

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Hoisting, Rotation and Pipehandling Equipment**with type designation(s)
RST495-3G Rotary Support Table

Issued to

National Oilwell Varco - Varco BJ B.V.
Etten-Leur, Netherlands

is found to comply with

DNVGL-OS-E101 – Drilling plant, Edition July 2015**DNVGL-SI-0166 – Verification for compliance with Norwegian shelf regulations, Edition July 2015****Application :****See page 2**This Certificate is valid until **2021-06-12**.Issued at **Høvik** on **2016-06-13**for **DNV GL**DNV GL local station: **Rotterdam, Product**
Certification /VerificationApproval Engineer: **Bruno Junalik**-----
Per Esvall
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: **262.1-008972-2**
Certificate No: **TAD00000BZ**

Reference Standard

API 7K "Specification for Drilling and Well Servicing Equipment", 6th Edition, December 2015.

Product description

49 ½ " Rotary Support Table (RST495-3G)

Application/Limitation

Minimum design temperature :	-20 °C
Maximum load rating :	1000 sh. T (907.2 mT)
Maximum torque load on bowl:	120 000 ft-lbs (162.7 kNm)
Maximum torque load on motors:	45 000 ft-lbs (61.0 kNm)
Maximum load on top cover:	15 sh. T (13.6 mT)
Design fatigue life:	20 years

Main bearing (between bowl and frame) is not part of this type approval.

Type Approval documentation

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Tests to be carried out

- Design verification function test shall be performed according to API Spec 7K, Section 5.2
- After installation each rotary table shall be tested according to DNV GL AS' Offshore Standard DNVGL-OS-E101 "Drilling Plant" Ch.2, Sec.6. Testing shall be witnessed by DNV GL representative.
- Charpy impact testing to be conducted at or below minimum design temperature, with acceptance criteria impact energy (in Joule) at 10% of yield strength (up to 42 Joule) according to DNVGL-OS-E101 "Drilling Plant" Ch. 2 Sec.2 Table 1.
- Non-destructive examination methods, extent and acceptance criteria according to DNVGL-OS-E101, Ch.2, Sec.6

Marking of product

Each item shall be marked according to API Spec 7K, section 10, including at least:

Name of manufacturer
Rated load capacity
Part no.
Serial no.

Documents, signboards etc. which are to accompany each product/delivery

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Databook including:

- Description of design and manufacture, indicating safety factors used.
- Material certificates and sketches indicating where material is used.
- Welding procedure specification with qualification record.
- Heat treatment and NDE reports.
- Statement of manufacture and inspection signed by surveyor.

Other conditions and comments

- The static load rating for the rotary table shall be equal to or less than the static load capacity of the main bearing.
- The control system/station is not part of this type approval and shall be approved separately for each rotary table. Documentation according to, DNVGL Offshore Standard DNVGL-OS-D202, Ch.3, Sec.1, 2. Documentation, is to be submitted by control system responsible.
- Each product is to be surveyed during fabrication in accordance with the requirements for equipment category I as defined in DNV GL AS' Offshore Standard DNVGL-OS-E101 "Drilling Plant", followed by the issuance Product Certificate. If the intended installation is DNV classed, then this automatically means DNV GL product certificate. Fabrication records are to be maintained in accordance with DNVGL-OS-E101 Ch.3, Sec.3, 2. Fabrication record.
- Qualification of welding procedures and qualification of welders shall be in accordance with DNVGL-OS-E101 Ch.2, Sec.6.
- 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.

Certificate Retention Survey

For retention of the Type Approval, DNV GL surveyor shall perform a survey – every second year and before the expiry date of this certificate. This in order to verify that the conditions for the type approval are complied with, ref. DNVGL-CP-0338, DNV GL type approval scheme.

This Type Approval Certificate replaces certificate D-4660.

END OF THE CERTIFICATE