



GD&T Symbols Reference Guide

Symbol	Control	Name	Description	Our Solution
	Location	Position	Controls the location and orientation of a feature in relation to its datum reference frame.	TruPosition Probe
	Location	Concentricity	Controls concentricity of a surface of revolution to a central datum.	TruPosition Probe
	Location	Symmetry	Controls the symmetry of two surfaces about a central datum.	SPC Trigger
	Form	Straightness	Controls the straightness of a feature in relation to its own perfect form.	SPC Trigger
	Form	Flatness	Controls the flatness of a surface in relation to its own perfect form.	Attribute Gage
	Form	Circularity	Controls the form of a revolved surface in relation to its own perfect form by independent cross sections.	Attribute Gage
	Form	Cylindricity	Like circularity but applies simultaneously to entire surface.	Attribute Gage
	Profile	Profile of a Surface	Controls size and form of a feature. In addition, it controls the location and orientation when a datum reference frame is used.	SPC Trigger Attribute Gage
	Profile	Profile of a Line	Like profile of a surface, applies to cross sections of a feature.	Custom Fixture Solution
	Orientation	Perpendicularity	Controls the orientation of a feature which is nominally perpendicular to the primary datum of its datum reference frame.	Custom Fixture Solution
	Orientation	Angularity	Controls orientation of a feature at a specific angle in relation to the primary datum of its datum reference frame.	Custom Fixture Solution
	Orientation	Parallelism	Controls orientation of a feature which is nominally parallel to the primary datum of its datum reference frame.	SPC Trigger
	Runout	Circular Runout	Controls circularity and coaxiality of each circular segment of a surface independently about a coaxial datum.	SPC Trigger
	Runout	Total Runout	Controls circularity, straightness, coaxiality, and taper of a cylindrical surface about a coaxial datum.	SPC Trigger



GD&T Symbols Reference Guide

Symbol	Meaning
	All Around
	Basic Dimension
	Between
CR	Controlled Radius
	Conical Taper
	Counterbore
	Countersink
∅	Diameter
	Depth
	Dimension Origin
	Free State
	LMC – Least Material Condition
	MMC – Maximum Material Condition

Symbol	Meaning
5X	Places
±	Plus or Minus
	Projected Tolerance Zone
R	Radius
(77)	Reference Dimension
	Slope
S∅	Spherical Diameter
SR	Spherical Radius
	Square
	Statistical Tolerance
	Tangent Plane
X	Target Point

For assistance with a **project or tooling design**, or to understand **options we offer to validate parts** are within tolerance, contact us at info@tpprobes.com or 1-616-300-1513.

Additional GD&T Informational Resources

[GD&T Basics](#)

[GEOTOL](#)

[SAE International](#)

[Tec-Ease, Inc.](#)