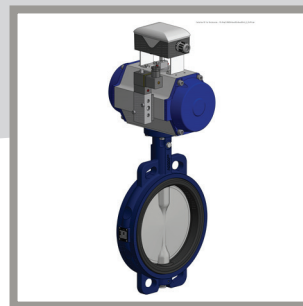
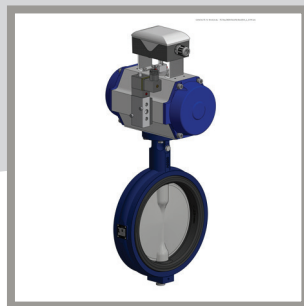
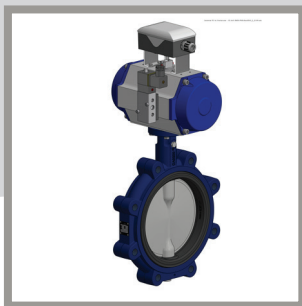


CENTER LINE *RS*

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OPERATING MANUAL

CENTER LINE Butterfly Valves Series RS with Actuator



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CENTERLINE Butterfly Valves, Series RS with Actuator

1. Introduction

This manual is to support the user with the installation, operation and maintenance of CENTERLINE butterfly valves of the RS type.

CAUTION

If the following attention and warning notes are not adhered to, dangers could arise and the warranty of the manufacturer could become void.

In case of further questions please contact the manufacturer, Xomox International GmbH & Co. OHG; addresses see section 9.

2. Intended use

These valves are exclusively designed to shut off or release pipe sections or to control the flow after installation in a pipe system between or on flanges and to shut off, enable or control the flow within the permissible pressure and temperature limits after the actuator has been connected to the system control. This is to take place after the installation in a pipe system

- between flanges in accordance with EN 1092-1 (Type 11 blank flange with PN designation) or EN 1759-1 (Type 11 blank flange with class designation), with even sealing strips. These have to be mechanically processed parallel and level and which have to be flush. The installation between other flanges and / or other sealing strips listed above is permitted only after technical checking back with Xomox International GmbH & Co. OHG.
- media with maximum operating pressure PS, which is indicated on the name plate of the butterfly valve,
- with a maximum operating temperature, which is permissible for the body lining indicated on the name plate of the butterfly valve – see data sheet <Chemical resistance of the housing lining>,
- after connection of the actuator to the control system.

Any other use of the valve is considered unintended.

CAUTION

If a valve is used in continuous operation for controlling purposes, the hydraulic flow parameters are to be selected in such a way that no damage can arise in the valve and in the discharge-sided pipeline due to excess speed. In case of doubt please check with the manufacturer!

3. Safety notes

3.1 General safety notes

To valves the same safety regulations apply as to the pipe system in which they are installed and to the control system to which the actuator is connected. This manual you have at hand only provides such safety notes which are additionally to be observed for valves.

Additional safety notes for actuator assemblies are included in the manuals of the assembly manufacturer.

3.2 Safety notes for the operator

It is not the responsibility of the manufacturer Crane / Xomox International GmbH to ensure that

- the valve is only used as intended, as it is described in section 2,

DANGER

No valve must be operated above the permissible pressure/ temperature range of which is insufficient for the operating condition: this permissible range is described in section 2. The application limit for the maximum permissible operating pressure PS is marked on the valve. The non-compliance of this instruction involves a risk to life and limb and may cause damage to the pipe system.

It has to be ensured that the selected materials of the medium-contacting valve parts are suitable for the used media. The manufacturer does not assume any liability for damage resulting from corrosion caused by aggressive media. The non-compliance of this instruction may involve a risk to life and limb and cause damage to the pipe system.

- an actuating unit which was subsequently mounted on the valve is adapted to the valve and correctly adjusted in both end positions of the valve – especially in the closing position,
- the pipe system and the control system were professionally mounted. The wall thickness of the valve body is dimensioned so that in such professionally routed pipelines additional loads of the standard range are considered,
- the valve is professionally connected to these systems,
- in this pipe system the usual flow rates (e.g. 4 m/s for liquids) in continuous operation are not exceeded and abnormal operating conditions such as vibrations, water hammer, temperature shocks, cavitation and less than significant portions of solids in the medium – especially abrasive ones - are co-ordinated with the manufacturer, Xomox International GmbH & Co. OHG,
- valves which are operated at operating temperatures of >50°C (122°F) or <-20°C (-4°F) are protected against

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- contact together with the pipe connections, the valve is only operated and maintained by personnel experienced in pressurized pipelines.

3.3 Particular dangers

DANGER

The pressure in the pipeline must be reduced prior to the loosening of the shaft locking screw or valve removal from the pipeline. This will ensure the medium doesn't escape from the line.

CAUTION

For valves which are used as terminal valves: With normal operation, especially with gaseous, hot and/or hazardous media, a dummy flange or a sealing cover has to be mounted on the free connecting socket with the valve securely locked in the "closed" position.

If a valve has to be opened in a pressurized line including a terminal valve, this must be performed with utmost caution so that any escaping media doesn't cause any damage. Take care when closing such a valve: danger of squashing!

If a valve has to be removed from a pipeline, medium may escape from the line or the valve. In the case of media which are harmful to health or hazardous the pipeline has to be completely empty before the valve is removed. Take care with residual media.

4. Transport and storage

Valves have to be handled, transported and stored carefully:

- The valve is to be kept in its original packaging exp./ or with the protection caps on the flange connections. The valves should be kept and transported (also to the installation site) on a pallet (or supported in a similar way).
- If there is no damage to the packaging, valves should be unpacked just before their installation in the pipeline.
- In the case of storage prior to installation, the valve and actuator should be stored in a closed room and to be protected against harmful influences including dirt or moisture.
- The actuator and the sealing beads on the flange connection faces must not be damaged by mechanical or any other influences.

- Valves are to be stored as delivered. The actuator must not be activated.

CAUTION

If lifting tackles (ropes or similar) are required for transport, these have to be attached in such a way that the actuator is not stressed and that neither the valve nor the actuating unit are damaged.

CAUTION

Valves which are delivered without actuator: The valve has to be transported carefully: the unsecured valve disc may open from closing position due to external effect.

CAUTION

Valves with actuator type "safety position OPEN". The valve disc protrudes from the body on both sides. The protruding edge of the valve disc has to be protected against any damage: if the sealing surface on the disc edge is damaged, the butterfly valve will not have an effective leaktight operation!

5. Installation in the pipeline

5.1. General remarks

With the installation of the valves in a pipeline the same instructions apply as to the connection of pipes and similar piping elements. The following instructions additionally apply to valves. For the transport to the installation site please also observe section 5.

CAUTION

With CENTERLINE Butterfly Valves of the Series RS no separate flange seals must be used: the elastic body lining features integrated sealing beads, which seal on the sealing strips of the counterflanges. Counterflanges must feature smooth sealing strips e.g. blank flanges in accordance with the EN 1092-1 Type 11 with packing strip in accordance figure B1 and B2 or EN 1759-1 Type 11 with packing strip according figure B or E. Other flange shapes are to be agreed on with the manufacturer, Crane / Xomox International GmbH.

The actuator is adjusted for the operating data stated in the order:

The setting of the end stops "OPEN" and "CLOSED" must not be altered without the consent of the manufacturer, Xomox International GmbH & Co. OHG.

If – in an exceptional case – a valve has to be mounted without actuator, it has to be ensured that such a val-

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ve is not pressurized. If an actuating unit is retrofitted, torque, direction of rotation, actuating angle and the setting of the end stops "OPEN" and "CLOSED" have to be agreed on with the manufacturer, Xomox International GmbH & Co. OHG. The non-compliance of these instructions might involve danger to the user and cause damage to the pipe system.

Valves with electric actuator:

CENTERLINE Butterfly Valves of the series RS have to be shut off in a direction-dependent manner in both end positions. The signals when the torque switch responds are to be used for the "fault" message. For further notes please refer to the manual for the electric actuator.

5.2 Working steps

- Transport valve in the protective packaging to the installation site and unpack it only there.
- Inspect valve and actuator for damage in transport. Damaged valves or actuators must not be installed.
- Make sure that only valves are installed the pressure class, connection type and connection dimensions of which meet the application requirements. See name plate on the valve. The connection data for the actuator have to correspond to the data of the control. See name plate on the actuator. The name plate or signs on the valve have still to be identifiable after commissioning.

DANGER

No valve must be operated above the permissible pressure/ temperature range of which is insufficient for the operating condition: this permissible range is described in section 2, <Intended use>. The non-compliance of this instruction involves a risk to life and limb and may cause damage to the pipe system.

- The counterflanges have to feature a clear span allowing for sufficient space for the opened valve disc so that the latter is not damaged when being swivelled out. This corresponds to the "U" dimension in the Crane Flow data sheets <Dimensions and weights>, see section 9, <Information>.
- Prior to installation the valve and the down-stream pipeline should be thoroughly cleaned of any contamination, especially of hard foreign substances.
- CENTERLINE Butterfly Valves of the series RS can generally be installed irrespective of the flow direction; however, from DN 250 onwards they are preferably to be installed with horizontal shaft.

NOTE

With solids-bearing media it is strongly recommended to install the butterfly valve in any case with horizontal shaft. If the solids form deposits, the butterfly valve is to be installed in such a way that the bottom disc half opens in flow direction.

- When inserting the valve (and the flange seals) in an already mounted pipeline the distance between the pipe ends has to be positioned in such a way that all connecting surfaces and the elastic body lining remain undamaged. The gap, however, should not be larger than necessary so that no additional stress is generated in the pipeline during installation.

CAUTION

The valves have to be mounted with a closed valve disc in the gap between the pipe ends: otherwise the valve disc could be damaged and the valve could leak.

Butterfly valves with actuator "safety position OPEN": For the installation in an existing pipeline the opened valve disc has to be closed with control medium and inserted into the line and screwed on in a completely closed state.

Ensure that for the duration of the installation process a supply with control medium is available with full control pressure for the closing of the butterfly valve.

If this is not possible, a part of the pipeline has to be removed so that the valve can be installed in opened position. The non-compliance of this instruction could cause injury.

- The counterflanges of the pipeline have to be flush, level and parallel.
- Screws which are used in threaded holes of the valve housing are to be implemented with a separating agent (e.g. graphite-containing).
- Flanged butterfly valves are to be centered on the counterflange during installation by means of the flange screws before the screws are tightened.

CAUTION

CENTERLINE Butterfly Valves of the series RS partly require screws of a varying length for the connection to the counterflanges. For the measurements for the flange screws please refer to Crane Flow data sheets <Screw dimensions>.

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- The flange screws have to be tightened diagonally. With metal flanges the body of the butterfly valve must fit to the sealing strips of the counterflanges with proper contact all round.
- In the case of plastic line systems with FRP flanges the torque limit values of the respective pipe and flange manufacturers are to be observed for the tightening of the flange screws.
- With the connection of the actuator to the control the actuator manual manufacturer applies.
- At the end of the installation an operational check with the signals of the control should be carried out: the valve has to close and open properly according to the control commands. Discernible malfunctions are absolutely to be redressed prior to commissioning. See also section 8, <Troubleshooting>.

CAUTION

**A butterfly valve is not self-locking:
The actuator must not be removed as long as the butterfly valve is pressurized.**

NOTE

**A piston actuator is not self-locking:
Piston actuators require permanent supply with control pressure for all positions which are triggered under control pressure.**

CAUTION

Wrongly executed control commands can be hazardous.

6. Pressure test of the pipe section

With the pressure test of valves the same instructions apply as to the pipeline. In addition, the following applies:

- First thoroughly flush newly installed line systems in order to flood out all foreign substances.
- The testing pressure of an opened valve must not exceed the value of $1.5 \times PS$ (at $20^{\circ}C/ 68^{\circ}F$). The component with the lowest PN limits the maximum permissible testing pressure in the line section. (PS = maximum permissible operating pressure, see also name plate). A closed valve must only be pressure-tested with $1.1 \times PS$.

7. Normal operation and maintenance

The valves are to be operated with the signals of the control. Valves which were delivered ex works with the actuator are exactly adjusted and must not be re-adjusted as long as the valve is in perfect working order.

For the manual emergency actuation on the actuator (if available) normal manual forces are sufficient; the use of extensions to increase the actuation torque is not recommended.

Regular maintenance work on the valves is not required; however, when the line section is inspected no leakage must escape to the

CAUTION

... In such cases please observe section 8, <Troubleshooting>.
It is recommended to actuate valves which aren't opened or closed for periods exceeding six months.

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8. Troubleshooting

When rectifying faults section 3, <Safety notes>, must absolutely be observed.

Fault Type	Remedy	Note
Leakage on the flange connection or plug/ plate of the body cover	<p>In the case of leakage on flange connection or plug:</p> <p>Retighten screws.</p> <p>If contrary to the installation specification (see section 5.2) additional flange seal(s) was/ were used: Remove this/ these flange seal(s).</p> <p>If leakage cannot be redressed in this way or in the case of leakage out of the shaft bushing: Repair required: replace body lining, request spare part and necessary manual from Xomox International GmbH & Co. OHG. Observe section 3.3, <Particular dangers>.</p>	<p><u>Note 1:</u> In the case of leakage to the outside the fault has to be rectified immediately if the medium corrodes the body .</p>
Leakage in the seat seal	<p>Check whether the valve is closed 100%. If this is the case: Check whether the actuator closes with full torque.</p> <p>If the actuator is o.k.: Open/ close valve repeatedly under pressure.</p> <p>If the valve is still leaking: Repair required: replace body lining, request spare parts and necessary manual from Xomox International GmbH & Co. OHG. Observe section 3.3, <Particular dangers>.</p>	
Leakage on the shaft seal	<p>Repair required: replace body lining, request spare parts and necessary manual from Xomox International GmbH & Co. OHG. Observe section 3.3, <Particular dangers>.</p>	

Spare parts are to be ordered with all specifications in the name plate. Only original parts must be installed.

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Fault Type	Remedy	Note
Malfunction	<p>If actuator and control are o.k.: Remove and inspect valve (in observance of the notes from section 3.3, <Particular dangers>).</p> <p>If the valve is damaged: Repair required: request spare parts and necessary manual from Crane / Xomox International GmbH.</p>	<p><u>Note 2:</u></p> <p>If after the removal it is discovered that the body lining and/ or the disc are not sufficiently resistant to the medium, suitable materials are to be selected if according to the data sheet <Chemical resistance of the lining> a material of a higher resistance is available.</p>
When an actuator with spring reset needs to be removed	<div style="border: 2px dashed black; padding: 10px; text-align: center;">  RISK OF INJURY! Depressurize pipeline and uncouple actuator from the supply with control pressure before the actuator is removed from the valve. </div>	<p><u>Note 3:</u></p> <p>The outer edge of the disc has to be smooth and undamaged all round; otherwise the disc should be replaced.</p>

Spare parts are to be ordered with all specifications in the name plate. Only original parts must be installed.



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