Certificate No:
TAD00001K0

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Miscellaneous

with type designation(s)
BARS-5000-7500-04

Issued to
The Oilgear Company
Traverse City, MI, 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 **2023-10-03**
This Certificate is valid until **2028-10-02**.
DNV local unit: **Houston, Approval CMC**

Approval Engineer: **Parna Deljo**

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

Oilgear's Subsea Boosting and Regulating System, BARS, is designed to integrate into a subsea accumulator bank charging system. The purpose of the BARS is to intensify the incoming supply pressure, and store additional volume in the subsea accumulators. The BARS is then used to provide pressure regulation to return the pressure to a usable level when fluid is fed to the rest of the hydraulic control system.

References Standards

API 6A, *Specification for Wellhead and Tree Equipment,* 21st Edition.

Application/Limitation

Design Parameters	Value	Equivalent
Maximum allowable working pressure (Inlet/Outlet Regions)	: 5,000 psi	(345 bar)
Test pressure (Inlet/outlet Regions)	: 7,500 psi	(517 bar)
Maximum allowable working pressure (Intensified Regions)[1]	: 7,500 psi	(517 bar)
Test pressure (Intensified Regions)	: 11,250 psi	(776 bar)
Rated temperature[1]	: -4˚F to 122˚F	(-20˚C to 50˚C)
Service	: Standard	

Note 1: The Maximum Rated Working Pressure and Design Temperature Rating values are not a designated rating condition of reference standard API 6A, but the values are justified by the manufacturer in the design package listed under "Calculation".

Type Approval documentation

Tests carried out

Doc No	Date	Title
TP#675	2023/6/23	Factory Acceptance Test Procedure for BARS-5000-7500-04 Complete Assembly

Marking of product

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

1. Serial No.
2. Manufacturer's name or trademark
3. Additional Marking at the manufacturer's discretion

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 conditions/comments

1. Procedures related to testing, welding, NDT, and other quality control requirements are to be reviewed/approved by DNV's local surveyor.
2. When DNV 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's Offshore Standard DNV-OS-E101.
3. DNV ref: A1392769

END OF CERTIFICATION