

Cutting Speed Formulas Lathe or Mill

(RPM = Revolutions Per Minute) $3.82 \times \text{SFM} \div \text{Diameter}$

(SFM = Surface Feet Per Minute) $0.262 \times \text{Diameter (Tool or Stock)} \times \text{RPM}$

Metric Conversion

(SFM to Surface Meters Per Minute) $\text{SFM} \times .3048$

(Surface Meters Per Minute to SFM) $\text{SMPM} \times 3.2808399$

Turning & Boring Cubic Inches per Minute

$\text{MMR} = 12 \times \text{DOC} \times \text{Feed} \times \text{SFM}$

Milling Feed Rate Formulas

Inches Per Minute (IPM) = $\text{FPT} \times \text{T} \times \text{RPM}$

Feed Per Revolution (FPR) = $\text{IPM} \div \text{RPM}$

Feed Per Tooth (FPT) = $\text{IPM} \div (\text{RPM} \times \text{T})$

Metric Conversion

Convert Inches Per Revolution (IPR) to Inches Per Minute (IPM) = $\text{IPR} \times \text{RPM}$

Convert Inches Per Minute (IPM) to Inches Per Revolution (IPR) = $\text{IPM} \div \text{RPM}$

Convert Inches Per Revolution (IPR) to Millimeters Per Revolution (MMPR) = $\text{IPR} \times 25.40$

Millimeters to Inches = $\text{Millimeters} \times .03937 = \text{Inches}$

Inches to Millimeters = $\text{Inches} \times 25.4 = \text{Millimeters}$

Meters to Inches = $\text{Meters} \times 39.37 = \text{Inches}$

Inches to Meters = $\text{Inches} \times .0254 = \text{Meters}$

Meters to Feet = $\text{Meters} \times 3.2808 = \text{Feet}$

Feet to Meters = $\text{Feet} \times .3048 = \text{Meters}$

Meters to Yards = $\text{Meters} \times 1.0936 = \text{Yards}$

Milling Formulas

(CTM = Time Cutting Time in Minutes) $L \div \text{IPM}$

(CTS = Time Cutting Time in Seconds) $L \div \text{IPM} \times 60$

(IPM = Inches per Minute) $\text{RPM} \times \text{IPT} \times \# \text{ of Teeth (flutes)}$

(MRR = Metal Removal Rate /Cubic Inches per Minute) $W \times D \times \text{IPM}$