



# Operating Instructions

## ERHARD Automatic Air Valve welded type

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Drawing to order

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### 1 General Remark

**These Operating Instructions must exclusively be used together with our Standard Operating Instructions for ERHARD Valves BA01E001**

### 2 Range of Application

Automatic ERHARD Air Valves are installed in dam, long-distance and turbine pipelines. This valve type is suitable for clean, neutral water. We recommend to control filling and emptying of the pipeline additionally by means of manual valves (avoiding filling impact or depression).

### 3 Mode of operation

Air Valves provide sufficient air evacuation from the pipeline, thus avoiding unsteady operating condition due to unwelcome reductions of the cross section caused by air bubbles. Air Valves also protect the pipelines against high depression which might e.g. occur when the pipeline is disconnected or emptied quickly.

The automatic ERHARD Air Valves, welded type, are designed and dimensioned according to the the operating conditions (pressure, water hammer, air volume, etc.). The valves consist of body, float, load spring and an automatic air-evacuation device operating under service conditions.

### 4 Installation into Pipeline

All packing material has to be removed from the valve.

The customer has to install an insulating and inspection valve between the pipeline and the Air Valve. Prior to installation, check the pipeline for impurities and foreign bodies and clean it if necessary. It is approved practice to flush the pipeline thoroughly through the inspection valve, prior to installing the Air Valve, in order to prevent impurities like grease, sealing and plastic components from entering the valve.

The valve is to be installed in a pit or a building at the summits (high points) of the pipeline. The valve's installed position must be completely vertical. Inclined position disturbs the performance: the float is jammed in its guides.

Screw the Air Valve onto the pipeline in an even manner avoiding torsion.

### 5 Initial Operation

The Air Valve is slowly filled with water through the inspection valve. If an operating pressure of more than 1 bar is obtained, the main valve should be drop-tight to the outside. The "device for automatic air evacuation under service condition" may show a leakage rate of about 10 drops per minute during operation. This should be evacuated through the leakage connection DN 15.

### 6 Operation

The Automatic Air Valves, welded type, function automatically.

## 7 Maintenance

If the flow medium is clean, the valves virtually need no maintenance. It is recommended to inspect the valves at intervals of half a year:

**See Safety Aspects in the Standard Operating Instructions.**

### 7.1 Maintenance of Main Valve

#### Inspection

#### Measure

##### External condition

Dirt around the valve

Cleaning

Dirt at the valve

Cleaning, particularly:  
in the zone of the valve seat,  
the load spring, the float guide

Corrosion

Cleaning, derusting, restoring the surface protection

Tightness to the outside

If there is any leakage, mark the spot(s).

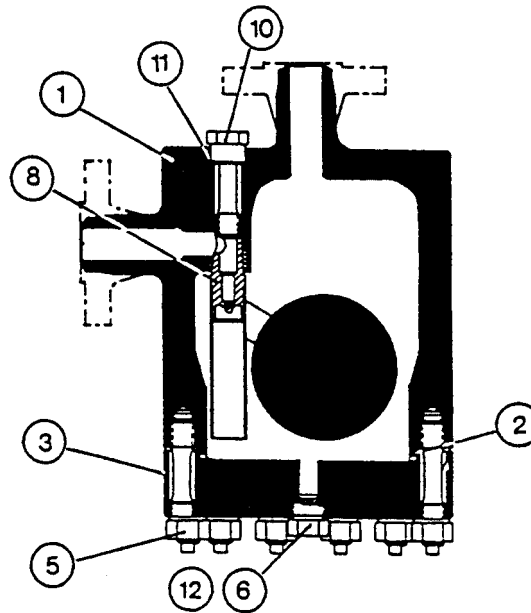
##### Interior space of the body

Open the relief screw on the body cover by approx. 2 turns, thus the pressure is released from inside the body.

Visual checking for cleanness (deposits, foreign matters, etc)  
If required, clean the seat areas at body and valve disc.  
Clean the interior space.

Find out the cause for leakage at the marked spot(s) and restore tightness. If no tightness is achieved, remove the valve and repair it.

## 7.2 Maintenance of automatic device for air evacuation under service condition



### 7.2.1 Drainage

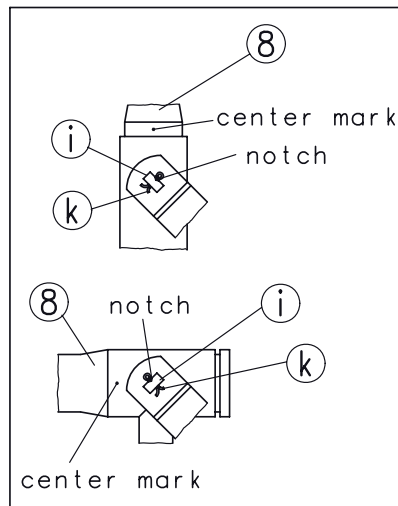
Screw out dirt drain plug (6) with sealing ring (12).

### 7.2.2 Opening and dismantling of float control device

The main valve and the "device for air evacuation under service conditions" must be pressureless. Unscrew the hexagon nuts (5) evenly and crosswise and remove the cover (3).

Slacken support screw (10) and screw out by 2—3 turns. Release the float control device (8) from the seat cone by slight hammer blows on the head of the support screw (10). Unscrew support screw (10) and remove float control device (8).

## 7.2.3 Dismantling, cleaning and assembly of float control device



After removal of the cotter pin (k), the rotary disc valve is drawn out laterally through the round hole in the float fork.

Cleaning in benzine.

Check the rotary disc valve for abrasion marks. In case of wear, the support body (8) has to be exchanged together with the rotary disc valve (i).

## 7.2.4 Assembly

During assembly, take care that the notch in the rotary disc valve (1) points at the center point in the support body (8) and the cotter pin (k) is again carefully inserted and spread.

## 7.2.5 Testing

Test the rotary disc valve (i) for smooth operation, i.e. it must be possible to move the float upwards and downwards without causing any resistance.

## 7.2.6 Installation of the float control device

The complete float control device together with the support body (8) is inserted into the conical body seat. Take care that the float is at the centre of the body.

Screw the support screw (10) with the sealing (11) [replace seal if necessary] into the thread of the support body (8) and tighten moderately with an open-jawed spanner or ring spanner (tightening torque 28 Nm).

Check the body seal (2) and replace it if necessary.

Carry out assembly according to figures on page 4 and 5.

Tighten the body screws evenly and crosswise (tightening torque 64 Nm (expansion screws M20)).

For flow medium "water", the recommended lubricant is Klüber Unisilikon L641.  
For flow medium "water", silicone-free design, the recommended lubricant is Klüber Synth VR 69-252.

