

MTIX Shoulder Milling Cutter

for Rough Milling of Titanium



MTIX 16000 Type



General Features

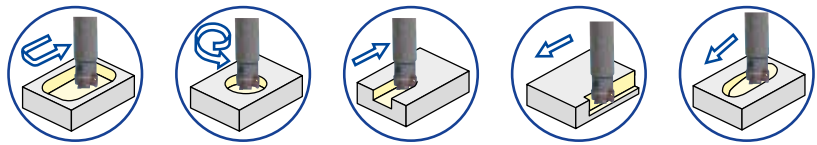
Stable and Reliable Tool Life in Titanium Roughing

With combination of high toughness grade ACM300 and optimized cutting edge shape, stable and reliable tool life are achieved in roughing application of Titanium.

Suitable for Titanium Structure Parts for Aircraft

MTIX cutter with wide range of insert nose-radius and large ramping angle availability is suitable for variable application of titanium structure parts for aircraft.

Large Application Range



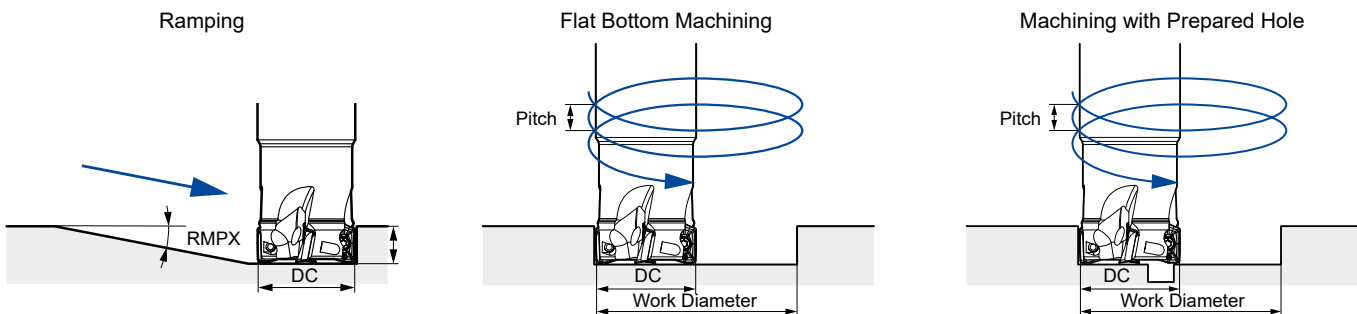
ISO	Grade	Coating Thickness (µm)	Features
S	ACM300	3	Realises superb stability in machining of Titanium, due to a high-strength carbide substrate and highly chipping-resistance coating.

Recommended Cutting Conditions

Min. - Optimum - Max.

ISO	Material	Cutting Speed (m/min)	Feed Rate (mm/t)	a_p (mm)	Grade
S	Titanium	30-60-90	0,05-0,10-0,15	<13	ACM300

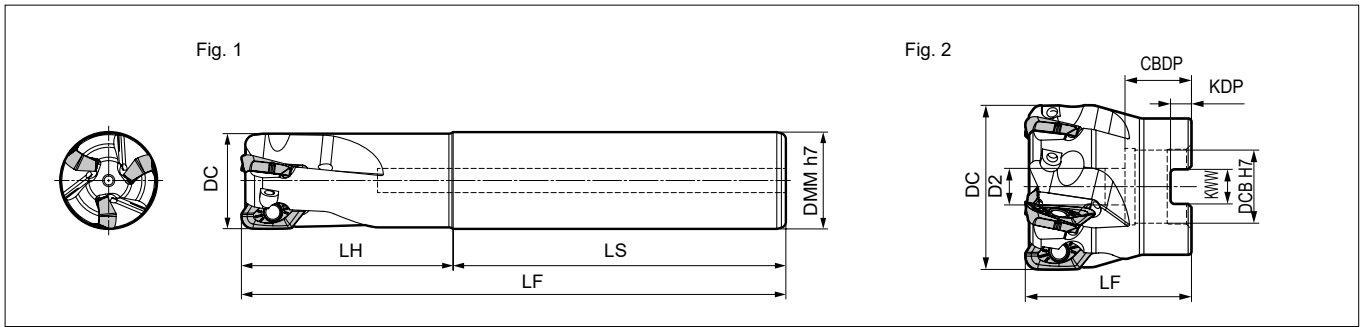
Ramping / Helical Milling Upper Limits



Tools			Flat Bottom Machining				Machining with Prepared Hole	
DC Ø (mm)	Nose Radius	Ramping	DC Ø (mm)	Nose Radius	Max. Machining Diam. (mm)	Max. Pitch (mm/rev)	Min. Machining Diam. (mm)	Max. Pitch (mm/rev)
Ø 32	RE ≥ 5,0	8,4	Ø 32	4,0	55,3	13,0	55,2	13,0
	RE ≤ 4,0	12,2		0,8	61,3	13,0		
Ø 50	RE ≥ 5,0	3,6	Ø 50	4,0	91,6	11,2	91,6	11,2
	RE ≤ 4,0	5,6		0,8	97,3	13,0		
Ø 63	RE ≥ 5,0	2,5	Ø 63	4,0	117,6	10,1	117,6	10,1
	RE ≤ 4,0	3,9		0,8	123,3	11,7		

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Rake Angle	Radial	-9° - -6°	13 mm	90°
	Axial	8° - 14°		



Body - MTIX (Shank Type)

Insert Radius RE	Cat. No.	Stock	DC	DMM	LF	LH	LS	No. of Teeth	Weight (kg)	Fig.
≤ 4,0	MTIX 16032E03	●	32	32	180	70	110	3	0,96	1
≥ 5,0	MTIX 16032E03-5,0	●	32	32	180	70	110	3	0,96	1

Inserts are sold separately.

Body - MTIX (Shell Type)

Insert Radius RE	Cat. No.	Stock	DC	DCB	LF	D2	KWW	KDP	CBDP	No. of Teeth	Weight (kg)	Fig.
≤ 4,0	MTIX 16050RS05	●	50	22	50	11	10,4	6,3	20	5	0,33	2
	16063RS06	●	63	22	50	11	10,4	6,3	20	6	0,34	2
≥ 5,0	MTIX16050RS05-5,0	●	50	22	50	11	10,4	6,3	20	5	0,62	2
	16063RS06-5,0	●	63	22	50	11	10,4	6,3	20	6	0,63	2

Inserts are sold separately.

Spare Parts

Applicable Cutters	Insert Screw		Wrench	Handle Grip	Wrench Bit
MTIX 16032E03(-5,0)	BFTX0409IP	3,0	TRDR15IP	-	-
16050RS05(-5,0)			-	HPS1015	TPB15IP
16063RS06(-5,0)			-	HPS1015	TPB15IP

Identification Details

MTIX	16	032	E	05
Cutter Series	Insert Size	Cutter Diameter	Round Shank	Number of Teeth
MTIX	16	050	R	S
Cutter Series	Insert Size	Cutter Diameter	Feed Direction	Metric Number of Teeth

Inserts

Application	Coated Carbide	Dimensions (mm)	
High Speed / Light Cut			
General Purpose			
Roughing			
Cat. No.	ACM300	RE (mm)	Fig.
XOMT 160508PEER-E	●	0,8	1
160512PEER-E	●	1,2	1
160516PEER-E	●	1,6	1
160520PEER-E	●	2,0	1
160530PEER-E	●	3,0	1
160540PEER-E	●	4,0	1
160550PEER-E	●	5,0	2
160560PEER-E	●	6,0	2
160564PEER-E	●	6,35	2

Fig. 1

Fig. 2

Inserts with nose radius of RE ≥ 5,0 are for use with bodies that have a "-5,0" part number suffix

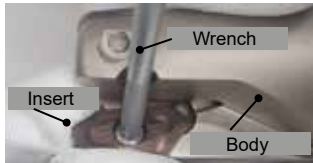
● = Euro stock

○ = Japan stock

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Precautions for Mounting

- (1) Clean the mounting seat and contact parts.
- (2) Apply screw lubrication to the screw thread as well as the screw head face to prevent seizure.
- (3) While pressing the insert solidly against the seat surface, tighten at the screws with the included wrench.
- (4) After tightening, check that there are no gaps between the surfaces.



Cutter Body	MTIX16 ____	MTIX16 ____ -5,0
Insert Radius $RE \leq 4,0 \text{ mm}$	OK	Not recommended. The insert has no support from the cutter body.
Insert Radius $RE \geq 4,0 \text{ mm}$	OK with modification	OK
Modification method		① Grind 1,5 mm from top ② Add chamfer 4,5 mm

Cutting Performance

Ti 6Al4V, Machine: DMU80P (HSK100)

Cutter: Dia. 50 mm, 5 teeth, Insert: 16-18 size, R 4,0

$v_c = 60 \text{ m/min}$
 $f_z = 0,12 \text{ mm/teeth}$
 $a_p = 10 \text{ mm}$
 $a_e = 21 \text{ mm}$
 HP coolant
 70 bar



MTIX



Competitor

$v_c = 50 \text{ m/min}$
 $f_z = 0,12 \text{ mm/teeth}$
 $a_p = 4 \text{ mm}$
 $a_e = 50 \text{ mm}$
 HP coolant
 70 bar



MTIX



Competitor

$v_c = 50 \text{ m/min}$
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 HP coolant
 70 bar



MTIX

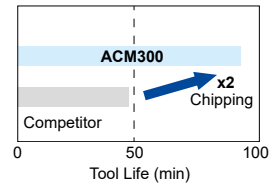
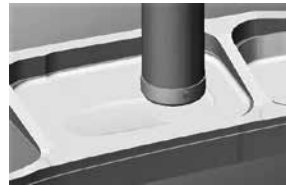
Impossible

Competitor

Application Example

Structural Parts, Ti 6Al4V, Countering / Ramping

ACM300 achieved twice longer tool life against competitor's grade.



Cutter: MTIX 16050RS05 (Ø 50, No. of teeth:5)
 Insert: XOMT 160540 PEER-E (ACM300)

Cutting Data: $v_c = 50 \text{ M/min}$, $a_p = 4 \text{ mm}$, $f_z = 0,12 \text{ mm/t}$, $a_e = 10 \text{ mm}$, wet

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