DNV·GL

Certificate No:
TAS000023X

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Anchor Handling Equipment

with type designation(s)
Karm Fork Ø600, Ø500 and Ø350, Towing pins Ø500, Ø450 and Ø350

Issued to
Karmøy Winch AS
Kopervik, Norway

is found to comply with
NMD's Regulations of 1 July 2014 No. 1072 on the construction of ships

Application :

Hydraulic operated shark jaws and towing pins for towing and anchor handling operations.

Issued at **Høvik** on **2019-09-09**
This Certificate is valid until **2024-09-08** .
DNV GL local unit: **Haugesund**

Approval Engineer: **Chi Wan Bang**

for **DNV GL**

Aldo Matteucci
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

Hydraulic operated towing pins for guiding of the line and shark jaws for holding the line during towing and anchor handling operations.

Type	SWL
Karm Fork Ø600	650 tonnes
Karm Fork Ø500	650 tonnes
Karm Fork Ø350	400 tonnes
Towingpins Ø500	300 tonnes
Towingpins Ø450	300 tonnes
Towingpins Ø350	160 tonnes

Application/Limitation

1. This Type Approval covers design(s) only. i.e. the Type Approval is not valid for the final product, but may be used as basis for obtaining a product certificate.
2. Materials are to be delivered in accordance with the mentioned NMD's Regulations Section 13 and with 3.1 certificates according to EN 10204.
3. Hydraulic cylinders are to be delivered with manufacturer's certificate as a minimum requirement. If delivered to a DNVGL classed vessel product certificate is required, ref. DNVGL-RU-SHIP Pt.4 Ch.6 Sec.5 [8.3].
4. All welding is to be carried out by certified welders.
5. The required Safe Working Load (SWL) for the Shark Jaw is dependent on the winch it is intended for, and is to be 20% higher than maximum hoisting capacity of the winch.
6. Final acceptance of the shark jaw is pending the successful test of release under dead ship condition with wire tension corresponding to 40% of the design SWL for the shark jaw.
7. Reference is made to shark jaws: According to NMD's "Rundskriv RSV 04-2008, 7.4" a procedure describing release methods, response time and pay out speed, shall be available for the crew onboard the ship. In addition vital information shall be visible from the navigators' normal working position. This flag state requirement applies also for procedures for operating the Shark Jaws/Towing Pins.
8. Emergency release shall be possible without manual handling close to the stopper, ref. to the mentioned NMD's Regulations Section 13.
9. Support and welding of the complete Shark Jaw/Tow Pin housing to the deck structure is not covered by this Type Approval.
10. This Type Approval certificate is not valid for designs, components, equipment, systems or products which are subject to classification by DNV GL.
    If equipment is installed on DNVGL vessels, each product shall comply with the documentation and certification requirements from DNVGL-RU-SHIP Pt.5 Ch.9.

Type Approval documentation

Tests carried out

Reference is made to Type Test carried out at Karmøy Winch AS 2009-10-05.

Marking of product

The product is to be marked with manufacturer's name or trademark and type number identification.

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.

END OF CERTIFICATE