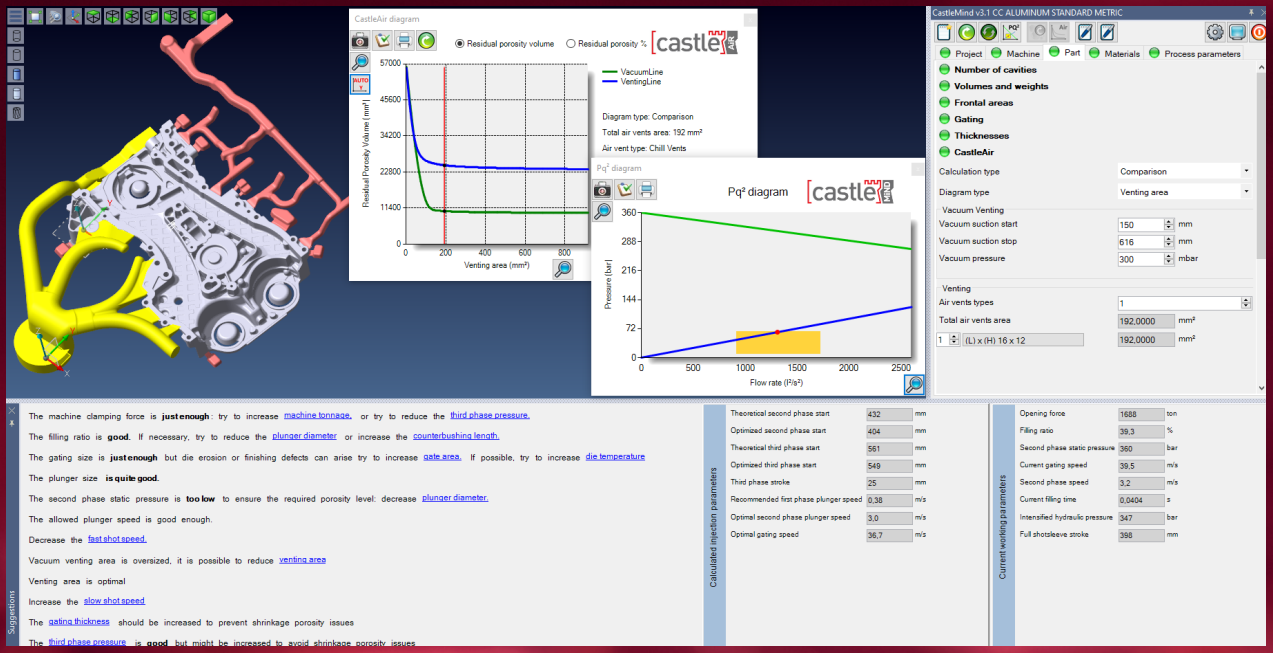
YOU'LL NEVER WORK ALONE



[castle MiND]

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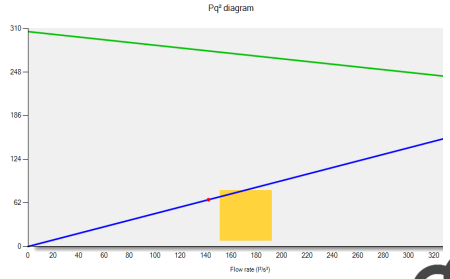
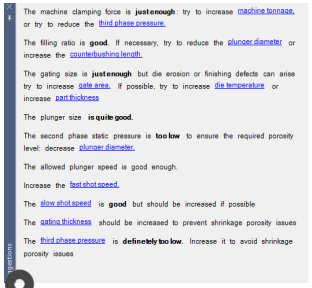
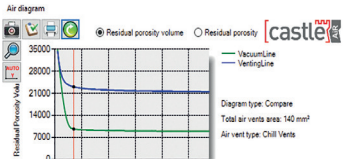
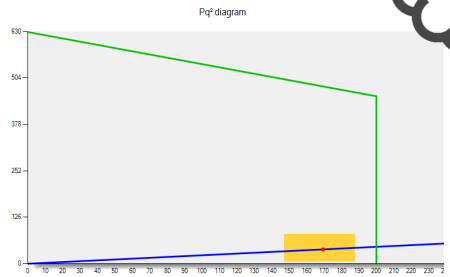
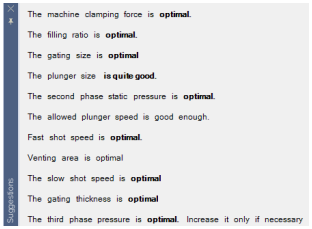
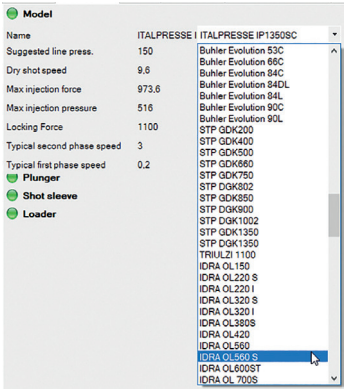






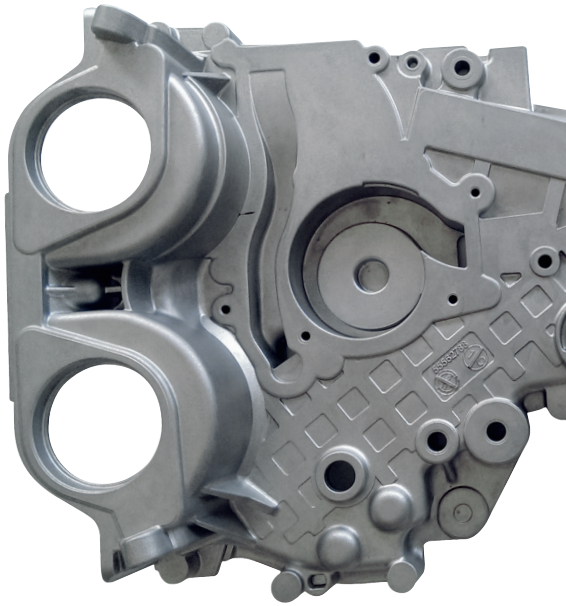






PRACTICAL INTELLIGENCE FOR DIE CASTING

- **DATA IMPORT FROM A VARIETY OF CAD SYSTEMS**
  (including Step, Parasolid, STL, IGES, SolidWorks™, SolidEdge™ and Catia™ and many others)
- **DIRECT DATA INPUT OF CASTING GEOMETRY**
  (volumes, thicknesses, areas)
- **MODEL PREPARATION IN A MINUTE, OPTIMIZATION CALCULATION IN A SECOND**
- **OPTIMIZATION OF DIE DESIGN AND PERFORMANCE**
- **INTERACTIVE PRACTICAL SUGGESTIONS**
- **ADVANCED MATHEMATICAL CALCULATIONS ARE TRANSLATED INTO A USER FRIENDLY INTERFACE**
- **VENTING AND VACUUM CALCULATION AND OPTIMIZATION**



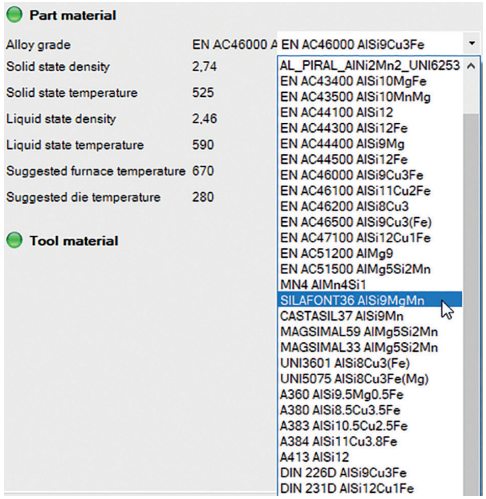
Castle MIND is an innovative software solution that presents advanced mathematical concepts within an interface designed to make the software very user friendly.

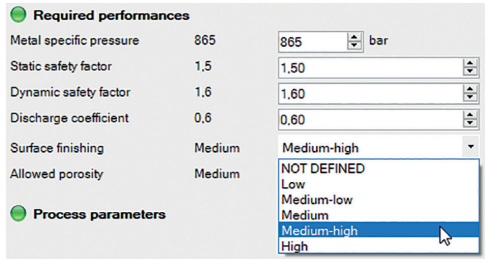
The software technical advantage stems from the use of mathematical rules derived from fluid dynamic principles and foundry or moulding experience that are used to evaluate and supplement the theoretical formulae.

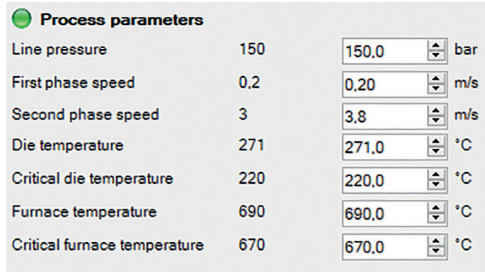
The results of the calculations are expressed in a way that makes the results comprehensible and useful even for operators with no a specific technical background.

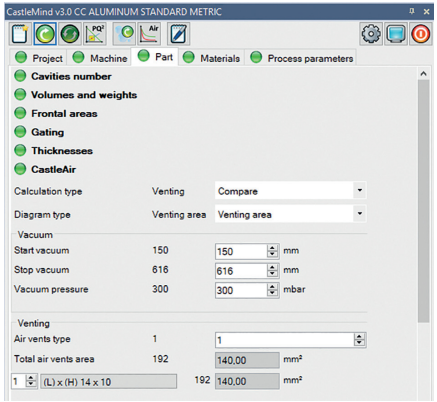
The software is able to identify both critical die design features and wrong process parameter. It suggests how to optimize them to avoid or reduce quality issues during production.

All the advice is provided in common foundry language rather than by numbers or formulas.







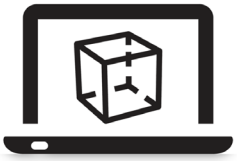


CASTLE MIND IS INNOVATION IN SIMULATION

Additional design tool for the casting die maker that:

- Applies highly advanced scientific and mathematical theories using well known terms in the foundry
- Provides extremely practical results in real time with no need to wait for days or hours.
- Not only identifies the problems but also suggests how to solve them
- Not only provides a simulation of a standard situation but it forecasts the real working scenario of the given tool on the given machine.

FOR DIE MAKERS AND PART DESIGNERS



CASTLE MIND provides the ability to:

Optimize dimension and shape of the gates in relation to the expected quality specifications for the casting, its geometry, type of alloy and the performance of the die casting equipment.

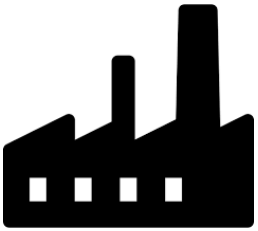
Predict and evaluate the air venting performance both for passive (chill vent) or active (vacuum) configuration and suggest the optimal venting area for a given setup.

Supply information on how to make the mould perform to its maximum potential (through PQ^2 diagram) and according to the kind of installed equipment and the operating conditions faced. It helps to decide whether it is necessary to thermo regulate or raise the temperature of the die.

Optimizes the plunger diameter and gets the moulding parameters for the given mould/machine combination.

Compile the machine parameters datasheet (injection strokes, plunger speed and pressure) as a guideline to be sent to the foundry or used for realistic filling simulations.

FOR THE FOUNDRYMEN



CASTLE MIND provides the ability to:

Optimize production providing optimal injection parameters, slow and fast shot velocity and strokes, shot sleeve diameter, furnace and die temperature in order to maximize part quality and reduce setup time.

Facilitate the detection of a failure root cause whether because of the mould, teh machinery or the process and advise potential solutions.

Increase casting quality (also in terms of porosity and surface finishing) and, more importantly, to maintain it extremely stable over time being influenced in only a small way by temperature and alloy composition fluctuations, in addition to other indeterminable factors.

Reduce die wear and metallization phenomena, frequently caused by poorly calculated and inadequate gating areas.

Reduce setup costs related to casting modifications needed due to defects detected (i.e. gate area changes) during the sampling process.

Extend mould cycle life by optimizing both die geometry and process injection parameters in order to avoid washout, erosion and die wear phenomena.

powered by

[PiQ²]
Developing Expertise

PiQ² srl
25123 Brescia · Via Branze, 45
T +39 030 6595058 · www.piq2.com · info@piq2.com