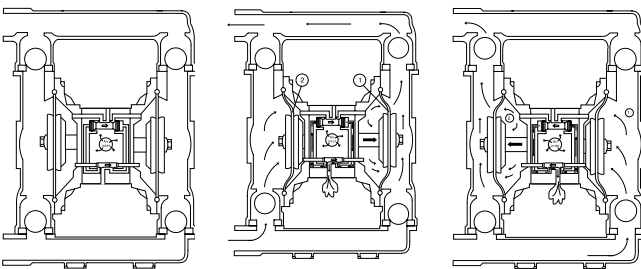


VERDERAIR VA double-action diaphragm pumps



This balanced series of compressed air driven, double-action, diaphragm pumps consists of two models: VERDERAIR VA and VA FDA. The pumps can be supplied in both plastic and metal (FDA model only in metal).

Working principle



1. The air valve directs compressed air behind diaphragm 1 which is then passed directly to the liquid column. The diaphragm functions as a divide between the compressed air and the liquid. The compressed air moves the diaphragm away from the central block of the pump. The opposite diaphragm is pulled towards the central block by the connecting rod, which is connected to the diaphragm that is under pressure. Diaphragm 2 now carries out the air-exPELLing stroke; air from behind the diaphragm is then expelled through the discharge valve into the atmosphere. Diaphragm 2 moves in the direction of the central block of the pump.

Atmospheric pressure then forces the liquid towards the inlet manifold, where the valve ball is moved from its seat.

This allows liquid to flow freely past the inlet valve ball and fill the liquid chamber.

2. Once the diaphragm under pressure, diaphragm 1, has reached the limit of its outward stroke, the air valve leads compressed air behind diaphragm 2. This compressed air pushes diaphragm 2 away from the central block, resulting in diaphragm 1 being pulled towards the central block. Diaphragm 2 pushes the inlet valve ball onto its seating through the hydraulic forces that develop. The same hydraulic forces cause the discharge valve ball to be lifted from its seat, whilst the opposite discharge valve ball is forced onto its seat. The inlet valve ball is lifted from its seat, so that the liquid can be transported to fill the liquid chamber.

3. When the stroke is completed the air valve once again brings air behind diaphragm 1 and diaphragm 2 starts on the air-exPELLing stroke.

Advantages and characteristics

- Simple installation
- Maintenance friendly
- Easy to operate
- Self-priming when dry
- No air lubrication needed
- Sanitary version possible.

Models

- VA

These diaphragm pumps provide flexible, reliable flow in all circumstances. The design of the control valve guarantees perfect operation that never jams and that does not have to be lubricated even at low compressed air pressure and high backpressure. VERDER has chosen those materials that offer the end user the best combination of advantages.

Capacity max.: 1050 l/min. lift max.: 84 kPa.

- Ball valves

The VERDERAIR VA models are fitted with ball valves which have a simple but effective design. They ensure that the pressure drop is low during circulation, resulting in a higher circulation than can be achieved with cylindrical valves. They can also cope with liquids with small particles in suspension, because these only create a line seal with the conical seat.

- Air relief valve



The entire air relief valve is maintenance-free, never jams and does not need lubricating. The air relief valve only consists of a couple of components, is easy to change and can be checked without the liquid connections having to be dismantled.

Accessories

- Pulsation damper



Oscillating pumps produce an oscillating flow. The design of the VERDERAIR double action diaphragm pump ensures there is a flexible and considerably reduced flow pulsation. A constant, non-pulsating flow can be achieved by using the Pulstech pulsation damper.

- Diaphragm failure detection system

When a diaphragm failure occurs, liquid can escape through the compressed air outlet valve. This can cause injury or damage to the local environment. To prevent this happening it is highly recommended that a diaphragm failure detection system is installed which can stop the pump and/or sound the alarm.

- CycleFlo Controller

The CycleFlo is a microprocessor guided batch controller, especially for the external control of VA pumps for batch and dosing applications. If the unit is integrated with a remote version of a VERDERAIR VA pump then the CycleFlo counts the strokes and thus the amount of liquid that is transported.



- VA FDA models

The VERDERAIR VA pumps are also available in a sanitary version; suitable for the food industry, fully compliant with FDA specifications.

Maximum capacity 568 l/min and a maximum lift of 84 kPa.

Application areas for the FDA series

- Evacuation of food processing mixing pans
- Transportation of ingredients from the sourcing tank to the mixing pans
- Rapid transportation of liquid concentrated from tankers to storage containers
- Siphoning of liquid from storage containers to smaller mixing tanks
- Pumping of hand- and massage lotions for the pharmaceutical industry.

Application areas

- Chemicals
- Pharmaceuticals
- Waste water treatment
- Water purification
- Shipping/shipbuilding
- Paper industry
- Paint and printing ink industry
- Unloading of trucks
- Food industry

VERDER Group, VERDERAIR products

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