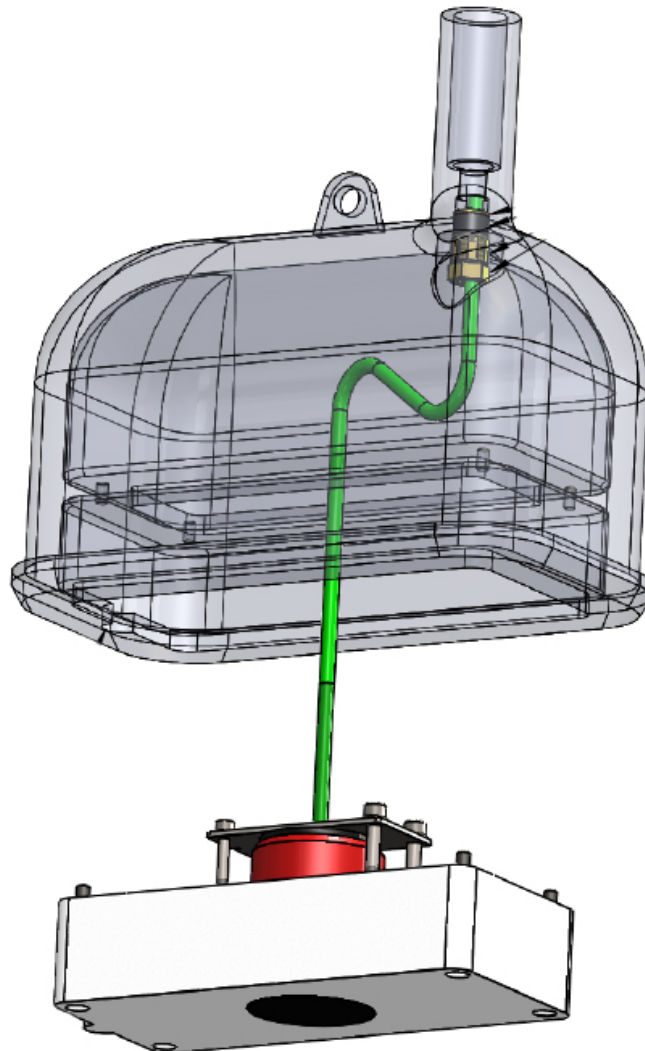


# SKIPPER

## Installation manual DL850S27DR-SB DL850 Doppler Speed log sensor DOLOG 2X replacement



Document no: DM-D100  
Rev: 2446  
For KIT-DOLOG-M1-SA rev 03  
Date: 2024.11.11

 **JOTRON**  
**SKIPPER**

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## INTRODUCTION

This document describes how to install a SKIPPER DL850 100mm sensor into an existing DOLOG 2X (DOLOG 21/22/23) tank.

The Rev 03 of KIT-DOLOG-M1-SA is a plastic adaptor replacing the heavy steel adaptor from rev 00

The sensor replacement is recommended to be performed in dry dock. It is possible to replace the sensor with vessel afloat.

The replacement will require new DL850 Operator unit, transceiver unit and sensor. For Operator unit and Transceiver unit installation instruction, please see respective manuals.

This procedure will mainly cover replacement of DOLOG sensor.

DL850S27DR-SB consist of:

- DL850S27DR-ZB Sensor DL850 270kHz wiuth plugged cable end
- KIT-DOLOG-M1-SA Kit DOLOG 2X
- KIT-DOLOG-T1-SA. Kit Mounting tools DOLOG 2X

# PREPARE SPEED LOG REPLACEMENT

The DOLOG speed log to be replaced consist of the following main parts:

1: Operator Unit.

To be replaced by SKIPPER DL850 Operator unit

2: Cable from operator unit to Electronic unit.

May be reused for DL850

3: Electronic unit

May be replaced by a terminal box for DL850 communication.

4: Cable Electronic unit to terminal box.

May be reused for DL850

5: Terminal box.

To be replaced by DL850 Transceiver unit (24VDC and/or115/220V AC requirement)

6: Sensor cable

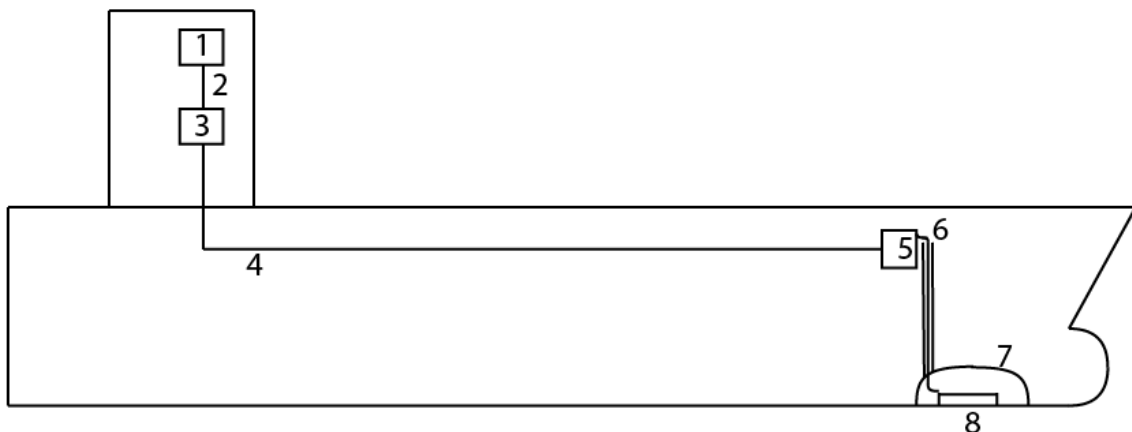
To be replaced by DL850 sensor with 40m cable

7: DOLOG tank

To be reused for installation of DL850 sensor with DOLOG adaptor

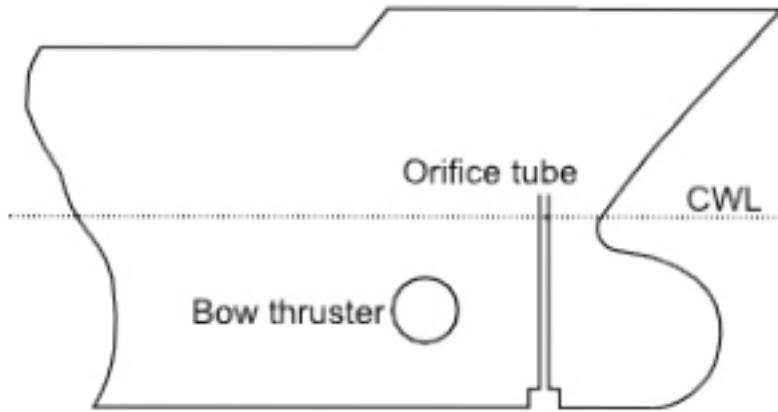
8: DOLOG sensor

To be replaced by DL850 sensor with 40m cable

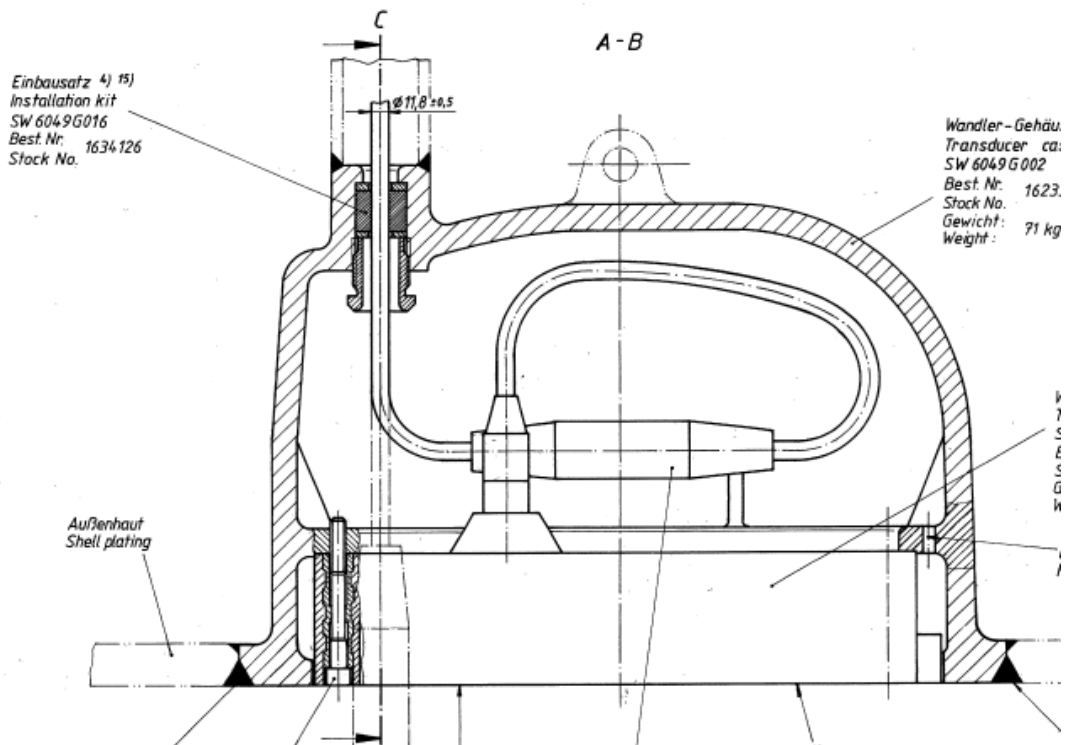


The sensor cable pipe (orifice tube) on the housing is part of the ship hull and has to reach above waterline (CWL=Construction water line.)

If sensor is replaced by diver in water this construction will enable water to come into the orifice tube construction but will stop at the level of water line.



The pipe has a watertight gasket in both ends.



# INSTALLING SENSOR ADAPTOR KIT

Install the sensor into the DOLOG adaptor as described in drawing.  
Sensor forward (ahead) mark to be correctly positioned.

**Exploded**

**Tightening Torque:**  
**M6 = 8Nm**  
**M8 = 18Nm**  
**M10 = 18Nm**

**Assembled**

| POS. | PART NR.    | DESCRIPTION                        | QTY. |
|------|-------------|------------------------------------|------|
| 1    | TC-2067     | Adaptor plate for DOLOG            | 1    |
| 2    | TC-2068     | Insert OD13mm ID11mm L67,5mm       | 4    |
| 3    | ZOA-01229   | Screw M10x80 mm DIN912 A4          | 4    |
| 4    | ZOA-01242   | Screw, Allan key M8x80, DIN912, A4 | 2    |
| 5    | ZOA-01071   | Spring washer M10 DIN127B A4       | 6    |
| 6    | TC-2065     | Bar Atlas Dolog for DL850S27       | 1    |
| 7    | ZOA-01011   | Lock Nut M8 80 DIN 985 St Steel A4 | 1    |
| 8    | ZOA-01070   | Split washer M8 DIN127 A4          | 2    |
| 9    | ZOA-01215   | Bolt M10 x 140 DIN912 A4, ISO 4762 | 2    |
| 10   | ZOA-01143   | Lock nut M6 DIN985 A4              | 1    |
| 11   | ZOA-01257   | Lock Nut M10 80 DIN 985 A4         | 2    |
| 12   | TC-2080     | Insert OD13mm ID11mm L67,5mm       | 4    |
| 13   | DL850S27-SB | 270 kHz Doppler Sensor             | 1    |

**SKIPPER**

Design: CN  
 Drawn: ST 2018.04.11  
 Checked: ST 2018.04.11

Part No: DL850S27-DR  
 Part Name: Mounting of DL850S and KIT in  
 Scale: 1:1  
 Date: 2024.03.20

Author: [Signature]  
 Date: 2024.03.20

# REMOVE OLD DOLOG SENSOR

Before old DOLOG is removed please prepare DOLOG sensor cable to be removed.

- Cable end unscrewed from terminal box.
- A long rope fastened to cable end. This rope will be used for pulling up the new DL850 sensor cable later.

Unscrew the 4 screws with a 8mm Allen key.

There are 2 levels of threads.

- Threads in tank
- Threads in sensor

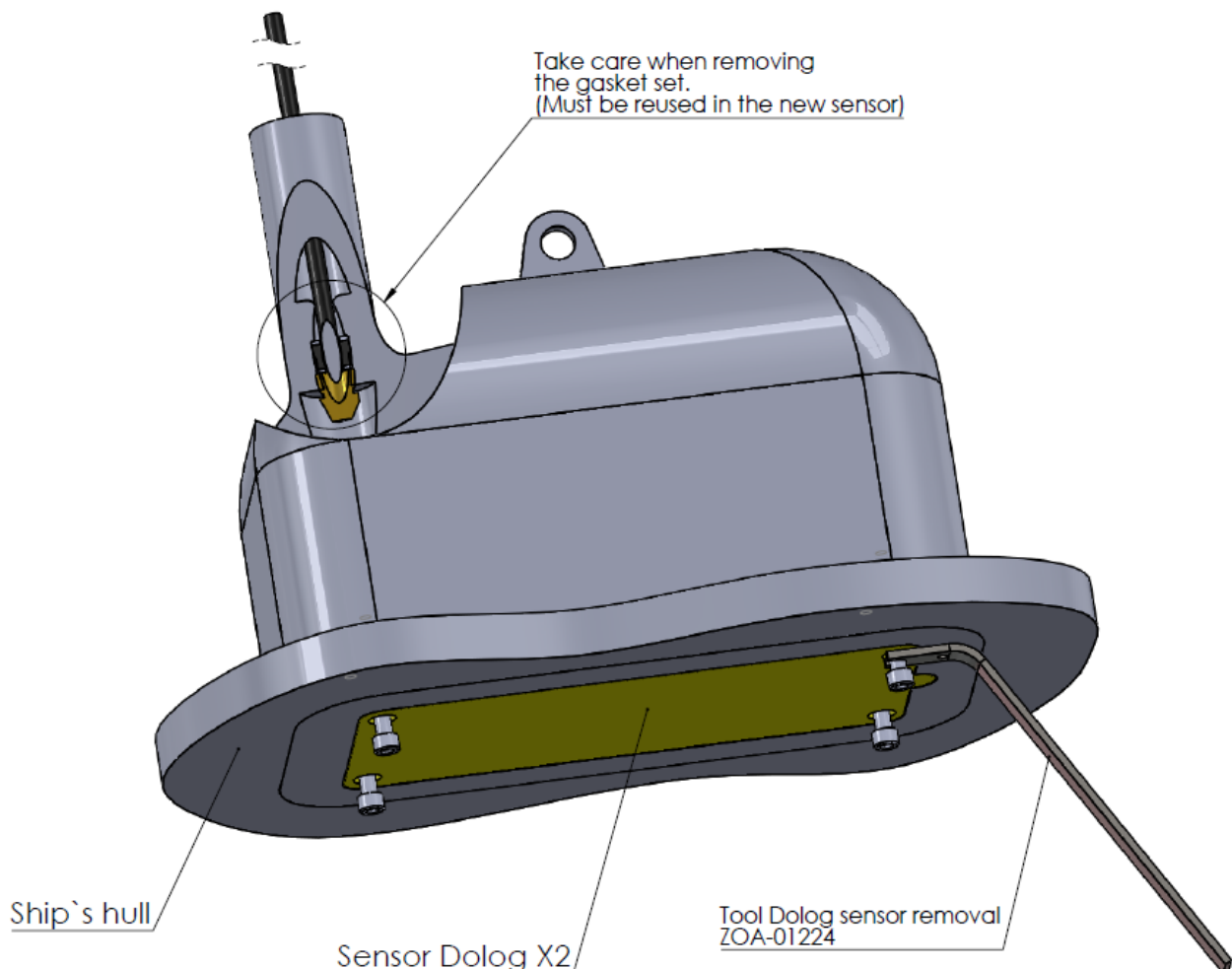
Only unscrew the tank threads so the screw hang in sensor as described in below picture

The sensor is now loose but most probably stuck. To force the sensor out of tank use the removal tool or similar. When loosened, disconnect cable plug.

Use a crow foot 36 mm, 1/2 inch extension and ratchet to unscrew 36 mm nut inside tank. Store the 36mm nut and gaskets in a safe place for reuse on SKIPPER sensor.

Pull out cable and bring cable with rope to a dry place. The rope is now going all the way from top of tank pipe, through pipe and tank and to the dry place.

NOTE; Take care when removing the gasket set - this kit does not contain replacement.



# PREPARE SENSOR FOR INSTALLATION

Install the 36 mm nut and gasket onto the 40 m cable of new DL850 sensor.

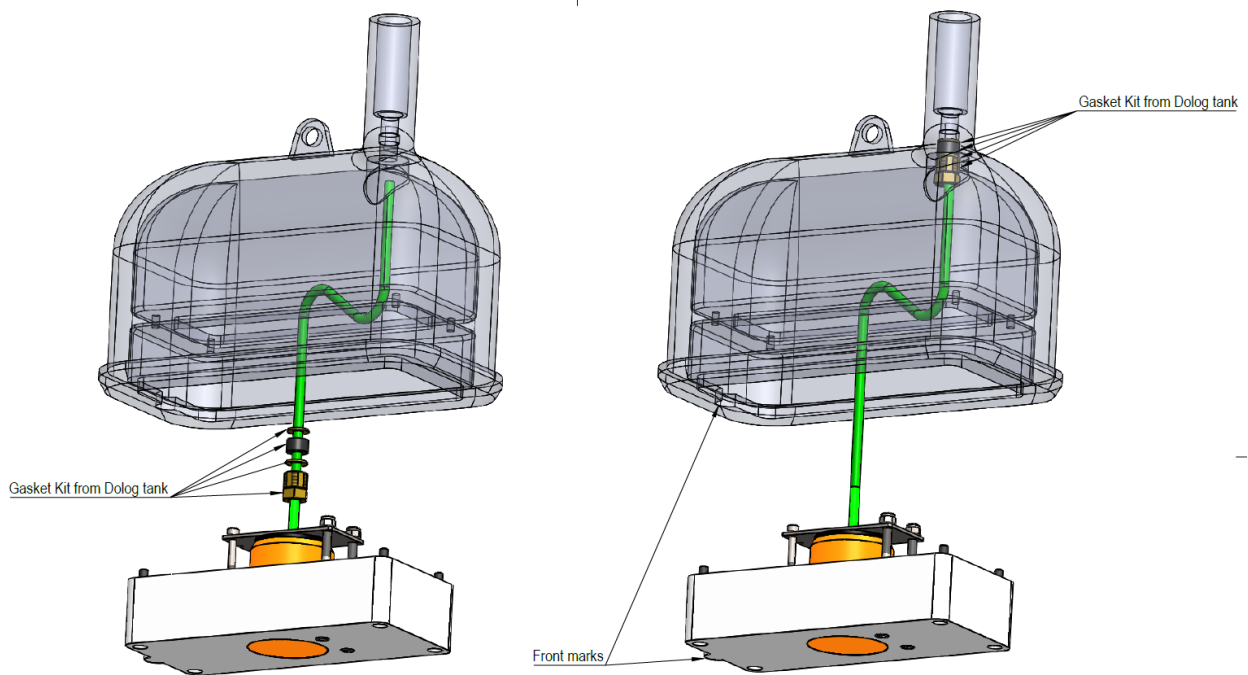
**NOTE** If installed by diver with vessel afloat:

The sensor cable is now going to be lowered into salt water.

To avoid salt water to penetrate into cable during diving operation the cable end is sealed.

Fasten the rope to new DL850S27DR-SB sensor cable end.

The new sensor cable may now be pulled up the tank pipe. Fasten gasket and 36 mm nut.



## INSTALL SENSOR INTO DOLOG TANK

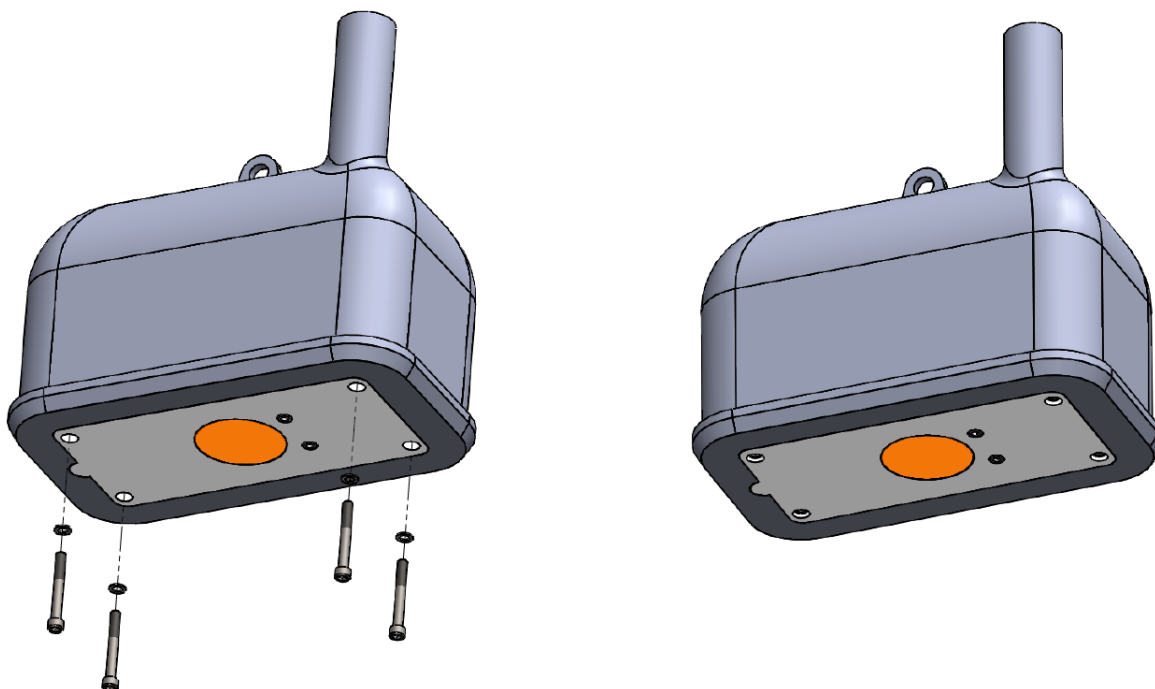
Lift the sensor into the dolog tank Fsten with 4 x screw M10x80.

The 2 x threaded bolts M10x400 and wing nuts included in the KIT-DOLOG-T1-SA kit may be used to lift the sensor into the dolog tank.

Raise the complete sensor with help of the 2 x wing nuts. When in upper position fasten the 2 x M10x80 mm screws.

When sensor is raised and secured with 2 x Screws M10 x 80 mm.

Remove the 2 x 400 mm threaded bolts. Fasten the next 2 x M10x80 mm screws were threaded bolts are removed.





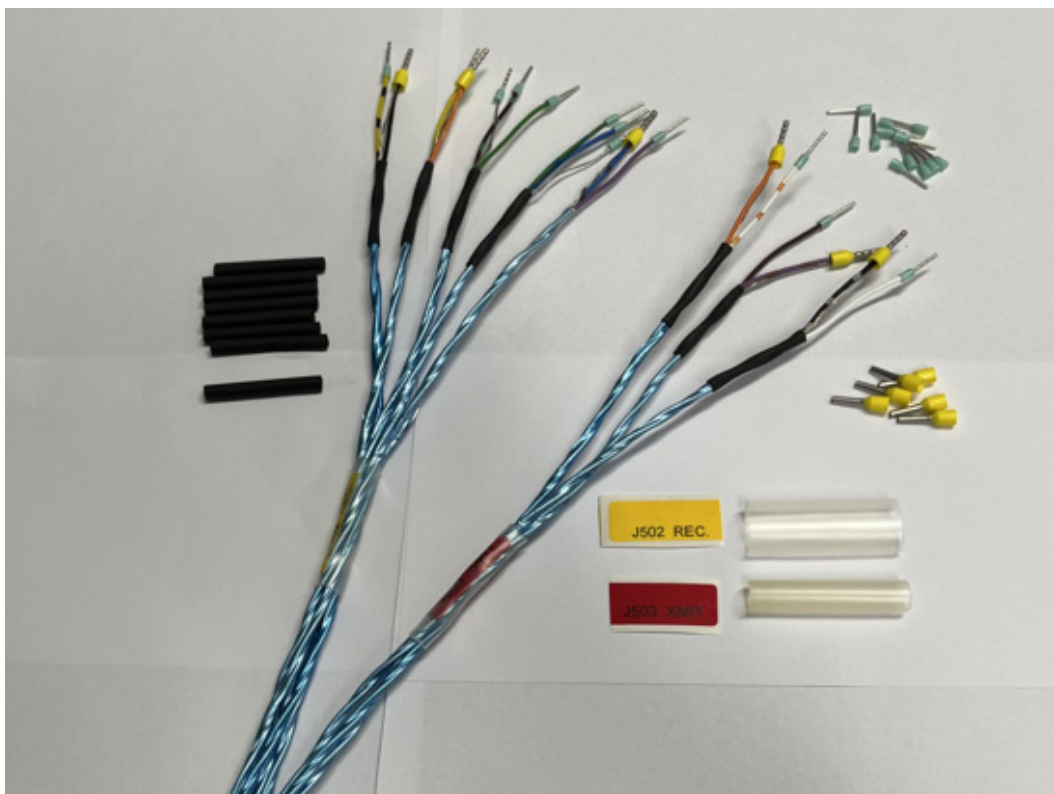
# CONNECT SENSOR CABLE

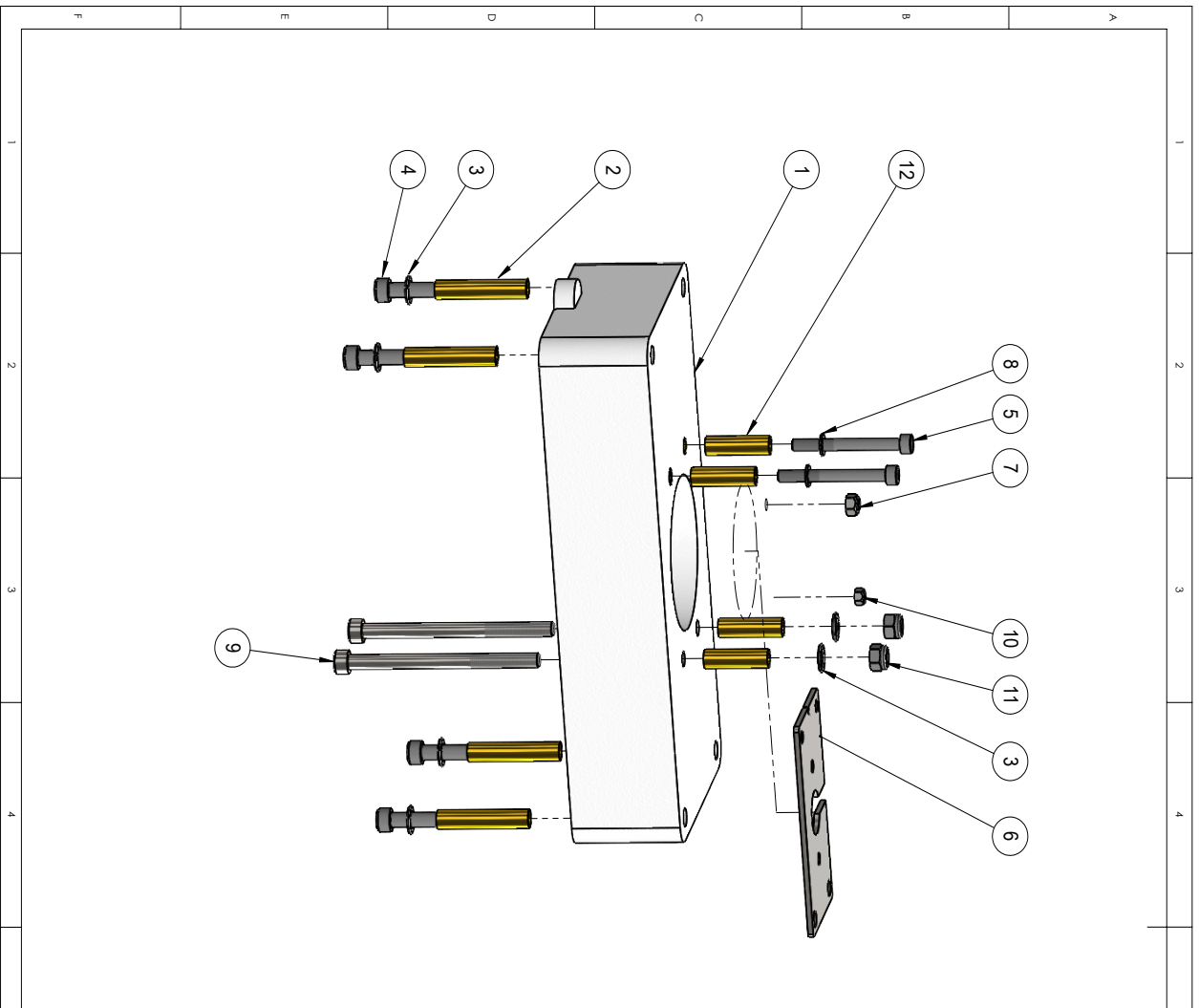
DL850S27DR-SB. speed log sensors are supplied with a water tight cable end to avoid water intrusion into cable when/if replaced by diver.



The following parts are supplied:

- Parts to prepare connector end after diving operation is finished. (The original cable end is supplied as a reference)





**Tightening Torque:**  
**M6 = 8Nm**  
**M8 = 18Nm**  
**M10 = 18Nm**

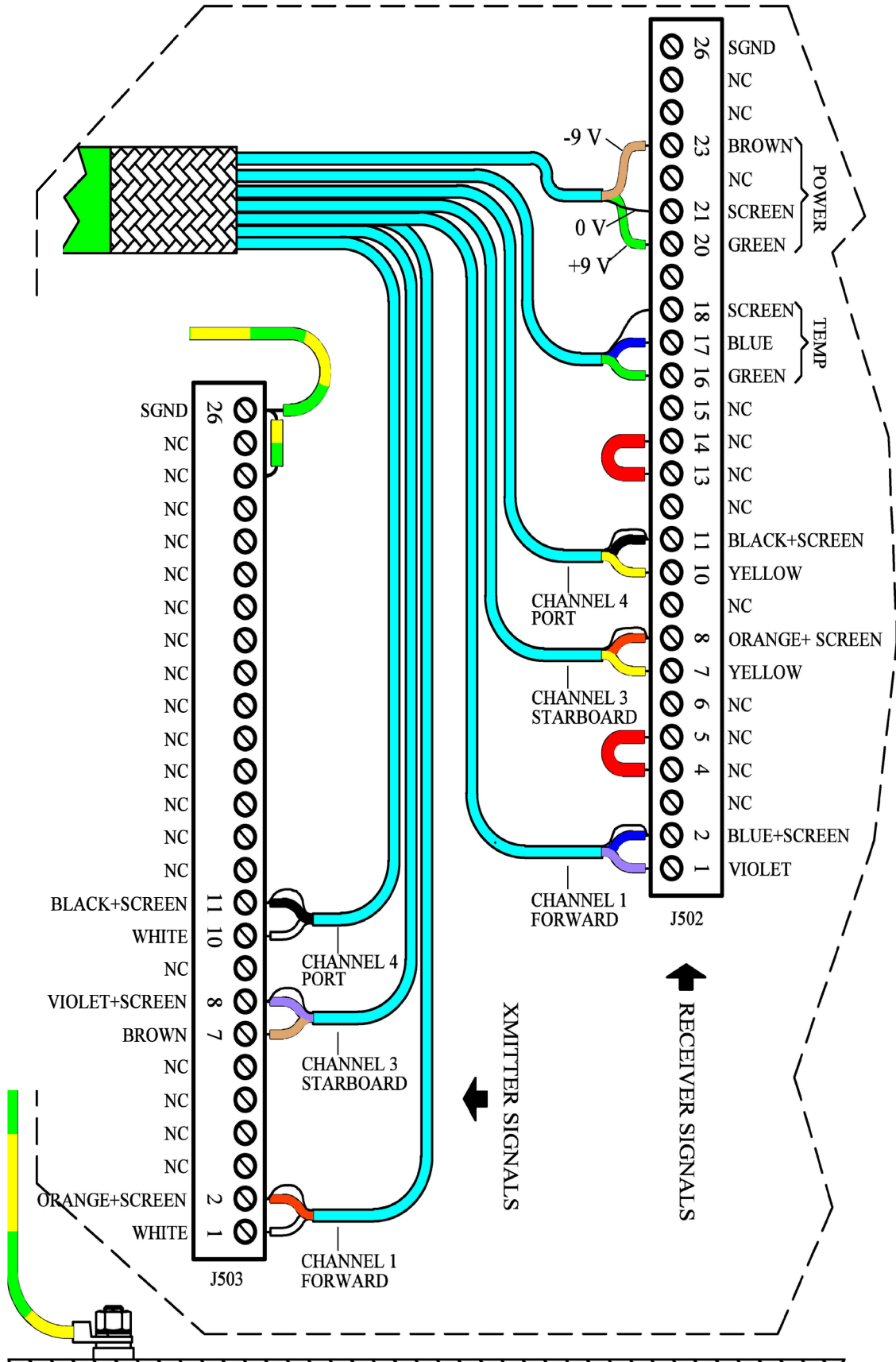
| POS. | PART NUMBER | DESCRIPTION                  | QTY. |
|------|-------------|------------------------------|------|
| 1    | TC-2067     | Adaptor plate for DOLOG      | 1    |
| 2    | TC-2068     | Insert OD13mm ID11mm L67.5mm | 4    |
| 3    | ZOA-01071   | Spring washer M10 DIN127B A4 | 6    |
| 4    | ZOA-01229   | Screw M10x80 mm DIN912 A4    | 4    |
| 5    | ZOA-01242   | Screw M8x80mm DIN912, A4     | 2    |
| 6    | TC-2065     | Bar DOLOG for DL850S27       | 1    |
| 7    | ZOA-01011   | Lock Nut M8 DIN985, A4       | 1    |
| 8    | ZOA-01070   | Spring washer M8 DIN127 A4   | 2    |
| 9    | ZOA-01215   | Screw M10x140mm DIN912 A4    | 2    |
| 10   | ZOA-01143   | Lock nut M6 DIN985 A4        | 1    |
| 11   | ZOA-01257   | Lock Nut M10 80 DIN 985 A4   | 2    |
| 12   | TC-2080     | Insert OD13mm ID11mm L67.5mm | 4    |

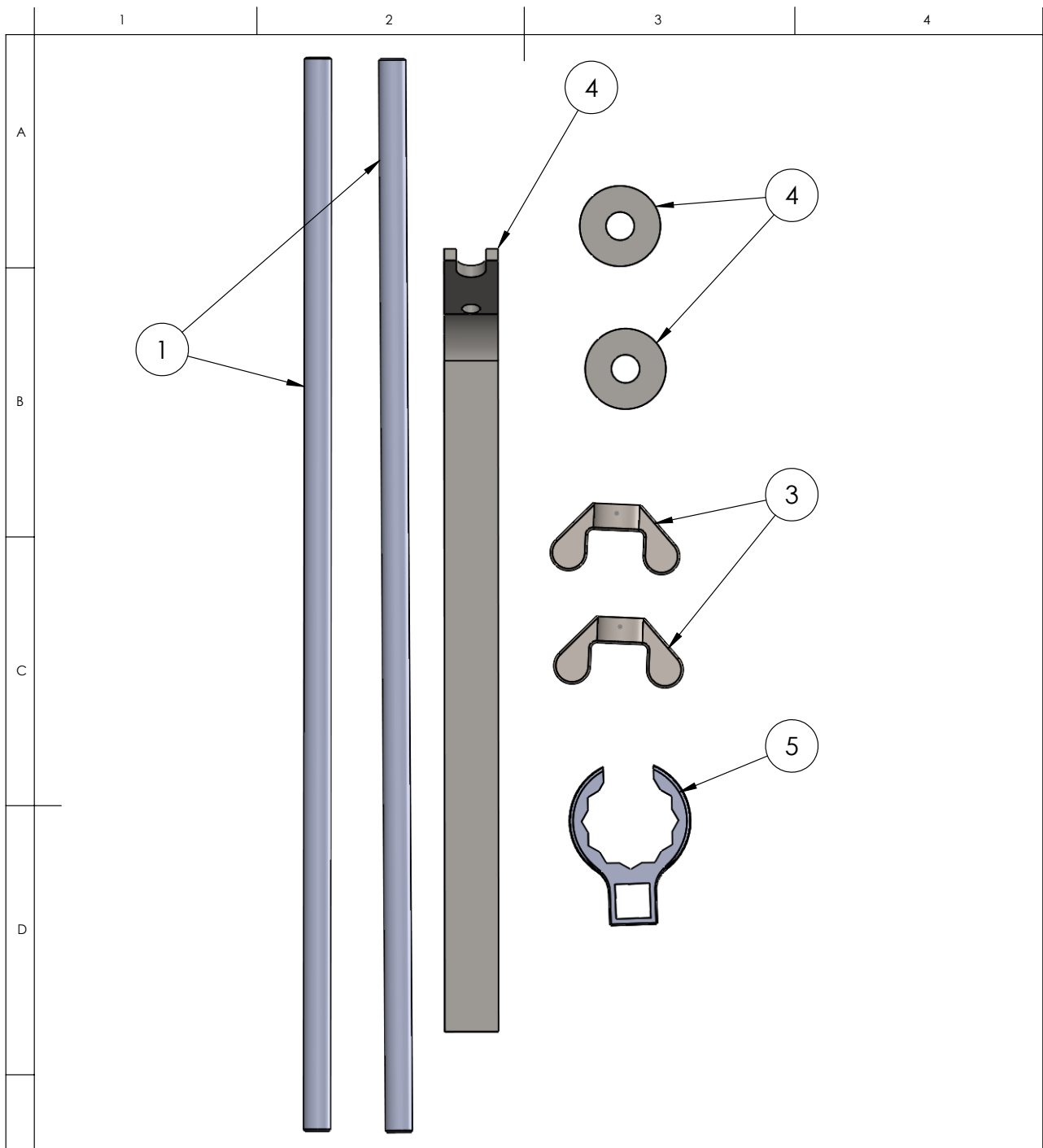
CN Revised changed information to Rev. 03, small connectors  
 M10 locked head bolt through in drawings.  
 Designed by: date: 2018.04.11 Approved by: GT 2018.04.11  
 ST 2018.04.11  
**All sharp edges to be broke or abounded**

**SKIPPER**  
 Name: Kit for Atlas Dolog 2x replacement  
 DL850S27 sensor  
 Dwg. no: KIT-DOLOG-M1-SA  
 Gen. tolerance: ISO2768m  
 For production: Scale: 2024.10.29  
 Revision: 03  
 Sheet: 2 of 2

# DL850-270 kHz sensor

## connections





| ITEM NO. | PART NUMBER | DESCRIPTION                   | QTY. |
|----------|-------------|-------------------------------|------|
| 1        | ZOA-01225   | Thread bolt M10 x 400mm       | 2    |
| 3        | ZOA-01226   | Wing nut M10 DIN315 4 EZ CR3+ | 2    |
| 4        | ZOA-01224   | Tool Dolog sensor removal     | 1    |
| 4        | ZOA-01228   | Washer M10 DIN9021 steel      | 2    |
| 5        | ZOA-01227   | Crow foot 36 mm               | 1    |

|                            |                    |                   |                    |                                     |              |                            |                 |  |  |
|----------------------------|--------------------|-------------------|--------------------|-------------------------------------|--------------|----------------------------|-----------------|--|--|
| F                          | CN                 | xx-xxx xx<br>Date |                    |                                     |              |                            |                 |  |  |
|                            | Designed by - date | Checked by        | Approved by - date | Material                            |              |                            |                 |  |  |
|                            | ST 2015.02.06      | GT                | G.T 2015.02.10     | <b>As parts</b>                     |              |                            |                 |  |  |
|                            |                    |                   |                    | Name<br>Kit Mounting tools Dolog 2X |              |                            |                 |  |  |
| Drwg. no. KIT-DOLOG-T1-SA  |                    |                   |                    |                                     |              | Revision<br>00             |                 |  |  |
| Gen. tolerance<br>ISO2768m |                    |                   |                    | Eur. projection<br>                 | Scale<br>1:2 | Edition date<br>2015.02.06 | Sheet<br>1 of 1 |  |  |



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