

Speed and Feeds for Hougen Cutters

Area Factor = IN²
 $IN^2 = \pi \times (D \times WT - WT^2)$

Feed Per Tooth = FPT

Horsepower = HP
 $HP = IN^2 \times IPM \times K$

Inches per Minute = IPM
 $IPM = FPT \times NT \times RPM$

K (how difficult the material is to machine)

Steel (K = 1)
 Cast Iron (K = .5)
 Aluminum (K = .25)

Outer Diameter = D

Material Tensile Strength = Kc
Thrust = T

$T = .7 \times WT \times FPT \times NT \times Kc$

Wall Thickness = WT
 .188, .196, .218, .264

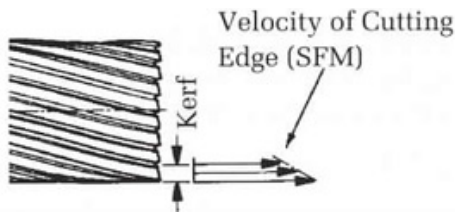
No. of Teeth = NT

Surface Feet per Minute = SFM
 $SFM = [\pi \times D \div 12] \times RPM$

Revolutions per Minute = RPM
 $RPM = SFM \div [\pi \div 12] \times OD$

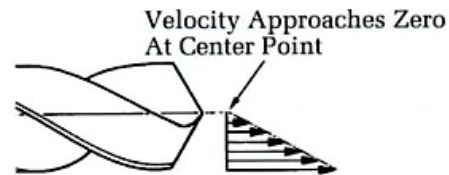
“12,000-Series” Cutter

$SFM = .262 \times \text{diameter} \times RPM$



Conventional Drill

$SFM = .262 \times \text{diameter} \times RPM$



Suggested Feed Rates

These are only starting points. They will vary with application and workpiece condition.

Material or Application Type	Feed Per Tooth (inches)
Thin Walled Workpieces Oblique Entry / Curved Surfaces Semi-Circles / Fragile Setups	.001 / .002 (.003 FPT with Work Hardening Materials)
Soft / Gummy Materials	.004 / .005
Typical / Average Applications	.003 / .004
Deep Holes	.004 / .005

Difficult-to-machine materials will require reduced feed rates.

**For additional help or questions, please contact
 Hougen Technical Support - tech@hougen.com**



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