Chip Load Chart

Chip loads are based on material thickness of average size for cutting edge length of tool. These recommendations do not apply to thicker material or Techno CNC tools with long cutting-edge lengths. These chip loads are only a recommended starting point and may not accommodate all circumstances. Therefore, tooling damage may still occur, and use of this chart does not warranty against tool breakage. We strongly encourage you to consult us directly on new tool applications. All parameters and settings are calculated with the intention of using inches per minute as the units for feed rate.

Tool Diameter	Hard Wood	Softwood & Plywood	MDF & Particle Board	High Pressure Laminate	Phenolic
1/8”	.003” – .005”	.004” - .006”	.004” - .007”	.003” - .005”	N/A
1/4”	.008” - .010”	.010” - .013”	.010” - .013”	.008” - .011”	.003” - .005”
3/8”	.014” - .018”	.016” - .019”	.014” - .017”	.015” - .018”	.006” - .008”
1/2” and up	.019” - .021”	.02” - .023”	.018” - .021”	.022” - .025”	.009” - .012”

Tool Diameter	Hard Plastic	Soft Plastic	Solid Surface	Acrylic	Aluminum
1/8”	.002” - .004”	.003” - .006”	.002” - .005”	.003” - .005”	.003” - .004”
1/4”	.006” - .009”	.007” - .010”	.006” - .009”	.007” - .010”	.005” - .007”
3/8”	.007” - .010”	.010” - .012”	.008” - .010”	.010” - .012”	.006” - .008”
1/2" and up	.010” .012”	.012” - .016”	.010” - .012”	.012” - .015”	.008” - .010”

Calculating Feedrate:

Feed Rate = RPM x number of flutes x chip load

Depth Pass : The variable “D” represents the Diameter of the cutter.

1 x D = Use Recommended Chip Load

2 x D = Reduce Chip Load by 25%

3 x D = Reduce Chip Load by 50%

RPM Selection

The general operating RPM for Techno CNC Tooling is between 12,000 – 24,000 RPM. Usually, the higher the spindle RPM, the better the edge finish becomes. However, the higher the spindle speed, the more heat is produced between the tool and the workpiece. In a production environment, your goal is to run as fast a feed rate as possible while still retaining good cut quality and tool longevity. Test cuts should be conducted on new materials prior to putting tools in a production setting.