EVOAQ
Air Quality Innovation

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.

Heat Pump Injection Ventilation	System Models **AQHPI**	Software Version **V3.2**	Manual Version **V3.1.0** *11-2023*

Installation Manual

EVOAQ Heat Pump Injection Ventilation

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

Please read this instruction booklet carefully before installing or starting up the product.

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.

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 air quality and the operating mode to maintain a comfortable and moisture-free indoor environment.

This system is capable of ventilating at very low rates while still bringing in enough fresh air into the house in situations where other systems would simply switch off. 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.

This system is designed to work in conjunction with ducted heat pumps without requiring the two to be interconnected. Refer to page 8 for more details on how the two systems interact.

INSTALLATION OVERVIEW

Before commencing installation, select a suitable place for the fan to be installed in the ceiling cavity. It is recommended to place the filter and fan near the manhole for easy access when carrying out maintenance to the system. Place the filter before the fan to protect the fan from dust and dirt buildup. 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.

If the system will be taking air from outside or the fan or air inlet is installed in external walls, care must be taken to avoid the backflow of gases into the system from gas califonts, open gas flues, or other open-fire appliances.

Attach the inlet side of the fan to the filter frame using the duct tape provided. Connect the acoustic ducting to the outlet of the fan. The acoustic ducting should be 1-1.5m long and placed after the fan to eliminate sounds from the fan motor inside the ducting system.

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

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

- Place the filter and fan near the manhole for easy access;
- Lay the ducting so there is a similar length of ducting to each diffuser where possible;
- Ensure the shortest length of ducting is no shorter than 3 metres;
- Avoid tight bends in the ducting;
- Ensure the ducting is stretched out fully. Cut the ducting where needed;
- Avoid installing the ducting where it may be crushed or damaged by you or other

tradespeople;
- **Avoid installing the diffusers near doors/hallways and directly above beds or couches.**

The wall controller included with this system 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.

Please note:

The inlet of the fan unit is on the side of the fan blades, the side that is not obstructed by the fan frame. There are also arrows on the unit and rating label showing airflow direction. Please be aware that the system is designed for air to flow from the filter, through the fan, and into the house. Ensure the fan is oriented correctly for this during installation.

Important information for the safety of installers and user:

Installation must only be carried out by qualified persons. Make sure that the installation complies with the applicable building and electrical regulations. This apparatus must not be used in explosive or corrosive atmospheres.

This 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.

TRANSPORT AND MANIPULATION

The packaging used for this apparatus has been designed to support normal transporting conditions. The apparatus 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 packed product and avoid knocking or dropping it.

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. Do not accept delivery if the apparatus is not in its original packaging or shows clear signs of having been manipulated in any way.

Check that the apparatus is in perfect condition while unpacking. *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.

ELECTRICAL CONNECTION

The ventilation 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 and in accordance with New Zealand electrical standards.

If the fan model you have purchased is fitted with a power plug then please note removing this plug will void the warranty of the fan.

In case of damage to the power plug, cord, or device itself, switch off the device and do not tamper with it. Damaged product must only be repaired or replaced exclusively by the manufacturer or by an appointed representative. Failure to comply with the above may endanger the safety of people and cause possible damage to the whole system.

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. When installing 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.

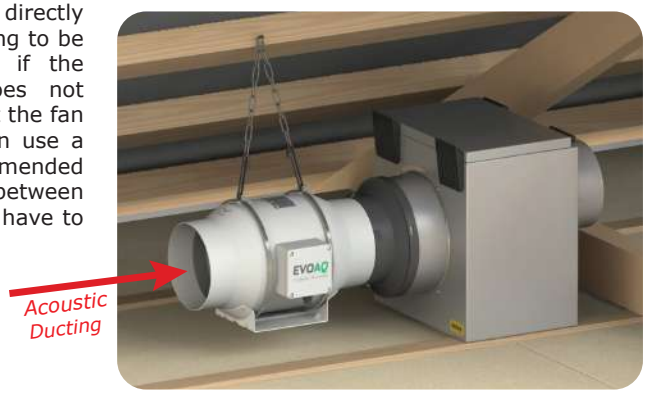
Before installing the fan, make sure the mains supply is disconnected, even if the system is switched off.

FAN INSTALLATION

Some things to consider when installing the fan and the filter:

- Mount the fan and filter so they sit above any ceiling material (~200mm above the ceiling);
- Connect 1m acoustic ducting after the fan (not in between the fan and filter);
- Hang up the fan with the chain and cable ties provided (e.g. see below image);
- Ensure the fan body is placed upright (see below) to avoid damage to the electronics;
- Keep the acoustic ducting straight and level with the fan for optimal airflows;
- Place the fan away from bedrooms to minimise noise issues.

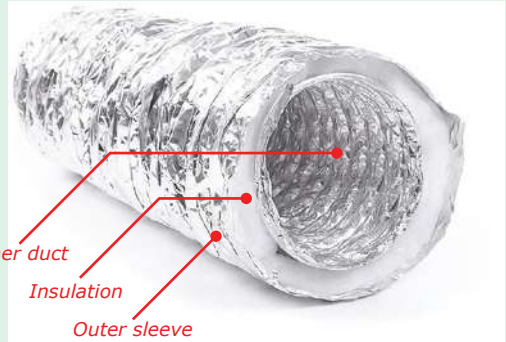
The fan should fit on the filter directly and does not require any ducting to be placed in between. However if the construction of the roof does not provide enough space to mount the fan directly onto the filter, you can use a short piece of ducting (recommended length <500mm) to connect between the two. This ducting does not have to be acoustic ducting.



Notes about installation of acoustic and insulated ducting

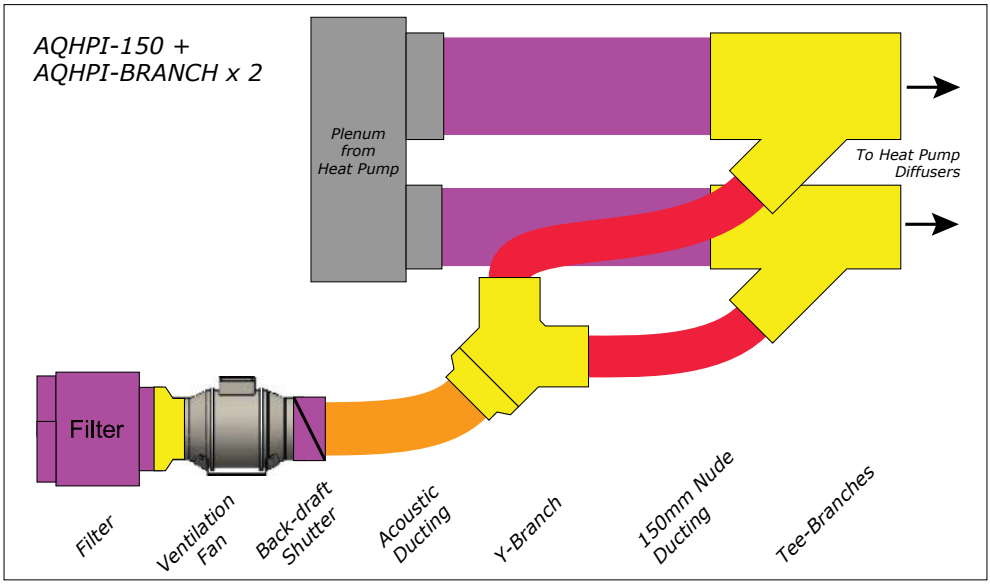
When installing acoustic ducting, it is essential to ensure both the inner duct and the outer sleeve are taped firmly. Acoustic ducting can be identified by the many small holes in the inner duct, which are missing in insulated ducting.

When installing insulated ducting, you must tape the inner duct, and it is recommended to tape the outer sleeve where possible (this generally does not include the diffusers).

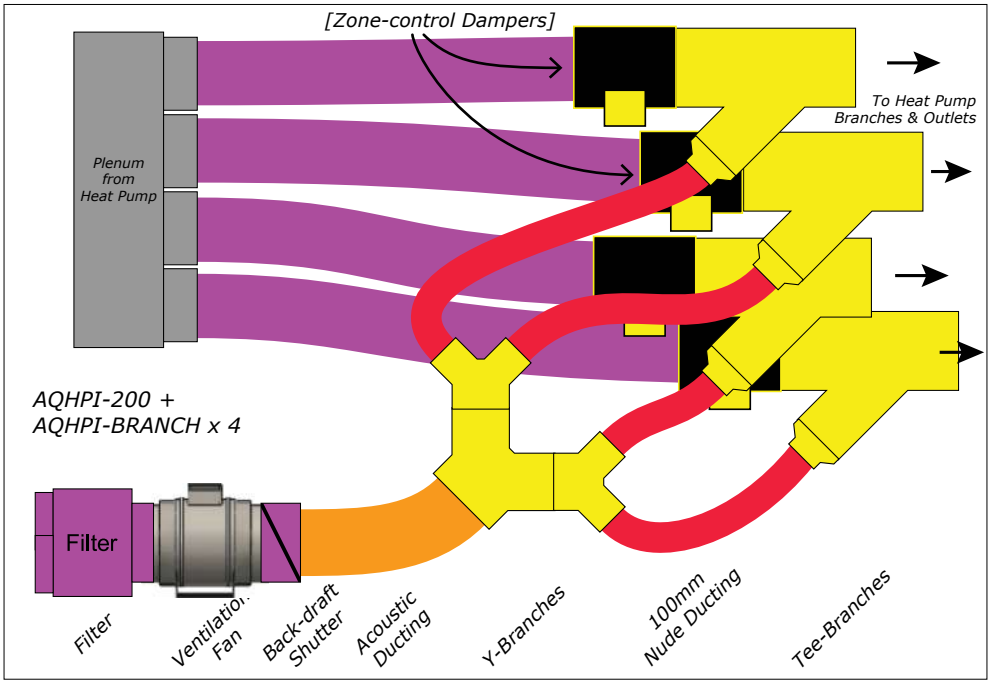


EXAMPLE LAYOUTS

2-Branch System



4-Branch System with Zone Control



disconnected, even if the machine is switched off. Never insert your hands into the inlet side of the fan without first unplugging the fan.

Before starting up the fan, ensure that:
- The fan 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;
- The duct is clear of any loose material that could be sucked up by the fan.

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.

MAINTENANCE AND REPAIR

Before servicing the fan, make sure it is disconnected from the mains supply - *even if it has previously been switched off.* Avoid the risk of anyone else plugging it in while you're working on it.

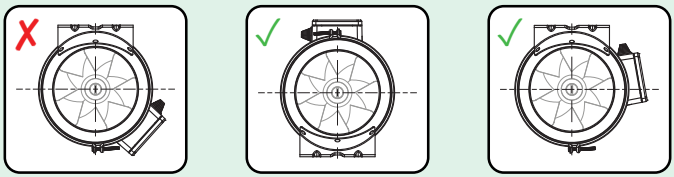
The fan must be regularly inspected. These inspections should consider the fan's working conditions, ensuring no dirt or dust builds up on the propeller, turbine, motor or grilles. This could be dangerous and perceptibly shorten the fan's lifespan. While cleaning, take extra care not to damage the propeller. The filters should be checked at least every 12 months, and replaced at least every 2 years, or earlier if necessary. Any and all maintenance work should be carried out in strict compliance with New Zealand safety regulations.

All our products contain repairable or replaceable parts. Repair or replacement of these parts should only be handled by the manufacturer. In the case of damage or malfunction of the fan, please contact the manufacturer or installer to arrange for repair. Please note that a small fee may apply for repair services not covered under warranty.

SYSTEM WIRING

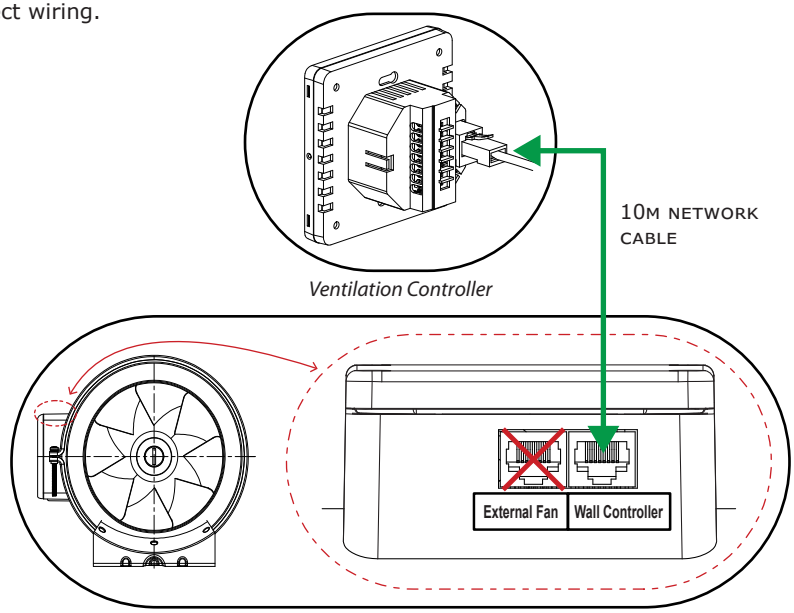
This system should be permanently powered via the ventilation fan. The ventilation fan is fitted with a power plug; if there is no power point available for the fan one should be installed by a registered electrician. The wall controller is connected to the fan via a network cable; as this cable is low-voltage it does not need to be wired by an electrician.

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



SYSTEM WIRING (CONTINUED)

If your system includes add-ons such as an EVOAQ Summer Upgrade Kit please note that wiring may differ from the below image; please refer to the respective upgrade kit manual for correct wiring.



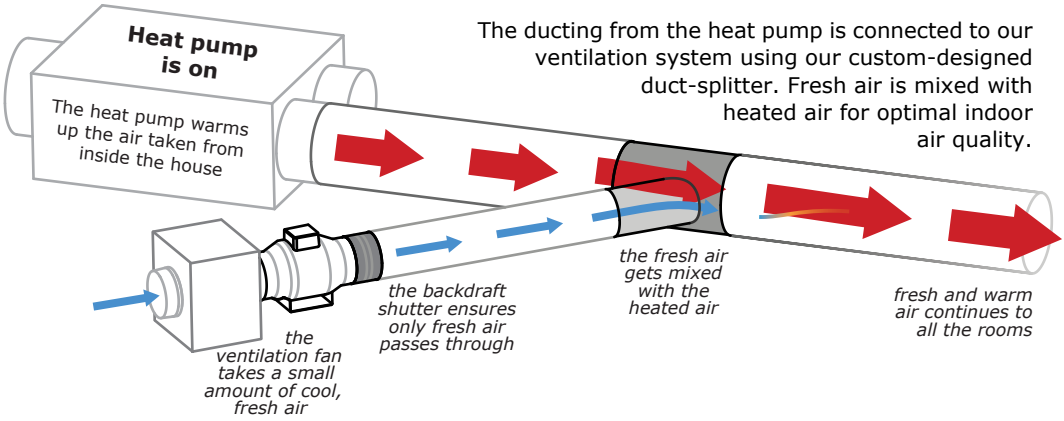
EVOAQ Heat Pump Injection Ventilation Fan

VNT-MFxxxSF Mixed Flow Fan Specifications		
System Code	*AQHPI-150*	*AQHPI-200*
Fan Spigot Size	*150mm*	*200mm*
Voltage (V/Hz)	*230 / 50*	*230 / 50*
Power (W)	*3 - 70*	*3 - 165*
Air Flow (L/s)	*17 ~ 180*	*30 ~ 348*
Static Pressure (Pa)	*503*	*746*
Noise Level (dB)	*31*	*38*
Speed (RPM)	*500 ~ 3000*	*500 ~ 3000*
Specific Fan Power (SFP)	*0.356 W/Ls^{-1}*	*0.294 W/Ls^{-1}*

For all our manuals, fan specifications, system details and more information visit *www.evoaq.co.nz/downloads*

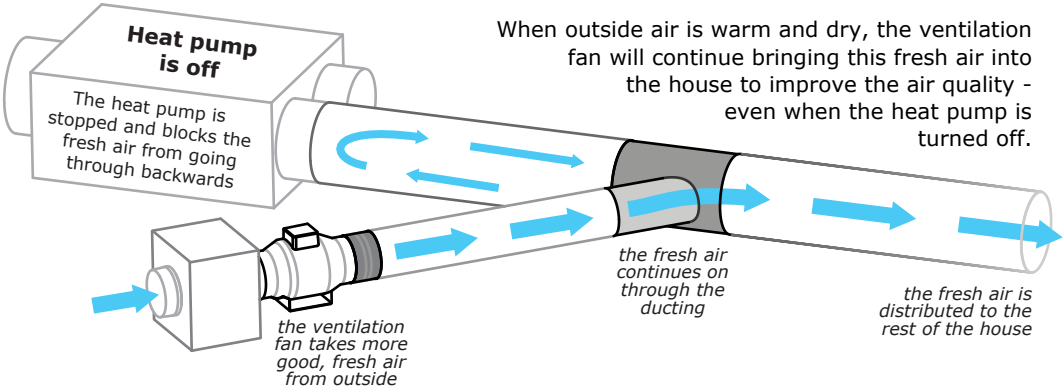
For further information, please contact EvolutionFX NZ Limited
email: *info@evolutionfx.co.nz*
phone: *+64 9 558 5590*

When the heat pump is running (heating or cooling)



The ducting from the heat pump is connected to our ventilation system using our custom-designed duct-splitter. Fresh air is mixed with heated air for optimal indoor air quality.

When the heat pump is off



When outside air is warm and dry, the ventilation fan will continue bringing this fresh air into the house to improve the air quality - even when the heat pump is turned off.

The ducting after the fan can be split into several branches in order to connect to all the required heat pump ducting branches. The splitters are connected after the fan and acoustic ducting - the backdraft shutter can be placed directly on the fan outlet side.

For systems with zone control, the tee-branches should be placed after any dampers so that fresh air can be supplied to the zone even if that zone is turned off.

For more information about how to connect and install the heat pump injection system, please contact us.

Tee-branches for connecting to the heat pump ducting may be available on request and are made to order.