



CERTIFICATE NUMBER
18-HS1810331-PDA

DATE
08 Jan 2019

ABS TECHNICAL OFFICE
Houston ESD - Piping

CERTIFICATE OF Design Assessment

This is to certify that a representative of this Bureau did, at the request of
WARREN RUPP, INC.

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: **Pump, Air Operated Diaphragm**

Model: **Sandpiper Models: S05, S1F, S15, S20, S30, SB1/SB25, ST1/ST25, ST1-1/2 / ST40, HDB2, HDB1-1/2 / HDB40, HDF1, HDF2, HDF3/HDF4, HDF3-M/HDF4-M, DMF2R/DMF2S, DMF3S Versa-Matic Elimina-M...**

This Product Design Assessment (PDA) Certificate 18-HS1810331-PDA, dated 08/Jan/2019 remains valid until 07/Jan/2024 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

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Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING

Daniel Hyun SON

Hyun Young Son
Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by the terms and conditions as contained in ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).

WARREN RUPP

800 NORTH MAIN ST.

P.O. BOX 1568

MANSFIELD OH

United States 44901

Telephone: 419-524-8388

Fax: 419-522-7867

Email: info.warrenrupp@idexcorp.com

Web: warrenruppinc.com

Tier: 3 - Type Approved, unit certification not required

Product: Pump, Air Operated Diaphragm**Model:** Sandpiper Models: S05, S1F, S15, S20, S30, SB1/SB25, ST1/ST25, ST1-1/2 / ST40, HDB2, HDB1-1/2 / HDB40, HDF1, HDF2, HDF3/HDF4, HDF3-M/HDF4-M, DMF2R/DMF2S, DMF3S

Versa-Matic Elima-Matic Models: E1 (1"), E2 (2"), E3 (3"), E4 (1.5")

Intended Service:

Marine & Offshore Applications - Sanitary System, Seawater and General Purpose Non-Essential Applications, as well as Bilge Application as a Secondary Non-Required Pump.

Description:

Air-Operated Double Diaphragm Pumps with T Series Surge Suppressors.

Rating:

Sandpiper Models:

Maximum Operating Pressure Sandpiper Models: 125 psi

Maximum Operating Pressure for ATEX compliant (Pump Models equipped with Kit Options A1, A2, A3, A4 or P1 only): 100 psi

S05 (0-15 GPM); S1F (0-45 GPM); S15 (0-106 GPM); S20 (0-150 GPM); S30 (0-235 GPM); SB1/SB25 (0-42 GPM);

ST1/ST25 (0-42 GPM); ST1-1/2/ST40 (0-90 GPM);

HDB2 (0 - 135 GPM); HDB1-1/2 / HDB40 (0-90 GPM); HDF1 (0-70 GPM); HDF2 (0-140 GPM); HDF3/HDF4 (0-

260 GPM); HDF3-M/HDF4-M (0-260 GPM); HDB3-A (0-260 GPM);

DMF2R/DMF2S (0-140 GPM), DMF3S. (0-260 GPM).

Temperature Limit: 212°F (100°C);

Versa-Matic Models:

E1-1" Bolted Metal: Rubber and TPE fitted (0-49 GPM), PTFE fitted (0-38 GPM)

E2-2" Flap Valve Clamped Pump Elastomeric and TPE fitted - Rugged (0-219 GPM), Bolted Aluminum Pump

Elastomeric and TPE fitted-Domed (0-194 GPM)

E2-2" Clamped Pump - Metallic Center: Elastomeric and TPE fitted- Rugged (0-185 GPM), Elastomeric and TPE

fitted- Domed (0-167 GPM), PTFE fitted (0-153 GPM)

E2-2" Bolted Aluminum Pump - Metallic Center: Elastomeric and TPE fitted- Rugged (0-163 GPM), Elastomeric and

TPE fitted- Domed (0-154 GPM), PTFE fitted (0-143 GPM)

E2-2" Bolted Stainless Pump - Metallic Center: Elastomeric and TPE fitted (0-160 GPM), PTFE fitted (0-157 GPM)

E3-3" Bolted Aluminum: Rubber and TPE fitted-Rugged (0-273 GPM), Rubber and TPE fitted-Domed (0-252 GPM),

PTFE fitted (0-186 GPM)

E3-3" Bolted Stainless Pump - Metallic Center: Elastomeric and TPE fitted-Rugged (0-273 GPM), Elastomeric and

TPE fitted-Domed (0-252 GPM), PTFE fitted (0-186 GPM)

E3-3" Clamped: Rubber and TPE fitted-Rugged (0-234 GPM), Rubber and TPE fitted-Domed (0-229 GPM), PTFE

fitted (0-180 GPM)

E4-1-1/2" Bolted Pump - Metallic Center: Elastomeric and TPE fitted (0-123 GPM), PTFE fitted (0-103 GPM)

Maximum Operating Pressure Versa-Matic Models: 125 psi ATEX compliant.

Refer the Manufacturer's Data Sheet Specification & Performance curves and Temperature limits for Model details on the web.

Service Restriction:

i) Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard and tolerances, must be clearly defined.

ii) Pumps used for bilge and ballast system are to be self-priming type or connected to a priming system as indicated in the ABS Steel Vessels Rules 4-6-4/5.5.2. c)

iii) These pumps are not approved for essential service or bilge service as listed in the ABS Steel Vessels Rules 4-6-

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1/7.3.1.

Comments:

- i) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
- ii) This approval does not include the flexible conductive connections or pipe connections of the pumps.

Notes/Drawing/Documentation:

Review Package, Pump DMF2R/DMF2R, DMF3S, Engineering Documentation (drawings page 4, 15, 18)

Drawing 060.045.000 Rev. D, Weldment, Cage Base.

Drawing 060.096.000 Rev. F, Base Pump.

Drawing 429.001.000 Rev. A Cam & Groove, Male Adapter.

Drawing 429.001.156 Rev. - Cam & Groove, 2" Aluminum Male.

FM Approval IEC EEX m T4;

Atex EX IM2 c T5 & EX II 2GD T5;

Complies with EN809 Pumping Directive, 94/9/EC, EC Directive 98/37/EC dated 20 October 2005;

EC Declaration of Conformity ATEX Summary of Markings, dated 27 May 2010;

s05mdl1ds-Rev.0313, Data Sheet Specification & Performance Model S05.

s1mdl1ds-Rev.0313, Data Sheet Specification & Performance Model S1F.

s15mdl1ds-Rev.0313, Data Sheet Specification & Performance Model S15.

s15mdl1ds-Rev.0313, Data Sheet Specification & Performance Model S20.

s30mdl1ds-Rev.0313, Data Sheet Specification & Performance Model S30.

sb1dl5ds-Rev. 0813, Data Sheet Specification & Performance Model SB1 & SB25.

st1dl5sm-Rev.0113, Data Sheet Specification & Performance Model ST1 & ST25.

st15dl4ds-Rev.1110, Data Sheet Specification & Performance Model ST1½ & ST40.

hdb154dl7ds-Rev.1013, Data Sheet Specification & Performance Model HDB1½ & HDB40.

hdf1dl2ds-Rev.0113, Data Sheet Specification & Performance Model HDF1 & HDF25.

hdf2dl6ds-Rev.0110, Data Sheet Specification & Performance Model HDF2.

hdf3adl7ds-Rev.0711, Data Sheet Specification & Performance Model HDF3 & 4.

hdb2dl3ds-Rev.1110, Data Sheet Specification & Performance Model HDB2.

hdf3mdl2ds-Rev.1110, Data Sheet Specification & Performance Model HDF3-M & HDF4-M.

Service & Operating Manual 3" Elima-Matic Clamped Mettalic ATEX, Rev. 0314.

Service & Operating Manual 1.5" Elima-Matic Bolted Mettalic, Rev. 0314.

Service & Operating Manual 2" Elima-Matic Flap Valve-ATEX, Rev. 0314.

Service & Operating Manual 1" Elima-Matic Bolted metal-ATEX, Rev. 0314.

Document No. VM_DofC_CE-Machine_V_rev0917, Declaration of Conformity dated September 26, 2017, Revision: 08, Pages: 1

Document No. Sandpiper CE DofC, Declaration of Conformity dated February 27, 2017, Revision: -, Pages: 1

Document No. WR ATEX DofC MAR2017, EC / EU Declaration of Conformity dated March 18, 2016, Revision: -, Pages: 1

Document No. VM ATEX DofC, EC / EU Declaration of Conformity dated September 26, 2017, Revision: -, Pages: 1

Terms of Validity:

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STANDARDS**ABS Rules:**

The Rules for Conditions of Classification, Part 1 2019 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2019 Steel Vessel 4-6-1/7.3.1, 7.5.3 iii)

The Rules for Condition of Classification, Part 1, 2019 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3 which covers the following:

2019 Mobile Offshore Drilling Units 4-2-2/3, 6-1-6/7.3.2.

National:

NA

International:

EN 809:1998+A1:2009

EN 13463-1:2009

EN 13463-5:2011

EN 60079-25:2010

Government:

NA

EUMED:

NA

OTHERS:

NA