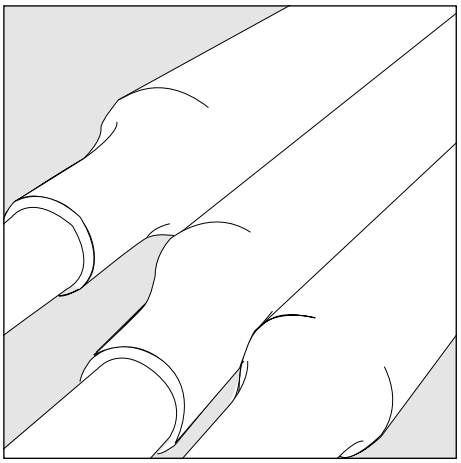
TE´s Raychem Cable Accessories



Installation Instruction EPP-3074-4/18

Joint for Single Core Polymeric Insulated Cables with Wire Screen (max. 70 mm²) up to 24 kV

Type: POLJ-xx/1x800 POLJ-xx/1x1000

This installation manual contains video instructions.

Scan the QR Codes to get video support.

In the case of any inconsistency, the written installation instruction shall prevail.

To view the TE Energy website:

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Before Starting

Check to ensure that the kit you are going to use fits the cable.
Refer to the kit label and the title of the installation instructions.
Components or working steps may have been modified since you last installed this product.
Carefully read and follow the steps in the installation instructions.

General Instructions

Check cable ends for ingress of moisture before starting with cable preparation.
Cables with double oversheath or outside rips might require changes in the cable preparation.
Cables with screens made of aluminum wires require specially designed kits.
Clean and degrease all parts that will come into contact with adhesive.
If a solvent is used follow the manufacturer's handling instructions.
Check core preparation dimensions before installing the cable accessory components.

Removal of Semicon Layer

Use appropriate stripping tools for smooth and even insulation diameter.
Adjust the stripping tool to the thickness of the semi-conductive layer.
Avoid removing too much of the insulation.
The surface of the insulation must be even and free of all traces of conductive material
For easy strip screen layers always use a round file to cut radially through the core screen.

Video: Semicon layer removal

Instructions for Heat-Shrink Components

Use a propane (preferred) or butane gas torch.
Ensure the torch is always used in a well-ventilated environment.
Adjust the torch to obtain a soft blue flame with a yellow tip. Pencil-like blue flames should be avoided.
Keep the torch aimed in the shrink direction to preheat the material.
Keep the flame moving continuously to avoid scorching the material.

Clean and degrease all parts that will come into contact with adhesive.
If required, tubing should be cut smoothly with a sharp knife leaving no jagged edges.
Start shrinking the tubing at the position recommended in the instruction.
Ensure that the tubing is shrunk smoothly all around before continuing along the cable.
Tubing should be smooth and wrinkle free with inner components clearly defined.

Admissible Cable Dimensions for POLx kits

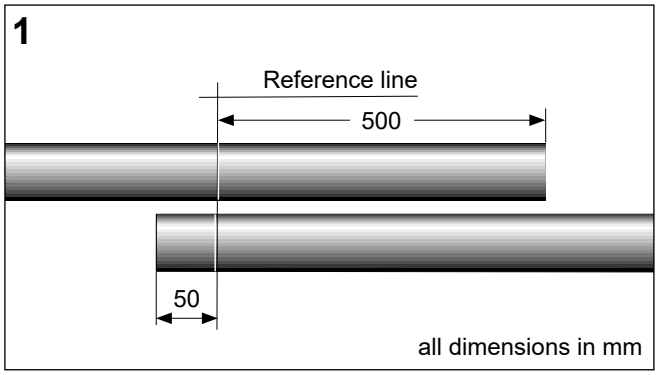
The kit is designed for cables with round stranded or solid conductors made of aluminum or copper (class 2).
Cables with insulation made of XLPE, PVC or EPR and
thickness: 12kv- 3,4mm; 17,5kV -4,5 mm; 24kV – 5,5 mm; 36kV- 8mm; 42kV-8-9mm
Oversheath made of PE, PVC or EPR and thickness between 2 mm and 4 mm
Cables manufactured according to cable standards IEC 60502 or Cenelec HD620 meet the required dimensions.

If cables are outside those standard dimensions, pls. contact your local support for advise.

Cable Overlap

Overlap the cables as shown in drawing.

Mark the reference line.



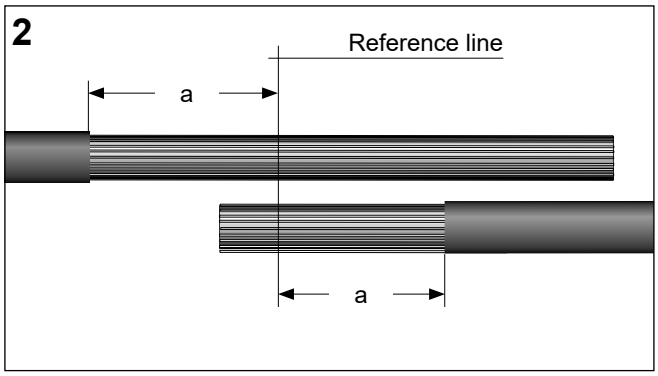
Cable Preparation

Remove the oversheath to dimension **a** shown in **Table 1**.

Clean the remaining oversheath for about 1 m.

Table 1

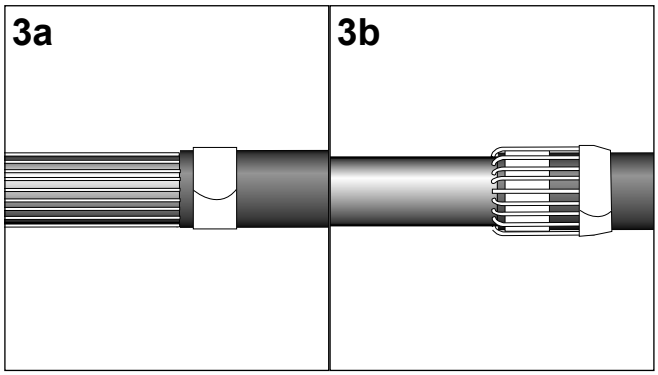
Kit size	12 kV a mm	24 kV a mm
800	190	210
1000	200	210



Short cable side:
3a. Wrap the smaller roll spring around the oversheath end.

3b. Bend back the screen wires onto the roll spring and oversheath. Fix it in place with adhesive tape approx. 50 mm from the oversheath cut. Trim the screen wires accordingly. Protect sharp wire ends with adhesive tape.

Long cable side:
Bend back the screen wires onto the oversheath. Fix it temporarily in place with adhesive tape.



Core Preparation

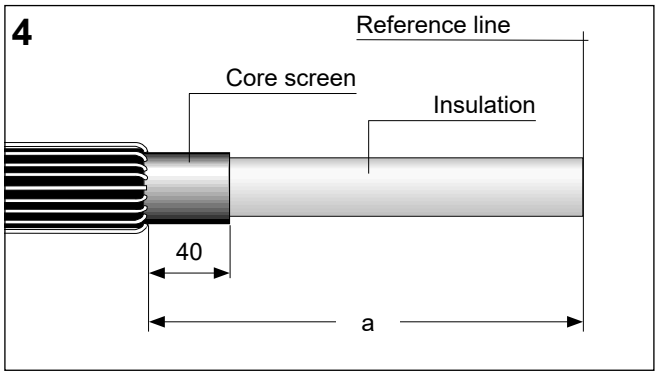
Cut the cores at the reference line using a hacksaw (see Table 1).

Thoroughly remove the core screen to within 40 mm from the oversheath cut so that the insulation surface is free from all traces of conductive material.

Clean and degrease the insulation.

Note: Do not nick the insulation!

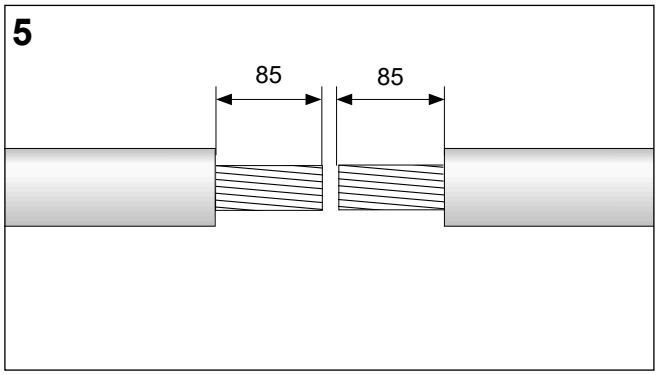
Video information:
Semicon Layer Removal



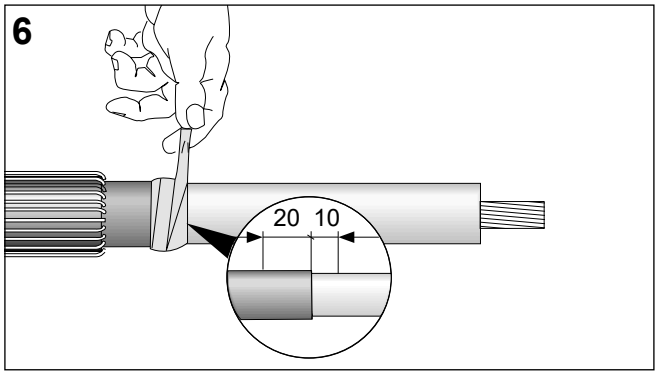
Remove the insulation on both cores to **dimension 85 mm**.

Table 2

Conductor (mm^2)	Round Stranded (RM) Diamter (mm)	Round Solid (RE) Diameter (mm)
800	Ø 32.5 - 35.3	Ø 30.9 - 32.1
1000	Ø 37.0 - 39.5	Ø 34.8 - 36.0

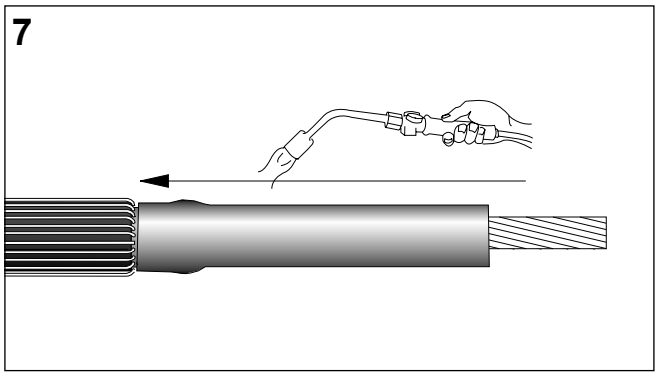


Take the yellow void filling strip S1189.
Remove the release papers from the strip with the pointed ends.
Wrap the void filler around the core screen starting 20 mm from the end of the screen and continue onto the insulation for 10 mm.
Stretch the strip to half of its original width to achieve a fine thin edge.



Slide the stress control tubing (black) over the plastic cable core level with the end of the insulation cut back.

Shrink down starting from the core end and working towards the oversheath.



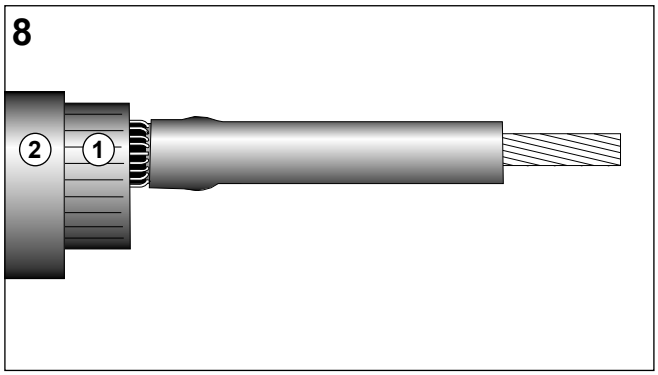
Completion of Joint

Slide a combined tubing set over one plastic cable core.

Use the plastic bag from the tubings as additional protection against dirt and scratches.

1 - Screened insulation sleeve (black and red)

2 - Outer sleeve (black)



Video information:
Installation of Connector

Installation of the mechanical connector

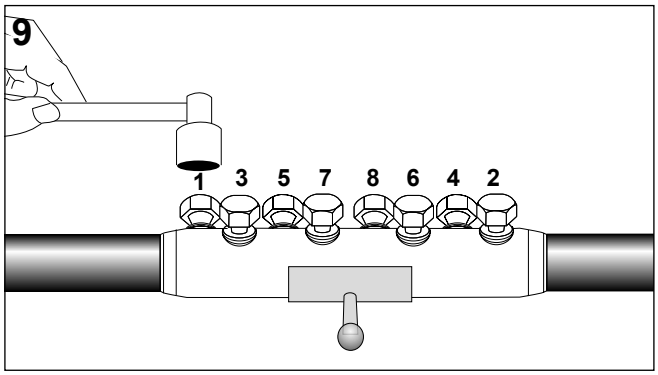
Clean and abrade the surface of the exposed conductors.

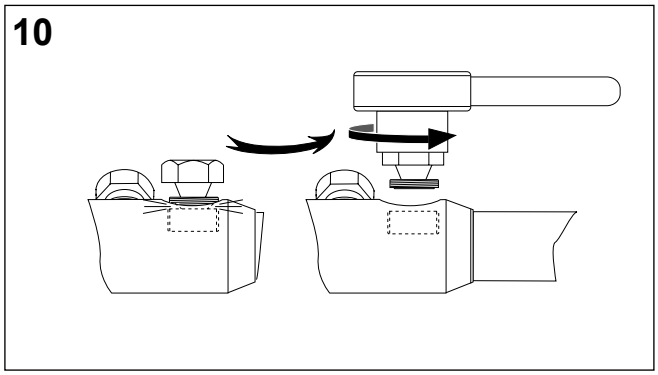
Insert conductors so that the insulation butts up with the end of the connector. Hand tighten the shear bolts so that the connector stays in place.

Tighten the bolts alternately and shear them off starting with the outer bolts (see sequence shown in the drawing).

By half turns, alternatively tighten the shear bolts with a socket wrench following the sequence given in the drawing, until shear off. Avoid core bending by using a holding tool available as IT-1000-019.

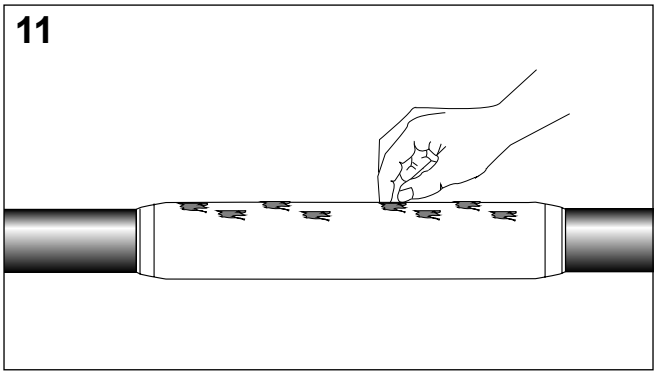
Re-arrange conductors after installation if required. Smooth off any sharp edges of protruding bolts where appropriate.
It could be possible that a bolt shears and the top section is retained in the connector.
It is possible to remove the top section of the screw from the connector body by unscrewing the bolt head. This is a characteristic of multi-shear bolts and does not affect the performance.





Smooth out any sharp edges of protruding bolts where appropriate by filling it using small piece of yellow tape cut of from of the long tape. Clean and degrease the connector area and the insulation with a cleaning wipe.

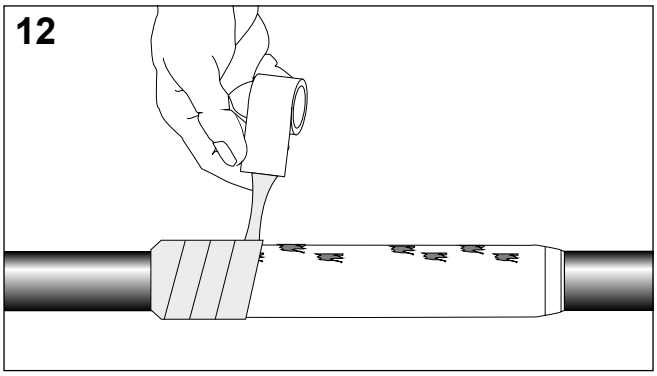
Fill up any irregularities over the sheared off bolts with the putty supplied with the kit.



Remove the printed release paper from the void filling tape (yellow). Apply the tape with a 50% overlap, stretching it to about half of its original width.

Fill up the connector area continuing onto the insulation for not more than 10 mm. Use the filler to achieve a smooth transition from the connector onto the insulation.

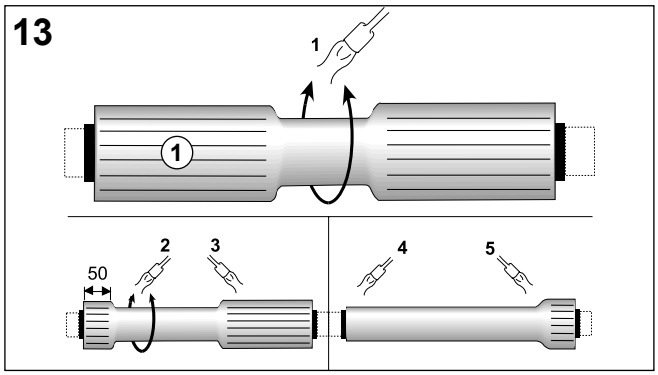
Note: Do not use too much void filler.



Position the screened insulating sleeve (black and red) centrally over the connector area.

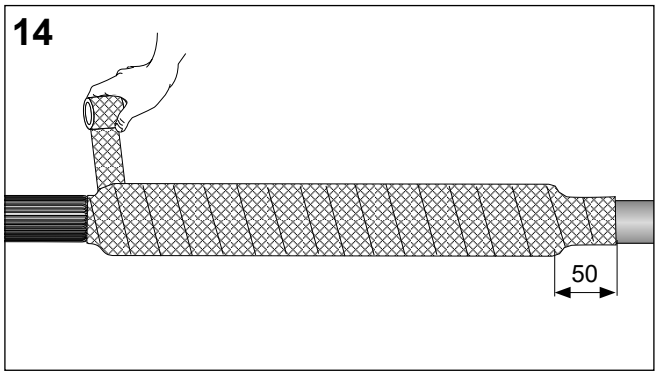
a. Start shrinking the sleeve in the centre (1).
b. Continue shrinking by working towards one side (2), stopping 50 mm from the end. Shrink the other half in the same way (3).
c. Shrink down the first end (4) and finally the second (5). The sleeve should be fully shrunk without leaving ridges.

Video information:
Shrinking



Remove the PVC tape from the long screen wires.

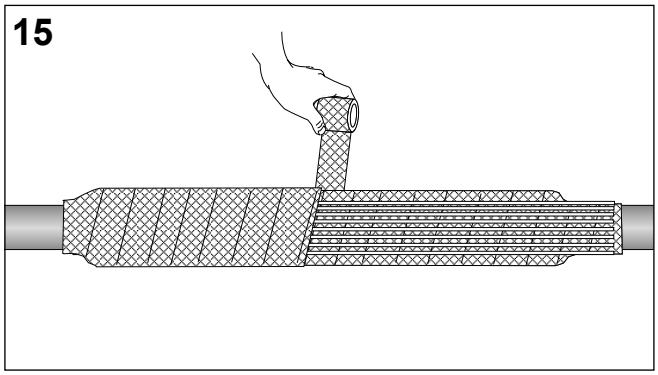
Wrap one layer of copper mesh round the joint with a 50% overlap, starting at the short screen wires. Continue across the joint.



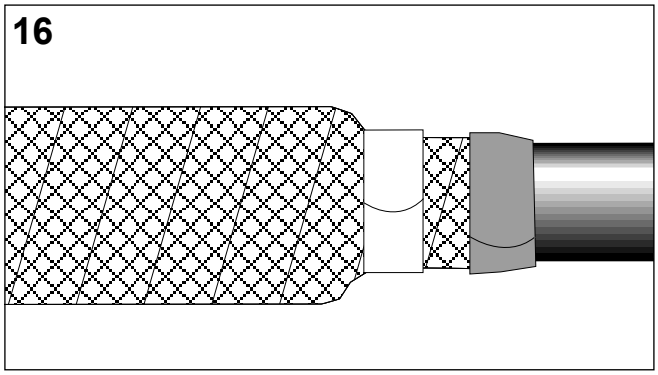
Bend the long screen wires back and distribute the screen wires evenly over the joint area.

Wrap another layer of copper mesh round the joint with a 50% overlap.

Trim the long screen wires level with the short ones.



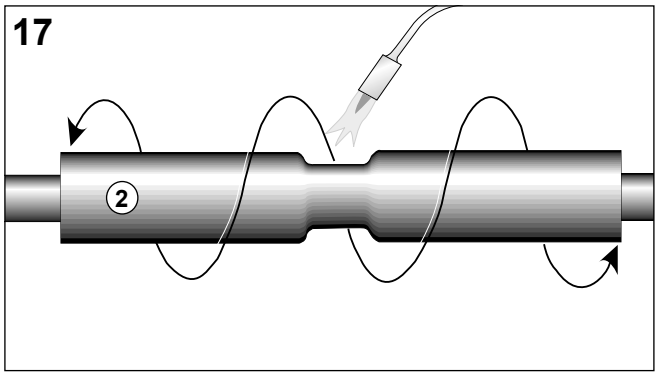
Fix the copper mesh and the screen wires in place with a roll spring close to the end of the joint area. Tighten the roll spring with a twisting action. Cover any sharp edges with adhesive tape.



Clean and degrease the ends of the oversheath for a length of about 150 mm.

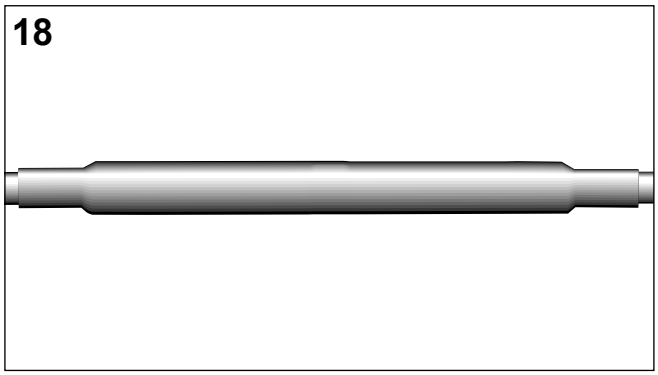
Centre the outer sleeve (black) over the joint area.

Start shrinking in the centre, working towards the ends.



Joint completed.

Allow the joint to cool before applying any mechanical strain.



Please dispose of all waste according to environmental regulations.