ETNST
Installation Manual

SKIPPER Electronics AS
Enebakkveien 150
P. O. Box 151, Manglerud
0612 Oslo, Norway
www.skipper.no

Telephone: +47 23 30 22 70
Telefax: +47 23 30 22 71
E-mail: support@skipper.no
Co. reg. no: NO-965378847-MVA

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1. General information

The SKIPPER ETNST Standard Tank is used for installation of:

1. Echo Sounder transducer type (50 and 200 kHz).

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 ETNST Standard Tank is delivered final assembled. The parts necessary for the transducer mounting will be found packed with the 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 transducer as deep as possible on the hull.

- 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 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 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. Transducer Tank ETNST

Note: due to surface machining, the diameter may vary between 217 and 219,1

Part no: ETNST.

Material: ST 52.3N
Surface Treatment: Flugger 1240 Industriprimer. Colour: Red
Gen. tolerance ±0.2

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<tr>
<th>Itemref</th>
<th>Quantity</th>
<th>Title/Name, designation, material, dimension etc</th>
<th>Article No./Reference</th>
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<td>TB-2002-Rev-00-Customer only</td>
<td>Edition 100215</td>
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3. Installation and Welding Guidance for Transducer Tank

Weld the Tank according to procedure as shown. Use low-Hydrogen electrodes, e.g. OK 6800. In order to avoid contraction strain, hammer each Welding Seam before applying next. Allow the Tank to cool down during welding.

DO NOT HAMMER THE LAST WELDING SEAM.

Grind flush all Weldings within 5m in front of, and 3m to the side of the Transducer. Finally, paint the Transducer Tank inside and outside with a non-corrosive coating.

Sveie tanken ihanholdt til viste prosedyre. Bruk lahydrogen elektroder, f.eks. OK 6800.

For å unngå krympespenninger mest mulig, hammers hver sveiestreng før neste legges, og tanken holdes så kald som mulig under sveisning. SISTE SVEISTRENG NIKK HAMMER!

Planløp alle sveisesemmer innenfor el. nærare 5m i front og 3m til hver side for sveiseren. Til slutt måles svingertanken ut-endig og innvendig med korrosjon hindrende måling.
4. Cable Pipe for Transducer Tank

WATERTIGHT JUNCTION BOX MUST BE SITED FOR EASY ACCESS IN AN EXPLOSION-SAFE PLACE, OVER MAX. WATER LINE.

VANNETT KOPPLINGSBOKS PLASSERES PÅ IKKE EKSPLOSJONSFARLIG, LETT TILGJENGELIG STED, OVER MAX. VANNLINJE.

STEEL PIPE, MIN. 35 mm DIAM. INSIDE.
- GALVANIZED PIPE: MIN. 8 mm
- BLACK PIPE: MIN. 10 mm

WALL THICKNESS:
- STATED IN VERITAS CHAP. X. PARA 7A, TYPE III

THE PIPE TO BE WELDED BEFORE PULLING THE CABLE. EXPANDING POSSIBILITIES MUST BE ARRANGED.

MAXIMUM DISTANCE BETWEEN PIPE CLAMPS, 25 X PIPE DIAM.

STÅLRØR, INNV. DIAM. MIN. 35 mm
VEGGTYKKELSE:
- GALVANISERTE RØR: MIN. 8 mm
- SVARTE RØR: MIN. 10 mm

MATERIALKVALITET:
- SE VERITAS REGLER KAP. X. PARA 7A, TYPE III

RØRET SVEISES INN MED TILSTREKKELIG EKSPANSJONSMULIGHET, FØR KABELEN TREKKES.

MÅKS. KLAMMERAVSTAND PÅ RØRET, 25 X RRDIAM.

Note: Cable gland must not be mounted inside the ICE Tank
5. Mounting of Transducer

Provide approx. 3/4m of Cable between Cable Gland and the Transducer Element.
Sorg for at kabellangen mellem kabelgjønnføring og svinger er ca. 3/4m.

### Mounting Ring

*Mounting Ring*

*Hankfering*

**Allen Screw M8 x 16 DIN9612**
Apply with lead or tin on Threads.
**Svinda skru M8 x 16 DIN9612**, påfer bløttvitt ellign, på gjenger.

**Special Wrench/Tool for tightening of Packing Nipple**

Speiselsverktøy for stramning av pakknippel.

**Allen key 6mm**

**Nøkkel 6mm**

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**Table: Mounting of Transducer**

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<th>Quantity</th>
<th>Title/Name, designation, material, dimension etc</th>
<th>Article No./Reference</th>
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**Skipper Electronics AS**  
**Mounting of Transducer**

**TB-3003-Rev-01**

**Edition**

**Sheet** 1/1
6. Transducer and Mounting Ring
7. Transducer Tank 50kHz

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N.B. DUE TO SURFACE MACHINING, THE DIAMETER MAY VARY BETWEEN 21.5 AND 22MM.
8. Transducer Tank 200kHz

<table>
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**Design Information**

- Designed by: Skipper Electronics AS
- Checked by: VT
- Approved by: Date 2005/05/02

**RevNo**

- Revision: TB-0200-Rev-00
- Draw. Edition: 100215
- Sheet: 01

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*NOTES:* DUE TO SURFACE MACHINING, THE DIAMETER MAY VARY BETWEEN 219 AND 211MM.