

Don't let precious energy
disappear into thin air!



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We are increasingly conscious of how Heating Systems consume precious fuels. For example, by switching off the heating earlier and switching off equipment when it's not in use. Yet very few people think about the water in the central heating system, even though this has a huge impact on its efficiency.

The principle is simple, water contains tiny air bubbles (microbubbles) and air doesn't heat up. These microbubbles combine to create large air pockets in radiators for instance. This dramatically increases energy consumption. Installing a deaerator is the ideal solution to this problem since it automatically removes all the air from the system.

Significant savings with deaerator

The independent Dutch research agency (TNO) has calculated the effect of a deaerator on energy consumption. The result: a possible energy saving of up to 25%.

Maintenance-free and a longer lifespan

A deaerator also reduces rusting, wear and tear generally, leakage of expansion vessels, overuse of the thermostatic valves, as well as decreasing pump performance. This in turn avoids unnecessary maintenance costs and dissatisfied users. A deaerator extends the lifespan of the system and substantially reduces the risk of any faults developing.

Spirotech deaerators: the only original

With more than 40 years of experience and a fully equipped R&D department, Spirotech is regarded as the only real specialist in deaeration and dirt separation in the world. This is why SpiroVent deaerators have been recommended by reputable boiler manufacturers for many years. We work day-in-day-out to develop and produce solutions to prevent and solve possible problems. In doing so, Spirotech is committed to its customers, responsible working conditions and the environment.

TNO's conclusion:

'Air doesn't dissolve very easily in installation water. Air bubbles combine to create larger bubbles, reducing the efficiency of central heating systems. Consequences: Extra heating and need for local ventilation. This can increase overall heat output by as much as 25%.'



Individual deaerator and dirt separator in a domestic heating system

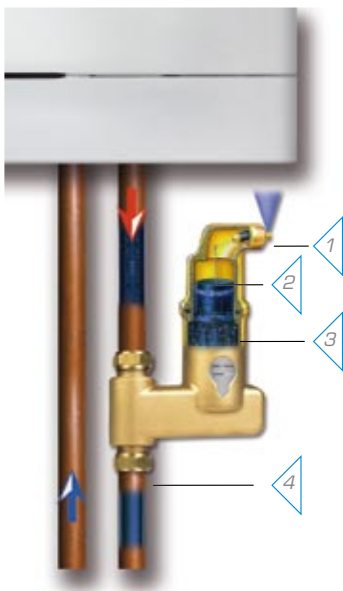


Deaerator in a utility plant

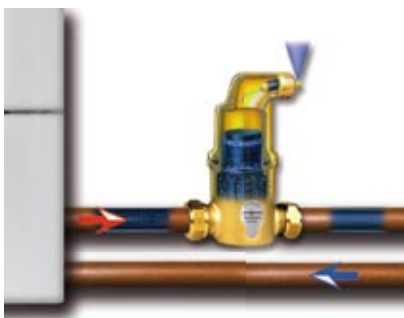
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Spirotech: always an efficient solution for air-free installation water

- 1 Guaranteed leak free blow-off valve
- 2 Special air chamber construction
- 3 Unique patented high efficiency separator element
- 4 Diameters from 22mm. up to DN 600 and bigger



Vertical connection



Horizontal connection

Because every home or building - and hence every heating system - is different, we supply a wide range of deaerators. The exact model that's fitted depends on the water content of the system, the boiler capacity and the flow rate.

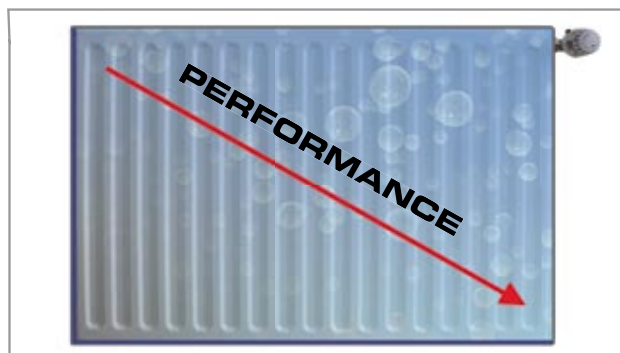
Spirotech automatically removes air from the central heating system

Our deaerators work in two phases. During the first phase, the unique operation of the Spirotube allows the microbubbles to separate from the water, collecting them in the air chamber above. During the second phase, the separated air is released through an automatic valve, leaving the installation water to perform as it should.

The blow-off valve ensures continuous operation under all circumstances. The valve cannot be shut off and is guaranteed leak free. Any floating dirt that might be present in the system is never able to reach the blow-off valve. The result is air-free water which restores the central heating system to optimum performance.

The benefits of a Spirotech deaerator:

- reduced energy consumption by up to 25%
- fewer problems and faults
- extended lifespan of the system
- can be installed in both new and existing systems
- 3-year guarantee



Air in a heating installation reduces the performance

Overview Spirotech deaeration products



SpiroTop - Automatic Air Vents



SpiroVent - Microbubble deaerators



SpiroVent - Superior Vacuum degassers



SpiroCombi - Combined deaerators and dirt separators

All rooms can count on Spirotech

Every room is different. As a result, so is its potential energy saving.* Below a three different situations, and the energy reduction that could be achieved.

Case 1: Single-family apartment

A single-family apartment extending over one floor consumes 1,200 m³ of gas per year. Because the large radiator in the living room is half filled by an air pocket, the temperature of the radiator water automatically rises to bring the room to the correct ambient temperature. This pushes up the temperature in all the radiators and increases heat delivery throughout the apartment. A common response to prevent overheating is to create extra ventilation since turning down the radiators won't achieve much. The combination of the higher supply temperature and the extra ventilation can increase energy consumption by as much as **25%**, which is equivalent to a total consumption of 1,500 m³ per year. This would cost a staggering £ 160,- extra per annum (at: £ 0,54/m³). If the family bought a deaerator, they mostly recoup the costs within a year.



Case 2: Single-family house

The children in this single-family house have their study in the attic. Attics are difficult to heat since air often collects in the highest radiator in the house. To make the attic a comfortable environment, the living room thermostat is turned up 1°C. This raises the temperature of the whole house by one degree on average. The family's annual energy consumption goes up by **10%** and their total gas consumption rises to 1,980 m³ per annum, at a cost of more than £ 95,-. Switching to a 2,000 Watt electric heating system won't help since it burns around 5 kWh per heating day (500 kWh for 100 heating days, costing £ 90). A Spirotech deaerator would help enormously and often pays for itself within a year.



Case 3: Office building

The heating in an office building which consumes 8,000 m³ of gas a year is regulated by the outside temperature. Because the north side of the building heats up slowly, the heating regulation is adjusted to compensate. Despite this, it's still unpleasantly cold in some of the rooms due to a trapped air in the system which interferes with the flow of heating water. This in turn reduces the efficiency of the system by **5 to 10%** (at 7% this stands for 560 m³ of gas per year, costing nearly £ 325,-). A deaerator would restore the efficiency of the heating system and prevent this extra energy loss.



Want to know how much you could save? Go to www.aircostsenergy.com.

* The results quoted are based on calculations performed by TNO. Actual losses are of course strongly influenced by user response to the discomfort caused by the loss of heating surface due to air.

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