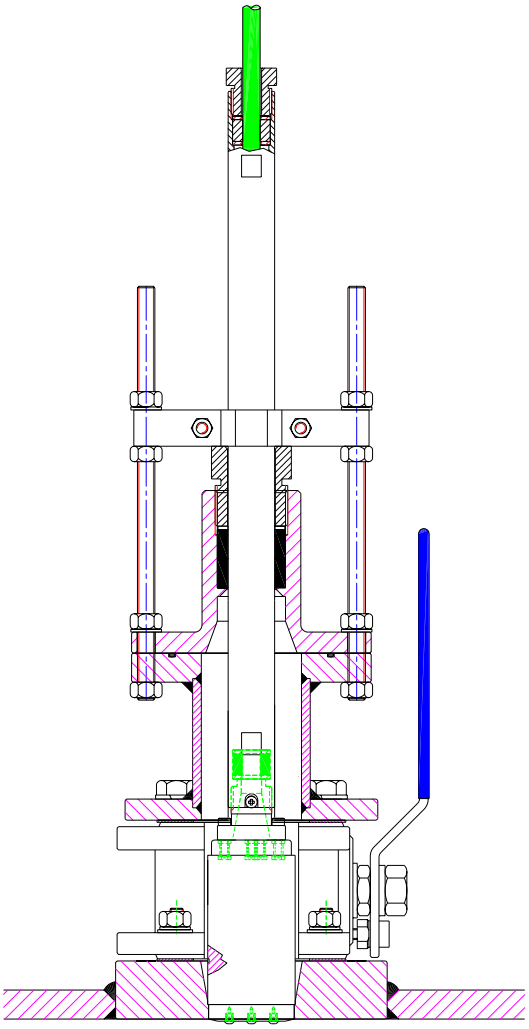
SKIPPER

Single Bottom Sea Valve

SB-60-SA
Operation and Installation Manual



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Contents

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

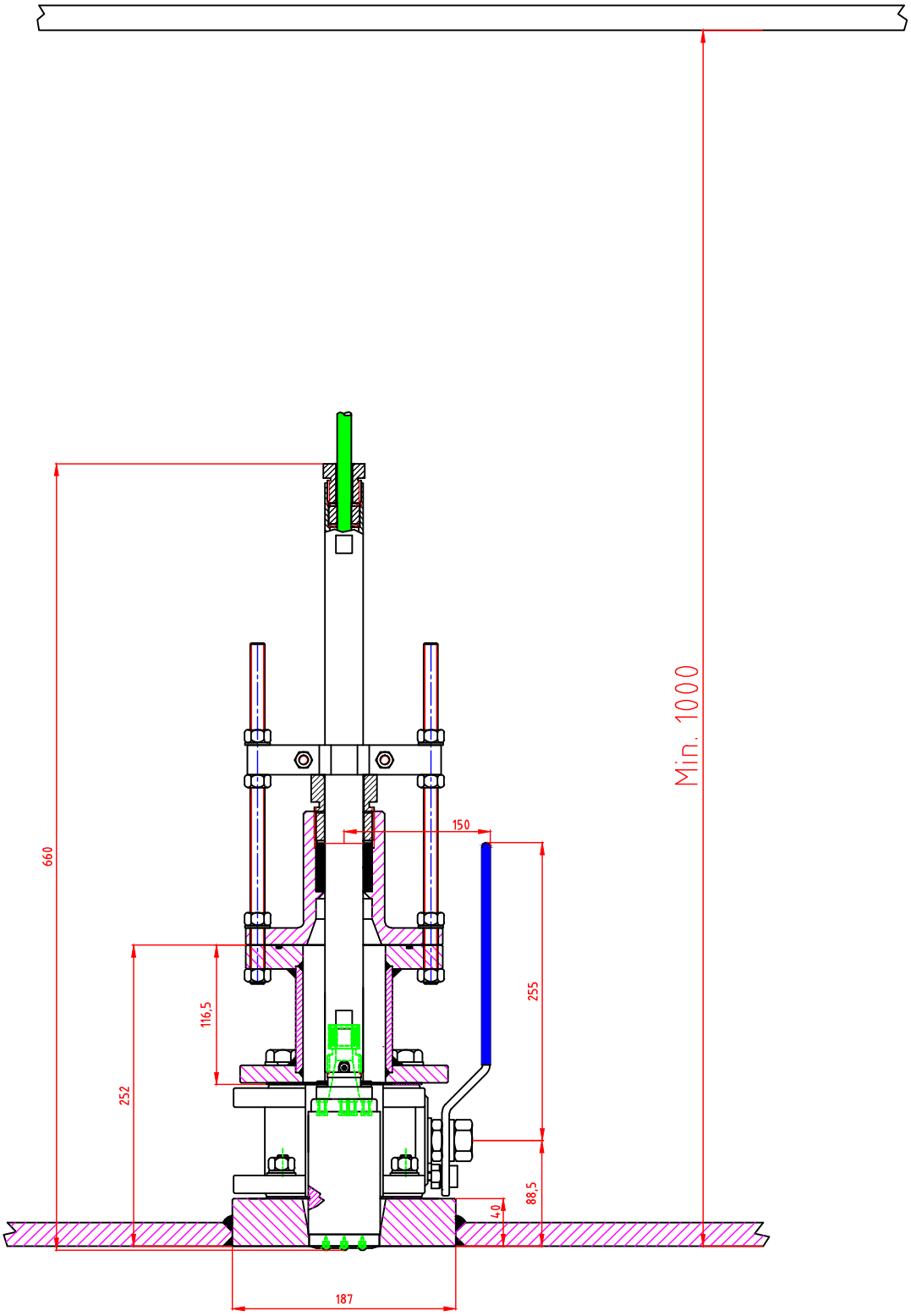
”Sensors for Speed Logs are delivered with a fixed cable. Attention must be taken to allow easy replacement/pulling of new cable during maintenance”.

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:

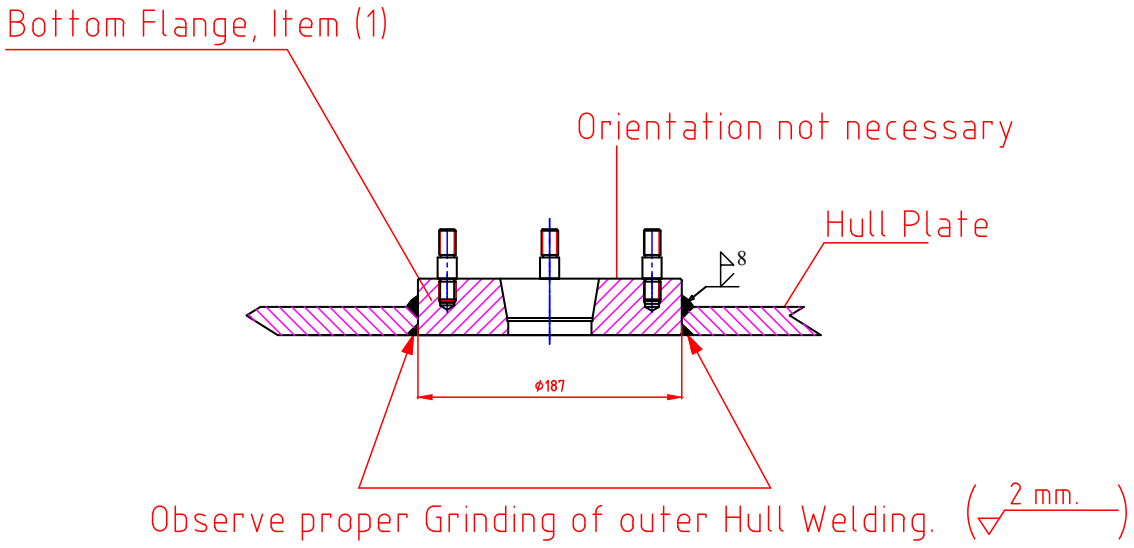
The bottom flange is a part of the Sea Valve that is machined with high accuracy and it should be protected after mounting to avoid damage to the bottom flange surfaces. This to avoid leakage. If the valve is pre-mounted, be shure to protect the valve from being polluted by welding debris.

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.**

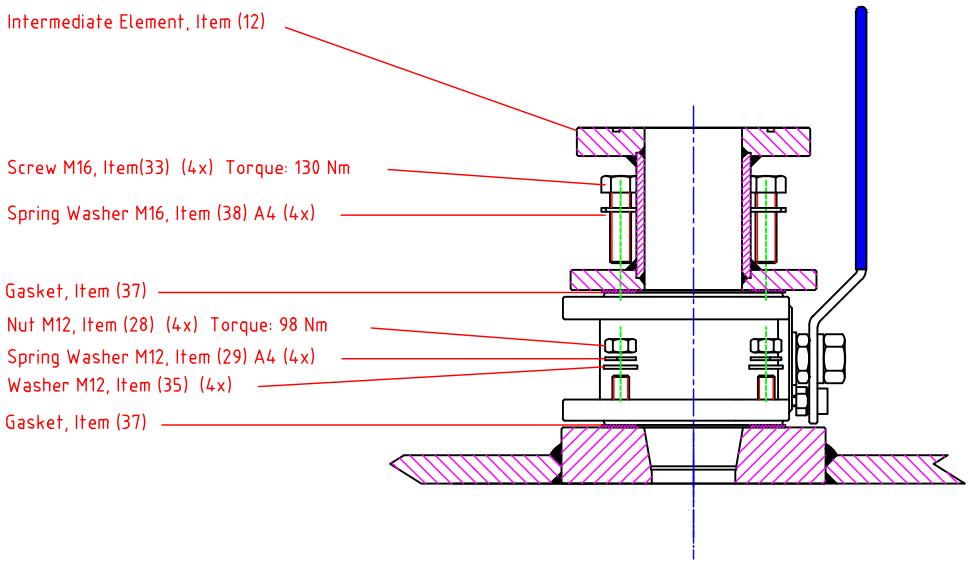
Welding the bottom flange in ships's hull



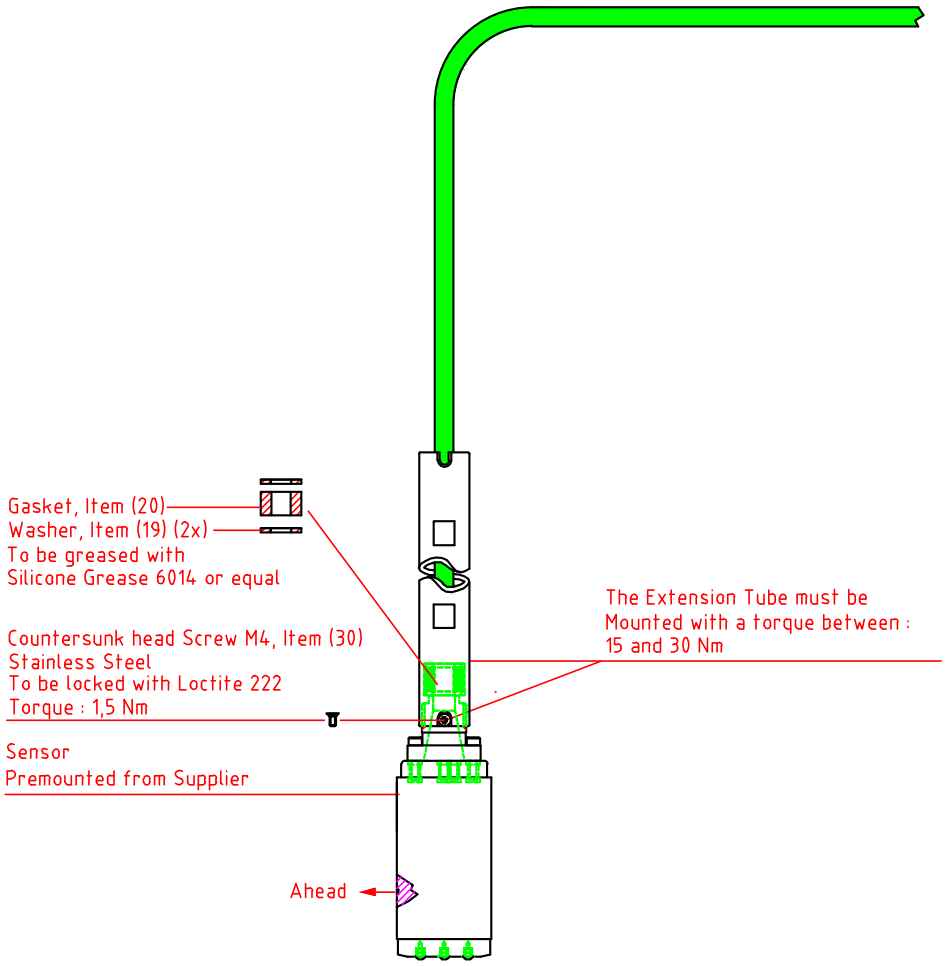
4. Sea Valve assembly

Sea Valve assembly. (Orientation not necessary).

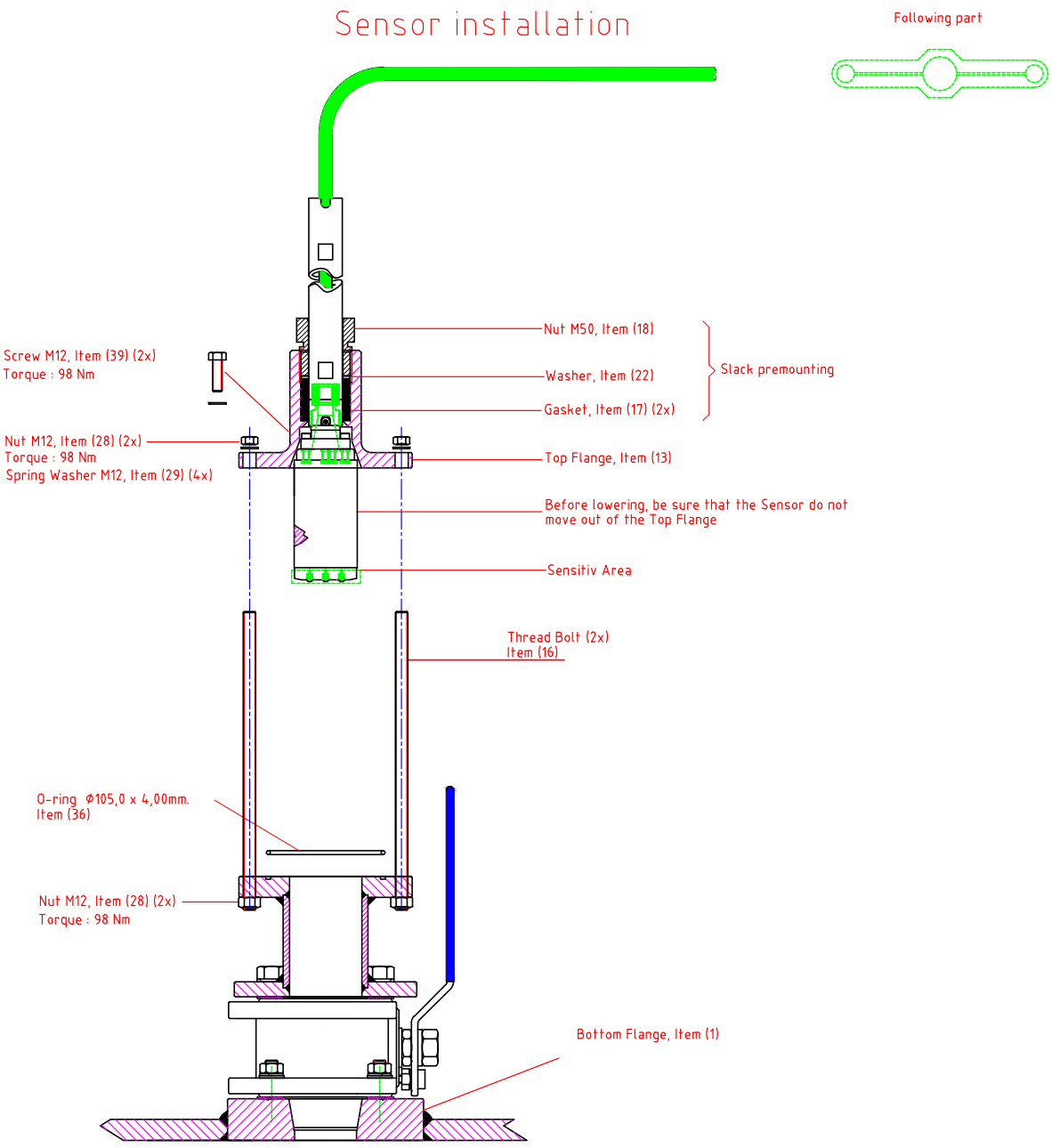
- Place 1.5 mm Klingersil gasket, Item (37) on top of Bottom Flange, Item (1).
- Then place the Ball Valve element on top of the Bottom Flange. The 12 mm nuts and washers should be mounted and tightened. (Align parts before tighten nuts).
- Place a 1.5 mm Klingersil gasket on top of the Ball Valve element.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



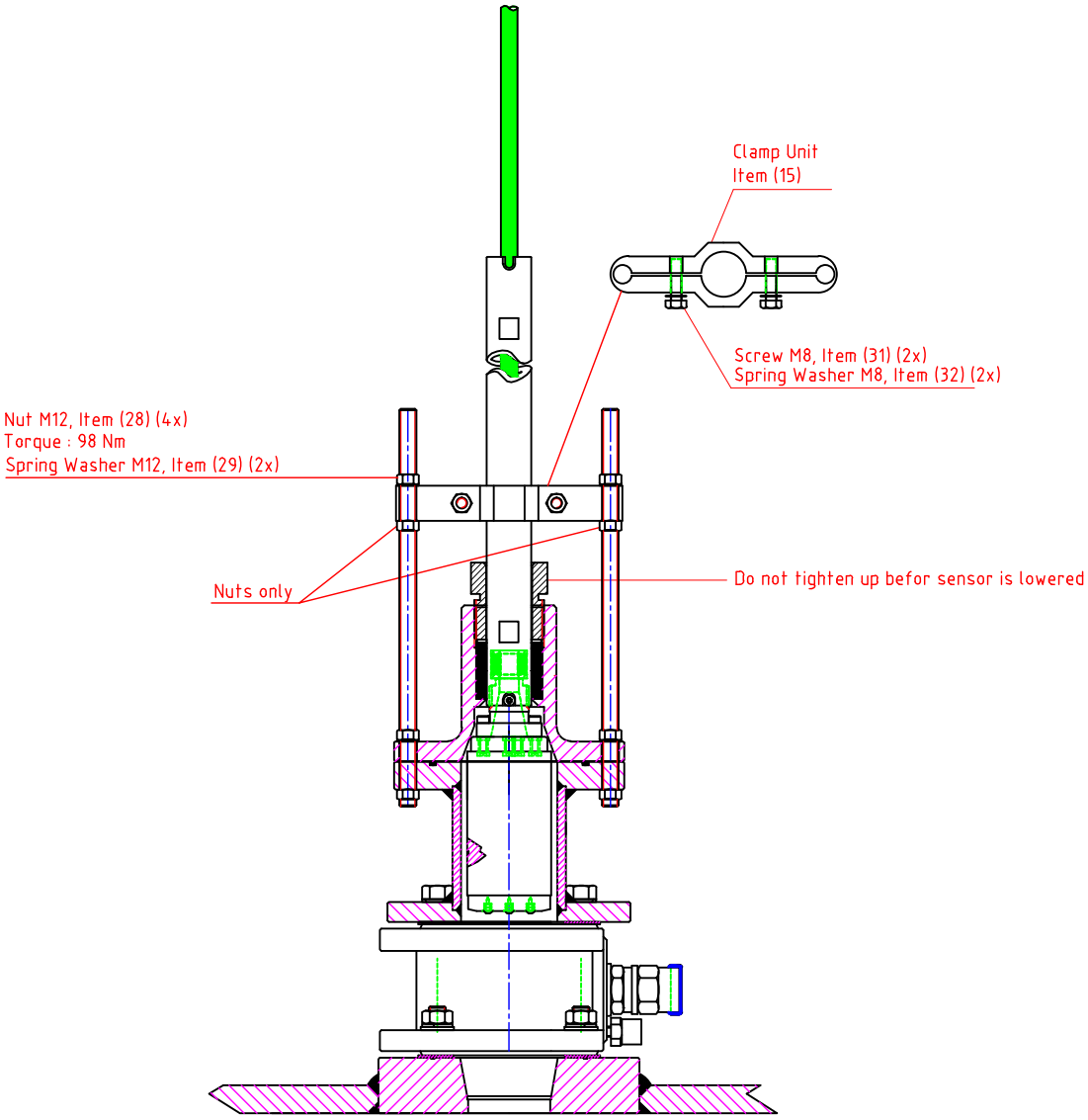
- Place the O-ring, Item (36) in the groove on top of the Intermediate Element, Item (12). Apply grease to the O-ring.
- Insert the 2 thread bolts, Item (16) through the flange and secure with 2 x M12 counter nuts, Item (28). Torque 98 Nm.
- Lower the Sensor and Top Flange carefully down to the top of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

The sensors sensitive area must be handled with care.

7. Clamp Unit mounting

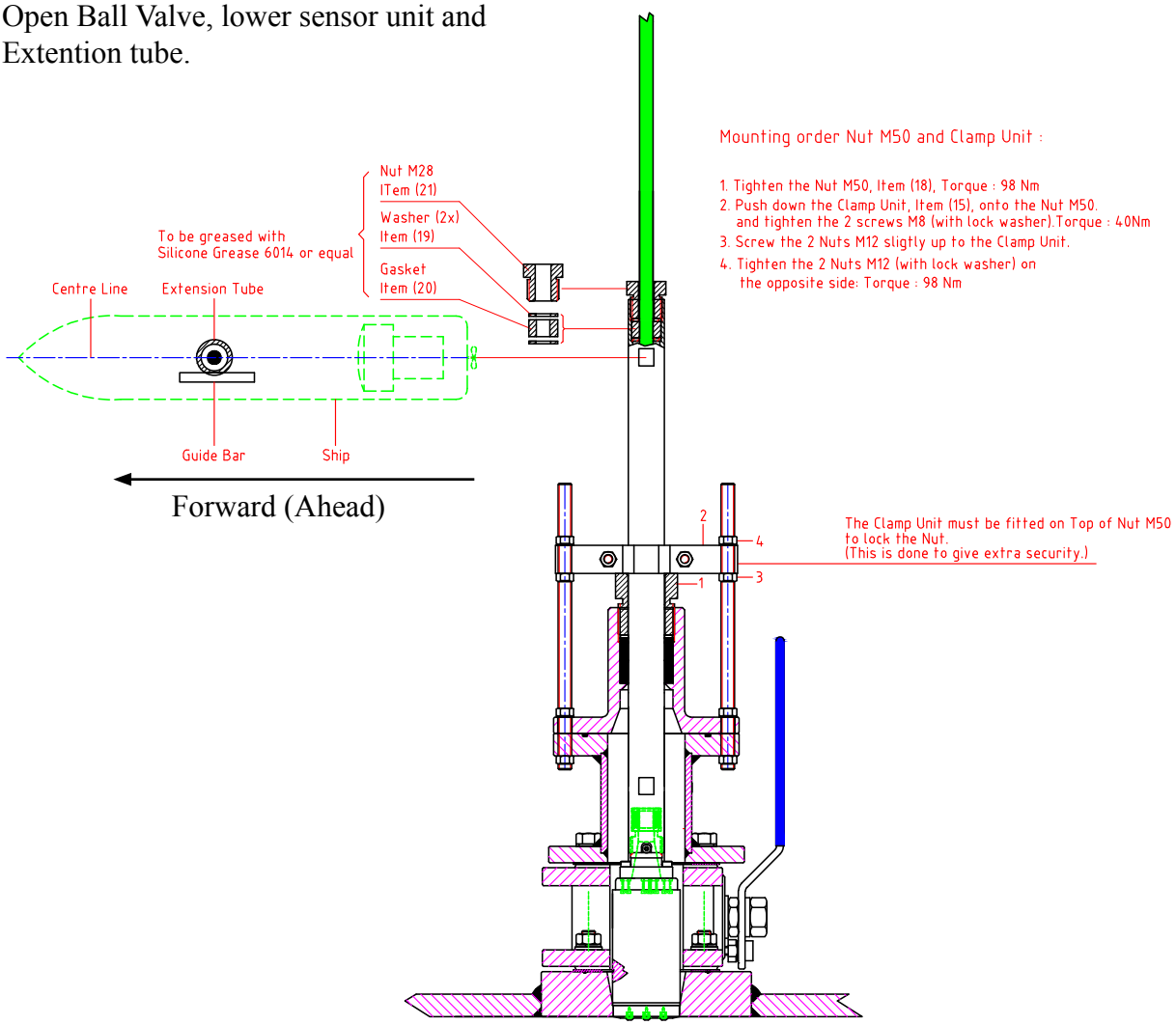
- Mount Top Flange, Item (13). Secure with 2 each washers and nuts. Torque: 98 Nm.

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

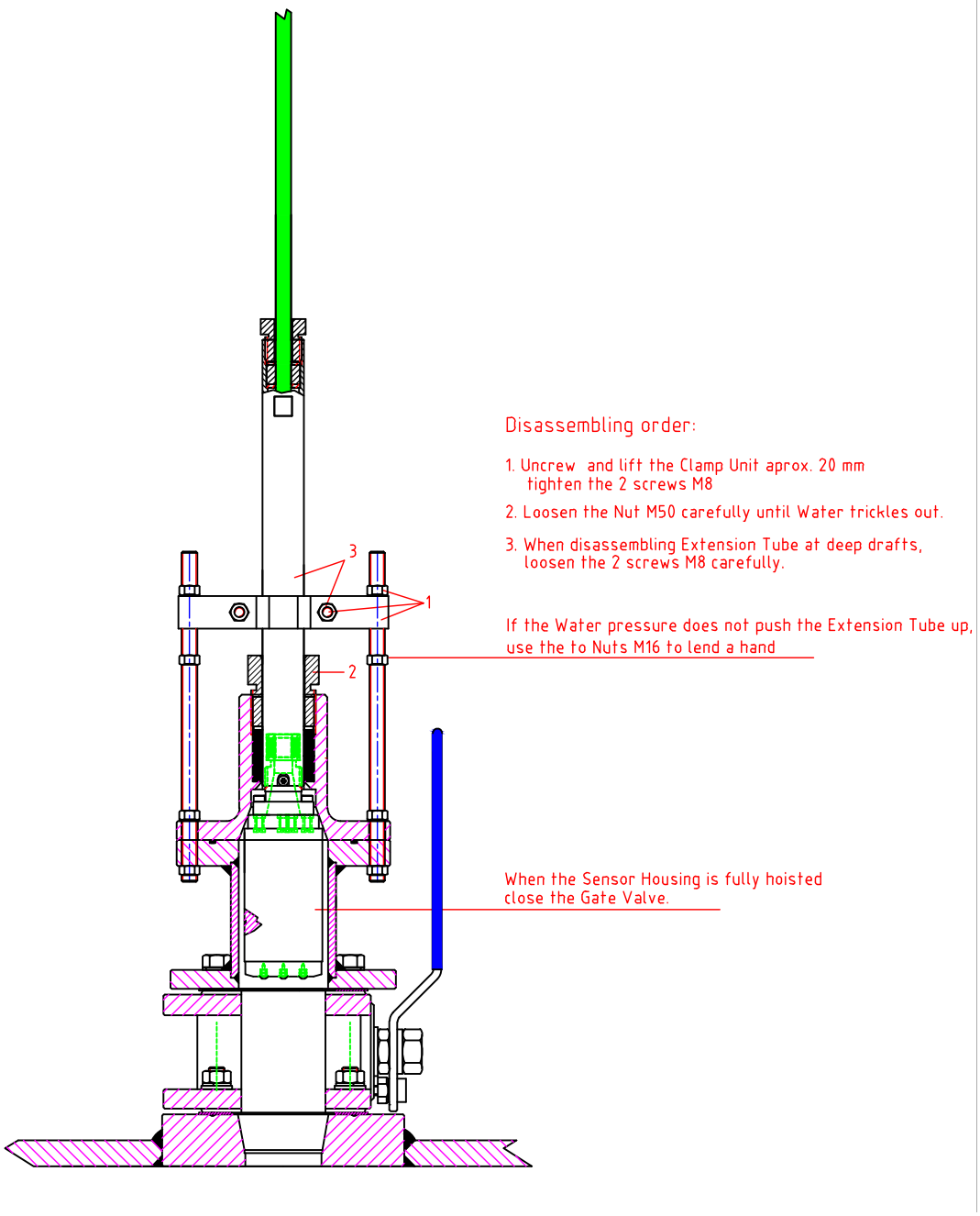
Open Ball Valve, lower sensor unit and Extention tube.



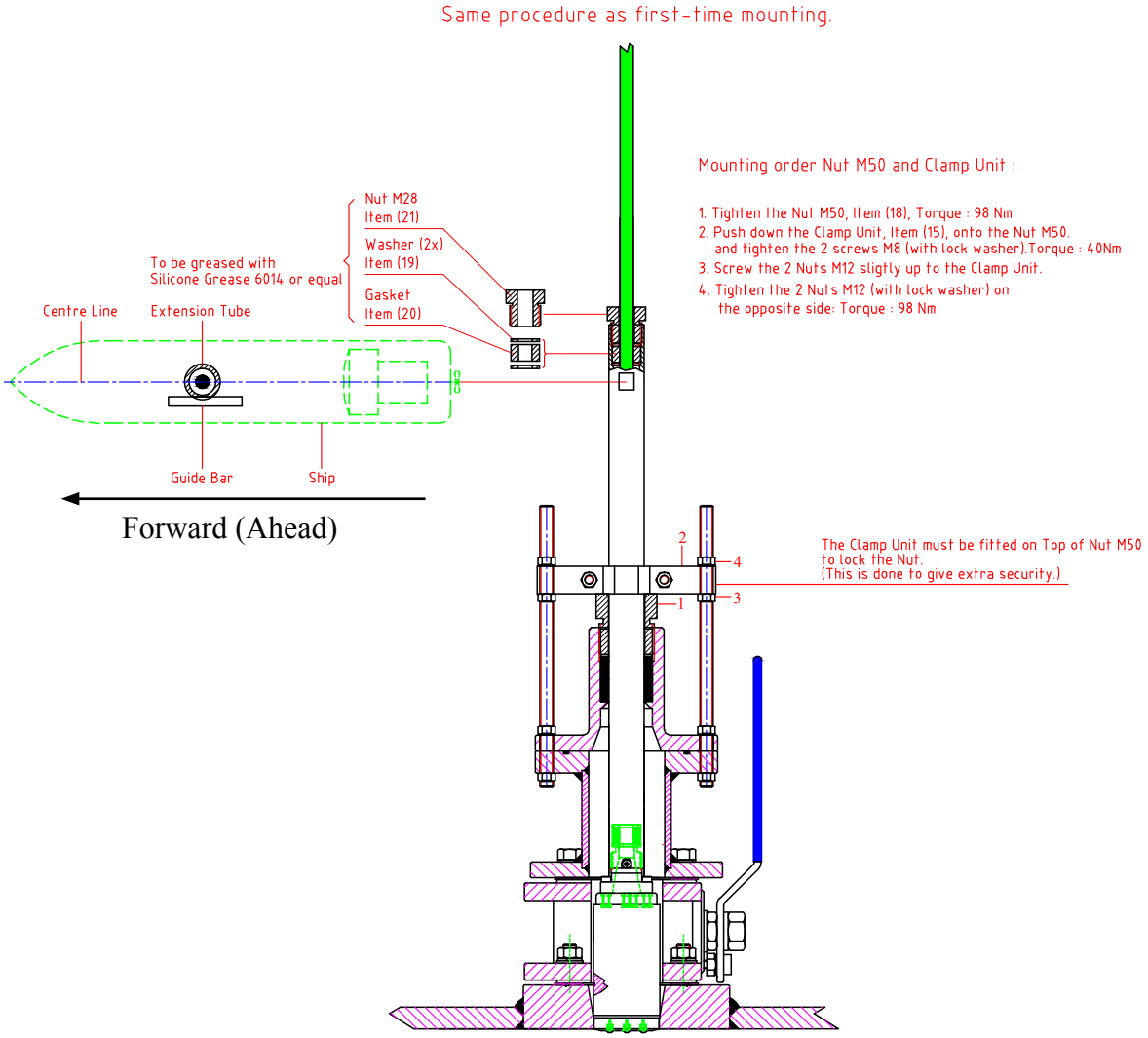
Protect sensor!

- 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.

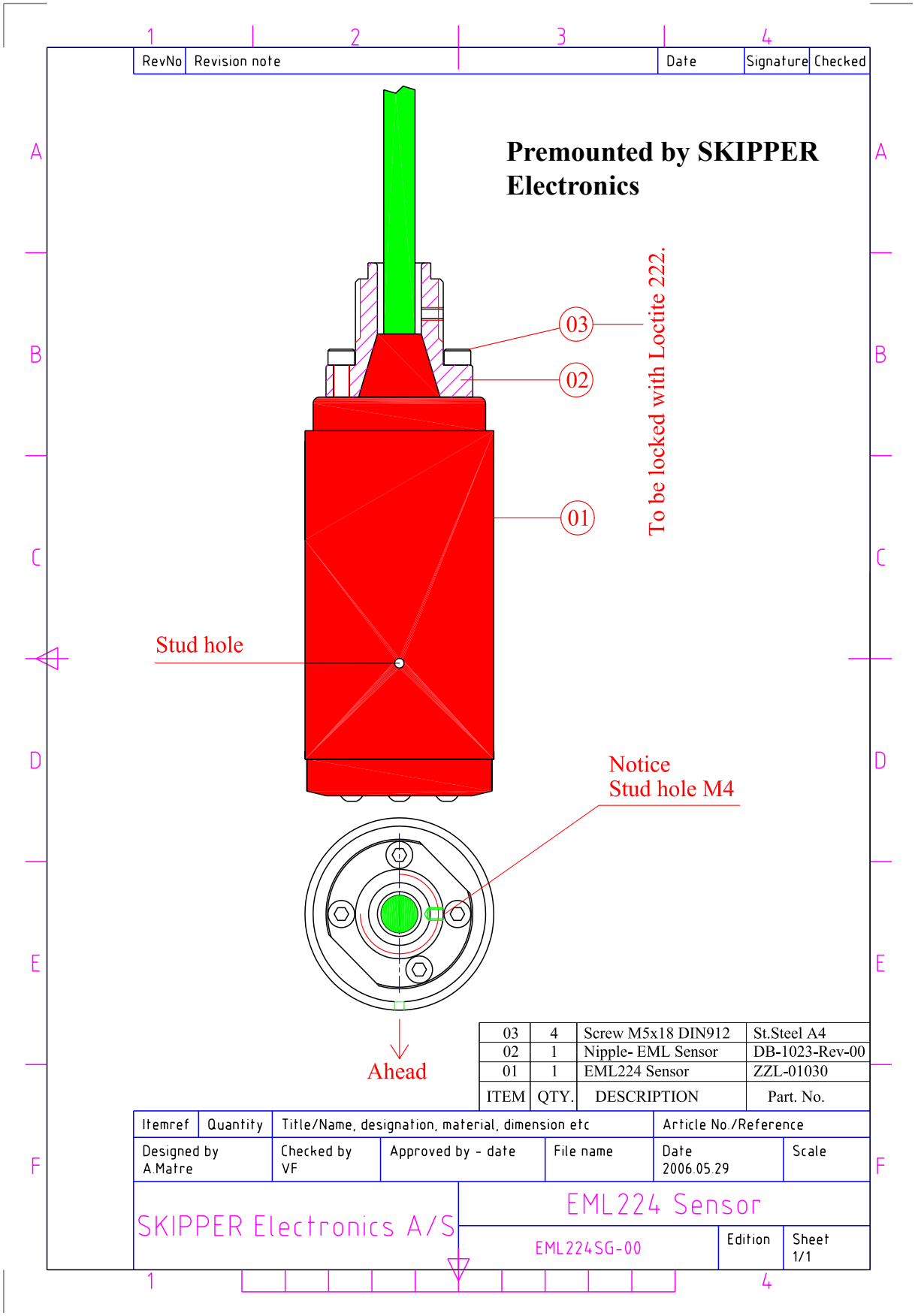
9. Sensor removal



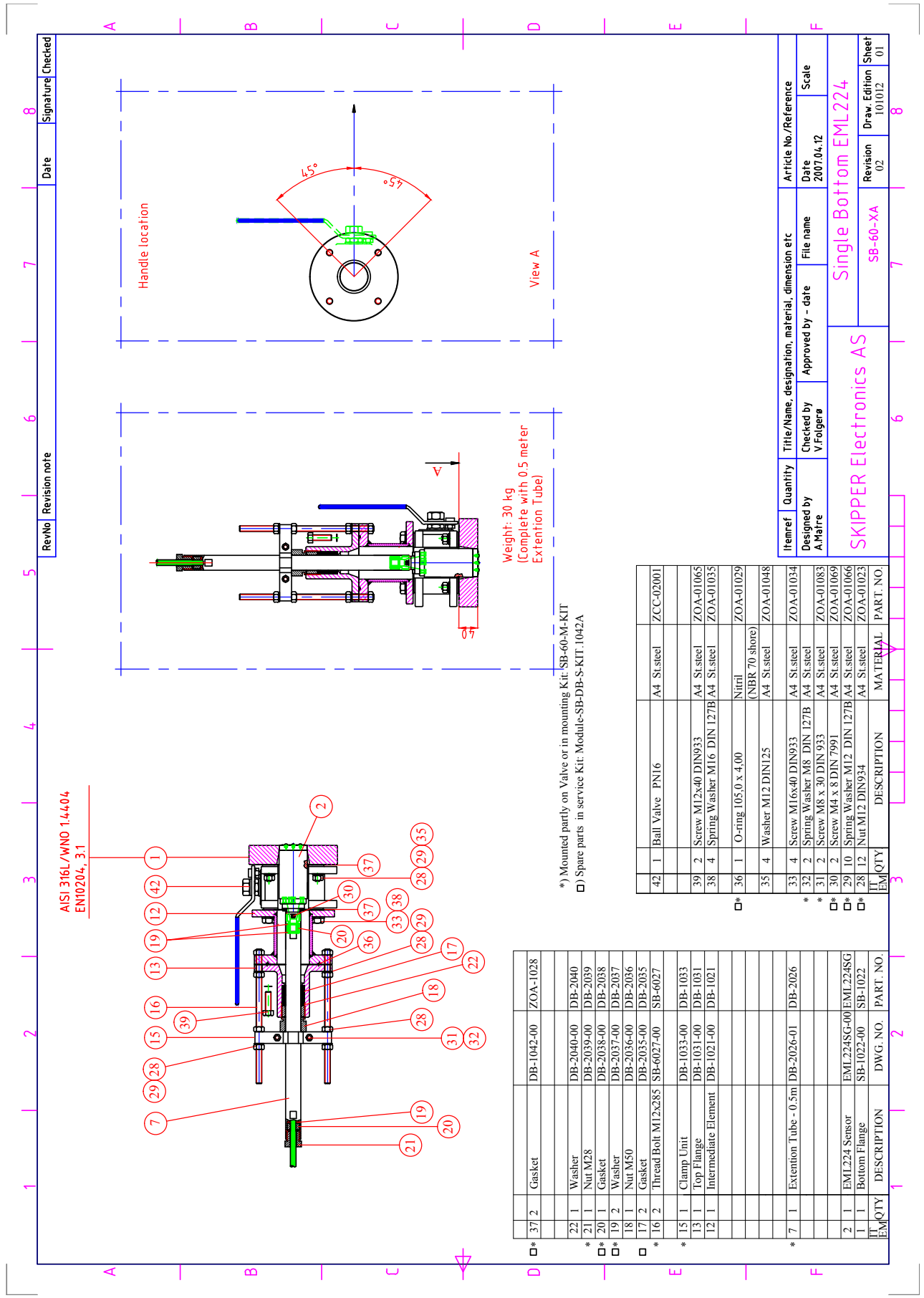
10. Re-installation



11. EML224 Sensor



12. EML224 Single Bottom



Item	QTY	DESCRIPTION	MATERIAL	PART. NO.
42	1	Ball Valve PN16	A4 St.steel	ZCC-02001
39	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)	ZOA-01029
35	4	Washer M12 DIN125	A4 St.steel	ZOA-01048
33	4	Screw M16x40 DIN933	A4 St.steel	ZOA-01034
* 32	2	Spring Washer M8 DIN 127B	A4 St.steel	
* 31	2	Screw M8 x 30 DIN 933	A4 St.steel	ZOA-01083
□* 30	2	Screw M4 x 8 DIN 7991	A4 St.steel	ZOA-01069
□* 29	10	Spring Washer M12 DIN 127B	A4 St.steel	ZOA-01066
□* 28	12	Nut M12 DIN934	A4 St.steel	ZOA-01023

Item	QTY	DESCRIPTION	DWG. NO.	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	DB-2039
□* 20	1	Gasket	DB-2038-00	DB-2038
□* 19	2	Washer	DB-2037-00	DB-2037
□ 18	1	Nut M50	DB-2036-00	DB-2036
□ 17	2	Gasket	DB-2035-00	DB-2035
* 16	2	Thread Bolt M12x285	SB-6027-00	SB-6027
* 15	1	Clamp Unit	DB-1033-00	DB-1033
13	1	Top Flange	DB-1031-00	DB-1031
12	1	Intermediate Element	DB-1021-00	DB-1021
* 7	1	Extention Tube - 0.5m	DB-2026-01	DB-2026
2	1	EML224 Sensor	EML224SG-00	EML224SG
1	1	Bottom Flange	SB-1022-00	SB-1022