

Operating Instructions

for ABO Butterfly Valves, Series 2E - 5

- 1. Introduction**
- 2. Safety Instructions**
- 3. Valve Identification**
- 4. Transportation and Storage**
- 5. Installation into Piping**
- 6. Pipe Pressure Test**
- 7. Operation and Maintenance**
- 8. Assistance in Case of Failure**
- 9. Valves with Electric or Pneumatic Actuator**
- 10. Other information**

1. Introduction

Double-offset butterfly valves of 2E – 5 series are designed for closing or regulating the flow of fluids in pipes. This applies to fluids of higher pressures and temperatures. The correct type and material design is determined using brochures and technical data sheets, or consultations with the manufacturer.

Butterfly valves of 2E – 5 series are in full compliance with Directive CE/97/23.

2. Safety Instructions

Installation, operation and maintenance may only be performed by properly trained and instructed staff.

For detailed safety regulations see the separate document, which must be read carefully before installation.

3. Valve Identification

Each butterfly valve is provided with an identification label in accordance with ČSN EN 19. The type designation consists of 4 digits:

First digit - identification of the series	5
Second digit - material of the body	4 – stainless steel 5 – carbon steel
Third digit - sealing material	7 – sealing metal – metal 9 – sealing PTFE
Fourth digit - disc material	0 – stainless steel

This four-digit number is followed by letter B or T:

B – stands for through holes for flange bolts
T – stands for threaded holes

Maximum and minimum operating temperatures $T_{S \max}$, $T_{S \min}$ depending on the operating pressure P_S for various material designs listed in the charts are included in the appropriate brochures.

4. Transportation and Storage

Valves must be stored indoors in dry and dust-free environment at normal temperatures.

Valves are stored in a slightly open position (never fully closed!).

When transporting large valves using a crane, they should only be handled by attaching the rope to the body, not the actuator or the lever.

5. Installation into Piping

Butterfly valves may be connected at the end of the pipe or installed in the piping system. Prior to the installation it is necessary to check whether the PN, DN and material design of the supplied valve corresponds to the intended use.

The procedure is graphically described in the document **Installation Instructions**.

Flanges with flat sealing surfaces e.g. B shape according to EN 1092 and also appropriate gasket must be used.

Before installation it is necessary to examine:

- Whether the PN, DN and materials of the supplied valve corresponds to the intended use.
- Whether no damage, namely to the sealing surfaces of the disc, occurred during transportation. **Do not use damaged valves!**
- Check the correct functioning of the valve (full opening and closing).
- The flanges must have a gasket strip, and they must be aligned and parallel, any impurities and solid particles must be removed from the flanges and piping.

When manufactured, valves with a carbon steel body (marked 55.0) are preserved using the oil preservative RUST-PEL 51. (If stored for more than 6 months, a new preservation treatment is recommended).

Prior to putting into operation, the preservation of the valve body needs to be removed using a warm aqueous solution containing a common detergent or solvent such as E 550 CLEAN etc.

A gasket made of a material resistant to the medium used is placed between the valve and the flange.

The arrow on the body marks the direction of the flow (direction Δp).

After centring the valve in the pipe, slightly tighten the 4 bolts and check if the disc moves freely. Tighten all bolts ("in a cross-cross pattern").

The heads of the opposite bolts in "T" type bodies must not be in touch!

After re-tightening the bolts check if the disc moves freely.

6. Pipe Pressure Test

The actual valve is pressurized by the manufacturer. When fitted in the pipeline the entire pipe section with valves needs to be pressurized. The following must be observed:

- Newly installed section must be carefully rinsed (cleaned) to remove all mechanical impurities.
- Valves in open position: pressure at 1.5 times the PN.
- Valves in closed position: pressure at 1.1 times the PN.

7. Operation and Maintenance

Valves can be manually controlled using normal force, it is not recommended to extend the length of the lever. When the lever is parallel to the pipe the valve is opened; the position of the lever perpendicular to the pipe means that the valve is closed.

Opening and closing using the lever must be gradual rather than abrupt, to avoid hydraulic shock.

The valves are maintenance-free, it is only necessary to check if the outer surface and the stem seal do not leak while in operation.

If the valve remains in the same position for a long time, it is recommended to close and open the valve repeatedly at least 4 times per year.

8. Assistance in Case of Failure

In case of failure and repair it is necessary to adhere to all safety rules - see the separate document **Safety Instructions**.

Failure	Measure	Note
Leakage between the valve and flanges	Tighten the flange bolts. In the case of ongoing leakage, replace the sealing between the valve and flanges.	
Leakage between the valve body and the flange	Repair by the manufacturer required.	
Closure leakage	Check if the valve is fully closed. Open and close the valve repeatedly. If the leakage persists, repair by the manufacturer is required.	
Leakage around the stem	Both the sealing flange nuts must be tightened (alternatively at a quarter of a turn). If the leakage persists, repair by the manufacturer is required.	If the nut of the sealing flange must be removed, make sure the piping is not under pressure!
Function defect	Remove and check the fitting. If damaged, send to the manufacturer.	See the Safety Instructions!

9. Valves with electric or pneumatic actuator

The above principles fully apply to these valves. It is also necessary to observe and check the correct end position adjustment of the actuators.

The positions of the actuators have been pre-set by the manufacturer and may not be adjusted.

The intake (or exhaust) of controlling air in pneumatic actuators can be adjusted to avoid their quick closure and hydraulic shock in the pipes.

10. Other Information

These regulations as well as other above-mentioned documents and further information – also in other languages – are available at www.abovalve.com or at the following address:

ABO valve, s.r.o.
Dalimilova 285/54
783 35 Olomouc
Czech Republic

Tel: 00420 585 223 955
Fax: 00420 585 223 984
abovalve@abovalve.com
www.abovalve.com

Last revision: 20th September 2010