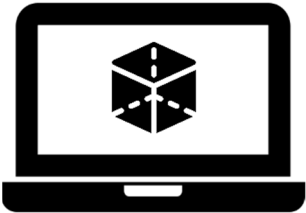
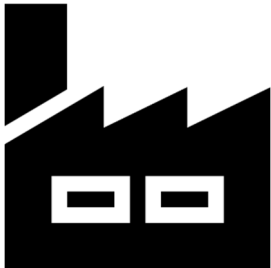


**FOR DIE
MAKERS AND PART
DESIGNERS**



**FOR THE
FOUNDRYMEN**



CastleRUN provides the ability to:

Optimize the dimension and shape of runners in an early stage of die design

Predict and reduce turbulence and air entrapment within the runners optimizing the geometry upstream of the gatings

Quickly ensure the optimal runner geometry **without running several time consuming filling simulations**

Increase casting quality checking that runners are working as intended

CastleRUN provide the ability to:

Optimize injection parameters by quickly simulating several configurations of injection profiles in order to maximize part quality and reduce on-the-field trial and error tests.

Increase casting quality (in terms of porosity and surface finishing) reducing bottlenecks and air entrapment in the runners upstream of the gatings

Reduce soldering/sticking phenomena related to uneven and turbulent flow in the runners, thus increasing mould life.

Reduce setup costs related to casting reviews (i.e. runner and gate shape changes) to solve defects after the first sampling process

Save money by reducing runners weight and also achieve a faster cycle time.

powered by



PiQ² srl

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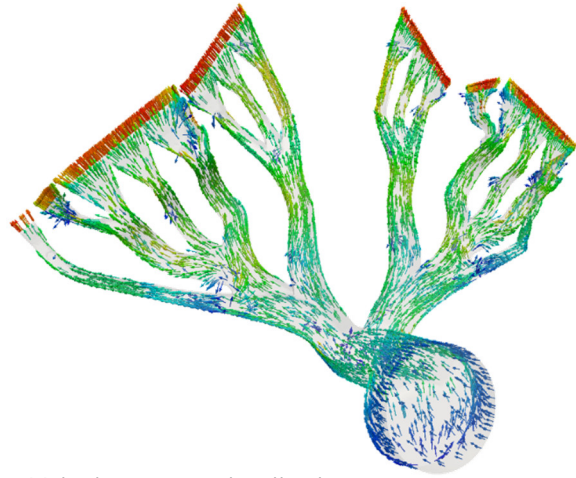
[PiQ²]
Developing Expertise



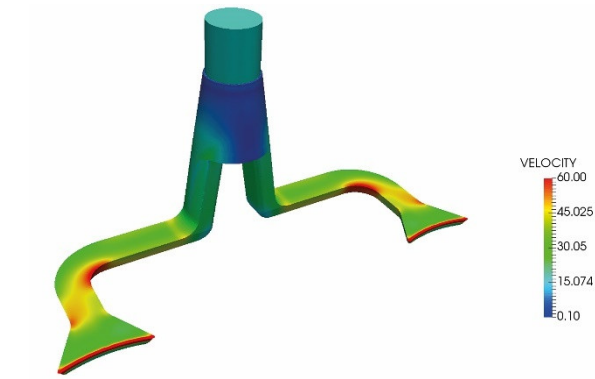
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RUN

FAST FLOW RUNNER SIMULATION

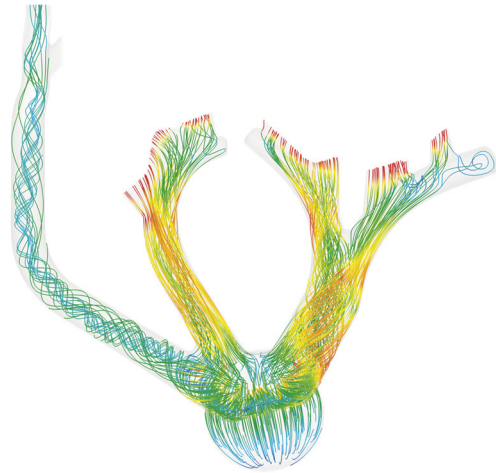
RUN



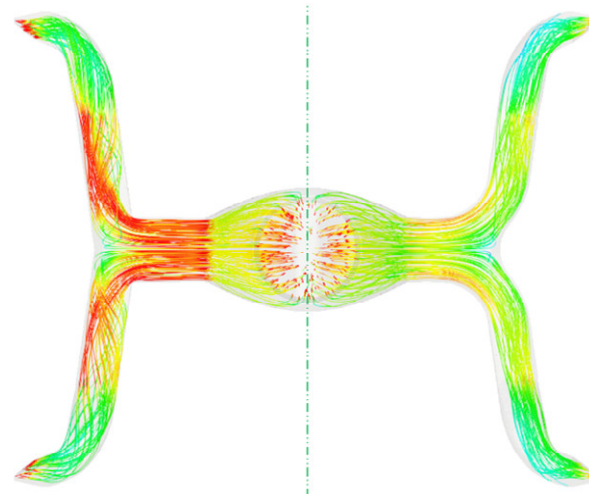
Velocity vectors visualization



Easy identification of critical flow regions



Velocity stream lines visualization



Velocity tracers comparison: pre-optimization (bad, left) and post optimization (good, right)

FAST FLOW RUNNER SIMULATION

CastleRUN is a fast, reliable and innovative simulation tool for the die design optimization of both cold and hot chamber die casting moulds. **Model preparation and calculation takes only a few minutes.**

The design of the runners within die casting technology has assumed greater and greater matter in recent years and is often the only way for the die designers **to improve the casting quality and the reliability of the process.**

Indeed, mould makers are often asked **to find solutions to optimize** the cavity filling while the geometry or ingating of the part cannot be modified at all due to design restrictions.

CastleRUN enables the die maker to design **the optimal runner geometry without running a time consuming filling simulation** of the whole casting.

It's a smart tool to easily simulate different solutions and achieve expected results such as: reduction of turbulence, air entrapment and a decrease of friction near the gate to avoid die wear and maximize its life.

→ **DATA IMPORT FROM MANY CAD SYSTEM**
(including Step, Parasolid, STL, Iges and many others)

→ **COMPLETE 3D CAD MODELLING CAPABILITIES**

→ **VALIDATION AND OPTIMIZATION OF RUNNERS DESIGN GEOMETRY**

→ **TYPICAL MODEL PREPARATION AND SIMULATION CALCULATION IN A FEW MINUTES**

→ **INTUITIVE RESULTS VISUALIZATION TO EASILY REDUCE TURBULENCE AND OPTIMIZE RUNNER SECTION AND SHAPE**

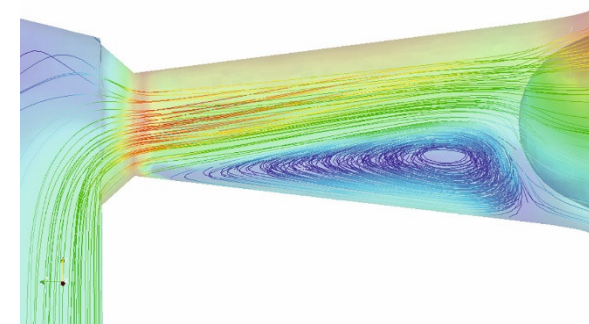
→ **FAST OPTIMIZATION OF SLOW SHOT INJECTION PROFILE TO REDUCE AIR ENTRAPMENT**

→ **PROVIDE A COMPLETE MAP OF SPEED AND PRESSURE OF THE FLOW WITHIN THE RUNNERS**

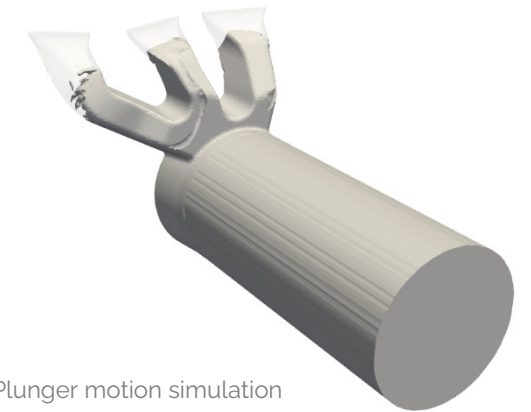
→ **TYPICAL TRAINING DURATION OF A FEW HOURS**

→ **FREE MULTI-CPU CALCULATION AND MESHING**

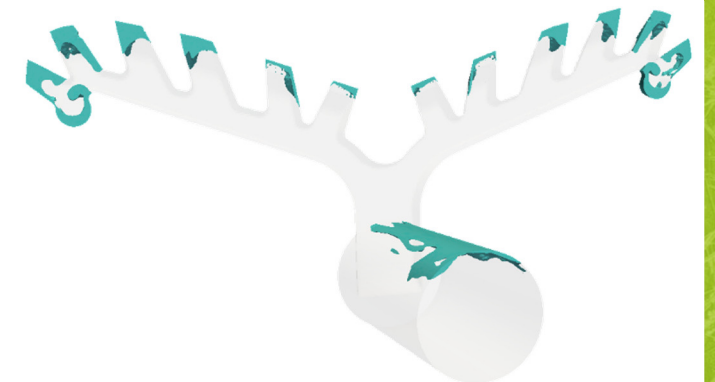
→ **FREE RESULTS VIEWER**



Turbulence visualization inside the runner of a three plate die



Plunger motion simulation



Air entrapment in shot sleeve