Shower head and bathroom units
Encrustation of scale will be reduced substantially. Shower heads will be cleaner and will require little or no de-scaling. Loose chunks of scale may become trapped behind the shower heads and aerators which will require cleaning out. You may find deposits of grit blocking very fine shower heads.

Silica Scale
Neither water softeners nor Aqua-Rex can treat silica scale. Silica does not react to acids such as vinegar or muriatic acid while calcium does.

Thermostats
Because of the increased efficiency of the water heater after the scale is removed you may need to turn down the thermostat to reduce the chance of scalding from the hotter water. You should expect energy savings to occur.

Water Softeners
If you have been using a conventional salt filled water softener you should switch over to the by-pass. You may notice an initial deterioration of water quality. **Be patient !** This will gradually improve once your Aqua-Rex has become fully effective.

Remember that the Aqua-Rex does not remove the calcium from the water. It stops it sticking to pipes or heaters The water will not be slippery or as soft as conventionally softened water but the hot water should be softer than untreated water. Most people are perfectly satisfied with the level of softening achieved by Aqua-Rex but please don't expect it to be as effective as a softener.

MAINTENANCE
The Aqua-Rex needs no maintenance or servicing, but check occasionally that the lights are flashing. If the Aqua-Rex stops working, first check that the power outlet is functioning. If the transformer is cold that means it has failed. Contact us for a replacement.
If the unit fails to work, or you are not happy with the results, then **PLEASE CONTACT US FIRST FOR ADVICE BEFORE RETURNING THE UNIT.**
info@aqua-rex.com
or call 1-877 640 2170

Neither Aqua-Rex LLC nor its parent company, Lifescience Products Ltd will accept responsibility for consequential loss as a result of the performance or otherwise of the Aqua-Rex unit.

100 Day Money Back Guarantee
If, for any reason whatsoever, you are dissatisfied with your Aqua-Rex product, you may return it at any time during the first 100 days after purchase and the purchase price of the unit will be reimbursed in full. Call us first before returning it to wherever it was purchased, together with your full name and address and proof of purchase, showing the price paid.

20 Year Manufacturer's Warranty
Lifescience Products Ltd guarantees to repair or to replace the Aqua-Rex treatment unit in the event that it suffers from any manufacturing defect during the first twenty years after purchase. The unit should be returned to us properly boxed and wrapped, together with the proof of purchase, showing the price paid. This warranty excludes external transformers.

AQUA-REX LLC
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Las Vegas. NV 89102
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INSTALLATION, OPERATING & MAINTENANCE INSTRUCTIONS FOR AQUA-REX WK1 WK1-E - WK2 - WK3

LOCATION
The best place to fit an Aqua-Rex physical water conditioner is on the cold pipe close to where it goes into the water heater. Anywhere on the cold supply pipe is also OK as long as it is after all filters and any other water treatment system except UV.

The signal generated by Aqua-Rex travels both upstream and downstream through the water thus treating all the water in the home, even when fitted only to the water heater or softener loop. You can fit it anywhere on the cold water supply on any pipe material; Copper, PEX, CPVC or PVC.

REFER TO THE SPECIFIERS GUIDE FOR MORE DETAILED INFORMATION ABOUT COMMERCIAL SYSTEMS WITH BOILERS AND HEAT EXCHANGERS. It is available as a download from the website.

PUMPS
Pumps reduce the effectiveness of Aqua-Rex so always fit a unit after a pump, never in front of one. In a home with a hot water return we recommend installing Aqua-Rex on the cold pipe to the water heater. On larger commercial systems treat the cold service with one unit and fit a second unit on the hot water return after the circulation pump.

HEAT EXCHANGERS
Where pump fed heat exchangers are used it is best to treat the line from the heater to the storage tank. The signal travels back into the heat exchanger at the hottest point.

LOW DELTA T BOILERS
Treat the return line from the heater to the storage tank, preferably after the hot water return and cold make up water junction.

FLEXIBLE CONNECTORS
These connectors can have spiral grooves or parallel grooves. On a spiral groove just follow the grooves from the center of the pipe to the ends. You can't fit wires properly on parallel grooves so find some straight pipe instead.

MAIN EARTH BOND
If there is a main earth bond close to the point of installation, make sure the Antennas are downstream (after) the earth bond.

PIPE BENDS & VALVES
Antennas can be wound either side of a bend, a tee or either side of a valve. (Twelve windings on two antennas requires 6 inches of pipe run; four antennas need 12 inches)

AQUA REX

LEAVE THIS INFORMATION WITH THE HOME OWNER

INSTALLATION

Fix the control box on the wall close to the pipe or hang it from the pipe if the wall is too far away. The length of free wire between the unit and the wrapped portion of the pipe should not exceed 15 inches.

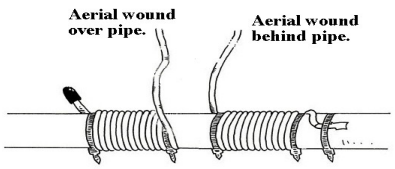
The WK2 and WK3 are supplied with two fixing lugs. Remove two of the screws from the back plate and attach the fixing lug to the back plate with the same screws.

ANTENNA WINDING

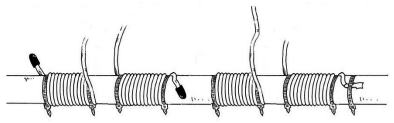
Antennas on all Aqua-Rex units are paired. They must be wound in opposite directions going away from a CENTRAL point. They must be tight on the pipe.

One antenna should start by passing behind the pipe and the other antenna should pass in front. Secure each end of the antennas with a cable tie.

DO NOT USE TAPE. SECURE BOTH ENDS PROPERLY. THE WIRES MUST NOT BE LOOSE.



All four antennas of the WK1-E. WK2 and WK3 must be wrapped around the pipe.



GROUNDING AN ANTENNA

The Aqua-Rex can perform better on metal pipes when **one** antenna is grounded. To ground an antenna, remove the black end cap and strip a half inch of insulation leaving the wire exposed. Secure it with a cable tie to the pipe ensuring there is good electrical contact by scraping off any paint so the bare metal is exposed.

Never ground more than one antenna on any unit.

WK1-E WK2 and WK3 MODELS

Each of these units have two adjacent pairs of antennas. These can be fitted to a single pipe, to two adjacent pipes or either side of a heat exchanger.

ALL MODELS

Do not allow gaps between the antenna and the pipe. Windings must be tight and close together except in the grooves of a flexible connection.

Do maximise the number of windings per antenna, a minimum of 12. (WK3 minimum is 15)

You do not need to have the same number of windings on both antenna.

If there is going to be surplus antenna wire, arrange for it to be at the end with the cap rather than the end nearest the control box.

You can wind the antenna either side of a "T" junction or elbow, on a horizontal or on a vertical pipe.

POWER SUPPLY

All units use the same 115/9Vac plug transformer. The low voltage lead from the plug transformers can be extended by splicing in extra cable such as speaker wire. This has been tested over half a mile so you can extend it to a convenient outlet without having to install a new outlet.

LIGHTS

WK1 & WK1-E One light will flash.

WK2 The two orange lights will flash independently

WK3 The two outer lights will flash orange independently. The central light will show green to indicate it is receiving power.

All units have a built in "Guard chip" which senses any irregularity in the micro-chip performance and re-sets the system automatically. No manual intervention or re-setting is required in the case of brownouts or power outages.

WK3 - Building Management System (BMS)

The WK3 has an outlet jack to connect to a BMS to indicate power supply failure. The isolated BMS contact is rated for signal levels only. The maximum rating is 24V and 100 mA. The contact remains closed during normal operation (fail-safe) and opens upon fault.

EVAPORATIVE SYSTEMS

Where systems are designed to operate with make up water for evaporation, such as cooling towers and steam generators, provision must be made for blow down and regular cleaning to remove residual deposits. This is specially important in the first couple of months after installation.

WHAT WILL YOU NOTICE?

Within three to four weeks, existing scale will become softer and will be easy to break off or wipe away. You may notice cloudy water coming from the hot faucets and some loose scale deposits at the bottom of your bath or basin. This is an indication that de-scaling has commenced. If the system was severely scaled, an increase in hot water flow may be observed. You may notice the water becoming hotter more rapidly, with better lathering and the water feeling softer with more foam.

De-scaling the system

You may find that chunks of scale break away from within the pipes and these, in rare circumstances, can block pipes, shower sprays, aerators, heaters and heat exchangers. **Be aware that this may happen and can reduce flow until the blockage is cleared and can also cause the heater to fail. It may be advisable to fit strainers to protect vulnerable heaters, especially plate and frame and Geononi heat excahngers.**

WARNING

Filters and strainers on appliances and blending valves should be checked on a regular basis for the first few months after installation until the old scale no longer appears.

DISHWASHERS

Aqua-Rex is not very effective treating water in a dishwasher as it's performance is reduced by the internal pump. Make sure you use an appropriate hard water detergent and hard water rinse aid such as Lemishine. If you use the correct liquids you shouldn't have a problem.