DATA SHEET
Specifications & Performance

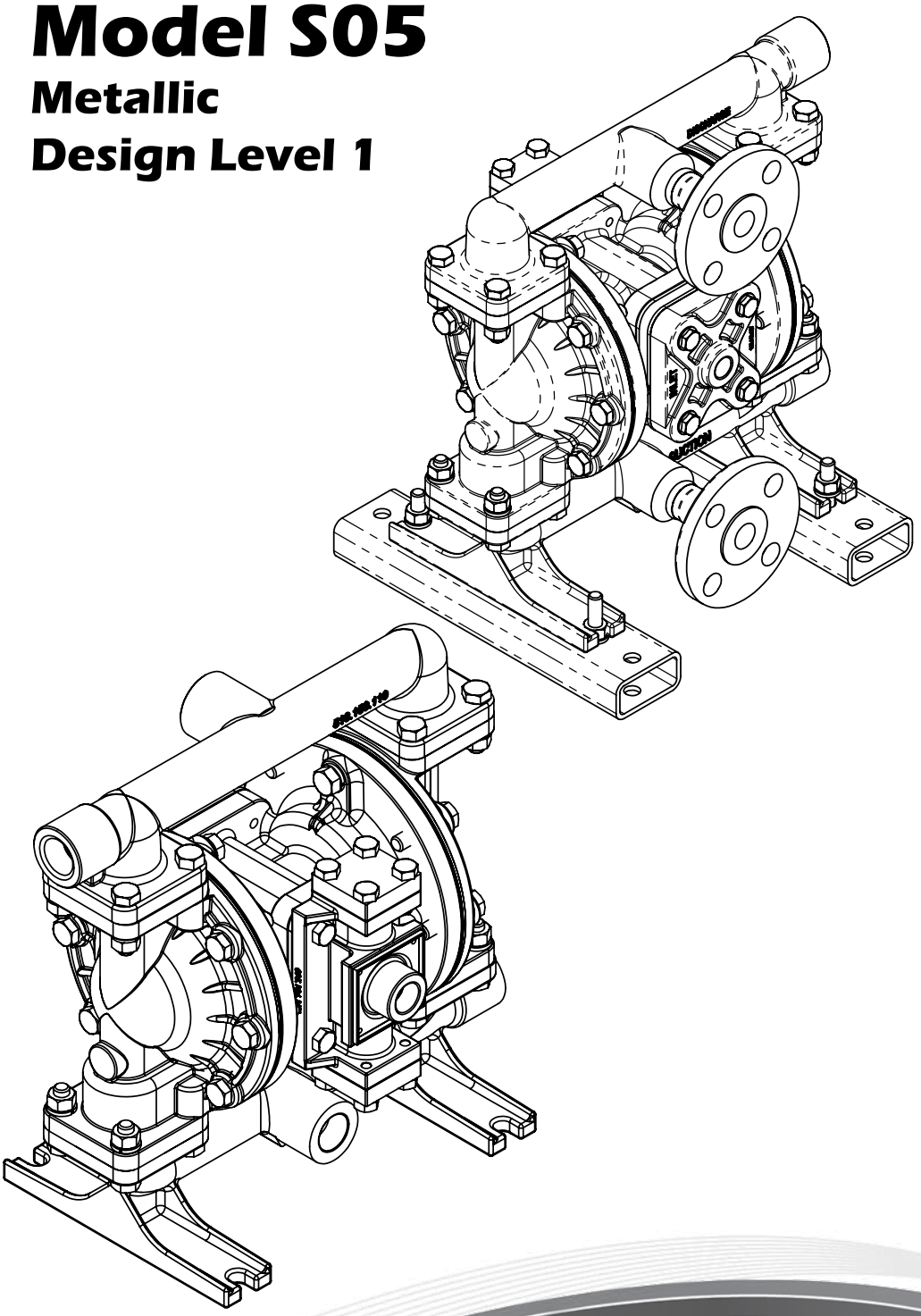
Certified Quality

Quality System
ISO9001 Certified

Environmental Management System
ISO14001 Certified

Member of: Hydraulic Institute

Model S05
Metallic
Design Level 1

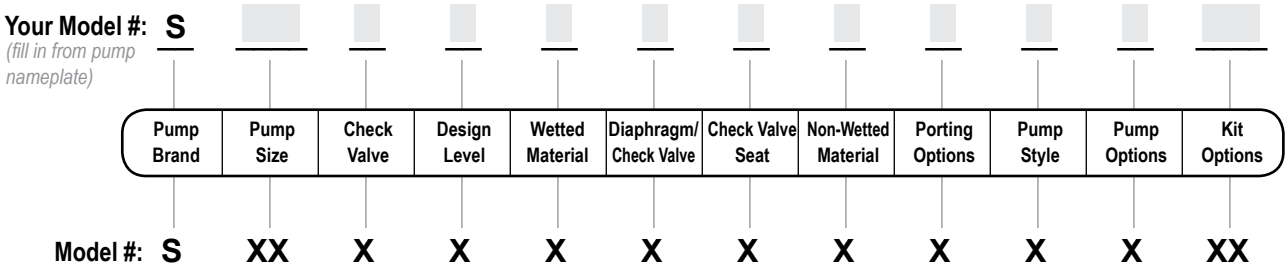


Warren Rupp, Inc.
A Unit of IDEX Corporation
800 N. Main St.,
Mansfield, Ohio 44902 USA
Telephone 419.524.8388
Fax 419.522.7867
WWW.SANDPIPERPUMP.COM

IDEX CORPORATION

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

Explanation of Pump Nomenclature



Pump Brand
S SANDPIPER®

Pump Size
05 1/2"

Check Valve Type
B Solid Ball

Design Level
1 Design Level

Wetted Material
A Aluminum
S Stainless Steel
H Alloy C
X Unpainted Aluminum

Diaphragm/Check Valve Materials
B Nitrile/Nitrile
C FKM/PTFE
N Neoprene/Neoprene
E EPDM/EPDM
1 Santoprene®/Santoprene®
2 PTFE-Santoprene®/PTFE
Z One Piece PTFE-Nitrile/PTFE

Check Valve Seat
A Aluminum
C Cast Iron
H Alloy C
S Stainless Steel
T PTFE
W UHMW Polyethylene

Non-Wetted Material Options
A Aluminum
Y Aluminum With Stainless Steel hardware
⚠ **C** Conductive Polypropylene With Stainless Steel hardware†
†**P** Polypropylene With Stainless Steel hardware

Porting Options
N NPT Threads
B BSP (Tapered) Threads
†**1** Dual Porting (NPT)
2 Top Dual Porting (NPT)
3 Bottom Dual Porting NPT
4 Dual Porting BSP (Tapered)
5 Top Dual Porting BSP (Tapered)
6 Bottom Dual Porting BSP (Tapered)
R 1/2" Raised Face #150 ANSI Flange with Threaded Pipe Connection
W 1/2" Welded Raised Face #150 ANSI Flanged Manifolds*

Pump Style
S Standard

Pump Options
⚠ **0** Integral Muffler
1 Sound Dampening Muffler
2 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 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

† **Note:** Pumps equipped with non-wetted options C or P are limited to a maximum operating pressure of 100 psi or 7 bar.

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

ATEX Detail

(1) ⟨Ex⟩ II 1G c T5
II 3/1 G c T5
⚠ II 1D c T100°C
I M1 c
I M2 c

Models equipped with Wetted Options S or H, Non-Wetted Option C, Pump Options 6 or 7, and Kit Option 0. **Note:** See ATEX Explanation of Type Certificate

⟨Ex⟩ II 2G c T5
II 3/2 G c T5
II 2D c T100°C

Models equipped with Wetted Options A,S or H, Non-Wetted Options A or Y, Pump Options 6 or 7, and Kit Option 0. **Note:** See ATEX Explanation of Type Examination Certificate

(2) ⟨Ex⟩ II 2G Ex ia c IIC T5
II 3/2 G Ex ia c IIC T5
II 2D Ex c ia 20 IP67
◇ T100°C

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

(3) ⟨Ex⟩ II 2G EEx m c II T5
II 3/2 2G EEx m c II 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. Compressed Air Temperature Range: Maximum Ambient Temperature to plus 50°C.

(4) FM APPROVED IEC EEX m T4 CSA®
△

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.

Performance

S05 METALLIC

SUCTION/DISCHARGE PORT SIZE
- 1/2" NPT (Internal) or 1/2" BSP (Tapered)
- 1" NPT (External) or 1" BSP (Tapered)
- 1/2" Raised Face #150 ANSI Flanges - Stainless Steel ONLY

CAPACITY
- 0 to 15 gallons per minute (0 to 56 liters per minute)

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

SOLIDS-HANDLING
- Up to .125 in. (3mm)

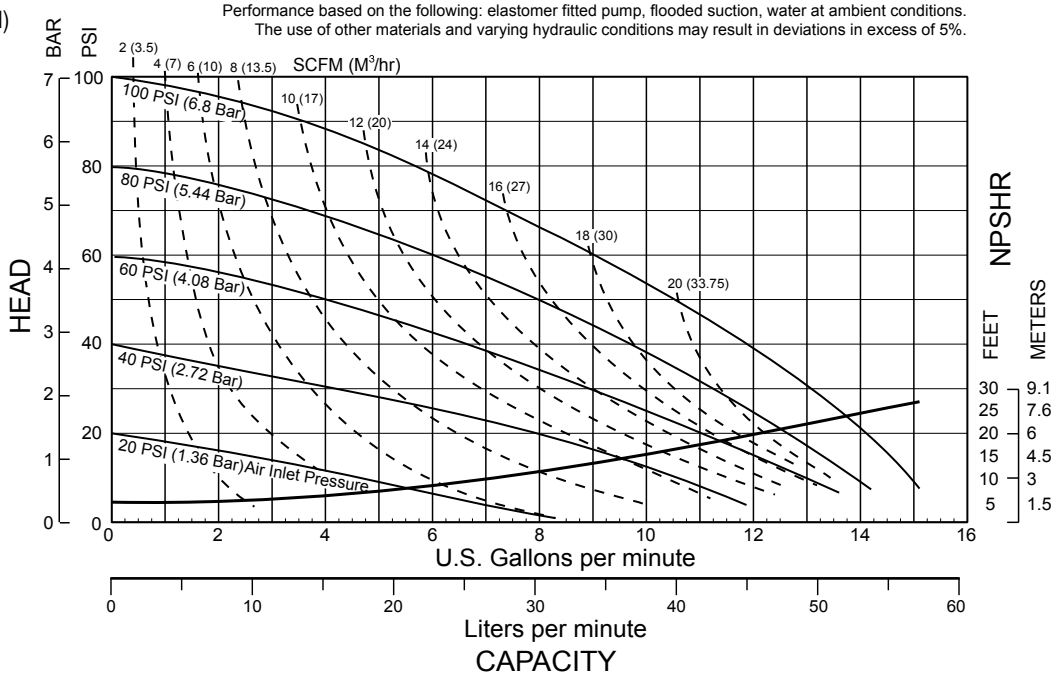
HEADS UP TO
- 125 psi or 289 ft. of water (8.6 bar or 86 meters)

MAX OPERATING PRESSURE
- 125 psi (8.6 bar) metallic center
- 100 psi (7 bar) non-metallic center

DISPLACEMENT/STROKE
- .026 Gallon / .098 liter

SHIPPING WEIGHT
- Aluminum 15 lbs. (7kg)
- Stainless Steel 21 lbs. (10kg)

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.

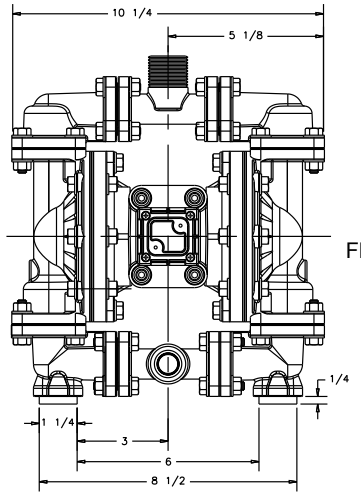
For specific applications, always consult the Chemical Resistance Chart.

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

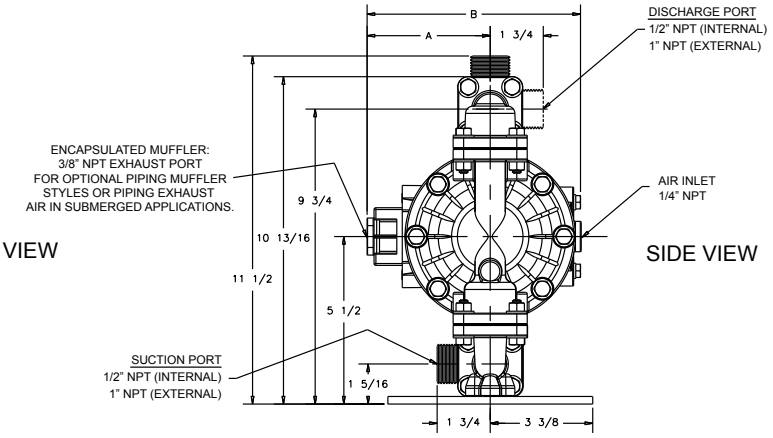
In addition, the ambient temperature range and the process temperature range do not exceed the operating temperature range of the applied non-metallic parts as listed in the manuals of the pumps.

S05 Metallic (Aluminum Model)

Dimensions in Inches. Dimensional tolerance: ±1/8"

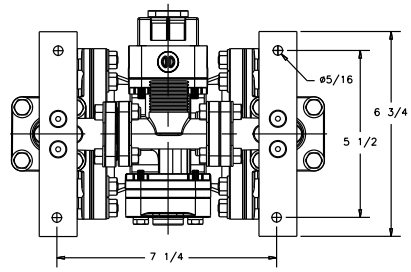


FRONT VIEW



SIDE VIEW

BOTH SUCTION AND DISCHARGE
PORTS ARE AVAILABLE IN
1/2" BSP TAPERED (INTERNAL)
1" BSP TAPERED (EXTERNAL)

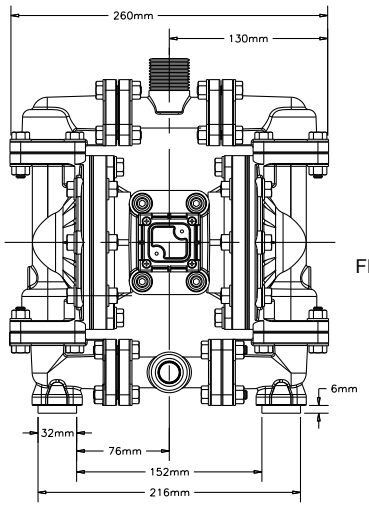


BOTTOM VIEW

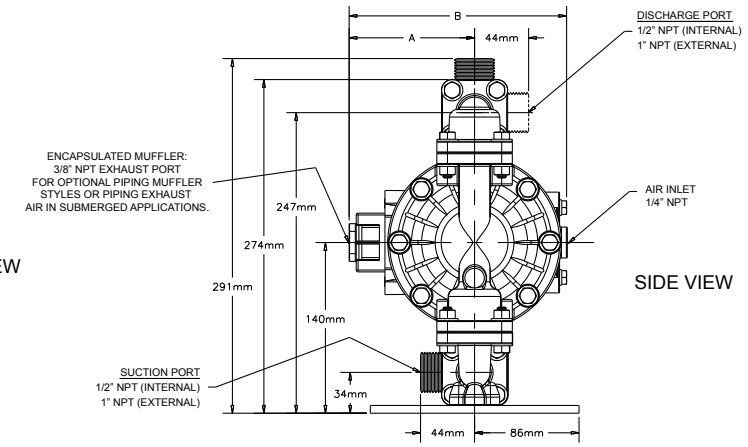
DIMENSION	A	B
Integral Muffler	4 5/16"	7 5/16"
Pulse Output Kit	4 5/16"	7 5/16"
Mesh Muffler	6"	9"
Sound Dampening Muffler	6"	9"
Metal Muffler	5 5/8"	8 5/8"

S05 Metallic (Aluminum Model)

Dimensions in millimeters. Dimensional tolerance: ±3mm

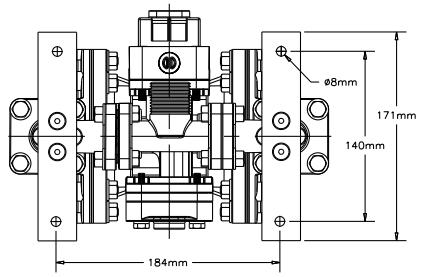


FRONT VIEW



SIDE VIEW

BOTH SUCTION AND DISCHARGE
PORTS ARE AVAILABLE IN
1/2" BSP TAPERED (INTERNAL)
1" BSP TAPERED (EXTERNAL)



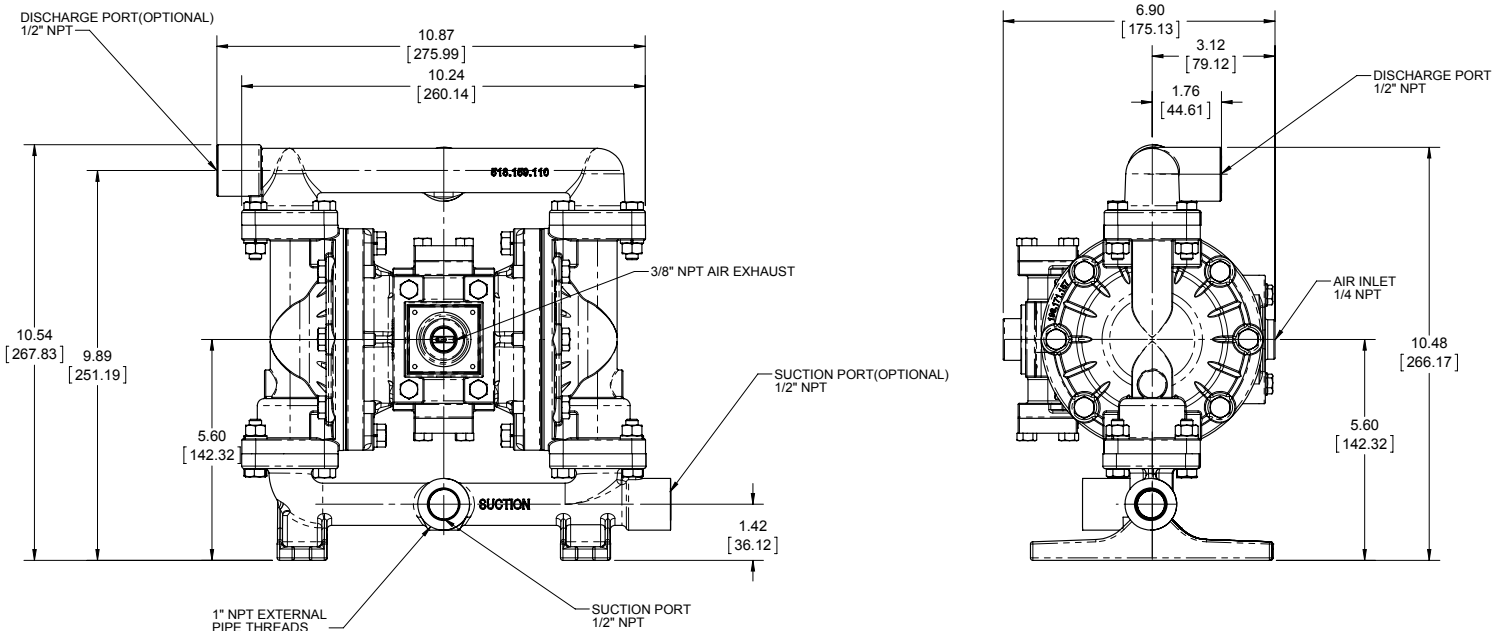
BOTTOM VIEW

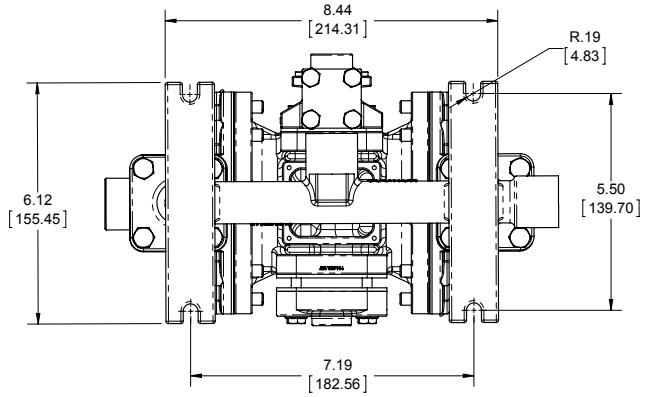
DIMENSION	A	B
Integral Muffler	109 mm	186 mm
Pulse Output Kit	109 mm	186 mm
Mesh Muffler	152 mm	229 mm
Sound Dampening Muffler	152 mm	229 mm
Metal Muffler	143 mm	219 mm

S05 Metallic - Stainless Steel NPT

Dimensions in inches (mm dimensions in brackets). Dimensional Tolerance:±1/8" (± 3mm)

The dimensions on this drawing are for reference only. A certified drawing can be requested if physical dimensions are needed.





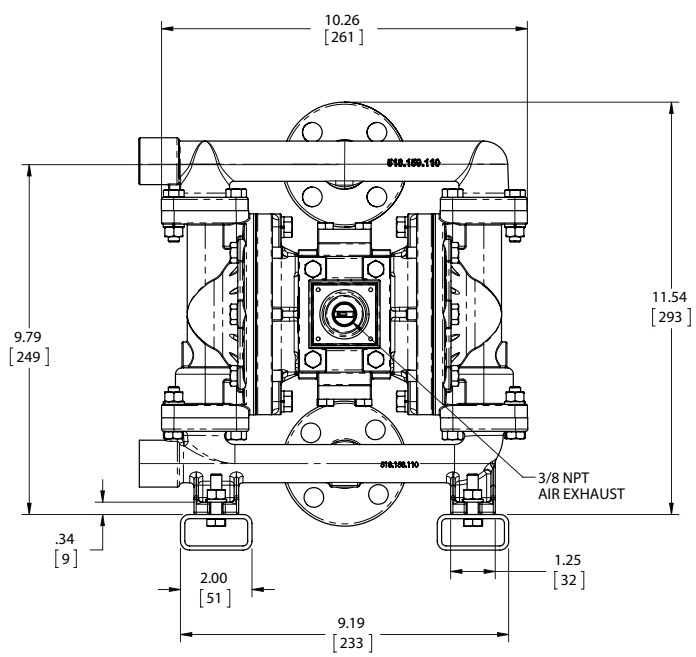
BOTTOM VIEW

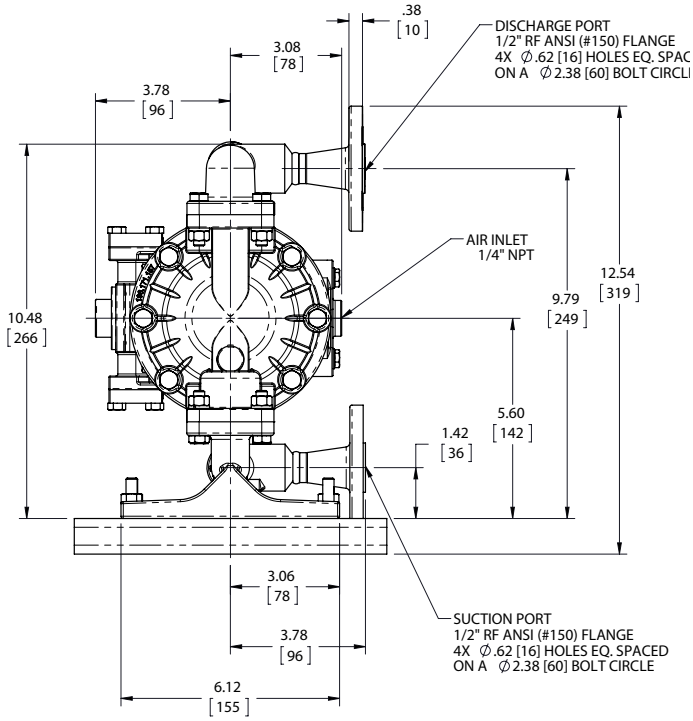
Dimensional Drawings

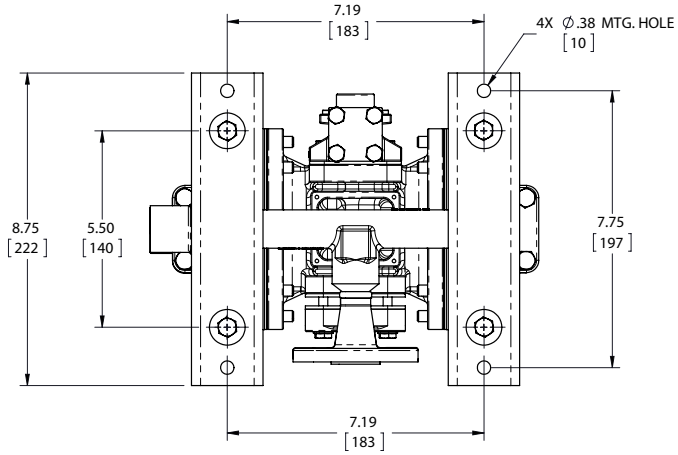
S05 Metallic - Stainless Steel ANSI Flange

Dimensions in inches (mm dimensions in brackets). Dimensional Tolerance:±1/8" (± 3mm)

The dimensions on this drawing are for reference only. A certified drawing can be requested if physical dimensions are needed.







Written Warranty

5 - YEAR Limited Product Warranty

Quality System ISO9001 Certified • Environmental Management Systems ISO14001 Certified

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 SANDPIPER®, MARATHON®, PortaPump®, SludgeMaster™ and Tranquilizer®.

~ See complete warranty at www. sandpiperpump.com/About/guaranteesandwarranties.html ~

WARREN RUPP, INC.®

Declaration of Conformity

Manufacturer: Warren Rupp, Inc.®, 800 N. Main Street, P.O. Box 1568, Mansfield, Ohio, 44901-1568 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 CORPORATION

CE

WARREN RUPP, INC.®

EC Declaration of Conformity

In accordance with ATEX Directive 94/9/EC,
Equipment intended for use in potentially explosive environments.

Manufacturer: Warren Rupp, Inc.®, A Unit of IDEX Corportion
800 North Main Street, P.O. Box 1568, Mansfield, OH 44901-1568 USA

EN 60079-25: 2004
For pumps equipped with Pulse Output ATEX Option
KEMA Quality B.V. (0344)

Applicable Standard:
EN13463-1: 2001,
EN13463-5: 2003

AODD Pumps and Surge Suppressors
For Type Examination Designations

AODD (Air-Operated Double Diaphragm) Pumps
EC Type Examination Certificate No. Pumps: KEMA 09ATEX0071 X
KEMA Quality B.V.
Utrechtseweg 310
6812 AR Arnhem, The Netherlands

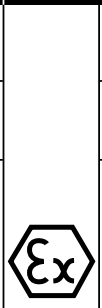
SANDPIPER® A WARREN RUPP, INC. BRAND Tranquilizer®

IDEX CORPORATION

DATE/APPROVAL/TITLE:
27 MAY 2010

David Roseberry, Engineering Manager

ATEX Summary of Markings

Type	Marking			Listed In	Non-Conductive Fluids
Pump types, S1F, S15, S20, and S30 provided with the pulse output option		II 2 G Ex ia c IIC T5 II 3/2 G Ex ia c IIC T5 II 2 D Ex c iaD 20 IP67 T100°C	KEMA 09ATEX0071 X CE 0344	KEMA 09ATEX0071 X KEMA 09ATEX0071 X KEMA 09ATEX0071 X	No Yes Yes
Pump types, S1F, S15, S20, and S30 provided with the integral solenoid option		II 2 G EEx m c II T5 II 3/2 G EEx m c II T5 II 2 D c IP65 T100°C	KEMA 09ATEX0071 X CE 0344	KEMA 09ATEX0071 X KEMA 09ATEX0071 X KEMA 09ATEX0071 X	No Yes Yes
Pump types, HDB1½, HDB40, HDB2, HDB50, HDB3, HDF1, HDF25, HDF2, HDF3M, PB¼, S05, S1F, S15, S20, S30, SB1, SB25, ST1½, ST40, G15, G20, and G30, without the above listed options, no aluminum parts		II 1 G c T5 II 3/1 G c T5 II 1 D c T100°C I M1 c I M2 c	KEMA 09ATEX0071 X KEMA 09ATEX0072 X CE 0344	KEMA 09ATEX0071 X KEMA 09ATEX0071 X KEMA 09ATEX0071 X KEMA 09ATEX0071 X KEMA 09ATEX0072 X	No Yes Yes No Yes
Pump types, DMF2, DMF3, HDB1½, HDB40, HDB2, HDB50, HDB3, HDF1, HDF25, HDF2, HDF3M, PB¼, S05, S1F, S15, S20, S30, SB1, SB25, SE½, ST1, ST25, ST1½, ST40, U1F, G05, G1F, G15, G20, and G30		II 2 G c T5 II 3/2 G c T5 II 2 D c T100°C	KEMA 09ATEX0072 X CE	KEMA 09ATEX0072 X KEMA 09ATEX0072 X KEMA 09ATEX0072 X	No Yes Yes
Surge Suppressors all types		II 2 G T5 II 3/2 G T5 II 2 D T100°C	KEMA 09ATEX0073 CE	KEMA 09ATEX0073 KEMA 09ATEX0073 KEMA 09ATEX0073	No Yes Yes

EC Type Certificate No. Pumps: KEMA 09ATEX0071 X
Type Certificate No. Pumps: KEMA 09ATEX0072 X
Type Certificate No. Suppressors: KEMA 09ATEX0073