

TYPE 3233

HAND-OPERATED DIAPHRAGM VALVE



Instruction Manual

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Congratulations on having purchasing the diaphragm valve type 3233.

1.1 GENERAL SAFETY INSTRUCTIONS

- Please verify that the product is complete and free from any damage.
- It is the customer's responsibility to select an appropriate valve for the application, ensure the unit is installed correctly and maintain the components.
- This product should only be installed and repaired by specialist staff using the correct tools.
- Please observe the relevant safety regulations throughout the operation, maintenance and repair of the product.
- If these instructions are ignored, no liability will be accepted and the guarantee on the device and accessories will be invalid.

1.2 DESCRIPTION OF THE DIAPHRAGM VALVE

The diaphragm valve type 3233 has been designed to control the flow of fluids, even charged or aggressive.

The compact design of this valve makes it possible to use it in processes where the space requirement is very small.

This 2/2-way valve is made up of :

- a valve body
- a diaphragm that isolates the fluid from the atmosphere and the mechanical parts of the top of the valve.
- an hand-operated actuator which makes it possible to control the valve opening.
- an optical position indicator indicating the valve status.



2.1 RECOMMENDATIONS FOR INSTALLING THE VALVE



Insert the valve into the process according to the standard industrial practices (preferably according to ASME or DIN 11850 standards).

2.1.1 Before installation

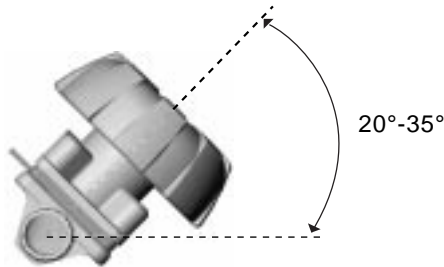
- Carefully clean the pipes.
- Remove all the pressures and tensible forces exerted on the valve by the pipes.

2.1.2 During installation

- Ensure the pipes are aligned.
- If the valve body must be welded onto the pipes, dismantle the valve (see § 4.2) to separate the actuator and the diaphragm from the body to prevent them from any damage.
- Preferably improve the surface quality by grinding the weldings.
- Carefully clean the body before mounting back the actuator and the diaphragm (see § 4.2).

2.1.3 Installation for self-draining

- Incline the valve of 20° to 35° (depending on the DN) with respect to the horizontal (see figure below)



- Install the pipes with a 2% minimum gradient in the direction of flow.



Self-draining in a process system is ultimately the responsibility of the system designer and/or end user.

3.1 GENERAL SPECIFICATIONS

The main advantages of the valve are the following:

- *Easy* to install and to use.
- Heat number indicated on each valve to ensure the traceability of the material.
- Any mounting position.
- Any direction of flow.
- Perfect tightness due to diaphragm.
- Self-draining (see § 2.1).
- Small space requirement.
- Flow optimized design.
- Valve inside design optimized to reduce the turbulences to the minimum.
- Minimal charge loss.
- Internal mechanism adapted to the constraints of the food and drug industry.
- Steam sterilizable.
- Autoclavable.

3.2 MANUAL ACTUATOR SPECIFICATIONS

- Material: phenylene polysulphide (PPS) or stainless steel
- Handwheel diameter depending on the DN:

DN	8	15	20	25	40	50
∅ (mm)	35	80	80	80	114	114

- Ambient temperature: +5 °C to +140 °C.

3.3 DIAPHRAGM SPECIFICATIONS

- Material:
 - PTFE/EPDM
 - elastomer (EPDM, FPM or CSM)

- Temperature of the medium:

Material	Temperature
PTFE/EPDM EPDM CSM	-10 °C to +130 °C
FPM	-5 °C to +150 °C

3.4 VALVE BODY SPECIFICATIONS

- Material:
 - Forged stainless steel (DIN 1.4435 BN2 / 316L according to ASME-BPE 1997).
 - Cast stainless steel (316L).
- Types of connections:
 - butt-weld ends which conform to ISO 4200, SMS 3008, DIN 11850, BS 4825-1 and JIS standards
 - Triclamp ends which conform to BS 4825-3, ISO 2852, DIN 32676, SMS 3017 standards
 - dairy pipe unions which conform to DIN 11851 or SMS 1145 standards
 - other connections on request.
- Nominal diameter (DN): DN8 to DN50
- Temperature of the conveyed medium: depends on the diaphragm material.
- Pressure class: PN10.



4.1 MAINTENANCE AND STORING

4.1.1 Maintenance and order codes of the spare parts

Regularly check if the diaphragm is not worn. Refer to the table below to have the order code (ident. no.) of the diaphragm corresponding to your valve (CSM diaphragms on request).



If your process uses muddy or abrasive fluids or fluids reaching high temperatures, the diaphragm must be checked often.

DN of body	Diaphragm ident. No.		
	EPDM diaphragm	FPM diaphragm	PTFE/EPDM diaphragm
8	642147G	640597E	643648X
15	642140M	640598P	636336X
20	642141A	640599Q	643234G
25	642142B	640600D	643235H
40	643645L	643653L	643659S
50	643646M	643656P	643660X

4.1.2 Storing

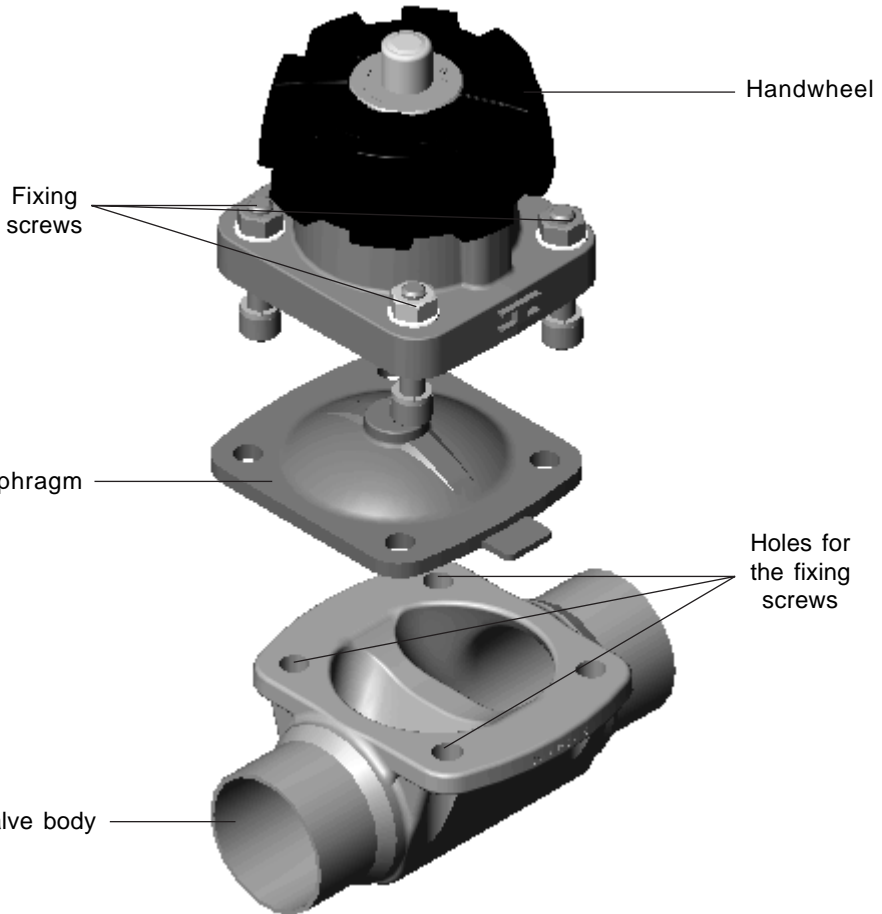
If the valve is stored for a long time, unscrew the body screws to avoid permanent change in shape of the diaphragm.



4.2 DISMANTLING THE DIAPHRAGM VALVE



Before dismantling or opening the valve, turn-off the medium and depressurize the pipes.



4.2 ENGLISH



- Open the valve until the optical indicator (yellow) is completely let out (till blocking).



Only turn the handwheel by hand.

- Remove the protection caps from the nuts, if necessary.
- Unscrew the 4 fixing screws in an alternating pattern and remove the valve body.
- Turn the handwheel a few times so that the diaphragm separates from the body.
- Remove the diaphragm:
 - For DN15 and 20, remove the elastomer diaphragm.
 - For DN > 20, unscrew the elastomer diaphragm.
 - For a PTFE/EPDM diaphragm, turn a quarter turn to release the bayonet.
- Place back the new diaphragm so that the fixing holes are aligned with those of the diaphragm (screw home if necessary).
- Open the actuator again (turn until blocking).
- Place back the valve body and the screws.
- Screw in an alternating pattern until the valve body is in its proper place, without tightening.
- Close the valve entirely then open it again completely so that the diaphragm positions itself correctly.
- Tighten the screws in an alternating pattern to the torque rating (in Nm) specified below:

DN	Diaphragm material	
	Elastomer	PTFE/EPDM
8	2	2,5
15	3,5	4
20	4	4,5
25	5	6
40	8	10
50	12	15

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