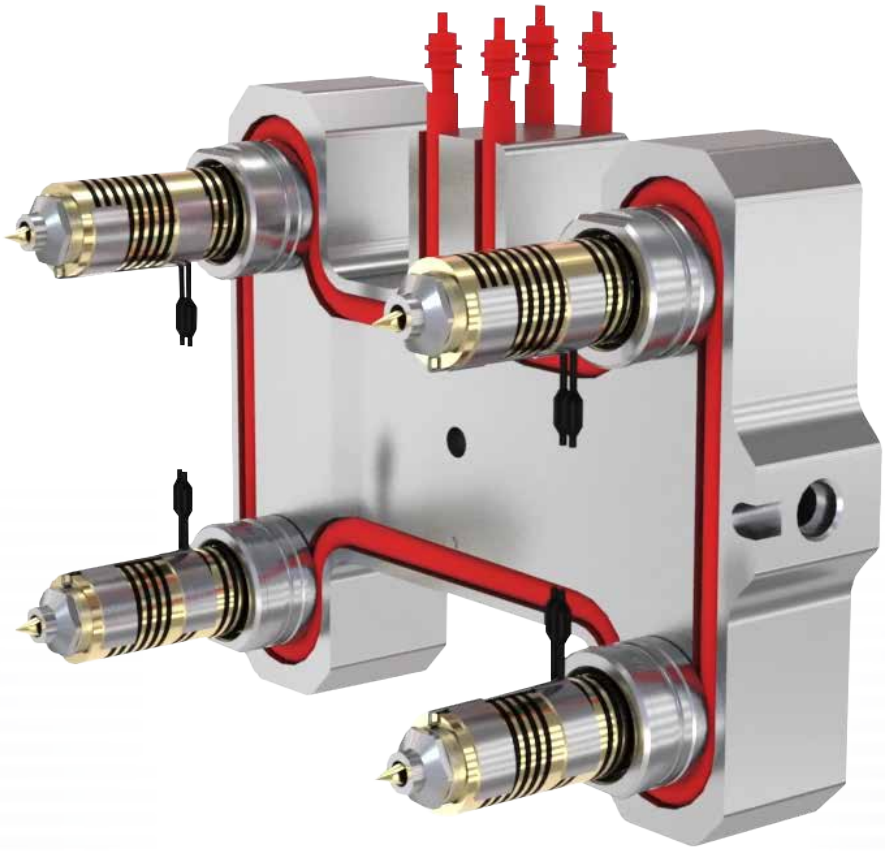

StellarONE

HOT RUNNER

User Manual

DME®

DME StellarONE

Customer Reference Information

To our customers:
DME created this manual to assist you in the installation of our StellarONE-Series Hot Runner System into your mold base. The contents of your manifold and components system is the machined manifold and its supporting components (nozzles, tips, support pads, etc.). No other plates or work is supplied with this package. If during setup and installation you have questions that are not answered in this guide, please email our Technical Service Department at DME_Tech_Service@DME.net

DME Company
29111 Stephenson Highway
Madison Heights, Michigan 48071
800-626-6653 (U.S.) 248-398-6000 (Worldwide)

Please fill in the following information below. Information can be obtained from the shipping documents and, if supplied, the identification tag shipped with your system. If you are not able to find the information, please email our Technical Service Department at DME_Tech_Service@DME.net

This will better assist us in troubleshooting and providing correct replacement parts, should they ever be needed.

Customer Reference Chart
Customer Name _____
Customer Purchase Order Number _____
End-User Name _____
Drawing Number _____
(Found in the title block on DME supplied drawings.)
Contact Number _____
(Found in the title block on DME supplied drawings.)

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DME StellarONE ASSEMBLY MANUAL

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Pre-Assembly Design & Inspection Guidelines

Guidelines

To ensure success of each hot runner application, it is important that mold designers take the following factors into consideration:

1) Selection of proper steel for the nozzle gate area.
2) Proper machining of gate detail to supplied drawing.
3) Proper cooling of the gate area to ensure proper gate vestige and to minimize drool or stringing of the material.
4) Adequate cooling in the nozzle plate, manifold retainer plate and/or support blocks (used to enclose the system), and the top clamp plate (items not included).
5) Use of the proper number and size assembly screws to provide required system support (customer to supply).
6) Allowance for adequate system cold clearance to permit later thermal expansion.

Note: Please treat these suggestions as guidelines only. Always follow standard mold making industry practices to ensure the proper function of the mold and hot runner system.

Inspection of the Manifold & Components

Prior to system assembly, we strongly suggest you complete the following checks and establish the procedures that will facilitate proper system assembly.

1) Check the parts list to ensure that all components are the proper part numbers, and that correct quantities are supplied.
2) Check all supplied heaters for proper resistance in ohms (Ω) and for high resistance to ground by doing the following:
   a)Refer to table supplied in the design package for each heater used in the system.
   b)Note the resistance.
   c)Measure each corresponding heater's resistance and determine if they are equivalent. (High resistance to ground is considered 5Meg Ω or greater.)
   d)Heater resistance should be +/-10% of listed rating.
3) Manifold: Confirm that the manifold thickness and nozzle locations are correct. Use the supplied manifold drawing to establish the shape of the clearance pocket needed in the top clamp plate and nozzle / manifold plate.

Note: The system design package supplied with the manifold and component package should be used to establish the correct installation dimensions for the system.

Design the Nozzle / Manifold Plate

(Customer Supplied)

Note the dowel pin locations on the supplied drawing and transfer this information to your nozzle plate design. Provide an adequate number and size water lines around nozzle locations and around manifold pocket. The supplied drawing should be used to establish proper clearance around the manifold. PROPER CLEARANCE IS CRITICAL.

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Pre-Assembly Design & Inspection Guidelines

1. Confirm the manifold plate thickness is as specified on the supplied drawings. This dimension is important because a change in plate thickness will affect the total stack up of the system and alter the machining dimensions of the nozzle counterbore.
2. Design a wire channel in the nozzle plate to protect and properly route wiring to the electrical connector. DO NOT run wire channels under the manifold because manifold temperatures may cause wire damage.
3. Location of the electrical connector mounting box must be determined. Attach the mounting box to the mold following the directions given in the product literature.
4. Note the nozzle counterbore depth and transfer this dimension to your plate design. The nozzle plate steel is specified on the supplied assembly drawing.
5. If necessary, provide proper clearance for nozzle heater leads in the underside of the manifold plate. CHECK AND MACHINE CLEARANCE FOR LOCATING RING FLANGE IF NECESSARY.

Design Advice

To prevent nozzle rotation during installation and future service, the EcoONE Series nozzle heads are keyed for anti-rotation. Additionally, a dowel pin is installed in the nozzle head to prevent the nozzle body from turning on the head. These two mechanisms inhibit the nozzle from turning when tightening or changing nozzle tips and retainers. The nozzle plate nozzle head bores should be machined with the key as detailed on the supplied plate and model details. Failure to key the nozzle head pockets as described will allow the nozzle to rotate in the pocket, potentially damaging lead wires and complicating future service. It is also strongly recommended that all systems incorporate well designed wire channels to properly route, as well as protect, system wiring.

Design the Top Clamp Plate

(Customer Supplied)

Identify locations of upper support pads on the supplied drawings and transfer this information to your clamp plate design. The support pads will be mounted to the top side of the manifold. Provide an adequate number and size water lines over the manifold shape. Transfer the matching machining dimension for the locating ring pocket from the supplied drawings. The clamp plate should be specified DME #1 steel or equivalent.

System Assembly Guidelines

Follow the steps and procedures outlined on the following pages to ensure proper system assembly. All dimensional checks should be recorded on the Master Inspection Sheet on page 18 so final documentation is complete. This information will also help facilitate final assembly and future service questions regarding this system. Use the line drawings on the following pages to record the system dimensions as assembled.

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Assembly Guidelines

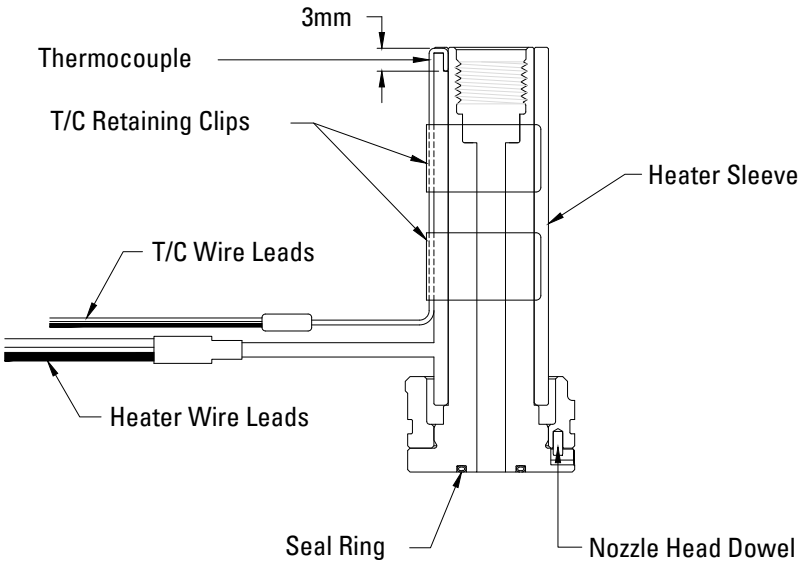
STEP 1 Nozzle Pre-Assembly

NOTE: The StellarONE nozzle assemblies are “front load” type. The heaters and thermocouples, and therefore the tip/gate assemblies, must be installed on the nozzle body after the nozzle body and head assembly are position in the nozzle/retainer plate. Completing the nozzle assembly at this time will require disassembly to complete future steps in the assembly process.

1. Install the nozzle head anti-rotation dowel in the nozzle head

2. Pass the nozzle body through the nozzle head from the top and align the slot in the nozzle body head flange with the dowel in the head

Figure 1



3. The tip installation is required to obtain the “A” dimension in step 2.

4. Do NOT install the nozzle body heater or thermocouple at this time. The tips, thermocouples and heaters will have to be removed from the nozzle body during final assembly (below) so the nozzle head and body assembly can pass through the nozzle plate bores.

Gate seal / tip torque specification:

NOZZLE SERIES	RETAINER BODY THREAD	TORQUE - OPEN GATE	TORQUE - VALVE GATE
StellarONE-04	M8 x 1.0	30Nm (22.1 FT/LBS)	N/A
StellarONE-06	M14 x 1.5	35Nm (25.8 FT/LBS)	32Nm (23.6 FT/LBS)
StellarONE-08	M16 x 1.5	35Nm (25.8 FT/LBS)	32Nm (23.6 FT/LBS)
StellarONE-10	M18 x 1.5	35Nm (25.8 FT/LBS)	32Nm (23.6 FT/LBS)
StellarONE-12	M20 x 1.5	40Nm (29.5 FT/LBS)	38Nm (28.0 FT/LBS)
StellarONE-16	M24 x 2.0	40Nm (29.5 FT/LBS)	38Nm (28.0 FT/LBS)

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Assembly Guidelines

STEP 2 Nozzle Measurements

Check the "A" dimension of the nozzle assemblies to ensure this dimension is within specification and to establish a base for all other dimensions. Record the value (Figure 2) on the Master Inspection Sheet on page 18.

NOTE: Do not finish tip/gate seal installation until after the nozzle body heater and thermocouple have been installed (step 18 below). The hexagonal flange of the tip / retainer holds the nozzle body heater in place.

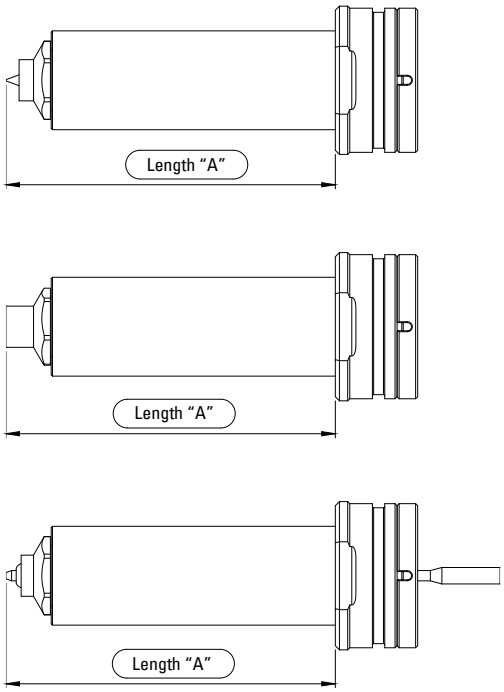

Figure 2

Tolerance is listed on assembly drawings

STEP 3 Nozzle Head Counterbore Depth Measurement

Inspect the nozzle / manifold plate that will house the nozzle bodies for flatness. Ensure the wire channels are free of any burrs and that all directional changes incorporate generous radii. All nozzle head counterbore depths (Figure 3) are to be +0.025 to – 0.00 mm from the design dimension. Measure the counterbore in three locations to ensure flatness. Record this number as the "B" dimension on the Master Inspection Sheet on page 18.

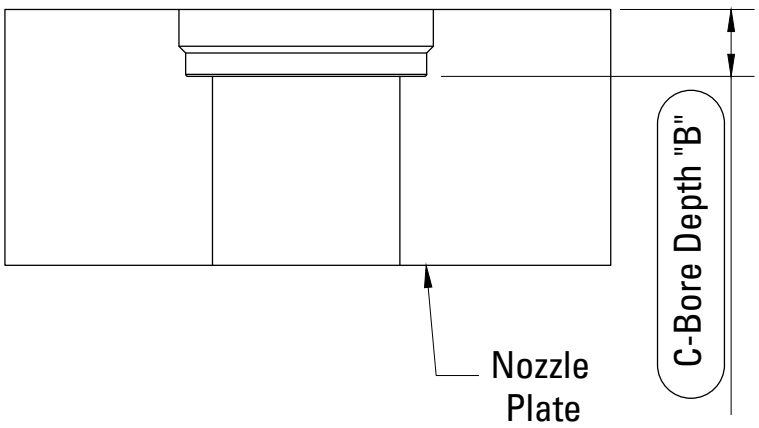

Figure 3

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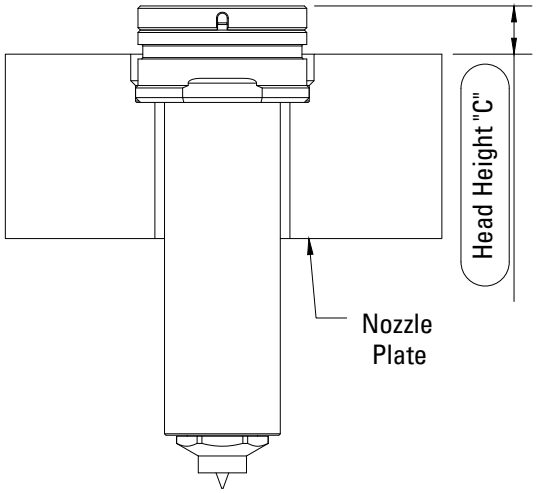
Assembly Guidelines

STEP 4: Head Height

Install the nozzles into their respective counterbores in the nozzle / manifold plate. Check the head height above the top surface of the nozzle / manifold plate and compare that height to the thickness of the manifold center support (10mm). Record the nozzle head height dimensions as “C” on the Master inspection Sheet on page 18 (Figure 4).

Figure 4



STEP 5: Grind Center Support Pad

If needed, size the manifold center support to a dimension of +0.00 to –0.025mm to the height of the nozzle heads found in Step #4. Grind both sides of the center support pad to ensure parallelism. (PLEASE NOTE: The support pads are manufactured from a non-magnetic material. Fabricate a fixture plate for the grinder.) Record this dimension where indicated on the Master Inspection Sheet on page 18.

NOTE: Mark the nozzle bodies on their outer diameter with the location in which they will be installed. Pay particular attention to systems that utilize different length nozzles. On multi-cavity molds, the marked number will normally reflect the cavity number, which in turn will match the temperature control zone number. Each nozzle counterbore should be numbered with its appropriate location. Use the “0” corner as a location reference.

With each manifold and component system, a wiring diagram is supplied that indicates probable nozzle locations. If the supplied diagram does not suit your needs, it is important that the drawing diagram be noted or a new diagram be made. A copy of the revised wiring diagram should be forwarded to Applications Engineering to keep the system file current. This will facilitate troubleshooting any problems that may arise in the future.

STEP 6: Install Additional Lower Support Pads (if required)

If there are large distances between the manifold center support and nozzles, or between nozzles, your manifold may have been designed to have additional lower support pads. As in step #5, these additional support pads may need to be ground to the appropriate thickness to match the nozzle head height and center support height. If they are required, record the finished heights on the Master Inspection Sheet on page 18. Install the pads with the provided socket head cap screws, referring to the system general assembly drawing for the proper torque value.

DME StellarONE

Assembly Guidelines

STEP 7: Check the Manifold Thickness

Record this dimension as “H-1” on the Master Inspection Sheet on page 18. (Do not include the heater cover plates in this measurement.) Next, test-fit the manifold block over the nozzles and dowel pins, making sure that the manifold lies flat across the nozzles (and additional lower support pads, if installed) with no rocking motion.

STEP 8: Properly Position the Manifold in the Nozzle / Manifold Plate

There are two dowel pins that align the manifold in the nozzle / manifold plate pocket. The first dowel is located at the center of the manifold. Install the tubular dowel through the center support pad. The second dowel (for anti-rotation) location is normally positioned at one of the manifold ends. The end location will be a machined slot in the bottom of the manifold that allows for expansion of the manifold as it reaches operating temperature. The length of the dowel pins should be 1.5mm less than the combined depths of their installation holes in the nozzle / manifold plate and the manifold, plus the height of the center support pad determined in Step #5. The less 1.5mm dimension ensures that the dowels do not hold the manifold off the nozzles. The use and proper location of these dowels is important to ensure nozzle drop locations line up accurately with the nozzle flow channel holes in the manifold. Install the dowel pins and check that their height meets the above criteria.

STEP 9: Establish the “D” Dimension

Establish the “D” dimension by adding the average “C” dimension to the “H-1” manifold thickness. Record this dimension on the Master Inspection Sheet on page 18 (Figure 5).

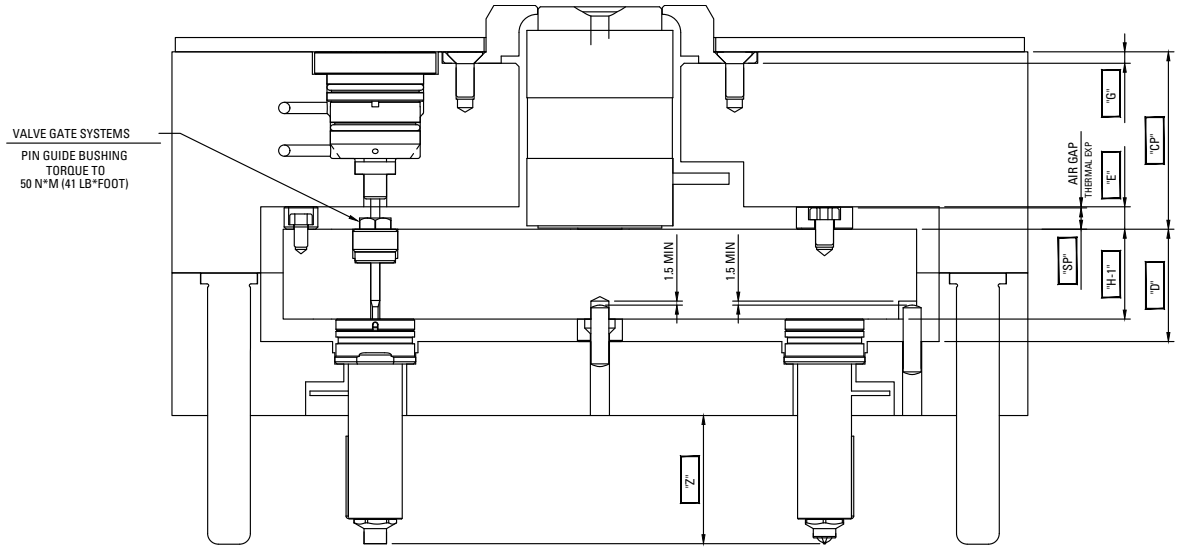


Figure 5

STEP 10: Check “E” Dimension

Check and record the dimension “E” from the center top surface of the manifold to the surface of the manifold pocket in the top clamp plate. Record this dimension as “E” on the Master Inspection Sheet on page 18 (Figure 5).

DME StellarONE

Assembly Guidelines

STEP 11: Size and Install Upper Support Pads

As in Step 5, size and install the upper support pads into the top side of the manifold. This dimension will be the "E" dimension minus air gap (cold clearance) specified on the system general assembly drawing. Record this as dimension "SP" (Figure 5) on the Master Inspection Sheet on page 18. If needed, size the upper support pads to dimension "SP" +0.00 to –0.025mm. Grind both sides of the support pads to ensure parallelism. (PLEASE NOTE: The support pads are manufactured from a non-magnetic material. Fabricate a fixture plate for the grinder.)

ONLY AFTER ALL FITTING AND MEASUREMENTS ARE RECORDED:

STEP 12: Install Nozzle Seal Rings

Remove the manifold from the nozzle / manifold plate.

Clean nozzle head seal ring counterbores and INSTALL SEAL RINGS in the nozzle heads. Carefully install the manifold back into position in the pocket of the nozzle / manifold plate without displacing the seal rings from their locations.

STEP 13: Install Manifold Power Wires

Review the wiring schematic to determine how many manifold heater circuits there will be and how they are to be identified by controller zone number.

Using the supplied wire and connectors, connect the wires to the manifold heater leads and route the wires to the electrical box. Before routing the wires through the wire channels, it is helpful to place a zone number label on the wires near the electrical box end.

STEP 14: Install Manifold Thermocouples

Review the wiring schematic to determine how many manifold T/C circuits there will be and how they are to be identified by controller zone number.

Using the supplied mounting hardware, fasten the thermocouple(s) to the respective location on the manifold. There are two wells for the manifold thermocouple probes. One is shallow for the top heater thermocouple, and one is deep for the bottom heater manifold:

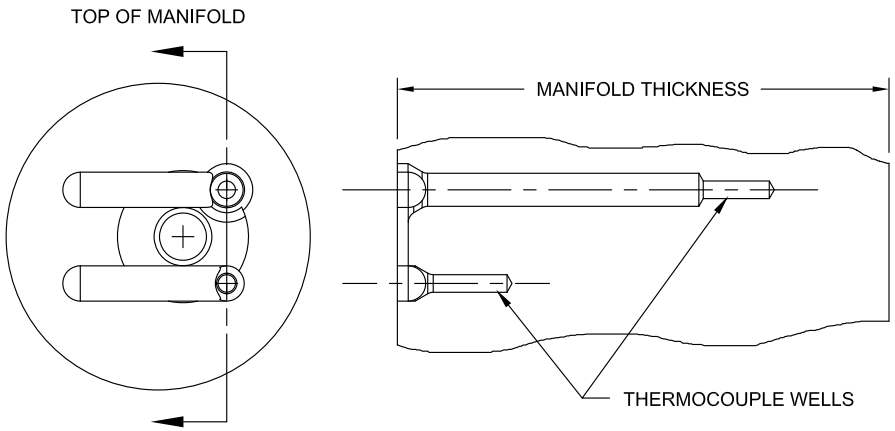


Figure 6

Route the wires to the electrical box. Before routing the wires through the wire channels, it is helpful to place a zone number label on the wires near the electrical box end.

DME StellarONE

Assembly Guidelines

STEP 15: Install the Inlet (Thermal Gate Systems)

Install the inlet in the top of the manifold per the assembly drawing, torquing the screws as defined on the general assembly drawing.

For StellarONE valve gate systems, the inlet is typically heated. Install the heated inlet per the assembly drawing, torquing the screws as defined on the general assembly drawing, and route the inlet heater power and thermocouple wires through the nozzle plate wire channels to the electrical terminal box.

STEP 16: Install the Drool Ring (Thermal Gate Systems)

If applicable, install the drool ring around the inlet per the general assembly drawing. The drool ring is not required and may or may not have been purchased with the system.

STEP 17: Install the VG Pin Guide Bushings (Valve Gate Systems)

Install valve gate guide bushings and retaining screws into the threaded holes in the top of the manifold. Torque pin guide bushing to 50 N*M (41 FT*LBS). See Figure 7 below.

STEP 18: Fasten Top Clamp Plate to the Nozzle / Manifold Plate

Test fit the top clamp plate to check for interference between the upper support pads and any manifold components or wiring. Measure the locating ring cut-off dimension depth “G” (Figure 7) and record. Carefully assemble the clamp plate to the nozzle / manifold plate. USE CAUTION to avoid pinching any of the system wiring. Refer to the system general assembly drawing to torque the assembly screws that hold the top clamp plate and nozzle / manifold plate together.

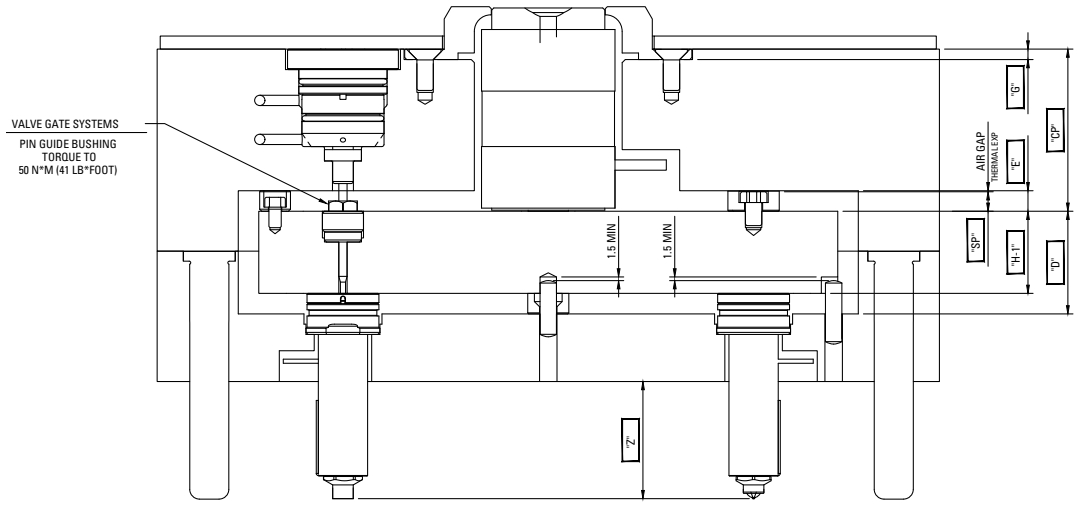


Figure 7

STEP 18a: Install Valve Gate Actuators (Valve Gate Systems)

Lubricate actuator body and cover o-rings with a quality o-ring lubricant. Install valve gate actuator in top clamp plate. Actuator cover bolts should be torqued to 13 N*M (9.6FT*LBS).

STEP 18b: Cut and Install Valve Pins (Valve Gate Systems)

Calculate the valve gate pin length per below taking thermal expansion into account. Cut the valve gate pin to cold length and grind the tip per the specification (Figure 8).

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Assembly Guidelines

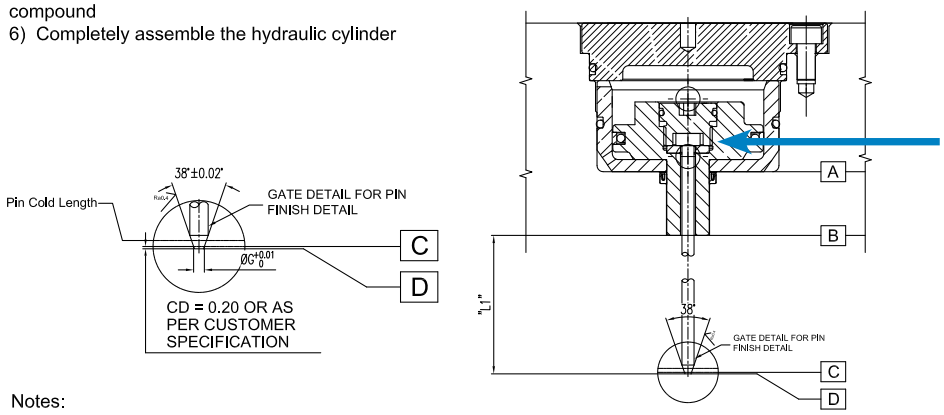
StellarONE VALVE PIN CUTTING and FINISHING

To simplify plate machining for the mold maker, the hydraulic unit is fitted to a separate hydraulic plate with simple cylindrical bores.

The following installation procedure must be followed:

1) Accurately measure the distance AC and BC.
2) Calculate heat expansion factor
   Fh = (processing temperature - mold temperature)°C*0.0000115
3) Calculate heat expansion of valve pin
   HE = distance BC * heat expansion factor = BC * Fh
4) The pin is cut to the calculated length "L"
   Valve pin total Length "L "= 12.6+AB+L1+CD-HE (for lengths <350mm)
   Valve pin total Length "L "= 12.6+AB+L1+CD-HE+0.2mm (for lengths >350mm)
5) The valve pin tip is then ground to an angle of 19° per side (38° inclusive)
6) The tip of the pin is lapped into the land using a lapping guide bushing or using the valve bushing as a lapping guide (do not permit the lapping paste to enter the valve bushing bore) using 400-600 grit lapping compound
6) Completely assemble the hydraulic cylinder

Figure 8



Notes:
1. Always install a hot runner system with the mold in the horizontal position
2. The viton o-rings used in this valve actuator unit are rated for a maximum continuous operating temperature of 205°C(400°F)
3. When using hydraulic actuation, maximum system pressure is 700 PSI (48 bar)
4. Always turn on plate cooling prior to heating the hot runner system. Should the O-rings be subjected to higher than rated temperatures, use appropriate gloves (PVC gloves) to avoid skin contact with the degraded O-ring

Once molding begins, the valve gate actuator tuning pad can be ground to make the final pin length adjustments if the gate vestige needs to be modified (blue arrow above)

STEP 19: Complete Nozzle Assembly and Installation

Rotate the hot half assembly so the nozzles face upward (Refer to figure 9).

1. If the nozzle tips / gate seals were installed in Step 1, remove them now
2. Install the nozzle body heaters by sliding them over the nozzle body. The power wire lead is to be toward the nozzle head.
3. Before routing the heater power wires through the wire channels in the nozzle / manifold plate, it is helpful to place a zone number label on the leads near the electrical connector box end.
4. Install the nozzle thermocouples (T/C). The nozzles T/C's are supplied as a straight probe. It is necessary to bend a small "hook" (3mm long) at the end of the probe, which will slide into the groove cut into the brass heater sleeve near the tip of the nozzle. The groove is in line with the heater power wires. Run the probe straight toward the nozzle head and bend the thermocouple lead wires so they exit away from the nozzle with the heater power wires. Install one or two (depending on nozzle length) nozzle T/C retention clips to hold the thermocouple probe in position, and close to the heater sleeve.

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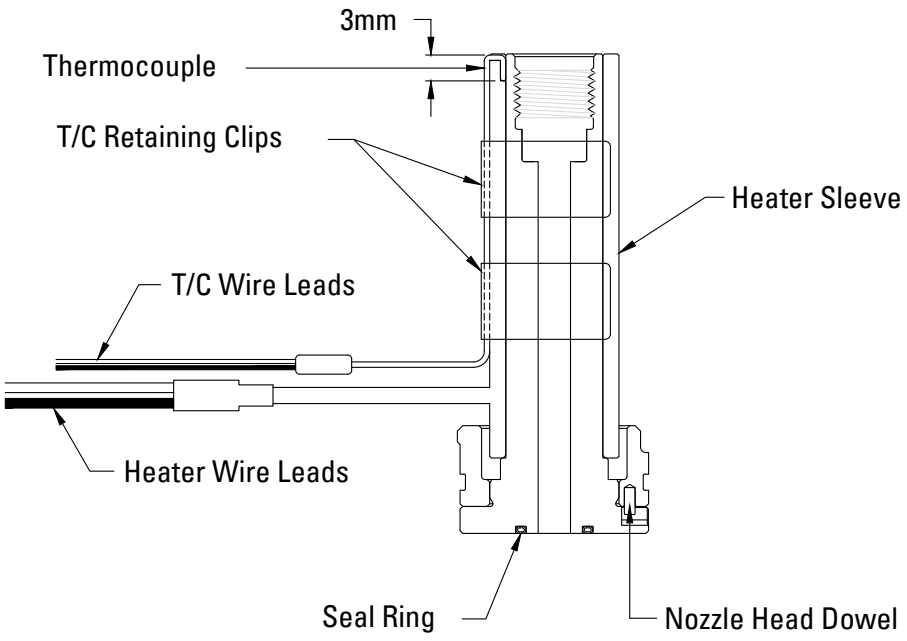
Assembly Guidelines

Figure 9



5. Before routing the T/C wires through the wire channels in the nozzle / manifold plate, it is helpful to place a zone number label on the leads near the electrical connector box end.
6. Install the nozzle tips / gate seals and torque per the table below.

NOTE: Per the general assembly drawing, apply a good quality high temperature anti-seize lubricant to the threads of the tip (or tip retainer) before final assembly

NOZZLE SERIES	RETAINER BODY THREAD	TORQUE - OPEN GATE	TORQUE - VALVE GATE
EcoONE-04	M8 x 1.0	30Nm (22.1 FT/LBS)	N/A
EcoONE-06	M14 x 1.5	35Nm (25.8 FT/LBS)	32Nm (23.6 FT/LBS)
EcoONE-08	M16 x 1.5	35Nm (25.8 FT/LBS)	32Nm (23.6 FT/LBS)
EcoONE-10	M18 x 1.5	35Nm (25.8 FT/LBS)	32Nm (23.6 FT/LBS)
EcoONE-12	M20 x 1.5	40Nm (29.5 FT/LBS)	38Nm (28.0 FT/LBS)
EcoONE-16	M24 x 2.0	40Nm (29.5 FT/LBS)	38Nm (28.0 FT/LBS)

7. Neatly route all heater power wires and T/C wires through the nozzle / manifold plate wire channels to the electrical connector box and terminate per the wiring diagram.

   If a heated inlet is installed, also be sure to route and terminate its heater and thermocouple wires as well as the manifold heaters and thermocouple wires.

   Do not pull wires tight around corners of the channel. It is also recommended to leave some service loop length on all wires in the electrical connector box to make future service easier.

STEP 20: Confirm Nozzle Length / "Z" Dimension

Check the "Z-1" dimension (Figure 10) to get the "Z" dimension (Figure 7) which is the sum of the dimension "Z-1" and the air gap. Record "Z" on the Master Inspection Sheet on page 18. THESE DIMENSIONS SHOULD FALL WITHIN ±0.025mm OF EACH OTHER.

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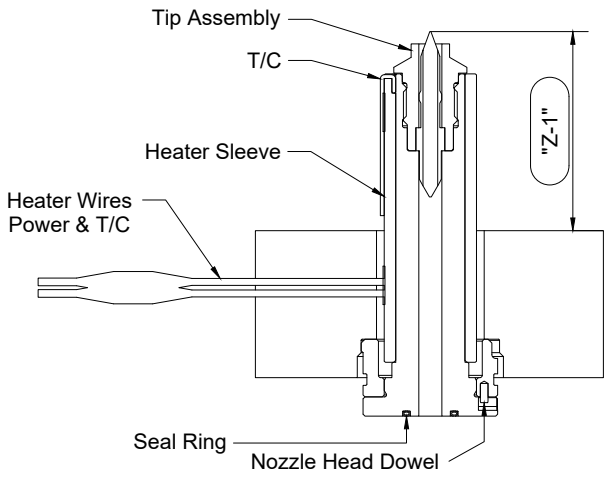
Manifold & Component Wiring Guidelines

Figure 10



STEP 21: Hot Half Final Assembly

1. Install all assembly screws and torque down as required per the general assembly drawings.
2. Re-check all wiring for continuity, check all power circuits for shorts to ground, prepare for power test of the hot half.

STEP 22: Power Test and Thermal Expansion Considerations

The initial power test of the hot runner heaters does not have to be performed at the processing temperature noted on the general assembly drawings. The heater and related thermocouple response should be verifiable at temperatures much lower than processing temperature (example 60°C / 150°F).

When the system is tested at the processing temperatures it was designed for, follow this hot runner start-up procedure to ensure thermal expansion happens in the correct order to properly set the nozzle seal rings. Improper start-up of any hot runner system is a common error, resulting in plastic leaks from scrape marks or scoring on the manifold. Be sure, particularly with a new system, to heat up the manifold first and allow it to expand, then turn on the nozzle zones. This will allow the nozzle heads to expand and contact the manifold after the manifold has already reached the necessary operating temperature and expanded to its operating size. Failure to do so could lead to burr creation between the manifold and one or more of the nozzle head surfaces. The EcoONE nozzles have seal rings between the manifold and nozzle head, making burr creation more likely if this procedure is not followed.

The EcoONE hot runner system was designed using a single melt temperature to calculate the expected average thermal expansion within the system. If a processing or mold cooling temperature is used that is significantly different than what was used when designing the hot runner system, the system thermal expansion may be less than or greater than what was originally calculated. It is the responsibility of the end-user/molder to use appropriate temperature settings. Refer to the general assembly drawing provided with the hot runner system.

Heat-up

1. Set the manifold system temperature controller zones to the correct processing/setpoint temperature for the material being molded (reference the general assembly drawing).

   Allow the manifold to soak for 20-30 minutes once setpoint temperature has been reached.

2. Set the nozzles and inlet heater (if equipped) controller zones to the correct processing/setpoint temperatures.

   Allow the nozzle and inlet (if heated) to soak for 5-10 minutes once setpoint temperature has been reached.

3. Check the nozzle tips/retainer (gate seal) torque to be sure it is still the value listed in the table of Step 19 above.

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Manifold & Component Wiring Guidelines

Ground Connection

A ground connection must exist between the hot runner system (mold base) and the temperature control system. This should be accomplished via the ground terminals of the mold power connector and mold power cable (which should contain a ground wire) connectors.

TO PREVENT ELECTRICAL SHOCK AND ENSURE PERSONAL SAFETY, THE GROUNDING WIRE SHOULD BE CONNECTED TO THE MOLD BASE OR THE TERMINAL BOX ITSELF.

Power and Thermocouple Connector Placement

Do not place the mold's power or thermocouple plugs in any area where they will be exposed to extreme temperature or humidity.

Confirm Zone Numbering with Respect to Cavity Numbers

Wire Channels

Use wire channels to ensure that wiring for nozzle and manifold (including thermocouples) is routed away from the manifold. Use retainer clips to hold the wiring in the channels to prevent wires from being cut or pinched during final assembly.

Recheck Resistances of Heaters and T/Cs

Compare to previous results. If values are different, troubleshoot the system. Record these values on the Master Inspection Sheet on page 18, and compare to those values provided on the general assembly drawing.

Adding Additional Wire to Nozzle Heater Leads

If additional lead length is required, use the same type and size of wire. Make the extension connection with a high temperature (non-insulated) butt connector and cover with a high-temperature insulating tape or similar material. Be sure to test all connections before final assembly.

Adding Additional Wire to Thermocouple Leads

If additional lead length is required, use only type "J" thermocouple wire. Color code is:

ANSI: Positive [+] white, Negative [–] red

IEC: Positive [+] black, Negative [–] white

Thermocouple extension should be of the lowest resistance possible, preferably silver solder or clean butt connector, and covered with a high-temperature insulating tape, or similar material.

NOTE: When multiple heaters are ganged together (parallel wired) to minimize the required number of control zones, only one pair of thermocouple wires per ganged set of heaters can be connected to the corresponding controller zone. Run other thermocouple leads into the electrical box, insulating and identifying each for use as spares if required at a later date.

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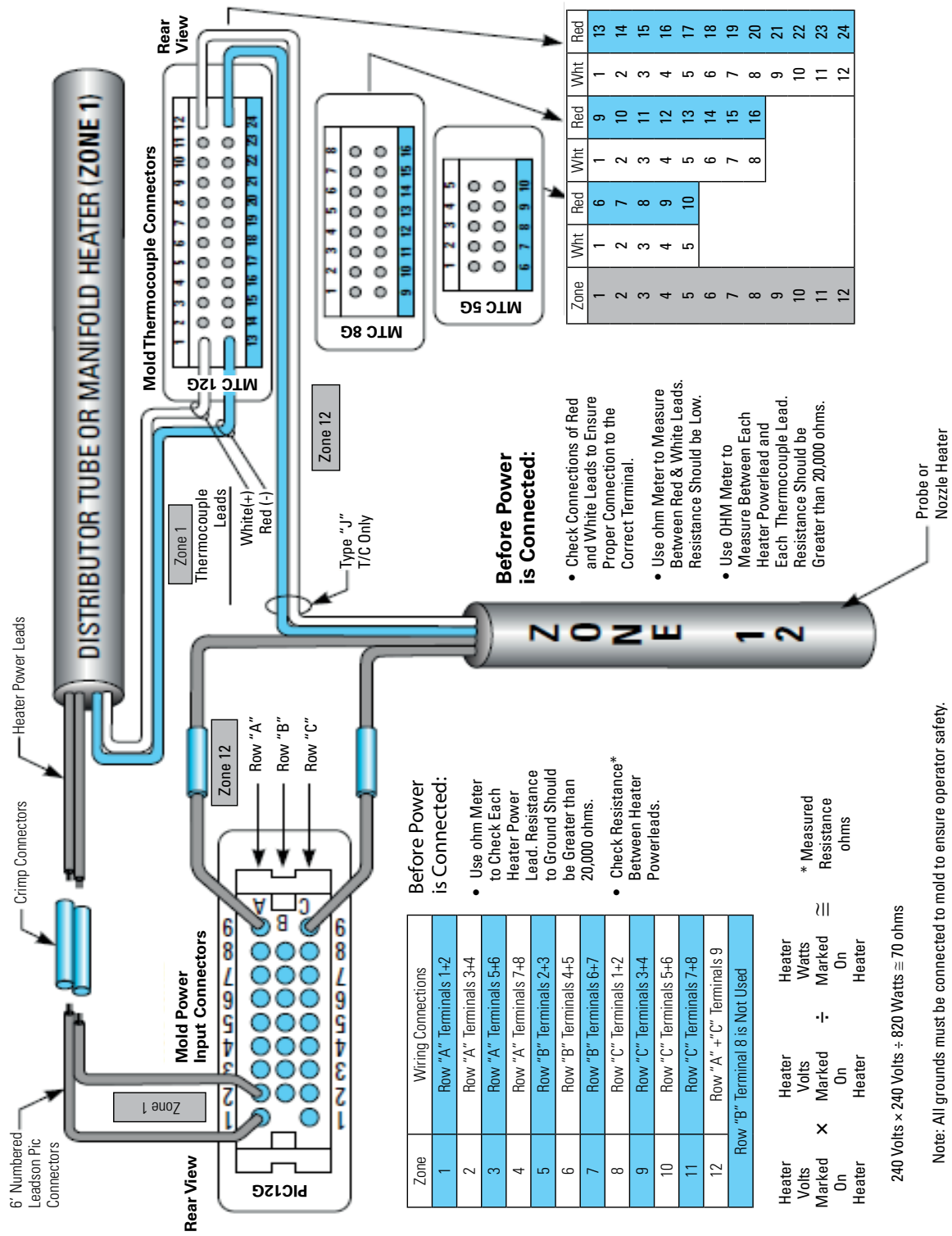
Wiring Diagram

Wiring Diagram for the DME Hot Runner System & Smart Series®/G-Series Mold Connectors



Zone	Wht	Red	Wht	Red	Wht	Red
1	1	6	1	9	1	13
2	2	7	2	10	2	14
3	3	8	3	11	3	15
4	4	9	4	12	4	16
5	5	10	5	13	5	17
6			6	14	6	18
7			7	15	7	19
8			8	16	8	20
9					9	21
10					10	22
11					11	23
12					12	24

Zone	Wiring Connections
1	Row "A" Terminals 1+2
2	Row "A" Terminals 3+4
3	Row "A" Terminals 5+6
4	Row "A" Terminals 7+8
5	Row "B" Terminals 2+3
6	Row "B" Terminals 4+5
7	Row "B" Terminals 6+7
8	Row "C" Terminals 1+2
9	Row "C" Terminals 3+4
10	Row "C" Terminals 5+6
11	Row "C" Terminals 7+8
12	Row "A" +"C" Terminals 9
	Row "B" Terminal 8 is Not Used

Heater Volts Marked On Heater × Heater Volts Marked On Heater ÷ Heater Watts Marked On Heater ≅ * Measured Resistance ohms

240 Volts × 240 Volts ÷ 820 Watts ≅ 70 ohms

Note: All grounds must be connected to mold to ensure operator safety.

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General System Start-up Guidelines

1) When the hot runner system has reached set point and is normalized, the temperature controller should indicate no deviation between set point and process temperatures.
2) Make sure that the machine nozzle orifice is as large as, but not larger than, the nozzle seat orifice on the manifold. This will allow maximum throughput to the hot runner system and the mold cavities.
3) Be certain that the nozzle radius on the machine barrel matches the nozzle seat radius on the inlet to prevent drooling. This should ensure a leak-proof seal.
4) Purge the barrel to ensure stable material enters the manifold.
5) Move the machine nozzle into position against the manifold nozzle seat / inlet

Manifold Filling Procedures

6) Ensure that the machine's nozzle tip is properly seated on the manifold nozzle seat / inlet.
7) Set machine back pressure to 300 – 500 psi.
8) Run the extruder until material flows through all nozzle orifices (gates). Run for an additional 5 –15 seconds. Clear the gates and all mold surfaces of material. If the machine nozzle will not stay against the tool, see "Notes & General Comments" below.
9) Move the sled back and decrease back pressure to normal setting.
10) Set decompression / suck back at a minimum 12mm to control drool.
11) Set molding parameters.
12) Move sled forward.
13) Start the molding process.
14) Check the system for leaks.

Notes & General Comments

- If the system will not start up, reduce or shut off water to the "A" plate. Water to the nozzle plate should remain on.
- If the machine will not extrude with the tool open, close the tool, jog the screw forward, open the tool, close the tool, and jog the screw forward again.
- If the machine nozzle will not stay against nozzle seat, PROCEED WITH CAUTION. Set injection forward pressure to 200 psi. Set injection speed to slow, making sure the system is up to temperature. Move the sled into the tool and cautiously jog injection forward until material flows through gates. If necessary, raise the injection pressure in steps up to, but not exceeding, 500 psi. Clear gates and all mold surfaces of material. Finally, start the molding process.

Note: Never inject plastic through the hot runner system with the mold open.

System Start-Up Guidelines – Cautions

- Be sure operating personnel wear proper safety equipment such as gloves and face shield at all times.
- Never use a torch to open frozen-off gates. This may damage tips, gate detail, or the mold itself.
- If a tool is inserted into the gate or tip to clear it, first back the machine nozzle away from the tool. Check for drool out of the back of the manifold before starting. Drool at this location will indicate little or no pressure in the manifold.
- Never inject any hot runner system with high injection pressure when the mold is open.
- During the first 15 minutes of operation, check system for leaks. Loss of shot size could be an indication of leakage.
- Input voltage to the temperature control system must not be less than 208 VAC.
- Voltages less than 240 VAC will require an extended time to bring the system up to its proper operating temperature. Lower voltages decrease effective wattage. For example: at 208 VAC, the effective wattage is 28% less than that at 240 VAC.

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Master Inspection Sheet

Master Inspection Sheet for the DME Manifold & Components System

Once this form is completed, please email to DME_Appl_Eng@DME.net

Drops	Nozzle Dimensions					Heater & Thermocouple (T/C) ohm Measurement:	
	A	B	C	D**	Z	Heater	T/C
Nozzle #1							
Nozzle #2							
Nozzle #3							
Nozzle #4							
Nozzle #5							
Nozzle #6							
Nozzle #7							
Nozzle #8							
Nozzle #9							
Nozzle #10							
Nozzle #11							
Nozzle #12							
Nozzle #13							
Nozzle #14							
Nozzle #15							
Nozzle #16							

Head Height* * Average "C" plus "H–1" dimension*

Assembly Date	DME Quote No.	Assembled By	
Manifold "H-1" Thickness		Center Support Height	
Dimension "E"		Dimension "SP"	
Locating Ring Cut-Off Dimension "G"			

NOTES:

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, 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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