



29111 Stephenson Hwy.  
Madison Heights, MI 48071 USA  
800-626-6653

## 375 Series Front Load Heaters

### Square Coil & Slip-On High Performance

#### INSTALLATION INSTRUCTIONS

#### NOTES

Dimensions are in inches.

The expansion factor must be taken into consideration prior to machining for and installing nozzle. This factor (BE) must then be added to the nominal "A" dimension.

Formula for determining this expansion:

$$BE = "A" \text{ dimension} \times 0.00000633 \times \text{nozzle setpoint} - 68^\circ \text{ F.}$$

Example:

Given a 2.500 inch "A" dimension, with a nozzle setpoint temperature of 500°F.

$$BE = 2.500 \times 0.00000633 \times (500 - 68) = 0.0068$$

thus "A" + BE will be 2.5068.

Please note that the above information is given as an example. Variations may occur based on mold configuration and cooling factor. In some instances it may be necessary to obtain an empirical factor.

#### OPERATING PROCEDURE

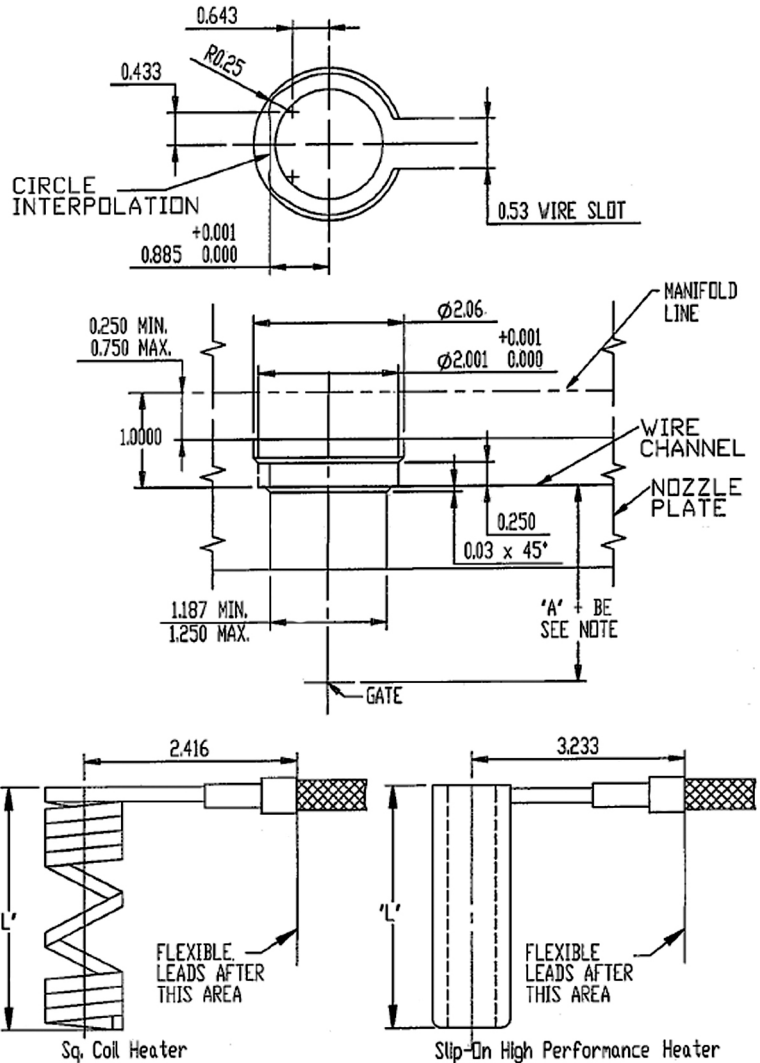
The nozzles are supplied with a Slip-On High Performance Heater or a Square (Flat) Coil Heater both with a J-Type thermocouple.

It is recommended to use a DME closed loop Temperature Controller for optimum temperature control with StepSmart® or SmartStep®. these systems will allow heater to dissipate any moisture and then change automatically to set point. It is essential to use controllers with the proper voltage and wattage capabilities. The voltage and wattage of each heater is clearly marked on the heater tag.

#### DISASSEMBLY PROCEDURE

1. The nozzle has been designed to have the tip removed in the press. See Recommendations and Guidelines Note 3 for keying nozzle to keep from rotating.
2. Careful attention should be taken to the heater/thermocouple leads as damage could occur when working on nozzle assembly.
3. For removal of tip from nozzle, a six point deep well socket is recommended. The nozzle must be at processing temperature and the heater should be turned off when removing tip counter-clockwise from the nozzle.
4. For removal of heater see Recommendations and guidelines Notes 4 & 6.

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#### ASSEMBLY PROCEDURE

1. Tip and nozzle threaded area must be clean of any material before reassembling.
2. Apply anti-seize compound on the tip threads.
3. Firmly screw the tip into the shank of the nozzle body. Tighten and untighten two or three times making sure there is a good contact between the tip and the nozzle. Torque the tip into the nozzle using 30 +/- 5 ft. lbs. For protection of the tip, a six point well socket is recommended.
4. For assembly of heater see Recommendations and Guidelines Notes 3 & 5.
5. Seal ring for nozzle body must be replaced each time the nozzle body and/or manifold are removed to ensure seal-off.
6. Wait a minimum of 5 minutes after set point has been achieved for sufficient heat to transfer into the tip before molding.



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"A"	Sub Assy #	Nozzle Body #	Heater #	Wattage	"L"
2.000	CIA1008-S	CIB1366	CIH0088-S	400	2.19
	EHA1008		SCH0088		
2.500	CIA1009-S	CIB1367	CIH0089-S	450	2.69
	EHA1009		SCH0089		
3.000	CIA1010-S	CIB1368	CIH0090-S	550	3.19
	EHA1010		SCH0090		
3.500	CIA1011-S	CIB1369	CIH0091-S	700	3.69
	EHA1011		SCH0091		
4.000	CIA1012-S	CIB1370	CIH0092-S	800	4.19
	EHA1012		SCH0092		
5.000	CIA1013-S	CIB1371	CIH0093-S	900	5.19
	EHA1013		SCH0093		
6.000	CIA1014-S	CIB1372	CIH0094-S	1000	6.19
	EHA1014		SCH0094		
7.000	CIA1015-S	CIB1373	CIH0095-S	1100	7.19
	EHA0015		SCH0095		

#### IMPORTANT SAFETY INFORMATION — DANGER —

A hot runner system includes electrical elements and may contain molten plastic at elevated temperatures and pressure.

- To avoid injury, exercise caution by reading these instructions before servicing or operating the system.
- The instructions MUST be passed on to the end-user where they must be read before using this product. Failure to do so can result in serious injury or death.

#### STORED ENERGY & HIGH TEMPERATURE HAZARDS

Failure to comply can result in serious injury or death.

This product maintains molten plastic at high-pressure. Use caution when operating and servicing the system.

Physical contact with molten plastic may result in severe burns. Proper protective equipment, including eye protection, must be worn.

This product has heated surfaces. Use caution when operating and servicing the system to avoid severe burns. Proper protective equipment should be worn.

#### ELECTRICAL HAZARDS — WARNING —

Failure to comply will result in serious injury or death.

Improper voltage or grounding can result in electrical shock.

Use only with proper voltage and proper earth grounding.

To avoid electrical shock, do not operate product when wet.

Do not operate this equipment with covers or panels removed.

To avoid electrical shock, turn off the main power disconnect and lockout/tag-out before servicing this device. Do not connect temperature sensors to electrical power. It will damage the product and could cause fire, severe injuries or death.

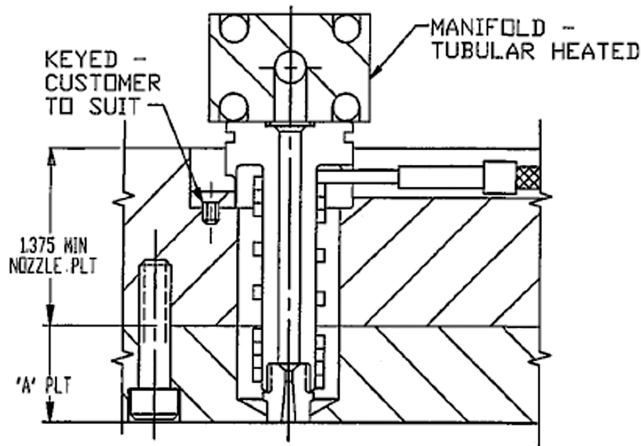
If green ground wire present, wire must be connected to the ground. Do not rebend rigid leads. Rebending leads might result in damage to the circuit. Product might absorb moisture when cool. Use low voltage or power to drive out residual moisture before applying full power. Failure to do so may cause damage to this product.



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## 375 Series Front Load Heaters Square Coil & Slip-On High Performance INSTALLATION INSTRUCTIONS

### SECTION SHOWING NOZZLE BODY KEYED FOR REAR LOAD SQ. COIL AND SLIP-ON HIGH PERFORMANCE HEATERS



For the selection of tips and gate diameters it is important to take into consideration the materials flow characteristic, shear rate of resin, molding conditions, fill time requirements, gate vestige, wall thickness and configuration of part to be molded. Situations requiring high injection velocities must be considered when selecting small gate diameters. High injection rates may require larger gates due to shear heat build-up (eg. high weight/thin wall applications). see material manufacturer literature for further information regarding the molding material.

### RECOMMENDATIONS & GUIDELINES

- 1.) The nozzle head must be held in such a manner to keep it from rotating upon installation of the tip assembly. This may be done by making a key for the head to match flat on the nozzle's head or by circle interpolation.
- 2) Nozzle plate must be designed so that the heads of the socket head cap screws are exposed when the mold is split on the parting line.

### Rear Load Square Coil Heaters

- 3.) Before the nozzle has been located and positioned in the nozzle plate, the heater can be installed on the nozzle body as follows:
  - a. Place the heater within the square coil heater wrench (provided with replacement heater).
  - b. Slip heater over nozzle body, aligning lead end of heater into slot in nozzle body head.
  - c. Remove square coil heater wrench from heater.
- 4.) To remove rear-load, square coil heaters reverse the procedure described in Note 3 above.

### Slip-On Rear Load High Performance Heaters

- 5.) Before the nozzle has been located and positioned in the nozzle plate the heater can be installed on the nozzle body as follows:
  - a. Slide heater (lead end toward nozzle head) onto nozzle body.
  - b. Align leads within center of wire channel.
  - c. Snap end of heater onto nozzle body.

### All Heaters

- 6.) To remove a rear-load slip-on high performance heater, reverse the procedure described above in Note 5.
- 7.) The power and thermocouple leads may be spliced in the wiring channel for ease of heater replacement. Leads may be spliced using Thomas & Betts PA plastic insulated disconnects.  
Male Catalog Number: 18RA-25IT      Female Catalog Number: 18RA-2577
- 8.) Secure wires in nozzle plate wire channel with DME wire covers.

### WIRING INFORMATION

Heaters are supplied with 2" prestripped 36' long leads. Heaters are 240 VAC.  
(2) power leads are MultiColor,  
(1) ground lead is GREEN.  
Thermocouple is 'J' Type and supplied with 36" leads.  
(1) T/C lead is WHITE and negative (-)  
constantin (non-magnetic)  
(1) T/C lead is BLACK and positive (+)  
iron (magnetic),

Note1: Thermocouple color code described above follows international IEC 584-3 convention.  
Thermocouple is 'J' type, The white (negative) wire used in IEC 584-3 convention is REVERSE of the white (positive). wire used in ASTM E230 (white = positive, red = negative) convention.