

# The Cool One – Heated Nozzle Locators, Assemblies and Replacement Parts

## Heated Nozzle Locators

A requirement for DME split-plate designs, and recommended for all DME hot runner molds, the new heated nozzle locator improves both the performance and structural integrity of DME hot runner systems. It provides uniform temperature control of resin from the machine nozzle to the distributor channel. The thermocouple equipped coil heater features a square (or flat) cross section to improve heat transfer to the core's .312 diameter feed channel. The heated nozzle locator provides quicker and easier system start-ups, minimizes pressure loss and eliminates cold slugs in the feed channel. Available in two lengths with choice of 1/2" or 3/4" spherical radius, the assemblies can be installed using either a clamp style or bolt thru style method for added design and construction versatility. See design and machining guidelines at the end of this Internally Heated Hot Runner Systems section.



## Heated Nozzle Locator Assemblies

HNL462 and HNL662 assemblies include:

- HNC46 or HNC66 core, respectively
- SSTC6290 heater
- HNS67 spacer

| R   | ITEM NUMBER |
|-----|-------------|
| 1/2 | HNL462      |
|     | HNL472      |
| 3/4 | HNL662      |
|     | HNL672      |



HNL472 and HNL672 assemblies include:

- HNC47 or HNC67 core, respectively
- SSTC7290 heater
- HNS67 spacer



## Heated Nozzle Locator Replacement Parts

### Cores

| R   | ITEM NUMBER |
|-----|-------------|
| 1/2 | HNC46       |
|     | HNC47       |
| 3/4 | HNC66       |
|     | HNC67       |

### Thermocouple Heaters

(240 VAC, 250 WATTS T/C type J 36" leads)

| ITEM NUMBER | USED WITH CORES |
|-------------|-----------------|
| SSTC6290    | HNC46 & 66      |
| SSTC7290    | HNC47 & 67      |

### Spacer

| ITEM NUMBER |
|-------------|
| HNS67       |

## Nozzle Locators (Replacement Only)

Heated Nozzle Locators (above) are recommended for all systems. Nozzle Locators NL6702 and 6703 are available for replacement in previous systems.

| ITEM NUMBER | R   |
|-------------|-----|
| NL6702      | 1/2 |
| NL6703      | 3/4 |

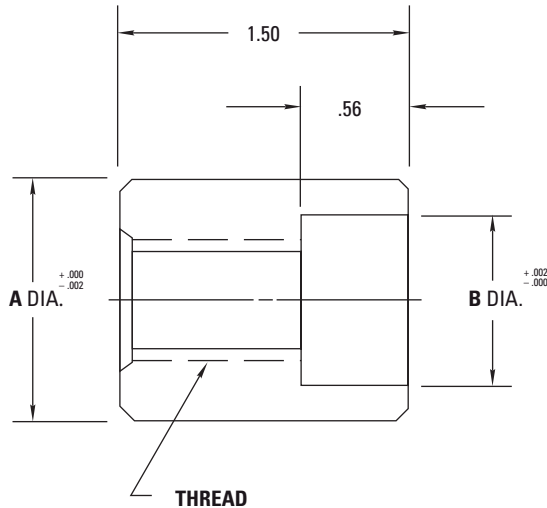


# The Cool One – End Caps and Distributor Tubes

## End Caps (for use with solid distributor block designs)

**MATERIAL: AISI 4140 STEEL**

End caps provide concentricity between distributor tube and distributor bore. Thread accommodates heater stop or lead wire protector (see design and machining guidelines at the end of this Internally Heated Hot Runner Systems section).

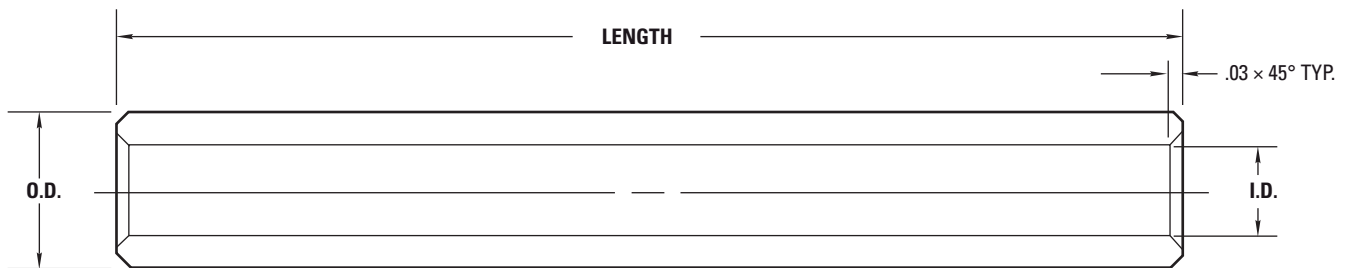


| ITEM NUMBER | DIA. A | DIA. B | THREAD    | USED WITH DIST. BORE/TUBE |
|-------------|--------|--------|-----------|---------------------------|
| EC1207      | 1.249  | 0.875  | 5/8" - 11 | 1.25 DIA./ .87 O.D.       |
| EC2015      | 1.999  | 1.625  | 3/4" - 10 | 2.00 DIA./1.62 O.D.       |

END CAPS FOR SPLIT PLATE DESIGNS: Moldmaker to supply to suit. See design and machining guidelines at the end of this Internally Heated Hot Runner Systems section.

## Distributor Tubes

**MATERIAL: AISI P-20 STEEL**  
**HARDNESS: 28-35 HRC**



| USED WITH 1.25 DIAMETER DISTRIBUTOR BORE/CHANNEL |                       |
|--|-----------------------|
| LENGTH   | I.D. = .50 O.D. = .87 |
|  | ITEM NUMBER           |
| 6"   | HT07046               |
| 10"  | HT070410              |
| 16"  | HT070416              |
| 20"  | HT070420              |
| 24"  | HT070424              |
| 29"  | HT070429              |
| 34"  | HT070434              |

| USED WITH 2.00 DIAMETER DISTRIBUTOR BORE/CHANNEL |                        |
|--|------------------------|
| LENGTH   | I.D. = .62 O.D. = 1.62 |
|  | ITEM NUMBER            |
| 10"  | HT150510               |
| 18"  | HT150518               |
| 24"  | HT150524               |
| 29"  | HT150529               |
| 34"  | HT150534               |
| 40"  | HT150540               |
| 46"  | HT150546               |

### NOTES:

Stainless Steel Distributor Tubes available on special order for molding highly corrosive plastics materials.

See design and machining guidelines at the end of this Internally Heated Hot Runner Systems section.

# The Cool One – Thermocouple Distributor Tube Heaters

## Thermocouple (T/C) Distributor Tube Heaters

(240 VAC, T/C type J, 34" leads)



| DIA. (AMPS)*     | ITEM NUMBER      | LENGTH   | WATTS |
|------------------|------------------|----------|-------|
| .500<br>(10 AMP) | HCTC044          | 4"       | 380   |
|                  | HCTC045          | 5"       | 500   |
|                  | HCTC046          | 6"       | 600   |
|                  | HCTC047          | 7"       | 700   |
|                  | HCTC048          | 8"       | 820   |
|                  | HCTC049          | 9"       | 920   |
|                  | HCTC0410         | 10"      | 1030  |
|                  | HCTC0411         | 11"      | 1140  |
|                  | HCTC0412         | 12"      | 1250  |
|                  | HCTC0413         | 13"      | 1350  |
|                  | HCTC0414         | 14"      | 1460  |
|                  | HCTC0415         | 15"      | 1570  |
|                  | HCTC0416         | 16"      | 1680  |
|                  | HCTC0417         | 17"      | 1780  |
|                  | HCTC0418         | 18"      | 1900  |
|                  | HCTC0419         | 19"      | 2010  |
|                  | HCTC0420         | 20"      | 2110  |
|                  | HCTC0421         | 21"      | 2220  |
|                  | HCTC0422         | 22"      | 2330  |
|                  | .625<br>(10 AMP) | HCTC0423 | 23"   |
| HCTC0424         |                  | 24"      | 2400  |
| HCTC0425         |                  | 25"      | 2400  |
| HCTC0426         |                  | 26"      | 2400  |
| HCTC0427         |                  | 27"      | 2400  |
| HCTC0428         |                  | 28"      | 2400  |
| HCTC0429         |                  | 29"      | 2400  |
| HCTC0430         |                  | 30"      | 2400  |
| HCTC055          |                  | 5"       | 620   |
| HCTC056          |                  | 6"       | 750   |
| HCTC057          | 7"               | 880      |       |
| HCTC058          | 8"               | 1020     |       |
| HCTC059          | 9"               | 1160     |       |
| HCTC0510         | 10"              | 1300     |       |

| DIA. (AMPS)*     | ITEM NUMBER | LENGTH | WATTS |
|------------------|-------------|--------|-------|
| .625<br>(10 AMP) | HCTC0511    | 11"    | 1430  |
|                  | HCTC0512    | 12"    | 1570  |
|                  | HCTC0513    | 13"    | 1700  |
|                  | HCTC0514    | 14"    | 1840  |
|                  | HCTC0515    | 15"    | 1980  |
|                  | HCTC0516    | 16"    | 2110  |
|                  | HCTC0517    | 17"    | 2250  |
|                  | HCTC0518    | 18"    | 2390  |
|                  | HCTC0519    | 19"    | 2520  |
|                  | HCTC0520    | 20"    | 2660  |
| .625<br>(15 AMP) | HCTC0521    | 21"    | 2800  |
|                  | HCTC0522    | 22"    | 2930  |
|                  | HCTC0523    | 23"    | 3070  |
|                  | HCTC0524    | 24"    | 3200  |
|                  | HCTC0525    | 25"    | 3340  |
|                  | HCTC0526    | 26"    | 3480  |
|                  | HCTC0527    | 27"    | 3620  |
|                  | HCTC0528    | 28"    | 3750  |
|                  | HCTC0529    | 29"    | 3900  |
|                  | HCTC0530    | 30"    | 4020  |
| .625<br>(30 AMP) | HCTC0531    | 31"    | 4160  |
|                  | HCTC0532    | 32"    | 4300  |
|                  | HCTC0533    | 33"    | 4440  |
|                  | HCTC0534    | 34"    | 4570  |
|                  | HCTC0535    | 35"    | 4710  |
|                  | HCTC0536    | 36"    | 4840  |
|                  | HCTC0537    | 37"    | 4980  |
|                  | HCTC0538    | 38"    | 5120  |
|                  | HCTC0539    | 39"    | 5250  |
|                  | HCTC0540    | 40"    | 5390  |
|                  | HCTC0541    | 41"    | 5520  |
|                  | HCTC0542    | 42"    | 5520  |
|                  | HCTC0543    | 43"    | 5520  |
|                  | HCTC0544    | 44"    | 5520  |

\*(AMPS) Amperage requirement for temperature control module.

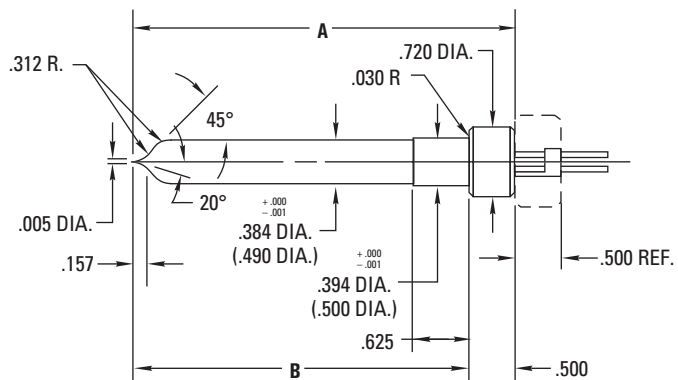
**NOTE:** Heaters should be at least 2" shorter than distributor tube length in mold design. See design and machining guidelines at the end of this Internally Heated Hot Runner Systems section.

# The Cool One – Components

## Auto-Fixed™ “Integral Heater” Probes (240 VAC, T/C Type J Grounded, 48" Leads)

MATERIAL: AISI D-2 STEEL

HARDNESS: 50-55 HRC



AVAILABLE WITH STRAIGHT OR 90° EXIT HEATER LEADS

See design and machining guidelines at the end of this Internally Heated Hot Runner Systems section.

These probes feature a swaged in heating element which is an integral part of the probe. A separate replaceable thermocouple is installed in each probe as supplied. The integral heater design provides highly efficient heat transfer, uniform heat distribution and is guaranteed for one year.

**Important:** Dimensions shown in parentheses apply to larger probes AFIP5372 thru 622 only. Tolerances shown also apply to dimensions in parentheses.

| ITEM NUMBER**       |                | AFIP4 SERIES PROBES<br>.394 (10 mm) DIAMETER |        |       |
|---------------------|----------------|--|--------|-------|
| STRAIGHT EXIT LEADS | 90° EXIT LEADS | A DIM.                                       | B DIM. | WATTS |
| AFIP4322            | AFIP432290     | 3.220  | 2.720  | 135   |
| AFIP4372            | AFIP437290     | 3.720  | 3.220  | 160   |
| AFIP4422            | AFIP442290     | 4.220  | 3.720  | 185   |
| AFIP4472            | AFIP447290     | 4.720  | 4.220  | 210   |

| ITEM NUMBER**       |                | AFIP5 SERIES PROBES<br>.500 (12.9 mm) DIAMETER |        |       |
|---------------------|----------------|--|--------|-------|
| STRAIGHT EXIT LEADS | 90° EXIT LEADS | A DIM.   | B DIM. | WATTS |
| AFIP5372            | AFIP537290     | 3.720  | 3.220  | 200   |
| AFIP5422            | AFIP542290     | 4.220  | 3.720  | 230   |
| AFIP5472            | AFIP547290     | 4.720  | 4.220  | 265   |
| AFIP5522            | AFIP552290     | 5.220  | 4.720  | 295   |
| AFIP5572            | AFIP557290     | 5.720  | 5.220  | 325   |
| AFIP5622            | AFIP562290     | 6.220  | 5.720  | 360   |

\*\*Includes probe, integral heater, thermocouple, adjustment ring and hold down nut.

## Replacement Thermocouples

(ALL PROBES)

| ITEM NUMBER | LEAD LENGTH |
|-------------|-------------|
| TC9900      | 48"         |

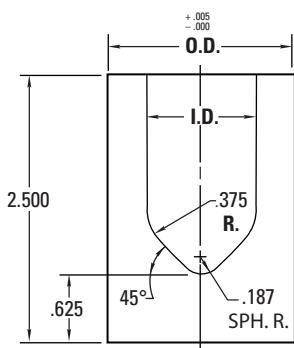
## Gate Inserts

MATERIAL: AISI S-7 STEEL (pre-hardened)

HARDNESS: 30-34 HRC

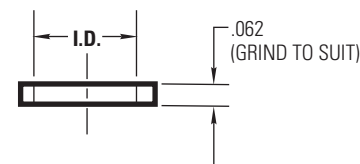
Hardness can be increased to a higher value by heat treatment, if desired.

| ITEM NUMBER | O.D.  | I.D.  | USED WITH    |
|-------------|-------|-------|--------------|
| AFG104N     | 1.625 | .875  | AFIP4 SERIES |
| AFG110N     | 1.750 | 1.000 | AFIP5 SERIES |



## Adjustment Rings

(Packaged with all probes)



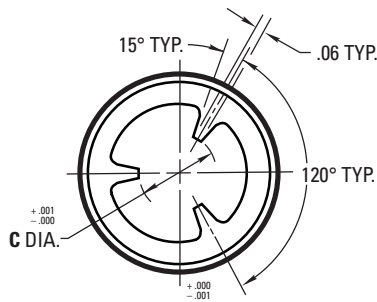
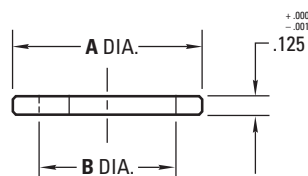
| ITEM NUMBER† | I.D. | USED WITH    |
|--------------|------|--------------|
| RAF4062      | .469 | AFIP4 SERIES |
| RAF5062      | .565 | AFIP5 SERIES |

†Bag of 5 rings.

## Register Rings

MATERIAL: AISI H-13 STEEL

HARDNESS: 48-52 HRC



| ITEM NUMBER | A DIM. | B DIM. | C DIM. | USED WITH    |
|-------------|--------|--------|--------|--------------|
| AFRR04N     | 1.062  | .865   | .387   | AFIP4 SERIES |
| AFRR05N     | 1.187  | .937   | .493   | AFIP5 SERIES |

## Hold-Down Nut

(Packaged with all probes)

THICKNESS = .500

THREAD = 1"- 8

HEX FLAT = 3/16

| ITEM NUMBER |
|-------------|
| AFN100      |



## Hold-Down Nut Wrench\*

| ITEM NUMBER |
|-------------|
| WR916       |

\*Required for straight exit leads only.

Internally Heated Hot Runner Systems | The Cool One – Components

# The Cool One – Probes and Probe Heaters

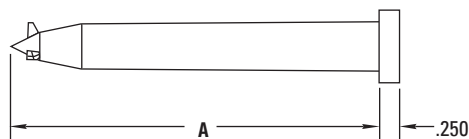
## Auto-Fixed™ Probes (3" to 6" long)

MATERIAL: AISI D-2 STEEL

HARDNESS: 50-55 HRC

| LENGTH<br>A | ITEM NUMBER ** |
|-------------|----------------|
| 2.893       | AFP310         |
| 3.625       | AFP410         |
| 4.625       | AFP510         |
| 5.609       | AFP610         |

\*\*Includes probe, stop sleeve and hold down nut only.



See design and machining guidelines at the end of this Internally Heated Hot Runner Systems section.

These finned style Auto-Fixed probes employ a precision engineered tip configuration that automatically "fixes" the relationship between probe tip and gate, centering the probe and limiting tip protrusion into the gate. Thermocouple heaters are guaranteed for one year as detailed under the

heater chart below. Gate inserts (shown on next page), pre-machined for use with these probes, can save valuable machining time and help assure optimum probe performance.

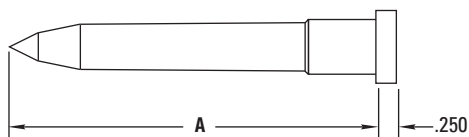
## Auto-Fixed™ Finless Probes (3" to 6" long)

MATERIAL: AISI D-2 STEEL

HARDNESS: 50-55 HRC

| LENGTH<br>A | ITEM NUMBER ** |
|-------------|----------------|
| 2.893       | AFPN310        |
| 3.625       | AFPN410        |
| 4.625       | AFPN510        |
| 5.609       | AFPN610        |

\*\*Includes probe, stop sleeve and hold down nut only.



See design and machining guidelines at the end of this Internally Heated Hot Runner Systems section.

These finless style Auto-Fixed probes are available in the same sizes as the finned probes above and also in lengths up to 10". An optional register ring is available to provide added stability at the probe tip if desired. As with the finned probes, thermocouple heaters are guaranteed for one year and pre-machined gate inserts are available.

**NOTE:** Due to minimum distance requirements specified, the AFP0310 and AFPN310 probes cannot be used in a Cool One system. They may, however, be used in an insulated runner system.

## Thermocouple (T/C) Probe Heaters†

(.250 diameter, 240 VAC, T/C type J grounded, 34" leads)



| ITEM NUMBER | FOR PROBE | WATTS | LENGTH |
|-------------|-----------|-------|--------|
| AFTC2132    | AFP(N)310 | 150   | 3.00   |
| AFTC2142    | AFP(N)410 | 220   | 3.75   |
| AFTC2152    | AFP(N)510 | 275   | 4.75   |
| AFTC2162    | AFP(N)610 | 350   | 5.75   |

## Non-Thermocouple Probe Heaters

(.250 diameter, 240 VAC, 34" leads)



| ITEM NUMBER | FOR PROBE | WATTS | LENGTH |
|-------------|-----------|-------|--------|
| AFC2132     | AFP(N)310 | 150   | 3.00   |
| AFC2142     | AFP(N)410 | 220   | 3.75   |
| AFC2152     | AFP(N)510 | 275   | 4.75   |
| AFC2162     | AFP(N)610 | 350   | 5.75   |

†Thermocouple (T/C) Probe Heaters are guaranteed for one year from date of shipment.

# The Cool One – Accessories and Replacement Parts

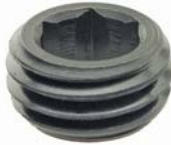
## Accessories/Replacement Parts for 3" to 6" Long Auto-fixed Probes

See design and machining guidelines at the end of this Internally Heated Hot Runner Systems section.

### Hold-Down Nut

(Packaged with all probes)

Thickness = .50  
Thread = 1"-8  
Hex Flat =  $\frac{9}{16}$



ITEM NUMBER

AFN100

### Stop Sleeve

(Packaged with all probes)

Length = 1.375  
Thread =  $\frac{3}{8}$ "-24  
Dia. = .375



ITEM NUMBER

AFSS38

### Register Ring

(For Finless Probes Only)

AISI H-13 STEEL  
48-52 HRC  
I.D. = .562  
O.D. = 1.375  
Thickness = .125



ITEM NUMBER

AFRR10N

### Gate Inserts

**MATERIAL:** AISI S-7 STEEL (pre-hardened)

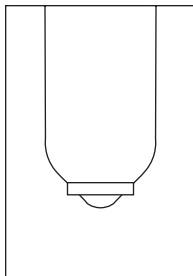
**HARDNESS:** 30-34 HRC

Hardness can be increased to a higher value by heat treatment, if desired.

I.D. = 1.000 O.D. = 1.750 Height = 2.500

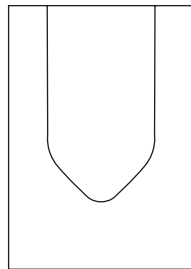


| ITEM NUMBER | FOR PROBE        |
|-------------|------------------|
| AFGI10      | AFP310 thru 610  |
| AFGI10N     | AFPN310 thru 610 |



AFGI10

Gate inserts are supplied premachined. See design and machining guidelines at the end of this Internally Heated Hot Runner Systems section.



AFGI10N

### Adjustment Rings

For simplified counterbore depth adjustment (No change from previous rings).

I.D. = .687 O.D. = .868



| ITEM NUMBER* | THICKNESS |
|--------------|-----------|
| RAF002       | .002      |
| RAF003       | .003      |
| RAF005       | .005      |
| RAF007       | .007      |
| RAF032       | .032      |
| RAF062       | .062      |
| RAF125       | .125      |

\*Package of 10.

### Replacement Thermocouple (T/C) And Non T/C Heaters

**FOR DISCONTINUED AUTO-FIXED PROBES AFP300, 400, 500, 600**  
(.250 diameter, 240 VAC, T/C type J grounded, 36" leads)

While the original Auto-Fixed probes (AFP300, 400, 500, 600) have been replaced with the AFP310 thru 610 series, replacement heaters for these previous probes are still available as detailed here.

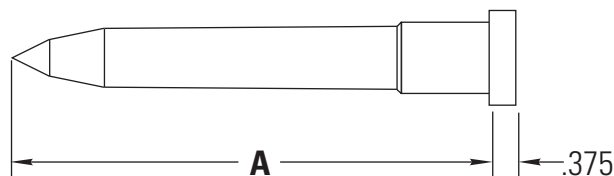
| T/C HEATERS ITEM NUMBER | NON T/C HEATERS ITEM NUMBER | FOR PROBE | WATTS | LENGTH |
|-------------------------|-----------------------------|-----------|-------|--------|
| AFTC2022                | AFC2022                     | AFP300    | 200   | 2"     |
| AFTC2032                | AFC2032                     | AFP400    | 300   | 3"     |
| AFTC2042                | AFC2042                     | AFP500    | 375   | 4"     |
| AFTC2052                | AFC2052                     | AFP600    | 475   | 5"     |

# The Cool One – Accessories and Replacement Parts

## Auto-Fixed™ Finless Probes (7" to 10" long)

**MATERIAL: AISI D-2 STEEL**  
**HARDNESS: 50-55 HRC**

These longer probes are ideal for larger molds or gating into deeper cavity configurations. The optional register ring shown below may be used to provide added stability at the probe tip if desired. Thermocouple heaters are guaranteed for one year as detailed under the heater chart below.



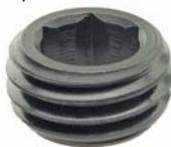
| LENGTH<br>A | ITEM<br>NUMBER** |
|-------------|------------------|
| 7.000       | AFPN720          |
| 8.000       | AFPN820          |
| 9.000       | AFPN920          |
| 10.000      | AFPN1020         |

\*\*Includes probe, stop sleeve and hold down nut only.

### Hold-Down Nut

(Packaged with all probes)

Thickness = .50  
Thread = 1/4"-12  
Hex Flat = 5/8



ITEM NUMBER

AFN125

### Stop Sleeve

(Packaged with all probes)

Length = 1.375  
Thread = 1/2"-20  
Dia. = .500



ITEM NUMBER

AFSS12

### Register Ring

AISI H-13 STEEL  
48-52 HRC  
I.D. = .693  
O.D. = 1.500



ITEM NUMBER

AFRR20N

## Thermocouple (T/C) Probe Heaters†

(.375 diameter, 240 VAC, T/C type J grounded, 46" leads)



| ITEM NUMBER | FOR PROBE | WATTS | LENGTH |
|-------------|-----------|-------|--------|
| AFTC3272    | AFPN720   | 645   | 7.15   |
| AFTC3282    | AFPN820   | 760   | 8.15   |
| AFTC3292    | AFPN920   | 870   | 9.15   |
| AFTC32102   | AFPN1020  | 980   | 10.15  |

†Thermocouple (T/C) Probe Heaters are guaranteed for one year from date of shipment.

## Gate Insert

**MATERIAL: AISI S-7 STEEL (pre-hardened)**  
**HARDNESS: 30-34 HRC**

Hardness can be increased to a higher value by heat treatment, if desired.

I.D. = 1.125 O.D. = 2000 Height = 2.500

ITEM NUMBER

AFGI20N



## Adjustment Rings

Moldmaker to supply to suit (.990 O.D., .820 I.D.)

See design and machining guidelines at the end of this Internally Heated Hot Runner Systems section.