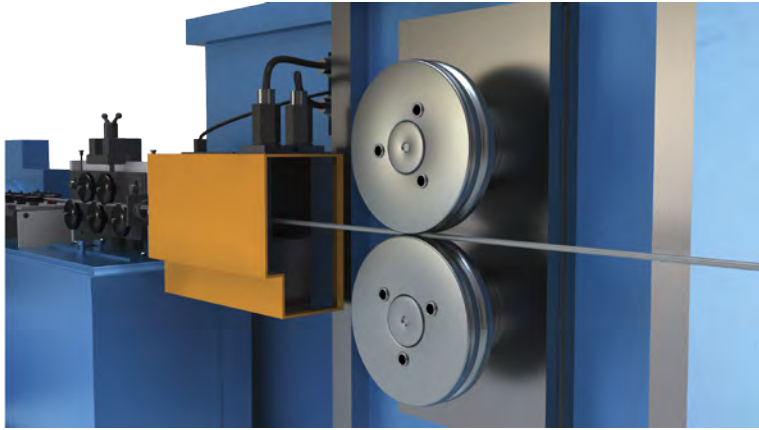


COLD FORMING FUNDAMENTALS

eLearning courses designed to increase productivity and profits



Learning made Simple, Visual, and Interactive

Cold forming processes are applied all over the world to produce metal components, such as fasteners and precision automotive parts. The operations associated with cold forming are generally considered quick, economical, and easily repeatable. A variety of functions that were traditionally accomplished by machining operations are now performed on cold forming machines. Cold forming industries are constantly expanding and improving with the aid of continuous process and technological advancements.

Credit Hours **2.5**

Learning Objectives

- Understand the benefits of cold forming when compared to machining.
- Recognize the various materials that can be cold formed.
- Differentiate between the types of cold forming machines and the products each machine can manufacture.
- Recall the various equipment and processes used to create cold formed products.
- Examine possible testing methods and troubleshooting solutions for common tooling and process failures in cold forming industries.

Table of Contents

I. Basic Concepts

- Cold Forming vs. Machining
- Cold Forming Properties
- Advantages and Disadvantages
- Cold Forming Material and Lubrication
- Raw Material Inspection
- Cold forming Machine Types
 - o Single Die Machines
 - o Two-Die Machines
 - o Multi-Die Machines

II. Equipment and Processes

- Equipment
 - o Uncoiler
 - o Straightener
 - o Feed Mechanism
 - o Cutoff Mechanism

- o Punch and Die
- o Transfer
- o Knockout

• Basic Processes

- o Extrusion
- o Upsetting
- o Heading
- o Piercing
- o Trimming

• Secondary Processes

- o Thread Rolling
- o Heat Treating

III. Testing and Troubleshooting

• Testing

- o Quality Control
- o Tensile Testing

- o Fatigue and Transverse Rupture Strength Testing

• Troubleshooting

- o Feed Rolls and Mechanical Roll
- o Transfer Fingers
- o Punch and Die
- o Double Hit
- o Cutoff
- o Galling
- o Part Fill
- o Extrusion
- o Upsetting
- o Piercing and Trimming

