

MULTICELL INSERTION HEATERS

Heater Offers Efficient Heat Dissipation and Long Life

The advanced design of the multicell insertion heater from Watlow offers three major advantages: extreme process temperature capability, independent zone control for precise temperature uniformity and loose fit design for easy insertion and removal.

Patented in 1963 as the Arc-O-Vec multicell, the design provides efficient heat dissipation and long life under the most demanding conditions.

Applications

- Superplastic forming and diffusion bonding of high performance metals
- Hot forging dies
- Heated platen assemblies
- Furnace applications
- Superheating of air and other gases
- Fluidized beds for heat treating
- Glass forming and processing machinery



Features and Benefits

Multiple, independently controlled zones

- Allows process temperature uniformity not possible with any other single-sheathed heater

Radiant design

- Allows for loose insertion
- Assures the heater will not bind or seize in the hole once inserted—the heater is easily removed

Oxidized sheath

- Provides high emissivity and improves the heater's performance as oxidation increases

Individually metal-sheathed coils

- Provides swaged coils into a larger, high temperature alloy to protect against element burnout

Quick disconnect plug and jack

- Permits fast replacement of individual elements

Special bending capabilities

- Solves unusual machinery needs



HAN-MIH-0807

To be automatically connected to the nearest North American Technical and Sales Office:

1-800-WATLOW2 • www.watlow.com • info@watlow.com

International Technical and Sales Offices: Australia, +61-3-9335-6449 • China, +86-21-3950-9510 • France, +33 (0) 3073-2425 • Germany, +49 (0) 7253-9400-0 • Italy, +39 (0) 2 458-8841 • Japan, +81-3-3518-6630 • Korea, +82-2-575-9804 • Malaysia, +60-3-7980-7741 • Mexico, +52 (442) 217-6235 • Shanghai, +86-21-3950-9504 • Singapore, +65-6773-9469 • Spain, +34 91 675 1292 • Sweden, +46 35-27-11-66 • Taiwan, +886-7-288-5168 • United Kingdom, +44 (0) 115-964-0777

Applications and Technical Data

Definition of Terms

Cold Toe

A physical minimum requirement of $1.6 \pm \frac{5}{16}$.

Independent Zone

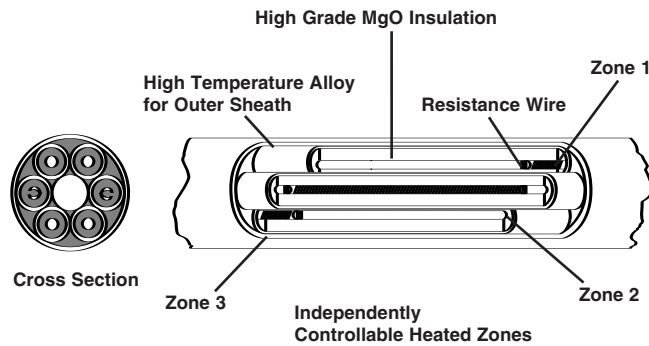
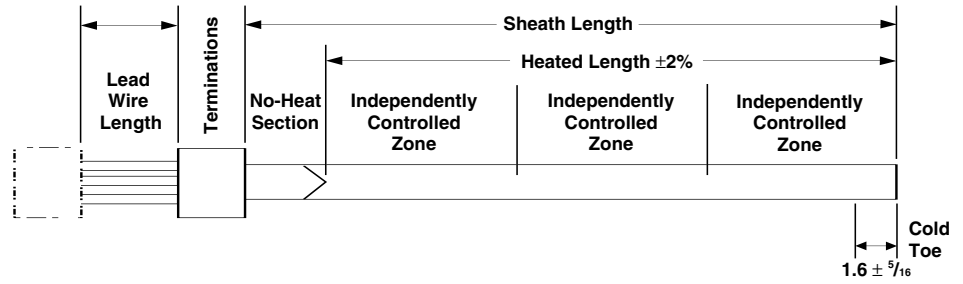
Up to three, separately controlled zones, which can be of varying lengths and wattages.

Heated Length

The combined sum of all independent zones.

Wattage

Ratings are the combined sum of all independent zones.



Options

Plug and Socket and Twist-Lock® Plug Variations

Two zone heaters requiring a quick disconnect plug will typically be supplied with a four contact plug and socket, while three zone heaters will be supplied with a six contact plug and socket.

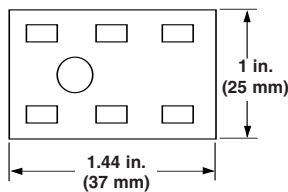
Twist-Lock® plug variations are typically supplied with single zone multicell heaters. When ordering a Twist-Lock® plug, please specify the **NEMA type** as shown below.

For any other plug variations, please contact the factory.

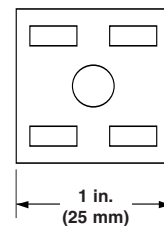
Note: Mating connectors are also available for plug terminations listed. Contact factory.

| Male Plug | Zones | Type | Voltage | Amperage | Blade Type |
|-----------|-------|--------|---------|----------|-------------|
| P404-CCT | 2 | 4 Wire | 600 | 30 | Straight |
| P406-CCT | 3 | 6 Wire | 600 | 30 | Straight |
| 4570C | 1 | 3 Wire | 250 | 15 | Twist-Lock® |
| 4720C | 1 | 3 Wire | 125 | 15 | Twist-Lock® |
| 5266C | 1 | 3 Wire | 125 | 15 | Straight |
| 5666C | 1 | 3 Wire | 250 | 15 | Straight |
| 7102C | 1 | 2 Wire | 250 | 20 | Twist-Lock® |
| 7545C | 1 | 2 Wire | 250 | 15 | Twist-Lock® |
| 7567C | 1 | 3 Wire | 125 | 10 | Twist-Lock® |

Plug and Socket



6 Contacts



4 Contacts

Twist-Lock®



4720C



4570C



7567C



7102C

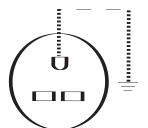


7545C

Straight



5266C

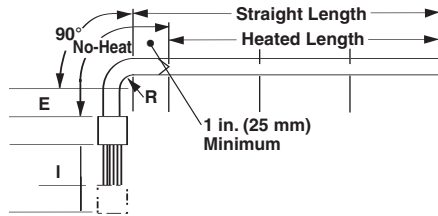


5666C

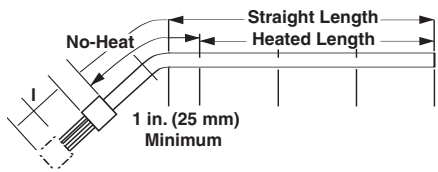
Physical Design Parameters

All bending of a multicell heater is restricted to the cold area of the heater. All bend radii points must be one inch (25 mm) from the hot/cold junction.

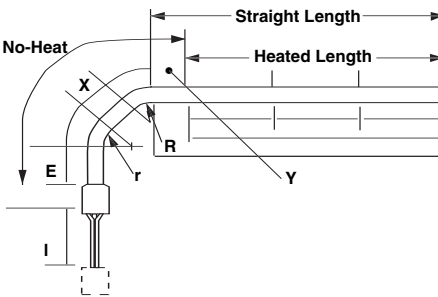
“L”



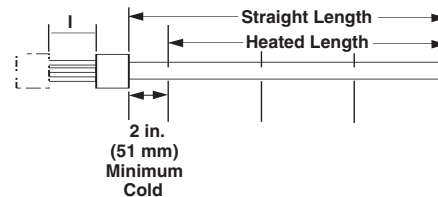
Angle



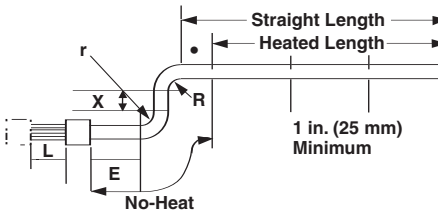
Droop



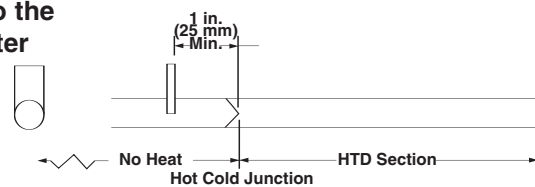
Straight



Crank

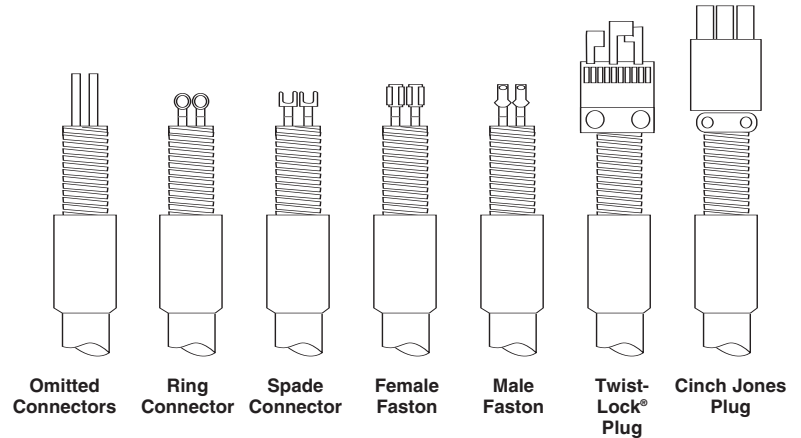


Weldments to the Multicell Heater Element



Termination Assemblies

All termination assemblies are available with potting sleeves or cups, with or without armorflex lead wire protection. Please specify potting vessel and lead cover option when ordering.



Termination illustrations shown with armorflex covering.

How to Order

To order multicell insertion heaters, please specify:

- Sheath diameter
- Heater length
- Configuration
- Potting vessel
- Connector
- Leadcover
- Flex leads
- Watts
- Volts
- Lead wire length (12 inch standard)
- NEMA type for Twist-Lock®/straight plugs, if required

Availability

Made-to-Order: Consult Watlow

| Symbol | E | r | X | R | Y | I |
|----------------------|---------|----------|----------|----------|--------|----------|
| Min. Length in. (mm) | 4 (102) | 1 ½ (38) | 1 ½ (38) | 1 ½ (38) | 1 (25) | 12 (305) |

Zones—Available in single zone construction only.