OPERATION AND MAINTENANCE

INSTRUCTIONS

EUROSTOP BUTTERFLY VALVE

INDEX

STORAGE INSTRUCTIONS

1.1 HANDLING

The handling of the valve has to be made with care, in order to avoid any shock, even accidental, which could damage it. In particular any lift of the valve should be carried out paying attention that the chain, cable or rope used for that specific operation is not clamped or does not touch the shafts, the gearbox or its handwheel. For this task the ends of the valve body or the flanges should be used.
It is absolutely forbidden to use the eventual hook(s) of the actuator to lift the valve.

NOTE: For possible future interventions on the internal parts of the valves it is strongly recommended laying every actuated (or to be actuated) valve together with a dismantling joint. Please consult Saint-Gobain PAM for these products.

1.2 STORAGE

Generally the valves are supplied with plugs at the extremities, or in pallets banded with plastic film; if the valves are without packing and have to stay for long time in the stock before being install, they must be stocked covering the passage of the valve, safeguarding in this way the interior parts and particularly the seat from the contact with powder or dirt.

The valves shall be stored in a location offering a good protection against direct sun, the rain and all other atmospheric elements (admissible storage temperature. -20°C to +70°C). The rubber components are sensitive to the light and the sunbeam. In absence of a storage place the valves have to be wrapped with a cellophane or plastic sheet, possibly of dark color. The butterfly valve must be always stored (and later on installed between flanges) with the disc in a slightly opened position. All butterflies valves are delivered with disc in this position.

The valves must not weight on the shaft or on the gearbox, and if the valves have to be stacked one on the other, it's important to pay attention that the coated surfaces don't come directly in contact: a cardboard between the surfaces should be used.

1.3 ACCESSORIES AND SPARE KITS STORAGE

Gasket
Normally the seal ring of the disk is made with a rubber quality which is sensitive to the sunlight. Therefore it is usual to store such rubber part in an area protected from the sunlight, in order to avoid its deterioration. If such conditions are not available, rubber parts should be then at least protected by cellophane or plastic sheets of dark color.

Bolts
The requested flange bolting is normally packed in a sack or a box equipped with a tag indicating the number and the type of the packed bolts. It is absolutely necessary to keep them in the original condition of delivery, avoiding putting them in contact with material which could damage them. Generally the bolting is slightly lubricated before delivery; any contact with dirt or dust could, in extreme cases, damage the threads and prevent its future mounting.

Actuators
For this particular type of accessory, which is generally mounted on the valve at the time of the delivery,, it is necessary to pay attention that nobody, with the exception of the specialist or authorized people, could attempt to repair or manipulate it, this would take out any warranty covering these specific components.
It is very important to check that the threaded orifices permitting the future electric/hydraulic/pneumatic connections are always well protected with the original plugs until their use in final assembly.
This will insure that no dirt, dust, humidity or any other external particle will damage the internal parts (gears, electrical coils, pistons, cylinders, seats, etc.).

When the electrical wiring is not made immediately after the mechanical mounting of the valve in the pipe system, the installer/contractor will take the necessary measure to protect correctly and thoroughly the actuator against any atmospheric degradation and the built-up of condensation. Furthermore it is necessary to check periodically during this particular period of time the status of internal components, by removing the covers of the operative unit and of the reduction unit, protecting with silicone or oil vaseline the respective cover gaskets when remounting them.

2 INSTALLATION INSTRUCTIONS

2.1 PRELIMINARY INSPECTION

Before mounting the valve in the pipeline, it is always advisable to:
control that no dirt or dust or external particles are contained in the valve body and in particular that the valve seat is clean. Every clamping screw (mounted inside or outside the valve) should be checked and any loosened screw should be tightened.

The valve should not be operated dry and before the final pipeline assembly and the final contact with the fluid.

In case of valve long term storage follow the guidelines here below:

Valves to be stored in a clean, dry protected warehouse, free from rapid temperature changes.
Visual inspection shall be performed and it shall include the packaging, Covers, Dryness, Cleanliness, and the sealing status.
Check the lubrication state of the gasket and put some lubricant suitable to get in contact with drinking water.
Make (after the valve has been lubricated) one complete cycle of opening/closing of the valve has to be made in order to check that all components ensuring this specific operations are working correctly.
The valve should be operated on a monthly basis.
If valve is to be stored for 3 years or longer, the main seal must be changed after 3 years of storage.

2.2 MOUNTING

The mounting of every valve has to be effectuated without pressure in the pipe. A sufficient space should be provided around the valve to permit its usual operation, as well as any eventual setting or future maintenance work.

It is usually foreseen to include in the mounting procedure of a valve a dismantling joint. The device is normally mounted in the downstream side of the valve. Thanks to its adjustable length range it's not needed a very precise mounting between the pipe flanges. When used at the downstream side of a butterfly valve, it allows, when removed off the pipe, to check the internal wear level and/or to change the seat ring of the valve, without taking it out of the pipe.

The EUROSTOP butterfly valve is bidirectional and may be installed with flow in either direction.
In any case the butterfly valves are generally mounted with the disc gasket downstream (with the control device on the right hydraulic side) to permit its replacement without removal the valve from the pipe (dismantling joint downstream).
The EUROSTOP butterfly valve may be installed either vertically or horizontally, in a straight length of pipe will not create a problem and hydraulically will make no difference
However care must be taken in case of contaminated waters, for example water containing sand, gravel, rust, lime and so on.

If a choice of stem position exists, the valve should be installed with the stem in the horizontal position; this will minimize seat wear by distributing the stem and disc weight evenly. Also, if the media is abrasive, the horizontal stem position creates a self-flushing effect that will extend the service life-expectancy of the valve.

The pipeline should be as free as possible from welding, scraps, mounting accessories, dirt, etc. The cleanest the pipe is kept during the installation, the less trouble will be produced. Afterwards if the transported fluid in the system contains a lot of external solid particles, it's recommended to install in the upstream side of the valve a strainer.

Both pipe flanges, which are connected to the valve, should be located perfectly in the centerline of the pipe and absolutely parallel. If no dismantling joint is used in the mounting procedure of the valve, the distance between the two pipe flanges should match the overall length given by the valve manufacturer including twice the thickness of the flange gaskets. Any longer distance between the two pipe flanges (even of some mm) can produce during the tightening of the flange bolts/nuts very high yield stress on the valve.

The centring can be made visually with the surface of the flange. The bolts have to be clamped gradually in alternate way.

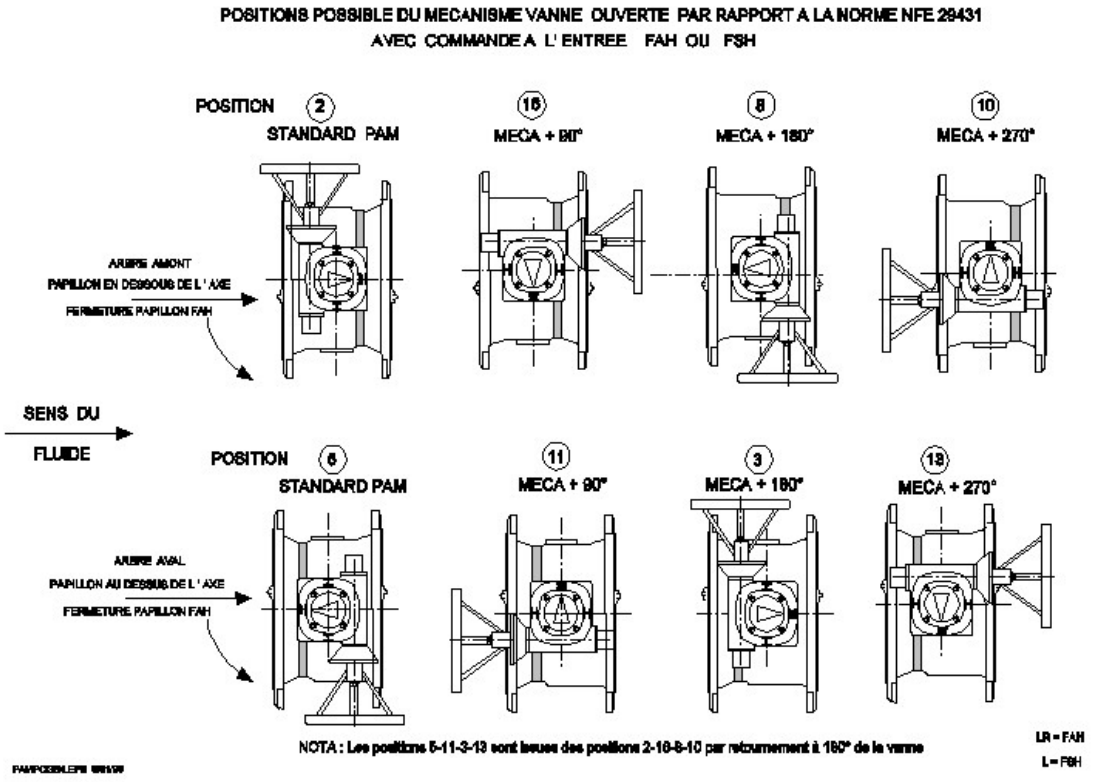
The gearboxes of the EUROSTOP manual version are set and tested in factory after the assembly on the valve.

If the valves have an electric actuator, it's necessary to check the manual installation of the producer.
Before the installation it will be necessary to realize the electric control board (if not required on the order) and to do the electric connections.

The electric connections have to be made verifying the right positioning of motor phases, following the wiring drawing , to avoid the opposite rotation that can cause also damages to the valve.
In this case a closing rotation will push the disc against the body seat, but if the limit or torque switch will not work, the mechanical effort created by the motor will produce the rupture of one of the components forming the driving assembly (gearbox, motor, valve).

NOTE: For possible future interventions on the internal parts of the valves it is strongly recommended laying every actuated (or to be actuated) valve together with a dismantling joint. Please consult Saint-Gobain PAM for these products.

The EUROSTOP butterfly valve is equipped with standard AUMA GS type gearbox position 2 like indicated in the N FE 29-431 Norm.
Other gearbox position are available upon request



2.3 START UP

After the mounting of the valves on the pipeline it must be verified that the coating has not been damaged. So it's advised to repair the coating to avoid the formation of rust.

In case of motorized version, normally the electrical actuator is tested and set-up in the factory when it is assembled with the butterfly valve. However, after having checked thoroughly the electrical wiring, it's necessary to operate the valve a few times for controlling its perfect operation. It is further recommended to start the electrical tests with the disc in the intermediate opened position to check that the closing operating switch signal is effectively corresponding to the closing of the valve disc without damaging any component of the driving assembly.

3 OPERATION INSTRUCTIONS

3.1 MANOEUVRE

The manoeuvre of the valve is driven by a worm type gearbox mounted externally to the body and connected through the shaft.

The gear is needed to realize a gradual movement to avoid the water hammer effect. To open and close it rotates of 90°.

In case of electric actuator, the time of manoeuvre has to be communicated from the customer at the time of the order (it will be not take responsibility for further modification).

The standard UNI EN 1074-1-2 fixes the maximum admittable torque C_{max} during the manoeuvre without damaging of the valve (example: with handwheel $C_{max} = F \cdot D_{handwheel}$ where F is the applied force).

3.2 SERVICE CONDITIONS

The standard UNI EN 1074-1-2 fixes the maximum speed of water in the valve:

PFA (bar)	10	16	25
Max speed of water (m/s)	3	4	5

The same standards fixes also the admittable temperature of water: from 0°C (excluded freezing) to 50°C.

The butterfly valve is an isolating device, so it's designed to work completely closed or open.

Partial flow introduces cavitation and friction troubles. Particularly they occur when the opening degree is below 30° and if the pressure condition is $P_{downstream} < (0{,}7 \cdot P_{upstream} - 0{,}28\ bar)$

4 MAINTENANCE INSTRUCTIONS

4.1 ORDINARY MAINTENANCE

The butterfly valves EUROSTOP are designed, manufactured and tested to guarantee the maximum liability and endurance. In the standard version the choosing of materials is made paying attention to usual type of fluid and the common exercise condition: all the parts do not necessitate of particularly maintenance. If the valves must work in extreme conditions, special version must be ordered.

The efficiency of hydraulic equipments during their life is generally connected to the exercise conditions and to the type of fluid. It's advised to plan periodical inspection according to the type of valve and to the main function of the same valve.

For the butterfly valves, to maintain the performances in the time, it's needed to do at less one complete cycle of opening/closing manoeuvre every year to reduce incrustations and sediments that can accumulate during the exercise.
If the butterfly it's used also to regulate the flow, it's necessary to verify periodically the conditions of body and seat.

Year / Operation	1	2	3	4	5	After 5 years
Cycle of manoeuvre (op. – cl.)	yes	yes	yes	yes	yes	One cycle every year
Verify the clamping of bolts of flanges and gearbox	yes	yes	yes	yes	yes	Control at every inspection
Verify seat and body (if the valve	yes	yes	yes	yes	yes	Control at every inspection

is used for regulation)						

4.2 EXTRAORDINARY MAINTENANCE

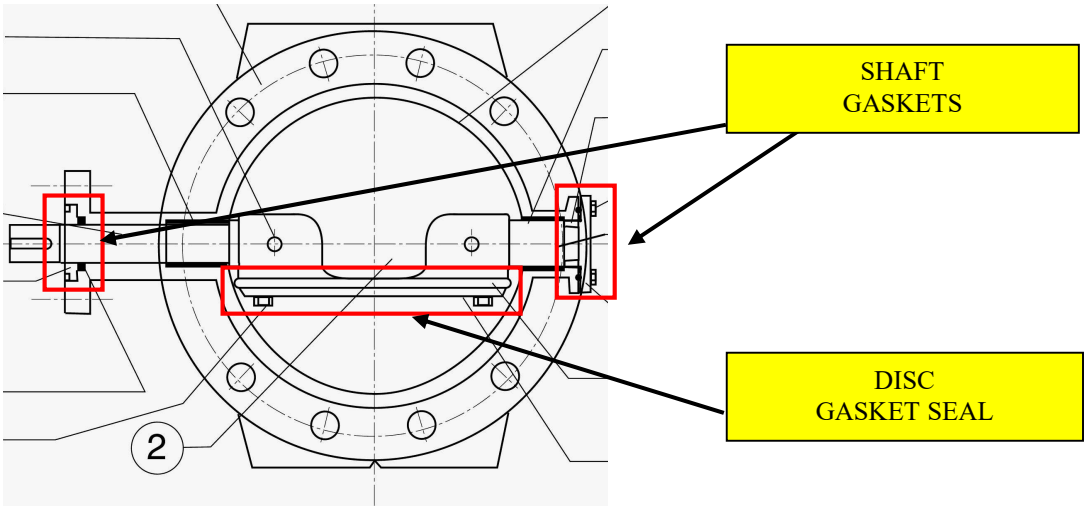
In presence of particular exercise conditions (not filtered or particularly aggressive water, incrustations) or damage due to external cause, it's possible that extraordinary maintenance operations are needed.

The operation of extraordinary maintenance that can be made directly on site is the replacement of disc gasket seal. Moreover the shaft sealing kit is available for the replacement of shaft gaskets. Other operations (replacement of the disc, shaft, …) are very exceptional and are not explained in this manual (in any case they are possible contacting our technical department).

For any extraordinary maintenance operations on gearboxes and/or electrical actuators please refer to operation and maintenance instructions of manufacturer.

All these operations have to be effectuated after the complete emptying of the pipe (total absence of pressure) to avoid any risk to the people during this operations.

Remember to remove gradually the bolts only after the clamping of the valve lifting device.



4.3 OTHER INTERVENTIONS

4.3.1 DISC GASKET SEAL REPLACEMENT

Please refer to the technical data sheet of spare parts for details.

4.3.2 SHAFT GASKETS REPLACEMENT

Please refer to the technical data sheet of spare parts for details.

NOTE
For any further information or clarification consult Saint - Gobain PAM .