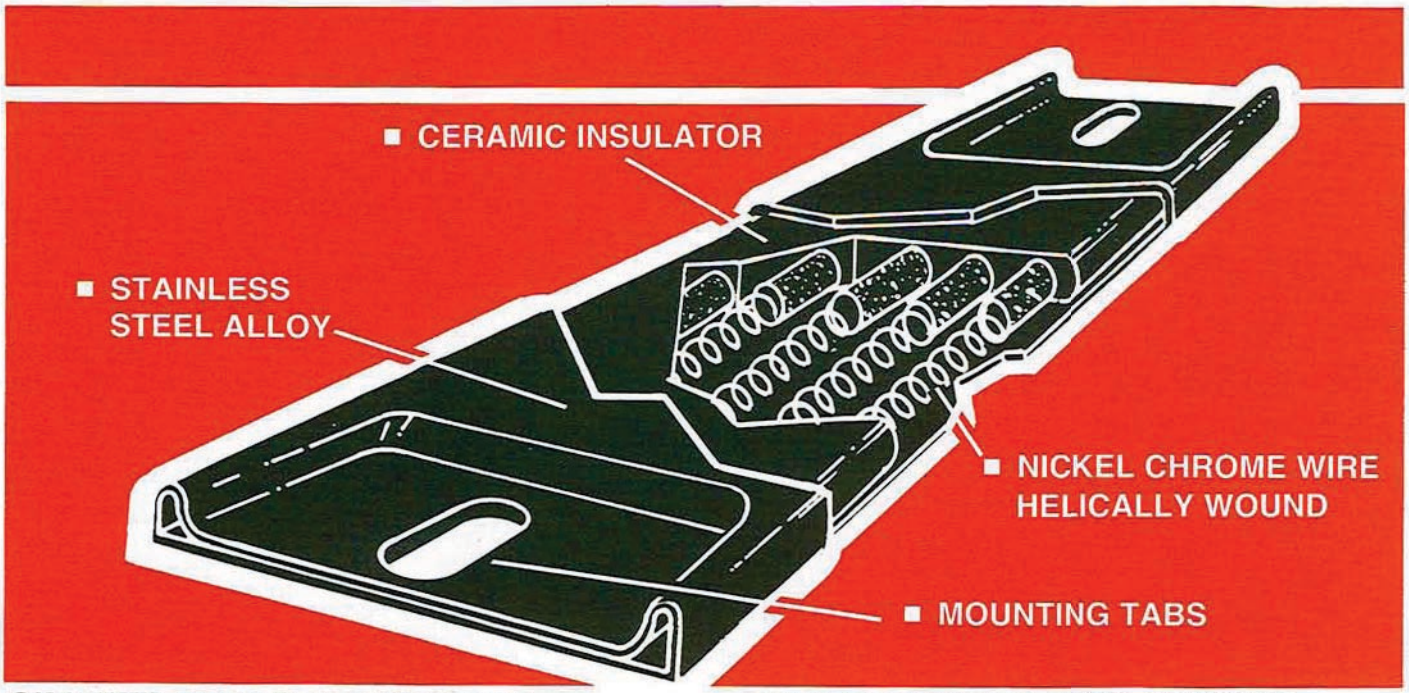
CHANNEL TUBE STRIP HEATERS & FINNED CHANNEL TUBE HEATERS



CHANNEL TUBE STRIP HEATERS

FEATURES

- STAINLESS STEEL 1200°F OPERATION
- MOUNTING TABS OR WELDED CLOSED ENDS
- SECURED TERMINAL POSTS
- NICKEL LEADS
- HIGH PURITY MgO FILLED

APPLICATIONS

- MOLDS & DIES
- OVENS
- AIR DUCTS
- PREHEATING
- FOOD SERVICE
- TANKS & VESSELS

CONSTRUCTION

Nickel chrome resistance wire is wound in a helix and strung through ceramic cores. Voids are filled with high purity magnesium oxide to provide even heat transfer while allowing operating temperatures to reach 1200°F on the stainless steel sheath. Delta channel tube heaters are supplied with either terminal posts or high temperature lead wires. The ends can be heli-arc welded closed, or mounting tabs can be pressed into the heater ends to provide mounting capability.

APPLICATIONS

Channel tube heaters are frequently used on hot plates, molds, dies, platens and a host of other applications.

FINNED CHANNEL TUBE HEATERS

FEATURES

- STAINLESS STEEL SHEATH
- NICKEL PLATED STEEL FINS
- SECURED TERMINAL POST
- OPERATION AT 1200°F SHEATH
- AIR HEATING TO 800°F
- MADE TO CUSTOMERS SPECIFICATIONS

APPLICATIONS

- DUCT HEATING
- SPACE HEATING
- DRYING EQUIPMENT
- OVENS
- BAKE-OUT OVENS
- HUMIDITY CONTROL

CONSTRUCTION AND APPLICATION

Nickel plated cooling fins are attached to the stainless steel sheath to provide rapid heat transfer to the surrounding air. Air passing over the 1200°F sheath is heated to allow ovens, ducts, environmental chambers and test stands to operate over long periods of time with a minimum of care and expense.

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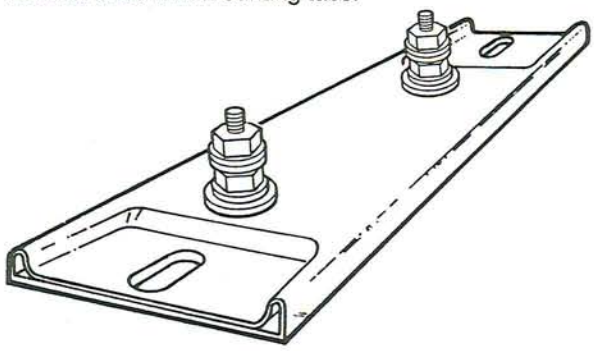
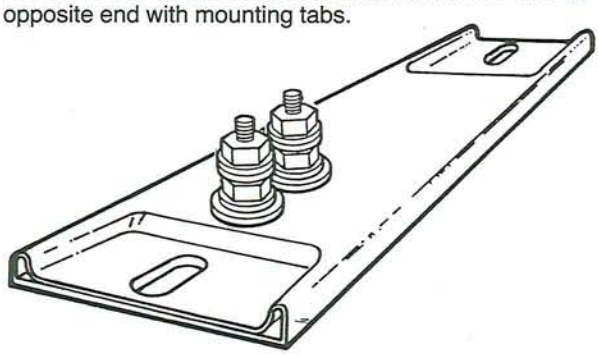
TERMINAL VARIATIONS

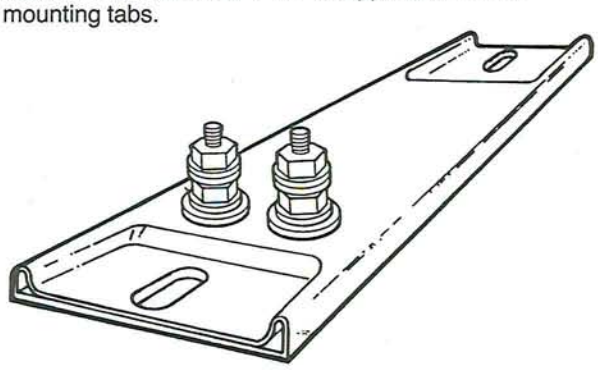
T-1 POST TERMINALS
Opposite ends of heater. Approximate 2″ unheated at terminal ends with mounting tabs.



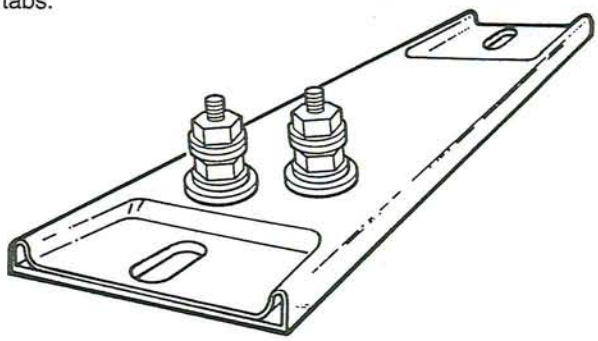
T-2 POST TERMINALS
Tandem at one end of heater, center line with length of heater with 3″ cold section at terminal end and 1-1/2″ at opposite end with mounting tabs.



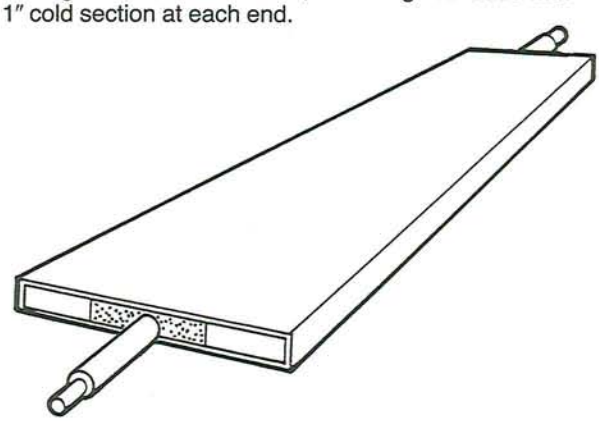
T-3 PARALLEL AT ONE END
Same end with the width of heater with 2-1/2″ cold section at terminal and 1-1/2″ at opposite end with mounting tabs.



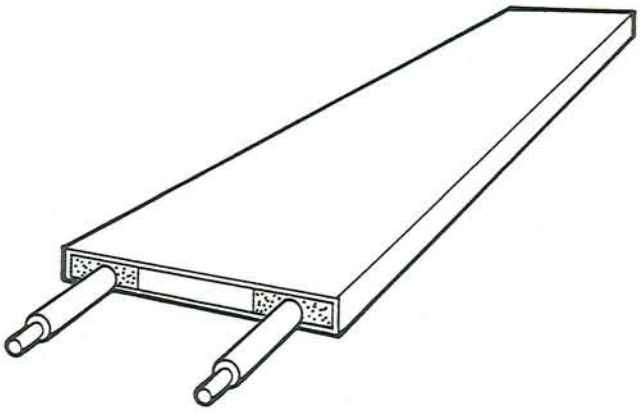
T-12 OFFSET
Offset at one end of the heater with 2-1/2″ cold section at terminal and 1-1/2″ at opposite end with mounting tabs.



L-1 FIBERGLASS LEADS
Exiting at each end of heater, 10″ fiberglass leads with 1″ cold section at each end.



L-2 FIBERGLASS LEADS
Exiting at same end of heater, 10″ fiberglass leads with 1″ cold section at terminal end and 1/2″ at opposite end.



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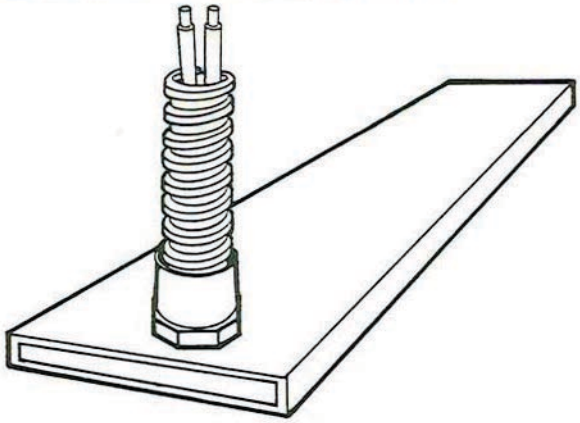
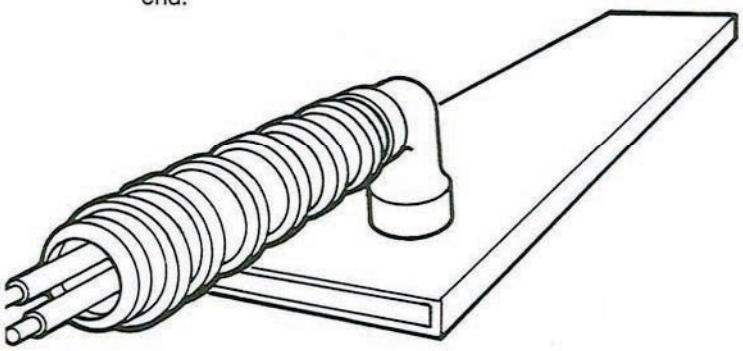
CHANNEL TUBE STRIP HEATERS & FINNED CHANNEL TUBE HEATERS

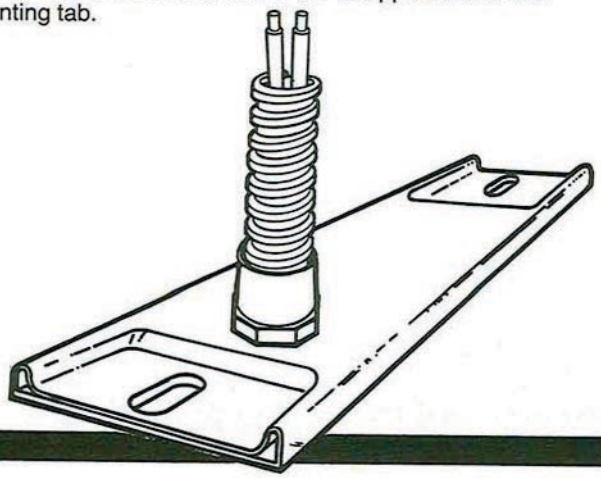
M – FLEXIBLE METAL HOSE
Stainless steel or galvanized conduit covers lead wires and exits from one point of heater surface. 10″ metal hose covering 12″ fiberglass leads with 1″ cold section at terminal end and 1/2″ at opposite end. MIN. LENGTH 5-1/2″ with tabs MIN. LENGTH 8″.



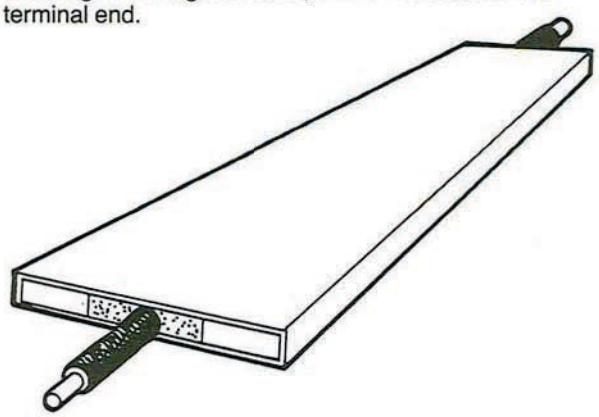
MR – RIGHT ANGLE METAL HOSE
Stainless steel or galvanize metal hose covering 12″ fiberglass leads exiting from one end of heater surface. Right armor hose can be positioned in any direction with 1-1/2″ cold section at terminal end and 1″ at opposite end.



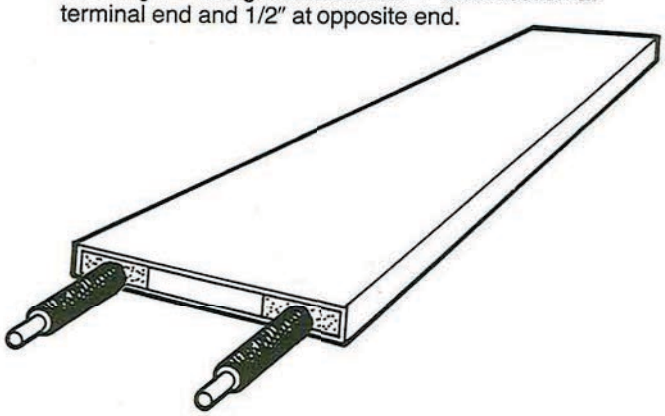
MT – FLEXIBLE METAL HOSE
10″ stainless steel or galvanized conduit covering 12″ fiberglass lead wire exit from one point of heater surface. Approximate 2″ unheated at terminal end and 1-1/2″ at opposite end with mounting tab.



A-1 METAL OVERBRAID
Exiting each end, 10″ metal braid covering 12″ fiberglass leads, with 1″ cold section at terminal end.

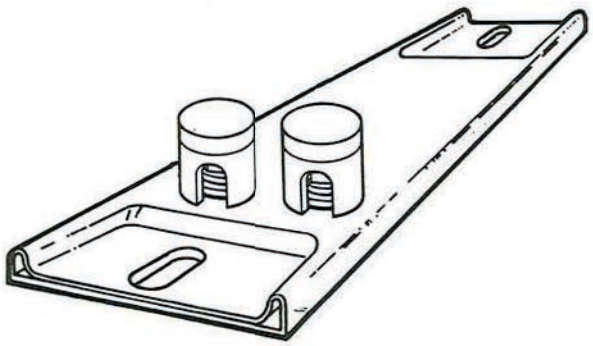


A-2 METAL OVERBRAID
Exiting same end, 10″ metal braid covering 12″ fiberglass leads with 1″ cold section at terminal end and 1/2″ at opposite end.



TERMINATION VARIATIONS

CC – CERAMIC TERMINAL COVERS
Protect against electric shock, used with insulated wire. Can be rotated at any angle. Screw size 10-32.



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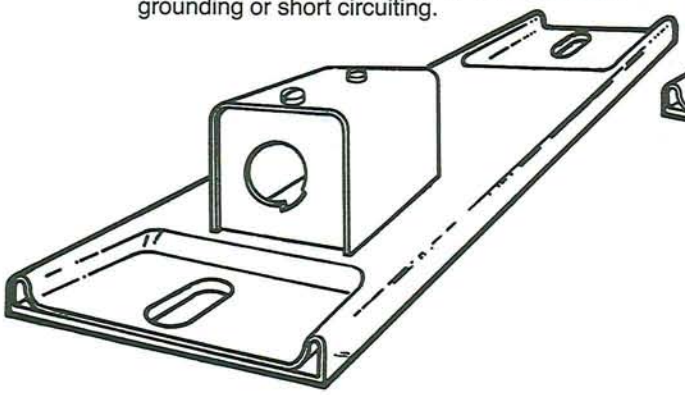
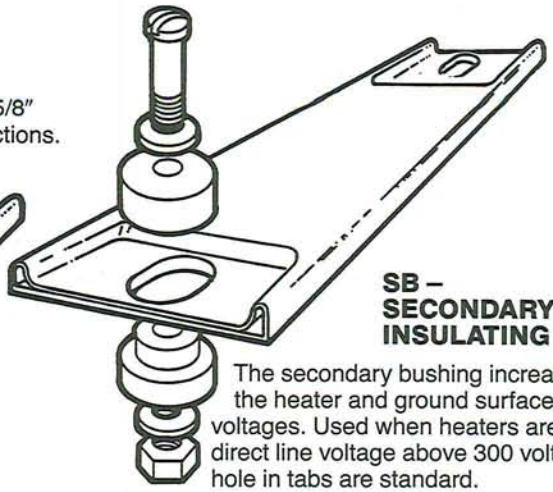
TB – TERMINAL BOX PROTECTION
Designed in standard height of 1-3/4" high, with 5/8" conduit knockout for standard metal hose connections. Protects terminals from damage, spill leakage, grounding or short circuiting.

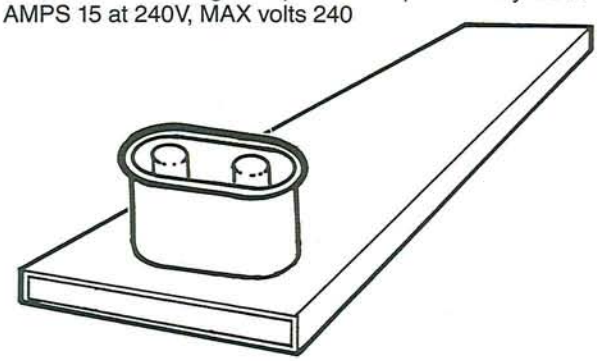




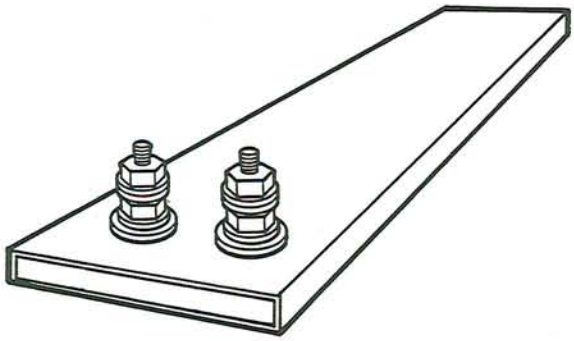
SB – SECONDARY INSULATING BUSHINGS
The secondary bushing increases the space between the heater and ground surface for clearance at higher voltages. Used when heaters are connected in series or direct line voltage above 300 volts. 1/2" x 5/8" mounting hole in tabs are standard.

TERMINATION VARIATIONS

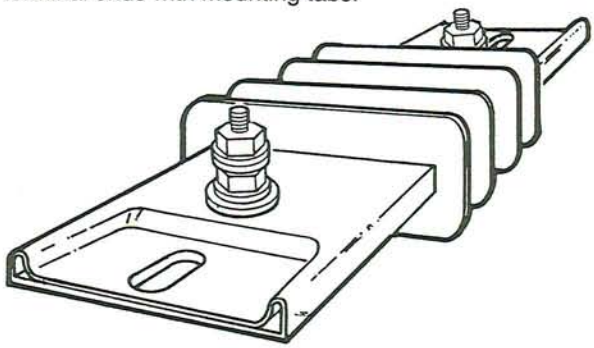
EP – EURO PLUG
Quick disconnect high temperature cup assembly. MAX AMPS 15 at 240V, MAX volts 240



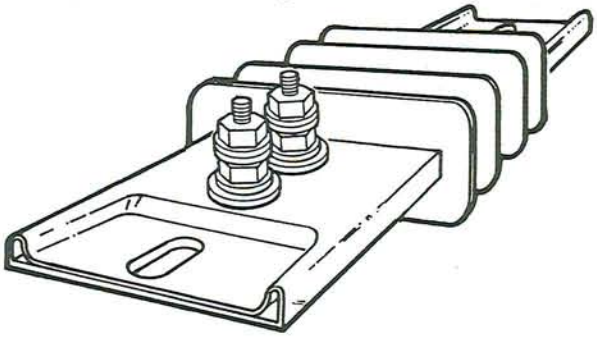
WO – WITHOUT MOUNTING TABS
Available on any termination and offers more heated area.



T-1 POST TERMINALS
Opposite ends of heater. Approximate 2" unheated at terminal ends with mounting tabs.



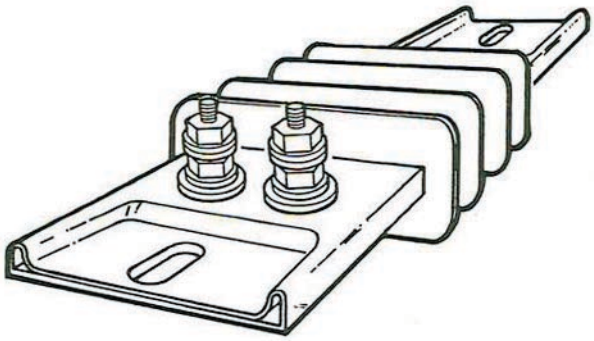
T-2 POST TERMINALS
Tandem at one end of heater, center line with length of heater with 3" cold section at terminal end and 1-1/2" at opposite end with mounting tabs.



CHANNEL TUBE STRIP HEATERS & FINNED CHANNEL TUBE HEATERS

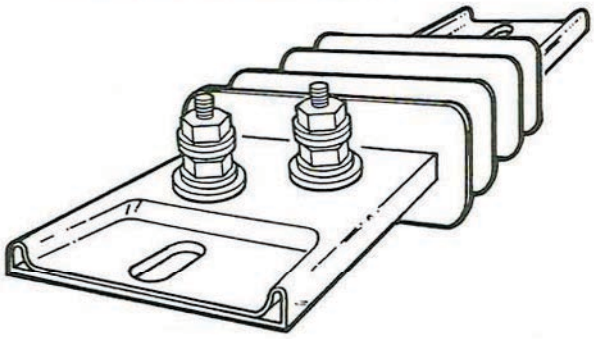
T-3 PARALLEL AT ONE END

Same end with the width of heater with 2-1/2″ cold section at terminal and 1-1/2″ at opposite end with mounting tabs.



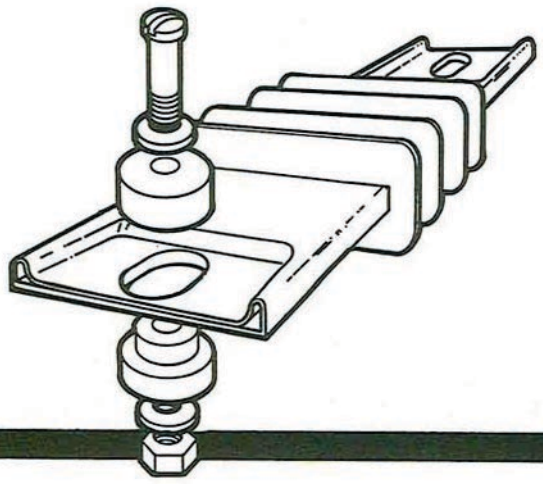
T-12 OFFSET

Tandem at one end of heater, center line with length of heater; with 2-1/2″ cold section at terminal and 1-1/2″ at opposite end with mounting tabs.



SB – SECONDARY INSULATING BUSHINGS

The secondary bushing increases the space between the heater and ground surface for clearance at higher voltages. Used when heaters are connected in series or direct line voltage above 300 volts. 1/2″ x 5/8″ mounting hole in tabs are standard.



CHANNEL TUBE STRIP HEATER STOCK LIST

OVERALL LENGTH (INCHES)	WATTS	VOLTS 120 (1)	VOLTS 240 (2)	PART NUMBER
1½ X 5½	180	*	*	CHA50E50
1½ X 8	250	*	*	CHA50H
1½ X 8	500	*	*	CHA50H
1½ X 9	400	*	*	CHA50J
1½ X 9	300	*	*	CHA50J
1½ X 12	500	*	*	CHA50AB
1½ X 12	700	*	*	CHA50AB
1½ X 13¾	600	*	*	CHA50AC75
1½ X 15¼	800	*	*	CHA50AE25
1½ X 17¼	900	*	*	CHA50AG25
1½ X 18	800	*	*	CHA5AH
1½ X 18	1000	*	*	CHA50AH
1½ X 23½	1100	*	*	CHA50BC50
1½ X 23½	1500		*	CHA50BC50
1½ X 25½	1200		*	CHA50BE50
1½ X 26	1000		*	CHA50BF
1½ X 26½	1500		*	CHA50BF50
1½ X 27	1000		*	CHA50BG
1½ X 28	1200		*	CHA50BH
1½ X 30	1750		*	CHA50CO
1½ X 31½	1500		*	CHA50CA50
1½ X 33½	1300		*	CHA50CC50
1½ X 35½	1500		*	CHA50CE50
1½ X 36	1600		*	CHA50CF
1½ X 37½	1800		*	CHA50CG50
1½ X 38	1500		*	CHA50CH
1½ X 43½	2100		*	CHA50DC50
1½ X 44¼	1600		*	CHA50DD25
1½ X 47½	1350		*	CHA50DG50
1½ X 47½	2200		*	CHA50DG50
1½ X 49¼	2500		*	CHA50DJ25
1½ X 61¼	3100		*	CHA50FA25
1½ X 73¼	3700		*	CHA50GC25

HOW TO ORDER CHANNEL TUBE STRIP HEATER

1. Order by part number, if known
2. State quantity
3. Length
4. Wattage
5. Voltage
6. Thickness
7. With tabs (T) or without (WO)
8. Termination

DELTA MANUFACTURING COMPANY INCORPORATED

CHANNEL TUBE STRIP HEATERS & FINNED CHANNEL TUBE HEATERS

CHANNEL SPECIFICATIONS

MECHANICAL

STANDARD WIDTH:	1-1/2″ ± .010
THICKNESS:	5/16″ ± .005, 3/8″ ± .008
LENGTH TOLERANCE:	± 1/16″ to 20″ ± 1/8″ over 20″
MOUNTING SLOT STANDARD:	5/16″ X 1/2″
MOUNTING SLOT OVER SIZE:	1/2″ X 5/8″ 300 volts and over
SHEATH:	304 stainless steel
SCREW TERMINALS:	Stainless steel 10-32 UNF
SHEATH TEMPERATURE:	1200°F (650°C) maximum
TEMPERATURE:	Clamp-on surface 850°F (454°C) maximum

ELECTRICAL

RESISTANCE TOLERANCE:	NEMA standard + 10% −5%
WATTAGE TOLERANCE:	NEMA standard + 5% −10%
MAXIMUM VOLTS:	480 volts
MAXIMUM AMPERAGE:	22 amps

WATT DENSITY = $\frac{\text{WATTAGE}}{\text{EHL X 3.625}}$ (TOP + BOTTOM + SIDES)

Secondary insulating bushing must be used on each mounting tab when connected in series or in direct line voltage above 300 volts.

FINNED CHANNEL TUBE HEATER STOCK LIST

OVERALL LENGTH (INCHES)	WATTS	120 (1) POST T-3	240 (2) POST T-3	PART NUMBER
2 X 10½	500	*	*	FSBK50
2 X 10½	700	*	*	FSBK50
2 X 12	650	*	*	FSBM
2 X 12	900	*	*	FSBM
2 X 14	800	*	*	FSBO
2 X 14	1100	*	*	FSBO
2 X 15¼	1200	*	*	FSBAE25
2 X 18	1500	*	*	FSBAH
2 X 19½	1700	*	*	FSBAJ50
2 X 20	1500	*	*	FSBBO
2 X 21	1800	*	*	FSBBA
2 X 23¾	2200		*	FSBBC75
2 X 25½	2400		*	FSBBE50
2 X 26¾	2500		*	FSBBF75
2 X 30	2100		*	FSBCO
2 X 30½	2800		*	FSBCO50
2 X 33½	3000		*	FSBCC50
2 X 36	3400		*	FSBCF
2 X 38½	3700		*	FSBCH50
2 X 42½	4000		*	FSBDB50
2 X 48	2100		*	FSBDH

The above list is of common sizes and ratings available.
Not all items are stocked.

FINNED CHANNEL SPECIFICATIONS

MECHANICAL

WIDTH INCLUDING FINS:	2″
HEIGHT INCLUDING FINS:	1-3/8″
LENGTH TOLERANCE:	± 1/16″ to 20″ ± 1/8″ over 20″
MOUNTING SLOT STANDARD:	5/16″ X 1/2″
MOUNTING SLOT OVER SIZE:	1/2″ X 5/8″ 300 volts and over
FINS:	Nickel plated steel
SCREW TERMINALS:	Stainless steel 10-32 UNF

Secondary insulating bushing must be used on each mounting tab when connected in series or in direct line voltage above 300 volts.

ELECTRICAL

RESISTANCE TOLERANCE:	NEMA standard + 10% −5%
WATTAGE TOLERANCE:	NEMA standard + 5% −10%
MAXIMUM VOLTS:	480 volts
MAXIMUM AMPERAGE:	22 amps

MAXIMUM OPERATING TEMPERATURES

STILL AIR	MAX WATTS PER SQ. IN.	MOVING AIR	MAX WATTS PER SQ. IN.
UP TO 300°F	20	AT 600 ft per min. up to 200°F	35
300°F TO 600°F	16	AT 600 ft. per min. up to 400°F	25
600°F TO 800°F	10	AT 600 ft. per min. up to 600°F	20

HOW TO ORDER FINTUBE STRIP HEATERS

1. Order by part number, if known
2. State quantity
3. Length
4. Watts
5. Volts
6. Termination

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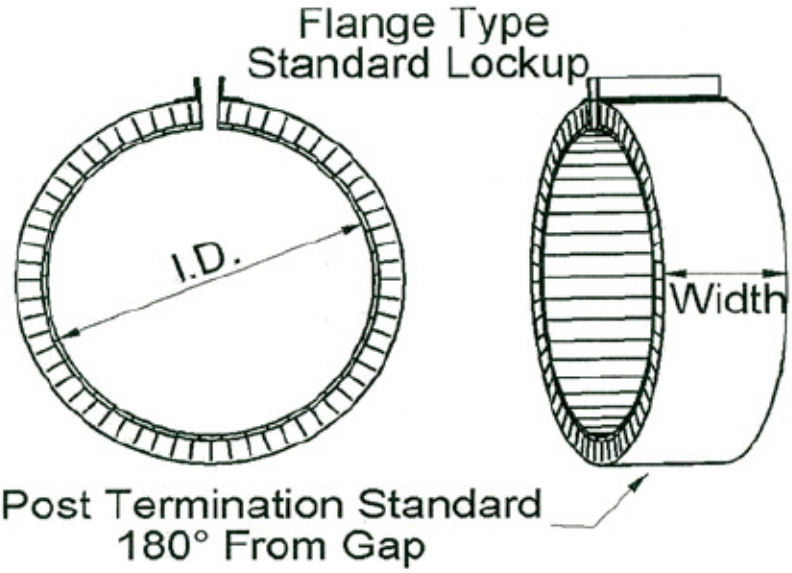

Note: Drawing is for illustration purposes only

DELTA MANUFACTURING COMPANY CERAMIC BAND SPECIFICATION DATA SHEET

Customer _____ Contact _____ Phone # _____

Address _____ Fax # _____ E-mail address _____

Heater Dimensions:
I.D._____(in)Width_____(in)
I.D._____(mm)Width_____(mm)

Maximum Operating Temperature_____F°

Rating:
Voltage_____ Phase_____ Watts_____

Construction:
☐ 1-piece ☐ 2-piece ☐ Partial
☐ Special Insulation ☐ Liner

Clamping:
☐ Flange(F) Standard ☐ Built-In (BB)
☐ Latch & Trunion (LT)

Terminations: (POST TERMINALS RECOMMENDED)
15 Amps Max
☐ Post T2 Tandem ☐ Post T3 Parallel

Terminations: (LEADS NOT RECOMMENDED)
Maximum 10 amps
☐ Fiberglass Leadwire length _____
☐ Overbraid/Conduit length _____

Single Exit:
☐ Metal Braid (C)
☐ Conduit (M) ☐ Galv ☐ SS
☐ Right Angle Elbow (MR) ☐ Galv ☐ SS
☐ Standoff Construction (SO)

Other:
☐ Terminal Box (TB) - Standard 2-Terminal
☐ Terminal Box (TB3) - 3 Terminals
☐ Ceramic Caps (CC)
☐ Euro Plug w/ Box (EPB) ☐ Horizontal ☐ Vertical
All (EP) maximum 15 Amps

Options:
Note: Holes/cutouts Not Recommended
Probe Provision Should Be at Gap
☐ Special Gap Width 1-pc Construction _____in.
☐ Special Gap Width 2-pc Each End _____in.
☐ Customers Part Number
☐ Other
Specify_____
_____

Fax drawings to: 918-224-6866
E-Mail to: info@deltamfg.com.
Send sample: 8717 W. 84th St.
Tulsa, Ok 74131

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