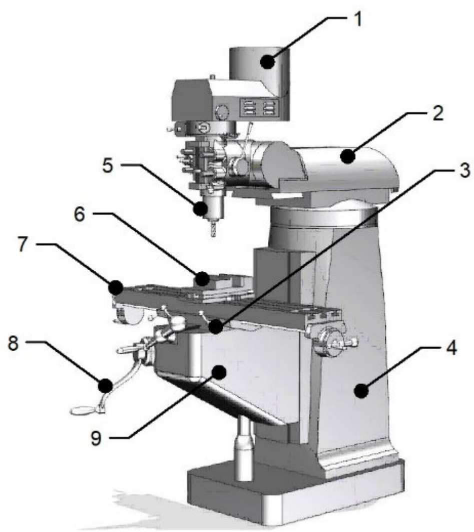
Separating Processes – Machining

This part of the lathe contains the motor, spindle, gears and controls that are responsible for power distribution to the rest of the lathe.

A piece of steel (P2) is to be milled with a 0.5 inch diameter cutter. What would be the *minimum* recommended RPM? Enter your answer in RPM to the nearest whole number.

Note: You will need to convert SFM to RPM



Thin-to-thick milling

Thick-to-thin

Up milling

Climb milling

Down milling

Conventional Milling

The most common type of cutting tool used in a milling machine is the ______.

A steel workpiece is 2.37 inches in diameter. Calculate the appropriate spindle RPM using this equation:

$$N = \frac{12V}{\pi D}$$

(The chart below gives cutting parameters for steel, use the optimum US customary value shown)

P	a_p	2.50 mm(0.50-4.00)
		.098 in(.020-.157)
	f_n	0.30 mm/r(0.15-0.50)
		.012 in/r(.006-.020)
	v_c	345 m/min(425-275)
		1130 sfm(1395-905)

A steel workpiece is 8.7 inches in diameter. Enter the recommended depth of cut in inches.

(The chart below gives cutting parameters for steel, use the optimum value shown)

P	a_p	2.50 mm(0.50-4.00)
		.098 in(.020-.157)
	f_n	0.30 mm/r(0.15-0.50)
		.012 in/r(.006-.020)
	v_c	345 m/min(425-275)
		1130 sfm(1395-905)

A steel workpiece is 1.7 inches in diameter. Enter the recommended feed rate in inches per revolution.

(The chart below gives cutting parameters for steel, use the optimum value shown)

P	a_p	2.50 mm(0.50-4.00) .098 in(.020-.157)
	f_n	0.30 mm/r(0.15-0.50) .012 in/r(.006-.020)
	v_c	345 m/min(425-275) 1130 sfm(1395-905)

The speed at which the surface of a machined cylinder passes by the cutter is known as the __________.

The ______ is a measure of how far the cutting tool extends into the work.

The ______ is the speed at which the cutting tool on a lathe advances along the direction of the cut.

Parting off

Drilling

Facing

Boring

Straight turning

Taper turning

External threading

Knurling

A(n) _________ is a convenient way to hold work on the lathe. It can readily adapt to a wide range of workpiece diameter and length. One common variety has three jaws that move together. 4-Jaw and other varieties are available.

A(n) _________ is a workholding device which is tightened by means of a draw tube or draw bar. It consists of segmented fingers that are tightened by being pulled along a taper.