

Flexible - Yet Secure

Aseptic Diaphragm Valve - Diaphragms

Material conformity

All diaphragms from Alfa Laval are made of materials conforming to FDA CFR 21 section 177 and most Aseptic Diaphragm Valves have USP 24 class VI certificate. Individual conformity certificates are available on request.

Fixing of diaphragm

Large diaphragms (\geq seat 10) are fixed by means of a threaded pin towards the compressor in order to distribute the power over as large a surface area as possible. This prevents mechanical damage in the connection between the compressor and the diaphragm, especially under vacuum conditions. Small diaphragms (seat 8) with lower forces are fixed by means of a rubber pin clamped to the compressor.

Material selection

Each application has different working conditions and therefore has different demands to the diaphragm valve. In order to select the most suitable diaphragm that will fit to your application it is important to have information on these working conditions. Of special importance are working temperature, chemical data of the processed fluid and the number of valve strokes. If in doubt about which diaphragm to choose for an application, please contact Alfa Laval for help with the selection.

Soft elastomer EPDM diaphragms

The EPDM seals suit most of applications also for high working temperature and with steam sterilisations. A typical feature of soft elastomer diaphragm is their insensitivity to mechanically polluted media such as cellular lumps, solid matter, etc. This type of media is very demanding for the valve function and the tightness of the seal where the soft texture of the soft elastomer makes it possible to run this media without any disturbance.

The optional EPDM/Kevlar seals have a reinforced core and provide extra mechanical stability. It is therefore ideal for long sterilising cycles with very high temperatures.

PTFE diaphragms

These diaphragms offer the highest possible degree of chemical resistance and has also a longer life time in high temperature applications. The PTFE is supported by a soft backing material and the diaphragms are available as two-piece and bonded seals.



Two-piece PTFE

For frequent cycling of the valve we recommend the use of a two-piece diaphragm, which gives an extended service life compared to the bonded diaphragm.

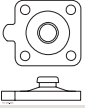



The convex contour of our two-piece PTFE minimizes the deforming forces acting upon the diaphragm when the valve is in closed position. This design enables the closing force to be minimized and this clearly increasing the service life of the diaphragms compared to the conventional two-piece diaphragm.

The standard backing material is EPDM.

For high temperature Alfa Laval offers a PTFE/Silicone two-piece diaphragm.

Bonded PTFE/EPDM

For the smaller valves Alfa Laval offers a bonded diaphragm instead of the two-piece. The bonded PTFE/EPDM facilitates a better opening of small valves compared to the stiffer two-piece PTFE diaphragms.

	Material	Seat size	Fixing in compressor
	EPDM EPDM/Reinforced PTFE/EPDM Bonded	8 8 8	Rubber pin moulded into diaphragm clamped to compressor
	EPDM EPDM/Reinforced PTFE/EPDM Bonded	10 - 80 10 - 50 10 - 80	Metal threaded pin, moulded into the diaphragm, screwed into the compressor
	PTFE/EPDM Two-piece PTFE/Silicone Two-piece	25 - 80 25 - 80	Metal threaded pin, sintered into the PTFE shield, screwed into the compressor.
	EPDM PTFE/EPDM Bonded	100 100	Metal threaded pin, moulded into the diaphragm, screwed into the compressor

Material	Working pressure ¹ (max)	Sterilisation temp. ²	FDA Conformity	USP Certificate
EPDM	10 bar	150°C	177.2600	Yes
EPDM/Reinforced	10 bar	150°C	177.2600	Yes
PTFE/EPDM Bonded	6 bar	150°C	177.1550/21	
PTFE/EPDM Two-piece	6 bar	150°C	177.1550/21	Yes
PTFE/Silicone Two-piece	6 bar	160°C	177.1550/21	Yes

¹) Depending on valve type

²) Depending on duration and cooling down

Ordering

The valves are sold as complete valves and the item numbers for the standard program are included in the ordering leaflets. For other configurations please specify:

- Port size
- Seat Size
- Body configuration
- Tube standard
- Connection
- Surface finish
- Stainless steel quality
- Diaphragm material
- Actuator type
- Additional options