

The Logistics of Large Scale Machining: From Raw Casting to Final Delivery



Xiamen, Fujian Jun 10, 2026 ([IssueWire.com](https://www.issuewire.com)) - In the world of precision manufacturing, the spotlight usually falls on the micron-level tolerances of a finished part. But when that part weighs 50 tons and spans 10 meters, the challenge isn't just cutting the metal—it's moving it.

For procurement managers sourcing **contract manufacturing in China**, the logistics of handling oversized components is often a major source of anxiety. How do you move a massive raw casting without cracking it? How do you flip a 30-ton weldment to machine the other side? How do you ship it across the ocean without it rusting?

At **Openex**, we believe that **heavy machining logistics** is just as much an engineering discipline as the machining itself. Here is a behind-the-scenes look at the journey of a massive component through our facility.

Phase 1: Arrival and The "Heavy Lift"

The process begins long before the first chip is cut. When a raw casting or forging arrives at our facility—often for the mining or hydropower industries—it can weigh anywhere from 20 to over 100 tons.

Standard forklifts are useless here. Openex is equipped with heavy-duty overhead crane systems with lifting capacities exceeding **50 tons** (with tandem lifting capabilities for even heavier loads).

The Critical Step: Incoming Inspection

Before we lift a finger to machine, we must ensure the raw material is sound. Moving a massive casting requires a dedicated rigging plan. Our certified riggers inspect lifting lugs and determine the center of gravity to ensure a safe lift. Once offloaded, the raw part undergoes immediate dimensional and visual inspection to ensure sufficient "stock" material is present for machining.

Phase 2: Internal Handling – The Industrial Dance

The most dangerous time for a heavy part is not when it's being cut, but when it's being moved. A complex housing or frame might need to visit multiple stations:

- **Stress Relieving:** Moving to our large-scale heat treatment furnaces.
- **Sandblasting:** Transporting to surface preparation booths.
- **Machining:** Loading onto our heavy-duty floor borers or gantry mills.

Flipping the Unflippable

Many large parts require machining on multiple faces. Flipping a 40-ton asymmetrical part is a high-stakes operation. We utilize specialized **welding positioners** and rotators, as well as engineered turning fixtures. This allows us to rotate massive components safely and precisely, preventing damage to the part (and protecting our team) while ensuring we don't induce new stresses into the metal.

Phase 3: Export Packaging – Defeating the Saltwater

Once the part is machined to precision, validated by our [CMM inspection](#), and painted, it faces its final adversary: the ocean.

Transporting oversized machined parts from China to Europe, Australia, or the Americas involves weeks at sea in a high-humidity, saline environment. Standard packaging is a recipe for a rusted, rejected part upon arrival.

Openex employs a rigorous export packaging protocol for heavy cargo:

- **Anti-Corrosion Science:** We utilize VCI (Vapor Corrosion Inhibitor) films and desiccants that create a chemical barrier against moisture. For critical machined surfaces, we apply heavy-duty rust preventatives that the customer easily removes but are impenetrable to salt spray.
- **Vacuum Sealing:** For sensitive equipment, we foil-bag and vacuum seal the entire component.
- **Custom Steel Skids:** Wood pallets crush under 50 tons. We fabricate custom **structural steel skids** designed specifically for the footprint and weight distribution of your part. This ensures that when the crane lifts the skid, the machined part experiences zero torque or twisting forces.

Phase 4: Container vs. Break Bulk

How does it leave the factory?

- **Open Top / Flat Rack Containers:** For parts that fit within standard width/length but are too heavy or tall for standard boxes, we load them into Open Tops or secure them to Flat Racks using heavy-duty lashing chains.
- **Break Bulk:** For the truly massive components (exceeding container dimensions entirely), we coordinate **Break Bulk shipping**. We transport the item directly to the port on low-bed trailers, where it is lifted individually into the ship's hold.

The Openex Promise

We don't just have big machines; we have the infrastructure to feed them. When you choose Openex, you aren't just buying CNC time. You are buying a complete logistical solution that safeguards your investment from the moment the raw material arrives until it lands safely at your site.

Do you have a project that is too heavy or awkward for your local shop?

Let us handle the weight. Contact Openex for a consultation on your large-scale manufacturing needs.

[Contact Us](#) for Heavy Fabrication Support

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