PRODUCT GUIDE

Mold Masters®

Hot Runners • Controllers • Auxiliary Injection • Co-injection

THE WORLD'S LEADING SUPPLIER OF HOT RUNNER TECHNOLOGY AND SYSTEMS

We design and manufacture hot runner solutions to optimize molding processes, improve efficiency and reduce resin waste. All with the end goal of helping our customers produce complex, accurate and aesthetically-pleasing plastic products at the highest possible levels of productivity.

With over 153,000 systems in use worldwide, the biggest players across every possible plastics market segment depend on Mold-Masters hot runner technology.

TECHNOLOGICALLY ENGINEERED TO DRIVE DOWN PART COSTS

Run faster cycle times, reduce part scrap, achieve best in class color change times combined with the most reliable and energy efficient heating system. These advancements are why Mold-Masters focuses on and invests so much in innovative technology.

READY FOR ANY CHALLENGE

Our team of knowledgeable and experienced engineers have the capability and dedication to find solutions to your most demanding applications. With resources on hand like CAE, FEA simulations and an extensive applications library combined with our due diligence you have the ideal foundation for success.

GLOBAL MANUFACTURING FOOTPRINT AND CAPACITY

With five major hot runner production facilities on four continents and MasterCARE aftermarket service centers globally, no company can support global tooling and molding customers like Mold-Masters. Speed to market, global capacity and local market support…unparalleled.

INNOVATION

With over 480 active patents, Mold-Masters continues to drive the injection molding industry. Through our dedicated R&D center, the continuous search for new ways to improve mold performance and enhance molded part quality has led to the creation of industry leading innovations such as iFLOW Manifold and Brazed Heater technologies. These technologies, and many more, are incorporated into the products we offer.

SERVICE AND SUPPORT YOU CAN COUNT ON

We support you for the entire lifecycle of your mold with our global MasterCARE™ teams and innovative services such as STAMP™. Our knowledgeable and passionate people are committed to providing the best customer care experience in the industry.

Plus we offer the best warranty in the industry.

GLOBAL SUPPORT AND SERVICE YOU CAN COUNT ON

Once you receive your Mold-Masters hot runner system and begin production, you're in the experienced hands of our MasterCARE aftermarket service professionals.

Working diligently to ensure your operation runs smoothly, MasterCARE personnel are your service partners that provide rapid global support with a range of services designed to maintain part quality, maximize uptime and minimize unscheduled interruptions. Contact MasterCARE today to unlock your operations full potential.

- Spare Parts
- Service & Repairs
- Remote Technical Support
- Preventative Maintenance
- Refurbishment
- Training Academy

LARGEST GLOBAL FOOTPRINT

Manufacturing Locations
Canada
Germany
China
India
UK

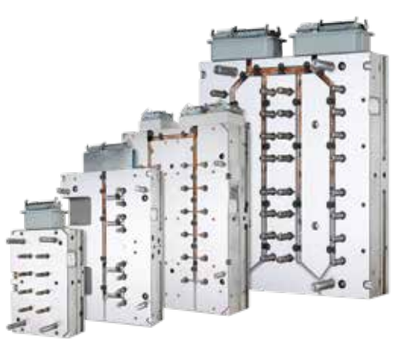
Other Regional Representatives

Denmark	Portugal
Bulgaria	Romania
Israel	Slovenia
Finland	Ukraine
Greece	

SOLUTIONS FOR EVERY APPLICATION

	Consumer Goods	Electronics	Medical	Personal Care	Technical	Cap & Closure	Packaging	White Goods	Automotive	PET / Preforms
Hot Runners										
Summit-Series	•	•	•	•	•	•				
Master-Series	•	•	•	•	•	•	•	•	•	
EcoONE-Series	•			•		•			•	
Sprint						•				
Fusion-Series G3							•	•	•	
Dura+								•	•	
Axiom/PET-Series										•
Co-injection			•		•	•	•		•	•
Advanced Gating										
Accu-Valve	•	•	•	•	•	•	•	•		
DeXa			•	•	•					
Melt-CUBE/Disk			•	•	•					
Tit-Edge	•		•	•						
Core Ring	•	•	•	•	•	•				
Actuation Control Systems										
SeVG+	•	•	•	•	•		•	•	•	
E-Drive/P-Drive/H-Drive	•	•	•	•	•	•			•	
SVG	•			•		•	•	•	•	•
Temperature Controllers										
TempMaster M4	•	•	•	•	•	•	•	•	•	
TempMaster M3	•	•	•	•	•	•	•	•	•	•
TempMaster M2+	•	•	•	•	•	•	•	•	•	•
TempMaster M1+	•	•	•	•	•	•	•	•	•	•
TempMaster MT	•			•			•	•	•	•
TempMaster ME	•			•			•	•	•	
Process Systems										
M-Ax	•	•	•	•	•	•	•	•	•	•
TempMaster WFM	•	•	•	•	•	•	•	•	•	•
Specialty Equipment										
E-Multi/E-Multi LSR	•	•	•	•	•	•	•	•	•	
Co-injection CONNECT			•		•	•	•		•	•
LSR Cold Deck	•	•	•	•	•				•	

INDUSTRY LEADING WARRANTY



Please speak to a MM representative for complete warranty details. Some conditions and/or limitations apply. Subject to change without notice.

AVAILABLE GATING STYLES

NON-VALVED

E-Type Torpedo (+Extended)

F-Type Torpedo (+Extended)

Bi-M C-Sprue

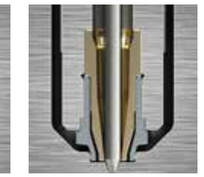
Hot Sprue (+Extended)

VALVED

Accu-Valve MX

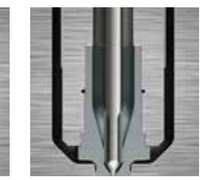
Cyl. Hot Valve - LL

Cyl. Liner-Less


Bi-M C-Valve

Accu-Valve CX

Cyl. Hot Valve


Cyl. Hot Valve - LX

Hot Valve

ADVANCED CAPABILITIES

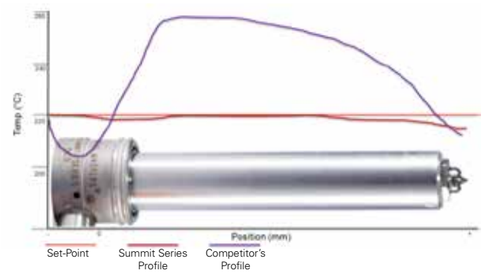
- High Cavitation
- Tight Pitch
- Inside Gating
- Side Gating
- Multi-tip
- Stack Molds
- Multi-material

TECHNICAL ADVANTAGES

Mold-Masters has over 480 active patents and has been in business for over 60 years. It is our engineering designs and vast application experience that differentiates us. We deliver products that outperform the competition in the simplest to the most challenging and technical applications. Our customers typically only see the results: Superior production quality, increased productivity and lower operating costs. No two hot runner suppliers are the same. Unlock your operations full potential with Mold-Masters original technology.

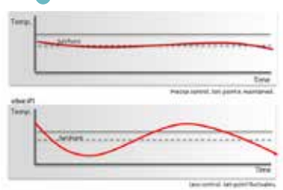
BEST IN-CLASS MELT MANAGEMENT

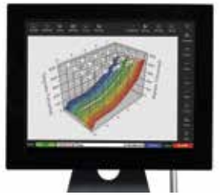
- A result of iFLOW Manifold Technology.
- Superior management of melt characteristics including shear, temperature, pressure drop and more.
- Patented melt flow geometry, flow path options and runner shapes.
- Extensive flexibility for design optimization.
- Industry leading mold fill balance.
- Rapid color change performance.



SUPERIOR THERMAL MANAGEMENT

- A result of Brazed Heater Technology.
- Especially valuable for processing materials with shear or temperature sensitivities.
- Superior thermal profile precision.
- Improves thermal balance across the whole system.
- Minimizes process variability (drop-drop/shot-shot).
- Significantly improves part quality and reduces scrap.



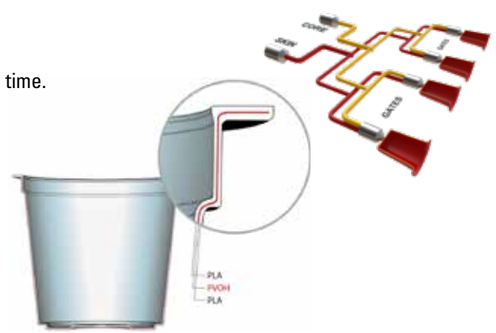


PRECISE TEMPERATURE CONTROL

- A result of TempMaster APS Control Technology.
- Proprietary Auto-Tuning Algorithm.
- Automatically adapts to process variables of each zone.
- Precise control accuracy minimizes variability.
- Optimizes the performance of any hot runner system.

HIGHLY TECHNICAL APPLICATION EXPERIENCE

- Capabilities that include Co-injection Technology.
- A specialized process that allows 2 resins to be combined into a single 3-layer melt stream.
- Used to enhance part performance and cost without any penalty to cycle time.
- Compatible with high performance barriers, bio-resins and PCR/scrap.



DELIVERING CUSTOMER RESULTS

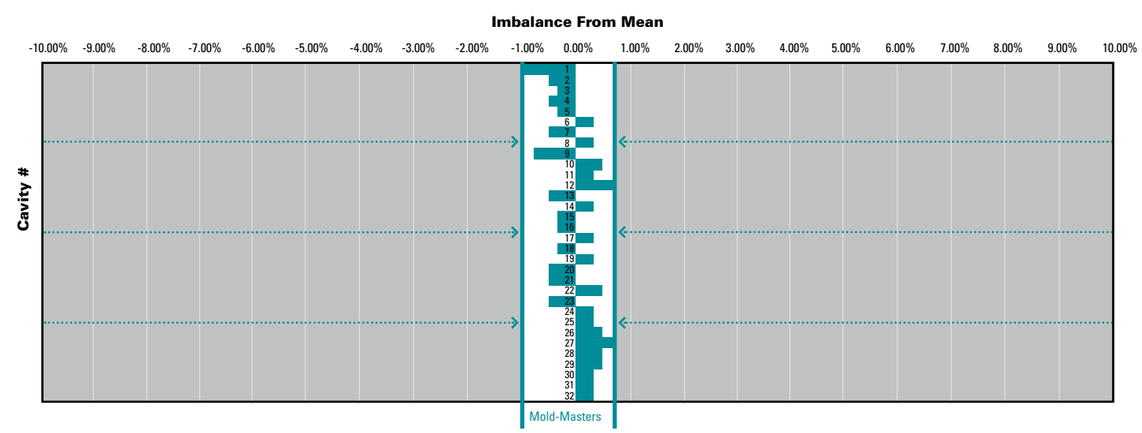
OPTIMAL BALANCE PERFORMANCE:
1.7% TOTAL VARIANCE ON SMALL TECHNICAL PARTS

When Mold-Masters technology and decades of experience comes together anything is possible. Our customers rely on our high performance capabilities to deliver solutions where others fall short. iFLOW can deliver precision mold balance with total variation to within 1.7% on small, difficult to mold, highly technical, medical components. Unlock your operations full potential with Mold-Masters technology.

APPLICATION DETAILS

Application: Medical
Part: Rear Barrel
Cavities: 32
Material: MABS
Part Weight: 0.35g
Shot Weight: 11.2g

Lightest: -1% (0.0035g)
Heaviest: +0.7% (0.0025g)
Percent Fill: 96.5%



Bio-Resin

LEADING THE INDUSTRY IN APPLICATION EXPERIENCE, KNOWLEDGE AND SUCCESS

Mold-Masters recognizes the importance Bio-Resins represent in helping to preserve the environment for future generations. We have invested considerable time and money in understanding these cutting edge materials to ensure we're ready when you are. Trust in Mold-Masters to drive positive results on your next Bio-Resin application.

UNDERSTANDING BIO-RESINS

Bio-Resins can be very challenging to process compared to the common resins they typically aim to replace. This of course can make producing good parts very difficult and sometimes impossible.

IMPORTANT CONSIDERATIONS

Obviously, many Bio-Resin grades differ from one to the other. Some can be easier to process than others but it is common for many to have narrow process windows due to Thermal or Shear sensitivities.

Additionally, if the Hot Runner design is not optimized for Bio-Resins, this can also be a source or even compound the issue. Therefore, taking into consideration Flow Pattern, eliminating hang-up spots and other design requirements are also critical elements that need to be considered.

TYPICAL PROCESSING CHALLENGES

When molding with Bio-Resins, a wide range of visual defects can appear based on the processing characteristics of the material and the hot runner configuration used. These defects include:

- Jetting.
- Streaking.
- Splay.
- Flow Marks.
- Knit Lines.
- Burn Marks.
- Stringing.

EXTENSIVE TESTING AND EXPERIENCE

Mold-Masters has spent extensive time testing a wide selection of these materials in our R&D facility and partnered with the University of Massachusetts. This research has allowed us to evaluate and understand their unique properties and effective processing requirements.

Most importantly, Mold-Masters has a variety of real world application experience which includes high cavitation production tools that have been in long term production.

CRITICAL KNOWLEDGE DATABASE

Mold-Masters Bio-Resin application success is directly related to our experience and our ability to pull information from our invaluable Applications Library. This data directs our team to select the correct product line(s) and assists us in designing the most optimum solution given the material at hand.

*Bio-Resins include, but are not limited to bio sourced,compostable, industrial compostable and bio-degradable materials.

Accu-Valve®

ACHIEVE THE HIGHEST QUALITY GATES, RELIABLY, FOR MILLIONS OF CYCLES

Precision cylindrical gate component alignment that significantly minimizes wear that leads to gate quality deterioration. Avoid the costly maintenance and downtime associated with traditional valve gate designs. Compatible with both commodity and engineering grade resins, Accu-Valve meets the demanding needs of many medical, packaging and personal care applications.

KEY FEATURES

PRECISION ALIGNMENT

- Highest quality gate results.
- Minimizes maintenance requirements.
- Significantly lowers operating costs.
- 1 year (3 million cycle) warranty available*.

CONTINUOUS 360 DEGREE VALVE PIN GUIDANCE

- Does not require direct reliance on cavity steel for pin alignment.
- Significantly minimizes wear of the gate and valve pin.
- Maintains critical high tolerance dimensions and concentricity.
- Enhances reliability.
- Extends service life.

ENHANCED THERMAL PROFILE

- Uninterrupted heat transfer to the valve pin.
- Helps to enhance gate cosmetics.

OPTIMIZED DESIGNS

- 2 models to choose from.
- Enhances fill balance or color change performance.
- Capable of rapid cycle times.

ACCU-VALVE MX
(Enhanced fill balance)

ACCU-VALVE CX
(Enhanced color change)

*Conditions apply

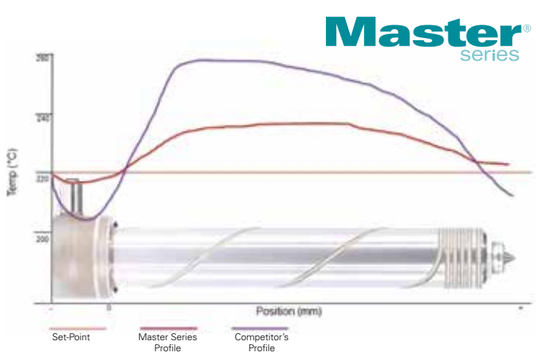
GENERAL PURPOSE

• ENHANCE PART QUALITY • MAXIMIZE PRODUCTIVITY • FAST COLOR CHANGES • LOWER PRODUCTION COSTS

Mold-Masters understands and supports the needs of our customers in a wide range of applications from the simplest to the most technical. Our capabilities extend to many industries including Consumer Goods, Personal Care, Electronics and many more. Our hot runner systems are focused on producing the highest quality parts with a wide range of materials while lowering your total cost of ownership by maximizing yield, lowering energy consumption and minimizing downtime. Supporting these markets are our proven hot runner systems, which make up our core product line, along with our extensive successful application experience. You can expect better performance and results from Mold-Masters. We have the solution you've been looking for to unlock your operations full potential.

CONSISTENT HIGH QUALITY PRODUCTION

Mold-Masters hot runner systems are optimized for each application. A common element to the success of our core hot runner products is that they incorporate Mold-Masters original Brazed Heater Technology for excellent thermal profiles. Brazed Heaters are embedded within the steel, unlike conventional heaters that sit on top. This maximizes thermal transfer efficiency to lower energy consumption and eliminates shifting that can lead to cold spots. The result is greater process consistency, both shot-to-shot and drop-to-drop.



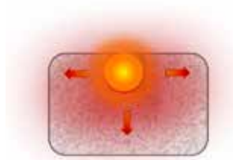
FAST COLOR CHANGES

Optimized runner channels of Mold-Masters iFLOW Manifold Technology eliminates sharp corners and dead spots to improve color change by up to 45%.

SUPERIOR RELIABILITY

Mold-Masters implements a wide range of engineering into our hot runner designs that improves reliability and extends service intervals. Our most notable is our Brazed Heater Technology. Brazing-in the elements eliminates air gaps that cause electrical arcing, the most common root cause for heater failures. We have systems that have been in production for over 20 years that are still using the original heaters they were shipped with. This superior reliability is why Mold-Masters is the only hot runner supplier to offer a 10-Year Warranty. Conventional heaters can be unreliable which generally need to be replaced every 1-3 years at considerable cost and time. How much have conventional heaters cost your business?

Conventional Heaters

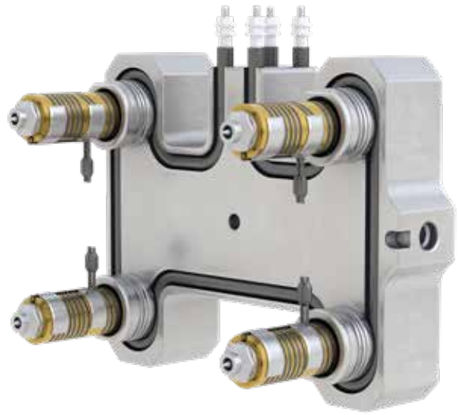


Brazed Heater Technology

EcoONE series

A HIGHLY ECONOMICAL STANDARDIZED SYSTEM FOR SIMPLE COMMODITY APPLICATIONS

A configurable 1-16 drop hot runner system suitable for applications processing commodity resins. Allows simple, cost-sensitive projects to get off the ground faster with minimal investment.



Master® series

THE BENCHMARK IN HOT RUNNER PERFORMANCE AND RELIABILITY

Proven to deliver consistent high performance processing capabilities for exceptional part quality. Compatible with a wide range of resins, Master-Series is the ideal choice for almost any application across any industry.

- Excellent thermal profile.
- Broadest nozzle range.
- Advanced capabilities.
- Energy efficient.

Accu-Line™

EASY, ECONOMICAL SINGLE CAVITY VALVE GATING

An advanced inline design able to reduce stack heights by up to 67%. Proven to deliver consistent high performance processing capabilities for exceptional part quality. Available with the broadest shot range capacity and widest range of resin compatibility. The ideal choice for high volume production or prototyping, of the smallest to largest parts, with applications across any industry.

MEDICAL

• HIGHEST QUALITY PRODUCTION • COMPLEX GEOMETRIES • TIGHT TOLERANCES • CHALLENGING MATERIALS

Mold-Masters understands the medical industry and delivers solutions that supports the needs of our customers. Our hot runner systems are focused on exceptional process control that produce parts of the highest quality, both in tolerance and visual appearance, regardless of the material. Supporting this market are our extensive selection of hot runner systems, Accu-Valve cylindrical gating styles, side gating options, control systems, auxiliary injection units and much more. Mold-Masters extensive product line, combined with our application experience, has the medical solution you've been looking for to unlock your operations full potential.

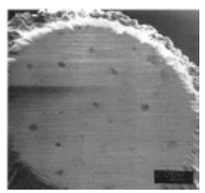
PRECISE THERMAL PROFILES

When dealing with resins with shear and temperature sensitivities, it is critical to ensure the hot runner system being used has a precise thermal profile. Thermal variabilities of the system can significantly affect mold balance and overall part quality. Part defects can appear as a result of degradation. While Mold-Masters Master-Series hot runner systems have excellent thermals, our most precise thermal profiles can be found on our Summit-Series systems. Summit-Series incorporates our most advanced proprietary heater technology that differentiates it from all of our other systems.

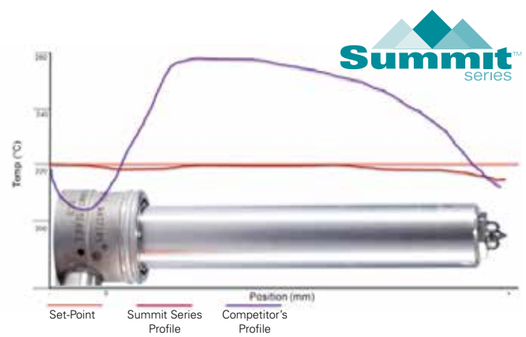
PROCESSING CHALLENGING MATERIALS

Glass fiber reinforced POM

Certain applications require using materials, fillers or additives that are abrasive or corrosive to the hot runner system. This causes premature wear to internal system components which can increase maintenance requirements. When components experience excessive wear it can lead to molded part quality defects. Mold-Masters hot runner systems can be optimized for these types of applications. We have the ability to incorporate a variety of special materials and coatings to increase the systems durability that can help minimize service requirements and maintain molded part quality.



Corrosion and Abrasion damage on valve pin

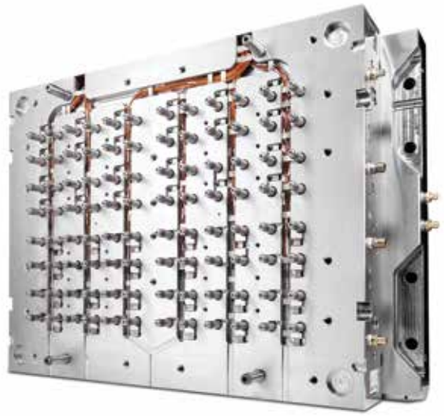


Summit™ series

CLIMBING TO NEW PERFORMANCE HEIGHTS

Our most advanced hot runner system incorporating specialized technology that delivers peak performance and ultimate precision. Ideal for molding with today's challenging abrasive, corrosive, shear and temperature sensitive resins like PC, POM & PBT. Summit is critical for demanding Medical, Personal Care and Technical molding applications.

- Precise thermal processing capabilities.
- Enhanced durability to abrasive & corrosive resins.



Master® series

THE BENCHMARK FOR PERFORMANCE IN PRECISION APPLICATIONS

Proven to deliver consistent and repeatable, high-performance processing capabilities for exceptional quality of complex parts with tight tolerance demands.

Compatible with medical-grade and high-performance polymers, it's the ideal solution for medical devices, diagnostic components, syringes, blood vials, pharmaceutical packaging, and more.

- High-cavitation and tight pitch designs
- Advanced control systems minimize variability
- Viable for clean-room applications

Accu-Valve®

ACHIEVE THE HIGHEST QUALITY GATES, RELIABLY, FOR MILLIONS OF CYCLES

Precision cylindrical gate component alignment that significantly minimizes wear that leads to gate quality deterioration. Avoid the costly maintenance and downtime associated with traditional valve gate designs. Compatible with both commodity and engineering grade resins, Accu-Valve meets the demanding needs of many Medical, Packaging and Personal Care applications. MX-Enhanced Fill Balance, CX-Color Change.

MX

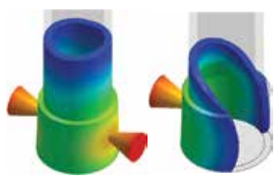
CX

SIDE GATING

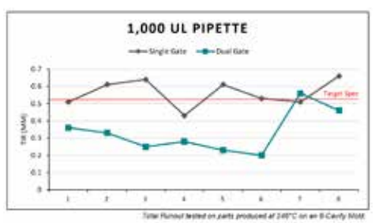
• LOW WEIGHT/DEEP DRAW PARTS • SPECIALIZED PART REQUIREMENTS
• OPTIMIZE GATE LOCATION • OPTIMIZE MOLD LAYOUT • MAXIMIZE PRODUCTIVITY

Mold-Masters continues to support the Medical market by offering a wide range of simultaneous direct side gating solutions of up to 16 cavities per drop. Perfect for high cavitation molds producing deep draw parts, side gating is commonly applicable to many medical components such as pipette tips, syringe barrels, needle shields and more.
Side gating eliminates scrap from sub-runners and enhances part quality by allowing for optimized gate locations on small parts which can be very difficult or impossible to be produced any other way that would be economical in high volume production. Our compact designs also allow for optimized mold layouts where our customers have the flexibility to lower cost per part by either increasing cavitation or being able to utilize smaller injection machines.

CONSISTENT HIGHER-QUALITY PRODUCTION



Mold-Masters side gating products benefit from our core technologies (iFLOW/Brazed Heaters) but also incorporate special design technologies of their own. A critical aspect in producing high quality gates is maintaining tip to gate concentricity. Our inline designs feature tips that are located to the gate of the cavity insert so their alignment is not influenced by thermal expansion. Additionally, our specialized dual-gate designs reduces cycle time by up to 50% and provides a more uniform front flow which minimizes "core shift". On pipette tips this improved TIR/deflection tolerances by up to 62%.



MAXIMIZING UPTIME

Mold-Masters recognizes that time is money. Our Melt-CUBE EVO features the industries simplest inline design that can be serviced with very straightforward maintenance procedures. Only one bolt is required to secure each pair of tips. This allows units to be assembled/disassembled up to 85% faster. On a 64-drop system that saves about 5hrs. How much is that time worth to you?

In addition, all of our side-gating solutions incorporate our reliable Brazed Heater Technology which are eligible for our industry leading 10-year warranty.

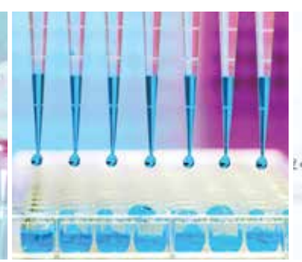
QUICK 4-STEP ASSEMBLY/DISASSEMBLE

STEP 1 Remove bolt & rectangular washer

STEP 2 Extract melt block using an M10 bolt

STEP 3 Remove and replace tip

STEP 4 Re-assemble



Melt CUBE EVO

THE NEXT EVOLUTION IN ADVANCED INLINE SIDE GATING TECHNOLOGY

A newly evolved design that minimizes downtime and enhances processing capabilities. Simultaneous direct side gating solution of up to 8 cavities per Cube eliminates scrap from sub-runners and enhances part quality. Perfect for high cavitation molds producing deep draw Medical parts such as pipette tips, syringe barrels, needle shields and more.

DeXa

OPTIMIZING PART QUALITY THROUGH PRECISION PROCESS CONTROL

Features individual tip temperature control and a simplified design to make maintenance quick and easy. Ideal for high cavitation molds producing deep draw medical parts such as lancets, pen injector components, needle shields and more.

Melt-Disk®

INDUSTRY LEADING CIRCULAR SIDE GATING SOLUTION

Simultaneous direct side gating solution of up to 8 cavities per Disk eliminates scrap from sub-runners and enhances part quality. Geared toward circular oriented mold layouts. Perfect for high cavitation molds producing deep draw Medical parts such as pipette tips, syringe barrels, needle shields and more.

Tit-Edge

OUR SIMPLEST AND MOST ECONOMICAL SIDE GATE SOLUTION

Simultaneous direct side gating solution of up to 4 cavities per drop. A simplistic design that reduces machining complexity and cost. Ideal for thick wall applications such as large medical syringe barrels, specialty packaging, writing instruments or other similar parts.

PACKAGING

• HIGH VOLUME PRODUCTION • MAXIMIZE PRODUCTIVITY • FAST COLOR CHANGES
• ROBUST & RELIABLE DESIGNS • LOW COST OF OWNERSHIP

Mold-Masters understands the packaging industry and delivers solutions that supports the needs of our customers. Our packaging hot runner systems are optimized for ultra high speed molding, incorporate industry standard gate cut-outs and are extremely robust. Mold-Masters is the only hot runner supplier to offer an available industry leading 10-year warranty. Mold-Masters has you covered.

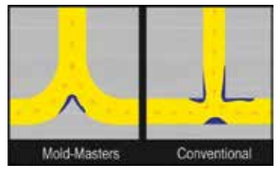
LOWER OPERATIONAL COSTS

Mold-Masters is able to produce parts of the highest quality, however we recognize the importance of controlling operational costs, especially for the packaging industry where margins can be razor thin. To address these market concerns, Mold-Masters ensures our hot runner systems are economical to operate and maintain. While our SPRINT nozzles are lower wattage for improved energy efficiency, Mold-Masters has also eliminated some components that make up significant costs associated with spare parts: nozzle heaters and vestibules.

Mold-Masters hot runner systems offer Brazed Heater Technology that are so reliable they're covered by an available industry leading 10-Year Warranty. Additionally, gating styles for packaging applications are available without vestibules, one of the most significant spare part costs. Vestibules commonly crack or break during production. Eliminating these components saves on costs associated with downtime and maintenance.

FAST COLOR CHANGES

Optimized runner channels of Mold-Masters iFLOW Manifold Technology eliminates sharp corners and dead spots to improve color change by up to 45%.



IMPROVE ENVIRONMENTAL STRESS CRACK RESISTANCE (ESCR)

Mold-Masters Sprint APEX gate seal is designed to significantly minimize the presence of injection flow lines, which can increase the ESCR level of CSD caps by up to 40%. By doing so, it enables light weighting without sacrificing CSD-cap durability.

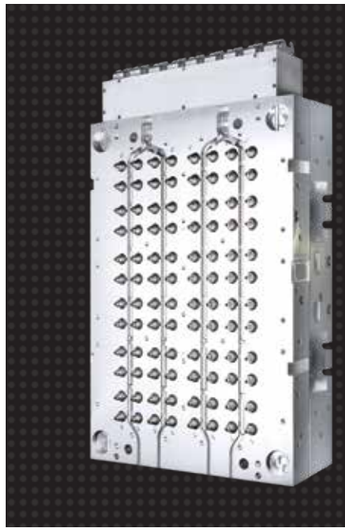
APEX offers a wide range of operational benefits to molders which includes improving color-change performance by up to 65% when compared to standard gate seals. It can improve the appearance quality of caps that have difficulty hiding flow lines such as transparent decorative caps. It also eliminates the use of insulation caps, a common wear item, for reduced maintenance costs.

Master® series

THE BENCHMARK IN HOT RUNNER PERFORMANCE AND RELIABILITY

Proven to deliver consistent high-performance processing capabilities for exceptional part and gate quality. Its versatility makes it the ideal solution for caps, closures, cosmetic products, and thin-wall packaging products of all shapes and sizes.

- Low to high cavitation designs
- Durability for high injection pressures
- Accommodates aggressive L/T ratios
- Compatible with PCR and Bio-Resin materials



Sprint™

LIGHTNING FAST, SPECIALIZED CAP & CLOSURE SYSTEM

Optimized for reliable high speed molding, Sprint systems are capable of <2 second cycle times, fast color changes and low energy consumption. A range of special features ensures highest production quality while minimizing downtime. Now includes MasterSHIELD Technology as standard for enhanced leakage protection. Compatible with PP, PS, HDPE, LDPE and other resins.

CO-INJECTION

OPTIMIZING PART PERFORMANCE AND COST

Mold-Masters industry leading Co-injection technology allows for two materials to be injected simultaneously, creating a 3-layer structure, in a single step. Incorporate high performance barrier materials to preserve freshness, maintain flavor and extend shelf life of products. Convert mono-layer components to multi-layer without sacrificing existing part quality or productivity levels.

AUTOMOTIVE

• CLASS "A" FINISHES • HIGHLY TECHNICAL • MAXIMIZE UPTIME • LOW COST OF OWNERSHIP • GLOBAL SUPPORT NETWORK

Mold-Masters understands the automotive industry and delivers solutions that supports the needs of our customers. Our automotive hot runner systems are optimized for delivering exceptional part quality by addressing common technical challenges associated with molding medium to large parts that demand Class "A" surface finishes. In addition, our designs facilitate in field maintenance that is quick and easy which helps to ensure you stay in production longer. Lastly, Mold-Masters Global Support Network has you covered from initial hot runner design and analysis through to production. Our global spare part warehouse facilities are stocked to ensure you receive standard spare parts quickly no matter where you are.

PRODUCING CLASS "A" SURFACE FINISHES

Molding medium to large parts for the automotive industry comes with its own unique set of technical challenges compared to other industries. Forward thinking automotive designs incorporating challenging resins continue to push the envelope of what's considered possible. However, Mold-Masters is always up for the challenge.

Mold-Masters automotive hot runner solutions incorporate a range of features that are designed to accommodate these process variables. For example, uncontrolled resin flow can severely impact part quality which appear as defects such as weld lines and pressure marks. Our advanced SeVG+ (Servo Electric Valve Gate) actuation control system offers complete control over the actuation profile of each individual valve pin. Users can now produce molded parts of exceptional quality that would not otherwise be possible.

MAXIMIZING UPTIME

Not only is Mold-Masters automotive focused hot runner systems drop-in ready, but our designs are easily serviced in the field, often without the need for special tools. Many of our hot runner systems and various controllers incorporate special features that speed up set-up, start-up, shut-down and maintenance.

Fusion Series hot runners now offer Waterless Actuators that incorporate Passive Actuator Cooling Technology (PACT). These advanced, patent pending actuator designs eliminate conventional hose plumbed cooling circuits.

GLOBAL SUPPORT NETWORK

Mold-Masters is dedicated to providing industry leading support to meet the unique needs of our automotive customers. We are dedicated to helping ensure their projects are successful even under the most challenging conditions. This support is offered through the entire lifecycle process from design concept through to full scale production. Mold-Masters also operates strategic spare part facilities and offers remote technical support as a first response to minimize lead times and to resolve any issue that may arise as quickly as possible.

Lighting

Exterior

Interior

Under Hood

Fusion® series G3

DROP IN, CONNECT AND INJECT

A completely pre-assembled and pre-wired system which allows for quick and easy one step drop in installation and connection. Ensures your mold gets into production as quickly as possible while incorporating a wide range of specialized features that maximize uptime. These include nozzles that can be installed in cold conditions, waterless actuators and quick release/adjustable actuators. Fusion nozzles have a shot range of <15g-5,000g+ and are available with compact nozzle bore cut-outs as small as Ø20mm to minimize machining requirements and improve gate access on smaller/technical parts.

Dura®+ PLUS

THE CLEAR CHOICE FOR LENSES

The ideal hot runner system for consistent, high quality production of automotive lens components that demand exceptional clarity. Engineered to perform with today's challenging resins it is compatible with corrosive resins such as PC, PC-ABS & PMMA. Dura+ remains the clearest choice for automotive lens molding applications.

Accu-Line™ FM

EASY, ECONOMICAL SINGLE CAVITY VALVE GATING

Engineered to deliver exceptional part quality with today's challenging abrasive, corrosive, shear and temperature sensitive resins such as PC, PC-ABS, POM & PMMA. Critical for demanding Automotive Lens, Medical, Personal Care and Technical molding applications.

TECHNICAL/SPECIALTY

• COMPLEX PART GEOMETRIES • SMALL LIGHTWEIGHT PARTS
• CHALLENGING GATE LOCATIONS • HIGH QUALITY PRODUCTION

Mold-Masters broad product portfolio includes industry-leading solutions for a variety of technical applications. Technical applications often demand specialty solutions. This includes solutions for applications requiring tight gate access, compact mold designs, reduced stack heights, increased productivity, processing new materials and much more. If you have an application and are interested to see what solutions are available to you, be sure to speak to Mold-Masters today. If we don't already have something on hand, we have the ability to create a customized solution that works. Mold-Masters allows our customers to do more.

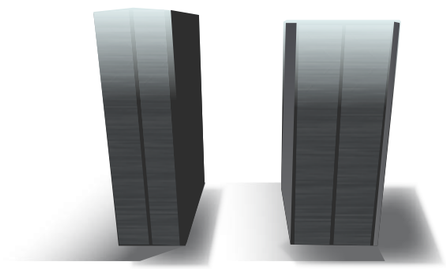
SPECIALTY SOLUTIONS

Technical applications often demand specialty solutions. Mold-Masters engineers have a broad range of proven solutions to choose from that minimizes risk and gives our customers the best chance of success. We can accommodate a variety of applications including those with complex geometries, tight pitches, limited gate access and more. For example, our Master-Series FemtoLite nozzles (our most compact) can be utilized in a variety of configurations and are ideal for tight pitch and inside gating applications.

On applications where our existing solutions aren't ideal, Mold-Masters MasterSOLUTIONS Team is available to tackle your toughest challenges. They have the ability to modify our existing designs or create something completely new that's optimized to perform to our high standards.

ENABLING BROADER UTILIZATION

In addition to part quality considerations, Mold-Masters technology allows for broader mold utilization. Mold-Masters hot runner systems with iFLOW Manifold Technology can be manufactured with thinner profiles which allows stack heights to be reduced by up to 22% compared to traditional gun-drilled manifolds. This allows the mold to be operated on machines with lower tonnage (existing or even smaller machines).



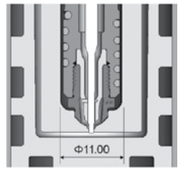
Mold-Masters iFLOW Manifold Technology offers compact stack heights

Mold-Masters Multi-tip Nozzles

Master series Nano

OUR SMALLEST, MOST COMPACT NOZZLE

Our most compact Master-Series nozzle solution, for highest quality molding of small parts, with advanced capabilities for tight pitch or inside gating. Available valved or non-valved. Ideal for many medical, personal care, packaging and small closure applications. Compatible with a wide range of resins.



Slim-Stack

REDUCE STACK HEIGHT BY UP TO 40%

Introducing the industries most compact stack mold center section assembly. Available as an option on Master-Series Stack Mold Hot Runner systems, it is especially valuable on projects with stack height limitations. This advanced design incorporates inline actuators affixed to a single common manifold. Ideal for many Packaging, Personal Care, Medical and Caps and Closure applications.

LSR Cold Deck

INDUSTRY LEADING LSR PROCESSING CAPABILITIES FROM KIPE

Now get valve gated cold decks for precision LSR molding from Mold-Masters through our exclusive strategic partnership with KIPE MOLDS. KIPE brings over 40 years of highly successful LSR knowledge and experience to our customers. Your best solution for optimized processing of LSR in single shot or over molding applications across any industry.

PET

• HIGH QUALITY PRODUCTION • MINIMIZE SCRAP • LOW COST OF OWNERSHIP
• PREVENT DOWNTIME • GLOBAL SUPPORT NETWORK

Mold-Masters understands the PET industry and delivers industry-leading solutions that supports the needs of our customers. Our high-performance single and 2-stage hot runner systems are optimized for delivering exceptional molded part quality and focused on increasing productivity and minimizing downtime to help achieve the lowest cost-per-part possible. We also offer our customers the flexibility to work with the machine and robotics supplier of their choice. In addition, Mold-Masters Global Support Network has you covered from initial hot runner design and analysis through to production. Experienced and knowledgeable Mold-Masters designers have the capability to add value by helping to identify light weighting opportunities and enhancing packaging designs.

ENHANCE PRODUCTION QUALITY

Mold-Masters PET hot runner systems are engineered to maximize performance and produce higher quality molded parts. Optimizing process and injection speed enhances quality, especially in the neck area. We also offer flexibility in preform design that provide opportunities for light weighting. Our hot runner systems are available with iFLOW Manifold Technology that feature patented melt flow geometry, flow path options and runner shapes. By eliminating sharp corners and dead spots, iFLOW offers best in-class melt management and industry-leading mold fill balance. The results are faster fill times, lower fill pressure, reduced AA levels and wider process windows (especially on older machines).

MAXIMIZING UPTIME

Mold-Masters understands that productivity is just as important as part quality. In support of this, our R&D department has introduced several key innovative technologies. MasterSHIELD Technology offers enhanced leakage protection between the nozzle and manifold. This robust, patent pending design, maintains a leak proof seal offering reliability even during cold start-ups or in the event of accidental overheating.

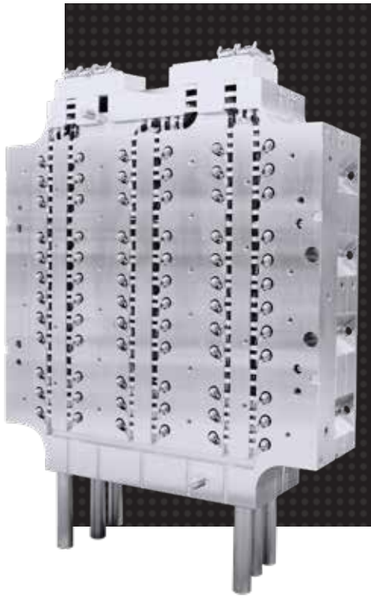
COMPLETE FLEXIBILITY

As a company, Mold-Masters is focused on hot runners. This means our customers have complete flexibility to work with the mold and machine suppliers of their choice.

Axiom

FULLY BALANCED IN-LINE SINGLE STAGE PET HOT RUNNER SYSTEMS

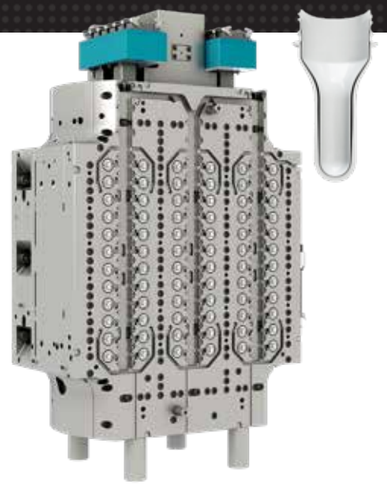
1-40 drop hot half systems designed for injection stretch blow machines (ISBM). Specifically engineered to meet the requirements of the competitive PET bottle manufacturing industry, Axiom is focused on enhancing part quality, increasing yield and lowering production costs. Available as either thermal gated or valve gated.



PET series

THE SPECIALIZED HOT RUNNER SYSTEM FOR PRODUCING 2-STAGE PET PREFORMS

Our latest generation design incorporates a variety of cutting-edge innovative technology that carries the PET industry into a new era. This includes MasterSHIELD Technology for enhanced leakage protection even in cold conditions. Molders can expect to achieve lower part costs through enhanced part quality and increased productivity. PET-Series is compatible with many industry standard layouts, existing molds and all major machine platforms including those with post-mold technology.



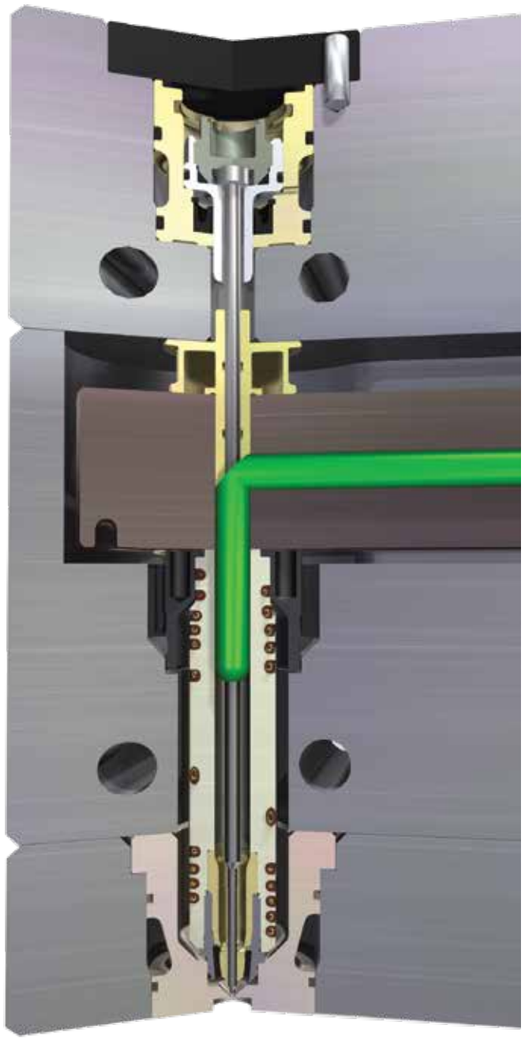
CO-INJECTION

OPTIMIZING PART PERFORMANCE AND COST

Our industry-leading Co-injection Technology utilizes a proprietary nozzle design that allows for two different resins to be combined into a single 3-layer melt stream. Enhance packaging performance to extend product shelf life (maintaining freshness and flavour) by incorporating a high-performance moisture, gas or light barrier as the core layer. Reduce part costs by minimizing expensive barrier/colorant materials and eliminating secondary operations. Convert mono-layer components to co-injection multi-layer without sacrificing current part quality or productivity levels.

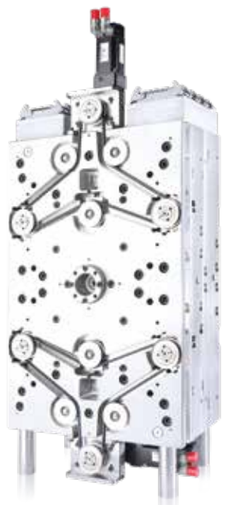
VALVE GATE ACTUATION CONTROL

Hot runner systems can be offered with or without valve gates, however valve gating brings with it a range of advantages. This includes a wider processing window, the ability to produce larger parts, the ability to process larger shot weights and enhanced product and gate quality. The choice to utilize a valve gate design may or may not be in your control depending on your application. Valve gating brings with it additional process complexity and challenges. It is important to understand what options are available to help deliver the results you desire.



CONVENTIONAL ACTUATION

Valve pin actuators are common in many hot runner applications and their movements are typically powered by either Pneumatic Air or Hydraulic Oil. While sufficient for many applications they have their limitations. On their own, the movements of these conventional actuators are restricted to simply opening or closing. While they generally actuate at the same time, there is some variability from drop-to-drop and from shot-to-shot. This is most commonly found with high cavitation Pneumatic systems where not all actuators are able to move at the same time. This variability can affect mold balance and overall part quality.



E-Drive synchro plate system

MINIMIZING ACTUATION VARIABILITY

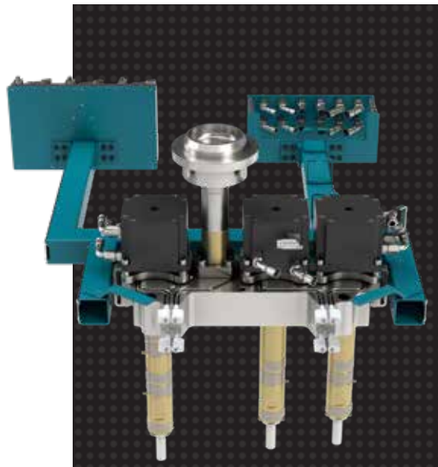
In order to overcome the limitations of conventional actuation methods, there are several more advanced options that are available. Choosing the right solution, again, depends on the application however Mold-Masters full range of options means we have you covered. Actuation control systems are available in pneumatic, hydraulic and electric.

E-Drive™

SERVO DRIVEN SYNCHRO PLATE SYSTEM ELIMINATES ACTUATION VARIABILITY

Simultaneous valve pin motion control of up to 144 cavities with precise 0.01mm tolerances for exceptional process control. Easily adjust pin stroke, velocity, torque, timing and position to improve mold balance and production quality. Compatible with all resins,

E-Drive is ideal for tight tolerance and tight pitch applications across a wide range of industries. Electric drive is suitable for clean room applications. Synchro plates are also available in Pneumatic and Hydraulic formats.



SeVG® PLUS

SERVO ELECTRIC VALVE GATE

Our most advanced actuation control system. A servo driven system that provides absolute control and precision over individual valve pin opening and closing actuation profiles. Fully adjust pin position, acceleration, velocity, stroke, timing and sequence. Critical capabilities that greatly enhances molded part quality for demanding applications. Available for all applications including large automotive parts that require Class "A" surface finishes.

SVG

SEQUENTIAL VALVE GATE CONTROL

Enhanced control of valve gate flow sequence and timing for pneumatic or hydraulic systems. Improve mold balance and part quality. Essential control when molding complex or large parts.

UNLOCK YOUR OPERATIONS FULL POTENTIAL

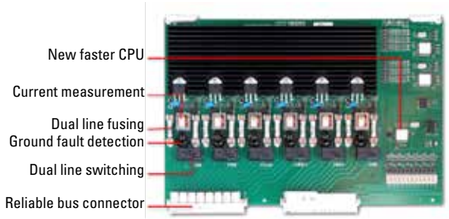
TempMaster controllers are the industry's most precise and reliable hot runner temperature control platform. With one of the most comprehensive product lines on the market, we have the solution that's right for your application and your budget. Optimize the performance of any hot runner system and unlock your operations full potential with TempMaster.

PRECISE APS CONTROL TECHNOLOGY

All TempMaster controllers feature APS (Adaptive Process System) technology. APS is the industry's leading heat control algorithm that ensures precise temperature control is maintained. APS continuously monitors, learns, predicts and automatically adapts to process variables. Making almost instantaneous micro adjustments ensures mold temperatures are maintained with the highest degree of precision.

HIGH-CAPACITY MODULAR CONTROL CARDS

Powering every TempMaster controller is our advanced M-Series cards. Their high capacity design reduces your card requirements by up to 60% vs competitive alternatives and are available with the widest selection from 5A to 40A which allows you to optimize power requirements to your application. Cards can be accessed in seconds, which contain on-board heater and thermocouple fuses, so servicing is quick and easy. M-Series cards feature the latest technology and innovations that deliver the performance, power and reliability that molders rely on.



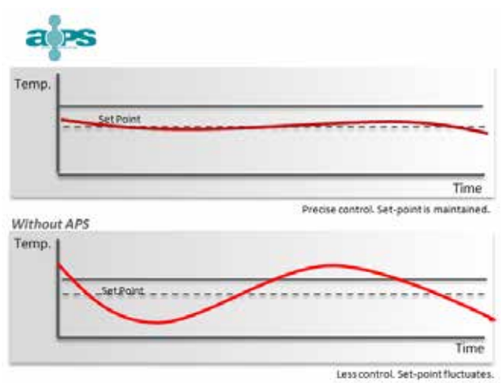
CLASS LEADING COMPACT DIMENSIONS

TempMaster controllers feature some of the industry's most compact cabinet dimensions in their class. This preserves a significant amount of valuable floor space and makes units easier to handle.

Our flagship TempMaster M2+ cabinet has a footprint up to 53% smaller (57% overall) than competitive systems of equal functionality and number of zones.

INTUITIVE TOUCH SCREEN CONTROLS

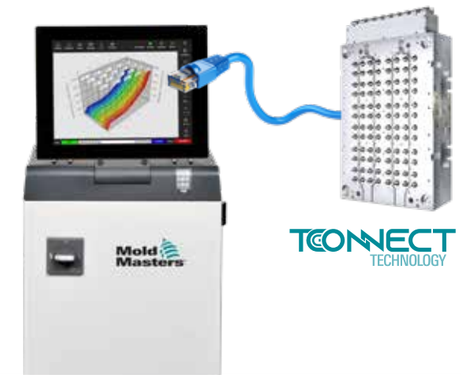
Full color touch screen HMI's come standard with all TempMaster controllers that makes information easy to identify and quick to differentiate. Our systems Intuitive layout means our controllers can be used with minimal training and allow you to get back into production almost immediately.



TempMaster™ series M3

REVOLUTIONIZE YOUR OPERATION. ELIMINATE CONVENTIONAL TC MOLD CABLES

Our TempMaster M3 controller incorporates many exciting innovations include revolutionary TC-Connect Technology. TC-Connect technology eliminates conventional mold thermocouple cables (50% of mold cables) to simplify your molding cell by reducing clutter and weight, speeding up mold changes, and improving reliability.



TempMaster™ series M2+ PLUS

ADVANCED, FULLY FEATURED CONTROL FOR SUPERIOR MOLDING PERFORMANCE

The M2+ offers the industries most advanced control features and functions. Designed with flexibility in mind, M2+ performs to the highest standards in any molding application with any resin while remaining simple and intuitive to operate.

TempMaster™ series M1+ PLUS

ADVANCED, COMPACT TEMPERATURE CONTROL FOR MEDIUM SIZED MOLDS

The M1 platform combines popular features with advanced APS Technology for precision control of up to 48 zones. Powerful performance in a compact unit.

TempMaster™ series Me

OUR SIMPLEST AND MOST ECONOMICAL TEMPERATURE CONTROLLER.

The Me platform combines essential features with advanced APS Technology for precision control of up to 12 zones. Powerful performance from a compact unit that helps improve part quality and minimize scrap.

PROCESS SYSTEMS

• HIGH QUALITY PRODUCTION • INCREASED PROCESS STABILITY
• MINIMIZE VARIABILITY • ENHANCED CONTROL • IMPROVED REPORTING

There are many processing variables that play a factor in molding parts of acceptable quality, including those that go beyond the hot runner system itself. Some of those variables include Mold Cooling and Automated Mold Functions. Mold-Masters offers critical systems to help minimize such variables in order to produce higher quality parts, more consistency from drop to drop and cycle to cycle day in and day out. After all, at the end of the day, it's the good parts in the box that matters.

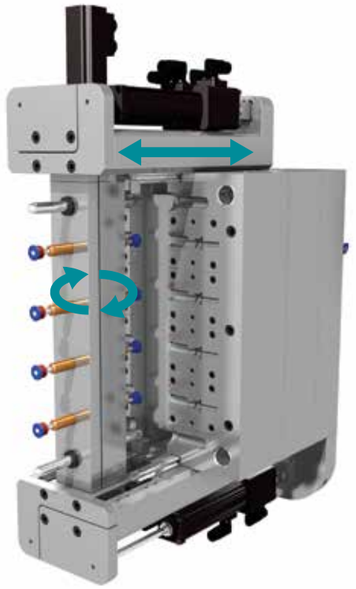
A COMMON CHALLENGE

When it comes to molding with a validated processes, it is not what the machine is told to that is important, it is what the machine is actually doing that matters. Although a process may be fully validated it is often impossible to confirm whether the process is actually running at these settings. In terms of mold cooling for example, there may be a partial blockage in a water circuit or even an incorrectly piped mold. In a variety of circumstances, its possible for the temperature controller to still show the coolant at the correct temperature when the reality is quite different.

Even though the mold temperature is an important control characteristic, many do not have the proper systems in place to verify their setting. Mold-Masters process systems overcomes these limitations and provides increased confidence and reliability in the process.

Automated mold functions are another important consideration that can impact productivity. The cycle time of a hot runner system can only be optimized to go as fast as the slowest piece of equipment within a molding cell.

Mold-Masters M-Ax Motion Controller gives customers the ability to cycle molds with rapid and precise movements for exceptional repeatability. This is critical for many of today's modern mold designs and essential for increasing productivity while minimizing risk of equipment damage.



TempMaster™ WFM series

WATER FLOW MONITORING SYSTEM

Coolant flow and temperature are often critical factors in achieving consistent production of quality molded parts and faster cycle times. Monitoring individual cooling circuits with WFM, compared with traditional flow regulators, offers molders an advanced solution that achieves greater process accuracy and confidence. Available as a standalone system or integrated with our TempMaster M2+ hot runner temperature controller.

PRECISION CONTROL FOR SERVO DRIVEN AUTOMATED MOLD FUNCTIONS

Molding environments are increasingly being digitized. Servos for mold functions offer superior precision, control and repeatability over traditional methods. The M-Ax servo motion axis controller offers the greatest process control accuracy and easiest adjustments of automated linear and rotary mold functions.

SERVO FUNCTIONS

Standard

- Valve gates
- Core pulls
- Coining plates
- Index plates
- Stripper plates
- Ejector plates
- Rotary tables
- Spin stack

Advanced

- E-Drive
- E-Multi
- And more...

E-Multi®

OPEN THE DOOR TO PRECISION MULTI-SHOT APPLICATIONS

Easily and economically convert any existing injection molding machine to allow multi-shot capabilities with the E-Multi Auxiliary Injection Unit. The successful E-Multi platform offers proven precision, repeatability, versatility and reliability. Compatible with a wide range of thermoplastic and LSR materials, E-Multi is ideal for a wide range of application across any industry.

INDUSTRIES WIDEST SELECTION

There are over 2,000 possible standard configurations for E-Multi units. Choose from various servos, screws, nozzles and many other options. This ensures the unit you receive is perfectly suited to your application and your production requirements.

PRECISION SHOT CONTROL

Precision is a critical component of molded part quality and helps minimize scrap. E-Multi servos drive barrel screws whose position can be controlled to within 0.01mm. This shot volume control on smaller E-Multi units means that shot weight can be managed to a weight variation of as little as 0.004g with complete repeatability and accuracy.

COMPACT SIZE

E-Multi's compact dimensions and all electric operation save an incredible amount of valuable floor space. In a horizontally mounted configuration, it can operate in areas as little as 1.5m² (16ft²) which is up to 9.3m² (100ft²) less than other systems. In a vertically mounted configuration, this space requirement is almost completely eliminated altogether.

E-Multi®

THE MOST VERSATILE, ALL ELECTRIC SERVO DRIVEN, AUXILIARY INJECTION UNIT

KEY FEATURES

SERVO DRIVEN

- High precision, fast, repeatable and reliable performance.
- Suitable for high tolerance applications.
- Program up to 10 injection profiles and holding pressures.
- Statistical process and production tracking.

VERSATILE MOUNTING OPTIONS

- Vertical, horizontal and custom mounting options.
- Can adapt to many requirements.
- Various feeding options available.

COMPACT DESIGN

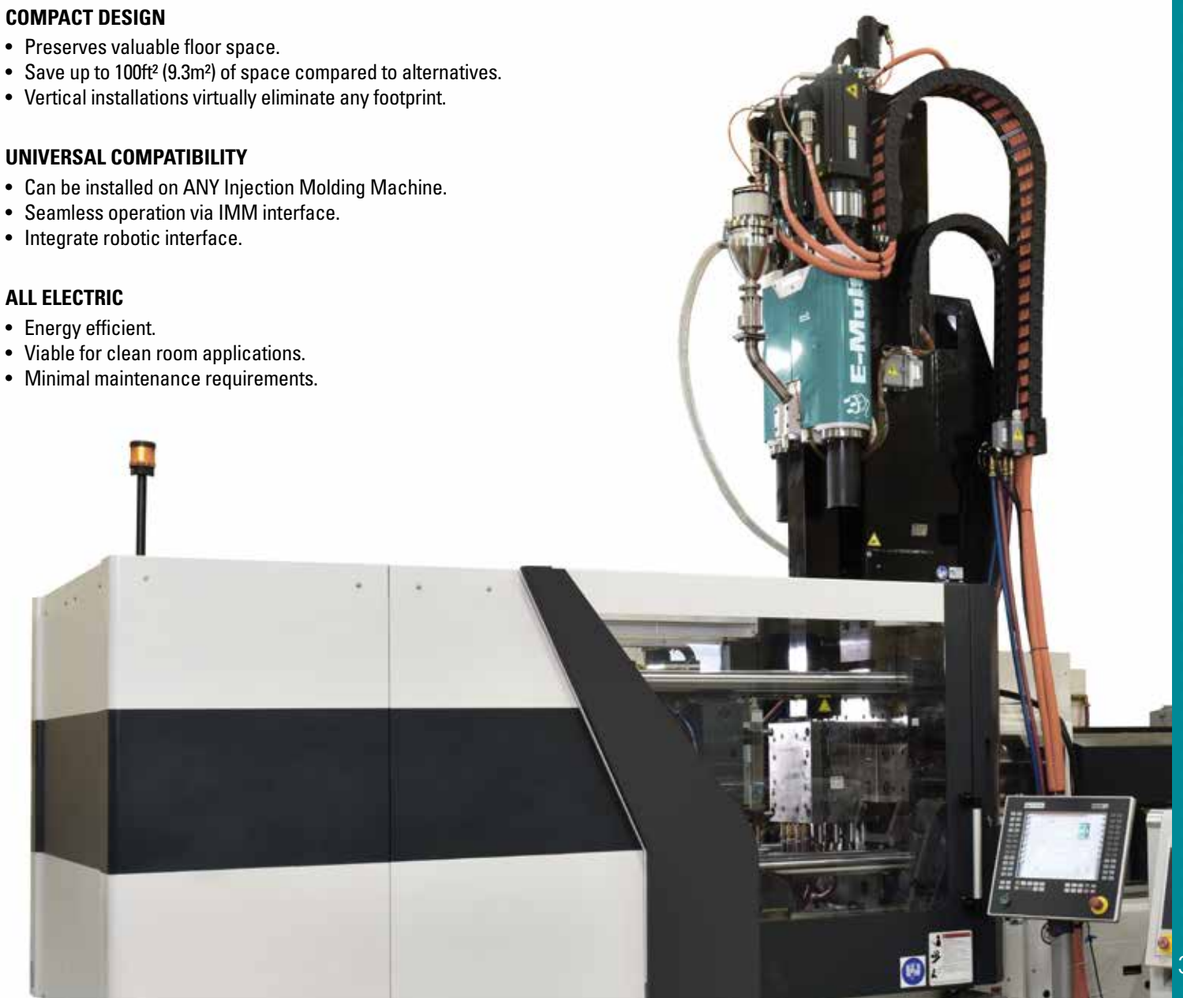
- Preserves valuable floor space.
- Save up to 100ft² (9.3m²) of space compared to alternatives.
- Vertical installations virtually eliminate any footprint.

UNIVERSAL COMPATIBILITY

- Can be installed on ANY Injection Molding Machine.
- Seamless operation via IMM interface.
- Integrate robotic interface.

ALL ELECTRIC

- Energy efficient.
- Viable for clean room applications.
- Minimal maintenance requirements.



CO-INJECTION

IMPROVING EVERYDAY PRODUCTS

Mold-Masters Co-injection allows two different resins to be combined into a single 3-layer melt stream consisting of skin and core layers. This specialized process can be used to enhance part performance and cost without any penalty to cycle time or production volume. Depending on the materials selected and the application, Co-injection can be used to extend shelf life, improve production efficiencies and allow for greater design flexibility. The Technology is compatible with High Performance Barriers, Bio-Resins and PCR/Scrap. Mold-Masters Co-injection can be used for a wide range of applications across any industry including preforms, thin wall containers, closures and much more. As the Co-injection Technology Pioneer and industry leader, the world's leading brands trust Mold-Masters.

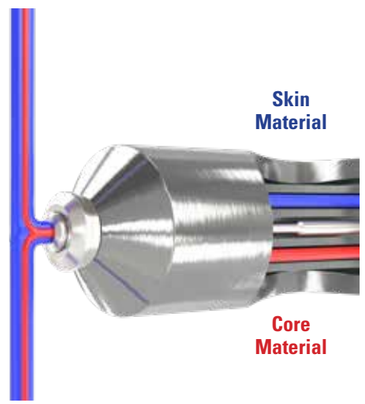
THE BENEFITS OF CO-INJECTION

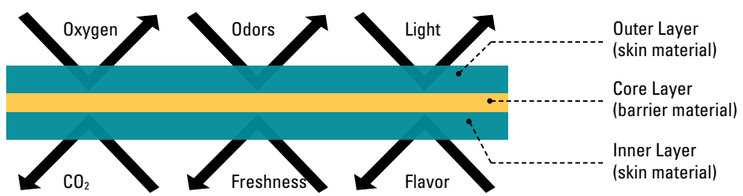
Mold-Masters Co-injection Technology adds value to many of the products we use every day. On food, beverage and medical containers that benefit from utilizing high performance barriers, Co-injection preserves freshness, maintains flavor and extends shelf life of products. Co-injection can also lower production costs of multi-material products by eliminating additional production steps and offers greater design flexibility. Mold-Masters Co-injection is also compatible with Bio-Resin materials.

In other applications, Mold-Masters Co-Injection Technology can also be used as part of a sustainability strategy. It's possible to inject recycled (PCR) or regrind materials as the Core Layer of up to 50% of total part weight. Virgin Material is injected as the Outer Skin Layer to maintain high part quality finish.

PRECISE PROCESS CONTROL

As the pioneer and industry leader in Co-injection Technology, Mold-Masters has extensive co-injection science knowledge and the most application experience. We hold many critical process patents to ensure application success. For example, Mold-Masters Co-injection Fold Over Control prevents core layer breakthrough and our Leading Edge Flatness Control maintains barrier consistency even on non-symmetrical shapes and designs.

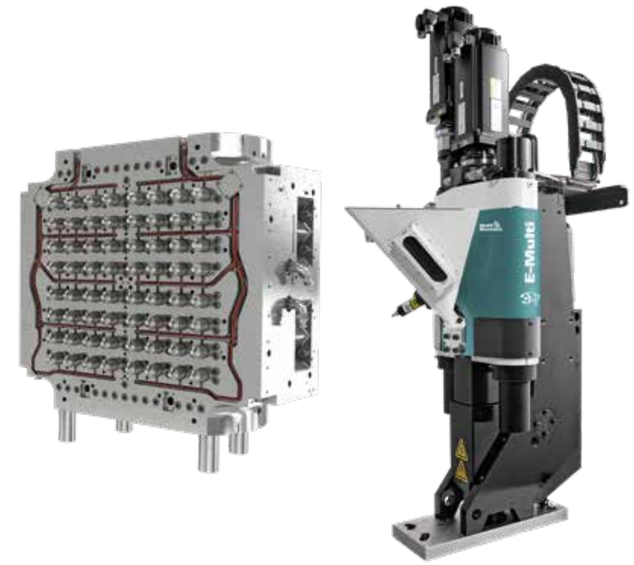




CO-INJECTION CONNECT

MOLD HIGHER QUALITY, ECONOMICAL CO-INJECTED PARTS FOR LESS

The Mold-Masters Co-Injection CONNECT solution includes everything you need to easily and economically convert your existing single shot injection molding equipment over to produce co-injected parts.



KEY FEATURES

HIGHLY ECONOMICAL

- Reduce your capital investment requirements by up to 84%.

COMPLETE PROJECT FLEXIBILITY

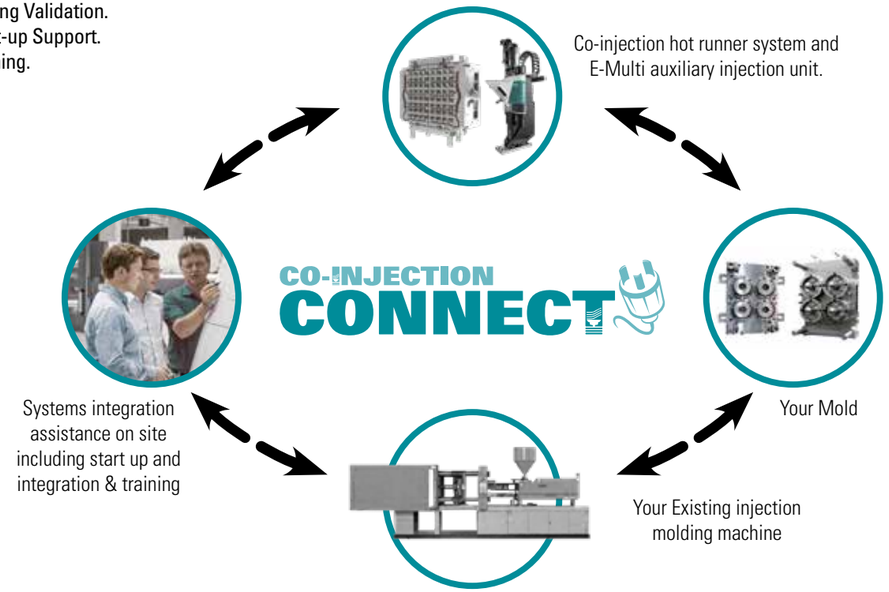
- Work with any machine or mold supplier.
- Customers have complete freedom to choose.

HIGH PRODUCTIVITY

- Same output and scale as monolayer parts.
- No cycle time penalty.
- Eliminate secondary processes and scrap.

CONNECT PACKAGE INCLUDES:

- Mold-Masters Co-Injection Hot Half.
- E-Multi Co-Injection Auxiliary Injection Unit.
- E-Multi Controller w 15" Touch Screen.
- Engineering.
- Testing Validation.
- Start-up Support.
- Training.



Integra

REDEFINING INJECTION MOLDING FOR SMALL PART PRODUCTION

A compact, turnkey injection cell that eliminates the need for conventional injection molding machines and semi-cold runner systems. Optimized for small part production, it enhances molded part quality while offering increased productivity. Ideal for the high-volume production of light weight medical components.

INDIVIDUAL PART PROCESS CONTROL

- Improve molded part quality.
- Minimized flow lines.
- Valve-gated part injection.
- Precise & repeatable servo-controlled processing.

INCREASE PRODUCTIVITY*

- Reduce cycle times by up to 25%.
- Eliminate cold runners.
- Lower material usage by up to 75%.
- Increase output with high-cavitation molds up to 96-cavities.

COMPACT SIZE

- Reduce your production cell footprint by up to 80%.
- Preserves valuable space.

RAPID LEAD TIMES

- Single source.
- Improve your Time to Market (TTM).
- Plug and play options.
- Available with site acceptance test (SAT).

*vs. semi-cold runner system. Application dependent. Intended as a guideline only. Individual results may vary.

SINGLE SOURCE, TURNKEY SOLUTION

SERVO CONTROLLED

- Precise and repeatable movements.
- All electric operation.
- Viable for clean room applications.
- Low energy consumption*.

Injection

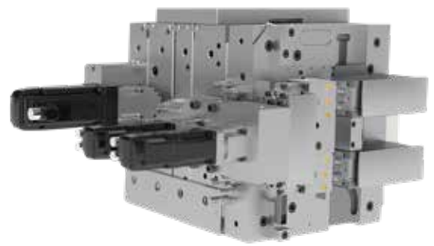
Valve Gate Actuation

Mold Movements

CAPABILITIES

- New patented production technology.
- Optimized for each application.
- Valve-gated.
- 4 to 96 cavities.
- Ø5-22mm part dimension range.
- Standard & custom components.
- Simple to service & maintain.
- Compatible with commodity and technical resins.

Please speak to a technical expert to determine suitability for your application.



GLOBAL CONTACTS

Scan for Global Contacts

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