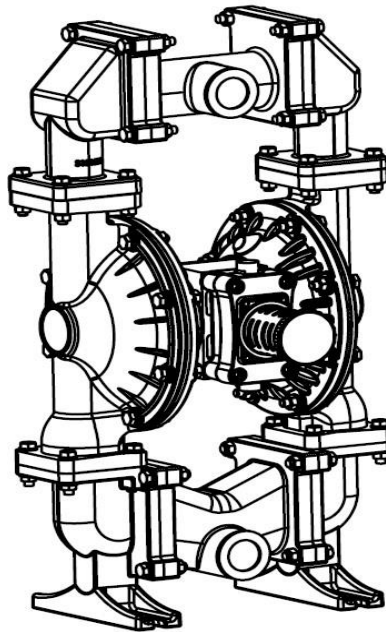


VESTAPUMP
Makes life comfortable

AODD PUMP WITH FLAP VALVE

USER MANUAL



VP16

www.vestapump.com • vesta@vestapump.com

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1- Caution Symbol and Warnigs

1.1- Caution Symbol

The warning symbol is the following CAUTION and the sign next to it. Serious accidents and injuries may occur if the items indicated by this symbol are not followed. Even serious accidents can result in loss of life. Be sure to read and follow the texts (warnings) marked with this symbol. Taking these warnings seriously can save your life and minimize your risk of injury.



CAUTION

1.2 –Warnings

The User's Guide booklet provides useful information from the use of the pump to its installation, repair and maintenance. The Owner's Manual booklet contains information aimed at familiarizing you with the pump's features, operation and safety information. This manual also contains maintenance information designed to improve the safe use of the pump. It is recommended that all service and maintenance of the pump be performed by Vesta Pump service. Vesta Pump service will provide high quality service and maintenance, as well as other assistance and maintenance that may be needed. The User's Manual should be considered an integral part of the pump and should be with you so that you can refer to it whenever you want. If these warnings are not heeded, material damage may occur to the pump or pump equipment.

The User's Guide Booklet contains instructions for use and

It must be read before using the ram pump. The manufacturer does not accept any responsibility for any damage to the pump due to improper use.

1.2.1- Misuse Hazard

- The liquid to be transferred by the diaphragm pump is notified to the authorized dealer or main dealer. The dealer determines the pump that is suitable for the liquid. Before pumping any liquid other than the reported liquid transfer, you should definitely contact Vesta Pump or the authorized dealer.
- The working pressure (max.) of the diaphragm pump is 7 bar. These pressure values should not be exceeded. Otherwise, the diaphragm pump may be damaged and will be out of warranty.
- When the diaphragm pump is first installed or when it is put into use and continues to operate, use sound-proof earplugs, safety glasses and gloves.
- Do not lift the pump above the ground when the diaphragm pump is in operation and under pressure.

- Do not modify parts of the diaphragm pump. Always use (OEM) original spare parts..
- If you used a flexible hose while assembling the diaphragm pump, be careful not to bend this hose during the transfer.
- While mounting the diaphragm pump or afterwards, make sure that the hose on the suction side is not flexible. Flexible hoses can bend during suction and stop suction.
- Pay attention to the compatibility of the liquid to be transferred by the pump and the pump body and elastomer (parts made of rubber). If you do not have enough information about whether it is compatible or not, definitely consult Vesta Pump or the authorized dealer.
- If there are any warnings from the company that produces the liquid for the fluid to be transferred with a diaphragm pump, take these warnings into consideration.
- Check the diaphragm pump body, diaphragms and other equipment daily. If any wear or tear is observed, replace the part immediately. When the diaphragm pump stops working and is disconnected from the line, if there is a risk of freezing of the liquid inside, clean the interior with a liquid suitable for this liquid. Otherwise, the material frozen in the diaphragm pump may damage the body and diaphragms.
- Do not transfer trichloroethane, methylene chloride, other halogen hydrocarbon solvents or liquids containing such solvents with these pumps in aluminum equipment operating under pressure. The use of these liquids may cause a chemical reaction and there is a high probability of explosion.
- While selecting the diaphragm pump, the compatibility of the pump body and elastomer parts with the liquid to be transferred should be determined. In unsuitable conditions, the pump may be damaged and even the risk of injury and death may occur. If the liquid to be transferred and the pump body are not compatible and VESTA PUMP has not made this choice, the manufacturer is not responsible for any damage that may occur.
- Make the connections of the diaphragm pump in the original inlet and outlet dimensions. When the inlet and outlet dimensions of the pump are changed or reduced, the pump may be damaged and some parts may deform early. When this situation occurs, the manufacturer is not responsible for malfunctions and loss of parts in the pump, and pump malfunctions will be excluded from the warranty.

1.2.2- Toxic Liquid Hazard

- If the toxic liquid or vapor comes into contact with the eyes or any part of the body during the transfer, it may cause permanent damage and cause death.

For this;

- You need to know the properties of the liquid to be transferred with the diaphragm pump. In line with this information, take measures to prevent the contact of toxic or harmful liquid with the environment.
- Do not move, lift or disassemble the pump while the diaphragm pump is under pressure in dangerous and toxic liquid transfers.
- Store the dangerous liquid in an approved container that the liquid cannot damage.
- In toxic and dangerous liquid transfers, approach the diaphragm pump with appropriate protective apron, clothing, gloves, glasses and mask.
- Be sure to report that the pumps sent to Vesta Pump or authorized dealer for repair purposes transfer toxic or dangerous liquids.
- Evacuate the exhaust air (pressure outlet) of the pumps that transfer toxic liquids to areas that will not harm anything. When the diaphragms burst, the toxic liquid or gas in the pump will come out from the pressure outlet.
- Make the pipe connections of the pump to which dangerous liquid will be transferred in a controlled manner so as not to leak.
- Before repairing the pumps that transfer toxic, acidic and explosive liquids, clean them beforehand with suitable liquids to clean these liquids and empty the liquid inside the pump.
 - These marks are affixed on the pump when it is shipped.



1.2.3- Fire and Explosion Hazard

Installation of pumps used in the transfer of liquids with fire and explosion hazards in non-ventilated environments and not properly grounded may cause dangerous situations. This can cause serious injury or even death.



Pumps to which flammable and combustible liquids will be transferred must be grounded against static electricity. (See Figure 4)

- Do not transfer non-conductive flammable liquids with non-conductive pump body materials (Polypropylene, PVDF).
- If you encounter electric shock or sparking while using the pump and its equipment, stop the pump. Do not start the pump until you are sure that the problem has been resolved.
- If the diaphragm pump transfers flammable liquids and is in a closed environment, ventilate the environment.
- Pipe the air outlet to a safe environment. In the event of a diaphragm explosion, some accidents will be prevented as flammable material will come out with compressed air. (See Figure 3)
- Do not smoke, do not use lighters, do not weld in the area where the pump is installed.
- During the transfer of flammable and explosive liquids in the diaphragm pump, the pipe connected to the suction line must not be flexible. Otherwise, the vacuum created by the diaphragm pump during suction may cause the flexible pipe to shrink and stop the liquid suction. In addition, there may be ruptures in the pipe whose surfaces adhere to each other due to vacuum. These ruptures can cause flammable and explosive liquid to flow out.
- Always use protective clothing, goggles, and a face mask when assembling or repairing a pump that transfers flammable and explosive liquids.
- Take necessary safety precautions when transferring flammable and explosive liquids with a diaphragm pump or when the temperature of the transfer liquid is 80°C and above.



The pump is delivered to the user without equipment. Protective equipment and The user has to supply the transfer equipment himself.



The inside of the pumps that are sent to the manufacturer or authorized dealer for service must be made empty so as not to harm the environment and the packaging. When pumps that transfer dangerous, explosive, flammable and human health-harming liquids are sent to the manufacturer or authorized dealer, they must be informed about the liquid. Otherwise, the company using the pump is responsible for injuries and even deaths that may occur.

2- Installation

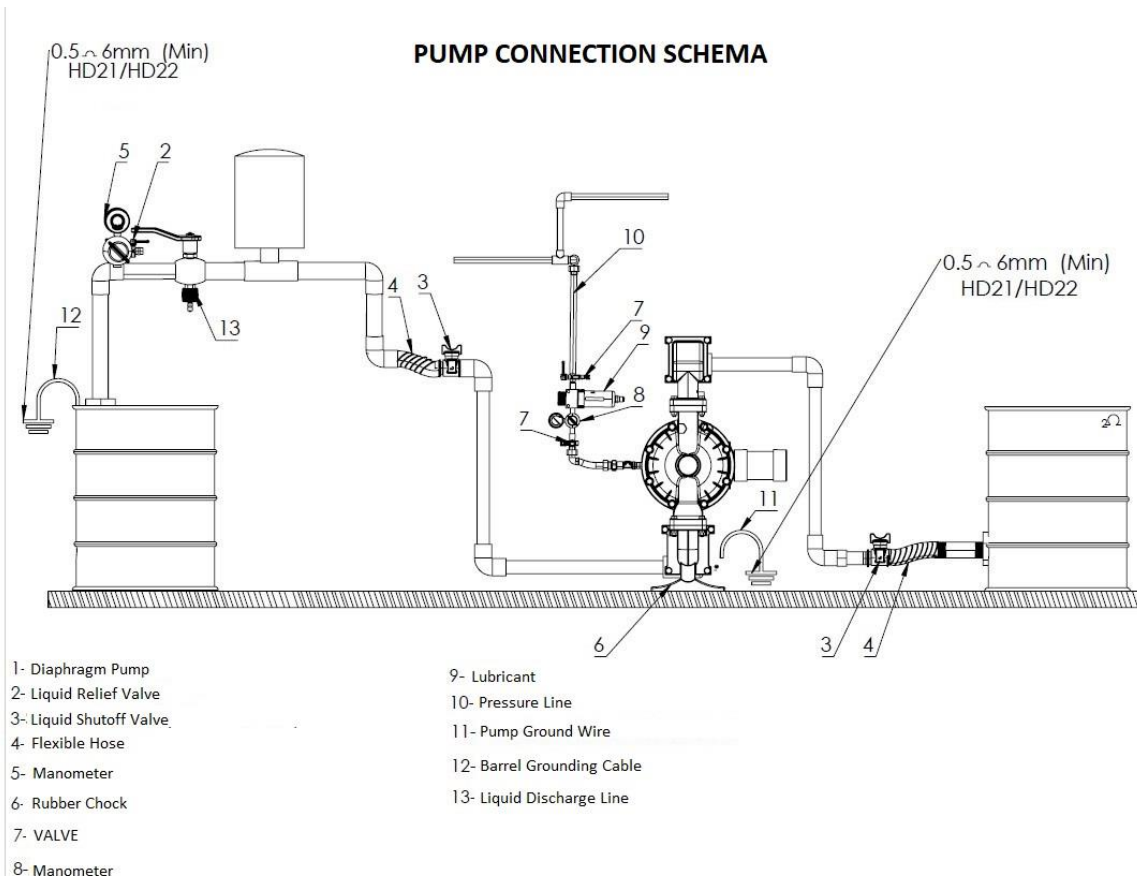
2.1- Information of General Installation

- The diaphragm pump is simple to install. However, if the installation specifications recommended by the manufacturer are taken into consideration, the operating life of the pump will be long and its efficiency will be high. (See Figure 1).
- When connecting the air or liquid side fittings (hoses, pipes, fittings, etc.) to each other in the diaphragm pump installation, care must be taken to avoid leakage and leakage from the thread connections. All fasteners must be tightened securely. If necessary, liquid gasket should be used.
- Before the diaphragm pump is assembled, all bolt and nut connections should be checked and tightened again if necessary. These connections may loosen due to the vibrations the pump is exposed to during transportation.

In the installation of diaphragm pumps, rubber wedges should be placed under the pump feet at the place of assembly. It is recommended by the manufacturer. The rubber chock reduces the stresses that may come to the pump, preventing the bolts from loosening from vibration and also preventing material fatigue.

- Diaphragm pump installation should be done as close as possible to the liquid to be transferred.
- Suction line length and number of fittings should be kept to a minimum during assembly.
- The suction line diameter of the installed pump should not be reduced to lower diameters.
- If the pipeline is not flexible at the place where the diaphragm pump is installed, a flexible hose should be placed between the pipeline and the pump.
- Our Ex-proof Pumps with ATEX Certificate can be used in explosive environment.

The following (Figure 1) installation method is to give enlightening information and guide the user company about how the installation can be. It guides the pump user to create his system in line with his own requirements. For more information and documents, contact Vesta Pump or authorized dealer.



2.1.1- Safe Operating Temperature for Main Body

	max.
Polypropylene	65°C
Aluminum	85°C
Stainless Steel	85°C
PVDF	85°C
Cast Iron	85°C
Polypropylene with Fiberglass	85°C
Sheet Stainless	85°C

2.1.2- Safe Operating Temperature for Elastomer Parts

	max.	min.
Neoprene Its resistance to vegetable oils is very good. It has high resistance to abrasion. It is preferred for use in neutral chemicals, greases and some solvents. Acids, Esters, Ketones are not preferred transfer fluids because they damage the material structure.	80°C	-23 °C
Buna-n It is often used in oils. It has high usage resistance in water, hydraulic oil transfers. It can be used easily in gasoline and its derivatives.	80°C	-23 °C
EPDM It has good resistance to chemicals. It cannot show much resistance against oil and solvents. Resistance to alcohols and ketones is moderate.	85°C	-23 °C
PTFE It is generally used in heavy chemicals and acids. Its durability is very good. It is very suitable for liquid transfer at high temperatures.	85°C	-37 °C
Viton Chemical resistance of most solvents and oils is good. It is preferred in animal and vegetable oils, some acids, hot water and hot solutions.	85°C	0 °C
Santoprene It has good resistance to acids and oils. Its mechanical flexibility and flexibility life is long. Wear resistance is high.	85°C	-23 °C



The temperature values of the materials whose operating temperatures are given above are given by considering the usage conditions of the diaphragm pump.

2.2- Air Line

The pressure coming from the air line connected to the pump should not exceed 7 bar. Install the air line with a hose not less than the connection size so that the pump can operate at the desired efficiency. Air line connection size is 3/4 in HP 15 type pump. Install the air line of the pump as shown in Figure 1. Make sure that the air line between the main air line and the pump is flexible. Put a shut-off valve (ball valve) in front of the air line to the pump. Close the air inlet from this valve when necessary or in case the pump is vented.

- Make the air line connection as in Figure 1. Attach the accessories to the wall or a stable place. Make sure the overhead line conducts electricity
 - Put a conditioner (air regulator) in front of the air line of the diaphragm pump. Water in the compressed air line can cause problems such as icing or freezing of the outlet air. This may cause the pump to operate unevenly or to stop completely.

- Moisture and water in the compressed air coming from the compressor can be reduced by using a waterstop regulator that can be used in addition to the air drying unit of the user. This will prevent polluted air from entering the pump. At the same time, it will reduce or prevent freezing in the outlet line by keeping some of the water in the line.
- To start the pump, turn the air valve approximately $\frac{1}{2}$ " and $\frac{3}{4}$ " to open. After the pump starts to work, the air flow can be given to the air valve at the desired level. If the opening of the valve increases the frequency of change but does not increase the flow rate, it means that cavitation has occurred in the liquid suction line. In this case, the air coming to the valve is reduced and the pump is activated slowly. Thus, cavitation is prevented.
- The fluid flow in the diaphragm pump is controlled in two cases. It is done either by controlling the compressed air line entering the pump with a pressure regulator, ball valve or solenoid valve, or by controlling the liquid outlet line of the pump with a pressure regulator, ball valve or solenoid valve.



Air line connected to the diaphragm pump (shown as 3 in figure 1)

It is necessary to evacuate the air trapped between the pump and the pump. Otherwise, the trapped air will cause the pump to move unexpectedly. This may cause accidents and poisoning due to moving parts.

2.3- Suction Line

The connection of the pump to the main suction line after the liquid suction port should be made with flexible hoses. This prevents some parts of the pump from breaking, deforming and loosening the bolts during knocking.

- During the assembly of the pump, always put a shut-off valve in front of the suction line. It will provide easy disassembly of the pump during valve repair and maintenance times.
- You can see whether there is a smooth flow of liquid in the suction line of the pump by means of the manometer placed on the line.
- Make sure that the flexible and main line pipes to be connected to the suction line are conductive. If you have not used conductive pipes, ground the pipes.
- Diaphragm life is shortened at a liquid inlet pressure of more than 1 bar. The most obvious example of this is that the diaphragm pumps connected under high tonnage tanks have a short diaphragm life due to the pressure of the tank..

2.4- Discharge Line

The discharge line, like the suction line, should be connected to the main line with a flexible hose so that the pipes formed in the pump are not exposed to knocking, the bolts are not loosened and the pump parts are not damaged.

- Install a ball shut-off valve in front of the discharge line, close to the pump. (See Figure 1)
- Put a manometer in front of the discharge line to be able to read the pressure. (See Figure 1)

- Make sure that the flexible and main line pipes to be connected to the discharge line are conductive. If you have not used conductive pipes, ground the pipes. (See Figure 1)

- In order to relieve the pressure on the discharge line, put a liquid discharge valve or valve on the line. This valve prevents harmful liquids from splashing into the eyes and skin during discharge. It prevents serious injuries. These injuries can cause death.

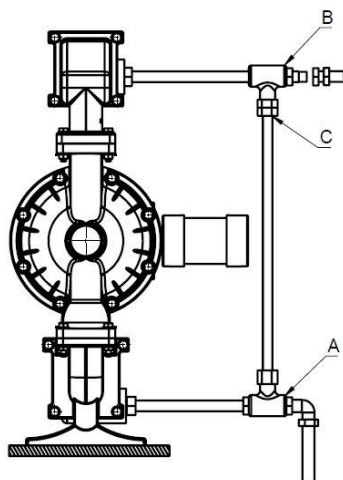


Do not use the fasteners with excessive torque value during installation.

do not squeeze. This may damage the pump.

2.5- Fluid Pressure Relief Valve

The heating and expansion of the liquid in the discharge line causes the pressure in the line to increase. This situation can be seen in long pressing lines with the effect of the sun or environmental factors. It can also occur in high pressure pumps supported by a diaphragm pump, when the valves do not do their job. In such cases, it is recommended to install a pressure relief device (by-pass line) as seen in Figure 2.



A- CONNECT LIQUID OUTPUT LINE HERE

B- MOUNT VALVE BETWEEN LIQUID INLET AND OUTPUT HOLES

C- CONNECT LIQUID INLET LINE HERE



Pressure relief valve in systems where the highest pressure is used

This by-pass system will prevent excessive increase in pressure and puncture of the pump or hose. (See Figure 2)

2.6- Exit Air Discharge

According to the installation type of the system, the environment should be properly ventilated. In case the liquid transferred by the pump is toxic, flammable or explosive, the air outlet should be kept away from people, other living things, areas where food is produced and all flammable environments.

- Excessive restriction of air outlet causes inefficient and unbalanced operation of the pump.

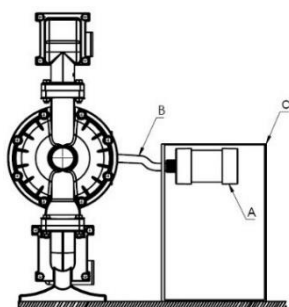
- The air outlet should be assembled in a way that it is collected in a container, taking into account the explosion of the diaphragms in places where harmful liquid transfer is made. You can see this in Figure 3.



Grounding cable cross-section minimum 6.5 mm in ex-proof pumps

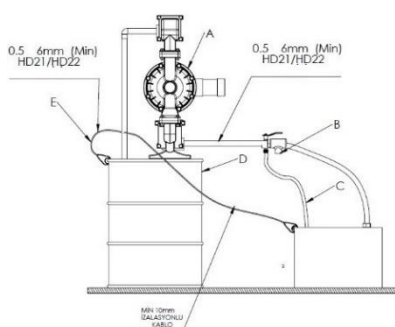
should be. In addition, HFFR (Halogen free flame retardent) cable should be used instead of standard cable. The place where the cable to be used in the pump will be connected is indicated on the pump with a special sign. This cable is supplied by the customer..

FIGURE:3



- A- MUFFLER
- B- AIR CONDUCTING AIR EXHAUST HOSE
- C- COVER FOR REMOTE AIR INTAKE

FIGURE:4



- A- PUMP
- B- LIQUID DRAIN VALVE
- C- LIQUID DISCHARGE LINE
- D- GROUND SCREW
- E- HOPPER GROUND CABLE

2.7- Grounding of the Pump



Diaphragm Pump must be grounded against static electricity.

- Ground the diaphragm pump as shown below (Figure 4). The surfaces in contact with the liquid in the diaphragm pump must be grounded with metal, stainless wire or electrical cable as shown in the figure. While transferring flammable and explosive liquids, suction and discharge lines should be selected from conductive materials. Grounding must be done on both lines, as is done to the pump. Never use non-conductive polypropylene and PVDF bodies for transferring flammable and explosive liquids.
- All equipment must be grounded (such as pump, air and liquid hoses, air compressor, combustible material buckets, liquid supply containers) to prevent sparks and fires that may occur due to static electricity and to reduce risks.
- In clamp type pumps, the clamps must also be grounded.
- Liquid resistances in diaphragm pumps should be less than 2×10^{12} ohm centimeters.

2.8- Cleaning the Pump

The diaphragm pump to be installed has been subjected to pressure and leakage tests with water by the manufacturer. If food product is to be transferred with this pump or if a fluid that will react in contact with water is to be transferred, wash the pump with a suitable solvent or a suitable liquid before putting it into operation.

2.9- Commissioning of the Pump

The connection of the diaphragm pump is quite simple. The fluid is sucked into the pump from the lower inlet pipe with the suction port, and the transfer fluid is pressed out of the pump from the upper outlet pipe, which is the discharge port. Diaphragm pumps have a pulsating flow. One of the ways to prevent pulsating flow is to install a flexible hose in front of the inlet and outlet lines of the pump at the installation site. Another flow arrangement is to place a damping volume (balance tank, tranquilizer) in front of the discharge line. In order to determine the pressure values that may occur at the inlet and outlet of the pump and to adjust the flow, a manometer and valve are attached to the inlet and outlet lines. The pump will not run when one or both valves are closed. When both valves are opened, the diaphragm pump continues to operate. In the meantime, the diaphragm pump is not damaged. Compressed air is needed for the diaphragm pump to operate mechanically. For the pump to operate at full capacity, the air inlet hose must be the same diameter as the air inlet line. It is recommended by the manufacturer to install a conditioner in front of the air inlet line. The conditioner allows to control the pressure setting and lubricate the air diverter valve. The fluid flow is adjusted by controlling the air flow with the valve to be placed in front of the air inlet line..

- Points to be considered in the assembly of the diaphragm pump;
- - Diaphragm pump should be as close as possible to the liquid to be transferred
- - The length of the suction line and the number of bends in the suction line should be kept as minimum as possible.
- - The inlet-outlet size of the diaphragm pump should not be different from the connection size of the place where it is mounted.

- If the pump does not draw when started, cavitation has occurred.
- Cavitation shortens the life of the diaphragm. Check the suction height. Do not start the pump fast, check the suction line diameter. These can cause cavitation.
- During the first commissioning of the pump, check all threaded connections and air connections for leaks and leaks. In case of any leakage, flammable explosive or acidic liquid may pose a risk.
- A damping tank should be used to prevent knocking in the pipeline at long delivery distances.

2.10- Pressure Equipment Evacuation

The pump and equipment are under pressure until the pressure in the pump is relieved. While the pump is in this state, the user may be harmed by the material that will be accidentally sprayed, spilled or splashed from the pump or equipment. Follow the pressure relief procedure to reduce both damage and possible risks.

Pressure relief procedure application situations

- When you need to relieve pressure
- When you stop the pump
- When you check, clean or maintain any system equipment.

How should it be done?

- Shut off the air line entering the pump from the valve. Open the air pressure relief valve to discharge the compressed air between the air line valve and the pump.
- Close the valve on the discharge line. Open the valve by placing a suitable container under the liquid pressure relief valve. Pour the remaining liquid into the container. Remove the outlet hose from the pump.

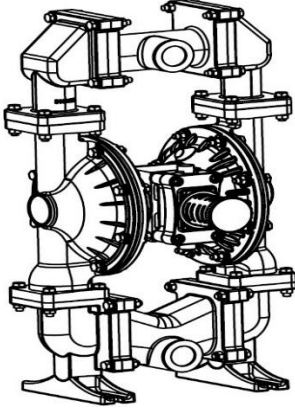
How to Discharge the Remaining Liquid in the Pump?

- Wear suitable clothes for the liquid transferred by the pump.
- If there is a valve on the suction part of the pump, close it
- Use a suitable container to hold liquid that will flow or drip from the suction hose
- Remove the suction hose from the suction port. to the ground disconnect if connected.

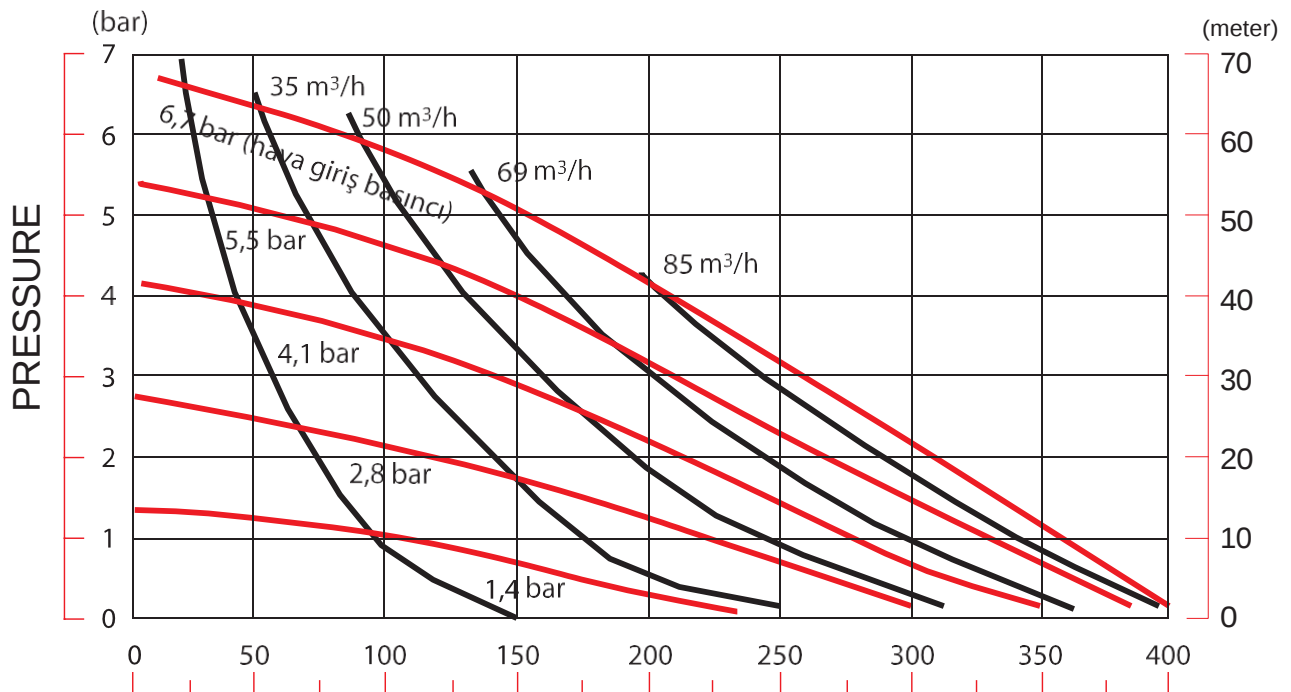
3- USAGE

3.1 Technical Information

3.1.1- Performance Curve and Pump Picture

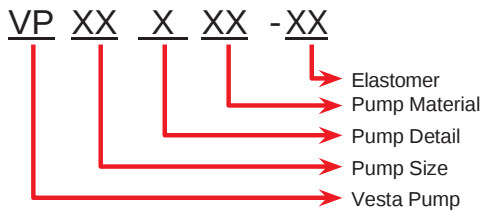
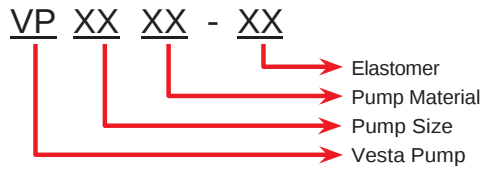


VP16 (1 1/2") Performance Curve



- In pumps with Teflon diaphragm, there may be a flow loss of up to 25%. This is because a supporting diaphragm is used behind the Teflon diaphragm in the pump. It increases the total hardness in the diaphragm used and decreases the pump efficiency..

3.1.2- Pump Type Coding



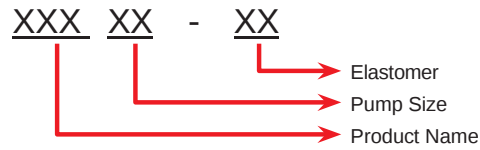
Elastomer Part Material		
	Diaphragm	Ball
N	Neoprene	Neoprene
B	Buna - N	Buna - N
S	Santoprene	Santoprene
E	EPDM	EPDM
T	PTFE (Teflon)	PTFE (Teflon)
V	Viton (FKM)	Viton (FKM)
C	-	Steel
TV	PTFE (Teflon)	Viton (FKM)
TC	PTFE (Teflon)	Steel
TE	PTFE (Teflon)	EPDM
SV	Santoprene	Viton (FKM)
ST	Santoprene	PTFE (Teflon)
SB	Santoprene	Buna - N
SC	Santoprene	Steel
SN	Santoprene	Neoprene
NC	Neoprene	Steel
BC	Buna - N	Steel

Pump Detail	
E	Electrical
T	Powder
C	Double Discharge
W	Aluminum Whole Body

Pump Size	
02	1/4"
05	3/4"
10	1"
15	1 1/2"
20	2"
30	3"

* Our Exproof Pumps with ATEX Certificate can be used in explosive atmospheres..

3.1.3- Spare Parts Coding



Elastomer	
45	Neoprene
46	Santoprene
47	Buna - N
48	EPDM
50	PTFE (Teflon)
51	Viton (FKM)
30	Aluminum
31	Cast Iron
32	SS
33	Polypropylene
35	PVDF

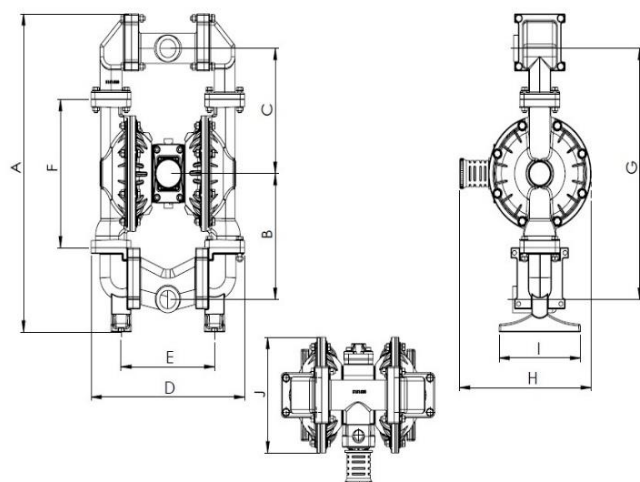
Pump Size	
02	1/4"
05	3/4"
10	1"
15	1 1/2"
20	2"
30	3"

3.1.4- Pump Technical Specifications

Max.Capacity	: 400 lt/min.
Inlet / Outlet	: 1 1/2"
Max. Pressure	: 7 bar
Suction Height (max)	: 70 m
Body Material	: Aluminum, PVDF Sand Casting Stainless, Sheet Stainless Polypropylene, Glass Fiber Polypropylene,
Diaphragm Options	: Santoprene, Neoprene, Buna-N, EPDM, Teflon, Viton Stainless Steel , Steel
Air Inlet Size	: 3/4"
Solid Size	: 6 mm
Dry Suction Depth	: 6 m
Air pressure (Min, Max)	: 1-7 bar
Working Temperature	: -18 °C ile 100 °C
Noise Level	: 79 dB
Luquid Flow with one Strock	: 1,76 lt/min.

3.1.5- Pump Measurement

Metallic Body

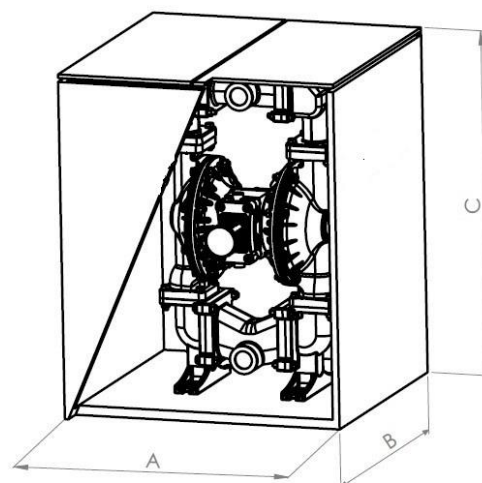


A	B	C	D	E	F	G	H	I	J
780	308	307	425	258	364	615	363	225	284

3.1.6- Package Dimension and Weight

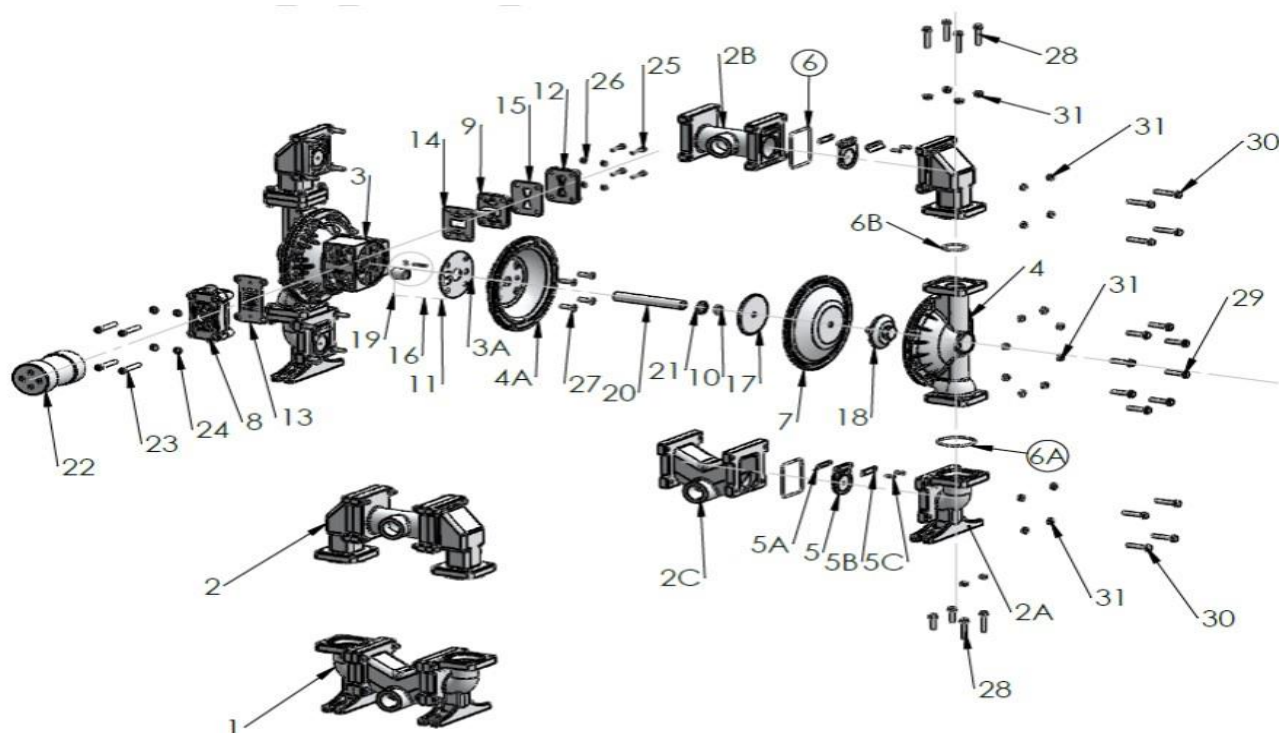
As seen in the figure below, the diaphragm pump is connected to the fixing board by means of bolts and nuts. The pump is prevented from tilting during transportation.

Metallic Body Measurement



A	B	C
510	360	770

3.1.7- Spare Part Drawing (METALLIC)

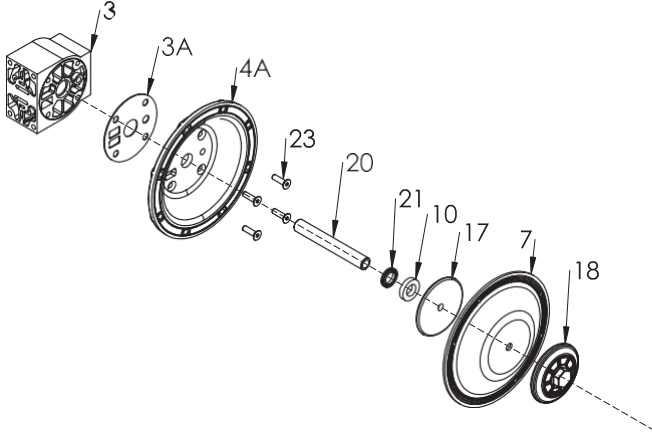


VP16 FLAP VALVE PUMP SPARE PARTS LIST

PARTS NO	PARTS CODE	PARTS NAME	UNIT	PARTS NO	PARTS CODE	PARTS NAME	UNIT
1	S011630	DISCHARGE LINE	1	8	H034033B	AIR VALVE REPAIR KIT	1
1A	S141630	T-FLANGE	2		H034030	AIR VALVE REPAIR KIT	1
1B	S171630	T FLANGE FOR DISCHARGE	1	9	H044033B	PILOT VALVE REPAIR KIT	1
				10	H055047	BUMPER	2
				11	H064033B	PIN BUSHING	2
				12	H075033B	COVER, I AIR INLET	1
2	S021630	SUCTION LINE	1	13	H084047	GASKET, FOR AIR VALVE	1
2A	S111630	T-FLANGE	2	14	H094047	GASKET, PLOT VALVE INFRONT	1
2B	S151630	T FLANGE FOR SUCTION	1	15	H104047	GASKET, PLOT VALVE BACK	1
				16	H124047	ORING for PIN	1
3	H015033B	MAIN BODY	1	17	H131530	INNER DIAPHRAGM HOLDER	2
3A	H115047	INNER COVER GASKET	2	18	S071530	OUTER DIAPHRAGM HOLDER	2
				19	H145032	ACTUATOR PIN	2
4	S031530	OUTER COVER	2	20	H151532	SHAFT	1
4A	H025030	INNER COVER	2	21	H165047	OIL SEAL	2
				22	H174033B	MUFFLER	1
5	S201547	FLAP BODY	4	23	CM10X60-P	CAP SCREW 10X60 STAINLESS IMBUS	4
5A	S191532S	SHEET STAINLESS FLAPE HOLDER	4	24	PM10-P0	PUL M10 SPECIAL STAINLESS	4
				25	CM8X45	CAP SCREW 8X45	4
				26	PM8	PUL M8	4
6	S161647	CONNECTION GASKET	4	27	CM10X25-PHB	CAP SCREW 10X25 PAS. H.B. IMBUS	8
				28	CM10X50	CAP SCREW M10X50	16
7	S061545	DIAPHRAGM	2	29	CM10X45	CAP SCREW M10X45	16
	S061546	DIAPHRAGM	2	30	CM10X30	CAP SCREW 10X30	8
	S061547	DIAPHRAGM	2	31	SM10-F	Nut Flanged M10	40
	S061548	DIAPHRAGM	2				
	S061550	DIAPHRAGM	2				
	S061551	DIAPHRAGM	2				

4- MAINTENANCE

Before starting the pump maintenance, if the fluid to be transferred has the feature of freezing and drying, it should be cleaned with the appropriate cleaning fluid. Otherwise, pump maintenance will be much more expensive and difficult. Check bolt connections at each use. Tighten any loose connections with the wrench. Change the necessary links.



a. – Diaphragm Maintenance

Parts No	Parts Code	Parts Name
3	H015033B	Main Body
3A	H115047	Gasket, Inner Cover
4A	H025033B	Inner Cover
23	CM10x60-PI	10x60 SS. Imbus
20	H151532	Shaft
21	H165047	Oil Seal
10	H055047	Bumper
17	H131530	Inner Diaphragm Holder
7	S0615XX	Diaphragm
18	S071533	Outer Diaphragm Holder



It is used in double diaphragm, teflon diaphragm pump options. Teflon The rubber diaphragm used in front of the Teflon diaphragm prolongs the breakage and fatigue resistance of the Teflon diaphragm and ensures its longevity..

To maintain the diaphragms, first turn off the pump suction line and then the pump outlet line. After turning off the compressed air, release the pressure in the pump and remove the pump from the air inlet line. Discharge the liquid remaining in the pump. See pump assembly drawings and diaphragm maintenance diagrams. Dismantle the suction and discharge lines.

4.1.1- Uninstall of Diaphragms

To remove the diaphragm assembly from the diaphragm shaft, remove the outer diaphragm holder by turning it counterclockwise using a 34 socket wrench. After this process, one of the diaphragms will be removed together with the inner and outer diaphragm holders, and the other will be removed as connected to the shaft. First of all, to remove the diaphragm between the inner and outer diaphragm holders, tighten the inner diaphragm holder by connecting it to the vise and unscrew it by turning it counterclockwise with the help of 34 socket wrench.

Loosely clamp the shaft connected to the other diaphragm to the vise and remove it using a wrench. Do the disassembly of the other diaphragm in the same way. Check the diaphragm for cuts, ruptures, abrasions and chemical effects. Replace diaphragms with new ones if necessary..

4.1.2- Install of Diaphragms

Insert the outer diaphragm holder and push it through the center hole of the diaphragm. Insert the bolt into the inner diaphragm holder and tighten it clockwise to the shaft. Screw the loose assembled assembly back into the vise. Tighten the diaphragm assembly together with a 34 socket wrench..

4.1.3- Assembling the Diaphragms to the Pump

Make sure that the stop is mounted on the diaphragm shaft. Tighten the shaft of a diaphragm assembly clockwise into the threaded hole on the diaphragm shaft end until it is flush with the shaft end of the inner diaphragm plate. Attach the shaft to the pump. Align the bolt holes in the diaphragm with the inner chamber bolt holes. Connect the outer chamber to the pump using bolts and nuts.

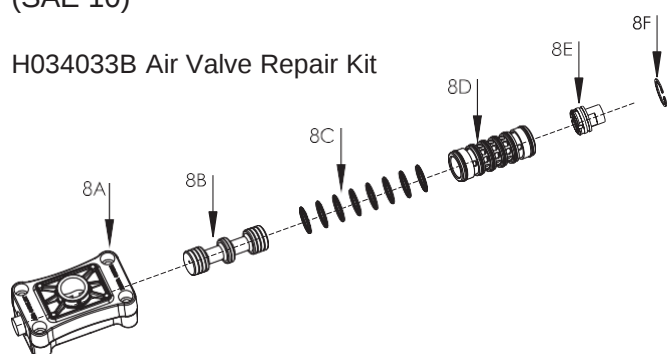
From the other side of the pump, pull the shaft of the diaphragm as far as it will go. Make sure that the stop is mounted on the diaphragm shaft. Tighten the exposed shaft of the diaphragm assembly clockwise to the diaphragm shaft as much as possible and leave enough room to adjust so that the bolt holes in the diaphragm match the bolt holes in the inner chamber.

Connect the remaining outer chamber to the pump using bolts, nuts and washers. Bolt Suction and Discharge Lines, Connect to pump using nut and washer.

4.2 – Types of Air Valve Kit and Maintenance

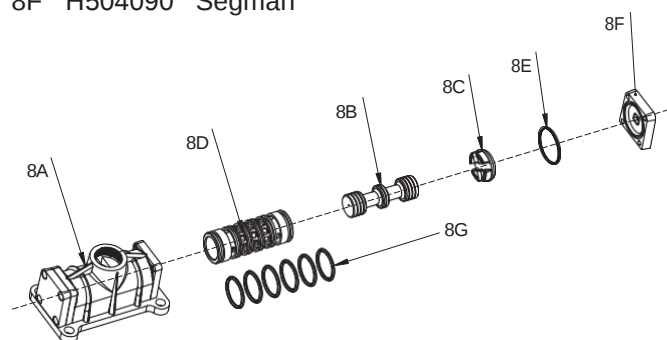
Air Valves are lubricated with special greases in the factory so that there is no need for additional lubrication. If additional lubrication is required, the air inlet connected to the pump is removed every 1 or 2 weeks. Machine oil is added 4-5 times from the air inlet of the pump with an oiler. (SAE 10)

H034033B Air Valve Repair Kit



AIR VALVE (PLASTIC BODY) REPAIR KIT PART LIST

Part	Part Code	Part Name
8A	H554033	Body of Air Valve
8B	H724030	Piston Body for Air Valve
8B	H724070	Piston Body for Air Valve
8C	H574047	Oring
8D	H714030	Jacket Body
8D	H714032	Jacket Body
8E	H584033	Cover
8F	H504090	Segman



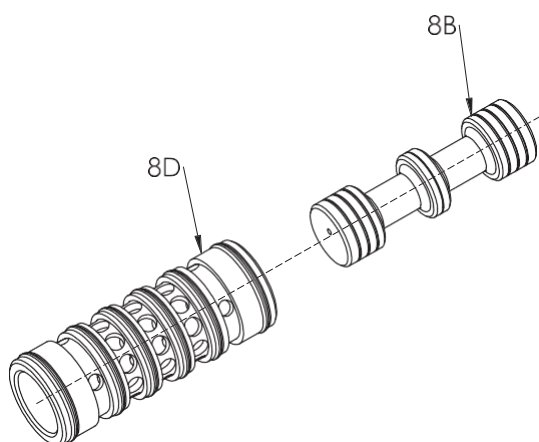
AIR VALVE (METALLIC BODY) REPAIR KIT PART LIST

Part	Part Code	Part name
8A	H554030	Body of Air Valve
8D	H714030	Jacket Body
8D	H714032	Jacket Body
8B	H724030	Piston Body for Air Valve
8C	H604033B	Cover
8E	H694047	Oring
8F	H614030	Cover
8G	H574047	Oring



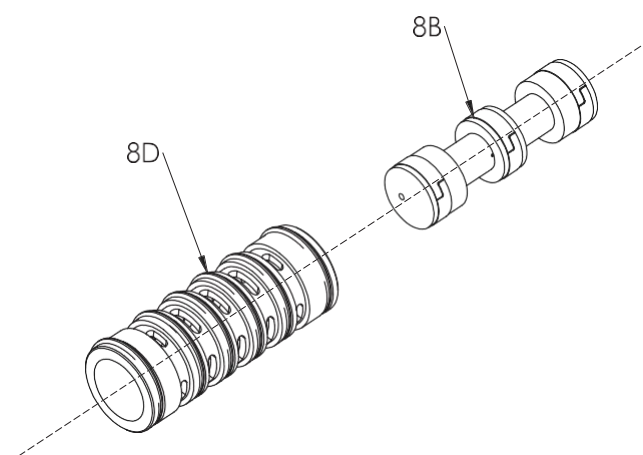
Do not over-lubricate the pump when extra-lubricating it. This situation is around may cause contamination or even malfunction.

H594032 Jacket Piston Set



JACKET PISTON REPAIR KIT PART LIST

Part	Part Code	Part Name
8D	H714030	Jacket Body
8D	H714032	Jacket Body
8B	H724030	Piston Body for Air Valve
8B	H724070	Piston Body for Air Valve



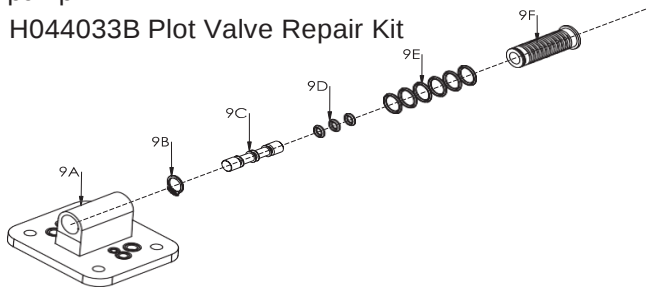
JACKET PISTON REPAIR KIT PART SET

Part	Part Code	Part Name
8D	H634032	Jacket Body for Air Valve
8D	H634030	Jacket Body for Air Valve
8B	H644030	Piston Body for Air Valve

4.3– Types of Plot Valve Kit and Maintenance

Before starting the valve maintenance, turn off the suction and discharge lines of the pump. Cut off the compressed air inlet and relieve pressure from the pump. Drain any remaining liquid inside the pump.

H044033B Plot Valve Repair Kit



PLOT VALVE REPAIR KIT PART LIST

Part	Part Code	Part Name
9A	H454033	Plot Valve Body
9B	S124090	Ring for Plot Valve
9C	H484032	Piston Body for Plot Valve
9D	H498047	Oring for Plot Valve
9E	H478047	Oring for Plot Valve Jacket
9F	H464030	Jacket Body for Plot Valve

See pump assembly drawings.

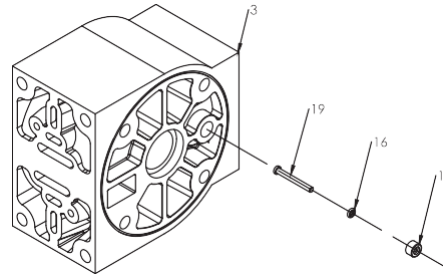
Unscrew the four bolts using a wrench or socket. Remove the air inlet cover and the air inlet gasket. The pilot valve assembly can now be removed for inspection and maintenance. You can remove the pilot valve kit without completely disassembling the pump.

Remove the pilot valve piston. Clean and check piston and o-rings for dirt, cuts and wear. Replace the o-rings and piston with new ones if necessary. Remove the circlip from the end of the liner and the liner from the valve body and clean. Check the liner and o-rings for dirt, cuts and wear. Replace o-rings and liner with new ones if necessary.

Lubricate the outer surface of the liner and the o-rings abundantly. Then carefully insert the liner into the valve body. When placing the liner, be careful not to cut the o-rings. Attach the segment to the shirt. Lubricate the outer surface of the piston and the o-rings generously. Then carefully insert the plunger into the shirt. When placing the piston, be careful not to cut the o-rings.

When refitting the pilot valve assembly to the intermediate space, take care to ensure that the pilot valve ends are set between the piston pins. Reinstall the gasket, air inlet cover and bolts. Connect the air inlet to the pump. The pump is ready for use.

4.4– Maintenance of Actuator Pin



Part	Part Code	Part Name
3	H015033	Main Body
19	H145032	Actuator Pin
16	H124047	Oring
11	H064033B	Pin Bushing

If the stop pin is damaged in high pressure applications and this situation continues even when the new pin is installed, the problem is solved by replacing it with a thicker pin. Turn off the suction and discharge lines of the pump before starting the Maintenance Pin maintenance. Cut off the compressed air inlet and relieve pressure from the pump. Drain any remaining liquid inside the pump. See pump assembly drawings.

Unscrew the four bolts using a wrench or socket. Remove the air inlet cover and the air inlet gasket. The pilot valve assembly can now be removed for inspection and maintenance.

Check the stop pins. See picture. You can reach the stop pins from the gap where the pilot valve assembly is located. Remove the pins from the bushings on both sides of the gap. Check the installed o-rings for cuts and wear. Replace o-rings as needed. Apply a small amount of grease to each o-ring and insert the pins into the bushings. Push the pins forward. When refitting the pilot valve assembly to the intermediate space, take care to ensure that the pilot valve ends are adjusted between the stop pins. Reinstall the gasket, air inlet cover and bolts. Connect the air inlet to the pump. The pump is ready for use.

4.5- Problems That May Occur in the Pump and Their Solutions

Compressed air comes to the pump and if the pump does not work, the air is directly if it comes out of the exhaust?	The liner piston may be stuck. The air coming into the pump must be clean.	Remove and clean the air valve.
If pump transfer is unstable?	Pilot valve may be faulty	Replace with new one.
If there are bubbles in the liquid coming out of the pump?	Suction line may be loose.	Tighten
	The diaphragm may be ruptured.	Change it
	Diaphragm holders may be loose.	Tighten
If fluid is coming from the exhaust air?	The diaphragm may be ruptured.	Change it
	Diaphragm holders may be loose.	Tighten
	Compressor air is excessively humid.	Clean the compressor tank .

5- Guarantee Conditions

Vesta guarantees the elimination of material and workmanship defects arising from production as of the date of sale of its own VESTA branded pumps to the end user. This warranty is valid only if the pump has been installed, operated and maintained according to Vesta's written recommendations.

This warranty does not cover general wear and tear and Vesta is free from general wear and tear or faulty assembly, improper application, abrasion, corrosion, insufficient or improper maintenance, neglect, accident, unconscious maintenance or equipment not covered by Vesta warranty: (hoses, fasteners, pneumatic regulator.), diaphragms, check valves and all kinds of gaskets (o-ring, z-ring) are out of the scope of warranty.

It does not give any warranty for accessories and equipment sold by Vesta but not produced by it; disclaims all obsolete warranties of merchantability and fitness for a particular purpose.

Under no circumstances, Vesta accepts any liability for compensation, loss, damage or injury; disclaims responsibility, liability, expense or expense directly or indirectly related to or arising from the use or dysfunction of any product; or, whether or not Vesta is aware of or notified of possible damages, indirect, special, penal or consequential damages, including but not limited to loss of sales, loss of profits, loss of pumped material, business slowdown, loss of production, loss of contract, reputation or goodwill. assumes no responsibility or liability for any damages that result.

This warranty is subject to the condition that the equipment, which is reported to be defective, is sent to Vesta or its authorized distributor in a way that the inside of the pumps is completely emptied and cleaned in a way that will not harm the environment and packaging, with the shipping fee paid in advance for the verification of the reported failure. The equipment will be returned to the end user, shipping prepaid. If a material or workmanship defect is not found as a result of the inspection of the equipment; repair work will be done for a reasonable fee, which may include parts, labor and shipping costs.

Vesta website and products found in promotional, marketing and technical literature and materials.

Related statements and data are not intended to describe the performance of any product under actual conditions of use or when used in specific applications, do not constitute a guarantee, and these statements and data should not be relied upon in determining the performance of products under actual conditions of use or suitability for specific applications.

All decisions regarding the cause of dysfunction depend only on Vesta Pump's determination. Pre-approval must be obtained from Vesta for the return of any product in order to evaluate the scope of warranty.

In any case, Vesta's liability for any single product will be limited to the original price paid for the product.

No Vesta authorized distributor or any other person is authorized to make changes on the product warranty and expose Vesta to any responsibility or liability other than those expressly provided herein.

Extended Product Warranty

The pumps produced under the Vesta pump brand are guaranteed against workmanship and fabrication faults for 2 years from the invoice date.

The repair period of the pumps is 20 working days. Our company is not responsible for products that are not received within 60 days. The time taken for repair is within the warranty period. In case of dispute, the burden of proof lies with the consumer.

5 years: Vesta guarantees spare parts and labor.

5-10 years: Vesta guarantees only spare parts.

All written and visual data contained in this document reflect the latest product information available at the time of publication. Vesta reserves the right to make changes at any time without prior notice.



AODD PUMP WITH FLAP VALVE

USER MANUAL

VP16