

# S1F METALLIC PUMP TECHNICAL DATA SHEET

## SERIES

### STANDARD DUTY BALL VALVE PUMPS

Offering the widest range of performance and application capabilities

## PERFORMANCE

### SUCTION / DISCHARGE PORT SIZE

- 1" NPT (internal)
- 1" BSP Tapered (internal)
- 1" ANSI 150# Raised Face Flanges

### CAPACITY

- 0 to 45 gallons per minute (0 to 170 LPM)

### AIR DISTRIBUTION VALVE

- No-lube, no-stall design

### SOLIDS-HANDLING

- Up to .25 in. (6mm)

### HEADS UP TO

- 125 psi or 289 ft. of water  
(8.6 Kg/cm<sup>2</sup> or 86 meters)

### MAXIMUM OPERATING PRESSURE

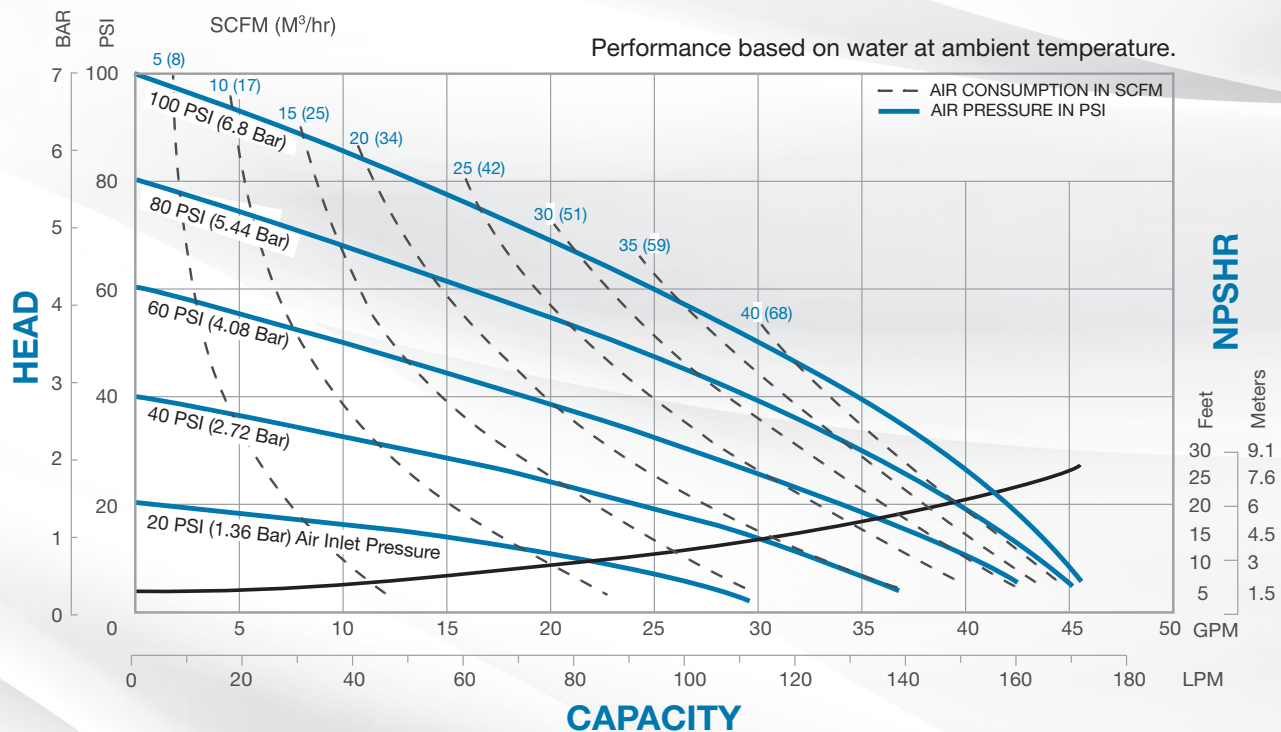
- 125 psi (8.6 bar)

### DISPLACEMENT/STROKE

- .11 Gallon / .42 liter

### WEIGHTS

- Aluminum 28 lbs. (13kg)
- Cast Iron 46 lbs. (21kg)
- Stainless Steel 43 lbs. (20kg)



### 5 YEAR LIMITED PRODUCT WARRANTY

5 Year Guarantee for defects in material or workmanship. See [sandpiperpump.com/content/warranty-certifications](http://sandpiperpump.com/content/warranty-certifications) for complete warranty, including terms and conditions, limitations and exclusions.



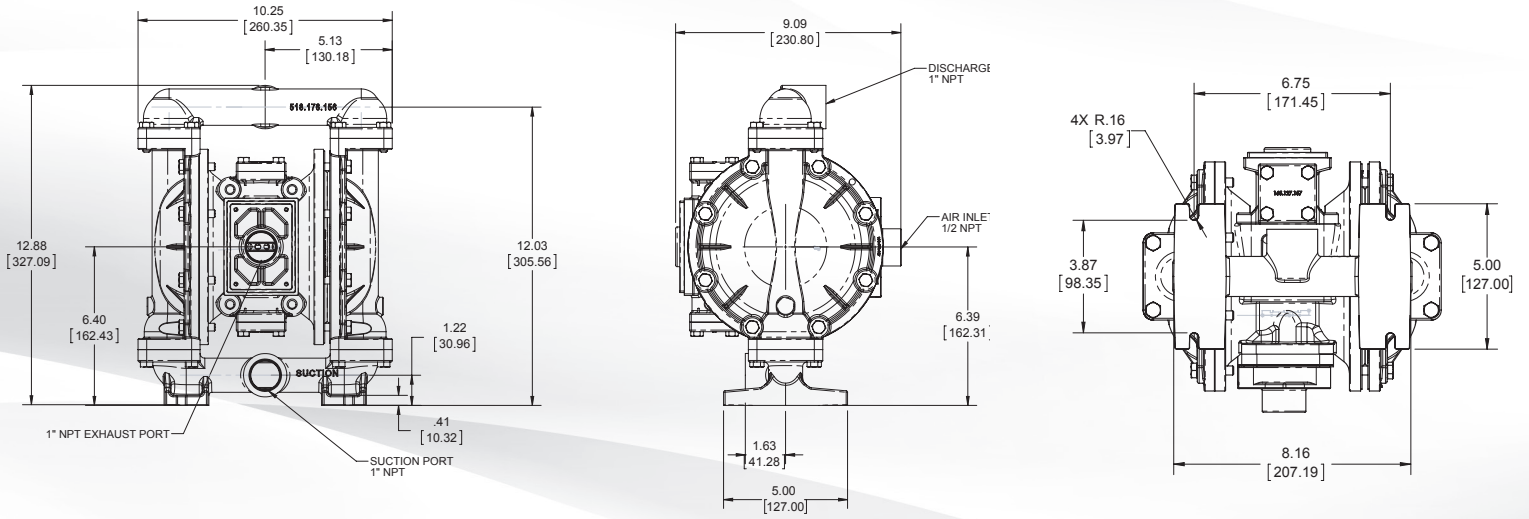
### USE ONLY GENUINE SANDPIPER PARTS

All certification, standards, guarantees & warranties originally supplied with this pump will be invalidated by the use of service parts not identified as "Genuine SANDPIPER Parts."

# DIMENSIONS

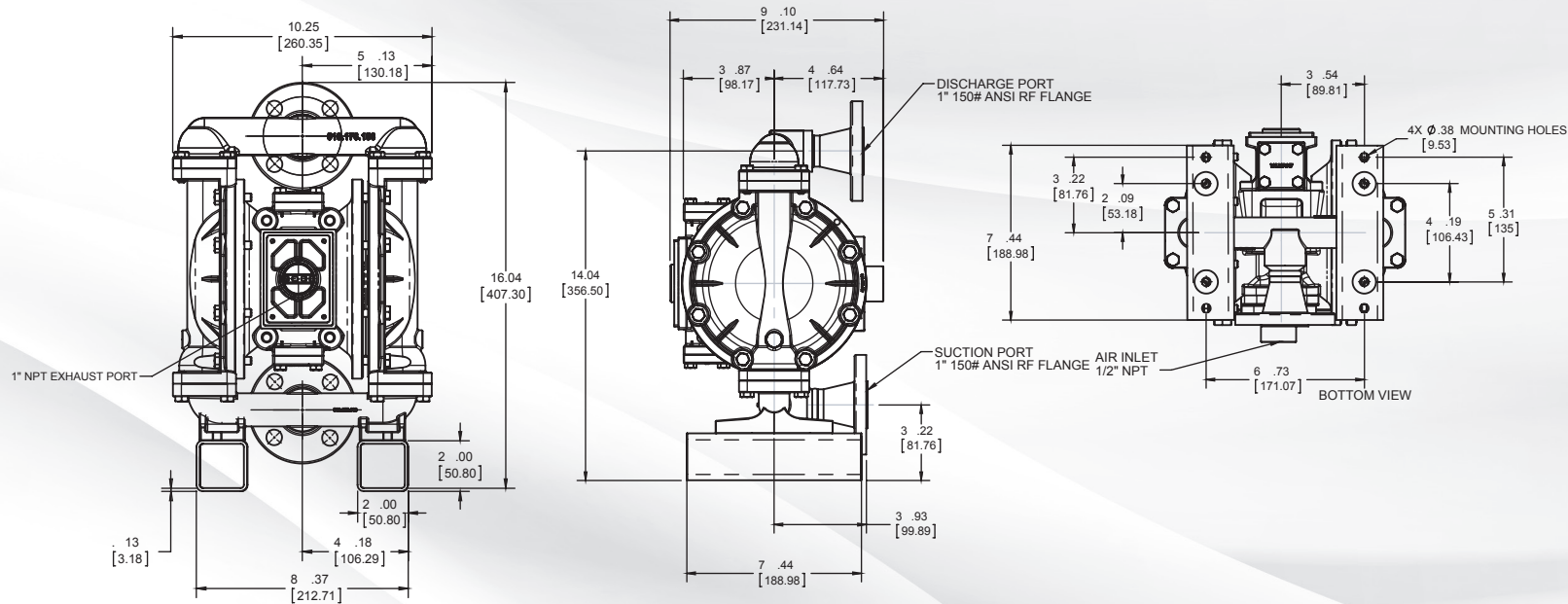
## S1F Metallic - NPT

Dimensions in inches (mm dimensions in brackets). Dimensional Tolerance:  $\pm 1/8"$  ( $\pm 3\text{mm}$ )  
 The dimensions on this drawing are for reference only. A certified drawing can be requested if physical dimensions are needed.



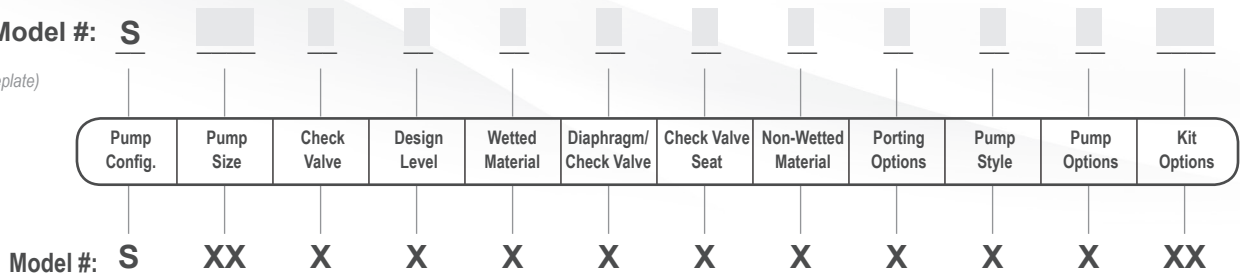
## S1F Metallic - ANSI Flange

Dimensions in inches (mm dimensions in brackets). Dimensional Tolerance:  $\pm 1/8"$  ( $\pm 3\text{mm}$ )  
 The dimensions on this drawing are for reference only. A certified drawing can be requested if physical dimensions are needed.



# EXPLANATION OF PUMP NOMENCLATURE

**Your Model #: S**  
(fill in from pump nameplate)



## PUMP BRAND

S SANDPIPER®

## PUMP SIZE

1F 1"

## CHECK VALVE TYPE

B Ball

## DESIGN LEVEL

1 Design Level

## WETTED MATERIAL

A Aluminum  
I Cast Iron  
S Stainless Steel  
H Alloy C  
X Unpainted Aluminum

## DIAPHRAGM/CHECK VALVE MATERIALS

1 Santoprene/Santoprene  
2 PTFE-Santoprene/PTFE  
B Nitrile/Nitrile  
C FKM/PTFE  
I EPDM/Santoprene  
G PTFE-Neoprene/PTFE  
H Hytrel/Hytrel  
N Neoprene/Neoprene  
Z One-Piece Bonded/PTFE

## CHECK VALVE SEAT

A Aluminum  
C Carbon Steel  
S Stainless Steel  
T PTFE  
W UHMW

## NON-WETTED MATERIAL OPTIONS

A Painted Aluminum  
I Cast Iron  
Y Painted Aluminum with Stainless Steel Hardware  
Z Cast Iron with Stainless Steel Hardware

## PORTING OPTIONS

N NPT Threads  
B BSP (Tapered) Threads  
R Raised Face 150# Threaded ANSI Flange  
S Welded Raised Face #150 ANSI Flanged Manifold

## PUMP STYLE

S Standard

## PUMP OPTIONS

0 None  
6 Metal Muffler

## 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 ATEX Compliant Coil

A2. Solenoid Kit with 24 VDC ATEX Compliant Coil

A3. Solenoid Kit with 110/120 VAC 50/60 Hz ATEX Compliant Coil

A4. Solenoid Kit with 220/240 VAC 50/60 Hz ATEX Compliant Coil

## MATERIALS

### Material Profile:

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

**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.

**EPDM:** Shows very good water and chemical resistance. Has poor resistance to oils and solvents, but is fair in ketones and alcohols.

**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.

**HYTREL®:** Good on acids, bases, amines and glycols at room temperatures only.

**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.

**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.

**NYLON:** 6/6 High strength and toughness over a wide temperature range. Moderate to good resistance to fuels, oils and chemicals.

### Operating Temperatures:

Max. Min.

190°F -20°F  
88°C -29°C

280°F -40°F  
138°C -40°C

350°F -40°F  
177°C -40°C

220°F -20°F  
104°C -29°C

200°F -10°F  
93°C -23°C

190°F -10°F  
88°C -23°C

180°F 32°F  
82°C 0°C

**POLYPROPYLENE:** A thermoplastic polymer. Moderate tensile and flex strength. Resists strong acids and alkali. Attacked by chlorine, fuming nitric acid and other strong oxidizing agents.

180°F 32°F  
82°C 0°C

**PVDF:** (Polyvinylidene Fluoride) A durable fluoroplastic with excellent chemical resistance. Excellent for UV applications. High tensile strength and impact resistance.

250°F 0°F  
121°C -18°C

**SANTOPRENE®:** Injection molded thermoplastic elastomer with no fabric layer. Long mechanical flex life. Excellent abrasion resistance.

275°F -40°F  
135°C -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 -35°F  
82°C -37°C

**URETHANE:** Shows good resistance to abrasives. Has poor resistance to most solvents and oils.

150°F 32°F  
66°C 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 -35°F  
104°C -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.



**NOTE: See service manual for ATEX details.**