

Water-King: How it Works

Extracts from a report by

Professor Peter Dobson and Alexandra Kay, University of Oxford, Dept of Engineering Science March 2006.

The Water-King device differs from most available non-chemical water conditioning devices because it applies an electric field to water inside the pipes rather than a magnetic field. The electrodes are fixed to the outside of the water pipes and they comprise two or more coils of insulated wire, they do not provide for any magnetic field production. A rectangular pulsed voltage is applied between the two coils and this induces an electric field inside the water pipe. The electric field will penetrate any normal water pipe.

The normal scale that builds up in hard water areas is calcite, often mixed with some magnesium carbonate. Application of Water-King to a system produces an increase in suspended nanoparticles, which tend to have a higher percentage of aragonite present, and these particles tend to flocculate rather than build scale, and form a fine sludge that is flushed away. There is also evidence that the application of Water-King to an existing installation brings about a removal of scale. The presence of traces of iron in the water also appears to enhance the effectiveness of Water-King, probably by enhancing the electrical charge on the suspended nanoparticles.

Softer Water

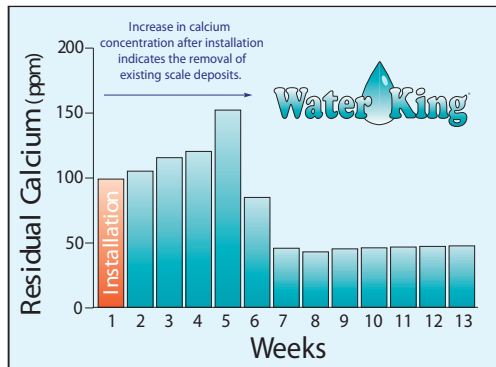
Unlike other types of water conditioner, Water-King is proven to produce softer water with less dissolved calcium occurring in hot water. The adjacent table shows week by week how much Water-King can soften hard water. After the first few weeks, during which the existing scale is removed, the hot water is half as hard as it was without the Water-King treatment.

Water-King Complies With Part L

The Domestic Heating Compliance Guide requires water heaters in hard water areas to be protected from the formation of limescale. It says "Where the mains water hardness exceeds 200 parts per million, provisions should be made to treat the feed water to water heaters and the hot water circuit of combination boilers to reduce the rate of accumulation of limescale." Installing a Water-King not only means you fulfil the legal requirements, but it will also remove existing scale from old systems and it is the only device of its kind actually proven to produce softer hot water.

Tested by Forensic Experts

Independent tests carried out on a Water-King installation by TFW Associates, Forensic Engineering Consultants to the Legal Profession, show that at the end of the trial period



the residual calcium concentration as calcium bicarbonate was reduced by approximately 50% compared with the initial pre-installation value.

Additionally, there was a marked reduction in calcium deposition on appliances fed only from the cold water supply.

In the tests a WK1 model was fitted in domestic premises located in a hard water area to treat the hot water system. It was sited on the cold supply pipe between the header tank and the hot water storage cylinder. Water was sampled weekly and double filtered through a 0.45 µm micro-fibre filter. The residual calcium concentration was measured using a Z8100 Hitachi Absorption Photometer.

Technical Data	wk1	sentry
Installation	DIY	Professional
Direct fired gas/oil water heater; maximum output	35 kW 119,420 Btu / hr	
Electrical water heater; Maximum output	15 kW 51,180 Btu / hr	
Maximum pipe diameter	28mm	
Frequency range	1-10kHz	
Peak output voltage	82V	
Power supply	230V	
Input current	0.02A	
Dimensions	140 x 85 x 50mm	
EMC Directive	RTCG certify levels below CISPR/14 & CISPR/22	
Radio Agency	Approved Tariff N°ENS 8505901009900-811	
Weight	0.75kg	0.80kg
Humidity Non Condensing	80%	IP68
Transformer	External	Internal

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How Water-King can save you money

FACT: Limescale reduces energy efficiency and the working life of your heating system. Just 1.6mm of scale can reduce heating efficiency by 12%

What Water-King can do for you

Saves energy, cuts bills

Reduces your carbon footprint

Complies with Part L regulations

Removes existing Limescale

Prevents new scale forming

Showers run stronger and cleaner

Soap and shampoo lather better

Reduces bath ring scum

Better for skin and hair

Can help eczema & psoriasis

No servicing, salt or chemicals required

Retains healthy minerals

Low running costs

Mains pressure unaffected

No separate drinking tap needed

No pipes to cut

Easy 20 minute fitting

Easy to take when you move

Domestic plumbing systems

In most homes, a single Water-King installed on the rising main will provide adequate scale protection and softer water.

Unvented water systems

When a combi boiler is used, and there is no hot water cylinder, a single Water-King unit fitted on the rising main will provide whole house protection. (See Fig 1). If only the boiler needs protection from scale, locate the Water-King within 2 metres of it. This also applies to a hot water cylinder under mains pressure. Only the cold supply pipe should be treated.

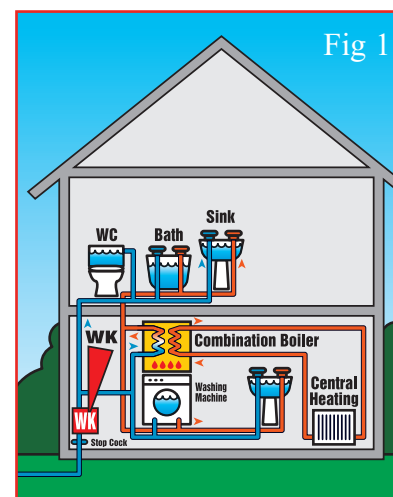


Fig 1

Vented hot water systems with cold water storage tank

Treated water delivered to a cold water storage tank will lose the effect of the treatment. Depending on water quality, this can happen very quickly. For this reason water is best treated after a storage tank.

For best results we recommend two Water-King units are fitted; one on the main inlet to the house (rising main) and one on the cold pipe that runs from the cold storage tank into the bottom of the hot cylinder (cold down service). (See Fig 2).

If you decide to fit only a single unit, then you will get best value from it by fitting it on the cold down service. The signal is transmitted through the water and will treat all the water in the storage tank above it. If you have copper pipes that are cross bonded to the rising main, the taps fed from it should be adequately treated as well.

A single unit fitted on a copper rising main can give a satisfactory result.

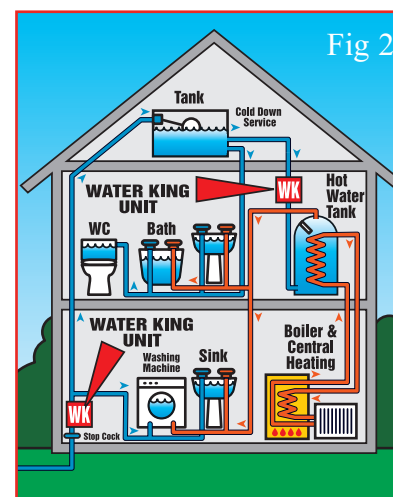


Fig 2

Larger domestic, commercial and industrial applications

Water-King electronic water softeners are suitable for a wide variety of commercial and industrial applications. Our free Specifiers Guide contains comprehensive instructions and guidance covering the full range of products and applications. It is available from our website or by calling our helpline:



WK1 is a simple to install DIY unit with aerial wires that plug into the control box. It has an external transformer that plugs into a standard 3 pin socket. The low voltage lead means that the control box can be installed in a bathroom or toilet whilst plugged into a socket outside.



Sentry for the professional installer

The sentry unit is intended for the professional installer. It is fully hard wired for security with an internal transformer. The unit is waterproof (tested to a depth of 3 metres) for safety.

Call now!
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If for any reason you are not satisfied with the results, simply return the unit to the outlet where purchased for a full refund