



Certificate no.:
TAS00004GG

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Windlass

with type designation(s)
K2-19, K2-24, K2-28, K2-32

issued to

SHM Maritime AS
Molde, Norway

is found to comply with

DNV rules for classification – Ships

DNV rules for classification – High speed and light craft

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV and for DNV product certification

Issued at **Hamburg** on **2025-07-23**

This Certificate is valid until **2030-07-22**.

for **DNV**

DNV local unit: **Hamburg - CMC North/East**

Approval Engineer: **Frank Poetsch**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

Anchor rope winches of types:

K2-19 HYD LHD*, K2-19 HYD RHD*, K2-24 HYD LHD*, K2-24 HYD RHD*, K2-24 EL LHD*, K2-24 EL RHD*, K2-28 EL LHD*, K2-28 EL RHD*, K2-32 EL LHD*, K2-32 EL RHD*

Winches with type designations K2-24, K2-28 and K2-32 are designed according to the DNV-RU-SHIP P3 Ch11 Hull equipment, supporting structure and appendages.

Winches with type designation K2-19 are designed according to the DNV-RU-HSLC Pt3 Ch5 Equipment, steering and appendages.

Application/Limitation

1. Working conditions

Type:	K2-19 HYD *	K2-24 HYD * K2-24 EL *	K2-28 EL *	K2-32 EL *
Ambient air temperature:	-25°C and +45°C			
Equivalent stud link chain grade	K2-19mm, MBL 211kN	K2-24mm, MBL 332kN	K2-28mm, MBL 449kN	K2-32mm, MBL 583kN
Lifting force, 30min	11kN	24,48kN	33,32kN	43,52kN
Lifting force, 2min	16,5kN	36,72kN	49,98kN	65,28kN
Hoisting speed	9m/min			
Anchorage depth	82,5m			
Rope-ø /steel galv., rotation resistant, max. 1980N/mm ²	19mm, MBL 211kN	24mm, MBL 402kN	28mm, MBL 547kN	32mm, MBL 715kN
Holding force, 80% of chain MBL	169kN	266kN	360kN	467kN
Drum-ø	394mm	480mm	560mm	640mm
Layer, max.	7	7	7	7
Safety windings (remain on drum)	4	4	4	4
Motor, hyd./elect.	BR100 / n.a.	BR130 / IEC132	n.a. / IEC132	n.a. / IEC180
Band brake with manual hand crank, Y/N	Y	Y	Y	Y
Reversible prime mover	Y	Y	Y	Y

*RHD – right side motor / LHD – left side motor / EL – electric driven, HYD – hydraulic driven

2. Material/ workmanship:

- acc. to DNV-RU-SHIP Pt3 Ch11 Sec1 – 6.2 Materials or DNV-RU-HSLC Pt3 Ch5 Sec4 – 6.2 Materials
- Materials with 3.1 certificates (ISO 10474 or EN 10204) are to be used when manufacturing load carrying parts. Traceability is to be ensured by the manufacturer's quality system.
- DNV-RU-Ship Pt.2 Ch.4 Fabrication and testing

3. Comments:

- The winches shall be protected permanently against corrosion.
- Screws shall be secured against unscrewing (e.g. by tightening torque, liquid thread locker).
- The power-driven windlasses are to be reversible.
- The hydraulic system shall be air vented before initial use and after each maintenance. The air venting procedure shall be in accordance with the makers instructions.
- Consideration shall be given to a means to contain debris resulting from a severe damage of the prime mover (hydraulic) due to over-speed in the event of uncontrolled rendering of the cable, particularly when an axial piston type hydraulic motor is the prime mover.
- For the protection of the mechanical parts in the event of the windlass jamming, an overload protection (e.g. slip coupling) shall be fitted to limit the maximum torque of the electric drive engine.

4. Product certification:

To obtain DNV Product Certificates, each winch shall be subject to

- DNV manufacturing survey

- Testing in presence of DNV acc. to our rules
 - DNV-RU-SHIP Pt3 Ch11 Sec1 – 6.6 Testing or
 - DNV-RU-HSLC Pt3 Ch5 Sec3 – 6.3 Testing respectively

Type Approval documentation

Tests carried out

Test report, windlass K2-28 EL LHD, serial no. 197024.001, witnessed by DNV surveyor, 2025-02-04 and 2025-04-10.
Test report, windlass K2-28 EL RHD, serial no. 197024.002, witnessed by DNV surveyor, 2025-02-04 and 2025-04-10.
Test report, windlass K2-24 EL RHD, serial no. 197010.003, witnessed by DNV surveyor, 2025-02-14.

Marking of product

Manufacturer's name or trademark and type designation.

Periodical assessment

This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>

END OF CERTIFICATE