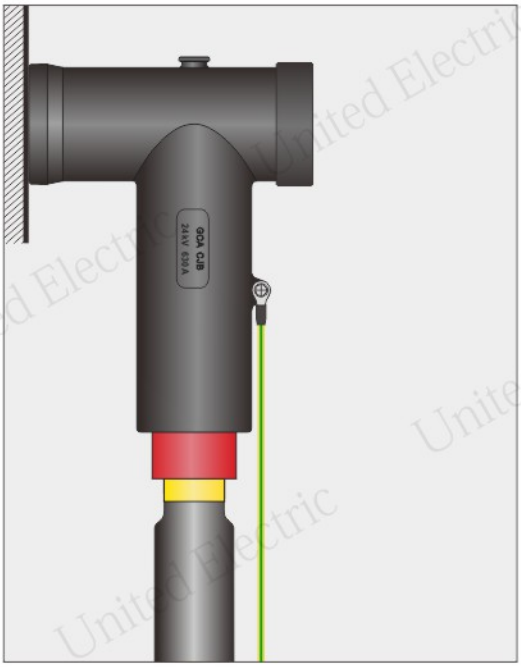
United Electric

Installation Instruction

CJB20-630 & CJBK20-630

24kV 630A Screened separable T connector
fo 1-core XLPE insulated cable,
copper wire screened, aluminum wire armored
01-9408-025-0622



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 connector body during all the procedure of operation.*

United Electric Co., Ltd

515 Saiba Bldg. No.16, Keji North 2nd Road,
Nanshan District, Shenzhen 518054,
Guangdong, China

Tel: 0086-755-26419390/26419370/26406630
Fax: 0086-755-26414580
E-mail: export@ueaccessory.com
Web: www.uesolution.cn

CJB20-630 is a 630A screened separable T connector made of silicone rubber, designed to connect with the type C1 bushing in accordance with the standard of CENELEC EN50181, the bolt type is M16.

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

This instruction is suitable for the installation of the screened separable T connectors over 24kV 1-core XLPE insulated cable, copper wire screened, aluminum wire armored, with compression type cable lug.

The installation should be made by the person who has been trained and got the qualified certificate.

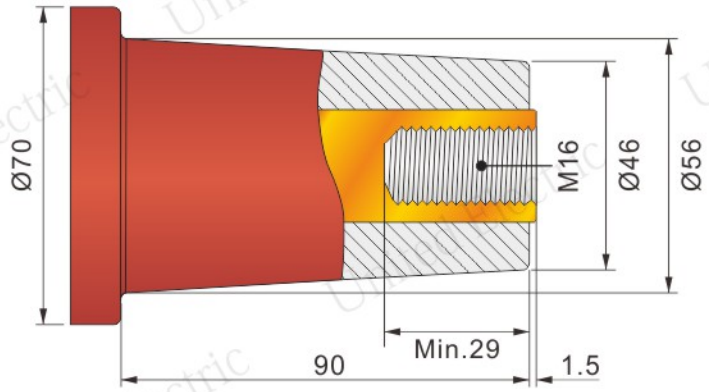
Carefully read and follow the steps in the installation instruction before installing the product.

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 on site.

Bushing profile:

- The connector should only be used on bushing with dimensions as shown as following drawing.
- The bushing size meet the requirements of standard EN50181.



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 suitable stress cone according to table 1.
- Check the cable on site which should be qualified.

Table 1

Front Connector	Rear Connector	Diameter over XLPE insulation Ø (mm)	Conductor cross section (sq.mm)	Cable lug material	
				Cu conductor cable	Al conductor cable
CJB20-630, 1×35sq.mm	CJBK20-630, 1×35sq.mm	18-23	35	Cu	Bimetallic
CJB20-630, 1×50sq.mm	CJBK20-630, 1×50sq.mm	18-23	50	Cu	Bimetallic
CJB20-630, 1×70sq.mm	CJBK20-630, 1×70sq.mm	18-23	70	Cu	Bimetallic
CJB20-630, 1×95sq.mm	CJBK20-630, 1×95sq.mm	23-28	95	Cu	Bimetallic
CJB20-630, 1×120sq.mm	CJBK20-630, 1×120sq.mm	23-28	120	Cu	Bimetallic
CJB20-630, 1×150sq.mm	CJBK20-630, 1×150sq.mm	23-28	150	Cu	Bimetallic
CJB20-630, 1×185sq.mm	CJBK20-630, 1×185sq.mm	28-36	185	Cu	Bimetallic
CJB20-630, 1×240sq.mm	CJBK20-630, 1×240sq.mm	28-36	240	Cu	Bimetallic
CJB20-630, 1×300sq.mm	CJBK20-630, 1×300sq.mm	31-37	300	Cu	Bimetallic
CJB20-630, 1×400sq.mm	CJBK20-630, 1×400sq.mm	31-37	400	Cu	Bimetallic
CJB20-630, 1×500sq.mm	CJBK20-630, 1×500sq.mm	36-40	500	Cu	Bimetallic
CJB20-630, 1×630sq.mm	CJBK20-630, 1×630sq.mm	40-45	630	Cu	Bimetallic

2. Cable preparation

- Ensure that the end of the cable within 1000mm should be straight.
- Clean the cable outer sheath and remove a length of 630mm. Remove the inner sheath to 60mm and aluminum wire armour to 70mm.
  Be noted that do not nick the screened copper wires and all the cut end should be vertical with cable core.

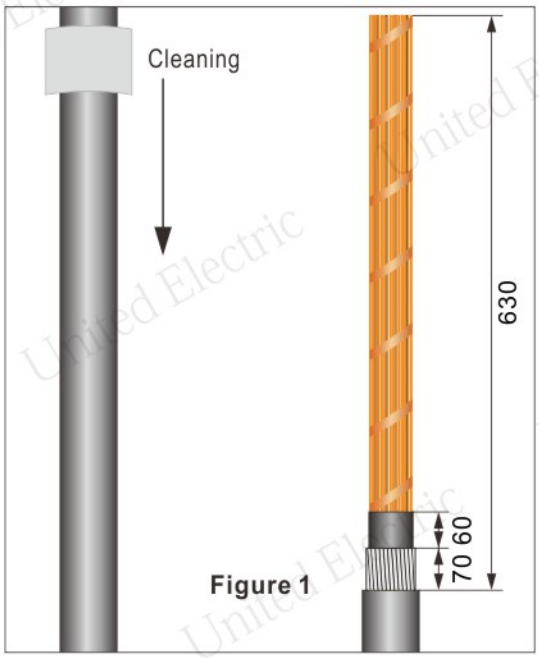


Figure 1

- Loosen and expand the end of copper braid, insert it into the flexible copper tape for not less than 40mm.
- Slip and insert the flexible copper tape and copper braid under the aluminum wire armour, fix them by jubilee clip.
- Bend the copper braid back over the cable outer sheath, fix it over wire armour by another jubilee clip.

  Note: the jubilee clip should be fixed around the flexible copper tape. Knock the overlap part between aluminum wire armour and flexible copper tape while fixing the jubilee clips and ensure that the copper braid is fixed firmly.

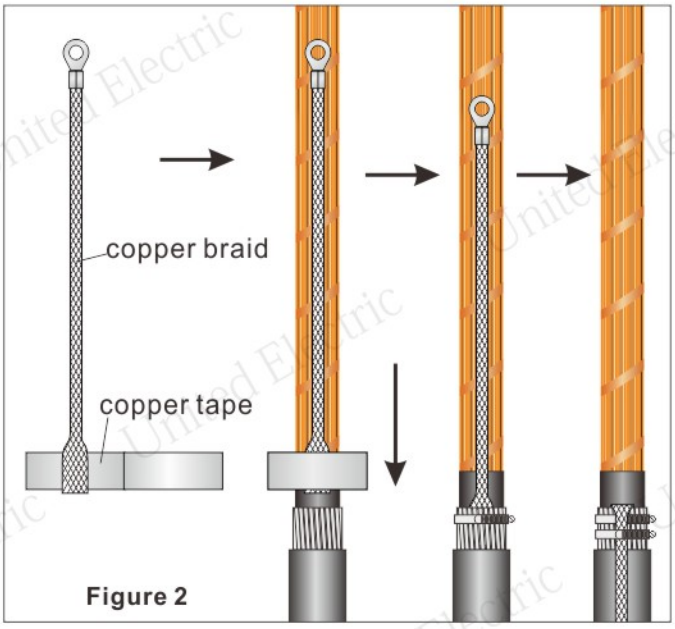


Figure 2

- Cover the sharp edge of jubilee clip and the end of aluminum wires by the black PVC adhesive tape, and cover the end of cable outer sheath for 10mm.
- Lift up the copper braid and half-overlappingwrap one layer of red sealing mastic over the cable outer sheath as a bedding with starting from 20mm to the end.
- Lay down the copper braid and keep wrapping one layer of red sealing mastic as shown in figure 3.
- Cover the red sealing mastic by PVC tape.

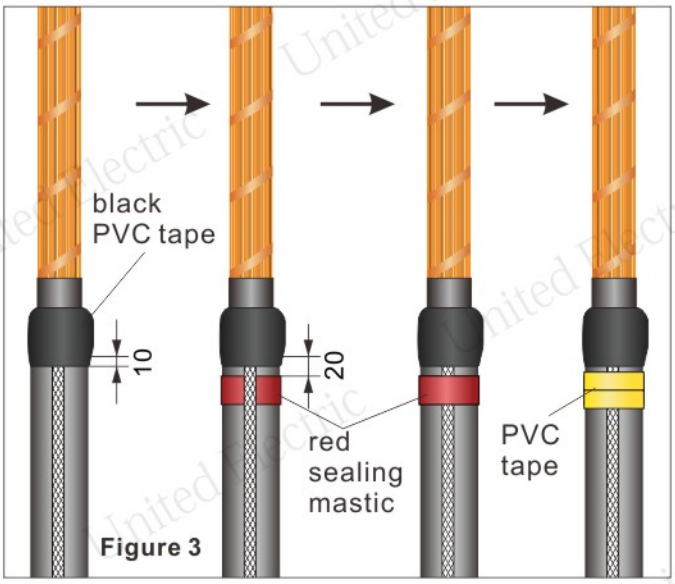


Figure 3

- Mark a reference line over the cable insulation screen layer with 35mm to the end of cable outer sheath.
- Place the heat shrink earth tube(black) over cable core and shrink it down with starting from the reference line.

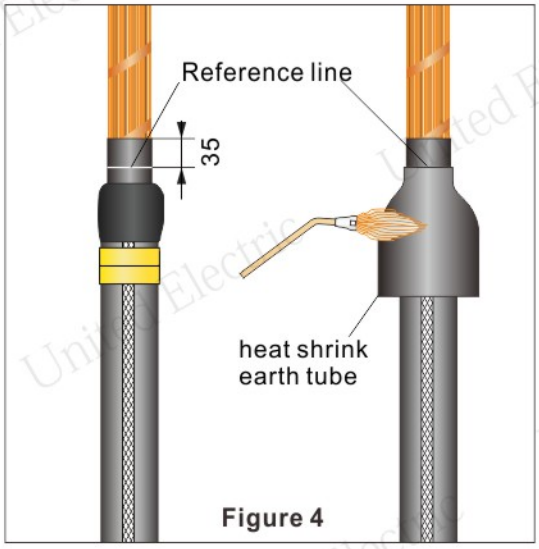


Figure 4

- Bend the screen copper wires back one by one .
- Bundle the copper wires to form an earth lead. Cut the end of earth lead to get a flat cross-section.
- Compress the earthing lug over the end of the earth lead by compression tool.

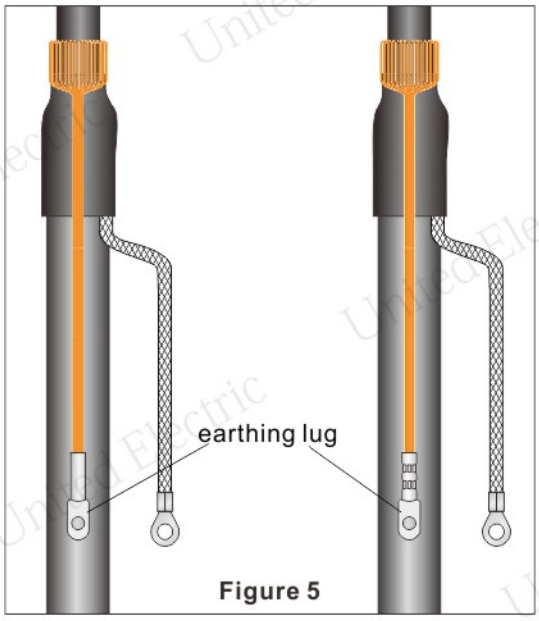


Figure 5

- Wrap one layer of red sealing mastic over the barrel tube of the earth lug. Cover the red sealing mastic by PVC tape.
- Place and shrink heat shrink earth tube (yellow/green) over the earth lead.
- Lift up the earth lead, wrap one layer of red sealing mastic over the cable outer sheath as shown in figure 3.
- Continue wrap another layer of red sealing mastic over the earth lead and cable outer sheath to form a waterproof and sealing layer.
- Lay down the earth lead and fix it over the cable outer sheath temporally by PVC tape.

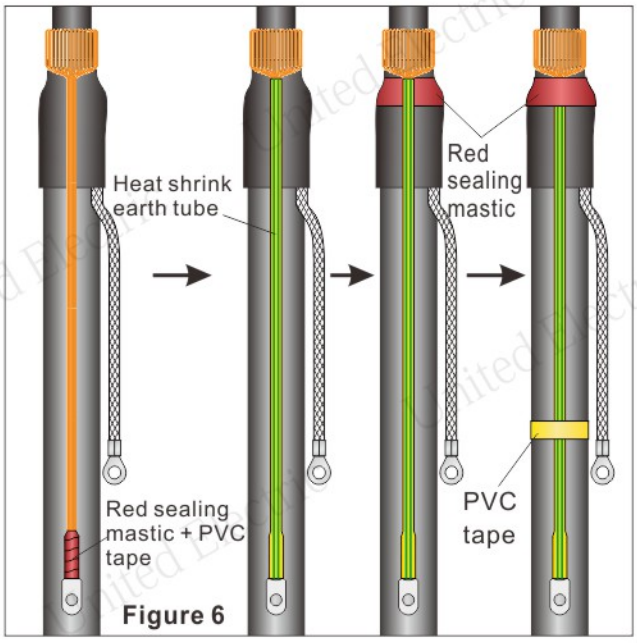


Figure 6

- Mark a reference line over the cable insulation screen layer with 35mm to the end of cable outer sheath.
- Place the heat shrink earth tube(black) over cable core and shrink it down with starting from the reference line.

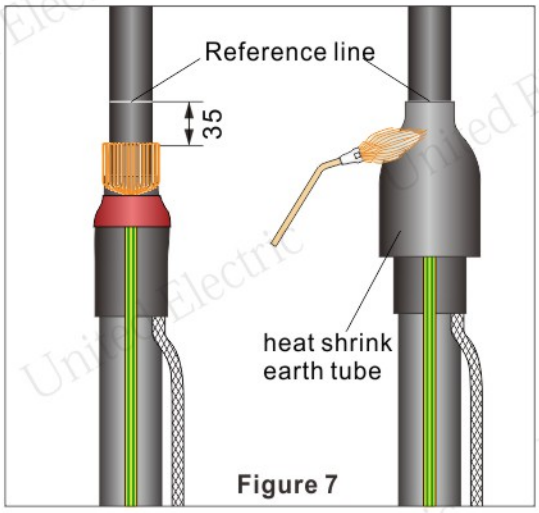


Figure 7

3. Cut the cable to requested length

- Measure 190mm from the upside edge of heat shrink tube, mark a reference line over the cable insulation screen.
- Cut the cable at the reference line.

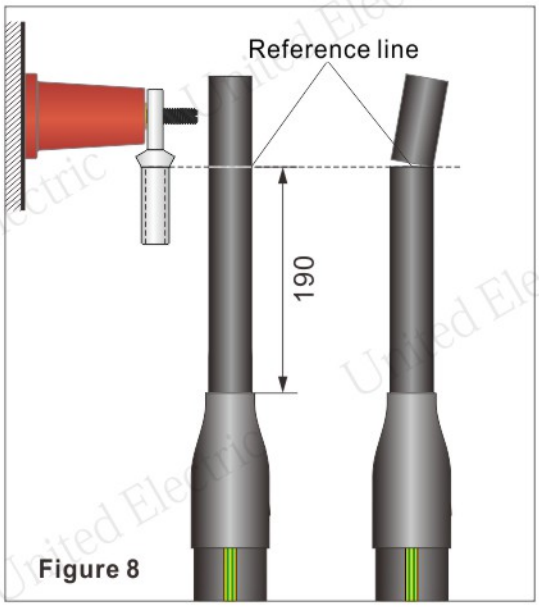


Figure 8

4. Core preparation

- Remove the insulation screen to 40mm, and keep the insulation for 100mm, conductor for 50mm. 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.

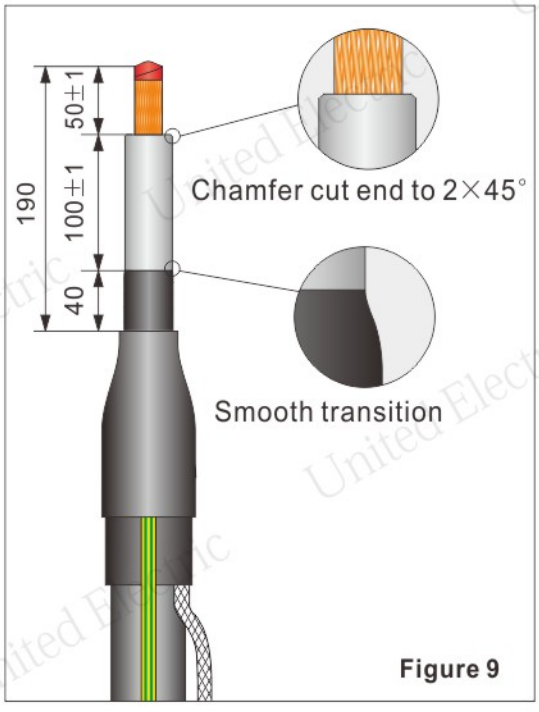


Figure 9

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 or cold shrink tube by covering the tube for 15mm.

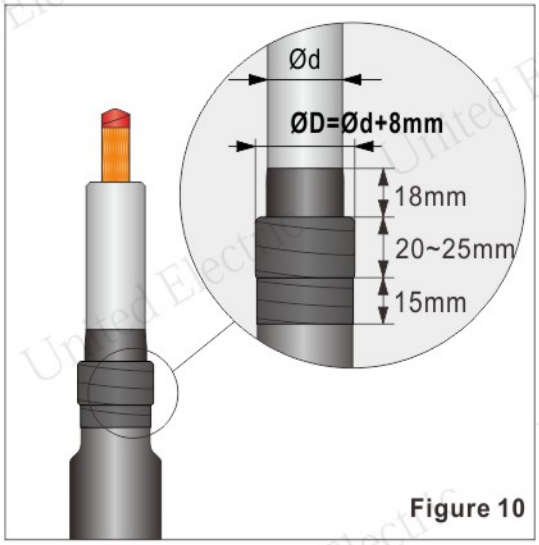


Figure 10

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 marked with the dotted line as figure 11.

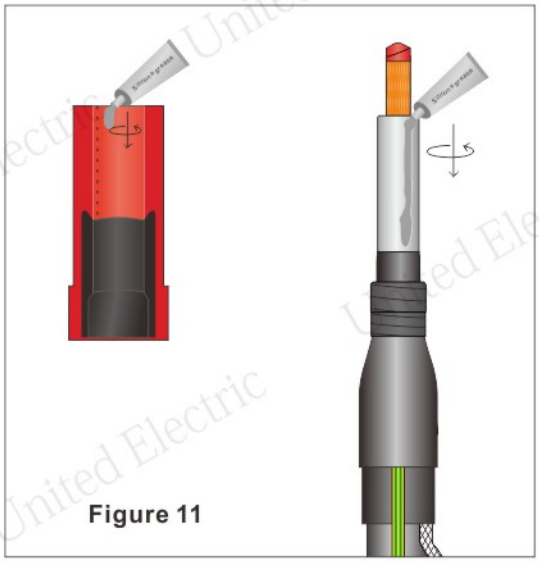


Figure 11

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.

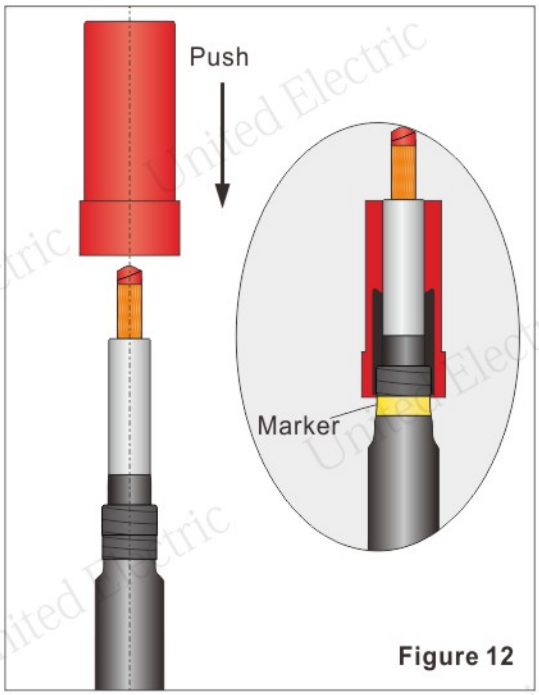


Figure 12

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.
- Remove any sharp edges and flashing of the compression part and clean the cable lug by cleaning tissue.

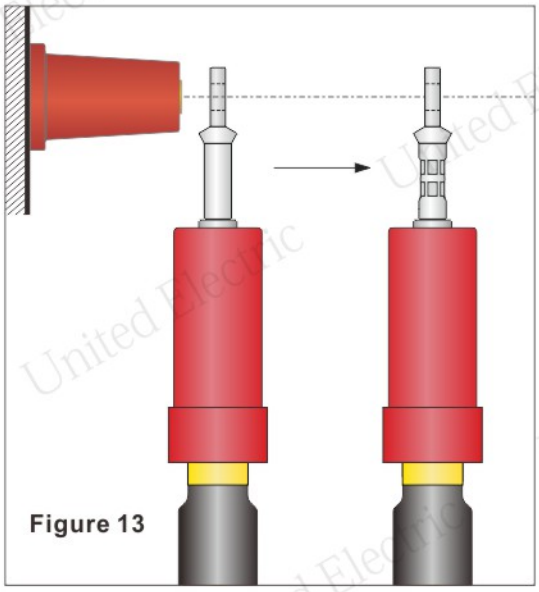


Figure 13

9. Clean and lubricate stress cone and connector

- Clean the outer surface of stress cone and inner surface of the T connector.
- 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 the T connector.

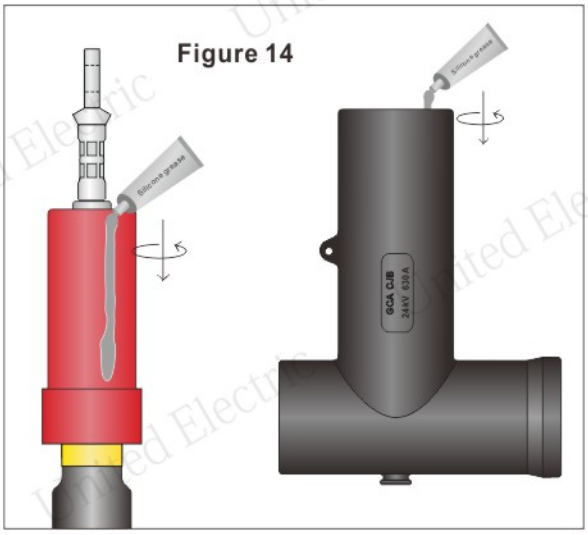


Figure 14

10. Push T connector onto stress cone

- Align the T connector with stress cone and cable lug, quickly push the T connector with no interruption onto the stress cone.
  Tips: Hold the T connector in hand for a few seconds after pushing it over the stress cone, to avoid slipping out.
- Be noticed that the stress cone and PVC marker should not have any moving. The down end of the stress cone should be exposed in the range of 30-40mm.

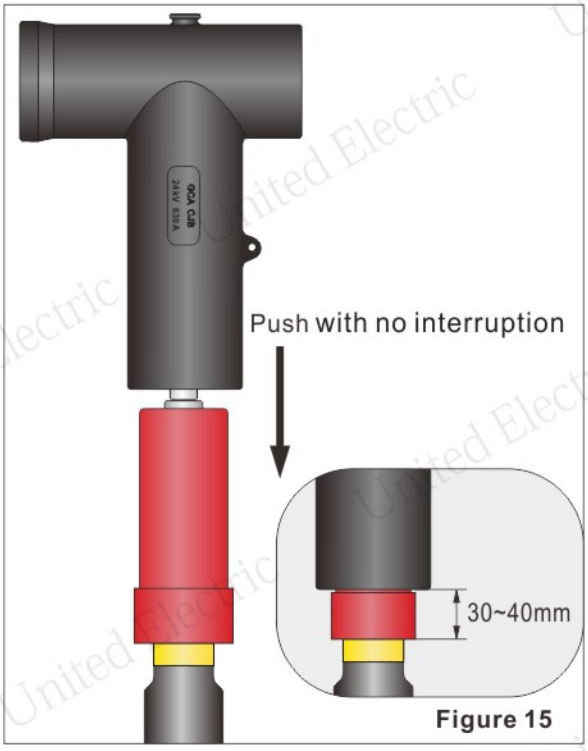


Figure 15

11. Clean and lubricate bushing and T connector

- 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 the T connector.

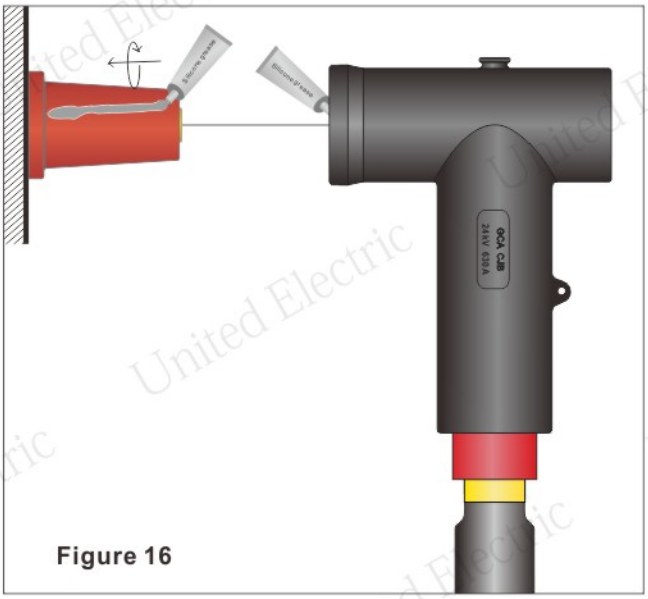


Figure 16

12. Push T connector onto bushing

- Fasten firmly M12/M16 double-end thread stud onto the connecting bushing with M16 ahead.
- Align the hole of the cable lug with the threaded pin and push the T connector onto the bushing.

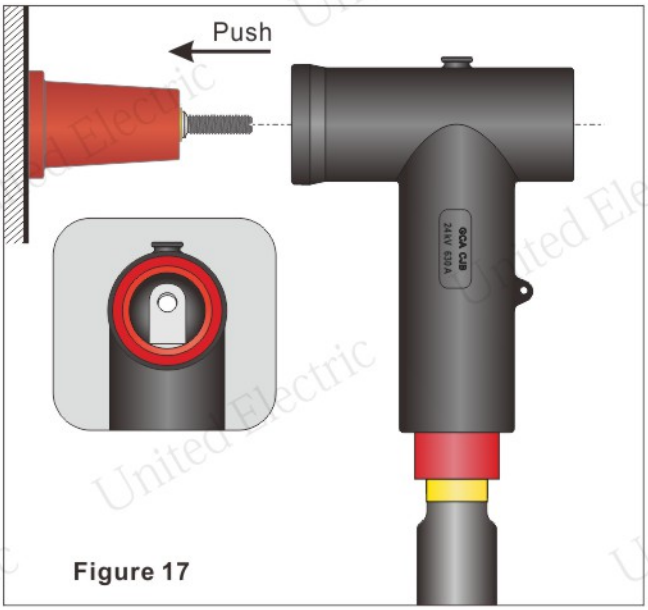


Figure 17

13. Fix T connector onto bushing

- Install the flat washer, spring washer and nut in sequence, screw down the nut with hexagon wrench with the torque of 35N.m.
- Clean and coat a thin layer of silicone grease onto the inner surface of back end of T connector and outer surface of insulation plug.
- Screw the insulation plug into the back end of T connector by hand first, and then fix it by spanner with the torque of 30N.m.
- Cover the insulation plug with protect cap.

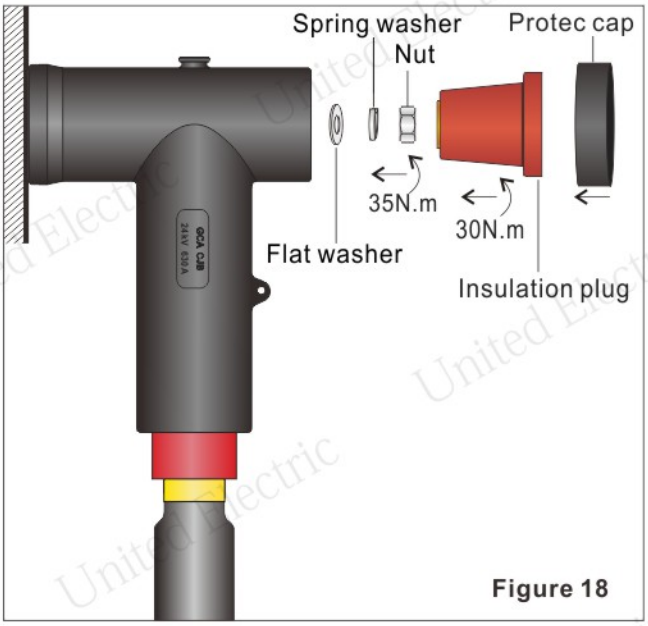


Figure 18

14. Install earthing wire and earthing lead

- Install the screen earthing wires onto to all of the T connector. There should be at least 5mm space distance between the connectors.
- Connect all the cable earthing leads and screen earthing wires to the earthing point, mark the phases.

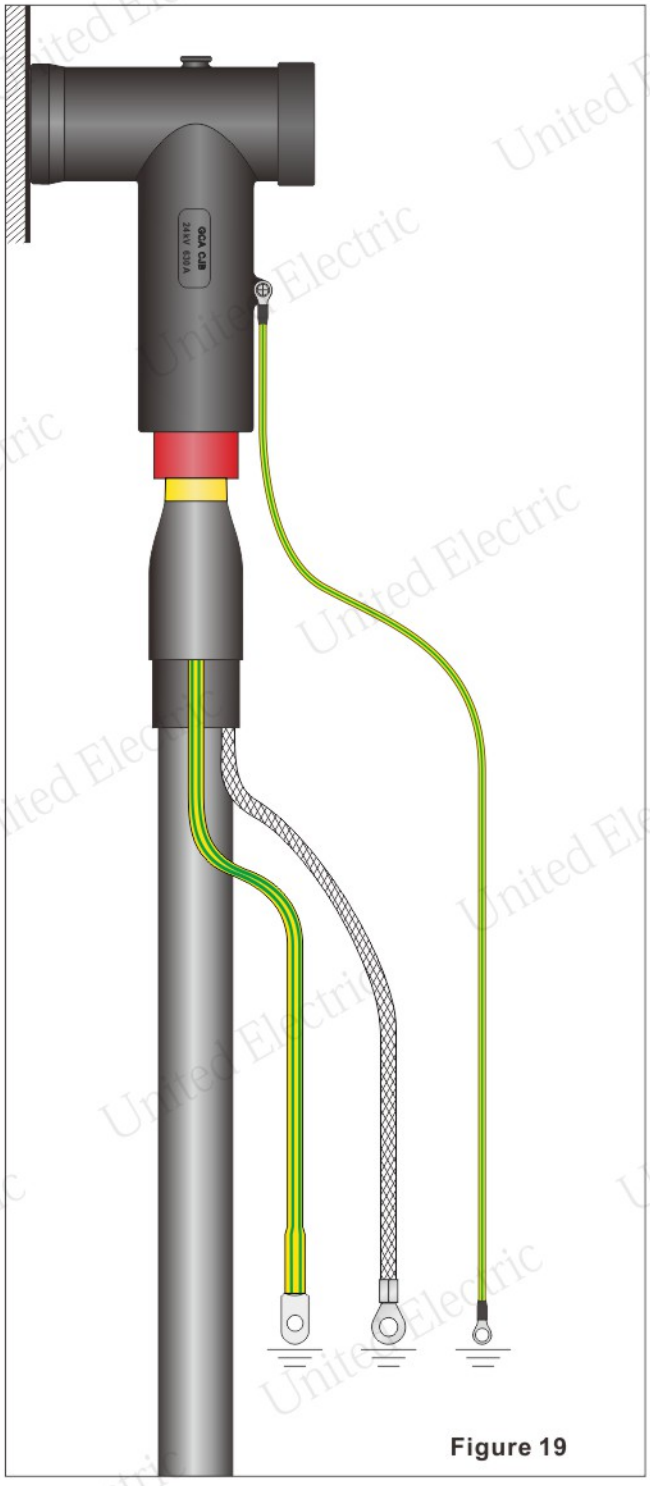
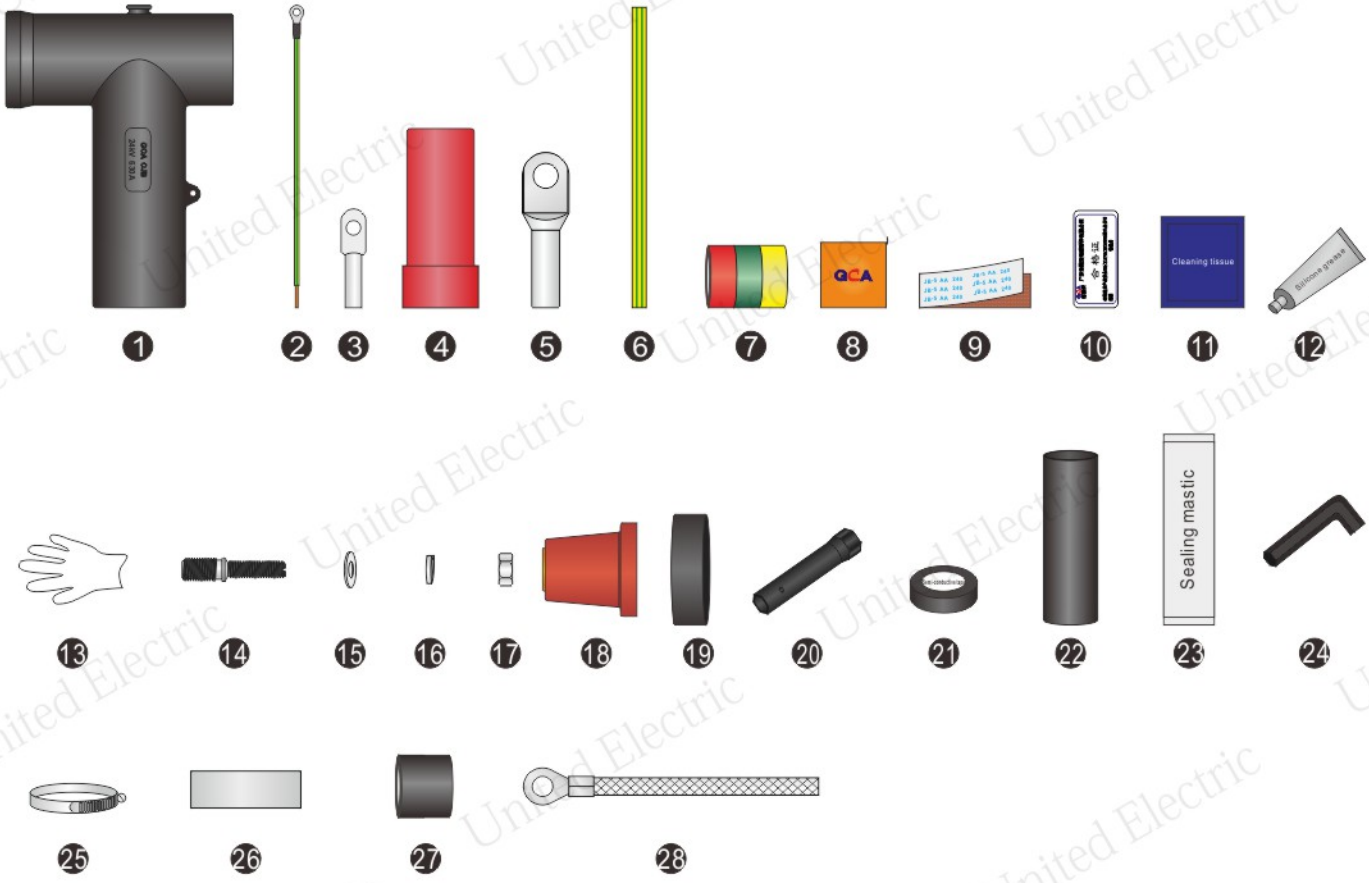


Figure 19

Kit Contents

02-9408-025-0622

CJB20-630 kit content for 1-core XLPE insulated cable, copper wire screened, without armour (3phases / kit)



❶ 3×Connector body	❷ 3×Earthing wire	❸ 3×Earthing lug	❹ 3×Stress cone
❺ 3×Cable lug	❻ 3×Heat shrink tube(Y/G)	❼ 1×PVC tape kit	❽ 1×Tape measure
❾ 2×Abrasive strap	❿ 1×Qualified certificate	⓫ 6×Cleaning tissue	⓬ 1×Silicone grease
⓭ 1×Plastic grove	⓮ 3×M16/M12 Stud	⓯ 3×Flat washer	⓰ 3×Spring washer
⓱ 3×Nut	⓲ 3×Insulation back plug	⓳ 3×Protect cap	⓴ 1×Socket wrench
㉑ 1×Semi-conductive tape	㉒ 6×Heat shrink earth tube	㉓ 2×Sealing mastic	㉔ 1×Spanner
㉕ 6×Jubilee clip	㉖ 3×Flexible copper tape	㉗ 1×Black PVC tape	㉗ 3×Copper braid