DNV·GL

Certificate No:
TAS0000258
File No:
686.62
Job Id:
262.1-008249-6

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Winch - General Application

with type designation(s)
H02, H03, H04, H07, H12

Issued to
Bryne Winch Solution AS
Nærbø, Norway

is found to comply with
DNV GL standard DNVGL-ST-0378 – Standard for offshore and platform lifting appliances
DNV GL standard DNVGL-ST-0377 – Standard for shipboard lifting appliances

Application :

Hydraulic winches with rated output torque and acceptable number of drum cycles as stated on next page

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

This Certificate is valid until **2024-08-28**.

Issued at **Høvik** on **2019-08-29**
DNV GL local station: **Stavanger** for **DNV GL**

Approval Engineer: **Antonio Sendin Alvarez**

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

- This type approval certificate is based on previous certificate S-8722
- Hydraulic winches with built-in 2 stage planetary gear (H02 one stage) and hydraulic brake (fail-safe).
- The submitted calculations are based on a design dynamic factor ψ_0 of 1.25. For design dynamic factor above this, the utilisation of the winch shall be specially considered.
- A design pressure of 280 MPa and a design temperature T_D of -20°C have been applied.
- The approval of the winches is based on the following safe working load (SWL) and nominal drum torque, corresponding to the maximum of load spectrum L4 according to F.E.M. 1.001 3rd edition. Acceptable number of drum cycles is listed below the load:

H02					
Wire diameter	11 mm				
Drum diameter	208 mm				
Total gear ratio	5.5				
Safe Working Load	**2000 kg**	**1710 kg**	**1005 kg**	**745 kg**	**695 kg**
Drum torque [Nm]	2550	2180	1280	950	885
Acceptable number of drum cycles for above torque	$5*10^4$	$1*10^5$	$1*10^6$	$1*10^7$	$1*10^8$

H03						
Wire diameter	14 mm					
Drum diameter	238 mm					
Total gear ratio	41.25					
Safe Working Load	**3000 kg**	**2770 kg**	**1635 kg**	**975 kg**	**730 kg**	**680 kg**
Drum torque [Nm]	4470	4130	2435	1450	1090	1010
Acceptable number of drum cycles for above torque	$7.5*10^3$	$1*10^4$	$1*10^5$	$1*10^6$	$1*10^7$	$1*10^8$

H04					
Wire diameter	14 mm				
Drum diameter	238 mm				
Total gear ratio	56.35				
Safe Working Load	**4000 kg**	**2995 kg**	**2280 kg**	**1810 kg**	**1690 kg**
Drum torque [Nm]	5960	4460	3400	2700	2520
Acceptable number of drum cycles for above torque	$3*10^4$	$1*10^5$	$1*10^6$	$1*10^7$	$1*10^8$

H07					
Wire diameter	20 mm				
Drum diameter	342 mm				
Total gear ratio	76.5				
Safe Working Load	**7000 kg**	**4315 kg**	**3510 kg**	**3035 kg**	**2820 kg**
Drum torque [Nm]	14970	9230	7500	6490	6030
Acceptable number of drum cycles for above torque	$1*10^4$	$1*10^5$	$1*10^6$	$1*10^7$	$1*10^8$

H12					
Wire diameter	24 mm				
Drum diameter	408 mm				
Total gear ratio	65				

Safe Working Load	**12000 kg**	**10000 kg**	**7200 kg**	**5580 kg**	**5190 kg**
Drum torque [Nm]	30650	25560	18390	14250	13250
Acceptable number of drum cycles for above torque	$4.5*10^4$	$1*10^5$	$1*10^6$	$1*10^7$	$1*10^8$

- The winches are approved for maximum 3 layers of wire. When the hook is in its lowest position it is to be at least 3 turns of wire left on the drum.

- Support of winch in ship structure or other structure shall be verified by separate approval.

Application/Limitation

1. The winches are accepted for use in platform cranes as defined in the above Rules. Control systems and safety functions have not been evaluated.
2. The winches are not intended for personnel lifting.
3. Materials are to be delivered with 3.1 certificates.
4. All load-transmitting bolts are assumed pre-stressed according to a procedure acceptable to the attending surveyor and to at least 70% of the yield stress of the bolt material.
5. The strength, function and support of possible sprag clutches are not covered by our approval, but assumed to be according to the guidelines of the sprag clutch manufacturer.
6. Our gear calculations are based on that optimum hardening depths have been achieved according to recognised standards and manufacturer's experience. Material fatigue values based on 90% reliability of survival have been applied according to the requirements for lifting appliances in our rules. Load distribution factors as stated by the manufacturer have been used and we have not considered these.

Type Approval documentation

H02:

H03:

H04:

H07:

H12:

Tests carried out

In order to obtain a DNV GL Product Certificate, testing is to be carried out in accordance to DNVGL-ST-0378 Table 14-1

Marking of product

The winches are to be marked with the manufacturer's name or trademark, type designation and serial number.

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.

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END OF THE CERTIFICATE