



MULTIDEC® -MILL

**SOLID CARBIDE END MILLS, DEBURRING TOOLS,
FRONT/BACK DEBURRING TOOLS &
CONCAVE QUARTER RADIUS MILLS**



UTILIS
multidec®
swiss type tools



multidec®-MILL

With multidec®-MILL, a new product range consisting of universal milling tools are now available. These tools are characterized by having an excellent price/performance ratio, and are as diverse as their areas of application. The multidec®-MILL product range is continuously being developed and expanded.

- Preferred Application
- Possible Application
- Application Not Recommended

| Series Operation | Order Designation | Steel | Stainless Steel | Titanium & Ti-Alloys | Non Ferrous Metals | Hardened | Machining Recommendations |
|---|-------------------|-------|-----------------|----------------------|--------------------|----------|--|
| End mills | UMMS 4...x 020... | ■ | ■ | □ | □ | - | 1 = unsuitable to 6 = optimal Roughing 1 2 3 4 5 6 Finishing 1 2 3 4 5 6 |
| | UMMS 4...x 0XS... | ■ | ■ | □ | □ | - | Roughing 1 2 3 4 5 6 Finishing 1 2 3 4 5 6 |
| Trochoidal End mills | UMMTR 5...x030... | ■ | ■ | □ | □ | - | Roughing 1 2 3 4 5 6 Finishing 1 2 3 4 5 6 |
| | UMMTR 5...x040... | ■ | ■ | □ | □ | - | Roughing 1 2 3 4 5 6 Finishing 1 2 3 4 5 6 |
| Deburring Tools | UMME...x60° | ■ | ■ | □ | □ | - | Roughing 1 2 3 4 5 6 Finishing 1 2 3 4 5 6 |
| | UMME...x90° | ■ | ■ | □ | □ | - | Roughing 1 2 3 4 5 6 Finishing 1 2 3 4 5 6 |
| Front/back Deburring Tools | UMMVR 4...x90° | ■ | ■ | □ | □ | - | Roughing 1 2 3 4 5 6 Finishing 1 2 3 4 5 6 |
| | UMMVRL 4...x90° | ■ | ■ | □ | □ | - | Roughing 1 2 3 4 5 6 Finishing 1 2 3 4 5 6 |
| Concave quarter radius mills | UMMVK 4...R | ■ | ■ | □ | □ | - | Roughing 1 2 3 4 5 6 Finishing 1 2 3 4 5 6 |
| Front/back Concave quarter radius mills | UMMVKL 4...R | ■ | ■ | □ | □ | - | Roughing 1 2 3 4 5 6 Finishing 1 2 3 4 5 6 |

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All dimensions are in millimeter (mm); native dimensions in inch are calculated into millimeter.

multidec®-MILL Series Descriptions

Solid Carbide End Mills, Deburring Tools, Concave Quarter Radius Drills

| Series | Depth | Flute Ø | Flute Length | Shank Ø | # of Teeth | Uneven Tooth Pitch | Tolerance | Coating | Milling Application |
|---------------------|-------|---------|--------------|---------|------------|--------------------|-----------|---------|----------------------------------|
| UMMS 4...x 020 ... | 2 x Ø | 2-20 | 0.9-52 | 6-20 | 4 | Yes | h6 | HMP700 | Full Groove, Contour, Trochoidal |
| UMMS 4...x 0XS ... | 2 x Ø | 2-12 | | 6-12 | 4 | No | h6 | HMP800 | Full Groove, Contour |
| UMMTR 5...x030... | 3 x Ø | 6-20 | 23-70 | 6-20 | 5 | Yes | h6 | HMP700 | Trochoidal, Helical |
| UMMTR 5...x040... | 4 x Ø | 6-20 | | 6-20 | 5 | Yes | h6 | HMP700 | Trochoidal, Helical |
| UMME...x60°... | | 1-16 | | 3-16 | 3-4 | Yes | h6 | HMP700 | Deburring |
| UMME...x90°... | | 1-16 | 5-8 | 3-16 | 3-4 | Yes | h6 | HMP700 | Deburring |
| UMMVR 4...x 90°... | | 2-12 | 8-23 | 4-12 | 4 | No | h6 | HMP700 | Deburring |
| UMMVRL 4...x 90°... | | 3-12 | | | 4 | No | h6 | HMP700 | Deburring |
| UMMVK 4...R... | | 3.6-5 | | 4-25 | 4 | No | h6 | HMP700 | Corner Radius |
| UMMVKL 4...R... | | 5.6-7 | | | 4 | No | h6 | HMP700 | Corner Radius |

Legend

The dimensions listed in the tool tables refer to the following tool parameters:

| | |
|-----------------------|----------------------------|
| CHW | Corner Chamfer Width |
| D | Shank Diameter |
| d₁ | Flute Diameter |
| dc₁ | MIN Cutting Diameter |
| dc₂ | MAX Cutting Diameter |
| DN | Clearance Diameter |
| l₁ | Flute Length/Length of Cut |
| l₂ | Neck Length |
| L | Overall Length (OAL) |
| R | Radius |
| Z | Number of Flutes (Teeth) |

Recommended cutting specifications

The cutting speed and feed are important parameters during cutting, both influence the machining time and the workpiece quality. All of the parameters specified in this document must be considered as guideline values. Each depend on the respective workpiece clamping, tool clamping, machine performance, machine stability, the tool itself and more. Each cutting value recommendation is therefore just a rough guideline.

Please contact our application engineers **call 413-562-4800** or **email sales@genwiss.com** for more information.

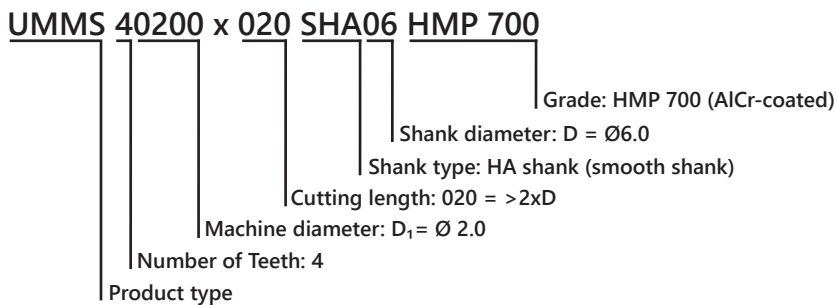
multidec®-MILL

Experience affordable performance at your shop with this solid carbide end mill platform, available in three, four and five flute geometries.

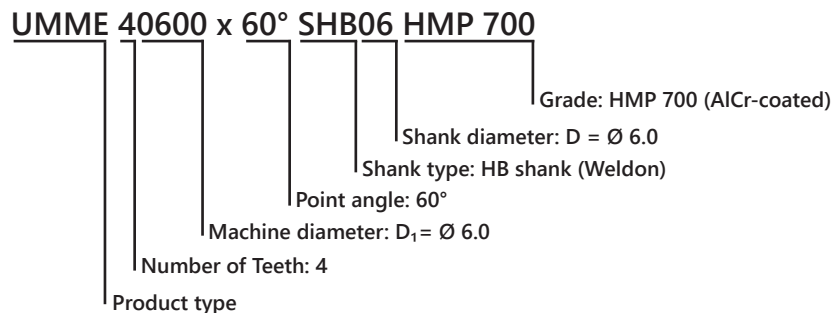
Features

- Suitable for general machining as well as long turning
- Chip Management System for seamless operation
- Flute lengths tailored for diverse machining needs
- Weldon flat design for precision and stability

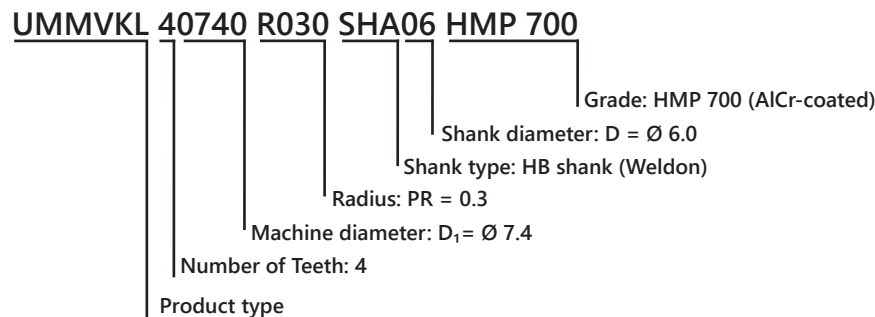
DESIGNATION SYSTEM FOR END MILLS















DESIGNATION SYSTEM FOR DEBURRING TOOLS



DESIGNATION SYSTEM FOR CONCAVE QUARTER RADIUS MILLS



Symbols for tool attributes

| | | | | | |
|--|--|---|---|---|---|
|  | Number of teeth Example: five teeth |  | Uneven tooth pitch |  | Cutting length Example: Drilling depth 3xD ₁ |
|  | Shank type Straight shank DIN 6535 (HA) |  | Edge reinforcement Corner radius (RE) |  | Dynamic helix angle |
|  | Weldon DIN6535 (HB) |  | Corner chamfer (CHW) |  | Helix angle Example: Helix angle 40° |
|  | Chip breaker |  | Sharp-edged |  | Point angle Example: Point angle 90° |

| | | | | | | | |
|------------------------------|---|---|---|---|---|---|---|
| UMMS 4... x 020 ... |  |  | >2xD |  |  |  | UNI Uneven tooth pitch Cut over centre |
| UMMS 4... x 0XS ... |  | | >2xD | |  |  | UNI Cut over centre |
| UMMTR 5... x 030 ... |  |  | >3xD |  |  |  | UNI Uneven tooth pitch Cut over centre |
| UMMTR 5... x 040 ... |  |  | >4xD |  |  |  | UNI Uneven tooth pitch Cut over centre |
| UMME ... x 60° ... |  |  |  | | | | |
| UMME ... x 90° ... |  |  |  | | | | |
| UMMVR 4... x 90° ... |  | | | | | | |
| UMMVRL 4... x 90° ... |  | | | | | | |
| UMMVK 4... R... |  | | | | | | |
| UMMVKL 4... R... |  | | | | | | |

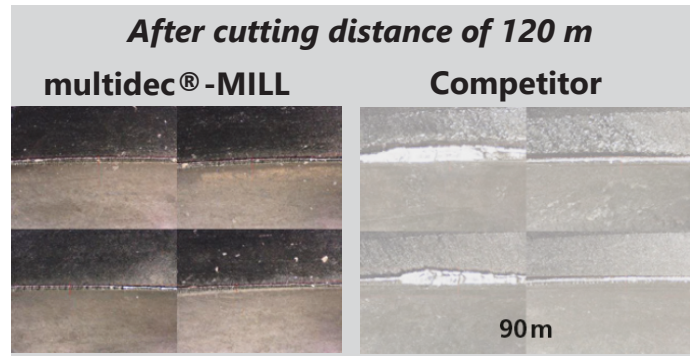
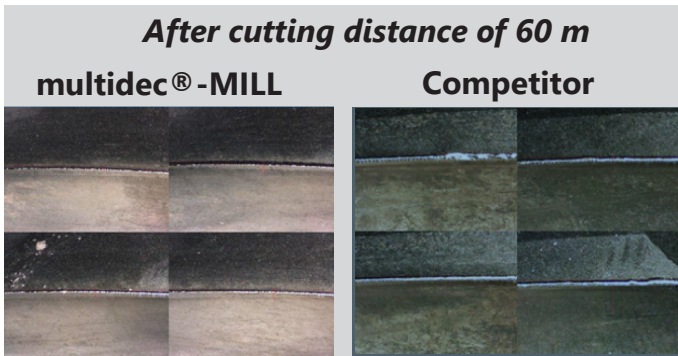
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Success stories

Application Parameters - Cutting distance determination 2xD UMMS 4120...

A milling tool with Ø 12 mm was used for contour milling in order to determine the cutting distance in meters.

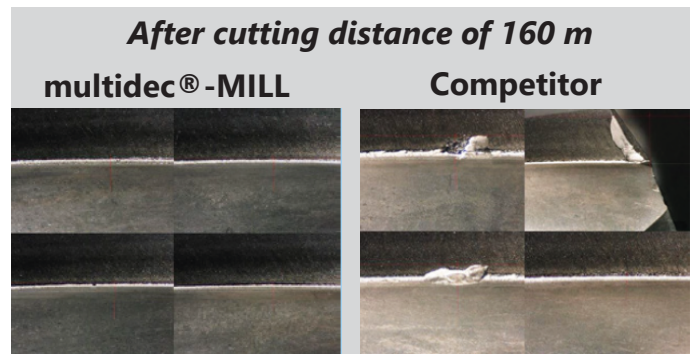
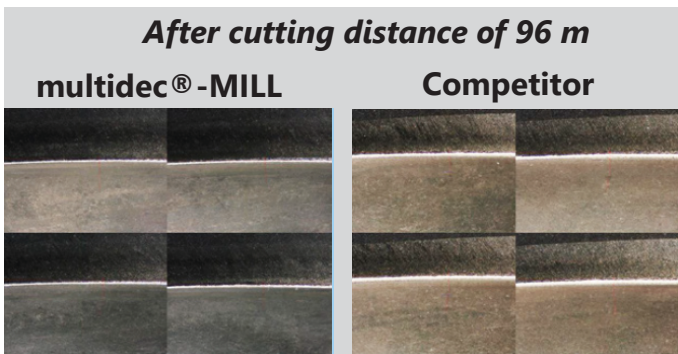
| | | | |
|---------------|----------------------------|---------------------------|-------------------|
| Machine model | Hermle C32U / HSK63 | Cutting speed (vc) | 160 m/min |
| Material No. | 1.7225 / 42CrMo4+QT | Feed per tooth (fz) | 0.075 mm/Z |
| Operation | contour milling | Axial cutting depth (ap) | 15 mm |
| Cooling | external air blow | Radial cutting depth (ae) | 15 mm |



Application Parameters – Cutting distance determination 2×D UMMS 4120...

A milling tool with Ø 12 mm was used for contour milling in order to determine the cutting distance in meters.

| | | | |
|---------------|-----------------------------------|---------------------------|-------------------|
| Machine model | Hermle C32U / HSK63 | Cutting speed (vc) | 85 m/min |
| Material No. | 1.4571 / X6CrNiMoTi (V4A) | Feed per tooth (fz) | 0.062 mm/Z |
| Operation | contour milling | Axial cutting depth (ap) | 12 mm |
| Cooling | external cooling lubricant | Radial cutting depth (ae) | 2.4 mm |



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UMMS 4 x 020
02XD

End Mills

Pg. 8



UMMS 4 x 0XS
02XD

End Mills

Pg. 10



UMMTR 5 x 030
03XD

Trochoidal End Mills

Pg. 11



UMMTR 5... x 040
04XD

Trochoidal End Mills

Pg. 12



UMME ... x 60°

Deburring

Pg. 13



UMME ... x 90°

Deburring

Pg. 14



UMMVR 4... x 90°

Front/back Deburring

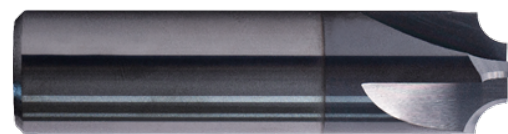
Pg. 15



UMMVRL 4 ... x 90°

Front/back Deburring

Pg. 16



UMMVK4 ... R

Concave Qtr Radius Mill

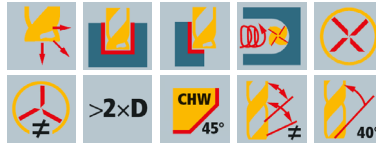
Pg. 17



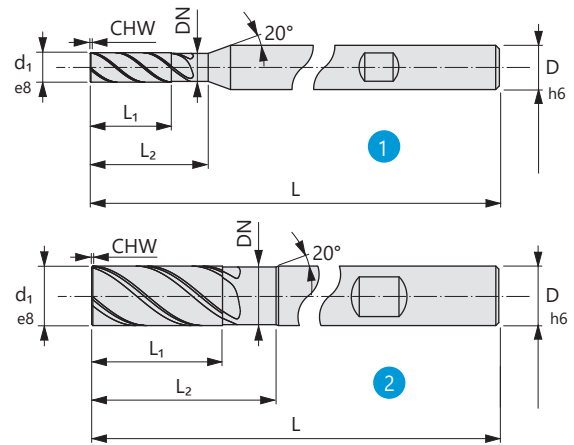
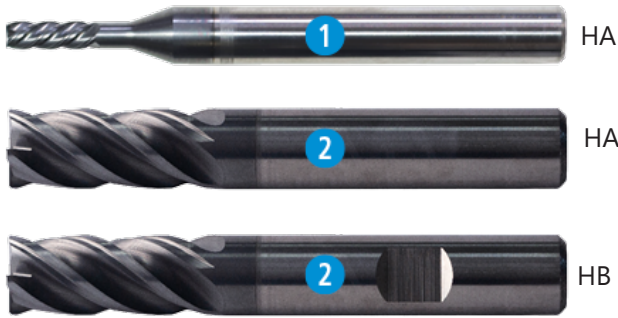
UMMVKL 4... R...

Front/back Concave
Quarter Radius Mill

Pg. 18



Symbols Key (Page 5)









UMMS 4... x 020 ...

| Item No. | Description | d ₁ Flute Ø | L ₁ Flute Length | DN Clearance Ø | CHW Corner Chamfer Width | L ₂ Neck Length | Z # Flutes | L OAL | D Shank Ø | Coating | Fig. | Shank |
|-------------|----------------------------|---------------------------|--------------------------------|-------------------|-----------------------------|-------------------------------|---------------|----------|--------------|---------|------|-------|
| 7007-552000 | UMMS 40200 x 020 SHA06 ... | 2mm | 5mm | 1.8mm | 0.1mm | 9mm | 4 | 57mm | 6mm | HMP700 | 1 | HA |
| 7007-552001 | UMMS 40300 x 020 SHA06 ... | 3mm | 8mm | 2.8mm | 0.1mm | 12mm | 4 | 57mm | 6mm | HMP700 | 1 | HA |
| 7007-552002 | UMMS 40400 x 020 SHA06 ... | 4mm | 11mm | 3.8mm | 0.1mm | 16mm | 4 | 57mm | 6mm | HMP700 | 1 | HA |
| 7007-552003 | UMMS 40500 x 020 SHA06 ... | 5mm | 13mm | 4.8mm | 0.2mm | 19mm | 4 | 57mm | 6mm | HMP700 | 1 | HA |
| 7007-552004 | UMMS 40600 x 020 SHA06 ... | 6mm | 13mm | 5.8mm | 0.2mm | 19mm | 4 | 57mm | 6mm | HMP700 | 2 | HA |
| 7007-552005 | UMMS 40800 x 020 SHA08 ... | 8mm | 20mm | 7.7mm | 0.2mm | 26mm | 4 | 63mm | 8mm | HMP700 | 2 | HA |
| 7007-552006 | UMMS 41000 x 020 SHA10 ... | 10mm | 22mm | 9.7mm | 0.2mm | 31mm | 4 | 72mm | 10mm | HMP700 | 2 | HA |
| 7007-552007 | UMMS 41200 x 020 SHA12 ... | 12mm | 26mm | 11.6mm | 0.2mm | 38mm | 4 | 83mm | 12mm | HMP700 | 2 | HA |
| 7007-552008 | UMMS 41600 x 020 SHA16 ... | 16mm | 32mm | 15.5mm | 0.3mm | 42mm | 4 | 92mm | 16mm | HMP700 | 2 | HA |
| 7007-552009 | UMMS 42000 x 020 SHA20 ... | 20mm | 42mm | 19.5mm | 0.3mm | 52mm | 4 | 104mm | 20mm | HMP700 | 2 | HA |
| 7007-552010 | UMMS 40200 x 020 SHB06 ... | 2mm | 5mm | 1.8mm | 0.1mm | 9mm | 4 | 57mm | 6mm | HMP700 | 1 | HB |
| 7007-552011 | UMMS 40300 x 020 SHB06 ... | 3mm | 8mm | 2.8mm | 0.1mm | 12mm | 4 | 57mm | 6mm | HMP700 | 1 | HB |
| 7007-552012 | UMMS 40400 x 020 SHB06 ... | 4mm | 11mm | 3.8mm | 0.1mm | 16mm | 4 | 57mm | 6mm | HMP700 | 1 | HB |
| 7007-552013 | UMMS 40500 x 020 SHB06 ... | 5mm | 13mm | 4.8mm | 0.2mm | 19mm | 4 | 57mm | 6mm | HMP700 | 1 | HB |
| 7007-552014 | UMMS 40600 x 020 SHB06 ... | 6mm | 13mm | 5.8mm | 0.2mm | 19mm | 4 | 57mm | 6mm | HMP700 | 2 | HB |
| 7007-552015 | UMMS 40800 x 020 SHB08 ... | 8mm | 20mm | 7.7mm | 0.2mm | 26mm | 4 | 63mm | 8mm | HMP700 | 2 | HB |
| 7007-552016 | UMMS 41000 x 020 SHB10 ... | 10mm | 22mm | 9.7mm | 0.2mm | 31mm | 4 | 72mm | 10mm | HMP700 | 2 | HB |
| 7007-552017 | UMMS 41200 x 020 SHB12 ... | 12mm | 26mm | 11.6mm | 0.2mm | 38mm | 4 | 83mm | 12mm | HMP700 | 2 | HB |
| 7007-552018 | UMMS 41600 x 020 SHB16 ... | 16mm | 32mm | 15.5mm | 0.3mm | 42mm | 4 | 92mm | 16mm | HMP700 | 2 | HB |
| 7007-552019 | UMMS 42000 x 020 SHB20 ... | 20mm | 42mm | 19.5mm | 0.3mm | 52mm | 4 | 104mm | 20mm | HMP700 | 2 | HB |



Cutting Data for UNI End Mills Z4 2xD

Guideline values

| Steel | | Stainless steel | Non-ferrous metals | Cast iron |
|---|---|---|---|---|
| 1  | 2  |  |  |  |
|  1 Preferably used for full groove and contour milling 2 Preferably used for trochoidal milling | | | | |

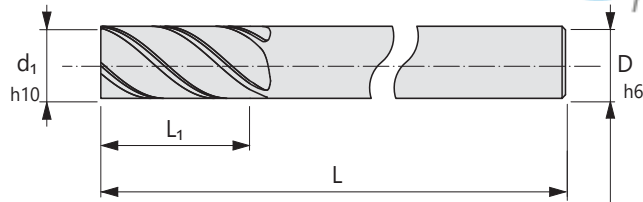
| | | | | | |
|---------------------------------------|------|-------|------|------|-------|
| Tensile strength (N/mm ²) | <850 | <1100 | <850 | <600 | <1000 |
|---------------------------------------|------|-------|------|------|-------|

| | | | | | |
|---------------------------|-----|-----|----|-----|-----|
| Cutting speeds vc (m/min) | 185 | 165 | 85 | 360 | 200 |
|---------------------------|-----|-----|----|-----|-----|

| DC (mm) | APMX (mm) | Plunge angle (°) | Application | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) |
|---------|-----------|------------------|--|-----------------|-----------------|-----------------|-----------------|-----------------|
| 2.0 | 5.0 | 0.4 |  Full groove milling $a_p = 1 \times D$ $a_e = 1 \times D$ | 0.010 | 0.010 | – | 0.013 | 0.013 |
| 3.0 | 8.0 | 0.4 | | 0.013 | 0.013 | – | 0.013 | 0.015 |
| 4.0 | 11.0 | 0.4 | | 0.013 | 0.013 | – | 0.015 | 0.015 |
| 5.0 | 13.0 | 0.4 | | 0.020 | 0.020 | – | 0.025 | 0.025 |
| 6.0 | 13.0 | 0.7 | | 0.030 | 0.030 | – | 0.030 | 0.035 |
| 8.0 | 20.0 | 0.8 | | 0.040 | 0.040 | – | 0.045 | 0.045 |
| 10.0 | 22.0 | 1.2 | | 0.045 | 0.045 | – | 0.065 | 0.050 |
| 12.0 | 26.0 | 1.8 | | 0.050 | 0.050 | – | 0.085 | 0.055 |
| 16.0 | 32.0 | 2.4 | | 0.055 | 0.055 | – | 0.100 | 0.060 |
| 20.0 | 42.0 | 3.0 | | 0.065 | 0.065 | – | 0.110 | 0.070 |
| 2.0 | 5.0 | 0.4 |  Contour milling $a_p = APMX_{max}$ $a_e = 0.2 \times D$ | 0.013 | 0.013 | 0.010 | 0.015 | 0.015 |
| 3.0 | 8.0 | 0.4 | | 0.015 | 0.015 | 0.013 | 0.015 | 0.018 |
| 4.0 | 11.0 | 0.4 | | 0.015 | 0.015 | 0.013 | 0.025 | 0.018 |
| 5.0 | 13.0 | 0.4 | | 0.025 | 0.025 | 0.020 | 0.030 | 0.030 |
| 6.0 | 13.0 | 0.7 | | 0.035 | 0.035 | 0.030 | 0.050 | 0.040 |
| 8.0 | 20.0 | 0.8 | | 0.045 | 0.045 | 0.040 | 0.065 | 0.050 |
| 10.0 | 22.0 | 1.2 | | 0.055 | 0.055 | 0.045 | 0.085 | 0.060 |
| 12.0 | 26.0 | 1.8 | | 0.065 | 0.065 | 0.050 | 0.100 | 0.070 |
| 16.0 | 32.0 | 2.4 | | 0.070 | 0.070 | 0.055 | 0.110 | 0.075 |
| 20.0 | 42.0 | 3.0 | | 0.085 | 0.085 | 0.065 | 0.125 | 0.090 |
| 2.0 | 5.0 | 0.4 |  Trochoidal milling $a_p = APMX_{max}$ $a_e = 0.08 \times D$ | 0.028 | 0.022 | 0.020 | 0.045 | 0.025 |
| 3.0 | 8.0 | 0.4 | | 0.040 | 0.032 | 0.028 | 0.064 | 0.036 |
| 4.0 | 11.0 | 0.4 | | 0.055 | 0.044 | 0.039 | 0.088 | 0.050 |
| 5.0 | 13.0 | 0.4 | | 0.065 | 0.052 | 0.046 | 0.104 | 0.059 |
| 6.0 | 13.0 | 0.7 | | 0.085 | 0.068 | 0.060 | 0.136 | 0.077 |
| 8.0 | 20.0 | 0.8 | | 0.100 | 0.080 | 0.070 | 0.160 | 0.090 |
| 10.0 | 22.0 | 1.2 | | 0.120 | 0.096 | 0.084 | 0.192 | 0.108 |
| 12.0 | 26.0 | 1.8 | | 0.140 | 0.112 | 0.098 | 0.224 | 0.126 |
| 16.0 | 32.0 | 2.4 | | 0.160 | 0.128 | 0.112 | 0.256 | 0.144 |
| 20.0 | 42.0 | 3.0 | | 0.185 | 0.148 | 0.130 | 0.296 | 0.167 |



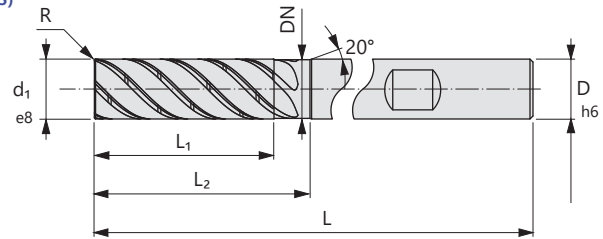
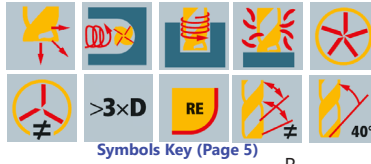
UMMS 4... x OXS ...



| Item No. | Description | d ₁ Flute Ø | L ₁ Flute Length | L OAL | D Shank Ø | Z # Flutes | Coating | Shank |
|-------------|----------------------------|---------------------------|--------------------------------|----------|--------------|---------------|---------|-------|
| 7007-552126 | UMMS 40200 x OXS SHA06 ... | 2mm | 4mm | 38mm | 6mm | 4 | HMP800 | HA |
| 7007-552127 | UMMS 40300 x OXS SHA06 ... | 3mm | 5mm | 38mm | 6mm | 4 | HMP800 | HA |
| 7007-552128 | UMMS 40400 x OXS SHA06 ... | 4mm | 7mm | 38mm | 6mm | 4 | HMP800 | HA |
| 7007-552129 | UMMS 40500 x OXS SHA06 ... | 5mm | 8mm | 38mm | 6mm | 4 | HMP800 | HA |
| 7007-552130 | UMMS 40600 x OXS SHA06 ... | 6mm | 8mm | 38mm | 6mm | 4 | HMP800 | HA |
| 7007-552131 | UMMS 40800 x OXS SHA08 ... | 8mm | 11mm | 43mm | 8mm | 4 | HMP800 | HA |
| 7007-552132 | UMMS 41000 x OXS SHA10 ... | 10mm | 13mm | 50mm | 10mm | 4 | HMP800 | HA |
| 7007-552133 | UMMS 41200 x OXS SHA12 ... | 12mm | 14mm | 63mm | 12mm | 4 | HMP800 | HA |

* HMP 800 = PVD coating (AlCr)

| Cutting Data for UNI End Mills Z4 2xD Guideline values | | | Steel | Stainless steel | Non-ferrous metals | Cast iron | |
|---|-----------|---|-----------------|-----------------|--------------------|-----------------|-----------------|
| Tensile strength (N/mm ²) | | | <800 | <1300 | <850 | <600 | <1000 |
| Cutting speeds v _c (m/min) | | | 120 | 75 | 40 | 360 | 100 |
| DC (mm) | APMX (mm) | Application | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) |
| 2.0 | 4.0 | Full groove milling $a_p = 0.5 \times D$ $a_e = 1 \times D$ | 0.002 | 0.002 | 0.002 | - | 0.002 |
| 3.0 | 5.0 | | 0.004 | 0.004 | 0.004 | - | 0.004 |
| 4.0 | 7.0 | | 0.009 | 0.009 | 0.009 | - | 0.009 |
| 5.0 | 8.0 | | 0.014 | 0.014 | 0.014 | - | 0.014 |
| 6.0 | 8.0 | | 0.018 | 0.018 | 0.018 | - | 0.018 |
| 8.0 | 11.0 | | 0.023 | 0.023 | 0.023 | - | 0.023 |
| 10.0 | 13.0 | | 0.028 | 0.028 | 0.028 | - | 0.028 |
| 12.0 | 14.0 | | 0.035 | 0.035 | 0.035 | - | 0.035 |
| Tensile strength (N/mm ²) | | | <800 | <1300 | <850 | <600 | <1000 |
| Cutting speeds v _c (m/min) | | | 150 | 90 | 45 | 360 | 125 |
| 2.0 | 4.0 | Contour milling $a_p = 1 \times D$ $a_e = 0.2 \times D$ | 0.002 | 0.002 | 0.002 | - | 0.002 |
| 3.0 | 5.0 | | 0.004 | 0.004 | 0.004 | - | 0.004 |
| 4.0 | 7.0 | | 0.007 | 0.007 | 0.007 | - | 0.007 |
| 5.0 | 8.0 | | 0.012 | 0.012 | 0.012 | - | 0.012 |
| 6.0 | 8.0 | | 0.016 | 0.016 | 0.016 | - | 0.016 |
| 8.0 | 11.0 | | 0.020 | 0.020 | 0.020 | - | 0.020 |
| 10.0 | 13.0 | | 0.025 | 0.025 | 0.025 | - | 0.025 |
| 12.0 | 14.0 | | 0.050 | 0.050 | 0.050 | - | 0.050 |



UMMTR 5... x 030 ...

| Item No. | Description | d ₁ Flute Ø | L ₁ Flute Length | DN Clearance Ø | R Radius | L ₂ Neck Length | L OAL | D Shank Ø | Z # Flutes | Coating | Shank |
|-------------|-----------------------------|---------------------------|--------------------------------|----------------------|-------------|----------------------------------|----------|--------------|---------------|---------|-------|
| 7007-552020 | UMMTR 50600 x 030 SHA06 ... | 6mm | 19mm | 5.8mm | 0.2mm | 23mm | 65mm | 6mm | 5 | HMP700 | HA |
| 7007-552021 | UMMTR 50800 x 030 SHA08 ... | 8mm | 25mm | 7.8mm | 0.2mm | 29mm | 70mm | 8mm | 5 | HMP700 | HA |
| 7007-552022 | UMMTR 51000 x 030 SHA10 ... | 10mm | 31mm | 9.8mm | 0.2mm | 36mm | 80mm | 10mm | 5 | HMP700 | HA |
| 7007-552023 | UMMTR 51200 x 030 SHA12 ... | 12mm | 37mm | 11.8mm | 0.2mm | 42mm | 93mm | 12mm | 5 | HMP700 | HA |
| 7007-552024 | UMMTR 51600 x 030 SHA16 ... | 16mm | 49mm | 15.8mm | 0.3mm | 56mm | 110mm | 16mm | 5 | HMP700 | HA |
| 7007-552025 | UMMTR 52000 x 030 SHA20 ... | 20mm | 61mm | 19.8mm | 0.3mm | 70mm | 126mm | 20mm | 5 | HMP700 | HA |
| 7007-552026 | UMMTR 50600 x 030 SHB06 ... | 6mm | 19mm | 5.8mm | 0.2mm | 23mm | 65mm | 6mm | 5 | HMP700 | HB |
| 7007-552027 | UMMTR 50800 x 030 SHB08 ... | 8mm | 25mm | 7.8mm | 0.2mm | 29mm | 70mm | 8mm | 5 | HMP700 | HB |
| 7007-552028 | UMMTR 51000 x 030 SHB10 ... | 10mm | 31mm | 9.8mm | 0.2mm | 36mm | 80mm | 10mm | 5 | HMP700 | HB |
| 7007-552029 | UMMTR 51200 x 030 SHB12 ... | 12mm | 37mm | 11.8mm | 0.2mm | 42mm | 93mm | 12mm | 5 | HMP700 | HB |
| 7007-552030 | UMMTR 51600 x 030 SHB16 ... | 16mm | 49mm | 15.8mm | 0.3mm | 56mm | 110mm | 16mm | 5 | HMP700 | HB |
| 7007-552031 | UMMTR 52000 x 030 SHB20 ... | 20mm | 61mm | 19.8mm | 0.3mm | 70mm | 126mm | 20mm | 5 | HMP700 | HB |

Cutting Data for UNI Trochoidal End Mills Z5 3 x D

Guideline values

| | Steel | Stainless steel | Non-ferrous metals | Cast iron |
|--|---|-----------------|--------------------|-----------|
| | <p>1 Preferably used for helical milling 2 Preferably used for trochoidal milling</p> | | | |

Tensile strength (N/mm²) <850 <1100 <850 <600 <1000

Cutting speeds v_c (m/min) 270 200 135 440 220

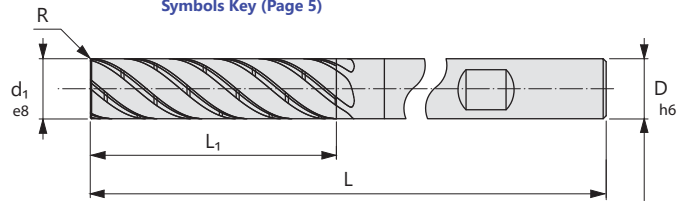
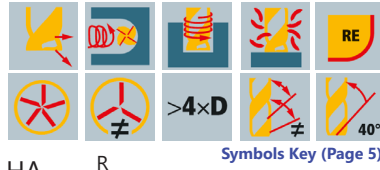
| DC (mm) | APMX (mm) | Plunge angle (°) | Application | Feeds f _z (mm/Z) | Feeds f _z (mm/Z) | Feeds f _z (mm/Z) | Feeds f _z (mm/Z) | Feeds f _z (mm/Z) |
|---------|-----------|------------------|---|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 6.0 | 19.0 | 0.7 | Trochoidal milling a _p =APMXmax a _e =0.08×D | 0.090 | 0.072 | 0.072 | 0.135 | 0.081 |
| 8.0 | 25.0 | 0.9 | | 0.105 | 0.084 | 0.084 | 0.158 | 0.095 |
| 10.0 | 31.0 | 0.9 | | 0.120 | 0.096 | 0.096 | 0.180 | 0.108 |
| 12.0 | 37.0 | 1.2 | | 0.138 | 0.110 | 0.110 | 0.207 | 0.124 |
| 16.0 | 49.0 | 1.2 | | 0.165 | 0.132 | 0.132 | 0.248 | 0.149 |
| 20.0 | 61.0 | 1.5 | | 0.192 | 0.154 | 0.154 | 0.288 | 0.173 |
| 6.0 | 19.0 | 0.7 | Helical milling | 0.049 | 0.039 | 0.039 | 0.073 | 0.044 |
| 8.0 | 25.0 | 0.9 | | 0.057 | 0.046 | 0.046 | 0.086 | 0.051 |
| 10.0 | 31.0 | 0.9 | | 0.065 | 0.052 | 0.052 | 0.098 | 0.059 |
| 12.0 | 37.0 | 1.2 | | 0.075 | 0.060 | 0.060 | 0.112 | 0.067 |
| 16.0 | 49.0 | 1.2 | | 0.090 | 0.072 | 0.072 | 0.134 | 0.081 |
| 20.0 | 61.0 | 1.5 | | 0.104 | 0.083 | 0.083 | 0.156 | 0.094 |

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Trochoidal End Mills



UMMTR 5... x 040 ...

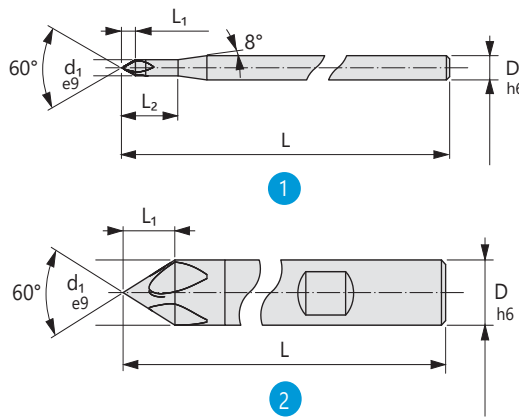


| Item No. | Description | d ₁ Flute Ø | L ₁ Flute Length | R Radius | L OAL | D Shank Ø | Z # Flutes | Shank | Coating |
|-------------|-----------------------------|---------------------------|--------------------------------|-------------|----------|--------------|---------------|-------|---------|
| 7007-552032 | UMMTR 50600 x 040 SHA06 ... | 6mm | 25mm | 0.2mm | 70mm | 6mm | 5 | HA | HMP700 |
| 7007-552033 | UMMTR 50800 x 040 SHA08 ... | 8mm | 33mm | 0.2mm | 75mm | 8mm | 5 | HA | HMP700 |
| 7007-552034 | UMMTR 51000 x 040 SHA10 ... | 10mm | 41mm | 0.2mm | 90mm | 10mm | 5 | HA | HMP700 |
| 7007-552035 | UMMTR 51200 x 040 SHA12 ... | 12mm | 49mm | 0.2mm | 100mm | 12mm | 5 | HA | HMP700 |
| 7007-552036 | UMMTR 51600 x 040 SHA16 ... | 16mm | 65mm | 0.3mm | 130mm | 16mm | 5 | HA | HMP700 |
| 7007-552037 | UMMTR 52000 x 040 SHA20 ... | 20mm | 81mm | 0.3mm | 150mm | 20mm | 5 | HA | HMP700 |
| 7007-552038 | UMMTR 50600 x 040 SHB06 ... | 6mm | 25mm | 0.2mm | 70mm | 6mm | 5 | HB | HMP700 |
| 7007-552039 | UMMTR 50800 x 040 SHB08 ... | 8mm | 33mm | 0.2mm | 75mm | 8mm | 5 | HB | HMP700 |
| 7007-552040 | UMMTR 51000 x 040 SHB10 ... | 10mm | 41mm | 0.2mm | 90mm | 10mm | 5 | HB | HMP700 |
| 7007-552041 | UMMTR 51200 x 040 SHB12 ... | 12mm | 49mm | 0.2mm | 100mm | 12mm | 5 | HB | HMP700 |
| 7007-552042 | UMMTR 51600 x 040 SHB16 ... | 16mm | 65mm | 0.3mm | 130mm | 16mm | 5 | HB | HMP700 |
| 7007-552043 | UMMTR 52000 x 040 SHB20 ... | 20mm | 81mm | 0.3mm | 150mm | 20mm | 5 | HB | HMP700 |

| Cutting Data for UNI Trochoidal End Mills Z5 4xD | | | | Steel | | Stainless Steel | Non-ferrous metals | Cast Iron |
|--|-----------|------------------|---|---|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Guideline values | | | | 1 | 2 | | | |
| | | | | | | | | |
| | | | | 1 Preferably used for helical milling 2 Preferably used for trochoidal milling | | | | |
| Tensile strength (N/mm ²) | | | | <850 | <1100 | <850 | <600 | <1000 |
| Cutting speeds v _c (m/min) | | | | 270 | 200 | 135 | 440 | 220 |
| DC (mm) | APMX (mm) | Plunge angle (°) | Application | Feeds f _z (mm/Z) | Feeds f _z (mm/Z) | Feeds f _z (mm/Z) | Feeds f _z (mm/Z) | Feeds f _z (mm/Z) |
| 6.0 | 25.0 | 0.7 | Trochoidal milling a _p =APMXmax a _e =0.08×D | 0.080 | 0.064 | 0.064 | 0.120 | 0.072 |
| 8.0 | 33.0 | 0.9 | | 0.095 | 0.076 | 0.076 | 0.143 | 0.086 |
| 10.0 | 41.0 | 0.9 | | 0.110 | 0.088 | 0.088 | 0.165 | 0.099 |
| 12.0 | 49.0 | 1.2 | | 0.125 | 0.100 | 0.100 | 0.188 | 0.113 |
| 16.0 | 65.0 | 1.2 | | 0.150 | 0.120 | 0.120 | 0.225 | 0.135 |
| 20.0 | 81.0 | 1.5 | | 0.170 | 0.136 | 0.136 | 0.255 | 0.153 |
| 6.0 | 25.0 | 0.7 | Helical milling | 0.038 | 0.030 | 0.030 | 0.057 | 0.034 |
| 8.0 | 33.0 | 0.9 | | 0.045 | 0.036 | 0.036 | 0.068 | 0.041 |
| 10.0 | 41.0 | 0.9 | | 0.052 | 0.042 | 0.042 | 0.078 | 0.047 |
| 12.0 | 49.0 | 1.2 | | 0.059 | 0.048 | 0.048 | 0.089 | 0.053 |
| 16.0 | 65.0 | 1.2 | | 0.071 | 0.057 | 0.057 | 0.107 | 0.064 |
| 20.0 | 81.0 | 1.5 | | 0.081 | 0.065 | 0.065 | 0.121 | 0.073 |

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Deburring Tools



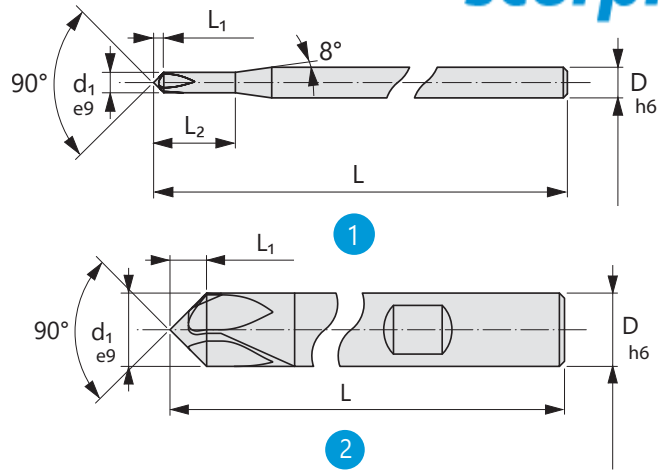
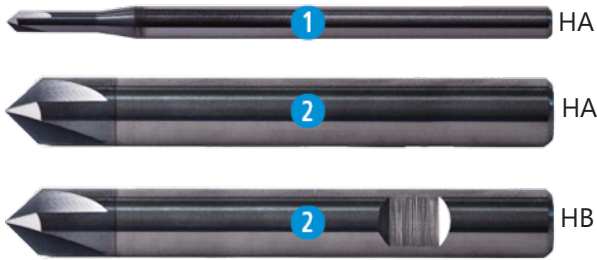
UMME ... x 60° ...

| Item No. | Description | d ₁ Flute Ø | L ₁ Flute Length | L ₂ Neck Length | L OAL | D Shank Ø | Z # Flutes | Shank | Fig. | Coating |
|-------------|----------------------------|---------------------------|--------------------------------|-------------------------------|----------|--------------|---------------|-------|------|---------|
| 7007-552044 | UMME 30100 x 60° SHA03 ... | 1mm | 0.9mm | 5mm | 50mm | 3mm | 3 | HA | 1 | HMP700 |
| 7007-552045 | UMME 30200 x 60° SHA03 ... | 2mm | 1.9mm | 8mm | 50mm | 3mm | 3 | HA | 1 | HMP700 |
| 7007-552046 | UMME 30300 x 60° SHA03 ... | 3mm | 2.9mm | – | 50mm | 3mm | 3 | HA | 2 | HMP700 |
| 7007-552047 | UMME 40400 x 60° SHA04 ... | 4mm | 3.9mm | – | 50mm | 4mm | 4 | HA | 2 | HMP700 |
| 7007-552048 | UMME 40600 x 60° SHA06 ... | 6mm | 5.9mm | – | 50mm | 6mm | 4 | HA | 2 | HMP700 |
| 7007-552049 | UMME 40800 x 60° SHA08 ... | 8mm | 7.9mm | – | 58mm | 8mm | 4 | HA | 2 | HMP700 |
| 7007-552050 | UMME 41000 x 60° SHA10 ... | 10mm | 9.9mm | – | 66mm | 10mm | 4 | HA | 2 | HMP700 |
| 7007-552051 | UMME 41200 x 60° SHA12 ... | 12mm | 11.9mm | – | 73mm | 12mm | 4 | HA | 2 | HMP700 |
| 7007-552052 | UMME 41600 x 60° SHA16 ... | 16mm | 15.8mm | – | 82mm | 16mm | 4 | HA | 2 | HMP700 |
| 7007-552053 | UMME 40600 x 60° SHB06 ... | 6mm | 5.9mm | – | 50mm | 6mm | 4 | HB | 2 | HMP700 |
| 7007-552054 | UMME 40800 x 60° SHB08 ... | 8mm | 7.9mm | – | 58mm | 8mm | 4 | HB | 2 | HMP700 |
| 7007-552055 | UMME 41000 x 60° SHB10 ... | 10mm | 9.9mm | – | 66mm | 10mm | 4 | HB | 2 | HMP700 |
| 7007-552056 | UMME 41200 x 60° SHB12 ... | 12mm | 11.9mm | – | 73mm | 12mm | 4 | HB | 2 | HMP700 |
| 7007-552057 | UMME 41600 x 60° SHB16 ... | 16mm | 15.8mm | – | 82mm | 16mm | 4 | HB | 2 | HMP700 |

| Cutting Data for UNI Deburring Tools 60° Guideline values | | Steel | Stainless steel | Non-ferrous metals | Cast iron |
|--|--|-----------------|-----------------|--------------------|-----------------|
| | | | | | |
| Tensile strength (N/mm ²) | | <850 | <1100 | <850 | <1000 |
| Cutting speeds vc (m/min) | | 100 | 65 | 60 | 250 |
| DC (mm) | Application | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) |
| 1.0 | Deburring $a_p = APM_{max}$ $a_e = 0.1 \times D$ | 0.010 | 0.010 | 0.008 | 0.013 |
| 2.0 | | 0.013 | 0.013 | 0.010 | 0.015 |
| 3.0 | | 0.015 | 0.015 | 0.012 | 0.020 |
| 4.0 | | 0.020 | 0.020 | 0.015 | 0.025 |
| 6.0 | | 0.030 | 0.030 | 0.022 | 0.035 |
| 8.0 | | 0.035 | 0.035 | 0.028 | 0.040 |
| 10.0 | | 0.045 | 0.045 | 0.035 | 0.050 |
| 12.0 | | 0.055 | 0.055 | 0.045 | 0.060 |
| 16.0 | | 0.075 | 0.075 | 0.055 | 0.080 |

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Deburring Tools



UMME ... x 90° ...

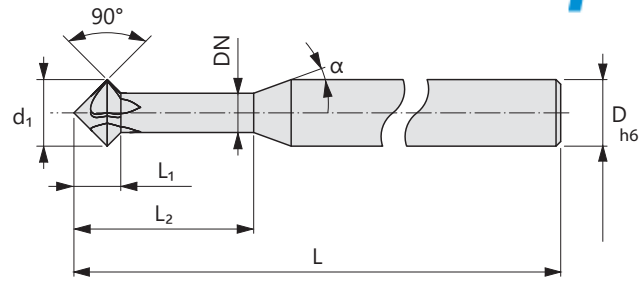
| Item No. | Description | d ₁ Flute Ø | L ₁ Flute Length | L ₂ Neck Length | L OAL | D Shank Ø | Z # Flutes | Fig. | Shank | Coating |
|-------------|----------------------------|---------------------------|--------------------------------|-------------------------------|----------|--------------|---------------|------|-------|---------|
| 7007-552058 | UMME 30100 x 90° SHA03 ... | 1mm | 0.7mm | 5mm | 50mm | 3mm | 3 | 1 | HA | HMP700 |
| 7007-552059 | UMME 30200 x 90° SHA03 ... | 2mm | 1.4mm | 8mm | 50mm | 3mm | 3 | 1 | HA | HMP700 |
| 7007-552060 | UMME 30300 x 90° SHA03 ... | 3mm | 2.1mm | | 50mm | 3mm | 3 | 2 | HA | HMP700 |
| 7007-552061 | UMME 40400 x 90° SHA04 ... | 4mm | 2.8mm | | 50mm | 4mm | 4 | 2 | HA | HMP700 |
| 7007-552062 | UMME 40600 x 90° SHA06 ... | 6mm | 4.2mm | | 50mm | 6mm | 4 | 2 | HA | HMP700 |
| 7007-552063 | UMME 40800 x 90° SHA08 ... | 8mm | 5.6mm | | 58mm | 8mm | 4 | 2 | HA | HMP700 |
| 7007-552064 | UMME 41000 x 90° SHA10 ... | 10mm | 7.0mm | | 66mm | 10mm | 4 | 2 | HA | HMP700 |
| 7007-552065 | UMME 41200 x 90° SHA12 ... | 12mm | 8.5mm | | 73mm | 12mm | 4 | 2 | HA | HMP700 |
| 7007-552066 | UMME 41600 x 90° SHA16 ... | 16mm | 11.2mm | | 82mm | 16mm | 4 | 2 | HA | HMP700 |
| 7007-552067 | UMME 40600 x 90° SHB06 ... | 6mm | 4.2mm | | 50mm | 6mm | 4 | 2 | HB | HMP700 |
| 7007-552068 | UMME 40800 x 90° SHB08 ... | 8mm | 5.6mm | | 58mm | 8mm | 4 | 2 | HB | HMP700 |
| 7007-552069 | UMME 41000 x 90° SHB10 ... | 10mm | 7.0mm | | 66mm | 10mm | 4 | 2 | HB | HMP700 |
| 7007-552070 | UMME 41200 x 90° SHB12 ... | 12mm | 8.5mm | | 73mm | 12mm | 4 | 2 | HB | HMP700 |
| 7007-552071 | UMME 41600 x 90° SHB16 ... | 16mm | 11.2mm | | 82mm | 16mm | 4 | 2 | HB | HMP700 |

Cutting Data for UNI Deburring Tools 90° Guideline values

| | | Steel | Stainless steel | Non-ferrous metals | Cast iron |
|---------------------------------------|---|-----------------|-----------------|--------------------|-----------------|
| | | | | | |
| Tensile strength (N/mm ²) | | <850 | <1100 | <850 | <1000 |
| Cutting speeds vc (m/min) | | 100 | 65 | 60 | 250 |
| DC (mm) | Application | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) |
| 1.0 | Deburring a _p =APMXmax a _e =0.1×D | 0.010 | 0.010 | 0.013 | 0.008 |
| 2.0 | | 0.013 | 0.013 | 0.015 | 0.010 |
| 3.0 | | 0.015 | 0.015 | 0.020 | 0.012 |
| 4.0 | | 0.020 | 0.020 | 0.025 | 0.015 |
| 6.0 | | 0.030 | 0.030 | 0.022 | 0.040 |
| 8.0 | | 0.035 | 0.035 | 0.028 | 0.050 |
| 10.0 | | 0.045 | 0.045 | 0.035 | 0.060 |
| 12.0 | | 0.055 | 0.055 | 0.045 | 0.080 |
| 16.0 | | 0.075 | 0.075 | 0.055 | 0.100 |

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Front/back Deburring Tools



UMMVR 4... x 90° ...

| Item No. | Description | d ₁ Flute Ø | L ₁ Flute Length | L ₂ Neck Length | α | L OAL | D Shank Ø | Z # Flutes | Shank | Coating |
|-------------|-----------------------------|---------------------------|--------------------------------|-------------------------------|-----|----------|--------------|---------------|-------|---------|
| 7007-552072 | UMMVR 40200 x 90° SHA04 ... | 2mm | 1.5mm | 8mm | 20° | 50mm | 4mm | 4 | HA | HMP700 |
| 7007-552073 | UMMVR 40300 x 90° SHA04 ... | 3mm | 2.0mm | 10mm | 20° | 50mm | 4mm | 4 | HA | HMP700 |
| 7007-552074 | UMMVR 40400 x 90° SHA04 ... | 4mm | 2.5mm | 10mm | 20° | 50mm | 4mm | 4 | HA | HMP700 |
| 7007-552075 | UMMVR 40500 x 90° SHA06 ... | 5mm | 3.0mm | 15mm | 20° | 65mm | 6mm | 4 | HA | HMP700 |
| 7007-552076 | UMMVR 40600 x 90° SHA06 ... | 6mm | 4.0mm | 15mm | 20° | 65mm | 6mm | 4 | HA | HMP700 |
| 7007-552077 | UMMVR 40800 x 90° SHA08 ... | 8mm | 2.5mm | 20mm | 30° | 70mm | 8mm | 4 | HA | HMP700 |
| 7007-552078 | UMMVR 41000 x 90° SHA10 ... | 10mm | 4.0mm | 23mm | 30° | 73mm | 10mm | 4 | HA | HMP700 |
| 7007-552079 | UMMVR 41200 x 90° SHA12 ... | 12mm | 6.0mm | 23mm | 30° | 73mm | 12mm | 4 | HA | HMP700 |

Cutting Data for UNI Front/Back Deburring Tools 90°

Guideline values

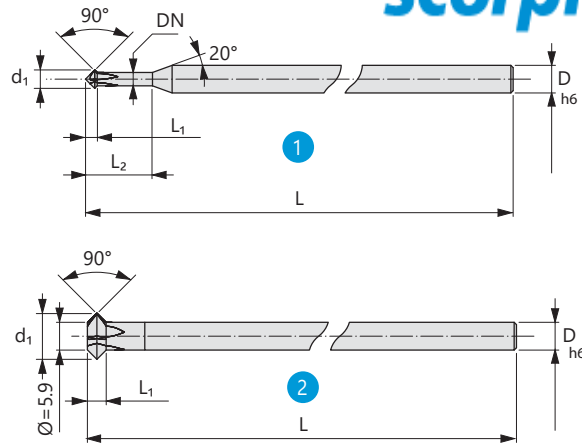
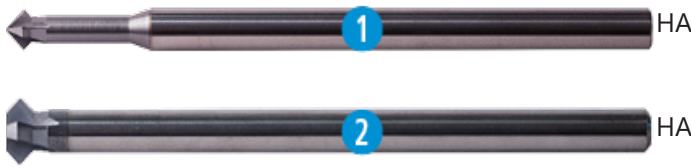
| DC (mm) | | Application | Steel | | Stainless steel | Non-ferrous metals | Cast iron |
|---------|--|---|-----------------|-----------------|-----------------|--------------------|-----------------|
| | | | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) |
| 2.0 | | Deburring $a_p = 0.1 \times D$ $a_e = 0.1 \times D$ | 0.011 | 0.010 | 0.009 | 0.019 | 0.012 |
| 3.0 | | | 0.014 | 0.013 | 0.011 | 0.024 | 0.015 |
| 4.0 | | | 0.017 | 0.015 | 0.014 | 0.029 | 0.019 |
| 5.0 | | | 0.019 | 0.017 | 0.015 | 0.032 | 0.021 |
| 6.0 | | | 0.022 | 0.020 | 0.018 | 0.037 | 0.024 |
| 8.0 | | | 0.028 | 0.025 | 0.022 | 0.048 | 0.031 |
| 10.0 | | | 0.033 | 0.030 | 0.026 | 0.056 | 0.036 |
| 12.0 | | | 0.038 | 0.034 | 0.030 | 0.065 | 0.042 |

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Front/back Deburring Tools



Symbols Key (Page 5)



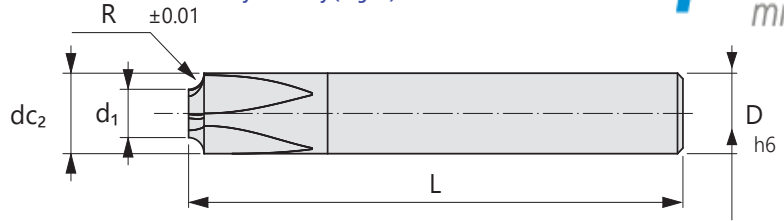
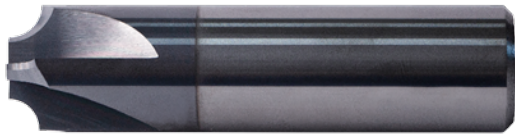
UMMVRL 4 ... x 90° ...

| Item No. | Description | d ₁ Flute Ø | L ₁ Flute Length | L ₂ Neck Length | DN Clearance Diameter | L OAL | D Shank Ø | Z # Flutes | Fig. | Shank | Coating |
|-------------|------------------------------|---------------------------|--------------------------------|-------------------------------|--------------------------|----------|--------------|---------------|------|-------|---------|
| 7007-552080 | UMMVRL 40300 x 90° SHA04 ... | 3mm | 2mm | 10mm | 2.2mm | 75mm | 4mm | 4 | 1 | HA | HMP700 |
| 7007-552081 | UMMVRL 40380 x 90° SHA04 ... | 3.8mm | 2.7mm | 13mm | 2.9mm | 75mm | 4mm | 4 | 1 | HA | HMP700 |
| 7007-552082 | UMMVRL 40400 x 90° SHA04 ... | 4mm | 2.7mm | 13mm | 2.9mm | 75mm | 4mm | 4 | 1 | HA | HMP700 |
| 7007-552083 | UMMVRL 40480 x 90° SHA05 ... | 4.8mm | 3mm | 15mm | 3.9mm | 75mm | 5mm | 4 | 1 | HA | HMP700 |
| 7007-552084 | UMMVRL 40500 x 90° SHA05 ... | 5mm | 3mm | 15mm | 3.9mm | 75mm | 5mm | 4 | 1 | HA | HMP700 |
| 7007-552085 | UMMVRL 40580 x 90° SHA06 ... | 5.8mm | 4mm | 15mm | 3.9mm | 100mm | 6mm | 4 | 1 | HA | HMP700 |
| 7007-552086 | UMMVRL 40600 x 90° SHA06 ... | 6mm | 4mm | 15mm | 3.9mm | 100mm | 6mm | 4 | 1 | HA | HMP700 |
| 7007-552087 | UMMVRL 40780 x 90° SHA06 ... | 7.8mm | 2mm | - | - | 100mm | 6mm | 4 | 2 | HA | HMP700 |
| 7007-552088 | UMMVRL 40800 x 90° SHA06 ... | 8mm | 2mm | - | - | 100mm | 6mm | 4 | 2 | HA | HMP700 |
| 7007-552089 | UMMVRL 40980 x 90° SHA06 ... | 9.8mm | 4mm | - | - | 100mm | 6mm | 4 | 2 | HA | HMP700 |
| 7007-552090 | UMMVRL 41000 x 90° SHA06 ... | 10mm | 4mm | - | - | 100mm | 6mm | 4 | 2 | HA | HMP700 |
| 7007-552091 | UMMVRL 41180 x 90° SHA06 ... | 11.8mm | 6mm | - | - | 100mm | 6mm | 4 | 2 | HA | HMP700 |
| 7007-552092 | UMMVRL 41200 x 90° SHA06 ... | 12mm | 6mm | - | - | 100mm | 6mm | 4 | 2 | HA | HMP700 |

| Cutting Data for UNI Front/Back Deburring Tools Guideline values | Steel | | Stainless steel | Non-ferrous metals | Cast iron | |
|---|-------------|---|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| | | | | | | |
| Tensile strength (N/mm ²) | <850 | <1100 | <850 | <600 | <1000 | |
| Cutting speeds v _c (m/min) | 70 | 38 | 30 | 150 | 45 | |
| DC (mm) | Application | | Feeds f _z (mm/Z) | Feeds f _z (mm/Z) | Feeds f _z (mm/Z) | Feeds f _z (mm/Z) |
| 3.0 | | Deburring a _p =0.1×D a _e =0.1×D | 0.014 | 0.013 | 0.011 | 0.024 |
| 3.8 | | | 0.017 | 0.015 | 0.014 | 0.029 |
| 4.0 | | | 0.017 | 0.015 | 0.014 | 0.029 |
| 4.8 | | | 0.019 | 0.017 | 0.015 | 0.032 |
| 5.0 | | | 0.019 | 0.017 | 0.015 | 0.032 |
| 5.8 | | | 0.022 | 0.020 | 0.018 | 0.037 |
| 6.0 | | | 0.022 | 0.020 | 0.018 | 0.037 |
| 7.8 | | | 0.028 | 0.025 | 0.022 | 0.048 |
| 8.0 | | | 0.028 | 0.025 | 0.022 | 0.048 |
| 9.8 | | | 0.033 | 0.030 | 0.026 | 0.056 |
| 10.0 | | | 0.033 | 0.030 | 0.026 | 0.056 |
| 11.8 | | | 0.038 | 0.034 | 0.030 | 0.065 |
| 12.0 | 0.038 | 0.034 | 0.030 | 0.065 | | |

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Concave Quarter Radius Mill



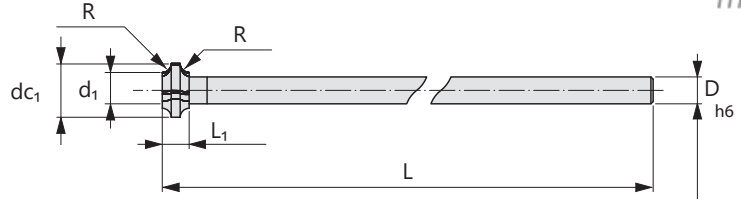
UMMVK 4... R...

| Item No. | Description | R Radius | d1 Flute Ø | dc ₂ MAX Cut Ø | L OAL | D Shank Ø | Z # Teeth | Shank | Coating |
|-------------|-----------------------------|----------|------------|---------------------------|-------|-----------|-----------|-------|---------|
| 7007-552096 | UMMVK 40360 R020 SHA04 ... | 0.2mm | 3.6mm | 4mm | 50mm | 4mm | 4 | HA | HMP700 |
| 7007-552095 | UMMVK 40340 R030 SHA04 ... | 0.3mm | 3.4mm | 4mm | 50mm | 4mm | 4 | HA | HMP700 |
| 7007-552094 | UMMVK 40320 R040 SHA04 ... | 0.4mm | 3.2mm | 4mm | 50mm | 4mm | 4 | HA | HMP700 |
| 7007-552093 | UMMVK 40300 R050 SHA04 ... | 0.5mm | 3mm | 4mm | 50mm | 4mm | 4 | HA | HMP700 |
| 7007-552099 | UMMVK 40480 R060 SHA06 ... | 0.6mm | 4.8mm | 6mm | 50mm | 6mm | 4 | HA | HMP700 |
| 7007-552098 | UMMVK 40440 R080 SHA06 ... | 0.8mm | 4.4mm | 6mm | 50mm | 6mm | 4 | HA | HMP700 |
| 7007-552097 | UMMVK 40400 R100 SHA06 ... | 1mm | 4mm | 6mm | 50mm | 6mm | 4 | HA | HMP700 |
| 7007-552100 | UMMVK 40500 R150 SHA10 ... | 1.5mm | 5mm | 10mm | 55mm | 10mm | 4 | HA | HMP700 |
| 7007-552102 | UMMVK 40600 R200 SHA10 ... | 2mm | 6mm | 10mm | 66mm | 10mm | 4 | HA | HMP700 |
| 7007-552104 | UMMVK 40700 R250 SHA12 ... | 2.5mm | 7mm | 12mm | 73mm | 12mm | 4 | HA | HMP700 |
| 7007-552103 | UMMVK 40600 R300 SHA12 ... | 3mm | 6mm | 12mm | 73mm | 12mm | 4 | HA | HMP700 |
| 7007-552108 | UMMVK 40900 R350 SHA16 ... | 3.5mm | 9mm | 16mm | 80mm | 16mm | 4 | HA | HMP700 |
| 7007-552106 | UMMVK 40800 R400 SHA16 ... | 4mm | 8mm | 16mm | 80mm | 16mm | 4 | HA | HMP700 |
| 7007-552105 | UMMVK 40700 R450 SHA16 ... | 4.5mm | 7mm | 16mm | 80mm | 16mm | 4 | HA | HMP700 |
| 7007-552110 | UMMVK 41000 R500 SHA20 ... | 5mm | 10mm | 20mm | 80mm | 20mm | 4 | HA | HMP700 |
| 7007-552107 | UMMVK 40800 R600 SHA20 ... | 6mm | 8mm | 20mm | 80mm | 20mm | 4 | HA | HMP700 |
| 7007-552109 | UMMVK 40900 R800 SHA25 ... | 8mm | 9mm | 25mm | 100mm | 25mm | 4 | HA | HMP700 |
| 7007-552101 | UMMVK 40500 R1000 SHA25 ... | 10mm | 5mm | 25mm | 100mm | 25mm | 4 | HA | HMP700 |

Cutting Data for UNI Concave Quarter Radius Mills

Guideline values

| Cutting Data for UNI Concave Quarter Radius Mills | | | | Steel | Stainless steel | Non-ferrous metals | Cast Iron | |
|---|-----------|---------|-------------|-----------------|-----------------|--------------------|-----------------|-----------------|
| Guideline values | | | | | | | | |
| Tensile strength (N/mm ²) | | | | <850 | <1100 | <850 | <600 | <1000 |
| Cutting speeds vc (m/min) | | | | 155 | 95 | 70 | 450 | 115 |
| PRFRAD (mm) | DCX- (mm) | DC (mm) | Application | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) |
| 0.2 | 4.0 | 3.6 | | 0.022 | 0.020 | 0.018 | 0.037 | 0.024 |
| 0.3 | 4.0 | 3.4 | | 0.022 | 0.020 | 0.018 | 0.037 | 0.024 |
| 0.4 | 4.0 | 3.2 | | 0.022 | 0.020 | 0.018 | 0.037 | 0.024 |
| 0.5 | 4.0 | 3.0 | | 0.022 | 0.020 | 0.018 | 0.037 | 0.024 |
| 0.6 | 6.0 | 4.8 | | 0.026 | 0.023 | 0.021 | 0.044 | 0.029 |
| 0.8 | 6.0 | 4.4 | | 0.026 | 0.023 | 0.021 | 0.044 | 0.029 |
| 1.0 | 6.0 | 4.0 | | 0.026 | 0.023 | 0.021 | 0.044 | 0.029 |
| 1.5 | 10.0 | 5.0 | | 0.028 | 0.025 | 0.022 | 0.048 | 0.031 |
| 2.0 | 10.0 | 6.0 | | 0.032 | 0.029 | 0.026 | 0.054 | 0.035 |
| 2.5 | 12.0 | 7.0 | | 0.035 | 0.032 | 0.028 | 0.060 | 0.039 |
| 3.0 | 12.0 | 6.0 | | 0.035 | 0.032 | 0.028 | 0.060 | 0.039 |
| 3.5 | 16.0 | 9.0 | | 0.038 | 0.034 | 0.030 | 0.065 | 0.042 |
| 4.0 | 16.0 | 8.0 | | 0.038 | 0.034 | 0.030 | 0.065 | 0.042 |
| 4.5 | 16.0 | 7.0 | | 0.038 | 0.034 | 0.030 | 0.065 | 0.042 |
| 5.0 | 20.0 | 10.0 | | 0.040 | 0.036 | 0.032 | 0.068 | 0.044 |
| 6.0 | 20.0 | 8.0 | | 0.040 | 0.036 | 0.032 | 0.068 | 0.044 |
| 8.0 | 25.0 | 9.0 | | 0.043 | 0.039 | 0.034 | 0.073 | 0.047 |
| 10.0 | 25.0 | 5.0 | 0.043 | 0.039 | 0.034 | 0.073 | 0.047 | |



UMMVKL 4... R...

| Item No. | Description | d ₁ Flute Ø | dc ₁ MIN Hole Size | R Radius | L ₁ Flute Length | L OAL | D Shank Ø | Z # Teeth | Shank | Coating |
|-------------|-----------------------------|---------------------------|----------------------------------|-------------|--------------------------------|----------|--------------|--------------|-------|---------|
| 7007-552114 | UMMVKL 40560 R020 SHA04 ... | 5.6mm | 6mm | 0.2mm | 2mm | 75mm | 4mm | 4 | HA | HMP700 |
| 7007-552120 | UMMVKL 40760 R020 SHA06 ... | 7.6mm | 8mm | 0.2mm | 2mm | 100mm | 6mm | 4 | HA | HMP700 |
| 7007-552113 | UMMVKL 40540 R030 SHA04 ... | 5.4mm | 6mm | 0.3mm | 2mm | 75mm | 4mm | 4 | HA | HMP700 |
| 7007-552119 | UMMVKL 40740 R030 SHA06 ... | 7.4mm | 8mm | 0.3mm | 2mm | 100mm | 6mm | 4 | HA | HMP700 |
| 7007-552112 | UMMVKL 40520 R040 SHA04 ... | 5.2mm | 6mm | 0.4mm | 2mm | 75mm | 4mm | 4 | HA | HMP700 |
| 7007-552118 | UMMVKL 40720 R040 SHA06 ... | 7.2mm | 8mm | 0.4mm | 2mm | 100mm | 6mm | 4 | HA | HMP700 |
| 7007-552111 | UMMVKL 40500 R050 SHA04 ... | 5mm | 6mm | 0.5mm | 2mm | 75mm | 4mm | 4 | HA | HMP700 |
| 7007-552115 | UMMVKL 40700 R050 SHA06 ... | 7mm | 8mm | 0.5mm | 2mm | 100mm | 6mm | 4 | HA | HMP700 |
| 7007-552124 | UMMVKL 40840 R080 SHA06 ... | 8.4mm | 10mm | 0.8mm | 4mm | 100mm | 6mm | 4 | HA | HMP700 |
| 7007-552122 | UMMVKL 40800 R100 SHA06 ... | 8mm | 10mm | 1mm | 4mm | 100mm | 6mm | 4 | HA | HMP700 |
| 7007-552121 | UMMVKL 40760 R120 SHA06 ... | 7.6mm | 10mm | 1.2mm | 5mm | 100mm | 6mm | 4 | HA | HMP700 |
| 7007-552116 | UMMVKL 40700 R150 SHA06 ... | 7mm | 10mm | 1.5mm | 5mm | 100mm | 6mm | 4 | HA | HMP700 |
| 7007-552125 | UMMVKL 40840 R180 SHA06 ... | 8.4mm | 12mm | 1.8mm | 6mm | 100mm | 6mm | 4 | HA | HMP700 |
| 7007-552123 | UMMVKL 40800 R200 SHA06 ... | 8.0mm | 12mm | 2mm | 7mm | 100mm | 6mm | 4 | HA | HMP700 |
| 7007-552117 | UMMVKL 40700 R250 SHA06 ... | 7.0mm | 12mm | 2.5mm | 8mm | 100mm | 6mm | 4 | HA | HMP700 |

Cutting Data for UNI Concave Quarter Radius Mills

Guideline values

| | | | Steel | Stainless steel | Non-ferrous metals | Cast Iron | |
|---------------------------------------|-----------|---------|---------------------------|-----------------|--------------------|-----------------|-----------------|
| Tensile strength (N/mm ²) | | | <850 | <1100 | <850 | <1000 | |
| Cutting speeds vc (m/min) | | | 155 | 95 | 70 | 450 | |
| PRFRAD (mm) | DCX- (mm) | DC (mm) | Application | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) | Feeds fz (mm/Z) |
| 0.2 | 6.0 | 5.6 | Corner Radius Milling | 0.011 | 0.010 | 0.009 | 0.019 |
| 0.2 | 8.0 | 7.6 | | 0.014 | 0.013 | 0.011 | 0.024 |
| 0.3 | 6.0 | 5.4 | | 0.011 | 0.010 | 0.009 | 0.019 |
| 0.3 | 8.0 | 7.4 | | 0.014 | 0.013 | 0.011 | 0.024 |
| 0.4 | 6.0 | 5.2 | | 0.011 | 0.010 | 0.009 | 0.019 |
| 0.4 | 8.0 | 7.2 | | 0.014 | 0.013 | 0.011 | 0.024 |
| 0.5 | 6.0 | 5.0 | | 0.011 | 0.010 | 0.009 | 0.019 |
| 0.5 | 8.0 | 7.0 | | 0.014 | 0.013 | 0.011 | 0.024 |
| 0.8 | 10.0 | 8.4 | | 0.017 | 0.015 | 0.014 | 0.029 |
| 1.0 | 10.0 | 8.0 | | 0.017 | 0.015 | 0.014 | 0.029 |
| 1.2 | 10.0 | 7.6 | | 0.017 | 0.015 | 0.014 | 0.029 |
| 1.5 | 10.0 | 7.0 | | 0.017 | 0.015 | 0.014 | 0.029 |
| 1.8 | 12.0 | 8.4 | | 0.019 | 0.017 | 0.015 | 0.032 |
| 2.0 | 12.0 | 8.0 | | 0.019 | 0.017 | 0.015 | 0.032 |
| 2.5 | 12.0 | 7.0 | | 0.019 | 0.017 | 0.015 | 0.032 |