PRODUCT NEWS

PN-E-003

SERIES EXPANSION

5-AXIS SERIES

Newly developed “barrel” and “torus” geometry for live 5-AXIS finishing

DIJET GmbH www.dijet.de

5 AXIS SERIES

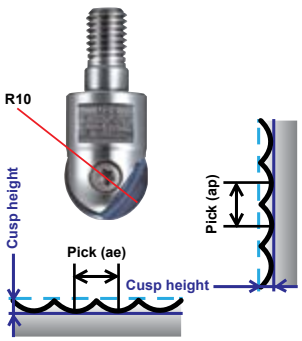
Designs that allow you to machine freely & quickly

Advanced machining technology that enables high-precision and high efficiency.

A lineup that supports machining of complex shapes found in the Die & Mold and Aerospace industries.

Cusp Height Comparisons: Tool Diameters: 20mm

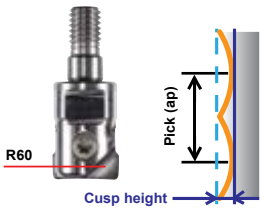
Ball Nose type



Pick (ap and ae) when theoretical cusp height is .002mm

ap,ae=0.4mm

KRM type

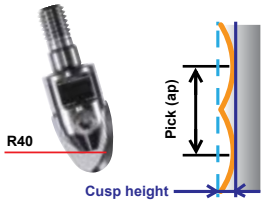


Pick (ap) when theoretical cusp height is .002mm

ap=0.98mm

Improved efficiency: 2.5 times

TNM type

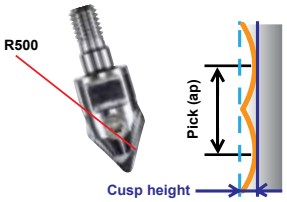


Pick (ap) when theoretical cusp height is .002mm

ap=0.8mm

Improved efficiency: 2 times

TPM type

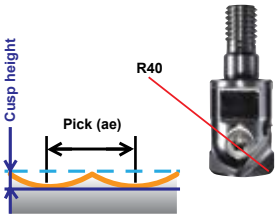


Pick (ap) when theoretical cusp height is .002mm

ap=2.83mm

Improved efficiency: 7 times

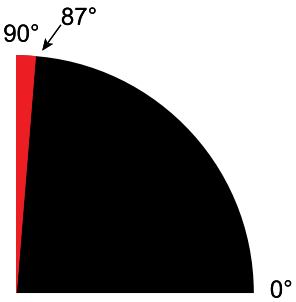
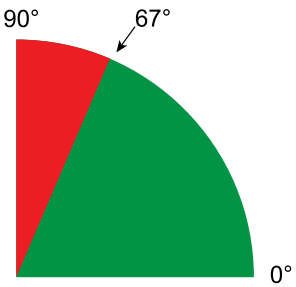
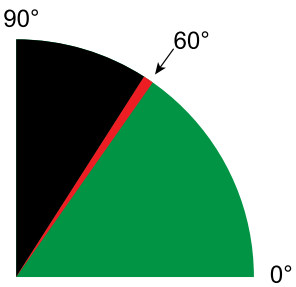
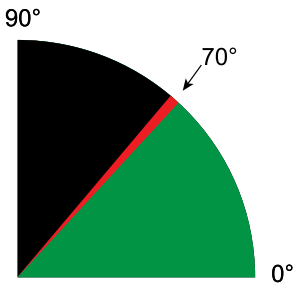
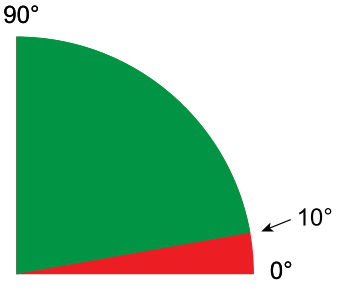
LRM type



Pick (ae) when theoretical cusp height is .002mm

ae=0.8mm

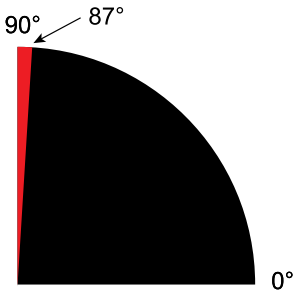
Improved efficiency: 2 times

Style & Machining area for 3-Axis machine	Features
KRM type  	• Highly accurate indexable barrel tool with large peripheral arc on cutting edge. • Efficient machining with high-precision side and bottom machining. • Available sizes: 16mm, 20mm, 25mm, & 30mm • Grades available: JC8015 & DH102
TNM type  	• Highly accurate indexable tangent barrel tool. • Efficient machining of continuous three-dimensional curved surfaces. • Available sizes: 16mm, 20mm • Grades available: JC8015 & FZ15
TPM type  	• Highly accurate indexable taper barrel tool. • High efficient machining with less angle change on side machining and corner machining on the tip radius. • Available sizes: 16mm, 20mm • Grades available: JC8015 & DH102
STLP type  	• Highly accurate solid taper barrel tool. • Achieves efficient machining in tilted surfaces & shape surfaces with extremely large barrel R. • Available sizes: 16mm & 20mm • Grades available: DH115
LRM type  	• Highly accurate indexable lens barrel tool. • Achieves high efficient machining on gently curved surfaces. • Available sizes: 16mm, 20mm, 25mm, & 30mm • Grades available: JC8015 & DH102

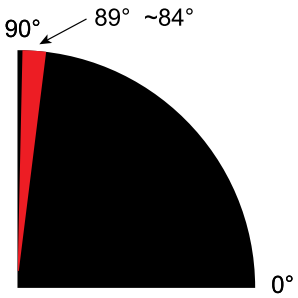
Style & Machining area for 3-Axis machine

Features

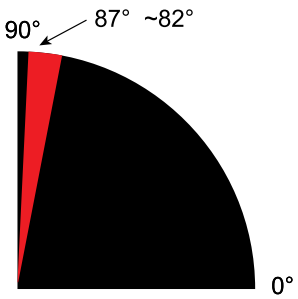
MQT-**A00 type



MQT-**A03 type

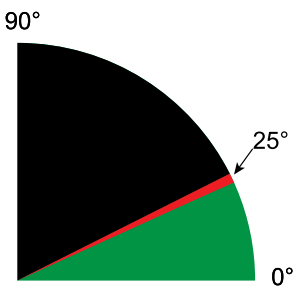


MQT-**A05 type



- High speed precision QM Max.
- High efficient finishing on tapered walls with 3-axis machines.
- Precision finishing with XPHW/XPHT inserts.
- Available sizes:
  16mm dia. with 0°, 3° and 5°
  20mm dia. with 0°, 3° and 5°
  25mm dia. with 0°
  35mm dia. with 0°

FJVA type



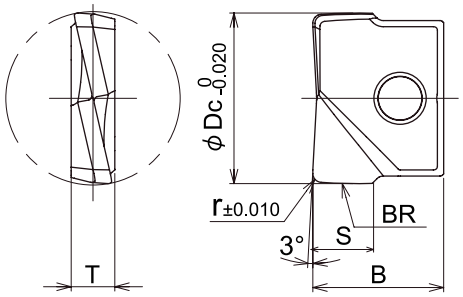
- Highly accurate tool with specialized shape. Suitable for machining turbine blades.
- Available sizes: 6mm, 8mm, 10mm & 12mm

Recommended cutting conditions:

KRM TYPE Insert for "MIRROR BARREL" KRM type

Corner radius accuracy of inserts within **±0.010mm**

Radius form accuracy on the outer periphery **±0.010mm**

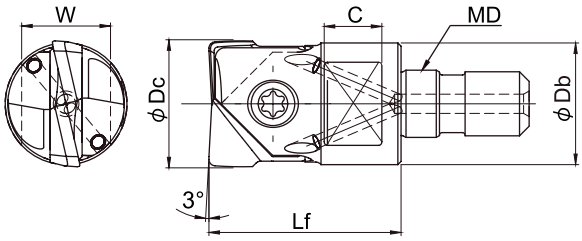


CATALOG NUMBER	GRADE		DIMENSIONS (mm)					
	JC8015	DH102	ØDc	r	BR	S	B	T
KRM-160-R10-BR50	•	•	16	1	50	5.7	12	4
KRM-200-R10-BR60	•	•	20	1	60	6.8	15	5
KRM-250-R10-BR60	•	•	25	1	60	7.3	18.5	6
KRM-300-R10-BR60	•	•	30	1	60	9.1	22.5	7

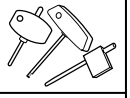
Note: Use only MIRROR RADIUS modular head MRX type or carbide shank end mill style.

KRM TYPE Modular head MRX type

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



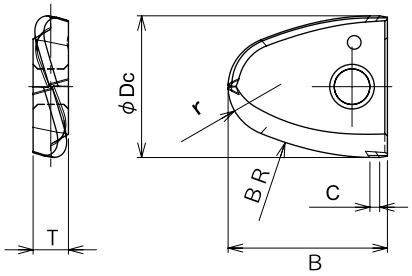
Insert Screw	Recommended Torque (Nm)
FSW-4013H	3.0
FSW-5016H	4.0
FSW-6020	5.0
FSW-8025S	6.0

CATALOG NUMBER	STK	DIMENSIONS (mm)						APPLICABLE INSERT	PARTS	
		ØDc	Lf	ØDb	MD	C	W		Screw	Wrench
										
MRX-160-M8	•	16	23	15	M8	8	12	KRM-160-R10-BR50	FSW-4013H	T-15
MRX-200-M10	•	20	30	19	M10	8	14	KRM-200-R10-BR60	FSW-5016H	A-20W
MRX-250-M12	•	25	35	24	M12	10	17	KRM-250-R10-BR60	FSW-6020	T-30
MRX-300-M16	•	30	43	29	M16	12.5	22	KRM-300-R10-BR60	FSW-8025S	T-30

Note: All holders are supplied without inserts & wrench.

Recommended cutting conditions:

TNM TYPE Insert for "MIRROR BARREL" TNM type



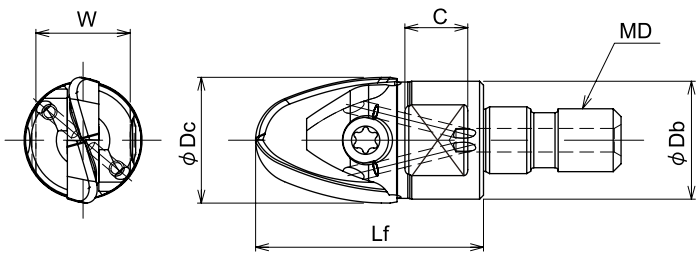
Radius form accuracy on the outer periphery ±0.010mm

CATALOG NUMBER	GRADE		DIMENSIONS (mm)					
	JC8015	FZ15	ØDc	r	BR	S	B	T
TNM-160-NR6BR32	•	•	16	6	32	18	4	1
TNM-200-NR8BR40	•	•	20	8	40	21	5	1

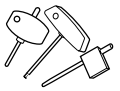
Note: Use only MIRROR BARREL modular head MTP type.

MTP TYPE MIRROR BARREL Modular head MTP type

Accuracy of MTP after combined O.D. run out: below 15 µm (Target below 10 µm).
When using TNM type insert / Radius form accuracy on the outer periphery: within ±0.010mm.



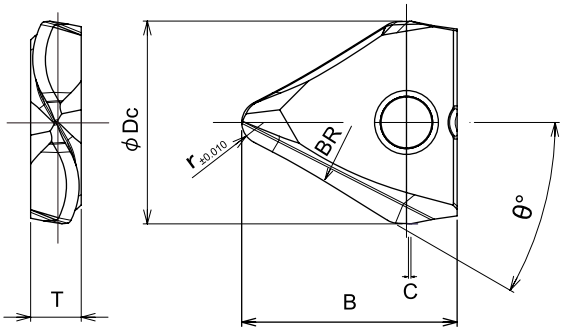
Insert Screw	Recommended Torque (Nm)
FSW-4013H	3.0
FSW-5016H	4.0

CATALOG NUMBER	STK	DIMENSIONS (mm)						APPLICABLE INSERT	PARTS	
		ØDc	Lf	ØDb	MD	C	W		Screw	Wrench
										
MTP-160-M8	•	16	29	15	M8	8	12	TPM-160... TNM-160...	FSW-4013H	T-15
MTP-200-M10	•	20	36	19	M10	9	14	TPM-200... TNM-200...	FSW-5016H	A-20W

Note: All holders are supplied without inserts & wrench.

Recommended cutting conditions:

TPM TYPE — Insert for "MIRROR BARREL" TPM type



Corner radius accuracy of inserts within **±0.010mm**

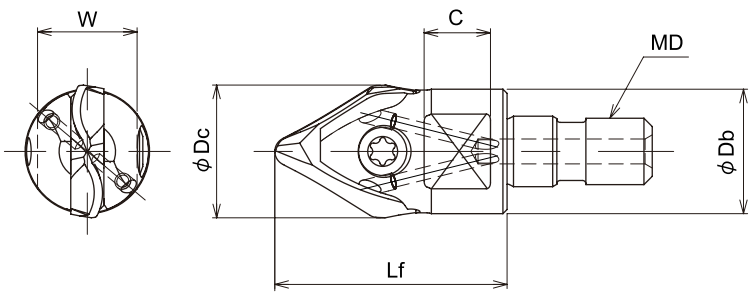
Radius form accuracy on the outer periphery **±0.010mm**

CATALOG NUMBER	GRADE		DIMENSIONS (mm)						
	JC8015	DH102	ØDc	r	BR	B	T	C	θ°
TPM-160-NR2T30BR400	•	•	16	2	400	17	4	1	30°
TPM-200-NR2T30BR500	•	•	20	2	500	20	5	1	30°

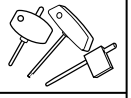
Note: Use only MIRROR BARREL modular head MTP type.

MTP TYPE — MIRROR BARREL Modular head MTP type

Accuracy of MTP after combined O.D. run out: below 15 µm (Target below 10µm).
When using TNM type insert / Corner Radius accuracy: within ±0.010mm. Radius form accuracy on the outer periphery: within ±0.010mm.



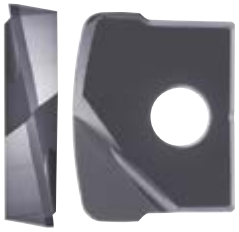
Insert Screw	Recommended Torque (Nm)
FSW-4013H	3.0
FSW-5016H	4.0

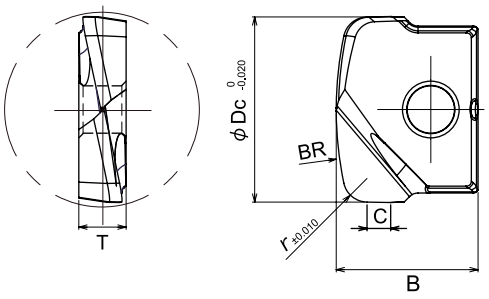
CATALOG NUMBER	STK	DIMENSIONS (mm)						APPLICABLE INSERT	PARTS	
		ØDc	Lf	ØDb	MD	C	W		Screw	Wrench
										
MTP-160-M8	•	16	28	15	M8	8	12	TPM-160... TNM-160...	FSW-4013H	T-15
MTP-200-M10	•	20	35	19	M10	9	14	TPM-200... TNM-200...	FSW-5016H	A-20W

Note: All holders are supplied without inserts & wrench.

Recommended cutting conditions:

LRM TYPE Insert for "MIRROR BARREL" LRM type





Corner radius accuracy of inserts within **±0.010mm**

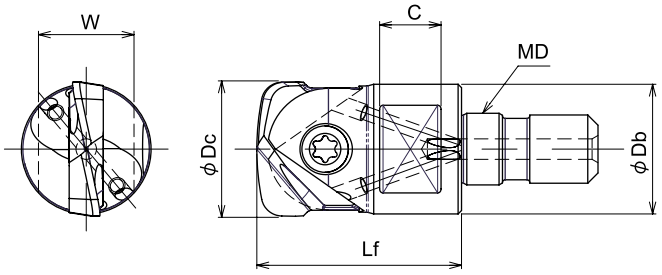
Radius form accuracy on the outer periphery **±0.010mm**

CATALOG NUMBER	GRADE		DIMENSIONS (mm)					
	JC8015	DH102	ØDc	r	BR	B	T	C
LRM-160-R20-BR32	•	•	16	2	32	12	4	2
LRM-200-R30-BR40	•	•	20	3	40	15	5	2
LRM-250-R30-BR50	•	•	25	3	50	18.5	6	2.5
LRM-300-R30-BR60	•	•	30	3	60	22.5	7	3

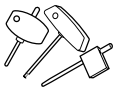
Note: Use only MIRROR BALL modular head MBX type or carbide shank end mill style.

MBX TYPE Modular head MBX type

Accuracy of MBX after combined O.D. run out: below 15μm (Target below 10μm).
When using LRM type insert/Corner radius accuracy: within ±0.010mm. Radius form accuracy on the front edge: within ±0.010mm.



Insert Screw	Recommended Torque (Nm)
FSW-4013H	3.0
FSW-5016H	4.0
FSW-6020	5.0
FSW-8025S	6.0

CATALOG NUMBER	STK	DIMENSIONS (mm)						APPLICABLE INSERT	PARTS	
		ØDc	Lf	ØDb	MD	C	W		Screw	Wrench
										
MBX-160-M8	•	16	23	15	M8	8	12	LRM-160-R20-BR32	FSW-4013H	T-15
MBX-200-M10	•	20	30	19	M10	8	14	LRM-200-R30-BR40	FSW-5016H	A-20W
MBX-250-M12	•	25	35	24	M12	10	17	LRM-250-R30-BR50	FSW-6020	T-30
MBX-300-M16	•	30	43	29	M16	12.5	22	LRM-300-R30-BR60	FSW-8025S	A-40

Note: All holders are supplied without inserts & wrench.

Recommended cutting conditions:

MQT TYPE Modular head MQT type

Through coolant hole

Fig.1

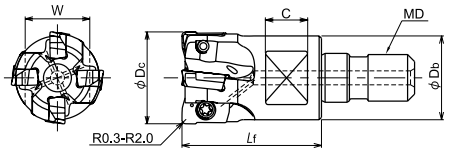
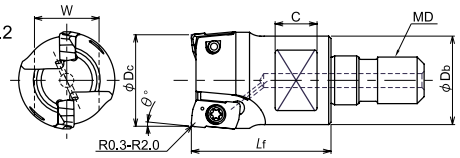


Fig.2



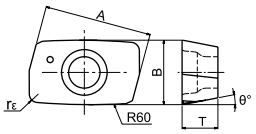
INCLINE ANGLE θ°	CATALOG NUMBER	STK	No. of Inserts	DIMENSIONS (mm) ØDc	Lf	ØDb	MD	C	W	INSERTS	PARTS: INSERTS	PARTS: WRENCH (not included)	FIG.
0°	MQT-2016A00-M8	•	2	16	23	14	M8	8	12	XP**100308ZWE-R YPHW1003**Z*R*-** ZPMT1003**ZER-PL	TSW-2556H	T-08	1
	MQT-4020A00-M10	•	4	20	30	18	M10	9	14		TSW-2556H		
	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		TSW-2556H		2
	MQT-2020A03-M10	•	2	20	30	18	M10	9	14		TSW-2556H		
5°	MQT-2016A05-M8	•	2	16	23	14	M8	8	12		TSW-2556H		
	MQT-2020A05-M10	•	2	20	30	18	M10	9	14		TSW-2556H		

Note: All cutters are supplied without inserts, wrench or MOLY.

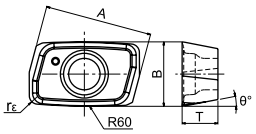
Clamp Screw	Recommended Torque
TSW-2556H	1.1
DSW-2563H	1.2

MQT TYPE Inserts

For tapered wall finishing

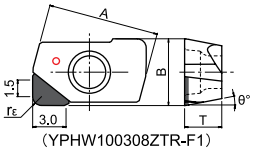


(XPHW100308ZER-R)



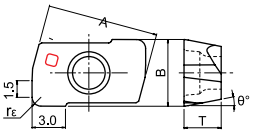
(XPHT100308ZER-R)

CBN insert

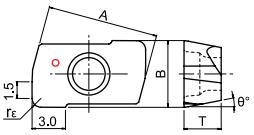


(YPHW100308ZTR-F1)

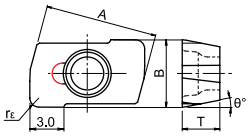
For finishing side face



(YPHW100303ZER-15)

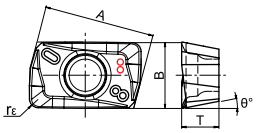


(YPHW100308ZER-15)



(YPHW100308ZER-F)
(For low feed machining)

Shoulder milling insert
(From semi-finishing to finishing)



(ZPMT1003＊＊ZER-PL)

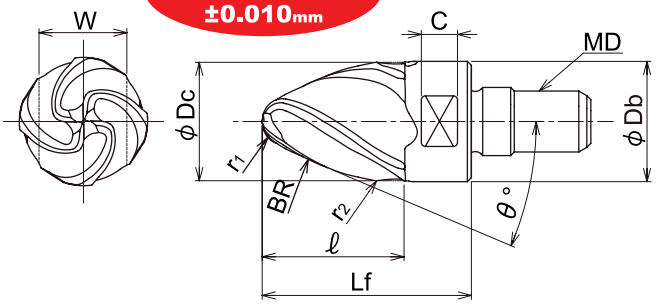
TYPE	CATALOG NUMBER	Tolerance	PVD COATED JC8015	JC8118	JC8050	DH102	CERMET CX75	CBN JBN795	DIMENSIONS (mm) A	T	B	rε	θ°
For tapered wall finishing	XPHW100308ZER-R	H	•			•	•		10.06	3.35	6	0.8	11°
	XPHT100308ZER-R	H	•				•		10.06	3.35	6	0.8	11°
For finishing side face	YPHW100303ZER-15	H	•			•	•		10.06	3.35	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°
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°

Recommended cutting conditions:

STLP TYPE — Solid modular head STLP type

• 4 flutes / Helix angle 30°

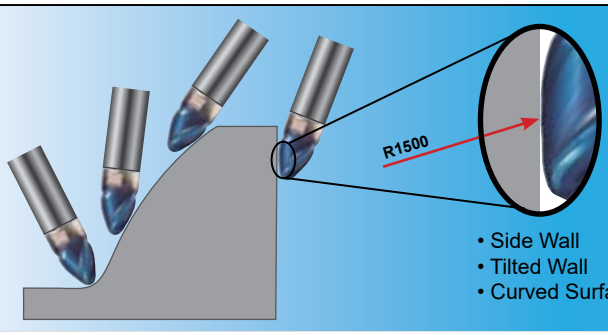
Radius form accuracy on the outer periphery ±0.010mm



CATALOG NUMBER	STK	GRADE	No. of Flutes	DIMENSIONS (mm)										
				ØDc	ℓ	Lf	BR	r1	r2	θ°	ØDb	MD	C	W
STLP-4160T20R4-M8	•	DH115	4	16	17.7	26	1,500	4	4	20°	15	M8	5.5	14
STLP-4200T15R4-M10	•			20	30	38	1,500	4	5	15°	19	M10	5.5	17
STLP-4200T20R5-M10	•			20	22	30	1,500	5	5	20°	19	M10	5.5	17
STLP-4250T20R5-M12	•			25	28	38	2,200	5	5	20°	24	M12	5.5	22

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

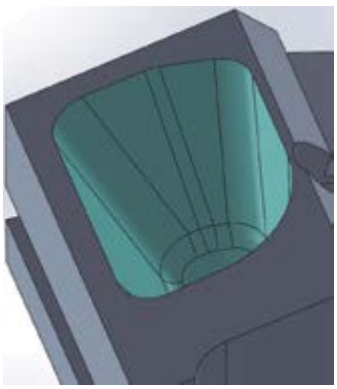
Example Of Use



• Side Wall
• Tilted Wall
• Curved Surface

- Has a large R cutting edge on the outer periphery.
- Highly efficient machining of inclined surfaces.
- Used mainly in 5-axis machining centers. You use “CAM” must also have a barrel module.

Cutting Data



Overhang length: 106mm

Result

STLP achieved high efficient & precision machining, compared with ball nose end mill.

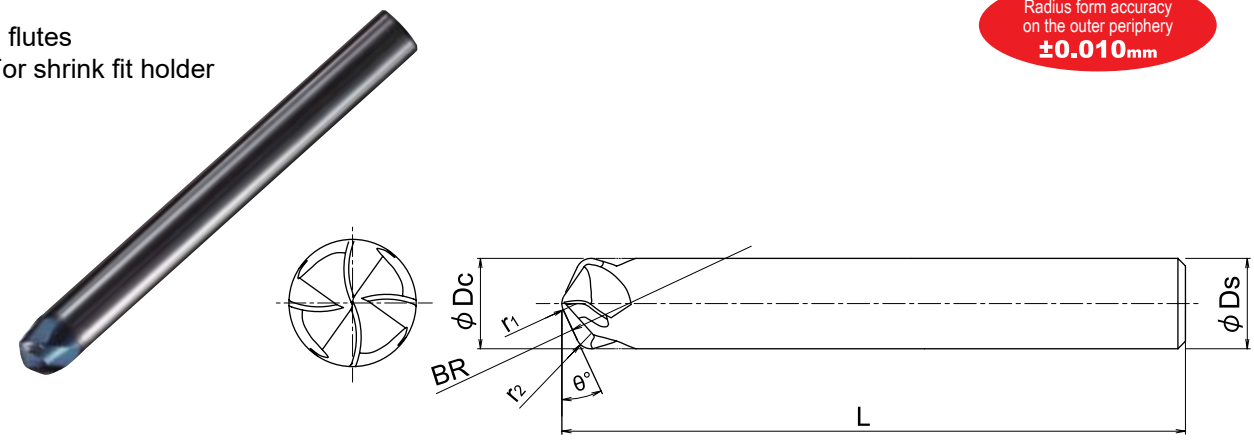
Work	Part Name	Test piece
	Material	1049 C50
	Hardness	--
Tool	Tool No.	STLP4160T20R4-M8
	Grade	DH115
Cutting Conditions	n	n=10,000min^{-1}
	Vf	Vf=1,200mm/min
	ap(mm)	2mm
	ae(mm)	0.15mm
	Coolant	Dry
	Machine	5-Axis MC

Recommended cutting conditions:

FJVA TYPE "FUJI BARRELL" FJVA type

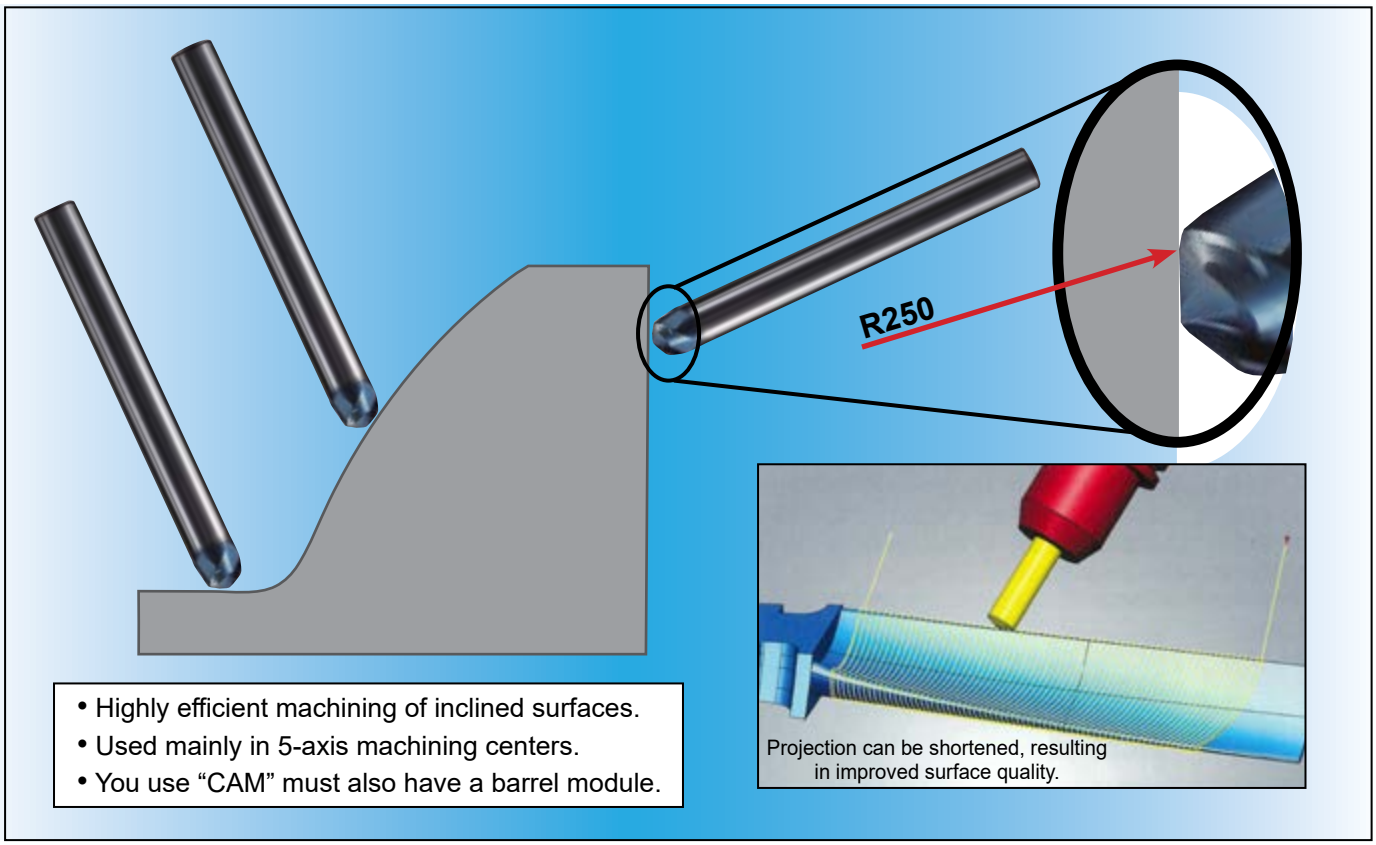
- 4 flutes
- For shrink fit holder

Radius form accuracy on the outer periphery ±0.010mm



CATALOG NUMBER	STK	GRADE	No. of Flutes	DIMENSIONS (mm)						
				ØDc	BR	r_1	r_2	θ°	L	ØDs
FJVA4060S06-R250	•	DH115	4	6	250	1	1	25°	60	6
FJVA4080S08-R250	•			8	250	1	1.20	25°	75	8
FJVA4100S10-R250	•			10	250	1	1.75	25°	80	10
FJVA4120S12-R250	•			12	250	1	1.75	25°	100	12

Example Of Use



- Highly efficient machining of inclined surfaces.
- Used mainly in 5-axis machining centers.
- You use "CAM" must also have a barrel module.

ISO9001 JQA-2089 ISO14001 JQA-EM1580

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