



Quick Recap: Basics of GD&T (Only around 30 mins)

- Revision of GD&T fundamentals, rules
- Feature of size and non-size features
- 14 GD&T Symbols

Virtual Condition Boundary

Form Tolerances

- Straightness tolerance with MMC modifier
- Flatness tolerance with MMC modifier
- Tangent modifier

Gauges to verify Geometrical tolerances

- Functional / Fixed Gauges:
 - Go-Gauges / No Go-Gauges
 - Attribute / Fixed gauges
 - Gauge size calculations and gauge-makers tolerances
 - Gauge design exercises
- Variable Gauges
- Various geometrical tolerance inspection tools
- Hand calculation for position tolerance using Pythagoras theorem

Orientation Tolerances

- How to apply?
- Perpendicularity tolerances with multiple datums
- Perpendicularity tolerances applied to feature of size
- Applied to a cylindrical or width type feature
- Orientation tolerances in multiple segment (combined) feature control frame
- Inspection methods to verify orientation tolerances

Datums

- Partial Datum
- Coaxial and Co-planar datums
- New datum features: Conical, Linear extruded shape, Complex Shape
- Datum Targets: Points, Line, Area
- Fixture designs using datum targets
- Temporary Datums
- Datum shift (Datum feature shift)
- Proper Sequence in applying GD&T

Location Tolerances

A) Position Tolerance

- Position –Boundary (for slots)
- Zero Tolerance at MMC
- Projected Tolerance Zone
- Position with no datums to establish primary datum axis from multiple features
- Simultaneous Vs Separate requirements
- Bi-Directional Tolerancing for pattern of features
- Composite Position tolerance:
 - Pattern-locating Tolerance Zone Framework (PLTZF)
 - Feature-relating Tolerance Zone Framework (FRTZF)
 - Composite tolerance with no datum / 1datum / 2datums / 3datums
 - 2-tier composite tolerance
 - 3-tier composite tolerance
 - 4-tier composite tolerance
 - Composite tolerance for Linear Coaxial Feature Alignment
- Rules of composite tolerances
- Combined position tolerances

B) Runout Tolerances

- Total Run out for flat surfaces
- Total runout applied on partial length
- Total Run out Tolerance with two datums

C) Profile Tolerances

- Profile of a plane or tapered surface
- Multi-segment or combined profile tolerance
- Composite tolerances:
 - Composite tolerance with no datum / 1datum / 2datums / 3datums
 - 2-tier composite tolerance
- Profile on a Unit Basis
- Restraint notes on non-rigid parts – specification and interpretation
- Inspection methods to verify Profile tolerances

D) Concentricity & Symmetry Tolerances

- How to use position tolerance instead of concentricity
- How to use runout tolerance instead of concentricity
- How to use position tolerance instead of symmetry

Contact

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Thank You !