# Commercial Practices

## Casting Production Specifications

To be used in consultation with your caster (Use in combination with Checklist C-8-2)*

### Checklist for Die Casting Production Part Purchasing

This Production Checklist provides a convenient method for assuring important factors involved in purchasing cast parts are evaluated and clearly communicated between the purchaser and the caster.

It should be used as a supplement to the essential dimensional and alloy specifications detailed on part prints submitted for quotation, since the listed factors directly affect the basis on which the casting quotation is made. The checklist may be reproduced for this purpose. Your caster will clarify any item requiring further explanation.

This checklist provides a numbering system in which the lowest numbered description for each requirement can be met at the lowest production cost, as follows:

<table>
<thead>
<tr>
<th>No.</th>
<th>Cost Effect</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Most economical basis for production</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>Involves additional work which may affect cost</td>
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<tr>
<td>3</td>
<td>Additional work which may increase cost</td>
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<tr>
<td>4</td>
<td>Special Requirements which may increase cost</td>
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</tr>
</tbody>
</table>

- **Casting Cleanliness**
  - 1. Some residue and chips not objectionable
  - 2. Shop run — blown reasonable free of chips but not degreased
  - 3. Clean, dry and free of chips
  - 4. Special requirements

- **Cast Surface Finish**
  - 1. Mechanical quality — finish is not significant
  - 2. Painting quality — streaks and chill areas coverable with paint
  - 3. Highest quality — for electroplating, decorative finishing, O-ring seats

- **Metal Extension (Flash) Removal**
  - 1. No die trimming — break off gates and overflows
  - 2. Die trimmed to within 0.0150" (0.38 mm) of die casting surface (See NADCA Guideline G-6-5)
  - 3. Hand filed or polished — flush with die casting’s surface
  - 4. Customer defined requirements

- **Metal Extension (Flash) Removal**
  - 1. Flash not removed
  - 2. Flash trimmed to within 0.010" (0.25 mm) of die casting surface
  - 3. Flash to be machined

- **Metal Extension (Flash) Removal**
  - 1. Not removed (See NADCA Guidelines G-6-4)
  - 2. Crushed or flattened (See NADCA Guidelines G-6-4)
  - 3. Removed from specific locations

- **Pressure Tightness**
  - 1. No requirement
  - 2. Pressure-tight to agreed-upon psi (kPa). Testing medium: ___________________
  - 3. Other arrangements to be agreed upon

- **Flatness**
  - 1. No requirement
  - 2. To NADCA “Standard” specification tolerances (S-4A-8)
  - 3. Critical requirement — to NADCA “Precision” specification tolerances (P-4A-8)
  - 4. Customer defined requirements

- **Dimensions**
  - 1. Normal: per NADCA “Standard” specification tolerances
  - 2. Semi-critical: “Precision” tolerances on specified dimensions, others “Standard”
  - 3. Critical: Special tolerances to be agreed upon

- **Customer’s Receiving Inspection**
  - 1. No unusual inspection requirements — no Statistical Quality Control
  - 2. Statistical quality control: Acceptable at Cpk 1.33 or higher (or AQL over _____________)
  - 3. Statistical quality control: Acceptable at Cpk 2.0 or higher (or AQL over _____________)

- **Packaging**
  - 1. Not critical — bulk packed
  - 2. Layer packed, with separators, or weight restriction
  - 3. Packed in cell-type separators or individually wrapped
  - 4. Customer defined requirements

* The specification provisions and procedures listed in Section 7, “Quality Assurance,” should also be addressed.

Publisher grants permission to reproduce this checklist as part of a casting Request for Quotation or Production Specification.
To be used in consultation with your caster (Use in combination with Checklist C-8-1)*

**Checklist for Finished Die Casting Part Purchasing**

This Finishing Checklist provides a convenient method for assuring that important factors involved in the surface finishing of cast parts are evaluated and clearly communicated between the purchaser and the caster.

It should be used as a supplement to the essential dimensional and alloy specifications detailed on part prints submitted for quotation, since the listed factors directly affect the basis on which the casting quotation is made. The checklist may be reproduced for this purpose. Your caster will clarify any item requiring explanation.

This checklist provides a numbering system in which the lowest numbered description for each requirement can be met at the lowest production cost, as follows:

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>☐ No insert used in cast part</td>
<td>☐ Polishing not required</td>
<td>☐ No buffing required</td>
<td>☐ Heavy Paint, Protective Only — Specify:</td>
<td>☐ 1 Normal indoor use only</td>
<td>☐ 1 Utility Grade — surface imperfections acceptable, nondecorative coatings</td>
<td>☐ 1 Superior Grade — specified average surface finish value of ___________ micro-inches, per print</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>☐ Inserts required, to be supplied by customer at 10% overage</td>
<td>☐ Polish only where marked on drawing</td>
<td>☐ Mechanical (burnishing, tumbling, etc.)</td>
<td>☐ 2 Decorative Paint — Specify:</td>
<td>☐ 2 Exposure to weather — Specify:</td>
<td>☐ 2 Functional Grade — slight, removable surface imperfections, heavier coatings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>☐ Inserts required, to be supplied by caster</td>
<td>☐ Polish all parting lines (except as noted)</td>
<td>☐ Buff as indicated on drawing</td>
<td>☐ 3 Severe Exposure Protection — Specify:</td>
<td>☐ 3 Exposure to unusual chemistry — Specify:</td>
<td>☐ 3 Commercial Grade — removable imperfections</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*The specification provisions and procedures listed in Section 7, “Quality Assurance,” should also be addressed.