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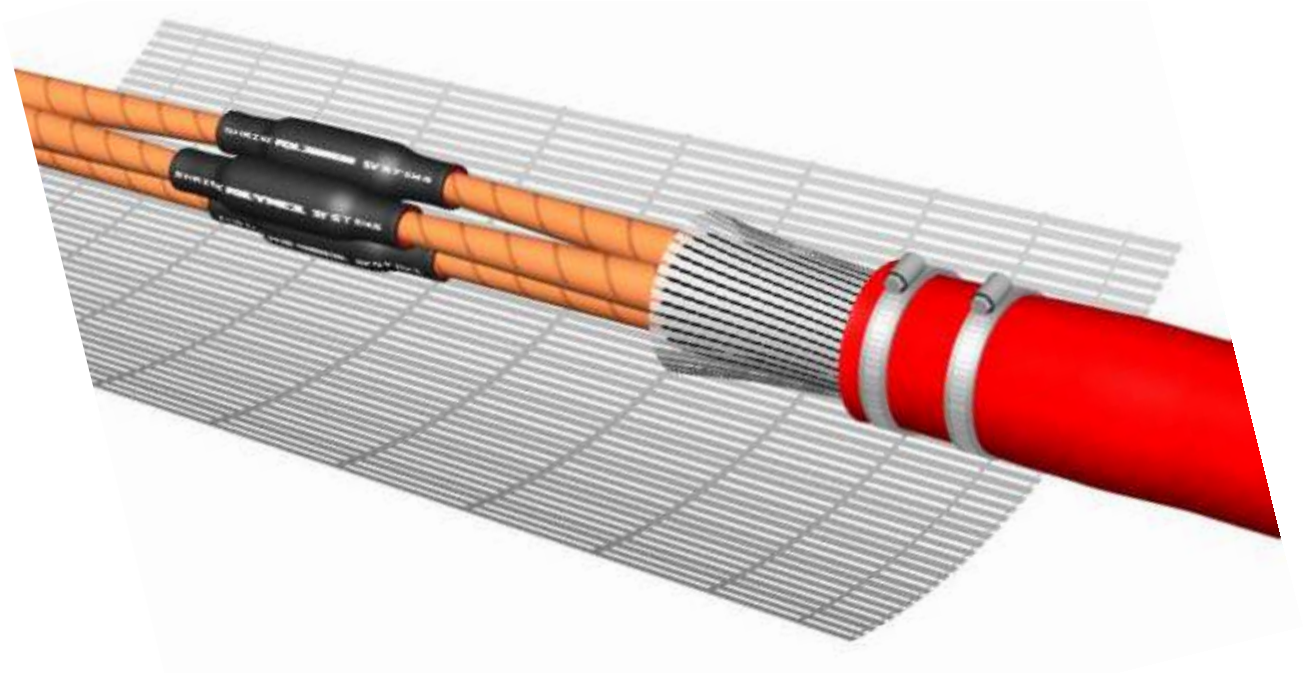
Shrink Polymer Systems

Cable Installation Materials – 24 volts to 36 kV

INSTALLATION INSTRUCTION
HEATSHRINK JOINT SUIT 3 CORE 7.2/12kV XLPE ARMOURED CABLE
REFERENCE TYPE: SPAJ 12X-3C



- THESE INSTRUCTIONS SHOULD BE FOLLOWED BY A TRAINED COMPETENT JOINTER
- 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: 24.01.14

CABLE PREPARATION

ALL DIMENSIONS SHOWN IN mm

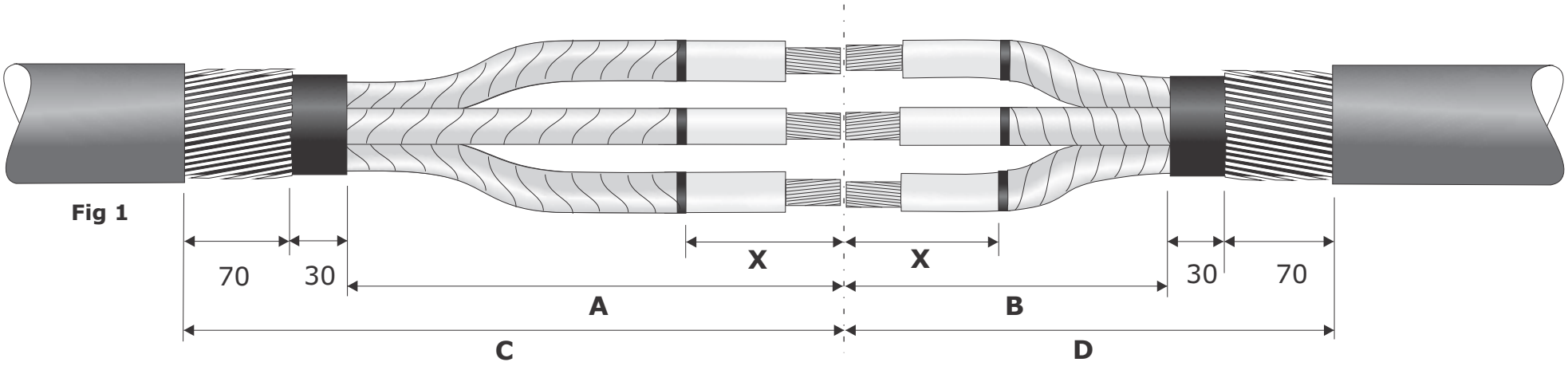


Fig 1

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)
35-70	550	350	650	450	160	100
95-185	550	350	650	450	170	130
185-300	700	400	800	500	180	140
400	750	450	850	550	200	160

Table 1

Note:- These joints are designed for use with MV compression ferrules and "tapered centralised conductor" mechanical connectors.

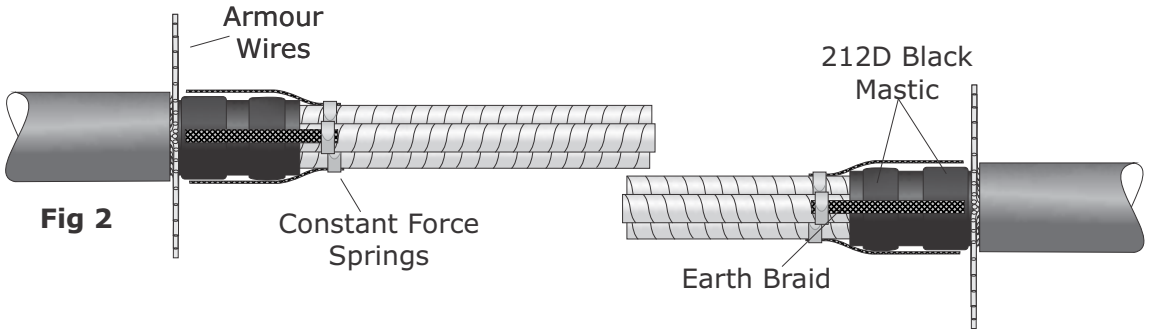


Fig 2

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.

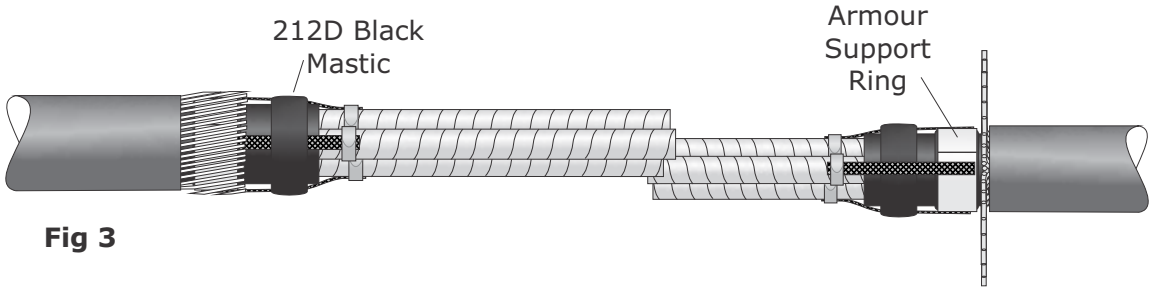


Fig 3

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.

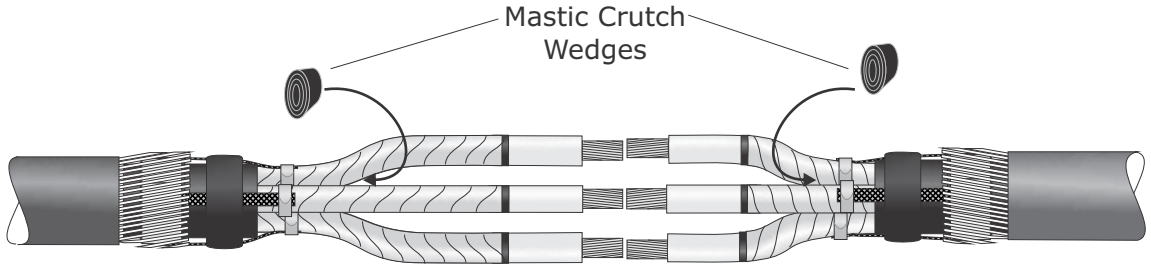


Fig 4

6. Remove the backing papers from the piece of black mastic tape labelled crutch wedge and form into a wedge. Open up the cores and insert the these as far as possible into the crutch of the cable.

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

Single core shown for clarity

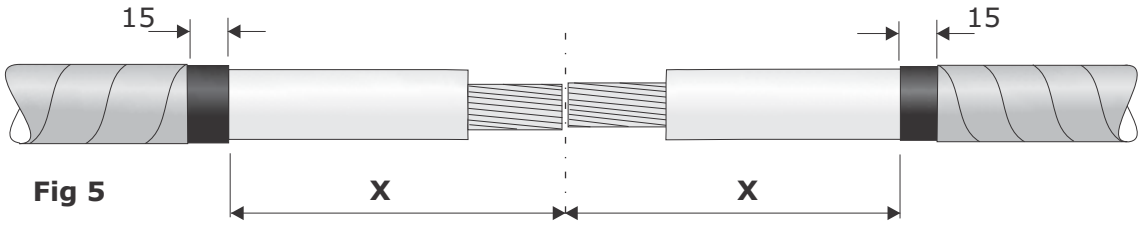


Fig 5

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

Thoroughly clean and 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/videos.

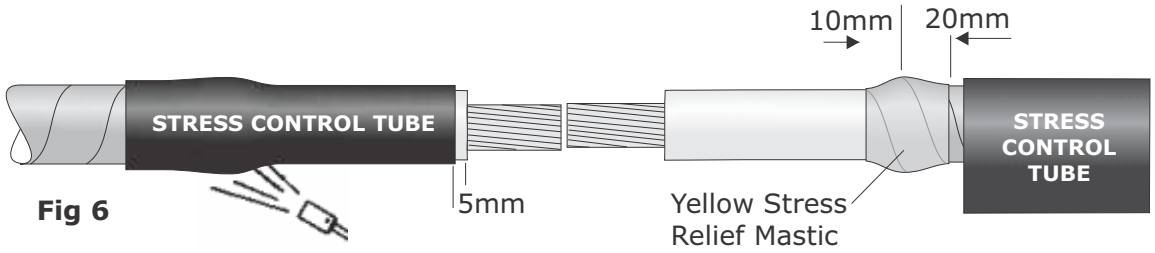


Fig 6

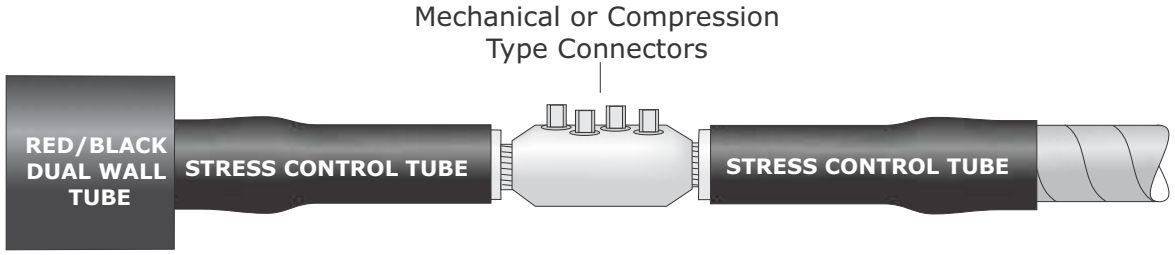


Fig 7

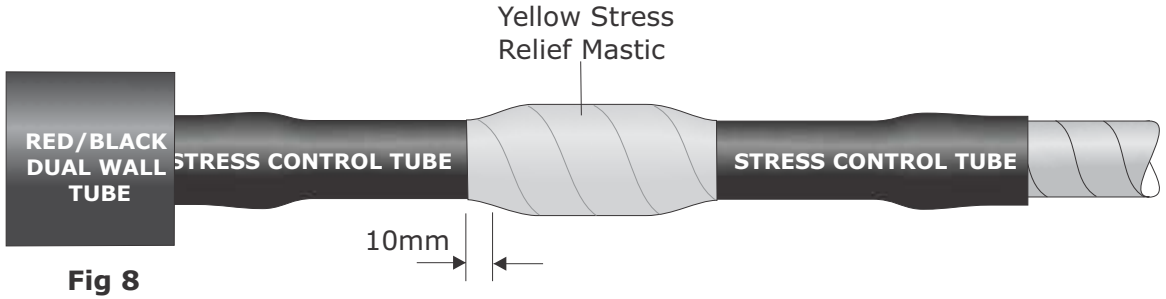


Fig 8

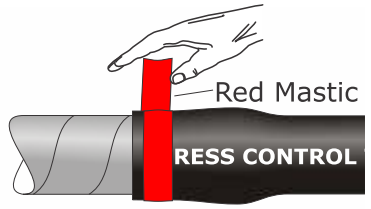


Fig 9

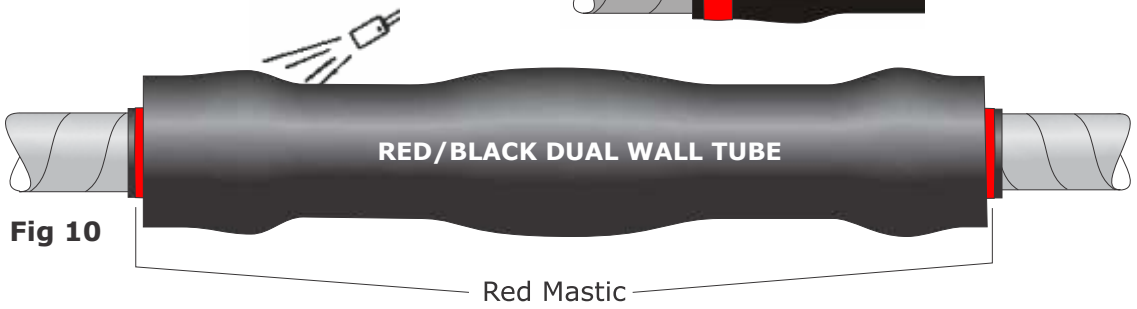


Fig 10

9. Position the stress control tubes and red/black dual wall tubes over each core as shown in Fig 6+7.

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 as shown in Fig 6.

11. Position the stress control tubes as shown 5mm back from the insulation and starting from the insulation end, apply heat all around the tubes using a soft flame torch. Heat until fully recovered.

12. Fit the approved MV 'tapered' connectors using the appropriate tool. Clean and de-grease before proceeding.

13. Stretch and apply the yellow stress relief mastic over the connector area and with a 50% overlap. Extend onto the short stress control tubes by 10mm, as shown in Fig 8.

Important:- Fill in the gap between primary insulation and ensure a smooth taper to the connector. Also if mechanical connectors used, fill any voids that the bolts leave after they have been sheared with the grey hv mastic tape supplied.

14. Stretch and apply the short red mastic tape pieces over the stress control tubes as shown in Fig 9, so that the red/black tubes sit upon it. This will create an additional moisture seal.

Finally, centrally position the red/black dual wall tubes so that they cover the screen end points. Starting in the middle and working towards the ends, shrink them whilst keeping the flame moving all around the tubes to ensure an even recovery and wall thickness.

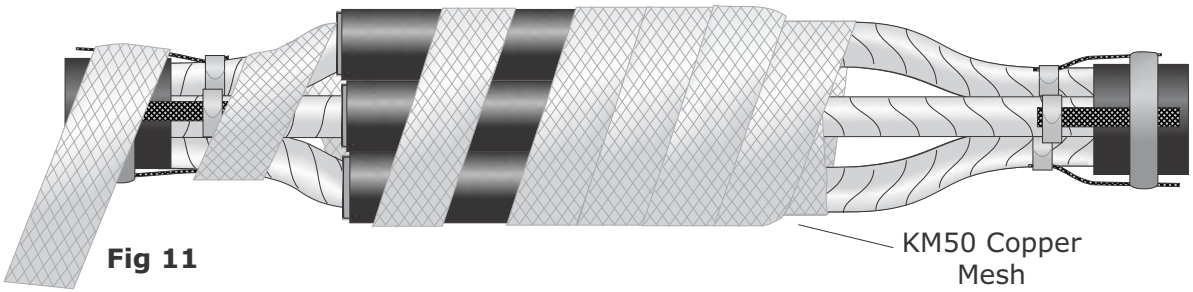


Fig 11

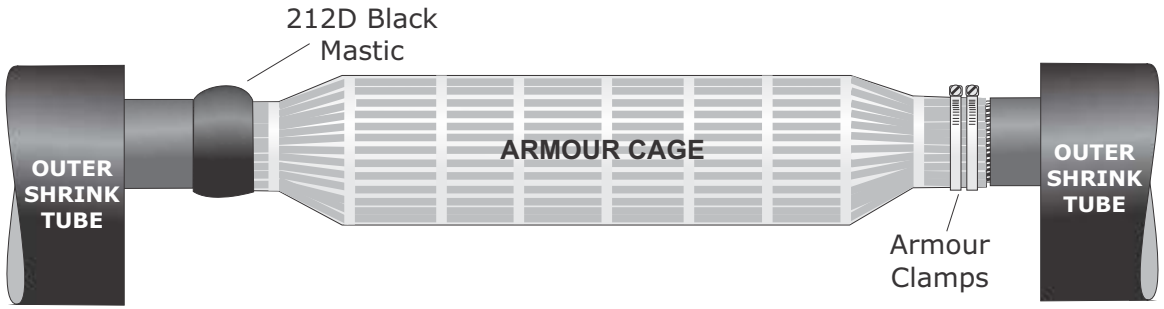


Fig 12

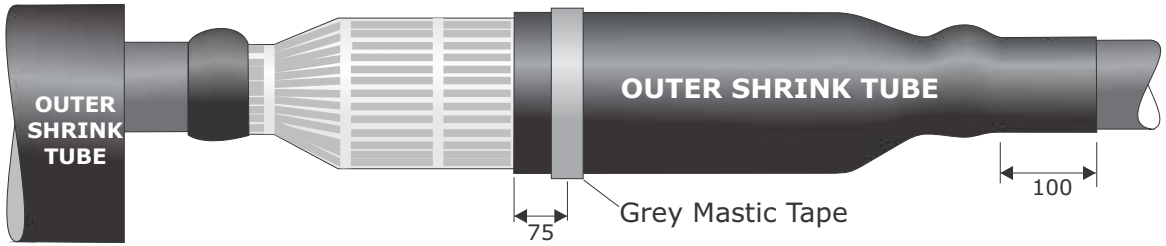


Fig 13

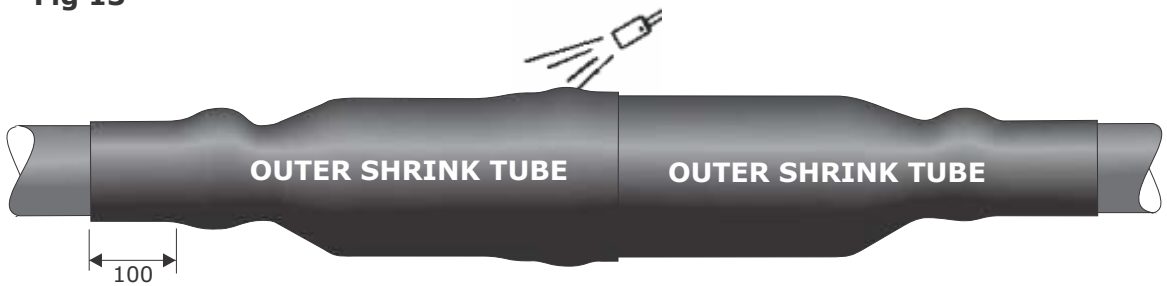


Fig 14

15. Using the tinned copper mesh applied with a 50% overlap, pull the cores together. Extend onto the copper screens as shown.

With an open spiral take one end of the tinned copper mesh and wrap around the armours at one end as shown in Fig 11.

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

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.

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