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" dimension x 0.00000633 x (nozzle setpoint - 68°F).
EXAMPLE: Given a 2.500 Inch "A" dimension, with a nozzle setpoint temperature of 500°F.
BE = 2.500 x 0.00000633 x (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 Square (Flat) Coil Heater equipped with Type J thermocouple. It is recommended to use a D-M-E closed loop Temperature Controller for optimum Temperature Control.

When starting the nozzle, set the temperature to 10% voltage if using in open loop controller for optimum temperature control. In either case this procedure will allow the heater to dissipate any moisture. Be certain to maintain this start-up setting for 15 minutes.

Controller equipped with Step Smart®, Smart Step® or other heater warm-up circuitry will change automatically.

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

1. Nozzle has been designed to have the tip removed in the press. See recommendations and guidelines Note #2 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 recommendations and guidelines Note #4.

### Assembly Procedure

1. Tip and nozzle threaded area must be clean of any material before reassembly.
2. Apply an 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 deep well socket is recommended.
4. For removal of heater recommendations and guidelines Note #4.
**INSTALLATION DATA**

375 SERIES FRONT LOAD HEATER

---

**RECOMMENDATIONS AND GUIDELINES**

1. Front Load Coil Heaters are designed to be used with 375 Series Nozzles.

2. The nozzle head must be held in such a manner to keep it from rotating upon installation of the Front Load Heater. This may be done by making a key for the head to match the flat on the nozzle's head or by circle interpolation.

3. 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.

4. 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 lead lies within the slot of the tube.
   b. Insert Tube "B" with angle cut within Tube "A" so that the angle of the 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 in the nozzle's head.
   e. Position heater so that the end of the last coil is above the chamfer.

5. The power and thermocouple leads may be spliced in the wiring channel for ease of heater replacement. Leads may be spliced using Thomas & Betts nylon insulated disconnects.

- **Male Cat. No.**: 18RA-251T
- **Female Cat. No.**: 18RA-2577


---

**WIRING INFORMATION**

Square Coil Heaters are supplied with 2" prestripped 36" long leads. Heaters are 240 VAC. 2 power leads are Multi Color. 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).