



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

250 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

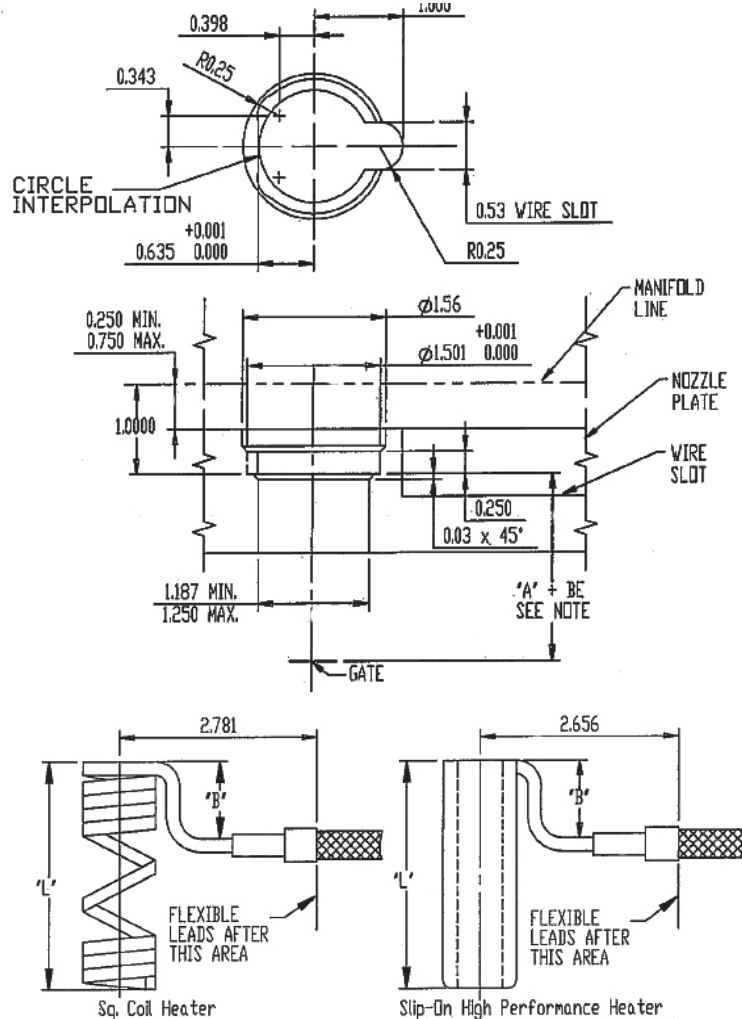
The nozzles are supplied with a Slip-On High Performance Heater or a Square (Flat) Coil Heater both with a J-Type thermocouple.

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 31 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 3,4 & 6.

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ASSEMBLY PROCEDURE

1. Tip and nozzle threaded area must be clean of any material before reassembling.
2. Apply anti-sieze compound on the tip threads.
3. Firmly screw the tip into the shank of the nozzle. 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	"B"	"L"
2.000	CIA1001-S	CIB1359	CIH1081-S	440	0.875	2.06
	EHA1001		SCH1081	300		
	EHA2001		SCH2081		1.375	
2.500	CIA1002-S	CIB1360	CIH1082-S	350	0.875	2.56
	EHA1002		SCH1082		1.375	
	EHA2002		SCH2082			
3.000	CIA1003-S	CIB1361	CIH1083-S	400	0.875	3.06
	EHA1003		SCH1083		1.375	
	EHA2003		SCH2083			
3.500	CIA1004-S	CIB1362	CIH1084-S	565	0.875	3.56
	EHA1004		SCH1084	425		
	EHA2004		SCH2084		1.375	
4.000	CIA1005-S	CIB1363	CIH1085-S	500	0.875	4.06
	EHA1005		SCH1085		1.375	
	EHA2005		SCH2085			
5.000	CIA1006-S	CIB1364	CIH1086-S	500	0.875	5.06
	EHA1006		SCH1096		1.375	
	EHA2006		SCH2086			
6.000	CIA1007-S	CIB1365	CIH1087-S	550	0.875	6.06
	EHA1007		SCH1087		1.375	
	EHA2007		SCH2087			

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.



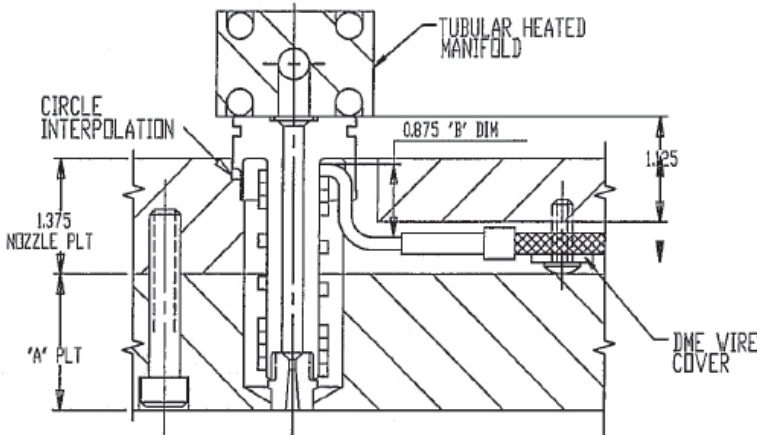
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250 Series Front Load Heaters

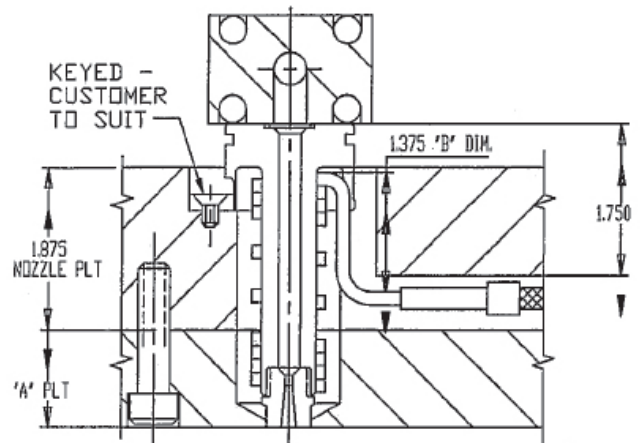
Square Coil & Slip-On High Performance

INSTALLATION INSTRUCTIONS

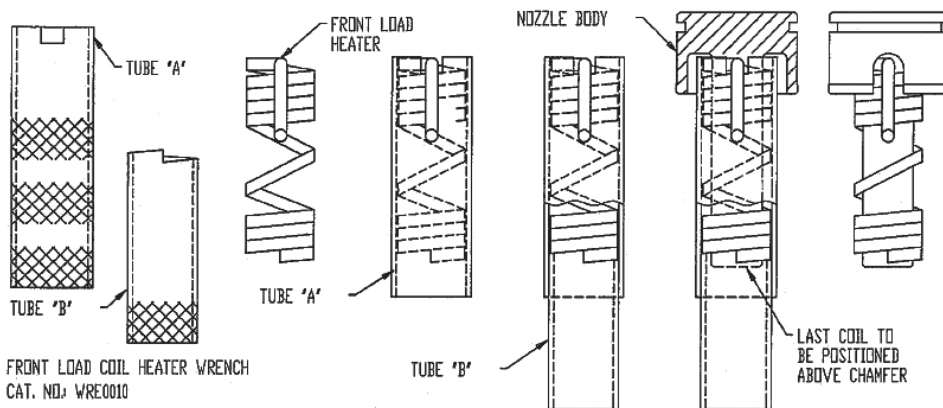
SECTION SHOWING WIRE SLOT FOR 1.375 NOZZLE PLATE FOR FRONT LOAD SCH1xxx SQ. COIL AND SLIP-ON HIGH PERFORMANCE HEATERS ONLY



SECTION SHOWING NOZZLE BODY KEYED AND WIRE SLOT FOR 1.875 NOZZLE PLATE FOR FRONT LOAD SCH2xxx SQ. COIL HEATERS ONLY



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.



WIRING INFORMATION

Square Coil 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.

RECOMMENDATIONS & GUIDELINES

1.) The nozzle head must be held in the 1.375 or 1.875 nozzle plate in such a manner to keep it from rotating upon installation of tip assembly. This may be done by molding a key for the head to match the flat on the nozzle's head or by circle interpolation.

Front Load Square Coil Heaters

2.) After the nozzle has been located and positioned in the nozzle plate with manifold secured in place and "A" plate removed, the heater can be installed on the nozzle body as follows:

- Place heater within tube "A" so that the bending exit lead lies within the slot of the tube.
- Insert tube "B" with the angle cut within tube "A" so that the angle of the tube mates with the last coil of the heater.
- Rotate tube "A" counterclockwise while at the same time rotate tube "B" clockwise. This action will spring open the coils enough to slide the heater onto the shaft of the nozzle body.
- Slide the heater onto the nozzle body shaft aligning the heater exit lead within the relief slot in the nozzle head.
- Position heater so that the end of the last coil is above the chamfer.

3.) To remove a Front-Load Square Coil Heater, reverse the procedure described in Note 3 above.

Slip-On Front Load High Performance Heaters

4.) After the nozzle has been located and positioned in the nozzle plate with the manifold secured in place and "A" plate removed, the heater can be installed on the nozzle body as follows:

- Slide heater (lead end toward nozzle head) onto nozzle body.
- Align leads within center of wire channel.
- Snap end of heater onto nozzle body.

5.) To remove Front-Load, Slip-On High Performance Heater, reverse the procedure described in Note 4.

All Heaters

6.) 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

7.) Secure wires in wire channel with DME Wire Covers before assembling "A" plate to mold.