AES · ALUMINUM EXTRUDED SHAPES

The Reshoring Playbook

Bringing Your Aluminum Extrusion Supply Onshore

A vendor-neutral decision tool for moving custom aluminum extrusion supply to a US source.

Who this is for: OEM procurement and supply-chain leaders, and design or manufacturing engineers, who source aluminum extrusions offshore or from a large domestic mill and are weighing a move to a US custom extruder.

How to use this guide: Read sections 2–4 to frame the decision, work the checklists in 5 and 6 against any supplier you are considering, then score a single profile with the worksheet in section 7.

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1. WHAT THIS PLAYBOOK COVERS

This is a practical guide for deciding whether, when, and how to bring an aluminum extrusion profile back onshore. "Reshoring" here means moving the supply of a part from an offshore source — or from a large domestic extruder that behaves like one — to a US custom extruder. "Custom extruder" means a shop that pushes aluminum through a die you own or commission, rather than selling stock shapes from a catalog.

The aim is a clear decision, not a sales pitch. Sections 2 through 7 are written to be useful no matter which supplier you choose. Use them to pressure-test your own assumptions and to hold any extruder — including the one you have today — to the same standard.

2. WHY RESHORING ALUMINUM SUPPLY IS ON THE TABLE NOW

Several pressures have made domestic supply worth a second look. None of them is a reason to move every part. Each is a reason to examine specific parts on their merits.

Supply resilience. A long supply chain has more points where it can break: a port, a vessel, a customs hold, a single overseas plant. Shortening the chain reduces the number of things that have to go right for parts to arrive. It does not remove risk; it concentrates it closer to home, where you have more visibility and more recourse.

Lead-time control. Distance adds fixed time that no amount of expediting removes — ocean transit, consolidation, and customs clearance sit on top of the supplier's own production time. A domestic source compresses the transit portion, which can make reorder cycles shorter and more predictable. Predictability often matters more than raw speed.

Tooling ownership. Extrusion dies are tooling specific to your profile. Where that die sits, who controls it, and how quickly it can be put back into production are real constraints. When tooling is held overseas, moving suppliers later can mean recutting a die. Knowing your tooling situation is part of knowing your supply risk.

Communication overhead. Time-zone gaps turn a quick question into a one-day round trip. Engineering changes, first-article reviews, and problem-solving all slow down when each exchange waits for the other side to wake up. A supplier in or near your own business hours lowers that friction. This is hard to put on a spreadsheet but easy to feel during a launch or a quality issue.

Freight and trade exposure. Long-haul freight rates move, and cross-border duties can change with policy. Both add cost and variability that are outside your control and hard to forecast. Domestic supply reduces exposure to these specific swings. It introduces its own cost factors, covered in section 4 — the point is to compare total cost, not to assume either side wins by default.

The honest framing: offshore supply can be the right answer for high-volume, stable, cost-driven parts where lead time is not tight and tooling is not sensitive. Reshoring tends to pay off for a narrower set of parts. The next section helps you find them.

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3. THE RESHORING DECISION FRAMEWORK

Reshore by profile, not by policy. Evaluate one part at a time against the triggers below, then phase the move so you learn before you commit.

Step 1 — Screen for trigger conditions

A profile is a stronger reshoring candidate when one or more of these is true:

- ☐ **Repeat demand.** You reorder this profile on a regular cadence, so faster, more predictable reorder cycles compound over time.
- ☐ **Tight or unpredictable lead-time needs.** Stockouts are costly, demand is hard to forecast, or you are carrying heavy safety stock to cover transit time.
- ☐ **Tooling or IP sensitivity.** The profile is proprietary, or you want clearer control over where the die lives and who can run it.
- ☐ **Quality or rework friction.** You spend real effort on inspection, sorting, or rework on incoming offshore parts.
- ☐ **Frequent engineering changes.** The design is still moving, and slow communication loops are holding up revisions.
- ☐ **Secondary operations.** The part needs machining, fabrication, or finishing that you currently coordinate across multiple vendors.

A profile is a weaker candidate when volume is very high and stable, the design is frozen, lead time is loose, and unit price dominates total cost. That is fine. Not everything should move.

Step 2 — Pilot the right profile first

Do not start with your highest-volume, most critical part. Start with one that lets you learn at low risk:

- A profile with **repeat demand but moderate volume**, so a stumble is recoverable.
- A part with **a known pain point** — a recurring quality issue or a lead-time problem — so success is easy to measure.
- A profile where **secondary operations** are in scope, so you can test whether single-source consolidation actually reduces your coordination work.

Step 3 — Phase the transition

1. **Qualify.** Share drawings and tolerances. Have the candidate extruder quote, and discuss tooling — whether your existing die can transfer or a new die is needed.

2. **First article.** Order a first article and inspect it against your own acceptance criteria, not just the supplier's.
3. **Parallel run.** Keep your existing source active while the new source proves repeatability across more than one production run.
4. **Shift the baseline.** Once repeatability and documentation hold up, move the profile's baseline demand over and keep a fallback plan.
5. **Review and expand.** Capture total-cost actuals and lead-time data, then decide which profile to move next.

The goal is evidence before commitment. A single good sample proves very little; consistency across runs is what you are buying.

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4. ONSHORE COST FACTORS — THE TOTAL-COST VIEW

Unit price is the most visible number and the most misleading one on its own. The same part carries costs that stay off the piece-price line. Compare landed, total cost over a realistic time horizon.

Freight and duties. Offshore unit price excludes ocean and inland freight, brokerage, and any duties. These move with rates and policy and are hard to forecast. Domestic freight is typically shorter-haul, though terms vary by supplier — confirm whether quotes are delivered or shipped from the plant. _____ *(your figure: typical landed-cost adders for your lanes)*

Lead time as a cost. Longer lead time is not just slower; it forces decisions earlier and on worse information. You commit to quantities before you know demand, which raises the odds of both stockouts and excess. Shorter, more predictable lead times let you order closer to real need.

Inventory carrying cost and safety stock. Long transit times have to be covered by inventory. That stock ties up cash, takes space, and risks obsolescence — particularly when designs change. Shorter replenishment cycles let you safely hold less. _____ *(your figure: your annual inventory carrying rate)*

Minimum order quantities. A low unit price often depends on a high minimum order. If that minimum exceeds real demand, the savings are on paper — you have bought inventory you did not need. A supplier with a lower minimum run can be cheaper in total even at a higher unit price, because you order what you use. _____ *(your figure: your MOQ vs. annual usage by profile)*

Tooling ownership and recut risk. If you cannot readily retrieve or transfer your die, switching suppliers can mean paying to cut a new one. That is a real, if occasional, cost of an arrangement where tooling control is unclear. Factor the expected cost of a recut into any supply that holds your tooling out of reach. _____ *(your figure: die cost for representative profiles)*

Quality, rework, and scrap. Parts that need sorting, rework, or replacement carry costs well beyond their price — inspection labor, line disruption, and scrap. Lower incoming defect rates reduce hidden cost even when the piece price is higher. _____ *(your figure: your cost of rework/scrap on current supply)*

Communication and time-zone overhead. Every slow exchange has a cost: engineering hours spent waiting, launches that slip, problems that take an extra day to resolve. It rarely shows up in a quote, but it is real, and it is usually lower with a domestic source in your business hours.

The takeaway. Add freight, duties, carrying cost, MOQ-driven excess, recut risk, rework, and communication overhead to the unit price on both sides. Domestic supply is often competitive on total cost even when the piece price is higher — and sometimes it wins outright. Run the numbers for your own profiles; do not assume either direction.

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5. SUPPLIER-RISK CHECKLIST

Use this to evaluate any domestic extruder — including your current one — before you move a profile. Treat unclear answers as risk, not as a formality.

- ☐ **Tooling retention policy.** Will they store your die, for how long, and under what conditions? Is it returnable or transferable, and what does retrieval involve?
- ☐ **Capacity and lead time for repeat runs.** Can they handle your reorder cadence without long queues? What is a realistic lead time for a typical repeat order?
- ☐ **Single-source and secondary-ops capability.** Can they extrude, machine, fabricate, and finish — ideally on one purchase order — or will you coordinate multiple vendors?
- ☐ **Minimum run size.** What is the smallest run they will accept? Does it fit your real demand, or will it force excess inventory?
- ☐ **Quality documentation.** Do they provide mill certs, inspection records, and traceability by default? "Mill cert" means a document certifying the alloy and temper of the material; traceability means lots can be tracked back to source.
- ☐ **Financial stability and longevity.** How long have they been in business? Are they stable enough to be a supplier years from now, when you reorder?
- ☐ **Responsiveness and a named contact.** Do you get a specific person who knows your account, or a queue? How fast do they respond to a quote request or a problem?

A supplier who answers all seven clearly is easier to plan around than one who is cheaper but vague.

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6. QUESTIONS TO ASK AN EXTRUDER

Copy these into your next supplier conversation. The answers are more revealing than any brochure.

1. Will you store my die, and for how long? What are the terms if I want it returned or transferred?
2. Who actually owns the tooling once it is cut — me or you?
3. What is your minimum run size for a custom profile?
4. How fast can you quote a new profile, and how fast can you quote and start a repeat run?

5. What is a realistic lead time for a typical reorder of my profile?
6. Can you handle machining, fabrication, and finishing on the same purchase order as the extrusion?
7. What quality documentation do I get by default — mill certs, inspection records, traceability?
8. What are your standard dimensional tolerances, and how do you handle a part that drifts out of spec?
9. How do you handle a first-article approval before full production?
10. What alloys and tempers do you regularly run, and which fit my application?
11. How do you handle an engineering change once a die exists — and what does it cost?
12. Who is my point of contact, and who do I reach when there is a problem?
13. How many years have you been extruding, and what is your customer retention like?
14. What are your shipping terms, and where does the freight responsibility transfer? ("FOB plant" means title and freight cost pass to the buyer when goods leave the supplier's facility.)
15. If I want to start with a prototype or short run, can you support that — and at what minimum?

Listen for specific, confident answers. Vague or shifting answers on tooling, minimums, or documentation are the ones that cost you later.

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7. RESHORING READINESS SCORECARD

Score one profile at a time. Rate each criterion from 1 (weak case to reshore) to 5 (strong case to reshore), based on your own situation. Total the column and read the note below.

#	Criterion	What a high score looks like	Your score (1–5)
1	Repeat demand	You reorder this profile on a regular, predictable cadence	
2	Lead-time sensitivity	Stockouts are costly; current transit time forces heavy safety stock	
3	Tooling / IP sensitivity	The profile is proprietary or tooling control is currently unclear	
4	Quality / rework burden	You spend real effort inspecting, sorting, or reworking incoming parts	
5	Total-cost gap	When freight, duties, carrying cost, and rework are added, domestic looks competitive	
6	Secondary-ops need	The part needs machining, fabrication, or finishing you now coordinate separately	
7	Design volatility	The design still changes, so fast communication loops matter	
8	Supply-risk exposure	Current source has single points of failure you cannot easily cover	
	Total		**/ 40**

How to read your score:

- **32–40:** Strong candidate. Pilot this profile now; the triggers line up.
- **22–31:** Promising. Reshore if a domestic supplier scores well on section 5, and pilot before committing.
- **12–21:** Mixed. Revisit specific weak criteria; the case may firm up as demand or design changes.
- **Below 12:** Weak candidate today. Offshore or current supply may be the right answer for this profile. Re-score if conditions change.

This is a directional tool, not a verdict. A single criterion — tight lead time on a critical part, or a supply-risk exposure you cannot cover — can justify reshoring on its own, regardless of total.

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8. A US EXTRUDER YOU CAN CALL

If your scorecard points toward reshoring a profile, the next step is a conversation with a supplier who can answer the section 6 questions directly.

AES (Aluminum Extruded Shapes) is a custom aluminum extruder in Cincinnati, Ohio, with more than 50 years in business. We handle extrusion, machining, fabrication, finishing, and assembly under a single purchase order, which can reduce the number of vendors you coordinate. Our 300 lb minimum run is lower than many extruders accept, which makes prototypes and short runs practical. We are US-made,

in a central Midwest location, and we stand behind tooling stewardship and responsiveness — a US extruder you can call, talk to a real person, and get a straight answer from.

If you want to pressure-test a profile or get a quote, reach us at **513.563.2205**.