

Declaration of Conformity as per Directive 97/23/EC

The manufacturer	Pfeiffer Chemie-Armaturenbau GmbH, 47906 Kempen, Germany
declares that:	PTFE-lined shut-off butterfly valves Series 10a and Series 10e, with PTFE liner and shaft seal <ul style="list-style-type: none"> • with worm gear and handwheel • with lever for 90° operation
<ol style="list-style-type: none"> 1. The valves are pressure accessories within the meaning of the Pressure Equipment Directive 97/23/EC and conform with the requirements of this Directive, 2. They may only be operated observing the operating instructions <BA10a-02_EN> delivered together with the valve. 	

Applied standards:

EN 593 AD2000 Regulations	Product standard for butterfly valves Regulations for pressurized valve body parts
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Type designation and technical features:

Pfeiffer data sheets <TB10a_EN and TB10e_EN> <i>NOTE: This Manufacturer's Declaration applies to all valve types listed in this catalog.</i>
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Applied conformity assessment procedure:

Conforming to Annex II of the Pressure Equipment Directive 97/23/EC, Module H
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Name of notified body:

Identification number of the notified body:

TÜV Rheinland Service GmbH Am Grauen Stein 51101 Köln Germany	0035
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These Declarations become invalid when modifications are made to the shut-off butterfly valves and/or assemblies that affect the technical data of the shut-off butterfly valve or the <Intended use> described in section 1 of the operating instructions, and considerably change the valve or an assembly delivered with it.

Kempen, 1. December 2006

Lorenz Stolzenberg, Managing Director

These Declaration of Conformity and operating instructions have been generated electronically and are legally binding without signature

Operating instructions


Shut-off butterfly valve with PFA/PTFE lining manually operated

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0 Introduction


These instructions are designed to assist the user during installation, operation and maintenance of shut-off butterfly valves with PTFE lining from the Series 10a and Series 10e.

 Note	<p>The WARNING and CAUTION notes must be strictly adhered to. Otherwise this may lead to personal injury and equipment damage and the manufacturer's warranty may become void. Please contact the manufacturer if you have any queries, see section 8 for contact address.</p>
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1 Intended use

After installing the valve in the pipeline, manually operated shut-off butterfly valves are designed exclusively for shutting off or controlling media (often corrosive) within the permissible pressure and temperature ranges.

The permissible pressure and temperature ranges for these shut-off butterfly valves are specified in the data sheets <TB10a_EN or TB10e_EN>.

 Danger	<p>Do not operate a shut-off butterfly valve when its permissible pressure/temperature rating is not sized for the operating conditions specified in the data sheets <TB10a_EN or TB10e_EN>. Failure to follow these safety precautions may result in personal injury and can damage equipment installed in the pipeline.</p>
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Observation of conformity with the Directive 94/9/EC.

 Note	<p>Pfeiffer valves do not have their own potential ignition source according to the risk assessment in the rare incident of an operating fault in accordance with DIN EN 13463-1:2000 and therefore do not fall within the scope of the Directive 94/9 EC. Relating to this directive, CE marking is not permissible. The integration of valves into the equipotential bonding of a plant applies to all metallic parts in hazardous areas regardless of the directive. Valves with plastic lining (PFA, PTFE) in applications with chargeable media have to be lined with conductive plastic lining with a surface resistance less than 1 Gigaohm (10^9 Ohm) in accordance with paragraph 7.4 of DIN EN 13463-1:2001.</p>
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Refer to the limitations in the above mentioned data sheets if the shut-off butterfly valve is intended for throttling services.

Observance of section 2 <Safety instructions> is presumed for the Intended use.

2 Safety instructions


2.1 General safety instructions

For shut-off butterfly valves, the same safety regulations apply as for the pipelines in which they are installed. These instructions only specify those safety instructions which need to be additionally observed concerning shut-off butterfly valves.

2.2 Safety instructions for the operator

The manufacturer does not assume any responsibility. Therefore, on using the shut-off butterfly valve, make sure the following instructions are observed:

⇒ The valve is to be used only for its intended use as described in section 1.

 Warning	<p>Preventing misuse of the shut-off butterfly valve: It is especially important to make sure that the selected lining for wetted parts in the shut-off butterfly valve is suitable for the media used as well as the prevailing pressures and temperatures. Failure to follow these safety precautions may result in personal injury and can damage equipment installed in the pipeline. The manufacturer does not assume any final responsibility.</p>
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⇒ Make sure that the pipeline has been installed correctly and is checked at regular intervals. The valve body wall thickness must be designed to take into account the usual pipeline additional forces and moments.






⇒ The valve needs to be connected correctly to the pipeline.

⇒ Make sure the usual flow velocities are not exceeded in continuous service in this pipeline. Exceptional operating conditions such as oscillations, water hammering, cavitation and large proportions of solid matter in the process medium, especially abrasive, must be clarified beforehand with the manufacturer.

⇒ Shut-off butterfly valves that are operated at temperatures greater than +50°C or lower than -20°C must be protected, together with the pipeline connections, against being touched.

- ⇒ A gear mounted subsequently onto the valve must fit the shut-off butterfly valve properly and its final positions, especially the open position, need to be correctly adjusted.
- ⇒ Make sure at all times, that the butterfly disc is only operated within the range 0° - 90°. Over winding the butterfly disc past 0° will lead to irreparable damage to the sealing ring i.e. sealing strip. This must therefore be avoided.
- ⇒ The valve should only be operated and serviced by personnel appropriately qualified for pressurized pipelines.

2.3 Particular hazards

 Danger	Prior to unscrewing the bonnet or removing the shut-off butterfly valve from the pipeline, relieve pressure entirely in the pipeline to ensure the process medium cannot escape uncontrollably from the pipeline.
 Warning	Should it be necessary to remove a shut-off butterfly valve from the pipeline, process medium may escape from the pipe or out of the shut-off butterfly valve. In the case of process media that can damage health or are dangerous, drain the pipeline completely before removing the shut-off butterfly valve from the pipeline. Take special care concerning any remaining media that may still be in the pipeline or have collected in the cavities of the valve.
 Warning	Only unscrew or loosen any screws or bolts connecting the body parts after the valve has been removed from the pipeline. Tighten the screws on reassembly with a torque wrench according to repair instructions <EB10a_EN or EB10e_EN>.
 Warning	<i>For shut-off butterfly valves intended for dead-end service:</i> During standard operation, in particular, with gases or hot and/or dangerous media, mount a blank flange at the free end connection or ensure that the shut-off butterfly valve is properly protected against unauthorized operation.
 Warning	If a shut-off butterfly valve used for dead-end service must be opened in a pressurized pipeline, special care must be taken to ensure that any process media escaping under pressure do not cause any damage. Take into consideration that in most cases the process medium is a dangerous substance!

2.4 Designation of the shut-off butterfly valve

The designation of the shut-off butterfly valve includes the following details:

Details	Designation	Comments																				
Manufacturer	Pfeiffer	Address, see section 8 <Further information>																				
Valve type	BR (and number)	e.g. BR 10a = Series 10a, see Pfeiffer catalog																				
Body material	e.g.: EN-JS 1049	Material number acc. to DIN EN 1563 (formerly GGG 40.3)																				
Size	DN (and number)	Value in mm, e.g. DN 50																				
Maximum pressure	PN (and number)	Value in bar at room temperature																				
Perm. temperature	TS (and number)	PS and TS are associated values at maximum permissible operating temperature and maximum permissible operating pressure.																				
Perm. pressure	PS (and number)																					
Serial no.	e.g.: 2030153/001/001	<table style="border: none;"> <tr> <td style="border: none;">203</td> <td style="border: none;">0153</td> <td style="border: none;">/001</td> <td style="border: none;">/001</td> <td style="border: none;">Valve no. within item</td> </tr> <tr> <td style="border: none;"> </td> <td style="border: none;"> </td> <td style="border: none;"> </td> <td style="border: none;"> </td> <td style="border: none;">Item in order</td> </tr> <tr> <td style="border: none;"> </td> <td style="border: none;"> </td> <td style="border: none;"> </td> <td style="border: none;"> </td> <td style="border: none;">Order</td> </tr> <tr> <td style="border: none;"> </td> <td style="border: none;"> </td> <td style="border: none;"> </td> <td style="border: none;"> </td> <td style="border: none;">Year of manufacture (e.g. 203=2003)</td> </tr> </table>	203	0153	/001	/001	Valve no. within item					Item in order					Order					Year of manufacture (e.g. 203=2003)
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				Item in order																		
				Order																		
				Year of manufacture (e.g. 203=2003)																		
Year of manufacture	e.g.: 2003	On customer request, the year of manufacture is stamped on the valve.																				
Conformity	CE	Conformity is certified separately by the manufacturer																				
Identification no.	0035	Notified body as per EU Directive = TÜV Anlagentechnik GmbH																				
Direction of flow	➔	Note: see note in section 4.2 <Installation instructions>																				

Table 1 – Designation of the control valve


Keep the labeling on the valve body and on the nameplate to ensure that the valve can be identified at all times.

3 Transport and storage

Shut-off butterfly valves **with linings must be carefully handled, transported and stored:**

- ⇒ Store the valve with its protective packing and/or with its protective caps in place in the end connections. Store and transport the shut-off butterfly valves that weigh over approx. 10 kg on pallets (or a similar type of support) right up to the point of installation. The packing is designed to protect the valve's plastic lining, that is prone to scratching, against being damaged.
- ⇒ Store the valve in a closed room before it is installed. Protect it against damaging influences such as dirt or moisture.





- ⇒ Make sure, in particular, that the plastic-lined facings of the flanges intended to connect the valve in the pipeline are not damaged through mechanical or other influences. Do not stack shut-off butterfly valves!
- ⇒ As a rule, shut-off butterfly valves of the 10a Series are delivered in the closed position and shut-off butterfly valves of the Series 10e Series in the slightly open position. Store the valves in the condition they were delivered in. Do not operate the valve.

 Warning	<i>Valves delivered without a lever/gear:</i> The butterfly disc is not safeguarded against alteration of its position. Do not allow the disc to be opened from the closed position by external influences (e.g. shock, vibrations).
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4 Installation in the pipeline

4.1 General


The same instructions apply for installing the shut-off butterfly valves in the pipeline as for connecting pipes and similar pipeline equipment. The following instructions additionally apply for shut-off butterfly valves. Also observe section 3 for transporting the shut-off butterfly valve to the point of installation.

 Caution	<i>The valve is lined with PTFE:</i> Handle with special care and follow the instructions for flange connection.
 Note	<i>The facings of the valve body are lined with plastic.</i> If additional flange gaskets are used, we recommend using gaskets made of PTFE. The mating flanges must have smooth facings. Contact the manufacturer if you intend to use other flange forms.
 Note	<i>The actuating device is set for the operating data specified in the order.</i> Do not alter the settings for the final positions OPEN and CLOSED without the manufacturer's prior consent.
 Danger	In exceptional cases, when a valve is installed into a pipeline without an actuator mounted, make sure that pressure is not applied to these valves. If an actuator unit has been mounted subsequently, torque, direction of rotation, operating angle as well as the final positions OPEN and CLOSED must be adapted to the shut-off butterfly valve. Failure to follow these safety precautions may result in personal injury and can damage equipment installed in the pipeline..


The following warnings are to be observed for gears:

 Warning	<i>Gears are not designed to be used as step-ladders:</i> Do not apply any weight/load to the gears. This can damage or destroy the shut-off butterfly valve.
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4.2 Installation instructions

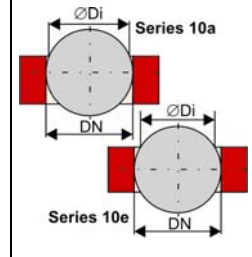
 Note	<i>Lined surfaces of the valve must be specially protected before/during installation:</i> Transport the valve in its original packaging right up to the point of installation. Remove packaging first at the point of installation.
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- ⇒ Check valve and gear for signs of damage that may have occurred during transportation. Do not install a damaged shut-off butterfly valve.
- ⇒ Prior to installation, carry out a function check. The valve must open and close properly. Any function errors that are recognized must be remedied before commissioning. See also section 7 <Troubleshooting>.
- ⇒ Make sure that only shut-off butterfly valves are installed when their pressure rating, end connections and face to face dimensions match the conditions of application. See the designation of the shut-off butterfly valve.

 Danger	Do not install a shut-off butterfly valve if its permissible pressure/temperature ranges do not apply to the operating conditions. The limits of application are marked on the valve, see section 2.4 <Designation>. The permissible range is determined in section 1 <Intended use>. Failure to follow these safety precautions may result in personal injury and can damage equipment installed in the pipeline.
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- ⇒ Make sure the end connections of the pipeline are aligned with the shut-off butterfly valve's end connections and their ends have parallel planes. Connecting flanges that are not parallel can damage the PTFE lining during installation!


 Note	The valve must be inserted in the gap between the pipe flanges with the butterfly disc in the closed position. Otherwise, the butterfly disc could be damaged and the valve will not shut tightly.
 Note	The inside diameter of the mating flanges must leave sufficient room for the opened butterfly disc to ensure that it cannot be damaged on swinging out. See Table 2.




DN	50	65	80	100	125	150	200	250	300	350	400	500	600	800
Di Series 10a	-	-	-	76,5	-	126	175	222	274	326	365	465	573	763
Series 10e	45	45	62	86	116	140	187	238	282	-	390	-	-	-

Table 2 : Minimum required inside diameter of the mating flanges

- ⇒ Prior to installation, carefully clean the valve and the connecting section of the pipeline from dirt, especially hard foreign material.
- ⇒ Make sure, in particular, that flange facings and any flange gaskets used are free from any dirt prior to installation.
- ⇒ The process medium can flow through the valve in either direction. The preferable mounting position for shut-off butterfly valves is with a shaft in a horizontal position. However, if possible, the gear should not be located directly underneath the shut-off butterfly valve.
- ⇒ Make sure the arrow on the valve body corresponds with the direction of flow in the pipeline.

 Note	In special cases, it may be necessary for the valve to be tightly shut against the direction of flow. The installation in such special cases must be determined by the operator of the pipeline (e.g. to protect a pump).
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- ⇒ On inserting the valve (and flange gaskets) into a ready mounted pipeline, keep a certain clearance between the pipeline ends to ensure that all facings (and gaskets) remain undamaged.

 Caution	Tighten the flange bolts evenly and in a criss-cross pattern in at least three steps. Tighten all flange bolts using the torques specified in Tables 2 or 3. Use a torque wrench to ensure that the torque specified is reached, yet not exceeded.
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DN [mm]	50	65	80	100	125	150	200	250	300	350	400	500	600	800
MA [Nm]	45	45	65	75	55	140	170	140	170	170	240	240	310	480

Table 3 – Flange torques for DIN-Flanges

DN [Zoll]	3"	4"	6"	8"	10"	12"	14"	16"	20"	24"	32"
MA [Nm]	65	50	100	150	140	160	160	230	240	300	470

Table 4 – Flange torques for ANSI-Flanges

5 Pressure check in pipeline section

The pressure check of valves has already been carried out by the manufacturer. To check the pressure of a section of pipeline with installed valves, the following points must be observed:



- ⇒ Carefully flush newly installed pipes to remove any foreign material.
- ⇒ **Valve OPEN:** The test pressure should not exceed the value **1.5 x PN** (see nameplate).
- ⇒ **Valve CLOSED:** The test pressure should not exceed the value **1.1 x PN** (see nameplate).

If a valve leaks, see section 7 <Troubleshooting>.

6 Standard operation and maintenance

Due to the fact of flowing plastic flange facings we strongly recommend to check flange bolt torques acc. to specified figures in section 4.2 after commissioning and normal operation temperature has been reached.

Normal manual force is sufficient to operate the manual operation. Turn the handwheel clockwise to close the valve. It is not permissible to use extensions to increase the operating torque.

 Note	<i>Shut-off butterfly valves with lever:</i> The position of the lever indicates the valve's position: Lever at a 90° angle to the pipeline: Valve CLOSED, Lever parallel to the pipeline: Valve OPEN.
 Danger	<i>Shut-off butterfly valves with lever:</i> Do not open and close the valve with sudden movements, but quick enough to prevent pressure surges and/or temperature shocks occurring in the pipeline. Failure to follow these safety precautions may result in personal injury and can damage equipment installed in the pipeline.


The shaft is sealed with a V-ring packing preloaded with a set of spring washers and does not require any maintenance.


Regular maintenance work on the shut-off butterfly valves is not necessary. The shut-off butterfly valve from the 10e Series with an additional packing can be fitted with a leak-off connection (e.g. ¼") at the valve neck, on request. This allow you to check whether the packing is leaking.

If a valve leaks, proceed as described in section 7 <Troubleshooting>.

7 Troubleshooting

Observe the safety instructions listed in section 2 on troubleshooting.

 Warning	<i>To remove a valve from a pipeline containing dangerous media and to take it out of the plant:</i> Decontaminate the valves properly first.
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Type of fault	Action to be taken	Comment
Leak at the connection to the pipeline	Tighten flange bolts.  Caution The permissible tightening torque of the flange bolts is restricted. See table 3 or 4 in section 4.2 <Installation instructions>. <i>If the medium leaks out at the flanges of the lined valve:</i> Retighten the flange bolts using the torque specified in Table 2 or 3 in section 4.2 <Installation instructions>. If necessary, the torque may be increased by max. 20 %. <i>If the medium leaks out at the flanges even after tightening the flange bolts:</i> Unscrew the flange bolts and remove the valve (on doing so, observe the instructions in section 2.3 <Particular hazards>). Check the parallel planes of the flanges and, if necessary, correct them. Also check the facing of all the flanges. If the plastic lining is damaged, replace it together with the associated flange gasket.	Note 1: <i>When ordering spare parts, include all the specifications listed in the valve designation. Only use original parts from Pfeiffer.</i>
Leak at the seat seal	Check whether the actuator closes completely the valve. <i>If the shut-off butterfly valve still leaks in the closed position:</i> Open and close the valve under a pressure drop several times. <i>If the valve still leaks:</i> If it must be repaired, replace the plastic lining of the valve body and/or butterfly disc, observing observe the instructions in section 2.3 <Particular hazards>). Contact Pfeiffer for spare parts and necessary instructions.	Note 2: <i>If, after removing the valve from the pipeline, it is found that the PTFE/PFA lining is not sufficiently resistant to the process medium, select parts made of a suitable material.</i>
Leak at the shaft	If it must be repaired, replace the shaft packing, observing section 2.3 <Particular hazards>. Contact Pfeiffer for spare parts and necessary instructions.	
Malfunction	<i>If the valve is damaged:</i> If it must be repaired, remove the valve, observing section 2.3 <Particular hazards>. Contact Pfeiffer for spare parts and necessary instructions.	



8 Further information

Contact the address below for the listed <Data sheets> and <Repair instructions> as well as further information.

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