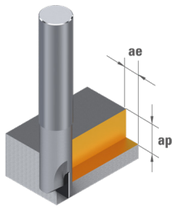
$$n\ [rpm] = \frac{Vc\ [m/min] \times 1000}{\pi \times D_1\ [mm]}$$

$$Vf\ [mm/min] = n\ [rpm] \times fz\ [mm] \times Z$$

## ROUTING

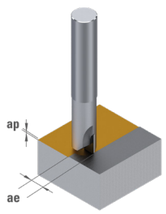
Feed per tooth fz [mm]

| | | VDI 3323 | | n rpm | ae (mm) | ap (mm) | Ø $D_1$ 1 - 2 | Ø $D_1$ 3 - 6 | Ø $D_1$ 7- 12 | Ø $D_1$ 13 - 20 |
|---|---|---|---|---|---|---|---|---|---|---|
| N | Wrought aluminium alloy < 12% Si | 21 - 22 |  | **25** - 40'000 | **0.10** - 1.00 | <0.9×L1 | 0.009 - 0.018 | 0.027 - 0.054 | 0.063 - 0.108 | 0.098 - 0.150 |
| | Cast aluminium alloy >12% Si | 23 | | **20** - 40'000 | **0.10** - 1.00 | <0.9×L1 | 0.008 - 0.016 | 0.023 - 0.047 | 0.055 - 0.064 | 0.085 - 0.130 |
| | Copper alloy good machinability with Pb | 26 | | **15** - 35'000 | **0.10** - 1.00 | <0.9×L1 | 0.009 - 0.018 | 0.027 - 0.054 | 0.063 - 0.108 | 0.098 - 0.150 |
| | Copper alloy with difficult machinability | 27-28 | | **15** - 35'000 | **0.10** - 1.00 | <0.9×L1 | 0.007 - 0.014 | 0.022 - 0.043 | 0.050 - 0.086 | 0.078 - 0.120 |
| | Plastic, wood | 29 | | **15** - 30'000 | **0.10** - 1.00 | <0.9×L1 | 0.009 - 0.018 | 0.027 - 0.054 | 0.063 - 0.108 | 0.098 - 0.150 |
| | Gold, silver | - | | **20** - 40'000 | **0.10** - 1.00 | <0.9×L1 | 0.006 - 0.012 | 0.018 - 0.036 | 0.042 - 0.072 | 0.065 - 0.100 |



## FACE MILLING

Feed per tooth fz [mm]

| | | VDI 3323 | | n tr/min | ae (mm) | ap (mm) | Ø $D_1$ 1 - 2 | Ø $D_1$ 3 - 6 | Ø $D_1$ 7- 12 | Ø $D_1$ 13 - 20 |
|---|---|---|---|---|---|---|---|---|---|---|
| N | Wrought aluminium alloy < 12% Si | 21 - 22 |  | **25** - 40'000 | **0.10** - 1.00 | <0.9×L1 | 0.008 - 0.016 | 0.023 - 0.047 | 0.055 - 0.094 | 0.085 - 0.130 |
| | Cast aluminium alloy >12% Si | 23 | | **20** - 40'000 | **0.10** - 1.00 | <0.9×L1 | 0.007 - 0.013 | 0.020 - 0.040 | 0.046 - 0.079 | 0.072 - 0.110 |
| | Copper alloy good machinability with Pb | 26 | | **15** - 35'000 | **0.10** - 1.00 | <0.9×L1 | 0.008 - 0.016 | 0.023 - 0.047 | 0.055 - 0.094 | 0.085 - 0.130 |
| | Copper alloy with difficult machinability | 27-28 | | **15** - 35'000 | **0.10** - 1.00 | <0.9×L1 | 0.006 - 0.012 | 0.018 - 0.036 | 0.042 - 0.072 | 0.065 - 0.100 |
| | Plastic, wood | 29 | | **15** - 30'000 | **0.10** - 1.00 | <0.9×L1 | 0.008 - 0.016 | 0.023 - 0.047 | 0.055 - 0.094 | 0.085 - 0.130 |
| | Gold, silver | - | | **20** - 40'000 | **0.10** - 1.00 | <0.9×L1 | 0.005 - 0.010 | 0.014 - 0.029 | 0.034 - 0.058 | 0.052 - 0.080 |



Values based on use of cutting oil. The cutting parameters are very strongly influenced by external parameters, such as tool and workpiece stability, etc.
The cutting conditions must be adapted to the operating conditions !