

Installation, Operation & Maintenance Manual

Series ZNX-ID03 · Concentric Rubber-Seated Butterfly Valve · DN50 – DN300

Designed by ZNX Fluid Control.

IOM MANUAL

Doc. ZNX-ID03-IOM-01 · Rev. B · 2026-09

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How to use this manual

This manual covers receipt, storage, installation, operation and routine maintenance of the ZNX-ID03 concentric rubber-seated butterfly valve, sizes DN50 (2") through DN300 (12"). Read chapter 1 in full before any work is carried out on the valve. Keep this manual available at the installation site at all times. Instructions in this manual must be followed in the order in which they are presented.

For product dimensions, materials and ordering codes, refer to the ZNX-ID03 product datasheet (Doc. ZNX-ID03-DS-01), available from www.znxcontrol.com.

DN50 – DN300

PN10 / PN16

Wafer & Lug

–10 °C ... +150 °C

1. Safety & Specifications

The ZNX-ID03 is a robust industrial valve. Nevertheless, improper handling during transport, installation or maintenance can cause serious injury and property damage. The following signal words are used throughout this manual:

DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTE

Indicates useful information for correct and efficient valve operation and maintenance.

General safety instructions

1	Before any work on the valve, depressurise the pipeline, close the valve, and allow the system to cool down to ambient temperature.
2	Never loosen flange bolts or dismantle the valve while the pipeline is under pressure or carries medium.
3	When handling the valve, use suitable lifting equipment. Do not lift the valve by the hand lever, gear operator or actuator.
4	Wear protective gloves, safety shoes and eye protection during installation and maintenance.
5	Valves used for media other than water and air (e.g. acids, solvents, flammable gases) require a material review by ZNX Fluid Control before installation.
6	After maintenance, verify the pipeline is leak-tight before returning the system to service.

Specifications at a glance

Size range	DN50 (2") – DN300 (12")
Body style	Wafer · Lug (single-flange and bi-directional)
Pressure rating	PN10 · PN16 (ANSI 150 compatible)
Working temperature	–10 °C ... +150 °C (seat-dependent)
Body material	Ductile iron ASTM A536 65-45-12 · Cast iron ASTM A126
Disc material	Ductile iron · Stainless steel 304/316 · Aluminum bronze
Seat material	EPDM · NBR · Viton® (FKM) · PTFE
Stem material	Stainless steel 416 / 316 · 17-4PH on request
Face-to-face	ISO 5752 short pattern (Series 13 / 20)
Top flange	ISO 5211 / F05 / F07 / F10 mounting pad
Working media	Water · Air · Neutral liquids and gases
Coating	Fusion-bonded epoxy 250 µm, blue RAL 5017

Storage & handling before installation

1	On receipt, inspect the valve for transport damage; report any damage to the carrier and to ZNX Fluid Control immediately.
2	Keep the valve in its packaging: store indoors, dry, –10 °C to +40 °C, away from sunlight and heat sources.
3	Leave the protective end caps in place until the valve is mounted in the pipeline.
4	Store the valve slightly open (disc at ~10°) to avoid seat compression marks during long-term storage.

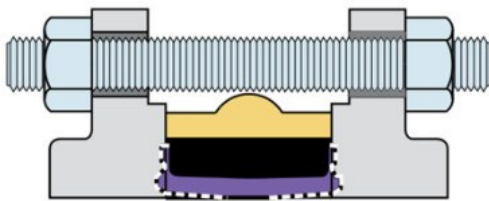
Pressure Rating

Three drop-tight pressure ratings are offered for butterfly valves. Normally, 200-psi shutoff is used in butterfly applications. However, 285-psi shutoff is optionally available for higher pressure applications. For smaller actuator sizing, 50-psi valves offer reduced torque. For reduced torque, throttling valves, which do not provide drop-tight closure, are available.

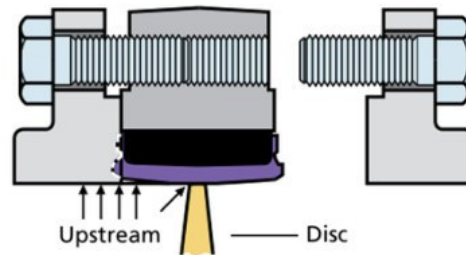
Actuation

Positive latch handles, worm gear operators and automatic actuators are available and interchangeable on the valve. The top flange is dimensionally compatible with other competitive butterfly valves. With the optional “utility top” stem, the valve interchanges directly with competitive valves allowing valve replacement without the need for new actuation.

Installation and Maintenance



Wafer Valve Connection



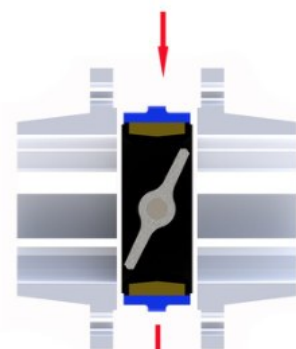
Lug Valve Connection

The butterfly valves are bi-directional, with identical flow way from either face. To install, simply close the valve, insert between flanges and make up with studs or capscrews. No regular maintenance or lubrication is ever required. Disassembly for inspection or replacement of parts is simple. Open the valve, remove handle or actuator, remove tangential pins, pull out the stems, and push the disc and seat out of the body. Reassemble in reverse order, with a small amount of general purpose non-hydrocarbon based lubricant on the outside of stems, seat and disc flats. Steel or cast iron flanges of either raised or flat-faced type are suitable for use with the butterfly valves.

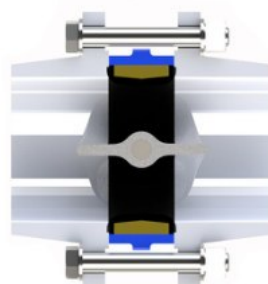
3. Installation Guide (I)

ZNX

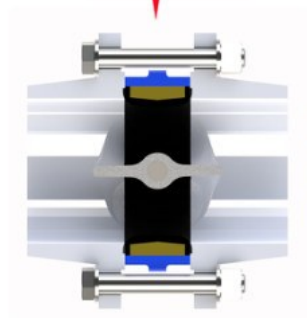
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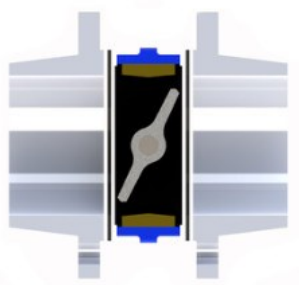
1 Leave a space between flanges so that valve can be easily inserted and removed and move the valve in accordance with the arrow



2 Open completely the valve before tightening flanges



3 Tighten bolts till flanges are in contact with valve body

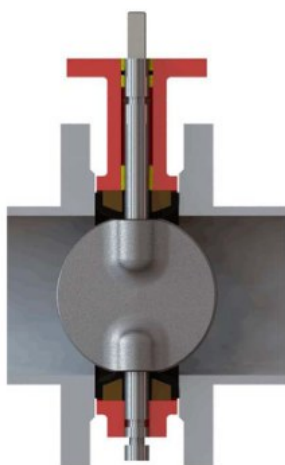


4 NOTE: do not insert other packing between flange and valve

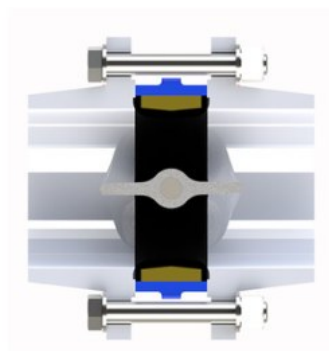
NOTE: Weld the pipe only in spots with the valve between flanges. Remove the valve before finishing welding to avoid that heat damage the seat. Clean carefully the welding to avoid that slags damage the seat

Installation for powders and muddy fluids

In case of use with powders or muddy fluids, install the valve with horizontal rotation axis, to allow sediments to flow easily on opening



Wrong
Vertical rotation axis



Right
Horizontal rotation axis

Installation Instructions

The butterfly valve can be installed on the pipeline, which is at any angle.

1. The valve should be installed in the location being sure to provide convenient operation, maintenance and replacement.

2. As mounting the butterfly valve, fail to consider flow direction of mediums in pipeline, that is to say, the valve can be used in double way.

3. Before installation, the butterfly valve should be stored in ware house and prevent it from moisture and in so doing, the disc should be kept to open at an angle of 15 degree.

4. Before installation, the following processes should be completed:

(1) Check carefully and confirm the operation condition of the valve is in line with the technical specification and requirements.

(2) Clean the disc sealing area and body sealing completely. It is not permitted to open the disc before cleaning.

(3) Check and confirm the handle is strongly collected to the flange and stem.

5. As mounting the butterfly valve in pipeline, the load for tightening connection bolts should be uniformed.

6. After installation, the disc must be opened in the case of the strength pressure test on pipeline being carried out.

7. After being installed, the valve should be examined regularly. The main item to be checked are as follows:

(1) Whether the valve seat and 'O' sealing ring have been damaged.

(2) Check the sealing effects of the disc sealing area.

(3) After the valve was examined and assembled, no scuffing happens at the time of on-off rotation.

(4) After the valve was examined and assembled, the sealing test should be carried out as the introduction.

(5) After each examination, detailed records should be filed for reference.



This product mainly consists of body, stem, disc, seat AL-Bronze bushings etc. The rotation of actuating device makes stem and disc revolved, which ensures on-off operations and flow control.

The rotation of the actuating device ensures dependability and position disc control and position disc control and water flow control. Rotate handle wheel clockwise, the valve is close.

Features

- 1.Small in size and light in weight. Easy installation and maintenance. It can be mounted wherever needed.
- 2.Simple and compact construction, quick 90degrees on-off operation.
- 3.Minimized operating torque, energy saving.
- 4.Bubbles-tight sealing with no leakage under the pressure testing
- 5.Wide selection of materials, applicable for various medium.
- 6.Long service life. Standing the test of tens of thousands opening/closing operations.
- 7.Flow curve tending to straight line. Excellent regulation performance.

Trouble & remedy

Trouble	cause	remedy
Leakage in sealing area	Disc sealing area or body sealing seat scratched, disc is not closed completely. Hexagonal socket head bolts on clamping ring are not tightened completely.	Repair the disc sealing replace repair the body sealing seat, adjust actuator to close the disc completely, tighten loosed hexagonal socket head bolts.
Leakage in shaft end	The seat or The 'O' ring is not pressed completely.	Replace the body sealing seat
Leakage in joint area between valve face and relevant flange on pipeline	Connection bolts are not screwed up uniformly.	Tighten the connection bolts evenly.

6. Spare Parts & Service

For ordering spare parts, always quote the valve serial number (found on the valve nameplate), the size (DN), and the spare part code from the table below. Recommended spare parts for commissioning and two years of operation are marked with ●.

Code	Spare part	Description	Rec.
S-01	Seat (resilient)	EPDM / NBR / FKM cartridge seat, field-replaceable, no special tools	●
S-02	Disc	Ductile iron / SS304 / SS316 / aluminum bronze, machined sealing edge	■
S-03	Stem	Stainless steel 416 / 316, one-piece or two-piece (DN50–DN150 / DN200–DN300)	■
S-04	Stem bearings	Upper and lower bushings, self-lubricating	●
S-05	O-ring set	Stem sealing O-rings, NBR / FKM	●
S-06	Lever / gear unit	Manual lever (DN50–DN150), worm gear unit (DN200–DN300), incl. ISO 5211 pad	■

● Recommended spare · ■ On request

Preventive maintenance schedule

Interval	Action
Each shift	Visual inspection for external leakage; verify disc position against the position indicator.
Monthly	Check that flange bolts remain tight; re-torque if necessary.
Every 6 months	Cycle the valve fully open ↔ fully closed at least three times to prevent seat seizure.
Every 12 months	Inspect the seat and disc sealing edge; replace the seat if leakage persists.
Every 5 years	Dismantle the valve, inspect stem, bearings and seat, replace all elastomer parts.

Seat replacement (field service)

1	Remove the valve from the pipeline and place it on a clean workbench with the flange faces horizontal.
2	Turn the disc to the fully-closed position, then remove the retainer screws and lift out the seat cartridge.
3	Clean the seat groove and disc edge; check the disc and stem for wear or corrosion and replace if required.
4	Fit the new seat cartridge (same material code as original) and secure the retainer screws cross-wise to the specified torque.
5	Cycle the valve open/closed three times and leak-test at $1.1 \times$ rated pressure before reinstalling in the line.

Returning to service

After any maintenance work, cycle the valve fully open and fully closed at least three times, verify the seat sealing, and pressure-test the pipeline section according to local regulations before returning the system to service.

Service & contact

Manufacturer	ZNX FLUID CONTROL CO., LTD
Website	www.znxcontrol.com
E-mail	zxn@znxcontrol.com
Technical support	Selection support, IOM documents in other languages, spare part kits
Warranty	24 months from date of shipment, subject to correct installation and operation per this manual