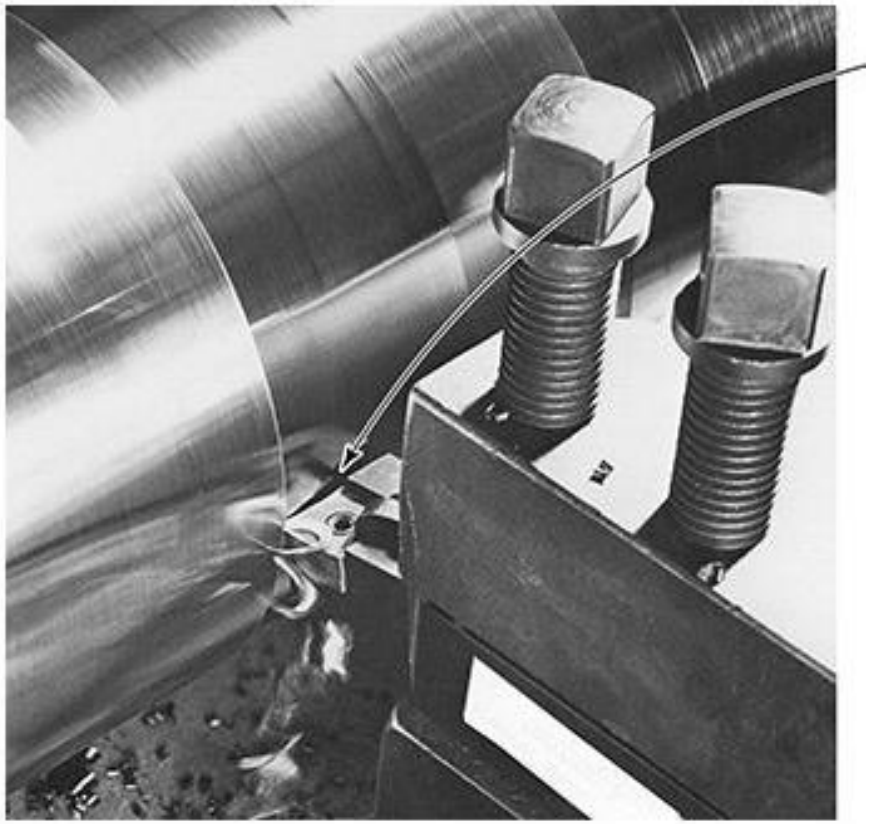
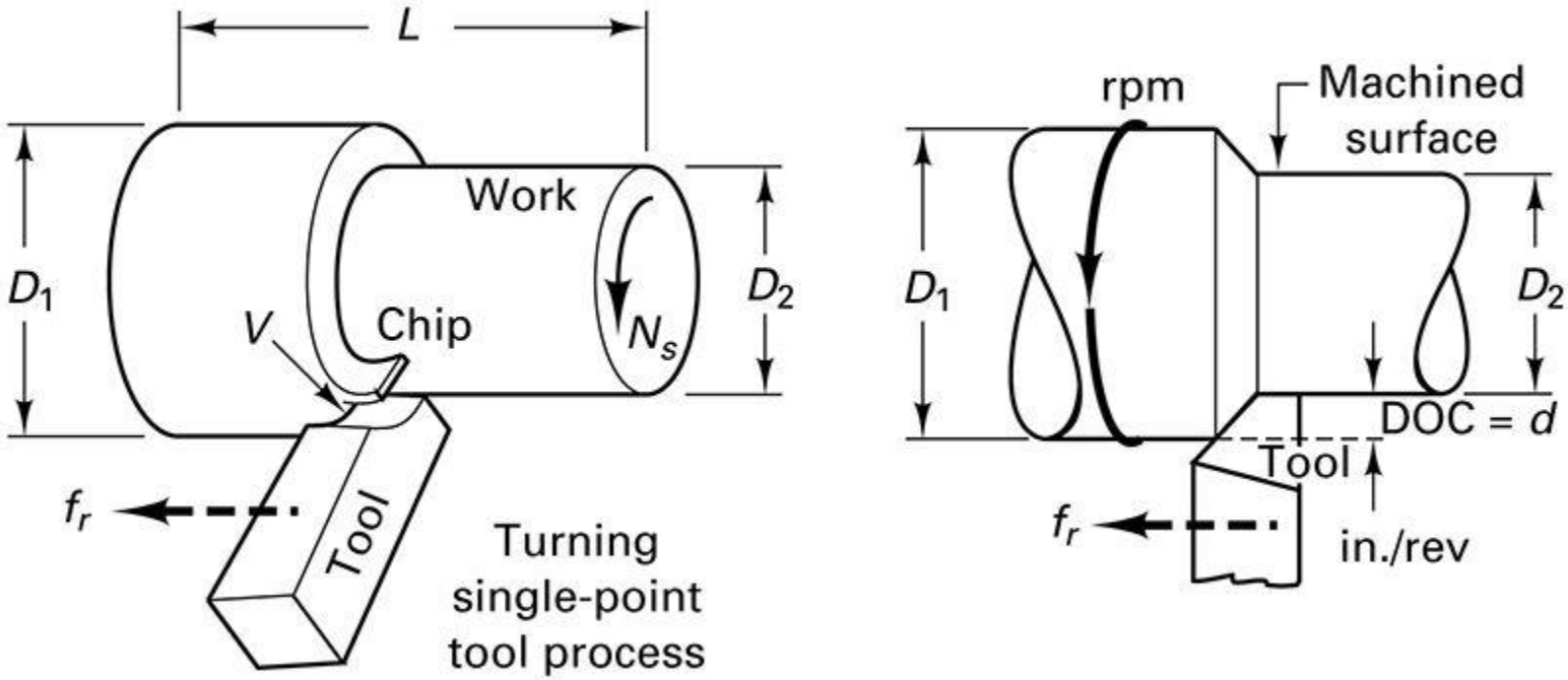
Turning and Boring Processes

Watch Video Here

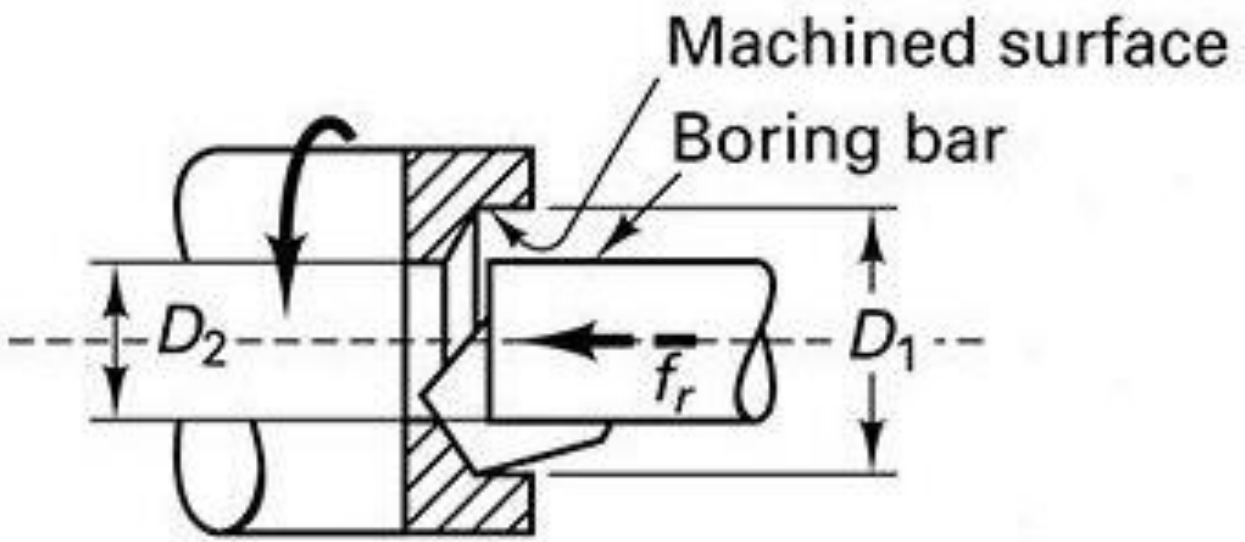
Turning Process



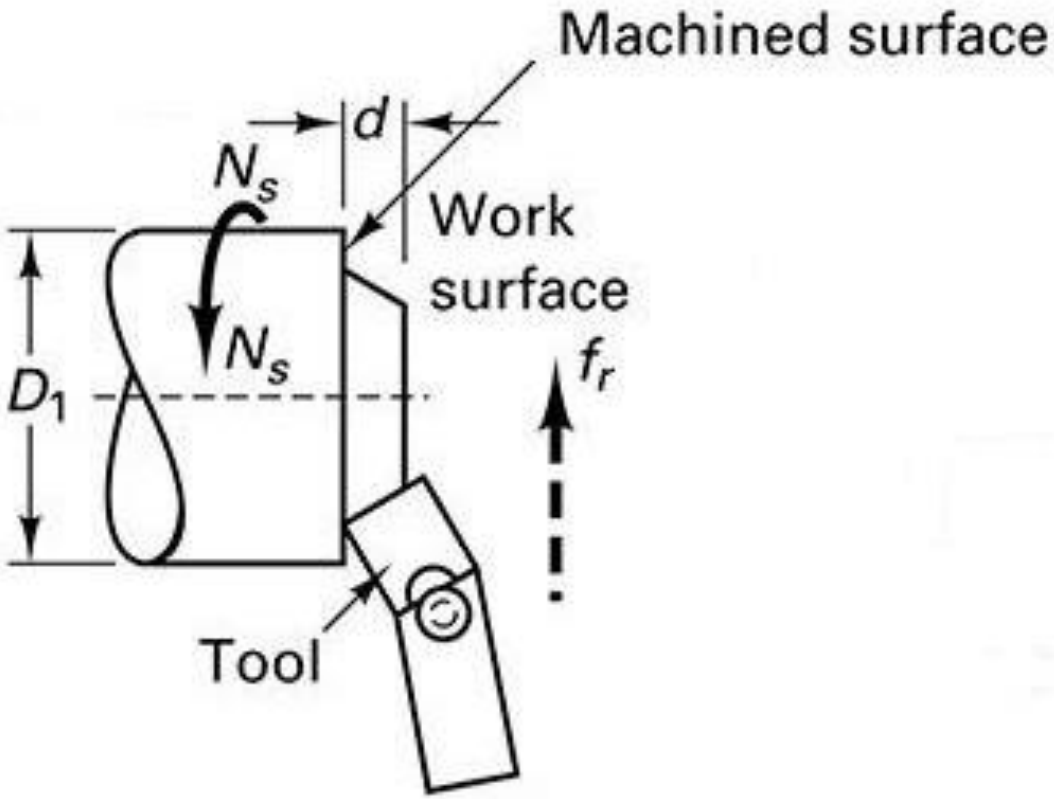
Turning Basics



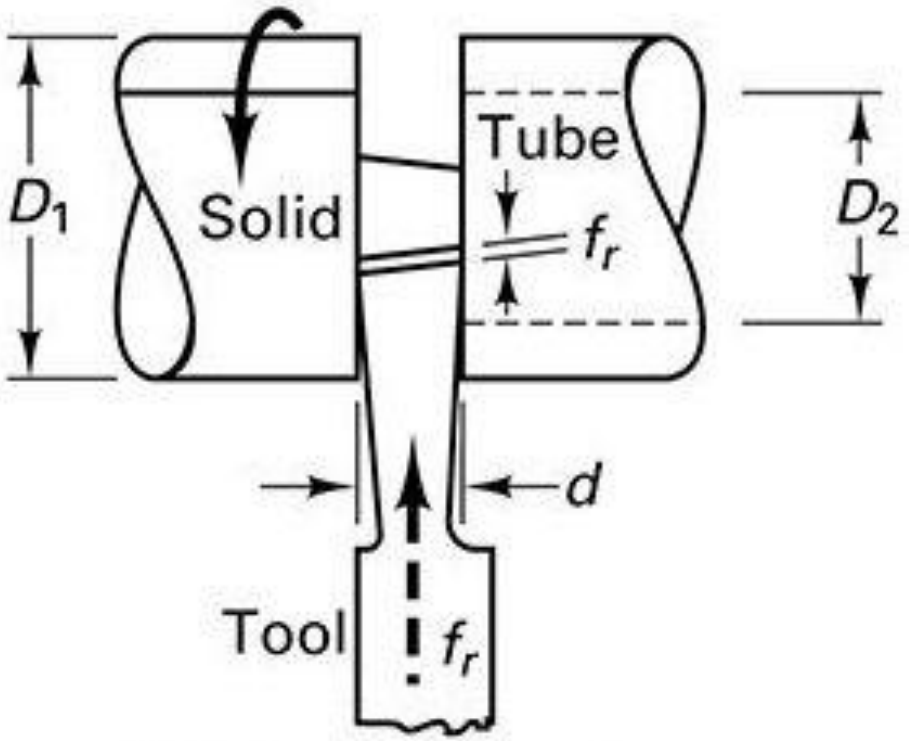
Boring Basics



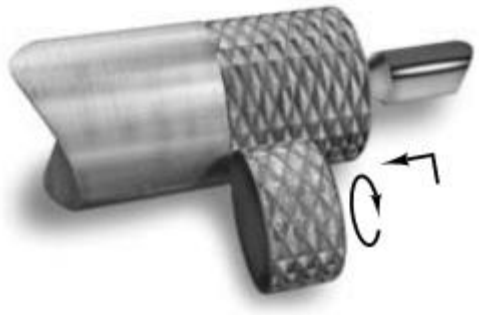
Facing Basics

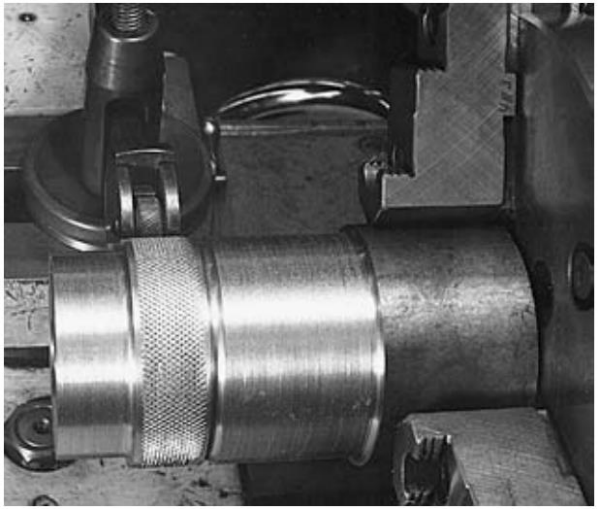


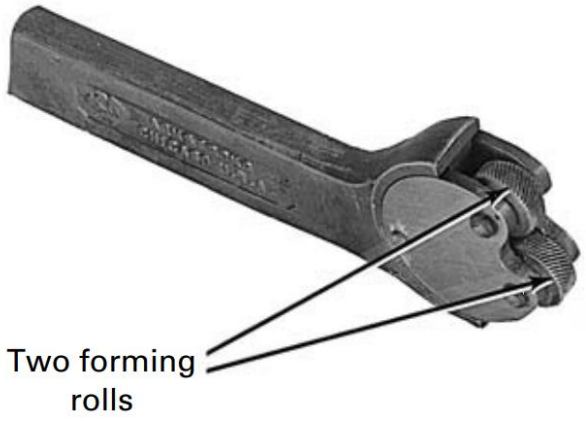
Cutoff or Parting Basics



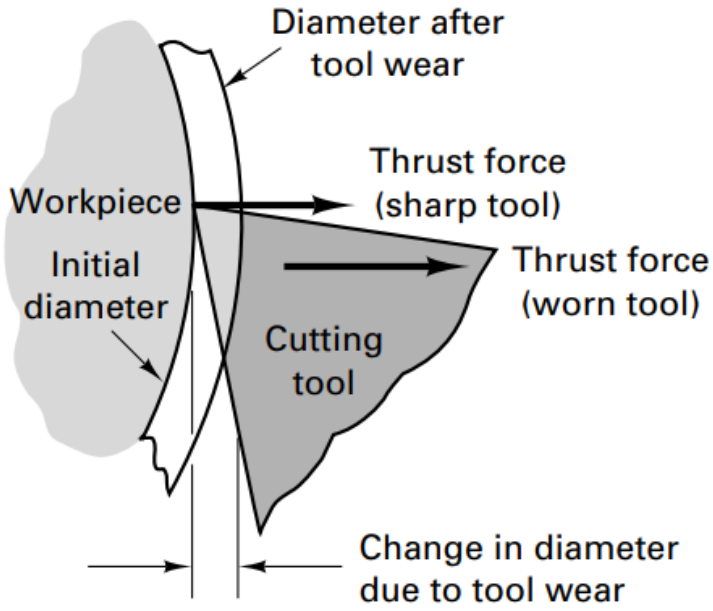
Knurling



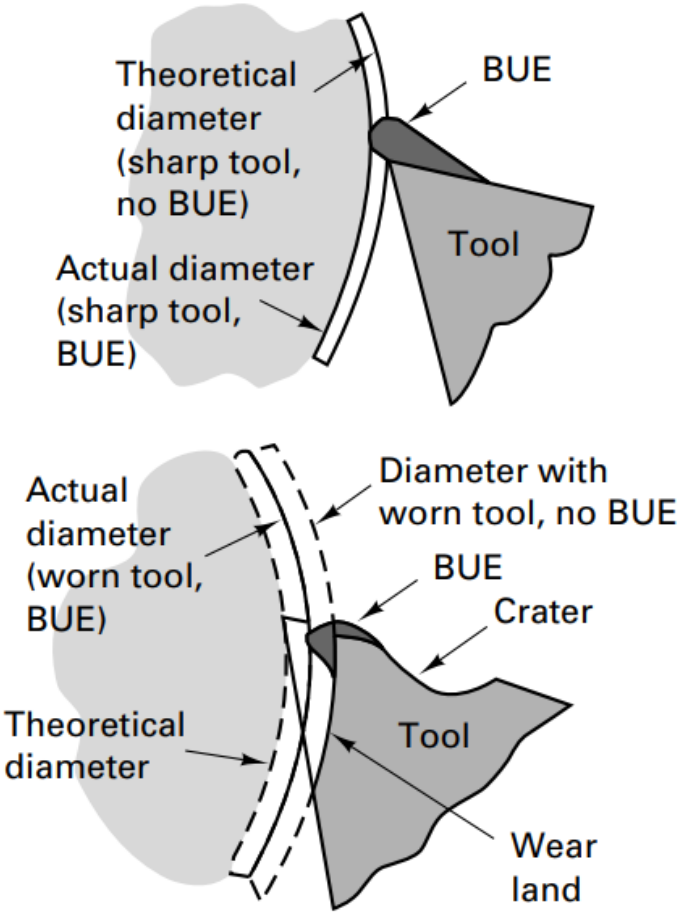




Tool Wear and BUE

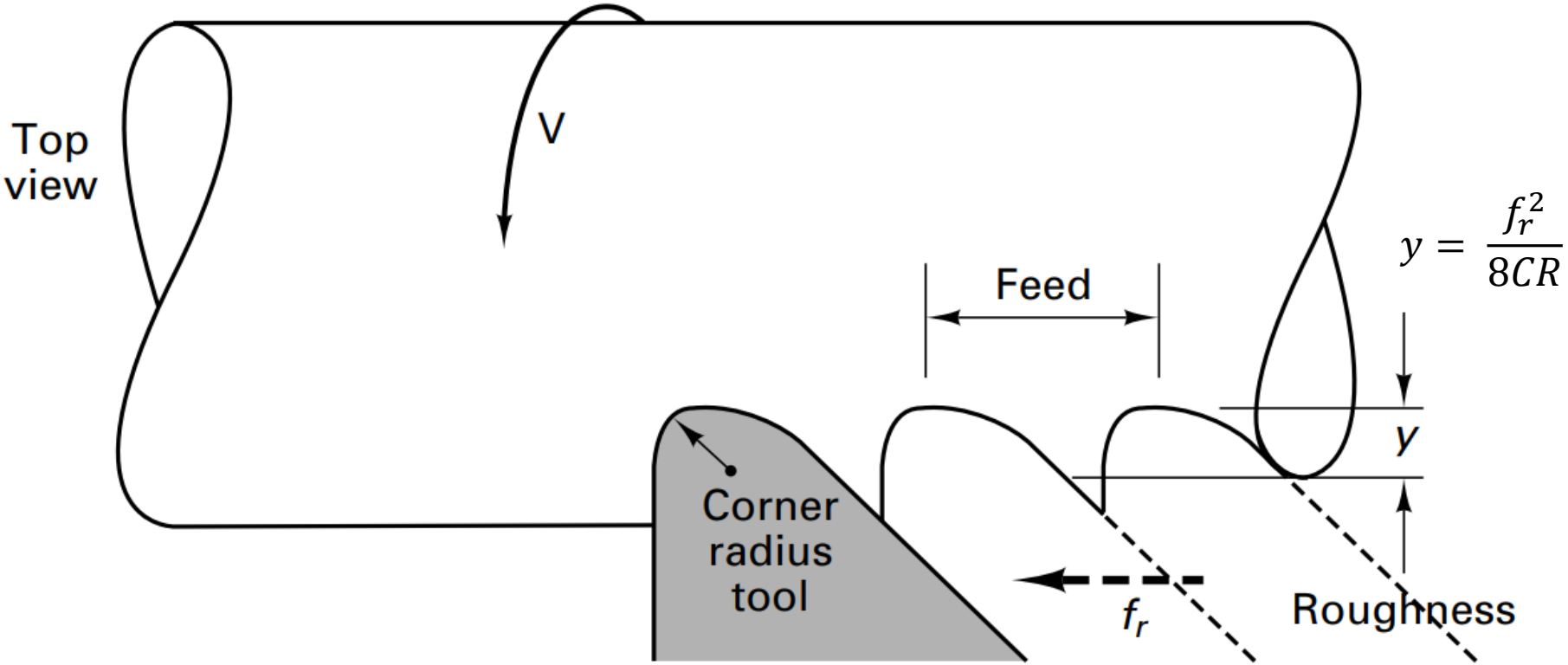


The diameter of a workpiece becomes larger, as do the thrust forces as the cutting tool wears on the flank during turning.



Regardless of whether the tool is dull or sharp, a built-up edge (BUE) causes the diameter of the workpiece to be smaller than desired.

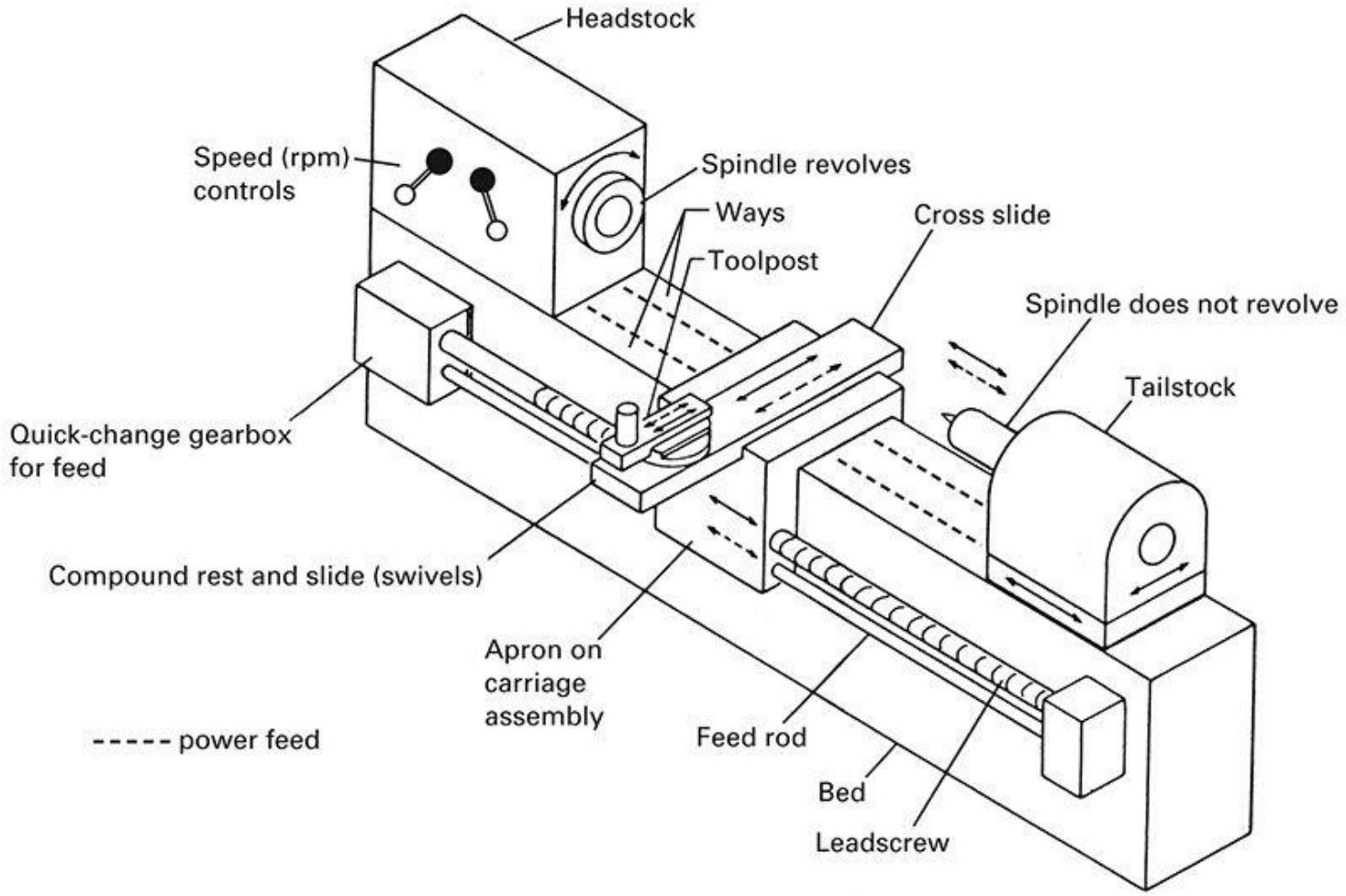
Surface Roughness and Cutting Tool Radius



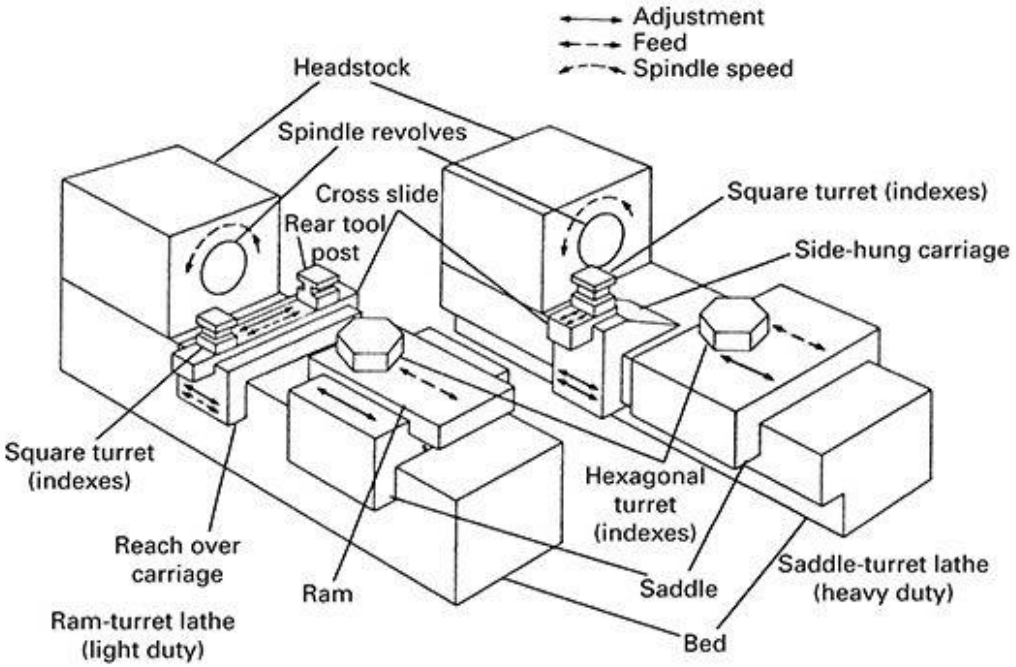
The feed and the corner radius (CR) of the cutting tool influences the surface roughness.

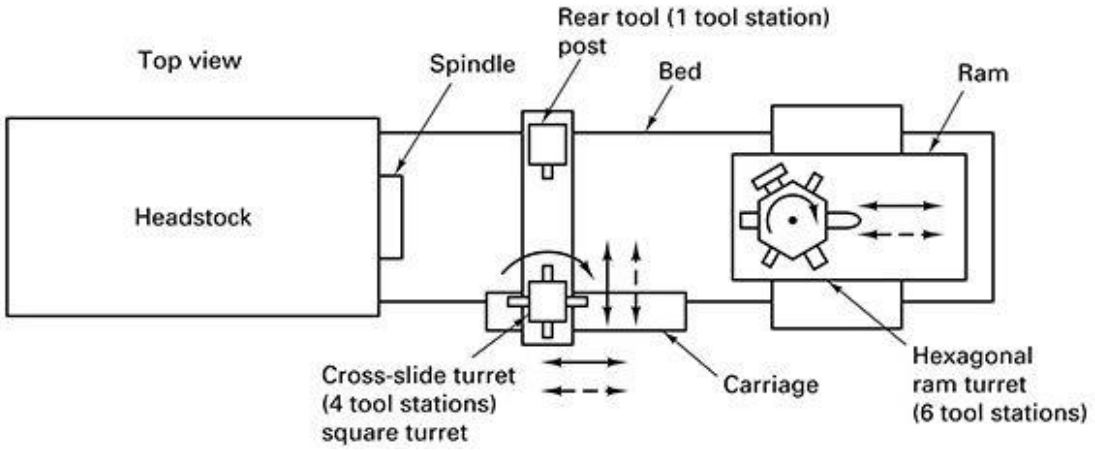
Watch Video Here

Diagram of a Lathe

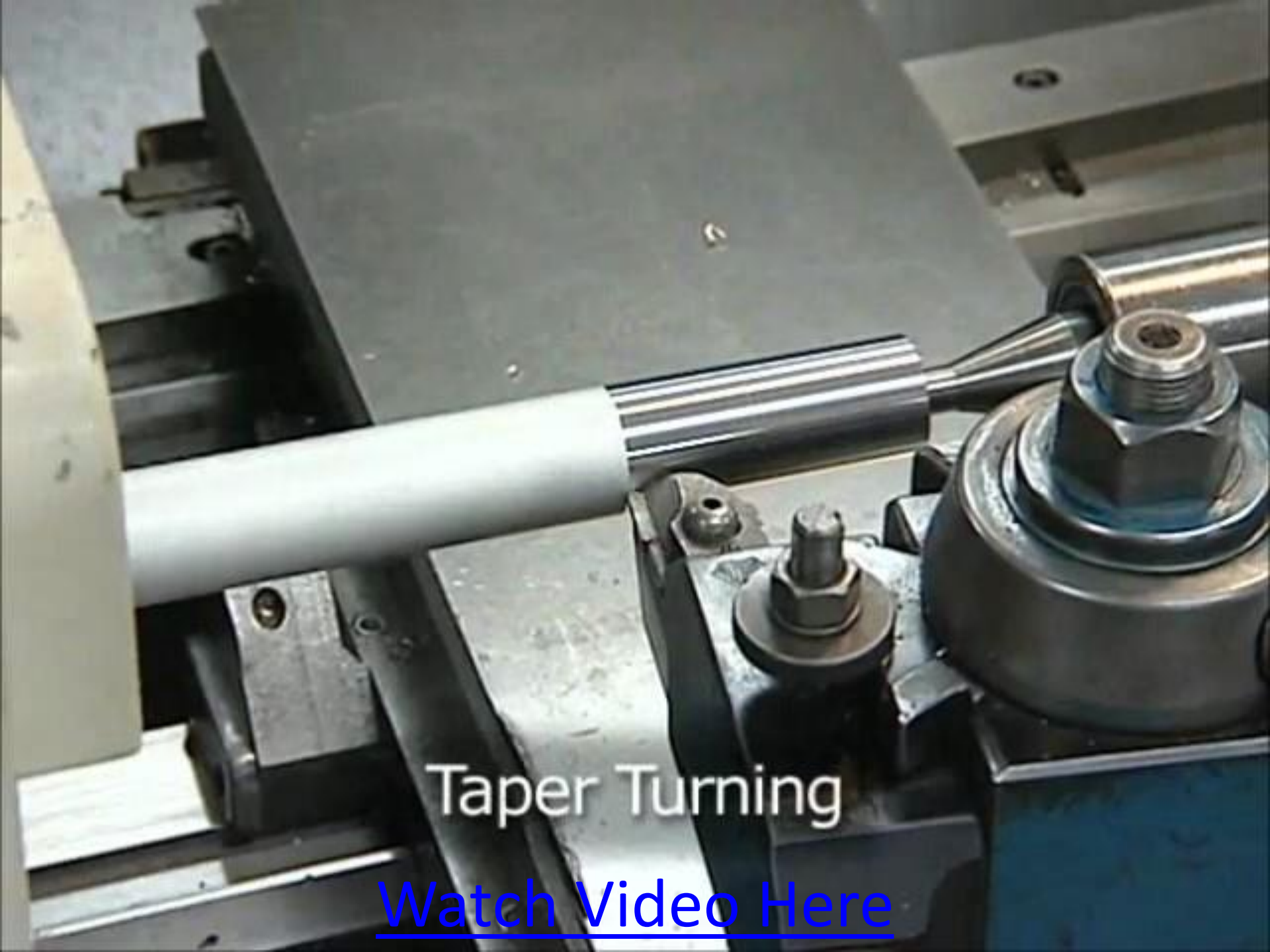


Turret Lathe

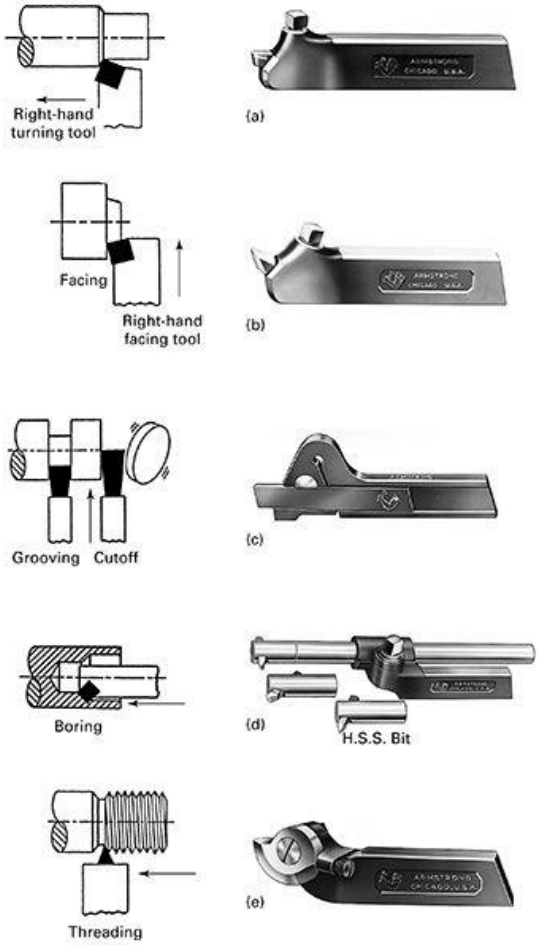




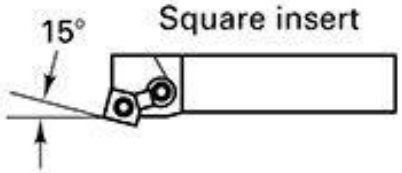
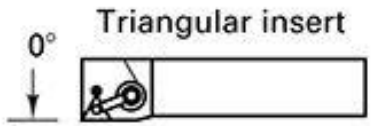
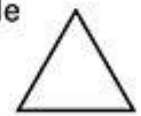
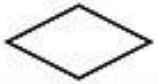
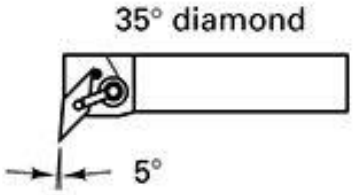
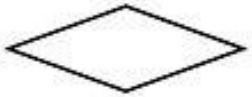
Vertical Turning Center


Taper Turning
Watch Video Here

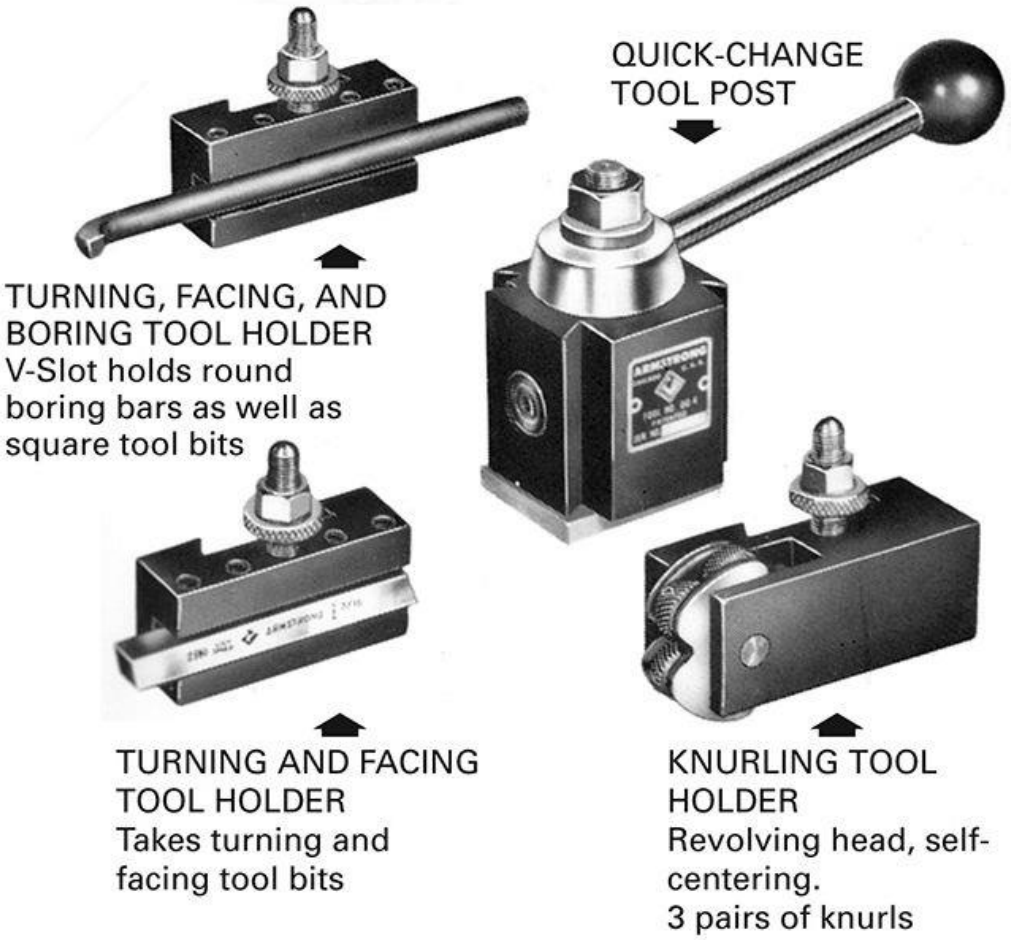
Tool Holders



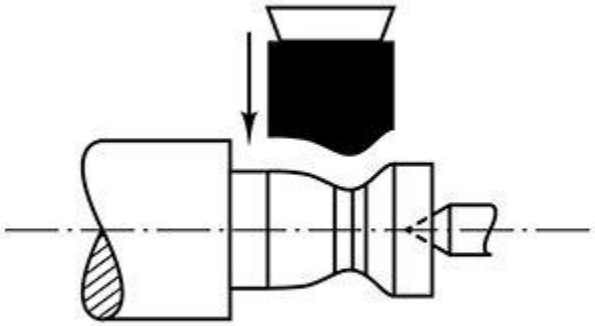
Cutting Insert Types

Insert shape	Available cutting edges	Typical insert holder
Round 	4–10 on a side 8–20 total	
80°/100° diamond 	4 on a side 8 total	
Square 	4 on a side 8 total	
Triangle 	3 on a side 6 total	
55° diamond 	2 on a side 4 total	
35° diamond 	2 on a side 4 total	

Quick-Change Tool Posts

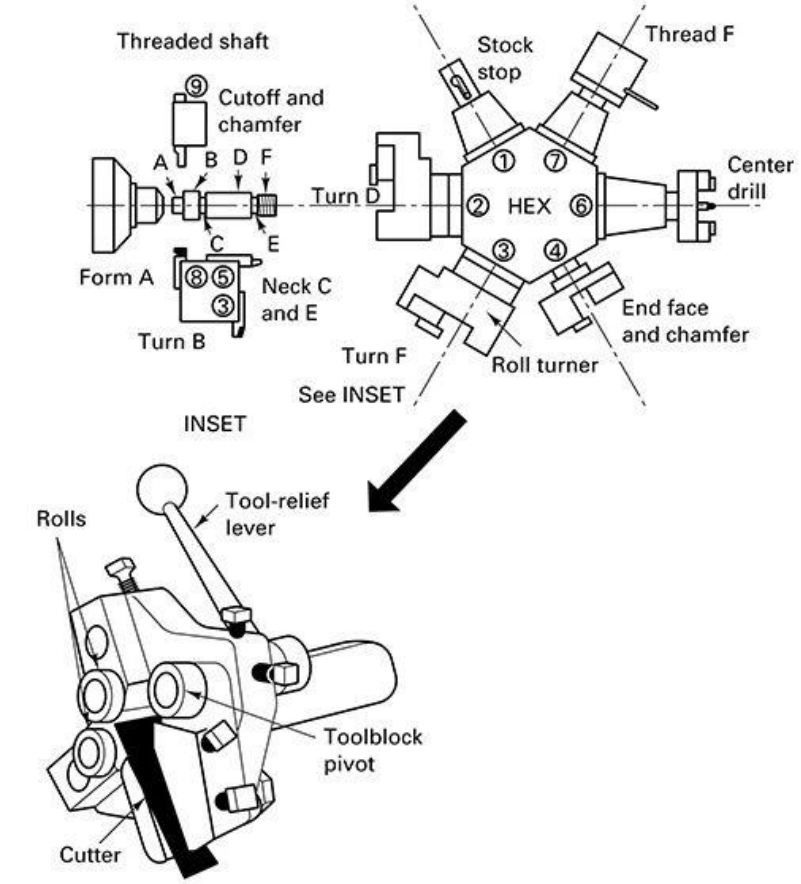


Form-cutting Tool



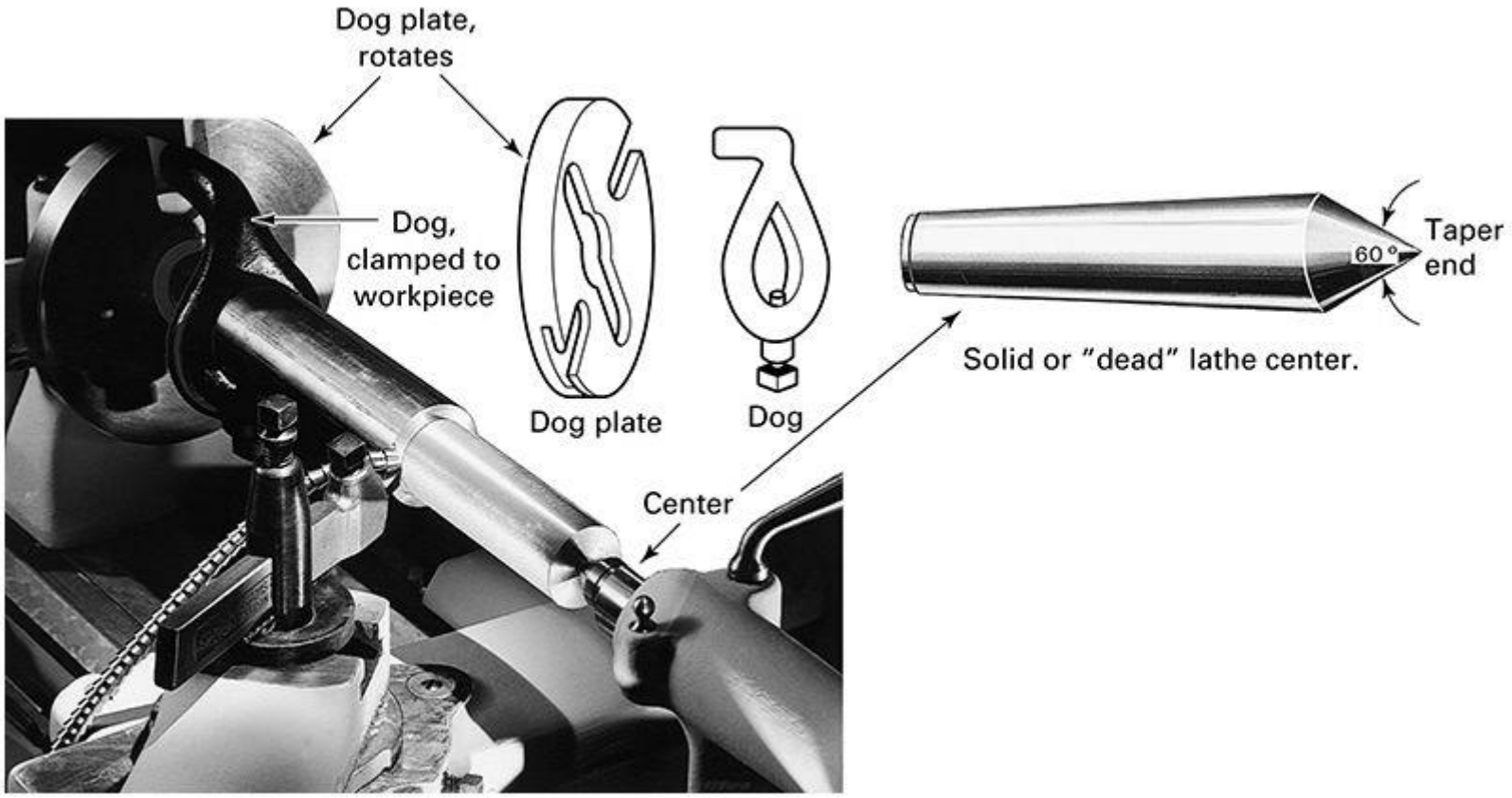
Form turning

Turret Lathe Tooling

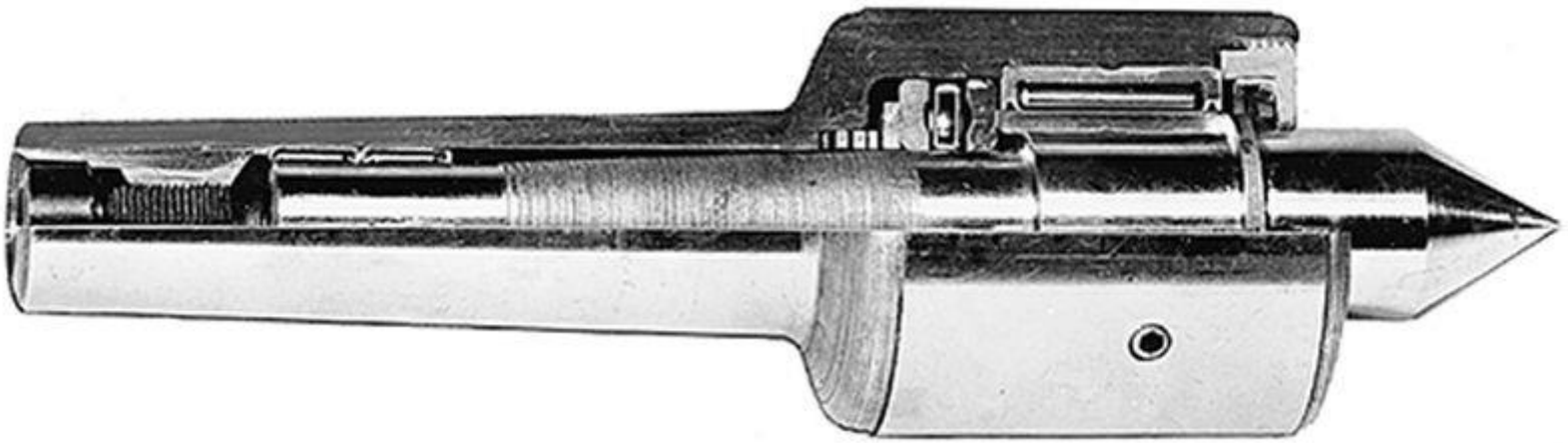


Roller turner has rolls to support the work against the cutting forces

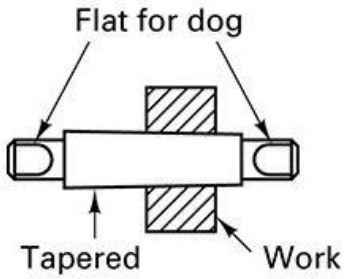
Faceplate and Dog



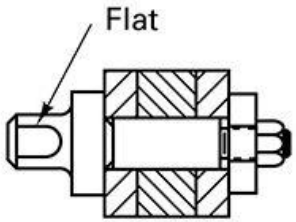
Live Center



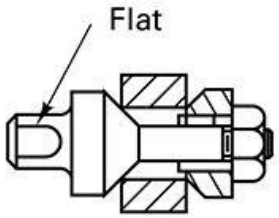
Mandrels



Plain solid mandrel

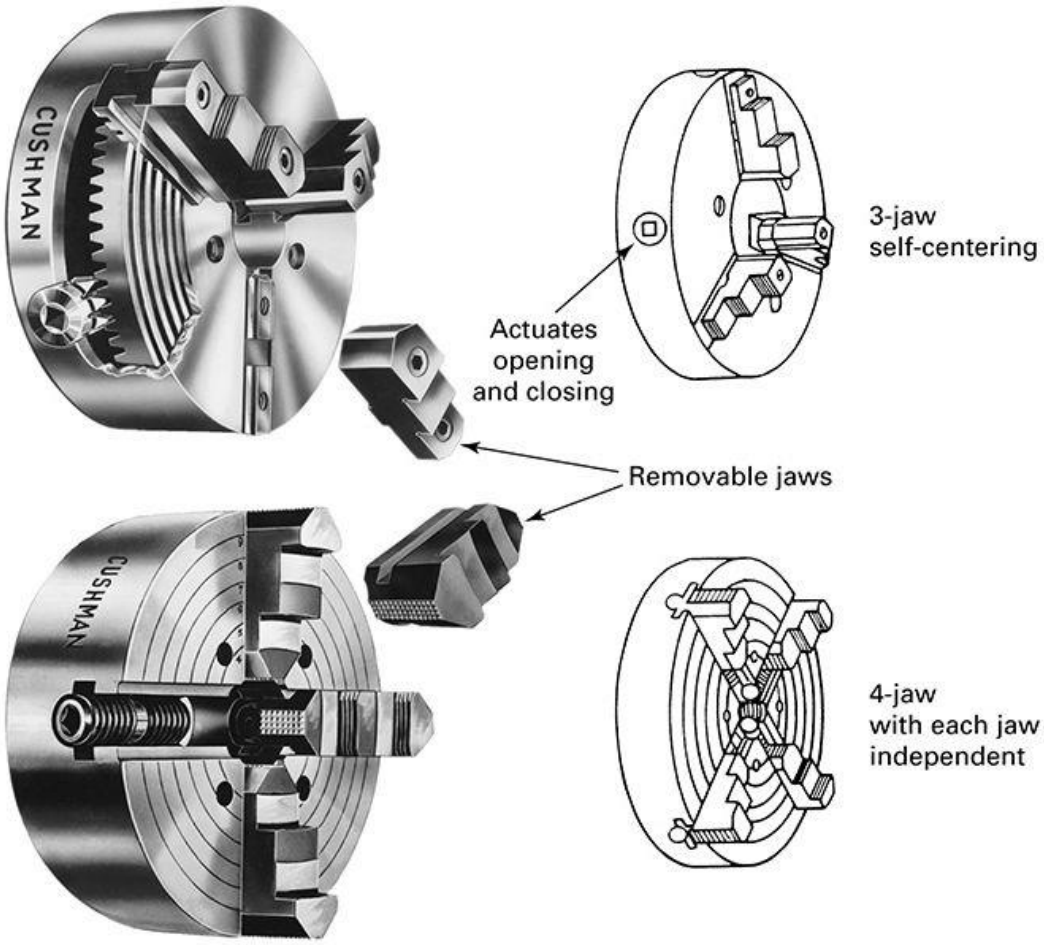


Gang mandrel



Cone mandrel

Lathe Chuck


CUSHMAN
Actuates opening and closing
3-jaw self-centering
Removable jaws
CUSHMAN
4-jaw with each jaw independent

Collets


Round collet
Square collet
Hexagon collet
Cutaway view of collet
SOUTH BEND
1-A

Follow and Steady Rest