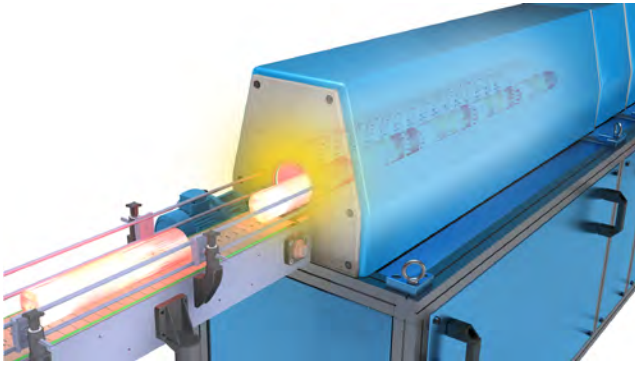


FORGINGS: CLOSED DIE PROCESSES

eLearning courses designed to increase productivity and profits



Learning made Simple, Visual, and Interactive

Forging: Closed Die Processes introduces learners to the pre-forging processes, conventional forging, and final inspection. The important and commercially vital process of closed die forging is brought to life in this course using realistic 3D models, helpful animations, and interactive quizzes. The material in this course is beneficial for both experienced forging veterans and learners new to the industry.

Credit Hours **2**

Learning Objectives

- Recall some of the primary products created by forging processes.
- Recognize the basic equipment used in forging processes.
- Understand some common terms such as billet, blank, press, and die.
- Recall some of the basic forging design considerations.
- Distinguish between the various steps in the forging process.
- Recognize some of the post-forging processes, such as heat treatment and testing.

Table of Contents

I. Pre-Forging Processes

- Raw Material Verification**
 - Raw Material Certificate
 - Traceability
 - Chemical Composition
 - Raw Material Mechanical Properties
 - Grain Size
 - Visual Defects
- Prototype Testing**
- Billet Cutting**
 - Bar Shearing
 - Bar Sawing
- Billet Heating Furnaces**
 - Fossil Fuel Furnaces
 - Electric Furnaces
- Billet Temperature Control**

II. Conventional Forging

- Forging Temperature Control**
- Billet Handling**
- Die Lubrication**
- Trimming**
- Piercing**
- Secondary Operations**
 - Coining
 - Bending
 - Straightening
 - Grinding

III. Final Inspection

- Dimensional Verification**
 - Forging Gauges
- Forging Defects**
 - Cracks and Laps
 - Excessive Mismatch
 - Excessive Scale Pits
 - Underfill

