

Introduction to Geometric, Dimensioning & Tolerance

Duration: 2 days (9am-5pm)

Course Description:

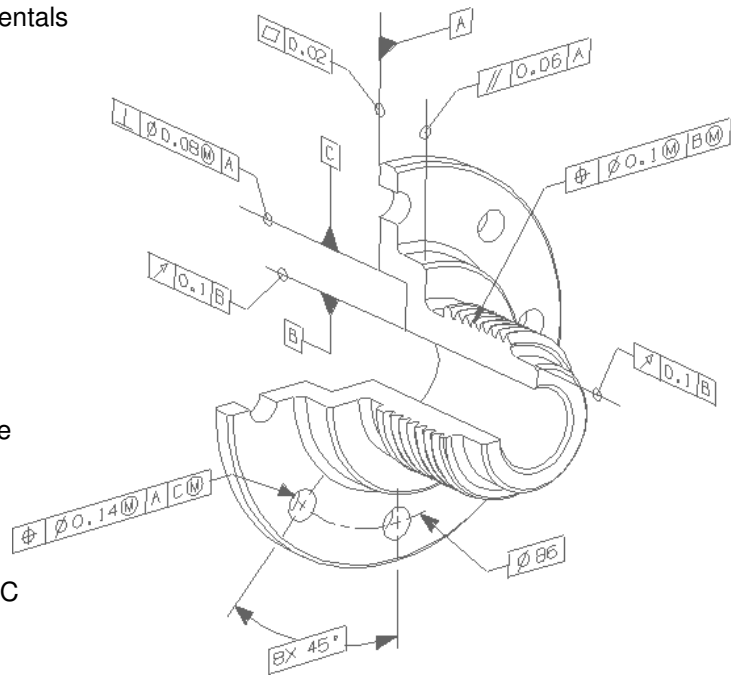
This short course introduces the concepts of size control and material tolerances. After defining terminology to be used, geometric characteristics and symbols, the course demonstrates how the geometric system works, using practical applications, blue-print reading and interpretation. The course covers application of position tolerance measurement and limits of size methods. Form tolerances for configurations such as flatness, straightness and roundness are discussed, and datum reference methods are covered in detail. Orientation tolerances are also discussed, for perpendicular, parallel and profile views of various items. Profile and position tolerances are covered, as are co-axial, symmetrical and concentric applications.

Target participants:

Individuals performing inspection, design, manufacturing and assembly. Understanding geometric dimensioning and tolerancing is essential for anyone reading blue prints. Important for academic instructors who conduct design and manufacturing related courses.

Course Outline:

1. Introduction
2. Dimensioning and Tolerancing Fundamentals
3. Symbols, Terms, and Rules
4. Datums
5. Form controls
 - Flatness
 - Straightness
 - Circularity
 - Cylindricity
6. Orientation
 - Parallelism
 - Perpendicularity
 - Angularity
7. Position, General
 - Specifying the position tolerance
 - Regardless of feature size
 - Maximum material condition
 - Shift tolerance
 - Boundary conditions
 - "0" positional tolerancing at MMC
8. Position, Location
 - Fasteners
 - Projected tolerance zones
 - Multiple patterns of features
 - Composite positional tolerancing
 - Two single-segment feature control frames
 - Nonparallel holes
 - Counterbored holes
 - Noncircular features at MMC
 - Symmetrical features at MMC
9. Position, Coaxiality
10. Concentricity & Symmetry
11. Runout
12. Profile



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