Fantech
Your Ventilation Solutions Company

Heat Recovery Ventilators

Installation Manual

IMPORTANT - PLEASE READ AND SAVE THIS MANUAL BEFORE INSTALLING UNIT

CAUTION - Before installation, careful consideration must be given to how this system will operate if connected to any other piece of mechanical equipment, i.e. a forced air furnace or air handler, operating at a higher static. After installation, the compatibility of the two pieces of equipment must be confirmed by measuring the airflow's of the Heat Recovery Ventilators.
It is always important to assess how the operation of any HRV may interact with vented combustion equipment (i.e. Gas Furnaces, Oil Furnaces, Wood Stoves, etc.).
NEVER - install a ventilator in a situation where its normal operation, lack of operation or partial failure may result in the backdrafting or improper functioning of vented combustion equipment!!!

Your ventilation system should be installed in conformance with the appropriate provincial or state requirements or in the absence of such requirements with local building codes.

Pool and Spa Ventilation Models

SHR 8005R • SHR 14105R

Limited Warranty

- The heat recovery aluminum core has a lifetime warranty. Fantech offers a lifetime warranty on the heat recovery core when installed in high humidity applications such as indoor pools and spas. During its lifetime oxidation may occur on the surface of the plates which is considered normal and does not need replacing. Fantech limits defects to condensation leaks as a result of perforation due to corrosion caused by normal use.
- Fantech HRV's have a warranty that is limited to 3 years on all parts from the date of purchase, including parts replaced during this time period. If there is no proof of purchase available, the date associated with the serial number will be used for the beginning of the warranty period.
- The motors found in all Fantech HRVs require no lubrication, and are factory balanced to prevent vibration and promote silent operation.
- The limited warranty covers normal use. It does not apply to any defects, malfunctions or failures as a result of improper installation, abuse, mishandling, misapplication, fortuitous occurrence or any other circumstances outside Fantech's control.
- Inappropriate installation or maintenance may result in the cancellation of the warranty.
- Any unauthorized work will result in the cancellation of the warranty.
- Fantech is not responsible for any incidental or consequential damages incurred in the use of the ventilation system.
- Fantech is not responsible for providing an authorized service centre near the purchaser or in the general area.
- Fantech reserves the right to supply refurbished parts as replacements.
- Transportation, removal and installation fees are the responsibility of the purchaser.
- The purchaser is responsible to adhering to all codes in effect in his area.

* *This warranty is the exclusive and only warranty in effect relative to the ventilation system and all other warranties either expressed or implied are invalid.*

TABLE OF CONTENTS

Understanding Fantech Product Numbers

SHR 14105R
S = Side Ducting
H = Heat Recovery
R = Remote Control Option

1410 = 1410cfm @0.4 W.G
5 = Five Ports
R = Recirculation

NOTE:

- Ventilation is a year round solution for providing better indoor air quality. Ventilation also provides moisture removing capabilities but may not be sufficient to control excess moisture year round.
- The pool and its environment must be operated according to the ASHRAE Application handbook guidelines. Failure to do so may lead to excessive moisture conditions. Consult with our technical support department for further assistance on sizing and guidelines. Unit should be set up and commissioned by qualified individuals.

The SHR 8005R contains the following items:

40455	Heat Recovery Ventilator model SHR8005R with installation kit
40452	Bypass module model BPM0820P with installation kit

The SHR 1405R contains the following items:

40445	Heat Recovery Ventilator model SHR14105R with installation kit
40441	Bypass module model BPM0824P with installation kit

Fantech SHR 8005R

Light Commercial HRV

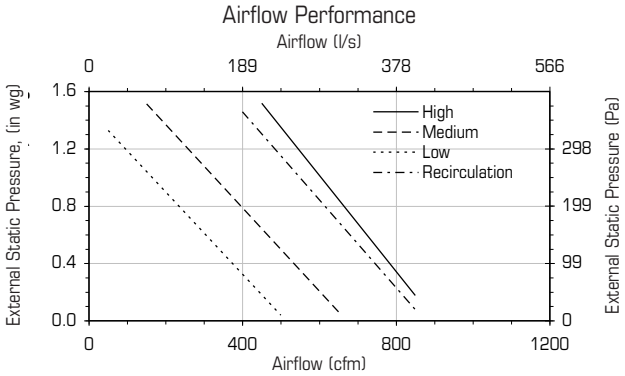
The Fantech SHR8005R is designed to provide an economical solution for high humidity applications such as indoor swimming pools, spas and fitness facilities. The higher humidity generation rate in these applications leads to annoying window condensation, mold and structure deterioration. It's designed to reduce the occurrence of condensation in the indoor environment by first operating in recirculation mode, moving air around the structures, sweeping windows dry and eliminating troublesome cold spots, then switching to air exchange mode as needed. Air exchange mode simply exhausts humid air to the outside and replaces it with drier air from outside. The airstreams are separated by an energy efficient heat recovery core which uses the energy in the exhaust air to lower the load on the HVAC system. Automatic defrost and provisions for condensation are standard.

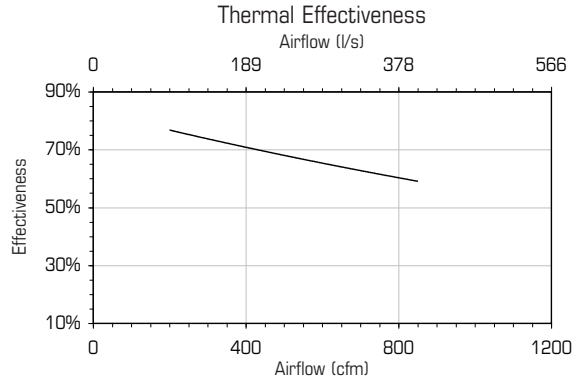
APPLICATIONS INCLUDE:

- Indoor Pools
- Spa's
- Health Centers
- Night Clubs
- Locker Room
- High humidity Applications

POWER & WEIGHT

• Volts	120V
• Amperage	5.4 Amps Total
• Weight	80.3 Kg (177 Lbs)
• Shipping Weight	98 Kg (217 Lbs)
• Blowers (x2)	115V, 60 Hz, 2.7 Amps
• Phase	Single





SPECIFICATIONS

CASE 20 gauge G90 galvanized steel coated with baked powder paint, insulated with 25mm (1 inch) and 50mm (2 inch) on outdoor air side foil-faced high density polystyrene foam for condensation control.

BLOWERS Two (2) maintenance-free Ebm-Papst™ backward inclined motorized impellers with permanently lubricated sealed ball bearings and (TOP) thermal overload protected.

HEAT RECOVERY CORES The heat recovery cores are fixed plate cross-flow heat exchanger using 1100 alloy aluminum and capable of transferring sensible heat between air streams. The heat recovery cores are engineered with a turbulence inducing geometry in order to maximize heat transfer while allowing an effective evacuation of condensate. The plates are hemmed to avoid cross-contamination of airstreams.

FILTERS The exhaust and fresh air streams are protected by MERV1 washable filters constructed to meet UL Class2. Optional MERV6 filters are direct replacement to the MERV1. Use of MERV6 filters will add an additional system pressure of 72 Pa (0.29in.wg) at 378 l/s (800cfm).

MOUNTING Unit can be rod mounted or seated on a platform. Flanged connections are provided for suitable ductwork connections. Unit shall be adaptable for easy service of electrical components.

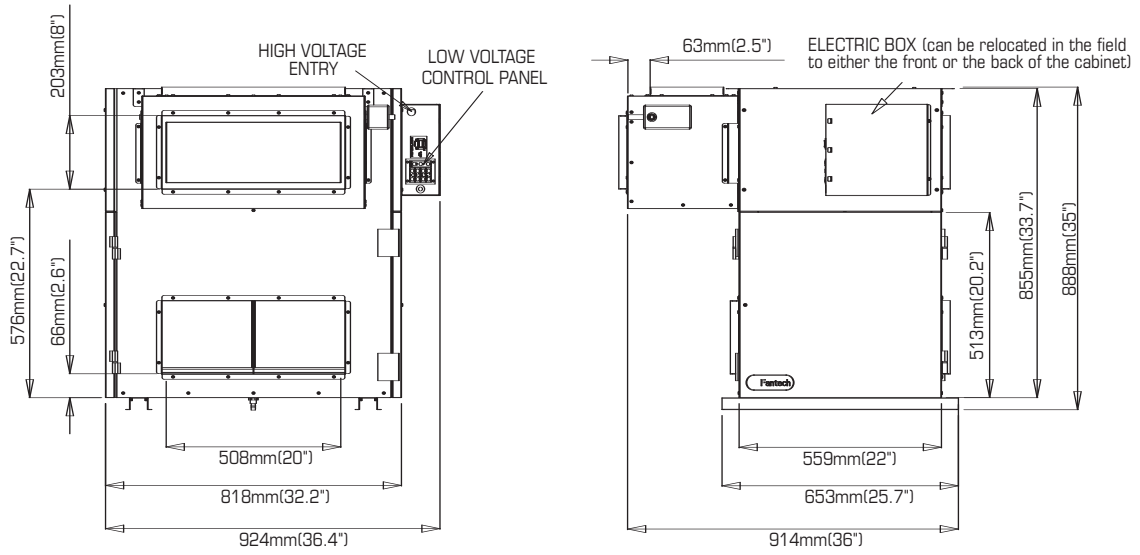
CONTROLS External three (3) position (Low/Standby/Medium) rocker switch that will offer continuous ventilation. Compatible with all Fantech HRV controls.

FROST CONTROL During the defrost sequence, a motorized damper temporarily blocks the incoming fresh air stream so that the warm air from the building can circulate through the HRV. The exhaust blower shuts down and the supply blower switches into high speed to maximize the effectiveness of the defrost strategy.

SERVICEABILITY Unit has hinged or screwed access panels on front and back. Cores, filters, motors and drain pan are serviceable from either sides of the unit. Fan assemblies are mounted on a removable sliding base. Heat recovery cores are mounted in slide-out rails for ease of inspection, removal and cleaning. Accessibility to the electrical box is maintained for any unit installation.

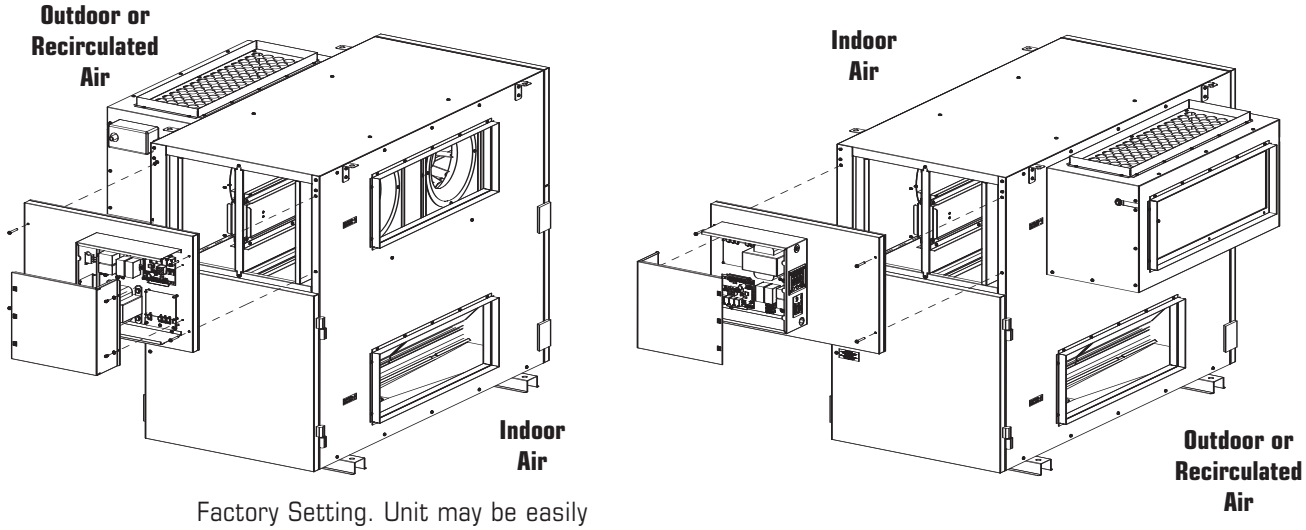
SHR 8005R Light Commercial HRV

Dimensions



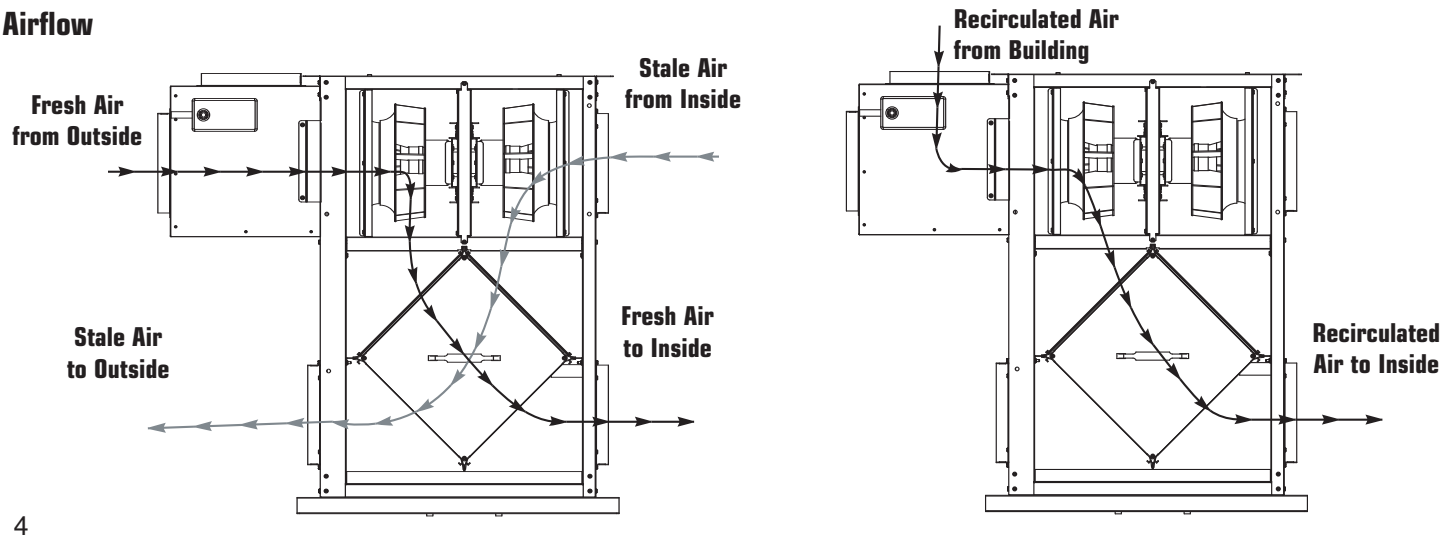
PORT CONFIGURATION

The unit has access doors on the front and back. Also, the main control panel may be moved from front to back allowing for ducting layout.



Factory Setting. Unit may be easily reversed in field.

Airflow



Fantech SHR 14105R

Light Commercial HRV

The Fantech SHR14105R is designed to provide an economical solution for high humidity applications such as indoor swimming pools, spas and fitness facilities. The higher humidity generation rate in these applications leads to annoying window condensation, mold and structure deterioration. It's designed to reduce the occurrence of condensation in the indoor environment by first operating in recirculation mode, moving air around the structures, sweeping windows dry and eliminating troublesome cold spots, then switching to air exchange mode as needed. Air exchange mode simply exhausts humid air to the outside and replaces it with drier air from outside. The airstreams are separated by an energy efficient heat recovery core which uses the energy in the exhaust air to lower the load on the HVAC system. Automatic defrost and provisions for condensation are standard.

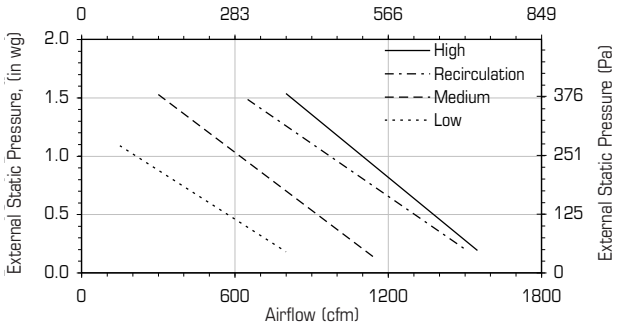
APPLICATIONS INCLUDE:

- Indoor Pools
- Spa's
- Health Centers
- Night Clubs
- Locker Room
- High humidity Applications

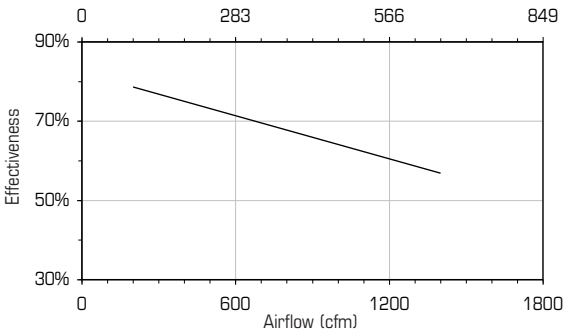
POWER & WEIGHT

• Volts	120V
• Amperage	10.6 Amps Total
• Weight	116 Kg (255 Lbs)
• Shipping Weight	134 Kg (295 Lbs)
• Blowers (x4)	115V, 60 Hz, 2.7 Amps
• Phase	Single

Airflow Performance



Thermal Effectiveness



SPECIFICATIONS

CASE 20 gauge G90 galvanized steel coated with baked powder paint, insulated with 25mm (1 inch) and 50mm (2 inch) on outdoor air side foil-faced high density polystyrene foam for condensation control.

BLOWERS Four (4) maintenance-free Ebm-Papst™ backward inclined motorized impellers with permanently lubricated sealed ball bearings and (TOP) thermal overload protected.

HEAT RECOVERY CORE The Heat recovery Cores are fixed plate cross-flow heat exchanger using 1100 alloy aluminum and capable of transferring sensible heat between air streams. The heat recovery cores are engineered with a turbulence inducing geometry in order to maximize heat transfer while allowing an effective evacuation of condensate. The plates are hemmed to avoid cross-contamination of airstreams.

FILTERS The exhaust and fresh air streams are protected by MERV1 washable filters constructed to meet UL Class2. Optional MERV6 filters are direct replacement to the MERV1. Use of MERV6 filters will add an additional system pressure of 90 Pa (0.36in.wg) at 665 l/s (1410cfm).

MOUNTING Unit can be rod mounted or seated on a platform. Flanged connections are provided for suitable ductwork connections. Unit shall be adaptable for easy service of electrical components.

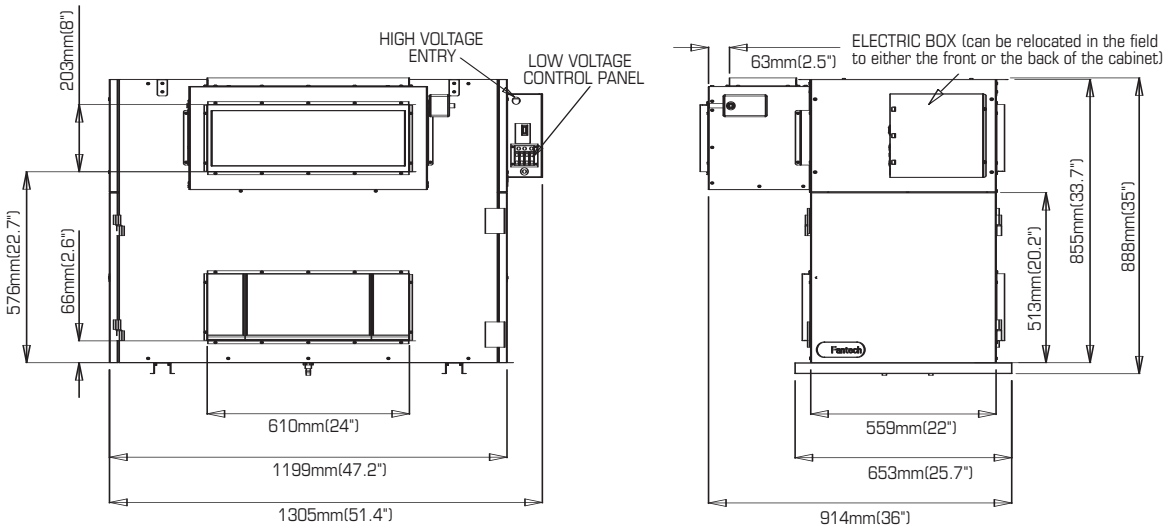
CONTROLS External three (3) position (Low/Standby/Medium) rocker switch that will offer continuous ventilation. Compatible with all Fantech HRV/ERV controls.

FROST CONTROL During the defrost sequence, a motorized damper temporarily blocks the incoming fresh air stream so that the warm air from the building can circulate through the HRV. The exhaust blower shuts down and the supply blower switches into high speed to maximize the effectiveness of the defrost strategy.

SERVICEABILITY Unit has hinged or screwed access panels on front and back. Cores, filters, motors and drain pan are serviceable from either sides of the unit. Fan assemblies are mounted on a removable sliding base. Heat recovery cores are mounted in slide-out rails for ease of inspection, removal and cleaning. Accessibility to the electrical box is maintained for any unit installation.

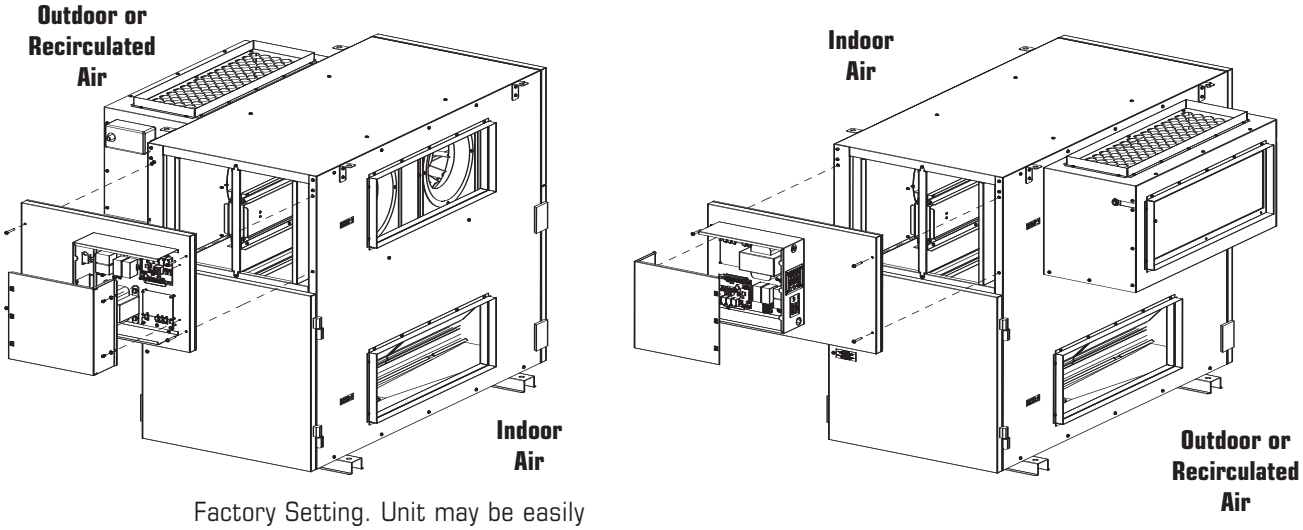
SHR 14105R Light Commercial HRV

Dimensions



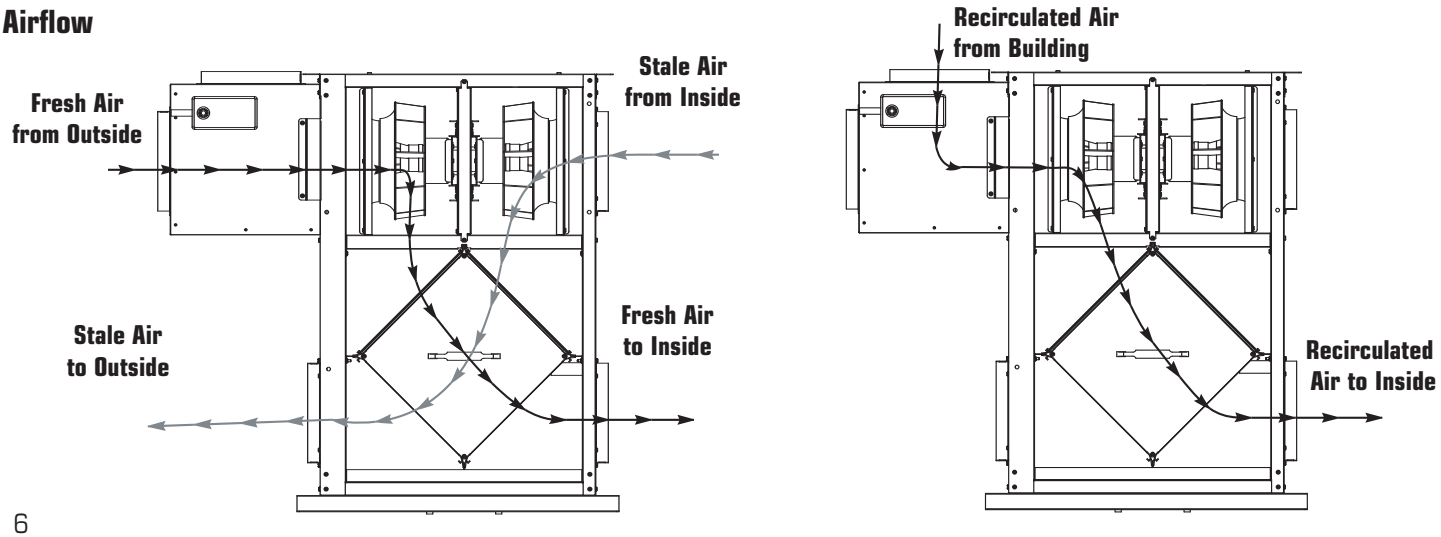
PORT CONFIGURATION

The unit has access doors on the front and back. Also, the main control panel may be moved from front to back allowing for ducting layout.



Factory Setting. Unit may be easily reversed in field

Airflow



MODES OF OPERATION

1. Continuous / Ventilation Mode

In this mode of operation, both fans are operating and exchanging air with the outside. The heat recovery ventilator (HRV) constantly exchanges the air at the rate you select, either at low or medium speed, and switches to high speed when activated by an optional remote control. Continuous mode is recommended, since pollutants are slowly but constantly being generated in a building.

2. Recirculation Mode

In recirculation mode, the supply motor continues to run and a damper moves to block off air entering from outside, drawing air instead from the conditioned space. The exhaust to outside motor is OFF when in recirculation mode.

3. Intermittent / Standby Mode

The system is always on standby and operates at high speed when activated by an optional remote control (required): "Standby" should be selected if the user wishes to stop the unit from continuous exchange.

4. Defrost

A preset defrost sequence is activated at an outdoor air temperature of -5ºC (23ºF) and lower.

During the defrost sequence, the motorized damper in the bypass module (BPM) temporarily blocks the incoming fresh air stream so that the warm air from the room can circulate through the HRV. The exhaust blower shuts down and the supply blower switches into high speed to maximize the effectiveness of the defrost strategy. During this cycle, the unit will not create a negative pressure. Please note that these systems are configured to defrost with the BPM devices installed on the fresh air from outside port. Alternate configuration are available by contacting our technical support department.

SETTING SPEED

Intermittent operation can be obtained by toggling the switch located on outside of cabinet. External low voltage contacts allow for high speed operation when an optional remote control is used.

Convenient Optional Low Voltage Wall Controls

Main Control

EDF1R
Triple Function Wall Control

2-wire

The EDF1R is designed to provide 3 modes of operation to the Heat/Energy Recovery Ventilator.

- Pressing the "Fan" button once initiates the unit to run at a continuous low speed of operation (green).
- Pressing the button twice allows the HRV/ERV to run continuous cycle of 20 minutes on and then standby for 40 minutes.
- Touch the button a third time and the system will run recirculation at high speed (red).

The ventilation system will stay on the last function selected until it is manually changed.

EDF5
Five-Function Wall Control

2-wire

- Features: Digital Display, Maintenance Light, Power Button, Cycle Timer, Longer Override Timer, Speed Control and Dehumidistat Control.
- Intermittent, Recirculation or Continuous Ventilation Modes
- Use in one central location

Boost Switches

RTS 2
Pushbutton Timer

2-wire

- 20-Minute Timer with LED Light
- Boosts system to high speed with the touch of a button
- Up to five can be used with one system
- Use in bathrooms, kitchens, laundry

RTS3
Pushbutton Timer

3-wire

- 20-40-60 Min. Boost Timer
- Press button once to energize system to high speed for 20 minutes
- Press button twice unit unit will run for 40 minutes on high speed.
- Press button three times for 60 minutes of high speed
- Up to five can be used with one system

MDEH1
Dehumidistat

2-wire

- Rotary Dial Dehumidistat
- Just turn dial to set desired humidity level
- Multiple units can be used
- Install in bathrooms, kitchen, laundry
- Dehumidifies when air outside is dryer than air inside

INSTALLATION

LOCATION

The HRV must be located in a conditioned space where it will be possible to conveniently service the unit. Typically the HRV would be located in the mechanical room, above a drop ceiling or an area close to the outside wall where the weatherhoods will be mounted. Attic installations are not recommended due to extreme temperatures, and difficulty in performing, required service & maintenance. Care must be taken to locate the recirculation port in an area that will not cause any unwanted contaminant to be drawn into the living space during recirculation and defrost.

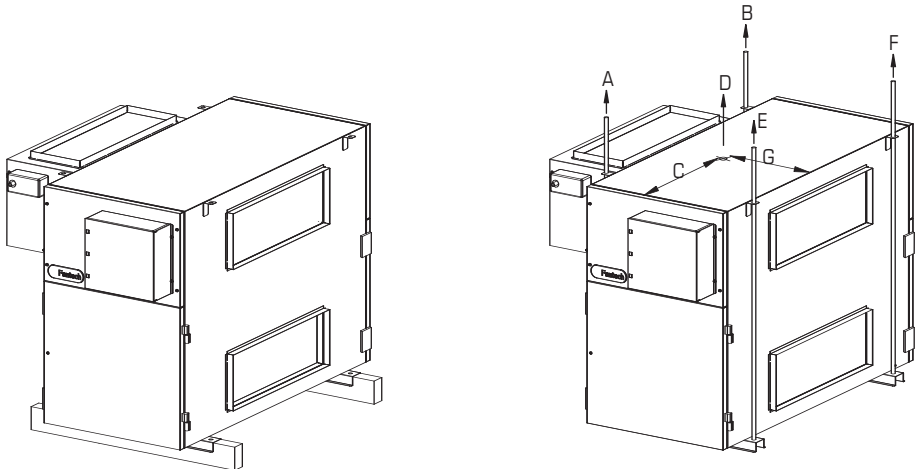
Connecting appliances to the HRV It is not recommended, including:

- clothes dryer
- kitchen exhaust hoods
- combustion venting
- central vacuum system

These appliance may cause lint, dust or grease to collect in the HRV , damaging the unit.

NOTE: Connecting any of these type of appliances to the HRV will invalidate your warranty

TIP: Flexible duct connectors should be installed between the HRV and the galvanized ductwork.

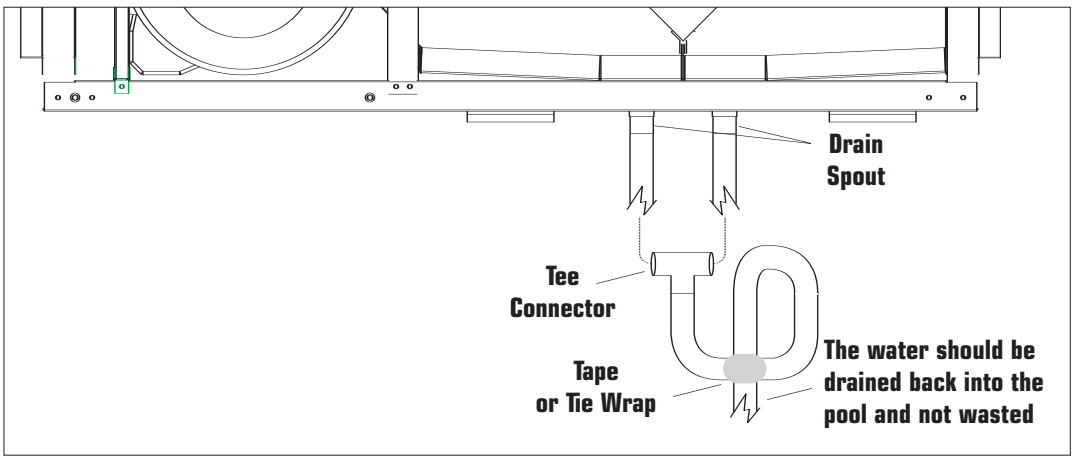


Model	A	B	C	D	E	F	G
SHR 8005R	23.8Kg (52.5lbs)	22.5Kg (49.6lbs)	390mm (15.4")	85Kg (187lbs)	20Kg (44lbs)	18.8Kg(41.3lbs)	448mm (17.6")
SHR 14105R	30.4Kg (67lbs)	27Kg (60lbs)	544mm (21.4")	109Kg (241lbs)	27.7Kg (61lbs)	24.3Kg (53.5lbs)	455mm (18")

Installing Drain Line

Through normal operation and including defrost mode, the HRV may produce some condensation. This water should flow into a nearby drain, or be taken away by a condensate pump. The HRV and all condensate lines must be installed in a space where the temperature is maintained above freezing point. A "P" trap should be made in the drain line. This will prevent odors from being drawn back up into the unit.

Install the drain hose, making a "P" trap



INSTALLING DUCTS GOING TO / FROM OUTSIDE

INSTALLING THE DUCTING TO THE WEATHERHOODS

OUTSIDE WEATHERHOODS – The weatherhoods must have built-in "bird" screens with 6.35 mm (1/4 inch) minimum mesh to prevent birds and rodents from entering into the ductwork. Do not use smaller mesh as it will be very susceptible to plugging up. The preferred location of the weatherhoods is:

- No less than 3 m (10 ft.) apart from each other.
- At least 457.2 mm (18 inches) snow line or ground level.
- Supply hood must be kept away from sources of contaminant, such as automobile exhaust fumes, gas meters, garbage cans, containers, cooling towers, tar roofs, etc.
- Avoid prevailing winds, whenever reasonably possible.

The outside perimeter of the weatherhood must be sealed to prevent leakage into the building.

DUCTING FROM THE WEATHERHOODS–TO AND FROM THE HRV – Galvanized sheet metal ducting with sufficient cross section with an integral single piece of insulated wrap with vapor barrier should be used to connect the HRV to the weatherhoods. The R-value of the insulation should be adequate for condensation control. Insulated flex duct may be used in moderation, if sized and installed properly. (Consult local codes)

All ducts should be sealed using a good bead of high quality caulking (preferably acoustical sealant) and a high quality aluminum foil tape, or other approved duct sealant.

INSTALLING DUCTS TO / FROM INSIDE

To maximize airflow in the ductwork system, all ducts should be kept short and have as few bends or elbows as possible. Forty-five degree are preferred to 90˚ elbows. Use "Y" tees instead of 90˚ elbows whenever possible.

All duct joints must be fastened with screws or duct sealant and wrapped with a quality duct tape to prevent leakage. Aluminum foil duct tape is recommended.

SUPPLY AIR DUCTING

In buildings without a forced air HVAC systems, fresh air should be supplied to all habitable areas. It should be supplied from high wall or ceiling locations. The grilles that are to be used should be designed to properly and comfortably sweep cold surfaces.

Optional inline duct heaters may be used to add heat if required. Typically the reheat is best done using a coil off the same boiler that heats the pool water.

Direct Connection to Furnace/ Air handler return duct

- Should you wish to hard duct the supply air directly into the cold air return of the HVAC systems, remember to check the airflow balance of the HRV with the HVAC systems fan both "on"and "off" to determine that it does not imbalance the HRV more than 10%. Make sure you respect the minimum distance from the supply air in of the HRV and the HVAC systems.

- It may be necessary to install a separate fresh air supply ductwork system if the heating is other than forced air.

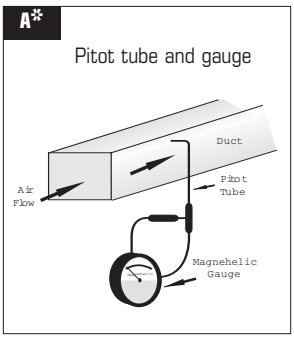
  When installing an HRV, the designer and installer should be aware of local codes that may require smoke detectors and/or firestats in the HVAC or HRV ductwork.
  Because an HRV is designed to bring fresh air into the building, structures may require supply voltage interrupt when smoke or flame sensors are triggered, or when a central fire alarm system is activated.

Exhaust Air ducting

The stale air exhaust system is used to draw air from the points in the building where the worst air quality problems occur. (See installation examples in the manual.)

AIR FLOW BALANCING

- The balancing procedure consists of measuring the exhaust air leaving the system and the supply air entering the system and ensuring that these two are equal. A deviation of 10% or less is acceptable.



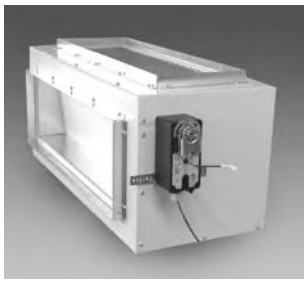
A The duct's airflow velocity is generally measured with a magnehelic gauge and a pitot tube.

- To avoid airflow turbulence and incorrect readings, the airflow velocity should be measured on steel ducting a minimum of 3 duct cross-section from the unit or elbow and before any transition.

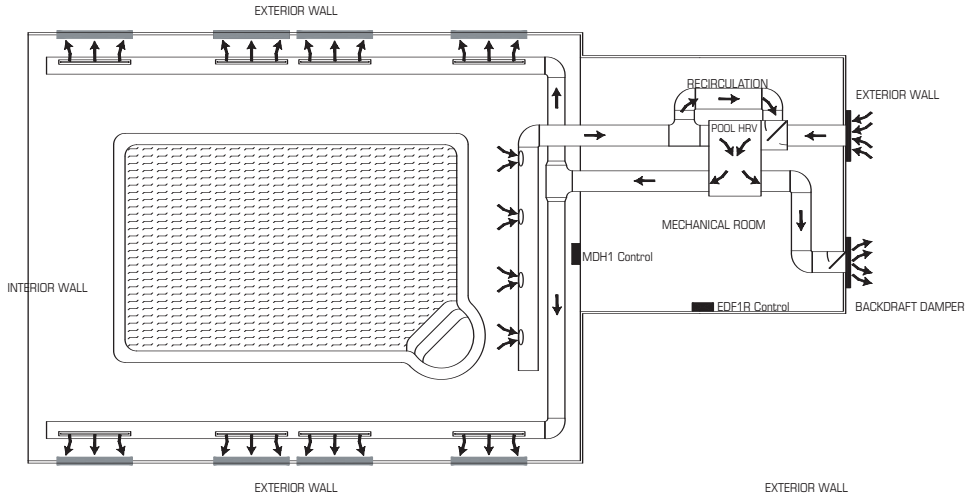
Note: A professional air balancer should be contacted to commission the system properly. A skilled HVAC Tech may complete the balance of air providing they possess the proper equipment. Call Fantech Technical support for assistance.

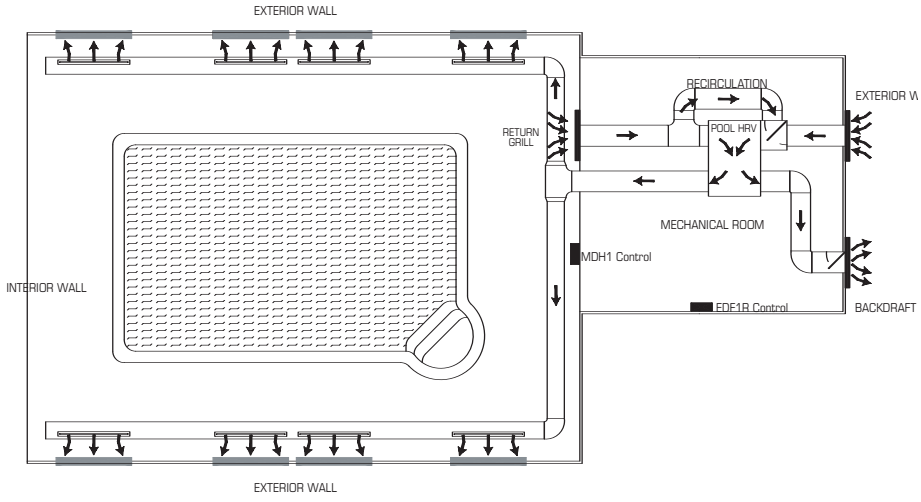
INSTALLING BYPASS MODULE (BPM)

REFER TO BPM INSTALLATION, OPERATION AND MAINTENANCE DOCUMENT FOR INSTRUCTIONS



INSTALLATION EXAMPLES

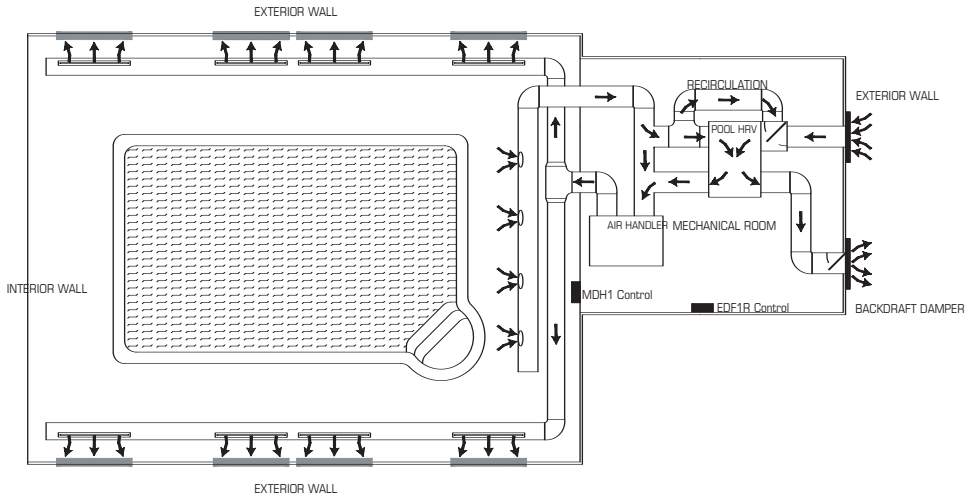




Installation with Grille

INSTALLATION EXAMPLES CON'T

HVAC



MAINTENANCE

CAUTION MAKE SURE UNIT IS UNPLUGGED BEFORE ATTEMPTING ANY MAINTENANCE WORK

The following components should also be inspected regularly and well maintained.

The motor - The motors are factory balanced and lubricated for life. They require no maintenance.

The unit - The inside of the unit should be wiped clean as needed.

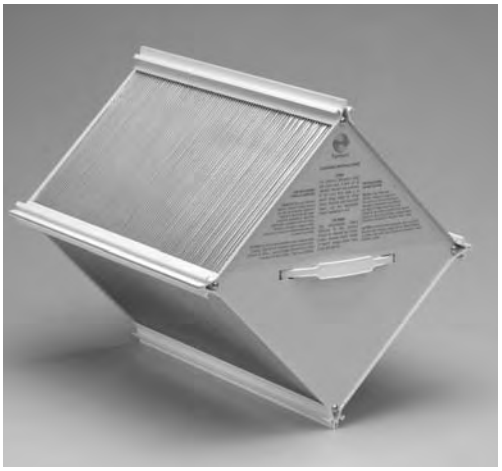
Condensation Pan - Units with drain hoses should have their line and connection checked regularly.

Outside hoods - The outside hoods need to be checked every season to make sure there are no leaves or insects blocking the airflow. Check regularly that there are no pollutants near the intake hood. Make sure they are clear of any snow accumulation during the winter months.

FILTERS

The filters need to be checked and cleaned once a month or when they appear dirty.

FIXED PLATE



Clean cores on a average every 3-6 months or as needed.

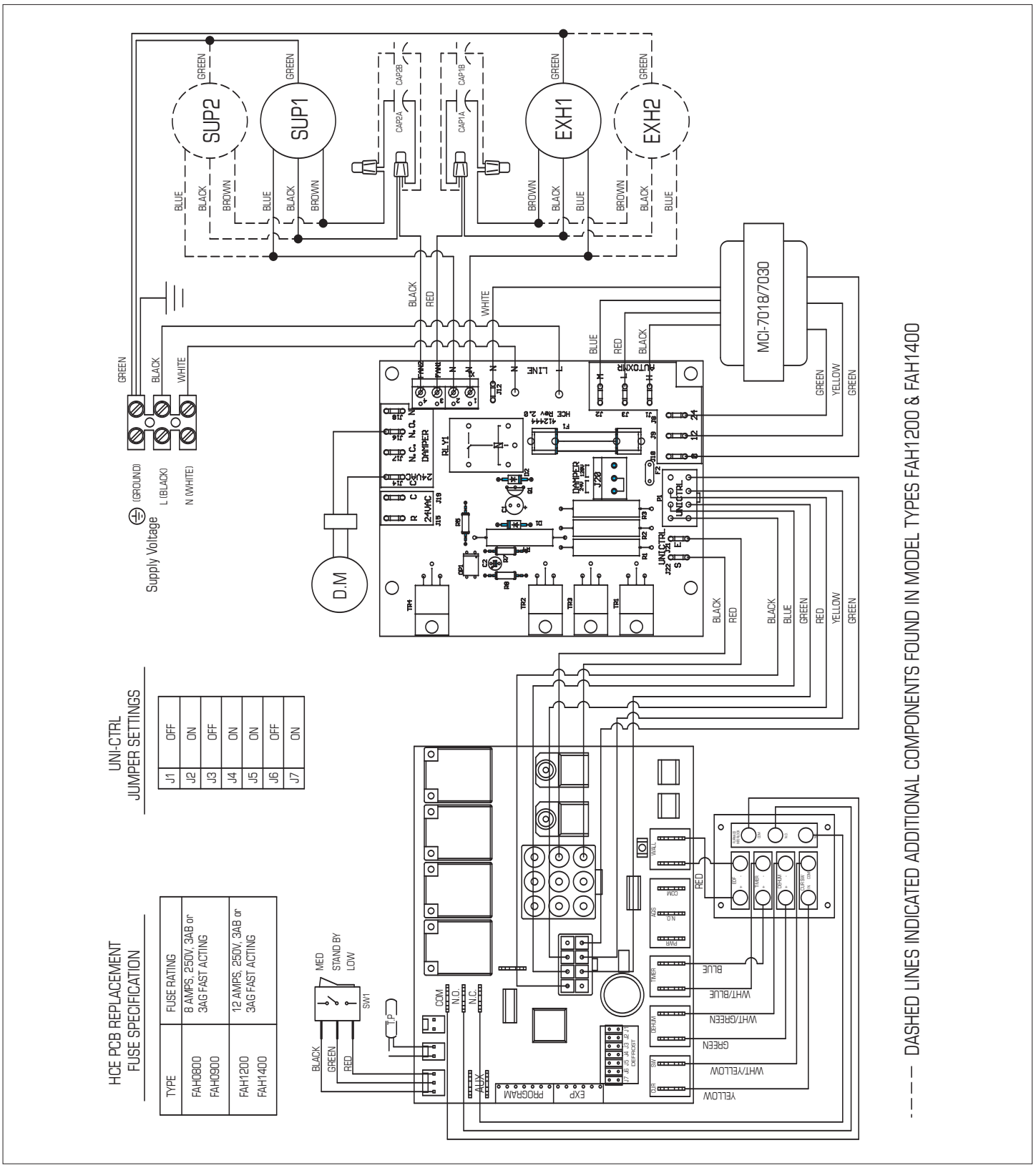
a) Open access door & remove filters.
b) Carefully pull on handle of core and pull evenly outward. Cores may be snug, but will slide out of the channel.
c) Wash the cores in warm soapy water or light coil solution.
d) Install clean cores making sure the matting surfaces have one sealing edges between each cores to minimize leaks.
e) Install the clean filters
f) Replace access door

Note: Core installation label on the outer end of the core.

To install the clean Core and Filters.

a) First mount the bottom flange of the core guide into the bottom channel approximately 6mm (1/4")
b) Mount the left or right side flange of the core guide approximately 6mm (1/4") followed by the other side
c) Mount the top flange of the core guide into the top channel approximately 6mm (1/4")
d) With all four corners in place and the core straight and even, push hard in the centre of the core until the core stops on the back of the cabinet.

WIRING DIAGRAM SHR 8005R AND SHR 14105R



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