



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **D-5584**

This is to certify that the
Miscellaneous

with type designation(s)
SUPERBOLT Tensioners MT and CY Series

Issued to
Nord-Lock AG
ST GALLENKAPPEL, Switzerland

is found to comply with
DNV Standard for Certification no. 2.22 "Lifting Appliances"
DNV-OS-C101 "Design of Offshore Steel Structures, General (LRFD Method)" April 2011
DNV-OS-E101 Drilling Plant October 2013
DNV Rules for Classification of Ships Part 4 Chapter 4 "Rotating Machinery, Power Transmission"


Application
See Page 2

This Certificate is valid until **2018-06-30**.

Issued at **Høvik** on **2014-06-16**

DNV local station: **Drilling Systems**

for **Det Norske Veritas AS**

Approval Engineer: 

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.
If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

Certificate No.: D-5584
File No.: 523.89
Job Id.: 262.1-010374-2

Product description

SUPERBOLT Tensioners are designed as direct replacements for hexagon nuts. They can be threaded onto a bolt, stud, threaded rod or shaft, or similar. The main thread serves to position the tensioner on the bolt against a hardened washer and the load bearing surface. Once the tensioner is positioned, tensioning of the bolt is accomplished with hand wrenches or light power tools by torquing a series of jackbolts that are incorporated in the tensioner and encircle the main thread. By torquing the jackbolts with a relatively low torque a high tension load in the bolt, stud, rod or shaft is generated.

The SUPERBOLT Tensioners MT-Series are mainly used on the property class 8.8 bolting according to ISO 898. The CY-Series are used on large diameters bolting of the property class 8.8 and on the property class 10.9 bolting.

Application/Limitation

This Type Approval Certificate covers standard MT- and CY-Series of SUPERBOLT Tensioners as specified in the manufacturer's product catalogue.

On request, SUPERBOLT Tensioners may be supplied with inch threads, in sizes larger than M160, manufactured in special materials and coated with various anti-corrosion protection systems, etc. Those special products, however, are not covered by this Type Approval Certificate but may be approved on case to case basis.

This Type Approval is valid only if the use of the products is in compliance with Regulations, DNV Rules and Standards, and manufacturer's Specification and Instruction for Assembly and Tightening applicable for the intended service.

Type Approval documentation

Tests carried out

The following reports on the tests carried out were reviewed:

- Tests of the effects of various bolt assembly lubricants and tightening procedures, and control of the loss of bolt pretension due to dynamic loading.
"Results of Measurement and Fatigue Tests on SUPERBOLT Torquenuts M48" EMPA Test Report No.: 113'894, dated 1 September 1989
- Fatigue tests of SUPERBOLT Tensioner MT-M42x4.5/W and standard hexagon nuts for comparison of fatigue performance.
"Fatigue tests on prestressing system", EMPA Test Report No.: 426,872/e.

Other conditions and comments

- Each product is to be surveyed during fabrication in accordance with the requirements for equipment of Category I as defined in DNV AS' Offshore Standard DNV-OS-E101 Drilling Plant, followed by issuance of Product Certificate Form No. 20.92a. Fabrication records are to be maintained in accordance with DNV-OS-E101 Ch.3, Sec.3, B102.
- This document may be used as part of the documentation required to comply with European Union (EU) Directives referenced in PSA's Acts, regulations and provisions for the petroleum activities. It should however be noted that the scope covered by this document does not necessarily cover all aspects required to issue the EU Declaration of Conformity and to affix the CE-mark. It is the manufacturer's/operator's responsibility to ensure compliance with relevant EU Directives.

Marking of product

For traceability to this Type Approval Certificate each tensioner is to be marked as follows:

- NV D-5584

Certificate No.: D-5584
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- Manufacturers Name or Mark
- Part No. as per Technical Data Sheet
- Maximum tightening torque [in Nm] per Jackbolt allowed
- Lot No.

Certificate retention survey

For retention of the Type Approval, Det Norske Veritas AS' representative shall carry out biennial Product Audits.

This certificate replaces Type Approval Certificate D-3858.

END OF CERTIFICATE