

Installation Instructions

Series 90 High Performance Butterfly Valves

High Performance BFV

WARNING



**THINK
SAFETY
FIRST**

Read this Manual **BEFORE** using this equipment.

Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment.

Keep this Manual for future reference.

DANGER



Electricity, electrocution and shock hazards.

NOTICE

Warning applies where an actuator is used.

WARNING

Local building or plumbing codes may require modifications to the information provided. You are required to consult the local building and plumbing codes prior to installation. If the information provided here is not consistent with local building or plumbing codes, the local codes should be followed. This product must be installed by a licensed contractor in accordance with local codes and ordinances.

NOTICE

Follow the guidelines listed here for proper installation, operation, and maintenance.

Inquire with governing authorities for local installation requirements.



High Performance
Butterfly Valves



Mueller Steam Specialty™

A **WATTS** Brand

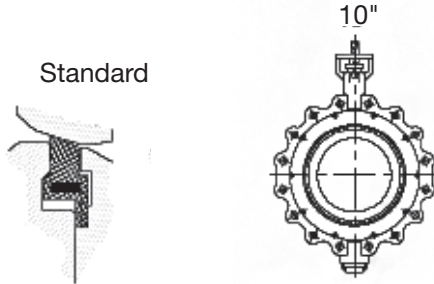
I. Basic Principle of Operation

High Performance BFV Butterfly Valves are an eccentric butterfly valve with RPTFE.

Version Lug 2" up to 40".

Hardware Description

2" up to 40".



Version	Size	Maximum Permissible Pressure at Room Temperature	Version Carbon Steel
Lug High Pressure	2" - 40"	580 psi	14°F to +122°F

II. Storage

Handling

The boxes and pallets containing the products must be handled by appropriate lifting equipment, respecting the safety rules (limits of use of the lifting equipment, safety measures of the company or site, etc...).

⚠ WARNING
Valves over 30 lbs. must be handled by straps attached to drums or lifting holes (or lifting shackles).

NOTICE

Product should be stored in its original packaging until installation. Product should be stored in a manner such that it is not exposed to vibrations.

III. Installation

⚠ WARNING

Before installation, the pipes must be depressurized and purged (empty of its fluid) in order to avoid any danger to the operator.

Preparation

The pipe work must be correctly aligned so that no extra stress is exerted on the valve casing.

Check the compatibility of the connection flanges against the operating pressure: the PN number of the flanges must be greater or equal to the operating pressure.

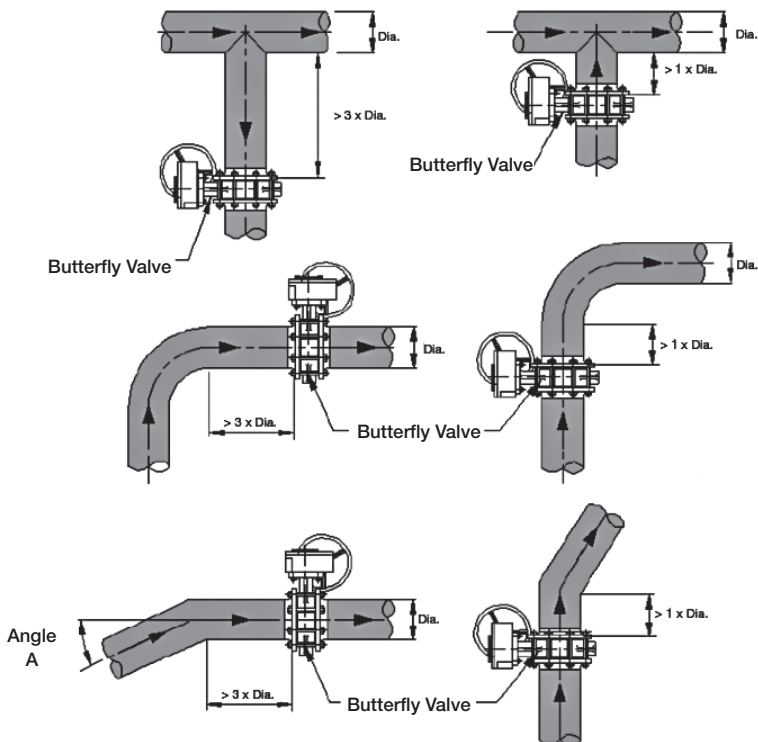
The valve is a machined piece of equipment and must not be used to prise apart the flanges.

Installation Conditions:

It is recommended that the distances mentioned below be respected in order to prolong the lifetime of the valve.

Mounting the valve close to pipe work junctions places it in turbulent zones which increase its wear.

Installation Diagrams



Installation

A. Mounting Between Flanges:

Lug - All Versions

Dia. In.		2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
ANSI B16.5	Class 150	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ANSI B16.47 A	Class 150	See ANSI B 16.5													
MSS SP44	Class 150									X	X	X	X	X	X

X Available for all versions

Maximum permissible pressure is:

Version	In.	Connection Type	Maximum Pressure
RPTFE/Lug	2" - 40"	Flanged	290 psi

Note: Lug 18" and above require mounting with a counter flange.

⚠ WARNING

For safety reasons, the throttle valve used in these mounting conditions, at the end of the pipe, provides only a full flange function. In the closed position, the maneuvering device must be locked in order to avoid any unauthorized maneuver. Opening the valve is only possible after taking all safety measures.

NOTICE

These valves are designed for "dead-end" service. These can be installed at the end of pipelines.

B. Inspection

- The valve will be unpacked carefully without shock or fall.
- The visual inspection of the valve before assembly is imperative, check the absence of foreign bodies in the valve and the pipe. Clean with water or compressed air if necessary.
- Check the surface condition of the valve flange seals.
- Confirm that the materials indicated on the plate comply with your demand and conditions of use.
- Check the preferred flow direction according to the type of application.

NOTICE

The corrosion protection treatment of steel parts constitutes temporary protection. A coating by paint is recommended before the valve is put into service.

NOTICE

- Beware of weld drops and metal chips that deteriorate the joints.
- Never weld the flanges on the piping once the faucet is in place (risk of damage to the cuff).

C. Assembly

Measurement to be taken before the first commissioning.

Spread the flanges sufficiently to slide the valve freely without causing damage (without contact).

Ensure that flanges are parallel and aligned.

Place the seals next to the flange faces.

Center the tap by assembling the tie rods trapped in the guidance ears of the body (Butterfly closed).

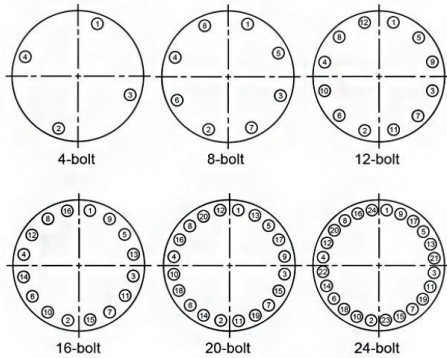
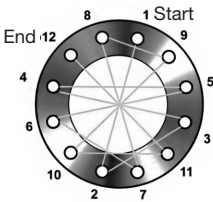
Gradually tighten the diametrically opposed tie rods alternately until the valve body has contact with the flange faces.

Control after assembly: perform a complete opening and closing of the throttle to ensure that nothing opposes its travel.

Mount the valves with diameter > 20" with the horizontal shaft.

Tighten the cable press moderately, but enough to ensure its tightness.

C. Bolting Instructions



Bolt Pattern Tightening Sequence

General

1. All cover styles
2. All nuts are to be tightened snug in a 90 degree pattern.
3. After all nuts are snug, then apply full torque per specification for unit.
4. When adding full torque, nuts should also be tightened in a 90 degree pattern.

For Four and Eight-Bolt Flanges:

1. 1st Round - 30 percent of final torque
2. 2nd Round - 60 percent of final torque
3. 3rd Round - 100 percent of final torque
4. Final Round - Clockwise or Counter-Clockwise around the flange

For Flanges with 12 or More Bolts:

1. 1st Round - 20 percent of final torque
2. 2nd Round - 40 percent of final torque
3. 3rd Round - 80 percent of final torque
4. 4th Round - 100 percent of final torque
5. Final Round - Clockwise or counter-clockwise around the flange

E. Troubleshooting

Issue	Causes	Solutions
Non-Waterproof Valve Internal Leak	Leaking Valve	Close the valve
		Control actuators
	Foreign body preventing the butterfly from closing	Open the pipe, control and remove the foreign body
	Damaged seal	Replace the seal
External leak (Shaft/axis)	Damaged sealing Press tow not tightened	Replace the seal Tighten the tow press
	Damaged lid seal	Replace the lid seal
External leakage (flange)	Damaged flange seal	Replace the seal
	Poorly assembled seal	Disassemble and reassemble the assembly. Replace the seal if necessary
	Damaged seal & seat	Replace seals and seat
High valve torque	Poorly assembled seal	Disassemble and reassemble the assembly. Replace the seal if necessary
	Damaged seal	Replace the seal
	Shaft and actuator not aligned	Align the shaft and actuator
	Deformed tree line	Replace the valve
The valve does not work	Damaged seal	Replace the seal
	Poorly assembled seal	Disassemble and reassemble the assembly. Replace the seal if necessary
	Foreign body preventing the butterfly from closing	Open the pipe, control and remove the foreign body
	Faulty actuator	Increase air pressure Check and replace the actuator if necessary
	Damaged Shaft/Actuator Coupling	Replace the key, shaft or actuator

G. Pre-Commissioning Protection

If a valve is assembled on a pipe more than 6 months before its commissioning, the following operations must be carried out:

- Perform an opening and closing cycle 1 time per month.
- Leave the valve in the open position.
- Before the valve is put into service, we advise you to have the good condition of the valve checked by a technician as part of an after-sales service.

IV. Maintenance

The valve has been designed to operate for a long time without maintenance. Depending on the conditions of use, the frequency of valve service is recommended every 15,000 cycles or every year.

When service is necessary, check:

- External sealing either to the axis or to the flanges.
- Internal sealing.
- The maneuverability of the valve.

When one of these defects appears, the change of joints is necessary.

WARNING

Depressurize the pipe before performing any maintenance on the valve.

If this instruction is not respected, this intervention can cause serious accidents of the personnel and / or significant damage to the equipment.

Limited Warranty: Mueller Steam Specialty warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge. This shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication or improper installation of the product. **THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** Any implied warranties that are imposed by law are limited in duration to one year.

Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult applicable state laws to determine your rights.



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