

**CAUTION :**  
Read instructions thoroughly and completely prior to beginning installation.

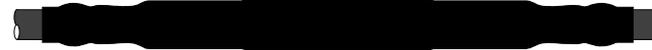
## Installation Instructions

# 24CSJ-2

## Cold-shrinkable straight joint

12 & 24 kV

Only to be used on copper wire screened cable with bonded extruded semi-conductive screen, extruded easy strip semi-conductive screen or fabric tape screen.



**IS 24CSJ2-E-09**

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Supersedes edition of January 2006

### Required components for the joint installation :

1 x Joint housing



1 x Field control mastic, type MFC STEP

- Template
- Roll adhesive tape
- White pencil
- Lubricant
- Wipers + gloves
- Installation instructions

2 x Self-adhesive copper tape



1 x Two-layer plate



1 x Pulling hook



**Further required components depending on the cable type (optional supply) :**

- Semi-conductive tape, type TSC, for fabric tape screened cable only

### Cable data

Diameter over ...		Conductor size	
cable outer sheath	core insulation	12 kV	24 kV
46 mm max.	23 mm min.	150 - 300 mm <sup>2</sup>	95 - 300 mm <sup>2</sup>

### Conductor connector data

deep indent & hexagonal crimping or shear head bolted	
Max. diameter	Max. length (after crimping)
33 mm	150 mm

In case your connector does not comply with the above mentioned dimensions, please contact our local representative.

90756E-R/1

This product should be installed only by competent personnel trained in good safety practices involving high voltage electrical equipment. These instructions are not intended as a substitute for adequate training or experience in such safety practices. These instructions do not attempt to provide for every possible contingency.

Failure to follow these instructions could result in damage to the product and serious or fatal injury.

**IMPORTANT :** Cable and associated apparatus must be de-energised, locked out, and tagged prior to product installation.



**THORNE &  
DERRICK  
INTERNATIONAL**

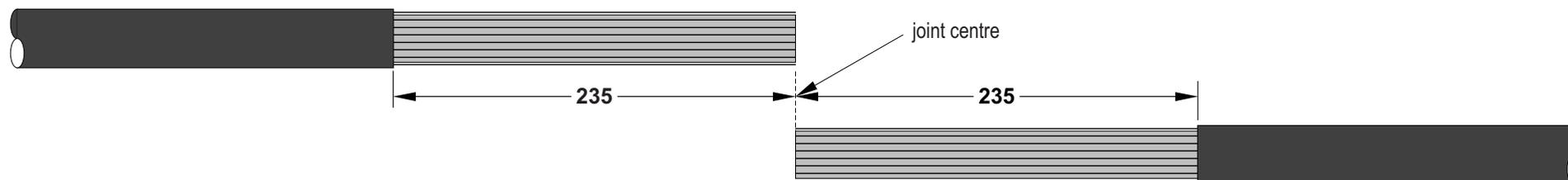
**Thorne & Derrick**  
+44 (0) 191 410 4292  
www.powerandcables.com



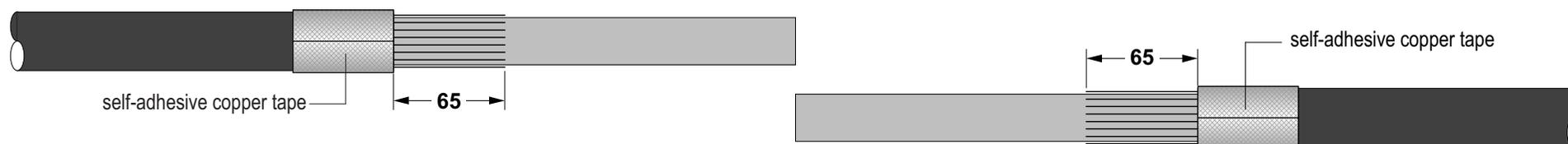
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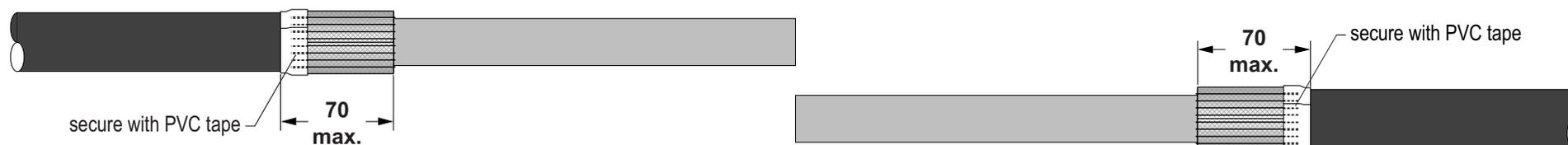
## CABLE PREPARATION



1. Clean the outer sheaths of both cables over approx. 1,5 m.
2. Remove the outer sheaths for a distance of 235 mm from cable ends.



3. Shorten the copper wire screens up to a point 65 mm from the outer sheaths.
4. Wrap the self-adhesive copper tapes around the outer sheaths flush with the ends.



5. Fold the screen wires back over the copper tapes and secure them with a wrap of adhesive tape to avoid sharp edges.

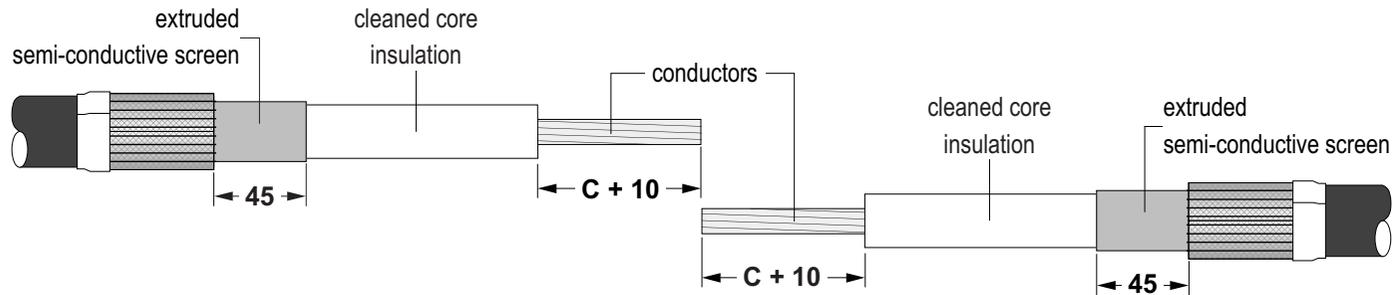
**IMPORTANT : the total length of screen connection must not exceed 70 mm.**



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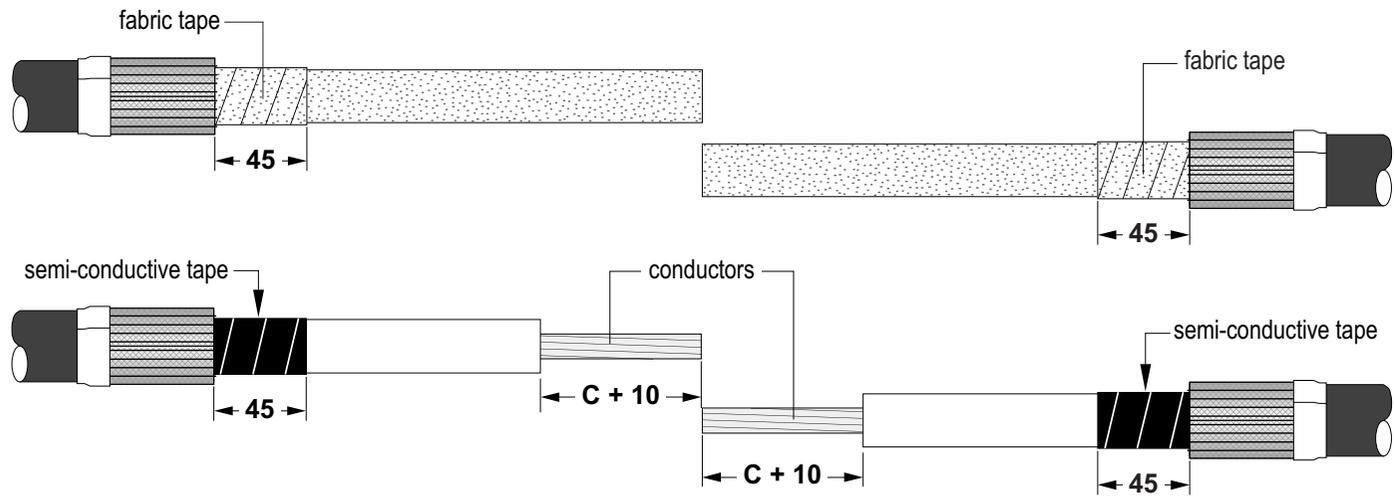


## A. Cable with bonded or easy strip semi-conductive screen

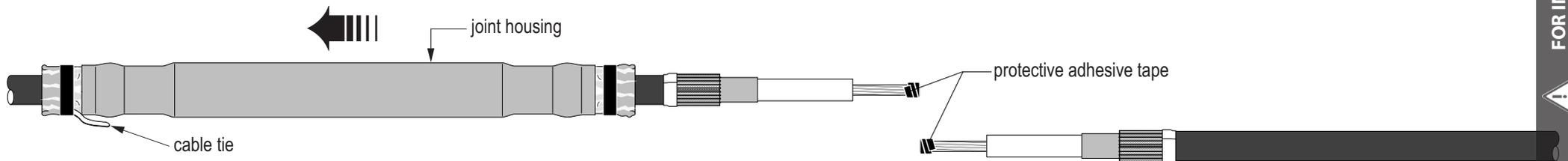


1. Remove the extruded semi-conductive screen to a point **45 mm** from the outer sheath.
2. Bare the conductors for a distance **C + 10 mm** (**C** = 1/2 of the connector length).
3. **THOROUGHLY CLEAN CORE INSULATION.**

## B. Cable with fabric tape screen



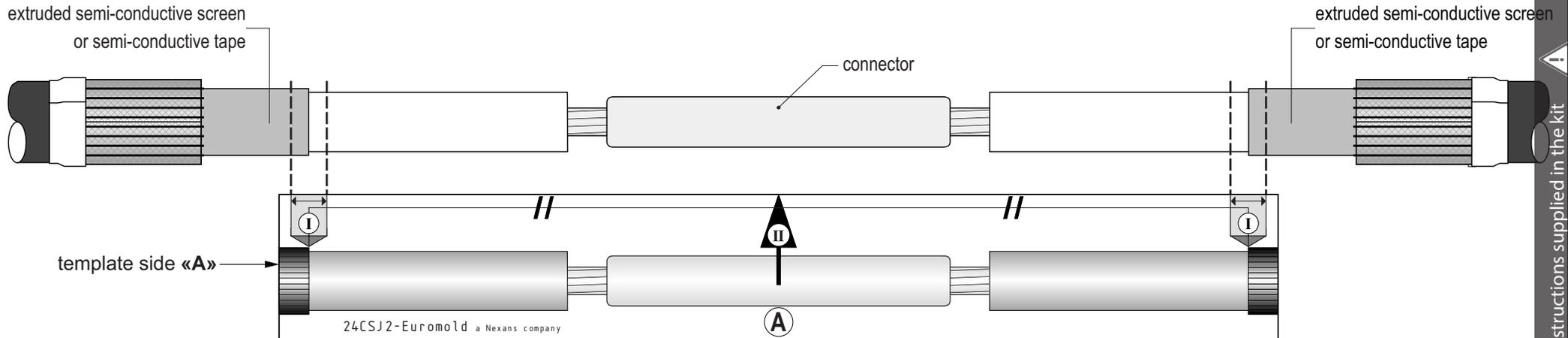
1. Remove the fabric tape to a point **45 mm** from outer sheath.
2. **CAREFULLY REMOVE THE GRAPHITE COATING WITH AN APPROPRIATE SOLVENT.**
3. Apply one layer of semi-conductive tape to a point **45 mm** from the outer sheath.
4. Bare the conductors for a distance **C + 10 mm** (**C** = 1/2 of the connector length).



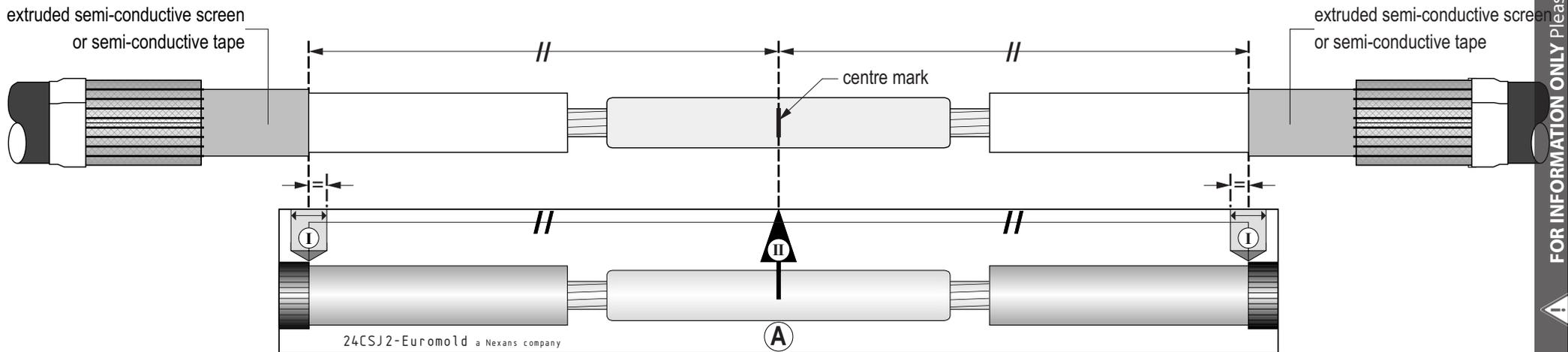
1. As a protection, wrap a few turns of adhesive tape around the conductor ends.
2. Slide the joint housing over one cable end. **Make sure the end with cable tie goes first over the cable.**



## CRIMPING OF THE CONNECTOR AND VERIFICATION OF THE CABLE PREPARATION



1. Remove protecting tape from the conductor ends and crimp the connector on to the conductors.
2. After crimping, using the side «A» of the template, check that the semi-conductive screen or tape edges are positioned within the red ranges «I» on the template.  
In case the semi-conductive screen ends do not fit, adjust with semi-conductive tape.



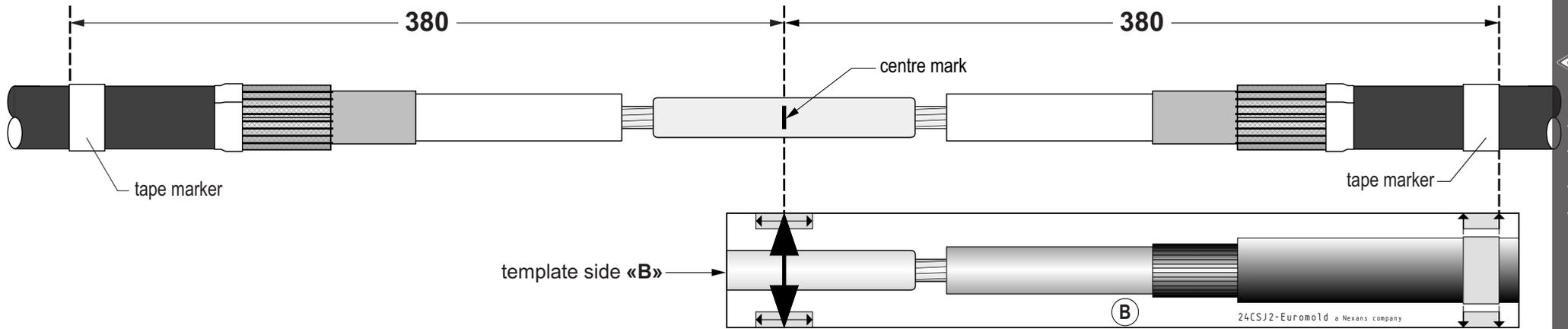
3. Centre the template between both semi-conductive screen or tape edges and apply a reference mark on to the crimped connector corresponding to the arrow «II».  
**IMPORTANT :** The obtained reference point is not necessarily the centre point of the crimped connector.



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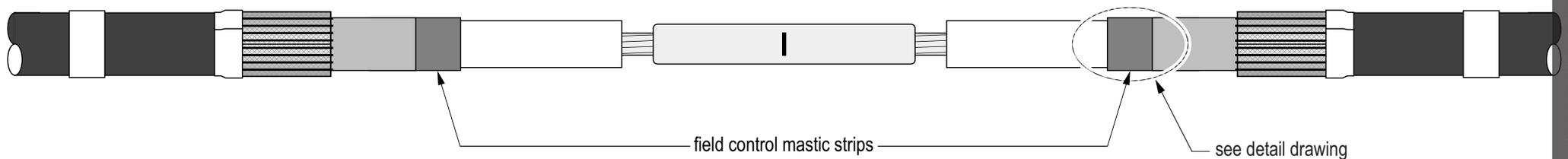


## INSTALLATION OF THE TAPE MARKERS



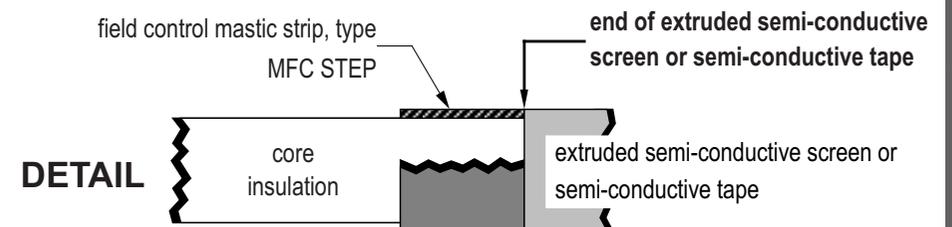
1. Apply on both cables a tape marker (5 layers minimum) at a distance of 380 mm from the reference point on the crimped connector. Side «B» of the template can be used.
2. **THOROUGHLY CLEAN CORE INSULATION REMOVING ALL TRACES OF CONDUCTIVE RESIDUE.**

## INSTALLATION OF THE FIELD CONTROL MASTIC STRIPS



Apply one field control mastic strip (type MFC STEP) on the core insulation flush with the extruded semi-conductive screen or semi-conductive tape (see detail drawing).

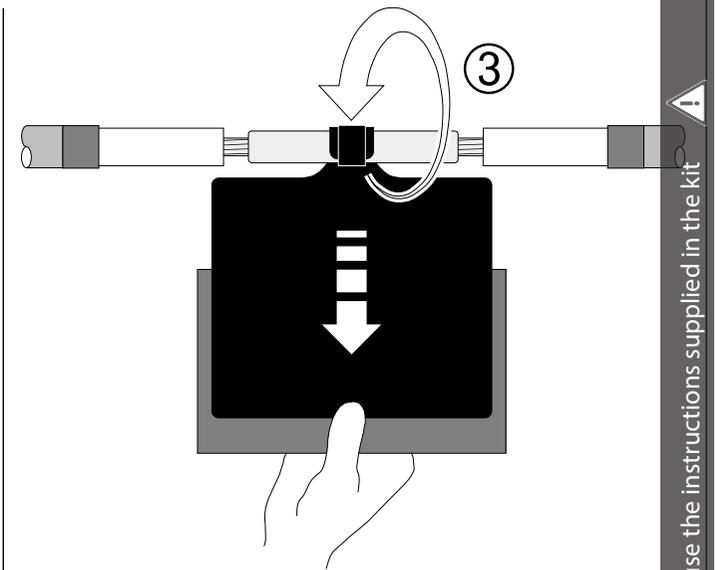
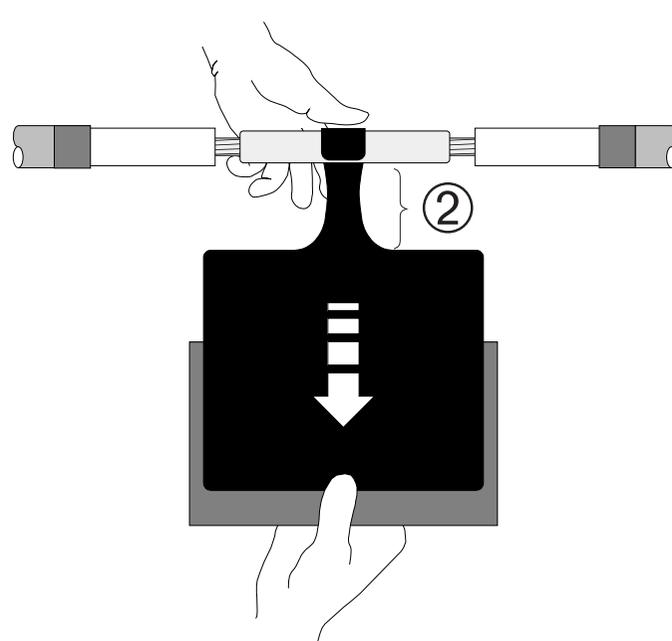
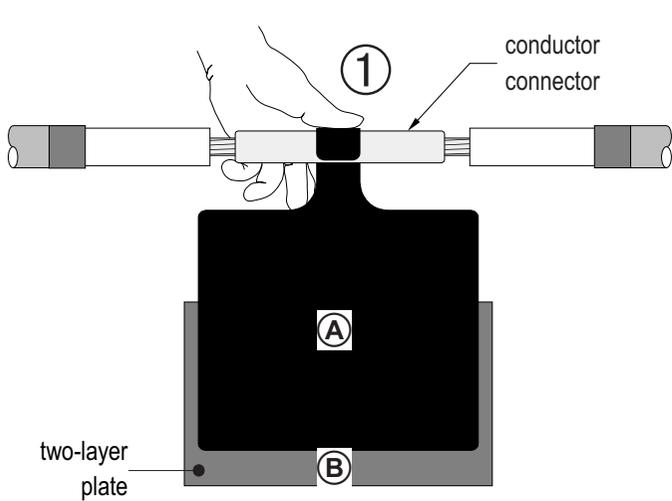
Do not stretch the mastic strips.



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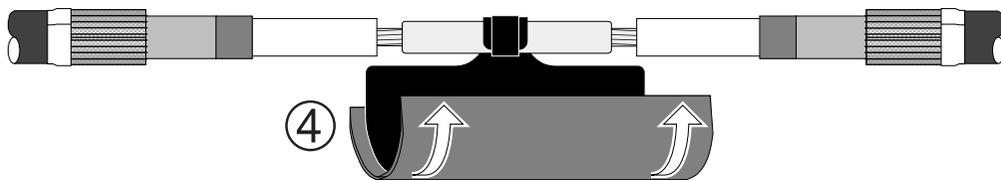
## INSTALLATION OF THE TWO-LAYER PLATE



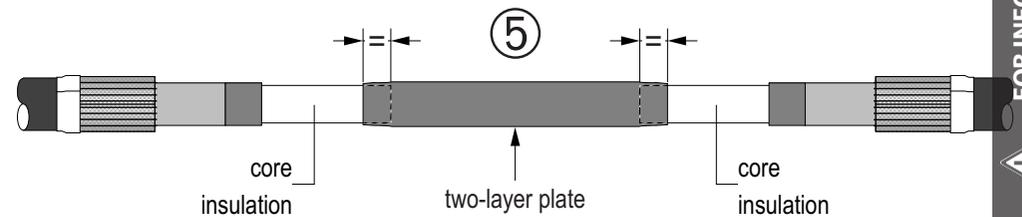
1. Remove any grease from the crimped connector.
2. Remove backing papers from the two-layer plate.
3. Position the two-layer plate **in the centre of the connector** (black side **A** [semi-conductive plate] inside, grey side **B** [field control plate] outside).
4. Centre the sticky tape onto the connector **1**.

5. While holding with one hand the plate finger onto the connector, pull the plate and stretch the finger (area **2**).

6. Wrap the finger around the connector while keeping the tension on the plate **3**.



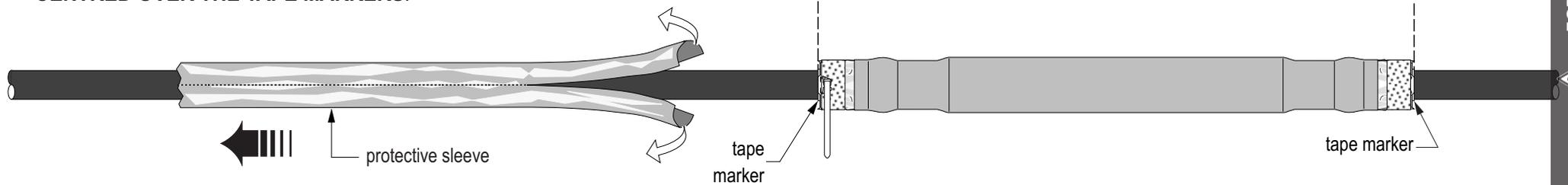
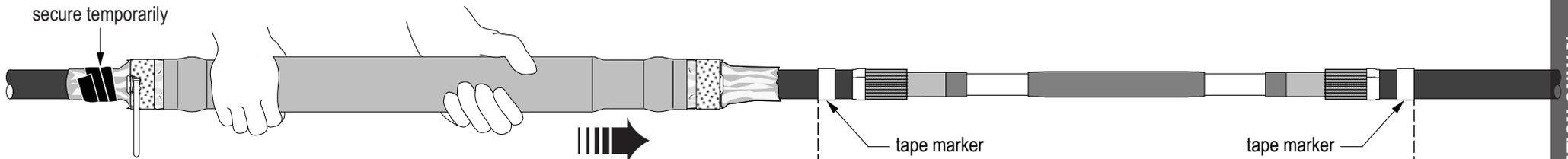
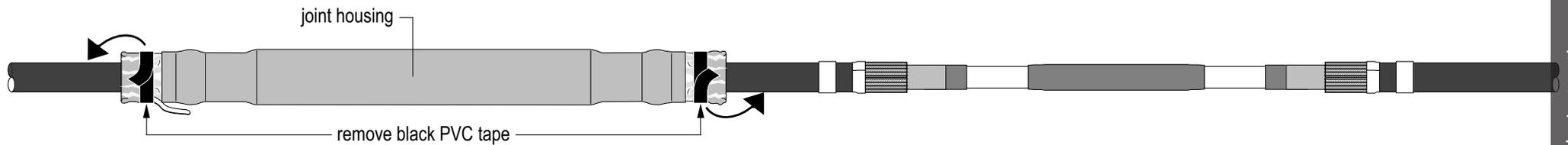
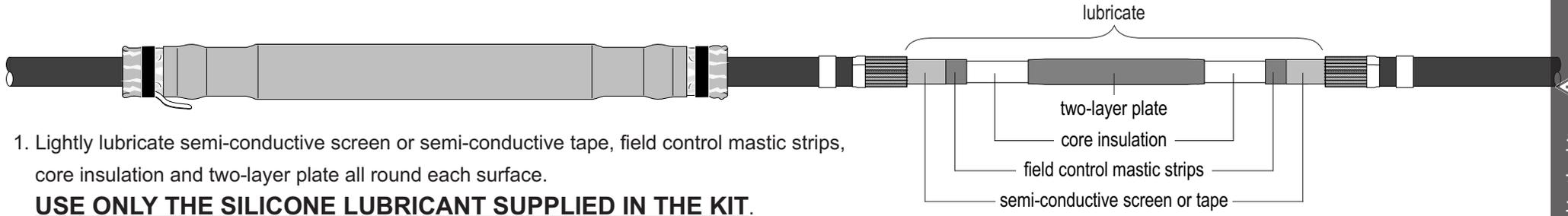
7. Wrap the plate completely around the connector **4**.



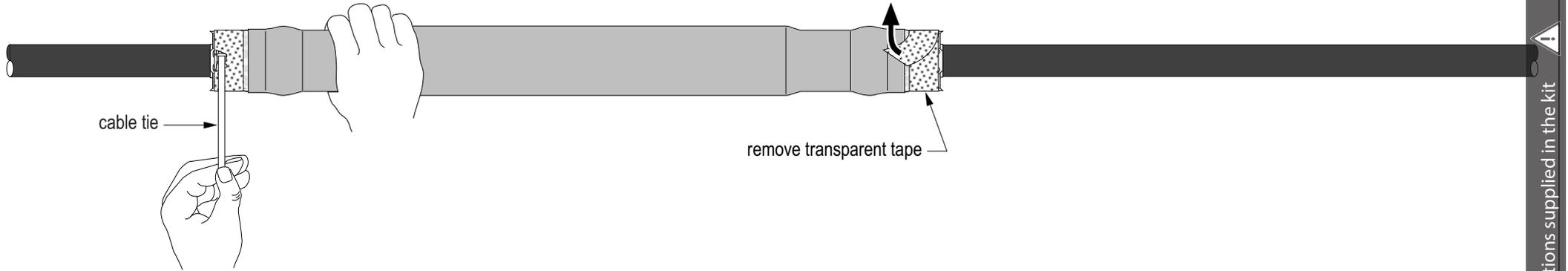
8. **IMPORTANT** : Make sure both core insulation ends are equally overlapped **5**.

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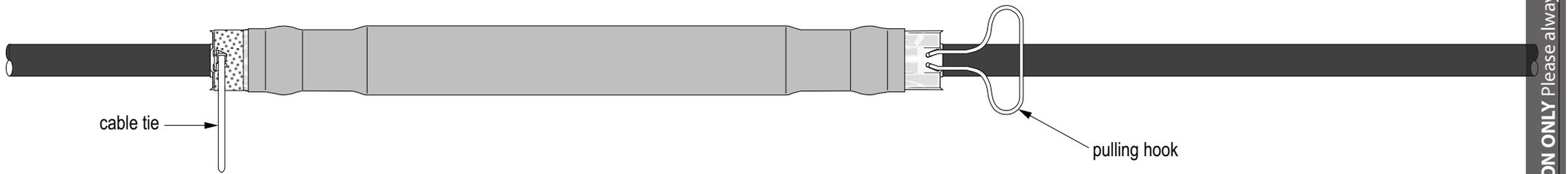
## POSITIONING OF THE JOINT HOUSING



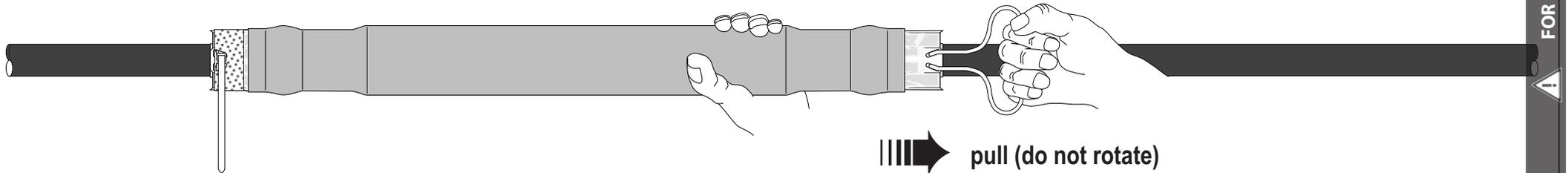
## INSTALLATION OF THE JOINT HOUSING



1. Secure the joint housing on to the cable by firmly tightening the cable tie on to the marker tape.
2. Remove transparent tape from the non clamped plastic tube (opposite end to the cable tie).

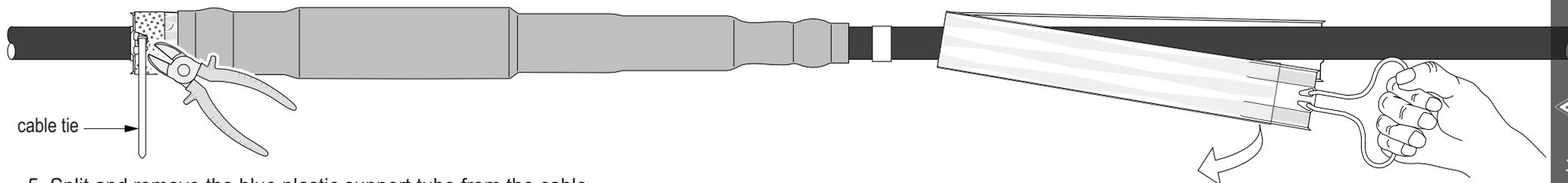


3. Insert pulling hook into the holes on the tubing end opposite the cable tie end.

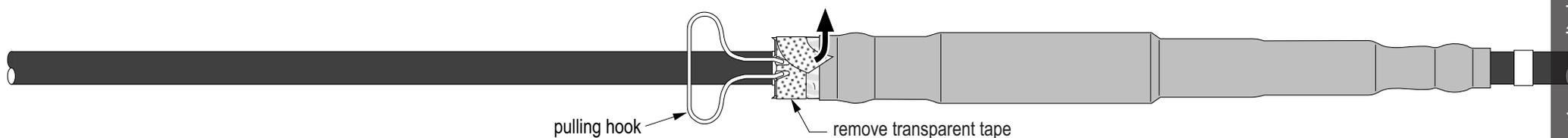


4. Hold with one hand the joint housing while pulling out the plastic tube with the other hand.

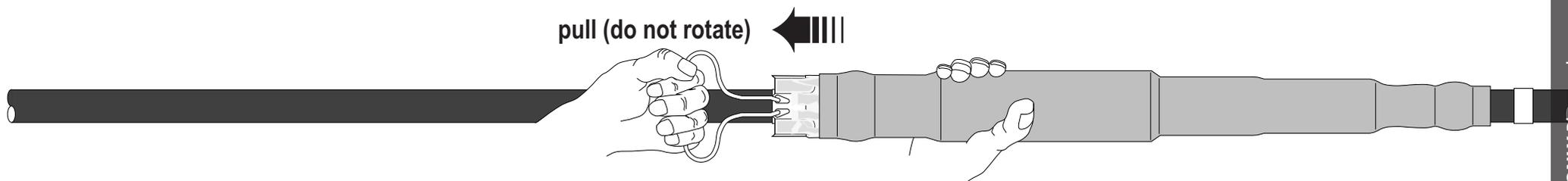
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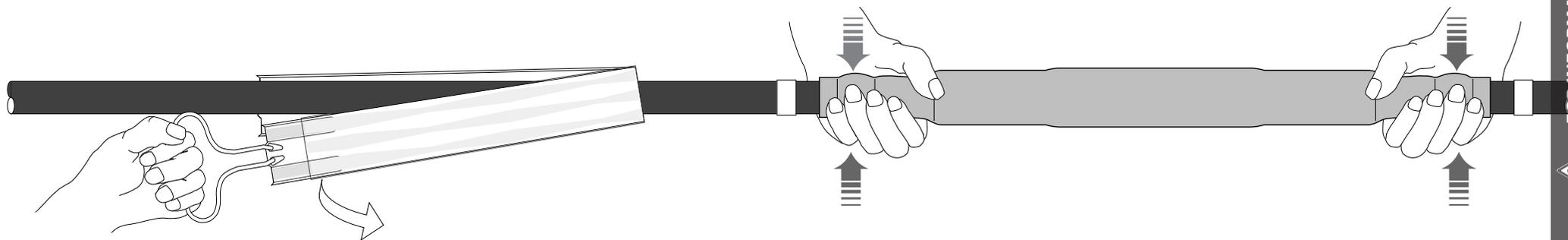
5. Split and remove the blue plastic support tube from the cable.
6. Cut and remove the cable tie.



7. Remove transparent tape from the second plastic tube.
8. Insert the pulling hook in the holes of the second plastic tube.



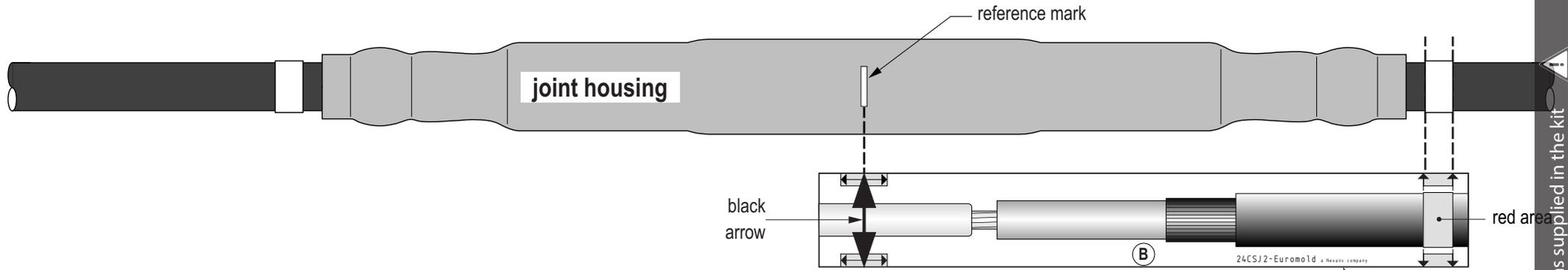
9. Hold with one hand the joint while pulling out the second plastic tube with the other hand.



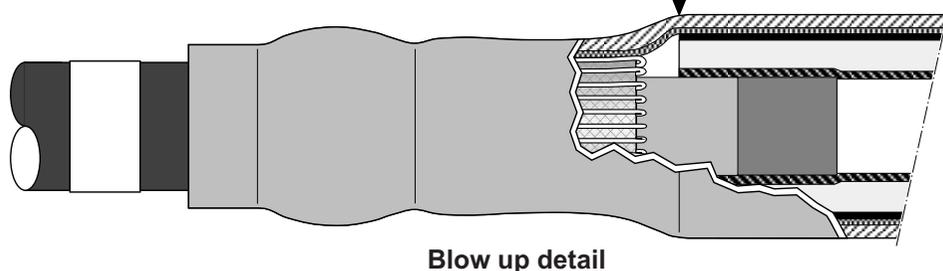
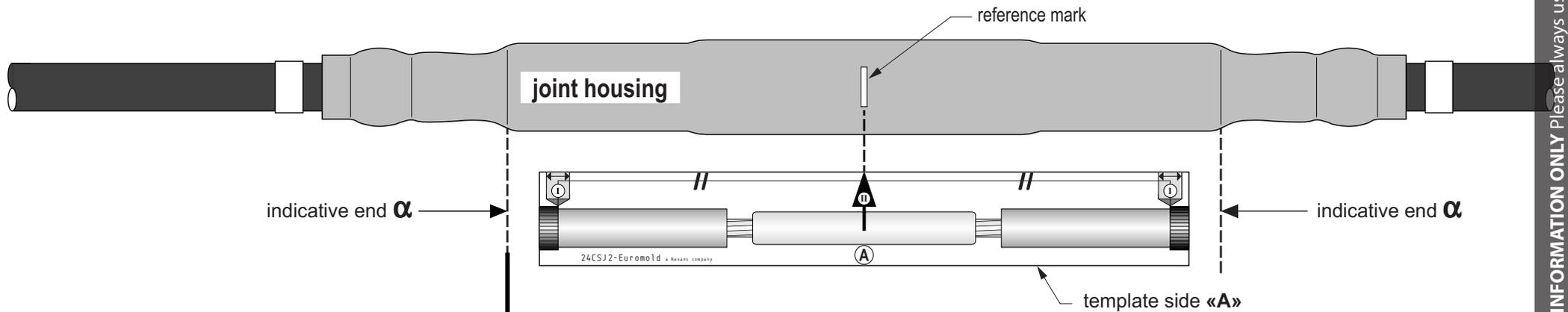
10. Split and remove the blue plastic support tube from the cable.
11. Compress by hand the mastic layers on to the outer cable sheaths.



### VERIFICATION OF THE JOINT POSITION



1. Using the «B» side of the template, position the red area in front of the tape marker on the cable (left or right).  
Make sure the arrows line up with the sides of the tape marker (see figure).
2. Using the supplied white pencil, apply a reference mark on the joint housing opposite the black arrow position on the template side «B».



3. Using the «A» side of the template, position the black arrow «II» at the reference mark.
4. The joint will be installed correctly when both red markers («I») on the template side «A» are inside the indicative ends «alpha» of the joint body (see figure).  
The joint is not installed correctly if one of the indicative ends «alpha» falls inside the red marker («I») or even in the area between the red markers.
5. The jointed cable can be energised 30 minutes after installation.