BLAZE

Installation & Operation Manual

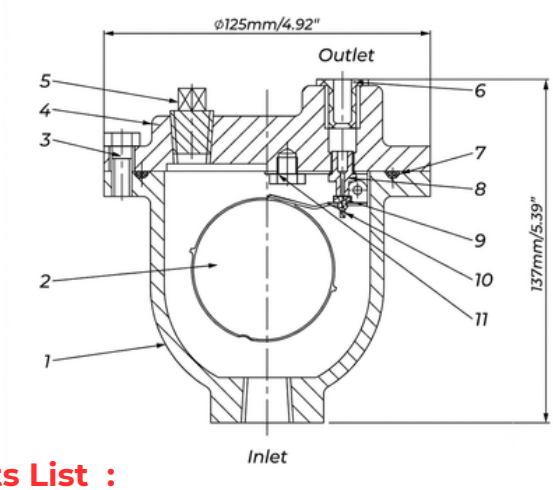
Automatic Air Release Valve (BT 5231)

Description :

This manual provides the information required to install, operate and maintain the BT 5231 Automatic Air Release Valve, ensuring reliable performance and a long service life.
The BT 5231 Automatic Air Release Valve is fitted with stainless steel internal components for long-lasting, trouble-free operation. It is typically installed at the highest points of a pipeline, where it combines the functions of an Air Release Valve and an Air/Vacuum Valve in a single unit.
During normal operation, the valve automatically releases air that accumulates within the pipeline. During system filling, draining or emergency conditions, such as a power failure, it automatically expels and admits large volumes of air. These combined functions help maintain efficient pipeline operation while protecting the system against vacuum conditions, air pockets and pressure surges.
The valve is float-operated and incorporates a resilient sealing mechanism, making it suitable for use with clean water and other non-corrosive fluids.

Note:

- The valve is not suitable for fluids containing suspended solids, such as wastewater.
- The valve is not intended for fuel service or other contaminated fluids.
- Maximum Working Pressure: 300 psi (20.7 bar).



Specifications :

Inlet Size (inch)	Outlet Size (inch)	Orifice Size (inch)	Rated Pressure (psi)
1/2"	1/2"	1/16"	300
3/4"			
1"			
1/2"	1/2"	3/32"	300
3/4"			
1"			

Receiving and Storage :

- Inspect the valve immediately upon receipt for any damage that may have occurred during transportation.
- Handle the valve carefully and avoid dropping or subjecting it to impact.
- Keep the valve in its original packaging and store it in a clean, dry environment until installation.
- For storage periods exceeding six months, keep the valve indoors in its original packaging.
- Do not expose the valve to direct sunlight, ozone or other environmental conditions that may affect its performance.

Parts List :

Item	Part Name	Material	ASTM Specification
1	Body	Ductile Iron	A536 Grade 65-45-12
2	Float Ball	Stainless Steel	A276 Type 304
3	Bolt	Carbon Steel	A307 Grade B
4	Cover	Ductile Iron	A536 Grade 65-45-12
5	Plug	Brass	B124 C37700
6	Orifice Button	Plastic	
7	Body/Cover Gasket	Rubber EPDM	D2000
8	Exhaust Nozzle	Stainless Steel	A276 Type 304
9	Exhaust Nozzle Seat	Rubber EPDM	D2000
10	Float Arm	Stainless Steel	A276 Type 304
11	Bolt	Stainless Steel	F593 Grade 304

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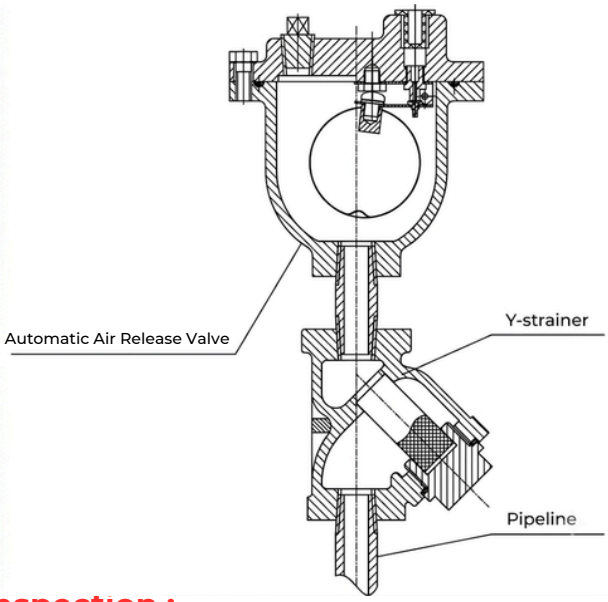
Installation :

1. ..Correct installation is essential to ensure reliable valve operation.
2. Install the valve at the highest point of the pipeline.
3. Always install the valve in the vertical position with the inlet facing downwards.
4. Where installed in buried pipelines, provide a valve chamber with adequate drainage, ventilation and frost protection.
5. As a small amount of water may be discharged during operation, ensure the outlet is connected to a suitable drain where required.
6. Install an isolation valve below the air valve to allow maintenance without draining the pipeline.

- The valve shall be installed in accordance with the applicable requirements of:
  - NFPA 13 – Standard for the Installation of Sprinkler Systems.
  - NFPA 13D – Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes.
  - NFPA 13R – Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Storeys in Height.
- An automatic air release valve installed on a sprinkler branch line shall be fitted with a strainer. The maximum opening size of the strainer shall not exceed 80% of the automatic air release valve orifice diameter, and the total open area of the strainer shall be at least four times the cross-sectional area of a Schedule 40 pipe of the same nominal inlet size.



Inspection :

If leakage is observed from the valve outlet or seat:

- Isolate the valve from the system.
- Remove the valve cover and inspect the internal components.
- Check the seat, float assembly and sealing surfaces for wear, damage or foreign matter.
- Replace any damaged components before returning the valve to service.

Maintenance :

The BT 5231 Automatic Air Release Valve is designed for maintenance-free operation under normal service conditions and does not require routine lubrication.

Troubleshooting :

If leakage occurs at the bottom connection, first tighten the valve flange connection. If the leakage continues, remove the valve and replace the gasket.

If leakage is observed from the cover, tighten the cover bolts evenly. If the problem persists, replace the cover gasket. If the valve leaks while in the closed position, disassemble the valve and inspect the seat, orifice button and float assembly for wear, damage or debris. Clean or replace any damaged components as required.

If the valve does not release air correctly, check that the operating pressure does not exceed the valve's maximum working pressure. If the problem continues, disassemble the valve and inspect the internal components for blockage or damage.

Note: Floats are weighted with sand, but if any water is found inside, the float must be replaced. If the seat is damaged, the bonnet should be replaced, as the seat is vulcanised onto it.

Disassembly :

Warning: Before removing the valve cover, fully isolate and drain the valve. Failure to release system pressure may result in serious injury.

1. Close the inlet isolation valve.
2. Remove the protective hood if fitted.
3. Remove the cover bolts.
4. Carefully lift off the valve cover.
5. Clean and inspect all internal components.
6. Remove any dirt or foreign material from the valve body and cover.
7. Replace any worn or damaged parts, including the seat if necessary.

Note: Floats are weighted with sand; if any water is found inside, the float must be replaced. Replace worn components as required, and clear all foreign material from the body and bonnet. If the seat is damaged, the bonnet should be replaced.

Reassembly :

1. Ensure that all components are clean before reassembly.
2. Replace all worn gaskets, seals and damaged components.
3. Install the stainless steel float into the valve body.
4. Position the body-to-cover gasket correctly.
5. Install the cover assembly onto the valve body and align the bolt holes.
6. Insert and tighten the cover bolts evenly using a criss-cross tightening sequence.
7. Slowly open the inlet isolation valve and check the valve for correct operation and leakage before returning the system to service.

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