





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

Pump not designed, tested or certified to be powered by

compressed natural gas. Powering the pump with natural

stabilized. Ultraviolet radiation can damage these parts and

negatively affect material properties. Do not expose to UV light



WARNING

for extended periods of time.

gas will void the warranty.





Users of electrical and electronic equipment (EEE) with the WEEE marking per Annex IV of the WEEE Directive must not dispose of end of life EEE as unsorted municipal waste, but use the collection framework available to them for the return, recycle, recovery of WEEE and minimize any potential effects of EEE on the environment and human health due to the presence of hazardous substances. The WEEE marking applies only to countries within the European Union (EU) and Norway. Appliances are labeled in accordance with European Directive 2002/96/EC. Contact your local waste recovery agency for a designated collection facility in your area.



None of the equipment supplied within the AirVantage unit either use of exceed the amounts stated above hazardous substances. A signed declaration from our supplier of the electronic/ electrical portion of the AirVantage unit will be held on file stating their adherence to the RoHS, 2002/95/EC regulation.



The enclosure is non-conducting and may generate an ignition-capable level of electrostatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth."



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

Special Conditions for Safe Use:

- For the safe operation of the equipment, it is necessary for the air supply line to be in a safe area
- The cable entry hole should be fitted with a suitably certified cable gland
- For the safe operation of the equipment, the pneumatic pump should be grounded
- The enclosure is non-conducting and may generate an ignition-capable level of electrostatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high pressure steam) which might cause a build-up of electrostatic charge on the non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth.

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.

A WARNING



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



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Explanation of Pump Nomenclature



Model

E Elima-Matic U Ultra-Matic V V-Series **RE** AirVantage 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

9 Geolast

A Acetal Stainless Steel

6 Santoprene XL

8 Polyurethane

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)

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 1 Neoprene 2 Nitrile 3 (FKM) Fluorocarbon 3 (FKM) Fluorocarbon 4 EPDM

Wetted Parts

- 5 PTFE 6 Santoprene XL 7 Hytrel 8 Polyurethane 9 Geolast 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

Construction Design

9 Bolted

0 Clamped

Diaphragm Material

1 Neoprene

2 Nitrile (Nitrile) 3 FKM (Fluorocarbon) 4 EPDM 5 PTFE 6 Santoprene XL

- 7 Hytrel
- 9 Geolast



Materials

Material Profile:	Operating Temperatures:		Polypropylene: A thermoplastic polymer. Moderate tensile 180°F 32 and flex strength. Resists stong acids and alkali. Attacked by 82°C 0°		
CAUTION! Operating temperature limitations are as follows:	Max.	Min.	chlorine, fuming nitric acid and other strong oxidizing agents.	05005	005
Conductive Acetal: Tough, impact resistant, ductile. Good abrasion resistance and low friction surface. Generally inert, with good homial resistance acetative acetation and evidining.		-20°F -29°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	-18°C
agents.			Santoprene®: Injection molded thermoplastic elastomer with	275°F	-40°F
EPDM: Shows very good water and chemical resistance. Has poor resistance to oils and solvents, but is fair in ketones and	280°F 138°C	-40°F -40°C	no tabric layer. Long mechanical flex life. Excellent abrasion resistance.	135°C	-40°C
alcohols.			UHMW PE: A thermoplastic that is highly resistant to a broad 180°F -3 range of chemicals. Exhibits outstanding abrasion and impact 82°C -3 resistance, along with environmental stress-cracking resistance.		
FKM: (Fluorocarbon) Shows good resistance to a wide range	350°F	-40°F -40°C			
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.	1//°C		Urethane: Shows good resistance to abrasives. Has poor resistance to most solvents and oils.	150°F 66°C	32°F 0°C
Hytrel®: Good on acids, bases, amines and glycols at room temperatures only.	220°F 104°C	-20°F -29°C	Virgin PTFE: (PFA/TFE) Chemically inert, virtually impervious. Very few chemicals are known to chemically react with PTFE; molecular alkali metals to the limit of a second function and	220°F 104°C	-35°F -37°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, kotopos, ostors and pito bydrocarbons and obloginated aromatic	200°F 93°C	-10°F -23°C	a few fluoro-chemicals such as chlorine trifluoride or oxygen difluoride which readily liberate free fluorine at elevated temperatures.		
hydrocarbons.			Maximum and Minimum Temperatures are the limits for which these materials can be open Temperatures counted with pressure affect the longevity of diaptragm pump components		
Nitrile: General purpose, oil-resistant. Shows good solvent, oil,	190°F	-10°F	Maximum life should not be expected at the extreme limits of the temperature ranges.		
water and hydraulic fluid resistance. Should not be used with highly polar solvents like acetone and MEK ozone, chlorinated	88°C	-23°C	Metals:		
hydrocarbons and nitro hydrocarbons.			Alloy C: Equal to ASTM494 CW-12M-1 specification for nickel and	d nickel alloy	
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	Stainless Steel: Equal to or exceeding ASTM specification A743 CF-8M for corrosio resistant iron chromium, iron chromium nickel and nickel based alloy castings for general applicaitons. Commonly referred to as 316 Stainless Steel in the pump indust		

For specific applications, always consult the Chemical Resistance Chart.

AFTERMARKET PARTS

RIGHT PART, RIGHT NOW

Pumper Parts is your single source for parts that fit Air-Operated Double Diaphragm (AODD) pumps

- Wilden®
- ARO®
- Yamada®

Designed to perform equal to or greater than original equipment manufacture.



Phone: (419) 526-7296 info@pumperparts.com www.pumperparts.com

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Performance

RE2 Bolted - Aluminum

Flow Rate

1: PUMP SPECS



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

NOTE: For RE2AA pumps fitted with PTFE diaphragms, reduce water discharge figures by 10%. Suction lift is reduced to 10' (3.05m) dry and 20' (6.10m) wet.

Displacement Per Stroke, 0.50 Gal. (1.89 L)

RE2 Bolted - Metallic

Flow	Rate
------	------

Adjustable to 0-150 gpm (568 lpm)
Port Size
Suction 2" ANSI 150#(DIN 50 Compatible Flange)
Discharge. 2" ANSI 150#(DIN 50 Compatible Flange)
Air Inlet
Air Exhaust
Suction Lift
Dry
Wet
Suction Lift (PTFE)
Dry
Wet
Max Solid Size (Diameter)
Max Noise Level
Shipping Weights
Stainless/Cast Iron 133 lbs (60.5 kg)
Hastelloy C 145 lbs (66 kg)

----- AIR CONSUMPTION IN SCFM 125 PSI (8.6 **AIR PRESSURE IN PSI** Ba SCFM M³/HR 100 PSI (6.8 Ba 80 PSI (5.44 Ba HEAD in PSI 60 PSI (4.08 Bar) 40 PSI (2.72 Bar) 60-40 -20 PSI (1.37 Bar 0 -Meters Feet Capacity in U.S. Gallons Per Minute Ó 6Ó0 **Capacity in Liters Per Minute**

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

NOTE: For RE2SA pumps fitted with PTFE diaphragms, reduce water discharge figures by 10%. Suction lift is reduced to 10' (3.05m) dry and 20' (6.10m) wet.



upply or liquid pressure. ragms, reduce water discharge figures by 10%. 6.10m) wet.

Dimensional Drawings

RE2 Bolted - Aluminum 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

RE2 Bolted - Metallic

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



VERSA-MATIC re2mdlAsmATEX-rev0915 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 \bigcirc .

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
	Deadhead (system pressure meets or exceeds air supply pressure).	Increase the inlet air pressure to the pump. Pump is designed for 1:1 pressure ratio at zero flow. (Does not apply to high pressure 2:1 units).
	Cavitation on suction side.	Check suction (move pump closer to product).
	Lack of air (line size, PSI, CFM).	Check the air line size, length, compressor capacity.
	Excessive suction lift.	For lifts exceeding 20' of liquid, filling the chambers with liquid will prime the pump in most cases.
	Air supply pressure or volume exceeds system hd.	Decrease inlet air (press. and vol.) to the pump. Pump is cavitating the fluid by fast cycling.
	Undersized suction line.	Meet or exceed pump connections.
	Restrictive or undersized air line.	Install a larger air line and connection.
	Suction side air leakage or air in product.	Visually inspect all suction-side gaskets and pipe connections.
	Suction line is blocked.	Remove or flush obstruction. Check and clear all suction screens or strainers.
	Pumped fluid in air exhaust muffler.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.
	Check valve obstructed.	Disassemble the wet end of the pump and manually dislodge obstruction in the check valve pocket.
	Check valve and/or seat is worn or needs adjusting.	Inspect check valves and seats for wear and proper setting. Replace if necessary.
	Entrained air or vapor lock in chamber(s).	Purge chambers through tapped chamber vent plugs. Purging the chambers of air can be dangerous.
Product Leaking Through Exhaust	Diaphragm failure, or diaphragm plates loose. 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 with and the decoment themesenture limitetions and the historical
Duran atom Dianharana	Covitation	Foloriza nino diameter en quetien eide of nump
Failure	Excessive flooded suction pressure.	Move pump closer to product. Raise pump/place pump on top of tank to reduce inlet pressure.
	Misapplication (chemical/physical incompatibility).	Consult Chemical Resistance Chart for compatibility with products, cleaners, temperature limitations and lubrication.
	Incorrect diaphragm plates or plates on backwards, installed incorrectly or worn.	Check Operating Manual to check for correct part and installation. Ensure outer plates have not been worn to a sharp edge.
Unbalanced Cycling	Excessive suction lift.	For lifts exceeding 20' of liquid, filling the chambers with liquid will prime the pump in most cases.
	Undersized suction line.	Meet or exceed pump connections.
	Pumped fluid in air exhaust muffler.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.
	Suction side air leakage or air in product.	Visually inspect all suction-side gaskets and pipe connections.
	Check valve obstructed.	Disassemble the wet end of the pump and manually dislodge obstruction in the check valve pocket.
	Check valve and/or seat is worn or needs adjusting.	Inspect check valves and seats for wear and proper setting. Replace if necessary.
	Entrained air or vapor lock in chamber(s).	Purge chambers through tapped chamber vent plugs.

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



AirVantage Troubleshooting Guide

A Caution! Whenever troubleshooting or performing any repairs on any IDEX AODD equipment, always remove air supply line to the pump and wear proper personal protective equipment.

LED OUTPUT FOR AirVantage UNIT

<u>STATE</u>

LED OUTPUT Solid

Startup/Settle/Deadhead Standby/Low Flow Learn Mode Seek/Optimize Steady State/Air Savings

1 Second ON / 1 Second OFF 0.1 Seconds ON / 0.1 Seconds OFF 1 Second ON / 0.1 Seconds OFF OFF / ON in rhythm with Cycle Rate of Pump

AirVantage LED DOES NOT LIGHT UP AT ALL

What to Check:

- Make sure power switch on the control module is turned on, (depressed to the left)
- Make sure air is being supplied to pump or make sure 110 VAC unit has power being supplied to it

Corrective Action:

2: INSTAL & OP

- Cycle power switch off/on
- Unplug patch cable and cycle power switch off/on
- Consult Factory After Sales Support team

AirVantage LED LIGHTS UP AND STAYS ON SOLID What to Check:

· Make sure patch cable is plugged in and locked

- Corrective Action:
- · Consult Factory After Sales Support team

VALVE FIRES ONCE AND IMMEDIATELY RESETS

Corrective Action:

Consult Factory After Sales Support team

VALVE LED NEVER LEAVES SEEK MODE - AirVantage LED PULSING IN TIME TO PUMP, BUT VALVE NOT ACTUATING AND THE PUMP IS NOT SAVING AIR

Corrective Action:

Consult Factory After Sales Support team

UNEXPECTED OPERATING CONDITION (AIR SAV-INGS OR FLOW RATE)

What to Check:

- Check for varying environmental pumping conditions (changing head or suction)
- Check ice buildup in exhaust area
- Inspect sleeve and spool for damage

Corrective Action:

Consult Factory After Sales Support team

PUMP CYCLING IS UNSTABLE OR ERRATIC

What to Check:

- Run pump without AirVantage and check pump operation
- Make sure patch cable plug is connected and locked
- Make sure power wire connectors are tight

Corrective Action:

Consult Factory After Sales Support team

PUMP RUNNING SLOWLY

What to Check:

- Run pump without AirVantage and check operation
- Cycle the power off/on to the control module to reset controller
- Check ice buildup in exhaust area
- Inspect sleeve and spool set for damage

Corrective Action:

- Consult Factory After Sales Support team
- · Cycle the power switch on the control module off/on



AirVantage Troubleshooting Guide

AirVantage RESETS AND ENTERS LEARN MODE TOO FREQUENTLY

What to Check:

- Check for excessive varying environmental pumping conditions
- (changing head or suction)
- Check ice buildup in exhaust area
- Inspect sleeve and spool for damage
- Make sure patch cable plug is connected and locked

Corrective Action:

Consult Factory After Sales Support Team

PUMP STALLS, RESETS, LEARNS, SEEKS AND REPEATS

What to Check:

- Make sure patch cable plug is connected and locked
- Check ice buildup in exhaust area

Corrective Action:

Consult Factory After Sales Support Team

PUMP MOVES OUT OF STEADY STATE AND NEVER ATTEMPTS TO RELEARN (LED ON)

What to Check:

- · Make sure patch cable plug is connected and locked
- Cycle the power off/on to the control module

Corrective Action:

- Consult Factory After Sales Support Team
- Cycle the power switch on the control module off/on

WHAT TO DO IN THE EVENT OF A DIAPHRAGM FAILURE

If a diaphragm failure has been detected in pumps fitted with AirVantage,

see page 5 for shut-down procedure.

What to Check:

Has product migrated to the sensor?

Corrective Action:

• If the sensor has been submerged in product, the sensor will need to be replaced. Consult the AirVantage servicing section of the manual for detailed instructions.

What to Check:

Has product contaminated the poppet valve?

Correct Action:

• If a significant amount of product has made it into the poppet valve, then the unit will need to be disassembled for inspection. Consult the AirVantage servicing section (p.24).



VERSA-MATIC[®] re2mdlAsmATEX-rev0915 A WARNING

Substitution of

components may

impair intrinsic safety.

WARNING

Do not open when an

explosive atmosphere may be present.

Composite Repair Parts Drawing - Aluminum Bolted Assembly



Torque Setting	S
Diaphragm Plates — Rubber	65 ft-lbs (88 N-m)
Diaphragm Plates — PTFE	65 ft-lbs (88 N-m)
Air Valve Cap Screws	25 in-lbs (2.8 N-m)



Composite Repair Parts Drawing - Aluminum

Center and Diaphragm Assembly



VERSA-MATIC re2mdlAsmATEX-rev0915 3: EXP VIEW

Composite Repair Parts List - Aluminum

AIR VALVE ASSEMBLY							
Item	Qtv	Description	Standard: Aluminum				
	1	Air Valve Assembly (Includes items 1-11)	P126-0085				
1	1	Valve Body	P126-0003				
2	1	Valve Spool	P126-0063				
3	4	Valve Spool Glyd Ring	P34-204F				
4	1	End Cap	P34-300				
5	2	End Cap Gasket	P24-205				
6	1	Adapter, Air Inlet	P126-0070				
7	1	Tube, Air Inlet Seal	P126-0005				
8	2	Air Inlet O-ring		560.024.360			
9	1	Valve Gasket		P24-202			
10	11	Valve Cap Screw		S1001			
11	2	Valve Cap Screw		P24-209			
	0 (<i>PP</i> _	IR END ASSEMBLY				
Item	Qty	Description		Standard: Aluminum			
12	1	Center Block		P126-0001			
13	1	Main Shaft Bushing		P24-402			
14	1	Air Chamber, Left		P126-0016			
15	1	Air Chamber, Right		P126-0017			
10	<u> </u>	Air Chamber Gasket		P79-109			
10	0	Air Chamber Boit		P24-110 D24 105			
10	<u> </u>	Busiling Dilet Shoft		P24-105			
19	5	Dilot Shaft Spacer		P24-104 D24-106			
20	5	Pilot Shaft O Ping	·	P24-100			
21	0	Stop Nut	· · · · · · · · · · · · · · · · · · ·	D24-107			
24	<u> </u>	Mounting Bracket Left	<u> </u>				
24	1	Mounting Bracket Pight	115.V013.139				
26	2	Retainer Plate	P126_0010				
20	2	Retainer Foam	P126-0010				
28	2	Retainer O-Ring	560,203,360				
29	8	Retainer Can Screw	P126-0032				
30	1	AirVantage Unit	P126-0081				
31	4	AirVantage Unit Cap Screw	170.125.330				
33	1	AirVantage Sensor	P126-0035 (Standard) P126-0059 (PTFE Diaphragm)				
34	1	AirVantage Unit Face Seal O-ring	560 011 360				
35	1	AirVantage Connector Plate	P126-0055				
36	1	AirVantage Connector Plate O-ring	V110BN				
37	1	Check Valve		894.014.000			
37a	1	Check Valve Cartridge		031.206.000			
38	4	Check Valve Cap Screw		171.100.115			
39	1	Check Valve O-Ring	560.200.360				
40	1	Muffler	530.038.000				
41	1	Muffler Adapter	312.045.335				
42	1	Muffler Nipple		538.110.335			
		DIA	PHRAGM ASSEMBLY				
Item	Qty	Description	Dome	Rugged	PTFE		
43	2	Main Shaft O-Ring	P24-403	P24-403	P24-403		
44	1	Main Shatt	P24-103	P24-103	P24-102		
45	2	Inner Diaphragm Plate	P126-0014	P126-0015	P126-0058		
40	2	Outer Diaphragm Plate			V22110		
47	2	Diaphragm	(Refer to Materials Chart)	VZZ4XX (Refer to Materials Chart)	V224TF-FB		
48	2	Bumper Washer	P24-501	P24-501	P24-501		
49	2	Stud	N/A	N/A	V221F		
50	2	Back-Up Diaphragm	N/A	N/A	V224TFB		
51	2	Probe Tip	846.001.167	846.001.167	N/A		
52	2	O-Ring Probe Tip	560.201.360	560.201.360	N/A		
53	2	O-Ring Sensor	560.033.360	560.033.360	N/A		



3: EXP VIEW

Composite Repair Parts List - Aluminum

WET END ASSEMBLY					
ltem	Qty	Description	Aluminum		
54	2	Water Chamber	V235F	В	
55	16	Water Chamber Bolt	V251E)	
56	16	Wetted Section Washer	V302G	A	
57	14	Wetted Section Nut	V3540		
58	4	Valve Seat	V240XX (Refer to Materials Chart)		
59	8	Valve Seat O-Ring	V240T V240TES (only used with metal seats)		
60	4	Valve Ball	V241XX (Refer to Materials Chart)		
			Port Option 1: NPT	Port Option 2: BSP	
61	1	Discharge Manifold	V236FB	V236FB BSP	
62	1	Inlet Manifold	V237FB	V237FB BSP	
63	12	Manifold Bolt	V251D	V251D	
64	12	Manifold Washer	V302GA	V302GA	
65	12	Manifold Nut	V354C	V354C	
66	2	Wetted Section Jam Nut	545.V003.330	N/A	

DIAPHRAGM	MATERIAL CODES
Suffix Codes	
N	Neoprene
BN	Nitrile
VT	FKM
ND	EPDM
TF	PTFE
XL/TPEXL	Santoprene
FG/TPEFG	Hytrel
G	Geolast

BALL MATERIAL CODES				
Suffix Codes				
Ν	Neoprene			
BN	Nitrile			
VT	FKM			
ND	EPDM			
TF	PTFE			
XL/TPEXL	Santoprene			
FG/TPEFG	Hytrel			
G	Geolast			
Р	Polyurethane			
A	Acetal			
Prefix Codes				
S	Stainless Steel			

SEAT MATERIAL CODES				
Suffix Codes				
Ν	Neoprene			
BN	Nitrile			
VT	FKM			
ND	EPDM			
TF	PTFE			
XL/TPEXL	Santoprene			
FG/TPEFG	Hytrel			
G	Geolast			
Р	Polyurethane			
A	Acetal			
CS	Carbon Steel			
Prefix Codes				
S	Stainless Steel			
Н	Hastelloy			



Composite Repair Parts Drawing - Metallic Stainless & Hastelloy C Bolted Assembly





Composite Repair Parts Drawing - Metallic

Center and Diaphragm Assembly





Composite Repair Parts Drawing - Metallic Detail Views

Air Valve





17 • Model RE2 Metallic Bolted



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Composite Repair Parts List - Metallic

AIR VALVE ASSEMBLY								
Item	Qty	Description	Standard: Aluminum					
	1	Air Valve Assembly (Includes items 1-11)	P126-0085					
1	1	Valve Body	P126-0003					
2	1	Valve Spool	P126-0063					
3	4	Valve Spool Glyd Ring	P34-204F					
4	1	End Cap	P34-300					
5	2	End Cap Gasket	P24-205					
6	1	Adapter, Air Inlet	P126-0070					
7	1	Tube, Air Inlet Seal		P126-0005				
8	2	Air Inlet O-ring		560.024.360				
9	1	Valve Gasket		P24-202				
10	11	Valve Cap Screw		S1001				
11	2	Valve Cap Screw		P24-209				
		<i>I</i>	AIR END ASSEMBLY					
Item	Qty	Description		Standard: Aluminum				
12	1	Center Block		P126-0001				
13	1	Main Shaft Bushing		P24-402				
14	1	Air Chamber, Left		P126-0016				
15	1	Air Chamber, Right		P126-0017				
16	2	Air Chamber Gasket		<u> </u>				
1/	8	Air Chamber Bolt	1	<u>P24-110</u>				
18	2	Busning		<u>P24-105</u>				
19	1	Pilot Shaft		<u>P24-104</u>				
20	5	Pilot Shaft Spacer		P24-106				
21	6	Pliot Shaft O-Ring		P24-107				
22	2	Stop Nut	P24-108					
24	1	Mounting Bracket Left		115.V013.159				
25		Mounting Bracket Right	115.V014.159					
20	<u> </u>	Retainer Plate	P120-0010					
21	2	Retainer Foarn	F 120-0011 560 203 360					
20	2	Retainer Cen Serow	P126_0032					
29	0	AirVentege Unit	P126_0081					
30	1	Air Vantage Unit Can Scrow	170 125 330					
22	4	AirVantage Onit Cap Sciew	P126-0035 (Standard) P126-0059 (PTFF Dianbragm)					
3/	1	Air Valitage Serisor	F 120-0055 (Stario	1010) F 120-003				
35	1	AirVantage Connector Plate						
36	1	AirVanage Connector Plate O-ring	V/110RN					
37	1	Check Valve		894.014.000				
372	1	Check Valve Cartridge		031 206 000				
38	1	Check Valve Can Screw		171 100 115				
30	1	Check Valve Oap Screw						
40	1	Muffler						
40	1	Muffler Adapter	312 0/5 325					
42	1	Muffler Ninnle		538 110 335				
12		DIA	PHRAGM ASSEMBLY	000.110.000				
Item	Qty	Description	Dome	Rugged	PTFE			
43	2	Main Shaft O-Ring	P24-403	P24-403	P24-403			
44	1	Main Shaft	P24-103	P24-103	P24-102			
45	2	Inner Diaphragm Plate	P126-0014	P126-0015	P126-0058			
46	2	Outer Diaphragm Plate	VB226	VB221	V221TO			
47	2	Diaphragm	V225XX (Refer to Materials Chart)	V224XX (Refer to Materials Chart)	V224TF-FB			
48	2	Bumper Washer	P24-501	P24-501	P24-501			
49	2	Back-Up Diaphragm	N/A	N/A	V224TFB			
50	2	Probe Tip	846.001.167	846.001.167	N/A			
51	2	O-Ring Probe Tip	560.201.360	560.201.360	N/A			
52	2	O-Ring Sensor	560.033.360	560.033.360	N/A			





Composite Repair Parts List - Metallic

WET END ASSEMBLY								
Item	Qty	Description	Stainless Steel	Hastelloy C	Cast Iron			
53	2	Water Chamber	SV235FB	HV235FB	WV235FB			
54	20	Water Chamber Bolt	SV187A	SV187A	SV187A			
55	20	Wetted Section Washer	SV189C	SV189C	SV189C			
56	20	Wetted Section Nut	SV185B	SV185B	SV185B			
57	4	Valve Seat	V240XX (Refer to Materials Chart)					
58	8	Valve Seat O-Ring	V240T V240TES (only used with metal seats)					
59	4	Valve Ball	V241XX (Refer to Materials Chart)					
60	1	Discharge Manifold	SV236FB		WV236FB			
61	1	Inlet Manifold	SV237FB-H		WV237FB-H			
62	16	Manifold Bolt	SV189D		SV189D			
63	16	Manifold Washer	SV189C		SV189C			
64	16	Manifold Nut	SV185B		SV185B			
65	1	Discharge Manifold	SV236FB-H	HV236FB-H	WV236FB-H			
66	1	Inlet Manifold	SV237FB-H	HV237FB-H	WV237FB-H			
67	16	Manifold Bolt	SV189D	SV189D	SV189D			
68	16	Manifold Washer	SV189C	SV189C	SV189C			
69	16	Manifold Nut	SV185B	SV185B	SV185B			

DIAPHRAGM MATERIAL CODES				
Suffix Codes				
Ν	Neoprene			
BN	Nitrile			
VT	FKM			
ND	EPDM			
TF	PTFE			
XL/TPEXL	Santoprene			
FG/TPEFG	Hytrel			
G	Geolast			

SEAT MATERIAL CODES				
Suffix Codes				
Ν	Neoprene			
BN	Nitrile			
VT	FKM			
ND	EPDM			
TF	PTFE			
XL/TPEXL	Santoprene			
FG/TPEFG	Hytrel			
G	Geolast			
Р	Polyurethane			
A	Acetal			
CS	Carbon Steel			
Prefix Codes				
S	Stainless Steel			
Н	Hastelloy			

BALL MA	TERIAL CODES
Suffix Codes	
Ν	Neoprene
BN	Nitrile
VT	FKM
ND	EPDM
TF	PTFE
XL/TPEXL	Santoprene
FG/TPEFG	Hytrel
G	Geolast
Р	Polyurethane
A	Acetal
Prefix Codes	
S	Stainless Steel



RE2 Bolted Metallic Hazardous Service Kits

Item	Description	Qty	Part Number
	AIR VALVE KIT		E2/E3 A AV KIT
3	Glide Ring	4	P34-204F
5	End Cap Gasket	2	P24-205
9	Valve Gasket	1	P24-202
	PILOT VALVE KIT		E3A PV KIT
19	Pilot Shaft Spacer	5	P24-106
20	Pilot Shaft O-Ring	6	P24-107
21	Stop Nut	2	P24-108
34	Main Shaft O-Ring	2	P24-403
	ELASTOMER KITS		See Factory
40	Diaphragm	2	
50	Valve Seat	4	
52	Valve Ball	4	

ltem	Description	Oty	Part #
	E2 - Comprehensive Maintenance Kit -	,	
	OE Speel Valve - Rubber Fitted -		E2 - CMK-OE-
	Metallic Bolted		RB-MB
39	SHAFT (RUBBER & XL PUMPS)	1	P24-103
19	PILOT SHAFT/SS	1	P24-104
18	BUSHING, THREADED	2	P24-105
21	O-RING, PILOT VALVE	6	P24-107
22	18.8 JAM NYLON LOCK NUT	2	P24-108
16	CENTER BLOCK GASKET	2	P126-0008
16	CENTER BLOCK GASKET	2	P79-109
9	AIR VALVE GASKET	1	P24-202
5	GASKET/END CAP	2	P24-205
38	BUSHING O-RING	2	P24-403
43	BUMPER WASHER	2	P24-501
3	GLYD RING, 2 PIECE SET	4	P34-204F
37	AIR MUFFLER-2"	1	530.041.000
2	SPOOL, E2/E3, AIR VALVE	1	P126-0063
20	RING, PILOT VALVE	5	P24-106
46	PROBE TIP	2	846.001.167
47	PROBE TIP O-RING	2	560.201.360
	E2 Comprohensive Maintenance Kit		E2-CMK-OE-
	E2 - Comprehensive Maintenance Kit -		E2-CMK-OE- TF-MB
	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted -		E2-CMK-OE- TF-MB
39	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted	1	E2-CMK-OE- TF-MB P24-102
39	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted SHAFT FOR TEFLON-FITTED PUMPS	1	E2-CMK-OE- TF-MB P24-102
39 19	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted SHAFT FOR TEFLON-FITTED PUMPS PILOT SHAFT/SS	1	E2-CMK-OE- TF-MB P24-102 P24-104
39 <u>19</u> 18	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted SHAFT FOR TEFLON-FITTED PUMPS PILOT SHAFT/SS BUSHING, THREADED	1	E2-CMK-OE- TF-MB P24-102 P24-104 P24-105
39 19 18 21	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted SHAFT FOR TEFLON-FITTED PUMPS PILOT SHAFT/SS BUSHING, THREADED O-RING, PILOT VALVE	1 1 2 6	E2-CMK-OE- TF-MB P24-102 P24-104 P24-105 P24-107
39 19 18 21 22	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted SHAFT FOR TEFLON-FITTED PUMPS PILOT SHAFT/SS BUSHING, THREADED O-RING, PILOT VALVE 18.8 JAM NYLON LOCK NUT	1 1 2 6 2	E2-CMK-OE- TF-MB P24-102 P24-104 P24-105 P24-107 P24-108
39 19 18 21 22 16	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted SHAFT FOR TEFLON-FITTED PUMPS PILOT SHAFT/SS BUSHING, THREADED O-RING, PILOT VALVE 18.8 JAM NYLON LOCK NUT CENTER BLOCK GASKET	1 2 6 2 2	E2-CMK-OE- TF-MB P24-102 P24-104 P24-105 P24-107 P24-108 P126-0008
39 19 18 21 22 16 16	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted SHAFT FOR TEFLON-FITTED PUMPS PILOT SHAFT/SS BUSHING, THREADED O-RING, PILOT VALVE 18.8 JAM NYLON LOCK NUT CENTER BLOCK GASKET CENTER BLOCK GASKET	1 1 2 6 2 2 2	E2-CMK-OE- TF-MB P24-102 P24-104 P24-105 P24-107 P24-108 P126-0008 P79-109
39 19 18 21 22 16 16 9	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted SHAFT FOR TEFLON-FITTED PUMPS PILOT SHAFT/SS BUSHING, THREADED O-RING, PILOT VALVE 18.8 JAM NYLON LOCK NUT CENTER BLOCK GASKET CENTER BLOCK GASKET AIR VALVE GASKET	1 1 2 6 2 2 2 1	E2-CMK-OE- TF-MB P24-102 P24-104 P24-105 P24-107 P24-108 P126-0008 P79-109 P24-202
39 19 18 21 22 16 16 16 9 5	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted SHAFT FOR TEFLON-FITTED PUMPS PILOT SHAFT/SS BUSHING, THREADED O-RING, PILOT VALVE 18.8 JAM NYLON LOCK NUT CENTER BLOCK GASKET CENTER BLOCK GASKET AIR VALVE GASKET GASKET/END CAP	1 1 2 6 2 2 2 1 2	E2-CMK-OE- TF-MB P24-102 P24-104 P24-105 P24-107 P24-108 P126-0008 P79-109 P24-202 P24-205
39 19 18 21 22 16 16 16 9 5 38	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted SHAFT FOR TEFLON-FITTED PUMPS PILOT SHAFT/SS BUSHING, THREADED O-RING, PILOT VALVE 18.8 JAM NYLON LOCK NUT CENTER BLOCK GASKET CENTER BLOCK GASKET CENTER BLOCK GASKET AIR VALVE GASKET GASKET/END CAP BUSHING O-RING	1 2 6 2 2 2 1 2 2 2 2 2 2 2 2 2	E2-CMK-OE- TF-MB P24-102 P24-104 P24-105 P24-107 P24-107 P24-108 P126-0008 P79-109 P24-202 P24-205 P24-403
39 19 18 21 22 16 16 9 5 38 43	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted SHAFT FOR TEFLON-FITTED PUMPS PILOT SHAFT/SS BUSHING, THREADED O-RING, PILOT VALVE 18.8 JAM NYLON LOCK NUT CENTER BLOCK GASKET CENTER BLOCK GASKET AIR VALVE GASKET GASKET/END CAP BUSHING O-RING BUMPER WASHER	1 1 2 6 2 2 2 1 2 2 2 2 2	E2-CMK-OE- TF-MB P24-102 P24-104 P24-105 P24-107 P24-107 P24-108 P126-0008 P79-109 P24-202 P24-202 P24-205 P24-403 P24-501
39 19 18 21 22 16 16 16 5 38 43 3	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted SHAFT FOR TEFLON-FITTED PUMPS PILOT SHAFT/SS BUSHING, THREADED O-RING, PILOT VALVE 18.8 JAM NYLON LOCK NUT CENTER BLOCK GASKET CENTER BLOCK GASKET AIR VALVE GASKET GASKET/END CAP BUSHING O-RING BUMPER WASHER GLYD RING, 2 PIECE SET	1 1 2 6 2 2 2 1 2 2 2 4	E2-CMK-OE- TF-MB P24-102 P24-104 P24-105 P24-105 P24-107 P24-108 P126-0008 P79-109 P24-202 P24-202 P24-205 P24-403 P24-501 P34-204F
39 19 18 21 22 16 16 16 9 5 38 43 3 37	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted SHAFT FOR TEFLON-FITTED PUMPS PILOT SHAFT/SS BUSHING, THREADED O-RING, PILOT VALVE 18.8 JAM NYLON LOCK NUT CENTER BLOCK GASKET CENTER BLOCK GASKET AIR VALVE GASKET GASKET/END CAP BUSHING O-RING BUMPER WASHER GLYD RING, 2 PIECE SET AIR MUFFLER-2"	1 1 2 6 2 2 2 1 2 2 2 4 1	E2-CMK-OE- TF-MB P24-102 P24-104 P24-105 P24-105 P24-107 P24-108 P126-0008 P79-109 P24-202 P24-202 P24-205 P24-403 P24-501 P34-204F 530.041.000
39 19 18 21 22 16 16 16 9 5 38 43 3 37 2	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted SHAFT FOR TEFLON-FITTED PUMPS PILOT SHAFT/SS BUSHING, THREADED O-RING, PILOT VALVE 18.8 JAM NYLON LOCK NUT CENTER BLOCK GASKET CENTER BLOCK GASKET CENTER BLOCK GASKET GASKET/END CAP BUSHING O-RING BUMPER WASHER GLYD RING, 2 PIECE SET AIR MUFFLER-2" SPOOL, E2/E3, AIR VALVE	1 1 2 6 2 2 2 2 2 2 2 4 1 1 1	E2-CMK-OE- TF-MB P24-102 P24-104 P24-105 P24-107 P24-107 P24-108 P126-0008 P79-109 P24-202 P24-202 P24-205 P24-403 P24-501 P34-204F 530.041.000 P126-0063
39 19 18 21 22 16 16 16 9 9 5 38 43 3 3 37 2 20	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted SHAFT FOR TEFLON-FITTED PUMPS PILOT SHAFT/SS BUSHING, THREADED O-RING, PILOT VALVE 18.8 JAM NYLON LOCK NUT CENTER BLOCK GASKET CENTER BLOCK GASKET CENTER BLOCK GASKET AIR VALVE GASKET GASKET/END CAP BUSHING O-RING BUMPER WASHER GLYD RING, 2 PIECE SET AIR MUFFLER-2" SPOOL, E2/E3, AIR VALVE RING, PILOT VALVE	1 1 2 6 2 2 2 2 2 2 2 4 1 1 5	E2-CMK-OE- TF-MB P24-102 P24-102 P24-105 P24-105 P24-107 P24-108 P126-0008 P79-109 P24-202 P24-202 P24-205 P24-403 P24-501 P34-204F 530.041.000 P126-0063 P24-106
39 19 18 21 22 16 16 16 9 5 38 3 3 3 3 7 7 2 20 46	E2 - Comprehensive Maintenance Kit - OE Speel Valve - Teflon Fitted - Metallic Bolted SHAFT FOR TEFLON-FITTED PUMPS PILOT SHAFT/SS BUSHING, THREADED O-RING, PILOT VALVE 18.8 JAM NYLON LOCK NUT CENTER BLOCK GASKET CENTER BLOCK GASKET AIR VALVE GASKET GASKET/END CAP BUSHING O-RING BUMPER WASHER GLYD RING, 2 PIECE SET AIR MUFFLER-2" SPOOL, E2/E3, AIR VALVE RING, PILOT VALVE PROBE TIP	1 1 2 2 2 2 2 2 2 4 1 5 2	E2-CMK-OE- TF-MB P24-102 P24-104 P24-105 P24-107 P24-108 P126-0008 P79-109 P24-202 P24-202 P24-205 P24-205 P24-403 P24-501 P34-204F 530.041.000 P126-0063 P24-106 846.001.167

Item	Description	Qty	Part Number
	RE2 Standard Sensor Kit		476.275.000
33	Sensor	1	P126-0035
46	Probe Tips	2	846.001.167
48	Sensor O-ring	2	560.033.360
47	Probe Tip O-rings	2	560.201.360
	RE2 Teflon Sensor Kit		475.276.000
33	Sensor	1	P126-0059
46	Probe Tips	2	846.001.167
48	Sensor O-ring	2	560.033.360
47	Probe Tip O-Rings	2	560.201.360
	RE2 Control Module Kit ATEX		470 000 000
	(Power Gen Airvantage Only)		4/6.296.000
81	Control Module Assembly ATEX	1	249.021.000
73	Gasket	2	720.071.360
76	Cap Screw	4	171.091.115
80	O-ring	2	560.205.360
88	Switch Cap O-ring	1	560.104.360
83	Switch Cap	1	165.135.330
	Poppet Valve Kit ATEX		476.289.000
75	Poppet Valve Assembly ATEX	1	893.104.000
34	O-rings	1	560.011.360
	Poppet Valve Assembly Kit ATE	κ	476.290.000
75	Poppet Valve Assembly ATEX	1	893.104.000
34	O-ring	1	560.011.360
79	Regulator	1	020.069.000
74	Pilot Valve	1	765.004.000
	Power Gen Kit ATEX		476.293.000
77	Power Gen Assembly ATEX	1	031.202.000
73	Gasket	1	720.071.360
76	Cap Screw	4	171.091.115
80	O-ring	1	560.200.360
	Seal Kit ATEX		476.280.000
34	O-ring	1	560.011.360
73	Gasket	4	720.071.360
80	O-ring	2	560.200.360
	Probe Tip Kit		476.283.000
46	Probe Tips	1	846.001.167
47	Probe Tip O-Rings	1	560.201.360

3: EXP VIEW



RE2 Bolted - Service Kits

Item	Qty	Description	Part Number	Item	Qty	Description	Part Number
		RE2 Sensor Kit	475.275.000	AIR VALVE KIT		E2/E3 A AV KIT	
33	1	Sensor, PTFE	P126-0035	3	4	Glide Ring	P34-204F
51	2	Prode Tips	846.001.157	5	2	End Cap Gasket	P24-205
52	1	Probe Tip O-Ring	560.201.360	9	1	Valve Gasket	P24-202
53	2	Sensor O-Ring	560.033.360		PIL	OT VALVE KIT	E3A PV KIT
		RE2 PTFE Sensor Kit	475.276.000	19	5	Pilot Shaft Spacer	P24-106
33	1	Sensor, PTFE	P126-0059	20	6	Pilot Shaft O-Ring	P24-107
51	2	Prode Tips	846.001.157	21	2	Stop Nut	P24-108
52	1	Probe Tip O-Ring	560.201.360	43	2	Main Shaft O-Ring	P34-403
53	2	Sensor O-Ring	560.033.360		ELA	ASTOMER KITS	See Factory
	R	E2 Control Module Kit ATEX		47	2	Diaphragm	1
	(Power Gen Airvantage Only)	4/5.296.000	58	4	Valve Seat	1
81		Control Module Assembly	249.021.000	60	4	Valve Ball	1
73	2	Gasket	720.071.360				-
76	2	Cap Screw	171.091.115	ltem	Qtv	Description	Part Number
80	2	O-Ring	560,200,360		Compret	ensive Maintenance	RE2-CMK-OE-RB-MB
94	1	Switch Cap O-Ring	560,104,360	2	1	Valve Spool	P126-0063
83	1	Switch Cap	165,135,33	3	4	Valve Spool Glyd Ring	P34-204F
		Poppet Valve Kit ATEX	476.289.000	5	2	End Cap Gasket	P24-205
75	1	Poppet Valve Assembly	893,104,000	9	1	Valve Gasket	P24-202
34	1	O-Ring	560.011.360	16	2	Air Chamber Gasket	P79-109
	Po	ppet Valve Assembly Kit ATEX	476.290.000	18	2	Bushing	P24-105
75	1	Poppet Valve Assembly	893,104,000	19	1	Pilot Shaft	P24-104
34	1	O-Ring	560 011 360	20	5	Pilot Shaft Spacer	P24-106
79	1	Regulator	020 069 000	21	6	Pilot Shaft O-Ring	P24-107
74	1	Pilot Valve	765 004 000	22	2	Stop Nut	P24-108
	<u>.</u>	Power Gen Kit	476,293,000	40		Main Shaft	D24 103
77	1	Power Gen Assembly ATEX	031 202 000	44	2	Bumper Washer	P24-105
73	1	Gasket	720 071 360	51	2	Probe Tin	846.001.167
76	4	Can Screw	171 091 115	52	2	Probe Tip O-Ring	560 201 360
80	1	O-Ring	560 200 360	43	2	Main Shaft O-Ring	P24-403
00		Seal Kit ATEX	476 280 000				
34	1	O-Ring	560 011 360				
73	4	Gasket	720 071 360				
80	$\frac{1}{2}$	O-Ring	560 200 360				
	. ~	Probe Tin Kit	476 283 000				
51	1	Probe Tins	846 001 167				
52		Probe Tip O-Rings	560 201 360				



AirVantage Sensor Servicing

INTERMEDIATE AND AirVantage SENSOR SERVICING

To service the intermediate and AirVantage sensor, first shut off and bleed the air being supplied to the pump. For safety purposes, the air supply line should be disconnected from the pump. Shut off both the suction and discharge lines to the pump. Consult the "Composite Repair Parts Drawing".

Step #1: Remove the Patch Cable

Twist the ribbed portion of the patch cable connector in a counterclockwise direction, until it unthreads from the connector. The cable can either be removed from the intermediate or from the control module.

Step #2: Remove the AirVantage from the Pump

Use a ½" socket and remove the four 5/16-18 x 5 1/2 cap screws that hold the AirVantage to the pump. Remove the two chamber bolts/nuts that are holding the right side bracket to be able to remove the right bracket and AirVantage unit from the pump. Be sure to support the weight of the AirVantage while removing the last cap screw. After the AirVantage is removed from the pump, set the unit down on the plastic cover located on the bottom.

Step #3: Remove the Manifolds, Chambers, and Diaphragms (Refer to exploded views for disassembly)

Step #4: Remove the Diaphragm Assemblies Refer to exploded views for disassembly.

"AirVantage CAUTION" – When the diaphragm assembly is removed, watch for the brass probe tips located on the end of the sensor rod. There is one brass probe tip and one o-ring per side. Inspect the probe tips and o-rings for wear. For every diaphragm service, these parts should be replaced and are available in kit form. Consult the "Composite Repair Parts Drawing" for part numbers and quantities.

Step #5: Accessing the AirVantage Sensor

Use a 9/64" hex key wrench to remove the 4 socket head cap screws from the sensor connector plate. Use a 13/16" socket and remove the plastic nut securing the connector to the connector plate. Remove the connector from the connector plate taking care not to lose/misplace the gasket on the connector or the o-ring that seals the connector plate. Next, use a 9/64" hex key wrench to remove the 2 socket head cap screws on each sensor end cap. Use a small flat screwdriver to gently pry the end caps from the inner chambers. Now slide the sensor out of the intermediate while feeding the connector and cable into the intermediate. Slide the Connector end of the cable out of the same opening as the sensor.

Step #6: Reinstallation

Note that the orientation of the sensor rod with respect to the pilot shaft location. The sensor rod side of the sensor should be on the "top" side of the pump (facing the air valve side of the pump). Slide the Connector end of the cable and then the sensor into the sensor opening. Feed the connector out through the opening in the intermediate. Ensure the gasket

is on the connector and the connector plate o-ring is in the connector plate o-ring groove. Insert the connector into the connector plate. Use a 13/16" socket to install the plastic nut in order to secure the connector to the connector plate. Use a 9/64" hex key wrench to install the 4 socket head cap screws and secure the sensor connector plate to the intermediate. Install the sensor end caps. Be sure not to pinch or cut the sensor o-rings. Use a small amount of lubrication if necessary to ease assembly. Use a 9/64" hex key wrench to install the 2 socket head cap screws on each sensor end cap to secure the sensor.







AirVantage Composite Repair Drawing



3: EXP VIEW

AirVantage Composite Parts List

•	5 1		
ITEM No.	PART NUMBER	DESCRIPTION	QTY.
72	258.020.147	COVER, END, TOP, ATEX	1
73	720.071.360	GASKET, ENCLOSURE	4
74	765.004.000	PILOT VALVE	1
75	893.104.000	VALVE, POPPET, ATEX	1
76	171.091.115	CAPSCREW, HEX SOC HD, M6-1.0 X 25	8
77	031.202.000	ASSY, POWER GENERATOR, ATEX	1
78	258.022.147	COVER, END, BOTTOM, ATEX	1
79	020.069.000	REGULATOR	1
80	560.200.360	SEAL, O-RING	2
81	249.022.000	CONTROL MODULE, RE2 ATEX	1
82	710.010.115	SCREW, SELF TAPPING	6
83	165.135.330	CAP, SWITCH	1
84	675.067.115	RING, RETAINING	1
85	430.050.147	HOUSING, MUFFLER	1
86	720.073.365	SEAL, CHECK VALVE	1
87	171.093.115	CAPSCREW, HEX SOC HD, 5-40 X 3/16	1
88	560.205.360	SEAL, O-RING	1
89	530.045.115	MUFFLER, SPARK ARRESTOR	1
90	165.137.115	CAP, PERFORATED	1
91	901.051.115	WASHER, M6 18-8 STAINLESS	8
92	535.094.015	PLATE, NAME	1
93	535.096.000	TAG, WARNING LABEL - ATEX	1
94	560.104.360	SEAL, O-RING	1
95	171.092.115	CAPSCREW, HEX SOC HD, M6-1.0 X 35	8

Note: Ensure all mating faces are free from scores or damage prior to re-assembly. Check each metallic face joint with a 0.003" feeler gage to ensure all flange faces are fully closed after assembly. Failure to do so may compromise the flameproof design of the assembly.





Do not open when an explosive atmosphere may be present.



AirVantage Servicing - Pilot Valve & Pressure Regulator

Pilot Valve and Pressure Regulator

To service the pilot valve or the pressure regulator, first shut off and bleed the air being supplied to the pump. For safety purposes the air supply line should be disconnected from the pump. Then shut off the suction and discharge lines to the pump. Bleed the pressure from the pump suction and discharge lines and remove the lines from the pump. During the servicing of the AirVantage, consult the "AirVantage Composite Repair Parts Drawing".

Step #1: Remove the Patch Cable

Twist the ribbed portion of the patch cable connector in a counterclockwise direction, until it unthreads from the connector. The cable can then be removed from the intermediate.

Step #2: Remove the AirVantage from the Pump

Use a $\frac{1}{2}$ " socket and remove the four 5/16-18 x 5 1/2 cap screws that hold the AirVantage to the pump. Remove the two chamber bolts/nuts that are holding the right side bracket to be able to remove the right bracket and AirVantage unit from the pump. Be sure to support the weight of the AirVantage while removing the last cap screw. After the AirVantage is removed from the pump, set the unit down on the plastic cover located on the bottom. Inspect the o-ring between the poppet valve and the adapter plate for damage.

Step #3: Access the Pilot Valve and Pressure Regulator

Use a 5mm hex-key wrench and remove the four M6 x 35mm socket head cap screws securing the top cover on. Lift the cover off, exposing the pilot valve and pressure regulator. There is a molded o-ring seal located on the underside of the cap. Make sure the o-ring stays located within the groove.

If the pilot valve needs to be replaced, unplug the connector attached to it. Use a jeweler's screwdriver and remove the two screws holding the pilot valve to the plate. The valve and gasket can now be removed and/replaced. When reinstalling the pilot valve, tighten the screws to snug with a jeweler's screwdriver.

"AirVantage Caution" – Be sure to reattach the connector to the pilot valve.

If the pressure regulator needs to be replaced, use slip-joint pliers to unscrew the regulator from the body by turning it in a counterclockwise direction.

"AirVantage CAUTION" – Do not loosen or tighten the regulator by turning the knurled portion of the unit. Place the slip-joint pliers on the smooth area underneath the knurled area of the regulator.

Step #4: Reinstallation

Reinstall the top cover, making sure the o-ring seal is still in the groove. Tighten the four M6 screws.

Reinstall the AirVantage right bracket, chamber bolts/nuts and four 5/16-18 x 5 1/2 cap screws, torque to 90 in-lbs.

"AirVantage Caution" – Be sure to reattach the patch cable connector that connects the AirVantage module to the intermediate.



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Note: Refer to Parts List on page 23 for part numbers

Note: Ensure all mating faces are free from scores or damage prior to reassembly. Check each metallic face joint with a 0.003" feeler gage to ensure all flange faces are fully closed after assembly. Failure to do so may compromise the flameproof design of the assembly.



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AirVantage Servicing - Power Generation Module

To service the power generation module, first shut off and bleed the air being supplied to the pump. For safety purposes the air supply line should be disconnected from the pump. Then shut off the suction and discharge lines to the pump. Bleed the pressure from the pump suction and discharge lines and remove the lines from the pump. During the servicing of the AirVantage, consult the "AirVantage Composite Repair Parts Drawing".

Step #1: Remove the Patch Cable

Twist the ribbed portion of the patch cable connector in a counterclockwise direction, until it unthreads from the connector. The cable can then be removed from the intermediate..

Step #2: Remove the AirVantage from the Pump

Use a ½" socket and remove the four 5/16-18 x 5 1/2 cap screws that hold the AirVantage to the pump. Remove the two chamber bolts/nuts that are holding the right side bracket to be able to remove the right bracket and AirVantage unit from the pump. Be sure to support the weight of the AirVantage while removing the last cap screw. After the AirVantage is removed from the pump, set the unit down on the cover located on the top. Inspect the o-ring between the poppet valve and the adapter plate for damage.

Step #3: Access the Power Generation Module

Use a 5mm hex-key wrench and loosen the four M6 x 35mm socket head cap screws securing the bottom cover. Lift the bottom cover off, exposing the power generation module. There is a molded o-ring seal located on the underside of the cap. Make sure the o-ring stays located within the groove.

If the power generation module needs to be replaced, unplug the connector that connects the power generator to the control board. Use a 4mm hex-key wrench to loosen the four M5 x 25mm socket head cap screws. The power generation module should now be loose. Carefully lift the power generation module off the rest of the assembly, making sure that the control board wire and connector slips through the hole in the power generation case.

"AirVantage Caution" - Take caution not to loosen the o-ring that seals between the components.

Step #4: Reinstallation

When reinstalling the new module make sure to feed the control module wire through the hole in the power generation case. Install the four M5 x 25mm socket head cap screws and tighten to 6.8 N-M.

"AirVantage Caution" – Be sure to reattach the connector from the power generator to the control board.

Reinstall the bottom cover, making sure the o-ring seal is still in the groove. Tighten the four M5 x 25mm socket head cap screws to 3.4 N-M.

Reinstall the top cover, making sure the o-ring seal is still in the groove. Tighten the four M6 screws. Reinstall the AirVantage right bracket, chamber bolts/nuts and four $5/16-18 \times 5 1/2$ cap screws, torque to 90 in-lbs.

"AirVantage Caution" – Be sure to reattach the patch cable connector that connects the AirVantage module to the intermediate.



Note: Refer to Composite Repair Parts List on page 23 for part numbers

Note: Ensure all mating faces are free from scores or damage prior to re-assembly. Check each metallic face joint with a 0.003" feeler gage to ensure all flange faces are fully closed after assembly. Failure to do so may compromise the flameproof design of the assembly.





EXP VIEW

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AirVantage Servicing - Control Module

To service the control module, first shut off and bleed the air being supplied to the pump. For safety purposes the air supply line should be disconnected from the pump. Then shut off the suction and discharge lines to the pump. Bleed the pressure from the pump suction and discharge lines and remove the lines from the pump. During the servicing of the AirVantage, consult the "AirVantage Composite Repair Parts Drawing".

Step #1: Remove the Patch Cable

Twist the ribbed portion of the patch cable connector in a counterclockwise direction, until it unthreads from the connector. The cable can then be removed from the intermediate.

Step #2: Remove the AirVantage from the Pump

Use a $\frac{1}{2}$ " socket and remove the four 5/16-18 x 5 1/2 cap screws that hold the AirVantage to the pump. Remove the two chamber bolts/nuts that are holding the right side bracket to be able to remove the right bracket and AirVantage unit from the pump. Be sure to support the weight of the AirVantage while removing the last cap screw. After the AirVantage is removed from the pump, set the unit down on the cover located on the bottom. Inspect the o-ring between the poppet valve and the adapter plate for damage.

Step #3: Access the Pilot Valve

Use a 5mm hex-key wrench and loosen the four M6 x 35mm socket head cap screws securing the top cover on. Lift the cover off, exposing the pilot valve. There is a molded o-ring seal located on the underside of the cap. Make sure the o-ring stays located within the groove. The connector will need to be removed from the pilot valve. Once the plug has been removed, feed the wire assembly into the hole in the valve body to the point where the connector just enters the valve body. Reinstall the top cover and loosely reinstall the bolts. The connector will eventually need to be reconnected.

Step #4: Access the Control Module

Use a 5mm hex-key wrench and loosen the four M6 x 35mm socket head cap screws securing the bottom cover on. Lift the bottom cover off, exposing the power generation module. There is a molded o-ring seal located on the underside of the cap. Make sure the o-ring stays located within the groove.

Unplug the connector that connects the power generator to the control board. Use a 4mm hex-key wrench to loosen the four M5 x 25mm socket head cap screws. The power generation module should now be loose. Carefully lift the power generation module off the rest of the assembly, making sure that the control board wire and connector slips through the hole in the power generation case.

"AirVantage Caution" - Take caution not to lose the o-ring seals between the components.

If the control module needs to be replaced, use an 4mm hexkey wrench and loosen the two M5 x 25mm socket head cap screws holding the control module to the poppet assembly. The control module should now be loose. Carefully lift the control module off the poppet assembly, making sure that the pilot valve connector wire slips through the hole in the poppet valve assembly.

"AirVantage Caution" - Take caution not to loosen the o-ring that seals between the components.

Step #5: Reinstalling

When reinstalling the new control module, make sure to feed the pilot valve connector wire through the hole in the poppet valve assembly. Install the two M5 x 25mm socket head cap screws and tighten to 3.4 N-M.

Reinstall the power generation module. Make sure to feed the control module wire through the hole in the power generation case. Install the four M5 x 25mm socket head cap screws and tighten to 6.8 N-M.

"AirVantage Caution" – Be sure to reattach the connector from the power generator to the control board.

Reinstall the top cover, making sure the o-ring seal is still in the groove. Tighten the four M6 screws. Reinstall the AirVantage right bracket, chamber bolts/nuts and four 5/16-18 x 5 1/2 cap screws, torque to 90 in-lbs.

"AirVantage Caution" – Be sure to reattach the patch cable connector that connects the AirVantage module to the intermediate.

Note: Ensure all mating faces are free from scores or damage prior to reassembly. Check each metallic face joint with a 0.003" feeler gage to ensure all flange faces are fully closed after assembly. Failure to do so may compromise the flameproof design of the assembly.





AirVantage Servicing - Sensor Assembly

To service the control module, first shut off and bleed the air being supplied to the pump. For safety purposes the air supply line should be disconnected from the pump. Then shut off the suction and discharge lines to the pump. Bleed the pressure from the pump suction and discharge lines and remove the lines from the pump. During the servicing of the AirVantage, consult the "AirVantage Composite Repair Parts Drawing".

Step #1: Remove the Patch Cable

Twist the ribbed portion of the patch cable connector in a counterclockwise direction, until it unthreads from the connector. The cable can then be removed from the intermediate.

Step #2: Remove the AirVantage from the Pump

Use a ½" socket and remove the four 5/16-18 x 5 1/2 cap screws that hold the AirVantage to the pump. Remove the two chamber bolts/nuts that are holding the right side bracket to be able to remove the right bracket and AirVantage unit from the pump. Be sure to support the weight of the AirVantage while removing the last cap screw. After the AirVantage is removed from the pump, set the unit down on the plastic cover located on the bottom.

Step #3: Diaphragm Disassembly

Refer to exploded views for disassembly.

"AirVantage CAUTION" – When the diaphragm assembly is removed, watch for the brass probe tips located on the end of the sensor rod. There is one brass probe tip and one o-ring per side. Inspect the probe tips and o-rings for wear. Every time the diaphragm is serviced, these parts should be replaced and are available in kit form. Consult the "Composite Repair Parts Drawing" for part numbers and quantities.

Step #4: Accessing the Sensor Assembly

Use a 9/64" hex key wrench to remove the 4 socket head cap screws from the sensor connector plate. Use a 13/16" socket and remove the plastic nut securing the connector to the connector plate. Remove the connector from the connector plate taking care not to lose/misplace the gasket on the connector or the o-ring that seals the connector plate. Next, use a 9/64" hex key wrench to remove the 2 socket head cap screws on each sensor end cap. Use a small flat screwdriver to gently pry the end caps from the inner chambers.

Now slide the sensor out of the intermediate while feeding the connector and cable into the intermediate. Slide the Connector end of the cable out of the same opening as the sensor.

Step #5: Reinstallation

Note the orientation of the sensor rod with respect to the pilot shaft location. The sensor rod side of the sensor should be on the "top" side of the pump (facing the air valve side of the pump). Slide the Connector end of the cable and then the sensor into the sensor opening. Feed the connector out through the opening in the intermediate. Ensure the gasket is on the connector and the connector plate o-ring is in the connector plate o-ring groove. Insert the connector into the connector plate. Use a 13/16" socket to install the plastic nut in order to secure the connector to the connector plate. Use a 9/64" hex key wrench to install the 4 socket head cap screws and secure the sensor connector plate to the intermediate. Install the sensor end caps. Be sure not to pinch or cut the sensor o-rings. Use a small amount of lubrication if necessary to ease assembly. Use a 9/64" hex key wrench to install the 2 socket head cap screws on each sensor end cap to secure the sensor.

Refer to the "Diaphragm Servicing" section of the manual to finish the diaphragm installation procedure.



Note: Refer to Composite Repair Parts List on page 23 for part numbers





EXP VIEW

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AirVantage Servicing - Poppet Valve Drawing



3: EXP VIEW

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AirVantage Servicing - Poppet Valve

Step #1: Remove the Patch Cable

Twist the ribbed portion of the patch cable connector in a counterclockwise direction, until it unthreads from the connector. The cable can then be removed from the intermediate.

Step #2: Remove the AirVantage from the Pump

Use a ½" socket and remove the four 5/16-18 x 5 1/2 cap screws that hold the AirVantage to the pump. Remove the two chamber bolts/nuts that are holding the right side bracket to be able to remove the right bracket and AirVantage unit from the pump. Be sure to support the weight of the AirVantage while removing the last cap screw. After the AirVantage is removed from the pump, set the unit down on the cover located on the bottom. Inspect the o-ring between the poppet valve and the adapter plate for damage.

Step #3: Access the Pilot Valve and Pressure Regulator

Use a 5mm hex-key wrench and loosen the four M6 x 35mm socket head cap screws securing the top cover on. Lift the cover off, exposing the pilot valve and pressure regulator. There is a molded o-ring seal located on the underside of the cap. Make sure the o-ring stays located within the groove.

Unplug the connector attached to it. Use a miniature 4-way Phillips screwdriver and remove the two screws securing the pilot valve to the plate. The valve and gasket can now be removed and/or replaced.

Use slip-joint pliers to unscrew the regulator from the body by turning it in a counterclockwise direction.

"AirVantage CAUTION" – Do not loosen or tighten the regulator by turning the knurled portion of the unit. Place the slip-joint pliers on the smooth area underneath the knurled area of the regulator.

Reinstall the top cover and loosely reinstall the bolts. Turn the assembly over and let it now rest on the top cover.

Step #4: Access the Power Generation Module

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Use a 5mm hex-key wrench and remove the four M6 x 35mm socket head cap screws securing the bottom cover on. Lift the bottom cover off, exposing the power generation module. There is a molded o-ring seal located on the underside of the cap. Make sure the o-ring stays located within the groove.

Unplug the connector that connects the power generator to the control board. Use a 4mm hex-key wrench to loosen the four M5 x 25mm socket head cap screws. The power generation module should now be loose. Carefully lift the power generation module off the rest of the assembly, making sure that the control board wire and connector slips through the hole in the power generation case.

Step #5: Access the Control Module

Use a 4mm hex-key wrench and loosen the two M5 x 25mm socket head cap screws securing the control module to the poppet assembly. The control module should now be loose. Carefully lift the control module off the poppet assembly, making sure that the pilot valve connector wire slips through the hole in the poppet valve assembly.

The Poppet valve assembly can now be replaced.

Step #6: Reinstallation

Install the control module on the poppet valve assembly. Make sure to feed the pilot valve connector wire through the hole in the poppet valve assembly. Install the two M5 x 25mm socket head cap screws and tighten to 3.4 N-M.

Install the power generation module onto the control module. Make sure to feed the control module wire through the hole in the power generation case. Install the four M5 x 25mm socket head cap screws and tighten to 6.8 N-M.

"AirVantage Caution" – Be sure to reattach the connector from the power generator to the control board.

Install the bottom cover, making sure the o-ring seal is still in the groove. Tighten the four M6 screws. The unit can now be turned over and set on the bottom cover.

Install the pilot valve, tighten the screws snug with a jeweler's screwdriver.

"AirVantage Caution" – Be sure to reattach the connector to the pilot valve.

AirVantage Caution" – Be sure to reattach the patch cable connector that connects the AirVantage module to the intermediate.

If the pressure regulator needs to be replaced, use slip-joint pliers to unscrew the regulator from the body by turning it in a counterclockwise direction.

"AirVantage CAUTION" – Do not loosen or tighten the regulator by turning the knurled portion of the unit. Place the slip-joint pliers on the smooth area underneath the knurled area of the regulator.

Step #4: Reinstallation

Reinstall the top cover, making sure the o-ring seal is still in the groove. Tighten the four M6 screws.

Reinstall the AirVantage right bracket, chamber bolts/nuts and four 5/16-18 x 5 1/2 cap screws, torque to 90 in-lbs.

"AirVantage Caution" – Be sure to reattach the patch cable connector that connects the AirVantage module to the intermediate.

Refer to Page 27 for Illustration.

Note: Ensure all mating faces are free from scores or damage prior to re-assembly. Check each metallic face joint with a 0.003" feeler gage to ensure all flange faces are fully closed after assembly. Failure to do so may compromise the flameproof design of the assembly.





AirVantage Servicing - Check Valve

AirVantage – Check Valve Assembly

To service the check valve, first shut off and bleed the air being supplied to the pump. For safety purposes the air supply line should be disconnected from the pump. Then shut off the suction and discharge lines to the pump. Bleed the pressure from the pump suction and discharge lines and remove the lines from the pump. During the servicing of the AirVantage, consult the "AirVantage Composite Repair Parts Drawing" (Page 11)

Step #1: Remove the Patch Cable

Twist the ribbed portion of the patch cable connector in the counterclockwise direction, until it un-threads from the connector.

Step #2: Remove the AirVantage from the Pump

Use a $\frac{1}{2}$ " socket and remove the four 5/16 x 5 $\frac{1}{2}$ cap screws that hold the AirVantage to the pump. Remove the two chamber bolts/nuts that are holding the right side bracket to be able to remove the right bracket and the AirVantage unit from the pump. Be sure to support the weight of the AirVantage while removing the last cap screw. After the AirVantage is removed from the pump, set the unit down on the plastic cover located on the bottom. Inspect the o-ring between the poppet valve and adapter plate for damage.

Step 3: Remove the Check Valve from the Pump

Use a $\frac{1}{2}$ " socket and remove the four 5/16 x 2 $\frac{1}{2}$ cap screw that holds the check valve to the pump.

Step 4: Inspect Check Valve

Using a 1 ¼" open socket wrench, remove the cartridge valve. Inspect o-rings and mechanism for any signs of wear, degradation, or damage. If any is present, replace with new cartridge valve assembly. Remove any remaining fluid contamination on inside of body and/or cartridge valve. Be careful not to lose the large and small o-rings on either face of the check valve body.

Step 5: Re-assembly of Check Valve

Apply a thin layer of white lithium grease to the threads on the valve cartridge. Insert cartridge valve into body and hand-tighten being careful not to pinch o-ring. Using a 9" torque wrench with crow-foot, torque cartridge vale to 250 in-lbs. Reapply o-rings, as necessary, to both faces of check valve. After applying Blue Loctite 248, 222 (or equivalent) secure check valve back to pump with four 5/16 x 2 $\frac{1}{2}$ cap screws, re-torque to 90 in-lbs.

To secure the AirVantage, re-install the four $5/16 \times 5 \frac{1}{2}$ cap screws, torquing to 90 in-lbs. Re-install Patch cable.



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Written Warranty

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.

~ 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 siquientes directrices de la comunidad europa:

Dieses produkt ist nach folgenden harmonisierten standards gefertigtworden, die übereinstimmung wird bestätigt:

Questo prodotto ha utilizzato i seguenti standards per verificare la conformita':

De volgende geharmoniseerde normen werden gehanteerd om de conformiteit van dit produkt te garanderen:

För denna produkt har följande harmoniserande standarder använts för att bekräfta överensstämmelse:

Harmoniserede standarder, der er benyttet:

Tässä tuotteessa on sovellettu seuraavia yhdenmukaistettuja standardeja:

Dette produkt er produsert i overenstemmelse med fløgende harmoniserte standarder:

Este produto utilizou os seguintes padrões harmonizados para varificar conformidade:

AUTHORIZED/APPROVED BY:

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

04/19/2012 REV 07

Dave Roseberry Engineering Manager

DATE: August 10, 2011 FECHA: DATUM: DATA:

VMQR 044FM



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DATO:

PÄIVÄYS:

on Machinery, according to Annex VIII

2006/42/EC

EN809:1998+

A1:2009



EC Declaration of Conformity

In accordance with ATEX Directive 94/9/EC, Equipment intended for use in potentially explosive environments.

Manufacturer:

Warren Rupp, Inc.® A Unit of IDEX Corportion 800 North Main Street Mansfield, OH 44902 USA

Airvantage-equipped ATEX-Certified Air-Operated Double Diaphragm RE2 and RE3 Bolted or Clamp Design Model Pumps.

Certificate Number: Sira 10ATEX1151X Issue: 2 Equiptment: AirVantage Air Flow Control Unit

Sira Certification Service

Rake Lane Eccleston Chester CH4 SJN United Kingdom



DATE/APPROVAL/TITLE: 05 DECEMBER 2011

oseberr

David Roseberry, Engineering Manager



Applicable Standard:

AirVantage EN 60079-0:2009 EN 60079-1:2007 IEC 60079-31:2006 Marking: II 2 G D Ex d ib IIB T4 Gb Ex tb IIIC 135° C Db IP66

Position Sensor EN 60079-0:2006 EN 60079-11:2007 EN 61241-0:2006 EN 61242-11:2006 Rating (not marked):

Ex ib IIB T4 Ex ibD 21 T132° C

CE 0518



Declaration of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

Manufacturer:

Warren Rupp, Inc.® A Unit of IDEX Corportion 800 North Main Street Mansfield, OH 44902 USA

Airvantage-equipped Air-Operated Double Diaphragm RE2 and RE3 Bolted or Clamped Design Pump Models.

Certificate Number: IECEx SIR 10.0110X Issue: 2 Equiptment: AirVantage Air Flow Control Unit

Sira Certification Service

Rake Lane Eccleston Chester CH4 SJN United Kingdom



DATE/APPROVAL/TITLE: 05 DECEMBER 2011

Applicable Standard:

AirVantage IEC 60079-0:2004 IEC 60079-1:2007-4 IEC 60079-31:2008 Marking: Ex d ib IIB T4 Gb

Ex tb IIIC 135° C Db IP66

Position Sensor IEC 60079-0:2007-10 IEC 60079-11:2006 IEC 61241-0:2004 IEC 61242-11:2005 Rating (not marked):

Ex ib IIB T4 Ex ibD 21 T132° C

Joseberr

David Roseberry, Engineering Manager

