

# Chromalox®

## Installation Instructions

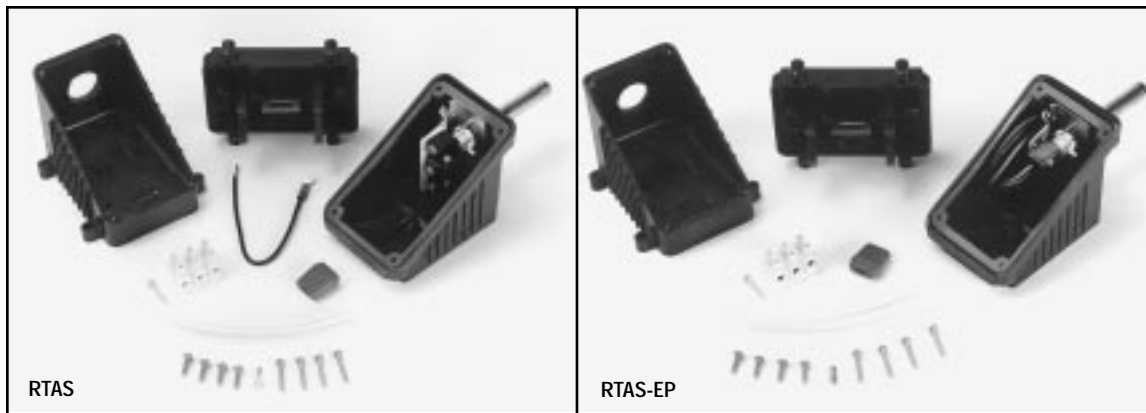
**NOTICE:** These thermostats are designed for temperature control service only. Because they may not fail safe, they should not be used for temperature limiting duty.

**WARNING:** Users should install adequate back-up controls and safety devices with their electric heating equipment. Where the consequences of failure may be severe, back-up controls are essential. Although the safety of the installation is the responsibility of the user, Chromalox will be glad to make equipment recommendations.

### SERVICE REFERENCE

DIVISION 4	SECTION RT
SALES REFERENCE (Supersedes PJ-453-6)	PJ453-7
161-562764-001	
DATE	OCTOBER, 1998

## RTAS and RTAS-EP Power Connection Kit With Integral Thermostat



#### RTAS and RTAS-EP Kit Parts:

- 1 – Molded Enclosure consisting of Base – Box – Lid
- 1 – Three Position Terminal Block
- 1 – Mounting Screw for Terminal Block
- 1 – Uninsulated Barrel Connector (RTAS-EP Only)
- 1 – Cover Gasket
- 1 – Six Inch Length of Insulating Tubing

- 1 – Eight Inch Length of 14 AWG Insulated Wire
- 4 – Cover Screws, 5/8" Long
- 4 – Box Screws, 1" Long
- 1 – Ring Connector (RTAS Only)
- 1 – Thermostat

### GENERAL

These kits are designed to provide temperature control as well as termination for one run of Rapid Trace Heating Cable. Select and purchase one grommet for terminating the cable. Please refer to the list below to ensure you purchase the proper grommet for the cable you are installing.

- GR1 For SRL-C
- GR2 For SRL-CR or SRL-CT
- GR3 For CWM-C
- GR4 For CWM-CT
- GR5 For SRL-MC
- GR6 For SRL-MCR or SRL-MCT

- GR7 For SRM/E-C
- GR8 For SRM-E/CT

Each kit contains enough material to connect one cable. One additional self-regulating cable can be connected; an extra grommet is required.

Materials required for installation include: sharp utility knife, standard electrical cutters, screwdriver and a pipe strap (Chromalox PS or equal).

Wipe inside lip of cover with a clean cloth. Remove protective backing from the gasket and affix it to the cover lip. Press firmly all around for proper adhesion.

### INSTALLATION

**WARNING:** Hazard of Electric Shock. Disconnect all power before starting. All installations must be effectively grounded in accordance with the National Electrical Code to eliminate shock hazard.

**Note:** All electrical wiring, including GFCI (Ground Fault Circuit Interrupters), must be done according to National Electrical or local codes by a qualified person.

**Note:** These instructions are for all Self-Regulating and Constant Wattage Heating Cables in ordinary locations. Consult factory for installation of braided cable in hazardous locations. Not all instructions, however, are for all cases. Each step of the instructions will have a heading in boldface stating what type of cable or connection each instruction is intended.

## INSTALLATION

### 1. FOR CONSTANT WATTAGE CABLES:

Cut the cable 12 inches past the last module point (indentation in cable). Note: Cutting the cable between module points creates a non-heating cold lead. See Figure 1.

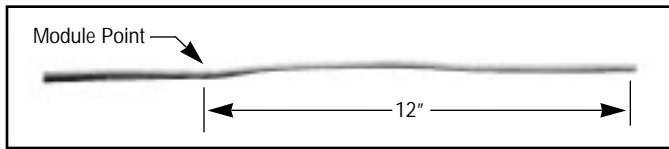


Figure 1

### 2. FOR CABLE WITH EXPOSED METAL BRAID (-C):

Push the braid back 12 inches on the cable. See Figure 2.

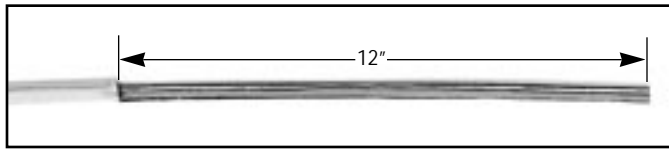


Figure 2

### 3. FOR ALL CABLES:

Feed the ends of the cables through the appropriate holes in the base. Allow eight inches of cable to extend above the top of the base. Slide cable grommet over the end of the cable and insert it into the opening in the base. See Figure 3.

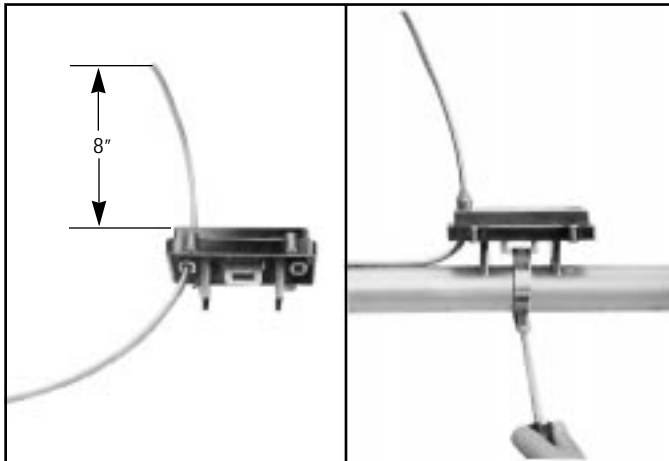


Figure 3

### 4. FOR ALL CABLES:

Secure the base to the pipe by threading the appropriate sized pipestrap through the slot in the mounting plate. Tighten the pipestrap until the base is securely attached to the pipe. Slide cable grommet over the end of the cable and insert it into the opening in the base. See Figure 4.



Figure 4

### 5. FOR OVERCOATED CABLES (-CR or -CT):

Score the outer insulation 1-1/2 inches from the end of the cable. Remove the jacket to expose the metal braid. See Figure 5.

**WARNING: Do not damage the braid or the base cable insulation.**

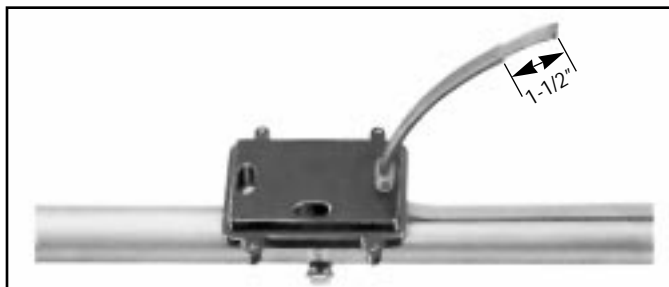


Figure 5

### 6. FOR ALL CABLES:

Punch out the knockouts on the bottom of the box which correspond to the openings in the base through which the heating cable passes. If you should make a mistake, blank grommets can be ordered to re-establish the water tight seal. See Figure 6.

### 7. FOR ALL CABLES:

Feed the cables through the corresponding holes in the box. Secure box to base using all four large (8-32) screws. See Figure 7.

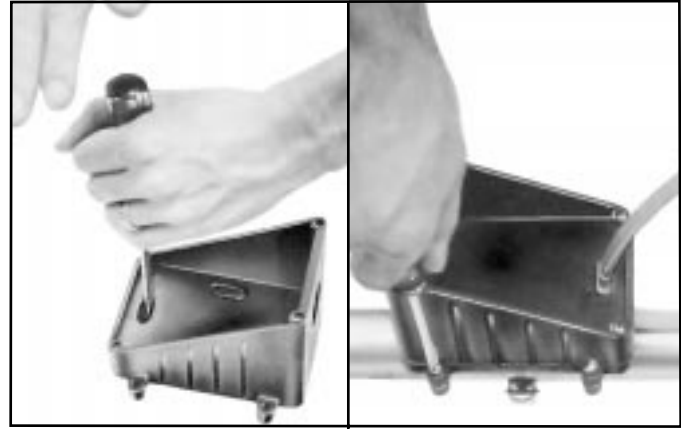


Figure 6

Figure 7

### 8. FOR OVERCOATED CABLES:

Starting from the end of the cable, unravel 1-1/2 inches of the braid. Twist the strands together to form a pigtail. See Figure 8.

### 9. FOR SELF-REGULATING CABLES:

Using standard electrical cutters, cut a 3/4 inch long notch out of the cable between the conductor wires. Bare a 3/8 inch length of each conductor by stripping off the outside insulation and the inner black core material. See Figure 9.

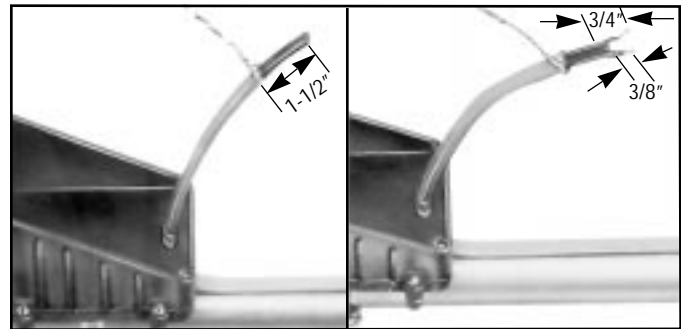


Figure 8

Figure 9

### 10. FOR CONSTANT WATTAGE CABLES:

Score the outer jacket 3/4 inch from the end of the cable and remove the jacket. Cut off the exposed nichrome wire, pushing any remainder back under the jacket. Constant Wattage cables have an inner layer of insulation which is also to be removed as described above. Separate the buss wires and strip off the last 3/8 inch of insulation from both buss wires. See Figure 10.

### 11. FOR OVERCOATED CABLES:

Slide the insulating tube over the end of the cable. Insert the end of the braid pigtail into the opening in the terminal block which will be nearest the center of the box. Tighten the screw firmly to hold the braid in place. See Figure 11.

## INSTALLATION

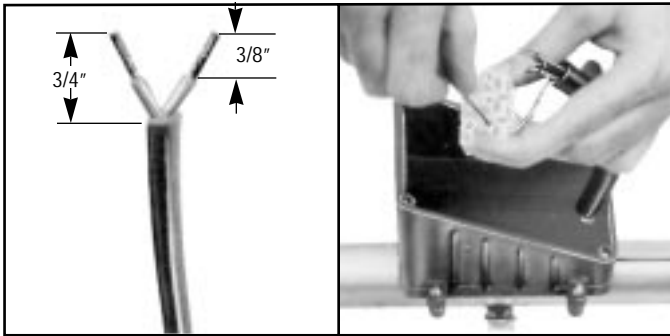


Figure 10



Figure 11

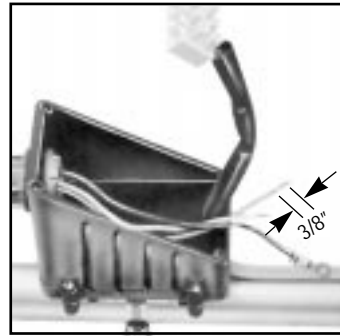


Figure 15



Figure 16

### 12. FOR ALL CABLES:

Insert the bared ends of the conductors into two adjacent openings in the terminal block. Tighten screws firmly to hold conductors in place. See Figure 12.



Figure 12

### 13. FOR RTAS ONLY:

Remove the screw and collar from the NORMALLY CLOSED terminal of the thermostat. Discard the collar. Push the screw through the opening in the connector attached to the insulated wire and screw it back into the normally closed terminal. See Figure 13.

### 14. FOR ALL CABLES:

Connect conduit hub (Chromalox CCH-1 or equal) to the box. Attach conduit to hub and bring eight inches of power leads into the box. See Figure 14.



Figure 13



Figure 14

### 15. FOR ALL CABLES:

Strip a 3/8 inch length of each conductor of the power wiring. Crimp the ring connector onto the end of the "Hot" conductor. See Figure 15.

### 16. FOR RTAS ONLY:

Remove the screw and collar from the COMMON terminal. Discard the collar. Push the screw through the opening in the ring connector. Drive the screw back into the COMMON terminal. See Figure 16.

### 17. FOR RTAS ONLY:

Insert the bared end of the ground wire into the opening of the terminal block which is opposite of the braid (or is empty). Insert the ends of the other hot (or neutral) and the eight inch long wire into the two remaining openings in the terminal block. Tighten screws firmly to hold conductors in place. See Figure 17.

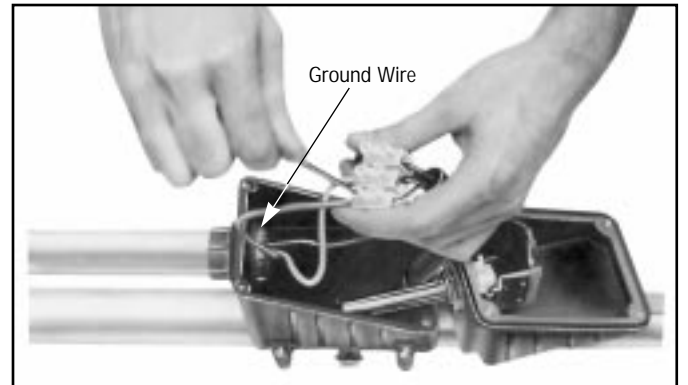


Figure 17

### 18. FOR RTAS-EP ONLY:

Slide the bared end of the hot power lead into the opening in the terminal block which is opposite of the empty terminal. Slide the bared end of the other hot or the neutral power lead into the middle opening of the terminal block. Tighten the screws firmly to hold the wires in place. See Figure 18.



Figure 18

### 19. FOR RTAS-EP ONLY:

- A. Slide the bared end of the black (NORMALLY CLOSED) thermostat wire into the opening of the terminal block which is next to the incoming power leads.
- B. Slide the bared end of the purple (COMMON) thermostat wire into the opening opposite of the hot power lead. Tighten the screws firmly to hold the wires in place. See Figures 19A and 19B.

## INSTALLATION

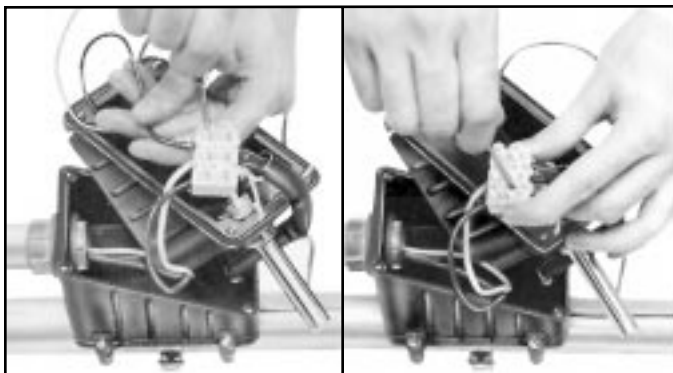


Figure 19A

Figure 19B

### 20. FOR RTAS-EP ONLY:

Trim the blue (NORMALLY OPEN) thermostat wire so that it is only two inches long. Tape over the end of the wire using fiberglass tape.) See Figure 20.

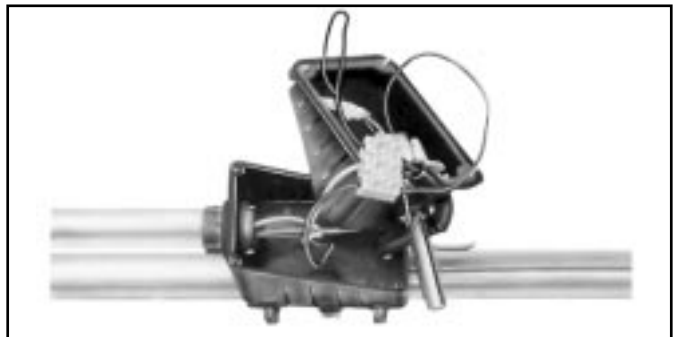


Figure 20

### 21. FOR RTAS-EP WITH OVERCOATED CABLES ONLY:

Slide the bared end of the ground wire into the end of the uninsulated barrel connector. Crimp it on using a crimping tool. Slide the end of the braid pigtail into the other end of the uninsulated barrel connector and crimp it on. See Figure 21.

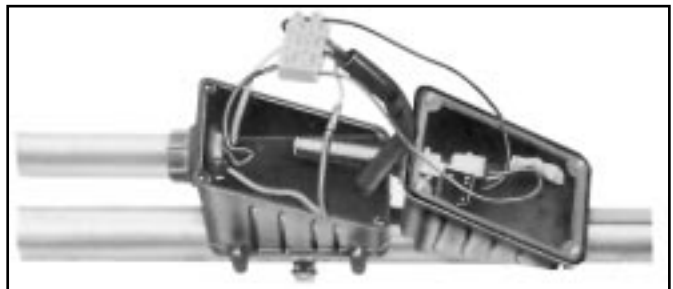


Figure 21

### 22. FOR ALL CABLES:

Mount terminal block to bottom of the box by driving the 6-32 self-tapping screw into the mounting hole as shown. See Figure 22.



Figure 22

### 23. FOR ALL CABLES:

The thermostat is shipped factory preset and pre-calibrated for 40°F operation. The setting may be changed by rotating the white knobs until the desired temperature is directly behind the setting post.

Carefully push the wires into the box. Secure lid to box. See Figure 23.



Figure 23

### 24. FOR CABLES WITH EXPOSED METAL BRAID:

Unravel four inches of braid from the cable and twist into a pigtail. Insert the end of the pigtail into one end of the uninsulated barrel connector and crimp it on. Connect to appropriate grounding source.

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