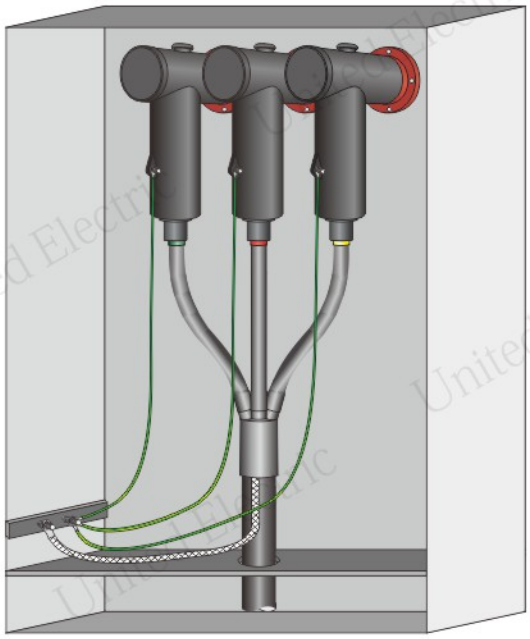
United Electric

Installation Instruction

SSFC15-630-1 & SSRC15-630-1

630A Screened T connector
for 3-core XLPE cable up to 17.5kV,
copper tape screened, steel tape armored
01-9408-006B-1119



Generals

- *Check and ensure the cable against any damage, water or moisture corrosion.*
- *The cable must be fixed right under the bushing without any distortion.*
- *Carefully read and follow the steps in the installation instruction. We are not responsible for any fault from incorrect installation.*
- *Do not nick the stress cone during all the procedure of operation.*

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SSFC15-630-1 is a 630A screened separable T connector made from silicone rubber, designed to connect with the type C bushing in accordance with the standard of CENELEC EN50181, EN50180. SSRC15-630-1 is a coupling connector, designed to connect with SSFC15-630-1, for dual cable arrangement.

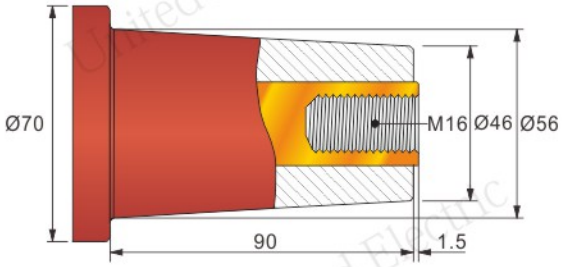
The instruction is suitable for the installation of SSFC15-630-1 & SSRC15-630-1 over 3-core XLPE insulated cable up to 17.5kV, copper tape screened, steel tape armored.

The installation should be made by the person who has been trained and get the qualified certificate. Carefully read and follow the steps in the installation instruction before installing the product.

Take care of the silicone rubber components during the installation, do not nick the components.

Bushing profile:

- *The connector should only be used on bushing with dimensions as shown in the right drawing.*
- *The bushing size meet the requirements of standard CENELEC EN50181, EN50180.*



1. Check the cable and installation site.

- The installation site should be clean, the relative humidity should not exceed 75%, the ambient temperature should be higher than 5℃.
- Check the cable at site which should be qualified.
- Check the kits according to the kit content, make sure the kit you are going to use fits the cable at site.

SSFC15-630-1 kit content

SSRC15-630-1 kit content

❶ 3×Connector body	❼ 3×Heat shrink tube	⓭ 4×Silicone grease	⓳ 3×Insulation back plug
❷ 3×Earthing wire	❽ 1×PVC tape kit	⓮ 1×Plastic grove	⓴ 3×Protect cap
❸ 1×Copper braid	❾ 1×Tape measure	⓯ 3×Stud	㉑ 2×Roll spring
❹ 3×Stress cone	❿ 2×Abrasive strap	⓰ 3×Flat washer	㉒ 1×Sealing mastic
❺ 3×Cable lug	⓫ 1×Qualified certificate	⓱ 3×Spring washer	㉓ 1×Socket wrench
❻ 1×Heat shrink breakout	⓬ 12×Cleaning tissue	⓲ 3×Nut	㉔ 3×Connecting rod

2. Cable preparation:

- Remove the cable outer sheath to 1000~1200mm as request. Clean and degrease the end of the cable outer sheath for about 150 mm.
- Remove the steel tape armor to 30mm.
- Remove the cable inner sheath and fillers to 10mm.
- Protect the copper tape screen by PVC tape.

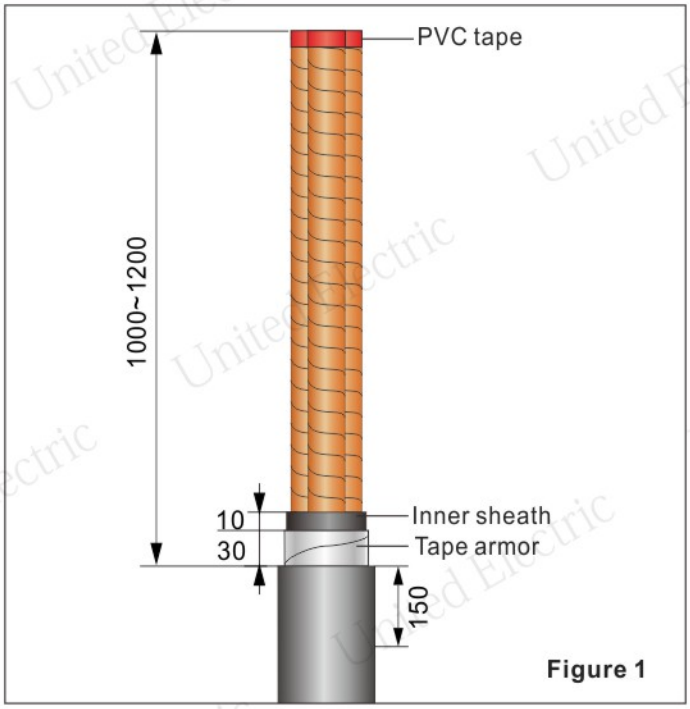


Figure 1

3. Connect earth braid

- Fold the end of copper braid and insert it into the crotch of cable cores, wrap and cross the copper braid around the 3 cores.
- Fix the copper braid onto the copper tape and tape armor by roll springs. Fold back the copper braid twice during wrapping roll spring. Tighten the roll spring with a twisting action.
- Wrap all the sharp edges with PVC tape over the roll springs as shown in figure 2.
- Lift the copper braid, wrap one layer of sealing mastic over the cable outer sheath. Lay down the copper braid, continue wrapping sealing mastic to cover the copper braid as shown in figure 2.

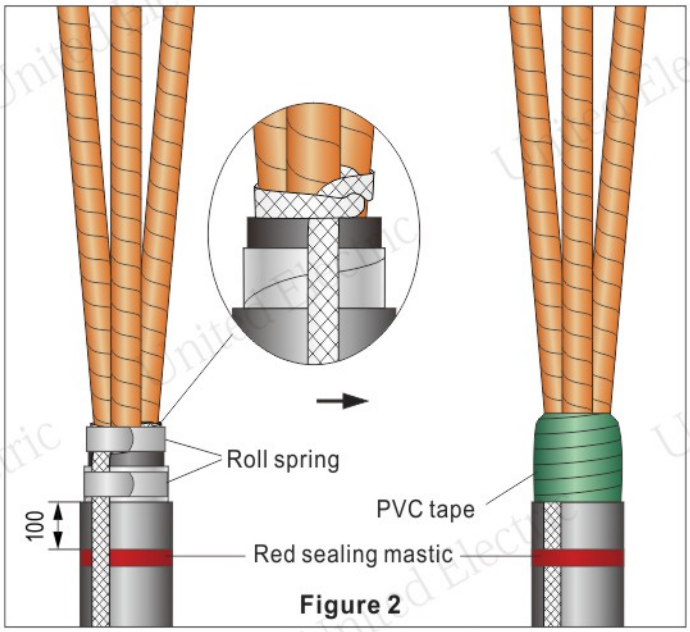


Figure 2

4. Install heat shrink breakout

- Slide the heat shrink breakout over the cores. Pull the breakout as far down the crotch as possible.
- Shrink the breakout into place starting at the center. Work first towards the lower end and then shrink the finger ends onto the cores. The numbers in figure 3 indicate the shrinking sequence.

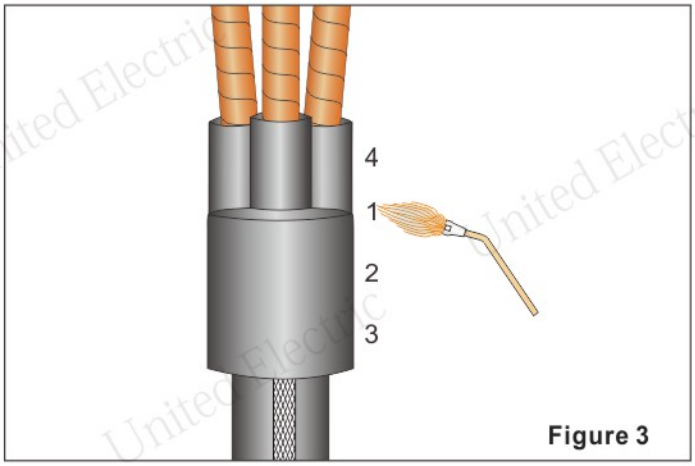


Figure 3

5. Install heat shrink tube

- Wrap hot melt adhesive tape over the finger end of heat shrink breakout.
- Place the tube over the cores and slide the tube over the end of breakout finger as far down as possible and shrink it down starting at the crotch and working upwards.
- Bend and shape the cores into their final position.
- Mark phases by PVC tape.

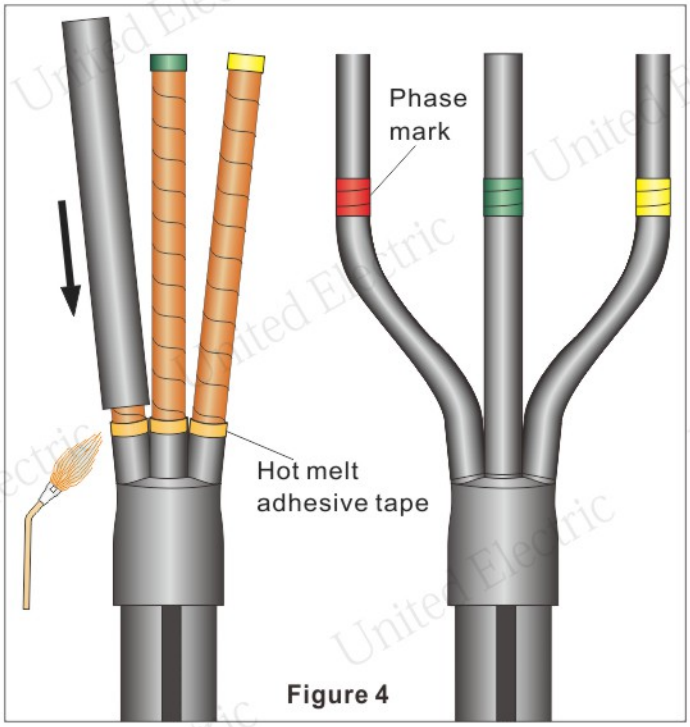


Figure 4

6. Cores preparation

- Screw the stud M16/M12 into the connected bushing, hang the cable lug over the stud, mark a reference line onto the heat shrink tube which is level with the top end of lug barrel hole.
- Cut the cable cores at the reference line.

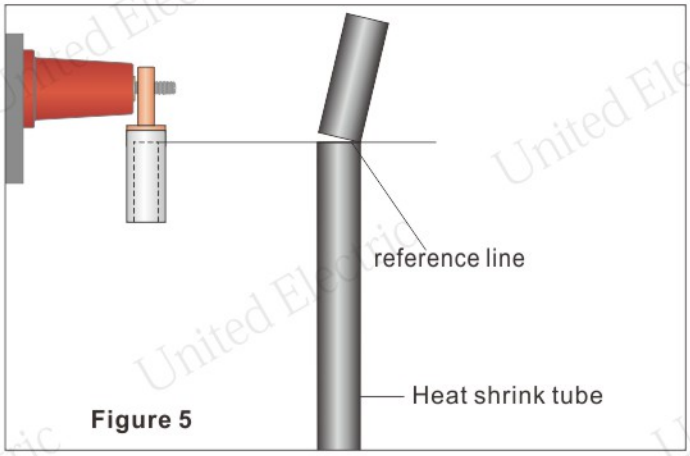


Figure 5

- Remove the copper tape screen and heat shrink tube to 212mm, remove the insulation screen to 25mm and cut back the insulation for 55mm. Chamfer the cable insulation cut to 3×45°. **Note: Do not nick the cable insulation**.
- Clean and thoroughly remove the oil stain and oxide film of the cable conductor surface. Wrap the cut end of conductor with PVC tape.
- Sanding the end of insulation screen for 3mm, the end should be smooth transition, without any turnup and sharp-angle.
- The cable insulation surface should be smooth and free from all traces of conductive material. Polish the cable insulation surface by abrasive paper if there are any irregularities or imperfections.
- Wrap PVC tape over the end of cable outer sheath as position mark

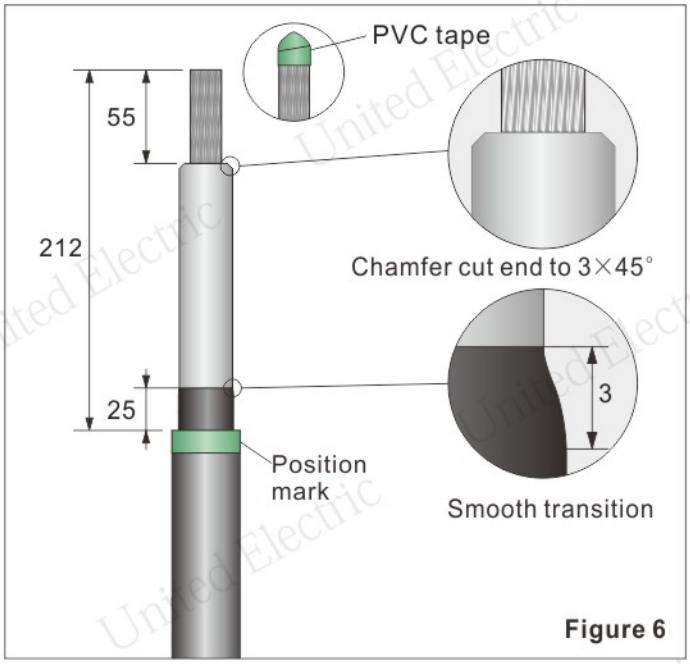


Figure 6

7. Clean stress cone and cable insulation

- Check the outer diameter of cable insulation and inner diameter of stress cone according to table 1
- Clean the outer surface of core insulation from the cut end downwards with cleaning tissue, do not reuse the cleaning tissue just applied.

Table 1

Size	Suitable insulation diameter Ø (mm)	Recommended 17.5kV cable conductor size (sq.mm)
1#	16.3~19.9	25, 35, 50
2#	19.8~22.5	70, 95
3#	21.7~24.6	120
4#	24.5~28.1	150, 185
5#	28.0~31.8	240, 300
6#	31.5~35.3	400

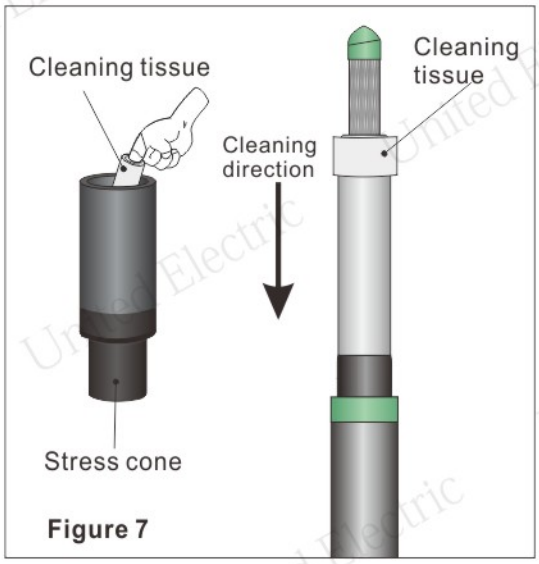


Figure 7

8. Lubricate stress cone and cable insulation

- After the solvent volatilization, coat silicone grease onto the outer surface of core insulation and the inner surface of stress cone.

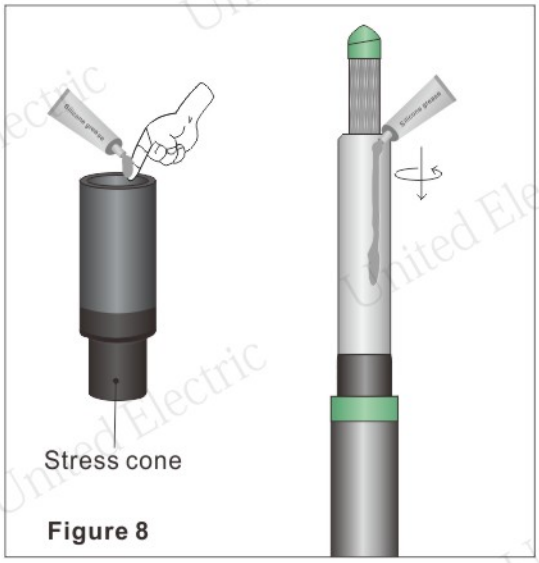


Figure 8

9. Install stress cone

- Push the stress cone onto the cable core with rotation until the bottom end of stress cone next to the positon mark.
  Note: Do not cover the marking PVC tape.

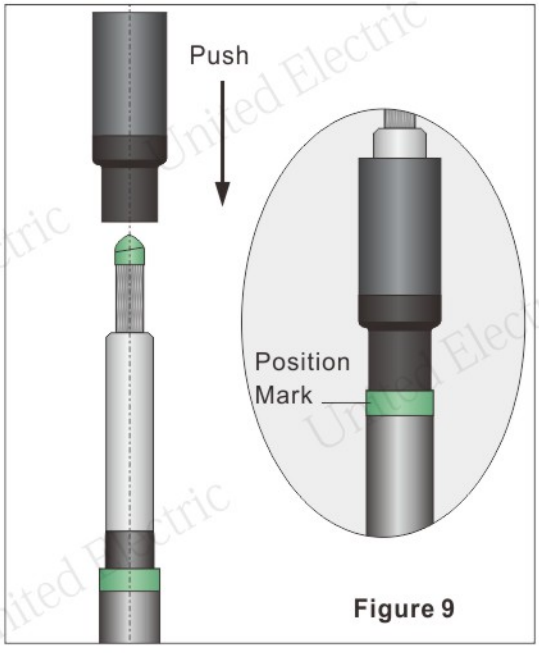


Figure 9

10. Install cable lug

- Remove the previously applied PVC tape from the conductor.
- Put on the proper cable lug over conductor. Compress the lug barrel according to the mark line, and compress the upper end first. Before compressing the cable lug, please pay attention that the direction of the lug palm, ensure the palm should be parallel with the copper plane in the bushing, which can guarantee good conduction contact.
  Attention: The load current may occurred due to the bad contact between the lug and the copper plane in bushing, it will result in heating and temperature growing up, and damage the cable and equipment.

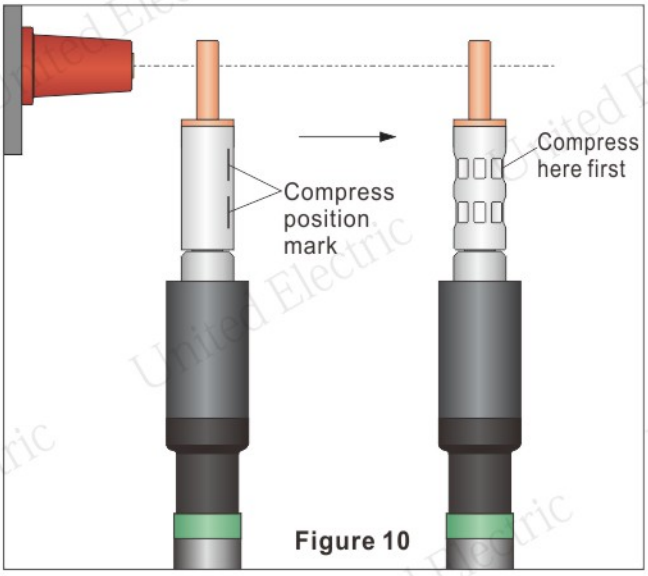


Figure 10

11. Clean and lubricate stress cone and SSFC15-630-1

- Clean the outer surface of stress cone and inner surface of SSFC15-630-1.
- After the solvent volatilization, coat evenly a thin layer of silicone grease onto the upper part of the stress cone and the inner surface of the bottom end of SSFC15-630-1.

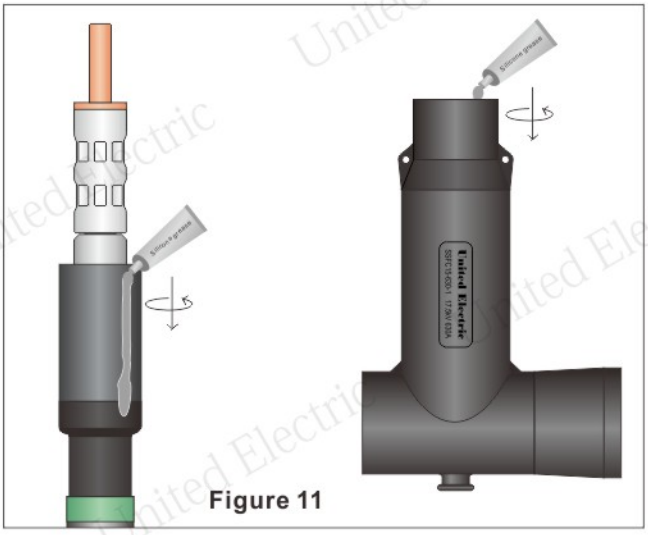


Figure 11

12. Install SSFC15-630-1 onto stress cone

- Hold the tail of stress cone by one hand and hold the connector body SSFC15-630-1 by the other hand, align the connector body with stress cone and cable lug, push the connector body with no interrupted onto the stress cone until the hole of cable lug palm centering with the back end of connector body.
- Check and ensure that the stress cone and PVC mark should not have any moving, and the connector body has been properly installed.
- Check the tail of stress cone platform, which should be level with the bottom end of connector body and should not expose more than 10mm. If not, adjust the stress cone until the exposed length less than 10mm.

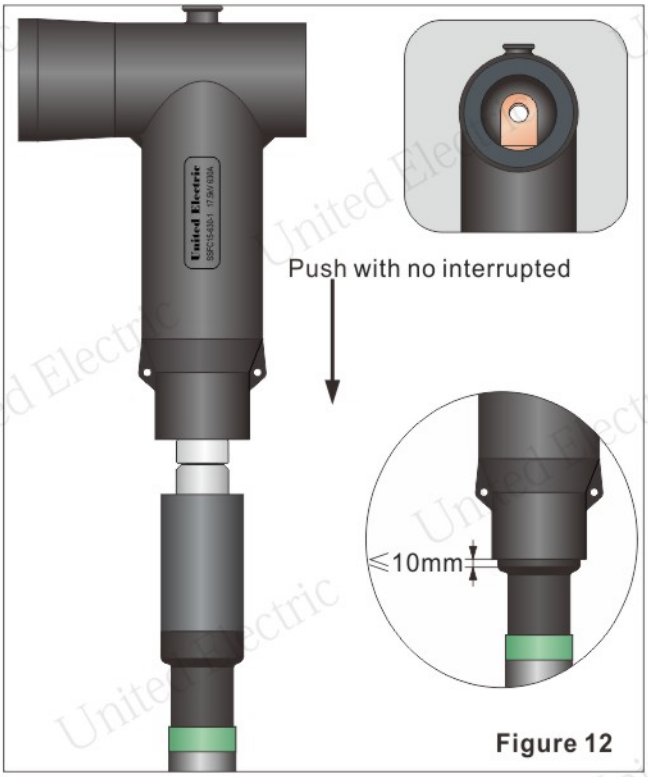


Figure 12

13. Clean and lubricate bushing and SSFC15-630-1

- Clean the outer surface of the connected bushing.
- After the solvent volatilization, coat evenly a thin layer of silicone grease onto the connected bushing, and the inner surface of the front end of SSFC15-630-1.

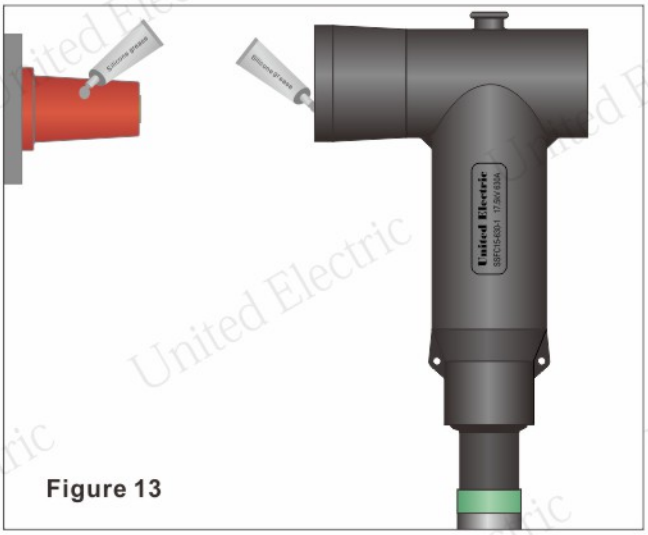


Figure 13

14. Push SSFC15-630-1 onto bushing

- Screw the stud into the bushing.
- Align the hole of cable lug palm with the stud and push the screened connector SSFC15-630-1 onto the bushing.
- Check again the tail of stress cone platform, which should not expose more than 10mm.
- Wrap 2 layer of PVC tape over the tail of stress cone and continue wrapping over the end of heat shrink tube as shown in figure 14.

Note:
If need to install the coupling connector SSRC15-630-1, please follow the steps 16~18, if not , please follow the step 15.

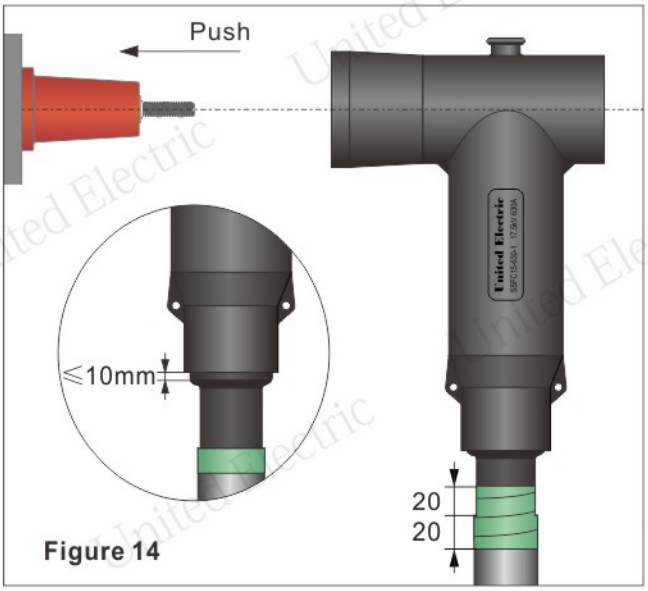


Figure 14

15. Fix SSFC15-630-1 and grounding earth

- Install the flat washer, spring washer and nut in sequence, screw down the nut by socket wrench with the torque 45-50N.m.
- Clean and coat a thin layer of silicone grease onto the inner surface of back end of SSFC15-630-1 and outer surface of insulation plug.
- Screw the insulation plug into the back end of SSFC15-630-1 by hand first, and then fix it by the socket wrench with the torque 45-50Nm.
- Cover the insulation plug with protect cap.
- Connect all the earth braid and earth wires to the earth point. Installation complete.

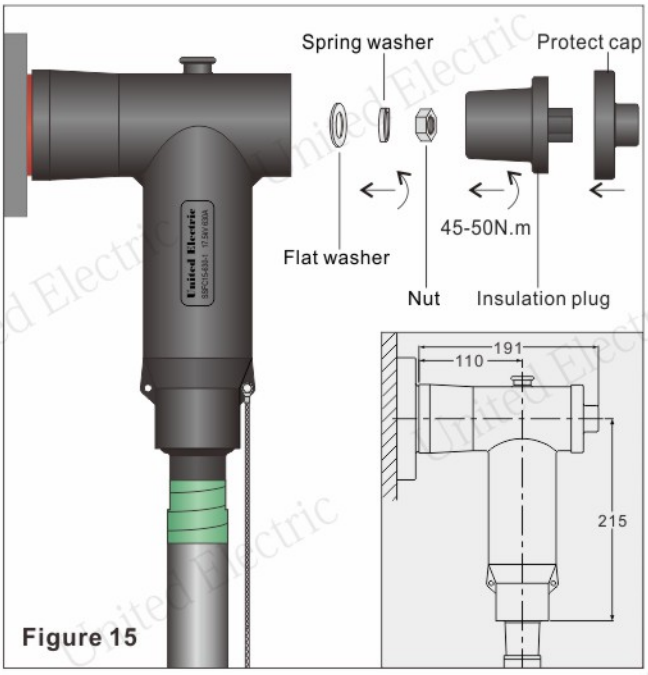


Figure 15

16. Install coupling connector SSRC15-630-1

- The cable preparation and installation of stress cone, cable lug, SSRC15-630-1 body please follow the steps 2~12.
- Screw the connecting rod into the back end of SSFC15-630-1 and fix it by a spanner with the torque 45-50N.m.

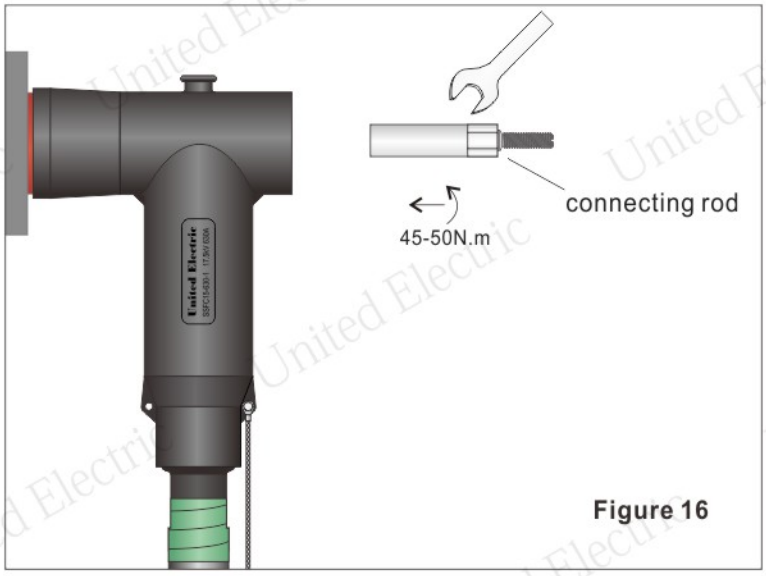


Figure 16

17. Push SSRC15-630-1 into SSFC15-630-1

- Clean the back end of SSFC15-630-1 and the front end of SSRC15-630-1, after the solvent volatilization, coated the surface with a thin layer of silicone grease.
- Align the hole of cable lug palm with the stud and push the coupling connector SSRC15-630-1 into SSFC15-630-1.
- Check again the tail of stress cone platform, which should not expose more than 10mm.
- Wrap 2 layer of PVC tape over the tail of stress cone and continue wrapping over the end of heat shrink tube as shown in figure 17.

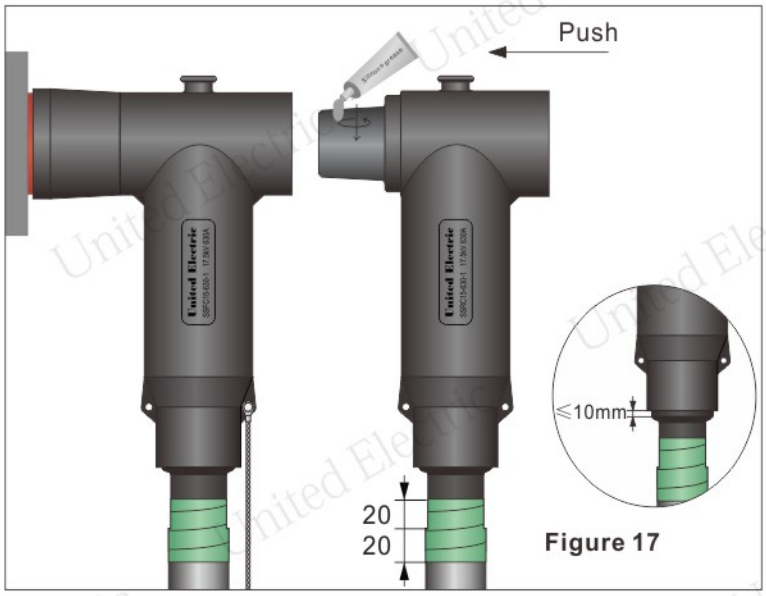


Figure 17

18. Fix SSRC15-630-1 and grounding earth

- Install the flat washer, spring washer and nut in sequence, screw down the nut by socket wrench with the torque 45-50N.m.
- Clean and coat a thin layer of silicone grease onto the inner surface of back end of SSRC15-630-1 and outer surface of insulation plug.
- Screw the insulation plug into the back end of SSRC15-630-1 by hand first, and then fix it by the socket wrench with the torque 45-50N.m. Cover the insulation plug with protect cap.
- Connect all the earth braid and earth wires to the earth point. Installation complete.

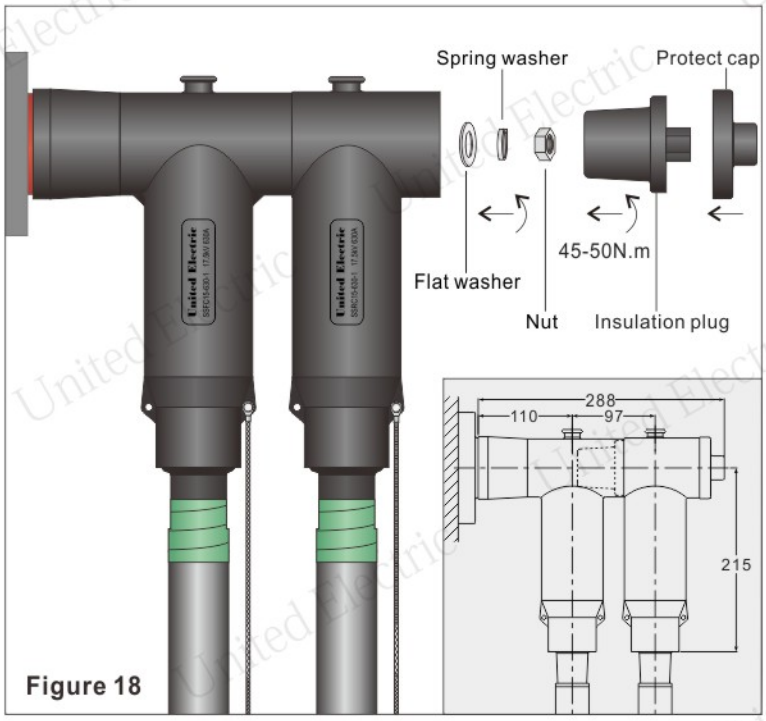


Figure 18