DNV·GL

Certificate No:
TAS00001FU

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Bottom Penetration for Echo Sounder, Sonar or Log

with type designation(s)
SB-200-ECHO

Issued to
Skipper Electronics AS
Oslo, Norway

is found to comply with
DNV GL rules for classification – Ships

Application :

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV GL.

Issued at **Høvik** on **2018-07-18**
This Certificate is valid until **2023-06-30**.
DNV GL local station: **Oslo Maritime and CAP**

Approval Engineer: **Adel Samiei**

for **DNV GL**

Marianne Spæren Marveng
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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Product description

Retractable gate valve arrangement (herein referred to as 'Assembly' in the certificate) with bottom penetration consisting of gate valve, pipe as intermediate element and flanged connection welded to the hull'
Material of bottom flanges, intermediate pipe, and top flanges are:

- AISI 316L / 1.4404 EN10028-7
- AISI 316 / 1.4401 EN10028-7

Application/Limitation

Products covered by this certificate may be used as installation for Echo sounder.

Products covered by this certificate are evaluated for a internal design pressure of 3.3 bar (equivalent to 33 meter of water).

Mounting to hull is to be approved in each case.

Gate valves shall be purchased with a DNV GL product certificate. Design review of valves are out of scope of this certificate. Design pressure of valves shall be minimum 3.3 bar.

The whole assembly shall be subject to hydrostatic test at 5 bar.

Valve bodies, pipes, and flanges shall be delivered with a works certificate (equivalent to type 3.1 material certificate) issued by an approved manufacturer of DNV GL.

Assembly as covered by this certificate shall be delivered with a DNV GL product certificate.

Type Approval documentation

Marking of product

For traceability to this Type Approval, the products are at least to be marked with:

- Manufacturer's name or trade mark
- Pressure class
- Size

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNVGL-CP-0338.