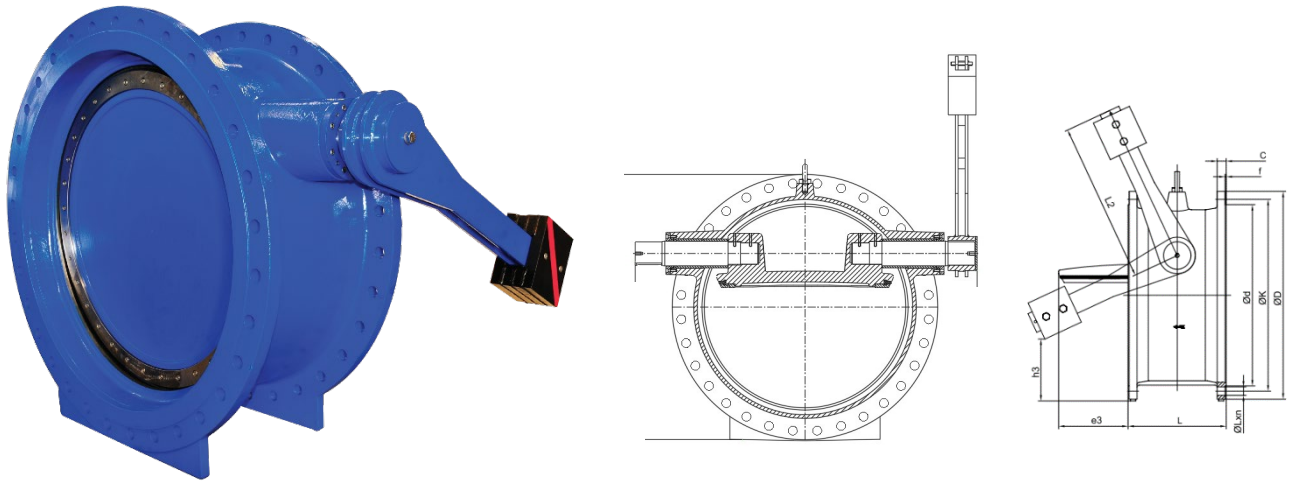


CORVALVE

TILTING CHECK VALVE

Description: Corvalve's Tilting Check Valves are versatile, designed for both horizontal and vertical installations in potable water systems. These robust valves feature customizable lever and counterweight design, with optional accessories such as a protection cover, limit switch, and hydraulic damper for enhanced operation and longevity.



Application:

Tilting Type Check Valves are designed to have low head loss in normal operation and to have drip tight sealing in case of backflow. These check valves are commonly used in the downstream of pump stations, protecting crucial devices.

Features:

- **Versatile Installation:** This valve is suitable for both horizontal and vertical installations, making it adaptable to a range of pipeline configurations.
- **Potable Water Applications:** It is designed for use in potable water applications, ensuring clean and safe water flow.
- **Lever & Counterweight Design:** The tilting check valve features a lever and counterweight design, which aids in the accurate and efficient operation of the valve.
- **Single or Double-Sided Lever & Counterweight Options:** Users have the flexibility to choose between single or double-sided lever and counterweight options, allowing for customization to specific operational requirements.



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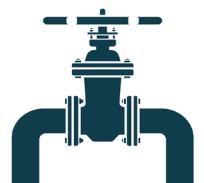
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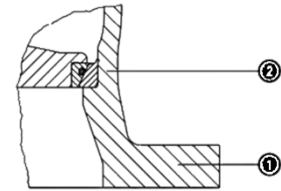
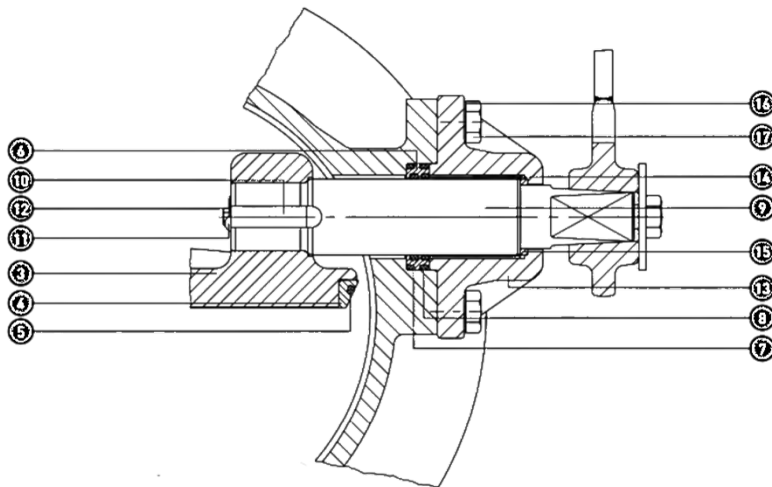


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- **Optional Protection Cover:** There's an available protection cover accessory upon request. This is used to protect the lever movement and ensure longevity of the valve.
- **Limit Switch Accessory:** Upon request, a limit switch accessory can be added to enable SCADA communications and alarms. This accessory aids in remote monitoring and control, providing early detection of potential issues.
- **Hydraulic Damper Accessory:** Also available upon request is a hydraulic damper (dashpot) accessory. This contributes to a non-slam operation of the valve, reducing the risk of water hammer and subsequent damage to the pipeline system.

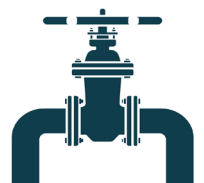
Construction



Material Specification

Parts	Main Materials	Optional Materials
Body	Ductile Iron	Carbon Steel
Cover		Stainless Steel
Disc		Nickel Aluminum Bronze
Shaft	X20Cr13	SS 304, SS 316, NAB
Bearings	Bronze	Brass, SS 304, SS 316, NAB
Retaining Ring	SS 304	SS 316, St 37
Seals	EPDM	NBR
Fasteners	SS 304	SS 316
Counter weight Lever	St 37	
Counter Weight	Cast Iron	Ductile Iron

PART NO.	PART
1	Body
2	Seat Ring
3	Valve Disc
4	Disc Facing Ring
5	O-ring
6	Spacer
7	O-ring
8	O-ring
9	Shaft
10	Key
11	Locking Plate
12	Hexagon Bolt
13	Flanged Bearing
14	Bush
15	Fitting Ring
16	Washer
17	Hexagon Bolt
18	Lever



Benefits of Tilting Disc Check Valves

- They feature a system that shuts swiftly and smoothly.
- These valves offer high stability even under conditions of low, pulsating flow.
- A moderate, average pressure drop is typically observed.
- They possess metal seats that are firmly sealed. The disc seats and shuts prior to any seat contact.

Pre-Installation Steps

Confirm Working Conditions: Ensure that the intended operating conditions are within the product's specified capabilities. Refer to the certified engineering diagrams for assistance.

Material Compatibility: Verify that the construction material of the DENZ Check Valve is chemically compatible with the substance flowing through the pipeline.

Test Valve Rotation: Prior to installation, turn the counterweight to ensure the valve's rotation is flexible and positioning is accurate.

Cleanliness Check: Make sure the interior of the valve and the pipeline are devoid of foreign substances like pipe scale or metal fragments, which could obstruct disc movement or cause valve damage.

Packing Seals: Inspect the packing seals. They should be tightly compressed before installation, but this should not prevent stem rotation.

Check Flange Distance: Ensure there's adequate space for valve installation by checking the distance between the pipe flanges.

Wedge Position: Make sure the wedge is fully opened or closed when under pressure. The wedge should not be used to adjust the flow rate.

Lubrication: Regularly apply lubrication to the stem screw during usage.

Regular Inspections: Perform routine checks on the valve's seal surfaces, stem, gasket, packing, etc. Any damaged parts should be promptly repaired or replaced.

Operating Principles

Tilting check valves work by allowing fluid flow in one direction and preventing backflow when fluid ceases or tries to reverse direction. The disc, which tilts open with forward flow and closes with backward flow, uses a unique tilting mechanism that requires less pressure to open, reducing pressure drop. The lever and counterweight design enable a controlled 'non-slam' closing, and optional accessories like hydraulic dampers provide further flow control.



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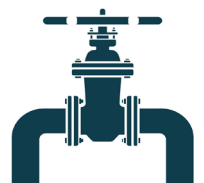
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Installation Steps for Tilting Check Valves

Safety Precautions: Before commencing installation, it's crucial that all pressurized lines are isolated, depressurized, and drained. Ignoring this step may lead to a sudden release of pressure resulting in serious injury or death.

Transportation and Handling: Care must be taken to protect the Corvalve Check Valves during transportation, loading, and handling. If using lifting devices such as a crane, always use the flange holes, lifting eyes, or suitable straps. The valve should never be hung by the lever or counterweight.

Pre-installation Inspection: Conduct a thorough visual inspection of the system before installation. Pay special attention to the stem, valve seat area, flanges, and coating. Look for defects, bent parts, dents, scratches, and any other damage. If defects are identified, the valves should be promptly repaired or replaced.

Assembly: The use of correct gaskets, bolts, washers, and nuts is essential when installing Corvalve's Check Valves with flanges. Bolts should be tightened in a criss-cross pattern and torqued appropriately to ensure a consistent pressure on the gasket surface. Align the valve flanges precisely. For bolt and nut sizes, please contact our sales team.

Flange Alignment: Ensure the pipeline's connecting flanges, which interface with the check valve, are arranged parallel to each other and perfectly aligned. This avoids tension loads on the valve body during installation. The connecting bolts must be tightened in a cross pattern to ensure a consistent seal of the flanges. Bolt tightening torques should be provided by the gasket supplier.

Testing: The trench should undergo pressure testing before it is backfilled post-installation. Secure the check valve and pipe against movement during testing. If water testing is conducted, ensure that the pipeline and valve are drained before proceeding with gas/air tests. Corvalve valves are designed to resist a test pressure of 1.5 times the PN value at open position and 1.1 times the PN value at the closed position.



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Double Eccentric Disc Design

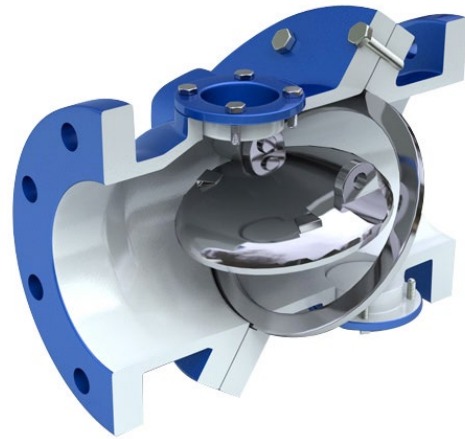
Corvalve's Tilting Check Valves utilize a flow-responsive double eccentric disc design. This innovative feature enables the disc to react quickly and open even at extremely low flows. Furthermore, when paired with the optional hydraulic damper accessory, operators have the flexibility to adjust the valve's opening and closing speed, which in turn provides cushioning to prevent slamming.

Superior Sealing Surface

The valve's stainless steel sealing surface is securely attached to the body through a weld overlay process. This welding is performed by a specialized Automated Welding Robot, ensuring consistency and precision. The surface is then polished to create a seamless finish and undergoes penetration testing for quality assurance. The end result of this rigorous process is a maximized wear-resistant seat where the sealing material is permanently bonded to the body. Moreover, the absence of uncoated threads on the body boosts the

Notes:

1. Different flange drillings are available, including ISO, EN, ANSI, and others.
2. The standard operating temperature range is -10°C to +80°C.
3. All RAL Colors are available.
4. Potable water certified coating is available.
5. Both thermoset and thermoplastic coatings are available.



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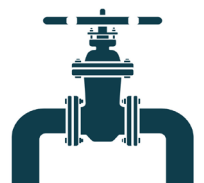
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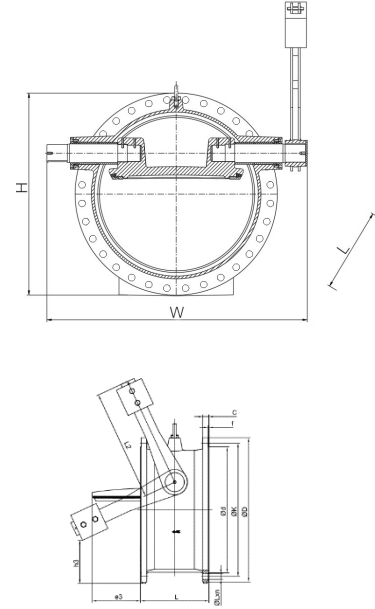


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CORVALVE

TILTING CHECK VALVE



Dimension (mm) & Weight

DN	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000	1200
Width	380	415	465	515	630	650	795	840	910	1000	1150	1350	1440	1580	1730	1912
Length	-	190	200	210	230	250	270	290	310	330	350	390	430	470	510	630
Height	225	255	290	345	410	465	525	585	645	720	845	915	1030	1130	1260	1490
Weight (Kg)	19	25	30	39	63	79	118	148	203	252	367	484	757	1027	1196	1800



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