

Why Do Precision Parts From India Fail Most, and How Do You Spec Them?



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Yes, India makes machined and cast parts to tolerance, and leads US imports of iron and steel castings. But precision work is where foreign buyers report the worst results, because capability is claimed rather than proven and contracts get split across workshops. A complete drawing, a written feasibility review, a paid first article with a dimensional report and a locked process fix most of it.

The Short Version

- Buyers report the worst India results in machining, castings, electronics, medtech and plastic tooling, and the best in leather, soft goods and craft.
- Indian vendors rarely say no directly, so ask for a written feasibility review that lists every tolerance they cannot hold.
- Every dimension needs a tolerance or a named general-tolerance standard in the title block.
- No capability claim counts until a paid first article passes a dimensional report against every drawing dimension.
- Inspect where the final machining happens, because the work may not be done in the building you audited.

You can get machined and cast parts made to tolerance in India. The United States bought more iron and steel castings from India in 2025 than from anywhere else (UN Comtrade, our analysis, on our [castings and forgings](#) page). But precision work is also where foreign buyers report their worst Indian results, and the reasons are specific and fixable – capability gets promised rather than proven, and the work gets split across workshops nobody named.

Our forum logs show a clear category pattern. Buyers report the most trouble with machining, castings, electronics, medtech and plastic tooling, and much less with leather, soft goods and handcraft. A US machine shop got parts with "super crooked drill holes, every single threaded hole needs to be retapped by us" ([r/Machinists, 2021](#)). This post explains why precision work goes wrong and sets out the spec rules that stop it. The caveat – these are buyer accounts, not a defect rate, and plenty of buyers report the opposite.

SourcingFrom Intelligence

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- 01 **Precision categories collect the worst reports.** Machining, castings, electronics, medtech and plastic tooling draw the complaints, while leather, soft goods and craft draw the praise. (*Our forum logs, five independent voices, 2019 to 2025*)
- 02 **Capability is overstated more than it's faked.** Seven or more buyers and one India-based agent describe suppliers who agree to every specification and then miss it. (*Our forum logs, 2019 to 2026*)
- 03 **A passed factory audit can still give varied parts,** because the contract winner may pass the work to several smaller shops. (*Our forum logs, 2025*)

What we don't know yet

- ☐ First-article pass rates for Indian machine shops by tier. We plan to log them through real orders.

1. Why Do Precision Parts Fail More Than Other Goods?

Because precision is where a small gap between promise and process shows. A cushion cover a few millimetres out still sells. A bore a few hundredths out doesn't fit. Three things in our logs explain most failures.

Capability on paper. A medtech buyer found "The factories were well equipped and capable on paper, but the reality when audited was very poor" ([r/manufacturing, 2025](#)). The machines exist. Process control, gauging and trained setters are what's missing.

Yes to everything. An automotive buyer said suppliers "tend to tell you whatever you want to hear. Can't reliably demonstrate technical capabilities" ([r/procurement, 2026](#)). An engineering buyer whose drawings had been agreed said "Everything we ordered from India was just wrong" ([r/manufacturing, 2025](#)). And an India-based sourcing agent explained the habit - "Vendors here will rarely say "no" directly" ([r/Importing, 2026](#)). That's a communication style, not dishonesty, but it means a "yes" carries no information.

Split contracts. The person who wins the order may pass it to several small workshops, so parts vary from piece to piece. We cover how that works, fairly, in [job work and subcontracting in India](#).

Plastic tooling is its own case. An Indian voice said the "tooling engineering side is very weak in India for stylish/trendy plastic products" ([r/IndiaBusiness, 2025](#)). For cosmetic moulded parts, test the toolmaker harder than the moulder.

2. Is It an India Problem or a Tier Problem?

A tier problem, mostly. An Indian brass-parts supplier described the market as "Tens of thousands of small workshops versus a smaller pool of audited OEM-grade exporters" ([r/manufacturing, 2025](#)). A buyer of steel and aluminium construction parts "never had any issues" after visiting his suppliers ([r/procurement, 2026](#)). Others report sintered metal flowing to automotive buyers and material quality that compares well.

So the question isn't whether India can hold your tolerance. It's whether the shop you found is in the tier that does it every day. You find out with paper and parts, not with the sales call.

3. What Should the Drawing Say?

The drawing is your contract, so it has to leave nothing to guess. A drawing that a shop at home would query is one an overseas shop will simply interpret. Before it goes out –

- **Every dimension carries a tolerance**, or the title block names a general-tolerance standard and class, for example ISO 2768–m. "Untoleranced" means "whatever the setter thinks".
- **Critical-to-function features are flagged**, so the shop knows which ten dimensions matter out of two hundred.
- **Datums and geometric tolerances are explicit** for anything that has to locate or seal. Flatness, position and runout don't follow from size tolerances.
- **Threads are fully called out**, size, pitch and class, and the gauge that proves them. The retapped threads in our opening were a thread-class problem.
- **Material to a named grade and standard**, not "mild steel" or "SS". Add surface finish values and any heat treatment or coating with its own spec.
- **Units, projection and revision** are stated. Inch drawings sent to metric shops cause real errors.

Then send the drawing as a controlled revision and ask for it back signed. Any later change goes out as a new revision, never as a WhatsApp photo with a circle on it.

4. How Do You Get a Supplier to Say No?

Ask for it in writing, as a task. Request a **feasibility review** with the quote: the supplier marks every dimension it can't hold with its normal process, says how it will measure each critical feature, and lists which operations happen in its own building and which go out. A shop that returns a clean "all OK" on a tight drawing hasn't read it. A shop that comes back with three questions and one tolerance it wants opened up is probably the one you want.

This turns the "yes to everything" habit around. You're not asking the supplier to refuse you. You're asking it to help you, which is much easier to say yes to.

Ask also for the machine list against your part, the measuring equipment it will use (a coordinate measuring machine for complex parts, calibrated gauges for the rest) and its calibration records. Management-system certificates help as a signal but not as proof, as our [ISO 9001 guide](#) explains.

5. What Counts as Proof of Capability?

A paid first article, measured. Our rule from the forum evidence is simple – no verbal capability claim counts until a part made to your drawing passes.

1. **Order a small first batch**, paid, made on the production process, not hand-finished in the toolroom.
2. **Require a first-article inspection report** with a ballooned drawing and a measured value for every dimension, plus the material certificate. Aerospace buyers use AS9102 for the format and automotive buyers use PPAP. Our [castings and forgings](#) page covers the casting side, including patterns and EN 10204 certificates.
3. **Measure the parts yourself** or have a lab do it. A report you didn't check is the supplier's claim in a table.
4. **Fit-test them** in the assembly they go into.

Only then lock the process. Write into the PO that any change of shop, machine, material source or subcontractor needs your written consent and a new first article. Then inspect production at the place where final machining happens, on parts drawn from packed cartons. Quality control in India sets out the inspection stages, and the sample was perfect, why wasn't the bulk? covers how bulk drifts from an approved sample.

Witnessing a first article in person is where many buyers decide to have someone on the ground. SourcingSync can attend the first-article measurement at the machining shop and check that the production run comes from the same place.

Questions Buyers Ask

Can Indian shops hold tight machining tolerances? ^

The audited export tier can and does. Prove it for your part with a paid first article and a full dimensional report before you place the volume order.

Is a factory audit enough? v

What's the most common failure in buyer reports? v

Should I start with castings or machined parts? v

6. Back to the Retapped Threads

That machine shop spent its own hours retapping every thread. The fix wasn't a different country. It was a thread class on the drawing, a gauge named in the PO, a first article measured before the volume order, and a rule that the parts come from the shop that made the sample. India's good

machine shops work to exactly that discipline every day. Your drawing just has to ask for it.