



Industrial Technology Virtual Learning

9-12/General Metals : Lathe tools and process


April, 17 2020



Objective/Learning Target:

Students and learn about the lathe turning processes and identify metal lathe turning tools.

Metal lathe



Tools and processes

Cutting Tools



ROUGHING
TOOL



RIGHT



LEFT

TURNING TOOLS



RECESSING
TOOL



PARTING
TOOL



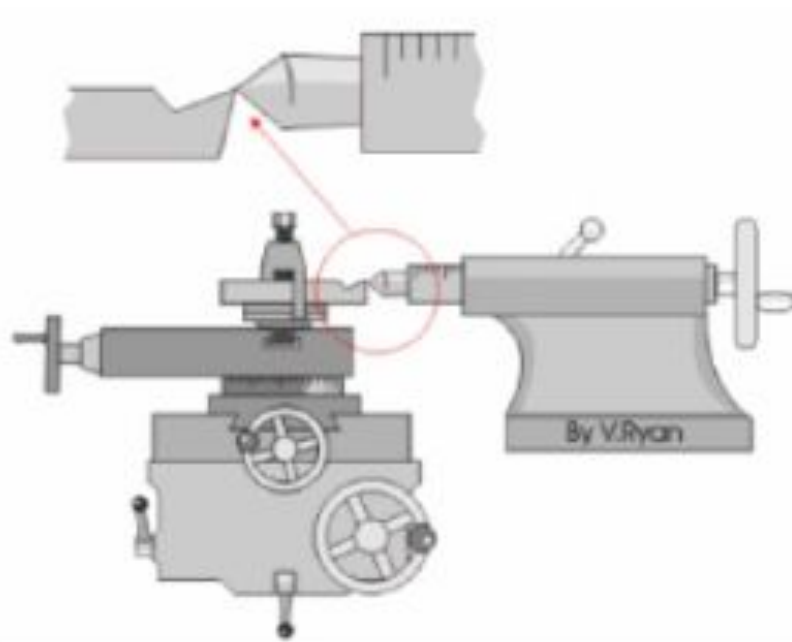
RIGHT



LEFT

KNIFE TOOLS

Setting up



- The point of the lathe tool must be centred at the same height as the tailstock tip.
- If this is not done the finish will be poorer.

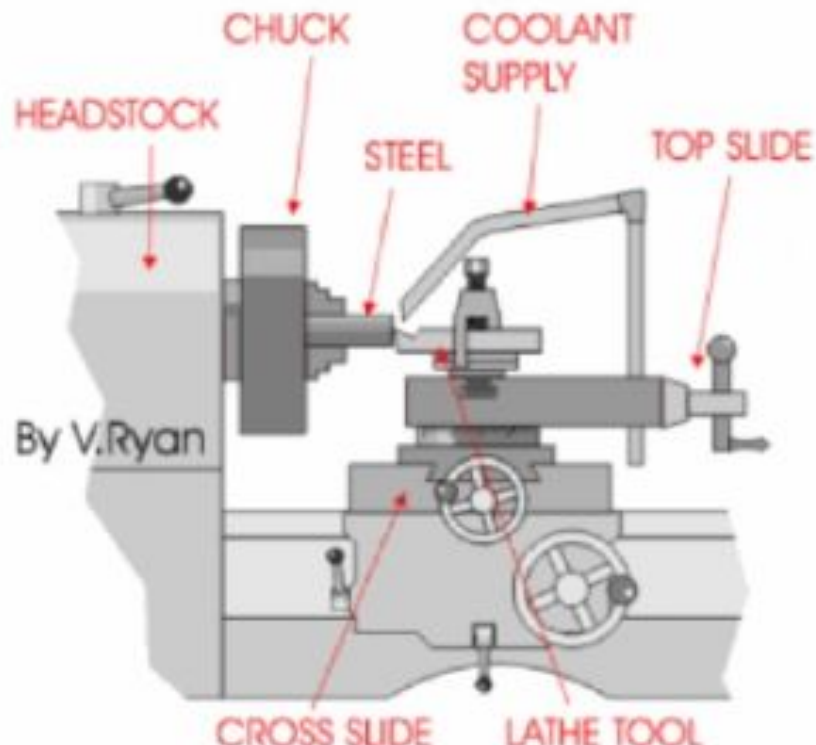
Part 1

Facing off

Facing off

A very basic operation is called **Facing off**. A piece of steel is placed in the chuck and lathe tool is used to level the end

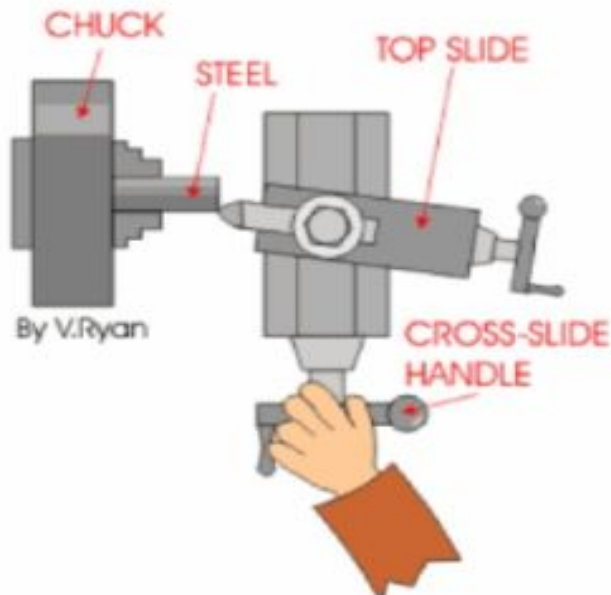
Facing Off



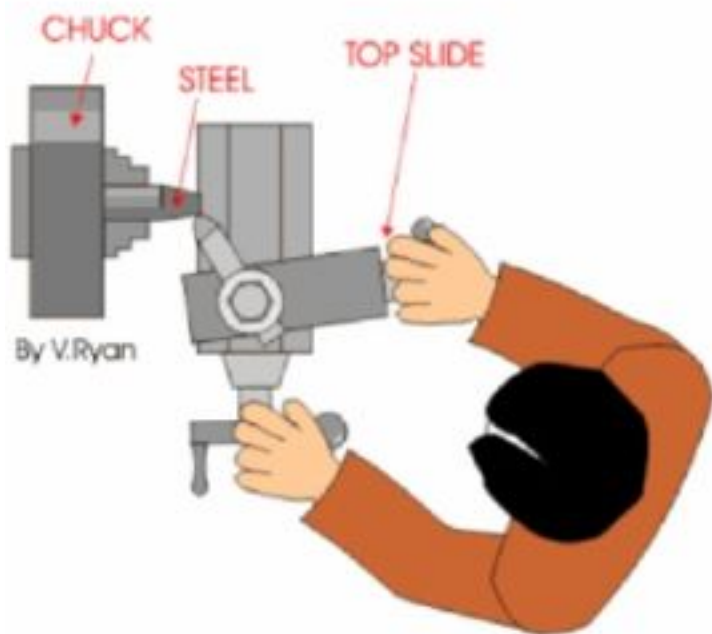
- The cross slide moves and the cutting tool cuts the surface of the steel.

Facing Off

- Only a small amount of material should be removed on each pass.



Turning a taper



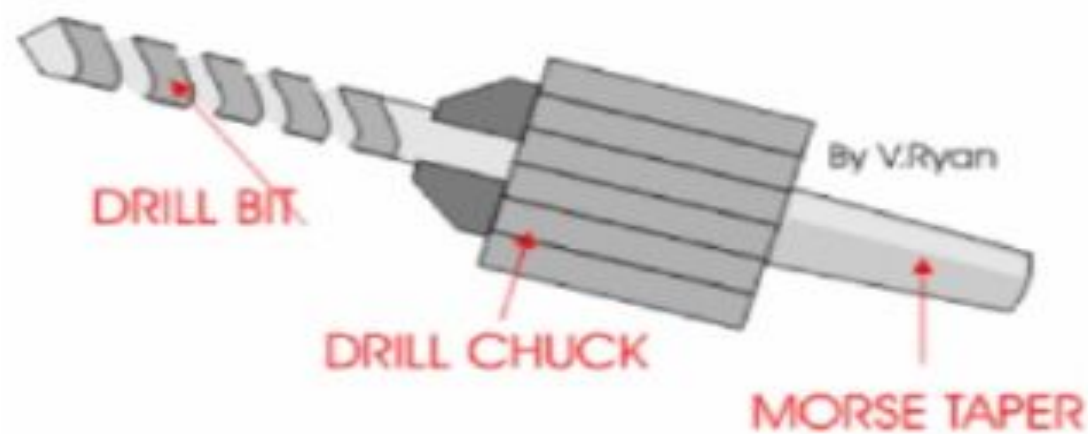
- The top slide is set at the desired angle.
- Small amounts of material is removed until the desired taper is achieved.

Part 2

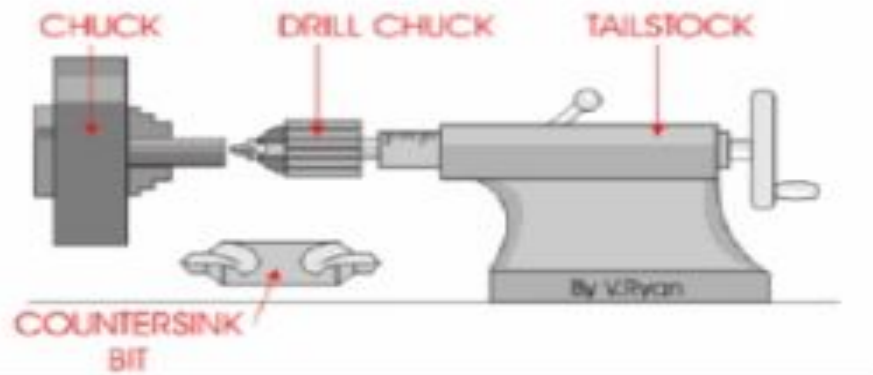
Drilling

Drilling

- The tailstock can be used to drill with the aid of a drill chuck attachment.



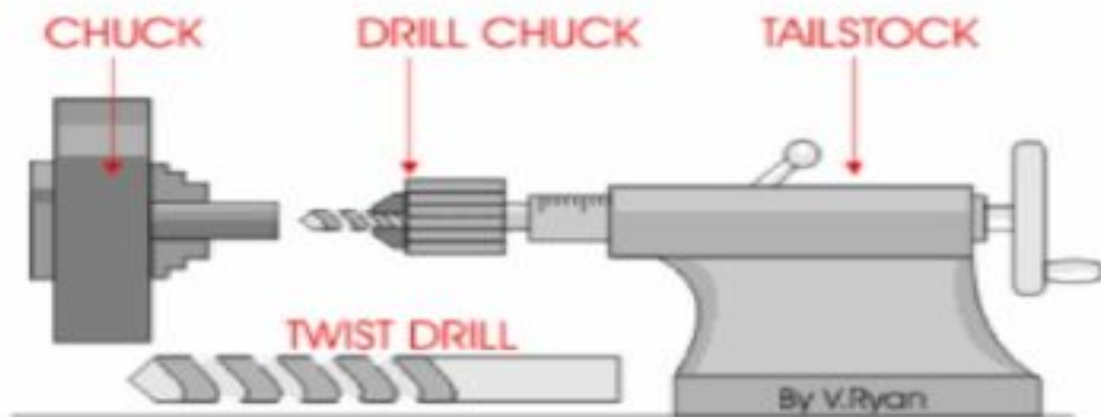
Countersink bit



- Using the **countersink bit** drill into the material slightly to create a starting point.
- Drilling without a countersink will make the drill bit slip.

Twist drill

- Using the tailstock drill the desired depth of hole needed.

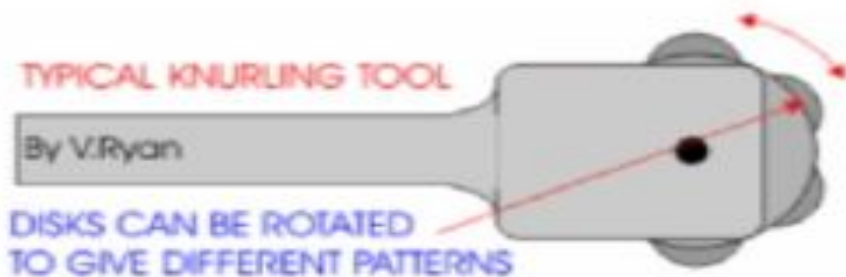


Part 3

Knurling

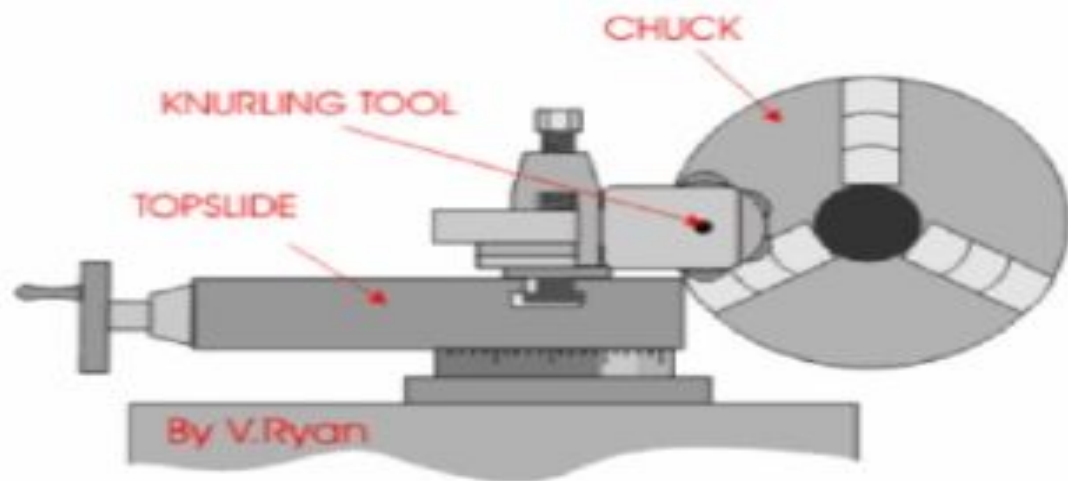
Knurling

- Knurling is the process of turning a pattern onto a round section.



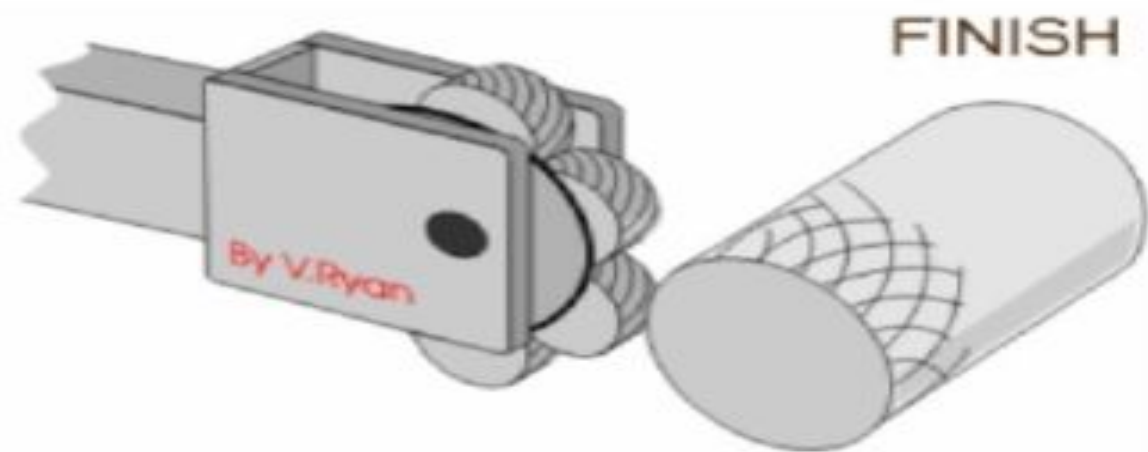
Knurling

- The pattern is usually used as a grip for a handle.



Knurling

- The pattern produced is called the 'knurled pattern'

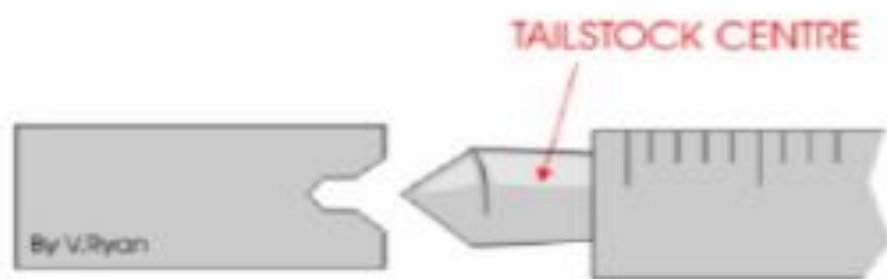


Part 4

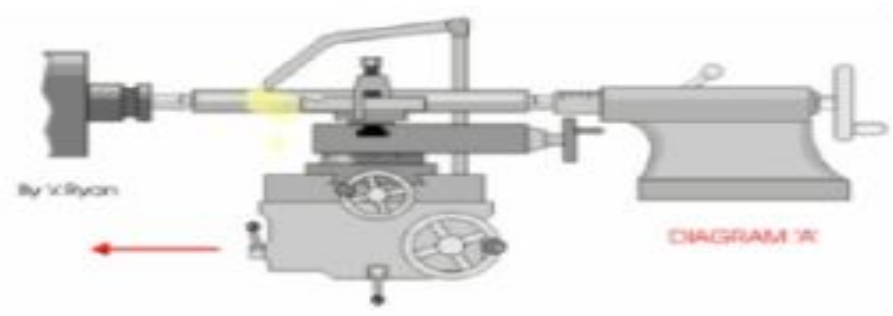
Turning a long taper

Turning a long piece of material

- If a long piece of material is to be turned on the lathe, it may be supported by the tailstock centre.



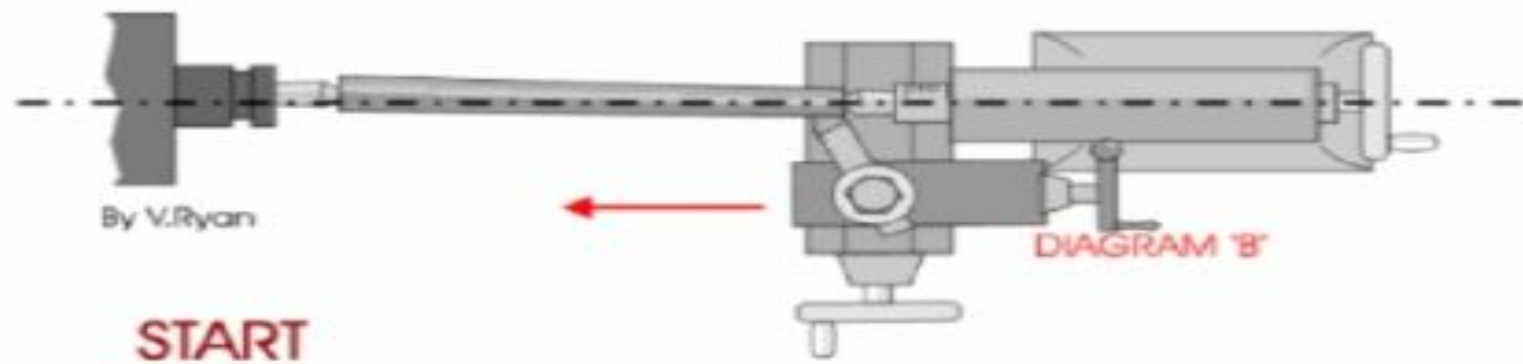
Turning a long Taper



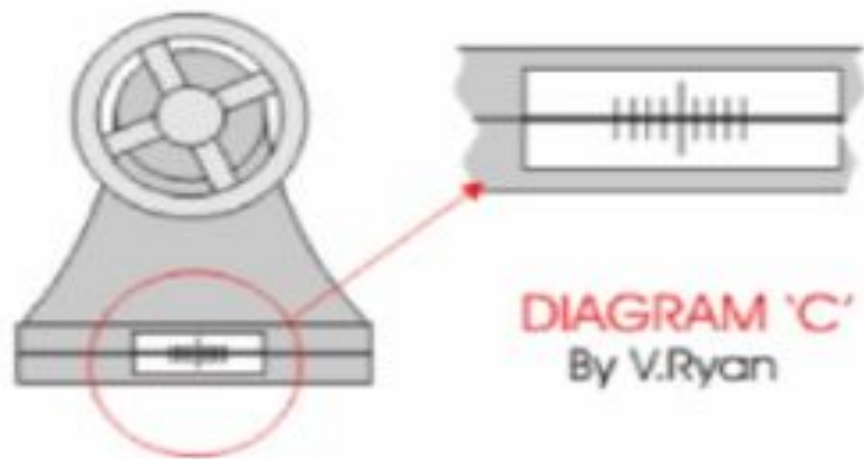
- The material is held between two centres.
- The three jaw chuck will not be used as it doesn't hold the material safely or accurately for this.

Turning a long Taper

- The tailstock is adjusted so it's off centre.



Turning a long Taper



- This is the scale at the back of the tailstock.
- It's adjusted so the tailstock is set off centre.