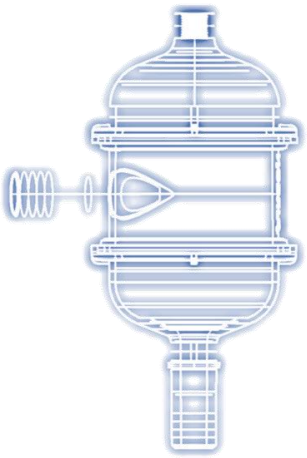
Benefits of Airgon for Housing Associations and Landlords



Airgon is a patent pending, British designed and manufactured, deaeration device, that when installed into a wet heating system will continuously remove all of the gases (Free air, dissolved oxygen and entrained gases) from the heating system water.

This improves thermal transfer from the radiators by [1,]15.47% on new systems and up to [2,]31.0% on aged systems at 60°C and 1.25 bar pressure which are typical operating parameters in a domestic heating system.

Airgon also extends system life by around [1,]7 years whilst significantly removing the risk of component failure and unplanned maintenance.

Airgon is scientifically proven to improve heating system performance by removing the thermal barrier created by dissolved oxygen and entrained gases, extending the life of the system, significantly reducing the risk of breakdown, and saving typically between 15% and 30% on fuel and CO_2 emissions.

1, 2. Report findings by TÜV SÜD, NEL No: 2023_274, and No: 2023_304

Airgon works with any wet heating system regardless of heat source. It works equally well with gas, oil, electric, biofuel, or hydrogen-based boilers because removing the thermal barrier created by air and dissolved gases, improves heat transfer.

This typically results in cost reductions of around 20% on fuel usage which is excellent news for the consumer and especially businesses who currently face substantial, uncapped energy price increases.

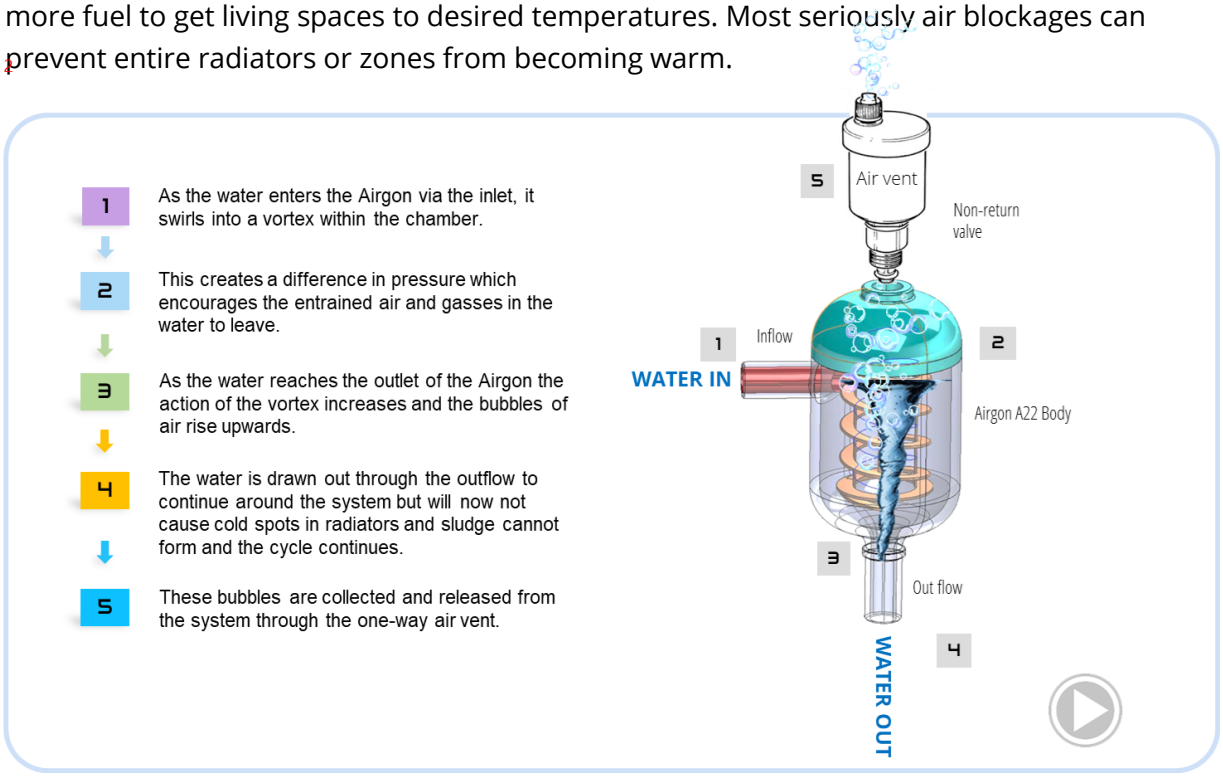
Airgon also significantly reduces maintenance costs and prolongs boiler life calculated to be 7 years. When the gasses are removed from the system water corrosion cannot take place stopping magnetite from forming which is the main cause of mechanical and component failure.

This is an area of particular interest to housing associations and landlords as Airgon can also reduce the cost of a boiler replacement programme by around 35%

So how does Airgon work?

Airgon works by addressing the issues that air causes in a closed wet heating system, especially the formation of magnetite (rust) as the dissolved oxygen in the water reacts with metal elements, increasing the viscosity of the water putting strain on pumps and other components.

Secondly, the pockets of trapped gas in radiators form cold spots, reducing the size of the available surface area to conduct heat into the environment. This results in having to use more fuel to get living spaces to desired temperatures. Most seriously air blockages can prevent entire radiators or zones from becoming warm.



The magnetite issue is partially alleviated using magnetic filters, but these only collect the rust as the system is gradually destroyed. Bleeding the radiators removes some of the free air temporarily but this quickly builds back up again.

By removing all of the air, there is no longer sufficient oxygen to react with metallic components to corrode and form magnetite. The removal of gasses entrained in the water prevents the thermal barrier from forming. With gas no longer present to become trapped in radiators, cold spots cannot form because there is nothing to form them.

As a housing provider, installing Airgon helps your tenants to reduce their heating bills by around 20% this gives you a lot of kudos, plus for every kWh of gas (burnt on site for heat) saves 0.19kg of CO_2.

You may not directly benefit from these savings unless you're operating a HMO. However, installing Airgon considerably reduces maintenance costs providing benefits in two primary areas:

1) **Fewer call outs**. Most call outs are air issue related. The most common being trapped air preventing radiators getting hot or causing the boiler to switch off because of pressure issues. This can occur at any time if the air is not removed from the system. Airgon prevents the accumulation of air and therefore this issue does not arise.
2) **Extended boiler life**. Any boiler replacement programme must take into consideration the life expectancy of installed equipment. If that life expectancy is 10 years, over a 30-year period the boiler will to be replaced three times. Airgon reduces component wear on two fronts;
    a. Reduced running times. By removing the thermal barrier in radiators, Airgon enables temperatures to be reached more quickly using less fuel. This means that boiler run times are reduced, extending the useful life of a system in terms of elapsed time.
    b. By preventing magnetite production, less strain is placed on components which now wear much more slowly.

As a result of the above effects, we calculate that Airgon extends boiler life by 6.8 years. On that basis, over a 30-year period, a boiler would only require replacement twice. The first replacement would be at year 17 rather than year 10, and the second at year 34 rather than year 20. Assuming the cost of the replacement boilers remains constant in real terms, this represents a reduction in Boiler Replacement costs of 42%.

You can buy a perfectly good replacement condensing boiler from a top brand for around £700. These would, however, despite being of a very high standard, have limited energy output if you need to provide heat for a larger property. In this case a more realistic figure might be £1,200 plus installation.
Monetarily we can express this as at least a reduction in the cost of one domestic boiler, at the time of writing a branded hi-efficiency condensing boiler costs around £1200 plus installation, and the elimination of at least one call out per year at an average cost of [3.)] £90. This values the maintenance cost savings provided by Airgon over this period at £3,900 per property.
For a housing association managing 10,000 properties, this would equate to **£1.3m per year** in maintenance cost savings. Larger housing associations would save proportionately higher amounts.
Whilst this a reasonably conservative figure the benefits are clear to see and calculating the potential cost efficiencies for your own circumstances is something we are happy to do for you if you provide us with the data.

3.) https://www.checkatrade.com/blog/cost-guides/plumber-cost/ average emergency call out £112.50UK.