



P060 - Cast Brackets and Duct Components



P063 - Forged Bent Control Levers



P074 - Automotive Crossmembers and Cast Gear Housings



P080 - Cast Pipe Bracket Housings



P110 - Forged Automotive Rocker Arms



P111 - Precision Automotive Valve and Lever Components



P112 - Cast Automotive Rocker Arms



P113 - Automotive Pivot Pins

MANUFACTURING CAPABILITY

Die Casting

Repeatable OEM components where integrated geometry, tooling economics and production efficiency are important

WHAT THIS PDF COVERS

Repeat / higher-volume production

Integrated thin-wall geometry

Aluminum / zinc / magnesium review

Secondary CNC machining

01 / PROCESS FIT

When die casting makes sense

The process is generally evaluated for repeat-volume components where tooling investment can be balanced against production efficiency and consistent geometry.

PROCESS FIT

Best reviewed when alloy, annual volume and component geometry justify...

- Repeat or higher production volume
- Integrated thin-wall geometry
- Consistent component shape

- Secondary CNC machining where needed

01**Production Efficiency**

Well suited to repeat production after tooling and process are established.

02**Integrated Features**

Ribs, bosses, pockets and features can be combined where design rules allow.

03**Consistent Geometry**

Stable tooling and process control support repeatable component shape.

04**Secondary Machining**

Critical sealing faces, bores, holes and threads can be CNC finished.

BUYER DECISION POINTS

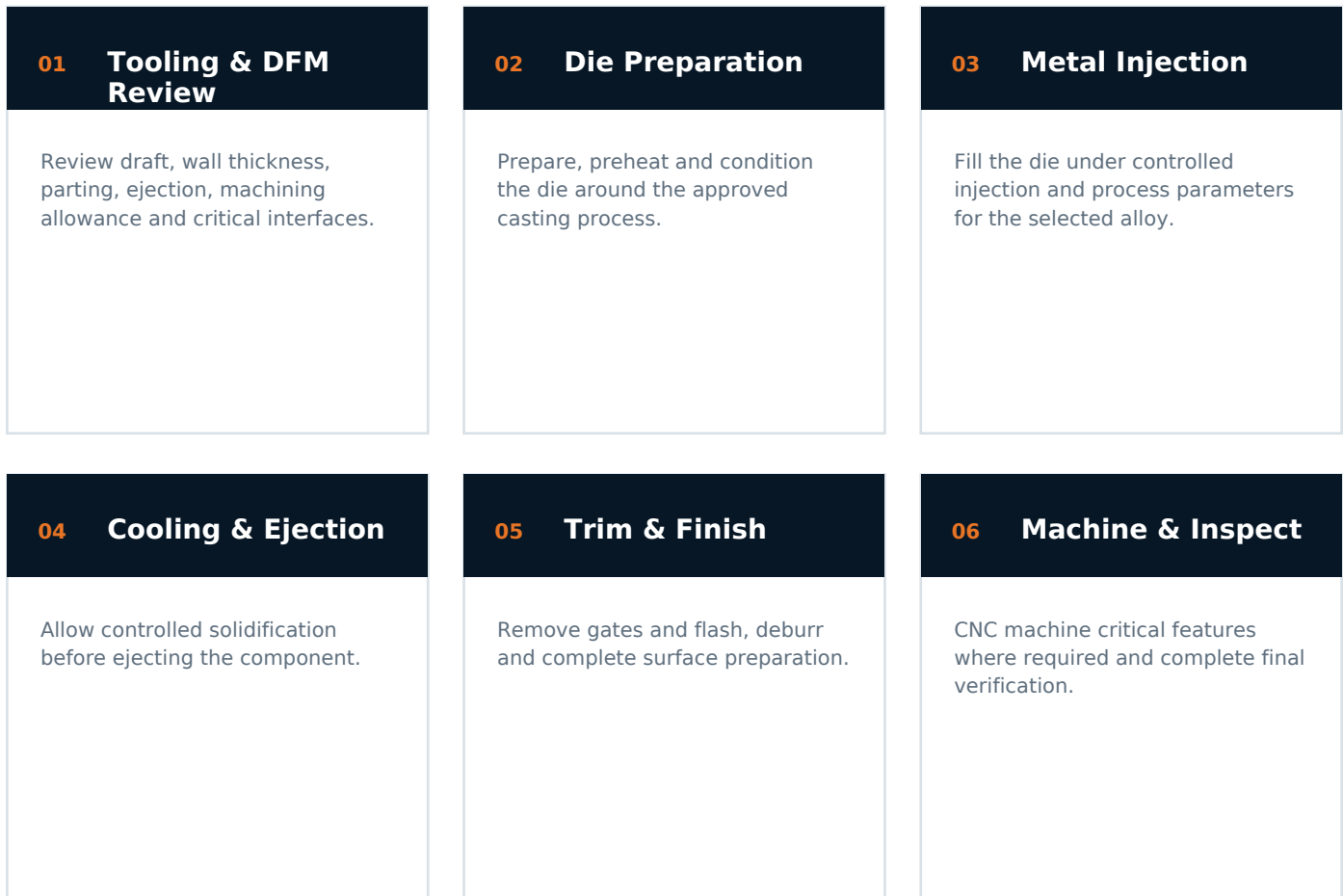
What should be clear before process selection

- Alloy selection and required properties
- Expected annual production volume
- Wall thickness, draft, parting and ejection
- Machining allowance on critical interfaces
- Surface finish and inspection requirements

02 / PROCESS FLOW

From tooling review to finished die-cast component

Process planning connects component DFM, die preparation, casting parameters, trimming, secondary machining and final inspection.

**BEFORE WE START**

Drawing review connects the process to the finished part.

Die casting RFQs benefit from annual volume, alloy, 3D geometry, critical interfaces and finish requirements because tooling economics are central to process selection.

03 / MATERIALS & ENGINEERING

Material options commonly reviewed for die casting

Alloy selection should follow mechanical, thermal, corrosion, weight and application requirements.

Aluminum Alloys

Widely considered for lightweight housings, brackets and industrial parts.

Zinc Alloys

Suitable where fine detail, surface condition and dimensional stability matter.

Magnesium Alloys

Selected for lightweight applications where weight reduction is a key objective.

Application Review

Final alloy should be confirmed from drawing and service environment.

Machining Stock

Critical interfaces may still require CNC finishing after casting.

Surface Finish

Coating or finishing requirements should be defined with the RFQ.

ENGINEERING REVIEW

What we review before die design

Requirement	What We Review	Manufacturing Impact
Alloy	Mechanical, thermal, corrosion and weight requirements	Influences die temperature, fill behavior and final properties.
Geometry	Wall thickness, ribs, bosses, draft and parting	Determines DFM and tooling feasibility.
Ejection	Undercuts, slides and release requirements	Influences tooling complexity and cycle.
Machining	Critical bores, sealing faces and datums	Defines post-cast CNC allowance and locating strategy.
Volume	Annual demand and program life	Determines whether tooling economics make sense.

04 / REPRESENTATIVE COMPONENTS

Geometry types commonly reviewed for die casting

These are representative OEM shapes only. Final process selection must be confirmed from alloy, annual volume and DFM review.

**01****Box housing / cover**

Representative geometry. Final manufacturing route is confirmed from drawing, alloy and quantity.

**02****Circular housing / cover**

Representative geometry. Final manufacturing route is confirmed from drawing, alloy and quantity.

**03****Mounting bracket / plate**

Representative geometry. Final manufacturing route is confirmed from drawing, alloy and quantity.

**04****Round machinery housing**

Representative geometry. Final manufacturing route is confirmed from drawing, alloy and quantity.

**05****Bracket / duct component**

Representative geometry. Final manufacturing route is confirmed from drawing, alloy and quantity.

**06****Compact housing / mounting plate**

Representative geometry. Final manufacturing route is confirmed from drawing, alloy and quantity.

INTEGRATED MANUFACTURING

Die-cast components can be trimmed, deburred, surface finished and CNC machined at sealing, bearing, threaded or assembly interfaces.

05 / QUALITY CONTROL

Inspection is integrated into the manufacturing route

Quality checkpoints are defined around drawing, alloy, casting process, secondary operations and finished component requirements.



QUALITY CHECKPOINTS

01 Drawing Review

Identify critical dimensions, material and functional interfaces.

02 Process Control

Plan tooling, injection, cooling, ejection and trimming checkpoints.

03 Dimensional Control

Verify critical machined surfaces, bores, holes and threads.

INSPECTION & DOCUMENTATION

Repeat production requires repeatable process control

- Visual and dimensional inspection of finished castings
- Critical machined-interface verification
- Material / alloy documentation when required
- Surface and coating inspection when specified
- Project-specific reports and traceability requirements

06 / RFQ REVIEW

What makes a die casting RFQ useful?

Because tooling investment is a major part of die casting, the RFQ should allow both DFM and program economics to be reviewed before quoting.

- 3D model and 2D drawing
- Target alloy and service requirements
- Expected annual volume / program life
- Critical tolerances and machined interfaces

NEXT STEP

Send your drawing for manufacturing review

Send your drawing, alloy, expected volume and technical requirements so tooling, casting, secondary machining and inspection can be reviewed together.

01 2D drawing or 3D model

02 Material grade / alloy

03 Estimated quantity / annual demand

04 Critical dimensions and tolerances

05 Surface, heat treatment or coating requirements

06 Inspection / documentation requirements

DOWNLOAD + REVIEW + RFQ

Use this capability PDF together with your drawing when discussing a new project.

www.thcastings.com