# DATA SHEET
## Specifications & Performance

**Certified Quality**

*Quality System*
*ISO 9001 Certified*

*Environmental Management System*
*ISO 14001 Certified*

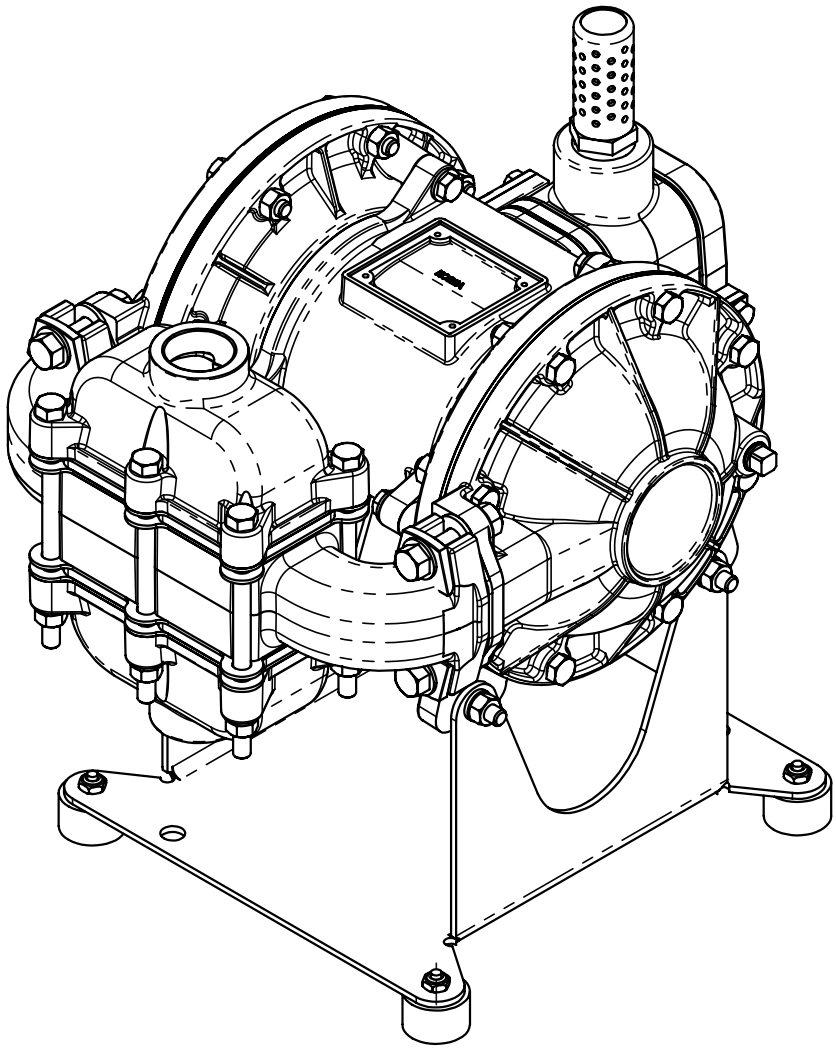
Member of Hydraulic Institute

ABS TYPE APPROVED PRODUCT

**Warren Rupp, Inc.**
A Unit of IDEX Corporation
800 N. Main St.,
Mansfield, Ohio 44902 USA
Telephone (419) 524.8388
Fax (419) 522.7867
SANDPIPERPUMP.COM

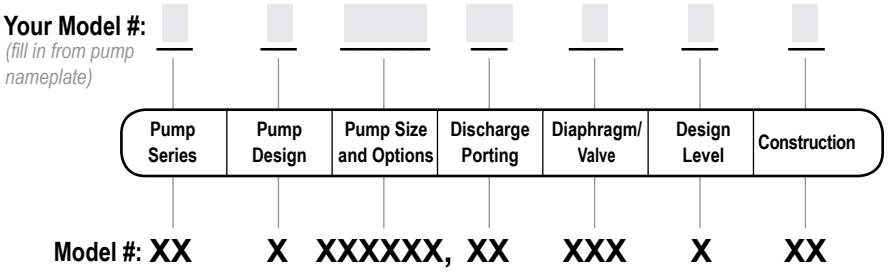


# Model SB1 & SB25
## Metallic
## Design Level 5



SANDPIPER®
A WARREN RUPP, INC. BRAND
SANDPIPERPUMP.COM

# Explanation of Pump Nomenclature




**Pump Series**
**S** SANDPIPER®

**Pump Design**
**B** Soilid Ball

**Pump Size**
**1** 1"
**25** 1" BSPT (Tapered Thread)

**Discharge Porting Position**
**D** Bottom
**S** Side
**T** Top
**ET** Dual Top
**ES** Dual Side

**Options**
**P1** Intrinsically Safe ATEX Compliant Pulse Output

**Diaphragm Check Valve Materials**
**B** Nitrile
**C** FKM with PTFE
**F** FDA Accepted White Nitrile
**GN** Neoprene Backup with PTFE Overlay and PTFE Check Balls
**GR** Hytrel Backup w/ PTFE Overlay/PTFE Balls
**GZ** PTFE/Nitrile Bonded One-Piece/PTFE Balls
**H** EPDM with PTFE
**N** Neoprene
**R** Hytrel
**S** Santoprene
**V** FKM

**Design Level**
**5**

**Construction**
**A** Aluminum Wetted, Aluminum Air
**SI** Stainless Steel Wetted, Cast Iron Air
**SS** Stainless Steel Wetted, Aluminum Air
**HC** Alloy-C Wetted, Aluminum Air
**HI** Alloy-C Wetted, Cast Iron Air

**Your Serial #:** *(fill in from pump nameplate)* _____

# ATEX Detail

| | ATEX Detail | Construction | Options |
|---|---|---|---|
| Ex | II 1G c T5<br>II 1D c T100°C<br>I M1 c<br>I M2 c | SI, HI | 00 |
| | II 2G c T5<br>II 2D c T100°C | A, SI, SS, HC, HI | 00 |
| | II 2G Ex ia c II T5<br>II 2D Ex c iaD 20<br>IP67 T100°C | A, HC, HI, SI, SS | P1 |

# Performance

## SB1 & SB25

**SUCTION/DISCHARGE PORT SIZE**
- SB1: 1" (25.4mm) NPT(F)
- SB25: 1" (25.4mm) BSP Tapered

**CAPACITY**
- 0 to 42 gallons per minute (0 to 159 liters per minute)

**AIR DISTRIBUTION VALVE**
- No-lube, no-stall design

**SOLIDS-HANDLING**
- Up to nearly .25 in. (6.3mm)

**HEADS UP TO**
- 125 psi or 289 ft. of water (8.8 Kg/cm$^2$ or 88 meters)

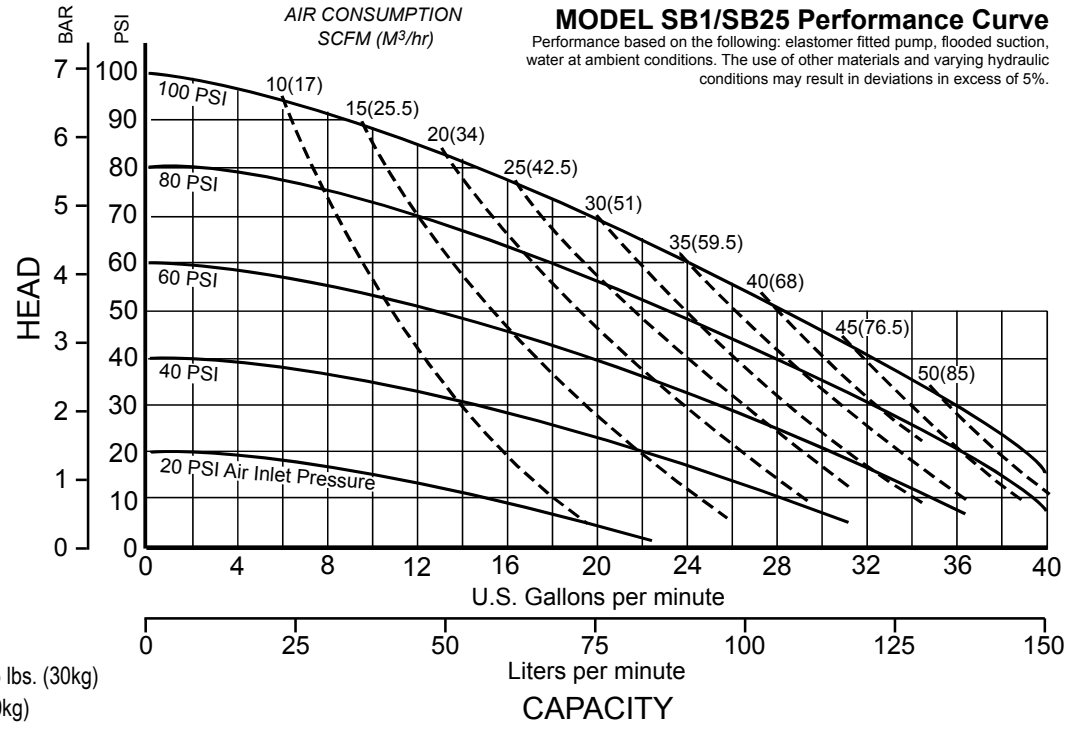
**MAXIMUM OPERATING PRESSURE**
- 125 psi (8.6 bar)

**DISPLACEMENT/STROKE**
- .09 Gallon / .34 liter

**SHIPPING WEIGHT**
- Aluminum 31 lbs. (14kg)
- Stainless Steel 45 lbs. (20kg)
- Alloy C 45 lbs. (20kg)
- Stainless Steel with Cast Iron Center 65 lbs. (30kg)
- Alloy C with Cast Iron Center 65 lbs. (30kg)

### MODEL SB1/SB25 Performance Curve

Performance based on the following: elastomer fitted pump, flooded suction, water at ambient conditions. The use of other materials and varying hydraulic conditions may result in deviations in excess of 5%.




# Materials

| Material Profile: | Operating Temperatures: | |
|---|---|---|
| ⚠ *CAUTION! Operating temperature limitations are as follows:* | Max. | Min. |
| **Conductive Acetal:** Tough, impact resistant, ductile. Good abrasion resistance and low friction surface. Generally inert, with good chemical resistance except for strong acids and oxidizing agents. | 190°F 88°C | -20°F -29°C |
| **EPDM:** Shows very good water and chemical resistance. Has poor resistance to oils and solvents, but is fair in ketones and alcohols. | 280°F 138°C | -40°F -40°C |
| **FKM:** (Fluorocarbon) Shows good resistance to a wide range of oils and solvents; especially all aliphatic, aromatic and halogenated hydrocarbons, acids, animal and vegetable oils. Hot water or hot aqueous solutions (over 70°F(21°C)) will attack FKM. | 350°F 177°C | -40°F -40°C |
| **Hytrel®:** Good on acids, bases, amines and glycols at room temperatures only. | 220°F 104°C | -20°F -29°C |
| **Neoprene:** All purpose. Resistance to vegetable oils. Generally not affected by moderate chemicals, fats, greases and many oils and solvents. Generally attacked by strong oxidizing acids, ketones, esters and nitro hydrocarbons and chlorinated aromatic hydrocarbons. | 200°F 93°C | -10°F -23°C |
| **Nitrile:** General purpose, oil-resistant. Shows good solvent, oil, water and hydraulic fluid resistance. Should not be used with highly polar solvents like acetone and MEK, ozone, chlorinated hydrocarbons and nitro hydrocarbons. | 190°F 88°C | -10°F -23°C |
| **Nylon:** 6/6 High strength and toughness over a wide temperature range. Moderate to good resistance to fuels, oils and chemicals. | 180°F 82°C | 32°F 0°C |
| **Polypropylene:** A thermoplastic polymer. Moderate tensile and flex strength. Resists stong acids and alkali. Attacked by chlorine, fuming nitric acid and other strong oxidizing agents. | 180°F 82°C | 32°F 0°C |
| **PVDF:** (Polyvinylidene Fluoride) A durable fluoroplastic with excellent chemical resistance. Excellent for UV applications. High tensile strength and impact resistance. | 250°F 121°C | 0°F -18°C |
| **Santoprene®:** Injection molded thermoplastic elastomer with no fabric layer. Long mechanical flex life. Excellent abrasion resistance. | 275°F 135°C | -40°F -40°C |
| **UHMW PE:** A thermoplastic that is highly resistant to a broad range of chemicals. Exhibits outstanding abrasion and impact resistance, along with environmental stress-cracking resistance. | 180°F 82°C | -35°F -37°C |
| **Urethane:** Shows good resistance to abrasives. Has poor resistance to most solvents and oils. | 150°F 66°C | 32°F 0°C |
| **Virgin PTFE:** (PFA/TFE) Chemically inert, virtually impervious. Very few chemicals are known to chemically react with PTFE; molten alkali metals, turbulent liquid or gaseous fluorine and a few fluoro-chemicals such as chlorine trifluoride or oxygen difluoride which readily liberate free fluorine at elevated temperatures. | 220°F 104°C | -35°F -37°C |

*Maximum and Minimum Temperatures are the limits for which these materials can be operated. Temperatures coupled with pressure affect the longevity of diaphragm pump components. Maximum life should not be expected at the extreme limits of the temperature ranges.*

| Metals: |
|---|
| **Alloy C:** Equal to ASTM494 CW-12M-1 specification for nickel and nickel alloy. |
| **Stainless Steel:** Equal to or exceeding ASTM specification A743 CF-8M for corrosion resistant iron chromium, iron chromium nickel and nickel based alloy castings for general applications. Commonly referred to as 316 Stainless Steel in the pump industry. |

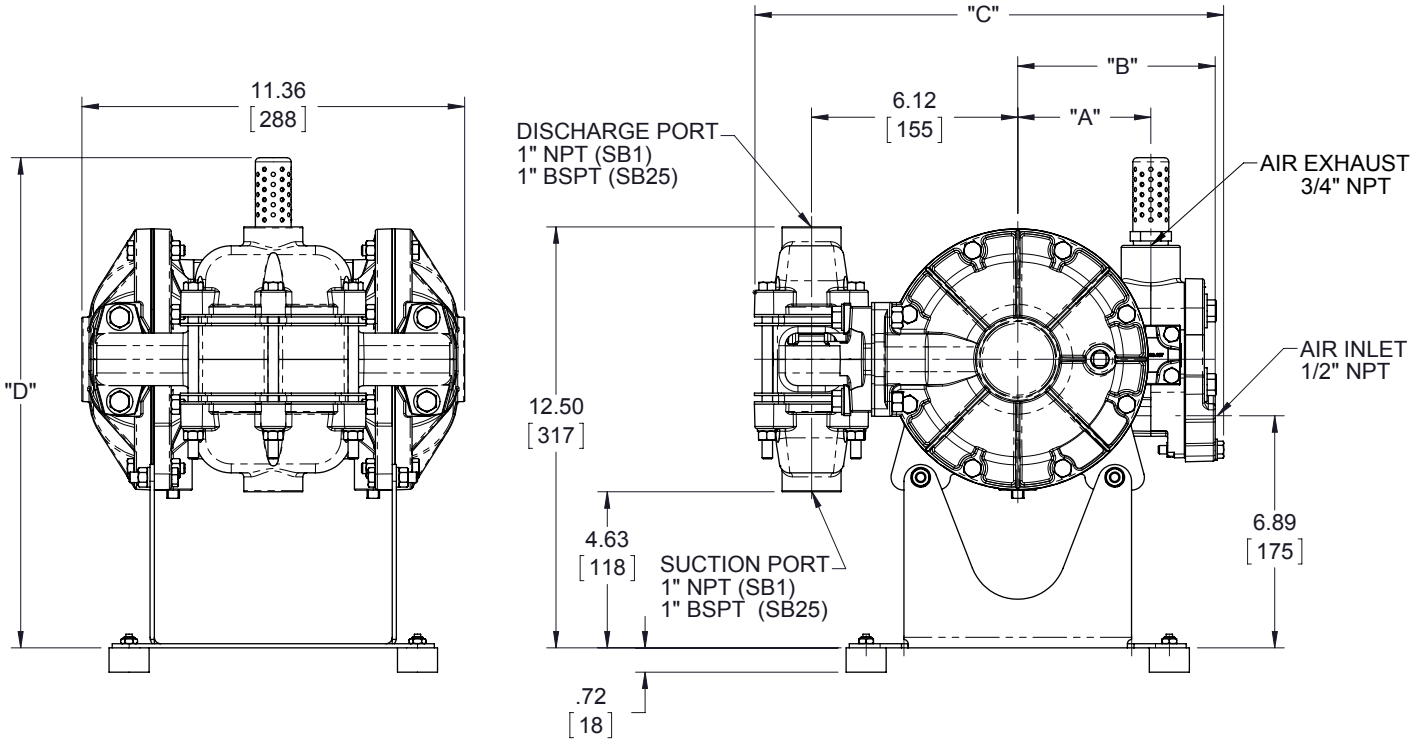
For specific applications, always consult the Chemical Resistance Chart.

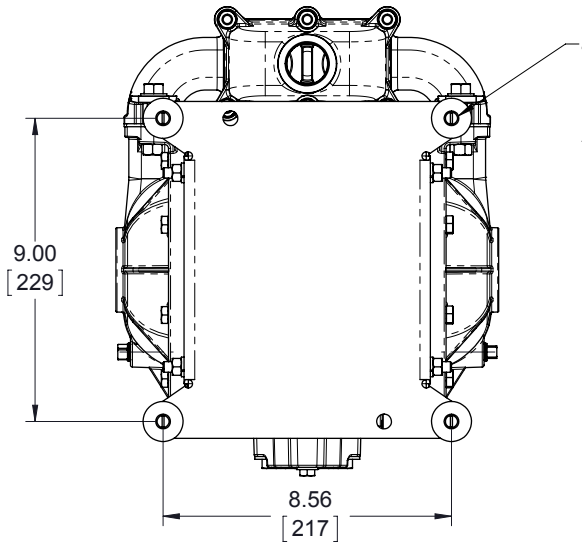
**Ambient temperature range:** -20°C to +40°C
**Process temperature range:** -20°C to +80°C for models rated as category 1 equipment
-20°C to +100°C for models rated as category 2 equipment

In addition, the ambient temperature range and the process temperature range do not exceed the operating temperature range of the applied non-metallic parts as listed in the manuals of the pumps.

# Dimensional Drawings

## SB1 & SB25 Heavy Duty Ball Valve



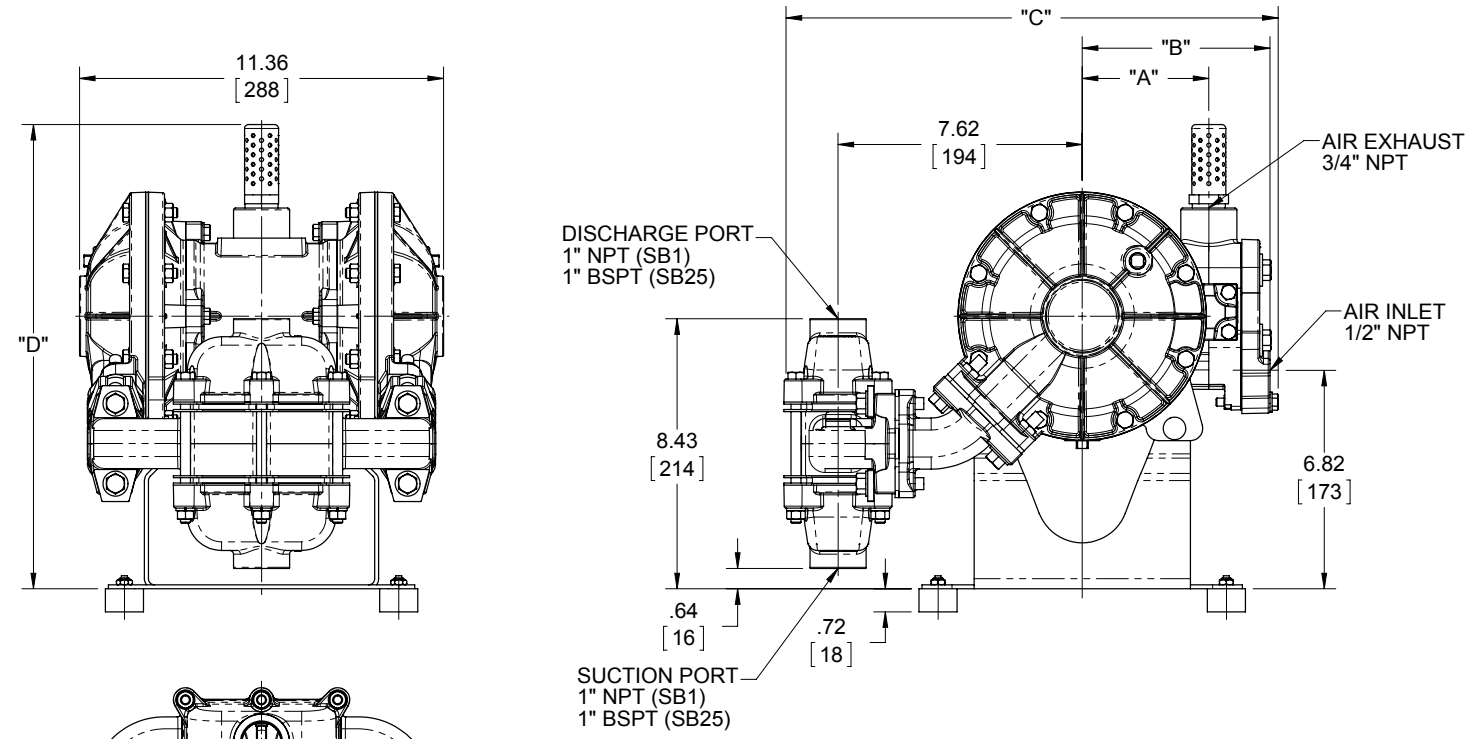

4X ∅.28 [7] MOUNTING HOLE

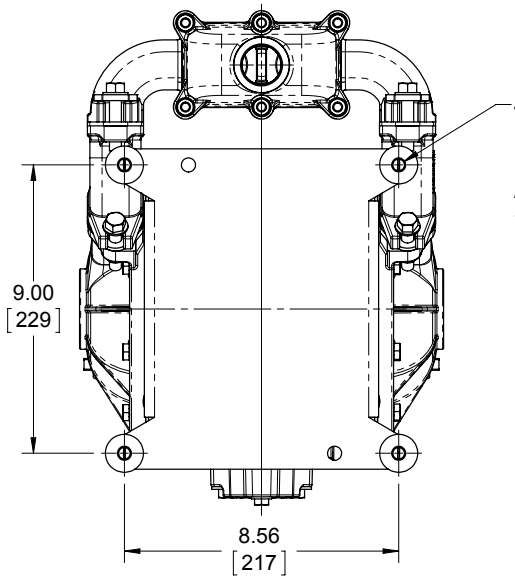
NOTE:
UNIT FURNISHED WITH SUB-BASE PLATE AND RUBBER FEET AS STANDARD. FOR STATIONARY BOLT DOWN USE, RUBBER FEET CAN BE REMOVED.

## SB1 / SB25

HEAVY DUTY BALL VALVE PUMP
DIMENSIONAL TOLERANCE ±1/8 [3]
[XX] = MILLIMETERS

| PUMP COFIGURATION | DIM "A" | DIM "B" | DIM "C" | DIM "D" |
|---|---|---|---|---|
| ALUMINUM CENTER SECTION | 3.95 [100] | 5.86 [149] | 13.90 [353] | 14.55 [370] |
| CAST IRON CENTER SECTION | 4.10 [104] | 5.54 [141] | 13.60 [345] | 15.75 [400] |
| PULSE OUTPUT CONFIGURATION | | | | |




NOTE:
UNIT FURNISHED WITH SUB-BASE PLATE AND RUBBER FEET AS STANDARD. FOR STATIONARY BOLT DOWN USE, RUBBER FEET CAN BE REMOVED.

# SB1 / SB25

**HEAVY DUTY FLAP VALVE PUMP**
**BOTTOM PORTED**

DIMENSIONAL TOLERANCE ±1/8 [3]
[XX] = MILLIMETERS

| PUMP COFIGURATION | DIM "A" | DIM "B" | DIM "C" | DIM "D" |
|---|---|---|---|---|
| ALUMINUM CENTER SECTION | 3.95 [100] | 5.86 [149] | 15.36 [390] | 14.49 [368] |
| CAST IRON CENTER SECTION | 4.10 [104] | 5.54 [141] | 15.06 [383] | 15.69 [398] |
| PULSE OUTPUT CONFIGURATION | | | | |

# 5 - YEAR Limited Product Warranty

*Warren Rupp, Inc. ("Warren Rupp") warrants to the original end-use purchaser that no product sold by Warren Rupp that bears a Warren Rupp brand shall fail under normal use and service due to a defect in material or workmanship within five years from the date of shipment from Warren Rupp's factory. Warren Rupp brands include Warren Rupp®,SANDPIPER®, MARATHON®, PortaPump®, SludgeMaster™ and Tranquilizer®.*

*~ See sandpiperpump.com/content/warranty-certifications for complete warranty, including terms and conditions, limitations and exclusions. ~*

**WARREN RUPP, INC.**

# Declaration of Conformity

**Manufacturer: Warren Rupp, Inc., 800 N. Main Street**
**Mansfield, Ohio, 44902 USA**

Certifies that Air-Operated Double Diaphragm Pump Series: HDB, HDF, M Non-Metallic, S Non-Metallic, M Metallic, S Metallic, T Series, G Series, U Series, EH and SH High Pressure, RS Series, W Series, SMA and SPA Submersibles, and Tranquilizer® Surge Suppressors comply with the European Community Directive 2006/42/EC on Machinery, according to Annex VIII. This product has used Harmonized Standard EN809:1998+A1:2009, Pumps and Pump Units for Liquids - Common Safety Requirements, to verify conformance.

David Roseberry
Signature of authorized person

October 20, 2005
Date of issue

David Roseberry
Printed name of authorized person

Engineering Manager
Title

Revision Level: F

August 23, 2012
Date of revision

IDEX

CE

WARREN RUPP, INC.

# EC / EU Declaration of Conformity

The objective of the declaration described is in conformity with the relevant Union harmonisation legislation: Directive 94/9/EC (until April 19, 2016) and Directive 2014/34/EU (from April 20, 2016).

**Manufacturer:**
Warren Rupp, Inc.
A Unit of IDEX Corportion
800 North Main Street
P.O. Box 1568
Mansfield, OH 44902 USA

**Applicable Standard:**
EN13463-1: 2001
EN13463-5: 2003
EN60079-25: 2004
**Harmonised Standard:**
EN13463-1: 2009
EN13463-5: 2011
EN60079-25:2010

The harmonised standards have been compared to the applicable standards used for certification purposes and no changes in the state of the art technical knowledge apply to the listed equipment.

**AODD Pumps and Surge Suppressors**
Technical File No.: 203104000-1410/MER

**AODD (Air-Operated Double Diaphragm) Pumps**
EC Type Examination Certificate No. Pumps: KEMA 09ATEX0071 X

DEKRA Certification B.V. (0344)
Meander 1051
6825 MJ Arnhem
The Netherlands

**Hazardous Locations Applied:**

| | |
|---|---|
| I M1 c | II 1 G c T5 |
| II 2 G Ex ia c IIC T5 | II 1 D c T100°C |
| II 2 D Ex c iaD 20 IP67 T100°C | II 2 G c T5 |
| II 2 G Eex m c II T5 | II 2 D c T100°C |
| II 2 D c IP65 T100°C | |

SANDPIPER®
A WARREN RUPP, INC. BRAND

Tranquilizer®

DATE/APPROVAL/TITLE:
18 March 2016

David Roseberry
David Roseberry, Director of Engineering

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