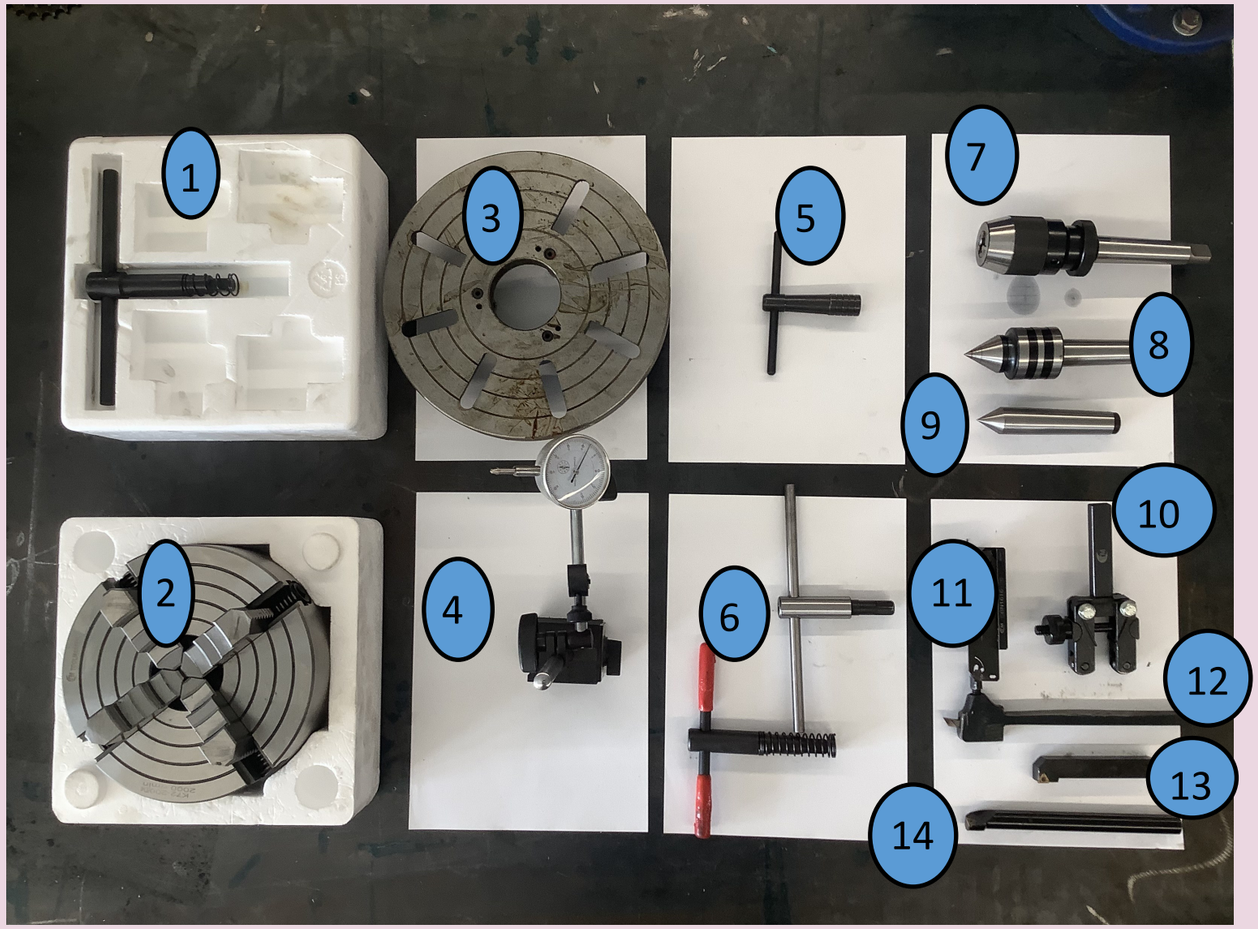
Metal Center Lathe

Naming the Parts

Metal Center Lathe

Metal Lathe Accessories



1 Four Jaw Chuck key

Adjusting the 4 independent Jaws

2. Four Jaw Chuck

Holding irregular shaped material for machining

3. Face Plate

Holding large shapes that will not fit into a 4 jaw chuck

4. Dial Test Indicator

Used for finding center on irregular shaped material held in chuck and face plate

5. Tool Holder Tool

Tightening screws that hold tools into the tool post

6. Three Jaw Chuck Key and cam—lock key

Holding concentric material for machining

7. Keyless Chuck

Holding center - drills, drill bits and reamers

8. Live Center

Supporting large or long material for machining

9. Dead Center

Used for supporting material at slow speeds

10. Knurling Tool

Applying diamond serration on concentric surfaces

11. Carbide Parting Tool

Parting off material to size

12. HSS Tool Holder

For machining material at medium speeds and feed rates

13. Carbide Turning Tool

For machining material at high speeds and feed rates

14. Carbide Boring Bar

For machining material internally, i.e. holes

Metal Lathe Operations

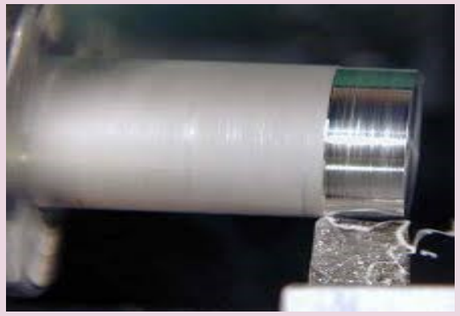
The center lathe is an important machine tool for shaping metals. Its main uses are to produce accurate cylindrical shapes, to cut across flat surfaces (facing off), the end of a work piece and for drilling and boring holes. The process for using a lathe is called turning.

Lathe Operations

Facing Off— Also called surfacing, it is the process of cutting a flat surface at 90 degrees to the axis of rotation at the end of a workpiece.

Drilling— Can be carried out by securing a center drill into the keyless chuck and using the tailstock a centred hole can be drilled into the end face of a revolving piece of material. Changing the center drill to a parallel shank drill of a certain size, can then be used to drill into or through the material.

Parallel Turning—Also called sliding is the process of turning a cylindrical shape parallel to the axis of rotation along a workpiece.



Parting Off— involves feeding a tool into a workpiece at 90 degrees to the axis of rotation to cut the workpiece to length. The tools second function will be to face off the material as it cuts through the material.

Taper Turning—Produces a conical shape at an angle to the axis of rotation. It is usually achieved by rotating the compound slide to the desired angle.

Turning Between Centers — Long work pieces can be supported by the headstock chuck and live centre, then cut.

Lathe centers are designed to fit into the tailstock spindle. All work must be centre drilled before turning begins.