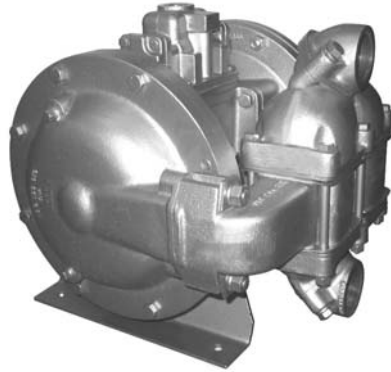


**WARREN
RUPP®**

Quality System
ISO9001 Certified

Environmental
Management System
ISO14001 Certified

IDEX
FLUID & METERING



SANDPIPER®

A WARREN RUPP PUMP BRAND

**HDB1 1/2-A Type 7
HDB40-A Type 7**

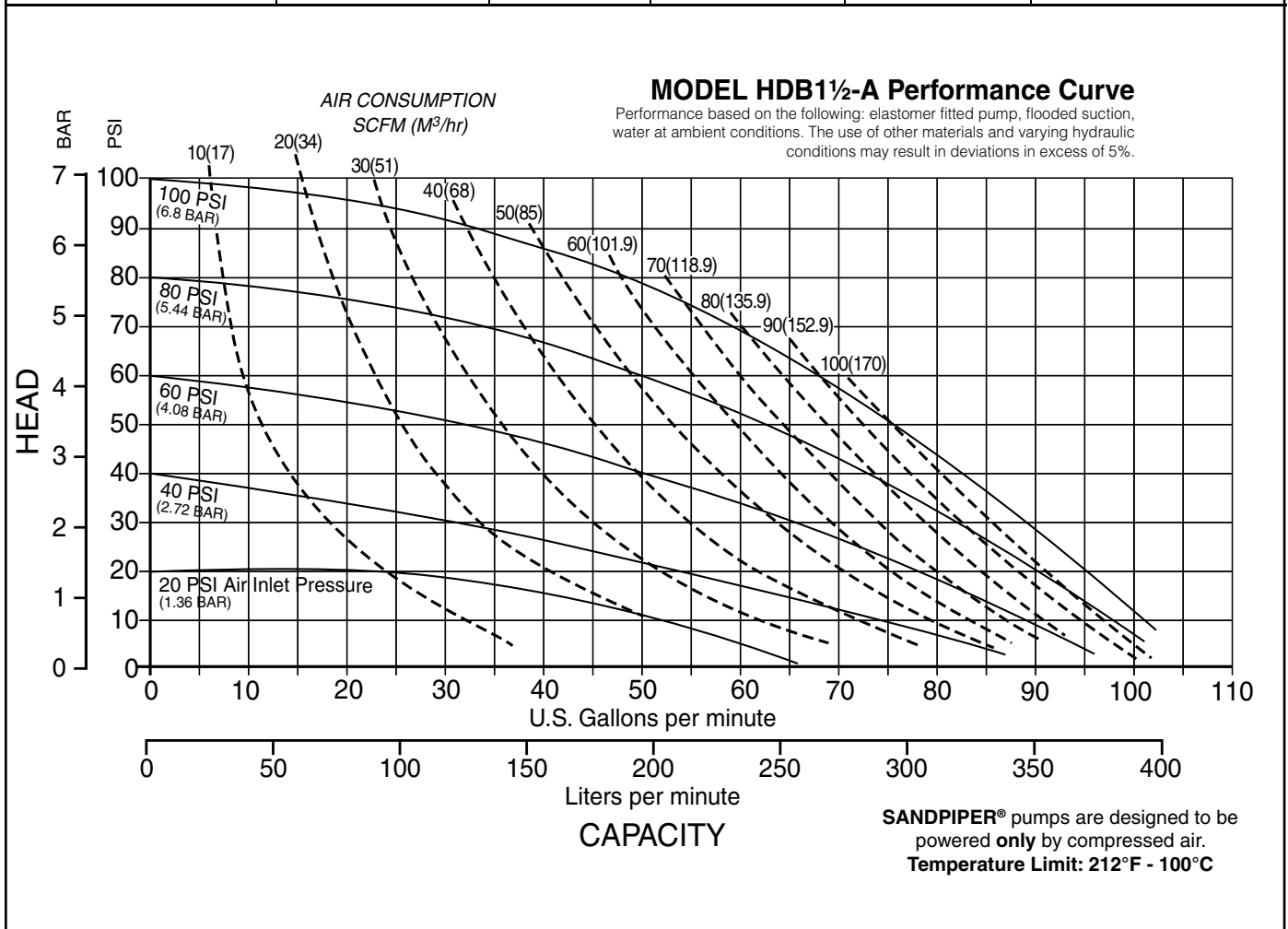
**Heavy Duty Ball Valve
Air-Operated
Double Diaphragm Pump**

ENGINEERING, PERFORMANCE
& CONSTRUCTION DATA



I M2 cT5
II 2GD T5

INTAKE/DISCHARGE PIPE SIZE	CAPACITY	AIR VALVE	SOLIDS-HANDLING	HEADS UP TO	DISPLACEMENT/STROKE
HDB1 1/2-A: 1 1/2 NPT HDB40-A: 1 1/2 BSP (Tapered)	0 to 105 gallons per minute (0 to 340 liters per minute)	No-lube, no-stall design	Up to 1/4 in. (6.3mm)	125 psi or 289 ft. of water (8.8 Kg/cm ² or 88 meters)	.37 Gallon / 1.29 liter



HDB1 1/2-A & HDB40-A



MATERIALS OF CONSTRUCTION

Type HDB1 1/2 HDB40-A	Porting*		Manifold	Outer Chamber	Inner Chamber	Outer Diaphragm Plate	Inner Diaphragm Plate	Intermediate Housing	Diaphragm Rod	Valve Seat	Hard-ware	Diaphragm	Ball Valve Material	Manifold Seat Gasket	Manifold Sealing Rings	Shipping Wt. (lbs)
	Side	Bottom														
SB-7-A	X	X	356-T6AL	356-T6AL	380AL	380AL	380AL	356-T6AL	416SS	316SS	PS	B	B	CB	A	75
SC-7-A	X	X	356T6AL	356T6AL	380AL	380AL	380AL	356T6AL	416SS	316SS	PS	V	T	CT	T	75
SI-7-A	X	X	356T6AL	356T6AL	380AL	380AL	380AL	356T6AL	416SS	316SS	PS	I	I	CT	A	75
SN-7-A	X	X	356T6AL	356T6AL	380AL	380AL	380AL	356T6AL	416SS	316SS	PS	N	N	CN	A	75
SV-7-A	X	X	356T6AL	356T6AL	380AL	380AL	380AL	356T6AL	416SS	316SS	PS	V	V	CT	T	75
SGN-7-A	X	X	356T6AL	356T6AL	380AL	380AL	380AL	356T6AL	416SS	316SS	PS	N/T	T	CT	T	75
SS-7-A	X	X	356T6AL	356T6AL	380AL	380AL	380AL	356T6AL	416SS	316SS	PS	S	S	CT	A	75
SB-7-CI	X	X	CI	CI	380AL	CI	380AL	356T6AL	416SS	316SS	PS	B	B	CB	A	102
SC-7-CI	X	X	CI	CI	380AL	CI	380AL	356T6AL	416SS	316SS	PS	V	T	CT	T	102
SI-7-CI	X	X	CI	CI	380AL	CI	380AL	356T6AL	416SS	316SS	PS	I	I	CT	A	102
SN-7-CI	X	X	CI	CI	380AL	CI	380AL	356T6AL	416SS	316SS	PS	N	N	CN	A	102
SV-7-CI	X	X	CI	CI	380AL	CI	380AL	356T6AL	416SS	316SS	PS	V	V	CT	T	102
SGN-7-CI	X	X	CI	CI	380AL	CI	380AL	356T6AL	416SS	316SS	PS	N/T	T	CT	T	102
SS-7-CI	X	X	CI	CI	380AL	CI	380AL	356T6AL	416SS	316SS	PS	S	S	CT	A	102
SB-7-II	X	X	CI	CI	CI	CI	CI	CI	416SS	316SS	PS	B	B	CB	A	104
SC-7-II	X	X	CI	CI	CI	CI	CI	CI	416SS	316SS	PS	V	T	CT	T	104
SI-7-II	X	X	CI	CI	CI	CI	CI	CI	416SS	316SS	PS	I	I	CT	A	104
SN-7-II	X	X	CI	CI	CI	CI	CI	CI	416SS	316SS	PS	N	N	CN	A	104
SV-7-II	X	X	CI	CI	CI	CI	CI	CI	416SS	316SS	PS	V	V	CT	T	104
SGN-7-II	X	X	CI	CI	CI	CI	CI	CI	416SS	316SS	PS	N/T	T	CT	T	104
SS-7-II	X	X	CI	CI	CI	CI	CI	CI	416SS	316SS	PS	S	S	CT	A	104
SB-7-SS	X	X	SS	SS	380AL	SS	380AL	356T6AL	416SS	316SS	PS	B	B	CB	A	107
SC-7-SS	X	X	SS	SS	380AL	SS	380AL	356T6AL	416SS	316SS	PS	V	T	CT	T	107
SI-7-SS	X	X	SS	SS	380AL	SS	380AL	356T6AL	416SS	316SS	PS	I	I	CT	A	107
SN-7-SS	X	X	SS	SS	380AL	SS	380AL	356T6AL	416SS	316SS	PS	N	N	CN	A	107
SV-7-SS	X	X	SS	SS	380AL	SS	380AL	356T6AL	416SS	316SS	PS	V	V	CT	T	107
SGN-7-SS	X	X	SS	SS	380AL	SS	380AL	356T6AL	416SS	316SS	PS	N/T	T	CT	T	107
SS-7-SS	X	X	SS	SS	380AL	SS	380AL	356T6AL	416SS	316SS	PS	V/T	T	CT	T	107
SB-7-SI	X	X	SS	SS	CI	SS	CI	CI	416SS	316SS	PS	B	B	CB	A	107
SC-7-SI	X	X	SS	SS	CI	SS	CI	CI	416SS	316SS	PS	V	T	CT	T	107
SI-7-SI	X	X	SS	SS	CI	SS	CI	CI	416SS	316SS	PS	I	I	CT	A	107
SN-7-SI	X	X	SS	SS	CI	SS	CI	CI	416SS	316SS	PS	N	N	CN	A	107
SV-7-SI	X	X	SS	SS	CI	SS	CI	CI	416SS	316SS	PS	V	V	CT	T	107
SGI-7-SI	X	X	SS	SS	CI	SS	CI	CI	416SS	316SS	PS	I/T	T	CT	T	107
SGN-7-SI	X	X	SS	SS	CI	SS	CI	CI	416SS	316SS	PS	N/T	T	CT	T	107
SGV-7-SI	X	X	SS	SS	CI	SS	CI	CI	416SS	316SS	PS	V/T	T	CT	T	107
SS-7-SI	X	X	SS	SS	CI	SS	CI	CI	416SS	316SS	PS	S	S	CT	A	107
SGN-7-HC	X	X	Alloy C	Alloy C	CI	Alloy C	CI	CI	416SS	Alloy C	PS	N/T	T	CT	T	107

Meanings of Abbreviations:

A = Compressed Fibre	CB = Conductive Nitrile	DC = Die Cast	N = Neoprene	SS = Stainless Steel
AL = Aluminum	CI = Cast Iron	H/T = Hytrel® Backup/PTFE Overlay	N/T = Neoprene Backup/PTFE Overlay	T = PTFE
B = Nitrile	CN = Conductive Neoprene	I = EPDM	PS = Plated Steel	V = FKM
	CT = Conductive PTFE	I/T = EPDM Backup/PTFE Overlay	S = Santoprene	Alloy C = Alloy C

*Note: For bottom ported option replace 1st character "S" with "D"

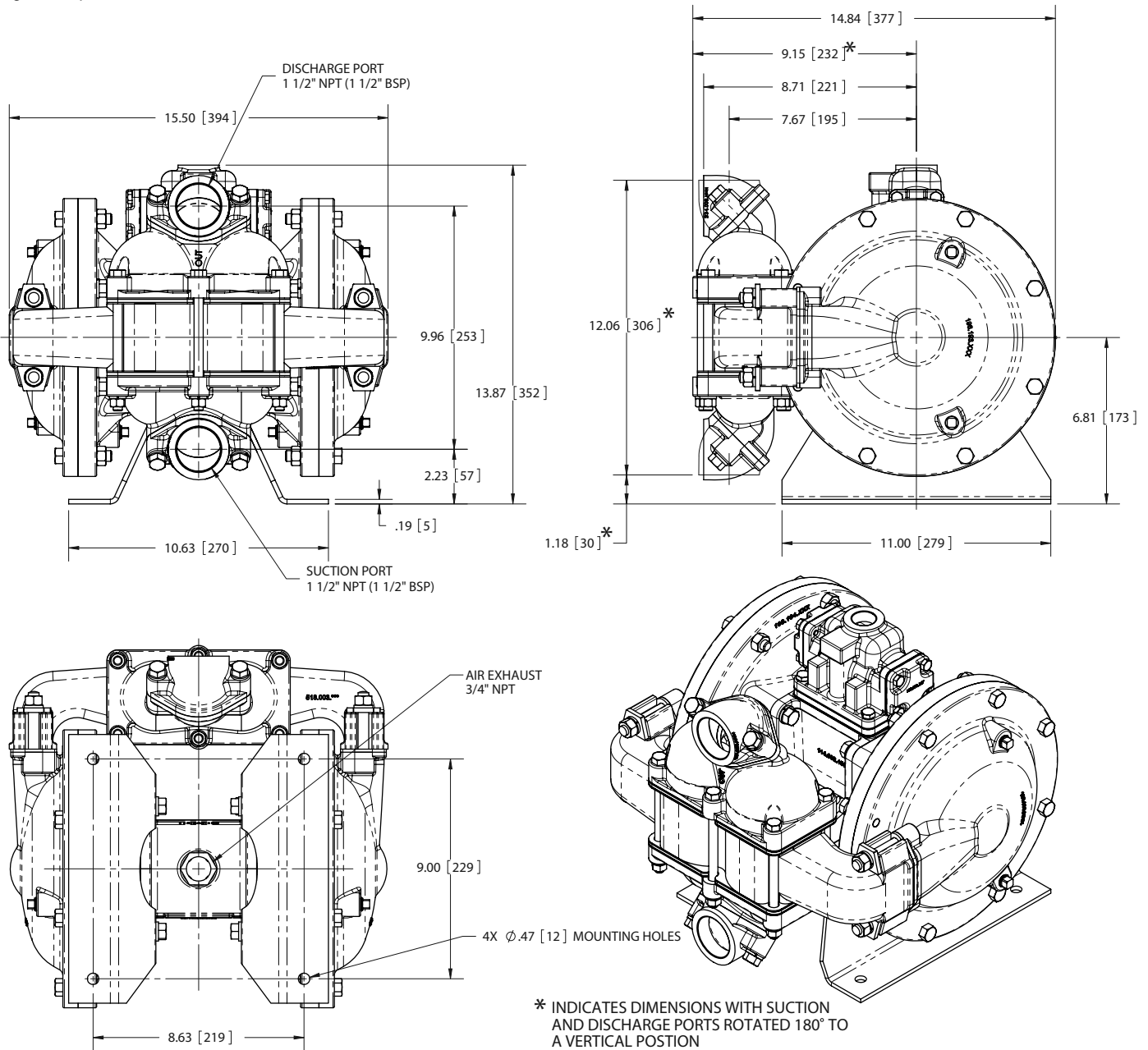
Materials	Operating Temperatures		
	Maximum*	Minimum*	Optimum**
Nitrile General purpose, oil-resistant. Shows good solvent, oil, water and hydraulic fluid resistance. Should not be used with highly polar solvents like acetone and MEK, ozone, chlorinated hydrocarbons and nitro hydrocarbons.	190°F 88°C	-10°F -23°C	50°F to 140°F 10°C to 60°C
EPDM Shows very good water and chemical resistance. Has poor resistance to oil and solvents, but is fair in ketones and alcohols.	212°F 100°C	-10°F -23°C	50°F to 212°F 10°C to 100°C
NEOPRENE All purpose. Resistant to vegetable oils. Generally not affected by moderate chemicals, fats, greases and many oils and solvents. Generally attacked by strong oxidizing acids, ketones, esters, nitro hydrocarbons and chlorinated aromatic hydrocarbons.	170°F 77°C	-35°F -37°C	50°F to 130°F 10°C to 54°C
HYTREL® Good on acids, bases, amines and glycols at room temperature.	190°F 88°C	-10°F -23°C	50°F to 140°F 10°C to 60°C
PTFE Chemically inert, virtually impervious. Very few chemicals are known to react chemically with PTFE: molten alkali metals, turbulent liquid or gaseous fluorine and a few fluoro-chemicals such as chlorine trifluoride or oxygen difluoride which readily liberate free fluorine at elevated temperatures.	212°F 100°C	-35°F -37°C	50°F to 212°F 10°C to 100°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) will attack FKM.	212°F 100°C	32°F 0°C	75°F to 212°F 24°C to 100°C
Santoprene® Injection molded thermoplastic elastomer with no fabric layer. Long mechanical flex life. Excellent abrasion resistance.	212°F 100°C	-10°F -23°C	50° to 212°F 10°C to 100°C
STAINLESS STEEL CF-8M equal to or exceeding ASTM specification A743 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.			
ALLOY C CW-12MW equal to or exceeding ASTM A494 specification for nickel and nickel alloy castings.			
For specific applications, always consult "Chemical Resistance Chart" Technical Bulletin			
* Definite reduction in service life. ** Minimal reduction in service life at ends of range.			

®Hytrel is a registered trademark of E.I. duPont., ®Santoprene is a registered trademark of Monsanto Corp., ®Warren Rupp, and SANDPIPER are registered trademarks of IDEX AODD, Inc.

HDB1 1/2-A & HDB40-A

Side Ported

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



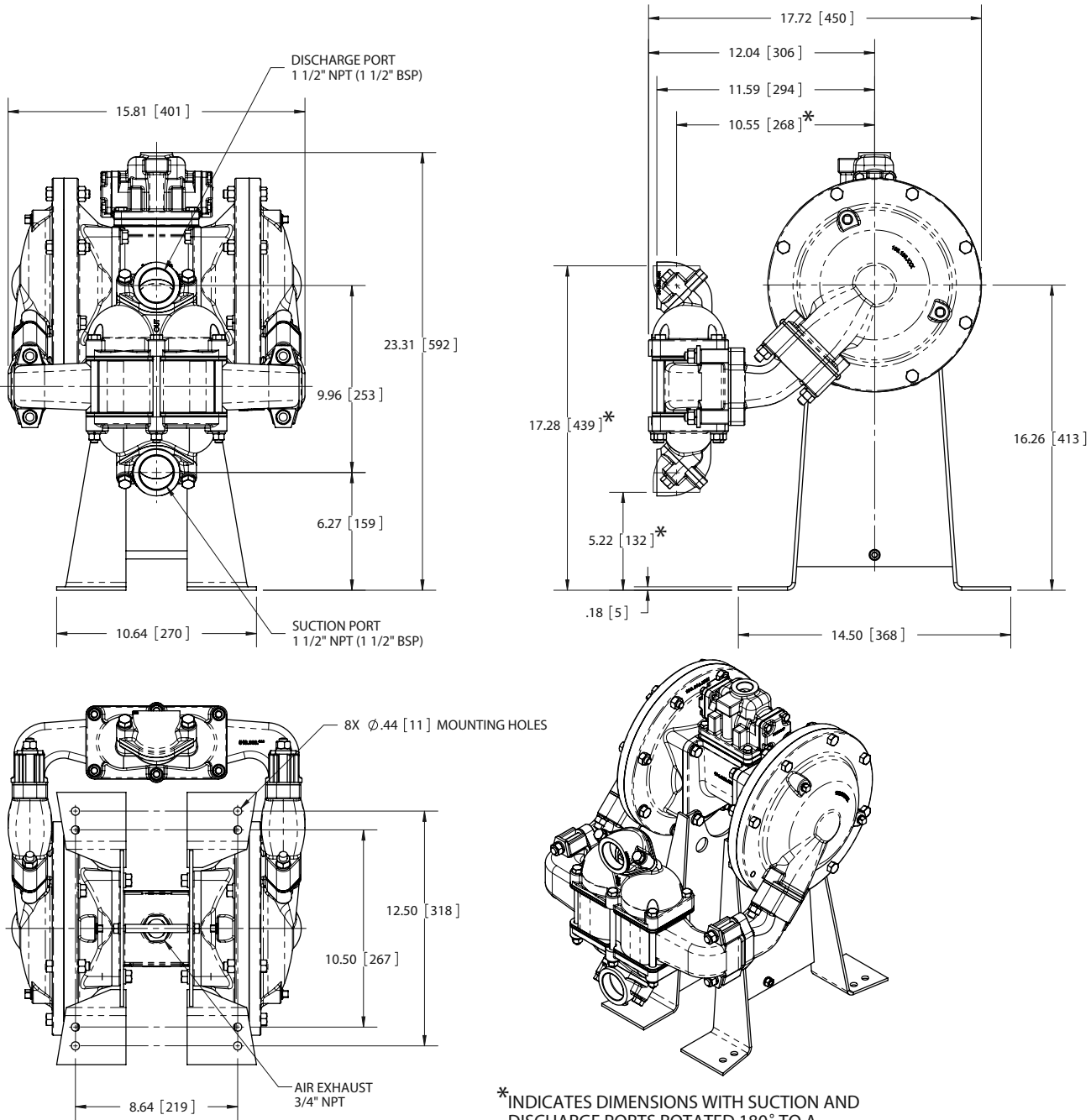
Model HDB1 1/2-A features 1 1/2" NPT threaded connections.
 Model HDB40-A features 1 1/2" BSP Tapered connections.

1 1/2" NPT(F) Suction and Discharge • 3/4" NPT(F) Air Inlet Port • 3/4" NPT(F) Air Exhaust Port (not shown)

HDB1 1/2-A & HDB40-A

Down Ported

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



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

Model HDB1 1/2-A features 1 1/2" NPT threaded connections.
Model HDB40-A features 1 1/2" BSP Tapered connections.

1 1/2" NPT(F) Suction and Discharge • 3/4" NPT(F) Air Inlet Port • 3/4" NPT(F) Air Exhaust Port (not shown)