Using Geometric Dimensioning and Tolerancing (GD&T) To Lower Product Manufacturing Costs

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Introduction to Concept

• 70% of product cost is locked in at design stage

• 80% of chronic quality issues are related to sub-standard product design

• Geometric designing and tolerancing (GD&T) can be used to overcome this

• Use GD&T to capture functional requirements & translate into correct manufacturing tolerances
Use GD&T as a Strategic Tool

- Allow assembly components to have maximum amount of tolerance
- Eliminate issuance of discrepancy waivers
- Ensure good products (around 25%) are not rejected due to bad tolerancing
- Use “zero tolerance at the maximum material virtual condition (MMVC)”
Learn for Good!

• Central principles of:
  - ANSI Y14.5 – 2009
  - ISO 8015

• Learn what is similar and different between the two standards

• How to use GD&T for strategic advantage
GD&T can be your secret weapon!

- Create standard-compliant drawings
- Understand how to interpret and inspect geometrical requirements
- How GD&T can be combined into a product designing system
- Bring down manufacturing cost of products without undermining product functionality
Learning Objectives

• Concepts of zero defects & on-target tolerancing
• Drawing conventions used in GD&T for ANSI and ISO applications
• Limits, fits and datum systems
• Form control, orientation control, location control, run-out and profile control
• Comparison of ANSI and ISO GD&T practices
• How to standardize GD&T concepts
Who Should Attend

- People who use blue-prints
- Industrial engineers
- Industrial engineering technologists
- Shop floor supervisors
- Mid-level manufacturing managers
- Design engineers
- Quality engineers
- Beginners to intermediate level