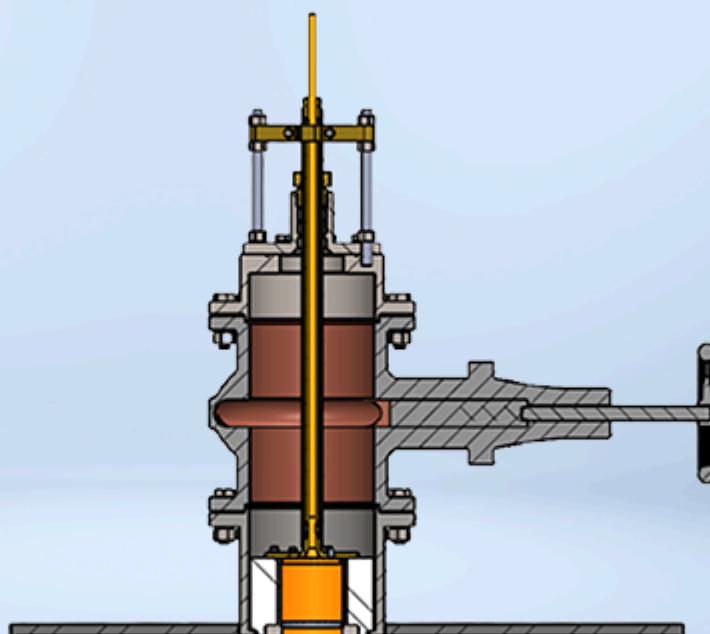


DL2SJ-SA

Single Bottom Sea Valve Installation manual



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Contents

- 1 Document information..... 4**
- 2 Installation..... 5**
 - 2.1 Important..... 5
 - 2.2 Space considerations..... 5
 - 2.3 Component overview..... 6
 - 2.3.1 Overview of the mounting kit..... 8
 - 2.3.2 Overview of the top assembly..... 9
 - 2.4 Assemble the extension tube and sensor..... 10
 - 2.5 Assemble the sea valve..... 12
 - 2.6 Lower the sensor..... 13
 - 2.7 Final assembly..... 15
- 3 Airing.....16**
- 4 Sensor removal..... 17**

1 Document information

This manual covers the operation and installation of SKIPPER DL2SJ-SA, which is a retrofit for replacing a JRC JLN-550 with a Jotron SKIPPER DL2 sensor. All images and drawings in this manual are illustrative. The supplied product may show minor differences in design, components, or accessories. These deviations do not change the product's intended use.

Document revision log				
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2 Installation

2.1 Important

**CAUTION:**

Be aware that the Sea Valve contains high precision parts and therefore proper handling when mounting is essential for the final result.

When handling the Sea Valve, all lifting devices must be attached on the outside of the valve. It is very important to not insert any chains, wire, rope or any other device into the valve chamber. This to avoid damaging and any kind of pollution of the Sea Valve.

The SKIPPER DL2SJ-SA is delivered partly assembled for transport. The parts necessary for final assembly will be provided in the shipment. Protect the active element of the transducer/sensors during transport and installation, and do not paint the surface.

The active surface of the transducer must be installed with front face a **maximum of +/-7 degree to the ships horizontal plane**. (Echo Sounder).

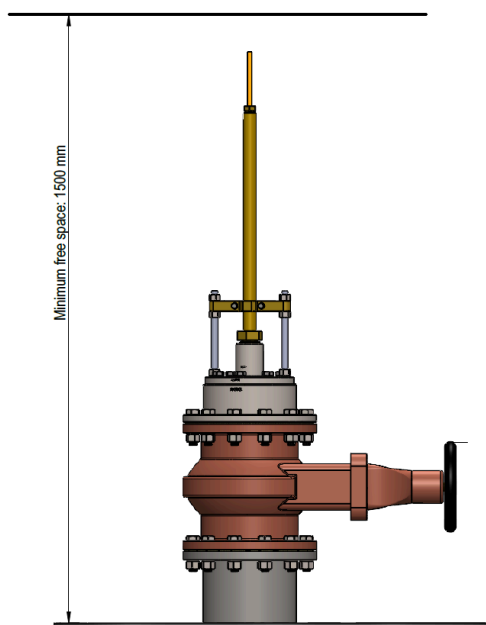
**Important:**

Sensors for Speed Log and Echo Sounder are delivered with a fixed cable. Attention must be taken to allow easy replacement/pulling of new cable during maintenance.

2.2 Space considerations

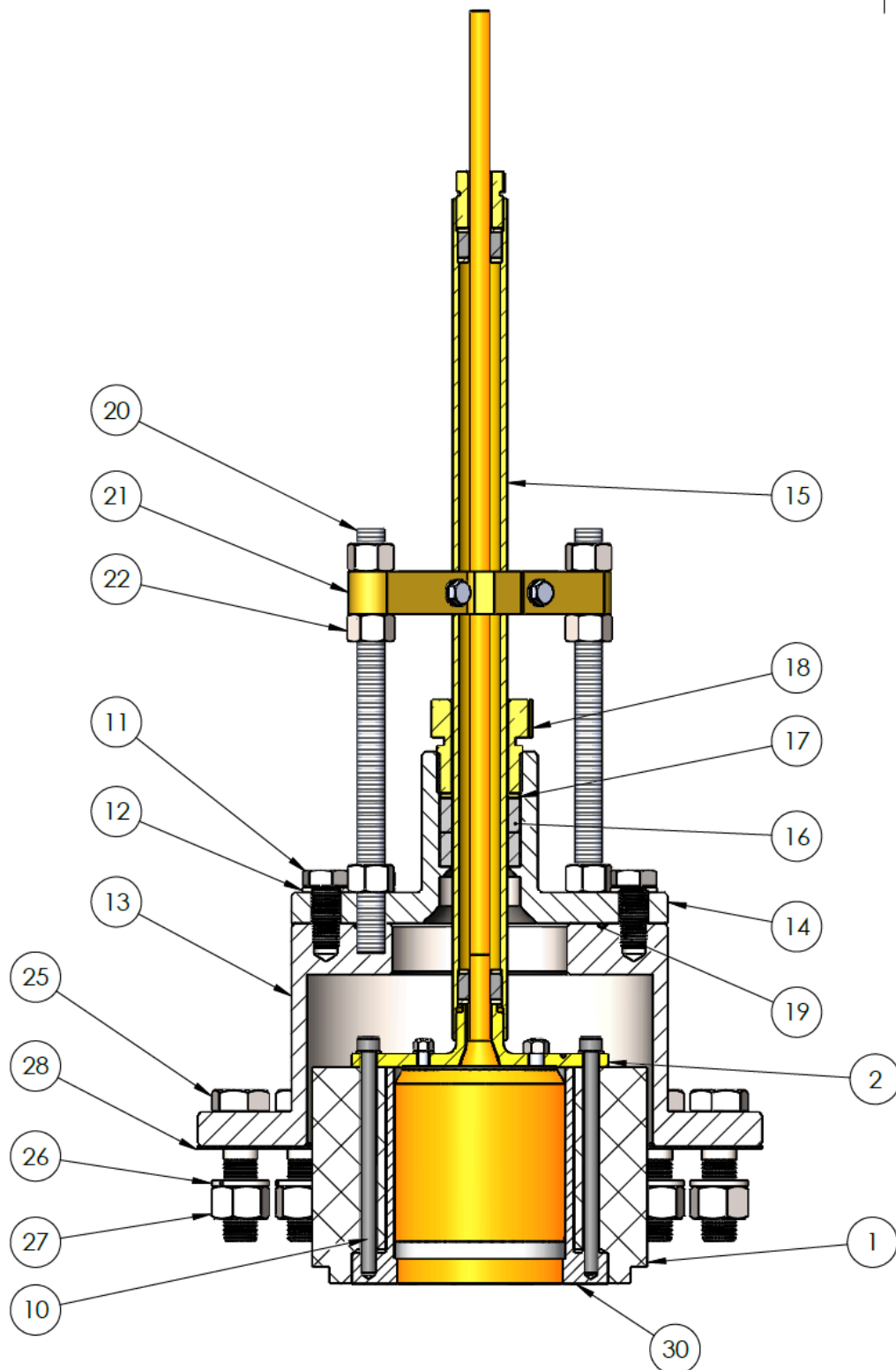
The minimum installation height for the SKIPPER DL2SJ-SA retrofit in the JLN-550 valve is 1500 mm.

Figure 1. Space considerations



2.3 Component overview

Figure 2. Overview of DL2SJ-SA

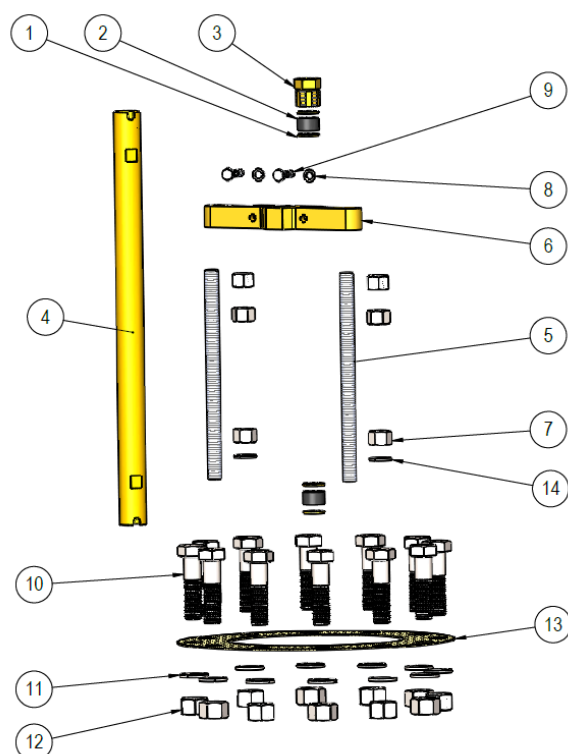


Pos.	Part nr.	Description	Qty.
1	DB-2212	Adaptor Housing POM for JLN-550	1
2	DB-2015	Cover Brass JLN-550	1
3	DL2S-277-ZA	DL2 Sensor Molded 40m cable	1
4	ZOA-01125	Washer M6 DIN125 A4	1
5	ZOA-01143	Lock nut M6 DIN985 A4	1
6	ZOA-01011	Lock Nut M8 DIN985 A4	1
7	DB-2037	Washer $\varnothing 25,9 \times 2,5 \varnothing 13$	4
8	DB-2038	Gasket $\varnothing 25,9/12 \times 15\text{mm}$	2
9	DB-2039	Nut M28 Brass	1
10	ZOA-01220	Screw M8 x 130 DIN912 A4 ISO 4762	4
11	ZOA-01056	Screw M16x35 DIN931 A4	6
12	ZOA-01035	Spring washer M16 DIN127B A4	6
13	DB-2214	Intermediate Element for JLN-550	1
14	DB-2031	Top Flange for XB-100/200-XX	1
15	DB-2026	Extension Tube 0,5m SB-100	1
16	DB-2035	Gasket $\varnothing 47 \varnothing 32,5 \times 20\text{mm}$	2
17	DB-2040	Washer $\varnothing 46 \times 2,5 \varnothing 32,5$	1
18	DB-2036	Nut M50 Brass	1
19	ZOA-01024	Nitril O-Ring $\varnothing 3,53 \times 139,30\text{mm}$	1
20	DB-2034	Safety Bolt, M16 X 250	2
21	DB-2054	Clamp Unit for XB-60/100/200-XX, Brass	1
22	ZOA-01036	Nut M16 DIN934 A4	6
23	ZOA-01070	Split washer M8 DIN127 A4	6
24	ZOA-01083	Screw M8x30 mm DIN933 A4	2
25	ZOA-01063	Screw M20x75 mm DIN931 A4	12
26	ZOA-01061	Spring Washer M20 DIN 127B A4	12
27	ZOA-01062	Nut M20 DIN934 A4	12
28	DB-2215	Gasket $\varnothing 330, \varnothing 210, t 1,5$ for JLN-550	1
29	ZOA-01069	Screw M4x8 mm DIN7991 A4	1

Pos.	Part nr.	Description	Qty.
30	TC-2017	Metal adaptor for SRD500	1

2.3.1 Overview of the mounting kit

Figure 3. Mounting kit - Exploded view



Pos.	Part nr.	Description	Qty.
1	DB-2037	Washer Ø25,9x2,5 Ø13	4
2	DB-2038	Gasket Ø25,9/12 x 15mm	2
3	DB-2039	Nut M28 Brass	1
4	DB-2026	Extension Tube 0,5m	1
5	DB-2034	Safety Bolt, M16 X 250	2
6	DB-2054	Clamp Unit, Brass	1
7	ZOA-01036	Nut M16 DIN934 A4	6
8	ZOA-01070	Split washer M8 DIN127 A4	2
9	ZOA-01083	Screw M8x30 mm DIN933 A4	2
10	ZOA-01063	Screw M20x75 mm DIN931 A4	12

Pos.	Part nr.	Description	Qty.
11	ZOA-01061	Spring Washer M20 DIN127B A4	12
12	ZOA-01062	Nut M20 DIN934 A4	12
13	DB-2215	Gasket Ø330, Ø210, t 1,5 for JLN-550	1
14	ZOA-01035	Spring washer M16 DIN127B A4	2

2.3.2 Overview of the top assembly

This section provides an overview of the components in the top assembly. The figure illustrates the assembly, and the table describes each component in detail. All items in [Figure 4: Exploded view of the top assembly \(on page 9\)](#) are delivered preassembled.

Figure 4. Exploded view of the top assembly

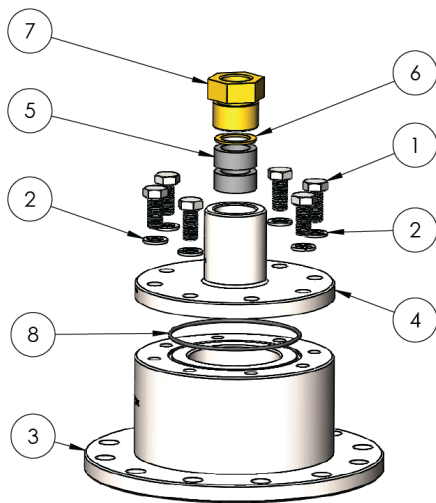
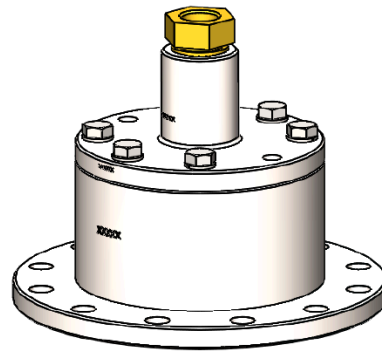


Figure 5. Assembled view

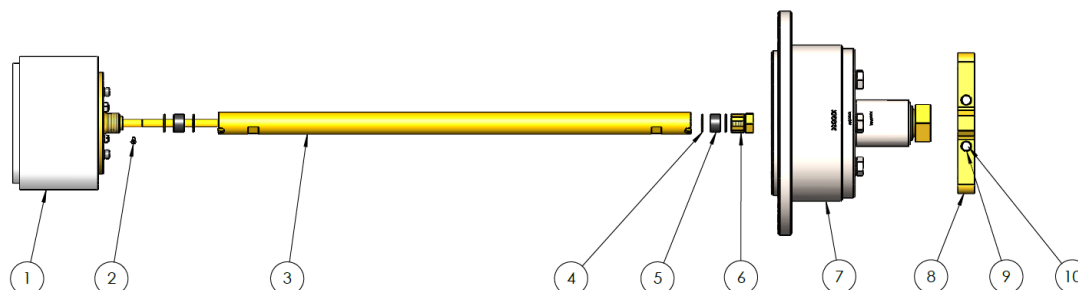


Pos.	Part number	Description	Qty.
1	ZOA-01056	Screw M16x35 DIN931 A4	6
2	ZOA-01035	Spring washer M16 DIN127B A4	6
3	DB-2214	Intermediate Element for JLN-550	1
4	DB-2031	Top Flange	1
5	DB-2035	Gasket Ø47 Ø32,5 X 20mm	2
6	DB-2040	Washer Ø46x2,5 Ø32,5	1
7	DB-2036	Nut M50 Brass	1
8	ZOA-01024	Nitril O-Ring Ø3,53x139,30mm	1

2.4 Assemble the extension tube and sensor

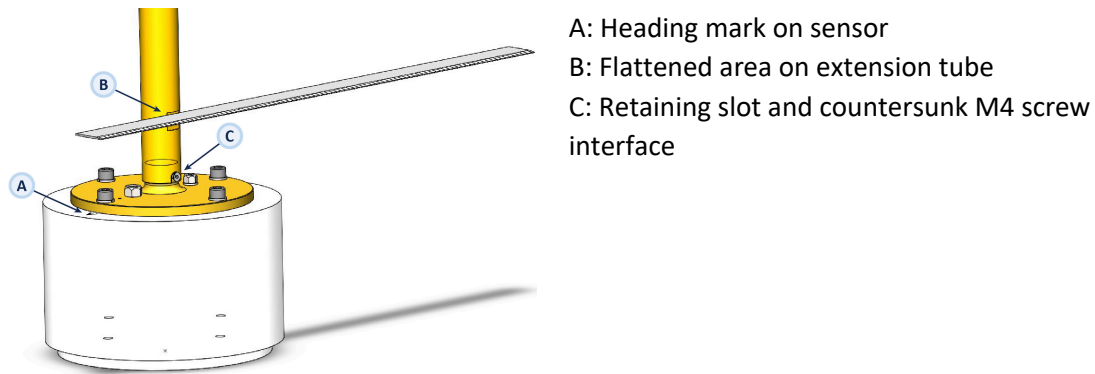
When delivered, the sensor is pre-assembled in the housing (item 1 in [Figure 6: Assemble the extension tube and sensor \(on page 10\)](#)). To assemble the extension tube, follow the instructions below.

Figure 6. Assemble the extension tube and sensor



Pos.	Part number	Description	Qty.
1	DL2SJ-S-KIT	Sensor & adaptors pre-mounted	1
2	ZOA-01069	Screw M4x8 mm DIN7991	1
3	DB-2025-70	Sea Valve, Extention Tube 0,7m	1
4	DB-2037	Washer Ø25,9x2,5 Ø13	4
5	DB-2038	Gasket Ø25,9/12 x 15mm	2
6	DB-2039	Nut M28	1
7	DL2SJ-M-KIT1	Metal Kit premounted	1
8	DB-2054	Clamp Unit for XB-60/100/200	1
9	ZOA-01070	Split washer M8 DIN127 A4	6
10	ZOA-01083	Screw M8x30 mm DIN933	2

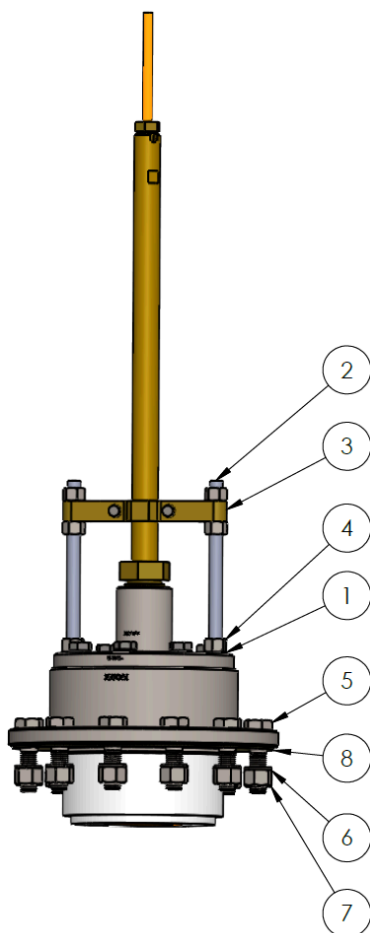
Figure 7. Details on sensor and extension tube



1. Thread a washer, gasket, and another washer (item 4 and 5 in [Figure 6: Assemble the extension tube and sensor \(on page 10\)](#)) on the sensor cable.
2. Thread the extension tube (item 3) on the cable.
3. Thread a washer, gasket, and another washer (item 4 and 5) on the cable.
4. Unscrew the countersunk M4 screw (item 2).
5. Tighten the extension tube until the hole for the countersunk M4 screw aligns with the retaining slot, see [Figure 7: Details on sensor and extension tube \(on page 11\)](#).
Ensure the flattened area on the extension tube aligns with the heading mark on the top/bottom of the sensor. The flat side should be on the port side of the vessel to ensure forward orientation.
6. Apply threadlocker (Loctite® 222 or similar; user-supplied) to the threads of the countersunk M4 screw. Insert and tighten the screw.
7. Mount the M28 nut (item 6) on the extension tube. Tighten until the gasket compresses around the cable.
8. Thread the sensor assembly through the top assembly (item 7).
9. Thread the clamp unit on the sensor cable (item 8).

2.5 Assemble the sea valve

Figure 8. Sea valve assembly

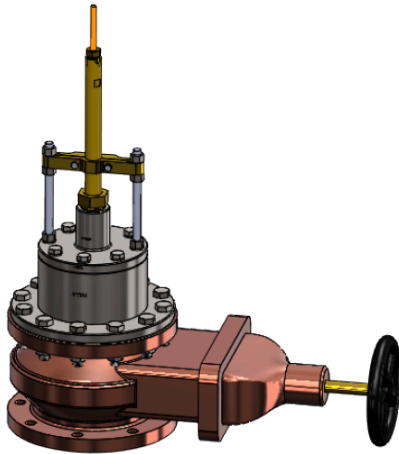


Pos.	Part number	Description	Qty.
1	ZOA-01035	Spring washer M16 DIN127B A4	8
2	DB-2034	Safety Bolt, M16 X 250	2
3	DB-2054	Clamp Unit for XB-60/100/200-XX, Brass	1
4	ZOA-01036	Nut M16 DIN934 A4	6
5	ZOA-01063	Screw M20x75 mm DIN931 A4	12
6	ZOA-01061	Spring Washer M20 DIN 127B A4	12
7	ZOA-01062	Nut M20 DIN934 A4	12
8	DB-2215	Gasket Ø330, ø210, t 1,5 for JLN-550	1

1. Place the 1.5 mm gasket on top of the gate valve element, positioned between the gate valve and the top assembly, see item 8 in [Figure 8: Sea valve assembly \(on page 12\)](#).
2. Secure the top assembly with 12 bolts, washers, and nuts (item 5, 6, and 7). Torque: 130 Nm.

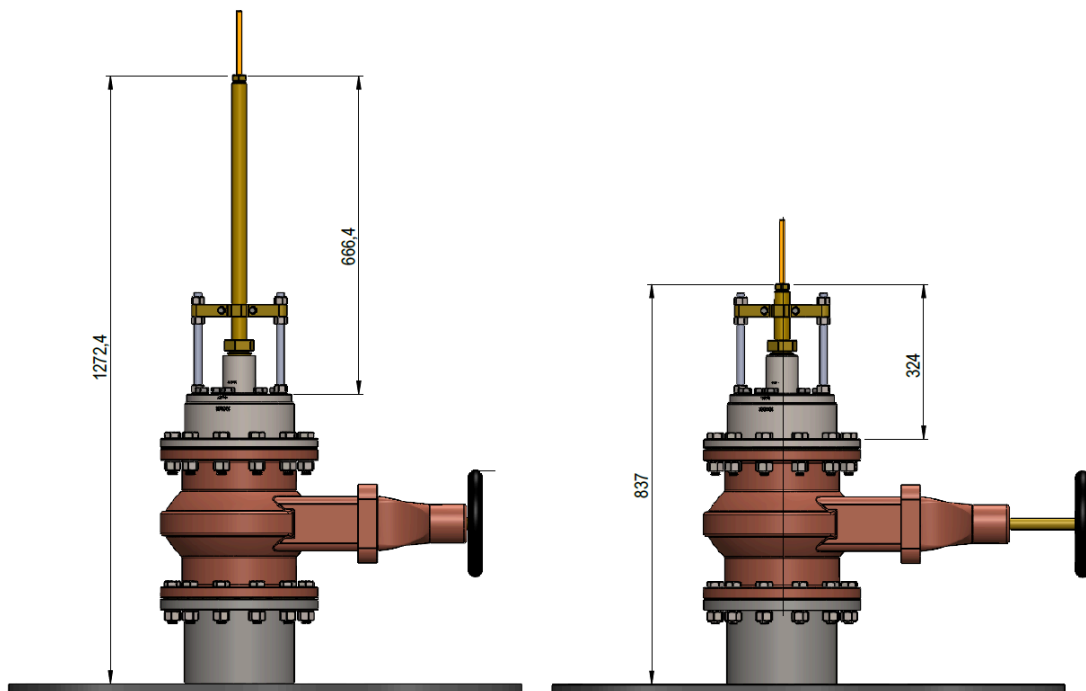
3. Mount the safety bolts, M12 nuts, and clamp unit.
4. When all items are aligned, tighten all screws and bolts.

Figure 9. Assembled view



2.6 Lower the sensor

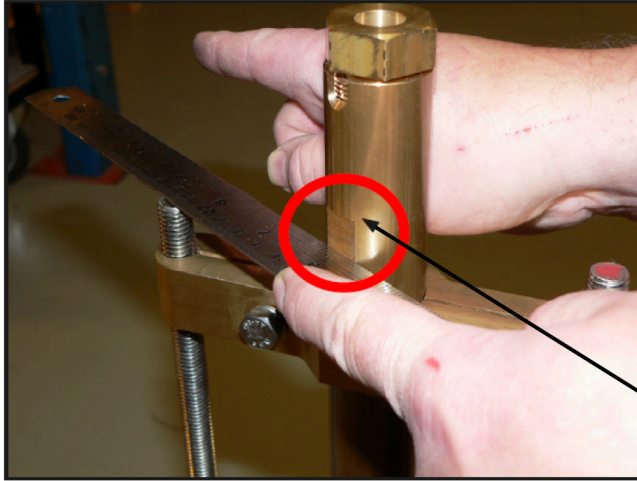
Figure 10. Distance for lowering the sensor



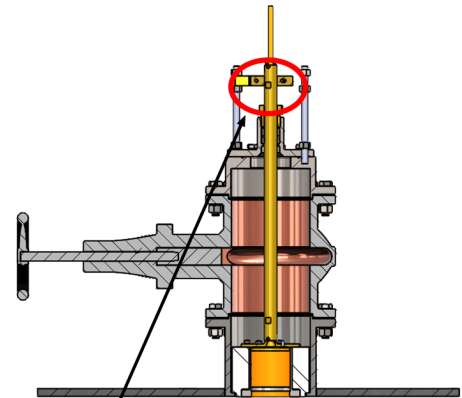
1. Ensure the countersunk M4 screw on the sensor is in contact with the retraining slot on the extension tube.
See instructions in [Assemble the extension tube and sensor \(on page 10\)](#) for details.
2. Open the sea valve, lower the sensor unit and extension tube.
See [Figure 10: Distance for lowering the sensor \(on page 13\)](#) for lowering height information.

3. Rotate the extension tube to align the sensor to point forward (ahead).

Ensure that the flattened area on the extension tube is aligned with the vessel's centerline, see images below. The flat side should be on the port side of the vessel to ensure sensor forward orientation.



A flat object points fore/aft.



The flat side should be on the port side.



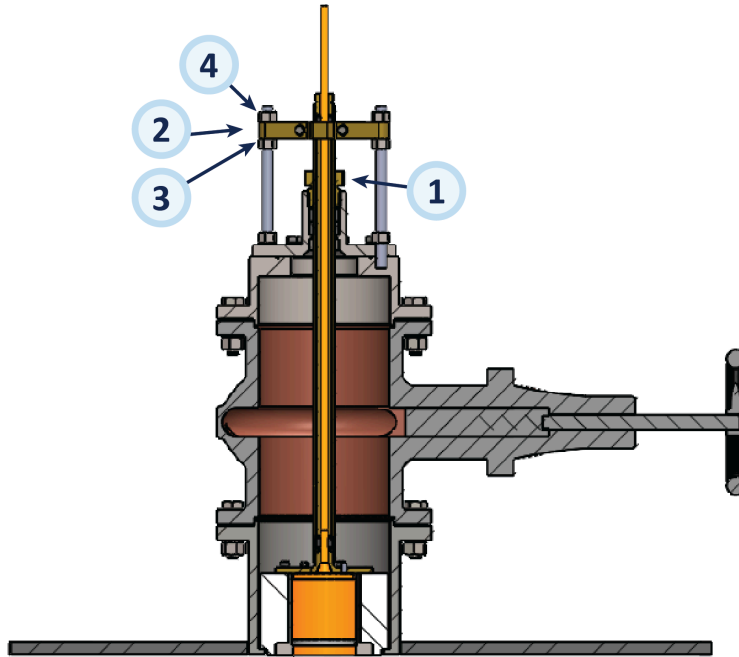
Note:

Sensor forward orientation is only required for Speed Logs. Echo sounder transducers require no forward orientation.

4. Tighten the two M8 screws on the clamp unit and the M12 nuts.

2.7 Final assembly

Figure 11. Final assembly



Follow the steps below to mount the M50 nut and the clamp unit:

1. Tighten the M50 nut.
Torque: 98 Nm.
2. Push down the clamp unit, onto the M50 nut and tighten the two M8 screws (with lock washer).
Torque: 40 Nm.



Important:

The clamp unit must be fitted on top of the M50 nut to lock the nut. This is done to give extra security.

3. Screw the two M16 nuts slightly up to the clamp unit.
4. Tighten the two M16 nuts (with lock washer) on the opposite side.
Torque: 130 Nm.

Protect sensor!

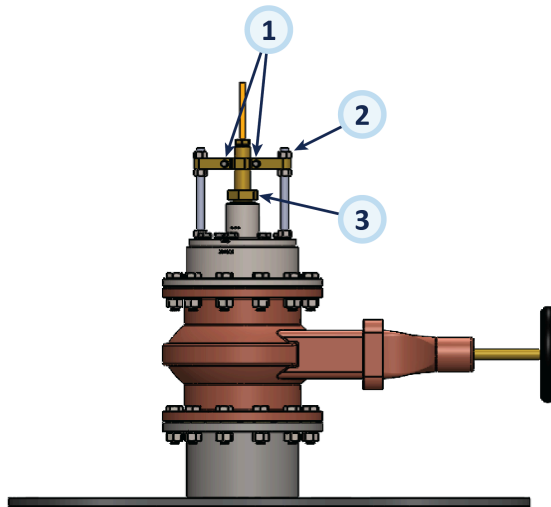
- When launching ship, lift sensor 50 mm.
- When dry docking ship, lift sensor 50 mm.

Check that the transducer/sensor housing, when fully inserted, is flush with the lower surface of the bottom flange.

3 Airing

After the ship is launched, it is necessary to let the compressed air out of the sea valve.

Figure 12. Airing

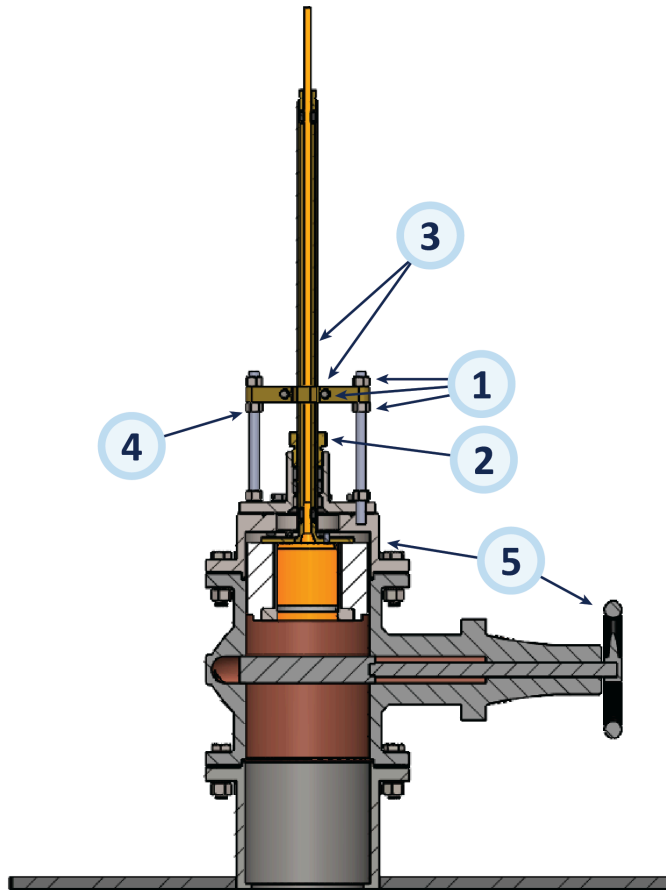


1. Lift the clamp unit approximately 10 mm and tighten the two M8 screws to hold it in position.
2. Screw the two M16 nuts slightly down to the clamp unit.
3. Unscrew the M50 nut until it reaches the clamp unit to vent the air. When water begins to trickle out, tighten the M50 nut properly.

4 Sensor removal

To disassemble the sensor, follow the steps and figure.

Figure 13. Sensor removal



1. Unscrew and lift the clamp unit approximately 20 mm, then tighten the two M8 screws to hold it in place.
2. Loosen the M50 nut carefully until water begins to trickle out.
3. When disassembling the extension tube at deep drafts, loosen the two M8 screws carefully.
4. If water pressure does not raise the extension tube by itself, use the two M12 nuts to lift it upward.
5. When the sensor housing reaches its mechanical upper position, close the gate valve.

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