GUHRING


90°

- for semi-finishing and fine-finishing
- no corner chamfers
- the solution for components requiring true 90° corners

# RF 100 90° Sharp corner milling cutters

GUHRING - YOUR WORLD-WIDE PARTNER

# RF 100 90°

## sharp corner milling cutter without corner chamfers

for semi-finishing and fine-finishing

P M K N S H

the suitable solution for multiple materials: Steel, cast iron, stainless materials, titanium- and special alloys and aluminium

Stable face geometry thanks to lip correction at cutting edge

**Sharp corner – no corner chamfer**

For components in electronics, medical, aviation, and machine builders where precise 90° corners are required.

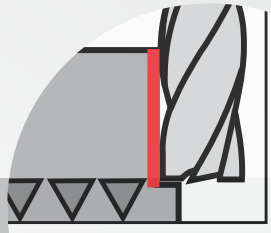
90°

Variable helix & flute spacing for chatter free operation

**RF 100 SF** · Guhring series 6776

**RF 100 A** · Guhring series 6775

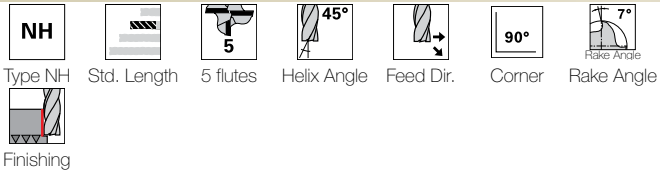
**RF 100 F** · Guhring series 6764



Optimal surface finish when side and face milling on wall and base geometries

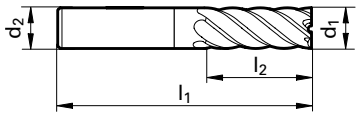
Perfect for HPC / HSC strategies such as Trochoidal milling or imachining®

## RF 100 SF 90° - Inch diameters




| | |
|---|---|
| P | • |
| M | • |
| K | • |
| N | • |
| S | • |
| H | |

center cutting · without corner protection chamfer




| | |
|---|---|
| Tool material | Solid Carbide |
| Surface | nano-A (a) |
| Type | RF 100 SF 90° |
| Shank design | HA / HB |

**Guhring Series 6776**

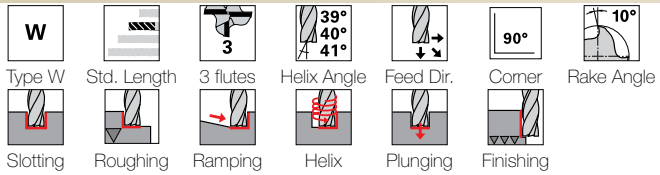
| d1 h10 inch | d2 h6 inch | l1 inch | l2 inch | Code no. | EDP Number |
|---|---|---|---|---|---|
| 3/16 | 3/16 | 2 | 5/8 | 4.760 | 9067760047600 |
| 1/4 | 1/4 | 2 1/2 | 3/4 | 6.350 | 9067760063500 |
| 5/16 | 5/16 | 2 1/2 | 13/16 | 7.940 | 9067760079400 |
| 3/8 | 3/8 | 2 1/2 | 1 | 9.520 | 9067760095200 |
| 1/2 | 1/2 | 3 1/2 | 1 1/4 | 12.700 | 9067760127000 |
| 5/8 | 5/8 | 3 1/2 | 1 1/4 | 15.870 | 9067760158700 |
| 3/4 | 3/4 | 4 | 1 1/2 | 19.050 | 9067760190500 |

## Feeds and Speeds -- Maximum recommended depth of cut ($a_p$) = 2 x d

| | Material | Hardness | Maximum Recommended Width of Cut $a_e$ | Cutting Speed SFM | Feed Rate - IPT per Ø 1/8 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 3/4 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steels: Structural, free-cutting, unalloyed heat-treatable, case hardened | up to 28 HRc | 0.3 x d | 920 | .0007 | .0013 | .0016 | .0021 | .0027 | .0031 | .0036 |
| P | Steels: Alloyed heat-treatable, tool steels, high speed steels | 28 to 44 HRc | 0.2 x d | 720 | .0006 | .0010 | .0014 | .0017 | .0021 | .0025 | .0030 |
| M | Stainless Steel: Easy to machine / sulphured | up to 22 HRc | 0.2 x d | 590 | .0006 | .0010 | .0014 | .0017 | .0021 | .0025 | .0030 |
| M | Stainless Steel: Moderately difficult to machine | over 22 HRc | 0.2 x d | 395 | .0006 | .0010 | .0014 | .0017 | .0021 | .0025 | .0030 |
| K | Cast iron, grey cast iron, spheroidal graphite and malleable cast iron | over 240 HB 30 | 0.2 x d | 655 | .0008 | .0015 | .0018 | .0019 | .0027 | .0031 | .0045 |
| N | Aluminium-cast alloys | up to 7% Si | 0.2 x d | 3280 | .0008 | .0015 | .0018 | .0019 | .0027 | .0031 | .0045 |
| S | High-Temperature Alloys Nimonic, Inconel, Monel, Hastelloy | up to 40 HRc | 0.15 x d | 150 | .0006 | .0010 | .0014 | .0017 | .0021 | .0025 | .0030 |
| S | Titanium alloys | up to 40 HRc | 0.15 x d | 425 | .0007 | .0013 | .0016 | .0021 | .0027 | .0031 | .0036 |

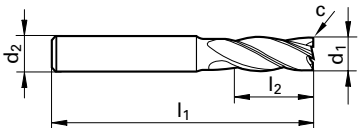
"Gührojet" peripheral cooling is recommended for optimal cooling and tool life.

## RF 100 A 90° - Inch diameters




| | | |
|---|---|---|
| P | | |
| M | | |
| K | | |
| N | • | |
| S | | |
| H | | |

center cutting · without corner protection chamfer




| | |
|---|---|
| Tool material | Solid Carbide |
| Surface | Bright |
| Type | RF 100 A 90° |
| Shank design | HA / HB |

**Guhring Series 6775**

| d1 h10 inch | d2 h6 inch | l1 inch | l2 inch | Code no. | EDP Number |
|---|---|---|---|---|---|
| 1/8 | 1/8 | 2 | 1/2 | 3.170 | 9067750031700 |
| 3/16 | 3/16 | 2 | 5/8 | 4.760 | 9067750047600 |
| 1/4 | 1/4 | 2 1/2 | 3/4 | 6.350 | 9067750063500 |
| 5/16 | 5/16 | 2 1/2 | 13/16 | 7.940 | 9067750079400 |
| 3/8 | 3/8 | 2 1/2 | 1 | 9.520 | 9067750095200 |
| 1/2 | 1/2 | 3 1/2 | 1 1/4 | 12.700 | 9067750127000 |
| 5/8 | 5/8 | 3 1/2 | 1 1/4 | 15.870 | 9067750158700 |
| 3/4 | 3/4 | 4 | 1 1/2 | 19.050 | 9067750190500 |

## Feeds and Speeds -- Slotting = up to 1xd; Roughing = 0.4 up to 0.9 x d; Finishing = 0.01 up to 0.1 x d

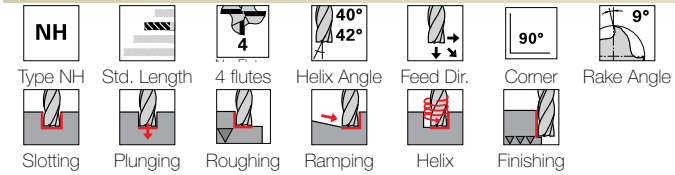
| | Material | Hardness | Maximum Recommended Width of Cut $a_e$ | Cutting Speed SFM | Feed Rate - IPT per Ø 1/8 | 1/4 | 5/16 | 3/8 | 1/2 | 5/8 | 3/4 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N | **Aluminum, Al-wrought alloys, Al-alloys** 2024, 6061, 7075, 1050, 6351, 5005, 2017, 7075 | up to 3% Si | Slotting | 1640 | .0008 | .0017 | .0020 | .0024 | .0033 | .0037 | .0041 |
| | | | Roughing | 1970 | .0008 | .0017 | .0021 | .0026 | .0035 | .0039 | .0045 |
| | | | Finishing | 3280 | .0008 | .0015 | .0018 | .0023 | .0029 | .0035 | .0038 |
| | **Aluminium-cast alloys** 3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9, 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg | up to 7% Si | Slotting | 755 | .0007 | .0013 | .0016 | .0021 | .0027 | .0031 | .0036 |
| | | | | 920 | .0008 | .0017 | .0020 | .0024 | .0033 | .0037 | .0041 |
| | | | Finishing | 1150 | .0008 | .0015 | .0018 | .0023 | .0029 | .0035 | .0038 |

"Gührojet" peripheral cooling is recommended for optimal cooling and tool life.

For high speed milling up to 2 x d deep, multiply slotting values by the below chip thinning factors:

| Width of Cut | SFM factor | IPT factor |
|---|---|---|
| .25 x d | SFM x 1.6 | IPT x 1.5 |
| .1 x d | SFM x 1.8 | IPT x 2.3 |
| .05 x d | SFM x 1.9 | IPT x 3.3 |

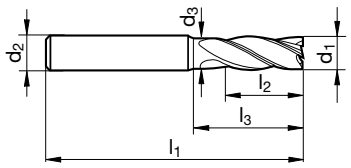
## RF 100 F 90° - Metric diameters




| | |
|---|---|
| Tool material | Solid Carbide |
| Surface | nano-A |
| Type | RF 100 F 90° |
| Shank design | HA |

| | |
|---|---|
| P | • |
| M | • |
| K | |
| N | |
| S | • |
| H | |

center cutting · without corner protection chamfer




Metric diameter end mills are stocked in Germany

**Guhring Series** **6764**

| d1 h10 mm | d2 h6 mm | d3 mm | l1 mm | l2 mm | l3 mm | Code no. | EDP Number |
|---|---|---|---|---|---|---|---|
| 3.00 | 6.00 | 2.80 | 57 | 8 | 15 | 3.000 | 9067640030000 |
| 4.00 | 6.00 | 3.80 | 57 | 11 | 18 | 4.000 | 9067640040000 |
| 5.00 | 6.00 | 4.80 | 57 | 13 | 18 | 5.000 | 9067640050000 |
| 6.00 | 6.00 | 5.70 | 57 | 13 | 20 | 6.000 | 9067640060000 |
| 8.00 | 8.00 | 7.70 | 63 | 19 | 26 | 8.000 | 9067640080000 |
| 10.00 | 10.00 | 9.50 | 72 | 22 | 30 | 10.000 | 9067640100000 |
| 12.00 | 12.00 | 11.50 | 83 | 26 | 36 | 12.000 | 9067640120000 |
| 16.00 | 16.00 | 15.50 | 92 | 32 | 42 | 16.000 | 9067640160000 |
| 20.00 | 20.00 | 19.50 | 104 | 38 | 52 | 20.000 | 9067640200000 |

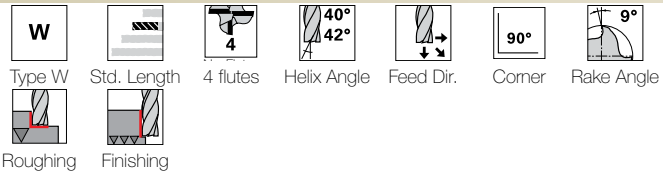
## Feeds and Speeds -- Slotting = up to 1xd; Roughing = 0.4 up to 0.9 x d; Finishing = 0.01 up to 0.1 x d

| | Material | Hardness | Maximum Recommended Width of Cut $a_e$ | Cutting Speed SFM | Feed Rate - IPT per Ø 3mm | 6mm | 8mm | 10mm | 12mm | 16mm | 20mm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steels: Structural, free-cutting, unalloyed heat-treatable, case hardened | up to 28 HRc | Slotting | 590 | 0.0007 | 0.0014 | 0.0018 | 0.0024 | 0.0028 | 0.0035 | 0.0039 |
| | | | Roughing | 655 | 0.0008 | 0.0016 | 0.0022 | 0.0028 | 0.0335 | 0.0039 | 0.0047 |
| | | | Finishing | 920 | 0.0006 | 0.0012 | 0.0016 | 0.0022 | 0.0026 | 0.0031 | 0.0037 |
| | Steels: Alloyed heat-treatable, tool steels, high speed steels | 28 to 44 HRc | Slotting | 445 | 0.0006 | 0.0012 | 0.0016 | 0.0022 | 0.0026 | 0.0031 | 0.0037 |
| | | | Roughing | 525 | 0.0008 | 0.0016 | 0.0020 | 0.0026 | 0.0031 | 0.0037 | 0.0043 |
| | | | Finishing | 655 | 0.0006 | 0.0012 | 0.0016 | 0.0020 | 0.0024 | 0.0028 | 0.0035 |
| M | Stainless Steel: Easy to machine / sulphured | up to 22 HRc | Slotting | 395 | 0.0006 | 0.0012 | 0.0016 | 0.0020 | 0.0024 | 0.0028 | 0.0035 |
| | | | Roughing | 460 | 0.0007 | 0.0014 | 0.0018 | 0.0024 | 0.0028 | 0.0035 | 0.0039 |
| | | | Finishing | 590 | 0.0006 | 0.0012 | 0.0016 | 0.0022 | 0.0026 | 0.0031 | 0.0037 |
| | Stainless Steel: Moderately difficult to machine | over 22 HRc | Slotting | 230 | 0.0005 | 0.0010 | 0.0012 | 0.0016 | 0.0018 | 0.0024 | 0.0028 |
| | | | Roughing | 330 | 0.0006 | 0.0010 | 0.0014 | 0.0018 | 0.0020 | 0.0026 | 0.0031 |
| | | | Finishing | 395 | 0.0006 | 0.0010 | 0.0014 | 0.0018 | 0.0020 | 0.0026 | 0.0031 |
| S | High-Temperature Alloys Nimonic, Inconel, Monel, Hastelloy | up to 40 HRc | Slotting | 100 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0016 | 0.0020 |
| | | | Roughing | 115 | 0.0004 | 0.0008 | 0.0012 | 0.0014 | 0.0016 | 0.0022 | 0.0026 |
| | | | Finishing | 150 | 0.0006 | 0.0010 | 0.0014 | 0.0018 | 0.0020 | 0.0026 | 0.0031 |
| | Titanium alloys | up to 40 HRc | Slotting | 195 | 0.0006 | 0.0010 | 0.0014 | 0.0018 | 0.0020 | 0.0026 | 0.0031 |
| | | | Roughing | 295 | 0.0006 | 0.0012 | 0.0016 | 0.0022 | 0.0026 | 0.0031 | 0.0037 |
| | | | Finishing | 425 | 0.0006 | 0.0012 | 0.0016 | 0.0022 | 0.0026 | 0.0031 | 0.0037 |

"Gühropet" peripheral cooling is recommended for optimal cooling and tool life.
For high speed milling up to 2 x d deep, multiply slotting values by the below chip thinning factors:

| Width of Cut | SFM factor | IPT factor |
|---|---|---|
| .25 x d | SFM x 1.6 | IPT x 1.5 |
| .1 x d | SFM x 1.8 | IPT x 2.3 |
| .05 x d | SFM x 1.9 | IPT x 3.3 |

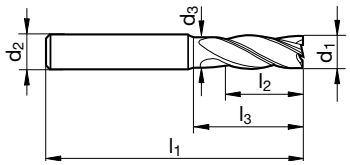
## RF 100 A 90° - Metric diameters




| | |
|---|---|
| Tool material | Solid Carbide |
| Surface | Bright |
| Type | RF 100 A 90° |
| Shank design | HA |

| | |
|---|---|
| P | |
| M | |
| K | |
| N | • |
| S | |
| H | |

center cutting · without corner protection chamfer




Metric diameter end mills are stocked in Germany

**Guhring Series** **6762**

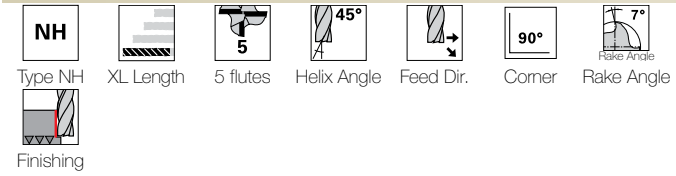
| d1 h10 mm | d2 h6 mm | d3 mm | l1 mm | l2 mm | l3 mm | Code no. | EDP Number |
|---|---|---|---|---|---|---|---|
| 3.00 | 6.00 | 2.80 | 57 | 8 | 15 | 3.000 | 9067620030000 |
| 4.00 | 6.00 | 3.80 | 57 | 11 | 18 | 4.000 | 9067620040000 |
| 5.00 | 6.00 | 4.80 | 57 | 13 | 18 | 5.000 | 9067620050000 |
| 6.00 | 6.00 | 5.70 | 57 | 13 | 20 | 6.000 | 9067620060000 |
| 8.00 | 8.00 | 7.70 | 63 | 19 | 26 | 8.000 | 9067620080000 |
| 10.00 | 10.00 | 9.50 | 72 | 22 | 30 | 10.000 | 9067620100000 |
| 12.00 | 12.00 | 11.50 | 83 | 26 | 36 | 12.000 | 9067620120000 |
| 16.00 | 16.00 | 15.50 | 92 | 32 | 42 | 16.000 | 9067620160000 |
| 20.00 | 20.00 | 19.50 | 104 | 38 | 52 | 20.000 | 9067620200000 |

## Feeds and Speeds -- Maximum recommended depth of cut ($a_p$) = 2 x d

| | Material | Hardness | Maximum Recommended Width of Cut $a_e$ | Cutting Speed SFM | Feed Rate - IPT per Ø 3mm | 6mm | 8mm | 10mm | 12mm | 16mm | 20mm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N | **Aluminum, Al-wrought alloys, Al-alloys** 2024, 6061, 7075, 1050, 6351, 5005, 2017, 7075 | up to 3% Si | 0.25 x d | 3280 | 0.0010 | 0.0012 | 0.0018 | 0.0020 | 0.0026 | 0.0031 | 0.0047 |
| | **Aluminium-cast alloys** 3.2131 G-AlSi5Cu1, 3.2153, G-AlSi7Cu3, 3.2573 G-AlSi9, 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg | up to 7% Si | 0.2 x d | 1310 | 0.0010 | 0.0012 | 0.0018 | 0.0020 | 0.0026 | 0.0031 | 0.0047 |

"Gührojet" peripheral cooling is recommended for optimal cooling and tool life.

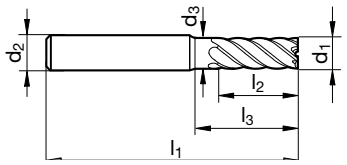
## RF 100 SF 90° - Metric diameters




| | |
|---|---|
| Tool material | Solid Carbide |
| Surface | nano-A [a] |
| Type | RF 100 SF 90° |
| Shank design | HA |

| | |
|---|---|
| P | • |
| M | • |
| K | • |
| N | • |
| S | • |
| H | |

center cutting · without corner protection chamfer




Metric diameter end mills are stocked in Germany

**Guhring Series** **6763**

| d1 h10 mm | d2 h6 mm | d3 mm | l1 mm | l2 mm | l3 mm | Code no. | EDP Number |
|---|---|---|---|---|---|---|---|
| 4.000 | 6.00 | 3.80 | 65 | 12 | 26 | 4.000 | 9067630040000 |
| 5.000 | 6.00 | 4.80 | 65 | 15 | 26 | 5.000 | 9067630050000 |
| 6.000 | 6.00 | 5.70 | 65 | 18 | 28 | 6.000 | 9067630060000 |
| 8.000 | 8.00 | 7.70 | 75 | 24 | 32 | 8.000 | 9067630080000 |
| 10.000 | 10.00 | 9.50 | 80 | 30 | 32 | 10.000 | 9067630100000 |
| 12.000 | 12.00 | 11.50 | 93 | 36 | 46 | 12.000 | 9067630120000 |
| 16.000 | 16.00 | 15.50 | 108 | 48 | 58 | 16.000 | 9067630160000 |
| 20.000 | 20.00 | 19.50 | 126 | 60 | 74 | 20.000 | 9067630200000 |

## Feeds and Speeds -- Maximum recommended depth of cut ($a_p$) = 2 x d

| | Material | Hardness | Maximum Recommended Width of Cut $a_e$ | Cutting Speed SFM | Feed Rate - IPT per Ø 3mm | 6mm | 8mm | 10mm | 12mm | 16mm | 20mm |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Steels: Structural, free-cutting, unalloyed heat-treatable, case hardened | up to 28 HRc | 0.3 x d | 920 | 0.0006 | 0.0012 | 0.0016 | 0.0022 | 0.0026 | 0.0031 | 0.0037 |
| | Steels: Alloyed heat-treatable, tool steels, high speed steels | 28 to 44 HRc | 0.2 x d | 720 | 0.0006 | 0.001 | 0.0014 | 0.0018 | 0.002 | 0.0026 | 0.0031 |
| M | Stainless Steel: Easy to machine / sulphured | up to 22 HRc | 0.2 x d | 590 | 0.0006 | 0.001 | 0.0014 | 0.0018 | 0.002 | 0.0026 | 0.0031 |
| | Stainless Steel: Moderately difficult to machine | over 22 HRc | 0.2 x d | 395 | 0.0006 | 0.001 | 0.0014 | 0.0018 | 0.002 | 0.0026 | 0.0031 |
| K | Cast iron, grey cast iron, spheroidal graphite and malleable cast iron | over 240 HB 30 | 0.2 x d | 655 | 0.0007 | 0.0014 | 0.0018 | 0.002 | 0.0026 | 0.0031 | 0.0047 |
| N | Aluminium-cast alloys | up to 7% Si | 0.2 x d | 3280 | 0.0007 | 0.0014 | 0.0018 | 0.002 | 0.0026 | 0.0031 | 0.0047 |
| S | High-Temperature Alloys Nimonic, Inconel, Monel, Hastelloy | up to 40 HRc | 0.15 x d | 150 | 0.0004 | 0.0008 | 0.0012 | 0.0014 | 0.0016 | 0.0022 | 0.0026 |
| | Titanium alloys | up to 40 HRc | 0.15 x d | 425 | 0.0006 | 0.0012 | 0.0016 | 0.0022 | 0.0026 | 0.0031 | 0.0037 |

"Gührojet" peripheral cooling is recommended for optimal cooling and tool life.

DRILLING

TAPPING/THREAD MILLING/
FLUTELESS TAPPING

MILLING

REAMING

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SPECIAL TOOLING
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DE-BURRING

MODULAR SYSTEMS

TOOL RESTORATION SERVICES

# GUHRING


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Fax (262) 784-9096

**West Coast Distribution Center and Reconditioning Facility**
15581 Computer Ln
Huntington Beach, CA 92649

**Reconditioning Facility**
121 W Dudley Town Rd.
Bloomfield, CT 06002

**Manufacturing and Reconditioning Facility**
29550 W.K. Smith Rd. Suite B
New Hudson, MI 48165

**Guhring Corporation**
20 Steckle Place, Unit #14
Kitchener, ON N2E 2C3
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Item #400001288