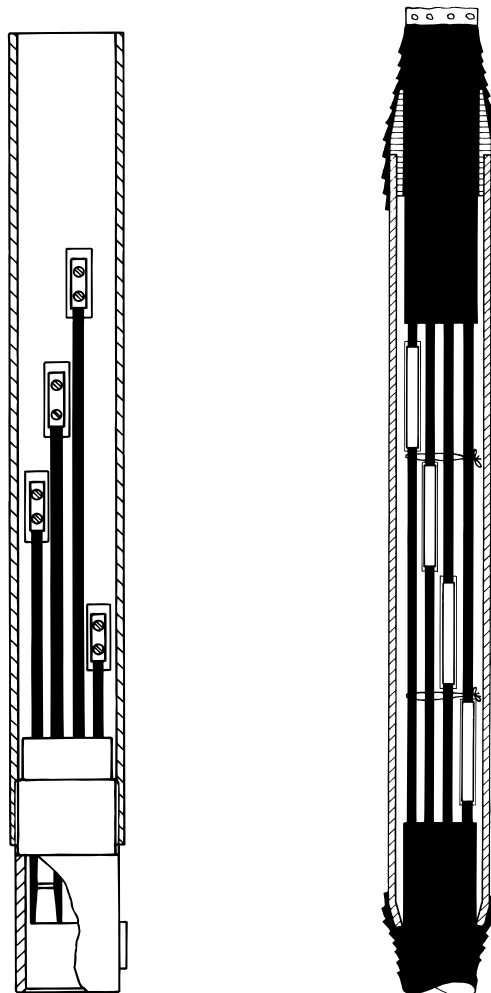


KMA

Installation and operating instructions



Original installation and operating instructions.

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1. Applications

Grundfos cable termination kits, type KMA, are specially designed to join the motor cable and the submersible drop cable, both single-core and multi-core cables, during installation of submersible pumps.

The Grundfos cable termination kit can be used for cables made of polyethylene, PVC, synthetic or natural rubber, etc. for voltages up to 1000 V and ranging in size from 1.5 mm² to 120 mm².

2. Cable termination kit

The termination kit is available in two versions:

- with detachable plug
- without detachable plug.

Please read the section below corresponding to the selected kit.

2.1 Cable termination kit with detachable plug

This kit is available in several versions, depending on the number of leads and the cable size. Furthermore, the kit is available with a built-in overvoltage protection device.

The figures referred to in the following text can be found in the appendix at the end of these instructions. Where two drawings are shown, the drawing to the right illustrates a cable joint with overvoltage protection device, e.g. fig. 1.

2.1.1 Preparation

This preparation section refers to the *Appendix* on page 4.

- Make sure that the submersible drop cable is not connected to the mains.
- Unscrew the tube (A) from the plug (B), fig. 1.
- Strip the submersible drop cable (D), fig. 2, and cut off the leads in a staggered manner so that they correspond to the leads on the motor plug (B), fig. 1.
- Both cable sheath and leads **must** be completely dry.
- Clean and sandpaper the stripped leads and that part of the insulation which will be covered by resin. Dirt or grease must not get into contact with the sandpapered surfaces.
- Push the tube (A) over the submersible drop cable, fig. 2, making sure that the threaded end is pointing towards the stripped cable end.
- Pull the insulators (F) off the connectors (S) and fit them on the leads of the submersible drop cable, fig. 2.
- Fit the appropriate lead of the submersible drop cable into each of the connectors (S), fig. 3.
- Push the insulators (F) over the connectors, making sure that they are properly covered and insulated, fig. 4.

- Arrange leads, connectors and overvoltage protection devices, if fitted, so that the tube (A) can easily be pushed over the joint.
- Push the tube (A) over the joint and screw it firmly onto the plug (B), fig. 4.
- Make sure that the submersible drop cable sheath is at least 50 mm inside the tube (A), fig. 4.
- Suspend the submersible drop cable with the joint vertically, making sure that the connectors are arranged correctly inside the tube and that the submersible drop cable is centered. The tube can now be filled with resin.

2.2 Cable termination kit without detachable plug

This kit is available in several versions, depending on the number of leads and the cable size.

The figures referred to in the following text can be found in the appendix at the end of these instructions.

2.2.1 Preparation

This preparation section refers to the *Appendix* on page 4.

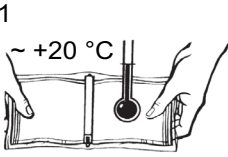
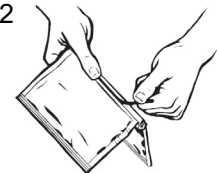
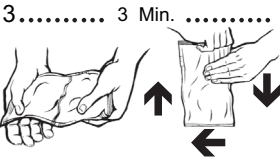
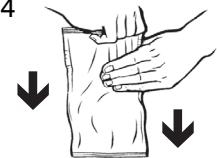


- Make sure that the submersible drop cable is not connected to the mains.
- Make sure that the motor cable is so long that the cable joint can be fastened to the riser pipe above the pump connection.
- Cut off the tapered end of the tube (A) until the tube diameter and the submersible drop cable diameter are identical.
- Cut off and strip the motor cable (M) and the submersible drop cable (D) in a staggered manner, fig. 6. Make sure that both cable sheaths are at least 50 mm inside the tube when this is pushed over the joint, fig. 8.
- Both cable sheath and leads **must** be completely dry.
- Clean and sandpaper the stripped leads and that part of the insulation which will be covered by resin. Dirt or grease must not get into contact with the sandpapered surfaces.
- Push the tube (A) over the submersible drop cable, tapered end first, so that it is free of the stripped cable end, fig. 6. Fit the rubber plug (G), if supplied, on the motor cable and push it upwards. The cylindrical plug end must point towards the stripped cable end.
- Push an insulator (F) over each motor cable lead, fig. 6.
- Fit and tighten the connectors (S), fig. 7.
- Push the insulators over the connectors, making sure that they are properly covered and insulated, fig. 8.
- Tie up the leads by thin strings between the first and the second and between the third and the fourth connectors, to ensure that the leads are centred in the tube.
- Push the tube (A) over the joints until these are positioned in the middle of the tube. Both cable sheaths should be at least 50 mm inside the tube, fig. 8.
- Wind one piece of the adhesive tape tightly around the tapered end of the tube and the submersible drop cable and press firmly to ensure a perfect seal.
- Suspend the submersible drop cable with the joint vertically, making sure that the connectors are arranged correctly inside the tube and that the submersible drop cable is centered. The tube can now be filled with resin.

3. Filling with resin

Check the date stamping on the resin mixture.

Personal safety

Personnel should wear antistatic clothing made of natural fibre or of high-temperature resistant synthetic fibre. All parts of the body which have been in contact with the resin should be washed after completion of the work. Use gloves and an air-fed mask or protective glasses with a half-mask respirator.

Step	Description	Picture
1	The resin (two-component mass) is supplied in a plastic bag. The contents must be warmed to about 20 °C before the two components are mixed.	 <p>TM056944 0113</p>
2	Remove the plastic strip separating the contents of the bag.	 <p>TM056945 0113</p>
3	Mix the resin carefully by kneading the contents together for 3 minutes.	 <p>TM056946 0113</p>
4	Move the content to one end.	 <p>TM056947 0113</p>
5	Twist and squeeze the bag.	 <p>TM056948 0113</p>
6	Immediately cut off one corner of the bag.	 <p>TM056949 0113</p>

– Slide the rubber plug, if supplied, down the motor cable and push it securely into the top of the tube so that resin is squeezed out from the tube between the motor cable and the plug.

– Remove any excess resin from the outside of the tube.

– Wind the adhesive tape tightly around the tube, starting 15-20 mm from the top end of the tube and continue over the submersible drop cable/motor cable, figs. 5 and 10. Wind the tape carefully to ensure a perfect seal and make sure that the submersible drop cable/motor cable is centered in the tube.

– Hardening time of the resin is one hour, so the submersible drop cable and the joint should not be twisted in relation to each other during that time.

If you get resin on your hands, wash it off immediately with soap.

3.1 Possible defects

If the resin foams and has the consistency of foam rubber, this indicates that the resin contains water and that the cable is not completely dry. Renew the joint.

If the resin does not stick properly to the cable, the cable surfaces have not been clean, free from grease or sandpapered sufficiently, or the cable has not been completely dry. Renew the joint.

4. Disposal

This product or parts of it must be disposed of in an environmentally sound way:

1. Use the public or private waste collection service.
2. If this is not possible, contact the nearest Grundfos company or service workshop.

Subject to alterations.

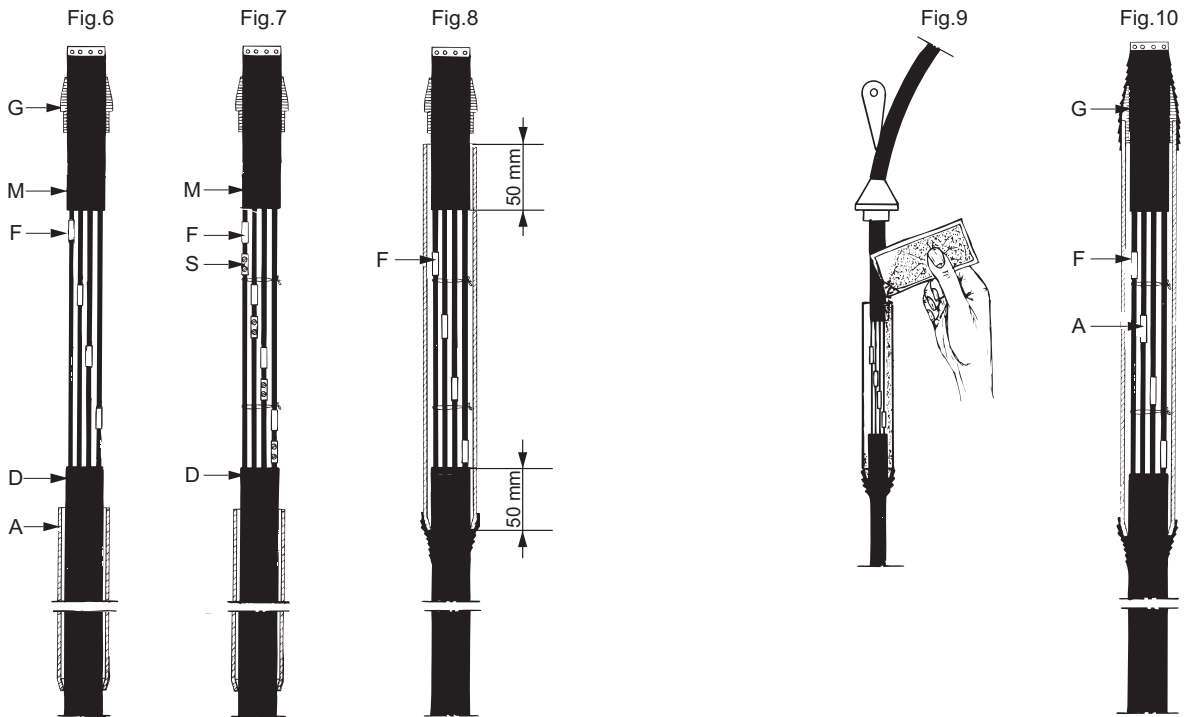
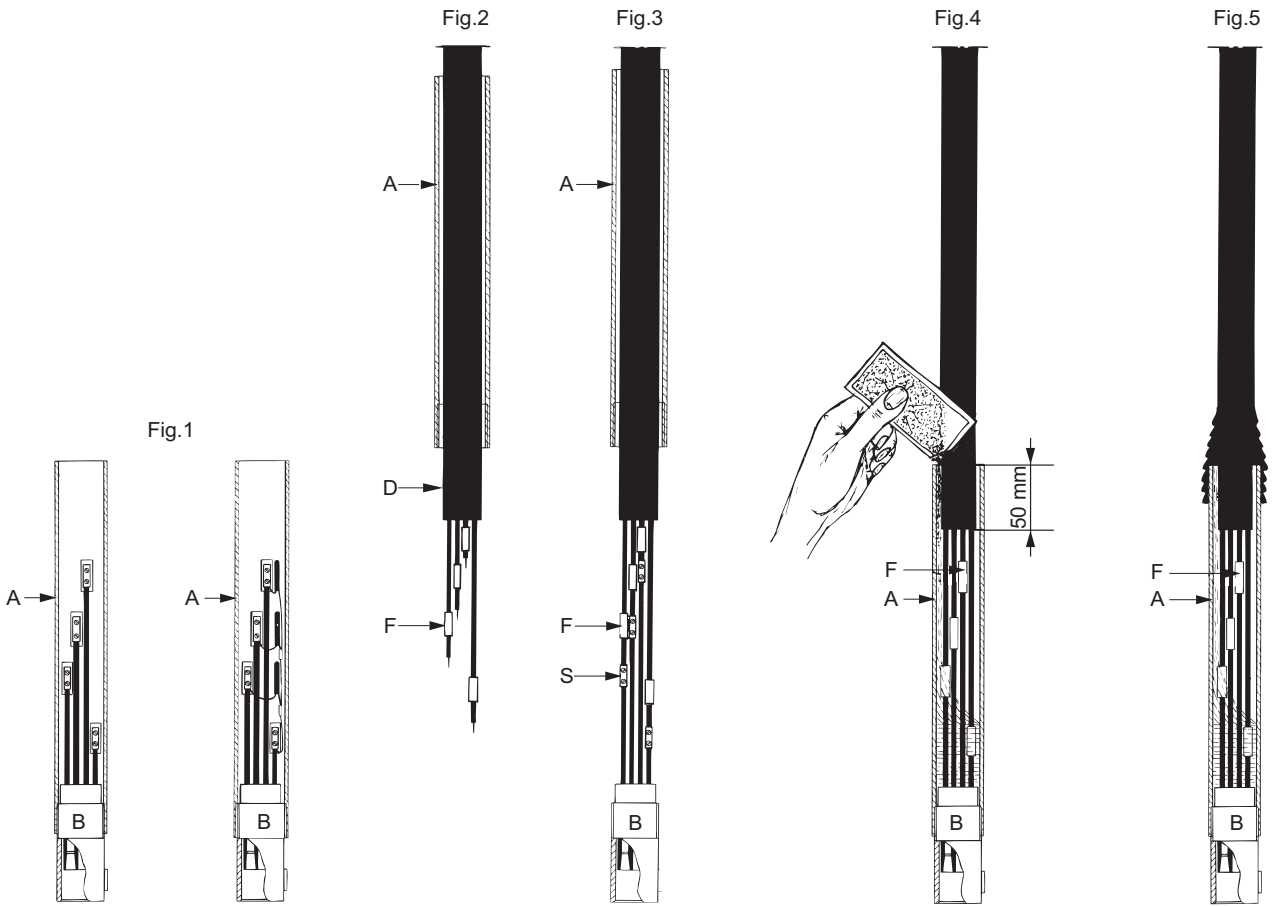


Fig. 1 Filling resin

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