



Certificate no.:
TAD00001S7

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Mud and Cementing Equipment

with type designation(s)
3.5" Fluid End Assembly, P/N 326TWC2039 (GD-1250)

issued to

GD Energy Products, LLC
Tulsa, OK, USA

is found to comply with

DNV-OS-E101 – Drilling facilities, Edition July 2024

Application:

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

Issued at **Houston** on **2025-08-25**

This Certificate is valid until **2030-08-24**.

for **DNV**

DNV local unit: **Certification & Inspection Services**

Approval Engineer: **M. Kevin Mandeville Jr.**

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 USD 300 000.

The following codes/standards were used as a reference:

API Specification 7K, *Drilling and Well Servicing Equipment*, 56th Ed.

Product description

3.5" Fluid End Assembly, P/N 326TWC2039 (GD-1250)

Application/Limitation

Design Parameter	Value	Equivalent
Minimum Design Temperature	-4°F	-20°C
Maximum Design Temperature	250°F	121°C
Maximum Allowable Working Pressure	20798 psi	143MPa
Service	Standard Water Based Fluid	

Type Approval documentation

Dwg. No.	Rev.	Description
326TWC2039	A	Assembly, Fluid Cylinder, 3.5" SGWS (GD-1250)
350TWC SGWS	A	Cylinder – Fluid, 3.50" HP SGWS (GD-1250) Plunger
PP1055494	B	Cover-Valve (FL), 3.75"/4 SGWS Discharge Gage Connection
PP1086293	A	Cover Valve (FL), 2" – 2002) WECO
PP1027607	B	Retainer, Discharge Gage Connection
PP1055492	A	Cover – Valve (FL), 3.75/4 SGWS Suction
PP1081138	A	Cover – Valve (FL), 3.75"/4" SGWS Suction
PP1027593	B	Retainer, 6-3/4"/4 Buttress
PP1106122	A	Gland, 3-1/2" Packing
PP1055493	A	Cover – Valve (FL), 3.75/4 SGWS Discharge

Tests carried out

Original Type Test Reference Survey Report ID: 2013-08-14-A / RWRI / PP083534 / TAMU467

Fabrication Procedures

Procedures related to fabrication, inspection, and NDE are to be reviewed and approved by the local DNV surveyor.

Marking of product

For traceability to this Type Approval Certificate the products marking shall:

1. Be reviewed and approved by the DNV local Surveyor
2. Identify and differentiate each production unit
3. Establish traceability to product design and fabrication documentation
4. Be in accordance with normative reference API 7K

Periodical assessment

For retention of the Type Approval Certificate, DNV's surveyor shall perform a retention survey after two years and three-and-a-half years, per DNV's Type Approval Class Programme, DNV-CP-0338

Manufactured by:

GD Energy Products, LLC
4747 S. 83rd E. Ave.
Tulsa, OK 74145

Other conditions/comments

1. Electrical equipment to be zone rated for the applicable hazardous area
2. Previous approval was under Type Approval Certificate D-5253. Current Type Approval reflects updated part numbers and materials. Reference DNV Project Number PP077183.
3. Reference DNV Project Number A1745970.

END OF CERTIFICATE