

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.



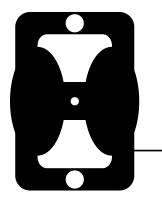
This pump is pressurized internally with air pressure during operation. Make certain that all fasteners are in good condition and are reinstalled properly during reassembly.



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.



Table of Contents

SECTION 1: PUMP SPECIFICATIONS......1

- Nomenclature
- Performance
- Materials
- Dimensional Drawings

SECTION 2: INSTALLATION & OPERATION.....6

- Principle of Pump Operation
- Typical Installation Guide
- Troubleshooting

SECTION 3: EXPLODED VIEW......9

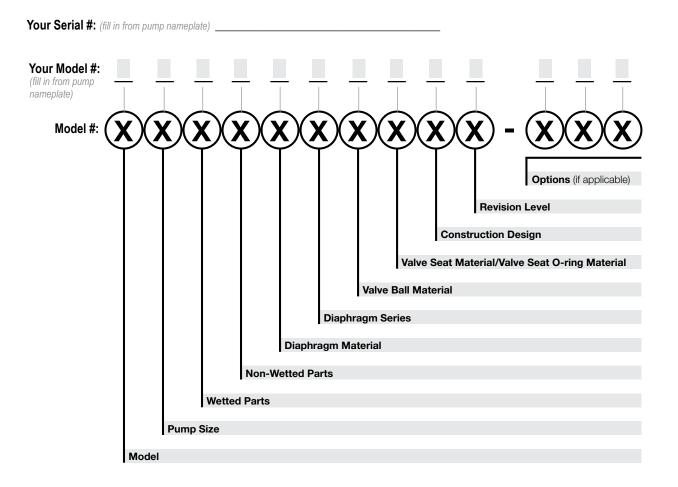
- Composite Drawings
- Parts List
- Materials Code

SECTION 4: WARRANTY & CERTIFICATES11

- Warranty
- CE Declaration of Conformity Machinery



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)

C Cast Iron S Stainless Steel H Alloy C P Polypropylene 4 1-1/4" or 1-1/2" K Kynar G Groundable Acetal C Cast Iron **Q** Epoxy-Coated Aluminum 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

Wetted Parts

A Aluminum

- 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

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



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 applications. Commonly referred to as 316 Stainless Steel in the pump industry.

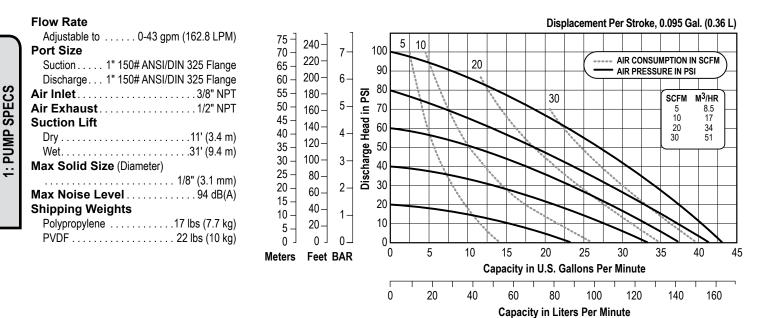
1: PUMP SPECS

For specific applications, always consult the Chemical Resistance Chart.



Performance

Rubber and TPE Fitted

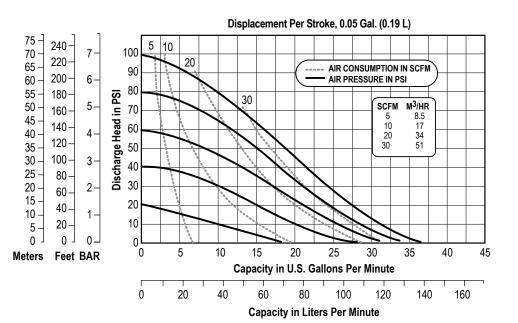


NOTE: Performance based on the following: elastomeric fitted pump, flooded suction, water at ambient conditions. The use of other materials and varying hydraulic conditions may result in deviations in excess of 5%.

E1 1" Bolted Plastic **PTFE Fitted**

Flow Rate

Adjustable to 0-36 gpm (136.3 LPM)
Port Size
Suction 1" 150# ANSI/DIN 325 Flange
Discharge 1" 150# ANSI/DIN 325 Flange
Air Inlet
Air Exhaust
Suction Lift
Dry
Wet
Max Solid Size (Diameter)
1/8" (3.2 mm)
Max Noise Level
Shipping Weights
Polypropylene
PVDF



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%.

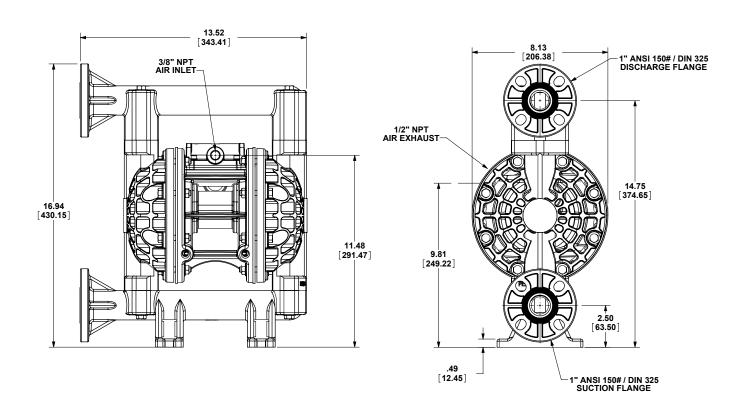


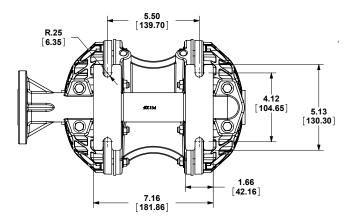
Dimensional Drawings

E1 Non-Metallic Bolted

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.



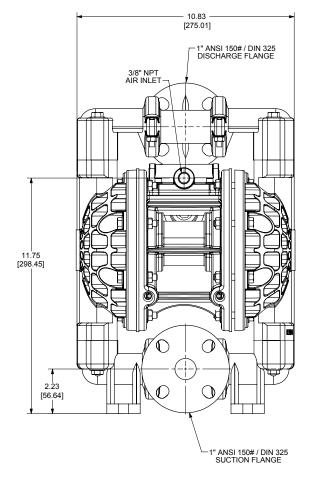


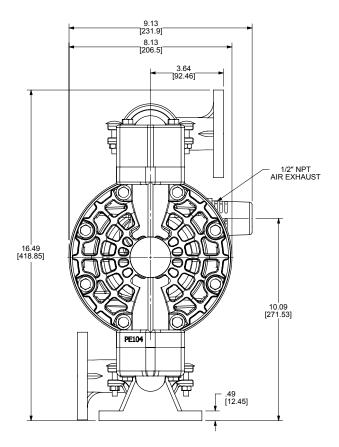


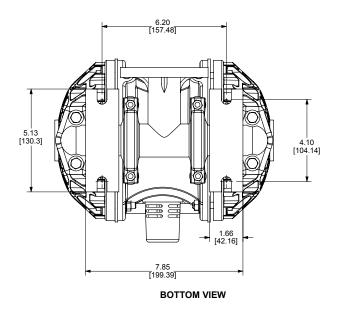
Dimensional Drawings

E1 Non-Metallic Bolted (Center Ported Manifold Option) 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.

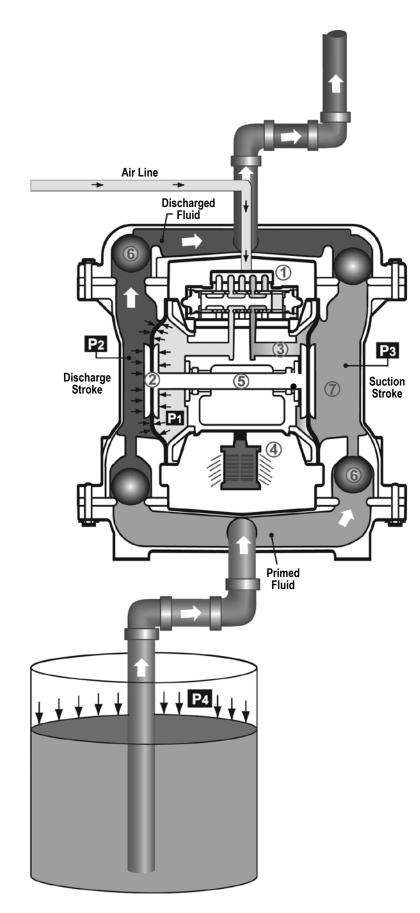








Principle of Pump Operation





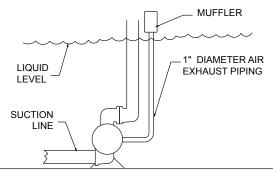
Air-Operated Double Diaphragm (AODD) pumps are powered by compressed air or nitrogen.

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{D} .

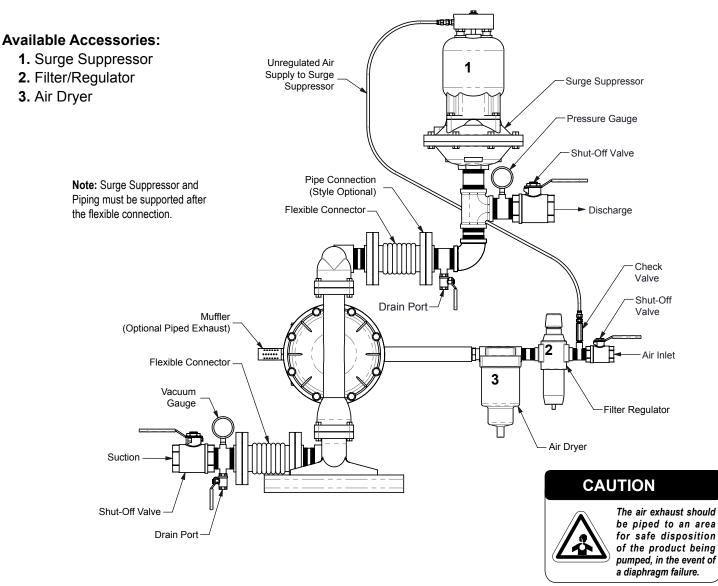
Suction (side) stroking also initiates the reciprocating (shifting, stroking or cycling) action of the pump. The suction diaphragm's movement is mechanically pulled through its stroke. The diaphragm's inner plate makes contact with an actuator plunger aligned to shift the pilot signaling valve. Once 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.



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.

SUBMERGED ILLUSTRATION

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.



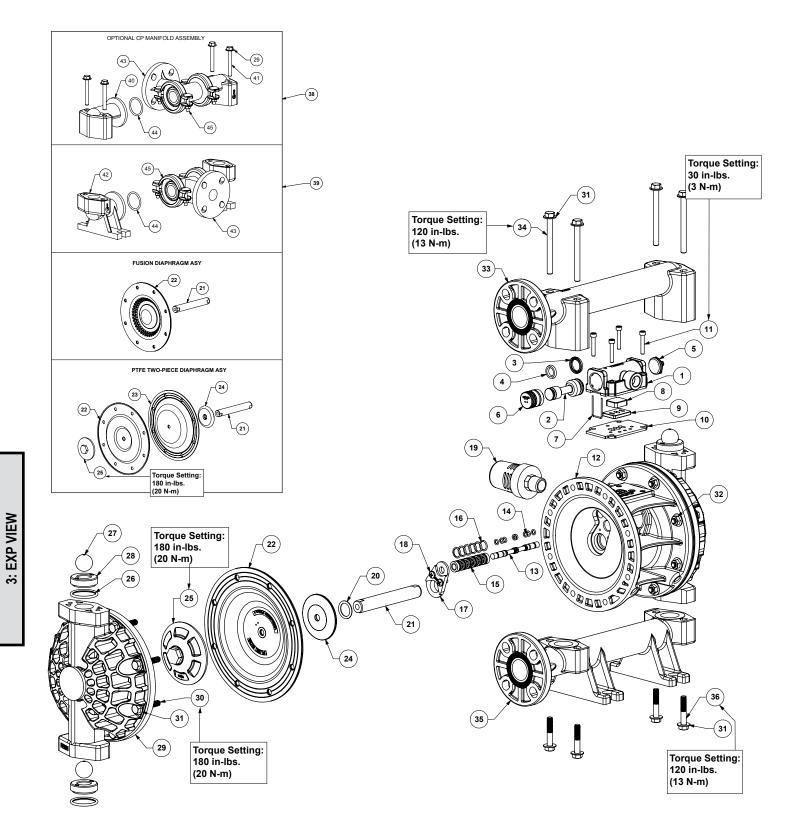
Troubleshooting Guide

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	Pump is over lubricated.	Set lubricator on lowest possible setting or remove. Units are designed for lube free operation.
/ Cycle	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	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.
Sluggish/Stalling,	Icing.	Remove muffler screen, de-ice, and re-install. Install a point of use air drier.
Flow Unsatisfactory	Clogged manifolds.	Clean manifolds to allow proper air flow
Flow Unsatisfactory	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	Diaphragm failure, or diaphragm plates loose.	Replace diaphragms, check for damage and ensure diaphragm plates are tight.
Through Exhaust	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	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.
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.

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



Composite Repair Parts Drawing





Composite Repair Parts List

Nem # Op. Description Part Number -<			Δir Va	lve Assembly		
Image: Second Second Process Second Second Process Second	Item #	Qty.	Description		Part Number	
- 1 Value Book Act 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,			Air Side Repair Kit (Includes Items	476.V011.000		
1 1 Value Social Value Body E1020 E1030 Status E1030 Status E1030 Status Stat			3,4,6-9,12-15,16,18)			
2 1 Value Sport Assembly, (includes Items 36.4) E1008/LBASY (includes Items 36.4) 3 4 Intro Values Sport (includes Chang) P37-04.6 3 1 End Can Assembly (includes Chang) E5007-64.9 6 1 Reduing End Can Assembly (includes Chang) E5007-64.9 7 2 States E5007-7 8 1 C1 At Undes Cange) E5007-7 9 1 C1 At Undes Cange) E5007-7 9 1 4 P38-7 E5007-7 11 4 P38-7 E5007-7 E5004 12 1 Central Scion Assembly (Includes Items 3.7) 475-07004 13 4 P30005457 Undes Item 13.1 755-0004.000 14 4 P30005457 Undes Item 13.1 755-0004.000 15 1 P300005457 Undes Item 13.1 755-0004.000 16 5 P300005457 Undes Item 15.1 755-0004.000 17 2 Statematic Itematic Itematic Itematic Itematic Itematic Itematic Itematic Itematitem 15.1 755-0004.000 <td>-</td> <td>1</td> <td>Valve Body Assembly (Includes items 1-11)</td> <td></td> <td>031.V005.552</td> <td></td>	-	1	Valve Body Assembly (Includes items 1-11)		031.V005.552	
3 1 Lange Version Scott Lice incomposition PRS: TotAl 3 1 End and Mark Scott Lice incomposition PRS: TotAl All 6 1 Reducing End Car. Assembly (includes 0-rings) ESSOP 7 2 Reducing End Car. Assembly (includes 0-rings) ESSOP 8 1 Chir Divertier ESSOP 9 1 At Divertier Return ESSOP 9 1 At Divertier Return ESSOP 9 1 At Divertier Return Statul 11 4 Plasse Vale Mounting Screws Statul 11 4 Plasse Vale Mounting Screws Statul 12 Plasse Vale Mounting Screws Statul Statul 13 1 Plot Scoot Statul Includes Item 13 17 45 (Value 0.00 14 8 Plot Scoot Statul Includes Item 13 17 75 (Value 0.00 15 1 Plot Scoot Statul Includes Item 13 17 75 (Value 0.00 16 9 Plot Name Scoot Statul Includes Item 13 17 75 (Value 0.00 17 <	2	1		F10(BUBASY (includes items 3	3 & 4)
5 1 End Cac Assembly (Includes O-Run) E5000 ASY 5 1 Reducine Error Can Assembly (Includes O-Run) E5000 ASY 6 1 Ar Divering Parts E10001 9 1 Ar Divering Parts E1001 10 1 Ar Divering Parts Store 11 4 Parts Parts Store 12 1 Parts Parts Store 13 1 Parts Parts Store 14 8 Parts Parts Store 13 1 Parts Parts Store 14 8 Parts Parts Store 15 5 10 Parts Parts Store 14 8 Parts Parts Store Store 15 5 10 Parts Parts Store Store 16 5 Store Store Store Store Store 17 10 Description TERLNUBBER Parts Parts Non	3	1	Large Valve Spool U-Cup		P98-104A	
6 1 Reducing End Case Assembly (includes C-Vings). ESODUR ASY 7 2 2 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0		1			P98-104AUB	
7 2 Staple Character ESOF File 3 1 All Denter File File 4 Pisob Vale Mounts File Stort Stort 11 4 Pisob Vale Mounts File Stort Stort 11 4 Pisob Vale Mounts Screw Stort Stort 12 1 Pisob Vale Mounts Screw Stort Yes 13 1 Pisob Vale Mounts Screw Stort Yes 14 8 Pisob Scort AS finducts Inn 13 T7X Vol4 000 Yes 15 1 Pisob Scort AS finducts Inn 15 T5X Vol4 000 Yes 17 2 Start Pisob Scort AS finducts Inn 15 T5X Vol4 000 Yes 16 4 Retainer Scort Filt Yes Yes 20 2 Man Shat C-Sino Stort Name PitE Fasion 21 1 Man Shat C-Sino Stort Name Yes Yes 22 2 Back Up Disphragin Stort Name Yes Yes Yes		1				
8 1 CTAP Durger At During Plate E100CT 300 00000 9 1 At During Plate At During Plate Sol 000000 10 4 Piese Subs Norman Sol 000000 11 4 Piese Subs Norman Sol 000000 12 1 Piese Subs Norman Sol 000000 13 1 Piese Subs Norman Sol 000000 14 8 Piese Subs Norman Sol 0000000 14 8 Piese Subs Norman Sol 00000000 14 8 Piese Subs Norman Sol 000000000000000000000000000000000000	0				ESUDUBAST ESODE	
S 1 Air During Pate E (001) (201) E (001) (201) 10 4 Pitasc Vave Mounting Screws (2010) 3103 3103 12 1 Piter Bite Carlie School (2010) Pite Bite Carlie School (2010) Piter Bite Ca	8	1	CT Air Diverter		E100CT	
11 4 Plastic Vele Mounting Series S1004 Item # City Description Catter Section Assembly Part Number 13 1 Plot Section ASY Includes Item 13: 775 (VOI 000) 755 (VOI 000) 14 8 Plot Section CARs 560 (V23.68) 561 (V23.68) 15 1 Plot Section CARs 560 (V23.68) 561 (V23.68) 17 2 Shaff-Yol Relations 560 (V23.68) 561 (V23.68) 18 4 Relating Screw Part Number 510 (V23.64) 19 1 Multic Disphration Assambly Elesionera 711 (V13.71) 20 2 Main Shaft 655 (V01.170) 718 (V13.71) V183F 21 1 Main Shaft 718 (V13.71) V183F V183F 22 2 Back (D Diaphragin Plate V181C N/A 22 2 Part Aumber V181F V183F 23 2 Back (D Diaphragin Plate Y181C N/A 24 1 <		1	Air Diverter Plate		E100H	
Center Section Assembly 12 1 Plio Repart Exciton 9art Number 13 1 Plio Repart Exciton 475 (107,000) 13 1 Plio Soud ASY (nucles item 15) 755 (2004,000) 14 8 Plio Soud ASY (nucles item 15) 755 (2004,000) 15 1 Plio Vivo Sieve ASY (nucles item 15) 755 (2004,000) 16 6 Plio Vivo Sieve ASY (nucles item 15) 755 (2004,000) 17 2 Seal Plio Nucles item 25 (2004,000) VIVA 18 1 Rescription Plio Vivo Sieve ASY (2004,000) VIVA 19 1 Main Shaft 685 (2001,120 Plio Vivo Sieve ASY (2004,000) 21 1 Main Shaft 685 (2001,120 Plio Vivo Sieve ASY (2004,000) 22 2 Back-10 Diaphragin Sise Boly Metrial Charth V183TE V183F 22 2 Back-10 Diaphragin Sise Boly Metrial Charth V183TE V183F 23 1 Main Shaft 685 (2001,120 Plio Nucle Nucle Nucle Nucle Nucle Nucle Nucle Nucle		1				
Item # Oty. Description Part Number 12 1 Plot Result At Unducts Lens 13-17 275 V00 000 14 8 Plot Secol At Unducts Lens 13-17 275 V00 400 14 8 Plot Secol At Unducts Lens 13-17 275 V00 4000 15 1 Plot Secol At Unducts Lens 15 755 V00 4000 16 6 Plot Valve Sleeve ASY (includes time 15) 755 V00 4000 17 2 Statisfylicit Relation 550 V01 338 18 4 Relations Sterw ELOI C 20 2 Main Shatt 685 V01 120 Part Number 21 1 Main Shatt 686 V01 120 Part Number 22 2 Disphragin 686 V01 120 Part Number 23 2 Back Up Disphragin 686 V01 120 Part Number 24 2 Disphragin 686 V01 120 Part Number 23 2 Part Quet Disphragin Kise Balow Material Charit V183F 24 1 Main Shatt V1810<		4	Center Se	ection Assembly	51004	
Pilot Repair Kul Includes item 13:17.1 476 V010.000 13 1 Pilot Speak SY (includes item 15) 775 V001.000 14 8 Pilot Speak SY (includes item 15) 755 V001.000 17 2 Pilot Speak SY (includes item 15) 755 V001.000 18 4 Relame Screw E101C 19 1 Main State 650 V002.5541 18 4 Relame Screw E101C 20 2 Main Shat 685 V001.120 Pol-4032 21 1 Main Shat 685 V001.120 Pol-4032 22 2 Back/up Datagam Issee Helow Material Charth V1831F-1 V1837 22 2 Back/up Datagam Issee Helow Material Charth V1831F IVA 23 2 Back/up Datagam Issee Helow Material Charth V1831F IVA 24 2 Inord Datagam Sing Material V1817F V1837F IVA 25 4 Valve Seat O-Ring Issee Helow Material Charth V18317 IVA		Qty.	Description			
13 1 Pilot Spool ASV (includes item 13) 775 V040 A00 14 8 Pilot Spool ASV (includes item 15) 755 V073 358 15 1 Pilot Spool Sterey ASV (includes item 15) 755 V073 358 16 6 Pilot Value Sterey ASV (includes item 15) 755 V070 300 18 4 Mathem Change 66 1000 19 1 Mathem Change 755 V070 300 19 1 Mathem Change VIIA 19 1 Mathem Change VIIA 19 1 Mathem Change VIIA 20 2 Mathem Shaft 685 V001 120 VIIA3 21 1 Math Shaft 685 V001 120 VIIA3 VIIA3 22 2 Diaphragm VIIA3 VIIA10 NA VIIA10 NA 23 2 Back-Up Diaphragm VIIA10 VIIA10 NA VIIA10 NA 24 ViIA10 NA KVIIA11 VIIA10 NA 25 2	12	1	Center Section	E101A 476 V010 000		
14 8 Piet Value Speez AS (includes litem 15) 560 (023 366 15 1 Piet Value Siezer AS (includes litem 15) 755 V004 (000) 16 6 Piet Value Siezer AS (includes litem 15) 755 V004 (000) 16 6 Piet Value Siezer AS (includes litem 15) 755 V004 (000) 13 1 Number 1 14 Number 1 1 15 1 Number 1 16 1 Number 1 17 17 Number 1 18 1 Nam Shall, Othing 685 V001 120 P50-103 21 1 Main Shall, Othing 685 V001 120 P50-103 NA 22 2 Back-Up Daphragm Na V1837c1 V1837 NA 23 1 Back-Up Daphragm Na V1817C NA 24 Valve Seal V1817C NA V1837c1 V1837 24 Valve Seal Valve Seal V1817c V1917F	13	1	Pilot Spool ASY (includes item 13)	476.V010.000 775 \/004.000		
15 1 Plot Value Steeve AS (Includes item 15) 755 V004 000 16 6 Piol Value Steeve AS (Includes item 15) 560 101 355 17 2 StatiPiot Fetamer 670 V02 554 18 4 Relianer, Strev F10/1C 19 Multier Disphreym Assembly Letstomers F10/1C 20 2 Man Shaft O-Ring 685 V001 120 PS0-108 21 1 Man Shaft 685 V001 120 PS0-108 22 2 Diaphragm (See Below Material Charit V1837E N/A 22 2 Back-Up Diaphragm (See Below Material Charit V1837E N/A 23 2 Poty Outer Diaphragm (See Below Material Charit V1837E N/A 24 2 Poty Outer Diaphragm Bate PS113 PV16110 N/A 25 2 Poty Outer Diaphragm Bate V1817E V1837E V1917E 26 4 Valve Seat O-Ring (See Below Material Charit KV1917E V1917E 27 <td>14</td> <td>8</td> <td>Pilot Spool O-Rings</td> <td colspan="2">560.023.358</td> <td></td>	14	8	Pilot Spool O-Rings	560.023.358		
17 2 ShatPhiot Retainer 670 V02 554 18 4 Relainer Screw E101C Und 19 1 Muffer Diphrapm Assembly Lessioners 20 Main Shaft 685 V001120 P50-108 21 1 Main Shaft 685 V001120 P50-108 22 2 Diaphragm See Below Material Chartr V183TF-1 V183F 23 2 Back-Lip Diaphragm NA V181TC NA 24 2 Diaphragm NA V181TC NA 24 2 Back-Lip Diaphragm NA V181TC NA 25 2 Kynar Outer Diaphragm KV181TO NA V183TE 26 4 Valve Seat O-Ring See Below Material Chartr SV190TF, V190TES 27 4 Valve Seat See Below Material Chartr V191TF 27 4 Valve Seat Polynopropression Polynopropression 28 2		1	Pilot Valve Sleeve ASY (includes item 15)		755.V004.000	
19 1 Muffler VIM4 Item # Oty Disphragm Spart Number Part Number 20 2 Main Shaft Q-Ring PER/UBBER PIFE 2-Nice PIFE 2-Nice 21 1 Main Shaft 685 VVD1 120 PSQ-108 PSQ-108 22 2 Disphragm (V183x-1 V183x-1 V183F-1 V183F-1 22 2 Back-Up Disphragm Plate PE113 PV181T0 N/A 24 2 Inner Disphragm Plate V181C N/A V181C N/A 25 2 Polv Que: Disphragm Plate V191x V191TF N/A V191TF V190TF, V190TES 26 4 Valve Satl O-Ring (See Below Material Chart)* V191TF V191TF 27 4 Valve Satl O-Ring (See Below Material Chart)* V191TF V191TF 28 2 Walter Chamber PE104 KE108 KE104 23 16 Walter Chamber SV185C SV187A SV187A </td <td></td> <td></td> <td>Pilot Valve Sleeve O-Rings</td> <td></td> <td></td> <td></td>			Pilot Valve Sleeve O-Rings			
19 1 Muffler VIM4 Item # Oty Disphragm Spart Number Part Number 20 2 Main Shaft Q-Ring PER/UBBER PIFE 2-Nice PIFE 2-Nice 21 1 Main Shaft 685 VVD1 120 PSQ-108 PSQ-108 22 2 Disphragm (V183x-1 V183x-1 V183F-1 V183F-1 22 2 Back-Up Disphragm Plate PE113 PV181T0 N/A 24 2 Inner Disphragm Plate V181C N/A V181C N/A 25 2 Polv Que: Disphragm Plate V191x V191TF N/A V191TF V190TF, V190TES 26 4 Valve Satl O-Ring (See Below Material Chart)* V191TF V191TF 27 4 Valve Satl O-Ring (See Below Material Chart)* V191TF V191TF 28 2 Walter Chamber PE104 KE108 KE104 23 16 Walter Chamber SV185C SV187A SV187A </td <td></td> <td></td> <td>Betainer Scrow</td> <td>l</td> <td><u>6/U.VUU2.554</u> F101C</td> <td></td>			Betainer Scrow	l	<u>6/U.VUU2.554</u> F101C	
Item # Qty. Description Part Number Part PLRUBBER PITE Fusion 20 2 Main Shaft Q-King 685 V001 120 P50-403 P50-403 21 1 Main Shaft Q-King 685 V001 120 P50-103 V1835x-1 22 2 Diaphragm (See Below Material Chart) V18315 N/A 23 2 Interr Diaphragm Plate N/A V181C N/A 24 2 Interr Diaphragm Plate KH113 KV18110 N/A 25 2 Kyme Outor Diaphragm Plate KH13 KV18110 N/A 26 4 Valve Ball (See Below Material Chart)* V191TF V190TE 27 4 Valve Ball (See Below Material Chart)* V191TF V191TF Wols Outor Diaphragm Plate 26 4 Valve Ball (See Below Material Chart)* V191TF Water Chamber See Below Material Chart* V191TF Water Chamber V1616 KE108	19	1	Muffler		VTM-4	
Intern # Uty. Description TPE/2.Piece PTE2 Piece PTE3 Piece <td></td> <td></td> <td></td> <td>sembly / Elastomers</td> <td></td> <td></td>				sembly / Elastomers		
20 2 Main Shaft O-Ring 685.V001120 P50-403 21 1 Main Shaft O-Ring VI83Xx-1 V183TF-1 V183TF 22 2 Diaphragm VSe Below Materia Charty V183TF V183TF 23 2 Back-Up Diaphragm Plate VA V181C N/A 24 2 Inerc Diaphragm Plate VEIC N/A V181TG N/A 25 2 Poly Outer Diaphragm Plate VEIC VI81C N/A N/A 26 4 Valve Seat O-Ring VSee Below Materia Charty V191TF V191TF 27 4 Valve Seat Poly One Value V191Xx V191TF 28 2 Water Chamber PE104 KE103 KE104 30 16 Water Chamber Rolt PE104 KE104 KE103 32 16 Water Chamber Rolt PE102 SV1858 SV1856 33 1 Discharge Manifold Bolt PE120 F120A KE104	Item #	Qty.	Description	TPE/RUBBER		PTEE Fusion
21 1 Main Shaft 665, V001 120 PS0-108 22 2 Diaphragm (See Below Material Chart)* V183xF-1 V183TF-1 V183TF 23 2 Back-Up Diaphragm Plate NA V183TF V183TF NA 24 2 Inner Diaphragm Plate PE113 PV181YC NA 24 2 Inner Diaphragm Plate PE113 PV181YC NA 26 4 Valve Seat O-Ring (See Below Material Chart)* V191TF V191TF 26 4 Valve Ball (See Below Material Chart)* V191TF V191TF 27 4 Valve Ball (See Below Material Chart)* V191TF V191TF 28 2 Water Charther PE103 KE103 KE103 23 16 Water Charther Not SV180C SV180C 23 1 Discharge Marifold Dig PE102 KE120 33 1 Discharge Marifold Dig Ported) PE102 KE120 34	20	2	Main Shaft O-Ring		P50-403	
22 2 Diaphragm (See Below Material Charthy V1831F-1 V1831F-1 23 2 Inner Diaphragm Plate NA V181C NA 24 2 Inner Diaphragm Plate PE11 V181C NA 25 2 Poly Outer Diaphragm Plate PE11 KV181TO NA 26 4 Valve Seat O-Ring 'V90xx KV181TO NA 26 4 Valve Seat O-Ring 'V90xx V191TF V191TF 27 4 Valve Seat Pet Number V191TF 28 4 Valve Seat Pet 108 KE103 28 4 Valve Seat PE108 KE104 29 2 Water Chamber PE108 KE104 30 16 Water Chamber Masher SV187A SV187A 32 16 Water Chamber Masher SV186A E120 33 1 Discharge Manifold Boit E120 KE120 34 4 Discharge Man		1	Main Shaft		P50	0-108
23 2 Isse Back-Up Diaphragm NA 24 2 Inner Diaphragm Plate PL13 V181C N/A 25 2 Polv Outer Diaphragm Plate PC113 PV181TO N/A 26 4 Valve Seat O-Ring (See Below Material Chart)* SV190TF, V190TES 27 4 Valve Seat O-Ring (See Below Material Chart)* V191TF 27 4 Valve Seat O-Ring V191Xc V191TF 28 2 Valve Seat Polvprovenee Kvmar 28 2 Water Chamber P108 V191TF 28 2 Water Chamber P108 KE108 30 16 Water Chamber P108 SV187A 31 16 Water Chamber SV182C SV187A 33 1 Dischare Manfold Bolt PE120 KE120 34 4 Dischare Manfold Bolt PE120 KE120F 36 4 Suction Manfold Bolt PE120F KV186A	22	2	Diaphragm		V183TE-1	V183F
24 2 Inner Diaphragm Plate PT13 PV181TC N/A 26 2 Polo_Uter Diaphragm Plate PE113 KV181TO N/A 26 4 Valve Seat O-Ring ''90xx KV181TO N/A 27 4 Valve Seat O-Ring ''91xx V191xr V191TF 27 4 Valve Seat ''91xx ''91xx V191TF Wate End Assembly Valve Seat ''91xx 28 4 'Valve Seat ''91xx 28 4 'Valve Seat ''91xx 30 16 Water Chamber SV180C 31 16 Water Chamber Washer SV187C 33 1 Discharge Manifold PE120 KE120 34 4 Discharge Manifold Solt E120E SV186A 35 1 Suction Manifold Solt PE120F KK120F 36 4 Suction Manifold Bolt PE120F KV184T 37			1 0			
25 2 Poly Outer Diabrizam Plate PE113 (See Below Material Charty) PV/B1TO N/A 26 4 Valve Seat O-Ring (See Below Material Charty) SV190TF, V190TES 27 4 Valve Seat V191xx V191xx V191xx 27 4 Valve Ball (See Below Material Charty) V191TF Water of Assembly Part Number V191xx V191TF Water of Assembly Part Number V191xx V191xx V191x 28 4 Valve Seat Pe104 KE106 28 4 Valve Seat Pe104 KE104 30 16 Water Chamber Matherial Charty SV187A 31 Discharge Manifold Col Pe104 KE120 33 1 Discharge Manifold Boit E120 KE120 34 4 Discharge Flowe Mot (Center Ported) SV189C	23		Back-Up Diaphragm		1C.	
Kynar Outer Diaphrägm Plate KE113 (90xx (See Below Material Chart)* KV18170 26 4 Valve Seat O-Ring "90xx (See Below Material Chart)* SV190TF, V190TES 27 4 Valve Seat O-Ring "V90xx (See Below Material Chart)* V191TF Vet End Assembly Part Number Wet End Assembly Part Number Kynar 28 4 Valve Seat Pet 08 KE 103 29 2 Water Chamber Pet 08 KE 104 30 16 Water Chamber Boit SV180C SV180C 31 16 Water Chamber Nut SV180C SV180C 33 1 Discharge Manifold PE120 E120A 34 4 Discharge Manifold Boit PE120F KE120F 35 1 Suction Manifold Boit PE120F Krar 35 1 Suction Manifold Assembly Polypropuleme Kynar 36 4 Suction Manifold Assembly PE120F Kf 104 37 8 Ma	25		Poly Outer Diaphragm Plate		PV181TO	
26 4 Valve Seat O-King (See Below Material Chart)* V191xx SV1901F, V1901ES 27 4 Valve Ball V191xx V191xx V191xx V191xx V191xx V191xx V191TF WetEnd Assembly Part Number Part Number 28 4 V191xx V191xx 28 4 Valve Seat PE108 KE108 29 2 Water Chamber PE104 KE104 30 16 Water Chamber Rolt SV1870. KE104 31 16 Water Chamber Nut E104 KE104 32 16 Water Chamber Nut E100 KE120 33 1 Discharge Manifold Bolt E120A KE120 SV1856. 33 1 Discharge Manifold Bolt E120F KE120 SV189C 36 4 Suction Manifold ASY (includes items 40,43,445) (VTFF Frited) 475 V007.504 (VTF Friterited) 475 V007.504 <td< td=""><td></td><td></td><td>Kynar Outer Diaphragm Plate</td><td>KE113</td><td>KV181TO</td><td></td></td<>			Kynar Outer Diaphragm Plate	KE113	KV181TO	
27 4 Valve Ball V191xx (See Below Material Charit*) V191TF Item # Qty. Description Polycropylene K108 28 4 Valve Seat Polycropylene K108 29 2 Water Chamber PE108 KE104 30 16 Water Chamber Bolt SV187A 31 16 Water Chamber Masher SV187A 32 16 Water Chamber Musher SV187A 33 1 Discharge Manifold PE120 KE120 34 4 Discharge Manifold Bolt E1208 KE120F 34 4 Discharge Manifold Bolt E1208 KE120F 35 4 Suction Manifold Bolt E1208 SV188C 36 4 Suction Manifold Bolt E1208 SV188C 37 8 Manifold Assembly Polyprovidene Kynar 38 1 Discharge Elbow (PTFE Fitted) 475 V007.604 (PTFE Fitted) 475 V000.604 41 4	26	4	Valve Seat O-Ring		SV190TF	F, V190TES
Wet End Assembly Part Number Item # Qty. Description Polypropylene Kynar 29 2 Water Chamber PE108 KE104 30 16 Water Chamber Bolt PY184 KE104 31 16 Water Chamber Bolt SV189C 32 16 Water Chamber Mut SV189C 33 1 Discharge Manifold PE120 KE120 34 4 Discharge Manifold Bolt E120A SV189C 35 1 Suction Manifold Bolt E120F KE120F 36 4 Suction Manifold Bolt E120A SV189C Optional CP Manifold Assembly	27	4	Valve Ball	"V191xx	V1	91TF
Item # Udy. Description Polypropylene Kynar 28 4 Valve Seat PE108 KE108 29 2 Water Chamber PE108 KE104 30 16 Water Chamber Bolt SV187A 31 16 Water Chamber Muster SV188C 32 16 Water Chamber Nut SV185B 33 1 Discharge Manifold PE120 KE120 34 4 Discharge Manifold Bolt E120A SV186A 35 1 Suction Manifold Bolt E120B KE120F 36 4 Suction Manifold Bolt E120B Kyrar 7 8 Manifold PManifold Assembly Polypropylene Kynar 9 1 Discharge Manifold ASY (includes items 40,43,44 45) (PTFE Fitted) (PTFE Fitted) 10 Kyrar E120B Suction Annifold ASY (includes items 42,43,44 45) (PTFE Fitted) (PTFE Fitted) 39 1 Suction Clow PU18T KE186 K188			Wet E	nd Assembly		
28 1 Valve Seat Performer Numary 29 2 Water Chamber Bolt PE108 KE108 30 16 Water Chamber Bolt PE104 SV187A 31 16 Water Chamber Bolt SV189C SV189C 32 16 Water Chamber Nut SV185E SV189C 33 1 Discharge Manifold PE120 KE120 34 4 Discharge Manifold PE120 KE120 35 1 Suction Manifold Bolt E120A SV188A 36 4 Suction Manifold Bolt E120B SV189C 37 8 Manifold Vasher SV189C SV189C Optional CP Manifold Assy (includes items 40,43,44 45) (PTFE Fitted) (PTFE Fitted) 475.V009.604 38 1 Discharge Ellow Polypropylene Kynar 39 1 Suction Manifold ASY (includes items 42,43,44 45) (XL Fitted) 475.V009.604 41 4 Discharge Ellow PV187 KE186 <	Item #	Qtv.	Description		Part N	Number
29 2 Water Chamber PE104 KE104 30 16 Water Chamber Bolt SV187A 31 16 Water Chamber Washer SV189C 32 16 Water Chamber Nut SV185C 33 1 Discharge Manifold Bolt E120A 34 4 Discharge Manifold Bolt E120A 35 1 Suction Manifold Bolt E120B 36 4 Suction Manifold Assembly Optional CP Manifold Assembly 37 8 Manifold Assembly Part Number 38 1 Discharge Manifold Assembly Part Number 38 1 Discharge Manifold ASY (includes items 40,43,44 45) (PTE Fitted) 39 1 Suction Manifold ASY (includes items 42,43,44 45) (VIE Fitted) 475.V007.354 (XL Fitted) 475.V009.354 40 2 Discharge Elbow Bolt (Center Ported) PV187 KE187 42 2 Suction Manifold ASY (includes items 42,43,44 45) (XL Fitted) 475.V007.354 (XL Fitted) 475.V010.354 41 Discharge	28				Polybrobylene	i nynar i
30 16 Water Chamber Bolt SV187A 31 16 Water Chamber Washer SV189C 32 16 Water Chamber Nut SV185B 33 1 Discharge Manifold PE120 KE120 34 4 Discharge Manifold PE120 KE120 34 4 Discharge Manifold PE120 KE120 35 1 Suction Manifold PE120F KE120F 36 4 Suction Manifold Bolt E1208 SV189C 37 8 Manifold Washer SV189C SV189C Optional CP Manifold Assembly Polypropylene Kynar (PTFE Fitted) (PTFE Fitted) 475.V007.604 (PTFE Fitted) 475.V009.604 38 1 Discharge Elbow Discharge Elbow (PTFE Fitted) 475.V007.354 (XL Fitted) 475.V009.354 40 2 Discharge Elbow Discharge Elbow PV186 KE186 41 4 Discharge Elbow Bolt (Center Ported) PV186		4	Valve Seat		PE108	
32 16 Water Chamber Nut SV185B 33 1 Discharge Manifold PE120 KE120 34 4 Discharge Manifold Bolt E120A SV186A 35 1 Suction Manifold Bolt PE120F KE120F 36 4 Suction Manifold Bolt PE120F KE120F 36 4 Suction Manifold Masher SV189C Optional CP Manifold Washer SV189C Part Number 0 Optional CP Manifold Assembly Part Number 1 Discharge Manifold ASY (includes items 40,43,44 45) (PTEF Fitted) (PTEF Fitted) 475.V009.604 38 1 Discharge Manifold ASY (includes items 42,43,44 45) (PTEF Fitted) 475.V009.354 (XL Fitted) 475.V009.354 39 1 Suction Manifold ASY (includes items 42,43,44 45) (YL Fitted) 475.V008.354 (XL Fitted) 475.V010.604 41 4 Discharge Elbow PV186 (XL Fitted) 475.V010.354 42 2 Suction Elbow PV187 KE186 44 4 PTEF Eitted Manifold Tee O-Ring	29	2	Water Chamber		PE108 PE104	KÉ108 KE104
33 1 Discharge Manifold Bolt PE120 KE120 34 4 Discharge Manifold Bolt E120A SV186A 35 1 Suction Manifold Bolt PE120F KE120F 36 4 Suction Manifold Bolt E120B SV186A 37 8 Manifold Washer SV189C SV189C Optional CP Manifold Assembly Part Number KE120F KE120B 38 1 Discharge Manifold ASY (includes items 40,43,44 45) (PTFE Fitted) (PTFE Fitted) 475.V009.354 39 1 Suction Manifold ASY (includes items 42,43,44 45) (PTFE Fitted) 475.V009.354 (PTFE Fitted) 475.V009.354 41 4 Discharge Elbow PV186 KE186 41 4 Discharge Elbow Bolt (Center Ported) 17.V010.17.115 KE187 43 2 Manifold Tee O-Ring PV187 KE186 44 4 PTFE Fitted Manifold Tee O-Ring V1881L KV188 45 4 Clamp Assembly SV189 SV189 Elastomer M	<u>29</u> 30	2 16	Water Chamber Water Chamber Bolt		PE108 PE104 SV	KĚ108 KE104 187A
34 4 Discharge Manfold Bolt E120A 34 4 Discharge Elow Bolt (Center Ported) SV186A 35 1 Suction Manfold Bolt E120B 36 4 Suction Manfold Bolt E120B 36 4 Suction Manfold Washer SV189C Optional CP Manifold Assembly Part Number Value Optional CP Manifold Assembly Part Number With the main of the	29 30 31	2 16 16	Water Chamber Water Chamber Bolt Water Chamber Washe	9r	PE108 PE104 SV SV	KÉ108 KE104 187A 189C
34 4 Discharge Elbow Bolt (Center Ported) SV186A 35 1 Suction Manifold Bolt E120F KE120F 36 4 Suction Manifold Bolt E120B SV189C Optional CP Manifold Assembly 0 Polypropylene Kynar 0 0 Polypropylene Kynar 38 1 Discharge Manifold ASY (includes items 40,43,44 45) (PTFE Fitted) 475.V009.364 39 1 Suction Manifold ASY (includes items 42,43,44 45) (PTFE Fitted) 475.V009.354 40 2 Discharge Elbow PV186 KE186 41 4 Discharge Elbow PV186 KE186 43 2 Manifold Tee O-Ring V186 KE187 43 2 Manifold Tee O-Ring V1881 KV188 44 4 Clamp Assembly SV189 SV189 45 4 Clamp Assembly SV189 SV189 Elastomer Material Specifications SV189 SV189 SV189 1	29 30 31 32	2 16 16 16	Water Chamber Water Chamber Bolt Water Chamber Washe Water Chamber Nut	or	PE108 PE104 SV SV SV	KÉ108 KE104 187A 189C 185B
37 8 Manifold Washer SV189C Optional CP Manifold Assembly Part Number 90 Polypropylene Kynar 38 1 Discharge Manifold ASY (includes items 40,43,44 45) Polypropylene Kynar 38 1 Discharge Manifold ASY (includes items 40,43,44 45) (PTFE Fitted) (PTFE Fitted) (PTFE Fitted) 475.V009.054 39 1 Suction Manifold ASY (includes items 42,43,44 45) (PTFE Fitted) (PTFE Fitted) 475.V010.604 40 2 Discharge Elbow PV186 KE186 41 4 Discharge Elbow Bolt (Center Ported) PV186 KE186 42 2 Suction Elbow PV187 KE186 43 2 Manifold Tee O-Ring V188 KV188 44 4 XL Fitted Manifold Tee O-Ring V188 KV188 45 4 Clamp Assembly SV189 Elastomer Material Specifications Elastomer Material Specifications V188 Material Diaphragm PIN Valve Ball PIN N/A <td>29 30 31 32 33</td> <td>2 16 16 16 1</td> <td>Water Chamber Water Chamber Bolt Water Chamber Washe Water Chamber Nut Discharge Manifold</td> <td></td> <td>PE108 PE104 SV SV PE120</td> <td>KÉ108 KE104 187A 189C 185B KE120</td>	29 30 31 32 33	2 16 16 16 1	Water Chamber Water Chamber Bolt Water Chamber Washe Water Chamber Nut Discharge Manifold		PE108 PE104 SV SV PE120	KÉ108 KE104 187A 189C 185B KE120
37 8 Manifold Washer SV189C Optional CP Manifold Assembly Part Number 90 Polypropylene Kynar 38 1 Discharge Manifold ASY (includes items 40,43,44 45) Polypropylene Kynar 38 1 Discharge Manifold ASY (includes items 40,43,44 45) (PTFE Fitted) (PTFE Fitted) (PTFE Fitted) 475.V009.054 39 1 Suction Manifold ASY (includes items 42,43,44 45) (PTFE Fitted) (PTFE Fitted) 475.V010.604 40 2 Discharge Elbow PV186 KE186 41 4 Discharge Elbow Bolt (Center Ported) PV186 KE186 42 2 Suction Elbow PV187 KE186 43 2 Manifold Tee O-Ring V188 KV188 44 4 XL Fitted Manifold Tee O-Ring V188 KV188 45 4 Clamp Assembly SV189 Elastomer Material Specifications Elastomer Material Specifications V188 Material Diaphragm PIN Valve Ball PIN N/A <td>29 30 31 32 33 33 34 34</td> <td>2 16 16 16 1 4</td> <td>Water Chamber Water Chamber Bolt Water Chamber Washe Water Chamber Nut Discharge Manifold Discharge Manifold Bo</td> <td>lt</td> <td>PE108 PE104 SV SV PE120 E120</td> <td>KÉ108 KE104 187A 189C 185B KE120 120A 186A</td>	29 30 31 32 33 33 34 34	2 16 16 16 1 4	Water Chamber Water Chamber Bolt Water Chamber Washe Water Chamber Nut Discharge Manifold Discharge Manifold Bo	lt	PE108 PE104 SV SV PE120 E120	KÉ108 KE104 187A 189C 185B KE120 120A 186A
Optional CP Manifold Assembly Part Number Item # Qty. Description Polypropylene Kynar 38 1 Discharge Manifold ASY (includes items 40,43,44.45) (PTFE Fitted) (PTFE Fitted) 475.V009.604 39 1 Suction Manifold ASY (includes items 42,43,44.45) (XL Fitted) 475.V007.354 (XL Fitted) 475.V009.354 40 2 Discharge Elbow PV187 KE186 41 4 Discharge Elbow PV187 KE186 41 4 Discharge Elbow PV187 KE186 41 4 Discharge Elbow PV187 KE186 42 2 Suction Elbow PV187 KE187 43 2 Manifold Tee O-Ring V1881F KV188 44 4 XL Fitted Manifold Tee O-Ring V1881L KV188 45 4 Clamp Assembly SV189 SV189 Blana Nitrile V183N-1 V191N NA NA V90NT Nordel V183N-1 V180N-1 V191ND <td>29 30 31 32 33 33 34 34</td> <td>2 16 16 16 1 4 4 1</td> <td>Water Chamber Water Chamber Bolt Water Chamber Washe Water Chamber Washe Uscharge Manifold Discharge Manifold Bo Discharge Elbow Bolt (Center Suction Manifold</td> <td>lt Ported)</td> <td>PE108 PE104 SV SV PE120 E1 SV PE120F</td> <td>KÉ108 KE104 187A 189C 185B KE120 120A 186A KE120F</td>	29 30 31 32 33 33 34 34	2 16 16 16 1 4 4 1	Water Chamber Water Chamber Bolt Water Chamber Washe Water Chamber Washe Uscharge Manifold Discharge Manifold Bo Discharge Elbow Bolt (Center Suction Manifold	lt Ported)	PE108 PE104 SV SV PE120 E1 SV PE120F	KÉ108 KE104 187A 189C 185B KE120 120A 186A KE120F
Item # Qty. Description Part Number 38 1 Discharge Manifold ASY (includes items 40,43,44 45) (PTFE Fitted) (PTFE Fitted) 475.V009.604 39 1 Suction Manifold ASY (includes items 42,43,44 45) (PTFE Fitted) (XL Fitted) 475.V009.354 39 1 Suction Manifold ASY (includes items 42,43,44 45) (PTFE Fitted) (YL Fitted) 475.V009.354 40 2 Discharge Elbow PV186 (XL Fitted) 475.V009.354 41 4 Discharge Elbow PV186 KE186 42 2 Suction Elbow PV187 KE186 43 2 Manifold Tee PV187 KE187 43 2 Manifold Tee PV188 KV188 44 4 Clamp Assembly SV189 SV189 45 4 Clamp Assembly SV189 SV189 Elastomer Material Specifications V183N-1 V191N N/A Nordel V183N-1 V191N V/A Viton V183ND-1 V191ND V900ND <td>29 30 31 32 33 34 34 35 36</td> <td>2 16 16 16 1 4 4 4 1 4</td> <td>Water Chamber Water Chamber Bolt Water Chamber Washe Water Chamber Nut Discharge Manifold Discharge Elbow Bolt (Center Suction Manifold Suction Manifold Bolt</td> <td>lt Ported)</td> <td>PE108 PE104 SV SV PE120 E120 PE120F FE120F</td> <td>KÉ108 KE104 187A 189C 185B KE120 120A 186A KE120F 20B</td>	29 30 31 32 33 34 34 35 36	2 16 16 16 1 4 4 4 1 4	Water Chamber Water Chamber Bolt Water Chamber Washe Water Chamber Nut Discharge Manifold Discharge Elbow Bolt (Center Suction Manifold Suction Manifold Bolt	lt Ported)	PE108 PE104 SV SV PE120 E120 PE120F FE120F	KÉ108 KE104 187A 189C 185B KE120 120A 186A KE120F 20B
38 1 Discharge Manifold ASY (includes items 40,43,44 45) (PTFE Fitted) (PTFE)	29 30 31 32 33 34 34 35 36	2 16 16 16 1 4 4 4 1 4	Water Chamber Water Chamber Bolt Water Chamber Nut Discharge Manifold Discharge Manifold Bol Discharge Elbow Bolt (Center Suction Manifold Bolt Manifold Bolt Manifold Washer	lt Ported)	PE108 PE104 SV SV PE120 E1 SV PE120F E1 SV	KĚ108 KE104 187A 189C 185B KE120 120A 186A KE120F 120B 189C
38 1 Discharge Manifold ASY (includes items 40,43,44 45) 475.V007.604 (PTFE Fitted) 475.V009.354 39 1 Suction Manifold ASY (includes items 42,43,44 45) (XL Fitted) 475.V008.604 (PTFE Fitted) 475.V010.604 40 2 Discharge Elbow (PTFE Fitted) 475.V008.604 (PTFE Fitted) 475.V010.354 41 4 Discharge Elbow Bolt (Center Ported) PV186 KE186 42 2 Suction Elbow PV187 KE187 43 2 Manifold Tee PV188 KV188 44 4 Clamp Assembly V188TF V188TF 45 4 Clamp Assembly SV189 SV189 Elastomer Material Specifications Material Diaphragm P/N Valve Ball P/N O-Ring P/N Neoprene V183N-1 V191N N/A Viton V183N-1 V191VT V90NT Viton V183ND-1 V191ND V90NT Nordel V183TPEFG V191TPEFG N/A Vitel V183TPEFG V1	29 30 31 32 33 34 34 35 36 37	2 16 16 1 4 4 1 4 8	Water Chamber Water Chamber Bolt Water Chamber Washe Water Chamber Nut Discharge Manifold Discharge Elbow Bolt (Center Suction Manifold Bolt Suction Manifold Bolt Manifold Washer Optional CP	lt Ported)	PE108 PE104 SV SV PE120 E1 SV PE120F E1 SV PE120F	KÉ108 KE104 187A 189C 185B KE120 120A 186A KE120F 120B 189C Number
39 1 Suction Manifold ASY (includes items 42,43,44 45) (XL Fitted) 475.V007.354 (XL Fitted) 475.V010.604 40 2 Discharge Elbow (XL Fitted) 475.V008.604 (PTFE Fitted) 475.V010.604 41 4 Discharge Elbow PV186 KE186 41 4 Discharge Elbow Bolt (Center Ported) 170.107.115 42 2 Suction Elbow PV187 KE187 43 2 Manifold Tee PV187 KE187 44 4 PTFE Fitted Manifold Tee O-Ring V188TF V188XL 45 4 Clamp Assembly SV189 SV189 Elastomer Material Specifications Elastomer Material Specifications V188XL Material Diaphragm P/N V191N N/A Neoprene V183N-1 V191N V90NT Viton V183N-1 V191N V90VT Nordel V183ND-1 V191ND V90ND Santoprene V183TPEFG V191TPEFG N/A Hytrel V183TPEFG V191TPEFG	29 30 31 32 33 34 34 35 36 37	2 16 16 1 4 4 1 4 8	Water Chamber Water Chamber Bolt Water Chamber Washe Water Chamber Nut Discharge Manifold Discharge Elbow Bolt (Center Suction Manifold Bolt Suction Manifold Bolt Manifold Washer Optional CP	lt Ported)	PE108 PE104 SV SV PE120 PE120F PE120F E1 SV PE120F E1 SV PE120F	KÉ108 KE104 189C 185B KE120 120A 186A KE120F 120B 189C Number Kynar
39 1 Suction Manifold ASY (includes items 42,43,44 45) (PTFE Fitted) 475,V008,604 (PTFE Fitted) 475,V008,354 (PTFE Fitted) 475,V010.604 40 2 Discharge Elbow PV186 KE186 41 4 Discharge Elbow Bolt (Center Ported) 170.107.115 KE186 42 2 Suction Elbow PV187 KE187 43 2 Manifold Tee PV188 KV188 44 4 PTFE Fitted Manifold Tee O-Ring V188TF KV188 45 4 Clamp Assembly SV189 SV189 Elastomer Material Specifications Material Diaphragm P/N Valve Ball P/N O-Ring P/N N/A V183N-1 V191N N/A Viton V183N-1 V191N V30BN Viton V183ND-1 V191N V300N Nordel V183TPERG V191ND V30ND Santoprene V183TPERG V191TPERG N/A Hytrel V183TPERG V191TPERG N/A	29 30 31 32 33 34 34 34 35 36 37 Item #	2 16 16 1 4 4 4 1 4 8 Qty.	Water Chamber Water Chamber Bolt Water Chamber Washe Discharge Manifold Bolt Discharge Elbow Bolt (Center Suction Manifold Bolt Suction Manifold Bolt Manifold Washer Optional CP Description	lt Ported) Manifold Assembly	PE108 PE104 SV SV PE120 PE120F PE120F E1 SV PE120F E1 SV PE120F	KÉ108 KE104 189C 185B KE120 120A 186A KE120F 120B 189C Number Kynar
39 1 Suction Manifold ASY (includes items 42,43,44 45) (PTFE Fitted) 475.V010.304 40 2 Discharge Elbow PV186 KE186 41 4 Discharge Elbow Bolt (Center Ported) 170.107.115 42 2 Suction Elbow PV186 KE187 43 2 Manifold Tee PV187 KE187 44 4 PTFE Fitted Manifold Tee O-Ring V188TF V188 44 4 Clamp Assembly SV189 SV189 Elastomer Material Specifications Material Diaphragm P/N Vave Ball P/N O-Ring P/N Neoprene V183N-1 V191N N/A Buna Nitrile V183N-1 V191N V90ND Viton V183ND-1 V191ND V90ND Santoprene V183TPEFG V191TPEKL V190XL Hytrel V183TPEFG V191TPEFG N/A	29 30 31 32 33 34 34 34 35 36 37 Item #	2 16 16 1 4 4 4 1 4 8 Qty.	Water Chamber Water Chamber Bolt Water Chamber Washe Discharge Manifold Bolt Discharge Elbow Bolt (Center Suction Manifold Bolt Suction Manifold Bolt Manifold Washer Optional CP Description	lt Ported) Manifold Assembly	PE108 PE104 SV SV PE120 PE120 PE120F PE120F E1 SV PE120F E1 SV PE120F E1 SV PE120F	KÉ108 KE104 187A 189C 185B KE120 120A 186A KE120F 120B 189C Vumber Kynar (PTFE Fitted) 475.V009.604
40 2 Discharge Elbow PV186 KE186 41 4 Discharge Elbow Bolt (Center Ported) 170.107.115 42 2 Suction Elbow PV187 KE187 43 2 Manifold Tee PV188 KV188 44 4 PTFE Fitted Manifold Tee O-Ring V188TF V188TF 44 4 Clamp Assembly SV189 SV189 45 4 Clamp Assembly SV189 SV189 Material Diaphragm P/N Valve Ball P/N O-Ring P/N Neoprene V183N-1 V191N N/A Viton V183VT-1 V191N V90ND Viton V183TPEXL-1 V191ND V90VT Santoprene V183TPEFG V191TPEKL V190XL Hytrel V183TPEFG V191TPEFG N/A	29 30 31 32 33 34 34 34 35 36 37 Item #	2 16 16 1 4 4 4 1 4 8 Qty.	Water Chamber Water Chamber Bolt Water Chamber Washe Discharge Manifold Bolt Discharge Elbow Bolt (Center Suction Manifold Bolt Suction Manifold Bolt Manifold Washer Optional CP Description	lt Ported) Manifold Assembly	PE108 PE104 SV SV PE120 PE120 PE120F E1 SV PE120F E1 SV PE120F E1 SV PE120F E1 SV V V PE120F E1 SV	KÉ108 KE104 187A 189C 185B KE120 120A 186A KE120F 20B 189C Number (PTFE Fitted) 475.V009.604 (XL Fitted) 475.V009.354
41 4 Discharge Elbow Bolt (Center Ported) 170.107.115 42 2 Suction Elbow PV187 KE187 43 2 Manifold Tee PV187 KE187 43 2 Manifold Tee PV188 KV188 44 4 PTFE Fitted Manifold Tee O-Ring V188TF V188TF 44 4 Clamp Assembly SV189 SV189 45 4 Clamp Assembly SV189 SV189 Elastomer Material Specifications Material Diaphragm P/N Valve Ball P/N O-Ring P/N Neoprene V183N-1 V191N N/A Buna Nitrile V183N-1 V191N V90BN Viton V183ND-1 V191ND V90VT Nordel V183TPETAL V191ND V90ND Santoprene V183TPETAC V191TPEXL V190XL Hytrel V183TPETAC V191TPETAC N/A	29 30 31 32 33 34 34 35 36 37 Item # 38	2 16 16 1 4 4 4 8 Qty. 1	Water Chamber Water Chamber Bolt Water Chamber Washe Water Chamber Nut Discharge Manifold Discharge Manifold Bolt Suction Manifold Bolt Suction Manifold Bolt Manifold Washer Optional CP Description	It Ported) Manifold Assembly ns 40,43,44 45)	PE108 PE104 SV SV PE120 PE120 PE120F E1 SV PE120F E1 SV PE120F E1 SV PE120F (PTFE Fitted) 475.V007.604 (XL Fitted) 475.V007.354 (PTFE Fitted) 475.V008.604	KÉ108 KE104 187A 189C 185B KE120 120A 186A KE120F 120B 189C Number (PTFE Fitted) 475.V009.354 (PTFE Fitted) 475.V009.354 (PTFE Fitted) 475.V010.604
42 2 Suction Elbow PV187 KE187 43 2 Manifold Tee PV188 KV188 44 4 PTFE Fitted Manifold Tee O-Ring V188TF KV188 44 4 Clamp Assembly SV189 SV189 45 4 Clamp Assembly SV189 SV189 Elastomer Material Specifications Material Diaphragm P/N Valve Ball P/N O-Ring P/N Neoprene V183N-1 V191N N/A Buna Nitrile V183N-1 V191N V90BN Viton V183ND-1 V191ND V90VT Nordel V183TPEXL-1 V191ND V90ND Santoprene V183TPEFG V191TPEXL V190XL Hytrel V183TPEFG V191A N/A	29 30 31 32 33 34 34 35 36 36 37 Item # 38 39	2 16 16 1 4 4 4 Qty. 1 1	Water Chamber Water Chamber Bolt Water Chamber Washe Water Chamber Nut Discharge Manifold Discharge Manifold Bolt Suction Manifold Bolt Manifold Washer Optional CP Discharge Manifold ASY (includes item	It Ported) Manifold Assembly ns 40,43,44 45)	PE108 PE104 SV SV PE120 PE120 PE120F E1 SV PE120F E1 SV PE120F E1 SV PE120F (PTFE Fitted) 475.V007.604 (XL Fitted) 475.V007.354 (PTFE Fitted) 475.V008.604 (XL Fitted) 475.V008.354	KÉ108 KE104 187A 189C 185B KE120 120A 186A KE120F 120B 189C Number (PTFE Fitted) 475.V009.354 (PTFE Fitted) 475.V010.604 (XL Fitted) 475.V010.354
44 4 PTFE Fitted Manifold Tee O-Ring V188TF 45 4 XL Fitted Manifold Tee O-Ring V188XL 45 4 Clamp Assembly SV189 Elastomer Material Specifications Material Diaphragm P/N Valve Ball P/N O-Ring P/N Neoprene V183N-1 V191N N/A Buna Nitrile V183BN-1 V191N V90BN Viton V183VT-1 V191VT V90VT Nordel V183TPEXL-1 V191ND V90ND Santoprene V183TPEFG V191TPEFG N/A Hytrel V183TPEFG V191A N/A	29 30 31 32 33 34 34 35 36 36 37 Item # 38 39	2 16 16 1 1 4 4 4 4 2 Qty. 1 2	Water Chamber Water Chamber Bolt Water Chamber Washe Water Chamber Nut Discharge Manifold Discharge Manifold Bolt Suction Manifold Bolt Manifold Washer Optional CP Discharge Manifold ASY (includes item Suction Manifold ASY (includes item	It Ported) Manifold Assembly ns 40,43,44 45) s 42,43,44 45)	PE108 PE104 SV SV PE120 PE120 PE120F PE120F E1 SV PE120F E1 SV PE120F (PTFE Fitted) 475.V007.604 (XL Fitted) 475.V007.354 (PTFE Fitted) 475.V008.604 (XL Fitted) 475.V008.354 PV186	KÉ108 KE104 187A 189C 185B KE120 20A 186A KE120F 20B 189C Vumber (PTFE Fitted) 475.V009.604 (XL Fitted) 475.V009.354 (PTFE Fitted) 475.V010.604 (XL Fitted) 475.V010.354 KE186
44 4 XL Fitted Manifold Tee O-Ring V188XL 45 4 Clamp Assembly SV189 Elastomer Material Specifications Material Diaphragm P/N Valve Ball P/N O-Ring P/N Neoprene V183N-1 V191N N/A Buna Nitrile V183BN-1 V191BN V90BN Viton V183VT-1 V191VT V90VT Nordel V183TPEXL-1 V191TPEXL V190VL Santoprene V183TPEFG V191TPEFG N/A Hytrel V183TPEFG V191A N/A	29 30 31 32 33 34 34 35 36 37 Item # 38 39 40 41	2 16 16 1 4 4 8 Qty. 1 1 2 4	Water Chamber Water Chamber Bolt Water Chamber Nut Discharge Manifold Discharge Manifold Bolt Suction Manifold Bolt Suction Manifold Bolt Manifold Washer Optional CP Discharge Manifold ASY (includes item Suction Manifold ASY (includes item Discharge Elbow Discharge Elbow	It Ported) Manifold Assembly ns 40,43,44 45) s 42,43,44 45)	PE108 PE104 SV SV PE120 PE120 PE120F E1 SV PE120F (PTFE Fitted) 475.V007.604 (XL Fitted) 475.V007.354 (PTFE Fitted) 475.V008.604 (XL Fitted) 475.V008.354 PV186 170.7 PV187	KÉ108 KE104 187A 189C 185B KE120 120A 186A KE120F 120B 189C Number (PTFE Fitted) 475.V009.604 (XL Fitted) 475.V009.354 (PTFE Fitted) 475.V010.604 (XL Fitted) 475.V010.604 (XL Fitted) 475.V010.354 KE186 107.115 KE187
AL Priced Main Not Fee O-Ring V TookL 45 4 Clamp Assembly SV189 Elastomer Material Specifications Material Diaphragm P/N Valve Ball P/N O-Ring P/N Neoprene V183N-1 V191N N/A Buna Nitrile V183BN-1 V191N V90BN Viton V183VT-1 V191VT V90VT Nordel V183TPEXL-1 V191ND V90ND Santoprene V183TPEFG V191TPEFG N/A Hytrel V183TPEFG V191A N/A	29 30 31 32 33 34 34 35 36 37 Item # 38 39 40 41	2 16 16 1 4 4 4 8 Qty. 1 1 2 4 2	Water Chamber Water Chamber Bolt. Water Chamber Washer Water Chamber Nut Discharge Manifold Discharge Manifold Bo Discharge Elbow Bolt (Center Suction Manifold Suction Manifold Washer Optional CP Discharge Manifold ASY (includes item Discharge Elbow Bolt (Center Suction Manifold ASY (includes item Discharge Elbow Discharge Elbow Bolt (Center Suction Manifold ASY (includes item Discharge Elbow Discharge Elbow Discharge Elbow Manifold ASY (includes item Discharge Elbow Manifold Tee	It Ported) Manifold Assembly ms 40,43,44 45) s 42,43,44 45) Ported)	PE108 PE104 SV SV PE120 PE120 PE120F E1 SV PE120F E1 SV PE120F E1 SV PE120F (PTFE Fitted) 475.V007.604 (XL Fitted) 475.V007.354 (PTFE Fitted) 475.V008.604 (XL Fitted) 475.V008.354 PV186 170.7 PV187 PV187 PV188	KÉ108 KE104 187A 189C 185B KE120 200A 186A KE120F 20B 189C Number (PTFE Fitted) 475.V009.604 (XL Fitted) 475.V009.354 (PTFE Fitted) 475.V010.604 (XL Fitted) 475.V010.354 KE186 107.115 KE187 KV188
Elastomer Material SpecificationsMaterialDiaphragm P/NValve Ball P/NO-Ring P/NNeopreneV183N-1V191NN/ABuna NitrileV183BN-1V191BNV90BNVitonV183VT-1V191VTV90VTNordelV183ND-1V191NDV90NDSantopreneV183TPEFGV191TPEFGN/AHytrelV183TPEFGV191AN/A	29 30 31 32 33 34 34 35 36 37 Item # 38 39 40 41 42 43	2 16 16 1 4 4 4 1 4 8 Qty. 1 1 2 4 2 2	Water Chamber Water Chamber Bolt Water Chamber Washe Water Chamber Nut Discharge Manifold Discharge Manifold Bolt Suction Manifold Bolt Manifold Washer Optional CP Discharge Manifold ASY (includes iter Discharge Elbow Bolt (Center Suction Manifold ASY (includes iter Discharge Elbow Bolt (Center Suction Elbow Manifold Tee PTEE Fitted Manifold Tee	It Ported) Manifold Assembly ms 40,43,44 45) s 42,43,44 45) Ported)	PE108 PE104 SV SV PE120 PE120 PE120F E1 SV PE120F (PTFE Fitted) 475.V007.604 (XL Fitted) 475.V007.354 (PTFE Fitted) 475.V008.604 (XL Fitted) 475.V008.354 PV186 170.7 PV188 V1	KÉ108 KE104 187A 189C 185B KE120 200A 186A KE120F 200B 189C Number (PTFE Fitted) 475.V009.604 (XL Fitted) 475.V009.354 (PTFE Fitted) 475.V010.354 (XL Fitted) 475.V010.354 KE186 107.115 KE187 KV188 88TF
Neoprene V183N-1 V191N N/Å Buna Nitrile V183BN-1 V191BN V90BN Viton V183VT-1 V191VT V90VT Nordel V183ND-1 V191ND V90ND Santoprene V183TPEXL-1 V191TPEXL V190XL Hytrel V183TPEFG V191TPEFG N/A Acetal N/A V191A N/A	29 30 31 32 33 34 34 35 36 37 Item # 38 39 40 41 42 43 44	$ \begin{array}{r} 2 \\ 16 \\ 16 \\ 16 \\ 1 \\ 4 \\ 4 \\ 4 \\ 1 \\ 4 \\ 8 \\ Qty. \\ 1 \\ 1 \\ 2 \\ 4 \\ 4 \\ 2 \\ 4 \\ 4 \\ 2 \\ 4 \\ 4 \\ 2 \\ 4 \\ 4 \\ 2 \\ 4 $	Water Chamber Water Chamber Bolt. Water Chamber Washer Water Chamber Nut Discharge Manifold Discharge Manifold Bol Discharge Elbow Bolt (Center Suction Manifold Bolt Manifold Washer Optional CP Discharge Elbow Discharge Manifold ASY (includes item Discharge Elbow Conter Suction Elbow Manifold Tee PTFE Fitted Manifold Tee Clamp Assembly	It Ported) Manifold Assembly ms 40,43,44 45) s 42,43,44 45) Ported) P-Ring Ring	PE108 PE104 SV SV PE120 PE120 PE120F PE120F PE120F PE120F PE120F (PTFE Fitted) 475.V007.604 (XL Fitted) 475.V007.354 (PTFE Fitted) 475.V008.604 (XL Fitted) 475.V008.354 PV186 170. ⁻ PV187 PV187 PV188 V1 V1	KÉ108 KE104 187A 189C 185B 185B 185B 185B 186A 186A 189C Vumber (PTFE Fitted) 475.V009.604 (XL Fitted) 475.V009.354 (PTFE Fitted) 475.V010.354 (PTFE Fitted) 475.V010.354 (E186 107.115 KE187 KV188 88TF 88XL
Buna Nitrile V183BN-1 V191BN V90BN Viton V183VT-1 V191VT V90VT Nordel V183ND-1 V191ND V90VT Santoprene V183TPEXL-1 V191TPEXL V190XL Hytrel V183TPEFG V191TPEFG N/A Acetal N/A V191A N/A	$ \begin{array}{r} 29 \\ 30 \\ 31 \\ 32 \\ 33 \\ 34 \\ 34 \\ 35 \\ 36 \\ 37 \\ \end{array} $ Item # 38 39 40 41 42 43 44 45	$ \begin{array}{r} 2 \\ 16 \\ 16 \\ 16 \\ 1 \\ 4 \\ 4 \\ 4 \\ 4 \\ 7 \\ 1 \\ 4 \\ 8 \\ \hline Qty. $ 1 1 2 4 4 4 4	Water Chamber Water Chamber Bolt. Water Chamber Washer Water Chamber Nut Discharge Manifold Discharge Manifold Bolt Suction Manifold Bolt Suction Manifold Washer Optional CP Discharge Elbow Bolt (includes iter Discharge Manifold ASY (includes iter Discharge Elbow Bolt (Center Suction Manifold ASY (includes iter Discharge Elbow Bolt (Center Suction Manifold ASY (includes iter Discharge Elbow Bolt (Center Suction Manifold ASY (includes iter Discharge Elbow Bolt (Center Suction Manifold ASY (includes iter Discharge Elbow Bolt (Center Suction Tischarge Elbow Bolt (Center Suction Elbow Manifold Tee PTFE Fitted Manifold Tee O XL Fitted Manifold Tee O XL Fitted Manifold Tee O Clamp Assembly Elastomer Ma	It Ported) Manifold Assembly ns 40,43,44 45) s 42,43,44 45) Ported) Ported) Pring Ring terial Specifications	PE108 PE104 SV SV PE120 PE120 PE120F PE120F PE120F PE120F (PTFE Fitted) 475.V007.604 (XL Fitted) 475.V007.354 (PTFE Fitted) 475.V008.604 (XL Fitted) 475.V008.354 PV186 170.7 PV187 PV187 PV188 V1 SV	KÉ108 KE104 187A 189C 185B KE120 120A 186A KE120F 120B 189C Number (PTFE Fitted) 475.V009.604 (XL Fitted) 475.V009.354 (PTFE Fitted) 475.V010.604 (XL Fitted) 475.V010.354 KE186 107.115 KE187 KV188 88TF 88XL /189
Viton V183VT-1 V191VT V90VT Nordel V183ND-1 V191ND V90ND Santoprene V183TPEXL-1 V191TPEXL V190NL Hytrel V183TPEFG V191TPEFG N/A Acetal N/A V191A N/A	29 30 31 32 33 34 34 35 36 37 Item # 38 39 40 41 42 43 44 45 Mate	2 16 16 1 4 4 4 8 Qty. 1 1 2 2 4 4 4 erial	Water Chamber Water Chamber Bolt. Water Chamber Washer Water Chamber Nut Discharge Manifold Discharge Manifold Bo Discharge Elbow Bolt (Center Suction Manifold Suction Manifold Washer Optional CP Discharge Manifold ASY (includes item Discharge Elbow Manifold Tee YL Fitted Manifold Tee Clamp Assembly Elastomer Ma	It Ported) Manifold Assembly ms 40,43,44 45) s 42,43,44 45) Ported) Ported) P-Ring Ring terial Specifications Valve Ball P/N	PE108 PE104 SV SV PE120 PE120 PE120F E1 SV PE120F PE120F (PTFE Fitted) 475.V007.604 (XL Fitted) 475.V007.354 (PTFE Fitted) 475.V008.604 (XL Fitted) 475.V008.354 PV186 170.* PV187 PV187 PV188 0-Ri	KÉ108 KE104 187A 189C 185B KE120 120A 186A KE120F 120B 189C Number (PTFE Fitted) 475.V009.604 (XL Fitted) 475.V009.354 (PTFE Fitted) 475.V010.354 (PTFE Fitted) 475.V010.354 KE186 107.115 KE187 KV188 88TF 88XL /189 ng P/N
Nordel V183ND-1 V191ND V90ND Santoprene V183TPEXL-1 V191TPEXL V190XL Hytrel V183TPEFG V191TPEFG N/A Acetal N/A V191A N/A	29 30 31 32 33 34 34 35 36 37 Item # 38 39 40 41 42 43 44 45 Mate Neco	2 16 16 16 1 4 4 4 2 2 4 2 2 4 4 2 2 4 4 2 2 4 4 2 2 2 4 4 5 2 2 4 4 5 6 1 1 1 1 1 1 1 1 1 1 1 1 1	Water Chamber Water Chamber Bolt Water Chamber Washe Water Chamber Nut Discharge Manifold Discharge Manifold Bolt Suction Manifold Bolt Manifold Washer Optional CP Discharge Elbow Bolt (Center Suction Manifold Washer Optional CP Discharge Manifold ASY (includes iter Discharge Elbow Bolt (Center Suction Manifold ASY (includes iter Discharge Elbow Bolt (Center Suction Manifold ASY (includes iter Discharge Elbow Bolt (Center Suction Manifold Tee PTFE Fitted Manifold Tee O- XL Fitted Manifold Tee O- Clamp Assembly Elastomer Ma Diaphragm P/N V183N-1	It Ported) Manifold Assembly ms 40,43,44 45) s 42,43,44 45) Ported) Pering Ring terial Specifications Valve Ball P/N V191N	PE108 PE104 SV SV PE120 PE120 PE120F C PE120F C PE120F PE120F C PE120F C PE120F C PE120F C PE120F C PE120F C C PE120F C C C C C C C C C C C C C C C C C C C	KÉ108 KE104 187A 189C 185B KE120 120A 186A KE120F 120B 189C Number (PTFE Fitted) 475.V009.604 (XL Fitted) 475.V009.354 (PTFE Fitted) 475.V010.354 (PTFE Fitted) 475.V010.354 (XL Fitted) 475.V010.354 KE186 107.115 KE187 KV188 88TF 88XL /189 ng P/N V/A
Hytrel V183TPEFG V191TPEFG N/A Acetal N/A V191A N/A	29 30 31 32 33 34 34 35 36 37 Item # 38 39 40 41 42 43 44 45 Mate Neop Buna Vit	2 16 16 1 4 4 1 4 8 Qty. 1 1 2 4 2 4 4 erial orene Nitrile ion	Water Chamber Water Chamber Bolt. Water Chamber Washer Water Chamber Nut Discharge Manifold Discharge Manifold Bolt Suction Manifold Bolt Suction Manifold Bolt Manifold Washer Optional CP Discharge Elbow Bolt (Center Suction Manifold ASY (includes item Discharge Elbow Bolt (Center Suction Manifold ASY (includes item Discharge Elbow Bolt (Center Suction Manifold ASY (includes item Discharge Elbow Bolt (Center Suction Manifold ASY (includes item Discharge Elbow Bolt (Center Suction Elbow Manifold Tee PTFE Fitted Manifold Tee O XL Fitted Manifold Tee O Clamp Assembly Elastomer Ma Diaphragm P/N V183BN-1 V183BN-1 V1833NT-1	It Ported) Manifold Assembly ms 40,43,44 45) s 42,43,44 45) Ported) Ported) Pering Ring terial Specifications Valve Ball P/N V191N V191N V191VT	PE108 PE104 SV SV PE120 PE120 PE120F PE120F PE120F PE120F (PTFE Fitted) 475.V007.604 (XL Fitted) 475.V007.354 (PTFE Fitted) 475.V008.604 (XL Fitted) 475.V008.354 PV186 170.' PV187 PV188 V1 OR OR OR N OR N OR N OR N OR N OR N OR	KÉ108 KE104 187A 189C 185B KE120 120A 186A KE120F 20B 189C Number (PTFE Fitted) 475.V009.604 (XL Fitted) 475.V009.354 (PTFE Fitted) 475.V010.604 (XL Fitted) 475.V010.604 (XL Fitted) 475.V010.354 KE186 107.115 KE187 KV188 88TF 88XL //189
Acetal N/A V191A N/A	29 30 31 32 33 34 34 35 36 37 Item # 38 39 40 41 42 43 44 45 Mate Neop Buna Vitt Nor	2 16 16 16 1 4 4 8 Qty. 1 1 1 2 4 2 2 4 4 2 2 4 4 2 2 4 4 5 7 8 8 9 9 1 1 1 4 8 9 9 9 9 9 9 9 9 9 9 9 9 9	Water Chamber Water Chamber Bolt. Water Chamber Washer Water Chamber Nut Discharge Manifold Discharge Manifold Bolt Suction Manifold Suction Manifold Washer Optional CP Discharge Elbow Bolt (Center Suction Manifold Washer Optional CP Discharge Manifold ASY (includes item Discharge Elbow Bolt (Center Suction Manifold ASY (includes item Discharge Elbow Bolt (Center Suction Manifold ASY (includes item Discharge Elbow Bolt (Center Suction Manifold Tee PTFE Fitted Manifold Tee O- Clamp Assembly Elastomer Ma Diaphragm P/N V183N-1 V183N-1 V183N-1	It Ported) Manifold Assembly ms 40,43,44 45) s 42,43,44 45) s 42,43,44 45) Ported) Pering Ring terial Specifications Valve Ball P/N V191N V191N V191N V191ND	PE108 PE104 SV SV PE120 PE120 PE120F PE120F PE120F (PTFE Fitted) 475.V007.604 (XL Fitted) 475.V007.354 (PTFE Fitted) 475.V008.604 (XL Fitted) 475.V008.354 PV186 170.1 PV187 PV188 V1 O-Ri O-Ri N SV	KÉ108 KE104 187A 189C 185B KE120 200A 186A KE120F 200B 189C Number (PTFE Fitted) 475.V009.604 (XL Fitted) 475.V009.354 (PTFE Fitted) 475.V010.604 (XL Fitted) 475.V010.354 KE186 107.115 KE187 KV188 88TF 88XL /189 ng P/N WA 00BN 00VT
	29 30 31 32 33 34 34 35 36 37 Item # 38 39 40 41 42 43 44 45 Mate Neop Buna Vitt Nor Santo	2 16 16 1 4 4 4 8 Qty. 1 1 1 2 4 2 2 4 4 erial prene Nitrile ton rdel prene	Water Chamber Water Chamber Bolt. Water Chamber Washer Water Chamber Nut Discharge Manifold Discharge Manifold Bolt Suction Manifold Bolt Suction Manifold Washer Optional CP Discharge Elbow Bolt (Center Suction Manifold Washer Optional CP Discharge Manifold ASY (includes iter Discharge Elbow Discharge Elbow Bolt (Center Suction Manifold ASY (includes iter Discharge Elbow Bolt (Center Suction Manifold ASY (includes iter Discharge Elbow Bolt (Center Suction Manifold Tee PTFE Fitted Manifold Tee O- Clamp Assembly Elastomer Ma Diaphragm P/N V183NP-1 V183ND-1 V183ND-1 V183ND-1	It Ported) Manifold Assembly ms 40,43,44 45) s 42,43,44 45) Ported) Period Peri	PE108 PE104 SV SV PE120 PE120 PE120F C PE120F C PE120F PE120F C PE120F C PE120F C PE120F C PE120F C PE120F C C PE120F C C C C C C C C C C C C C C C C C C C	KÉ108 KE104 187A 189C 185B KE120 120A 186A KE120F 20B 189C Number (PTFE Fitted) 475.V009.604 (XL Fitted) 475.V009.354 (PTFE Fitted) 475.V009.354 (PTFE Fitted) 475.V010.354 (XL Fitted) 475.V010.354 KE186 107.115 KE187 KV188 88TF 88XL /189 ng P/N V/A 00BN 00VT 00ND 90XL
s/skh	29 30 31 32 33 34 34 35 36 37 Item # 38 39 40 41 42 43 44 45 Mate Neop Buna Vit Nor Santo Hy	2 16 16 16 1 4 4 4 8 Qty. 1 1 1 2 4 2 4 4 erial prene trel	Water Chamber Water Chamber Bolt Water Chamber Nut Discharge Manifold Discharge Manifold Bolt Suction Manifold Bolt Suction Manifold Bolt Manifold Washer Optional CP Discharge Elbow Bolt (Center Suction Manifold Bolt Manifold Washer Optional CP Discharge Manifold ASY (includes item Discharge Elbow Discharge Elbow Bolt (Center Suction Manifold ASY (includes item Discharge Elbow Bolt (Center Suction Manifold Tee Discharge Elbow Bolt (Center Suction Elbow Manifold Tee PTFE Fitted Manifold Tee O- Clamp Assembly Elastomer Ma Diaphragm P/N V183NL1 V183NL1 V183NL1 V183ND-1 V183TPEKL-1 V183TPEFG	It Ported) Manifold Assembly ms 40,43,44 45) s 42,43,44 45) Ported) Ported) Ported) Ported) Ported) Viging terial Specifications Valve Ball P/N V191N V191N V191NU V191TPEXL V191TPEKL V191TPEFG	PE108 PE104 SV SV PE120 PE120 PE120F C PE120F PE120F PE120F C PE120F C PE120F C PE120F C PE120F C PE120F C PE120F C C PE120F C C C C C C C C C C C C C C C C C C C	KĚ108 187A 189C 185B 185B 185B 186A KE120F 200B 189C Vumber (PTFE Fitted) 475.V009.604 (XL Fitted) 475.V010.604 (XL Fitted) 475.V010.354 (PTFE Fitted) 475.V010.354 (PTFE Fitted) 475.V010.354 (XL Fitted) 475.V010.354 KE186 107.115 KE187 88TF 88XL /189 00BN 00VT 00ND 90XL V/A
	29 30 31 32 33 34 34 35 36 37 Item # 38 39 40 41 42 43 44 45 Mate New Buna Vitt Nor Santo Hyj Acc	2 16 16 16 1 4 4 4 4 4 4 8 Qty. 1 1 2 4 2 4 2 4 4 erial prene trel tetal	Water Chamber Water Chamber Bolt Water Chamber Nut Discharge Manifold Discharge Manifold Bol Discharge Elbow Bolt (Center Suction Manifold Bolt Mainfold Washer Optional CP Discharge Elbow Discharge Manifold ASY (includes item Discharge Elbow Manifold Tee OPTFE Fitted Manifold Tee O- Clamp Assembly Elastomer Ma V183N-1 V183N-1 V183N-1 V183NP-1 V183NPEFG N/A	It Ported) Manifold Assembly ms 40,43,44 45) s 42,43,44 45) Ported) Ported) Ported) terial Specifications Valve Ball P/N V191N V191N V191N V191N V191N V191A	PE108 PE104 SV SV PE120 PE120 PE120F PE120F PE120F PE120F (PTFE Fitted) 475.V007.604 (XL Fitted) 475.V007.354 (PTFE Fitted) 475.V008.604 (XL Fitted) 475.V008.354 PV186 170.7 PV187 PV187 PV188 170.7 PV187 PV188 0-Ri O-Ri O-Ri	KÉ108 KE104 187A 189C 185B KE120 120A 186B KE120 120A 186B KE120 120A 186B Vumber (PTFE Fitted) 475.V009.604 (XL Fitted) 475.V010.354 (PTFE Fitted) 475.V010.354 (PTFE Fitted) 475.V010.354 (XL Fitted) 475.V010.354 KE186 107.115 KE187 KV188 88TF 88XL /189 00BN 00VT 00BN 00VT 00ND 90XL V/A



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 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: 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:

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 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:

AUTHORIZED/APPROVED BY:

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

06/14/2017 REV 08

osol

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:

2006/42/EC

EN809:1998+

A1:2009

to Annex VIII

on Machinery, according





WWW.VERSAMATIC.COM

PÄIVÄYS: