

TAPPING FORMULAS

Mill Tap Programming

Inch Mode (Set. 9= Inch)

G94 F: PITCH (in Inches) * RPM

G95 F: PITCH (in Inches)

Inch Tap	
TPI	13
RPM	500
G94 F	RPM/TPI
G95 F	(1/TPI)

G94 F	500/13
G95 F	(1/13)

G94 F	38.4615
G95 F	0.0769

Metric Tap	
Pitch (mm)	1.75
RPM	500
G94 F	Pitch*RPM/25.4
G95 F	Pitch/25.4

G94 F	1.75*500/25.4
G95 F	1.75/25.4

G94 F	34.4488
G95 F	0.0689

There are exactly 25.4mm per inch.

millimeters / 25.4 = inches

Pitch = The distance between one thread and the next, single-start tap

Lead = The axial distance the tap will travel (Z-axis) with one full revolution

G84 = Right hand tapping, clockwise

G74 = Left hand tapping, counter-clockwise

Mill Tap Programming

Metric Mode (Set. 9= mm)

G94 F: PITCH (in mm) * RPM

G95 F: PITCH (in mm)

Metric Tap	
Pitch (mm)	1.75
RPM	500
G94 F	Pitch*RPM
G95 F	Pitch

G94 F	1.75*500
G95 F	1.75

G94 F	875.000
G95 F	1.750

Inch Tap	
TPI	13
RPM	500
G94 F	RPM/TPI*25.4
G95 F	(1/TPI)*25.4

G94 F	500/13*25.4
G95 F	(1/13)*25.4

G94 F	976.923
G95 F	1.954

There are exactly 25.4mm per inch.

inches * 25.4 = millimeters

RPM = The number of Revolutions Per Minute the spindle will turn, S value

TPI = The number of Threads Per Inch

G94 = Feed per Minute Mode

G95 = Feed per Revolution Mode