



TPC1 Hazardous Power / End Connection Kit

Installation Instructions

Model TPC1 Hazardous Power or End Connection kit consisting of a gland and end seal for TRACEPAK heater cables. This kit is used with an approved junction box of 120 in³ (2000 cm³) volume.

CSA Certified: CI I Div 1 or 2, Gp B, C & D
CI II Div 1 or 2, Gp E, F & G

When used with the following O'Brien heaters:

| | |
|----------|---------------------|
| J3 - J5 | 3 or 5BTV1-CT |
| P3 - P5 | 3 or 5BTV2-CT |
| B5 - B20 | 5, 10, or 20XTV1-CT |
| N5 - N20 | 5, 10, or 20XTV2-CT |

Note: Heating circuits in hazardous areas must be protected by a suitable approved ground leakage circuit breaker.

KIT CONTENTS

- 1 TPC1 ALUMINUM HOUSING ASSEMBLY
- 1 LEAD WEDGE
- 1 TERMINAL BLOCK
- 2 HEAT SHRINK BLACK
- 1 HEAT SHRINK CLEAR
- 1 POTTING COMPOUND AND NOZZLE



1. If ambient is below 70°F (21 °C) remove Potting Material Syringe and store in a warm place such as an inner shirt pocket.
2. The TPC1 fitting must be installed in a 3/4" FNPT fitting or hub on an appropriate junction box. Install item 10 BODY wrench tight into hub of approved junction box or fitting.
3. Cut heating cable to length, leaving a minimum of 6" (150mm) inside the junction box. Mark the cable where it enters the termination fitting going into the junction box.



TOOLS REQUIRED:

- Slip Joint Pliers
- Needle Nose Pliers
- Wire Cutters
- Heat Gun
- Knife

INSTALLATION TPC1

4. Slip components of terminating kit onto the heating cable in the following order:

- Item 1 CAP
- Item 2 OUTER STOP
- Item 3 COLLAR WITH Item 4 O-RING
- Item 5 GROMMET
- Item 6 BUSHING
- Item 7 FOLLOWER WASHER

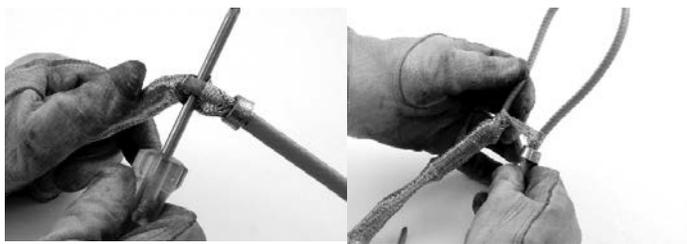


5. Begin 3/4" (20 mm) from the mark made where the cable enters the fitting and remove the outer cable jacket to expose the grounding braid. Be careful not to damage the braid.



6. Lightly crimp on item 8 LEAD WEDGE. Do not use excessive crimping action distorting the wedge. Locate the wide side of the taper of the wedge at the end of the jacket. Insure the wedge does not cover any portion of the jacket material and is covering only the braid.

7. Remove the braid to within 1/8" (3mm) of the narrow side of the wedge. Separate the braid by pulling the heating cable out from the braid close to the outer jacket.



Pull and twist the braid into a tight pigtail. Do not cut the braid or damage the cable underneath. For Group B installations only, solder the twisted pigtail for a minimum of 1-1/2" (40 mm) from the lead wedge.

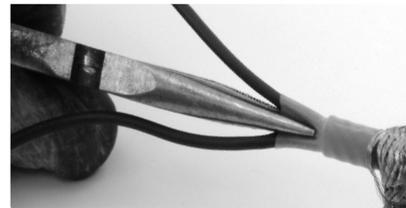
8. Score around the cable jacket 1/2" (12mm) from the narrow side of the wedge. As applicable, either remove the inner jacket below the braid and then remove the spiral polymer heating strands flush with the score or remove the inner jacket below the braid and expose the conductive core.

9. As applicable, either pull bus wires sideways from center core, or using a sharp knife make a cut just inside of each bus wire and pull bus wires sideways from conductive core.

10. Using a pair of diagonal cutters, carefully remove center or conductive core flush with 1/2" score. Do not nick the bus wires or cut any of the bus wire strands.

11. Install the black small diameter shrink tubing over each bus wire insuring that the shrink tubing is fully bottomed out against the remaining core material by the lead wedge. Shrink in place with a heat gun.

12. Install the clear 1" (25mm) large diameter shrink tube bottomed out against the braid just below the smaller side of the wedge. The smaller shrink tubing and end of the core material should be in the center of the length of shrink tube. Shrink in place with a heat gun. While tubing is still hot, pinch the end between the bus wires closed with a pair of needle nosed pliers. Hold in place while tubing cools.



13. Remove Item 9 INSERT from Item 10 BODY and discard the paper separation. Insert the cable and lead wire assembly with items 8 LEAD WEDGE, 7 FOLLOWER WASHER, and 6 BUSHING into item 9 INSERT. Engage threads and tighten wrench tight to approximately 10 ft. lbs. (13.5 Nm) of torque.



Be careful not to nick or damage the tapered flame path on the side of the insert below the knurl area.



14. Remove the cap from the tip of item 13 POTTING syringe which has been stored in a warm area. While holding the insert assembly with lead wires up, fully insert syringe tip into the insert next to the wires and force out potting compound. Gradually withdraw the syringe as recess is filled allowing no air entrapment. Fill to within 1/8" (3mm) from the top of the recess.



15. Using heat gun, heat insert assembly to about 260°F. (127°C.) for several minutes until thermoset potting material hardens. (It will take about two minutes to harden at room temperature applying 260°F heat.)

16. After allowing insert to cool, install insert assembly into item 10 BODY guiding leads into junction box. Follow by inserting items 3 COLOR & 4 O-RING, item 5 GROMMET, and item 2 OUTER STOP.



17. Install item 1 CAP to item 10 BODY and tighten wrench tight.



18. Install the bus wires into the Item 15 TERMINAL BLOCK. If the application is an end connection, stow the block inside the junction box and connect the braid pigtail to the grounding lug in the junction box.

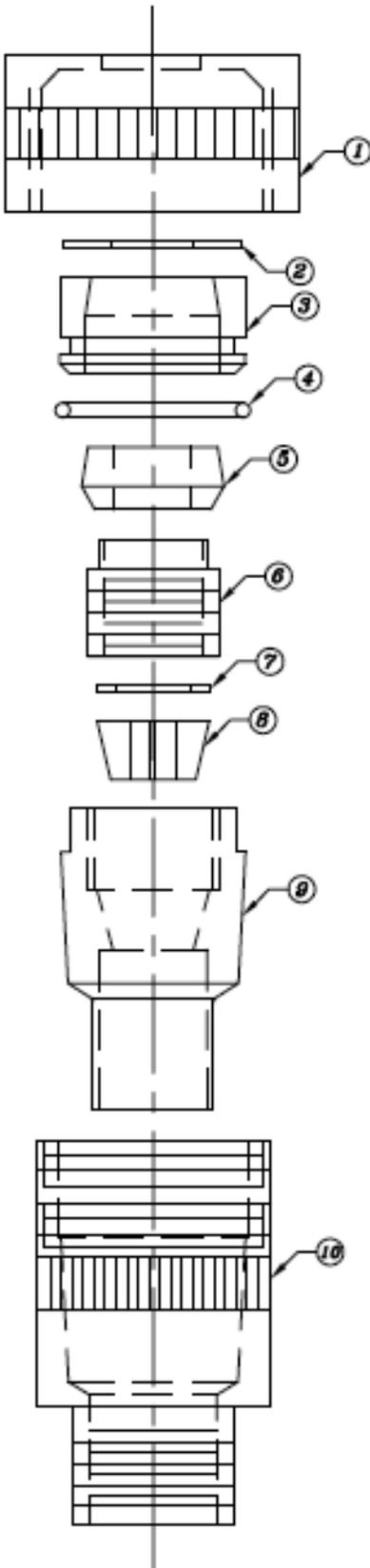
If the application is a power connection, connect power to the block using wire with an insulation rating of a minimum of 90°C such as type THHN and properly ground the junction box according to local codes.



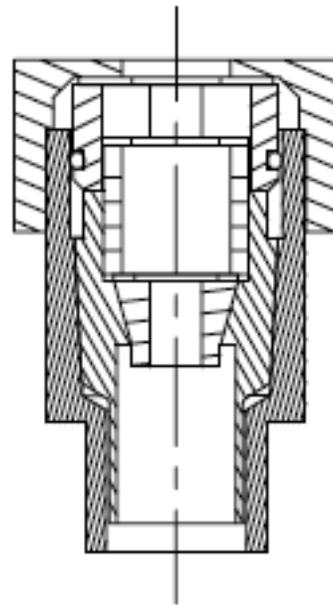
19. Securely install the junction box cover.



INSTALLATION TPC1



| ID | Description | Material |
|----|---------------------|-----------------|
| 1 | CAP | ALUMINUM |
| 2 | OUTER STOP | STAINLESS STEEL |
| 3 | COLLAR | ALUMINUM |
| 4 | O-RING | SILICONE |
| 5 | GROMMET | SILICONE |
| 6 | BUSHING | STAINLESS STEEL |
| 7 | FOLLOWER WASHER | STAINLESS STEEL |
| 8 | WEDGE | LEAD |
| 9 | INSERT | ALUMINUM |
| 10 | BODY | ALUMINUM |
| 11 | BLACK SHRINK TUBING | POLYOLIFIN |
| 12 | CLEAR SHRINK TUBING | KYNAR |
| 13 | POTTING COMPOUND | URETHANE |
| 14 | TAG | PAPER |
| 15 | TERMINAL BLOCK | |



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