

# DATA SHEET

## Specifications & Performance

Certified Quality



Quality System  
ISO 9001 Certified



Environmental Management System  
ISO 14001 Certified

Member of:  
**Hydraulic**  
INSTITUTE

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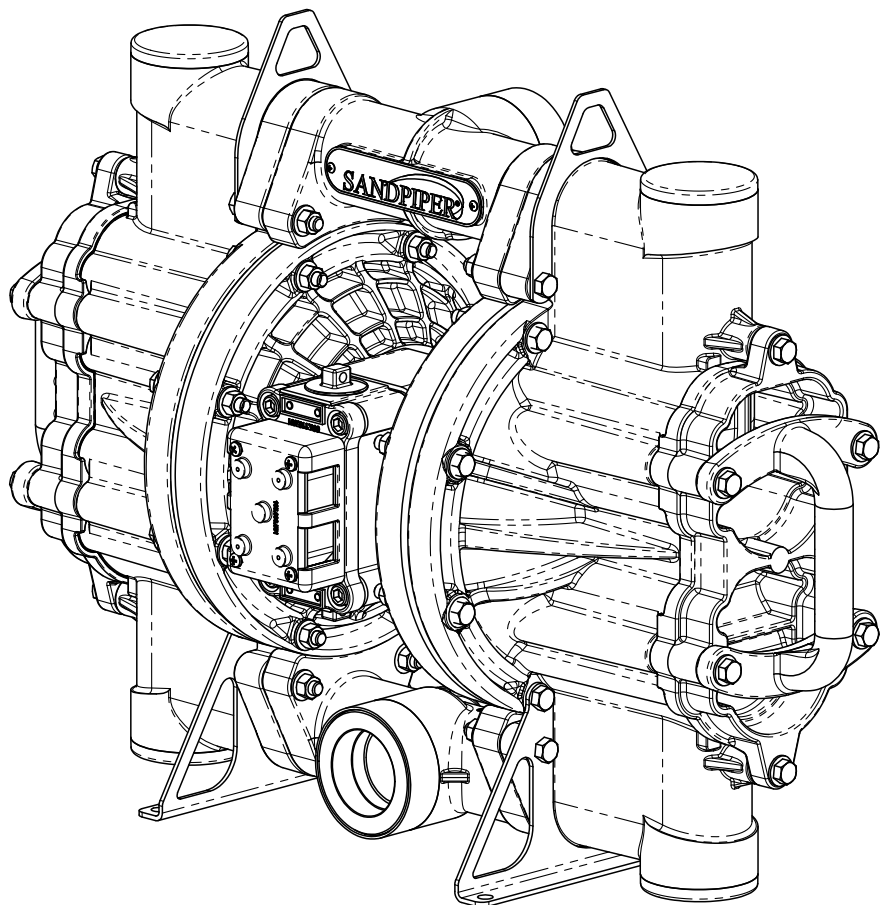


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# Model HD20F

## Non-Metallic Flap Valve

### Design Level 1

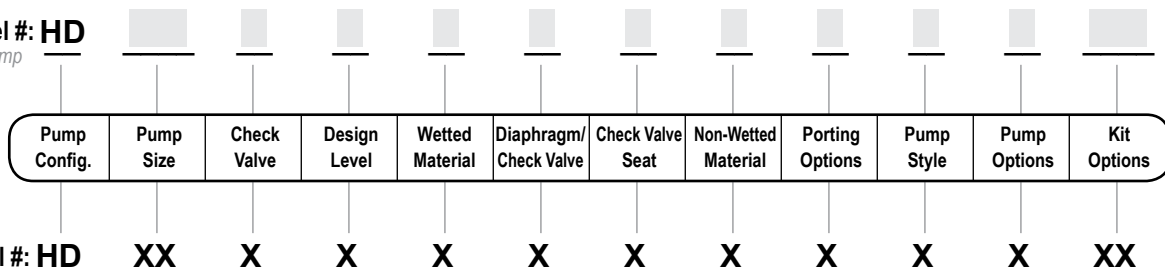


**SANDPIPER**®  
A WARREN RUPP, INC. BRAND  
SANDPIPERPUMP.COM

# Explanation of Pump Nomenclature

Your Model #: **HD**

(fill in from pump nameplate)



## Pump Configuration

**HD** Heavy Duty

## Pump Size

**20** 2"

## Check Valve Type

**F** Flap Valve

## Design Level

**1** Design Level

## Wetted Material

**P** Polypropylene / Glass Filled Polypropylene

## Diaphragm/Check Valve Materials

**B** Buna-N / Buna-N

**E** EPDM / EPDM

**H** Hytrel / Hytrel

**J** Santoprene / EPDM

**N** Neoprene / Neoprene

**P** Neoprene / Urethane

**V** FKM / FKM

## Check Valve Seat

**S** Stainless

## Non-Wetted Material Options

**P** Glass Filled Polypropylene

## Porting Options

**N** NPT Female

**B** BSPT Female

**U** Universal Flange (Fits ANSI & DIN)

## Pump Style

**S** Standard

## Pump Options

**0** Integral Muffler

**1** Sound Dampening Muffler

**2** Mesh 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

**SP.** Stroke Indicator Pins

**SB.** Stainless Brass Main Valve

Your Serial #: (fill in from pump nameplate) \_\_\_\_\_

# Performance

## HD20F NON-METALLIC FLAP VALVE

### SUCTION/DISCHARGE PORT SIZE

- 2" NPT (F)
- 2" BSPT (F)
- 2" ANSI / DIN Flange

### CAPACITY

- 0 to 150 gallons per minute (0 to 567 liters per minute)

### AIR DISTRIBUTION VALVE

- No-lube, no-stall design

### SOLIDS-HANDLING

- Up to 1.8 in. (45.7mm)

### HEADS UP TO

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

### MAXIMUM OPERATING PRESSURE

- 100 psi (7 bar)

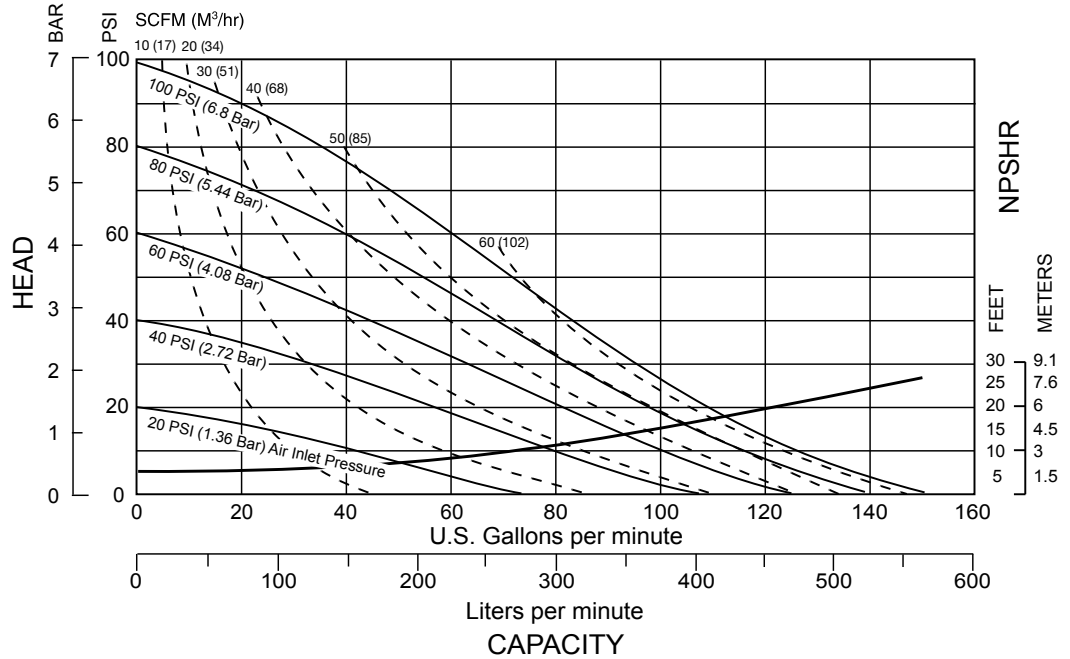
### DISPLACEMENT/STROKE

- .50 Gallon / 1.9 liter

### WEIGHTS

- Pump: 53 lbs. (24kg)
- Shipping: 70 lbs. (31.7kg)

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

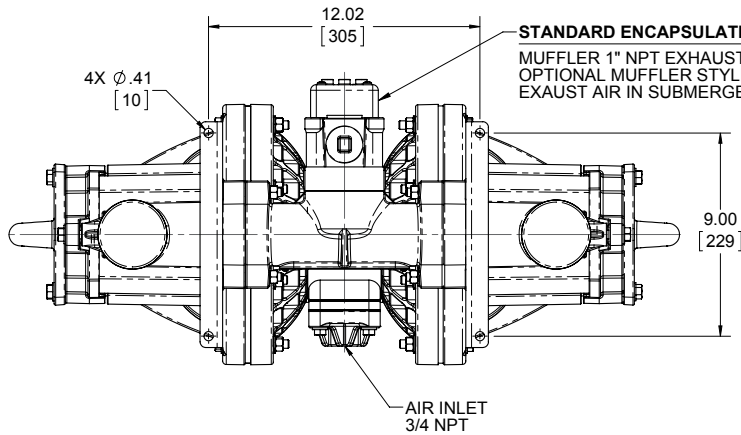
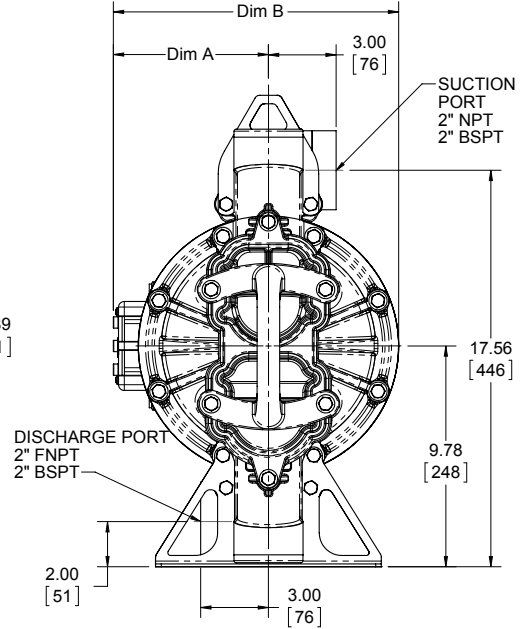
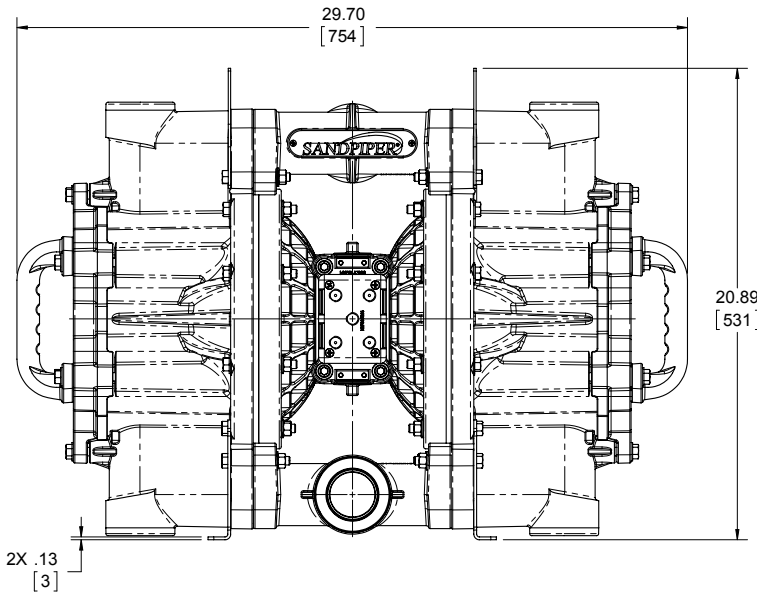
Material Profile:	Operating Temperatures:		Polypropylene: A thermoplastic polymer. Moderate tensile and flex strength. Resists strong acids and alkali. Attacked by chlorine, fuming nitric acid and other strong oxidizing agents.	180°F	32°F
	Max.	Min.		82°C	0°C
<b>CAUTION!</b> Operating temperature limitations are as follows: <b>Conductive Acetal:</b> 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	<b>PVDF:</b> (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
<b>EPDM:</b> 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	<b>Santoprene®:</b> Injection molded thermoplastic elastomer with no fabric layer. Long mechanical flex life. Excellent abrasion resistance.	275°F 135°C	-40°F -40°C
<b>FKM:</b> (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	<b>UHMW PE:</b> 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
<b>Hytrel®:</b> Good on acids, bases, amines and glycols at room temperatures only.	220°F 104°C	-20°F -29°C	<b>Urethane:</b> Shows good resistance to abrasives. Has poor resistance to most solvents and oils.	150°F 66°C	32°F 0°C
<b>Neoprene:</b> 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	<b>Virgin PTFE:</b> (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
<b>Nitrile:</b> 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	<b>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.</b>		
<b>Nylon:</b> 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	<b>Metals:</b>		
			<b>Alloy C:</b> Equal to ASTM494 CW-12M-1 specification for nickel and nickel alloy.		
			<b>Stainless Steel:</b> 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.

# Dimensional Drawings

## HD20F Non-Metallic

Dimensions in Inches [ ] in Millimeters. Dimensional tolerance: +/- 1/8" [ ] +/- 3mm




**STANDARD ENCAPSULATED**  
MUFFLER 1" NPT EXHAUST PORT FOR  
OPTIONAL MUFFLER STYLES OR PIPING  
EXHAUST AIR IN SUBMERGED APPLICATIONS

DIMENSIONAL TOLERANCE ±.13 [3]

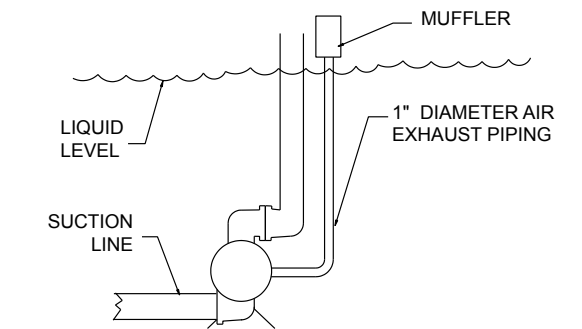
MUFFLER OPTION	DIM "A"	DIM "B"
INTEGRAL MUFFLER	6.88 [175]	12.65 [321]
MESH MUFFLER	9.38 [238]	15.15 [385]
SOUND DAMPENING MUFFLER		

**⚠ IMPORTANT**



When the pumped product source is at a higher level than the pump (flooded suction condition), pipe the exhaust higher than the product source to prevent siphoning spills. In the event of a diaphragm failure a complete rebuild of the center section is recommended.

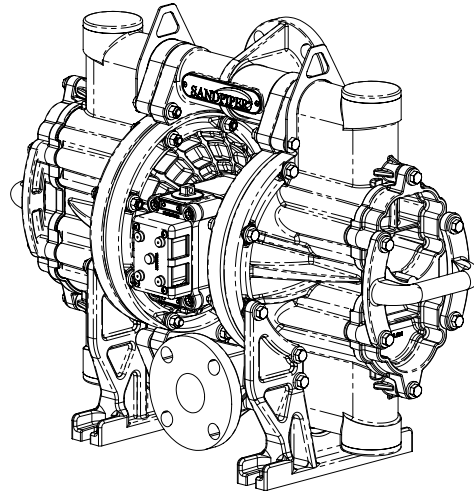
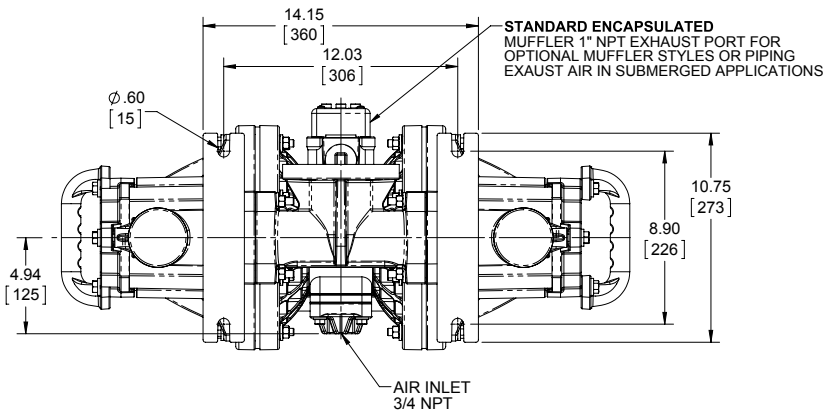
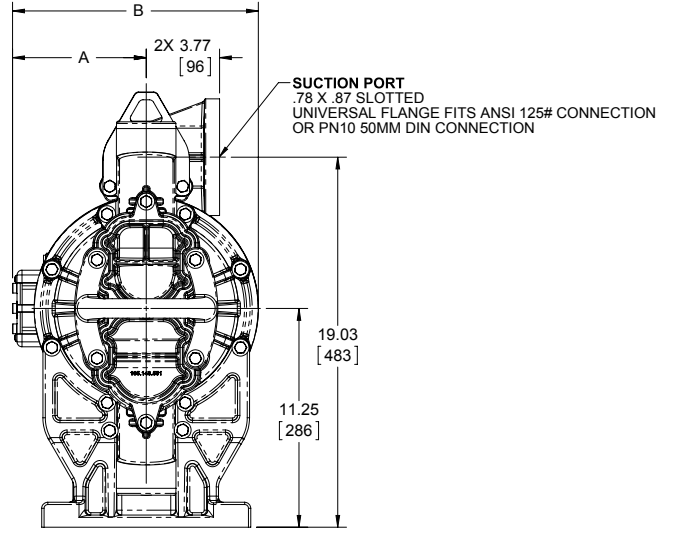
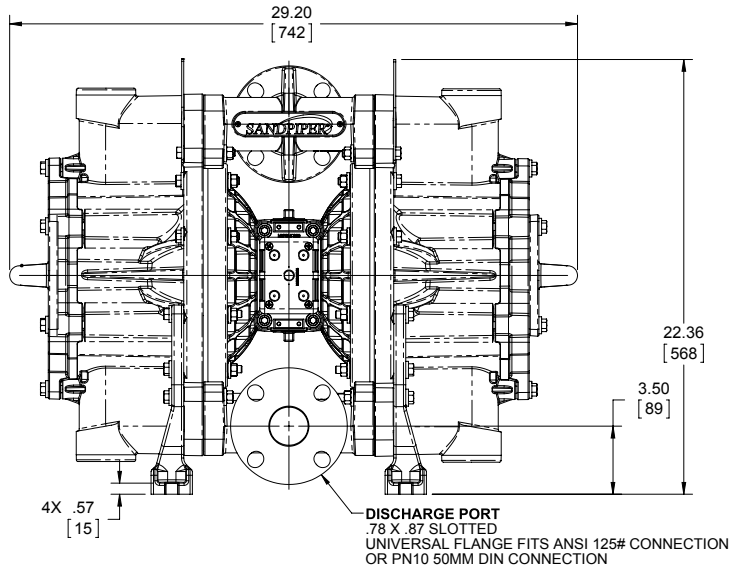
### SUBMERGED ILLUSTRATION



# Dimensional Drawings

## HD20F Non-Metallic Flanged Manifold

Dimensions in Inches [ ] in Millimeters. Dimensional tolerance: +/- 1/8" [ ] +/- 3mm

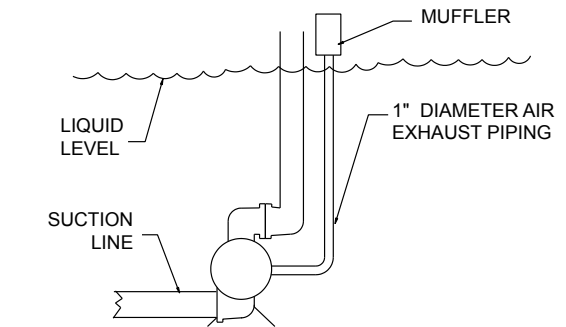


### MODEL HD20F

DIMENSIONAL TOLERANCE ±.13 [3]

MUFFLER OPTION	DIM "A"	DIM "B"
INTEGRAL MUFFLER	6.88 [175]	12.65 [321]
THREADED MUFFLER	9.38 [238]	15.15 [385]

### SUBMERGED ILLUSTRATION



### IMPORTANT



When the pumped product source is at a higher level than the pump (flooded suction condition), pipe the exhaust higher than the product source to prevent siphoning spills. In the event of a diaphragm failure a complete rebuild of the center section is recommended.

# 5 - YEAR Limited Product Warranty

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

~ See [sandpiperpump.com/content/warranty-certifications](http://sandpiperpump.com/content/warranty-certifications) for complete warranty, including terms and conditions, limitations and exclusions. ~

**WARREN  
RUPP, INC.**

## Declaration of Conformity

Manufacturer: Warren Rupp, Inc., 800 N. Main Street  
Mansfield, Ohio, 44902 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

David Roseberry  
Printed name of authorized person

Revision Level: F

October 20, 2005  
Date of issue

Engineering Manager  
Title

August 23, 2012  
Date of revision

**IBEX**

**CE**