Lighting

Our castings are used in commercial lighting for a wide range of environments, including hospital operating rooms, large commercial buildings such as the new World Trade Center complex in New York, and even harsh marine applications. Using our V-Process to achieve a superior 150 RMS finish and zero degree draft, Harmony Castings is the ideal partner for your next project.

Key Features and Benefits:
- 150 RMS Finish
- Zero Degree Draft
- Thin Walls
- Tight Tolerances
- Corrosion Resistant
- Excellent Casting Integrity
- Speed to Market
- Unlimited Pattern Life
- Quick Pattern Revisions

MISSION STATEMENT

Harmony Castings exceeds customer expectations by delivering quality products and building long-term relationships based on trust and confidence in our performance. Our dealings with our customers, vendors, employees and our community are rooted in integrity.

Visit our website: harmonycastings.com

Send files and prints to: quotes@harmonycastings.com
V-PROCESS Sequence

Step 1: The pattern (with vent holes) is placed on a hollow carrier plate.
Step 2: A heater softens the .003" to .008" plastic film. Plastic has good elasticity and a high deformation ratio.
Step 3: Softened film drapes over the pattern with 200 to 400 mm Hg vacuum acting through the pattern vents to draw it tightly around the pattern.
Step 4: The flask is placed on the film-coated pattern. Flask walls are also a vacuum chamber with the outlet shown at right.
Step 5: The flask is filled with dry, unbounded sand. A slight vibration compacts sand to maximum bulk density.
Step 6: A sprue cup is formed and the mold surface leveled. The back of the mold is covered with unheated plastic film.
Step 7: Vacuum is applied to the flask. Atmospheric pressure then hardens the sand. The vacuum is released, pressurized air is introduced into the carrier and the mold is stripped.
Step 8: The cope and drag assembly form a plastic-lined cavity. During pouring, molds are kept under vacuum.
Step 9: After cooling, the vacuum is released and free-flowing sand drops away leaving a clean casting, with no sand lumps. The sand is cooled for re-use.

### Aluminum Castings: Process Comparisons

<table>
<thead>
<tr>
<th>Process</th>
<th>Typical Size Range</th>
<th>Tolerances</th>
<th>Surface Finish</th>
<th>Min. Draft Required</th>
<th>Min. Section Thickness</th>
<th>Nominal Lead Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>V-PROCESS Castings</td>
<td>Up to 150 lbs</td>
<td>± .010&quot; for the first 1&quot;, then add ± .002&quot; per inch. Add a maximum .020&quot; across parting line</td>
<td>125-150 RMS</td>
<td>None</td>
<td>.125&quot;</td>
<td>Samples: 2 to 6 weeks Production: 2 to 6 weeks after approval</td>
</tr>
<tr>
<td>Sand Castings</td>
<td>Ounces to tons</td>
<td>± 1/32&quot; to 6&quot;, then add ± .003&quot; per inch. Add ± .020&quot; to .090&quot; across parting line</td>
<td>200-550 RMS</td>
<td>1 to 5 degrees</td>
<td>.25&quot;</td>
<td>Samples: 2 to 6 weeks Production: 2 to 6 weeks after approval</td>
</tr>
<tr>
<td>Investment (Lost Wax)</td>
<td>Ounces to 20 lbs</td>
<td>± .003&quot; to 1/4&quot; &lt;br&gt;± .004&quot; to 1/2&quot; &lt;br&gt;± .005&quot; to 3&quot; &lt;br&gt;then add ± .003&quot; per inch</td>
<td>63-125 RMS</td>
<td>None</td>
<td>.060&quot;</td>
<td>Samples: 8 to 10 weeks Production: 5 to 12 weeks after approval</td>
</tr>
<tr>
<td>Permanent Mold</td>
<td>Ounces to 100 lbs</td>
<td>± .015&quot; to 1&quot;, then add ± .002&quot; per inch. Add ± .010&quot; to .030&quot; across parting line</td>
<td>150-300 RMS</td>
<td>2 to 5 degrees</td>
<td>.1875&quot;</td>
<td>Samples: 8 to 20 weeks Production: 10 to 12 weeks after approval</td>
</tr>
<tr>
<td>Plaster Mold</td>
<td>Ounces to 50 lbs</td>
<td>± .005&quot; to 2&quot; &lt;br&gt;then add ± .002&quot; per inch. Add ± .010&quot; across parting line</td>
<td>63-125 RMS</td>
<td>1/2 to 2 degrees</td>
<td>.070&quot;</td>
<td>Samples: 2 to 10 weeks Production: 4 to 8 weeks after approval</td>
</tr>
<tr>
<td>Die Casting</td>
<td>Ounces to 15 lbs</td>
<td>± .002&quot; per inch. Add ± .015&quot; across parting line</td>
<td>32-63 RMS</td>
<td>1 to 3 degrees</td>
<td>.030&quot; to .060&quot;</td>
<td>Samples: 12 to 22 weeks Production: 8 to 14 weeks after approval</td>
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</tbody>
</table>