

# United Electric

## Installation Instruction

### GCA CB20-250

250A Screened Elbow connector  
for **1-core** XLPE cable up to 24kV,  
copper **wire screened**, without armored



#### 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.

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**CB20-250** is a screened elbow connector made of silicone rubber, designed to be connect with the type A bushing in accordance with the standard of EN50181. The outer diameter of the contact pin is Ø8mm, suit for cable deadbreak connection.

The instruction is suitable for the installation of CB20-250 over 1-core XLPE cable up to 24kV, copper wire screened, without armored.

The CB20-250 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.

**1. Check the cable and installation site.**

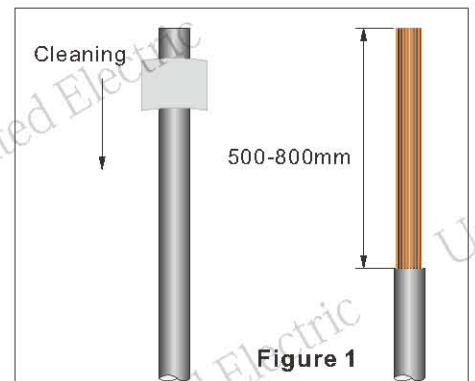
- The installation site should be clean, the relative humidity should not exceed 75%, the ambient temperature should be higher than 5°C.
- Check the outer diameter of cable insulation and inner diameter of connector body according to table 1.
- Check the cable at site which should be qualified.

**Table 1**

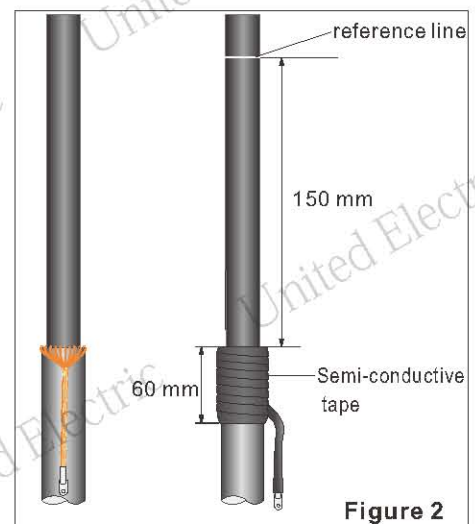
Type	Suit for outer diameter of cable insulation (mm)	Suit for cable conductor size (sq.mm)	
		8.7/15(17.5)kV	12/20(24)kV
CB20-250-1#	17~22	35~70	25~50
CB20-250-2#	22~26	95~150	70~120
CB20-250-3#	26~30	185~240	150~185

**2. Cable preparation**

- Clean and remove the cable outer sheath for the length of 500-800mm as request on site. (Figure 1)



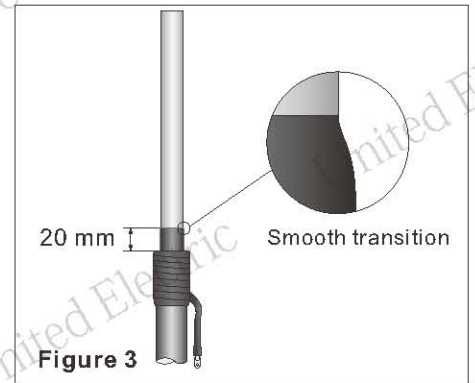
- Bend the copper wires back onto the cable sheath evenly.
- Knit the copper wires to form an earth lead. Cut the end of earth lead to get a flat cross-section.
- Compress the earthing lug over the end of the earth lead by compression tool, remove any sharp edges and flashing.
- Place and shrink heat shrink tubing over the earth lead, cut the excess tubing to expose the palm of earthing lug.
- Half-overlapping wrap two layers of semi-conductive tape cover the copper wires for 60mm start from the folded part .
- Measure 150mm from the upside end of wrapped semi-conductive tape, mark a reference line over the cable insulation screen. Cut the cable at the reference line.



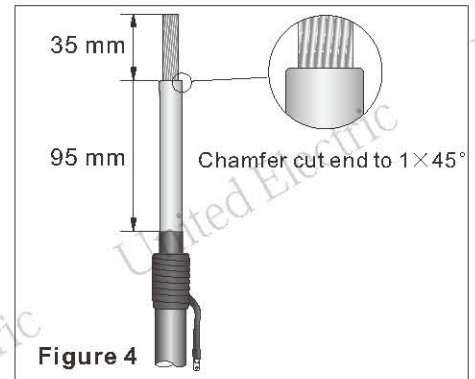
- Remove the cable insulation screen to 20mm above the end of wrapped semi-conductive tape.

**Note: Do not nick the cable insulation.**

- The cable screen cut should be smooth transition, without any turnout 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 3)

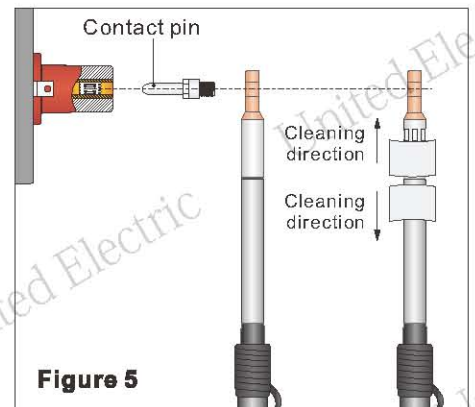


- Remove the cable insulation for 35mm measure from cut end of cable conductor.
- Chamfer the cable insulation cut to  $1 \times 45^\circ$ .
- Clean the cable conductor, thoroughly remove the oil stain and oxide film of the cable conductor surface. (figure 4)



**2. Complete Installation**

- Place cable lug onto cable conductor, align the threaded hole of cable lug with the pin hole of connected bushing, compress the lug with compress tool. Remove any sharp edges and flashing.
- Clean the cable insulation from the insulation cut end downwards insulation screen with cleaning tissue, do not reuse the cleaning tissue.
- Clean the compressed lug from the cable insulation to the cable conductor, do not reuse the cleaning tissue. (figure 5)



- Clean inner surface of the elbow connector body with cleaning tissue.

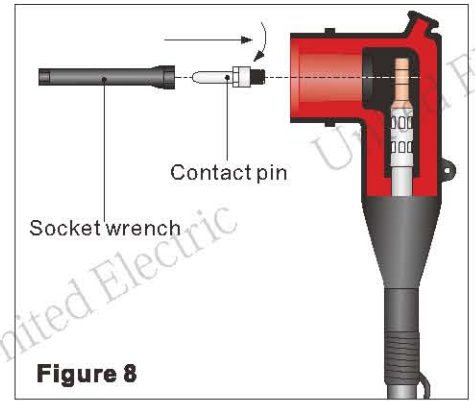


- Coat silicone grease onto the inner surface of elbow connector body by plastic rod.
- Coat silicone grease onto the surface of cable lug and cable insulation. (Figure 7)

**Note: Do not coat the copper palm area, which will be contact with the contact pin.**



- Align the elbow connector body with cable insulation. Slip on the straight body over cable insulation, until cable insulation screen cover by straight connector, and the threaded hole of cable lug is align with the pin hole of elbow connector body.
- Screw the contact pin over cable lug by socket wrench. (figure 8)



**Figure 8**

- Clean inner surface of the elbow connector body with cleaning tissue.
- Clean outer surface of connecting bushing with cleaning tissue. (figure 9)



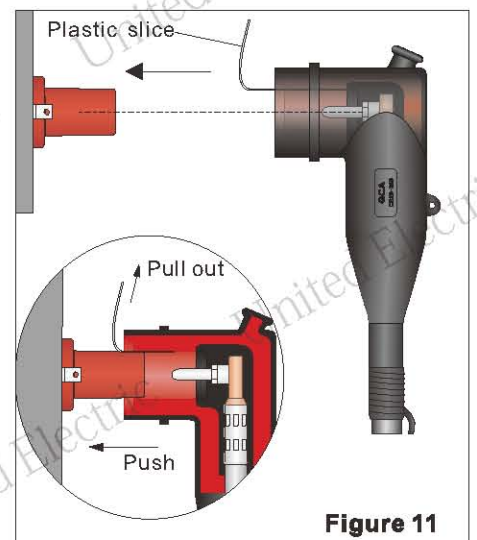
**Figure 9**

- Coat silicone grease onto the inner surface of elbow connector body by plastic rod.
- Coat silicone grease onto the outer surface of connecting bushing. (figure 10)



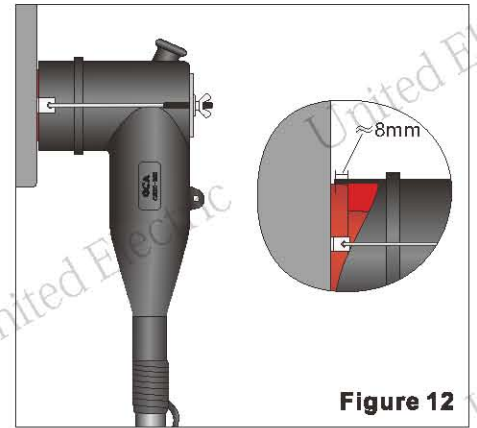
**Figure 10**

- Place a plastic slice into the entry of elbow connector body, align the contact pin with pin hole bushing, push the elbow connector body onto connecting bushing.
- Pull out the plastic slice while push the connector body onto the bushing, to release air pressure inside the connector body. (figure 11)

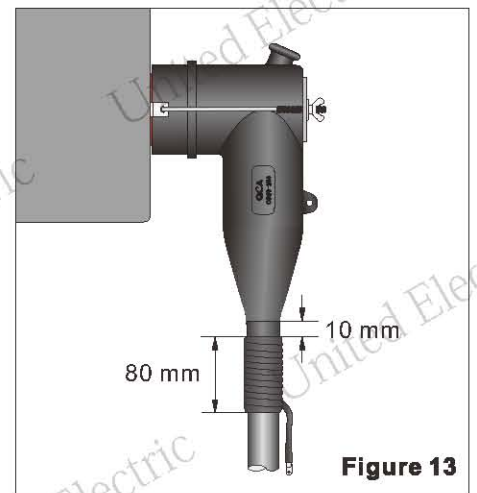


**Figure 11**

- Assemble the holding bails and fixing hook over the elbow connector body.
- Fix the fixing hook to the bushing. Make sure that the elbow connector body is installed well onto the bushing.
- After fixing the hooks, the elbow connector body should cover the step of the bushing for about 8mm.



- Half-overlapping wrap around semi-conductive tape with half stretching over the tail of elbow connector, and fill the gap between the tail of straight body and cable outer sheath as shown in figure 10.
- Wrap around 3 layers of PVC tape to cover the semi-conductive tape.  
**Note:** Use the red, green, yellow PVC tape to mark different phases.



- Connect earth lead and earthing wire to the earthing point. (figure 14)
- Finish the installation of the other two phase and fix the cable. Installation complete.

