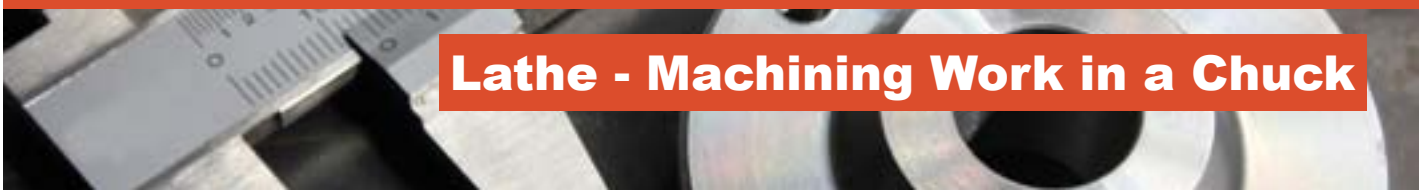

Lathe - Machining Work in a Chuck

Course 325: Lathe—Machining Work in a Chuck

A sequential follow-up to Course 324 on lathe operation, covers chuck installation, boring and counterboring operations, thread cutting, and taper boring. Continues into special lathe operations that use faceplates, angle plates, and boring bars. Provides several real “hands-on” projects.

TPC Training is accredited by IACET to offer **0.5 CEU** for this program.

Lesson 1: Lathe Setup and Workpiece Preparation

Topics

Checking the Lathe; Basic Holding Methods; Chuck Size Selection; Installing a Chuck; Installing Work in a Chuck; Correcting Misalignment; Centering Odd Shapes in a Chuck; Using a Three-Jaw Universal Chuck; Using a Collet Chuck; Using Mandrels; Workpiece Description; Planning the Work Sequence; Using a Four-Jaw Independent Chuck; Removing a Chuck

Objectives

- Select and install a chuck.
- Install and center work in a chuck.
- Use a 3-jaw and 4-jaw chuck.
- Use a collet chuck.
- Use a mandrel.

Lesson 2: Rough Turning and Finish Turning

Topics

Facing the Workpiece; Tool Selection and Installation for Facing; Tool Alignment for Facing; Setting the Speed and Feed for Facing; Rough Turning the Workpiece; Speed and Feed for Rough Turning; Use of Cutting Fluids; Setting the Longitudinal Feed; Completing Rough Turning; Finish Turning the Workpiece; Facing the Shoulder

Objectives

- Select, install, and align both a facing tool and a turning tool.
- Set the correct speed and feed for facing and turning.
- Rough turn a workpiece.
- Finish turn a workpiece.
- Face a shoulder

Lesson 3: Boring and Counterboring

Topics

Boring Tool Design; Boring Tool Bit Selection; Boring the Workpiece; Installing the Boring Bar and Bit; Adjusting the Cross Feed; Rough Boring; Depth of Cut for Rough Boring; Rough Trial Cut; Speed and Feed for Rough Boring; Use of Coolants; Completing the Rough Boring; Finish Boring; Finish Boring Tool Selection and Installation; Speed and Feed for Finish Boring; Counterboring

Objectives

- Select and install a boring bar and bit.
- Select the speed and feed for boring and counterboring.
- Make a trial cut.
- Rough bore and finish bore a workpiece.
- Counterbore a workpiece.

Lesson 4: Cutting Internal Threads and Boring Tapers

Topics

Cutting Internal Threads; Thread-Cutting Tool Selection; Installing and Aligning the Tool; Threading the Workpiece; Checking Finished Threads; Boring Tapers; Using the Compound-Rest Method for Boring Tapers; Cutting Tool Selection and Installation; Aligning the Tool with the Workpiece; Boring the Taper; Using the Taper-Attachment Method; Workpiece Mounting and Tool Selection; Aligning the Tool with the Workpiece

Objectives

- Select, install, and align a thread-cutting tool.
- Machine internal threads in a workpiece.
- Check finished threads.
- Bore a taper using the compound-rest method.
- Bore a taper using the taper-attachment method.

Lesson 5: Holding Irregular and Oversize Workpieces

Topics

Special Lathe Operations; Mounting the Workpiece on a Faceplate; Truing a Faceplate; Holding Work on a Faceplate; Using Faceplate Jaws; Using Faceplate Clamps; Using Angle Plates; Installing and Aligning an Angle Plate; Mounting Work on an Angle Plate; Aligning Work on an Angle Plate; Using V-Block Angle Plates; Facing Large Diameters; Mounting the Workpiece; Using a Specialized Mandrel; Boring Work on the Lathe Carriage

Objectives

- Mount and true a faceplate.
- Use faceplate clamps and jaws.
- Hold work on an angle plate.
- Mount work on the lathe carriage for boring.