BOREHOLE SUBMERSIBLE CABLE

Splicing Instructions

Before commencing you should ensure the supplied splice kit has all the components listed in this instruction sheet, see next page.

You will also require the following hand tools; wire striping tool, pliers, crimp tool and heat gun.

Attention: As the drop cable is being connected to mains power, the splice should be carried out by a suitably qualified and experienced electrician.

1. Using diagram 1 and diagram 2 as a guide; remove approximately 135mm of the outer insulation from both the submersible drop cable and the motor lead. Be careful not to damage the inner secondary insulation in any way.
2. Now remove/strip back the insulation cover of the 4 wires having approx. 5mm of the copper conductors visible.
3. Using the supplied alum oxide sand paper (kit item 5), rough up the external surfaces of each of the 8 wires (4 on the drop cable, 4 on the motor lead). This helps the heat shrink tube resin to bond and adhere to the insulation cover surfaces.

Diagram 1

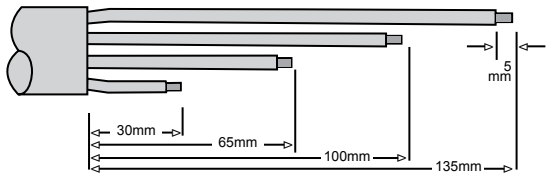
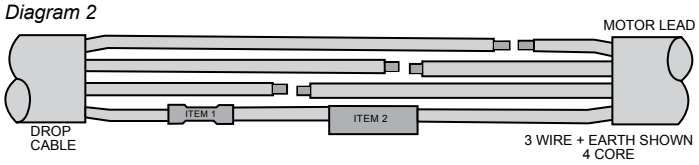


Diagram 2



4. Now wipe the just sanded area with the cleaning wipe (kit item 4), to remove any dust and residue that may interfere with good sealing.
5. First slide the largest diameter and longest heat shrink tube connector (kit item 3) back down over either the motor lead or drop cable. Safely back out of the way, you can now slide the smallest heat shrink tube (kit item 2) onto each conductor/wire (4 required per splice) and then fit the crimp connectors (kit item 1) and crimp each one using a suitable and correctly sized crimping tool onto each conductor.

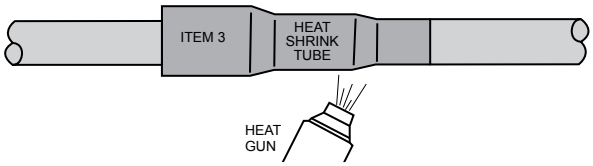
   Important: Make sure you are connecting the correct wires/colours to each other, see our colour chart below.

	3 Wire Motors		
	AU-NZ	**EURO**	**USA**
Main / Run winding	Blue	Blue/Grey	Black
Start / Aux winding	White	Black	Red
Common	Red	Brown	Red
Earth	Green or Green/Yellow	Green or Green/Yellow	Green or Yellow or Green/Yellow

   Then fit and crimp the other four lead conductors into each corresponding crimp connector. The motor lead and drop cable should now be connected/joined.

6. Now you are ready to seal and waterproof the four inner conductors.

Diagram 3



7. Now slide and evenly position each of the four heat shrink tubes over the crimps you have just done for each wire. Spread the conductors apart so that you can use the heat gun to apply heat to each tube without prematurely heating and shrinking the one beside it. Start from one end and slowly move along the tube to the other end. You will see it shrink and the internal tube glue will ooze out evenly around the tube end, indicating you have sealed the wires and tube together.

8. Now that the 4 conductors are spliced together, you need to apply the mastic tape to seal in-between and around the 4 conductors and out towards and over the motor lead and drop cable by 75mm to 100mm. The mastic putty needs to be fairly even in its diameter with a slight tapering off towards each end.

9. Sand the outer cover of the drop cable and motor lead for approx. 150mm to rough up the surface to ensure best adhesion. Now clean the area you have just sanded with the wipe to remove any hand grease and dust particles. Slide the larger shrink tube down and position length ways evenly over the splice.

10. A preferred method is to hold the cable vertically and slowly heat up the heat shrink tube from the centre up to the top. This helps expel any air bubble. As you near the top of the tube, small amounts of the resin should be visible, this will cool down and form a part of the splice seal.

11. Now invert the cable and repeat for the other end. Allow the now completed splice to cool down, preferably in a flat horizontal position.

    Note: When the heat shrink tube has been shrunk to its minimum, approximately 4 times smaller and the tube appears very tight around the splice joint, the cable splice is now complete and should be fully sealed from the bore water.

12. Using a multi-meter, check the leads resistance. The earth pin should have a low resistance to the body of the pump ensuring the earth connection is correct. The other three conductors should have a high resistance to earth. The resistance between the conductors will now show the resistance of the motor windings. Check with your motor supplier technical specifications for the resistance figures for that size motor.

Should the lead fail any resistance testing, you will need to redo the splice and repeat the above process.

For larger submersible drop cable splices, other types of kits and methods are available to achieve a watertight splice.

Contact Sterling Pumps for more details.

4" Sterling Splice Kit
Reorder part number: AM11725

1. Qty 4 2.5mm crimp connectors
2. Qty 4 9.5mm x 60mm heat shrink connector tube with resin
3. Qty 1 28mm x 350mm heat shrink connector tube with resin
4. Qty 1 Cleaning wipe
5. Qty 1 Sand paper (Alum oxide)
6. Qty 1 Black mastic tape

6" Sterling Splice Kit
Reorder part number: AM11726

1. Qty 4 4mm to 6mm crimp connectors
2. Qty 4 12mm x 60mm heat shrink connector tube with resin
3. Qty 1 33mm x 450mm heat shrink connector tube with resin
4. Qty 1 Cleaning wipe
5. Qty 1 Sand paper (Alum oxide)
6. Qty 1 Black mastic tape

STERLING
PUMPS

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