

Operating Instructions

VEGAWAVE 62

Cable shortening set



Document ID: 32361



VEGA

Contents

1	About this document	3
1.1	Function	3
1.2	Target group	3
1.3	Symbols used.....	3
2	For your safety	4
2.1	Authorised personnel	4
2.2	Appropriate use.....	4
2.3	Warning about incorrect use.....	4
2.4	Environmental instructions	4
3	Product description	5
3.1	Configuration.....	5
3.2	Principle of operation.....	5
3.3	Packaging, transport and storage.....	5
4	Mounting	7
4.1	General instructions	7
4.2	Mounting sequence.....	8
5	Maintenance and fault rectification	16
5.1	Maintenance	16
5.2	Instrument repair	16
6	Dismount	17
6.1	Dismounting steps.....	17
6.2	Disposal	17
7	Supplement	18
7.1	Technical data	18

1 About this document

1.1 Function

This operating instructions provides all the information you need for mounting, connection and setup as well as important instructions for maintenance, fault rectification, the exchange of parts and the safety of the user. Please read this information before putting the instrument into operation and keep this manual accessible in the immediate vicinity of the device.

1.2 Target group

This operating instructions manual is directed to trained personnel. The contents of this manual must be made available to the qualified personnel and implemented.

1.3 Symbols used



Document ID

This symbol on the front page of this instruction refers to the Document ID. By entering the Document ID on www.vega.com you will reach the document download.



Information, tip, note

This symbol indicates helpful additional information.



Caution: If this warning is ignored, faults or malfunctions can result.
Warning: If this warning is ignored, injury to persons and/or serious damage to the instrument can result.



Danger: If this warning is ignored, serious injury to persons and/or destruction of the instrument can result.



Ex applications

This symbol indicates special instructions for Ex applications.



SIL applications

This symbol indicates instructions for functional safety which must be taken into account particularly for safety-relevant applications.



List

The dot set in front indicates a list with no implied sequence.



Action

This arrow indicates a single action.



Sequence of actions

Numbers set in front indicate successive steps in a procedure.



Disposal

This symbol indicates special instructions for disposal.

2 For your safety

2.1 Authorised personnel

All operations described in this documentation must be carried out only by trained, qualified personnel authorised by the plant operator.

During work on and with the device, the required personal protective equipment must always be worn.

2.2 Appropriate use

The cable shortening set is used to shorten VEGAWAVE sensors in cable version (VEGAWAVE 62).

2.3 Warning about incorrect use

Inappropriate or incorrect use of this product can give rise to application-specific hazards, e.g. vessel overfill through incorrect mounting or adjustment. Damage to property and persons or environmental contamination can result. Also, the protective characteristics of the instrument can be impaired.

2.4 Environmental instructions

Protection of the environment is one of our most important duties. That is why we have introduced an environment management system with the goal of continuously improving company environmental protection. The environment management system is certified according to DIN EN ISO 14001.

Please help us fulfil this obligation by observing the environmental instructions in this manual:

- Chapter "*Packaging, transport and storage*"
- Chapter "*Disposal*"

3 Product description

3.1 Configuration

Scope of delivery

The scope of delivery encompasses:

- Cable shortening set
- Documentation
 - This operating instructions manual

3.2 Principle of operation

Application area

The cable shortening set is a set of parts that is required for shortening a VEGAWAVE 62 in the PUR cable version.

The cable shortening set can be used, e.g., when the sensor has to be guided through a narrow tube.

The cable shortening set must not be used if the sensor is deployed for solids detection in water.

Functional principle

The cable of the sensor consists of a suspension cable, the electrical cables and an outer insulation.

3.3 Packaging, transport and storage

Packaging

Your instrument was protected by packaging during transport. Its capacity to handle normal loads during transport is assured by a test based on ISO 4180.

The packaging of standard instruments consists of environment-friendly, recyclable cardboard. For special versions, PE foam or PE foil is also used. Dispose of the packaging material via specialised recycling companies.

Transport

Transport must be carried out in due consideration of the notes on the transport packaging. Nonobservance of these instructions can cause damage to the device.

Transport inspection

The delivery must be checked for completeness and possible transit damage immediately at receipt. Ascertained transit damage or concealed defects must be appropriately dealt with.

Storage

Up to the time of installation, the packages must be left closed and stored according to the orientation and storage markings on the outside.

Unless otherwise indicated, the packages must be stored only under the following conditions:

- Not in the open
- Dry and dust free
- Not exposed to corrosive media
- Protected against solar radiation
- Avoiding mechanical shock and vibration
- Storage and transport temperature see chapter " *Supplement - Technical data - Ambient conditions*"

Storage and transport temperature

- Relative moisture 20 ... 85 %

Lifting and carrying

With instrument weights of more than 18 kg (39.68 lbs) suitable and approved equipment must be used for lifting and carrying.

4 Mounting

4.1 General instructions

Required tools:

- Measuring tape/Yardstick
- Cleaning cloth
- Marker (permanent)
- Bolt cutter
- Flat wrench SW 24
- Pipe tongs
- Skinning tool
- Cable stripping knife
- Side cutters
- Crimping tool
- Allen key 2 mm
- Hot air blower
- Talcum/Grease

In addition:

- Bench vice with Aluminium or plastic protective jaws

4.2 Mounting sequence

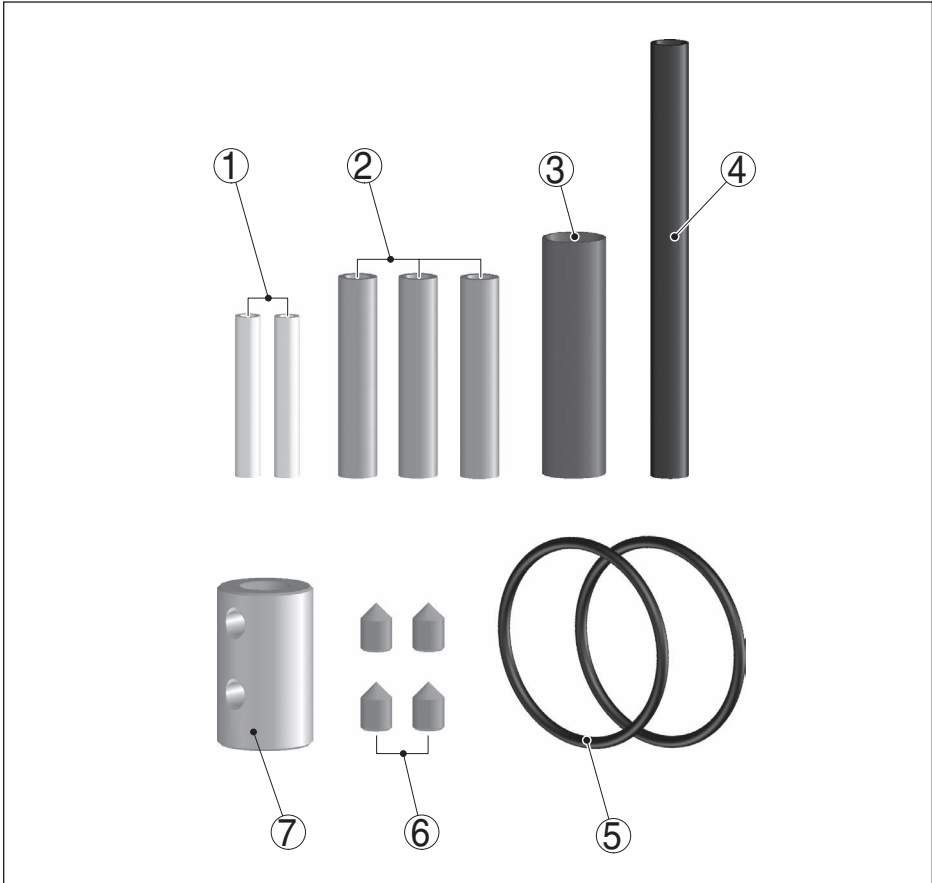


Fig. 1: Cable shortening set - Scope of delivery

- 1 Crimp connector yellow, 2 pieces, article no. 2.11444
- 2 Crimp connector red, 3 pieces, article no. 2.18710
- 3 Shrinking hose blue $\varnothing 8 \times 30$ mm, 1 pce., article no. 1.243
- 4 Shrinking hose black $\varnothing 3 \times 55$ mm, 1 pce., article no. 1.1207
- 5 O-rings $\varnothing 37 \times 2$ mm, 2 pcs., article no. 2.28878
- 6 Pins M4 x 6, 4 pcs., article no. 2.28894
- 7 Cable clamp $\varnothing 12 \times 20$ mm, 1 pce., article no. 2.28876

Mounting

The numbers refer to the figures on the following pages.

1. Interrupt power supply of the sensor and remove connection cable.
2. Dismount the sensor.
3. Clean cable (9) of the sensor.
4. Determine the new sensor length (L) according to the illustration with a measuring tape and mark with a marker.

Specifications on the sensor length (L) are available in the operating instructions of the sensor.

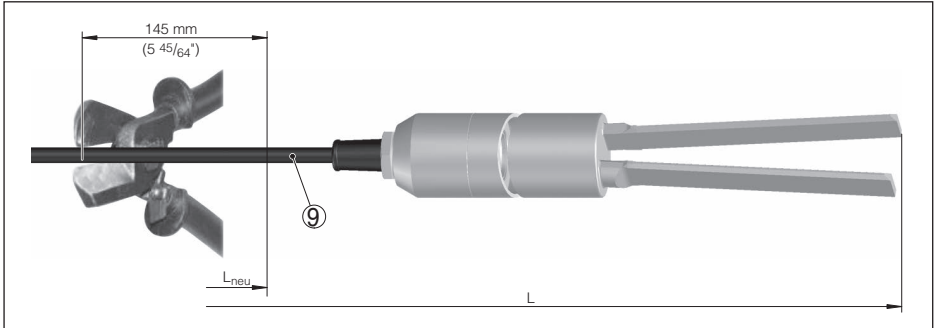


Fig. 2: Cut the cable with a bolt cutter

9 Cable

5. Cut the cable (9) with a bolt cutter approx. 145 mm (ca. 5.7 in) above the new sensor length (L).
6. Clamp the upper part of the electronics module (19) in a bench vice.

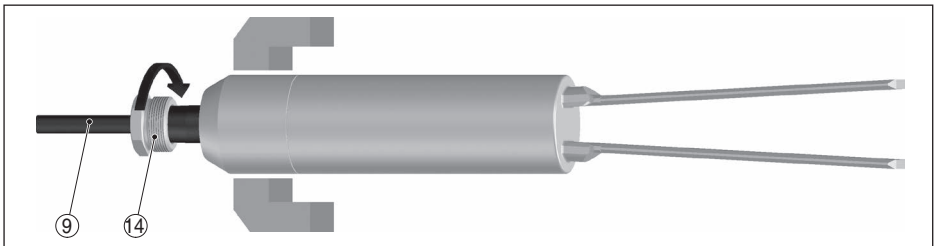


Fig. 3: Loosen the pressure screw

9 Cable

14 Pressure screw

7. Unwind pressure screw (14) with a fork wrench SW 24 so that the cable does not turn during the following disassembly.
8. Clamp the lower part of the vibrating element (below the screwed separating position) in the bench vice.
Do not clamp on the fork tines.

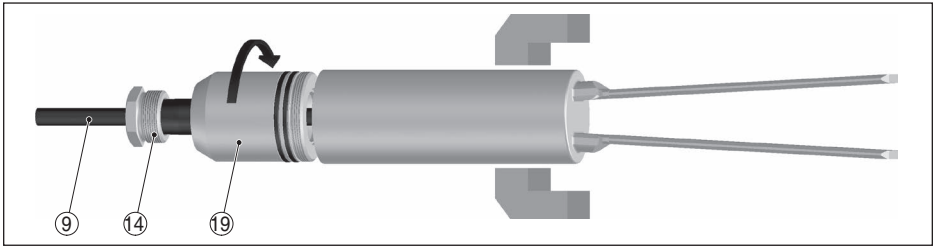


Fig. 4: Unwind the vibrating element

9 Cable

14 Pressure screw

19 Upper part of the electronics module

9. Loosen the upper part of the electronics module (19) with pipe tongs and unscrew it. Both threaded connections are secured with soluble locking paint.

Make sure that the cable (9) does not turn.

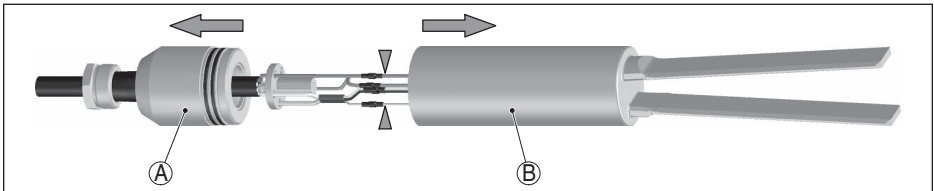


Fig. 5: Pull apart the vibrating element carefully - cut the wires

A Upper part of the electronics module

B Lower part of the vibrating element

10. Stretch out the two parts (A and B) carefully.

Cut the wires directly on the crimping with side cutters (see arrows).

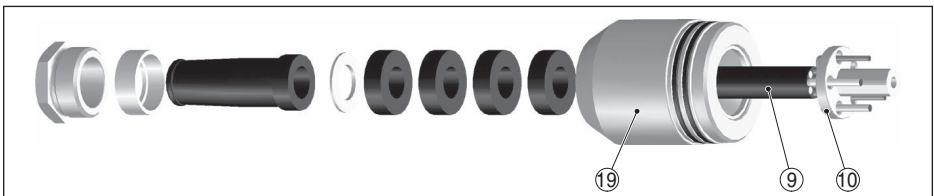


Fig. 6: Pull the cable out of the upper part of the electronics module

9 Cable

10 Perforated disc

19 Upper part of the electronics module

11. Pull the cut cable (9) out of the upper part of the electronics module (19).

Keep all parts for mounting.

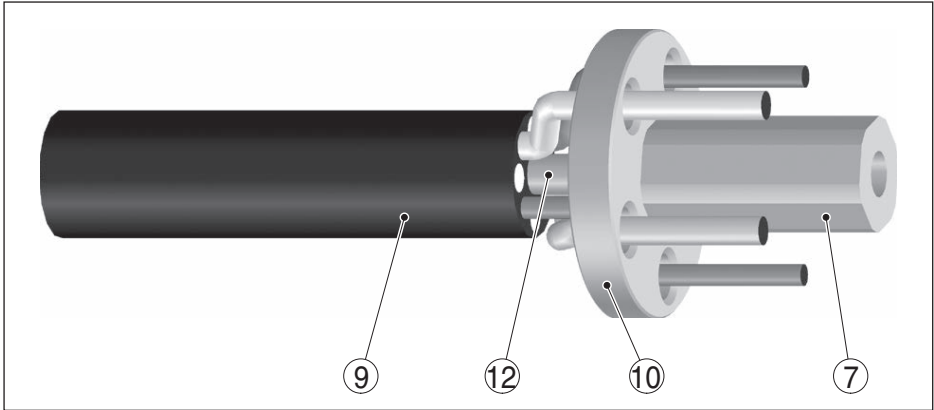


Fig. 7: Sever the suspension cable (12) with a bolt cutter

- 7 Cable clamp
- 9 Cable
- 10 Perforated disc
- 12 Suspension cable

12. Cut the suspension cable (12) with a bolt cutter and keep the perforated disc (10) for mounting.
13. Clean the remaining cable of the sensor (9) of oil and grease and rub it off with talcum.

The old cable crimping cannot be used anymore and must be correctly disposed of.

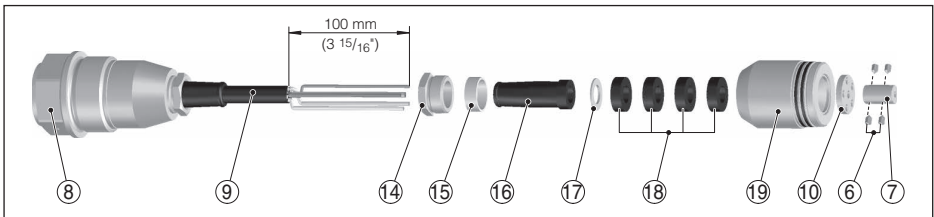


Fig. 8: Slide the parts onto the cable

- 6 Pins (4 pcs.)
- 7 Cable clamp
- 8 Mounting boss
- 9 Cable
- 10 Perforated disc
- 14 Pressure screw
- 15 Pressure ring
- 16 Rubber wrapping
- 17 Washer
- 18 Rubber rings (4 pcs.)
- 19 Upper part of the electronics module

14. Slide the individual parts (14, 15, 16, 17, 18, 19) according to the drawing onto the cable.

Make sure that the shoulder of the washer (17) points to the pressure ring.

15. Remove the outer insulation of the cable over a length of 100 mm (4 in).
16. Shorten the suspension cable (12) with a bolt cutter by 70 mm (2.8 in) (remaining length: 30 mm/1.2 in).

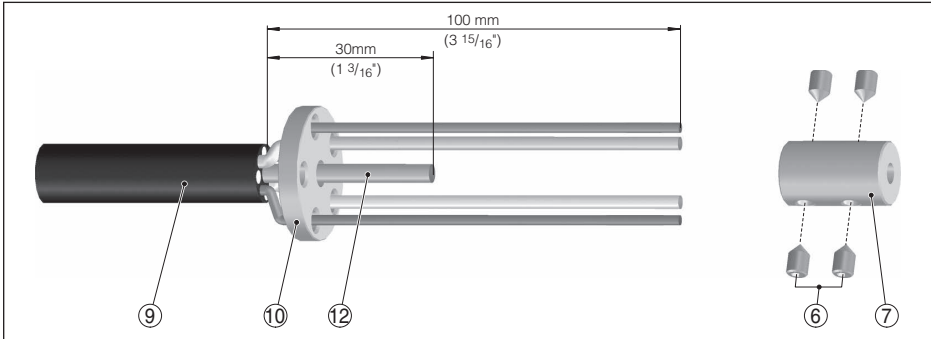


Fig. 9: Shorten the suspension cable - slide on the cable clamp

- 6 Threaded pins
- 7 Cable clamp
- 10 Perforated disc
- 12 Suspension cable

17. Place the perforated disc (10) onto the bare suspension cable (12) and lead the 4 wires (green, yellow, red, green-yellow) separately through the outer holes of the perforated disc (10).

Do not lead the beige plastic cords (11) through the perforated disc.

18. Slide the cable clamp (7) flush onto the suspension cable (12). While doing this, turn the cable clamp in the direction of the cable twist to avoid fraying the wire rope. The chamfered side facilitates insertion of the cable.
19. Tighten the threaded pins (6) evenly on all sides with an Allen wrench 2 mm. The threaded pins should all be screwed in to the same depth in the cable clamp (approx. 3 Nm/2.2 lbf ft).
20. Cut the beige plastic cords as short as possible with side cutters.
21. Remove the insulation of the shielded green (GN) and yellow (YE) wires over a length of 60 mm (2.4 in). Slide the textile slightly backward and open it a little with a sharp object in the back area. Make sure that the wires do not get damaged.

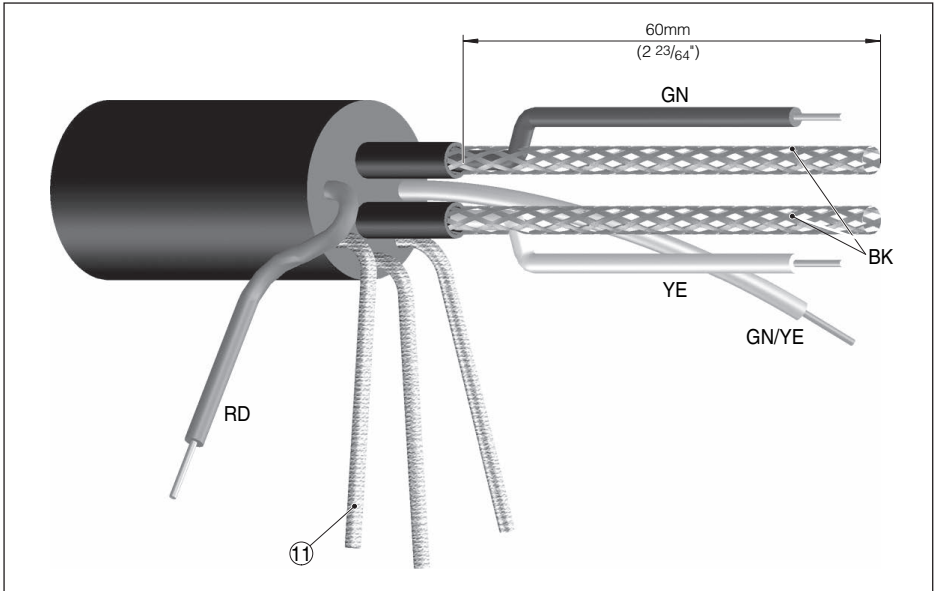


Fig. 10: Pull the cores out of the braiding

- 11 Plastic cords
- GN Green
- YE Yellow

- 22. Pull the yellow and green wires backward out of the braiding.
- 23. Exchange O-rings (5), grease thread and o-rings.

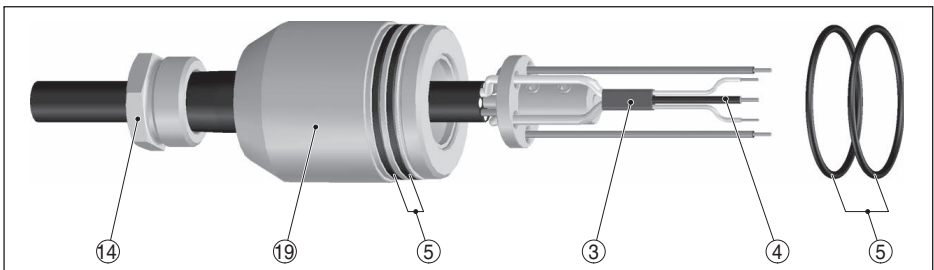


Fig. 11: Exchange O-rings - prepare the wires

- 3 Shrinking hose - blue
- 4 Shrinking hose - black
- 5 O-rings
- 14 Pressure screw
- 19 Upper part of the electronics module

- 24. Bring the shielding of the wires (yellow) and (green) together and twist them. Insulate the twisted shielding with the black shrinking hose (4) according to the drawing. Shrink over the transition green-black-yellow in the insulated core with the blue shrinking hose (3).

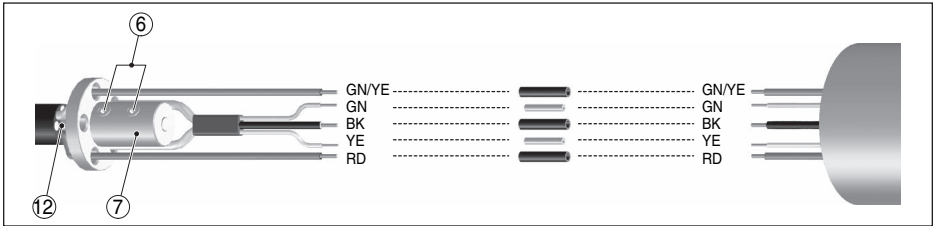


Fig. 12: Connect the cores

- 6 Threaded pins
- 7 Cable clamp
- 12 Suspension cable
- GN Green
- BK Black
- YE Yellow
- RD Red
- GN/YE Green-yellow

Green-yellow

25. Strip off the insulation of the wires over a length of 5 mm (0.2 in) and connect according to drawing with crimp connectors and crimping tools.

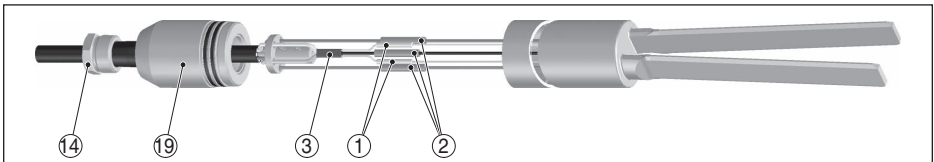


Fig. 13: Connect cores with crimping tools

- 1 Crimp connector - yellow (2 pieces)
- 2 Crimp connector - red (3 pcs.)
- 3 Shrinking hose - blue
- 14 Pressure screw
- 19 Upper part of the electronics module

26. Assemble the parts of the vibrating element (A + B). Provide the thread with screw retention. Make sure that no wires get squashed.

The cable must not turn.

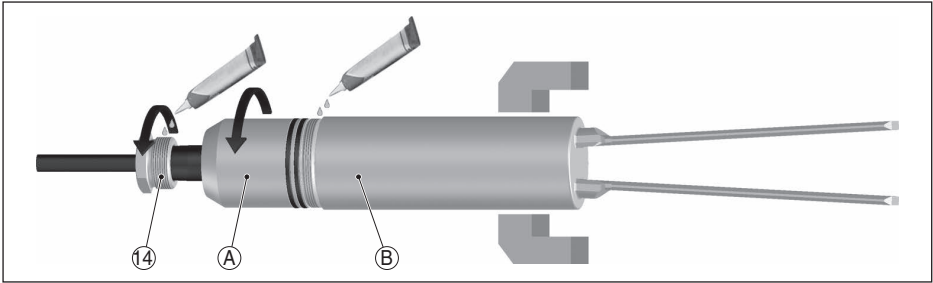


Fig. 14: Screw the vibrating element together

- 14 Pressure screw
- A Upper part of the electronics module
- B Lower part of the vibrating element

27. Screw the parts of the vibrating element together tightly. To do this, clamp the lower part of the vibrating element (B) into the bench vice and turn only the upper part of the vibrating element (A). The cable must not turn.
28. Pull the cable (9) to the top and press the seal rings (18) and the washer (17) into the upper part of the electronics module (19).
29. Slide the pressure screw (14) and the pressure ring (15) onto the rubber jacket (16).

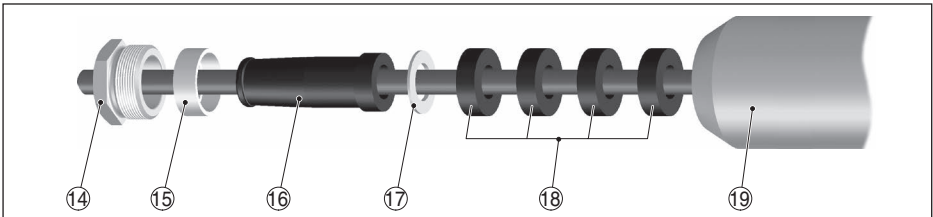


Fig. 15: Cable sealing

- 14 Pressure screw
- 15 Pressure ring
- 16 Rubber wrapping
- 17 Washer
- 18 Rubber rings
- 19 Upper part of the electronics module

30. Provide the pressure screw (14) with screw retention and screw it into the upper part of the electronics module (19).
31. Tighten the pressure screw (14) with the fork wrench SW 24 (approx. 6 Nm/4.4 lbf ft).
32. Check the length of the sensor.
33. Mount the sensor.
34. Connect the sensor according to the operating instructions of the sensor.
35. Check the correct switching function of the sensor.

5 Maintenance and fault rectification

5.1 Maintenance

Maintenance

If the device is used properly, no special maintenance is required in normal operation.

Cleaning

The cleaning helps that the type label and markings on the instrument are visible.

Take note of the following:

- Use only cleaning agents which do not corrode the housings, type label and seals
- Use only cleaning methods corresponding to the housing protection rating

5.2 Instrument repair

Take note of the specifications in the sensor documentation.

6 Dismount

6.1 Dismounting steps

Note chapter "*Mounting*" and carry out the described steps in reverse order.

6.2 Disposal

The cable shortening set consists of materials which can be recycled by specialised recycling companies.

Materials: see chapter "*Technical data*"

Take note of the specifications in the sensor documentation.

7 Supplement

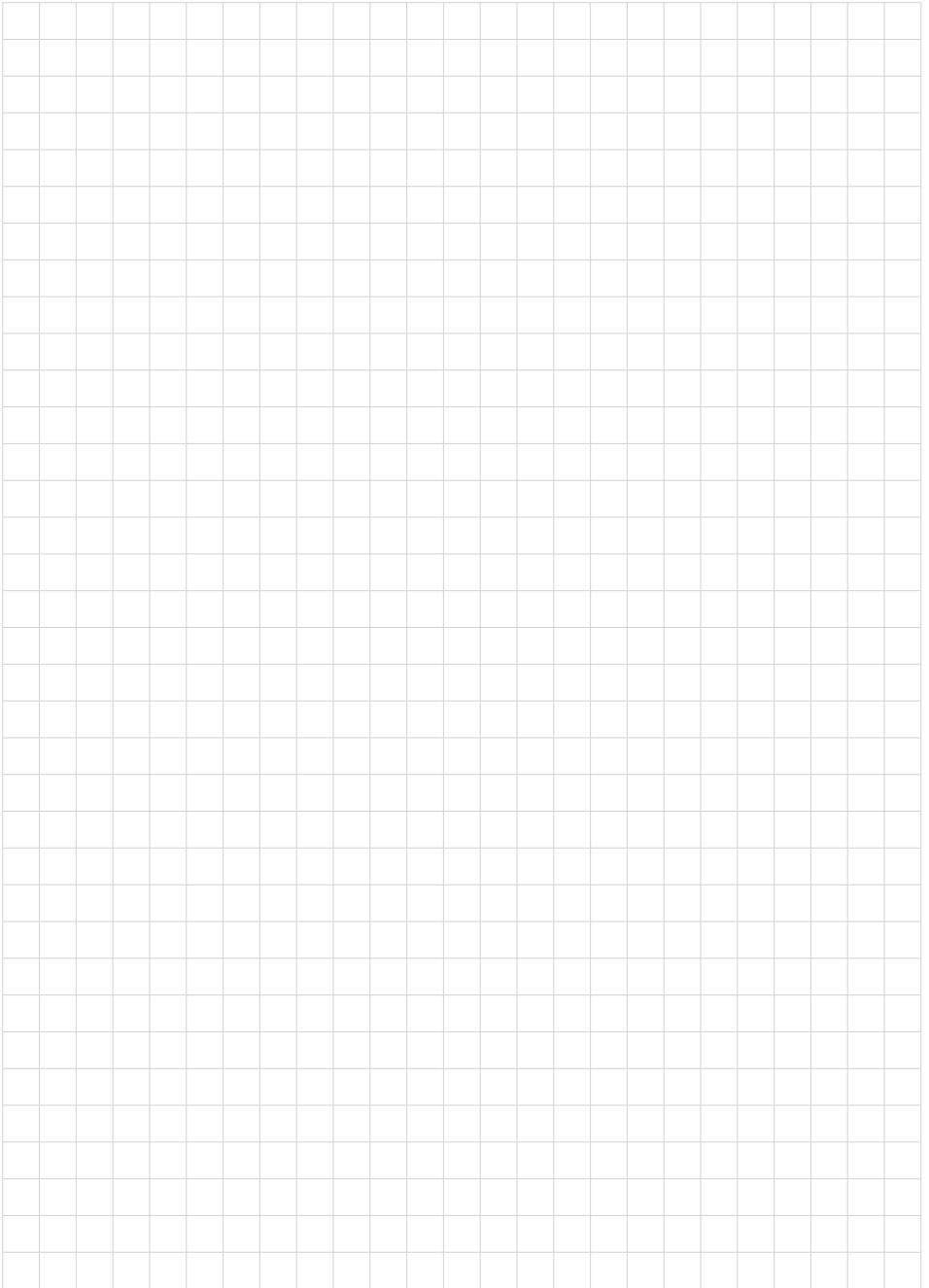
7.1 Technical data

General data

Materials, wetted parts	The cable shortening set does not alter the durability of the sensor. The materials used are listed in the operating instructions of the sensor.
Sensor length	0.3 ... 80 m (1 ... 262 ft)

Approvals

The respective sensor approvals are not qualified or restricted in any way when the cable shortening set is correctly applied.



Printing date:

VEGA

All statements concerning scope of delivery, application, practical use and operating conditions of the sensors and processing systems correspond to the information available at the time of printing.

Subject to change without prior notice

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