

DIJET TOOLS

for high efficient 5-axis machining



Lineup

Tulip S-Heads

STLP type

- ① Radius on tapered edge: R1500mm
Form accuracy: below +/- 10µm
- ② Possible high efficient machining by adopting 4 flutes
- ③ New PVD coated grade DH115, applications from hard-to-cut materials to high hardened materials



page 3

Mirror Barrel

KRM type

- ① High precision indexable barrel tools for finishing with large R-shaped side cutting edge
- ② Achieves high precision and high efficient finishing on tapered walls and bottom face
- ③ Uses standard Mirror Radius modular head



page 4

High Precision QM Max

MQT type

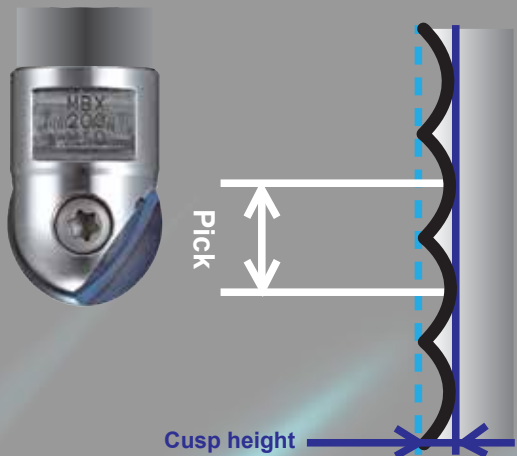
- ① High precision QM Max
- ② High efficient finishing on tapered walls with 3-axis machining
- ③ Precision finishing with XPHW/XPHT inserts



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Concept

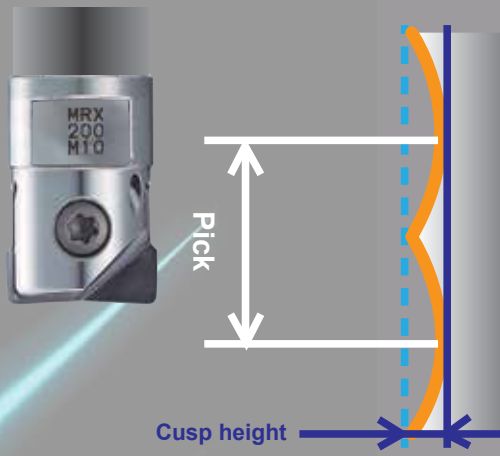
When using $\phi 20$ (R10) Ball Nose End Mill



< $\phi 20$ mm Ball Nose End Mill (R10mm) >
 Pick (ap) when theoretical cusp height is 0.002mm
ap=0.4mm

When using $\phi 20$ (R60) KRM Type

NEW

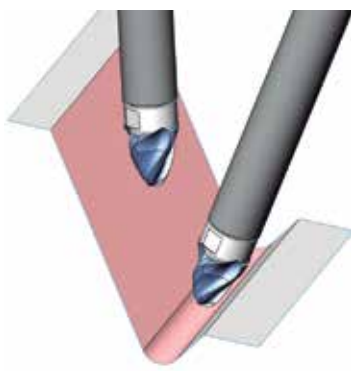


< $\phi 20$ mm KRM Type (R60mm) >
 Pick (ap) when theoretical cusp height is 0.002mm
ap=0.98mm

Improved efficiency: 2.5 times

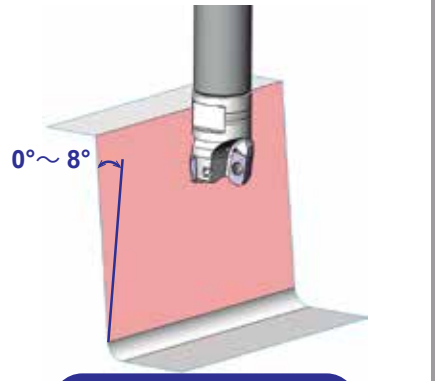
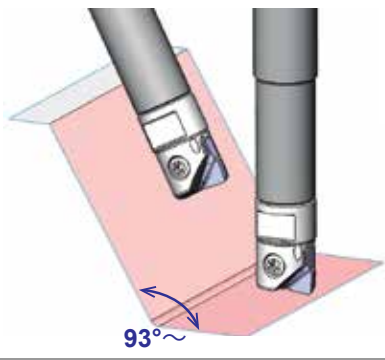
Calculated from $ap=2\sqrt{(R^2-(R-H)^2)}$

Type of machining



STLP for 5-axis
 • For tapered wall and corner finishing

KRM for 5-axis
 • For tapered wall & bottom finishing



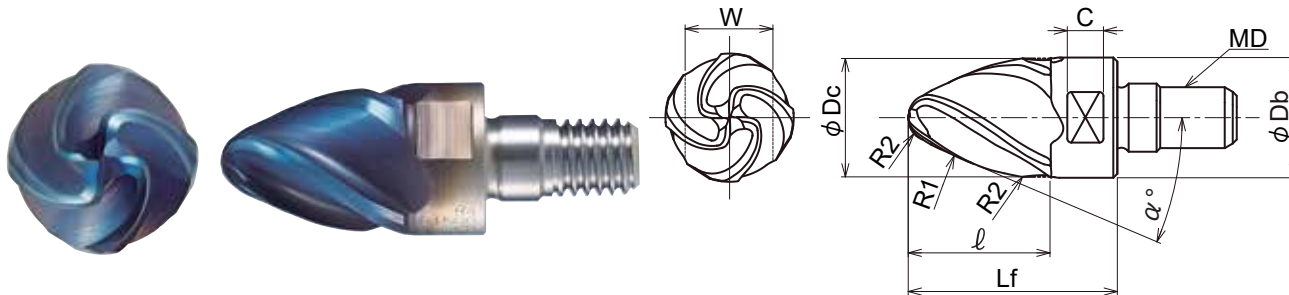
MQT for 3-axis
 • For tapered wall finishing with 3-axis



STLP
TYPE

Solid modular head STLP type

- 4 flutes / Helix angle 30°
- Form accuracy: 0.010mm



Cat. No.	Stock	Grade	No. of flutes	(mm) Dimensions									
				φ Dc	l	Lf	R1	R2	α°	φ Db	MD	C	W
STLP4160T20R4-M8	◎	DH115	4	16	14.3	26	1500	4	20°	15	M8	5.5	14
STLP4200T20R5-M10	◎			20	17.9	30	1500	5	20°	19	M10	5.5	17

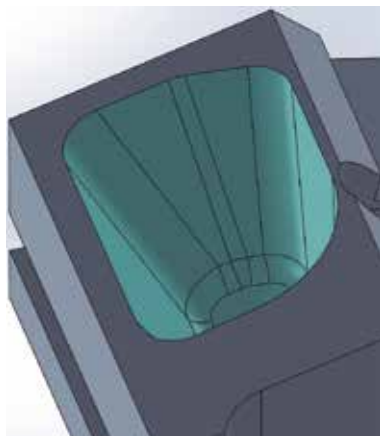
Note) Be sure to use DIJET DS type spanner wrench to prevent over-tightening.

◆ Tightening Torque for head

Thread	Tightening torque	Spanner size of S-Head	Cat No. of spanner wrench DS type
M8	10~11N·m	14	DS-14
M10	10~16N·m	17	DS-17

STLP
TYPE

Cutting data



Overhung length: 106mm

Work	Part name	Test piece
	Material	S50C C50
	Hardness	—
Tool	Tool No.	STLP4160T20R4-M8
	Grade	DH115
Cutting conditions	n	n=10,000min ⁻¹
	Vf	Vf=1,200mm/min
	ap (mm)	2mm
	ae (mm)	0.15mm
	Coolant	Dry
	Machine	5-axis MC
Result	STLP achieved high efficient & precision machining, compared with ball nose end mill.	

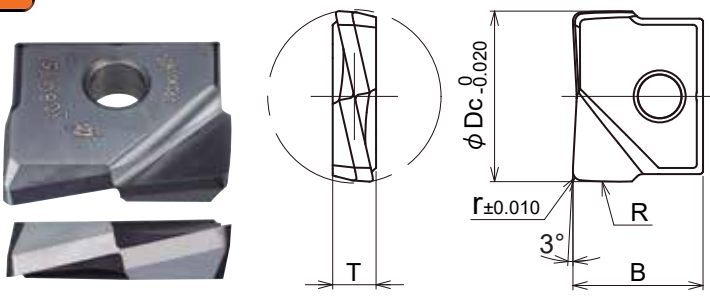
Movie



5
axis

KRM
TYPE

Insert for "MIRROR BARREL" KRM type



Corner radius accuracy of inserts: within ±0.010mm

Radius form accuracy on the outer periphery: within ±0.010mm

Cat. No.	PVD coated		(mm) Dimensions				
	JC8015 (Z10~20)	DH102 (Z01)	R	r	φDc	B	T
KRM-160-R10-BR50	◎	◎	50	1	16	12	4
KRM-200-R10-BR60	◎	◎	60	1	20	15	5

Note) Use only MIRROR RADIUS modular head MRX type or carbide shank end mill style.

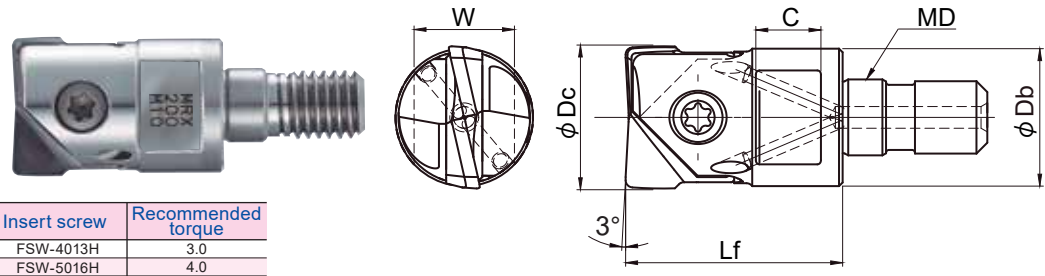
5
axis

MRX
TYPE

Modular head MRX type

Through coolant hole

Accuracy of MRX after combined O.D. run out: below 15µm (Target below 10µm)
 * In case of using KRM type insert / Corner radius accuracy: within ±0.010mm, radius form accuracy on the outer periphery.: within ±0.010mm



Insert screw	Recommended torque
FSW-4013H	3.0
FSW-5016H	4.0

Cat. No.		Stock	(mm) Dimensions						Applicable inserts	Parts	
			φ Dc	Lf	φ Db	MD	C	W		Clamp screw	Wrench
NEW	OLD										
MRX-160-M8	MRN-160-M8 (-H)	●	16	23	15	M8	8	12	RNM-160/170-.../HRM-160/170-... FRM-160/170.../KRM-160-...	FSW-4013H	T-15
MRX-200-M10	MRN-200-M10 (-H)	●	20	30	19	M10	8	14	RNM-200/210-.../HRM-200/220-... FRM-200/210.../KRM-200-...	FSW-5016H	A-20W

Note) 1. All holders are supplied without inserts & wrench.
 2. Please see below for recommended tightening torque on Modular Head. (When mounting head to shank, recommend to use DIJET DS type spanner wrench to prevent over tightening.)

◆ Tightening Torque for head

Thread	Tightening torque for head	Spanner size	Cat No. of spanner wrench DS type
M8	16N·m	12	DS-12
M10	16N·m	14	DS-14
M12	20N·m	17	DS-17
M16	25N·m	22	DS-22



Cutting Data

Ball		Barrel		Work	Part name		Test piece (side milling)	
					Material		NAK80 P21	
					Hardness		40HRC	
Ra=0.70µm		Ra=0.26µm		Tool	Tool No.		MBX-200-M10 MRX-200-M10	
Overhung length: 130mm					Insert No.		Ball Barrel BNM-200-SSR (DH108) KRM-200-R10-BR60 (JC8015)	
				Cutting conditions	n		n=6,369min ⁻¹	
					Vf		Vf=1,910mm/min	
					ap (mm)		0.4mm 1.0mm	
					ae (mm)		0.1mm	
					Coolant		Dry	
				Machine		5-axis MC		
				Result	KRM achieved excellent surface roughness compared with indexable ball nose end mill.			
					<div data-bbox="1282 640 1485 861" data-label="Image"> </div>			

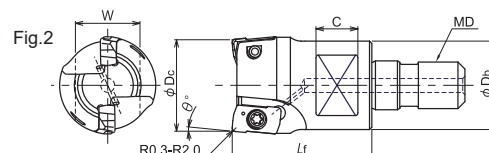
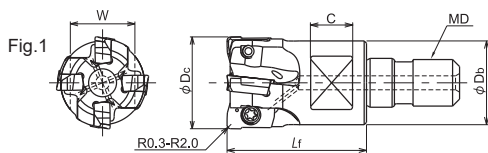


5
axis

MQT
TYPE

Modular head MQT type

Through coolant hole



Incline angle θ°	Cat. No.	Stock	No. of inserts	Dimensions (mm)					Inserts	Parts		Fig	
				ϕD_c	L _f	ϕD_b	MD	C		W	Clamp screw		Wrench (not included)
0°	MQT-2016A00-M8	●	2	16	23	14	M8	8	12	XP * 100308ZER-R YPHW1003 * * Z * R- * * ZPMT1003 * * ZER-PL	TSW-2556H	T-08	1
	MQT-4020A00-M10	●	4	20	30	18	M10	9	14		TSW-2556H		
	MQT-5025A00-M12	●	5	25	35	22.5	M12	10	17		DSW-2563H		
	MQT-6035A00-M16	●	6	35	43	29	M16	12	22		DSW-2563H		
3°	MQT-2016A03-M8	●	2	16	23	14	M8	8	12	XP * 100308ZER-R YPHW1003 * * Z * R- * * ZPMT1003 * * ZER-PL	TSW-2556H	T-08	2
	MQT-2020A03-M10	●	2	20	30	18	M10	9	14		TSW-2556H		
5°	MQT-2016A05-M8	●	2	16	23	14	M8	8	12	XP * 100308ZER-R YPHW1003 * * Z * R- * * ZPMT1003 * * ZER-PL	TSW-2556H	T-08	2
	MQT-2020A05-M10	●	2	20	30	18	M10	9	14		TSW-2556H		

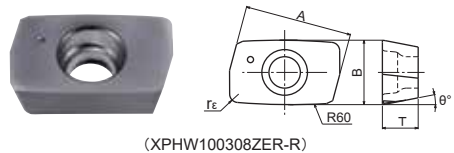
Note) 1. All cutters are supplied without inserts, wrench or MOLY. 2. Please see page 4 for recommended tightening torque.

Clamp screw	Recommended torque
TSW-2556H	1.1
DSW-2563H	1.1

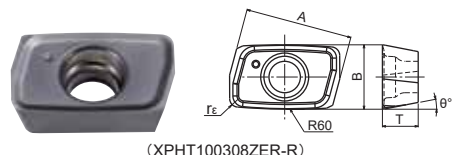
MQT
TYPE

Inserts

For tapered wall finishing

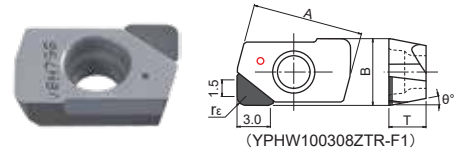


(XPHW100308ZER-R)



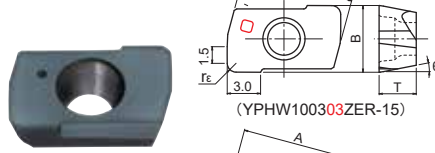
(XPHT100308ZER-R)

CBN insert



(YPHW100308ZTR-F1)

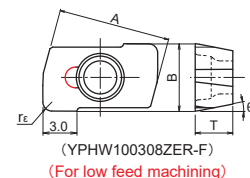
For finishing side face



(YPHW100303ZER-15)

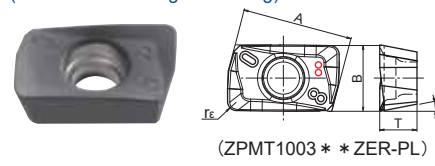


(YPHW100308ZER-15)



(YPHW100308ZER-F)
(For low feed machining)

Shoulder milling insert
(From semi-finishing to finishing)



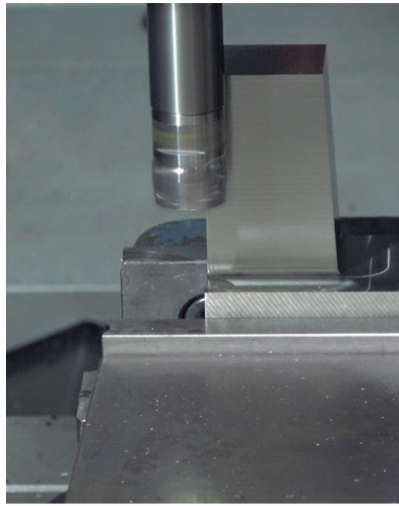
(ZPMT1003 * * ZER-PL)

Type	Cat. No.	Tolerance	PVD coated			Cermet	CBN	Dimensions (mm)				
			JC8015	JC8118	DH102			CX75	JBN795	A	T	B
NEW For tapered wall finishing	XPHW100308ZER-R	H	●		◎	●		10.06	3.35	6	0.8	11°
	XPHT100308ZER-R	H	●			●		10.06	3.35	6	0.8	11°
For finishing side face	YPHW100303ZER-15	H	●		●	●		10.06	3.35	6	0.3	11°
	YPHW100308ZER-15	H			●	●		10.06	3.35	6	0.8	11°
	YPHW100308ZER-F	H	●					10.06	3.35	6	0.8	11°
	YPHW100308ZTR-F1	H					●	10.06	3.35	6	0.8	11°
NEW Shoulder milling insert (From semi-finishing to finishing)	ZPMT100304ZER-PL	M		●	●	●		10.08	3.4	6	0.4	11°
	ZPMT100308ZER-PL	M	○	●	●	●		10.08	3.4	6	0.8	11°
	ZPMT100320ZER-PL	M		●	●	●		10.08	3.4	6	2.0	11°

10 inserts per case, except grade JBN795 insert is packed in 1 piece per case.



Cutting data



Overhung length: 100mm

Work	Part name	Test piece
	Material	NAK80 P21
	Hardness	40HRC
Tool	Tool No.	MQT-2020A03-M10
	Insert No.	XPHW100308ZER-R (JC8015)
Cutting conditions	n	n=6,400min ⁻¹
	Vf	Vf=1,940mm/min
	Pick feed a_p (mm)	1.5mm
	a_e (mm)	0.15mm
	Coolant	Dry
	Machine	Vertical MC
Result	MQT improved the efficiency 3 times, compared with ball nose end mill. (Pick feed:0.56mm → 1.5mm)	

Movie



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