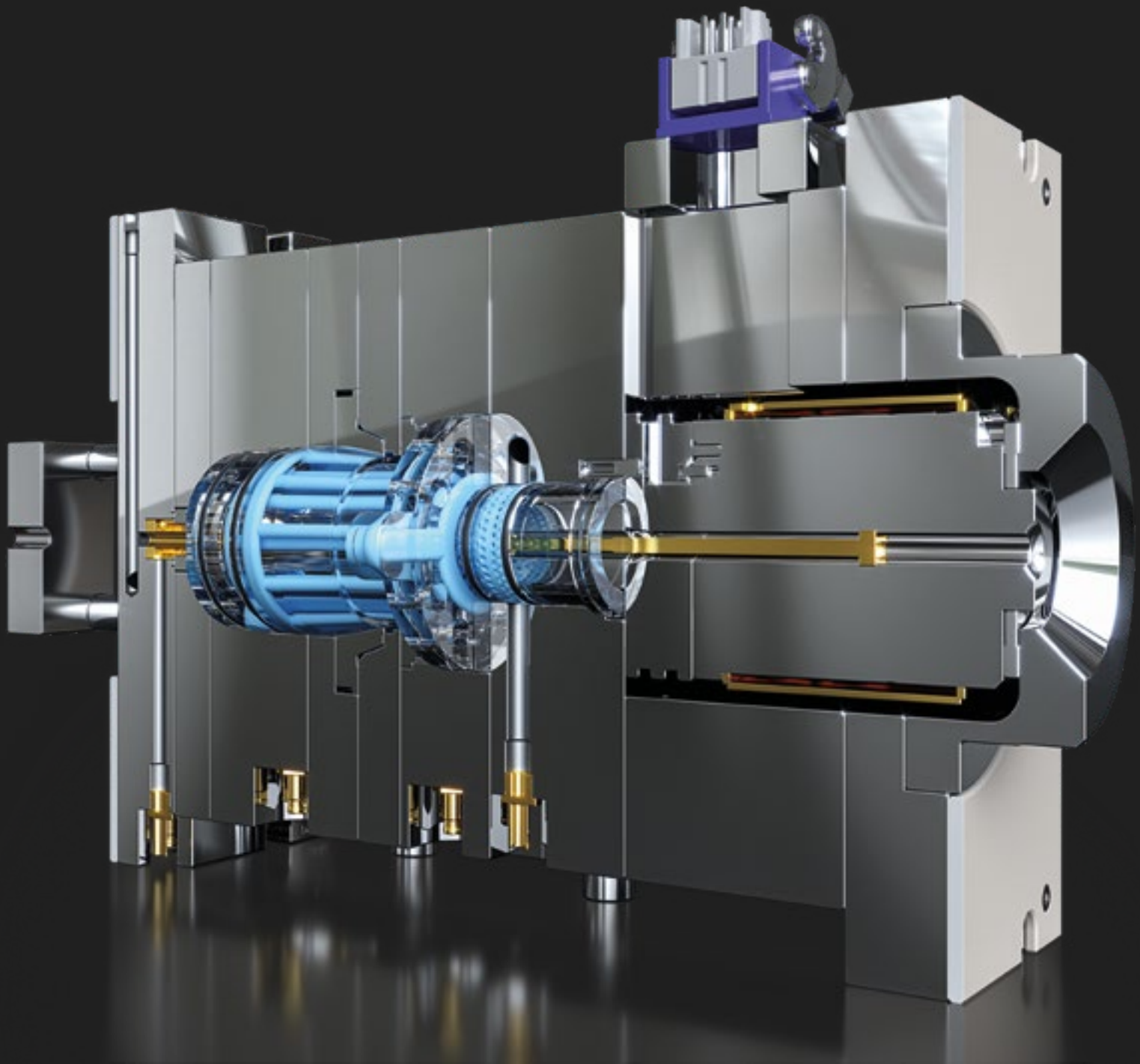


OPTIFLO

CONFORMAL COOLING



**OPTIMISED COOLING
IN EVERY MOULD**

OPTIFLO

CONFORMAL COOLING



OPTIFLO® uses the very latest Additive Machining (AM) technology and materials to produce the conformal cooling channels and tool inserts in a single manufacturing process to achieve complex component designs.

All **OPTIFLO®** elements are designed by our specialist design engineers in our UK and Chinese facilities, where they work together for the best result. Our extensive experience in tooling and moulding enables our specialist engineers to improve dimensional and thermal control to reduce cycle times and improve non-uniform shrinkage issues, and Mold Flow Analysis software is used to test and hone the channels to maximise efficiency for optimum performance.

Using cutting-edge Additive Machining (AM) technology not only enables us to create **complex cooling channels** but at the same time makes this process **affordable for our customers**. The conformal cooling channels follow the twists and turns of complex part designs, resulting in substantially higher cooling efficiency and improved process control.

OPTIFLO® technology service makes conformal cooling affordable for our customers, delivering non-corrosive, fully hardened 52 HRC cores, cavities and inserts that are guaranteed for 1,000,000+ cycles.

This service allows supply of individual cores for your exiting tools as well as fitting into a new mould tool.

- Reduced Cycle Times
- Lower Rejection Rates
- Improved Thermal Control
- Reduces Shrinkage Issues
- Improves Dimensional Control
- Increases Operational Profits
- Guaranteed for 1,000,000 Cycles

UP TO 50% REDUCED CYCLE TIMES

Optimised cooling throughout the mould reduces cooling time especially for problematic areas such as thick wall sections and lack of drafted forms.

UP TO 75% LOWER REJECTION RATES

Better mould temperature uniformity reduces differential shrinkage and therefore warping and shrinkage, leading to improved part quality.

UP TO 100% IMPROVED THERMAL CONTROL

Channels closely follow the mould form to reach crucial hard to reach areas and can be used to create increased coolant flow to carry off more heat.



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OPTIMUM CORE CONTROL

By innovative cooling channel design within your mould cores, we can help optimise and reduce or improve:

- Affects of lack of draft
- Uniform shrinkage
- Tolerance issues caused by deformation
- Surface flow marks
- Improved cycle times
- Rejection rates

FLATNESS CONTROL

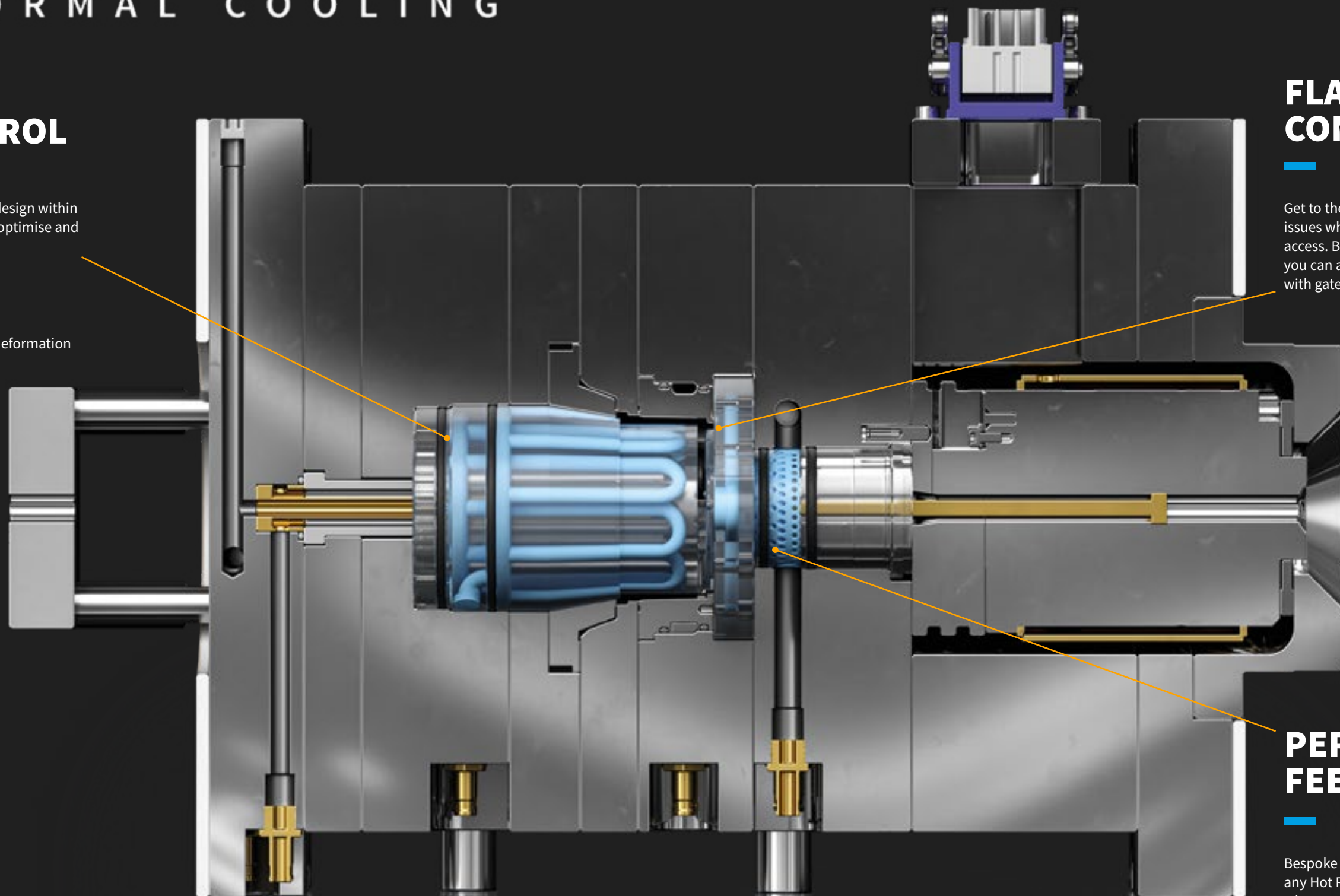
Get to the areas that can cause flatness issues when conventional cooling is difficult access. By pin pointing the cooling design you can achieve excellent flatness along with gate feed control.

PERFECT FEED CONTROL

Bespoke thermal insulated bushing to fit any Hot Runner system, ultimate control where you need it!

Reduces:

- Cold Slugs
- Flow Marks
- Increased valve pin control and life cycle



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EQUIPMENT + MATERIALS

Using 5x EOS 280 machines, the latest DMLS, we have developed tool steel technologies working alongside Uddenholm to enable the supply of inserts, cores and cavities in the following materials:

Corrax (modified 1.2083 ESR)

A superb stainless, corrosion resistant, tool steel for the plastics industry.

1.2344 (Orvar Supreme)

For the die cast industry, refined to perform with the demanding process.

These materials have been life cycle tested for over a period of 3 years in mass production (material TDS can be supplied on application).

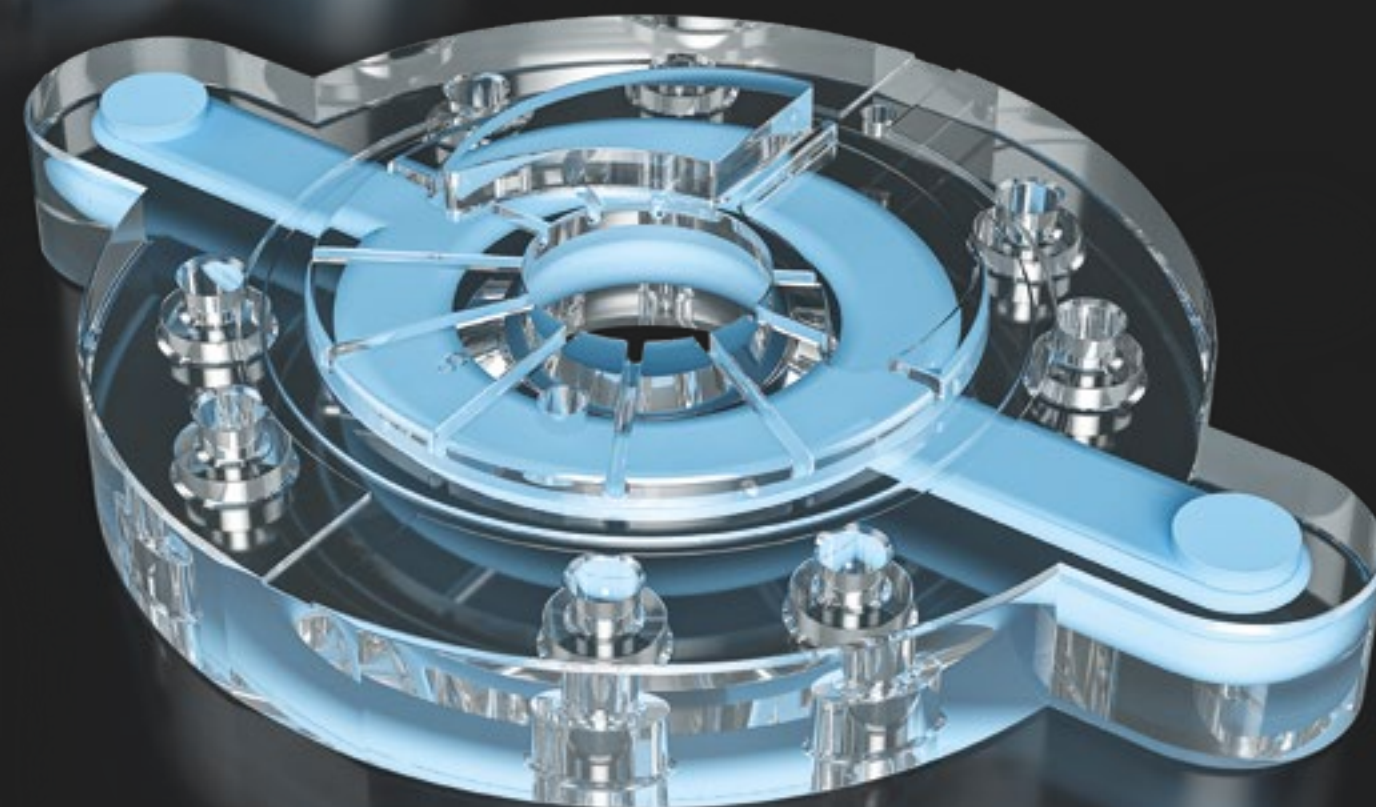
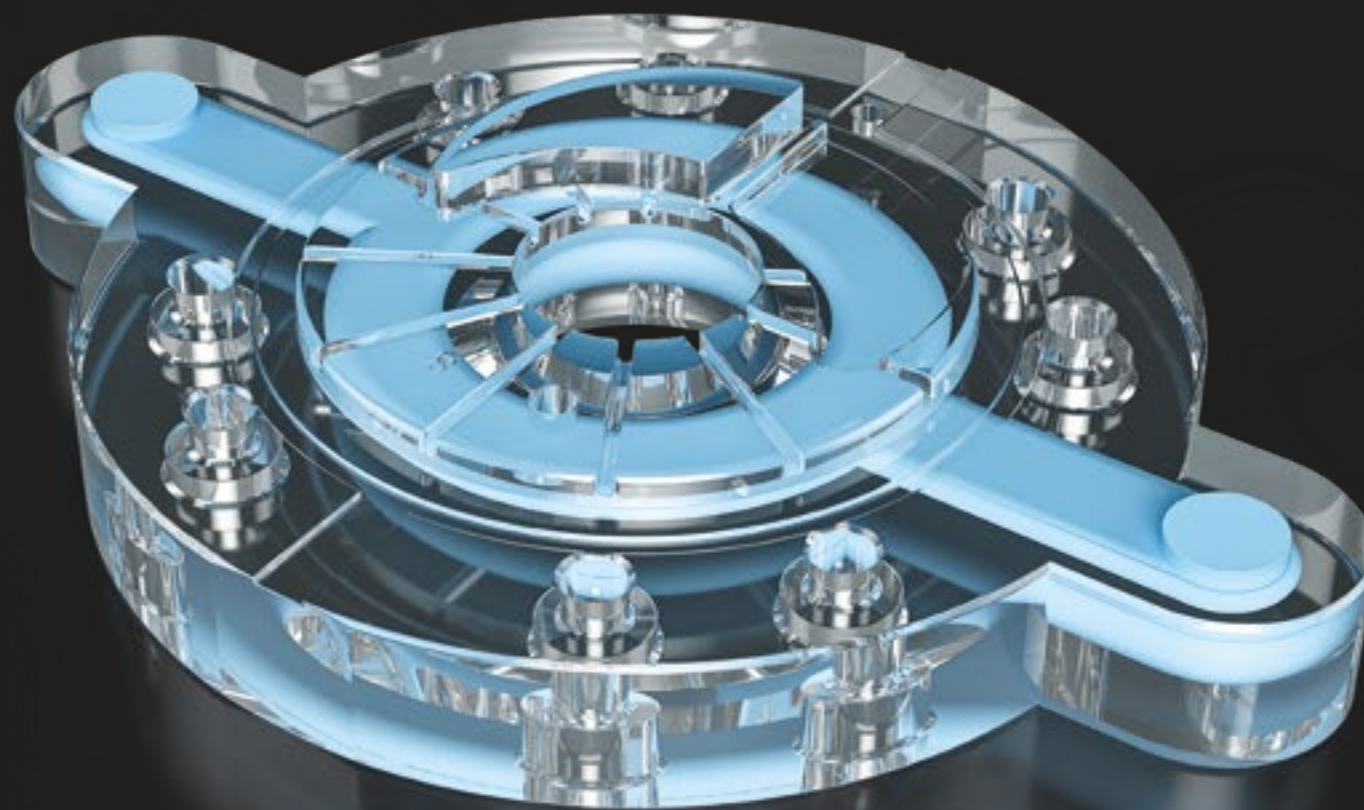
We have the added benefit of VACUUM heat treatment and tempering onsite to increase turnaround times and quality control.

PROCESS FLOW

The **OPTIFLO**® solution can be delivered into your manufacturing site in two ways:

Design and development of a new mould tool, utilising our Cybertools team both in the UK and China.

Supplying our engineering team a 3D model file in STEP or IGES of your problematic areas within your current production tool. We will analyse the optimum cooling solution and offer you options to either have the inserts fitted onsite at Cybertools UK, or supply you with an insert with stock allowance for your own engineers to fit.



AFFORDABLE TO THE MASSES

Cybertools has been working on this service for many years to endeavour to supply a cost effective solution to our industry, with **OPTIFLO**® it can.

We can deliver **OPTIFLO**® from inserts with only a marginal increase over conventional manufacturing, but delivering huge long term production savings.

GRAFTING

We are now offering 'GRAFTING' for those larger tools where this cooling solution was just not viable in the past.

By grafting an **OPTIFLO**® skin over a pre-machined insert substrate, we can deliver the cooling performance without the penalty of unrealistic costs.

Speak to our specialist engineers for more information.



Optiflo® has transformed many areas where the company was seeing bottle necks and tolerance control issues within important elements of our production ranges.

By introducing **Optiflo**® into the equation through Cybertools, who we have been working together with for over 15 years, **Optiflo**® has reduced tolerance deviation by 25%, cycle times by 15%, and reduced the time for process optimisation and tool progression needed on new tooling by 50%. The results are a cost saving that increases our margins considerably.

HONEYWELL



OPTIMISED COOLING IN EVERY MOULD

Contact OPTIFLO today for more details:

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CYBERTOOLS 
| DESIGN | DEVELOP | MANUFACTURE

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