

# Gage Maker's Tolerance Chart For Pin and Ring Gages

Tolerance Class    XXX    XX    X    Y    Z    ZZ

## Inch Diameter

.010" - .825"	.000010"	.000020"	.000040"	.000070"	.0001"	.0002"
.825" - 1.510"	.000015"	.000030"	.000060"	.000090"	.00012"	.00024"
1.510" - 2.510"	.000020"	.000040"	.000080"	.00012"	.00016"	.00032"
2.510" - 4.510"	.000025"	.000050"	.0001"	.00015"	.0002"	.0004"
4.510" - 6.510"	.000033"	.000065"	.00013"	.00019"	.00025"	.0005"
6.510" - 9.010"	.000040"	.000080"	.00016"	.00024"	.00032"	.00064"
9.010" - 12.010"	.000050"	.0001"	.0002"	.0003"	.0004"	.0008"

## Metric Diameter

.254 mm - 20.96 mm	.00025 mm	.00051 mm	.00102 mm	.00178 mm	.00254 mm	.00508 mm
20.96 mm - 38.35 mm	.00038 mm	.00076 mm	.00152 mm	.00229 mm	.00305 mm	.00610 mm
38.35 mm - 63.75 mm	.00051 mm	.00102 mm	.00203 mm	.00305 mm	.00406 mm	.00813 mm
63.75 mm - 114.55 mm	.00064 mm	.00127 mm	.00254 mm	.00381 mm	.00508 mm	.01016 mm
114.55 mm - 165.35 mm	.00084 mm	.00165 mm	.00330 mm	.00483 mm	.00635 mm	.01270 mm
165.35 mm - 228.85 mm	.00102 mm	.00203 mm	.00406 mm	.00610 mm	.00813 mm	.01626 mm
228.85 mm - 305.05 mm	.00127 mm	.00254 mm	.00508 mm	.00762 mm	.01016 mm	.02032 mm

## Tolerance Direction

Cylindrical Ring Gage    Go Member is to the minus side, Nogo Member is to the plus side.  
 Cylindrical Plug Gage    Go Member is to the plus side, Nogo Member is to the minus side.  
 Master Gages    Tolerance is split 50/50

## Geometric Dimensioning & Tolerancing

(Based on ASME Y14.5M-2009)

— STRAIGHTNESS	⊕ POSITION TOLERANCE	↗ TOTAL RUNOUT	∇ DEPTH/DEEP
▭ FLATNESS	◎ CONCENTRICITY	∅ DIAMETER	□ SQUARE
○ CIRCULARITY	≡ SYMMETRY	50 BASIC DIMENSION	8x NUMBER OF PLACES
∩ CYLINDRICITY	↗ CIRCULAR RUNOUT	(.50) REFERENCE DIMENSION	R RADIUS
⌒ PROFILE OF A LINE	Ⓟ PROJECTED TOLERANCE ZONE	Ⓜ DATUM FEATURE	SR SPHERICAL RADIUS
⌒ PROFILE OF A SURFACE	Ⓜ AT MAXIMUM MATERIAL CONDITION (MMC)	Ⓜ CONICAL TAPER	S∅ SPHERICAL DIAMETER
∠ ANGULARITY	Ⓟ AT LEAST MATERIAL CONDITION (LMC)	∇ SLOPE	∅ <sup>5</sup> or ∅ <sub>A1</sub> DATUM TARGET
⊥ PERPENDICULARITY	Ⓟ REGARDLESS OF FEATURE SIZE (RFS)	□ COUNTERBORE/SPOTFACE	
// PARALLELISM		∇ COUNTERSINK	



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