

CLEANAIRE HRV : WARRANTY

Heat Recovery Ventilators -- MA600-80, MB600-95, & MB800-95

On proof of purchase from an authorised **CLEANAIRE** Distributor, to the original owner, and commencing 90 days after invoice, Avon Electric Ltd's warranty is.....

- A) **For the first 5 years...** the complete Heat Recovery Ventilator and Fan Speed Controller is warranted against manufacturing or materials defects, replacement or rectification including labour (at ordinary time rates), materials and transport (where any materials, are supplied, or authorised to be supplied, by Avon) and when all replaced components are returned to Avon, complete, intact and "as removed", within 15 days of being installed.
- B) **For 10 years...** from commencement of this warranty, the Aluminium Heat Exchanger "core" will be replaced, overhauled or rectified at no charge. This extended warranty includes labour (in ordinary time) and reasonable transport expenses (receipt's required).

Specifically excluded from Avon's warranty are:

- a) Any fair wear and tear which may occur in the normal residential ventilation use of the HRV
- b) Any faults caused by abuse, neglect or lack of maintenance (impediment to the designed air flows through the HRV) e.g. a Heat Exchanger Core, that may be blocked or partially blocked with airborne particulate (dust) or blocked or restricted air intake / exhaust terminals or air filters and other component failures, which can be caused by loose electrical terminations, or fluctuations / irregularities in the power supply which can cause fan motor burn out and electronic component failure. Any condensate drain damage or faults.
- c) Any claim or expense, including any consequential losses whatsoever, that exceed the actual original invoice value of the specific item of equipment supplied by Avon Electric Ltd.
- d) Any faulty installation work, or Components or Accessories, Ducting, Diffusers, Grilles, etc, not supplied by Avon, any wiring circuits external to the HRV or Speed Controller, or faulty condensate drainage, or HRV mounting system, or corrosion caused by airborne particulate or chemicals which does not impair performance.
- e) Faults or claims caused by any replacement parts (ie.. air filters), not supplied by Avon Electric Ltd

No other conditions or warranty applies and any claim to be made in writing within 30 days of the event to which it relates.

NOTE... In a typical house, a continuously operating HRV processes in excess of 3 million cubic metres of exhaust air and outdoor air annually. In some parts of NZ outdoor / or indoor air may be polluted with various chemicals or pollutants. With such large volumes of air being processed even small amounts of some chemicals can cause corrosion.

Avon has selected the best quality materials, finishes and components as appropriate for the design duty of the CLEANAIRE HRV, when used in normal residential applications. Over time, the chemical content of the supply and exhaust air (which varies throughout NZ) will cause the appearance of the two fans and the Heat Exchanger (which are in the supply and exhaust air streams) to display signs of contact with the numerous corrosive chemicals that are present in the two air streams. The changed appearance of any internal components of surfaces, due to sustained exposure to huge volumes of outdoor and indoor air, is *fair wear and tear* and is unlikely to impair component performance or life or constitute "component failure".

Avon Electric Ltd may charge for all time or expenses involved in rectifying faults not covered by this warranty.

Thank you for choosing a **CLEANAIRE HRV**. We are sure you will not be disappointed and welcome your comments.

AVON Electric Ltd
(Established 1939)

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Some information relative to product warranty, reliability & durability

CREDIBILITY :- Avon was first established in 1939, registered the **CLEANAIRE** name in 1969, has been owned by present management since 1978 and has continuously manufactured domestic, commercial and industrial HRV's since 1982. We have spent many years designing and perfecting an HRV for NZ conditions, which is proudly *made in New Zealand !!*
www.avonelectric.co.nz & www.dryair.co.nz

WHY A HEAT RECOVERY VENTILATOR HAS TO BE EXCEPTIONALLY RELIABLE :- A Heat Recovery system is a considerable financial outlay and in an average NZ home, when ventilating at the rate specified by NZ Standard 4303:1990 "Ventilation for Acceptable Indoor Air Quality", approx 3 million cubic metres of exhaust and outdoor air passes through the HRV fans and Heat Exchanger annually. Consider the effects of exposure to a forced air flow of 3 million cubic metres of air, every year, to processed Paper, Plastic and Aluminium !! Compare the materials below in regard to durability...

ALUMINIUM HEAT EXCHANGERS :- **CLEANAIRE** Heat Exchangers **are** made of aluminium. Since first produced in 1982 not one **CLEANAIRE** aluminium heat exchanger has failed. That's why we can offer and back up a **10 year free replacement warranty**. Untreated aluminium is a natural anti-fungal. (Aluminium Hydroxide is widely used in many hygiene products). Aluminium has been proven to be exceptionally durable, consider the life of aluminium window frames, roofs, aeroplanes and boats etc. Regardless of sustained exposure to three million cubic metres of forced air each year aluminium will NOT disintegrate, warp, twist or reduce thermal transfer performance.

PAPER HEAT EXCHANGERS:- Some competitor products known as ERV's, (www.hvi.org) include Heat Exchanger's made of "permeable" processed paper specifically designed to transfer moisture (humidity) from the outgoing air to the incoming air which defeats the purpose of trying to provide a clean dry air supply because all manner of water soluble biogens, mould and fungi thrive in the damp stale exhaust air from any home. A percentage of which, however small, **must** be transferred right through the permeable heat exchanger to the incoming outdoor air. Sustained exposure to three million cubic metres of forced air each year must cause some degradation to paper heat exchangers. An ERV may slowly reduce the humidity of the air in a home but it will take much longer than an HRV and in some homes, where indoor moisture generation is high, indoor condensation is unlikely to be controlled satisfactorily.

However excellent the technology in an ERV, in time, porous processed paper because it transfers moisture **must** support mould, fungi, and rot and degrade and in damp cold climates it will freeze. Frozen damp paper is likely to rapidly deteriorate. Regardless of warranty what \$ to replace the heat exchanger? Technical data published by one New Zealand ERV supplier informs that their ERV switches OFF when the air temperature falls below 8°C. The **CLEANAIRE** Aluminium Heat Exchanger cannot transfer humidity and performs at temperatures down to -15°C and so *will always comply with NZS4303 :1990*.

PLASTIC HEAT EXCHANGERS :- The heat exchangers of some other competitors are made of thin plastic. The plastic has to be as thin as packaging used for biscuits to transfer heat. Over time most plastic warps and twists. Heat Exchanger's must have a perfect seal between the *exhaust* and *supply* air streams. Any leakage between the *exhaust* and *supply* air renders the Heat Exchanger useless and the incoming outdoor air will be contaminated by exhaust air contaminants. Any plastic shower curtain even when regularly cleaned and dosed with disinfectants or fungicide is proof that plastic supports biogens, fungi and mould. How often will plastics Heat Exchanger (in a roofspace) be cleaned or dosed with fungicide?

Most common plastic's deteriorate relatively quickly -- plastic does not have to be exposed to sunlight to "age and disintegrate i.e. ...consider plastic shower curtains, refrigerator plastics and plastic upholstery. Most plastics contain an oil like ingredient called Di Octyl Phthalate (DOP -- see wikipedia) which makes plastic durable and pliable. Sustained exposure to three million cubic metres of forced air each year can cause the DOP or other ingredients in the base plastic material to evaporate *into the air stream* leaving the base material brittle and frail. Whatever ingredient leaches from the plastic heat exchanger ends up in the ventilation air stream to the home. Plastics are associated with carcinogens and most become electrostatically charged.

EFFICIENCY :- Thermal conductivity is a measure of how materials transfer energy by conduction. Heat Recovery is the prime aim of ventilation recovery systems. A material with high thermal conductivity will transfer energy better than a material that does not have high thermal conductivity. Items required to be thermally efficient are usually made of metal.. I.e. Pots, pans, electric element's, hot water radiators etc

Aluminium has one of the highest heat transfer co-efficient of all common materials, ie.... 235W/m.K
 Thermal conductivity of paper is 0.11W/m.K. Common plastics are less thermally conductive than paper.

Some HRV / ERV manufacturers claim high thermal efficiencies. **FACT** :- in certain conditions most HRV / ERV's can be proven to perform "up to" a very high performance efficiency but, in an average home, once the home is fresh and dry (approx 24 hours after initial commissioning) most HRV's are hard pressed to perform anywhere near their published "up to" efficiency.
FACT :- **CLEANAIRE** Heat Exchanger efficiency ratings are certified by EUROVENT to Standard EN308, and ISO 9001.