

Drill Feeds and Speeds –

Different drilling conditions make it impossible to develop any rigid rules for feeds and speeds. The following tables contain guidelines that can be utilized when drilling standard materials. Also, the following "rules of thumb" can be used to determine proper feeds and speeds for drilling ferrous materials (note: varying conditions can easily require adjustments):

- Feed equals .001" per revolution for every 1/16" of drill diameter, plus or minus .001" on the total
- Speed equals 90 surface feet per minute in 100 Brinell hardness material, and the speed be reduced 10 surface feet per minute for each additional 50 points of Brinell hardness.
- Feed and speed rates should be reduced up to 45 to 50% when drilling holes deeper than 4 drill diameters.

Diameter of Drill - Inches	Feed Inches per Revolution
Under 1/8	.001 to .003
1/8 to 1/4	.002 to .006
1/4 to 1/2	.004 to .010
1/2 to 1 inch	.007 to .015
1 inch and over	.015 to .025

Recommended feeds of various diameter drills

NOTE: It is best to start with a moderate speed and feed, increasing either one, or both, after observing the action and condition of the drill.

Material	Recommended speed (sfm)
Aluminum and its Alloys	200-300
Brass and Bronze (ordinary)	150-300
Bronze (High Tensile)	70-150
Die Casting (Zinc Base)	300-400
Iron - Cast (soft)	75-125
-Cast (medium hard)	50-100
Hard Chilled	10-20
Malleable	80-90
Magnesium and its Alloys	250-400
Monel Metal or High-Nickel Steel	30-50
Plastics or Similar Materials	100-300
Steel	
Mild .2 carbon to .3 carbon	80-110
Steel .4 carbon to .5 carbon	70-80
Tool 1.2 carbon	50-60
Forgings	40-50
Alloy - 300 to 400 Brinell	20-30
High Tensile (Heat Treated)	