

Screw Machine

HOW TO REDUCE COSTS & PURCHASE MORE ECONOMICALLY

WHAT	HOW	WHY
QUANTITY	<p>Check annual requirements and advise supplier.</p> <p>On re-orders, advise supplier of any changes from the original prints.</p>	<p>With an annual contract the supplier can minimize: tooling, setup costs and material costs. Greater flexibility for the most economical method of manufacturing is allowed.</p>
OVER AND UNDER RUNS	<p>Order consisting of exact quantities increases cost.</p>	<p>Allowance must be made for overage in production which must be prorated in the quoted price.</p> <p>Over/under run quantities in the Precision Machined Products Industry may vary based on bar length, part size and equipment used to produce the parts.</p>
DELIVERY	<p>Allow sufficient lead time for normal planning. Provide your supplier with the best forecast you have.</p>	<p>Quick deliveries involve premium material and labor costs. A longer/better forecast permits more economical manufacturing runs.</p>
PACKAGING	<p>If special packaging, labeling or bar coding is required, advise the supplier of this when the request for pricing is made.</p>	<p>Unusual packaging requirements are expensive due to special material and labor. If advised in advance, a supplier may be able to provide alternative, less expensive packaging.</p>
MATERIAL	<p>Design and application permitting, specify standard sizes of free machining grades.</p> <p>Be open to supplier suggestions for material grade types.</p>	<p>Free machining grades usually result in lower piece part cost.</p>

TOLERANCES	Specify no closer tolerance than absolutely functionally necessary. Be sure that the tolerances are shown on the drawing and are practical and consistent with the application of the part.	If required, suppliers of precision machined products can and will make the parts with close tolerances. However, higher costs can be expected the closer the tolerance requirements.
DIMENSIONAL RELATIONSHIP	For slotting, cross drilling, milling, broaching, etc., do not specify definite relationships between dimensions unless required. Be sure all dimensions are shown clearly and add up.	Specifying a close relationship requires expensive fixturing and gauging which slows production and increases piece part cost.
INTERNAL DIAMETERS	Hole diameters should be specified to the maximum allowable limits.	Suppliers of precision machined products stock standard drills, reamers and plug gauges. Special internal diameters can be produced where required with special tooling.
SHARP CORNERS	Unless there is a functional need for a sharp corner, specify chamfers or radii at all intersecting surfaces.	Sharp corners nick easily and require special handling. It is also more economical to produce a part with "broken corners."
THREADS	Specify standard threads, American National Standards Institute (ANSI) Unified Inch Screw Threads (UN and UNR Thread Form) metric standard or other ANSI standard threads. Use class 2a or 2b fits where application permits. For I.D. threads choose the least percent of thread that gives the required strength.	Special threads require special tools and gauges. Closer fits may require additional operations. Full threads are harder to produce.
BURRS	Do not specify burr removal unless necessary to part function.	Burrs are a natural result of any machining operation involving intersecting

		surfaces. Burr prevention and removal may require additional machining or second operations.
SURFACE FINISH	Clearly specify surface finish no closer than necessary to meet functional requirements.	Finer surface finish may require special tooling, slower cycle time or additional operations and which could result in higher part production costs and special handling and packaging methods.
QUALITY	<p>Be as detailed as possible with the quality requirements. Specify which characteristics are of greatest importance to product performance.</p> <p>Acquaint the supplier with any internal quality control requirements (i.e. - PPAP, FMEAS, warranties, etc.), so that production quality methods will be consistent. Indicate initial sample requirements, specialized data requirements and inspection routings as part of the request for quotation.</p>	This will allow the supplier to focus on critical features.
GAUGES AND GAGING EQUIPMENT	Wherever possible, part design should avoid the need for special gauges.	Special gauges and gauging equipment add to part cost. Customers may supply special gauges to eliminate additional gauge costs.

PLATING AND HEAT TREATING

Most job shops specialize in machining and rely on outside suppliers for plating and heat treating. However, proper results can be obtained if the specifications are clearly and completely spelled out, as well as tests and certifications that may be required.

When specifying plating, be sure to advise thickness of plate desired and whether print tolerances apply before or after plating. If possible, use specifications from ASTM, Military or Federal Specifications or other recognized sources to remove any doubt as to

the requirement. Be sure to advise the supplier of any tests which will be used by incoming inspection.

When heat treating is required, avoid general terms such as "Case Harden" or "Heat Treat and Draw." Give relevant details covering depth of case required, core hardness, draw temperature and times, proper hardness scale and tensile ductility requirements.