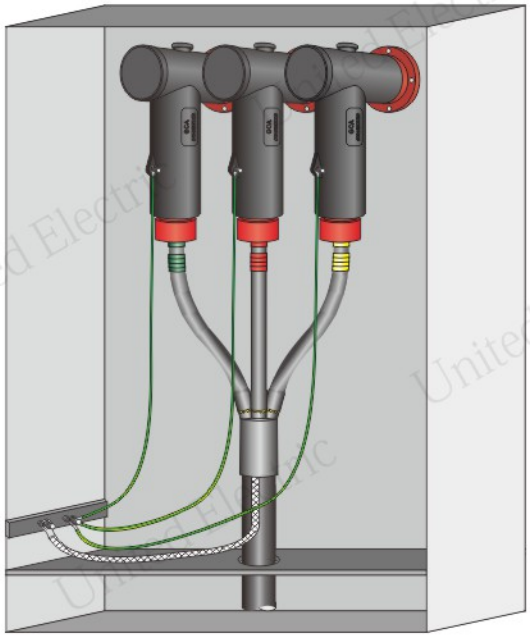
Installation Instruction

United Electric

Installation Instruction

GCA CJB30-630 & CJBK30-630

630A Screened T connector
for 3-core XLPE cable up to 36kV,
copper tape screened, steel wire armored
with Pre-expanded stress cone
01-9408-023A-0823



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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CJB30-630 is a 630A screened separable T connector made of silicone rubber, designed to connect with the type C bushing in accordance with the standard of CENELEC EN50181, EN50180. CJBK30-630 is a coupling connector, designed to connect with CJB30-630, for dual cable arrangement.

The instruction is suitable for the installation of CJB30-630 & CJBK30-630 over 3-core XLPE insulated cable up to 36kV, copper tape screened, steel wire armored cable. The stress cone type is pre-expanded type, GCA 2D#.

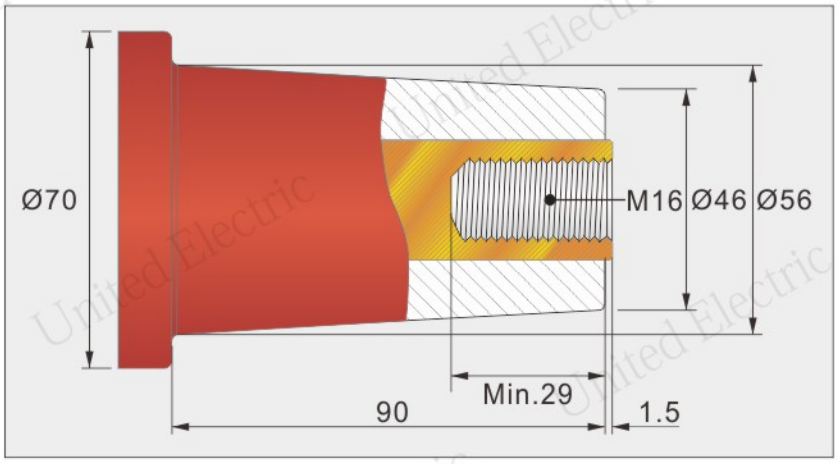
The installation should be made by the person who has been trained and get the qualified certificate. Carefully read and follow the steps in the installation instruction before installing the product.

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

Check the kits according to the packing list, make sure the kits comply with the cable at site.

Bushing profile:

- *The connector should only be used on bushing with dimensions as shown in follow 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 type and cross-section and the type of stress cone according to table 1.
- Check the cable at site which should be qualified.

Table 1

Front Connector	Rear Connector	Stress cone type	Cable type and cross-section (sq.mm)
CJB30-630, 3×35-95sq.mm, MCL	CJBK30-630, 3×35-95sq.mm, MCL	630A Pre-expanded stress cone GCA 2D#	18/30kV EPR cable (3C×35+3C×10)
			18/30kV EPR cable (3C×70+3C×25)
			19/33kV 95sq.mm XLPE cable

2. Cable preparation:

- Remove the cable outer sheath to 800-1000mm accordingly. Clean and degrease the end of the cable outer sheath for about 150 mm.
- Remove the steel wire armor to 30mm.
- Remove the cable inner sheath and fillers to 10mm.
- Protect the copper tape screen by PVC tape.

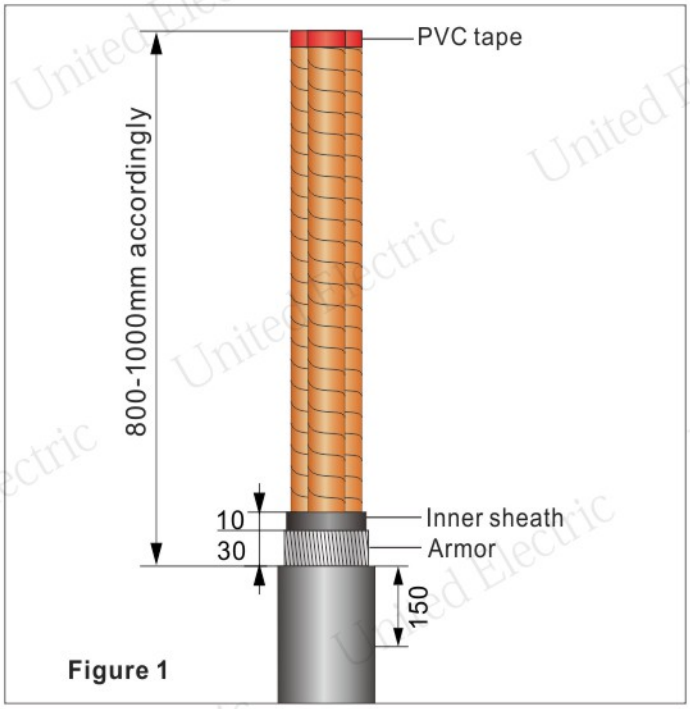


Figure 1

3. Connect earth braid

- Separate the end of copper braid to 3-cores, wrap and solder the separated ends onto copper tape screen as shown in figure 2.
- Fix the copper braid onto wire armor by jubilee clip.
- Lift up the copper braid and wrap one layer of red sealing mastic over the cable outer sheath as a bedding with starting from 30mm to the end.
  Lay down the copper braid and keep wrapping another layer of red sealing mastic.
- Wrap PVC tape over the soldering and jubilee clips to cover the sharp edges.

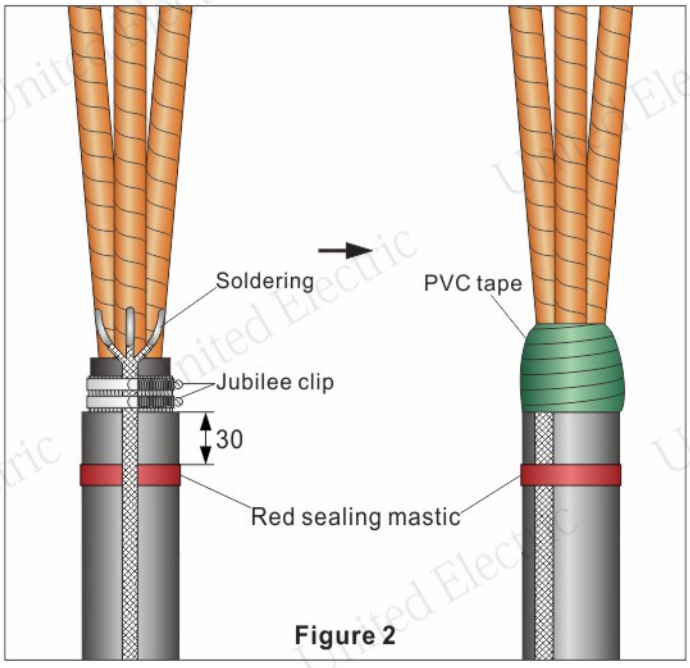


Figure 2

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.

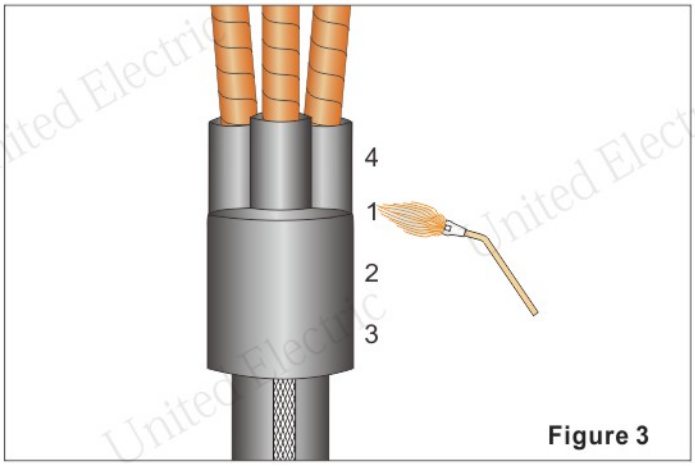


Figure 3

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 crutch and working upwards.
- Bend and shape the cores into their final position

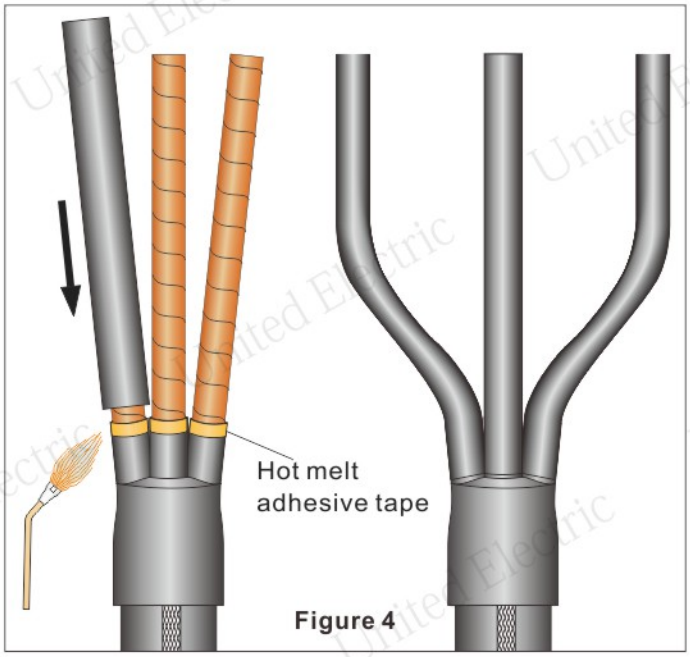


Figure 4

6. Phase cores preparation

- Screw the M16/M12 stud 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.

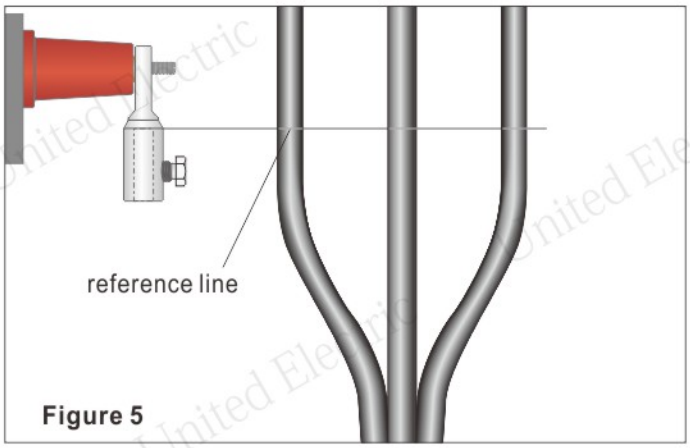


Figure 5

- Remove heat shrink tube, copper tape, core insulation screen and insulation layer to the dimensions as show in figure 6.

Note:
(1) Do not nick the cable insulation when remove the cable insulation screen. The cable screen end should be smooth transition, without any turnup and sharp-angle.

(2) The cable insulation surface should be smooth and free from all traces of conductive material. Polish the cable insulation surface by abrasive strap if there are any irregularities or imperfections. Chamfer the cable insulation cut to 2×45°.

(3) Clean the cable conductor, thoroughly remove the oil stain and oxide film of the cable conductor surface if any. Wrap the cut end of conductor with PVC tape.

35-95sq.mm (Cable lug: UE-MCL 35-150-29)

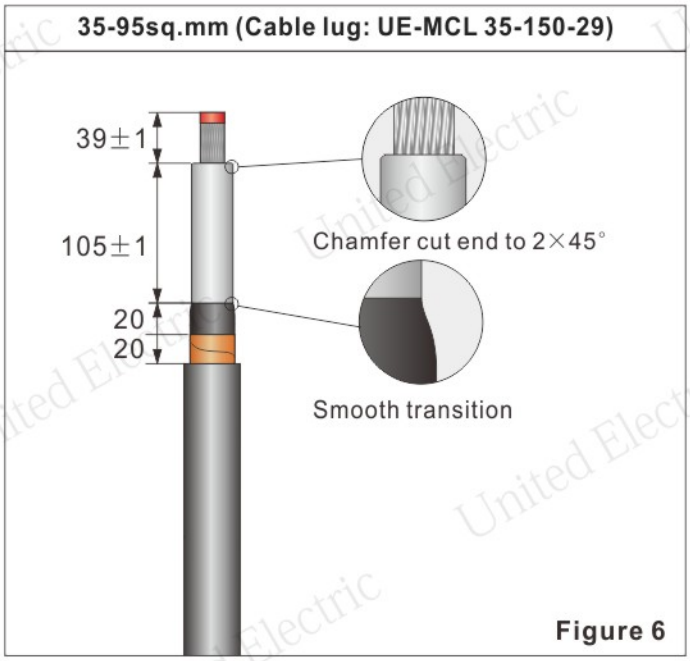


Figure 6

7. Wrap semi-conductive tape

- Measure 18mm form the cut end of insulation screen, half-overlapping wrap the semi-conductive tape around the insulation screen and copper tape screen with 150% stretch of its original length, and to make a step with width of 20-22mm and outer diameter ØD= outer diameter of insulation Ød + 8mm.
- Continue wrapping semi-conductive tape down over the heat shrink tube with cover the tube for 15mm.
- Wrap several layers of PVC tape next to the semi-conductive step as a marker for checking the position of the stress cone. The stress cone must stay in place after finish the installation of CJB connector body.

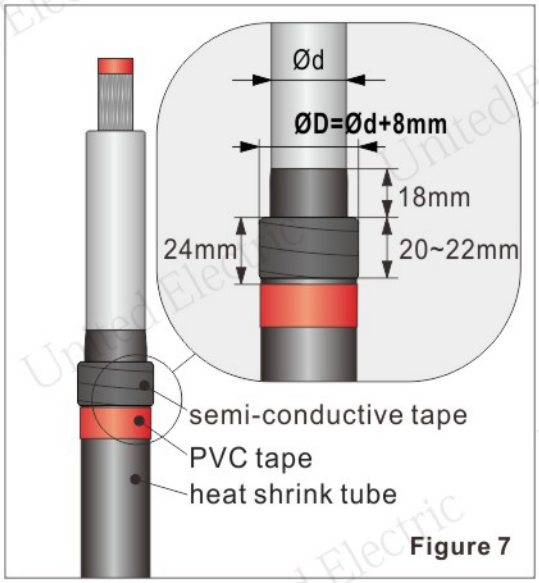
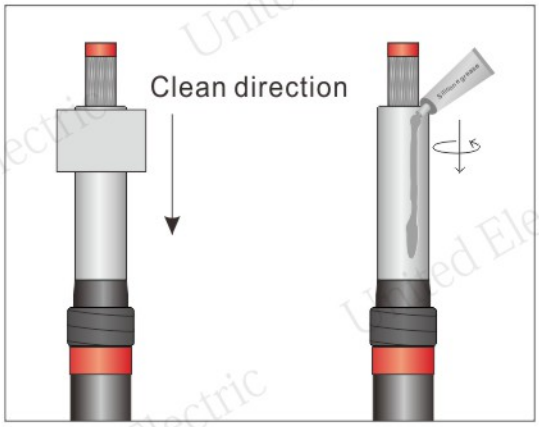


Figure 7

8. Clean and lubricate the cable insulation

- Clean the outer surface of core insulation from the cut end downwards with cleaning tissue, do not reuse the cleaning tissue just applied.
- After the solvent volatilization, coat silicone grease onto the outer surface of core insulation and the inner surface of stress cone.
  Do not coat silicone grease onto the insulation screen.



9. Install stress cone

- Position the stress cone with the loose white core ribbon directed toward the cut end of cable core.
- Align the base of the stress cone (not the plastic core) with the edge of position mark tape.
- Grasping loose core ribbon end, carefully pull out several turns of the plastic core. After the stress cone makes adequate contact, release the assembly and continue unwinding the plastic core.
- Adjust stress cone by hand to remove the deformation and distortion. Make sure that the flange of stress cone contact firmly with the semi-conductive tape step.

Figure 9

10. Install cable lug (UE-MCL 35-150-29)

- Remove the PVC tape previous applied from the conductor.
- Put on the proper cable lug over conductor, barrel of lug butts against insulation. Please notice the direction of the lug palm, the palm must 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.
- Install the mechanical lug according to the installation instruction packed with lug. Remove any sharp edges.

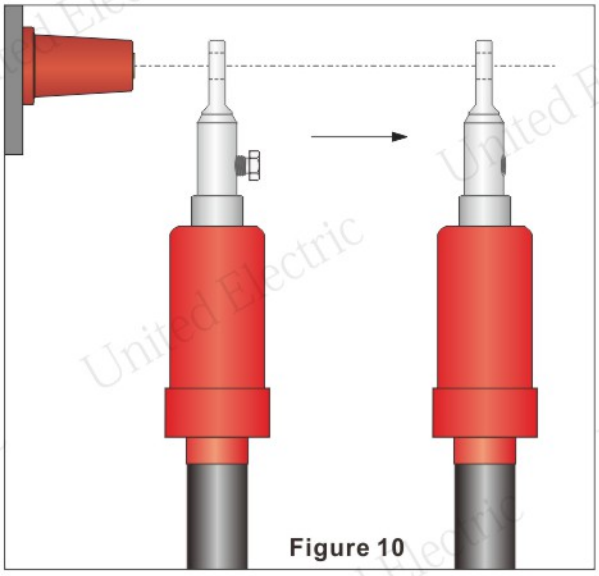


Figure 10

11. Clean and lubricate stress cone and CJB30-630

- Clean the outer surface of stress cone and inner surface of CJB30-630.
- 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 CJB30-630.

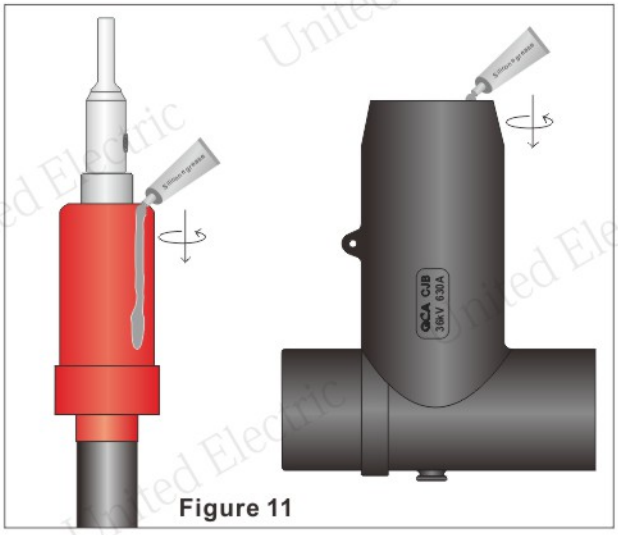


Figure 11

12. Install CJB30-630 onto stress cone

- Align the front connector CJB30-630 with stress cone and cable lug, push the CJB30-630 with no interrupted onto the stress cone.
- Be noticed that the stress cone and PVC marker should not have any moving. The down end of the stress cone will expose for 30-45mm. (Figure 12)

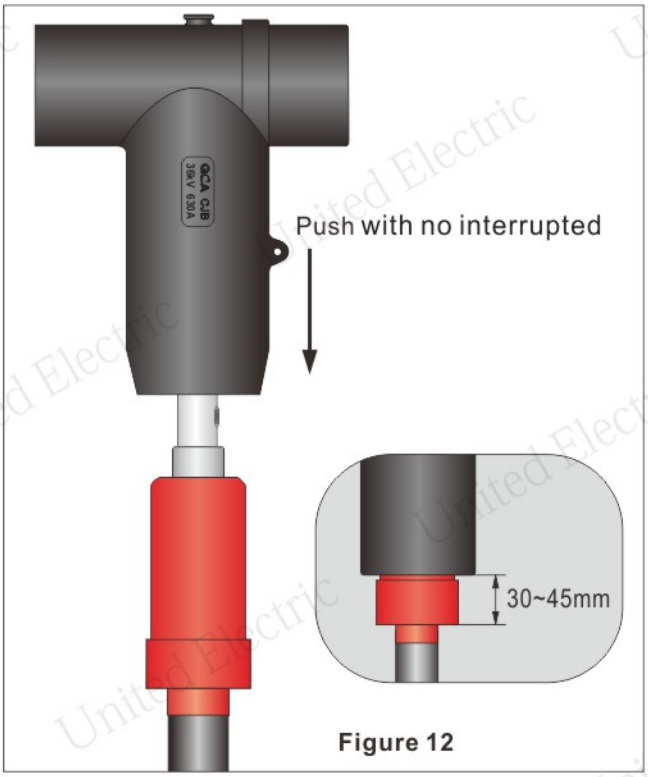


Figure 12

13. Clean and lubricate bushing and CJB30-630

- Clean the outer surface of the connected bushing.
- Coat evenly a thin layer of silicone grease onto the connected bushing, and the inner surface of the front end of CJB30-630. (Figure 13)

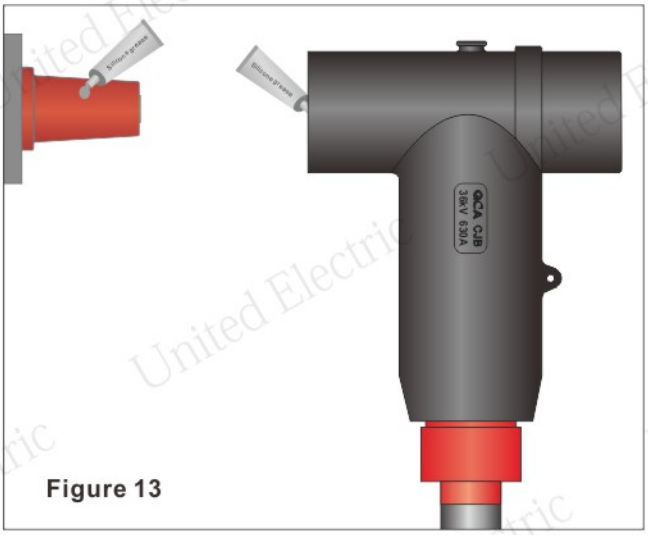


Figure 13

14. Push CJB30-630 onto bushing

- Screw the M16/M12 stud into the bushing.
- Align the eye of the cable lug with the threaded pin and push the screened connector CJB30-630 onto the bushing. (Figure 14)

Note:
If need to install the coupling connector CJBK30-630 please follow the steps 16~18, if not , please follow the step 15.

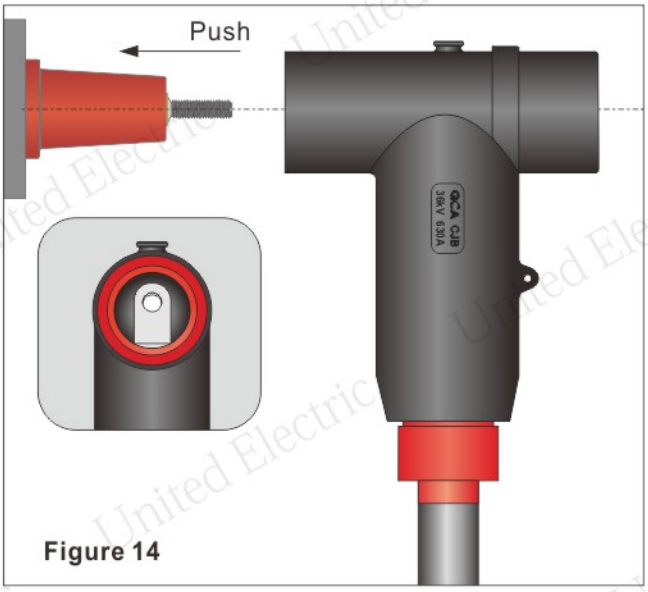


Figure 14

15. Fix CJB30-630 and grounding earth

- Install the flat washer, spring washer and nut in sequence, screw down the nut by socket wrench with the torque of 30-40N.m.
- Clean and coat a thin layer of silicone grease onto the inner surface of back end of CJB30–630 and outer surface of insulation plug.
- Screw the insulation plug into the back end of CJB30-630 by hand first, and then fix it by the spanner.
- Cover the insulation plug with protect cap.
- Connect all the earth braid and earth wires to the earth point, mark the phases. Installation complete.

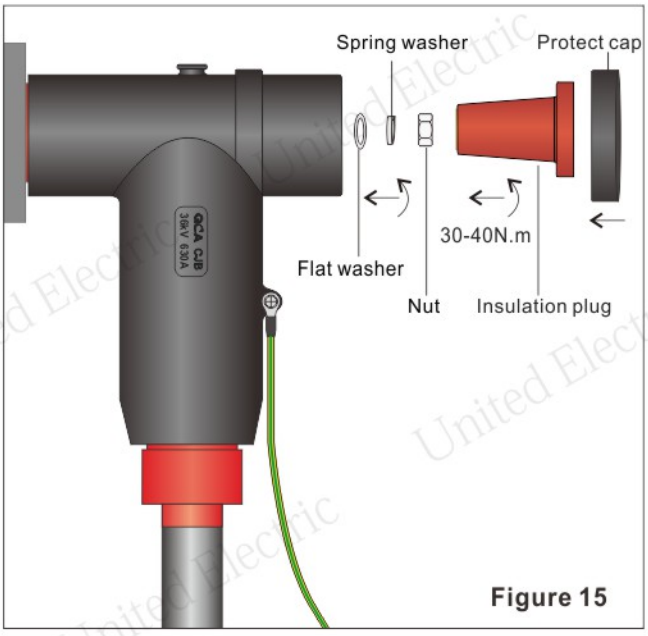


Figure 15

16. Install coupling connector CJBK30-630

- The cable preparation and installation of stress cone, cable lug, CJBK30-630 body please follow the steps 2~12.
- Screw the B type connecting rod into the back end of CJB30-630 and fix it by a spanner.
- Screw the M16/M12 stud into the B type connecting rod.

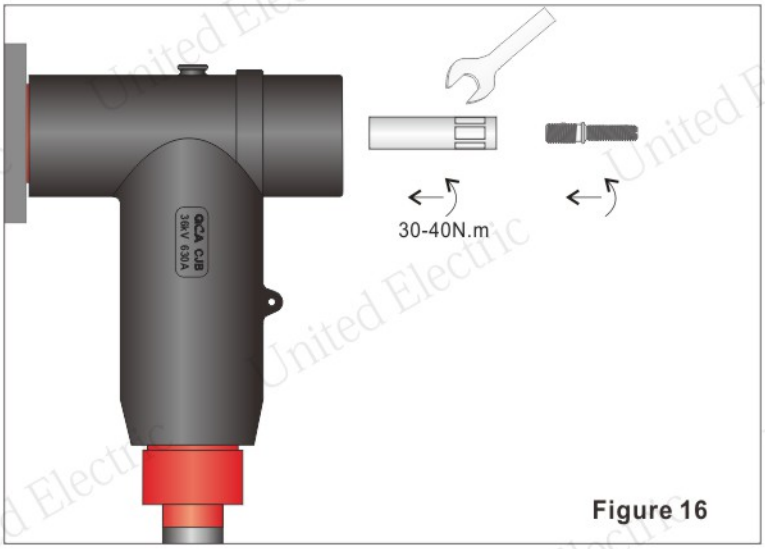


Figure 16

17. Push CJBK30-630 into CJB30-630

- Clean the back end of CJB30-630 and the front end of CJBK30-630, after the solvent volatilization, coated the surface with a thin layer of silicone grease.
- Align the eye of the cable lug with the threaded pin and push the coupling connector CJBK30-630 into CJB30-630.

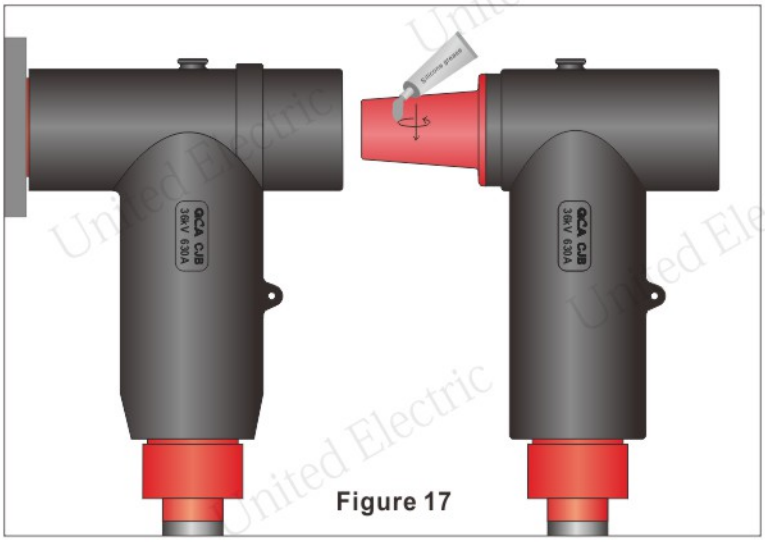


Figure 17

18. Fix CJBK30-630 and grounding earth

- Install the flat washer, spring washer and nut in sequence, screw down the nut by socket wrench with the moment of 30-40N.m.
- Clean and coat a thin layer of silicone grease onto the inner surface of back end of CJBK30–630 and outer surface of insulation plug.
- Screw the insulation plug into the back end of CJBK30-630 by hand first, and then fix it by the spanner. Cover the insulation plug with protect cap.
- Connect all the earth braid and earth wires to the earth point, mark the phases. Installation complete.

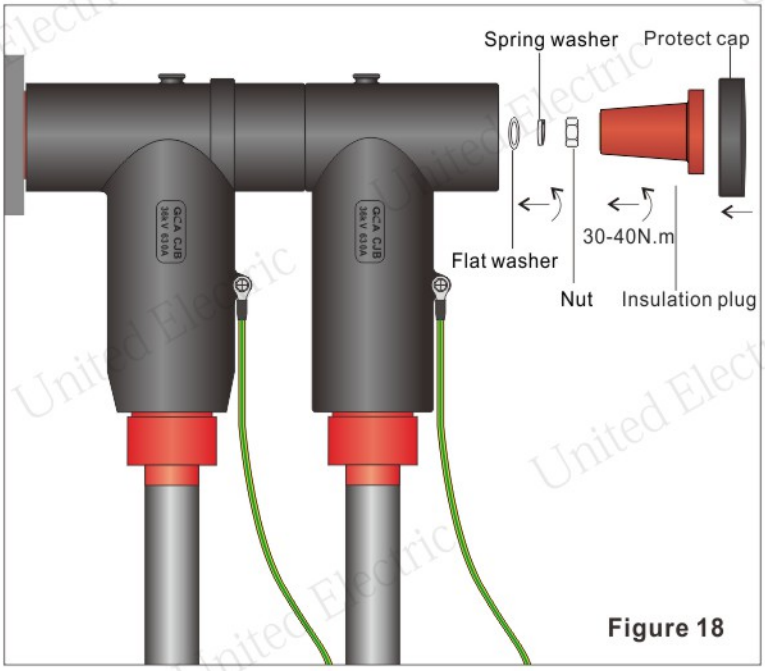


Figure 18

Kit Contents

CJB30-630 kit contents for 3-core cable

CJBK30-630 kit contents for 3-core cable

❶ 3×Connector body	❾ 1×Tape measure	⓱ 3×Spring washer	㉕ 3×25mm² earth lug
❷ 3×Earthing wire	❿ 2×Abrasive strap	⓲ 3×Nut	㉖ 2×Jubilee clip
❸ 1×Copper braid	⓫ 1×Qualified certificate	⓳ 3×Insulation back plug	㉗ 1×Semi-conductive tape
❹ 3×Stress cone (pre-expanded)	⓬ 12×Cleaning tissue	⓴ 3×Protect cap	㉘ 1×Solder paste
❺ 3×Cable lug	⓭ 1×Silicone grease	㉑ 1×Spanner	㉙ 1×Tin solder
❻ 1×Heat shrink breakout	⓮ 1×Plastic grove	㉒ 1×Socket wrench	㉚ 1×Tinned copper wire
❼ 3×Heat shrink tube	⓯ 3×Stud	㉓ 3×4mm² earth lug	㉛ 3×B type connecting rod
❽ 1×PVC tape kit	⓰ 3×Flat washer	㉔ 3×10mm² earth lug	㉜ 1×Red sealing mastic