



ÖZKAN

lead water to the next level

TILTING TYPE CHECK VALVES

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ÖZKAN .LEAD WATER TO THE NEXT LEVEL



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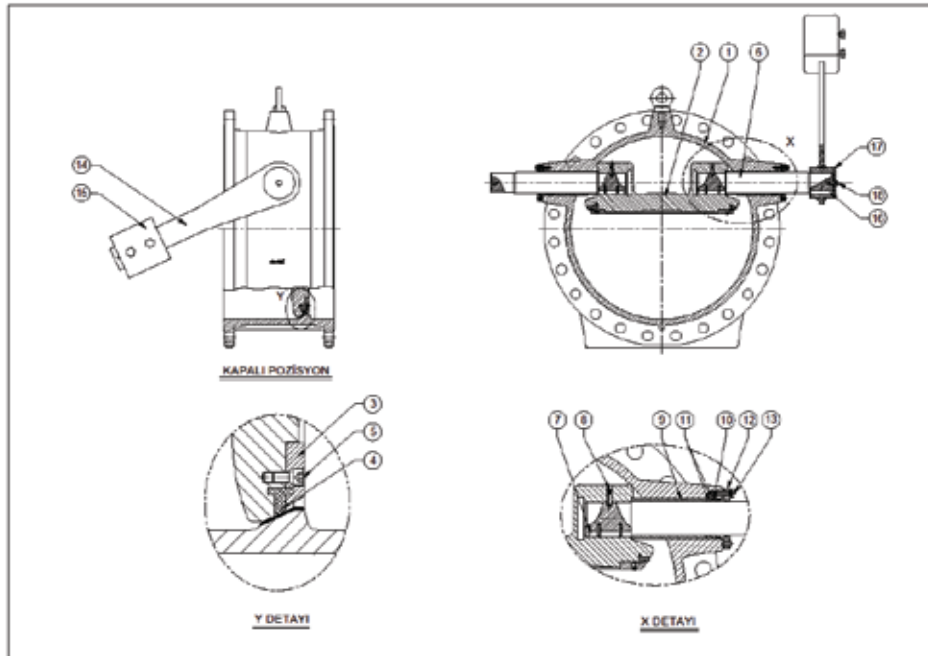
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1. INTRODUCTION



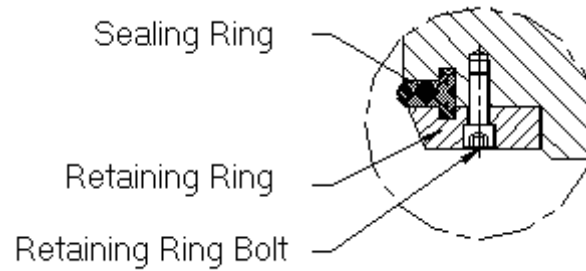
- ÖZ-KAN tilting type check valves are designed for preventing back flow in emergency situations without performing manual operation or using energy. These valves are used for isolating the water main in power failures and preventing back-flow.
- Tilting type check valves are equipped with lever and counter weight mechanism. Valve opens with the flow. Check valve closes with the help of counter weight when flow ceases.
- Closing characteristics of tilting type check valves can be adjusted by the help of counter weight located on the lever.



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- A resilient sealing ring on the periphery of the disc and an integral stainless steel seat on body provide sealing in tilting type check valves. Resilient sealing ring is attached to the disc by means of a retaining ring. In closed position, this resilient sealing ring is pressed on the cone shaped integral body seat therefore providing drop-tight sealing.
- Resilient sealing ring can be replaced easily without uninstalling the lever and counter weight mechanism. If the pipeline is big enough to enable a technician to work inside the pipeline, resilient sealing ring can be replaced without uninstalling the valve from pipeline.



- Tilting type check valve body has a stainless steel welded and microfinished body seat. Ni or AISI 316 stainless steel welding is used in order to prevent corrosion and mechanical damages, especially cavitation. Tilting type check valves which are specially manufactured for sea-water service are equipped with integral ductile iron body seats covered with hard rubber lining.

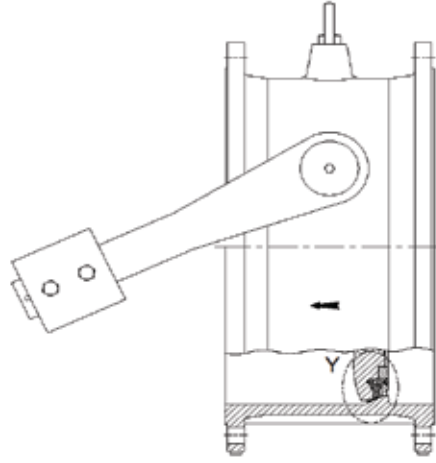
2. ASSEMBLY GUIDE & START-UP INSTRUCTIONS

- Valves should be thoroughly checked for possible damages before assembly. Although every single valve manufactured in our company is tested and inspected separately, some damages may occur due to rough handling and faulty transport. Resilient sealing ring on valve disc should be carefully checked before assembly. Especially in hot climates and dry storage conditions, EPDM sealing ring gets harder in time and does not perform its duty. If the sealing ring is damaged or has cracks on it, it must be replaced with a new one otherwise it may not perform its sealing duty under pressure. Changing method of the sealing ring is described in MAINTENANCE & REPAIRS section.
- Some lubrication material such as soft soap should be applied on resilient sealing ring and the body seat in order to provide easy operation on a dry pipeline before installation.
- Valves are equipped with lifting eyes for easy lifting. These lifting eyes and flange holes should be used for lifting valves.

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LIFTING EYE



WARNING : Never lift a tilting type check valve from lever or counter weight mechanism. This is extremely dangerous for the workers and may damage the valve beyond repair. Always check the weight of the valve and the crane capacity before lifting a valve. Never lift a valve that's weight is over the crane capacity.

The arrow on body indicating flow direction must be taken into consideration during installation. Otherwise check valve will not perform its duty.

Only recommended size bolts and nuts should be used for the assembly of valves. Otherwise there may be leakage from flange connections.

There mustn't be any obstacles around the valve that may prevent the free motion of the lever and counter weight. Also there mustn't be any obstacles on the upstream and downstream sides of the valve that may prevent the valve disc from reaching full open position.

WARNING : Pipes both on downstream and upstream sides of the tilting type check valve must be cleaned from all foreign particles before operating the pipeline. Otherwise these foreign particles will damage the resilient sealing ring of the valve.

All necessary precautions must be taken to prevent workers to access the lever and counter weight operation area.

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3. OPERATION PRICIPLES FOR TILTING TYPE CHECK VALVES

- Tilting type check valves do not require an operator. These valves work with flow. Check valve opens with flow and stay open during flow conditions.
- Check valve closes with the help of counter weight when flow ceases.
- Closing characteristic of the check valves with hydraulic dampers can be adjusted by the help of counter weight located on lever.
- Space left between flanges must be large enough to install the valve without damaging coating on raised faces. However flanges of pipeline must not be pulled towards the valve due an installation gap lerger than what is needed. Use of dismantling joints is stongly recomended .
- Tilting type check valves work completely according to flow conditions. Lever and counter weight mechanism can move very suddenly due to an electrical failure. Therefore all necessary precautions should be taken around the area surrounding the check valve.

WARNING ! MORTAL DANGER

All necessary precautions must be taken to prevent workers to enter the operation zone of the tilting type check valves. Otherwise there may be serious casualties because tilting type check valve operates automatically without warning in power failure. All necessary warning labels must be located to mark the perimeter of the tilting type check valve and no worker must enter this perimeter while the valve is in operation.

- Check valves specially manufactured for sea water service are equipped with hard rubber lining in order to protect the valve body from the corrosive effects of sea water. Hard rubber lining is applied by means of vulcanizing and it is non-replaceable.

WARNING : Hard rubber lined check valves are not suitable for operation with mediums containing solid particles. These solid particles may damage the rubber lining beyond repair, especially if they get stuck between the sealing ring and seat surface.

4. MAINTENANCE & REPAIR

- Tilting type check valves are specially designed for minimum maintenance requirements.
- If the flow does not cease even after the check valve disc reaches full closed position, then the sealing ring may be damaged and should be replaced. If the pipeline and the valve are large enough to enable a worker to work inside, then the resilient sealing ring can be replaced without uninstalling the valve from pipeline. If

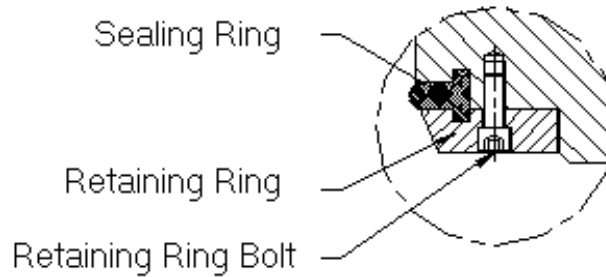
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the valve is not large enough, then it must be uninstalled from the pipeline to change the resilient sealing ring.

WARNING : Nobody must enter the pipeline, unless all pumps are stopped and at least two isolating valves on pressure side are closed. Pipeline must be completely discharged where the repairs will take place and must be well ventilated if the workers are going to enter the pipeline. There mustn't be pressure on both sides of the valve that is going to be repaired.

Check valve disc must be in slightly open position in order to replace the sealing ring. All retaining ring bolts must be removed. Retaining ring can be removed easily after removing all retaining ring bolts. After removing the retaining ring, damaged sealing ring can be easily removed from its T shaped channel on the disc.



After removing the damaged sealing ring, sealing ring grooves both on valve disc and retaining ring must be cleaned. Any remaining parts from the damaged sealing ring must be removed from the ring channels on the disc and the retaining ring.

New sealing ring can be installed after cleaning the sealing ring grooves on disc and retaining ring. Retaining ring can be reinstalled after the sealing ring is installed. Special care should be given to make sure that the sealing ring is properly fit to the channels both on disc and retaining ring.

Retaining ring bolts must be tightened cross wise after placing the retaining ring in its place.

- Valves that are not working or installed in “dead” mains and which are likely to remain closed for long periods, should be operated at least partially once a month. Through inspection should be carried out at least every six months.
- Please contact ÖZ-KAN Maintenance & Repair Service for your problems
Contact Telephone : + 90 232 3280600 (Pbx)
- Damaged coating can be mended by epoxy touch-up paint. Damaged area must be cleaned from dust, rust and oil. After cleaning the damaged area, touch paint can be applied.

5. SHUT DOWN & DISASSEMBLY INSTRUCTIONS

- Pumps must be stopped and at least two isolating valves on pressure side must be closed. Pipeline on both sides of the valve that is going to be disassembled must be discharged.
- Tilting type check valve that is going to be replaced must be closed completely.

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- Tilting type check valve must be connected to a crane from the lifting eye located on top of the valve. All flange bolts and nuts should be removed.

WARNING : Never lift a tilting type check valve from lever or counter weight mechanism. This is extremely dangerous for the workers and may damage the valve beyond repair. Always check the weight of the valve and the crane capacity before lifting a valve. Never lift a valve that's weight is over the crane capacity.

- Lift and separate the valve from pipeline with the help of the crane. Special attention should be given not to hit the valve to the pipeline.
- Valve should be left slightly open, if it is going to be kept in stock for while. Otherwise the resilient sealing ring will loose its profile under dry storage conditions and will not provide sealing when valve is reinstalled to the pipeline. Valve disc shouldn't be left in full open positions, because this will leave the valve disc vulnerable to mechanical damages.
- If the valve is going to be stocked lying on its flanges, valve should be kept on a wooden pallet and should not touch the soil. Flange surfaces should be protected from mechanical damages.
- Valve should be protected from direct sun light.

6. SPARE PARTS

- Resilient sealing rings can be supplied from ÖZ-KAN Center Office in Turkey in case they have to be changed.
OZ-KAN MAKINA ELEMANLARI SAN. ve TIC. A.S.
10008 Sok. No.15 Ataturk Organize Sanayi Bolgesi Cigli – IZMIR – TURKEY
Tel. 00 90 232 3280600 (Pbx) Fax. 00 90 232 3280609
Web Site : www.oz-kan.com E-mail : info@oz-kan.com

- Please use the format given below, to order sealing rings.

This order example is prepared for DN 500 PN25 sealing ring.

DN	PN	Material	Qty.
500	25	Tilting Type Check Valves Sealing Ring	2 pcs.

7. SERVICE POINTS

- Please contact ÖZ-KAN Center Office in Turkey, if service personnel are required. Our friends will answer you in shortest occasion.

OZ-KAN MAKINA ELEMANLARI SAN. ve TIC. LTD A.S.
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