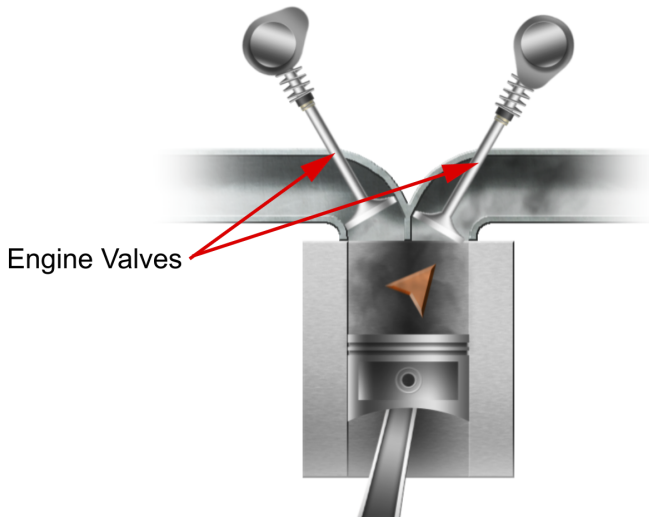


Engine Valve Manufacturing

eLearning courses designed to increase productivity and profits



Learning Made Simple, Visual, and Interactive

The THORS *Engine Valve Manufacturing* course begins with an in-depth understanding of the premachining processes involved in manufacturing an engine valve. This course also delves into machining processes, such as turning, centerless grinding, and cylindrical grinding, and other processes, such as special processes and final inspection, used in engine valve manufacturing. To enhance the learning experience, the course contains interactive quizzes that allow learners to test their knowledge and retention of the visually engaging content.

Credit Hours **2**

Learning Objectives

- Describe the various steps involved in each of the different premachining processes.
- Identify the various types of machining processes used in engine valve manufacturing.
- Recognize the different types of surface hardening processes applied to an engine valve.
- Define the various types of surface treatments performed on an engine valve.

Table of Contents

I. Premachining Processes

- **Bar Preparation**
 - ▣ Raw Material Inspection
 - ▣ Cutting
 - ▣ Deburring and Chamfering
- **Upset Forging**
 - ▣ Process Stages
 - ▣ Inspection
- **Heat Treatment**
 - ▣ Inlet Valve
 - ▣ Exhaust Valve
 - ▣ Shot Blasting

I. Premachining Processes (continued)

- **Friction Welding**
 - ▣ Process
 - ▣ Parameters
 - ▣ Post Welding Processes
- **Straightening**
- **Stress Relieving**
- **Stellite Deposition**
 - ▣ Gas Tungsten Arc Welding
 - ▣ Plasma Transferred Arc (PTA) Welding
 - ▣ Inspection

II. Machining and Other Processes

- **Machining**
 - ▣ Turning
 - ▣ Centerless Grinding
 - ▣ Cylindrical Grinding
- **Special Processes**
 - ▣ Surface Hardening
 - ▣ Surface Treatment
- **Final Inspection**

