DNV·GL

Certificate No:
TAD00001A0

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Blow out Preventer

with type designation(s)
RAM ASSY, 5K WIRELINE BLIND SHEAR (SET) 18-15M, INTEGRAL BLADE, P/N 3166498 REV. A, RAM ASSY, 5K WIRELINE BLIND SHEAR (SET) 18-15M, INTEGRAL BLADE, P/N 3166498-01 REV. NC

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

is found to comply with
DNVGL-OS-E101 – Drilling facilities, Edition January 2018

Application :

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

Issued at **Houston** on **2020-04-22**
This Certificate is valid until **2025-04-21**.
DNV GL local station: **Certification & Inspection Services**

Approval Engineer: **Pari Natarajan**

for **DNV GL**

Christian Nilsen
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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.

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Job Id: **262.1-033626-1**
Certificate No: **TAD00001A0**

Design codes/standards used as references

- API 16A, Specification for Drill-through Equipment, 4th Edition

Application/Limitation

Design Parameter	Value
Family Type	Compact Ram BOPs
API 16A Performance Requirement Level	PR1 for P/N 3166498 REV. A, PR2 for P/N 3166498-01 REV. NC
Nominal Bore Size	18 ¾"
Rated Working Pressure	15,000 psia
API 16A Metallic Temperature Rating	T-20/250 (-20°F to 250°F)
API 16A Non-metallic Temperature Rating	DAD
- Low Temperature Limit	20°F
- Continuous Elevated Temperature Limit	150°F
- Extreme Temperature Limit	250°F
Designation of Systems; Equipment	BOP Systems; BOP Equipment, Ram blocks
Service	Sour (H2S)
Applied Closing Ratio (22" Operator Evaluated at 5,000 psi maximum operator closing pressure and 3,000 psi maximum operator open pressure)	*3.83 (for reference only)*

Type Approval documentation

Note: Other part numbers or updated revisions may be acceptable under this type approval certificate, provided critical aspects of the design remain the same. Changes shall be documented and approved (via Engineering Change Notice or similar) by the Manufacturer's Engineering and/or Quality Department as appropriate. DNV GL's local surveyor shall verify the changes before issuance of the Product Certificate.

Tests carried out

Marking of product

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

1. Serial No.
2. Marking as specified in API references.
3. Additional marking at the manufacturer's discretion

Periodical assessment

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

This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in https://approvalfinder.dnvgl.com

Other conditions/ comments

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

End of Certificate