Table Of Contents

Cartridge Heaters for Runnerless Molding can be found in Section 2

Tubular Heaters for Runnerless Molding can be found in Section 10

Coil & Cable Heaters

5 section

Mightyband™ Coil Heaters

The Superior Coil Heater Design with a Built-In Thermocouple

U.S. Patents #4150281 and #4253011

Design Features

- ✳ *Temperatures up to 1800°F (982°C)*
- ✳ *Precise temperature control*
- ✳ *Choice of lead orientation*
- ✳ *Built-in type J or K Thermocouple*
- ✳ *Round, square and rectangular cable*
- ✳ *Rugged, durable construction*
- ✳ *Unheated straight section*
- ✳ *Fast response time*
- ✳ *Choice of lead protection*
- ✳ *Longer heater life*
- ✳ *Higher watt densities*
- ✳ *Made to customer specifications*

A REVOLUTIONARY CONCEPT IN HEATER DESIGN

Tempco Mightyband heaters have opened new frontiers and revolutionized the plastic injection runnerless molding industry since their introduction by Tempco in 1977. They provided the manufacturers of this type of equipment with a new and more effective heating element concept, thus allowing them to design and manufacture new, improved, and more efficient runnerless molding systems, with the capabilities required to meet the ever-increasing demand for processing engineering resins and high production output requirements of today's industrial and consumer markets.

One specific way to improve the Mightyband heater design is to use a square or rectangular mineral insulated cable, which has a flat surface contact, allowing better heat conduction and a faster start-up time.

Construction Characteristics

Tempco's dedication to quality and product improvement has led us to the development of a second generation of Mightyband heaters.

Manufactured for trouble-free performance in operations involving heating of cylindrical, flat, and irregular-shaped surfaces where precise temperature control is essential. Especially adapted as an alternate heat source for demanding and high temperature applications where other types of heaters have failed.

The design and manufacturing concept incorporates a built-in thermocouple, with a grounded junction terminating at the end of the cable opposite to the lead end. In some heaters, the thermocouple junction can be terminated anywhere within the coil section. Consult Tempco for the availability of this option on your specific heater.

The built-in thermocouple and the overall low mass construction provide quick response for positive temperature control. Incorporating the thermocouple into the heater construction eliminates the need for separate thermocouples, which have proven to be expensive, fragile and impractical.

Standard Type J thermocouple with 304 stainless steel heater sheath is recommended for temperatures up to 1500°F (815°C). An optional Type K thermocouple with Inconel® 600 heater sheath for temperatures up to 1800°F (982°C) is available upon request. In some applications, the built-in thermocouple may not be required. In this case, it can be omitted from the heater cable.

The heating source for the Mightyband heater is a resistance wire in straight form or wound into a miniature helical coil. Selecting the best-suited resistance wire configuration is predetermined by an engineering formula applied to the specific heater design.

On Mightyband heaters where wire wound resistance coils are used, the tail end of the heater cable is usually unheated. Optional unheated or cooler tail sections are available on straight resistance wire heater designs. Consult Tempco with your specific requirements.

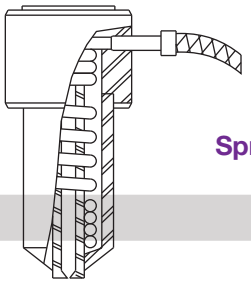
The swaging and drawing process involved in manufacturing the heater cable for Mightyband heaters compacts the ceramic insulators that house the heating element and thermocouple wire into a solid mass, producing a rugged and durable heater cable, providing excellent thermal conductivity, dielectric strength and quick thermocouple response.

Variations and Applications

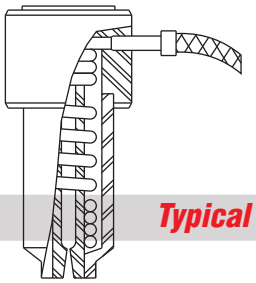
Mightyband heaters lend themselves to a wide range of applications. The flexibility of mineral insulated cable allows the Mightyband heater to be coiled, formed, wrapped around pipes or used straight. It can also be cast-in to metal or welded onto machine component parts. Open wound coil heaters can be used as cartridge heaters in irregular size holes.

Tempco offers from stock a large selection of standard Mightyband coil heaters for plastic injection runnerless molding bushings and for internally heated injection machine nozzles. The inside diameter of a coiled heater is wound undersized for a screw-on fit. Therefore, hold-down straps are not usually required.

Mightyband™ Coil Heater Specifications

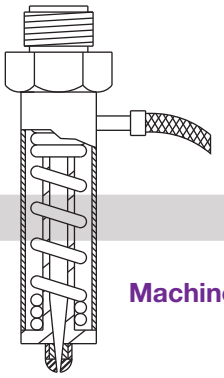


Sprue Bushing



Sprue Bushing

Typical Applications



Machine Nozzle

Specifications

Electrical

Resistance Tolerance: . . . . . ±10%

Wattage Tolerance: . . . . . ±10%

Maximum Amperage: . . . . . 20 Amps

Standard Voltage: . . . . . 120 or 240 Volts

Higher or lower voltages applicable for specific heater designs; consult Tempco with your requirements.

Dimensional

Standard square cable: . . . . . .0.125", 0.134" square

Standard rectangular cable: . . . . . .0.110" × 0.160"

Standard round cable diameters: . . . . . .0.115", 0.120", 0.125"
0.132", 0.153", 0.163"
Others available upon request.

Cable diameter tolerance: . . . . . ±0.005

Standard potting adapter: . . . . . 5/16" Diameter
Used with heater only and heater with T/C leads, 20 gauge and under.

. . . . . 1/2" Diameter
Used with heater only and heater with T/C leads, 18 gauge to 10 gauge.

Standard potting adapter length: . . . . . 1-1/2"
Other lengths available.

Standard coil I.D.: . . . . . From 3/8" up to 2-1/2" in any increments.
Applicable Coil I.D. is subject to cable diameter.

Coil I.D. Tolerance: . . . . . 3/8" to 3/4", +0.000", –0.020"
. . . . . 7/8" to 1-1/4", +0.000", –0.030"
1-1/2" to 2-1/2", +0.000", –0.060"

Coil Width (length): . . . . . Up to 12" on 3/8" to 3/4" I.D.
Up to 16" on 7/8" to 1-1/4" I.D.
Up to 18" on 1-1/2" to 2-1/2"

Coil Width Tolerance: . . . . . 0 to 6": +0, –1/8"
6 to 12": +1/8", –1/4"
12 to 18": ±1/4"

Standard Sheath Material: . . . . . 304 stainless steel
For temperatures up to 1500°F (815°C)

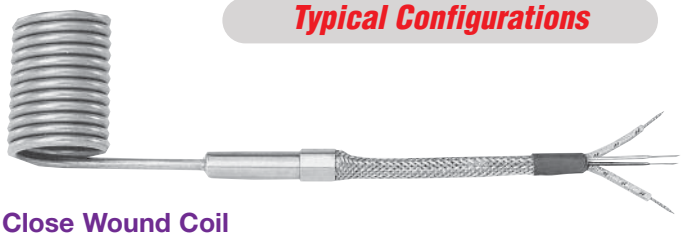
Optional Sheath Material: . . . . . Inconel® 600
For temperatures up to 1800°F (982°C)

Standard Thermocouple: . . . . . ANSI Type J

Optional Thermocouple: . . . . . ANSI Type K

Minimum Bending Radius: . . . . . Two times the sheath diameter

Typical Configurations



Close Wound Coil

Distributed Wattage

By specifically arranging a coiling pattern on the heater cable, heat distribution can be concentrated where it is needed. Useful to compensate for heat losses along the edges of the part being heated. Specify concentration.

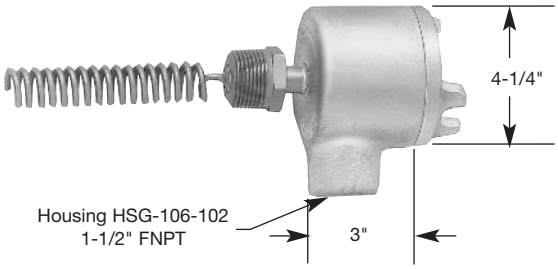
Clamping Straps

Mightybands normally do not require clamping straps as the inside diameter of the coil is wound undersize for a screw fit. At times because of differences in the expansion and contraction in materials a clamping strap may be required to ensure circumferential clamping forces. Clamping straps also provide additional protection of the heater coils from accidental damage. If optional clamping strap is required, specify.

Special Coil Heater Configurations

Star Wound Coil

Star wound formations are usually inserted into pipes or ducts and are used to heat moving air or liquids. The offset coils create a turbulent flow. This allows the flowing material to have better contact with the heater surface, resulting in more efficient heat transfer.



Explosion or Moisture Resistant Box

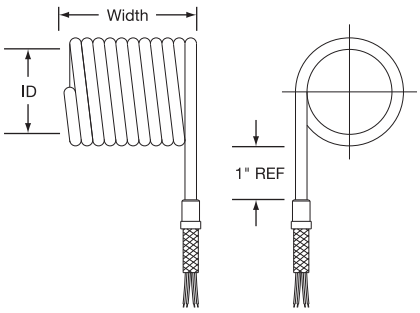
Mightyband coil heaters can be used for immersion heating and/or in-line heating of liquids, gases or air. The built-in thermocouple provides a self-contained heating unit, eliminating the need for separate thermowells, and is available with standard NPT or special fittings. The outside diameter (O.D.) of the coil must be smaller than the fitting being used for proper fit to the mating part. The wiring can be protected from hazardous environments by attaching explosion or moisture-proof boxes. Consult Tempco with your requirements.

NPT Pipe Fittings

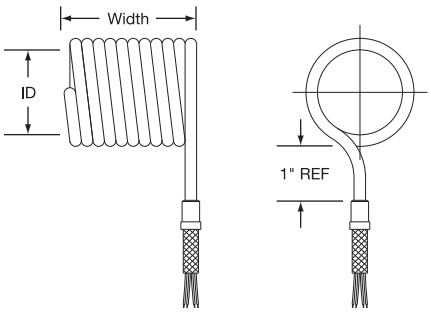
Mightyband coil heaters can be used for immersion heating and/or in-line heating of liquids, gases or air. The built-in thermocouple provides a self-contained heating unit, eliminating the need for separate thermowells. Available with standard NPT fittings or special fittings. The outside diameter (O.D.) of the coil must be smaller than the fitting being used for proper fit to the mating part. Consult Tempco with your requirements.

Lead Orientations

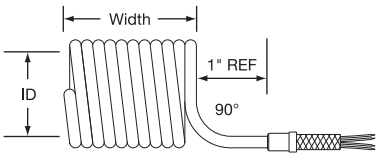
LO1 Standard



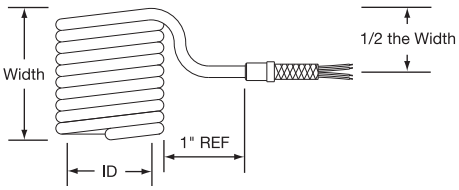
LO2



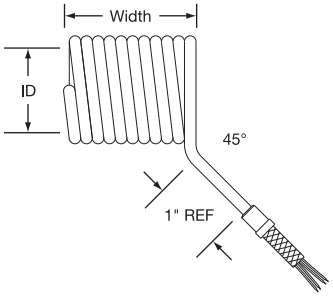
LO3



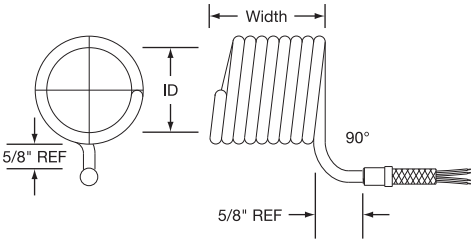
LO4



LO5



LO6

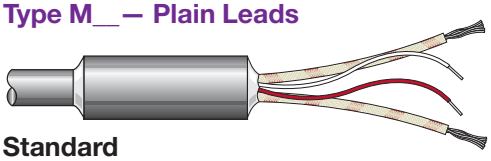


Note: Lead orientations can be custom formed. Consult Tempco with your requirements. We welcome your inquiries.

Potting Adapter Lead Terminations

- The heating element wire to lead wire transition is done within the potting adapter. Potting adapter sizes are 5/16" O.D. × 1-1/2" long for heater cable diameters 0.188" and smaller and 1/2" × 1-1/2" long for diameters above 0.188". Other diameters and lengths are available, depending on design parameters.
- When the 1/2" × 1-1/2" long potting adapter is used for high temperature applications, a special heat sink collar is also used to help keep the transition from overheating.
- All transitions use 1150°F (621°C) braze joint between the heating element wire and the flexible lead wire.
- Normally the lead wire construction is a fiberglass braided insulation rated to 482°F (250°C). For high temperature applications an MGT (mica, fiberglass, Teflon® impregnation) insulation rated to 842°F (450°C) is used. All thermocouple leads use a fiberglass insulation rated to 900°F (482°C). Lead wires are selected to meet the amperage and temperature requirements of each specific heater.

Type M__— Plain Leads



Standard
M1 — High temperature cement potting with TGGT (Teflon® tape, fiberglass, Teflon® treated fiberglass overbraid) insulated lead wire for 482°F (250°C) and silicone sealed is standard.

Optional
M2 — High temperature epoxy potting rated 450°F (232°C) for a better moisture seal.

Optional
M3 — High temperature cement potting with MGT (mica tape, Teflon® treated fiberglass overbraid) insulated lead wire for 842°F (450°C) and silicone sealed.

Note: Temperature at potting adapter should not exceed the specified limits.

Lead Wire Abrasion Protection Terminations

Type A__— Stainless Steel Armor Cable

Type A1 — Rated to 482°F (250°C)
Type A2 — Rated to 450°F (232°C)
Type A3 — Rated to 842°F (450°C)

Flexible SS armor cable protects the leads against abrasion and contamination. Special plugs can be attached to heater leads and thermocouple leads.

Type B__— Stainless Steel Overbraid

Type B1 — Rated to 482°F (250°C)
Type B2 — Rated to 450°F (232°C)
Type B3 — Rated to 842°F (450°C)

SS overbraid protects the leads against abrasion and allows more aggressive bending, which is not possible with armor cable. Special plugs can be attached to heater and thermocouple leads.

Type C__— Galvanized Armor Cable

Type C1 — Rated to 482°F (250°C)
Type C2 — Rated to 450°F (232°C)
Type C3 — Rated to 842°F (450°C)

Flexible galvanized armor cable protects the leads against abrasion and contamination. Special plugs can be attached to heater leads and thermocouple leads.

Type S__— Fiberglass Sleeve

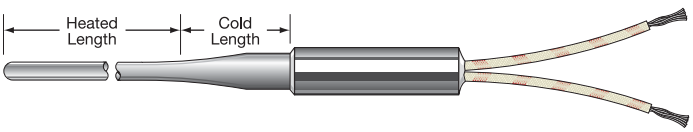
Type S1 — Rated to 482°F (250°C)
Type S2 — Rated to 450°F (232°C)
Type S3 — Rated to 842°F (450°C)

Fiberglass sleeve protects the leads against abrasion and allows more flexibility of lead wires. Special plugs can be attached to heater and thermocouple leads.

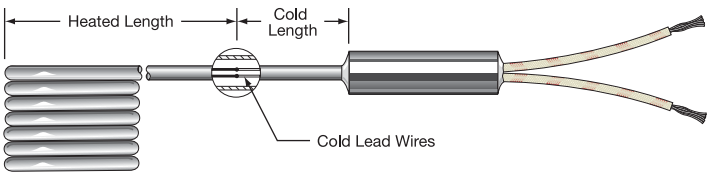
Optional Heater Cable Cold End

The availability of Tempco-Pak heaters with optional cold heater cable end depends on the electrical ratings and materials used for each heater design. Consult Tempco for the availability of these options.

Type ND— Neck Down



Type NW— Built-in Cold Wire



Mightyband™ Coil Heaters

Heater shown with
Lead Protection Type B and
Lead Orientation LO1.

Standard (Non-Stock) Round Cable Heaters

Standard Cable Heaters have 304 Stainless Steel Sheath

Inside Diameter in	Inside Diameter mm	Outside Diameter in	Outside Diameter mm	Width in	Width mm	Watts	Volts	Distributed Wattage	Close Wound	Lead Protection	Lead Orientation	Part Number
½	12.7	0.808	20.5	2	50.8	340	240	yes		C1	LO2	MHC00001
½	12.7	0.808	20.5	2½	63.5	340	240	yes		C1	LO2	MHC00002
½	12.7	0.808	20.5	3	76.2	340	240	yes		C1	LO2	MHC00003
½	12.7	0.808	20.5	3½	88.9	340	240	yes		C1	LO2	MHC00004
½	12.7	0.808	20.5	3	76.2	380	240	yes		C1	LO2	MHC00005
½	12.7	0.808	20.5	3½	88.9	380	240	yes		C1	LO2	MHC00006
½	12.7	0.730	18.5	2½	63.5	450	240		yes	C1	LO1	MHC00007
½	12.7	0.764	19.4	4½	114.3	400	240	yes		C1	LO2	MHC00008
½	12.7	0.750	19.1	5½	139.7	400	240	yes		C1	LO2	MHC00009
½	12.7	0.750	19.1	6½	165.1	400	240	yes		C1	LO2	MHC00010
½	12.7	0.750	19.1	4⅝	117.5	300	240		yes	C1	LO1	MHC00011
½	12.7	0.712	18.1	2	50.8	340	120		yes	C1	LO2	MHC00012
½	12.7	0.764	19.4	2½	63.5	340	120	yes		C1	LO2	MHC00013
½	12.7	0.764	19.4	3	76.2	380	120	yes		C1	LO2	MHC00014
½	12.7	0.764	19.4	3½	88.9	380	120	yes		C1	LO2	MHC00015
½	12.7	0.744	18.9	4½	114.3	400	120	yes		C1	LO2	MHC00016
½	12.7	0.744	18.9	5½	139.7	400	120	yes		C1	LO2	MHC00017
½	12.7	0.744	18.9	6½	165.1	400	120	yes		C1	LO2	MHC00018
½	12.7	0.750	19.1	4⅝	117.5	300	120		yes	C1	LO1	MHC00019
❖ ⅝	15.9	0.931	23.6	2	50.8	300	240	yes		C1	LO2	MHC00020
❖ ⅝	15.9	0.931	23.6	2½	63.5	325	240	yes		C1	LO2	MHC00021
⅝	15.9	0.891	22.6	2	50.8	330	120		yes	B1	LO2	MHC00022
⅝	15.9	0.875	22.2	2	50.8	330	240		yes	B1	LO2	MHC00023
⅝	15.9	0.875	22.2	2½	63.5	330	240	yes		B1	LO2	MHC00024
⅝	15.9	0.875	22.2	3	76.2	330	240	yes		B1	LO2	MHC00025
⅝	15.9	0.875	22.2	3	76.2	380	240	yes		C1	LO2	MHC00026
⅝	15.9	0.875	22.2	3	76.2	360	240		yes	B1	LO2	MHC00027
⅝	15.9	0.875	22.2	4	101.6	360	240	yes		B1	LO2	MHC00028
⅝	15.9	0.875	22.2	4	101.6	500	240		yes	B1	LO2	MHC00029
⅝	15.9	0.875	22.2	5	127.0	500	240	yes		C1	LO2	MHC00030
❖ ⅝	15.9	0.875	22.2	6	152.4	550	240	yes		C1	LO2	MHC00031
¾	19.1	1.056	26.8	1¼	31.8	250	230		yes	M†	LO1	MHC00032
¾	19.1	1.056	26.8	1¼	31.8	125	230		yes	M†	LO1	MHC00033
¾	19.1	1.056	26.8	1¼	31.8	400	120		yes	B1	LO1	MHC00034
¾	19.1	1.000	25.4	2	50.8	365	120		yes	B1	LO1	MHC00035
¾	19.1	1.056	26.8	2	50.8	135	240		yes	B1	LO1	MHC00036
¾	19.1	1.000	25.4	3	76.2	750	240		yes	B1	LO1	MHC00037
¾	19.1	0.972	24.7	5	127.0	600	240		yes	B1	LO1	MHC00038
¾	19.1	0.992	25.2	8½	215.9	1300	240		yes	B1	LO1	MHC00039
⅞	22.2	1.181	30.0	1	25.4	400	120		yes	B1	LO1	MHC00040
⅞	22.2	1.181	30.0	1¼	31.8	250	240		yes	M†	LO2	MHC00041
❖ ⅞	22.2	1.181	30.0	2	50.8	400	240	yes		C1	LO2	MHC00042
⅞	22.2	1.181	30.0	2⅝	66.7	480	240	yes		C1	LO2	MHC00043
⅞	22.2	1.181	30.0	3⅛	79.4	480	240	yes		C1	LO2	MHC00044

Note: ❖ Denotes the Thermocouple Junction is located between third and fourth coil from the tip end, isolated from the sheath. See page 5-5 for Lead Protection and page 5-4 for Lead Orientation descriptions.

† Cement Potted Teflon® insulated SPC wire

Mightyband™ Coil Heaters

Standard (Non-Stock) Round Cable Heaters

Standard Cable Heaters have 304 Stainless Steel Sheath

Inside Diameter in	Inside Diameter mm	Outside Diameter in	Outside Diameter mm	Width in	Width mm	Watts	Volts	Distributed Wattage	Close Wound	Lead Protection	Lead Orientation	Part Number
7/8	22.2	1.115	28.3	2	50.8	670	120		yes	B3	LO2	MHC00045
7/8	22.2	1.125	28.6	2	50.8	670	240		yes	B1	LO2	MHC00046
7/8	22.2	1.125	28.6	2 1/2	63.5	670	240	yes		B1	LO2	MHC00047
7/8	22.2	1.125	28.6	3 1/8	79.4	670	240	yes		B1	LO2	MHC00048
❖ 7/8	22.2	1.181	30.0	2 1/2	63.5	450	240	yes		C1	LO2	MHC00049
7/8	22.2	1.181	30.0	3 3/8	92.1	550	240	yes		C1	LO2	MHC00050
7/8	22.2	1.181	30.0	4 5/16	109.5	550	240	yes		C1	LO2	MHC00051
7/8	22.2	1.181	30.0	5 5/16	134.9	650	240	yes		C1	LO2	MHC00052
7/8	22.2	1.181	30.0	6 5/16	160.3	650	240	yes		C1	LO2	MHC00053
7/8	22.2	1.181	30.0	7 5/16	185.7	650	240	yes		C1	LO2	MHC00054
❖ 7/8	22.2	1.125	28.6	3	76.2	680	240	yes		C1	LO2	MHC00055
❖ 7/8	22.2	1.125	28.6	3 1/2	88.9	700	240	yes		C1	LO2	MHC00056
7/8	22.2	1.125	28.6	3 3/8	92.1	770	240	yes		B1	LO2	MHC00057
7/8	22.2	1.125	28.6	4 5/16	109.5	770	240	yes		B1	LO2	MHC00058
7/8	22.2	1.125	28.6	5 5/16	134.9	770	240	yes		B1	LO2	MHC00059
7/8	22.2	1.125	28.6	4	101.6	775	240	yes		C1	LO2	MHC00060
7/8	22.2	1.125	28.6	6 5/16	160.3	730	240	yes		B1	LO2	MHC00061
7/8	22.2	1.125	28.6	7 5/16	185.7	730	240	yes		B1	LO2	MHC00062
❖ 7/8	22.2	1.125	28.6	5	127.0	900	240	yes		C1	LO2	MHC00063
7/8	22.2	1.105	28.1	8 5/16	211.1	730	240	yes		C1	LO2	MHC00064
7/8	22.2	1.105	28.1	9 5/16	236.5	730	240	yes		C1	LO2	MHC00065
7/8	22.2	1.105	28.1	10 5/16	261.9	730	240	yes		C1	LO2	MHC00066
❖ 7/8	22.2	1.125	28.6	6	152.4	1000	240	yes		C1	LO2	MHC00067
7/8	22.2	1.105	28.1	11 1/16	287.3	850	240	yes		C1	LO2	MHC00068
7/8	22.2	1.105	28.1	12 5/16	312.7	850	240	yes		C1	LO2	MHC00069
7/8	22.2	1.105	28.1	13 5/16	338.1	850	240	yes		C1	LO2	MHC00070
7/8	22.2	1.105	28.1	14 5/16	363.5	850	240	yes		C1	LO2	MHC00071
7/8	22.2	1.105	28.6	7	177.8	1100	240	yes		C1	LO2	MHC00072
1	25.4	1.250	31.8	1 1/2	38.1	375	120		yes	B1	LO1	MHC00073
1	25.4	1.306	33.2	1 1/2	38.1	375	240		yes	B1	LO1	MHC00074
1	25.4	1.240	31.5	2	50.8	400	120		yes	B1	LO1	MHC00075
1	25.4	1.266	32.2	2 1/2	63.5	450	120		yes	B1	LO1	MHC00076
1	25.4	1.250	31.8	8	203.2	1250	240		yes	B3	LO1	MHC00077
1 1/4	31.8	1.556	39.5	1	25.4	340	240		yes	B1	LO1	MHC00078
1 1/4	31.8	1.556	39.5	1 1/4	31.8	375	120		yes	B1	LO1	MHC00079
1 1/4	31.8	1.480	37.6	1 1/2	38.1	400	120		yes	B1	LO1	MHC00080
1 1/4	31.8	1.492	37.9	2	50.8	475	120		yes	B1	LO1	MHC00081
1 1/4	31.8	1.480	37.6	2 1/2	63.5	750	240		yes	C1	LO2	MHC00082
1 1/4	31.8	1.514	38.5	4 1/2	114.3	1250	240		yes	C3	LO2	MHC00083
1 1/4	31.8	1.534	39.0	6 1/2	165.1	1800	240		yes	C3	LO2	MHC00084
1 1/4	31.8	1.548	39.3	7	177.8	2000	240		yes	B3	LO1	MHC00085
1 1/4	31.8	1.594	40.5	8 1/2	215.9	2335	240		yes	C3	LO2	MHC00086
1 1/4	31.8	1.626	41.3	10 1/2	266.7	2500	240		yes	C1	LO2	MHC00087

Note: ❖ Denotes the Thermocouple Junction is located between third and fourth coil from the tip end, isolated from the sheath. See page 5-5 for Lead Protection and page 5-4 for Lead Orientation descriptions.

CONTINUED

Mightyband™ Coil Heaters

Continued from previous page...

Heater shown with Lead Protection B and Lead Orientation LO1.

Standard (Non-Stock) Round Cable Heaters

Standard Cable Heaters have 304 Stainless Steel Sheath

Inside Diameter in	Inside Diameter mm	Outside Diameter in	Outside Diameter mm	Width in	Width mm	Watts	Volts	Distributed Wattage	Close Wound	Lead Protection	Lead Orientation	Part Number
		1.806	45.9	1	25.4	400	120		yes	B1	LO1	MHC00088
		1.730	43.9	1¼	31.8	425	120		yes	B1	LO1	MHC00089
		1.742	44.2	1½	38.1	525	120		yes	B1	LO1	MHC00090
		1.742	44.2	2	50.8	475	120		yes	B1	LO1	MHC00091
		1.752	44.5	2	50.8	475	240		yes	B1	LO1	MHC00092
		1.754	44.6	2	50.8	550	240		yes	B1	LO1	MHC00093
		1.742	44.2	2½	63.5	600	120		yes	B3	LO1	MHC00094
		1.766	44.9	2½	63.5	600	240		yes	B3	LO1	MHC00095
		1.742	44.2	3	76.2	475	120		yes	B1	LO1	MHC00096
		1.732	44.0	3	76.2	875	240		yes	B1	LO2	MHC00097
1½	38.1	1.750	44.5	4⅛	104.8	1000	240	yes		C3	LO2	MHC00098
		1.732	44.0	4	101.6	1000	240		yes	B3	LO2	MHC00099
		1.750	44.5	5⅛	130.2	1000	240	yes		C3	LO2	MHC00100
		1.742	44.2	5	127.0	1200	240		yes	B3	LO1	MHC00101
		1.766	44.9	6⅛	155.6	1200	240	yes		B3	LO2	MHC00102
		1.750	44.5	7⅛	181.0	1100	240	yes		C1	LO2	MHC00103
		1.806	45.9	6	152.4	675	120		yes	B3	LO1	MHC00104
		1.750	44.5	6	152.4	1200	240		yes	B3	LO2	MHC00105
		1.766	44.8	8⅛	206.4	1250	240	yes		B3	LO2	MHC00106
		1.796	45.6	9⅛	231.8	1400	240	yes		B3	LO2	MHC00107
		1.826	46.4	10⅛	257.2	1800	240	yes		B3	LO2	MHC00108
		1.982	50.3	1	25.4	475	120		yes	B1	LO1	MHC00109
		2.000	50.8	1½	38.1	625	240		yes	B1	LO1	MHC00110
1¾	44.5	2.000	50.8	2	50.8	675	240		yes	B1	LO1	MHC00111
		1.982	50.3	2½	63.5	725	240		yes	B1	LO1	MHC00112
		2.056	52.2	7	177.8	2000	240		yes	B3	LO2	MHC00113
2	50.8	2.250	57.2	1⅜	34.9	450	240		yes	B1	LO1	MHC00114
		2.326	59.1	6½	165.1	2400	240		yes	B3	LO1	MHC00115

Note: See page 5-5 for Lead Protection and page 5-4 for Lead Orientation descriptions.

Standard (Non-Stock) Tempco Replacement Coil Heaters for OEM Hot Runner Bushings

Standard Cable Heaters have 304 Stainless Steel Sheath

Inside Diameter in	Inside Diameter mm	Outside Diameter in	Outside Diameter mm	Width in	Width mm	Watts	Volts	Distributed Wattage	Close Wound	OEM Part Number	TEMPCO Part Number
		0.808	20.5	3	76.2	380	240	yes		KH-52030	MHC00005
		0.808	20.5	3½	88.9	380	240	yes		KH-52035	MHC00006
		0.764	19.4	4½	114.3	400	240	yes		KH-53045	MHC00008
		0.750	19.1	5½	139.7	400	240	yes		KH-53555	MHC00009
		0.750	19.1	6½	165.1	400	240	yes		KH-53565	MHC00010
½	12.7	0.764	19.4	2	50.8	340	120		yes	KH-520	MHC00012
		0.764	19.4	2½	63.5	340	120	yes		KH-52025	MHC00013
		0.764	19.4	3	76.2	380	120	yes		KH-52030	MHC00014
		0.764	19.4	3½	88.9	380	120	yes		KH-52035	MHC00015
		0.744	18.9	4½	114.3	400	120	yes		KH-53045	MHC00016
		0.744	18.9	5½	139.7	400	120	yes		KH-53055	MHC00017
		0.744	18.9	6½	165.1	400	120	yes		KH-53065	MHC00018
		1.181	30.0	2⅜	66.7	480	240	yes		KH-826	MHC00043
		1.181	30.0	3⅛	28.6	480	240	yes		KH-82630	MHC00044
		1.181	30.0	3⅜	92.1	550	240	yes		KH-82636	MHC00050
		1.181	30.0	4⅜16	109.5	550	240	yes		KH-82640	MHC00051
		1.181	30.0	5⅜16	134.9	650	240	yes		KH-82650	MHC00052
		1.181	30.0	6⅜16	160.3	650	240	yes		KH-82660	MHC00053
		1.181	30.0	7⅜16	185.7	650	240	yes		KH-82670	MHC00054
⅞	22.2	1.105	28.1	8⅜16	211.1	730	240	yes		KH-84380	MHC00064
		1.105	28.1	9⅜16	236.5	730	240	yes		KH-84390	MHC00065
		1.105	28.1	10⅜16	261.9	850	240	yes		KH-84310	MHC00066
		1.105	28.1	11⅜16	287.3	850	240	yes		KH-85311	MHC00068
		1.105	28.1	12⅜16	312.7	850	240	yes		KH-85312	MHC00069
		1.105	28.1	13⅜16	338.1	850	240	yes		KH-85313	MHC00070
		1.105	28.1	14⅜16	363.5	850	240	yes		KH-85314	MHC00071
		1.480	37.6	2½	63.5	750	240		yes	KH-1225	MHC00082
		1.514	38.5	4½	114.3	1250	240		yes	KH-1245	MHC00083
1¼	31.8	1.534	39.0	6½	165.1	1800	240		yes	KH-1265	MHC00084
		1.594	40.5	8½	215.9	2335	240		yes	KH-1285	MHC00086
		1.626	41.3	10½	266.7	2500	240		yes	KH-12105	MHC00087

Note: All OEM Replacement Heaters have round cable, Type "C" galvanized armor cable lead wire protection and LO2 lead orientation (see page 5-4).

Mightyband™ (Square Cable)

Mightyband™ Coil Heaters with Square/Rectangular MI Cable

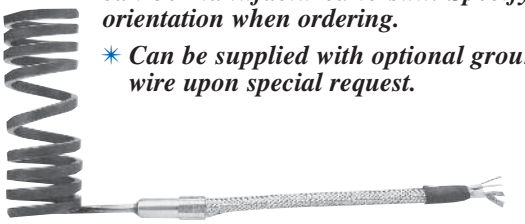
TEMPCO offers a square sheathed, mineral insulated, coiled nozzle heater with a built-in-thermocouple. The unique feature of the 1/8" square sheath is a larger sheath contact area as compared to its round sheathed counterpart, allowing for faster start-up cycles. The ANSI Type J standard or optional Type K thermocouple normally has a grounded junction. However, an optional ungrounded junction is available. Heaters can be formed into a compact coiled nozzle heater supplying a full 360° of heat to the distributed wattage coil. The low mass of the heater allows quick response to both heating and cooling.

Specifications

Resistance tolerance: . . . . . ±10%
Wattage tolerance: . . . . . ±10%
Maximum Wattage: . . . . . 720 watts *(for 240 volt heaters)*
300 watts *(for 120 volt heaters)*
Maximum operating temperature: 1500ºF (816ºC)
Maximum Watt density: . . . . . 134 watts/in² applied to nozzle
Physical Dimensions: . . . . . 1/8" square
(except non-heated tail section, which is 1/8" round)
Length of non-heated section: . . . . . 1" to 6" *(specify when ordering)*
Potting Adapter: . . . . . 5/16" O.D. × 1-1/2" long
Standard Lead Length as specified in table below (if other than standard, specify)

Standard Features

- ***Standard lead wire construction is a fiberglass braided insulation with stainless steel overbraid suitable for 482°F (250°C). Optional constructions using Teflon® insulation or armor cable are available on request.***
- ***The standard wire to M.I. cable transition area (potting adapter) is temperature rated to 450°F (232°C). High temperature 842°F (450°C) is optional.***
- ***The ANSI Type J standard or optional Type K thermocouple junction can be grounded at the tip (the end farthest from transition area) or ungrounded anywhere along the length of the heater.***
- ***Heaters can be supplied with optional stainless steel clamping straps, which provide additional circumferential clamping forces and protection of the heater coils from accidental damage.***
- ***All Mightyband coil heaters are available with one (1) of six (6) different lead orientations (LO) as shown on Page 5-4. Other custom lead orientations can be manufactured to suit. Specify lead orientation when ordering.***
- ***Can be supplied with optional grounding wire upon special request.***



Standard (Non-Stock) 1/8" Square Tempco-Pak Cable Heaters *(Non-heated tail section is 1/8" round)*

Standard Cable Heaters have 304 Stainless Steel Sheath

Coil I.D. in	Coil I.D. mm	Closed Coil Width in	Closed Coil Width mm	Stretched Width in	Stretched Width mm	Built-In T/C	Voltage	Wattage	Standard Lead Length in	Standard Lead Length mm	Lead Protection	Lead Orientation	Part Number
.500	12.7	2.00	50.8	2.5	63.5	yes	240	450	40	1016	C†	L01	MHC00116
.500	12.7	2.50	63.5	4.6	116.8	yes	240	300	48	1219	A†	L05	MHC00117
.750	19.1	1.25	31.8	—	—	yes	230	125	48	914	M†	L04	MHC00118
.750	19.1	1.25	31.8	—	—	yes	230	250	48	914	M†	L04	MHC00119
.750	19.1	1.25	31.8	1.5	38.1	yes	240	300	48	1219	S2	L05	MHC00120
.750	19.1	0.95	24.1	—	—	yes	240	250	72	1829	M1	L01	MHC00121
.968	24.6	0.95	24.1	—	—	yes	240	250	72	1829	M2	L01	MHC00122
.968	24.6	1.58	40.1	—	—	yes	240	300	72	1829	M2	L01	MHC00123

† Cement Potted Teflon® insulated SPC wire