



Certificate No:
TAS0000327

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Brakes

with type designation(s)
HSB20 - 10DRY

Issued to

Warner Electric, LLC dba Wichita Clutch
Wichita Falls, TX, USA

is found to comply with

DNV GL standard DNVGL-ST-0378 – Standard for offshore and platform lifting appliances

Application :

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

Issued at **Houston** on **2021-08-10**

This Certificate is valid until **2026-08-09**.

for **DNV**

DNV local station: **Houston Offshore Services**

Approval Engineer: **Bo Cui**

.....
Mark Miser
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.

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 300,000 USD.



Form code: TA 251

Revision: 2021-03

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Product description

Hydraulic failsafe brakes HSB20-10DRY with braking torques between 95,000 ft-lbs and 118,189 ft-lbs (214760 for technical details).

Application/Limitation

The brakes are approved for the following particulars

The active brakes shall be always installed in the lifting appliance together with a failsafe brake.

All load bearing materials are to be delivered with 3.1 certificates (EN 10204:2004), documenting mechanical properties and chemical composition in accordance with the Type Approval documentation, and shall comply with DNVGL-ST-0378 Standard for offshore and platform lifting appliances, edition July 2019.

Min. Design Temperature: -20°C

Design Friction Coefficient: 0.3

Inner Disk numbers: 11

Outer Disk Number: 10

New Brake Torque: 118,189 ft-lbs

Worn Brake Torque: 95,000 ft-lbs

Min. Release pressure: 400 Psi

Max recommended pressure: 500 Psi

Type Approval documentation

:

Tests carried out

The prototype was carried out on June 20, 2021 with reference to project A1036900

Marking of product

The brake shall be clearly marked with identification and serial number which relates the equipment to certificates and fabrication documentation.

Periodical assessment

For retention of the Type Approval, DNV's surveyor shall perform periodical assessment in accordance with DNV's Class Program DNVGL-CP-0338, Section 4.

END OF CERTIFICATE