

Installation and operation manual

Butterfly valves – Bonded liner lug, wafer and double flanged type



ALFA EUROPE BV
Oosterveldsingel 37
7558 PJ Hengelo
The Netherlands

Phone: +31 (0) 74 30 31 940
Fax: + 31 (0) 74 30 31 946
E-mail: info@alfa-europe.com

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1. General information

This manual shall serve as an instruction for installation and operation of Alfa Europe bonded liner butterfly valves.

It is the responsibility of the installer to ensure that approved materials are used and that the installation and maintenance work meets applicable rules, regulations and requirements. In case of problems which cannot be solved from information in this manual, Alfa Europe shall be contacted for support.

Note that most of the information in this manual concerns safety, so please read carefully before installation of the valve.

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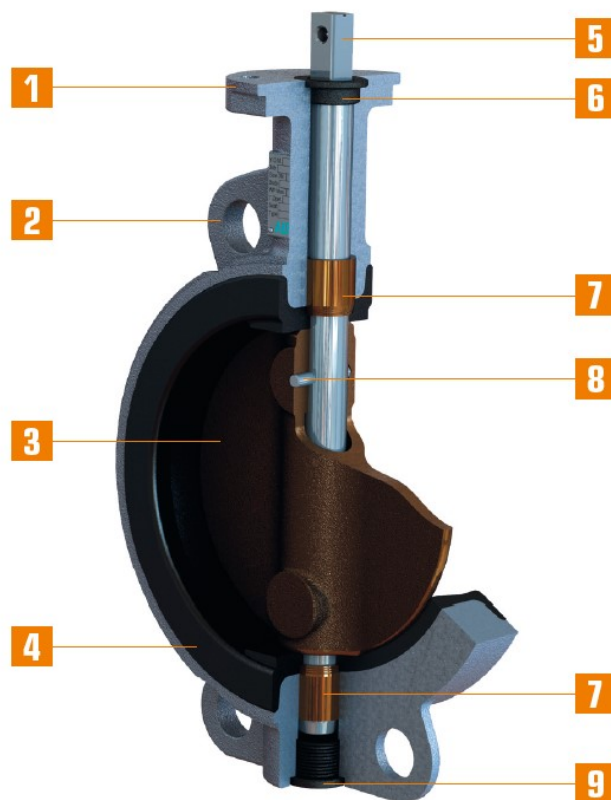
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2. Valve parts



1. Topflange

Actuation Flange according ISO 5211

2. Valvebody

Minimum GGG40 body

Available in several materials

3. Disc

Streamlined centric disc to reduce pressure loss and lower energy costs available in several materials

4. Liner

Vulcanised Lining bonded to the Body, no corrosion between valve body and liner for:

- Suitable for dry conditions
- Longer life time
- For end of line service
- Low torque
- No flange gaskets required

Available in several materials

5. Shaft

Centric One piece shaft system, 100% bi-directional tight shut off

6. Support bearing

Extra support bearing for lower valve torque

7. Bearing bush

Bronze bearing bush vulcanised to the liner. No use of o-rings on the shaft

8. Pin

Cylindrical pin

9. Stop plug

To seal bottom side of the valve and to guide stem/shaft

3 Storage and handling instruction

3.1 Storage

Store the valves indoors in a clean and dry place. Corrosion that occurs during storage will significantly reduce the life span of the valve.

High temperature and direct sunlight will shorten the service life of the rubber liner. Optimal storage condition is in covered pallets with ambient temperature of 5-20°C.

Butterfly valves shall be stored with the disc slightly opened to prevent permanent disc setting deformation.

3.2 Lifting and handling

Be careful when lifting the valve. Never lift by the valve handle, gear operator, hand wheel or actuator. Securely place the rope or hoist around the valve body while handling - see picture below. Consider center of gravity and prevent tilting and rotational forces.

Please consider the following advices in order to prevent damage to the valve:

Scratch to disc edge: The edge of the butterfly valve is hand polished and very easily scratched. If carelessly handled, the valve will leak at the position of the scratch.

Scratches to the rubber liner: Sharp object might scratch the sealing surface inside the valve or on the flanges. If carelessly handled, the valve will leak at the position of the scratch.

Force applied to top of stem: Mounting a lever, gearbox or actuator onto the butterfly valve is easily made, in case any force is needed be careful not to hit the stem. Great force applied to the top of the stem might cause a permanent imprint in the rubber. Bumping the valve into a hard object might cause the same damage.

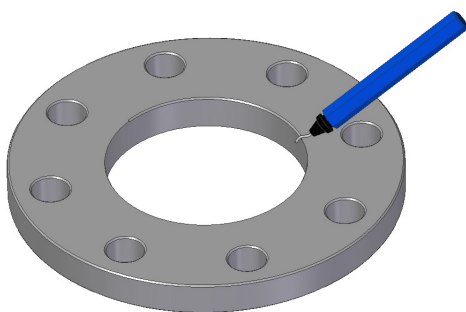
4. Installation

The valves shall never be installed where service conditions could exceed the valve ratings concerning pressure, temperature or operating media. Failure to comply with this warning may result in personal injury or property damage.

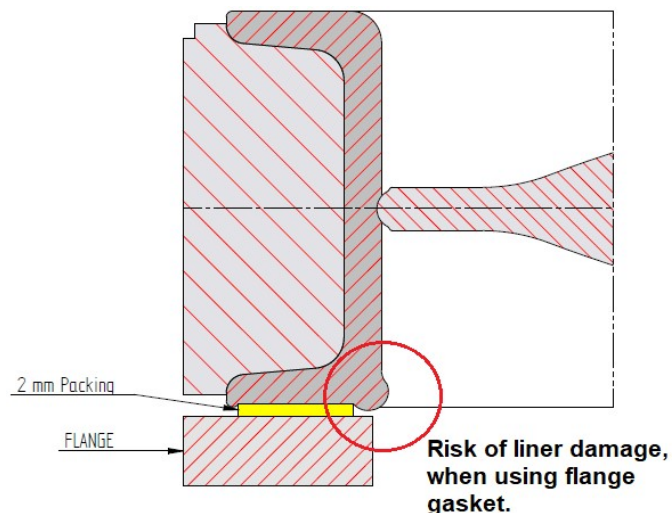
Never use additional flange gaskets. The valve seat will ensure proper sealing !

4.1 Installation procedure

1. Check the valve identification tag to make sure the pressure and valve materials are correct for the application.
2. the counter flanges sealing surface, must be free of Burrs, radial grooves, welding spots, Dirt/Oil, **Sharp edges**. Any sharp edges may occur in liner damage !



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3. Make sure the pipe line has sufficient support in order to prevent vibrations and load weight from damaging the valve.

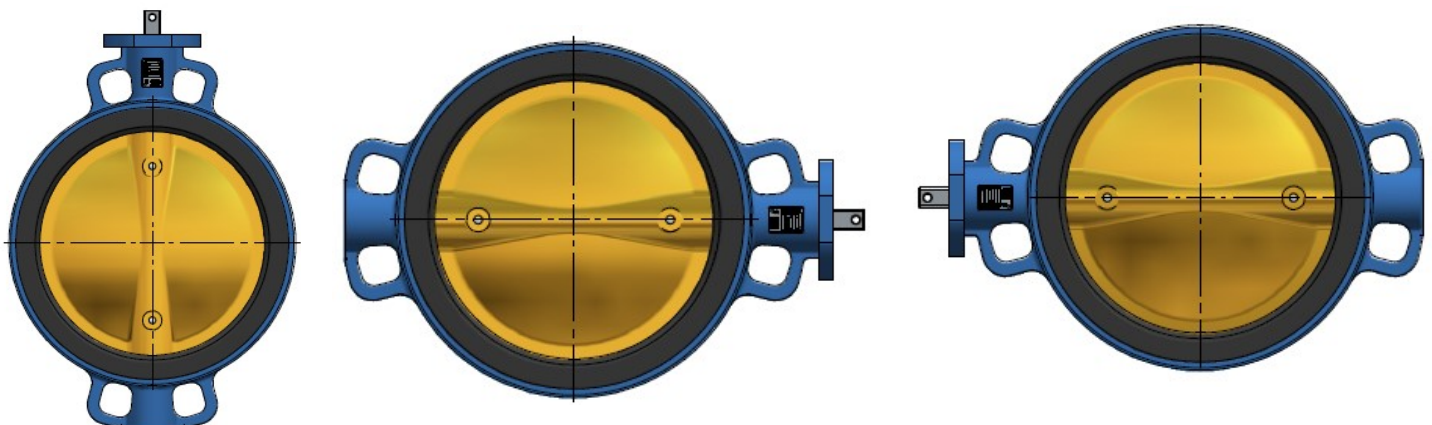
4. Make sure pipes are aligned

When the valve is installed between two pipeline flanges, these must be completely aligned. If not aligned, it may result in impermissibly high loads stressing the valve body during operation which may eventually lead to fracture. When the valve is installed in a pipeline, make sure it is as tension-free as possible. The pipeline forces transmitted to the valve must not exceed the values specified in EN 1074-2.

5. Make sure the pipe flanges and valve sealing faces are clean from any debris.

6. Spread the flanges enough to allow the butterfly valve to fit with **partly opened disc (5-10 degrees)**.

6. The valves can be mounted in any orientation, with horizontal and/ or vertical pipeline. In general, Alfa Europe recommends the rubber seated valve be installed with the stem in the Horizontal position. Please note for larger size butterfly valves the actuator must be supported.



Preferred installation

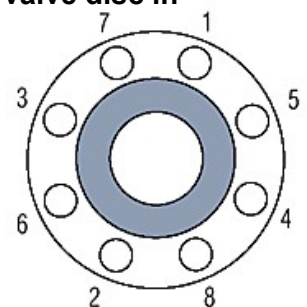
7. Fix the valve (without any gaskets) with the bolts - without tighten them - open the disc to a fully open position and make sure it will not be in contact with the pipe.

8. Tighten each bolt crosswise according to figure on the right.

9. After the valve being installed and not in operation, please keep the valve disc in slightly open position.

4.2 Bolt tightening sequence

Crosswise bolt tightening to ensure a fixed installation, other bolt tightening may affect the installation. Bolt torque is given below.



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5. Maintenance and repair

Alfa Europe butterfly valves are designed to be maintenance free, but to guarantee the function it is important for the valve to be in regular use to avoid the disc to stick in the seating. Recommended frequency of use is at least once a week.

If a valve for any reason is removed from the pipe, you need to inspect it before re-installation. If the lining or disc is damaged due to wear and tear or for other reasons, a replacement is necessary.

5.1 Removing the valve

Prior to any replacement, the valves must be dismantled from the pipe system as follows:

1. Drain and depressurize the pipe on each side of the valve.
2. Ensure that the disc is partially opened (5-10 degrees) before removing the valve.
3. Before removing an automatic actuator ensure that the operating system is not pressurized. Before re-installation of the valve please look through the installation instructions.

6. Bolt dimensions

Wafer - Lug and double flange valves							
	PN10		PN16			PN10	
Size DN	Bolts	QTY	Bolts	QTY	Size DN	Bolts	QTY
DN40			M16	4	DN450	M24	20
DN50			M16	4	DN500	M24	20
DN65			M16	4	DN600	M27	20
DN80			M16	8	DN700	M27	24
DN100			M16	8	DN800	M30	24
DN125			M16	8	DN900	M30	28
DN150			M20	8	DN1000	M33	28
DN200	M20	8					
DN250	M20	12					
DN300	M20	12					
DN350	M20	16					
DN400	M24	16					

6.1 Bolt Torque N.m.

Tightening bolts with below maximum torque figures :

Bolt size	Maximum Bolting Torque	Bolt Size	Maximum Bolting Torque
M12	17Nm	M27	180Nm
M16	32Nm	M30	280Nm
M20	75Nm	M33	350Nm
M24	125Nm	M36	480Nm

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Instructions for transport, storage, inspection, installation, operation, maintenance, & disposal for Rubber-seated Butterfly Valves S46/S57/S60/S64.



Double Flange
S46



Wafer
S57



MONO Flange
S60



LUG
S64

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TRANSPORT					
	Packaging	Use original packaging		 Top	 Fragile
	Environment	 Max. 40 °C	 30%-80% H.R.	 Shade	Clean
	When lifting	Use the correct equipment			

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STORAGE					
	Environment	 Max. 40 °C	 30%-80% H.R.	 Shade	Clean
	Disc position				


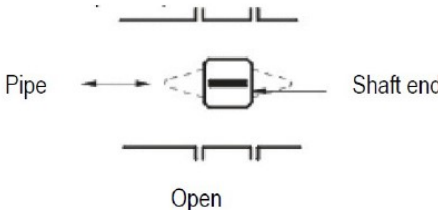
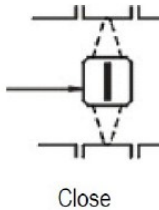













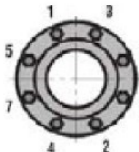

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INSPECTION		
	Transport damage	Check if butterfly valve is damaged. Notify damage within 10 days after arrival



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INSTALLATION		
	Valve open/closed	 
	If the fluid is dangerous	Avoid contact!  
	In case of external fire.	Tightness not guaranteed.  
	In case of explosive atmosphere	Body earthen. Periodical conductivity check required. 
	Direction of flow	Bi-directional allowed.
	Shaft position	Valve shaft should be horizontal.
	Flange gaskets	Separate gaskets should not be used unless specifically recommended by the ALFA.
	Centering	Installation in the centre of the pipe
	Tightening of bolts	Criss-cross fashion. 
	Tightening torque	Until leakage stops. (metal/metal contact not required)