Marley® Engineered Products

MEP-SPTA-HW

T-Splice Kit CRG Series

Installation, Operation & Maintenance Instructions

TOOLS REQUIRED:
Crimping Tool-Allen Tel Products, Inc - Mfg Part Number ATD-200 or equivalent, Diagonal Cutting Pliers, Razor Blade or Utility Knife, Measuring Tape

KIT CONTENTS:

QTY	DESCRIPTION
2	14-16 ga Male Connector
2	10-12 ga Male Connector
4	10-12 ga Female Connector
1	14-16 ga 2x1 Connector Adapter
1 roll	Silicone Self Fusing Tape
2 rolls	Fiberglass/Silicone Tape
1	1” x 9” long 3M Heat Shrink Tubing EPS-300
1	Butyl Rubber Sealant
1	Instruction Sheet

KIT DESCRIPTION:
The MEP-SPTA-HW splice kit is used for joining three lengths of CRG self-regulating heating tape for a branch tee.
Suitable for use with CRG series cables, power connection kit MEP-PCA-HW, MEP-ESA-ES

De-energize all power before installation or servicing

The kit contains components necessary to make one T-splice.

GENERAL INSTALLATION INSTRUCTIONS

For Dry Locations Only

1. Ground metal structures used for support or on which the cable is installed in accordance with the National Electric Code.
2. After installation of thermal insulation is complete, the insulation resistance of the entire branch circuit should not be less than 10 Mohm.
3. Install cable at- 30°C (-22° F) or above.
4. Do not install heater closer than 13mm (1/2”) to any exposed combustible surface unless the cable has a metal shield or sheath and is provided with a positive temperature control which will limit the surface temperature of the heater to a value not exceeding 72°C (I162°F).
5. Minimum bending radius for the heater is 6mm (l/4”).

Heater Splice

1. Remove the outer jacket for 75mm (3”). Push back the braid and strip the inner jacket of the heater 2” exposing the black inner core material. An extra 1/2” needs to be cut from the black inner core to reduce the exposed length from 3” to 2 1/2”. This is done to ensure that the braid pigtail lengths are able to reach the center of the splice for connection later in these instructions. In preparing the black inner core for splicing, the material in between the conductors needs to be removed from the tips of the conductors 1 1/2”. This is best accomplished using a razor blade or other sharp cutting device. The goal here is to create a void or channel between the conductors. One of the conductors should be cut back an additional 1/4”. The black inner core conductors are staggered to minimize the width of the area to be spliced and to accommodate the connectors that are to be applied to the ends of the conductors later in these instructions.The black material should be stripped from the tips of the conductors1/4” to enable fastening to the conductors that are described later in these instructions.

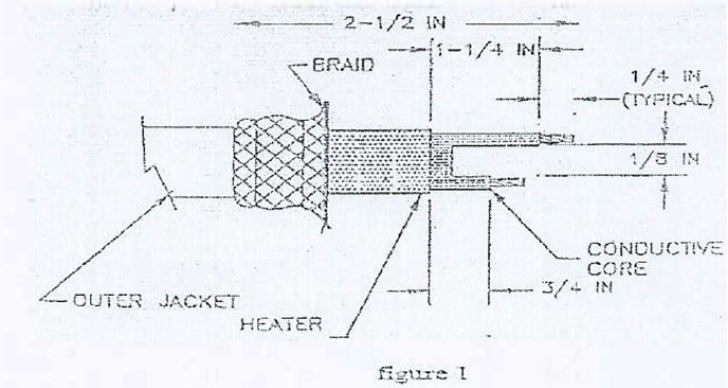


figure 1

2. Crimp the quick connectors supplied on the bus wires as shown in figure 2. In all cases, make sure the conductor/ braid to be crimped is visible beyond the end of the opening in the crimp connector (as little as 1/64”, to a longer length 1/8”, that does not impeded the final slide connection of the male and female part when fully engaged). For the male connector, this is to be done using the slot on the crimp tool directly under the number “16” or the last spot in the back of the front jaw before the pivot pin. Crimp once at the rear of the connector opening and once at the front of the opening to insure a no slip connection. For the female connector, 2 conductors (one from each cable) are placed into the connector and a different slot on the tool needs to be used. It is the slot labeled “10-12” behind the front jaw and pivot pin. Crimp once at the rear of the connector and once at the front of the connector to insure a no slip connection. Tug on the connectors after crimping to insure they are tightly crimped to the heater bus wires.

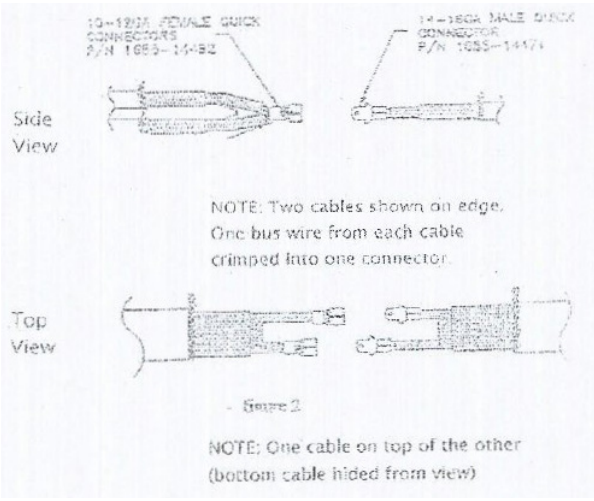


figure 2

3. Slide section of shrink sleeve over single heater. Insert male quick connector into female quick connector, make sure connection is securely fit together. (Note that crimps are staggered).

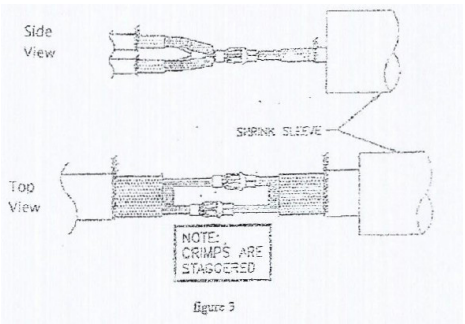


figure 3

4. Cut two 12 mm (6”) pieces of fiberglass/silicone tape. Cover each connector separately, ensuring complete coverage, overlapping in necessary. Cover the connector and the black conductive plastic up to the point where the wires are separated.

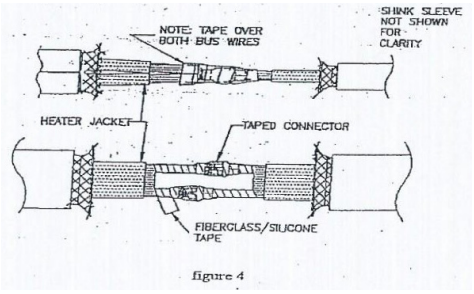


figure 4

5. Separate the strands of the braid on all three heaters and twist into pigtails. These will be connected later.

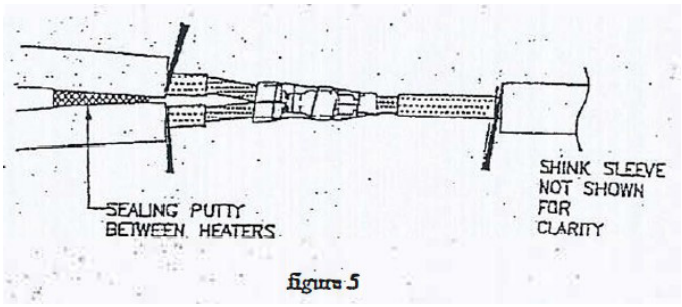


figure 5

6. Remove the backing paper from the black sealing putty provided in the T-Splice kit. Place the sealing putty between the two heaters as shown in figure 5. The sealant should be up against the braid pigtail and not touching the black conductive plastic on the heater.

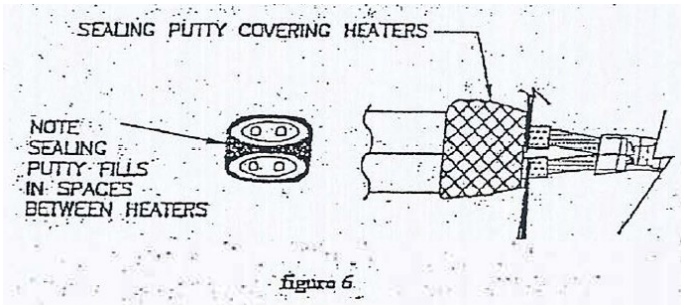


figure 6

7. Wrap the sealing putty around both heaters. Use the whole length of sealant provided. Mold the sealant around the heaters so that it fills in the spaces between the heaters and assumes the shape of the heater jacket. Mold the sealant on the outside of the heaters so it is slightly larger than the heaters' outer jacket (see figure 6).

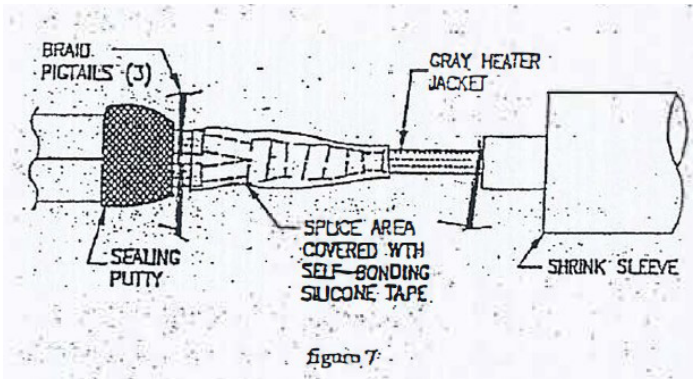


figure 7

8. Wrap the entire splice area with self-fusing silicone tape. Pull the tape tight when winding to insure bond between layers. The splice area should be covered with at least two thicknesses of tape . Be certain that the black conductive plastic is covered. Do not cover the braid with silicone tape. Crimp the large quick connect terminals onto the braid pigtails formed in step 5. This is to be done using the slot labeled "12-10" directly behind the pivot pin. Crimp once at the beginning of the connector opening and once at the end of the opening to insure that the braid does not slip out of the connector. The female quick connects are crimped onto the two pigtails on one side, the male quick connect is crimped onto the single pigtail on the opposite side.

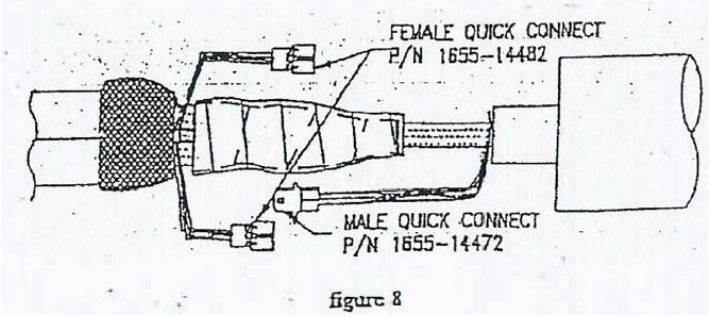


figure 8

9. Wrap a single layer of fiberglass/silicone tape over the self-fusing silicone.

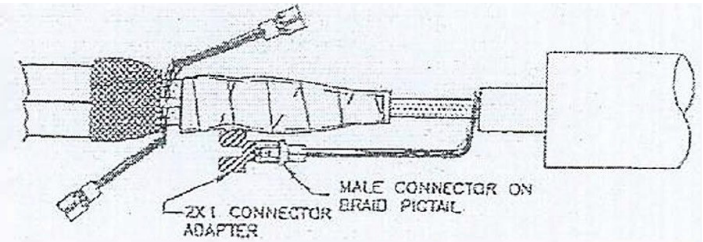
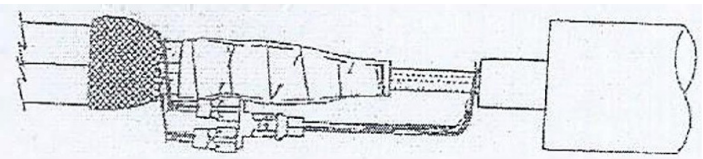
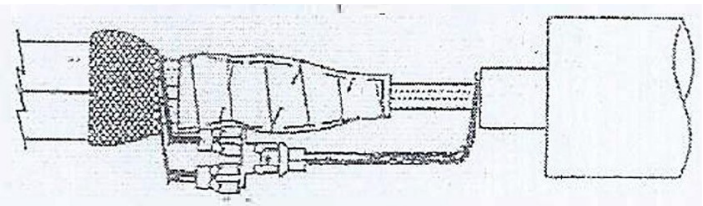


Figure 9

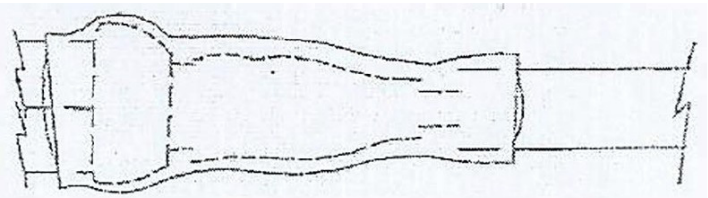
10. Push/slide the pigtail connectors together to form the connection.


Figure 10

11. Insert connector adaptor over male connector. Tug on connector to make sure it is secure. Insert female connectors to connector adapter. Make sure connection is secure. Secure adaptor and braid to splice with fiberglass/silicone tape.


Figure 11

12. Slide shrink sleeve over splice and shrink into place. Read below before attempting.


Figure 12

WARNING! Avoid overheating the heat shrink tubing. Smoke from the surface and / or charring would denote that overheating has occurred. The tubing will become brittle and may prematurely fail.

Using a heat gun or suitable heat source capable of temperatures between 400 and 650 Deg F, EVENLY apply heat to the tubing so that it shrinks uniformily with the goal being to seal the surfaces of the shrink tubing to the surfaces of the cable(s). Start with a distance of 6 inches and move closer or farther as necessary to prevent charring of the tubing and cable.

Specific details below:

Shrink sleeve should extend about 25mm (1”) over the outer jacket at each end of the splice. Heat splice in the center then work to each edge. Adhesive coating in the shrink sleeve will flow out onto heater at each end. Allow to cool 1 minute before moving.

Secure completed splice to pipe within 450mm (18”) of splice using fiberglass/silicone tape.