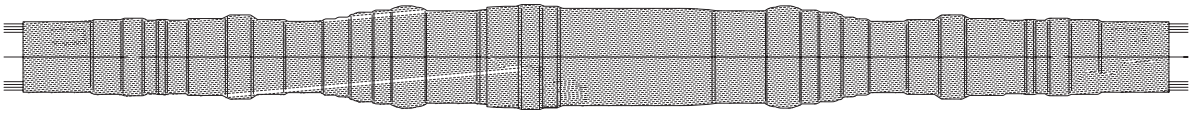
Saves Your Energy

INSTALLATION INSTRUCTION PEM1090ENG
2013-05

ENGLISH



HEAT SHRINK JOINTS PAPER TO PAPER CABLES
HJP11.24

GENERAL INFORMATION

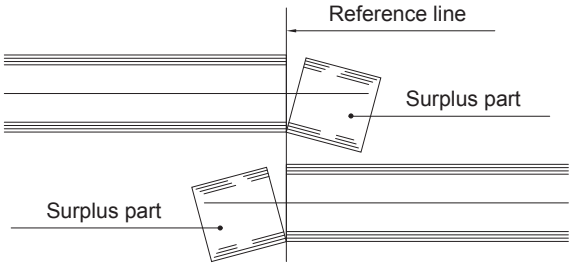
- Check that the kit is suitable for the cable type.
- Check the materials listed in the bill of materials for completeness.
- Read the installation instructions carefully before starting the installation.
- Install carefully and make sure the materials are clean during the installation.
- Clean the working place after the installation.

GENERAL INSTRUCTIONS FOR HEAT SHRINKING

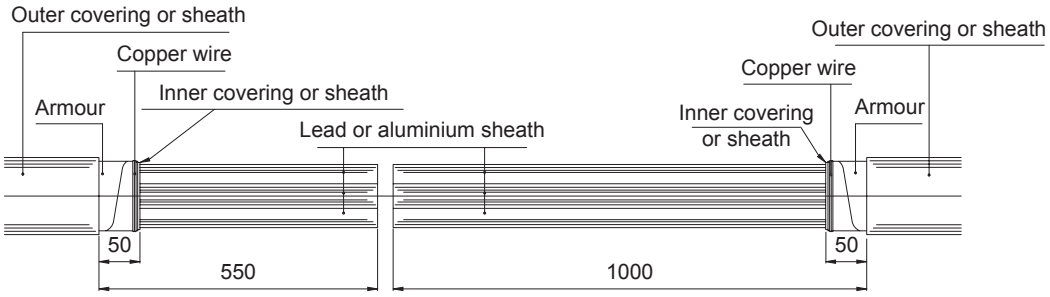
- Please note that in some working places a hot work permit is needed.
- Use a propane burner with a flame length of approx. 20-30 cm. Do not use too large or sharp flame.
- Move the flame all around the cable on the shrinking direction. Move the flame continuously to avoid overheating.
- Make sure that the ventilation is good and there are no flammable materials around.
- Clean the cable surfaces before shrinking.
- When shrinking, always follow the installation instructions and the relevant sequence to avoid trapped air.
- Check that the tube has shrunk evenly around the cable before you continue shrinking.
- If the tube turns around at the end of shrinking, straighten the tube by directing the flame inside the tube from the opposite direction.
- After shrinking the tubes should be smooth and even following the shape inside.

LEGAL NOTICE

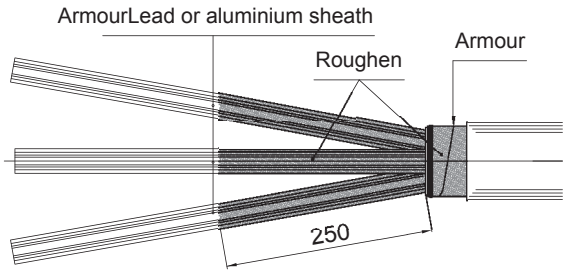
- The product must be installed only by a competent person with sufficient training in installation practices and with sufficient knowledge of good safety and installation practices in respect of electrical equipment. If local legislation contains provisions in respect of such training or sufficient knowledge in respect of installation of electrical equipment such provisions shall be fulfilled by the said person.
- Ensto accepts no liability concerning claims resulting from misuse, incorrect installation or ignored national safety regulations or other national provisions.
- WARNING: Failure to follow the installation instructions may result in damage to the product and serious or fatal injury.



1. Overlap the cables for at least 300 mm. Cut the cables in the middle of the overlapping (reference line).

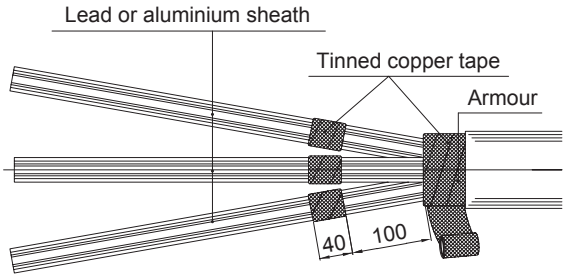


2. Cut and remove the outer covering or sheath for 550 mm on the short side of the joint and for 1000 mm on the long side of the joint. Cut and remove the possible armour up to 50 mm from the outer covering or sheath. Fix it with copper wire. Cut and remove the possible inner covering or sheath.



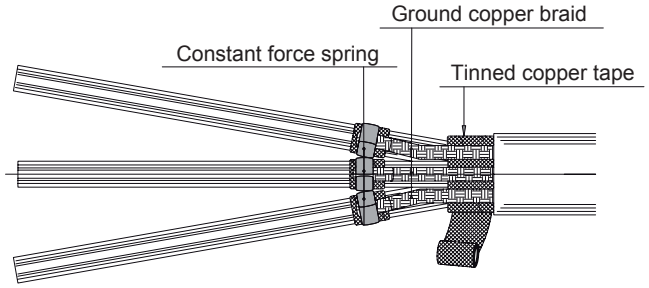
3. Clean the outer covering or sheath up to at least 1.5 m distance to avoid tube inner surfaces to become dirty. Spread the cores. Clean the possible armour and the lead or aluminium sheaths with a suitable solvent. Roughen the possible outer sheath for a distance of 100 mm and the possible armour for its length.

   Roughen the lead or aluminium sheaths for the distance of 250 mm with grinding paper.



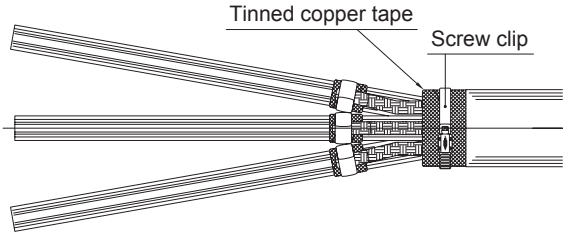
4. **Only for an armoured cable**

Wrap two layers of tinned copper tape with 50 % overlap on the lead or aluminium sheath, for 40 mm distance starting 100 mm from the armour edge. Wrap two layers of tinned copper tape with 50 % overlap on the armour.



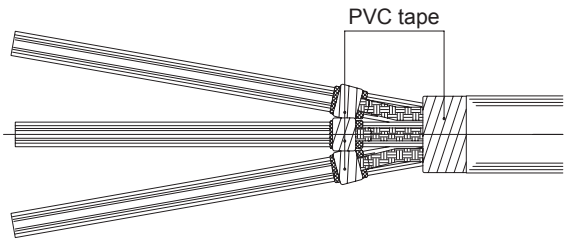
5. **Only for an armoured cable**

Place a short ground copper braid on each core. Put the other end of the braid on the tinned copper tape covered part of the lead or aluminium sheath and the other end on the armour. Fix each braid end on the tinned copper braid covered part with two turns of the constant force spring. Fold the braid end over the spring and wrap the rest of the constant force spring on the folded braid end.



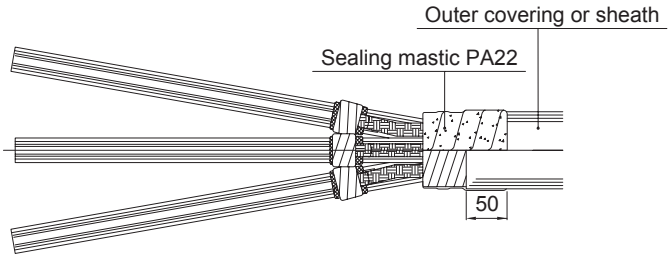
6. **Only for an armoured cable**

Wrap the rest of the tinned copper tape roll on the ground copper braids on the armour area and fix them with the screw clip.

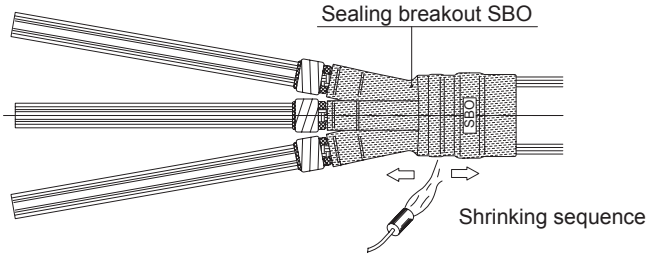


7. **Only for an armoured cable**

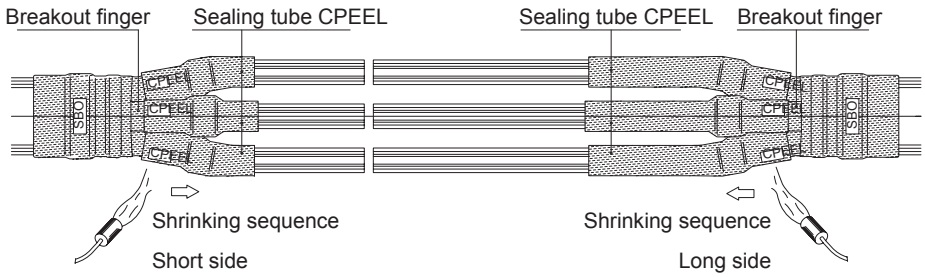
   Cover the constant force springs and the screw clip with some layers of PVC tape.



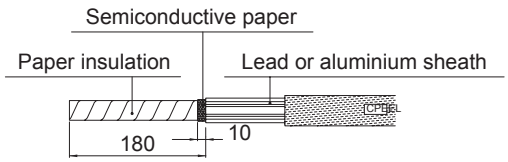
8. Wrap sealing mastic PA22 on the possible armour and continue to cover 50 mm of the outer covering or sheath. If there is no armour, just cover 50 mm of the outer covering or sheath.



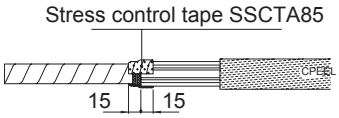
9. Push the sealing breakout SBO into the crutch as far as possible. Shrink the breakout starting from the middle.



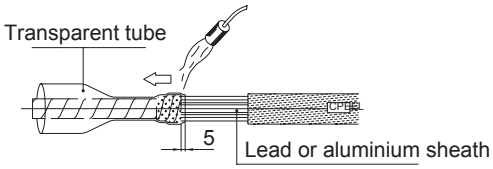
10. Place the longer sealing tubes on the longer cores and the shorter sealing tubes on the shorter cores. Push them on the breakout fingers up to about 20 mm from the crutch. Shrink the tubes one by one starting from the breakout end.



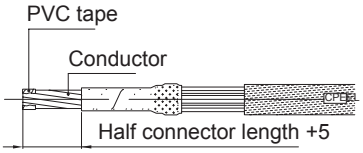
11. Cut and remove the lead or aluminium sheath up to 180 mm from the conductor end. Remove the semiconductive paper leaving 10 mm at the lead or aluminium sheath edge. Remove the first layer of the paper insulation up to the semiconductive paper edge.



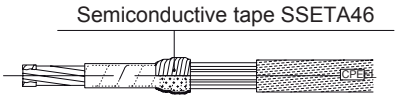
12. Wrap one layer of stress control tape SSCTA85 on the edge of the lead or aluminium sheath. Cover 15 mm of the lead or aluminium sheath and continue 15 mm to the insulation side so that the semiconductive paper remains under the taping. The tape must be applied with 50 % overlap and by stretching it to half of its original width.



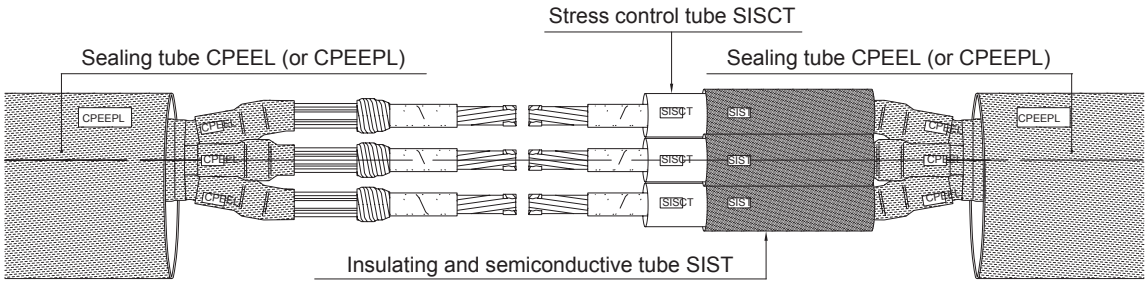
13. Place the transparent tube on core so that it covers the stress control tape area and continues 5 mm on the lead or aluminium sheath. Shrink the tube starting from the lead or aluminium sheath end.



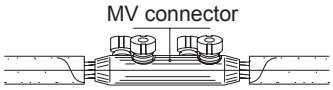
14. Cut the transparent tube and remove half of the bolt connector length + 5 mm from the insulation of the cable. If you use compression connectors, remove the insulation following the connector manufacturer's instructions. Be careful not to nick the conductor when removing the last paper layers. Clean the conductors and wrap some layers of PVC tape on them.



15. Wrap one layer of semiconductive tape SSETA46 on the transparent tube. Cover the stress control taped area but not more. The tape must be applied with 50 % overlap and by stretching it to half of its original width.



16. Slip the two sealing tubes CPEEPL (or CPEEL) one to each side of the cable, or both on the same side of the cable. The smaller one fits inside the bigger. Slip the insulating and semiconductive tubes SIST, the stress control tubes SISCT on the cores. Protect the tubes from dirt.

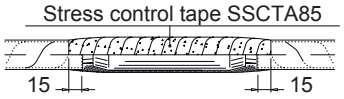


17. Remove the PVC tape from the ends of the conductors and install the MV connectors following the manufacturer's instructions.

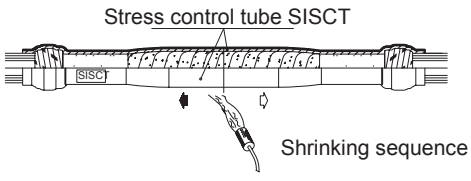
Table 1

Kit	Cable size mm²	Max. connector dimensions	
		length mm	diameter mm
HJP11.2401	25-35	100	25
HJP11.2402	50-95	130	30
HJP11.2403	95-240	130	33

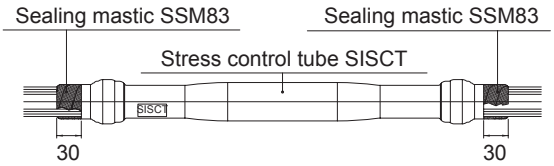
18. Fill any holes left in the connector with grey mastic. Clean the connector.



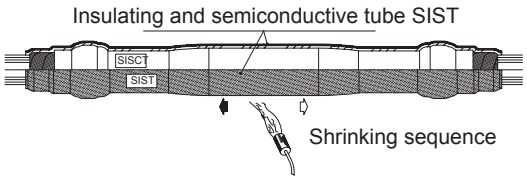
19. Wrap two layers of SSCTA85 to cover the connector covering 15 mm of the transparent tube on the other side and the insulation on the other. SSCTA85 must be applied with a 50 % overlap and by stretching it to half of its original width.



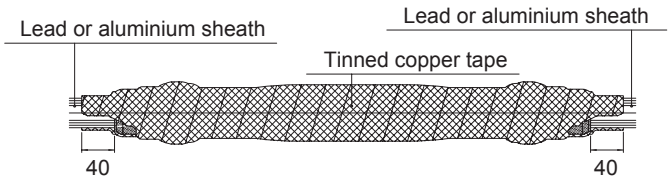
20. Centre the stress control tube SISCT on the connector. Start shrinking the tube from the middle and move towards the ends. Clean the surface of the stress control tube after shrinking.



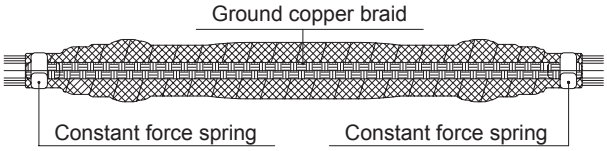
21. Wrap two layers of sealing tape SSM83 starting from the end of the stress control tube and continuing for 30 mm on the paper insulation on both sides of the tube.



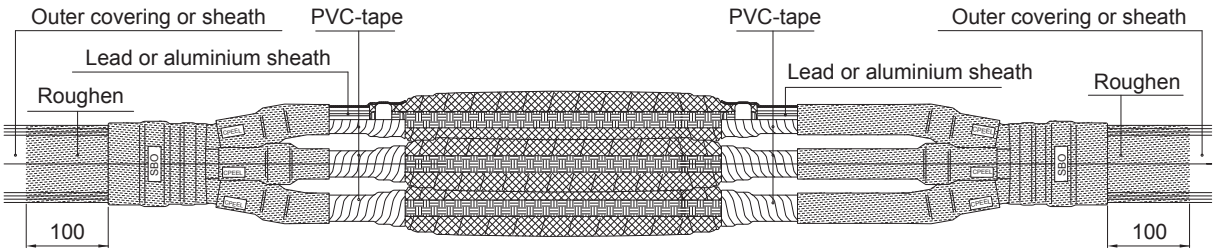
22. Centre the insulating and semiconductive tube SIST on top of the stress control tube. Start shrinking it from the middle and move towards the ends.



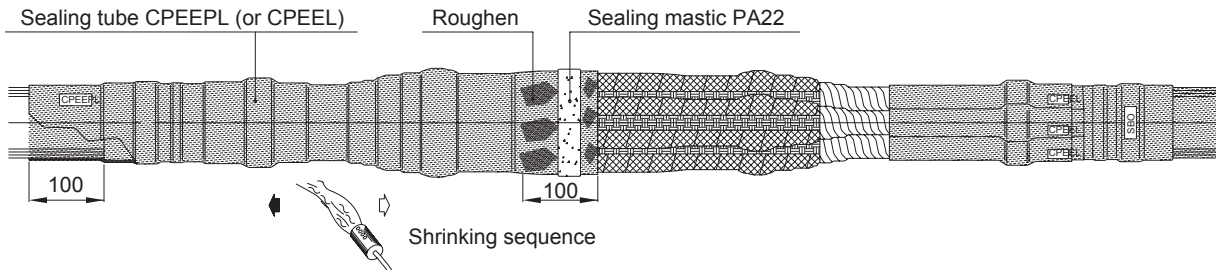
23. Wrap tinned copper tape on the joint starting to cover 40 mm of the lead or aluminium sheath, continue to cover the joint up to 40 mm of the lead or aluminium sheath on the other side. Tinned copper tape must be applied with a 20 % overlap. Fix the end of the tape by knotting it.



24. Place the ground copper braid on the joint. Fix the braid in both ends with two turns of the constant force springs. Fold the braid ends over the springs and wrap the rest of the springs on the folded braid ends.

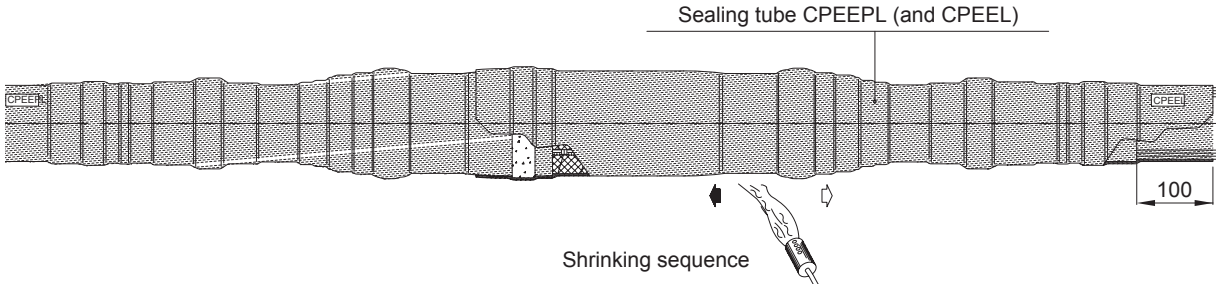


25. Cover the constant force springs with some layers of PVC tape. Cover also the open lead or aluminium sheath. Roughen 100 mm of the possible outer sheath on the both sides of the joint with grinding paper. Push the cores together.



26. Slide the smaller CPEEPL (or CPEEL) sealing tube so that it overlaps 100 mm of the outer covering or sheath. Start to shrink the tube from middle and move towards the ends. The tube is properly shrunk when the adhesive starts to come out from the ends.

    Roughen around 100 mm of the first shrunk tube on the end closer to the centre of the joint with grinding paper. Wrap one layer of sealing mastic PA22 on the tube for 30 mm distance in the middle of the roughened area.



27. Slide the bigger CPEEPL or (CPEEL) sealing tube so that it overlaps the previously roughened 100 mm of the first sealing tube. Start to shrink the tube from middle and move towards the ends. The tube is properly shrunk when the adhesive starts to come out from the ends.

28. The joint is finished and ready to use, but let it cool down before loading it mechanically.

NOTES

NOTES

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