

**WARREN
RUPP®**

Quality System
ISO9001 Certified

Environmental
Management System
ISO14001 Certified

IDEX
FLUID & METERING



U.S. Patent #5,996,627 & 6,241,487
Other U.S. Patents Applied for



See page 2
for ATEX ratings.



SANDPIPER®

A WARREN RUPP PUMP BRAND

**S1F Non-Metallic
Design Level 3
Ball Valve**

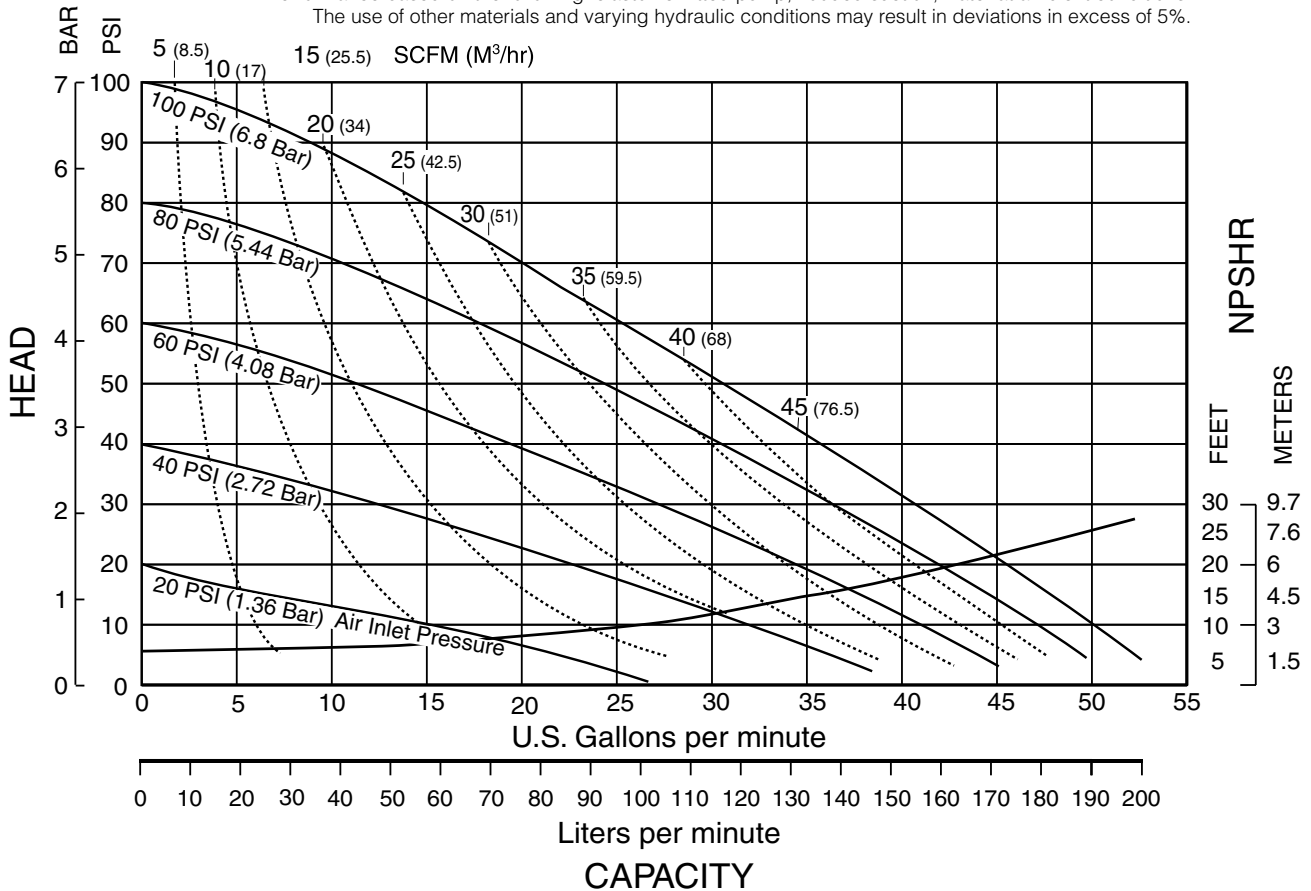
**Air-Operated
Double Diaphragm Pump**

ENGINEERING, PERFORMANCE
& CONSTRUCTION DATA

INTAKE/DISCHARGE PIPE SIZE	CAPACITY	AIR VALVE	SOLIDS-HANDLING	HEADS UP TO	DISPLACEMENT/STROKE
1" ANSI Flange or PN10 25mm DIN Flange	0 to 53 gallons per minute (0 to 200 liters per minute)	No-lube, no-stall design	Up to .25 in. (6mm)	100 psi or 231 ft. of water (7 bar or 70 meters)	.19 Gallon / .72 liter

MODEL S1F Non-Metallic 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

S1F Non-Metallic · Design Level 3 · Ball Valve

Model	Pump Brand	Pump Size	Check Valve Type	Design Level	Wetted Material	Diaphragm/Check Valve Materials	Check Valve Seat	Non-Wetted Material Options	Porting Options	Pump Style	Pump Options	Kit Options	Shipping Weight lbs. (kg)
S1FB3P1PPUS000.	S	1F	B	3	P	1	P	P	U	S	0	00.	42 (19)
S1FB3P2PPUS000.	S	1F	B	3	P	2	P	P	U	S	0	00.	42 (19)
S1FB3PBPPUS000.	S	1F	B	3	P	B	P	P	U	S	0	00.	42 (19)
S1FB3PGPPUS000.	S	1F	B	3	P	G	P	P	U	S	0	00.	42 (19)
S1FB3PNPPUS000.	S	1F	B	3	P	N	P	P	U	S	0	00.	42 (19)
S1FB3K1KPUS000.	S	1F	B	3	K	1	K	P	U	S	0	00.	54 (24)
S1FB3K2KPUS000.	S	1F	B	3	K	2	K	P	U	S	0	00.	54 (24)
S1FB3P3PPUV000.	S	1F	B	3	P	3	P	P	U	V	0	00.	48 (22)
S1FB3K3KPUV000.	S	1F	B	3	K	3	K	P	U	V	0	00.	64 (29)
S1FB3P4PPUV000.	S	1F	B	3	P	4	P	P	U	V	0	00.	48 (22)
S1FB3K4KPUV000.	S	1F	B	3	K	4	K	P	U	V	0	00.	64 (29)

Note: Models listed in the table are for reference only. See nomenclature below for other models.

Pump Brand

S= SANDPIPER®

Pump Size

1F= 1" Full Flow

Check Valve Type

B= Ball

Design Level

3= Design Level 3

Wetted Material

K= PVDF

P= Polypropylene

▲ C= Conductive Polypropylene

▲ V= Conductive PDVF

Diaphragm Check Valve Materials

1= Santoprene®/Santoprene®

2= PTFE Santoprene Backup/PTFE

3= PTFE Pumping, PTFE-Santoprene Backup Driver/PTFE

4= Santoprene Pumping/Santoprene®

B= Nitrile/Nitrile

G= PTFE-Neoprene Backup/PTFE

N= Neoprene/Neoprene

V= FKM/FKM

Y= PTFE Pumping/One-Piece Bonded Driver/PTFE

Z= One-Piece Bonded/PTFE

Check Valve Seat

K= PVDF

P= Polypropylene

Non-Wetted Material Options

P= Polypropylene

1= 40% Glass Filled Polypropylene with PTFE hardware

▲ C= Conductive Polypropylene

Porting Options

U= Universal (Fits ANSI and DIN)

7= Dual Porting (ANSI)

8= Top Dual Porting (ANSI)

9= Bottom Dual Porting (ANSI)

Pump Style

D= With Electronic Leak Detection (110 V)

E= With Electronic Leak Detection (220V)

M= With Mechanical Leak Detection

S= Standard

V= With Visual Leak Detection

Pump Options

▲ 0= None

1= Sound Dampening Muffler

2= Mesh Muffler

3= High temperature Air Valve w/Integral Muffler

4= High temperature Air Valve w/Sound Dampening Muffler

5= High temperature Air Valve w/Mesh Muffler

▲ 6= Metal Muffler

▲ 7= Metal Muffler with Grounding Cable

Kit Options

▲ 00.= None

P0.= 10-30VDC Pulse Output Kit

◇ P1.= Intrinsically-Safe 5-30VDC, 110/120VAC 220/240 VAC Pulse Output Kit

P2.= 110/120 or 220/240VAC Pulse Output Kit

E0.= Solenoid Kit with 24VDC Coil

▲ E1.= Solenoid Kit with 24VDC Explosion-Proof Coil

E2.= Solenoid Kit with 24VAC/12VDC Coil

▲ E3.= Solenoid Kit with 12VDC Explosion-Proof Coil

E4.= Solenoid Kit with 110VAC Coil

▲ E5.= Solenoid Kit with 110VAC Explosion-Proof Coil

E6.= Solenoid Kit with 220VAC Coil

▲ E7.= Solenoid Kit with 220VAC Explosion-Proof Coil

▲ E8.= Solenoid Kit with 110VAC, 50 Hz Explosion-Proof Coil

▲ E9.= Solenoid Kit with 230VAC, 50 Hz Explosion-Proof Coil

SP= Stroke Indicator Pins

◆ A1.= Solenoid Kit with 12 VDC Explosion-Proof Coil

◆ A2.= Solenoid Kit with 24 VDC Explosion-Proof Coil


◆ A3.= Solenoid Kit with 110/120 VAC 50/60 Hz Explosion-Proof Coil

◆ A4.= Solenoid Kit with 220/240 VAC 50/60 Hz Explosion-Proof Coil

(1)  II 2GD T5



Note: Pumps are only ATEX compliant when ordered with wetted material option C or V, non-wetted material option C, pump option 0, 6 or 7, and kit option 0.

(2)  II 2G Ex ia c IIC T5
II 2D c iaD 20 IP67 T100°C




Note: Pumps ordered with the options listed in (1) above are ATEX compliant when ordered with kit option P1.

(3*)  II 2G EEx m c T5
II 2D c IP65 T100°C



Note: Pumps ordered with the options listed in (1) to the left are ATEX compliant when ordered with kit option A1, A2, A3, or A4.

*Refer to the service manual to see special conditions for safe use.

(4)  IEC EEX m T4



Note: Pump models equipped with these explosion-proof solenoid kit options E1, E3, E5, E7, E8 or E9, are certified and approved by the above agencies. They are **NOT** ATEX compliant.





CAUTION! Operating temperature limitations are as follows:

Materials	Operating Temperatures	
	Maximum*	Minimum*
Virgin 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.	220°F 104°C	-35°F -37°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
PVDF:	250°F 121°C	0°F -18°C
Polypropylene:	180°F 82°C	32°F 0°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 solution (over 70°F) will attack FKM.	350°F 177°C	-40°F -40°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 hydrocarbon.	190°F 88°C	-10°F -23°C
Neoprene: 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, and nitro hydrocarbons and chlorinated aromatic hydrocarbons.	200°F 93°C	-10°F -23°C

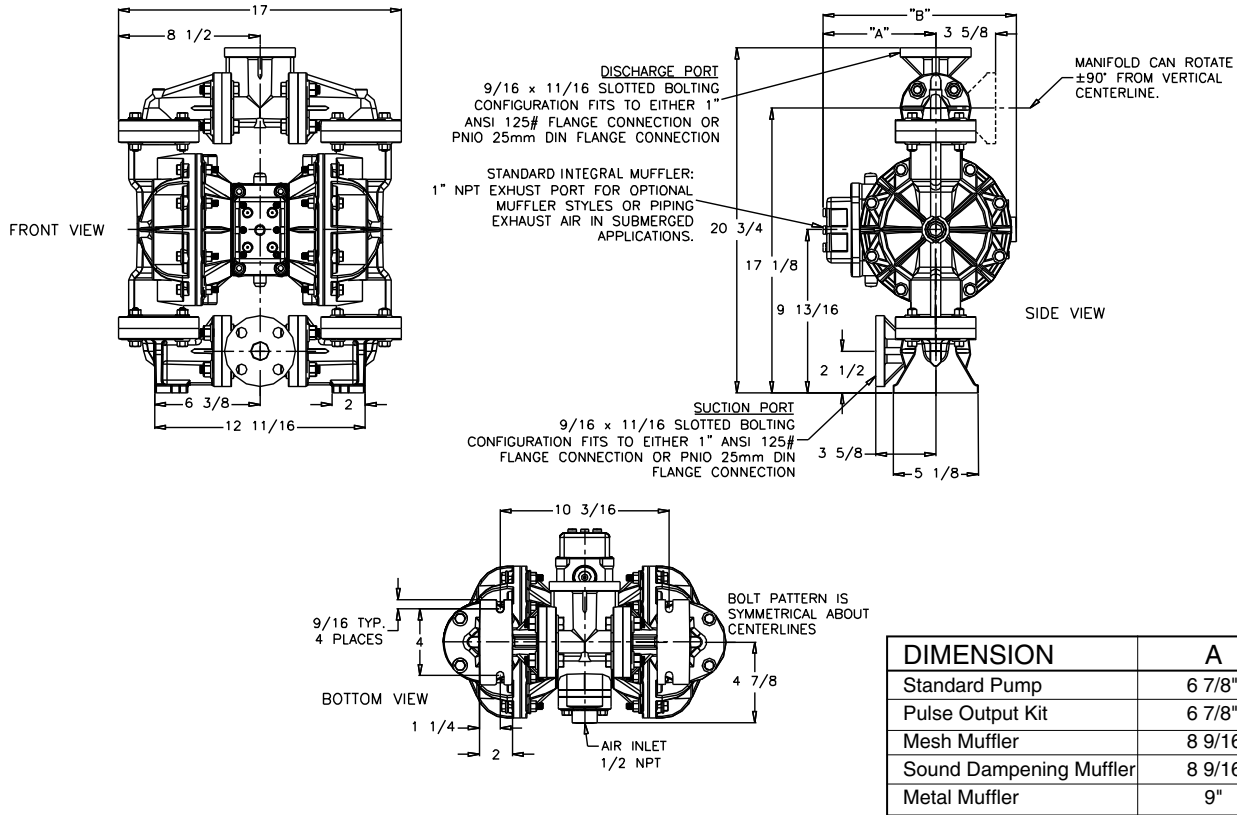
For specific applications, always consult "Chemical Resistance Chart" Technical Bulletin

*Definite reduction in service life.

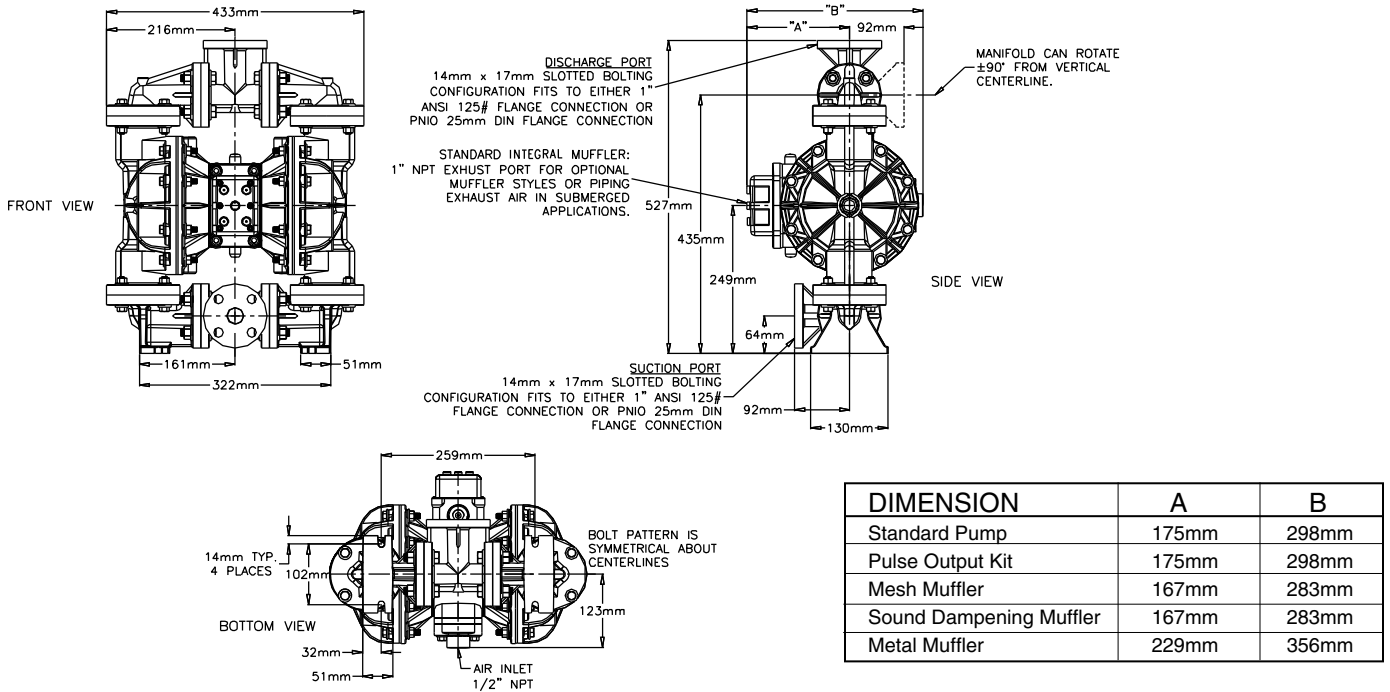
**Minimal reduction in service life at ends of range.

Dimensions: S1F Non-Metallic

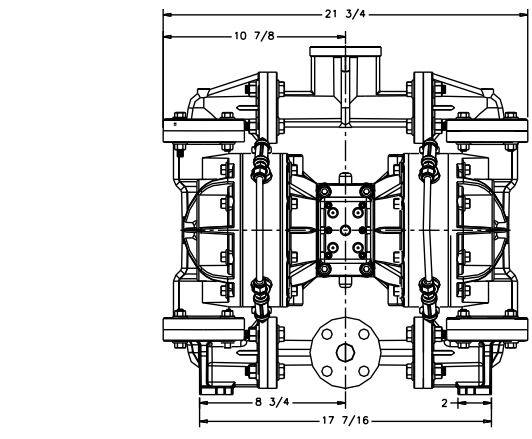
Dimensions in Inches
Dimensional tolerance: $\pm 1/8"$



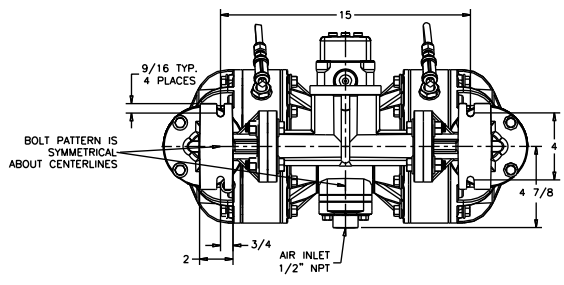
Dimensions in Millimeters
Dimensional tolerance: $\pm 3mm$



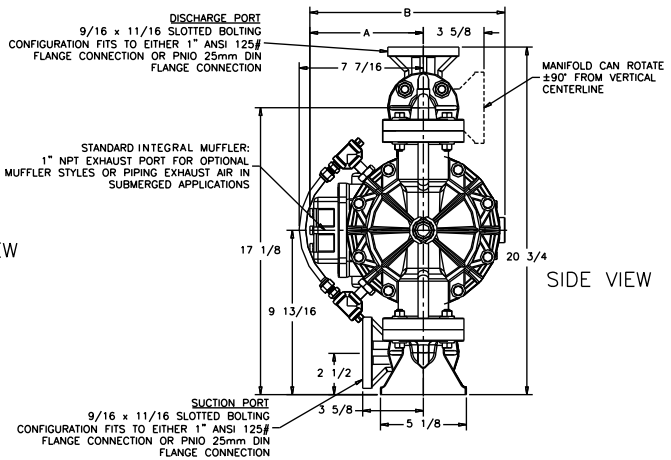
Dimensions: S1F Non-Metallic with Spill Containment



FRONT VIEW

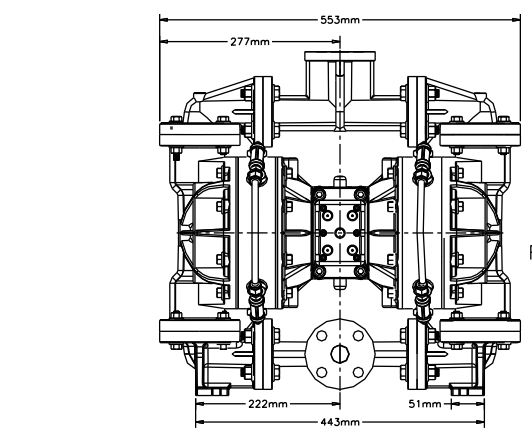


BOTTOM VIEW

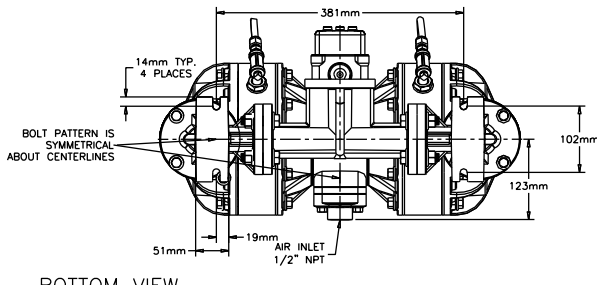


SIDE VIEW

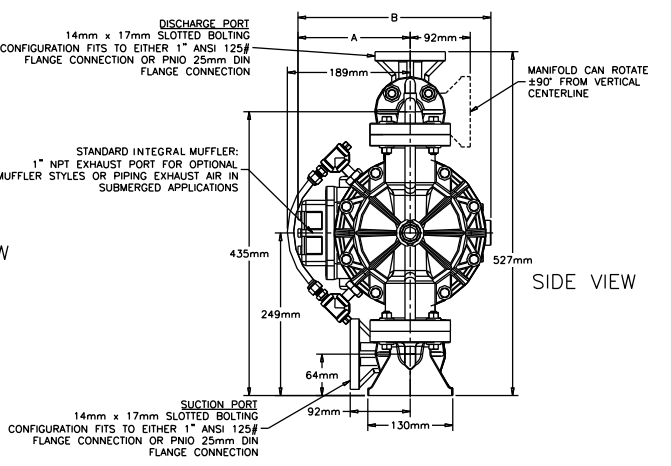
DIMENSION	A	B
Standard Pump	5 5/8"	10 1/4"
Pulse Output Kit	5 5/8"	10 1/4"
Mesh Muffler	8 9/16"	11 1/8"
Sound Dampening Muffler	8 9/16"	11 1/8"



FRONT VIEW



BOTTOM VIEW



SIDE VIEW

DIMENSION	A	B
Standard Pump	143mm	260mm
Pulse Output Kit	143mm	260mm
Mesh Muffler	167mm	283mm
Sound Dampening Muffler	167mm	283mm