WarmlyYours

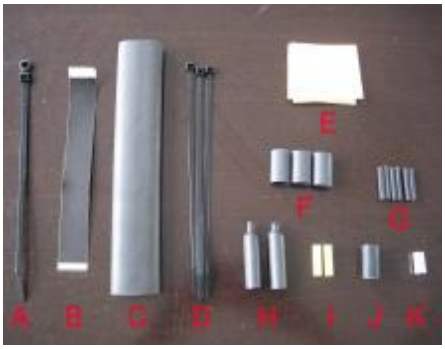
PT-SPLICE
Pipe Freeze Protection Splice Kit (for In-Line and T-Splice)

(part #JSR10)

JSR10 Splice and Tee Kit Installation Instructions

Description

The JSR10 Splice and Tee Kit is suitable for use with HTR serials self-regulating heating cables to make splice, tee and end seal connections. The kit contains materials for one splice and one end seal, or one tee connection and one end seal. This kit does not provide a power connection: use an JSR00 or JSR08 power connection kit for a complete installation.



Applications

Use the JSR10 kit with the following heating cables:HTR-C and HTR-CR heating cable. All are designed for pipe freeze protection in dry location, HTR-CR cables are designed for both wet and dry areas, as all as for roof and gutter de-icing. The cable type is printed on the outer jacket of the cable.

Tools required

Scissors,Flat nose pliers(KNIPEX 2001200),Nssdle Nose Pliers,Utility Knife,Panduit crimp tools CT100-A,Cutters,Heat Gun(2000W,Temperature Range 90-600℃(194-1112℉),air flow 300/500L/min)

Approvals

c UL us LISTED 46DV PIPE HEATING CABLE & 4FB1 DE-ICING AND SNOW MELTING EQUIPMENT

Kit Contents		
Item	Qty	Description
A	1	Clamp tie
B	1	Black cloth tape(6”long)
C	1	Heat-shrinkable tube(8″ long,1″ dia.)
D	3	Cable ties
E	5	Mastic strips(1-1/2”long,1”width)
F	3	Heat-shrinkable tube(1”long,1/2”dia.)
G	6	Heat-shrinkable tube(1″ long,1/8″ dia.)
H	2	Heat-shrinkable cap
I	2	Insulated bus wire crimps
J	1	Heat-shrinkable tube for ground
K	1	Uninsulated braid crimp

Installation Surpport:

The minimum installation temperature for this kit is 0℉(-18℃)

Warnings:

There components are electrical devices.They must be installed correctly to ensure proper operation and to prevent shock or fire.Carefully follow all of the installation instructions and read these important warnings.

• To minimize the danger of fire from sustained electrical arcing if the heating cable is damaged or improperly installed, and to comply with the requirements of the national electrical codes, ground-fault equipment protection must be used on each heating cable branch circuit. Arcing may not be stopped by conventional circuit protection.

• Bus wires will short if they contact each other.Keep bus wire separated.

• Keep ends of heating cable and kit components dry before and during installation.

• The black heating cable core is conductive and can short. It must be properly insulated and kept dry.

•Component approvals and performance are based on the use of specified parts only. Do not substituted parts or use vinyl electrical tape.

• Leave these installation instructions with the user for future reference.

• The heating cable should not be embedded in the thermal insulation.

•The cable should not be twisted during installation.

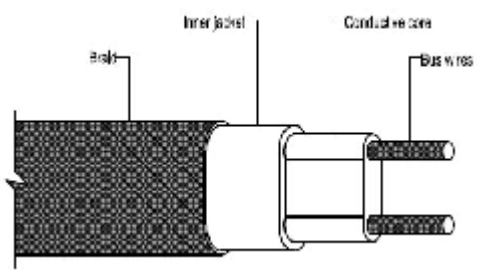
•De-energize all power circuits before installation or servicing.

• The conductive layer of this heating cable device must be connected to a suitable grounding/earthing terminal.

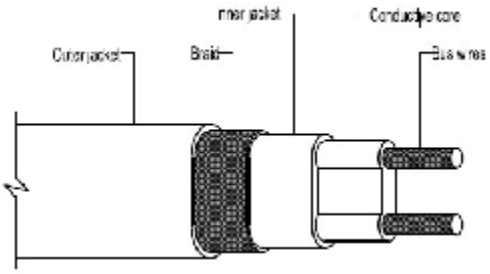
Cautions:

Charring or hurning the heat-shrinkable tubes in this kit will produce fumes that may cause eye,shin, nose,and throat irritation.

Splice and Tee Connections



Heating cable with braid and no outer jacket



Heating cable with braid and outer jacket

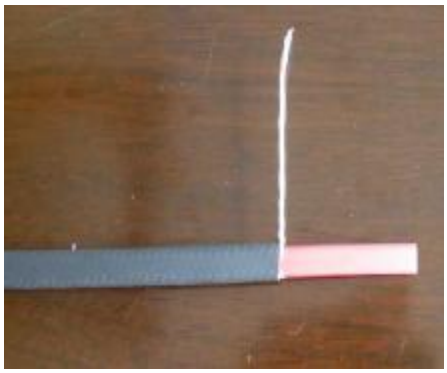
Note: Instructions generally show heating cable with braid and outer jacket. Cables with no outer jacket look slightly different from those illustrated.

Installation Instructions:

1. Cleanly cut off the end of each cable. Lightly score completely around and then down outer jacket. The length is 70 mm （2-3/4 inch）.**Do not cut braid or inner jacket.**

2. Bend heating cable to break jacket at score then peel off outer jacket.

3. Position braid on same side of each heating cable section. Straighten the braid and twist into a “pigtail”.

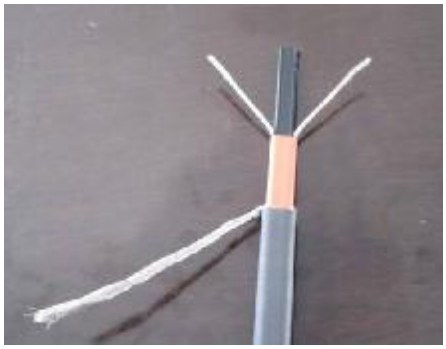


4. At the end of each heating cable, Lightly score completely around and then down inner jacket. The length is 45 mm（1-4/5 inch）.

5. Bend heating cable to break jacket at score, then peel off inner jacket.

6. Skive outside edges of black matrix.
Do not cut bus wire strands!

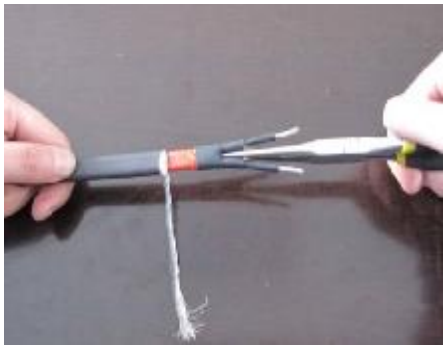
7. Peel exposed wires back from center matrix.

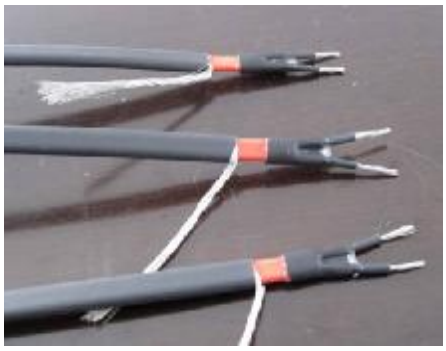


8. Cut and remove remaining center core of matrix. Leaving bare conductors.
Do not cut bus wires!

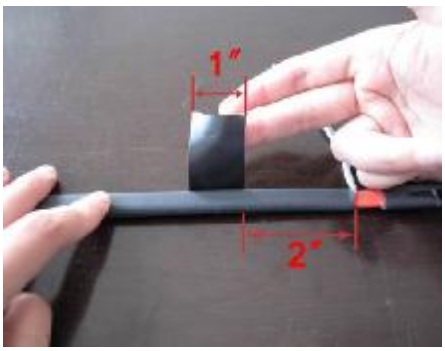
9. Slide 3.2mm (1/8 inch) × 25.4mm (1 inch) shrink tubes over bus wires. To shrink tubing move heat source continuously from side to side. Total heating time should be about 2 minutes (Temperature range 300°C-350°C (572℉-662℉)). While shrinking, ensure that tubes remain up against black core.

10. Center the 12.7mm (1/2 inch) × 25.4mm (1 inch) heat-shrinkable tube over the end of heating cable as shown. Heat tube evenly until it shrinks and adhesive flows out both ends. Shrink the tube completely. Total heating time should be about 3 minutes (Temperature 300°C -350°C(572℉-662℉)) Immediately after shrinking, pinch with needle nose pliers between wires while tube is still hot. Hold for 10 seconds to ensure seal.
Make sure the heat shrink tube completely sealed between two insulated bus wires and has no visible gap.

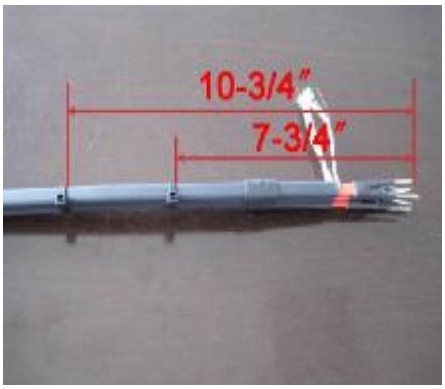




11. Remove release paper from mastic strip. Wrap a piece of mastic around the outer jacket on each heating cable section and position as shown.**(For more width heating cable, especially for HTR heating cable series, stretch the mastic strips, make sure the length can full around the outer jacket on each heating cable)**



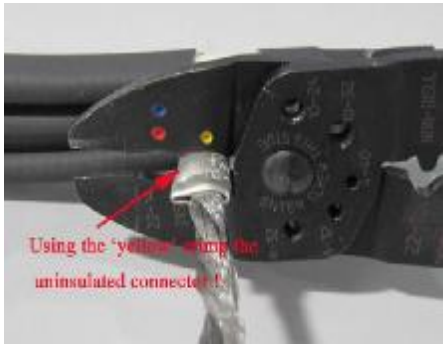
12. Carefully align the heating cable sections and place them together, press mastic strips firmly together. Fasten with a cable tie at each of the two positions shown.



13. Twist the braid pigtails together.

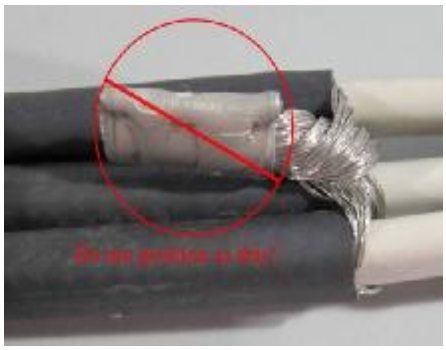
14.Slide uninsulated crimp over braid to within 12.7mm（1/2 inch）of heating cable.

15. Crimp the braid as shown, using the “CT-100A” crimp tool. **Crimp at least twice.**



16. Cut off the extra braid.

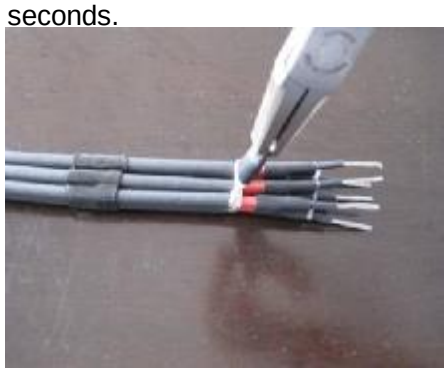
Position the braid crimp connector as shown (Figure 16-1, Figure 16-2, Figure 16-3,)



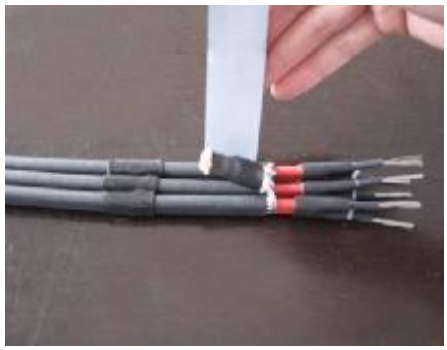
17. Slide the 12mm (1/2″) × 25.4mm (1″) heat-shrink tube over uninsulated braid crimp

18. Heat tube evenly until it shrinks and adhesive flows out both ends. Shrink the tube completely (as Figure 18-1 shown). Total heating time should be about 3 minutes (Temperature about 400°C(752℉))

19. Immediately after shrinking, pinch the end of the tube with flat-nose pliers until the end stays sealed, this normally takes 10 seconds.



20. Fold the crimped braid back against the heating cables. Wrap black cloth tape evenly around crimp and heating cables. Cover crimp completely.

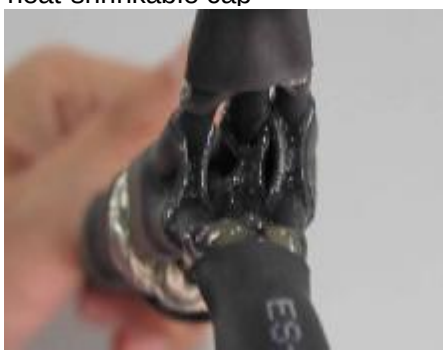


21. Select one bus wire from each cable section and twist the wires together. Repeat with remaining bus wires.
Be careful not to twist together bus wires from the same heating cable!

22. Use insulated bus wire crimps and “CT-100A” crimp tool to crimp each set of bus wires together.

23. Slide heat-shrinkable cap over each set of bus wires crimps. And Heat tube from the end of the heat-shrinkable cap evenly until it shrinks and adhesive flows out (as Figure 23-1 shown). Total heating time should be about 3 minutes (Temperature about 400°C(752℉)) Addition heat is needed if the heat-shrinkable cap was not shrink completely and ring of adhesive was not appear.

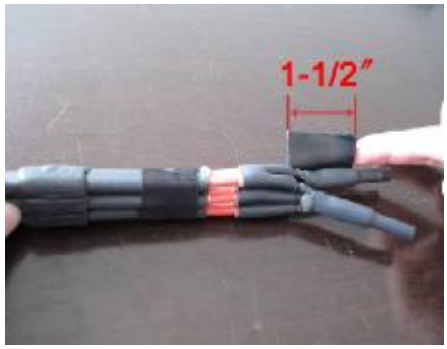
23.1 The adhesive of heat shrink tube may melt during shrinking heat-shrinkable cap



23.2 Pinch again with needle nose pliers as shown.

23.3 Make sure the heat shrink tube completely sealed between two insulated bus wires and has no visible gap.

24. Remove release paper from mastic strips（1 inch× 1-1/2 inch）, wrap one strip of mastic with width (not length) around the each heated shrinkable cap against the end of the 12.7mm (1/2 inch) × 25.4mm(1 inch) heat-shrinkable tube and position as shown.



(Important: Stretch the mastic strips because the width can not full around each of the heat shrinkable cap)

24.1 Stretch the mastic strips

24.2 Wrap one strip of mastic with stretched width.

25. Squeeze the mastic together

26. Slide the 203mm(8 inch)-long heat-shri nkable tube as shown.
Place edge of tube at edge of mastic.

27. Shrink the tube completely. Start at end farthest from the cap and work toward the open end. Keep heating after tube has shrunk, to melt adhesive and mastic inside tube. Total heating time should be about 5 minutes (Temperature about 400°C(752℉))
Caution: To avoid burns allow heated sections to cool before touching!
Important： Addition heat is needed after the tube is shrunk to melt mastic and adhesive inside. Ensure the ring of mastic and adhesive will appear!

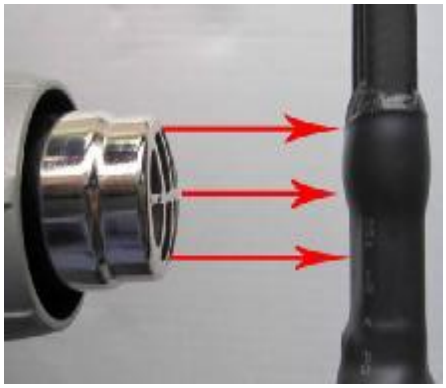
27.1 Start at the point as shown.

27.2 Shrink the tube side by side and sway the heat gun back and forth during shrink the tube(as Figure 27-1 shown)

27.3 Shrink the tube at start completely, Ring of mastic and adhesive will appear (as Figure 27-3 shown), Then Heat gun work toward the open end.

Important：During shrinking the tube, heat gun should work toward the heat shrinkable tube all the time, do not work toward the mastic! Otherwise, the mastic will be easily turning bubbly. Heat the area of tube which is covering the mastic. The below mastic will melt for sealing the visible gaps.

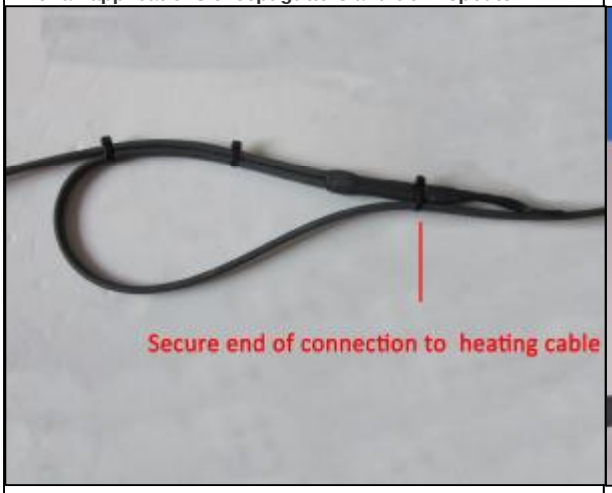
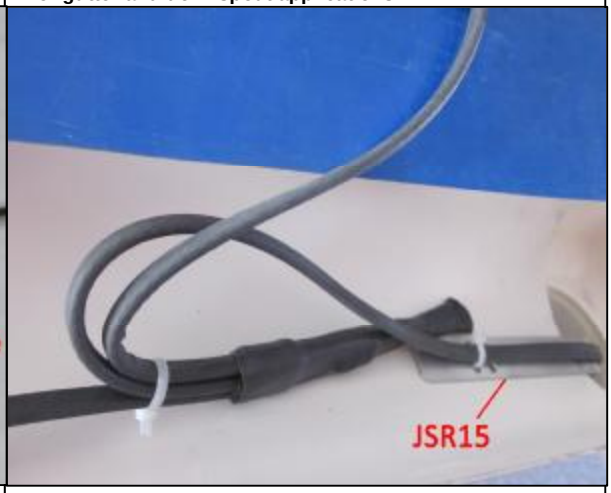
The right area for heating as below shown:



The wrong area for heating as below shown:

27.4 Work toward the open end. Shrink the tube completely.

28. Immediately after shrinking, pinch the end of the tube with flat nose pliers until the end stays sealed; this normally takes 10 seconds.
Important: If the width of flat-nose pliers can not wide enough to pinch the end of the tube, Increase the pinch times!

For all applications except gutters and downspouts	For gutter and downspout applications
	
After the connection has cooled, fold over the connection and fasten it with the third cable tie	• Secure heating cable with down-spout hanger(JSR15) • Fasten clamp tie to center of connection. • Use a hammer, nail, and clamp tie to secure connection and secure connection and keep it off of the gutter bottom as shown