

Tips to Reduce Costs When Buying Aluminum Die-Cast Parts

Expert Advice from Align Manufacturing

- 1. Choose the Right Alloy**
 - Aluminum alloys are highly cost-effective and offer excellent strength-to-weight ratios, making them the most common choice for die casting.
 - Select the lowest-cost alloy that meets your design and performance requirements.
- 2. Optimize Volume Production**
 - Die casting is best suited for medium to high-volume production. Higher production volumes allow fixed costs, such as tooling, to be distributed over more parts, reducing the per-part cost.
 - Consider multi-cavity molds to increase production efficiency. For example, switching from a single-cavity to a multi-cavity mold significantly boosts output while minimizing tool wear.
- 3. Simplify the Part Design**
 - Simplified geometries reduce machining and finishing requirements, saving time and money.
 - Avoid intricate features unless necessary, as they can increase tooling complexity and costs.
- 4. Select Durable Tooling Materials**
 - Invest in high-quality tooling materials, such as tool steel, for long production runs. While the initial cost may be higher, it ensures longer tool life and reduces the need for frequent replacements, saving money over time.
- 5. Consolidate Manufacturing Processes**
 - Incorporate features into the die-cast part that reduce or eliminate secondary processes, such as machining or welding.
- 6. Plan for Long-Term Use**
 - Design molds that can be reused for future production runs to spread tooling costs over multiple batches.
 - Consider standardizing parts across different projects to maximize mold utility.
- 7. Evaluate Alternative Production Methods for Low Volumes**
 - For smaller production volumes, consider alternative methods such as CNC machining or 3D printing, which may be more cost-effective.
- 8. Order Early and Collaborate Closely**
 - Place orders early and maintain clear communication. This allows for better production planning, avoiding rush fees and inefficiencies.
- 9. Request Material and Process Consultation**
 - If unsure about the best material or process, request a consultation or submit a quote with Align Manufacturing. Our experts can provide cost comparisons for different materials and production options.
- 10. Maintain the Mold**
 - Proper maintenance of the mold can extend its lifespan and ensure consistent quality, reducing long-term costs.

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<https://alignmfg.co/>

Email: info@alignmfg.co

Phone No: +1 470-945-4158

For more information, please contact us: <https://alignmfg.co/contact/>

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