

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Winch, Brake**

with type designation(s)

**Brake brackets: Type BB-46, Type BB-85, Rear brackets: Type RBC-46/63, Type RBC-84,
Parking lock unit: 187 2994**

Issued to

**Bosch Rexroth AB
Mellansel Västernorrlands Län, Sweden**

is found to comply with

Standard for Certification No. 2.22 Lifting Appliances**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed
by DNV GL.**This Certificate is valid until **2020-03-14**.Issued at **Høvik** on **2016-03-15**DNV GL local station: **Stockholm**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.

Job Id: **262.1-006583-3**
Certificate No: **TAS0000043**

Product description

Brakebrackets: Type BB-46, Type BB-85
Rear bracket: Type RBC-46/63, RBC-84
Parking lock unit: 187 2994

Application/Limitation

This approval is based on the Type Approval Certificate S-5592.

All load carrying 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 Standard for Certification No. 2.22 "Lifting Appliances" June 2013 Ch.2 Sec.1.

Each product is to be load tested following the requirements stated in the Standard for Certification No. 2.22 "Lifting Appliances" June 2013 Ch.2 Sec.12 Clause 2.1.1.

Design temperature: -20 °C

Maximum force (included dynamics addition) in longitudinal direction

Type BB-46:	225 kN
Type BB-85:	375 kN
Type RBC-46/63:	225 kN
Type RBC-84:	375 kN
Parking lock unit:	165 kN

Type Approval documentation



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Tests carried out

The prototype test is not relevant. In order to obtain a DNV GL Product Certificate, the load test is to be carried out according to DNV's Standard for Certification No. 2.22 "Lifting Appliances" June 2013 Ch.2 Sec.12 and witnessed by a DNV GL surveyor.

Marking of product

Each product shall be marked according to DNV's Standard for Certification No. 2.22 "Lifting Appliances" June 2013 Ch.2 Sec.12.

Periodical assessment

For retention of the Type Approval, a DNV GL surveyor shall perform a survey every second year and before expire date of this certificate to verify that the conditions for the type approval are complied with.

END OF CERTIFICATE