BOLTED JOINT BASICS

eLearning courses designed to increase productivity and profits

Learning made Simple, Visual, and Interactive

The Bolted Joint Basics course will help a learner understand the different types of physical principles that must be taken into consideration with a bolted joint, the concepts that allow a bolted joint to work, and the common tools used to assemble and control a bolted joint.

Credit Hours **2**

Learning Objectives

- Recall the various types of stresses and loads placed on a bolted joint.
- Recognize ultimate tensile strength, yield strength, and proof load.
- Understand the importance of clamp load.
- Identify the differences between two and three assembled bolted joint members.
- Define each type of measurement method used to quantify torque in a bolted joint.
- Name the different types of assembly tools, including nutrunners and torque wrenches.
- Outline assembly control methods used to tighten a bolted joint.

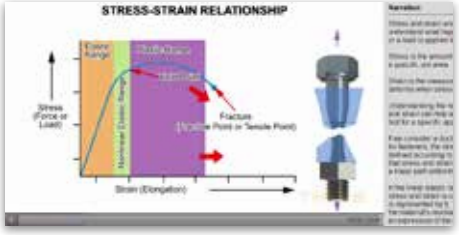
Table of Contents

I. Bolted Joint Concepts

- **Basic Concepts**
  - Force and Load
  - Friction and Torque
  - Stress-Strain Relationship
  - Proof Load
  - Yield Strength and Ultimate Tensile Strength
- **Assembly Concepts**
  - Torque-Tension Relationship
  - Joint Diagram
  - Clamp Load
  - K Factor
  - Torque Control
  - Torque-Turn Control
  - Yield Control
  - Load Indicator

I. Bolted Joint Concepts

- **Assembly Tools**
  - Nutrunners
  - Torque Wrenches
  - Hydraulic Tensioning
  - Heat Tightening
- **Assembly Control Methods**
  - Prevailing Torque Fasteners
  - Lockwire
  - Adhesive Thread Lockers
  - Washers



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