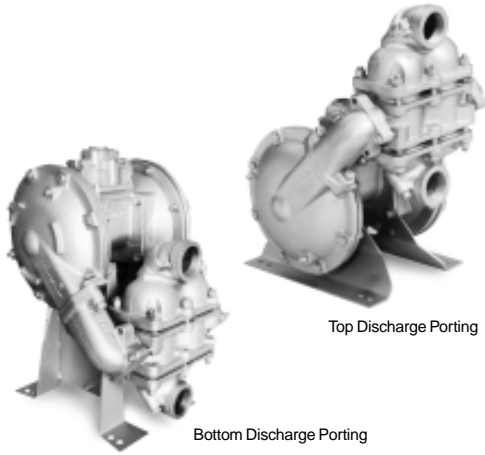


**WARREN RUPP®**

Quality System  
ISO9001 Certified

Environmental  
Management System  
ISO14001 Certified

**IDEX**  
IDEX CORPORATION



Top Discharge Porting

Bottom Discharge Porting

# SandPIPER®

## SB2-A Type 3 Ball Valve

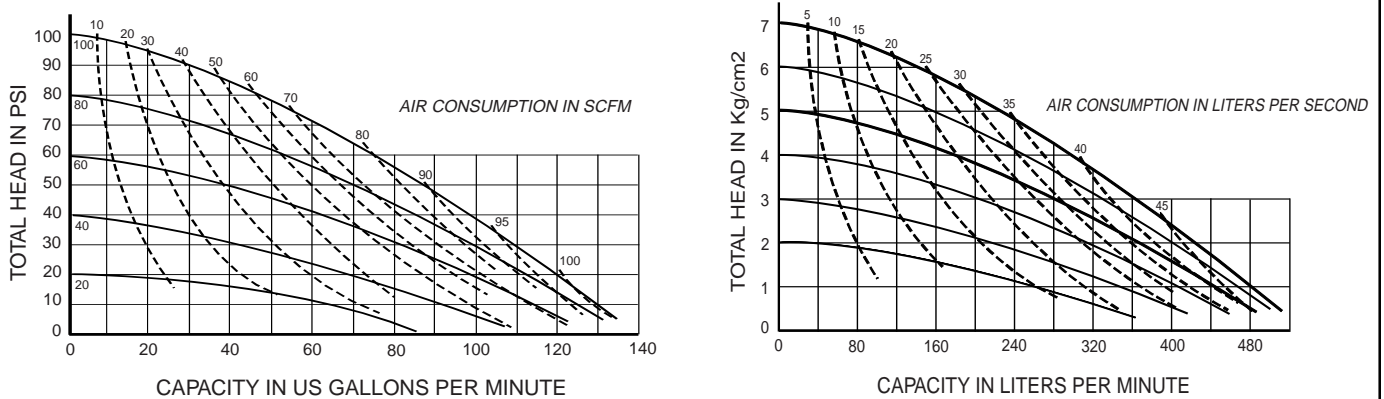
### Air-Powered Double-Diaphragm Pump

ENGINEERING, PERFORMANCE  
& CONSTRUCTION DATA

<b>INTAKE/DISCHARGE PIPE SIZE</b> 2" (50mm) NPT (F)	<b>CAPACITY</b> 0 to 135 gallons per minute (0 to 511 liters per minute)	<b>AIR VALVE</b> No-lube, no-stall design	<b>SOLIDS-HANDLING</b> Up to 3/8 in. (9mm)	<b>HEADS UP TO</b> 125 psi or 289 ft. of water (8.8 Kg/cm <sup>2</sup> or 88 meters)	<b>DISPLACEMENT/STROKE</b> .43 Gallon / 1.63 liter
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SandPIPER® pumps are designed to be powered **only** by compressed air.  
Temperature Limit: 212°F - 100°C

### Model SB2-A Performance Curve



### 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	Top Porting	Bottom Porting
TB-3-CI	DB-3-CI	CI	CI	AL380DC	CI	PS	AL356T6	416SS	316SS	PS	B	B	A	B	139	134
TC-3-CI	DC-3-CI	CI	CI	AL380DC	CI	PS	AL356T6	416SS	316SS	PS	V	T	T	V	139	134
TI-3-CI	DI-3-CI	CI	CI	AL380DC	CI	PS	AL356T6	416SS	316SS	PS	I	I	A	I	139	134
TN-3-CI	DN-3-CI	CI	CI	AL380DC	CI	PS	AL356T6	416SS	316SS	PS	N	N	A	N	139	134
TGI-3-CI	DGI-3-CD	CI	CI	AL380DC	CI	PS	AL356T6	416SS	316SS	PS	I/T	T	T	V	139	134
TGN-3-CI	DGN-3-CI	CI	CI	AL380DC	CI	PS	AL356T6	416SS	316SS	PS	N/T	T	T	V	139	134
TGR-3-CI	DGR-3-CI	CI	CI	AL380DC	CI	PS	AL356T6	416SS	316SS	PS	H/T	T	T	V	139	134
TS-3-CI	DS-3-CI	CI	CI	AL380DC	CI	PS	AL356T6	416SS	316SS	PS	S	S	A	I	139	134
TB-3-II	DB-3-II	CI	CI	CI	CI	PS	CI	416SS	316SS	PS	B	B	A	B	169	166
TC-3-II	DC-3-II	CI	CI	CI	CI	PS	CI	416SS	316SS	PS	V	T	T	V	169	166
TI-3-II	DI-3-II	CI	CI	CI	CI	PS	CI	416SS	316SS	PS	I	I	A	I	169	166
TN-3-II	DN-3-II	CI	CI	CI	CI	PS	CI	416SS	316SS	PS	N	N	A	N	169	166
TGN-3-II	DGN-3-II	CI	CI	CI	CI	PS	CI	416SS	316SS	PS	N/T	T	T	V	169	166
TGR-3-II	DGR-3-II	CI	CI	CI	CI	PS	CI	416SS	316SS	PS	H/T	T	T	V	169	166
TS-3-II	DS-3-II	CI	CI	CI	CI	PS	CI	416SS	316SS	PS	S	S	A	I	169	166
TB-3-SS	DB-3-SS	WR-S	WR-S	AL380DC	WR-S	PS	AL356T6	416SS	316SS	PS	B	B	A	B	145	149
TC-3-SS	DC-3-SS	WR-S	WR-S	AL380DC	WR-S	PS	AL356T6	416SS	316SS	PS	V	T	T	V	145	149
TI-3-SS	DI-3-SS	WR-S	WR-S	AL380DC	WR-S	PS	AL356T6	416SS	316SS	PS	I	I	A	I	145	149
TN-3-SS	DN-3-SS	WR-S	WR-S	AL380DC	WR-S	PS	AL356T6	416SS	316SS	PS	N	N	A	N	145	149
TGN-3-SS	DGN-3-SS	WR-S	WR-S	AL380DC	WR-S	PS	AL356T6	416SS	316SS	PS	N/T	T	T	V	145	149
TGR-3-SS	DGR-3-SS	WR-S	WR-S	AL380DC	WR-S	PS	AL356T6	416SS	316SS	PS	H/T	T	T	V	145	149
TS-3-SS	DS-3-SS	WR-S	WR-S	AL380DC	WR-S	PS	AL356T6	416SS	316SS	PS	S	S	A	I	145	149
TB-3-SI	DB-3-SI	WR-S	WR-S	CI	WR-S	PS	CI	416SS	316SS	PS	B	B	A	B	175	179
TC-3-SI	DC-3-SI	WR-S	WR-S	CI	WR-S	PS	CI	416SS	316SS	PS	V	T	T	V	175	179
TI-3-SI	DI-3-SI	WR-S	WR-S	CI	WR-S	PS	CI	416SS	316SS	PS	I	I	A	I	175	179
TN-3-SI	DN-3-SI	WR-S	WR-S	CI	WR-S	PS	CI	416SS	316SS	PS	N	N	A	N	175	179
TGN-3-SI	DGN-3-SI	WR-S	WR-S	CI	WR-S	PS	CI	416SS	316SS	PS	N/T	T	T	V	175	179
TGR-3-SI	DGR-3-SI	WR-S	WR-S	CI	WR-S	PS	CI	416SS	316SS	PS	H/T	T	T	V	175	179
TS-3-SI	DS-3-SI	WR-S	WR-S	CI	WR-S	PS	CI	416SS	316SS	PS	S	S	A	I	175	179

**Meanings of Abbreviations:**

- A = Compressed Fibre
- AL = Aluminum
- B = Buna-N
- CI = Cast Iron
- 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 = Viton®
- WR-S = Alloy Type 316SS

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# SB2-A Ball Valve

# SandPIPER®

Materials	Operating Temperatures		
	Maximum*	Minimum*	Optimum**
<b>BUNA-N</b> 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	50°F to 140°F 10°C to 60°C
<b>EPDM</b> Shows very good water and chemical resistance. Has poor resistance to oil and solvents, but is fair in ketones and alcohols.	212°F 100°C	-10°F -23°C	50°F to 212°F 10°C to 100°C
<b>NEOPRENE</b> All purpose. Resistant to vegetable oils. Generally not affected by moderate chemicals, fats, greases and many oils and solvents. Generally attacked by strong oxidizing acids, ketones, esters, nitro hydrocarbons and chlorinated aromatic hydrocarbons.	170°F 77°C	-35°F -37°C	50°F to 130°F 10°C to 54°C
<b>HYTREL®</b> Good on acids, bases, amines and glycols at room temperature.	190°F 88°C	-10°F -23°C	50°F to 140°F 10°C to 60°C
<b>PTFE</b> 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 100°C	-35°F -37°C	50°F to 212°F 10°C to 100°C
<b>VITON®</b> 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 Viton.	212°F 100°C	32°F 0°C	75°F to 212°F 24°C to 100°C
<b>SANTOPRENE®</b> Injection molded thermoplastic elastomer with no fabric layer. Long mechanical flex life. Excellent abrasion resistance.	212°F 100°C	-10°F -23°C	50° to 212°F 10°C to 100°C

**WR-S** Warren Rupp Alloy Type 316 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.

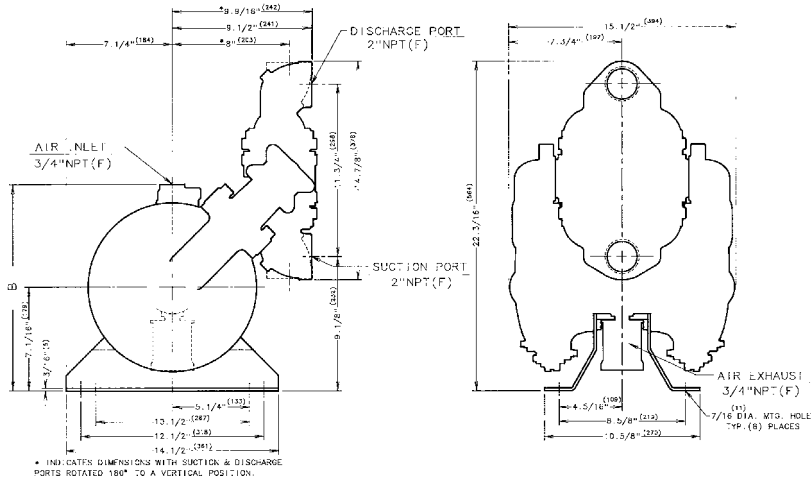
For specific applications, always consult "Chemical Resistance Chart" Technical Bulletin

\* Definite reduction in service life.  
\*\* Minimal reduction in service life at ends of range.

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

## TOP DISCHARGE PORTING

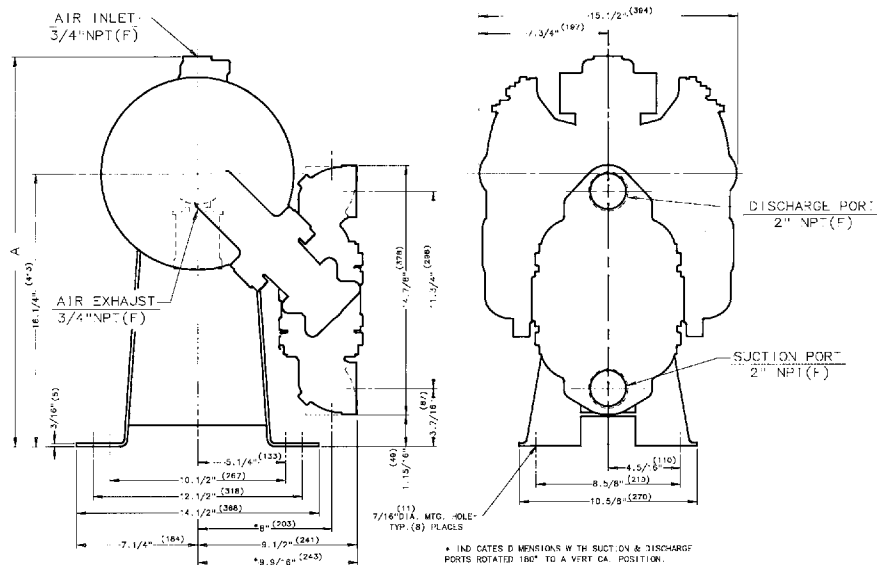
\* Indicates dimensions with suction and discharge ports rotated 180° to a vertical position.



Dimension	A	B
Standard Pump	23 1/4" (590)	14 1/16" (357)
Pulse Output Kit	23 13/16" (605)	14 5/8" (371)

## BOTTOM DISCHARGE PORTING

\* Indicates dimensions with suction and discharge ports rotated 180° to a vertical position.



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