

**1: PUMP SPECS** 

2: INSTAL & OP

3: EXP VIEW

4: WARRANTY

## **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.

### A 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.



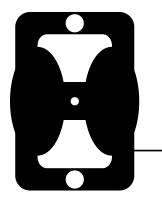
This pump is pressurized internally with air pressure during operation. Make certain that all fasteners are in good condition and are reinstalled properly during reassembly.



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.





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.



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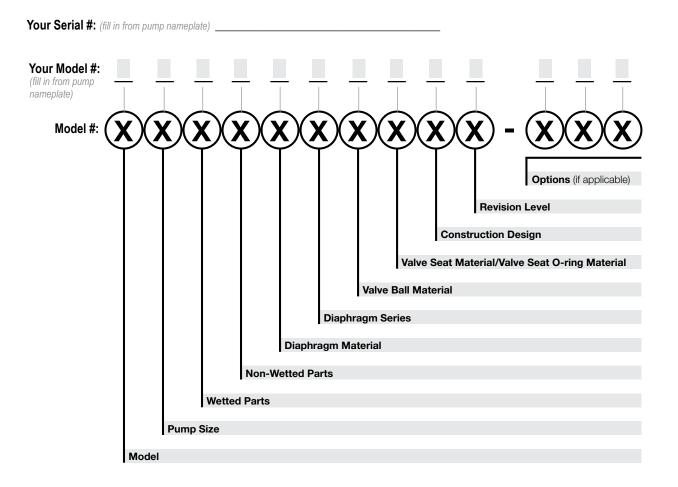
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## **Explanation of Pump Nomenclature**



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"

2 2"

3 3"

1 Neoprene

2 Nitrile

4 EPDM

5 PTFE

7 Hytrel

A Acetal

6 Santoprene XL

8 Polyurethane

S Stainless Steel

- **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)
- Wetted Parts A Aluminum C Cast Iron S Stainless Steel H Alloy C P Polypropylene 4 1-1/4" or 1-1/2" K Kynar G Groundable Acetal B Aluminum (screen mount) Valve Ball Material Valve Seat/Valve Seat O-Ring Material **Construction Design** 1 Neoprene 9 Bolted 2 Nitrile 0 Clamped 3 (FKM) Fluorocarbon 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

**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



# Materials

Material Profile:	Operating Temperatures:		
<b>CAUTION!</b> Operating temperature limitations are as follows:	Max.	Min.	
<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>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>FKM:</b> (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	
<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>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>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>Polypropylene:</b> 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		
<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		
Santoprene®: Injection molded thermoplastic elastomer with no fabric layer. Long mechanical flex life. Excellent abrasion resistance.	275°F 135°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		
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	d nickel allog	/.		
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

E1 1" Bolted Metal **Rubber and TPE Fitted** 

Flow Rate		ı 100 🖛	5	Dis	placement Per Str	oke, .09 Gal. (0.34 L)
Adjustable to0-46 gpm (174.1 lpm) Port Size			10			
Suction	65 - 220 - 60 - 200 - 6	_ 08 <u>8</u> _		20		SSURE IN PSI
Discharge	55 - 180 -	Head in F				SCFM M <sup>3</sup> /HR 5 8.5
Air Exhaust1/2" NPT	50 - 160 - 5 45 - 140 - 40 - 40 - 40 - 40 - 40 - 40 - 4	00 Hea			30	5 8.5 10 17 20 34
Suction Lift Dry	35 - 120 -	Discharge				
Wet	25 - 80 -					
	15 - 40	20				
Max Noise Level	$\begin{array}{ccc} 10 - & 40 - \\ 5 - & 20 - \end{array}$					
Aluminum	0    0    0   0   0   0   0   0   0	AR O	5 10	15 20	25 30	35 40 45
Stainless Steel				Capacity in U.	S. Gallons Per M	inute
		0	20 40	60 80	100 120	140 160

NOTE: Performance based on the following: elastomeric 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%.

**Capacity in Liters Per Minute** 

#### E1 1" Bolted Metal PTFE Fitted

#### Flow Rate

Adjustable to0-36 gpm (163.3 lpm)
Port Size
Suction
Discharge 1" NPT
Air Inlet
Air Exhaust
Suction Lift
Dry
Wet
Max Solid Size (Diameter)
<b>Max Noise Level</b>
Shipping Weights
Aluminum
Stainless Steel
Alloy C

Displacement Per Stroke, .047 Gal. (0.18 L) 5 10 100 70 7 200 20 60 6------ AIR CONSUMPTION IN SCFM SS 80 AIR PRESSURE IN PSI Discharge Head in 0 0 0 50 160 5 SCFM M<sup>3</sup>/HR 8.5 5 40 4 10 17 120 20 34 30 51 30 3. 80 20 2-20 40 10 1-0 0 0-0 20 0 5 10 15 25 30 35 Meters Feet BAR Capacity in U.S. Gallons Per Minute 0 20 40 60 80 100 120 140 Capacity in Liters Per Minute

NOTE: Performance based on the following: PTFE 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%.

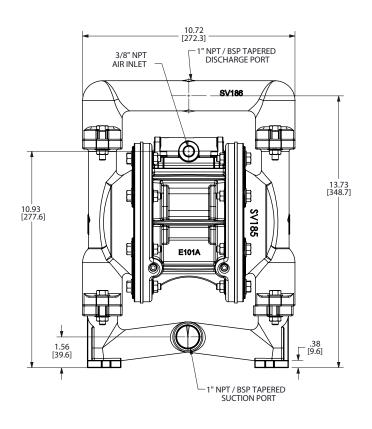


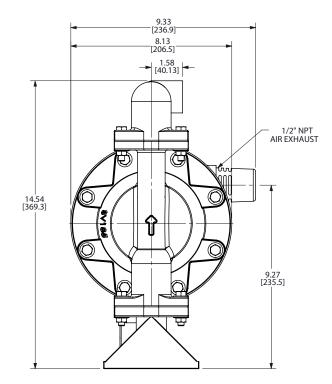
3 • Model E1 Metallic Bolted

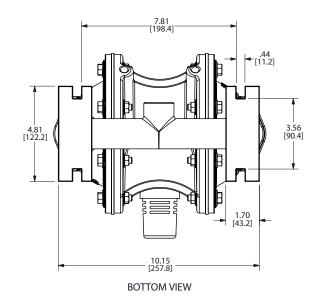
## **Dimensional Drawings**

### E1 Metallic Bolted with Non-Metallic Center

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.



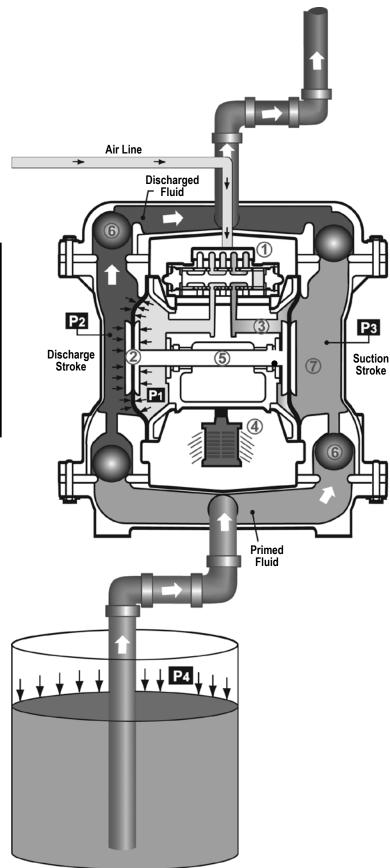






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## **Principle of Pump Operation**



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  $\mathcal{T}$ .

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.

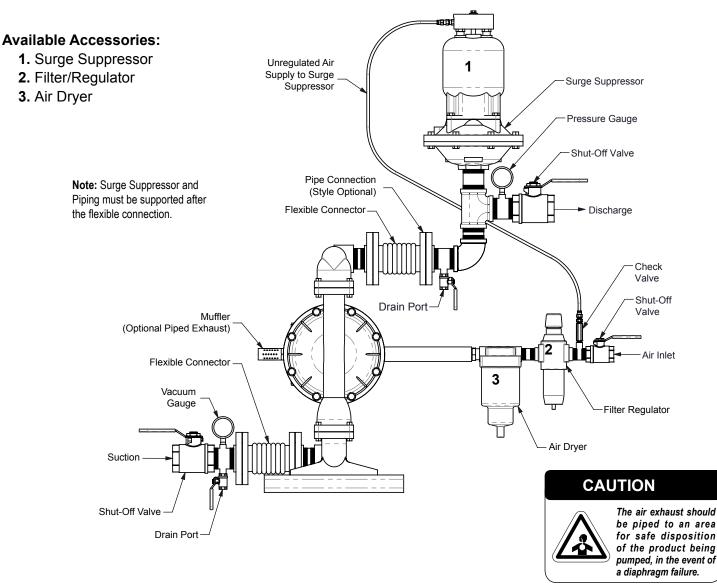
SUBMERGED ILLUSTRATION

# LIQUID LEVEL SUCTION LINE

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**



#### 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.



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2: INSTAL & OP

## **Troubleshooting Guide**

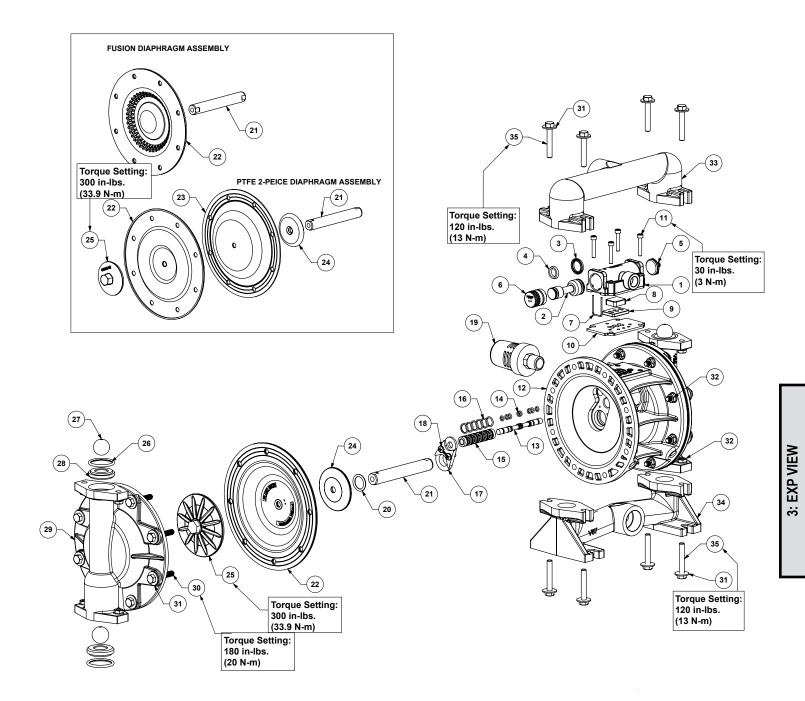
Symptom:	Potential Cause(s):	Recommendation(s):
Pump Cycles Once	Deadhead (system pressure meets or exceeds air supply pressure).	Increase the inlet air pressure to the pump. Pump is designed for 1:1 pressure ratio at zero flow. (Does not apply to high pressure 2:1 units).
	Air valve or intermediate gaskets installed incorrectly.	Install gaskets with holes properly aligned.
	Bent or missing actuator plunger.	Remove pilot valve and inspect actuator plungers.
Dump Will Not Operate	Pump is over lubricated.	Set lubricator on lowest possible setting or remove. Units are designed for lube free operation.
Pump Will Not Operate	Lack of air (line size, PSI, CFM).	Check the air line size and length, compressor capacity (HP vs. cfm required).
/ Cycle		Disassemble and inspect main air distribution valve, pilot valve and pilot valve actuators.
	Check air distribution system.	
	Discharge line is blocked or clogged manifolds. Deadhead (system pressure meets or exceeds air	Check for inadvertently closed discharge line valves. Clean discharge manifolds/piping. Increase the inlet air pressure to the pump. Pump is designed for 1:1 pressure ratio at zero flow.
	supply pressure).	(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	Cavitation on suction side.	Check suction condition (move pump closer to product).
Not Prime or No Flow	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	Over lubrication.	Set lubricator on lowest possible setting or remove. Units are designed for lube free operation.
	lcing.	Remove muffler screen, de-ice, and re-install. Install a point of use air drier.
Sluggish/Stalling,	Clogged manifolds.	Clean manifolds to allow proper air flow
Flow Unsatisfactory	Deadhead (system pressure meets or exceeds air	Increase the inlet air pressure to the pump. Pump is designed for 1:1 pressure ratio at zero flow.
	supply pressure).	(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.
Dreduct Leeking		
Product Leaking	Diaphragm failure, or diaphragm plates loose. Diaphragm stretched around center hole or bolt holes.	Replace diaphragms, check for damage and ensure diaphragm plates are tight. Check for excessive inlet pressure or air pressure. Consult Chemical Resistance Chart for compatibility
Through Exhaust	Diaphragin stretched around center hole of boit holes.	with products, cleaners, temperature limitations and lubrication.
Premature Diaphragm	Cavitation.	Enlarge pipe diameter on suction side of pump.
Failure	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.
Unhalanced Cycling	Excessive suction lift.	For lifts exceeding 20' of liquid, filling the chambers with liquid will prime the pump in most cases.
Unbalanced Cvcling		Meet or exceed pump connections.
Unbalanced Cycling	Undersized suction line.	
Unbalanced Cycling		
Unbalanced Cycling	Pumped fluid in air exhaust muffler.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.
Unbalanced Cycling	Pumped fluid in air exhaust muffler. Suction side air leakage or air in product.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly. Visually inspect all suction-side gaskets and pipe connections.
Unbalanced Cycling	Pumped fluid in air exhaust muffler.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.

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



2: INSTAL & OP

## **Composite Repair Parts Drawing**





## **Composite Repair Parts List**

Item #	Qty.	Air Valve Asser Description		Part Number	
	વ્યાપ્ર.	Air Side Repair Kit (Includes Items			
		3,4,6-9,12-15,16,18)	476.V011.000		
-	1	Valve Body Assembly (Includes items 1-11)		031.V005.552	
1	1	Valve Body (includes item 11)	E100A		
2	1	Valve Spool Assembly (Includes items 3&4)		E100BUB ASY	
3	1	Large Valve Spool U-Cup		P98-104A	
4	1	Small Valve Spool U-Cup		P98-104AUB	
5	1	End Cap Assembly (Includes O-Ring)		E500D ASY	
6	2	Reducing End Cap Assembly (Includes O-Rings)		E500DUB ASY E500F	
8	<u> </u>	Staple CT Air Diverter		E100CT	
9	1	Air Diverter Plate		E1000H	
10	1	Air Valve Gasket	360.V002.360		
11	4	Mounting Screws		S1004	
	•	Center Section As	sembly		
ltem #	Qty.	Description		Part Number	
12	1	Center Section	E101A		
		Pilot Repair Kit (Includes Items 13-17)	476.V010.000		
13	1	Pilot Spool ASY (includes item 14)	775.V004.000		
14	8	Pilot Spool O-Rings	560.023.358		
15	1	Pilot Valve Sleeve ASY (includes item 16)	755.V004.000		
16 17	6	Pilot Valve Sleeve O-Rings Shaft/Pilot Retainer	<u>560.101.358</u> 670.V002.554		
18	4	Retainer Screw	E101C		
19	1	Muffler		VTM-4	
10	I	Diaphragm Assembly /	Elastomers	V TIVI T	
ltom #	054			Part Number	
Item #	Qty.	Description	TPE/RUBBER	PTFE 2-Piece	PTFE Fusior
20	2	Main Shaft O-Ring		P50-403	
21	1	Main Shaft	685.V001.120	P50-1	08
22	2	Diaphragm	"V183xx-1 (See Below Material Chart)"	V183TF-1	V183F
23	2	Back-Up Diaphragm	N/A	V183TB	N/A
24	2	Inner Diaphragm Plate	V181	ÎC	N/A
25	2	Outer Diaphragm Plate (See Note 1 Below)	V81B, SV181B ASY, HV181B	SV181TO, HV181TO	N/A
26	4	Valve Seat O-Ring	"V90xx (See Below Material Chart)"	SV190TF	
27	4	Valve Ball	"V191xx (See Below Material Chart)"	V191TF	
		Wet End Assen	nbly		
Item #	Qty.	Description		Part Number	
			Aluminum	Stainless Steel	Hastelloy
28 29	4	Valve Seat Water Chamber	V90A V85DC	SV190 SV185	HV190 HV185
30	16	Water Chamber Bolt	V05DC	SV 105 SV 18	
31	16	Water Chamber Washer	V189C	SV18	
32	16	Water Chamber Waster	V185B	SV18	
~-	1	Discharge Manifold	V86	SV186	HV186
33		Suction Manifold	V87	SV187	HV187
33 34	1				
34 35	<u>1</u> 8	Manifold Bolt	V187A	SV18	/A
34 35 31	8	Manifold Bolt Manifold Washer	V187A V189C	SV18	9C
34 35		Manifold Bolt Manifold Washer Manifold Nut	V187A V189C V185B		9C
34 35 31 32	8	Manifold Bolt Manifold Washer Manifold Nut Elastomer Material Spo	V187A V189C V185B ecifications	SV18 SV18	9C 5B
34 35 31 32 Material	8	Manifold Bolt Manifold Washer Manifold Nut Elastomer Material Spi Diaphragm P/N	V187A V189C V185B ecifications Valve Ball P/N	SV18 SV18 O-Ring	9C 5B <b>P/N</b>
34 35 31 32 <b>Material</b> Neoprene	8	Manifold Bolt Manifold Washer Manifold Nut Elastomer Material Sp Diaphragm P/N V183N-1	V187A V189C V185B ecifications Valve Ball P/N V191N	SV18 SV18 O-Ring N/A	9C 5B <b>P/N</b>
34 35 31 32 Material Neoprene Buna Nitrile	8	Manifold Bolt Manifold Washer Manifold Nut Elastomer Material Sp Diaphragm P/N V183N-1 V183BN-1	V187A V189C V185B ecifications Valve Ball P/N V191N V191BN	SV18 SV18 O-Ring N/A V90E	9C 5B <b>P/N</b> N
34 35 31 32 Material Neoprene Buna Nitrile Viton	8	Manifold Bolt Manifold Washer Manifold Nut Elastomer Material Sp Diaphragm P/N V183N-1 V183BN-1 V183VT-1	V187A V189C V185B ecifications Valve Ball P/N V191N V191BN V191VT	SV18 SV18 O-Ring N/A V90E V90V	9C 5B P/N N N T
34 35 31 32 Material Neoprene Buna Nitrile Viton Nordel	8	Manifold Bolt         Manifold Washer         Manifold Nut         Elastomer Material Sp         Diaphragm P/N         V183N-1         V183BN-1         V183VT-1         V183ND-1	V187A V189C V185B ecifications Valve Ball P/N V191N V191BN V191VT V191ND	SV18 SV18 O-Ring N/A V90E V90V V90V	9C 5B <b>P/N</b> N N /T
34 35 31 32 Material Neoprene Buna Nitrile Viton Nordel Santoprene	8	Manifold Bolt         Manifold Washer         Manifold Nut         Elastomer Material Sp.         Diaphragm P/N         V183N-1         V183BN-1         V183VT-1         V183ND-1         V183TPEXL-1	V187A           V189C           V185B           ecifications           Valve Ball P/N           V191N           V191BN           V191VT           V191ND           V191TPEXL	SV18 SV18 O-Ring N/A V90E V90V V90V V90V V90N	9C 5B <b>P/N</b> N N T ID XL
34 35 31 32 Material Neoprene Buna Nitrile Viton Nordel	8	Manifold Bolt         Manifold Washer         Manifold Nut         Elastomer Material Sp         Diaphragm P/N         V183N-1         V183BN-1         V183VT-1         V183ND-1	V187A V189C V185B ecifications Valve Ball P/N V191N V191BN V191VT V191ND	SV18 SV18 O-Ring N/A V90E V90V V90V	9C 5B P/N N N T ID XL

Note: The outer diaphragm plate material is to match the water chamber material



3: EXP VIEW

# **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://vm.salesmrc.com/pdfs/VM\_Product\_Warranty.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 DECLARACAO 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:

2006/42/EC on Machinery, according

to Annex VIII

EN809:1998+

A1:2009

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:

#### 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 siguientes Directrices de la Comunidad Europea:

Dieses produkt erfüllt die folgenden Vorschriften der Europäischen Gemeinschaft:

Este producto cumple con las siguientes 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:

Dave Roseberry

Director of Engineering

Authorized Representative:

Shannon, Co. Clare Ireland

Attn: Barry McMahon

R79 Shannon Industrial Estate,

**IDEX Pump Technologies** 

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:

#### AUTHORIZED/APPROVED BY:

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

06/14/2017 REV 08



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

