

# 24 checks before your CNC machining quote

This is a review aid, not a universal machining limit or acceptance specification. Feasibility, inspection, price and lead time are confirmed against the approved drawings, material and quantity. Sheet metal and casting need additional process-specific checks.

---

## ☐ 01. Thin walls

Identify thin walls and unsupported spans. Review stiffness, workholding and distortion for the selected material. Mark areas where ribs or thickness changes are acceptable.

---

## ☐ 02. Internal corners

Show the smallest acceptable internal radius and the mating part clearance. Ask for a process review where a sharp internal corner is functionally necessary.

---

## ☐ 03. Deep holes

Specify diameter, full-diameter depth, through or blind condition, and entry direction. Review tool reach and chip removal before fixing the process.

---

## ☐ 04. Small features and reach

Check whether the tool and holder can reach each small feature. Include pocket depth and adjacent geometry; feature size alone does not establish feasibility.

---

## ☐ 05. Undercuts and side features

Identify side holes, undercuts and inaccessible faces. Discuss extra setups, suitable tooling or alternative processes for the actual geometry.

---

## ☐ 06. Thread engagement

Specify required full thread depth separately from drilled depth. Confirm engagement against the mating fastener, material and load; agree tool clearance for blind holes.

---

## ☐ 07. Thread callouts

State thread standard, size, pitch, tolerance class and handedness where relevant. Resolve missing or conflicting callouts before manufacture.

---

## ☐ 08. Small threads

Identify small or difficult threads and required gauges. Tapping or thread milling is selected for the material, size and access; do not assume one method fits every thread.

---

## 24 checks before your CNC machining quote

This is a review aid, not a universal machining limit or acceptance specification. Feasibility, inspection, price and lead time are confirmed against the approved drawings, material and quantity. Sheet metal and casting need additional process-specific checks.

---

### ☐ 09. Counterbores and countersinks

Specify the fastener or head standard, seat diameter, depth and included angle as applicable. Include flushness requirements on cosmetic or mating surfaces.

---

### ☐ 10. Threaded inserts

Identify the insert manufacturer, part number, installed length and installation requirements. Use that insert supplier's preparation dimensions rather than a generic tap-hole size.

---

### ☐ 11. General tolerances

State the applicable drawing standard and general tolerance requirements. Clarify their scope; missing dimensions and unspecified geometry still need review.

---

### ☐ 12. Critical dimensions

Identify fit, sealing and assembly dimensions and explain their function. Agree acceptance criteria and inspection coverage; unmarked features are not automatically non-critical.

---

### ☐ 13. Datums

Define functional datums and the drawing convention used. Resolve an incomplete datum reference frame with the designer instead of guessing the assembly intent.

---

### ☐ 14. Geometric tolerances

Specify the required control, tolerance zone and datum references. Position, profile and dimensional tolerances are not interchangeable; confirm what the inspection must establish.

---

### ☐ 15. Form and orientation

Specify flatness, perpendicularity or parallelism only where function requires them. Review size, material, heat treatment, setups and measurement conditions for feasibility.

---

### ☐ 16. Surface texture

Identify the faces requiring a defined surface texture and the applicable parameter and value. Separate sealing or sliding requirements from cosmetic appearance.

## 24 checks before your CNC machining quote

This is a review aid, not a universal machining limit or acceptance specification. Feasibility, inspection, price and lead time are confirmed against the approved drawings, material and quantity. Sheet metal and casting need additional process-specific checks.

---

### ☐ 17. Edges and burrs

State chamfer or edge-break limits and identify edges that must remain sharp. Include internal intersections, cleanliness and assembly requirements where relevant.

---

### ☐ 18. Appearance and anodizing

Identify cosmetic faces, colour references, masking and coating requirements. Agree the sample and acceptance method when matching appearance across parts or batches matters.

---

### ☐ 19. Plating and heat treatment

Specify material condition, treatment standard and coating requirements. Where embrittlement prevention is required, agree the applicable qualified process; no universal bake cycle is assumed.

---

### ☐ 20. Drawing and CAD package

Supply a readable dimensioned drawing and available 3D data. Identify which document governs each requirement and resolve any mismatch before production.

---

### ☐ 21. Views and sections

Add sections or detail views wherever internal geometry or small features would otherwise be ambiguous. Ensure dimensions and notes remain readable at normal viewing scale.

---

### ☐ 22. Units and projection

State units and projection method explicitly. Check imported CAD scale and any mixed-unit dimensions; do not infer projection solely from the destination country.

---

### ☐ 23. Assembly and BOM

For assemblies, provide part numbers, quantities, materials, finishes and relevant mating requirements. Identify purchased items and who supplies them.

---

### ☐ 24. Revision and approval

Put revision identifiers on drawings, models and the BOM. Identify the approved production revision, retain superseded records as required, and keep obsolete files out of the active job package.