

375 SERIES FRONT LOAD HEATERS SQUARE COIL & SLIP-ON HIGH PERFORMANCE
INSTALLATION DATA

NOTE: Dimensions are in Inches

NOTE: 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 is as follows:

$$BE = 'A' \text{ dimension} \times 0.0000633 \times (\text{nozzle setpoint} - 68^\circ \text{ F}).$$

EXAMPLE: Given a 2.500 Inch 'A' dimension, with a nozzle setpoint temperature of 500° F.

$$BE = 2.500 \times 0.0000633 \times (500 - 68) = 0.0068$$

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.

'A'	SUB-ASS'Y CAT.NO.	NOZZLE BODY CAT.NO.	HEATER CAT.NO.	WATTAGE	'B'	'L'
2.000	CIA1008-S	CIB1366	CIH1088-S	400	0.875	2.19
	EHA1008		SCH1088			
	EHA2008		SCH2088			
2.500	CIA1009-S	CIB1367	CIH1089-S	450	0.875	2.69
	EHA1009		SCH1089			
	EHA2009		SCH2089			
3.000	CIA1010-S	CIB1368	CIH1090-S	550	0.875	3.19
	EHA1010		SCH1090			
	EHA2010		SCH2090			
3.500	CIA1011-S	CIB1369	CIH1091-S	700	0.875	3.69
	EHA1011		SCH1091			
	EHA2011		SCH2091			
4.000	CIA1012-S	CIB1370	CIH1092-S	800	0.875	4.19
	EHA1012		SCH1092			
	EHA2012		SCH2092			
5.000	CIA1013-S	CIB1371	CIH1093-S	900	0.875	5.19
	EHA1013		SCH1093			
	EHA2013		SCH2093			
6.000	CIA1014-S	CIB1372	CIH1094-S	1000	0.875	6.19
	EHA1014		SCH1094			
	EHA2014		SCH2094			
7.000	CIA1015-S	CIB1373	CIH1095-S	1100	0.875	7.19
	EHA1015		SCH1095			
	EHA2015		SCH2095			

OPERATING PROCEDURE

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

It is recommended to use a DME closed loop Temperature Controller for optimum Temperature Control with Step Smart® or Smart Step®. 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. Step Smart®, Smart Start® and DME® are all registered trademarks of DME Company.

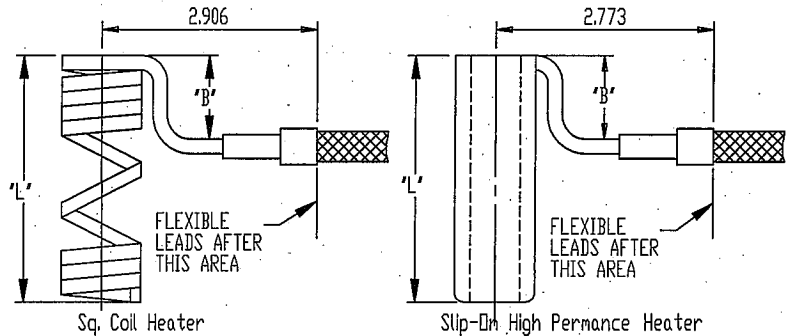
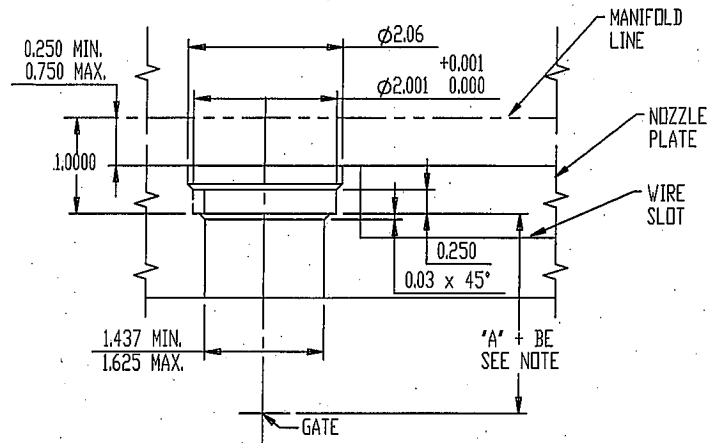
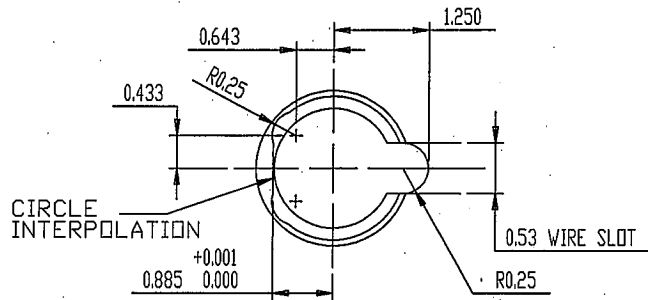
DISASSEMBLY PROCEDURE

- Nozzle has been designed to have the tip removed in the press. See Recommendations and Guidelines Note # 1 for keying nozzle to keep from rotating.
- Careful attention should be taken to the heater / thermocouple leads as damage could occur when working on nozzle assembly.
- 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.
- For removal of heater see Recommendations and Guidelines Note # 4 & 6.

ASSEMBLY PROCEDURE

- Tip and nozzle threaded area must be clean of any material before reassembling.
- Apply an anti-seize compound on the tip threads.
- 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 deep well socket is recommended.
- For assembly of heater see Recommendations and Guidelines Note # 3 & 5.
- Seal ring for nozzle body must be relaced each time nozzle body and/or manifold are removed to ensure seal-off.
- 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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IMPORTANT SAFETY INFORMATION

A hot-runner system includes electrical elements and may contain molten plastic at elevated temperature and pressure. To avoid injury, exercise caution by reading these instructions before servicing or operating the system.

These instructions must be passed on to the end user where they should be read before using this product. Failure to do so can result in serious injury or death.



Failure to comply will result in serious injury or death:

ELECTRICAL HAZARDS

Improper voltages or grounding can result in electrical shock. Use only with proper voltage and a proper earth ground.
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 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 it could cause fire, severe injuries or even 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 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.



Failure to comply can result in serious injury or death:

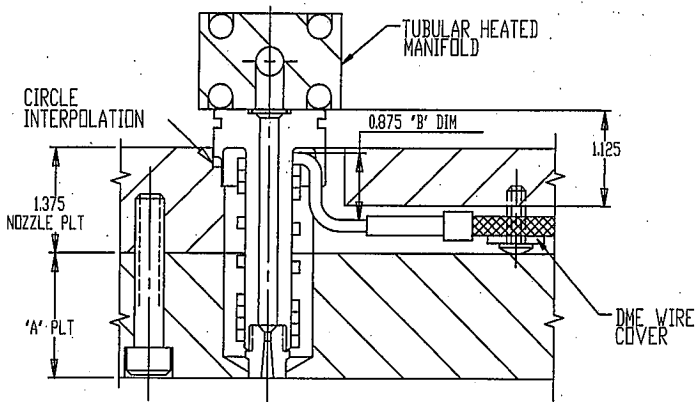
STORED ENERGY AND HIGH TEMPERATURE HAZARDS

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.

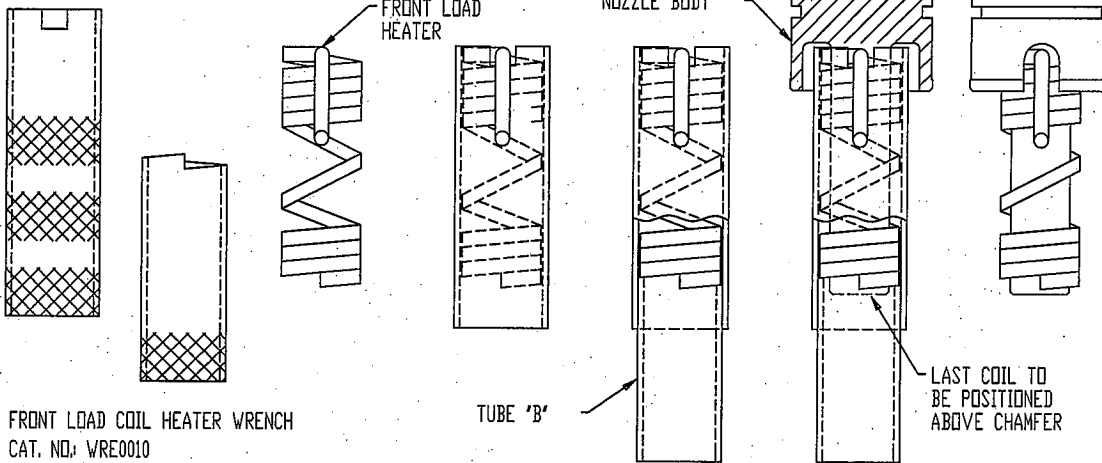
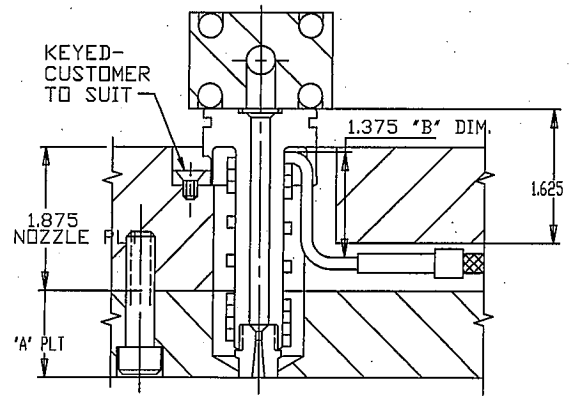
DME
Every step of the way

375 SERIES FRONT LOAD HEATERS SQUARE COIL & SLIP-ON HIGH PERFORMANCE
INSTALLATION DATA

SECTION SHOWING WIRE SLOT FOR 1.375 "A" 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 "A" PLATE FOR FRONT
LOAD SCH2xxx SQ. COIL HEATERS ONLY



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.
Thermocouple is supplied with 36' leads.

- 1 T/C lead is WHITE and negative (-) constantan (non-magnetic).
- 1 T/C lead is BLACK and positive (+) iron (magnetic).

Note:

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.

For 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 (e.g. high weight thin wall applications). See material manufacturer's literature for further information regarding material to be molded.

RECOMMENDATIONS AND GUIDELINES

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

Front Load Square Coil Heaters

3. 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:
 - a. Place heater within Tube 'A' so that the bending exit leads lies within the slot of the tube.
 - b. Insert Tube 'B' with the angle cut within Tube 'A' so that the angle of tube mates with the last coil of the heater.
 - c. 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.
 - d. Slide the heater onto the nozzle body shaft aligning the heater exit lead within the relief slot of the nozzle's head.
 - e. Position heater so that the end of the last coil is above the chamfer.
4. To remove a Front-Load Sq. Coil Heater reverse the procedure described in Recommendations and Guidelines Note # 3.

Slip-On Front-Load Cast-In Heaters

5. 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:
 - a. Slide the heater (lead end toward nozzle head) onto nozzle body.
 - b. Align leads within center of wire channel of nozzle body.
 - c. Snap end of heater onto nozzle body.
6. To remove a Front-Load, Slip-On High Performance Heater, reverse the procedure described in Recommendations and Guidelines Note # 5.

All heaters

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 Cat. No: 18RA-251T
Female Cat. No: 18RA-2577
8. Secure wires in wire channel with DME Wire Covers before assembling 'A' plate to mold.