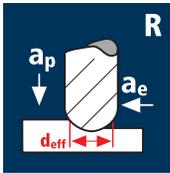


Anwendung



Werkstoff

Stahl
850 - 1100 N/mm²

| d ₁ [mm] | z | v _c [m/min] | f _z [mm] | a _p [mm] | a _e [mm] | d _{eff} [mm] | n [min ⁻¹] | v _f [mm/min] | Q [mm ² /min] |
|---------------------|---|------------------------|---------------------|---------------------|---------------------|-----------------------|------------------------|-------------------------|--------------------------|
| 0.20 | 2 | 14 | 0.005 | 0.016 | 0.070 | 0.11 | 40512 | 429 | 0.5 |
| 0.30 | 2 | 21 | 0.008 | 0.024 | 0.105 | 0.16 | 41778 | 668 | 1.7 |
| 0.40 | 2 | 34 | 0.013 | 0.048 | 0.120 | 0.26 | 41625 | 1057 | 6.1 |
| 0.50 | 2 | 43 | 0.016 | 0.060 | 0.150 | 0.32 | 42773 | 1360 | 12.3 |
| 0.60 | 2 | 51 | 0.019 | 0.072 | 0.180 | 0.39 | 41625 | 1590 | 20.6 |
| 0.80 | 2 | 69 | 0.026 | 0.096 | 0.240 | 0.52 | 42237 | 2154 | 49.7 |
| 1.00 | 2 | 86 | 0.032 | 0.120 | 0.300 | 0.65 | 42115 | 2679 | 96.5 |
| 1.50 | 2 | 145 | 0.054 | 0.240 | 0.375 | 1.10 | 41959 | 4523 | 407.1 |
| 2.00 | 2 | 160 | 0.072 | 0.320 | 0.500 | 1.47 | 34646 | 4982 | 797.2 |

Werkzeugstahl
gehärtet
52 - 56 HRC

| | | | | | | | | | |
|------|---|----|-------|-------|-------|------|-------|------|-------|
| 0.20 | 2 | 14 | 0.003 | 0.016 | 0.070 | 0.11 | 40512 | 203 | 0.3 |
| 0.30 | 2 | 21 | 0.004 | 0.024 | 0.105 | 0.16 | 41778 | 309 | 0.8 |
| 0.40 | 2 | 34 | 0.006 | 0.048 | 0.120 | 0.26 | 41625 | 500 | 2.9 |
| 0.50 | 2 | 43 | 0.008 | 0.060 | 0.150 | 0.32 | 42773 | 642 | 5.8 |
| 0.60 | 2 | 51 | 0.009 | 0.072 | 0.180 | 0.39 | 41625 | 749 | 9.7 |
| 0.80 | 2 | 69 | 0.012 | 0.096 | 0.240 | 0.52 | 42237 | 1014 | 23.4 |
| 1.00 | 2 | 86 | 0.015 | 0.120 | 0.300 | 0.65 | 42115 | 1255 | 45.2 |
| 1.50 | 2 | 90 | 0.025 | 0.240 | 0.375 | 1.10 | 26044 | 1318 | 118.6 |
| 2.00 | 2 | 90 | 0.034 | 0.320 | 0.500 | 1.47 | 19488 | 1314 | 210.2 |

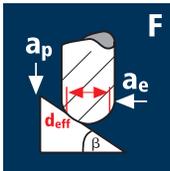
Inox normal
[Cr-Ni/1.4301]
[Cr-Ni-Mo/1.4571]

| | | | | | | | | | |
|------|---|-----|-------|-------|-------|------|-------|------|-------|
| 0.20 | 2 | 12 | 0.003 | 0.010 | 0.060 | 0.09 | 42441 | 246 | 0.2 |
| 0.30 | 2 | 17 | 0.004 | 0.015 | 0.090 | 0.13 | 41625 | 358 | 0.5 |
| 0.40 | 2 | 23 | 0.006 | 0.020 | 0.120 | 0.17 | 43065 | 500 | 1.2 |
| 0.50 | 2 | 36 | 0.009 | 0.040 | 0.125 | 0.27 | 42441 | 764 | 3.8 |
| 0.60 | 2 | 43 | 0.011 | 0.048 | 0.150 | 0.33 | 41477 | 888 | 6.4 |
| 0.80 | 2 | 57 | 0.014 | 0.064 | 0.200 | 0.43 | 42195 | 1207 | 15.5 |
| 1.00 | 2 | 72 | 0.018 | 0.080 | 0.250 | 0.54 | 42441 | 1519 | 30.4 |
| 1.50 | 2 | 100 | 0.032 | 0.180 | 0.300 | 0.97 | 32815 | 2113 | 114.1 |
| 2.00 | 2 | 100 | 0.043 | 0.240 | 0.400 | 1.30 | 24485 | 2101 | 201.7 |

Titanlegierungen ausg.
> 300 HB
[Ti6Al4V]

| | | | | | | | | | |
|------|---|----|-------|-------|-------|------|-------|------|-------|
| 0.20 | 2 | 12 | 0.003 | 0.010 | 0.060 | 0.09 | 42441 | 255 | 0.2 |
| 0.30 | 2 | 17 | 0.004 | 0.015 | 0.090 | 0.13 | 41625 | 366 | 0.5 |
| 0.40 | 2 | 23 | 0.006 | 0.020 | 0.120 | 0.17 | 43065 | 508 | 1.2 |
| 0.50 | 2 | 36 | 0.009 | 0.040 | 0.125 | 0.27 | 42441 | 781 | 3.9 |
| 0.60 | 2 | 43 | 0.011 | 0.048 | 0.150 | 0.33 | 41477 | 921 | 6.7 |
| 0.80 | 2 | 57 | 0.015 | 0.064 | 0.200 | 0.43 | 42195 | 1249 | 16.0 |
| 1.00 | 2 | 72 | 0.018 | 0.080 | 0.250 | 0.54 | 42441 | 1562 | 31.3 |
| 1.50 | 2 | 75 | 0.033 | 0.180 | 0.300 | 0.97 | 24612 | 1629 | 88.0 |
| 2.00 | 2 | 75 | 0.044 | 0.240 | 0.400 | 1.30 | 18364 | 1623 | 155.9 |

Anwendung



Werkstoff

Stahl
850 - 1100 N/mm²

| d ₁ [mm] | z | v _c [m/min] | f _z [mm] | a _p [mm] | a _e [mm] | d _{eff} [mm] | n [min ⁻¹] | v _f [mm/min] | β [°] |
|---------------------|---|------------------------|---------------------|---------------------|---------------------|-----------------------|------------------------|-------------------------|-------|
| 0.20 | 2 | 22 | 0.026 | 0.010 | 0.040 | 0.19 | 36857 | 1917 | 45° |
| 0.30 | 2 | 33 | 0.033 | 0.010 | 0.050 | 0.27 | 38905 | 2568 | 45° |
| 0.40 | 2 | 42 | 0.037 | 0.010 | 0.057 | 0.36 | 37136 | 2748 | 45° |
| 0.50 | 2 | 55 | 0.042 | 0.020 | 0.065 | 0.46 | 38059 | 3197 | 45° |
| 0.60 | 2 | 65 | 0.046 | 0.020 | 0.070 | 0.55 | 37618 | 3461 | 45° |
| 0.80 | 2 | 85 | 0.052 | 0.020 | 0.080 | 0.71 | 38108 | 3963 | 45° |
| 1.00 | 2 | 108 | 0.058 | 0.030 | 0.090 | 0.91 | 37777 | 4382 | 45° |
| 1.50 | 2 | 156 | 0.068 | 0.030 | 0.105 | 1.32 | 37618 | 5116 | 45° |
| 2.00 | 2 | 208 | 0.078 | 0.040 | 0.120 | 1.75 | 37833 | 5902 | 45° |

Werkzeugstahl
gehärtet
52 - 56 HRC

| | | | | | | | | | |
|------|---|-----|-------|-------|-------|------|-------|------|-----|
| 0.20 | 2 | 22 | 0.026 | 0.010 | 0.040 | 0.19 | 36857 | 1917 | 45° |
| 0.30 | 2 | 33 | 0.033 | 0.010 | 0.050 | 0.27 | 38905 | 2568 | 45° |
| 0.40 | 2 | 42 | 0.037 | 0.010 | 0.057 | 0.36 | 37136 | 2748 | 45° |
| 0.50 | 2 | 55 | 0.042 | 0.020 | 0.065 | 0.46 | 38059 | 3197 | 45° |
| 0.60 | 2 | 65 | 0.046 | 0.020 | 0.070 | 0.55 | 37618 | 3461 | 45° |
| 0.80 | 2 | 85 | 0.052 | 0.020 | 0.080 | 0.71 | 38108 | 3963 | 45° |
| 1.00 | 2 | 108 | 0.058 | 0.030 | 0.090 | 0.91 | 37777 | 4382 | 45° |
| 1.50 | 2 | 144 | 0.068 | 0.030 | 0.105 | 1.32 | 34725 | 4723 | 45° |
| 2.00 | 2 | 144 | 0.078 | 0.040 | 0.120 | 1.75 | 26192 | 4086 | 45° |

Inox normal
[Cr-Ni/1.4301]
[Cr-Ni-Mo/1.4571]

| | | | | | | | | | |
|------|---|-----|-------|-------|-------|------|-------|------|-----|
| 0.20 | 2 | 22 | 0.026 | 0.010 | 0.040 | 0.19 | 36857 | 1917 | 45° |
| 0.30 | 2 | 33 | 0.033 | 0.010 | 0.050 | 0.27 | 38905 | 2568 | 45° |
| 0.40 | 2 | 42 | 0.037 | 0.010 | 0.057 | 0.36 | 37136 | 2748 | 45° |
| 0.50 | 2 | 55 | 0.042 | 0.020 | 0.065 | 0.46 | 38059 | 3197 | 45° |
| 0.60 | 2 | 65 | 0.046 | 0.020 | 0.070 | 0.55 | 37618 | 3461 | 45° |
| 0.80 | 2 | 85 | 0.052 | 0.020 | 0.080 | 0.71 | 38108 | 3963 | 45° |
| 1.00 | 2 | 108 | 0.058 | 0.030 | 0.090 | 0.91 | 37777 | 4382 | 45° |
| 1.50 | 2 | 144 | 0.068 | 0.030 | 0.105 | 1.32 | 34725 | 4723 | 45° |
| 2.00 | 2 | 144 | 0.078 | 0.040 | 0.120 | 1.75 | 26192 | 4086 | 45° |

Titanlegierungen ausg.
> 300 HB
[Ti6Al4V]

| | | | | | | | | | |
|------|---|-----|-------|-------|-------|------|-------|------|-----|
| 0.20 | 2 | 22 | 0.026 | 0.010 | 0.040 | 0.19 | 36857 | 1917 | 45° |
| 0.30 | 2 | 33 | 0.033 | 0.010 | 0.050 | 0.27 | 38905 | 2568 | 45° |
| 0.40 | 2 | 42 | 0.037 | 0.010 | 0.057 | 0.36 | 37136 | 2748 | 45° |
| 0.50 | 2 | 55 | 0.042 | 0.020 | 0.065 | 0.46 | 38059 | 3197 | 45° |
| 0.60 | 2 | 65 | 0.046 | 0.020 | 0.070 | 0.55 | 37618 | 3461 | 45° |
| 0.80 | 2 | 85 | 0.052 | 0.020 | 0.080 | 0.71 | 38108 | 3963 | 45° |
| 1.00 | 2 | 108 | 0.058 | 0.030 | 0.090 | 0.91 | 37777 | 4382 | 45° |
| 1.50 | 2 | 108 | 0.068 | 0.030 | 0.105 | 1.32 | 26044 | 3542 | 45° |
| 2.00 | 2 | 108 | 0.078 | 0.040 | 0.120 | 1.75 | 19644 | 3065 | 45° |