



# ÖZKAN

lead water to the next level

## DYNAMIC AIR RELEASE VALVES

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ÖZKAN .LEAD WATER TO THE NEXT LEVEL



## INDEX

### 1. GENERAL INFORMATION

- 1.1 Tips for Long Term operation
- 1.2 Instruction for Shipment & Warehousing

### 2. ASSEMBLY GUIDE & START –UP INSTRUCTIONS

- 2.1 Assembly Location
- 2.2 Installation Conditions
- 2.3 Items Located Around the valve
- 2.4 Installation Positions
- 2.5 Assembly

### 3. OPERATION

### 4. MAINTENANCE & REPAIRS

### 5. SHUT DOWN & DISASSEMBLY

### 6. SPARE PARTS

### 7. SERVICE STOPS

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# DYNAMIC AIR RELEASE VALVES

## 1. INTRODUCTION



- ÖZ-KAN dynamic air release valves are designed for, pumping stations, water transmission lines and high level water reservoirs. These air release valves are not suitable for sewage and waste water lines.
- Dynamic air release valves are vital equipment for pipelines. These valves discharge air from the pipeline while an empty line is being filled and take in air to the pipeline while the pipeline is being discharged. Also they discharge the small air pockets that get stuck in the pipeline under pressure.

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- Dynamic Air Release Valve prevents costly pipeline fractures by admitting air into the pipeline while the line is being discharged.
- These valves work with natural law for buoyancy and they do not need operators after the initial start up.

## 2. ASSEMBLY GUIDE & START UP INSTRUCTIONS

- Dynamic Air Release Valves are connected to the pipelines at special points where the pipelines change direction, on top of hills, on pump outlets and at certain lengths on straight pipelines.
- Usually these valves are installed on Tees that are on the top side of the pipes.
- Valves should be thoroughly checked before installations to the pipeline. Although all valves are tested carefully before leaving the manufacturing area, this control should be made incase there are problems due to faulty transport and handling.

**WARNING : Pipes both on the downstream and upstream sides of the valves should be carefully cleaned from all solid particles. Otherwise these particles will damage the resilient sealing ring on the initial filling of the pipeline.**

- An isolation valve of the same diameter with the dynamic air release valve can be connected to the pipeline before connecting the air valve. This valve can be used isolate the dynamic air release valve from the pipeline for removals and maintenance while the pipeline is in operation.
- After installing the isolation valve, dynamic air release valve can be installed to the pipeline.
- Lift and place the dynamic air release valve on the isolation valve. Fasten the connection bolts and nuts. Only use the recommended size bolts and nuts for connection. Otherwise there may be leakage from flange connection.
- Open the isolation valve (if installed between the dynamic air release valve and the pipeline ). Dynamic air release valve is ready for operation.

## 3. OPERATION

- Dynamic air release valves do not require an operator. These valve work with natural law for buoyancy and they do not need operators after the initial start up.
- While an empty pipeline is being filled for the first time the dynamic air release valve floats are down at the bottom of the orifices. Valve discharges air freely at this moment. When water reaches and fills the orifice floats rise with the rising water in the orifice and close tightly on the sealing rings and stop water from coming out.

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- The small air pockets that get stuck in the pipeline are collected under the small orifice cylinder and when there is enough air in the chamber the small orifice cylinder falls down a little and lets the air out. Cylinder tightly seals the orifice with the rising water and does not let the water leak from the orifice.
- When discharging the pipeline floats fall down when the water leaves the valve chamber and admit air to the pipeline. This prevents the pipeline fractures.

**IMPORTANT NOTICE : Isolation valve of the dynamic air release valve must be in open position all time while the pipeline is in operation. Otherwise the dynamic air release valve will not perform its function and lead to costly pipe breaks in case the line is discharged.**

#### 4. MAINTENANCE & REPAIRS

- ÖZ-KAN Dynamic air release valves are designed for maintenance free service.
- In case there is leakage from air valve orifices, dust cover should be removed to detect the location of leakage.

If the leakage is from main orifice seal, this might be because of a foreign object that got stuck between the seal element and the orifice or damaged o-ring.

If the leakage is from the center of the anti-shock cylinder, this might be because of a damaged seal element or a foreign object that got stuck between the seal and the small orifice seat.

- In both cases, cover bolts must be removed and float cylinders must be removed from the chamber. Bolts that hold the bottom plate should be removed to access the damaged o-ring or sealing element.
- Floats must be installed as shown in drawings and bottom plate must be installed. Cover o-ring must be checked. Than float assembly should be installed and cover bolts must be tightened.

**WARNING : Never loosen any of the orifice cover bolts without closing the isolation valve of the air valve. Loosening the orifice cover bolts without closing the isolation valve may lead to serious injury and damage the valve.**

- Pipeline must be cleaned from all foreign particles before start-up, in order to prevent foreign material damages on sealing elements.
- If the coating gets damaged, damaged coating can be mended with touch-up paint for fusion bonded powder epoxy. Damaged coating area should be cleaned from grease and rust before applying the touch-up paint. After

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completely cleaning the area from rust, grease and dust touch-up paint can be applied.

## 5. DISASSEMBLY AND REMOVEL FROM PIPELINE

- Isolation valve must be closed from removing the dynamic air release valve from the pipeline.
- Bolts that connect the air valve to the pipeline flange must be removed.
- If the valve is going to be kept in stock for a while, it should be kept in a closed place and shielded from direct sun and hazardous environmental effects. Air valve should be kept on a wooden pallet. Valve should not be stocked on soil.

## 6. SPARE PARTS

- All necessary spare parts, such as sealing rings and o-rings can be supplied from ÖZ-KAN head office.

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## 7. SERVICE REQUIREMENTS

- In case maintenance personnel is required for maintenance and repairs please contact ÖZ-KAN Center Office in Turkey. Contact details given below.

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