



End Mill for Titanium Alloy

UVX-TI-SERIES

Volume 3



KEY FEATURES: OSG END MILL FOR TITANIUM ALLOY



1 Unequal spacing, variable lead
Superior suppression of vibration

2 Available in 4 or 5 flutes

3 Optimal flute shape
Smooth evacuation of chips

4 Web Taper
High efficient milling is achieved
by increasing rigidity

UVX + SAFE-LOCK™ -THE PULL OUT PROTECTION

The unique Safe-Lock™ design in cutting tools and tool holders combines a high precision press fit clamping with a positive form locking mechanism. This prevents round cutting tools from being rotated or completely pulled out from its tool holder during heavy machining. The combination of symmetrical pull out protection, highest concentricity and excellent balance of the Safe-Lock™ system, results in a vibration free machining process. This leads to a more efficient metal removal rate, that is superior when compared to conventional Milling chucks or Weldon shanked cutting tools and tool holders.



The Safe-Lock™ design is now available on the UVX end mill series.

- For High Performance Cutting (HPC)
- Highly accurate clamping due to shrink fit technology
- High torque due to form closed clamping
- No loss of accuracy
- No pull out of the tool
- No spinning of the tool
- No damages on work piece or machine
- Groove on tool shank is directed so that tool will be pulled into the chuck (depending on direction of rotation)



SAFE-LOCK®

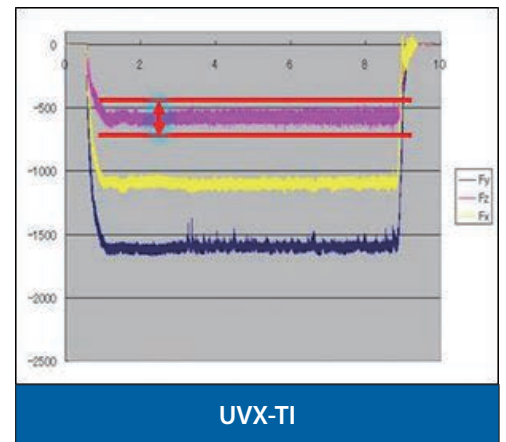
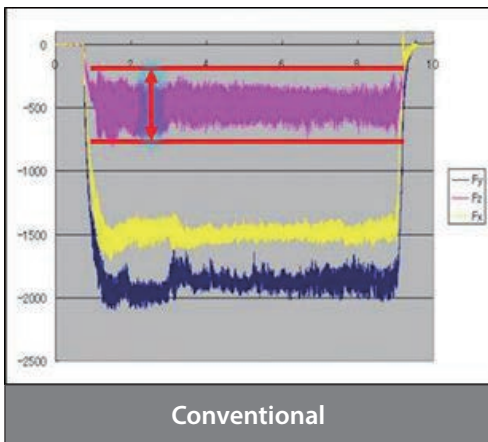
Milling Method and Features

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

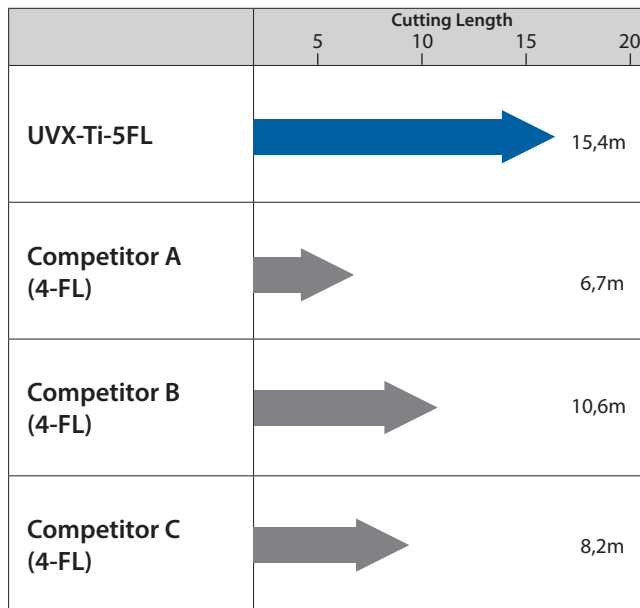
The UVX-TI Series can finish wall surfaces with single cutting and offers a seamless, beautiful cutting surface, thanks to vibration-free cutting

| | | |
|-----------------|--|--|
| Tool | UVX-TI-5FL | UVXL-TI-5FL |
| Size | ∅ 16 X R3 | ∅ 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) | |

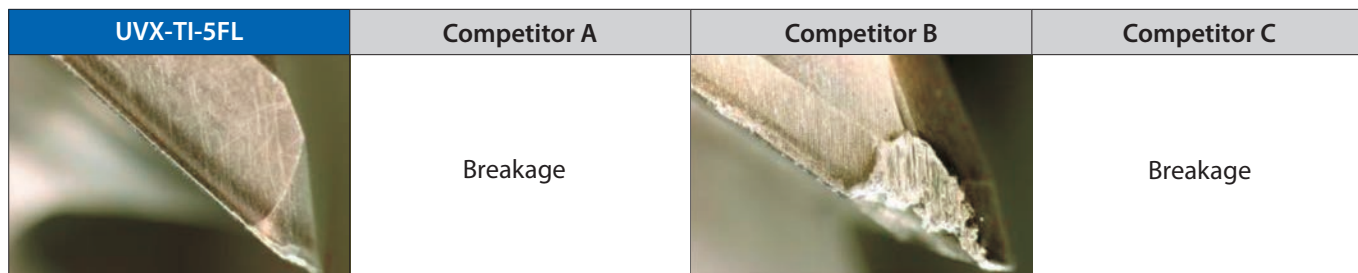


Long Tool Life of UVX-TI-5FL

| | |
|----------------|--|
| 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



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

UVXL-TI-5FL Superior efficiency of side milling

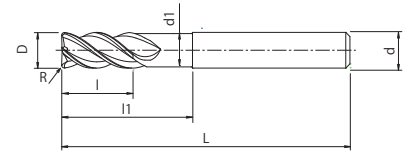
| | General cutting condition | Condition with max. feed rate |
|----------------|-------------------------------------|-------------------------------------|
| Tool | UVXL-TI-5FL Ø 12 X R 1 | |
| Work Material | Ti-6Al-4V (32HRC) | |
| Cutting Speed | 70 m/min (1.857 min ⁻¹) | 70 m/min (1.857 min ⁻¹) |
| 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 | |



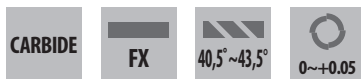
Deep side milling of titanium alloy with UVXL-TI-5FL Ø12. Under the cutting cond. of maximized feed rate, astounding result of M.R.R. = 182 cm³/min and fz=0.34 mm/t were achieved.

UVX-TI-4FL

Milling | Solid carbide



- First choice in quality and performance
- Carbide end mill with TiAlN coating
- For Titanium alloys
- 4 flutes, variable helix and unequal spacing, also with corner radius

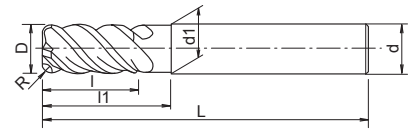


Milling | Solid carbide

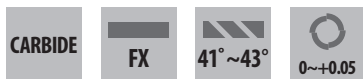
| EDP | Z | D | R | L | l | l1 | d | d1 |
|---------|---|----|-----|-----|----|----|----|------|
| 8555120 | 4 | 12 | - | 90 | 24 | 36 | 12 | 11,5 |
| 8555121 | 4 | 12 | 1 | 90 | 24 | 36 | 12 | 11,5 |
| 8555122 | 4 | 12 | 1,5 | 90 | 24 | 36 | 12 | 11,5 |
| 8555123 | 4 | 12 | 2 | 90 | 24 | 36 | 12 | 11,5 |
| 8555124 | 4 | 12 | 2,5 | 90 | 24 | 36 | 12 | 11,5 |
| 8555125 | 4 | 12 | 3 | 90 | 24 | 36 | 12 | 11,5 |
| 8555126 | 4 | 12 | 4 | 90 | 24 | 36 | 12 | 11,5 |
| 8555160 | 4 | 16 | - | 100 | 32 | 48 | 16 | 15,5 |
| 8555161 | 4 | 16 | 1 | 100 | 32 | 48 | 16 | 15,5 |
| 8555162 | 4 | 16 | 1,5 | 100 | 32 | 48 | 16 | 15,5 |
| 8555163 | 4 | 16 | 2 | 100 | 32 | 48 | 16 | 15,5 |
| 8555164 | 4 | 16 | 2,5 | 100 | 32 | 48 | 16 | 15,5 |
| 8555165 | 4 | 16 | 3 | 100 | 32 | 48 | 16 | 15,5 |
| 8555166 | 4 | 16 | 4 | 100 | 32 | 48 | 16 | 15,5 |
| 8555200 | 4 | 20 | - | 120 | 40 | 60 | 20 | 19,5 |
| 8555201 | 4 | 20 | 1 | 120 | 40 | 60 | 20 | 19,5 |
| 8555202 | 4 | 20 | 1,5 | 120 | 40 | 60 | 20 | 19,5 |
| 8555203 | 4 | 20 | 2 | 120 | 40 | 60 | 20 | 19,5 |
| 8555204 | 4 | 20 | 2,5 | 120 | 40 | 60 | 20 | 19,5 |
| 8555205 | 4 | 20 | 3 | 120 | 40 | 60 | 20 | 19,5 |
| 8555206 | 4 | 20 | 4 | 120 | 40 | 60 | 20 | 19,5 |
| 8555207 | 4 | 20 | 5 | 120 | 40 | 60 | 20 | 19,5 |
| 8555250 | 4 | 25 | - | 140 | 50 | 75 | 25 | 24,5 |
| 8555251 | 4 | 25 | 1 | 140 | 50 | 75 | 25 | 24,5 |
| 8555252 | 4 | 25 | 1,5 | 140 | 50 | 75 | 25 | 24,5 |
| 8555253 | 4 | 25 | 2 | 140 | 50 | 75 | 25 | 24,5 |
| 8555254 | 4 | 25 | 2,5 | 140 | 50 | 75 | 25 | 24,5 |
| 8555255 | 4 | 25 | 3 | 140 | 50 | 75 | 25 | 24,5 |
| 8555256 | 4 | 25 | 4 | 140 | 50 | 75 | 25 | 24,5 |
| 8555257 | 4 | 25 | 5 | 140 | 50 | 75 | 25 | 24,5 |
| 8555258 | 4 | 25 | 6 | 140 | 50 | 75 | 25 | 24,5 |

UVX-TI-5FL

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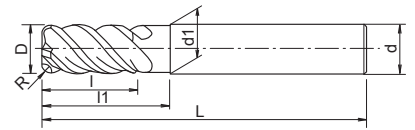


Milling | Solid carbide

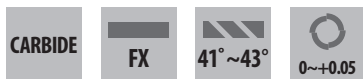
| EDP | Z | D | R | L | l | l1 | d | d1 |
|---------|---|----|-----|-----|----|----|----|------|
| 8555320 | 5 | 12 | - | 90 | 24 | 36 | 12 | 11,5 |
| 8555321 | 5 | 12 | 1 | 90 | 24 | 36 | 12 | 11,5 |
| 8555322 | 5 | 12 | 1,5 | 90 | 24 | 36 | 12 | 11,5 |
| 8555323 | 5 | 12 | 2 | 90 | 24 | 36 | 12 | 11,5 |
| 8555324 | 5 | 12 | 2,5 | 90 | 24 | 36 | 12 | 11,5 |
| 8555325 | 5 | 12 | 3 | 90 | 24 | 36 | 12 | 11,5 |
| 8555326 | 5 | 12 | 4 | 90 | 24 | 36 | 12 | 11,5 |
| 8555360 | 5 | 16 | - | 100 | 32 | 48 | 16 | 15,5 |
| 8555361 | 5 | 16 | 1 | 100 | 32 | 48 | 16 | 15,5 |
| 8555362 | 5 | 16 | 1,5 | 100 | 32 | 48 | 16 | 15,5 |
| 8555363 | 5 | 16 | 2 | 100 | 32 | 48 | 16 | 15,5 |
| 8555364 | 5 | 16 | 2,5 | 100 | 32 | 48 | 16 | 15,5 |
| 8555365 | 5 | 16 | 3 | 100 | 32 | 48 | 16 | 15,5 |
| 8555366 | 5 | 16 | 4 | 100 | 32 | 48 | 16 | 15,5 |
| 8555400 | 5 | 20 | - | 120 | 40 | 60 | 20 | 19,5 |
| 8555401 | 5 | 20 | 1 | 120 | 40 | 60 | 20 | 19,5 |
| 8555402 | 5 | 20 | 1,5 | 120 | 40 | 60 | 20 | 19,5 |
| 8555403 | 5 | 20 | 2 | 120 | 40 | 60 | 20 | 19,5 |
| 8555404 | 5 | 20 | 2,5 | 120 | 40 | 60 | 20 | 19,5 |
| 8555405 | 5 | 20 | 3 | 120 | 40 | 60 | 20 | 19,5 |
| 8555406 | 5 | 20 | 4 | 120 | 40 | 60 | 20 | 19,5 |
| 8555407 | 5 | 20 | 5 | 120 | 40 | 60 | 20 | 19,5 |
| 8555450 | 5 | 25 | - | 140 | 50 | 75 | 25 | 24,5 |
| 8555451 | 5 | 25 | 1 | 140 | 50 | 75 | 25 | 24,5 |
| 8555452 | 5 | 25 | 1,5 | 140 | 50 | 75 | 25 | 24,5 |
| 8555453 | 5 | 25 | 2 | 140 | 50 | 75 | 25 | 24,5 |
| 8555454 | 5 | 25 | 2,5 | 140 | 50 | 75 | 25 | 24,5 |
| 8555455 | 5 | 25 | 3 | 140 | 50 | 75 | 25 | 24,5 |
| 8555456 | 5 | 25 | 4 | 140 | 50 | 75 | 25 | 24,5 |
| 8555457 | 5 | 25 | 5 | 140 | 50 | 75 | 25 | 24,5 |
| 8555458 | 5 | 25 | 6 | 140 | 50 | 75 | 25 | 24,5 |

UVX-TI-5FL SAFE-LOCK®

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- SafeLock shank

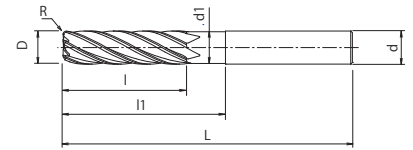


Milling | Solid carbide

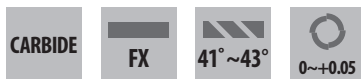
| EDP | Z | D | R | L | l | l1 | d | d1 |
|----------|---|----|-----|-----|----|----|----|------|
| 48247120 | 5 | 12 | - | 90 | 24 | 36 | 12 | 11,5 |
| 8555670 | 5 | 12 | 1 | 90 | 24 | 36 | 12 | 11,5 |
| 48247123 | 5 | 12 | 1,5 | 90 | 24 | 36 | 12 | 11,5 |
| 48247124 | 5 | 12 | 2 | 90 | 24 | 36 | 12 | 11,5 |
| 48247125 | 5 | 12 | 2,5 | 90 | 24 | 36 | 12 | 11,5 |
| 8555671 | 5 | 12 | 3 | 90 | 24 | 36 | 12 | 11,5 |
| 48247127 | 5 | 12 | 4 | 90 | 24 | 36 | 12 | 11,5 |
| 48247160 | 5 | 16 | - | 100 | 32 | 48 | 16 | 15,5 |
| 8555672 | 5 | 16 | 1 | 100 | 32 | 48 | 16 | 15,5 |
| 48247163 | 5 | 16 | 1,5 | 100 | 32 | 48 | 16 | 15,5 |
| 48247164 | 5 | 16 | 2 | 100 | 32 | 48 | 16 | 15,5 |
| 48247165 | 5 | 16 | 2,5 | 100 | 32 | 48 | 16 | 15,5 |
| 8555673 | 5 | 16 | 3 | 100 | 32 | 48 | 16 | 15,5 |
| 48247167 | 5 | 16 | 4 | 100 | 32 | 48 | 16 | 15,5 |
| 48247200 | 5 | 20 | - | 120 | 40 | 60 | 20 | 19,5 |
| 8555674 | 5 | 20 | 1 | 120 | 40 | 60 | 20 | 19,5 |
| 48247203 | 5 | 20 | 1,5 | 120 | 40 | 60 | 20 | 19,5 |
| 48247204 | 5 | 20 | 2 | 120 | 40 | 60 | 20 | 19,5 |
| 48247205 | 5 | 20 | 2,5 | 120 | 40 | 60 | 20 | 19,5 |
| 8555675 | 5 | 20 | 3 | 120 | 40 | 60 | 20 | 19,5 |
| 48247207 | 5 | 20 | 4 | 120 | 40 | 60 | 20 | 19,5 |
| 8555676 | 5 | 20 | 5 | 120 | 40 | 60 | 20 | 19,5 |
| 48247250 | 5 | 25 | - | 140 | 50 | 75 | 25 | 24,5 |
| 8555677 | 5 | 25 | 1 | 140 | 50 | 75 | 25 | 24,5 |
| 48247253 | 5 | 25 | 1,5 | 140 | 50 | 75 | 25 | 24,5 |
| 48247254 | 5 | 25 | 2 | 140 | 50 | 75 | 25 | 24,5 |
| 48247255 | 5 | 25 | 2,5 | 140 | 50 | 75 | 25 | 24,5 |
| 8555678 | 5 | 25 | 3 | 140 | 50 | 75 | 25 | 24,5 |
| 48247257 | 5 | 25 | 4 | 140 | 50 | 75 | 25 | 24,5 |
| 8555679 | 5 | 25 | 5 | 140 | 50 | 75 | 25 | 24,5 |
| 48247259 | 5 | 25 | 6 | 140 | 50 | 75 | 25 | 24,5 |

UVXL-TI-5FL

Milling | Solid carbide



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- For Titanium alloys
- 5 flutes, long length of cut, variable helix and unequal spacing, also with corner radius



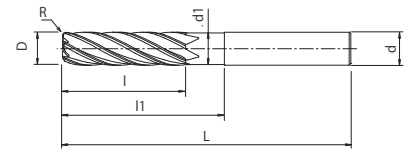
| EDP | Z | D | R | L | l | l1 | d | d1 |
|---------|---|----|-----|-----|-----|-----|----|------|
| 8555520 | 5 | 12 | - | 110 | 48 | 60 | 12 | 11,5 |
| 8555521 | 5 | 12 | 1 | 110 | 48 | 60 | 12 | 11,5 |
| 8555522 | 5 | 12 | 1,5 | 110 | 48 | 60 | 12 | 11,5 |
| 8555523 | 5 | 12 | 2 | 110 | 48 | 60 |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

Milling | Solid carbide

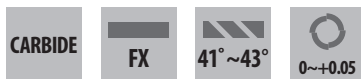


UVXL-TI-5FL SAFE-LOCK®

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Milling | Solid carbide

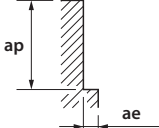
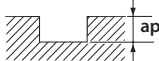
| EDP | Z | D | R | L | l | l1 | d | d1 |
|----------|---|----|-----|-----|-----|-----|----|------|
| 48248120 | 5 | 12 | - | 110 | 48 | 60 | 12 | 11,5 |
| 8555680 | 5 | 12 | 1 | 110 | 48 | 60 | 12 | 11,5 |
| 48248123 | 5 | 12 | 1,5 | 110 | 48 | 60 | 12 | 11,5 |
| 48248124 | 5 | 12 | 2 | 110 | 48 | 60 | 12 | 11,5 |
| 48248125 | 5 | 12 | 2,5 | 110 | 48 | 60 | 12 | 11,5 |
| 8555681 | 5 | 12 | 3 | 110 | 48 | 60 | 12 | 11,5 |
| 48248127 | 5 | 12 | 4 | 110 | 48 | 60 | 12 | 11,5 |
| 48248160 | 5 | 16 | - | 130 | 64 | 80 | 16 | 15,5 |
| 8555682 | 5 | 16 | 1 | 130 | 64 | 80 | 16 | 15,5 |
| 48248163 | 5 | 16 | 1,5 | 130 | 64 | 80 | 16 | 15,5 |
| 48248164 | 5 | 16 | 2 | 130 | 64 | 80 | 16 | 15,5 |
| 48248165 | 5 | 16 | 2,5 | 130 | 64 | 80 | 16 | 15,5 |
| 8555683 | 5 | 16 | 3 | 130 | 64 | 80 | 16 | 15,5 |
| 48248167 | 5 | 16 | 4 | 130 | 64 | 80 | 16 | 15,5 |
| 48248200 | 5 | 20 | - | 160 | 80 | 100 | 20 | 19,5 |
| 8555684 | 5 | 20 | 1 | 160 | 80 | 100 | 20 | 19,5 |
| 48248203 | 5 | 20 | 1,5 | 160 | 80 | 100 | 20 | 19,5 |
| 48248204 | 5 | 20 | 2 | 160 | 80 | 100 | 20 | 19,5 |
| 48248205 | 5 | 20 | 2,5 | 160 | 80 | 100 | 20 | 19,5 |
| 8555685 | 5 | 20 | 3 | 160 | 80 | 100 | 20 | 19,5 |
| 48248207 | 5 | 20 | 4 | 160 | 80 | 100 | 20 | 19,5 |
| 8555686 | 5 | 20 | 5 | 160 | 80 | 100 | 20 | 19,5 |
| 48248250 | 5 | 25 | - | 190 | 100 | 125 | 25 | 24,5 |
| 8555687 | 5 | 25 | 1 | 190 | 100 | 125 | 25 | 24,5 |
| 48248253 | 5 | 25 | 1,5 | 190 | 100 | 125 | 25 | 24,5 |
| 48248254 | 5 | 25 | 2 | 190 | 100 | 125 | 25 | 24,5 |
| 48248255 | 5 | 25 | 2,5 | 190 | 100 | 125 | 25 | 24,5 |
| 8555688 | 5 | 25 | 3 | 190 | 100 | 125 | 25 | 24,5 |
| 48248257 | 5 | 25 | 4 | 190 | 100 | 125 | 25 | 24,5 |
| 8555689 | 5 | 25 | 5 | 190 | 100 | 125 | 25 | 24,5 |
| 48248259 | 5 | 25 | 6 | 190 | 100 | 125 | 25 | 24,5 |

CUTTING CONDITIONS

Milling | Endmills | Cutting conditions

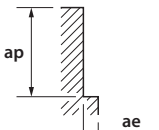

UVX-TI-4FL / SAFE-LOCK®

Titanium alloy (Ti-6Al-4V)

| | Side milling | | Slotting | | | | | | | |
|-------------------|---|---|------------------------|------------|----------|--------|--|---|----|--------|
| Vc | 60 ~ 80 m/min | | 30 ~ 50 m/min | | | | | | | |
| Ø | S (min ⁻¹) | F (mm/min) | S (min ⁻¹) | F (mm/min) | | | | | | |
| 12 | 1.900 | 680 | 1.350 | 270 | | | | | | |
| 16 | 1.400 | 500 | 990 | 200 | | | | | | |
| 20 | 1.100 | 480 | 800 | 190 | | | | | | |
| 25 | 900 | 400 | 640 | 150 | | | | | | |
| Max cutting depth |  | <table border="1"> <tr> <td>ap</td> <td>ae</td> </tr> <tr> <td>≤ 1,8 Dc</td> <td>0,2 Dc</td> </tr> </table> | ap | ae | ≤ 1,8 Dc | 0,2 Dc |  | <table border="1"> <tr> <td>ap</td> </tr> <tr> <td>≤ 1 Dc</td> </tr> </table> | ap | ≤ 1 Dc |
| ap | ae | | | | | | | | | |
| ≤ 1,8 Dc | 0,2 Dc | | | | | | | | | |
| ap | | | | | | | | | | |
| ≤ 1 Dc | | | | | | | | | | |

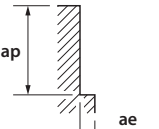
UVX-TI-5FL / UVX-TI-5FL-HB / SAFE-LOCK®

Titanium alloy (Ti-6Al-4V)

| | Side milling | | Slotting | | | | | | | |
|-------------------|---|---|------------------------|------------|----------|--------|--|---|----|--------|
| Vc | 60 ~ 80 m/min | | 30 ~ 50 m/min | | | | | | | |
| Ø | S (min ⁻¹) | F (mm/min) | S (min ⁻¹) | F (mm/min) | | | | | | |
| 12 | 1.900 | 855 | 1.350 | 340 | | | | | | |
| 16 | 1.400 | 630 | 990 | 250 | | | | | | |
| 20 | 1.100 | 600 | 800 | 240 | | | | | | |
| 25 | 900 | 500 | 640 | 192 | | | | | | |
| Max cutting depth |  | <table border="1"> <tr> <td>ap</td> <td>ae</td> </tr> <tr> <td>≤ 1,8 Dc</td> <td>0,2 Dc</td> </tr> </table> | ap | ae | ≤ 1,8 Dc | 0,2 Dc |  | <table border="1"> <tr> <td>ap</td> </tr> <tr> <td>≤ 1 Dc</td> </tr> </table> | ap | ≤ 1 Dc |
| ap | ae | | | | | | | | | |
| ≤ 1,8 Dc | 0,2 Dc | | | | | | | | | |
| ap | | | | | | | | | | |
| ≤ 1 Dc | | | | | | | | | | |

UVXL-TI-5FL / SAFE-LOCK®

Titanium alloy (Ti-6Al-4V)

| | Side milling | | | | | |
|-------------------|---|--|----|----|-----------|--------|
| Vc | 60 ~ 80 m/min | | | | | |
| Ø | S (min ⁻¹) | F (mm/min) | | | | |
| 12 | 2.100 | 1.050 | | | | |
| 16 | 1.600 | 920 | | | | |
| 20 | 1.270 | 760 | | | | |
| 25 | 1.020 | 587 | | | | |
| Max cutting depth |  | <table border="1"> <tr> <td>ap</td> <td>ae</td> </tr> <tr> <td>≤ 3,75 Dc</td> <td>0,1 Dc</td> </tr> </table> | ap | ae | ≤ 3,75 Dc | 0,1 Dc |
| ap | ae | | | | | |
| ≤ 3,75 Dc | 0,1 Dc | | | | | |

Milling | Endmills



Cutting conditions

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