



shaping your dreams

End Mill for Titanium Alloy

UVX-TI-SERIES

UVX-TI-5FL-HB / UVX-TI-5FL / UVXL-TI-5FL



Features: OSG End Mill for Titanium Alloy

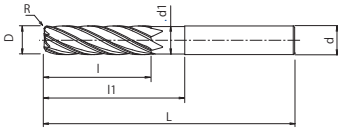


1 Unequal spacing, variable lead
Superior suppression of vibration

2 Optimal flute shape
Smooth evacuation of chips

3 Web Taper
High efficient milling is achieved by
increasing rigidity

End Mill



EDP	ZΔ	D	R	L	l	d1	l1	d	Price
8555520	5	12	-	110	48	11,5	60	12	
8555521	5	12	1	110	48	11,5	60	12	
8555522	5	12	1,5	110	48	11,5	60	12	
8555523	5	12	2	110	48	11,5	60	12	
8555524	5	12	2,5	110	48	11,5	60	12	
8555525	5	12	3	110	48	11,5	60	12	
8555526	5	12	4	110	48	11,5	60	12	
8555560	5	16	-	130	64	15,5	80	16	
8555561	5	16	1	130	64	15,5	80	16	
8555562	5	16	1,5	130	64	15,5	80	16	
8555563	5	16	2	130	64	15,5	80	16	
8555564	5	16	2,5	130	64	15,5	80	16	
8555565	5	16	3	130	64	15,5	80	16	
8555566	5	16	4	130	64	15,5	80	16	
8555600	5	20	-	160	80	19,5	100	20	
8555601	5	20	1	160	80	19,5	100	20	
8555602	5	20	1,5	160	80	19,5	100	20	
8555603	5	20	2	160	80	19,5	100	20	
8555604	5	20	2,5	160	80	19,5	100	20	
8555605	5	20	3	160	80	19,5	100	20	
8555606	5	20	4	160	80	19,5	100	20	
8555607	5	20	5	160	80	19,5	100	20	
8555650	5	25	-	190	100	24,5	125	25	
8555651	5	25	1	190	100	24,5	125	25	
8555652	5	25	1,5	190	100	24,5	125	25	
8555653	5	25	2	190	100	24,5	125	25	
8555654	5	25	2,5	190	100	24,5	125	25	
8555655	5	25	3	190	100	24,5	125	25	
8555656	5	25	4	190	100	24,5	125	25	
8555657	5	25	5	190	100	24,5	125	25	
8555658	5	25	6	190	100	24,5	125	25	

Conditions

Titanium Alloy (Ti-6Al-4V)				
Side Milling				
60 ~ 80 m/min				
Vc	S	F	Depth of Cut	
∅	(min ⁻¹)	(mm/min)	ap	ae
12	2.100	1.050	$\leq 3,75 D_c$ 	$0,1 D_c$
16	1.600	920		
20	1.270	760		
25	1.020	587		

Cutting Data

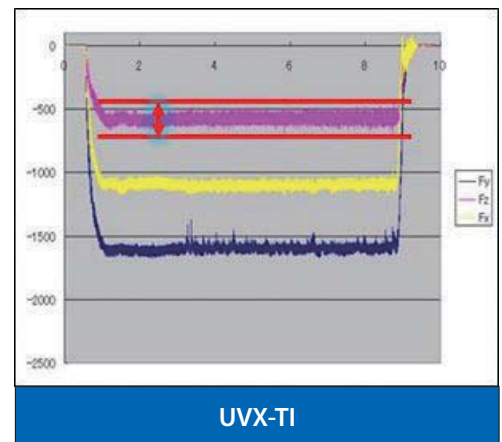
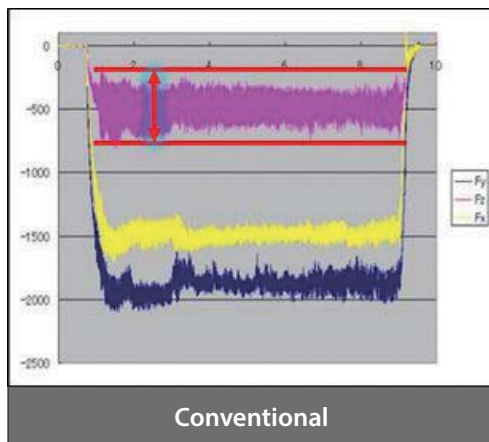
Milling Method and Features

Stable and high efficiency milling of titanium alloy is now possible!
UVX series offers solutions for slot milling to easily chatter complicated pocket milling.

	Feature	Slot Milling	Side Milling	
			Depth under 3D	Depth over 3D, under 5D
UVX-TI-5FL	Multi-purpose short type, 5FL	○	⊙	×
UVXL-TI-5FL	High efficient long type, 5FL	△	⊙	⊙

⊙ Best ○ Good × Not recommended △ Fair

Stable high feed milling is achieved by suppressing vibration with high rigidity



Pocket Milling of UVX(L)-TI-5FL

The UVX-TI Series can finish wall surfaces with single cutting and offers a seamless, beautiful cutting surface, thanks to vibration-free cutting

Tool	UVX-TI-5FL	UVXL-TI-5FL
Size	Ø 16 X R3	Ø 12 X R1
Work Material	Ti-6Al-4V	
Cutting Speed	55 m/min (1.100 min ⁻¹)	70 m/min (1.850 min ⁻¹)
Feed Rate	550 mm/min (0,1 mm/t)	650 m/min (0.07 min ⁻¹)
Milling Method	Pocket Milling	
Depth of Cut	ap=16 mm ae=9,6 mm	ap=45 mm ae=0,2 mm
M.R.R.	85 cm ³ /min	6 cm ³ /min
Coolant	Water Soluble	
Overhang Length	50 mm	
Machine	5-axis Machining Center (HSK-A63)	



Machining Data

Long Tool Life of UVX-TI-5FL

Tool	UVX-TI-5FL Ø 12 X R 1	
Work Material	Ti-6Al-4V (35HRC)	
Cutting Speed	100 m/min (2.500 min ⁻¹)	
Feed Rate	625 mm/min (0,05 mm/t)	
Milling Method	Side Milling	
Depth of Cut	ap=6,35 mm (0,5D) ae=3,81 mm (0,3D)	
Coolant	Water Soluble	
Machine	Vertical Machining Center (BT40)	

After 10,5m of Milling

UVX-TI-5FL	Competitor A	Competitor B	Competitor C
	Breakage		Breakage

The UVX-TI-5FL has outstanding resistance against fracture and can cut materials with excellent stability.

UVXL-TI-5FL Superior efficiency of side milling

	General cutting condition	Condition with max. feed rate
Tool	UVXL-TI-5FL Ø 12 X R 1	
Work Material	Ti-6Al-4V (32HRC)	
Cutting Speed	70 m/min (1.857 min ⁻¹)	70 m/min (1.857 min ⁻¹)
Feed Rate	1.114 mm/min (0,12 mm/t)	3.157 mm/min (0,34 mm/t)
Milling Method	Side Milling	
Depth of Cut	ap=0,48 mm ae=1,2 mm	
M.R.R.	64cm ³ /min	182cm ³ /min
Coolant	Water Soluble	
Machine	Horizontal Machining Center (BT40)	
Holder	Shrink Holder	



Deep side milling of titanium alloy with UVXL-TI-5FL Ø12. Under the cutting cond. of maximized feed rate, astounding result of M.R.R. = 182 cm³/min and fz=0.34 mm/t were achieved.

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