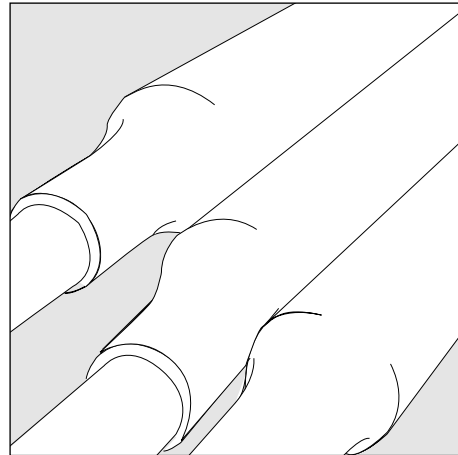


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TE's Raychem Cable Accessories



Installation Instructions EPP-1780-5/17

**Repair Joint for Single Core
Polymeric Insulated Cables
with Wire Shield
36 kV**

Type: MXSU-61XX-L

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To view the TE Connectivity 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

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 a solvent is used follow the manufacturer's handling instructions.

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.

The Information contained in these installation instructions is for use only by installers trained to make electrical power installations and is intended to describe the correct method of installation for this product. However, TE Connectivity has no control over the field conditions which influence product installation.

It is the user's responsibility to determine the suitability of the installation method in the user's field conditions.

TE Connectivity's only obligations are those in TE Connectivity's standard Conditions of Sale for this product and in no case will TE Connectivity be liable for any other incidental, indirect or consequential damages arising from the use or misuse of the products.

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Application range of the MXSU-L kits:

The kit is based on polymeric insulated cables for **stranded circular conductors** and wire shielding.

Application range for aluminium or copper conductors are mentioned in **table A** below.

Table A

36 kV	
Kit number	Range (mm²)
MXSU-6121-L	70–150
MXSU-6131-L	150–300
MXSU-6141-L	240–400

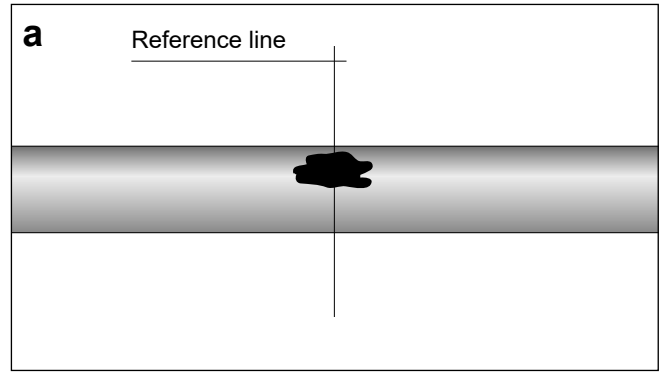
Table B: Admissible cable dimensions for MXSU-L kits:

Kit number	Conductor Ø		Core Insulation Ø		Outer Cable Ø	
	min. (mm)	max. (mm)	min. (mm)	max. (mm)	min. (mm)	max. (mm)
MXSU-6121-L	8.7	15.0	26.2	34.5	34.0	44.0
MXSU-6131-L	13.9	21.6	31.5	39.6	38.0	53.0
MXSU-6141-L	17.8	24.6	36.2	42.8	40.0	54.0

Cable preparation

Damaged cable:

Mark a reference line in the centre of the damaged section. Cut the cores at the reference line.

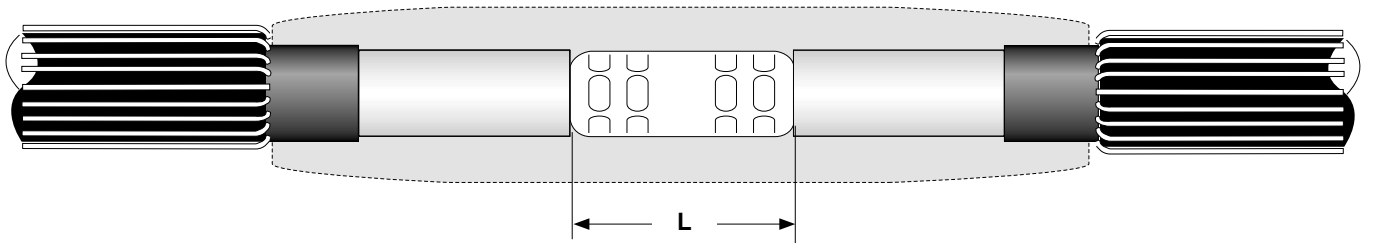


Cable section with joint:

Carefully remove all parts of the existing splice, so that the **insulation remains undamaged** and the surface is free from all traces of the previous jointing material.

The connector supplied can replace up to the conductor length **L** see drawing **b**.

b



Cut out the length **L** (see **Table 1**) of the cable including the connector as shown in the drawing **c** using a hacksaw.

Clean the outer jacket on both cable sides for about 1200 mm.

c

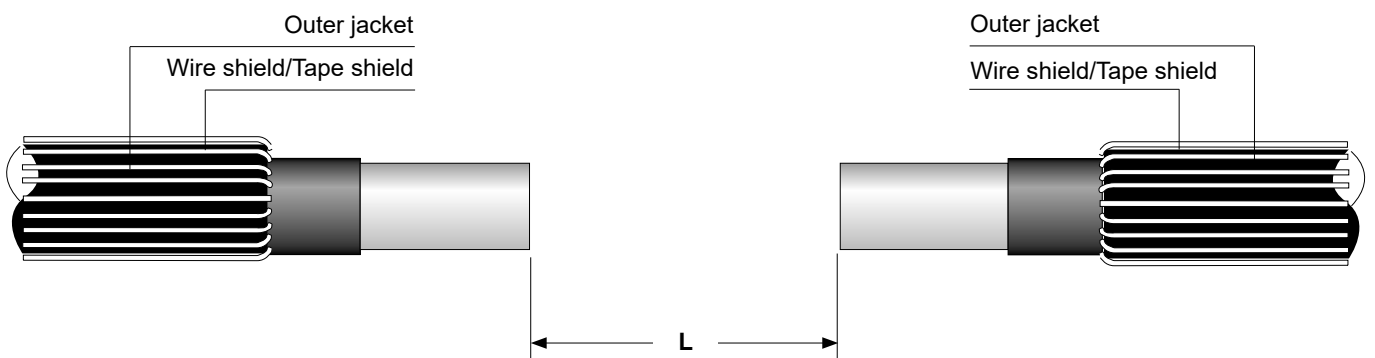


Table 1

36 kV				
Kit number	Kit range (mm ²)	L (mm)	a (mm)	l (mm)
MXSU-6121-L	70–150	320	220	60
MXSU-6131-L	150–300	310	225	65
MXSU-6141-L	240–400	280	240	80

Core Preparation

Remove the outer jacket on both sides according to dimension **a** given in **table 1**.

Bend back the shield wires onto the outer jacket and secure the ends with adhesive tape.

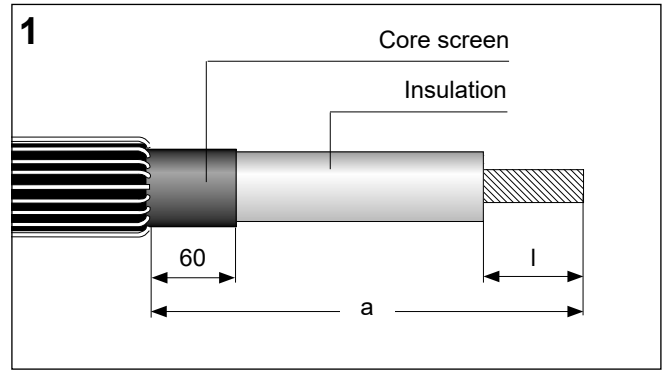
Thoroughly remove the core screen according to the dimension given in the drawing, so that the insulation surface is free from all traces of conductive material.

Do not nick the insulation!

Note: For cables with **graphite core screen** first remove the conductive tapes from the core to a distance of 35 mm from the oversheath cut. Afterwards carefully remove the graphite layer according the dimension in the drawing without leaving residues of conductive material on the insulation.

Remove the insulation according to the dimension **l** given in **table 1**.

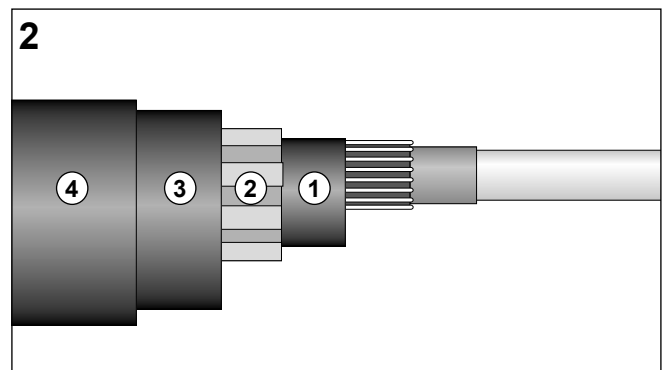
Clean and degrease the insulation.



Completion of Joint

Slide a combined tubing set and the outer sleeve over one cable end. The plastic bag of the tubing set shall be used as additional protection by placing it under the tubing set.

1. Stress control tubing (black)
2. Screened insulation sleeve (black and red)
3. Outer sleeve (black)
4. Outer sleeve (black)

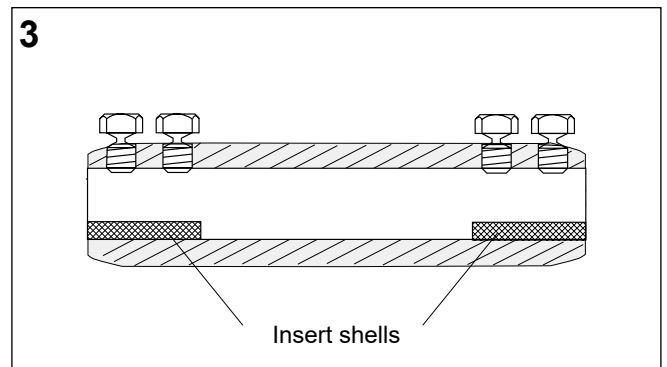


Installation of the mechanical connector

The connector is supplied with insert half shells which have to be used on small cross sections.

Check before installation if the conductor can be inserted into the connector with the half shells installed.

In case the conductor can not be inserted, remove the inserts from the connector bore.



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.

For connectors using more than one shear bolt per side, tighten the bolts alternately and shear them off starting with the outer bolts (see also sequence shown in the drawing). Avoid core bending.

Note:

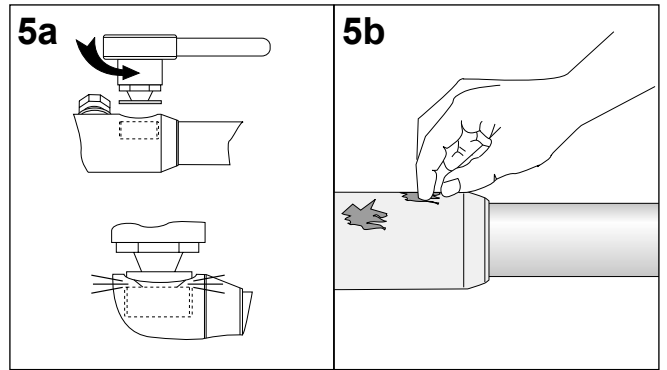
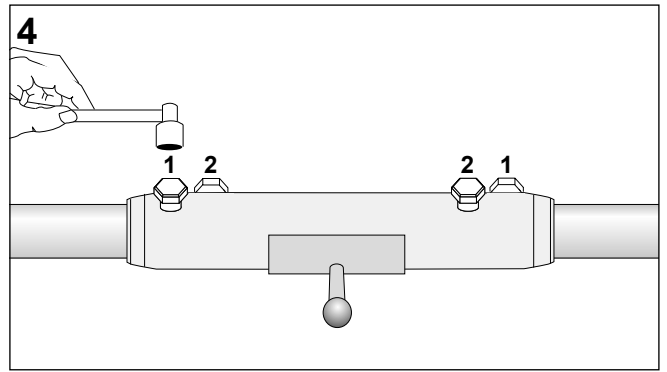
When a cordless impact wrench is in use, the tightening intervals should be in the range of 2 seconds.

Smooth out any sharp edges of protruding bolts where appropriate.

It could be possible that the bolt shears but the top is retained in the connector body. In that case unscrew the head of the bolt until it is removed from the connector (see picture 7a).

Fill out any indentations left over the shear bolts with the clay provided to obtain a smooth finish (see picture 7b).

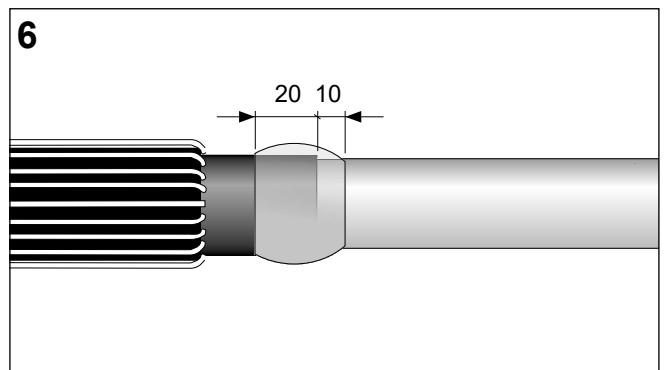
Clean and degrease the connector area.



Take the yellow void filling strip from the alu foil pocket. 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.



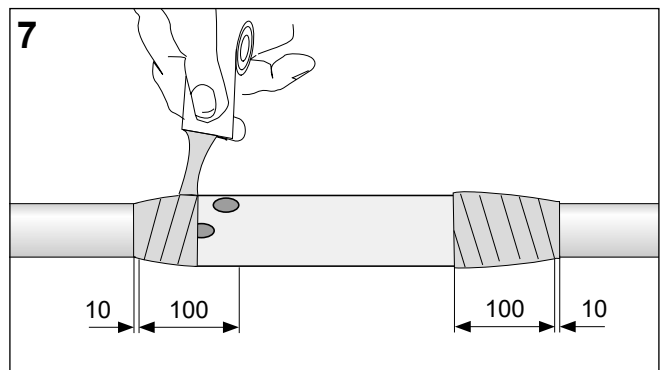
Pre-heat the connector until it is hand-hot.

Remove the release paper from the long length of the yellow void filling strip.

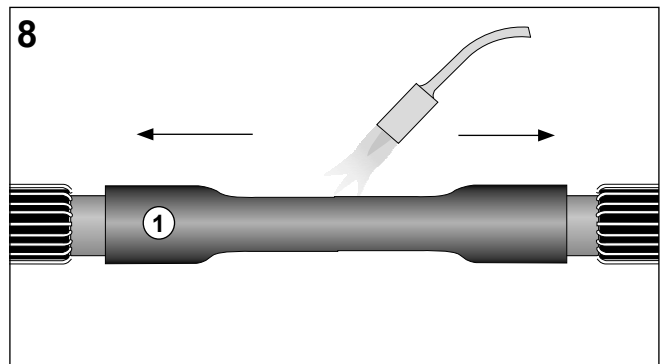
Wrap it around the end of the insulation, starting 10 mm onto the insulation and continue for a distance of 100 mm onto the connector.

It is necessary to cover the sheared off heads of the screw heads and to fill up the steps to achieve a smooth transition from the connector onto the insulation.

Stretch the strip to half of its original width to achieve fine thin edges, overlap the insulation as shown in the drawing.



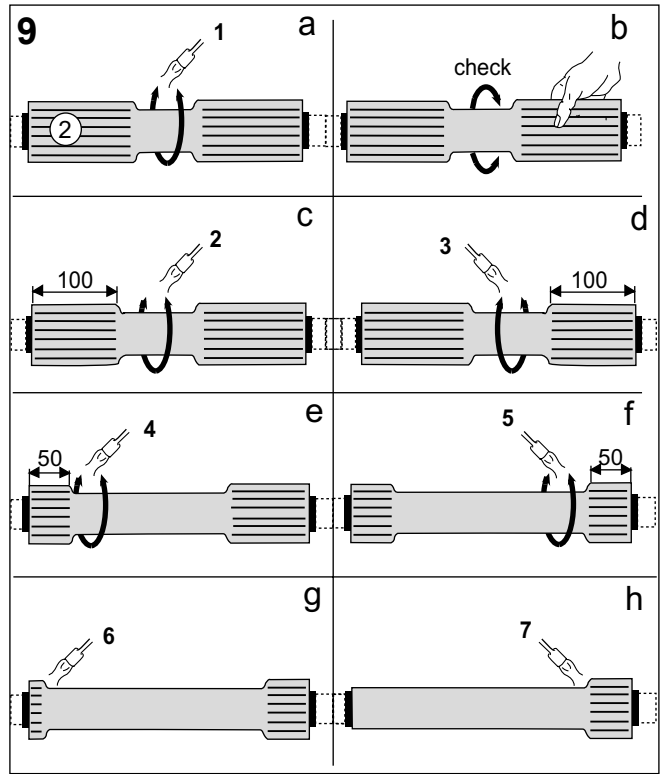
Pull the stress control tubing (black) from the inside of the tubing set and position it centrally over the connector. Start shrinking in the centre working towards the ends. The tubing should be fully shrunk and wrinkle free.



Position the screened insulating sleeve (1, black and red) centrally over the connector area.

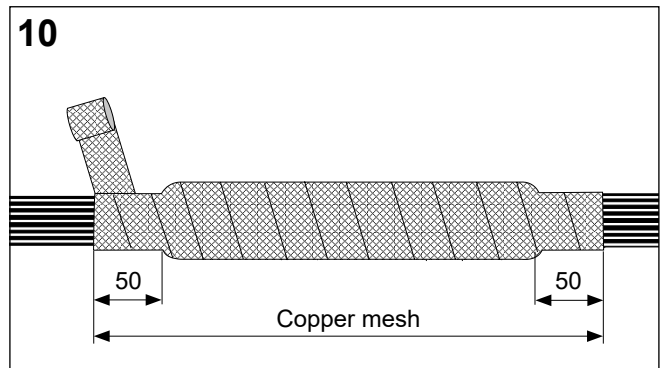
- a. Start shrinking the sleeve in the centre (1).
- b. Check if fully shrunk by twisting the end. The sleeve should not move from its position.
- c. Continue shrinking by working towards one side (2), stopping 100 mm from the end.
- d. Shrink the other half in the same way (3).
- e. Continue shrinking the other half, stopping 50 mm from the end (4).
- f. Shrink the other half in the same way (5).
- g. Shrink down the first end (6).
- h. Finally shrink down the second end (7).

The sleeve should be fully shrunk without leaving ridges.



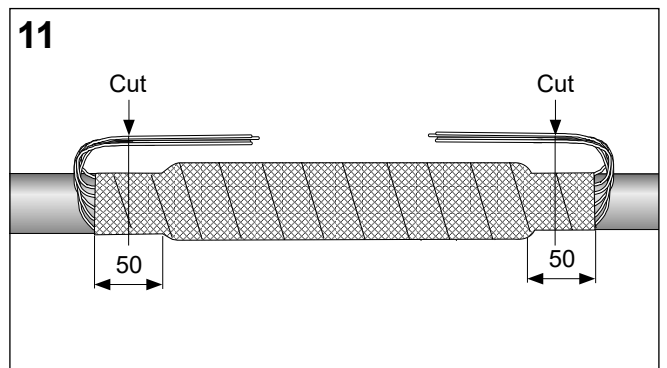
Starting with a 50 mm overlap onto the oversheath on one cable side, wrap one layer of copper mesh round the joint with a 50 % overlap.

Continue the installation also for 50 mm onto the oversheath on the other cable side.

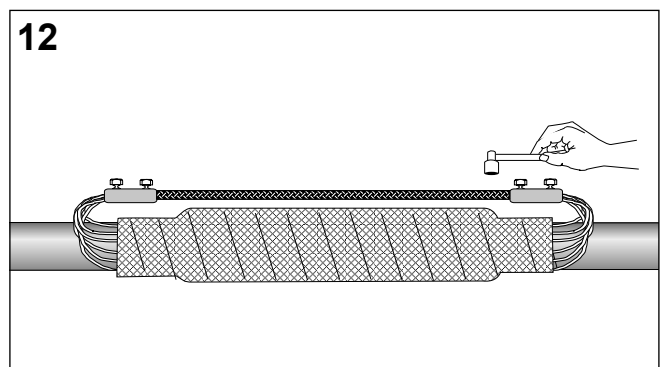


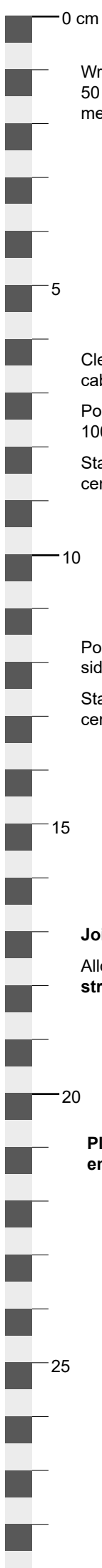
Bend the shield wires back over the joint area close to the copper mesh.

Gather the wires together and cut them centrally above the 50 mm copper mesh overlap on the cable oversheath.



Form earth leads of the shield wires and insert them and the copper earth braid supplied with the kit, into the mechanical shield connectors. Tighten the bolts until the heads shear off.





Wrap a second layer of copper mesh round the joint with a 50 % overlap. Cover the complete joint area including the mechanical shield connectors.

Clean and degrease the end of the overshath on both cables for a length of about 150 mm.
Position the first outer sleeve (black) on one cable side with 100 mm overlap to the overshath.
Start shrinking on the cable side, working towards the joint center.

Position the second outer sleeve (black) on the other cable side with 100 mm overlap to the overshath.
Start shrinking on the cable side, working towards the joint center.

Joint completed.
Allow the joint to **cool before** applying any **mechanical strain**.

Please dispose of all waste according to environmental regulations.

