Milling Table Feed from Feed per Tooth

Table feed rate of a milling cutter from feed per tooth, number of teeth and spindle speed, with the spindle speed for a cutting speed.

Method: v_f = f_z z N; N = v_c/(πD)

Input parameters

Unit system: SI

Parameter	Value	Unit
Feed per tooth	0.10000	mm
Number of teeth	6.0000	
Cutter diameter	63.000	mm
Cutting speed	200.00	m/min

Calculated results

Parameter	Value	Unit
Spindle speed	1,010.5	rpm
Table feed	606.30	mm/min

Formula and method

$$N = \frac{v_c}{\pi D}, \quad v_f = f_z \, z \, N$$

Variables

f_z	Feed per tooth	m
z	Number of teeth	-
D	Cutter diameter	m
v_c	Cutting speed	m/s
N	Spindle speed	1/s
v_f	Table feed	m/s

Method and standards

Kinematics.

Assumptions and limits

- Full engagement. No spindle-speed limit of the machine and no chip-thinning correction (at radial engagement below half the diameter, raise f_z to keep the chip thickness).

References

• v_f = f_z z N; N = v_c/(πD)

Report details

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Release checks	2 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/mechanical/manufacturing/milling-feed-rate

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.