

CRANE

FLUID SYSTEMS

AUTOMATIC AIR VENT

D2003 & D2004

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.



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 PRESSURES AND TEMPERATURES

Fig. No	PN	Non-shock pressure at temperature range	Non-shock pressure at max. temperature
D2003	PN10	10 bar from -10°C to 120°C	10 bar at 120°C
D2004	PN10	10 bar -10°C to 110°C	10 bar at 110°C

Not suitable for fatigue loading, creep conditions, fire testing, fire hazard environment, corrosive or erosive service, transporting fluids with abrasive solids.

PRESSURE/TEMPERATURE RATING

These air vents are suitable for use up to 10 bar pressure rating. They must be installed in a piping system where the normal pressure and temperature do not exceed the above ratings.

The maximum allowable pressure is for non-shock conditions. Water hammer and impact for example, should be avoided.

If the limits of use specified in these instructions are exceeded or if the valve is used on applications for which it was not designed, a potential hazard could result.

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 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 in the standard version (black plastic cap for sizes 3/8" & 1/2") must be loosened.

The upper cap for the hygroscopic version (sizes 3/4" & 1") must be completely hand tightened.

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

Hygroscopic cap

3/4" and 1" models are equipped with a hygroscopic safety cap. Its functionality is based on the properties of the fibre discs that serve as the seal cartridge and whose volume increases by 50% as soon as they become wet and thus cause the valve to close. This way, possible damages are avoided in case of leakage.

Models with shut-off

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

Note:- maximum discharge pressure 2.5 bar, system pressure must be under 2.5 bar to allow the air to discharge automatically.

MAINTENANCE

The D2003 & D2004 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.

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- Designed and manufactured under quality management systems in accordance with BS EN ISO 9001:2008

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