Certificate no.:
TAD00001NN

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Pipe Fitting

with type designation(s)
Hydraulic hose swivel 3 1/8" 5 K, DN E10004 and Choke & Kill hose swivel 3 1/16" 10k API 16A hub, DN E10009

issued to
Sivilingeniør E.J.Wiig AS
Paradis, **Norway**

is found to comply with
DNV-OS-E101 – Drilling facilities, Edition July 2024
DNV statutory interpretations DNV-SI-0166 – Verification for compliance with Norwegian shelf regulations, Edition July 2021

Application:

See page 2. Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2024-10-22**
This Certificate is valid until **2029-10-21**.
DNV local unit: **West Norway CMC**

for **DNV**

Approval Engineer: **Ole Osuldsen**

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.

Reference standards

API 16C Choke and Kill Equipment 2021
API 6A 2018 , Wellhead & Christmas tree equipment
API 6X 2019 Design calculations for pressure equipment 2023
API 16 A Specification for Drill Through Equipment 2017
DNV RP-C203, 2021
NACE MR0175/ISO 15156

Product description

-Hydraulic hose swivel size 3 1/8" 5000 Psi API BX 154 hubs.
- Choke & Kill hose swivel 3 1/16" 10k API BX 154 16A hubs.

Application/Limitation

The approval is valid for the fields of application and operational limitations as follows:

Product & Size	**Hydraulic Hose Swivel 3 1/8" 5 K API Spec 16A BX 154 Hubs**	**Choke & Kill Hose swivel 3 1/16" 10 k API spec 16 A BX 154 hubs**
Pressure class	5000 psi /345 bar	10000 Psi /690 bar
Test Pressure	7.500 psi /517 bar	15000 Psi / 1035 bar
Design Temperature	-20^{0}C to +100^{0}C	-20^{0}C to +177^{0}C
Max axial tension	30 kN @ 5.000 psi	200 KN @ 10.000 psi
Max bending moment	20 kNm	20 kNm
Rotation speed	20 rpm	10 rpm
Service	Hydraulic fluid , oil, synthetic oil.	Mud, mineral oil, synthetic oil, sour service.
Environment	Offshore, submerged to 30 m water depth	Offshore, submerged to 30 m water depth

Type Approval documentation for the 3 1/8" Hydraulic Hose Swivel

Tests carried out on the final prototypes with serial numbers 1326 and 1334.

The following test reports describe tests carried out on the prototype swivels. All test reports have been witnessed and signed by a DNV Surveyor:

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's Offshore Standard DNV-OS-E101 Drilling facilities, Ch.3, Sec.3, followed by issuance of a Product Certificate. Fabrication records are to be maintained in accordance with DNV-OS-E101, Ch.3, sec. 3.2.
- Scaling has been evaluated and performed in accordance with API 16 C sect A.5.2.2.2.2
- Charpy impact testing to be performed at minimum design temperature according to DNV-OS-E101, Ch. 2, Sec. 2 [2].
- Pressure testing shall be performed in accordance with DNV-OS-E101 Ch 2 Sec 8, 3.3 Pressure testing.

Marking of product

For traceability the following minimum amount of marking is to be carried out on each product:

- Manufacturer's name and trademark
- "NV TAD00000NN"
- Serial Number
- Swivel size
- Pressure rating
- Temperature rating

Documentation to be accompanied with each product/delivery

- DNV Product Certificate if delivered to a vessel with DNV DRILL or DRILL(N) notation
- Maintenance/ User Manual

Certificate Retention Survey

For retention of the Type Approval, DNV surveyor shall perform a survey every second year in accordance with DNV Type Approval Scheme DNV-CP-0338, Sept 2021.

Periodical assessment

For retention of the type approval DNV Surveyor shall perform a survey every second year in accordance with DNV Type approval scheme DNV-CP-0338 Sept 2021.

END OF CERTIFICATE