DNV·GL

Certificate No:
TAD0000130

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Valve

with type designation(s)
Adjustable By-Pass Actuator (ABPA)

Issued to
Koller Maschinen- und Anlagenbau GmbH
Celle, Germany

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

Application :

See next page.

Design Owner:

Baker Hughes INTEQ GmbH
Celle, Germany

Issued at **Høvik** on **2019-03-22**
This Certificate is valid until **2024-03-21**.
DNV GL local station: **Hamburg Verification**

Approval Engineer: **Axel Janson**

for **DNV GL**

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.

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Reference Standards

[1] ASME B31.3, Process Piping (2010)

Product Description

The Adjustable By-pass Actuator (ABPA) consists of a mud valve for flow diversion for pressure and flow rate variations, operated by an electrical controlled pneumatic drive unit.

Application/Limitation

Design Parameter	Value	Equivalent
Design Pressure:	55 MPa	7 980 psi
Operating Working Pressure:	50 MPa	7 250 psi
Flow Rate:	0-1500 l/min	0-396 gal/min
Min./Max. Temperature Rating:	-29 °C / 82 °C	-20 °F / 180 °F
Average MTB Maintenance:	1000 cycles	
Design Life:	10 years	

Type Approval documentation

Fabrication and Testing Procedures

Test Procedures:

1. Hydrostatic pressure testing of valve body shall be performed in accordance with DNVGL-OS-E101 Ch.2 Sec.8 (1.5 x design pressure = 82.5 Mpa).
2. Function testing, at design pressure, shall be carried out in accordance with DNVGL-OS-E101 Ch.2 Sec.8.
3. Charpy testing shall be performed in accordance with Ch.2, Sec.2 of DNVGL-OS-E101 Drilling Facilities.

NDE Procedures:

4. NDE/NDT shall be performed in accordance with Ch.2, Sec.8 of DNVGL-OS-E101 Drilling Facilities.

Welding Procedures:

5. Qualification of welding procedures and qualification of welders shall be in accordance with Ch.2, Sec.8 of DNVGL-OS-E101 Drilling Facilities.

Marking of Product

Each product shall be marked with the following (as a minimum):

- Part No.
- Serial No.
- Pressure Rating
- Manufacturers Name or Mark

Other Conditions and Comments

- All wetted materials shall be supplied with material inspection certificate type 3.1.
- Fabrication records are to be maintained in accordance with DNVGL-OS-E101 Ch.3, Sec.3 §2.
- Sealing materials shall be in accordance with DNVGL-OS-E101 Ch. 2 Sec. 2 §2.8.

- Each product to be surveyed during fabrication in accordance with the requirements in DNVGL-OS-E101 Drilling Plant, followed by an issuance of DNV GL Product Certificate Form No. CMC 231.
- Documentation confirming appropriate zone classification of the equipment shall be presented prior to installation.
- This Type Approval Certificate replaces certificate D-5828.

Periodical assessment

For retention of this Type Approval, DNV GL AS's representative shall carry out surveys every second year in accordance with DNV GL Type Approval Scheme DNVGL-CP-0338.

END OF CERTIFICATE