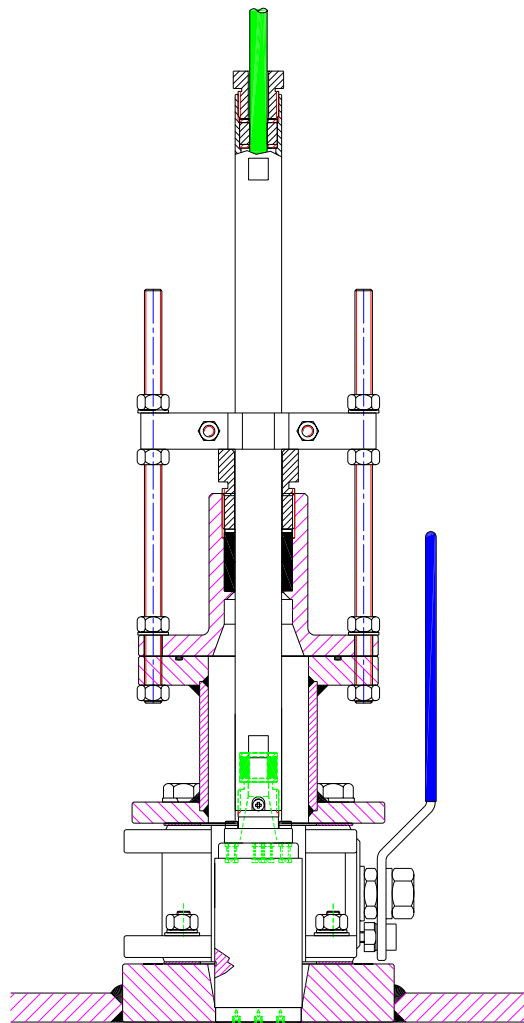


SKIPPER

Single Bottom Sea Valve

SB-60-SA

Operation and Installation Manual



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SKIPPER SB (Single Bottom) Sea Valve 60 mm

1. Installation

The SKIPPER SB Sea Valve 60 mm is used for installation of EML224 Speed Log.

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 SB Sea Valve 60 mm is delivered partly assembled for transport. The parts necessary for final assembly will be found packed in a box delivered with the Sea Valve. First of all, it must be decided where the Sea Valve should be installed. Normally, this will be in the fore part of the ship, in the centerline, or as close to the centerline as possible. Optimal system operation is achieved by fitting the transducer/sensor as deep as possible on the hull.

- The active surface of the sensor must be installed with front face a maximum of +/-1 degree to the ships horizontal plane. (Speed Logs).

Do not mount transducers close to the bow thruster propeller outlets, or aft of other hull installations (outlets, vents or other protruding details) who may create aeration or turbulence.

It is necessary to select a part of the hull that is submerged and free from turbulence and aeration under all load and speed conditions, and to avoid positions where air is trapped in heavy weather.

If a flat, horizontal section is not available for transducer fitting, the shipyard must construct a suitable bed. Welding seams in this area should be smoothed and rounded off, in order not to create turbulence or aeration at speed.

Protect the active element of the transducer/sensors during transport and installation, and

do not paint the surface.

The Sea Valve should be placed in a service accessible place, large enough for installation and disassembly of the sensor unit. See drawing: "Space considerations".

Important

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

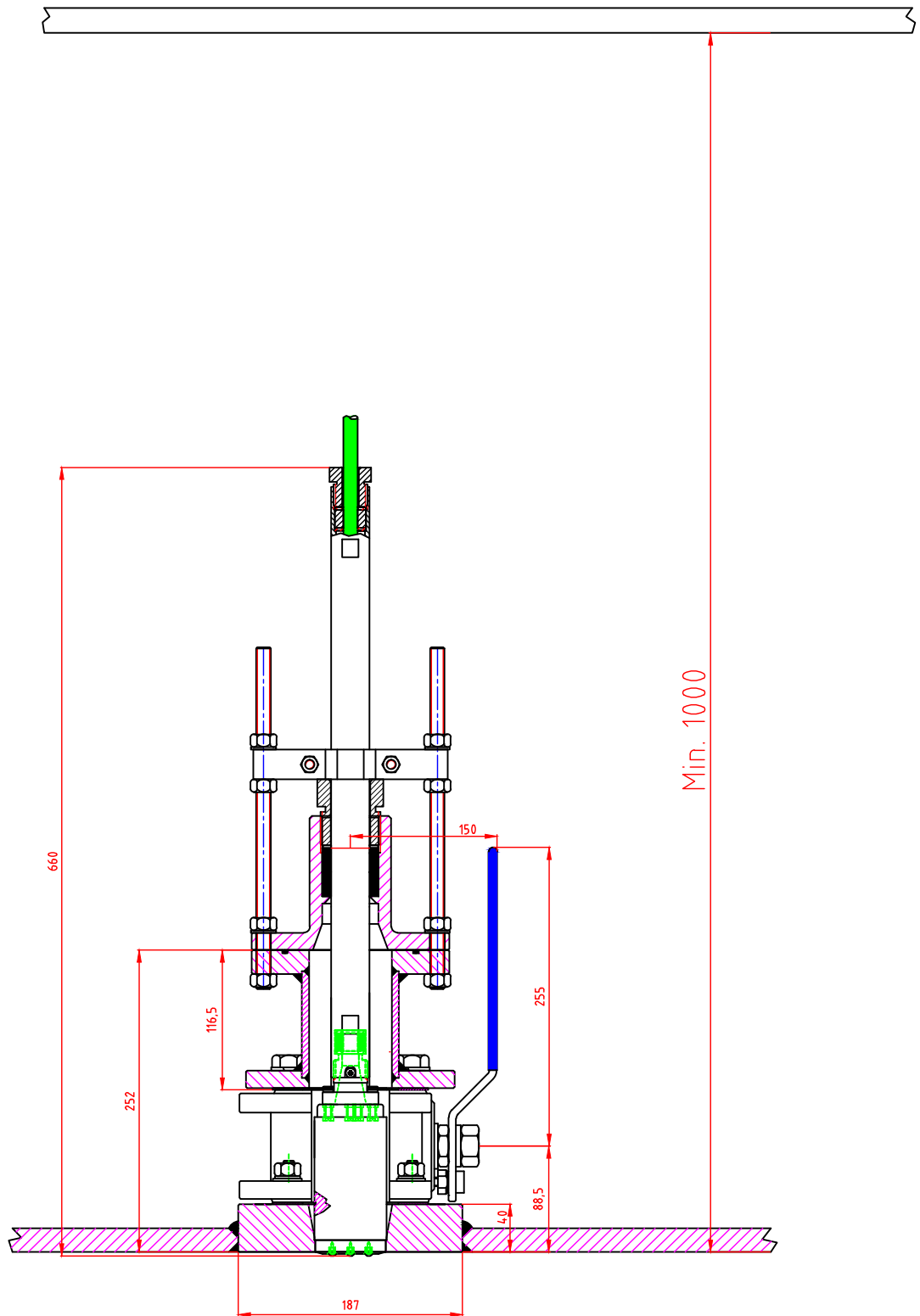
SKIPPER Electronics AS will recommend installation positions if GA-drawings (General arrangements), lines drawings and frame drawings are made available for study.

Condition.

The welding to hull structures and structural support of the items may be subject to separate approval by classification societies for each installation on board a ship.

Note: All “Item (X)” references on the following pages, can be found on drawing EML224 Single Bottom.

2. Space considerations



The Sea Valve should be placed in a service accessible place, large enough for installation and disassembly of the sensor unit.

3. Welding the bottom flange

- When the position has been decided, a 187 mm hole is cut in the hull.
- Disassemble the Sea Valve.
- The bottom flange, Item (1) is welded into the hull. Standard welding practice, methods and procedures should be observed, but may vary. (See welding notes).

Attention:

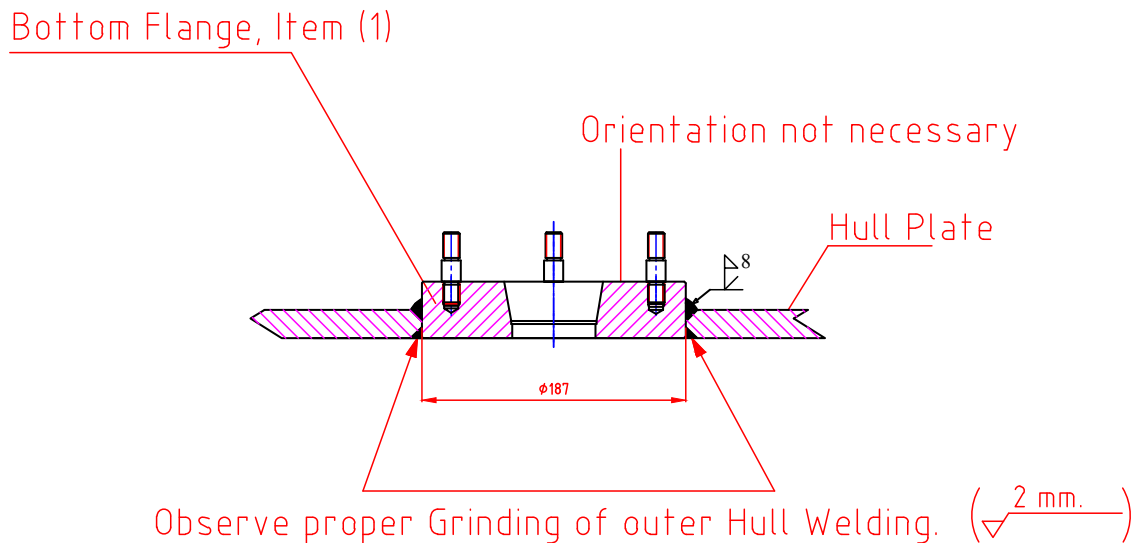
The bottom flange is a part of the Sea Valve that is machined with high accuracy and it should be protected after mounting to avoid damage to the bottom flange surfaces. This to avoid leakage. If the valve is pre-mounted, be shure to protect the valve from being polluted by welding debris.

WELDING NOTES!

All bottom parts and flanges for welding are precisely machined parts. During welding of these parts to the ship's hull plates, careful attention must be paid to avoid construction strain on the bottom parts and flanges.

- Let parts cool down during welding.
- Over heating may change fit and form and result in non-conformity with intended sensor/transducer.
- Welding to thick hull steel plates will exert high stress on bottom parts and flanges.
- Especially care must be taken during welding of stainless steel flanges.
- Work must be performed by a qualified and certified welder.

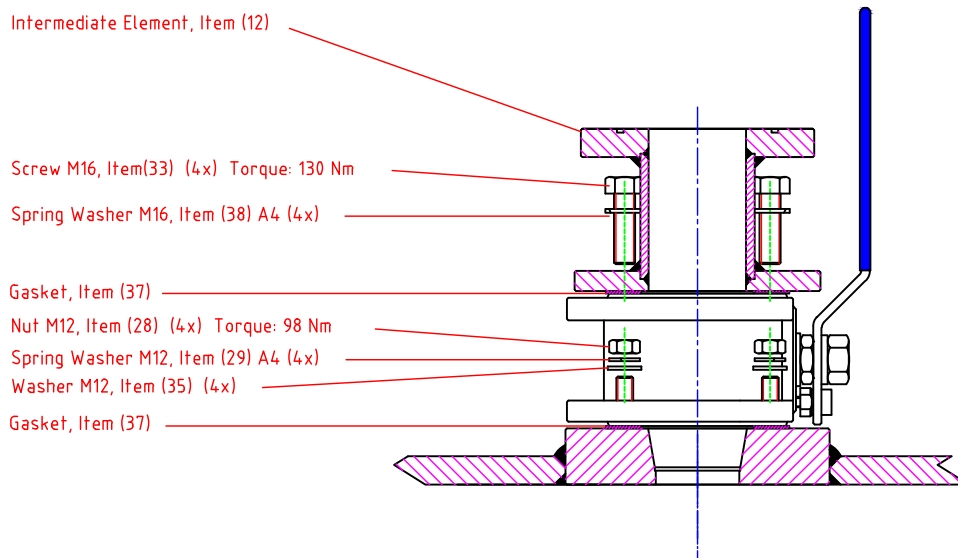
Welding the bottom flange in ships's hull



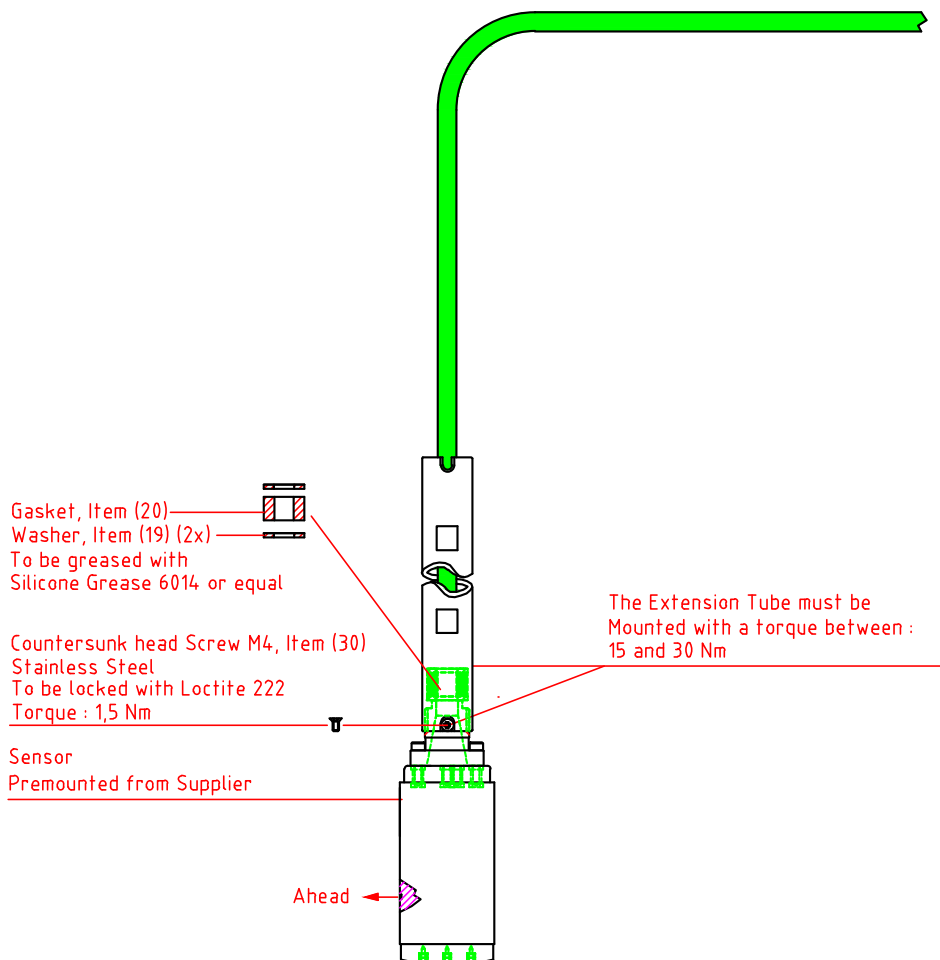
4. Sea Valve assembly

Sea Valve assembly. (Orientation not necessary).

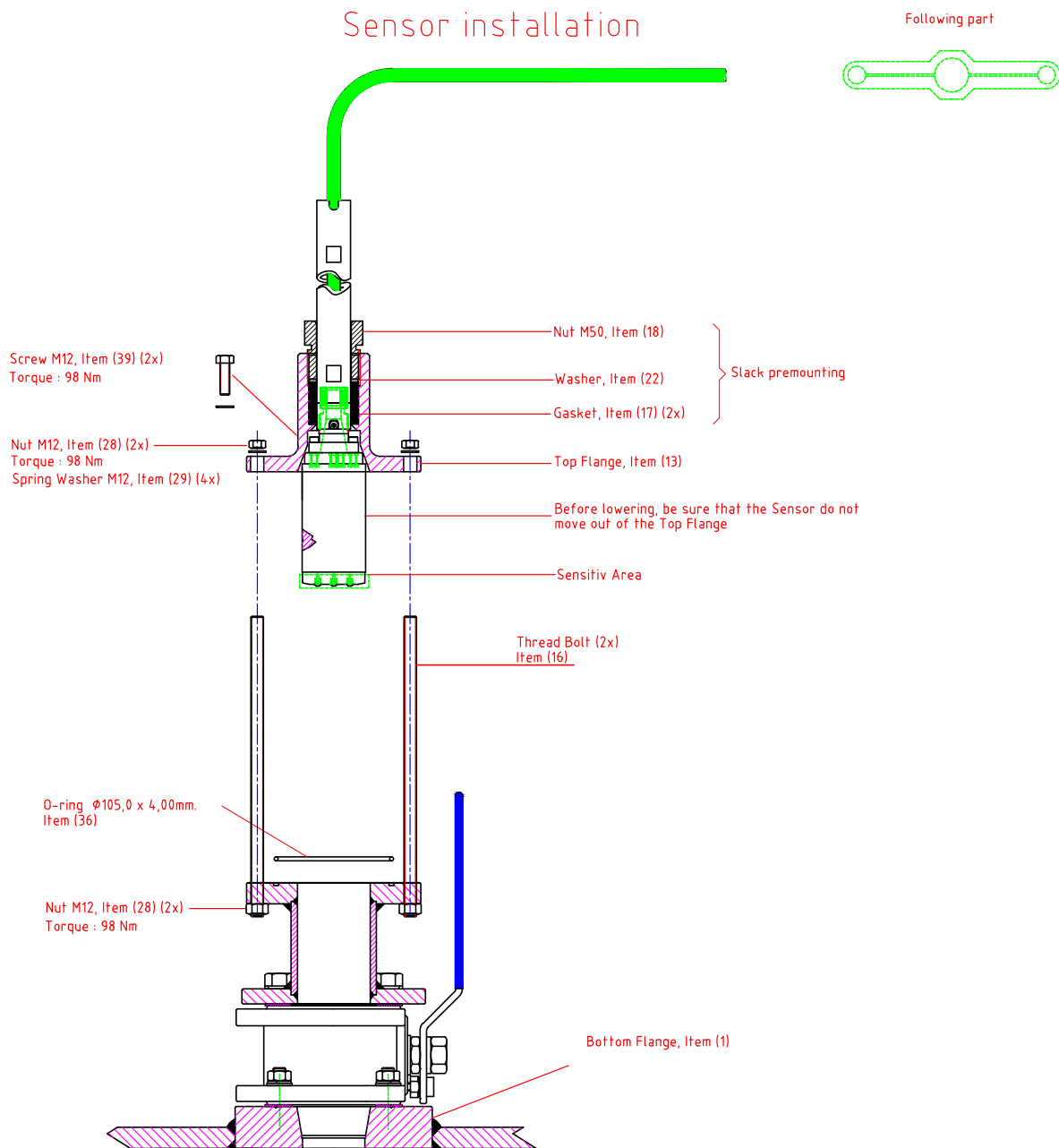
- Place 1.5 mm Klingersil gasket, Item (37) on top of Bottom Flange, Item (1).
- Then place the Ball Valve element on top of the Bottom Flange. The 12 mm nuts and washers should be mounted and tightened. (Align parts before tighten nuts).
- Place a 1.5 mm Klingersil gasket on top of the Ball Valve element.
- Mount the intermediate element, Item (12) on top of the Ball Valve element.
- All 4 bolts, Item (33) and washers, Item (38) should be mounted, and tightened. (Align parts before tighten bolts).



5. Assembling of first extension tube and sensor



6. Sensor installation



- Place the O-ring, Item (36) in the groove on top of the Intermediate Element, Item (12). Apply grease to the O-ring.
- Insert the 2 thread bolts, Item (16) through the flange and secure with 2 x M12 counter nuts, Item (28). Torque 98 Nm.
- Lower the Sensor and Top Flange carefully down to the top of Intermediate Element, Item (12).

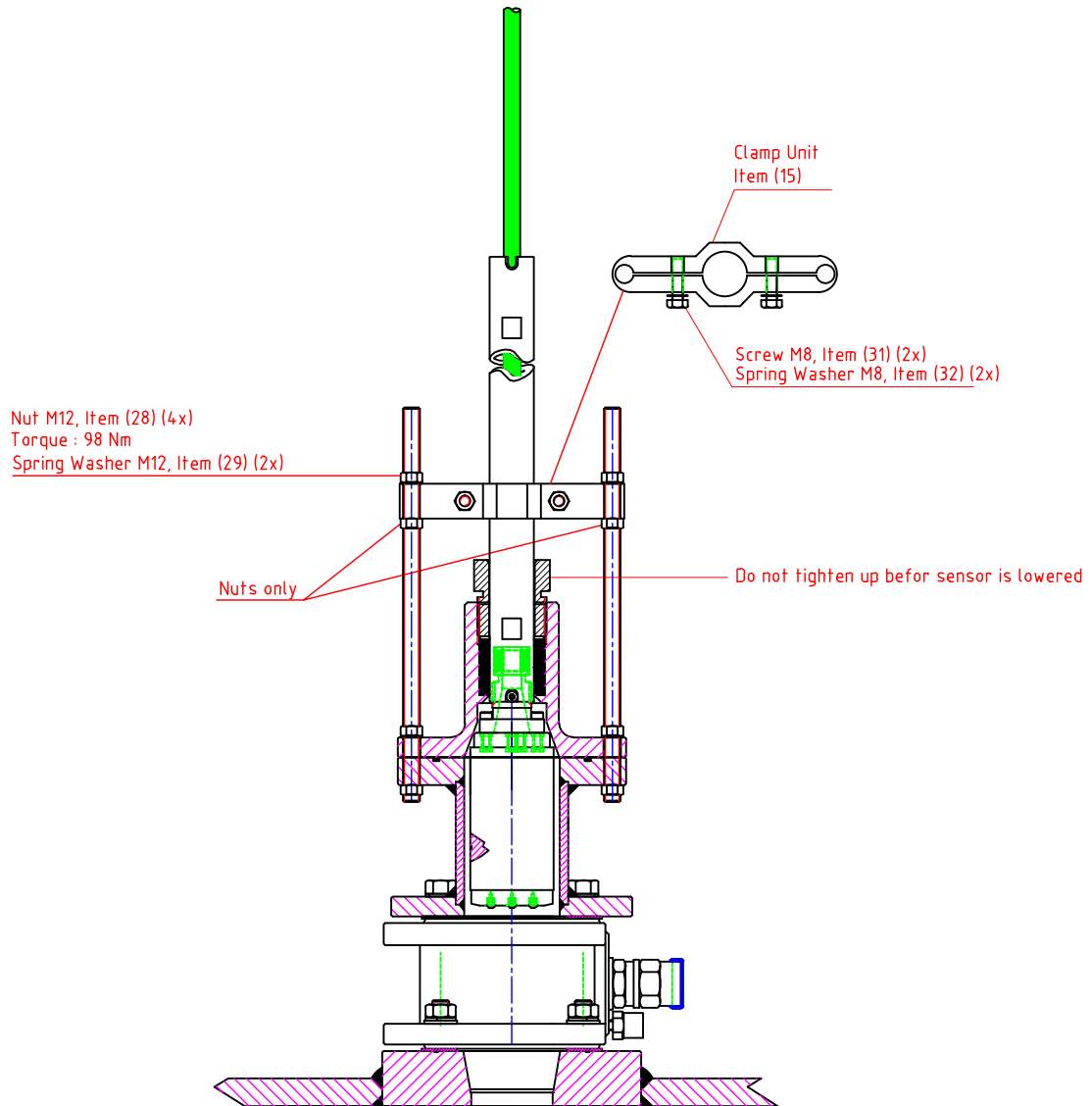
The sensors sensitive area must be handled with care.

7. Clamp Unit mounting

- Mount Top Flange, Item (13). Secure with 2 each washers and nuts. Torque: 98 Nm.

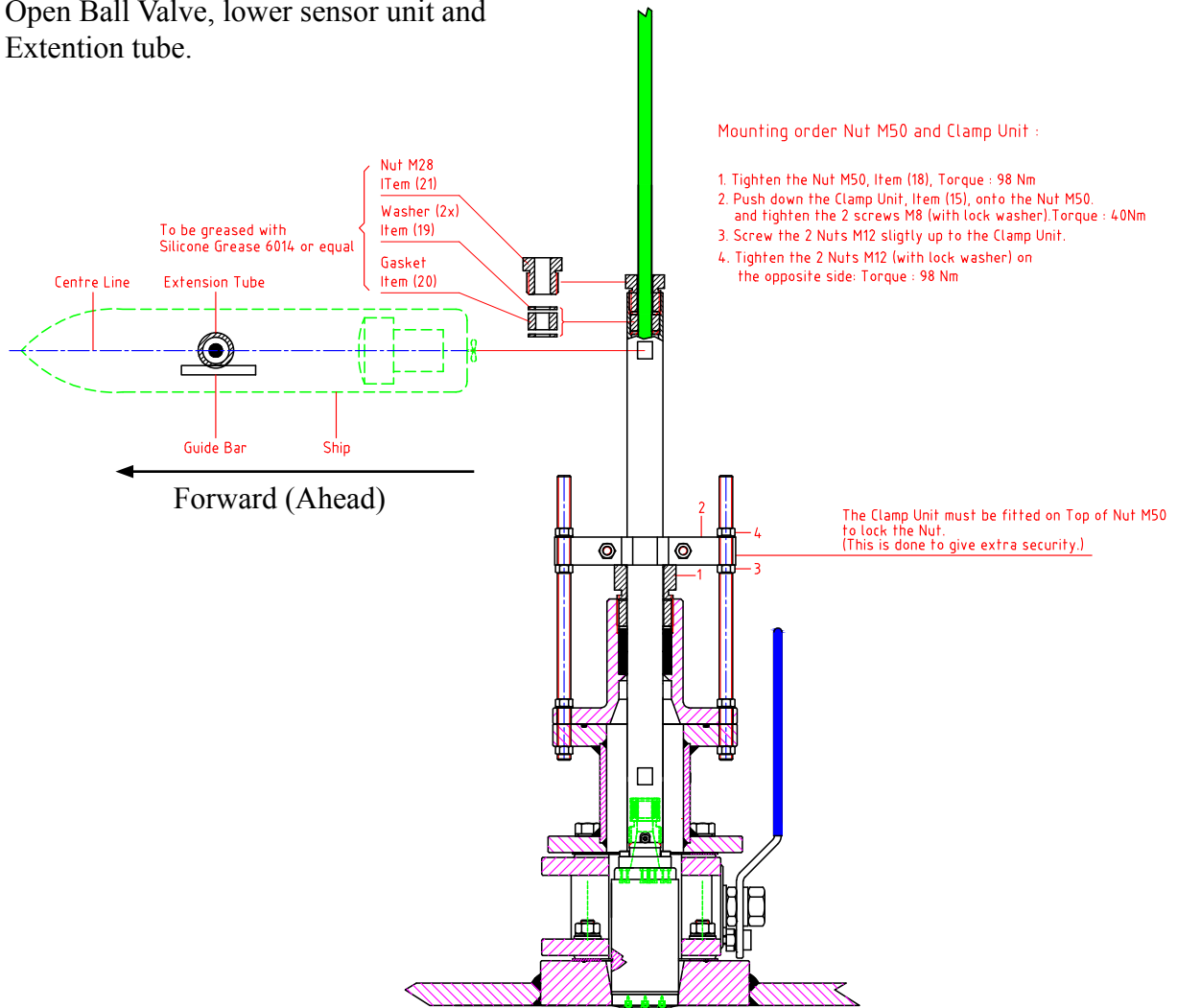
Clamp unit to be mounted in the following order:

- 2 x M12 nuts, Item (28).
- Clamp unit, Item (15).
- 2 x M12 nuts, Item (28) with spring washer, Item (29).



8. Final assembly

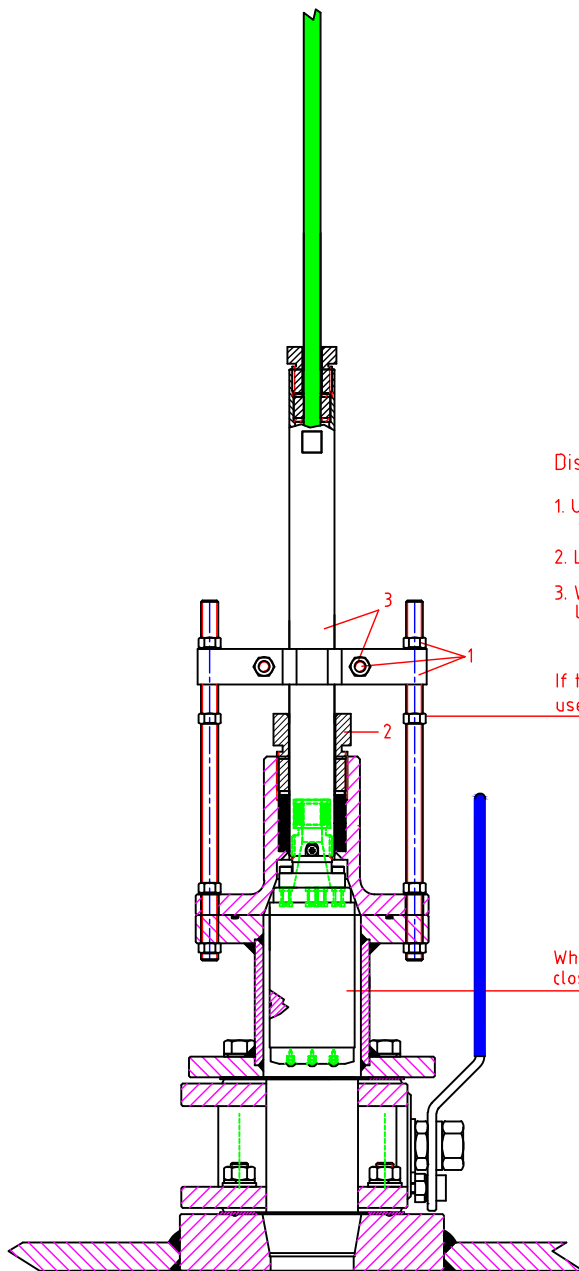
Open Ball Valve, lower sensor unit and Extension tube.



Protect sensor!

- When launching ship, lift sensor 50 mm.
- When dry docking ship, lift sensor 50 mm.
- After the ship is afloat, it is necessary to let the air out of the Sea Valve. Loosen the nut M50, let the air out and tighten nut again.
- Check that the transducer sensor housing, when fully inserted, is flush with the lower surface of the bottom flange.

9. Sensor removal



Disassembling order:

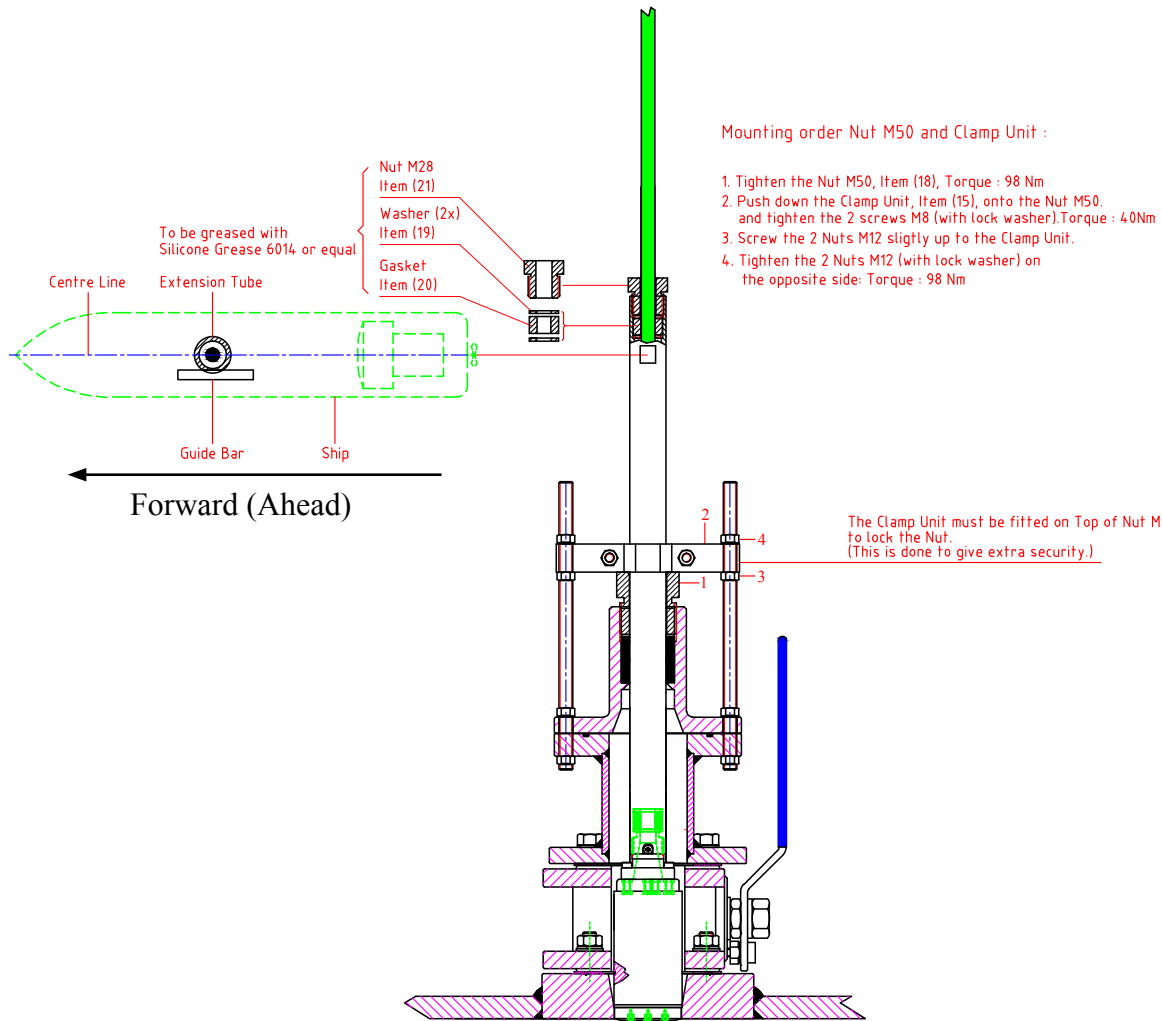
1. Uncrew and lift the Clamp Unit aprox. 20 mm tighten the 2 screws M8
2. Loosen the Nut M50 carefully until Water trickles out.
3. When disassembling Extension Tube at deep drafts, loosen the 2 screws M8 carefully.

If the Water pressure does not push the Extension Tube up, use the to Nuts M16 to lend a hand

When the Sensor Housing is fully hoisted close the Gate Valve.

10. Re-installation

Same procedure as first-time mounting.



11. EML224 Sensor

1		2	3		4
RevNo	Revision note			Date	Signature
					Checked

03	4	Screw M5x18 DIN912	St.Steel A4
02	1	Nipple- EML Sensor	DB-1023-Rev-00
01	1	EML224 Sensor	ZZL-01030
ITEM	QTY.	DESCRIPTION	Part. No.

Itemref	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference
Designed by A.Matre	Checked by VF	Approved by - date	File name Date 2006.05.29
SKIPPER Electronics A/S		EML224 Sensor	
		EML224SG-00	Edition Sheet 1/1

12. EML224 Single Bottom

RevNo	Revision note	Date	Signature/Checked
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ABCDEF

12345678

ABC

DEF

12345678

ABC

DEF

AISI 316L/WND 1.4404
EN10204, 3.1

Weight: 30 kg
(Complete with 0.5 meter
Extension Tube)

Handle location

View A

*) Mounted partly on Valve or in mounting Kit: SB-60-M-KIT
 □) Spare parts in service Kit: Module-SB-DB-S-KIT: 1042A

Itemref	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference
42	1	Ball Valve PN16	A4 St.steel ZCC-02001
32	2	Screw M12x40 DIN933	A4 St.steel ZOA-01065
38	4	Spring Washer M16 DIN 127B	A4 St.steel ZOA-01035
36	1	O-ring 105,0 x 4,00	Nitril (NBR, 70 shore)
35	4	Washer M12 DIN125	A4 St.steel ZOA-01048
33	4	Screw M16x40 DIN933	A4 St.steel ZOA-01034
31	2	Spring Washer M8 DIN 127B	A4 St.steel ZOA-01083
30	2	Screw M8 x 30 DIN 933	A4 St.steel ZOA-01069
29	10	Screw M4 x 8 DIN 7991	A4 St.steel ZOA-01066
28	12	Nut M12 DIN934	A4 St.steel ZOA-01023
EM-QTY		DESCRIPTION	MATERIAL PART. NO.

□ 37	2	Gasket	DB-1042-00	ZOA-1028
22	1	Washer	DB-2040-00	DB-2040
*	21	1	Nut M28	DB-2039-00
□	20	1	Gasket	DB-2038-00
□	19	2	Washer	DB-2037-00
□	18	1	Nut M50	DB-2036-00
□	17	2	Gasket	DB-2035-00
*	16	2	Thread Bolt M12x285	SB-6027-00
*	15	1	Clamp Unit	DB-1033-00
□	13	1	Top Flange	DB-1031-00
□	12	1	Intermediate Element	DB-1021-00
*	7	1	Extension Tube - 0,5m	DB-2026-01
2	1	EML224 Sensor	EML224SG-00	EML224SG
□	1	Bottom Flange	SB-1022-00	SB-1022
EM-QTY		DESCRIPTION	DWG. NO.	PART. NO.

SKIPP	Electr	AS
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Single Bottom	EML224
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Revision	02	Draw. Edition	101012	Sheet	01
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