




## A13

Eco Type Air Release Valve  
Double Orifice

### Product Description

DENZ-A13 is a double orifice air release with an isolation valve, which is designed for emptying & filling water networks by the use of compressed air. As a result of the double orifice structure, larger and smaller air flows can be achieved through the pipe network. For purposes of isolation, there is no need to use any additional stop valves in addition to the internal handwheel/valve.

DENZ A-Series Air Valve's are one of the most essential components of the water supply systems. No matter whether it is a water distribution line or a sewage main, air valves play a critical role.

Two primary functions are performed by the DENZ A-Series air valves in pipeline systems. One of the first things that can occur in a pressurized pipeline is to release the accumulated air that has accumulated within the solution. The air will form bubbles along the pipeline profile, which will gather at localized high points. Bubbles accumulate air when their buoyancy exceeds the energy required to transport them through liquid. Air release valves are manufactured by DENZ to release this free air.

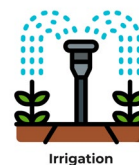
An air valve also admits air into the system when the internal pressure of the pipeline drops below atmospheric pressure. By admitting air into the pipeline as the internal vacuum condition develops, the magnitude of the vacuum pressure can be reduced and as a result help prevent the pipeline from experiencing excessive deflection and/or collapse as well as help prevent the formation of a full vacuum condition in which vapor cavities may form from the fluid vaporizing.

DENZ Air Valves can contribute to the improvement of the efficiency of the water system.



### Production References

Size Range	DN50 – DN200
Pressure Range	PN10/16/25
Temperature	-10°C to +80°C
Design	EN 1074-4
Connection	Flanged - EN1092-2
Coating	Electrostatic Powder Epoxy
Testing	EN 12266-1
Marking	EN 19
Operation	Internal Isolation Valve





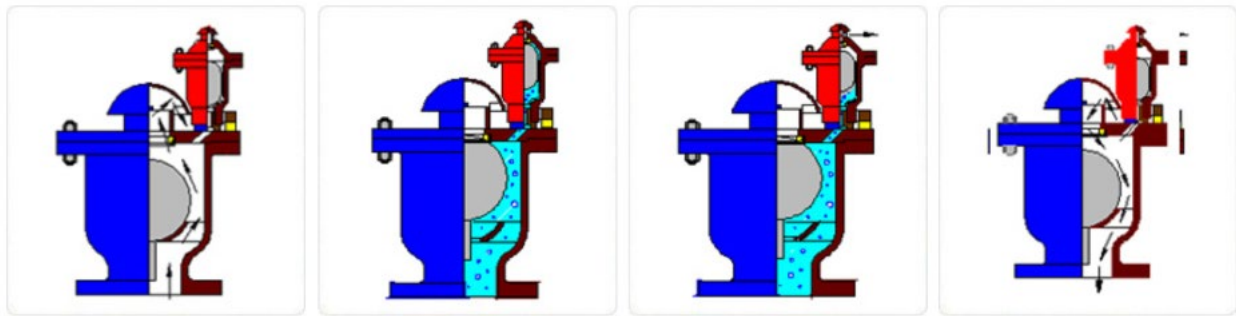
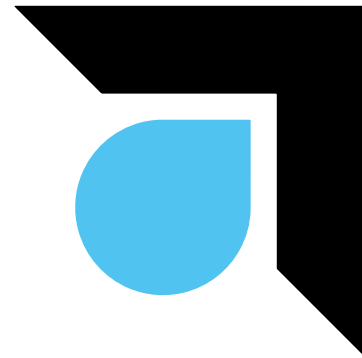
### Application Areas

- Water supply network
- Water lines
- Water transmission
- Water supply
- Pump suction lines

### Product Features

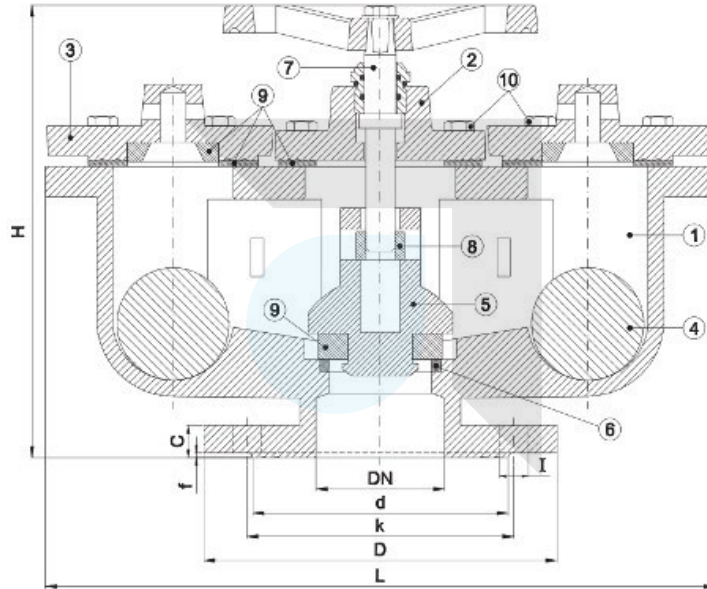


- Advanced design with simple mechanism, strong float to prevent cracking during sudden water hammer and quick closure.
- Aerokinetic mechanism to resist blow shut under higher air velocity even up to sonic velocity of air.
- No arms or levers to prevent vibrating, bending, direct closure of the float.
- Smooth cage outside of the float, keep float moving in specified guide rail.
- Bottom rubber buffer for collision prevention and drain easy with proper holes around the cage during vacuum.
- Outside screen will be an option for safety and prevent insects or birds in.
- Fully fusion epoxy coated inside and outside of valve body for long term services.
- Polyethylene floating parts increase corrosion resistance, which increases service life.
- Floats made of polyethylene are easier to replace.
- In order to maintain full flow of water, air release valves must be used at pipeline peak points.
- Completely coated body and bonnet meet the hygienic requirements for potable water networks. (WRAS coating optional)
- It is made from ductile iron, with a flanged connection in accordance with EN 1092-2. The floating part is made of polyethylene and is easily replaceably.
- Working pressure range: 0.5 – 16 bar.



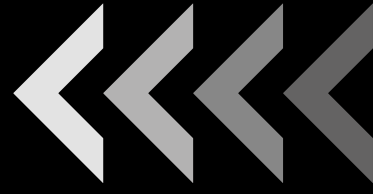


**Material List** <<<<



#	Part	Material
1	Body	Ductile Iron EN-GJS-400/500 (GGG40/50)
2	Centering Bonnet	Ductile Iron EN-GJS-400/500 (GGG40/50)
3	Bonnet	Ductile Iron EN-GJS-400/500 (GGG40/50)
4	Float	Polyethylene
5	Wedge	Ductile Iron EN-GJS-400/500 (GGG40/50)
6	Bushing	Brass MS58
7	Shaft	Stainless Steel AISI420
8	Nut	Brass MS58
9	Sealing	EPDM
10	Bolts	Galvanized Steel 8.8
11	Sealing	EPDM / NBR
12	Orifice Cover	ST 37 / Ductile Iron
13	Bolts	8.8 / A2 / A4
14	Discharge Nipple	Brass MS58

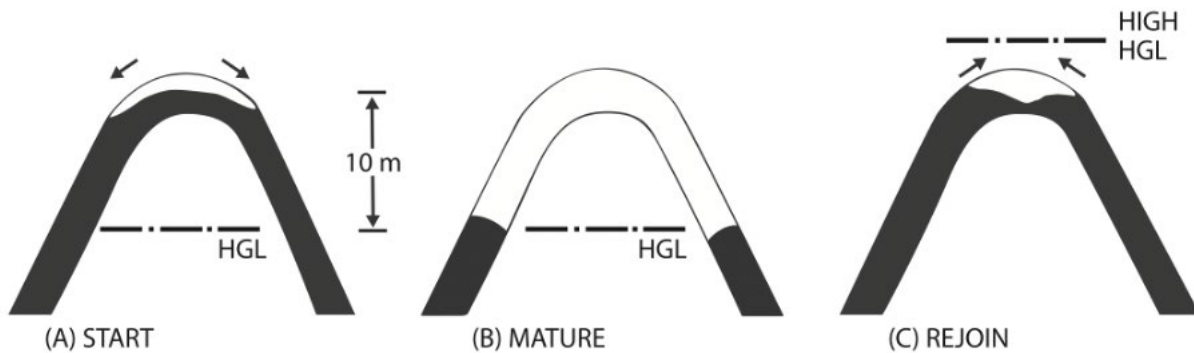


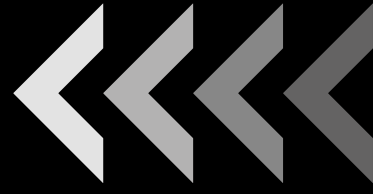


## Dimensions

DN	PN	D	k	d	f	C	l*n	L	H	KG
50	10-16-25	165	125	99	3	20	19x4	410	275	27
65	10-16-25	185	145	118	3	20	19x4	410	275	28
80	10-16-25	200	160	132	3	22	19x8	415	280	29
100	10-16	220	180	156	3	24	19x8	415	280	31
100	25	235	190	156	3	28	23x8	415	284	34
125	10-16	250	210	184	3	26	19x8	415	280	32
125	25	270	220	184	3	30	28x8	415	284	35
150	10-16	285	240	211	3	26	23x8	635	400	79
150	25	300	250	211	3	34	28x8	635	408	87
200	10	340	295	266	3	26	23x8	635	400	87
200	16	340	295	266	4	30	23x12	635	404	87
200	25	360	310	274	4	34	28x12	635	408	95
250	10	395	350	319	4	28	23x12	655	370	92
250	16	405	355	319	4	32	28x12	655	374	93
250	25	425	370	330	4	36	31x12	655	378	101

Units: mm / indicative dimensions & weights





## Be Sure To Read The Following Warranty Clauses Of DENZ Air Valves



- Always observe the specifications of and the precautions and instructions on using our product.
- We always strive to improve product quality and reliability. Therefore, should you intend to use this product with any equipment or machinery that may pose the risk of serious or even fatal injury, or property damage, ensure an appropriate safety design or take other measures with sufficient consideration given to possible problems. We shall assume no responsibility for any inconvenience stemming from any action on your part without our written consent in the form of specifications or other documented approval.
- The related technical documents, operation manuals, and other documentation prescribe precautions on selecting, constructing, installing, operating, maintaining, and servicing our products. For details, consult with our nearest distributor or agent.
- Any product abnormality that occurs during the warranty period or which is reported to us will be investigated immediately to identify its cause. Should our product be deemed defective, we shall assume the responsibility to repair or replace it.
- Any repair or replacement needed after the warranty period ends shall be charged to the customer.

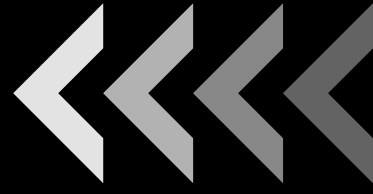
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## General Operating Instructions



- Do not step on or apply excessive weight on air release valve. (It can be damaged.)
- Keep the valve away from excessive heat or fire. (It can be damaged or destroyed.)
- Always operate the valve within the pressure vs. temperature range. (The valve can be damaged or deformed by operating beyond the allowable range.)
- Allow sufficient space for maintenance and inspection.
- Do not use the valve in conditions where the fluid may have crystallized. (The valve will not operate properly.)
- Keep the valve out of direct sunlight, water, and dust. Use cover to shield the valve. (The valve will not operate properly.)
- Perform periodic maintenance. (Leakage may develop due to temperature changes or over periods of prolonged storage, rest or operation.)
- If any part has the risk of freezing, insulate it thermally.
- Immediately after installing the pipeline, or in similar cases, the pipe may contain accumulated soil, sand, dirt, or dust. If, therefore, the valve is subjected to water (filled with water) for the first time, discharge such soil, sand, dirt, and dust sufficiently by using a mud discharge valve or something similar.





## General Instructions For Transportation, Unpacking and Storage



- When suspending and supporting a valve, take care and do not stand under a suspended valve.
- This valve is not designed to handle impacts of any kind. Avoid throwing or dropping the valve.
- Avoid scratching the valve with any sharp object.
- Do not over-stack cardboard shipping boxes. Excessively stacked packages may collapse
- Avoid contact with any coal tar creosote, insecticides, vermicides, or paint. (These chemicals may cause damage to the valve.)
- Store products in their corrugated cardboard boxes. Avoid exposing products to direct sunlight and store them indoors (at room temperature).
- Also avoid storing products in areas with excessive temperatures. (Corrugated cardboard packages become weaker as they become wet with water or other liquid. Take care in storage and handling.)
- After unpacking the products, check that they are defect-free and meet the specifications.

## Installation



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The installation of the valve is important for its proper operation. DENZ Air Valves must be installed at the system high points in the vertical position with the inlet down. For pipeline service, a vault with freeze protection, adequate screened venting, and drainage should be provided. During closure, some fluid discharge will occur so vent lines should extend to an open drain area in plant service. A shut-off valve should be installed below the valve in the event servicing is required.

## Valve Construction



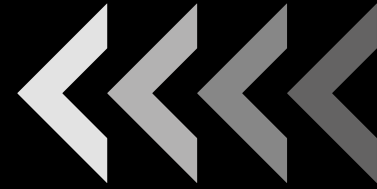
The standard DENZ Air Release Valve body and cover are ductile iron. See the specific Materials List submitted for the order if other than standard ductile iron construction. All internal components are stainless steel with the polyethylene floats.

## Maintenance



The DENZ Air Release Valve series requires no scheduled lubrication or maintenance





## Inspection

Periodic inspection to verify operation can be performed. A manual drain valve can be installed in the lower drain plug to perform this operation.

1. With the inlet shutoff valve open, partially open the drain valve until flow can be heard. If the air valve is working properly, water should be exhausted from the drain valve.
2. Close the inlet shutoff valve.
3. Slowly open the drain valve to allow the fluid in the valve to drain.
4. Close the drain valve.
5. Slowly open the inlet shutoff valve to fill the valve with water. Observe the seating action and verify that the valve closes without leakage.
6. If leakage occurs, the valve should be removed and inspected for wear or possible damage from foreign matter.

## Troubleshooting

Several problems and solutions are presented below to assist you in troubleshooting the valve assembly in an efficient manner.

Leakage at Bottom Connection: Tighten valve threaded connection. If leak persists, remove valve and seal threads with thread sealant.

Leakage at Cover: Tighten bolts and replace gasket.

Valve Leaks when Closed: Flush valve to remove debris. Disassemble and inspect seat, orifice button, and float. NOTE: Many floats contain sand for weight but if water is detected, replace float.

Valve not Venting Air: Check that operating pressure does not exceed Working Pressure on nameplate. Perform inspection and disassemble valve if problem persists.

## Disassembly

The valve can be disassembled without removing it from the pipeline. Or for convenience, the valve can be removed from the line. All work on the valve should be performed by a skilled mechanic with proper tools. No special tools are required.

1. Close inlet shut-off valve. Open drain valve or remove drain plug. Remove the cover bolts on the top cover.
2. Pry cover loose and lift off valve body.
3. Remove the 2 retainer rings and pivot pins that pass through the lever frame. The float and linkage will be free from the cover. Disconnect float from lever.
4. To remove lever frame, remove two round-head fasteners. Rotate seat counterclockwise to remove.
5. Remove locknut and orifice button from orifice button arm.
6. Clean and inspect parts.

Note: some floats contain sand for extra weight; if water is detected, replace float. Replace worn parts as necessary,





## Reassembly



All parts must be cleaned and gasket surfaces should be cleaned with a stiff wire brush in the direction of the serrations or machine marks. Worn parts, gaskets and seals should be replaced during reassembly.

1. Apply adhesive thread sealant to seat and assemble Cover with maximum torque of 27 Nm; DO NOT OVER-TORQUE.
2. Assemble lever frame to cover over locating pin in cover. Secure with screws and washers.
3. Install new orifice button flush to arm. Assemble lock washer and locknut over orifice button but do not tighten.
4. Connect arms and assemble to lever frame with four pivot pins and retaining rings; rings should snap over pins.
5. Adjust orifice button so that orifice button arm slopes up when resting gently against seat. Secure button by tightening lock washer and nut.
6. Attach float by installing last pivot pin into lever frame. Float should move freely pressing the orifice button against the seat when pushed upward. Verify that all retainer rings are properly secured.
7. Assemble gasket and cover over bolt holes in body.
8. Insert lubricated bolts and tighten to the torques available.
9. Place valve back in service. Slowly open inlet isolation valve.

## Test Procedures



- Hydrostatic test
- Air release test
- Air release under pressure
- Air vacuum test
- Low pressure sealing test
- Body resistance test

## Parts and Service



Parts and service are available from your local representative or the factory. Make note of the valve Model No and Working Pressure located on the valve nameplate and contact:

DENZ Su Teknolojileri A.Ş.  
06520, Ankara, Turkey  
[www.denzwater.com](http://www.denzwater.com)

