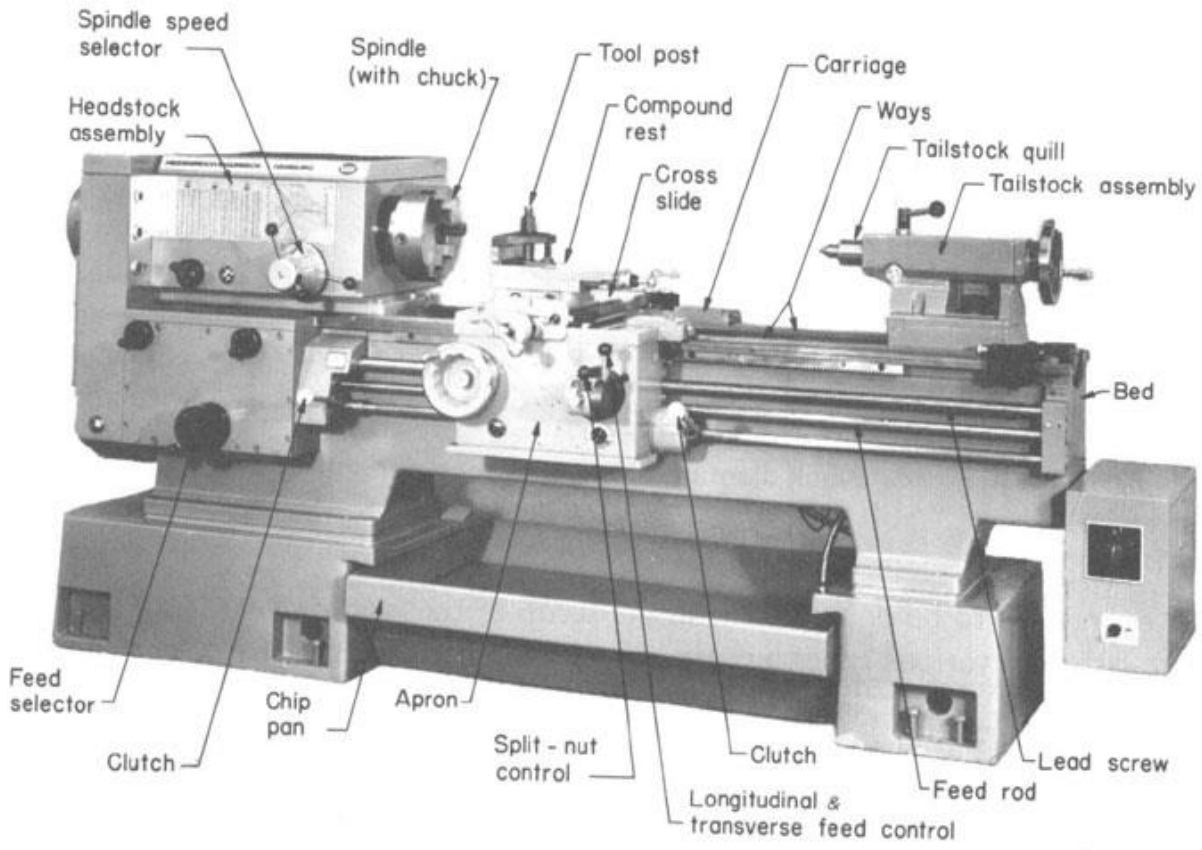
Introduction to lathe Machine perform straight turning and calculate machining time.

Apparatus:

Lathe machine, stop watch, tachometer, MS rod.

Figure:



Head stock

Tailstock

Lead screw

Feed Rod

Carriage

Half Lock lever

Apron

Observations & Calculations:

Number of passes=N_t=

Feed Rate=F_r=---------- (mm\mint)

Sr.No	Length of rod L	Initial diameter D_i	Final Diameter D_f	Depth of cut= $\frac{Di - Df}{2xN}$	RPMs	Cutting Speed $V_i=\pi DixRPM$	Feed F=F_r\RPM	Machining Time $T_M=\frac{L}{FxRPM}xN_t$	Actual Time Ta	Idler Time Ta-Tc
	mm	mm	mm	mm		mm\mint	mm\rev	mint	mint	mint
1										
2										
3										

Graphs:

1. Plot a relationship between RPMs and Cutting Speed.
2. Plot a relationship between RPMs and Feed.
3. Plot a relationship between RPMs and Machining Time.
4. Plot a relationship between RPMs and Actual Time.
5. Plot a relationship between Machining Time and Actual Time.

Specimen Calculations

Questions

How straight and Taper turning differ?

How many linear & rotational axes a lathe machine has?

Write different types of slideways?

What are standard cutting speed, depth of cut and feed for Mild steel?

Comments on

How to reduce idler time