



BUTTERFLY VALVE TYPE 12-20-40

INTRODUCTION

In general, butterfly valves sealed elastomer are finding increased use, thanks to their reliability, and the many advantages compared with traditional valves. In particular, butterfly valves EUROVALVE 12-20-40 Series is used in various industries, and for that interception for adjustment of any type of fluid.

His particular design can meet as required by the steel industry, marine, food, chemical, petrochemical, water treatment, dyeing, etc.. And in conditioning and heating equipment. Major advantages of butterfly valves are:

- the footprint and weight particularly low, which facilitates installation on the pipe even in those areas where the plants are somewhat limited;*
- headquarters elastomer sealing with reinforced phenolic resin or aluminum, as well as ensure that the geometric and dimensional stability, easy, in case of accidental breakage due to intervention of foreign bodies, his replacement, without requiring the intervention of staff Specialist.*

Moreover, the sealing valve protects the body from the fluid passage, so it may be of material and not particularly valuable at the same time, partially covering the sides of the body, particularly given the profile, allows for valve ready to on the pipe assembly, without the need for additional seals.

The shutter self due to the same on the float, lenticular form, is a good way to reduce the pressure drop across the valve and the precise date processing board, ensuring, for interference with the home elastomer, held up a perfect 21.5 Bar and depression TORR to 10⁻³, allowing only due to the loss of molecular permeability.

Moreover, on disk is not present any evidence for mounting with the tree, because it is a potential drawbacks and corrosion case, which ensures greater section of way, low pressure drop and less turbulence.

In conclusion we can say that the throttle body is an interception for pressures ranging from vacuum to over 20 bar and temperatures employees with the type of elastomer chosen for the seat.

The EUROVALVE butterfly valves are bi-directional, that can be fitted with the direction of flow on both sides. Built for installation between flanges UNI, DIN or ASME, the valves are inserted directly between them, put seals without any kind. They can be mounted in any position pipe and in cases of necessity valve small and medium diameter, with actuators facing downward, without altering the interference between the disc and seat.

Before inserting the valve between the flanges, we recommend that you spread on the outer surfaces of the seat in contact with them, a layer of silicone grease, and that to avoid a possible bonding with the coupling flanges and a possible tear, when removed. After being inserted between the flanges, with the semi disc, the valve type WAFER is centered on these; are then inserted the tie rods, which spend all outside the valve body. For the tie rods and then put nuts and tighten everything evenly.

For valves type LUG, whose bodies externally present solid pieces with holes or passers coincide with those of flanges, installing, using bolts, is faster and easier. Finally, mount completed, check the entire opening and closing the valve several times. It is good practice, however, does not install the valve near curves or derivations of the pipeline, especially upstream, in order not to worsen the system hydraulic fluid and not unnecessarily urge the valve (dynamic movement). The flanges, even better if a neck or back pocket, should always be perfectly parallel, with surfaces worked well with internal and external diameters.

Indeed, parallel flanges don't work well and seek the tie rods abnormally creating a bad tightening with the grip it follows a rapid wear of the same, caused by disc when maneuvering.

Furthermore, great importance has the internal and external diameters of flanges, for a proper functioning of the valve. Indeed, diameters too small can lead inability to maneuver; too large diameters are not sufficiently tightened the seat, thus creating some imperfect seal outwards. The ideal solution is represented by the configuration where the internal diameter of the flanges is the same as that of transition from valve.

MANUAL DRIVE

Opening and closing operations are obtained by turning the handlever of 1/4 of rotation (90°).

Handlever is supplied in aluminium - epoxy painted.

To understand whether the valve is in "open" or "closed" position, look at the lever position:

- 1) the valve is in "open" position when the lever is aligned with the pipe;*
- 2) the valve is in "closed" position when the lever is crosswise with the pipe.*

Rotate clockwise to close the valve, from right to left to open; it is also possible to set the opening of disc each 9°.

REMOTE CONTROL

Valve can be operated with remote control by pneumatic, hydraulic or electric actuators.

INSTALLATION INSTRUCTIONS

- General information regarding EUROVALVE valves Series 12-20-40
 - At the shipping, the surface of the headquarters and the stems are lubricated with silicone grease. The valve is rather clean and perfectly defatted where was used for oxygen, hydrogen or chlorine.

- General information for assembly on site
 - The valve can be mounted on the pipe at any position.
 - To avoid damage to the seal, before to install, pipes must be cleaned of dirt and residues welding.
 - The valve Series 12-20-40 type WEAFFER or LUG or be inserted directly between the flanges put seals without any kind. The particular design of the seats ensures the maintenance outwards.

- Generally, instructions for installation of a valve type Wafer (on existing pipelines)
 - Check that distance between the two flanges mod. 12-20-40 is the same of the preceding valve dimension;
 - Move flanges to make enough room to make valve insertion easier;
 - Partly close the disc so that it remains within the body;
 - Insert the valve between the flanges.
 - Insert bushing through centring holes of valve;
 - Insert remaining studs, align the valve with the flanges, tighten the nuts;
 - Check that the valve can open and close without obstacles;
 - Open the valve and tighten nuts uniformly.
 - To install a Lug valve, go on as for Wafer type, using screws instead of studs and nuts.

- Generally, instructions for installation of a valve type Wafer (on new pipelines)
 - For mounting valves on new lines, proceed in accordance with the best practice; the only warning is that you should not ever settle the flanges to the tube with the valve placed in line, the heat can destroy the premises seat so irreparable.

MAINTENANCE

- The WAFER type valve **EUROVALVE** Series 12-20-40 (or type LUG) does not require periodic maintenance and lubrication.
- All valves leak soft **EUROVALVE** are equipped with compasses bronze + Teflon.
- The various parts of the valve may be inspected or removed in a short time with normal equipment. To do it, you must close the valve, remove the tie rods or bolts from flanges, and extract from the same pipe.
- Life duration of the body: the valve body is not subject to particular stress or wear, as it does not directly in contact with the product. The average length of the body depends on the type of material with which it is constructed from environment in which the valves are installed, the type of protection applied on the body, the mechanical stress to which it is subjected (pipes, indirect loads, type mounting horizontal / vertical strokes direct).
- Life duration of the shafts: superior and inferior shaft are not in contact with the fluid. The shifts life depend on the number of operations (cycles) to which is subjected, in general the shaft does not present particular problems under 10,000 cycles as the work is performed by bronze bearing. Take care not to send in over-pressure valve disc closed, as this may result in damage superior shaft and inferior. In this case it is recommended that immediate replacement of shaft.
- Life duration of disc: as can be seen by drawing exploded, the disc is coupled with the shafts without fixings. This allows the disk to have game on the stem and it self-centered within the seat, forming with the same line sealing continues. The average length of the disc depends on the passage of fluid (the fluid velocity, suspended solids, chemical composition of the fluid itself.). If the valve was properly installed and used as evidenced on this manual, the disc will have an average duration of 4 years.

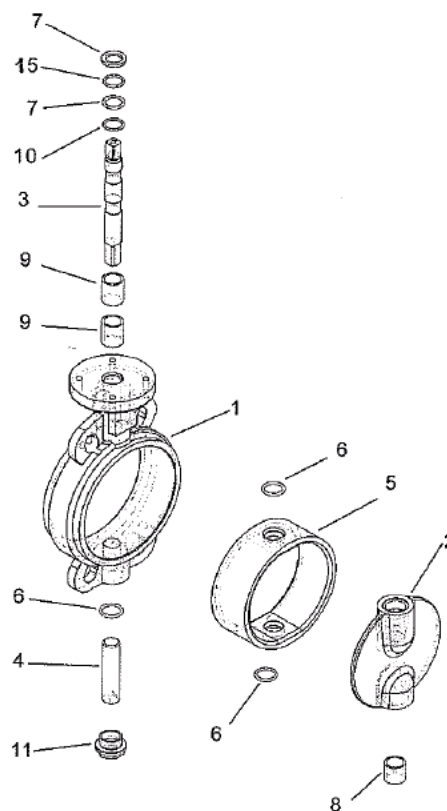
TO HAVE A CORRECT VALVES OPERATION, WE SUGGEST TO DO BIENNIAL PERIODIC INSPECTION TO CHECK THE SITUATION OF INTERNAL VALVE PARTS

- Bad Working (leaking): Make sure the valve is fully closed. In this case, the loss is caused by damage to or gasket sealing surface of the disk. It will be necessary maintenance valve and replace damaged components.

DISASSEMBLING VALVE INSTRUCTIONS

- **Remove line's pressure**
- Close the disc so that it remains within the body, then remove all the bushing excepted for the two lowest bearing the valve;
- Spread flanges and remove the valve; **Attention: must not use the valve to stave off the flanges as this may cause damage to the valve itself.**
- Open the valve to get maximum liberty of action while disassembling the valve;
- Remove nuts;
- Remove upper stem using the threaded hole if necessary;
- Remove nut or flange off the lower part of the valve;
- Put a screw on the lower stem to get it out of the valve;
- Remove the disc pushing it out from the seat;
- Remove the seat from the body of the valve, inspect all parts and replace them if damaged.

POS.	DESCRIZIONE
1	Body
2	Disk
3	Upper Stem
4	Bottom Stem
5	Seat
6	O'Ring
7	Washer
8	Bearing
9	Bearing
10	O'Ring
11	Plug
15	Seeger



ASSEMBLING VALVE INSTRUCTIONS

- Put O'rings on seat, then insert it the body, previous lubrication with silicon grease;
 - Match seat holes with body holes using a round bar that must be smaller than stems, not to damage the O'Rings;
 - Apply silicon grease inside the seat;
 - Insert disc in the seat, take care that the square connection refers to the flange control;
 - Insert lubricated stems;
 - Insert nut or flanges on the lower part of the valve;
 - Place the control of the valve in the right position;
 - Check correct assembling by operating the valve a few times.
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ASSEMBLING CYCLE

1. Insert the O'Ring Pos.6 (2 Pieces) on seat Pos.5.
2. Insert the seat Pos.5 on body Pos.1.
3. Insert the bearing Pos.9 on body Pos.1.
4. Insert the bearing Pos.8 on disk Pos.2. [Bottom bearing is only for DN>350 (12")]
5. Insert the disk Pos.2 on seat Pos.5.
6. Insert the upper steam Pos.3 on body Pos.1.
7. Insert the bottom steam Pos.4 on body Pos.1.
8. Insert O'Ring Pos.10 on upper steam Pos.3.
9. Insert washer Pos.7 on upper steam Pos.3.
10. Insert Seeger Pos.15 on upper steam Pos.3
11. Insert O'Ring Pos.6 + plug Pos.11 on body Pos.1.

INSTRUCTIONS FOR APPROPRIATE VALVE USE

EUROVALVE ensures the smooth functioning and **respect for law PED** for its valves' production provided that you abide by the limits of use depending on the temperature and compatibility of fluids (Table page 8) with forums and used discs.

SECURITY

The valve produced by EUROVALVE presents arrangements that guarantee their safely work:

- plate ISO antiblow-out,
 - no pins between disk and shafts
 - Mechanical irreversible drives
 - Special painting cycle
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SPARE PARTS

Usually the valve is provided with the disk open some degree, and so if they recommend the installation of the pipe flanges.

After all tight tie rods or bolts, the maneuvers will begin opening and closing to ensure that there are no defects in assembly above.

If everything is perfect, the valve can operate for long periods of time, without the need for inspections or spare parts. The only parts that you can recommend for a valve EUROVALVE are special rubber namely:

- Seat on body (PART.5)
 - O'rings on seat (PART.6-10).
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FEATURES OF ELASTOMER SEATS

Commercial Name	Composition	Fluids Compatible	Fluids not compatible	Temperature Limits	
BUNA N (NBR)	Copolymer of butadiene and high acrylonitrile	Sea Water Hydrocarbons Natural Gas Oils and Fats Air	Diluted Acids Benzene Solvents	-18° C +90° C	-0° F +194° F
HNBR (HSN)	Copolymer of butadiene and high acrylonitrile Hydrogenated			-40° C +150° C	-40° F +300° F
EPDM	Ethylene Propylene Termpolymer	Water – Steam Sea Water – Brine Ketone - Alkalis Diluted Acids	Hydrocarbons Oils Fats	-35° C +110° C	-30° F +230° F
EPDM-HT				-35° C +150° C	-30° F +300° F
HYPALON (CSM)	Chlorosulfonated Polyethylene	Acids Organic Acids Oils and Fats	Nitric acid Ketones Steam	-18° C +100° C	-0° F +212 °F
SILICONE (WMQ)	Organic Silicone Polymer	Food	Acids Steam Hydrocarbons	-35° C +150° C	-30° F +300° F
VITON (FKM-FTM)	Fluorocarbon Polymer	Acids Oils Hydrocarbons Gasoline	Steam Freon Alkalis Solvents Ketones	-10° C +160° C	+14° F +320° F
NEOPRENE (CR)	Chloro Butadiene	Oils - Fats	Ketones Acids Solvents	-18° C +90° C	-0° F +194° F
NATURAL RUBBER (NR)	Latex (Vegetable)	Abrasive non aggressive products	Steam Solvents Acids Hydrocarbons	-35° C +65° C	-30° F +150° F

The above table is merely indicative. Many factors affect the field of corrosion (type of solution - concentration - temperature - presence of impurities etc..). The latest assessment it is therefore up to the customer depending on the applications and the characteristics of plants.

OTHER FEATURES

- *Self-cleaning and bi-directional (that is allows mounting in both directions of flow)*
 - *Resistance to corrosion and abrasion, in effect only when required and the disc in contact with the media.*
 - *See Seal metal reinforcement that ensures the geometric and dimensional stability.*
 - *Disco self within the required effect mating floating tree-disk.*
 - *Coupling tree - free disk fixings (screws, bolts, etc..), Which may represent agents and corrosion failures.*
 - *Disco designed to ensure broad section of way, low pressure drop, minimum turbulence.*
 - *Build according ISO 5752 - BS 5155 - DIN 3202 - 3 - K1 API 609 - MSS SP 67.*
 - *Summary ease of installation and maintenance shall not require additional gaskets for mounting between flanges, or lubrication.*
 - *Adapting to any type of pneumatic or electric adapter.*
 - *Protection of exterior valve corrosion (epoxy or polyurethane coating).*
 - *Good regulation feature.*
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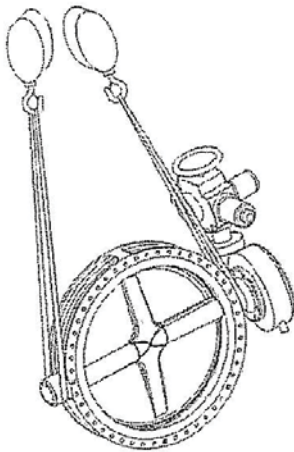
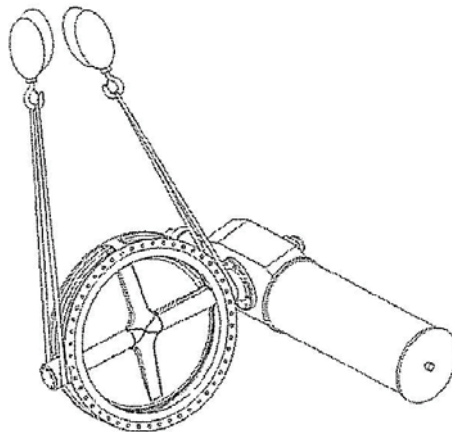
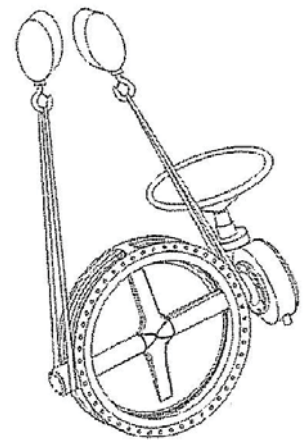
LIFTING AND HANDLING

A) PACKING FOR DELIVERY

- Packing the valves with the disc in a slightly open position; protect the ring part of the ledge with silicone grease seal and put the plastic caps or woodfastened with straps on the sides of the flange.
- In case of bare shaft valve, cover the shaft ends with plastic pipes.
- If the valve is provided with hydraulic actuator or pneumatic "spring opens", use the manual opening device to clamp the disk in closed position; if the manual device is not planned create an adequate rigid protection.
- The packing method must be defined in the order by the customer. It must be able to ensure safe transportation and possible storage.

B) HANDLING

- CAGE: move the packed valves by forklift truck and forks
- BOX: use the appropriate lifting points
- VALVES NOT PACKED: the handling must be carried out using pallet, paying attention to the machined surfaces. In case of large dimensions appropriate tools must be used, such as: brackets, hooks, fasteners, slings, etc. ...

VALVE WITH
ELECTRIC ACTUATORVALVE WITH
PNEUMATIC ACTUATORVALVE WITH BARE SHAFT
OR WITH MANUAL GEAR**ATTENTION**

- For the handling and/or lifting, size and choose the equipment according to the valve weight indicated in the packing list and/or in the transport document.
- Be careful not to damage the delicate parts of the actuator (refert to the manual).
- During handling, pay maximum attention to not bump or drop the equipment and comply with all local safety regulations