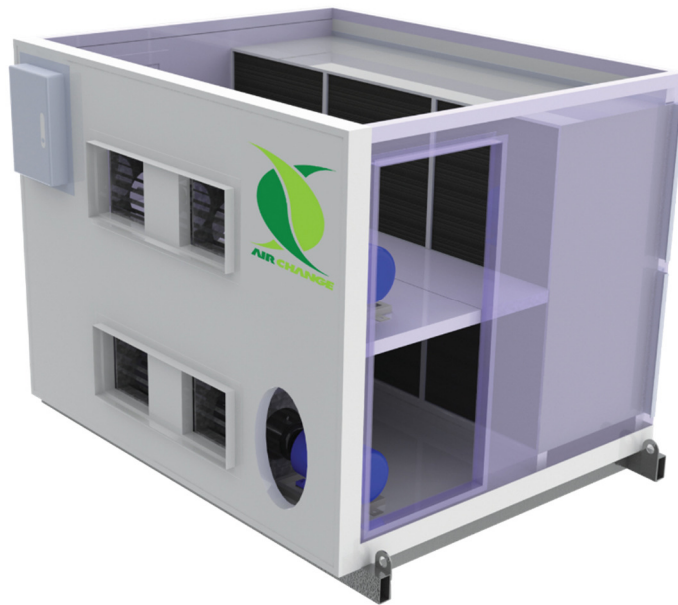


# INSTALLATION AND MAINTENANCE MANUAL

## Ventilator and Air Handling Unit (ERV-RT, NEXT-AHU, and GB-AHU Models)



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# Air Change Ventilator and Air Handling Unit



## 1. INTRODUCTION

### SAFETY CONSIDERATIONS



#### **IMPORTANT**

DO NOT LEAVE HEAT EXCHANGERS EXPOSED TO DIRECT SUNLIGHT. Prolonged exposure to UV light can cause severe damage to the structure of the heat exchanger, and will void the warranty.



#### **WARNING**

Improper installation, service, maintenance or use can cause explosions, fire, electrical shocks or other conditions which may cause personal injury or property damage and will void the warranty. Check with Air Change or your nearest Air Change dealer for any information required on this equipment.



#### **DANGER**

Electrical shock can cause personal injury or death. Before performing any work on this equipment, the electrical supply must be turned off at the electrical service box to avoid the possibility of shock, injury or damage to equipment.

Note: There may be more than one power supply circuit.

## **NOTE TO INSTALLER**

- Only trained and qualified personnel should install, repair or service air conditioning equipment. Untrained supervised operatives can perform basic maintenance functions such as cleaning or replacing filters. Service personnel must perform all other operations.
- Installing and servicing air conditioning equipment can be hazardous due to electrical and mechanical components.
- When working on air conditioning equipment, observe precautions in all literature, tags and labels attached to or shipped with unit. Follow all safety codes and guidelines. Wear safety goggles, work gloves and any protective clothing.
- All work must comply with relevant Australian Standard wiring rules and local authority codes. Installers must ensure that all statutory regulations and by-laws have been addressed, and that all relevant codes regarding the handling and recovery of refrigerants have been observed.
- Installers must ensure that the structures built to take the units have been suitably constructed for the purpose, all safety precautions have been applied prior to installation, and all preparation work has been constructed and suitably sized for its purpose.

## **Inspection and Unpacking**

- The unit should be inspected upon delivery for possible external damage incurred during transport. If damage is evident it should be noted on the freight docket and the Air Change sales office contacted. A claim should be lodged with shipping company within three (3) days if shipment is damaged or incomplete.
- If major damage is apparent, do not lift unit on to site without prior approval from Air Change. All units are tested and inspected prior to packing and leave Air Change premises in perfect condition.
- Check unit rating plate to ensure the correct unit matches the job specifications.

## **Unit Handling**

- Do not remove the skids, or any protective crating or packaging, until the unit is at the point of installation. When removing packaging or crating, be careful not to damage, scratch, or dent the unit.
- After the removal of packaging or crating, all removable access panels should be opened to inspect for unit internal damage.

## Lifting with a Forklift

- Exercise extreme caution when lifting with a forklift. Do not exceed the height limit of the forklift and never allow fork to lift against the bottom panel of the unit.
- Make careful consideration of the unit's centre of gravity and distribute the weight equally on both forks. Test load to see if the weight is equally distributed. Do this by lifting the unit a few centimetres off the floor and holding it there before lifting any further or before transporting the unit.

## Lifting with a Crane

**NOTE: All units should be lifted into position using slings.**

- Where units have to be lifted into position, installers must check the unit weight is within the safe working capacity of the lifting equipment.
- When preparing to move the unit, always determine the unit's centre of gravity in order to equally distribute the weight.
- Spreader bars must be used between slings to prevent crushing the frame or panels. Spreader bars and/or pipe are not supplied with units.
- Spreaders whose length exceeds the largest dimension across the unit should be across the top of the unit.

## 2. INSTALLATION

### Location

#### General

- The Air Change unit is marked with stickers “Fresh Air” “Supply Air”, “Return Air”, and “Exhaust Air”, showing the air path through the unit.
- The Exhaust Air outlet should be directed to a clear path without obstacles to the atmosphere.
- The Fresh Air supply inlet should be clear of any polluted air from other units, exhaust fans, etc.

#### Level and Suitable Base

- These units are primarily designed to be fitted on a suitably reinforced support base of sufficient strength to adequately take the full operating weight of the equipment.
- HRV units must be mounted on a level base and any slope should not exceed +25 mm over the unit's dimensions to ensure proper condensate drainage.
- On rooftop applications, the unit must sit at least 152 mm above the roof surface. Place the unit above a load bearing wall. Arrange supporting members to adequately support the unit and minimise the transmission of vibration to the building.

#### Suspending the Unit

- Before suspending the unit, check the supporting beams to be used and verify that it has sufficient load carrying capacity to support the weight of the unit.

#### Access for Maintenance

- The unit must be mounted so maintenance personnel can gain access to all parts of the unit and with sufficient room to remove fans, compressors, coils or heat exchangers as required.
- Minimum space requirements:
  - 600 mm for electrical access;
  - 1000 mm from Fresh Air inlet;
  - 1000 mm from all access doors on the unit in accordance with the design and construction to allow servicing or removal of parts.

#### Ductwork Considerations

The unit must be situated close to the point of use to prevent unnecessary long runs of ductwork.

## Fresh Air Inlet Precautions

- The location of the Fresh Air inlets should adhere to AS1668.2.
- The Fresh Air intake should be positioned clear of any objects which could obstruct the airflow and be away from any exhaust discharge ducts from the unit or any adjacent equipment.
- The Fresh Air inlet should be fitted with a weather shelter and inlet and exhaust points should be minimum 6 m apart.



## Rooftop and Plant Room Installation

- Air Change ERV-RT, NEXT-AHU and GB-WHU models are suitable for either rooftop or plantroom installation.
- When a unit is fitted into a plant room, the external louvre or ducting feed system must have sufficient free area to prevent negative pressure build-up in the plant room.

## Noise Levels

- Do not sit unit adjacent to sleeping quarters unless background noise levels have been checked and permitted by the appropriate authority.
- It is recommended that rubber supporting or vibration absorbing pads are used to support the unit to minimise any vibration being transmitted into the building structure. We recommend wafer pads be used under the frame. We also recommend flexible couplings be fitted to the supply and return ducts to reduce vibration transfer.



## Drainage



### IMPORTANT

Installation of "P" Trap is mandatory for all drainage points. Air Change will not accept any liability for any water damage resulting from incorrect installation. A minimum of 50 mm elevation difference between three levels are required. Schematics are as follows.

All drainage needs to be trapped (standard "P" trap). Prior to start up, charge the external "P" trap by pouring several litres of water into the drip tray, allowing run off to seal the drain outlets to prevent outside air being drawn into the unit.



### IMPORTANT

External drip trays are mandatory for units installed in plant rooms or inside roof space. Drainage from the unit and external drip tray is the responsibility of the installing contractor. A separate safety tray must be fitted under the unit and drained separately. Air Change will not accept any liability for any water damage resulting from incorrect installation.

- The unit should be installed with a positive fall to ensure water drains away freely through drain holes provided. Drain lines must be as large as or larger than the fitting to which the line is being connected. Ensure that drain lines are fitted to both the dump outlet as well as the overflow outlet (if necessary). Drain lines should have a minimum fall of 20 mm per m length.
- If drain lines are to be extended from the inside to the outside of the building, they must be extended *beyond* the walls of the building to eliminate the possibility of damage caused by drain water running down the exterior surface of the building wall.
- Where drain lines are likely to be exposed to freezing temperatures or when they are subject to the formation of condensation, the lines should be insulated.

## Phase Rotation

- All 3-phase motors are phase connected in the factory. If the opposite direction is required, swap any two phases at the mains terminal block.

## Filters



### IMPORTANT

Never operate the unit without filters fitted to the Return and Fresh Air intakes with blower access panels removed.

Make-up air quantity (if any) is to be incorporated into outdoor air filtered airflow.

- Filters are **not** supplied, and are fitted by the installer to the customer's requirements. If special high efficiency particulate arrestance filters are to be used, a check should be made with your agent that the correct fans have been specified at tender stage to accommodate the excess static pressures. Return Air filters should be fitted as part of the Return Air ducting, and should be sized according to general good practice.
- 50 mm panel filters (G4 class minimum) are recommended for Return Air intake.
- 50 mm panel + 560 mm bag filters (G4 class minimum) are recommended for Outdoor Air Intake.
- **NOTE:** If these units are being used during construction when adhesive or sealants are in use, and if ducts and carpets are being installed or removed, make sure all equipment is fitted and adequately protected. We recommend using disposable or temporary filters during commissioning and during pre-hand over running.

## Electrical/Electronic Connections

- For power requirements and voltages, see the unit specifications.
- The electrical diagram is attached on the wall of the electrical board cabinet.

## Mains Power Supply and Fusing

- A power supply rated at 415 V +/- 10% 3-phase or 240 V +/- 10% 1-phase, 50 Hz is required to operate the machine within manufacturer's tolerances.
- Mains cables are to be connected as per the wiring diagram.
- Field wiring on the sensor and HLI communication to the controller (if any) need to be done on site.
- All wiring must comply with AS3000.
- The units require a mains circuit breaker or HRC fusing capable of handling the full load of the unit and selected in accordance with SAA Wiring Rules to be fixed external to the unit.
- A mains switch is fitted to the electrical board inside unit.

## Electrical Connection and Supply Size Precaution

- We recommend an isolator be mounted externally to the unit (not supplied) and a suitably sized fuse mounted back at the distribution board to provide local isolation during service and maintenance periods. The unit has a 3-phase switch internally on the electrical board.

## Ducting

- Flexiduct ducting is recommended for use with all Air Change systems. See image below.



- Ducts should be insulated in accordance with ASHRAE Standard 90.1.
- Fan inlet and outlet conditions can affect the fan performance, particularly ducting elbows which can cause non-uniform inlet flow and swirl at the inlet. To reduce losses due to fan system effect, adequate length of straight duct between elbow and fan inlet should be provided or turning vanes used in the elbow.
- Poor fan outlet conditions can affect the fan performance, particularly the effective duct length. For 100% recovery, the duct must meet requirements for 100% effective duct length.
- Ducts should be sized to accommodate a maximum airflow velocity of no greater than 6 m/s through the duct.

### 3. REFRIGERATION PIPING

*(Applicable to optional Split System with remote condenser only)*



#### **IMPORTANT**

The unit is designed for use with specific refrigerants (R-410A or R-407C or R-134A). Check serial number plate for type of refrigerant. The use of other refrigerants is not authorised or approved by Air Change, and may cause operational problems such as poor performance and efficiency, loss of capacity, degradation of materials, and refrigerant leaks.



#### **DANGER**

The use of flammable or explosive materials as a refrigerant creates the additional risks of fire and explosion which may result in property damage, personal injury or death.

#### **General**

- Design pipe work to prevent drainage of liquid refrigerant into the compressor during off cycle, and to ensure return of oil to the compressor.

#### **Piping**

- Pipe diameters vary with unit capacity.
- Use only clean sealed refrigeration grade piping and cut only with a pipe cutter.
- Insulate the gas line and seal all insulation joints.

#### **Charging**

- Evacuate the indoor unit and interconnecting pipe work to a standard pressure of 500 microns which is to be held for minimum of 15 minutes.
- Open the service valve at both the indoor and outdoor unit to allow refrigerant to flow through the system.
- Start by altering the refrigerant charge to match the nominal amount specified for the total line length installed.
- Check the superheat on the suction line is in the range of 7 K – 11 K.

## 4. SYSTEM COMPONENTS

### Requirement

- Air Change units incorporate either:
  - An **enthalpy** air to air Heat exchanger for total temperature and moisture transfer, or
  - A **sensible** air to air Heat exchanger for temperature only transfer.

These units are manufactured to meet design criteria. The system is professionally assembled and internally wired throughout, with large access panels where required for service and maintenance.

- If specified for corrosive air applications, the required components are coated with corrosion resistant materials selected by Air Change. Upon request, specifications of the treatments used can be supplied.

### System Components

The unit comprises the following components:

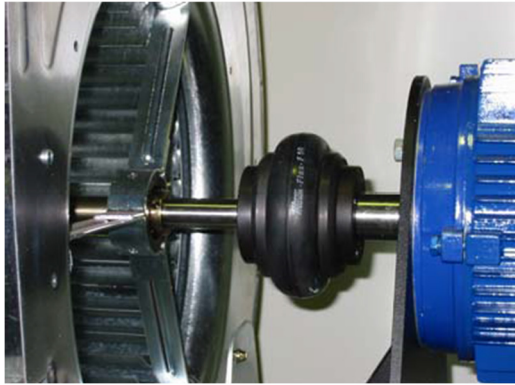
#### Cabinet

- Prefabricated wall and ceiling panels are made of stressed skin insulated sandwich construction, consisting of metal internal parts and external skins bonded under pressure with thermosetting adhesive to a core of rigid cellular insulation.
- Insulation is a single layer of rigid Polyisocyanurate sheet to AS1366.3 Class SL continuous without voids, free of line faults through or across the sheet.
- Purpose built UV treated polymer joiners are used to insulate against heat loss through the body of the unit. The cabinet is fully weatherproof and designed for outdoor use.
- Galvanised steel RHS construction on base.
- Air Change units are designed with extremely large access doors to ensure that all parts are accessible for servicing and replacement.

#### Fans

- Air Change RTP units have internal fans which draw through the coils for balanced pressure drops across the heat exchanger and coil.
- Supply and exhaust fans (forward curved centrifugal) are fabricated from galvanised steel. A range of fans are used to suit the size of unit (refer to attached schematic).
- All units use direct drive via a flexible coupling on both supply and exhaust fans and have a maximum operating pressure of 1200 Pa.

- Fans incorporating pillow block bearings require regular re-greasing. Refer to *Section 9. Service & Maintenance* for details.



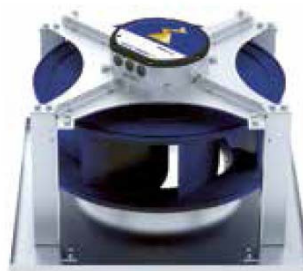
Fan with spider bracket bearing



Fan with pillow block bearing

### **Optional Upgrade to EC Plug Fans**

- An optional upgrade is aerofoil single-inlet, backward-inclined, centrifugal impellers with three-dimensional profiled blades, made from one cast without welds.
- The fan is directly driven by a high efficiency variable speed EC (electronically commutated) motor and controlled via 0-10 V through constant volume air controller.
- The fan motor is fitted with sealed for life ball bearings with in-built diagnostic/service LED.



## Heat Exchanger

- The sensible heat exchanger uses counter flow with transfer media between moulded plastic air guiding frames for a very high efficiency and long life.

There is no cross contamination between the air paths.

- The Energy Reclaim (enthalpy) counter flow enthalpy heat exchanger incorporated into the unit will reclaim up to 75% of the energy (under normal operating conditions) from the space return/relief air to outside air, i.e. to pre-treat the outside air. This results in a saving of up to 75% on the cost of heating or cooling the outdoor air. (Typical RTP use with normal air conditioning, see Plan and Side View schematic).
- The Heat Reclaim (sensible) counter flow heat exchanger incorporated into the unit will reclaim up to 80% of the heat (under normal operating conditions) from the space return/relief air to outside air, i.e. to pre-treat the outside air. This results in a saving up to 80% on the cost of heating or cooling the outdoor air. (Typical ACPP use in swimming pools).



### IMPORTANT

DO NOT ATTEMPT TO CHANGE THE LENGTH OF THE HEAT EXCHANGER BY REMOVING END PLATES AND PLASTIC PLATES.

This can cause the media between the plates to dislodge from its position, resulting in a lack of performance because of an increased pressure drop through the heat exchanger or damage to the Sensible media. Any tampering with the heat exchanger may invalidate our warranty and Air Change will not be held responsible for compromised performance or a pressure drop.

If the heat exchanger is the incorrect length, please return to Air Change for a replacement unit.

- The Heat Exchangers are constructed of plastic moulded plates with media between each plate. The Heat Exchanger has been secured by end plates under pressure.
- The **Enthalpy** heat exchanger has end plates and corner/middle fixings of galvanised steel and *non-washable* enthalpy media between the plates.
- The **Sensible** heat exchanger has end plates and corner/middle fixings of powder coated aluminium with sensible Mylar media between the plates.

## Electrical

- An electrical diagram is attached to the inside of the access door.
- The electrical switchboard incorporated in the unit is fully internally wired and housed within the compressor enclosure. It is of industrial standard and conforms to Australian Standards and specific state electrical authorities.
- All wiring is independently colour coded.
- The main power entering the system is protected by an isolation switch inside the unit. Circuit breakers, contactors and overloads are used on the three-phase fan motors to ensure maximum protection at all times.
- Internal controls are 24VAC.

## Coils (Optional)

- If applicable, coils can be mounted internal to the unit.
- Hot and cold water coils are constructed of copper tube and aluminium fins.
- The velocity through the coils has been designed for less than 2.4 m/s for low-pressure drop and high efficiency, and the coils have a baked resin coating for corrosion protection.
- Test pressure for coils should not exceed 2200 kPa (22 bar).
- Multiple coils are separated to allow for cleaning on both faces.
- See *Section 9. Service & Maintenance* for coil for access.

## Control System

- Internal controls are all 24 V supply.
- The controller is powered by a 240/24VAC transformer on the electrical board. No external power is needed for the controller.
- Fans are controlled by variable speed drives (VSDs) on units rated 2500 L/s and above. Units rated below 2500 L/s have 3-speed direct-drive fans with VSD available as an optional upgrade.

## Variable Speed Drive (VSD)

- Air Change units employ ABB VSD's to adjust and maintain fan motor speed.
- See VSD Speed Change Diagram for instructions on speed adjustment.
- Because of the need for cooling, there must 100mm free air passage above and below the VSD's. A small grill between the Compressor compartment and the negatively pressurised Exhaust-Air compartment allows air to be drawn over the VSD's, removing heat generated. Care must be taken not to allow any debris to block this air passage.



## Optional Fire Control Circuitry

Units can be supplied with a 24 V DC circuit supplied by the Fire Department's Fire Control Board. In case of fire, the 24 V DC circuit will be de-activated, causing the unit to switch off, shutting down the system completely except for the exhaust fans which act independently for smoke exhaust.

The 24 V DC circuit can only be reset by the Fire Department.

## 5. OPERATIONS

### Start-up Procedures



#### CAUTION

Start-up to be conducted by qualified service engineers familiar with equipment.

- Ensure that drain lines are fitted to both the dump outlet as well as the overflow outlet (if necessary).
- Ensure drain lines have been charged with water.
- Check all duct work connections are clean, and clear of any obstruction. Ensure all relevant dampers and fire dampers are open or at the correct setting.
- Check if there are any signs of excessive vibration on fans.
- Ensure filters have been fitted in the outdoor air inlet.
- Check that sufficient electrical power is available.
- Ensure there is no restriction in the airstream that can cause major blockage (for example closed air volume dampers).

### Unit Air Flows

- Check air flows are to specified requirements. Ensure the supply air quantity is balanced with the return air, both static pressure and air flows, with an approximate allowance of 5% more supply air than return air to provide a slight space pressurisation. Airflows can be adjusted on direct driven fans by changing the fan speed. There are three speed settings per fan on 240 V direct drive fans. Direct coupled fans can be adjusted via the Variable Speed Drives.
- Units supplied with EC Plug fans (optional) include an air volume controller. The air flow set point has been pre-set in the factory which allows the fan to automatically adjust the speed to meet the required airflow. Airflow setpoint can still be adjusted through air volume controller (Unicon CPG).

## 6. EC PLUG FAN AIR VOLUME CONTROLLER SETPOINT CHANGE PROCEDURE

### OPTIONAL UPGRADE

EC Plug Fans employ a UNIcon CPG Controller from Ziehl-Abegg to deliver the correct amount of air volume.



#### IMPORTANT

Do NOT change any parameters under the BASE SETUP menu. Alteration of any parameter under this menu will reset the entire program and result in fans not delivering accurate air volume.

- 1 Press ▼ and ▲ simultaneously to enter the Main Menu.
- 2 Press ▼ or ▲ to find “Setting” and press P to enter.
- 3 Under Setpoint 1 press P button until the value flashes and press ▼ or ▲ to change.
- 4 Press P to save the new value.
- 5 Press ▼ and ▲ again to return to main menu.
- 6 The “Info” menu contains read-only and displays key running parameters such as actual airflow, and control voltage reference.

## 7. SERVICE & MAINTENANCE

### Heat exchangers

#### Air Change Enthalpy and Sensible Heat Exchangers



#### **IMPORTANT**

Return and Outdoor air filters must be changed/cleaned regularly to ensure airflow is unrestricted. The heat exchanger warranty may be voided if filters are not cleaned according to maintenance schedule and if proper filtration standards are not adhered to.

Note: Air Change can provide a heat exchanger replacement service on request.



#### **WARNING**

Switch off unit before attempting to remove parts for cleaning.

- The Sensible Heat exchanger has clear Mylar heat exchange media between the plates which can be wiped over with a damp cloth or gently hosed clean.
- The Enthalpy Heat exchanger has a brown paper-based enthalpy exchange media between the plates which can be vacuumed or brushed gently.



#### **IMPORTANT**

**DO NOT WASH THE ENTHALPY HEAT EXCHANGER**

## Maintenance Schedule



### WARNING

Always disconnect line voltage before servicing electrical equipment. Ensure there are no loose electrical connections at services intervals.



### IMPORTANT

Failure to carry out regular maintenance with a licensed and reputable refrigeration company may render warranty claims invalid if faults have been caused by lack of proper maintenance. Air Change may request to see the maintenance schedule carried out.

## General

- Air Change systems are designed for easy maintenance, with highest quality materials and components used throughout.
- Preventative maintenance programs will vary according to actual working conditions and location and hours of usage by the client.
- Air Change will be pleased to provide expert advice on special service requirements for particular installations.

## Monthly Maintenance Schedules

- Filters should be inspected frequently immediately after installation to confirm the frequency of cleaning needed for the particular location. Regular change/clean of filters is necessary to ensure normal operating conditions.
- The filters should be cleaned once a month and the filter media should be replaced every 12 months.
- The following is a guide until frequency according to usage is established:
  - Bag Filters: Bag filters should last three (3) to six (6) months after which they should be cleaned or replaced where necessary. Pre filters can be used in front of bag filters to collect the larger particles leaving the bag filter to catch the fine dust.
  - Disposable corrugated filters: Ordinary disposable corrugated filters should last for one (1) month in normal commercial use, but can last longer depending on usage.
  - Cleanable filters: If filters are cleanable, the filters should be cleaned once a month and the filter media should be replaced every 12 months.

## Three-Monthly Checks

- Repeat the Monthly Schedule.
- Clean Heat Exchanger.
- Check blower wheels for dirt build-up and tightness on shaft.
- Check all cabinet panels for correct fitting, alignment and seals, and clean cabinet as required.
- Ensure no insulation has been detached from panels.
- Check if there is any signs of excessive vibration on fans.
- Apply greasing into fan bearings through greasing points (only applicable on pillow block bearings type). Re-greasing should be applied every three months for pool installations or corrosion resistant units only.
- All electrical terminals should be checked for tension on each maintenance visit with main switch off.
- Clear coils of obstructions or dirt.
- Clean condensate drain trays.

## Annual Maintenance

- Repeat monthly and three-monthly checks.
- Apply greasing into fan bearings through greasing points (only applicable on pillow block bearings type).
- Connect service gauges and record operating pressures and mode.
- Test the superheat setting by placing a thermocouple at suction outlet and subtract the temperature from the suction temperature at the compressor. A reading between 4°C to 11°C is acceptable.
- Check cabinet for any paint chips or abrasions and treat accordingly.
- Measure and record the amperage of each motor against nameplate details.
- Record voltages between phases and amperage at each phase.
- Check the VSD fan for any build-up of dust. Remove fan and clean by blowing out VSD casing, then refit the fan.
- Check the VSD fault history and record any entries in the maintenance report. Take action on any and all faults.

## 8. TROUBLESHOOTING GUIDE

Problem	Probable Cause	Correction Method
Lock out due to electrical trip	Voltage problem	Check phase voltage and rectify
	Insulation breakdown	Replace faulty component
	Dirty/loose contacts	Clean/tighten or replace
Tripped circuit breaker	Short Circuit	Trace and correct
	Earth leakage or overheating cables due to high load	Meggar and place as necessary
	Power fluctuations	Contact electricity supplier
Lack of air flow	Blocked Filters	Clean or replace filters
	Fans stopped	Check electrical

## 9. TECHNICAL DATA - TABLES

### Heat Exchanger Data

Specification	Small Heat Exchanger	Large Heat Exchanger
<b>Height</b>	710 mm	1290 mm
<b>Depth</b>	330 mm	640 mm
<b>Width</b>	645 mm	650 mm
<b>Weight</b>	25 kg/m	75 kg/m
<b>Pressure Drop</b>	150 Pa @ 750 L/s per metre up to 250 Pa @ 1000 L/s per metre	120 Pa @ 1000L/s per metre up to 150 Pa @1700 L/s per metre
<b>Reclaimed Heat</b>	Enthalpy Heat exchanger - up to 75%. Sensible Heat Exchanger - up to 80%	Enthalpy Heat exchanger - up to 75%. Sensible Heat Exchanger - up to 80%
<b>Insulation</b>	5 mm thick black poly-ethylene with adhesive backing, fire resistant	5 mm thick black poly-ethylene with adhesive backing, fire resistant
<b>Material</b>	Poly-propylene solvent resistant	High impact poly-styrene solvent resistant
<b>Temperature Range</b>	Plates withstand a temperature range of -50°C to 150°C	Plates withstand a temperature range of -50°C to 120°C
<b>Transfer Media</b>	Enthalpy media - moisture permissible. Exchanges moisture and temperature.	
<b>Maintenance</b>	Supply and exhaust air must be filtered to avoid particles entering the heat exchanger	

### Sandwich Panel Data

Skins	
<b>CRP Colorbond</b>	0.6 mm
<b>Australian Standard</b>	AS 2728 Category 2 and/or 3
<b>Substrate</b>	ZINCFORM® G300 BFC Z275 1
<b>Pretreatment</b>	Corrosion resistant proprietary conversion coating
<b>Primer Coat</b>	Universal corrosion inhibitive epoxy primer. Nominal thickness 5 µm each side.
<b>Finish Coat</b>	Custom formulated system. Nominal thickness 20 µm on the top or weather side. The standard colour is off white.
<b>Backing Coat</b>	Custom formulated Foam Grey, specially designed to facilitate adhesion to foam cores. Nominal film thickness 5 µm
<b>Gloss</b>	Nominal 25% (60°)
Dimensions	
<b>Width</b>	Standard 1200 mm (coverage)
<b>Length</b>	To design requirements (limited by handling/transportation consideration)
<b>Thickness</b>	Standard 50 mm
<b>Weight</b>	11.3 kg/m
Panel Spans	
<b>Walls</b>	5400 mm
<b>Ceilings</b>	3000 mm
Insulation Factors	
<b>R Value</b>	2.65 m/Kw
Fire Hazard Properties	
<b>Ignitability Index</b>	0 (scale 0 - 20)
<b>Spread of Flame Index</b>	0 (scale 0 - 10)
<b>Heat Evolved Index</b>	0 (scale 0 - 10)
<b>Smoke Developed Index</b>	0 (scale 0 - 10)



## 10. WARRANTY INFORMATION, TERMS & CONDITIONS

Failure to carry out regular maintenance with a licensed and reputable refrigeration company may render warranty claims invalid if faults have been caused by lack of Maintenance. Air Change may request to see the maintenance schedule carried out.

Management will need to keep records provided by service companies, which will detail the service done to each unit. This record is a summary of your service documentation for easy reference for management in case of a warranty claim.

Your equipment is a major investment and will last for many years if properly maintained and serviced.

Air Change Australia Pty Ltd will only accept a completed warranty card (issued in each manual; see page 26) or a copy of the original invoice complete with matching serial numbers as proof of purchase. This information must be verified before the authorisation of any warranty claims. We also require details of servicing with all warranty claims.

## Warranty Claim Form

All warranty claims are subject to sale/service terms & conditions.  
Please fill in the form and **fax back to (02) 8774 1490**.

<b>Project name</b> .....	
<b>Address</b> .....	<b>State</b> .....
.....	<b>Postcode</b> .....
<b>Reported by</b> .....	<b>Phone</b> .....
<b>Site Contact</b> .....	<b>Phone</b> .....
<b>MODEL #</b> .....	<b>SERIAL #</b> .....
<b>Details of problem</b>	
.....	
.....	
.....	
<b>Print Name</b> .....	<b>Signature</b> .....
<b>Position</b> .....	.....

AIR CHANGE OFFICE USE ONLY

**Service Agent:** ..... **M1 PO#** .....

**Technician Name:** ..... **Phone:** .....

**Warranty Claim Number (WAN):** .....

Approved / Declined

**BY:** .....

**DATE:** .....

**Details of Approval/Decline:**

.....

.....

.....

<b>Parts List:</b>	<b>Send Date</b> .....
	<b>Invoice #</b> .....
	<b>Receive Date:</b> .....
	<b>Invoice #</b> .....

**Completion Date:** ..... **Date Client Informed** .....

**Please remember to send "Details of Servicing Report" with this page if warranty is required.**

### Details of Servicing

DATE	CONTRACTOR /SERVICING FIRM	DETAILS
/ /	.....	.....
/ /	.....	.....
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## 11. WARRANTY POLICY

For The SALE AND SUPPLY OF PRODUCTS from AIR CHANGE AUSTRALIA PTY LTD

### 1. Applicability

- 1.1. This Warranty Policy applies to any Products sold and/or supplied by Air Change Australia Pty Ltd (“**Air Change**”) to a Purchaser and supersedes any terms and conditions of the Purchaser.
- 1.2. This Warranty Policy is also subject to the Terms and Conditions for the sale and supply of Products from Air Change (“**Terms and Conditions**”), a copy of which is available on the web site [www.airchange.com.au](http://www.airchange.com.au) and forms part of any Quotation or Order Confirmation from, and any Contract with, Air Change.

### 2. Definitions

- 2.1. “*Contract*” shall mean any and all agreements for the sale and/or supply of Product(s) from Air Change.
- 2.2. “*Parties*” shall mean Air Change and the Purchaser jointly.
- 2.3. “*Price*” shall mean the price to be paid by the Purchaser for the Product(s) excluding Goods and Services Tax (GST).
- 2.4. “*Product*” shall mean the product(s) as set out in the Contract.
- 2.5. “*Purchaser*” shall mean any and all party / parties entering into a Contract with Air Change for the sale and/or supply of Product(s) by Air Change.

### 3. Parts Warranty

- 3.1. Unless otherwise agreed in writing and subject to the terms and conditions of this Warranty Policy and the Terms and Conditions, Air Change warrants (a) that the Products are free of manufacturing defects in materials and workmanship, and (b) that the Products will deliver the rated heating and cooling capacity specified in the quotation and published technical details for such Product.
- 3.2. If during a period of 12 months from the date of delivery of the Product(s) to the Purchaser (“**Warranty Period**”) any part manufactured by Air Change is found upon inspection by Air Change to have proved defective in design, material or workmanship under normal use and service and when properly installed, connected and commissioned as per the manual, Air Change will supply an exchange replacement part(s) free of charge to the Purchaser provided that the Purchaser has complied with the conditions of warranty (“**Warranty Conditions**”) including those in clauses 5 and 6.
- 3.3. The Warranty Period may be extended so that the 12 month period commences upon commissioning of the Product(s) provided that (a) the date of commissioning occurs within 3 months of delivery of the Product(s) and (b) a commissioning report which specifies the date of commissioning is delivered to Air Change within 21 days of the date of commissioning.
- 3.4. Unless prior agreed by Air Change in writing, any cost or expense incurred by any persons removing or refitting or rebuilding the replacement part(s) shall be borne by the Purchaser except where Labour warranty has been specifically included in the sale.
- 3.5. If the Purchaser does not make a warranty claim within the Warranty Period, even if the defect occurs during the Warranty Period, the Purchaser shall lose all benefit of the Parts Warranty and any Labour Warranty.

### 4. Labour Warranty

- 4.1. The Purchaser may obtain a 12 month labour warranty (“**Labour Warranty**”) from Air Change at an additional cost of 2.5% of the Price plus GST subject to the Warranty Conditions and this clause.
- 4.2. The Labour Warranty must be purchased and paid for prior to any warranty claim being actioned.
- 4.3. The Labour Warranty shall entitle the Purchaser, in addition to the parts warranty in clause 3, during the Warranty Period having the costs of the labour of installing any replacement part(s) supplied pursuant to the parts warranty being costs paid by Air Change.
- 4.4. The labour covered by the Labour Warranty shall be undertaken (a) by Air Change or (b) by sub-contractors chosen and arranged by Air Change or (c) subject to the prior approval of Air Change, by the Purchaser or its agents or subcontractors, provided that in these circumstances labour shall be no more than \$65.00 per hour and refrigerant shall be no more than \$15.00 per kilogram and there shall be no charges for initial call out fees, quotations, travelling time, overtime, hire equipment, apprentice labour or brazing rod and nitrogen.

## **5. Warranty Conditions**

- 5.1. The full Price in addition to GST and any other costs and charges pursuant to the Contract and the Terms and Conditions must have been paid.
- 5.2. The Product(s) must be in its first installation.
- 5.3. The Product(s) must have been installed in compliance with all of the conditions specified in the installation manual supplied with the Product(s).
- 5.4. The Product(s) must be operated and serviced in strict accordance with the installation instructions, operation instructions, service instructions, industry standards and relevant Government and industry codes and regulations.
- 5.5. The Product(s) must not have been subject to misuse, negligence, damage or accident in transit where the customer was responsible for transport.
- 5.6. The Product(s) must not have been modified, altered or supplemented in any way whatsoever without prior approval of such modifications, alterations or supplements being given by Air Change.
- 5.7. Where Air Change recommends the use of particular fluids, refrigerants, consumables, materials or other accessories with the Product(s), the Product(s) must not have been used with other fluids, refrigerants, consumables, materials or accessories.
- 5.8. No part of the Product(s) shall be considered defective due to failure to correspond with information regarding the quality or use of the Product(s) given by someone other than Air Change.
- 5.9. No part of the Product(s) shall be considered defective if it is properly characterised as a consumable or due to normal wear or deterioration.
- 5.10. Any identification or serial number on the Product(s) or the part(s) must not have been altered, defaced or removed.
- 5.11. The warranty is subject to inspection of the Product(s) or potentially defective parts of the Product(s) by Air Change, although Air Change may in its sole discretion waive the requirement for inspection.
- 5.12. The source of all part(s) supplied by Air Change pursuant to the Parts Warranty shall be sourced from or through Air Change and at the sole discretion of Air Change. Air Change shall not be liable for replacement parts sourced from other suppliers, manufacturers or wholesalers.
- 5.13. Air Change shall not be liable for defects arising out of materials provided by or a design stipulated by the Purchaser.

## **6. Making a Warranty Claim**

- 6.1. In order for a Purchaser to make a claim under the Parts Warranty or the Labour Warranty, the Purchaser must provide to Air Change (a) a completed warranty card (supplied with the installation or instruction manual provided with the Product(s)) or a copy of the original invoice with matching serial numbers as proof of purchase and (b) full written details of the defect, fault or problem and (c) if requested by Air Change, photographs, servicing information, commissioning report, and/or the potentially defective part.
- 6.2. Any part(s) sent to Air Change must be accompanied by written details of the warranty claim and identification of the model and serial number of the Product(s).
- 6.3. In the event that Air Change provides a replacement part(s) and requests return of a defective part(s), the defective part shall become the property of Air Change and if the defective part(s) is not returned within 14 days the Purchaser shall be liable for the full cost and transport cost of the replacement part(s).

## **7. Limitation of Liability**

- 7.1. Except as expressly provided in this Warranty Policy, Air Change shall have no obligations or liabilities whatsoever to the Purchaser in respect of the delivered Product(s) or any part thereof. Consequently, without limiting the generality of the above, Air Change shall under no circumstances be liable to the Purchaser for liquidated damages, loss of production, loss of profit, loss of revenue, loss of use, cost of capital, costs connected with interruption of operation or other consequential or indirect loss or damages arising out of or in connection with any Product(s) supplied.
- 7.2. At the expiration of the Warranty Period all liability whatsoever on the part of Air Change ceases.

## **8. Force Majeure**

- 8.1. If Air Change fails to fulfil its obligations pursuant to the Warranty Policy due to industrial disputes or any other circumstances beyond its reasonable control, which Air Change could not have reasonably expected or taken into account and which consequences Air Change could not reasonably have avoided or overcome (including but not limited to fire, flood, power blackout, earthquake, war or delays in deliveries by sub- contractors) it shall be regarded as a case for relief and Air Change will not be liable for any damages or any other relief or remedies.

WV1.03/11