

# Zylindrische Fräser AX-NV3

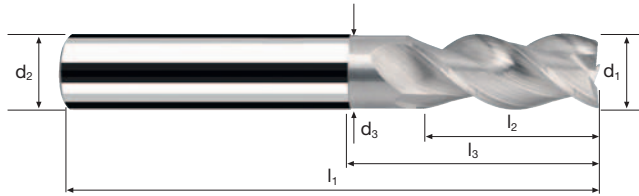
Glattschneidig, normale Ausführung mit Kurzhals



**HM MG10**  $\lambda$  **40°**  
 $\gamma$  **20°**

90°

Vario



Schuppen



Schichten



**Rm** < 850

**Al** Aluminium > 99%

**Al** Aluminium Alloy

**Al** Aluminium Cast

**Cu** Copper

**Plastic** Thermoplast

| Beispiel:<br>Bestell-Nr. |          | Beschichtung<br><b>C</b> | Artikel-Nr.<br><b>15530</b> | $\alpha$ -Code<br><b>.180</b> |    |    |          |   | CELERO |        |
|--------------------------|----------|--------------------------|-----------------------------|-------------------------------|----|----|----------|---|--------|--------|
| $\emptyset$<br>Code      | d1<br>e8 | d2<br>h6                 | d3                          | l1                            | l2 | l3 | $\alpha$ | z | 15630  | C15630 |
| .180                     | 3        | 6                        | 2.8                         | 57                            | 8  | 14 | 4.5°     | 3 | ●      | ●      |
| .220                     | 4        | 6                        | 3.7                         | 57                            | 11 | 16 | 3.0°     | 3 | ●      | ●      |
| .260                     | 5        | 6                        | 4.6                         | 57                            | 13 | 18 | 1.5°     | 3 | ●      | ●      |
| .300                     | 6        | 6                        | 5.5                         | 57                            | 13 | 20 | 0.0°     | 3 | ●      | ●      |
| .391                     | 8        | 8                        | 7.4                         | 63                            | 19 | 26 | 0.0°     | 3 | ●      | ●      |
| .450                     | 10       | 10                       | 9.2                         | 72                            | 22 | 31 | 0.0°     | 3 | ●      | ●      |
| .501                     | 12       | 12                       | 11.0                        | 83                            | 26 | 37 | 0.0°     | 3 | ●      | ●      |
| .610                     | 16       | 16                       | 15.0                        | 92                            | 32 | 43 | 0.0°     | 3 | ●      | ●      |
| .682                     | 20       | 20                       | 19.0                        | 104                           | 38 | 53 | 0.0°     | 3 | ●      | ●      |
|                          |          |                          |                             |                               |    |    |          |   |        |        |
|                          |          |                          |                             |                               |    |    |          |   |        |        |
|                          |          |                          |                             |                               |    |    |          |   |        |        |
|                          |          |                          |                             |                               |    |    |          |   |        |        |
|                          |          |                          |                             |                               |    |    |          |   |        |        |
|                          |          |                          |                             |                               |    |    |          |   |        |        |
|                          |          |                          |                             |                               |    |    |          |   |        |        |
|                          |          |                          |                             |                               |    |    |          |   |        |        |
|                          |          |                          |                             |                               |    |    |          |   |        |        |
|                          |          |                          |                             |                               |    |    |          |   |        |        |
|                          |          |                          |                             |                               |    |    |          |   |        |        |
|                          |          |                          |                             |                               |    |    |          |   |        |        |
|                          |          |                          |                             |                               |    |    |          |   |        |        |

Anwendung

Werkstoff

Al-Knetlegierung  
Si < 6%

| d1 [mm] | z | v <sub>c</sub> [m/min] | f <sub>z</sub> [mm] | a <sub>p</sub> [mm] | a <sub>e</sub> [mm] | n [min <sup>-1</sup> ] | v <sub>f</sub> [mm/min] | Q [cm <sup>3</sup> /min] |
|---------|---|------------------------|---------------------|---------------------|---------------------|------------------------|-------------------------|--------------------------|
| 3       | 3 | 550                    | 0.050               | 4.5                 | 1.4                 | 58360                  | 8755                    | 55.0                     |
| 4       | 3 | 550                    | 0.065               | 6.0                 | 1.8                 | 43770                  | 8535                    | 92.0                     |
| 5       | 3 | 550                    | 0.085               | 7.5                 | 2.3                 | 35015                  | 8930                    | 154.0                    |
| 6       | 3 | 550                    | 0.110               | 9.0                 | 2.7                 | 29180                  | 9630                    | 234.0                    |
| 8       | 3 | 550                    | 0.135               | 12.0                | 3.6                 | 21885                  | 8865                    | 383.0                    |
| 10      | 3 | 550                    | 0.165               | 15.0                | 4.5                 | 17510                  | 8665                    | 585.0                    |
| 12      | 3 | 550                    | 0.200               | 18.0                | 5.4                 | 14590                  | 8755                    | 851.0                    |
| 16      | 3 | 550                    | 0.215               | 24.0                | 7.2                 | 10940                  | 7055                    | 1219.0                   |
| 20      | 3 | 550                    | 0.250               | 30.0                | 9.0                 | 8755                   | 6565                    | 1772.5                   |

Reinkupfer

|    |   |     |       |      |     |       |      |        |
|----|---|-----|-------|------|-----|-------|------|--------|
| 3  | 3 | 400 | 0.040 | 4.5  | 1.4 | 42445 | 5095 | 31.0   |
| 4  | 3 | 400 | 0.050 | 6.0  | 1.8 | 31830 | 4775 | 51.5   |
| 5  | 3 | 400 | 0.070 | 7.5  | 2.3 | 25465 | 5350 | 90.5   |
| 6  | 3 | 400 | 0.090 | 9.0  | 2.7 | 21220 | 5730 | 139.0  |
| 8  | 3 | 400 | 0.110 | 12.0 | 3.6 | 15915 | 5250 | 227.0  |
| 10 | 3 | 400 | 0.130 | 15.0 | 4.5 | 12735 | 4965 | 335.0  |
| 12 | 3 | 400 | 0.160 | 18.0 | 5.4 | 10610 | 5095 | 495.0  |
| 16 | 3 | 400 | 0.170 | 24.0 | 7.2 | 7960  | 4060 | 701.5  |
| 20 | 3 | 400 | 0.200 | 30.0 | 9.0 | 6365  | 3820 | 1031.5 |

Thermoplaste

|    |   |      |       |      |     |       |       |        |
|----|---|------|-------|------|-----|-------|-------|--------|
| 3  | 3 | 1000 | 0.050 | 4.5  | 1.4 | 60000 | 9000  | 54.5   |
| 4  | 3 | 1000 | 0.065 | 6.0  | 1.8 | 60000 | 11700 | 126.5  |
| 5  | 3 | 1000 | 0.085 | 7.5  | 2.3 | 60000 | 15300 | 258.0  |
| 6  | 3 | 1000 | 0.110 | 9.0  | 2.7 | 53055 | 17510 | 425.5  |
| 8  | 3 | 1000 | 0.135 | 12.0 | 3.6 | 39790 | 16115 | 696.0  |
| 10 | 3 | 1000 | 0.165 | 15.0 | 4.5 | 31830 | 15755 | 1063.5 |
| 12 | 3 | 1000 | 0.200 | 18.0 | 5.4 | 26525 | 15915 | 1547.0 |
| 16 | 3 | 1000 | 0.215 | 24.0 | 7.2 | 19895 | 12830 | 2217.0 |
| 20 | 3 | 1000 | 0.250 | 30.0 | 9.0 | 15915 | 11935 | 3222.5 |

Aluminiumguss  
Si 6% - 15%

|    |   |     |       |      |     |       |      |       |
|----|---|-----|-------|------|-----|-------|------|-------|
| 3  | 3 | 350 | 0.035 | 4.5  | 1.4 | 37135 | 3900 | 23.5  |
| 4  | 3 | 350 | 0.045 | 6.0  | 1.8 | 27855 | 3760 | 40.5  |
| 5  | 3 | 350 | 0.060 | 7.5  | 2.3 | 22280 | 4010 | 67.5  |
| 6  | 3 | 350 | 0.075 | 9.0  | 2.7 | 18570 | 4180 | 101.5 |
| 8  | 3 | 350 | 0.095 | 12.0 | 3.6 | 13925 | 3970 | 171.5 |
| 10 | 3 | 350 | 0.115 | 15.0 | 4.5 | 11140 | 3845 | 259.5 |
| 12 | 3 | 350 | 0.140 | 18.0 | 5.4 | 9285  | 3900 | 379.0 |
| 16 | 3 | 350 | 0.150 | 24.0 | 7.2 | 6965  | 3135 | 541.5 |
| 20 | 3 | 350 | 0.175 | 30.0 | 9.0 | 5570  | 2925 | 790.0 |

Anwendung

Werkstoff

Al-Knetlegierung  
Si < 6%

| d1 [mm] | z | v <sub>c</sub> [m/min] | f <sub>z</sub> [mm] | a <sub>p</sub> [mm] | a <sub>e</sub> [mm] | n [min <sup>-1</sup> ] | v <sub>f</sub> [mm/min] | Q [cm <sup>3</sup> /min] |
|---------|---|------------------------|---------------------|---------------------|---------------------|------------------------|-------------------------|--------------------------|
| 3       | 3 | 450                    | 0.035               | 1.8                 | 3                   | 47750                  | 5015                    | 27.0                     |
| 4       | 3 | 450                    | 0.045               | 2.4                 | 4                   | 35810                  | 4835                    | 46.5                     |
| 5       | 3 | 450                    | 0.060               | 3.0                 | 5                   | 28650                  | 5155                    | 77.5                     |
| 6       | 3 | 450                    | 0.075               | 3.6                 | 6                   | 23875                  | 5370                    | 116.0                    |
| 8       | 3 | 450                    | 0.095               | 4.8                 | 8                   | 17905                  | 5105                    | 196.0                    |
| 10      | 3 | 450                    | 0.115               | 6.0                 | 10                  | 14325                  | 4940                    | 296.5                    |
| 12      | 3 | 450                    | 0.140               | 7.2                 | 12                  | 11935                  | 5015                    | 433.5                    |
| 16      | 3 | 450                    | 0.150               | 9.6                 | 16                  | 8955                   | 4030                    | 619.0                    |
| 20      | 3 | 450                    | 0.175               | 12.0                | 20                  | 7160                   | 3760                    | 902.5                    |

Reinkupfer

|    |   |     |       |      |    |       |      |       |
|----|---|-----|-------|------|----|-------|------|-------|
| 3  | 3 | 350 | 0.030 | 1.8  | 3  | 37135 | 3340 | 18.0  |
| 4  | 3 | 350 | 0.035 | 2.4  | 4  | 27855 | 2925 | 28.0  |
| 5  | 3 | 350 | 0.050 | 3.0  | 5  | 22280 | 3340 | 50.0  |
| 6  | 3 | 350 | 0.060 | 3.6  | 6  | 18570 | 3345 | 72.5  |
| 8  | 3 | 350 | 0.075 | 4.8  | 8  | 13925 | 3135 | 120.5 |
| 10 | 3 | 350 | 0.090 | 6.0  | 10 | 11140 | 3010 | 180.5 |
| 12 | 3 | 350 | 0.110 | 7.2  | 12 | 9285  | 3065 | 265.0 |
| 16 | 3 | 350 | 0.120 | 9.6  | 16 | 6965  | 2505 | 385.0 |
| 20 | 3 | 350 | 0.140 | 12.0 | 20 | 5570  | 2340 | 561.5 |

Thermoplaste

|    |   |     |       |      |    |       |      |        |
|----|---|-----|-------|------|----|-------|------|--------|
| 3  | 3 | 800 | 0.035 | 1.8  | 3  | 60000 | 6300 | 34.0   |
| 4  | 3 | 800 | 0.045 | 2.4  | 4  | 60000 | 8100 | 78.0   |
| 5  | 3 | 800 | 0.060 | 3.0  | 5  | 50930 | 9165 | 137.5  |
| 6  | 3 | 800 | 0.075 | 3.6  | 6  | 42445 | 9550 | 206.5  |
| 8  | 3 | 800 | 0.095 | 4.8  | 8  | 31830 | 9070 | 348.5  |
| 10 | 3 | 800 | 0.115 | 6.0  | 10 | 25465 | 8785 | 527.0  |
| 12 | 3 | 800 | 0.140 | 7.2  | 12 | 21220 | 8910 | 770.0  |
| 16 | 3 | 800 | 0.150 | 9.6  | 16 | 15915 | 7160 | 1100.0 |
| 20 | 3 | 800 | 0.175 | 12.0 | 20 | 12735 | 6685 | 1604.5 |

Aluminiumguss  
Si 6% - 15%

|    |   |     |       |      |    |       |      |       |
|----|---|-----|-------|------|----|-------|------|-------|
| 3  | 3 | 300 | 0.025 | 1.8  | 3  | 31830 | 2385 | 13.0  |
| 4  | 3 | 300 | 0.030 | 2.4  | 4  | 23875 | 2150 | 20.5  |
| 5  | 3 | 300 | 0.040 | 3.0  | 5  | 19100 | 2290 | 34.5  |
| 6  | 3 | 300 | 0.055 | 3.6  | 6  | 15915 | 2625 | 56.5  |
| 8  | 3 | 300 | 0.065 | 4.8  | 8  | 11935 | 2325 | 89.5  |
| 10 | 3 | 300 | 0.080 | 6.0  | 10 | 9550  | 2290 | 137.5 |
| 12 | 3 | 300 | 0.100 | 7.2  | 12 | 7960  | 2390 | 206.5 |
| 16 | 3 | 300 | 0.105 | 9.6  | 16 | 5970  | 1880 | 289.0 |
| 20 | 3 | 300 | 0.125 | 12.0 | 20 | 4775  | 1790 | 429.5 |