

Chromalox®

Installation Instructions and RENEWAL PARTS IDENTIFICATION

SERVICE REFERENCE

DIVISION 4	SECTION HBT
SALES REFERENCE (Replaces PV402-3)	PM402-3
161-048371-001	
DATE	SEPTEMBER, 2004

Type HBT Tubular Heater Bands



Specifications – Table A

Model	Volts	Watts (Total)	Amperes		Barrel Diameter (In.)
			120V	240V	
HBT-30*	120/240	675	5.62	2.81	3
HBT-36*	120/240	925	7.70	3.85	3¾
HBT-40*	120/240	650	5.42	2.71	4
HBT-45*	120/240	750	6.25	3.13	4½
HBT-4411*	120/240	1100	9.17	4.58	4½
HBT-50*	120/240	825	6.88	3.44	5
HBT-55	120 or 240	950	7.91	3.96	5½
HBT-65	120 or 240	1100	9.17	4.58	6½
HBT-75	120 or 240	1275	10.63	5.31	7½
HBT-85	120 or 240	1425	11.88	5.93	8½
HBT-95	120 or 240	1550	12.92	6.46	9½
HBT-120	120 or 240	2000	16.67	8.33	12

*Connected in series for 240 volt.

GENERAL

⚠ WARNING

FIRE/EXPLOSION HAZARD. This heater is not intended for use in hazardous atmospheres where flammable vapors, gases, liquids or other combustible atmospheres are present as defined in the National Electrical Code. Failure to comply can result in personal injury or property damage.

1. Heater Construction Characteristics —
 - A. One-piece stainless steel clamping band.
 - B. Two (2) matching alloy sheath tubular heating elements.
 - C. Heavy construction of clamp and quick-connect Allen head bolt allow firm grip on heaters and tight heater fit to pipe or barrel configuration.

2. Heater bands may be used individually or in multiples spaced ½" apart.

⚠ WARNING

The system designer is responsible for the safety of this equipment and should install adequate back-up controls and safety devices with their electric heating equipment. Where the consequences of failure could result in personal injury or property damage, back-up controls are essential.

INSTALLATION

1. Position clamping band over heating elements. The quick-disconnect bolt should be threaded sufficiently through trunnion so that it holds the elements in place when snapped into the socket. Grip clamping band and elements at each end and spread sufficiently to position heater band around the surface to be heated.
2. When heater band is correctly placed in the desired location, compress ends of band together and snap bolt head into trunnion socket as shown in Figure 2.
3. Turn Allen head bolt with 1/4" Allen wrench to draw heater band tight on cylinder. Ensure that there is good contact between heating element and cylinder. (See Figure 3)
4. **CAUTION: Hazard of heater failure. To avoid "hotspots", good thermal contact must be maintained between heater and associated barrel or pipe at all times. Heater sheath temperature should not exceed 1600°F.**

⚠ WARNING

FIRE HAZARD. Since heaters are capable of developing high temperatures, extreme care should be taken to:

- A. Avoid installing heaters in an atmosphere containing combustible gases and vapor.
- B. Avoid contact between heater and combustible material.
- C. Keep combustible materials far enough away to be free of effects of high temperature.

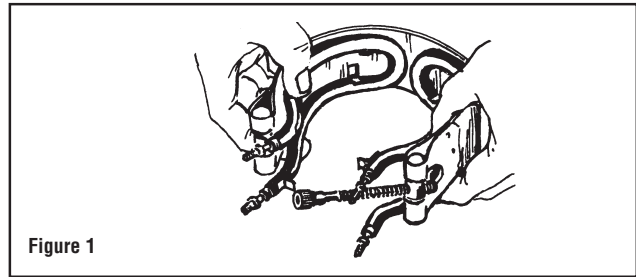


Figure 1

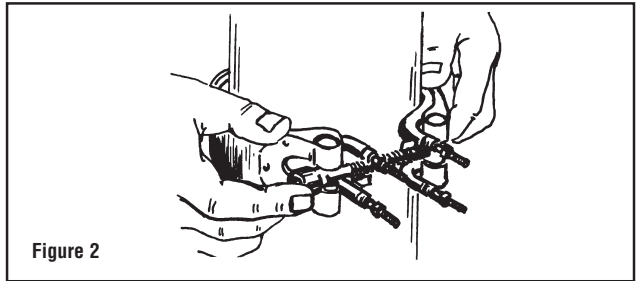


Figure 2

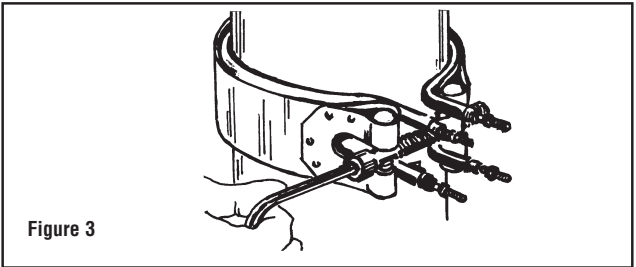


Figure 3

WIRING

⚠ WARNING

ELECTRIC SHOCK HAZARD. Disconnect all power before installing or servicing heater. Failure to do so could result in personal injury or property damage. Heater must be installed by a qualified person in accordance with the National Electrical Code, NFPA 70.

ELECTRIC SHOCK HAZARD. Any installation involving electric heaters must be performed by a qualified person and must be effectively grounded in accordance with the National Electrical Code to eliminate shock hazard.

1. Rough-in Wiring — Wiring to heater should be to the voltage specified on heater and in accordance with local and National Electrical Codes. **CAUTION: High temperatures will oxidize copper. Do not use copper wire in connecting this heater. Solid or stranded, insulated, nickel-plated copper is recommended.** As a guide in determining line wire sizes see amperes in Specifications Table A on page 1.

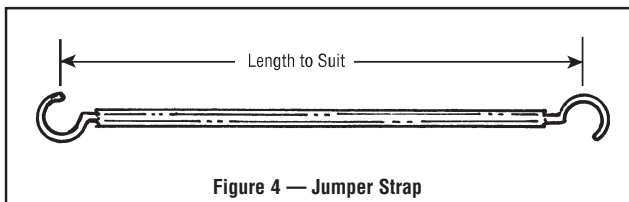


Figure 4 — Jumper Strap

2. Assemble terminal hardware and wiring in the order shown in Figure 7 on next page. Note: In applications where jumper strap(s) provided is (are) too short, fashion a wire jumper (See Figure 4) to the correct length.

CAUTION: Do not exceed 11 inch pounds or torque when tightening the hex nuts on the heater terminals. Excessive torque will result in stripping the terminals from the refractory of the heating element.

3. Wiring Heaters —

- A. **IMPORTANT** — The following heaters: HBT-30, HBT-36, HBT-40, HBT-4411, HBT-45 and HBT-50 consist of two (2) 120-volt elements which **must** always be wired in series when used on 240-volts. Failure to comply will result in heater burnout. See wiring diagram Figure 5 for wiring in series.
- B. For rated output for all other heater bands, connect heating elements in parallel and make line connections as shown in Figure 6.

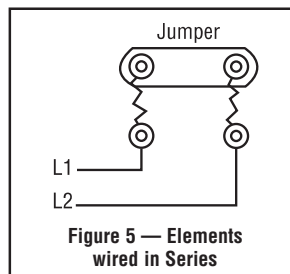


Figure 5 — Elements wired in Series

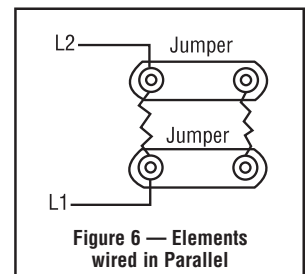


Figure 6 — Elements wired in Parallel

TESTING

⚠ WARNING

Hazard of Electric Shock or Burns. Avoid contact to hot surfaces and live electrical terminals during this adjustment.

1. Energize the heater and check for hot spots after the heater has reached operating temperature. These can be identified as bright red areas on the heating element or dark brown areas on the clamping band. If hot spots are encountered, place a wooden block on the affected area and tap lightly with a hammer to bring the heater in contact with the pipe or barrel surface.

2. It's good practice to check the tightness of the clamping band after a few hours at operation temperature.

MAINTENANCE

⚠ WARNING

ELECTRIC SHOCK HAZARD. Disconnect all power before installing or servicing heater. Failure to do so could result in personal injury or property damage. Heater must be installed by a qualified person in accordance with the National Electrical Code, NFPA 70.

1. For longer heater life, maintain good contact between heater and work cylinder by periodically checking clamping band tightness.

2. Make certain that both the terminals and band are free from contact with oil, liquids or other foreign matter. Such contaminants can cause heater failures.
3. Check for loose terminal connections and tighten if necessary.

RENEWAL PARTS IDENTIFICATION

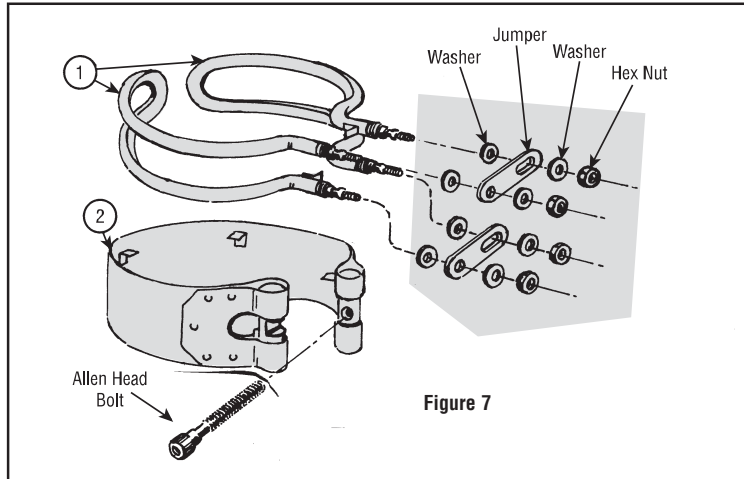


Figure 7

Terminal Parts Kit

Part No. 168-115456-001

(Includes 8 Washers, 4 Hex nuts, 2 Jumper Straps.)

(Note: If wired in series, 2nd jumper strap is not needed. See Fig. 5)

Model	Volts	Total Wattage	① Heating Element Sub-Assembly	② Clamping* Band
HBT-30	120/240	675	319-019515-019 (2)	055-050835-010
HBT-36	120/240	925	319-019515-021 (2)	055-050835-011
HBT-40	120/240	650	319-019515-001 (2)	055-050835-001
HBT-45	120/240	750	319-019515-003 (2)	055-050835-002
HBT-4411	120/240	1100	319-019515-023 (2)	055-050835-002
HBT-50	120/240	825	319-019515-005 (2)	055-050835-003
HBT-55	120	950	319-019515-007 (2)	055-050835-004
HBT-55	240	950	319-019515-008 (2)	055-050835-004
HBT-65	120	1100	319-019515-009 (2)	055-050835-005
HBT-65	240	1100	319-019515-010 (2)	055-050835-005
HBT-75	120	1275	319-019515-011 (2)	055-050835-006
HBT-75	240	1275	319-019515-012 (2)	055-050835-006
HBT-85	120	1425	319-019515-013 (2)	055-050835-007
HBT-85	240	1425	319-019515-014 (2)	055-050835-007
HBT-95	120	1550	319-019515-015 (2)	055-050835-008
HBT-95	240	1550	319-019515-016 (2)	055-050835-008
HBT-120	120	2000	319-019515-017 (2)	055-050835-009
HBT-120	240	2000	319-019515-018 (2)	055-050835-009

Note: Number in () indicates quantity of same part number used.

*Includes Allen Head Bolt.

Limited Warranty:

Please refer to the Chromalox limited warranty applicable to this product at <http://www.chromalox.com/customer-service/policies/termsofsale.aspx>.

Chromalox[®]
PRECISION HEAT AND CONTROL

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