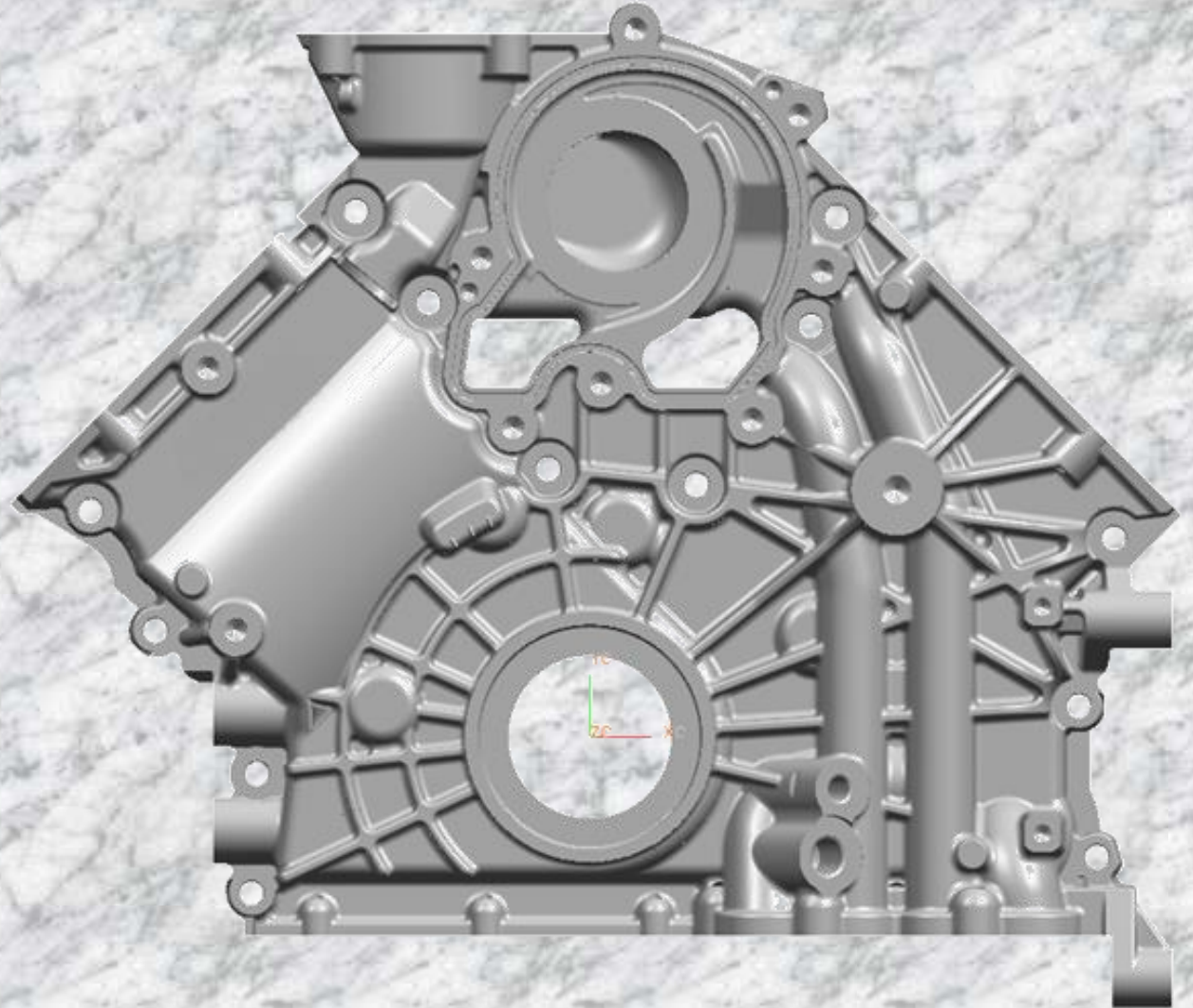




Prototype Casting Specialists



Our Process



- Data Import
- Product Design Validation
- Print / Parting Construction
- Tooling Model Validation
- CNC Tool Paths
- Tooling Generation
- Casting
- Product Validation



Data Import



- ATD can accommodate most of our customers CAD formats.

Native CAD formats are always preferred, but other acceptable export formats include STEP, Parasolid, & Iges.

Native preferred formats:

- Catia V4 & V5
- NX
- SDRC – Ideas / NX Ideas
- Pro – E
- Solid Edge

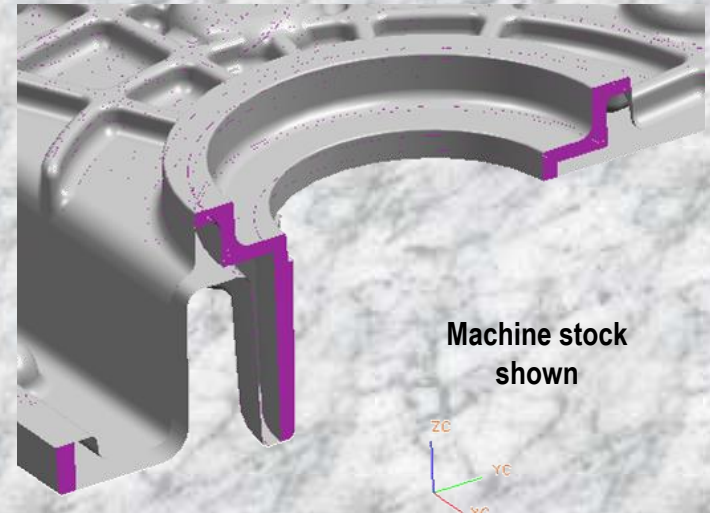
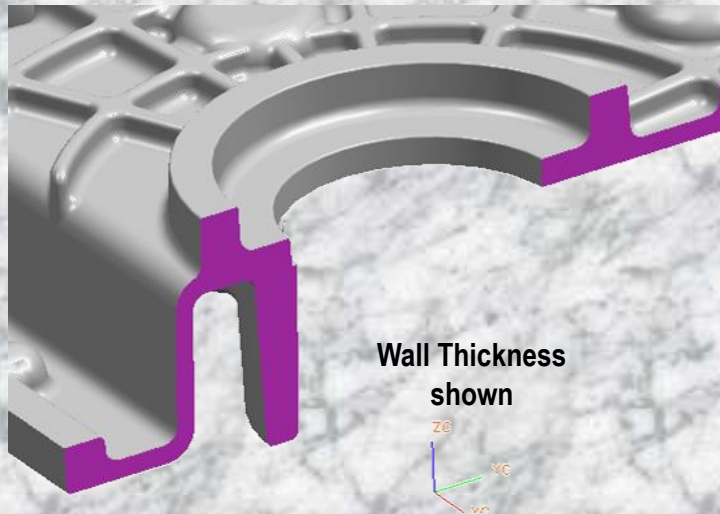
Non-native preferred formats:

- STEP
- Parasolid
- IGES

Product Design Validation



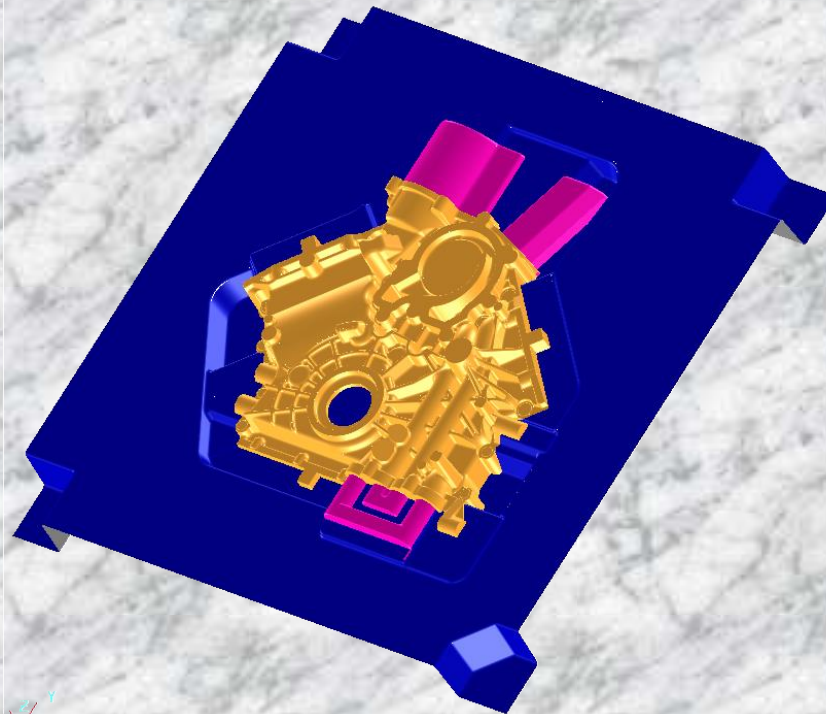
- Data interrogation to insure that Wall Thickness, Machine stock and Draft have all been considered in the product design



Print / Parting Construction



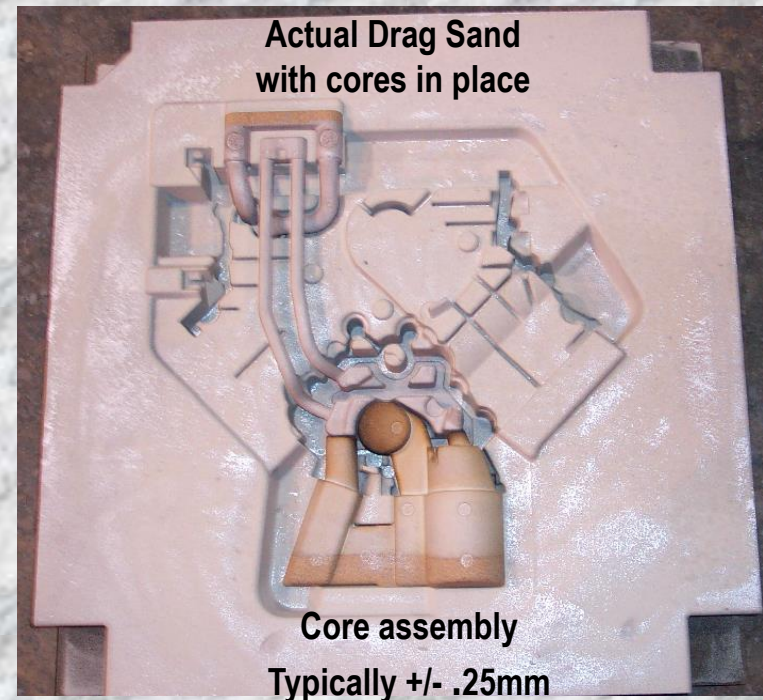
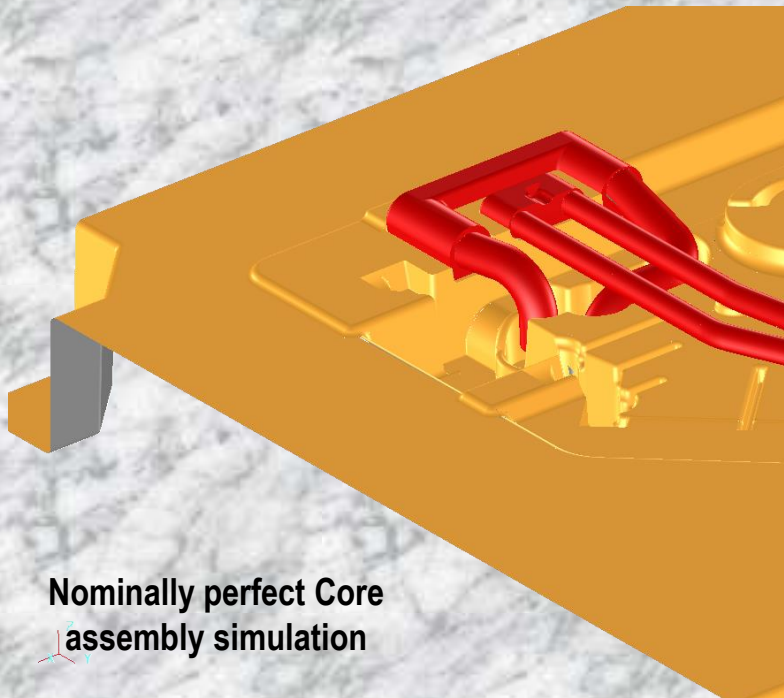
- Using CAD Modeling Software, our models are 100% computer generated, producing nominally perfect models.



Tooling Model Validation



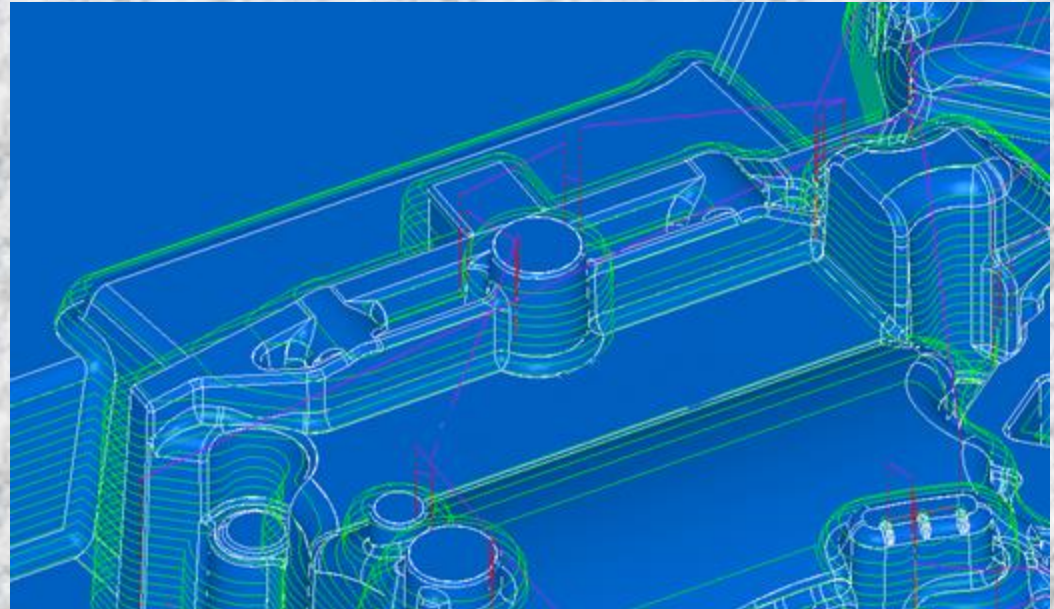
- Electronically simulating core and assembly clearances, we insure our molds work precisely at the foundry.



CNC Tool Paths



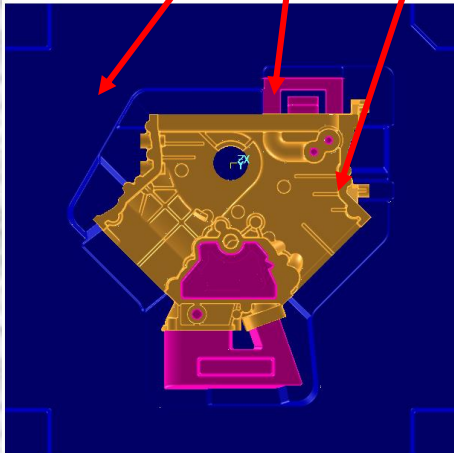
- CNC Tool Paths are generated from the CAD model. After completion, the resulting tool will be far more accurate than traditional prototype methods.



Tooling Generation

- Computer tooling models are used to CNC cut 100% of our tooling. Parting, Print & Product Shape

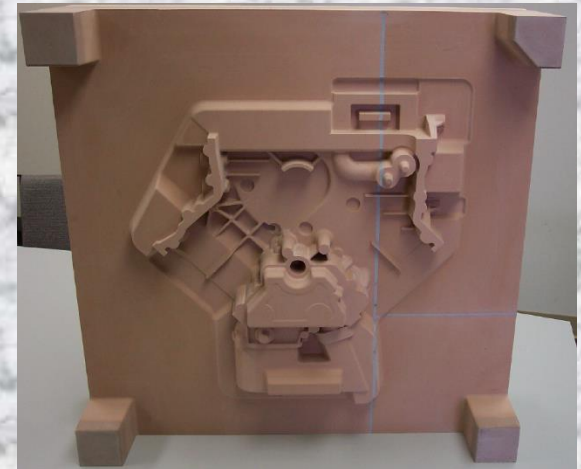
Parting, Print & Product shape are all cut at one time creating the least possible tolerance stack up



Nominally perfect
Computer Model



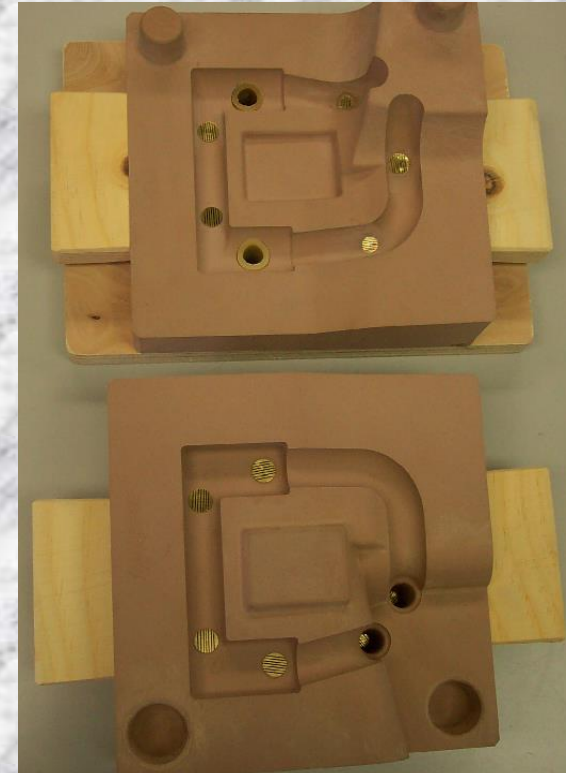
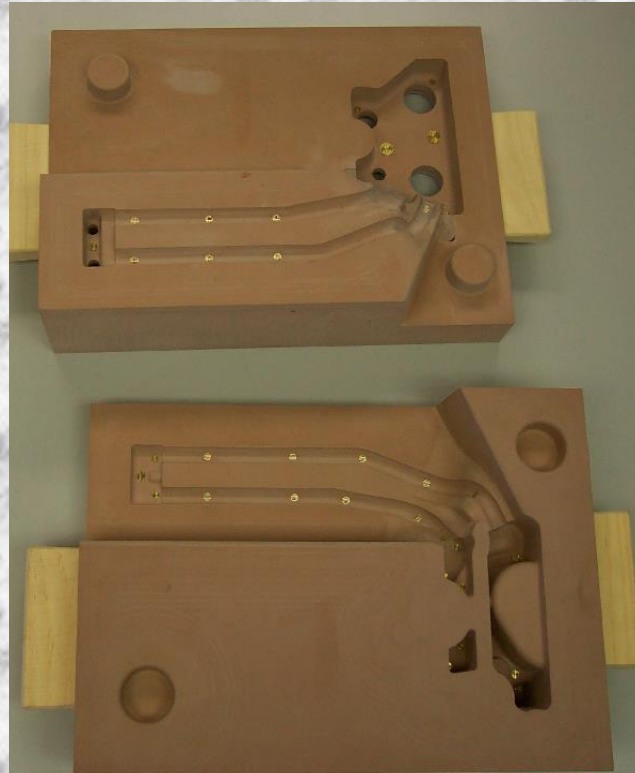
CNC Cutting



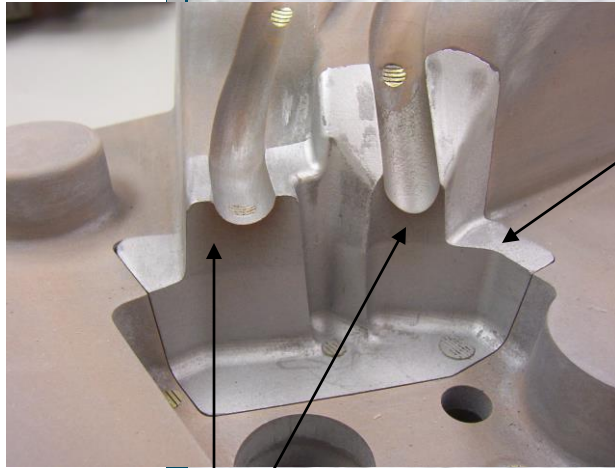
Prototype Pattern
Typically +/- .10mm

Tooling Generation

- CNC cut core boxes

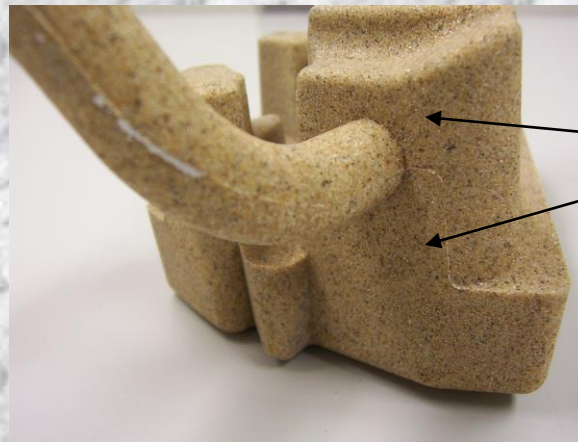


Matching Design Intent



Removable insert (Loose Piece) to produce cores with a back draft condition

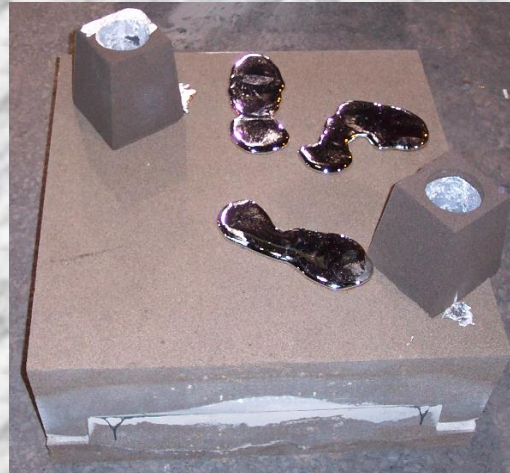
Back Draft area



Notice that the draft is one plane on both sides of the parting

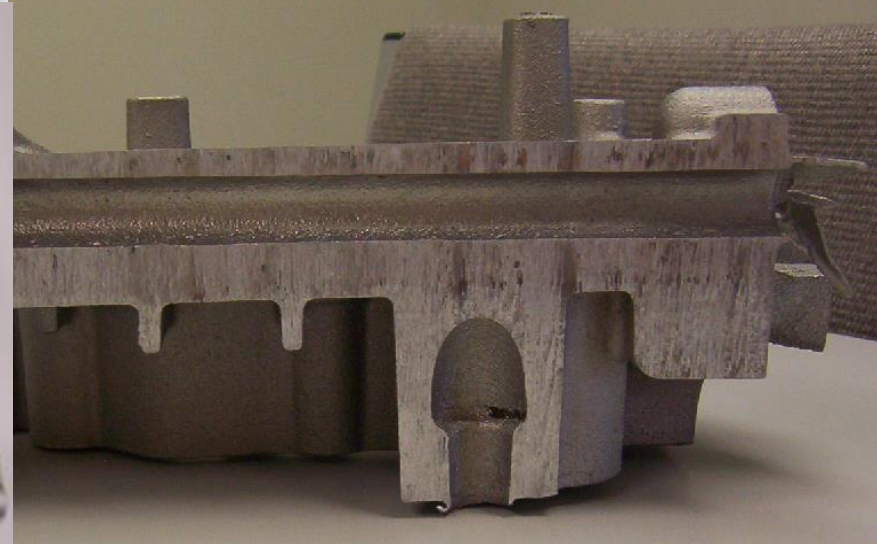
Casting

- Close relations with the foundry help to coordinate product realization



Casting Inspection

- Sample castings are cut up and visually inspected for process problems



Casting tolerance
Typically +/- .50mm

Part Validation

- To insure that only acceptable variances occur, sample parts are compared back to CAD models.



X-Ray inspections for
internal shape defects



Laser Scanning for
external shape validation