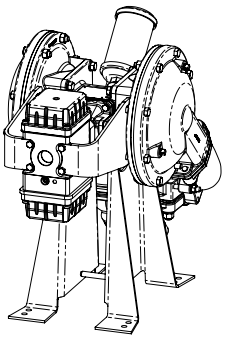
WARREN RUPP®

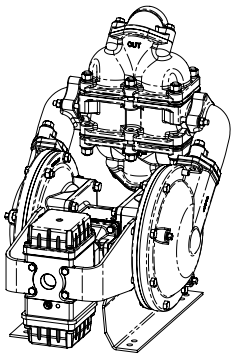
*Quality System ISO9001 Certified*

*Environmental Management System ISO14001 Certified*

IDEX FLUID & METERING



Bottom Ported



Top Ported

US Patent # 6,241,487
US Patent # 7,521,921 Pending

CE

SANDPIPER®
A WARREN RUPP PUMP BRAND

# RHDB2
## Heavy Duty Ball Valve AirVantage Design Level 1

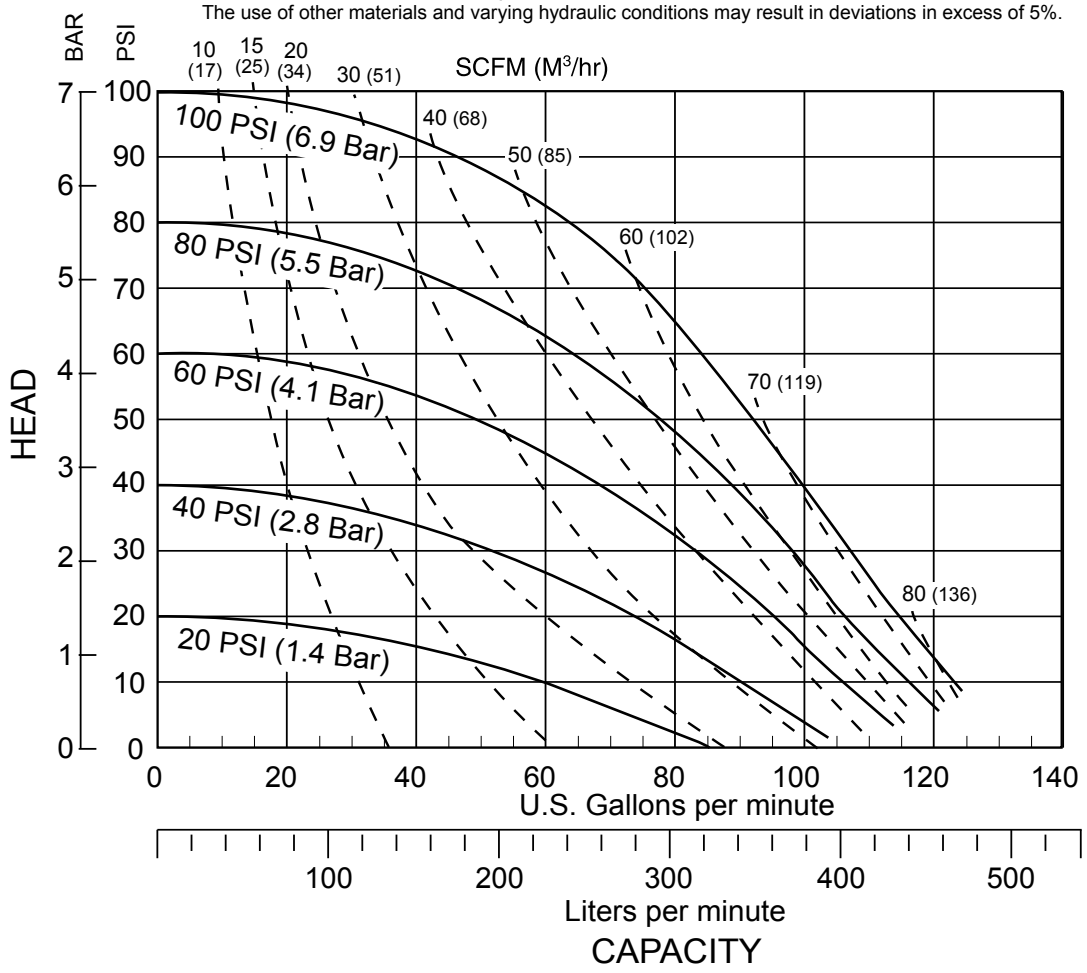
### Air-Operated Double Diaphragm Pump

ENGINEERING, PERFORMANCE & CONSTRUCTION DATA

| INTAKE/DISCHARGE PIPE SIZE | CAPACITY | AIR VALVE | SOLIDS-HANDLING | HEADS UP TO | DISPLACEMENT/STROKE |
|---|---|---|---|---|---|
| 2 " *(50mm)* NPT (F) | 0 to 130 gallons per minute (0 to 492 liters per minute) | No-lube, no-stall design | Up to 3/8 in. *(9mm)* | 125 psi or 289 ft. of water (125 psi or 8.6 bar inlet) (8.6 bar or 88 meters) | .47 Gallon / 1.77 liter |

## Model RHDB2 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%.




**SANDPIPER® pumps are designed to be powered only by compressed air.**

# Explanation of Pump Nomenclature: RHDB2

## Materials of Construction

| Top Porting | Bottom Porting | Manifold | Outer Chamber | Inner Chamber | Outer Diaphragm Plate | Inner Diaphragm Plate | Intermediate Housing | Diaphragm Rod | Valve Seat | Hard-ware | Diaphragm | Ball Valve Material | Manifold Seat Gasket | Manifold Sealing Rings | Shipping Wt. (lbs.) Top P | Shipping Wt. (lbs.) Bottom P | AirVantage Options |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TB-3-A | DB-3-A | AL | AL | AL | CI | PS | AL | SS | SS | PS | B | B | CB | B | 105 | 112 | S |
| TC-3-A | DC-3-A | AL | AL | AL | CI | PS | AL | SS | SS | PS | V | T | CT | V | 105 | 112 | S |
| TI-3-A | DI-3-A | AL | AL | AL | CI | PS | AL | SS | SS | PS | I | I | CT | I | 105 | 112 | S |
| TN-3-A | DN-3-A | AL | AL | AL | CI | PS | AL | SS | SS | PS | N | N | CN | N | 105 | 112 | S |
| TGI-3-A | DGI-3-A | AL | AL | AL | CI | PS | AL | SS | SS | PS | I/T | T | CT | V | 105 | 112 | S |
| TGN-3-A | DGN-3-A | AL | AL | AL | CI | PS | AL | SS | SS | PS | N/T | T | CT | V | 105 | 112 | S |
| TGR-3-A | DGR-3-A | AL | AL | AL | CI | PS | AL | SS | SS | PS | H/T | T | CT | V | 105 | 112 | S |
| TS-3-A | DS-3-A | AL | AL | AL | CI | PS | AL | SS | SS | PS | S | S | CT | I | 105 | 112 | S |
| TB-3-I | DB-3-I | CI | CI | AL | CI | PS | AL | SS | SS | PS | B | B | CB | B | 151 | 161 | S |
| TC-3-I | DC-3-I | CI | CI | AL | CI | PS | AL | SS | SS | PS | V | T | CT | V | 151 | 161 | S |
| TI-3-I | DI-3-I | CI | CI | AL | CI | PS | AL | SS | SS | PS | I | I | CT | I | 151 | 161 | S |
| TN-3-I | DN-3-I | CI | CI | AL | CI | PS | AL | SS | SS | PS | N | N | CN | N | 151 | 161 | S |
| TGI-3-I | DGI-3-I | CI | CI | AL | CI | PS | AL | SS | SS | PS | I/T | T | CT | V | 151 | 161 | S |
| TGN-3-I | DGN-3-I | CI | CI | AL | CI | PS | AL | SS | SS | PS | N/T | T | CT | V | 151 | 161 | S |
| TGR-3-I | DGR-3-I | CI | CI | AL | CI | PS | AL | SS | SS | PS | H/T | T | CT | V | 151 | 161 | S |
| TS-3-I | DS-3-I | CI | CI | AL | CI | PS | AL | SS | SS | PS | S | S | CT | I | 151 | 161 | S |
| TB-3-S | DB-3-S | ‡SS | ‡SS | AL | SS | PS | AL | SS | SS | PS | B | B | CB | B | 166 | 173 | S |
| TC-3-S | DC-3-S | ‡SS | ‡SS | AL | SS | PS | AL | SS | SS | PS | V | T | CT | V | 166 | 173 | S |
| TI-3-S | DI-3-S | ‡SS | ‡SS | AL | SS | PS | AL | SS | SS | PS | I | I | CT | I | 166 | 173 | S |
| TN-3-S | DN-3-S | ‡SS | ‡SS | AL | SS | PS | AL | SS | SS | PS | N | N | CN | N | 166 | 173 | S |
| TGN-3-S | DGN-3-S | ‡SS | ‡SS | AL | SS | PS | AL | SS | SS | PS | N/T | T | CT | V | 166 | 173 | S |
| TGR-3-S | DGR-3-S | ‡SS | ‡SS | AL | SS | PS | AL | SS | SS | PS | H/T | T | CT | V | 166 | 173 | S |
| TS-3-S | DS-3-S | ‡SS | ‡SS | AL | SS | PS | AL | SS | SS | PS | S | S | CT | I | 166 | 173 | S |

**Meanings of Abbreviations:**

A = Compressed Fibre
AL = Aluminum
B = Nitrile
CB = Conductive Nitrile
CI = Cast Iron
CN = Conductive Neoprene
CT = Conductive PTFE
DC = Die Cast
H/T = Hytrel® Backup/PTFE Overlay
I = EPDM
I/T = EPDM Backup/PTFE Overlay
N = Neoprene
N/T = Neoprene Backup/ PTFE Overlay
PS = Plated Steel
S = Santoprene®
SS = Stainless Steel
T = PTFE
V = FKM

S = Self Contained Electrical Generator
P = 100 VAC Electrical Conneciton

‡ **CF-8M Stainless Steel** equal to or exceeding ASTM specification A743 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.

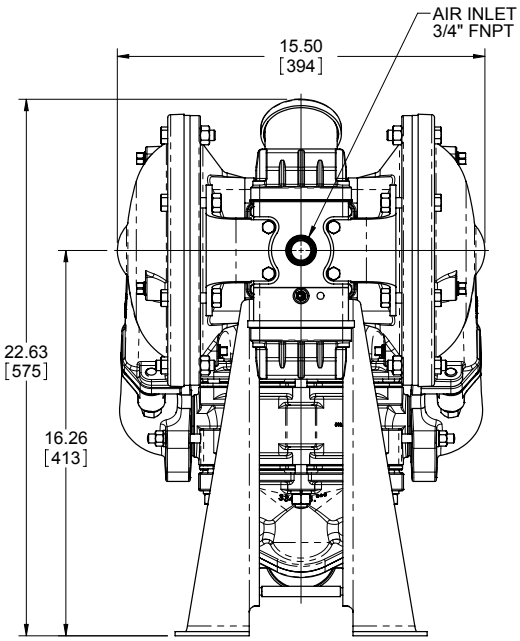
## ⚠ CAUTION! *Operating temperature limitations are as follows:*

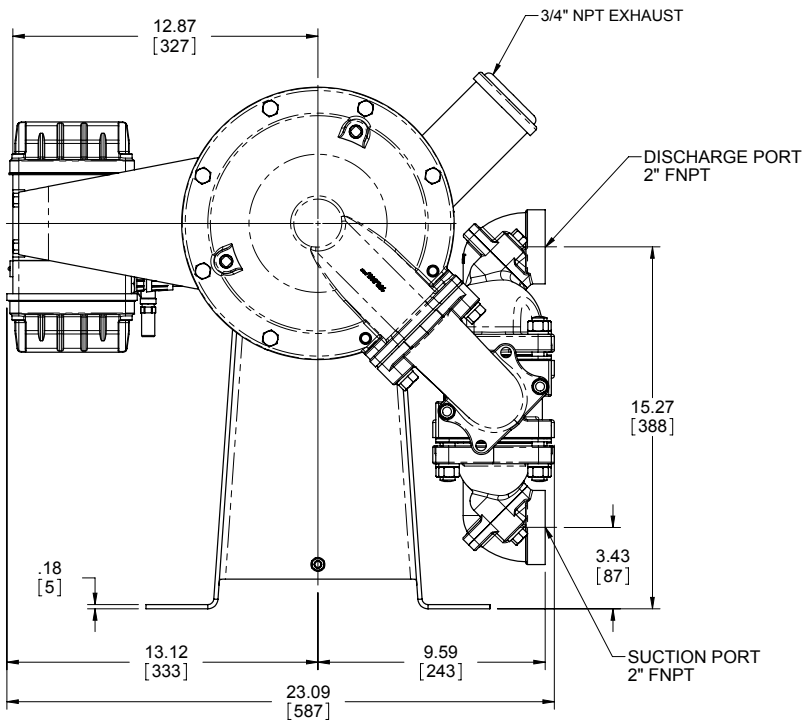
| Materials | Operating Temperatures Maximum* | Minimum* | Optimum** |
|---|---|---|---|
| **NITRILE** General purpose, oil-resistant. Shows good solvent, oil, water and hydraulic fluid resistance. Should not be used with highly polar solvents like acetone and MEK, ozone, chlorinated hydrocarbons and nitro hydrocarbons. | 190°F<br>88°C | -10°F<br>-23°C | 50°F to 140°F<br>10°C to 60°C |
| **EPDM** Shows very good water and chemical resistance. Has poor resistance to oil and solvents, but is fair in ketones and alcohols. | 212°F<br>100°C | -10°F<br>-23°C | 50°F to 212°F<br>10°C to 100°C |
| **NEOPRENE** All purpose. Resistant ot vegetable oils. Generally not affected by moderate chemicals, fats, greases and many oils and solvents. Generally attacked by strong olidizing acids, ketones, esters, nitro hydrocarbons and chlorinated aromatic hydrocarbons. | 170°F<br>77°C | -35°F<br>-37°C | 50°F to 130°F<br>10°C to 54°C |
| **HYTREL®** Good on acids, bases, amines and glycols at room temperature. | 190°F<br>88°C | -10°F<br>-23°C | 50°F to 140°F<br>10°C to 60°C |
| **PTFE** Chemically inert, virtually impervious. Very few chemicals are known to react chemically 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. | 212°F<br>100°C | -35°F<br>-37°C | 50°F to 212°F<br>10°C to 100°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) will attack FKM. | 212°F<br>100°C | 32°F<br>0°C | 75°F to 212°F<br>24°C to 100°C |
| **SANTOPRENE®** Injection molded thermoplastic elastomer with no fabric layer. Long mechanical flex life. Excellent abrasion resistance. | 212°F<br>100°C | -10°F<br>-23°C | 50° to 212°F<br>10°C to 100°C |
| **STAINLESS STEEL** CF-8M equal to or exceeding ASTM specification A743 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. | | | |
| **ALLOY C** CW-12MW equal to or exceeding ASTM A494 specification for nickel and nickel alloy castings. | | | |
| For specific applications, always consult "Chemical Resistance Chart" Technical Bulletin | * Definite reduction in service life.<br>** Minimal reduction in service life at ends of range. | | |

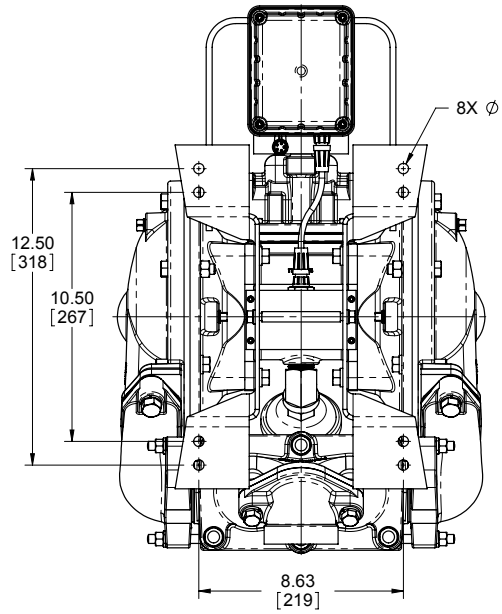
Santoprene is a registered tradename of Exxon Mobil Corp.
Hytrel is a registered tradename of E.I. du Pont.

# Dimensions: RHDB2 Bottom Ported

Dimensions are ± 1/8"
Figures in parenthesis = millimeters

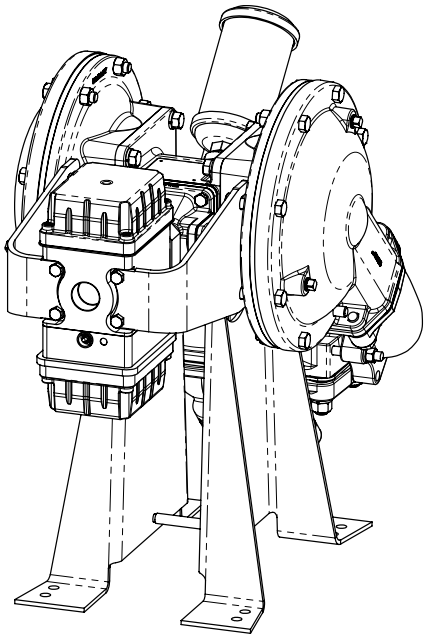


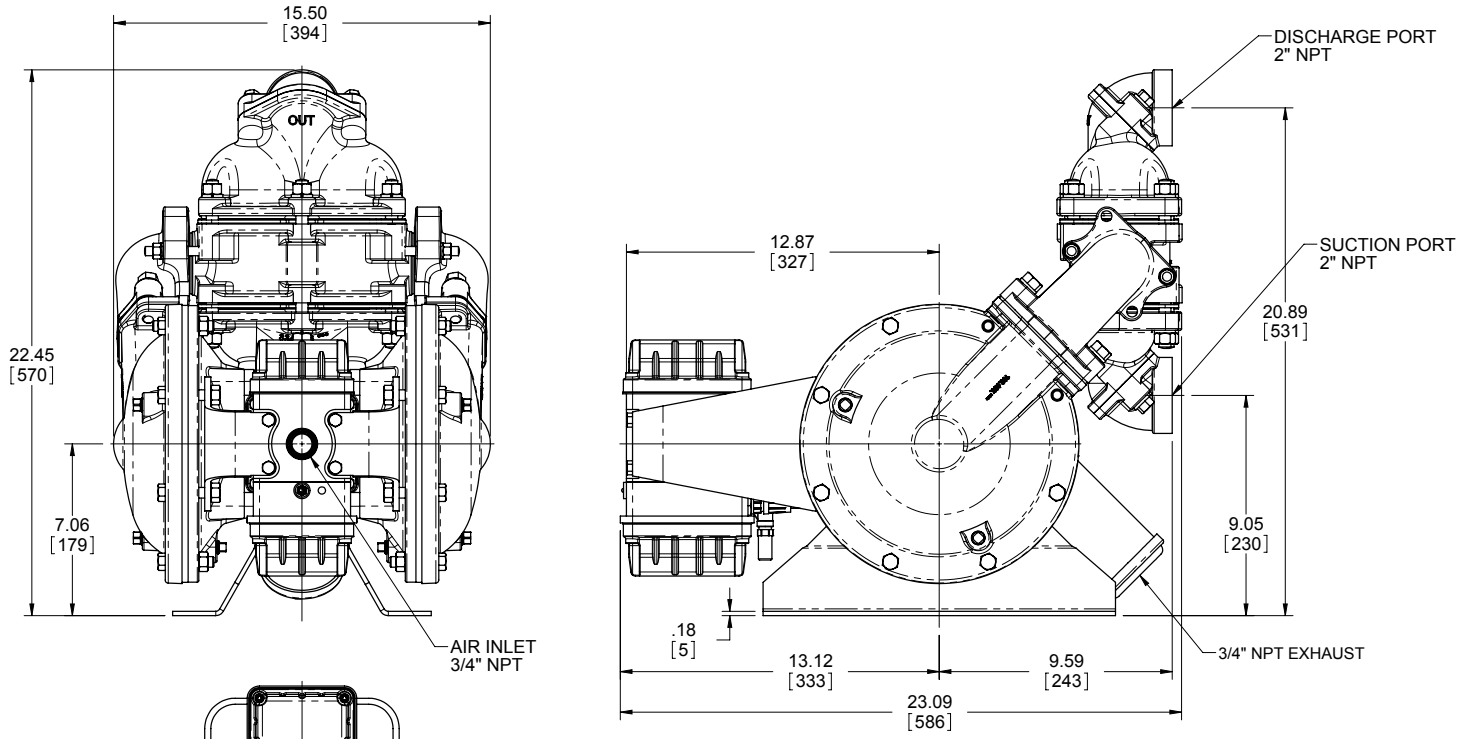

SUCTION AND DISCHARGE PORTS ARE AVAILABLE WITH 2" BSP CONNECTIONS

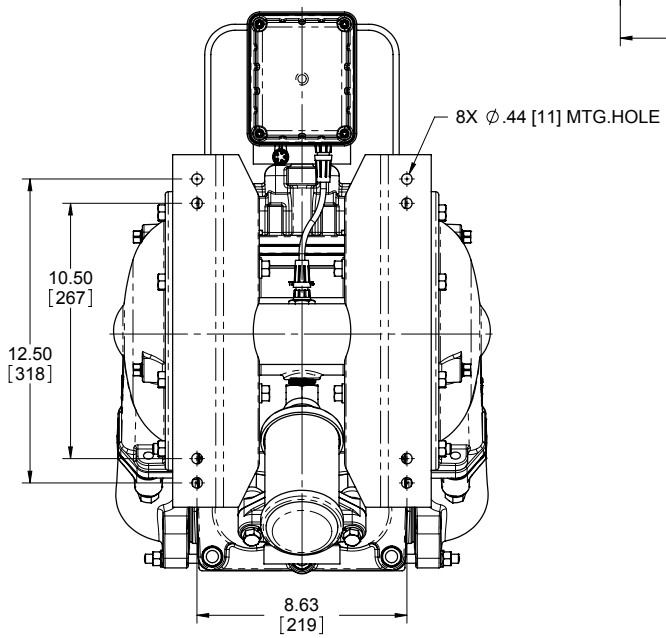
SUCTION AND DISCHARGE PORTS CAN BE ROTATED 90° FOR VERTICAL PORTING



# Dimensions: RFDB2 Top Ported

Dimensions are ± 1/8"
Figures in parenthesis = millimeters




SUCTION AND DISCHARGE PORTS ARE AVAILABLE WITH 2" BSP CONNECTIONS

SUCTION AND DISCHARGE PORTS CAN BE ROTATED 180° FOR VERTICAL PORTING