

# Aseptic diaphragm valves



ASME BPE

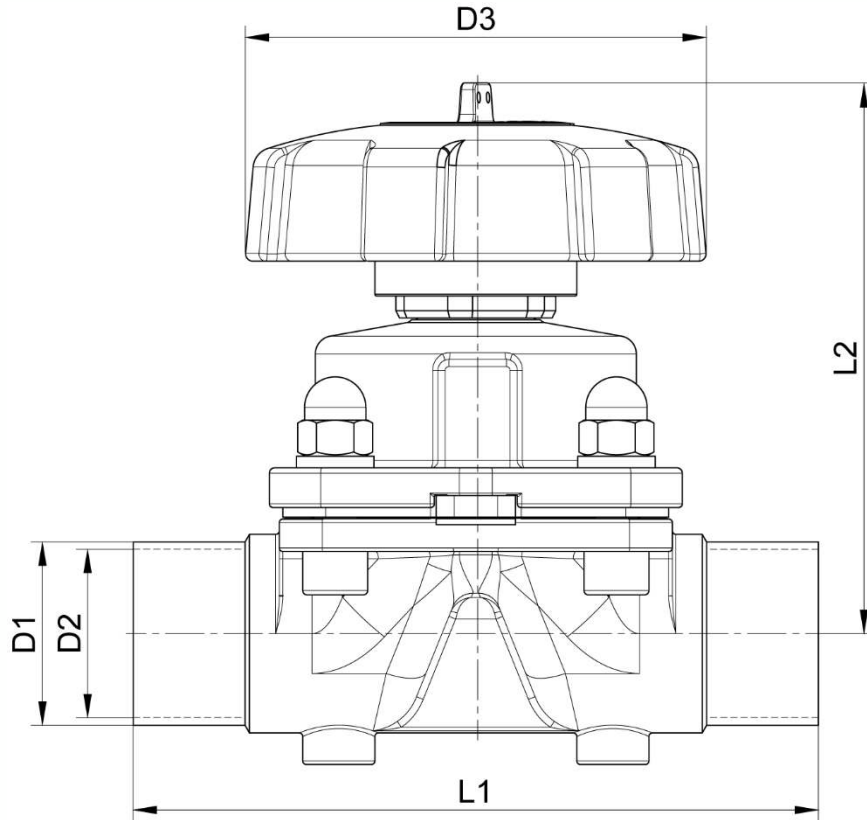
Model **8070****Manual diaphragm valves BW****316L stainless steel****PC handle**

## Specifications

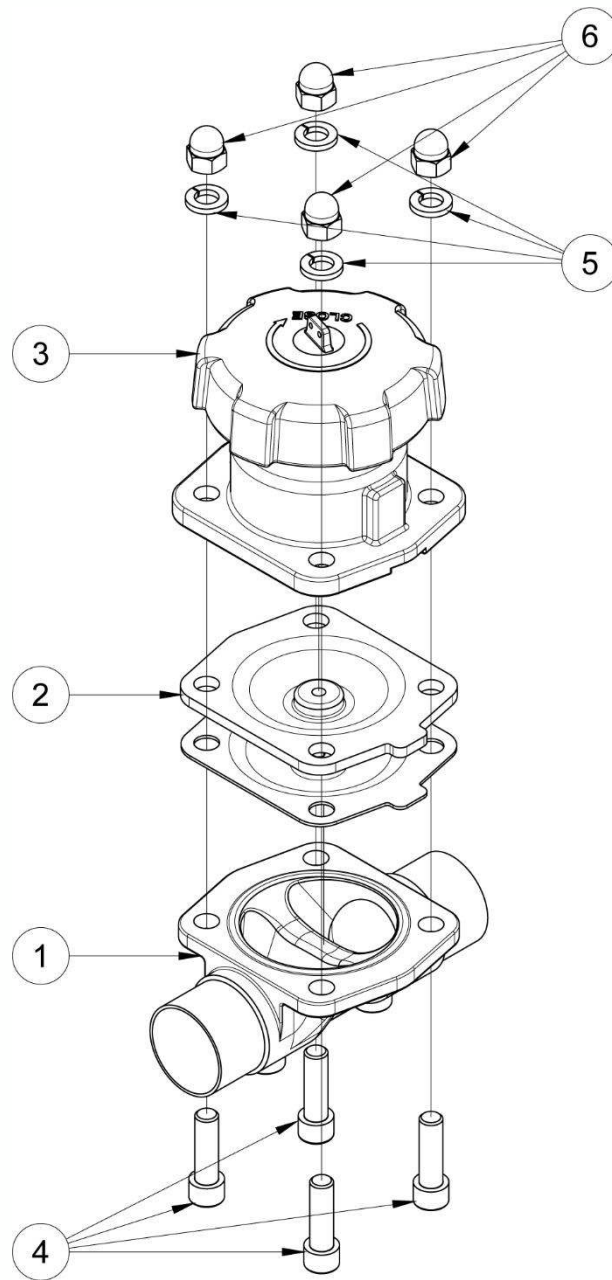
**Dimensions:** 1/4" to 2" (O.D.)**Connection:** to be welded**Max. allowed pressure:** 6 bar**Temperature:** - 10°C to +150°C**Material:** CF3M die-cast stainless steel body  
EPDM + TFM diaphragm

On request:

- SF4 finish
- EN 1.4435 forged body
- EPDM diaphragm



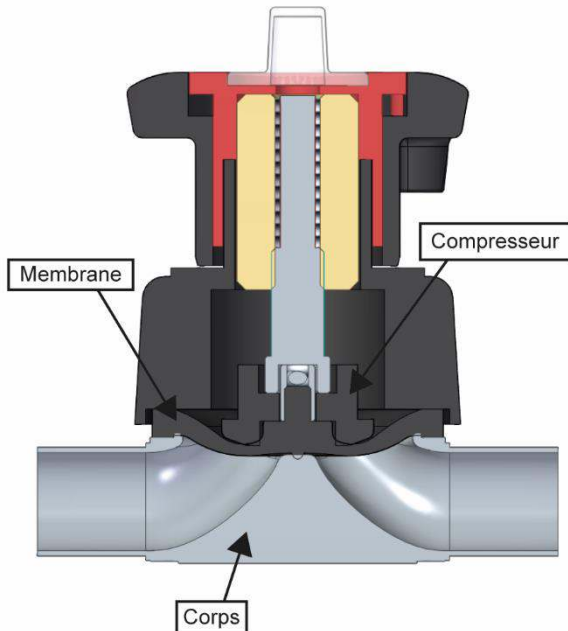
DN (inches)	D1 (mm)	D2 (mm)	D3 (mm)	L1 (mm)	L2 min./max. (mm)	Weight (kg)	Part number SF1
1/4"	6.35	4.57	33	61	58 - 63	0.24	680701-025
3/8"	9.53	7.75	33	61	58 - 63	0.24	680701-038
1/2"	12.7	9.4	33	61	64 - 69	0.30	680701-050
3/4"	19.05	15.8	60	117	80 - 86	0.50	680701-075
1"	25.4	22.1	90	127	104 - 115	0.58	680701-100
1"1/2"	38.1	34.8	110	159	131 - 147	1.00	680701-150
2"	50.8	47.5	128	190	153 - 174	3.95	680701-200



N°	Part Name	Material	Quantity
1	LOWER BODY	CF3M	1
2	DIAPHRAGM	EPDM + TFM	2
3	UPPER BODY (+ MANUAL HANDWHEEL)	CF3M (+ PC)	1
4	CHC BOLT	A4	4
5	GROWER WASHER	A4	4
6	CAP NUT	A4	4

## Use

### Operating principal



A diaphragm valve is made up of a stainless steel body **1**, one or several diaphragms **2** and a hand wheel **3** which contains a compressor.

When the valve is closed, the compressor is in the lowest position it can be. In this position it will press on the diaphragm **2** or diaphragms so that it comes/they come into contact with the valve's body **1**.

When the valve is open, the compressor is in the highest position it can be. This means that the diaphragm(s) **2** can move away from the inside of the valve's body **1** and the fluid can flow through the valve.

The inside of the valve's body is designed to minimise fluid retention zones.

The red element between the valve's handle (manual handwheel) and the upper body is a visual indicator that shows if the valve is open or closed.

When you cannot see the red element, the valve is closed. When you can see all of the red element, the valve is open as far as it can go.

#### CLOSED



#### OPEN



### Fluids

This valve is suitable for non-abrasive and non-coagulable fluids, as long as the fluids are chemically compatible with the valve parts that they can come into contact with.

The body and the diaphragm(s) can come into contact with the fluid so it is important to check that these parts are compatible with your process.



Warning: If the diaphragm valve is used with gases that have a temperature above 60°C then people could burn themselves if they touch it.

## Assembly and maintenance instructions

### Installation

You can install the valve in any position and direction. However, check that all fluids can flow through it freely.

Check that there is enough space to move the diaphragm valve's handle and to carry out maintenance operations where you are planning to install the valve.

Check that all piping is perfectly aligned and that the piping support structure is dimensioned so that the valve is not subject to any external stresses. The piping support structure must only support the pipes, not the valve.

Clean the installation and check that the equipment is clean and free from foreign bodies that could damage the valve.

#### How to install a valve with plain ends:

Welding must be carried out by qualified personnel. You need to disassemble the valve before welding it to the piping to make sure that you do not damage the valve.

**You must make sure that the diaphragm is not in contact with the upper body during welding.**

You can install the valve in a self-draining position so that the fluid will flow out of the valve by itself when it is not under pressure. To do this, incline the valve at an angle of  $\alpha$  with respect to the horizon. When you install the valve you must position the mark near the valve's end in a horizontal position, pointing upwards, as shown in the image on the right. See the table below for the  $\alpha$  values.



Dimensions	1/4"	3/8"	1/2"	3/4"	1"	1 1/2"	2"
$\alpha$	32.5°	23.5°	21°	20°	29.2°	25°	18.2°

Pressure test the installation according to the relevant standards (e.g. EN 12266-1), but do not exceed the valve's specifications.

### Maintenance

The valve does not require any specific maintenance if it is used in normal operating conditions.

If the valve is never opened or closed during normal operation then you should regularly open and close the valve to check that it is still working correctly.

You may need to change some of the valve's parts due to unusual wear and tear, or if a fluid has damaged the valve and caused a leak or malfunction.

If this is the case see the "Assembly / Disassembly" section below.

## Assembly / Disassembly

*The maintenance and removal/reassembly of the valve must be carried out by personnel who are qualified and trained for this type of intervention.*



Warning: Before you work on the valve, check that the installation has been stopped and that the piping is empty and is not pressurised.

Warning: If the diaphragm valve is used with fluids that have a temperature above 60°C then people could burn themselves if they touch it.

Warning: Beware of hazardous materials - follow the instructions provided by the suppliers.

Open the valve. You can check the position of the valve using the red visual indicator under the handwheel **3**.

Unscrew the cap nuts **6** and then remove them as well as the washers **5**.

Remove the CHC bolts **4**.

Separate the upper body and the handwheel **3** + the diaphragms **2** from the lower body **1**.

Close the valve.

Unscrew the diaphragm **2** from the compressor by turning it anti-clockwise. N.B. Before you disassemble the diaphragm, mark its position so that you can reposition it correctly when you reassemble it.

Clean the parts if required.

Replace the diaphragm if it shows signs of wear.

Open the valve before you start to reassemble it.

Follow the disassembly steps in reverse to reassemble all of the parts of the diaphragm valve.

Close the valve.

Screw in the CHC bolts **4**.

Pressure test the valve and check that it can be opened and closed before you put the installation back into service.

## Standards and compliance

- FDA declaration of conformity (CR 21:177.2600 or 177.1550)
- Complies with USP certification Class VI.
- 3A and CE certification.