Automatic Air Vent

Fig. 775 & 776

Function

Automatic Air Vent valves are designed to remove the air that accumulates in heating and air conditioning systems without the need for manual intervention. This prevents harmful phenomena that may compromise the life and the performance of the heating system and which include:

- Corrosion due to the oxygen.
- Pockets of air trapped in the heating emitters.
- Cavitation in the circulation pumps.

Fig. 775

Product Life Cycle

The life of the piping products is dependent on its application, frequency of use and freedom from misuse. Compatibility with the system into which it is installed must be considered. The properties of the fluid being transported such as pressure, temperature and the nature of the fluid must be taken into account to minimise or avoid premature failure or non-operability.

A well-designed system will take into consideration all the factors considered in the piping products design, but additionally electrolytic interaction between dissimilar metals in the piping products and the system must be examined. Before commissioning a system, it should be flushed to eliminate debris and chemically cleaned as appropriate to eliminate contamination, all of which will prolong the life of the piping products.

Limits of Use

These valves have been categorised in accordance with the Pressure Equipment Directive 2014/68/EU.

The fluid to be transported is limited to group 2 liquids i.e. non-hazardous.

On no account must these valves be used on any group 1 liquids, group 1 gases, group 2 gases or unstable fluids.

Note: Valves are classified as SEP (sound engineering practice) and as such cannot be CE marked and do not require a declaration of conformity.

Operating

- Valves must be installed into a well-designed system and it is recommended that the system be inspected in accordance with the appropriate national and regional legislation.
- Valves must be installed by trained personnel only.
- Maximum operating pressure reduces as service temperature increases. Service temperature and pressure should not be exceeded.
- The installation should be designed to provide adequate means of draining and venting to avoid harmful effects such as water hammer, vacuum collapse, corrosion and uncontrolled chemical reactions and to permit cleaning, inspection and maintenance in the correct manner.
- Valves are not designed to operate under high shock loadings. Where pressure increases occur due to shock loading (water hammer), they should be added to the working pressure to obtain the total pressure acting on the valve. The total must not exceed the pressure rating of the valve.
- The product has not been designed to include corrosion, erosion or abrasion allowances. Any queries regarding service applications should be addressed to the Hattersley - Technical Sales Department.
- Not suitable for fatigue loading, creep conditions, fire testing, fire hazard environment, corrosive or erosive service, transporting fluids with abrasive solids.
- The piping system shall be designed to reduce the risk of fatigue due to vibration of pipes.
- Hattersley valves have not been designed as fire safe valves.

Operating Pressures and Temperatures

Fig. No.	PN	Non-shock pressure at temperature range	Non-shock pressure at max. temperature
Fig. 775 / 776	PN10	10 Bar / 0 – 110°C	110°C max.

Installation and Operating Instructions

Layout and Siting

Care should be taken regarding orientation of the automatic air vent to enable full efficiency to expel air from the system.

It should be considered at the design stage where air vents will be located to give access for inspection maintenance and repair.

Installation

These air vents are threaded to ISO 228/1 BSP parallel (external) and require a seal washer to ensure leak tightness.

Air vents are precision manufactured items and as such, should not be subjected to misuse such as careless handling, allowing dirt to enter, lack of system cleaning before operation and excessive force during assembly.

All special packaging material must be removed.

The valve is installed in the vertical position, on the air separator, on manifolds, on riser pipes and generally in parts of the system where a concentration of air pockets is to be expected.

Operating

During operation the upper cap must be loosened.

It is not advisable to fit the valve in places which could be subject to freezing.

Models with shut-off

The automatic shut-off valve, which forms a seal with the valve body by means of an O-ring, facilitates maintenance operations by shutting off the water flow when the valve is removed and also allows for easy inspection.

Note: maximum discharge pressure 7 bar.

Maintenance

The Fig. 775 & 776 air vent is maintenance free.

However, the system should be at zero pressure and ambient temperature prior to any inspection.

Maintenance Engineers & Operators are reminded to use correct fitting tools and equipment.

A full risk assessment and methodology statement must be compiled prior to any maintenance.

The risk assessment must take into account the possibility of the limits of use being exceeded whereby a potential hazard could result.

A maintenance programme should therefore include checks on the development of unforeseen conditions, which could lead to failure.

Stress Corrosion Cracking

The use of chemicals for system dosing must be determined by the user as all aspects of the system must be established and considered, and the effect of the chemicals used (including compounds arising from chemical combinations) must also be established in order to accurately determine compatibility.

Hattersley (and its related brands) manufacture hardware (valves, couplings, etc) for the Building Services industry and Utilities industries. However, we are not system designers or operators and cannot make recommendations regarding chemical compatibility for the system, as a result of the above variables. Any comments from Hattersley regarding chemical compatibility shall relate solely to the Hattersley product and does not constitute a recommendation on compatibility for the wider system, resultant chemical compounds, components, substances or materials, in whole or in part.

For reference, and not exhaustive, certain austenitic stainless steels and aluminium alloys crack in the presence of chlorides, mild steel cracks in the presence of alkali and nitrates, copper alloys crack in ammoniacal solutions and iron with almost any caustic species (hydrogen presence notwithstanding).

For more information on how SCC can occur, please visit www.hattersley.com

YouTube To visit our video library search Hattersley Valves on YouTube

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