



COOL

PART & PROCESS CONTROL
THROUGH THERMAL MANAGEMENT



DME Complete
Thermal
Management



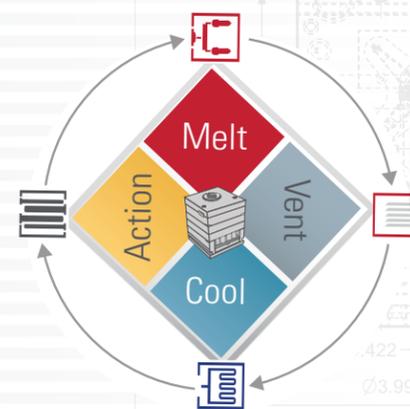
YOUR DESIGN

Molded plastic parts remain one of the key enablers to innovation of both consumer and industrial products. Lighter, stronger, smaller and more appealing products are possible by leveraging the versatility and performance of plastics. DESIGN is critical to every aspect of the plastic part. Through DESIGN products can be differentiated in terms of their form, fit and function to deliver improved performance through the entire application life-cycle. Efficient design lowers total costs allowing for high-speed, high-volume molding operations due to higher material prices, reduce cycle time, reduced scrap rates, and increase overall productivity and costs to manufacture further improving the total value to the customer.



OUR SOLUTION

We work alongside you taking a holistic approach that helps ensure all of the project requirements are met wherever in the world they are required. We start by building a detailed understanding of your plastic part design, its intended application in use and the resulting requirements for the tool. Drawing on unrivaled breadth of capabilities we take an integrated approach to meet your needs combining our precise melt delivery systems, engineered and designed components, and mold cooling technologies that ensure part quality and appearance are achieved at the lowest cost possible. Our goal is to deliver the best possible plastic part at the lowest possible cost. **This is the advantage of the DME Integrated Tool Technology Solution.**



The DME Integrated Tooling Technology Solution

PELLET

INJECTION SOLUTIONS

MELT	VENT	COOL	ACTION
MELT DELIVERY SYSTEMS	VENTING SOLUTIONS	THERMAL (COOLING) MANAGEMENT	ENGINEERED COMPONENTS

PART

TRUCOOL

PART & PROCESS CONTROL THROUGH THERMAL MANAGEMENT

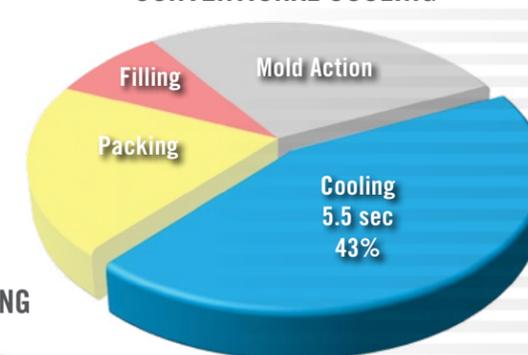
DME's TruCool™ technology provides greater thermal control. Optimal heat and cooling is key to the economics and quality of a plastic part. When there is uneven cooling of the injected part, the temperature delta runs high and as a result long cycle times can be extended, parts can suffer from high warpage and the end product can be plagued with tension and stress especially if shorter run times are attempted. DME's new advanced **TruCool™ 3D solutions** conform the cooling to the exact geometry of the part and, as a result, dramatically reduces cycle time and improves part quality. Advanced CAD and simulation software are used to help optimize mold design, which combined with new Standard 3D Cooling Components and Custom Printed Solutions ensures that cooling channels are optimized even in the most demanding molds. For the first time this allows greater control over targeted, hard to reach areas of the mold which translates to a reduced thermal delta as the part cools.

The result... greater throughput and more consistent production.

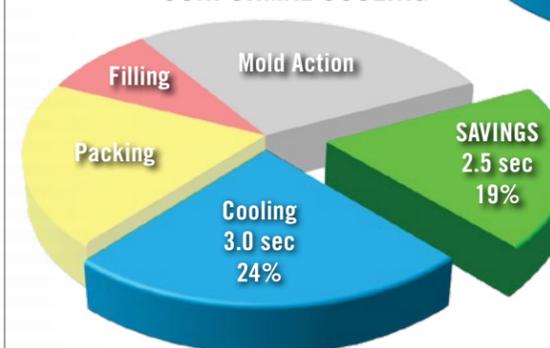
End Result of Thermal Management:

- Reduced part stress
- Reduced warpage
- Shorter cycle times
- Lower overall cost
- Reduced scrap and waste

CONVENTIONAL COOLING

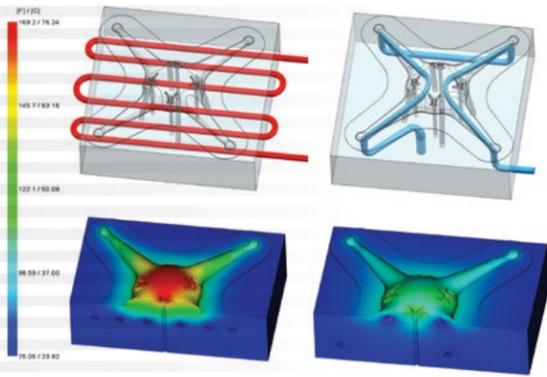


CONFORMAL COOLING

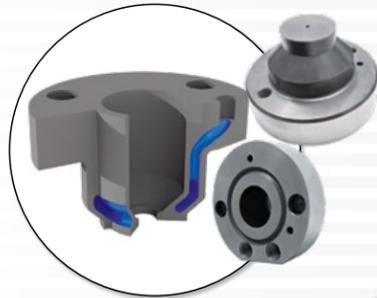


TruCool™

MOLD COOLING SOLUTIONS



DME Cooled Gate Bushings
Designed to work with a wide range of manifold drops, reducing cycle time, and eliminating gate blush & splay.



Shown are results from a full analysis process. You can see the difference that conformal cooling provides by comparing the temperature delta on the mold inserts.

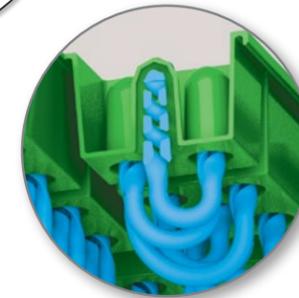
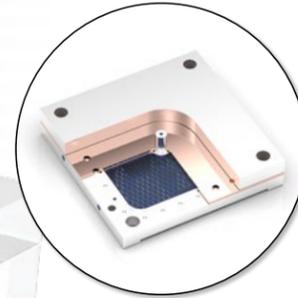
DME Conformal Cooling

Conformal Cooled Sprue Bushings
Reduce cycle time by quickly solidifying resin. Allows use of larger sprue diameters reducing the pressure needed to fill the part.

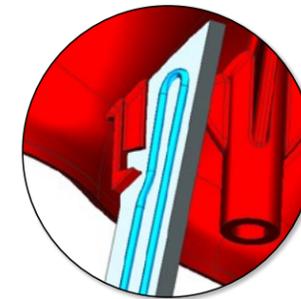


DME MOLD Bases & Plates

DME Smart Plate
Pre-engineered cooling solution for the A side of DME XPress™ mold bases provides consistent cooling without the need for design or analyses.



TruCool™ Custom Solutions
Involves a full analysis process, custom designed components and support during implementation with remote internet conference or even on-site support.



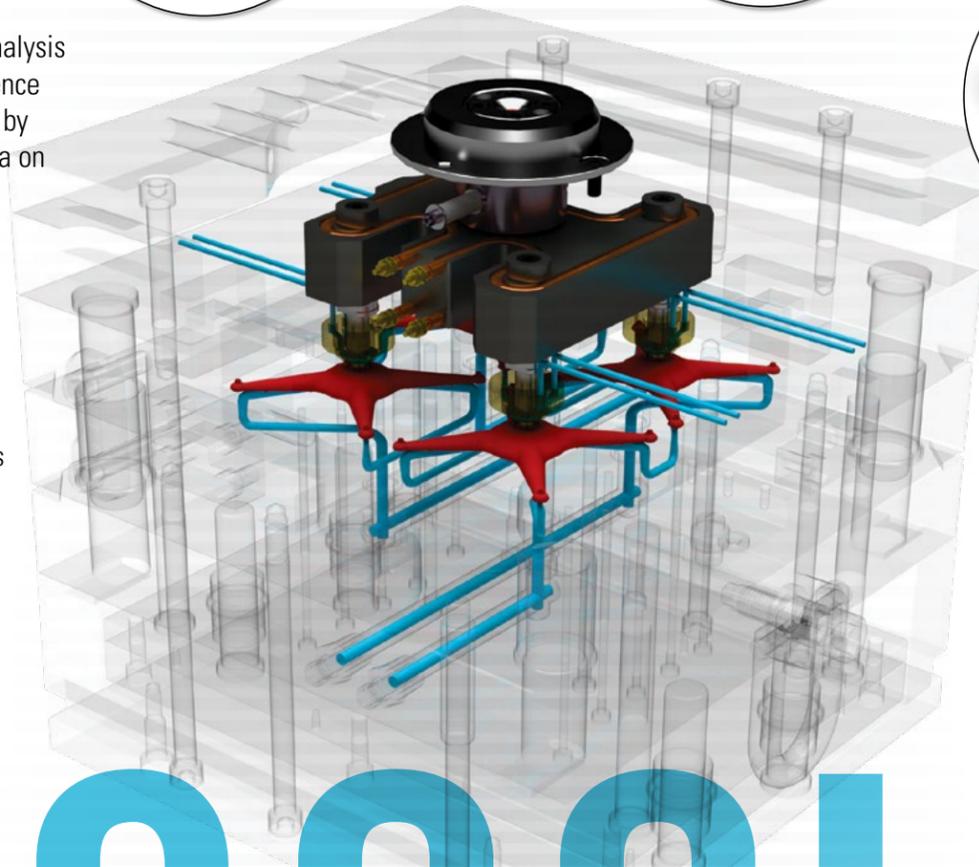
TruCool™ Lifter Inserts
Allow for the integration of cooling in previously unattainable locations in the mold through, provides a tailored solution that can replace standard lifters. This offers greater thermal control for reduced cycle time and better part quality.

Cycle Time Analysis

Description	Seconds	% Total Cycle Time	
Mold Action	3.5	28%	
Filling	1.0	9%	
Packing	2.5	20%	
Cooling	Conventional	5.5	43%
	Conformal	3.0	24%
Savings	2.5	19%	

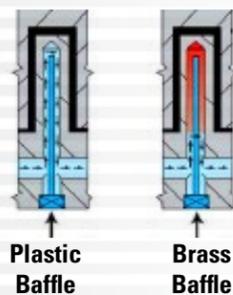
This MoldFlow comparative analysis demonstrates the difference that conformal cooling provides. Benefits produced above include:

- Shorter cycle time
- Higher part quality / reduced warpage
- Reduced part stress
- Eliminated gate blush

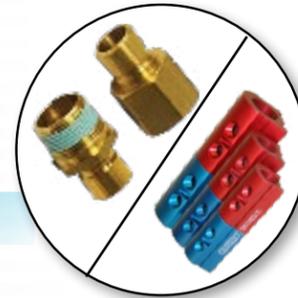


COOL

DME's CoolingCare
Maintains the efficiency of cooling channels within your mold, ensuring optimal molding performance through the life of the tool.



Turbulent Flow Plastic Baffles
Provide superior mold cooling performance versus traditional brass baffles. Patented side wipers prevent coolant blow-by, ensuring coolant flow to the end of the baffles. The Plastic Baffles have built-in ribs that create turbulent flow and reduce stagnant laminar flow. The product is effective in improving cooling of targeted hot spots and dramatically improves cooling time.



Flow Regulation (Fittings & Manifolds)
Fittings and manifolds are key components in successfully delivering adequate cooling to all portions of an injection mold. Our premium manifolds come in a range of sizes and can facilitate nearly every coolant delivery condition for proper distribution. Connectors and fittings are necessary to supply coolant from the delivery system into the mold and have been industry standard for many years.

SMARTFLOW®

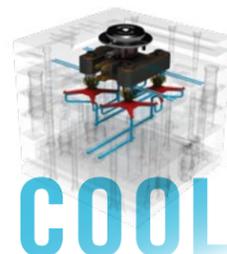
Operators are able to view real time cooling data via Bluetooth compatible devices. Tracer® VM Bluetooth Interface collects, transmits and saves data from Tracer VM Base flowmeters installed in injection mold cooling circuits.



DME MOLD Components

DME[®] Conformal Cooling

INDUSTRY STANDARD CONFORMAL COOLED COMPONENTS



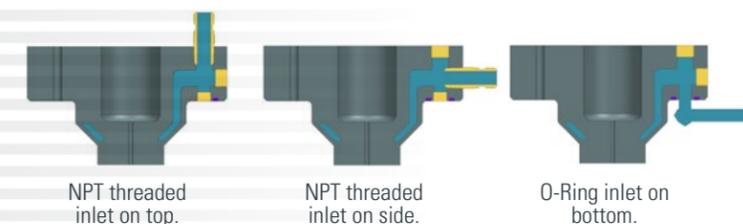
DME's standard conformal cooled components offer the ability to incorporate conformal cooling into an injection mold prior to difficulties arising during the run process. Specially engineered channels work with conventional cooling as well as custom conformal channels to provide optimum thermal control.

DME's cooled gate bushings have been tailored to a wide range of hot manifold manufacturers and only require minimal fitting during the install process. Superior control of valve gate and hot drops can prevent gate blemish as well as reduce cycle time. In some cases heat from the drop tip is difficult to cool due to the inability to bring channels within ideal proximity. With our cooled gate bushings, this concern is addressed offering greater thermal control of the tip.

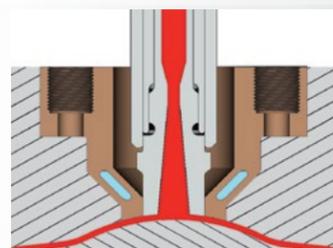
This same concept applies when dealing with cold sprue systems.

Sometimes a cold sprue can be the thickest part of the resin flow when dealing with small parts. This extends the cycle time due to the excessive heat buildup in the sprue. As the constant delivery of molten resin passes through, it builds up residual heat and often drives long cycle times. With conformal cooled cold sprue bushings, you can cool the sprue faster which can also lead to the ability of increasing the sprue diameter which will allow lower pressures needed to fill the mold.

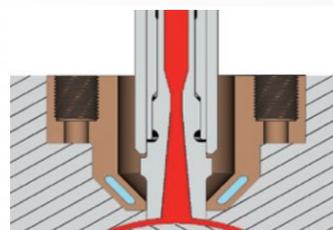
Conformal cooled standard components are beneficial to the operation of a tool and can become a valuable asset in any injection mold.



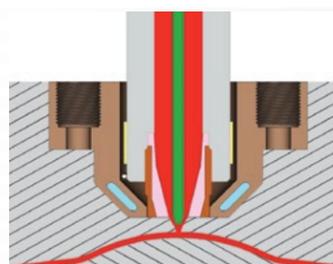
FACE CONFIGURATIONS UNIVERSAL FIT



Exposed face (shown with contour)

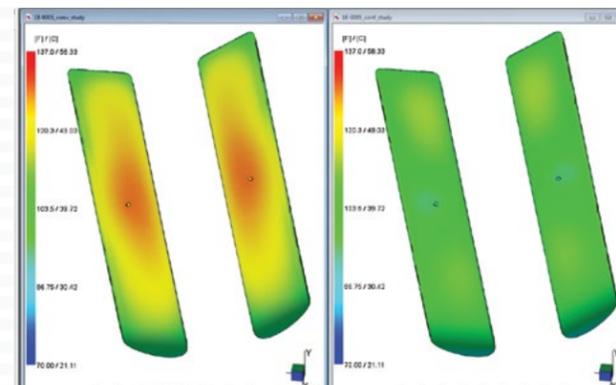


Blind face with exposed drop tip



Blind face with valve gate

MORE PARTS - BETTER QUALITY: BY INCORPORATING DME CONFORMAL COOLED COMPONENTS



1

2

3

4

Let the experts at DME run **MOLD FLOW ANALYSIS & DESIGN** software.

Determine the need for **STANDARDIZED OR CUSTOM DESIGNED** Conformal Cooled Components for best performance.

Install DME Component, **ACHIEVE OPTIMUM RESULTS.**

Produce the end product **THAT EXCEEDS THE DEMAND.**

MAINTAIN YOUR TOOL & PROTECT YOUR INVESTMENTS

DME's TruCool™ offers a wide range of thermal management solutions. For your convenience we offer these as a bundled solution under DME's TruCool™ family of thermal management products and services all targeted at providing optimum thermal control. Below are some of DME's featured Mold thermal management products and DME Industrial Supplies that fall under the TruCool family of products. Contact your local DME Representative for additional TruCool products and services for your next project.



COOLINGCARE - COOLING CHANNEL CLEANING



TRACER VM FLOWMETER



MOKON - HEATING/ CHILLING SYSTEMS



M2 TEMPERATURE CONTROLLER UNITS



DME® MOLD Components

HI-TEMPERATURE/ BLIND HOLE INSERTS



WATER FITTINGS AND PLUGS



BAFFLES AND BUBBLERS



WATER MANIFOLDS & DIVERTERS



DME EZ-FIT

HI-TEMPERATURE/BLIND HOLE INSERTS

SMALL PACKAGE LARGE THERMAL IMPACT

Design Your Mold With Maximum Thermal Management in Mind

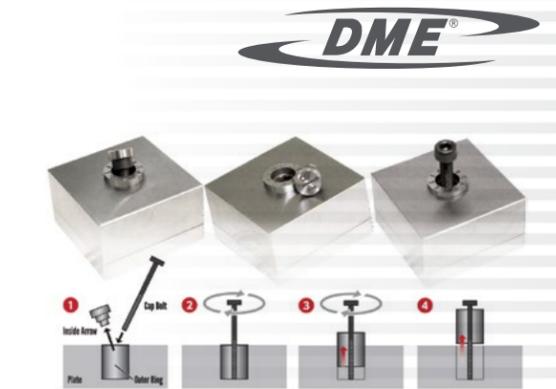
- Improves cycle time due to engineering freedom of the water line placement
- DME's Hi-Temp inserts are rated at more than twice the max temp of our standard inserts
- Blind hole inserts allow the designer to route cooling lines closer to the core where cooling is critical
- Traditional inserts require a knockout hole to be machined for removal which limits cooling channel location and size. Hi-Temp/Blind Hole inserts maximize design and cooling location options.
- Specific resins require high heat and longer cycle times. Choose the insert that stands up to the heat and allows for optimal cooling for improved cycle times.

Traditional Method: Eject insert with pin from back of cavity plate. Knockout hole impedes water line design & hampers effective part cooling design.

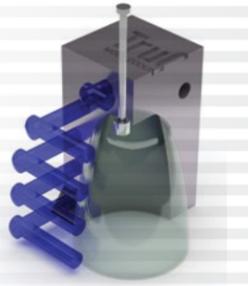
Example of savings from improved cycle time.

	Traditional	Blind Hole	Improvement
Number of Units / Year	1,472,688	1,534,050	61,362
Cycle (seconds)	25.0	24.5	0.5
Cycles / year	736,344	767,025	30,681
Additional Cost / Mold	0	\$30*	0
Total Gain / Savings	\$0	\$67,025	\$4,196

* Represents two inserts in a 2-cavity mold.



1 Traditional style insert with traditional cooling. Insert knockout hole hampers cooling channel design.



2 Better Traditional cooling channel is optimized with Hi-Temp/Blind Hole insert. Greater channel flexibility with Blind Hole application.



3 Best Conformal Cooling at the most optimal placement to provide cycle time reduction and improved part quality, due to blind hole insert technology.



Blind Hole: Absence of a knockout hole allows designers the freedom to place water lines in optimal locations for effective cooling, and reduced cycle time.

COOLING CARE CA SERIES - AUTOMATIC CLEANING, DIAGNOSTICS & CONSERVATION OF COOLING CHANNELS



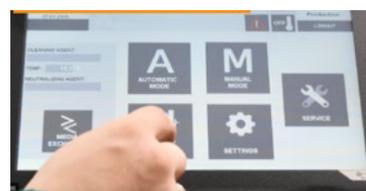
CA-6 & CA-2 FUNCTIONS

Multiple Functions Allow For Comprehensive Maintenance Of Cooling Channels

- 1 DIAMETER (BORE) TEST** - Channel leak verification before and after cleaning
- 2 BLOCKAGE TEST** - Detection of clogged channels linked to unclogging procedure
- 3 DIAGNOSTICS** - Flow rate measurement of every channel, comparison of the results with the archived data
- 4 CLEANING** - Patent pending channel cleaning process based on two-way pulsating movement of cleaning medium
- 5 NEUTRALIZATION & CONSERVATION** - Protection of channels with corrosion inhibitors at the end of the rinsing process
- 6 REPORTING** - Record of all process parameters in the database, export of cleaning reports to external devices



AVAILABLE IN SIX AND TWO CIRCUIT VERSIONS



User Friendly Interface

FEATURES

- User friendly interface
- Fully Automatic - operators are only required to connect the mold and define the channels to be cleaned
- A unique design allowing for independent and efficient cleaning of channels in most mold applications
- Advanced archiving system supporting the correct mold maintenance throughout the entire mold operation time
- High pulsation dynamics of cleaning allows for less aggressive cleaning media-safe for steel, aluminum, copper and bronze
- Intelligent monitoring of the cleaning process - the device recognizes when the desired flow rate values are reached and finishes cleaning

COMPLIANCE WITH INDUSTRY 4.0

Advanced Service

- CoolingCare units can perform a self-diagnostic test to identify possible malfunctions; this feature reduces the machine downtime in the case of service
- Not on site, not a problem with CoolingCare's built-in modem for on-line diagnostics & service

Advanced Management

- Text message informs the operator when the cleaning process is over, or in the case of some unexpected events (failed leak test, cleaning medium level drop, etc.)
- Lights-out cleaning



SMARTFLOW® TRACER® VM BLUETOOTH INTERFACE & BASES

Tracer® VM Bluetooth Interface collects, transmits and saves data from Tracer® VM Base flowmeters installed in injection mold cooling circuits. Flowmeters purchased separately are connected via cable to the Tracer® VM Bluetooth Interface. The Interface provides power to each flowmeter and receives voltage signals for temperature and flow. The Bluetooth Interface wirelessly transmits flow and temperature to display on a mobile device. Flow condition data log files can be created via app and saved on USB flash drive documenting the mold cooling water conditions. The Interface also communicates over Ethernet connection to PC software for network file storage and alerts. The files are easily read into database software for reference or analysis. Scientific Molders can use this data to confirm processing parameters and optimize cycle times and cooling water efficiency.

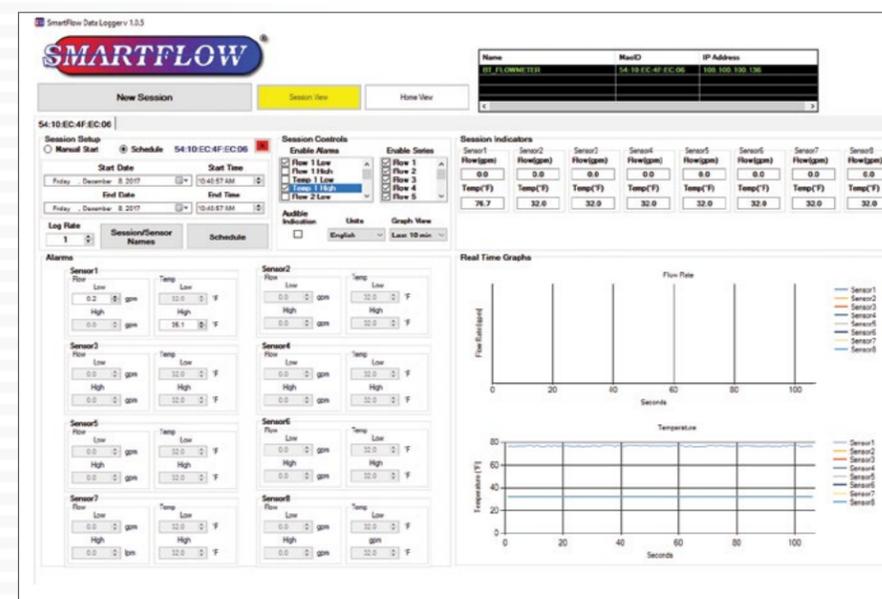


Tracer® VM Interface

The **Tracer® VM Flowmeter** is a non-display meter that reports flow rates and temperature via voltage signals for connection to data acquisition system or Bluetooth Interface. The TRACER® VM is designed for use in industrial water applications such as injection mold cooling and pump monitoring. The flowmeter uses Vortex sensor technology that is highly accurate and repeatable without any moving parts. Connection to the process is made using standard pipe threads in NPT or BSP from 3/8" through 1-1/2". The flowmeter body materials are corrosion-resistant and can be ordered in brass, nylon, anodized aluminium or stainless steel. These options are based on inlet/thread size.



Tracer® VM Base



Data Logger Software • PC based for network file storage and alarm capabilities.



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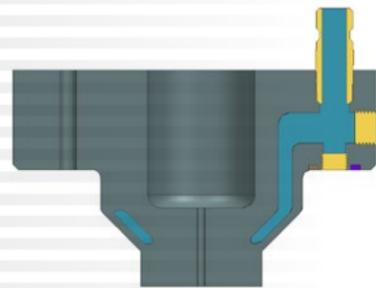
DME COOLED GATE BUSHING

DME's Conformal Cooled Gate Bushing brings new capabilities to hot runner systems. You achieve greater control of the gate region which can eliminate splay, stringing, reduce warpage and of course, shorten cycle time. Achieve lower piece price and provide superior product with minimal investment.

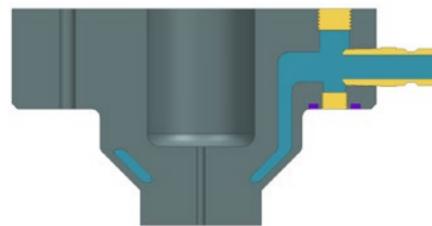
Applications range from automotive, such as lenses, to packaging like soup cups or lids and everything in-between. Benefits of conformal cooling now available without the need for an analysis process through standard conformal cooling components.



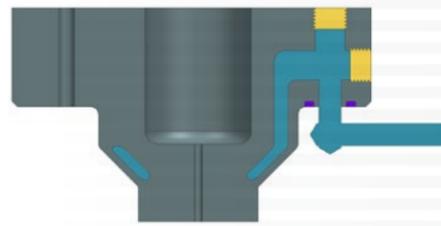
OPTIONAL INLET CONFIGURATIONS



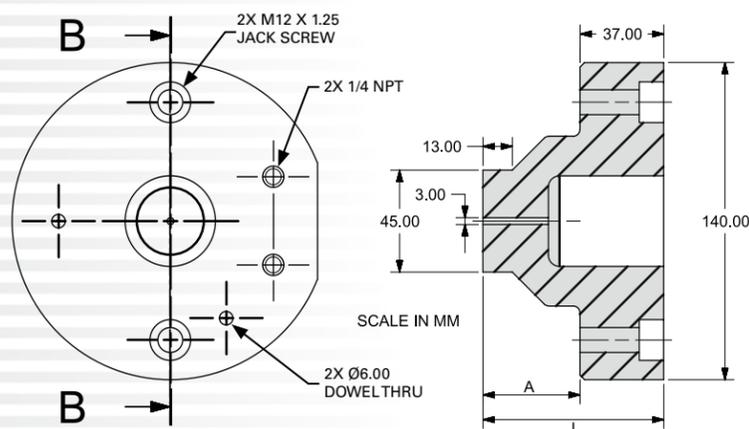
NPT threaded inlet on top.



NPT threaded inlet on side.



O-Ring inlet on bottom.



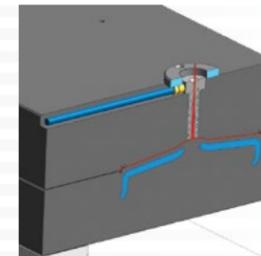
ITEM NUMBER PREFIX	A	L
14065TRUB	1 11/16" (43.00 mm)	3 5/32" (80.00 mm)
14100TRUB	3 5/64" (78.00 mm)	4 17/32" (115.00 mm)

DME Cooled Gate Bushing are a universal fit for multiple molding options and scenarios. They are supplied with surplus stock in the center bore. This allows the end user to mill a precise fitting orifice to house a wide variety of different drop shapes and configurations. The face of the insert also has surplus stock which allows you full control in the way that the face of the insert mates with the mold and/or resin part.

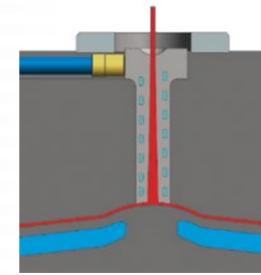


DME COOLED SPRUE BUSHING

DME's Conformal Cooled Cold Sprue Bushing opens up a wide range of possibilities for the injection process. By having sufficient cooling around the sprue, you can increase its diameter which can reduce the pressure needed to fill your part. Imagine the lifetime savings of a mold that you can now run in a smaller, more economical press. That combined with faster output, lower scrap and superior product results in winning across the board. Using pre-engineered components to provide optimal resin flow provides substantial gain with minimal investment.



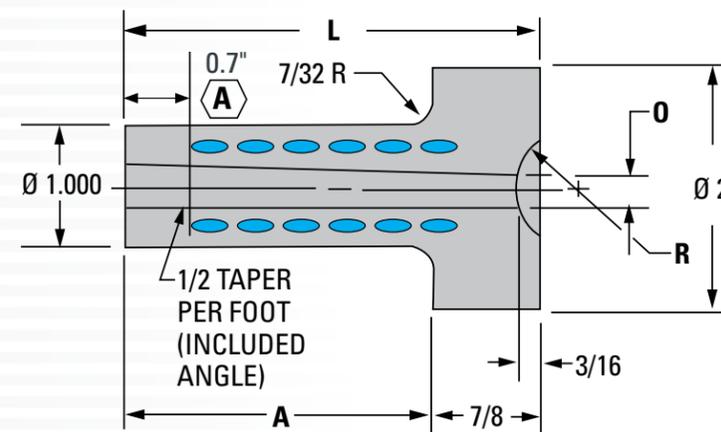
Interchangeable with our standard B-series with minimal tool modification.



Reduce cycle time, pressures and part stress with greater control of the sprue.

"B-TRU" Series

"B" SERIES



Available with O 5/32, 7/32, 9/32 or 11/32 R 1/2 or 3/4



- B01-B12 limited to 0.5" (12.7 mm) alteration. This includes overall length adjustment and runner depth.
- B00 limited to 0.3" (7.62 mm) alteration. This includes overall length adjustment and runner depth.



ITEM NUMBER PREFIX	A	L
B00__TRUP	2 ⁹ / ₃₂	1 ²⁵ / ₃₂
B01__TRUP	1 ¹³ / ₃₂	2 ³ / ₃₂
B02__TRUP	1 ²⁹ / ₃₂	2 ²⁵ / ₃₂
B03__TRUP	2 ¹³ / ₃₂	3 ³ / ₃₂
B04__TRUP	2 ²⁹ / ₃₂	3 ²⁵ / ₃₂
B05__TRUP	3 ¹³ / ₃₂	4 ³ / ₃₂
B06__TRUP	3 ²⁹ / ₃₂	4 ²⁵ / ₃₂
B07__TRUP	4 ¹³ / ₃₂	5 ³ / ₃₂
B08__TRUP*	4 ²⁹ / ₃₂	5 ²⁵ / ₃₂
B10__TRUP*	5 ²⁹ / ₃₂	6 ²⁵ / ₃₂
B12__TRUP*	6 ²⁹ / ₃₂	7 ²⁵ / ₃₂

Some sizes maybe subject to lead time.

* Some "O" sizes unavailable.

Please contact your DME representative for details.



Your One-Stop-Shop!

With tens of thousands of products to choose from, DME is your one-stop shop for everything molding. From complex undercuts solutions and plate control to standard pins, bushings and interlocks, the DME line of mold components will help you build or rebuild your mold base inside out, top to bottom. Industrial Supplies, Mold Bases, MUD Quick-Change, Control Systems, and Hot Runner solutions round out our extensive offering to truly be your one-stop shop.



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