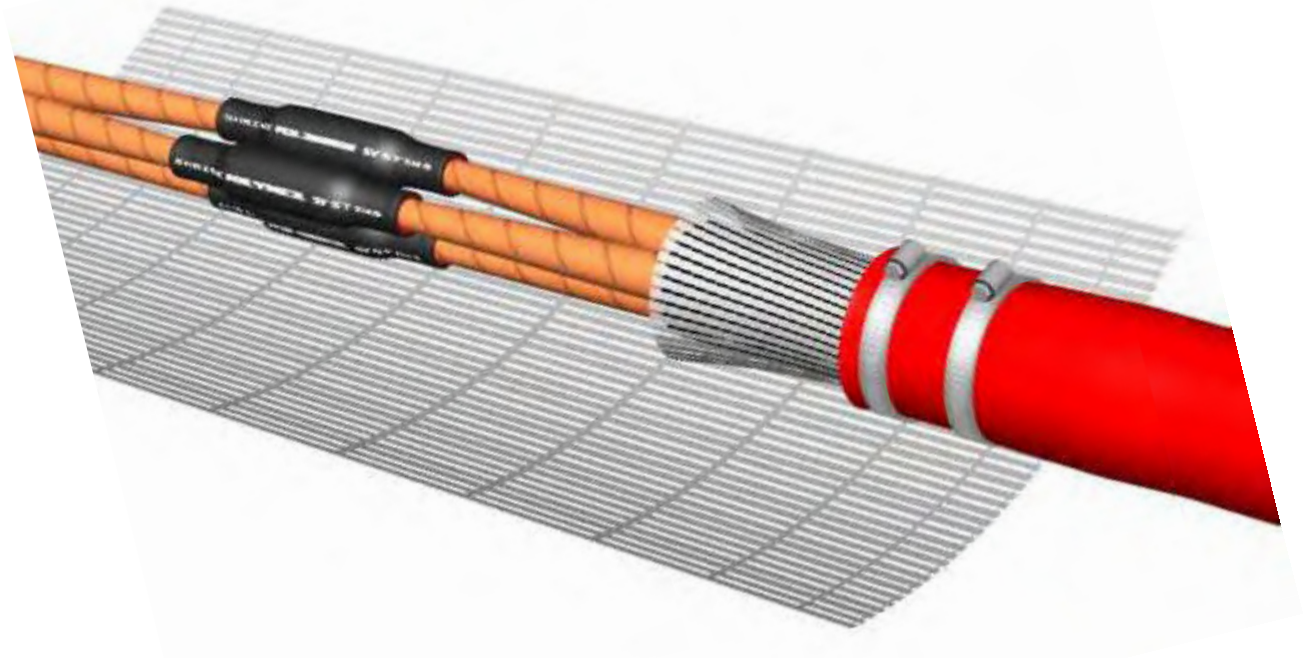
Shrink Polymer Systems

Cable Installation Materials – 24 volts to 36 kV

INSTALLATION INSTRUCTION
HEATSHRINK JOINT SUIT 3 CORE 33kV XLPE ARMOURED CABLE
REFERENCE TYPE: SPAJ 36X-3C



- THESE INSTRUCTIONS SHOULD BE FOLLOWED BY A TRAINED COMPETENT FITTER
- A PROPANE GAS TORCH IS THE PREFERRED METHOD FOR SHRINKING THESE MATERIALS
- ENSURE THAT THE MATERIALS ARE KEPT CLEAN AND DRY AND ARE FREE FROM DUST, SAND AND GREASE
- PLEASE CALL SHRINK POLYMER SYSTEMS FOR ANY ADVICE

DATE OF ISSUE: 11.01.11

CABLE PREPARATION

ALL DIMENSIONS SHOWN IN mm

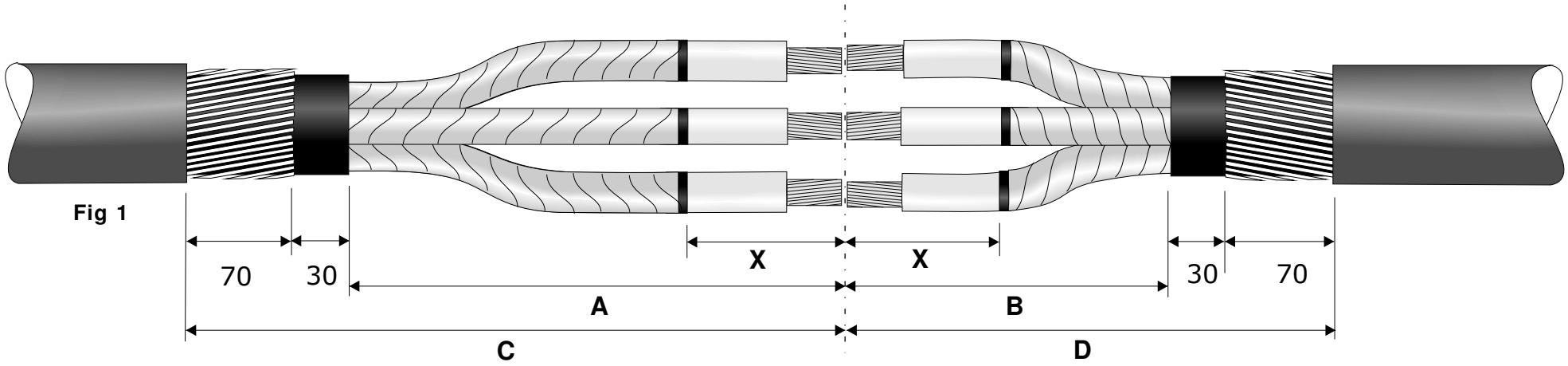


Fig 1

1. Ensure the cables overlap before preparing the Cables to the dimensions shown above and in accordance with the Table 1 below for Conductor size. Ensure you use the same cable range dimensions as the kit supplied.

2. Before proceeding, position the Outer Shrink Tube/s and clamps etc, over the Cable end/s.

CONDUCTOR SIZE (mm^2)	A	B	C	D	X (mm)	MAX CONNECTOR LENGTH (mm)
35-95	1000	500	1100	600	230	110
120-185	1020	520	1120	620	240	150
240-300	1050	550	1150	650	250	160

Table 1

Note:- These Joints are designed for use with HV Compression Ferrules and "Tapered Centralised Conductor" Mechanical Connectors.

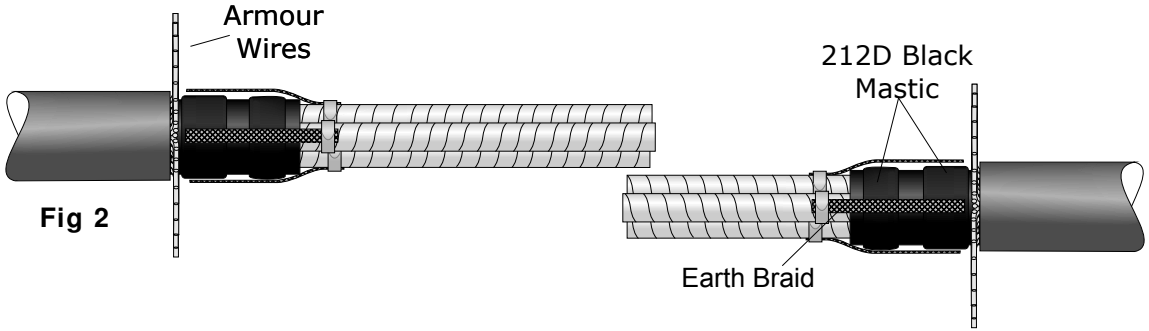


Fig 2

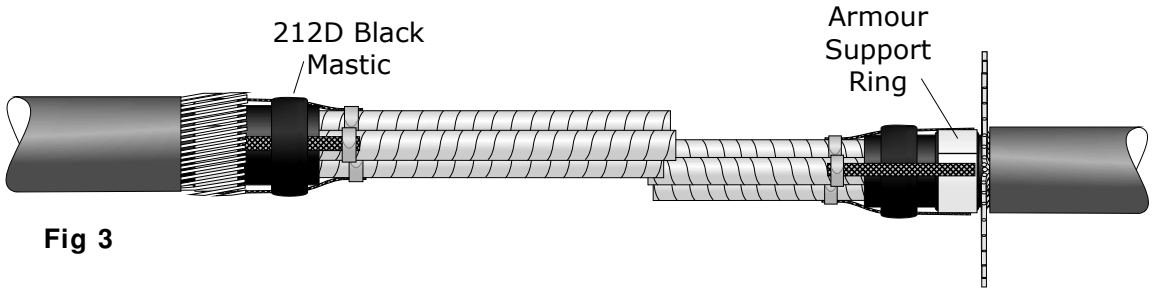


Fig 3

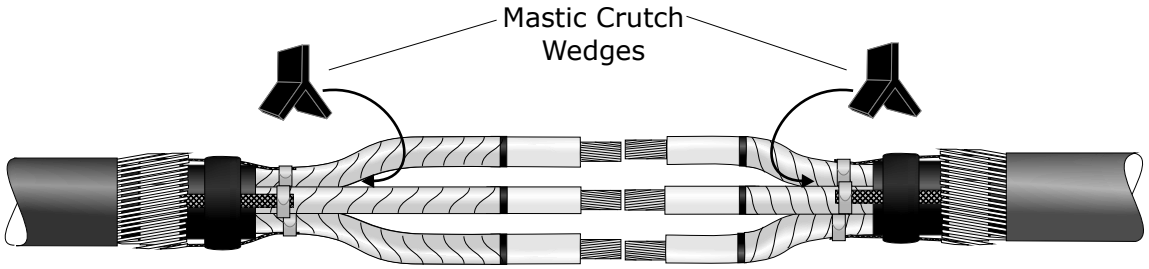


Fig 4

Single core shown for clarity

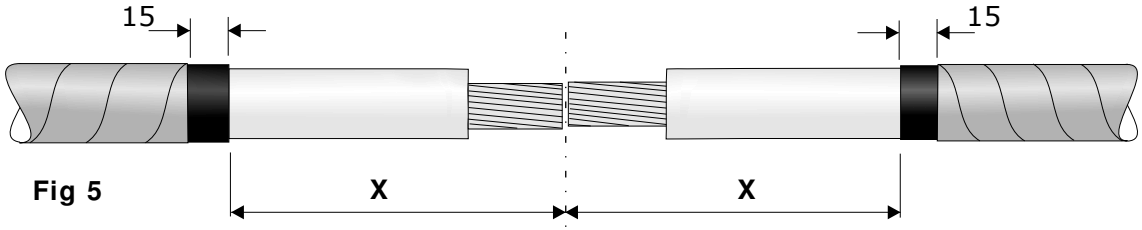


Fig 5

3. Lift the wire armours and apply a two bands of the 212D black mastic tape as shown in Fig 2.

4. Secure the three earth braids to the copper tape screens using the constant force springs supplied. Repeat with the other cable end.

5. Fit the under armour support ring and fold down the armours as shown in Fig 3.

Apply a further band of black mastic tape over the earth braids. Repeat with the other cable end.

Note: Under armour support ring not required if cable is double steel tape armoured (DSTA)

6. Open up the cores and insert the black crutch wedges, as far as possible.

7. Prepare the cores to the dimensions given in Fig 1 and Table 1.

8. Using a suitable tool, remove the semi-conductive layer, taking care not to damage the primary insulation, particularly at the Screen ends.

Thoroughly de-grease the exposed insulation using the cleaning tissues provided.

It may be advisable to secure the copper tape screens to prevent them from unwinding.

Note:- Screen removal Tools can be provided. See website for Screen removal advice.

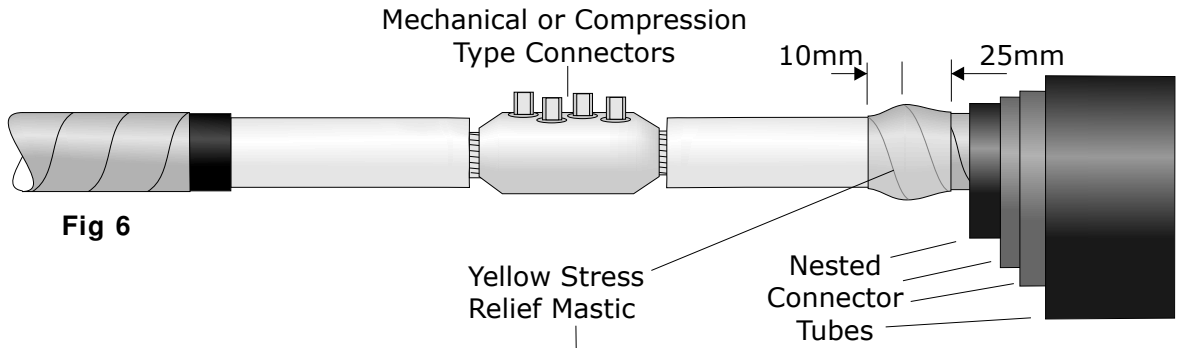


Fig 6

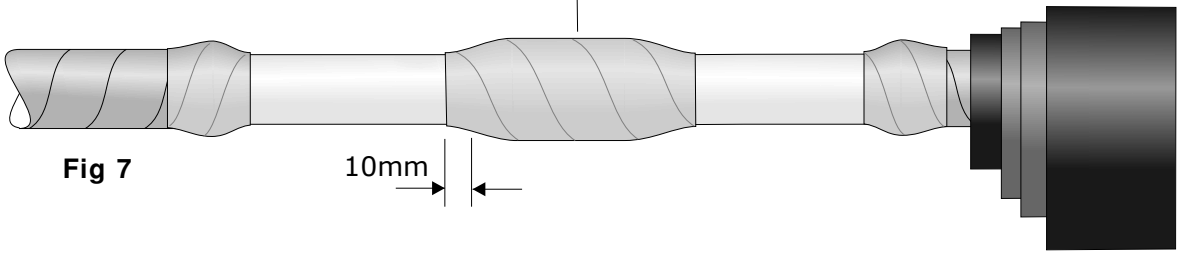


Fig 7

Fig 8

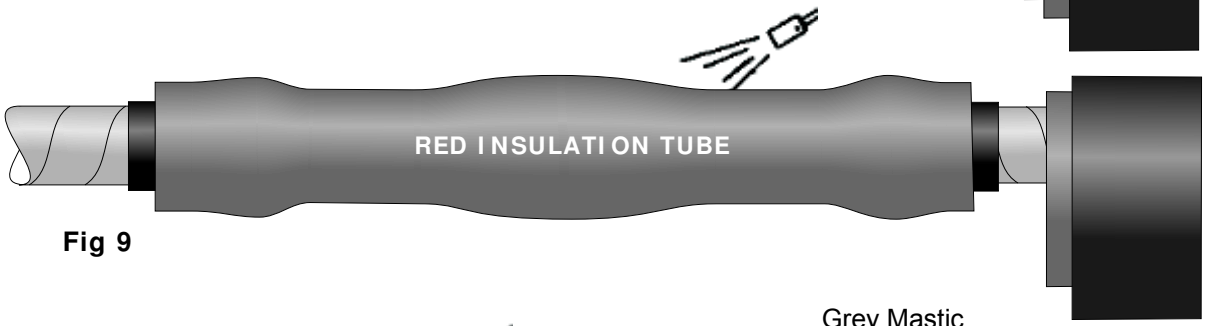


Fig 9

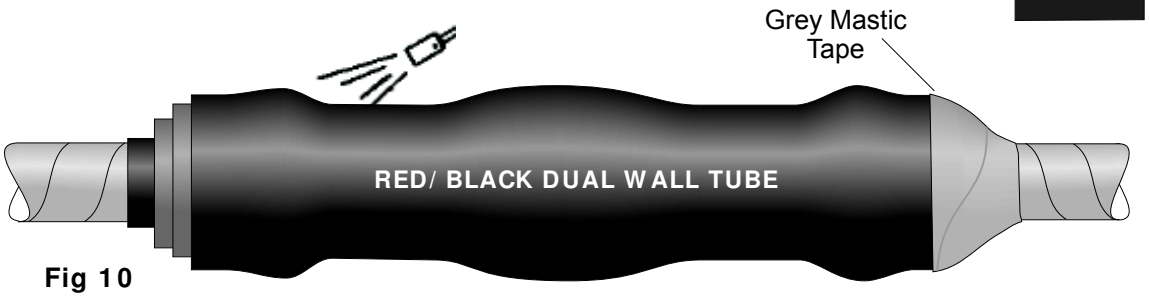


Fig 10

9. Ensure the outer shrink tube/s are over the cable end/s. Park the stress control tubes, red insulation tubes and red/black dual wall tubes over each core as shown in Fig 6.

Join the conductors using an approved MV "Tapered" connector, remove any sharp edges and de-grease before proceeding.

10. Stretch the yellow stress relief tape and apply over the screen cut area, extending onto the primary insulation by 10mm and catching the copper tape screens.

11. Apply the yellow stress relief mastic over the connector area under tension and with a 50% overlap. Extend onto the primary insulation by 10mm, as shown in Fig 7.

Important:- Fill in the gap between Primary Insulation and Connector. Also if mechanical connectors used, fill any voids that the Bolts leave after they have been sheared.

12. Centralize the 3 x black stress control tubes over the connector area, ensuring they overlap the core screens at both ends. Starting from the middle, using a soft flame torch, apply heat all around the tubes until fully recovered.

13. Position the first set of red insulation tubes and shrink as previous. Now fit the remaining set of red tubes. **Note:** Fit the longer set of red tubes first before the shorter second set.

14. Finally position the red/black dual wall tubes and starting in the middle and working towards the ends, shrink them, keeping the flame moving all around the tubes to ensure an even recovery and wall thickness.

Stretch and apply the short lengths of 4SCHV grey mastic tape over the tube ends as in Fig 10.

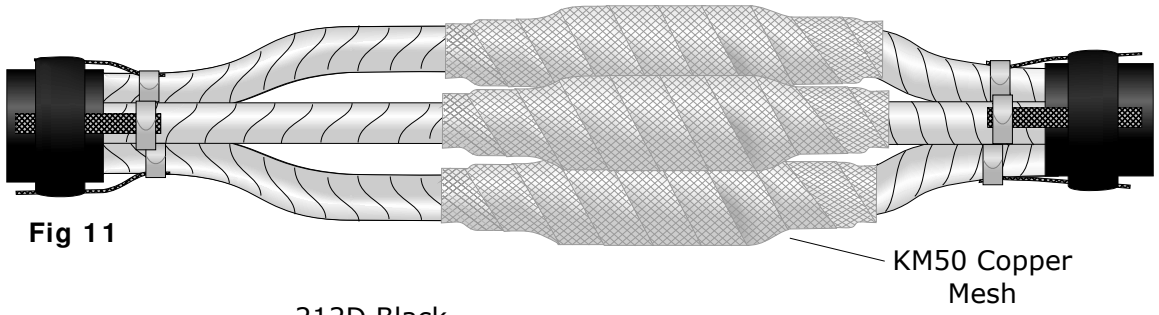


Fig 11

15. Using the tinned copper mesh applied with a 50% overlap, apply around each core as shown in fig 11. Extend onto the copper screens and secure.

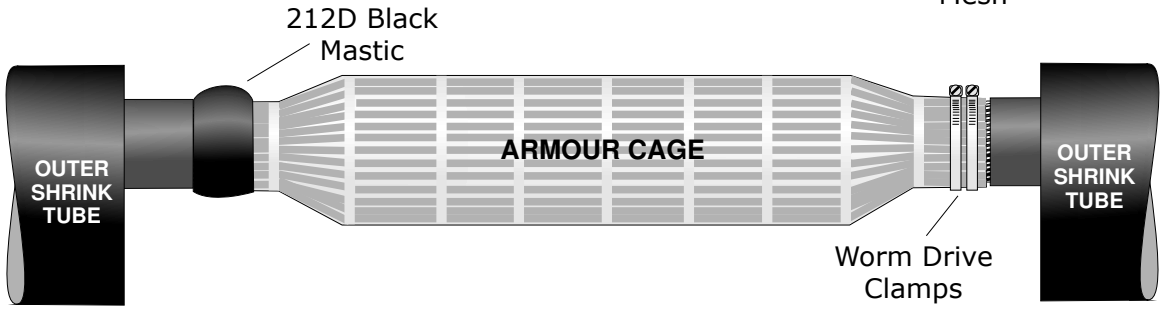


Fig 12

16. Wrap the armour cage around the completed joint and secure with the clamps provided. Ensure all earth braids are connected.

Abrade the outer sheath for approximately 100mm on each side.

Remove the 2 backing papers from the 212D black mastic strips and apply over the worm drive clamps.

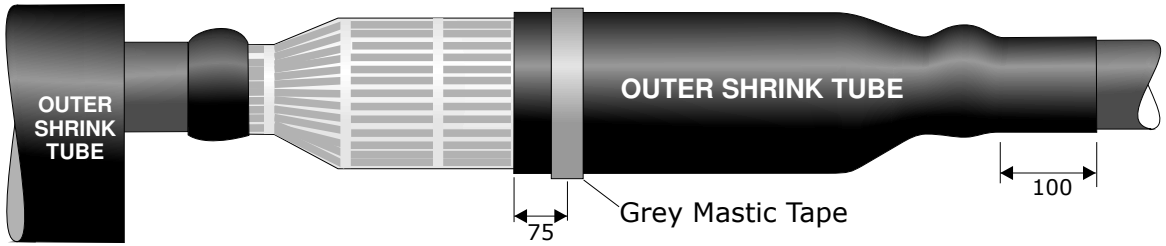


Fig 13

17. Position one of the outer shrink tubes approx 100mm over the cable sheath.

Using a suitable heat source, start shrinking from the centre and work toward one end at a time. Keep the flame moving at all times to ensure an even recovery.

18. Apply a band of the grey mastic tape approx 75mm from the end of the tube as shown in Fig 13.

19. Now fit the second outer shrink tube.

Once fully recovered sealant should be visible at the ends of the tubes.

Allow the joint to completely cool before applying any mechanical strain.

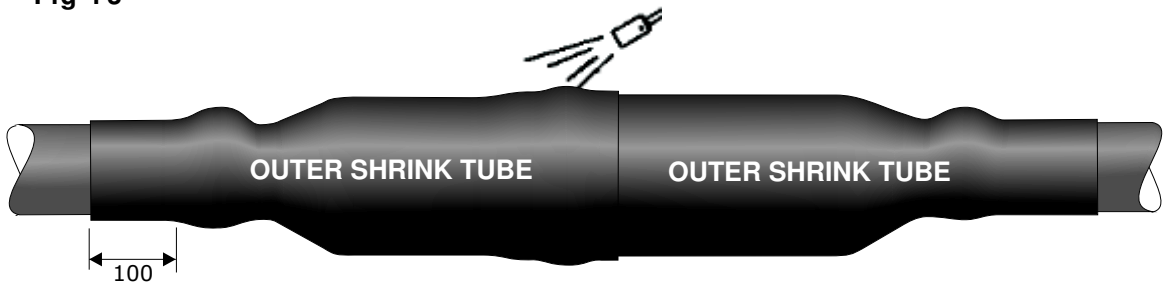


Fig 14

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