Certificate No:
TAD00001GU

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Blow out Preventer

with type designation(s)
5K WCSR-X, WIRELINE CASING SHEAR RAM ASSEMBLY (SET), 18-15 RBOP

Issued to
Hydril USA Distribution, LLC
Houston, TX, USA

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 :

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

Issued at **Houston** on **2022-09-16**
This Certificate is valid until **2027-09-15**.
DNV local station: **Certification & Inspection Services**

Approval Engineer: **Pari Natarajan**

for **DNV**

Mark Miser
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.

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.

Product description

- 5K WCSR-X, WIRELINE CASING SHEAR RAM ASSEMBLY (SET), 18-15 RBOP
- WCSR-X is a non-sealing ram

Design codes/standards used as references

1. API 16A "Specification for Drill-through Equipment" 4th Edition

Application/Limitation

Design Parameter	Value	(equivalent)
Family Type	: Compact Ram BOPs	
Nominal Bore Size	: 476 mm	(18 ¾")
Rated Working Pressure	: 103.4 MPa	(15,000 psi)
Temperature Ratings for Metallic Materials,		
- Classification	: T-20/250	
- Operating range	: -29°C to 121°C	(-20°F to 250°F)
Performance Requirement Level	: PR2	
Designation of System	: BOP System	
Type of Equipment	: BOP Equipment, Ram blocks	
Retained Fluid Rating	: Sour/H_2S	
Applied Closing Ratio (22" Operator Evaluated at 5,000 psi maximum operator closing pressure and 3,000 psi maximum operator open pressure)	: 3.83	(reference only)
Summary of DVT Shear Samples	: 7/32 Wireline	(reference only)
	: 5.5" S-135 24.7 ppf	(reference only)
	: 1/4" SS Tubing	(reference only)
	: 10-3/4" SDSS 109 ppf	(reference only)
	: 16.15" Q-125HP 126.9 ppf	(reference only)
	: 16.1" Q-125ICY 110 ppf	(reference only)
	: 13-5/8" Q-125HC 87 ppf	(reference only)

Type Approval documentation

Tests carried out

Shear testing's were performed using 22"-5K operator. Reviewed the following report and found satisfactory.

Marking of product

For traceability, the following markings shall be carried out on each product:

- Unique product identification (i.e. serial no.);
- Marking as stated in API 16A §8;
- Marking according to the manufacturer's specification(s).

Periodical assessment

Periodical assessments for type approvals will be required after two years (+/- 90 days) and after three-and-a-half years (+/- 90 days) in accordance with DNV-CP-0338, Section 4.

Other Comments and Conditions

- Procedures related to testing, welding, NDT, and other quality control requirements are to be reviewed/approved by DNV local surveyor.
- When DNV Product Certification is required, each product shall be surveyed during fabrication in accordance with the requirements for Category I equipment as defined in DNV Offshore Standard DNV-OS-E101.
- DNV Reference Project: A1256202

END OF CERTIFICATE