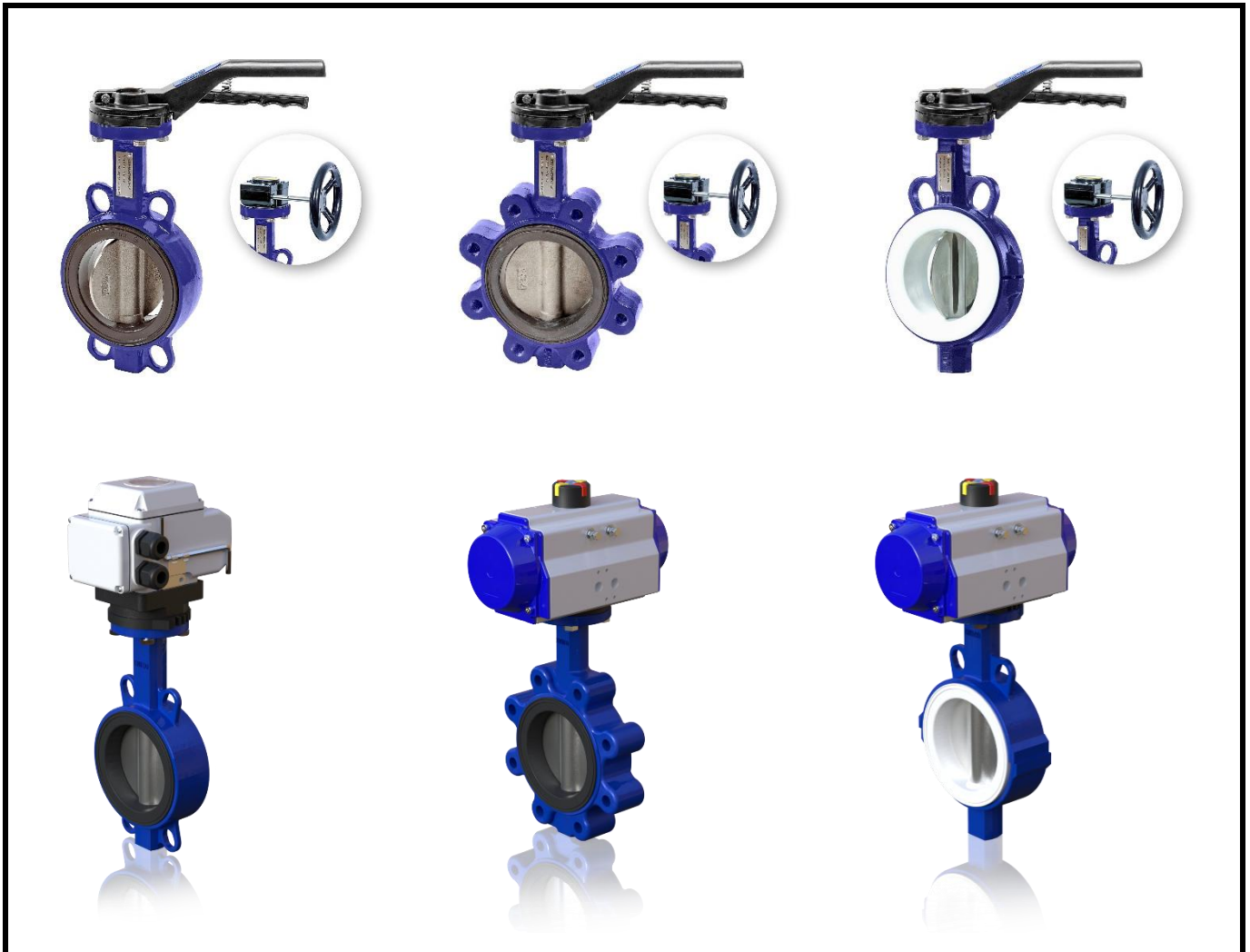


BUTTERFLY VALVES Type WAFER | LUG

CENTRICALLY LINED-RESILIENT SEATED



This operating manual contains essential information on the installation, operation, maintenance, and storage of WESA butterfly valves. Please read this manual carefully and keep it for future reference.

Installation, maintenance, and servicing of the butterfly valves may only be carried out by trained and qualified personnel.



CAUTION

Failure to observe the following instructions and warnings may result in hazards to people and property. In addition, the distributor's warranty may become void.

For technical questions or further information, please contact the distributor.

1. INTENDED USE



Purpose of the Butterfly Valves
WESA butterfly valves are intended solely for installation on or between the flanges of a piping system and, after connecting the actuator to the control system, for controlling media within the approved pressure and temperature limits. They are designed to:

- shut off the flow,
- allow the passage of media, or
- regulate the flow rate.



Caution!-Safety Notice Machinery Regulation!
The valves are not complete machines within the meaning of the **EU Machinery Regulation (EU) 2023/1230**. However, they comply with the **essential health and safety requirements** of this regulation that are applicable to them.
Commissioning is **only permitted** when:

- the valve is securely **connected to the pipeline on both sides**
- **the actuator has been properly mounted** and connected, and
- **there is no risk to persons** from moving parts or escaping media.



Warning-Improper Use
Any use outside the operating conditions specified in this manual is considered improper.
This specifically includes:

- use with media that is not approved
- exceeding the pressure or temperature limits
- mechanical modifications to the valve.

Operation without appropriate safety measures or without a connected actuator. In the event of improper use, the warranty becomes void, and the manufacturer or distributor accepts no liability for any resulting personal injury or property damage.

Permissible Operating Limits (Example)

Parameters	Value Range	Note
Operating Pressure	Up to 16 bar	dependent on nominal size and material
Operating Temperature	–10°C up to +120°C	dependent on the sealing material
Medium	Liquids Gases	see approved media list
Installation Position	All types	preferably vertical shaft orientation



Note
Compliance with these regulations is a prerequisite for **safe operation** and for maintaining the warranty. In case of uncertainties or special operating conditions, please contact the **distributor or manufacturer**.

2. GENERAL SAFETY INSTRUCTIONS AND OPERATOR SAFETY GUIDELINES



General Information

The same safety regulations apply to **WESA butterfly valves** as to:

- the piping system into which they are installed, and
- the control system to which the actuator is connected.

This manual contains only **additional safety instructions** that must be observed specifically for the operation and maintenance of the butterfly valves. **Furthermore, additional safety**-relevant information may be provided in the operating manuals of the actuator units. It is the responsibility of the operator to ensure that the butterfly valves are used solely as **intended**, in accordance with the descriptions provided in this manual.



Warning – Safety Risks in Case of Non-Compliance

Failure to observe the precautions stated in this manual may:

- pose a risk to personnel, and
- cause damage **to the piping system or the valve**.

WESA-Armaturen GmbH, the distributor, assumes **no liability for damages** resulting from corrosion, **abrasion, or chemical effects** of the process media.



Responsibility for Materials and Installation

It must be ensured that:

- the materials of the valve parts in contact with the medium are suitable for the medium used, and
- the valve has been properly installed in the piping system.



Pressure and Temperature Limits

Caution!

No valve may be operated if its **approved pressure or temperature range** is insufficient for the actual operating conditions. These limits are specified on the **nameplate**. For applications **outside these limits, approval from the manufacturer is strictly required**. Failure to comply with this requirement may pose a **risk to life and limb** and can cause significant damage to the piping system.

3. TRANSPORT AND STORAGE

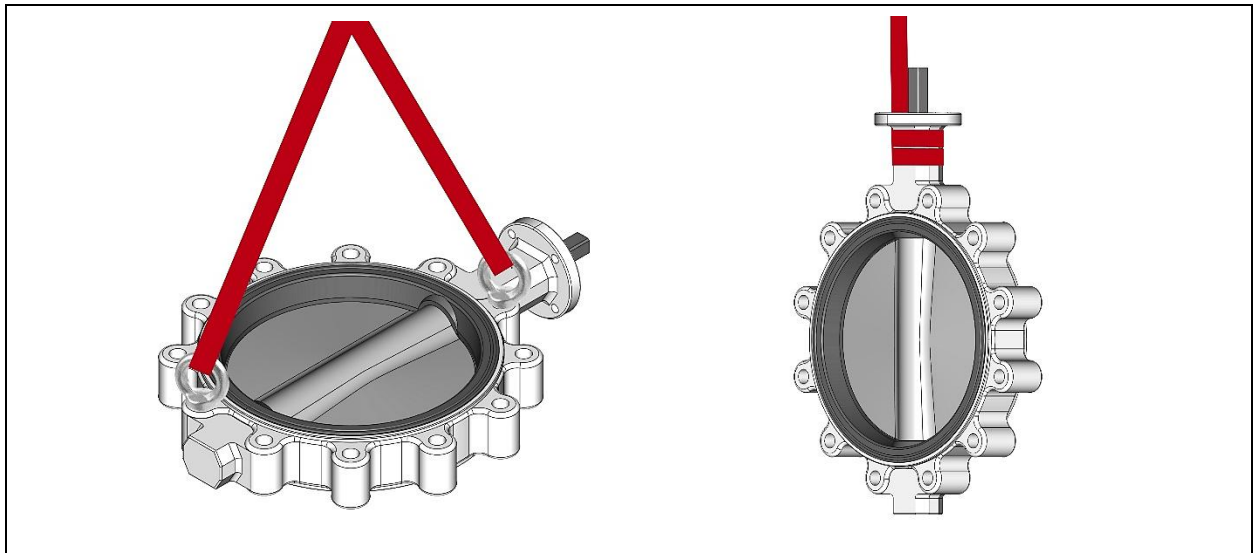
General

The following points must be strictly observed to ensure proper transport and storage of WESA butterfly valves, in order to prevent damage and impairments to functionality.

Transport Instructions



- Keep the valve in its original packaging until it is ready for use (installation).
- Protect the valve from impacts, dirt, and moisture during transport.
- Attach lifting straps or hoisting devices only to the designated lifting points (see corresponding illustration).
- Large valves must not be suspended or lifted by the gearbox or actuator.
- Always avoid damage to the valve disc and flange sealing surfaces during transport.



Storage Instructions



- Store valves only in closed, dry rooms.
- The storage surface must be level, clean, and dry.
- The butterfly valve must not be placed on the sealing surface or valve disc.
- For prolonged storage, regularly check for moisture or corrosion.
- If the valve is to be stored for an extended period, the seals should be lightly **greased and the flange openings sealed**.

4. TRANSPORT INSTRUCTIONS FOR VALVES WITHOUT ACTUATOR



- For valves delivered without an actuator, the valve **disc is not secured against movement**.
- The valve must be transported in such a way that the disc cannot be displaced from the transport **position by external influences (e.g., vibrations, impacts)**.

5. INSTALLATION SAFETY INSTRUCTIONS

General Notes



- **Installation of valves** into the system may only be carried out by **qualified personnel**.
- Qualified personnel, within the meaning of this manual, are persons who, due to their **training, knowledge, and professional experience**, are able to **correctly assess and perform** the assigned tasks and **recognize and eliminate potential hazards**.
- The function of a valve after installation **must correspond to its intended use**.

Safety Regulations During Commissioning



- A valve that is **not secured in a fixed position must not be subjected to pressure**.
- **Operation of an actuator** mounted on a valve is only permitted as long as the valve is enclosed on **both sides by a section of pipe or equipment**.
- **Premature operation may cause a risk of crushing** and is the sole responsibility of the user.
- **Valves** that close a pressurized section **at the end of a line** must be secured with a blind flange to **prevent any external leakage**.

6. INSTALLATION OF A BUTTERFLY VALVE INTO THE PIPING SYSTEM

Preparation



- Only install butterfly valves whose pressure **rating** and **materials** are suitable for the **intended operating conditions**.
- Refer to the nameplate for specifications.
- Normally, the valve should be factory-adjusted and ready for operation with a **manual lever, gearbox handwheel, or actuator**.
- A **butterfly valve without visible transport damage** should be stored in its **original factory packaging** until installation.
- The outer edge of the disc is finely machined to ensure tight sealing. Avoid any **damage** during handling.

Flange and Pipeline Requirements



- Flanged valves must be installed on or between flanges **according to EN 1092-1 or EN 1759-1**.
- Gasket surfaces of **type A or B** must be **machined flat and parallel**, and **aligned correctly**.
- Other flange types or gaskets may only be used **with the manufacturer's written approval**.
- The **internal diameter of the mating flanges** must be sufficient to **prevent** the valve disc from being **damaged** when it swings open.
- **Internal surfaces of the valve and pipe sections** must be **free of debris** (e.g., weld spatter, rust particles).
- Contaminants can damage the **sealing surface** and render the valve unusable.

Installation Instructions



- Install the butterfly valve in a **(nearly) closed position** to protect the **sealing surface** of the disc.
- Pipe ends must be **aligned** and the **connecting surfaces flat and parallel**.
- Gaskets are normally **not required** for centric valves.
- The sealing surfaces of the butterfly valve are already lined with **elastomers or polymers**.
- Mating flanges must be **smooth** and **full-surface** (Form A or B, EN 1092-1 / EN 1759-1).
- Any non-standard flange types **must be approved by the manufacturer**.
- The lining inside the valve body **must not come into contact with grease or mineral oil-based lubricants**.
- Check the valve and actuator for **transport damage**. **Do not install** damaged components.

Installation Orientation and Actuator

- Preferred **installation position**: valve shaft **horizontal**.
- The gearbox should, if possible, **not be mounted directly below the valve** to avoid damage from potential leakage along the shaft.

Special Cases: Butterfly Valves Without Actuator



- Butterfly valves delivered **without an actuator must be installed** in the **closed position** and only opened **after the actuator is retrofitted**.
- An **installation manual for the actuator** must be provided by the actuator manufacturer.
- **The torque** must be adapted to the valve, and the **end stops "OPEN" and "CLOSED" correctly adjusted**.
- It must be ensured that a **valve without an actuator** is not subjected to **pressure before the actuator is installed**.

Additional Installation Instructions

- Butterfly valves for **installation between flanges** must be **carefully centered** during installation.
- Butterfly valves can be installed **regardless of the medium's flow direction**.
- After installation, the valve disc should be opened to **flush the pipeline**, ensuring pipe sections are **free of contaminants** before the valve is closed for the first time. For **connecting an actuator to the system-side control**, follow the **actuator manufacturer's instructions**.

BUTTERFLY VALVE AS END VALVE AND WITH ACTUATOR (LUG)

- If a butterfly valve is installed as an **end valve** and subjected to pressure, it must be **sealed with a blind flange**.
- Purpose: **Protection of personnel and property** in case of leakage or unauthorized opening.
- For **connecting an actuator** to the system-side control, follow the **manufacturer's instructions** of the respective actuator.

BUTTERFLY VALVE WITH PNEUMATIC ACTUATOR

- Pneumatic actuators are **delivered and set according to the order specifications**.
- **Changes to the opening and closing stops** without manufacturer approval **are not permitted**.
- If a valve is delivered **without an actuator**:
It may be installed but must not be subjected to pressure. If an actuator is retrofitted:
Torque, rotation direction, stroke, and end stops for opening and closing **must be checked and correctly set**.

Note: Non-compliance can lead to serious or fatal injuries as well as property damage.

BUTTERFLY VALVE WITH ELECTRIC ACTUATOR

- The **actuator must be switched off** in the **end positions by the signal from the limit switch**.
- The signal from a **torque switch** serves for **fault indication** and must be **addressed immediately**.
- Further instructions can be found in the **electric actuator manual**.

Functional Check After Installation

- **Manually operated butterfly valves** (lever or handwheel) must be able to **achieve the full swing angle** quickly with normal force.
- **Attached actuators** must move **smoothly** to the "OPEN" or "CLOSED" **positions** according to the marked control data.
- **Faulty control commands** can **pose risks to personnel** and cause **damage** to the piping system.
- **Any visible functional defects** must be corrected **before commissioning**.

7. PRESSURE TESTING AND COMMISSIONING

Danger to life!



110

Note:

- All butterfly valves have been factory-tested by the manufacturer **according to EN 12266-1**.
- For **pressure testing a valve in the system**, the **test conditions of the pipeline section** generally apply, with the following restrictions:



Test Pressure

- The **test pressure** of a valve **must not exceed $1.5 \times PS$** (PS = nominal pressure according to the valve nameplate).
The valve disc **must be in the open position** during testing.
- If a **closed butterfly valve** is subjected to more than **$1.1 \times PS$** , there is a **risk of overloading** internal parts of the valve.



Removal and Handling After Operation – Safety Instructions

- **Safety rules:** The same regulations apply as for the **pipeline system** and installation.
- **Before performing any work:** Ensure that the **pipeline is released, depressurized, and drained**.



Removing the Butterfly Valve

- **Make sure the valve is fully closed**
- **Remove flange bolts** and **spread flanges** using suitable tools.
- **Pull out the valve:**
- **Do not damage flange sealing surfaces.**
- Store the valve in a **well-protected** manner.
- **Protect the sealing surfaces.**



Handling Contaminated Media

- If a valve is removed from pipelines containing **hazardous media**, the **product-contacting parts** (disc, shaft, seat ring) must be **professionally decontaminated** before any repair work.
- After removal, the valve body lining **must not come into contact** with **grease, especially mineral-oil-based grease or oil**.

8. OPERATION AND MAINTENANCE-SAFETY INSTRUCTIONS



Basic Rules

- The valve's function must always correspond to its intended use.
- Operating conditions must comply with the specifications on the valve's nameplate.
- Work on the valve may only be carried out by qualified personnel.
- "Qualified" in the context of this manual refers to persons who, due to their education, expertise, and professional experience, can correctly assess and perform the work and recognize and eliminate potential hazards.



Work on the Valve

- Before loosening closure screws, bolts on the valve cover, or before removing the valve, pressure in the system or pipeline section on both sides of the valve must be fully relieved.
- Purpose: Prevent uncontrolled release of the medium.
- Operating an actuator on a valve is only permitted when the valve is enclosed on both sides by pipe or equipment sections.
- Any operation beforehand presents a risk of crushing and is the sole responsibility of the user.



Mode of Operation-Actuation

Manual Operation

- The valve closes clockwise and opens counterclockwise.
- A manually operated butterfly valve requires normal hand force.
- Do not use extensions on the handwheel (e.g., "valve hooks" or similar).



Automatic Operation

- Butterfly valves with actuators must be operated according to the control signals.
- Valves delivered from the factory with an actuator are precisely calibrated at the factory.
- This calibration in the gearbox/actuator must not be adjusted as long as the valve functions correctly.



Maintenance

- The only required maintenance is a visual inspection of the flange connection for external leaks at appropriate intervals.
- For butterfly valves that remain permanently in one position, it is recommended to operate them periodically to ensure free movement.





9. TROUBLESHOOTING ASSISTANCE

When rectifying malfunctions, **safety instructions must be strictly observed.**

TYPE OF DISORDER	INTERVENTION
“LEAKS AT THE FLANGE CONNECTION”	Seal the flange connection between the housing and the pipeline: Follow the instructions in the pipeline operating manual and the installation instructions of the valve. If the leakage cannot be eliminated by tightening the flanges, ensure that the pipeline flanges are properly aligned and parallel.
“LEAK AT THE SEAL”	Check whether the valve is fully closed with the full operating torque. If the valve remains leaky in the closed position, operate the valve under pressure several times by opening and closing it. If the leakage persists, contact WESA.
“MALFUNCTIONS”	Remove the valve, observe, and inspect it. If the valve is damaged, contact WESA.



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