



# Hot Runner Solutions for Technical Moulding

An Introduction to Mastip Technology

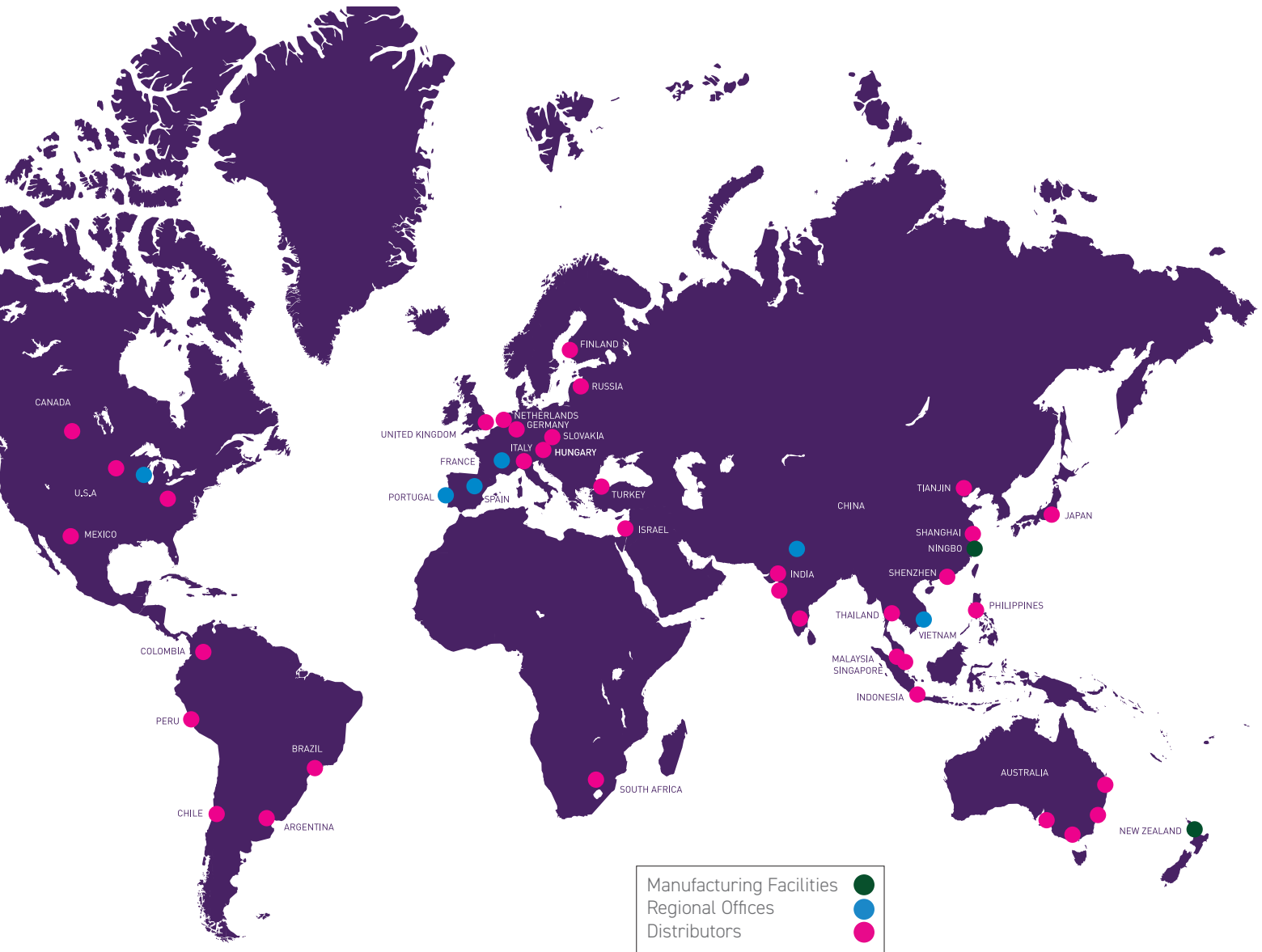
## Mastip is a leading supplier of innovative hot runner solutions to the global plastic injection moulding industry.

The company believes foremost in providing service and support, throughout the life cycle of the hot runner. This means you can be confident that spares and technical support is always available.

Mastip has a comprehensive range of hot runner products from single nozzles through to complete hot half solutions, available in either thermal or valve gate to satisfy the most demanding applications.

At Mastip we strive to understand our customers exact moulding requirements in order to deliver reliable and high performing solutions. Every Mastip system provides faster cycle times and material savings while producing quality components, all leading to higher efficiencies and a better return on investment.





## Global Support

Our global network provides complete support from initial enquiries through to post sales service for all Mastip systems. With a strong presence in every major region from Europe, the America's, Asia and the Pacific we are there to support your business.

## Technical Market Expertise

Mastip produces solutions across many markets, including medical, optical, packaging, caps and closures, electrical, engineering, industrial, appliances and automotive components.

Mastip's solutions teams assess each application to ensure the correct nozzle configuration, manifold design and wear resistant components are utilised to achieve part quality, repeatability and long term reliability.

### Medical

The medical market demands product that is free of contaminants, free of gate vestiges and high part quality. Mastip has a proven range of hot runner solutions that meet these demands. Mastip's range of nozzles, valve gates and manifolds will deliver the level of performance and quality expected of the medical market.

**Key Products:** MX Nozzle, MVG Valve Gate, Hot Half

### Caps and Closures

The caps and closures market requires maximum productivity, achieved through multiple cavities, short cycle times and close pitching. Mastip has a range of solutions ideal for this market. Our high cavity hot half solutions, in either thermal or valve gate configuration, ensures part quality is maintained even at fast cycle times.

**Key Products:** MX Nozzle, MVG Valve Gate, Hot Half

### Optical

The optical market requires parts that have exceptional clarity and consistent dimensional size. This means the hot runner must have uniform thermal distribution and deliver consistency from shot to shot. Mastip's solutions reduce residence time of the material and maintain a uniform thermal profile across the entire system, ensuring optimum condition of the molten plastic, resulting in optical part clarity and repeatability.

**Key Products:** MX Nozzle, MVG Valve Gate

### Electrical

The electrical market requires components made from tough engineering resins often with additives that change the moulding profile. Mastip hot runner systems give you control of the moulding process, with a comprehensive range of nozzles and valve gate solutions, able to withstand the corrosive and abrasive nature of these additives.

**Key Products:** BX Nozzle, MVG Valve Gate

### Appliances

The consumer appliance market needs components with great cosmetic finishes while maintaining structural integrity. The components often have long flow lengths requiring multiple injection points and sequential filling. Mastip engineer hot runner systems for large parts utilising valve gates to provide fast filling, lower injection pressures and ultimate control achieving moulding of large components with outstanding quality.

**Key Products:** BX Nozzle, SX Nozzle, MVG Valve Gate, SVG Valve Gate

### Packaging

The demands of the packaging market range from fast cycling thin wall applications to thick wall long cycle products as used in the cosmetics industry. These quite different needs actually demand the same – excellent control of the melt flow and processing conditions. Mastip's valve gate solutions are ideal for the packaging market, delivering both the reliability and performance needed to succeed.

**Key Products:** BX Nozzle, MVG Valve Gate

### Engineering / Industrial

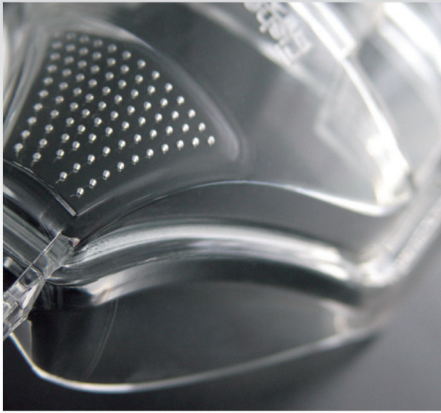
The engineering market requires product that demands a high level of technical expertise and experience. Most engineering mouldings require durable hot runner systems manufactured from high-grade materials to guarantee long-term reliable moulding. Mastip's range of nozzles ensures there is a solution that provides just that.

**Key Products:** BX Nozzle, SX Nozzle, MVG Valve Gate

### Automotive Components

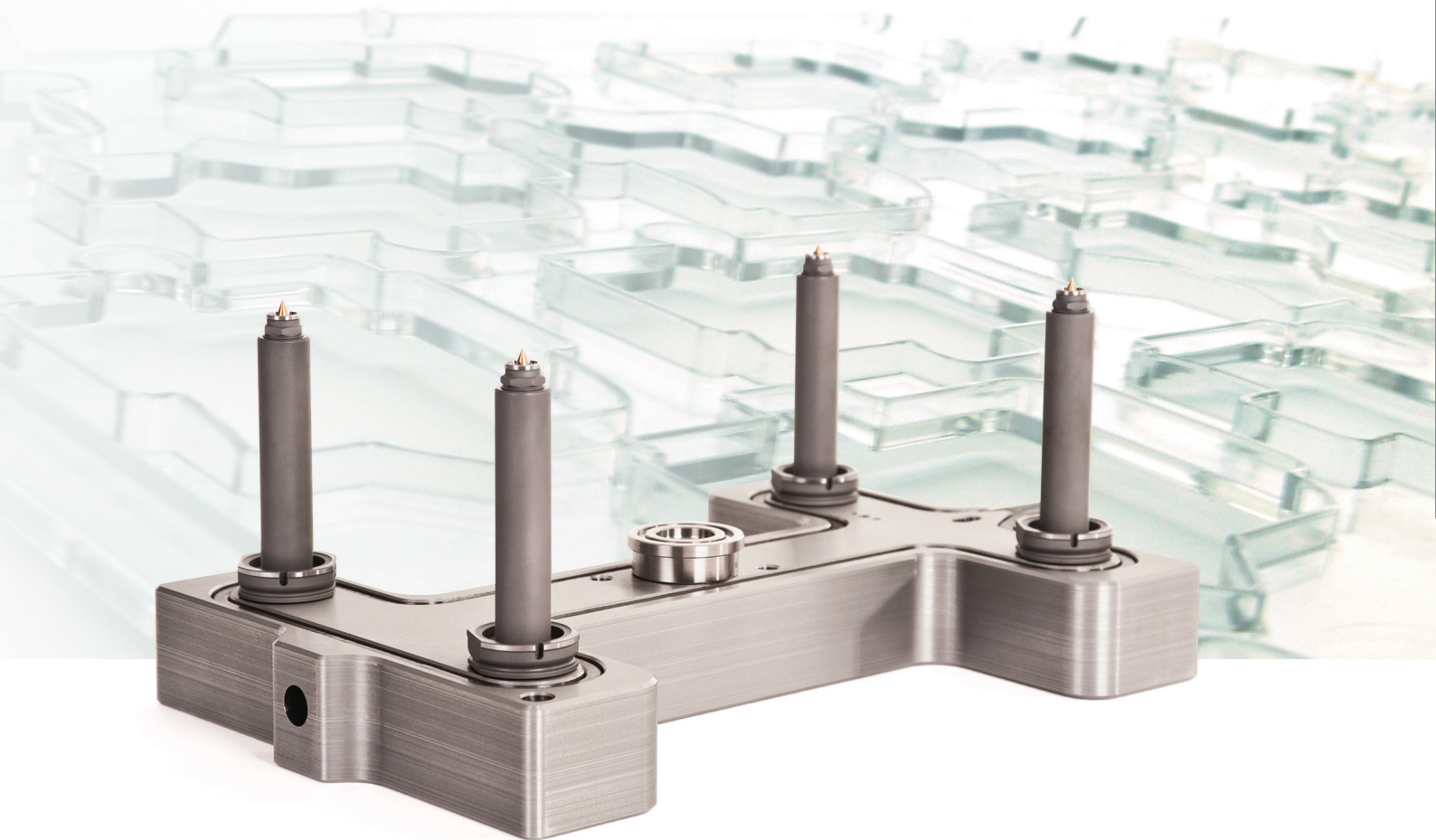
The automotive component market ranges from highly visual cosmetic parts to structural engineering parts that often have to work in harsh environments. Mastip's extensive experience in these type of products means we can deliver a solution customised to your specific needs which will provide long term reliability and performance.

**Key Products:** BX Nozzle, SX Nozzle, MVG Valve Gate, SVG Valve Gate



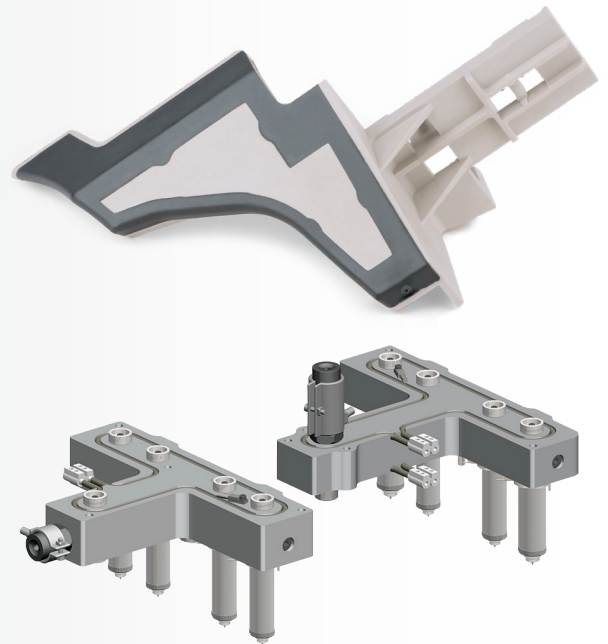
## Technical Market Solutions

Mastip supplies solutions; this means that each of our systems is custom made to meet your exact requirements. Our engineers will work with you to assess the needs of your project ensuring the right solution is achieved for your application.



An integral part of supplying the solution is to provide full 3D models of the hot runner system and required machining details ready for integrating into your mould design. We will detail all the critical areas needed to achieve a leak proof system that will provide long-term reliability.

Whether your needs are close pitching, fast colour change, fast material change or short cycle requirements, Mastip has the right solution. Mastip's solutions will provide material savings and low cost of ownership making your production more efficient.

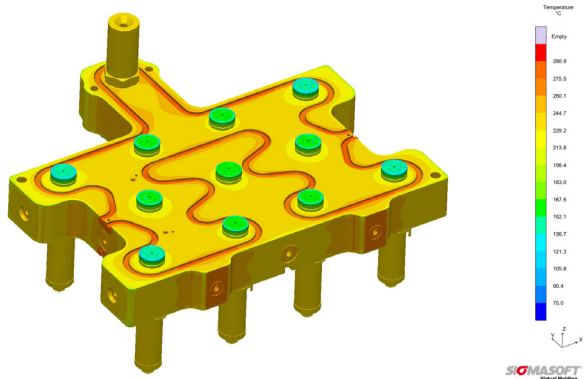


### Sequential Filling Solutions

If your product requires sequential filling, Mastip has the right solution. Mastip will deliver a solution that provides precise control of the melt flow, allowing you to manage weld lines ensuring moulded parts with improved surface appearance and strength.

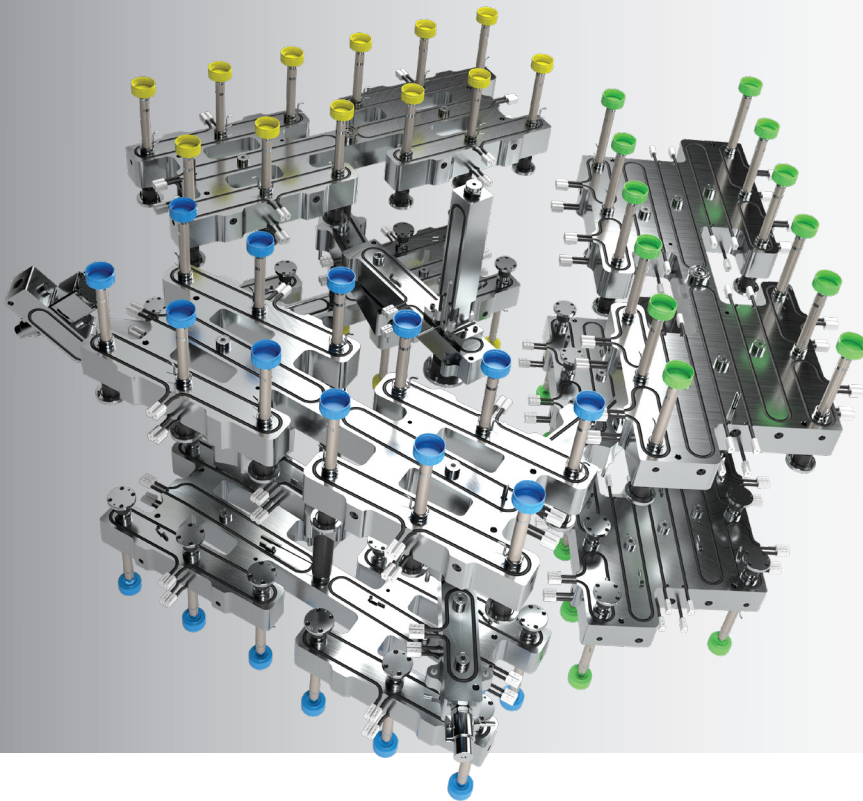
### Multi Material Systems

Mastip has extensive experience in supplying solutions for multi material and multi colour applications. From simple high cavitation plastic packaging to technically advanced components such as structural and engineering parts for the automotive industry.



### Thermal & Flow Analysis

Mastip utilises leading edge flow, thermal and strength analysis software to achieve high performing solutions. These software packages are also an integral part of our new product development programme. This gives us in-depth understanding of our products ensuring we can deliver reliability and performance; net result to you is maximum return on investment.



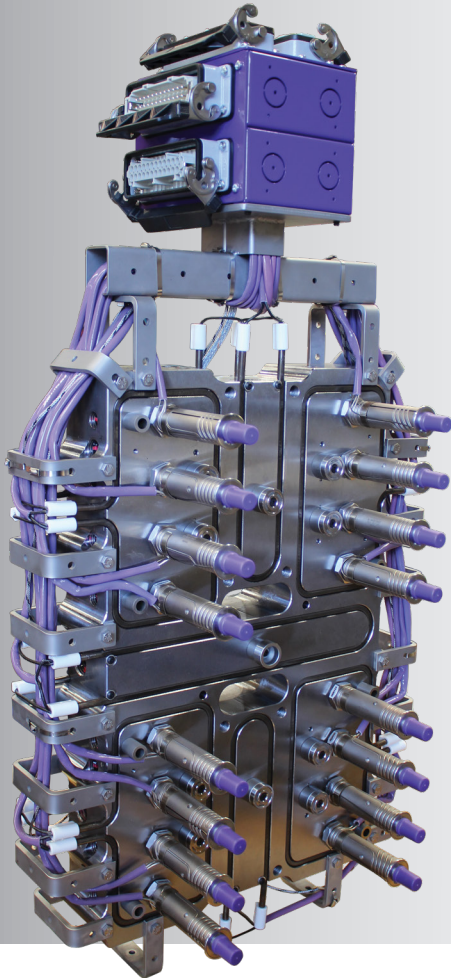
### Stack Mould Solutions

For maximum efficiency Mastip can design and build stack mould hot runner systems to suit your application, whether it is a manifold system or a complete hot half solution.

### Hot Half Solutions

Mastip delivers a complete hot half solution to integrate with your tool design. All aspects of the hot half design, manufacture, assembly and testing is completed by our team of engineers to Mastip's exceedingly high standards ensuring we provide reliability and performance. A Mastip hot half is backed by a three year leak proof warranty.

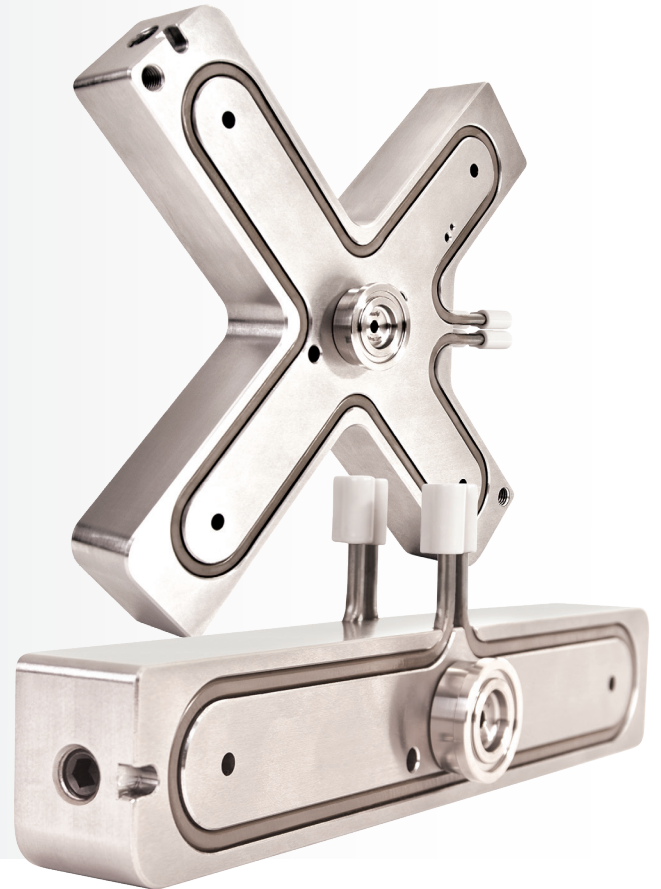




### **NEXUS™ Pre-Assembled Systems**

Nexus™ Pre-Assembled Systems are delivered as a complete turn-key solution for quick and simple installation. Nexus™ Systems incorporate the advanced leak protection of FlowLoc™ Threaded Nozzle Technology and Cylix™ Cylinders for valve gate actuation.

With the ability to process both commodity and abrasive engineering grade polymers, Nexus™ Systems are ideal for small to medium automotive, medium to large appliance and large part electrical applications. Nexus™ Systems are fully customisable to suit your specific application requirements.



### **Manifold System Solutions**

All Mastip manifolds are designed to deliver a uniform melt to each nozzle, ensuring cavity-to-cavity consistency. This is achieved through natural balancing of the flow channels and ensuring constant temperature profiles are maintained across the manifold block.



### MX Nozzle

The MX nozzle is the ideal solution for high cavity hot half systems including those requiring close cavity pitching. Due to its excellent thermal consistency the MX nozzle is able to process a wide range of plastics, from the easy ethylene's to tough engineering resins.

### BX Nozzle

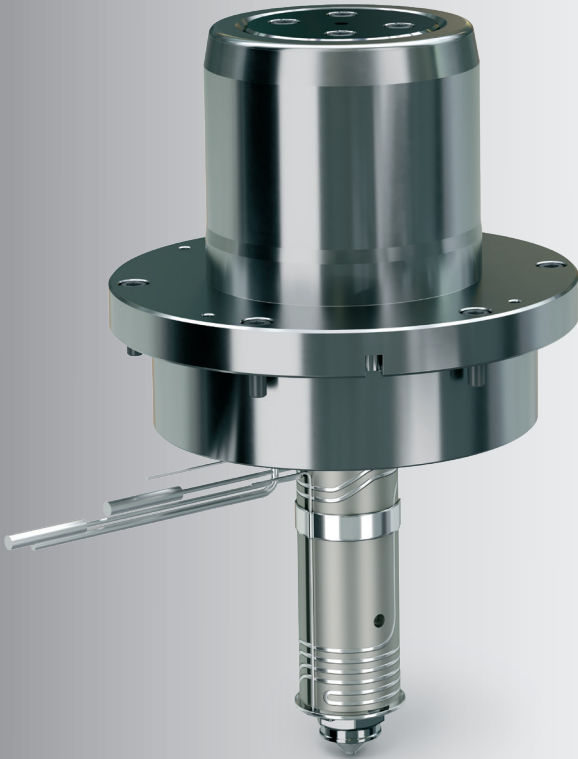
The BX nozzle is a general purpose solution for low to medium cavitation applications not requiring hot half construction. The BX nozzle provides the same moulding performance as the MX nozzle, just in a rear loading configuration. Available in a large variety of sizes and lengths the BX nozzle is a versatile product suitable for a wide range of applications, which delivers excellent performance under demanding moulding conditions.

### SX Nozzle

The SX nozzle is a dedicated single nozzle solution giving outstanding performance for all single nozzle applications. Utilising two independently controlled heater zones achieves uniform temperature distribution along the length of the nozzle, making it the ideal nozzle to process demanding engineering and temperature sensitive resins.

### TX Nozzle

The FlowLoc™ (TX) Nozzle is designed to provide a secure, leak-proof solution for multi-cavity manifold systems. FlowLoc™ incorporates advanced heating technology with embedded heaters for exceptional thermal performance. The TX range is ideal for Mastip's next generation Nexus™ Systems and VeriShot™ single valve gate solutions.



## Valve Gate Solutions

Mastip's Valve Gates deliver superior part quality, optimal flow and cosmetic gates in a compact, reliable and easily serviced package.

**MVG** – The Mastip MVG manifold valve gate system is the perfect choice whether processing easy or engineering resins, or when requiring close cavity pitching.

MVG is available in 3 sizes (MVG25, MVG40 and MVG55) to suit a variety of applications and is compatible with the MX and BX nozzle range in Series 13, 16, 19 and 27.

**VeriShot** – The compact design of the VeriShot<sup>TM</sup> single valve gate system greatly reduces mould height requirements and functions as a locating ring ensuring perfect alignment between mould and machine platen. VeriShot<sup>TM</sup> provides outstanding performance and reliability and is ideal for applications requiring a highly cosmetic gate finish, fast flow rates, large volume parts and dimensional accuracy.

## METICOM<sup>TM</sup> Temperature Controllers

The MetiCom range of Temperature Controllers are CE approved, high quality, reliable control systems that are flexible, easy to set up and simple to operate.

Designed to work under strict conditions, the MetiCom range offers password-protected access levels, simple and intuitive programming allowing multiple saved setups to enable quick and simple changes.

Expanding on our current range of controllers we have recently introduced new Modular (TM10, TM20), Integrated (CIS-1, CIS-2) and Touchscreen Models (CTI).



## **AQUILO™ Liquid Silicone Rubber Systems**

The Aquilo™ LSR system features a “Cold Deck” design that includes cooling channels in the mould plates, manifolds, and nozzles. This design ensures the mixed material remains in its uncured condition before entering the heated cavity plates.

Additionally, the use of valve gating technology improves balance between cavities and from shot to shot, eliminating material curing in the gate between cycles. Sequential timing of the valve gates is the key component that ensures cavities are kept balanced.

Mastip’s CR04 and CR06 dedicated LSR nozzles are designed with cooling channels extending towards the valve gate nut ensuring a consistent thermal profile along the nozzle. This design enables optimal control of the valve gate nut temperature which is critical in consistently producing high-quality LSR parts.

The consistent thermal profile along the nozzle also ensures that LSR flows smoothly and uniformly into the part, resulting in a high-quality gate and improved part quality overall. This is especially important in industries where precision and quality are critical, such as medical device manufacturing.





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