Calculations

n = Rotation Speed in RPM
vc = cutting speed in m/min
d = Diameter in mm
z = number of teeth
fz = tooth feed in mm/tooth
vf = feed speed (mm/min)

The speed of the cutter is calculated using the following formula:

n [RPM] = (vc [m/min] *1000) / (3.14 * Ød1 [mm])

Example:

vc = 400 m/min (selected from table)
d = Ø 8 mm

15923 U/min = (400 *1000) / (3.14 * 8)

The feed speed can be calculated by following formula:

vf = n * z * fz

Example for high-strenght aluminium 8mm milling cutter:

n = 15923 U/min from formula above
fz= 0,030 from table
z = 2

955,38 mm/min = 15923 * 2 * 0,03

Approximate values for speed an feedrate

	Cutting speed m/min.	Diameter milling cutter					
		Ø 0,5mm	Ø 1mm	Ø 1,5mm	Ø 2mm	Ø 2,5mm	Ø 3mm
		Tooth feed in mm / tooth / rotation					
Cast-Aluminium > 6% Si	200	0,002	0,003	0,005	0,007	0,011	0,015
Aluminium Wrought alloy	300	0,003	0,004	0,006	0,008	0,012	0,016
Softplastic	150	0,008	0,015	0,030	0,040	0,050	0,060
Hardplastic	100	0,004	0,006	0,010	0,012	0,015	0,018
Hardwood	450	0,008	0,010	0,012	0,015	0,018	0,020
Wood	500	0,010	0,012	0,015	0,020	0,025	0,030
MDF	450	0,010	0,012	0,015	0,017	0,020	0,025
Brass, Copper, Bronze	365	0,003	0,004	0,006	0,008	0,012	0,015
Steel	90	0,001	0,003	0,004	0,006	0,008	0,010

The values given are a rough guide and may differ from the table depending on the machine and peripherals.