

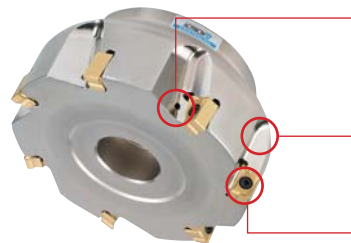
RM4

Rich Mill RM4

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

Features

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



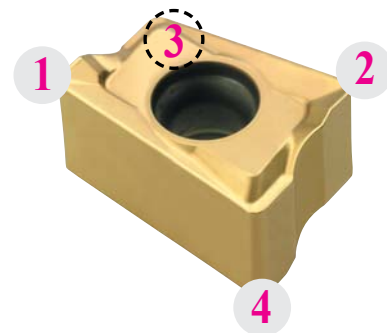
- Through coolant system
Longer tool life due to direct cooling injection into the cutting edge of insert

- Wide chip pocket for better chip evacuation

- Simple screw on system

Insert features

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



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

- **Step design**
 - Improving chip control
 - Reducing cutting load

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

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




- **Concave design**
 - 4 cutting edges
 - Minimize interference

- **Clearance face**
 - Strong negative face
 - Strong cutting edge


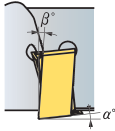
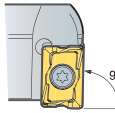
RM4



Chip breaker

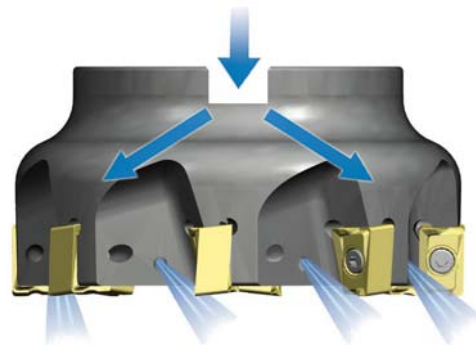
Insert	Cutting edge	Features
Aluminum, Light machining MA		With sharp edge application the better productivity has been accomplished, especially for Aluminum or low force cut
Light cutting MF		Due to low cutting load, it is good for light cutting and difficult-to-cut material.
General cutting MM		It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

Setting configuration

Shape	Cutting edge	Features
		High rake chip breaker & positive setting angle for low cutting load → Improving machinability
		Multi applications for facing, shouldering, slotting, ramping, helical cutting, etc

Through coolant system

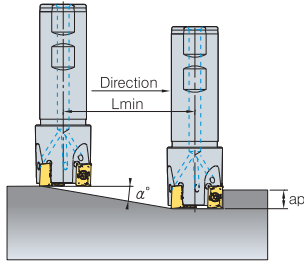
- By using on exclusive coolant bolt(hexagonal socket bolt) powerful cooling & better chip evacuation can be acquired. To get optimal chip control, the direction of coolant injection has been designed to reach to each cutting edge directly. (through coolant arbor is required.)



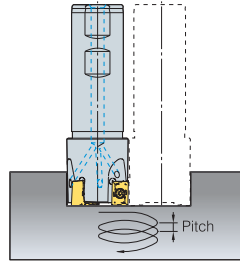
Through coolant system for decreasing cutting heat and good chip evacuation

Ramping and Helical cutting

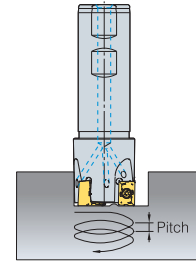
1. Ramping



2. Helical cutting for blind hole



3. Helical cutting for through hole



Designation		Ramping			Helical cutting for blind hole			Helical cutting for through hole		
		D	α°	Lmin	Maximum hole diameter	Maximum pitch	Minimum hole diameter	Maximum pitch	Minimum hole diameter	Maximum pitch
RM4PS	3014HR	14	4.5	125	27	3.1	25	2.7	19	1.3
	3016HR	16	3.5	160	31	2.7	29	2.5	23	1.4
	3018HR	18	3.0	185	35	2.7	33	2.4	27	1.5
	3020HR	20	2.7	204	39	2.7	37	2.5	31	1.6
	3025HR	25	1.8	301	49	2.3	47	2.1	41	1.6
	3032HR	32	1.2	451	63	2.0	61	1.9	55	1.5
	3040HR	40	0.9	616	79	1.8	77	1.8	71	1.5
	3050HR	50	0.6	843	99	1.5	97	1.5	91	1.3
RM4PC	3040HR	40	0.9	616	79	1.8	77	1.8	71	1.5
	3050HR	50	0.6	843	99	1.5	97	1.5	91	1.3
	3063HR	63	0.5	1123	125	1.6	123	1.6	117	1.4
	3080HR	80	0.3	1508	159	1.2	157	1.2	151	1.1
	3100HR	100	0.2	1910	199	1.0	197	1.0	191	0.9
RM4PS	4032HR	32	2.5	229	62	4	59.5	3.0	49	2.0
	4040HR	40	2.0	286	78	4	75.5	3.0	65	2.0
	4050HR	50	2.0	286	98	5	95.5	4.0	85	3.5
	4063HR	63	2.0	286	124	5	121.5	5.0	111	5.0
RM4PC	4050HR	50	2.0	286	98	5	95.5	4.0	85	3.5
	4063HR	63	2.0	286	124	5	121.5	5.0	111	5.0
	4080HR	80	1.5	382	158	5	155.5	5.0	145	5.0
	4100HR	100	1.0	573	198	5	195.5	4.5	185	4.0
	4125HR	125	1.0	573	248	5	245.5	5.0	235	5.0
	4160R	160	0.5	1146	318	4	315.5	3.5	305	3.5

The Lmin is when depth of cut is 10.0mm. ($L_{min} = 10/\tan \alpha$)

Recommended cutting condition

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

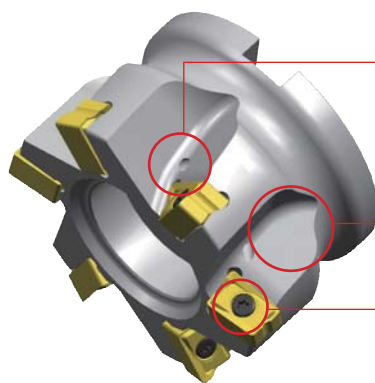
RM4



Rich Mill RM4Z

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

Features



■ **Through coolant system**

- Improving chip control
- Cooling inserts increases tool life

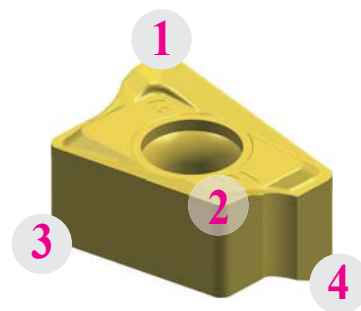
■ **Wide chip pocket**

■ **Screw on system**

Improving chip evacuation

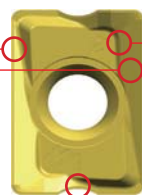
Inserts features

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



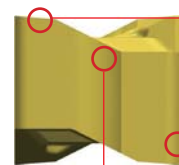
- **Major cutting edge**
- High rake cutting edge
 - Sharp cutting edge

- **Chip breaker**
- High rake angle
 - Control chip flow



- **Step design**
- Improving chip control
 - Reducing cutting load

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

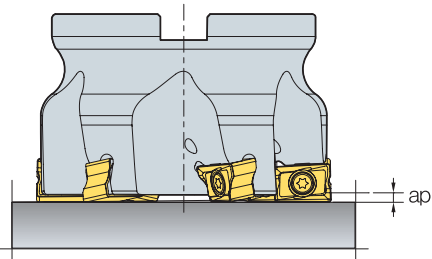


- **Minor cutting edge**
- Special design for plunge machining

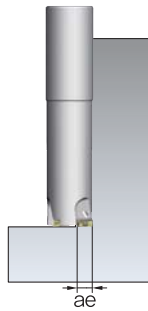
- **Sides**
- Negative type
 - Strong cutting edge

The depth of cut by machining type

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

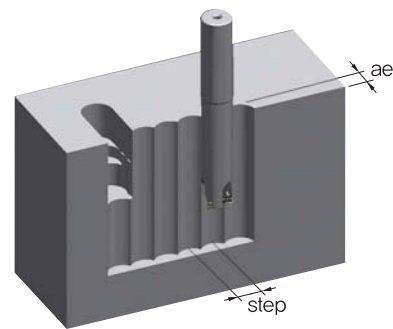


- In plunging, Depth of cut = a_e (mm)



Types	Horizontality	Verticality	
	max a_p (mm)	max a_e (mm)	step
RM4Z 3000	1.5	9	< 0.7D
RM4Z 4000	2.5	14	< 0.7D

Max Step in plunging



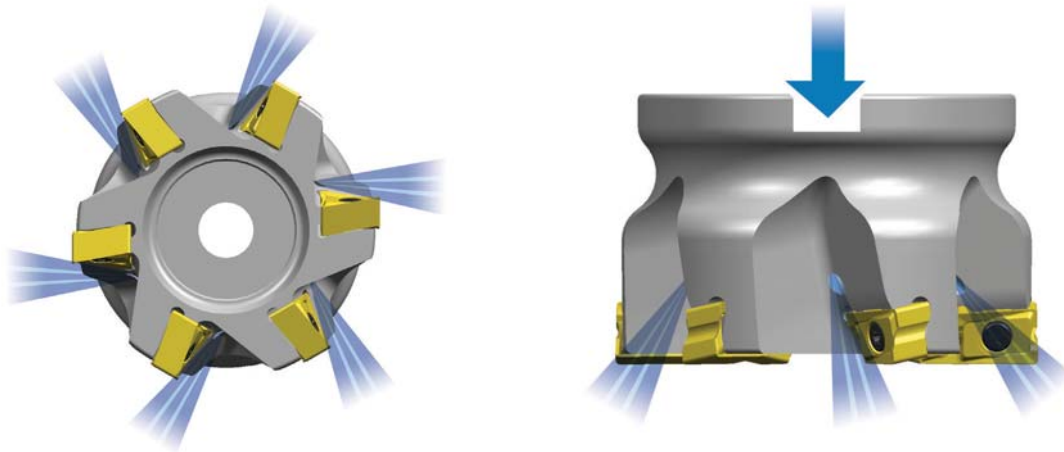
ae	Cutter Diameter(mm)								
	25	32	40	50	52	63	66	80	100
	max step (mm)								
1	9.7	11.1	12.4	14	14.2	15.7	16.1	17.7	19.9
2	13.5	15.4	17.4	19.5	20	22	22.6	24.9	28
3	16.2	18.6	21	23.7	24.2	26.8	27.4	30.3	34.1
4	18.3	21.1	24	27.1	27.7	30.7	31.4	34.8	39.1
5	20	23.2	26.4	30	30.6	34	34.9	38.7	43.5
6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

RM4

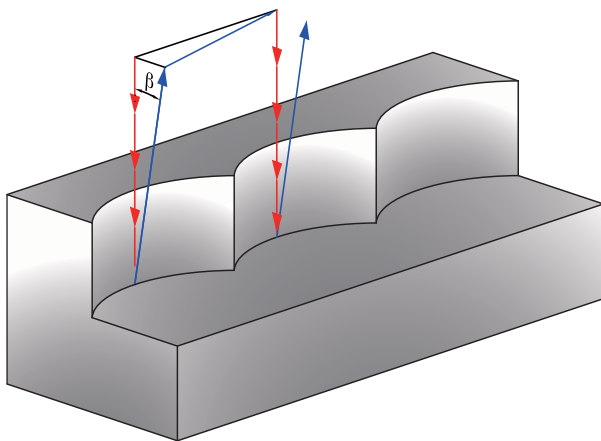


Through coolant system

- By using an exclusive coolant bolt (hexagonal socket bolt), more powerful cooling & better chip evacuation are realized.
- To get optimal chip control, the design of the coolant injection directs coolant directly to each cutting edge (through coolant arbor is necessary.)



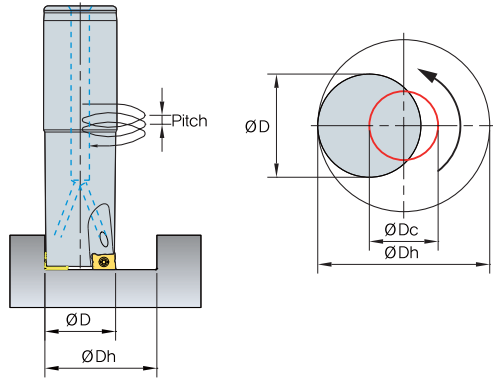
Programming tip



- Plunging feed direction
- Tool escape
- β Escape angle ($\beta \geq 1^\circ$)

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

Helical machining



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

ØDc = Tool center path

ØDh = Desired hole diameter

ØD = Tool Dia.

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

Recommended cutting condition

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

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

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

RM4



RM4PC(M)3000

- AR : -6°
- RR : -19°~13°

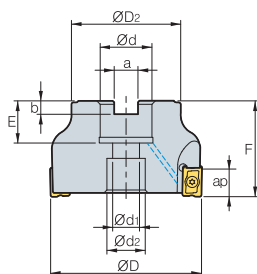


Fig. 1

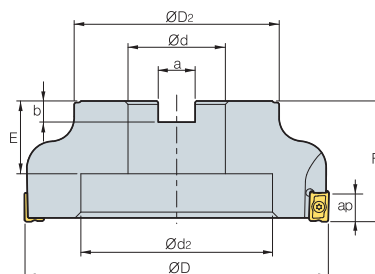


Fig. 2

(mm)

Designation			ØD	ØD ₂	Ød	Ød ₁	Ød ₂	a	b	E	F	ap		Fig.
RM4PCM	3040HR	4	40	35	16	9	14	8.4	5.6	19	40	9.0	0.24	1
	3040HR-M	5	40	35	16	9	14	8.4	5.6	19	40	9.0	0.23	1
	3050HR	5	50	42	22	11	18	10.4	6.3	20	40	9.0	0.36	1
	3050HR-M	7	50	42	22	11	18	10.4	6.3	20	40	9.0	0.35	1
	3063HR	7	63	49	22	11	18	10.4	6.3	20	40	9.0	0.61	1
	3063HR-M	9	63	49	22	11	18	10.4	6.3	20	40	9.0	0.6	1
RM4PC (RM4PCM)	3080HR	8	80	57	25.4(27)	14	20	9.5(12.4)	6.0(7.0)	25(23)	50	9.0	1.25(1.24)	1
	3080HR-M	10	80	57	25.4(27)	14	20	9.5(12.4)	6.0(7.0)	25(23)	50	9.0	1.24(1.23)	1
	3100HR	9	100	67	31.75(32)	18	26	12.7(14.4)	8.0(8.0)	33(25)	63(50)	9.0	2.46(1.94)	1
	3100HR-M	12	100	67	31.75(32)	18	26	12.7(14.4)	8.0(8.0)	33(25)	63(50)	9.0	2.44(1.93)	1

() Metric size

Available inserts

LNEX-MF	LNEX-MM	LNEX-MA	LNMX-MF	LNMX-MM													
Designation	Coated					Cermet			Uncoated								
	NCM825	NCM835	NC5330	PC3500	PC3530	PC3545	PC3530	PC8510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
LNEX 100605PNR-MF			●	●			●										
LNMX 100605PNR-MF			●	●			●										
LNEX 100605PNR-MM			●	●			●										
LNMX 100605PNR-MM			●	●			●										
LNEX 100608PNR-MF			●				●										
LNMX 100608PNR-MF							●										
LNEX 100608PNR-MM							●										
LNMX 100608PNR-MM			●														
LNEX 100605PNR-MA														●			
LNEX 100605PNL-MM																	
LNMX 100605PNL-MM			●														

Available arbors

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

Parts



FTKA0307



TW09S

RM4PC(M)4000

- AR : -6°
- RR : -19°~13°

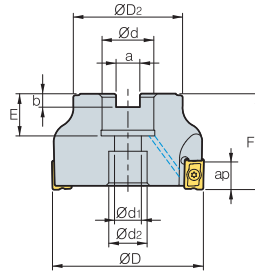


Fig. 1

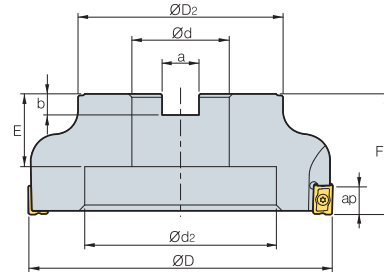


Fig. 2

(mm)

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

• () Metric size

Available inserts



Designation	Coated						Cermet			Uncoated				
	NCM25	NCM35	PC3500	PC5400	PC3545	PC9530	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
L NEX 151004PNR-MF			●											
L NEX 151004PNR-MM			●											
L NEX 151008PNR-MF			●	●										
L NEX 151008PNR-MM			●	●	●									
L NEX 151016PNR-MF			●	●	●	●								
L NEX 151016PNR-MM			●	●	●	●								
L NEX 151004PNR-MA												●		
L NEX 151008PNR-MA												●		
L NEX 151008PNL-MM														
L NEX 151008PNL-MM														

Available arbors

Designation	Available arbors	
	RM4PC	RM4PCM
RM4PC(M) 4050HR	-	BT□□-FMC22-□□
4050HR-M		
4063HR		
4063HR-M	BT□□-FMA 25.4-□□	BT□□-FMC27-□□
4080HR		
4080HR-M	BT□□-FMA31.75-□□	BT□□-FMC32-□□
4100HR	BT□□-FMA38.1-□□	BT□□-FMB40-□□
4100HR-M		
4125HR	BT□□-FMA50.8-□□	BT□□-FMC40-□□
4125HR-M		
4160R		
4160R-M		

Parts



FTKA0412B

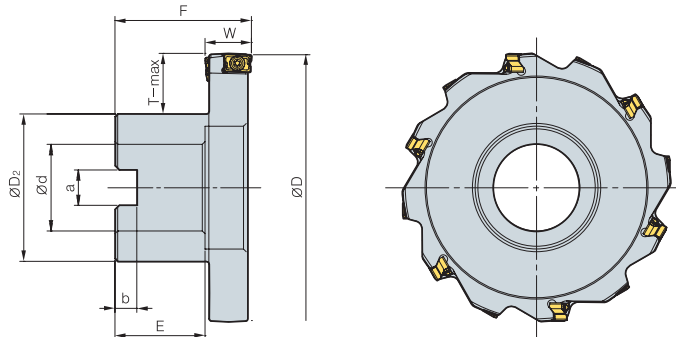


TW15S

RM4



RM4PFCB3000



(mm)

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

Available inserts

LNEX-MM

LNMX-MM



Designation	Coated									Cermet			Uncoated				
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
LNEX 100605PNR-MM				●	●	●			●								
LNMX 100605PNR-MM				●	●	●	●	●	●								
LNEX 100605PNL-MM																	
LNMX 100605PNL-MM				●													

Available arbors

Designation	Available arbors	Designation	Available arbors
	RM4PC		RM4PC
RM4PFCB 308011R 308013R 308015R 308017R 310011R	BT□□-FMA 25.4-□□	RM4PFCB 312511R 312513R 312515R 312517R 316011R	BT□□-FMA38.1-□□
	BT□□-FMA 31.75-□□		
310013R 310015R 310017R		316013R 316015R 316017R	

Parts

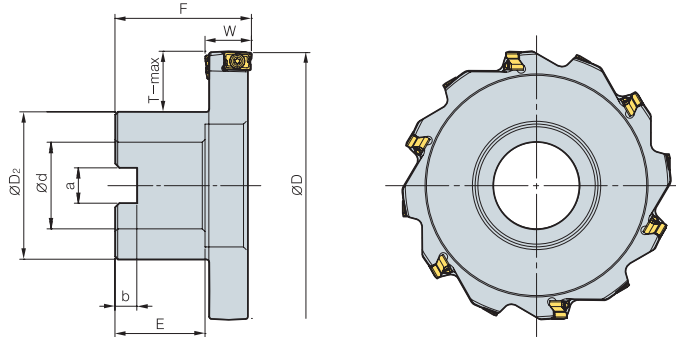


FTKA0307



TW09S

RM4PFCB4000



(mm)

Designation		ØD	ØD ₂	Ød	a	b	E	F	W	T-max
RM4PFCB	408022R	6	80	40	25.4	9.5	6	25	22	19
	408024R	6	80	40	25.4	9.5	6	25	24	19
	408026R	6	80	40	25.4	9.5	6	25	26	19
	408028R	6	80	40	25.4	9.5	6	25	28	19
	410022R	8	100	54	31.75	12.7	8	32	22	22
	410024R	8	100	54	31.75	12.7	8	32	24	22
	410026R	8	100	54	31.75	12.7	8	32	26	22
	410028R	8	100	54	31.75	12.7	8	32	28	22
	412522R	10	125	70	38.1	15.9	10	38	22	26
	412524R	10	125	70	38.1	15.9	10	38	24	26
	412526R	10	125	70	38.1	15.9	10	38	26	26
	412528R	10	125	70	38.1	15.9	10	38	28	26
416022R	12	160	70	38.1	15.9	10	38	22	44	
416024R	12	160	70	38.1	15.9	10	38	24	44	
416026R	12	160	70	38.1	15.9	10	38	26	44	
416028R	12	160	70	38.1	15.9	10	38	28	44	

Available inserts

LNEX-MM

LNMX-MM



Designation	Coated									Cermet			Uncoated				
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
LNEX 151008PNR-MM				●	●	●	●	●	●								
LNMX 151008PNR-MM				●	●	●	●	●	●								
LNEX 151008PNL-MM																	
LNMX 151008PNL-MM																	

Available arbors

Designation	Available arbors	Designation	Available arbors
	RM4PC		RM4PC
RM4PFCB 408022R 408024R 408026R 408028R 410022R 410024R 410026R 410028R	BT□□-FMA 25.4-□□	RM4PFCB 412522R 412524R 412526R 412528R 416022R 416024R 416026R 416028R	BT□□-FMA38.1-□□
	BT□□-FMA 31.75-□□		

Parts



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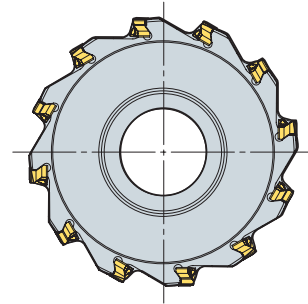
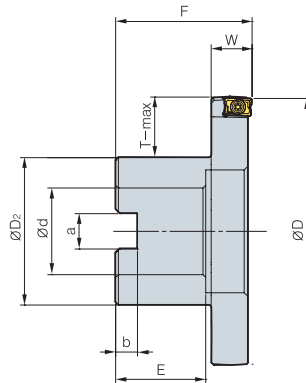
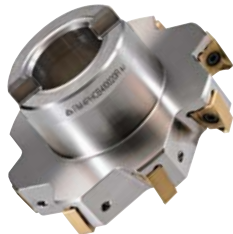


TW15S

RM4



RM4PHCB3000



(mm)

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

Available inserts

	LNEX-MF	LNEX-MM	LNEX-MA	LNMX-MF	LNMX-MM																							
						Coated										Cermet			Uncoated									
Designation											NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20	
LNEX 100605PNR-MF																												
LNMX 100605PNR-MF																												
LNEX 100605PNR-MM																												
LNMX 100605PNR-MM																												
LNEX 100608PNR-MF																												
LNMX 100608PNR-MF																												
LNEX 100608PNR-MM																												
LNMX 100608PNR-MM																												
LNEX 100605PNR-MA																												

Available arbors

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

Parts

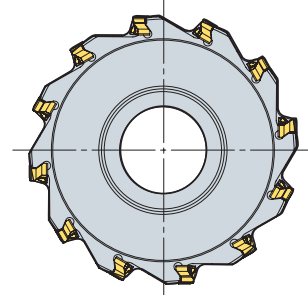
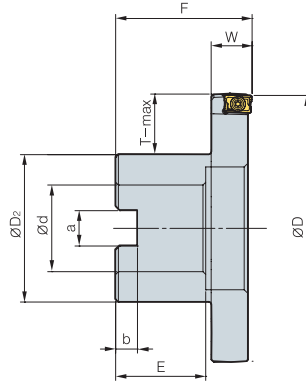
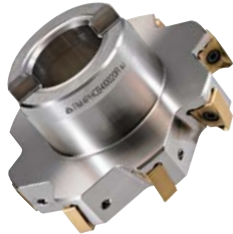


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TW09S

RM4PHCB4000

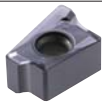


(mm)

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

Available inserts

LNEX-MF



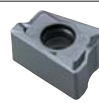
LNEX-MM



LNEX-MA



LNMX-MF



LNMX-MM



Designation	Coated										Cermet			Uncoated			
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
LNEX 151004PNR-MF				●					●								
LNMX 151004PNR-MF				●					●								
LNEX 151004PNR-MM																	
LNMX 151004PNR-MM																	
LNEX 151008PNR-MF				●		●			●								
LNMX 151008PNR-MF				●	●	●			●								
LNEX 151008PNR-MM				●	●	●			●								
LNMX 151008PNR-MM				●	●	●	●	●	●								
LNEX 151016PNR-MF																	
LNMX 151016PNR-MF																	
LNEX 151016PNR-MM																	
LNMX 151016PNR-MM				●													
LNEX 151004PNR-MA															●		
LNEX 151008PNR-MA															●		

Available arbors

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

Parts



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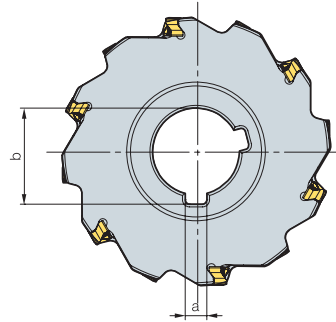
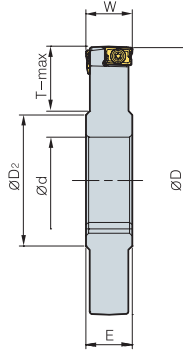


TW15S

RM4



RM4PFCP3000



(mm)

Designation		ØD	ØD ₂	Ød	a	b	E	W	T-max	
RM4PFCP	308015R	10	80	41.5	25.4	6.35	28	15	50	17
	308017R	10	80	41.5	25.4	6.35	28	17	50	17
	310015R	12	100	48	31.75	7.94	35.2	15	50	24
	310017R	12	100	48	31.75	7.94	35.2	17	50	24
	312515R	14	125	58	38.1	9.53	42.3	15	60	32
	312517R	14	125	58	38.1	9.53	42.3	17	60	32
	316015R	16	160	58	38.1	9.53	42.3	15	60	49
	316017R	16	160	58	38.1	9.53	42.3	17	60	49

Available inserts

LNEX-MM



LNMX-MM



Designation	Coated									Cermet			Uncoated				
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
LNEX 100605PNR-MM				●	●	●			●								
LNMX 100605PNR-MM				●	●	●	●	●	●								
LNEX 100605PNL-MM																	
LNMX 100605PNL-MM				●													

Available arbors

Designation	Available arbors	Designation	Available arbors
	RM4PFCP		RM4PC
RM4PFCP 308011R 308013R 308015R 308017R	BT□□-SCA 25.4-□□	RM4PFCP 312511R 312513R 312515R 312517R	BT□□-SCA38.1-□□
310011R 310013R 310015R 310017R			

Parts

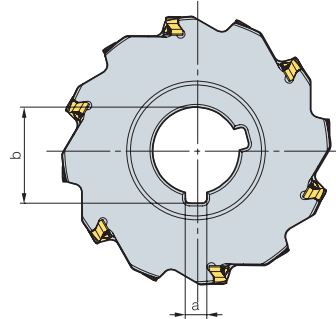
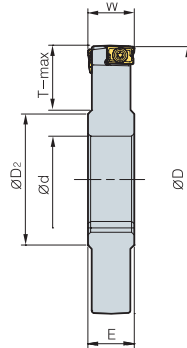


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TW09S

RM4PFCP4000



(mm)

Designation		ØD	ØD ₂	Ød	a	b	E	W	T-max
RM4PFCP	408022R	6	80	41.5	25.4	6.35	28	22	17
	408024R	6	80	41.5	25.4	6.35	28	24	17
	408026R	6	80	41.5	25.4	6.35	28	26	17
	408028R	6	80	41.5	25.4	6.35	28	28	17
	410022R	8	100	48	31.75	7.94	35.2	22	24
	410024R	8	100	48	31.75	7.94	35.2	24	24
	410026R	8	100	48	31.75	7.94	35.2	26	24
	410028R	8	100	48	31.75	7.94	35.2	28	24
	412522R	10	125	58	38.1	9.53	42.3	22	32
	412524R	10	125	58	38.1	9.53	42.3	24	32
	412526R	10	125	58	38.1	9.53	42.3	26	32
	412528R	10	125	58	38.1	9.53	42.3	28	32
	416022R	12	160	58	38.1	9.53	42.3	22	49
	416024R	12	160	58	38.1	9.53	42.3	24	49
416026R	12	160	58	38.1	9.53	42.3	26	49	
416028R	12	160	58	38.1	9.53	42.3	28	49	

Available inserts

LNEX-MM

LNMX-MM



Designation	Coated									Cermet			Uncoated				
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
LNEX 151008PNR-MM				●	●	●			●								
LNMX 151008PNR-MM				●	●	●	●	●	●								
LNEX 151008PNL-MM																	
LNMX 151008PNL-MM																	

Available arbors

Designation	Available arbors	Designation	Available arbors
	RM4PFCP		RM4PC
RM4PFCP 408022R 408024R 408026R 408028R	BT□□-SCA 25.4-□□	RM4PFCP 412522R 412524R 412526R 412528R 416022R 416024R 416026R 416028R	BT□□-SCA38.1-□□
	BT□□-SCA 31.75-□□		

Parts



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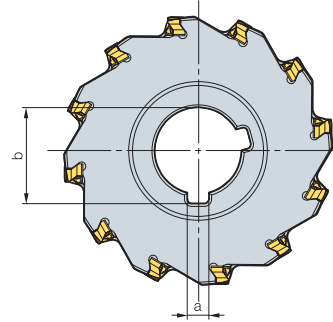
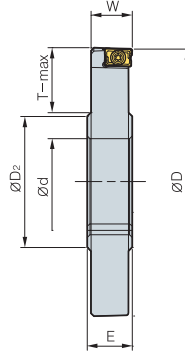


TW15S

RM4



RM4PHCP3000



(mm)

Designation		ØD	ØD ₂	Ød	a	b	E	W	T-max
RM4PHCP 308015R	10	80	41.5	25.4	6.35	28	16.5	15.1	17
310015R	12	100	48	31.75	7.94	35.2	16.5	15.1	24
312515R	14	125	58	38.1	9.53	42.3	16.5	15.1	32
316015R	16	160	58	38.1	9.53	42.3	16.5	15.1	49

Available inserts

LNEX-MF



LNEX-MM



LNEX-MA



LNMX-MF



LNMX-MM



Designation	Coated									Cermet			Uncoated				
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
LNEX 100605PNR-MF				●	●	●			●								
LNMX 100605PNR-MF				●	●	●			●								
LNEX 100605PNR-MM				●	●	●			●								
LNMX 100605PNR-MM				●	●	●	●	●	●								
LNEX 100608PNR-MF				●					●								
LNMX 100608PNR-MF				●					●								
LNEX 100608PNR-MM									●								
LNMX 100608PNR-MM				●													
LNEX 100605PNR-MA														●			

Available arbors

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

Parts

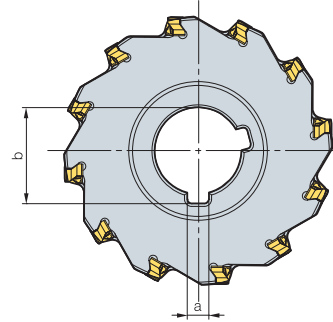
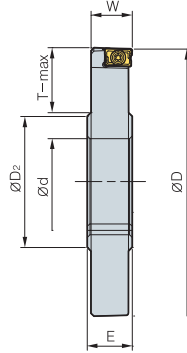


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TW09S

RM4PHCP4000

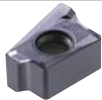


(mm)

Designation		ØD	ØD ₂	Ød	a	b	E	W	T-max
RM4PHCP 408020R	6	80	41.5	25.4	6.35	28	22	19.8	17
410020R	8	100	48	31.75	7.94	35.2	22	19.8	24
412520R	10	125	58	38.1	9.53	42.3	22	19.8	32
416020R	12	160	58	38.1	9.53	42.3	22	19.8	49

Available inserts

LNEX-MF



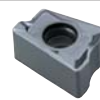
LNEX-MM



LNEX-MA



LNMX-MF



LNMX-MM



Designation	Coated									Cermet			Uncoated				
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
LNEX 151004PNR-MF				●					●								
LNMX 151004PNR-MF				●					●								
LNEX 151004PNR-MM									●								
LNMX 151004PNR-MM									●								
LNEX 151008PNR-MF				●		●			●								
LNMX 151008PNR-MF				●	●	●			●								
LNEX 151008PNR-MM				●	●	●			●								
LNMX 151008PNR-MM				●	●	●	●	●	●								
LNEX 151016PNR-MF																	
LNMX 151016PNR-MF																	
LNEX 151016PNR-MM																	
LNMX 151016PNR-MM				●													
LNEX 151004PNR-MA															●		
LNEX 151008PNR-MA															●		

Available arbors

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

Parts



FTKA0412B



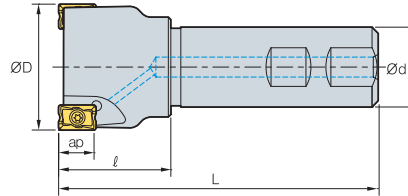
TW15S

RM4



RM4PS3000

- AR : -6°
- RR : -39°~16°



(mm)

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

Available inserts

	LNEX-MF	LNEX-MM	LNEX-MA	LNMX-MF	LNMX-MM												
						Coated						Cermet			Uncoated		
Designation	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
LNEX 100605PNR-MF				●	●	●			●								
LNMX 100605PNR-MF				●	●	●			●								
LNEX 100605PNR-MM				●	●	●			●								
LNMX 100605PNR-MM				●	●	●	●	●	●								
LNEX 100608PNR-MF				●					●								
LNMX 100608PNR-MF									●								
LNEX 100608PNR-MM									●								
LNMX 100608PNR-MM				●													
LNEX 100605PNR-MA														●			
LNEX 100605PNL-MM									●								
LNMX 100605PNL-MM				●					●								

Parts



FTKA0307

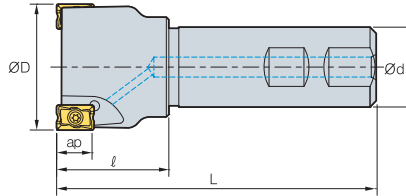


TW09S

RM4PS4000



- AR : -6°
- RR : -24°~14°



(mm)

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

Available inserts

LNEX-MF



LNEX-MM



LNEX-MA



LNMX-MF



LNMX-MM



Designation	Coated										Cermet			Uncoated			
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC5545	PC5530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
LNEX 151004PNR-MF				●					●								
LNMX 151004PNR-MF				●					●								
LNEX 151004PNR-MM																	
LNMX 151004PNR-MM									●								
LNEX 151008PNR-MF				●		●			●								
LNMX 151008PNR-MF				●	●	●			●								
LNEX 151008PNR-MM				●	●	●			●								
LNMX 151008PNR-MM				●	●	●	●	●	●								
LNEX 151016PNR-MF																	
LNMX 151016PNR-MF																	
LNEX 151016PNR-MM																	
LNMX 151016PNR-MM				●													
LNEX 151004PNR-MA														●			
LNEX 151008PNR-MA														●			

Parts



FTKA0412B



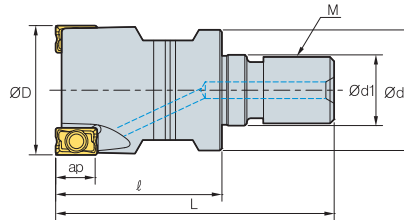
TW15S

RM4



RM4PM

- AR : -6°
- RR : -39°~16°



(mm)

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

Available inserts

	LNEX-MF	LNEX-MM	LNEX-MA	LNMX-MF	LNMX-MM												
Designation	Coated									Cermet			Uncoated				
	NCM325	NCM335	NC5330	PC3500	PC5300	PC5400	PC3545	PC9530	PC6510	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
LNEX 100605PNR-MF				●	●	●			●								
LNMX 100605PNR-MF				●	●	●			●								
LNEX 100605PNR-MM				●	●	●			●								
LNMX 100605PNR-MM				●	●	●	●	●	●								
LNEX 100608PNR-MF				●					●								
LNMX 100608PNR-MF									●								
LNEX 100608PNR-MM									●								
LNMX 100608PNR-MM				●													
LNEX 100605PNR-MA														●			
LNEX 100605PNL-MM									●								
LNMX 100605PNL-MM				●					●								

Available arbors

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

Designation : RM4PM3032HR-M16
Modular head threading measure size(M16)

||

Adaptor Spec. : MAT-M16-035-S32S
Adaptor threading measure(M16)

Parts

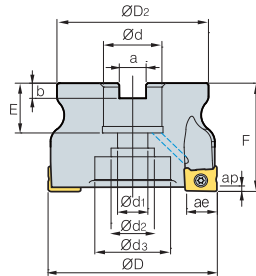


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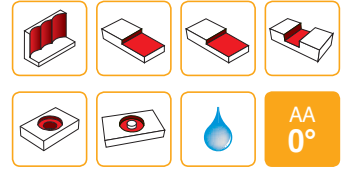


TW09S

RM4ZC(M)3000/4000 *New*



- AR : -11°
- RR : -12°~10°



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

(mm)

• () Metric size

Available inserts

LNEX-MM

LNMX-MM



Type	Designation	Coated										Cermet			Uncoated			
		NCM925	NCM935	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
3000 type	LNEX 100605PNL-MM																	
	LNMX 100605PNL-MM					●												
4000 type	LNEX 151008PNL-MM																	
	LNMX 151008PNL-MM																	

Available arbors

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

Parts

Type	Screw	Wrench
3000 type	FTKA0307	TW09S
4000 type	FTKA0412B	TW15S

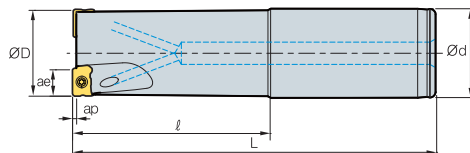
RM4



RM4ZS3000 *New*



- AR : -11°
- RR : -17°~14°

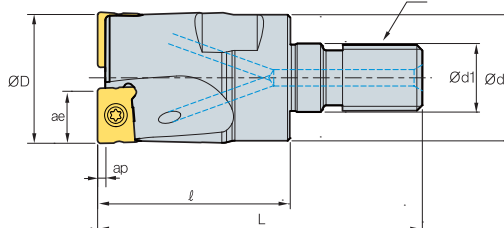
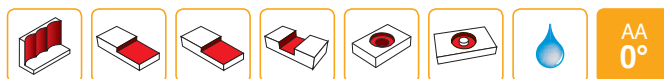


Designation			ØD	Ød	l	L	ap	ae	
RM4ZS	3025HR-L25	2	25	25	120	200	1.5	9.0	0.62
	3032HR-L32	3	32	32	120	210	1.5	9.0	1.13
	3040HR-L32	4	40	32	120	250	1.5	9.0	1.53

RM4ZM3000 *New*



- AR : -11°
- RR : -17°~14°



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

Available inserts

LNEX-MM

LNMX-MM



Designation	Coated									Cermet			Uncoated				
	NCM325	NCM335	NC5330	PC3500	PC5300	PC3545	PC9530	PC6510	PC215K	PD2000	CN2000	CN20	CN30	H01	G10	ST30A	ST20
LNEX 100605PNL-MM				●													
LNMX 100605PNL-MM				●													

Parts



FTKA0307



TW09S

MAT(Steel shank type)

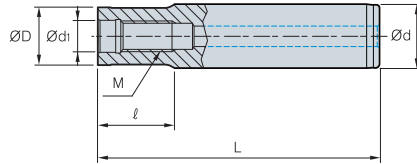


Fig. 1

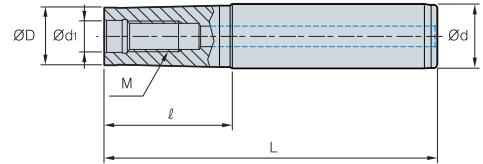


Fig. 2

		(mm)						
	Designation	ØD	Ød	Ød ₁	ℓ	L	M	M
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

RM4



MAT-C(Carbide shank type)

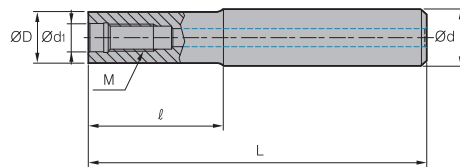


Fig. 1

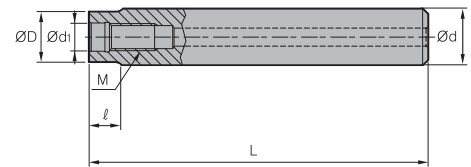


Fig. 2

(mm)

	Designation	ØD	Ød	Ød ₁	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	