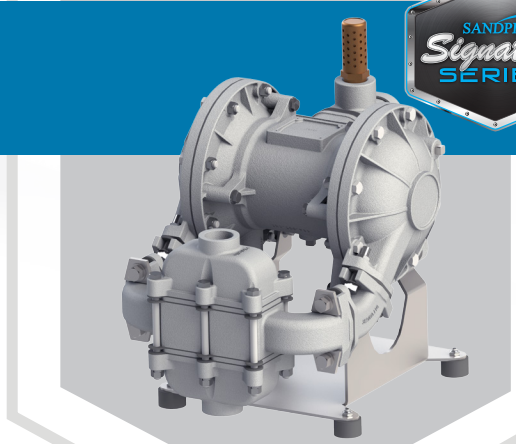
SB1 & SB25 METALLIC PUMP
TECHNICAL DATA SHEET



SERIES

HEAVY DUTY BALL VALVE PUMP
For fluids containing settling, suspended & floating solids.

PERFORMANCE

SUCTION / DISCHARGE PORT SIZE
- SB1: 1" (25.4mm) NPT(F)
- SB25: 1" (25.4mm) BSP Tapered

CAPACITY
- 0 to 42 gallons per minute (0 to 159 LPM)

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

SOLIDS-HANDLING
- Up to nearly .25 in. (6.3mm)

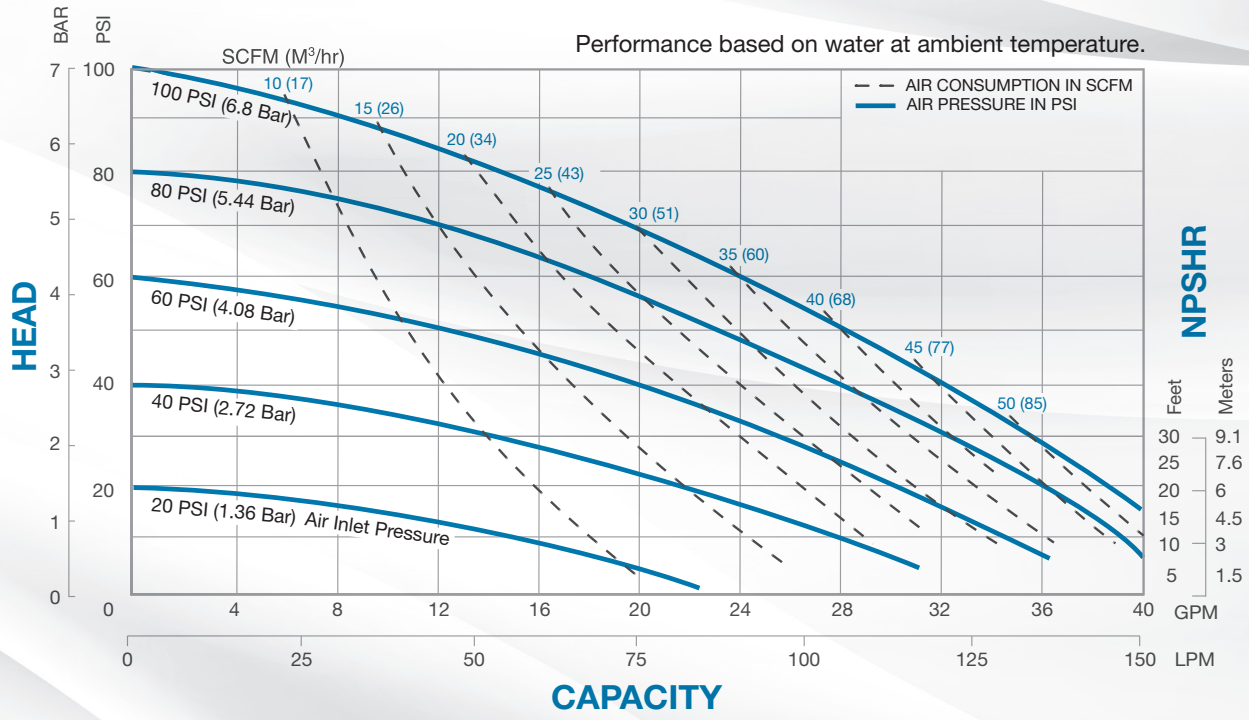
HEADS UP TO
- 125 psi or 289 ft. of water (8.8 Kg/cm2 or 88 meters)

MAXIMUM OPERATING PRESSURE
- 125 psi (8.6 bar)

DISPLACEMENT/STROKE
- .09 Gallon / .34 liter

WEIGHTS
- Aluminum 31 lbs. (14kg)
- Stainless Steel 45 lbs. (20kg)
- Alloy C 45 lbs. (20kg)
- Stainless Steel with Cast Iron Center 65 lbs. (30kg)
- Alloy C with Cast Iron Center 65 lbs. (30kg)

Performance based on water at ambient temperature.



5 YEAR LIMITED PRODUCT WARRANTY
5 Year Guarantee for defects in material or workmanship. See sandpiperpump.com/content/warranty-certifications for complete warranty, including terms and conditions, limitations and exclusions.

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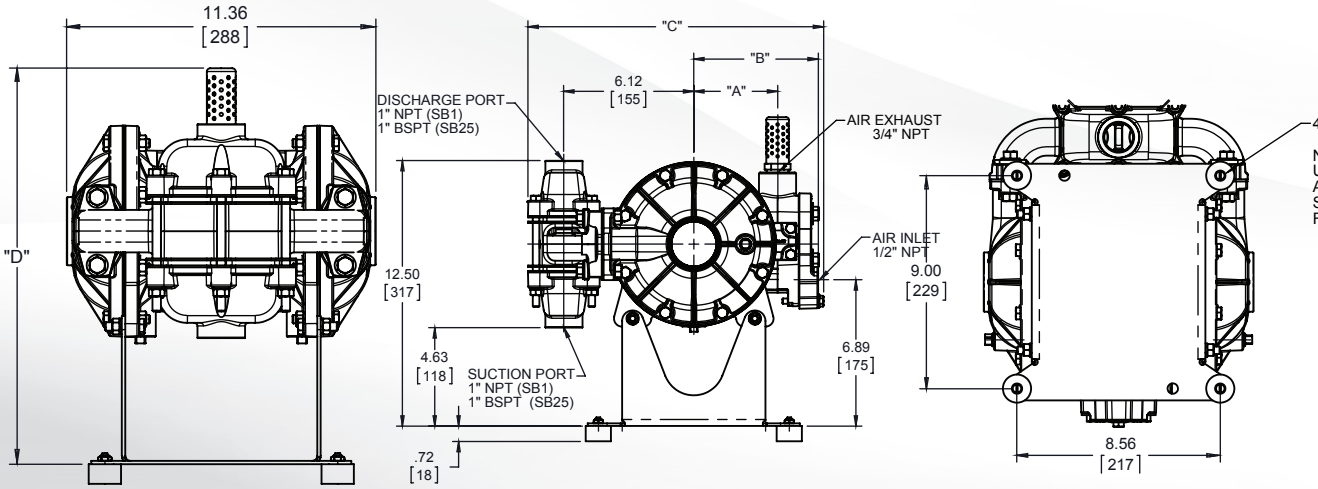
ISO 9001 Certified
ISO 14001 Certified

DIMENSIONS



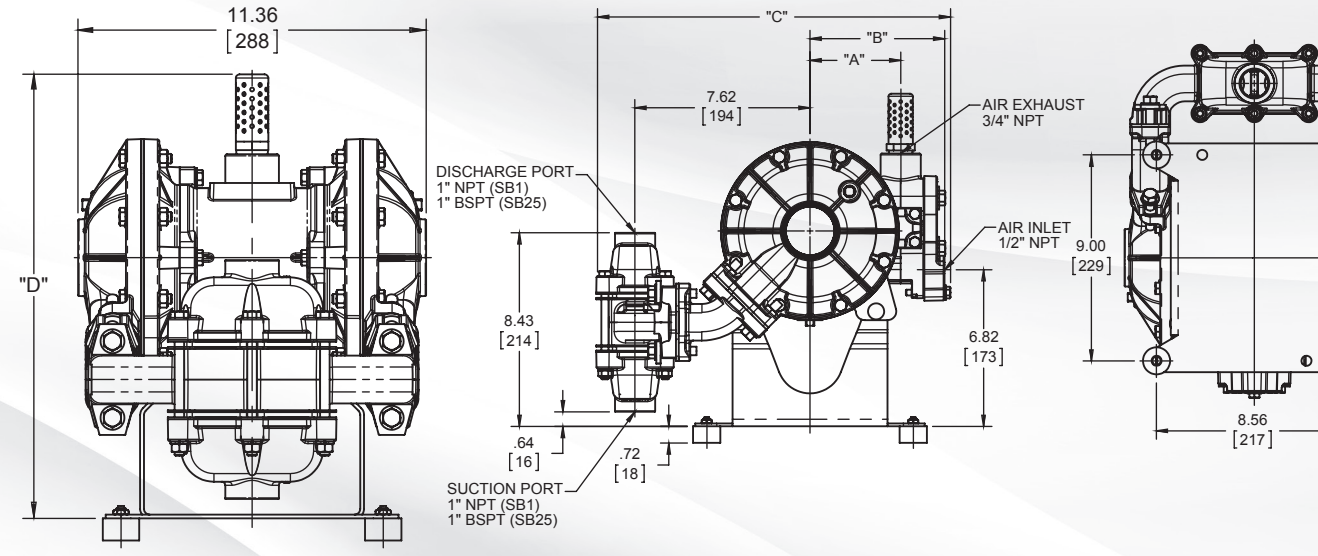
SB1 / SB25

HEAVY DUTY BALL VALVE PUMP

DIMENSIONAL TOLERANCE ±1/8 [3]

[XX] = MILLIMETERS

PUMP COFIGURATION	DIM "A"	DIM "B"	DIM "C"	DIM "D"
ALUMINUM CENTER SECTION	3.95 [100]	5.86 [149]	13.90 [353]	14.55 [370]
CAST IRON CENTER SECTION	4.10 [104]	5.54 [141]	13.60 [345]	15.75 [400]
PULSE OUTPUT CONFIGURATION				



SB1 / SB25

HEAVY DUTY BALL VALVE PUMP
BOTTOM PORTED

DIMENSIONAL TOLERANCE ±1/8 [3]

[XX] = MILLIMETERS

PUMP COFIGURATION	DIM "A"	DIM "B"	DIM "C"D	IM "D"
ALUMINUM CENTER SECTION	3.95 [100]	5.86 [149]	15.36 [390]	14.49 [368]
CAST IRON CENTER SECTION	4.10 [104]	5.54 [141]	15.06 [383]	15.69 [398]
PULSE OUTPUT CONFIGURATION				

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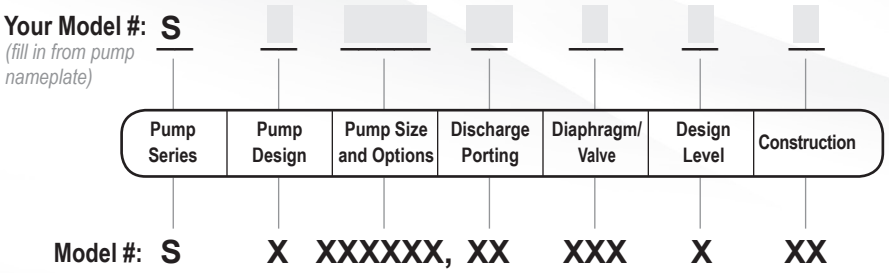
EXPLANATION OF PUMP NOMENCLATURE



PUMP SERIES
S SANDPIPER®

PUMP DESIGN
B Soilid Ball

PUMP SIZE
1 1”
25 1” BSPT (Tapered Thread)

DISCHARGE PORTING POSITION
D Bottom
S Side
T Top
ET Dual Top
ES Dual Side

OPTIONS
P1 Intrinsically Safe ATEX Compliant Pulse Output

DIAPHRAGM CHECK VALVE MATERIALS
B Nitrile
C FKM with PTFE
F FDA Accepted White Nitrile
GN Neoprene Backup with PTFE Overlay and PTFE Check Balls
GR Hytrel Backup w/ PTFE Overlay/PTFE Balls
GZ PTFE/Nitrile Bonded One-Piece/PTFE Balls
H EPDM with PTFE
N Neoprene
R Hytrel
S Santoprene
V FKM

DESIGN LEVEL
5

CONSTRUCTION
A Aluminum Wetted, Aluminum Air
SI Stainless Steel Wetted, Cast Iron Air
SS Stainless Steel Wetted, Aluminum Air
HC Alloy-C Wetted, Aluminum Air
HI Alloy-C Wetted, Cast Iron Air

MATERIALS

Material Profile: ⚠ CAUTION! Operating temperature limitations are as follows:	Operating Temperatures: 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.

Ex

NOTE: See service manual for ATEX details.

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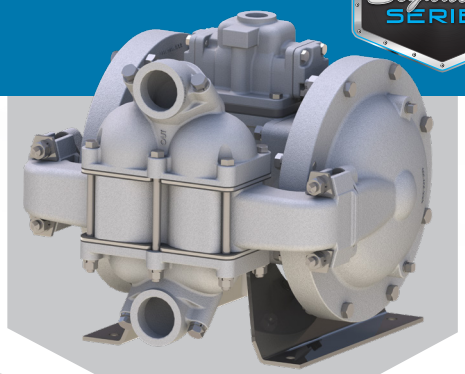
HDB1½ / HDB40 METALLIC BALL VALVE PUMP
TECHNICAL DATA SHEET



SERIES

HEAVY DUTY BALL VALVE PUMP
For fluids containing settling, suspended & floating solids.

PERFORMANCE

SUCTION / DISCHARGE PORT SIZE
- HDB1½: 1½ NPT
- HDB40: 1½ BSP (Tapered)

CAPACITY
- 0 to 122 gallons per minute (0 to 462 liters per minute)

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

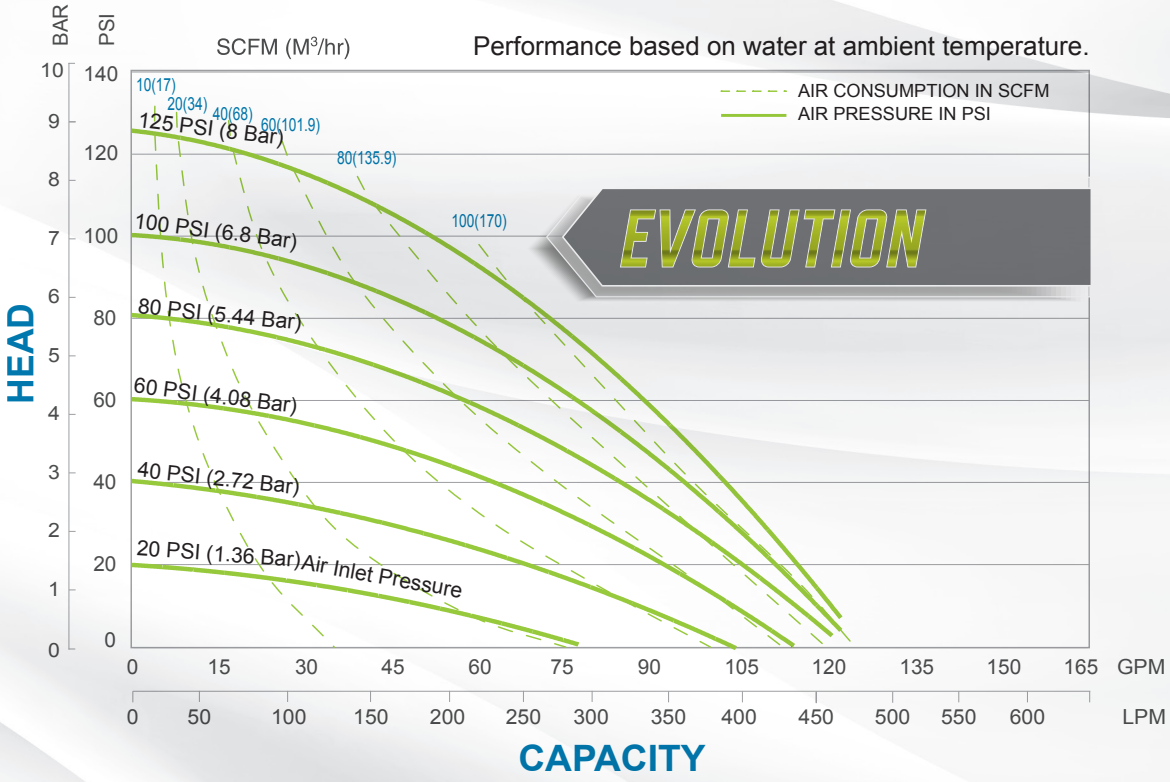
SOLIDS-HANDLING
- Up to .25 in. (6.3mm)

HEADS UP TO
- 125 psi or 289 ft. of water (8.8 Kg/cm2 or 88 meters)

MAXIMUM OPERATING PRESSURE
- 125 psi (8.6 bar)

DISPLACEMENT/STROKE
- .37 Gallon / 1.4 liter

WEIGHTS
- Aluminum 75 lbs. (34kg)
- Cast Iron 104 lbs. (47kg)
- Stainless Steel 107 lbs. (48kg)



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ISO 9001 Certified
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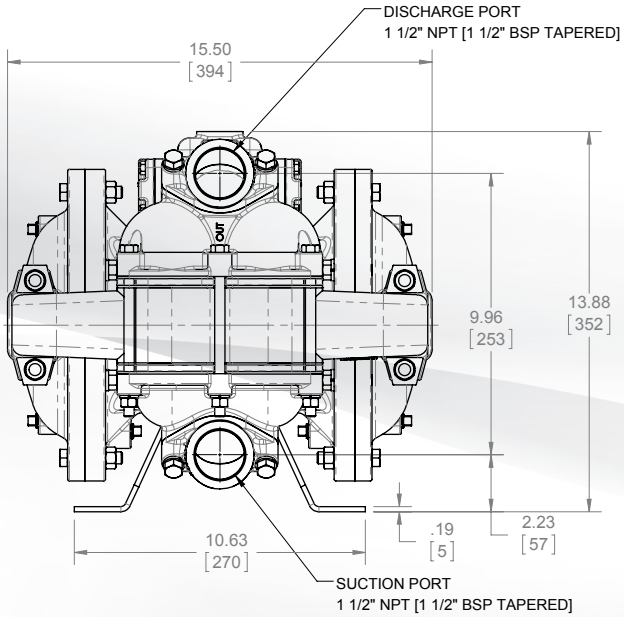
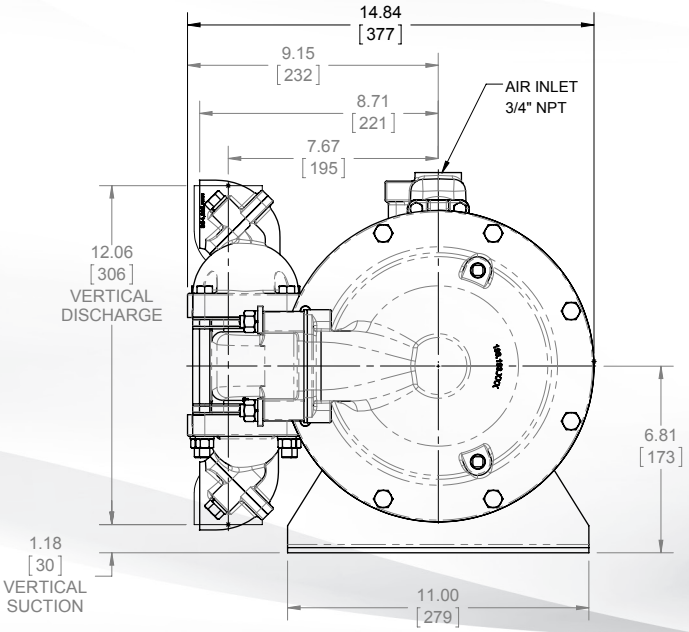
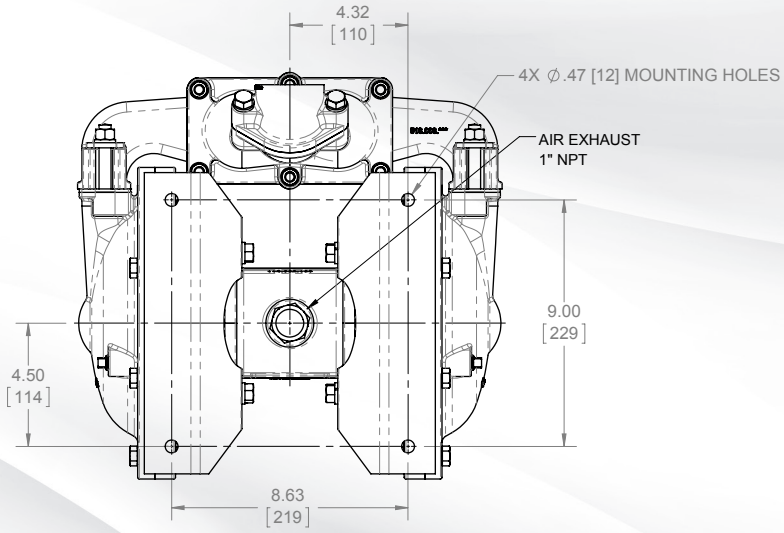
DIMENSIONS

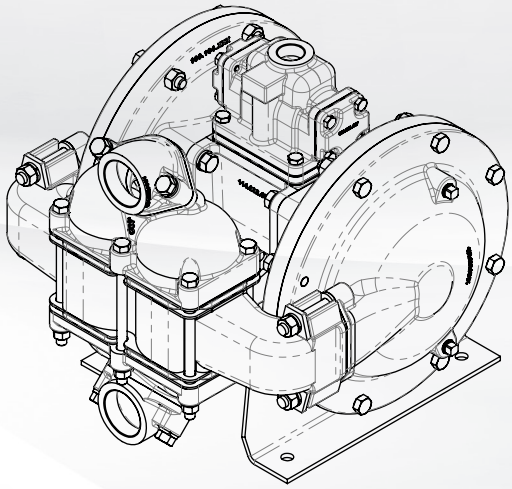
HDB1 1/2 & HDB40, Side Ported

Dimensions are ± .13" (3mm). Figures in parenthesis = millimeters









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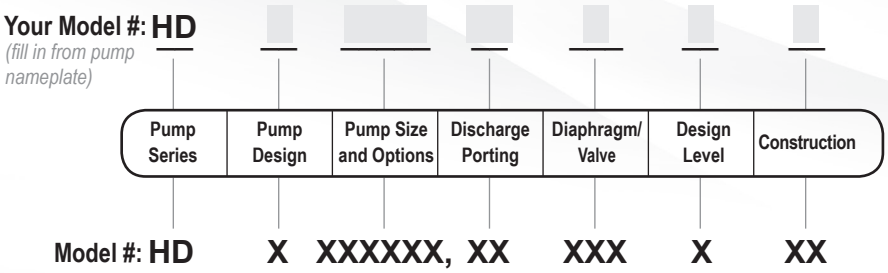
EXPLANATION OF PUMP NOMENCLATURE



PUMP SERIES
HD Heavy Duty

PUMP DESIGN
B Solid Ball

PUMP SIZE & OPTIONS
1 1/2"
P1 Intrinsically Safe ATEX Compliant
SB Stainless-Brass sleeve and spool set

DISCHARGE PORTING POSITION
S Side

DIAPHRAGM CHECK VALVE MATERIALS
B Nitrile
C FKM with PTFE
F FDA Accepted White Nitrile
GN Neoprene Backup with PTFE Overlay and PTFE Check Balls
GR Hytrel Backup w/ PTFE Overlay/PTFE Balls
GZ PTFE/Nitrile Bonded One-Piece/PTFE Balls
H EPDM with PTFE
I EPDM
N Neoprene
R Hytrel
S Santoprene
U Santoprene with PTFE
V FKM

DESIGN LEVEL
8

CONSTRUCTION
A Aluminum Wetted, Aluminum Air
CI Cast Iron Wetted, Aluminum Air
II Cast Iron Wetted, Cast Iron Air
SI Stainless Steel Wetted, Cast Iron Air
SS Stainless Steel Wetted, Aluminum Air

MATERIALS

Material Profile: ⚠ CAUTION! Operating temperature limitations are as follows:	Operating Temperatures: Max.	Min.
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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
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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
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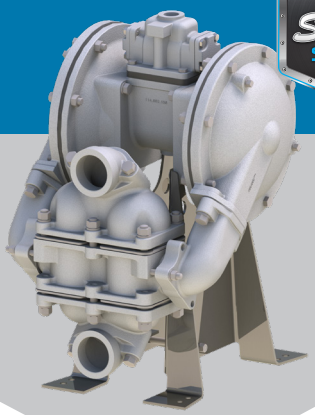
HDB2 METALLIC BALL VALVE PUMP
TECHNICAL DATA SHEET



SERIES

HEAVY DUTY BALL VALVE PUMP
For fluids containing settling, suspended & floating solids.

PERFORMANCE

SUCTION / DISCHARGE PORT SIZE
- HDB2: 2" NPT
- HDB50: 2" BSP (Tapered)

CAPACITY
- 0 to 135 gallons per minute (0 to 511 LPM)

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

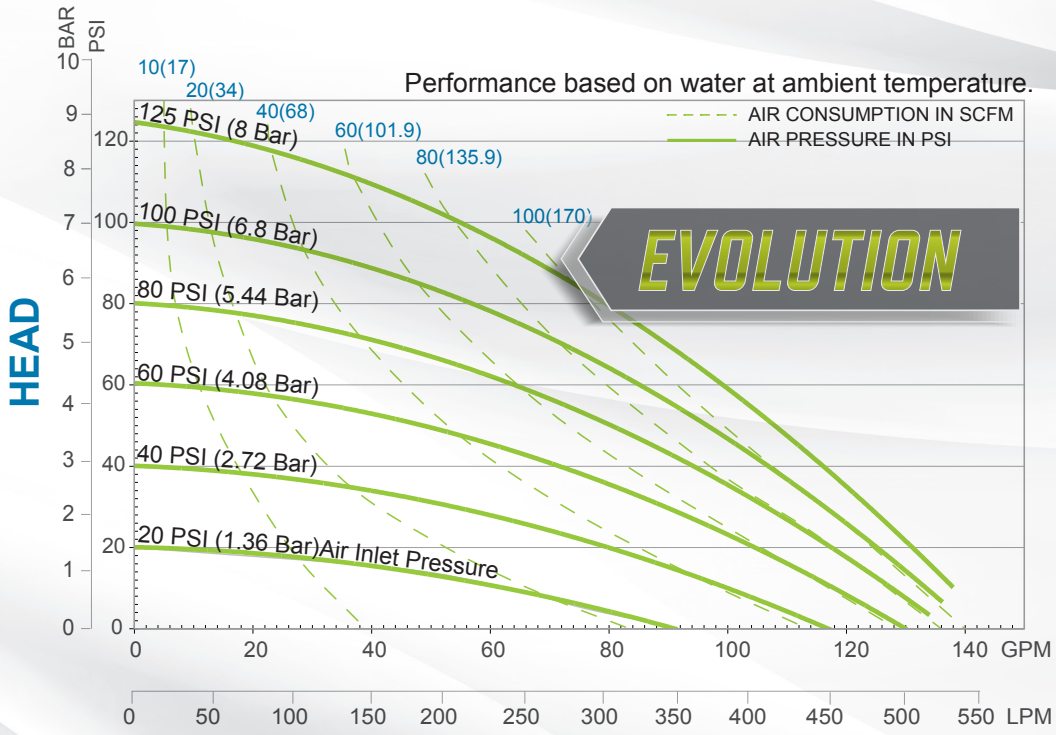
SOLIDS-HANDLING
- Up to ⅜ in. (9mm)

HEADS UP TO
- 125 psi or 289 ft. of water (8.8 Kg/cm2 or 88 meters)

MAXIMUM OPERATING PRESSURE
- 125 psi (8.6 bar)

DISPLACEMENT/STROKE
- .46 Gallon / 1.7 liter

WEIGHTS
- Aluminum 90 lbs. (41kg)
- Cast Iron 120 lbs. (55kg)
- Stainless Steel 143 lbs. (66kg)
- *Add 40 lbs for cast iron center section



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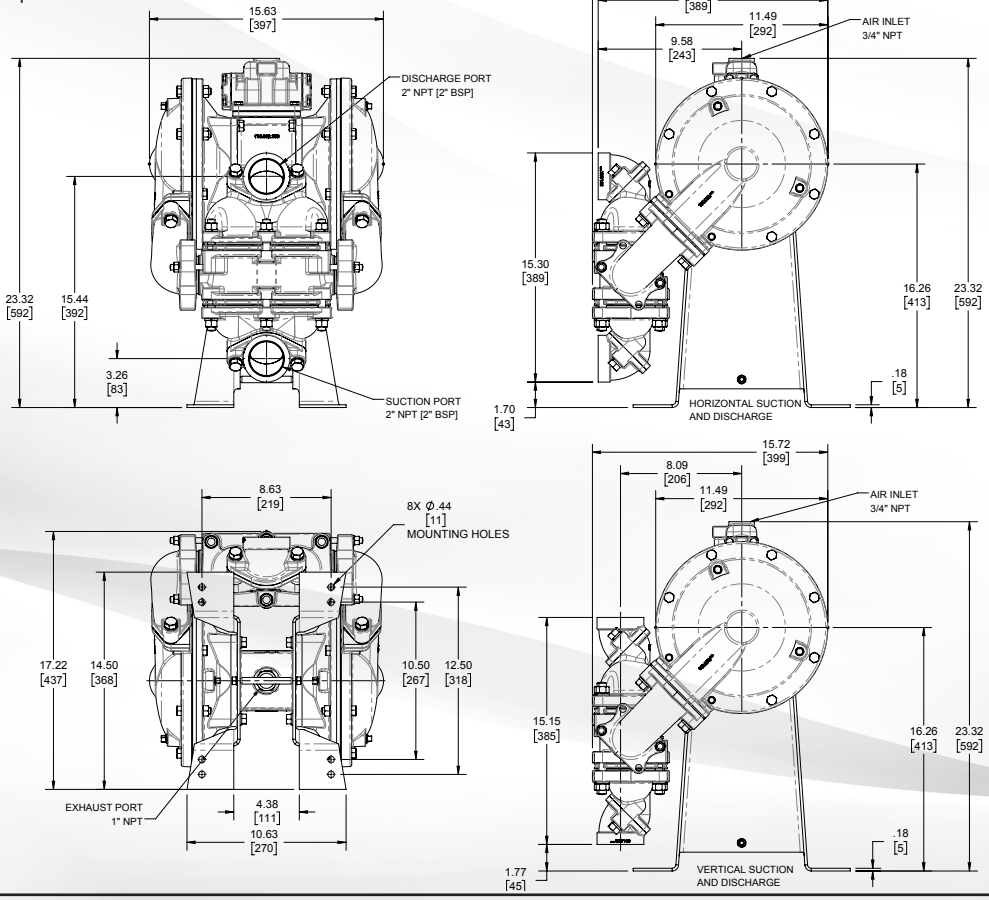
DIMENSIONS

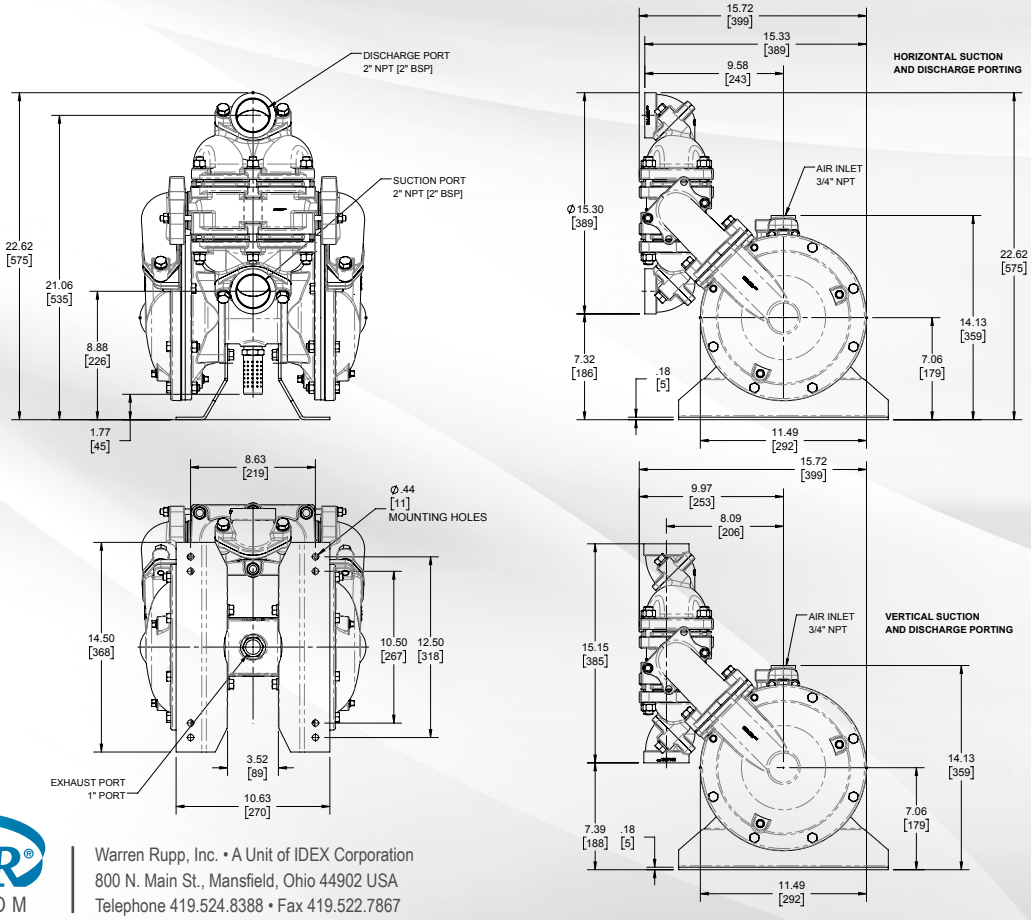
HDB2 & HDB50, Down Ported

Dimensions are ± .13" (3mm). Figures in parenthesis = millimeters



HDB2 & HDB50, Top Ported

Dimensions are ± .13" (3mm). Figures in parenthesis = millimeters



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EXPLANATION OF PUMP NOMENCLATURE

Your Model #: HD _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____

(fill in from pump nameplate)

Pump Config.	Pump Size	Check Valve	Design Level	Wetted Material	Diaphragm/ Check Valve	Check Valve Seat	Non-Wetted Material	Porting Options	Pump Style	Pump Options	Kit Options
Model #: HD	XX	X	X	X	X	X	X	X	X	X	XX

PUMP SERIES
HD Heavy Duty

PUMP DESIGN
B Soilid Ball

PUMP SIZE
2 2”
50 2”

Discharge Porting Position
D Bottom
T Top

DIAPHRAGM CHECK VALVE MATERIALS
B Nitrile
C FKM with PTFE
F FDA Accepted White Nitrile
GN Neoprene Backup with PTFE Overlay and PTFE Check Balls
GR Hytrel Backup w/ PTFE Overlay/PTFE Balls
GS Santoprene Backup with PTFE overlay and PTFE Check Balls
GZ PTFE/Nitrile Bonded One-Piece/PTFE Balls
H EPDM with PTFE
I EPDM
N Neoprene
R Hytrel
S Santoprene
U Santoprene with PTFE
V FKM

DESIGN LEVEL
4

CONSTRUCTION
A Aluminum Wetted, Aluminum Air|
CI Cast Iron Wetted, Aluminum Air
II Cast Iron Wetted, Cast Iron Air
SI Stainless Steel Wetted, Cast Iron Air
SS Stainless Steel Wetted, Aluminum Air
HC Alloy-C Wetted, Aluminum Air
HI Alloy-C Wetted, Cast Iron Air

MATERIALS

Material Profile: ⚠ CAUTION! Operating temperature limitations are as follows:	Operating Temperatures: Max.	Min.
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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.

SANDPIPER®
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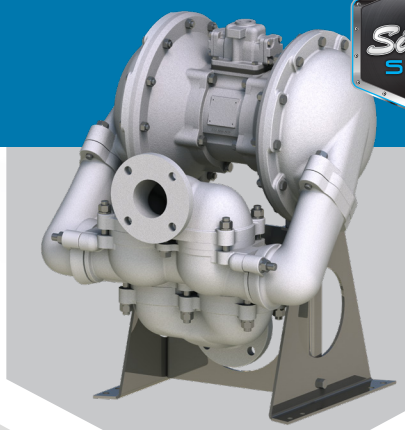
Warren Rupp, Inc. • A Unit of IDEX Corporation
800 N. Main St., Mansfield, Ohio 44902 USA
Telephone 419.524.8388 • Fax 419.522.7867

HDB3/HDB4 METALLIC BALL VALVE PUMP
TECHNICAL DATA SHEET



SERIES

HEAVY DUTY BALL VALVE PUMP
For fluids containing settling, suspended & floating solids.

PERFORMANCE

SUCTION / DISCHARGE PORT SIZE
- 3" ANSI Flange

CAPACITY
- 0 to 300 gallons per minute (0 to 1136 LPM)

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

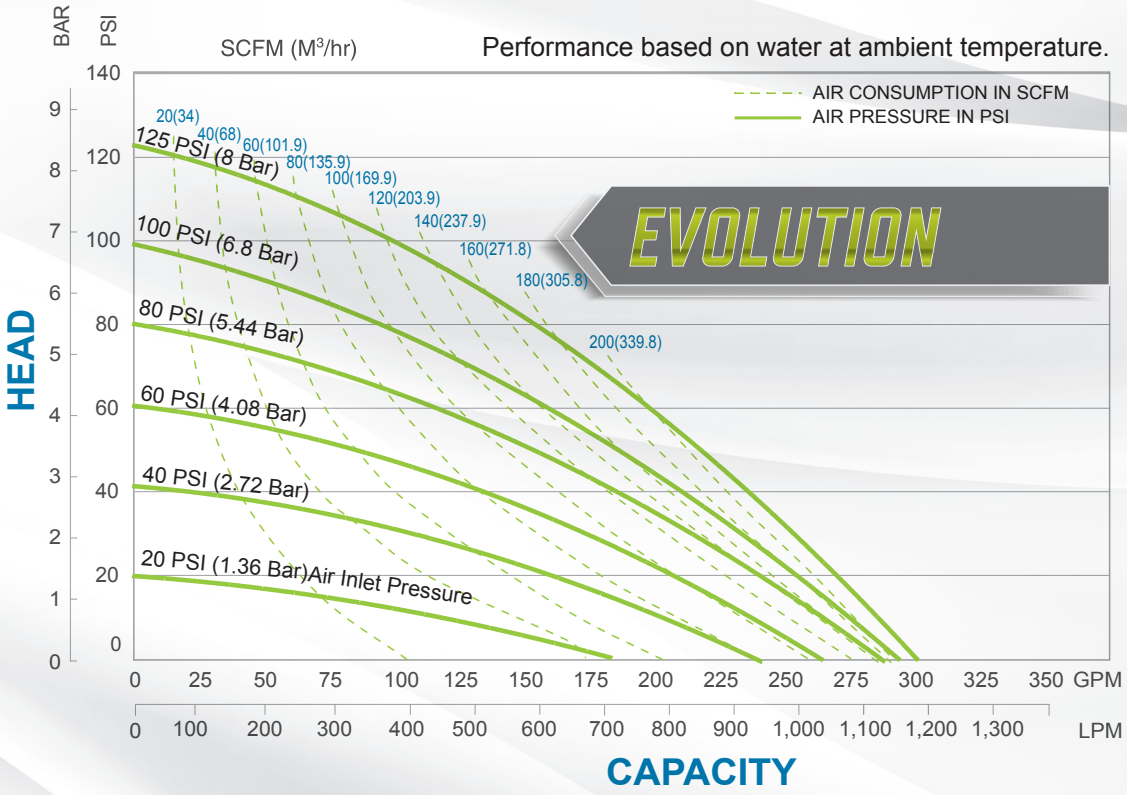
SOLIDS-HANDLING
- Up to .875 in. (22.2mm)

HEADS UP TO
- 125 psi or 289 ft. of water (8.8 Kg/cm2 or 88 meters)

MAXIMUM OPERATING PRESSURE
- 125 psi (8.6 bar)

DISPLACEMENT/STROKE
- 2.0 Gallon / 7.6 liter

WEIGHTS
- Cast Iron 460 lbs. (207 kg)
- Stainless Steel 480 lbs. (216 kg)



5 YEAR LIMITED PRODUCT WARRANTY
5 Year Guarantee for defects in material or workmanship. See sandpiperpump.com/content/warranty-certifications for complete warranty, including terms and conditions, limitations and exclusions.

USE ONLY GENUINE SANDPIPER PARTS
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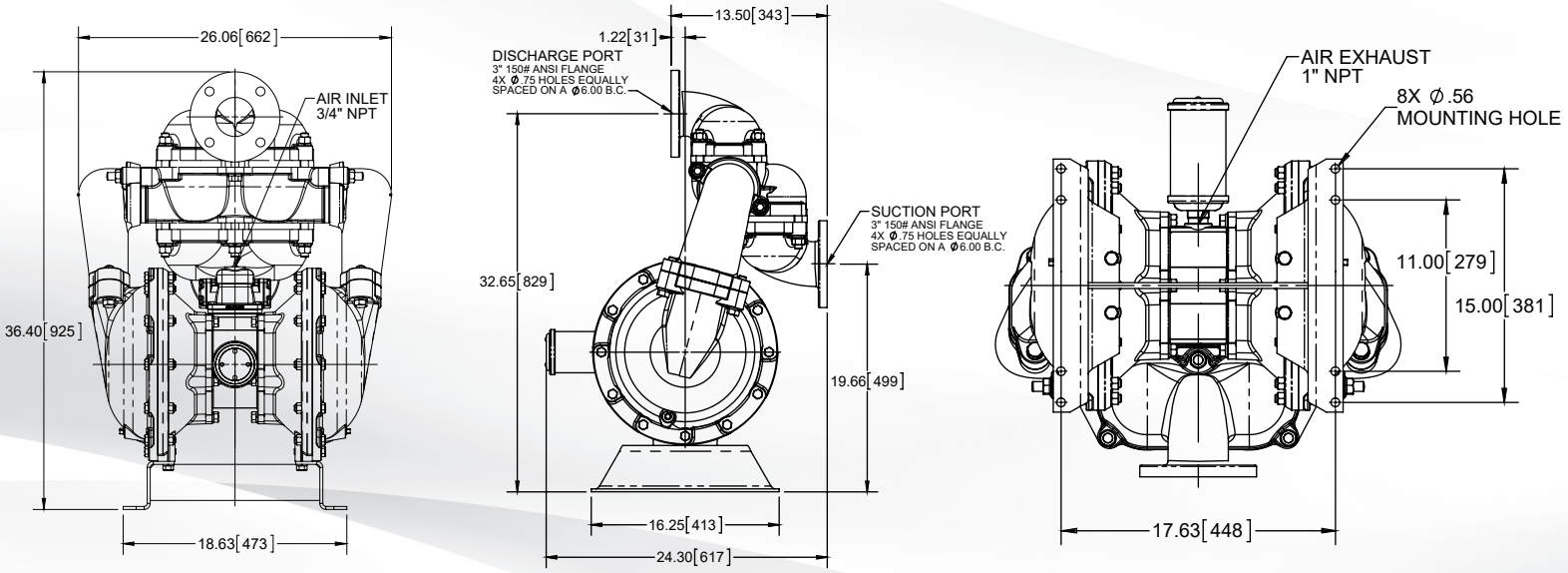
DIMENSIONS

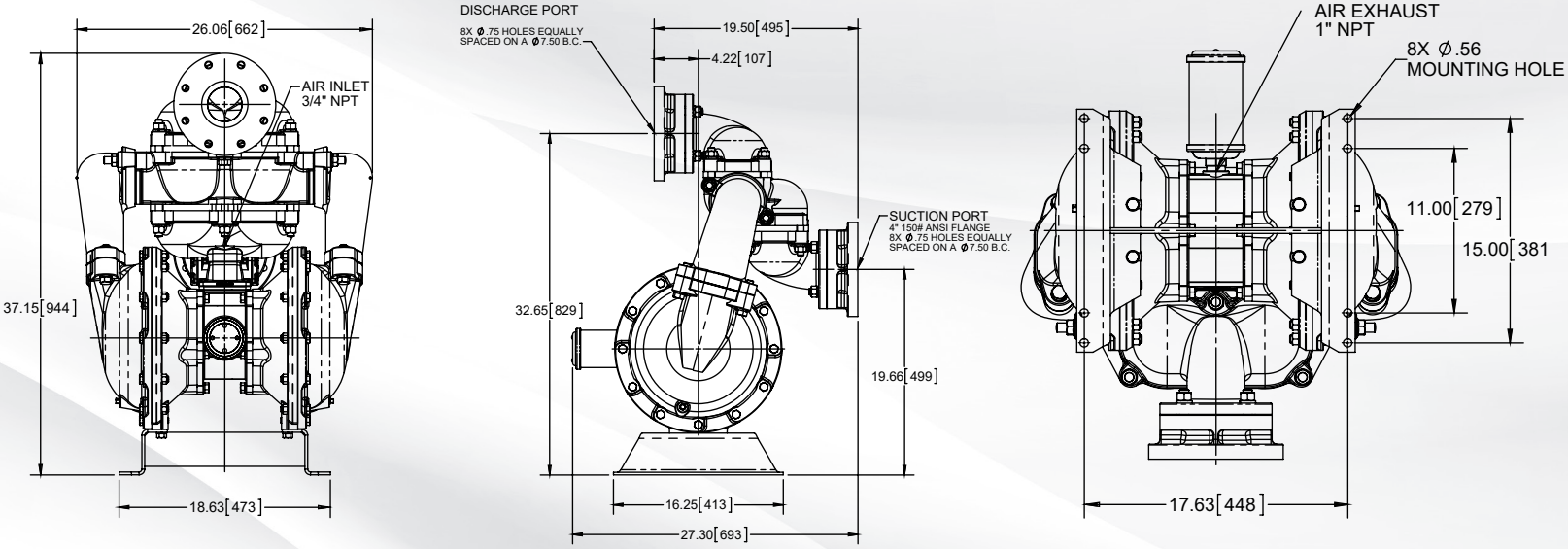
HDB3 Heavy Duty Ball Valve - 3" Top Ported

Dimensions in inches (metric dimensions in brackets). Dimensional Tolerance .125" (3mm).



HDB4 Heavy Duty Ball Valve - 4" Top Ported

Dimensions in inches (metric dimensions in brackets). Dimensional Tolerance .125" (3mm).



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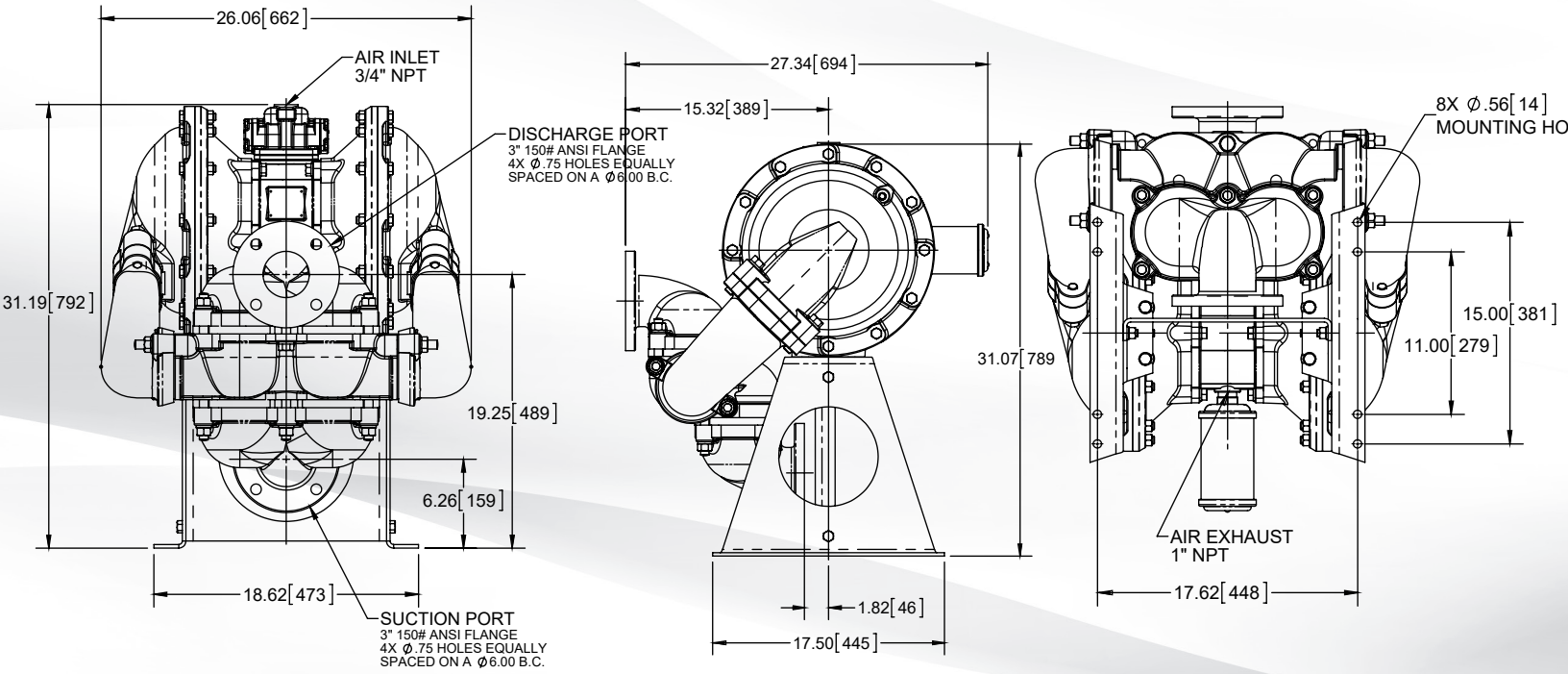
DIMENSIONS

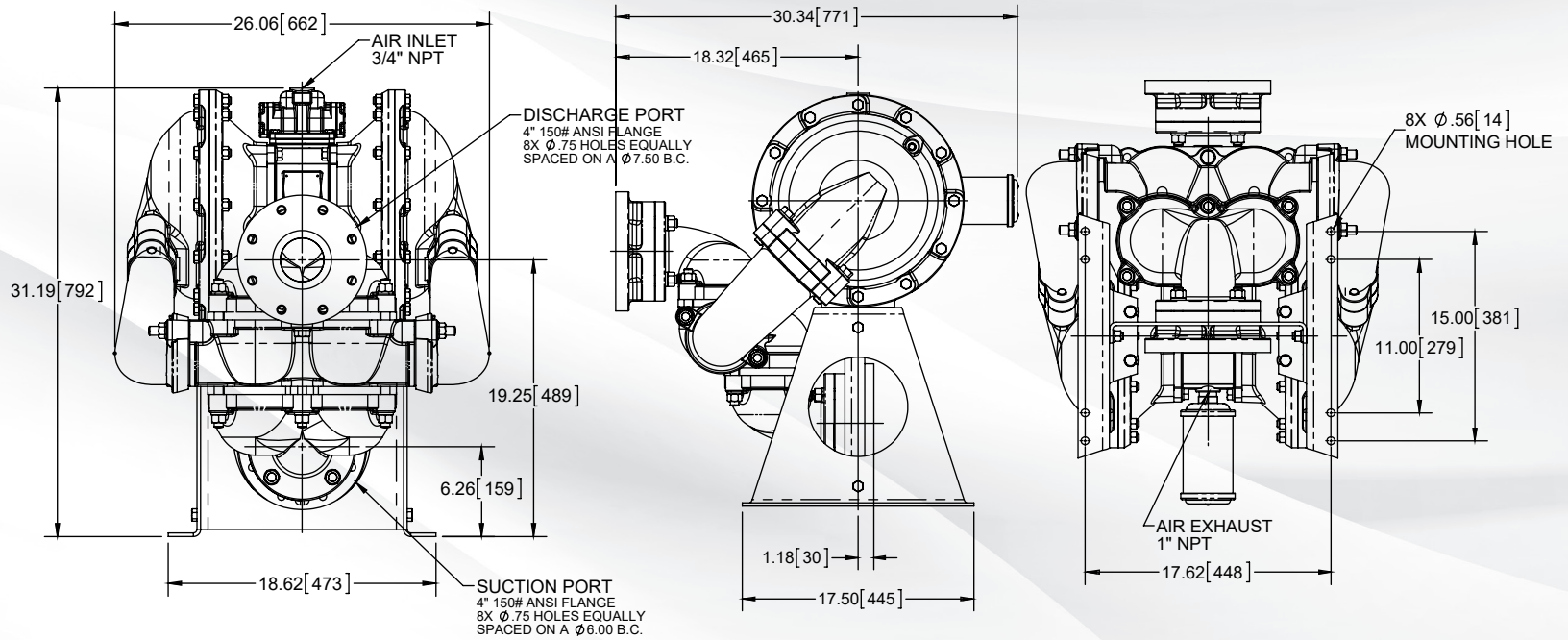
HDB3 Heavy Duty Ball Valve - 3" Bottom Ported

Dimensions in inches (metric dimensions in brackets). Dimensional Tolerance .125" (3mm).



HDB4 Heavy Duty Ball Valve - 4" Bottom Ported

Dimensions in inches (metric dimensions in brackets). Dimensional Tolerance .125" (3mm).



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EXPLANATION OF PUMP NOMENCLATURE

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

Pump Series	Pump Design	Pump Size and Options	Discharge Porting	Diaphragm/ Valve	Design Level	Construction
Model #: HD	**X**	**XXXXXX,**	**XX**	**XXX**	**X**	**XX**

PUMP SERIES
HD Heavy Duty

PUMP DESIGN
B Solid Ball

PUMP SIZE
3 3”
4 4”

DISCHARGE PORTING POSITION
D Bottom
T Top

OPTIONS
P1 Intrinsically Safe ATEX Compliant Pulse Output

DIAPHRAGM CHECK VALVE MATERIALS
B Nitrile
C FKM with PTFE
GN Neoprene Backup with PTFE Overlay and PTFE Check Balls
H EPDM with PTFE
I EPDM
N Neoprene
U Santoprene with PTFE

DESIGN LEVEL
4

CONSTRUCTION
SS Stainless Steel Wetted, Cast Iron Air
CI Cast Iron Wetted, Cast Iron Air

MATERIALS

Material Profile: ⚠ CAUTION! Operating temperature limitations are as follows:	Operating Temperatures: 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

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Metals:

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NOTE: See service manual for ATEX details.

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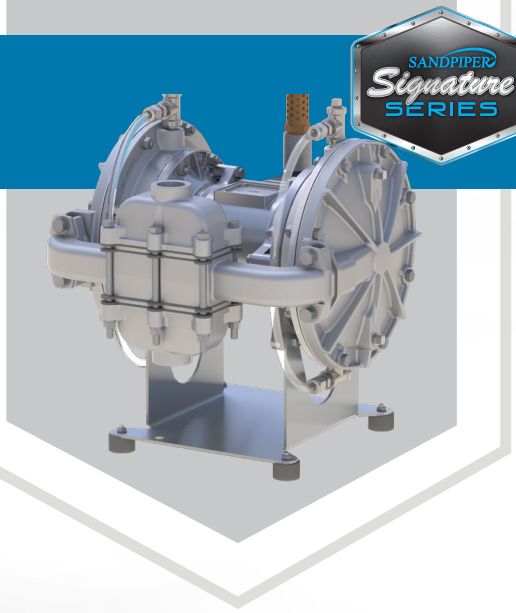
ST1 & ST25 METALLIC PUMP TECHNICAL DATA SHEET



SERIES

CONTAINMENT DUTY BALL VALVE PUMPS

The only complete line of AODD pumps featuring superior fluid containment; protecting your people, environment, and pump.

PERFORMANCE

SUCTION / DISCHARGE PORT SIZE

- ST1: 1" NPT (internal)
- ST25: 1" BSP Tapered (internal)

CAPACITY

- 0 to 42 GPM (0 to 159 LPM)

AIR DISTRIBUTION VALVE

- No-lube, no-stall design

SOLIDS-HANDLING

- Occational solids only, to nearly .25" (6.3mm)

HEADS UP TO

- 125 psi or 289 ft. of water (8.8 Kg/cm2 or 88 meters)

MAXIMUM OPERATING PRESSURE

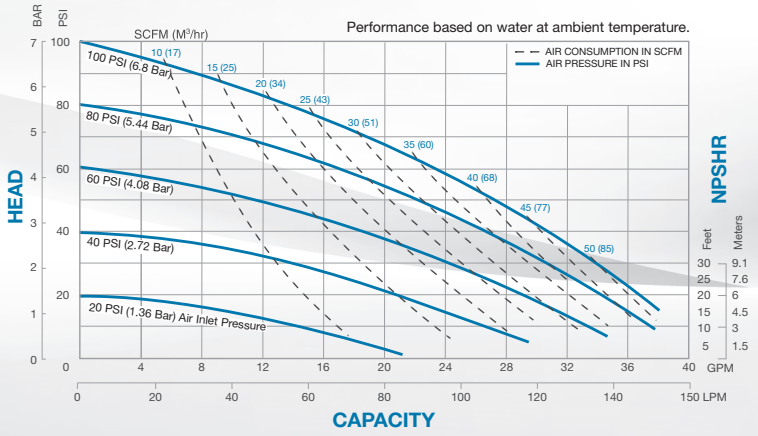
- 125 psi (8.6 bar)

DISPLACEMENT/STROKE

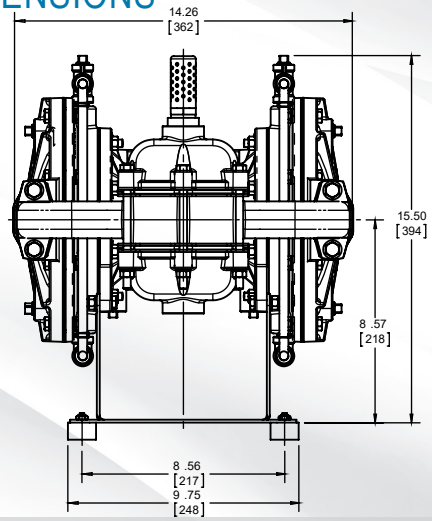
- .09 Gallon / .34 liter

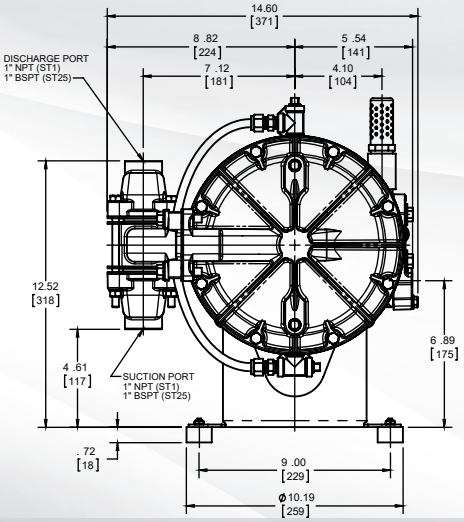
WEIGHTS

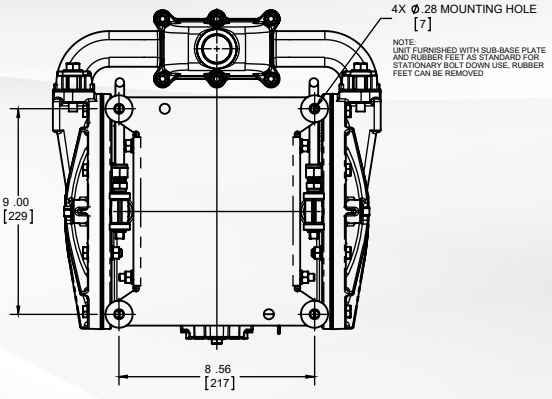
- Aluminum 46 lbs. (20kg)
- Stainless Steel 67 lbs. (30kg)



DIMENSIONS







5 YEAR LIMITED PRODUCT WARRANTY

5 Year Guarantee for defects in material or workmanship. See 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."

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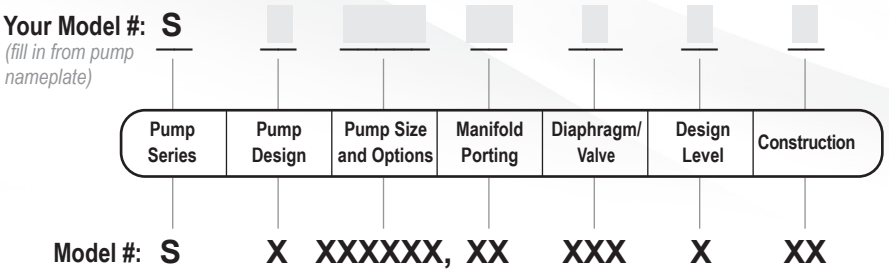
ISO 9001 Certified
ISO 14001 Certified

EXPLANATION OF PUMP NOMENCLATURE



PUMP SERIES
S SANDPIPER®

PUMP DESIGN
T Spill Containment

PUMP SIZE & OPTIONS
1 1" NPT
25 1" BSP Tapered

OPTIONS
VL Visual Leak Detection Sight Tubes

MANIFOLD PORTING POSITION
D Side

DIAPHRAGM CHECK VALVE MATERIALS
NG Neoprene Driver Diaphragms, PTFE Pumping Diaphragms and PTFE Check Balls
VG FKM Driver Diaphragms / PTFE Pumping Diaphragms and PTFE Check Balls
GNG Neoprene Back-Up with PTFE Overlay Driver Diaphragms, PTFE Pumping Diaphragms and PTFE Check Balls

DESIGN LEVEL
5

CONSTRUCTION
A Aluminum Wetted, Aluminum Air
SS Stainless Steel Wetted, Aluminum Air
HC Alloy-C Wetted, Aluminum Air

MATERIALS

Material Profile: CAUTION! Operating temperature limitations are as follows:	Operating Temperatures: 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
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NOTE: See service manual for ATEX details.

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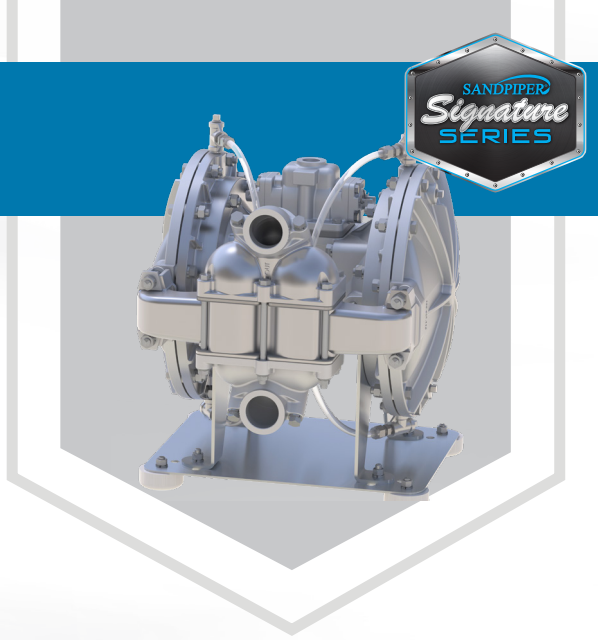
ST1½ & ST40 METALLIC PUMP TECHNICAL DATA SHEET



SERIES

CONTAINMENT DUTY BALL VALVE PUMPS

The only complete line of AODD pumps featuring superior fluid containment; protecting your people, environment, and pump.

PERFORMANCE

SUCTION / DISCHARGE PORT SIZE

- ST1½: 1½ (37.5mm) NPT (F)
- ST40: 1½ (37.5MM) BSP (F)(Tapered))

CAPACITY

- 0 to 106 GPM
  (0 to 400 LPM)

AIR DISTRIBUTION VALVE

- No-lube, no-stall design

SOLIDS-HANDLING

- Occational solids only.
  Up to ¼ in. (6.3mm)

HEADS UP TO

- 125 psi or 289 ft. of water
  (8.8 Kg/cm2 or 88 meters)

MAXIMUM OPERATING PRESSURE

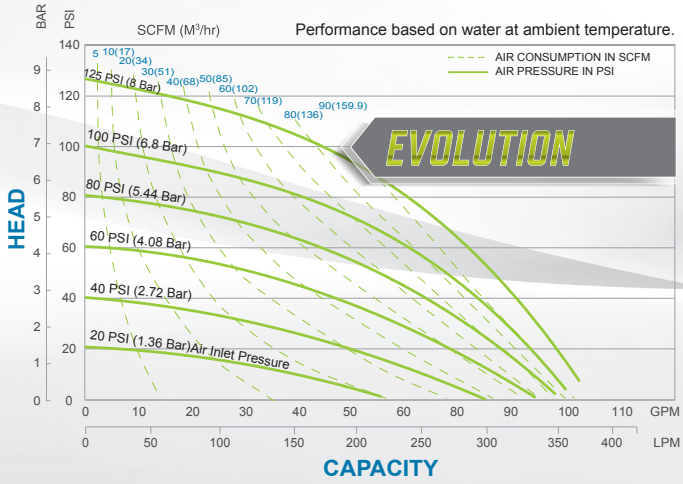
- 125 psi (8.6 bar)

DISPLACEMENT/STROKE

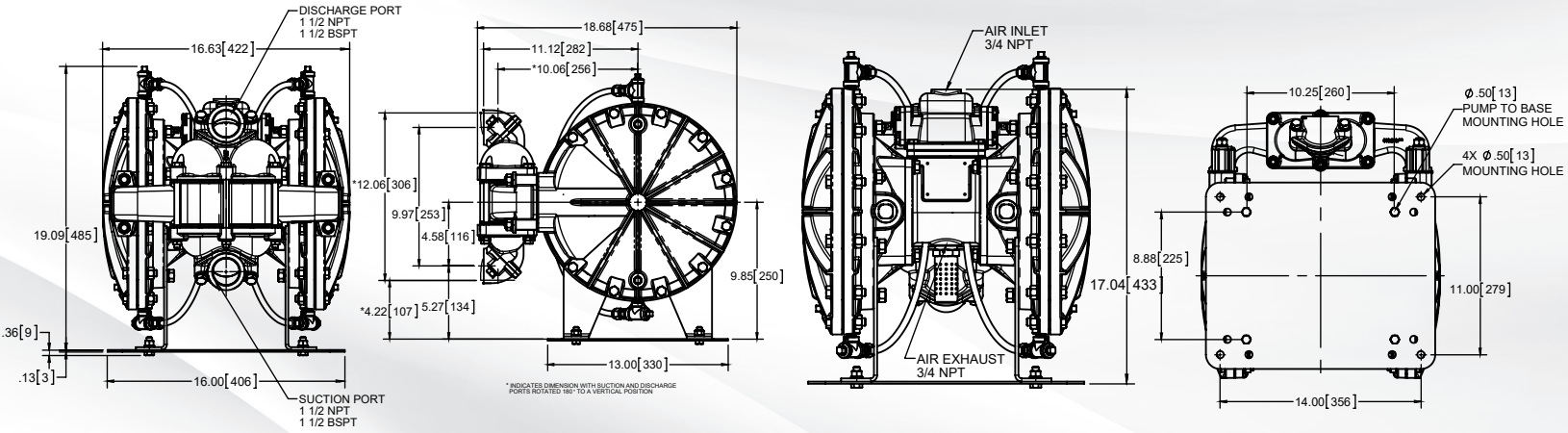
- .37 Gallon / 1.29 liter

WEIGHTS

- Aluminum 99 lbs. (46kg)
- Cast Iron 146 lbs. (66kg)
- Stainless Steel 212 lbs. (95kg)



DIMENSIONS



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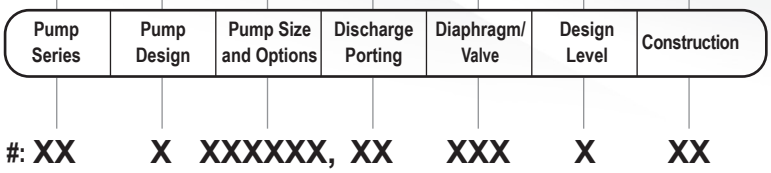
ISO 9001 Certified
ISO 14001 Certified

EXPLANATION OF PUMP NOMENCLATURE

Your Model #:
(fill in from pump nameplate)



Model #: XX X XXXXXX, XX XXX X XX

Pump Series
S SANDPIPER®

Pump Design
T Spill Containment

Pump Size & Options
1½" NPT
40 1½" BSP Tapered

Options
VL Visual Leak Detection Sight Tubes

Discharge Porting Position
S Side

Diaphragm Check Valve Materials
GI EPDM Driver Diaphragms, PTFE Pumping Diaphragms, and PTFE Check Balls
GN Neoprene Driver Diaphragms, PTFE Pumping Diaphragms, and PTFE Check Balls
GV FKM Driver Diaphragms, PTFE Pumping Diaphragms, and PTFE Check Balls

Design Level
5

Construction
A Aluminum Wetted, Aluminum Air
SI Stainless Steel Wetted, Cast Iron Air
SS Stainless Steel Wetted, Aluminum Air

MATERIALS

Material Profile: ⚠ CAUTION! Operating temperature limitations are as follows:	Operating Temperatures: 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
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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
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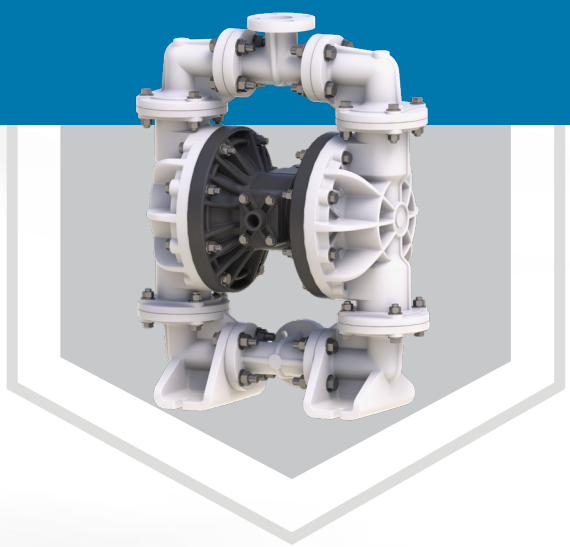
S15 NON-METALLIC PUMP TECHNICAL DATA SHEET



SERIES

STANDARD DUTY BALL VALVE PUMPS

Offering the widest range of performance and application capabilities

PERFORMANCE

SUCTION / DISCHARGE PORT SIZE

- 1 1/2 ANSI Flange or

CAPACITY

- 0 to 100 GPM (0 to 378 LPM)

AIR DISTRIBUTION VALVE

- No-lube, no-stall design

SOLIDS-HANDLING

- Up to .47 in. (12mm)

HEADS UP TO

- 100 psi or 231 ft. of water (7 bar or 70 meters)

MAXIMUM OPERATING PRESSURE

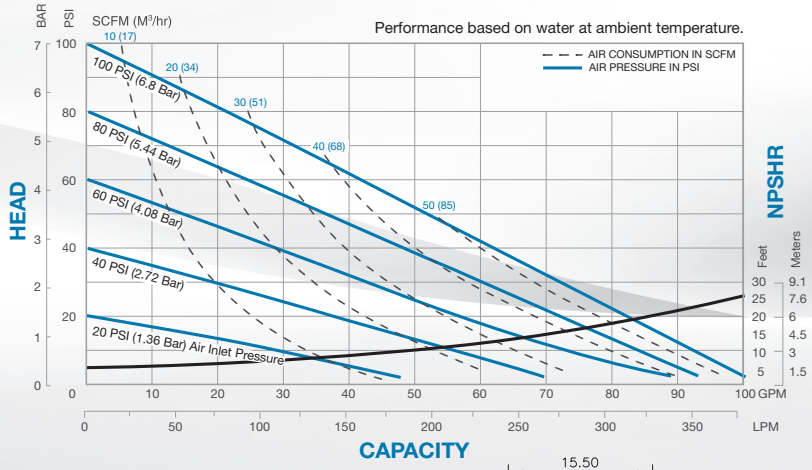
- 100 psi (7 bar)

DISPLACEMENT/STROKE

- .43 Gallon / 1.63 liter

WEIGHTS

- Polypropylene 82 lbs. (37kg)
- PVDF 112 lbs. (51kg)
- Conductive Polypropylene 85 lbs. (38kg)
- Polypropylene Spill Containment 149 lbs. (68kg)
- PVDF Spill Containment 194 lbs. (88kg)



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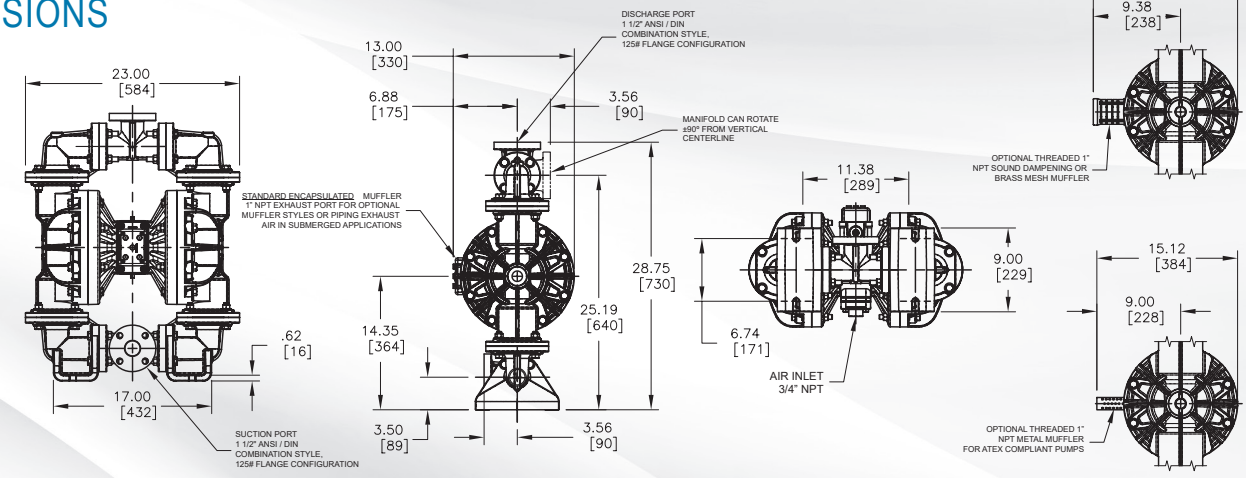

5 YEAR LIMITED PRODUCT WARRANTY

5 Year Guarantee for defects in material or workmanship. See 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."

SANDPIPER®
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Warren Rupp, Inc. • A Unit of IDEX Corporation
800 N. Main St., Mansfield, Ohio 44902 USA
Telephone 419.524.8388 • Fax 419.522.7867

ISO 9001 Certified
ISO 14001 Certified

EXPLANATION OF PUMP NOMENCLATURE

Your Model #: S _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____

(fill in from pump nameplate)

Pump Config.	Pump Size	Check Valve	Design Level	Wetted Material	Diaphragm/ Check Valve	Check Valve Seat	Non-Wetted Material	Porting Options	Pump Style	Pump Options	Kit Options
Model #: S	XX	X	X	X	X	X	X	X	X	X	XX

PUMP BRAND
S SANDPIPER®

PUMP SIZE
15 1 1/2"

CHECK VALVE TYPE
B Ball

DESIGN LEVEL
3 Design Level

WETTED MATERIAL
K PVDF
P Polypropylene
C Conductive Polypropylene

DIAPHRAGM/CHECK VALVE MATERIALS
1 Santoprene/Santoprene
2 PTFE-Santoprene Backup/PTFE
6 PTFE Pumping, PTFE-Neoprene Backup Driver/PTFE
B Nitrile/Nitrile
C FKM / PTFE
G PTFE-Neoprene Backup/PTFE
M Santoprene/PTFE
N Neoprene/Neoprene
U Urethane/Urethane
Z One-Piece Bonded/PTFE

CHECK VALVE SEAT
K PVDF
P Polypropylene

NON-WETTED MATERIAL OPTIONS
C Carbon Filled Conductive Polypropylene
P 40%Glass Filled Polypropylene
1 40%Glass Filled Polypropylene w/PTFE Coated Hardware

PORTING OPTIONS
U Universal Flange (Fits ANSI & DIN)
7 Dual Porting (ANSI)
8 Top Dual Porting (ANSI)
9 Bottom Dual Porting (ANSI)

PUMP STYLE
D with Electronic Leak Detection (110V)
E with Electronic Leak Detection (220V)
M with Mechanical Leak Detection
S Standard
V with Visual Leak Detection

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:	Operating Temperatures: 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.

NOTE: See service manual for ATEX details.

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S20 NON-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
- 2" Universal Flange
  (Fits ANSI & DIN Flange)

CAPACITY
- 0 to 160 GPM (0 to 605 LPM)

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

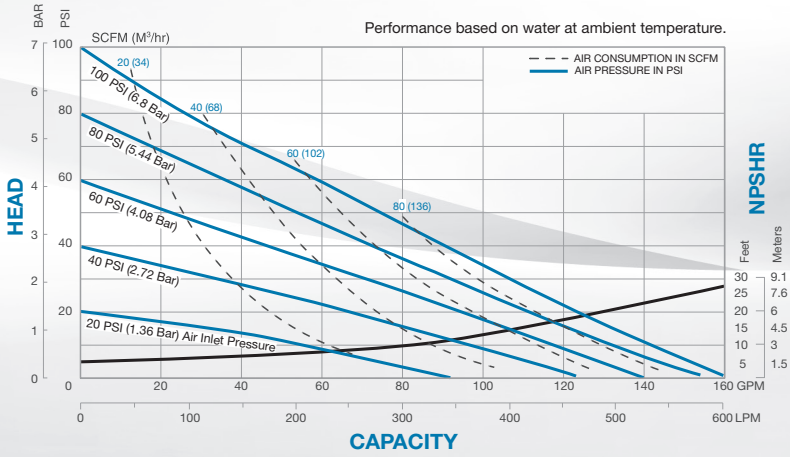
SOLIDS-HANDLING
- Up to .66 in. (17mm)

HEADS UP TO
- 100 psi or 231 ft. of water
  (7 bar or 70 meters)

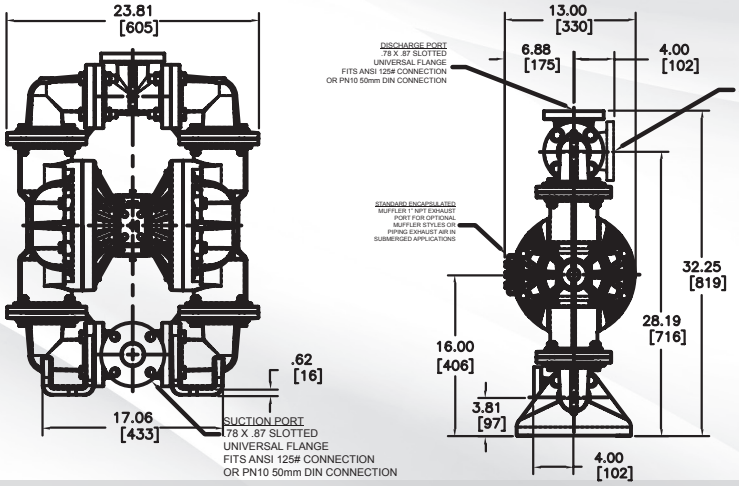
MAXIMUM OPERATING PRESSURE
- 100 psi (7 bar)

DISPLACEMENT/STROKE
- .46 Gallon / 1.73 liter

WEIGHTS
- Polypropylene 95 lbs. (43kg)
- PVDF 130 lbs. (59kg)
- Conductive Polypropylene 100 lbs. (45kg)



DIMENSIONS



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EXPLANATION OF PUMP NOMENCLATURE

Your Model #: S _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____

(fill in from pump nameplate)

Pump Config.	Pump Size	Check Valve	Design Level	Wetted Material	Diaphragm/ Check Valve	Check Valve Seat	Non-Wetted Material	Porting Options	Pump Style	Pump Options	Kit Options
Model #: S	XX	X	X	X	X	X	X	X	X	X	XX

PUMP BRAND
S SANDPIPER®

PUMP SIZE
20 2”

CHECK VALVE TYPE
B Ball

DESIGN LEVEL
3 Design Level

WETTED MATERIAL
K PVDF
P Polypropylene
C Conductive Polypropylene

DIAPHRAGM/CHECK VALVE MATERIALS
1 Santoprene/Santoprene
2 PTFE-Santoprene Backup/PTFE
6 PTFE Pumping, PTFE-Neoprene Backup Driver/PTFE
B Nitrile/Nitrile
C FKM / PTFE
G PTFE-Neoprene Backup/PTFE
M Santoprene/PTFE
N Neoprene/Neoprene
Z One-Piece Bonded/PTFE

CHECK VALVE SEAT
K PVDF
P Polypropylene

NON-WETTED MATERIAL OPTIONS
C Carbon Filled Conductive Polypropylene
P 40%Glass Filled Polypropylene
1 40%Glass Filled Polypropylene w/PTFE Coated Hardware

PORTING OPTIONS
U Universal Flange (Fits ANSI & DIN)
7 Dual Porting (ANSI)
8 Top Dual Porting (ANSI)
9 Bottom Dual Porting (ANSI)

PUMP STYLE
D with Electronic Leak Detection (110V)
E with Electronic Leak Detection (220V)
M with Mechanical Leak Detection
S Standard
V with Visual Leak Detection

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

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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
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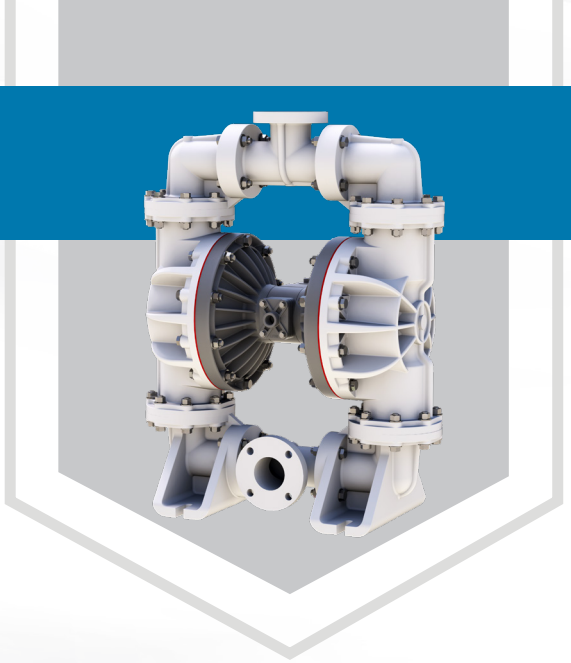
S30 NON-METALLIC PUMP
TECHNICAL DATA SHEET



SERIES

STANDARD DUTY BALL VALVE PUMPS
Offering the widest range of performance and application capabilities

PERFORMANCE

SUCTION / DISCHARGE PORT SIZE
- 3" ANSI Flange or 80mm DIN Flange

CAPACITY
- 0 to 280 GPM (0 to 1060 LPM)

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

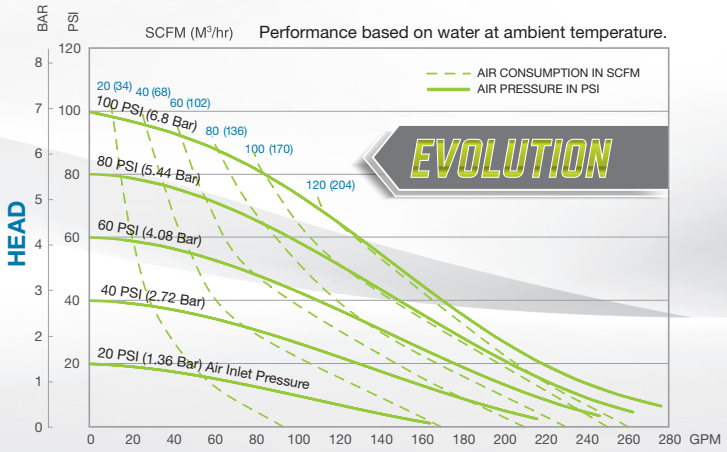
SOLIDS-HANDLING
- Up to .75 (19 mm)

HEADS UP TO
- 100 psi or 231 ft. of water (7 bar or 70 meters)

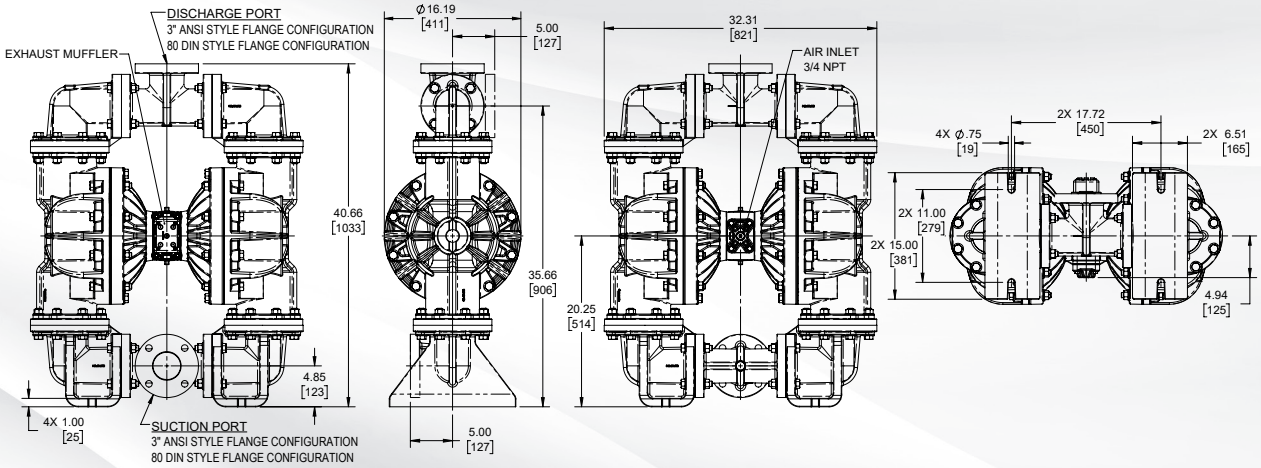
MAXIMUM OPERATING PRESSURE
- 100 psi (7 bar)

DISPLACEMENT/STROKE
- 1.0 Gallon / 3.78 liter

WEIGHTS
- Polypropylene 208 lbs (94 kg)
- PVDF 271 lbs (123 kg)



DIMENSIONS



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EXPLANATION OF PUMP NOMENCLATURE

Your Model #: S _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____

(fill in from pump nameplate)

	Pump Config.	Pump Size	Check Valve	Design Level	Wetted Material	Diaphragm/ Check Valve	Check Valve Seat	Non-Wetted Material	Porting Options	Pump Style	Pump Options	Kit Options
Model #:	S	XX	X	X	X	X	X	X	X	X	X	XX

PUMP BRAND
S SANDPIPER®

PUMP SIZE
30 3"

CHECK VALVE TYPE
B Ball

DESIGN LEVEL
3 Design Level

WETTED MATERIAL
K PVDF
P Polypropylene

DIAPHRAGM/CHECK VALVE MATERIALS
1 Santoprene/Santoprene
2 PTFE-Santoprene Backup/PTFE
3 PTFE Pumping, PTFE - Santoprene, Backup Driver / PTFE
4 Santoprene Pumping, Santoprene Driver / Santoprene
M Santoprene/PTFE

CHECK VALVE SEAT
K PVDF
P Polypropylene

NON-WETTED MATERIAL OPTIONS
P 40% Glass Filled Polypropylene
1 40% Glass Filled Polypropylene w / PTFE Coated Hardware

PORTING OPTIONS
A ANSI Flange
D DIN Flange
7 Dual Porting (ANSI)
8 Top Dual Porting (ANSI)
9 Bottom Dual Porting (ANSI)

PUMP STYLE
D with Electronic Leak Detection (110V)
E with Electronic Leak Detection (220V)
M with Mechanical Leak Detection
S Standard
V with Visual Leak Detection

PUMP OPTIONS
0 None

KIT OPTIONS
00. None
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P2. 110/120 or 220/240VAC Pulse Output Kit
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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

MATERIALS

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S1F NON-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" ANSI Flange or
  PN10 25mm DIN Flange

CAPACITY
- 0 to 53 gallons per minute
  (0 to 200 liters per minute

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

SOLIDS-HANDLING
- Up to .25 in. (6 mm)

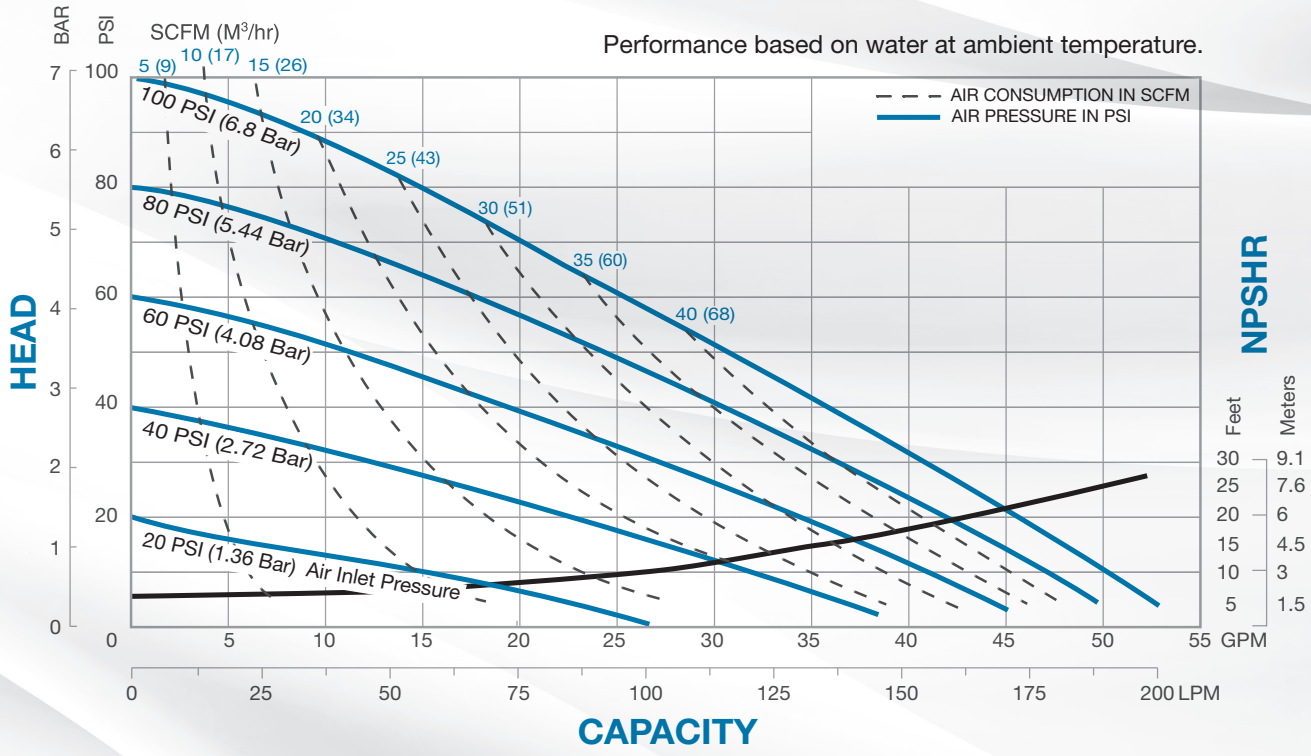
HEADS UP TO
- 100 psi or 231 ft. of water
  (7 bar or 70 meters)

MAXIMUM OPERATING PRESSURE
- 100 psi (7 bar)

DISPLACEMENT/STROKE
- .19 Gallon / .72 liter

WEIGHTS
- Polypropylene 42 lbs. (19kg)
- PVDF 54 lbs. (24kg)
- Conductive Polypropylene 40 lbs. (18kg)

Performance based on water at ambient temperature.



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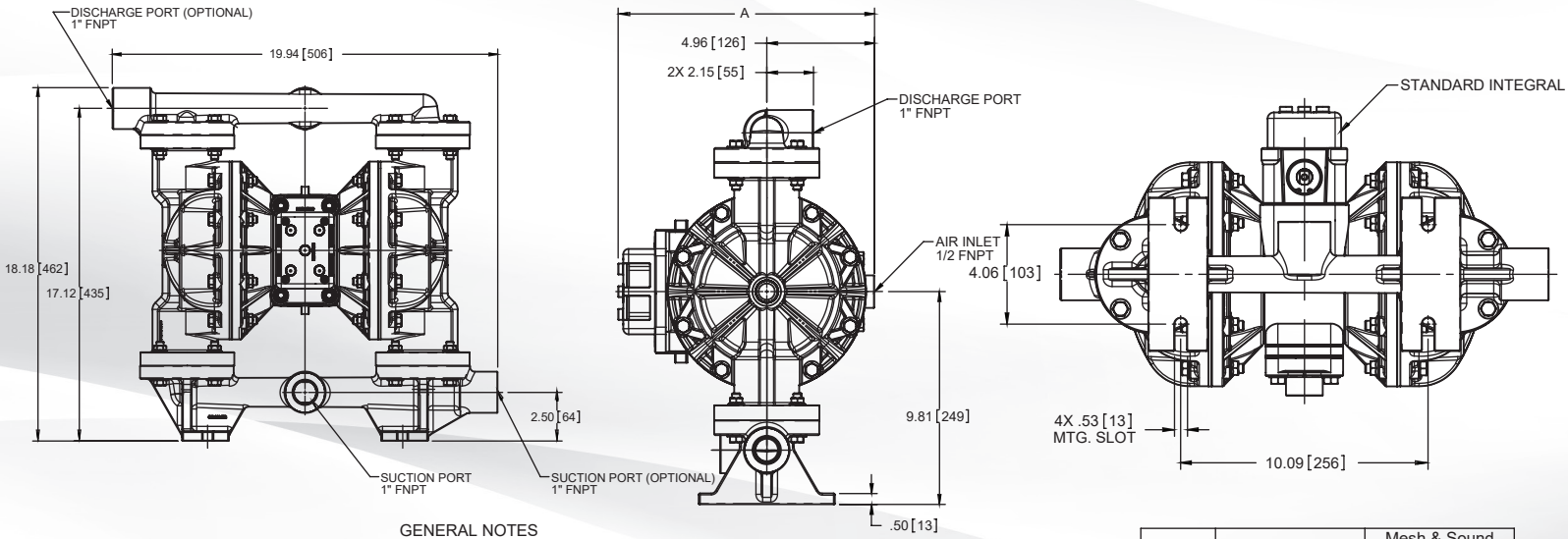
SAI GLOBAL
ISO 9001 Certified
ISO 14001 Certified

DIMENSIONS

S1F Non-Metallic Inline Ported Option- Polypropylene Wet End Models ONLY

Dimensions in inches (metric dimensions in brackets). Dimensional Tolerance .125" (3mm).



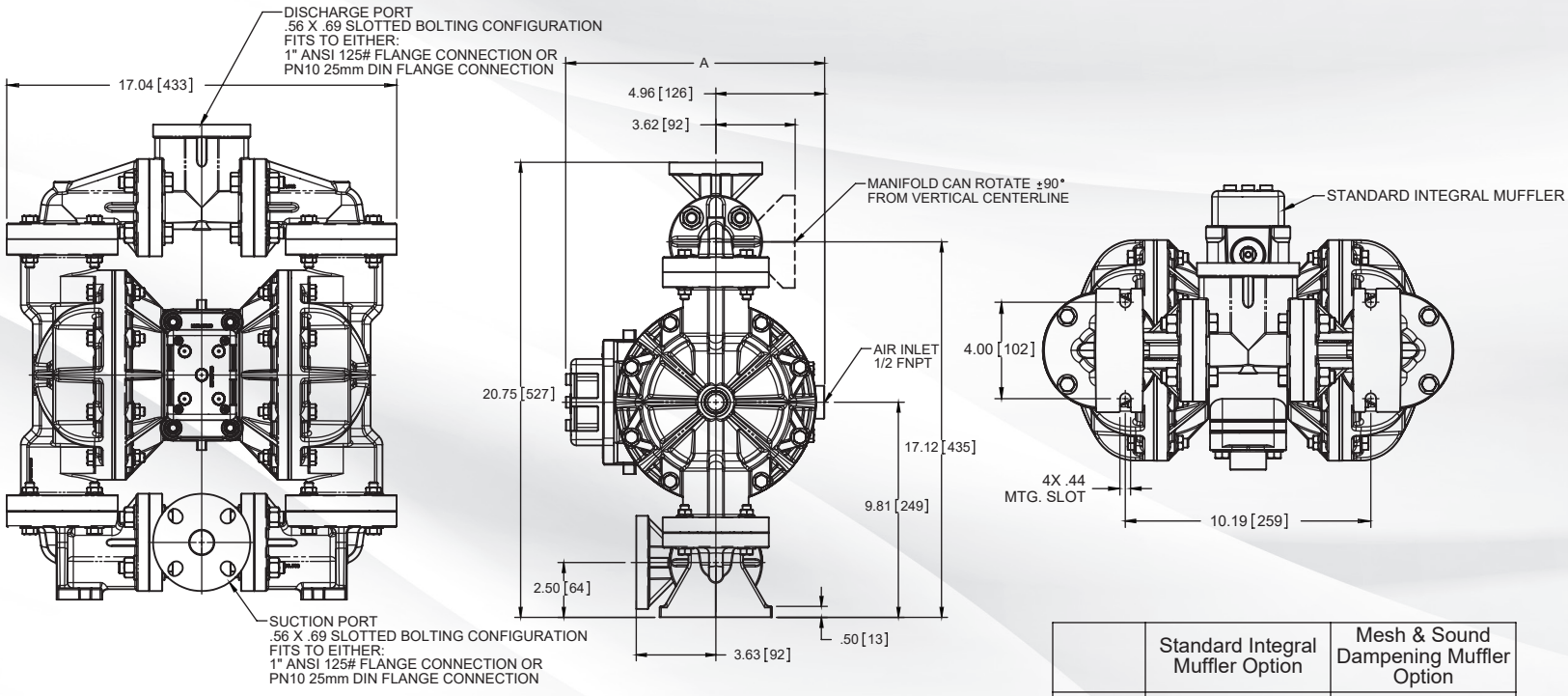
GENERAL NOTES

1. OPTIONAL SUCTION & DISCHARGE SIDE PORTS WILL BE PLUGGED AT FACTORY, NOT SHOWN
2. STANDARD INTEGRAL MUFFLER (SHOWN) COVERS 1" FNPT EXHAUST PORT FOR OPTIONAL MUFFLER STYLES OR PIPING EXHAUST AIR IN SUBMERGED APPLICATIONS

	Standard Integral Muffler Option	Mesh & Sound Dampening Muffler Option
A	11.81 [300]	13.50 [343]

S1F Non-Metallic Center Ported Options

Dimensions in inches (metric dimensions in brackets). Dimensional Tolerance .125" (3mm).



	Standard Integral Muffler Option	Mesh & Sound Dampening Muffler Option
A	11.81 [300]	13.50 [343]

GENERAL NOTES

1. STANDARD INTEGRAL MUFFLER (SHOWN) COVERS 1" FNPT EXHAUST PORT FOR OPTIONAL MUFFLER STYLES OR PIPING EXHAUST AIR IN SUBMERGED APPLICATIONS

SANDPIPER®
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EXPLANATION OF PUMP NOMENCLATURE

Your Model #: S _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____

(fill in from pump nameplate)

Pump Config.	Pump Size	Check Valve	Design Level	Wetted Material	Diaphragm/ Check Valve	Check Valve Seat	Non-Wetted Material	Porting Options	Pump Style	Pump Options	Kit Options
Model #: S	XX	X	X	X	X	X	X	X	X	X	XX

PUMP BRAND
S SANDPIPER®

PUMP SIZE
1F 1" Full Flow

CHECK VALVE TYPE
B Ball

DESIGN LEVEL
3 Design Level

WETTED MATERIAL
K PVDF
P Polypropylene
C Conductive Polypropylene
V Conductive PVDF

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
M Santoprene/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
N NPT Thread
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)
I Inline Porting NPT Threads
M With Mechanical Leak Detection
S Standard
V With Visual Leak Detection

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

KIT OPTIONS (CONT.)
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:	Operating Temperatures: 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.

NOTE: See service manual for ATEX details.

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