Versa-Matic

Service & Operating Manual

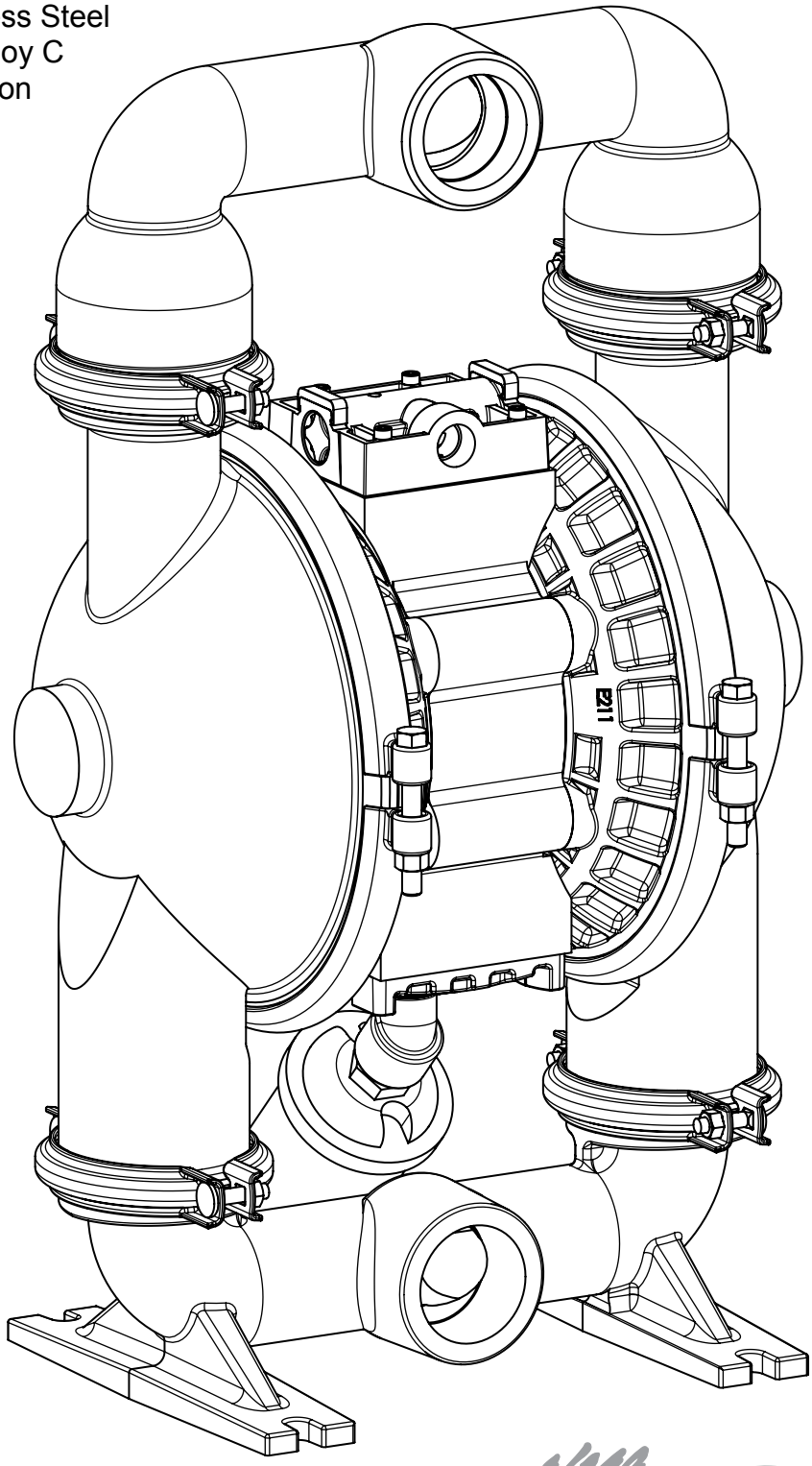
Original Instructions

2" Ultra-Matic Metallic Clamped

U2

U2 Metallic Pumps

- Aluminum
- Stainless Steel
- Hastelloy C
- Cast Iron



VERSA-MATIC®

VERSA-MATIC® • Warren Rupp, Inc. • A Unit of IDEX Corporation
800 North Main Street, Mansfield, OH 44902 USA • Phone: (419) 526-7296 • **www.versamatic.com**

Safety Information

⚠ IMPORTANT

Read the safety warnings and instructions in this manual before pump installation and start-up. Failure to comply with the recommendations stated in this manual could damage the pump and void factory warranty.

When the pump is used for materials that tend to settle out or solidify, the pump should be flushed after each use to prevent damage. In freezing temperatures the pump should be completely drained between uses.

⚠ CAUTION

Before pump operation, inspect all fasteners for loosening caused by gasket creep. Retighten loose fasteners to prevent leakage. Follow recommended torques stated in this manual.

Nonmetallic pumps and plastic components are not UV stabilized. Ultraviolet radiation can damage these parts and negatively affect material properties. Do not expose to UV light for extended periods of time.

WARNING
Pump not designed, tested or certified to be powered by compressed natural gas. Powering the pump with natural gas will void the warranty.

WARNING
The use of non-OEM replacement parts will void (or negate) agency certifications, including CE, ATEX, CSA, 3A and EC1935 compliance (Food Contact Materials). Warren Rupp, Inc. cannot ensure nor warrant non-OEM parts to meet the stringent requirements of the certifying agencies.

⚠ WARNING

When used for toxic or aggressive fluids, the pump should always be flushed clean prior to disassembly.

Before maintenance or repair, shut off the compressed air line, bleed the pressure, and disconnect the air line from the pump. Be certain that approved eye protection and protective clothing are worn at all times. Failure to follow these recommendations may result in serious injury or death.

Airborne particles and loud noise hazards. Wear eye and ear protection.

In the event of diaphragm rupture, pumped material may enter the air end of the pump, and be discharged into the atmosphere. If pumping a product that is hazardous or toxic, the air exhaust must be piped to an appropriate area for safe containment.

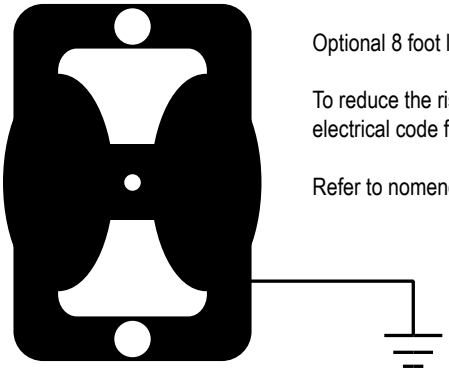
Take action to prevent static sparking. Fire or explosion can result, especially when handling flammable liquids. The pump, piping, valves, containers and other miscellaneous equipment must be properly grounded.

This pump is pressurized internally with air pressure during operation. Make certain that all fasteners are in good condition and are reinstalled properly during reassembly.

Use safe practices when lifting

Grounding the Pump

To be fully groundable, the pumps must be ATEX Compliant. Refer to the nomenclature page for ordering information.



Optional 8 foot long (244 centimeters) Ground Strap is available for easy ground connection.

To reduce the risk of static electrical sparking, this pump must be grounded. Check the local electrical code for detailed grounding instruction and the type of equipment required.

Refer to nomenclature page for ordering information.

⚠ WARNING

Take action to prevent static sparking. Fire or explosion can result, especially when handling flammable liquids. The pump, piping, valves, containers or other miscellaneous equipment must be grounded.

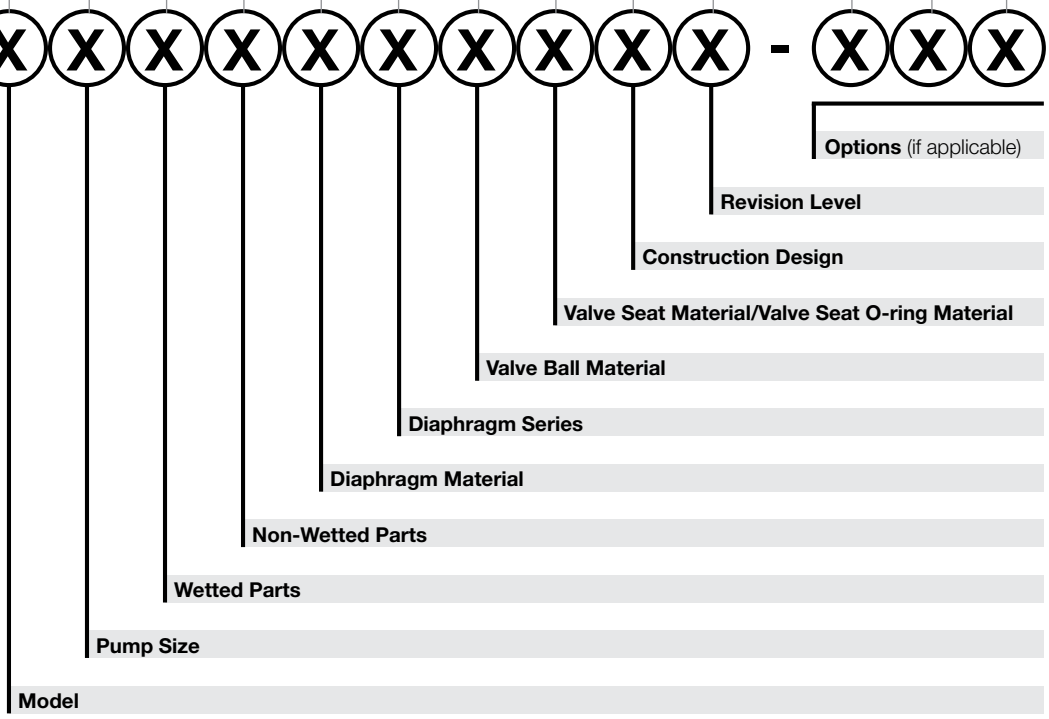
Table of Contents

Explanation of Pump Nomenclature

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

Your Model #:
(fill in from pump nameplate)

Model #: X X X X X X X X X X - X X X



Model
E Elima-Matic
U Ultra-Matic
V V-Series

Pump Size
6 1/4"
8 3/8"
5 1/2"
7 3/4"
1 1"
4 1-1/4" or 1-1/2"
2 2"
3 3"

Wetted Parts
A Aluminum
C Cast Iron
S Stainless Steel
H Alloy C
P Polypropylene
K Kynar
G Groundable Acetal
B Aluminum (screen mount)

Non-Wetted Parts
A Aluminum
S Stainless Steel
P Polypropylene
G Groundable Acetal
Z PTFE-coated Aluminum
J Nickel-plated Aluminum
C Cast Iron
Q Epoxy-Coated Aluminum

Diaphragm Material
1 Neoprene
2 Nitrile (Nitrile)
3 FKM (Fluorocarbon)
4 EPDM
5 PTFE
6 Santoprene XL
7 Hytrel
Y FDA Santoprene

Diaphragm Series
R Rugged
D Dome
X Thermo-Matic
T Tef-Matic (2-piece)
B Versa-Tuff (1-piece)
F FUSION (one-piece integrated plate)

Valve Ball Material Valve
1 Neoprene
2 Nitrile
3 (FKM) Fluorocarbon
4 EPDM
5 PTFE
6 Santoprene XL
7 Hytrel
8 Polyurethane
A Acetal
S Stainless Steel
Y FDA Santoprene

Seat/Valve Seat O-Ring Material
1 Neoprene
2 Nitrile
3 (FKM) Fluorocarbon
4 EPDM
5 PTFE
6 Santoprene XL
7 Hytrel
8 Polyurethane
A Aluminum w/ PTFE O-Rings
S Stainless Steel w/ PTFE O-Rings
C Carbon Steel w/ PTFE O-Rings
H Alloy C w/ PTFE O-Rings
T PTFE Encapsulated Silicone O-Rings
Y FDA Santoprene

Construction Design
9 Bolted
0 Clamped

Design Level
A
C

Miscellaneous Options
B BSP Tapered Thread
CP Center Port
ATEX ATEX Compliant
FP Food Processing
SP Sanitary Pump
HP High Pressure
OE Original Elima-Matic
F Flap Valve
HD Horizontal Discharge
3A 3-A Certified
UL UL Listed
OB Oil Bottle

Materials

Material Profile:	Operating Temperatures:	
⚠ *CAUTION! Operating temperature limitations are as follows:*	Max.	Min.
Conductive Acetal: Tough, impact resistant, ductile. Good abrasion resistance and low friction surface. Generally inert, with good chemical resistance except for strong acids and oxidizing agents.	190°F 88°C	-20°F -29°C
EPDM: Shows very good water and chemical resistance. Has poor resistance to oils and solvents, but is fair in ketones and alcohols.	280°F 138°C	-40°F -40°C
FKM: (Fluorocarbon) Shows good resistance to a wide range of oils and sovents; especially all aliphatic, aromatic and halogenated hydrocarbons, acids, animal and vegetable oils. Hot water or hot aqueous solutions (over 70°F) 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.

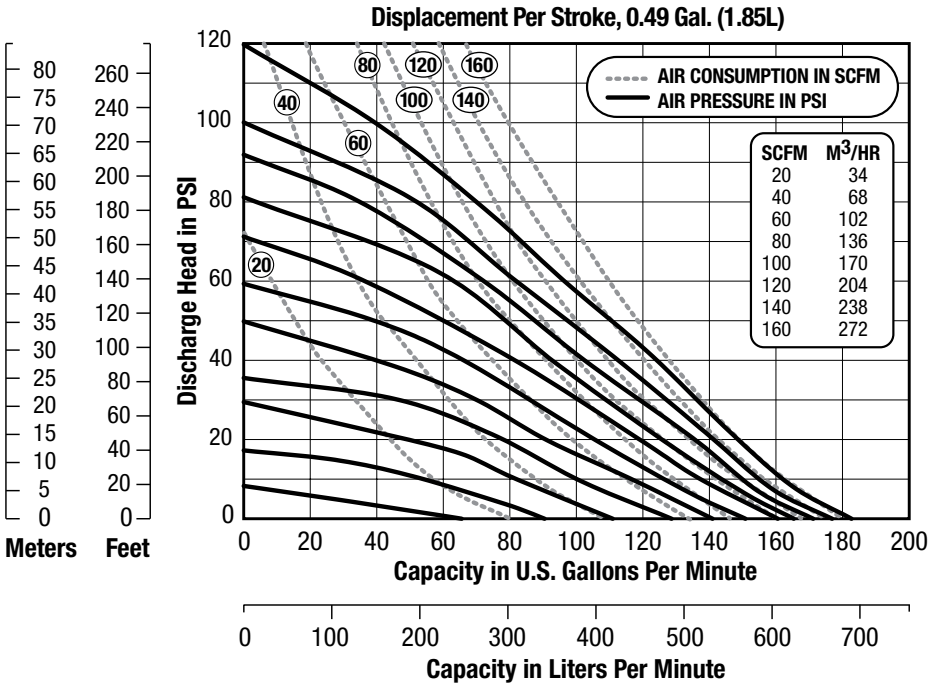
Stainless Steel: Equal to or exceeding ASTM specification A743 CF-8M for corrosion resistant iron chromium, iron chromium nickel and nickel based alloy castings for general applicaitons. Commonly referred to as 316 Stainless Steel in the pump industry.

For specific applications, always consult the Chemical Resistance Chart.

Performance

U2 - 2" Metallic Clamped Pump

Flow Rate
Adjustable to . . . . . 0-182 gpm (689 lpm)
Port Size
Suction . . . . . .2" Female NPT (BSP)
Discharge . . . . . .2" Female NPT (BSP)
Air Inlet . . . . . 1/2" NPT
Air Exhaust . . . . . 3/4" NPT
Suction Lift (Dry)
Rubber . . . . . .20' (6.10 m)
PTFE . . . . . .10' (3.05 m)
Max Solid Size (Diameter)
. . . . . .1/2" (6 mm)
Shipping Weights
Aluminum . . . . . 69 lbs (31 kg)
Cast Iron. . . . . 114 lbs (52 kg)
Hastelloy C. . . . . 124 lbs (56 kg)
Stainless Steel . . . . . 114 lbs (52 kg)



NOTE:For U2 pumps fitted with PTFE diaphragms, reduce water discharge figures by 20%.Suction lift is reduced to 10' (3.05m) dry and 20' (6.10m) wet.

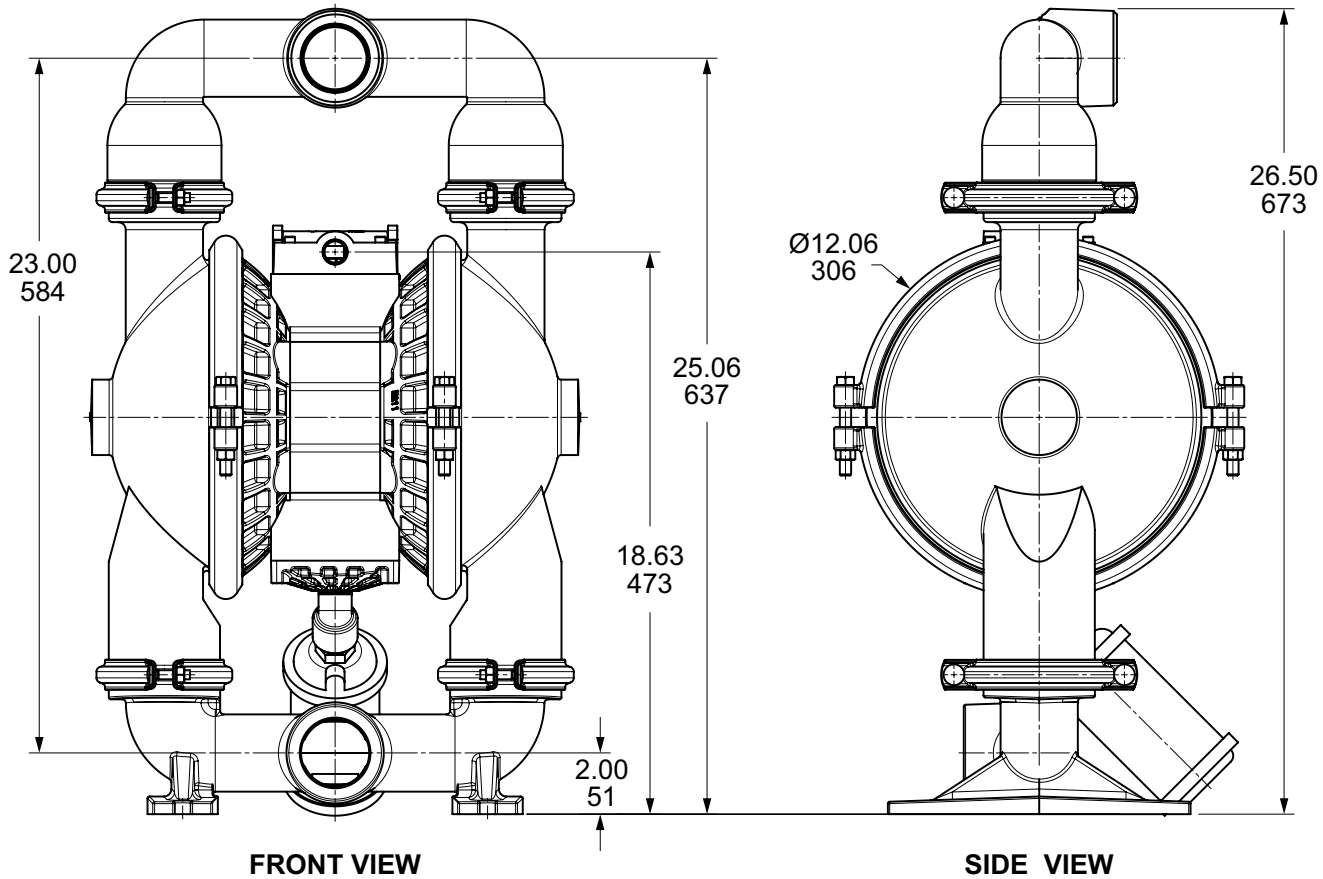
CAUTION: Do not exceed 125 psig (8.5 bars) air supply or liquid pressure.

Dimensional Drawings

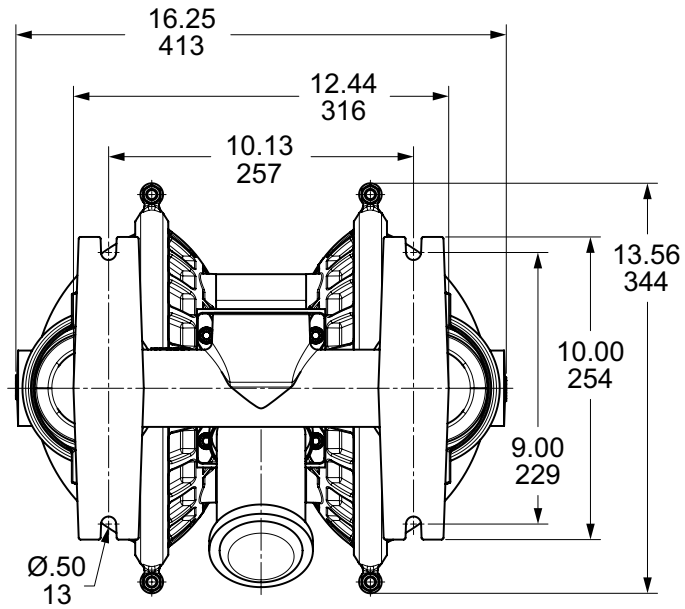
U2 Metallic Clamped

Dimensions in inches (mm dimensions in brackets)

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

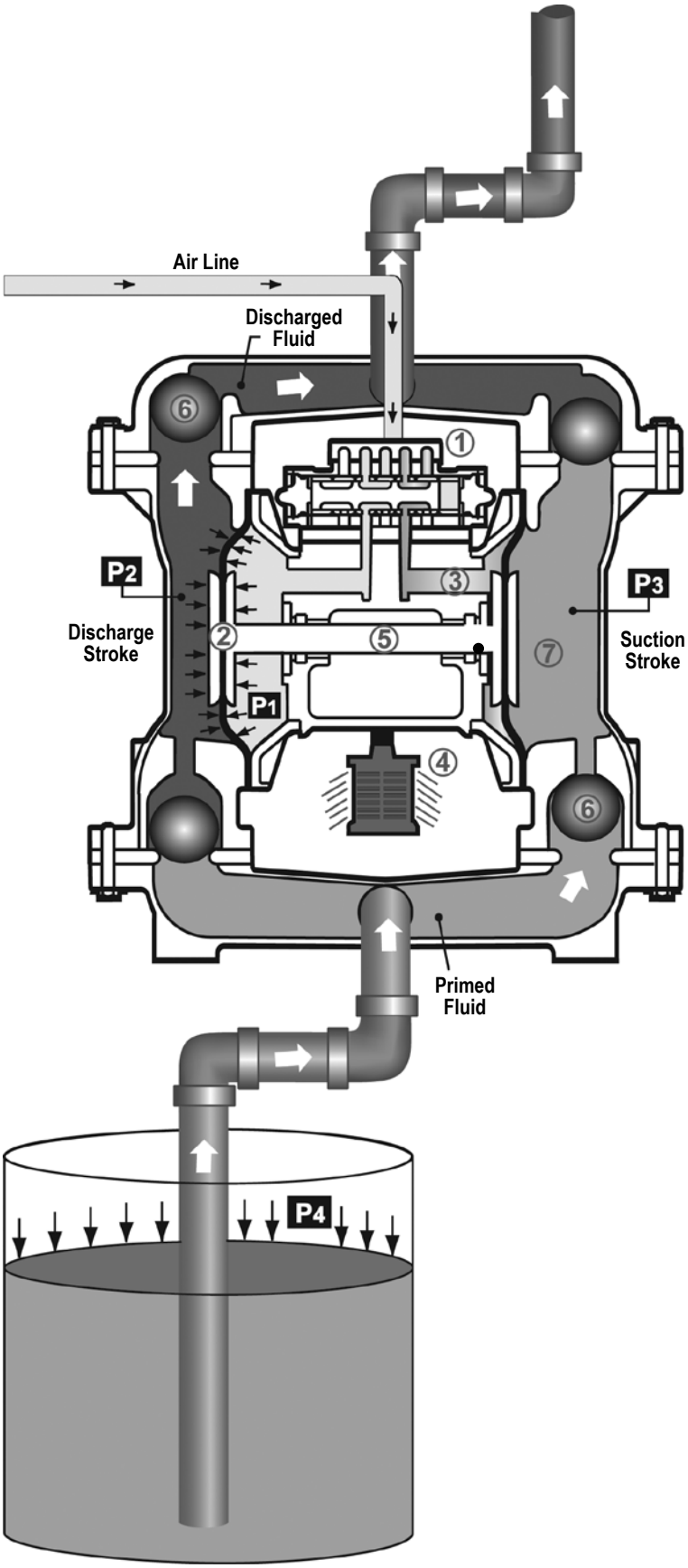


FRONT VIEW **SIDE VIEW**



BOTTOM VIEW

Principle of Pump Operation



Air-Operated Double Diaphragm (AODD) pumps are powered by compressed air or nitrogen.

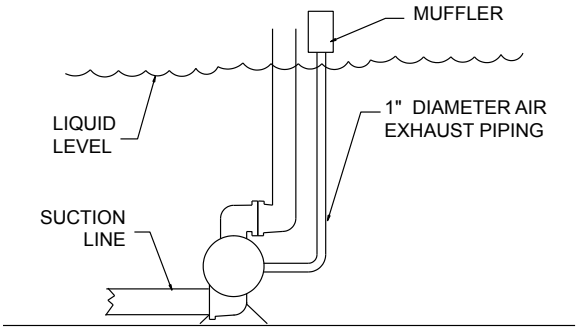
The main directional (air) control valve ① distributes compressed air to an air chamber, exerting uniform pressure over the inner surface of the diaphragm ②. At the same time, the exhausting air ③ from behind the opposite diaphragm is directed through the air valve assembly(s) to an exhaust port ④.

As inner chamber pressure **(P1)** exceeds liquid chamber pressure **(P2)**, the rod ⑤ connected diaphragms shift together creating discharge on one side and suction on the opposite side. The discharged and primed liquid's directions are controlled by the check valves (ball or flap)⑥ orientation.

The pump primes as a result of the suction stroke. The suction stroke lowers the chamber pressure **(P3)** increasing the chamber volume. This results in a pressure differential necessary for atmospheric pressure **(P4)** to push the fluid through the suction piping and across the suction side check valve and into the outer fluid chamber ⑦.

Suction (side) stroking also initiates the reciprocating (shifting, stroking or cycling) action of the pump. The suction diaphragm's movement is mechanically pulled through its stroke. The diaphragm's inner plate makes contact with an actuator plunger aligned to shift the pilot signaling valve. Once actuated, the pilot valve sends a pressure signal to the opposite end of the main directional air valve, redirecting the compressed air to the opposite inner chamber.

SUBMERGED ILLUSTRATION

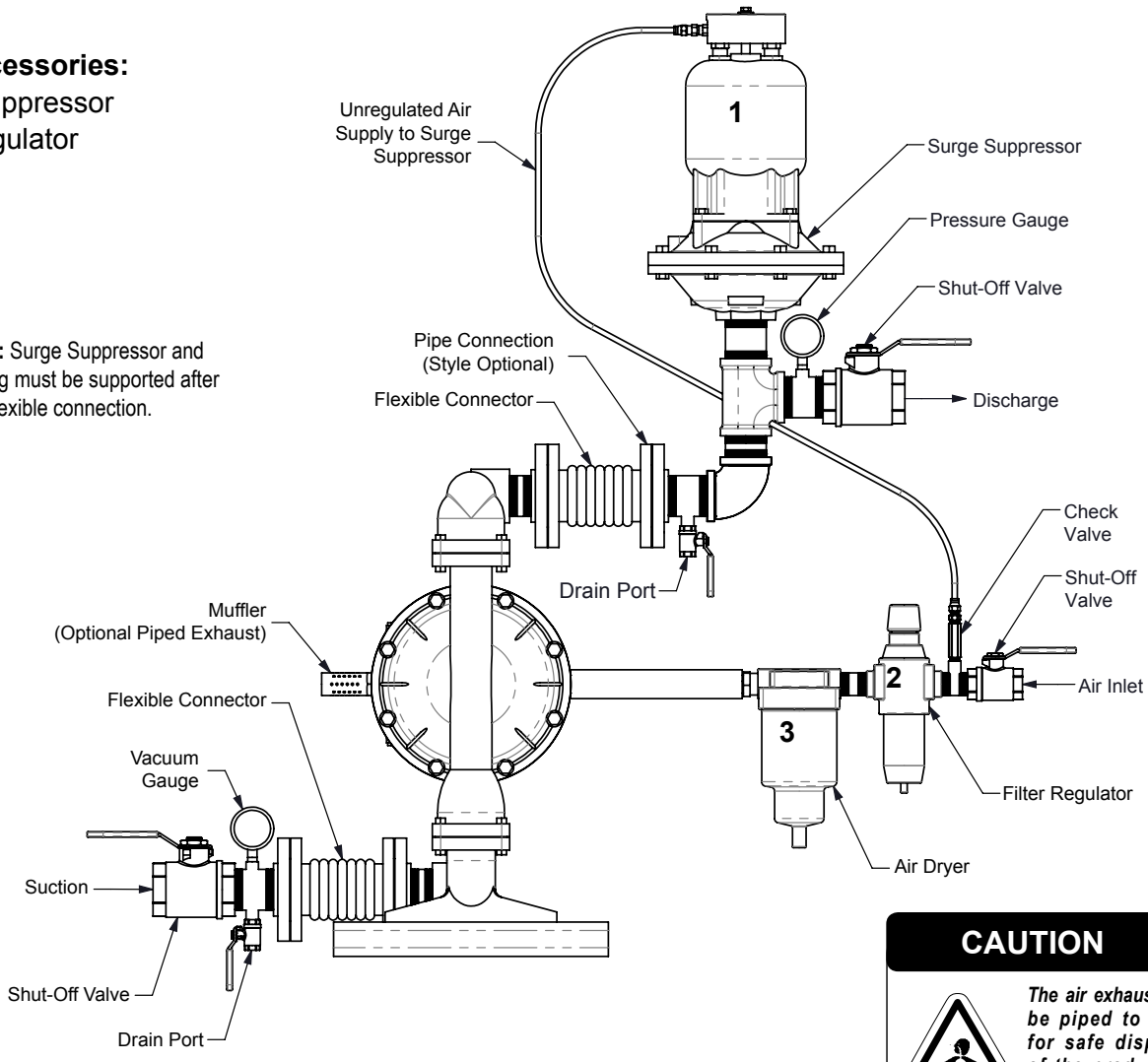


Pump can be submerged if the pump materials of construction are compatible with the liquid being pumped. The air exhaust must be piped above the liquid level. When the pumped product source is at a higher level than the pump (flooded suction condition), pipe the exhaust higher than the product source to prevent siphoning spills.

Recommended Installation Guide

Available Accessories:

1. Surge Suppressor
2. Filter/Regulator
3. Air Dryer



Note: Surge Suppressor and Piping must be supported after the flexible connection.

CAUTION

The air exhaust should be piped to an area for safe disposition of the product being pumped, in the event of a diaphragm failure.

Installation And Start-Up
Locate the pump as close to the product being pumped as possible. Keep the suction line length and number of fittings to a minimum. Do not reduce the suction line diameter.

Air Supply
Connect the pump air inlet to an air supply with sufficient capacity and pressure to achieve desired performance. A pressure regulating valve should be installed to insure air supply pressure does not exceed recommended limits.

Air Valve Lubrication
The air distribution system is designed to operate WITHOUT lubrication. This is the standard mode of operation. If lubrication is desired, install an air line lubricator set to deliver one drop of SAE 10 non-detergent oil for every 20 SCFM (9.4 liters/sec.) of air the pump consumes. Consult the Performance Curve to determine air consumption.

Air Line Moisture
Water in the compressed air supply may cause icing or freezing of the exhaust air, causing the pump to cycle erratically or stop operating. Water in the air supply can be reduced by using a point-of-use air dryer.

Air Inlet And Priming
To start the pump, slightly open the air shut-off valve. After the pump primes, the air valve can be opened to increase air flow as desired. If opening the valve increases cycling rate, but does not increase the rate of flow, cavitation has occurred. The valve should be closed slightly to obtain the most efficient air flow to pump flow ratio.

Troubleshooting Guide

Symptom:	Potential Cause(s):	Recommendation(s):
Pump Cycles Once	Deadhead (system pressure meets or exceeds air supply pressure).	Increase the inlet air pressure to the pump. Pump is designed for 1:1 pressure ratio at zero flow. (Does not apply to high pressure 2:1 units).
	Air valve or intermediate gaskets installed incorrectly.	Install gaskets with holes properly aligned.
	Bent or missing actuator plunger.	Remove pilot valve and inspect actuator plungers.
Pump Will Not Operate / Cycle	Pump is over lubricated.	Set lubricator on lowest possible setting or remove. Units are designed for lube free operation.
	Lack of air (line size, PSI, CFM).	Check the air line size and length, compressor capacity (HP vs. cfm required).
	Check air distribution system.	Disassemble and inspect main air distribution valve, pilot valve and pilot valve actuators.
	Discharge line is blocked or clogged manifolds.	Check for inadvertently closed discharge line valves. Clean discharge manifolds/piping.
	Deadhead (system pressure meets or exceeds air supply pressure).	Increase the inlet air pressure to the pump. Pump is designed for 1:1 pressure ratio at zero flow. (Does not apply to high pressure 2:1 units).
	Blocked air exhaust muffler.	Remove muffler screen, clean or de-ice, and re-install.
	Pumped fluid in air exhaust muffler.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.
	Pump chamber is blocked.	Disassemble and inspect wetted chambers. Remove or flush any obstructions.
Pump Cycles and Will Not Prime or No Flow	Cavitation on suction side.	Check suction condition (move pump closer to product).
	Check valve obstructed. Valve ball(s) not seating properly or sticking.	Disassemble the wet end of the pump and manually dislodge obstruction in the check valve pocket. Clean out around valve ball cage and valve seat area. Replace valve ball or valve seat if damaged. Use heavier valve ball material.
	Valve ball(s) missing (pushed into chamber or manifold).	Worn valve ball or valve seat. Worn fingers in valve ball cage (replace part). Check Chemical Resistance Guide for compatibility.
	Valve ball(s)/seat(s) damaged or attacked by product.	Check Chemical Resistance Guide for compatibility.
	Check valve and/or seat is worn or needs adjusting.	Inspect check valves and seats for wear and proper setting. Replace if necessary.
	Suction line is blocked.	Remove or flush obstruction. Check and clear all suction screens or strainers.
	Excessive suction lift.	For lifts exceeding 20' of liquid, filling the chambers with liquid will prime the pump in most cases.
	Suction side air leakage or air in product.	Visually inspect all suction-side gaskets and pipe connections.
	Pumped fluid in air exhaust muffler.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.
Pump Cycles Running Sluggish/Stalling, Flow Unsatisfactory	Over lubrication.	Set lubricator on lowest possible setting or remove. Units are designed for lube free operation.
	Icing.	Remove muffler screen, de-ice, and re-install. Install a point of use air drier.
	Clogged manifolds.	Clean manifolds to allow proper air flow
	Deadhead (system pressure meets or exceeds air supply pressure).	Increase the inlet air pressure to the pump. Pump is designed for 1:1 pressure ratio at zero flow. (Does not apply to high pressure 2:1 units).
	Cavitation on suction side.	Check suction (move pump closer to product).
	Lack of air (line size, PSI, CFM).	Check the air line size, length, compressor capacity.
	Excessive suction lift.	For lifts exceeding 20' of liquid, filling the chambers with liquid will prime the pump in most cases.
	Air supply pressure or volume exceeds system hd.	Decrease inlet air (press. and vol.) to the pump. Pump is cavitating the fluid by fast cycling.
	Undersized suction line.	Meet or exceed pump connections.
	Restrictive or undersized air line.	Install a larger air line and connection.
	Suction side air leakage or air in product.	Visually inspect all suction-side gaskets and pipe connections.
	Suction line is blocked.	Remove or flush obstruction. Check and clear all suction screens or strainers.
	Pumped fluid in air exhaust muffler.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.
	Check valve obstructed.	Disassemble the wet end of the pump and manually dislodge obstruction in the check valve pocket.
	Check valve and/or seat is worn or needs adjusting.	Inspect check valves and seats for wear and proper setting. Replace if necessary.
	Entrained air or vapor lock in chamber(s).	Purge chambers through tapped chamber vent plugs. Purging the chambers of air can be dangerous.
Product Leaking Through Exhaust	Diaphragm failure, or diaphragm plates loose.	Replace diaphragms, check for damage and ensure diaphragm plates are tight.
	Diaphragm stretched around center hole or bolt holes.	Check for excessive inlet pressure or air pressure. Consult Chemical Resistance Chart for compatibility with products, cleaners, temperature limitations and lubrication.
Premature Diaphragm Failure	Cavitation.	Enlarge pipe diameter on suction side of pump.
	Excessive flooded suction pressure.	Move pump closer to product. Raise pump/place pump on top of tank to reduce inlet pressure. Install Back pressure device (Tech bulletin 41r). Add accumulation tank or pulsation dampener.
	Misapplication (chemical/physical incompatibility).	Consult Chemical Resistance Chart for compatibility with products, cleaners, temperature limitations and lubrication.
	Incorrect diaphragm plates or plates on backwards, installed incorrectly or worn.	Check Operating Manual to check for correct part and installation. Ensure outer plates have not been worn to a sharp edge.
Unbalanced Cycling	Excessive suction lift.	For lifts exceeding 20' of liquid, filling the chambers with liquid will prime the pump in most cases.
	Undersized suction line.	Meet or exceed pump connections.
	Pumped fluid in air exhaust muffler.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.
	Suction side air leakage or air in product.	Visually inspect all suction-side gaskets and pipe connections.
	Check valve obstructed.	Disassemble the wet end of the pump and manually dislodge obstruction in the check valve pocket.
	Check valve and/or seat is worn or needs adjusting.	Inspect check valves and seats for wear and proper setting. Replace if necessary.
	Entrained air or vapor lock in chamber(s).	Purge chambers through tapped chamber vent plugs.

For additional troubleshooting tips contact After Sales Support at service.warrenrupp@idexcorp.com or 419-524-8388

Composite Repair Parts List

AIR VALVE ASSEMBLY			
Item	**Description**	**Qty**	**Standard: Polypropylene**
	Air Valve Assembly (Includes items 1-10)	1	E200
1	Valve Body	1	E200A
2	Valve Spool Assembly	1	E200B ASY (Includes U-Cups)
3	Valve Spool U-Cup	2	P98-104A
4	End Cap Assembly	2	E500D ASY (Includes O-Rings)
5	End Cap Staple	2	E500F
6	Staple Retainer	2	E200L
7	Air Diverter	1	E200G
8	Valve Insert	1	E200H
9	Valve Gasket	1	E200J
10	Valve Cap Screw	4	P24-209

AIR END ASSEMBLY				
Item	**Description**	**Qty**	**Standard: Polypropylene / Aluminum**	**Option1: Polypropylene / Stainles**
15	Center Block	1	E210	E210
16	Air Chamber Gasket	2	E212	E212
17	Air Chamber	2	E211	SE211
18	Air Chamber Bolt	12	V302G	V181F
19	Air Chamber Nut	2	V354C	SV354C
20	Air Chamber Washer	12	V302GA	SV302GA
21	Bushing	2	E201MB	E201MB
22	Pilot Shaft	1	E203A	E203A
23	Pilot Shaft Spacer	5	P24-106P	P24-106P
24	Pilot Shaft O-Ring	6	P24-107	P24-107
25	Stop Nut	2	P24-108	P24-108
26	Shaft Retainer – Left	1	E201B-L ASY (Includes O-Rings)	E201B-L ASY (Includes O-Rings)
27	Shaft Retainer – Right (not shown)	1	E201B-R ASY (Includes O-Rings)	E201B-R ASY (Includes O-Rings)
28	Shaft Retainer O-Ring	2	E201B-5	E201B-5
29	Shaft Retainer Screw	8	10-050	10-050
30	Exhaust Valve	2	E202 ASY	E202 ASY
31	Exhaust Sleeve O-Ring	2	560.013.360	560.013.360
32	Retainer Plate Seal	2	P34-403	P34-403
33	Muffler Plate	1	E201H	E201H
34	Muffler Plate Gasket	1	E200J-1	E200J-1
35	Muffler Plate Cap Screw	4	E201G	E201G
36	Muffler Elbow	1	PE201N	PE201N
37	Muffler	1	V20AEM	V20AEM
38	Air Chamber O-Ring	2	P24-107	P24-107

DIAPHRAGM ASSEMBLY						
Item	**Description**	**Qty**	**Rugged**	**Dome**	**Fusion**	**Teflon 2-Piece**
40	Main Shaft	1	P24-103	P24-103	P24-103F	P24-102
41	Diaphragm Shaft Stud	2	N/A	N/A	N/A	V221F
42	Inner Diaphragm Plate	2	V221B	V226B	N/A	V221TI
43	Outer Diaphragm Plate	2	VB221 SVB221 WVB221 HVB221	VB226 SVB226 HVB226	N/A	V221TO SV221TO HV221TO
44	Diaphragm O-Ring	2	V221D	N/A	N/A	N/A
45	Diaphragm	2	V224BN V224N V224ND V224VT V224TPEXL V224TPEFG	V225BN V225N V225ND V225VT V225TPEXL V225TPEFG	V227F	V224TF
46	Back-up Diaphragm	2	N/A	N/A	N/A	V224TFB

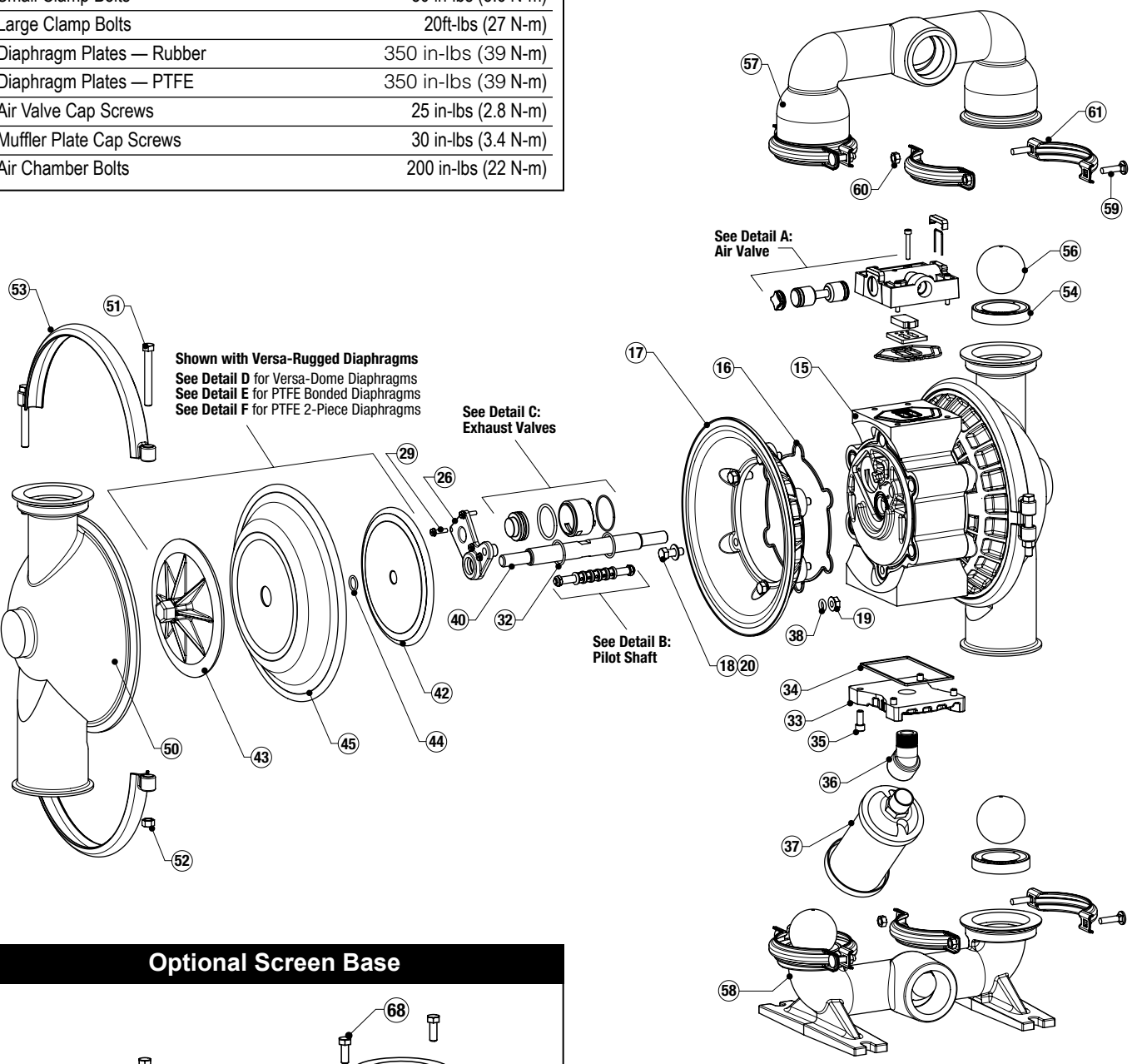
WET END ASSEMBLY						
Item	**Description**	**Qty**	**Standard: Aluminum**	**Option1: Stainless Steel**	**Option 2: Hastelloy**	**Option 3: Cast Iron**
50	Water Chamber	2	V235	SV235	HV235	WV235
51	Large Clamp Bolt	4	V230C	SV230C	SV230C	V230C
52	Large Clamp Nut	4	V230D	SV230D	SV230D	V230D
53	Large Clamp Assembly	4	V230	SV230	SV230	V230
54	Valve Seat	4	V240BN V240N V240ND V240TPEFG V240TF V240VT V240TPEXL V240A SV240 HV240 WV240			
55	Valve Seat O-Ring (not shown)	4	V240T (Use with V240A, SV240, HV240, WV240 only)			
56	Valve Ball	4	V241BN V241N V241ND V241P V241TPEXL V240TPEFG V241VT V240SS			
57	Discharge Manifold	1	V236*	SV236*	HV236*	WV236*
58	Inlet Manifold	1	V237F*	SV237F*	HV237F*	WV237F*
59	Small Clamp Bolt	8	V239B	SV239B	V239B	SV239B
60	Small Clamp Nut	8	V239C	SV239C	V239C	SV239C
61	Small Clamp Assembly	8	V239	SV239	V239	SV239

OPTIONAL SCREEN BASE ASSEMBLY			
Item	**Description**	**Qty**	**Standard: Aluminum**
65	Screen Base	1	V238
66	Screen Base Inlet Manifold	1	V237
67	Inlet Cover	1	V242
68	Screen Base Bolts	3	V238A

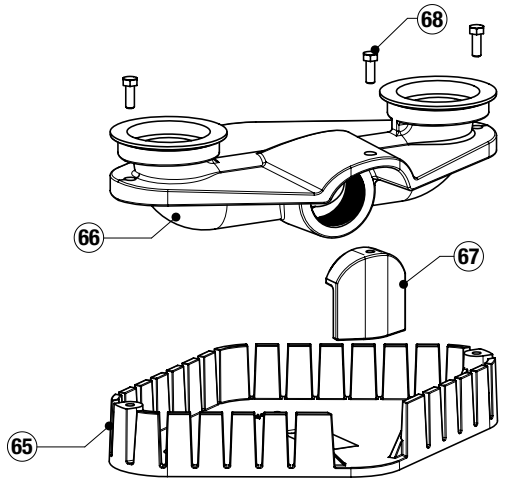
** Add "BSP" for BSP threads.*

Composite Repair Parts Drawing - Exploded View

Torque Settings	
Small Clamp Bolts	50 in-lbs (5.6 N-m)
Large Clamp Bolts	20ft-lbs (27 N-m)
Diaphragm Plates — Rubber	350 in-lbs (39 N-m)
Diaphragm Plates — PTFE	350 in-lbs (39 N-m)
Air Valve Cap Screws	25 in-lbs (2.8 N-m)
Muffler Plate Cap Screws	30 in-lbs (3.4 N-m)
Air Chamber Bolts	200 in-lbs (22 N-m)



Optional Screen Base

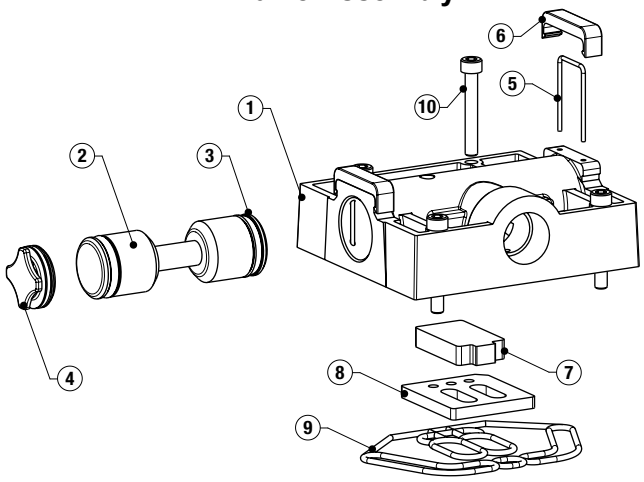


3: EXP VIEW

Composite Repair Parts Drawing - Detail Views

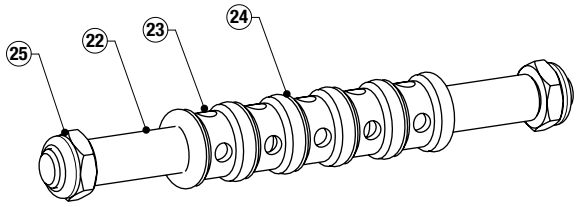
Detail A

Air Valve Assembly



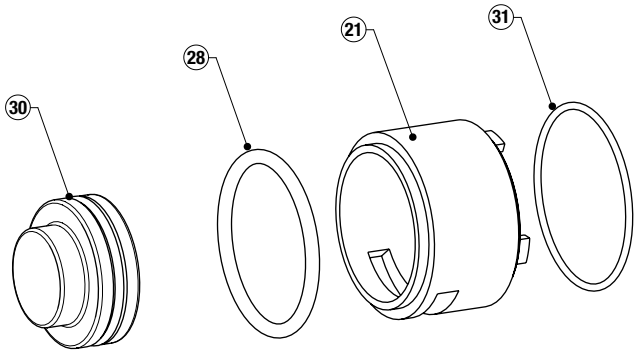
Detail B

Pilot Shaft Assembly



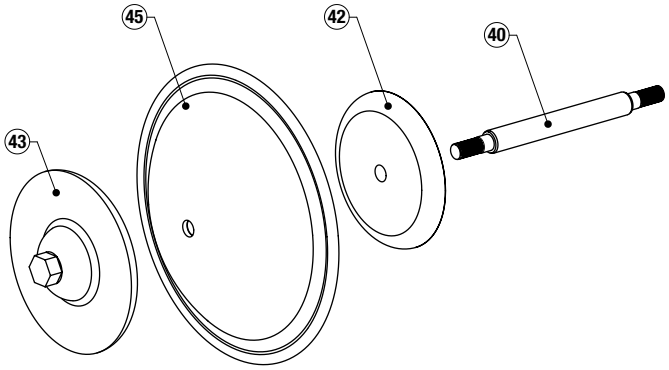
Detail C

Exhaust Valve Assembly



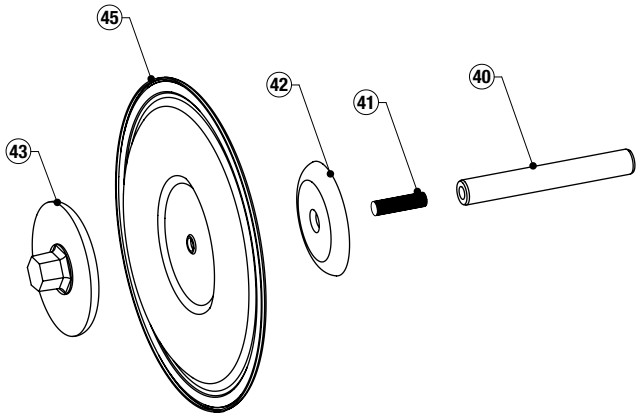
Detail D

Versa-Dome Diaphragms



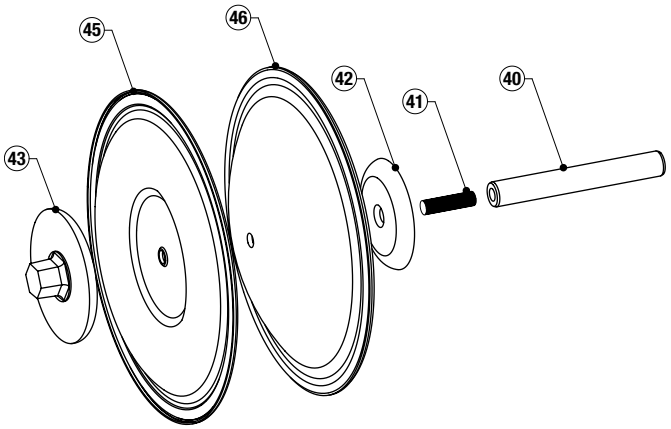
Detail E

PTFE Bonded Diaphragms



Detail F

PTFE 2-Piece Diaphragms



Repair Kits

AIR VALVE KIT: U2 AV KIT		
Part #	**Description**	**Qty.**
P98-104A	Valve Spool O-Ring	2
E200J	Valve Gasket	1
E200G	Air Diverter	1
E200H	Valve Insert	1

PILOT VALVE KIT: U2 PV Kit		
Part #	**Description**	**Qty.**
P24-107	Pilot Shaft O-Ring	6
P24-106P	Pilot Shaft Spacer	5
P24-108	Stop Nut	2
P24-403	Main Shaft O-Ring	2

5 - YEAR Limited Product Warranty

Quality System ISO9001 Certified • Environmental Management Systems ISO14001 Certified

Versa-Matic warrants to the original end-use purchaser that no product sold by Versa-Matic that bears a Versa-Matic 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 Versa-Matic's factory.

The use of non-OEM replacement parts will void (or negate) agency certifications, including CE, ATEX, CSA, 3A and EC1935 compliance (Food Contact Materials). Warren Rupp, Inc. cannot ensure nor warrant non-OEM parts to meet the stringent requirements of the certifying agencies.

~ See complete warranty at http://www.versamatic.com/pdfs/VM%20Product%20Warranty.pdf ~

DECLARATION OF CONFORMITY

DECLARATION DE CONFORMITE • DECLARACION DE CONFORMIDAD • ERKLÄRUNG BEZÜGLICH EINHALTUNG DER VORSCHRIFTEN
DICHIARAZIONE DI CONFORMITÀ • CONFORMITEITSVERKLARING • DEKLARATION OM ÖVERENSSTÄMMELSE
EF-OVERENSSTEMMELSESERKLÆRING • VAATIMUSTENMUKAISUUSVAKUUTUS • SAMSVARSERKLÄRING
DECLARAÇAO DE CONFORMIDADE

MANUFACTURED BY:
FABRIQUE PAR:
FABRICADA POR:
HERGESTELLT VON:
FABBRICATO DA:
VERVAARDIGD DOOR:
TILLVERKAD AV:
FABRIKANT:
VALMISTAJA:
PRODUSENT:
FABRICANTE:

VERSA-MATIC®
Warren Rupp, Inc.
A Unit of IDEX Corporation
800 North Main Street
P.O. Box 1568
Mansfield, OH 44901-1568 USA

Tel: 419-526-7296
Fax: 419-526-7289

PUMP MODEL SERIES: E SERIES, V SERIES, VT SERIES, VSMA3, SPA15, RE SERIES AND U2 SERIES

This product complies with the following European Community Directives:
Ce produit est conforme aux directives de la Communauté européenne suivantes:
Este producto cumple con las siguientes Directrices de la Comunidad Europea:
Dieses produkt erfüllt die folgenden Vorschriften der Europäischen Gemeinschaft:
Questo prodotto è conforme alle seguenti direttive CEE:
Dir produkt voldoet aan de volgende EG-richtlijnen:
Denna produkt överensstämmer med följande EU direktiv:
Versa-Matic, Inc., erklærer herved som fabrikant, at ovennævnte produkt er i overensstemmelse med bestemmelserne i Direkktive:
Tämä tuote täyttää seuraavien EC Direktiivien vaatimukstet:
Dette produkt oppfyller kravene til følgende EC Direktiver:
Este produto está de acordo com as seguintes Directivas comunitárias:

2006/42/EC
on Machinery, according to Annex VIII

This product has used the following harmonized standards to verify conformance:
Ce materiel est fabriqué selon les normes harmonisées suivantes, afin d' en garantir la conformité:
Este producto cumple con las siquientes directrices de la comunidad europa:
Dieses produkt ist nach folgenden harmonisierten standards gefertigtworden, die übereinstimmung wird bestätigt:
Questo prodotto ha utilizzato i seguenti standards per verificare la conformita´:
De volgende geharmoniseerde normen werden gehanteerd om de conformiteit van dit produkt te garanderen:
För denna produkt har följande harmoniserande standarder använts för att bekräfta överensstämmelse:
Harmoniserede standarder, der er benyttet:
Tässä tuotteessa on sovellettu seuraavia yhdenmukaistettuja standardeja:
Dette produkt er produsert i overenstemmelse med fløgende harmoniserte standarder:
Este produto utilizou os seguintes padrões harmonizados para varificar conformidade:

EN809:1998+ A1:2009

AUTHORIZED/ APPROVED BY:
Approuve par:
Aprobado por:
Genehmigt von:
approvato da:
Goedgekeurd door:
Underskrift:
Valtuutettuna:
Bemyndiget av:
Autorizado Por:

Dave Roseberry
Director of Engineering

Authorized Representative:
IDEX Pump Technologies
R79 Shannon Industrial Estate,
Shannon, Co. Clare Ireland
Attn: Barry McMahon

DATE: February 27, 2017
FECHA:
DATUM:
DATA:
DATO:
PÄIVÄYS:

CE

06/14/2017 REV 08

VMQR 044FM