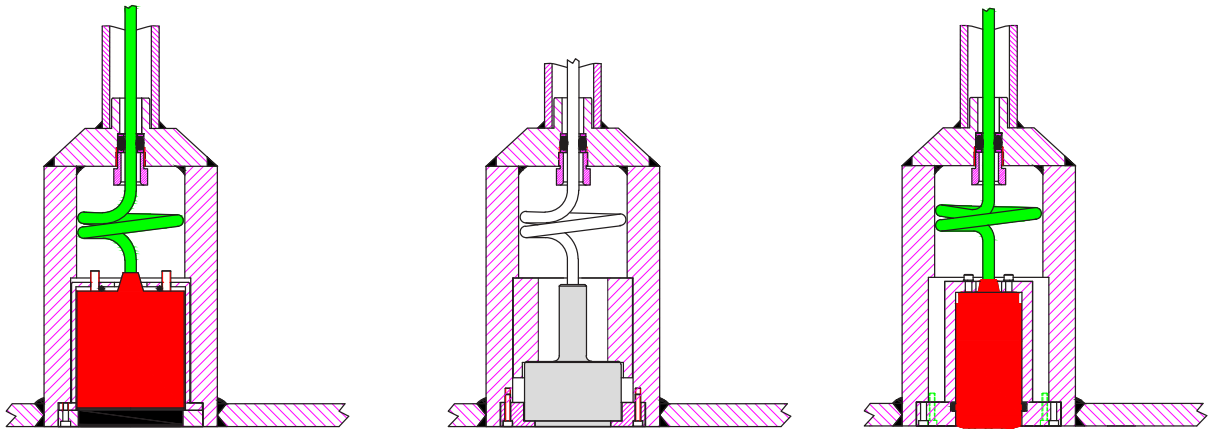


SKIPPER

Combo Tank Aluminium

ETNALC

Installation Manual



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1. General information

The SKIPPER ETNALC Combo Tank Aluminium is used for installation of:

1. Echo Sounder transducer type (24, 38, 50 and 200 kHz). Optional Ice/Sand protection for same.
2. DL850 Doppler Log.
3. EML224 Speed Log.

Caution!

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

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

The SKIPPER ETNALC Combo Tank Aluminium is delivered final assembled. The parts necessary for the sensor and transducer mounting will be found packed with the sensor/transducer. First of all, it must be decided where the Tank 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 sensor/transducer 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)
- The active surface of the transducer must be installed with front face a maximum of +/-7 degree to the ships horizontal plane. (Echo Sounder).

Do not mount sensor/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 the sensor/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.**

Important

”Sensors for Speed Log and Echo Sounder are delivered with a fixed cable. Needed 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.

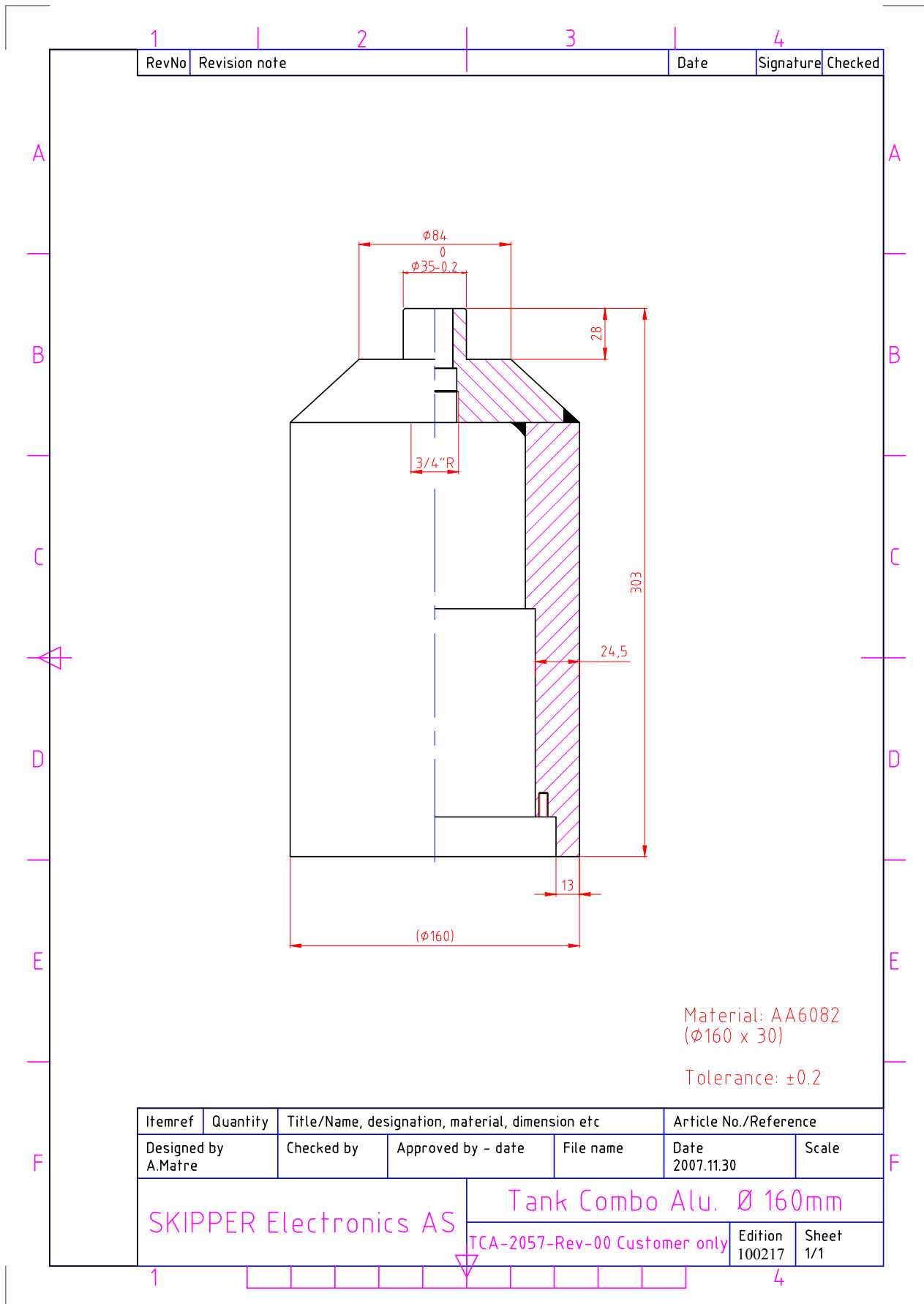
- Standard welding practice, methods and procedures should be observed, but may vary. (See welding notes).

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.

2. Combo Aluminium Tank Ø 160 mm



3. Aluminium Welding Procedure

1		2	3	4
RevNo	Revision note		Date	Signature
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Max 1° for Speed Logs
Max 7° for Echo Sounders

Flush

Flush

Protruding
Utstikkende

Max 20°

30 cm

30 cm

Ahead

Build a streamlined blester around the tank

60°

Observe proper grinding of outer Hull welding.
Sveis på utsiden av bunn må planslipes.

ALUMINIUM WELDING PROCEDURE

Welding Wire: AlMg4.5Mn or equal (1.0) - 1.2 mm
 Welding Gas: Argon 4.6 or Mision 99.99
 Gas flow: 16 - 19 L/min.
 ① 135 - 140 A
 ② 155 - 220 A

DEGREASE ALUMINIUM CAREFULLY
 Brush with Stainless Steel Brush within 30 min. prior to welding.
 Preheat with Propan Gas thickest part min. 130°. No pendulous movement during welding.
 No Airdraft during welding at welding Position.
 All Materials: DnV, GL or equal Certificates.
 Welder qualification: Valid Certificate for the specified thickness and welding Positions. DnV, GL or equal.

SVEISEPROSEDYRE FOR ALUMINIUM
 Sveisetråd: AlMg4,5Mn eller filsv. (1,0) - 1,2 mm
 Dekk-gass: Argon 4,6 eller Mision 99,99.
 Gassflyt: 16 - 19 L/min.
 ① 135 - 140 A
 ② 155 - 220 A

AVFETT ALUMINIUMEN FORSIKTIG
 Børst med rustfri stålbørste innen 30 min. før sveising.
 Forvarm med propangass tykkeste del min. 130°C.
 Ingen pendling under sveising.
 Luftdrag i sveiseområdet må unngås.
 Materialer: DnV, GL eller tilsv.sertifikater.
 Sveiseoperatørs kvalifikasjoner: Gyldig sertifikat for spesifisert tykkelse og sveiseområde. DnV, GL eller tilsv.

Itemref	Quantity	Title/Name, designation, material, dimension etc			Article No./Reference	
Designed by A.Matre	Checked by	Approved by - date	File name	Date 2007.11.19	Scale	

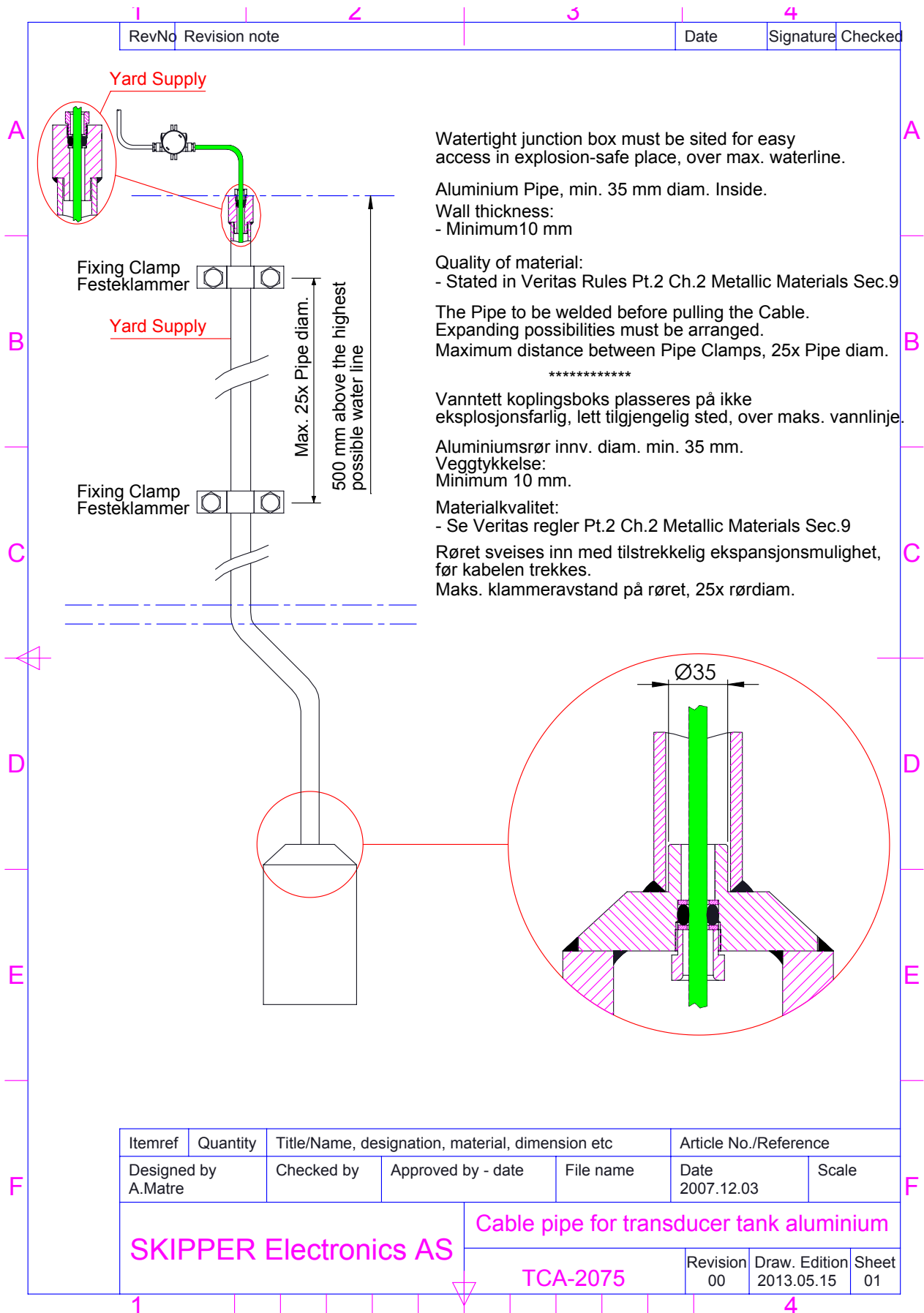
SKIPPER Electronics AS

Installation and welding guidance for Transducer Tank- Alu.

TCA-2041-Rev-01

	Edition 2013.05.15	Sheet 1/1
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4. Cable Pipe for Aluminium Tank



5. Transducer Mounting

1		2		3		4
RevNo	Revision note			Date	Signature	Checked

Provide approx. 3/4m of Cable between Cable Gland and the Transducer Element.
Sørg for at kabellengden mellom kabelgjennomføring og svinger er ca. 3/4m.

Tube, Aluminium
Rør, Aluminium
Ref. TCA-2075

Tube, Steel
Rør, Stål
Ref. TA3004

Washer, stainless — Skive, rustfri
Rubber Gasket — Gummipakning
Washer, stainless — Skive, rustfri
Packing Nipple — Pakknippel

Special Wrench/Tool for tightening of Packing Nipple
Spesialverktøy for stramming av pakknippel.

Sensor/Transducer Element with Cable.
Svingerelement med kabel.

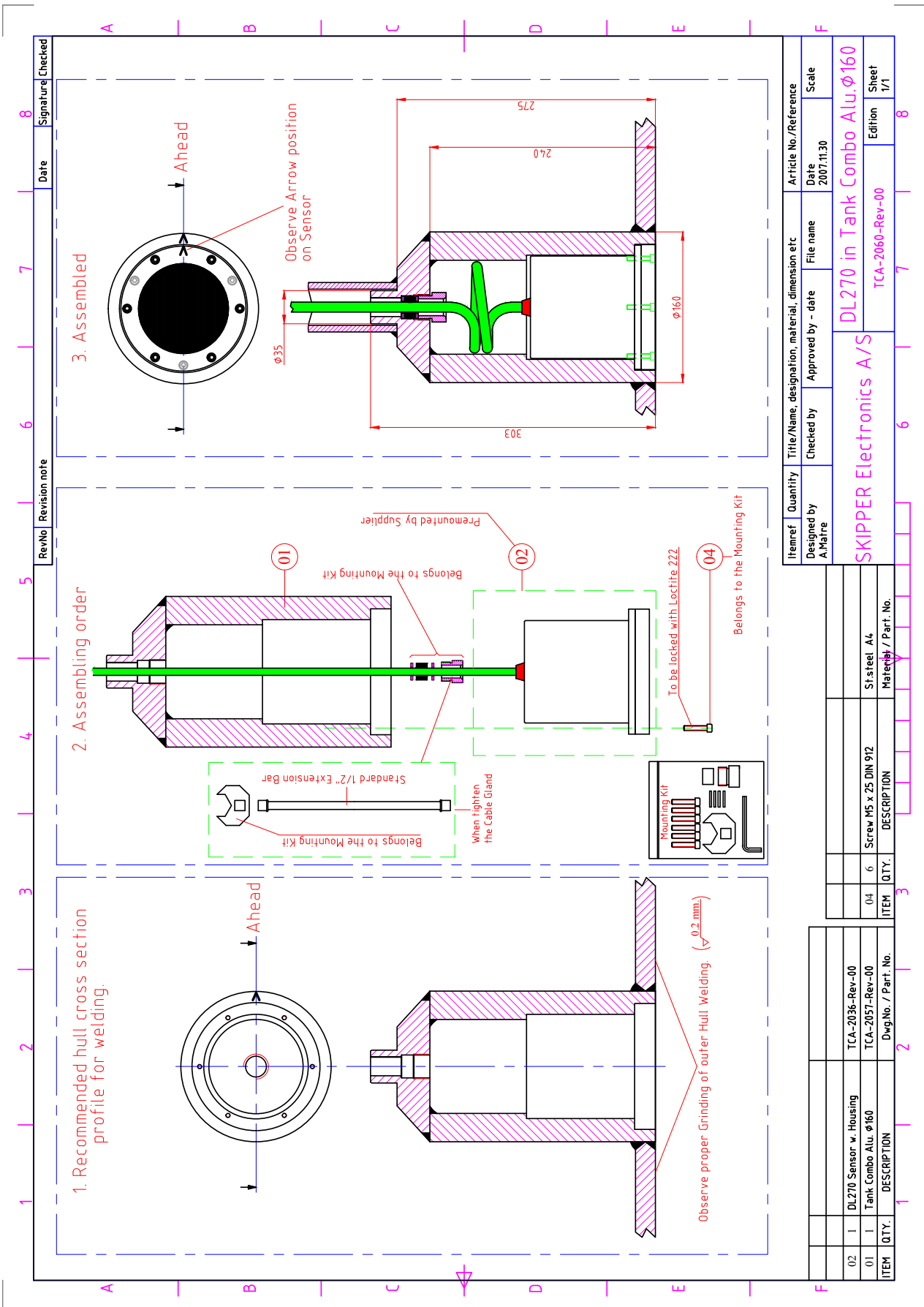
Mounting Ring
Montasjering

Allen Screw M8x16 DIN912.
Apply with lead or sim. on Threads.
Sylhode skrue M8x16 DIN912.
Påfør blyhvitt el.lign. på gjenger.

Allen key 6mm.
Nøkkel 6mm.

Itemref	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference
Designed by AM	Checked by VF	Approved by - date	File name
		2007.12.18	Scale
Skipper Electronics AS		Mounting of Transducer	
		TB-3003-Rev-01	Edition Sheet 1/1

6. DL 270 in 160 mm Aluminium Combo Tank



Itemref	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference
02	1	DL270 Sensor w. Housing	TCA-2036-Rev-00
01	1	Tank Combo Alu. $\phi 160$	TCA-2057-Rev-00
ITEM QTY.		DESCRIPTION	Dwg.No. / Part. No.
04	6	Screw M5 x 25 DIN 912	St:steel A4
ITEM QTY.		DESCRIPTION	Material / Part. No.

Designed by	Checked by	Approved by - date	File name	Article No./Reference
A.Maire				2007.11.30

Scale	Sheet
1/1	1/1

DL270 in Tank Combo Alu. $\phi 160$
SKIPPER Electronics A/S
TCA-2060-Rev-00
Edition 1/1

7. 50 kHz in 160 mm Aluminium Combo Tank

RevNo

Revision note

Date

Signature

1

1. Recommended hull cross section profile for welding.

2

2. Assembled

3

2. Assembling order

4

5

6

7

8

A

B

C

D

E

F

1

2

3

4

5

6

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7

8

A

B

C

D

E

F

ITEM	QTY.	DESCRIPTION	Material / Part. No.
08	2(4)	Washer M12 DIN 125	St. steel A4
07	6	Screw M5 x 25 DIN 912	St. steel A4
06	1	Press Element Alu. 50kHz	TCA-2044-Rev-00
05	1	Gasket	SB-6029-Rev-00
04	1	PG-Nipple	TC-2013-Rev-00
03	1	Ring Alu. 50kHz	TCA-2043-Rev-00
02	1	Tank Combo Alu $\varnothing 160$	TCA-2057-Rev-00
01	1	Transducer 50 kHz 25/40meter	ENT050BEL / (L-X = 40m)

Itemref	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference
Designed by A Mairre	Checked by	File name	Scale
	Approved by - date	Date	2007.12.03

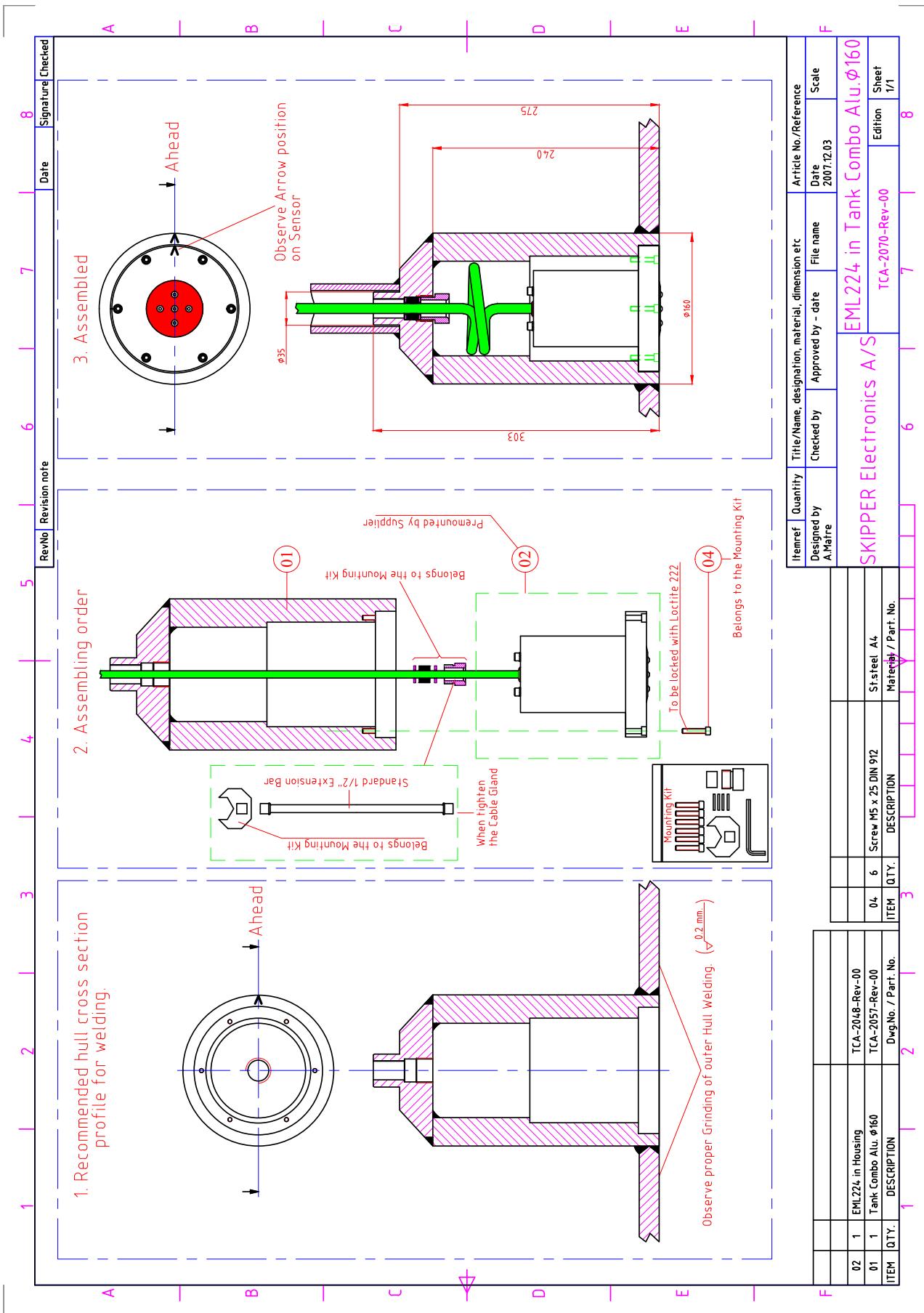
SKIPPER Electronics A/S

TCA-2065-Rev-00

50kHz in Tank Combo Alu. $\varnothing 160$

Edition 1/1

8. EML224 in 160 mm Aluminium Combo Tank



Itemref	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference
02	1	EML224 in Housing	TCA-2048-Rev-00
01	1	Tank Combo Alu. ϕ 160	TCA-2057-Rev-00
ITEM	QTY.	DESCRIPTION	Dwg.No. / Part. No.
04	6	Screw M5 x 25 DIN 912	St:steel A4
			Material / Part. No.

Itemref	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference
Designed by	A.Maire	Checked by	Approved by - date
File name	2007:12:03	Date	2007:12:03
Scale	1/1	Edition	1/1

SKIPPER Electronics A/S	EML224 in Tank Combo Alu. ϕ 160
TCA-2070-Rev-00	