COi Rubber Products

METAL STAMPING | PRELIMINARY TOLERANCE GUIDE

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The values below are **starting points for manufacturability and quotation**, not an assertion of COI or supplier-certified capability. All critical dimensions require drawing and tooling review.

1 MATERIAL-SPECIFIC STARTING GUIDELINES

Material	Standard (in)	Precision target (in)	Engineering considerations
Low-carbon steel (CRS / HRPO)	±0.010	±0.005	Good baseline; strength, thickness and grain direction matter.
Stainless steel (304 / 316)	±0.010–0.015	±0.005	Greater springback/work hardening; formed features need review.
Aluminum (5052 / 6061*)	±0.010	±0.005	Temper affects formability; *6061-T6 can crack on tight bends.
Copper (C110)	±0.005–0.010	±0.003–0.005	Soft material; protect surfaces and control burrs.
Brass (C260)	±0.005–0.010	±0.003–0.005	Temper and cosmetic requirements affect tooling.
Galvanized steel	±0.010–0.015	±0.005	Coating thickness and edge condition need consideration.
Spring steel / high-strength steel	±0.010–0.020	Engineering review	Springback, tool wear and heat treatment may dominate.

2 FEATURE-BASED GUIDELINES

Feature	Standard (in)	Precision target (in)
Blanked outside profile	±0.010	±0.005
Punched hole diameter	±0.005	±0.002–0.003
Hole-to-hole position	±0.010	±0.005
Formed flange / height	±0.020	±0.010
Bend angle	±2°	±1°

3 APPLICATION AND QUOTING NOTES

• All dimensions shown are bilateral inches unless otherwise noted; 0.010 in = 0.254 mm; 0.005 in = 0.127 mm; 0.020 in = 0.508 mm.

• Guidelines assume conventional sheet-metal stamping, stable production tooling, and nominal sheet thickness approximately 0.020–0.125 in (0.5–3.2 mm). They are preliminary RFQ targets, not validated process capabilities.

• Tolerance feasibility depends on stock thickness and temper, feature size, proximity to edges/bends, die clearance, press, part orientation, plating/coating, and measurement method.

• Specify critical-to-quality features on the drawing, with datums and GD&T; as appropriate. Hole position and formed dimensions require a defined datum scheme.

• Burr direction/height, flatness, edge break, cosmetic finish, coating, and surface condition are separate requirements and must be quoted explicitly.

• Final accepted tolerances are those on the approved drawing, purchase order and PPAP/control plan where applicable; supplier capability and first-article samples must be confirmed.

Suggested drawing note: “Unless otherwise specified, general stamped dimensions ±0.010 in; critical dimensions and formed features per drawing and approved supplier capability. No blanket tolerance applies to burr, flatness, or finish.”