

## Casting Production Specifications

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

### Checklist for Die, SSM and Squeeze 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:

This checklist is for use in consultation with your die caster prior to estimating production costs. Use in combination with the Finishing Checklist C-8-2. Also review Checklists T-2-1A and T-2-1B, for Die Casting Die Specification, in Section 2.

| No.                        | Cost Effect                                    |
|----------------------------|------------------------------------------------|
| <input type="checkbox"/> 1 | Most economical basis for production           |
| <input type="checkbox"/> 2 | Involves additional work which may affect cost |
| <input type="checkbox"/> 3 | Additional work which may increase cost        |
| <input type="checkbox"/> 4 | Special Requirements which may increase cost   |
| Part # _____               |                                                |

|          |                                                                     |                            |                                                                                                          |
|----------|---------------------------------------------------------------------|----------------------------|----------------------------------------------------------------------------------------------------------|
| <b>A</b> | Casting Cleanliness                                                 | <input type="checkbox"/> 1 | Some residue and chips not objectionable                                                                 |
|          |                                                                     | <input type="checkbox"/> 2 | Shop run – blown reasonably free of chips but not degreased                                              |
|          |                                                                     | <input type="checkbox"/> 3 | Clean, dry and free of chips                                                                             |
|          |                                                                     | <input type="checkbox"/> 4 | Special requirements _____                                                                               |
| <b>B</b> | Cast Surface Finish                                                 | <input type="checkbox"/> 1 | Mechanical quality – finish is not significant                                                           |
|          |                                                                     | <input type="checkbox"/> 2 | Painting quality – streaks and chill areas coverable with paint                                          |
|          |                                                                     | <input type="checkbox"/> 3 | Highest quality – for electroplating, decorative finishing, O-ring seats                                 |
| <b>C</b> | Metal Extension (Flash) Removal<br>Parting Line<br>External Profile | <input type="checkbox"/> 1 | No die trimming – break off gates and overflows                                                          |
|          |                                                                     | <input type="checkbox"/> 2 | Die trimmed to _____ of die casting surface (See NADCA Guideline G-6-5)                                  |
|          |                                                                     | <input type="checkbox"/> 3 | Hand filed or polished – flush with die casting’s surface                                                |
|          |                                                                     | <input type="checkbox"/> 4 | Customer defined requirements (such as thermal, tumble or vibratory deburring, or shot or grit blasting) |
| <b>D</b> | Metal Extension (Flash) Removal<br>Cored Holes                      | <input type="checkbox"/> 1 | Flash not removed                                                                                        |
|          |                                                                     | <input type="checkbox"/> 2 | Flash trimmed _____ of die casting surface                                                               |
|          |                                                                     | <input type="checkbox"/> 3 | Flash to be machined or otherwise completely removed                                                     |
| <b>E</b> | Metal Extension (Flash) Removal<br>Ejector Pins                     | <input type="checkbox"/> 1 | Not removed (See NADCA Guidelines G-6-4)                                                                 |
|          |                                                                     | <input type="checkbox"/> 2 | Crushed or flattened (See NADCA Guidelines G-6-4)                                                        |
|          |                                                                     | <input type="checkbox"/> 3 | Removed from specific locations _____                                                                    |
| <b>F</b> | Pressure Tightness                                                  | <input type="checkbox"/> 1 | No requirement                                                                                           |
|          |                                                                     | <input type="checkbox"/> 2 | Pressure-tight to agreed-upon psi (kPa). Testing medium: _____                                           |
|          |                                                                     | <input type="checkbox"/> 3 | Other arrangements to be agreed upon                                                                     |
| <b>G</b> | Flatness                                                            | <input type="checkbox"/> 1 | No requirement                                                                                           |
|          |                                                                     | <input type="checkbox"/> 2 | To NADCA “Standard” specification tolerances (S-4A-8)                                                    |
|          |                                                                     | <input type="checkbox"/> 3 | Critical requirement – to NADCA “Precision” specification tolerances (P-4A-8)                            |
|          |                                                                     | <input type="checkbox"/> 4 | Customer defined requirements                                                                            |
| <b>H</b> | Dimensions                                                          | <input type="checkbox"/> 1 | Normal: per NADCA “Standard” specification tolerances                                                    |
|          |                                                                     | <input type="checkbox"/> 2 | Semi-critical: “Precision” tolerances on specified dimensions, others “Standard”                         |
|          |                                                                     | <input type="checkbox"/> 3 | Critical: Special tolerances to be agreed upon                                                           |
| <b>I</b> | Customer’s Receiving Inspection                                     | <input type="checkbox"/> 1 | No unusual inspection requirements – no Statistical Quality Control                                      |
|          |                                                                     | <input type="checkbox"/> 2 | Statistical quality control: Acceptable at Cpk 1.33 or higher (or AQL over _____)                        |
|          |                                                                     | <input type="checkbox"/> 3 | Statistical quality control: Acceptable at Cpk 2.0 or higher (or AQL over _____)                         |
| <b>J</b> | Packaging                                                           | <input type="checkbox"/> 1 | Not critical – bulk packed                                                                               |
|          |                                                                     | <input type="checkbox"/> 2 | Layer packed, with separators, or weight restriction                                                     |
|          |                                                                     | <input type="checkbox"/> 3 | Packed in cell-type separators or individually wrapped                                                   |
|          |                                                                     | <input type="checkbox"/> 4 | Customer defined requirements _____                                                                      |

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

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# Commercial Practices

This checklist is for use in consultation with your die caster prior to estimating production costs. Use in combination with the Finishing Checklist C-8-2. Also review Checklists T-2-1A and T-2-1B, for Die Casting Die Specification, in Section 2.

## Casting Surface Finishing Specifications

To be used in consultation with your caster (Use in combination with Checklist C-8-1)\*

### Checklist for Finished Die, SSM and Squeeze 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:

**No. Cost Effect**

- 1 Most economical basis for production
- 2 Involves additional work which may affect cost
- 3-4 Additional work which may increase cost
- 5 Most difficult surface to cast on a production basis

Part # \_\_\_\_\_

|          |                                            |                                                                                                                                                                         |
|----------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>K</b> | Casting Insert                             | <input type="checkbox"/> 1 No insert used in cast part                                                                                                                  |
|          |                                            | <input type="checkbox"/> 2 Inserts required, to be supplied by customer at 10% overage                                                                                  |
|          |                                            | <input type="checkbox"/> 3 Inserts required, to be supplied by caster                                                                                                   |
| <b>L</b> | Parting Lines                              | <input type="checkbox"/> 1 Polishing not required                                                                                                                       |
|          |                                            | <input type="checkbox"/> 2 Polish only where marked on drawing                                                                                                          |
|          |                                            | <input type="checkbox"/> 3 Polish all parting lines (except as noted)                                                                                                   |
| <b>M</b> | Surface Preparation                        | <input type="checkbox"/> 1 No buffing required                                                                                                                          |
|          |                                            | <input type="checkbox"/> 2 Mechanical (burnishing, tumbling, etc.) Specify: _____                                                                                       |
|          |                                            | <input type="checkbox"/> 3 Buff as indicated on drawing                                                                                                                 |
| <b>N</b> | Plating, Anodizing or Other Special Finish | <input type="checkbox"/> 1 Protective Only — Specify: _____                                                                                                             |
|          |                                            | <input type="checkbox"/> 2 Decorative Paint — Specify: _____                                                                                                            |
|          |                                            | <input type="checkbox"/> 3 Severe Exposure Protection — Specify: _____                                                                                                  |
| <b>O</b> | Painting                                   | <input type="checkbox"/> 1 Heavy Paint, Protective Only — Specify: _____                                                                                                |
|          |                                            | <input type="checkbox"/> 2 Decorative Paint — Specify: _____                                                                                                            |
|          |                                            | <input type="checkbox"/> 3 Application requires base coat or special treatment: _____<br>Specify: _____                                                                 |
| <b>P</b> | Environmental                              | <input type="checkbox"/> 1 Normal interior use only                                                                                                                     |
|          |                                            | <input type="checkbox"/> 2 Exposure to weather — Specify: _____                                                                                                         |
|          |                                            | <input type="checkbox"/> 3 Exposure to unusual chemistry — Specify: _____                                                                                               |
| <b>Q</b> | As-Cast Surface See NADCA Guidelines G-6-6 | <input type="checkbox"/> 1 Utility Grade — surface imperfections acceptable, nondecorative coatings                                                                     |
|          |                                            | <input type="checkbox"/> 2 Functional Grade — slight, removable surface imperfections, heavier coatings                                                                 |
|          |                                            | <input type="checkbox"/> 3 Commercial Grade — removable imperfections                                                                                                   |
|          |                                            | <input type="checkbox"/> 4 Consumer Grade — no objectionable imperfections, as agreed upon, when viewed under normal lighting conditions at _____ feet viewing distance |
|          |                                            | <input type="checkbox"/> 5 Superior Grade — specified average surface finish value of _____ microinches, per print                                                      |
| <b>R</b> | Special Requirements                       | For special flash removal requirements, see Checklist C-8-1, items C & E                                                                                                |
|          |                                            | For special packaging/weight restrictions, see Checklist C-8-1, item J                                                                                                  |

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