
	20018R/L	50.8(50)	18	72	12.7(12)	55.8	61		20018R/L	50.8(40)	65	90	19.0(16.4)	11	30	53	200	10.5	17	12
	25018R/L	50.8(50)	18	72	12.7(12)	55.8	86		25018R/L	47.625(60)	65	130	25.4(25.7)	14	38	58	250	10.5	17	16
	31518R/L	50.8(50)	18	72	12.7(12)	55.8	118		31518R/L	47.625(60)	65	130	25.4(25.7)	14	38	90	315	10.5	17	20
RAHCP (M)	12520R/L	38.1(40)	20	56	9.52(10)	42.3	32	RAHCB (M)	12520R/L	38.1(40)	60	70	15.9(16.4)	10	30	25	125	10.5	19	8
	16020R/L	38.1(40)	20	56	9.52(10)	42.3	50		16020R/L	38.1(40)	60	70	15.9(16.4)	10	30	43	160	10.5	19	10
	20020R/L	50.8(50)	20	72	12.7(12)	55.8	61		20020R/L	50.8(40)	65	90	19.0(16.4)	11	30	53	200	10.5	19	12
	25020R/L	50.8(50)	20	72	12.7(12)	55.8	86		25020R/L	47.625(60)	65	130	25.4(25.7)	14	38	58	250	10.5	19	16
	31520R/L	50.8(50)	20	72	12.7(12)	55.8	118		31520R/L	47.625(60)	65	130	25.4(25.7)	14	38	90	315	10.5	19	20
RAHCP (M)	12522R/L	38.1(40)	22	56	9.52(10)	42.3	32	RAHCB (M)	12522R/L	38.1(40)	60	70	15.9(16.4)	10	30	25	125	10.5	21	8
	16022R/L	38.1(40)	22	56	9.52(10)	42.3	50		16022R/L	38.1(40)	60	70	15.9(16.4)	10	30	43	160	10.5	21	10
	20022R/L	50.8(50)	22	72	12.7(12)	55.8	61		20022R/L	50.8(40)	65	90	19.0(16.4)	11	30	53	200	10.5	21	12
	25022R/L	50.8(50)	22	72	12.7(12)	55.8	86		25022R/L	47.625(60)	65	130	25.4(25.7)	14	38	58	250	10.5	21	16
	31522R/L	50.8(50)	22	72	12.7(12)	55.8	118		31522R/L	47.625(60)	65	130	25.4(25.7)	14	38	90	315	10.5	21	20

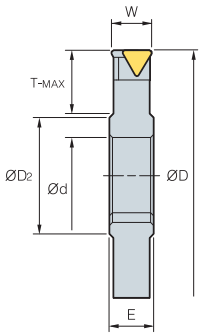
Available Inserts and Recommended cutting condition **E284**

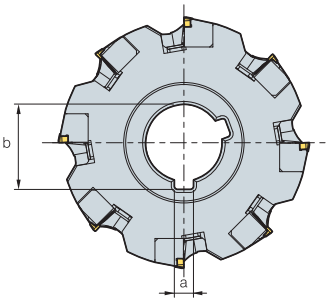
• The ap (Maximum width of cutter) size written above is the number when using insert having corner size R0.5. The ap is subject to change as per insert corner size
• The ap (Maximum width of cutter) size written above is the number when using SDXT09M405R-MM. The ap is subject to change as per insert corner size
• ( )Metric Size

Parts

Specification Edge width(TAHCP/B)	Insert	Locator	Wedge (WSD09N / WSA10N)	Insert Screw	Wedge Screw	Locator Screw	Insert Wrench	Wedge, Locator Wrench
□□□1214R/L	SDXT09M40□R/L	LSD09R/L	WSD09N	FTGA03508	DHA0617	SHGA0409	TW15S	HW30
□□□1416R/L	SDXT09M40□R/L	LSD09R/L	WSD09N	FTGA03508	DHA0617	SHGA0409	TW15S	HW30
□□□1618R/L	SDXT13050□R/L	LSD13R/L	WSA10N	FTNC04509	DHA0617	SHGA0411	TW20S	HW30
□□□1820R/L	SDXT13050□R/L	LSD13R/L	WSA10N	FTNC04509	DHA0617	SHGA0411	TW20S	HW30
□□□2022R/L	SDXT13050□R/L	LSD13R/L	WSA10N	FTNC04509	DHA0617	SHGA0411	TW20S	HW30
□□□2224R/L	SDXT13050□R/L	LSD13R/L	WSA10N	FTNC04509	DHA0617	SHGA0411	TW20S	HW30

FC(M) (Full side cutter)





• AR : 5°
• RR : 0°

(mm)

Designation			ØD	W	T-MAX	Ød	E	a	b	ØD2	Insert
FC (FCM)	**08010**	6	80	10	17.0	25.4(27)	12	6.35(7)	28	41.5	TPCN1103PPN
	10012	8	100	12	24.0	31.75(32)	14	7.92(8)	35.2	48	TPCN1103PPN
	12512	10	125	12	31.5	38.1(40)	14	9.52(10)	42.3	58	TPCN1103PPN
	12520	8	125	20	31.5	38.1(40)	22	9.52(10)	42.3	58	TPCN1103PPN
	16012	12	160	12	49.0	38.1(40)	14	9.52(10)	42.3	58	TPCN1103PPN
	16016	12	160	16	49.0	38.1(40)	18	9.52(10)	42.3	58	TPCN1103PPN
	16018	10	10	18	49.0	38.1(40)	20	9.52(10)	42.3	58	TPCN1603PPN
	16020	10	10	20	49.0	38.1(40)	22	9.52(10)	42.3	58	TPCN1603PPN
	20022	12	200	22	61.0	50.8(50)	24	12.7(12)	55.8	72	TPCN1603PPN
	25024	16	250	24	81.0	50.8(50)	26	12.7(12)	55.8	84	TPCN1603PPN
	31524	16	315	24	113.5	50.8(50)	26	12.7(12)	55.8	84	TPCN1603PPN

• ( )Metric Size

Available Inserts

TPCN

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
TPCN	**1103PPN**		●										●	●		E21
	1603PPN		●	●						●				●		

Available Arbors

Designation		Arbors	
FC(M)	**08010**	BT40-SCA27-75/120	BT50-SCA27-90/135
	10012	BT40-SCA32-105	BT50-SCA32-90/135
	12512	-	BT50-SCA40-90/135
	12520	-	BT50-SCA40-90/135
	16012	-	BT50-SCA40-90/135
	16018	-	BT50-SCA40-90/135
	16020	-	BT50-SCA40-90/135
	20022	-	-
	25024	-	-
	31524	-	-

Recommended cutting condition

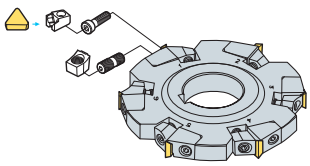
Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	190~310 160~270 60~100	0.10~0.25 0.10~0.30 0.10~0.25	**NCM325** **PC3500** **ST30A**
M	90~150 80~150	0.10~0.25 0.10~0.30	**PC9530** **ST30A**
K	140~230 50~90	0.10~0.35 0.10~0.40	**PC6510** **G10**

Parts

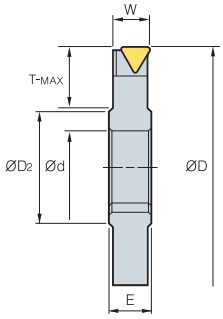
 Locator	 Wedge	 Screw	 Locator Screw	 Wrench
LFC2R/L· LFC3R/L	WFC2N · WFC3N	DHA0617	MHB0310	HW30L
LFC2R/L-1*	WFC2N-1*	DHA0815	MHB0410	HW40L

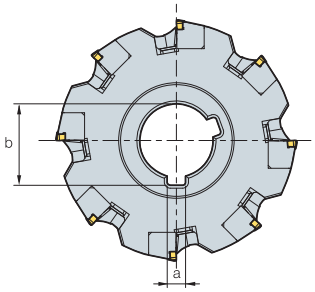
Available Inserts **E21** Available Arbors and bolt **E318~E320**

* FC08010

Assembling	

HC(M) (Half side cutter)





• AR : 5°
• RR : 0°

(mm)

Designation			ØD	W	T-MAX	Ød	E	a	b	ØD2	Insert
HC (HCM)	**10024R/L**	6	100	24	24.0	31.75(32)	27	7.92(8)	35.2	48	TPCN1603PPN
	12524R/L	8	125	24	31.5	38.1(40)	27	9.52(10)	42.3	58	TPCN1603PPN
	16024R/L	10	160	24	49.0	38.1(40)	27	9.52(10)	42.3	58	TPCN1603PPN
	20024R/L	12	200	24	62.0	50.8(50)	27	12.7(12)	55.8	72	TPCN1603PPN
	25024R/L	16	250	24	81.0	50.8(50)	27	12.7(12)	55.8	84	TPCN1603PPN
	31524R/L	20	315	24	113.5	50.8(50)	27	12.7(12)	55.8	84	TPCN1603PPN

• ( )Metric Size

Available Inserts

TPCN

Designation		Cermet		Coated										Uncoated			Page
		CN2000	CN30	NCM325	NCM335	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
TPCN	**1603PPN**		●	●							●				●		E21

Available Arbors

Designation		Arbors	
HC(M)	**10024R/L**	BT40-SCA31.75-105	BT50-SCA31.75-90/135
	12524R/L	-	BT50-SCA38.1-90/135
	16024R/L	-	BT50-SCA38.1-90/135
	20024R/L	-	-
	25024R/L	-	-
	31524R/L	-	-

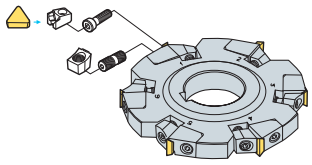
Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	190~310 160~270 60 ~ 100	0.10~0.25 0.10~0.30 0.10~0.25	**NCM325** **PC3500** **ST30A**
M	90~150 80~150	0.10~0.25 0.10~0.30	**PC9530** **ST30A**
K	140~230 50~90	0.10~0.35 0.10~0.40	**PC6510** **G10**

Parts

Specification	Locator	Wedge	Screw	Locator Screw	Wrench
Ø100~Ø315	LFC3R/L	WFC3N	DHA0815	MHB0410	HW40L

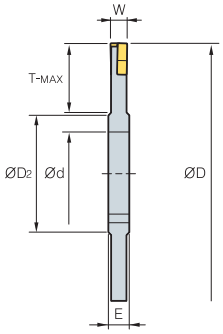
Assembling

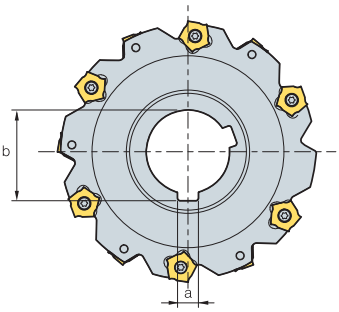


Available Inserts E21

Available Arbors and bolt E318~E320

SPP(M)





• AR : -2°
• RR : -28°

(mm)

Designation			ØD	W	T-MAX	Ød	a	b	E	ØD2	Insert	Screw	Wrench
SPP (SPPM)	080-04	8	80	4	20	25.4(27)	6.35(7)	28.04(29.8)	8	40	PNEJ1223N	PTMA0403F	TW15S
	080-05	8	80	5	20	25.4(27)	6.35(7)	28.04(29.8)	8	40	PNEJ1230N	PTMA0404F	TW15S
	080-06	8	80	6	20	25.4(27)	6.35(7)	28.04(29.8)	8	40	PNEJ1235N	PTMA0405F	TW15S
	100-04	10	100	4	24	31.75(32)	7.94(8)	35.18(34.8)	8	47	PNEJ1223N	PTMA0403F	TW15S
	100-05	10	100	5	24	31.75(32)	7.94(8)	35.18(34.8)	8	47	PNEJ1230N	PTMA0404F	TW15S
	100-06	10	100	6	25	31.75(32)	7.94(8)	35.18(34.8)	8	47	PNEJ1235N	PTMA0405F	TW15S
	100-07	10	100	7	25	31.75(32)	7.94(8)	35.18(34.8)	10	47	PNEJ1240N	PTMA0406F	TW15S
	100-08	10	100	8	25	31.75(32)	7.94(8)	35.18(34.8)	10	47	PNEJ1245N	PTKA0407F	TW15S
	100-09	10	100	9	25	31.75(32)	7.94(8)	35.18(34.8)	12	47	PNEJ1250N	PTKA0408F	TW15S
	100-10	10	100	10	25	31.75(32)	7.94(8)	35.18(34.8)	12	47	PNEJ1255N	PTKA0409F	TW15S
	125-04	12	125	4	30	38.1(40)	9.53(10)	42.32(43.5)	8	56	PNEJ1223N	PTMA0403F	TW15S
	125-05	12	125	5	32	38.1(40)	9.53(10)	42.32(43.5)	8	56	PNEJ1230N	PTMA0404F	TW15S
	125-06	12	125	6	32	38.1(40)	9.53(10)	42.32(43.5)	8	56	PNEJ1235N	PTMA0405F	TW15S
	125-07	12	125	7	32	38.1(40)	9.53(10)	42.32(43.5)	10	56	PNEJ1240N	PTMA0406F	TW15S
	125-08	12	125	8	32	38.1(40)	9.53(10)	42.32(43.5)	10	56	PNEJ1245N	PTKA0407F	TW15S
	125-09	12	125	9	32	38.1(40)	9.53(10)	42.32(43.5)	12	56	PNEJ1250N	PTKA0408F	TW15S
	125-10	12	125	10	32	38.1(40)	9.53(10)	42.32(43.5)	12	56	PNEJ1255N	PTKA0409F	TW15S
	160-04	16	160	4	45	38.1(40)	9.53(10)	42.32(43.5)	8	66	PNEJ1223N	PTMA0403F	TW15S
	160-05	16	160	5	45	38.1(40)	9.53(10)	42.32(43.5)	8	66	PNEJ1230N	PTMA0404F	TW15S
	160-06	16	160	6	45	38.1(40)	9.53(10)	42.32(43.5)	8	66	PNEJ1235N	PTMA0405F	TW15S
	160-07	16	160	7	45	38.1(40)	9.53(10)	42.32(43.5)	10	66	PNEJ1240N	PTMA0406F	TW15S
	160-08	16	160	8	45	38.1(40)	9.53(10)	42.32(43.5)	10	66	PNEJ1245N	PTKA0407F	TW15S
	160-09	16	160	9	45	38.1(40)	9.53(10)	42.32(43.5)	12	66	PNEJ1250N	PTKA0408F	TW15S
	160-10	16	160	10	45	38.1(40)	9.53(10)	42.32(43.5)	12	66	PNEJ1255N	PTKA0409F	TW15S
	160-11	16	160	11	45	38.1(40)	9.53(10)	42.32(43.5)	14	66	PNEJ1260N	PTKA0410F	TW15S
	160-12	16	160	12	45	38.1(40)	9.53(10)	42.32(43.5)	14	66	PNEJ1265N	PTKA0411F	TW15S
	160-13	16	160	13	45	38.1(40)	9.53(10)	42.32(43.5)	16	66	PNEJ1270N	PTKA0412F	TW15S
	160-14	16	160	14	45	38.1(40)	9.53(10)	42.32(43.5)	16	66	PNEJ1275N	PTKA0413F	TW15S
	200-06	18	200	6	60	50.8(50)	12.7(12)	55.83(53.5)	8	70	PNEJ1235N	PTMA0405F	TW15S
	200-07	18	200	7	60	50.8(50)	12.7(12)	55.83(53.5)	10	70	PNEJ1240N	PTMA0406F	TW15S
	200-08	18	200	8	60	50.8(50)	12.7(12)	55.83(53.5)	10	70	PNEJ1245N	PTKA0407F	TW15S
	200-09	18	200	9	60	50.8(50)	12.7(12)	55.83(53.5)	12	70	PNEJ1250N	PTKA0408F	TW15S
	200-10	18	200	10	60	50.8(50)	12.7(12)	55.83(53.5)	12	70	PNEJ1255N	PTKA0409F	TW15S
	200-11	18	200	11	60	50.8(50)	12.7(12)	55.83(53.5)	14	70	PNEJ1260N	PTKA0410F	TW15S
	200-12	18	200	12	60	50.8(50)	12.7(12)	55.83(53.5)	14	70	PNEJ1265N	PTKA0411F	TW15S
	200-13	18	200	13	60	50.8(50)	12.7(12)	55.83(53.5)	16	70	PNEJ1270N	PTKA0412F	TW15S
	200-14	18	200	14	60	50.8(50)	12.7(12)	55.83(53.5)	16	70	PNEJ1275N	PTKA0413F	TW15S

• ( )Metric Size

Available Arbors

Designation		Arbors		
		BT30	BT40	BT50
SPP	080-04~06	BT30-SCA25.4-60	BT40-SCA25.4-75/120	BT50-SCA25.4-90/135
	100-04~10	-	BT40-SCA31.75-105	BT50-SCA31.75-90/135
	125-04~09	-	-	BT50-SCA38.1-90/135
	160-04~14	-	-	BT50-SCA38.1-90/135
	200-06~14	-	-	-
SPPM	080-04~06	-	BT40-SCA27-75/120	BT50-SCA27-90/135
	100-04~10	-	BT40-SCA32-105	BT50-SCA32-90/135
	125-04~09	-	-	BT50-SCA40-90/135
	160-04~14	-	-	BT50-SCA40-90/135
	200-06~14	-	-	-

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	190~310 160~270 60~100	0.10~0.25 0.10~0.30 0.10~0.25	**NCM325** **PC3500** **ST30A**
M	90~150 80~150	0.10~0.25 0.10~0.30	**PC9530** **ST30A**
K	140~230 50~90	0.10~0.35 0.10~0.40	**PC6510** **G10**

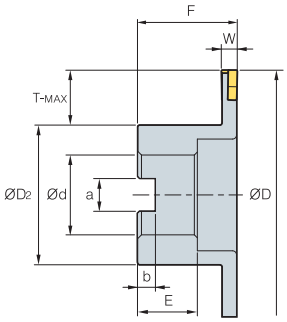
Code system

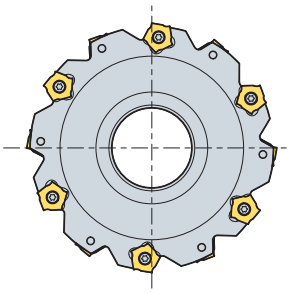
S P P 160 - 06 R

- S: Cutter use(S - Side cutter)
- P: Insert Shape(P - Pentagonal Insert)
- P: Cutter type(P - Plane type, B - Boss type)
- 160: Cutter diameter(ØD)
- 06: Width of cut(W)
- R: Hand of tool(R/L)

Available Inserts E12
Available Arbors and bolt E318~E320

SPB(M)





• AR : -2°
• RR : 28°

(mm)

Designation			ØD	W	T-MAX	ØD2	Ød	a	b	F	E	Insert	Screw	Wrench
SPB (SPBM)	080-04R/L	8	80	4	18	40	25.4(27)	9.5(12.4)	6(7)	50	25(22)	PNEJ1223N	PTMA0403F	TW15S
	080-05R/L	8	80	5	18	40	25.4(27)	9.5(12.4)	6(7)	50	25(22)	PNEJ1230N	PTMA0404F	TW15S
	080-06R/L	8	80	6	18	40	25.4(27)	9.5(12.4)	6(7)	50	25(22)	PNEJ1235N	PTMA0405F	TW15S
	100-04R/L	10	100	4	21	54	31.75(32)	12.7(14.4)	8(8)	50	32(28)	PNEJ1223N	PTMA0403F	TW15S
	100-05R/L	10	100	5	21	54	31.75(32)	12.7(14.4)	8(8)	50	32(28)	PNEJ1230N	PTMA0404F	TW15S
	100-06R/L	10	100	6	21	54	31.75(32)	12.7(14.4)	8(8)	50	32(28)	PNEJ1235N	PTMA0405F	TW15S
	100-07R/L	10	100	7	21	54	31.75(32)	12.7(14.4)	8(8)	50	32(28)	PNEJ1240N	PTMA0406F	TW15S
	100-08R/L	10	100	8	21	54	31.75(32)	12.7(14.4)	8(8)	50	32(28)	PNEJ1245N	PTMA0407F	TW15S
	100-09R/L	10	100	9	21	54	31.75(32)	12.7(14.4)	8(8)	50	32(28)	PNEJ1250N	PTMA0408F	TW15S
	100-10R/L	10	100	10	21	54	31.75(32)	12.7(14.4)	8(8)	50	32(28)	PNEJ1255N	PTMA0409F	TW15S
	125-04R/L	12	125	4	25	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1223N	PTMA0403F	TW15S
	125-05R/L	12	125	5	25	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1230N	PTMA0404F	TW15S
	125-06R/L	12	125	6	25	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1235N	PTMA0405F	TW15S
	125-07R/L	12	125	7	25	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1240N	PTMA0406F	TW15S
	125-08R/L	12	125	8	25	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1245N	PTKA0407F	TW15S
	125-09R/L	12	125	9	25	70	38. (40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1250N	PTKA0408F	TW15S
	125-10R/L	12	125	10	25	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1255N	PTKA0409F	TW15S
	160-04R/L	16	160	4	43	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1223N	PTMA0403F	TW15S
	160-05R/L	16	160	5	43	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1230N	PTMA0404F	TW15S
	160-06R/L	16	160	6	43	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1235N	PTMA0405F	TW15S
	160-07R/L	16	160	7	43	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1240N	PTMA0406F	TW15S
	160-08R/L	16	160	8	43	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1245N	PTKA0407F	TW15S
	160-09R/L	16	160	9	43	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1250N	PTKA0408F	TW15S
	160-10R/L	16	160	10	43	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1255N	PTKA0409F	TW15S
	160-11R/L	16	160	11	43	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1260N	PTKA0410F	TW15S
	160-12R/L	16	160	12	43	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1265N	PTKA0411F	TW15S
	160-13R/L	16	160	13	43	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1270N	PTKA0412F	TW15S
	160-14R/L	16	160	14	43	70	38.1(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1275N	PTKA0413F	TW15S
	200-06R/L	18	200	6	53	90	50.8(40)	19(16.4)	11(9)	65	38(30)	PNEJ1235N	PTMA0405F	TW15S
	200-07R/L	18	200	7	53	90	50.8(40)	19(16.4)	11(9)	65	38(30)	PNEJ1240N	PTMA0406F	TW15S
	200-08R/L	18	200	8	53	90	50.8(40)	19(16.4)	11(9)	65	38(30)	PNEJ1245N	PTKA0407F	TW15S
	200-09R/L	18	200	9	53	90	50.8(40)	19(16.4)	11(9)	65	38(30)	PNEJ1250N	PTKA0408F	TW15S
	200-10R/L	18	200	10	53	90	50.8(40)	19(16.4)	11(9)	65	38(30)	PNEJ1255N	PTKA0409F	TW15S
	200-11R/L	18	200	11	53	90	50.8(40)	19(16.4)	11(9)	65	38(30)	PNEJ1260N	PTKA0410F	TW15S
	200-12R/L	18	200	12	53	90	50.8(40)	19(16.4)	11(9)	65	38(30)	PNEJ1265N	PTKA0411F	TW15S
	200-13R/L	18	200	13	53	90	50.8(40)	19(16.4)	11(9)	65	38(30)	PNEJ1270N	PTKA0412F	TW15S
	200-14R/L	18	200	14	53	90	50.8(40)	19(16.4)	11(9)	65	38(30)	PNEJ1275N	PTKA0413F	TW15S

• ( )Metric Size

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	190~310 160~270 60~100	0.10~0.25 0.10~0.30 0.10~0.25	**NCM325** **PC3500** **ST30A**
M	90~150 80~150	0.10~0.25 0.10~0.30	**PC9530** **ST30A**
K	140~230 50~90	0.10~0.35 0.10~0.40	**PC6510** **G10**

Notice(When mounting inserts)

- Insert chip breaker should face chip pocket of the cutter
- Fasten screw after insert contacts securely on its seat
- If there is a gap between insert and its seat after mounting it may cause tool troubles

Available Inserts **E12**
Available Arbors and bolt **E318~E320**

SPS

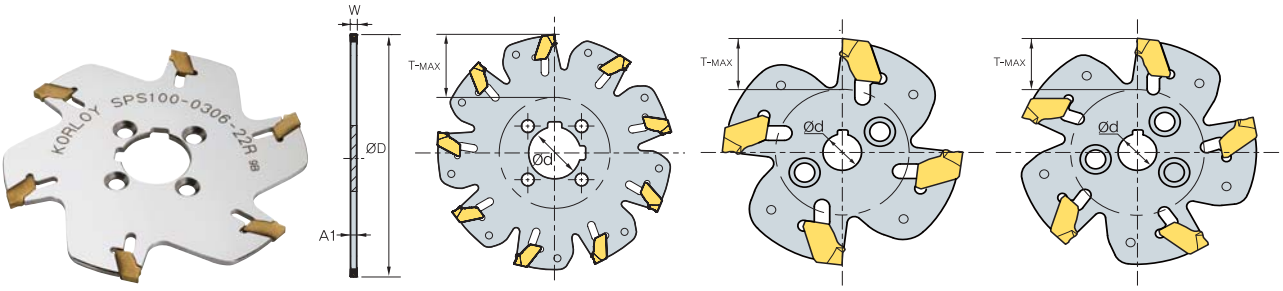


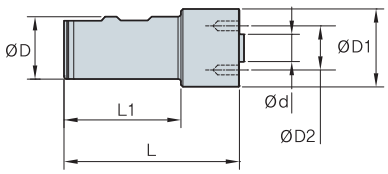
Fig. 1 Fig. 2 Fig. 3

(mm)

Designation		⊙	ØD	W	T-MAX	Ød	A1	Fig.	Insert	Adaptor WS	Adaptor DF	Wrench
SPS	050-0204-08R	4	50	2.2	11	8	1.8	2	SPFN 200 - ( )	WS2528-M4	-	SW17P (separately ordered)
	063-0205-10R	5	63	2.2	15.5	10	1.8	3		WS2532-M5	-	
	080-0207-22R/F	7	80	2.2	20(17)	22	1.8	1		WS3240-M5	DF22-46	
	100-0209-22R/F	9	100	2.2	30(27)	22	1.8	1		WS3240-M5	DF22-46	
	125-0211-32F	11	125	2.2	35	32	1.8	1		-	DF32-55	
	160-0214-32F	14	160	2.2	52.5	32	1.8	3		-	DF32-55	
	063-0305-10R	5	63	3	15.5	10	2.55	1	SPFN 300 - ( )	WS2532-M5	-	
	080-0307-22R/F	7	80	3	20(17)	22	2.55	1		WS3240-M5	DF22-46	
	100-0309-22R/F	9	100	3	30(27)	22	2.55	1		WS3240-M5	DF22-46	
	125-0311-32F	11	125	3	35	32	2.55	1		-	DF32-55	
	160-0314-32F	14	160	3	52.5	32	2.55	1		-	DF32-55	
	200-0318-40F	18	200	3	60	40	2.55	1	SPFN 400 - ( )	-	DF40-80	
	080-0406-22R/F	6	80	4	20(17)	22	3.4	1		WS3240-M5	DF22-46	
	100-0408-22R/F	8	100	4	30(27)	22	3.4	1		WS3240-M5	DF22-46	
	125-0410-32F	10	125	4	35	32	3.4	1		-	DF32-55	
	160-0413-32F	13	160	4	52.5	32	3.4	1		-	DF32-55	
	200-0417-40F	17	200	4	60	40	3.4	1		-	DF40-80	

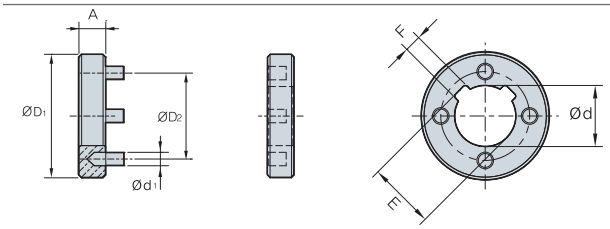
• Applicable wrench : SW17P (Separately sold) • T-max : ( )=> In use of DF adaptor • ( )Metric Size

WS( )-( ) (Weldon Shank)



Designation	L	L1	D	D1	D2	d	Screw
WS2528-M4	110	85	25	28	18	8	PTKA0408
WS2532-M5	110	85	25	32	22	10	PTKA0515
WS3240-M5	120	90	32	40	32	22	PTKA0515

DF( )-( ) (Drive Flange set)



Designation	D1	D2	d	d1	A	E	F
DF22-46	46	32	22	5	10	24.1	6
DF32-55	55	45	32	6	10	34.8	8
DF40-80	80	63	40	11	12	43.5	10
DF50-110	110	80	50	14	14	53.6	12

Recommended cutting condition

Workpiece	Cutting Condition vc(m/min)	Cutting Condition fz(mm/t)	Grades
P	160~270 130~210	0.13~0.25 0.10~0.17	**PC3500** **PC3545**
M	90~150	0.10~0.22	**PC5300**
K	110~180	0.10~0.25	**PC215K**

Available Inserts **E20**

For slotting workpieces with corner radii of varying size and width

WIND MILL

Neu

- Optimal machining for slotting applications
- A unique recess design on the minor cutting edge reduces cutting load and improves tool life
- Special clamping system prevents incorrect clamping and fracture

Item description

• Insert

• Cutter WFSP(M) - Plane type

WFSB(M) - Boss type

Cutter Code system

W	FS	P(B)	100	-	T04
Wind Mill	Insert arrangement	Cutter type	ØD		W
	FS : Full side HS : Half side	P : Plane type B : Boss type			

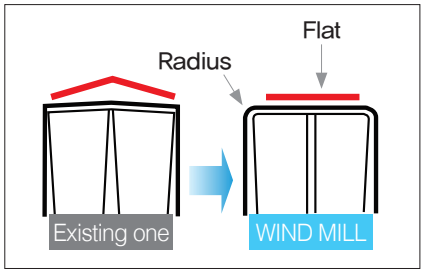
Insert Code system

S	N	H	T	12	045	08	R/L	-	WX
Insert shape	Relief angle of major cutting edge	tolerance	Shape of cross section	Ød	Height of cutting edge	Nose R	R/L		Chip breaker

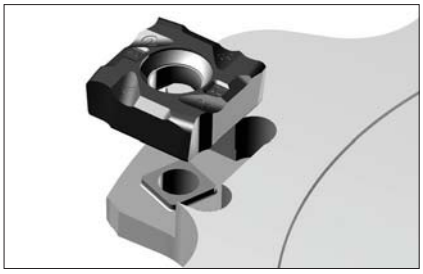
Features

• Ideal geometry for superior surface roughness and extended tool life

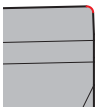
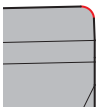
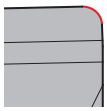
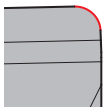
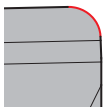
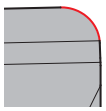
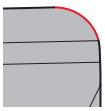
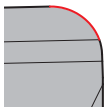
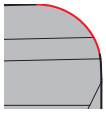
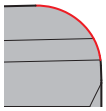
• Perpendicular slot



• Protruded part on tip seat prevents wrong clamping and fracture

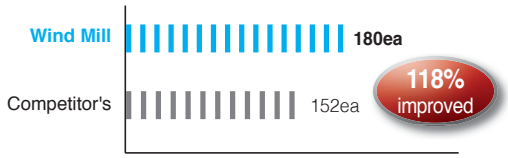


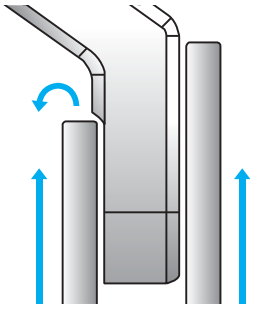
• Workpieces with corner radii of varying size and width (R0.2~R2.0)

R0.2	R0.4	R0.6	R0.8	R1.0	R1.2	R1.4	R1.6	R1.8	R2.0
									

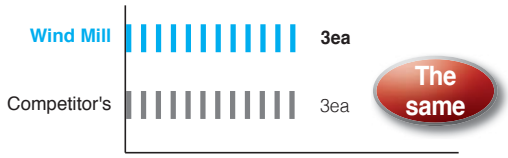
Application Example

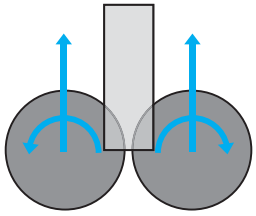
- **Workpiece** FCD500K
- **Cutting conditions** vc(m/min) = 200
  fz(mm/t) = 0.2
  vf(mm/min) = 600
  ap(mm) = 2~3
- **Tool** KSF140R-T14-HM-2
  SNHT1205408R/L-WX (PC5300)





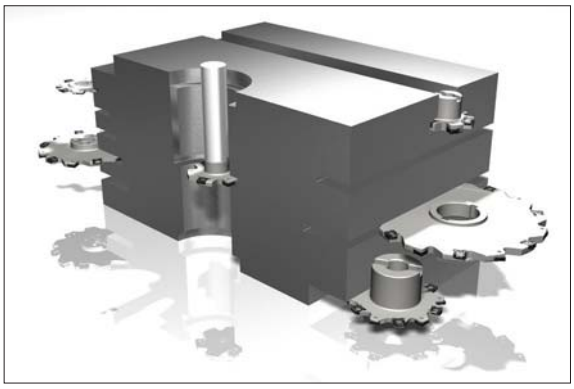
- **Workpiece** Mild steel (Lug for Vessel)
- **Cutting conditions** vc(m/min) = 560
  fz(mm/t) = 0.09
  vf(mm/min) = 750
  ap(mm) = 6
- **Tool** WFSP178R/L-T06
  SNHT1203508R/L-WX (PC5300)



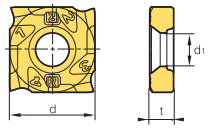


Recommended cutting condition

Workpiece	Cutting conditions		Grade
	vc(m/min)	fz (mm/t)	
P	150 ~ 250	0.10 ~ 0.25	PC5300
M	120 ~ 200	0.10 ~ 0.30	PC5300
K	100 ~ 150	0.10 ~ 0.30	PC5300



List of inserts

Designation		Coated	Dimensions				Nose R	Configuration
		PC5300	Ød	Ød1	t	W		
SNHT	11023□□R/L-WX	●	11.0	4	2.30	4.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6	
	1103□□R/L-WX	●	11.0	4	3.00	5.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6	
	1203□□R/L-WX		12.7	5	3.25	5.5	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
	12035□□R/L-WX	●	12.7	5	3.54	6.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
	1204□□R/L-WX		12.7	5	4.00	7.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
	12045□□R/L-WX	●	12.7	5	4.54	8.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
	1205□R/L-WX		12.7	5	5.00	9.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
	12054□R/L-WX	●	12.7	5	5.47	10.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
	1206□□R/L-WX		12.7	5	6.00	11.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
	12065□□R/L-WX		12.7	5	6.50	12.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
	1207□□R/L-WX		12.7	5	7.00	13.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
	12075□□R/L-WX		12.7	5	7.50	14.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	

• Inserts with various nose R sizes can be supplied in 2~3 weeks

WFSB(M) - Boss type New

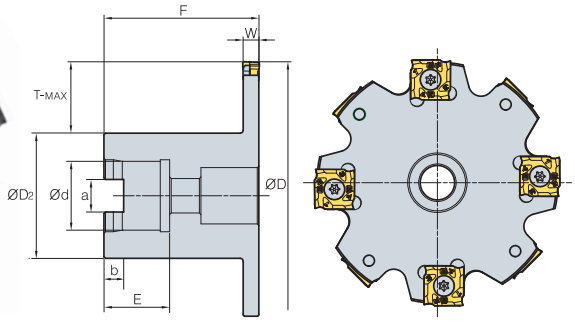


Fig. 1

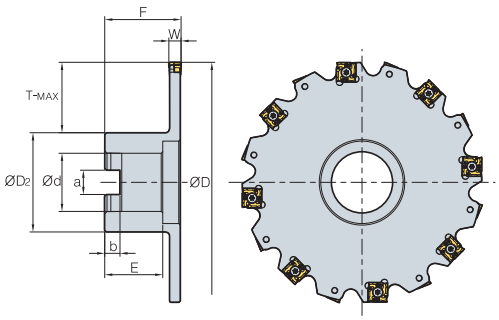


Fig. 2

• AR : -2°
• RR :-12°

(mm)

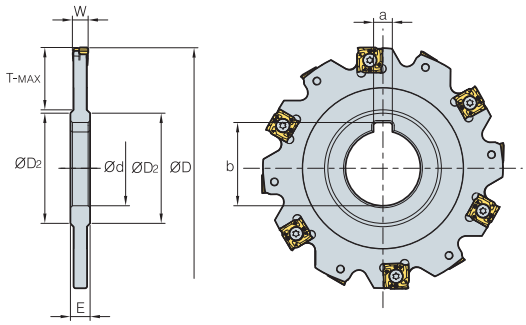
Designation			ØD	W	T-MAX	ØD2	Ød	a	b	F	E	Insert	Screw	Wrench
WFSBM	**080R/L-T04**	8	80	4	17	40	22	10.4	6.3	50	21	SNHT11023R/L-WX	PTMA03503	TW09S
	080R/L-T05	8	80	5	17	40	22	10.4	6.3	50	21	SNHT1103R/L-WX	PTMA03504	TW09S
	080R/L-T06	8	80	6	17	40	22	10.4	6.3	50	21	SNHT12035R/L-WX	PTMA04045F	TW15S
WFSB (WFSBM)	**100R/L-T04**	10	100	4	21	50(48)	25.4(27)	9.5(12.4)	6(7)	50	25	SNHT11023R/L-WX	PTMA03503	TW09S
	100R/L-T05	10	100	5	21	50(48)	25.4(27)	9.5(12.4)	6(7)	50	25	SNHT1103R/L-WX	PTMA03504	TW09S
	100R/L-T06	10	100	6	21	50(48)	25.4(27)	9.5(12.4)	6(7)	50	25	SNHT12035R/L-WX	PTMA04045F	TW15S
	100R/L-T07	10	100	7	21	50(48)	25.4(27)	9.5(12.4)	6(7)	50	25	SNHT1204R/L-WX	PTMA0405F	TW15S
	100R/L-T08	10	100	8	21	50(48)	25.4(27)	9.5(12.4)	6(7)	50	25	SNHT12045R/L-WX	PTMA0406F	TW15S
	100R/L-T09	10	100	9	21	50(48)	25.4(27)	9.5(12.4)	6(7)	50	25	SNHT1205R/L-WX	PTMA0407F	TW15S
	100R/L-T10	10	100	10	21	50(48)	25.4(27)	9.5(12.4)	6(7)	50	25	SNHT12054R/L-WX	PTMA0408F	TW15S
	125R/L-T04	12	125	4	30	60(58)	31.75(32)	12.7(14.4)	8	50	32(30)	SNHT11023R/L-WX	PTMA03503	TW09S
	125R/L-T05	12	125	5	30	60(58)	31.75(32)	12.7(14.4)	8	50	32(30)	SNHT1103R/L-WX	PTMA03504	TW09S
	125R/L-T06	12	125	6	30	60(58)	31.75(32)	12.7(14.4)	8	50	32(30)	SNHT12035R/L-WX	PTMA04045F	TW15S
	125R/L-T07	12	125	7	30	60(58)	31.75(32)	12.7(14.4)	8	50	32(30)	SNHT1204R/L-WX	PTMA0405F	TW15S
	125R/L-T08	12	125	8	30	60(58)	31.75(32)	12.7(14.4)	8	50	32(30)	SNHT12045R/L-WX	PTMA0406F	TW15S
	125R/L-T09	12	125	9	30	60(58)	31.75(32)	12.7(14.4)	8	50	32(30)	SNHT1205R/L-WX	PTM A0407F	TW15S
	125R/L-T10	12	125	10	30	60(58)	31.75(32)	12.7(14.4)	8	50	32(30)	SNHT12054R/L-WX	PTMA0408F	TW15S
	160R/L-T04	16	160	4	43	80(70)	38.1(40)	15.9(16.4)	10(9)	60	38(32)	SNHT11023R/L-WX	PTMA03503	TW09S
	160R/L-T05	16	160	5	43	80(70)	38.1(40)	15.9(16.4)	10(9)	60	38(32)	SNHT1103R/L-WX	PTMA03504	TW09S
	160R/L-T06	16	160	6	43	80(70)	38.1(40)	15.9(16.4)	10(9)	60	38(32)	SNHT12035R/L-WX	PTMA04045F	TW15S
	160R/L-T07	16	160	7	43	80(70)	38.1(40)	15.9(16.4)	10(9)	60	38(32)	SNHT1204R/L-WX	PTMA0405F	TW15S
	160R/L-T08	16	160	8	43	80(70)	38.1(40)	15.9(16.4)	10(9)	60	38(32)	SNHT12045R/L-WX	PTMA0406F	TW15S
	160R/L-T09	16	160	9	43	80(70)	38.1(40)	15.9(16.4)	10(9)	60	38(32)	SNHT1205R/L-WX	PTMA0407F	TW15S
	160R/L-T10	16	160	10	43	80(70)	38.1(40)	15.9(16.4)	10(9)	60	38(32)	SNHT12054R/L-WX	PTMA0408F	TW15S
	160R/L-T11	16	160	11	43	80(70)	38.1(40)	15.9(16.4)	10(9)	60	38(32)	SNHT1206R/L-WX	PTKA0409F	TW15S
	160R/L-T12	16	160	12	43	80(70)	38.1(40)	15.9(16.4)	10(9)	60	38(32)	SNHT12065R/L-WX	PTKA0410F	TW15S
	160R/L-T13	16	160	13	43	80(70)	38.1(40)	15.9(16.4)	10(9)	60	38(32)	SNHT1207R/L-WX	PTKA0411F	TW15S
	160R/L-T14	16	160	14	43	80(70)	38.1(40)	15.9(16.4)	10(9)	60	38(32)	SNHT12075R/L-WX	PTKA0412F	TW15S
	200R/L-T06	18	200	6	53	90	38.1(40)	15.9(16.4)	10(9)	65	38(32)	SNHT12035R/L-WX	PTMA04045F	TW15S
	200R/L-T07	18	200	7	53	90	38.1(40)	15.9(16.4)	10(9)	65	38(32)	SNHT1204R/L-WX	PTMA0405F	TW15S
	200R/L-T08	18	200	8	53	90	38.1(40)	15.9(16.4)	10(9)	65	38(32)	SNHT12045R/L-WX	PTMA0406F	TW15S
	200R/L-T09	18	200	9	53	90	38.1(40)	15.9(16.4)	10(9)	65	38(32)	SNHT1205R/L-WX	PTMA0407F	TW15S
	200R/L-T10	18	200	10	53	90	38.1(40)	15.9(16.4)	10(9)	65	38(32)	SNHT12054R/L-WX	PTMA0408F	TW15S
	200R/L-T11	18	200	11	53	90	38.1(40)	15.9(16.4)	10(9)	65	38(32)	SNHT1206R/L-WX	PTKA0409F	TW15S
	200R/L-T12	18	200	12	53	90	38.1(40)	15.9(16.4)	10(9)	65	38(32)	SNHT12065R/L-WX	PTKA0410F	TW15S
	200R/L-T13	18	200	13	53	90	38.1(40)	15.9(16.4)	10(9)	65	38(32)	SNHT1207R/L-WX	PTKA0411F	TW15S
	200R/L-T14	18	200	14	53	90	38.1(40)	15.9(16.4)	10(9)	65	38(32)	SNHT12075R/L-WX	PTKA0412F	TW15S
	250R/L-T06	20	250	6	73(78)	100(90)	50.8(40)	19.1(16.4)	11(9)	65	38(32)	SNHT12035R/L-WX	PTMA04045F	TW15S
	250R/L-T07	20	250	7	73(78)	100(90)	50.8(40)	19.1(16.4)	11(9)	65	38(32)	SNHT1204R/L-WX	PTMA0405F	TW15S
	250R/L-T08	20	250	8	73(78)	100(90)	50.8(40)	19.1(16.4)	11(9)	65	38(32)	SNHT12045R/L-WX	PTMA0406F	TW15S
	250R/L-T09	20	250	9	73(78)	100(90)	50.8(40)	19.1(16.4)	11(9)	65	38(32)	SNHT1205R/L-WX	PTMA0407F	TW15S
	250R/L-T10	20	250	10	73(78)	100(90)	50.8(40)	19.1(16.4)	11(9)	65	38(32)	SNHT12054R/L-WX	PTMA0408F	TW15S
	250R/L-T11	20	250	11	73(78)	100(90)	50.8(40)	19.1(16.4)	11(9)	65	38(32)	SNHT1206R/L-WX	PTKA0409F	TW15S
	250R/L-T12	20	250	12	73(78)	100(90)	50.8(40)	19.1(16.4)	11(9)	65	38(32)	SNHT12065R/L-WX	PTKA0410F	TW15S
	250R/L-T13	20	250	13	73(78)	100(90)	50.8(40)	19.1(16.4)	11(9)	65	38(32)	SNHT1207R/L-WX	PTKA0411F	TW15S
	250R/L-T14	20	250	14	73(78)	100(90)	50.8(40)	19.1(16.4)	11(9)	65	38(32)	SNHT12075R/L-WX	PTKA0412F	TW15S

Available Inserts **E18**

•Ø80 : Fig.1 , Ø100~Ø250 : Fig.2

• ( )Metric Size

WFSP(M) - Plane type New



• AR : -2°
• RR :-12°

(mm)

Designation			ØD	W	T-MAX	ØD2	Ød	a	b	E	Insert	Screw	Wrench
WFSP (WFSBM)	080-T04	8	80	4	20	40	25.4(27)	6.35(7)	28(29.8)	8	SNHT11023R/L-WX	PTMA03503	TW09S
	080-T05	8	80	5	20	40	25.4(27)	6.35(7)	28(29.8)	8	SNHT1103R/L-WX	PTMA03504	TW09S
	080-T06	8	80	6	20	40	25.4(27)	6.35(7)	28(29.8)	8	SNHT12035R/L-WX	PTMA04045F	TW15S
	100-T04	10	100	4	24	47	31.75(32)	7.92(8)	35.2(34.8)	8	SNHT11023R/L-WX	PTMA03503	TW09S
	100-T05	10	100	5	24	47	31.75(32)	7.92(8)	35.2(34.8)	8	SNHT1103R/L-WX	PTMA03504	TW09S
	100-T06	10	100	6	24	47	31.75(32)	7.92(8)	35.2(34.8)	8	SNHT12035R/L-WX	PTMA04045F	TW15S
	100-T07	10	100	7	24	47	31.75(32)	7.92(8)	35.2(34.8)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
	100-T08	10	100	8	24	47	31.75(32)	7.92(8)	35.2(34.8)	10	SNHT12045R/L-WX	PTMA0406F	TW15S
	100-T09	10	100	9	24	47	31.75(32)	7.92(8)	35.2(34.8)	12	SNHT1205R/L-WX	PTMA0407F	TW15S
	100-T10	10	100	10	24	47	31.75(32)	7.92(8)	35.2(34.8)	12	SNHT12054R/L-WX	PTMA0408F	TW15S
	125-T04	12	125	4	32	56	38.1(40)	9.52(10)	42.3(43.5)	8	SNHT11023R/L-WX	PTMA03503	TW09S
	125-T05	12	125	5	32	56	38.1(40)	9.52(10)	42.3(43.5)	8	SNHT1103R/L-WX	PTMA03504	TW09S
	125-T06	12	125	6	32	56	38.1(40)	9.52(10)	42.3(43.5)	8	SNHT12035R/L-WX	PTMA04045F	TW15S
	125-T07	12	125	7	32	56	38.1(40)	9.52(10)	42.3(43.5)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
	125-T08	12	125	8	32	56	38.1(40)	9.52(10)	42.3(43.5)	10	SNHT12045R/L-WX	PTMA0406F	TW15S
	125-T09	12	125	9	32	56	38.1(40)	9.52(10)	42.3(43.5)	12	SNHT1205R/L-WX	PTMA0407F	TW15S
	125-T10	12	125	10	32	56	38.1(40)	9.52(10)	42.3(43.5)	12	SNHT12054R/L-WX	PTMA0408F	TW15S
	160-T04	16	160	4	45	66	38.1(40)	9.52(10)	42.3(43.5)	8	SNHT11023R/L-WX	PTMA03503	TW09S
	160-T05	16	160	5	45	66	38.1(40)	9.52(10)	42.3(43.5)	8	SNHT1103R/L-WX	PTMA03504	TW09S
	160-T06	16	160	6	45	66	38.1(40)	9.52(10)	42.3(43.5)	8	SNHT12035R/L-WX	PTMA04045F	TW15S
	160-T07	16	160	7	45	66	38.1(40)	9.52(10)	42.3(43.5)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
	160-T08	16	160	8	45	66	38.1(40)	9.52(10)	42.3(43.5)	10	SNHT12045R/L-WX	PTMA0406F	TW15S
	160-T09	16	160	9	45	66	38.1(40)	9.52(10)	42.3(43.5)	12	SNHT1205R/L-WX	PTMA0407F	TW15S
	160-T10	16	160	10	45	66	38.1(40)	9.52(10)	42.3(43.5)	12	SNHT12054R/L-WX	PTMA0408F	TW15S
	160-T11	16	160	11	45	66	38.1(40)	9.52(10)	42.3(43.5)	14	SNHT1206R/L-WX	PTKA0409F	TW15S
	160-T12	16	160	12	45	66	38.1(40)	9.52(10)	42.3(43.5)	14	SNHT12065R/L-WX	PTKA0410F	TW15S
	160-T13	16	160	13	45	66	38.1(40)	9.52(10)	42.3(43.5)	16	SNHT1207R/L-WX	PTKA0411F	TW15S
	160-T14	16	160	14	45	66	38.1(40)	9.52(10)	42.3(43.5)	16	SNHT12075R/L-WX	PTKA0412F	TW15S
	200-T06	18	200	6	60	70	50.8(50)	12.7(12)	55.8(53.5)	8	SNHT12035R/L-WX	PTMA04045F	TW15S
	200-T07	18	200	7	60	70	50.8(50)	12.7(12)	55.8(53.5)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
	200-T08	18	200	8	60	70	50.8(50)	12.7(12)	55.8(53.5)	10	SNHT12045R/L-WX	PTMA0406F	TW15S
	200-T09	18	200	9	60	70	50.8(50)	12.7(12)	55.8(53.5)	12	SNHT1205R/L-WX	PTMA0407F	TW15S
	200-T10	18	200	10	60	70	50.8(50)	12.7(12)	55.8(53.5)	12	SNHT12054R/L-WX	PTMA0408F	TW15S
	200-T11	18	200	11	60	70	50.8(50)	12.7(12)	55.8(53.5)	14	SNHT1206R/L-WX	PTKA0409F	TW15S
	200-T12	18	200	12	60	70	50.8(50)	12.7(12)	55.8(53.5)	14	SNHT12065R/L-WX	PTKA0410F	TW15S
	200-T13	18	200	13	60	70	50.8(50)	12.7(12)	55.8(53.5)	16	SNHT1207R/L-WX	PTKA0411F	TW15S
	200-T14	18	200	14	60	70	50.8(50)	12.7(12)	55.8(53.5)	16	SNHT12075R/L-WX	PTKA0412F	TW15S
	250-T06	20	250	6	88	70	50.8(50)	12.7(12)	55.8(53.5)	8	SNHT12035R/L-WX	PTMA04045F	TW15S
	250-T07	20	250	7	88	70	50.8(50)	12.7(12)	55.8(53.5)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
	250-T08	20	250	8	88	70	50.8(50)	12.7(12)	55.8(53.5)	10	SNHT12045R/L-WX	PTMA0406F	TW15S
	250-T09	20	250	9	88	70	50.8(50)	12.7(12)	55.8(53.5)	12	SNHT1205R/L-WX	PTMA0407F	TW15S
	250-T10	20	250	10	88	70	50.8(50)	12.7(12)	55.8(53.5)	12	SNHT12054R/L-WX	PTMA0408F	TW15S
	250-T11	20	250	11	88	70	50.8(50)	12.7(12)	55.8(53.5)	14	SNHT1206R/L-WX	PTKA0409F	TW15S
	250-T12	20	250	12	88	70	50.8(50)	12.7(12)	55.8(53.5)	14	SNHT12065R/L-WX	PTKA0410F	TW15S
	250-T13	20	250	13	88	70	50.8(50)	12.7(12)	55.8(53.5)	16	SNHT1207R/L-WX	PTKA0411F	TW15S
	250-T14	20	250	14	88	70	50.8(50)	12.7(12)	55.8(53.5)	16	SNHT12075R/L-WX	PTKA0412F	TW15S

Available Inserts E18

• ( )Metric Size

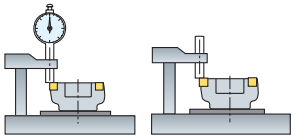
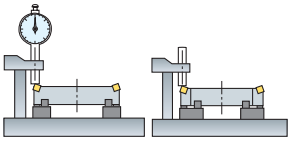
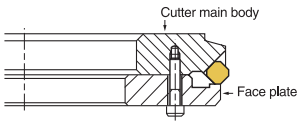
High feed cutter with extra pitch for cast iron and light alloy steels

High feed Cutter

- High feed cutter employs extra pitch for cast iron and light alloy steels
- Quick change type for reduction of cutter change time
- Cutting edge chatter is controlled
- Quick change type for cutter size under ø160, 2piece types for cutter size over ø200

Guide of insert setting

▶ Special equipment has to be used to get precise run out with high feed cutter.

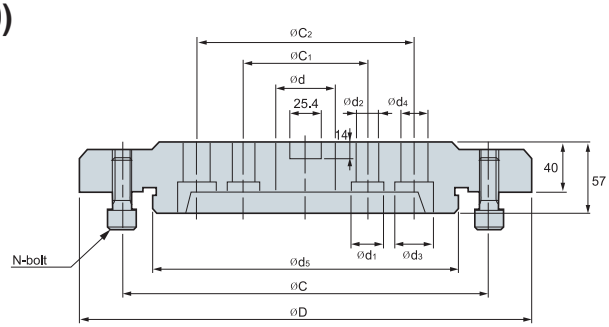
Adaptor type	Roller type	Plate type
		
- Mainly under ø160 diameter is used in 1piece type - Available for fixed size of cutter and assembling & checking can be done at the same time	- Mainly over ø200 diameter is used in 2piece type - Due to 3 adjustable guide roller, variety size of cutter can be assembled	- Suitable for small size cutter due to the simple tructure - It is unnecessary to unclamp the cutter from the machine, it's possible to reassemble the cutter as it mounted on the machine - You should make plate by yourself

Guide of insert setting in adaptor/roller type

1. Clean the cutter and equipment
2. Pointer should be assembled with same height with cutter
3. Move to each insert on tip seat to end of pointer and tighten(torque 2N.m) wedge.
4. Exchange pointer to dial gauge
5. Measure the run-out totally
6. When a insert over run-out, loosen wedge and adjust run-out. (for roughing 10~20μ, for finishing 5~10μ)
7. Tighten(torque 7-8N.m) wedge
8. Measure the final run-out by dial gauge

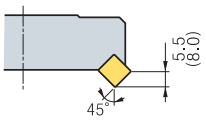
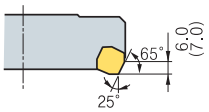
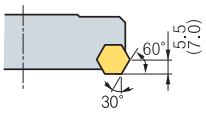
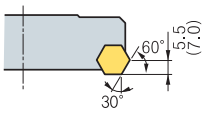
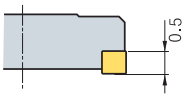
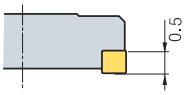
Notice) When you clamp wedge too tighten, run-out is getting worse to cutter distortion
When you clamp wedge, you should use torque wrench to set more precisely

Adaptor(Ø200 ~ Ø450)



Designation		ØD	Ød	Ød1	Ød2	Ød3	Ød4	Ød5	ØC	ØC1	ØC2	N	Cutter
APR	200	180	47.625	26	18	-	-	80	120	101.6	-	4	Ø200
	250	230	47.625	26	18	-	-	120	170	101.6	-	4	Ø250
	315	295	47.625	26	18	32	22	180	230	101.6	177.8	6	Ø315
	355	335	63.50	26	18	32	22	220	270	101.6	177.8	6	Ø355
	400	370	63.50	26	18	32	22	250	300	101.6	177.8	8	Ø400
	450	420	63.50	26	18	32	22	300	350	101.6	177.8	8	Ø450

High feed cutters type and features

Designation	Cutter diameter	Workpiece, Application range	Min. surface roughness	Approach angle and Max. cutting depth is for 5000 type	Axial rake angle	Radial rake angle	Available insert
ANH4000 **ANH5000**	Ø100~Ø450	Cast iron Roughing	25Z		-5°	-6°	SNCN1204ENN SNCN1504ENN
CDH4000 **CDH5000**	Ø100~Ø450	Cast iron Roughing Finishing	18Z		+10°	+5°	SDCN42R SDCN53R
DEH5000	Ø100~Ø450	Al alloy Roughing	20Z		+14°	+6°	HECN090408FN
DPH5000	Ø100~Ø450	Cast iron Roughing Finishing	12Z		+5°	-3°	HPEN090408 HPEN090408-WC
PNH4000 **PNH5000**	Ø125~Ø450	Cast iron Finishing	12Z		-5°	-6°	SNEF435 SNEF535
PPH4000	Ø125~Ø450	Cast iron Finishing	12Z		+5°	-5°	SPEN120416-WC

Recommended cutting condition

Workpiece	Cutting Condition		Grades	Remark
	vc(m/min)	fz(mm/t)		
Cast iron	100~230	0.05~0.20	**PC6510**	PVD Coated
	80~150	0.05~0.20	**H01,G10**	Uncoated
Al alloy	400	0.10~0.30	**PC6510**	PVD Coated
	400	0.05~0.20	**H01,G10**	Uncoated

Excellent tool life acheived by the wide variety of grades to match work conditions

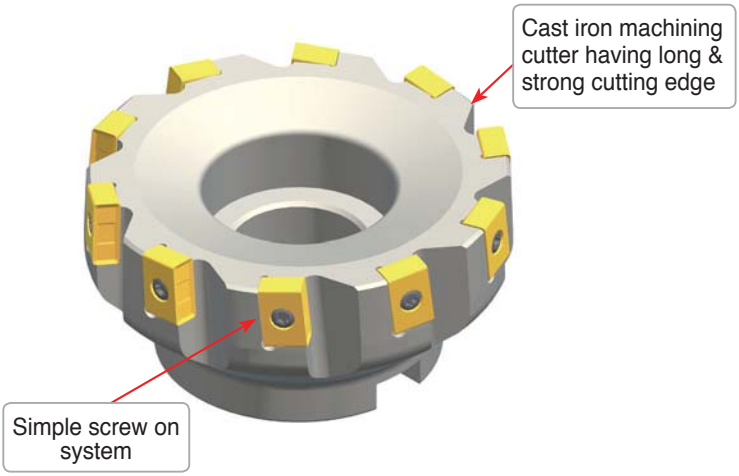
Storm Mill

- Conventional cutter with wide coverage
- Using 4 corners (Maximum 8 corner avaiable with R/L type cutter)
- Effective on large depth of cut applications due to the long cutting edge
- Excellent tool life guaranteed by wide variety of grades to suit any working conditions
- 2 different types of inserts(chamfer / nose R) are available with 1 type of cutter

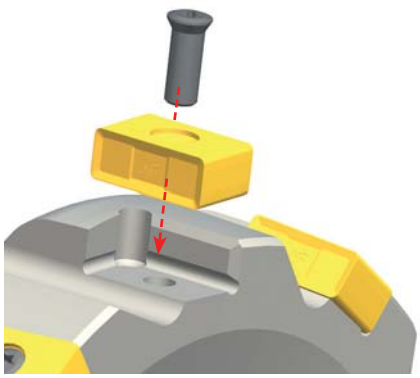
Code System

S	Q	N	3	250	R	(2)	– 28Z
Cutter	Approach angle	Relief angle of insert	Insert	Cutter Dia.	Hand	Cutter shape	No. of tooth
S : Storm Mill	Q : 88˚ F : 85˚ A : 45˚ E : 75˚	N : Negative (0˚)	3 : 9.525mm 4 : 12.7mm	MM	R : Right L : Left	No code : Normal type 2 : Quick change type (2 pieces type)	

Cutter



Clamping of insert



Recommended cutting condition

Designation / Grades	Gray cast iron		Ductile cast iron	
	GC		GCD	
	vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)
PC3500	150~250	0.08~0.28	100~180	0.08~0.28
PC6510	150~300	0.10~0.28	100~200	0.10~0.28
PC3545	150~250	0.08~0.22	100~180	0.08~0.22
H01	100~200	0.08~0.22	70~140	0.08~0.22
G10	90~120	0.08~0.28	60~130	0.08~0.28

Optimal cutter for steel and cast iron machining with easily adjustable run-out

Shave Mill

- Adjustable Range (Adjustable range: 0.1mm, Adjustable allowance: within 2μm)
- Wiper crown type 8-cornered insert reduces machining cost and realizes excellent surface roughness
- Grade with high toughness and wear resistance ensures long tool life
- The cBN grade achieves superior surface finish

Cutter Code System

SVM	M	4	250	R	Z6
Shave Mill	Metric Type	Inscribed Circle	Cutter Dia.(Ø)	Hand of tool	No. of tooth(Z)
	M : Metric A : Inch	4 : 12.7mm	Ø250	R: right handed L: left handed	

Insert Code System

Carbide

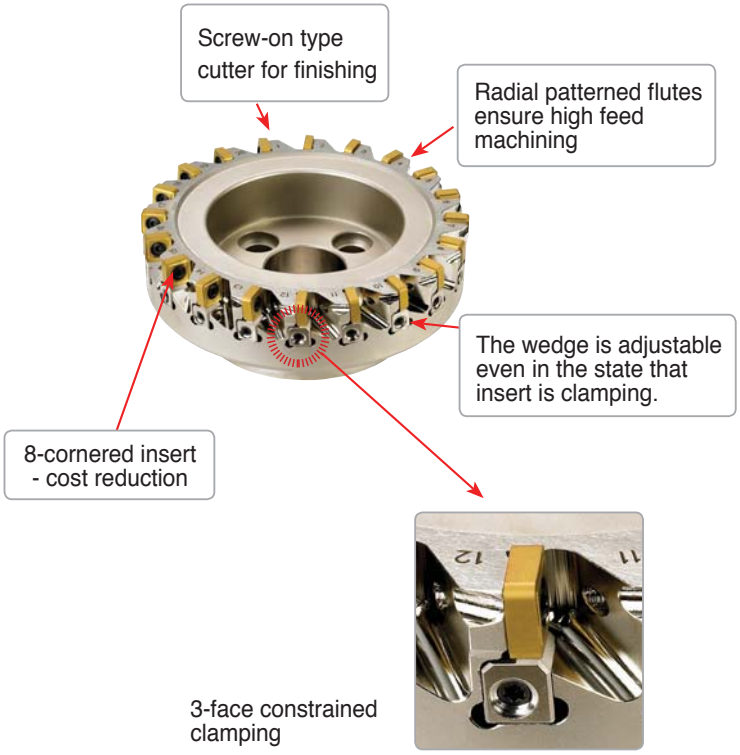
Nose R type	SNEU120420-MF
Chamfer type	SNEU1204ANN-MF
Low cutting type	SNEU1204-WMF

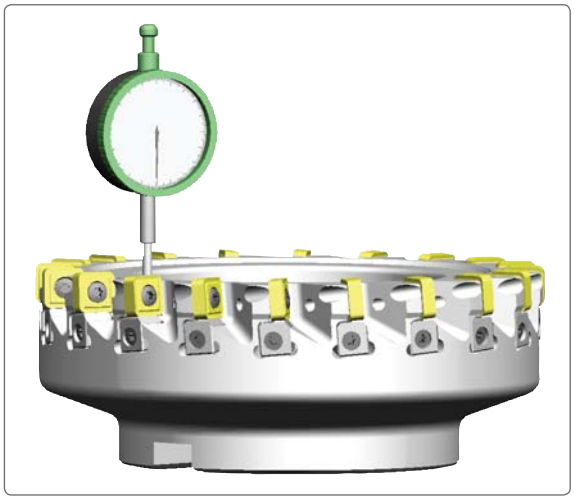
cBN

SNEU1204-TBW

T : Nagaland
B : cBN
W: Wiper

Features

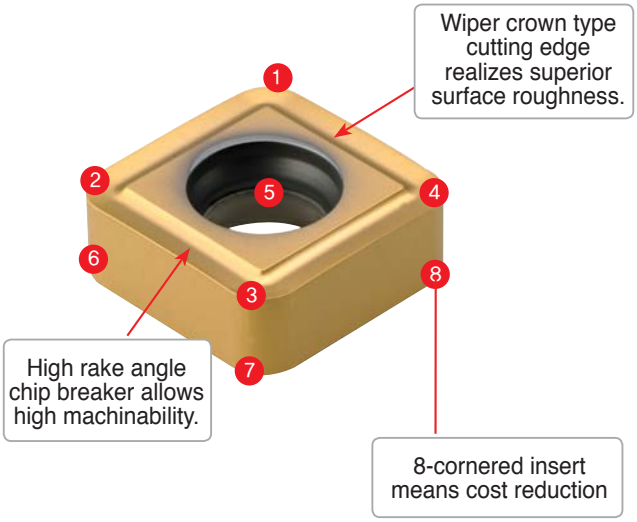




Adjustment

- Adjustable range: 0.1mm
- Adjustability: below 2μ
- Operation: easy and simple

Features of insert



SNEU120420-MF	SNEU1204ANN–MF
 Nose R type	 Chamfer type
SNEU1204–WMF	**SNEU1204–TBW**
 For low cutting load	 Wiper for high speed machining

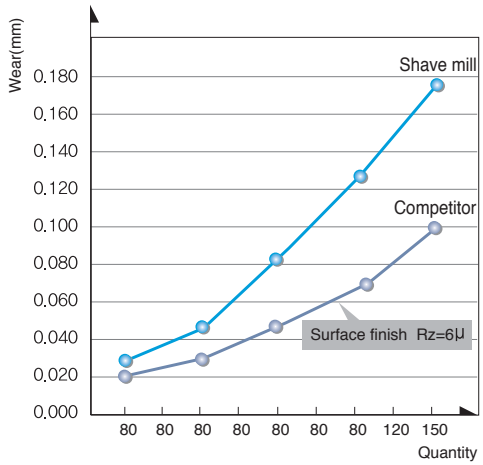
Recommended cutting condition

Workpiece	Cutting Condition			Grades
	vc(m/min)	fz(mm/t)	ap(mm)	
P	160~270	0.05 ~ 0.2	~ 0.5	**PC3500**
K	140~230 600~1000	0.05 ~ 0.3 0.05 ~ 0.2	~ 0.5 ~ 0.5	**PC6510** **DBN920**

Application example 1

· Work piece : Cylinder head (facing)
· Cutting conditions : vc=200, fz=0.15, ap=0.5, Dry
· Tools : Shave Mill - SVMM4250R
Insert - PC6510 SNEU120420-MF

· Work piece : FC25(HB250) Cylinder head (facing)
· Cutting conditions : vc=700, fz=0.1, ap=0.5, Dry
· Tools : Shave Mill - SVMM4160R
Insert - DBN920 SNEU1204-cBN



• Results

	Tool life	Surface finish	Machinability
Shave mill	250 pcs	Rz=3μ	High
Competitor	180 pcs	Rz=3.5μ	Normal

▸ Korloy's shave mills ensure twice the machinability, adjustability,and surface roughness than competitor's, along with twice the tool life.

Better tool life with special grade which has both toughness and wear resistance

Shave Mill Ultra

- Superior surface roughness for this Finishing cutter when applied to heavy work pieces
- Easy to handle and good rigidity with simple screw on system
- Superior surface finishes due to the wiper crown cutting edge
- Better tool life with special grade which has both toughness and wear resistance
- Two different types: economical normal type and adjustable run-out type 'B'

Code System of Cutter

SVU M 6 250 R Z6 – B

Shave Mill Ultra	Metric Type	Inscribed Circle	Cutter Dia.(Ø)	Hand of tool	No. of tooth(Z)	Cutter Type
	M : Metric A : Inch	6 : 19.05mm	Ø250	R : Right L : Left		None : Normal B : Adjustable

Code System of Insert

L N C S 1 9 0 7 – R3.0 – WC

Shave Mill Ultra	Corner Type	Wiper Crown
	C : Chamfer R : Round	

Features

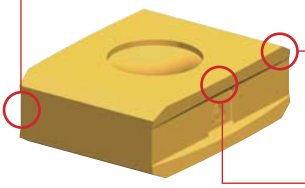
Normal type

Good rigidity and economical due to simple screw on type

Better surface roughness when you use only 1 insert but adjust the 'ap' under 0.03mm

Adjustable cutting edge(Type B)

Easy to handle the run-out due to Korloy exclusive high toughness cutting edge special parts



Good cutting performance & chip flow due to positive rake angle chip breaker

Economical 4 corner use insert

Good surface roughness by wiper crown cutting edge design

Adjustable Range	· Range : 1.0mm · Allowance : Within 2μ

Recommended cutting condition

Workpiece	Cutting Condition			Tooth	Grades
	vc(m/min)	fz(mm/t)	ap(mm)		
P	160~270	0.05~0.20	~0.50	Full use	PC3500
	160~270	2~5	~0.03	1use	
K	140~230	0.05~0.20	~0.50	Full use	PC6510
	140~230	2~5	~0.03	1use	

Special Korloy cutter for cast iron roughing

Cube Mill

- Special Korloy cutter for cast iron roughing
- 8 corner using insert (maximum 16 corner available with 2 cutter, R/L cutter)
- Excellent cutting performance with positive rake angle made by 3 dimensional chip breaker
- Excellent tool life by combination of the variety of grades and chip breakers to match most working conditions
- 2 different type of inserts(chamfer / nose R) are available with 1 type cutter

Roughing for cast iron

Code System

CBM	E	3	250	R	(2) – 28Z
Cutter	AA	Inscreibed circle of Insert	Cutter Dia	Hand	Cutter shape	No. of tooth(Z)
CBM : CUBE MILL	Q : 88˚ C : 65˚ F : 85˚ A : 45˚ E : 75˚	3 : 9.525 4 : 12.7	Ø250	R : Right L : Left	Unmarked : Normal type 2 : Quick change type (2 pieces type)	

Cube Mill and Cube Mill Couple are available by order made.

Insert (R/L type)

<Chamfer type>

<Nose R type>

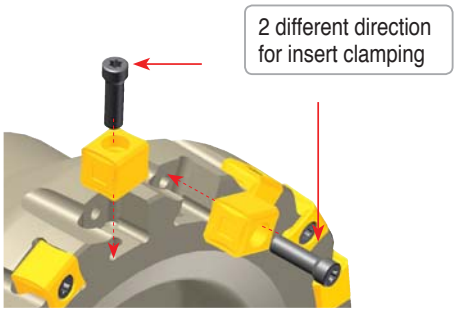
Cutter body

	General	Quick change
Cutter diameter(Ø)	Ø80~315 mm	Ø200~450 mm
	3 1/4~12 1/2 Inch	8~18 Inch
AA : 88°, 85°, 75°, 65°, 45°		

Cutter

Special design to make actual positive rake angle

Simple screw on system



Screw on clamping system

Parts

	Screw	Wrench
 Cube mill 3000		
	FTGA0417CBM	TW15 - 100
	ETGA0520CBM	TW20 - 100

Ideal combination of Aluminum body with cast iron high feed cutter

Couple Mill

- Ideal combination of Aluminum body with cast iron high feed cutter
- Since the weight of the cutter has been reduced 50% of a steel cutter it is very easy to handle and very effective in preventing loading accidents
- Applicable for Cube Mill, Storm Mill

CUBE-COUPLE Code system

CBM E 3 355 R 28Z – CP

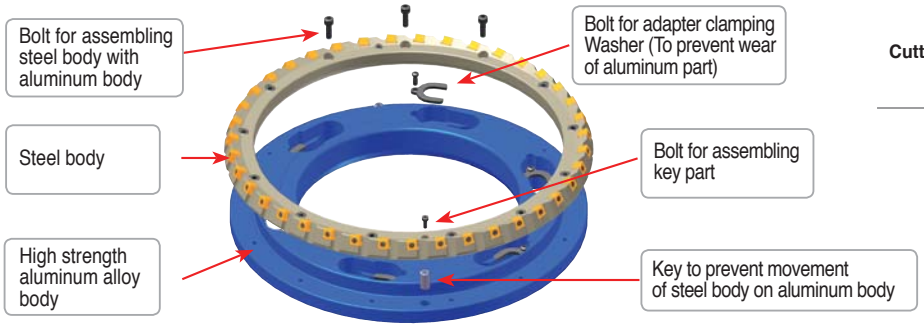
Cutter	AA	Inscreibed circle of Insert	Cutter Dia	Hand	No. of tooth(Z)	Couple Mill
CBM : CUBE MILL	Q : 88˚ C : 65˚ F : 85˚ A : 45˚ E : 75˚	3 : 9.525 4 : 12.7	Ø355	R : Right L : Left	28Z : 28	

STORM-COUPLE Code system

S Q N 3 355 R 28Z – CP

Cutter	AA	Relief angle of insert	Inscreibed circle of Insert	Cutter Dia	Hand	No. of tooth(Z)	Couple Mill
S : STORM MILL	Q : 88˚ E : 75˚ F : 85˚ A : 45˚	N : Negative(0°)	3 : 9.525 4 : 12.7	Ø355	R : Right L : Left	28Z : 28	

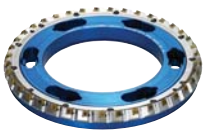
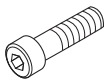
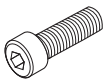
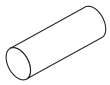
Assembling structure



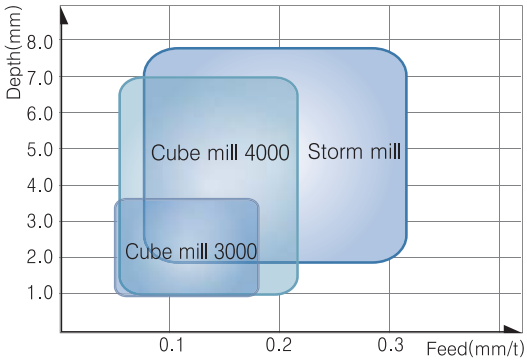
Cutter body

	Quick change	
Cutter diameter(Ø)	Metric	Ø355~450mm
	Inch	14 1/4~18 Inch

Parts

	Screw	Wrench	Wrench	Bolt for body	Bolt for key	Key for body
						
CUBE-COUPLE 3000 Type	FTGA0417CBM	TW15-100	-	BHA0616	MHBO410	PN1019-DRV
CUBE-COUPLE 4000 Type	ETGA0520CBM	TW20-100		BHA0620		
STORM-COUPLE 3000 Type	FTNA0513	-	TW15S	-	-	-

Application range of High feed Cutters for Cast iron



Recommended cutting condition

CUBE MILL		Gray cast iron		Ductile cast iron	
		vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)
PVD	PC6510	150 ~ 300	0.08 ~ 0.18	100 ~ 200	0.08 ~ 0.18
	PC215K	120 ~ 210	0.05 ~ 0.18	80 ~ 150	0.05 ~ 0.18
Uncoated	G10	90 ~ 120	0.05 ~ 0.18	60 ~ 130	0.05 ~ 0.18

Available Arbors and Adaptors

Designation			Available Arbors and Adaptors		
			Arbors	General Arbor	Adaptor
CBMQ	3080R/L	-00Z	BT□□-FMA25.4-□□	NT*□□(M/U)-FMA25.4-25	
(CBMF)	3100R/L	-00Z	BT□□-FMA31.75-□□	NT*□□(M/U)-FMA31.75-□□	
(CBME)	3125R/L	-00Z	BT□□-FMA38.1-□□	NT*□□(M/U)-FMA38.1-□□	
(CBMC)	3160R/L	-00Z	BT□□-FMA50.8-□□	NT*□□(M/U)-FMA50.8-□□	
(CBMA)	3200R/L	-00Z	BT□□-FMA47.625-□□	NT*□□(M/U)-FMA47.625-25, KCP-8***	
	3250R/L	-00Z	BT□□-FMA47.625-□□	KNT*□□(M/U)-FMA47.625-25, KCP-8***	
	3315R/L	-00Z		KCP-8***(Centering Plug)	
	3200R/L2	-00Z			APR200
	3250R/L2	-00Z			APR250
	3315R/L2	-00Z			APR315
	3355R/L2	-00Z			APR355
	3400R/L2	-00Z			APR400
	3450R/L2	-00Z			APR450
SQN	3080R/L	-00Z	BT□□-FMA25.4-□□	NT*□□(M/U)-FMA25.4-25	
(SFN)	3100R/L	-00Z	BT□□-FMA31.75-□□	NT*□□(M/U)-FMA31.75-□□	
(SEN)	3125R/L	-00Z	BT□□-FMA38.1-□□	NT*□□(M/U)-FMA38.1-□□	
(SAN)	3160R/L	-00Z	BT□□-FMA50.8-□□	NT*□□(M/U)-FMA50.8-□□	
	3200R/L	-00Z	BT□□-FMA47.625-□□	NT*□□(M/U)-FMA47.625-25, KCP-8***	
	3250R/L	-00Z	BT□□-FMA47.625-□□	NT*□□(M/U)-FMA47.625-25, KCP-8***	
	3315R/L	-00Z		KCP-8***(Centering Plug)	
	3200R/L2	-00Z			APR200
	3250R/L2	-00Z			APR250
	3315R/L2	-00Z			APR315
	3355R/L2	-00Z			APR355
	3400R/L2	-00Z			APR400
	3450R/L2	-00Z			APR450

• *□□–NT number / ** □□–BT number / ***Milling over 5
〈Arbors **add〉
ex) BT** □□

ANH4000

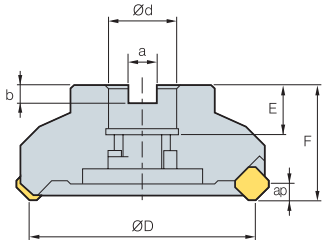


Fig. 1

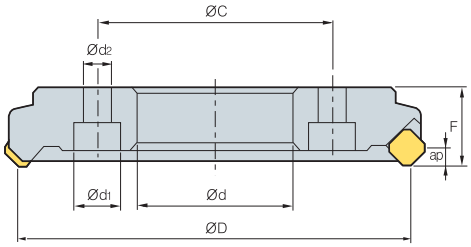


Fig. 2

AA 45°
- AR : 5°
- RR : -6°

(mm)

Designation			ØD	Ød	Ød1	Ød2	a	b	E	F	ØC	ap	kg	Fig.
ANH	4100R/L	8	100	31.75	-	-	12.7	8	22	50	-	5.5	2.5	1
	4125R/L	10	125	38.1	-	-	15.9	10	27	63	-	5.5	4.7	1
	4160R/L	14	160	50.8	-	-	19.0	11	27	63	-	5.5	7.3	1
	4200R/L	18	200	80	24	14	-	-	-	40	120	5.5	7	2
	4250R/L	24	250	120	30	18	-	-	-	40	170	5.5	9.6	2
	4315R/L	30	315	180	30	18	-	-	-	40	230	5.5	12.9	2
	4355R/L	34	355	220	30	18	-	-	-	40	270	5.5	15.5	2
	4400R/L	38	400	250	30	18	-	-	-	40	300	5.5	18.8	2
	4450R/L	44	450	300	30	18	-	-	-	40	350	5.5	22.2	2

Available Inserts

SNCN

SNKN

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNCN	1204ENN															E17
SNKN	1204ENN															E18

Available Arbors

Designation		Arbors	
ANH	100R/L	NT*□□(M/U)-FMA31.75-□□	-
	125R/L	NT*□□(M/U)-FMA38.1-□□	-
	160R/L	NT*□□(M/U)-FMA50.8-□□	-
	200R/L	-	APR200
	250R/L	-	APR250
	315R/L	-	APR315
	355R/L	-	APR355
	400R/L	-	APR400
	450R/L	-	APR450

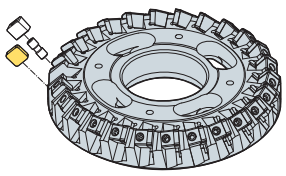
Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	140 ~ 230	0.05 ~ 0.30	PC6510
	135 ~ 220	0.10 ~ 0.30	H01
	50 ~ 90	0.10 ~ 0.30	G10

Parts

Specification	Wedge	Wedge Screw	Wrench
Ø100~Ø450	WANH4N	DHA0821F	HW40

Assembling



Available Inserts E17, E18 Available Arbors and bolt E318~E320

ANH5000

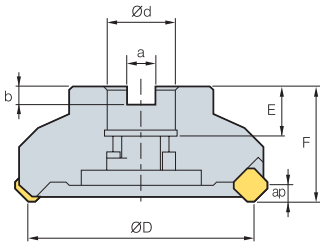


Fig. 1

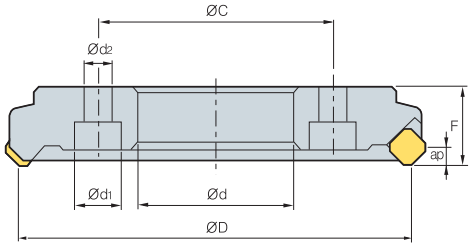


Fig. 2

AA 45°
- AR : 5°
- RR : -6°

(mm)

Designation			ØD	Ød	Ød1	Ød2	a	b	E	F	ØC	ap	kg	Fig.
ANH	5100R/L	8	100	31.75	-	-	12.7	8	22	50	-	8	2.6	1
	5125R/L	10	125	38.1	-	-	15.9	10	27	63	-	8	5	1
	5160R/L	14	160	50.8	-	-	19.0	11	27	63	-	8	7.5	1
	5200R/L	18	200	80	24	14	-	-	-	40a	120	8	7	2
	5250R/L	24	250	120	30	18	-	-	-	40	170	8	9.6	2
	5315R/L	30	315	180	30	18	-	-	-	40	230	8	12.9	2
	5355R/L	34	355	220	30	18	-	-	-	40	270	8	15.5	2
	5400R/L	38	400	250	30	18	-	-	-	40	300	8	18.8	2
	5450R/L	44	450	300	30	18	-	-	-	40	350	8	22.2	2

Available Inserts

SNCN

SNKN

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNCN	1504ENN												●			E17
SNKN	1504ENN			●												E18

Available Arbors

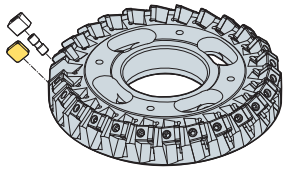
Designation		Arbors	
ANH	100R/L	NT*□□(M/U)-FMA31.75-□□	-
	125R/L	NT*□□(M/U)-FMA38.1-□□	-
	160R/L	NT*□□(M/U)-FMA50.8-□□	-
	200R/L	-	APR200
	250R/L	-	APR250
	315R/L	-	APR315
	355R/L	-	APR355
	400R/L	-	APR400
	450R/L	-	APR450

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	140 ~ 230	0.05 ~ 0.30	PC6510
	135 ~ 220	0.10 ~ 0.30	H01
	50 ~ 90	0.10 ~ 0.30	G10

Parts

Specification	Wedge	Wedge Screw	Wrench
Ø100~Ø450	WANH5N	DHA0821F	HW40

Assembling	
	

Available Inserts E17, E18 Available Arbors and bolt E318~E320

CDH4000

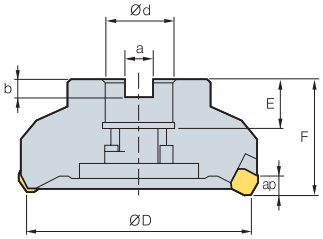


Fig. 1

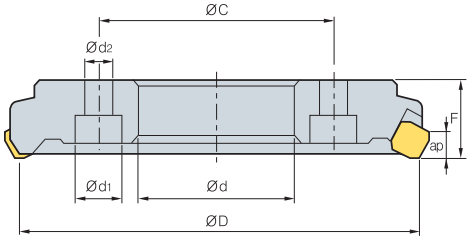


Fig. 2

AA 65°
• AR : 10°
• RR : 5°

(mm)

Designation			ØD	Ød	Ød1	Ød2	a	b	E	F	ØC	ap	kg	Fig.
CDH	**4100R/L**	8	100	31.75	-	-	12.7	8	22	50	-	6	2.3	1
	4125R/L	10	125	38.1	-	-	15.9	10	27	63	-	6	4.4	1
	4160R/L	14	160	50.8	-	-	19.0	11	27	63	-	6	6.8	1
	4200R/L	18	200	80	24	14	-	-	-	40	120	6	6.7	2
	4250R/L	24	250	120	30	18	-	-	-	40	170	6	9.1	2
	4315R/L	30	315	180	30	18	-	-	-	40	230	6	12.3	2
	4355R/L	34	355	220	30	18	-	-	-	40	270	6	14.8	2
	4400R/L	38	400	250	30	18	-	-	-	40	300	6	18.1	2
	4450R/L	44	450	300	30	18	-	-	-	40	350	6	21.3	2

Available Inserts

SDCN

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SDCN	**42R**															E13
	42L															

Available Arbors

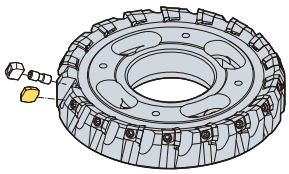
Designation		Arbors	
CDH	**100R/L**	NT*□□(M/U)-FMA31.75-□□	-
	125R/L	NT*□□(M/U)-FMA38.1-□□	-
	160R/L	NT*□□(M/U)-FMA50.8-□□	-
	200R/L	-	APR200
	250R/L	-	APR250
	315R/L	-	APR315
	355R/L	-	APR355
	400R/L	-	APR400
	450R/L	-	APR450

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	140 ~ 230	0.05 ~ 0.30	**PC6510**
	135 ~ 220	0.10 ~ 0.30	**H01**
	50 ~ 90	0.10 ~ 0.30	**G10**

Parts

Specification	Wedge	Wedge Screw	Wrench
Ø100-Ø160	WCDH4R1L1	DHA0821F	HW40
Ø200-Ø450	WCDH4R/L		

Assembling	
	

Available Inserts **E13** Available Arbors and bolt **E318~E320**

CDH5000

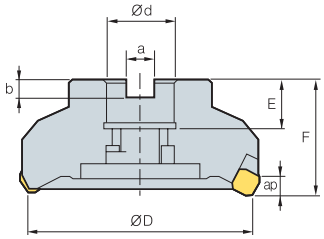


Fig. 1

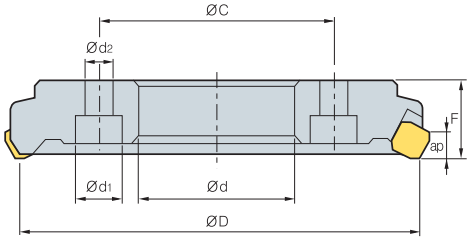


Fig. 2

AA 65°
- AR : 10°
- RR : 5°

(mm)

Designation			ØD	Ød	Ød1	Ød2	a	b	E	F	ØC	ap	kg	Fig.
CDH	5100R/L	08	100	31.75	-	-	12.7	8	22	50	-	7	2.3	1
	5125R/L	10	125	38.1	-	-	15.9	10	27	63	-	7	4.4	1
	5160R/L	14	160	50.8	-	-	19.0	11	27	63	-	7	6.8	1
	5200R/L	18	200	80	24	14	-	-	-	40	120	7	6.6	2
	5250R/L	24	250	120	30	18	-	-	-	40	170	7	9.1	2
	5315R/L	30	315	180	30	18	-	-	-	40	230	7	12.2	2
	5355R/L	34	355	220	30	18	-	-	-	40	270	7	14.7	2
	5400R/L	38	400	250	30	18	-	-	-	40	300	7	18	2
	5450R/L	44	450	300	30	18	-	-	-	40	350	7	21.2	2

Available Inserts

SDCN

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SDCN	53R															E13
	53L															

Available Arbors

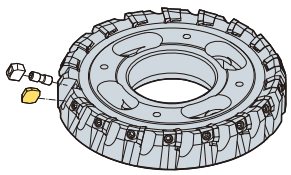
Designation		Arbors	
CDH	100R/L	NT*□□(M/U)-FMA31.75-□□	-
	125R/L	NT*□□(M/U)-FMA38.1-□□	-
	160R/L	NT*□□(M/U)-FMA50.8-□□	-
	200R/L	-	APR200
	250R/L	-	APR250
	315R/L	-	APR315
	355R/L	-	APR355
	400R/L	-	APR400
	450R/L	-	APR450

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	140 ~ 230	0.05 ~ 0.30	PC6510
	135 ~ 220	0.10 ~ 0.30	H01
	50 ~ 90	0.10 ~ 0.30	G10

Parts

Specification	Wedge	Wedge Screw	Wrench
Ø100-Ø160	WCDH5R1L1	DHA0821F	HW40
Ø200-Ø450	WCDH5R/L		

Assembling	
	

Available Inserts E13 Available Arbors and bolt E318~E320

DEH5000

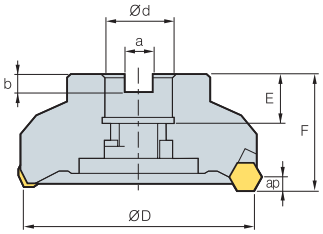


Fig. 1

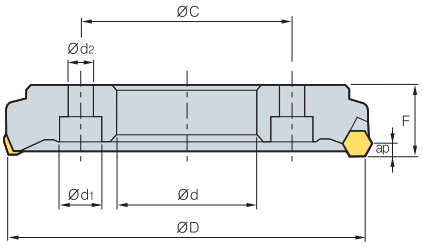


Fig. 2

AA 60°
- AR : 14°
- RR : 6°

(mm)

Designation			ØD	Ød	Ød1	Ød2	a	b	E	F	ØC	ap	kg	Fig.
DEH	5100R/L	6	100	31.75	-	-	12.7	8	22	50	-	7	2.3	1
	5125R/L	7	125	38.1	-	-	15.9	10	27	63	-	7	4.4	1
	5160R/L	8	160	50.8	-	-	19.0	11	27	63	-	7	6.3	1
	5200R/L	12	200	80	24	14	-	-	-	40	120	7	6.5	2
	5250R/L	14	250	120	30	18	-	-	-	40	170	7	9.1	2
	5315R/L	18	315	180	30	18	-	-	-	40	230	7	12.1	2
	5355R/L	20	355	220	30	18	-	-	-	40	270	7	14.8	2
	5400R/L	24	400	250	30	18	-	-	-	40	300	7	17.8	2
	5450R/L	28	450	300	30	18	-	-	-	40	350	7	21	2

Available Inserts

HECN

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
HECN	090408FN															E07
	090408SN															
	090408TN															

Available Arbors

Designation		Arbors	
DEH	5100R/L	NT*□□(M/U)-FMA31.75-□□	-
	5125R/L	NT*□□(M/U)-FMA38.1-□□	-
	5160R/L	NT*□□(M/U)-FMA50.8-□□	-
	5200R/L	-	APR200
	5250R/L	-	APR250
	5315R/L	-	APR315
	5355R/L	-	APR355
	5400R/L	-	APR400
	5450R/L	-	APR450

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	140 ~ 230	0.05 ~ 0.30	PC6510
	135 ~ 220	0.10 ~ 0.30	H01
	50 ~ 90	0.10 ~ 0.30	G10

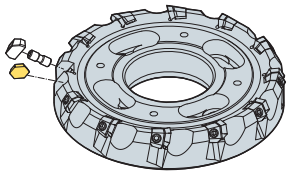
Parts

Specification	Wedge	Wedge Screw	Wrench
Ø100-Ø200	WDEHR-1/L-1	DHA0821F	HW40
Ø250-Ø450	WDEHR/L		

Available Inserts E07

Available Arbors and bolt E318~E320

Assembling	



DPH5000

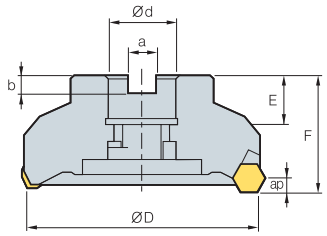


Fig. 1

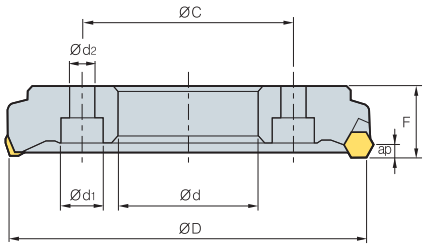


Fig. 2

AA 60°
- AR : 5°
- RR : -3°

(mm)

Designation			ØD	Ød	Ød1	Ød2	a	b	E	F	ØC	ap	kg	Fig.
DPH	5100R/L	8	100	31.75	-	-	12.7	8	22	50	-	7	2.3	1
	5125R/L	10	125	38.1	-	-	15.9	10	27	63	-	7	4.4	1
	5160R/L	14	160	50.8	-	-	19.0	11	27	63	-	7	6.7	1
	5200R/L	18	200	80	24	14	-	-	-	40	120	7	6.5	2
	5250R/L	24	250	120	30	18	-	-	-	40	170	7	9	2
	5315R/L	30	315	180	30	18	-	-	-	40	230	7	12	2
	5355R/L	34	355	220	30	18	-	-	-	40	270	7	14.5	2
	5400R/L	38	400	250	30	18	-	-	-	40	300	7	17.7	2
	5450R/L	44	450	300	30	18	-	-	-	40	350	7	21	2

Available Inserts

HPEN

HPEN-WC

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
HPEN	090408FN															E07
	090408SN															
	090408EN															
	090408-WC															

Available Arbors

Designation		Arbors	
DPH	5100R/L	NT*□□(M/U)-FMA31.75-□□	-
	5125R/L	NT*□□(M/U)-FMA38.1-□□	-
	5160R/L	NT*□□(M/U)-FMA50.8-□□	-
	5200R/L	-	APR200
	5250R/L	-	APR250
	5315R/L	-	APR315
	5355R/L	-	APR355
	5400R/L	-	APR400
	5450R/L	-	APR450

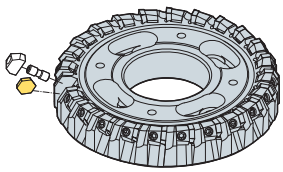
Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	140 ~ 230	0.05 ~ 0.30	PC6510
	135 ~ 220	0.10 ~ 0.30	H01
	50 ~ 90	0.10 ~ 0.30	G10

Parts

Specification	 Wedge	 Wedge Screw	 Wrench
Ø100~Ø450	WDPH5R/L	DHA0821F	HW40

Assembling



Available Inserts E07

Available Arbors and bolt E318~E320

PNH4000/5000

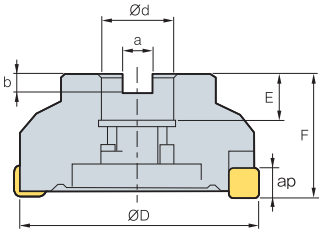


Fig. 1

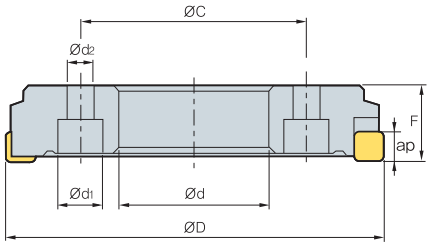


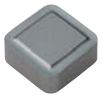
Fig. 2

AA 90°
- AR : -5°
- RR : -6°

(mm)

Designation			ØD	Ød	Ød1	Ød2	a	b	E	F	ØC	ap	kg	Fig.
PNH	4125R/L	10	125	38.1	-	-	15.9	10	27	63	-	Max 0.5	3.4	1
	4160R/L	14	160	50.8	-	-	19.0	11	27	63	-	Max 0.5	5.5	1
	4200R/L	18	200	80	24	14	-	-	-	40	120	Max 0.5	5.5	2
	4250R/L	24	250	120	30	18	-	-	-	40	170	Max 0.5	7.7	2
	4315R/L	30	315	180	30	18	-	-	-	40	230	Max 0.5	10.5	2
	4355R/L	34	355	220	30	18	-	-	-	40	270	Max 0.5	12.9	2
	4400R/L	38	400	250	30	18	-	-	-	40	300	Max 0.5	16.1	2
	4450R/L	44	450	300	30	18	-	-	-	40	350	Max 0.5	19.1	2
PNH	5125R/L	10	125	38.1	-	-	15.9	10	27	63	-	Max 0.5	3.4	1
	5160R/L	14	160	50.8	-	-	19.0	11	27	63	-	Max 0.5	5.3	1
	5200R/L	18	200	80	24	14	-	-	-	40	120	Max 0.5	5.4	2
	5250R/L	24	250	120	30	18	-	-	-	40	170	Max 0.5	7.6	2
	5315R/L	30	315	180	30	18	-	-	-	40	230	Max 0.5	10.4	2
	5355R/L	34	355	220	30	18	-	-	-	40	270	Max 0.5	12.8	2
	5400R/L	38	400	250	30	18	-	-	-	40	300	Max 0.5	15.9	2
	5450R/L	44	450	300	30	18	-	-	-	40	350	Max 0.5	18.9	2

Available Inserts



SNEF

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNEF	435															E17

Available Arbors

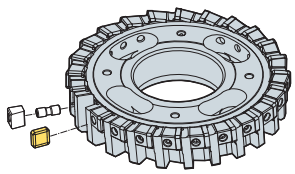
Designation		Arbors	
PNH	125R/L	NT*□□(M/U)-FMA38.1-□□	-
	160R/L	NT*□□(M/U)-FMA50.8-□□	-
	200R/L	-	APR200
	250R/L	-	APR250
	315R/L	-	APR315
	355R/L	-	APR355
	400R/L	-	APR400
	450R/L	-	APR450

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	140 ~ 230	0.05 ~ 0.30	PC6510
	135 ~ 220	0.10 ~ 0.30	H01
	50 ~ 90	0.10 ~ 0.30	G10

Parts

Specification	Wedge	Wedge Screw	Wrench
Ø125-Ø450	WANH4N	DHA0821F	HW40
Ø125-Ø450	WANH5N		

Assembling	
	

Available Inserts E17 Available Arbors and bolt E318~E320

PPH4000

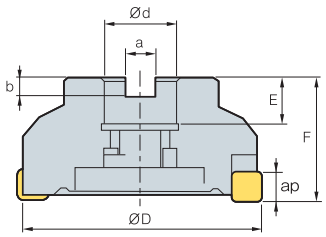


Fig. 1

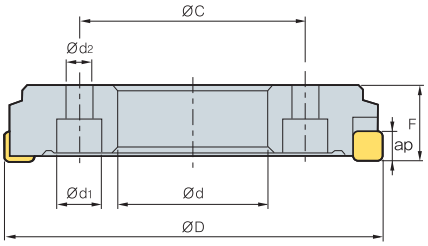


Fig. 2

AA 90°
- AR : 5°
- RR : -6°

(mm)

Designation			ØD	Ød	Ød1	Ød2	a	b	E	F	ØC	ap	kg	Fig.
PPH	**4125R/L**	10	125	38.1	-	-	15.9	10	27	63	-	Max 0.5	3.4	1
	4160R/L	14	160	50.8	-	-	19.0	11	27	63	-	Max 0.5	5.3	1
	4200R/L	18	200	80	24	14	-	-	-	40	120	Max 0.5	5.5	2
	4250R/L	24	250	120	24	14	-	-	-	40	170	Max 0.5	7.7	2
	4315R/L	30	315	180	30	18	-	-	-	40	230	Max 0.5	10.5	2
	4355R/L	34	355	220	30	18	-	-	-	40	270	Max 0.5	13	2
	4400R/L	38	400	250	30	18	-	-	-	40	300	Max 0.5	16	2
	4450R/L	44	450	300	30	18	-	-	-	40	350	Max 0.5	19	2

Available Inserts

SPEN-WC

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SPEN	**120416-WC**															E19

Available Arbors

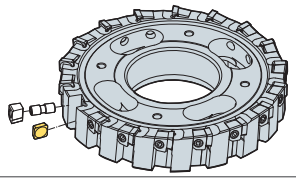
Designation		Arbors	
PPH	**4125R/L**	NT*□□(M/U)-FMA38.1-□□	-
	4160R/L	NT*□□(M/U)-FMA50.8-□□	-
	4200R/L	-	APR200
	4250R/L	-	APR250
	4315R/L	-	APR315
	4355R/L	-	APR355
	4400R/L	-	APR400
	4450R/L	-	APR450

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	140 ~ 230	0.05 ~ 0.30	**PC6510**
	135 ~ 220	0.10 ~ 0.30	**H01**
	50 ~ 90	0.10 ~ 0.30	**G10**

Parts

Specification	 Wedge	 Wedge Screw	 Wrench
Ø125~Ø450	WPPH4R/L	DHA0821F	HW40

Assembling	

Available Inserts E19 Available Arbors and bolt E318~E320

SVM(M)4000

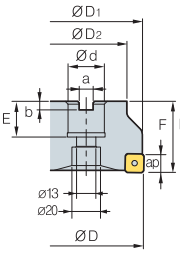


Fig. 1

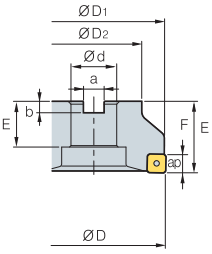


Fig. 2

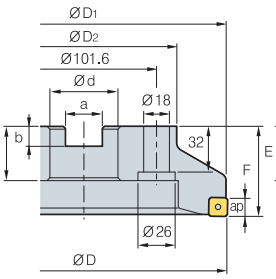


Fig. 3

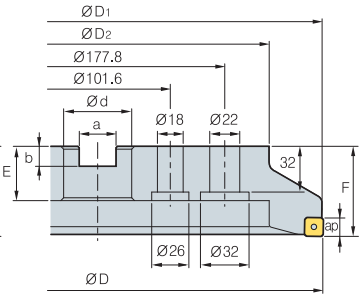


Fig. 4

(mm)

Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
SVM	4080R/L-Z8	8	80	79	57	25.4	12.4	6	25	50	1.0	1.2	1
	4100R/L-Z12	12	100	99	67	31.75	14.4	8	32	63	1.0	2.3	1
	4125R/L-Z16	16	125	124	87	38.1	16.4	10	38	63	1.0	3.5	2
	4160R/L-Z20	20	160	159	107	50.8	16.4	11	38	63	1.0	5	2
	4200R/L-Z24	24	200	199	130	47.625	25.7	14	38	63	1.0	7.2	3
	4250R/L-Z30	30	250	249	180	47.625	25.7	14	38	63	1.0	12	3
	4315R/L-Z36	36	315	314	240	47.625	25.7	14	38	63	1.0	19.5	4
SVMM	4080R/L-Z8	8	80	79	57	27	12.4	7	22	50	1.0	1.2	1
	4100R/L-Z12	12	100	99	67	32	14.4	8	28	63	1.0	2.3	1
	4125R/L-Z16	16	125	124	87	40	16.4	9	30	63	1.0	3.5	2
	4160R/L-Z20	20	160	159	107	40	16.4	9	30	63	1.0	5	3
	4200R/L-Z24	24	200	199	130	60	25.7	14	38	63	1.0	7.2	3
	4250R/L-Z30	30	250	249	180	60	25.7	14	38	63	1.0	12	3
	4315R/L-Z36	36	315	314	240	60	25.7	14	38	63	1.0	19.5	4

Available Inserts


SNEU-MF


SNEU1204ANN-MF


SNEU-WMF


SNEU-TBW

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
SNEU	120420-MF									●						E17
	1204ANN-MF															
	1204R-WMF															
	1204-TBW															

Parts

Specification	 Wedge	 Wedge Screw	 Contract Screw	 Wrench
Ø80~Ø315	WKAJ3	DTA0619	XTKA0412	TW15-100

Available Inserts E17

SVUM6000

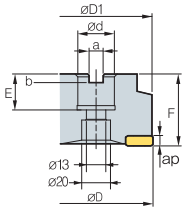


Fig. 1

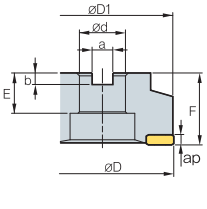


Fig. 2

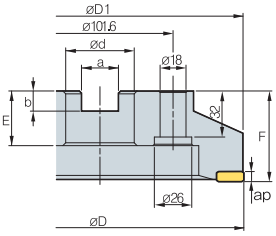


Fig. 3

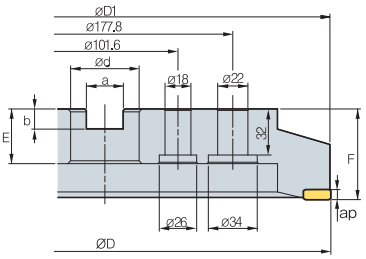
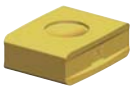


Fig. 4

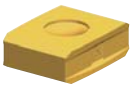
(mm)

Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
SVUM	6080R/L-Z4	4	80	79	57	27	12.4	7	22	50	0.5	1.2	1
	6100R/L-Z4	4	100	100	67	32	14.4	8	28	63	0.5	2.3	1
	6125R/L-Z4	4	125	125	87	40	16.4	9	30	63	0.5	3.5	2
	6160R/L-Z4	4	160	160	107	40	16.4	9	30	63	0.5	5	3
	6200R/L-Z6	6	200	200	130	60	25.7	14	38	63	0.5	7.2	3
	6250R/L-Z6	6	250	250	180	60	25.7	14	38	63	0.5	12	3
	6315R/L-Z8	8	315	315	240	60	25.7	14	38	63	0.5	19.5	4

Available Inserts



LNCS(R3.0)



LNCS(C1.5)

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
LNCS	1907-R3.0-WC															E09
	1907-C1.5-WC															

Parts

Specification	Screw	Wrench
Ø80~Ø315	FTNA0513	TW20-100

Available Inserts E09

SVUM6000-B

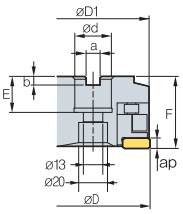


Fig. 1

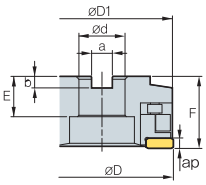


Fig. 2

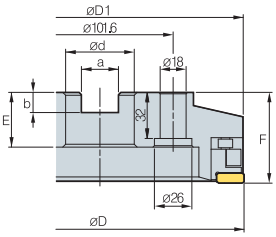


Fig. 3

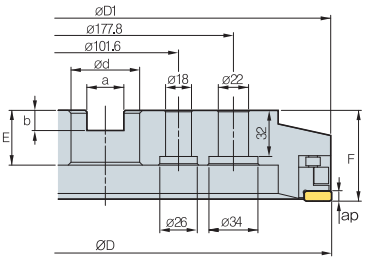
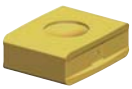


Fig. 4

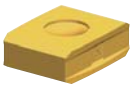
(mm)

Designation			ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
SVUM	6080R/L-Z4-B	4	80	79	57	27	12.4	7	22	50	0.5	1.2	1
	6100R/L-Z4-B	4	100	99	67	32	14.4	8	28	63	0.5	2.3	1
	6125R/L-Z4-B	4	125	124	87	40	16.4	9	30	63	0.5	3.5	2
	6160R/L-Z4-B	4	160	160	107	40	16.4	9	30	63	0.5	5	3
	6200R/L-Z6-B	6	200	200	130	60	25.7	14	38	63	0.5	7.2	3
	6250R/L-Z6-B	6	250	250	180	60	25.7	14	38	63	0.5	12	3
	6315R/L-Z8-B	8	315	315	240	60	25.7	14	38	63	0.5	19.5	4

Available Inserts



LNCS(R3.0)



LNCS(C1.5)

Designation		Cermet		Coated									Uncoated			Page
		CN2000	CN30	NCM325	NCM335	PC3500	PC3600	PC3545	PC9530	PC6510	PC5300	PC5400	ST30A	G10	H01	
LNCS	1907-R3.0-WC															E09
	1907-C1.5-WC															

Parts

Specification	Locator	Wedge	Wedge Screw	Adjust Screw	Contract Screw	Wrench
Ø80~Ø315	LSH4R	WSH4	DHA0724F	AZ0619F-D	FTNA0512	TW20-100

Available Inserts E09

Inch

Actual designations of milling cutter

Fig. 1

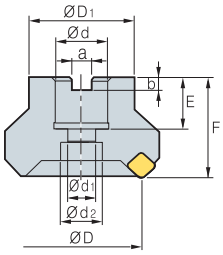


Fig. 2

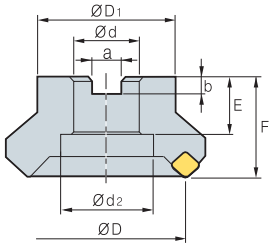


Fig. 3

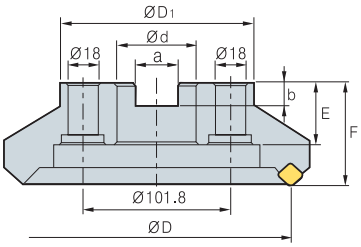
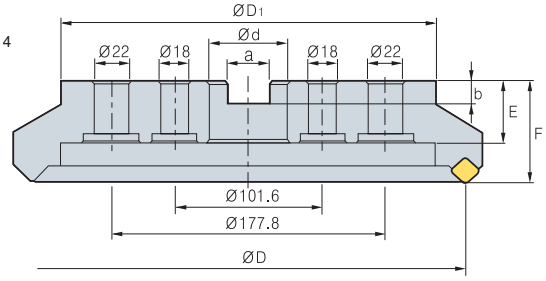


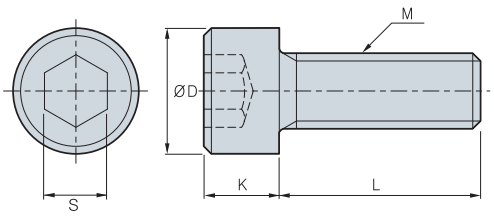
Fig. 4



Inch type

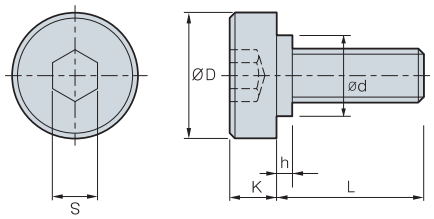
Dimensions (inch)									Fig.	Available Arbors
ØD	Ød	a	b	E	F	$ØD_1$	$Ød_1$	$Ød_2$		
40	16	8.4	5.6	18	40	34	9	14	1	FMC16, SMA16
50	22	10.4	6.3	20	40	42	11	18	1	FMC22
63	22	10.4	6.3	20	40	49	11	18	1	FMC22
80	25.4	9.5	6	25	50	57	14	20	1	FMA25.4
100	31.75	12.7	8	32	50	67	-	45	2	FMA31.75 , SMB31.75
125	38.1	15.9	10	38	63	87	-	56	2	FMA38.1
160	50.8	19	11	38	63	107	-	-	2	FMA50.8
200	47.625	25.4	14	38	63	130	-	-	3	FMA47.625
250	47.625	25.4	14	38	63	180	-	-	3	FMA47.625
315	47.625	25.4	14	38	63	240	-	-	4	-

Wrench bolt



Designation	ØD	S	K	L	M	Cutter size
SB0825	13	6	8	25	M08 × 1.25	Ø40
SB1025	16	8	10	25	M10 × 1.50	Ø50, Ø63
SB1035	16	8	10	35	M10 × 1.50	Ø50,Ø63(HRM)
SB1230	18	10	12	30	M12 × 1.75	Ø80
SB1630	24	14	16	30	M16 × 2.0	Ø100
SB1645	24	14	16	45	M16 × 2.0	Ø80, Ø100(HRM)
SB2040	30	17	20	40	M20 × 2.5	Ø125

Clamp bolt



Specifications	Dimensions (inch)						Cutter size
	D	L	K	S	h	d	
M8 X 1.25	20	20	7	6	-	-	Ø40
M10 X 1.5	28	24	9	8	-	-	Ø50 , Ø63
M12 X1.75	33	28	10	10	2	23	Ø80
M16 X 2	40	32	10	14	5	23	Ø100
M20 X 2.5	50	40	14	17	5	27	Ø125
M24 X 3	64	46	14	19	9	37	Ø160

Metric - ISO6462, DIN138

Clamping part of milling cutter

Fig. 1

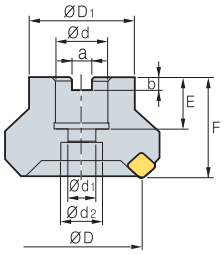


Fig. 2

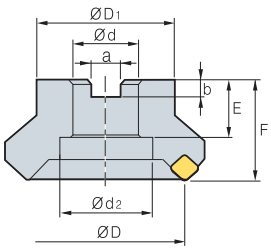


Fig. 3

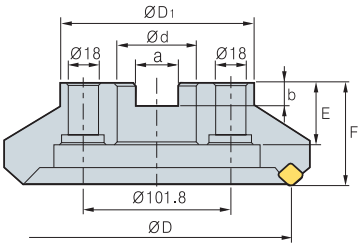
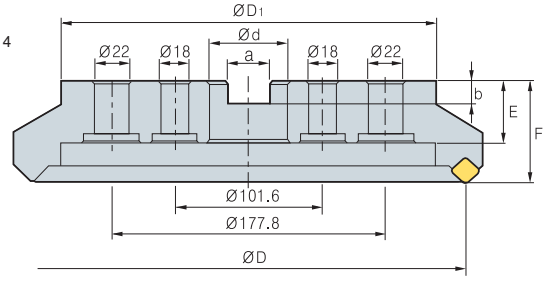


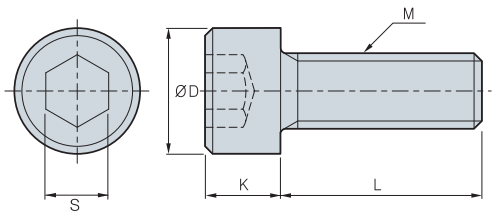
Fig. 4



Metric type(mm)

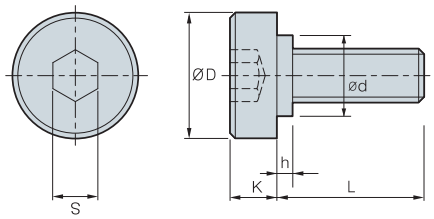
Dimensions (mm)									Fig.	Available Arbors
ØD	Ød	a	b	E	F	ØD1	Ød1	Ød2		
40	16	8.4	5.6	18	40	34	9	14	1	FMC16, SMA16
50	22	10.4	6.3	20	40	42	11	18	1	FMC22
63	22	10.4	6.3	20	40	49	11	18	1	FMC22
80	27	12.4	7	22	50	57	14	20	1	FMC27
100	32	14.4	8	28	50	67	-	45	2	FMC32
125	40	16.4	9	32	63	87	-	56	2	FMB40
160	40	16.4	9	32	63	107	-	-	2	FMB40
200	60	25.7	14	38	63	130	-	-	3	FMB60
250	60	25.7	14	38	63	180	-	-	3	FMB60
315	60	25.7	14	38	63	240	-	-	4	-

Wrench bolt



Designation	ØD	S	K	L	M	Cutter size
SB0825	13	6	8	25	M08 × 1.25	Ø40
SB1025	16	8	10	25	M10 × 1.50	Ø50, Ø63
SB1035	16	8	10	35	M10 × 1.50	Ø50, Ø63(HRM)
SB1230	18	10	12	30	M12 × 1.75	Ø80
SB1245	18	10	12	45	M12 × 1.75	Ø80(HRM)
SB1630	24	14	16	30	M16 × 2.0	Ø100
SB1645	24	14	16	45	M16 × 2.0	Ø100(HRM)
SB2040	30	17	20	40	M20 × 2.5	Ø125

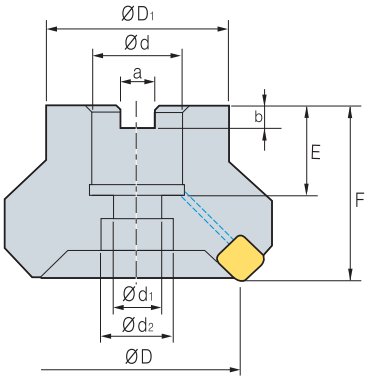
Clamp bolt



Specifications	Dimensions (mm)						Cutter size
	D	L	K	S	h	d	
M12 X1.75	33	28	10	10	2	23	Ø80
M16 X 2	40	32	10	14	5	23	Ø100
M20 X2.5	50	40	14	17	5	27	Ø125 , Ø160

Clamping part of milling cutter(Oil-Hole)

Clamping part of milling cutter



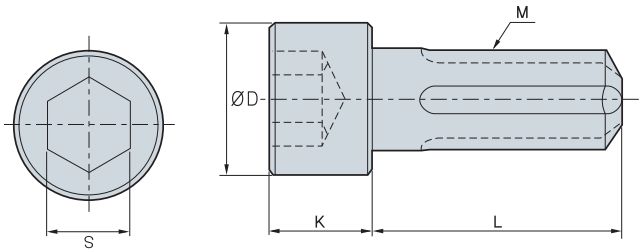
Inch type

Dimensions (inch)									Available Arbors
ØD	Ød	a	b	E	F	ØD1	Ød1	Ød2	
40	16	8.4	5.6	19	40	34	9	14	FMC16,SMA16
50	22	10.4	6.3	21	40	42	11	18	FMC22
63	22	10.4	6.3	21	40	49	11	18	FMC22
80	25.4	9.5	6	24	50	57	14	20	FMA25.4,FMB25.4
100	31.75	12.7	8	32	63	67	18	26	FMA31.75, SMB31.75
125	38.1	15.9	10	35	63	87	22	32	FMA38.1,FMB38.1,FMC38.1

Metric type

Dimensions (mm)									Available Arbors
ØD	Ød	a	b	E	F	ØD1	Ød1	Ød2	
40	16	8.4	5.6	19	40	34	9	14	FMC16,SMA16
50	22	10.4	6.3	21	40	42	11	18	FMC22
63	22	10.4	6.3	21	40	49	11	18	FMC22
80	27	12.4	7.0	23	50	57	14	20	FMC27
100	32	14.4	8.0	25	50	67	18	26	FMC32
125	40	16.4	9.0	29	63	87	22	32	FMB40 / FMC40

Wrench bolt



Designation	ØD	S	K	L	M	Cutter size
CB0825	13	6	8	25	M08×1.25	Ø40
CB1025	16	8	10	25	M10×1.50	Ø50, Ø63
CB1035	16	8	10	35	M10×1.50	Ø50, Ø63(HRM)
CB1230	18	10	12	30	M12×1.75	Ø80
CB1245	18	10	12	45	M12×1.75	Ø80(HRM)
CB1630	24	14	16	30	M16×2.0	Ø100
CB1645	24	14	16	45	M16×2.0	Ø100(HRM)
CB2040	30	17	20	40	M20×2.5	Ø125

Gear Cutter Applicable Example

Applicable Example-External tooth Gear

Finishing : M20

- **Cutter Dia** : Ø400
- **Tooth No** : 20Tooth
- **External tooth gear** : Formal cutter for gear processing which can be expected to KS 4 level accuracy
- Cutter can simultaneously chmpher while milling.

M20XZ130-EX

Semi-finishing

- **Cutter Dia** : Ø280
- **Tooth No** : 48Tooth
- Designed for processing of external gear involute curve line shape
- Possible to work for gear root portion R with optimal insert R design

M20-M22-ROU

Roughing

- **Cutter Dia** : Ø300
- **Tooth No** : 60Tooth
- High feed rate with low cutting resistance due to V shape insert setting design

LNE333-02-1

LNE434-02-1

KEL1906-C0.6-MF

Applicable Example-Internal tooth Gear

Finishing : M16

- **Cutter Dia** : Ø400
- **Tooth No** : 20Tooth
- **Internal tooth gear** : Formal cutter for gear processing which can be expected to KS 4 level accuracy
- Cutter can simultaneously chmpher while milling.

M16XZ130

Semi-finishing

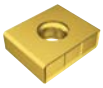
- **Cutter Dia** : Ø280
- **Tooth No** : 48Tooth
- The semi-finishing cutter was designed for processing of external gear involute curb line shape.

M16-M18-ROU

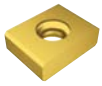
LNE433-R60

Roughing

- **Cutter Dia** : Ø560
- **Tooth No** : 40Tooth
- Possible to use for gear processing of all module due to step type of insert setting design



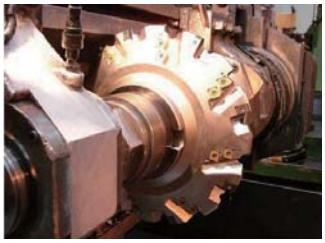
KEL1906-C0.6-MF



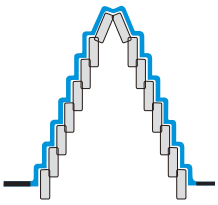
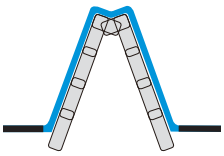
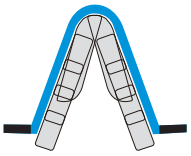
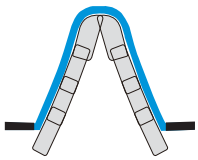
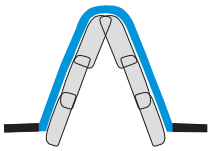
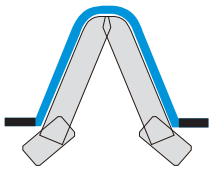
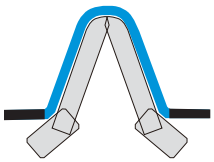
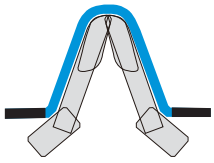
LNE434-02-1

Gear Cutter Machining Example

- **Machine**
  Gleason-PFAUTER CNC Hobbing Machine (Power : 52kW)
- **Cutting condition**
  vc = 119.98 m/min (n=86.8 rpm)
  fz = 0.518 mm/t (vf=450 mm/min)
  ae = 36mm
  Dry
- **Tools**
  M16-PT-RACK-KOR03 (Ø440xW90)
- **Semi-finishing cutter (low cut, low resistance)**

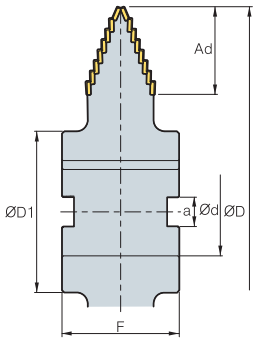


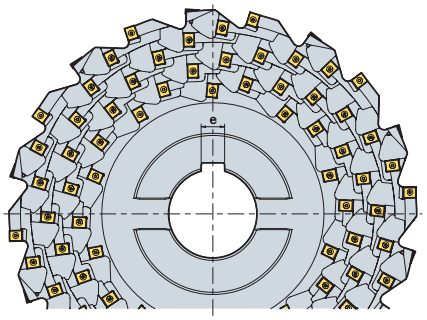
- **Machine**
  KARATS (30kw)
- **Cutting condition**
  vc = 150 m/min, n=119rpm
  fz = 0.09mm/t , vf=81.6mm/min
  ae = 45mm
  Dry
- **Tools**
  M24 Semi-finishing External type Applicable Insert
  M40-ROU(Main),
  CPE424-01(Flank)

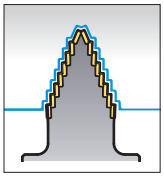
Type	Cutter Shape	Cutting edge Shape	Type	Figure
Roughing			Step Type	1. Working for big sized gear tooth 2. Low cutting resistance with step type insert setting
			V shape Type	1. Low cutting resistance with V shape cutting insert setting 2. Optimal cutting edge line setting according to Rach type & cutting edge sahpe
Semi-finishing			Low cutting resistance Type	1. 4 Corner insert on Root portion 2. 3D chip breaker shape on flank 3. Optimal cutting edge line setting for low cutting resistance
			External gear high rigidity Type	1. Optimal R type insert setting on Root portion 2. Superior Semi-finishing cutting with high rigidity shape of cutter & insert
			Internal gear high rigidity Type	1. Exclusive semi-finishing Internal Gear insert 2. Optimal cutting edge line setting with Internal tooth shape
Finishing			External gear	1. Concave shape of cutting edge line according to external gear type 2. Optimal cutting insert setting design according to a customer conditions
			Internal gear	1. 2 corner insert setting on right & left side and chamfering insert setting 2. Adjustable chamfering cartridge use for chamfering control
			2STEP type	1. Exclusive insert for machining the root part 2. 4-cornered insert

• Optimal cutting insert setting design according to customer condition

Gear Roughing Cutter (Step Type)



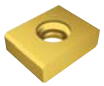
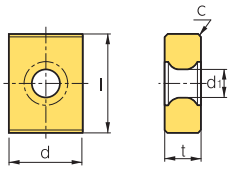




(mm)

m	⊚	ØD	Ad	Ød	ØD1	a	e	F
30	96	450	90	100	180	25	14	140
	108	500	90	100	180	25	14	140
	120	560	90	120	220	40	32	160
40	112	450	105	100	180	25	14	140
	126	500	105	100	180	25	14	140
	140	560	105	120	220	40	32	160
50	160	560	119	120	220	40	32	160

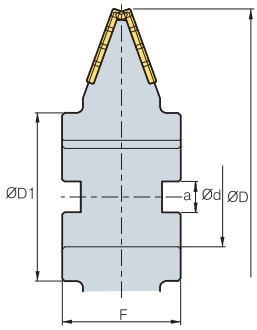
Available Inserts

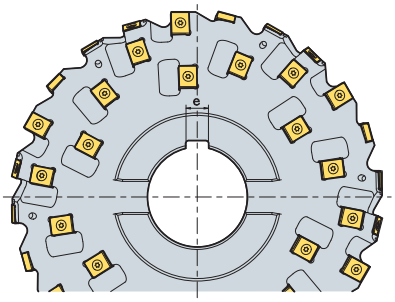
Picture	Designation		Coated				Uncoated		Dimensions (mm)					Configuration
			NC5330	PC9530	PC3500	PC5300	H01	G10	l	d	t	d1	c	
 Reinforced cutting Edge	LNE	434-02-1			○	◎			19.05	14.29	6.35	5.4	0.6	(mm) 
 Low cutting Resistance	KEL	1906-C0.6-MF			○	◎			19.05	14.29	6.35	5.4	0.6	
		190610-MR			○	◎			19.05	14.29	6.35	5.4	-	

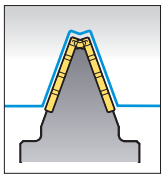
※The above specification is subject to change according to customer related condition & Korloy technical condition

◎ : 1st Rec ○ : 2rd Rec

Gear Roughing Cutter (V shape Type)





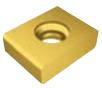
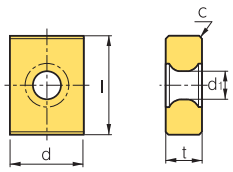
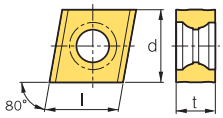


(mm)

m	Type	⊚	ØD	Ød	ØD1	a	e	F
20	rack	48	280	80	135	25	18	95
22	rack	48	280	80	135	25	18	95
24	rack	48	320	80	145	25	18	105
26	rack	60	320	80	145	25	18	105
28	rack	96	400	100	180	25	24	130
30	rack	96	400	100	180	25	24	130
32	rack	96	400	100	180	25	24	130
34	rack	112	400	100	180	25	24	130
36	rack	112	450	100	180	25	24	130
38	rack	112	450	100	180	25	24	130
40	rack	128	450	100	180	25	24	160
42	rack	128	450	100	180	25	24	160
44	rack	128	560	120	220	32	32	160
46	rack	144	560	120	220	32	32	160
48	rack	144	560	120	220	32	32	160
50	rack	144	560	120	220	32	32	160

Available Inserts

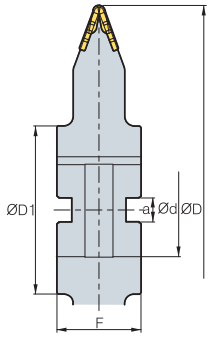
(mm)

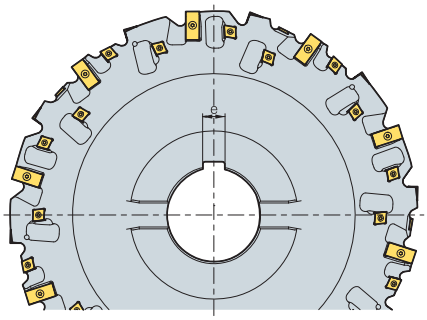
Picture	Designation		Coated				Uncoated		Dimensions (mm)					Configuration
			NC5330	PC9530	PC3500	PC5300	H01	G10	l	d	t	d1	c	
 Reinforced cutting Edge	LNE	**434-02-1**			○	◎			19.05	14.29	6.35	5.4	0.6	
 Low cutting Resistance	LNE	**1906-C0.6-MF**			○	◎			19.05	14.29	6.35	5.4	0.6	
		190610-MR							19.05	14.29	6.35	5.4	-	
 Reinforced cutting Edge	KEL	**333-02-1**			○	◎			14.3	12.7	6.35	5.8	0.8	
	CNHQ	**1005-C0.5**							10	10	5.4	-	-	

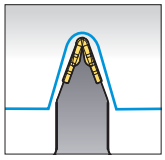
※ The above specification is subject to change according to customer related condition & Korloy technical condition

◎ : 1st Rec ○ : 2rd Rec

Gear Semi-finishing Cutter
(Low cutting resistance Type)





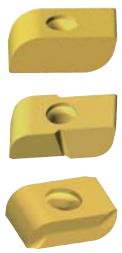
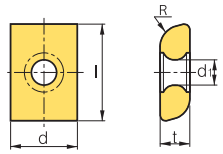
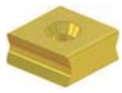
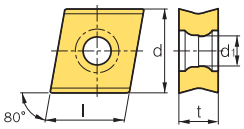


(mm)

m	No.of teeth	⊙	ØD	Ød	ØD1	a	e	F
6	30,60,120	18	250	60	100	25	18	70
8	30,60,120	18	250	60	100	25	18	80
10	30,60,120	24	250	60	100	25	18	80
12	30,60,120	24	250	60	100	25	18	90
14	30,60,120	24	280	80	135	25	24	95
16	30,60,120	32	280	80	135	25	24	100
18	30,60,120	32	320	80	145	25	24	105
20	30,60,120	64	400	100	180	25	24	110
22	30,60,120	64	400	100	180	25	24	110
24	30,60,120	64	400	100	180	25	24	120

Available Inserts

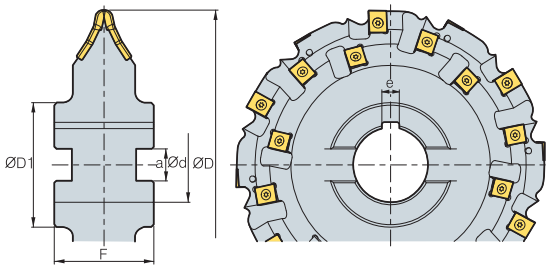
(mm)

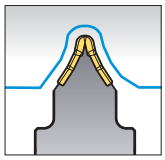
Picture	Designation		Coated				Uncoated		Dimensions (mm)					Configuration
			NC5330	PC9530	PC3500	PC5300	H01	G10	l	d	t	d1	c	
		**M6-2ST**			○	◎			19.05	11.6	3.8	4.4	2.25	
		M8-2ST			○	◎			19.05	11.6	4	4.4	3	
		M10-2ST			○	◎			19.05	11.6	4.76	4.4	3.75	
		M12-2ST			○	◎			19.05	14.3	6.35	5.5	4.5	
		M14-2ST			○	◎			25.4	14.3	6.35	5.5	5.25	
		M16-2ST			○	◎			31.8	14.3	7.14	5.5	6	
		M18-2ST			○	◎			31.8	14.3	7.14	5.5	6.75	
		M20-2ST			○	◎			31.8	14.3	9.52	5.5	7.5	
		M22-2ST			○	◎			31.8	14.3	9.52	5.5	8.25	
		M24-2ST			○	◎			31.8	14.3	9.52	5.5	9	
	KEC	**120606-MX**			○	◎			12	12.7	6.35	4.5	-	
		150708-MX			○	◎			15.15	15	7.6	5.8	-	

※ The above specification is subject to change according to customer related condition & Korloy technical condition

◎ : 1st Rec ○ : 2rd Rec

Gear Semi-finishing Cutter
(High rigid edge Type, External Gear)



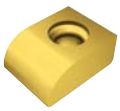
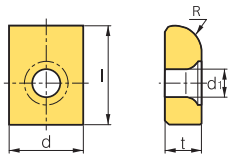
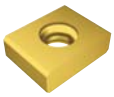
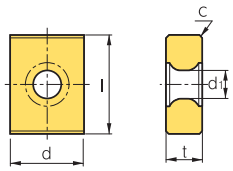


(mm)

m	No.of teeth	◎	ØD	Ød	ØD1	a	e	F
12	30,60,120	24	250	60	100	25	14	70
14	30,60,120	36	250	60	100	25	14	80
16	30,60,120	36	250	60	100	25	14	80
18	30,60,120	36	250	60	100	25	14	90
20	30,60,120	48	280	80	135	25	18	95
22	30,60,120	48	280	80	135	25	18	100
24	30,60,120	48	320	80	145	25	18	105
26	30,60,120	72	400	100	180	25	24	110
28	30,60,120	72	400	100	180	25	24	110
30	30,60,120	72	400	100	180	25	24	120
32	30,60,120	84	400	100	180	25	24	130
34	30,60,120	84	400	100	180	25	24	130

Available Inserts

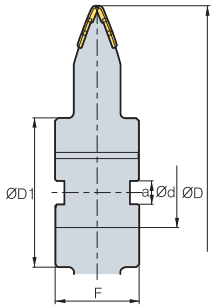
(mm)

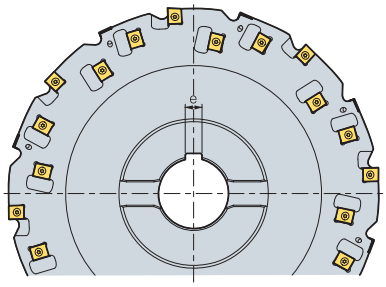
Picture	Designation			Coated				Uncoated		Dimensions (mm)						Configuration
				NC5330	PC9530	PC3500	PC5300	H01	G10	l	d	t	d_1	R	c	
		**M8-ROU**				○	◎			15.875	11	4.76	4.6	4.6	-	
		M12-M14-ROU				○	◎			19.05	14.29	6.35	5.4	5.4	-	
		M16-M18-ROU				○	◎			19.05	14.29	7	5.4	5.4	-	
		M20-M22-ROU				○	◎			19.05	14.29	7.94	5.4	5.4	-	
		M40-ROU				○	◎			25.4	14.29	9.52	5.4	5.4	-	
	LNE	**434-02-1**				○	◎			19.05	14.29	6.35	5.4	-	0.6	
	KEL	**1906-C0.6-MF**				○	◎			19.05	14.29	6.35	5.4	-	0.6	
		190610-MR				○	◎			19.05	14.29	6.35	5.4		-	

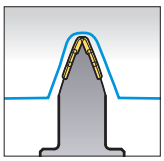
※ The above specification is subject to change according to customer related condition & Korloy technical condition

◎ : 1st Rec ○ : 2rd Rec

Gear Semi-finishing Cutter
(High rigid edge Type, Internal Gear)





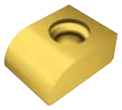
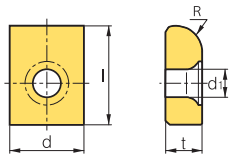
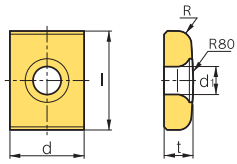


(mm)

m	No.of teeth	⊚	ØD	Ød	ØD1	a	e	F
12	30,60,120	24	250	60	100	25	14	70
14	30,60,120	36	250	60	100	25	14	80
16	30,60,120	36	250	60	100	25	14	80
18	30,60,120	36	250	60	100	25	14	90
20	30,60,120	48	280	80	135	25	18	95
22	30,60,120	48	280	80	135	25	18	100
24	30,60,120	48	320	80	145	25	18	105
26	30,60,120	72	400	100	180	25	24	110
28	30,60,120	72	400	100	180	25	24	110
30	30,60,120	72	400	100	180	25	24	120
32	30,60,120	84	400	100	180	25	24	130
34	30,60,120	84	400	100	180	25	24	130

Available Inserts

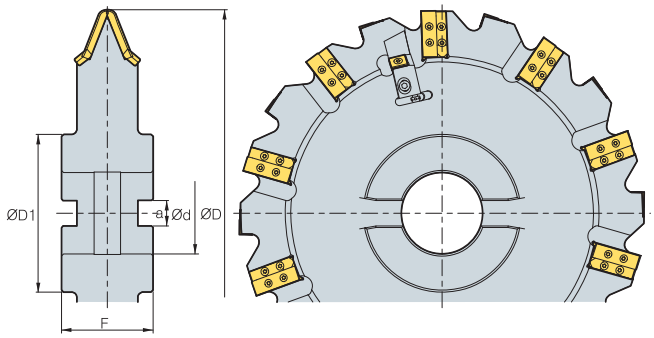
(mm)

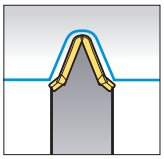
Picture	Designation		Coated				Uncoated		Dimensions (mm)					Configuration
			NC5330	PC9530	PC3500	PC5300	H01	G10	l	d	t	d_1	c	
		**M8-ROU**			○	◎			15.875	11	4.76	4.6	2	
		M12-M14-ROU			○	◎			19.05	14.29	6.35	5.4	3	
		M16-M18-ROU			○	◎			19.05	14.29	7	5.4	5	
		M20-M22-ROU			○	◎			19.05	14.29	7.94	5.4	7	
		M40-ROU			○	◎			25.4	14.29	9.52	5.4	10	
	LNE	**433-R80**			○	◎			19.05	14.29	5.56	5.4	2.5	

※The above specification is subject to change according to customer related condition & Korloy technical condition

◎ : 1st Rec ○ : 2rd Rec

Gear Finishing Cutter (1 Step Type, External Gear)



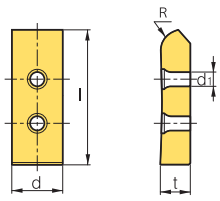
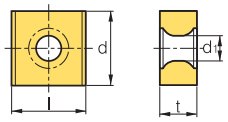


(mm)

m	⊚	ØD	Ød	ØD1	a	F
6	20	400	80	155	25	90
8	20	400	80	155	25	90
10	20	400	80	155	25	90
12	20	400	80	155	25	90
14	20	400	80	155	25	90
16	20	400	80	155	25	90
18	20	400	80	155	25	90
20	20	400	80	155	25	90
22	20	400	80	155	25	90
24	20	400	80	155	25	90

Available Inserts

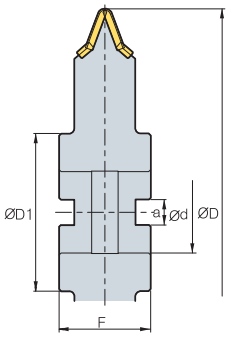
(mm)

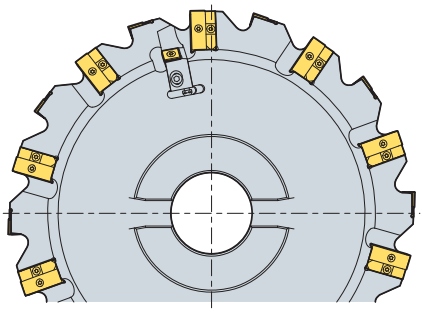
Picture	Designation		Coated				Uncoated		Dimensions (mm)					Configuration
			NC5330	PC9530	PC3500	PC5300	H01	G10	l	d	t	d1	R	
		**M6**			○	◎			19	14.3	5	5.5	2.25	
		M8			○	◎			27	14.3	5.4	5.5	3	
		M10			○	◎			29	14.3	6.35	5.5	3.75	
		M12			○	◎			33	14.3	6.35	5.5	4.5	
		M14			○	◎			39	14.3	6.35	5.5	5.25	
		M16			○	◎			43	14.3	7.94	5.5	6	
		M18			○	◎			50	14.3	7.94	5.5	6.75	
		M20			○	◎			54	14.3	9.53	5.5	7.5	
		M22			○	◎			57	14.3	9.53	5.5	8.25	
		M24			○	◎			64	14.3	9.53	5.5	9	
	SNEQ	**1507-C0.8**			○	◎			15.875	15.875	7.94	-	-	

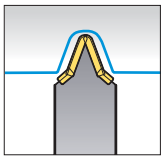
※The above specification is subject to change according to customer related condition & Korloy technical condition

◎ : 1st Rec ○ : 2rd Rec

Gear Finishing Cutter
(1 Step Type, Internal Gear)





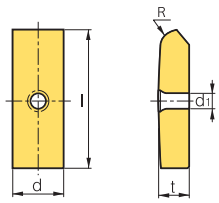
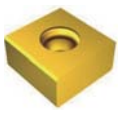
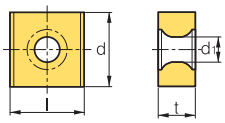


(mm)

m	⊙	ØD	Ød	ØD1	a	F
6	20	400	80	155	25	90
8	20	400	80	155	25	90
10	20	400	80	155	25	90
12	20	400	80	155	25	90
14	20	400	80	155	25	90
16	20	400	80	155	25	90
18	20	400	80	155	25	90
20	20	400	80	155	25	90
22	20	400	80	155	25	90
24	20	400	80	155	25	90

Available Inserts

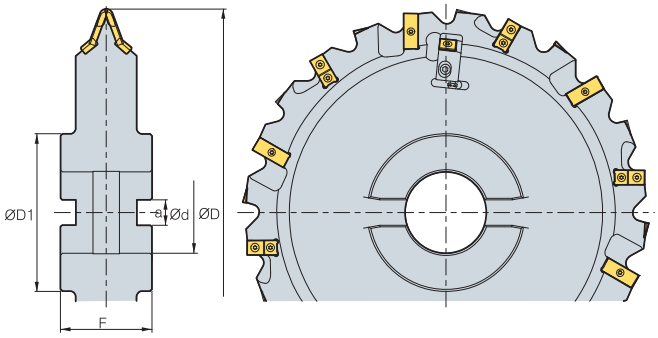
(mm)

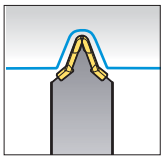
Picture	Designation		Coated				Uncoated		Dimensions (mm)					Configuration
			NC5330	PC9530	PC3500	PC5300	H01	G10	l	d	t	d1	R	
		**M6**			○	◎			19	14.3	5	5.5	2.25	
		M8			○	◎			27	14.3	5.4	5.5	3	
		M10			○	◎			29	14.3	6.35	5.5	3.75	
		M12			○	◎			33	14.3	6.35	5.5	4.5	
		M14			○	◎			39	14.3	6.35	5.5	5.25	
		M16			○	◎			43	14.3	7.94	5.5	6	
		M18			○	◎			50	14.3	7.94	5.5	6.75	
		M20			○	◎			54	14.3	9.53	5.5	7.5	
		M22			○	◎			57	14.3	9.53	5.5	8.25	
		M24			○	◎			64	14.3	9.53	5.5	9	
	SNEQ	**1507-C0.8**			○	◎			15.875	15.875	7.94	-	-	

※The above specification is subject to change according to customer related condition & Korloy technical condition

◎ : 1st Rec ○ : 2rd Rec

Gear Finishing Cutter
(2 Step Type, Internal / Externa Gear)



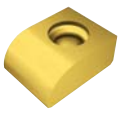
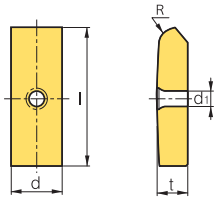
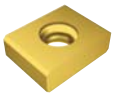
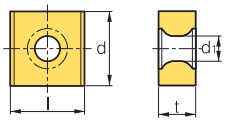
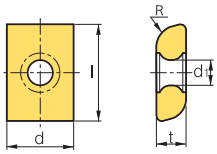


(mm)

m	⊚	ØD	Ød	ØD1	a	F
6	24	400	80	155	25	90
8	24	400	80	155	25	90
10	24	400	80	155	25	90
12	24	400	80	155	25	90
14	24	400	80	155	25	90
16	24	400	80	155	25	90
18	24	400	80	155	25	90
20	24	400	80	155	25	90
22	24	400	80	155	25	90
24	24	400	80	155	25	90

Available Inserts

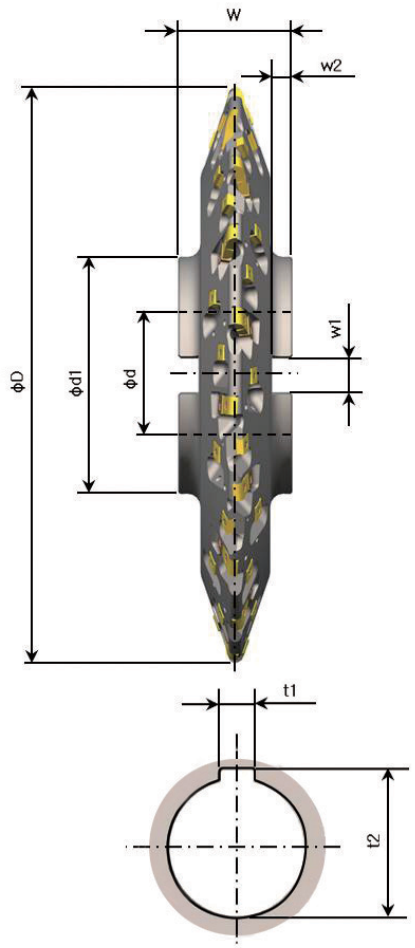
(mm)

Picture	Designation		Coated				Uncoated		Dimensions (mm)					Configuration
			NC5330	PC9530	PC3500	PC5300	H01	G10	l	d	t	d1	R	
		M6		○		◎			19	14.3	5	5.5	2.25	
		M8		○		◎			27	14.3	5.4	5.5	3	
		M10		○		◎			29	14.3	6.35	5.5	3.75	
		M12		○		◎			33	14.3	6.35	5.5	4.5	
		M14		○		◎			39	14.3	6.35	5.5	5.25	
		M16		○		◎			43	14.3	7.94	5.5	6	
		M18		○		◎			50	14.3	7.94	5.5	6.75	
		M20		○		◎			54	14.3	9.53	5.5	7.5	
		M22		○		◎			57	14.3	9.53	5.5	8.25	
		M24		○		◎			64	14.3	9.53	5.5	9	
	SNEQ	1507-C0.8		○		◎			15.875	15.875	7.94	-	-	
		M6-2ST							19.05	11.6	3.8	4.4	2.25	
		M8-2ST							19.05	11.6	4	4.4	3	
		M10-2ST							19.05	11.6	4.76	4.4	3.75	
		M12-2ST							19.05	14.3	6.35	5.5	4.5	
		M14-2ST							25.4	14.3	6.35	5.5	5.25	
		M16-2ST							31.8	14.3	7.14	5.5	6	
		M18-2ST							31.8	14.3	7.14	5.5	6.75	
		M20-2ST							31.8	14.3	9.52	5.5	7.5	
		M22-2ST							31.8	14.3	9.52	5.5	8.25	
		M24-2ST							31.8	14.3	9.52	5.5	9	

※ The above specification is subject to change according to customer related condition & Korloy technical condition

◎ : 1st Rec ○ : 2rd Rec

Gear Cutter Order Form



Cutter Type

☐ **Roughing** ☐ **Semi-finishing** ☐ **Finishing**

☐ Step ☐ Low cutting resistance ☐ 1 Step

☐ V shape ☐ High rigid edge ☐ 2 Step

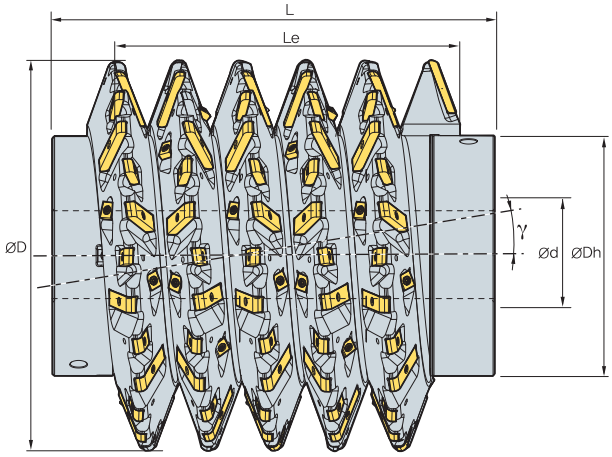
- Stock for finishing(one side) (mm) :
- Outside diameter D(mm) :
- Bore diameter d(mm) :
- Hub diameter d1(mm) :
- Cutter width W(mm) :
- Radial keyway w1(mm) :
- Radial keyway w2(mm) :
- Axial keyway t1(mm) :
- Axial keyway t2(mm) :

Involute Gear Data

☐ **External Gear** ☐ **Internal Gear** ☐ **Rack Gear**

- Module M(mm) :
- No.of teeth Z(mm) :
- Pressure angle α(°) :
- Helix angle β(°) :
- Addendum modification coefficient x :
- Tip diameter da(mm) :
- Root diameter d_f(mm) :
- Root radius ρ_{fp}(mm)
- Base tangent length W_k(mm)
- No. of measuring teeth K :
- Dimensions / Dimension over balls M_d(mm) :
- Ball diameter D_M(mm) :
- Gear quality (DIN, JIS) :

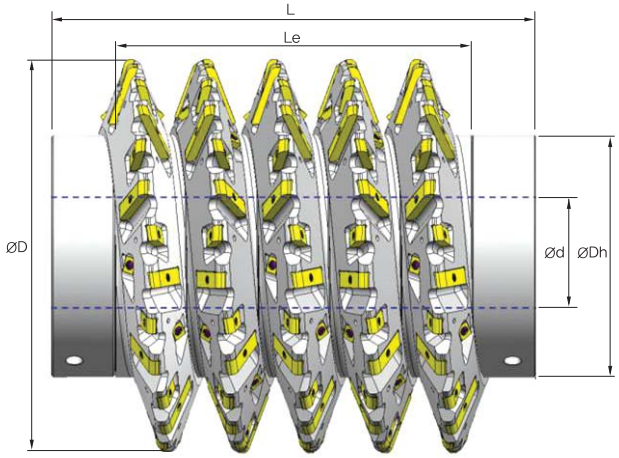
Indexable HOB New



(mm)

Gear Module	ØD	ØDh	Ød	No.Segm. (Pitch)	Le	Segment insert	Total insert	γ (Lead Ang.)
6	180	125	40	6	(113)	15	90	2.084
	210	125	50	6	(113)	17	102	1.763
	240	160	60	6	(113)	19	114	1.528
7	180	125	40	6	(132)	15	90	2.469
	210	125	50	6	(132)	17	102	2.084
	240	160	60	6	(132)	19	114	1.803
8	210	125	50	6	(151)	17	102	2.413
	240	160	60	6	(151)	19	114	2.084
	270	180	80	6	(151)	21	126	1.834
9	210	125	50	6	(169)	17	102	2.751
	240	160	60	6	(169)	19	114	2.372
	270	180	80	6	(169)	21	126	2.084
10	210	125	50	6	(189)	17	102	3.099
	240	160	60	6	(189)	19	114	2.666
	270	180	80	6	(189)	21	126	2.339
12	240	140	60	6	(226)	18	108	3.276
	270	180	80	6	(226)	22	132	2.866
	350	215	80	6	(226)	26	156	2.149
14	270	180	80	6	(264)	22	132	3.415
	350	215	80	6	(264)	26	156	2.547
16	270	160	80	6	(302)	22	132	3.989
	350	215	80	6	(302)	26	156	2.959
18	270	145	80	5	(283)	22	110	4.589
	350	215	80	5	(283)	26	130	3.383
20	350	215	80	5	(314)	26	130	3.823
	450	265	100	5	(314)	34	170	2.866

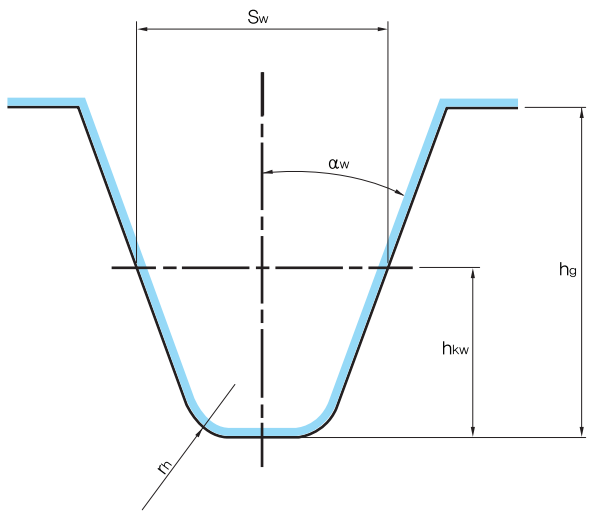
Indexable HOB



Tool SPEC.

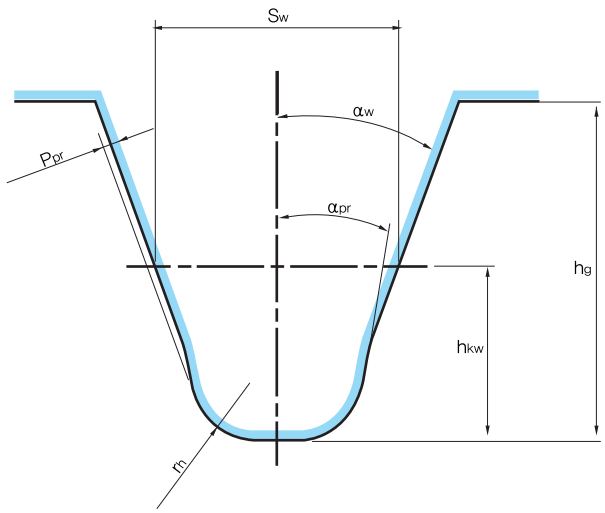
- Outside diameter ØD(mm) :
- Bore diameter Ød(mm) :
- Hub diameter ØDh(mm) :
- Hob length L(mm) :
- Cutting length Le(mm) :
- Spiral direction RH/LH :
- Quality class acc. to DIN 3968 :

Profile of Hob [Module m6 ~]



- Module M(mm) :
- Addendum hkw(mm) :
- Tooth thickness Sw(mm) :
- Tooth depth hg(mm) :

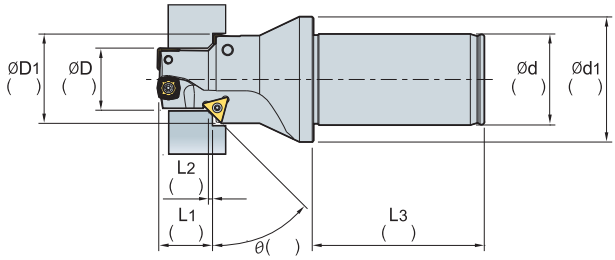
Profile of Roughing hob [Module m8 ~]



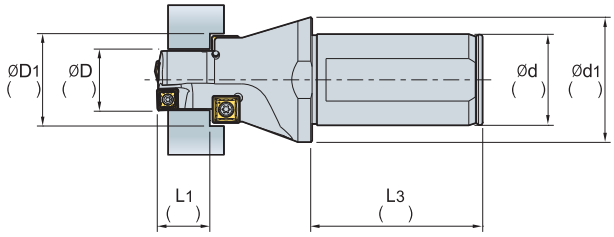
- Pressure angle α_w(mm) :
- Protuberance amount P_{pr}(mm) :
- Protuberance angle α_{pr}(mm) :
- Tip radius r_h(mm) :

Special drill holder for multi purpose

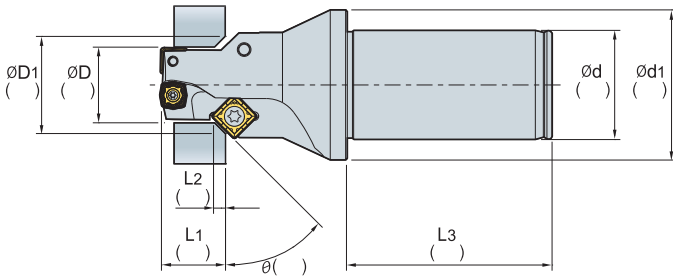
Drilling & Chamfering & Counter Boring



Drilling & Counter Boring

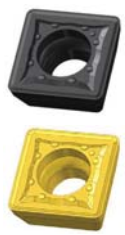
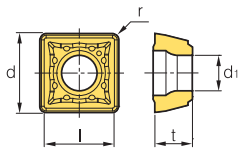
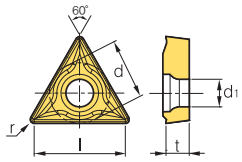


Drilling & Chamfering



※ Order-made items available outer above configulations

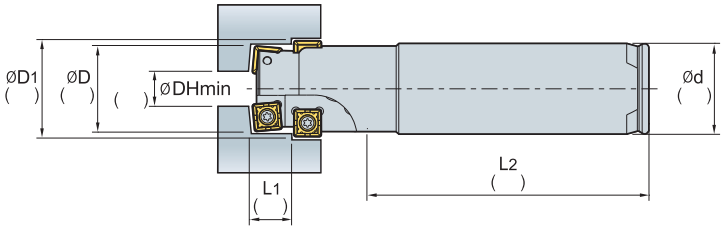
Available Inserts

Picture	Designation		Coated PC5300	Coated PC3600	Dimensions (mm) l	d	t	r	d_1	Available Screw	Configuration
	SPMT	050204-BC	●		4.2	5	2.48	0.4	2.25	FTNA0204	
		060204-BC	●		5.2	6	2.48	0.4	2.61	FTNA02205	
		07T308-BC	●		6.34	7.94	3.97	0.8	2.85	FTKA02565	
		090408-BC	●		7.9	9.525	4.3	0.8	4.05	FTNA03508	
		110408-BC	●		9.9	11.5	5	0.8	4.45	FTKA0408	
		120408-BC	●		11.1	12.7	5	0.8	4.45	FTKA0408	
		140512-BC	●		11.9	14.3	5.4	1.2	5.75	FTNA0510	
	TCMT	090204-HMP	●		8.6	5.56	2.38	0.4	2.50	FTKA02206	
		090208-HMP	●		7.6	5.56	2.38	0.8	2.50	FTKA02206	
		110202-HMP	●		10.5	6.35	2.38	0.2	2.80	FTKA2565	
		110204-HMP	●		10.0	6.35	2.38	0.4	2.80	FTKA2565	
		110208-HMP	●		9.0	6.35	2.38	0.8	2.80	FTKA2565	
		16T304-HMP	●		15.5	9.525	3.97	0.4	4.40	FTGA3512	
		16T308-HMP	●		14.5	9.525	3.97	0.8	4.40	FTGA3512	

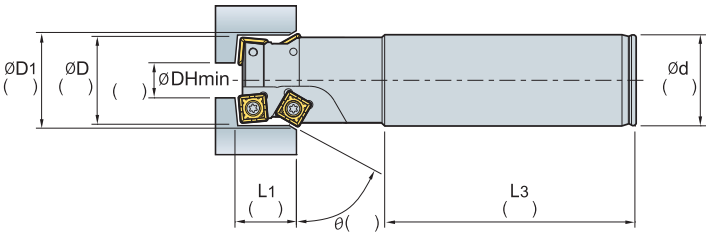
● Stock item

Special boring holder for multi purpose

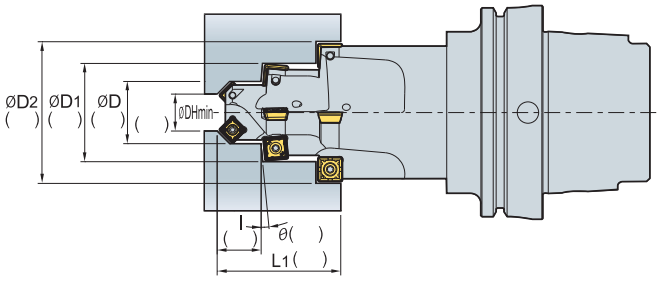
Boring & Counter Boring



Boring & Chamfering

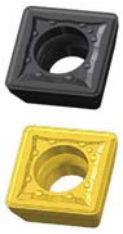
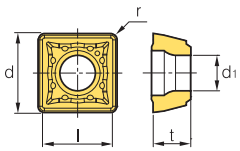
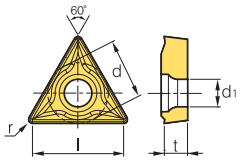


Boring & Chamfering & Counter Boring



※ Order-made items available outer above configulations

Available Inserts

Picture	Designation		Coated PC5300	Coated PC3600	Dimensions (mm) l	d	t	r	d_1	Available Screw	Configuration
	SPMT	050204-BC	●		4.2	5	2.48	0.4	2.25	FTNA0204	
		060204-BC	●		5.2	6	2.48	0.4	2.61	FTNA02205	
		07T308-BC	●		6.34	7.94	3.97	0.8	2.85	FTKA02565	
		090408-BC	●		7.9	9.525	4.3	0.8	4.05	FTNA03508	
		120408-BC	●		9.9	11.5	5	0.8	4.45	FTKA0408	
		140512-BC	●		11.1	12.7	5	0.8	4.45	FTKA0408	
		140512-BC	●		11.9	14.3	5.4	1.2	5.75	FTNA0510	
	TCMT	090204-HMP	●		8.6	5.56	2.38	0.4	2.50	FTKA02206	
		090208-HMP	●		7.6	5.56	2.38	0.8	2.50	FTKA02206	
		110202-HMP	●		10.5	6.35	2.38	0.2	2.80	FTKA2565	
		110204-HMP	●		10.0	6.35	2.38	0.4	2.80	FTKA2565	
		110208-HMP	●		9.0	6.35	2.38	0.8	2.80	FTKA2565	
		16T304-HMP	●		15.5	9.525	3.97	0.4	4.40	FTGA3512	
		16T308-HMP	●		14.5	9.525	3.97	0.8	4.40	FTGA3512	

● Stock item