

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

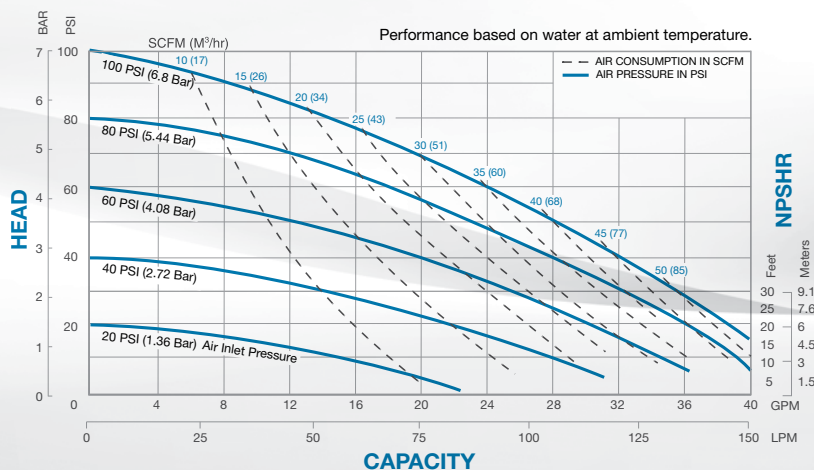
- 125 psi (8.6 bar)

DISPLACEMENT/STROKE

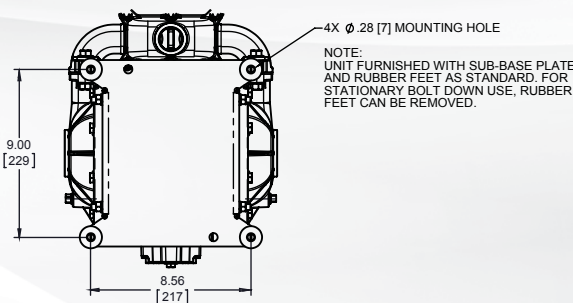
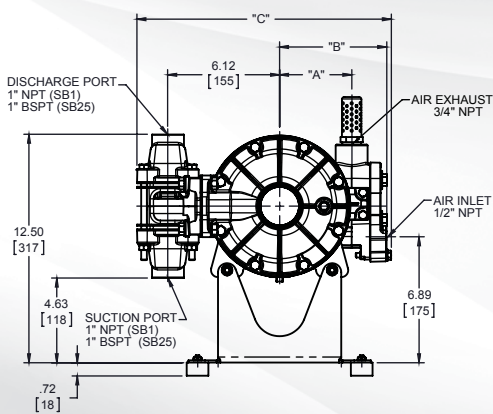
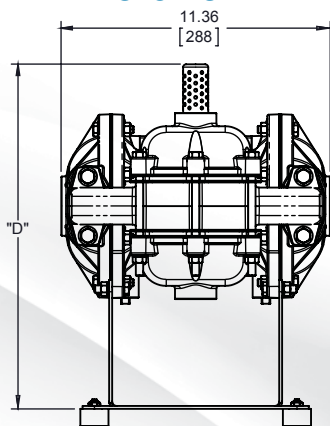
- .09 Gallon / .34 liter

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)



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."

EXPLANATION OF PUMP NOMENCLATURE

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

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

PUMP SERIES

S SANDPIPER®

PUMP DESIGN

B Soild 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:

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
88°C

-20°F
-29°C

280°F
138°C

-40°F
-40°C

350°F
177°C

-40°F
-40°C

220°F
104°C

-20°F
-29°C

200°F
93°C

-10°F
-23°C

190°F
88°C

-10°F
-23°C

180°F
82°C

32°F
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
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.

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 461 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

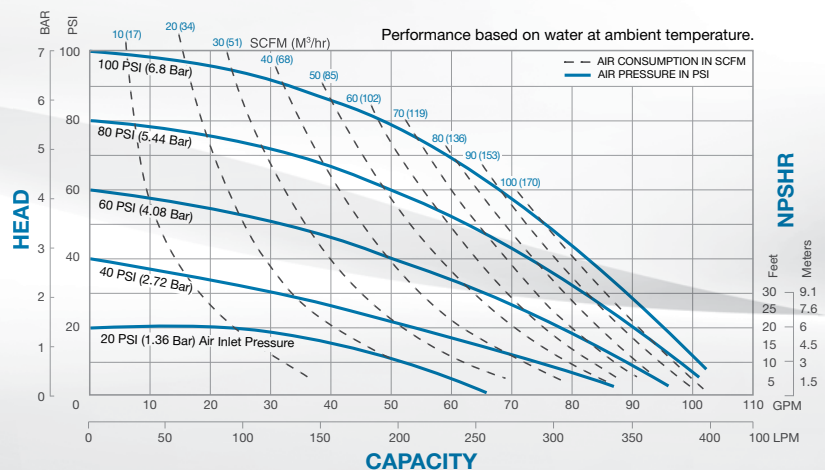
- 125 psi (8.6 bar)

DISPLACEMENT/STROKE

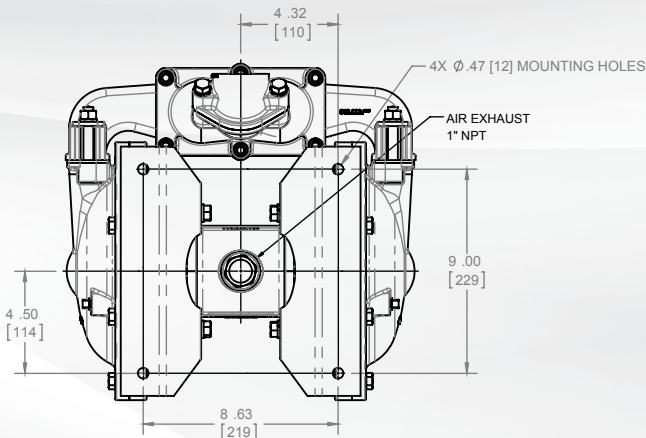
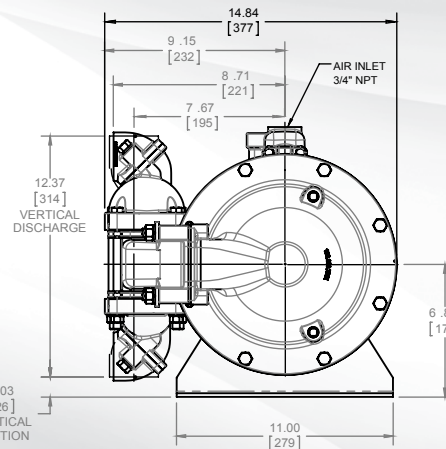
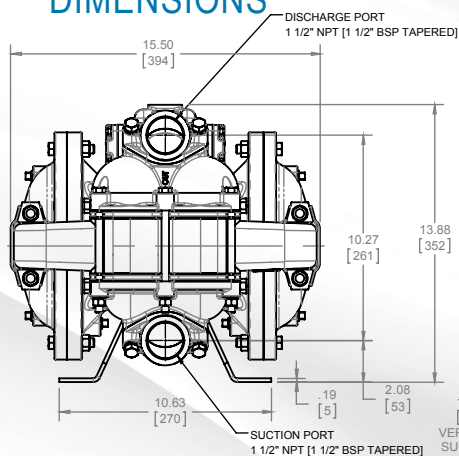
- .37 Gallon / 1.4 liter

WEIGHTS

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



DIMENSIONS



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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
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Model #: **HD X XXXXXX, XX XXX X XX**

PUMP SERIES

HD Heavy Duty

PUMP DESIGN

B Solid Ball

PUMP SIZE & OPTIONS

1 1/2"

P1 Intrinsically Safe ATEX Compliant Pulse Output

SB STAINLESS-BRASS SLEEVE AND SPOOL SET

DISCHARGE PORTING POSITION

D Down Ported

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

HC Alloy-C Wetted, Aluminum Air

HI Alloy-C Wetted, Cast Iron Air

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 88°C -20°F -29°C

280°F 138°C -40°F -40°C

350°F 177°C -40°F -40°C

220°F 104°C -20°F -29°C

200°F 93°C -10°F -23°C

190°F 88°C -10°F -23°C

180°F 82°C 32°F 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 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.

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

- 2" (50mm) NPT (F)

CAPACITY

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

AIR DISTRIBUTION VALVE

- No-lube, no-stall design

SOLIDS-HANDLING

- Up to 3/8 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)

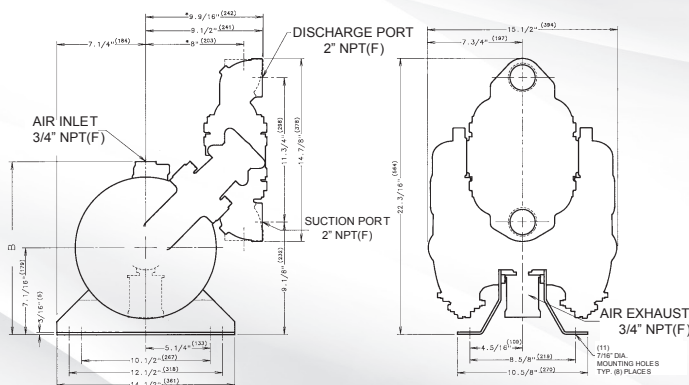
DISPLACEMENT/STROKE

- .46 Gallon / 1.7 liter

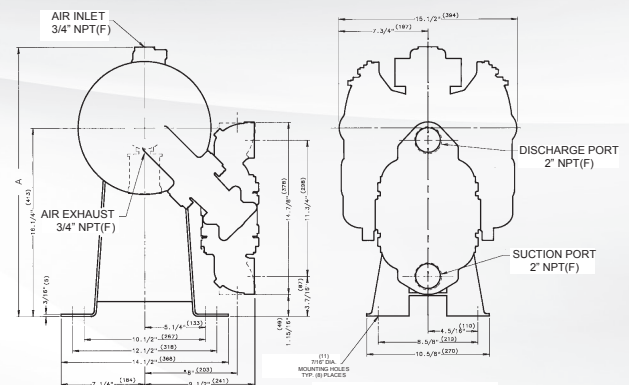
WEIGHTS

- Aluminum 75 lbs. (34kg)
- Cast Iron 104 lbs. (47kg)
- Stainless Steel 107 lbs. (48kg)
- *Add 40 lbs for cast iron center section

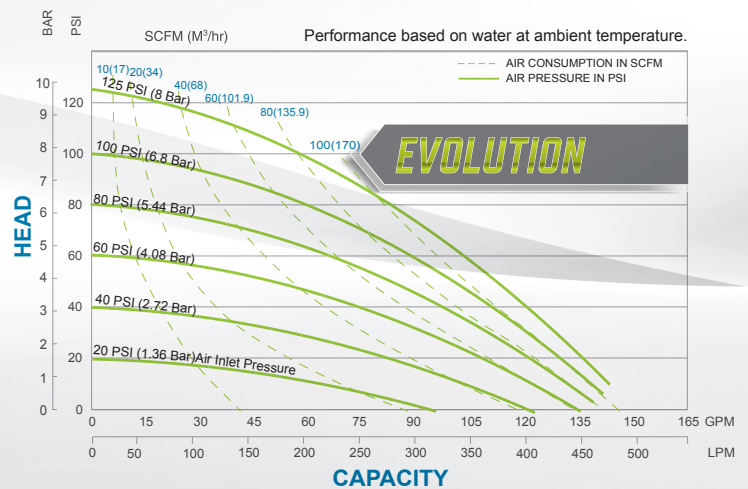
DIMENSIONS



* INDICATES DIMENSIONS WITH SUCTION AND DISCHARGE PORTS ROTATED 180° TO A VERTICAL POSITION.



* INDICATES DIMENSIONS WITH SUCTION AND DISCHARGE PORTS ROTATED 180° TO A VERTICAL POSITION.



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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 Solioid Ball

PUMP SIZE

2 2"

Discharge Porting Position

D Bottom

S Side

ET Dual Top

ES Dual 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

N Neoprene

R Hytrel

S Santoprene

U Santoprene with PTFE

V FKM

DESIGN LEVEL

3

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

OPTIONS

P1 Intrinsically Safe ATEX Compliant
Pulse Output

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.

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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
88°C

-20°F
-29°C

280°F
138°C

-40°F
-40°C

350°F
177°C

-40°F
-40°C

220°F
104°C

-20°F
-29°C

200°F
93°C

-10°F
-23°C

190°F
88°C

-10°F
-23°C

180°F
82°C

32°F
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
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

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Metals:

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For specific applications, always consult the Chemical Resistance Chart.



NOTE: See service manual for ATEX details.

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

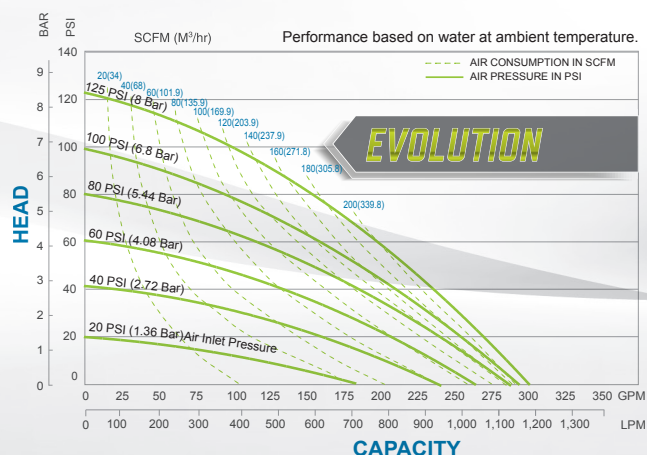
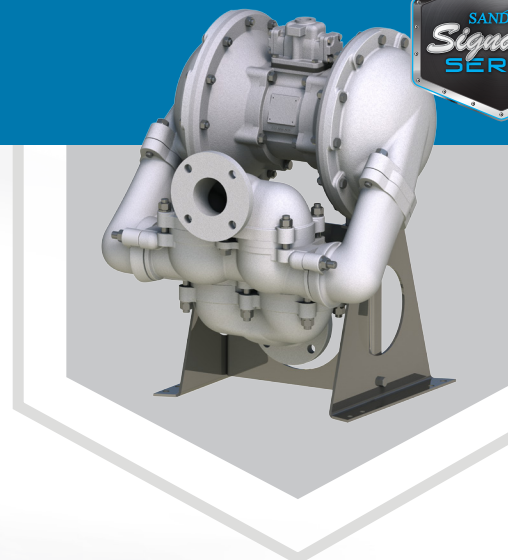
- 125 psi (8.6 bar)

DISPLACEMENT/STROKE

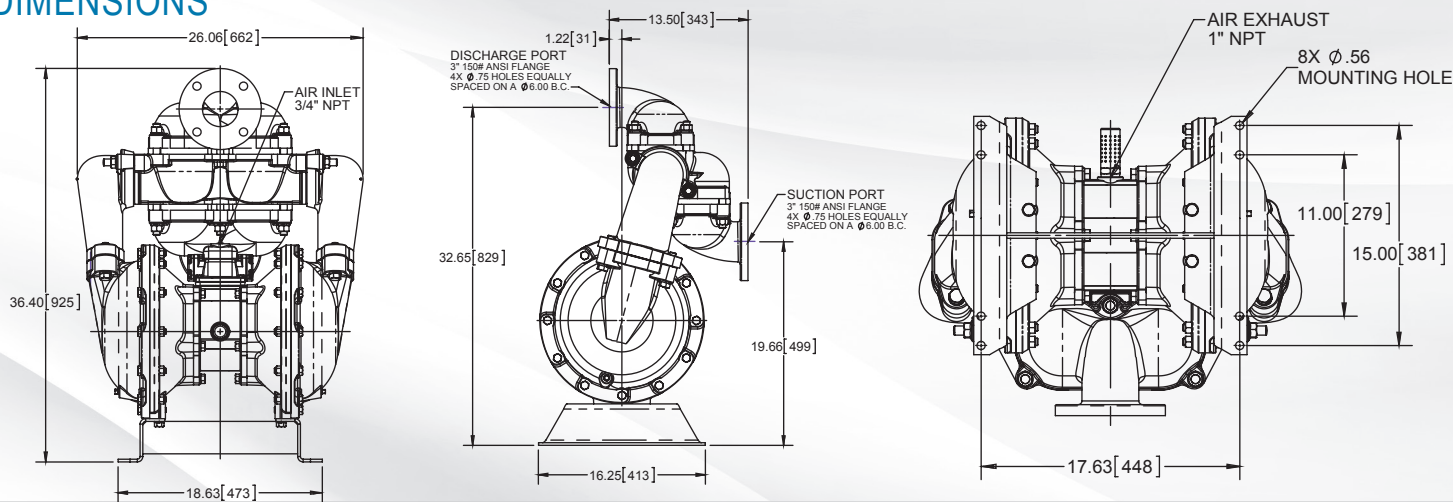
- 2.0 Gallon / 7.6 liter

WEIGHTS

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



DIMENSIONS



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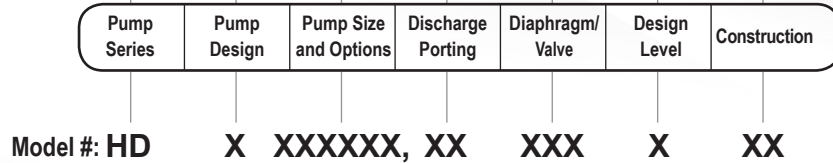


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EXPLANATION OF PUMP NOMENCLATURE

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



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

SI Stainless Steel Wetted, Cast Iron Air

CI Cast Iron Wetted, Cast Iron Air

MATERIALS

Material Profile:

CAUTION! Operating temperature limitations are as follows:

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Max. Min.

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88°C

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-29°C

280°F
138°C

-40°F
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350°F
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-40°F
-40°C

220°F
104°C

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-29°C

200°F
93°C

-10°F
-23°C

190°F
88°C

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-23°C

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82°C

32°F
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.

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82°C

32°F
0°C

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121°C

0°F
-18°C

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135°C

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-40°C

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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.