E

MILLING

Milling tools that provide the best quality for customers' needs and improve productivity.

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LLING

Cutters for Molds

Milling cutter for Aluminum

Side Milling Cutters

Milling cutter for cast iron At high feed

Detail Information of milling cutter and Arbor

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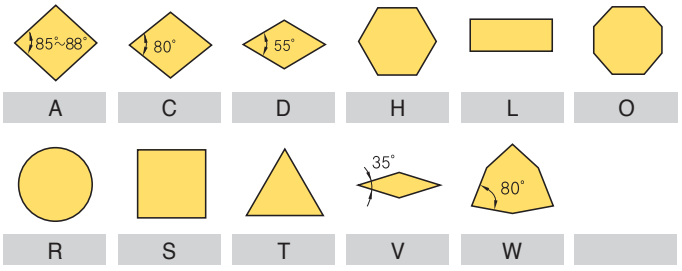
S P K R 12

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

1 Insert Shape

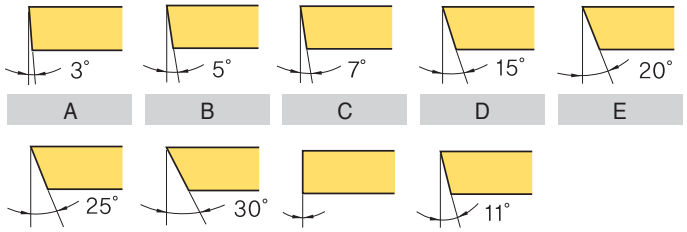
S P K R 12 03 ED 08 S R - MX



A	C	D	H	L	O
R	S	T	V	W	

2 Relief Angle

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

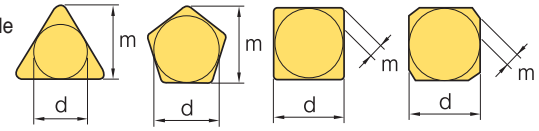


A	B	C	D	E
F	G	N	P	

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)

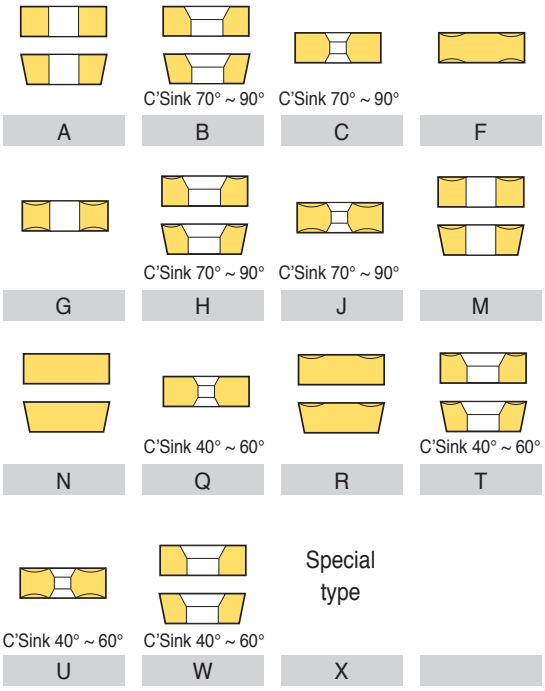
d	Tolerance on d		Tolerance on m	
	J,K,L,M,N	U	M,N	U
6.35	±0.05	±0.08	±0.08	±0.13
9.525	±0.05	±0.08	±0.08	±0.13
12.7	±0.08	±0.13	±0.13	±0.20
15.875	±0.10	±0.18	±0.15	±0.27
19.05	±0.10	±0.18	±0.15	±0.27
25.4	±0.13	±0.25	±0.18	±0.38

■ 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

4 Cross Section Type

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

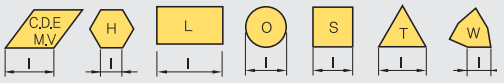


A	B	C	F
G	H	J	M
N	Q	R	T
U	W	X	

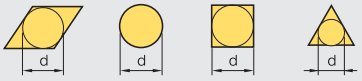
5 Cutting Edge Length, Diameter of Inscribed circle

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

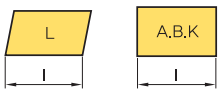
■ Metric system ※ Decimal integer constant



■ 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

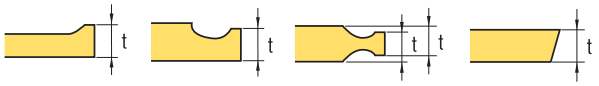
△	06	09	11	16	22	27	33	44
○ □	03	05	06	09	12	15	19	25
55°	04	06	07	11	15	19	23	31
80°	03	05	06	09	12	16	19	25
Inscribed circle	5/32″	7/32″	1/4″	3/8″	1/2″	5/8″	3/4″	1″
Inch system	5	7	2(8)	3	4	5	6	8

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

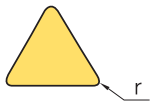


Symbol		Height of cutting edge(t)	
Metric	Inch	mm	Inch
01	1(2)	1.59	1/16
T0	1.125	1.79	9/128
T1	1.2	1.98	5/64
02	1.5(3)	2.38	3/32
T2	1.75	2.78	7/64
03	2	3.18	1/8
T3	2.5	3.97	5/32
04	3	4.76	3/16
05	3.5	5.56	7/32
06	4	6.35	1/4
07	5	7.94	5/16
09	6	9.52	3/8
11	7	11.11	7/16
12	8(16)	12.70	1/2

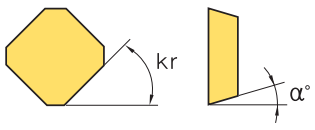
( ) Symbol for small size insert

7 Nose Radius (Nose R)

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



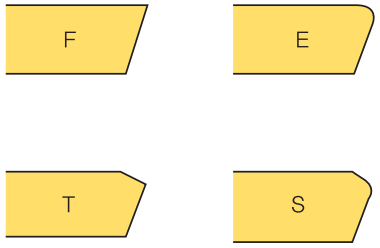
r		Symbol		r		Symbol	
mm	Inch	mm	Inch	mm	Inch	mm	Inch
00	0	0.0		12	3	1.2	3/64
02		0.2		15		1.5	
04	1	0.4	1/64	16	4	1.6	4/64
05		0.5		24	6	2.4	6/64
08	2	0.8	2/64	32	8	3.2	8/64
10		1.0		40		4.0	



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		

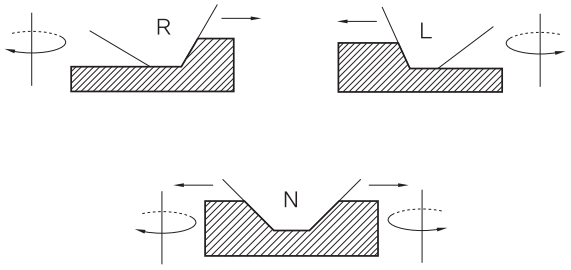
8 Edge Preparation

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**

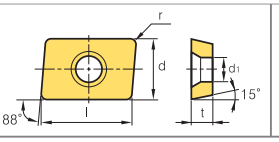
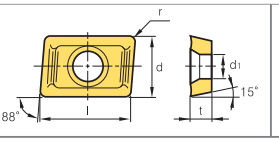
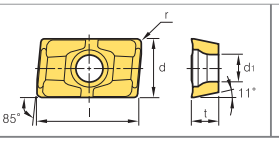
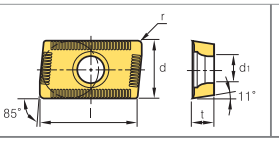
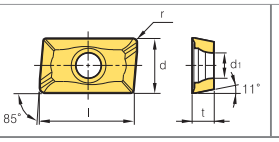
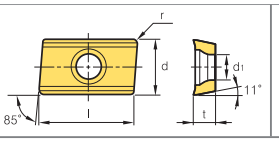
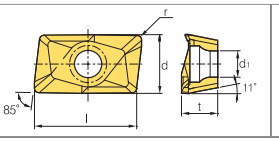
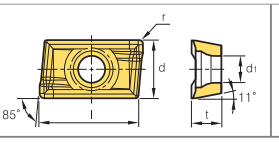
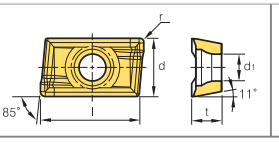
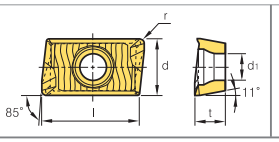
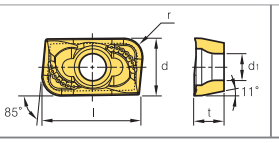
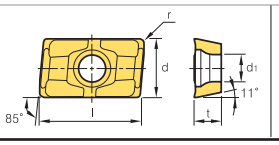
MA MF MM MX

MF MM MR MA

MA MF MM

Workpiece			NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
	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	Coated										Cermet			Uncoated				Dimensions (mm)					Geometries	Available tools
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	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		E206
	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		E112 E124
	1604PDTR-X22																		16.4	9.525	4.76	0.8	4.4		
APFT-X28	1604PDR-X28																		16.4	9.525	4.76	0.8	4.4		E112 E124
	1604PDSR-X28																		16.4	9.525	4.76	0.8	4.4		
	1604PDTR-X28																		16.4	9.525	4.76	0.8	4.4		
APKT	1604PDSR	●			●			●											16.4	9.525	4.76	0.8	4.4		E112 E124
APKT-MA	1604PDFR-MA										●			●					16.4	9.525	4.76	0.2	4.4		E112 E124
APKT-MA2	1604PDFR-MA2													●					16.5	9.56	5.76	0.8	4.5		E112 E124
	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		E112 E124
	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		E112 E124 E131
APKT-MM	1604PDSR-MM	●●			●●●●●														16.4	9.525	5.2	0.8	4.4		E112 E124 E131
APKT-MM1	160432R-MM1	●																	16.4	9.525	4.76	3.2	4.4		E112 E124
APKT-X22	1604PDSR-X22	●																	16.4	9.525	4.76	0.8	4.4		E112 E124
	1604PDTR-X22																		16.4	9.525	4.76	0.8	4.4		

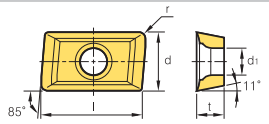
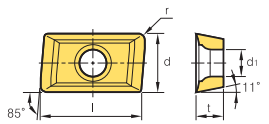
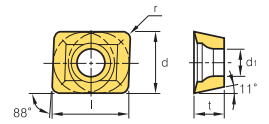
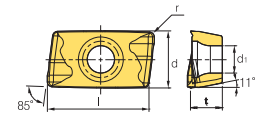
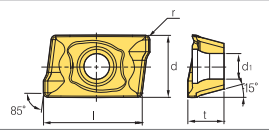
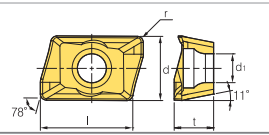
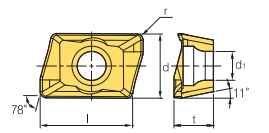
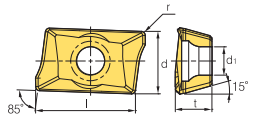
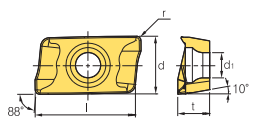
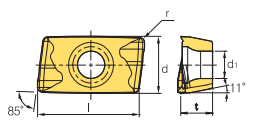
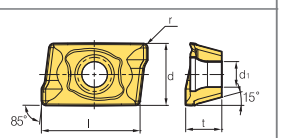
●: Stock item

Workpiece

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

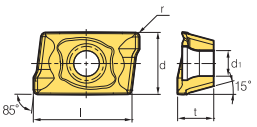
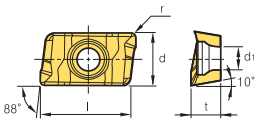
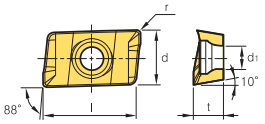
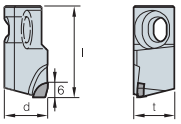
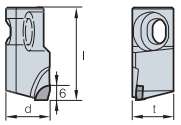
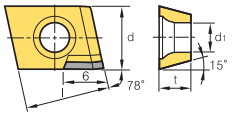
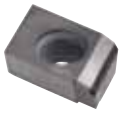
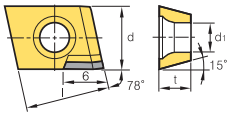
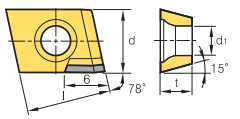
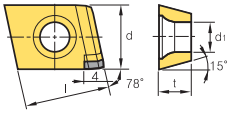
Inserts	Designation	Coated									Cermet			Uncoated				Dimensions (mm)					Geometries	Available tools
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	l	d	t	r	d_1	
APKT-X23 	1604PDR-X23																		16.3	9.525	4.76	1.0	4.4		E112 E124
	1604PDTR-X23																		16.3	9.525	4.76	1.0	4.4	
APKT-X24 	1604PDR-X24																		16.3	9.525	4.76	1.0	4.4		E112 E124
	1604PDFR-X24																		16.3	9.525	4.76	1.0	4.4	
APLT 	070304R																		7.5	6.35	3.18	0.4	2.8		E206
APMT-MA 	0602PDFR-MA													●					6	4.24	2.6	0.4	2.0		E108~E111 E113, E116~E123 E125~E126 E129~E134 E136~E138 E141~E144 E146~E149
	0903PDFR-MA													●					9.4	6.21	3.6	0.4	2.8	
	11T3PDFR-MA													●					11.2	6.467	3.6	0.5	2.9	
	1604PDFR-MA													●					16.4	9.41	5.76	0.8	4.5	
	1806PDFR-MA													●					17.4	10.98	6.35	0.8	4.5	
APMT-MF 	11T3PDSR-MF	●		●	●	●	●												11.2	6.467	3.6	0.5	2.85		E108~E134 E137, E138 E140, E141 E143, E144 E147, E148 E149
	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 	0903PDER-ML						●												9.4	6.21	3.6	0.4	2.8		E109~E111, E113 E116~E118 E120~E123 E125~E126 E129~E131 E133~E134 E136~E144 E146~E149
	11T3PDER-ML						●												11.2	6.467	3.6	0.5	2.9	
	1604PDER-ML						●												16.4	9.41	5.76	0.8	4.5	
	1806PDER-ML						●												17.4	10.98	6.35	0.8	4.5	
APMT-MM 	060202PDSR-MM				●	●	●	●											6	4.24	2.6	0.2	2.0		E108~E134 E136~E149
	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	
	11T3PDSR-MM	●		●	●	●	●	●	●	●									11.2	6.467	3.6	0.5	2.85		
	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	6.467	3.6	1.6	2.85	
	11T318R-MM																		11	6.467	3.6	1.8	2.85	
	11T324R-MM				●	●	●		●										11	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	

※ Large R I/S : Not aplicable to standard holder and cutter. Need special one.

●: Stock item

Workpiece	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	DP200
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	Coated									Cermet			Uncoated			PCD	Dimensions (mm)						Geometries	Available tools
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	DP200	l	d	t	r	d_1	C		
APMT-MM 	180630R-MM																		16.7	10.98	6.35	3.0	4.5	-		E108~E134 E136~E149
	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	-		
APXT-MA 	11T3PDR-MA														●				11.3	6.594	3.6	0.5	2.85	-		E122 E131 E134
	11T318R-MA																		11.3	6.594	3.6	1.8	2.85	-		
APXT-MR 	11T3PDSR-MR																		11.3	6.594	3.6	0.5	2.85	-		E127
	11T308PDR-MR																		11.3	6.594	3.6	0.8	2.85	-		
BAPDR/L-XAF  Sharpe Edge	BAPDR-XAF																		31	14	13.8	-	-	-		E101
	BAPDL-XAF																		31	14	13.8	-	-	-		
BAPDR/L-XAW  Sharpe Edge Wiper Insert	BAPDR-XAW																		31	13.8	13.8	-	-	-		E101
	BAPDL-XAW																		31	13.8	13.8	-	-	-		
CDEW-NAF  strengthened Edge	1204R-NAF																	●	12.7	9.525	4.76	-	4.4	-		E100 E101
	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	-		E100 E101
	1204L-NAW																		12.7	9.525	4.76	-	4.4	-		
CDEW-XAF  Sharpe Edge	1204R-XAF																	●	12.7	9.525	4.76	-	4.4	-		E100 E101
	1204L-XAF																		12.7	9.525	4.76	-	4.4	-		
CDEW-XAW  Sharpe Edge Wiper Insert	1204R-XAW																	●	12.7	9.525	4.76	-	4.4	-		E100 E101
	1204L-XAW																		12.7	9.525	4.76	-	4.4	-		

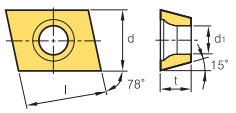
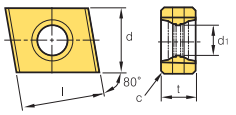
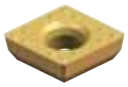
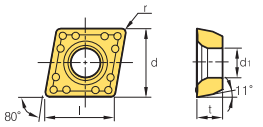
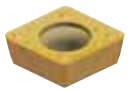
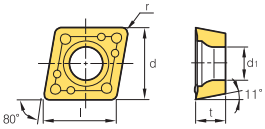
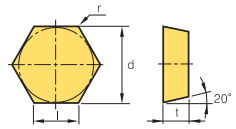
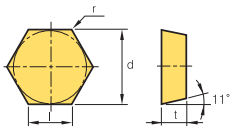
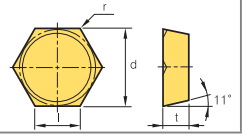
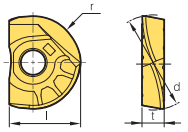
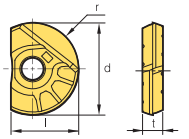
※ Large R I/S : Not aplicable to standard holder and cutter. Need special one.

●: Stock item

Workpiece			NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC210F	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
	Steel	P	✱	✱	●	✱	✱	✱			●		●	●	✱			✱	●
	Stainless steel	M					✱	✱	✱		●								
	Cast iron	K			✱		✱			●	●					●	✱		
	Non-ferrous metal	N										●				✱			
	Heat resistant alloy, Titanium alloy	S					✱	✱											
	Hardened steel	H				✱					●								

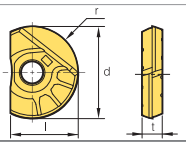
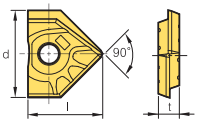
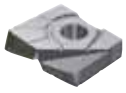
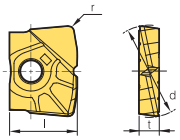
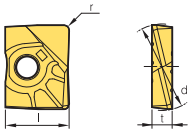
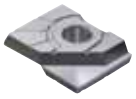
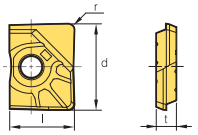
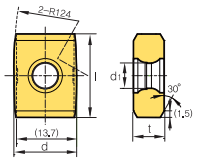
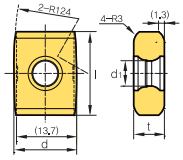
Machining types

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

Inserts	Designation	Coated										Cermet			Uncoated				Dimensions (mm)						Geometries	Available tools
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC210F	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	l	d	t	r	d_1	C		
CDEW-XCF  Sharpe Edge	1204R-XCF														●				12.7	9.525	4.76	-	4.4	-		E100 E101
	1204L-XCF																		12.7	9.525	4.76	-	4.4	-		
CNHQ 	1005-C0.5																		10	10	5.4	-	4.7	0.5		E257 E258
	1305-C0.5																		12.7	10	5.4	-	4.7	0.5		
	1606-C0.5																		16	12	6.4	-	5.9	0.5		
CPMH 	120408-MM			●															12.9	12.7	4.76	0.8	5.5	-		E233
CPMT 	060204-MM			●															6.4	6.35	2.38	0.4	2.75	-		E233
	080308-MM			●															8.1	7.938	3.40	0.8	3.18	-		
	09T308-MM			●															9.7	9.525	3.97	0.8	4.4	-		
HECN 	090408FN																		9.0	15.875	4.76	0.8	-	-		E283
	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	-	-		E284
	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	-	-		E284
	110412-WC																		11.0	19.05	4.76	1.2	-	-		
LBH 	080									●									7.0	8	2.4	4	-	-		E214
	090																		7.5	9	2.4	4.5	-	-		
	100									●									8.5	10	2.6	5	-	-		
	110																		9.0	11	2.6	5.5	-	-		
	120									●									10.0	12	3	6	-	-		
	130																		10.5	13	3	6.5	-	-		
	160									●									12.0	16	4	8	-	-		
	170																		12.5	17	4	8.5	-	-		
	200									●									15.0	20	5	10	-	-		
	210																		15.5	21	5	10.5	-	-		
	250									●									18.5	25	6	12.5	-	-		
	260																		19.0	26	6	13	-	-		
	300									●									22.5	30	7	15	-	-		
	310																		23.0	31	7	15.5	-	-		
	320									●									23.5	32	7	16	-	-		
LBS 	080																		7.0	8	2.4	4	-	-		E214
	090																		7.5	9	2.4	4.5	-	-		
	100																		8.5	10	2.6	5	-	-		
	110																		9.0	11	2.6	5.5	-	-		
	120																		10.0	12	3	6	-	-		
	130																		10.5	13	3	6.5	-	-		
	160																		12.0	16	4	8	-	-		
	170																		12.5	17	4	8.5	-	-		
	200																		15.0	20	5	10	-	-		
	210																		15.5	21	5	10.5	-	-		

●: Stock item

Workpiece			Machining types
Steel	P	● ✱ ● ● ✱ ✱ ● ● ● ● ● ● ●	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ●	● General cutting
Cast iron	K	● ● ● ● ● ● ✱	✱ Interrupted cutting
Non-ferrous metal	N	● ● ●	
Heat resistant alloy, Titanium alloy	S	✱ ✱	
Hardened steel	H	✱ ●	

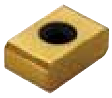
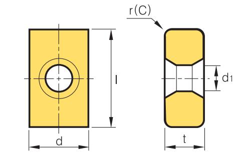
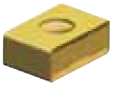
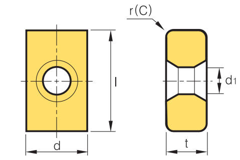
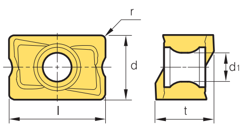
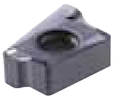
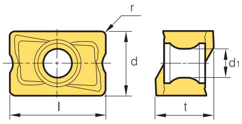
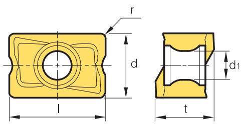
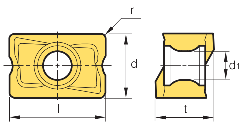
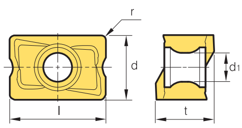
Inserts	Designation	Coated								Cermet			Uncoated				Dimensions (mm)					Geometries	Available tools
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC210F	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	l	d	t	r	d_1		
LBS 	250																		18.5	25	6	12.5	-		E214
	260																		19.0	26	6	13	-		
	300																		22.5	30	7	15	-		
	310																		23.0	31	7	15.5	-		
	320																		23.5	32	7	16	-		
LCF 	160-D90									●									13.7	16	4	-	-		E214
	200-D90									●									17.0	20	5	-	-		
	250-D90																		21.5	25	6	-	-		
LFH 	100																		8.5	10	2.6	1.0	-		E214
	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	E214
	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	-		
LR  Special type	200-R30									●									15.0	20	5	3.0	-	 LR Type	
	210-R05																		15.5	21	5	0.5	-		
	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	-		
LNCS 	1907-C1.5-WC																		19.05	14.3	7	-	5.8		E288 E289
	1907-R3.0-WC																		19.05	14.3	7	-	5.8		

●: Stock item

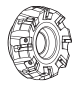
Workpiece		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
Steel	P	◒	✱	●	◒	✱	✱	✱				●	●	◒			◒	●
Stainless steel	M					✱	✱	✱	✱									
Cast iron	K			◒		✱	✱			●					●	◒		
Non-ferrous metal	N										●				◒			
Heat resistant alloy, Titanium alloy	S					✱	✱	✱										
Hardened steel	H					◒	✱											

Machining types

- ● Continuous cutting
- ◒ General cutting
- ✱ Interrupted cutting

Inserts	Designation	NCM325 (Coated)	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000 (Cermet)	CN20	CN30	H01 (Uncoated)	G10	ST30A	ST20	l (mm)	d	t	r	d1	Geometries	Available tools
LNE 	324-R0.8																		15.9	9.525	6.35	0.8	4.4		-
	324-C1.0																		15.9	9.525	6.35	1.0	4.4		
LNEX-MF 	150608-MF																		15.88	15.23	6.35	0.8	-		-
	150608-ML																		15.88	15.23	6.35	0.8	-		
LNEX-QNN 	1506QNN-MF																		15.88	15.23	6.35	0.8	-		-
	1506QNN-ML																		15.88	15.23	6.35	0.8	-		
LNEX-ANN 	1506ANN-MF																		15.88	15.23	6.35	0.8	-		-
	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		E75 E76 E79 E80 E83~87
	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		E75 E76 E79 E80 E83~87
	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		E75~E89
	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		E75~E89
	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		E75~E80 E83~E87
	151004PNR-MA														●				15.0	10.0	10.0	0.4	4.5		
	151008PNR-MA														●				15.0	10.0	10.0	0.8	4.5		

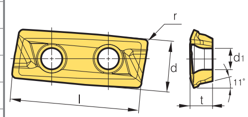
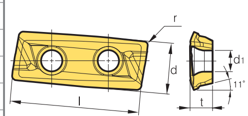
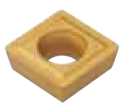
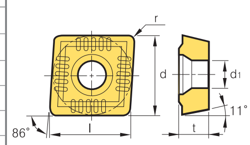
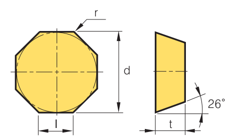
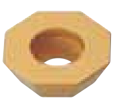
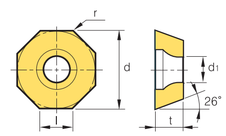
●: Stock item

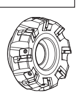


Workpiece	Steel	P	◐	✤	●	◐	✤	✤					●	●	◐			◐	●
	Stainless steel	M					✤	✤	✤										
	Cast iron	K			◐		✤			●	◐					●	◐		
	Non-ferrous metal	N										●				◐			
	Heat resistant alloy, Titanium alloy	S					✤	✤											
	Hardened steel	H					◐												

Machining types

- ● Continuous cutting
- ◐ General cutting
- ✤ Interrupted cutting

Inserts	Designation	Coated										Cermet			Uncoated				Dimensions (mm)					Geometries	Available tools
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	l	d	t	r	d1		
LXET-MA New 	250404PEFR-32-MA																		25	10.775	4.76	0.4	4.5		E237~ E239
	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		E237~ E239
	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		

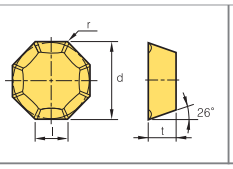
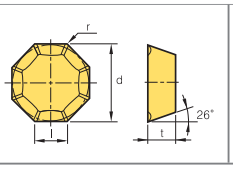
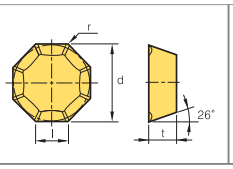
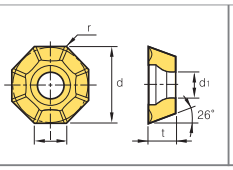
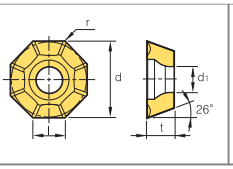
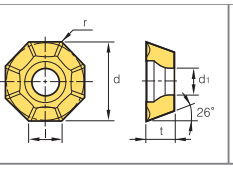
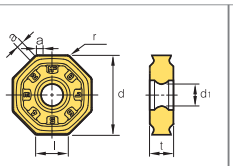
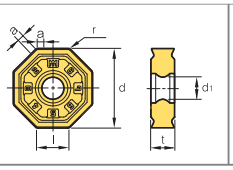
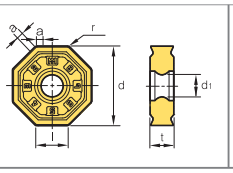
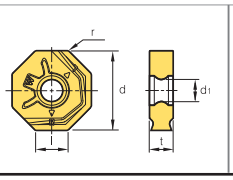


Workpiece

Steel	P
Stainless steel	M
Cast iron	K
Non-ferrous metal	N
Heat resistant alloy, Titanium alloy	S
Hardened steel	H

Machining types

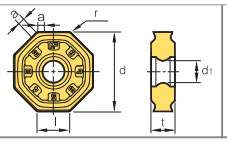
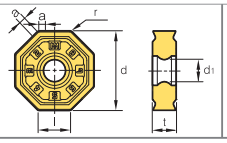
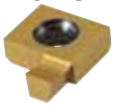
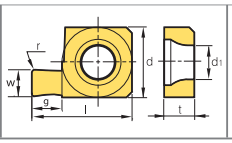
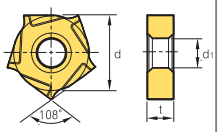
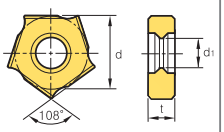
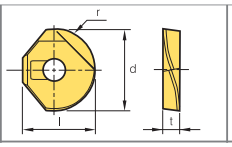
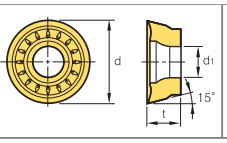
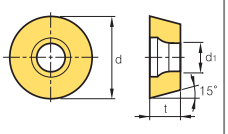
- ● Continuous cutting
- ⇄ General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated									Cermet			Uncoated				Dimensions (mm)						Geometries	Available tools
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	l	d	t	r	d_1	a		
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	-	-		
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 E48
	05T3EN-MA																		5.2	12.7	3.97	0.5	4.4	-		
	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 E48
	05T308SN-MM																		5.2	12.7	3.97	0.8	4.4	-		
	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	-		E90 E91
	080608-MF																		8.4	20.2	6.0	0.8	5.6	-		
	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-MM	060608-MM																		6.6	16.0	6.0	0.8	5.6	-		E90 E91
	080608-MM																		8.4	20.2	6.0	0.8	5.6	-		
	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	-		E90 E91
	080608-MA														●				8.4	20.2	6.0	0.8	5.6	-		
ONHX-W	060608-W																		6.5	16.0	6.0	0.8	5.6	-		E90 E91
	080608-W																		8.2	20.2	6.0	0.8	5.6	-		

●: Stock item

Workpiece: 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	Coated: NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PC210F	Cermet: CN2000	CN20	CN30	Uncoated: H01	G10	ST30A	ST20	Dimensions (mm): l	d	t	r	d1	a	Cutter width	W	g	Geometries	Available tools
ONMX-MF 	060608-MF				●					●									6.6	16.0	6.0	0.8	5.6	-	-	-	-		E90 E91
	080608-MF									●									8.4	20.2	6.0	0.8	5.6	-	-	-	-		
	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	-	-	-	-		E90 E91
	080608-MM				●●				●●										8.4	20.2	6.0	0.8	5.6	-	-	-	-		
	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		E224
	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		
PNEJ 	1223N				●														-	12.7	2.3	-	5.0	-	4.0	-	-		E263 E264
	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	E263 E264
	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	-	-	-	-	-		E219
	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	-	-	-	-		E174 E175 E180 E181 E185
	1204M0-MA														●				-	12	4.76	-	4.5	-	-	-	-		
RDHW 	0501M0F																		-	5	1.59	-	2.3	-	-	-	-		E178 E179 E184 E185
	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	-	-	-	-		

●: Stock item

Workpiece		
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	Coated									Cermet			Uncoated				Dimensions (mm)						Geometries	Available tools
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC3530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	l	d	t	r	d_1	a		
RDHW	1605M0F																		-	16	5.56	-	5.5	-		E176 E178 E182 E183
	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	-		E174 E175 E180 E181 E185
	1204M0-MF				●●	●●													-	12	4.76	-	4.5	-		
	1605M0-MF																		-	16	5.56	-	5.5	-		
RDKT-ML	1605M0-ML																		-	16	5.56	-	5.5	-		E176 E178 E182 E183
RDKT-MM	10T3M0-MM	●●			●●	●●	●●	●●											-	10	3.97	-	3.85	-		E174~E177 E180~E185
	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	-		E178 E179 E184
	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
SDCN	42R																		-	12.7	3.18	-	-	3.5		E281 E282
	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 E44 E281 E282
	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		
SDET-MA	09M402R-MA										●				●				-	9.525	3.923	0.2	4.0	1.2		E168~E173
	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		

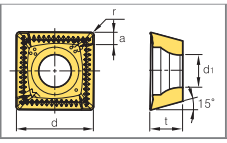
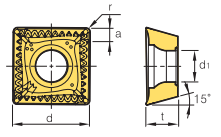
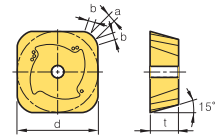
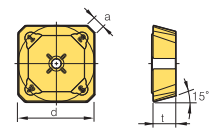
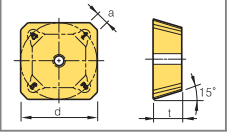
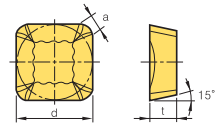
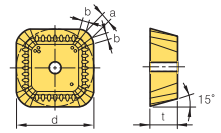
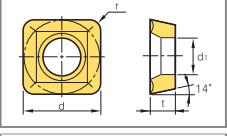
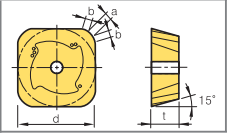
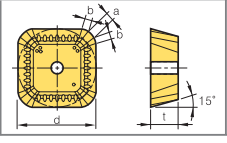
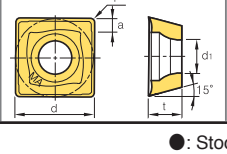
※ **Cutting edge geometry**
- G : Light Side, Sharpe Edge
- S20 : STS
- RH : Strengthened Edge

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

●: Stock item

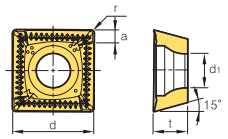
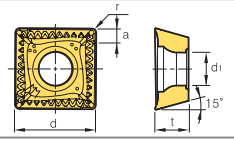
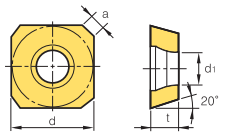
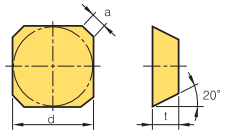
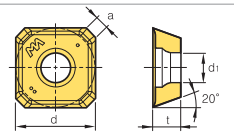
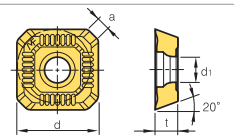
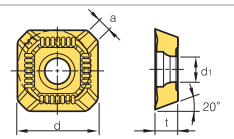
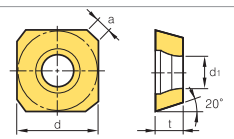
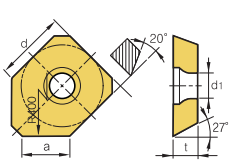
Workpiece		
Steel	P	● ✱ ● ● ● ✱ ✱ ● ● ● ● ● ● ● ● ●
Stainless steel	M	✱ ✱ ✱ ● ● ●
Cast iron	K	● ● ✱ ● ● ● ● ●
Non-ferrous metal	N	● ●
Heat resistant alloy, Titanium alloy	S	✱ ✱ ● ●
Hardened steel	H	● ●

Machining types
- ● Continuous cutting
- ● General cutting
- ✱ Interrupted cutting

Inserts	Designation	Coated										Cermet			Uncoated				Dimensions (mm)							Geometries	Available tools
		NCM325	NCM335	NC5330	PC3500	PC3600	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	l	d	t	r	d_1	a	b		
SDET-MF	09M405R-MF																			-	9.525	4	0.5	4	1.2	-		E168 ~E173
	130508R-MF																			-	13.5	5.56	0.8	5.56	2.2	-		
SDET-MM	09M405R-MM																			-	9.525	4	0.5	4	1.2	-		E168 ~E173
	130508R-MM																			-	13.5	5.56	0.8	5.56	2.2	-		
SDKN-SM	1203AESN-SM																			-	12.7	3.18	-	-	1.64	0.59		E34 E35 E44 E45
	1203AEEN-SM																			-	12.7	3.18	-	-	1.64	0.59		
	1504AESN-SM																			-	15.875	4.76	-	-	1.64	0.58		
	1504AEEN-SM																			-	15.875	4.76	-	-	1.64	0.58		
SDKN-MU New	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	-		
SDKR-SM	1203AESN-SM																			-	12.7	3.18	-	-	1.43	0.71		E34 E35 E44 E45
	1504AESN-SM																			-	15.875	4.76	-	-	1.64	0.58		
SDMT-MM	090308-MM			●																-	9.525	3.18	0.8	4.4	-	-		E206 E220
SDXN-FM	1203AESN-FM																			-	12.7	3.18	-	-	1.43	0.71		E34 E35 E44 E45
	1203AEEN-FM																			-	12.7	3.18	-	-	1.43	0.71		
	1504AESN-FM																			-	15.875	4.76	-	-	1.43	0.70		
	1504AEEN-FM																			-	15.875	4.76	-	-	1.43	0.70		
SDXR-FM	1203AESN-FM																			-	12.7	3.18	-	-	1.43	0.71		E34 E35 E44 E45
	1504AESN-FM																			-	15.875	4.76	-	-	1.43	0.70		
SDXT-MA	09M405R-MA															●				-	9.525	4.0	0.5	4.0	1.2	-		E168 ~E173
	130508R-MA															●				-	13.5	5.56	0.8	5.56	2.2	-		

●: Stock item

Workpiece			Machining types
Steel	P		● Continuous cutting
Stainless steel	M		⇄ General cutting
Cast iron	K		✱ Interrupted cutting
Non-ferrous metal	N		
Heat resistant alloy, Titanium alloy	S		
Hardened steel	H		

Inserts	Designation	Coated									Cermet			Uncoated				Dimensions (mm)						Geometries	Available tools
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	l	d	t	r	d_1	a		
SDXT-MF	09M403R-MF																		-	9.525	4.0	0.3	4.0	1.2		E168 ~E173
	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		E168 ~E173
	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		
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	 ※ Shape of Edge · S20 : STS	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		E162 ~E167
	14M4AGFN-MA										●				●				-	14.0	4.0	-	4.4	2.64		
SEET-MF	0903AGSN-MF	●							●										-	9.525	3.18	-	3.4	2.11		E162 ~E167
	14M4AGSN-MF	●	●			●			●	●									-	14.0	4.0	-	4.4	2.64		
SEET-MM	0903AGSN-MM	●				●													-	9.525	3.18	-	3.4	2.11		E162 ~E167
	14M4AGSN-MM	●	●			●	●		●										-	14.0	4.0	-	4.4	2.64		
SEEW	0903AGTN																		-	9.525	3.18	-	3.4	2.11		E162 ~E167
	14M4AGTN													●					-	14.0	4.0	-	4.4	2.64		
SEEW-W	14M4AGFN-W																		-	14.0	4.0	-	4.4	8.5		E162 E163 E165 E166 E167
	14M4AGSN-W																		-	14.0	4.0	-	4.4	8.5		
	14M4AGTN-W																		-	14.0	4.0	-	4.4	8.5		

●: Stock item

Workpiece		
Steel	P	● ✱ ● ● ● ✱ ✱ ✱
Stainless steel	M	✱ ✱ ✱ ✱
Cast iron	K	● ● ✱ ✱ ● ● ● ●
Non-ferrous metal	N	● ●
Heat resistant alloy, Titanium alloy	S	✱ ✱ ✱
Hardened steel	H	● ✱

Machining types

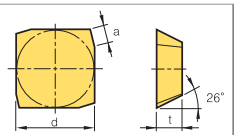
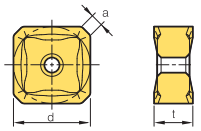
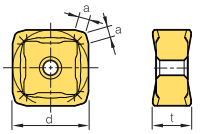
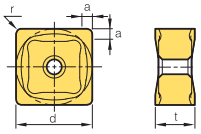
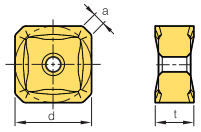
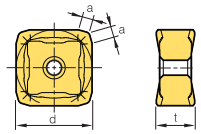
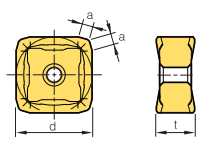
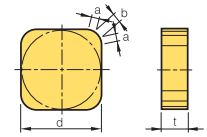
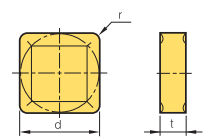
● Continuous cutting
● General cutting
✱ Interrupted cutting

Inserts	Designation	Coated										Cermet		Uncoated			Dimensions (mm)						Geometries	Available tools
		NCM325	NCM335	NC5330	PC3500	PC3600	PC5300	PC5400	PC3545	PC9530	PC6510	PC215K	CN2000	CN20	CN30	H01	G10	ST30A	l	d	t	d_1	a	b		
SEKN-SM	1203AFSN-SM																		-	12.7	3.18	-	2.46	-		E36 E37
	1203AFEN-SM																		-	12.7	3.18	-	2.46	-		
	1504AFSN-SM								●										-	15.875	4.76	-	2.50	-		
	1504AFEN-SM																		-	15.875	4.76	-	2.50	-		
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
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-SM	1203AFSN-SM																		-	12.7	3.18	-	2.46	-		E36 E37
	1504AFSN-SM																		-	15.875	4.76	-	2.50	-		
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
SEXN-FM	1203AFSN-FM				●														-	12.7	3.18	-	2.36	-		E36 E37
	1203AFEN-FM				●														-	12.7	3.18	-	2.36	-		
	1504AFSN-FM				●														-	15.875	4.76	-	2.40	-		
	1504AFEN-FM				●														-	15.875	4.76	-	2.40	-		
SEXR-FM	1203AFSN-FM								●										-	12.7	3.18	-	2.36	-		E36 E37
	1504AFSN-FM								●										-	15.875	4.76	-	2.40	-		
SEXT-MF	0903AGSN-MF						●	●											-	9.525	3.18	3.4	2.11	-		E162 ~E167
	14M4AGSN-MF	●			●		●	●			●								-	14.0	4.0	4.4	2.64	-		
SEXT-MM	0903AGSN-MM				●		●	●			●	●							-	9.525	3.18	3.4	2.11	-		E162 ~E167
	14M4AGSN-MM	●	●		●		●	●		●	●	●							-	14.0	4.0	4.4	2.64	-		
SEXT-MR	0903AGSN-MR																		-	9.525	3.18	3.4	2.11	-		E162 ~E167
	14M4AGSN-MR	●			●		●			●									-	14.0	4.0	4.4	2.64	-		

●: Stock item

Workpiece		
Steel	P	● ✱ ● ● ✱ ✱ ● ● ● ● ● ● ● ● ●
Stainless steel	M	✱ ✱ ✱ ● ● ●
Cast iron	K	● ● ✱ ● ● ● ● ●
Non-ferrous metal	N	● ●
Heat resistant alloy, Titanium alloy	S	✱ ✱ ● ●
Hardened steel	H	✱ ● ● ●

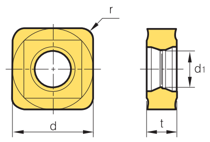
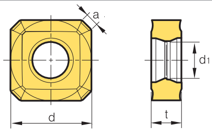
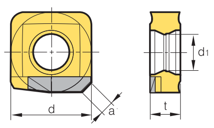
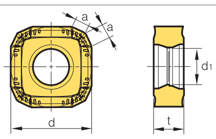
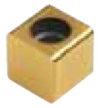
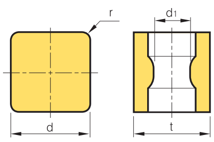
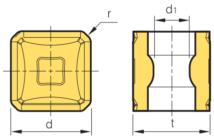
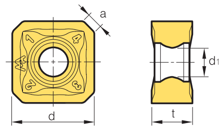
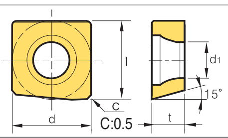
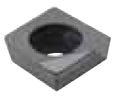
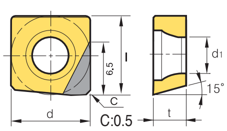
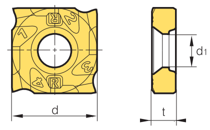
Machining types
- ● Continuous cutting
- ● General cutting
- ✱ Interrupted cutting

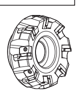
Inserts	Designation	Coated									Cermet			Uncoated				Dimensions (mm)							Geometries	Available tools
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	l	d	t	r	d_1	a	b		
SFCN	1203EFR														●	●			-	12.7	3.18	-	-	2.5	-		E38
SNC(M)F-MF	SNCF 1206ANN-MF																		-	12.7	6.6	-	-	2	-		E92 E93
	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	-		E94 E95
	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	-		
SNC(M)F-MF	SNCF 1206QNN-MF				●				●										-	12.7	6.6	0.8	-	1	-		E96
	SNMF 1206QNN-MF				●														-	12.7	6.6	0.8	-	1	-		
SNC(M)F-MM	SNCF 1206ANN-MM				●														-	12.7	6.6	-	-	2	-		E92 E93
	1507ANN-MM				●		●												-	15.875	7.35	-	-	2.1	-		
	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	-		E94 E95
	1507ENN-MM						●												-	15.875	7.35	-	-	1.8	-		
	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	-		E96
	SNMF 1206QNN-MM				●														-	12.7	6.6	0.8	-	1	-		
SNCN	1204ENN	●													●	●	●		-	12.7	4.76	-	-	1.4	1.0		E39 E279 E280
	1504ENN															●			-	15.875	4.76	-	-	1.4	1.0		
SNEF	435								●										-	12.7	4.76	2.0	-	-	-		E285
	535																		-	15.875	4.76	2.0	-	-	-		

●: Stock item

Workpiece		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	CN2000	CN20	CN30	DBN700	DBN920	H01	G10	ST30A	DP200
Steel	P	◐	✤	●	◐	✤	✤				●	●	●	◐			◐	●	
Stainless steel	M					✤	✤	✤											
Cast iron	K			◐		✤			●	◐					●	◐			
Non-ferrous metal	N														◐				●
Heat resistant alloy, Titanium alloy	S					✤	✤												
Hardened steel	H					◐													

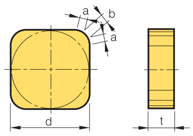
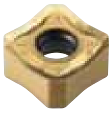
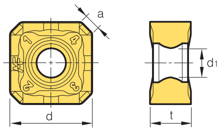
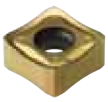
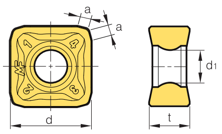
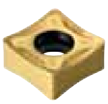
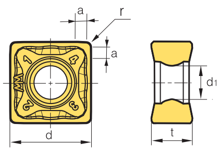
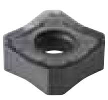
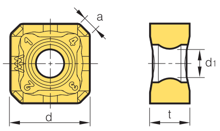
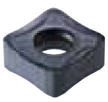
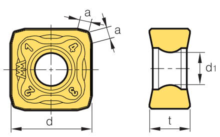
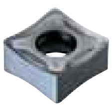
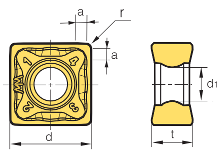
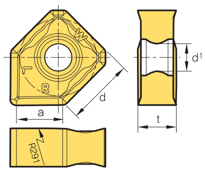
Machining types
- ● Continuous cutting
- ◐ General cutting
- ✤ Interrupted cutting

Inserts	Designation	Coated: NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	Cermet: CN2000	CN20	CN30	cBN: DBN700	DBN920	Uncoated: H01	G10	ST30A	PCD: DP200	Dimensions (mm): l	d	t	r	d1	a	Geometries	Available tools
SNEU-MF 	120420-MF								●											-	12.7	4.76	2.0	5.7	(2.3)		E287
SNEU-MF 	1204ANN-MF																			-	12.7	4.76	-	5.7	(2.0)		E287
SNEU-TBW 	1204-TBW																			-	12.7	4.76	-	5.7	(2.1)		E287
SNEU-WMF 	1204-WMF																			-	12.7	4.76	-	5.7	2.3		E287
SNEX 	101010								●											-	10	10	1.0	4.6	-		E272
	1010ZNN																			-	10	10	(1.0)	4.6	-		
SNEX-CU1 	101010-CU1								●											-	10	10	1.0	4.6	-		E276
	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		E65~E74
	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	-		
SNEW 	09T3ADFR															●				9.525	9.525	3.97	-	4.4	-		E101
SNEW-NAF 	09T3ADTR-XAF																		●	9.525	9.525	3.97	-	4.4	-		E101
	09T3ADTR-NAF																		●	-	-	-	-	-	-		
SNHT-WX New 	1102308R/L-WX					●														-	11	2.30	-	4	-		E268 E269
	110308R/L-WX					●														-	11	3.00	-	5	-		
	120308R/L-WX																			-	12.7	3.25	-	5.5	-		
	1203508R/L-WX					●														-	12.7	3.50	-	6	-		
	120408R/L-WX																			-	12.7	4.00	-	7	-		
	1204508R/L-WX					●														-	12.7	4.54	-	8	-		
	120508R/L-WX																			-	12.7	5.00	-	9	-		
	1205408R/L-WX					●														-	12.7	5.47	-	10	-		
	120608R/L-WX																			-	12.7	6.00	-	11	-		
	1206508R/L-WX																			-	12.7	6.50	-	12	-		
	120708R/L-WX																			-	12.7	7.00	-	13	-		
	1207508R/L-WX																			-	12.7	7.5	-	14	-		

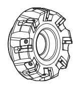


Workpiece		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	CN2000	CN20	CN30	H01	G10	ST30A	ST20
Steel	P	◐	✱	●	◐	✱	✱			●	●	◐			◐	●	
Stainless steel	M					✱	✱	✱									
Cast iron	K			◐		✱			●				●	◐			
Non-ferrous metal	N												◐				●
Heat resistant alloy, Titanium alloy	S					✱	✱										
Hardened steel	H					✱											

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

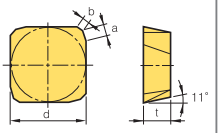
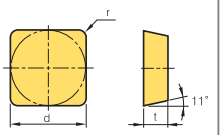
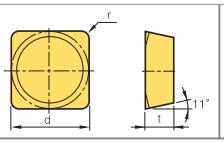
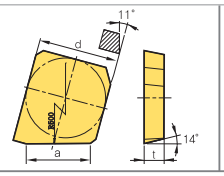
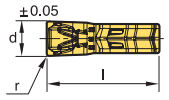
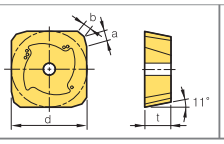
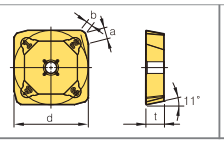
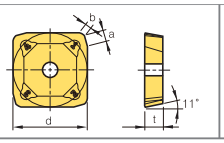
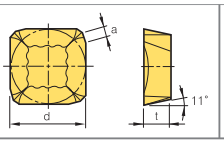
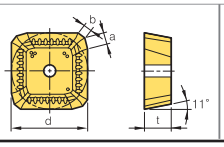
Inserts	Designation	Coated										Cermet		Uncoated				Dimensions (mm)							Geometries	Available tools
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	CN2000	CN20	CN30	H01	G10	ST30A	ST20	l	d	t	r	d_1	a	b		
SNKN 	1204ENN									●								-	12.7	4.76	-	-	1.4	1.0		E39 E279 E280
	1504ENN	●																-	15.875	4.76	-	-	1.4	1.0		
SNM(E)X-MF 	SNMX 1206ANN-MF				●	●	●			●								-	12.7	6.35	-	4.5	2.36	-		E65 E66 E70
	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	-		E65 ~E69 E71 E72
	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	-		E73 E74
	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	-	-		
SNM(E)X-MM 	SNMX 1206ANN-MM	●		●	●	●	●		●	●								-	12.7	6.35	-	4.5	2.36	-		E65 ~E69 E71 E72
	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	-		E70
	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	-		E73 E74
	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	-		E65 E66

●: Stock item



Workpiece			NCM325	NCM335	NC5330	PC3500	PC3600	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
	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	Coated										Cermet		Uncoated					Dimensions (mm)							Geometries	Available tools
		NCM325	NCM335	NC5330	PC3500	PC3600	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	l	d	t	r	d_1	a	b		
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	-	-	-		E286
	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	-		
SPFN	200-N																		8.8	2.2	-	0.2	-	-	-		E265
	300-N																		9.8	3.0	-	0.2	-	-	-		
	400-N																		9.8	4.0	-	0.25	-	-	-		
SPKN-SM	1203EDSR-SM																		-	12.7	3.18	-	-	1.66	0.92		E40 E41
	1203EDER-SM																		-	12.7	3.18	-	-	1.66	0.92		
	1504EDSR-SM																		-	15.875	4.76	-	-	1.62	0.93		
	1504EDER-SM																		-	15.875	4.76	-	-	1.62	0.93		
SPKN-MU	1203EDSR-MU						●												-	12.7	3.18	-	-	0.86	1.87		E40 E41
New	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	-		
SPKR-SM	1203EDSR-SM																		-	12.7	3.18	-	-	1.66	0.92		E40 E41
	1504EDSR-SM																		-	15.875	4.76	-	-	1.63	0.93		

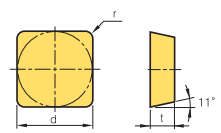
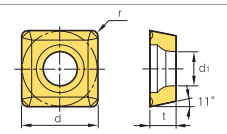
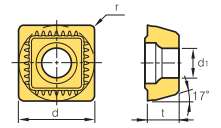
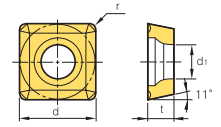
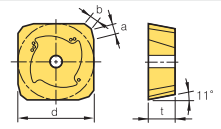
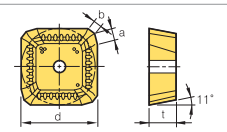
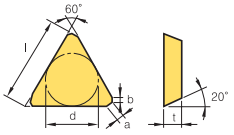
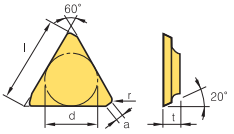
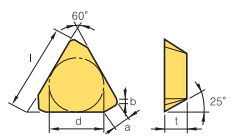
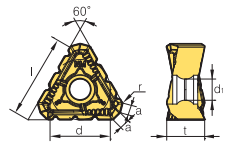
●: Stock item

Workpiece

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

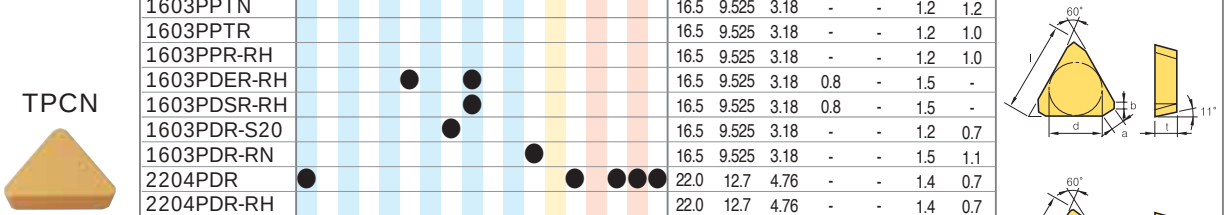
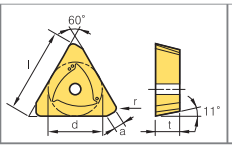
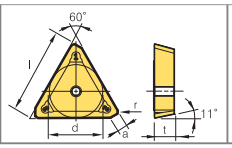
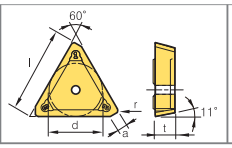
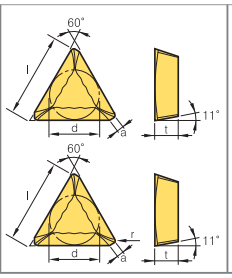
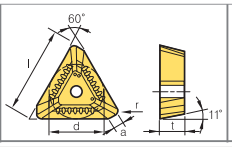
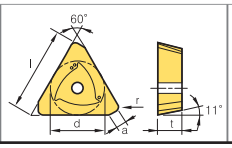
Inserts	Designation	Coated: NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	Cermet: CN2000	CN20	CN30	Uncoated: H01	G10	ST30A	ST20	l	d	t	r	d1	a	b	Geometries	Available tools
SPMN	120308																●		-	12.7	3.18	0.8	-	-	-		E228
SPMT	060304	●																	-	6.35	3.18	0.4	2.8	-	-		E202 E217 E218
SPMT-KC	110408-KC				●											●	●		-	11.5	4.8	0.8	4.5	-	-		E228
SPMT-MM	120408-MM				●	●													-	12.7	4.76	0.8	5.6	-	-		E141 E202 E217 E218
	120508-MMN																		-	12.7	5.56	0.8	5.6	-	-		
SPXN-FM	1203EDSR-FM																		-	12.7	3.18	-	-	1.41	1.00		E37 E38
	1203EDER-FM																		-	12.7	3.18	-	-	1.41	1.00		
	1504EDSR-FM																		-	15.875	4.76	-	-	1.38	1.01		
	1504EDER-FM																		-	15.875	4.76	-	-	1.38	1.01		
SPXR-FM	1203EDSR-FM																		-	12.7	3.18	-	-	1.41	1.00		E37 E38
	1504EDSR-FM																		-	15.875	4.76	-	-	1.38	1.01		
TEC(E)N	TECN 22R															●			11.0	6.35	3.18	-	-	1.0	0.5		E43
	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	TEEN 43R-Z																		22.0	12.7	4.76	-	-	2.0	0.5		E43
	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	-		
TFCN	2203PFR														●				22.0	12.7	3.18	-	-	2.42	0.71		E39
	2203PFL																		22.0	12.7	3.18	-	-	2.42	0.71		
TNMX	2710AZNR-NM	●	●	●	●		●												27	15.875	10	0.8	5.6	2.63	-		E49 E50
	2710AZNL-NM																		27	15.875	10	0.8	5.6	2.63	-		

※ Shape of Edge
- G : Light side, Sharp edge
- S20 : STS
- ZH : Hole added

●: Stock item

Workpiece	
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	Coated: NCM325	NCM335	NC5330	PC3500	PC3600	PC5300	PC5345	PC9530	PC6510	PC8110	PD2000	Cermet: CN2000	CN20	CN30	Uncoated: H01	G10	ST30A	ST20	l	d	t	r	d_1	a	b	Geometries	Available tools
TPCN	1103PPN													●			●	●		11.0	6.35	3.18	-	-	0.7	0.7		E40 E255 E256
	1103PPTN																			11.0	6.35	3.18	-	-	0.7	0.7		
	1603PDR	●																		16.5	9.525	3.18	-	-	1.2	0.7		
	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-SM	1603PDSR-SM																			16.5	9.525	3.18	1.0	-	1.70	-		E40
	1603PDER-SM																			16.5	9.525	3.18	1.0	-	1.70	-		
	2204PDSR-SM							●												22.0	12.7	4.76	1.0	-	1.91	-		
	2204PDER-SM																			22.0	12.7	4.76	1.0	-	1.91	-		
TPKN-MU	2204PDSR-MU																			22.0	12.7	4.76	0.8	-	1.96	-		E40
TPKN-SU	1603PDSL-SU					●		●												16.5	9.525	3.18	1.0	-	1.70	-		E40
	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		E40
	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	-		
TPKR-SM	1603PDSR-SM																			16.5	9.525	3.18	1.0	-	1.70	-		E40
	2204PDSR-SM																			22.0	12.7	4.76	1.0	-	1.91	-		
TPXN-FM	1603PDSR-FM				●			●												16.5	9.525	3.18	1.0	-	1.30	-		E40
	1603PDER-FM																			16.5	9.525	3.18	1.0	-	1.30	-		
	2204PDSR-FM				●			●												22.0	12.7	4.76	1.0	-	1.51	-		
	2204PDER-FM																			22.0	12.7	4.76	1.0	-	1.51	-		

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

●: Stock item

Workpiece			NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
	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

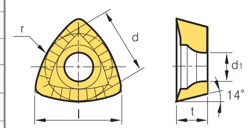
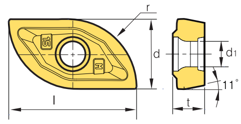
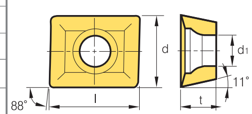
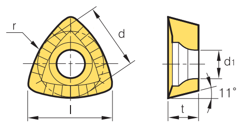
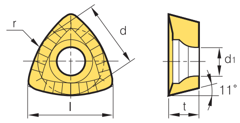
Inserts	Designation	Coated										Cermet			Uncoated				Dimensions (mm)									Geometries	Available tools
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	l	l2	l1	d	t	r	d1	a	f		
TPXR-FM	1603PDSR-FM						●												16.5	-	-	9.525	3.18	1.0	-	1.30	-		E43
	2204PDSR-FM						●												22.0	-	-	12.7	4.76	1.0	-	1.51	-		
TWX-KC	16R-KC				●														16.5	-	-	9.52	3.97	0.8	4.45	-	-		E230
	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	-	-		E244 E245
																										-	-		
VDKT-MA	11T210N-MA														●				8.8	-	-	6.35	2.87	1.0	2.8	-	-		E244 E245
	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		E201 ~E205
	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		E191 ~E200
	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		
XCET-KC	310404ER-KC				●											●●			30.9	-	-	9.525	4.5	0.4	4.4	-	-		E229
XEKT-MA	19M504FR-MA									●					●				18	16.4	1.4	-	5	0.4	4.4	-	-		E247 ~E252
	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	-	-		

●: Stock item

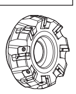
Workpiece		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
Steel	P	◐	✱	●	◐	✱	✱					●	●	◐			◐	●
Stainless steel	M					✱	✱	✱										
Cast iron	K			◐		✱			●	◐					●	◐		
Non-ferrous metal	N										●				◐			
Heat resistant alloy, Titanium alloy	S					✱	✱											
Hardened steel	H					◐												

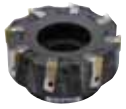
Machining types

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

Inserts	Designation	Coated										Cermet			Uncoated				Dimensions (mm)								Geometries	Available tools
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	l	l2	l1	d	t	r	d1	f		
ZDMT-R-MM 	080310R-MM				●														8.4	-	-	6.73	3.2	10	2.8	-		E222
	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	-		E220 E221
	100M-MM				●														19	-	-	10.4	4.5	10	3.4	-		
	125M-MM				●														24	-	-	12.9	5.3	12.5	4.5	-		
	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	-		
	100S-MM				●														15.5	-	-	8.4	3.8	10	3.4	-		
	125S-MM				●														20.5	-	-	10.7	4.5	12.5	4.5	-		
	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	-		E145 E206
	1505PPSR-MMN																		15.9	-	-	12.7	5.76	-	5.6	-		
ZPMT-R-MM 	160520R-MM				●														16.1	-	-	12.7	5.56	20	5.6	-		E222
	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	-		E222

●: 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
		Aℓ EF(M) 4000		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
		Aℓ PF(M) 4000		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 / AFO(M)5000		45°	Ø80~Ø125 / Ø80~Ø315	High rake angle low cutting force Economical (8 corners available)	●					E47 E48
	Power Buster	PBAC(M)5000		45°	Ø80~Ø315	Double sided Insert High depth High Feed Roughing	●					E52
		PBZC(M)5000		80°	Ø80~Ø315		●					E53
	Aero Mill	Aℓ APD(M) A Type, B Type		90°	Ø80~Ø315	Aluminum cutter body suitable for high speed machining, Both cemented carbides and PCD inserts are available, G2.5 balance possible	●					E99 E100

Aℓ Cutter for Aluminum

Type	Cutter	Designation	Shape	A.A	Diameter range	Features	Application: Facing	Shouldering	Slotting	Copying	Ramping, Helical	Page
Cutters for molds	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.	●	●	●	●	●	E108 ~E109
		AMC(M) 3000S/3000S-K/ 4000S		90°	Ø40~Ø200		●	●	●	●	●	E111 ~E113
		AMC(M) 1000SE 2000SE 3000SE		75°	Ø40~Ø100		●					E114 E115
		AMC(M) 2000M 3000M 4000M		90°	Ø50~Ø125		●	●	●	●	●	E116 E117 E118
	Future Mill	FMAC(M)3000 FMAC(M)4000		45°	Ø50~Ø125 Ø50~Ø200	Accurate inserts and cutter, Excellent chip flow	●					E162 E163
		FMAC(M)3000A FMAC(M)4000A		45°	Ø63~Ø125 Ø63~Ø315	Excellent in high speed cutting and tapping center, low power machine due to light aluminum body	●					E164 E165
		FMPC(M)3000 FMPC(M)4000		90°	Ø50~Ø100 Ø63~Ø125	4 corners available various inserts can be applied to machine for different types of workpiece	●	●	●			E168 E169
		FMPC(M)3000A FMPC(M)4000A		90°	Ø63~Ø100 Ø63~Ø315	Excellent in high speed cutting and tapping center, low power machine due to light aluminum body	●	●	●			E170 E171
		FMRC(M)3000 FMRC(M)4000		-	Ø40~Ø100 Ø50~Ø125	4~8 corners available Double contact faces between insert & seat part of cutter for stable clamping Excellent rotating-free machining	●				●	E174 E175
		FMRC(M)5000 FMRC(M)6000		-	Ø50~Ø125 Ø63~Ø160		●				●	E176 E177

Al Cutter for Aluminum

Type	Cutter	Designation	Shape	A.A	Diameter range	Features	Application					Page
							Facing	Shouldering	Slotting	Copying	Ramping, Helical	
Cutters for molds	HRM	HRMC(M)13 HRMC(M)15		15°	Ø50~Ø80 Ø63~Ø160	Powerful clamping by double clamping system 3 corners available high feed cutting with low cutting load	●	●	●	●	●	E201
	HRMD	HRMDC(M)09 HRMDC(M)13 HRMDC(M)16 New		14°	Ø40~Ø100 Ø50~Ø125 Ø80~Ø315	Double side insert with 6 corner High feed cutting with strong simple screw-on clamp	●	●	●	●	●	E191 ~ E193
	BT/HSK Tooling System	BT30/40/50 HSK63		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	●	●	●	●	●	E137 ~E138 E139 ~E141
		BT30/40/50 HSK63/100		90°	Ø16~Ø100		●	●	●			E142 ~E144 E146 ~E149
		BT30/40/50-MAT HSK63/100-MAT		90°	Ø12~Ø40	Alpha Mill, Rich Mill, FMR, Laser Mill, HRM(D), Pro-A, Pro-X Modular head M06~M16 applicable	●	●	●	●	●	E150 E151
		BT50 HAT4000		90°	Ø50~Ø80	Head only replacement possible and higher efficiency by self assembly head	●	●	●			E145
Cutters for aluminum	Pro-L Mill	PALC(M) New	Aℓ 	90°	Ø63	High helix and high depth of cut High perpendicularity Low cutting load	●	●	●	●	●	E237
	Pro-A Mill	PAC(M) 4000	Aℓ 	90°	Ø40~Ø100	Buffed insert controls chip flow without built-up edge	●	●	●	●	●	E244
	Pro-X Mill	PAXC(M)5000 PAXC(M)6000	Aℓ 	90°	Ø40~Ø125 Ø50~Ø125	Powerful clamping Excellent body rigidity for rectangular and curve machining	●	●	●	●	●	E247 E248

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	●					E279 E280
			CDH 4000/5000		65°	Ø100~Ø450	Double positive rake angle Minimized cutting load	●					E281 E282
			DEH 5000		60°	Ø100~Ø450	For aluminum & aluminum alloy. Hexagonal insert available.	●					E283
			DPH 5000		60°	Ø100~Ø450	Hexagonal insert available Economical cutter	●					E284
			PNH 4000/5000		90°	Ø125~Ø450	Wiper insert available Double negative rake angle Excellent surface finish	●					E285
			PPH 4000		90°	Ø125~Ø450	Square insert and wiper insert available Excellent surface finish	●					E286
	Shave Mill		SVM(M)4000		90°	Ø80~Ø315	Exclusive adjusting device of cutting edge adjusts run-out easily.	●					E287
	Shave Mill Ultra		SVUM6000		90°	Ø80~Ø315	Good rigidity and economical due to Screw on Simple type	●					E288
			SVUM6000-B		90°	Ø80~Ø315	Easy to handle the run-out due to Korloy exclusive high toughness cutting edge special parts	●					E289
Indexable side cutter	Tangential type	Full-side cutter	TAFCP		-	Ø100~Ø315	Various cutting depth can be possible because of adjustable length control.22 Medium to Roughing based on strengthened edge		●	●			E257
			TAFCB		-	Ø100~Ø315		●	●	●			E257
		Half-side cutter	TAHCP		-	Ø100~Ø315			●	●			E258
			TAHCB		-	Ø100~Ø315		●	●	●			E258

Al Cutter for Aluminum

Type	Cutter	Designation	Shape	A.A	Diameter range	Features	Application: Facing	Shouldering	Slotting	Copying	Ramping, Helical	Page
Cutters for molds	Laser Mill	LBE□□-C LRE□□-C		-	Ø8~Ø32	Indexable ball endmill for precise mold. Rigid holder with simple design finishing MQL is available Carbide shank	●	●	●			E215 E217
	Mach Mill	BFE		-	Ø16~Ø32	Upgraded cutting performance with S type curve design V clamping application	●	●	●	●		E219
		GBE		-	Ø16~Ø50	Helical design of edge can reduce the force during operation Safe application to prevent rotation guarantee the increased tool life	●	●	●	●		E220
		BRE		-	Ø20~Ø63	Flute type chip-pocket can make chip-evacuation Customized edge design can prevent the breakage of holder's body	●	●	●	●		E222
	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	-	-	-	-	-	E224
	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	-	-	-	-	-	E228
				30° 45° 60°	Ø5~Ø35 Ø5~Ø48 Ø5~Ø57	Various chamfer Degrees available Effective long chamfer cutting available	-	-	-	-	-	E229
				45°	~Ø28	Center Ring, Grooving, Chamfer Ring	-	-	-	-	-	E230
		CCT New		30° 45° 60°	Ø3~Ø16	Centering, Countersinking, Chamfering	-	-	-	-	-	E232
		CET New		30° 45° 60°	Ø4~Ø16	Countersinking, Chamfering, Shouldering	-	-	-	-	-	E231
	T-Cutter	TFE		90°	Ø21~Ø50	For slotting	●	●	●	●	●	E233
Cutters for aluminum	Pro-L Mill	PALS-HR New	Al 	90°	Ø32~Ø63	High helix and high depth of cut High perpendicularity Low cutting load	●	●	●	●	●	E238
		PALS-HM New	Al 		Ø63							E239
	Pro-A Mill	PAS 2000/4000	Al 	90°	Ø12~Ø42 Ø32~Ø40	Polished face increases chip flow and reduces built-up edge	●	●	●	●	●	E245
	Pro-X Mill	PAXS 5000/6000	Al 	90°	Ø20~Ø40 Ø25~Ø40	Square shoulder and conter machining	●	●	●	●	●	E249
Thread milling	-	TM		-	Ø32~Ø50	For internal and external threading	●					D49

Al Cutter for Aluminum

ADN(M)4000

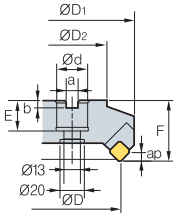


Fig. 1

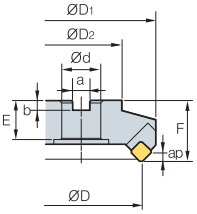


Fig. 2

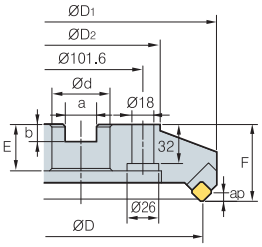


Fig. 3

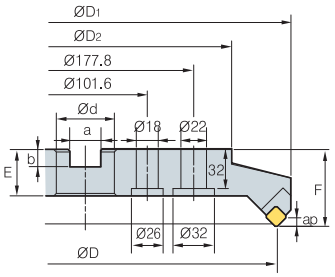


Fig. 4

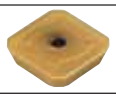
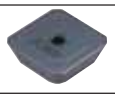
• AR : 15°
• RR : -4°

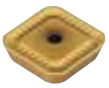
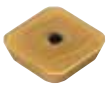
(mm)

Designation		⌀	øD	øD1	øD2	ød	a	b	E	F	ap	kg	Fig.
ADN(M)	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-SM	SDKN-MU	SDKN-SU
			

SDKR-MX	SDKR-SM	SDXN-FM	SDXR-FM
			

Designation		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC3600	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SDCN	42M															●				E13
	42M-G															●				
	42MT		●										●		●			●	●	
	42MT-RH																			
	42MT-S20								●											
	1203AEEN																			
	1203AEEN-RH																			
	1203AESN																			
	1203AESN-RH																			
SDKN	1203AESN-SM																			E14
	1203AEEN-SM																			
	1203AESN-MU					●														
	1203AESN-SU					●	●	●												
SDKR	1203AESN-MX																			E14
	1203AETN-MX																			
	1203AEN-MX	●																		
	1203AESN-SM																			
SDXN	1203AESN-FM																			E14
	1203AEEN-FM																			
SDXR	1203AESN-FM																			E14

Available Arbors

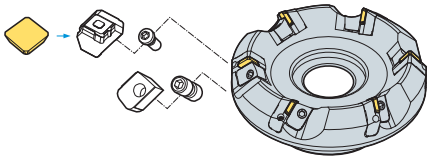
Designation	General Arbor	NC Arbors	
		ADN	ADNM
ADN(M)4080R/L	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4 -□□	FMC27
4100R/L	NT*□□ (M/U)-FMA31.75 - □□	BT**□□-FMA31.75 -□□	FMC32
4125R/L	NT*□□ (M/U)-FMA38.1 - □□	BT**□□-FMA38.1 -□□	FMB40
4160R/L	NT*□□ (M/U)-FMA50.8 - □□	BT**□□-FMA50.8 -□□	FMB40
4200R/L	NT*□□ (M/U)-FMA47.625-25, 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	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3500
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Assembling



Parts

Locator	Wedge	Wedge Screw	Locator Screw	Wrench
				
LADN4R/L	WEPN4R/L	DHA0821F	LTX0514	HW40

Available Inserts E13, E14
Available Arbors and bolt E290~E292

● : Stock item

ADN(M)5000+

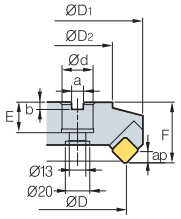


Fig. 1

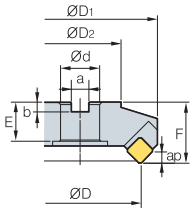


Fig. 2

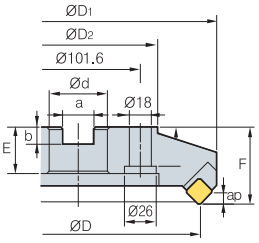


Fig. 3

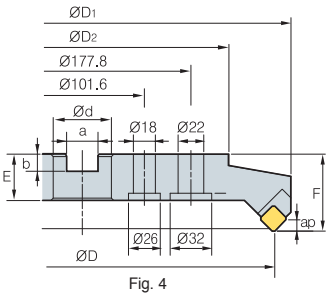


Fig. 4

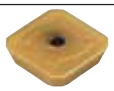
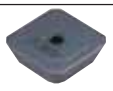
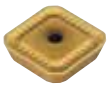
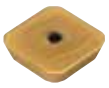
AA 45°
- AR : 15°
- RR : -4°

(mm)

Designation		⊚	ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
ADN(M)	5080R/L+	4	80	107	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	8	2.0	1
	5100R/L+	5	100	126	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	8	2.7	2
	5125R/L+	6	125	150	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	8	4.3	2
	5160R/L+	8	160	185	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	8	6.5	2
	5200R/L+	10	200	225	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	8	9.1	3
	5250R/L+	12	250	275	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	8	14.5	3
	5315R/L+	14	315	340	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	8	21.0	4

• ( )Metric Size

Available Inserts

SDCN	SDKN-SM	SDKN-MU	SDKN-SU
			
SDKR-MX	**SDKR-SM**	**SDXN-FM**	**SDXR-FM**
			

Designation		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC3600	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SDCN	53M															●				E13
	53M-G																●			
	53MT	●	●										●		●			●		
	53MT-RH				●															
	53MT-S20							●												
	1504AEEN																			
	1504AEEN-RH						●			●										
	1504AESN																			
	1504AESN-RH									●										
SDKN	1504AESN-SM																			E14
	1504AEEN-SM																			
	1504AESN-MU						●													
	1504AESN-SU						●	●												
SDKR	1504AESN-MX		●																	E14
	1504AETN-MX																			
	1504AEN-MX	●																		
	1504AESN-SM																			
SDXN	1504AESN-FM																			E14
	1504AEEN-FM																			
SDXR	1504AESN-FM																			E14

Available Arbors

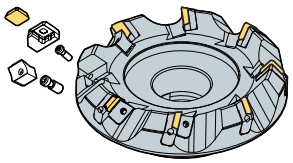
Designation	General Arbor	NC Arbors	
		ADN	ADNM
ADN(M)5080R/L	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4-□□	FMC27
5100R/L	NT*□□ (M/U)-FMA31.75-□□	BT**□□-FMA31.75-□□	FMC32
5125R/L	NT*□□ (M/U)-FMA38.1-□□	BT**□□-FMA38.1-□□	FMB40
5160R/L	NT*□□ (M/U)-FMA50.8-□□	BT**□□-FMA50.8-□□	FMB40
5200R/L	NT*□□ (M/U)-FMA47.625-25, 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		Grades
	vc(m/min)	fz(mm/t)	
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3500
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Assembling



Parts

Locator	Wedge	Wedge Screw	Locator Screw	Wrench
				
LADN5R/L	WHPS5R/L	WHX0817	LTX0514	HW40

Available Inserts E13, E14 Available Arbors and bolt E290~E292

● : Stock item

AE(M)4000

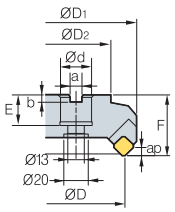


Fig. 1

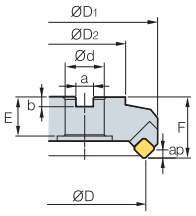


Fig. 2

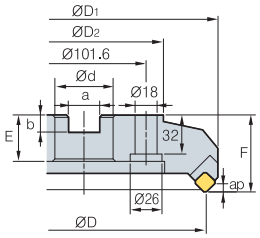


Fig. 3

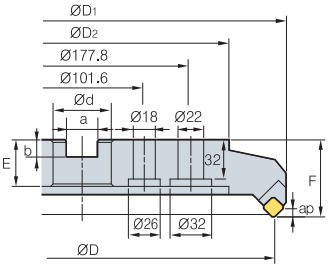


Fig. 4

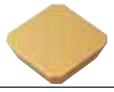
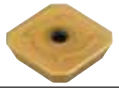
AA 45°
- AR : 20°
- RR : -3°

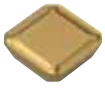
(mm)

Designation		⌀	øD	øD1	øD2	ød	a	b	E	F	ap	kg	Fig.
AE(M)	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-SM	SEKN-SU	SEKR-MF1	SEKR-MX
				

SEKR-X35	SEKR-SM	SEXN-FM	SEXR-FM
			

Designation		Coated									Cermet			Uncoated			page
		NCM325	NCM335	NC5330	PC3500	PC3600	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	
SECN	1203AFFN															●	●		
	1203AFTN												●	●	●			●	
	1203AFEN																		
	1203AFSN	●	●																E15
	1203AFEN-RH						●		●										
	1203AFSN-RH																		
	1203AFTN-S20								●										
SEKN	1203AFSN-SM																		
	1203AFEN-SM																		E16
	1203AFSN-SU					●		●											
SEKR	1203AFSN-MF1																		
	1203AFSN-MX	●	●						●						●				
	1203AFSN-X35																		E16
	1203AFFN-X35																		
	1203AFSN-SM																		
SEXN	1203AFSN-FM				●														E16
	1203AFEN-FM																		
SEXR	1203AFSN-FM							●											E16

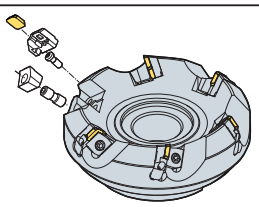
Available Arbors

Designation	General Arbor	NC Arbors	
		AE	AEM
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	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3500
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Assembling	
	

Parts

Locator	Wedge	Wedge Screw	Locator Screw	Wrench
				
LAE4R/L	WAE4R/L	DHA0821F	LTX0512	HW40

Available Inserts E15, E16 Available Arbors and bolt E290~E292

● : Stock item

AE(M)5000

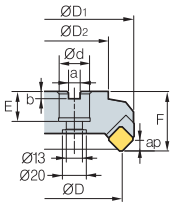


Fig. 1

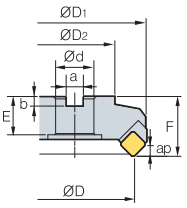


Fig. 2

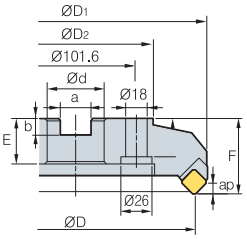


Fig. 3

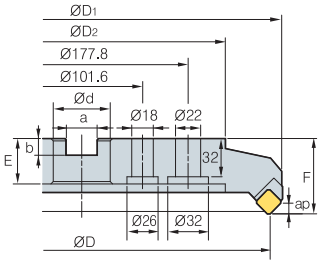


Fig. 4

AA 45°
- AR : 20°
- RR : -3°

(mm)

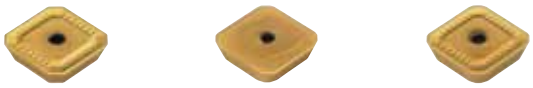
Designation		⊚	ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
AE(M)	5080R/L	4	80	103	60	25.4(27)	9.5(12.4)	6(7)	25(22)	50	7.5	1.7	1
	5100R/L	5	100	122	80	31.75(32)	12.7(14.4)	8(8)	32(28)	50	7.5	2.9	2
	5125R/L	6	125	146	100	38.1(40)	15.9(16.4)	10(9)	38(30)	63	7.5	4.4	2
	5160R/L	8	160	181	120	50.8(40)	19.0(16.4)	11(9)	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 SEKN-SM SEKR-MX

SEKR-SM SEXN-FM SEXR-FM



Designation		Coated										Cermet		Uncoated			page
		NCM325	NCM335	NC5330	PC3500	PC3600	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	
SECN	1504AFFN																●		E15
	1504AFTN														●			●	
	1504AFEN																		
	1504AFSN	●	●																
	1504AFEN-RH																		
	1504AFSN-RH									●									
	1504AFTN-S20																		
SEKN	1504AFSN-SM							●											E16
	1504AFEN-SM																		
	1504AFSN-SU					●		●											
SEKR	1504AFSN-MX	●	●						●										E16
	1504AFSN-SM																		
SEXN	1504AFSN-FM																		E16
	1504AFEN-FM																		
SEXR	1504AFSN-FM																		E16

Available Arbors

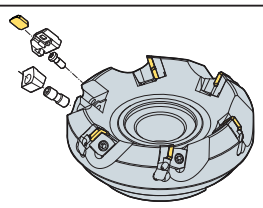
Designation	General Arbor	NC Arbors	
		AE	AEM
AE(M)5080R/L	NT*□□(M/U)-FMA25.4-25	BT**□□-FMA25.4-□□	FMC27
5100R/L	NT*□□(M/U)-FMA31.75-□□	BT**□□-FMA31.75-□□	FMC32
5125R/L	NT*□□(M/U)-FMA38.1-□□	BT**□□-FMA38.1-□□	FMB40
5160R/L	NT*□□(M/U)-FMA50.8-□□	BT**□□-FMA50.8-□□	FMB40
5200R/L	NT*□□(M/U)-FMA47.625-25,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

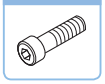
Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3500
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Assembling



Parts

Locator	Wedge	Wedge Screw	Locator Screw	Wrench
				
LAE5R/L	WAE5R/L	DHA0821F	LTX0512	HW40

EF(M)4000

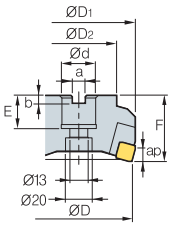


Fig. 1

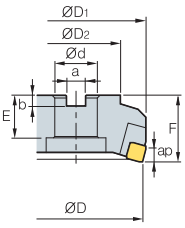


Fig. 2

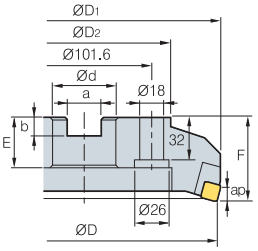


Fig. 3

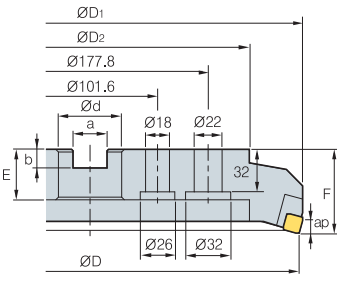


Fig. 4

• AR : 18°
• RR : 11°

(mm)

Designation		⚙	ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
EF(M)	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	Coated									Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SFCN 1203EFR														●	●			E17

Available Arbors

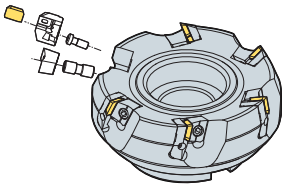
Designation	General Arbor	NC Arbors	
		EF	EFM
EF(M)4080R/L	NT*□□ (M/U)-FMA25.4-25 -□□	BT**□□-FMA25.4 -□□	FMC27
4100R/L	NT*□□ (M/U)-FMA31.75 -□□	BT**□□-FMA31.75 -□□	FMC32
4125R/L	NT*□□ (M/U)-FMA38.1 -□□	BT**□□-FMA38.1 -□□	FMB40
4160R/L	NT*□□ (M/U)-FMA50.8 -□□	BT**□□-FMA50.8 -□□	FMB40
4200R/L	NT*□□ (M/U)-FMA47.625-25, 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	400 ~ 500	0.05 ~ 0.20	H01

Assembling



Parts

Locator	Wedge	Wedge Screw	Locator Screw	Wrench
LEF4R/L LEF4R1*/L1*	WEFR/L	DHA0821F	LTX0512	HW40

* : Ø80 ~ Ø125

Available Inserts E17 Available Arbors and bolt E290~E292

● : Stock item

EN(M)4000

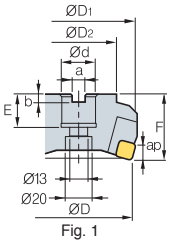


Fig. 1

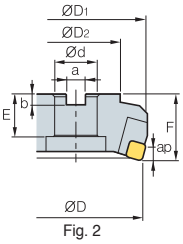


Fig. 2

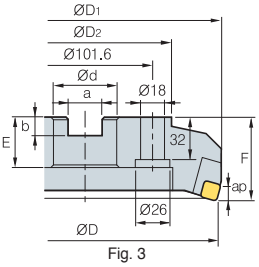


Fig. 3

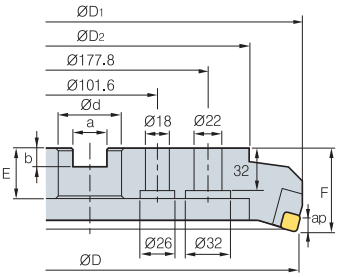


Fig. 4

AA 75°
- AR : -6°
- RR : -5°

(mm)

Designation		⊙	øD	øD1	øD2	ød	a	b	E	F	ap	kg	Fig.
EN(M)	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

Designation	Coated								Cermet			Uncoated			page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNCN 1204ENN	●														●	●	●	E17
SNKN 1204ENN								●										E19

Available Arbors

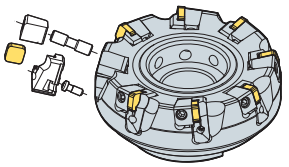
Designation	General Arbor	NC Arbors	
		EN	ENM
EN(M) 4080R/L	NT*□□ (M/U)-FMA25.4-25 -□□	BT**□□-FMA25.4 -□□	FMC27
4100R/L	NT*□□ (M/U)-FMA31.75 -□□	BT**□□-FMA31.75 -□□	FMC32
4125R/L	NT*□□ (M/U)-FMA38.1 -□□	BT**□□-FMA38.1 -□□	FMB40
4160R/L	NT*□□ (M/U)-FMA50.8 -□□	BT**□□-FMA50.8 -□□	FMB40
4200R/L	NT*□□ (M/U)-FMA47.625-25, 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	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3500
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Assembling



Parts

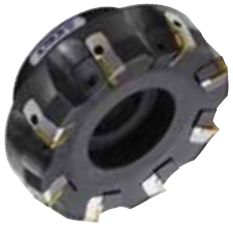
Locator	Wedge	Wedge Screw	Locator Screw	Wrench
LEN4R/L	WENR/L WENR1*/L1*	DHA0830 DHA0825*	LTX0512	HW40

* : Ø80 ~ Ø100

Available Inserts E16, E17 Available Arbors and bolt E290~E292

● : Stock item

EPN(M)4000



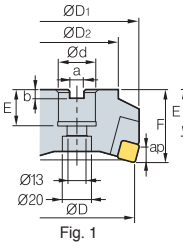


Fig. 1

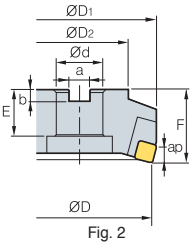


Fig. 2

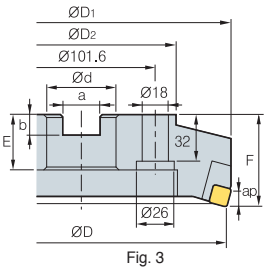


Fig. 3

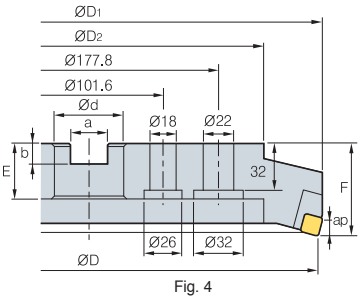


Fig. 4

AA 75°

- AR : 7°
- RR : 0°

(mm)

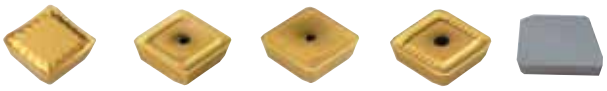
Designation		⌀	øD	øD1	øD2	ød	a	b	E	F	ap	kg	Fig.
EPN(M)	4080R/L	5	80	86	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	9	1.4	1
	4100R/L	6	100	107	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	9	2.1	2
	4125R/L	8	125	132	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	9	3.8	2
	4160R/L	10	160	166	107	50.8(40)	19.0(16.4)	11(9)	38(30)	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-SM SPKN-SU SPKN-MU

SPKR-MX SPKR-SM SPXN-FM SPXR-FM SPEX



Designation		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC3600	PC5300	PC3545	PC9530	PC6510	PC8110	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SPCN	1203EDR	●	●												●	●	●	●	●	
	1203EDL																●	●		
	1203EDR-G															●				
	1203EDER-RH						●			●										E20
	1203EDSR-RH									●										
	1203EDTR-RH				●															
	1203EDR-S20								●											
SPKN	1203EDSR-SM																			E20
	1203EDER-SM																			
	1203EDER-MU																			
	1203EDSR-SU					●	●	●												E20
	1203EDSL-SU					●														
SPKR	1203EDSR-MX	●	●		●															E20
	1203EDSL-MX	●																		
	1203EDSR-SM																			
SPXN	1203EDSR-FM				●			●												E21
	1203EDER-FM																			
SPXR	1203EDSR-FM							●												E21
SPEX	1203EDR/L-1																			E20

Available Arbors

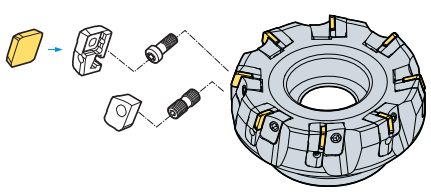
Designation	General Arbor	NC Arbors	
		EPN	EPNM
EPN(M) 4080R/L	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4 -□□	FMC27
4100R/L	NT*□□ (M/U)-FMA31.75 -□□	BT**□□-FMA31.75 -□□	FMC32
4125R/L	NT*□□ (M/U)-FMA38.1 -□□	BT**□□-FMA38.1 -□□	FMB40
4160R/L	NT*□□ (M/U)-FMA50.8 -□□	BT**□□-FMA50.8 -□□	FMB40
4200R/L	NT*□□ (M/U)-FMA47.625-25, 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		Grades
	vc(m/min)	fz(mm/t)	
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3500
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Assembling



Parts

Locator | Wedge | Wedge Screw | Locator Screw | Wrench

LEPN4R/L LEPN4R1*/L1*	WEPN4R/L	DHA0821F DHA0817F*	LTX0514	HW40

* : Ø80 ~ Ø100

Available Inserts E20, E21 Available Arbors and bolt E290~E292

● : Stock item

EPN(M)5000+

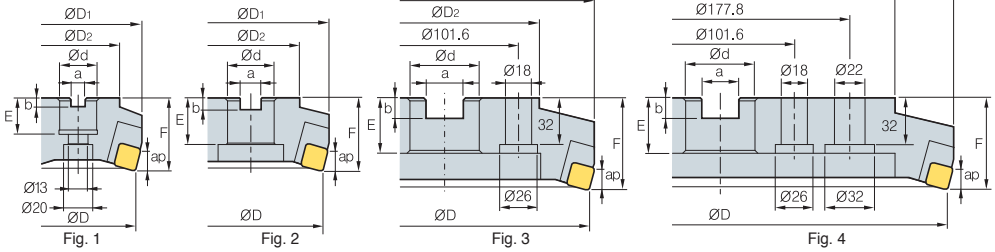


Fig. 1 Fig. 2 Fig. 3 Fig. 4

AA 75°
- AR : 7°
- RR : 0°

(mm)

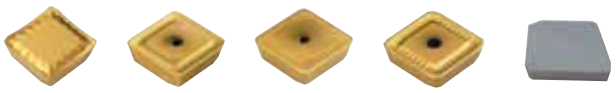
Designation			øD	øD1	øD2	ød	a	b	E	F	ap	kg	Fig.
EPN(M)	5080R/L+	5	80	91	57	25.4(27)	9.5(12.4)	6(7)	25(22)	50	12	1.5	1
	5100R/L+	6	100	110	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	12	2.1	2
	5125R/L+	8	125	134	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	12	3.9	2
	5160R/L+	10	160	169	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	12	5.7	2
	5200R/L+	12	200	209	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	12	8.4	3
	5250R/L+	16	250	259	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	12	13.6	3
	5315R/L+	20	315	324	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	12	21.6	4

• ( )Metric Size

Available Inserts

SPCN SPKN-SM SPKN-SU SPKN-MU

SPKR-MX SPKR-SM SPXN-FM SPXR-FM SPEX



Designation		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC3600	PC5300	PC3545	PC9530	PC6510	PC8110	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SPCN	150412T																			
	1504EDR	●													●		●	●		
	1504EDSR		●																	
	1504EDL									●										
	1504EDR-G															●				E20
	1504EDER-RH							●		●										
	1504EDSR-RH									●										
	1504EDTR-RH				●															
	1504EDR-S20								●											
SPKN	1504ESR-SM																			E20
	1504EDER-SM																			
	1504EDSR-MU					●														
	1504EDSR-SU					●	●	●												E20
	1504EDSL-SU					●														
SPKR	1504EDR-MX	●																		
	1504EDSR-MX		●		●															E20
	1504EDSR-SM																			
SPXN	1504EDSR-FM				●		●													E21
	1504EDER-FM																			
SPXR	1504EDSR-FM						●													E21
SPEX	1504EDR/L-1																			E20

Available Arbors

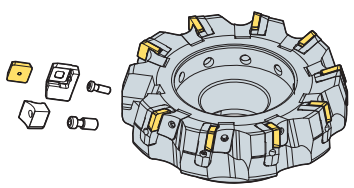
Designation	General Arbor	NC Arbors	
		EPN	EPNM
EPN(M) 5080R/L	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4 -□□	FMC27
5100R/L	NT*□□ (M/U)-FMA31.75 -□□	BT**□□-FMA31.75 -□□	FMC32
5125R/L	NT*□□ (M/U)-FMA38.1 -□□	BT**□□-FMA38.1 -□□	FMB40
5160R/L	NT*□□ (M/U)-FMA50.8 -□□	BT**□□-FMA50.8 -□□	FMB40
5200R/L	NT*□□ (M/U)-FMA47.625-25, 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		Grades
	vc(m/min)	fz(mm/t)	
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3500
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Assembling



Parts

Locator	Wedge	Wedge Screw	Locator Screw	Wrench
LEPN5R/L LEPN5R1*/L1*	WHPS5R/L	WHX0817 WHX0813*	LTX0514	HW40

* : Ø80

Available Inserts E20, E21 Available Arbors and bolt E290~E292

● : Stock item

PF(M)4000

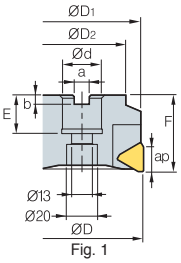


Fig. 1

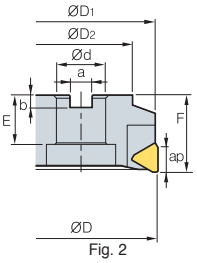


Fig. 2

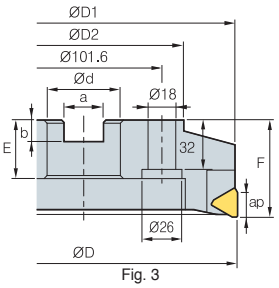


Fig. 3

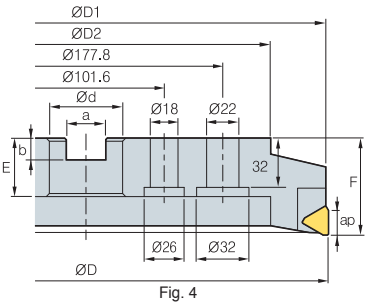


Fig. 4

• AR : 15°
• RR : 14°

(mm)

Designation		⚙	ØD	ØD1	ØD2	Ød	a	b	E	F	ap	kg	Fig.
PF(M)	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	Coated								Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
TFCN 2203PFR														●				E21
2203PFL																		

Available Arbors

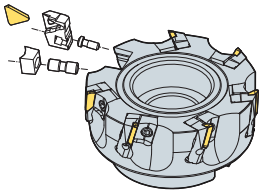
Designation	General Arbor	NC Arbors	
		PF	PFM
PF(M) 4080R/L	NT*□□ (M/U)-FMA25.4-25 -□□	BT**□□-FMA25.4 -□□	FMC27
4100R/L	NT*□□ (M/U)-FMA31.75 -□□	BT**□□-FMA31.75 -□□	FMC32
4125R/L	NT*□□ (M/U)-FMA38.1 -□□	BT**□□-FMA38.1 -□□	FMB40
4160R/L	NT*□□ (M/U)-FMA50.8 -□□	BT**□□-FMA50.8 -□□	FMB40
4200R/L	NT*□□ (M/U)-FMA47.625-25,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

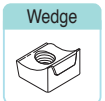
Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3500
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Assembling



Parts

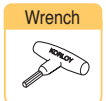
LPF4R/L
LPF4R1**/L1**



WPFR/L

DHA0821F
DHA0817F*

LTX0512



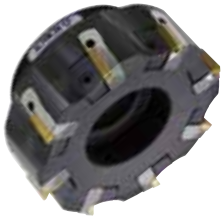
HW40

* : Ø80 ~ Ø100 / ** : Ø80 ~ Ø125

Available Inserts E21 Available Arbors and bolt E290~E292

● : Stock item

PPN(M)4000



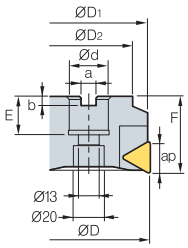


Fig. 1

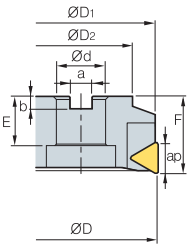


Fig. 2

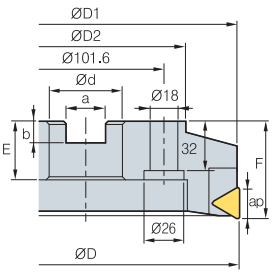


Fig. 3

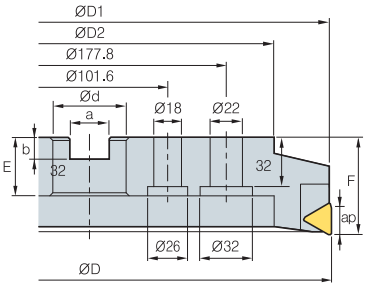


Fig. 4

AA 90°

- AR : 7°
- RR : 0°

(mm)

Designation			øD	øD1	øD2	ød	a	b	E	F	ap	kg	Fig.
PPN(M)	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-SM	TPKN-SU	TPKN-MU
			
TPKR-MX	**TPKR-SM**	**TPXN-FM**	**TPXR-FM**
			

Designation		Coated									Cermet		Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC3600	PC5300	PC3545	PC9530	PC6510	PC8110	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
TPCN	2204PDR	●												●			●	●	●	E22
	2204PDR-G															●				
	2204PDL																	●		
	2204PDSR		●																	
	2204PDTR																			
	2204PDR-RH																			
	2204PDER-RH						●			●	●									
	2204PDSR-RH									●	●									
	2204PDR-S20								●											
TPKN	2204PDSR-SM							●												E22
	2204PDER-SM																			
	2204PDSR-MU					●														
	2204PDSR-SU					●	●	●												
	2204PDSL-SU					●														
TPKR	2204PDR-MX	●																		E22
	2204PDSR-MX	●	●																	
	2204PPR-MX																			
	2204PDSR-SM																			
TPXN	2204PDSR-FM				●			●												E22
	2204PDER-FM																			
TPXR	2204PDSR-FM							●												E23

Available Arbors

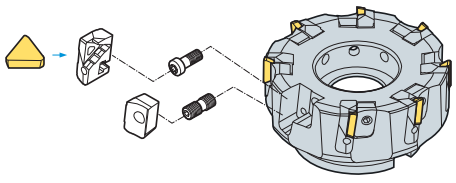
Designation	General Arbor	NC Arbors	
		PPN	PPNM
PPN(M) 4080R/L	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4 -□□	FMC27
4100R/L	NT*□□ (M/U)-FMA31.75 -□□	BT**□□-FMA31.75 -□□	FMC32
4125R/L	NT*□□ (M/U)-FMA38.1 -□□	BT**□□-FMA38.1 -□□	FMB40
4160R/L	NT*□□ (M/U)-FMA50.8 -□□	BT**□□-FMA50.8 -□□	FMB40
4200R/L	NT*□□ (M/U)-FMA47.625-25,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

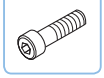
Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3500
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Assembling



Parts

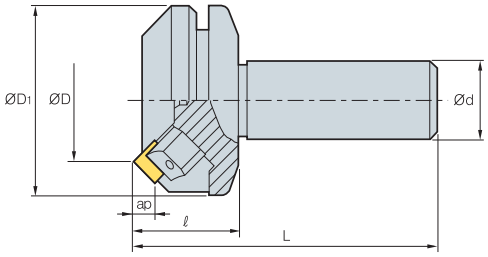
Locator	Wedge	Wedge Screw	Locator Screw	Wrench
				
LPPN4R/L LPPN4R1*/L1*	WPPN4R/L	DHA0821F DHA0817F*	LTX0514	HW40

* : Ø80 ~ Ø100

Available Inserts E22, E23 Available Arbors and bolt E290~E292

● : Stock item

ADS4000



AA 45°

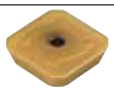
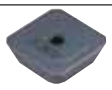
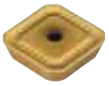
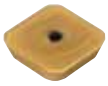
- AR : 15°
- RR : -3°

(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

• ( )Metric Size

Available Inserts

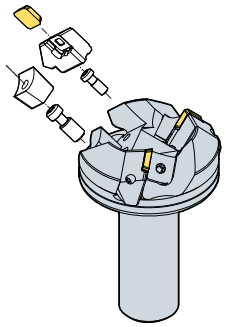
SDCN	SDKN-SM	SDKN-MU	SDKN-SU
			
SDKR-MX	**SDKR-SM**	**SDXN-FM**	**SDXR-FM**
			

Designation		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC3600	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SDCN	42M															●				E13
	42M-G															●				
	42MT		●										●		●			●	●	
	42MT-RH																			
	42MT-S20								●											
	1203AEEN																			
	1203AEEN-RH																			
	1203AESN																			
	1203AESN-RH																			
SDKN	1203AESN-SM																			E14
	1203AEEN-SM																			
	1203AESN-MU					●														
	1203AESN-SU					●	●	●												
SDKR	1203AESN-MX																			E14
	1203AETN-MX																			
	1203AEN-MX	●																		
	1203AESN-SM																			
SDXN	1203AESN-FM																			E14
	1203AEEN-FM																			
SDXR	1203AESN-FM																			E14

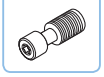
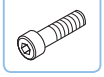
Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3500
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

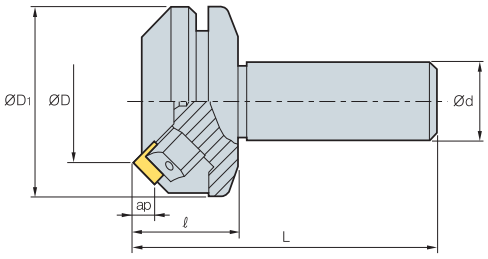
Assembling



Parts

Locator	Wedge	Wedge Screw	Locator Screw	Wrench
				
LASS4R/L	WASR/L	WTX0817	LTX0512	TW25

ADS5000



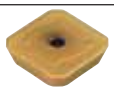
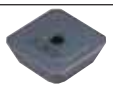
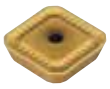
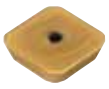
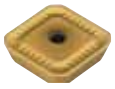
AA 45°
• AR : 15°
• RR : -3°

(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

• ( )Metric Size

Available Inserts

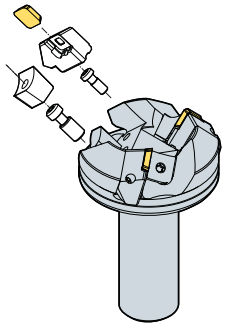
SDCN	SDKN-SM	SDKN-MU	SDKN-SU
			
SDKR-MX	**SDKR-SM**	**SDXN-FM**	**SDXR-FM**
			

Designation		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC3600	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SDCN	53M															●				E13
	53M-G																●			
	53MT	●	●										●		●			●		
	53MT-RH				●															
	53MT-S20								●											
	1504AEEN																			
	1504AEEN-RH							●		●										
	1504AESN																			
	1504AESN-RH									●										
SDKN	1504AESN-SM																			E14
	1504AEEN-SM																			
	1504AESN-MU					●														
	1504AESN-SU					●		●												
SDKR	1504AESN-MX		●																	E14
	1504AETN-MX																			
	1504AEN-MX	●																		
	1504AESN-SM																			
SDXN	1504AESN-FM																			E14
	1504AEEN-FM																			
SDXR	1504AESN-FM																			E14

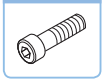
Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3500
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Assembling



Parts

Locator	Wedge	Wedge Screw	Locator Screw	Wrench
				
LASS5R/L	WASR/L	WTX0817	LTX0512	TW25

PES2000/3000/4000

2000/3000 type 4000 type

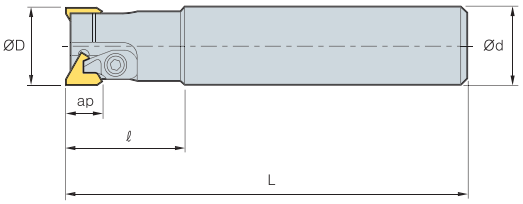


Fig. 1

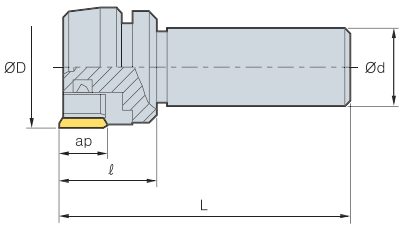


Fig. 2

AA 90°

- 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

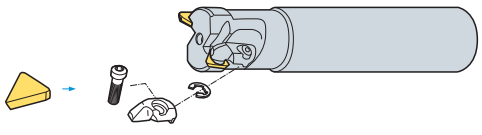
Available Inserts

Type	Designation	Coated								Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
2000 type	TECN 22R															●			E21
	22TR													●			●		
3000 type	TECN 32R															●			E21
	32TR		●											●			●		
	32TR-S20																		
4000 type	TEEN 43R															●			E21
	43R-G														●				
	43TR	●	●						●			●		●			●		
	43TR-S20							●											
	43TR-Z																●		
	43TR-ZH				●			●											

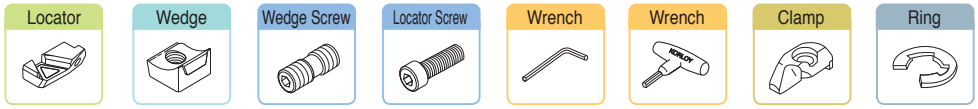
Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3500
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Assembling



Parts



2000 type	-	-	-	CHX0407	HW25L	-	CH4R1	ER03
3000 type	-	-	-	CHX0510	HW30L	-	CH5R1	ER04
4000 type	LPTS4R/L	WPTSR	DHA0815	LTX0512	-	HW40	-	-

AFO(M)4000

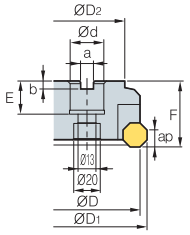


Fig. 1

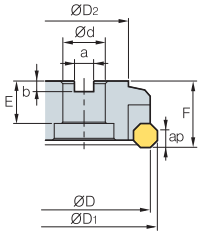


Fig. 2

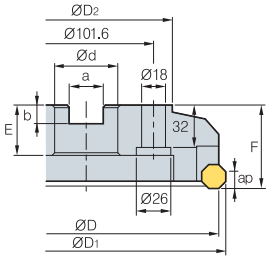


Fig. 3

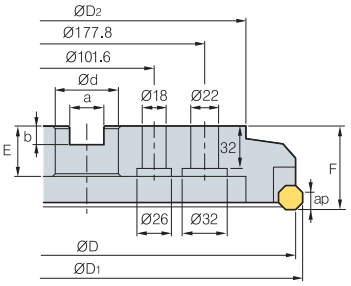


Fig. 4

AA 45°

- AR : 15°
- RR : 5°

(mm)

Designation		⊚	øD	øD1	øD2	ød	a	b	E	F	ap	kg	Fig.
AFO(M)	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		Coated								Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
OFCW	05T3SN																		E10
	05T3FN																		
	05T308FN																		
OFKT	05T3SN-MF	●	●						●										E11
	05T308SN-MF																		
	05T3SN-MM	●	●						●										
	05T308SN-MM																		
	05T3FN-MA														●				
	05T3EN-MA																		

Available Arbors

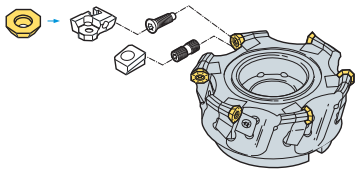
Designation	General Arbor	NC Arbors	
		AFO	AFOM
AFO(M)4080R/L	NT*□□ (M/U)-FMA25.4-25	BT** □□-FMA25.4 -□□	FMC27
4100R/L	NT*□□ (M/U)-FMA31.75 -□□	BT**□□-FMA31.75 -□□	FMC32
4125R/L	NT*□□ (M/U)-FMA38.1 -□□	BT**□□-FMA38.1 -□□	FMB40

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

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3500
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Assembling



Parts

Locator	Wedge	Wedge Screw	Screw	Wrench
LAF04R/L	WAFO4R/L	DHA0815	FTKA0408	TW15S

Available Inserts E10, E11
Available Arbors and bolt E290~E292

● : Stock item

AFO(M)5000

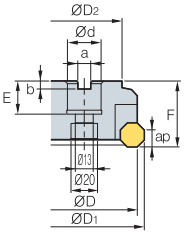


Fig. 1

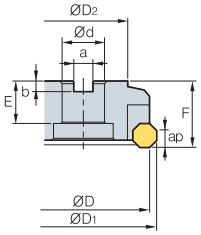


Fig. 2

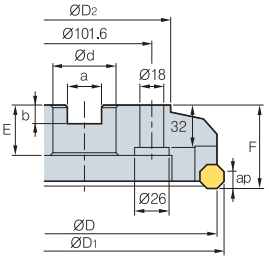


Fig. 3

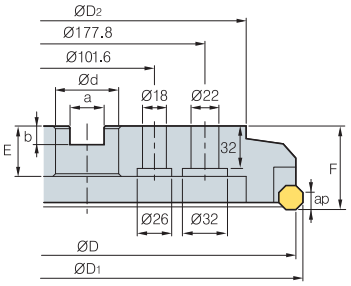


Fig. 4

AA 45°

- AR : 15°
- RR : 5°

(mm)

Designation		⚙	øD	øD1	øD2	Ød	a	b	E	F	ap	kg	Fig.
AFO(M)	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		Coated								Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
OFCN	0704SN	●			●		●		●										E10
	0704FN																		
	070408SN		●																
	070408FN																		
OFKR	0704SN-MF	●	●																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

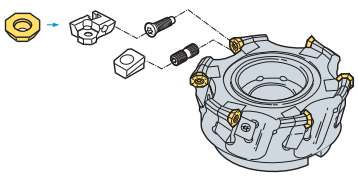
Designation	General Arbor	NC Arbors	
		AFO	AFOM
AFO(M)5080R/L	NT*□□ (M/U)-FMA25.4-25	BT**□□-FMA25.4-□□	FMC27
5100R/L	NT*□□ (M/U)-FMA31.75-□□	BT**□□-FMA31.75-□□	FMC32
5125R/L	NT*□□ (M/U)-FMA38.1-□□	BT**□□-FMA38.1-□□	FMB40
5160R/L	NT*□□ (M/U)-FMA50.8-□□	BT**□□-FMA50.8-□□	FMB40
5200R/L	NT*□□ (M/U)-FMA47.625-25, 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	150 ~ 300	0.05 ~ 0.15	NCM325
	120 ~ 230	0.05 ~ 0.20	PC3500
	100 ~ 200	0.05 ~ 0.20	ST30A
M	50 ~ 200	0.05 ~ 0.20	PC9530
	50 ~ 120	0.05 ~ 0.20	ST30A
K	150 ~ 250	0.05 ~ 0.30	PC6510
	100 ~ 200	0.05 ~ 0.30	G10

Assembling



Parts

Locator	Wedge	Wedge Screw	Screw	Wrench
LAF05R/L LAF05R*/L-1* * : Ø80 ~ Ø100	WEFR/L	DHA0821F	LTX0512	HW40

Available Inserts E10, E11, E13

Available Arbors and bolt E290~E292

● : Stock item

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

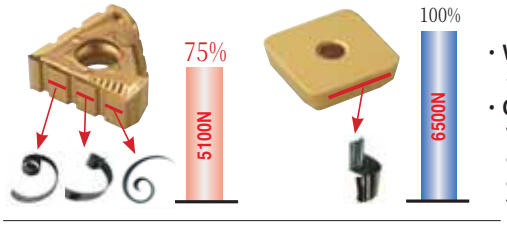
PB	A	C	M	5	250	R/L	–	M
Power Buster	**AA**	**Cutter type**	**Arbor type**	**Inscreibed circle of insert**	**Tool Dia.**	**Hand**		**No, of tooth**
Power buster	A : 45° Z : 80°	C : Cutter S : Shank	M : Metric I : Inch	5 : 15.875	ØD : 250	R : Right L : Left		No code : Coarse pitch M : Close pitch

Features of Insert

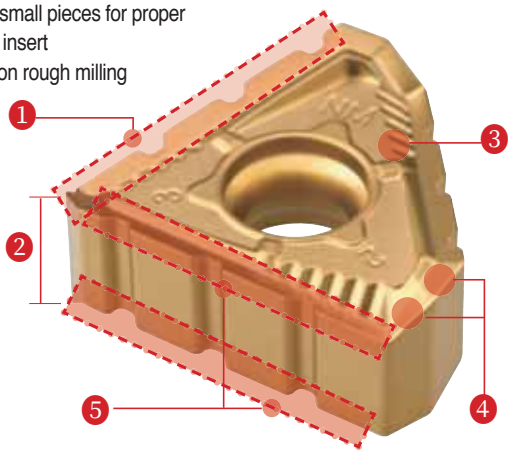
❶ Major cutting edge(serrated edge)

- 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

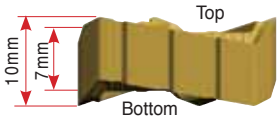


- **Work piece :** SCM440
- **Cutting condition :** vc=200m/min ap=8mm ae=90mm fz=0.3mm/t



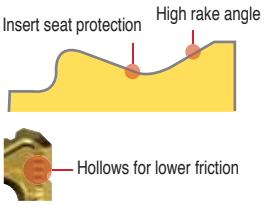
❷ Thicker insert

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



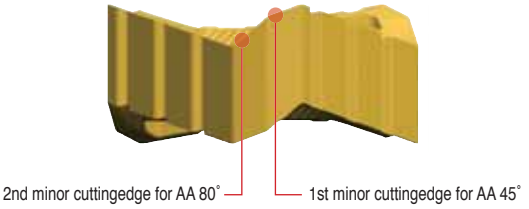
❸ NM Chip breaker

- 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



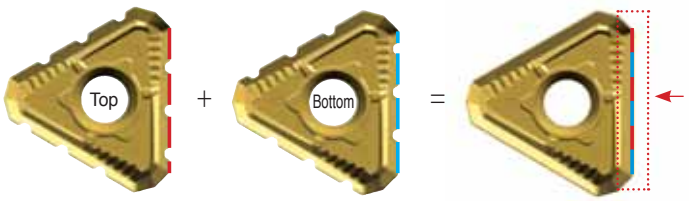
❹ Minor cutting edge

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



❺ Mirror system

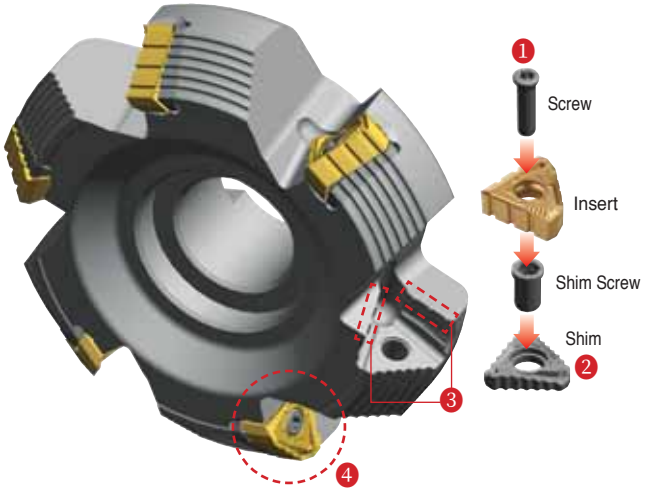
Cutting edge on the both side of insert covers all overlapped cutting area



Perfected cutting edge by using 2 different side of cutting edge

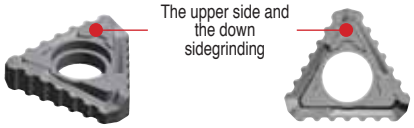
Features of Cutter

1 Screw on clamping system • Simple and strong screw on clamping system

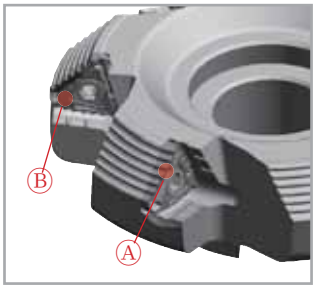


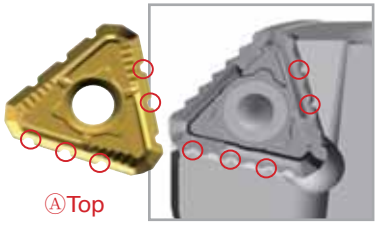
2 Better rigidity & Stable Assembly system

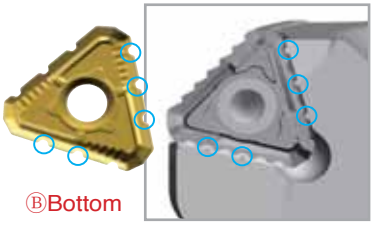
- The shim protects the cutter from insert damage
- High accuracy shim ensures tighter clamping



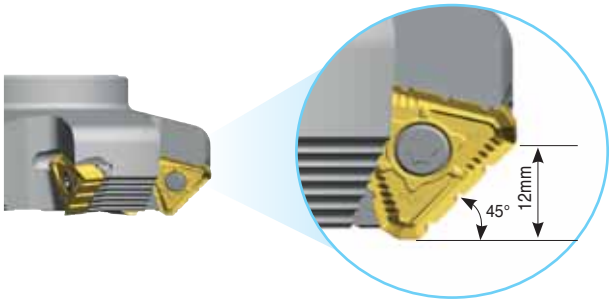
3 Foolproof System • Insert serrations match pocket design to prevent improper seating and alignment

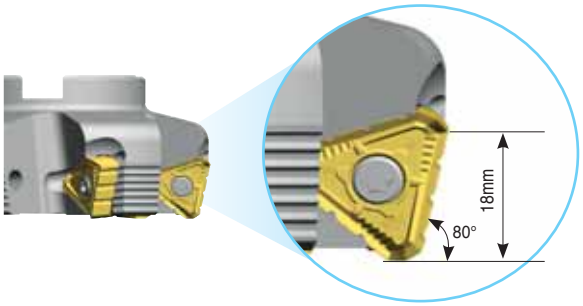




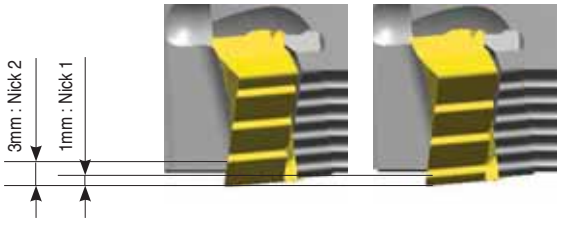


4 Multi-application system • Same insert for multi use (45˚and 10˚)

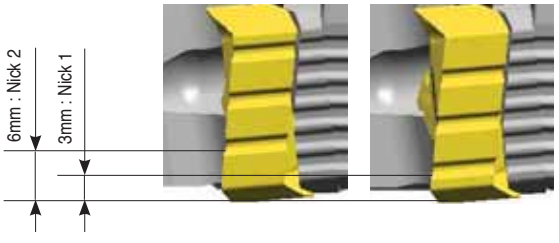




The serrations are effective with a depth of cut larger than 1mm

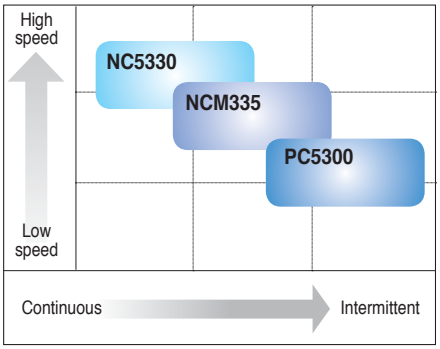


The serrations are effective with a depth of cut larger than 3mm



Recommended cutting condition

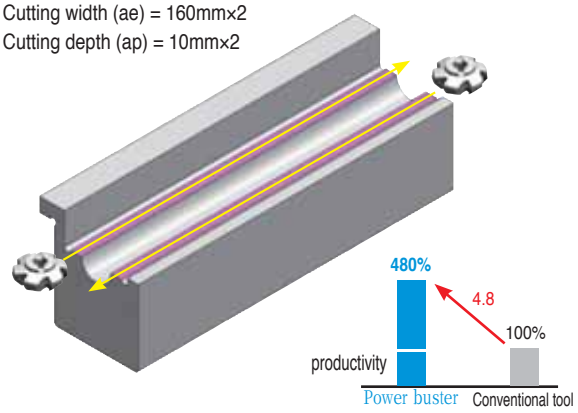
ISO	Workpiece	NC5330	NCM335	PC5300
		mm/t		
		0.1-0.2-0.3	0.1-0.2-0.3	0.1-0.2-0.3
		m/min		
P	Carbon steel	300-250-200	280-230-180	250-200-160
P	Alloy steel	250-210-180	230-180-150	180-150-120
P	Die steel	180-150-130	160-130-110	140-120-100
K	Gray cast iron	280-220-180	250-200-160	220-180-150
K	Malleable cast iron	250-200-160	230-180-150	180-150-130
K	Nodular cast iron	230-180-150	210-160-130	160-120-120



Power Buster Test

• **Cylinder block for ship engine (Cast iron)**

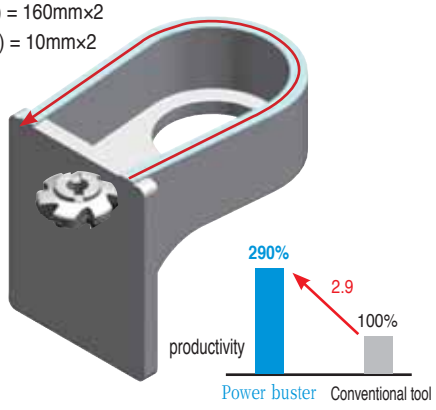
Cutting width (ae) = 160mm×2
Cutting depth (ap) = 10mm×2



Item	Power Buster	Conventional tool
Diameter(ØD)	200mm	200mm
⊙	12 tooth	12 tooth
Grade	NC9025	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

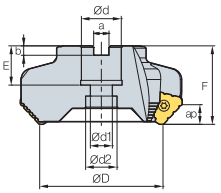


Fig. 1

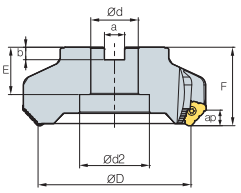


Fig. 2

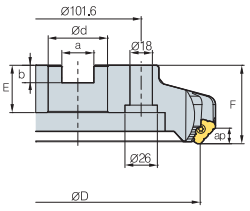


Fig. 3

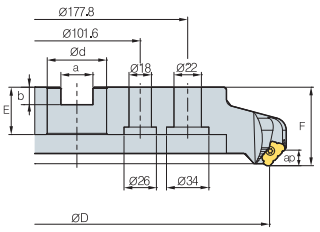


Fig. 4

AA 45°

• AR : -5°
• RR : -11°

(mm)

	Designation		⌀	øD	ød	ød1	ød2	a	b	E	F	ap	Fig.
Coarse pitch	PBAC(M)	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(M)	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	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
TNMX 2710AZNR-NM		●	●	●	●		●											E21
2710AZNL-NM																		

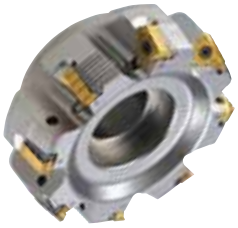
Available Arbors

Designation		Available Arbors	
		PBAC	PBACM
PBAC (PBACM)	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-□ 5250R-□ 5315R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□

Parts

Screw	Shim	Shim Screw	Wrench
			
FTGA0518	ST53AZR	SHXN0712F	TW20-100

PBZC(M)5000



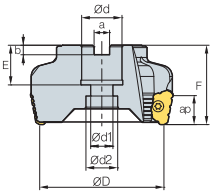


Fig. 1

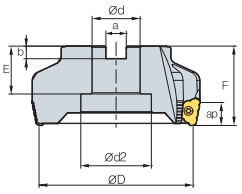


Fig. 2

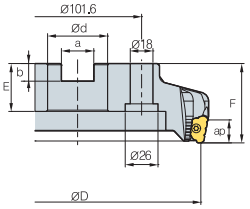


Fig. 3

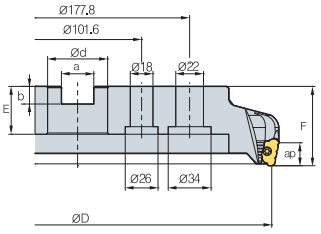


Fig. 4

AA
80°

- AR : -5°
- RR : -12°

(mm)

Designation		⌀D	ød	ød1	ød2	a	b	E	F	ap	Fig.
Coarse pitch	PBZC(M) 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(M) 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

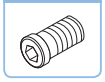
TNMX-NM

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
TNMX 2710AZNR-NM		●	●	●	●		●											E21
2710AZNL-NM																		

Available Arbors

Designation		Available Arbors	
		PBZC	PBZCM
PBZC (PBZCM)	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-□ 5250R-□ 5315R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□

Parts

Screw	Shim	Shim Screw	Wrench
			
FTGA0518	ST53AZR	SHXN0712F	TW20-100

Available Inserts E21 Available Arbors and bolt E290~E292

● : Stock item

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


RM(H)8A
E 66~68


RM(H)8E
E 69~72


RM(H)8Q
E 73~74


RM4PC(M)
E 75~76


RM4PF(H)CB
E 77~80


RM4PF(H)CP
E 81~84


RM4PS
E 85~86


RM4PM
E 87


RM4ZC(M)
E 88


RM4ZS
E 89


RM4ZM
E 89


RM16AC
E 90~91


RMT8A
E 92~93


RMT8E
E 94~95


RMT8Q
E 96

Code system

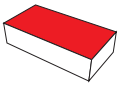
RM16 A C M 4 100 H R – M

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

Rich Mill RM8

Double sided insert to use 8 cutting edges

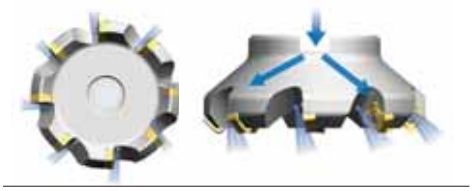
- Innovative double sided insert makes it possible to use 8 cutting edges. It is more economical than conventional single sided insert
- The unique geometry and high rake angle of cutting edge guarantees excellent surface finish. Applicable for various workpieces like steel, stainless steel, cast iron, 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



Facing

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

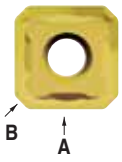
Chip breaker

Insert	Cutting edge	Features
For aluminum MA		Due to sharp cutting edge and buffed surface, it has good chip flow and welding resistance
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
	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

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	-	-	RM8A 6.0mm RM8E 9.0mm RM8Q 11.5mm	-	-	150~300	0.10~0.35	RM8A 7.5mm RM8E 11mm
P	NCM325	200~300	0.05~0.30	150~300	0.10~0.35	200~350	0.03~0.25		200~300	0.05~0.30	150~300	0.10~0.35	
P	PC3500	200~300	0.05~0.30	150~300	0.10~0.35	200~350	0.03~0.25		200~300	0.05~0.30	150~300	0.10~0.35	
K	PC6510	150~300	0.08~0.35	150~300	0.10~0.40	-	-		150~300	0.08~0.35	150~300	0.10~0.40	
K	PC5300	150~300	0.08~0.35	150~300	0.10~0.40	-	-		150~300	0.08~0.35	150~300	0.10~0.40	
M	PC9530	100~180	0.05~0.30	120~180	0.10~0.35	120~200	0.03~0.2		-	-	-	-	
M	PC5300	-	-	-	-	-	-		100~180	0.05~0.30	120~180	0.10~0.35	

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
General cutting MM		It is suitable design for general milling
Wiper W		It has better surface roughness than MM,MF chip breaker

Instruction for wiper insert

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

Through coolant system

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

Recommended cutting condition

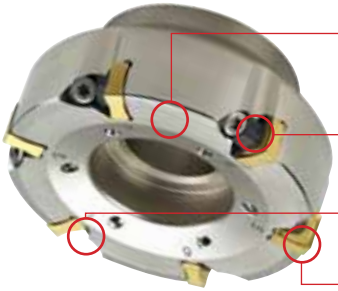
ISO	Grade	ONM(H)X060608-MM		ONM(H)X060608-MF		ONHX060608-W		ONM(H)X080608-MM		ONM(H)X080608-MF		ONHX080608-W	
		vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)
P	NCM325	150~300	0.10~0.35	200~300	0.05~0.30	200~300	0.05~0.20	150~300	0.10~0.40	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	PC9530	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	PC6510	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

Rich Mill RMT8

New generation clamping system

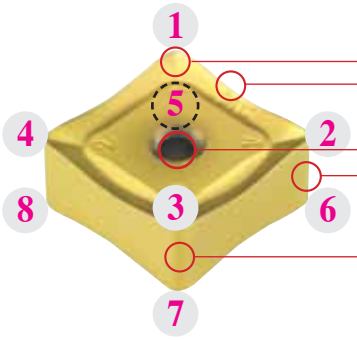
- New latch clamping system provides a powerful cutting force and an easy insert change
- New grades with chipping resistance provides good surface roughness and better tool life
- Due to the specially designed chip breaker, all operations are possible
- RMT with various pitches can replace conventional ISO milling tool

Features of RMT



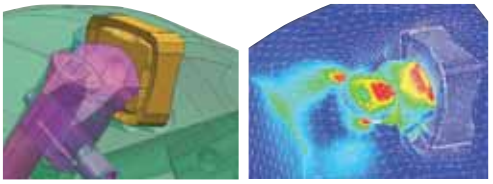
- High rigid cutter body to improve durability
- New latch clamping system ensures the powerful cutting force and easy to insert change
- The 3-dimensional chip pocket design for smooth chip control
- Economical 8 corners with a double-sided insert

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		○
	PC3500		○
	PC3545		○
M	PC9530		◎
K	PC6510		◎

◎:Optimum ○:Proper

Recommended cutting condition

ISO	Grade	MM		MF	
		vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)
P	NCM325	150~300	0.05~0.30	150~300	0.05~0.20
	PC3500	150~300	0.05~0.30	150~300	0.05~0.20
	PC3545	150~300	0.05~0.30	150~300	0.05~0.20
M	PC9530	120~180	0.05~0.20	120~180	0.05~0.20
K	PC6510	150~300	0.05~0.30	150~300	0.05~0.20

RM8AC(M)4000

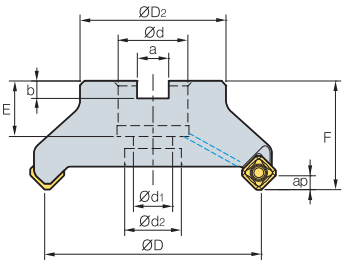


Fig. 1

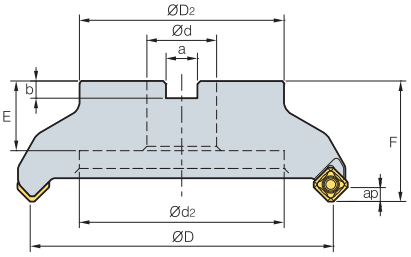


Fig. 2

AA 45°

- AR : -6°
- RR : -9°~-6°

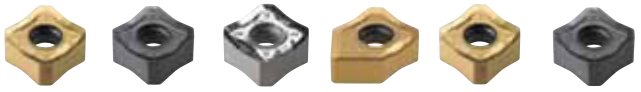
(mm)

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	4080HR	5	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	6.0	1.2	1
(RM8ACM)	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-MM	SNEX-MA	SNEX-W	SNMX-MF	SNMX-MM



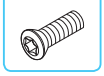
Designation		Coated								Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNEX	1206ANN-MF				●	●				●									E19
	1206ANN-MM	●			●	●	●		●	●									
SNMX	1206ANN-MF				●	●				●									
	1206ANN-MM	●		●	●	●			●	●									
SNEX	1206ANN-MA														●				
	1206ANN-W				●					●									

Available Arbors

Designation		Available Arbors	
		RM8AC	RM8ACM
RM8ACM	4050HR-□	-	BT□□-FMC22-□□
	4063HR-□		
RM8AC	4080HR-□	BT□□-FMA25.4-□□	BT□□-FMC27-□□
(RM8ACM)	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

Screw



Wrench

FTKA0410 TW15S

Available Inserts E19 Available Arbors and bolt E290~E292

● : Stock item

RMH8AC(M)4000 Neu

Shim type

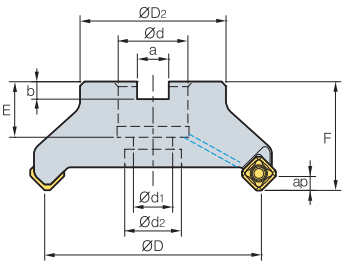


Fig. 1

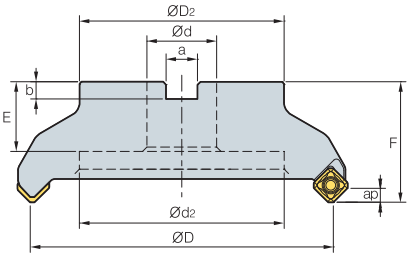


Fig. 2

AA 45°

- AR : -6°
- RR : -9°~-6°

(mm)

Designation		⌀D	⌀D2	⌀d	⌀d1	⌀d2	a	b	E	F	ap	kg	Fig.
RMH8AC (RMH8ACM)	4080HR-M	7	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	6.0	1.2	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
	4125HR-M	10	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	36(30)	63	6.0	3.6	1
	4160R-M	12	160	107	50.8(40)	-	107	19(16.4)	11(9)	38(32)	63	6.0	5.3	2
	4200R-M	14	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
	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	26	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-MM	SNEX-MA	SNEX-W	SNMX-MF	SNMX-MM
					

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNEX	1206ANN-MF				●	●	●			●									E19
	1206ANN-MM	●			●	●	●		●	●									
SNMX	1206ANN-MF				●	●				●									
	1206ANN-MM	●		●	●	●			●	●									
SNEX	1206ANN-MA														●				
	1206ANN-W				●					●									

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-□ 4250R-□ 4315R-□ 4400R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□

Parts

Screw	Shim	Shim Screw	Wrench
			
FTKA0412B	SS42RM8	SHXN0609F	TW15S

Available Inserts E19 Available Arbors and bolt E290~E292

● : Stock item

RM8AC(M)5000

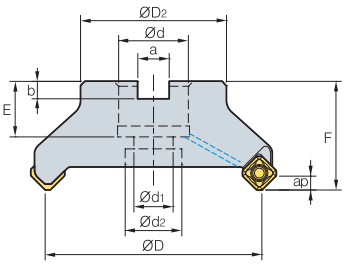


Fig. 1

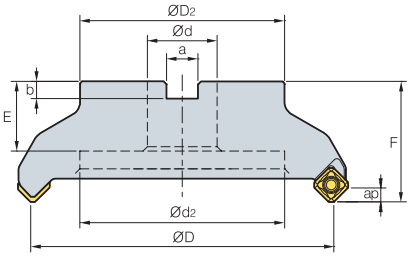


Fig. 2

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-MM	SNEX-MA	SNMX-MF	SNMX-MM
				

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNEX	1507ANN-MF				●				●										E19
	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-□ 5250R-□ 5315R-□ 5400R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□

Parts

Screw	Wrench
	
FTGA0513	TW20-100

Available Inserts E19 Available Arbors and bolt E290~E292

● : Stock item

RMH8AC(M)5000 New

Shim type

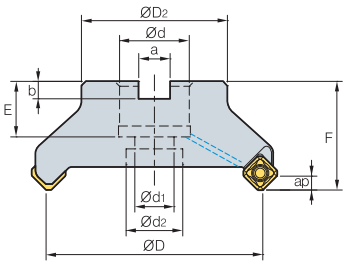


Fig. 1

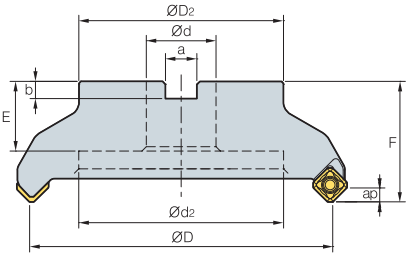


Fig. 2

AA 45°

- AR : -6°
- RR : -9°~-6°

(mm)

Designation		⌀D	⌀D2	⌀d	⌀d1	⌀d2	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-MM	SNEX-MA	SNMX-MF	SNMX-MM
				

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNEX	1507ANN-MF								●										E19
	1507ANN-MM				●				●										
SNMX	1507ANN-MF				●				●										
	1507ANN-MM																		

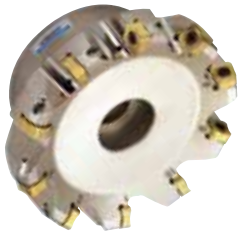
Available Arbors

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-□ 5250R-□ 5315R-□ 5400R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□

Parts

Screw	Shim	Shim Screw	Wrench
			
FTGA0513	SS53RM8	SHXN0712F	TW20-100

RM8EC(M)4000



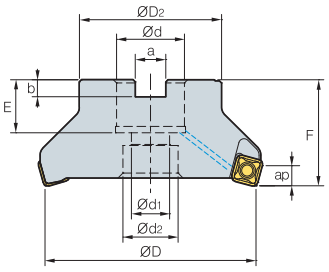


Fig. 1

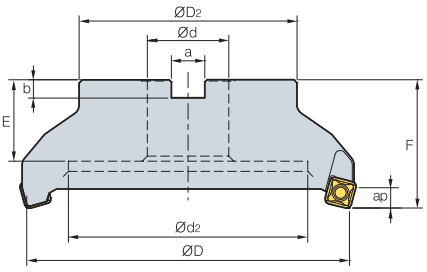


Fig. 2

AA 75°

- AR : -6°
- RR : -8°~-6°

(mm)

Designation		⊙	øD	øD2	ød	ød1	ød2	a	b	E	F	ap	kg	Fig.
RM8EC (RM8ECM)	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
	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-MM	SNEX-MA	SNMX-MF	SNMX-MM
				

Designation		Coated								Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNEX	1206ENN-MF				●	●			●										E19
	1206ENN-MM				●	●	●		●										
SNMX	1206ENN-MF				●	●	●		●										
	1206ENN-MM				●	●	●		●										
SNEX	1206ENN-MA				●				●						●				

Available Arbors

Designation		Available Arbors	
		RM8EC	RM8ECM
RM8ECM	4050HR-□ 4063HR-□	-	BT□□-FMC22-□□
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-□ 4250R-□ 4315R-□ 4400R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□

Parts

Screw	Wrench
	
PTKA0411-R3	TW15S

Available Inserts E19
Available Arbors and bolt E290~E292

● : Stock item

RMH8EC(M)4000 New

Shim type

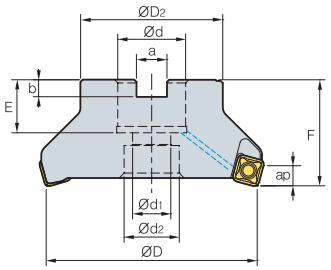


Fig. 1

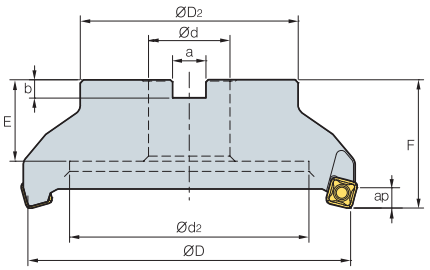


Fig. 2

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-MM	SNEX-MA	SNMX-MF	SNMX-MM
					

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNEX	1206ENN-MF					●	●			●									E19
	1206ENN-MM				●	●	●			●									
SNMX	1206ENN-MF				●	●	●			●									
	1206ENN-MM				●	●	●			●									
SNEX	1206ENN-MA				●					●					●				

Available Arbors

Designation		Available Arbors	
		RMH8EC	RMH8ECM
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-□ 4250R-□ 4315R-□ 4400R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□

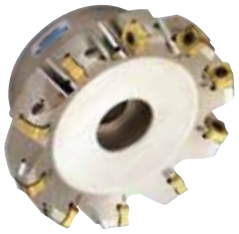
Parts

Screw	Shim	Shim Screw	Wrench
			
PTKA0411-R3	SS42RM8	SHXN0609F	TW15S

Available Inserts E19
Available Arbors and bolt E290~E292

● : Stock item

RM8EC(M)5000



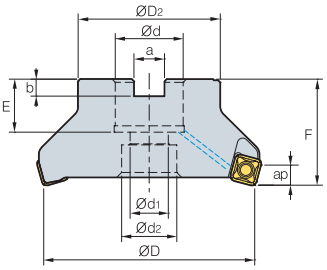


Fig. 1

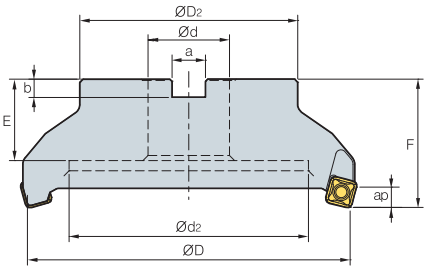


Fig. 2

AA 75°

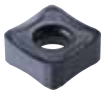
- AR : -6°
- RR : -8°~-6°

(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-MM	SNEX-MA	SNMX-MF	SNMX-MM
				

Designation		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNEX	1507ENN-MF				●				●										E19
	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-□ 5250R-□ 5315R-□ 5400R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□

Parts

Screw	Wrench
	
FTGA0513	TW20-100

Available Inserts E19 Available Arbors and bolt E290~E292

● : Stock item

RMH8EC(M)5000 New

Shim type

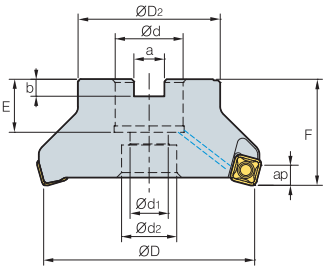


Fig. 1

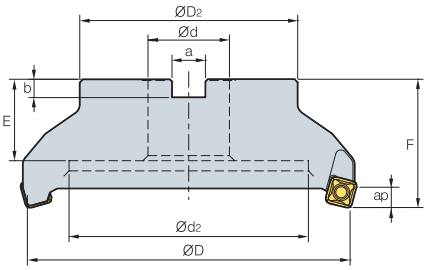


Fig. 2

AA 75°

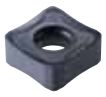
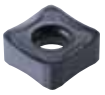
- AR : -6°
- RR : -8°~-6°

(mm)

Designation		⌀D	⌀D2	⌀d	⌀d1	⌀d2	a	b	E	F	ap	kg	Fig.
RMH8EC (RMH8ECM)	5080HR-M	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	11.0	1.1	1
	5100HR-M	100	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	125	87	38.1(40)	22	32	15.9(16.4)	10(9)	36(30)	63	11.0	3.4(3.3)	1
	5160R-M	160	107	50.8(40)	-	107	19(16.4)	11(9)	38(32)	63	11.0	4.4(4.1)	2
	5200R-M	200	130	47.625(60)	-	135	25.4(25.7)	14.0	38(32)	63	11.0	6.4(6.1)	2
	5250R-M	250	180	47.625(60)	-	180	25.4(25.7)	14.0	38(32)	63	11.0	11.0(10.7)	2
	5315R-M	315	240	47.625(60)	-	238	25.4(25.7)	14.0	38	63	11.0	18.0(17.7)	2
	5400R-M	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

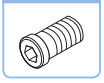
SNEX-MF	SNEX-MM	SNEX-MA	SNMX-MF	SNMX-MM
				

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNEX	1507ENN-MF				●				●										E19
	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-□ 5250R-□ 5315R-□ 5400R-□	BT□□-FMA47.625-□□	BT□□-FMB60-□□

Parts

Screw	Shim	Shim Screw	Wrench
			
FTGA0513	SS53RM8	SHXN0712F	TW20-100

Available Inserts E19
Available Arbors and bolt E290~E292

● : Stock item

RM8QC(M)4000

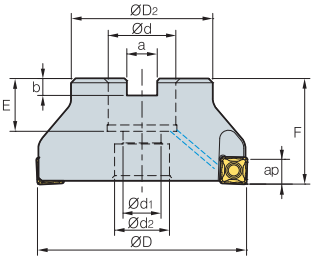


Fig. 1

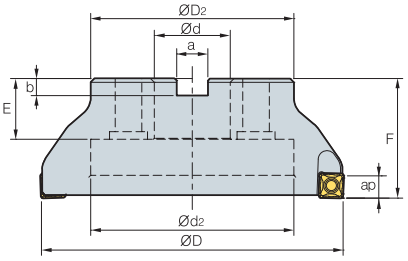


Fig. 2

AA 88°

- AR : -6°
- RR : -8°~-6°

(mm)

Designation		⊙	øD	øD2	ød	ød1	ød2	a	b	E	F	ap	kg	Fig.
RM8QC (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
	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	20	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-MM SNEX-MA SNMX-MF SNMX-MM

Designation	Coated									Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNEX 1206QNN-MF				●	●	●			●									E19
SNMX 1206QNN-MF				●		●			●									
SNEX 1206QNN-MM				●		●			●									
SNMX 1206QNN-MM				●		●			●									
SNEX 1206QNN-MA																		
SNEX 120612-MF																		
SNMX 120612-MF																		
SNEX 120612-MM									●									
SNMX 120612-MM				●					●									
SNEX 120612-MA														●				

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

Screw	Wrench
	
PTKA0411-R3	TW15S

Available Inserts E19 Available Arbors and bolt E290~E292

● : Stock item

RMH8QC(M)4000 New

Shim type

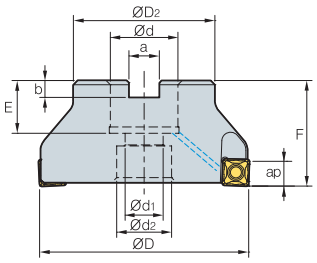


Fig. 1

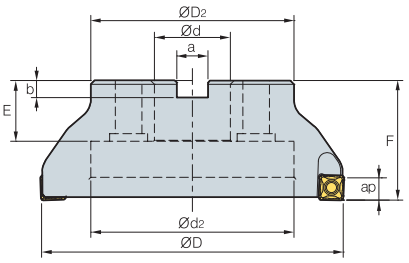


Fig. 2

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

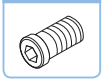
SNEX-MF	SNEX-MM	SNEX-MA	SNMX-MF	SNMX-MM
				

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNEX 1206QNN-MF				●	●	●			●									E19
SNMX 1206QNN-MF				●		●			●									
SNEX 1206QNN-MM				●		●			●									
SNMX 1206QNN-MM				●		●			●									
SNEX 1206QNN-MA																		
SNEX 120612-MF																		
SNMX 120612-MF																		
SNEX 120612-MM																		
SNMX 120612-MM				●					●									
SNEX 120612-MA														●				

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

Screw	Shim	Shim Screw	Wrench
			
PTKA0411-R3	SS42RM8	SHXN0609F	TW15S

Available Inserts E19
Available Arbors and bolt E290~E292

● : Stock item

RM16AC(M)6000

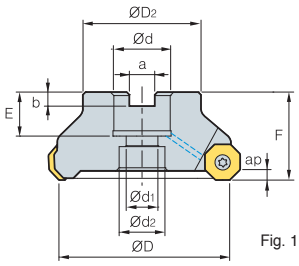


Fig. 1

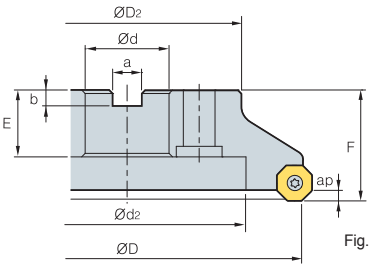


Fig. 2

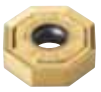
AA 45°
• AR : -6°
• RR : -6°

(mm)

Designation		⚙	øD	øD2	ød	ød1	ød2	a	b	E	F	ap	kg	Fig.
RM16AC(M)	6063HR-M	5	63	49	22	11	18	10.4	6.3	20	40	4.0	0.7	1
	6080HR-M	6	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	4.0	1.2	1
	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-MM	ONHX-W	ONHX-MA	ONMX-MF	ONMX-MM
					

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
ONMX 060608-MM				●					●									E11 E12
ONHX 060608-MM				●					●									
ONMX 060608-MF				●					●									
ONHX 060608-MF				●					●									
ONHX 060608-W				●	●			●	●									
ONMX 0606ANN-MM				●	●	●		●	●									
ONHX 0606ANN-MM																		
ONMX 0606ANN-MF					●	●		●	●									
ONHX 0606ANN-MF									●									
ONHX 060608-MA														●				

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 6250R-M 6315R-M 6400R-M	BT□□-FMA47.625-□□	BT□□-FMB60-□□

Parts

Screw	Wrench
	
FTGA0513	TW20-100

Available Inserts E11, E12
Available Arbors and bolt E290~E292

● : Stock item

RM16AC(M)8000

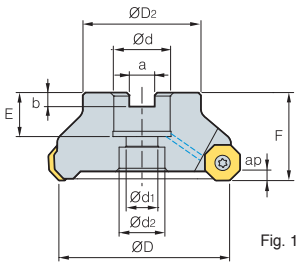


Fig. 1

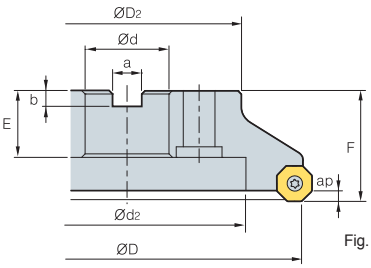


Fig. 2

AA 45°
• AR : -6°
• RR : -6°

(mm)

Designation		⌀	øD	øD2	ød	ød1	ød2	a	b	E	F	ap	kg	Fig.
RM16AC(M)	8063HR-M	5	63	49	22	11	18	10.4	6.3	20	40	5.5	0.7	1
	8080HR-M	6	80	57	25.4(27)	14	20	9.5(12.4)	6(7)	25(23)	50	5.5	1.2	1
	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-MM	ONHX-W	ONHX-MA	ONMX-MF	ONMX-MM
					

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
ONMX 080608-MM				●	●			●	●									E11 E12
ONHX 080608-MM				●					●									
ONMX 080608-MF									●									
ONHX 080608-MF																		
ONHX 080608-W				●														
ONMX 0806ANN-MM				●	●			●	●									
ONHX 0806ANN-MM						●												
ONMX 0806ANN-MF				●	●				●									
ONHX 0806ANN-MF					●	●			●									
ONHX 080608-MA														●				

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 8250R-M 8315R-M 8400R-M	BT□□-FMA47.625-□□	BT□□-FMB60-□□

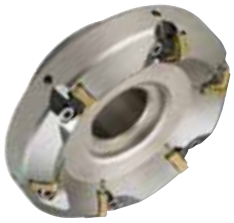
Parts

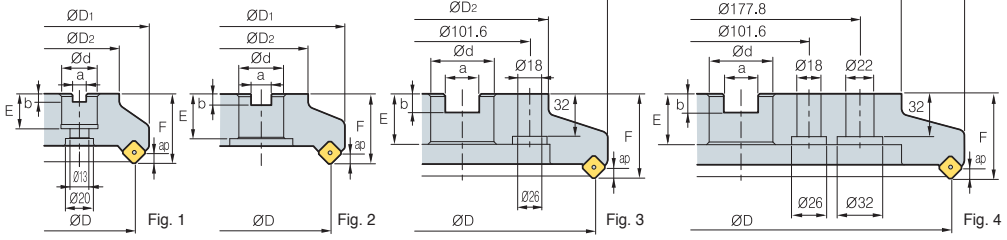
Screw	Wrench
	
FTGA0513	TW20-100

Available Inserts E11, E12 Available Arbors and bolt E290~E292

● : Stock item

RMT8A(M)4000





AA 45°
- AR : -6°
- RR : -6°

(mm)

Designation		⚙	øD	øD1	øD2	ød	a	b	E	F	ap	kg	Fig.
RMT8A(M)	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		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNCF	1206ANN-MF																		E17
	1206ANN-MM				●														
SNMF	1206ANN-MF																		
	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 □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

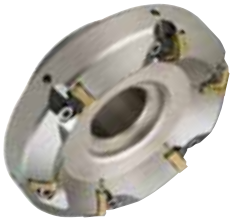
Parts

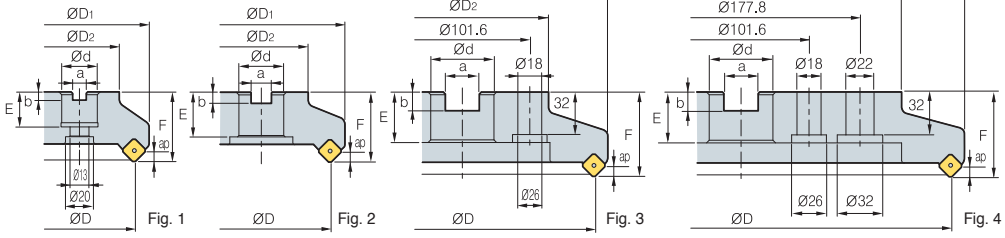
Screw	Screw	Spring	Latch	Wrench
				
ETKA0523	KHB0417	SPR0315	LTC05SR-RM4	TW20-100

Available Inserts E17 Available Arbors and bolt E290~E292

● : Stock item

RMT8A(M)5000





AA 45°

- AR : -6°
- RR : -6°

(mm)

Designation		⌀	øD	øD1	øD2	ød	a	b	E	F	ap	kg	Fig.
RMT8A(M)	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		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNCF	1507ANN-MF								●										E17
	1507ANN-MM				●		●												
SNMF	1507ANN-MF																		
	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 -□□	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

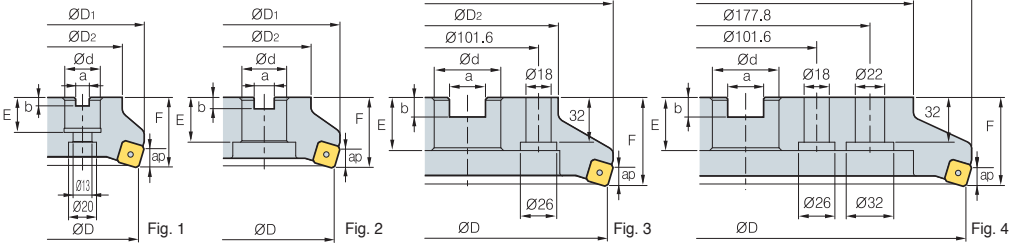
Parts

Screw	Screw	Spring	Latch	Wrench
ETKA0625	KHB0417	SPR0415	LTC06SR-RM5	TW20-100

Available Inserts E17 Available Arbors and bolt E290~E292

● : Stock item

RMT8E(M)4000



AA 75°

- AR : -6°
- RR : -8°~-6°

(mm)

Designation		⊙	øD	øD1	øD2	ød	a	b	E	F	ap	kg	Fig.
RMT8E(M)	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		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNCF	1206ENN-MF								●										E17
	1206ENN-MM				●		●												
SNMF	1206ENN-MF				●														
	1206ENN-MM				●														

Available Arbors

Designation		General Arbor	NC Arbors	
			RMT8E	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 □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

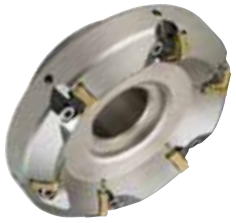
Parts

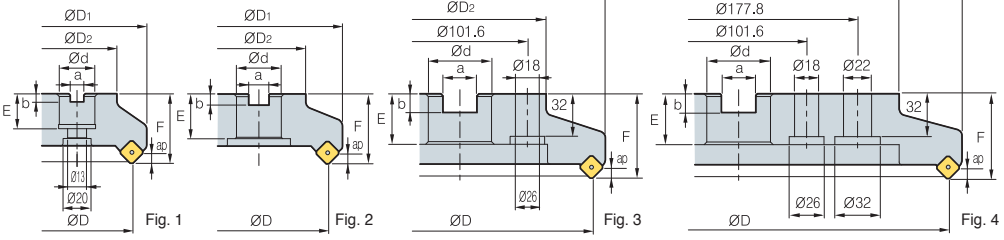
Screw	Screw	Spring	Latch	Wrench
				
ETKA0523	KHB0417	SPR0315	LTC05SR-RM4	TW20-100

Available Inserts E17 Available Arbors and bolt E290~E292

● : Stock item

RMT8E(M)5000





AA 75°

- AR : -6°
- RR : -8°~-6°

(mm)

Designation		⚙	øD	øD1	øD2	ød	a	b	E	F	ap	kg	Fig.
RMT8E(M)	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		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNCF	1507ENN-MF				●				●										E17
	1507ENN-MM						●												
SNMF	1507ENN-MF																		
	1507ENN-MM				●														

Available Arbors

Designation		General Arbor	NC Arbors	
			RMT8E	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 □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

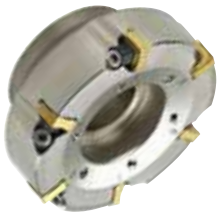
Parts

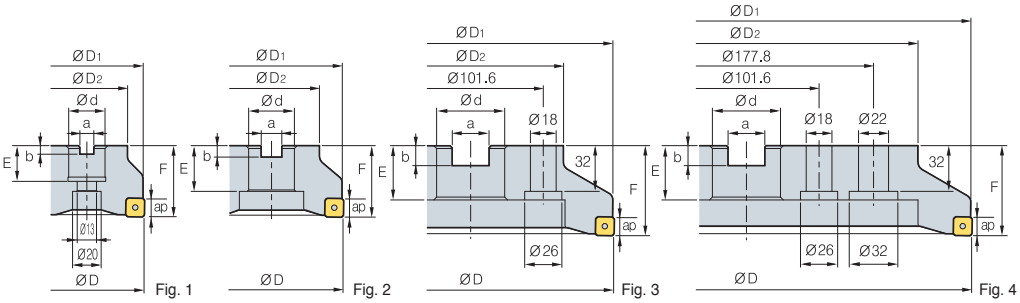
Screw	Screw	Spring	Latch	Wrench
				
ETKA0625	KHB0417	SPR0415	LTC06SR-RM5	TW20-100

Available Inserts E17 Available Arbors and bolt E290~E292

● : Stock item

RMT8Q(M)





AA 88°

- AR : -6°
- RR : -11°~-6°

(mm)

Designation		⊚	øD	øD1	øD2	Ød	a	b	E	F	ap	kg	Fig.
RMT8Q(M)	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)	12.7(14.4)	8(8)	32(28)	50	5	1.8	2
	4100R-M	8	100	99	67	31.75(32)	12.7(14.4)	8(8)	32(28)	50	5	1.8	2
	4125R	8	125	124	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	5	3.6	2
	4125R-M	10	125	124	87	38.1(40)	15.9(16.4)	10(9)	38(30)	63	5	3.6	2
	4160R	10	160	159	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	5	5.7	2
	4160R-M	14	160	159	107	50.8(40)	19.0(16.4)	11(9)	38(30)	63	5	5.7	2
	4200R	12	200	199	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	5	7.5	3
	4200R-M	18	200	199	130	47.625(60)	25.4(25.7)	14(14)	38(38)	63	5	7.5	3
	4250R	16	250	249	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	5	12.5	3
	4250R-M	22	250	249	180	47.625(60)	25.4(25.7)	14(14)	38(38)	63	5	12.5	3
	4315R	20	315	314	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	5	19.9	4
	4315R-M	28	315	314	240	47.625(60)	25.4(25.7)	14(14)	38(38)	63	5	19.9	4

• ( )Metric Size

Available Inserts

	SNMF-MF	SNMF-MM
		

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNMF 1206QNN-MF				●														E17
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 □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

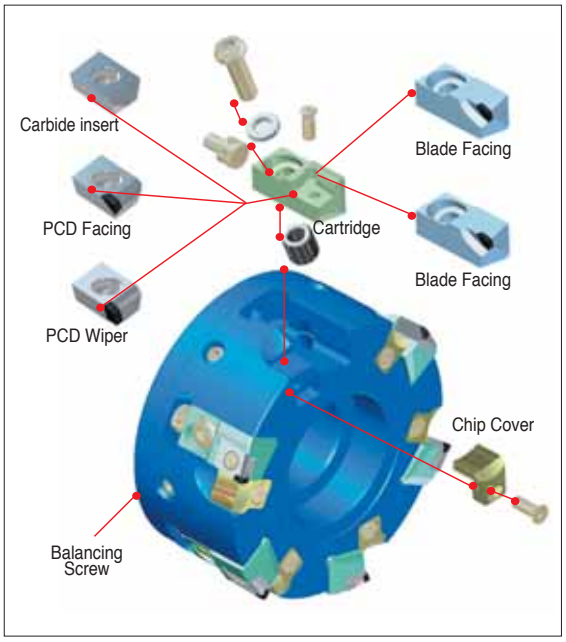
Parts

Screw	Screw	Spring	Latch	Wrench
				
ETKA0523	KHB0417	SPR0315	LTC05SR-RM4	TW20-100

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

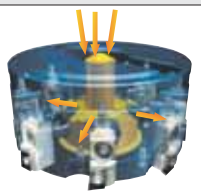
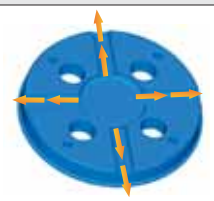


Assembly structure of cutter

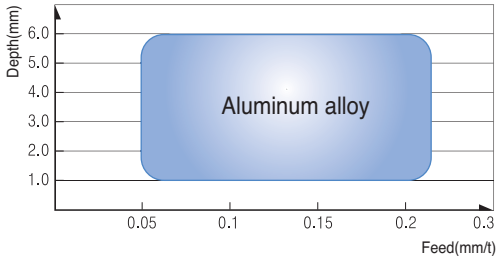
- Increased stability based on cartridge type application
- Both insert and blade can be available in the same cutter
- Finishing to roughing can be possible because of wide chip pocket space
- Roughing and finishing available with carbide, PCD insert application
- Cutter breakage can be solved by making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

Coolant through system

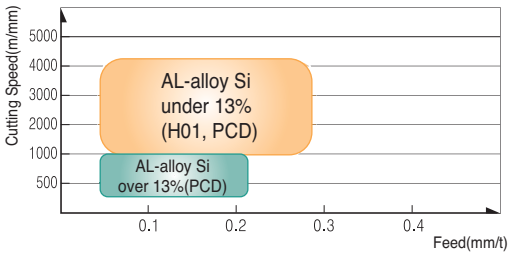
- Specially designed coolant through system provides coolant from the center of the cutter to the insert enhances the cooling rate and chip evacuation.
- Direction of coolant has designed to focus directly to the insert cutting edge to maximize chip evacuation and improve tool life
- Coolant bolt is 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	Coolant Cover
	
For Ø80~Ø160	For Ø200 and over

Application range



Recommended cutting condition

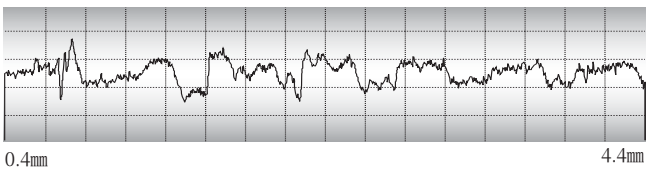


Surface finish

■ **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		Extra charge
Ø250	Coolant Cover	CCP250		
Ø315	Coolant Cover	CCP315		

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

Good performance in small-medium size of operations

Aero Mill-Mini

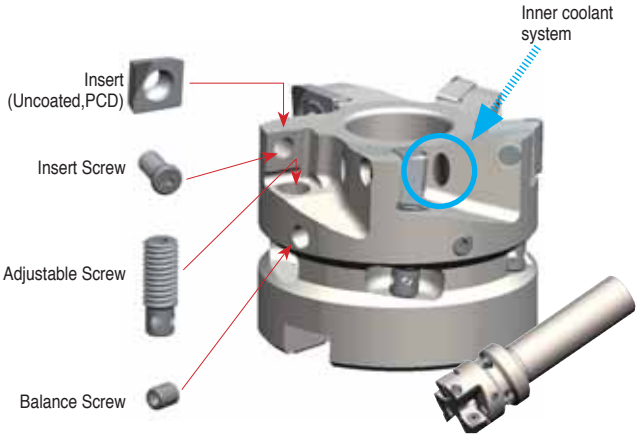
- Good performance in small-medium size of operations
- Good duration of the steel body
- Choice of Uncoated carbide / PCD grades can be applied to various kind of work material
- Balance level : G25

Code system

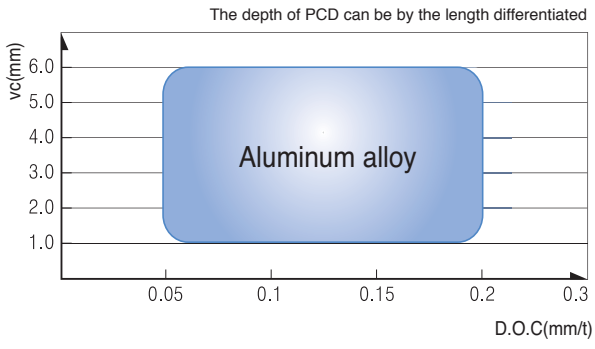
M	A	P	D	(S)	040	-	H	R	Z4
Mini	Aero Mill	Approach Angle	Insert Clearance Angle	Unmarked : Cutter S : Shank	Diameter(Ø)		H : Coolant	Hand(R/L)	Number of tooth

Structure of Aero Mill -Mini

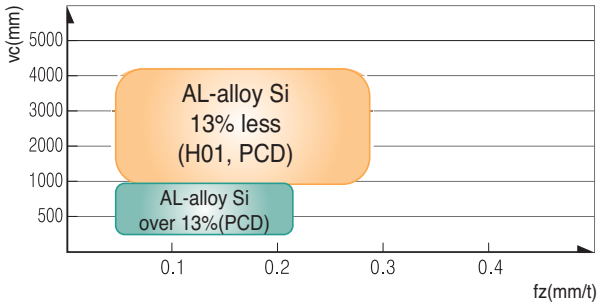
- Simple and strong design of Screw-on clamping.
- Adjustable range : ±0.1mm Max
- Adjustable step : Min. 2 micro meter
- Wide chip pocket area for Roughing and Aluminum machining.
- Inner coolant system



Application range



Recommended cutting condition

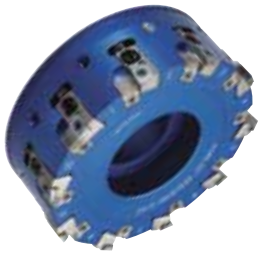


Max. RPM

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

APD(M)-A

Cartridge + Insert



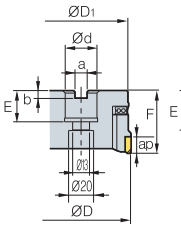


Fig. 1

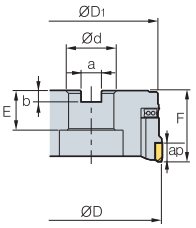


Fig. 2

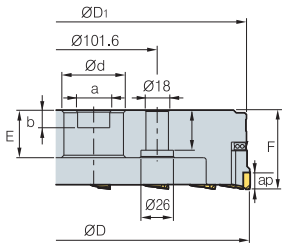


Fig. 3

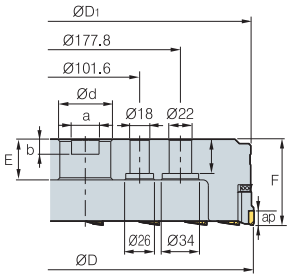


Fig. 4

AA 90°

- AR : 6°
- RR : 5°~9°

(mm)

Designation		⊙	øD	øD1	ød	a	b	E	F	ap	Max rpm	kg	Fig.
APD(M)	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

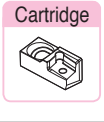
Designation		General Arbor	NC Arbors
APD(M)	080R/L	NT*□□(M/U)-FMA25.4-25	BT**□□-FMA25.4 -□□
	100R/L	NT*□□(M/U)-FMA31.75 -□□	BT**□□-FMA31.75 -□□
	125R/L	NT*□□(M/U)-FMA38.1 -□□	BT**□□-FMA38.1 -□□
	160R/L	NT*□□(M/U)-FMA50.8 -□□	BT**□□-FMA50.8 -□□
	200R/L 250R/L	NT*□□(M/U)-FMA47.625-25, KCP-8***	BT**□□-FMA47.625-□□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

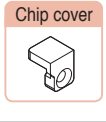
*□□ - NT Number **□□ - BT Number ***Over Milling 5

Recommended cutting condition

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

Parts


Cartridge


Chip cover


Chip cover Screw


Insert Screw


Adjust Screw


Cartridge Screw


Wrench for Insert


Wrench for Cartridge

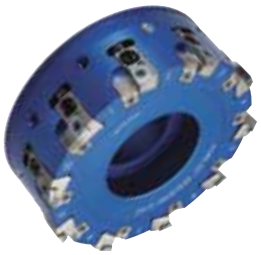
LAPDR/L-AJ	CAPDR/L-AJ	PTMA0411	FTNA0411	AZ0514	BHA0619-NYLOK	TW15S	HW50

Available Inserts E06, E07 Available Arbors and bolt E290~E292

● : Stock item

APD(M)-B

Blade



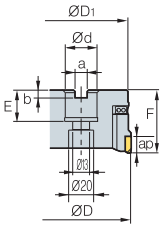


Fig. 1

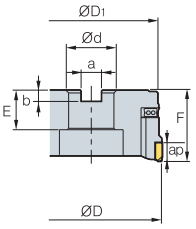


Fig. 2

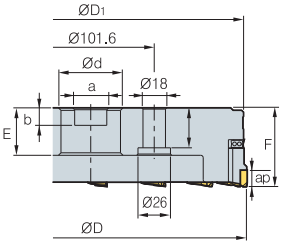


Fig. 3

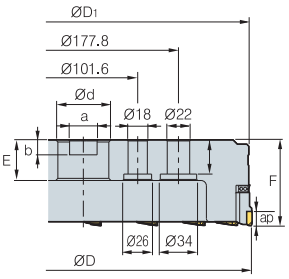


Fig. 4

AA 90°

- AR : 6°
- RR : 5°~9°

(mm)

Designation		⚙	øD	øD1	ød	a	b	E	F	ap	Max rpm	kg	Fig.
APD(M)	080R/L-B6Z	6	80	76	25.4(27)	9.5(12.4)	6(7)	25(22)	50	6	16000	0.75	1
	100R/L-B6Z	6	100	95	31.75(32)	12.7(14.4)	8(8)	32(28)	50	6	15000	0.95	2
	125R/L-B8Z	8	125	120	38.1(40)	15.9(16.4)	10(9)	38(30)	63	6	12500	1.8	2
	160R/L-B10Z	10	160	155	50.8(40)	19.0(16.4)	11(9)	38(30)	63	6	10000	2.9	2
	200R/L-B12Z	12	200	195	47.625(60)	25.4(25.7)	14(14)	38(38)	63	6	8000	4.0	3
	250R/L-B16Z	16	250	245	47.625(60)	25.4(25.7)	14(14)	38(38)	63	6	6500	6.3	3
	315R/L-B18Z	18	315	310	47.625(60)	25.4(25.7)	14(14)	38(38)	80	6	5000	11.3	4

- The ap of –B(blade) type means PCD size.
- ( )Metric Size

Available Blades

	BAPDR-XAF	BAPDR-XAW
		

Designation	PCD	page
	DP200	
BAPDR-XAF		E06
BAPDL-XAF		
BAPDR-XAW		
BAPDL-XAW		

Available Arbors

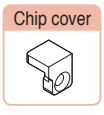
Designation		General Arbor	NC Arbors
APD(M)	080R/L	NT*□□(M/U)-FMA25.4-25	BT** □□-FMA25.4 -□□
	100R/L	NT*□□(M/U)-FMA31.75 -□□	BT** □□-FMA31.75 -□□
	125R/L	NT*□□(M/U)-FMA38.1 -□□	BT** □□-FMA38.1 -□□
	160R/L	NT*□□(M/U)-FMA50.8 -□□	BT** □□-FMA50.8 -□□
	200R/L 250R/L	NT*□□(M/U)-FMA47.625-25, KCP-8***	BT**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

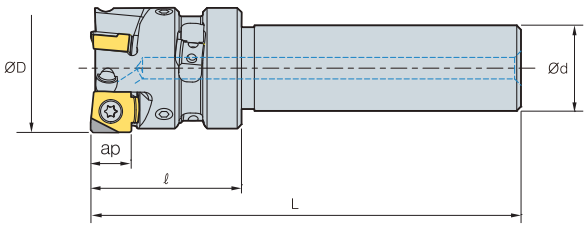


CAPDR/L-AJ PTMA0411 AZ0514 BHA0619-NYLOK HW50

Available Blades E06 Available Arbors and bolt E290~E292

● : Stock item

MAPDS000HR/L-Z0 New



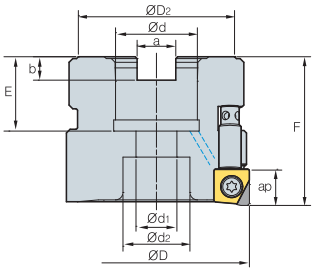
※ PCD ap:5mm

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

MAPD000HR/L-Z0 New



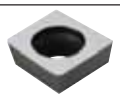
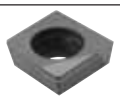
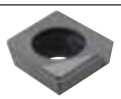
※ PCD ap:5mm

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	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

Parts

Insert Screw	Adjust Screw	Balance Screw	Wrench for Insert	Adjust Wrench
				
FTKA0408	AHX0617F-NYLOK	KHD0405	TW15S	HW20L

Coolant Bolt (Not included)

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

• Details for cloolant bolt are on catalogue

Available Inserts E18
Available Arbors and bolt E290~E292

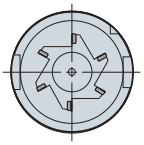
● : Stock item

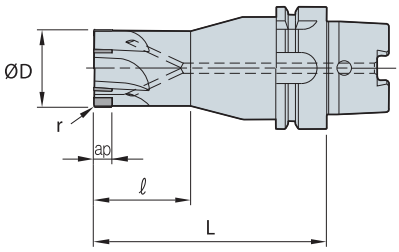
Code system

PDF 6 032 - HSK63A

- PDF FACE CUTTER
- Tooth
- Diameter
- Shank

PCD FACE CUTTER





AA 90°
- AR : 6°
- RR : 5°~9°

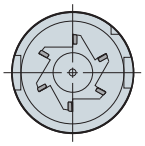
(mm)

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



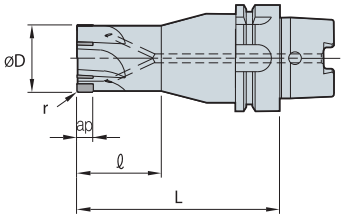


Fig. 1

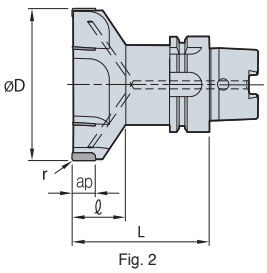


Fig. 2

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

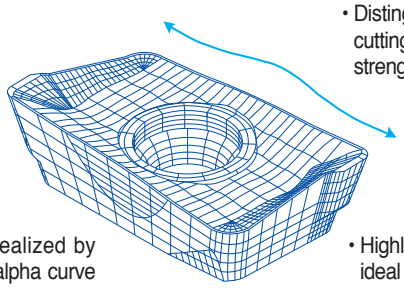
Various applications are available with multi-functional cutters

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

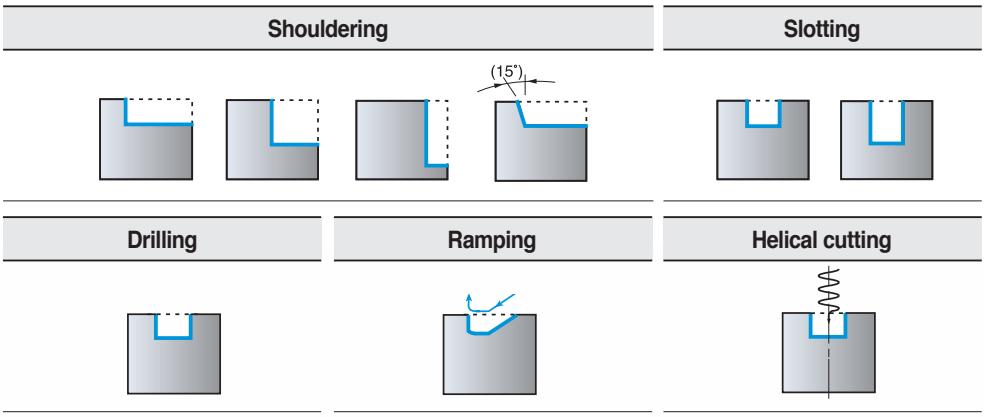
Alpha Mill Insert

- 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.
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

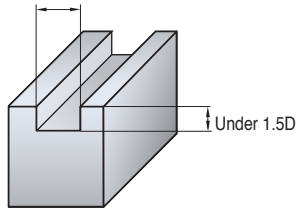
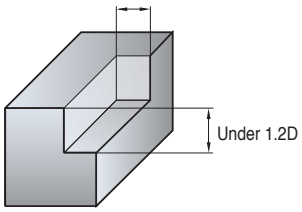
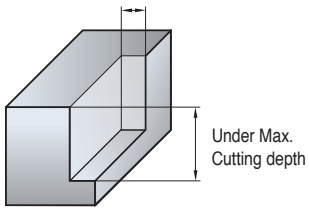
MA	ML
APMT0602PDFR-MA	-
APMT0903PDFR-MA	APMT0903PDER-ML
APMT11T3PDFR-MA	APMT11T3PDER-ML
APMT1604PDFR-MA	APMT1604PDER-ML
APMT1806PDFR-MA	APMT1806PDER-ML

- 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		M		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)

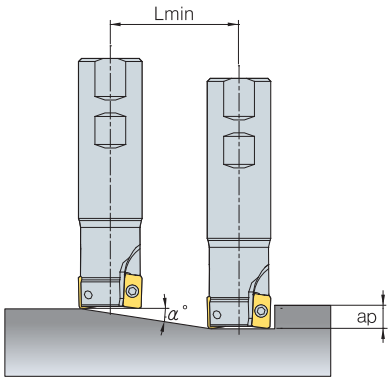
Workpiece	Grades	Fig.	Tool Dia. Ø20, 25 vc(m/min)	Ø20, 25 fz(mm/t)	Ø32, 40 vc(m/min)	Ø32, 40 fz(mm/t)	Ø50, 63 vc(m/min)	Ø50, 63 fz(mm/t)	Ø80, 100 vc(m/min)	Ø80, 100 fz(mm/t)
Mild steel, Low carbon steel	NCM325 PC3500	①	80~100	0.05~0.08	100~120	0.05~0.08	100~120	0.05~0.08	100~120	0.05~0.08
		②	100~120	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)

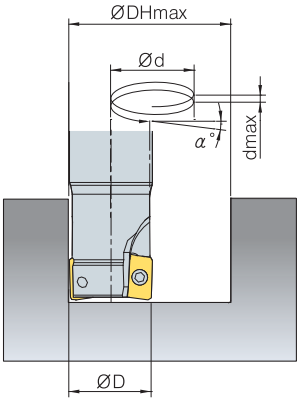
Workpiece	Grades	Fig.	Tool Dia. Ø20, 25 vc(m/min)	Ø20, 25 fz(mm/t)	Ø32, 40 vc(m/min)	Ø32, 40 fz(mm/t)	Ø50, 63 vc(m/min)	Ø50, 63 fz(mm/t)	Ø80, 100 vc(m/min)	Ø80, 100 fz(mm/t)
Mild steel, Low carbon steel	NCM325 PC3500	①	60~80	0.05~0.08	80~120	0.05~0.08	120~200	0.05~0.08	150~200	0.05~0.08
		②	80~120	0.08~0.10	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

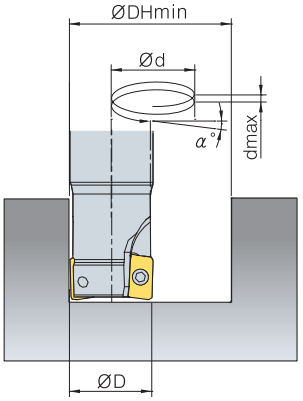
1. Ramping



2. Helical cutting for blind hole



3. Helical cutting for through hole

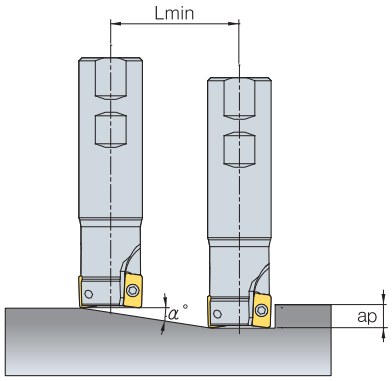


Designation	Tool Dia. ØD(min)	Ramping			Helical cutting for blind hole				Helical cutting for through hole	
		ap	Maximum angle α(°)	Lmin(mm)	Max. desirable hole Dia. ØDHmax(mm)	Max. pitch dmax(mm)	Min. desirable hole Dia. ØDHmin(mm)	Max. pitch dmax(mm)	Min. desirable hole Dia. ØDHmin(mm)	Max. pitch dmax(mm)
AMS1010HS	10	5	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		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	9	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		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

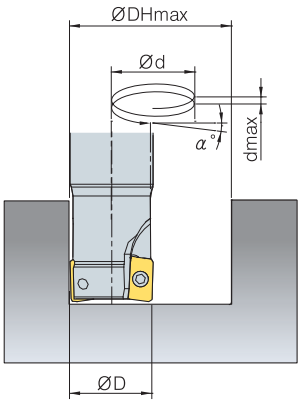
$$L\,min = \frac{ap}{\tan \alpha^{\circ}} \quad (mm)$$

Cutting condition for ramping and helical operation

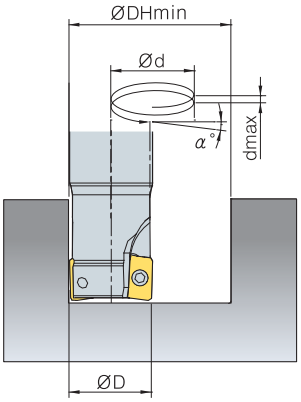
1. Ramping



2. Helical cutting for blind hole



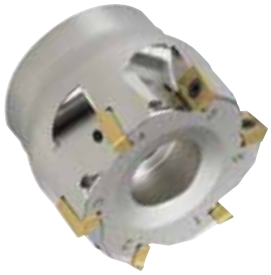
3. Helical cutting for through hole

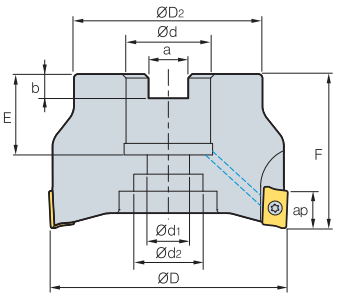


Designation	Tool Dia. ØD(min)	Ramping			Helical cutting for blind hole				Helical cutting for through hole	
		ap	Maximum angle α(°)	Lmin(mm)	Max. desirable hole Dia. ØDHmax(mm)	Max. pitch dmax(mm)	Min. desirable hole Dia. ØDHmin(mm)	Max. pitch dmax(mm)	Min. desirable hole Dia. ØDHmin(mm)	Max. pitch dmax(mm)
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

$$L\,min = \frac{ap}{\tan \alpha^{\circ}} \quad (mm)$$

AMC(M)1000S





AA 90°

- AR : 9°~13°
- RR : -14°~5°

(mm)

Designation			øD	øD2	ød	ød1	ød2	a	b	E	F	ap	kg
AMC(M)	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-MM	APMT-MF																
																			
		Coated										Cermet			Uncoated				
Designation		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	page
APMT	0602PDFR-MA																		E05
	060202PDSR-MM			●	●	●	●	●											
	0602PDSR-MM			●	●	●	●	●	●	●									
	060208PDSR-MM			●	●	●	●	●											
	060212R-MM			●	●	●													

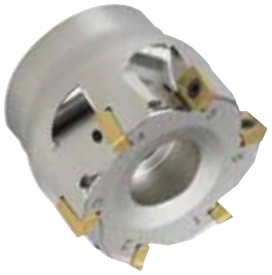
Available Arbors

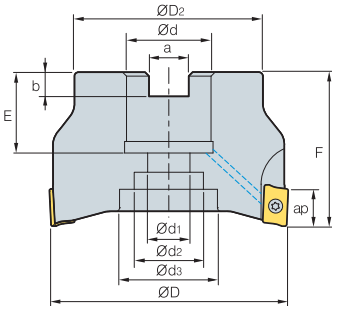
Designation		Ød	NC Arbors
AMC(M)	1032HS 1040HS-16	16	BT□□-FMC16-□□
	1040HS-22 1050HS 1063HS	22	BT□□-FMC22-□□

Parts

Screw	Wrench
	
FTKA01842	TW06S-A

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
AMC(M)	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
	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

Designation		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	0903PDFR-MA																		E05
	0903PDER-ML						●												
	0903PDSR-MM			●	●	●	●	●											
	090308PDSR-MM			●	●	●	●	●											
	090312R-MM					●	●	●											
	090316R-MM				●	●													
	090320R-MM				●	●													

Available Arbors

Designation		Ød	NC Arbors
AMC(M)	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-□□

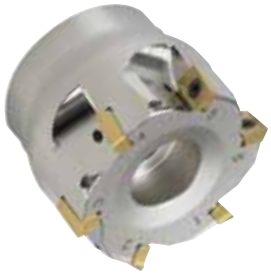
Parts

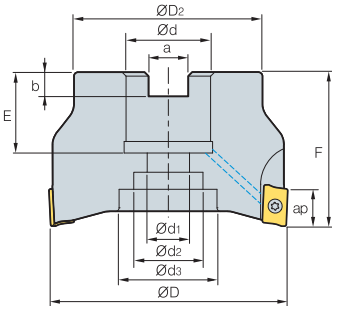
Screw	Wrench
	
FTKA02565S	TW08S

Available Inserts E05 Available Arbors and bolt E290~E292

● : Stock item

AMC(M)2000S





AA 90°

• AR : 9°~13°
• RR : -14°~5°

(mm)

Designation		⌀D	⌀D2	⌀d	⌀d1	⌀d2	⌀d3	a	b	E	F	ap	kg
AMC(M)	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
	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		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	11T3PDFR-MA						●												E05
	11T3PDER-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

Screw

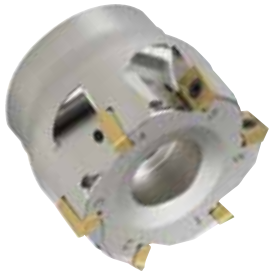
Wrench

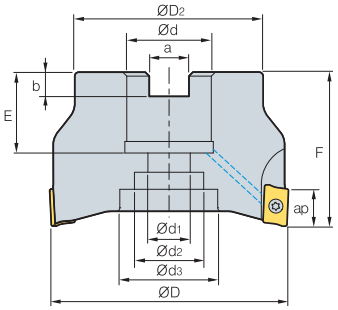
FTKA02565S TW08S

Available Inserts E05 Available Arbors and bolt E290~E292

● : Stock item

AMC(M)3000S





AA 90°

- AR : 14°
- RR : -12°~8°

(mm)

Designation			øD	øD2	ød	ød1	ød2	ød3	a	b	E	F	ap	kg
AMC(M)	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
	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

- ( )Metric Size

Available Inserts

	APMT-MA	APMT-ML	APMT-MM	APMT-MF
				

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	1604PDFR-MA						●												E05
	1604PDER-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-□□

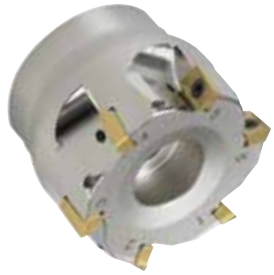
Parts

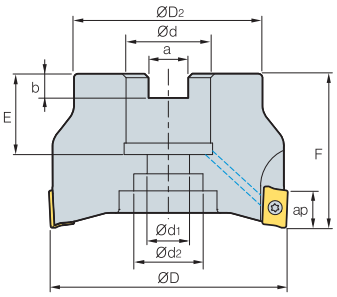
Screw	Wrench
	
FTKA0410	TW15S

Available Inserts E05 Available Arbors and bolt E290~E292

● : Stock item

AMC(M)3000S-K





AA 90°

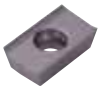
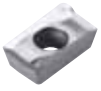
• AR : 14°
• RR : -12°~8°

(mm)

Designation			øD	øD2	ød	ød1	ød2	a	b	E	F	ap	kg
AMC(M)	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
	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

• ( )Metric Size

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
											

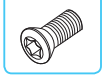
Designation		Coated								Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APFT	1604PDSR-X22				●														E04
	1604PDTR-X22																		
	1604PDR-X28																		
	1604PDSR-X28																		
	1604PDTR-X28																		
APKT	1604PDSR	●			●				●										E04 E05
	1604PDSR-MF	●				●													
	1604PDSR-MM	●●			●●	●●													
	160432R-MM1	●																	
	1604PDFR-MA														●				

Designation		Coated								Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APKT	1604PDFR-MA2																		E04 E05
	160416FR-MA2																		
	160432FR-MA2																		
	1604PDFR-MA3														●●				
	1604PDSR-X22	●																	
	1604PDTR-X22																		
	1604PDR-X23																		
	1604PDTR-X23																		
	1604PDR-X24																		
	1604PDTR-X24																		

Available Arbors

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

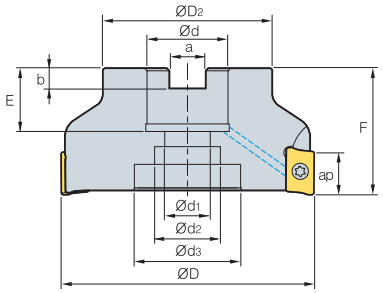
Parts

Screw	Wrench
	
FTKA0410	TW15S

Available Inserts E04,E05 Available Arbors and bolt E290~E292

● : Stock item

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
AMC(M)	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
	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		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	1806PDFR-MA						●												E05
	1806PDER-ML						●												
	1806PDSR-MM	●		●	●	●	●	●	●	●									
	1806PDSR-MF			●		●	●	●											
	180612PDSR-MM	●		●	●	●	●	●											
	180616PDSR-MM			●			●	●											
	180620PDSR-MM																		
	180624PDSR-MM			●	●		●												
	180630R-MM																		
	180632R-MM			●	●		●	●											

Available Arbors

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

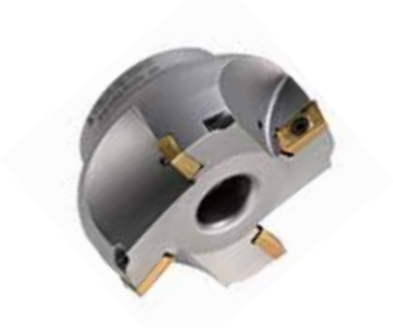
Parts

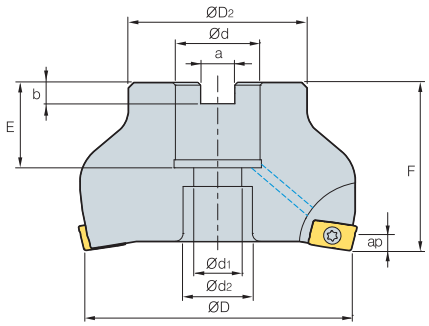
Screw	Wrench
	
FTKA0410	TW15S

Available Inserts E05 Available Arbors and bolt E290~E292

● : Stock item

AMC(M)1000SE/2000SE





AA 75°
• AR : 45°
• RR : 0°

(mm)

Designation		⊚	øD	øD2	ød	ød1	ød2	a	b	E	F	ap	kg
AMC(M)	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(M)	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	Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
1000 type	APMT 060202PDSR-MM			●	●	●	●	●											E05
	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-□□

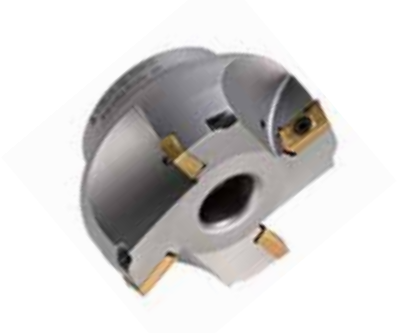
Parts

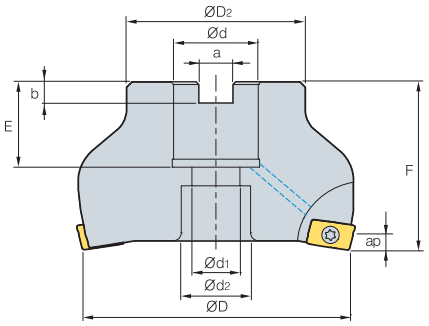
	Screw	Wrench	Wrench
			
1000 type	FTKA01842	-	TW06S-A
2000 type	FTKA02565S	TW08S	-

Available Inserts E05
Available Arbors and bolt E290~E292

● : Stock item

AMC(M)3000SE





AA 75°
• AR : 45°
• RR : 0°

(mm)

Designation			øD	øD2	ød	ød1	ød2	a	b	E	F	ap	kg
AMC(M)	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		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	1604PDSR-MM	●		●	●	●	●	●	●	●									E05
	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

Screw

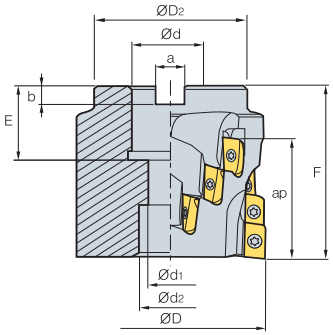
Wrench

FTKA0410 TW08S

Available Inserts E05 Available Arbors and bolt E290~E292

● : Stock item

AMC(M)2000M



AA 90°

• AR : 9°
• RR : -9°~-5°

(mm)

Designation		⊚	øD	øD2	ød	ød1	ød2	a	b	E	F	No. of flute	ap	kg
AMC(M)	2050M	16	50	40	22.225(22)	11	18	8(10.4)	5(6.3)	29(21)	58	4	39	0.7
	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

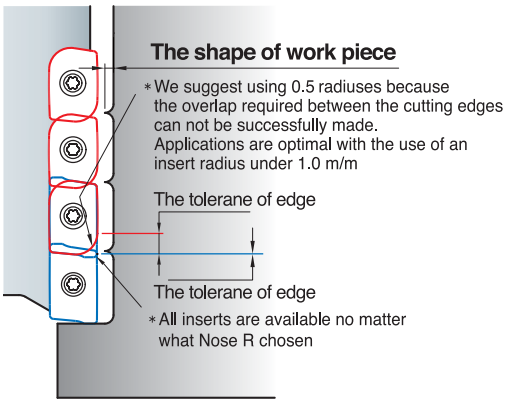
	APMT-MA	APMT-ML	APMT-MM	APMT-MF
				

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	11T3PDFR-MA																		E05
	11T3PDER-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-□□

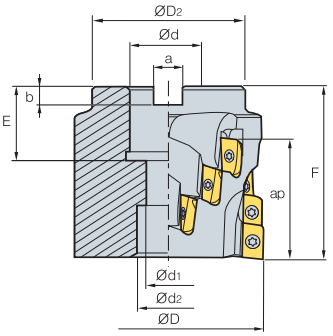
Caution when insert are screwed



Parts

Screw	Wrench
	
FTKA02565S	TW08S

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(M)	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

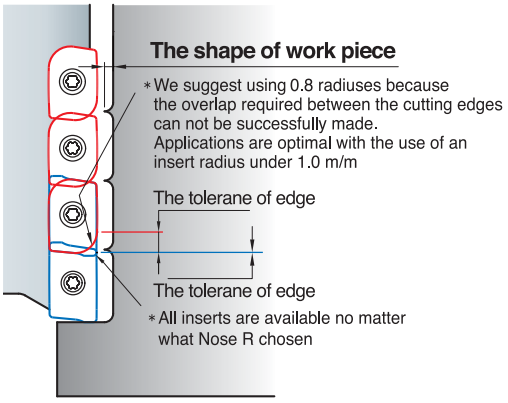
	APMT-MA	APMT-ML	APMT-MM	APMT-MF
				

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	1604PDFR-MA																		E05
	1604PDER-ML						●												
	1604PDSR-MM	●		●	●	●	●	●	●	●									
	1604PDSR-MF	●		●	●	●	●	●											
	160410PDSR-MM	●			●	●	●	●											
	160416PDSR-MM	●		●	●	●	●	●											
	160424R-MM			●	●	●	●	●											
	160430R-MM						●												
	160432R-MM	●		●	●	●	●	●											

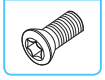
Available Arbors

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



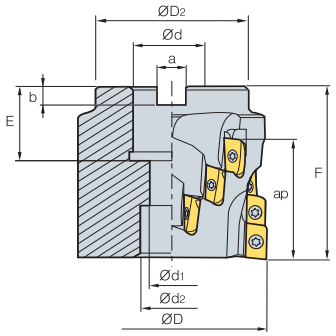
Parts

Screw	Wrench
	
FTKA0410	TW15S

Available Inserts E05 Available Arbors and bolt E290~E292

● : Stock item

AMC(M)4000M



AA 90°

• AR : 9°
• RR : -9°~-5°

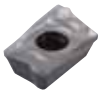
(mm)

Designation		⌀	øD	øD2	ød	ød1	ød2	ød3	a	b	E	F	No. of flute	ap	kg
AMC(M)	4063M	16	63	57	25.4(27)	14	20	28	9.5(12.4)	6(7)	38(38)	85	4	61.1	1.1
	4080M	20	80	67	31.75(32)	14	26	40	12.7(14.4)	8(8)	40(40)	100	4	76.1	2.23
	4100M	30	100	87	38.1(40)	22	32	60	15.9(16.4)	10(9)	40(40)	100	6	76.1	3.59
	4125M	18	125	87	38.1(40)	22	32	52	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

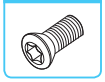
Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	1806PDFR-MA																		E05
	1806PDER-ML						●												
	1806PDSR-MM	●		●	●	●	●	●	●	●									
	1806PDSR-MF			●		●	●	●											
	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-□□

Parts

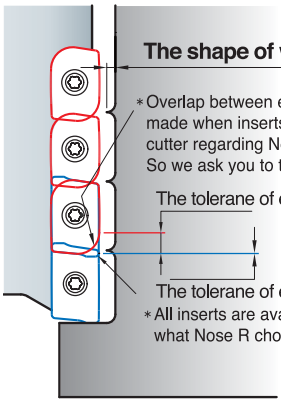
Screw



Wrench

FTKA0410	TW15S

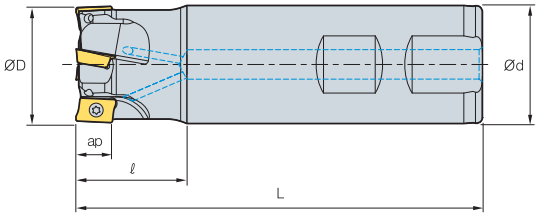
Caution when insert are screwed



Available Inserts E05
Available Arbors and bolt E290~E292

● : Stock item

AMS1000S



AA 90°

- AR : 7.5°~13°
- RR : -17°~-6°

(mm)

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

• ( )Metric Size

Available Inserts

APMT-MA

APMT-MM

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	0602PDFR-MA																		E05
	060202PDSR-MM			●	●	●	●	●											
	0602PDSR-MM			●	●	●	●	●	●	●									
	060208PDSR-MM			●	●	●	●	●											
	060212R-MM			●	●	●		●											
	060216R-MM				●														

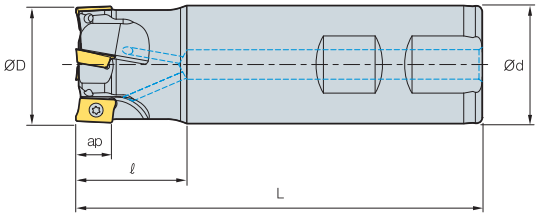
Parts

Screw

Wrench

	FTKA01842	TW06S-A

AMS1500S



AA 90°

- AR : 7.5°~12.5°
- RR : -28°~-14°

(mm)

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

Available Inserts

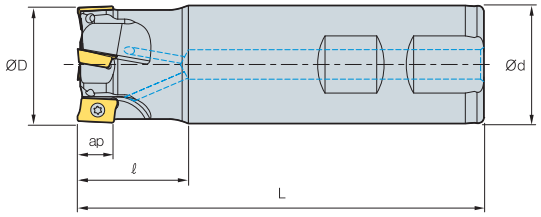
	APMT-MA	APMT-ML	APMT-MM
			

Designation		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	0903PDFR-MA																		E05
	0903PDER-ML						●												
	0903PDSR-MM			●	●	●	●	●											
	090308PDSR-MM			●	●	●	●	●											
	090312R-MM					●	●	●											
	090316R-MM				●	●													
	090320R-MM				●	●													

Parts

Screw	Wrench	Cutter Dia.
		
FTKA02555S FTKA02565S	TW08S	Ø10~Ø14 Ø16~Ø100

AMS1500S



AA 90°

- AR : 7.5°~12.5°
- RR : -28°~-14°

(mm)

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

Available Inserts

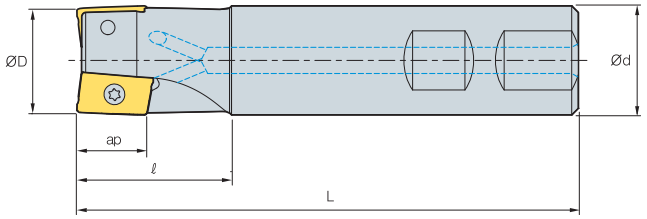
	APMT-MA	APMT-ML	APMT-MM
			

Designation		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	0903PDFR-MA						●												E05
	0903PDER-ML						●												
	0903PDSR-MM			●	●	●	●	●											
	090308PDSR-MM			●	●	●	●	●											
	090312R-MM					●	●	●											
	090316R-MM				●	●													
	090320R-MM				●	●													

Parts

Screw	Wrench
	
FTKA02565S	TW08S

AMS2000S



AA 90°

- AR : 3°~14°
- RR : -25°~-18°

(mm)

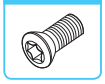
Designation			øD	ød	ℓ	L	ap	kg
AMS	2010HS	1	10	10	20	85	11	0.04
	2010HS-1L16	1	10	16	30	160	11	0.21
	2012HS	1	12	16	25	85	11	0.10
	2012HS-1L16	1	12	16	30	160	11	0.21
	2014HS	1	14	16	25	90	11	0.12
	2014HS-1L16	1	14	16	30	160	11	0.21
	2016HS	2	16	16	25	90	11	0.12
	2016HS-2L16	2	16	16	30	180	11	0.21
	2018HS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

Available Inserts

	APMT-MA	APMT-ML	APMT-MF	APMT-MM
				

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	11T3PDFR-MA																		
	11T3PDER-ML						●												
	11T3PDSR-MM	●		●	●	●	●	●	●	●									
	11T3PDSR-MF	●		●	●	●	●	●											
	11T308PDSR-MM	●		●	●	●	●	●	●										E05
	11T312PDSR-MM	●		●	●	●	●	●	●										E06
	11T316R-MM	●		●	●	●													
	11T318R-MM																		
	11T324R-MM			●	●	●		●											

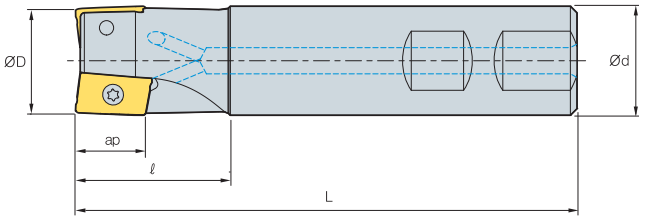
Parts

Screw	Wrench	Cutter Dia.
		
FTKA02555S FTKA02565S	TW08S	Ø10~Ø14 Ø16~Ø100

Available Inserts E05, E06

● : Stock item

AMS3000S



AA 90°

- AR : 3°~14°
- RR : -18°~-10°

(mm)

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

Available Inserts

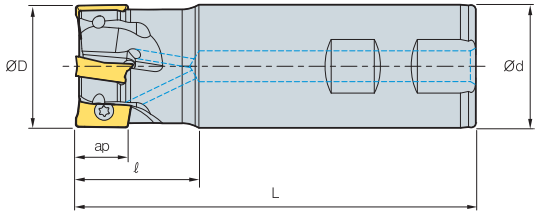
	APMT-MA	APMT-ML	APMT-MF	APMT-MM
				

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	1604PDFR-MA						●												E05
	1604PDER-ML						●												
	1604PDSR-MM	●		●	●	●	●	●	●	●									
	1604PDSR-MF	●		●	●	●	●	●											
	160410PDSR-MM	●				●	●	●											
	160416PDSR-MM	●		●	●	●	●	●											
	160424R-MM			●	●	●	●	●											
	160430R-MM						●												
	160432R-MM	●		●	●	●	●	●											

Parts

Screw	Wrench	Cutter Dia.
		
FTKA0408 FTKA0410	TW15S	Ø25 Ø32~Ø100

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										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APFT	1604PDSR-X22				●														E04
	1604PDTR-X22																		
	1604PDR-X28																		
	1604PDSR-X28																		
	1604PDTR-X28																		
APKT	1604PDSR	●			●				●										E04 E05
	1604PDSR-MF	●				●													
	1604PDSR-MM	●	●		●	●	●	●	●										
	160432R-MM1	●																	
	1604PDFR-MA														●				
	1604PDFR-MA2																		
	160416FR-MA2																		
	160432FR-MA2																		
	1604PDFR-MA3														●	●			
	1604PDSR-X22	●																	
	1604PDTR-X22																		
	1604PDR-X23																		
	1604PDTR-X23																		
	1604PDR-X24																		
	1604PDTR-X24																		

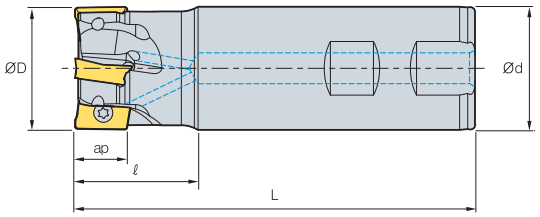
Parts

Screw	Wrench	Cutter Dia.
		
FTKA0408 / FTKA0410	TW15S	Ø25 / Ø32~Ø100

Available Inserts E04, E05

● : Stock item

AMS4000S



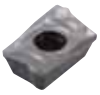
AA 90°

- AR : 7°~13°
- RR : -20°~-6°

(mm)

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

Available Inserts

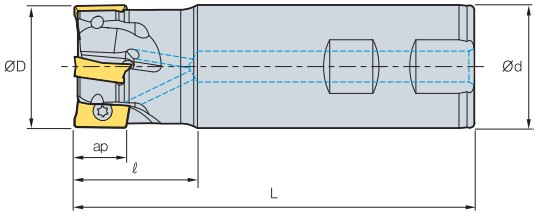
	APMT-MA	APMT-ML	APMT-MM	APMT-MF
				

Designation		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	1806PDFR-MA																		E05
	1806PDER-ML						●												
	1806PDSR-MM	●		●	●	●	●	●	●	●									
	1806PDSR-MF			●		●	●	●											
	180612PDSR-MM	●		●	●	●	●	●											
	180616PDSR-MM			●			●	●											
	180620PDSR-MM																		
	180624PDSR-MM			●	●		●												
	180630R-MM																		
	180632R-MM			●	●		●	●											

Parts

Screw	Wrench	Cutter Dia.
FTKA0408 FTKA0410	TW15S	Ø20~Ø25 Ø32~Ø100

AMS4000S



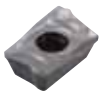
AA 90°

- AR : 7°~13°
- RR : -20°~-6°

(mm)

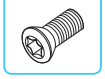
Designation			øD	ød	ℓ	L	ap	kg
AMS	4040HS-3M32	3	40	32	50	200	17	1.20
	4040HS-3L32	3	40	32	50	260	17	1.60
	4040HS-4M32	4	40	32	50	200	17	1.20
	4040HS-4L32	4	40	32	50	260	17	1.60
	4040HS-S32	4	40	32	40	130	17	0.76
	4040HS-S40	4	40	40	40	130	17	1.10
	4040HS-S42	4	40	42	40	130	17	1.20
	4050HS-S32	5	50	32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

Available Inserts

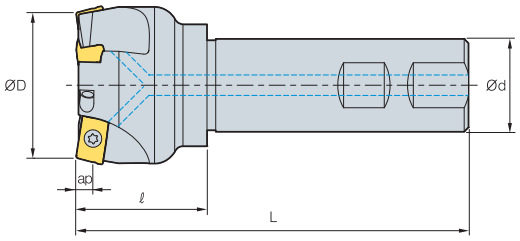
	APMT-MA	APMT-ML	APMT-MM	APMT-MF
				

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	1806PDFR-MA																		E05
	1806PDER-ML						●												
	1806PDSR-MM	●		●	●	●	●	●	●	●									
	1806PDSR-MF			●		●	●	●											
	180612PDSR-MM	●		●	●	●	●	●											
	180616PDSR-MM			●			●	●											
	180620PDSR-MM																		
	180624PDSR-MM			●	●		●												
	180630R-MM																		
	180632R-MM			●	●		●	●											

Parts

Screw	Wrench
	
FTKA0410	TW15S

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

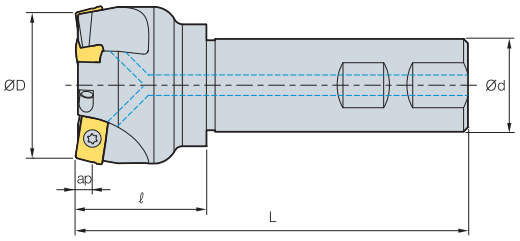
APMT-MM

Type	Designation	Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
1000 type	APMT 060202PDSR-MM			●	●	●	●	●											E05
	0602PDSR-MM			●	●	●	●	●	●	●									
	060208PDSR-MM			●	●	●	●	●											
	060212R-MM			●	●	●													
	060216R-MM				●														
2000 type	APMT 11T3PDSR-MM	●		●	●	●	●	●	●	●									
	11T3PDSR-MF	●		●	●	●	●	●											
	11T308PDSR-MM	●		●	●	●	●	●	●										
	11T312PDSR-MM	●		●	●	●	●	●	●										
	11T316R-MM	●		●	●	●		●											
	11T318R-MM																		
	11T324R-MM			●	●	●		●											
	APXT 11T3PDSR-MR																		
	11T308PDR-MR																		
	11T3PDR-MA														●				
	11T318R-MA																		

Parts

1000 type	FTKA01842	-	TW06S-A
2000 type	FTKA02565S	TW08S	-

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

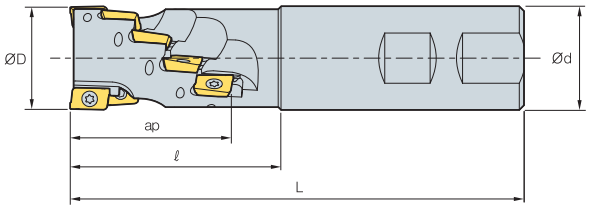
APMT-MM

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	1604PDSR-MM	●		●	●	●	●	●	●	●									E05
	1604PDSR-MF	●		●	●	●	●	●											
	160410PDSR-MM	●				●	●	●											
	160416PDSR-MM	●		●	●	●	●	●											
	160424R-MM			●	●	●	●	●											
	160430R-MM						●												
	160432R-MM	●		●	●	●	●	●											

Parts

Screw	Wrench
FTKA0410	TW15S

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

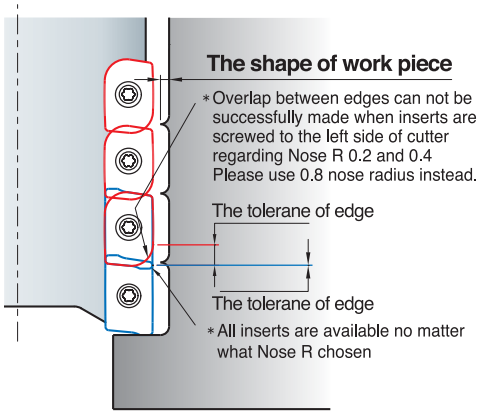
APMT-MA

APMT-ML

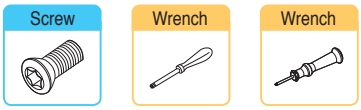
APMT-MM

Type	Designation	Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
1000 type	APMT 0602PDFR-MA																		E05
	060202PDSR-MM			●	●	●	●	●											
	0602PDSR-MM			●	●	●	●	●	●	●									
	060208PDSR-MM			●	●	●	●	●											
	060212R-MM			●	●	●													
	060216R-MM				●														
1500 type	APMT 0903PDFR-MA																		
	0903PDER-ML						●												
	0903PDSR-MM			●	●	●	●	●											
	090308PDSR-MM			●	●	●	●	●											
	090312R-MM					●	●	●											
	090316R-MM				●	●													
	090320R-MM				●	●													

Caution when insert are screwed

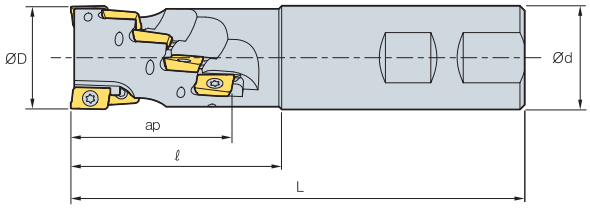


Parts



1000 type	FTKA01842	-	TW06S-A
1500type	FTKA02565S	TW08S	-

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

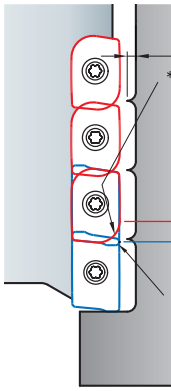
Available Inserts

APMT-MF

APMT-MM

Type	Designation		Coated									Cermet			Uncoated				page
			NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
2000 type	APMT	11T3PDFR-MA																	E05
		11T3PDER-ML						●											
		11T3PDSR-MM	●		●	●	●	●	●	●	●								
		11T3PDSR-MF	●		●	●	●	●	●										
		11T308PDSR-MM	●		●	●	●	●	●	●									
		11T312PDSR-MM	●		●	●	●	●	●	●									
		11T316R-MM	●		●	●	●												E05
		11T318R-MM																	
		11T324R-MM			●	●	●		●										
4000 type	APMT	1806PDFR-MA																	
		1806PDER-ML						●											
		1806PDSR-MM	●		●	●	●	●	●	●	●								
		1806PDSR-MF			●		●	●	●										
		180612PDSR-MM	●		●	●	●	●	●										
		180616PDSR-MM			●			●	●										
		180620PDSR-MM																	
		180624PDSR-MM			●	●		●											
		180630R-MM																	
		180632R-MM			●	●		●	●										

Caution when insert are screwed



The shape of work piece

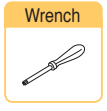
* We suggest using 0.5 & 0.8 radiuses because the overlap required between the cutting edges can not be successfully made. Applications are optimal with the use of an insert radius under 1.0 m/m

The tolerane of edge

The tolerane of edge

* All inserts are available no matter what Nose R chosen

Parts



2000 type	FTKA02565S	TW08S
4000 type	FTKA0410	TW15S

AMS1000MH/1500MH/2000MH/3000MH

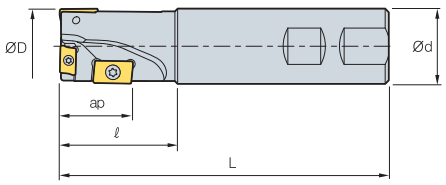


Fig. 1

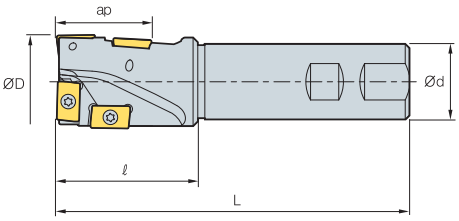


Fig. 2

AA 90°

- AR : 9°~12°
- RR : -12°~-10°

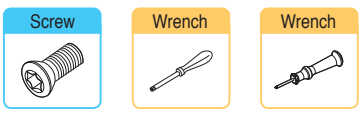
(mm)

Designation			øD	ød	ℓ	L	ap	kg	APMT 0602-	APMT 0903-	APMT 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

Type	Designation	Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
1000 Type	APMT 0602PDFR-MA																		E05
	060202PDSR-MM			●	●	●	●	●											
	0602PDSR-MM			●	●	●	●	●	●	●									
	060208PDSR-MM			●	●	●	●	●											
1500 Type	APMT 0903PDFR-MA																		
	0903PDER-ML						●												
	0903PDSR-MM			●	●	●	●	●											
	090308PDSR-MM			●	●	●	●	●											
2000 Type	APMT 11T3PDFR-MA																		
	11T3PDER-ML						●												
	11T3PDSR-MM	●		●	●	●	●	●	●	●									
	11T3PDSR-MF	●		●	●	●	●	●											
	11T308PDSR-MM	●		●	●	●	●	●	●										
	11T312PDSR-MM	●		●	●	●	●	●	●										
	11T316R-MM	●		●	●	●													
	11T318R-MM																		
	11T324R-MM			●	●	●		●											
3000 Type	APMT 1604PDSR-MM	●		●	●	●	●	●	●	●									
	1604PDSR-MF	●		●	●	●	●	●											
3000-K Type	APKT 1604PDSR-MM	●	●		●	●		●	●	●									E04
	1604PDSR-MF	●				●													

Parts



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

Recommended cutting condition

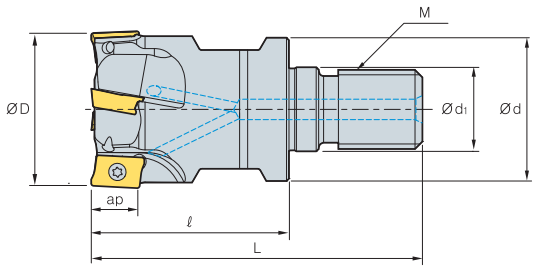
	Drilling	Shouldering	Slotting
vc(m/min)	80~200	80~200	80~200
fz(mm/t)	0.03~0.06	0.05~0.25	0.05~0.20

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

Available Inserts E04, E05, E06

● : Stock item

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		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	0602PDFR-MA																		E05
	060202PDSR-MM			●	●	●	●	●											
	0602PDSR-MM			●	●	●	●	●	●	●									
	060208PDSR-MM			●	●	●	●	●											
	060212R-MM			●	●	●													
	060216R-MM				●														

Available Adoptor

Designation		Available Adoptor
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)

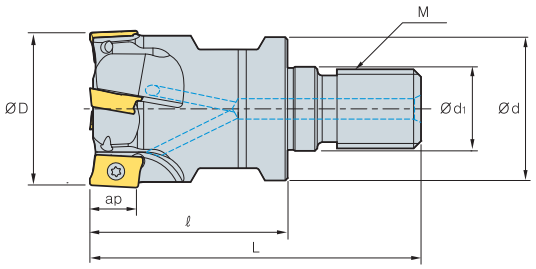
Parts

Screw

Wrench

FTKA01842 TW06S-A

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		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	0903PDFR-MA						●												E05
	0903PDER-ML																		
	0903PDSR-MM			●	●	●	●	●											
	090308PDSR-MM			●	●	●	●	●											
	090312R-MM					●	●	●											
	090316R-MM				●	●													
	090320R-MM				●	●													

Available Adoptor

Designation		Available Adoptor
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)

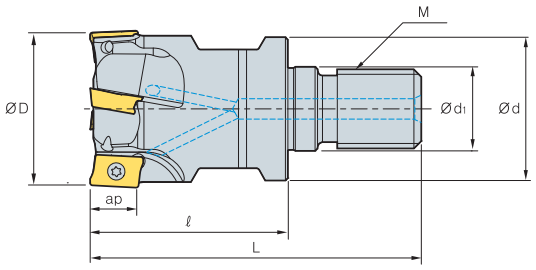
Parts

Screw	Wrench	Cutter Dia.
		
FTKA02555S FTKA02565S	TW08S	Ø10~Ø14 Ø16~Ø100

Available Inserts E05 Available Adoptor E253~E254

● : Stock item

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	APXT-MA
					

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	11T3PDFR-MA																		
	11T3PDER-ML						●												
	11T3PDSR-MM	●		●	●	●	●	●	●	●									
	11T3PDSR-MF	●		●	●	●	●	●											
	11T308PDSR-MM	●		●	●	●	●	●	●										E05
	11T312PDSR-MM	●		●	●	●	●	●	●										E06
	11T316R-MM	●		●	●	●													
	11T318R-MM																		
	11T324R-MM			●	●	●		●											
APXT	11T3PDR-MA														●				

Available Adoptor

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

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

||

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

Parts

Screw	Wrench
	
FTKA02565S	TW08S

Available Inserts E05, E06 Available Adoptor E253~E254

● : Stock item

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

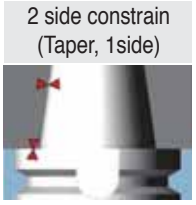
DBT system

(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

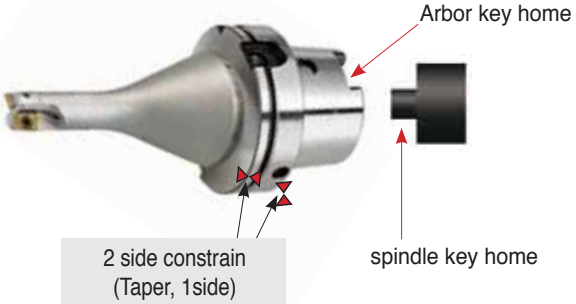
HSK Arbor Feature

- 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

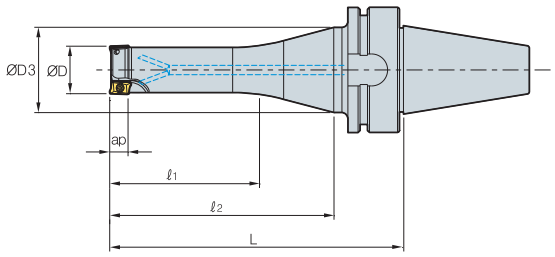
HSK Tolerance comparison

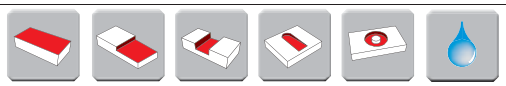
Arbor type	Max. Tolerance	Min. Tolerance	Available facility
HSK-T	0.075	0.035	Multi-Tasking Machine
HSK-A	0.33	0.08 general	MCT

HSK A : HSK T key Tolerance comparison



BT30 AM1000HS / BT40 AM1500HS





AA 90°

- AR : 7.5°~13°
- RR : -28°~-7°

(mm)

	Designation		øD	øD3	ℓ1	ℓ2	L	ap
BT30	AM1010HS-2	2	10	43	35	83	112	5.6
	AM1012HS-2	2	12	43	35	83	112	5.6
	AM1012HS-3	3	12	43	35	83	112	5.6
	AM1016HS-3	3	16	43	35	83	112	5.6
	AM1016HS-4	4	16	43	35	83	112	5.6
	AM1020HS-4	4	20	43	45	98	127	5.6
	AM1020HS-5	5	20	43	45	98	127	5.6
BT40	AM15016HS-2	2	16	43	45	83	117	9
	AM15016HS-2L	2	16	43	35	118	152	9
	AM15020HS-2	2	20	43	60	98	132	9
	AM15020HS-3	3	20	43	60	98	132	9
	AM15020HS-2L	2	20	43	50	118	152	9
	AM15025HS-3	3	25	43	75	113	147	9
	AM15025HS-4	4	25	43	75	113	147	9
	AM15025HS-3L	3	25	43	65	133	167	9
	AM15032HS-4	4	32	43	80	113	147	9
	AM15032HS-5	5	32	43	80	113	147	9
	AM15032HS-4L	4	32	43	70	133	167	9
	AM15040HS-5	5	40	47	60	98	132	9
	AM15040HS-6	6	40	47	60	98	132	9
	AM15040HS-5L	5	40	47	50	118	152	9

Available Inserts

APMT-MA

APMT-ML

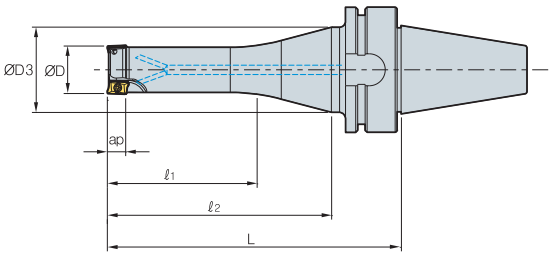
APMT-MM

Type	Designation	Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
1000 type	APMT 0602PDFR-MA																		E05
	060202PDSR-MM			●	●	●	●	●											
	0602PDSR-MM			●	●	●	●	●	●	●									
	060208PDSR-MM			●	●	●	●	●											
	060212R-MM			●	●	●													
	060216R-MM				●														
1500 type	APMT 0903PDFR-MA																		
	0903PDER-ML						●												
	0903PDSR-MM			●	●	●	●	●											
	090308PDSR-MM			●	●	●	●	●											
	090312R-MM					●	●	●											
	090316R-MM				●	●													
	090320R-MM				●	●													

Parts

	Screw	Wrench	Wrench	Cutter Dia.
1000 type	FTKA01842	-	TW06S-A	Ø10~Ø63
1500 type	FTKA02565S	TW08S	-	Ø16~Ø100

BT40 AM2000HS



AA 90°

- AR : 7°~10°
- RR : -20°~-7°

(mm)

	Designation		øD	ØD3	ℓ1	ℓ2	L	ap
BT40	AM2016HS-2	2	16	43	45	83	117	11
	AM2016HS-2L	2	16	43	35	118	152	11
	AM2020HS-2	2	20	43	60	98	132	11
	AM2020HS-2L	2	20	43	50	118	152	11
	AM2025HS-3	3	25	43	75	113	147	11
	AM2025HS-3L	3	25	43	65	113	147	11
	AM2032HS-4	4	32	43	80	113	147	11
	AM2032HS-4L	4	32	43	70	133	167	11
	AM2040HS-5	5	40	47	60	98	132	11
	AM2040HS-5L	5	40	47	50	118	152	11
	AM2050HS-6	6	50	47	60	98	132	11
	AM2050HS-6L	6	50	47	50	118	152	11

Available Inserts

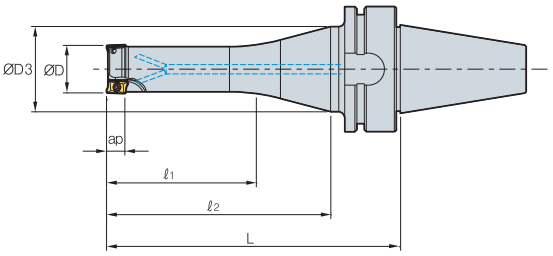
	APMT-MA	APMT-ML	APMT-MM	APMT-MF
				

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	11T3PDFR-MA																		E05
	11T3PDER-ML						●												
	11T3PDSR-MM	●		●	●	●	●	●	●	●									
	11T3PDSR-MF	●		●	●	●	●	●											
	11T308PDSR-MM	●		●	●	●	●	●	●										
	11T312PDSR-MM	●		●	●	●	●	●	●										
	11T316R-MM	●		●	●	●													
	11T318R-MM																		
	11T324R-MM			●	●	●		●											

Parts

Screw	Wrench
	
FTKA02565S	TW08S

BT50 AM3000HS / AM4000HS



AA 90°

- AR : 7°~10°
- RR : -20°~-7°

(mm)

	Designation		øD	øD3	ℓ1	ℓ2	L	ap
BT50	AM3025HS-2	2	25	43	65	113	158	16
	AM3025HS-2L	2	25	43	55	123	168	16
	AM3032HS-3	3	32	43	70	113	158	16
	AM3032HS-3L	3	32	43	60	123	168	16
	AM3040HS-4	4	40	47	50	98	143	16
	AM3040HS-4L	4	40	47	40	108	153	16
	AM3050HS-5	5	50	47	50	98	143	16
	AM3050HS-5L	5	50	47	40	108	153	16
BT50	AM4020HS-1	1	20	43	50	98	143	17
	AM4025HS-2	2	25	43	65	113	158	17
	AM4032HS-3	3	32	43	70	113	158	17
	AM4032HS-3L	3	32	43	60	123	168	17
	AM4040HS-4	4	40	47	50	98	143	17
	AM4040HS-4L	4	40	47	40	108	153	17
	AM4050HS-5	5	50	47	50	98	143	17
	AM4050HS-5L	5	50	47	40	108	153	17

Available Inserts

APMT-MA

APMT-ML

APMT-MM

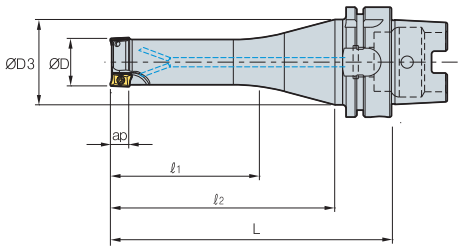
APMT-MF

Type	Designation	Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
3000 type	APMT 1604PDFR-MA																		E05
	1604PDER-ML						●												
	1604PDSR-MM	●		●	●	●	●	●	●	●									
	1604PDSR-MF	●		●	●	●	●	●											
	160410PDSR-MM	●			●		●												
	160416PDSR-MM	●		●	●	●	●	●											
	160424R-MM			●	●	●	●	●											
	160430R-MM						●												
	160432R-MM	●		●	●	●	●	●											
4000 type	APMT 1806PDSR-MM	●		●	●	●	●	●	●	●									
	1806PDSR-MF			●		●	●	●											
	180612PDSR-MM			●	●	●	●	●											
	180616PDSR-MM	●		●			●	●											
	180620PDSR-MM																		
	180624PDSR-MM			●	●		●												
	180630R-MM																		
	180632R-MM			●	●		●	●											

Parts

	Screw	Wrench	Cutter Dia.
3000 type	FTKA0408 / FTKA0410	TW15S	Ø25 / Ø32~Ø100
4000 type	FTKA0408 / FTKA0410	TW15S	Ø20~Ø25 / Ø32~Ø200

HSK63A AM1000HS/1500HS



- AR : 7.5°~13°
- RR : -28°~-7°

(mm)

Designation		⊚	øD	øD3	ℓ1	ℓ2	L	ap
HSK63A	AM1010HS-2	2	10	43	35	83	116	5.6
	AM1012HS-2	2	12	43	35	83	116	5.6
	AM1012HS-3	3	12	43	35	83	116	5.6
	AM1016HS-3	3	16	43	35	83	116	5.6
	AM1016HS-4	4	16	43	35	83	116	5.6
	AM1020HS-4	4	20	43	45	98	131	5.6
	AM1020HS-5	5	20	43	45	98	131	5.6
HSK63A	AM15016HS-2	2	16	43	45	83	116	9
	AM15016HS-2L	2	16	43	35	118	151	9
	AM15020HS-2	2	20	43	60	98	131	9
	AM15020HS-3	3	20	43	60	98	131	9
	AM15020HS-2L	2	20	43	50	118	151	9
	AM15025HS-3	3	25	43	75	113	146	9
	AM15025HS-4	4	25	43	75	113	146	9
	AM15025HS-3L	3	25	43	65	133	166	9
	AM15032HS-4	4	32	43	80	113	146	9
	AM15032HS-5	5	32	43	80	113	146	9
	AM15032HS-4L	4	32	43	70	133	166	9
	AM15040HS-5	5	40	47	60	98	131	9
	AM15040HS-6	6	40	47	60	98	131	9
	AM15040HS-5L	5	40	47	50	118	151	9

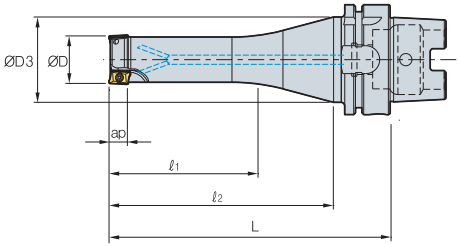
Available Inserts

Type	Designation	Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
1000 type	APMT 0602PDFR-MA																		E05
	060202PDSR-MM			●	●	●	●	●											
	0602PDSR-MM			●	●	●	●	●	●	●									
	060208PDSR-MM			●	●	●	●	●											
	060212R-MM			●	●	●													
	060216R-MM				●														
1500 type	APMT 0903PDFR-MA																		
	0903PDER-ML						●												
	0903PDSR-MM			●	●	●	●	●											
	090308PDSR-MM			●	●	●	●	●											
	090312R-MM					●	●	●											
	090316R-MM				●	●													
	090320R-MM				●	●													

Parts

	Screw	Wrench	Wrench	Cutter Dia.
1000 type	FTKA01842	-	TW06S-A	Ø10~Ø63
1500 type	FTKA02565S	TW08S	-	Ø16~Ø100

HSK63A AM2000HS



AA 90°

- AR : 7°~10°
- RR : -20°~-7°

(mm)

Designation		⊙	øD	ØD3	ℓ1	ℓ2	L	ap
HSK63A	AM2016HS-2	2	16	43	45	83	116	11
	AM2016HS-2L	2	16	43	35	118	151	11
	AM2020HS-2	2	20	43	60	98	131	11
	AM2020HS-2L	2	20	43	50	118	151	11
	AM2025HS-3	3	25	43	75	113	146	11
	AM2025HS-3L	3	25	43	65	113	146	11
	AM2032HS-4	4	32	43	80	113	146	11
	AM2032HS-4L	4	32	43	70	133	166	11
	AM2040HS-5	5	40	47	60	98	131	11
	AM2040HS-5L	5	40	47	50	118	151	11
	AM2050HS-6	6	50	47	60	98	131	11
	AM2050HS-6L	6	50	47	50	118	151	11

Available Inserts

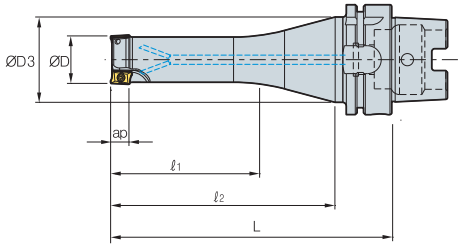
	APMT-MA	APMT-ML	APMT-MM	APMT-MF
				

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	11T3PDFR-MA						●												E05
	11T3PDER-ML																		
	11T3PDSR-MM	●		●	●	●	●	●	●	●									
	11T3PDSR-MF	●		●	●	●	●	●											
	11T308PDSR-MM	●		●	●	●	●	●	●										
	11T312PDSR-MM	●		●	●	●	●	●	●										
	11T316R-MM	●		●	●	●													
	11T318R-MM																		
	11T324R-MM			●	●	●		●											

Parts

Screw	Wrench
	
FTKA02565S	TW08S

HSK63A AM3000HS / 4000HS



- AR : 7°~10°
- RR : -20°~-7°

(mm)

Designation		⊙	øD	øD3	ℓ1	ℓ2	L	ap
HSK63A	AM3025HS-2	2	25	43	65	113	146	16
	AM3025HS-2L	2	25	43	55	123	156	16
	AM3032HS-3	3	32	43	70	113	146	16
	AM3032HS-3L	3	32	43	60	123	156	16
	AM3040HS-4	4	40	47	50	98	131	16
	AM3040HS-4L	4	40	47	40	108	141	16
	AM3050HS-5	5	50	47	50	98	131	16
	AM3050HS-5L	5	50	47	40	108	141	16
HSK63A	AM4020HS-1	1	20	43	50	98	131	17
	AM4025HS-2	2	25	43	65	113	146	17
	AM4032HS-3	3	32	43	70	113	146	17
	AM4032HS-3L	3	32	43	60	123	156	17
	AM4040HS-4	4	40	47	50	98	131	17
	AM4040HS-4L	4	40	47	40	108	141	17
	AM4050HS-5	5	50	47	50	98	131	17
	AM4050HS-5L	5	50	47	40	108	141	17

Available Inserts

APMT-MA

APMT-ML

APMT-MM

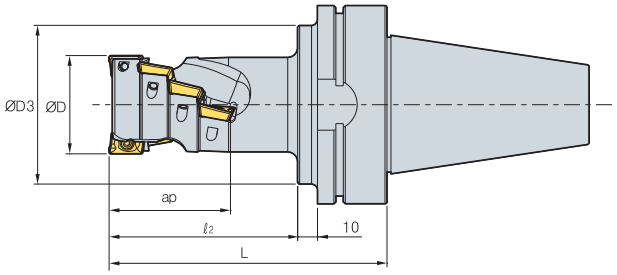
APMT-MF

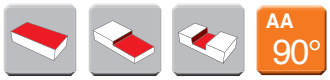
Type	Designation		Coated									Cermet			Uncoated				page
			NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
3000 type	APMT	1604PDFR-MA						●												E05
		1604PDER-ML						●												
		1604PDSR-MM	●		●	●	●	●	●	●	●									
		1604PDSR-MF	●		●	●	●	●	●											
		160410PDSR-MM	●				●	●	●											
		160416PDSR-MM	●		●	●	●	●	●											
		160424R-MM			●	●	●	●	●											
		160430R-MM						●												
		160432R-MM	●		●	●	●	●	●											
4000 type	APMT	1806PDFR-MA																		
		1806PDER-ML						●												
		1806PDSR-MM	●		●	●	●	●	●		●									
		1806PDSR-MF			●		●	●	●											
		1806PDSR-ML			●	●			●											
		180612PDSR-MM	●		●	●	●	●	●											
		180616PDSR-MM			●			●	●											
		180620PDSR-MM																		
		180624PDSR-MM			●	●		●												
		180630R-MM																		
		180632R-MM			●	●		●	●											

Parts

	Screw	Wrench	Cutter Dia.
3000 type	FTKA0408 FTKA0410	TW15S	Ø25 Ø32~Ø100
4000 type	FTKA0408 FTKA0410	TW15S	Ø20~Ø25 Ø32~Ø200

BT30/40 AM1000/1500





AA 90°

- AR : -12.5°~13°
- RR : -17°~-6°

(mm)

	Designation		øD	øD3	ℓ2	L	No. of flute	ap
BT30	AM1016015-2	6	16	80	30	62	2	15.5
	AM1020020-3	12	20	80	32	64	3	20.5
	AM1025025-4	20	25	80	39	71	4	25.5
BT40	AM1016015-2	6	16	80	30	67	2	15.5
	AM1020020-3	12	20	80	32	69	3	20.5
	AM1025025-4	20	25	80	39	76	4	25.5
BT30	AM15020026-1	3	20	80	42	74	1	26.5
	AM15025035-2	8	25	80	50	62	2	35
	AM15032044-2	10	32	80	60	92	2	44
BT40	AM15020026-1	3	20	80	42	79	1	26.5
	AM15025035-2	8	25	80	50	87	2	35
	AM15032044-2	10	32	80	60	97	2	44

Available Inserts

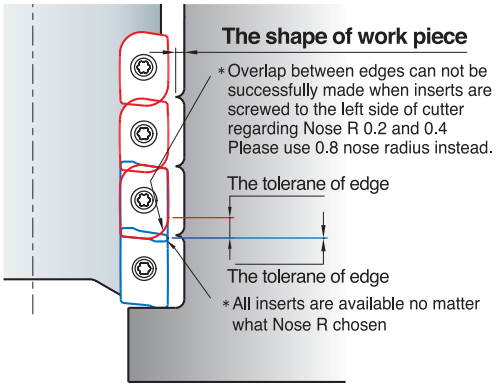
APMT-MA

APMT-ML

APMT-MM

Type	Designation	Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
1000 type	APMT 0602PDFR-MA																		E05
	060202PDSR-MM			●	●	●	●	●											
	0602PDSR-MM			●	●	●	●	●	●	●									
	060208PDSR-MM			●	●	●	●	●											
	060212R-MM			●	●	●													
	060216R-MM				●														
1500 type	APMT 0903PDFR-MA																		
	0903PDER-ML						●												
	0903PDSR-MM			●	●	●	●	●											
	090308PDSR-MM			●	●	●	●	●											
	090312R-MM					●	●	●											
	090316R-MM				●	●													
	090320R-MM				●	●													

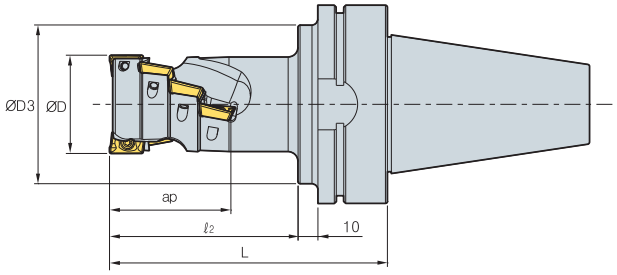
Caution when insert are screwed

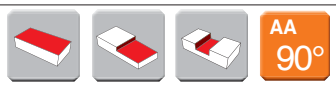


Parts

	Screw	Wrench	Wrench	Cutter Dia.
1000 type	FTKA01842	-	TW06S-A	Ø10~Ø63
1500 type	FTKA02565S	TW08S	-	Ø16~Ø100

BT30/40 AM2000





AA 90°

- AR : -9°
- RR : -13°~-8°

(mm)

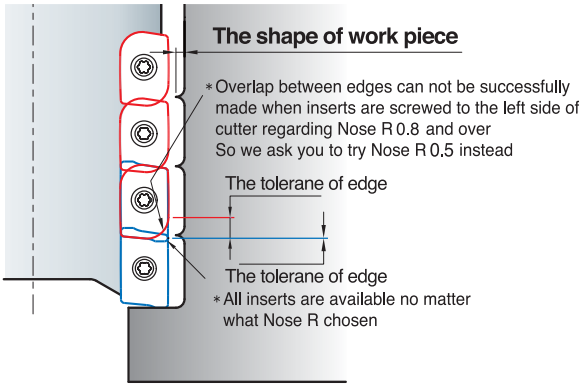
	Designation	⊚	øD	øD3	ℓ2	L	No. of flute	ap
BT30	AM2020029-1	3	20	80	45	77	1	29.4
	AM2025038-2	8	25	80	55	87	2	38.9
	AM2032048-2	10	32	80	65	97	2	48.5
	AM2040058-2	14	40	80	75	107	2	58
	AM2050039-4	16	50	80	58	90	4	39
	AM2063039-4	16	63	80	58	90	4	39
	AM2080039-5	20	80	80	63	95	5	39
	AM2100039-6	24	100	80	63	95	6	39
BT40	AM2020029-1	3	20	80	45	82	1	29.4
	AM2025038-2	8	25	80	55	92	2	38.9
	AM2032048-2	10	32	80	65	102	2	48.5
	AM2040058-2	14	40	80	75	112	2	58
	AM2050039-4	16	50	80	58	95	4	39
	AM2063039-4	16	63	80	58	95	4	39
	AM2080039-5	20	80	80	63	100	5	39
	AM2100039-6	24	100	80	63	100	6	39

Available Inserts

APMT-MA	APMT-ML	APMT-MM	APMT-MF
			

	Designation	Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	11T3PDFR-MA																		E05
	11T3PDER-ML						●												
	11T3PDSR-MM	●		●	●	●	●	●	●	●									
	11T3PDSR-MF	●		●	●	●	●	●											
	11T308PDSR-MM	●		●	●	●	●	●	●										
	11T312PDSR-MM	●		●	●	●	●	●	●										
	11T316R-MM	●		●	●	●													
	11T318R-MM																		
	11T324R-MM			●	●	●		●											

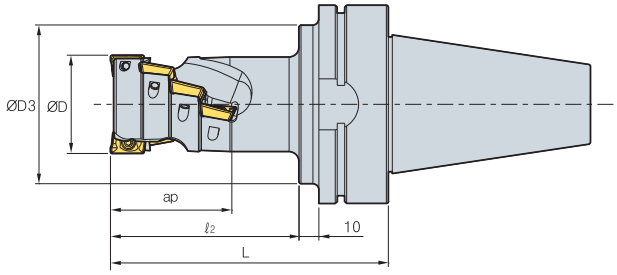
Caution when insert are screwed



Parts

Screw	Wrench
	
FTKA02565S	TW08S

BT50 AM3000/4000



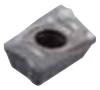
AA 90°

- AR : 13°~15°
- RR : -11°~-4°

(mm)

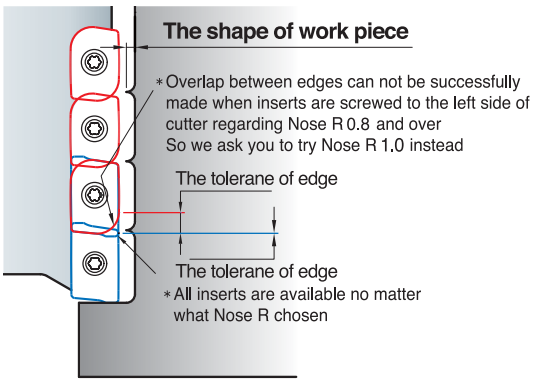
	Designation	⊙	øD	øD3	ℓ2	L	No. of flute	ap
BT50	AM3050043-2	6	50	80	72	120	2	43
	AM3063057-4	16	63	80	86	134	4	57
	AM3080071-4	20	80	80	100	148	4	71
	AM3100071-6	30	100	80	100	148	6	71
BT50	AM4040046-2	6	40	80	75	123	2	46
	AM4050061-2	8	50	80	95	143	2	61
	AM4063061-4	16	63	80	95	143	4	61
	AM4080076-4	20	80	80	105	153	4	76
	AM4100076-6	30	100	80	105	153	6	76

Available Inserts

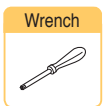



Type	Designation	APMT-MA	APMT-ML	APMT-MM	APMT-MF	Coated									Cermet			Uncoated				page
						NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
3000 type	APMT 1604PDFR-MA																					E05
	1604PDER-ML										●											
	1604PDSR-MM					●		●	●	●	●	●	●	●								
	1604PDSR-MF					●		●	●	●	●	●										
	160410PDSR-MM					●			●	●	●	●										
	160416PDSR-MM					●		●	●	●	●	●										
	160424R-MM							●	●	●	●	●										
	160430R-MM										●											
	160432R-MM					●		●	●	●	●	●										
4000 type	APMT 1806PDFR-MA																					
	1806PDER-ML																					
	1806PDSR-MM					●		●	●	●		●		●								
	1806PDSR-MF							●		●		●										
	180612PDSR-MM					●		●	●	●		●										
	180616PDSR-MM							●														
	180620PDSR-MM																					
	180624PDSR-MM							●	●													
	180630R-MM																					
	180632R-MM							●	●			●										

Caution when insert are screwed

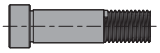


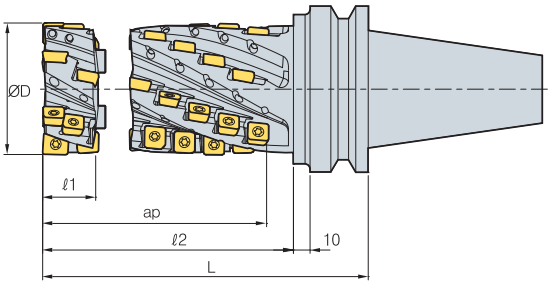
Parts



3000 type	FTKA0410	TW15S
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

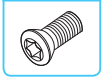

ZPMT-MM

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SPMT 120508-MMN																		E21
ZPMT 1505PPSR-MMN																		E24

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		

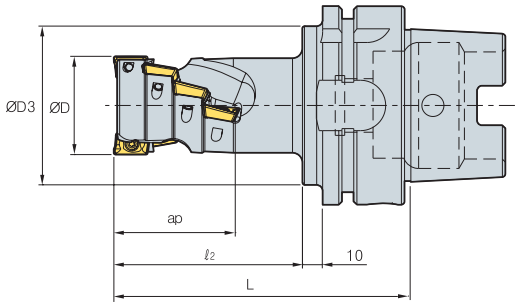
Parts

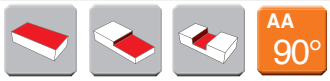
Screw	Wrench
	
ETNA0511	TW20

Available Inserts E21, E24

● : Stock item

HSK63A AM1000/1500





• AR : -12.5°~13°
• RR : -17°~-6°

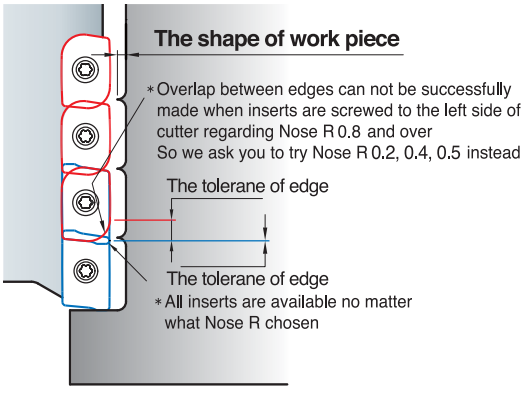
(mm)

Designation		⊚	øD	øD3	ℓ2	L	No. of flute	ap
HSK63A	AM1016015-2	6	16	80	30	66	2	15.5
	AM1020020-3	12	20	80	32	68	3	20.5
	AM1025025-4	20	25	80	39	75	4	25.5
HSK63A	AM15020026-1	3	20	80	42	78	1	26.5
	AM15025035-2	8	25	80	50	86	2	35
	AM15032044-2	10	32	80	60	96	2	44

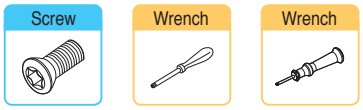
Available Inserts

Type	Designation	Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
1000 type	APMT 0602PDFR-MA																		E05
	060202PDSR-MM			●	●	●	●	●											
	0602PDSR-MM			●	●	●	●	●	●	●									
	060208PDSR-MM			●	●	●	●	●											
	060212R-MM			●	●	●													
	060216R-MM				●														
1500 type	APMT 0903PDFR-MA																		
	0903PDER-ML						●												
	0903PDSR-MM			●	●	●	●	●											
	090308PDSR-MM			●	●	●	●	●											
	090312R-MM					●	●	●											
	090316R-MM				●	●													
	090320R-MM				●	●													

Caution when insert are screwed



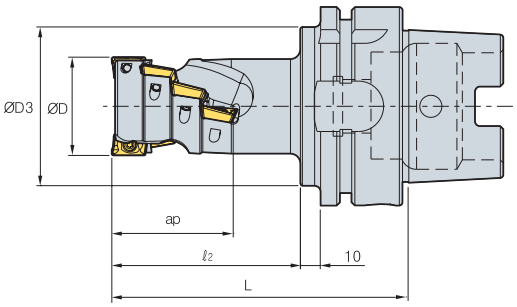
Parts

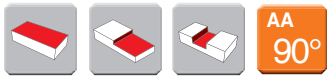


1000 type	FTKA01842	-	TW06S-A
1500 type	FTKA02565S	TW08S	-

● : Stock item

HSK63A AM2000





• AR : -12.5°~13°
• RR : -17°~-6°

(mm)

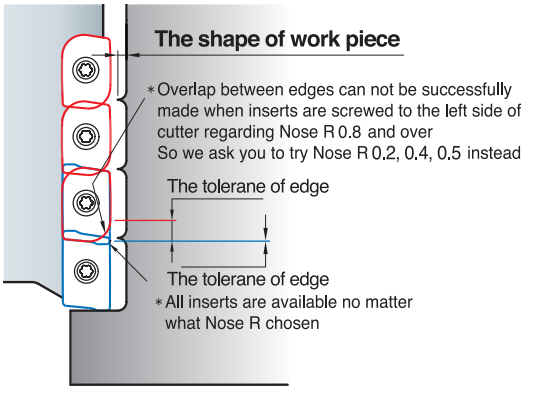
Designation		⊚	øD	øD3	ℓ2	L	No. of flute	ap
HSK63A	AM2020029-1	3	20	80	45	81	1	29.4
	AM2025038-2	8	25	80	55	91	2	38.9
	AM2032048-2	10	32	80	65	101	2	48.5
	AM2040058-2	14	40	80	75	111	2	58
	AM2050039-4	16	50	80	58	94	4	39
	AM2063039-4	16	63	80	58	94	4	39
	AM2080039-5	20	80	80	63	99	5	39
	AM2100039-6	24	100	80	63	99	6	39

Available Inserts

	APMT-MA	APMT-ML	APMT-MM	APMT-MF
				

Designation		Coated								Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	11T3PDFR-MA																		E05
	11T3PDER-ML						●												
	11T3PDSR-MM	●		●	●	●	●	●	●	●									
	11T3PDSR-MF	●		●	●	●	●	●											
	11T308PDSR-MM	●		●	●	●	●	●	●										
	11T312PDSR-MM	●		●	●	●	●	●	●										
	11T316R-MM	●		●	●	●													
	11T318R-MM																		
	11T324R-MM			●	●	●		●											

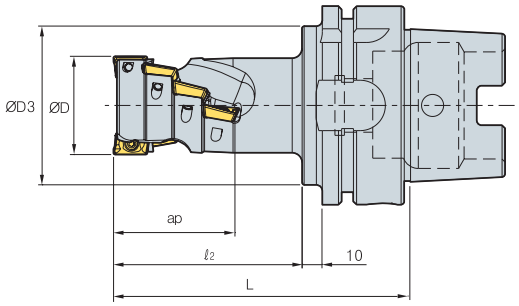
Caution when insert are screwed



Parts

FTKA02565S	TW08S

HSK100A AM3000



AA 90°

- AR : -13°~15°
- RR : -11°~-4°

(mm)

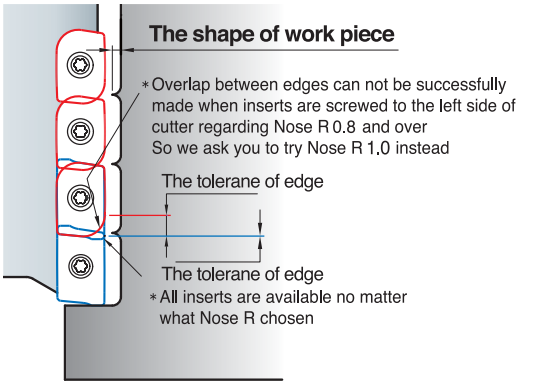
Designation		⊚	øD	øD3	ℓ2	L	No. of flute	ap
HSK100A	AM3050043-2	6	50	80	72	111	2	43
	AM3063057-4	16	63	80	86	125	4	57
	AM3080071-4	20	80	80	100	139	4	71
	AM3100071-6	30	100	80	100	139	6	71

Available Inserts

	APMT-MA	APMT-ML	APMT-MM	APMT-MF
				

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	1604PDFR-MA																		E05
	1604PDER-ML						●												
	1604PDSR-MM	●		●	●	●	●	●	●	●									
	1604PDSR-MF	●		●	●	●	●	●											
	160410PDSR-MM	●				●	●	●											
	160416PDSR-MM	●		●	●	●	●	●											
	160424R-MM			●	●	●	●	●											
	160430R-MM						●												
	160432R-MM	●		●	●	●	●	●											

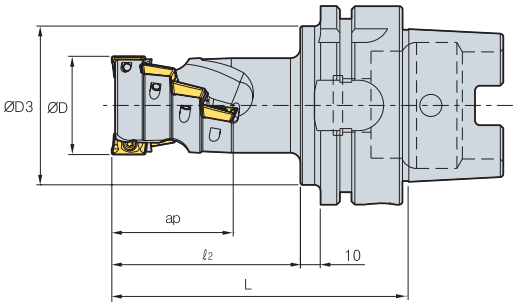
Caution when insert are screwed

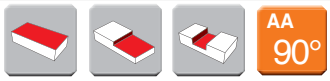


Parts

Screw	Wrench
	
FTKA0410	TW15S

HSK100A AM4000



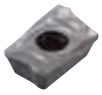


• AR : -13°~15°
• RR : -11°~-4°

(mm)

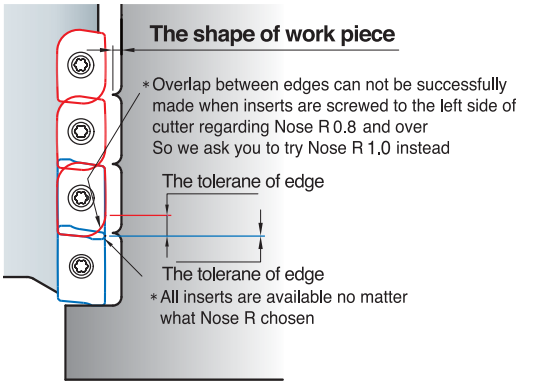
Designation		⊙	ØD	ØD3	ℓ2	L	No. of flute	ap
HSK100A	AM4040046-2	6	40	80	75	114	2	46
	AM4050061-2	8	50	80	95	134	2	61
	AM4063061-4	16	63	80	90	129	4	61
	AM4080076-4	20	80	80	105	144	4	76
	AM4100076-6	30	100	80	105	144	6	76

Available Inserts

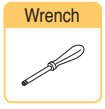
	APMT-MA	APMT-ML	APMT-MM	APMT-MF
				

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
APMT	1806PDFR-MA																		E05
	1806PDER-ML						●												
	1806PDSR-MM	●		●	●	●	●	●	●	●									
	1806PDSR-MF			●		●	●	●											
	180612PDSR-MM	●		●	●	●	●	●											
	180616PDSR-MM			●			●												
	180620PDSR-MM																		
	180624PDSR-MM			●	●		●												
	180630R-MM																		
	180632R-MM			●	●		●	●											

Caution when insert are screwed

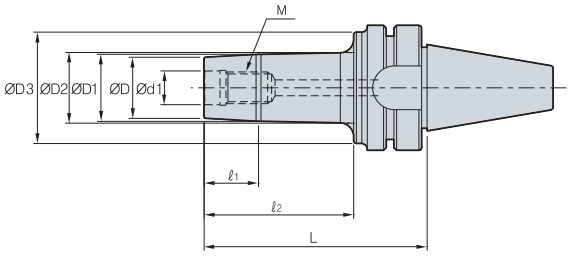


Parts



	FTKA0410	TW15S

BT30/BT40/BT50

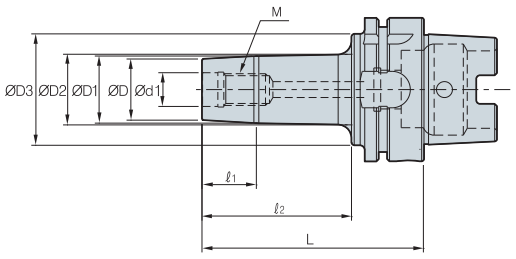


(mm)

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 : E32

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 : E32

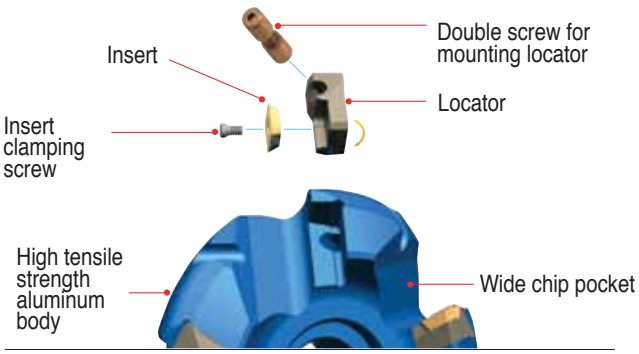
Rigid body employs high tensile aluminum

Future Mill

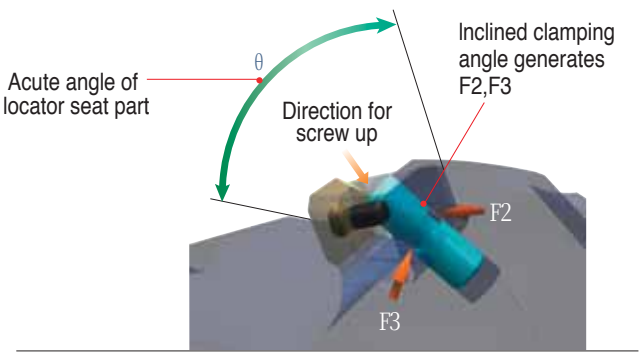
- Light aluminum body(50% of steel body) can be used for high speed cutting, tapping center, and on low power machines
- Easy handling
- It can be used for aluminum alloys, medium cutting of steel, and cast iron
- Rigid body employs high tensile aluminum
- Locators for excellent durability
- Various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

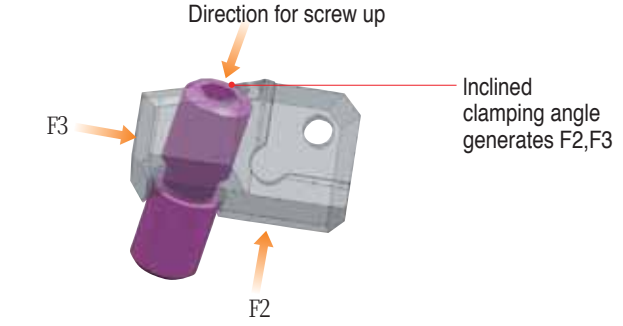
Cutter

- ▶ 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

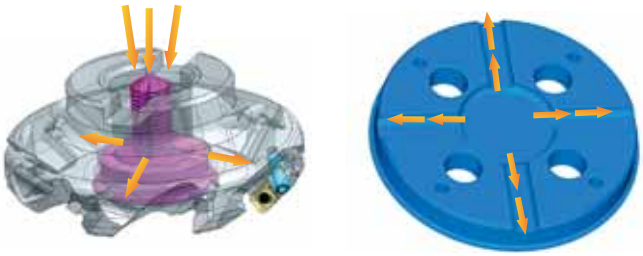




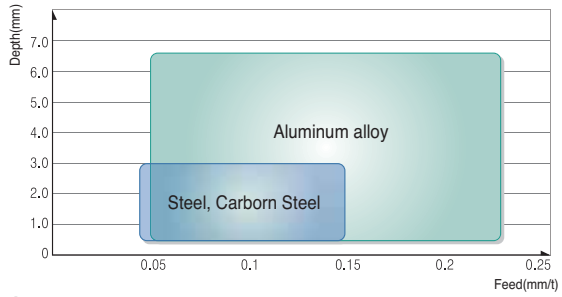
Through coolant system

- ▶ 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

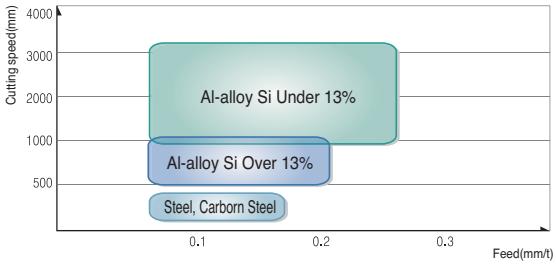
• Bolt : Ø63 ~ Ø160	• Cover : Over Ø200



Application range as per workpiece



Cutting speed



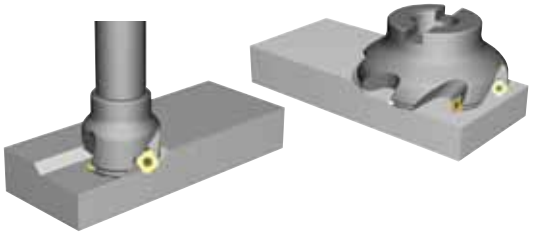
Max. available revolution

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

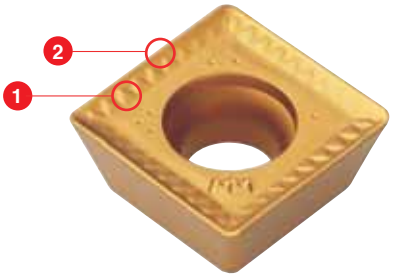
Type	Chip breaker	Cutting edge	Features of chip breaker
Light cutting	Non C/B		Superior surface roughness at finishing due to ground type cermet insert
	MF		Superior cutting quality for light and difficult-to-cut material machining through the low cutting load of chip breaker
General cutting	MM		Suitable 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

ISO	C/B / Grade	MF		MM		MR		MA	
		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	200 ~ 300	0.05 ~ 0.20	150 ~ 300	0.10 ~ 0.30	150 ~ 250	0.10 ~ 0.30		
	NCM325	200 ~ 300	0.05 ~ 0.20	150 ~ 300	0.10 ~ 0.30	150 ~ 250	0.10 ~ 0.30	-	-
	PC3500	200 ~ 300	0.05 ~ 0.20	150 ~ 300	0.10 ~ 0.30	100 ~ 250	0.10 ~ 0.30	-	-
M	PC9530	100 ~ 180	0.05 ~ 0.15	120 ~ 180	0.10 ~ 0.30	-	-	-	-
	NCM335	120 ~ 200	0.05 ~ 0.15	120 ~ 200	0.10 ~ 0.30	-	-	-	-
K	PC5300	150 ~ 250	0.05 ~ 0.20	150 ~ 250	0.10 ~ 0.30	-	-	-	-
Aluminum	H01	-	-	-	-	-	-	350 ~ 1,000	0.10 ~ 0.35

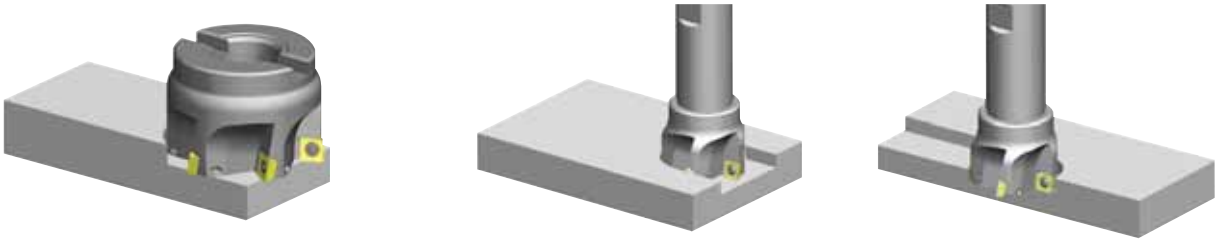
Future Mill(FMP)

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 ef ficiency 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

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

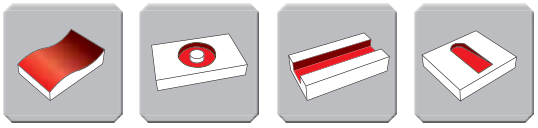
Workpiece	Feed (mm/t)	Cutting Speed vc(m/min)							
		CVD Coated		PVD Coated					Carbide
		NCM325	NCM335	PC3535	PC3545	PC6510	PC8520	PC9530	H01
SM□□C	~0.3	100~250	100~220	100~250	100~220	-	100~250	100~250	-
SCM									
STD	~0.25	100~220	100~200	100~220	100~200	-	100~220	100~220	-
KP									
NAK	~0.2	100~220	100~180	100~200	100~180	-	100~200	100~200	-
STS	~0.2	-	-	-	80~200	-	80~200	80~200	-
GC/GCD	~0.25	-	-	-	-	100~200	-	-	-
Non-ferrous Aluminum	~0.4	-	-	-	-	-	-	-	400~1,000

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

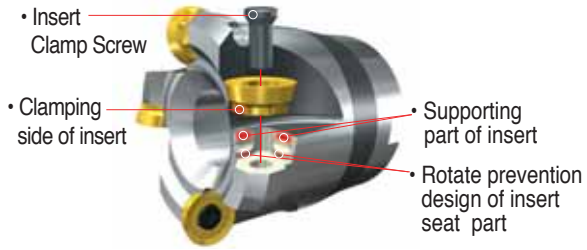
FMR Insert cutting edge shape

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

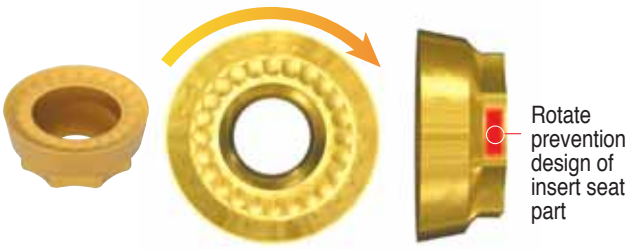
Chip breakers

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

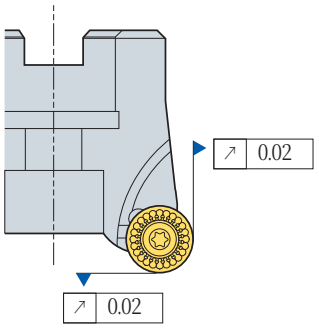
Clamping system



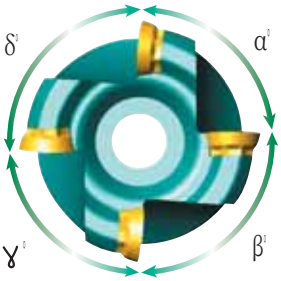
FMR□ 3000 type	FMR□ 5000 type
FMR□ 4000 type	FMR□ 6000 type



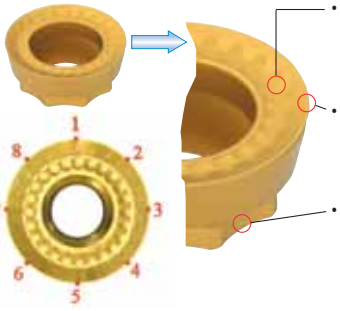
RDKT10T3M0-□□	RDKT1605M0-MM
RDKT1204M0-□□	RDKT2006M0-MM



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



4-8 cutting edge available per insert

- 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

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=130, fz=0.2, ap=1.5, 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
P	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
P	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
P	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
P	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.

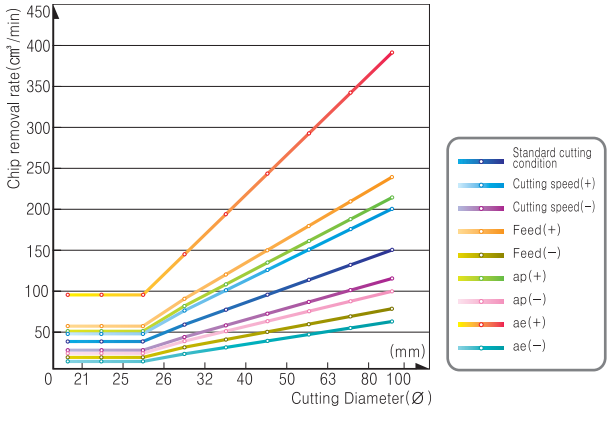
• RDKT12□□

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
P	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
P	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
P	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
P	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	General structure steel	200HB≤	PC3500	100~250	≤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
P	General carbon steel	30HRC≤	PC5300	100~220	≤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
P	High carbon steel,Alloy steel	30~40HRC	PC3545	100~200	≤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
P	High carbon steel,Alloy steel	40~50HRC	PC3545	90~150	≤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
P	Alloy steel	50HRC≥	PC3545	90~150	≤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
M	Stainless steel	270HB≤	PC5300	50~200	≤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
K	Cast iron, Ductile cast iron	Tensile strength 350Mpa≤	PC5300	150~250	≤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

• Pocketing

	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	General structure steel	200HB≤	PC3500	100~250	≤1.0	≤0.3	≤1.2	≤0.3	≤1.5	≤0.3	≤1.7	≤0.3	≤2.0	≤0.4	≤2.4	≤0.5	≤3.0	≤0.6	≤4.0	≤0.7
P	General carbon steel	30HRC≤	PC5300	100~220	≤0.7	≤0.3	≤1.2	≤0.3	≤1.5	≤0.3	≤1.7	≤0.3	≤2.0	≤0.4	≤2.4	≤0.5	≤3.0	≤0.6	≤4.0	≤0.7
P	High carbon steel,Alloy steel	30~40HRC	PC3545	100~200	≤0.7	≤0.1	≤0.9	≤0.1	≤1.2	≤0.1	≤1.5	≤0.1	≤1.7	≤0.2	≤2.0	≤0.3	≤2.7	≤0.4	≤3.7	≤0.5
P	High carbon steel,Alloy steel	40~50HRC	PC3545	90~150	≤0.7	≤0.1	≤0.9	≤0.1	≤1.2	≤0.1	≤1.5	≤0.1	≤1.7	≤0.2	≤2.0	≤0.3	≤2.7	≤0.4	≤3.7	≤0.5
P	Alloy steel	50HRC≥	PC3545	90~150	≤0.7	≤0.1	≤0.9	≤0.1	≤1.2	≤0.1	≤1.5	≤0.1	≤1.7	≤0.2	≤2.0	≤0.3	≤2.7	≤0.4	≤3.7	≤0.5
M	Stainless steel	270HB≤	PC5300	50~200	≤0.7	≤0.1	≤0.9	≤0.1	≤1.2	≤0.1	≤1.5	≤0.1	≤1.7	≤0.2	≤2.0	≤0.3	≤2.7	≤0.4	≤3.7	≤0.5
K	Cast iron, Ductile cast iron	Tensile strength 350Mpa≤	PC5300	150~250	≤1.0	≤0.3	≤1.2	≤0.3	≤1.5	≤0.3	≤1.7	≤0.3	≤2.0	≤0.4	≤2.4	≤0.5	≤3.0	≤0.6	≤4.0	≤0.7

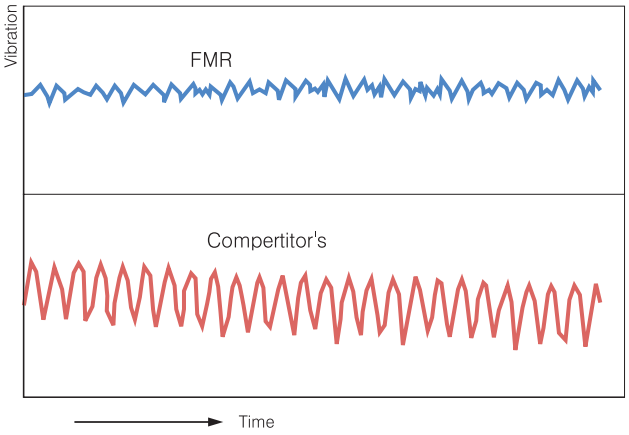
• Plunging

	Workpiece	Hardness	Grades	Cutting speed (m/min)	FMR1000		FMR1500		FMR2000		FMR2500		FMR3000		FMR4000		FMR5000		FMR6000	
					ae (mm)	fz (mm/t)	ae (mm)	fz (mm/t)	ae (mm)	fz (mm/t)	ae (mm)	fz (mm/t)	ae (mm)	fz (mm/t)	ae (mm)	fz (mm/t)	ae (mm)	fz (mm/t)	ae (mm)	fz (mm/t)
P	General structure steel	200HB≤	PC3500	100~250	≤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
P	General carbon steel	30HRC≤	PC5300	100~220	≤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
P	High carbon steel,Alloy steel	30~40HRC	PC3545	100~200	≤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
P	High carbon steel,Alloy steel	40~50HRC	PC3545	90~150	≤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
P	Alloy steel	50HRC≥	PC3545	90~150	≤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
M	Stainless steel	270HB≤	PC5300	50~200	≤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
K	Cast iron, Ductile cast iron	Tensile strength 350Mpa≤	PC5300	150~250	≤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

• 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	General structure steel	200HB≤	PC3500	100~250	≤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
P	General carbon steel	30HRC≤	PC5300	100~220	≤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
P	High carbon steel,Alloy steel	30~40HRC	PC3545	100~200	≤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
P	High carbon steel,Alloy steel	40~50HRC	PC3545	90~150	≤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
P	Alloy steel	50HRC≥	PC3545	90~150	≤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
M	Stainless steel	270HB≤	PC5300	50~200	≤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
K	Cast iron, Ductile cast iron	Tensile strength 350Mpa≤	PC5300	150~250	≤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

FMR Vibration test

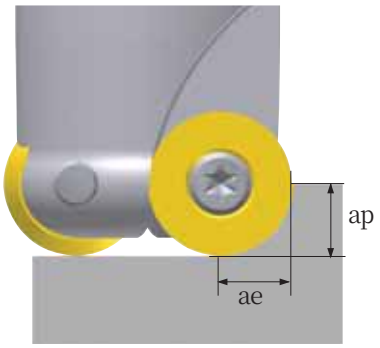


Machining example

- **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)**
$fz = \frac{vf}{n \times z}$ (mm/t)	$vf = fz \times n \times z$ (mm/min)
Chip removal rate	**Required machine power**
$Q = \frac{ap \times ae \times vf}{1000}$ (cm^3/min)	$Pkw = \frac{Q \times kc}{60 \times 102 \times \eta}$ (kW) $Php = \frac{Pkw}{0.75}$ (hp)

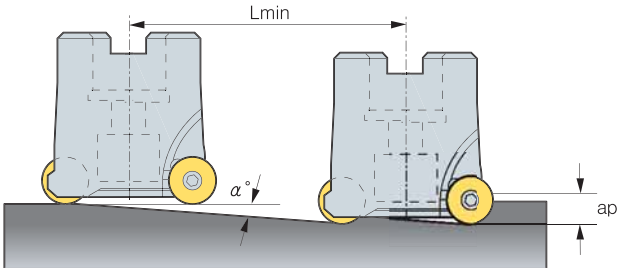


vc = Cutting speed(m/min)	**H** = Horsepower requirement(Hp)
n = Revolution per a minute(min^{-1})	**Q** = Chip removal amount(cm3/min)
D = Cutting diameter(mm)	**ap** = Depth of cut(mm)
vf = Feed per a minute(mm/min)	**ae** = Width of cut(mm)
fz = Feed per tooth(mm/t)	**Kc** = Specific cutting resistance(MPa)
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

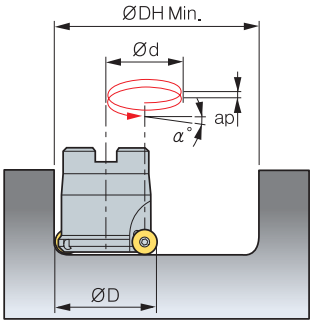


$$L_{min} = \frac{ap}{\tan \alpha^{\circ}} \ (mm)$$

※ 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=1mm	ap=2mm	ap=2.5mm	ap=3mm	ap=3.5mm	ap=4mm	ap=5mm	ap=6mm	ap=8mm	ap=10mm
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

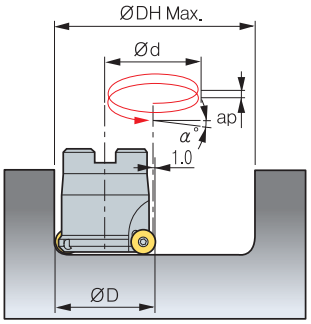
Helical cutting technical data - ØDH Min



- 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

Section	Insert	Tool Dia.	ØDH Min	Ød	Ramping angle (α°) ap 1	2	2.5	3	3.5	4	5	6	8	
FMR 1000	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	-	-	-	-	-	-	-
FMR 1500	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	-	-	-	-	-	-
FMR 2000	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	-	-	-	-	-
FMR 2500	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	-	-	-	-
FMR 3000	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	-	-	-
FMR 4000	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	-	-
FMR 5000	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	-
FMR 6000	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

Section	Insert	Tool Dia.	ØDH Max	Ød	Ramping angle (α°) ap 1	2	2.5	3	3.5	4	5	6	8	
FMR 1000	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	-	-	-	-	-	-	-
FMR 1500	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	-	-	-	-	-	-
FMR 2000	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	-	-	-	-	-
FMR 2500	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	-	-	-	-
FMR 3000	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	-	-	-
FMR 4000	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	-	-
FMR 5000	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	-
FMR 6000	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

FMAC(M)3000

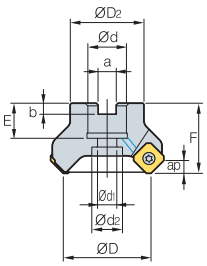


Fig. 1

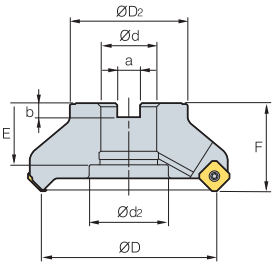


Fig. 2

AA 45°

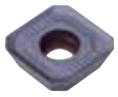
- AR : 21°
- RR : -17°~-12°

(mm)

Designation		⌀	øD	øD2	Ød	a	b	E	F	Ød1	Ød2	ap	kg	Fig.
FMAC(M)	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
	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		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
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

Screw

Insert Wrench

FTKA0307	TW09S

FMAC(M)4000

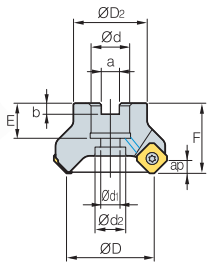


Fig. 1

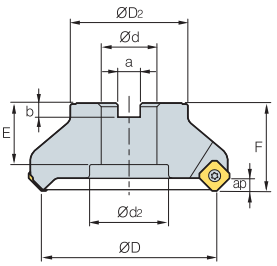


Fig. 2

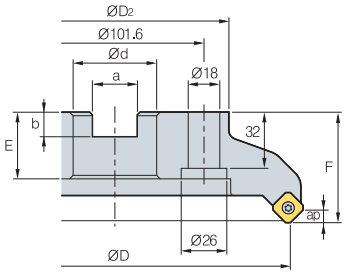


Fig. 3

AA 45°

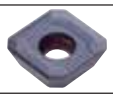
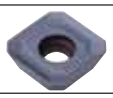
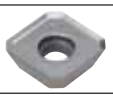
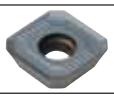
- AR : 21°
- RR : -17°~-12°

(mm)

Designation			ØD	ØD2	Ød	a	b	E	F	Ød1	Ød2	ap	kg	Fig.
FMAC(M)	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
	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	18	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

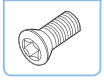
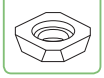
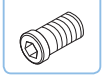
SEET-MF	SEET-MM	SEET-MA	SEXT-MF
			
SEXT-MM	**SEXT-MR**	**SEEW**	**SEEW-W**
			

Designation		Coated								Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
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

Screw	Shim	Shim Screw	Insert Wrench	Shim Screw
				
FTGA03512	SS42SAF	SHXN0509F	TW15S	HW35L

Available Inserts E15, E16
Available Arbors and bolt E290~E292

● : Stock item

FMAC(M)3000-A (Aluminum body)

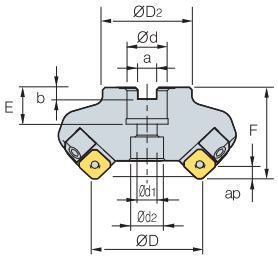


Fig. 1

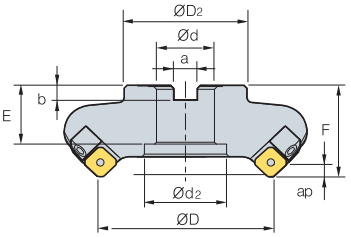


Fig. 2

AA 45°

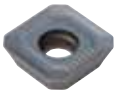
- AR : 21°
- RR : -16°~-12°

(mm)

Designation		⊙	øD	øD2	ød	a	b	E	F	ød1	ød2	ap	kg	Fig.
FMAC(M)	3063R-A	3	63	49	22	10.4	6.3	20	40	11	18	4	0.5	1
	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		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
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

Screw	Insert Wrench	Locator Wrench	Locator	Locator Screw
				
FTKA0307	TW09S	HW30L	LFMA3R-A	DHA620

FMAC(M)4000-A (Aluminum body)

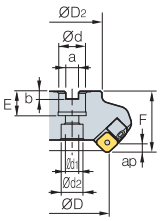


Fig. 1

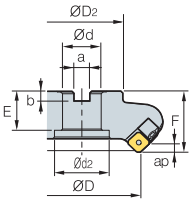


Fig. 2

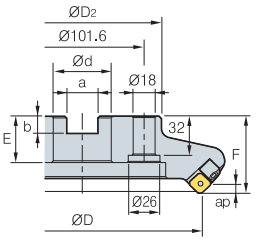


Fig. 3

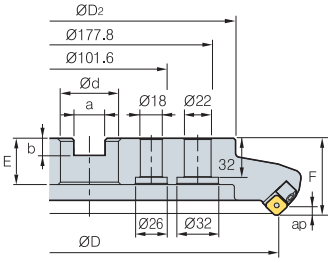


Fig. 4

AA 45°

- AR : 21°
- RR : -16°~-12°

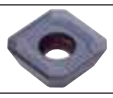
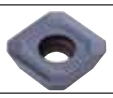
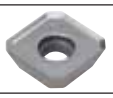
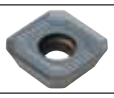
(mm)

Designation		⊚	øD	øD2	ød	a	b	E	F	ød1	ød2	ap	kg	Fig.
FMAC(M)	4063R-A	3	63	49	22	10.4	6.3	20	50	11	18	6.5	0.6	1
	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
	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

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

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
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-□□
	4100R-□	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

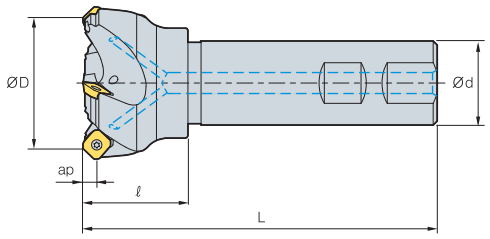
Screw	Insert Wrench	Locator Wrench	Locator	Locator Screw
				
FTGA03512	TW15S	HW40L	LFMA4R-A	DHA0830

Available Inserts E15, E16

Available Arbors and bolt E290~E292

● : Stock item

FMAS3000



AA 45°

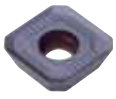
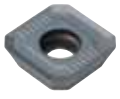
- AR : 23°
- RR : -17°~-13°

(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

• ( )Metric Size

Available Inserts

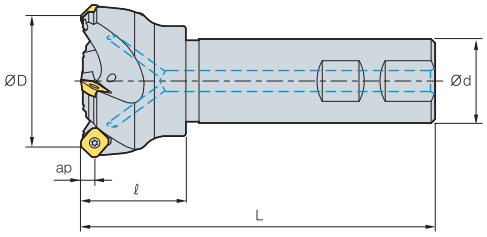
SEET-MF	SEET-MM	SEET-MA	SEXT-MF	SEXT-MM	SEXT-MR	SEEW	SEEW-W
							

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5345	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SEET	0903AGFN-MA														●				E15 E16
	0903AGSN-MF	●						●											
	0903AGSN-MM	●				●													
SEXT	0903AGSN-MF					●	●												
	0903AGSN-MM				●	●	●		●	●									
	0903AGSN-MR																		
SEEW	0903AGTN													●					

Parts

Screw	Insert Wrench
	
FTKA0307	TW09S

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

• ( )Metric Size

Available Inserts

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

Designation		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5445	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
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

Screw	Shim	Shim Screw	Insert Wrench	Shim Screw
				
FTGA03512	SS42SAF	SHXN0509F	TW15S	HW35L

Available Inserts E15, E16

● : Stock item

FMPC(M)3000

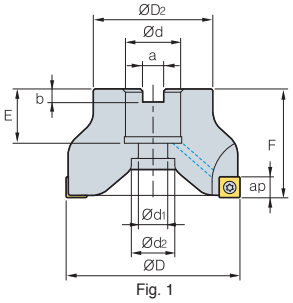


Fig. 1

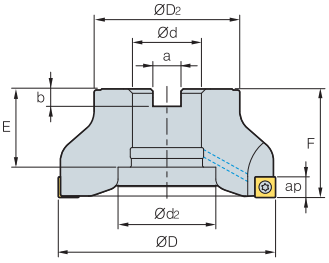
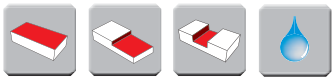


Fig. 2



AA 90°

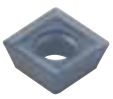
- AR : 10°
- RR : -9°~-8°

(mm)

Designation		⌀	øD	øD2	ød	a	b	E	F	ød1	ød2	ap	kg	Fig.
FMPC(M)	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
	3080HS	7	80	55	25.4(27)	9.5(12.4)	6(7)	25(22)	50	14	20	7	1.0	1
	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		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SDET	09M402R-MA										●				●				E13 E14 E15
	09M405R-MF																		
	09M405R-MM																		
SDXT	09M405R-MF	●	●			●	●		●	●									
	09M405L-MF																		
	09M405R-MM	●	●		●	●	●		●	●									
	09M405L-MM																		
	09M405R-MA														●				

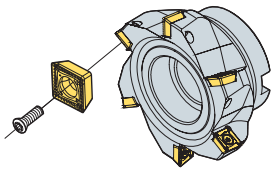
Available Arbors

Designation		⌀d	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

Screw	Wrench
	
FTGA03508	TW15S

Assembling



Available Inserts E13, E14, E15

Available Arbors and bolt E290~E292

● : Stock item

FMPC(M)4000

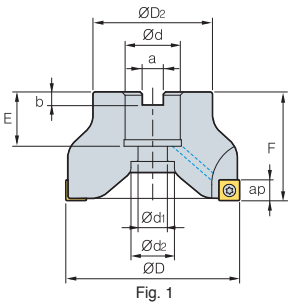


Fig. 1

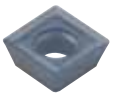
• AR : 10°
• RR : -9°~-8°

(mm)

Designation		⊙	øD	øD2	ød	a	b	E	F	ød1	ød2	ap	kg	Fig.
FMPC(M)	4063HS	5	63	49	22	10.4	6.3	20(20)	50(50)	11	18	11	0.4	1
	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		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SDET	130504R-MA														●				E13 E14 E15
	130508R-MF																		
	130508R-MM																		
SDXT	130508R-MF	●	●			●	●		●	●									
	130508R-MM	●	●		●	●	●	●	●	●									
	130538-MM																		
	130508R-MA														●				

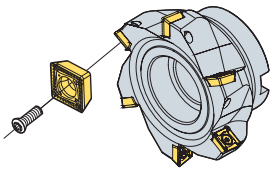
Available Arbors

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

Screw	Wrench
	
FTNC04511	TW20S

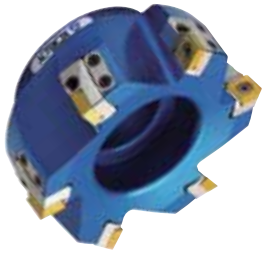
Assembling



Available Inserts E13, E14, E15
Available Arbors and bolt E290~E292

● : Stock item

FMPC(M)3000-A (Aluminum Body)



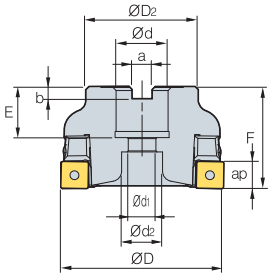


Fig. 1

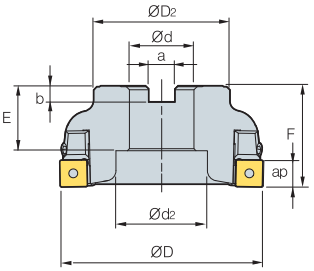


Fig. 2

AA 90°

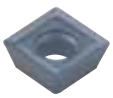
- AR : 10°
- RR : -9°~-7.3°

(mm)

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

• ( )Metric Size

Available Inserts

SDET-MF	SDET-MM	SDET-MA	SDXT-MF	SDXT-MM	SDXT-MA
					

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SDET	09M402R-MA										●				●				E13 E14 E15
	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-□□

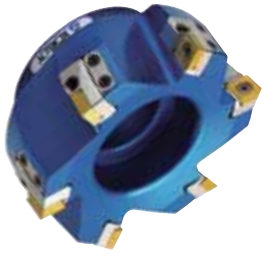
Parts

3063S-A	FTGA03508	TW15S	HW30L	LFMP3R-A	DHA0624	CFMP3R14R1-A	PXMA0306
3080S-A ~ 3100S-A	FTGA03508	TW15S	HW30L	LFMP3R-A	DHA0624	CFMP3R-A	PXMA0306

Available Inserts E13, E14, E15
Available Arbors and bolt E290~E292

● : Stock item

FMPC(M)4000-A (Aluminum Body)



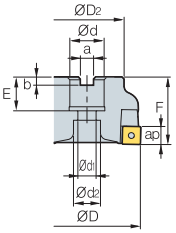


Fig. 1

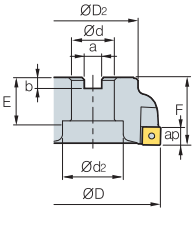


Fig. 2

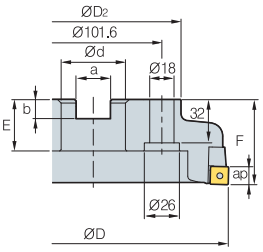


Fig. 3

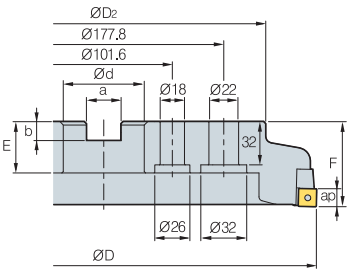


Fig. 4

AA 90°

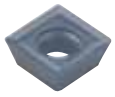
- AR : 10°
- RR : -9°~-7.3°

(mm)

Designation		⚙	ØD	ØD2	Ød	a	b	E	F	Ød1	Ød2	ap	kg	Fig.
FMPC(M)	4063S-A	3	63	49	22	10.4	6.3	20	50	11	18	6.5	0.6	1
	4080S-A	4	80	67	25.4(27)	9.5(12.4)	6(7)	25(22)	50	13.5	20	6.5	0.8	1
	4100S-A	5	100	67	31.75(32)	12.7(14.4)	8(8)	32	50	-	45	6.5	1.1	2
	4100S-25.4-A	5	100	67	25.4	9.5	6	25	50	-	38	6.5	1.2	2
	4125S-A	6	125	87	38.1(40)	15.9(16.4)	10(9)	38(35)	63	-	56	6.5	1.7	2
	4125S-25.4-A	6	125	70	25.4	9.5	6	25	63	-	38	6.5	1.8	2
	4160S-A	8	160	107	50.8(40)	19.0(16.4)	11(9)	38(35)	63	-	75	6.5	2.5	2
	4200S-A	10	200	130	47.625(60)	25.4(25.7)	14(14)	38(32)	63	-	-	6.5	3.2	3
	4250S-A	12	250	180	47.625(60)	25.4(25.7)	14(14)	38	63	-	-	6.5	4.1	3
	4315S-A	15	315	240	47.625(60)	25.4(25.7)	14(14)	38	63	-	-	6.5	6.7	4

• ( )Metric Size

Available Inserts

SDET-MF	SDET-MM	SDET-MA
		
SDXT-MF	**SDXT-MM**	**SDXT-MA**
		

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SDET	130504R-MA														●				
	130508R-MF																		
	130508R-MM																		E13
SDXT	130508R-MF	●●				●●			●●										E14
	130508R-MM	●●			●●	●●	●●		●●										E15
	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-□	47.625	BT□□-FMA47.625-□□
	4250S-□	60	BT□□-FMB60-□□
	4315S-□	60	BT□□-FMB60-□□

Parts

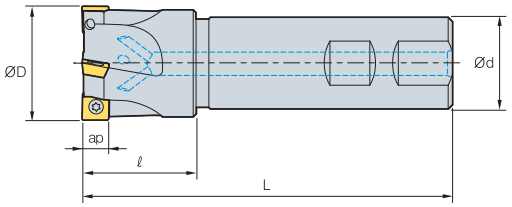
Screw	Insert Wrench	Locator Wrench	Locator	Locator Screw	Chip cover	Chip cover Screw
						

4063S-A ~ 4080S-A	FTNC04509	TW20S	HW40L	LFMP4R1-A	DHA0825	CFMP3R14R1-A	PXMA0306
4100S-A ~ 4315S-A	FTNC04509	TW20S	HW40L	LFMP4R-A	DHA0830	CFMP4R-A	PXMA0306

Available Inserts E13, E14, E15
Available Arbors and bolt E290~E292

● : Stock item

FMPS3000

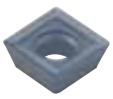


AA 90°
- AR : 10°
- RR : -9°~-8°

(mm)

Designation			øD	ød	ℓ	L	ap	kg
FMPS	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

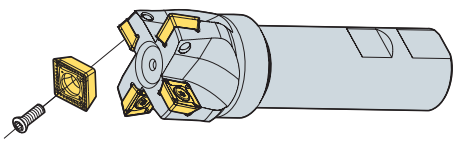
	SDET-MF	SDET-MM	SDET-MA	SDXT-MF	SDXT-MM	SDXT-MA
						

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SDET	09M402R-MA										●				●				E13 E14 E15
	09M405R-MF																		
	09M405R-MM																		
SDXT	09M405R-MF	●	●			●	●		●	●									
	09M405L-MF																		
	09M405R-MM	●	●		●	●	●		●	●									
	09M405L-MM																		
	09M405R-MA																		

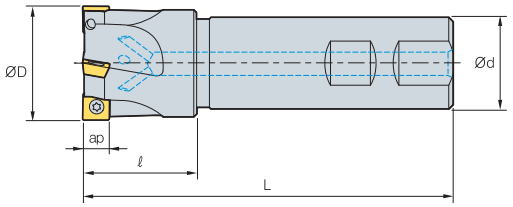
Parts

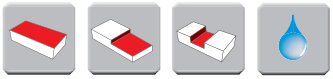
Screw	Wrench
	
FTGA03508	TW15S

Assembling



FMPS4000





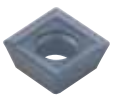
AA 90°

- 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

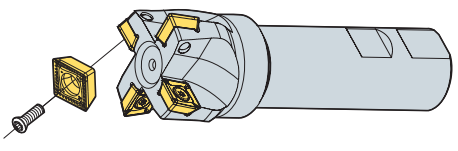
	SDET-MF	SDET-MM	SDET-MA	SDXT-MF	SDXT-MM	SDXT-MA
						

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SDET	130504R-MA														●				E13 E14 E15
	130508R-MF																		
	130508R-MM																		
SDXT	130508R-MF	●	●			●	●		●	●									
	130508R-MM	●	●		●	●	●	●	●	●									
	130538-MM																		
	130508R-MA														●				

Parts

Screw	Wrench
	
FTNC04511	TW20S

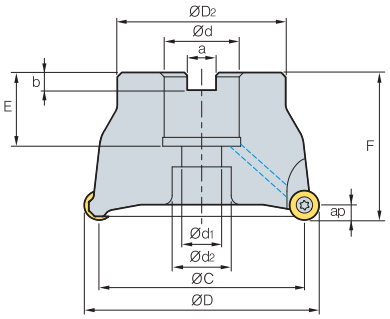
Assembling



Available Inserts E13, E14, E15

● : Stock item

FMRC(M)3000



• AR : 5°
• RR : -5°

(mm)

Designation			øD	øC	øD2	ød	a	b	E	F	ød1	ød2	ap	kg
FMRC(M)	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
	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	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
RDCT 10T3M0-MA														●				E12 E13
RDKT 10T3M0-MF					●	●	●											
10T3M0-MM	●	●		●	●	●	●	●										

Available Arbors

Designation		Ød	NC Arbors
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-□□

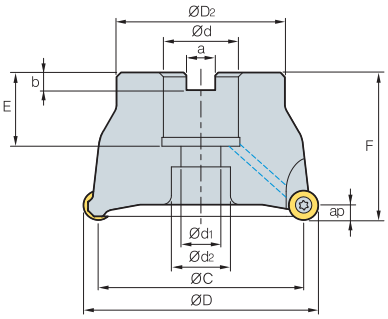
Parts

Screw	Wrench
	
FTGA03508	TW15S

Available Inserts E12, E13
Available Arbors and bolt E290~E292

● : Stock item

FMRC(M)4000



• AR : 5°
• RR : -5°

(mm)

Designation			øD	øC	øD2	ød	a	b	E	F	ød1	ød2	ap	kg
FMRC(M)	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
	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 Ø40~Ø63

• ( )Metric Size

Available Inserts

	RDKT-MF	RDKT-MM	RDCT-MA
			

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
RDCT 1204M0-MA														●				E12 E13
RDKT 1204M0-MF				●	●	●	●											
1204M0-MM	●	●	●	●	●	●	●	●										

Available Arbors

Designation	Ød	NC Arbors
FMRC(M) 4050HRD 4063HRD 4063HRD-M	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

Screw	Wrench
	
FTKA0410	TW15S

Available Inserts E12, E13
Available Arbors and bolt E290~E292

● : Stock item

FMRC(M)5000

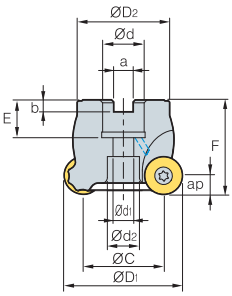


Fig. 1

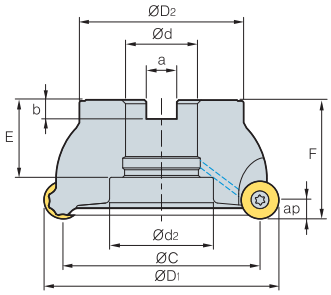


Fig. 2

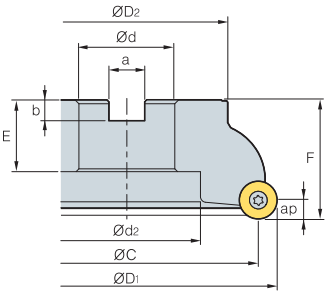


Fig. 3

• AR : 5°
• RR : -5°

(mm)

Designation		⊙	øD	øC	øD2	ød	a	b	E	F	ød1	ød2	ap	kg	Fig.
FMRC(M)	5050HRD	3	50	34	42	22	10.4	6.3	20	50	11	16.5	8.0	0.4	1
	5063HRD	4	63	47	49	22	10.4	6.3	20	50	11	18	8.0	0.6	1
	5063HRD-H	5	63	47	49	22	10.4	6.3)	20	50	11	18	8.0	0.6	1
	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	1
	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	1
	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)	1
	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)	1
	5125HRD	7	125	109	87	38.1(40)	15.9(16.4)	10(9)	35(29)	63(63)	22	32	8.0	3	1
	5125HRD-H	8	125	109	87	38.1(40)	15.9(16.4)	10(9)	35(29)	63(63)	22	32	8.0	3	1

Note) It's general that you measure of inner diameter when the diameter of FMRC/FMRCM is Ø40~Ø63 - Ø160 is not inner coolant

• ( )Metric Size

Available Inserts

RDHW-E,F,S

RDKT-MM

Designation		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
RDHW	1605M0E																		E13
	1605M0F																		
	1605M0S																		
RDKT	1605M0-MM				●		●												
	1605M0-ML																		

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

Screw	Wrench
	
FTGA0513-P	TW20-100

Available Inserts E13
Available Arbors and bolt E290~E292

● : Stock item

FMRC(M)6000

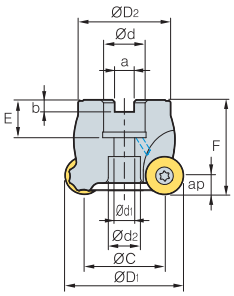


Fig. 1

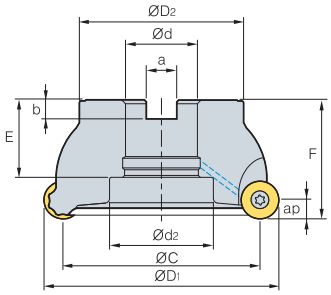


Fig. 2

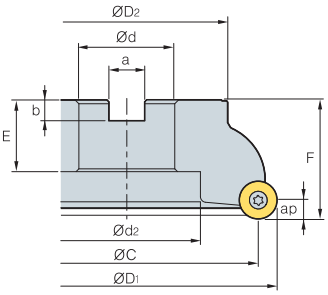


Fig. 3

• AR : 5°
• RR : -5°

(mm)

Designation			øD	øC	øD2	ød	a	b	E	F	ød1	ød2	ap	kg	Fig.
FMRC(M)	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
	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 Ø40~Ø63 - Ø160 is not inner coolant

• ( )Metric Size

Available Inserts

RDHW-E,F,S

RDKT-MM

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST720	
RDHW 2006M0E																		E13
2006M0F																		
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

Screw

Wrench

FTGA0515-P TW20-100

Available Inserts E13 Available Arbors and bolt E290~E292

● : Stock item

FMRS1000/1500

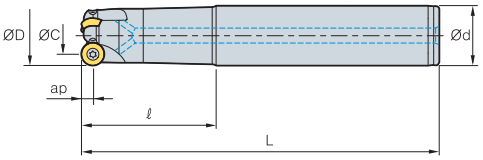


Fig. 1

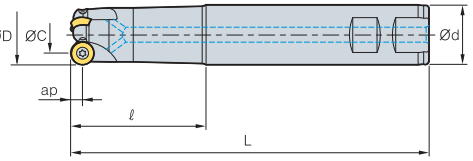


Fig. 2

• 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	Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
1000 type	RDHW 0501M0E							●											E12 E13
	0501M0F																		
	0501M0S																		
	RDKW 0501M0E				●														
1500 type	RDHW 06T1M0E							●											
	06T1M0F																		
	06T1M0S																		
	RDKW 06T1M0E				●														

Parts

Screw

Wrench

1000 type	FTNA0203	TW06P
1500 type	FTNA02205	TW06P

Available Inserts E12, E13

● : Stock item

FMRS2000/2500

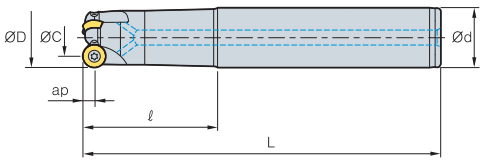


Fig. 1

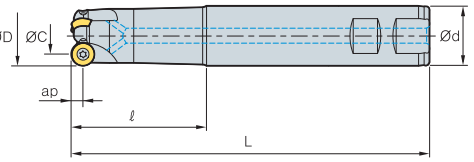


Fig. 2

• 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	2
	2015HRD-L	2	15	8	20	90	200	3.5	0.5	2
	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	2
	2020HRD-L	3	20	14	25	90	200	3.5	0.5	2
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	2
	2516HRD-L	2	16	8	20	90	200	4.0	0.5	2
	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	2
	2520HRD-L	2	20	12	25	90	200	4.0	0.6	2
	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	2
	2525HRD-L	3	25	17	32	110	250	4.0	0.7	2

Available Inserts

RDHW-E,F,S

RDKW

Type	Designation	Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
2000 type	RDHW 0702M0E							●											E12 E13
	0702M0F																		
	0702M0S																		
	RDKW 0702M0E				●														
2500 type	RDHW 0803M0E							●											
	0803M0F																		
	0803M0S																		
	RDKW 0803M0E				●														

Parts

Screw

Wrench

2000 type	FTNA02555	TW07S
2500 type	FTNA0305 FTNA0306 (Ø20 Over)	TW09S

Available Inserts E12, E13

● : Stock item

FMRS3000

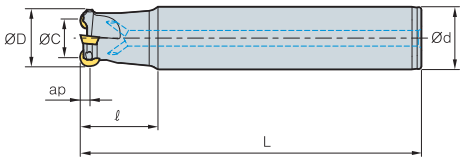


Fig. 1

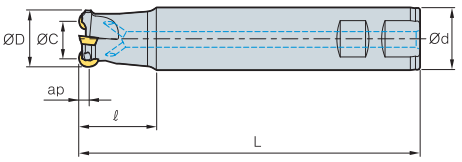


Fig. 2

• 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	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
RDCT 10T3M0-MA														●				E12 E13
RDKT 10T3M0-MF					●	●	●											
10T3M0-MM	●	●		●	●	●	●	●										

Parts

Screw

Wrench

FTGA03508(07) TW15S

Available Inserts E12, E13

● : Stock item

FMRS4000

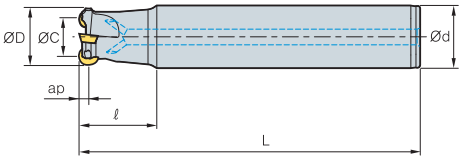


Fig. 1

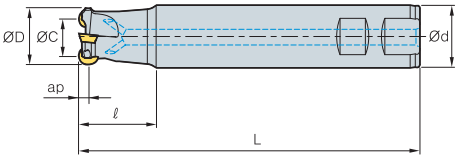


Fig. 2

• AR : 5°
• RR :-8°~-5°

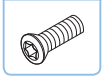
(mm)

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

Designation	RDKT-MF	RDKT-MM	RDCT-MA	Coated									Cermet			Uncoated				page
				NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
RDCT 1204M0-MA																	●				E12 E13
RDKT 1204M0-MF							●	●	●	●											
1204M0-MM				●	●		●	●	●	●	●										

Parts

Screw	Wrench
	
FTKA0410	TW15S

Available Inserts E12, E13

● : Stock item

FMRS5000

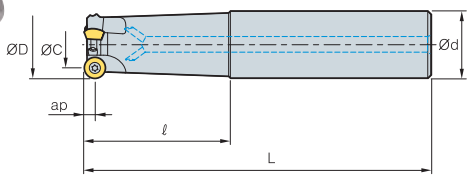


Fig. 1

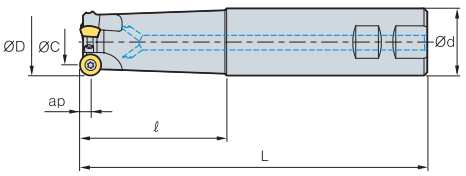


Fig. 2

• 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		Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
RDHW	1605M0E																		E13
	1605M0F																		
	1605M0S																		
RDKT	1605M0-MM				●		●												
	1605M0-ML																		

Parts

Screw

Wrench

FTGA0513-P	TW20-100

FMRS6000

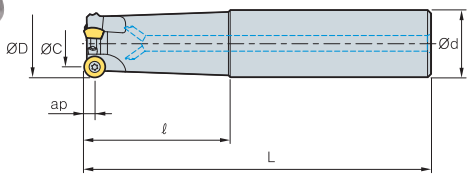


Fig. 1

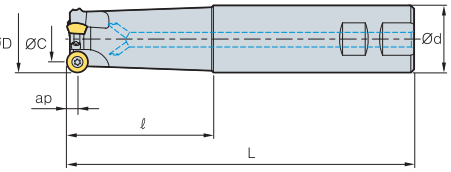


Fig. 2

- 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

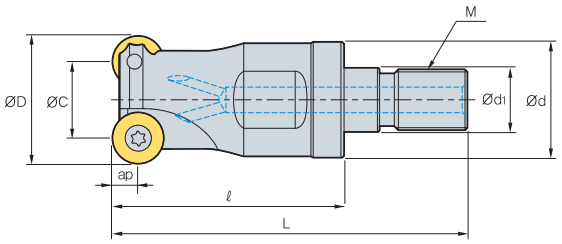
RDKT-MM

Designation		Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
RDHW	2006M0E																		E13
	2006M0F																		
	2006M0S																		
RDKT	2006M0-MM				●		●												

Parts

Screw	Wrench
	
FTGA0515-P	TW20-100

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
FMRM	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
FMRM	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
FMRM	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	Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
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 Adoptor

Designation	Available Adoptor	Designation	Available Adoptor
FMRM 1008HRD-M06	MAT - M06	FMRM 1520HRD-M10	MAT - M10
1010HRD-M06		FMRM 2015HRD-M08	MAT - M08
1012HRD-M06		2020HRD-M10	MAT - M10
1015HRD-M08	MAT - M08	FMRM 2516HRD-M08	MAT - M08
FMRM 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)

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

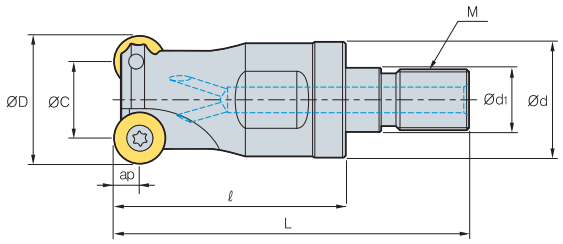
Parts

	Screw	Wrench	Wrench
1000 type	FTNA0203	TW06P	-
1500 type	FTNA02205	TW06P	-
2000 type	FTNA02555	-	TW07S
2500 type	FTNA0305	-	TW09S

Available Inserts E12, E13
Available Adoptor E253~E254

● : Stock item

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
FMRM	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
FMRM	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	Coated										Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
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 Adoptor

Designation		Available Adoptor	Designation		Available Adoptor
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	
			FMRM	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

Screw

Wrench

3000 type	FTGA03508(07)	TW15S
4000 type	FTKA0410	TW15S
5000 type	FTGA0513-P	TW20-100

Available Inserts E12, E13 Available Adoptor E253~E254

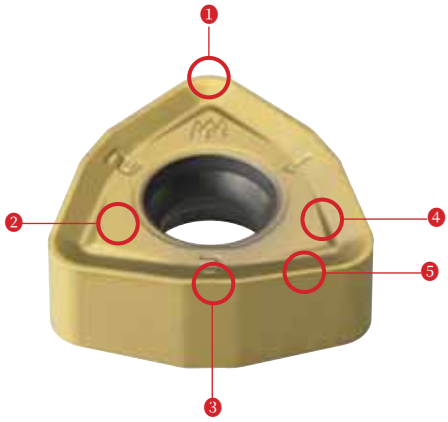
● : Stock item

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



1 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

2 Clamping surface

· Design for stable clamping
· Prevention of friction by chip

3 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

4 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

5 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

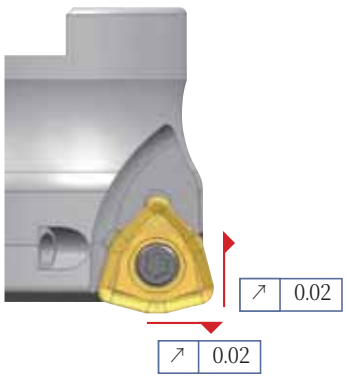
· Improvement of chip control and evacuation
· Longer tool life due to reduced cutting temperature

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



NOTE : There is lots of repeated information. For example: Symmetrical design for R/L type tool is repeated 4 times on this one page

Cutter type Code system

HRM D C (M) 13 063 H R-5

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

HRM	D	S	09	32	H	R	2	S	32
High Removal Milling	Double Sided Insert	Tool type: S: Shank	Inscreibed circle of insert: 06 : 06type insert, 09 : 09type insert, 13 : 13type insert	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

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

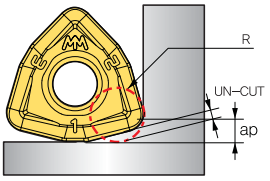
Modular Adopter Code system

MAT M16-120-S32 S-C

MAT	M16	120	S32	S	C
Modular Adopter	M Dimensions	Neck length: 120	Shank Dia.: S32 : Ø32	Neck type: T : Taper, S : Straight	Adopter 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

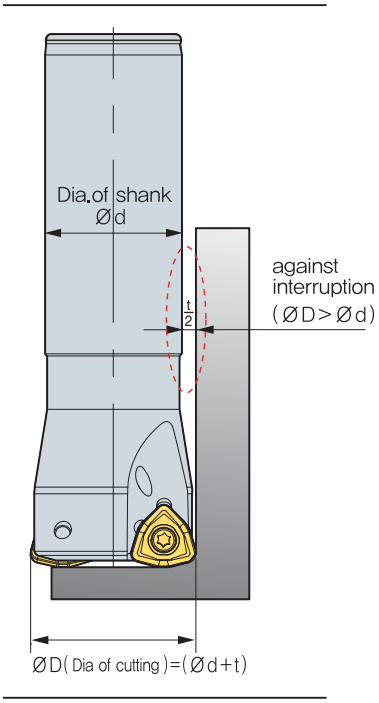


·Information for uncut part by using "Input.R" for CAM program

·Uncut part can be changed by poor machine condition or weak clamp of workpiece, etc

Interference prevent system

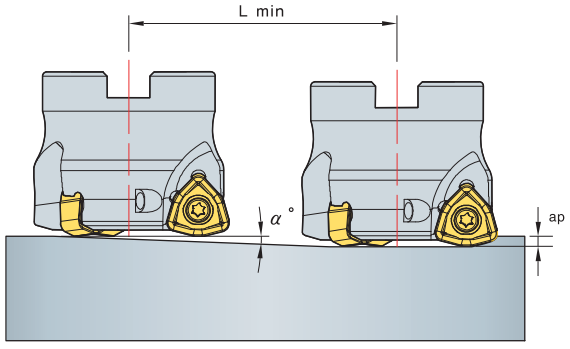
Designation	ØD(mm)	Ød(mm)	t(mm)
HRMDS0617HR-2□16	17	16	1
HRMDS0618HR-2□16	18	16	2
HRMDS0621HR-2□20	21	20	1
HRMDS0626HR-3□25	26	25	1
HRMDS0633HR-4□32	33	32	1
HRMDS0926HR-2□25	26	25	1
HRMDS0933HR-3□32	33	32	1
HRMDS0935HR-4□32	35	32	3
HRMDS0940HR-4□32	40	32	8
HRMDS0950HR-5□32	50	32	18
HRMDS0950HR-5□40	50	40	10
HRMDS0950HR-5□42	50	42	8
HRMDS1333HR-3□32	33	32	1
HRMDS1335HR-4□32	35	32	3
HRMDS1340HR-4□30	40	32	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



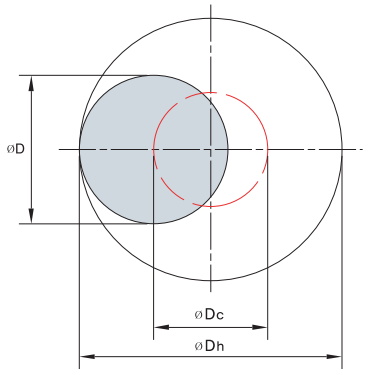
•The side clearance prevents to interference between tool and workpiece even in deep hole machining

Ramping & Helical cutting technical data

Ramping



Helical cutting



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

$$\text{ØDc} = \text{ØDh} - \text{ØD}$$

ØDc = Tool pass of tool center
ØDh = Desirable hole diameter on workpiece
ØD = Tool Dia.

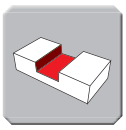
- Adjust feed to under 70% of Recommended cutting condition when ramping & helical cutting
- In helical ramping, max. cutting depth per 1 helical revolution of cutter should not exceed max. cutting depth as per insert size
- in ramping, max. cutting depth for 1 ramping process should not exceed max. 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)	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


Copying

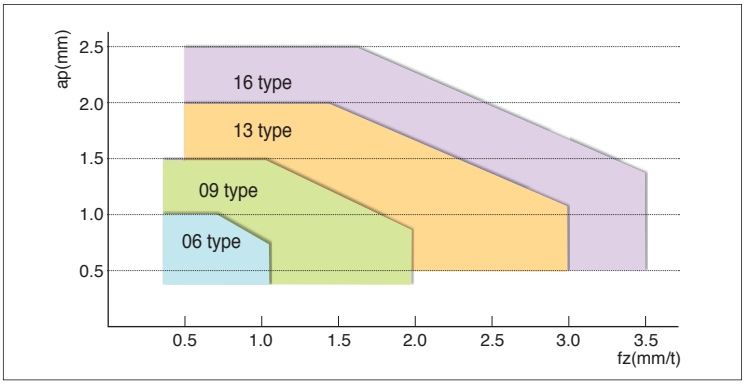

Facing


Slotting


Ramping


Helical cutting


Through coolant system



Recommended cutting condition

Workpiece		Hardness	Grades	vc (m/min)	fz (mm/t)
P	General structural steel, Mild steel	Under 200HB	PC3500 PC3545	200 (100~230)	1.0 ~ 2.0
P	Carbon steel, Alloy steel	Under 30HRC	PC3500 PC3545	180 (100 ~ 220)	1.0 ~ 1.5
P	High Carbon steel, Alloy steel	30~40 HRC	PC3500 PC3545	160 (100~200)	0.8 ~ 1.3
P	Pre-hardened steel	40~50 HRC	PC3500 PC5300	120 (80~180)	0.6 ~ 1.2
M	Stainless steel	Under 270HB	PC5300 PC3545	120 (80~150)	0.8 ~ 1.3
K	Cast iron	Under 350N/mm²	PC5300	180(100~220)	1.2 ~ 1.8

Machining Example - I

Working condition

Work piece : SM45C(HRC22)
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)

Productivity : 40% increased Tool cost : 80% decreased

※**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

Machining Example - II

Working condition

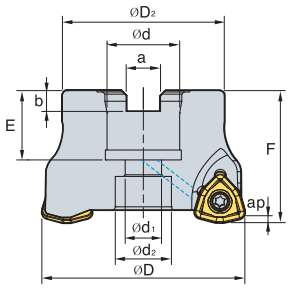
Work piece : STS304
Cutting speed : vc = 130m/min (414-1)
fz = 1.2mm/tooth
vf = 2,981mm/min
ap = 1.0mm
ae = 80mm
Coolant : Wet, Machining : Facing and Slotting
Machine : Vertical MCT
Overhang of tool : 250mm

Tool information : HRMDCM13100HR-6
WNMX130520ZNN-MM(PC3545)

Productivity : 80% increased Tool cost : 25% decreased

※**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

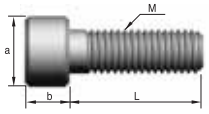
WNMX-MM

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
WNMX 09T316ZNN-MM				●	●	●	●	●										E23

Available Arbors

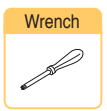
Designation		NC Arbors
HRMDCM	09040HR-☐	BT☐☐-FMC16-☐☐
		SK☐☐-FMC16-☐☐
	09050HR-☐	BT☐☐-FMC22-☐☐
	09063HR-☐	SK☐☐-FMC22-☐☐
	09080HR-☐	BT☐☐-FMC27-☐☐
		SK☐☐-FMC27-☐☐
	09100HR-☐	BT☐☐-FMC32-☐☐
		SK☐☐-FMC32-☐☐
HRMDC	09080HR-☐	BT☐☐-FMA25.4-☐☐
		SK☐☐-FMA25.4-☐☐
	09080HR-31.75-☐	BT☐☐-FMA31.75-☐☐
	09100HR-☐	SK☐☐-FMA31.75-☐☐

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

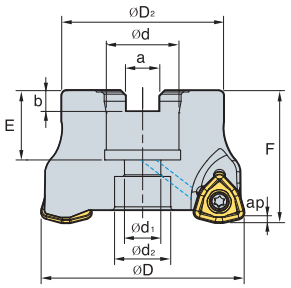


FTKA0307	TW09S	

Available Inserts E23 Available Arbors and bolt E290~E292

● : Stock item

HRMDC(M)13



AA 14°

- AR : -7°
- RR : -12°~-4°

(mm)

Designation			øD	øD2	ød	ød1	ød2	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	SB1630
	13100HR-7	7	100	67	32	18	26	14.4	8	25	50	2	1.6	
	13125HR-7	7	125	87	40	22	32	16.4	9	29	63	2	3.2	SB2040
	13125HR-8	8	125	87	40	22	32	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	SB1230
	13080HR-6	6	80	57	25.4	14	20	9.5	6	24	50	2	1	
	13080HR-31.75-5	5	80	67	31.75	18	26	12.7	8	32	63	2	1.4	SB1630
	13080HR-31.75-6	6	80	67	31.75	18	26	12.7	8	32	63	2	1.4	
	13100HR-6	6	100	67	31.75	18	26	12.7	8	32	63	2	2.1	SB1630
	13100HR-7	7	100	67	31.75	18	26	12.7	8	32	63	2	2.1	
	13125HR-7	7	125	87	38.1	22	32	15.9	10	35	63	2	3.3	SB2040
	13125HR-8	8	125	87	38.1	22	32	15.9	10	35	63	2	3.3	MBA-M20

Available Inserts

WNMX-MM

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
WNMX 130520ZNN-MM				●	●	●	●	●										E23

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

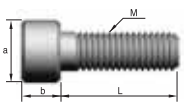
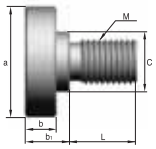
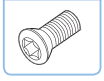


Fig. 2



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

Screw	Wrench
	
FTKA0412B	TW15S

Available Inserts E23 Available Arbors and bolt E290~E292

● : Stock item

HRMDC(M)16 New

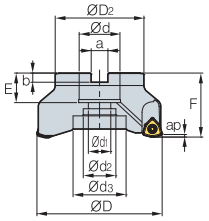


Fig. 1

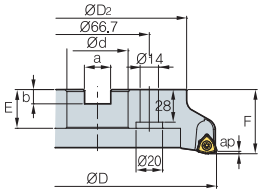


Fig. 2

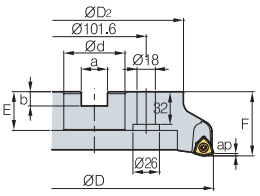


Fig. 3

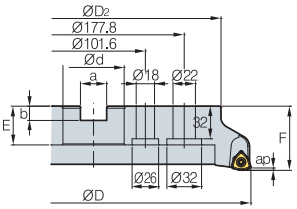


Fig. 4

AA 14°

- AR : -7°
- RR : -12°~-4°

(mm)

Designation		⊚	øD	øD2	ød	ød1	ød2	ød3	a	b	E	F	ap	kg	Bolt	Fig.
HRMDC(M)	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		

Available Inserts

WNMX-MM

Designation	Coated									Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
WNMX160720ZNN-MM					●	●												E23

Available Arbors

Designation	HRMDC	HRMDCM
HRMDC(M) 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

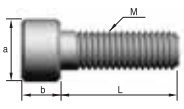
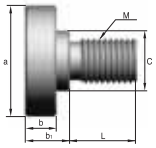


Fig. 2



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

Screw

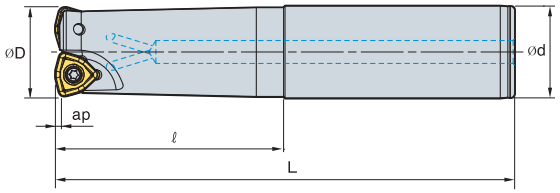
Wrench

FTGA0513-P TW20-100

Available Inserts E23 Available Arbors and bolt E290~E292

● : Stock item

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	0.50
	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

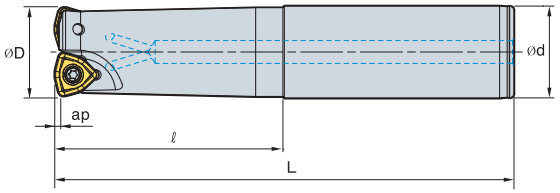
WNMX-MM

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
WNMX 060312ZNN-MM					●	●												E23

Parts

Screw	Wrench
	
ETNA02506	TW07S

HRMDS09



AA 14°

- 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-4M32	4	40	32	50	250	1.5	1.5
	0940HR-4L32	4	40	32	50	300	1.5	1.8
	0940HR-4S40	4	40	40	60	150	1.5	1.3

Available Inserts

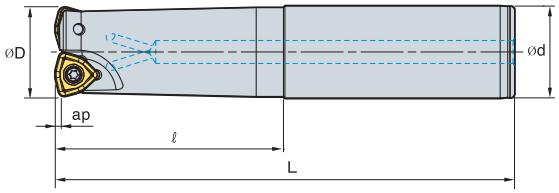
WNMX-MM

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
WNMX 09T316ZNN-MM				●	●	●	●	●										E23

Parts

Screw	Wrench
	
FTKA0307	TW09S

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

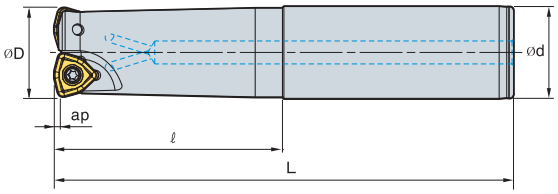
WNMX-MM

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
WNMX 09T316ZNN-MM				●	●	●	●	●										E23

Parts

Screw	Wrench
	
FTKA0307	TW09S

HRMDS13



AA 14°

- 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

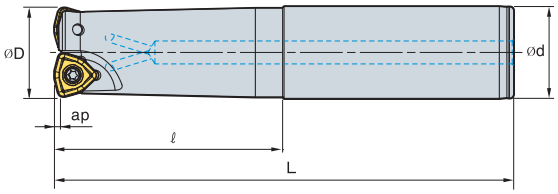
WNMX-MM

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
WNMX 130520ZNN-MM				●	●	●	●	●										E23

Parts

Screw	Wrench
	
FTKA0412B	TW15S

HRMDS13



AA 14°

- 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

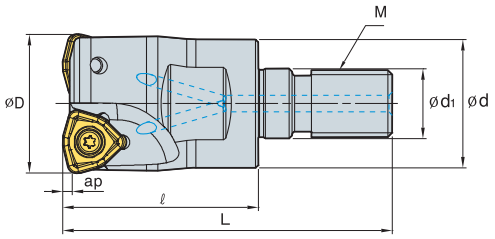
WNMX-MM

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
WNMX 130520ZNN-MM				●	●	●	●	●										E23

Parts

Screw	Wrench
	
FTKA0412B	TW15S

HRMDM 06 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-MM

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
WNMX060312ZNN-MM					●	●												E23

Available Adoptor

Designation		Available Adoptor	Designation		Available Adoptor
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			

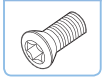
Designation : HRMDM0932HR-M16
Modular Head Threading Measure size(M16)

II

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

Parts

Screw



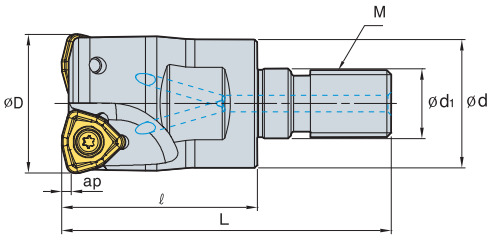
Wrench

ETNA02506	TW07S

Available Inserts E23 Available Adoptor E253~E254

● : Stock item

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
HRMDM	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-MM

Type	Designation	Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
09 type	WNMX09T316ZNN-MM			●	●	●	●	●											E23
13 type	WNMX130520ZNN-MM			●	●	●	●	●											

Available Adoptor

Designation		Available Adoptor	Designation		Available Adoptor
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)

=

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

Parts

Screw

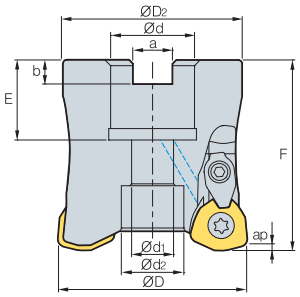
Wrench

09 type	FTKA0307	TW09S
13 type	FTKA0412B	TW15S

Available Inserts E23 Available Adoptor E253~E254

● : Stock item

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)

Note) Through coolant type between Ø50~Ø125

• ( )Metric Size

Available Inserts

WDKT-MH

Type	Designation	Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
13 type	WDKT130520ZDSR-MH				●	●	●	●	●										E23
15 type	WDKT150625ZDSR-MH				●	●	●	●	●	●									

Available Arbors

Designation		Available Arbors	
		HRMC	HRMCM
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-□□
	15160R-7	BT□□-FMA50.8-□□	SK□□-FMC40-□□

Bolt

Fig. 1

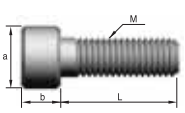
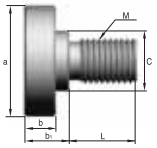
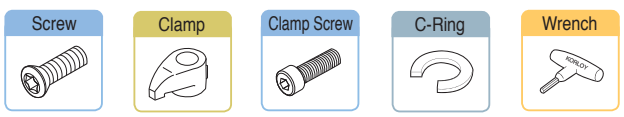


Fig. 2



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

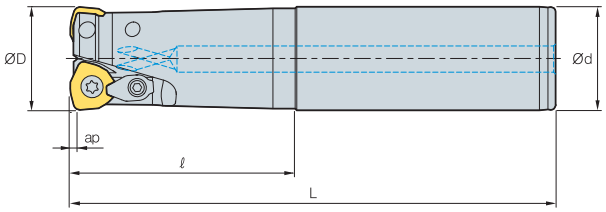


13 type (Ø50,63,80)	FTGA0513-P	CHH4.5R1	CTX04513H	CR03	TW20-100
15 type (Ø63,80,100,125, 160)	FTGA0513-P	CHH5.5R1	CTX0515	CR04	TW20-100

Available Inserts E23
Available Arbors and bolt E290~E292

● : Stock item

HRMS 08/10



AA 15°

- 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
HRMS	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

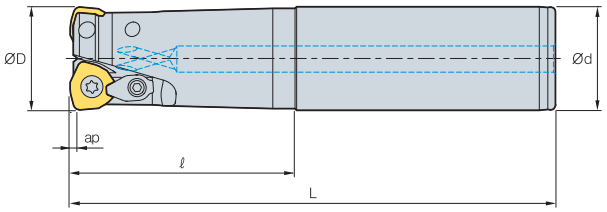
WDKT-MH

Type	Designation	Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
08 type	WDKT080316ZDSR-MH				●	●	●	●	●										E23
10 type	WDKT10T320ZDSR-MH				●	●	●	●	●										

Parts

	Screw	Clamp	Clamp Screw	C-Ring	Wrench
08 type	FTNA0306	-	-	-	TW09P
10 type	FTKA0408	CHH3.5R1	CTX03510	CR03	TW15S

HRMS 13



AA 15°

- 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

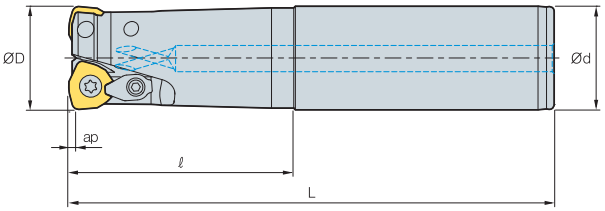
WDKT-MH

Designation	Coated									Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
WDKT130520ZDSR-MH				●	●	●	●	●										E23

Parts

	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

HRMS 15



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

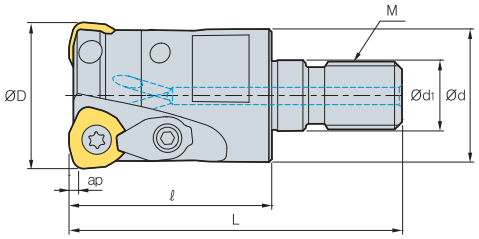
WDKT-MH

Designation	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC3530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
WDKT 150625ZDSR-MH				●	●	●	●	●	●									E23

Parts

Screw	Clamp	Clamp Screw	C-Ring	Wrench
FTGA0513-P	CHH5.5R1	CTX0515	CR04	TW20

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
HRMM	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
HRMM	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	Coated									Cermet			Uncoated				page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
08 type	WDKT080316ZDSR-MH				●	●	●	●	●										E23
10 type	WDKT10T320ZDSR-MH				●	●	●	●	●										
13 type	WDKT130520ZDSR-MH				●	●	●	●	●										

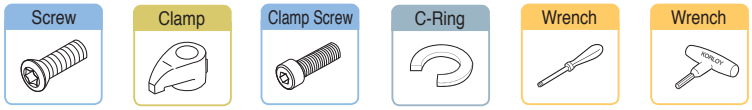
Available Adoptor

Designation		Adoptor	Designation		Adoptor	Designation		Adoptor
HRMM	0820HR-M10	MAT-M10	HRMM	0835HR-M16	MAT-M16	HRMM	1040HR-M16	MAT-M16
	0821HR-M10			0840HR-M16		HRMM	1332HR-M16	
	0825HR-M12	MAT-M12	HRMM	1025HR-M12	MAT-M12		1333HR-M16	MAT-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)

Adaptor Spec. : MAT-M10-030-S20S
Adaptor Threading Measure(M10)

Parts

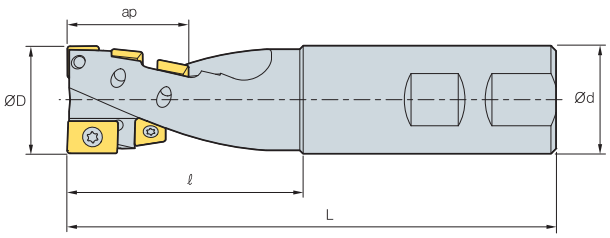


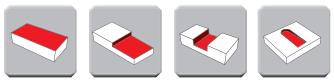
		Screw	Clamp	Clamp Screw	C-Ring	Wrench	Wrench
08 type		FTNA0306	-	-	-	-	-
10 type		FTKA0408	CHH3.5R1	CTX03510	CR03	TW15S	-
13 type	Ø32,33,35	FTGA0510-P	CHH4.5R1	CTX04513H	CR03	-	TW20
	Ø40	FTGA0512-P	CHH5.5R1	CTX04513H	CR03	-	TW20

Available Inserts E23
Available Adoptor E253~E254

● : Stock item

THE





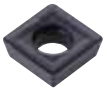
AA 90°

• 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	Coated										Cermet			Uncoated				page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST720	
SPMT060304	●																	E04
SDMT090308-MM				●														E05
SPMT120408-MM				●		●												E14
APLT070304R																		E21
ADLT150308R	●																	E24
ZPMT1504PPSR-MM				●		●												

Recommended cutting condition

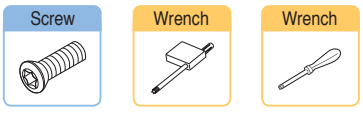
• Grooving

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	60~120	0.06~0.20	NCM325
M	50 ~ 120	0.06~0.15	NCM325
K	60~120	0.10~0.20	NCM325

• Side cutting

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	100 ~180	0.10 ~ 0.35	NCM325
M	80 ~ 180	0.10 ~ 0.30	NCM325
K	80 ~150	0.15~ 0.35	NCM325

Parts



THE	25R	ETNA02506	TW07P	-
	32R	ETNA0408	-	TW15S
	40R	ETNA0511	-	TW20S
	50R	ETNA0511	-	TW20S

Available Inserts E04, E05, E14, E21, E24

● : Stock item

Longer tool life is achieved due to the excellent cutting performance of the insert grade

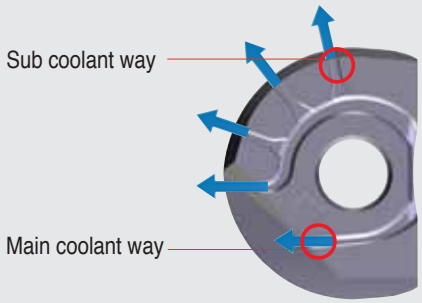
Laser Mill

- 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

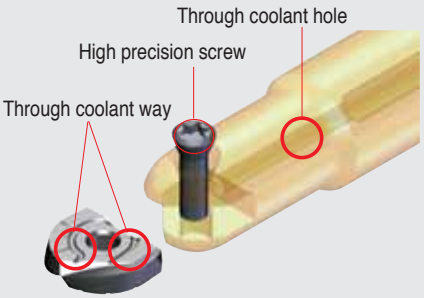
MQL System

- 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**



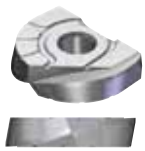
Features

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.

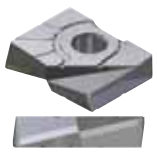
LBS, LR Order-made items

LBH-Ball



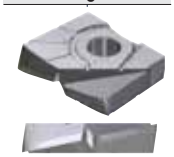
- Helical cutting edge
- Suitable for harder material with high feed

LRH-Corner radius



- Helical cutting edge
- Variety of nose -R

LFH-High feed



- Helical cutting edge
- Suitable for high feed

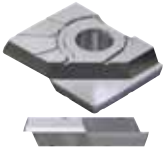
LCF-Chamfer

- Straight cutting edge
- Center drilling and chamfering

LBS-Ball type

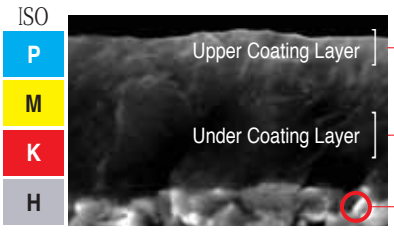
- Straight cutting edge
- Suitable for precise

LR-Corner R type



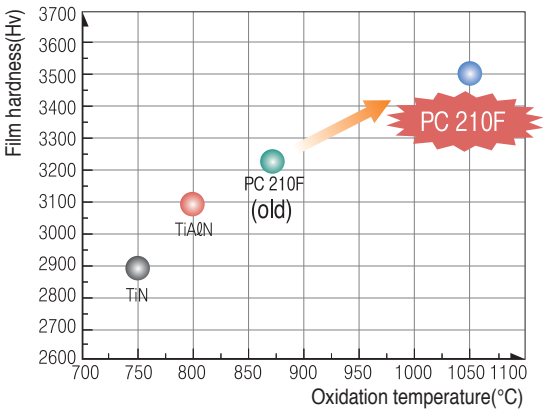
- Straight cutting edge
- Variety of nose-R

New PC210F Features



- Due to the ultra fine carbide, toughness of cutting edge has been increased
- Special coating has been applied for high-speed machining & hardened workpiece
- High quality of machined surface due to the excellent lubrication property of the film

Film hardness & Oxidation temperature

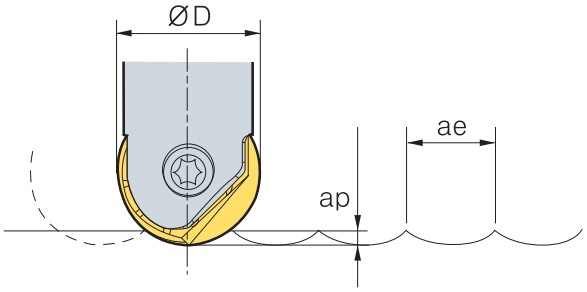


Cutting condition formula for milling

Cutting speed	RPM
$vc = \frac{\pi \times De \times n}{1000}$ (m/min)	$n = \frac{vce \times 1000}{\pi \times De}$ (rev/min)

Feed per tooth	Feed per minute
$fz = \frac{vf}{n \times z}$ (mm/t)	$vf = fz \times n \times z$ (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) $H = \frac{Pc}{0.75}$ (kw)



vc = Cutting speed(m/min)	**Pkw**= Power Requirement (kW)
vce = Practical cutting speed(m/min)	**Php** = Horsepower requirement(hp)
n = Revolution per Minute(min^{-1})	**Q** = Chip removal amount(cm3/min)
Dc = 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	

Recommended cutting condition

Workpiece	Recommended grade	Hardness	vc(m/min)	fz(mm/t)	ap	ae
					ap(mm)	ae(mm)
Carbon steel, Alloy steel	PC210F	~ HRC30	100 ~ 250	0.2 ~ 0.3	0.07D	0.07D
Carbon steel, Alloy steel	PC210F	HRC30 ~ 40	80 ~ 150	0.1 ~ 0.3	0.07D	0.07D
Die steel	PC210F	HRC30 ~ 40	80 ~ 150	0.1 ~ 0.2	0.05D	0.05D
Cast iron	PC210F	-	100 ~ 200	0.3 ~ 0.35	0.07D	0.07D
Hardened steel	PC210F	HRC50 ~ 60	100 ~ 150	0.1 ~ 0.3	0.03D	0.03D
Stainless steel	PC210F	-	80 ~ 150	0.1 ~ 0.3	0.05D	0.05D
Aluminum alloy	PC210F	-	200 ~ 300	0.15 ~ 0.4	0.15D	0.15D

Practical cutting speed calculation formulas

1. θ°Using : Calculating cutting speed at P point (Cutting speed according to depth of cut when ramping)

• Formula : Practical cutting speed

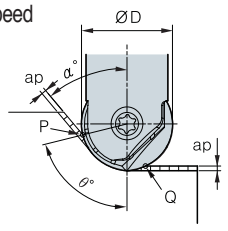
$$vc = \frac{\pi \times De \sin\theta \times n}{1000} \text{ (m/min)}$$

$$\theta = \cos^{-1}\left(\frac{De - 2ap}{De}\right) + 90 - \alpha°$$

2. In case of using ap : Calculating cutting speed at Q point

• Formula : Practical cutting speed

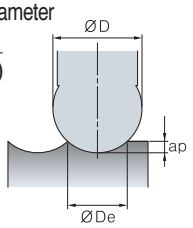
$$vce = \frac{2\pi n\sqrt{ap(De - ap)}}{1000}$$



3. Formula of actual diameter

• Formula of actual diameter

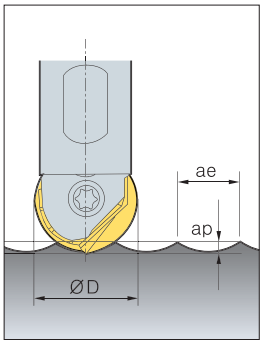
$$De = 2\sqrt{ap(D-ap)}$$



Practical cutting speed calculation formulas

h(surface roughness) (μm)										
R(mm) \ ae(mm)	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

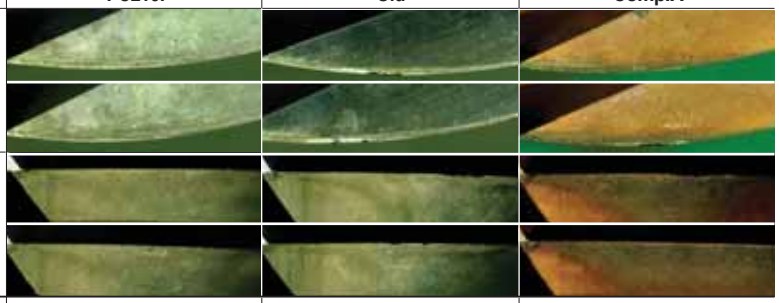
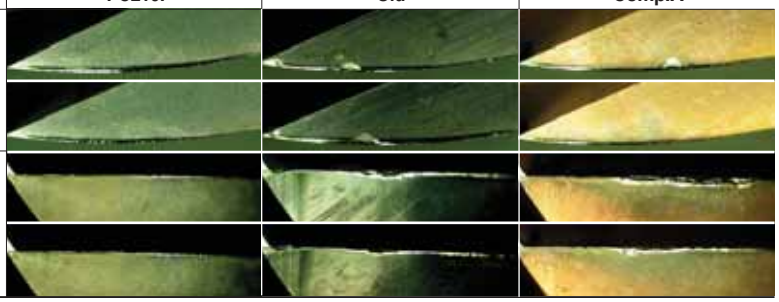
• Formula of surface roughness : h(surface finish) = $\frac{(ae)^2}{8R} \times 1000(\mu m)$



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

Wear resistance test

Cutting conditioin		Pictures			
			PC210F	Old	Comp.A
 Cutting time : 15 hours	NAK80(HRC30), Air vc(m/min) = 376 fz(mm/t) = 0.33 ap(mm) = 0.5 ae(mm) = 0.5 vf(mm/min) = 4,000 n(min^{-1}) = 6,000	Front, back view			
		Top view			
			PC210F	Old	Comp.A
 Cutting time : 8 hours	STD11(HRC50~65), Air vc(m/min) = 251 fz(mm/t) = 0.38 ap(mm) = 0.5 ae(mm) = 0.3 vf(m/min) = 3,000 n(min^{-1}) = 4,000	Front, back view			
		Top view			

Machining example

Crank Shaft	
Workpiece	SCM440 (HRC40)
cutting condition	vc(m/min) = 376 / fz(mm/t) = 0.25 ap(mm) = 0.5 / ae(mm) = 0.2 n(min^{-1}) = 6000 vf(mm/min) = 3000 / MQL
Tools	Holder : LBE200115T-S25 Insert : LBH200 (PC210F)

CV-Joint	
Workpiece	SM53C Forged steel (HRC35)
cutting condition	vc(m/min) = 200 / fz(mm/t) = 0.25 ap(mm) = 0.5~2.0 / ae(mm) = 0.5~1.0 n(min-1) = 3000 vf(mm/min) = 1500 / Air
Tools	Holder : LBE230-HSKC63 Insert : LBH230 (PC210F)

Car Bumper Mold	
Workpiece	KP4MA (HRC30~35)
cutting condition	vc(m/min) = 700 / fz(mm/t) = 0.25 ap(mm) = 0.5 / ae(mm) = 0.2 n(min-1) = 9000 vf(mm/min) = 4500 / Air
Tools	Holder : LBE250170S-S25C Insert : LBH250 (PC210F)

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

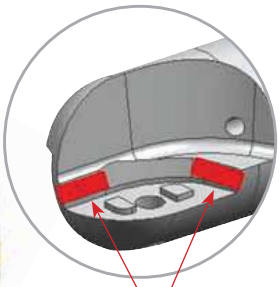
Holder Code System

GBE	300	-	S	32
Product Name	**Machining Dia.**		**Type**	**Shank Dia.**
General Indexable Ball Endmill	Ø16, Ø20, Ø25 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

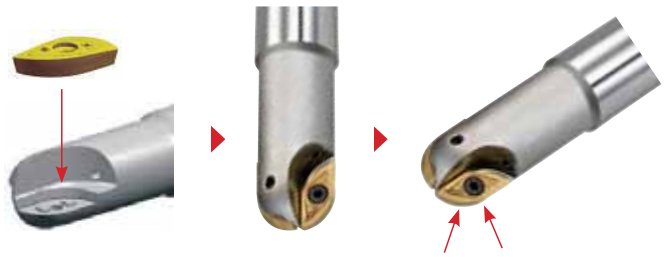
Multi Edge type | Single Edge type | Modular type



Projection

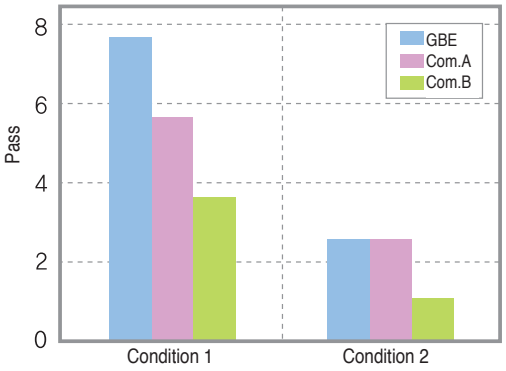
- ▶ Various diameters (Ø16,20,25,30,32,40,50)
- ▶ Improved chip treatment with internal coolant(cutting edge portion)
- ▶ Long tool life & better processing
- ▶ Easy insert setting with projection part to prevent vibration during processing

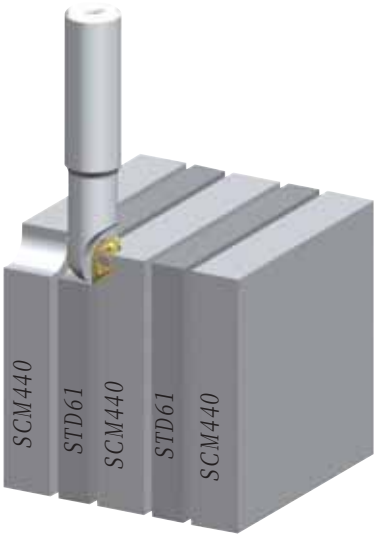
How to set insert



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		

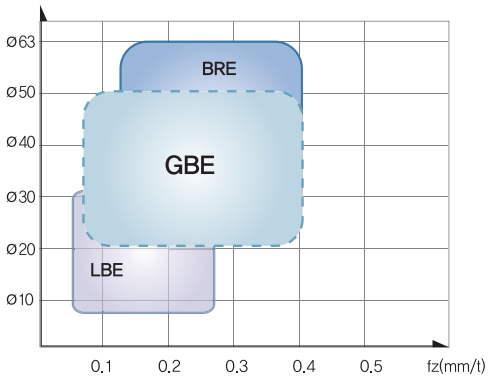
Inserts / Parts

Type	Insert			Parts			
							
Dia.	Internal I/S	External I/S	External main I/S	Screw		Wrench	
				Int./Ext. type	Ext. main type	Int./Ext. type	Ext. main type
Ø16	ZPET080M-MM	ZPET080S-MM	-	FTKA02555S	-	TW08S	-
Ø20	ZPET100M-MM	ZPET100S-MM	SPMT060304	FTKA0307	ETNA02506	TW09S	TW07P
Ø25	ZPET125M-MM	ZPET125S-MM	SPMT060304	FTKA0409	ETNA02506	TW15S	TW07P
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	SDMT120408-MM	FTGA0614	ETNA0511	TW20-100	TW25S
Ø50	ZPET250M-MM	ZPET250S-MM	SDMT120408-MM	FTGA0818	ETNA0511	TW25S	TW25S

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

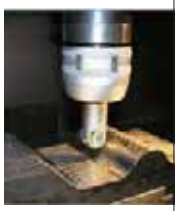
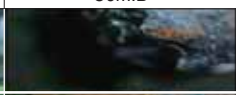
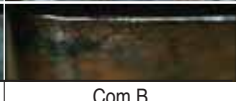
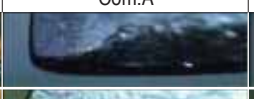
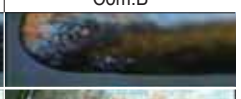
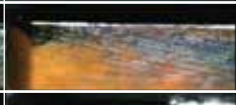
Line-up for Indexable ball Endmill



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			
				GBE	Com.A	Com.B
	• 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)	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			
Cutting time : 4 Pass						

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

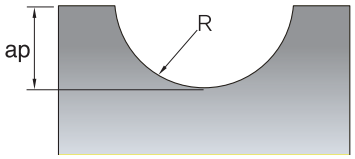
• Good chip flow
• Good heat emission

• Wider insert ensures cutting edge strength

• Better setting force by recess

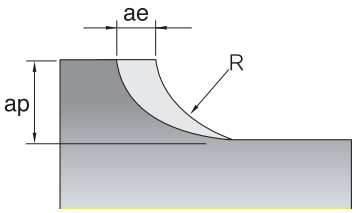
BRE machining type for roughing & Recommended cutting condition

Machining Type 1



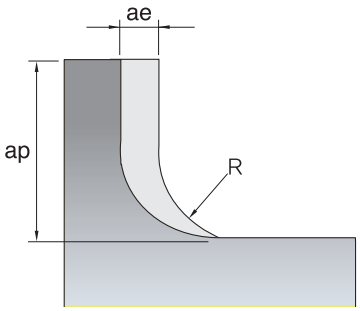
ap=0.3D - 0.5D

Machining Type 2



ae=0.2D - 0.3D ap=0.3D - 0.5D

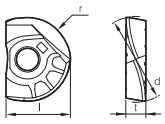
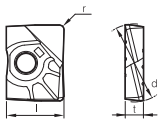
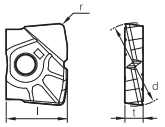
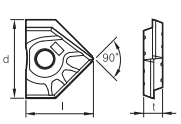
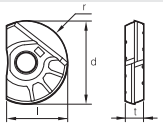
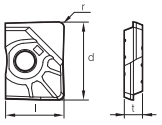
Machining Type 3



ae=0.1D - 0.5D ap=1.2D - 1.5D

Workpiece	Machining Type	Velocity(m/min)	Feed(mm/t)	Grade
Carbon / Alloy steel	1	120~220	0.1~0.4	NCM325
	2	120~220	0.2~0.4	NCM325
	3	100~180	0.1~0.3	NCM325
Alloy steel	1	100~200	0.1~0.4	NCM325
	2	100~200	0.2~0.4	NCM325
	3	80~160	0.1~0.3	NCM325
Tool steel	1	80~150	0.1~0.3	NCM325
	2	80~150	0.15~0.35	NCM325
	3	60~120	0.1~0.3	NCM325
High hardness material (H_R35-45)	1	60~120	0.1~0.3	NCM325
	2	60~120	0.1~0.3	NCM325
	3	50~80	0.1~0.2	NCM325
Cast iron	1	100~180	0.2~0.5	NCM320K
	2	100~180	0.2~0.5	NCM320K
	3	80~160	0.15~0.4	NCM320K

Available Inserts

Holders	LBH (Ball type)  R accuracy ±0.005	LRH (Corner radius type)  Corner R ±0.015	LFH (High feed type) 	LCF (Chamfer type) 	LBS(Ball type)  R accuracy ±0.005	LR(Corner radius type)  Corner R ±0.015
LBE080	LBH080 LBH090				LBS080 LBS090	
LBE100 **LRE100**	LBH100 LBH110	LRH100-R05 LRH100-R20 LRH100-R10 LRH110-R05	LFH100		LBS100 LBS110	LR100-R05 LR100-R20 LR100-R10 LR110-R05
LBE120 **LRE120**	LBH120 LBH130	LRH120-R05 LRH120-R20 LRH120-R10 LRH130-R05	LFH120		LBS120 LBS130	LR120-R05 LR120-R20 LR120-R10 LR130-R05
LBE160 **LRE160**	LBH160 LBH170	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	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	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	LRH300-R10 LRH300-R30 LRH300-R20 LRH310-R05	LFH300		LBS300 LBS310	LR300-R10 LR300-R30 LR300-R20 LR310-R05
LBE320 **LRE320**	LBH320	LRH320-R10 LRH320-R30 LRH320-R20	LFH320		LBS320	LR320-R10 LR320-R30 LR320-R20

Available Inserts E07, E08

Carbide Shank-Ball, Corner R type

LBE 08/10/12/16/20/25/30/32

Straight type

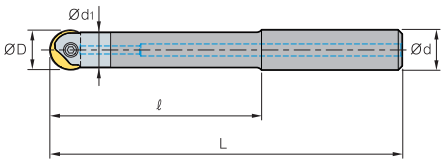


Fig. 1

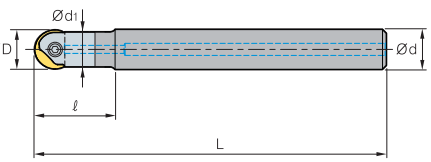


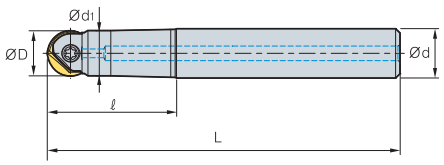
Fig. 2

(mm)

Designation		øD	ød	ød1	ℓ	L	Parts		Available Inserts(Ø)	Fig.
							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

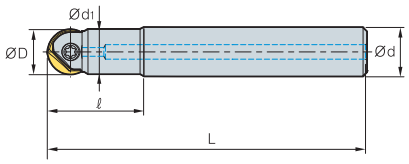
Steel Shank-Ball, Corner R type
LBE08/10/12/16/20/25/30/32
Taper type



(mm)

Designation		øD	ød	ød1	ℓ	L	Parts		Available Inserts(Ø)
							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, Corner R type
LBE12/16/20/25/30/32
Straight type



(mm)

Designation		øD	ød	ød1	ℓ	L	Parts		Available Inserts(Ø)
							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	22, 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-Ball, Corner R type
LRE10/12/16/20/25/30/32

Straight type

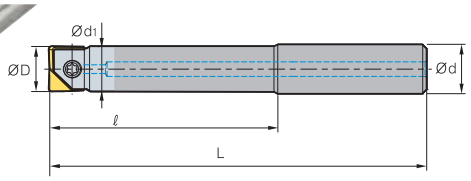


Fig. 1

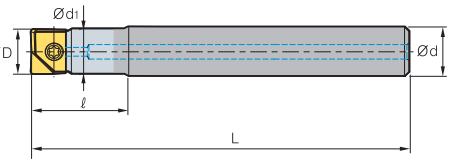


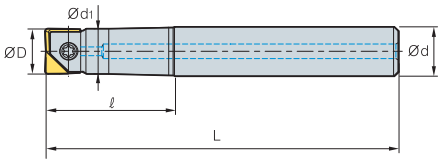
Fig. 2

(mm)

	Designation	øD	ød	ød1	ℓ	L	Parts		Available Inserts(Ø)	Fig.
							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
LRE10/12

Taper type



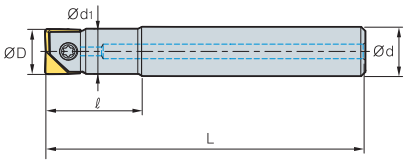
(mm)

	Designation	øD	ød	ød1	ℓ	L	Parts		Available Inserts(Ø)
							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

Available Inserts E07, E08

Steel Shank, Corner R type
LRE12/16/25/30/32

Straight type



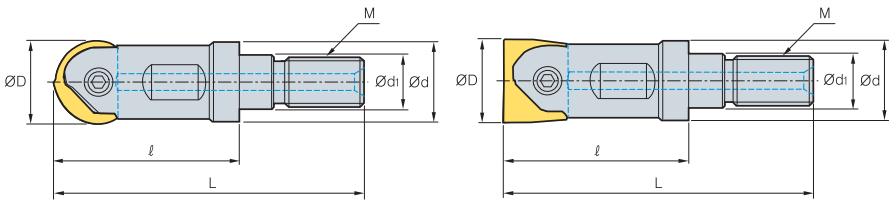
(mm)

Designation		øD	ød	ød1	ℓ	L	Parts		Available Inserts(Ø)
							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		M	øD	L	ℓ	ød	ød1	Parts		Available Inserts(Ø)
								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 E253~E254

BFE

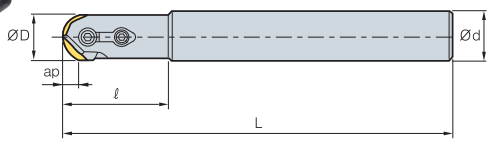


Fig. 1

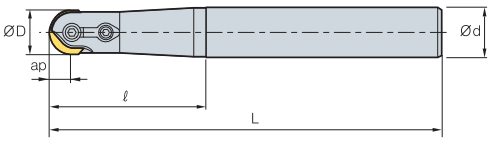


Fig. 2

(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

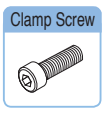
RC

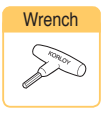
Designation		Coated PC210F	Page
RC	16	●	E12
	20	●	
	25	●	
	30		
	32	●	

Recommended cutting condition

Workpiece	Cutting Condition	
	vc(m/min)	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





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

GBE(Single Edge)

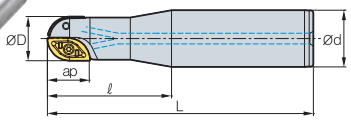


Fig. 1

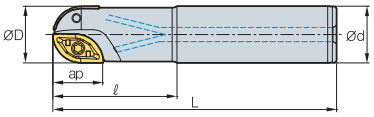


Fig. 2

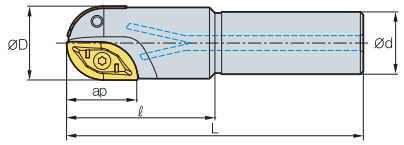


Fig. 2

(mm)

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	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
	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
	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
	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

GBE-M(Multi Edge)

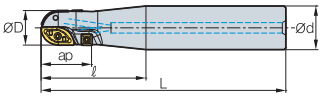


Fig. 4

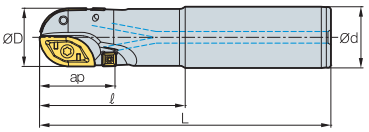


Fig. 5

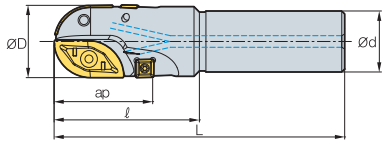


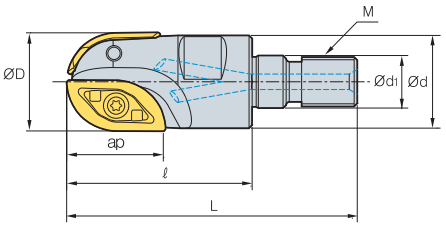
Fig. 6

(mm)

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	4
	200M-L25	20	25	70	250	28	ZPET100M-MM	ZPET100S-MM	SPMT060304	FTKA0307	ETNA02506	TW09S	TW07P	4
	250M-S32	25	32	80	180	33	ZPET125M-MM	ZPET125S-MM	SPMT060304	FTKA0409	ETNA02506	TW15S	TW07P	4
	250M-L32	25	32	80	300	33	ZPET125M-MM	ZPET125S-MM	SPMT060304	FTKA0409	ETNA02506	TW15S	TW07P	4
	300M-S32	30	32	100	200	41	ZPET150M-MM	ZPET150S-MM	SDMT090308-MM	FTGA0511-P	ETNA0408	TW20-100	TW15S	4
	300M-L32	30	32	100	350	41	ZPET150M-MM	ZPET150S-MM	SDMT090308-MM	FTGA0511-P	ETNA0408	TW20-100	TW15S	4
	320M-S32	32	32	100	200	42	ZPET160M-MM	ZPET160S-MM	SDMT090308-MM	FTGA0511-P	ETNA0408	TW20-100	TW15S	5
	320M-L32	32	32	100	350	42	ZPET160M-MM	ZPET160S-MM	SDMT090308-MM	FTGA0511-P	ETNA0408	TW20-100	TW15S	5
	400M-S42	40	42	100	200	56	ZPET200M-MM	ZPET200S-MM	SPMT120408-MM	FTGA0614	ETNA0511	TW20-100	TW20S	5
	400M-L42	40	42	100	350	56	ZPET200M-MM	ZPET200S-MM	SPMT120408-MM	FTGA0614	ETNA0511	TW20-100	TW20S	5
	500M-S42	50	42	100	200	67	ZPET250M-MM	ZPET250S-MM	SPMT120408-MM	FTGA0818	ETNA0511	TW25-100	TW20S	6
	500M-L42	50	42	100	350	67	ZPET250M-MM	ZPET250S-MM	SPMT120408-MM	FTGA0818	ETNA0511	TW25-100	TW20S	6

Available Inserts E24

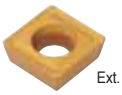
GBEM



(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

	ZPET-M	ZPET-S	SPMT	SPMT-MM
	 Internal	 External	 Ext. main	 Ext. main

Designation	Coated				Page
	NCM325	PC3500	PC5300	PC3545	
ZPET 080M-MM					E24
100M-MM		●			
125M-MM		●			
150M-MM		●			
160M-MM		●			
200M-MM		●			
250M-MM					
ZPET 080S-MM					
100S-MM		●			
125S-MM		●			
150S-MM		●			
160S-MM		●			
200S-MM		●			
250S-MM					
SPMT 060304	●				E21
SDMT 090308-MM		●			E14
SPMT 120408-MM		●		●	E21

Parts

Screw 

Wrench 

Cutter Dia. 

Int./Ext. type	Ext. main type	Int./Ext. type	Ext. main type	Cutter Dia.
FTKA02555	-	TW08S	-	Ø16
FTKA0307	ETNA02506	TW09S	TW07P	Ø20
FTKA0409	ETNA02506	TW15S	TW07P	Ø25
FTGA0511-P	ETNA0408	TW20-100	TW15S	Ø30
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, E21, E24

● : Stock item

BRE

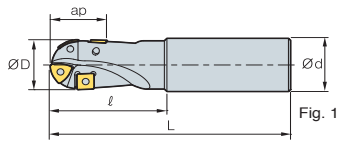


Fig. 1

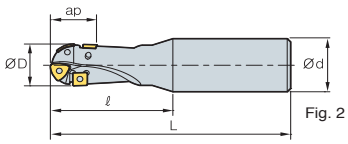


Fig. 2

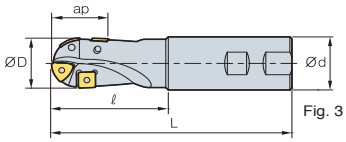


Fig. 3

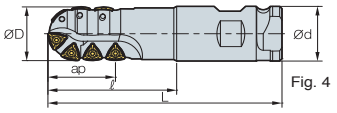


Fig. 4

• AR : 0°~10°
• RR : -3°~0°

(mm)

Designation		øD	ød	ℓ	L	ap	Available Inserts Main	Available Inserts Ext. main	Parts Screw	Parts 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	●						
	120408-MM		●			●		E21
	120508-MMN							
ZDMT	080310R-MM		●					E24
	110312.5R-MM		●					
	130416R-MM		●					
ZPMT	160520R-MM		●					
	160525R-MM		●					
	160525R-MR							
	160531.5R-MM		●					

Parts

Screw	Wrench	Wrench
ETNA02506* ETNA0408** ETNA0511	TW15S** TW20-100	TW07P*

*BRE 20, BRE 25 **BRE 32

Recommended cutting condition

Machining • Slotting-A • Shouldering(general cutting edge)-B • Shouldering(long cutting edge)-C

Workpiece		Hardness	Cutting Condition vc(m/min)	Cutting Condition 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, E21, E24

● : Stock item

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

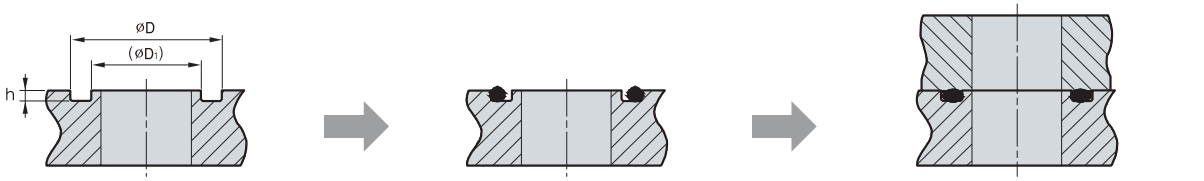
- ORC: O-Ring Cutter
- P30: O-Ring size

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)

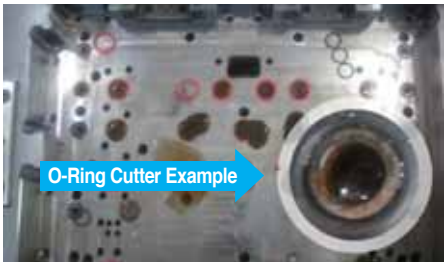
O-ring size	øD	(øD1)	h ± 0.05
P08	11.0	5.8	1.40
P09	12.0	6.8	
P10	13.0	7.8	
P11	15.0	8.5	1.80
P12	16.0	9.5	
P14	18.0	11.5	
P15	19.0	12.5	
P16	20.0	13.5	
P18	22.0	15.5	
P20	24.0	17.5	
P21	25.0	18.5	
P22	26.0	19.5	
P24	30.0	20.6	2.70
P25	31.0	21.6	

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	
P40	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	

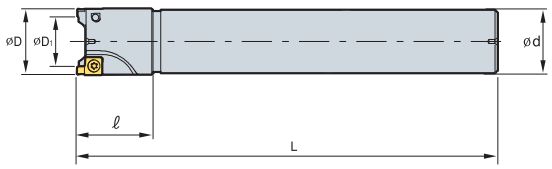
Recommended cutting condition

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		Coated									Cermet			Uncoated				Page
			NCM325	NCM335	NC5330	PC3500	PC3600	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
ORC-P08~P10	ORG	265				●														E12
ORC-P11~P22		325				●														
ORC-P24~P40		470				●														
ORC-G25~G40		405				●														

Parts

Screw	Wrench
	

ORC-P08~P22	FTKA0307	TW09S
ORC-P24~P40	FTGA03508	TW15S
ORC-G25~G40		

Available Inserts E12

● : Stock item

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

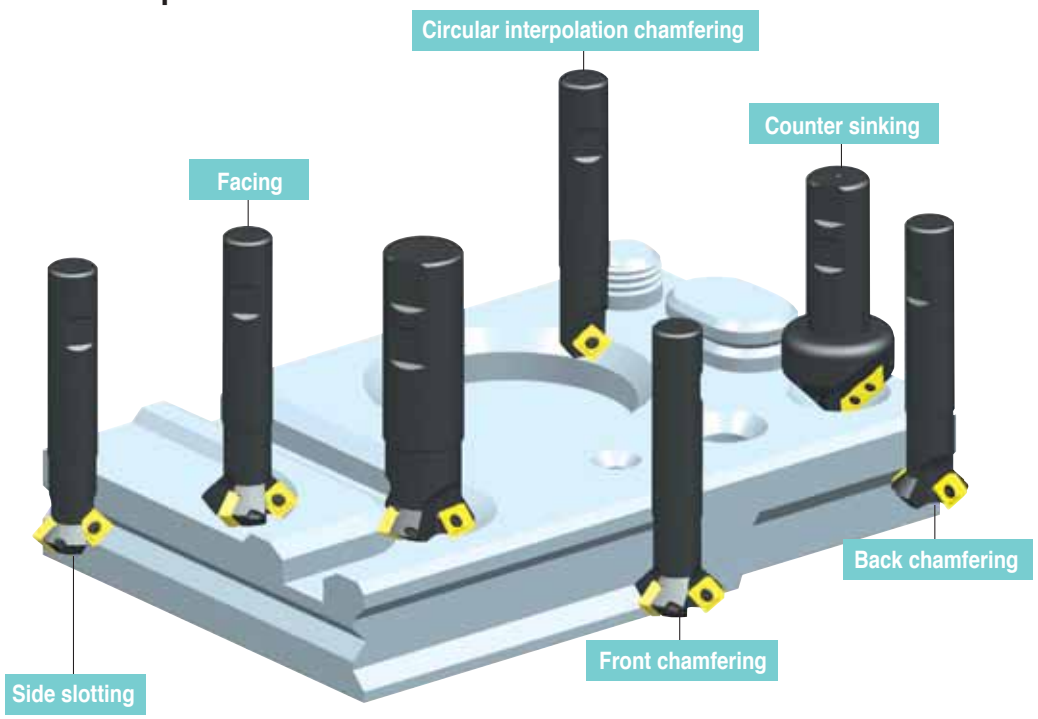
CE 45 - 11 25 R - S 20

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 PC5300 ST30A	100~160	0.05~0.25	100~160	0.05~0.25
M	PC5300 PC3545	90~120	0.05~0.20	90~120	0.10~0.30
K	PC5300 G10	100~160	0.10~0.30	100~160	0.30~0.50

Application example



Multi-functional Chamfer Tool

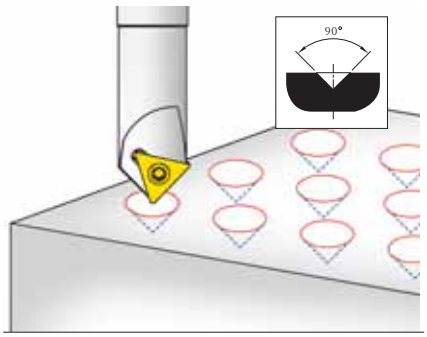
Code System

CE 45 - 16 00 R - S 20

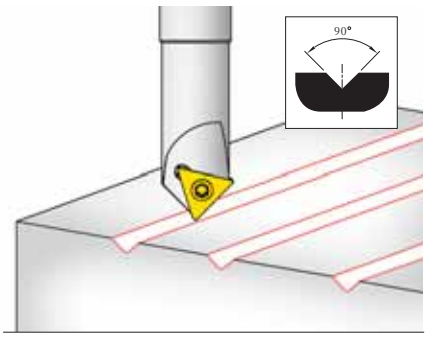
Chamfer Endmill	Chamfer angle	Inscribed circle of insert	Min. Cutting Dia.	Hand	Overall length	Shank Dia.
	45°	16 : TWX16R-KC 22 : TWX22R-KC	Ø0	R : Right L : Left	S : 90,110 L : 200	Ø12 Ø20 Ø25

Application area and Recommended cutting condition

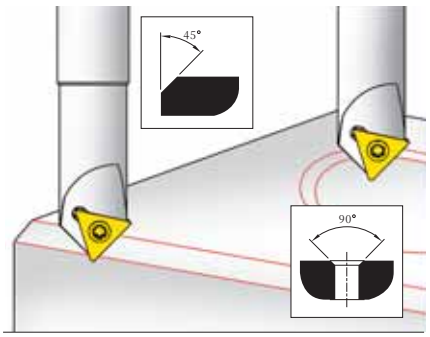
Centering



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

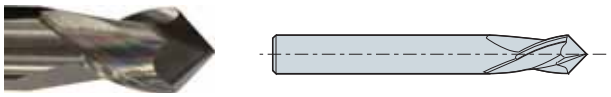
Code System

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

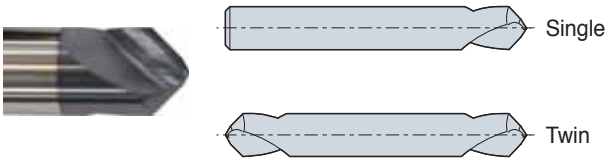
CET(Centering & Chamfering Endmill Tool)



▶For internal chamfering up to 0.5mm

▶Can be applied to side milling and easy to regrinding

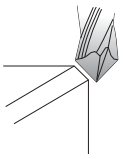
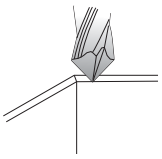
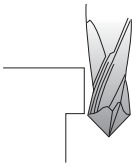
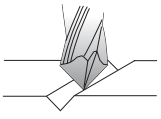
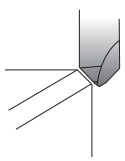
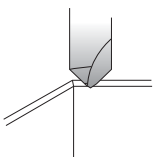
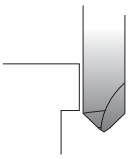
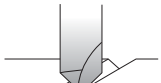
CCT(Centering & Chamfering Tool)



▶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)

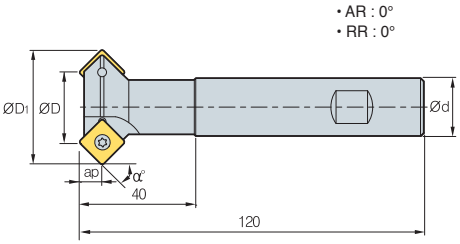


Fig. 1

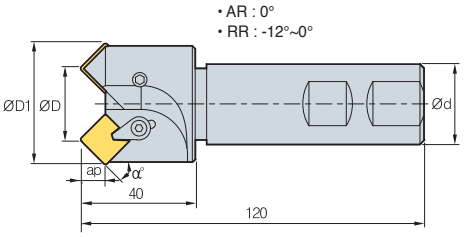


Fig. 2

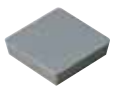
(mm)

Designation		⦶	øD	øD1	ød	ap	Fig.	Available Inserts	α°(Chamfer angle)		Machining range (Min~Max)	Uses
									Front	Back		
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
CE	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

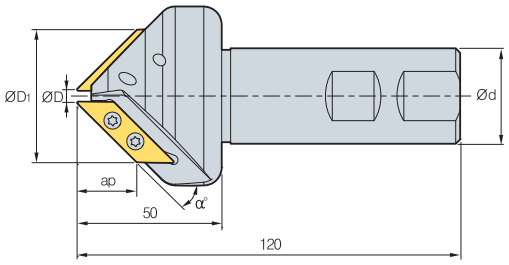


Designation	Coated										Cermet			Uncoated				Page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SPMT 110408-KC				●											●	●		E21
SPMN 120308																●		

Parts

	Screw	Clamp	C-Ring	Wrench	Wrench
CE□□-11□□R-S	FTKA0408	-	-	TW15S	-
CE□□-12□□R-S	CHX0617L	CH6R2	CR05	-	HW30L

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	Coated										Cermet			Uncoated				Page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
XCET 310404ER-KC				●											●	●		E23

Parts

Screw	Wrench
	

CE□□-31□□R-S	FTKA03510	TW15S

CE(Multi-functional)

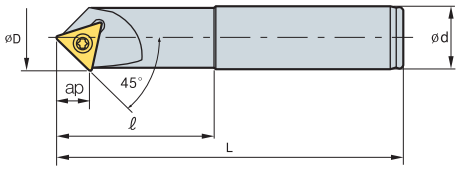


Fig. 1

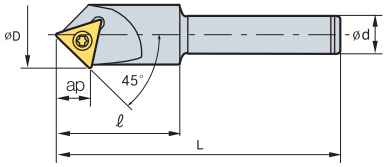


Fig. 2

- AR : -12°~15°
- RR : 0°

(mm)

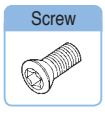
Designation		øD	ød	ℓ	L	ap	Fig.	Available Inserts	Machining range (Min~Max)	Uses
CE	45-1600R-S12	22	12	40	90	10	2	TWX16R-KC	Ø0 ~ Ø20	Centering Grooving Chamfering
	45-1600R-S20	22	20	50	110	10	1	TWX16R-KC	Ø0 ~ Ø20	
	45-1600R-L20	22	20	60	200	10	1	TWX16R-KC	Ø0 ~ Ø20	
	45-2200R-S12	29	12	40	90	14	2	TWX22R-KC	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	

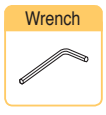
Available Inserts

TWX-KC

Designation		Coated										Cermet			Uncoated				Page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
TWX	16R-KC				●														E23
	22R-KC				●														

Parts



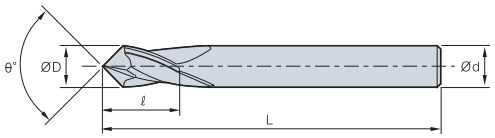


CE45-□□□□R-□□	FTNA0408	TW15L

Available Inserts E23

● : Stock item

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

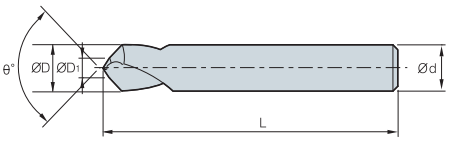


Fig. 1

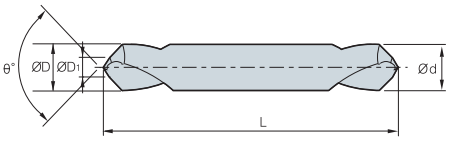
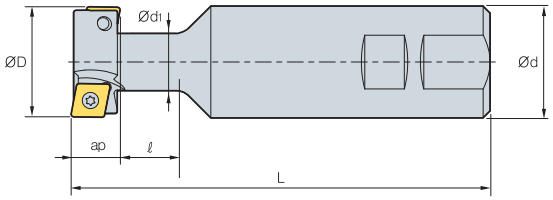


Fig. 2

(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

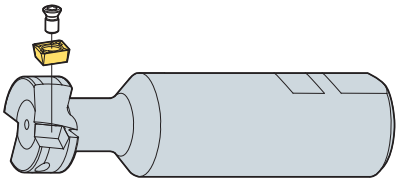
Available Inserts

Designation	CPMT	CPMH	Coated									Cermet			Uncoated				Page
			NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
CPMT	060204-MM					●														E07
	080308-MM					●														
	09T308-MM					●														
CPMH	120408-MM					●														

Parts

	Screw	Wrench
2125R/L	FTNA02555	TW08S
2525R/L	FTNA0306	TW09S
3232R/L	FTNA0407	TW15S
4032R/L	PTMA0511A	TW15S
5032R/L		

Assembling

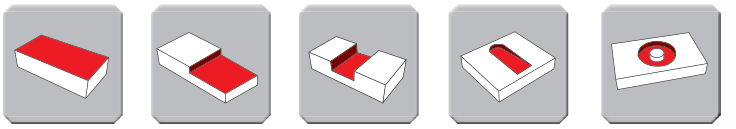


New indexable milling tool for the machining of high quality workpieces

Pro-L Mill New

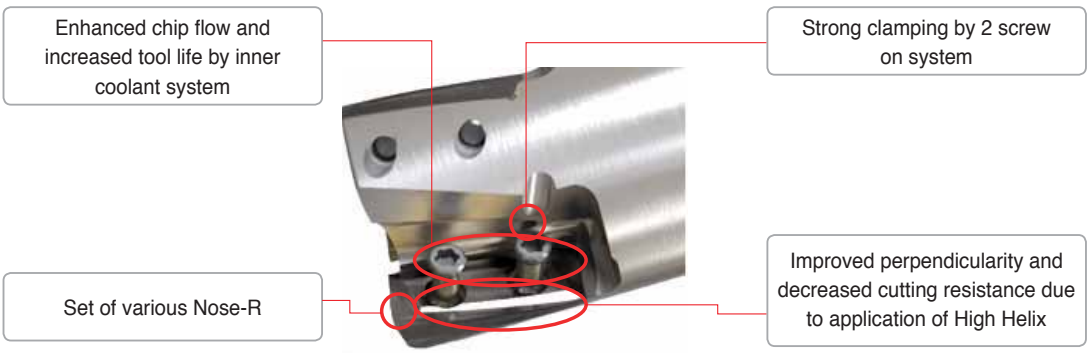
- Improved perpendicularity and lower cutting resistance by composition of clearance face and High Helix edge
- Productivity increase due to more than half as much of Depth of Cut comparing to existing product
- Strong clamping design by adaption of double screw on system
- Improved chip flow due to helical type design of chip pocket and application of coolant system

Uses



Facing | Shouldering | Slotting | Ramping | Helical cutting

Features



Shank type Code system

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

Cutter type Code system

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	-	○	-

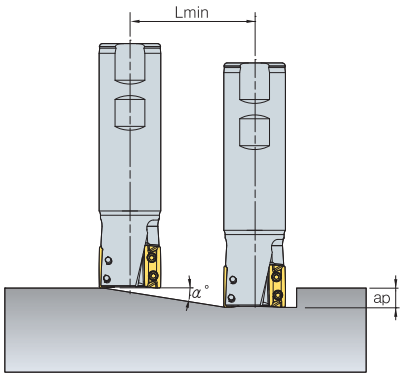
Cutting Performance

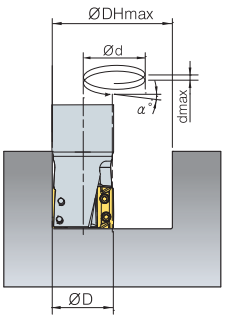
N Al6061 (HRC30)

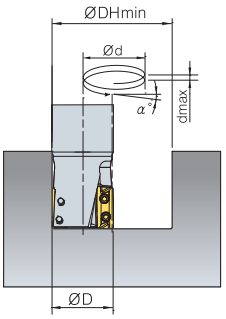
■Cutting condition
vc = 500m/min
fz = 0.2mm/t
ap = 30 ~ 60mm
ae = 1 ~ 5mm(finishing : 1mm, roughing : 5mm)
z = 3

Pro-L Mill Ramping & Helical cutting technical data

1. Ramping	2. Blind hole Helical cutting	3. Thru hole Helical cutting







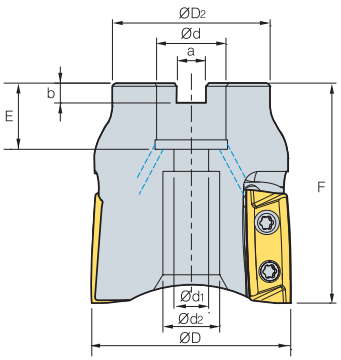
Designation	ØD(mm)	Ramping		Blind hole Helical cutting				Thru hole Helical cutting	
		α°(max)	Lmin(mm)	ØDHmax (mm)	dmax (mm)	ØDHmin (mm)	dmax (mm)	ØDHmin (mm)	dmax (mm)
PALS032HR-2S20	32	3.37	170	62	3.6	60	3.5	55	3.2
PALS032HR-2S25	32	3.37	170	62	3.6	60	3.5	55	3.2
PALS032HR-2S32	32	3.37	170	62	3.6	60	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

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

α° : Max. rampig angle
ap : Depth of cut

PALC(M) New



AA 90°
• AR : 16°
• RR : -8°

(mm)

Designation		øD	øD2	Ød	Ød1	Ød2	Ød3	a	b	E	E1	F	ap	kg
PALC(M) 063HR	4	63	50	22	11	18	-	10	6.3	21	28	70	34	0.57

Available Inserts

LXET

Type	Designation	Coated									Cermet			Uncoated				Page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PC215K	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
Ø63	LXET 3405PEFR-63-MA 3405PEER-63-ML																		E10

Available Arbors

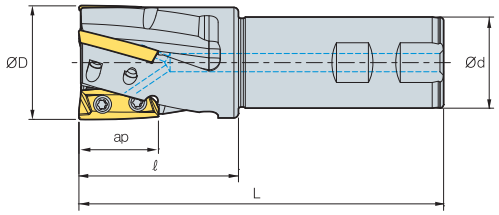
Designation	Ød	Available Arbors
PALC(M) 063HR	22	BT□□-FMC22-□□

Parts

	Screw	Wrench
Ø63	FTGA0511-P	TW20-100

Available Inserts E10

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

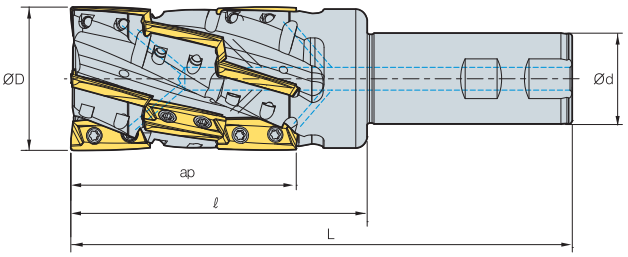
LXET

Type	Designation	Coated									Cermet			Uncoated				Page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PC215K	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
Ø32	LXET 2504PEFR-32-MA																		E10
	2504PEER-32-ML																		
Ø40	2504PEFR-40-MA																		
	2504PEER-40-ML																		
	2504PEFR-40-MA																		
	2504PEER-40-ML																		
Ø50	3405PEFR-50-MA																		
	3405PEER-50-ML																		
Ø63	3405PEFR-63-MA																		
	3405PEER-63-ML																		

Parts

	Screw	Wrench	Wrench
Ø32	FTKA0408	TW15S	-
Ø40	FTKA0410	TW15S	-
Ø50	FTGA0510-P	-	TW20-100
Ø63	FTGA0511-P	-	TW20-100

PALS(Multi Edge) New



AA 90°
- AR : 16°
- RR : -8°

(mm)

Designation			øD	ød	ℓ	L	ap	kg
PALS	063HM-4S32	4	63	32	70	160	96	1.60
	063HM-4S40	4	63	40	70	160	96	1.92
	063HM-4S42	4	63	42	70	160	96	2.00

Available Inserts

LXET

Type	Designation	Coated									Cermet			Uncoated				Page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PC215K	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
Ø63	LXET 3405PEFR-63-MA 3405PEER-63-ML																		E10

Parts

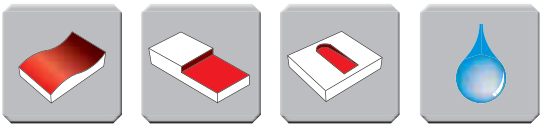
	Screw	Wrench
Ø63	FTGA0511-P	TW20-100

Buffed on top face of insert ensure good chip control and reduces built-up edge

Pro-A Mill

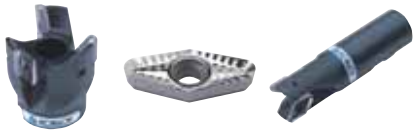
- Buffed top face of insert ensures good chip control and reduces built-up edge
- Small size modular type for aluminum machining
- Various line up of modular system for aluminum machining
- For shouldering, curved surface and ramping
- High rake angle chip breaker ensures excellent surface roughness 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

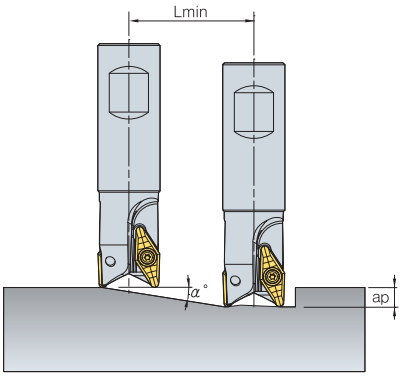
Type	Series	Pro-A mill	Through coolant system
Application of small-sized Aluminum machining	**Pro-A 2000**	 • Modular : Ø12~Ø42 • Shank : Ø12~Ø42 • Insert : VDKT11T210N-MA VDKT11T220N-MA	O
General application of Aluminum machining	**Pro-A 4000**	 • cutter : Ø40~Ø100 • Shank : Ø32~Ø40 • Insert : VCKT220530N-MA	O

Recommended cutting condition

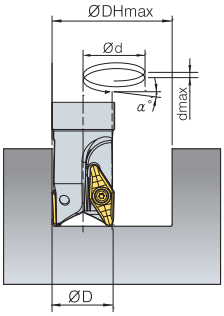
Workpiece		Cutting speed vc(m/min)
Aluminum alloy	Rm < 280 MPa	1000
	Rm > 280 MPa	800
Copper alloy	Long chip	250
Thermo plastic	-	300
Aluminum alloy	Si < 12%	800
Copper alloy	Short chip	400
Magnesium alloy	-	400
Duroplastics	-	150

Pro-A Mill Ramping & Helical cutting technical data

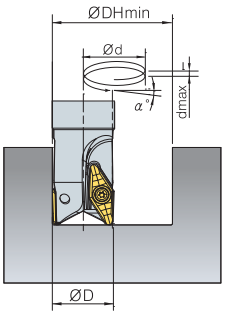
1. Ramping



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

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

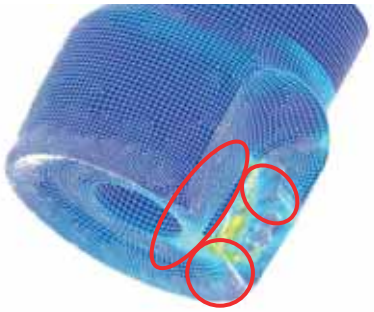
α° : Max. rampig angle
ap : Depth of cut

Strong clamping due to the concave design of insert bottom

Pro-X Mill

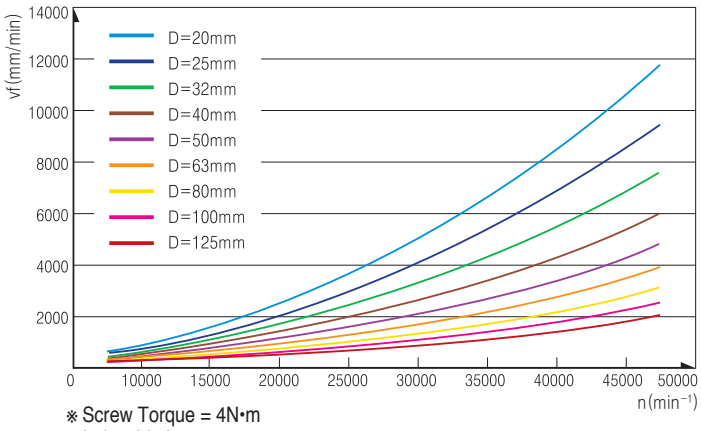
- Strong clamping due to the concave design of insert bottom
- Good chip flow and less build up edge acheived with the buffed surface of insert
- High rake angle of insert provides good surface finish and low cutting load
- Specially designed for high speed machining of aluminum
- Suitable for square 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)		Max. RPM	
5000 type	6000 type	n(min⁻¹)	vc(m/min)
20	-	15,000	940
25	25	32,600	2,559
32	32	28,800	2,894
40	40	25,800	3,240
50	50	23,000	3,611
63	63	20,500	4,055
80	80	18,200	4,572
100	100	16,300	5,118
125	125	14,600	5,731

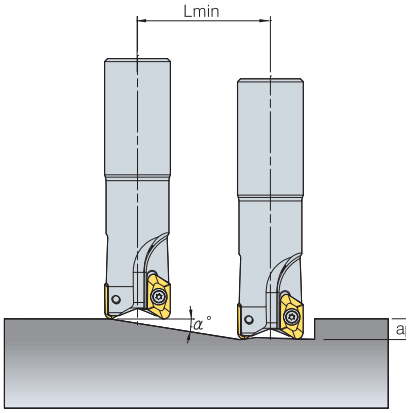
※ In case of actual machining accidental breakage of insert or tool could happen even under the written RPM special cover or door is necessary to prevent damage from broken insert or broken tool

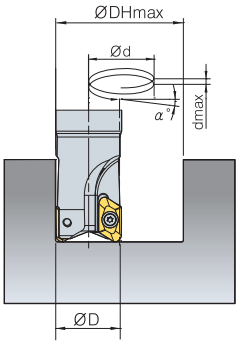
Recommended cutting condition

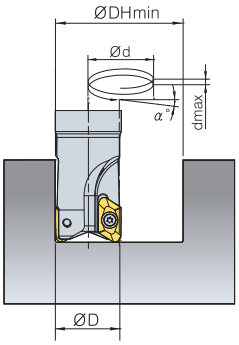
Workpiece		Cutting Speed vc(m/min)	Feed fz(mm/t)
Aluminum alloy	Rm280 < MPa	1200	0.30
	Rm280 > MPa	1000	0.25
Copper alloy	Long chipping	400	0.20
Thermo plastic	-	350	0.15
Aluminum alloy	Si <12%	1000	0.25
	Si ≥12%	-	-
Copper alloy	Short chipping	500	0.20
Magnesium alloy	-	450	0.20
Duroplastics	-	200	0.15

Pro-X Mill Ramping & Helical cutting technical data

1. Ramping	2. Blind hole Helical cutting	3. Thru hole Helical cutting







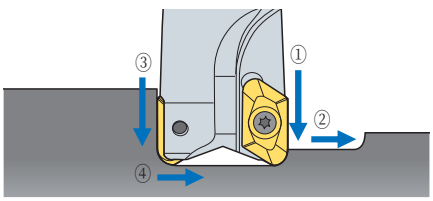
Designation	ØD(mm)	Ramping		Blind hole Helical cutting				Thru hole Helical cutting	
		α°(max)	Lmin(mm)	ØDHmax(mm)	dmax(mm)	ØDHmin(mm)	dmax(mm)	ØDHmin(mm)	dmax(mm)
PAXS5020HR	20	8.4	68	34	5.0	32	4.7	27	4.0
PAXS5025HR	25	13.2	43	44	10.4	42	9.9	34	8.0
PAXS5032HR	32	9.5	60	58	9.7	56	9.3	48	8.0
PAXS5040HR	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
PAXCM6060HR	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

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

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

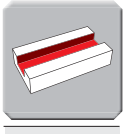
Holder	ap(mm)	
	5000 Type	6000 Type
Ø20	8	-
Ø25	4	11
Ø32	4	6
Ø40~125	4	6

Insert	ap(mm)
XETK19	4
XETK25	6

Uses

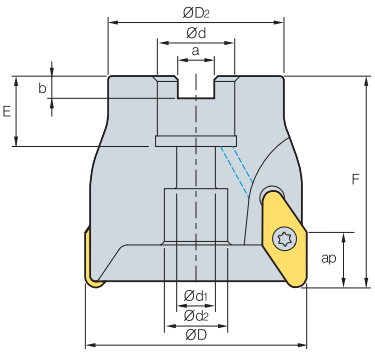

Copying


Helical cutting


Slotting & Shouldering


Ramping

PAC(M)4000



AA 90°

- AR : 0°
- RR : -3°

(mm)

Designation		ø	øD	øD2	ød	ød1	ød2	a	b	E	F	ap	kg
PAC(M)	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
	4080HR	4	80	60	25.4(27)	14	20	9.5(12.4)	6.0(7.0)	25(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

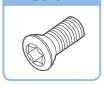
Designation	Coated										Cermet			Uncoated				Page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
VCKT 220530N-MA														●				E23

Available Arbors

Designation		Ød	Available Arbors
PAC(M)	4040HR	16	BT□□-FMC16-□□
	4050HR 4063HR	22	BT□□-FMC22-□□
	4080HR	25.4	BT□□-FMA25.4-□□
		27	BT□□-FMC27-□□
	4100HR	31.75	BT□□-FMA31.75-□□
		32	BT□□-FMC32-□□

Parts

Screw



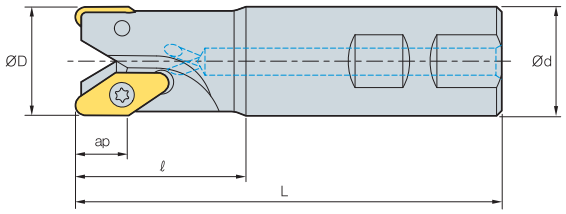
Wrench

FTNC04509 (Ø40) FTNC04511	TW 20S	

Available Inserts E23
Available Arbors and bolt E290~E292

● : Stock item

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
PAS	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	Coated									Cermet			Uncoated				Page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
2000 type	VDKT 11T210N-MA														●				E23
4000 type	VCKT 220530N-MA														●				

Parts

Screw

Wrench

2000 type	ETNA02505* / ETNA02506	TW 07S
4000 type	FTNC04509	TW 20S

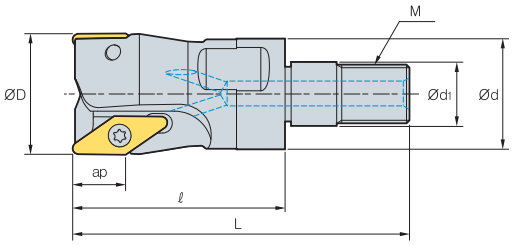
* PAS2012 · 2016

Available Inserts E23

Available Arbors and bolt E290~E292

● : Stock item

PAM2000



AA 90°

- 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	Coated										Cermet			Uncoated				Page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
VDKT 11T210N-MA														●				E23

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

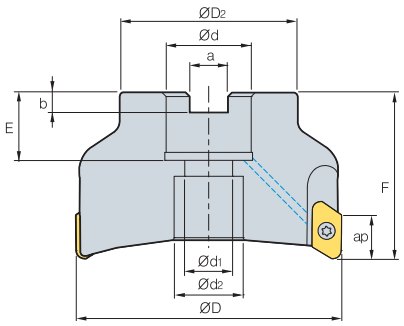
Screw	Wrench
ETNA02505* ETNA02506	TW 07S

* PAM2012·2016

Available Inserts E23 Available Adaptors E253~E254

● : Stock item

PAXC(M)5000



• AR : 8°~17.5°
• RR : -9.5°~-5°

(mm)

Designation		⊚	øD	øD2	ød	ød1	ød2	a	b	E	F	Max rpm	ap	kg
PAXC(M)	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
	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		Coated										Cermet			Uncoated				Page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
XEKT	19M504FR-MA										●				●				E23
	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 5063HR-A,B	22	BT□□-FMC22-□□
	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-□□

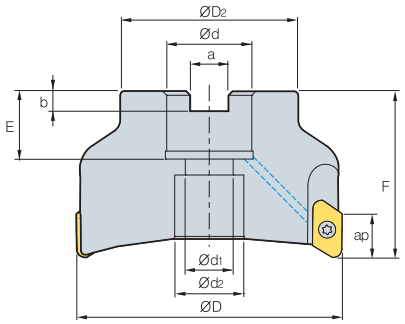
Parts

Screw	Wrench
	
PTKA0408	TW 15S

Available Inserts E23 Available Arbors and bolt E282~E284

● : Stock item

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
PAXC(M)	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
	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		Coated										Cermet			Uncoated				Page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
XEKT	250604FR-MA														●				E23
	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-□□

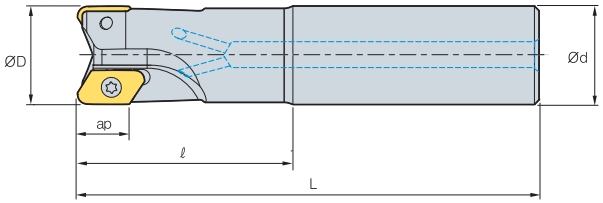
Parts

Screw	Wrench
	
FTGA0513-P	TW 20-100

Available Inserts E23
Available Arbors and bolt E282~E284

● : Stock item

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	32	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	42	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

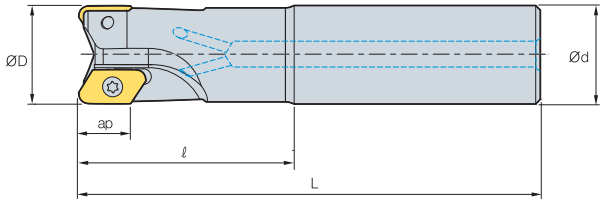
XEKT-MA

	Designation	Coated									Cermet			Uncoated				Page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
XEKT	19M504FR-MA										●				●				E23
	19M508FR-MA										●				●				
	19M512FR-MA										●				●				
	19M516FR-MA														●				
	19M518FR-MA																		
	19M520FR-MA										●				●				
	19M530FR-MA														●				
	19M532FR-MA										●				●				
	19M540FR-MA										●				●				
	19M550FR-MA										●				●				

Parts

Screw	Wrench
	
PTKA0408	TW 15S

PAXS6000



AA 90°

- 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		Coated										Cermet			Uncoated				Page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
XEKT	250604FR-MA														●				E23
	250608FR-MA														●				
	250612FR-MA														●				
	250616FR-MA																		
	250620FR-MA																		
	250630FR-MA																		
	250632FR-MA																		
	250640FR-MA																		
	250650FR-MA														●				

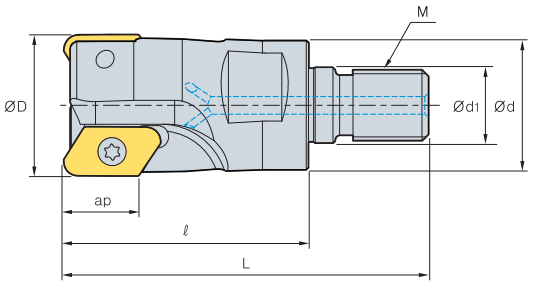
Parts

Screw

Wrench

	FTGA0510-P (Ø25~Ø32) FTGA0513-P (Ø40)	TW 20-100

PAXM5000



AA 90°

• 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		Coated									Cermet			Uncoated				Page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
XEKT	19M504FR-MA										●				●				E23
	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)

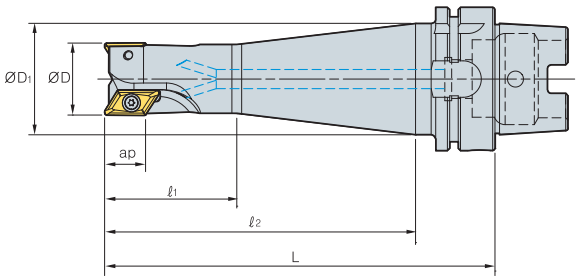
Parts

Screw	Wrench
	
PTKA0407 PTKA0408	TW 15S

Available Inserts E23
Available Adaptors E253~E254

● : Stock item

HSK63A/100A PAX5000



AA 90°

- AR : 5°~17.5°
- RR : -14°~-5°

(mm)

Designation			øD	øD1	ℓ1	ℓ2	L	ap	kg
HSK63T	PAX5032HR-A, B	2	32	53	58	137	163	17	1.14
HSK100T	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		Coated										Cermet			Uncoated				Page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
XEKT	19M504FR-MA										●				●				E23
	19M508FR-MA										●				●				
	19M512FR-MA										●				●				
	19M516FR-MA														●				
	19M518FR-MA																		
	19M520FR-MA										●				●				
	19M530FR-MA														●				
	19M532FR-MA										●				●				
	19M540FR-MA										●				●				
	19M550FR-MA										●				●				

Parts

Screw	Wrench
PTKA0407 PTKA0408	TW 15S

MAT(Steel Shank type)

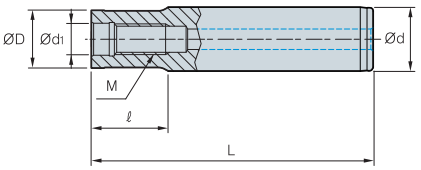


Fig. 1

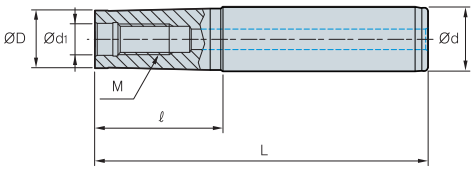


Fig. 2

(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 Adapter • T : Taper Neck Adapter

Available Modulars

FMRM type

E184

LBE-MHD type

E218

PAM type

E246

AMM type

E132

RM4PM type

E87

RM4ZM type

E89

HRMM type

E205

HRMDM type

E199

PAXM type

E251

Applicable Modular E33 (FMRM, LBE, PAM, AMM, RM4PM, RM4ZM, HRMM, PAXM)

MAT-C(Carbide Shank type)

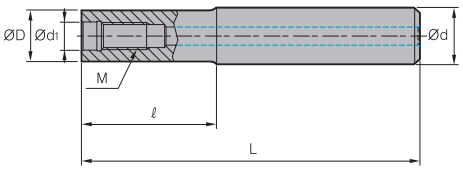


Fig. 1

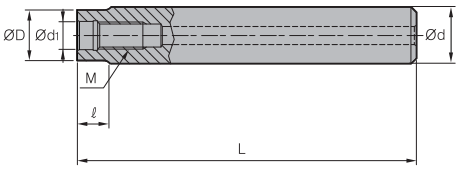


Fig. 2

(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

Available Modulars

FMRM type	LBE-MHD type	PAM type	AMM type	RM4PM type
				
E184	E218	E246	E132	E87

RM4ZM type	HRMM type	HRMDM type	PAXM type
			
E89	E205	E199	E251

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

Adjusting

Cutter type

For half side cutter, minimum width of the cutter will be written only.

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

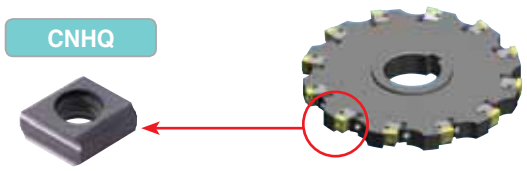
Cutter Dia.

Min. width of cutter

Hand

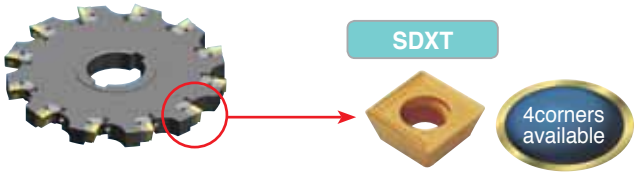
Unmarked	R	L
Neutral	Right	Left
Full side cutter (Plane type)	Half side cutter (Boss type)	

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)

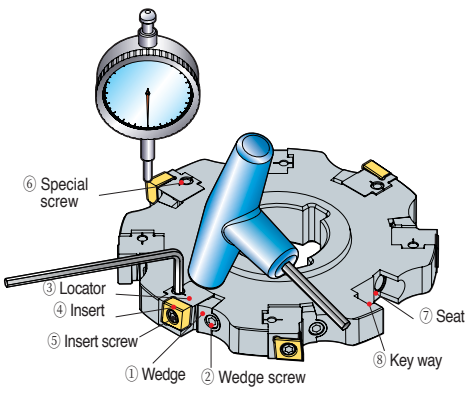


- Medium/Finishing
- Suitable for small width cutting operation (12~24mm)
- 3 dimensional chip breaker provides smooth cutting operation.
- Several chip breakers as per applications are available (MF, MM, FA)
- Economical insert using 4 cutting edges per insert

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		Cutting width for half side cutter (ap)	Cutting width for full side cutter (ap)			
	NCM325	PC6510					
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							

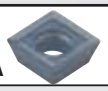
Applicable holder E253, E254 Available Arbors and bolt E290~E292 ● : Stock item

Recommended cutting condition

ISO	Grades	vc(m/min)	fz(mm/t)
P	NCM325	150~300	0.10~0.30
	PC3500	100~300	
M	PC5300	100~180	0.10~0.30
	NCM335	120~200	
K	PC215K	150~250	0.10~0.30
	PC6510	150~300	

Radial type

Cutting width as per insert & type of cutter

MA  MF  MM  (mm)

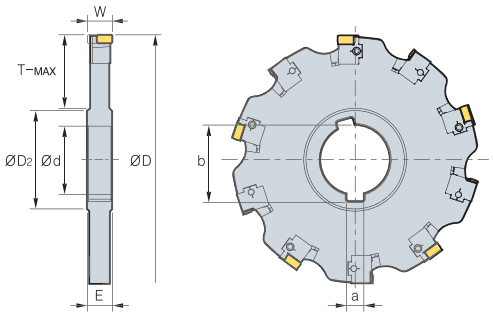
Designation	Coated							Uncoated	Cutting width for half side cutter (ap)	Cutting width for full side cutter (ap)		
	NCM325	NCM335	PC3500	PC3545	PC9530	PC6510	PC5300	H01				
SDXT 09M405R-MA								●	8	12~14 14~16	9.525	4
09M405L-MA												
09M405R-MF	●	●			●	●	●					
09M405L-MF												
09M405R-MM	●	●	●		●	●	●					
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 E259, E260 Available Arbors and bolt E290~E292 ● : Stock item

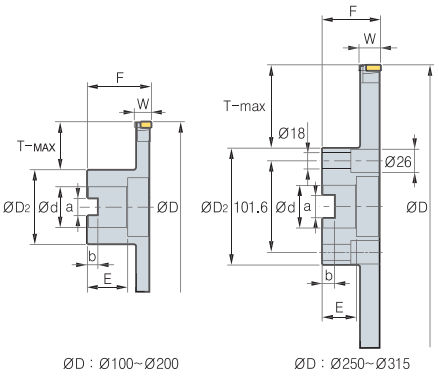
Recommended cutting condition

ISO	Grades	vc(m/min)	fz(mm/t)
P	NCM325	120~250	0.08~0.30
	NCM335	120~220	0.08~0.25
	PC3500	100~220	0.10~0.25
M	PC9530	80~180	0.10~0.25
	PC5300		
K	PC8110	150~230	0.10~0.25
	PC6510	180~250	

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 E256

• The ap (Maximium width of cutter) size written above is the number when using insert having corner size C0.5 or R0.5

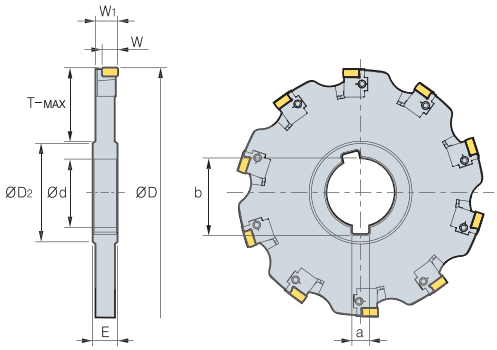
• ( )Metric Size

Parts

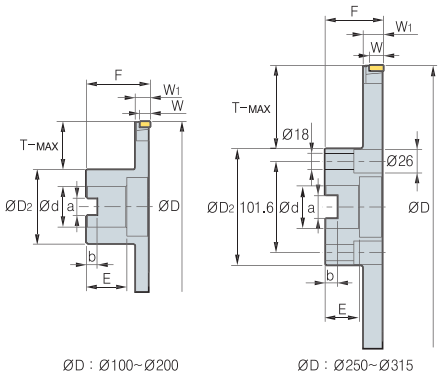
Edge width(TAFCP/B)	Insert	Locator	Wedge	Insert Screw	Wedge Screw	Locator Screw	Insert Wrench	Wedge Wrench	Locator Wrench
□□□1418R/L	CNHQ1005-□□□	LSA-CH10R/L	WSA10N	FTKA0410	DHA0617	SHGA0411	TW15S	HW30	-
□□□1821R/L	CNHQ1305-□□□	LSA-CH13R/L	WSA13N	FTKA0410	DHA0821F	SHGA0411	TW15S	HW40	HW30L
□□□2124R/L	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 E256

• The ap (Maximium width of cutter) size written above is the number when using insert having corner size C0.5 or R0.5

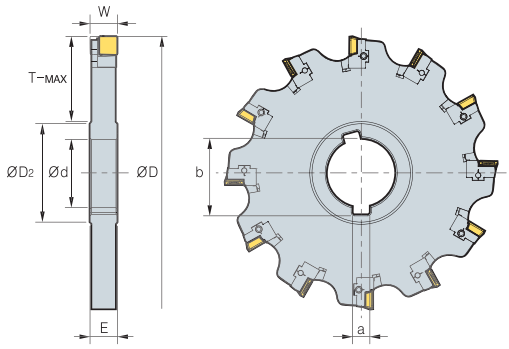
• ( )Metric Size

Parts

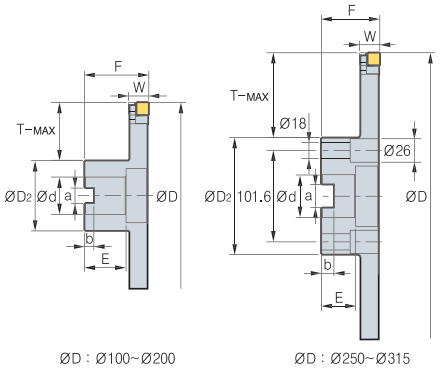
Edge width(TAHCP/B)	Insert	Locator	Wedge	Insert Screw	Wedge Screw	Locator Screw	Insert Wrench	Wedge Wrench	Locator Wrench
□□□1418R/L	CNHQ1005-□□□	LSA-CH10R/L	WSA10N	FTKA0410	DHA0617	SHGA0411	TW15S	HW30	-
□□□1821R/L	CNHQ1305-□□□	LSA-CH13R/L	WSA13N	FTKA0410	DHA0821F	SHGA0411	TW15S	HW40	HW30L
□□□2124R/L	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 E256

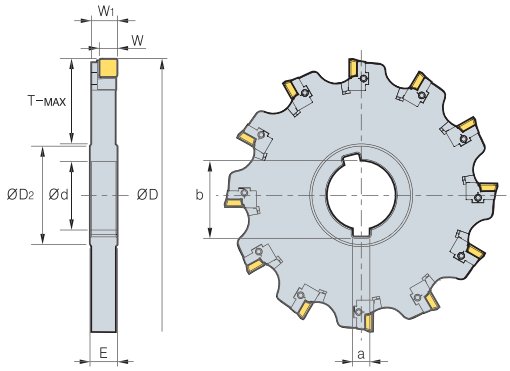
• The ap (Maximium width of cutter) size written above is the number when using insert having corner size C0.5 or R0.5

• ( )Metric Size

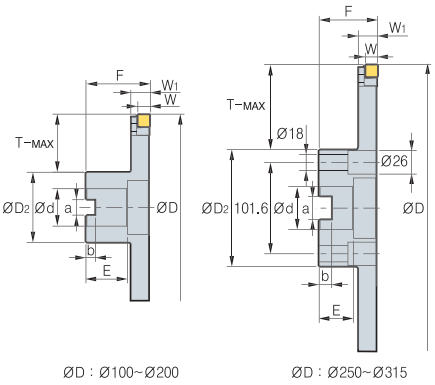
Parts

Edge width(RAFCP/B)	Insert	Locator	Wedge	Insert Screw	Wedge Screw	Locator Screw	Insert Wrench	Wedge, Locator Wrench
			WSD09N WSA10N					
□□□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	W	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 E256

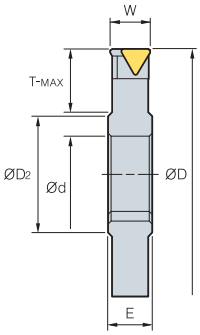
• The ap (Maximum width of cutter) size written above is the number when using insert having corner size R0.5. The ap is subject to change as per insert corner size
• The ap (Maximum width of cutter) size written above is the number when using SDXT09M405R-MM. The ap is subject to change as per insert corner size

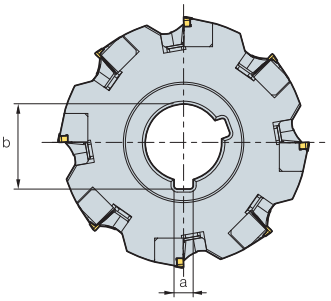
• ( )Metric Size

Parts

Edge width(TAHCP/B)	Insert	Locator	Wedge	Insert Screw	Wedge Screw	Locator Screw	Insert Wrench	Wedge, Locator Wrench
			WSD09N / WSA10N					
□□□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(M) 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	Coated										Cermet			Uncoated				Page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
TPCN 1103PPN													●		●	●	●	E22
1603PPN	●							●					●		●			

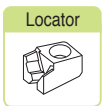
Available Arbors

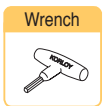
Designation	Arbors	
FC(M) 08010	BT40-SCA27-75/120	BT50-SCA27-90/135
10012	BT40-SCA32-105	BT50-SCA32-90/135
12512	-	BT50-SCA40-90/135
12520	-	BT50-SCA40-90/135
16012	-	BT50-SCA40-90/135
16018	-	BT50-SCA40-90/135
16020	-	BT50-SCA40-90/135
20022	-	-
25024	-	-
31524	-	-

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	150 ~ 250 120 ~ 200 100 ~ 150	0.10 ~ 0.25 0.10 ~ 0.30 0.10 ~ 0.30	NCM325 PC3500 ST30A
M	80 ~ 180 80 ~ 150	0.10 ~ 0.25 0.10 ~ 0.30	PC9530 ST30A
K	130 ~ 200 100 ~ 150	0.10 ~ 0.35 0.10 ~ 0.40	PC6510 G10

Parts

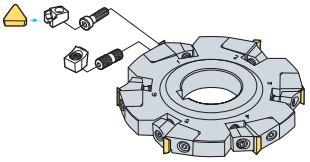




LFC2R/L· LFC3R/L	WFC2N · WFC3N	DHA0617	MHB0310	HW30L
LFC2R/L-1*	WFC2N-1*	DHA0815	MHB0410	HW40L

* FC08010

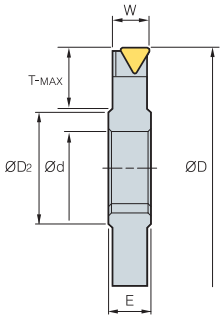
Assembling

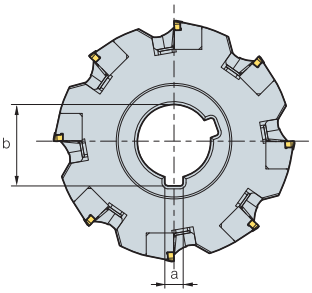


Available Inserts E22
Available Arbors and bolt E290~E292

● : Stock item

HC(M) (Half side cutter)





• AR : 5°
• RR : 0°

(mm)

Designation		ØD	W	T-MAX	Ød	E	a	b	ØD2	Insert
HC(M) 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	Coated										Cermet			Uncoated				Page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
TPCN 1603PPN	●							●					●		●			E22

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	-	-

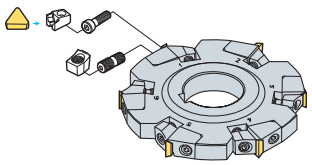
Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
P	150 ~ 250 120 ~ 200 100 ~ 150	0.10 ~ 0.25 0.10 ~ 0.30 0.10 ~ 0.30	NCM325 PC3500 ST30A
M	80 ~ 180 80 ~ 150	0.10 ~ 0.25 0.10 ~ 0.30	PC9530 ST30A
K	130 ~ 200 100 ~ 150	0.10 ~ 0.35 0.10 ~ 0.40	PC6510 G10

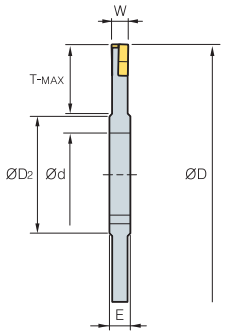
Parts

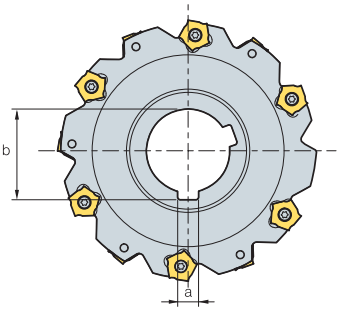
Locator	Wedge	Screw	Locator Screw	Wrench
LFC3R/L	WFC3N	DHA0815	MHB0410	HW40L

Assembling



SPP(M)





• AR : -2°
• RR : -28°

(mm)

Designation		⊚	ØD	W	T-MAX	Ød	a	b	E	ØD2	Insert	Screw	Wrench
SPP(M)	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	150 ~ 250	0.10 ~ 0.25	NCM325
	120 ~ 200	0.10 ~ 0.30	PC3500
	100 ~ 150	0.10 ~ 0.30	ST30A
M	80 ~ 180	0.10 ~ 0.25	PC9530
	80 ~ 150	0.10 ~ 0.30	ST30A
K	130 ~ 200	0.10 ~ 0.35	PC6510
	100 ~ 150	0.10 ~ 0.40	G10

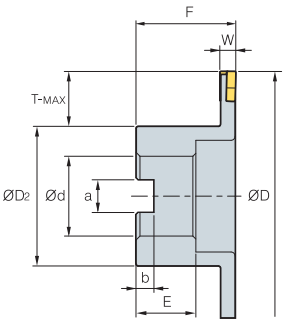
Code system

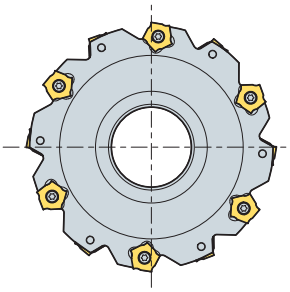
S P P 160 - 06 R

- 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 E290~E292

SPB(M)





• AR : -10°
• RR : 0°

(mm)

Designation		ØD	W	T-MAX	ØD2	Ød	a	b	F	E	Insert	Screw	Wrench
SPB(M)	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	50.8(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1255N	PTKA0409F	TW15S
	160-11R/L	16	160	11	43	70	50.8(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1260N	PTKA0410F	TW15S
	160-12R/L	16	160	12	43	70	50.8(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1265N	PTKA0411F	TW15S
	160-13R/L	16	160	13	43	70	50.8(40)	15.9(16.4)	10(9)	60(50)	38(30)	PNEJ1270N	PTKA0412F	TW15S
	160-14R/L	16	160	14	43	70	50.8(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	150 ~ 250	0.10 ~ 0.25	NCM325
	120 ~ 200	0.10 ~ 0.30	PC3500
	100 ~ 150	0.10 ~ 0.30	ST30A
M	80 ~ 180	0.10 ~ 0.25	PC9530
	80 ~ 150	0.10 ~ 0.30	ST30A
K	130 ~ 200	0.10 ~ 0.35	PC6510
	100 ~ 150	0.10 ~ 0.40	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 E290~E292

SPS

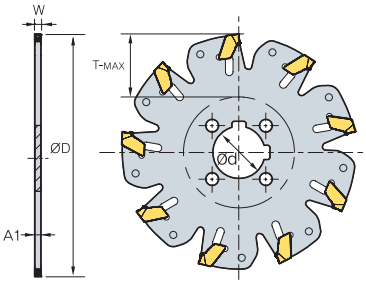


Fig. 1

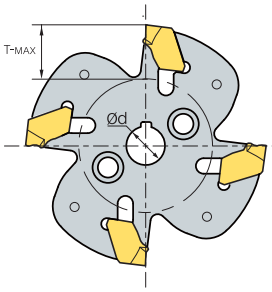


Fig. 2

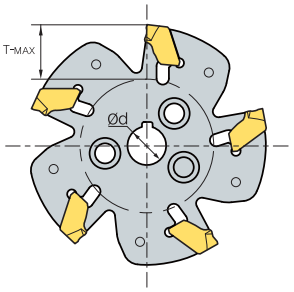


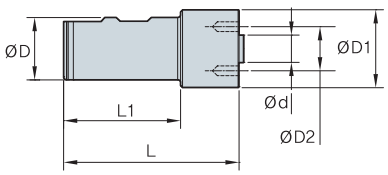
Fig. 3

(mm)

	Designation		øD	W	T-MAX	ød	A1	Fig.	Insert	Adaptor WS	Adaptor DF
SPS	050-0204-08R	4	50	2.2	11	8	1.8	2	SPFN 200 - ( )	WS2528-M4	-
	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	1		-	DF32-55
	063-0305-10R	5	63	3	15.5	10	2.55	3	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

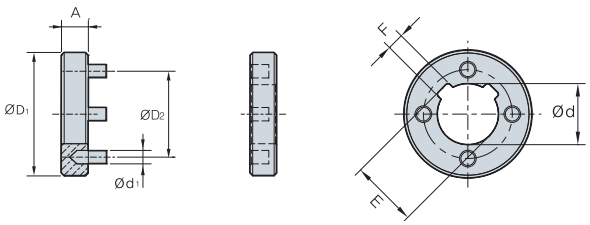
• ( )Metric Size

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		Grades
	vc(m/min)	fz(mm/t)	
P	150(100~200) 120(80~170)	0.13~0.25 0.10~0.17	PC3500 PC3545
M	160(120~200)	0.10~0.22	PC5300
K	110(70~150)	0.10~0.25	PC215K

Available Inserts E20

For slotting workpieces with corner radii of varying size and width

Wind Mill New

- 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

• **Insert**

• **Cutter** WFSP(M) - Plane type

WFSB(M) - Boss type

Cutter Code system

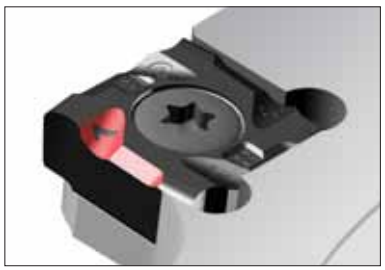
W	FS	P(B)	100	-	T04
Wind Mill	Insert arrangement	Cutter type	ØD		W
	FS : Full side HS : Half side	P : Plane type B : Boss type			

Insert Code system

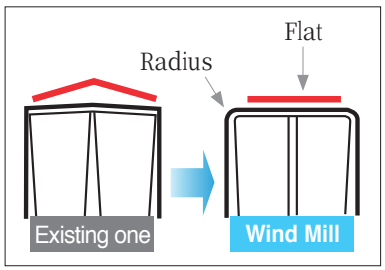
S	N	H	T	12	045	08	R/L-	WX
Insert shape	Relief angle of major cutting edge	tole-rance	Shape of cross section	Ød	Height of cutting edge	Nose R	R/L	Chip breaker

Features

• Ideal geometry for superior surface roughness and extended tool life

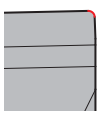
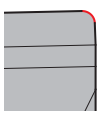
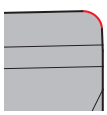
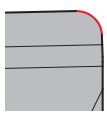
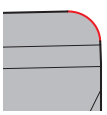
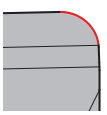
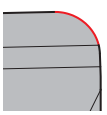
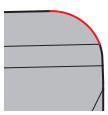
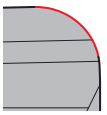
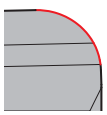


• Perpendicular slot



• Protruded part on tip seat prevents wrong clamping and fracture

• Workpieces with corner radii of varying size and width (R0.2~R2.0)

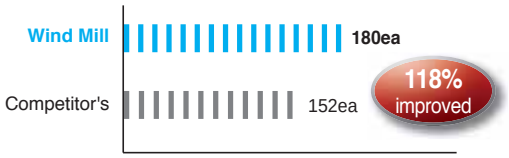
R0.2	R0.4	R0.6	R0.8	R1.0	R1.2	R1.4	R1.6	R1.8	R2.0
									

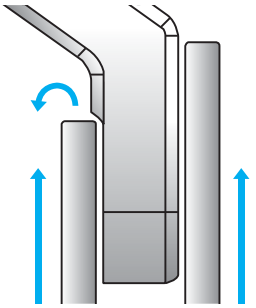
Application Example

■ **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)

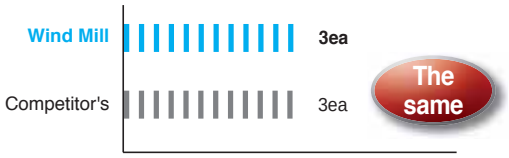


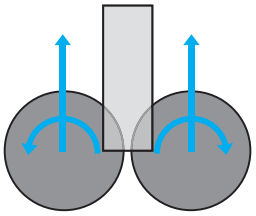


■ **Workpiece** Mild steel (Lug for Vessel)

■ **Cutting conditions** vc(m/min) = 560
fz(mm/t) = 0.09
vf(mm/min) = 750
ap(mm) = 6

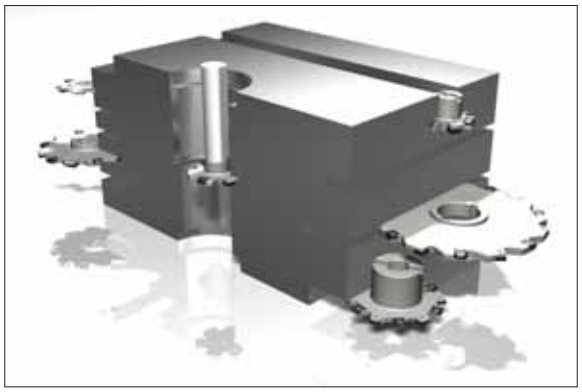
■ **Tool** WFSP178R/L-T06
SNHT1203508R/L-WX (PC5300)





Recommended cutting conditions

Workpiece	Cutting conditions		Grade
	vc (m/min)	fz (mm/t)	
P	150 ~ 250	0.10 ~ 0.25	PC5300
	120 ~ 200	0.10 ~ 0.30	PC5300
	100 ~ 150	0.10 ~ 0.30	PC5300
M	100 ~ 180	0.10 ~ 0.25	PC5300
	80 ~ 150	0.10 ~ 0.30	PC5300
K	150 ~ 250	0.10 ~ 0.35	PC5300
	130 ~ 200	0.10 ~ 0.40	PC5300



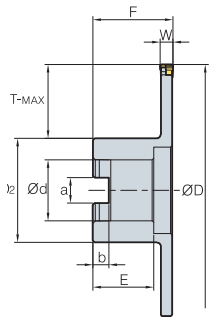
List of inserts

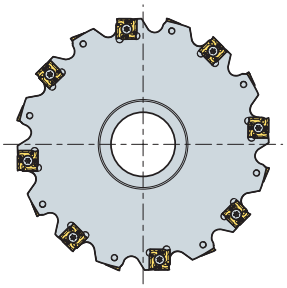
Insert	Dimensions			
	d	t	w	Nose R
SNHT1102308R/L-WX	11	2.3	4.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6
SNHT110308R/L-WX	11	3	5.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6
SNHT120308R/L-WX	12.7	3.25	5.5	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0
SNHT1203508R/L-WX	12.7	3.5	6.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0
SNHT120408R/L-WX	12.7	4	7.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0
SNHT1204508R/L-WX	12.7	4.54	8.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0
SNHT120508R/L-WX	12.7	5	9.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0
SNHT1205408R/L-WX	12.7	5.47	10.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0
SNHT120608R/L-WX	12.7	6	11.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0
SNHT1206508R/L-WX	12.7	6.5	12.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0
SNHT120708R/L-WX	12.7	7	13.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0
SNHT1207508R/L-WX	12.7	7.5	14.0	0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0

• Inserts with various nose R sizes can be supplied in 2~3 weeks
• Please refer to stock management of cutters and detail dimensions in the 2014 catalogue

WFSB(M) - Boss type

New





• AR : -2°
• RR :-12°

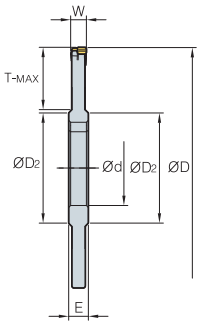
(mm)

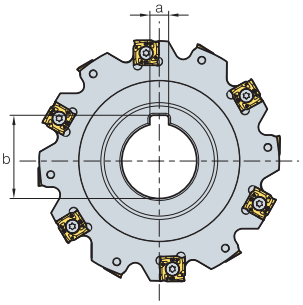
Designation		⊚	øD	W	T-MAX	øD2	Ød	a	b	E	Insert	Screw	Wrench
WFSB(M)	080-T04	8	80	4	20	40	25.4(27)	6.35(7)	28.04(29.8)	8	SNHT11023R/L-WX	PTMA03503F	TW09S
	080-T05	8	80	5	20	40	25.4(27)	6.35(7)	28.04(29.8)	8	SNHT1203R/L-WX	PTMA0404F	TW15S
	080-T06	8	80	6	20	40	25.4(27)	6.35(7)	28.04(29.8)	8	SNHT12035R/L-WX	PTMA0404F	TW15S
	100-T04	10	100	4	24	47	31.75(32)	7.94(8)	35.18(34.8)	8	SNHT11023R/L-WX	PTMA03503F	TW09S
	100-T05	10	100	5	24	47	31.75(32)	7.94(8)	35.18(34.8)	8	SNHT1203R/L-WX	PTMA0404F	TW15S
	100-T06	10	100	6	24	47	31.75(32)	7.94(8)	35.18(34.8)	8	SNHT12035R/L-WX	PTMA0404F	TW15S
	100-T07	10	100	7	24	47	31.75(32)	7.94(8)	35.18(34.8)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
	100-T08	10	100	8	24	47	31.75(32)	7.94(8)	35.18(34.8)	10	SNHT12045R/L-WX	PTMA0406F	TW15S
	100-T09	10	100	9	24	47	31.75(32)	7.94(8)	35.18(34.8)	12	SNHT1205R/L-WX	PTMA0407F	TW15S
	100-T10	10	100	10	24	47	31.75(32)	7.94(8)	35.18(34.8)	12	SNHT12055R/L-WX	PTMA0408F	TW15S
	125-T04	12	125	4	32	56	38.1(40)	9.53(10)	42.32(43.5)	8	SNHT11023R/L-WX	PTMA03503F	TW09S
	125-T05	12	125	5	32	56	38.1(40)	9.53(10)	42.32(43.5)	8	SNHT1203R/L-WX	PTMA0404F	TW15S
	125-T06	12	125	6	32	56	38.1(40)	9.53(10)	42.32(43.5)	8	SNHT12035R/L-WX	PTMA0404F	TW15S
	125-T07	12	125	7	32	56	38.1(40)	9.53(10)	42.32(43.5)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
	125-T08	12	125	8	32	56	38.1(40)	9.53(10)	42.32(43.5)	10	SNHT12045R/L-WX	PTMA0406F	TW15S
	125-T09	12	125	9	32	56	38.1(40)	9.53(10)	42.32(43.5)	12	SNHT1205R/L-WX	PTMA0407F	TW15S
	125-T10	12	125	10	32	56	38.1(40)	9.53(10)	42.32(43.5)	12	SNHT12055R/L-WX	PTMA0408F	TW15S
	160-T04	16	160	4	45	66	38.1(40)	9.53(10)	42.32(43.5)	8	SNHT11023R/L-WX	PTMA03503F	TW09S
	160-T05	16	160	5	45	66	38.1(40)	9.53(10)	42.32(43.5)	8	SNHT1203R/L-WX	PTMA0404F	TW15S
	160-T06	16	160	6	45	66	38.1(40)	9.53(10)	42.32(43.5)	8	SNHT12035R/L-WX	PTMA0404F	TW15S
	160-T07	16	160	7	45	66	38.1(40)	9.53(10)	42.32(43.5)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
	160-T08	16	160	8	45	66	38.1(40)	9.53(10)	42.32(43.5)	10	SNHT12045R/L-WX	PTMA0406F	TW15S
	160-T09	16	160	9	45	66	38.1(40)	9.53(10)	42.32(43.5)	12	SNHT1205R/L-WX	PTMA0407F	TW15S
	160-T10	16	160	10	45	66	38.1(40)	9.53(10)	42.32(43.5)	12	SNHT12055R/L-WX	PTMA0408F	TW15S
	160-T11	16	160	11	45	66	38.1(40)	9.53(10)	42.32(43.5)	14	SNHT1206R/L-WX	PTKA0410	TW15S
	160-T12	16	160	12	45	66	38.1(40)	9.53(10)	42.32(43.5)	14	SNHT12065R/L-WX	PTKA0411	TW15S
	160-T13	16	160	13	45	66	38.1(40)	9.53(10)	42.32(43.5)	16	SNHT1207R/L-WX	PTKA0412	TW15S
	160-T14	16	160	14	45	66	38.1(40)	9.53(10)	42.32(43.5)	16	SNHT12075R/L-WX	PTKA0413	TW15S
	200-T06	18	200	6	60	70	50.8(50)	12.7(12)	55.83(53.5)	8	SNHT12035R/L-WX	PTMA0404F	TW15S
	200-T07	18	200	7	60	70	50.8(50)	12.7(12)	55.83(53.5)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
	200-T08	18	200	8	60	70	50.8(50)	12.7(12)	55.83(53.5)	10	SNHT12045R/L-WX	PTMA0406F	TW15S
	200-T09	18	200	9	60	70	50.8(50)	12.7(12)	55.83(53.5)	12	SNHT1205R/L-WX	PTMA0407F	TW15S
	200-T10	18	200	10	60	70	50.8(50)	12.7(12)	55.83(53.5)	12	SNHT12055R/L-WX	PTMA0408F	TW15S
	200-T11	18	200	11	60	70	50.8(50)	12.7(12)	55.83(53.5)	14	SNHT1206R/L-WX	PTKA0410	TW15S
	200-T12	18	200	12	60	70	50.8(50)	12.7(12)	55.83(53.5)	14	SNHT12065R/L-WX	PTKA0411	TW15S
	200-T13	18	200	13	60	70	50.8(50)	12.7(12)	55.83(53.5)	16	SNHT1207R/L-WX	PTKA0412	TW15S
	200-T14	18	200	14	60	70	50.8(50)	12.7(12)	55.83(53.5)	16	SNHT12075R/L-WX	PTKA0413	TW15S
	250-T06	20	250	6	88	70	50.8(50)	12.7(12)	55.83(53.5)	8	SNHT12035R/L-WX	PTMA0404F	TW15S
	250-T07	20	250	7	88	70	50.8(50)	12.7(12)	55.83(53.5)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
	250-T08	20	250	8	88	70	50.8(50)	12.7(12)	55.83(53.5)	10	SNHT12045R/L-WX	PTMA0406F	TW15S
	250-T09	20	250	9	88	70	50.8(50)	12.7(12)	55.83(53.5)	12	SNHT1205R/L-WX	PTMA0407F	TW15S
	250-T10	20	250	10	88	70	50.8(50)	12.7(12)	55.83(53.5)	12	SNHT12055R/L-WX	PTMA0408F	TW15S
	250-T11	20	250	11	88	70	50.8(50)	12.7(12)	55.83(53.5)	14	SNHT1206R/L-WX	PTKA0410	TW15S
	250-T12	20	250	12	88	70	50.8(50)	12.7(12)	55.83(53.5)	14	SNHT12065R/L-WX	PTKA0411	TW15S
	250-T13	20	250	13	88	70	50.8(50)	12.7(12)	55.83(53.5)	16	SNHT1207R/L-WX	PTKA0412	TW15S
	250-T14	20	250	14	88	70	50.8(50)	12.7(12)	55.83(53.5)	16	SNHT12075R/L-WX	PTKA0413	TW15S

• ( )Metric Size

Available Inserts E18

WFSP(M) - Plane type New





• AR : -2°
• RR :-12°

(mm)

Designation			øD	W	T-MAX	øD2	Ød	a	b	E	Insert	Screw	Wrench
WFSP(M)	080-T04	8	80	4	20	40	25.4(27)	6.35(7)	28.04(29.8)	8	SNHT11023R/L-WX	PTMA03503F	TW09S
	080-T05	8	80	5	20	40	25.4(27)	6.35(7)	28.04(29.8)	8	SNHT1203R/L-WX	PTMA0404F	TW15S
	080-T06	8	80	6	20	40	25.4(27)	6.35(7)	28.04(29.8)	8	SNHT12035R/L-WX	PTMA0404F	TW15S
	100-T04	10	100	4	24	47	31.75(32)	7.94(8)	35.18(34.8)	8	SNHT11023R/L-WX	PTMA03503F	TW09S
	100-T05	10	100	5	24	47	31.75(32)	7.94(8)	35.18(34.8)	8	SNHT1203R/L-WX	PTMA0404F	TW15S
	100-T06	10	100	6	24	47	31.75(32)	7.94(8)	35.18(34.8)	8	SNHT12035R/L-WX	PTMA0404F	TW15S
	100-T07	10	100	7	24	47	31.75(32)	7.94(8)	35.18(34.8)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
	100-T08	10	100	8	24	47	31.75(32)	7.94(8)	35.18(34.8)	10	SNHT12045R/L-WX	PTMA0406F	TW15S
	100-T09	10	100	9	24	47	31.75(32)	7.94(8)	35.18(34.8)	12	SNHT1205R/L-WX	PTMA0407F	TW15S
	100-T10	10	100	10	24	47	31.75(32)	7.94(8)	35.18(34.8)	12	SNHT12055R/L-WX	PTMA0408F	TW15S
	125-T04	12	125	4	32	56	38.1(40)	9.53(10)	42.32(43.5)	8	SNHT11023R/L-WX	PTMA03503F	TW09S
	125-T05	12	125	5	32	56	38.1(40)	9.53(10)	42.32(43.5)	8	SNHT1203R/L-WX	PTMA0404F	TW15S
	125-T06	12	125	6	32	56	38.1(40)	9.53(10)	42.32(43.5)	8	SNHT12035R/L-WX	PTMA0404F	TW15S
	125-T07	12	125	7	32	56	38.1(40)	9.53(10)	42.32(43.5)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
	125-T08	12	125	8	32	56	38.1(40)	9.53(10)	42.32(43.5)	10	SNHT12045R/L-WX	PTMA0406F	TW15S
	125-T09	12	125	9	32	56	38.1(40)	9.53(10)	42.32(43.5)	12	SNHT1205R/L-WX	PTMA0407F	TW15S
	125-T10	12	125	10	32	56	38.1(40)	9.53(10)	42.32(43.5)	12	SNHT12055R/L-WX	PTMA0408F	TW15S
	160-T04	16	160	4	45	66	38.1(40)	9.53(10)	42.32(43.5)	8	SNHT11023R/L-WX	PTMA03503F	TW09S
	160-T05	16	160	5	45	66	38.1(40)	9.53(10)	42.32(43.5)	8	SNHT1203R/L-WX	PTMA0404F	TW15S
	160-T06	16	160	6	45	66	38.1(40)	9.53(10)	42.32(43.5)	8	SNHT12035R/L-WX	PTMA0404F	TW15S
	160-T07	16	160	7	45	66	38.1(40)	9.53(10)	42.32(43.5)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
	160-T08	16	160	8	45	66	38.1(40)	9.53(10)	42.32(43.5)	10	SNHT12045R/L-WX	PTMA0406F	TW15S
	160-T09	16	160	9	45	66	38.1(40)	9.53(10)	42.32(43.5)	12	SNHT1205R/L-WX	PTMA0407F	TW15S
	160-T10	16	160	10	45	66	38.1(40)	9.53(10)	42.32(43.5)	12	SNHT12055R/L-WX	PTMA0408F	TW15S
	160-T11	16	160	11	45	66	38.1(40)	9.53(10)	42.32(43.5)	14	SNHT1206R/L-WX	PTKA0410	TW15S
	160-T12	16	160	12	45	66	38.1(40)	9.53(10)	42.32(43.5)	14	SNHT12065R/L-WX	PTKA0411	TW15S
	160-T13	16	160	13	45	66	38.1(40)	9.53(10)	42.32(43.5)	16	SNHT1207R/L-WX	PTKA0412	TW15S
	160-T14	16	160	14	45	66	38.1(40)	9.53(10)	42.32(43.5)	16	SNHT12075R/L-WX	PTKA0413	TW15S
	200-T06	18	200	6	60	70	50.8(50)	12.7(12)	55.83(53.5)	8	SNHT12035R/L-WX	PTMA0404F	TW15S
	200-T07	18	200	7	60	70	50.8(50)	12.7(12)	55.83(53.5)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
	200-T08	18	200	8	60	70	50.8(50)	12.7(12)	55.83(53.5)	10	SNHT12045R/L-WX	PTMA0406F	TW15S
	200-T09	18	200	9	60	70	50.8(50)	12.7(12)	55.83(53.5)	12	SNHT1205R/L-WX	PTMA0407F	TW15S
	200-T10	18	200	10	60	70	50.8(50)	12.7(12)	55.83(53.5)	12	SNHT12055R/L-WX	PTMA0408F	TW15S
	200-T11	18	200	11	60	70	50.8(50)	12.7(12)	55.83(53.5)	14	SNHT1206R/L-WX	PTKA0410	TW15S
	200-T12	18	200	12	60	70	50.8(50)	12.7(12)	55.83(53.5)	14	SNHT12065R/L-WX	PTKA0411	TW15S
	200-T13	18	200	13	60	70	50.8(50)	12.7(12)	55.83(53.5)	16	SNHT1207R/L-WX	PTKA0412	TW15S
	200-T14	18	200	14	60	70	50.8(50)	12.7(12)	55.83(53.5)	16	SNHT12075R/L-WX	PTKA0413	TW15S
	250-T06	20	250	6	88	70	50.8(50)	12.7(12)	55.83(53.5)	8	SNHT12035R/L-WX	PTMA0404F	TW15S
	250-T07	20	250	7	88	70	50.8(50)	12.7(12)	55.83(53.5)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
	250-T08	20	250	8	88	70	50.8(50)	12.7(12)	55.83(53.5)	10	SNHT12045R/L-WX	PTMA0406F	TW15S
	250-T09	20	250	9	88	70	50.8(50)	12.7(12)	55.83(53.5)	12	SNHT1205R/L-WX	PTMA0407F	TW15S
	250-T10	20	250	10	88	70	50.8(50)	12.7(12)	55.83(53.5)	12	SNHT12055R/L-WX	PTMA0408F	TW15S
	250-T11	20	250	11	88	70	50.8(50)	12.7(12)	55.83(53.5)	14	SNHT1206R/L-WX	PTKA0410	TW15S
	250-T12	20	250	12	88	70	50.8(50)	12.7(12)	55.83(53.5)	14	SNHT12065R/L-WX	PTKA0411	TW15S
	250-T13	20	250	13	88	70	50.8(50)	12.7(12)	55.83(53.5)	16	SNHT1207R/L-WX	PTKA0412	TW15S
	250-T14	20	250	14	88	70	50.8(50)	12.7(12)	55.83(53.5)	16	SNHT12075R/L-WX	PTKA0413	TW15S

• ( )Metric Size

Available Inserts E18

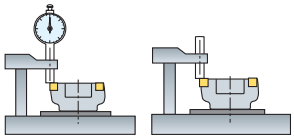
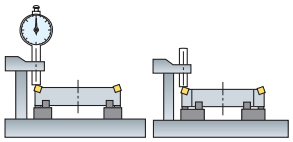
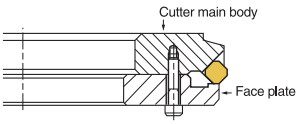
High feed cutter with extra pitch for cast iron and light alloy steels

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.

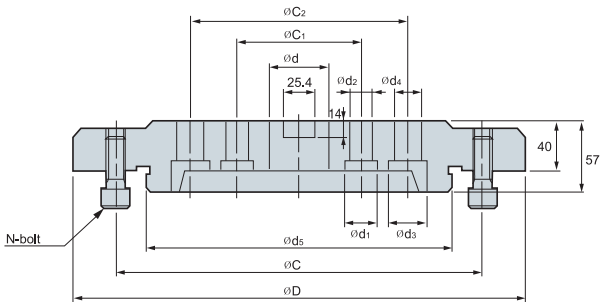
Adaptor type	Roller type	Plate type
		
- Mainly under ø160 diameter is used in 1piece type - Available for fixed size of cutter and assembling & checking can be done at the same time	- Mainly over ø200 diameter is used in 2piece type - Due to 3 adjustable guide roller, variety size of cutter can be assembled	- 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

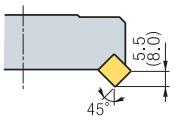
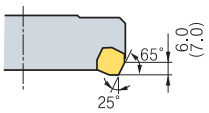
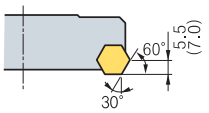
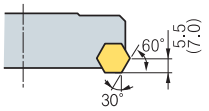
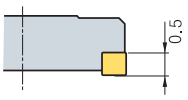
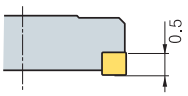
Notice) When you clamp wedge too tighten, run-out is getting worse to cutter distortion
When you clamp wedge, you should use torque wrench to set more precisely

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

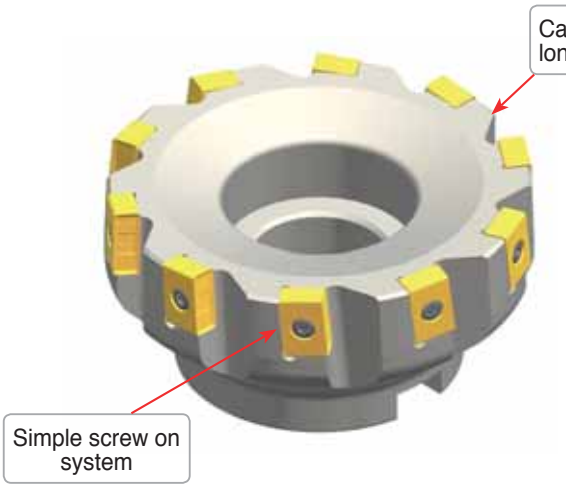
- Conventional cutter with wide coverage
- Using 4 corners (Maximum 8 corner avaiable with R/L type cutter)
- Effective on large depth of cut applications due to the long cutting edge
- Excellent tool life guaranteed by wide variety of grades to suit any working conditions
- 2 different types of inserts(chamfer / nose R) are available with 1 type of cutter

Code System

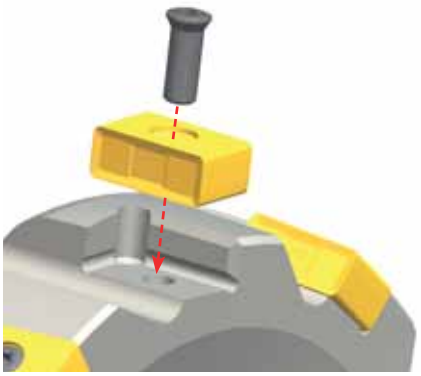
S	Q	N	3	250	R	(2)	-	28Z

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 GC		Ductile cast iron 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 2㎛)
- 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 M : Metric A : Inch	Inscribed Circle 4 : 12.7mm	Cutter Dia.(Ø) Ø250	Hand of tool R: right handed L: left handed	No. of tooth(Z)

Insert Code System

Carbide

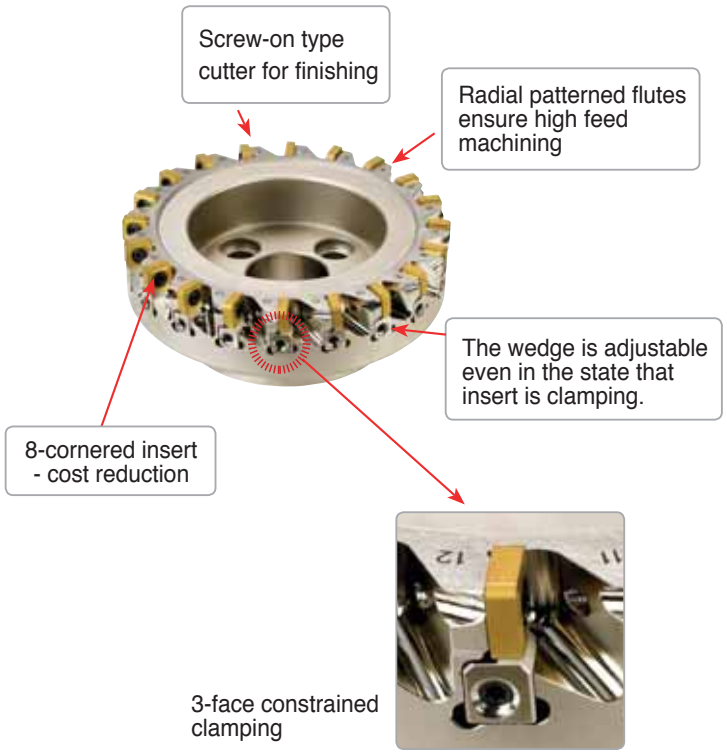
Nose R type	SNEU120420-MF
Chamfer type	SNEU1204ANN-MF
Low cutting type	SNEU1204-WMF

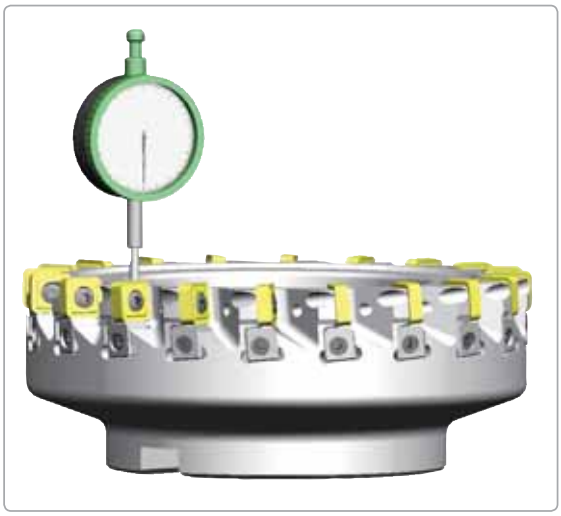
cBN

SNEU1204-TBW

T : Nagaland
B : cBN
W: Wiper

Features

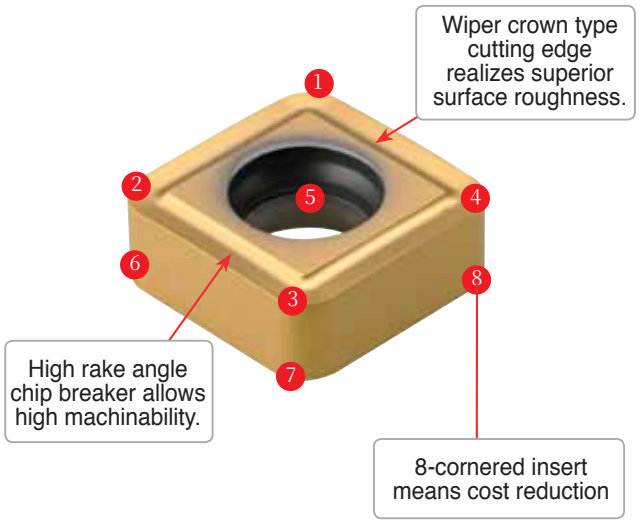


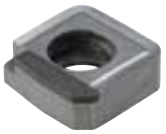


Adjustment

- Adjustable range: 0.1mm
- Adjustability: below 2μ
- Operation: easy and simple

Features of insert



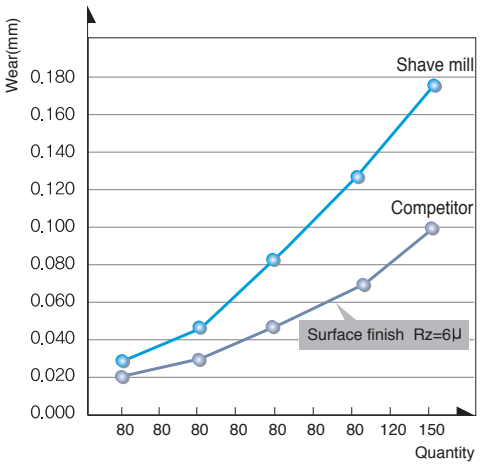
SNEU120420-MF	SNEU1204ANN-MF
	
Nose R type	Chamfer type
SNEU1204-WMF	**SNEU1204-TBW**
	
For low cutting load	Wiper for high speed machining

Recommended cutting conditions

Workpiece	Cutting conditions			Grade
	vc(m/min)	fz(mm/t)	ap(mm)	
P	150~250	0.05 ~ 0.2	~ 0.5	PC3500
K	150~300 600~1000	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



Application example 2

· 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	250pcs	Rz=3 μ	High
Competitor	180pcs	Rz=3.5 μ	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'

Cutter Code System

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

Insert Code System

L N C S 1 9 0 7 - R3.0 - WC

Shave Mill Ultra	Corner Type	Wiper Crown
	C : Chamfer R : Round	

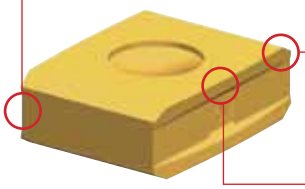
Features

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	Grade
	vc(m/min)	fz(mm/t)	ap(mm)		
P	150~250	0.05~0.20	~0.50	Full use	PC3500
	150~250	2~5	~0.03	1use	
K	150~300	0.05~0.20	~0.50	Full use	PC6510
	150~300	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>
	

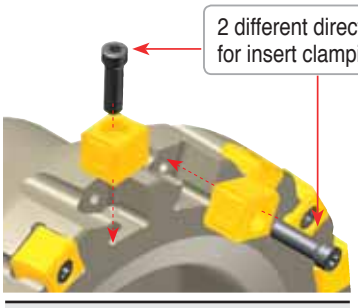
Cutter body

	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



2 different direction for insert clamping

Screw on clamping system

Parts

Cube mill 3000

Screw	Wrench
	
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

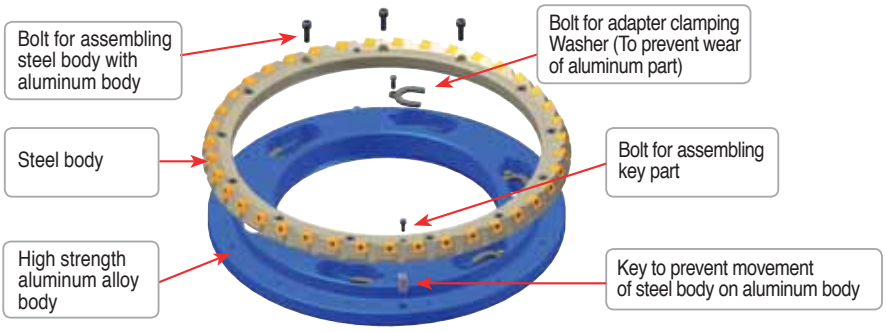
CUBE-COUPLE Code system

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		

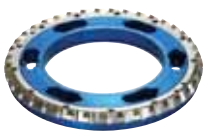
Assembling structure



Cutter body

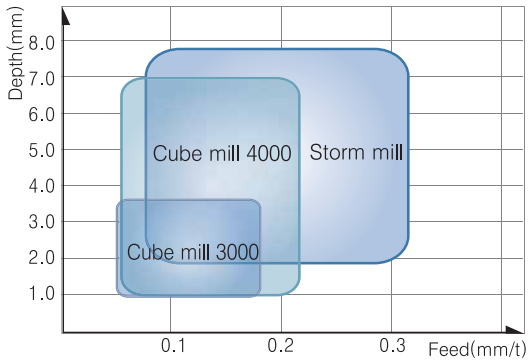
Cutter diameter(Ø)	Quick change	
	Metric	Ø355~450mm
	Inch	14 1/4~18 Inch

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 3000Type	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

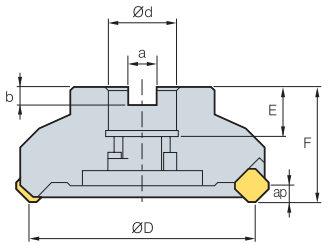


Fig. 1

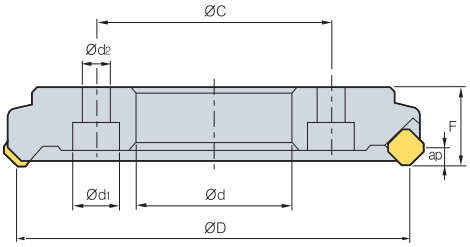


Fig. 2

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	Coated										Cermet			Uncoated				Page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNCN 1204ENN	●														●	●	●	E17
SNKN 1204ENN								●										E19

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

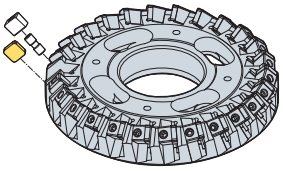
Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	100 ~ 200 80 ~ 150	0.05 ~ 0.30 0.10 ~ 0.30	PC6510 H01,G10

Parts

Wedge	Wedge Screw	Wrench
		
WANH4N	DHA0821F	HW40

Assembling



Available Inserts E17, E19
Available Arbors and bolt E290~E292

● : Stock item

ANH5000

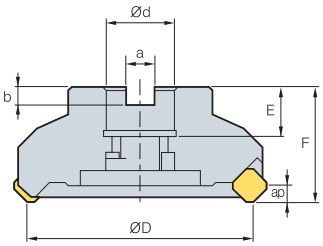


Fig. 1

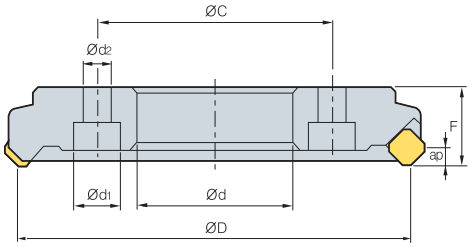


Fig. 2

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	-	-	-	40	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	Coated										Cermet			Uncoated				Page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNCN 1504ENN																●		E17
SNKN 1504ENN	●																	E19

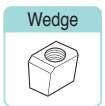
Available Arbors

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

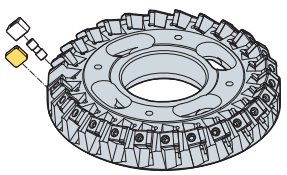
Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	100 ~ 200 80 ~ 150	0.05 ~ 0.30 0.10 ~ 0.30	PC6510 H01,G10

Parts



WANH5N	DHA0821F	HW40

Assembling



Available Inserts E17, E19
Available Arbors and bolt E290~E292

● : Stock item

CDH4000

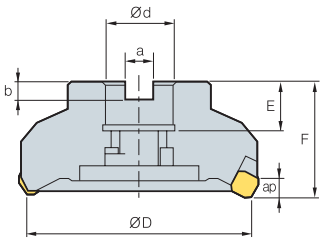


Fig. 1

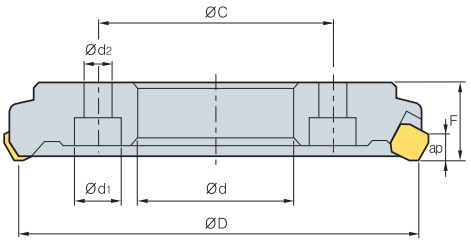


Fig. 2

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	Coated										Cermet			Uncoated				Page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SDCN 42R/42L														●				E13

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

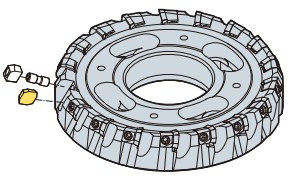
Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	100 ~ 200 80 ~ 150	0.05 ~ 0.30 0.10 ~ 0.30	PC6510 H01,G10

Parts

	Wedge	Wedge Screw	Wrench
Ø100-Ø160	WCDH4R1L1	DHA0821F	HW40
Ø200-Ø450	WCDH4R/L		

Assembling



Available Inserts E13
Available Arbors and bolt E290~E292

● : Stock item

CDH5000

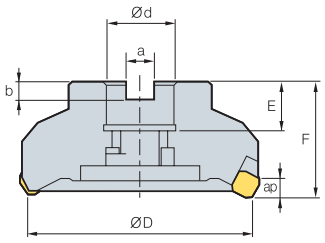


Fig. 1

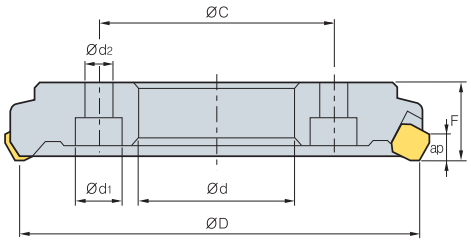


Fig. 2

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	Coated										Cermet			Uncoated				Page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SDCN 53R																		E12
53L																		

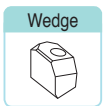
Available Arbors

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

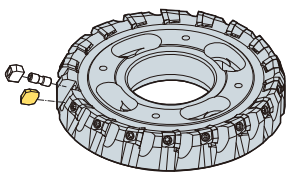
Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	100 ~ 200 80 ~ 150	0.05 ~ 0.30 0.10 ~ 0.30	PC6510 H01,G10

Parts



Ø100-Ø160	WCDH5R1L1	DHA0821F	HW40
Ø200-Ø450	WCDH5R/L		

Assembling



Available Inserts E12
Available Arbors and bolt E290~E292

● : Stock item

DEH5000

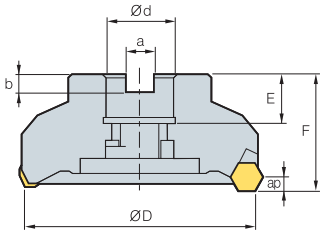


Fig. 1

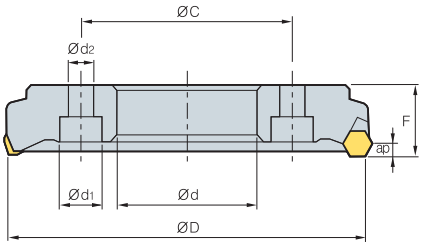


Fig. 2

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		Coated										Cermet			Uncoated				Page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
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

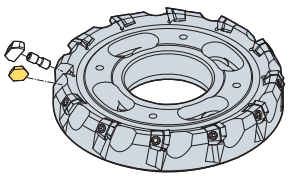
Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	100 ~ 200 80 ~ 150	0.05 ~ 0.30 0.10 ~ 0.30	PC6510 H01,G10

Parts

	Wedge	Wedge Screw	Wrench
Ø100-Ø200	WDEHR-1/L-1	DHA0821F	HW40
Ø250-Ø450	WDEHR/L		

Assembling



Available Inserts E07
Available Arbors and bolt E290~E292

● : Stock item

DPH5000

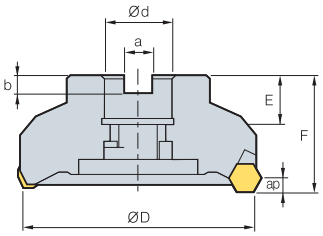


Fig. 1

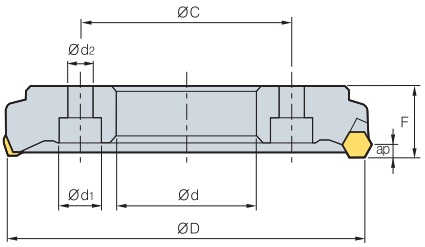


Fig. 2

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		Coated										Cermet			Uncoated				Page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST720	
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

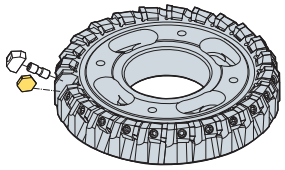
Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	100 ~ 200 80 ~ 150	0.05 ~ 0.30 0.10 ~ 0.30	PC6510 H01,G10

Parts

Wedge	Wedge Screw	Wrench
		
WDPH5R/L	DHA0821F	HW40

Assembling



PNH4000/5000

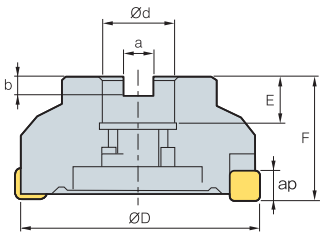


Fig. 1

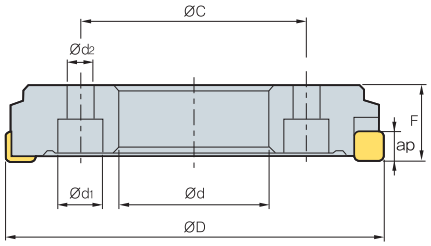


Fig. 2

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	Coated										Cermet			Uncoated				Page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
SNEF 435								●										E17

Available Arbors

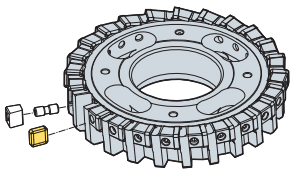
Designation		Arbors	
PNH	125R/L	NT*□□(M/U)-FMA38.1-□□	-
	160R/L	NT*□□(M/U)-FMA50.8-□□	-
	200R/L	-	APR200
	250R/L	-	APR250
	315R/L	-	APR315
	355R/L	-	APR355
	400R/L	-	APR400
	450R/L	-	APR450

Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	100 ~ 200 80 ~ 150	0.05 ~ 0.30 0.10 ~ 0.30	PC6510 H01,G10

Parts

	Wedge	Wedge Screw	Wrench	
4000 type	WPNH4N	DHA0821F	HW40	
5000 type	WPNH5N			

Assembling	
	

Available Inserts E17
Available Arbors and bolt E290~E292

● : Stock item

PPH4000

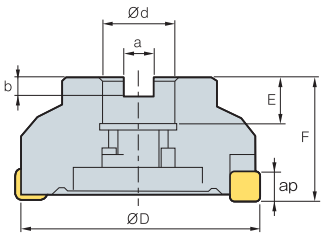


Fig. 1

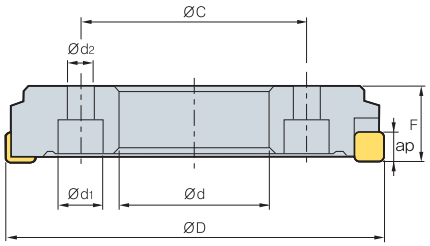


Fig. 2

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	Coated										Cermet			Uncoated				Page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST720	
SPEN 120416-WC																		E20

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

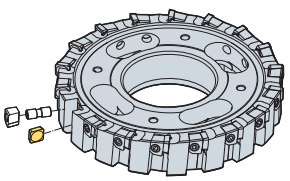
Recommended cutting condition

Workpiece	Cutting Condition		Grades
	vc(m/min)	fz(mm/t)	
K	100 ~ 200 80 ~ 150	0.05 ~ 0.30 0.10 ~ 0.30	PC6510 H01,G10

Parts

Wedge	Wedge Screw	Wrench
WPPH4R/L	DHA0821F	HW40

Assembling



SVM(M)4000

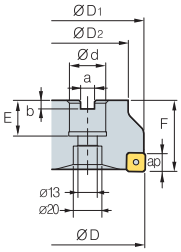


Fig. 1

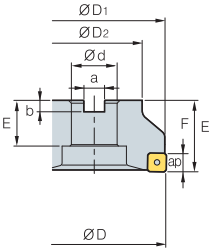


Fig. 2

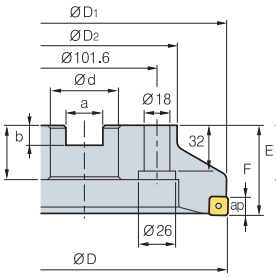


Fig. 3

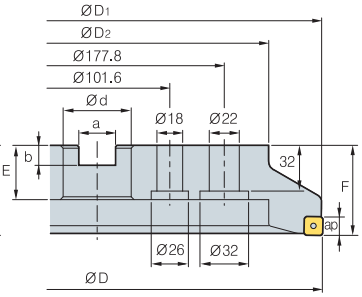


Fig. 4

(mm)

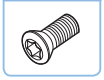
Designation			øD	øD1	øD2	ød	a	b	E	F	ap	kg	Fig
SVM	4080R/L-Z8	8	80	79	57	25.4	12.4	6	25	50	1.0	1.2	1
	4100R/L-Z12	12	100	99	67	31.75	14.4	8	32	63	1.0	2.3	1
	4125R/L-Z16	16	125	124	87	38.1	16.4	10	38	63	1.0	3.5	2
	4160R/L-Z20	20	160	159	107	50.8	16.4	11	38	63	1.0	5	2
	4200R/L-Z24	24	200	199	130	47.625	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		Coated									cBN		Uncoated				Page
		NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	DBN700	DBN920	H01	G10	ST30A	ST20	
SNEU	120420-MF																	E18
	1204ANN-MF																	
	1204-WMF																	
	1204-TBW																	

Parts

Wedge	Wedge Screw	Contract Screw	Wrench
			
WKAJ3	DTA0619	XTKA0412	TW15-100

SVUM6000

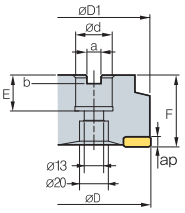


Fig. 1

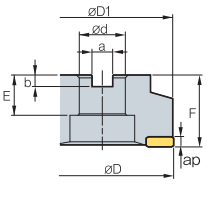


Fig. 2

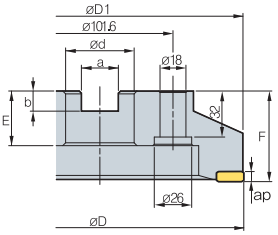


Fig. 3

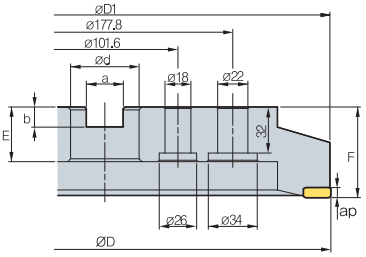


Fig. 4

(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	Coated										Cermet			Uncoated				Page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
LNCS 1907-R3.0-WC																		E08
1907-C1.5-WC																		

Parts

Screw	Wrench
	
FTNA0513	TW20-100

SVUM6000-B

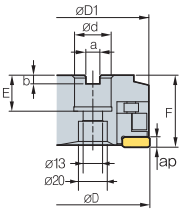


Fig. 1

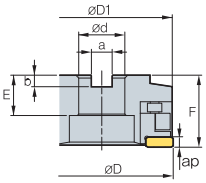


Fig. 2

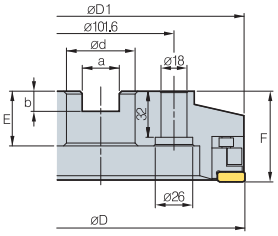


Fig. 3

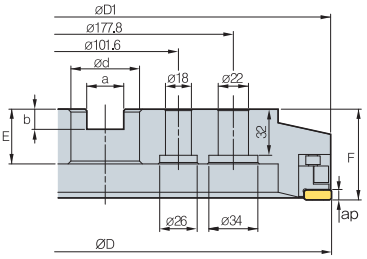


Fig. 4

(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	Coated										Cermet			Uncoated				Page
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
LNCS 1907-R3.0-WC																		E08
1907-C1.5-WC																		

Parts

Locator	Wedge	Wedge Screw	Adjust Screw	Contract Screw	Wrench
LSH4R	WSH4	DHA0724F	DHA0724F	FTNA0512	TW20-100

Inch

Actual designations of milling cutter

Fig. 1

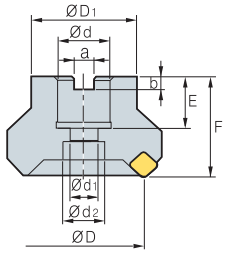


Fig. 2

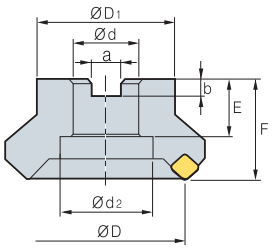


Fig. 3

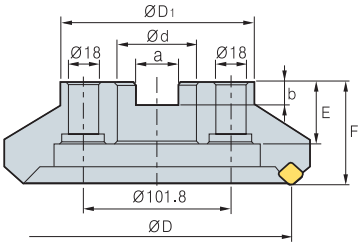
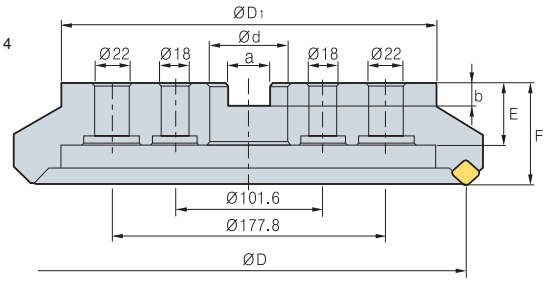


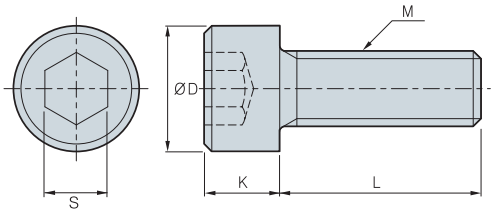
Fig. 4



Inch type

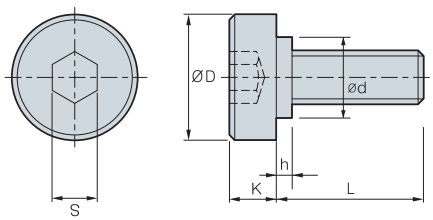
Dimensions (inch)									Fig.	Available Arbors
ØD	Ød	a	b	E	F	ØD1	Ød1	Ød2		
40	16	8.4	5.6	18	40	34	9	14	1	FMC16, SMA16
50	22	10.4	6.3	20	40	42	11	18	1	FMC22
63	22	10.4	6.3	20	40	49	11	18	1	FMC22
80	25.4	9.5	6	25	50	57	14	20	1	FMA25.4
100	31.75	12.7	8	32	50	67	-	45	2	FMA31.75 , SMB31.75
125	38.1	15.9	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 (mm)						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

Clamping part of milling cutter

Fig. 1

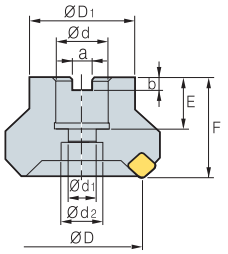


Fig. 2

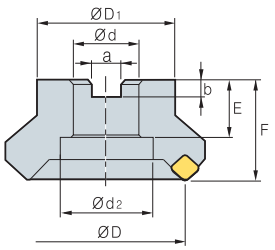


Fig. 3

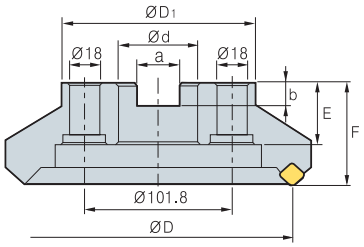
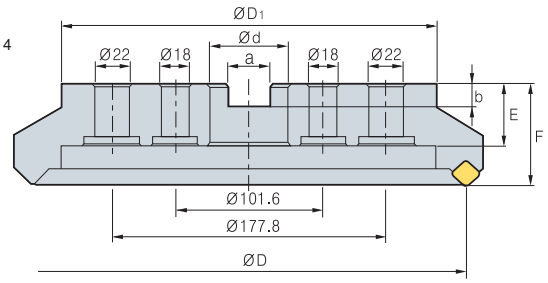


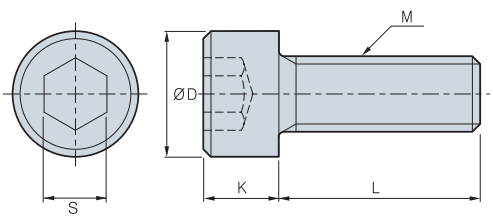
Fig. 4



Metric type(mm)

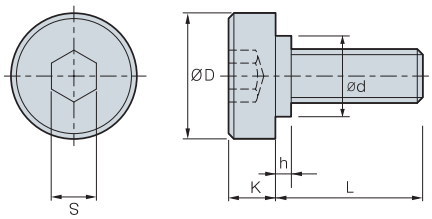
Dimensions (mm)									Fig.	Available Arbors
ØD	Ød	a	b	E	F	ØD1	Ød1	Ød2		
40	16	8.4	5.6	18	40	34	9	14	1	FMC16, SMA16
50	22	10.4	6.3	20	40	42	11	18	1	FMC22
63	22	10.4	6.3	20	40	49	11	18	1	FMC22
80	27	12.4	7	22	50	57	14	20	1	FMC27
100	32	14.4	8	28	50	67	-	45	2	FMC32
125	40	16.4	9	32	63	87	-	56	2	FMB40
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

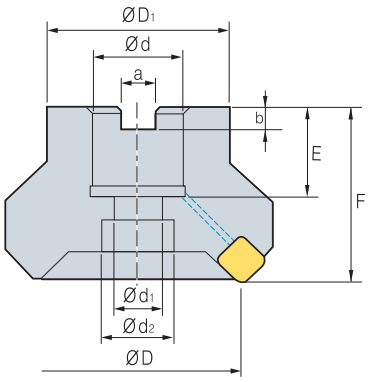
Clamp bolt



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



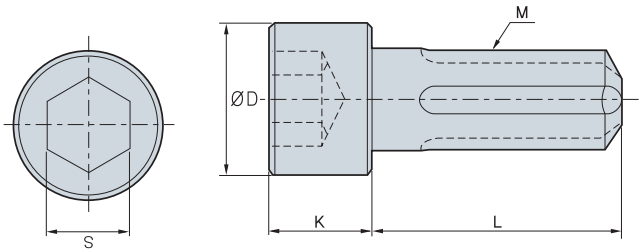
Inch type

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	D	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

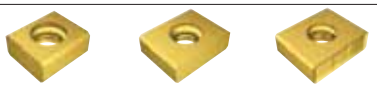
Semi-finishing

- **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

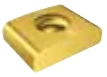
Finishing : M16

- **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

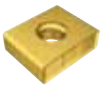
- **Cutter Dia** : Ø280
- **Tooth No** : 48Tooth
- The semi-finishing cutter was designed for processing of external gear involute curb line shape.



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

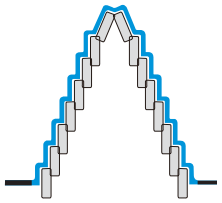
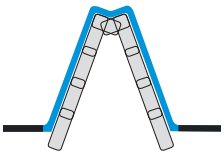
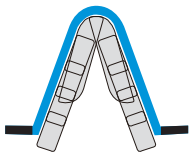
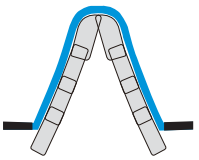
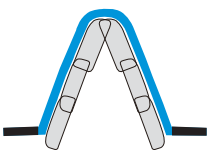
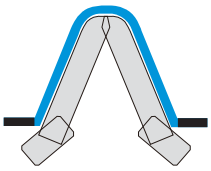
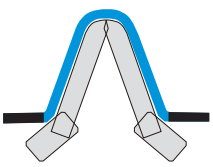
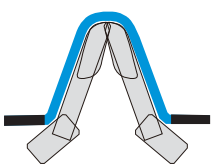


KEL1906-C0.6-MF LNE434-02-1

Gear Cutter Machining Example

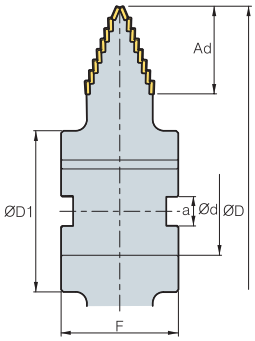
- **Machine**
  Gleason-PFAUTER CNC Hobbing Machine (Power : 52kW)
- **Cutting condition**
  vc = 119.98 m/min (n=86.8 rpm)
  fz = 0.518 mm/t (vf=450 mm/min)
  ae = 36mm
  Dry
- **Tools**
  M16-PT-RACK-KOR03 (Ø440xW90)
- **Semi-finishing cutter (low cut, low resistance)**

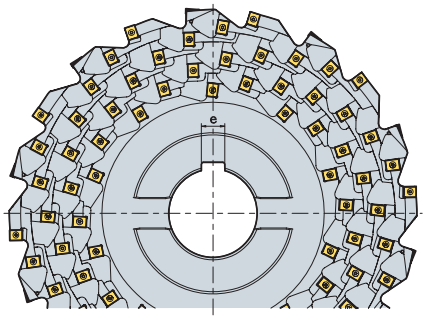
- **Machine**
  KARATS (30kw)
- **Cutting condition**
  vc = 150 m/min , n=119rpm
  fz = 0.09mm/t , vf=81.6mm/min
  ae = 45mm
  Dry
- **Tools**
  M24 Semi-finishing External type Applicable Insert
  M40-ROU(Main) ,
  CPE424-01(Flank)

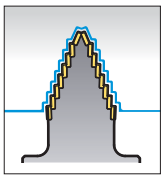
Type	Cutter Shape	Cutting edge Shape	Type	Figure
Roughing			Step Type	1. Working for big sized gear tooth 2. Low cutting resistance with step type insert setting
			V shape Type	1. Low cutting resistance with V shape cutting insert setting 2. Optimal cutting edge line setting according to Rach type & 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**)





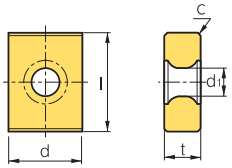


(mm)

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

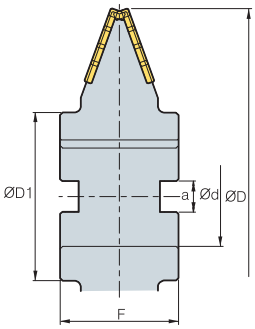
(mm)

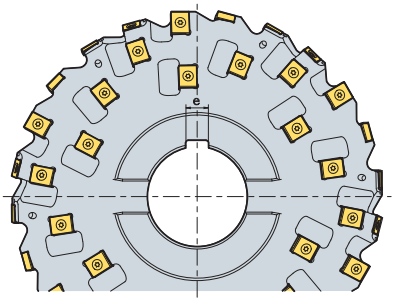
Picture	Designation	Coated				Uncoated		Dimensions (mm)					Configuration
		NC5330	PC9530	PC3500	PC5300	H01	G10	l	d	t	d_1	c	
 Reinforced cutting Edge	LNE 434-02-1			○	◎			19.05	14.29	6.35	5.4	0.6	
 Low cutting Resistance	KEL 1906-C0.6-MF			○	◎			19.05	14.29	6.35	5.4	0.6	
	190610-MR			○	◎			19.05	14.29	6.35	5.4	-	

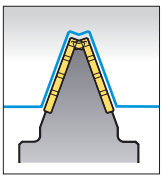
※ The above specification is subject to change according to customer related condition & Korloy technical condition

◎ : 1st Rec ○ : 2rd Rec

Gear Roughing Cutter (V shape Type)





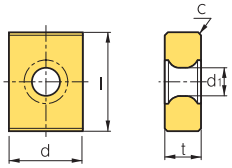
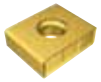
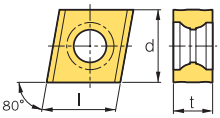


(mm)

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

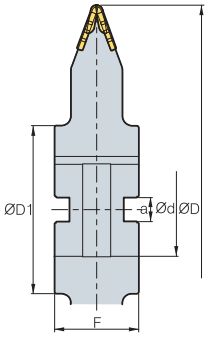
(mm)

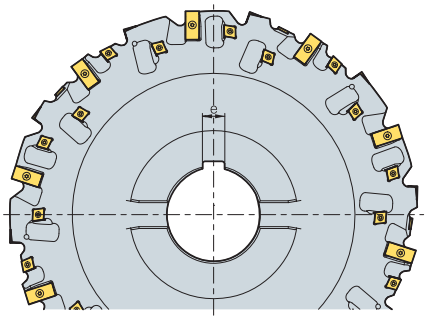
Picture	Designation	Coated						Uncoated		Dimensions (mm)					Configuration
		NC5330	PC9530	PC3500	PC5300	NCM325	PC6510	H01	G10	l	d	t	d1	c	
 Reinforced cutting Edge	LNE 434-02-1			○	◎					19.05	14.29	6.35	5.4	0.6	
 Low cutting Resistance	KEL 1906-C0.6-MF			○	◎					19.05	14.29	6.35	5.4	0.6	
	190610-MR			○	◎					19.05	14.29	6.35	5.4	-	
 Reinforced cutting Edge	LNE 333-02-1			○	◎					14.3	12.7	6.35	5.8	0.8	
	CNHQ 1005-C0.5									10	10	5.4	-	-	

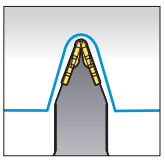
※ The above specification is subject to change according to customer related condition & Korloy technical condition

◎ : 1st Rec ○ : 2rd Rec

Gear Semi-finishing Cutter (**Low cutting resistance Type**)





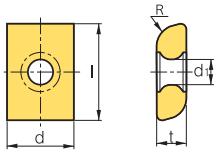
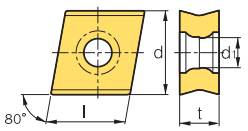


(mm)

m	No.of teeth	⦾	øD	ød	øD1	a	e	F
6	30,60,120	18	250	60	100	25	14	70
8	30,60,120	18	250	60	100	25	14	80
10	30,60,120	24	250	60	100	25	14	80
12	30,60,120	24	250	60	100	25	14	90
14	30,60,120	24	280	80	135	25	18	95
16	30,60,120	32	280	80	135	25	18	100
18	30,60,120	32	320	80	145	25	18	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

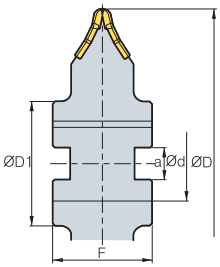
(mm)

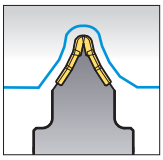
Picture	Designation	Coated				Uncoated		Dimensions (mm)					Configuration
		NC5330	PC9530	PC3500	PC5300	H01	G10	l	d	t	d_1	R	
	M6-2ST			○	◎			19.05	11.6	3.8	4.4	2.25	
	M8-2ST			○	◎			19.05	11.6	4	4.4	3	
	M10-2ST			○	◎			19.05	11.6	4.76	4.4	3.75	
	M12-2ST			○	◎			19.05	14.3	6.35	5.5	4.5	
	M14-2ST			○	◎			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)



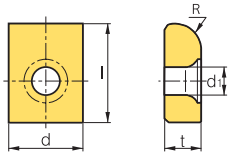
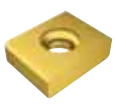
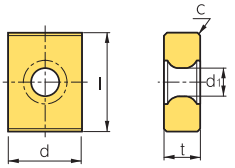


(mm)

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

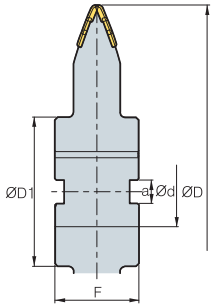
(mm)

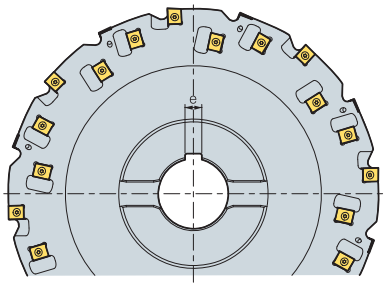
Picture	Designation	Coated				Uncoated		Dimensions (mm)						Configuration
		NC5330	PC9530	PC3500	PC5300	H01	G10	l	d	t	d1	R	c	
	M8-ROU			○	◎			15.875	11	4.76	4.6	4.6	-	
	M12-M14-ROU			○	◎			19.05	14.29	6.35	5.4	5.4	-	
	M16-M18-ROU			○	◎			19.05	14.29	7	5.4	5.4	-	
	M20-M22-ROU			○	◎			19.05	14.29	7.94	5.4	5.4	-	
	M40-ROU			○	◎			25.4	14.29	9.52	5.4	5.4	-	
	LNE434-02-1			○	◎			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		-	

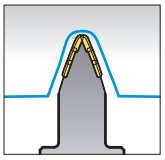
※ The above specification is subject to change according to customer related condition & Korloy technical condition

◎ : 1st Rec ○ : 2rd Rec

Gear Semi-finishing Cutter (High rigid edge Type, Internal Gear)





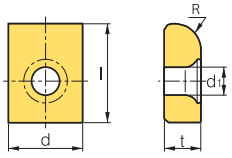
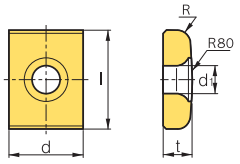


(mm)

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

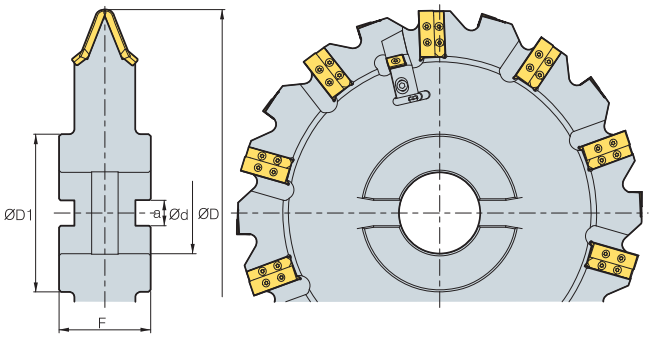
(mm)

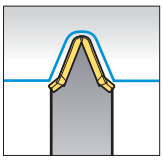
Picture	Designation	Coated				Uncoated		Dimensions (mm)					Configuration
		NC5330	PC9530	PC3500	PC5300	H01	G10	l	d	t	d1	R	
	M8-ROU			○	◎			15.875	11	4.76	4.6	2	
	M12-M14-ROU			○	◎			19.05	14.29	6.35	5.4	3	
	M16-M18-ROU			○	◎			19.05	14.29	7	5.4	5	
	M20-M22-ROU			○	◎			19.05	14.29	7.94	5.4	7	
	M40-ROU			○	◎			25.4	14.29	9.52	5.4	10	
	LNE433-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)



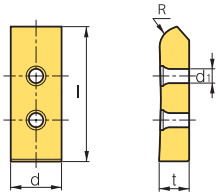
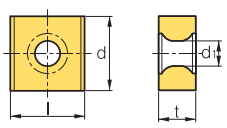


(mm)

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

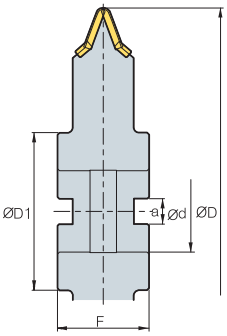
(mm)

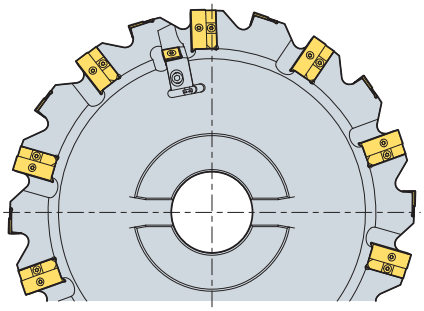
Picture	Designation	Coated				Uncoated		Dimensions (mm)					Configuration
		NC5330	PC9530	PC3500	PC5300	H01	G10	l	d	t	d1	R	
	M6			○	◎			19	14.3	5	5.5	2.25	
	M8			○	◎			27	14.3	5.4	5.5	3	
	M10			○	◎			29	14.3	6.35	5.5	3.75	
	M12			○	◎			33	14.3	6.35	5.5	4.5	
	M14			○	◎			39	14.3	6.35	5.5	5.25	
	M16			○	◎			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	
	SNEQ1507-C0.8			○	◎			15.875	15.875	7.94	-	-	

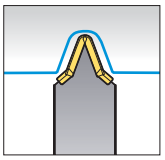
※ The above specification is subject to change according to customer related condition & Korloy technical condition

◎ : 1st Rec ○ : 2rd Rec

Gear Finishing Cutter (1 Step Type, Internal Gear)





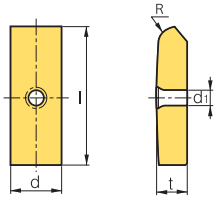
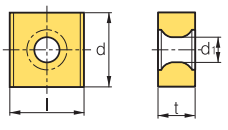


(mm)

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

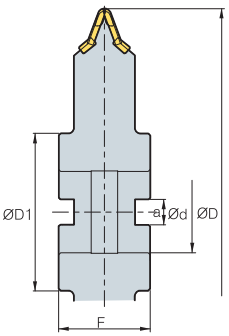
(mm)

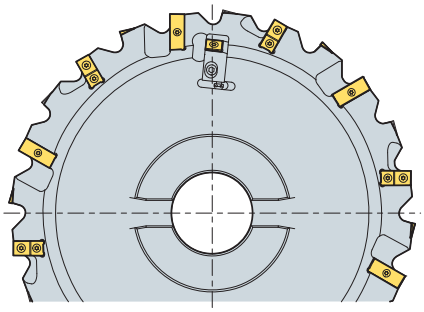
Picture	Designation	Coated				Uncoated		Dimensions (mm)					Configuration
		NC5330	PC9530	PC3500	PC5300	H01	G10	l	d	t	d1	R	
	M6			○	◎			19	14.3	5	5.5	2.25	
	M8			○	◎			27	14.3	5.4	5.5	3	
	M10			○	◎			29	14.3	6.35	5.5	3.75	
	M12			○	◎			33	14.3	6.35	5.5	4.5	
	M14			○	◎			39	14.3	6.35	5.5	5.25	
	M16			○	◎			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	
	SNEQ1507-C0.8			○	◎			15.875	15.875	7.94	-	-	

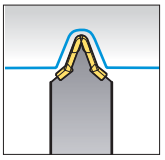
※ The above specification is subject to change according to customer related condition & Korloy technical condition

◎ : 1st Rec ○ : 2rd Rec

Gear Finishing Cutter (2 Step Type, Internal / Externa Gear)





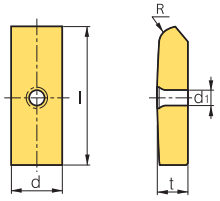
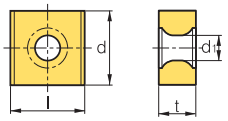
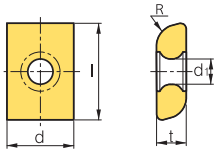


(mm)

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

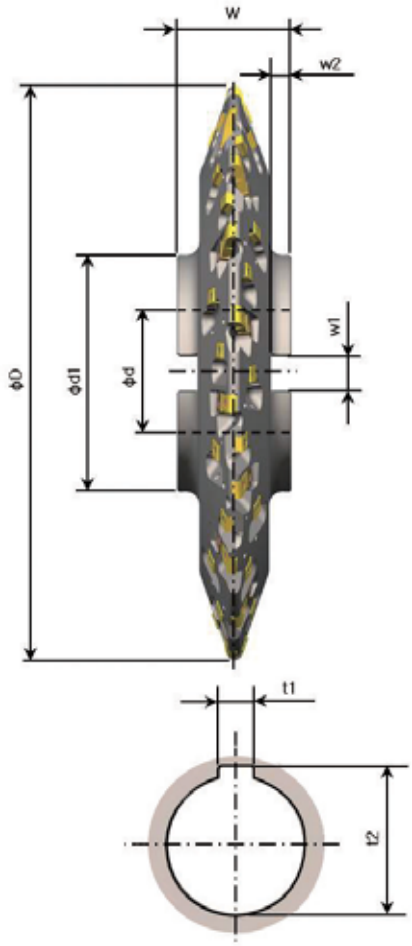
(mm)

Picture	Designation	Coated				Uncoated		Dimensions (mm)					Configuration
		NC5330	PC9530	PC3500	PC5300	H01	G10	l	d	t	d_1	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	
	SNEQ1507-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

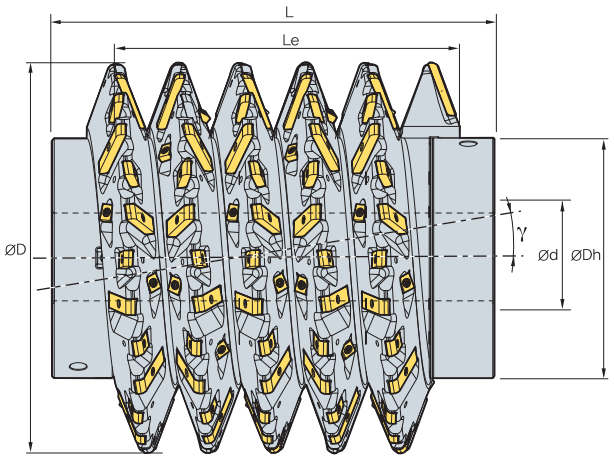
- Stock for finishing(one side) (mm) :
- Outside diameter D(mm) :
- Bore diameter d(mm) :
- Hub diameter d1(mm) :
- Cutter width W(mm) :
- Radial keyway w1(mm) :
- Radial keyway w2(mm) :
- Axial keyway t1(mm) :
- Axial keyway t2(mm) :

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) :

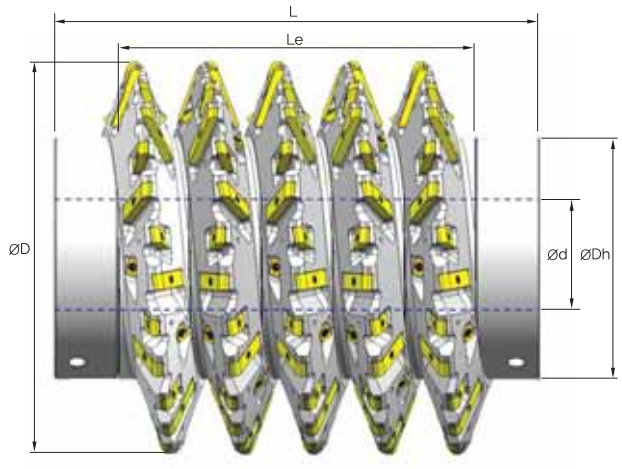
Indexable HOB New



(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) :

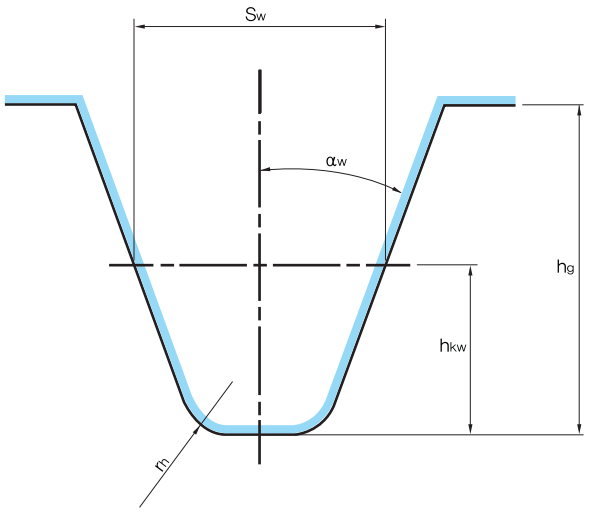
■Hob length L(mm) :

■Cutting length Le(mm) :

■Spiral direction RH/LH :

■Quality class acc. to DIN 3968 :

Profile of Hob [Module m6 ~]



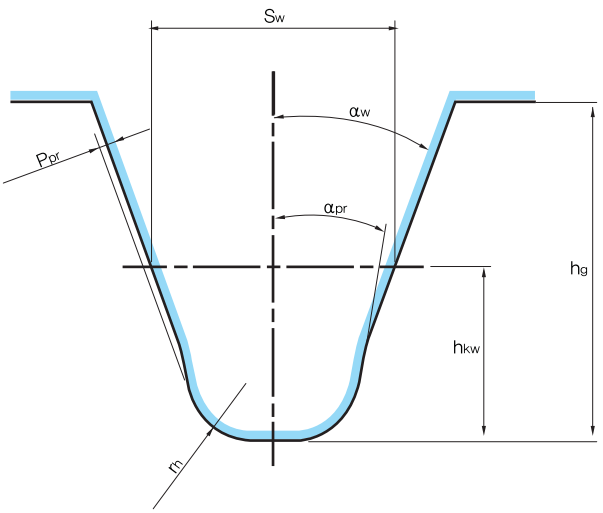
■Module M(mm) :

■Addendum h_{kw}(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) :