

Heat Transfer System Installation Manual

Please take the time to read these instructions in full before commencing your installation.

Careful planning prior to starting work will guarantee the fastest and best results regarding the installation.



Working in the ceiling space can be a hazard, and all safety precautions should be used to ensure the safety of yourself and any others.

EVOAQ - Air Quality Innovation

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Thank you for your purchase of our company's products. This system has been manufactured following current technical safety regulations and is in compliance with AS/NZ60335 standard.

Please read this instruction booklet carefully before installing the system.

It contains important information on personal and user safety measures to be followed while installing, using, and carrying out maintenance work on the equipment. Once the product has been installed, please hand this booklet to the end user.

TRANSPORT AND MANIPULATION

The packaging used for this system has been designed to support normal transporting conditions. The product must always be transported in its original packaging as not doing so could deform or damage the product. Do not place heavy weights on the packaging and avoid knocking or dropping it.

Check that the apparatus is in perfect condition while unpacking. Do not accept delivery if the apparatus is not in its original packaging or shows clear signs of having been manipulated in any way. Any fault or damage caused in origin is covered by our company guarantee. Please make sure that the apparatus coincides with the product you have ordered and that the details on the rating label fulfil your requirements.

The product should be stored in a dry place in its original packaging, protected from dust and dirt until it is installed in its final location.

IMPORTANT INFORMATION

Installation must only be carried out by qualified persons. Make sure that the installation complies with the applicable building and electrical regulations. The fan appliance must not be used in explosive or corrosive atmospheres. The duct system must be used exclusively for the heat transfer system, or ventilation and heat transfer system if used as an add-on.

The appliance is not intended for use by young children or infirm persons unless they have been adequately supervised by a responsible person to ensure that they can use the appliance safely. Young children should be supervised to ensure that they do not play with the appliance.

ELECTRICAL CONNECTION

The heat transfer fan must be connected to a single-phase mains network, with the specific voltage and frequency according to the specifications on the fan rating label.

The electrical installation must include an isolating switch with a contact clearance of at least 3 mm, correctly sized and in accordance with the electrical standards.

Earthing is not required as this fan has double insulation (Class II).

If the fan model you have purchased is not fitted with a power cord then please note that it must be wired with a fixed permanent connection. Disconnect the mains supply before making any electrical connection. If in any doubt contact a registered electrician.

SAFETY DURING INSTALLATION

Make sure there are no loose elements near the fan, as they could run the risk of being sucked up by it. When connecting the fan to the ducting, check that the ducting is clean of any element that could be sucked up by the fan. During installation of the fan, make sure that all the fittings are in place and that the structure which supports it is resistant enough to bear its weight at full functioning power.

Fans may have a delayed start-up time or operate under the control of their inbuilt electronics. Always take extreme care as the unit may start unexpectedly. Before carrying out any maintenance, make sure the mains supply is disconnected, even if the machine is switched off. Never insert your hands into the inlet side of the fan without first unplugging the fan.

INSTALLING THE SYSTEM

Before commencing installation, select a suitable place for the fan to be installed in the ceiling cavity, preferably within ~3m of the inlet grille. It is recommended to place the fan near the manhole where possible, for easy access when carrying out maintenance to the system. Suspend the fan from the ceiling framing with the chain and cable ties provided in order to minimise the sound levels resonating through the ceiling framing.

Take care not to place the inlet too close (within 1.5m) to the heat source, as the air generated can exceed temperatures that the fan is designed to operate under. If the intake air is too hot, the fan may shut down or be damaged. We recommend placing the heat room inlet grille 3-6m away from the heat source.

Attach the inlet side of the fan to the acoustic ducting (~3m long) from the inlet grille using the duct tape provided. On the other side of the fan, connect the other acoustic ducting (~1m length) with the duct tape. Ensure both the inner ducting and outer sleeve are fully taped onto the fan, and the outer sleeve of the acoustic ducting is without tears or holes. The acoustic ducting should minimise/eliminate sounds from the fan motor inside the ducting system.

The inlet of the fan unit is the end where you can see the fan blade clearly. There are also arrows on the unit showing airflow direction.

Spending time planning the layout of the ducting system is important. See the later pages of this instruction manual for further details and example layouts.

Some simple rules to apply to ensure the best possible results:

- Lay the ducting so there is a roughly equal length of ducting from the fan to each diffuser.
- The shortest length of ducting should be no shorter than 3 metres.
- Avoid tight bends in the ducting.
- Ensure the ducting is stretched out fully. Cut the ducting where needed.
- Ensure the inner duct of the insulated, and both layers of the acoustic duct is securely taped.
- Avoid installing the ducting where it may be crushed or damaged by you or other tradesmen.
- Avoid installing the diffusers near doors/hallways and directly above beds or couches.

If a wall controller is included with the system, this is connected to the fan via the supplied network cable. The controller is low-voltage only, however to prevent any damage to both the fan and controller, please ensure that the fan is disconnected from the mains supply before connecting the controller.

STARTING UP THE FAN

Before starting up the fan, ensure that:

- The apparatus is well secured and the electrical connections have been carried out correctly.
- Any electrical safety devices are correctly connected, adequately adjusted and ready for use.
- The wire and electrical connection inputs are correctly sealed and water-tight.

When starting up the fan, ensure that:

- The propeller turns in the correct direction.
- There are no abnormal vibrations.

If the circuit protection device is tripping during operation, the apparatus must be quickly disconnected from the mains supply. The whole installation should be carefully checked before trying to start up the machine again.

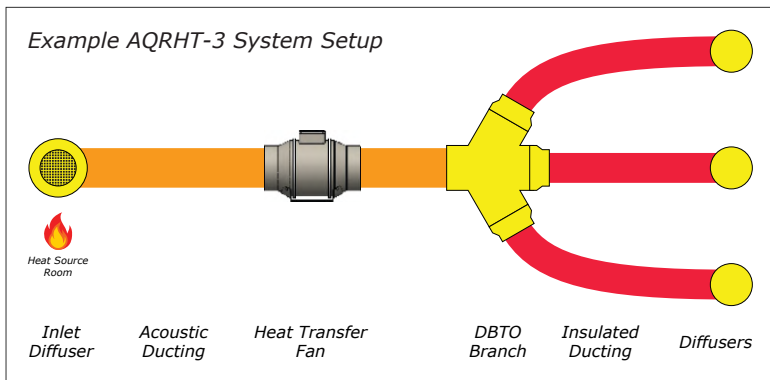
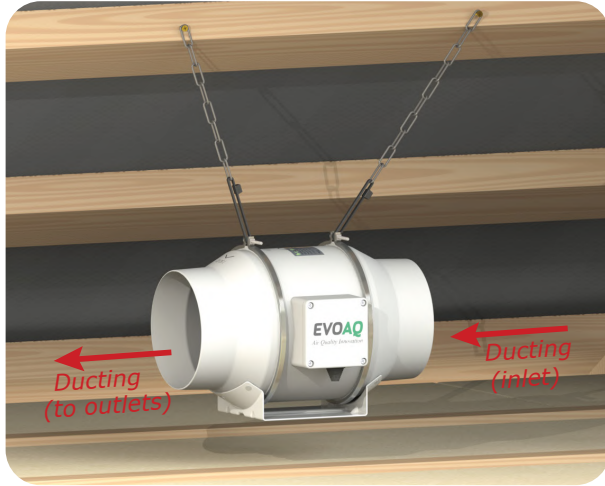
When the fan is first powered up, there may be a momentary startup delay of up to 30 second while the fan is calibrating the sensors or checking user input from the wall controller.

FAN INSTALLATION

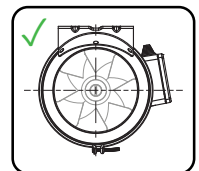
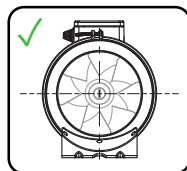
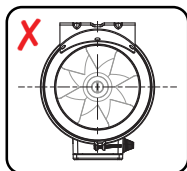
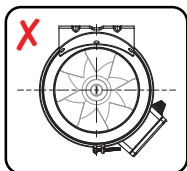
Some things to consider when installing the fan:

- Mount the fan(s) so it sits above any ceiling material - ~200mm above the ceiling
- Hang the fan with the chain and cable ties provided (e.g. see below image).
- To avoid damage to the electronics, ensure the fan body is placed upright (see below)
- For optimal airflows, keep the duct straight and level with the fan
- Place the fan away from bedrooms to minimise noise issues

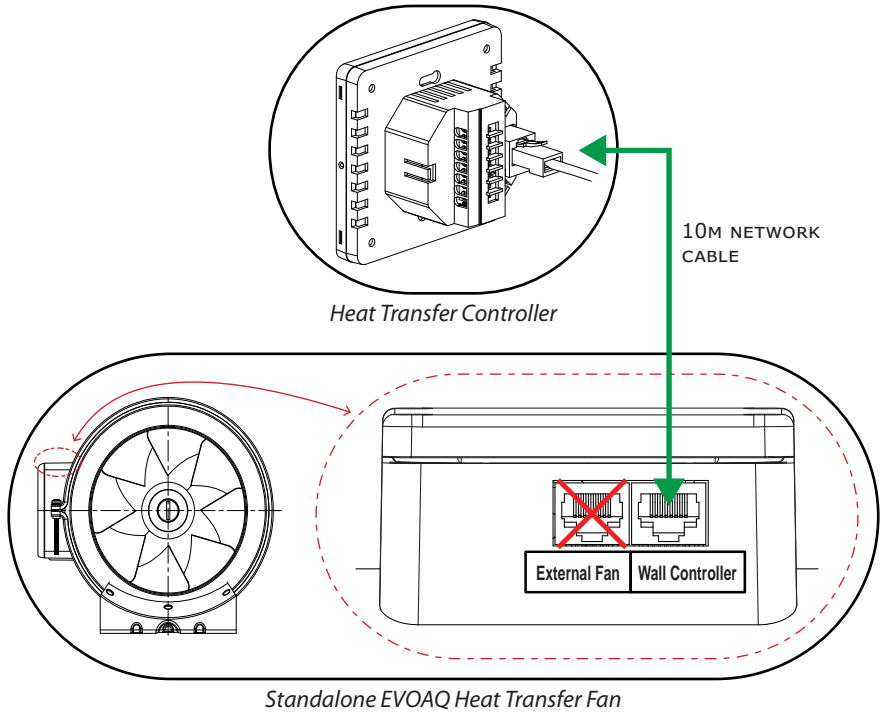
We recommend positioning the fan close to the manhole for easy access for servicing.
If your system includes a filter, it should be checked at least every 12 months, and replaced at least every 2 years - or earlier if necessary.



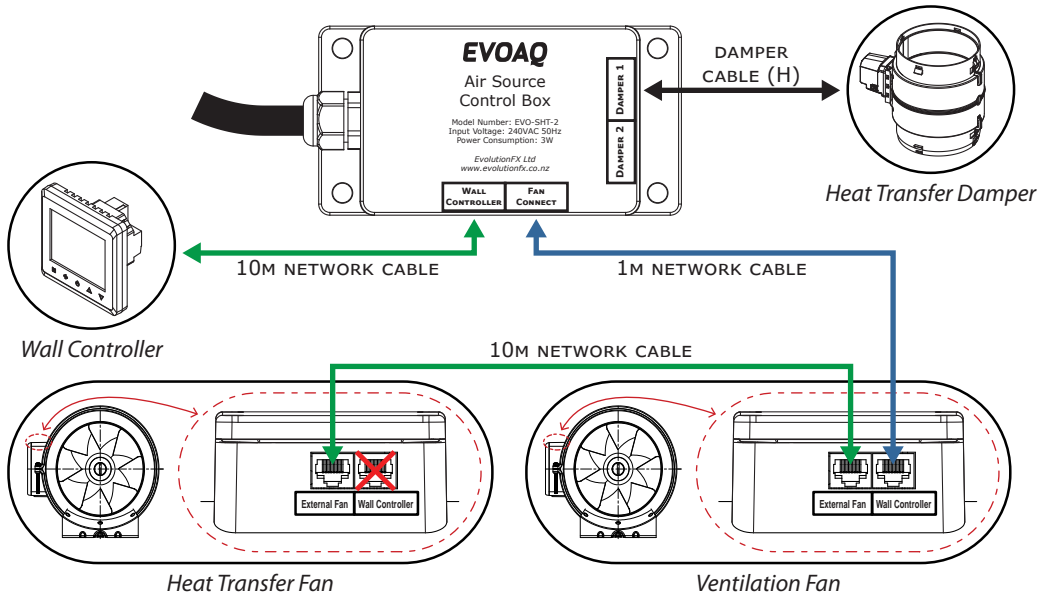
Do not install the electronics box upside down as this will damage the fan



SYSTEM WIRING - Standalone Heat Transfer ONLY



SYSTEM WIRING - Ventilation with Heat Transfer Add-On



HEAT TRANSFER OPERATION

Before installing the system, it is important to understand how this heat transfer system works. The fan itself is controlled by internal electronics and sensors, and its operation mode can be adjusted using the wall controller provided. If no wall controller is connected, the fan will revert to its default mode which is HIGH speed.

When the fan is first turned on using the wall controller, it runs at a low TRICKLE speed sensing the air temperature going through the fan. Once the room heats up and this air reaches a pre-defined minimum temperature, the fan will speed up to about 40% speed. After this, the fan will continue to measure the air temperature and adjust its speed accordingly, speeding up if there is enough heat available in the heat source room, and slowing down if the temperature drops again.

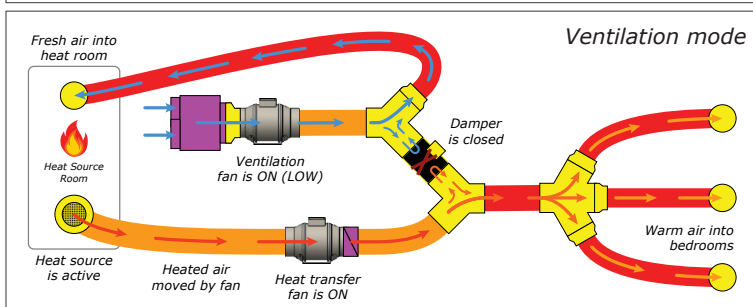
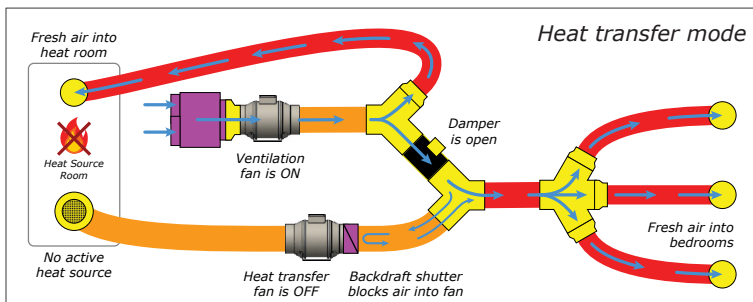
After the heat source stops to provide heat to the room, the fan will keep running, slowing down as the room starts to cool down, until it reaches its minimum TRICKLE speed again. It will then keep running at this speed until the room heats up to the minimum temperature again, or the controller is turned off.

The controller can be set to LOW, MED, HIGH, or AUTO speed. This speed setting limits the maximum speed the fan will speed up to, but the fan itself will determine which speed it should go to depending on the temperature of the air flowing through the fan.

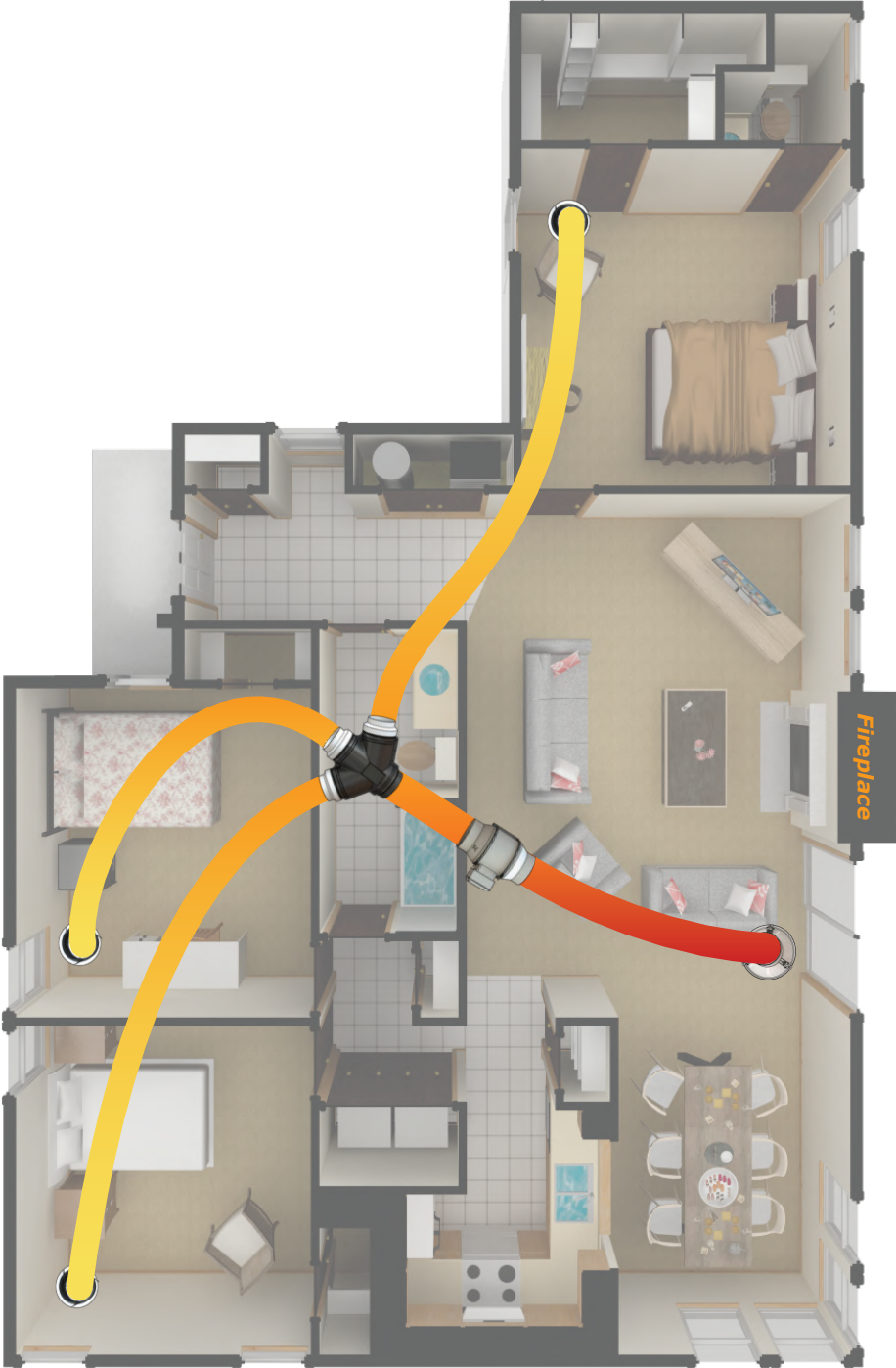
Refer to the wall controller manual for more specific installation and operation instructions.

HEAT TRANSFER AS ADD-ON FOR VENTILATION

When the heat transfer system is installed as an add-on for an EVOAQ ventilation system, the heat transfer fan operates the same as described above when the wall controller is in heat transfer mode. While in heat transfer mode, the ventilation fan will continue introducing fresh air into the heat source room at a low rate, which is heated by the heat source and transferred to the rest of the house by the heat transfer fan. When in ventilation mode, the heat transfer fan shuts off and the ventilation fan supplies fresh air to all rooms at the set rate of the wall controller. A back-draft shutter on the heat transfer fan prevents this fresh air going back through the heat transfer inlet.



Sample System Layout



MAINTENANCE

Before manipulating the fan, make sure it is disconnected from the mains supply - even if it has previously been switched off. Prevent the possibility of anyone else connecting it while it is being manipulated.

The apparatus must be regularly inspected. These inspections should be carried out while bearing in mind the machine's working conditions, taking care to avoid dirt or dust accumulating on the propeller, turbine, motor or grids. This could be dangerous and perceptibly shorten the working life of the fan unit. While cleaning, great care should be taken not to damage the propeller.

All maintenance and repair work should be carried out in strict compliance with each country's current safety regulations.

The fan included with this ventilation system is designed as simply plug in and go without requiring user intervention.

The smart in-built electronics are constantly monitoring the incoming air quality. The fan will vary its speed between very low and very high rates (10 - 100%) depending on the temperature of the available air to maintain a comfortable indoor environment.

This system is capable of transferring air at very low rates to continue moving air around your house as long as there is still remaining heat to be benefitted from.

We recommend using heat transfer as an add-on with EVOAQ ventilation. Maintaining correct ventilation of the house is important in order to prevent heat and energy losses and to allow you to enjoy a healthier indoor environment.

For further information, please contact EvolutionFX NZ Limited

Email: info@evolutionfx.co.nz

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EVOAQ Heat Transfer Fan Specifications

Fan Size	125mm	125mm	200mm
Voltage (V/Hz)	230 / 50	230 / 50	230 / 50
Power (W)	2 - 17	2 - 17	3 - 165
Air Flow (m ³ /hr)	65 ~ 284	65 ~ 284	63 ~ 1228
Static Pressure (Pa)	159	159	580
Noise Level (dB)	28	28	38
Speed (RPM)	250 - 2250	250 - 2250	500 - 3000
Weight (kg)	2.5	2.5	3.5
Specific Fan Power (SFP)	0.175 W/Ls ⁻¹	0.175 W/Ls ⁻¹	0.294 W/Ls ⁻¹

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