



IIGDT Training

“GD&T - Introduction & Fundamental Principles”

Objective:

To provide fundamental lessons in proper interpretation of engineering drawings used in the design, manufacture and inspection of parts, which have geometric controls applied per ANSI Y14.5M-1982 and ASME Y14.5M-1994.

Course Length:

2 days

Course Content:

Introduction to Theory and Rules

- Rule 1 on Feature Size
- Rules 2 & 3 on Material Condition Principles Applied to Features
- Pitch Diameter Rule
- Comparison of Changes Between ANSI Y14.5M-1982 and ASME Y14.5M-1994

Linear Transformation to GD&T

- Implications of +/- Tolerancing
- Conversion of Square Zone to Diametral

Datums and Datum Features

- Datum Precedence
- Planar Datum Features
- Datum Features of Size
- Inclined Datums
- Compound Datums
- Datum Targets and Partial Datum Features
- MMC, LMC and RFS Applied to Datum Features
- Introduction to Multiple Hole Patterns Defined as a Single Datum

14 Geometric Symbols

- Analysis of Symbols and Definitions
- Analysis of Tolerance Zones
- Actual Mating Envelope
- Supporting Symbology

Feature Control Frames

- Single Segment Feature Control Frames
- Composite Feature Control Frames
- 2D Analysis of Single Segment and Composite Feature Control Frames
- Virtual Condition Principles
- Simultaneous Requirements
- Beginning Levels of 3D Analysis

Beginning Analysis of Measurement Applications

- Negative Implications of Specific Measurement Procedures
- Analysis of Data from Case Studies and Formula Calculations
- Position Calculation Exercises and Review of General Guidelines

Global Simplification of GD&T

- GD&T Boundary Comparisons
- Reduction of Symbology (14 symbols down to 3 symbols)

Overview of Progression to GD&T Level III “Advanced Applications & Analysis”

Prerequisites:

Introduction to Mechanical Drawings or equivalent knowledge

Who should attend?

This fundamental course is for those who must read and interpret engineering drawings and who want to develop or to improve their understanding of the basics of measurement tools, geometric symbology and engineering drawing interpretation as applied per ASME Y14.5M-1994. Drafters, inspectors, designers, technicians, machine operators, toolmakers, technical managers and engineers will all greatly benefit.