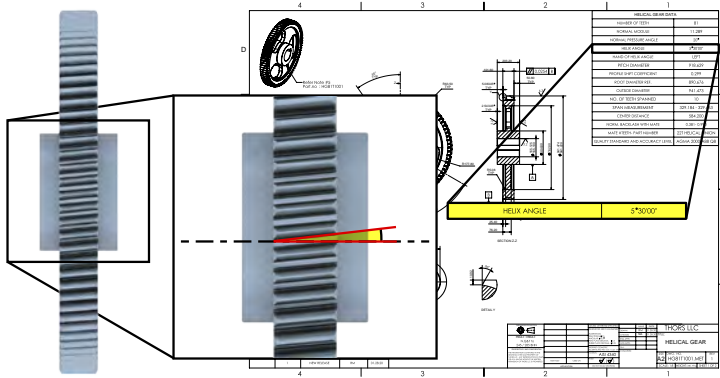


# ENGINEERING DRAWINGS FOR SPUR AND HELICAL GEARS [2ND ED.]

*eLearning courses designed to increase productivity and profits*



## Learning made Simple, Visual, and Interactive

This course teaches the fundamental concepts needed to read and interpret a gear drawing. Commonly used terms, such as those found in a gear data block, associated with gear features, and in notes, are explained to enhance the understanding of drawing requirements to manufacture mating gear parts.

Credit Hours **2.5**

## Learning Objectives

- 💡 Identify the distinct characteristics that are included on a spur or helical gear drawing.
- 💡 Recognize a gear data block and the different elements contained within it.
- 💡 Recognize and understand the importance of various feature attributes that may appear on spur and helical gear drawings, as well as the associated dimensioning and symbols used.
- 💡 Understand the different types of notes that may be found on drawings for spur and helical gears.

## Table of Contents

### I. Distinct Characteristics

- Gear Data Block
- Gear Data Information
  - o Basic Gear Data
  - o Calculated Gear Data
  - o Proprietary Gear Data
- Gear Data Geometry
  - o Number of Teeth
  - o Normal Diametral Pitch
  - o Normal Pressure Angle
  - o Helix Angle
  - o Hand of Helix
  - o Pitch Diameter
  - o Profile Shift Coefficient
  - o Root Diameter
  - o Outside Diameter
  - o Number of Teeth Spanned
  - o Span Measurement
  - o Center Distance
  - o Normal Backlash with Mate
  - o Mate Number of Teeth
  - o Quality Standard and Accuracy Level

### II. Gear Dimensioning and Symbols

- Conventional Representations
- Datum Features
  - o Use of a Bore as a Datum Feature
  - o Use of a Journal as a Datum Feature
- Surface Finish Symbols
- Size Attributes
- Feature Attributes
  - o Bell Centers
  - o Tooth Tip Chamfer Dimension
  - o End Face Edge Chamfer Dimension
  - o Helix and Profile Modifications
    - Crowning
    - Circular End Relief
    - Circular Tip Relief
  - o Thread Specifications for Tapped Holes
  - o Keyways and Keyseats

### III. Notes

- Material Notes
  - o Type of Metal
  - o Quality of Material
- Special Process Notes
  - o Surface Finish Notes
  - o Shot Peen Notes
  - o Coating Notes
- Heat Treatment Notes
  - o Through Hardening
  - o Case Hardening
- Quality Notes
  - o Finishing Processes
  - o Inspection Requirements

