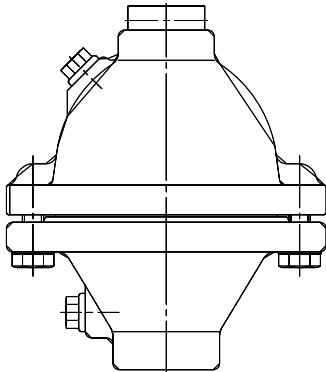


Operating Instructions

Automatic Air Valves



- 1 Product Description and Range of Application
- 2 Design Features - Technical Data
- 3 Performance
- 4 Installation
- 5 Commissioning
- 6 Maintenance

These operating instructions must always be used in connection with BA01E001!

1 Product Description and Range of Application

Prod. No.

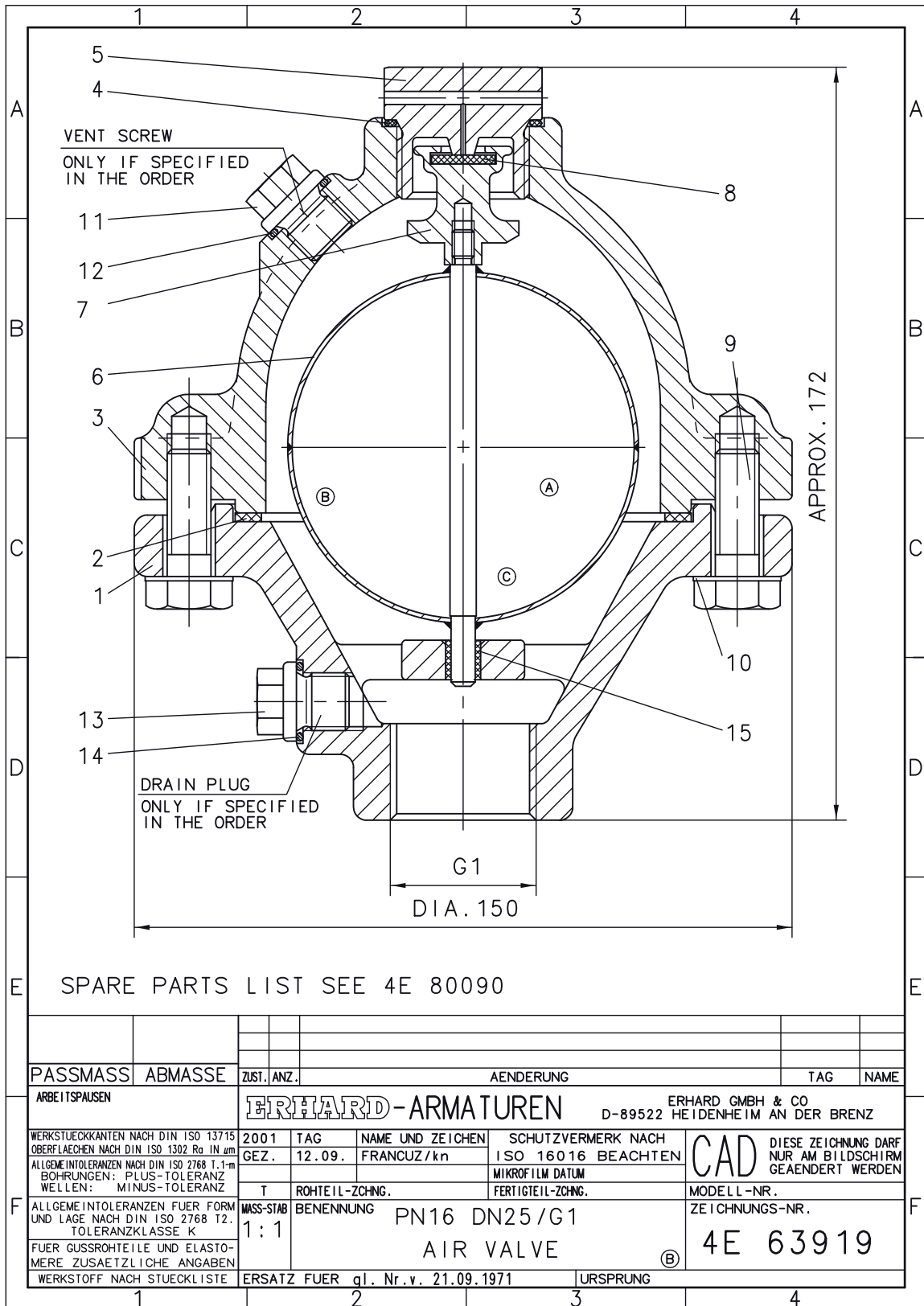
1.1 Automatic Air Valve

6919 PN 16

Single Air Valve with float small air outflow cross section
With threaded muff connection R 1"

Size DN	Nominal pressure PN	Hydr. test pressure in bars for		Max. admissible working pressure in bars at working temperature	
		Body	seat	< 60° C	prod. no.
25	16	24	16	1-16	6919

2 Design Features - Technical Data



Operating Instructions - ERHARD Air Valves

	15	BUSH			
	14	SEALING RING			
	13	SCREW PLUG			
	12	SEALING RING			
	11	DRAIN PLUG			
	10	WASHER			
	9	HEXAGON HEAD SCREW			
(A) Tabelle berichtigt 21.03.2000 Ci	8	SEAL	COMPLETELY ASSEMBLED		
	7	VALVE DISC			
	6	FLOAT			
		5	DRAIN PLUG		
		4	SEALING RING		
		3	BODY, UPPER PART		
		2	GASKET		
	1	BODY, LOWER PART			
	ITEM	DESCRIPTION			
SEE DRAWING 4. 63919					
CAD <small>DIESE ZEICHNUNG DARF NUR AM BILDSCHIRM GEEENDERT WERDEN</small>		SPARE PARTS LIST FOR AIR VALVE PN10/16 DN25/1"		4E 80090	
12.11.1990 KELLER TEK-1					
ERHARD-ARMATUREN			ERHARD GMBH & CO D-89522 HEIDENHEIM AN DER BRENZ		

3 Performance

Air valves are installed at high points of water delivery lines, in front and/or behind valves, e.g. main burst safety devices, behind considerably enlarge cross section, behind throats and throttling points and downstream of feeding pumps or turbines. They are used to prevent annoying air accumulation in water lines, to permit complete filling and emptying of a pipe line, to limit depression and to evacuate gases (air) accumulated during operation under pressure. We recommend to control filling and emptying of the line additionally by means of manual valves (avoiding filling impact or depression).

These valve type are suitable for pure neutral water.

3.1 Filling the pipe line

When the line is being filled with water, the air is pushed in front of the water column and evacuated through the air outflow cross section of the air valve. When the water level reaches the floating point of the float, the float is raised and closes the outflow cross section. The working pressure acting against the valve seat should be larger than 1 bar in order to ensure tight closure. For locations with lower pressure, it is necessary to select special air valve types.

Limits to be observed: On closing the air valve, the max. admissible water hammer should be limited to $p = 3$ bars. This value results from a filling velocity of 0.25 m/s in the pipeline.

3.2 Emptying the pipeline

When the drain valve is opened decreasing the pressure to atmospheric one, the float drops releasing air inflow cross section. Air flows into the pipeline through this orifice thus limiting possible depression.

Limits to be observed: $v_{\max.} = 50$ m/s referring to the free air inflow cross section.

3.3 Air evacuation under working pressure

The gases (air) accumulating at a thigh point of the line and thus in the body of the air valve force the water from the valve back into the line. When the water level reaches the floating point of the float, the float drops due to its own weight and releases the air outflow cross section. The air under working pressure will be blown out until the float rises and closes the air outflow cross section. This process is repeated in a discontinuous manner depending on the air volume accumulating.

3.4 Type 6919

This type is used for evacuating small air rates (max. 1 l/s). A float (6) guided in the valve body (1,3) opens or closes the air outflow cross section by means of a ball (10) depending on the water level. This process is performed under pressure-less condition as well as under full working pressure.

4 Installation

The air valves are to be installed in a chamber or a building at the summits (high points) of the pipeline. The air valve's installed position must be exactly vertical. Inclined position disturbs the performance: the float jams in the guides.

The customer has to install an isolating and guard valve as well as a pressure relief device. Before installation, check the pipeline for impurities and foreign bodies and clean it, if necessary (flush trough the guard valve).

We recommend to use steel-reinforced rubber seals as gaskets.

Screw the air valve on to the pipe in a uniform manner avoiding torsion.

5 Commissioning

The air valve is slowly filled with water through the guard valve. After a working pressure of more than 1 bar is reached, the valve should be drop-tight to the outside. Open the guard valve completely and fix it in the position (e.g. by removing the hand wheel). Now the air valve is ready for operation.

6 Maintenance

ERHARD air valves are virtually maintenance-free. However, their performance and tightness should be checked regularly at least one a year according to DVGW print W 392.

Before working on the air valve, shut the guard valve and evacuated pressure through the pressure relief device. Only then valve components may be dismantled.

Inspection External condition	Measures
Impurities on the valve	Clean
Impurities near the valve	Clean
Corrosion	Remove the rust. Renew corrosion protection.
Internal condition	
Impurities on internal parts	Clean
Valve bore	Blow out / poke through
Check float	It must float being $\leq 2/3$ immersed in water
Check seals	Replace if necessary