WEY BUTTERFLY TF13
Instruction manual

1 Safety

This manual contains basic information to follow during the installation, start-up, maintenance and storage of Wey butterfly valves. The information reflected on the manual of instructions is based on current data to the date of this edition. Sistag AG reserves all rights to modify this instruction manual without prior notification.

2 Notes on commissioning

This manual contains vital and useful information about the valves to be used and maintained properly. It is important that the valves are installed by a qualified assembler. The security instructions detailed in this manual must be respected as well as the recommendations explained hereinafter. It is important to keep this instruction in a place close to the installation area for easy consultation by users.

3 General instructions

Read this instruction manual carefully before installing and start up the valve. In case of doubt, please contact Sistag AG.

All electric work must be executed by authorized people.

4 During Installation

Consider the **Engineering data and conditions of work** and the assembly instructions that are explained more ahead. The installation and use of the valve must be in conformity with applicable regulations concerning security and health.

Before mounting any actuator, verify the position of the valve disc according to the mark on the upper shaft.

5 During operation

Please consider **Technical Data and working conditions**. NEVER exceed the specified limitations. The use of the valves in extreme conditions may damage the valves seriously.

NEVER touch the valves and pipes in contact with the liquid during its operation. If there are hot products there is risk of burnings.

Do not manipulate the actuator in case of failure. There can be components under tension that could jump. Both the valve and the actuator have rotating parts. Do not put your hands or fingers between the connection of the valve and the actuator when it is supplied with compressed air. Do not place your fingers between the disc and the seat with the actuator connected because it could close. All these actions can cause serious injuries.

NEVER put electric actuators in contact with water. Please verify with our technical department the ingress protection of each component in case of doubt. The use of the valves in corrosive environmental conditions without due protection, can damage the valves seriously.

NEVER disassemble the valve until the pipe has been drained. The fluid inside the pipe can be hazardous and/or at high temperature which can cause serious injuries.

6 During maintenance

NEVER disassemble the valve until the pipes have been drained. Please consider that the liquid of the pipe can be hazardous or at high temperature which can cause serious injuries. Do not disassemble any part of the butterfly valve when it is mounted in a pipe, and above all, if there is still any fluid inside the pipe. Do not try to disassemble the axes of the valve when is mounted in a pipe. The axis could be ejected due to pressure inside the pipe and this could cause serious injuries.

7 Compliance with instructions

Any breach of these instructions could cause risks for workers, machines, installations, facilities and results in loss on warranty claims.

This breach could produce the following risks:

- Failure of important functions of machine and facilities
- Failures of procedures of maintenance and repair
- Electrical Risk, mechanical and chemical
- Serious injuries
- Risk of liberation of hazardous substances to the environment

8 Technical data and working conditions

- The butterfly valves are designed to work with fluids, gases and dusty products. It is the responsibility of the Client to select the materials adapted for each service and the evaluation of the risks of the installation.
- Working pressure: Maximum possible working pressure of the valves is 16 bar (indicated on the valves name plate).
  Standard: 16 bar DN 32-150; 10 bar DN 200-1600. Special valves 25 bar DN 32-300. Consider that this data is general and that valves can be designed for lower pressures which is the reason why the maximum working pressure must always be verified with the information given on the valve name plate before put into operation.
- Working temperature: Standard valves are designed for 0 °C to + 90 °C
- Ambient temperature: Standard valves are designed for 0 °C to + 40 °C
- Please consider that there are materials with superior characteristics. For more information contact Sistag AG. Our staff may recommend the most suitable materials the intended application.
- Protection and resistance against corrosion: Wey butterfly valves are provided with corrosion protection category C4 according to EN ISO 12944.

Before installing the valve make sure that the outer protection coating of the standard valve is sufficient for the application. In case that a special protection is required, please contact Sistag AG for advice.

9 Guarantee

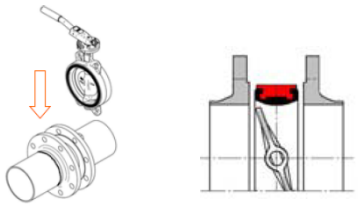
Please refer to the General Terms and Conditions of Sale and Supply (GTSS) 1.1.13.

10 Installation

Too small a pipe flange diameter can cause the valve disc to jam and cause serious damage. A diameter too large prevents a good internal seal between liner and disc and a good external seal between the liner and the counter flanges. It is recommended to mount valves from DN 450 and larger with the shaft in horizontal position.

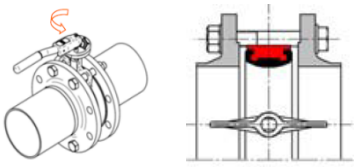
1. Move the two counter flanges apart just enough to allow the valve to slide between the flanges without damaging the lips of the rubber liner. Put the disc in half-open position but not projecting outside the valve width (fig. 1).

Fig. 1



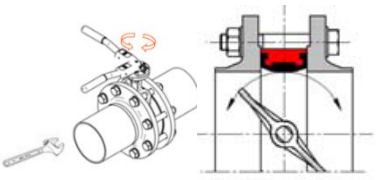
2. Centre the valve and anchor the bolts and nuts, but do not yet tighten them. Place the disc in a perfectly centered and fully open position whilst taking care not to cause any damage (fig. 2).

Fig. 2



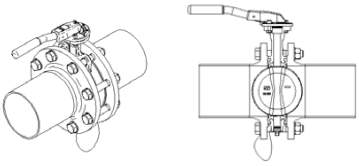
3. Tighten the bolts in diagonally opposite sequence until metal/metal contact is reached between the valve body and flanges. Do not over tighten. Gently open and close the disc. If the optimum dimensions have been respected and assembly instructions carefully followed, the disc should rotate freely. (fig. 3).

Fig. 3



4. Connect earth link of the valve to the screw flange as indicated in figure 4. Check the right electrical connection between metallic components of the valve and earth link by Ohmmeter (Test acc. to. EN 12266-2 annex B).

Fig. 4



11 Reccommendations and advices

Weld the pipe and the flanges well away from the valve to avoid any heat damage to the rubber liner and the coating (fig. 5). The flanges must be flat and should be inspected to see that the welding has not deformed them. No welding residue should appear on the flat faces of the flanges in contact with the valve. Sharp edges should be avoided as these might damage the rubber liner and optional coatings on the disc during assembly. The flanges must be parallel to obtain proper alignment and operation of the valve. A parallelism mistake could damage gravely the water tightness of the valve because the press of the seat is different in each case. Likewise, lugs and valve body could break (fig. 6).

Avoid weldings

Fig. 5

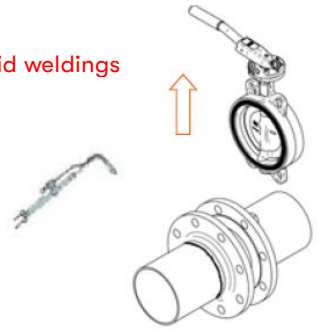
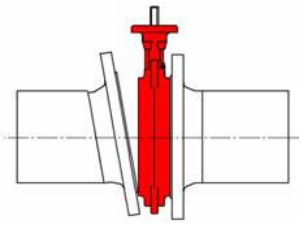


Fig. 6



Check for perfect parallelism between flanges

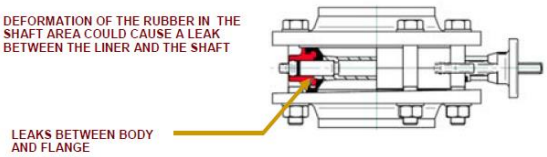
Assembler has to make sure and check that no foreign part is being left inside the equipment after assembly.

12 Storage instructions

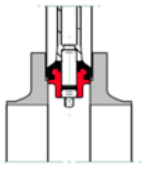
- Stock valves with disc in partial open position and packed in the same way as supplied by Sistag AG. Be careful that disc is not too much open in order to avoid damaging the disc edges.
- Try to use first older valves. Seat is getting harder over time, decreasing its elasticity. Year of manufacturing is indicated on the seat as follows: “0” year 2020, “1” year 2021, “2” year 2022, etc.
- If you notice that it is difficult to open a valve that has been stocked during a long period, clean it carefully with a cloth, lubricate the contact surface between the seat and disc with silicone spray (**do not lubricate the valves with ordinary grease and oils, use only silicone spray or special grease type Klubersynth**), try to open and close disc until movement is smooth. The valve is ready to use.
- Ambient temperature: Shall be lower than 25°C.
- Humidity: Shall be avoided, also possible condensation.
- Light: Direct sun light and ultraviolet radiation shall be avoided.
- Oxygen & Ozone: Avoid air draught.
- Contact with chemical products: Avoid contact with solvents, fats, oils, acids, etc.
- Contact with powdery products: Avoid powder deposit.

13 Incorrect installation and reasons for faulty function

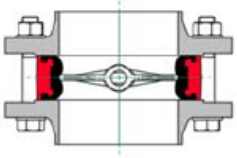
PIPE FLANGES NOT PARALLEL: If there is no even pressure of the seat on both sides, this can lead to leakage between body and flange and between seat and shaft.



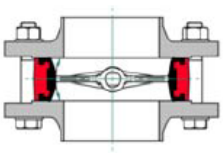
PIPE FLANGES TOO CLOSE TOGETHER: If the flanges are not pressed sufficiently apart when installing the valve, deformation or cracking of the liner may result.



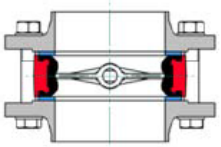
DEFORMATION OF THE LINER CAUSED BY INSTALLATION OF THE VALVE IN CLOSED POSITION: If the installation guidelines are not followed exactly and the flange screws are tightened with the valve closed, an unintentional deformation of the liner will occur. This deformation prevents normal opening and closing of the valve, can lead to a permanent deformation of the disc seat area and to an increase of the actuating torque.



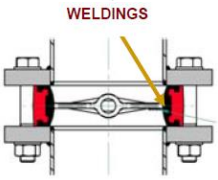
USE OF INCORRECT FLANGES (TOO SMALL INTERNAL DIAMETER): Could cause contact between disc and inner edge of flange, prevents correct opening of disc and may cause serious damage to the coating.



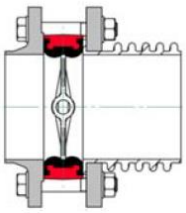
USE OF FLANGE GASKETS BETWEEN LINER AND FLANGE: The flat gaskets press the liner inwards, which greatly increases the required torque and prevents the valve from opening and closing.



WELDING WORK NEAR THE BUTTERFLY VALVE: To facilitate the assembly and alignment of the valve with its flanges, the pipe is sometimes welded to the valve between the flanges. This causes irreparable damage to both the liner (due to excessive heat) and the disc.



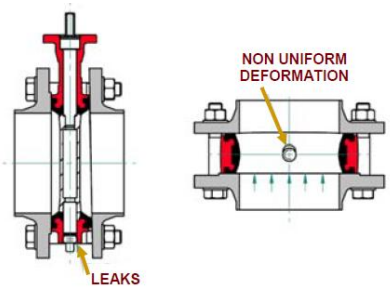
INSTALLATION WITH AN ELASTIC MUFF: The elastic sleeve slides directly over the sleeve of the valve and increases the required torque. This could cause leakage through the shaft and make correct operation practically impossible. Therefore, this type of installation is prohibited.



LEAK BETWEEN FLANGES: The causes may be:

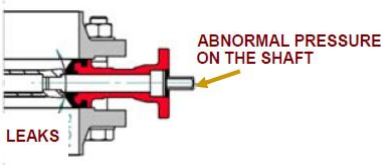
1. Pipe flanges not parallel.
2. The flange bolts are not sufficiently tightened; the pipe flanges must have a metal to metal connection with the valve body.
3. The pipe flanges show welding residues or are not completely flat.
4. The elastomer liner has lost its elasticity (this can happen e.g. in heating systems where the recommended maximum operating temperature has been exceeded).

LEAKS OVER THE SHAFTS:
The pipe flanges are not aligned parallel, which leads to uneven pressure on the sleeve, so that the shaft entries are deformed.

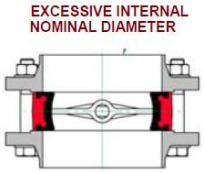


INTERNAL LEAK: The causes may be:

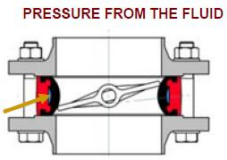
1. If there is leakage across the top of the disc, this can be caused by excessive pressure from the shaft on the disc, pushing the disc down.
2. If there is leakage through other parts of the disc, the maximum working pressure has been exceeded.



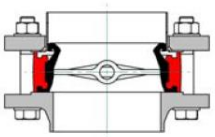
AFTER A CERTAIN TIME, THE BUTTERFLY VALVE CAN NO LONGER BE OPENED OR CLOSED:
The causes may be:



1. If the inner diameter of the pipe flanges exceeds the correct dimension, the liner will not be held firmly in place. The constant movement of the opening and closing disc displaces the liner inwards into the valve and makes it impossible to open or close the valve.
2. If leakage occurs via the shaft as a result of poor installation, the fluid pressure is transferred to the inside of the liner, causing it to swell. This leads to excessive friction between disc and liner, which prevents the valve from functioning fully.
3. If the liner is not suitable for pipeline flow, problems may occur during opening and closing because the liner swells.



LOOSE COUNTER FLANGE: If loose counter flanges are used in a system, this could be the reason for leakage and poor function. The liner is not properly fixed between the loose flanges, is pushed out of its initial position and creates leakage and a malfunctioning butterfly valve.



14 CE Conformity

Directive 2014/68/EU (PED)

Wey butterfly valves fulfil the pressure equipment directive. For more information, please consult the specific directive.

Directive 2014/34/EU (ATEX)

Wey butterfly valves in special execution fulfil the requirements of the directive for equipment and protection systems, destined for use in explosive atmospheres. For more information, please refer to the specific instructions and declaration.