United Electric

Installation Instruction

CJB20-630 & CJBK20-630

630A Screened T connector
for 11kV 1-core XLPE cable,
Copper tape screened, unarmored,
with compression cable lug
01-9408-015C-1023

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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CJB20-630 is a 24kV 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.

CJBK20-630 is a coupling connector, designed to connect with CJB20-630, for dual cable arrangement.

The instruction is suitable for the installation of CJB20-630 & CJBK20-630 over 6.35/11kV 1-core XLPE insulated, copper tape screened, unarmored cable. The cable lug is compression type with round head.

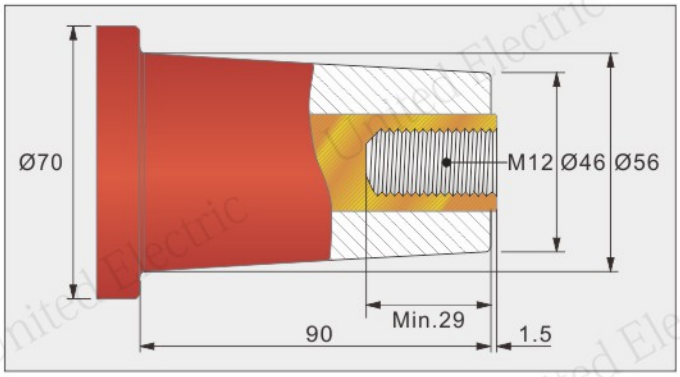
The installation should be made by the person who has been trained and get the qualified certificate. Carefully read and follow the steps in the installation instruction before installing the product.

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

Check the kits according to the kit contents, 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 outer diameter of cable insulation and inner diameter of stress cone according to table 1.
- Check the cable at site which should be qualified.

Table 1

Front Connector	Coupling Connector	Stress cone size and suitable diameter range Ø (mm)	Cable lug material	
			Cu conductor	Al conductor
CJB20-630, 11kV, 1×70sq.mm	CJBK20-630, 11kV, 1×70sq.mm	1#, 18-23	Cu	Bimetallic
CJB20-630, 11kV, 1×95sq.mm	CJBK20-630, 11kV, 1×95sq.mm	1#, 18-23	Cu	Bimetallic
CJB20-630, 11kV, 1×120sq.mm	CJBK20-630, 11kV, 1×120sq.mm	1#, 18-23	Cu	Bimetallic
CJB20-630, 11kV, 1×150sq.mm	CJBK20-630, 11kV, 1×150sq.mm	1#, 18-23	Cu	Bimetallic
CJB20-630, 11kV, 1×185sq.mm	CJBK20-630, 11kV, 1×185sq.mm	2#, 23-28	Cu	Bimetallic
CJB20-630, 11kV, 1×240sq.mm	CJBK20-630, 11kV, 1×240sq.mm	2#, 23-28	Cu	Bimetallic
CJB20-630, 11kV, 1×300sq.mm	CJBK20-630, 11kV, 1×300sq.mm	3#, 28-36	Cu	Bimetallic
CJB20-630, 11kV, 1×400sq.mm	CJBK20-630, 11kV, 1×400sq.mm	3#, 28-36	Cu	Bimetallic
CJB20-630, 11kV, 1×500sq.mm	CJBK20-630, 11kV, 1×500sq.mm	7#, 31-37	Cu	Bimetallic

2. Cable preparation

- Clean and cut the cable to requested length on site as shown in figure 1.

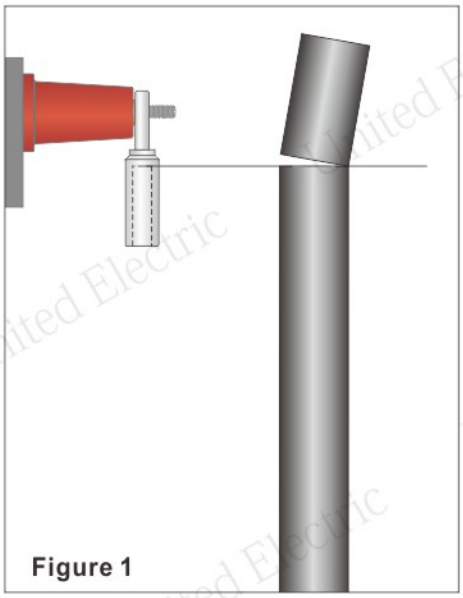


Figure 1

- Remove the cable outer sheath to 240mm in figure 2.
- Protect the end of metal tape by PVC tape.

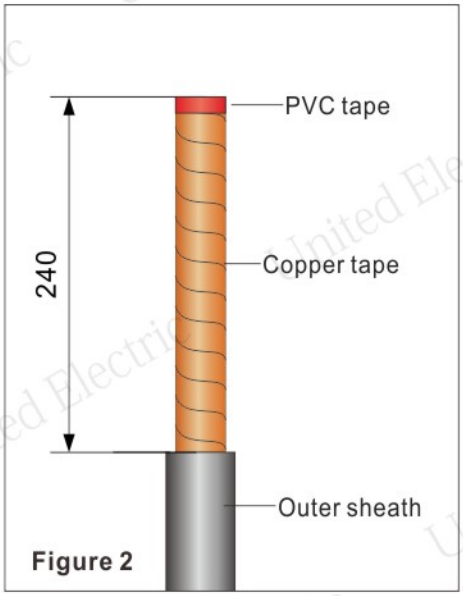


Figure 2

- Place copper braid onto the copper tape, wrap roll spring one turns over the end of copper braid. Fold the copper braid back to the outer sheath, wrap the rest of the roll spring over the copper braid. Tighten the roll spring with a twisting action.
- Lift up the copper braid and half-overlapping 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 one layer of red sealing mastic as shown in figure 3.
- Cover the sharp edge of roll spring and the red sealing mastic by PVC tape.

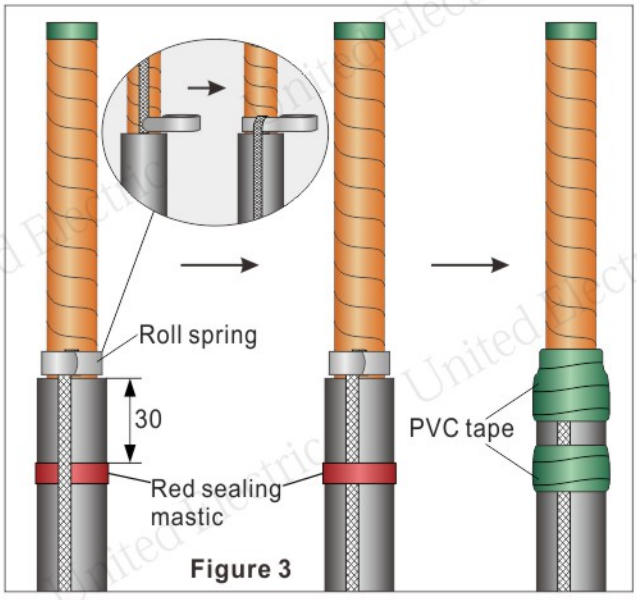


Figure 3

3. Place and shrink heat shrink tube

- Measure and mark a reference line over the copper tape with 190mm to the cable end.
- Place and slide heat shrink tube over the cable core with 190mm to the cable end, shrink it down starting at the top end and working downwards as shown in figure 4.
- Fix the earth lead to the cable outer sheath at a point approximately 50mm below the heat shrink tube.

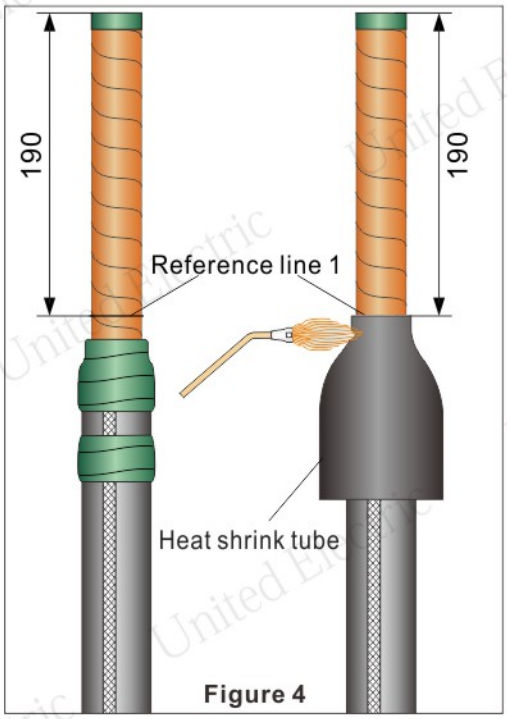


Figure 4

4. Core preparation

- Remove the copper tape to 20mm and insulation screen to 20mm, and keep the insulation for 100±1mm, conductor for 50±1mm. Chamfer the cable insulation cut to 2×45°.
  Note: Do not nick the cable insulation.
- Clean the cable conductor surface. Wrap the cut end of conductor with PVC tape.
- The end of insulation screen 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.

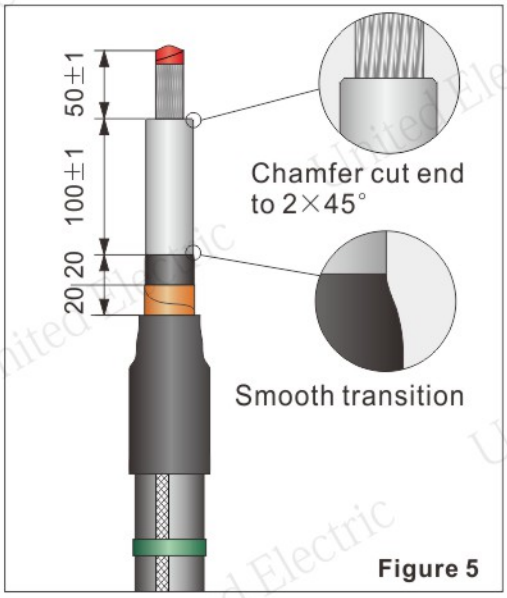


Figure 5

5. Wrap semi-conductive tape

- Measure 18mm form the cut end of insulation screen, half-overlapping wrap the semi-conductive tape around the insulation screen with 150% stretch of its original length, and to make a step with width of 20-25mm 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 about 15mm.

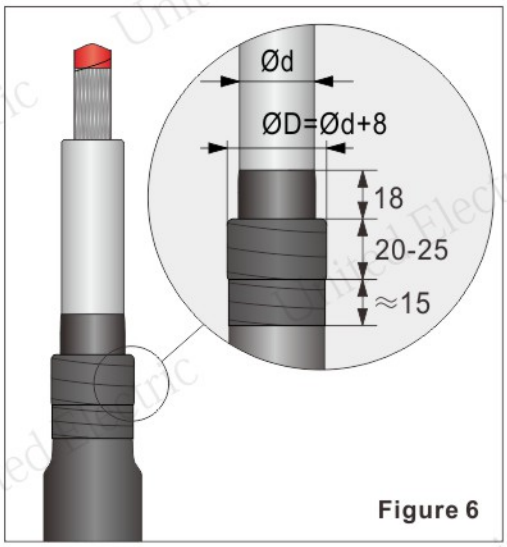


Figure 6

6. Clean and lubricate stress cone and 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.
- Coat silicone grease onto the inner surface of the stress cone where mark with the broken line. (figure 7)

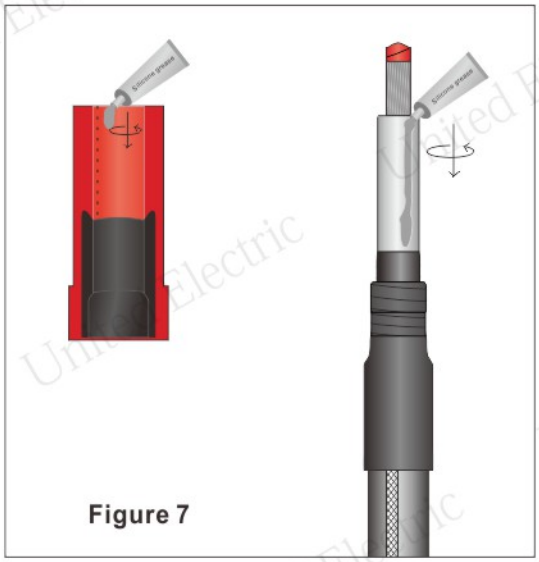


Figure 7

7. Install stress cone

- Push the stress cone onto the cable core with rotation until the flange of stress cone contact firmly with the semi-conductive tape step.
- Wrap several layers of PVC tape next to the underside of the stress cone as a marker for checking the position of the stress cone. The stress cone must stay in place after finish the installation of T connector body.

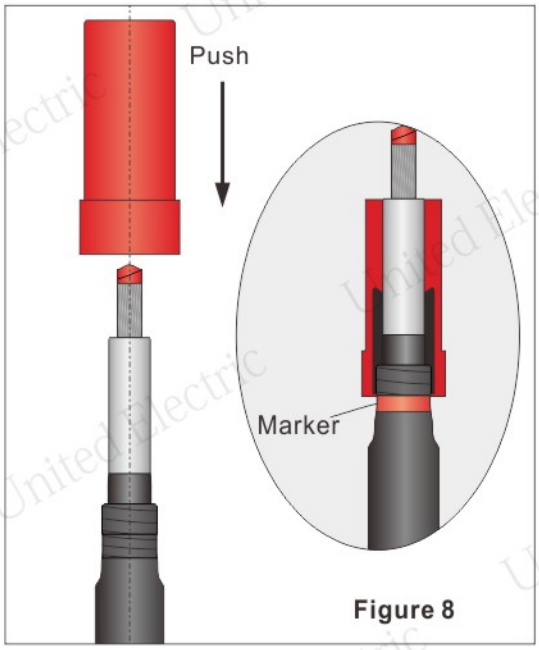


Figure 8

8. Install cable lug

- Remove the previously applied PVC tape from the conductor.
- Put on the proper cable lug over conductor for compressing. When compress the cable lug, please notice the direction of the lug palm, the palm should be parallel with the copper plane in the bushing, which can guarantee good conduction contact.
  Attention: The load current may occurr 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.

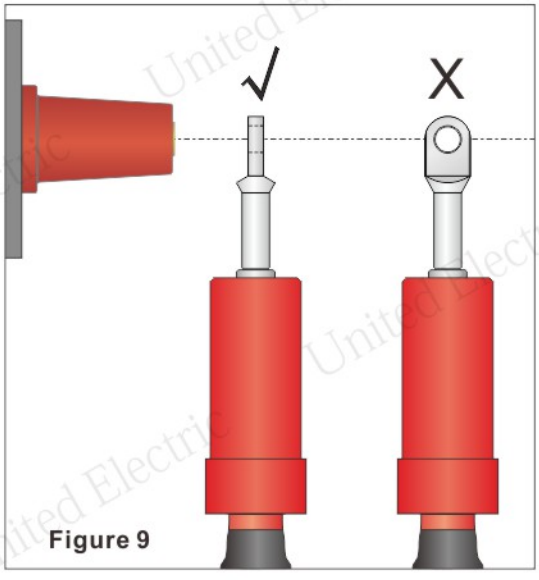


Figure 9

9. Clean and lubricate stress cone and CJB20

- Clean the outer surface of stress cone and inner surface of CJB20-630.
- 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 CJB20-630.

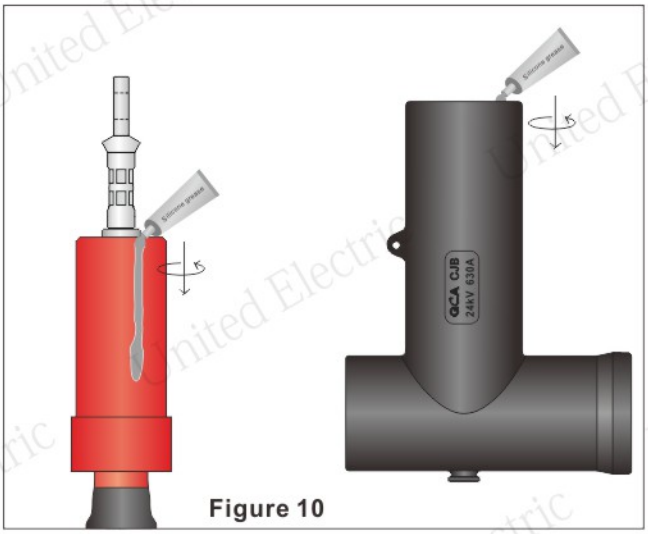


Figure 10

10. Install CJB20-630 onto stress cone

- Align the front connector CJB20-630 with stress cone and cable lug, push the CJB20-630 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 11)

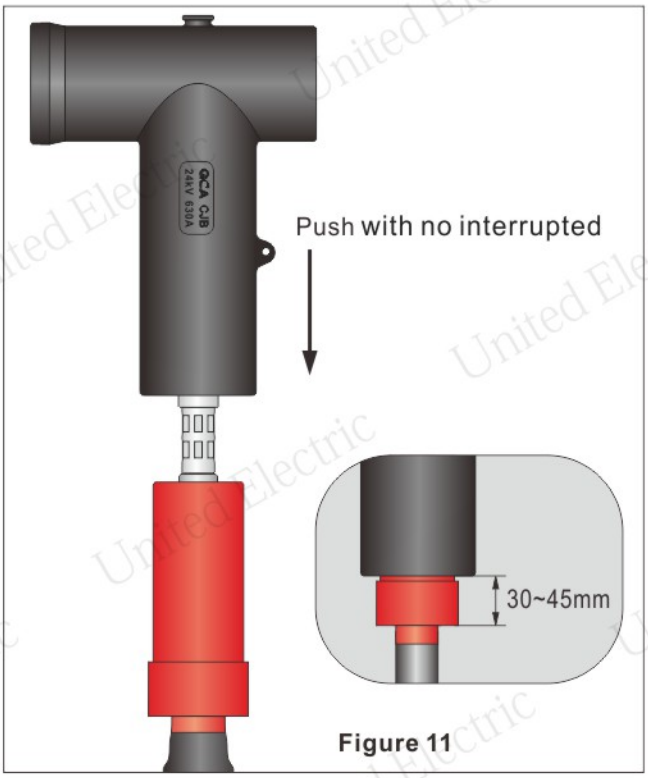


Figure 11

11. Clean and lubricate bushing and CJB20-630

- 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 CJB20-630. (Figure 12)

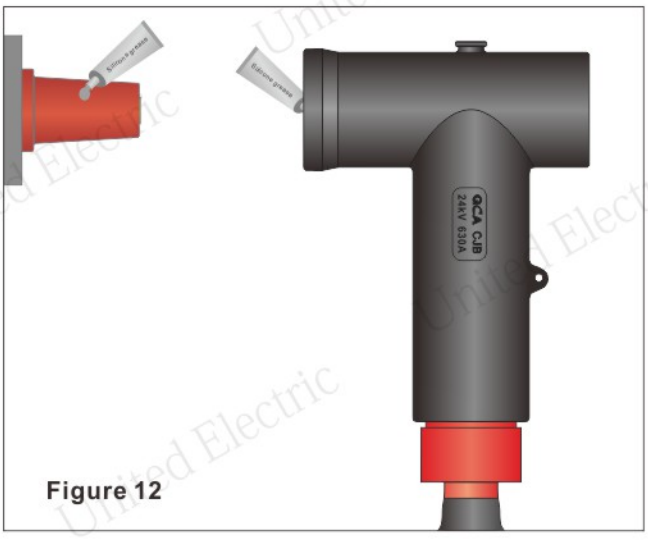


Figure 12

12. Push CJB20-630 onto bushing

- Screw the M16/M12 stud into the bushing.
- Align the eye of the cable lug with the threaded stud and push the screened connector CJB20-630 onto the bushing. (Figure 13)

Note:
If need to install the coupling connector CJBK20-630 please follow the steps 14~16, if not , please follow the step 13.

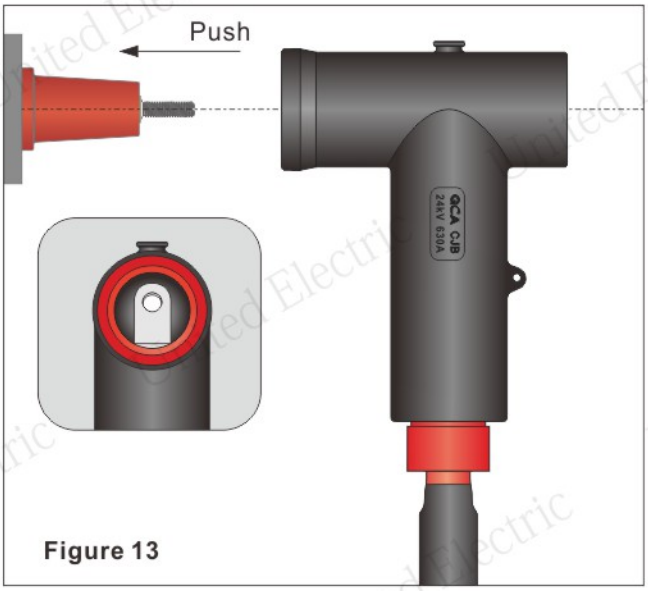


Figure 13

13. Fix CJB20-630 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 CJB20–630 and outer surface of insulation plug.
- Screw the insulation plug into the back end of CJB20-630 by hand first, and then fix it by the hexagon wrench with the torque 30-40Nm.
- Cover the insulation plug with protect cap.
- Connect all the earth braid and earth wires to the earth point, mark the phases. Installation complete.

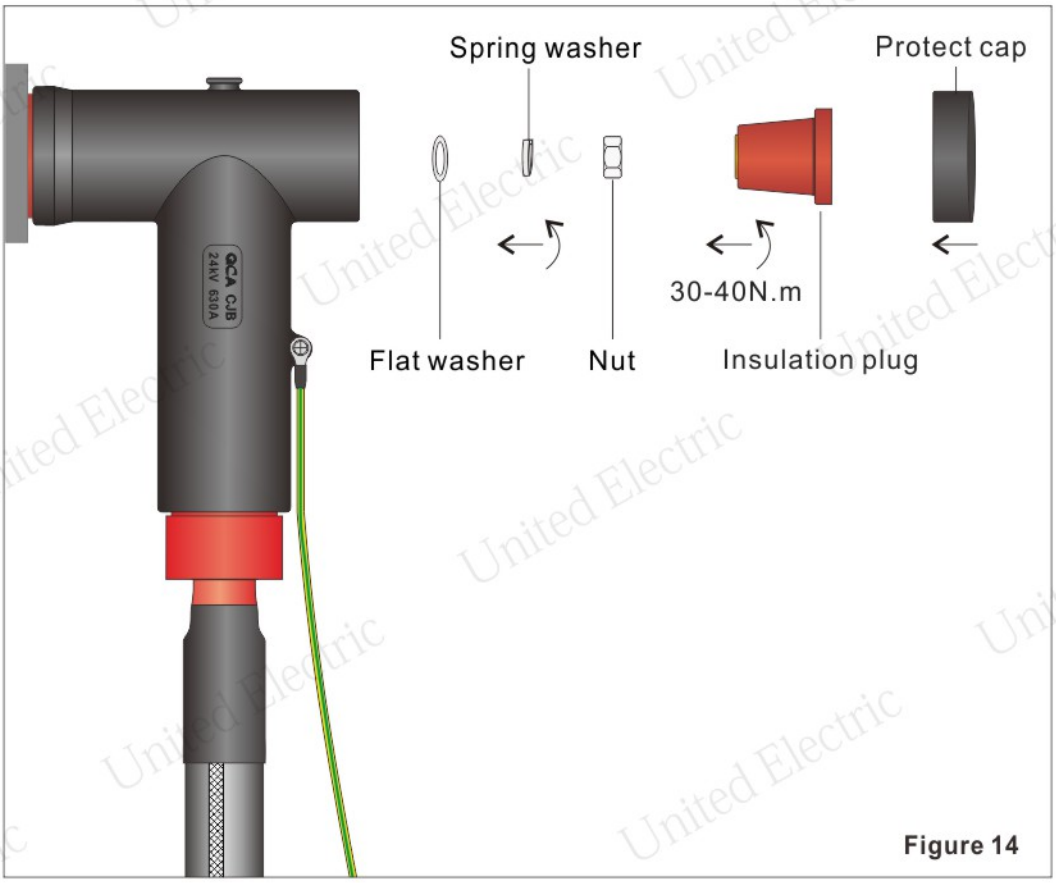


Figure 14

14. Install coupling connector CJBK20-630

- The cable preparation and installation of stress cone, cable lug, CJBK20-630 body please follow the steps 2~10.
- Screw the B type connecting rod into the back end of CJB20-630 and fix it by a spanner.
- Screw the M16/M12 stud into the B type connecting rod.

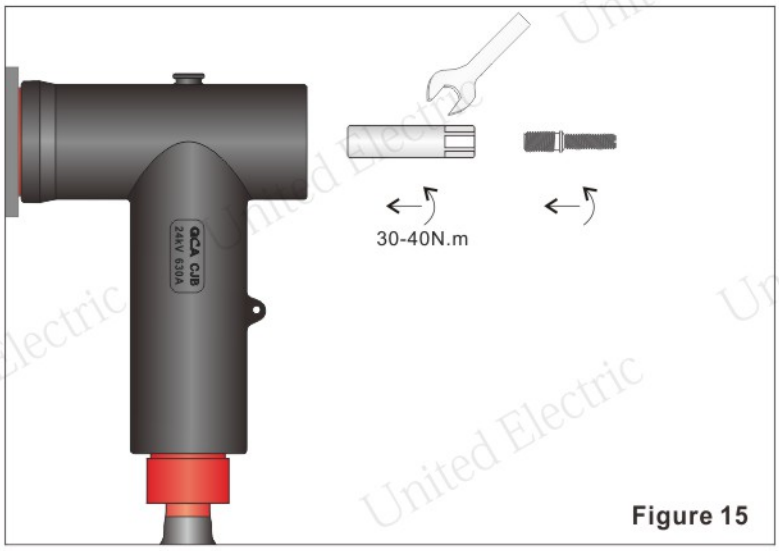


Figure 15

15. Push CJBK20-630 into CJB20-630

- Clean the back end of CJB20-630 and the front end of CJBK20-630, after the solvent volatilization, coated the surface with a thin layer of silicone grease.
- Align the eye of the cable lug with the threaded stud and push the coupling connector CJBK20-630 into CJB20-630.

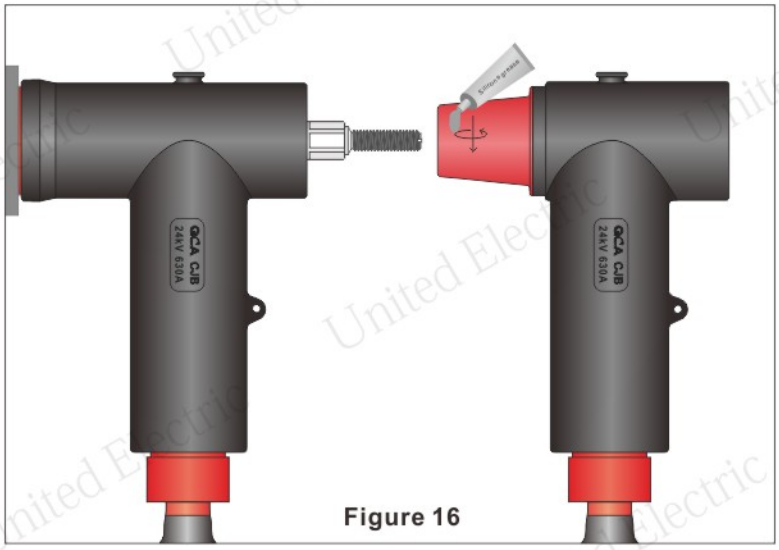


Figure 16

16. Fix CJBK20-630 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 CJBK20–630 and outer surface of insulation plug.
- Screw the insulation plug into the back end of CJBK20-630 by hand first, and then fix it by the hexagon wrench with the torque 30-40Nm.
- Cover the insulation plug with protect cap.
- Connect all the earth braid and earth wires to the earth point, mark the phases. Installation complete.

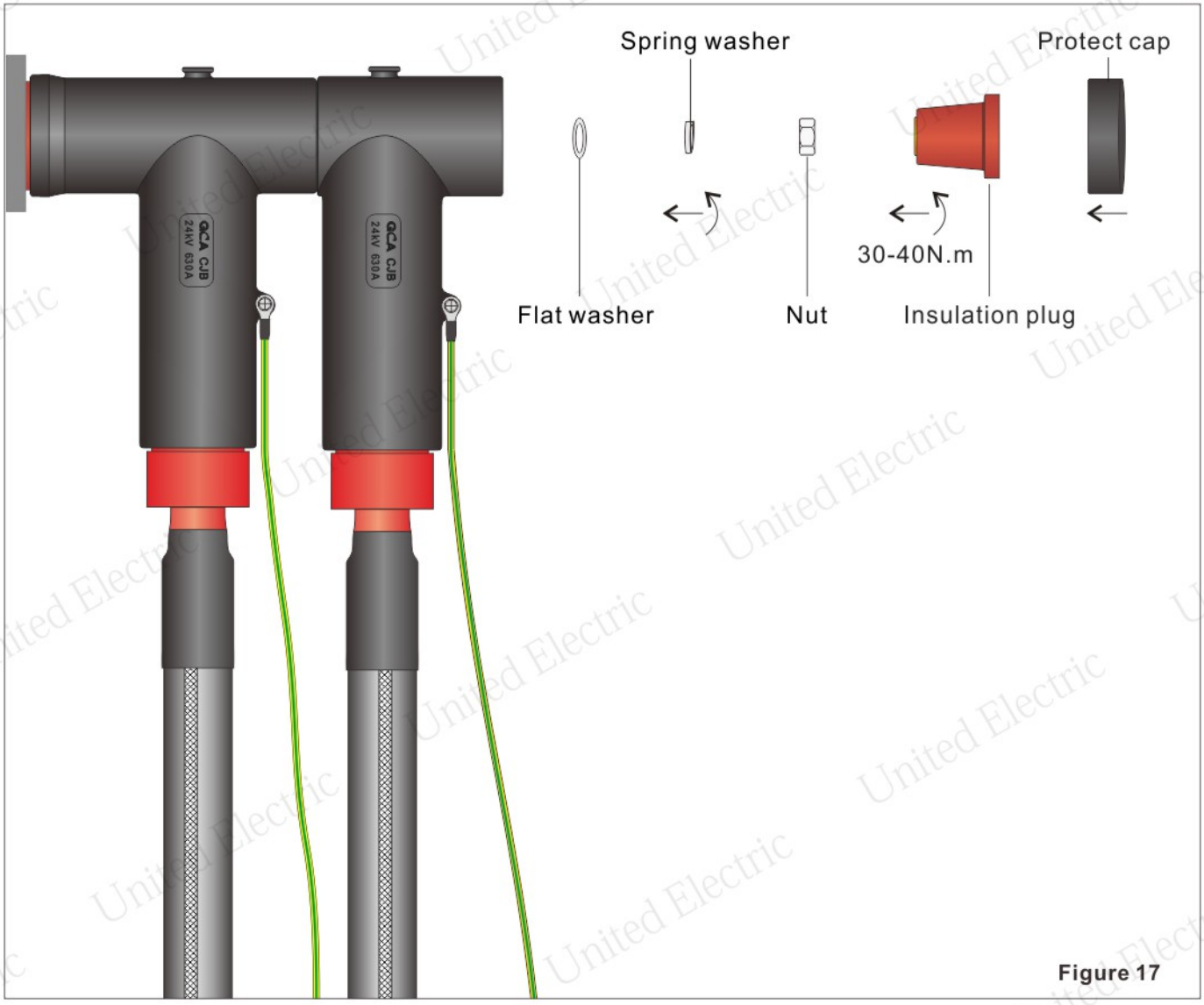


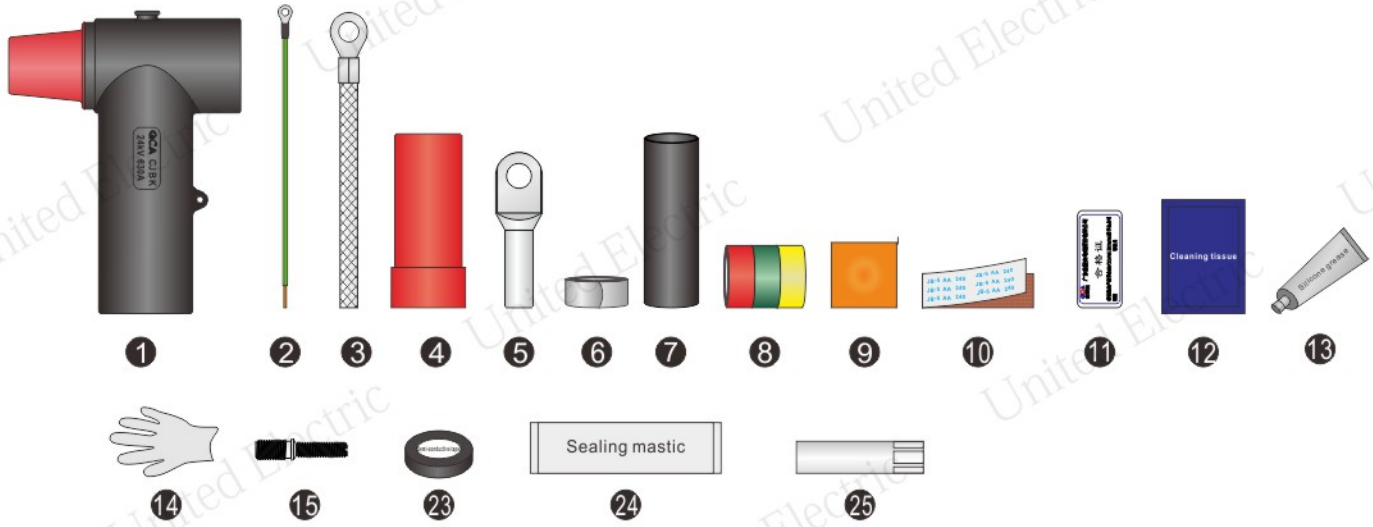
Figure 17

Kit Contents

02-9408-015C-1023

CJB20-630 kit contents for 1-core cable (3phases / kit)

CJBK20-630 kit contents for 1-core cable (3phases / kit)



❶	3×Connector body	❽	1×PVC tape kit	⓯	3×Stud	㉒	1×Socket wrench
❷	3×Earthing wire	❾	1×Tape measure	⓰	3×Flat washer	㉓	1×Semi-conductive tape
❸	3×Copper braid	❿	2×Abrasive strap	⓱	3×Spring washer	㉔	1×Sealing mastic
❹	3×Stress cone	⓫	1×Qualified certificate	⓲	3×Nut	㉕	3×B type connecting rod
❺	3×Cable lug	⓬	12×Cleaning tissue	⓳	3×Insulation back plug		
❻	3×Roll spring	⓭	1×Silicone grease	⓴	3×Protect cap		
❼	3×Heat shrink tube	⓮	1×Plastic grove	㉑	1×Spanner		