



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

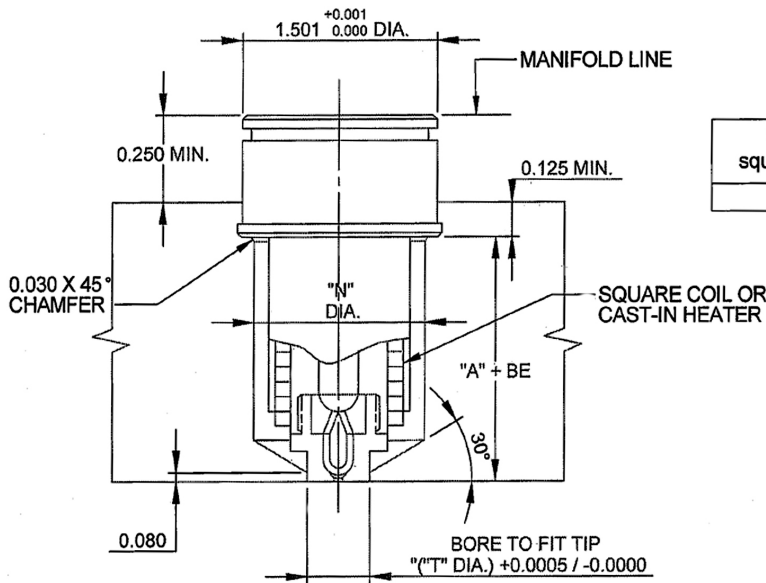
250 Series Ring Gate Nozzle

INSTALLATION DATA
Refer to mini print #1800

NOTE:

Dimensions shown in inches.

Before installing a Ring Gate Nozzle it is important to take the nozzle's expansion factor into consideration. For best results, please follow the information below.



MACHINING DETAILS

"N" Dia. (max.) square coil or cast-In	"N" Dia. (min.) square coil or cast-In
1.250	1.187

Ring Gate Tip Sub-Assembly		
Catalog No.	"O" Dia.	"T" Dia.
EHT0001	0.060	0.375
EHT0002	0.080	0.375
EHT0003	0.060	0.500

Note: Nozzle Assembly requires Nozzle Sub-assembly and Tip-assembly.

For selection of gate diameter it is important to take into consideration the materials flow characteristics, 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 manufacturers literature for further information regarding material to be molded.

To compensate for the nozzle's growth when heat is applied, the linear expansion of the nozzle (BE) at a given temperature must be added to the nominal dimension "A". The position of the needle will now be flush or slightly protruding thru the gate. The formula below shows how to figure boring depth (dimension "A" + BE). The tip of the nozzle will now be flush with cavity line.

Formula for determining this expansion factor is as follows:

$$BE = "A" \text{ dimension} \times 0.00000633 \times (\text{Nozzle set point temperature} - 68^{\circ}\text{F}).$$

EXAMPLE: Given a 3 inch "A" dimension, with a nozzle set point temperature of 500° F:

$$BE = 3 \times 0.00000633 \times (500 - 68) = 0.008 \text{ Thus "A" + BE will be } 3.008$$

Note: The above information is only given as an example. variations may occur based on mold configurations and cooling factor.

In some instances it may be necessary to obtain an empirical factor.

WIRING INFORMATION

Square Coil Heaters and Cast-In 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 (+) n (magnetic).

Nozzle Sub-Assy Catalog #		"A" Dim. for Nozzle Ass'y
Sq. Coil Htr.	Cast-In Htr.	
EHA0001	CIA0001	2.000
EHA0002	CIA0002	2.500
EHA0003	CIA0003	3.000
EHA0004	CIA0004	3.500
EHA0005	CIA0005	4.000
EHA0006	CIA0006	5.000
EHA0007	CIA0007	6.000

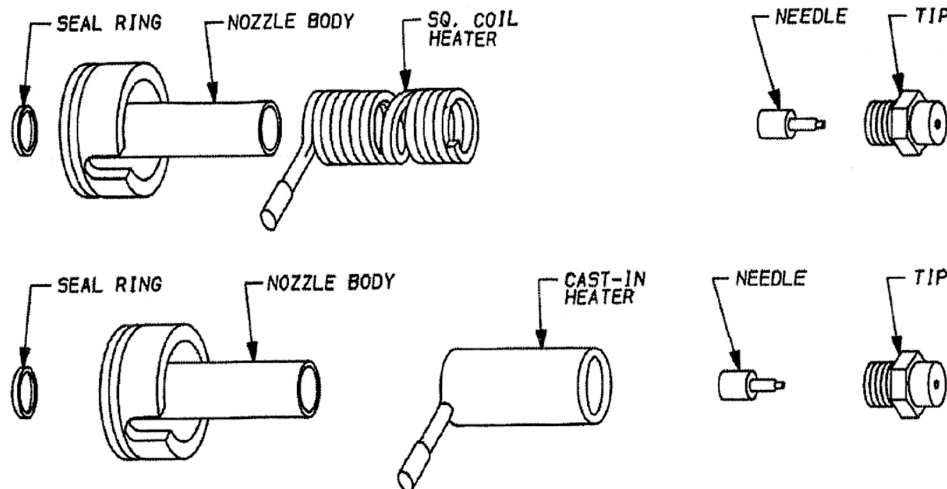


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OPERATING PROCEDURE

- The nozzles are supplied with a Square (Flat) Coil Heater or Cast-In Heater equipped with a Type J Thermocouple.
- It is recommended to use a DME closed-loop Temperature Controller for optimum temperature control.
- When starting the nozzle, set the temp. to 10% voltage if using in open loop manual type or to 200°F if using closed loop automatic type. In either case, this procedure will allow the heater to dissipate any moisture.
- Make sure you maintain this start-up setting for 15 minutes.
- Controller equipped with StepSmart®, SmartStep® or other heater warmup 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.

DISASSEMBLY PROCEDURE

1. Place the nozzle in a vice using "V" block, then secure it firmly at the nozzle head.
2. 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. If the nozzle is still in the mold, the nozzle must be "keyed" to prevent wire damage.
3. Tip and needle must be cleaned of any material before reassembling.
4. Remove the heater using a Square Coil Heater wrench (wrench is included with replacement heater).
5. Cast-in heater may be removed if failure occurs and replaced with a square coil heater. Follow assembly procedures for Square Coil Heater.

ASSEMBLY PROCEDURE

1. Nozzle body must be cleaned of any material in the seal-off area and threaded areas before reassembling.
2. Careful attention should be taken to the needle as damage could occur if needle is dropped or strikes a rigid material. Treat needle like glass or ceramic material.
3. Install the heater using a Square Coil Heater wrench. (wrench included with replacement heater). After the heater is installed, it should cover the entire length of the nozzle body-stretch the heater by hand if necessary.
4. Apply an anti-sieze compound on the tip threads.
5. Firmly screw the tip sub-assembly into the shank of the nozzle body. Tighten and untighten two or three times making sure there is good contact between the tip and the shank. Torque the sub-assembly into the nozzle body using 30 +/- 5 ft.-lbs. For protection of the tip sub-assembly, a six point deep well socket is recommended.
6. Careful attention should be taken to the heater/thermocouple leads as damage could occur when working on nozzle assembly.
7. Seal ring for nozzle body must be replaced each time nozzle body and/or manifold are removed to ensure seal-off.
8. Wait a minimum of 5 minutes after set point has been achieved for sufficient heat to transfer into the tip before molding.

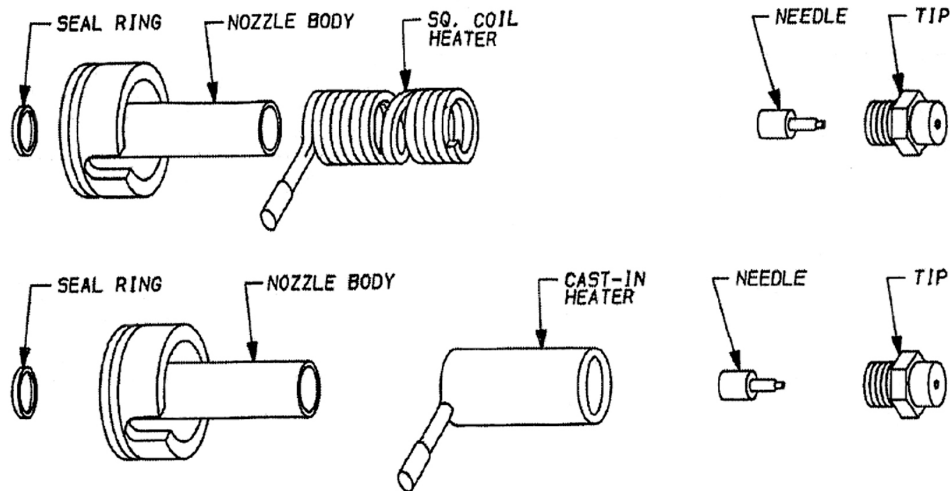


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IMPORTANT SAFETY INFORMATION—DANGER—

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 must be read before using this product. Failure to do so can result in serious injury or death.

ELECTRICAL HAZARDS—WARNING—

1. Failure to comply will result in serious injury or death.
2. Improper voltages or grounding can result in electrical shock. Use only with proper voltage and a proper earth ground.
3. To avoid electrical shock, do not operate product when wet.
4. Do not operate this equipment with covers or panels removed.
5. To avoid electrical shock, turn off main power disconnect and lockout/tag out before servicing this device.
6. Do not connect temperature sensors to electrical power. It will damage the product and can cause fire, severe injuries or death.
7. If green ground wire is present, wire must be connected to the ground.
8. Do not rebend rigid leads. Rebending leads may result in damage to circuit.
9. 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.

STORED ENERGY & HIGH TEMPERATURE HAZARDS—DANGER—

1. Failure to comply can result in serious injury or death.
2. This product contains molten plastic at high pressure. Use caution when operating and servicing the system.
3. Physical contact with molten plastic may result in severe burns. Proper protective equipment, including eye protection, must be worn.
4. This product has heated surfaces. Use caution when operating and servicing the system to avoid severe burns. Proper protective equipment should be worn.

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