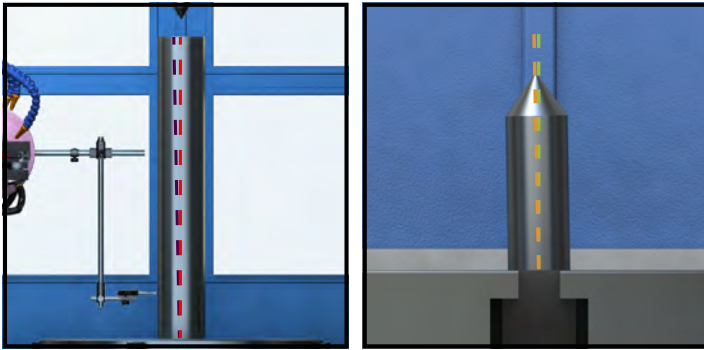


CYLINDRICAL GEAR MANUFACTURING TROUBLESHOOTING

eLearning courses designed to increase productivity and profits



Learning made Simple, Visual, and Interactive

Gears: Cylindrical Gear Manufacturing Troubleshooting is a highly visual course designed for an advanced learner who has prior knowledge of gear terminology, gear manufacturing, and gear chart interpretation. In this course, learners are introduced to the common manufacturing errors that manifest themselves on gear charts. The course then provides an understanding of the potential root causes of the errors, followed by a discussion on the tips and techniques that can be used to correct the errors.

Credit Hours **2.5**

Learning Objectives

- Identify the most common errors seen on gear charts that occur during gear manufacturing.
- Distinguish between and understand the potential root causes for the most common manufacturing errors.
- Apply the proper techniques to correct the most common manufacturing errors.

Table of Contents

I. Identifying Common Manufacturing Errors

- **Helix Wobble**
 - o Chart Characteristics
 - o Part Performance
- **Helix Off-Angle**
 - o Chart Characteristics
 - o Part Performance
- **Helix Taper**
 - o Chart Characteristics
 - o Part Performance
- **Combination of Helix Errors**
 - o Chart Characteristics
 - o Part Performance
- **Profile Wobble**
 - o Chart Characteristics
 - o Part Performance

• Other Errors

- o Profile Off-Slope
- o Profile Taper
- o Base Pitch Error
- o Cumulative Pitch Error
- o Tooth Thickness Error

II. Root Causes of Errors

- **Incorrect Headstock Centering**
- **Incorrect Tailstock Centering**
- **Improper Machine Alignment**
- **Inconsistent Part True-Up**
- **Tooling Errors**

III. Tips and Techniques to Correct Errors

- **Headstock Check**
- **Orbit Check**
- **Machine Alignment**
- **Part Alignment**
 - o True-Up for a Bored Gear
 - o True-Up for a Shaft Pinion

