GF Piping Systems

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Instruction manual

Butterfly valve Type 567/568



Observe instruction manual

The instruction manual is part of the product and an important element within the safety concept.

- Read and observe instruction manual.
- Always keep instruction manual available close to the product.
- Pass on instruction manual to all subsequent users of the product.

1. Intended use

After being installed into a piping system, butterfly valves type 567/ 568 are exclusively meant to block or convey media within the approved pressure and temperature limits, and to regulate the flow

The maximum time of operation is 25 years. The valve is intended to be used within the chemical stability of the entire valve and all its components.

Butterfly valves are not recommended for media with solid matters. Cavitation has to be avoided during normal operation

In case of degreasing or jamming media, butterfly valves can only be used after consulting a GF Piping Systems representative

- Use type 567 only as intermediate butterfly valves. • Use type 568 as intermediate or ending butterfly valve
- See «Georg Fischer's planning criteria» for approved pressure areas of all approved temperatures for all housing materials. These documents also contain the "list of chemical resistivity" for the different valve materials.

2. Regarding this document

This document contains all necessary information for the installation, operation and service of the product.

2.1 Related documents

 Georg Fischer planning fundamentals • Instruction manual for expanding the BFV 567/ 568 for further functions:

Instruction manual	GMST number
Quick Guide	-
Electrical actuator	5886/1,4
Pneumatic actuator PA30- PA90	5377/1, 2, 4d
Integrated Electric Feedback	5939/1, 4
Intermediate Element for BUV 567/568	5918/1,4

These documents can be obtained from the GF Piping Systems representative or under www.piping.georgfischer.com

2.2 Abbreviations

Abbreviation	Meaning
BFV	Butterfly Valve
Type 567/ 568	Butterfly Valve 567/ 568
DN	Nominal diameter
PN	Pressure rate
SFA	Socket flange adaptor
BFA	Butt fusion flange adaptor

3. Safety and warning instructions

This manual contains warning instructions that shall warn against injuries or material losses. Always read and observe those warning instructions.



WARNING

Imminent danger! Non-observance may result in major injuries or death.

Possible danger! \triangle

Non-observance may result in major injuries.

 $\underline{\wedge}$ Dangerous situation! Non-observance may result in minor injuries CAUTION

The manufacturer Georg Fischer Rohrleitungssysteme AG, 8201 Schaff-hausen (Switzerland) explains that the butterfly valves types 567/ 568 according to the harmonised construction type standards EN-593

are pressure-maintaining components in terms of the EG Pressure Equipment Directive 97/23TM/EG and comply with the requirements of this directive that apply to valves,

2, comply with the applicable requirements of the Construction Products Directive 89/106/EG for valves

The Œ sign on the valve proves this compliance (according to the Pressure Equipment Directive, only valves with a ND larger than 25 shall be indicated with Œ).

The operation of these butterfly valves is not allowed until the conformi ty of the entire system, in which the butterfly valves have been installed has been explained with one of the mentioned EG Directives.

Changes to the butterfly valve that could effect the stated technical data and the intended purpose, void this declaration of conformity. Additional information can be found in "Georg Fischer's planning fundamentals".

Schaffhausen, 01 July 2013

EC declaration of conformity

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161.484.584 / GMST 5906/1e, 4e (07.13) © Georg Fischer Rohrleitungssysteme CH-8201 Schaffhausen/Schweiz, 2013 Printed in Switzerland

Operating torque (everage value) for opening / closing the BFV (standard valves in new condition)

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50 65 80 100 125 150 200 250 300 DN Inch 2 1/2" 3 90 Nm 5bar 14 33
 Nm 10 bar
 12
 17
 28
 38.5
 50
 61
 90
 115
 145
 Remark: Depending on the application the operating torque can increase up to 4 times.

CAUTION

Damage to the butterfly valves through the use of auxiliary equipment to increase the coupling moment.

- Operate valve only with the intended actuating means (lever, transmission, actuator).
- If an increased actuating torque occurs, check valve for damage/wear and tear.

When dismantling the butterfly valve, the following risks can emerge

WARNING

When dismantling the butterfly valve, there is a risk of injury through the uncontrolled leakage of the medium and/or subsequent flow of the medium from an open pipeline and/or the butterfly valve. If the pressure has not been relieved completely and the

pipeline has not been emptied completely, the medium can leak uncontrollably.

There is a risk of injury depending on the type of the medium Completely relieve pressure from the pipeline before dismantling.

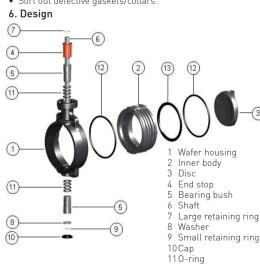
- In case of harmful, inflammable or explosive media, completely empty and flush pipeline. After dismantling the butterfly valve, also let the valve run dry while putting it in a vertical position.
- Consider possible residues. • Guarantee the safe catching of the medium (e.g. mounting of a catchment tank) and avoid splashing through
- appropriate measures. • Make sure that opening and closing the pipe is not done jerkily and that pressure surges in the piping system are
- avoided. This has to be observed especially when operating the pipe with a hand lever.

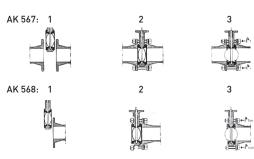
5. Transport and storage

- Transport and/or store product in unopened original packaging.
- Protect product from dust, dirt, dampness as well as thermal and UV radiation.
- Make sure that the product has not been damaged neither by mechanical nor thermal influences
- Store product in the same idle position as it has been delivered.
- Check product for transport damages prior to the installation.

Gaskets

- All gaskets/collars (material e.g. EPDM, FPM) are organic materials and react to environmental conditions Therefore, store cool, dry and dark in its original packaging
- Check gaskets/collars for possible ageing damages such as tearing or rigidification prior to the installation. Sort out defective gaskets/collars.





• 1. Allow for sufficient spacing between the flange ends Note that the BFV opens counterclockwise.

During the installation

• 2: Put the valve disc at closed position

- Move the butterfly valve with the seals (0-rings or flat gaskets) between both flange ends
- 3: Realign the pipeline. Make sure that the disc can be fully
- openedFasten the butterfly valve with flange screws (see table 1)

Maximum closing torgues for installing the BFV Type 567

DN	Inch	Nm	Inch-lbs				
50	2"	30	256				
65	2 1/2"	35	310				
80	3"	40	352				
100	4"	45	398				
125	5"	50	442				
150	6"	60	531				
200	8"	75	664				
250	10"	75	664				
300	12"	80	708				
Lada and factor in the DEM and EVE the flat of the second							

Indexes for fastening the BFV type 567 with flange screws

d	DN Inch S		Schrauben gesamt	Max. Drehmoment/ Nm		
63	50	2	4 x M16 x 140mm	25		
75	65	2 1/2	4 x M16 x 140mm	25		
90	80	3	8 x M16 x 150mm	25		
110	100	4	8 x M16 x 180mm	30		
140	125	5	8 x M16 x 200mm	35		
160	150	6	8 x M20 x 220mm	40		
225	200	8	8 x M20 x 240mm	50		
280	250	10	8 x M20 x 300mm	80		
315	300	12	12 x M20 x 300mm	80		

Indexes for fastening the BFV type 568 with flange screws

IS0		BB - VSB with the various flanges							Max. o
DN		PP		PVC-U			PVD	PVDF	
	Quantity of screws	PP-V	PP/ steel	PVC- U	PP-V	PP/ steel	PP-V	PP/ steel	closing to
	5010105	LMIN	LMIN	LMIN	LMIN	LWIN	LMIN	LWIN	torque
50	8xM16	55	55	50	55	50	55	50	20
65	8xM16	60	60	50	60	50	60	50	25
80	16xM16	60	65	55	60	55	65	55	15
100	16xM16	65	70	60	70	60	70	60	20
125	16xM16	70	80	70	70	70	80	70	25
150	16xM20	80	80	80	80	70	80	80	35
200	16xM20	90	90	90	90	90	90	80	45

ANSI		BB - VSB with the various flanges						in Nm		
		PP		PVC-U			PVDF		1" G	
Quantity of	PP-V	PP/ steel	PVC- U	PP-V	PP/ steel	PP-V	PP/ steel	closing to		
	5010115	LMIN	LMIN	LMIN	LMIN	LMIN	LMIN	LMIN	torque	
2	8xUNC 5/8	55	55	50	55	50	55	50	25	
2 1/2	8xUNC 5/8	55	60	50	60	50	60	50	25	
3	8xUNC 5/8	60	65	55	60	55	65	55	25	
4	16xUNC 5/8	65	70	60	60	60	70	60	30	
5	16xUNC 3/4	70	80	70	70	70	80	70	35	
6	16xUNC 3/4	80	80	80	80	70	80	70	40	
8	16xUNC 3/4	90	90	90	90	90	90	80	50	

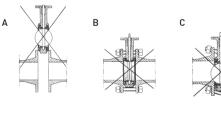
After installing Do another function test also after installing

Chamfering of the SFA / BFA If SFA/BFA of Georg Fischer are used, chamfering is not necessary, because the disc doesn't touch the SFA/BFA or the BFA already have a chamfer.

If you install a SFA/BFA of another manufacturer, please

observe that the inside diameter (Int-) of the SFA/BFA are larger than the disc outlet diameter (Q1). If necessary you may chamfer the SFA/BFA as shown in this table below

Possible consequences of a faulty installation:



Prior to installation

A: Not enough space between the two flanged pipe sides or disc is open B: The butterfly valve gets stuck in the pipeline

Leaky BFV / Medium is

- 4. Insert shaft and move it to the limit stop. Watch at the shape of the shaft when inserting it:
- The notch on the upper side of the shaft indicates the position of the disc
 - In addition two chamfers at the haft are larger, which avoids a faulty assembly
- Insert lower bearing bush and push it into the limit stop. 5 Insert washer and secure it with the small retaining ring. Mount cap and flange sealings (o-rings).

8.3 Assembly hand lever

ensured.

to the right direction.

8.4 Turn of the hand lever

stop remains on the shaft.

terfly valve.

washer

be taken

9. Maintenance

be observed.

disassembly.

Problem

BFV does

between the

Disc cannot

be opened

completely

BFV can

hardly be

opened/

closed or

cannot be

closed at all

opened/

not fit

flanges

their functionality.

10. Troubleshooting List

Conse-

quence

Installation

not possible

Flow rate

actuating

torque too

high

too low

2.

steps

2.

3.

5.

6.

8.



Hand lever assembled by closed disc. By the indexa-tion of the shaft and the end stop a clear assembly is

Closing torque for hand lever connection 15 Nm

To turn the hand lever at 180 degrees take the following

Butterfly valve is in closed position. Washer at the hand lever solve easily. Do not remove it completely.

Open the lever clip with a screwdriver. Additionally by the dimensions DN200-300 unscrew the boltes between

hand lever. Afterwards move the screwdriver upwards to unlock the end stop.

Take nut and washer complete from the hand lever. Turn hand lever and raster element at 180 degrees. End

Reassemble hand lever and raster element at the but-

Assemble the hand lever in closed position of the disc.

Lock the hand lever clip. Finish the assembly of the hand lever with nut and

During normal operation, butterfly valves do not need

servicing. But it is recommended to maintain the butterfly

valves latest after 5000 cycles. The following provisions must

Periodic inspection to make sure that there is no leakage of media to the outside. If media is exiting at the flanged

connectors, they have to be tightened according to Table 2.

In case of leaks or other disturbances, Chapters 1 to 5 must

• It is recommended to once or twice a year operate butterfly

valves that are always in the same position in order to test

• Depending on the operating conditions, the collars should

be periodically lubricated with grease (silicone-based). • It is recommended that the o-rings of the bearing bushes

are checked and if necessary exchanged after each

In case of leakage, dismount butterfly valves and replace

damaged gaskets/collars. Order spare parts for butterfly

valves with complete specifications, e.g. all details regarding

the type plates. Only use original parts of GF Piping Systems.

Cause

Flanges are

too close to

Disc is open

Disc touches

SFA/BFA

Operating

conditions

temperature

and pressure

are possible

outside of the

specification

Gasket is

such as

media.

each other

Solution

• Push flange

spreading tool

• Close disc

Bevel SFA/

to Table

Contact

• Replace

valve

Replace

BFA according

manufacturer

apart with

handlever and end stop. Bring the screwdriver between raster element and

With view of the moulded GF logo disc at the wafer hou-

sing, the hand lever stands in closed position of the disc

Dangerous situation! NOTICE Non-observance may result in material losses.

4. Safety and responsibility

In order to provide safety in the plant, the operator is responsible for the following measures:

- Products may only be used for its intended purpose, see intended purpose
- Never use a damaged or defective product. Immediately sort out damaged product.
- Make sure that the piping system has been installed professionally and serviced regularly.
- Products and equipment shall only be installed by persons who have the required training, knowledge or experience.
- Regularly train personnel in all relevant guestions. regarding locally applicable regulations regarding safety at work, environmental protection especially for pressurised pipes.

The personnel is responsible for the following measures:

• Know, understand and observe the instruction manual and the advices therein.

The same safety guidelines apply for butterfly valves as for the piping system into which they are built.

To operate the butterfly valves, the torques as indicated in table 1 are sufficient.

 At high flow velocity we recommend to use a dear operator instead of a hand lever.

• A butterfly valve is not self-locking: The actuating device shall not be disassembled, as long as the valve is flowed or pressurised.

7. Installation

Installation into the pipeline

 Only use butterfly valves type 567 as intermediate butterfly valves

12 Flange sealing

13 Profile sealing

• Use butterfly valves type 568 as intermediate or end butterfly valves

As connecting part we recommend socket flange adaptor (SFA) or butt fusion flange adaptor (BFA) with flat sealing surface in connection with flanges of PVC-U, PP-V or PP/ steel. When SFA / BFA with serrated sealing surface are used, in individuel cases a flat gasket needs to be added.

Prior to the installation

- Make sure that only butterfly valves are installed whose pressure category, connection type, connection dimensions and materials correspond to the operating conditions • Carry out function test. To do so, close and reopen butterfly
- Only install butterfly valves without functional disturbances

8. Disassembly/ Assembly

Pipeline is not wel

Note that there are arrows Δ on various parts of the butterfly valves, which enable a quick and correct assembly. Pictures according the steps, see "Quick Guide"

8.1 Disassembly BFV 567/ 568

- Turn disc to ca. 45°
- Remove cap.
- Remove the small retaining ring and take out the washer.
- Remove the large retaining ring and take out the washer and end stop.
- Pull the shaft of the butterfly valve up to the upper 5. bearing bush.
- 6. Hold the shaft and turn disk to ca. 30°. Pull out shaft completely.
- 7 Insert shaft from above at a 15°-position and push out the upper bearing bush.
- Pull the shaft of the butterfly valve up to the lower 8. bearing bush.
- 9. Hold shaft and turn disc to ca. 30°. Pull out shaft completely
- 10. Insert shaft from above at a 45°-position and push out the lower bearing bush.
- 11. Pull out shaft completely and remove the disc
- 12. Press out the inner body from the notchless side.

8.2 Assembly BFV 567/ 568

- Mount large safety ring, mechanical end stop and upper bearing bush on shaft.
- Insert inner body into the wafer housing lobserve position of arrow and cam) and move it to the limit stop
- 3. Insert disc in the open position of 90° (observe position of arrow).

connecting	exiting	damaged	gasket
elements		irregular tightening of the flange screws	• Evenly tighten flange screws criss-cross according to Table Screw fixation
		SFA/BFA with fluted sealing face	 Use SFA/BFA with even sealing face

Selection of lubricants



Material damage due to inappropriate lubricants that corrode the materials that butterfly valves and/or gaskets are made of.

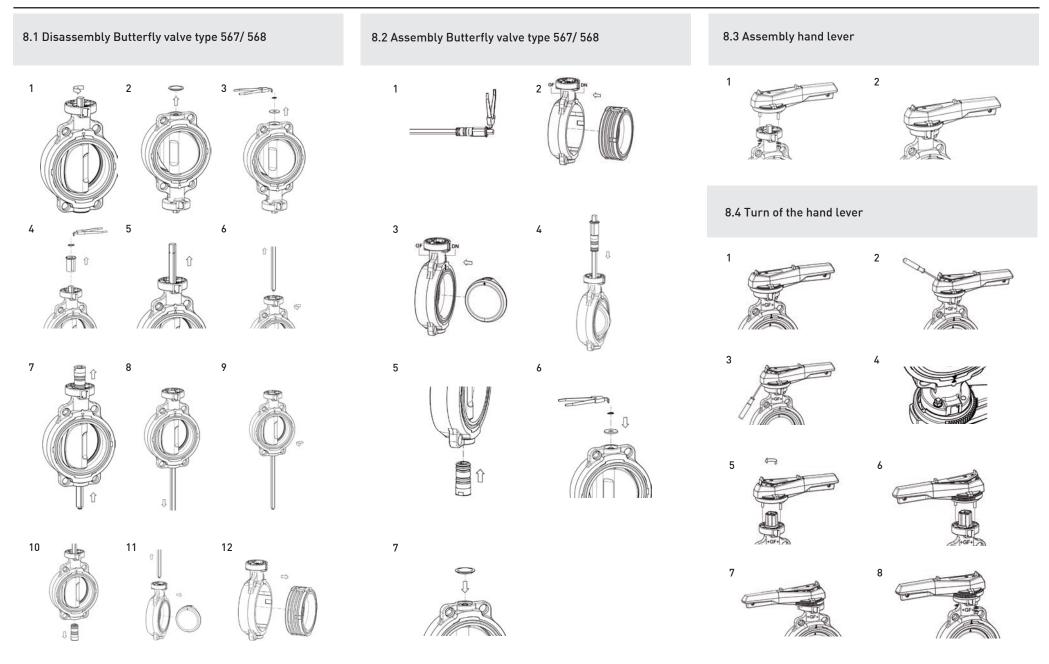
- Make sure that no lubricants are used that are based on mineral oil or Vaseline (petrolatum). • Observe special manufacturer's notice for
- paint-compatible butterfly valves
- Lubricate all gaskets with grease based on silicone or polycol. Other lubricants are not permissible.

10. Spare parts

Spare parts are available at your local Georg Fischer sales company or on the Internet at www.piping.georgfischer.com/de

The technical data are not binding. They neither constitute expressly warranted characteristics nor guaranteed properties nor a guaranteed durability. They are subject to modification. Our General Terms of Sale apply.

QUICK GUIDE Butterfly Valve Type 567/568



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