



Certificate no.:
TAD00001KY

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Pipe Fitting

with type designation(s)
High pressure swivel

issued to

Sivilingeniør E.J.Wiig AS
Oslo, Norway

is found to comply with

DNV-OS-E101 – Drilling facilities, Edition July 2021

DNV statutory interpretations DNV-SI-0166 – Verification for compliance with Norwegian shelf regulations, Edition July 2021

Application:

Refer page 2 for application and operational limits.

Issued at **Høvik** on **2024-01-11**

This Certificate is valid until **2029-01-10**.

for **DNV**

DNV local unit: **Haugesund**

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.



Form code: TA 251

Revision: 2023-09

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Reference standards

- API 6A Specification for Wellhead and Christmas Tree Equipment 2018
- API 16A Specification for Drill through Equipment 2017
- API 16C Choke and Kill Systems 2021
- API 6X Design calculation for pressure containing equipment,. 2019
- DNV-RP-C203 Fatigue design of offshore steel structures 2021

Product description

- Hydraulic Hose Swivel, Size '6" with working pressure 23Mpa/3330 Psi and API Spec 16A with Grayloc Hubs/GR63.

Application/Limitation

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

Product & Size	Hydraulic Hose Swivel 6" with Grayloc/GR63 hubs		
Pressure class	3330 psi /23 Mpa		
Test Pressure	5000 psi /34,5 Mpa		
Design Temperature	-20°C to +121°C		
Max axial tension	30 kN @ 5.000 psi		
Max bending moment	20 kNm		
Max lateral load	30 KNm		
Max rotation	Reciprocal typ up to +/-15 Degrees per 10 S.		
Rotational friction torque	50 Nm @ 100 bar	100 Nm @ 200 bar	200 Nm @ 345 bar
Max rotation angle	Unlimited.		
Design life	10 years.		
Fatigue	The fatigue life is 8375 hours/2791 incidents of 3 hours of 10 year storm. Based on rainfall analysis supplied by Designer. Fatigue S/N curve; Table KD-320.1M. ASME VIII.		
Service Operation	Mud , well returns. Operation of the equipment is the sole responsibility of the vessel owner.		
Environment	Marine environment. Carthodic protection is not included.		

Type Approval documentation for the 6" Hydraulic Hose Swivel

Type Approval documentation for the 6" Hydraulic Hose Swivel

All prototypes, SN1326, passed the pressure tests at low-and high temperatures as required by API 16A/16C. All tests were performed at the satisfaction of the 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]. If the intended installation is DNV classed, then this shall be a DNV product certificate.

- Charpy impact testing to be performed at or below design temperature according to DNV-OS-E101, Ch. 2, Sec. 2 [2.6].

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 TAD00001KY"
- 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 this Type Approval, DNV AS' representative may carry out product audits biennially. According to DN-CP-0338.

END OF CERTIFICATE