ERHARD
BY TALIS

ERHARD TWIN-AIR®
air valves

ERHARD TWIN-AIR AIR VALVE FOR AUTOMATIC AIR RELEASE AND AIR ADMISSION OF PIPELINES

ERHARD TWIN-AIR Air Valves are installed at the high points of closed conduits and downstream or upstream of valves. They may be used for pipe burst control valves, behind throttling points and feeding pumps or turbines.

Air valves are needed for preventing troublesome air accumulations in the pipelines, supporting complete filling and emptying of a pipeline, limiting depression and evacuating gases (air) accumulated during operation under pressure.

Mode of operation

When the pipeline is empty and pessureless, both orifices of the ERHARD TWIN-AIR Air Valve are open.

Filling the pipeline

When filling the pipeline with water, the air is pushed in front of the water column and can freely discharge through the large and the small orifice of the air valve. When during the filling process the water column reaches the float point of both balls, they are raised with the rising liquid level. The large orifice is now closed by the large float ball. At the same time, the small float ball activates a lever mechanism closing the small orifice by means of a rubber plug.

Air evacuation under pressure

When under full working pressure the liquid level descends due to air accumulation, the small float ball drops reaching the float point, and releases the small air-exhausting cross section. At each operating cycle, the small orifice is cleaned by means of a patented cleaning device, a pin being moved upwards by the air blown off and being pushed back by spring force after completion of the air evacuation process. Due to the acting differential pressure the large ball closes the large orifice when evacuating air during operation.

Emptying the pipeline

When during operation, the pipeline pressure decreases to or below atmospheric pressure, the two float balls fall and release the air outflow and inflow cross sections. Now, the ambient air can flow through the air valve into the pipeline according to the depression prevailing in the pipeline. Critical underpressure which can lead to damages of the pipeline is avoided.

IRRESISTIBLE DESIGN FEATURES

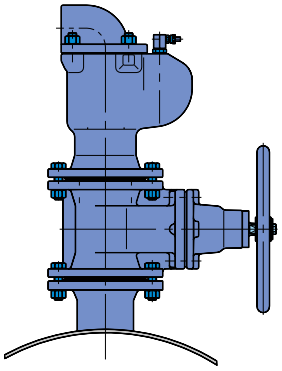
Convincing details

- Compact design
- Flow optimized
- Lightweight type
- Safe operation
- Little maintenance
- Large air outflow and inflow cross sections
- For maximum air outflow and inflow velocities
- Automatic air release under operating conditions, lever-operated, with patented self-cleaning feature effective at each operating cycle
- Large orifice with connecting thread
- Effective corrosion protection
- Enclosed seal
- Pressure rating up to PN 40
- No copper alloy
- Self-centering float ball
- High-grade materials

Materials and corrosion protection

- Body and body cover made of ductile cast iron EN-JS 1050
- Body coating: inside enamelled and outside epoxy, or
- Inside and outside epoxy coating
- Body cover: inside and outside EKB epoxy coating
- Float ball for DN 50 to DN 100 made of multichamber GRP (optional of austenitic CrNi steel)
- Float ball for DN 150 and DN 200 made of austenitic CrNi steel (mat. No. 1.4571)
- Float guide and float assembly for evacuation under pressure made of austenitic CrNi steel (mat. 1.4571)
- Body seat made of EPDM
- Connecting bolts made of stainless steel A4

RANGE OF APPLICATION AND OPERATING CONDITIONS

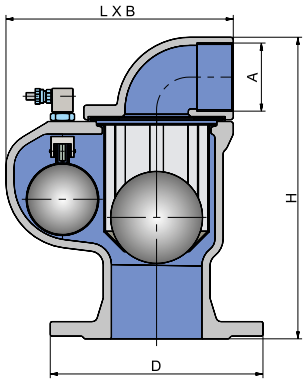


Range of application

- Automatic air release and air admission of pipelines for potable water
- Special designs on request, e. g. with protective screen, with suppressed air-inflow feature etc.

Operating conditions

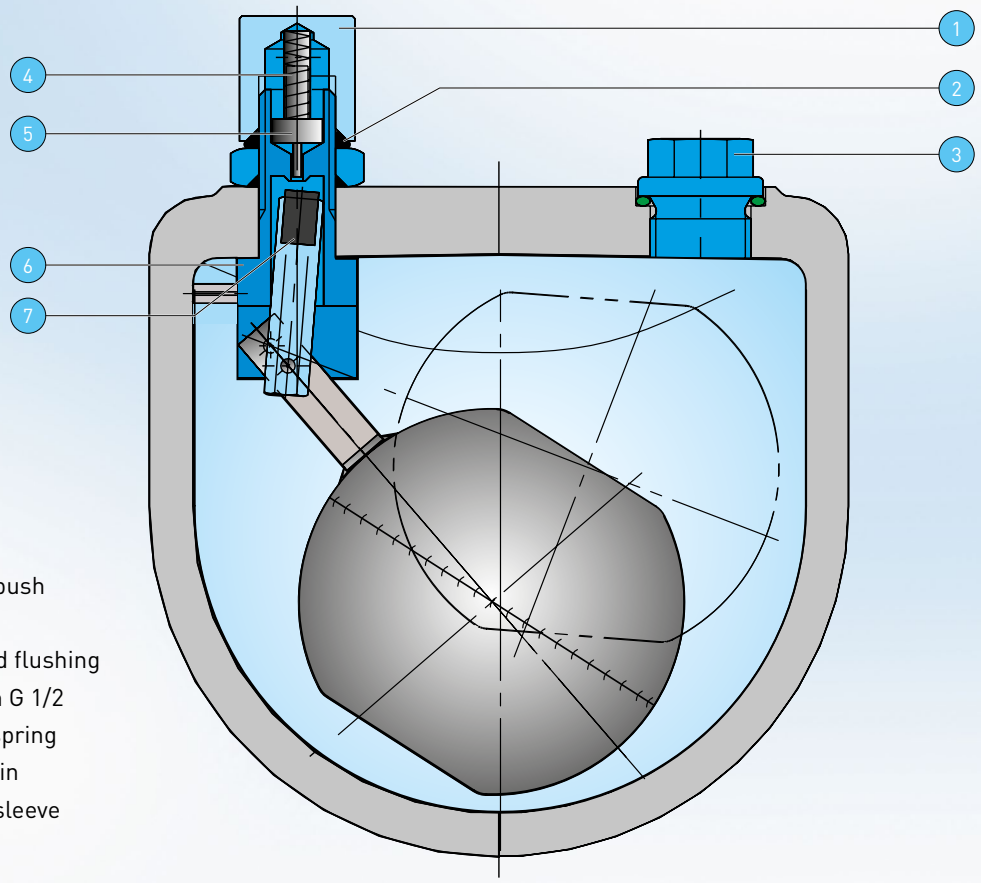
- Minimum working pressure: 0.2 bar
- Maximum working pressure: up to 25 bars
- Maximum working temperature: 70 °C



Dimensions and weights

Size DN	Height H [mm]	Flange-Ø D				External dimensions L x B [mm]	Orifice cross section mm²			Threaded connection A	Weight appr. kg	Volume m³
		PN10	PN16	PN25	PN40		large orif.	small orif. PN10-25	small orif. PN40			
50	317	165	165	165	165	240 x 191	3850	5	1.75	G 21/2	19	0,015
80	317	200	200	200	200	240 x 191	3850	5	1.75	G 21/2	19	0,015
100	333	220	220	235	235	240 x 191	3850	5	1.75	G 21/2	20	0,015
150	385	285	285	300	300	316 x 222	9500	5	1.75	G 4	32	0,029
200	385	340	340	360	375	316 x 222	9500	5	1.75	G 4	43	0,029

DETAIL: AIR EVACUATION UNDER PRESSURE WITH PATENTED CLEANING DEVICE



1 Threaded bush
2 O-ring
3 Testing and flushing connection G 1/2
4 Pressure spring
5 Cleaning pin
6 Threaded sleeve
7 Seal

Pressure ratings, flanges

Size DN	Pressure rating PN	Hydrost. test pressure in bars for		Design dimensions of the flanges
		body	seat	
50-200	25	37.5	0,2/25	Flange B, DN 50 - 200, PN 25, EN 1092-2
50-200	40	60.0	0,2/40	Flange B, DN 50 - 200, PN 40, EN 1092-2
100-200	16	24.0	0,2/16	Flange B, DN 100 - 200, PN 16, EN 1092-2
200	10	15.0	0,2/10	Flange B, DN 200, PN 10, EN 1092-2

AIR OUTFLOW AND INFLOW CAPACITIES

The suitable valve size is selected on the basis of the actual working conditions.

Air capacity

For air capacities, see diagrams on the right:

1. Air evacuation via the large orifice (filling the pipeline). The air flow rate Q is identical with the inflowing water rate.
2. Air evacuation via the small orifice (under working pressure).
3. Air admission via the large orifice (emtpying the pipeline). The air flow rate Q is identical with the outflowing water rate.

Extreme air rate demand

If one single air valve cannot comply with the specified outflow and inflow requirements, air valves can be fitted in clusters.

For large air inflow rates (valves larger than DN 200), ERHARD Disc Type Air Inlet Valves are the appropriate solution.

Recommended limit values
Filling the pipeline

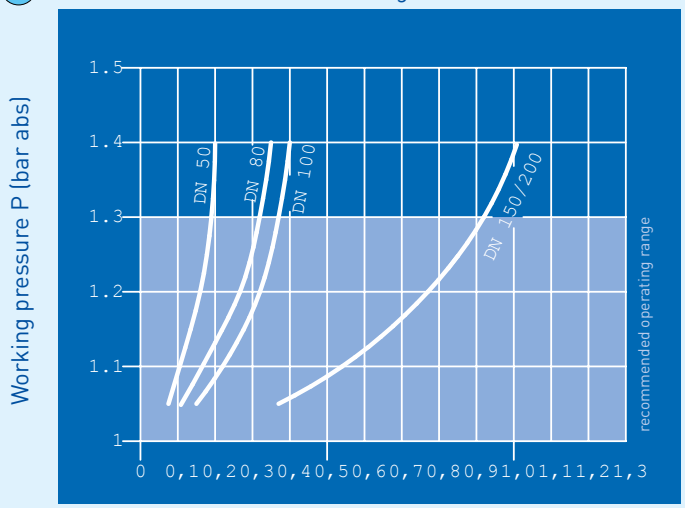
During the closing process of the ERHARD TWIN-AIR air valve, for safety reasons the maximum admissible water hammer should not exceed P = 3 bars. This is based on filling the pipeline at a velocity of 0.25 m/sec.

Recommended limit values
Emptying the pipeline

The recommended air velocity when emptying the pipeline is $V_{max.}$ = 80 m/sec. (referred to the clear air inflow cross section).

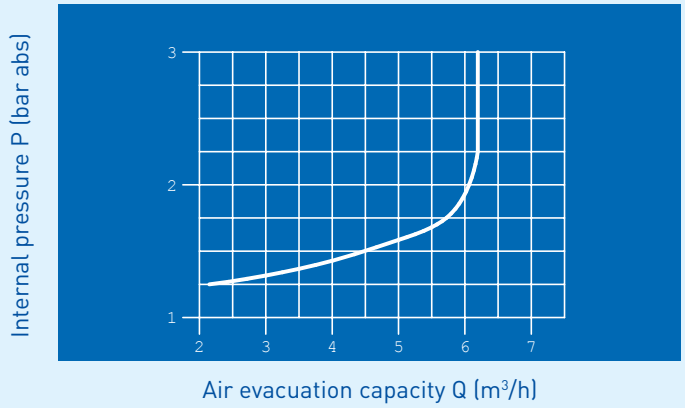
1

Air outflow (large orifice)



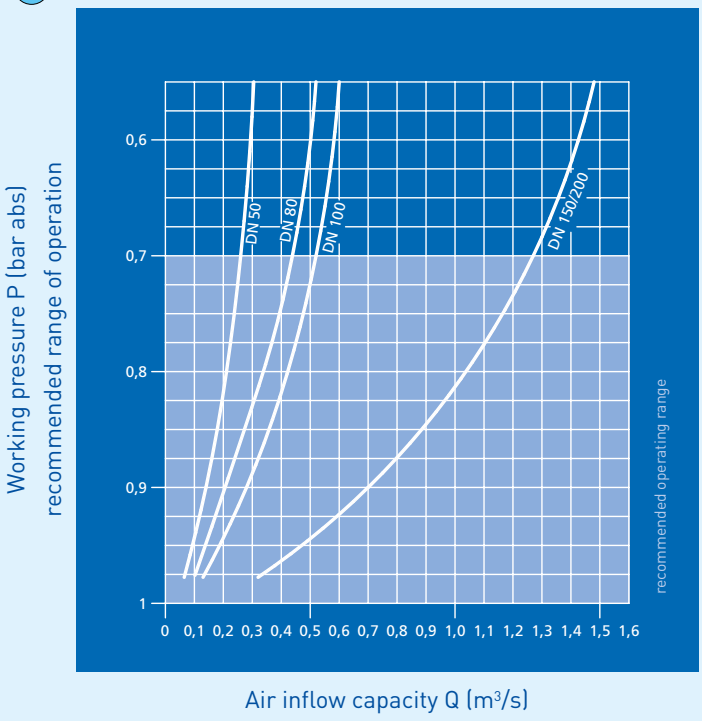
2

Air evacuation under pressure (small orifice Ø 2.5 mm)



3

Air inflow (large orifice)



www.talis-group.com

TALIS is always the number one choice whenever water transport or control is required. TALIS has the best solution for water and energy management, as well as for industry and municipal applications. With a varied range of products we offer comprehensive solutions for the entire water cycle. From hydrants to butterfly valves. From the knife-gate valves to the needle valves. Our experience, innovative technology, global expertise and individual consultation process form the basis for developing sustainable solutions for the efficient handling of the vital resource “water”.

ERHARD GmbH & Co. KG
Postfach 1280
D-89502 Heidenheim
Meeboldstrasse 22
D-89522 Heidenheim
PHONE +49 7321 320-0
FAX +49 7321 320-491
E-MAIL info@erhard.de
INTERNET www.erhard.de

TALIS