Rev. 01 / 05-05-2023

TM

CMO VALVES

INSTRUCTIONS AND MAINTENANCE MANUAL

INSTRUCTIONS AND MAINTENANCE MANUAL

ASSEMBLY

APPLICATION OF EUROPEAN DIRECTIVES

See document of European Directives applicable to **CMO Valves.**

Valve TM complies with the Directive on Equipment and Protective Systems for Potentially Explosive Atmospheres. In these cases the logo will appear on the identification label. This label shows the exact classification of the zone in which the valve can be used. The user is responsible for its use in any other zone.

HANDLING

When handling the equipment please pay special attention to the following points:

- **SAFETY WARNING:** Before handling the valve check that the crane to be used is capable of bearing its weight.
- Do not lift the valve or hold it by the actuator. Lifting the valve by the actuator can lead to operating problems as it is not designed to withstand the valve's weight.
- Do not lift the valve by holding it in the flow passage area. The valve's O-ring seal is located in this area. If the valve is held and lifted by this area it can damage the surface and the O-ring seal and lead to leakage problems whilst the valve is operating.
- To prevent damage, especially to the anticorrosive protection, it is recommended to use soft straps to lift the knife gate valves. These straps must be fitted around the top of body.

INSTALLATION

In order to avoid personal harm and other type of damage (to property, the plant, etc.) please follow these recommendations:

- The staff responsible for the handling and maintenance of the equipment must be qualified and trained in operations with this type of equipment.
- Use suitable Personal Protective Equipment (PPE) (gloves, safety boots, goggles, helmet, reflective vest...).
- Shut off all operating lines to the valve and put up a warning sign.
- Completely isolate the valve from the whole process.
- Depressurise the process.
- Drain all the line's fluid through the valve.
- Use hand tools not electric tools during the installation and maintenance, in according to current regulations.

Before installation, inspect the valve body and components for any possible damage occurred during transport or storage.

Make sure that the valve's inside cavities are clean.

VALVE INSTALLATION

1.- Loosen the screws holding the coupling and remove the seal (fig.1).

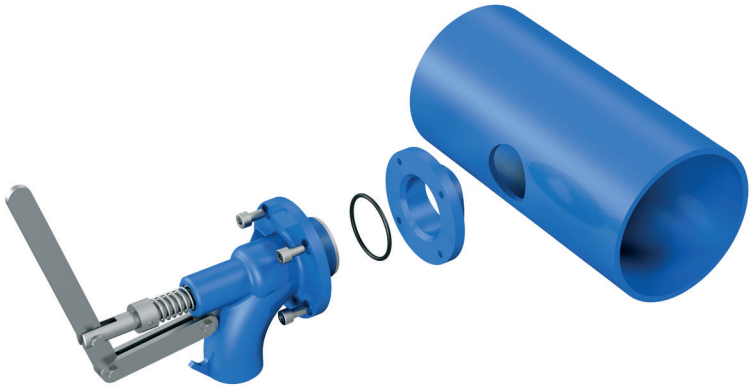

Fig. 1

2.- Weld the coupling to the pipe. The coupling is prepared for installation in vertical or horizontal piping. It is important to ensure that the holes in the valve's fastening flange are in the required position. (fig.2)

Fig. 2

3.- Fasten the valve to the coupling with the screws, after first fitting the O-ring between both parts. (fig.3)

Fig. 3

4.- With the pipe empty, check that nothing obstructs the movement of the stem and/or lever and that valve works correctly.

ACTUATOR

LEVER

This is the actuator commonly used in these valves. The lever (6) must be moved in opening or closing direction in order to operate. The closing operation is aided by the action of the spring (8), which keeps the valve in closed position.

PNEUMATIC

These valves are normally supplied with a single-acting cylinder. **CMO Valves** pneumatic actuators are designed to connect to a 6-bar pneumatic network, although these cylinders withstand up to 10 bars. The pressurised air used for the actuator must be correctly filtered and lubricated. This type of actuator does not require any adjustment, since the pneumatic cylinder is designed for the exact stroke required by the valve.

MAINTENANCE

In order to avoid personal harm and other types of damage (to the plant, etc.) please follow these recommendations:

- The staff member responsible for the installation, operation and maintenance of the valves must be qualified and trained in the operation of similar valves.
- Use suitable Personal Protective Equipment (PPE) (gloves, safety boots, goggles, helmet...).
- Shut off all operating lines to the valve and put up a warning sign.
- Completely isolate the valve from the process.
- Fully depressurise the process.
- Drain all the line's fluid through the valve.
- Use hand tools not electric tools during the installation and maintenance, in according to current regulations.

The only maintenance required in this type of valve is to change the seat's rubber joint (if soft seated valve is used) and the packing. It is recommended to check the seal every 6 months, however its working life will depend on the valve's operating conditions, such as: Pressure, temperature, number of operations, fluid composition, among others.

In an ATEX zone, electrostatic charges may be present inside the valve, which can cause explosions. The user is responsible for minimising the risks.

- The maintenance staff must consider the risks of explosion and ATEX training is recommended.
- If the fluid transported constitutes an internal explosive atmosphere, the user must regularly check the installation's correct watertight integrity.
- Regular cleaning of the valve to prevent accumulation of dust.
- Assemblies not permitted at the end of the line. Avoid painting the products supplied

STORAGE

To ensure the valve is in optimum conditions of use after long periods of storage, it should be stored in a well-ventilated place at temperatures below 30ºC.

It is not advisable, but if it is stored outside, the valve must be covered to protect it from heat and direct sunlight, with good ventilation to prevent humidity. The following aspects must be considered for storage purposes:

- The storage place must be dry and under cover.
- It is not recommended to store the equipment outdoors with direct exposure to adverse weather conditions, such as rain, wind, etc. Even less so if the equipment is not protected with packaging.
- This recommendation is even more important in areas with high humidity and saline environments. Wind can carry dust and particles which can come into contact with the valve's mobile parts and this can lead to operating difficulties. The actuator system can also be damaged due to the introduction of particles in the different elements.
- The equipment must be stored on a flat surface to avoid deformations.
- If the equipment is stored without suitable packaging it is important to keep the valve's mobile parts lubricated, for this reason it is recommended to carry out regular checks and lubrication.
- Likewise, if there are any machined surfaces without surface protection it is important for some form of protection to be applied to prevent the appearance of corrosion.

REPLACING THE SEAL

1. Ensure there is absolutely no pressure or fluid in the system.
2. Remove the valve from the pipeline by loosening the flange bolts (3).
3. Release the lever (6) from the obturator (5) by loosening the screws.
4. Release the spring (8). This is done by removing the pin (11) that holds the stop sleeve (7) and extracting the obturator (5).
5. Remove the obturator (5) and remove the damaged seal (4), then clean the housing.
6. Clean the O-ring housing and fit the new seal.
7. Insert the spring (8) in the obturator (5) and secure with the stop sleeve (7) and the pin (11).
8. Fasten the lever (6) to the obturator (5) using the screws.
9. Assembly will be performed in reverse order to disassembly.

COMPONENT LIST		
POS	COMPONENT	MATERIAL
1	BODY	CF8M
2	O-RING	NITRILE
3	FLANGE	AISI316
4	O-RING	NITRILE
5	OBTURATOR	AISI316
6	LEVER	AISI316
7	STOP SLEEVE	AISI316
8	SPRING	AISI302
9	GUIDE SLEEVE	PTFE
10	O-RING	NITRILE
11	PIN	AISI316

Tabla 1

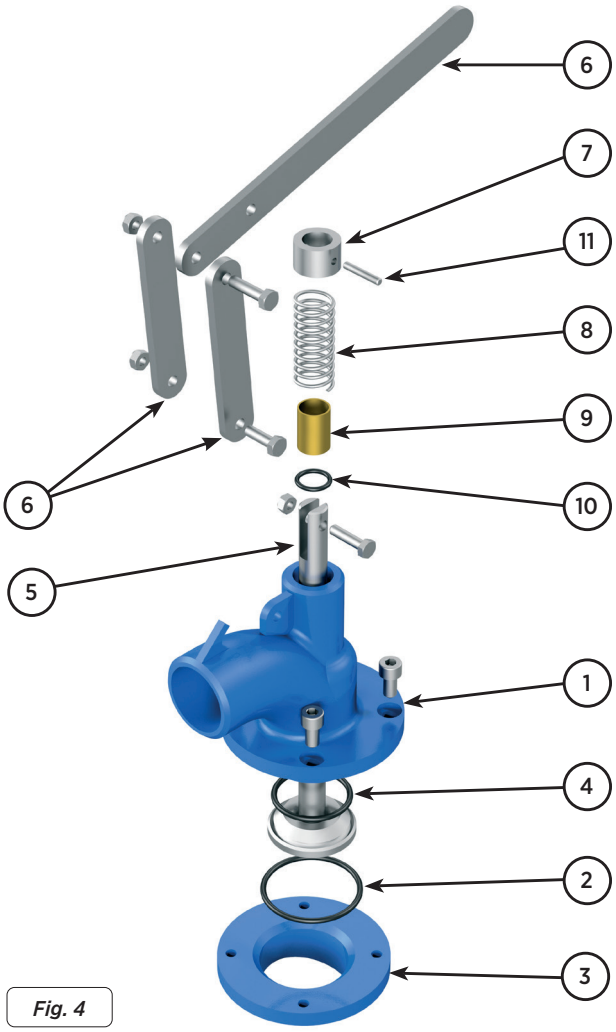

Fig. 4

www.cmovalves.com

CMO VALVES

QMS CERTIFIED BY LRQA
Approval number ISO9001 0035593

CMO VALVES
HEADQUARTERS MAIN OFFICES & FACTORY

Amategi Aldea, 142
20400 Tolosa
Gipuzkoa (Spain)

Tel.: (+34) 943 67 33 99

cmo@cmovalves.com
www.cmovalves.com

CMO VALVES
MADRID

C/ Rumania, 5 - D5 (P.E. Inbisa)
28802 Alcalá de Henares
Madrid (Spain)

Tel.: (+34) 91 877 11 80

cmomadrid@cmovalves.com
www.cmovalves.com

CMO VALVES
FRANCE

5 chemin de la Brocardière
F-69570 DARDILLY
France

Tel.: (+33) 4 72 18 94 44

cmofrance@cmovalves.com
www.cmovalves.com