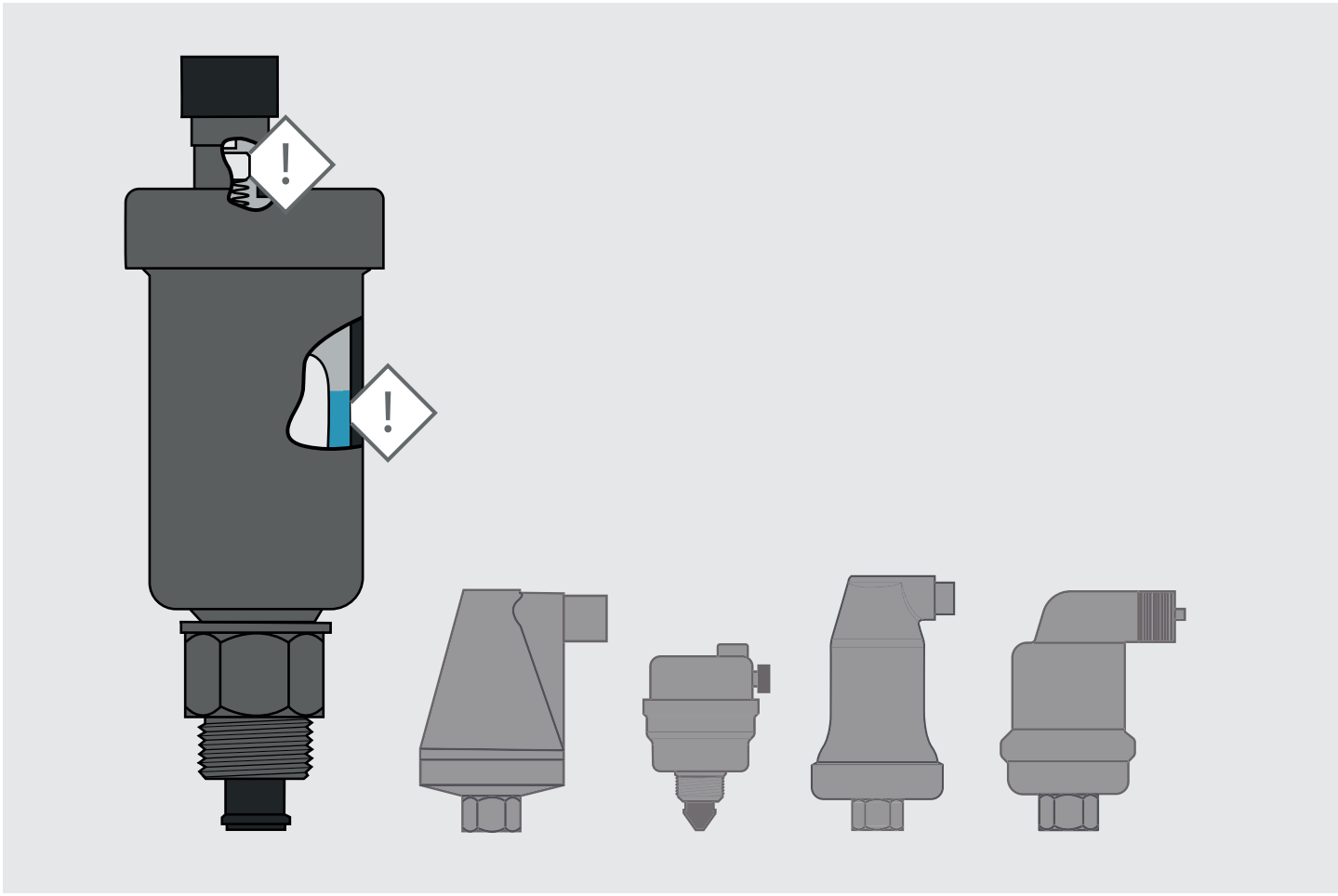
risycard

RICA 01 - automatic air vents



RISK OF OXYGEN ENTRY

An automatic air vent that suddenly becomes an ‘aerator’ turns immediately into one of the biggest causes of corrosion !

Although almost everyone thinks that automatic air vents can prevent corrosion (which is hardly the case*), in practice it turns out that they even allow air (and therefore oxygen) to enter the installation.
The real CAUSE of the problem lies, of course, in the failing pressure maintenance. This makes it the ‘Achilles’ heel for the life span of the heating installation.

OPERATION

Automatic air vents must expel accumulated gases automatically.

The operation is very simple. A float that is on the water level, keeps a valve closed (fig 1). When gases have collected at the top of the float chamber, they push the water level down and the float drops, causing the vent valve to open (fig 2). The collected gases can now escape causing the water level, and thus the float to rise and the valve closes again.

Important Note
the proper functioning of the automatic air vent thus depends on two factors:

- there must be enough water in the float chamber to keep the vent valve closed
- there must be sufficient pressure to expel the accumulated air.

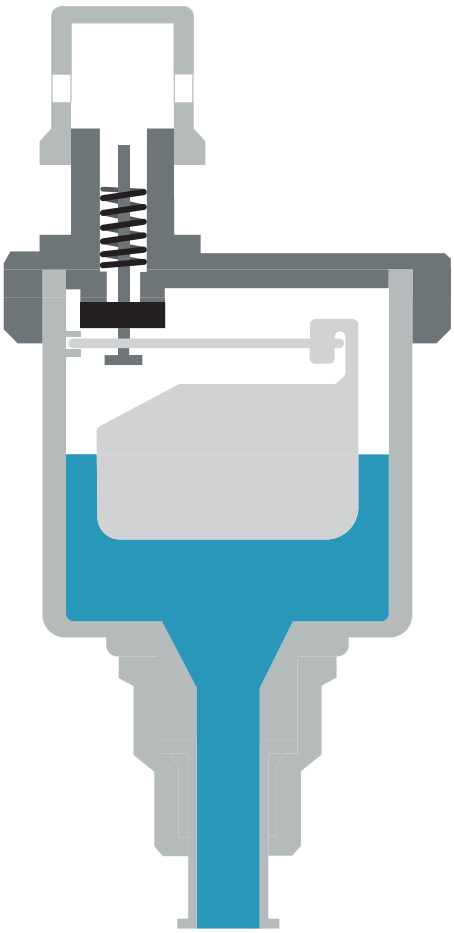


fig 1

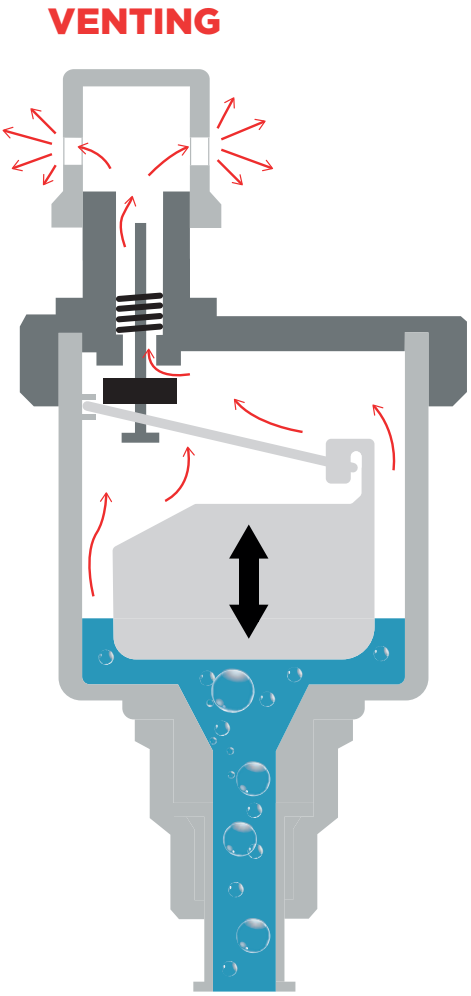
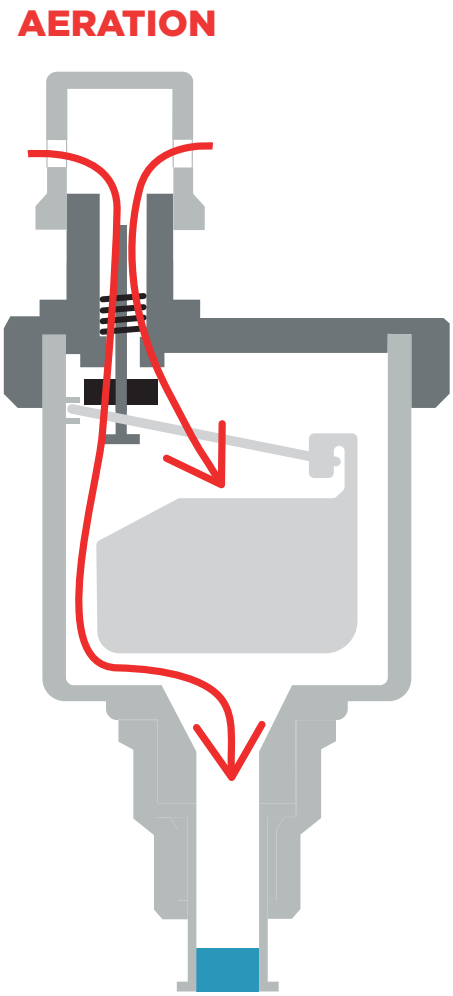


fig 2

RISK OF OXYGEN ENTRY

With sufficient water and sufficient pressure in the float chamber, an automatic air vent stays closed.

If the pressure decreases and finally **negative pressure** occurs the float will drop and the vent valve opens. Now **the automatic air vent functions like an 'aerator'** and sucks in air and with it large amounts of oxygen. This is a significant risk of automatic air vents. T**o prevent this attention should be paid to good pressure control.** Removing automatic air vents does not solve the underlying cause (negative pressure).



DID YOU KNOW

** automatic air vents contribution to the prevention of corrosion in central heating systems is very limited.*

The gases that an AAV discharges falls only once under the heading "air" – and that is at the very first time when the installation is filled up. Only then is there "air" (ie 78% nitrogen, 21% oxygen and 1% other gases) to be removed. Shortly after start up the oxygen part of the air has been consumed in the corrosion process. There is then no more "air" in the system but only "other gases".

Several national guidelines explain this in detail:
BE: WTCB TV278
NL: ISSO 13
UK: BSRIA BG 50
DE: VDI 2035 Blatt 1

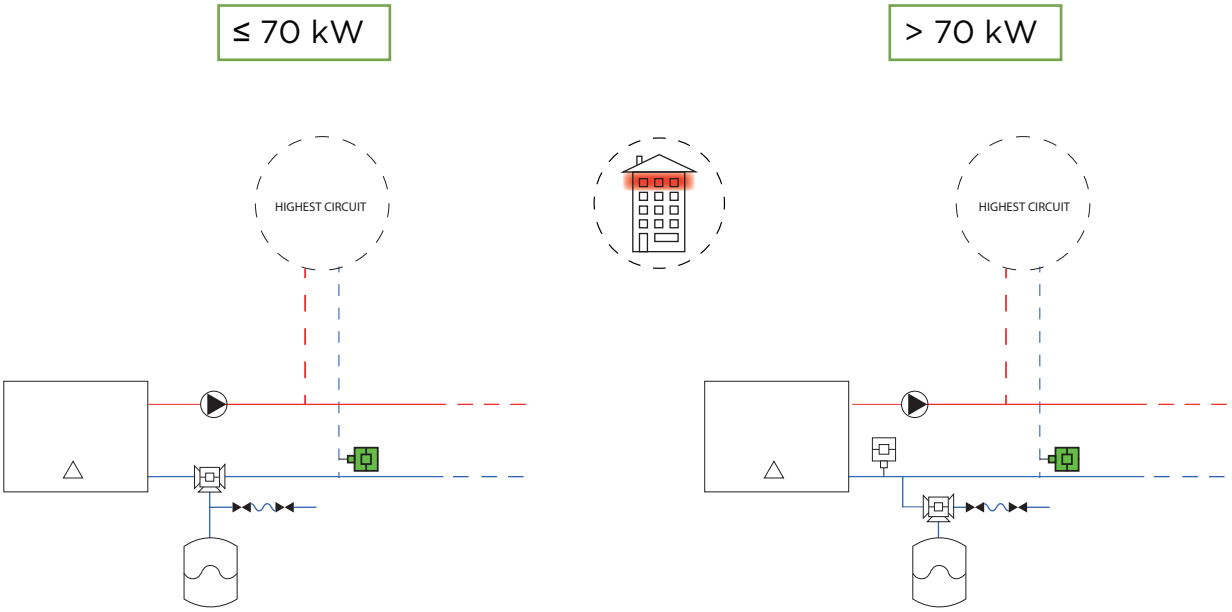
There are several case studies available from Resus that illustrate the Risks covered in the Risycard series.

THE IMPORTANCE OF RISYCOR

For the correct installation of a Risycor, please refer to the Application Guideline.

In this specific case in addition to a Risycor in the general return, we also recommend to place one in the return circuit from the highest point of the installation

For a good follow-up of the entire installation, the recorded data should be checked using the Resus dashboard at least once a year.



ABOUT US

Resus is the manufacturer of Risycor, a system for continuous corrosion monitoring in closed heating and cooling systems. Like a smoke detector, a Risycor is an early warning system that prevents problems by providing an early warning.

Corrosion is ALWAYS the result of oxygen ingress, which in 90% of the cases
Is the result of poor pressure control. The remainder of the cases are often the result of failing risk components. Read more about this in our Risycards and Risybasics.
The application of Risycor is explained in the Risycor Application Guidelines.

READ ALSO

RICA 01 - automatic air vents
RICA 02 - green zone
RICA 03 - neutral point
RICA 04 - failing air non return valve
RICA 05 - oxygen diffusion open bladder
RICA 06 - breakdown of PWH water
RICA 07 - oxygen diffusion
RICA 08 - content indication constant pressure
RICA 09 - clopen systems
RICA 10 - pre-pressure

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