Confirmation of Product Type Approval

Company Name: DOVER PUMPS & PROCESS SOLUTIONS SEGMENT, INC. DBA BLACKMER

Address: 1809 CENTURY AVE SW GRAND RAPIDS MI 49503 United States

Product: Pump

Model(s): LGL and TX Series

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	22-2296174-PDA	07-OCT-2022	06-OCT-2027
Manufacturing Assessment (MA)	25-7220534	08-OCT-2025	15-OCT-2030
Product Quality Assurance (PQA)	25-7220534-PQA	08-OCT-2025	15-OCT-2030

Tier
4 - Enrolled in PQA Program

Intended Service
1) LGL Series Sliding Vane Pumps for use in LPG, butane, and anhydrous ammonia, 2) TX Series

Description
Pumps for liquids, flammable liquids, liquified gases

1) LGL Series Sliding Vane Pumps

2) TX Series

Ratings
1) LGL Series Sliding Vane Pumps

Flow capacities ranging from 30 to 370 U.S. gpm (114 – 1,400 L/min). Maximum internal relief valve pressure for all models is 150 psi (10.3 bar) differential (125 psi for 1 inch pumps) and maximum working pressure of 350 psi except the LGLH2 and the LGLD3F have a maximum internal relief valve pressure up to 165 psi and a maximum working pressure of 400 psi.

2) TX Series

Maximum Working Pressure: 175 psi (12.1 bar)

Maximum Differential Pressure: 125 psi (8.6 bar)

Maximum Temperature: 240 ºF (115 ºC)

Performance Data: Capacity from 10 to 550 GPM

See attachment for the pump specifications excluding the compressor.

Service Restrictions
1. Unit Certification is required for this product if intended for LPG application as per 5C-8-5/13.1.3 of the Marine Vessel Rules. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

2. Unit Certification is required for this product if the TX Series pumps are used for services listed in Marine Vessels Rules 4-6-1/7.3.1, hydrostatic and capacity testing is to be performed to the satisfaction of the Surveyor as indicated in Marine Vessels Rules 4-6-1/7.3.2 a), b).

Comments
The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes, Drawings and Documentation
Drawing No. 201-023, Perf: TXD2, Revision: a, Pages: 1

Drawing No. 201-025, Perf: TXD2.5, Revision: a, Pages: 1

Drawing No. 201-027, Perf: TXD3, Revision: a, Pages: 1

Drawing No. 201-029, Perf: TX4, Revision: a, Pages: 1

Drawing No. 201-049, Perf: TXH3C, Revision: a, Pages: 1

Drawing No. 201-051, Perf: TSH35A, Revision: a, Pages: 1

Drawing No. 201-091, MOC: TXD Pumps, Revision: a, Pages: 1

Drawing No. 201-094, MOC: TXH Series, Revision: a, Pages: 1

Drawing No. 201-101, Dim: TX1.5 PO, Revision: a, Pages: 1

Drawing No. 201-103, Dim: TXD2A, TXD1220A PO, Revision: a, Pages: 1

Drawing No. 201-105, Dim: TX2.5, TXD1225A PO, Revision: a, Pages: 1

Drawing No. 201-107, Dim: TXD3E, TXD1230A PO, Revision: a, Pages: 1

Drawing No. 201-109, Dim: TX4A PO, Revision: a, Pages: 1

Drawing No. 201-117, Dim: TXH3, Revision: a, Pages: 1

Drawing No. 201-119, Dim: TXH35, Revision: a, Pages: 1

Drawing No. 201-133, Dim: TXDI2, Revision: a, Pages: 1

Drawing No. 201-135, Dim: TXDI2.5, Revision: a, Pages: 1

Drawing No. 201-137, Dim: TXDI3A, Revision: a, Pages: 1

Drawing No. 201-139, Dim: TXI4, Revision: a, Pages: 1

Drawing No. 201-A02, Parts List: TXD2A, TX2A, Revision: a, Pages: 1

Drawing No. 201-A08, Parts List: TXDI3A, Revision: a, Pages: 1

Drawing No. 201-A09, Parts List: TXI4A, Revision: a, Pages: 1

Drawing No. 201-C00, IOM: TXH3C, TXH35A, Revision: a, Pages: 1

Drawing No. 201-C01, Parts List: TXH3C, Revision: a, Pages: 1

Drawing No. 201-C02, Parts List: TXH35A, Revision: a, Pages: 1

Drawing No. 501-002, Spec: LGF1 and LGB1 series pumps, Revision: a, Pages: 1

Drawing No. 501-005, Spec: LGLH2A High Pressure LPG Pump, Revision: a4, Pages: 1

Drawing No. 501-008, Bulletin: LGL3021, Revision: a4, Pages: 1

Drawing No. 501-010, Spec: LGLD2, LGLD3, LGLD4 Series Pumps, Revision: a4, Pages: 1

Drawing No. 501-012, Spec: LGRL 1.25, LGL 1.25, LGL 1.5 Series Pumps, Revision: a4, Pages: 1

Drawing No. 501-021, Perf: LG, LGL and TLG Pumps, Revision: a, Pages: 1

Drawing No. 501-025, Perf: LGLH2 pumps, Revision: a, Pages: 1

Drawing No. 501-027, Perf: LGL3021 pumps, Revision: a, Pages: 1

Drawing No. 501-090, MOC: TLGLF3HD, Revision: a, Pages: 1

Drawing No. 501-091, MOC: LGF1(P)E, LGB1(P)E, Revision: a, Pages: 1

Drawing No. 501-093, MOC: LGRL(F)1.25, LGL(F)1.25, LGL1.5, Revision: a, Pages: 1

Drawing No. 501-094, MOC: LGLD2E, LGLH2A, LGLD3F, Revision: a, Pages: 1

Drawing No. 501-095, MOC: TLGLF3C, Revision: a, Pages: 1

Drawing No. 501-096, MOC: LGL3021A, Revision: a, Pages: 1

Drawing No. 501-097, MOC: LGL4B, LGLD4B, TLGLF4B, Revision: a, Pages: 1

Drawing No. 501-101, Dim: LGF1E, LGF1PE, Revision: a, Pages: 1

Drawing No. 501-105, Dim:LGB1E, LGB1PE, Revision: a, Pages: 1

Drawing No. 501-107, Dim: LGRL1.25, LGL1.25, LGL1.5, Revision: a, Pages: 1

Drawing No. 501-109, Dim: LGRLF1.25, LGLF1.25A, LGLF1.5A, Revision: a, Pages: 1

Drawing No. 501-111, Dim: LGLD2E, Revision: a, Pages: 1

Drawing No. 501-113, Dim: LGLD3F, Revision: a, Pages: 1

Drawing No. 501-115, Dim: LGLF3C, Revision: a, Pages: 1

Drawing No. 501-117, Dim: LGLD4, LGL4, Revision: a, Pages: 1

Drawing No. 501-118, Dim: LGLF3HD, Revision: a, Pages: 1

Drawing No 501-119, Dim: LGLF4B, Revision: a, Pages: 1

Drawing No LGL1, LGL1 Parts, Revision: A, Pages: 1

Drawing No. UL51, UL51 10th Edition, Revision: 10, Pages: 1

Drawing No UL 51 01, CoC UL 51 Pumps & Valves, Revision: 1, Pages: 1

Drawing No UL 51 02, CoC UL 51 (T)LGL4, Revision: 1, Pages: 1

Drawing No UL 51 03, CoC UL 51 LG Series, Revision: 1, Pages: 1

Drawing No UL 51 04, CoC UL 51 TLGLF3, Revision: 1, Pages: 1

Term of Validity
This Product Design Assessment (PDA) Certificate remains valid until 06/Oct/2027 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

ABS Rules
2022 Rules for Conditions of Classification 1-1-4/7.7, 1-1-A3 and A4, which covers the following:

2022 Rules for Building and Classing Marine Vessel Rules: 4-6-1/7.3.1, 4-6-1/7.3.2 a), b).; 5C-8-5/13.1.3

2022 Rules for Conditions of Classification - Offshore Units and Structures 1- 1-1-4/9.7,1-1-A2, 1-1-A3, which covers the following:

2022 Rules for Building and Classing Mobile Offshore Unit: 4-1-2

International Standards
NA

EU-MED Standards
NA

National Standards
UL51 10th Edition, Date 31 May 2013

Government Standards
NA

Other Standards
NA

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 06-Jan-2026 6:41

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the “Intended Service” details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.