

CNC DFM Checklist

A pre-quotation review for machined components. Use it to identify avoidable geometry, setup and specification risks before sending an RFQ.

Geometry and cutter access

- Internal corner radii are compatible with realistic cutter diameters and the required mating geometry.
- Deep pockets, narrow slots and high aspect-ratio features have been challenged for tool reach and deflection.
- Undercuts, back-side features and cross holes have an intentional machining strategy.
- Thin walls, tall fins and fragile features have enough support for machining and workholding.
- The design avoids zero-thickness geometry, tiny slivers and unnecessary cosmetic details.

Setups and workholding

- A stable first-operation workholding surface is available.
- Critical features can be reached without excessive re-clamping or specialist fixtures.
- Datum surfaces remain accessible and meaningful between setups.
- The stock form and allowance are realistic for the selected material and quantity.

Tolerances and finish

- Tight tolerances are limited to function-critical interfaces.
- General tolerances are stated for unspecified dimensions.
- Surface finish requirements are applied only where function or sealing requires them.
- Threads, inserts, counterbores and fits use clear standards and inspection expectations.
- Deburring, edge-break, coating and masking requirements are defined.

RFQ information

- Supplier receives a STEP or Parasolid model plus a controlled PDF drawing.
- Material grade, condition, heat treatment and finish are unambiguous.
- Quantities, expected repeat demand and acceptable process alternatives are stated.
- Critical-to-function features and acceptance criteria are highlighted.

Final check	Ask the supplier which features dominate cost. A small geometry or tolerance change before quotation can remove a setup, specialist tool or inspection operation.
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