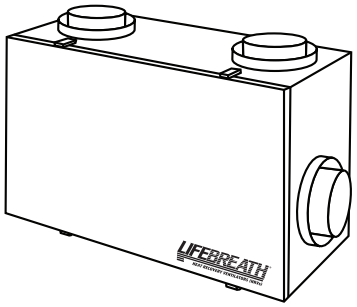
LIFEBREATH®

THE ULTIMATE AIR EXCHANGER

Operation and Installation Manual

RNC Series

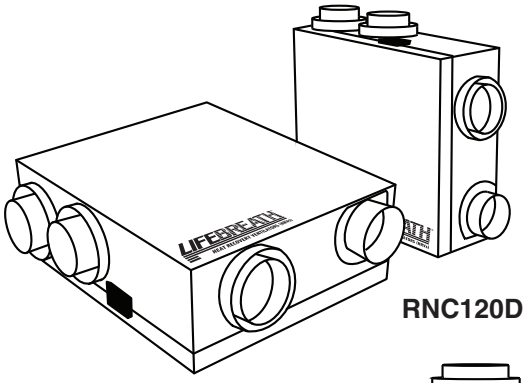
2 Speed Electronics



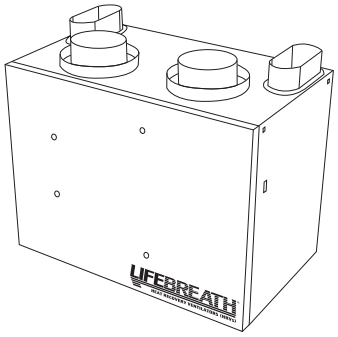
RNC155

RNC200*

RNC95*



RNC120D



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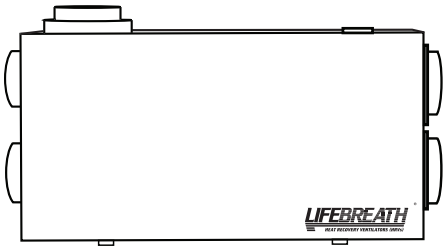

RNC10

RNC20

Residential New Construction Series (RNC)
Heat Recovery Ventilators

* **This product earned the ENERGY STAR by meeting strict energy efficiency guidelines set by Natural Resources Canada and the US EPA. It meets ENERGY STAR requirements only when used in Canada.**

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IMPORTANT - PLEASE READ THIS MANUAL BEFORE INSTALLING UNIT.

NOTE

Due to ongoing research and product development, specifications, ratings and dimensions are subject to change without notice.

Introduction

The Lifebreath HRV (Heat Recovery Ventilator) is designed to introduce fresh outdoor air into a building while exhausting an equal amount of stale indoor air.

During the heating season, heat energy from the stale exhausting air is transferred to the fresh incoming air via Lifebreath’s patented aluminum core. During the air conditioning season, the HRV will help cool the incoming fresh air with the cooler stale exhausting air.

Warranty

All Heat Recovery Ventilators carry a Lifetime Warranty on the heat recovery core and a 5 (five) year replacement parts warranty.

During the warranty period, if any core experiences a failure or perforation caused by normal use while owned by the original purchaser, a replacement core (FOB our plant) will be supplied at no expense.

⚠ 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 air flows of the HRV, by using the balancing procedure found in this manual.
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.

⚠ ATTENTION

Do not apply electrical power to the unit until installation has been fully completed (including low voltage control wiring).

Installation and wiring to be in accordance with CEC, NEC, and local electrical codes.

LEAVE FOR HOMEOWNER

TO BE COMPLETED BY CONTRACTOR AFTER INSTALLATION

Installing Contractor _____ Telephone / Contact _____

Serial Number _____ Installation Date _____

Model _____

LIFEBREATH
THE ULTIMATE AIR EXCHANGER

Model RNC95

THERMALLY CONDUCTIVE, PATENTED ALUMINUM CORE
The cross-flow heat recovery core transfers heat between the two airstreams. It is easily removed for cleaning or service.

MOTORS AND BLOWERS
Each air stream has one centrifugal blower driven by a common PSC motor. 2 speed fan operation.

FILTERS
Washable air filters in exhaust and supply air streams.

MOUNTING THE HRV
Four threaded inserts at corners of the cabinet designed to accept the "S" hooks and hanging straps supplied with the unit.

DEFROST
Recirculating defrost system.

CASE
Twenty gauge prepainted galvanized steel (G60) for superior corrosion resistance. Insulated to prevent exterior condensation. Drain connections 2 - 1/2" (12 mm) OD.

WEIGHT 52 lbs. (23.6 kg) **SHIPPING WEIGHT** 56 lbs (25.4 kg)

RNC SERIES ELECTRONICS
- Built-in Relay for Interfacing to furnace
- A standard ON/OFF switch can be added to provide Low/High Ventilation or ON/OFF functionality in order to meet building standards.
- Optional controls can be installed at the time of the installation or at a later date to upgrade the basic features of the ventilation system.

OPTIONAL CONTROLS
99-DX-01 Lifestyle RNC Digital Control
- 2 Speed Operation on each mode • 4 user selectable operational modes: Continuous Ventilation, 20 ON/40 OFF, 20 ON/40 Recirculation, Continuous Recirculation
- Adjustable Dehumidistat function built into the main wall control
- Connect to 3 wire 20 gauge low voltage wire.

99-BC-01 Lifestyle RNC Ventilation Control -
- 2 Speed Fan setting (Low/High) • Dehumidistat
- Connect to 3 wire 20 gauge low voltage wire.

OPTIONAL TIMERS
99-DET01 **Lifestyle 20/40/60 Minute Timer** - Initiates high speed ventilation for 20, 40, or 60 minutes, (3 wire) 20 gauge wire (min.) 100' length

99-20M01 **Lifestyle 20 Minute Timer** - Initiates high speed ventilation for 20 minutes, (3 wire) 20 gauge wire (min.) 100' length.

99-101 **Mechanical Timer** - Initiates High speed ventilation for up to 60 minutes, (2 wire) 20 gauge wire (min.) 100' length

OPTIONAL ACCESSORIES
99-DH-01 **Lifestyle Dehumidistat -** Initiates high speed ventilation when the indoor humidity level is above the set point. (3 wire) 20 gauge wire (min.) 100' length

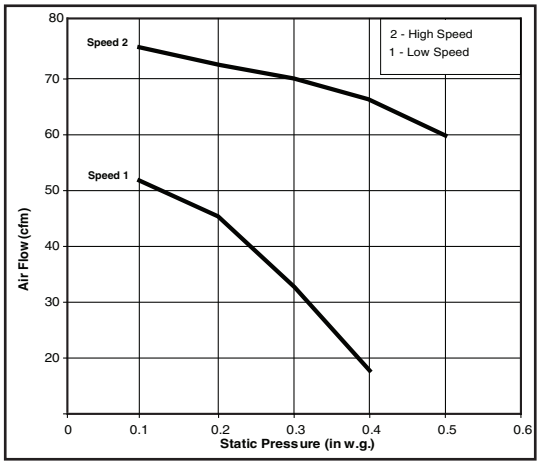
99-163 **Duct Heater w/ Electronic SCR Thermostat,** 1 Kw, 6" (150 mm)

99-185 **Weatherhoods**, Two - 5" (125 mm) c/w 1/4" (6 mm) mesh screen

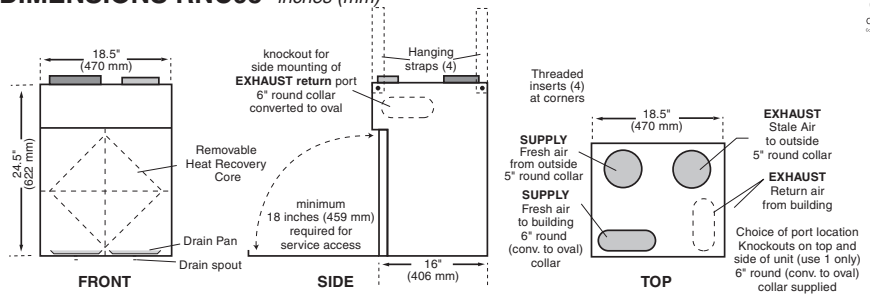
Performance (HVI certified)
Net supply air flow in cfm (L/s) against external static pressure

E.S.P (external static pressure)		*[cfm (L/s)]*
@ 0.1" (25 Pa)		76 (36)
@ 0.2" (50 Pa)		73 (34)
@ 0.3" (75 Pa)		70 (33)
@ 0.4" (100 Pa)		66 (31)
@ 0.5" (125 Pa)		60 (29)
Max. Temperature Recovery		88%
Sensible Effectiveness @ 60 cfm (28 L/s)	32°F (0°C)	88%
*Sensible Efficiency @ 60 cfm (28 L/s)	32°F (0°C)	75%
*Sensible Efficiency @ 61 cfm (29 L/s)	-13°F (-25°C)	68%
VAC @ 60HZ		120
WATTS / Low speed.		59
WATTS / High speed		150
Amp rating		0.9

**Sensible Efficiency – thermal **Latent Efficiency – moisture*
Note: Effectiveness - based on temp. differential between the 2 airstreams
Efficiency – takes into account all power inputs



DIMENSIONS RNC95 *inches (mm)*



All units conform to CSA and UL standards.

WARRANTY
Units carry a LIFETIME warranty on the heat recovery core and a 5 year replacement parts warranty.

Date: _____ Contractor: _____

Tag: _____ Qty: _____ Supplier: _____

Project: _____ Quote#: _____

Engineer: _____ Submitted by: _____

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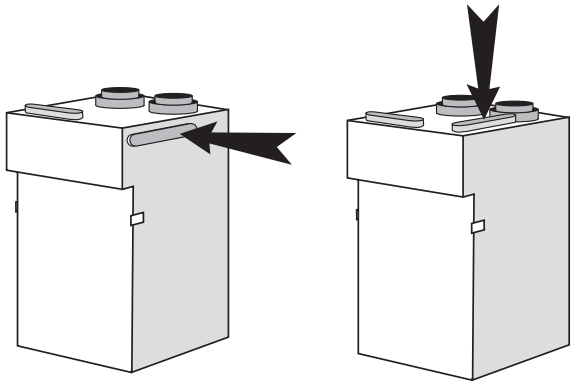
ISO 9001 REGISTERED

RNC95 Port Specifications

The RNC95 Heat Recovery Ventilator (HRV) has been designed to allow the installer to choose between two possible positions on the cabinet for the INDOOR EXHAUST (return from building) port. Illustrations in this manual show standard (side mounted) port location. The same specifications apply to both RNC95 setups, regardless of which port position is selected.



SIDE MOUNTED PORT
standard location

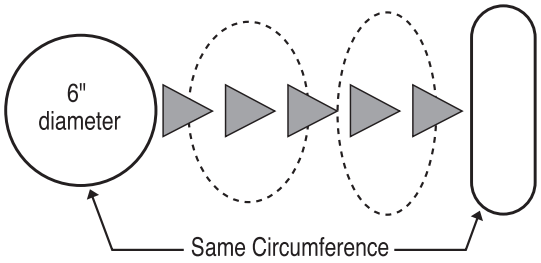
TOP MOUNTED PORT
alternate location

Variable Port Location

Variable Port Location / Installation (Model RNC95 only)

The **exhaust return** port collar is not factory installed. Installer may choose either **side mounted** or alternate **top mounted** port by simply removing one of the two knock-out plates and attaching a port collar (supplied). To remove knock-out plate, insert a utility knife into the knock-out slits and trace them completely to puncture protective film underneath. Then, cut the solid tabs between the slits, using tin snips or side cutters, and remove the knock-out plate. If any protective film still blocks the opening, **remove it now**.

In order to make the RNC95 as space efficient as possible, the INDOOR supply and return ports are converted from round to oval shape. Overall size of the port remains the same. Simply bend a standard duct fitting to the correct shape, and attach to the oval port using the same method as for a round port.



Round port bent to oval

RNC95 Air Flow

Stale air enters the FRONT RIGHT side port. The air will pass down the front half of the core, then up the back half of the core and out the RIGHT REAR port.

Fresh outdoor air will enter the LEFT REAR port and pass down the back half of the core. It will then pass up the front half of the core, and out the LEFT FRONT port. This unique configuration allows the air to actually travel through the core twice, making the RNC95 almost as efficient as a double core unit.

LIFEBREATH
THE ULTIMATE AIR EXCHANGER

Model RNC155

THERMALLY CONDUCTIVE, PATENTED ALUMINUM CORE
The cross-flow heat recovery core transfers heat between the two airstreams. It is easily removed for cleaning or service.

MOTORS AND BLOWERS
Each air stream has one centrifugal blower driven by a common PSC motor. 2 speed fan operation.

FILTERS
Washable air filters in exhaust and supply air streams.

MOUNTING THE HRV
Four threaded inserts at corners of the cabinet designed to accept the "S" hooks and hanging straps supplied with the unit.

DEFROST
Recirculating damper defrost system.

CASE
Twenty gauge prepainted galvanized steel (G60) for superior corrosion resistance. Insulated to prevent exterior condensation. Drain connections 2 - 1/2" (12 mm) OD. Balancing ports are located in the door.

WEIGHT 71 lbs. (32.5 kg) **SHIPPING WEIGHT** 73 lbs. (33.5 kg)

RNC SERIES ELECTRONICS
- Built-in Relay for Interfacing to furnace
- A standard ON/OFF switch can be added to provide Low/High Ventilation or ON/OFF functionality in order to meet building standards.
- Optional controls can be installed at the time of the installation or at a later date to upgrade the basic features of the ventilation system.

OPTIONAL CONTROLS
99-DX-01 Lifestyle RNC Digital Control
- 2 Speed Operation on each mode • 4 user selectable operational modes: Continuous Ventilation, 20 ON/40 OFF, 20 ON/40 Recirculation, Continuous Recirculation
- Adjustable Dehumidistat function built into the main wall control
- Connect to 3 wire 20 gauge low voltage wire.

99-BC-01 Lifestyle RNC Ventilation Control -
- 2 Speed Fan setting (Low/High) • Dehumidistat
- Connect to 3 wire 20 gauge low voltage wire.

OPTIONAL TIMERS
99-DET01 **Lifestyle 20/40/60 Minute Timer** - Initiates high speed ventilation for 20, 40, or 60 minutes, (3 wire) 20 gauge wire (min.) 100' length

99-20M01 **Lifestyle 20 Minute Timer** - Initiates high speed ventilation for 20 minutes, (3 wire) 20 gauge wire (min.) 100' length.

99-101 **Mechanical Timer** - Initiates High speed ventilation for up to 60 minutes, (2 wire) 20 gauge wire (min.) 100' length

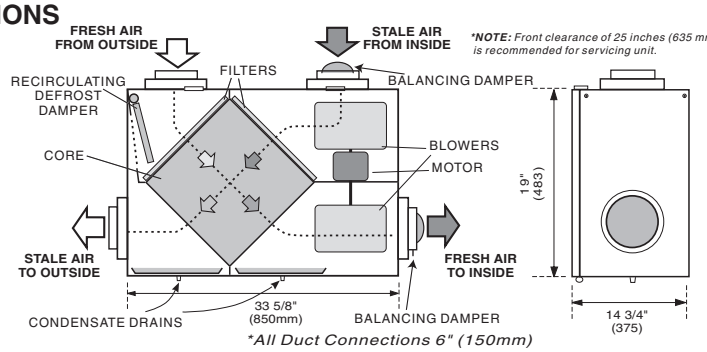
OPTIONAL ACCESSORIES
99-DH-01 **Lifestyle Dehumidistat -** Initiates high speed ventilation when the indoor humidity level is above the set point. (3 wire) 20 gauge wire (min.) 100'

99-163 **Duct Heater w/ Electronic SCR Thermostat,** 1 Kw, 6" (150 mm)

99-186 **Weatherhoods**, Two - 6" (150 mm) c/w 1/4" (6 mm) mesh screen

DIMENSIONS
RNC155

inches (mm)



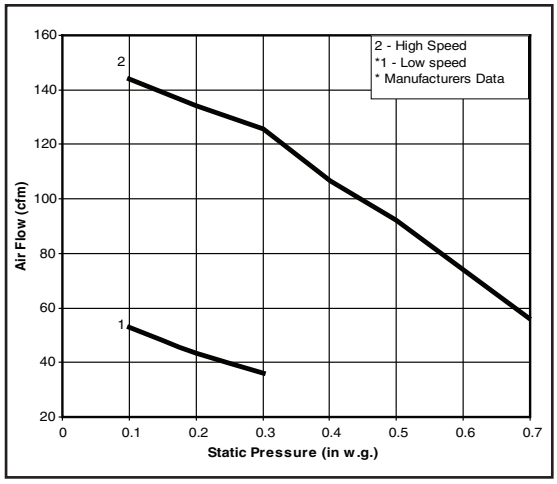
NOTE: Front clearance of 25 inches (635 mm) is recommended for servicing unit.

All Duct Connections 6" (150mm)

Performance (HVI certified)
Net supply air flow in cfm (L/s) against external static pressure

E.S.P (external static pressure)		[cfm (L/s)]
@ 0.1" (25 Pa)		144 (68)
@ 0.2" (50 Pa)		134 (63)
@ 0.3" (75 Pa)		125 (59)
@ 0.4" (100 Pa)		113 (53)
@ 0.5" (125 Pa)		92 (43)
@ 0.6" (150 Pa)		73 (34)
Max. Temperature Recovery		78%
Sensible Effectiveness @ 65 cfm (31 L/s)	32°F (0°C)	73%
*Sensible Efficiency @ 65 cfm (31 L/s)	32°F (0°C)	64%
*Sensible Efficiency @ 68 cfm (32 L/s)	-13°F (-25°C)	66%
VAC @ 60HZ		120
WATTS / Low speed.		49
WATTS / High speed		120
Amp rating		1.4

**Sensible Efficiency – thermal **Latent Efficiency – moisture*
Note: Effectiveness - based on temp. differential between the 2 airstreams
Efficiency – takes into account all power inputs



All units conform to CSA and UL standards.

WARRANTY
Units carry a LIFETIME warranty on the heat recovery core and a 5 year replacement parts warranty.

Date: _____ Contractor: _____

Tag: _____ Qty: _____ Supplier: _____

Project: _____ Quote#: _____

Engineer: _____ Submitted by: _____

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Website: www.lifebreath.com

ISO 9001 REGISTERED

LIFEBREATH
THE ULTIMATE AIR EXCHANGER

Model RNC200

THERMALLY CONDUCTIVE, PATENTED ALUMINUM CORE
The cross-flow heat recovery core transfers heat between the two airstreams. It is easily removed for cleaning or service.

MOTORS AND BLOWERS
Each air stream has one centrifugal blower driven by a common PSC motor. 2 speed fan operation.

FILTERS
Washable air filters in exhaust and supply air streams.

MOUNTING THE HRV
Four threaded inserts at corners of the cabinet designed to accept the “S” hooks and hanging straps supplied with the unit.

DEFROST
Recirculating damper defrost system.

CASE
Twenty gauge prepainted galvanized steel (G60) for superior corrosion resistance. Insulated to prevent exterior condensation. Drain connections 2 - 1/2" (12 mm) OD. Balancing ports are located in the door.

WEIGHT 71 lbs. (32.5 kg) **SHIPPING WEIGHT** 73 lbs (33.5 kg)

RNC SERIES ELECTRONICS
- Built-in Relay for Interfacing to furnace
- A standard ON/OFF switch can be added to provide Low/High Ventilation or ON/OFF functionality in order to meet building standards.
- Optional controls can be installed at the time of the installation or at a later date to upgrade the basic features of the ventilation system.

OPTIONAL CONTROLS
99-DX-01 Lifestyle RNC Digital Control
- 2 Speed Operation on each mode • 4 user selectable operational modes: Continuous Ventilation, 20 ON/40 OFF, 20 ON/40 Recirculation, Continuous Recirculation
- Adjustable Dehumidistat function built into the main wall control
- Connect to 3 wire 20 gauge low voltage wire.

99-BC-01 Lifestyle RNC Ventilation Control
- 2 Speed Fan setting (Low/High) • Dehumidistat
- Connect to 3 wire 20 gauge low voltage wire.

OPTIONAL TIMERS
99-DET01 **Lifestyle 20/40/60 Minute Timer** - Initiates high speed ventilation for 20, 40, or 60 minutes, (3 wire) 20 gauge wire (min.) 100' length

99-20M01 **Lifestyle 20 Minute Timer** - Initiates high speed ventilation for 20 minutes, (3 wire) 20 gauge wire (min.) 100’ length.

99-101 **Mechanical Timer** - Initiates High speed ventilation for up to 60 minutes, (2 wire) 20 gauge wire (min.) 100' length

OPTIONAL ACCESSORIES
99-DH-01 **Lifestyle Dehumidistat -** Initiates high speed ventilation when the indoor humidity level is above the set point. (3 wire) 20 gauge wire (min.) 100' length

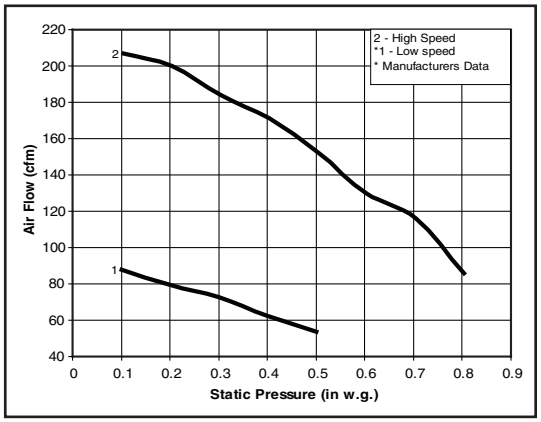
99-163 **Duct Heater w/ Electronic SCR Thermostat,** 1 Kw, 6” (150 mm)

99-186 **Weatherhoods**, Two - 6” (150 mm) c/w 1/4” (6 mm) mesh screen

Performance (HVI certified)
Net supply air flow in cfm (L/s) against external static pressure

E.S.P (external static pressure)		*[cfm (L/s)]*
@ 0.1" (25 Pa)		207 (97)
@ 0.2" (50 Pa)		200 (94)
@ 0.3" (75 Pa)		184 (87)
@ 0.4" (100 Pa)		171 (80)
@ 0.5" (125 Pa)		152 (71)
@ 0.6" (150 Pa)		130 (61)
@ 0.7" (175 Pa)		116 (55)
@ 0.8" (200 Pa)		86 (40)
Max. Temperature Recovery		74%
Sensible Effectiveness @ 66 cfm (31 L/s)	32°F (0°C)	74%
*Sensible Efficiency @ 66 cfm (31 L/s)	32°F (0°C)	64%
*Sensible Efficiency @ 109 cfm (51 L/s)	-13°F (-25°C)	62%
VAC @ 60HZ		120
WATTS / Low speed.		87
WATTS / High speed		164
Amp rating		1.4

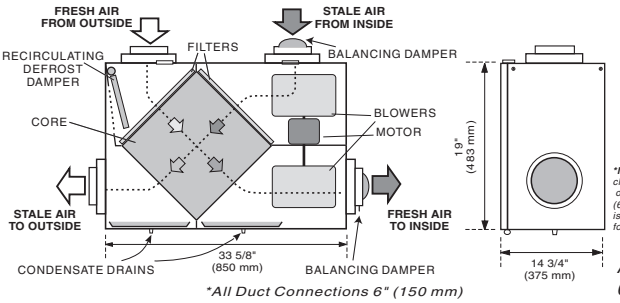
**Sensible Efficiency – thermal **Latent Efficiency – moisture*
Note: Effectiveness - based on temp. differential between the 2 airstreams
Efficiency – takes into account all power inputs



All units conform to CSA and UL standards.

DIMENSIONS

RNC200
inches (mm)



**All Duct Connections 6" (150 mm)*

**NOTE: Front clearance of 25 inches (635 mm) is recommended for servicing unit.*

All Duct Connections 6” (160 mm)

WARRANTY
Units carry a LIFETIME warranty on the heat recovery core and a 5 year replacement parts warranty.

Date: _____ Contractor: _____

Tag: _____ Qty: _____ Supplier: _____

Project: _____ Quote#: _____

Engineer: _____ Submitted by: _____

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ISO 9001 REGISTERED

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THE ULTIMATE AIR EXCHANGER

Model RNC10

THERMALLY CONDUCTIVE, PATENTED ALUMINUM CORE
The cross-flow heat recovery core transfers heat between the two air streams. It is easily removed for cleaning or service.

MOTORS AND BLOWERS
Each air stream has one centrifugal blower driven by a common PSC motor. 2 speed fan operation.

FILTERS
Washable air filters in exhaust and supply air streams.

MOUNTING THE HRV
Four threaded inserts at corners of the cabinet designed to accept the “S” hooks and hanging straps supplied with the unit.

DEFROST
Damper defrost system; defrosts automatically as the outdoor temperature falls.

CASE
Twenty gauge prepainted galvanized steel (G60) for superior corrosion resistance. Insulated to prevent exterior condensation. Drain connections two - 1/2" (12mm) OD.

WEIGHT 63 lbs. (28.7 kg) **SHIPPING WEIGHT** 67 lbs. (30.4 kg)

RNC SERIES ELECTRONICS
• Built-in Relay for Interfacing to furnace • A standard ON/OFF switch can be added to provide Low/High Ventilation or ON/OFF functionality in order to meet building standards.• Optional controls can be installed at the time of the installation or at a later date to upgrade the basic features of the ventilation system.

OPTIONAL CONTROLS
99-DX-01 Lifestyle RNC Digital Control • 2 Speed Operation on each mode • 2 user selectable operational modes: Continuous Ventilation, 20 ON/40 OFF, • Adjustable Dehumidistat function built into the main wall control • Connect to 3 wire 20 gauge low voltage wire.

99-BC-01 Lifestyle RNC Ventilation Control - • 2 Speed Fan setting (Low/High) • Dehumidistat • Connect to 3 wire 20 gauge low voltage wire.

OPTIONAL TIMERS
99-DET01 **Lifestyle 20/40/60 Minute Timer** - Initiates high speed ventilation for 20, 40, or 60 minutes, (3 wire) 20 gauge wire (min.) 100' length

99-20M01 **Lifestyle 20 Minute Timer** - Initiates high speed ventilation for 20 minutes, (3 wire) 20 gauge wire (min.) 100’ length.

99-101 **Mechanical Timer** - Initiates High speed ventilation for up to 60 minutes, (2 wire) 20 gauge wire (min.) 100' length

OPTIONAL ACCESSORIES
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99-186 **Weatherhoods**, Two - 6” (150 mm) c/w 1/4” (6 mm) mesh screen

WARRANTY
Units carry a lifetime warranty on the heat recovery core and a 5 year replacement parts warranty.

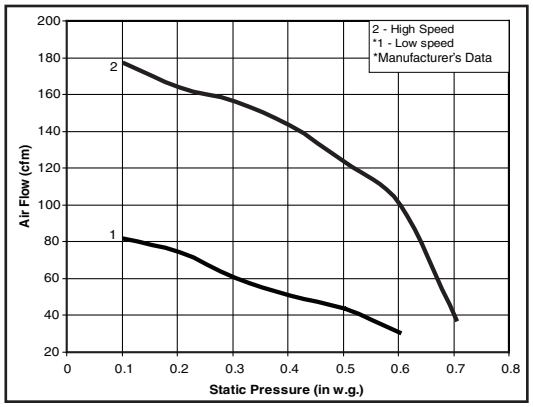
Performance (HVI certified)
Net supply air flow in cfm (L/s) against external static pressure

E.S.P (external static pressure)	*[cfm (L/s)]*
@ 0.1" (25 Pa)	177 (83)
@ 0.2" (50 Pa)	164 (77)
@ 0.3" (75 Pa)	156 (73)
@ 0.4" (100 Pa)	143 (67)
@ 0.5" (125 Pa)	123 (58)
@ 0.6" (150 Pa)	100 (47)
@ 0.7" (175 Pa)	38 (18)

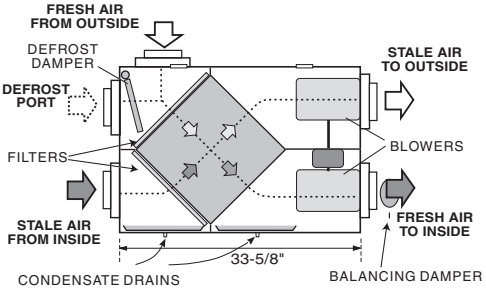
Max. Temperature Recovery		78%
Sensible Effectiveness @ 67 cfm (32 L/s)	32°F (0°C)	76%
*Sensible Efficiency @ 67 cfm (32 L/s)	32°F (0°C)	66%
*Sensible Efficiency @ 68 cfm (32 L/s)	-13°F (-25°C)	60%
VAC @ 60HZ		120
WATTS / Low speed.		63
WATTS / High speed		173
Amp rating		1.4

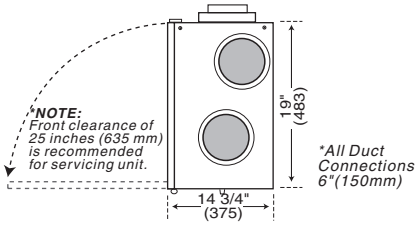
**Sensible Efficiency - thermal **Latent Efficiency - moisture*

Note: Effectiveness - based on temp. differential between the 2 airstreams Efficiency - takes into account all power inputs



Dimensions RNC10 inches (mm)





All units conform to CSA and UL standards

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Engineer: _____ Submitted by: _____

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ISO 9001 REGISTERED

LIFEBREATH
THE ULTIMATE AIR EXCHANGER

Model RNC20

THERMALLY CONDUCTIVE, PATENTED ALUMINUM CORE
The cross-flow heat recovery core transfers heat between the two air streams. It is easily removed for cleaning or service.

MOTORS AND BLOWERS
Each air stream has one centrifugal blower driven by a common PSC motor. 2 speed fan operation.

FILTERS
Washable air filters in exhaust and supply air streams.

MOUNTING THE HRV
Four threaded inserts at corners of the cabinet designed to accept the "S" hooks and hanging straps supplied with the unit.

DEFROST
Damper defrost system; defrosts automatically as the outdoor temperature falls.

CASE
Twenty gauge prepainted galvanized steel (G60) for superior corrosion resistance. Insulated to prevent exterior condensation. Drain connections two - 1/2" (12mm) OD.

WEIGHT 63 lbs. (28.7 kg) **SHIPPING WEIGHT** 67 lbs. (30.4 kg)

RNC SERIES ELECTRONICS
• Built-in Relay for Interfacing to furnace • A standard ON/OFF switch can be added to provide Low/High Ventilation or ON/OFF functionality in order to meet building standards.• Optional controls can be installed at the time of the installation or at a later date to upgrade the basic features of the ventilation system.

OPTIONAL CONTROLS
99-DX-01 Lifestyle RNC Digital Control • 2 Speed Operation on each mode • 2 user selectable operational modes: Continuous Ventilation, 20 ON/40 OFF, • Adjustable Dehumidistat function built into the main wall control • Connect to 3 wire 20 gauge low voltage wire.

99-BC-01 Lifestyle RNC Ventilation Control - • 2 Speed Fan setting (Low/High) • Dehumidistat • Connect to 3 wire 20 gauge low voltage wire.

OPTIONAL TIMERS
99-DET01 **Lifestyle 20/40/60 Minute Timer** - Initiates high speed ventilation for 20, 40, or 60 minutes, (3 wire) 20 gauge wire (min.) 100' length

99-20M01 **Lifestyle 20 Minute Timer** - Initiates high speed ventilation for 20 minutes, (3 wire) 20 gauge wire (min.) 100' length.

99-101 **Mechanical Timer** - Initiates High speed ventilation for up to 60 minutes, (2 wire) 20 gauge wire (min.) 100' length

OPTIONAL ACCESSORIES
99-DH-01 **Lifestyle Dehumidistat -** Initiates high speed ventilation when the indoor humidity level is above the set point. (3 wire) 20 gauge wire (min.) 100' length

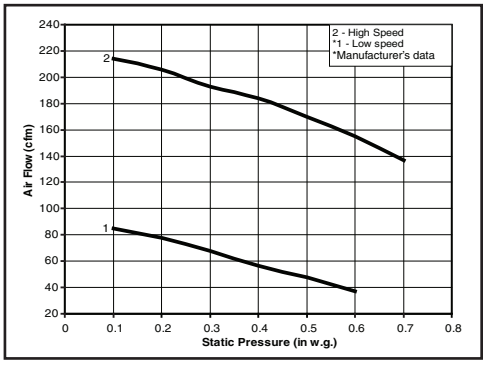
99-163 **Duct Heater w/ Electronic SCR Thermostat,** 1 Kw, 6" (150 mm)

99-186 **Weatherhoods**, Two - 6" (150 mm) c/w 1/4" (6 mm) mesh screen

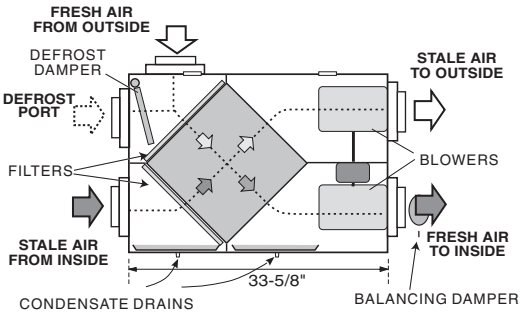
Performance (HVI certified)
Net supply air flow in cfm (L/s) against external static pressure

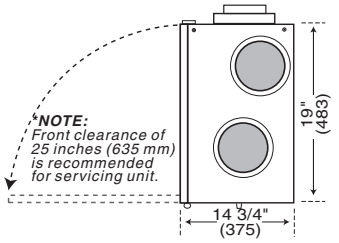
E.S.P (external static pressure)		[cfm (L/s)]
@ 0.1" (25 Pa)		214 (101)
@ 0.2" (50 Pa)		206 (97)
@ 0.3" (75 Pa)		193 (91)
@ 0.4" (100 Pa)		184 (87)
@ 0.5" (125 Pa)		170 (80)
@ 0.6" (150 Pa)		155 (73)
@ 0.7" (175 Pa)		137 (65)
Max. Temperature Recovery		69%
Sensible Effectiveness @ 119 cfm (56 L/s)	32°F (0°C)	67%
*Sensible Efficiency @ 119 cfm (56 L/s)	32°F (0°C)	60%
*Sensible Efficiency @ 117 cfm (55 L/s)	-13°F (-25°C)	60%
VAC @ 60HZ		120
WATTS / Low speed.		70
WATTS / High speed		182
Amp rating		1.4

**Sensible Efficiency - thermal **Latent Efficiency - moisture*
Note: Effectiveness - based on temp. differential between the 2 airstreams
Efficiency - takes into account all power inputs



Dimensions RNC20 inches (mm)





All units conform to CSA and UL standards

WARRANTY
Units carry a lifetime warranty on the heat recovery core and a 5 year replacement parts warranty.

**All Duct Connections 6"(150mm)*

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ISO 9001 REGISTERED

LIFEBREATH
THE ULTIMATE AIR EXCHANGER

Model RNC5-TPD

THERMALLY CONDUCTIVE, PATENTED ALUMINUM CORE
The cross-flow heat recovery core transfers heat between the two airstreams. It is easily removed for cleaning or service.

MOTORS AND BLOWERS
Each air stream has an independent motorized impeller. 2 speed fan operation.

FILTERS
Washable air filters in exhaust and supply air streams.

DEFROST
Recirculating damper defrost system.

CASE
Twenty gauge prepainted galvanized steel (G60) for superior corrosion resistance. Insulated to prevent exterior condensation. Drain connections 1/2" (12 mm) OD. Balancing ports are located in the door.

MOUNTING THE HRV
Four threaded inserts at corners of the cabinet designed to accept the "S" hooks and hanging straps supplied with the unit.

WEIGHT 61 lbs. (28 kg) **SHIPPING WEIGHT** 64 lbs. (29 kg)

RNC SERIES ELECTRONICS
- Built-in Relay for Interfacing to furnace
- A standard ON/OFF switch can be added to provide Low/High Ventilation or ON/OFF functionality in order to meet building standards.
- Optional controls can be installed at the time of the installation or at a later date to upgrade the basic features of the ventilation system.

OPTIONAL CONTROLS
99-DX-01 Lifestyle RNC Digital Control
- 2 Speed Operation on each mode • 4 user selectable operational modes: Continuous Ventilation, 20 ON/40 OFF, 20 ON/40 Recirculation, Continuous Recirculation
- Adjustable Dehumidistat function built into the main wall control
- Connect to 3 wire 20 gauge low voltage wire.

99-BC-01 Lifestyle RNC Ventilation Control
- 2 Speed Fan setting (Low/High) • Dehumidistat
- Connect to 3 wire 20 gauge low voltage wire.

OPTIONAL TIMERS
99-DET01 **Lifestyle 20/40/60 Minute Timer** - Initiates high speed ventilation for 20, 40, or 60 minutes, (3 wire) 20 gauge wire (min.) 100' length

99-20M01 **Lifestyle 20 Minute Timer** - Initiates high speed ventilation for 20 minutes, (3 wire) 20 gauge wire (min.) 100' length.

99-101 **Mechanical Timer** - Initiates High speed ventilation for up to 60 minutes, (2 wire) 20 gauge wire (min.) 100' length

OPTIONAL ACCESSORIES
99-DH-01 **Lifestyle Dehumidistat -** Initiates high speed ventilation when the indoor humidity level is above the set point. (3 wire) 20 gauge wire (min.) 100' length

99-163 **Duct Heater w/ Electronic SCR Thermostat,** 1 Kw, 6" (150 mm)

99-185 **Weatherhoods**, Two - 5" (125 mm) c/w 1/4" (6 mm) mesh screen

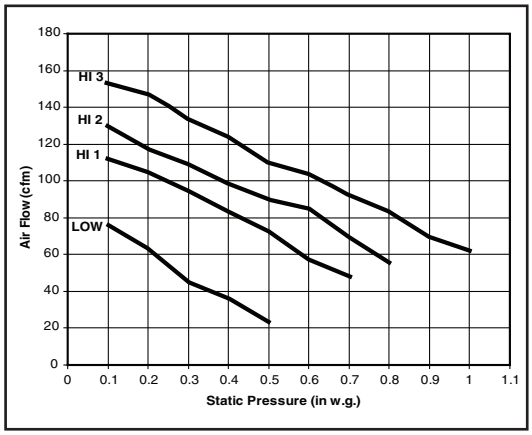
Performance (HVI certified)
Net supply air flow in cfm (L/s) against external static pressure

E.S.P (external static pressure)	***[cfm (L/s)]***
@ 0.1" (25 Pa)	156 (74)
@ 0.2" (50 Pa)	146 (69)
@ 0.3" (75 Pa)	134 (63)
@ 0.4" (100 Pa)	124 (59)
@ 0.5" (125 Pa)	115 (54)
@ 0.6" (150 Pa)	104 (49)
@ 0.7" (175 Pa)	95 (45)
@ 0.8" (200 Pa)	85 (40)
@ 0.9" (225 Pa)	69 (33)
@ 1.0" (250 Pa)	62 (29)

Max. Temperature Recovery		78%
Sensible Effectiveness @ 66 cfm (31 L/s)	32°F (0°C)	74%
*Sensible Efficiency @ 66 cfm (31 L/s)	32°F (0°C)	61%
*Sensible Efficiency @ 76 cfm (36 L/s)	-13°F (-25°C)	63%
VAC @ 60HZ		120
WATTS / Low speed.		69
WATTS / High speed		147
Amp rating		1.7

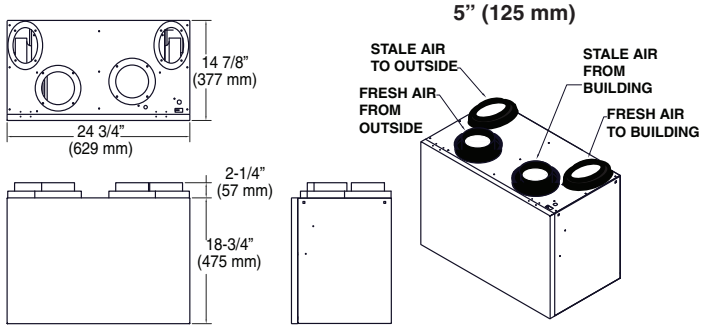
**Sensible Efficiency - thermal **Latent Efficiency - moisture*

Note: Effectiveness - based on temp. differential between the 2 airstreams Efficiency - takes into account all power inputs



Dimensions RNC5-TPD inches (mm)

All duct connections are 5" (125 mm)



Installer Selectable High Speed Settings
Adjust High Speed by rotating the dial located on the left side of the electrical box. HI 3 is the factory setting. Rotate one click for HI 2 and two clicks for HI 1. Low speed is not adjustable.

All units conform to CSA and UL standards

WARRANTY
Units carry a lifetime warranty on the heat recovery core and a 5 year replacement parts warranty.

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ISO 9001 REGISTERED

LIFEBREATH
THE ULTIMATE AIR EXCHANGER

Model RNC120D

THERMALLY CONDUCTIVE, PATENTED ALUMINUM CORE
The cross-flow heat recovery core transfers heat between the two airstreams. It is easily removed for cleaning or service.

MOTORS AND BLOWERS
Each air stream has an independent motorized impeller. 2 speed fan operation.

FILTERS
Washable air filters in exhaust and supply air streams.

MOUNTING THE HRV
Four threaded inserts at corners of case designed to accept four reinforced polyester straps that are supplied with the unit.

DEFROST
Recirculating damper defrost system.

CASE
Twenty gauge prepainted galvanized steel (G60) for superior corrosion resistance. Insulated to prevent exterior condensation. Drain connections- 1/2" (12 mm) OD.

WEIGHT 42 lbs. (19 kg.) **SHIPPING WEIGHT** 45 lbs. (20.5 kg.)

RNC SERIES ELECTRONICS
- Built-in Relay for Interfacing to furnace
- A standard ON/OFF switch can be added to provide Low/High Ventilation or ON/OFF functionality in order to meet building standards.
- Optional controls can be installed at the time of the installation or at a later date to upgrade the basic features of the ventilation system.

OPTIONAL CONTROLS
99-DX-01 Lifestyle RNC Digital Control
- 2 Speed Operation on each mode • 4 user selectable operational modes: Continuous Ventilation, 20 ON/40 OFF, 20 ON/40 Recirculation, Continuous Recirculation
- Adjustable Dehumidistat function built into the main wall control
- Connect to 3 wire 20 gauge low voltage wire.

99-BC-01 Lifestyle RNC Ventilation Control
- 2 Speed Fan setting (Low/High) • Dehumidistat
- Connect to 3 wire 20 gauge low voltage wire.

OPTIONAL TIMERS
99-DET01 **Lifestyle 20/40/60 Minute Timer** - Initiates high speed ventilation for 20, 40, or 60 minutes, (3 wire) 20 gauge wire (min.) 100' length

99-20M01 **Lifestyle 20 Minute Timer** - Initiates high speed ventilation for 20 minutes, (3 wire) 20 gauge wire (min.) 100' length.

99-101 **Mechanical Timer** - Initiates High speed ventilation for up to 60 minutes, (2 wire) 20 gauge wire (min.) 100' length

OPTIONAL ACCESSORIES
99-DH-01 **Lifestyle Dehumidistat -** Initiates high speed ventilation when the indoor humidity level is above the set point. (3 wire) 20 gauge wire (min.) 100' length

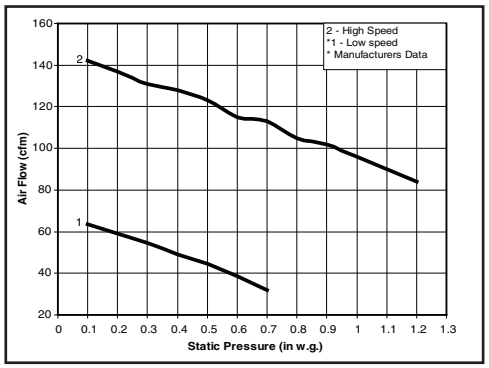
99-163 **Duct Heater w/ Electronic SCR Thermostat,** 1 Kw, 6" (150 mm)

99-185 **Weatherhoods**, Two - 5" (125 mm) c/w 1/4" (6 mm) mesh screen

Performance (HVI certified)
Net supply air flow in cfm (L/s) against external static pressure

E.S.P (external static pressure)		*[cfm (L/s)]*
@ 0.1" (25 Pa)		142 (67)
@ 0.2" (50 Pa)		137 (64)
@ 0.3" (75 Pa)		131 (62)
@ 0.4" (100 Pa)		128 (60)
@ 0.5" (125 Pa)		123 (58)
@ 0.6" (150 Pa)		115 (54)
@ 0.7" (175 Pa)		113 (53)
@ 0.8" (200 Pa)		105 (49)
@ 0.9" (225 Pa)		102 (48)
@ 1.0" (250 Pa)		96 (45)
Max. Temperature Recovery		72%
Sensible Effectiveness @ 70 cfm (33 L/s)	32°F (0°C)	68%
*Sensible Efficiency @ 70 cfm (33 L/s)	32°F (0°C)	59%
*Sensible Efficiency @ 67 cfm (32 L/s)	-13°F (-25°C)	56%
VAC @ 60HZ		120
WATTS / Low speed.		70
WATTS / High speed		160
Amp rating		1.5

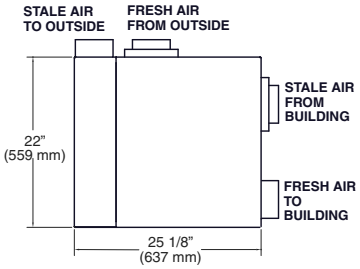
**Sensible Efficiency - thermal **Latent Efficiency - moisture*
Note: Effectiveness - based on temp. differential between the 2 airstreams
Efficiency - takes into account all power inputs

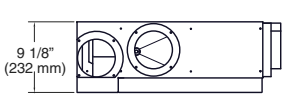


All units conform to CSA and UL standards

WARRANTY
Units carry a lifetime warranty on the heat recovery core and a 5 year replacement parts warranty.

Dimensions RNC120D inches (mm)





All duct collars are 5" diameter (127 mm)

Front view (if mounting vertically)
Bottom view (if mounting horizontally)

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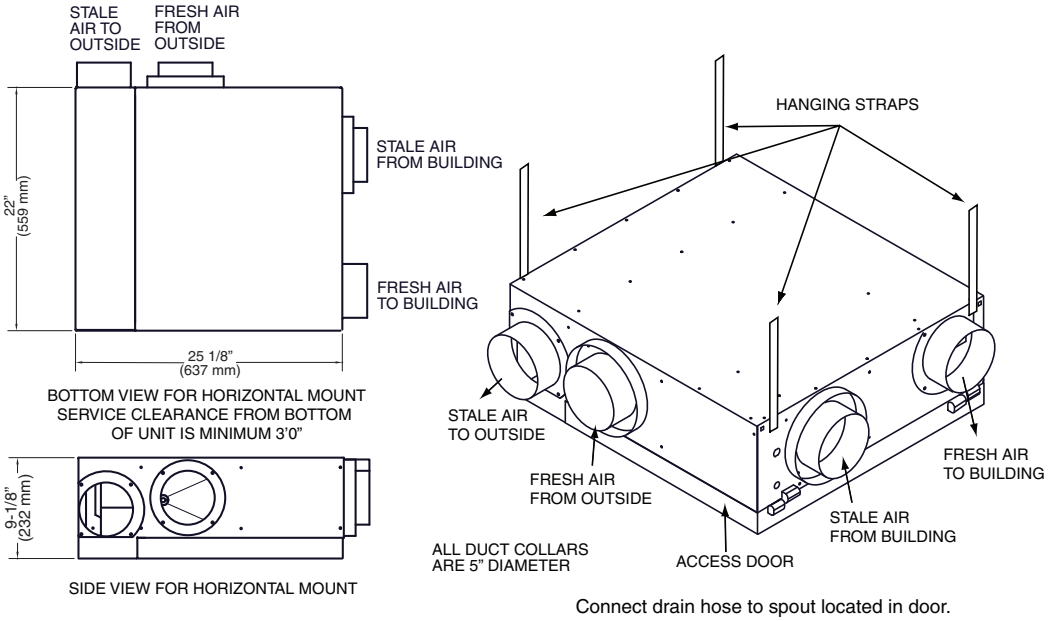
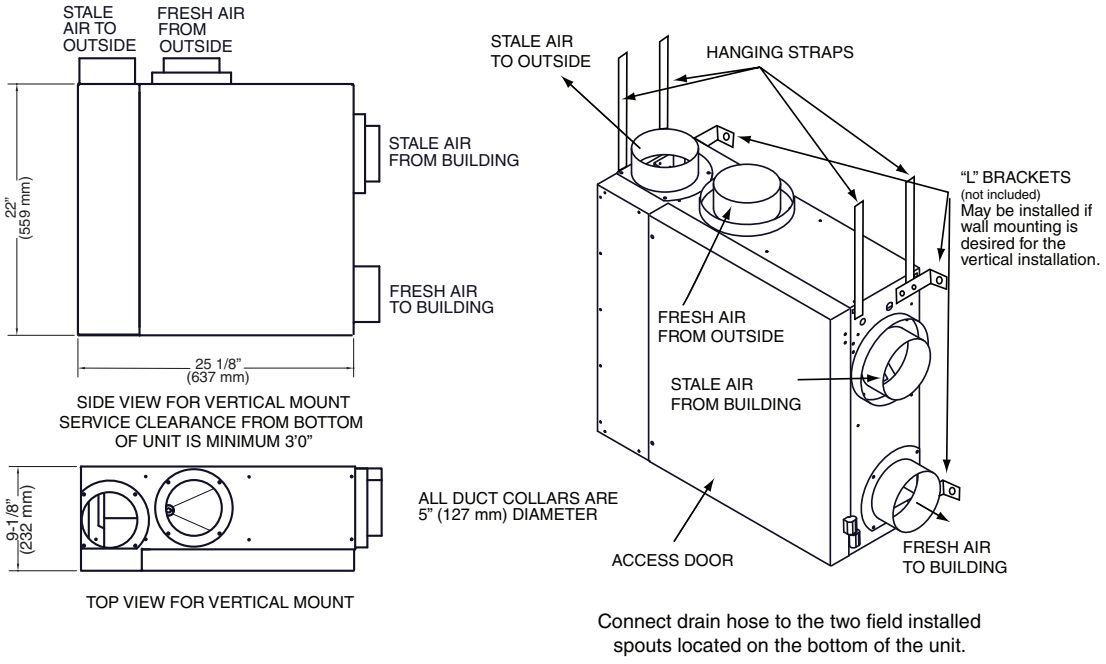
LIFEBREATH
HEAT RECOVERY VENTILATORS (HRVs)

Option 1 - Horizontal Duct Configuration Dimensions inches



Option 2 - Vertical Duct Configuration Dimensions *inches*



The HRV can be installed horizontally or vertically as illustrated on the following pages. The unit should be suspended using the provided hanging straps. **The unit must be level for proper condensate drainage.**

Sufficient clearance below the access door is required for servicing the air filters and core. A minimum of 25" (635mm) clearance is recommended so the door can be removed. Four PVC reinforced polyester hanging straps are provided for hanging the HRV.

Controlling your HRV

Today's modern, tight homes require fresh outdoor air to maintain a healthy indoor air environment. The amount of ventilation you require in your home will depend upon:

• the number of occupants and their activity levels,

• the way your home was built.

• your personal preferences for fresh air,

The HRV introduces fresh air to your home while recovering energy from the air it exhausts. Specifically, an HRV that is properly installed, operated and maintained will:

- exhaust stale, contaminated air
- recover the majority of the energy from the exhausted stale air
- use the recovered energy to preheat or precool outside air that is drawn into the house
- distribute the fresh air throughout the house

HOW MUCH VENTILATION DO I NEED?

During seasons when your windows and doors are closed (winter, and summer if air conditioned), the HRV should be set to operate continuously on low speed with the option of going to high speed as the need arises. For example: if you are entertaining and there is a large number of people present, the unit should be switched temporarily to high speed.

You may wish to use an intermittent operational mode if your home is unoccupied (20 minutes ON / 40 minutes OFF).

How the Dehumidistat Works

Often today's well insulated and tight homes will have high indoor humidity levels during the heating season. High humidity levels are apparent from the visible condensation on windows. The amount of condensation on the windows will increase as outdoor temperatures drop.

Your HRV will reduce indoor humidity levels when outdoor air is dryer than indoor air. This usually occurs during the heating season when outdoor temperatures are less than 15°C (59°F).

Optional RNC Series wall controls have a dehumidistat which can be set to achieve a further dehumidification effect from your HRV. High speed ventilation will be initiated upon exceeding the dehumidistat setpoint. Once the humidity in the house is reduced, the HRV will revert back to its previous setting.

We suggest operating the HRV for the first few days without use of the dehumidistat function to observe if a further dehumidification effect will be required. The dehumidistat operates in % of RH (relative humidity) with 80 being high and 20 being low. Set the Dehumidistat to 80% to disable. If, after a few days, further dehumidification is required (the house is still too humid), set the humidity level to a lower amount.

Dehumidistat Notes:

Your HRV will reduce indoor humidity levels when outdoor air is dryer than indoor air. This usually occurs during the heating season when outdoor temperatures are less than 15°C (59°F).

The average person in comfortable between 30-50% RH.

The dehumidistat should be set to OFF for all season except the heating season. OFF is achieved by setting the dehumidistat to 80.

The dehumidistat function will be disabled if outdoor temperatures exceed 15°C (59°F) for a 24 hour period.

RNC Series Electronics

A standard ON/OFF switch can be added to provide Low/High Ventilation or ON/OFF functionality. Refer to “Dry Contacts” in this manual.

Optional controls can be installed at the time of the installation or at a later date, providing a number of choices for upgrading the basic features of the ventilation system.

Glossary

DEFROST MODE - during operation in cold weather, periodically frost must be removed from the HRV. This will occur automatically and is part of the energy efficient design.

DEHUMIDISTAT - a control device that senses the amount of moisture in the air and activates high speed ventilation when the air moisture level in the home exceeds the set point.

RESET - whenever resetting of the HRV is required, simply disconnect power for 30 seconds. The Self Test will occur when the HRV is re reconnected.

SELF TEST - each time the HRV is powered/energized the self test function will automatically initiate. During the self test the HRV will cycle through all the speeds available, test the damper motor operation and will default back to the previous operational mode and speed selection. Total self test duration is approximately 60 seconds.

STANDBY MODE - the HRV is powered/energized and waiting for fan operation to be initiated. For example, the HRV is set to Continuous Ventilation Operational Mode at Speed 0.

THERMISTOR - the HRV's temperature sensor which measures electrical resistance in a known manner, as outdoor temperatures fluctuate.

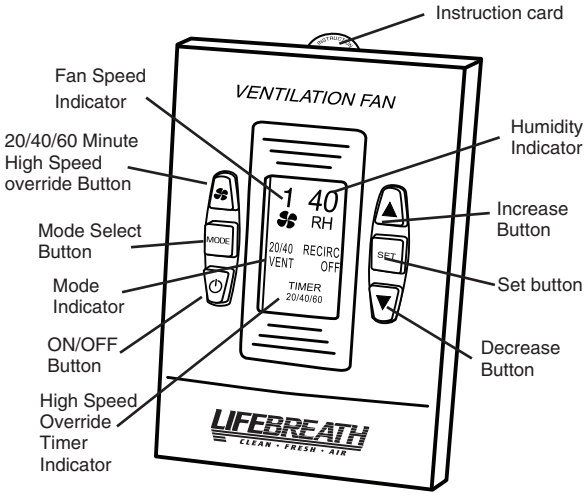
The Lifestyle RNC Digital Control Part #99-DX-01

Part # 99-DX-01

The Lifestyle RNC Digital Control offers advanced features to control your home's ventilation.

Key Features

- 2 Speed Fan setting (Low-1/High-2)
- Standby setting (Fan speed 0)
- Electronic Dehumidistat
- Four Selectable Modes of Operation
  - 20 min. ON / 40 min. off
  - 20 min. ON / 40 min. recirculate *
  - Continuous Ventilation
  - Continuous Circulation *
- 20 / 40 /60 High Speed override button
- Instruction Card is inserted in the control
- Easy to read LCD Screen
- Slim-line design
- Connect to 3 wire 20 gauge low voltage wire



Connects to 3 wire 20 gauge low voltage wire

Setting the Control

1. Press and release SET button until the FAN symbol appears on the screen.
2. SCROLL (using Up/Down Arrows) to select desired fan speed (0, 1, 2). Press SET.
3. SCROLL to select the desired operational mode (VENT, 20/40, 20/40 RECIRC*, RECIRC*, OFF). Press SET. (Refer to Manual for explanation of operational modes.)

20/40/60 Minute High Speed Timer

This function temporarily initiates high speed ventilation for 20, 40 or 60 minutes. Press FAN button once for 20, twice for 40 and three times for 60 minutes.

Setting the Dehumidistat

Refer to "How the Dehumidistat Works" in this manual before setting the Dehumidistat.

1. Press and release MODE until "RH" and a number flashes. SCROLL to desired number. Press MODE to exit. Refer to the unit's Operation & Installation Manual for instructions on how the Dehumidistat works.

The Lifestyle RNC Digital Control Gives you 4 Mode Selection

The Lifestyle RNC Digital Control has 4 Operational Modes* and 2 speeds on each mode to adjust indoor ventilation levels. Experiment with the ventilation levels in your home to evaluate the best amount of ventilation to suit your home and preferences.

I. Continuous Ventilation Mode

This is the most popular mode since it provides continuous ventilation within the home. You may, for example, select Continuous Ventilation at high speed for high household activity levels or Continuous Ventilation for lower activity levels.

II. 20 minutes ON, 40 minutes OFF Mode

This Operational Mode will provide 20 minutes of ventilation each hour. You may wish to use this ventilation mode in low speed for low household activity levels or if the home is unoccupied.

III. 20 minutes ON, 40 minutes Recirculation Mode*

This Operational Mode provides 20 minutes of ventilation (fresh air) and 40 minutes of recirculated air. Use this mode only if your HRV is not connected to a forced air system (the forced air system already circulates household air).

IV. Continuous Recirculation Mode*

This Operational Mode recirculates your household air (no ventilation). Use this mode only if HRV is not connected to a forced air system.

How to Synchronize the Humidity Setting on the Lifestyle RNC Digital Control

The Lifestyle RNC Digital wall control has a feature that will allow it to be synchronized with other humidity instruments in your home.

1. Turn off the control with the ON/OFF Button.
2. Simultaneously press and release the ON/OFF Button and the 20/40/60 Minute High Speed Override Button.
3. Use the Increase/Decrease Buttons to adjust the Humidity indicator on the display screen to the number of degrees difference between your humidity measuring devise. Minus is indicated by flashing.
4. Press the MODE button.

*Recirculation not available on all models.

The Lifestyle RNC Ventilation Control Part #99-BC-01

The Lifestyle RNC Ventilation Control offers ON/OFF, High Speed/Low speed plus an electronic dehumidistat.

Key Features

- 2 Speed Fan setting (Low/High)
- Electronic Dehumidistat
- Instruction Card is inserted in the control
- Slim-line design
- Connect to 3 wire 20 gauge low voltage wire.

Turning on the Control

Press and release the ON/OFF button. The "ON Indicator Light" will illuminate.

Adjusting the Ventilation Speed

The unit will normally operate at low speed. Press and release the SPEED button to initiate high speed ventilation. The "High Speed Indicator LED" will illuminate.

Humidity Control

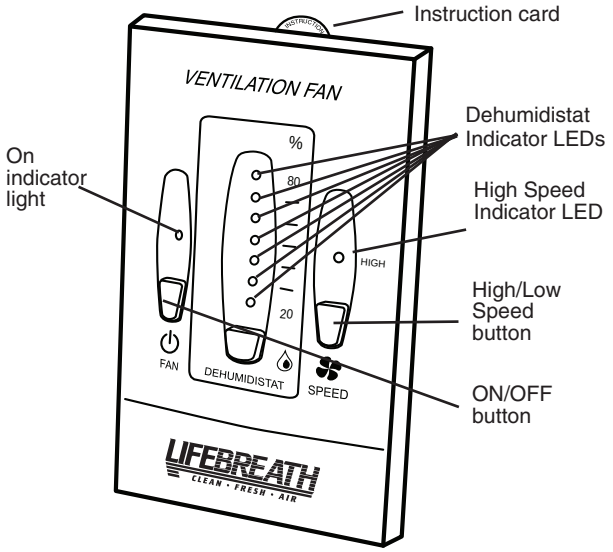
Your unit will produce a dehumidifying effect when outdoor humidity levels are lower than indoor humidity levels. Never use the dehumidistat feature when outdoor temperatures are above 59 F (15 C).

Setting the Dehumidistat

Press and release the DEHUMIDISTAT button until the DEHUMIDISTAT LED is at the desired setting. After 5 seconds the dehumidistat light will either flash or be on continuous.

A flashing light indicates the humidity level is higher than the setting and the unit is operating on high speed ventilation. A continuous light indicates the humidity level is lower than the setting. Refer to the unit's Operation & Installation Manual for instructions on how the Dehumidistat works.

Note - Only 1 dehumidistat should be active on a system.



⚠ ATTENTION

*Install a jumper between 2 (ON) and 3 (RED) on the HRV terminal block to configure the ON/OFF button to ON/STANDBY. Refer to "Setting Standby when using a Main Control" in this manual.

The Lifestyle Dehumidistat Part #99-DH-01

Key Features

- The Dehumidistat measures the indoor humidity level and will initiate high speed ventilation when the moisture level in the home exceeds the set point on the control.
- Once the humidity in the house is reduced, the HRV will revert back to its previous setting.
- The Dehumidistat should be set to OFF for all season except the heating season.
- Connect to 3 wire 20 gauge low voltage wire.

Humidity Control

Your HRV will produce a dehumidifying effect when outdoor humidity levels are lower than indoor humidity levels. Never use the dehumidistat feature when outdoor temperatures are above 59 F (15 C).

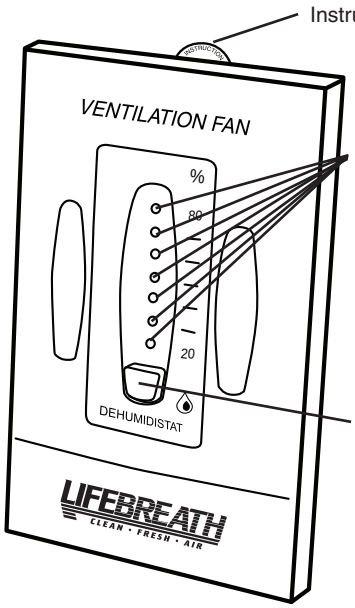
Note: The indoor humidity level is measured at the control.

Setting the Dehumidistat

Press and release the DEHUMIDISTAT button until the DEHUMIDISTAT LIGHT is at the desired setting. After 5 seconds the dehumidistat light will either flash or be on continuous.

A flashing light indicates the humidity level is higher than the setting and the unit is operating on high speed ventilation. A continuous light indicates the humidity level is lower than the setting. Refer to the unit's Operation & Installation Manual for instructions on how the Dehumidistat works.

Note - Only 1 dehumidistat should be active on a system.



Dehumidistat Indicator LEDs
Set to the desired humidity level. High speed ventilation will initiate when the indoor moisture level exceeds the set point on the control.

⚠ ATTENTION

If the system does not have a main control installed, the HRV Terminal Block must have a jumper installed between 2 (ON) and 3 (RED). Refer to "Operating the HRV without a Main Control" in this manual.

Optional Timers

The timer will override the Operational Mode (regardless of the setting) and initiate high speed ventilation. Upon completion of the timer cycle, the HRV will return to your selected Operational Mode and speed setting

⚠ ATTENTION

If the system does not have a main control installed, the HRV Terminal Block must have a jumper installed between 2 (ON) and 3 (RED). Refer to “Operating the HRV without a Main Control” in this manual.

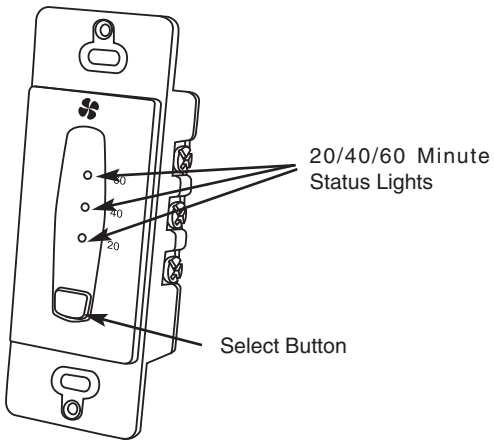
Lifestyle 20/40/60 Minute Timer

Part # 99-DET01

Initiates high speed ventilation for 20, 40 or 60 minutes. The 20/40/60 Minute Status Lights indicate high speed operation.

Lockout Mode is useful if you wish to disable the timer. Set lockout by holding the Select Button for 5 seconds. Unlock by holding for 5 seconds.

Connect to 3 wire 20 gauge low voltage wire. Mounts in a standard 2" x 4" electrical box.



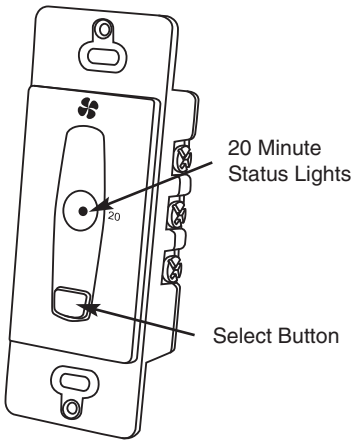
Lifestyle 20 Minute Timer

PART NO. 99-20M01

Initiates high speed ventilation for 20 minutes. The 20 Minute Status Light indicates high speed operation.

Lockout Mode is useful if you wish to disable the timer. Set lockout by holding the select button for 5 seconds. Unlock by holding for 5 seconds.

Connect to 3 wire 20 gauge low voltage wire. Mounts in a standard 2" x 4" electrical box.



The Three Methods of Installation

The three methods of installation for the HRV system are:

- The Simplified installation.
- The Partially Dedicated Installation
- The Fully Dedicated Installation

Simplified Installations

The Simplified Installation draws stale air from the cold air return duct of the air handler/furnace and introduces an equal amount of fresh air farther downstream into the cold air return. Refer to *"Simplified Installation Diagrams".*

The air handler/furnace blower must be running when the unit is operating for this system to be effective. Refer to *"Interlocking the HRV to an Air handler/Furnace Blower".*

Partially Dedicated Installations

The Partially Dedicated Installation draws stale air from specific points in the house and introduces an equal amount of fresh air into the cold air return. Refer to *"Partially Dedicated Installation Diagrams".*

Stale air ducts should be installed in areas of the home where the poorest indoor air quality exists (bathrooms and kitchen). Each location with a stale air duct should have a timer to initiate high speed ventilation. Refer to "*Optional Timers*" in this manual.

The air handler/furnace blower should be running when the HRV is operating to evenly distribute the fresh air throughout the house. Refer to *"Interlocking the HRV to an Air handler/Furnace Blower".*

Fully Dedicated Installations

The Fully Dedicated Installation draws stale air from specific points in the house and delivers fresh air to specific locations of the house. This system is not connected to an air handler/furnace. Refer to "*The Fully Dedicated Installation Diagrams*" in this manual.

Stale air ducts should be installed in areas of the home where the poorest indoor air quality exists (bathrooms and kitchen). Each location with a stale air duct should have a timer which will initiate high speed ventilation. Refer to "Optional Timers" in this manual.

Fresh air ducts should be installed to all bedrooms and living areas, excluding bathrooms, kitchen and utility areas. Grilles should be located high on a wall or in ceiling locations. Grilles that diffuse the air comfortably are recommended. Refer to "Grilles" in this manual. Special care should be taken in locating grilles if the floor is the only option available. Areas such as under baseboard heaters will help to temper the air.

Optional in-line duct heaters are available for mounting in the supply duct work to add heat if required.

Installing the Ducting Between the HRV & Living Areas in the House

A well designed and installed ducting system will allow the HRV to operate at its maximum efficiency.

All ducts should be kept short and have as few bends or elbows as possible to maximize airflow. Forty-five degree elbows are preferred to 90° elbows. Use "Y" tees instead of straight tees whenever possible.

All duct joints must be fastened with screws, rivets or duct sealant and wrapped with mastic or quality duct tape to prevent leakage. Mastic is preferred but if duct tape is used, we recommend aluminum foil duct tape.

Galvanized (rigid) ducting from the HRV to the living areas in the house is recommended whenever possible although flexible duct can be used in moderation if necessary.

A short length (approximately 12 inches or 300mm) of non-metallic flexible insulated duct should be connected between the HRV and the supply/exhaust duct system to avoid possible noise transfer through the duct system.

All ducts running through attics and unheated spaces must be sealed and insulated to code.

⚠ ATTENTION

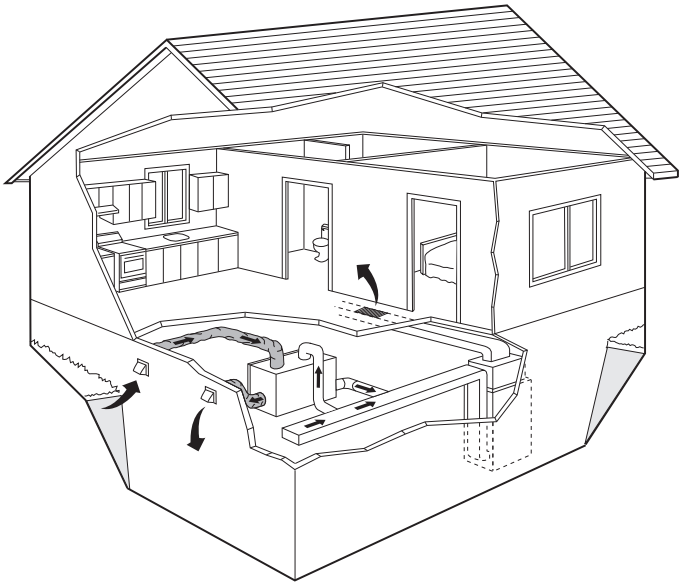
Applications such as greenhouses, atriums, swimming pools, saunas, etc. have unique ventilation requirements which should be addressed with an isolated ventilation system.

Simplified Installation Diagrams

Simplified Installation (Return/Return Method)

Key Points

- The HRV must be balanced.
- It is mandatory that the furnace blower run continuously or HRV operation be interlocked with the furnace blower. (Refer to “Interlocking the HRV to an Air Handler/Furnace Blower.”)
- The duct configuration may change depending on the HRV model. See specifications for your unit.
- Check local codes / authority having jurisdiction for acceptance.
- A backdraft damper is required in the exhaust air duct to prevent outdoor air from entering the unit when the Furnace/Airhandler is running and the unit is in Standby, OFF or Recirculate.

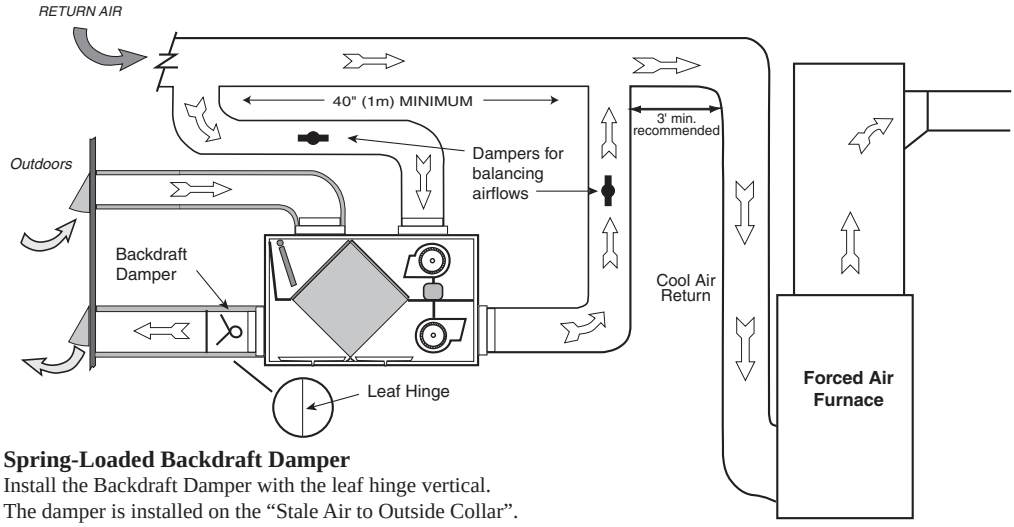


Sizing the Ductwork

It is the responsibility of the installer to ensure all ductwork is sized and installed as designed to ensure the system will perform as intended.

The amount of air (cfm) that an HRV will deliver is directly related to the total external static pressure (E.S.P.) of the system. Static pressure is a measure of resistance imposed on the blower by length of duct work plus the number of fittings used in the duct work.

DIRECT CONNECTION of the SUPPLY AIR STREAM and EXHAUST AIR STREAM to the FURNACE COLD AIR RETURN.



Spring-Loaded Backdraft Damper

Install the Backdraft Damper with the leaf hinge vertical.
The damper is installed on the “Stale Air to Outside Collar”.

4” (102mm) Backdraft Damper Part No. 99-RSK4
5” (127mm) Backdraft Damper Part No. 99-RSK5
6” (152mm) Backdraft Damper Part No. 99-RSK6
8” (203mm) Backdraft Damper Part No. 99-RSK8

⚠ WARNING

The Stale Air to Outside air duct requires a Backdraft Damper. This damper prevents outdoor air from entering the HRV during the operation of the Furnace/ Airhandler while the HRV is in standby, OFF or Recirculate.

Installation Notes

- Unit is normally balanced on HIGH speed with the furnace blower ON.
- A minimum separation of 40 inches (1m) is recommended between the two direct connections.
- The exhaust air connection should be upstream of the supply air connection to prevent exhausting any fresh air.
- Weatherhood arrangement is for drawing purposes only. Six feet (2m) minimum separation is recommended. The Weatherhood must also be 18" (460mm) above grade minimum.
- The airflow must be confirmed on site using the balancing procedures found in this manual

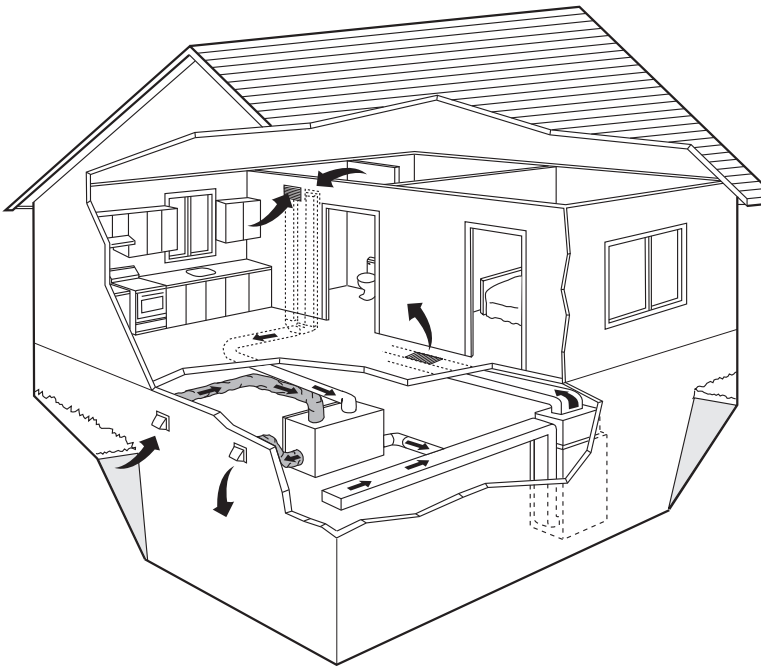
Partially Dedicated Installation Diagrams

Partially Dedicated System

This installation enables stale air to be drawn from the poorest air quality areas of the home (bathrooms, kitchen).

Key Points

- The HRV must be balanced.
- It is recommended that the furnace blower run continuously or HRV operation be interlocked with the furnace blower to evenly distribute the fresh air throughout the house.(Refer to “Interlocking the HRV to an Air Handler/Furnace Blower.”)
- The duct configuration may change depending on the HRV model. See specifications for your unit.
- Check local codes / authority having jurisdiction for acceptance.
- A backdraft damper is required in the exhaust air duct to prevent outdoor air from entering the unit when the Furnace/Airhandler is running and the unit is in Standby, OFF or Recirculate.

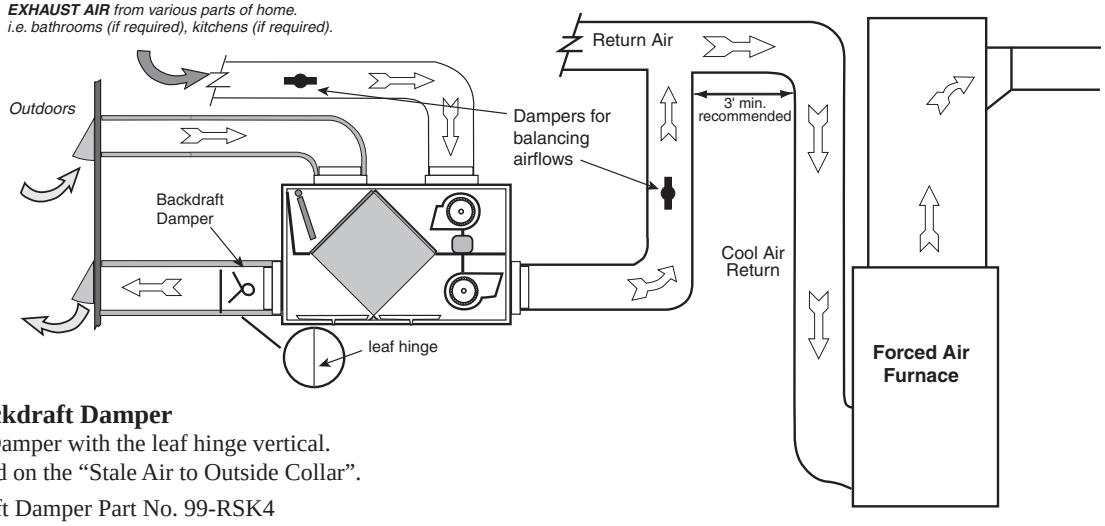


Sizing the Ductwork

It is the responsibility of the installer to ensure all ductwork is sized and installed as designed to ensure the system will perform as intended.

The amount of air (cfm) that an HRV will deliver is directly related to the total external static pressure (E.S.P.) of the system. Static pressure is a measure of resistance imposed on the blower by length of duct work plus the number of fittings used in the duct work.

DIRECT CONNECTION of the SUPPLY AIR STREAM to the FURNACE COLD AIR RETURN
(Stale air drawn from key areas of home)



Spring-Loaded Backdraft Damper

Install the Backdraft Damper with the leaf hinge vertical.
The damper is installed on the “Stale Air to Outside Collar”.

4” (102mm) Backdraft Damper Part No. 99-RSK4
5” (127mm) Backdraft Damper Part No. 99-RSK5
6” (152mm) Backdraft Damper Part No. 99-RSK6
8” (203mm) Backdraft Damper Part No. 99-RSK8

Installation Notes

- Unit is normally balanced on HIGH speed with the furnace blower ON.
- Weatherhood arrangement is for drawing purposes only. Six feet (2m) minimum separation is recommended. The Weatherhood must also be 18" (460mm) above grade minimum.
- The airflow must be confirmed on site using the balancing procedures found in this manual.

⚠ WARNING

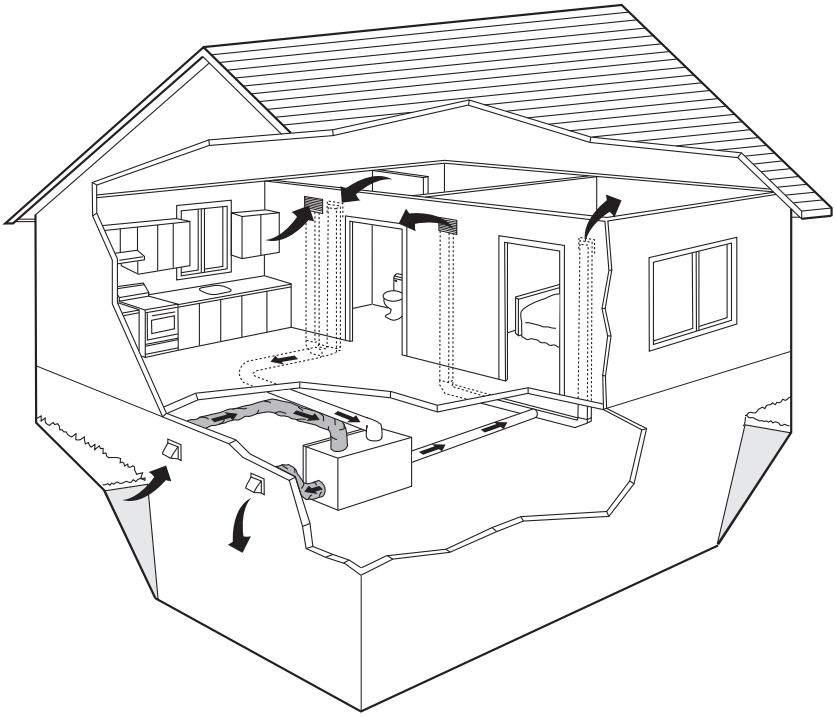
The Stale Air to Outside air duct requires a Backdraft Damper. This damper prevents outdoor air from entering the HRV during the operation of the Furnace/Airhandler while the HRV is in standby, OFF or Recirculate.

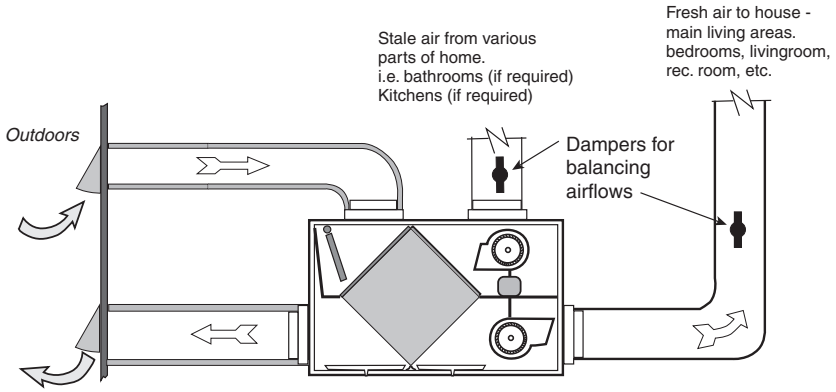
Fully Dedicated System

This is a stand alone HRV system which is not connected to a force air system. Stale air is drawn from key areas of the home (bathroom, kitchen) while fresh air is supplied to main living areas.

Key Points

- The HRV must be balanced.
- The duct configuration may change depending on the HRV model. See specifications for your unit.
- Check local codes / authority having jurisdiction for acceptance.





Installation Notes

- Unit is normally balanced on HIGH speed with the furnace blower ON.
- Weatherhood arrangement is for drawing purposes only. Six feet (2m) minimum separation is recommended. The Weatherhood must also be 18" (460mm) above grade minimum.
- The airflow must be confirmed on site using the balancing procedures found in this manual.

Installation

Location

Install the unit in a heated space that provides convenient space for service access. A typical location is in either a mechanical room or an area close to the outside wall within close proximity to the mounted weatherhoods. If a basement area is inconvenient or non-existent, install the unit in either a utility or laundry room.

Attic installations are not recommended due to:

A) the complexity of work to install

B) freezing conditions in the attic

C) difficulty of access for servicing and cleaning

Leave sufficient clearance in front of the access door for servicing the air filters and core. The recommended clearance is a minimum of 25" (635 mm) for opening and closing the door. Airia provides four straps for hanging the unit from the basement floor joists.

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a qualified installer or service agency.

Suspending the Unit with Adjustable Straps

The adjustable hanging straps are designed to reduce the possibility of noise, resonance and harmonics.

NOTE: Provide a front clearance of 25 inches (635 mm) for servicing the unit.

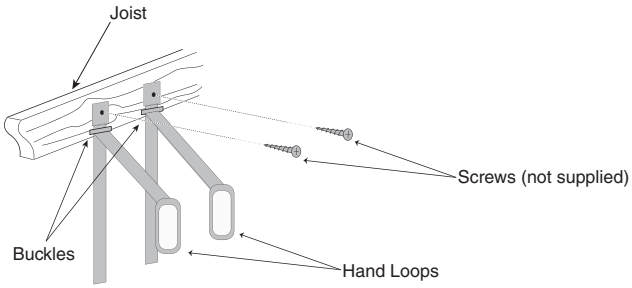
⚠ CAUTION

Unit must be installed level to ensure proper condensate drainage. Due to the broad range of installation and operational conditions, consider the possibility of condensation forming on either the unit or connecting ducting. Objects below the installation may be exposed to condensate.

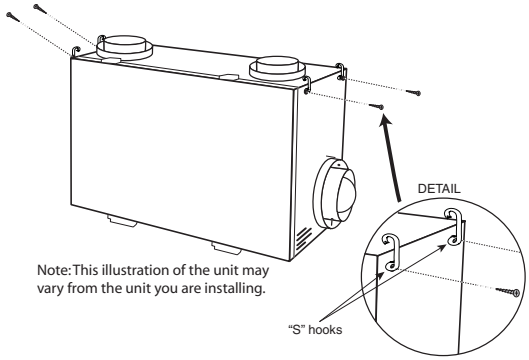
⚠ ATTENTION

The model 120D includes 4 PVC reinforced polyester straps to hang the unit.
1. Insert screws (not included) through the straps and fasten to the joists.
2. Unscrew the 4 machine screws located on the unit.
3. Insert machine screws through straps and into mounting holes in unit.

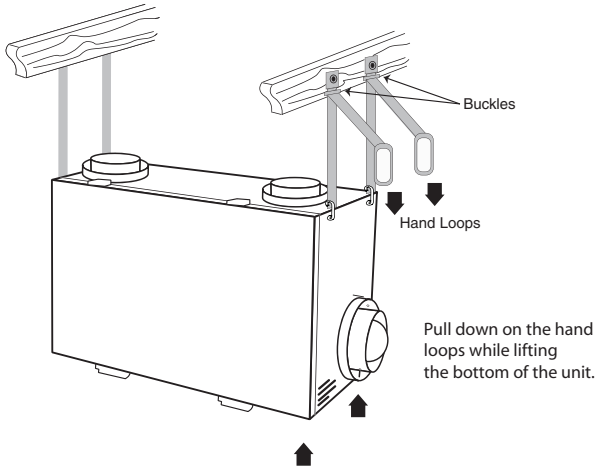
1. Insert screws (not included) through the Hanging Strap grommets and fasten to the joists. Ensure the screw head is wider than the eyelet of the grommet.



2. Unscrew the 4 machine screws located on the upper side of the unit. Attach the "S" hooks and reinsert the machine screws.



3. Hook the bottom grommets of the straps through the "S" hooks. Pull down on the hand loops while lifting up the bottom of the unit. Repeat at opposite end of the unit.



4. Make certain the unit is level. Adjust the unit down by lifting up on the buckle. Fold the hand loops and excess strap and secure with a nylon tie.

Electrical

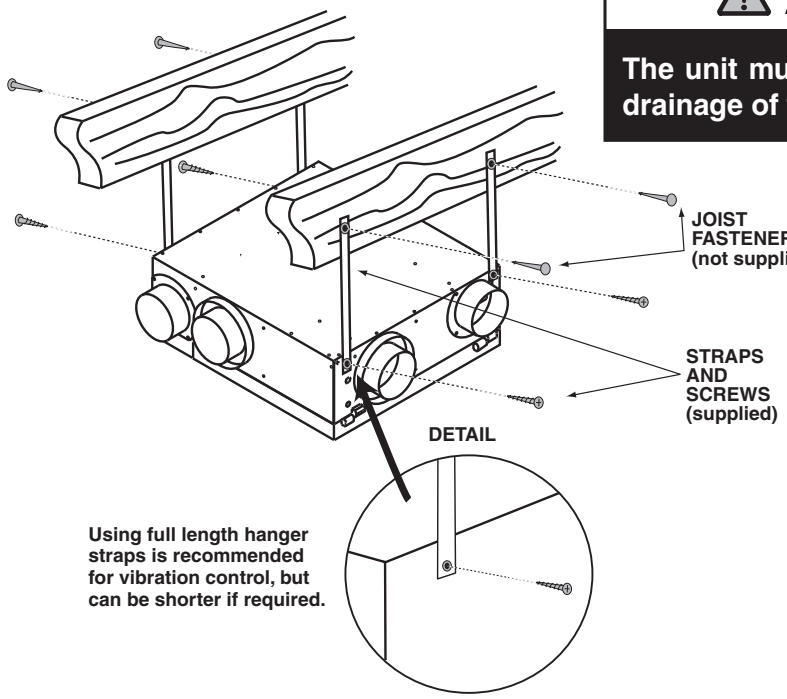
Plug the unit into a standard designated (120 VAC) electrical outlet with ground. The use of an extension cord with this unit is not recommended. If the installation requires further wiring, have a licensed electrician make all of the electrical connections. The recommended circuit is a separate 15 amp/120 volt circuit.

WARNING:

To prevent electrical shock while either cleaning or servicing the unit, it is ***extremely important*** to confirm the polarity of the power line that is switched by the safety (disconnect) switch. The hot line (black) is the proper line for switching. To confirm the proper polarity, use a voltmeter or test lamp to ensure there is no voltage after the switch when the door is open. Check between that point and ground (on the cabinet). This procedure must be followed, as dwellings are occasionally wired improperly. Always ensure the proper grounding of the unit.

Suspending the RNC120D

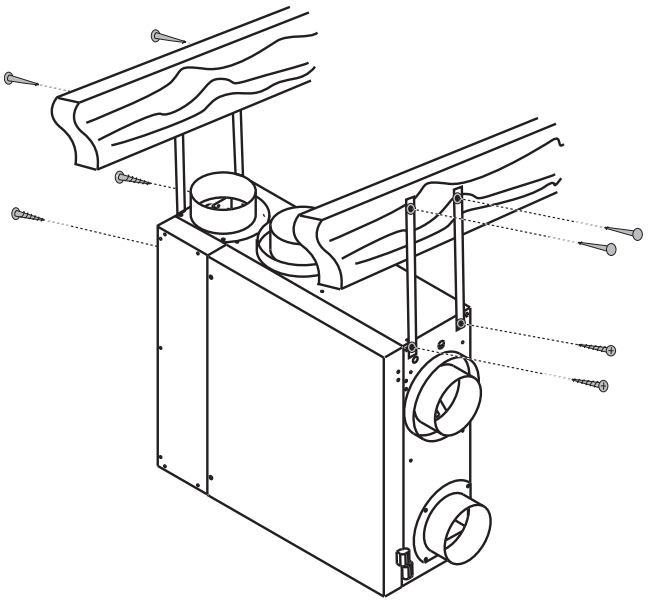
Horizontal Installation

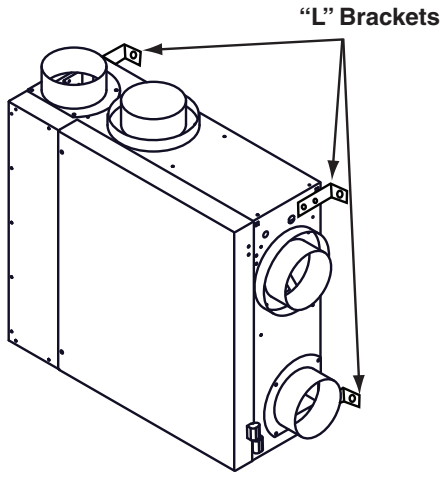


⚠ ATTENTION

The unit must be mounted level for proper drainage of the condensate pans.

Vertical Installation





Wall Mounting the HRV

Suspending the RNC120D

The hanging straps should be attached to the unit at the top end corners (mounting screws are already located on the HRV case). Securely fasten the other end of the straps to the ceiling making sure the UNIT IS LEVEL. The straps are designed to reduce the possibility of noise, resonance or harmonics; therefore using the full length of the strap between the HRV and the floor joists is recommended.

"L" BRACKETS (not included) may be installed if wall mounting is desired for the vertical installation.

It is important to isolate the "L" BRACKET from the attached surface to minimize vibration.

Use the hanging strap hardware to attache the brackets. Do not drill additional holes in the HRV.

Drain Connection

Drain Connection

The HRV may produce some condensation during a defrost cycle. This water should flow into a nearby drain, or be taken away by a condensate pump.

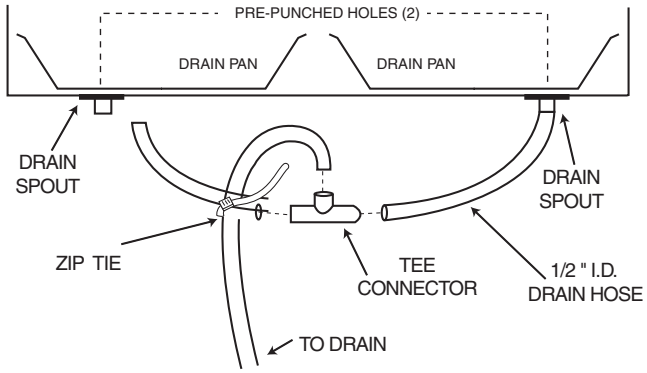
⚠ CAUTION

The HRV and all condensate lines must be installed in a space where the temperature is maintained above the freezing point or freeze protection must be provided.

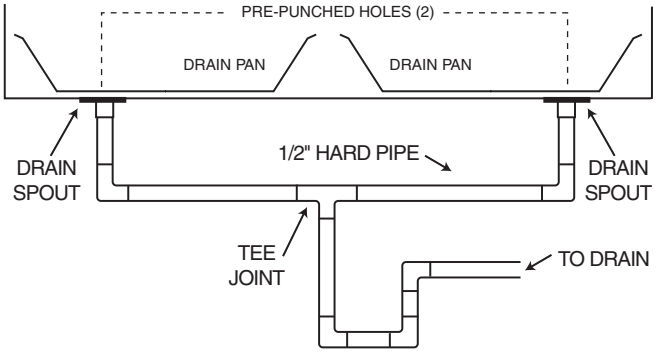
The HRV cabinet has prepunched holes for the drain (see below). Insert the drain spout through the hole in the drain pan. Be sure to install the "O ring" which seals each spout to the pan. HAND TIGHTEN the washer and lock nut which hold the drain spout in place.

Construct a P-Trap using the plastic tee connector. Cut two lengths of 1/2" drain hose (not included) and connect the other ends to the two drain spouts. Position the "T" fitting to point upward and connect the drain line. Tape or fasten base to avoid any kinks. Pour a cup of water into the drain pan of the HRV after the drain connection is complete. This creates a water seal which will prevent odors from being drawn up the hose and into the fresh air supply of the HRV.

DRAIN HOSE PLUMBING



HARD PIPE PLUMBING



Note: Secondary drain pan may be required to protect from condensate leakage.

⚠ CAUTION

Drain trap and tubing MUST be below bottom of door with 1/4" per foot downwards slope away from unit.

Grilles

Adjustable grilles should be used to balance the flow rates into and out of various rooms. The grilles should not be adjusted after balancing the unit.

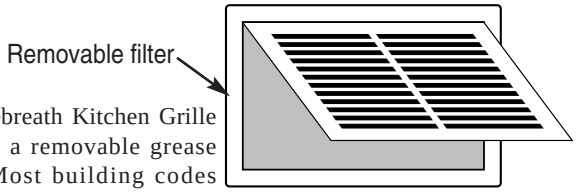
Grilles or diffusers should be positioned high on the wall or in the ceiling. Kitchen Exhaust grilles must never be connected to the range hood. They should be installed at least 4 feet (1.2 m) horizontally away from the stove.

Field supplied balancing dampers should be installed external to the unit to balance the amount of stale air being exhausted with the amount of fresh air being brought into the house. Refer to Air flow Balancing section.

⚠ CAUTION

Do not mount exhaust grille within 4' (1.2m) (horizontally) of a stove to prevent grease from entering the unit.

The Lifebreath Kitchen Grille

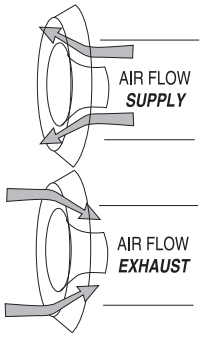


The Lifebreath Kitchen Grille includes a removable grease filter. Most building codes require that kitchen grilles be equipped with washable filters.

The Lifebreath Techgrille

The TECHGRILLE is a round, fully adjustable grille, which provides superior, quiet air distribution.

4" (100 mm) Part No. 99-140
5" (125 mm) Part No. 99-141
6" (150 mm) Part No. 99-142
8" (200 mm) Part No. 99-148



Installing the Ducting from the Weatherhoods to the HRV

The inner and outer liners of the flexible insulated duct must be clamped to the sleeve of the weatherhoods (as close to the outside as possible) and the appropriate port on the HRV. It is very important that the fresh air intake line be given special attention to make sure it is well sealed. A good bead of high quality caulking (preferably acoustical sealant) will seal the inner flexible duct to both the HRV port and the weatherhood prior to clamping.

To minimize air flow restriction, the flexible insulated duct that connects the two outside weatherhoods to the HRV should be stretched tightly and be as short as possible.

Twisting or folding the duct will severely restrict air flow.

Hard (rigid) ducting which has been sealed and insulated should be used for runs over 10’ (3.3 m). Refer to your building code.

Intake Weatherhood Requirements

- Should be located upstream (if there are prevailing winds) from the exhaust outlet
- At least 6' (2 m) from the exhaust weatherhood
- At least 6' (2 m) away from dryer vents and furnace exhaust (medium or high efficiency furnaces)
- A minimum of at least 6' (2 m) from driveways, oil fill pipes, gas meters, or garbage containers
- At least 18" (460 mm) above the ground, or above the depth of expected snow accumulation
- At least 3' (1 m) from the corner of the building
- Do not locate in a garage, attic or crawl space

Exhaust Weatherhood Requirements

- At least 6' (2 m) from the ventilation air intake
- At least 18" (460 mm) above ground or above the depth of expected snow accumulation
- At least 3' (1 m) away from the corner of the building
- Not near a gas meter, electric meter or a walkway where fog or ice could create a hazard
- Not into a garage, workshop or other unheated space

When installing the weatherhood, its outside perimeter **must be** sealed with exterior caulking.

⚠ ATTENTION

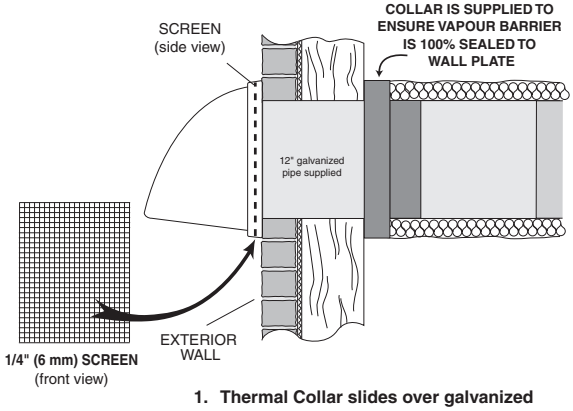
Local codes may require greater distances for exhaust and intake.

Lifebreath Weatherhoods

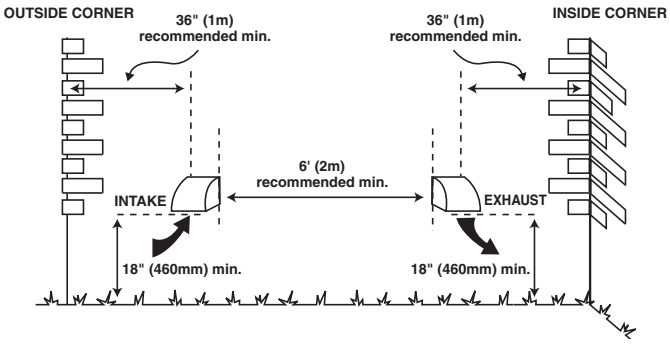
Fixed covered weatherhoods have a built-in bird screen with a 1/4" (6mm) mesh to prevent foreign objects from entering the ductwork.

5” (125 mm) Part No. 99-185
6” (150 mm) Part No. 99-186
7” (200 mm) Part No. 99-187

Weatherhood Installation



1. **Thermal Collar slides over galvanized sleeve of Weatherhood.**
2. **Fasten Thermal Collar to Belt.**
3. **Slide the Insulated Flexible Ducting over the Weatherhood's galvanized sleeve and fasten it to the Thermal Collar.**
4. **Hood is hinged to allow for easy access for cleaning of bird screen.**



⚠ CAUTION

Weatherhood arrangement - requires a minimum of 6' (2m) separation and a minimum of 18" (460mm) above the ground, or above the depth of expected snow accumulation.

Installation of the Main Control

Standard Series Controls may be installed onto a flush mounted 2" x 4" electrical switch box or it may be surface mounted onto a wall.

Only 1 master control should be installed to a ventilation system (the Face Plate on this illustration may not be exactly the same as yours).

1. Remove the *Operating Instructions Card* from the top of the Control (Figure A).
2. Separate the *Face Plate* from the *Back Plate* by firmly pulling apart (Figure B). Be careful not to damage Face Plate Contact Pins.
3. Place the *Back Plate* of the control in the desired location on the wall and pencil mark the wall in the center of the *Wire Opening, Top Screw Hole* and *Bottom Screw Hole* (Figure C).
4. Remove the *Back Plate* and drill a 3/8" opening in the wall to allow for the *Wire Opening* and a 1/8" hole for the *Wall Anchors* for the top and bottom screw holes (Figure D).
5. Pull 3/20 wire through the opening in the wall and the *Wire Opening* of the *Back Plate* (Figure C).
6. Connect Red, Green and Yellow to the *Wiring Terminals* located on the *Back Plate* (Figure C).
7. Secure a single wire to the *Wire Retainer* located on the *Back Plate* (Figure C).
8. Attach the *Back Plate* to the wall using the 2 supplied screws and anchors.
9. Attach the *Face Plate* to the *Back Plate* (Figure B). Note: Be careful to correctly align the *Face Plate* to avoid damaging the *Face Plate Contact Pins*.
10. Insert the *Operating Instructions Card* into the control (Figure A).
11. Connect the 3/20 wire to the *Terminal Block* located on ventilator (Figure E).

⚠ ATTENTION

Pay special attention not to damage the Contact Pins when attaching and detaching the Face Plate. (Figure B)

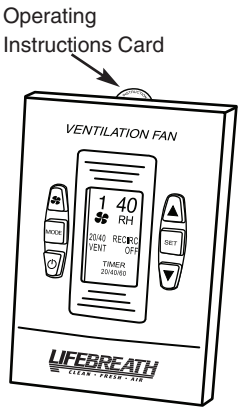


Figure A - Face Plate
(Illustration of Face Plate may vary from actual control)

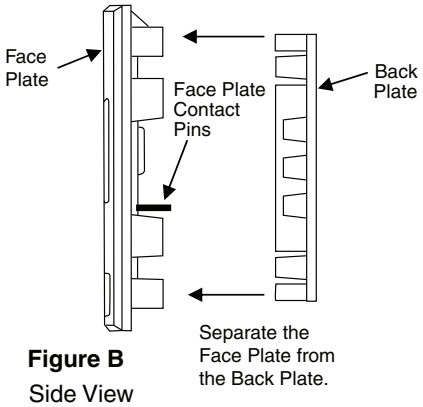


Figure B
Side View

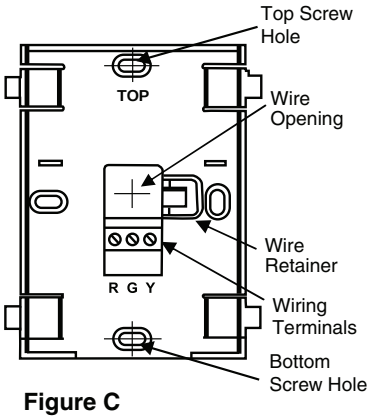


Figure C
Front View of Back Plate

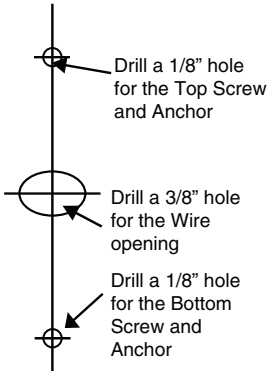


Figure D
Drill holes in wall

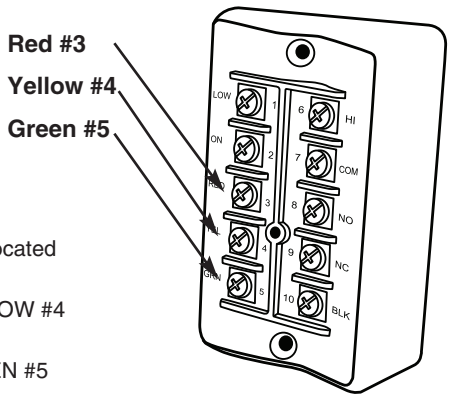


Figure E
Terminal Block located on ventilator
- Yellow to YELLOW #4
- Red to RED #3
- Green to GREEN #5

Use 3/20 wire

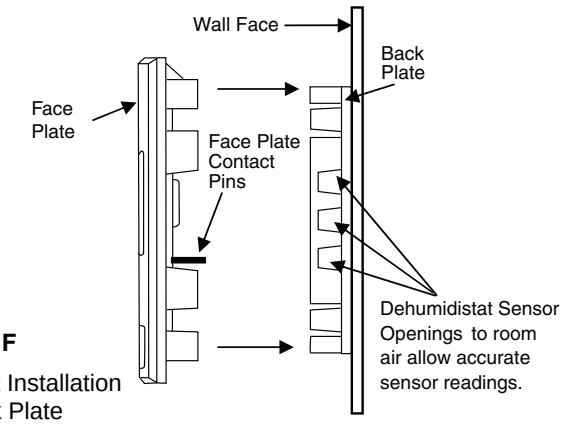


Figure F
Correct Installation of Back Plate

Installation and Operation of 20 Minute and 20/40/60 Minute Timers

Operating your Lifestyle 20 Minute or 20/40/60 Minute Timers

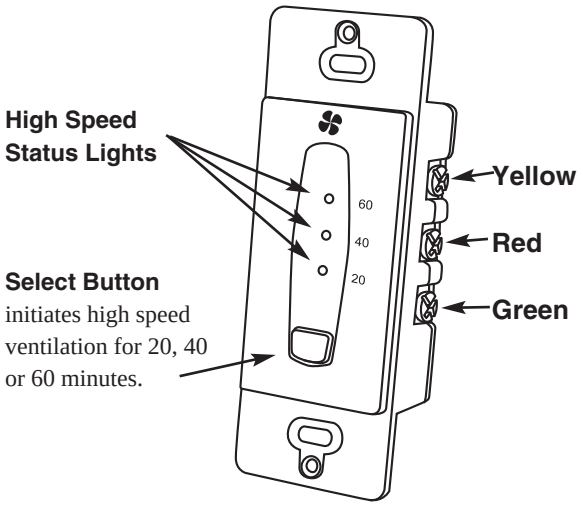
Press and release the *Select Button* to activate high speed override. The *High Speed Status Light* will illuminate and the unit will run on high speed ventilation for 20 minutes.

The Lifestyle 20/40/60 Minute timers provide an extended override time of 20 - 40 additional minutes simply by pressing and releasing the *select button*.

The *High Speed Status Light* will dim after 10 seconds of run time.

The *High Speed Status Light* will flash during the last 5 minutes of the cycle.

All timers connected to the unit will illuminate for the duration of the override when the *Select Button* is pressed.



Lockout Mode

Lockout Mode is useful if you wish to disable the timers.

The timer can be set to lockout mode by pressing and holding the *Select Button* for five seconds. After five seconds, the *High Speed Status Light* will flash; release the *Select Button*. The timer is now in lockout mode. If the *Select Button* is pressed during lockout mode the *High Speed Status Light* will momentarily illuminate but no override will be initiated.

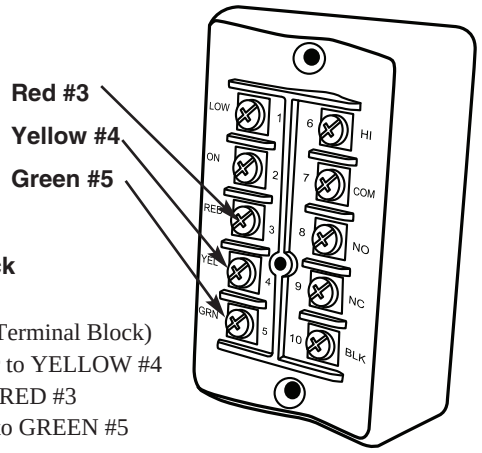
If lockout mode is initiated when the timer is activated, the timer will continue its timed sequence but will not allow any further overrides to be initiated. Lockout mode can be unlocked by pressing and holding the *Select Button* for five seconds. After five seconds the *High Speed Status Light* will stop flashing. Release the *Select Button* and the timer will now operate normally.

ATTENTION

If the system does not have a main control installed, the HRV Terminal Block must have a jumper installed between 2 (ON) and 3 (RED). Refer to "Operating the HRV without a Main Control" in this manual.

NOTE ABOUT TIMERS

- **Timers mount in standard 2" x 4" electrical boxes.**
- **Wire multiple timers individually back to the unit.**
- **Use 3/20 low voltage wire**

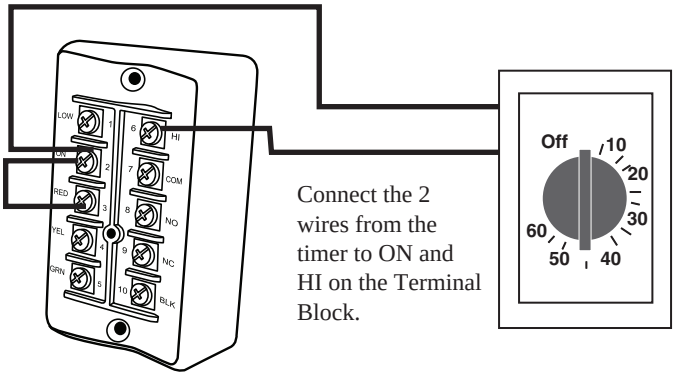


Terminal Block Connections
(from Timer to Terminal Block)
Yellow on timer to YELLOW #4
Red on timer to RED #3
Green on timer to GREEN #5

Installation of Mechanical Timers Part # 99-101

The Mechanical timer is a 2 wire "dry contact" timer. A jumper wire must be connected between ON and RED. Connect the 2 timers wires to ON and HI. Refer to illustration.

2 wire timers require a jumper wire between ON and RED on the terminal block if a main control with an ON/OFF switch is not installed to the unit.



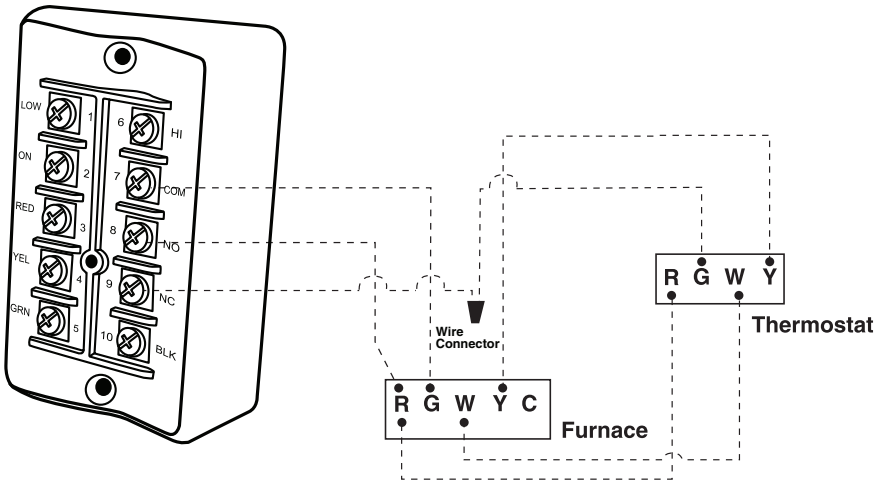
Interlocking the HRV to an Air handler/Furnace Blower

Connecting the HRV as illustrated will ensure the Air Handler/Furnace Blower Motor is operating whenever the HRV is ventilating.

The HRV must be interlocked to the Furnace/Air Handler with a Simplified Installation (Return/Return Installation) and should be interlocked with a Partially Dedicated Installation.

⚠ CAUTION

Consideration should be given to competing airflows when connecting the HRV in conjunction with an Air Handler/Furnace Blower system.

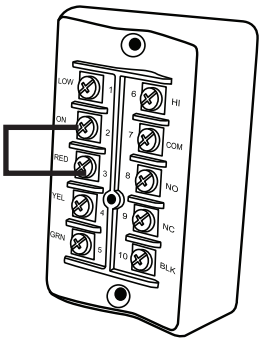


Setting "Standby" when using a Main Control

The HRV will be "fully-off" when the OFF position is selected on the Main Control. Timers and /or other controls will not function when the HRV is in the OFF position.

The "fully-off" feature can be modified to "standby-off" by adding a jumper on the Terminal Block between 2 (ON) and 3 (RED). "Standby" can also be achieved by setting the main control to the ON position and selecting speed 0*. Timers and /or additional controls will initiate high speed ventilation when activated.

* Speed 0 is not available on all controls



The Terminal Block
(located on the HRV

⚠ CAUTION

Building codes in some areas require "fully-off" functionality. Check with your local building authority before modifying the unit to "standby -off". Unintentional operation of the HRV by the end user may occur if the unit is modified from "fully-off" to "standby-off".

Operating the HRV without a Main Control and Adding Dry Contact Controls

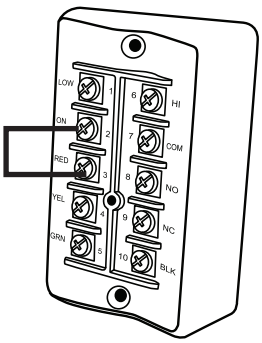
A jumper must be in place between 2 (ON) and 3 (RED) on the Terminal Block to activate the HRV for timers and/or dry contact controls.

Adding Dry Contact Controls

Low Speed - A jumper between 2 (ON) and 1 (LOW) initiates low speed ventilation.

High Speed - A jumper between 2 (ON) and 6 (HI) initiates high speed ventilation.

Dehumidistat - A dry contact for a dehumidistat is connected between 2 (ON) and 10 (BLK).



The Terminal Block
(located on the HRV

The HRV must have a Jumper in place between 2 (ON) and 3 (RED) on the Terminal Block when installing the unit without a Main Control.

Balancing the Air Flows

Balancing the air flows is critical to ensuring that the amount of air introduced from the outside of the building equals the amount of air exhausted to the outside of the building. If these two air flows are not properly balanced, the following issues may occur:

- A positive or negative pressure may occur in the house
- HRV may not operate at its maximum efficiency
- The unit may not defrost properly

Air Flow Measuring Gauges

The magnehelic gauge and the digital manometer are suitable instruments for the balancing of air flows.

A magnehelic gauge with a scale of 0 to .25" w.c. is suitable for accurately measuring air duct velocity. The value on the gauge will be velocity pressure. A digital manometer requires the ability to display differential pressures at 3 digits of resolution.

Gauge Attachments

When sampling an air flow, various attachments are available for use on a magnehelic gauge or digital manometer.

Consult with your Lifebreath Distributor for available options such as a pitot tube, flow measuring station, and an air flow measuring probe.

The following illustration shows a magnehelic gauge with a scale of 0 to .25" w.c. with a pitot tube attachment. This combination will measure the system air velocity pressure accurately, regardless of the duct size or shape (either round or rectangular).

Balancing Preparation

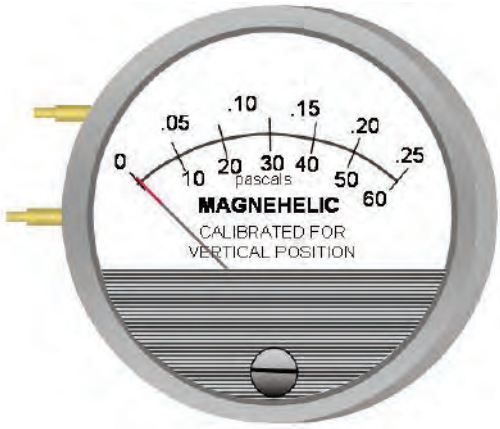
Prior to performing the air balancing procedure, perform the following steps:

- Seal the ductwork system
- Confirm the installation and proper operation of all the components of the HRV
- Fully open the balancing dampers
- Turn off all household exhaust devices (range hood, clothes dryer, bathroom fans)
- Set the HRV at high speed
- Prior to balancing the unit, first adjust air flows in branch lines to specific areas of the house
- If the outdoor temperature is below 0˚C (32˚F), ensure the unit is not running in defrost
- Place the magnehelic gauge on a level surface and adjust it to zero
- If the system is a Simplified or Partially Dedicated installation, operate the furnace/air handler at high speed

⚠ ATTENTION

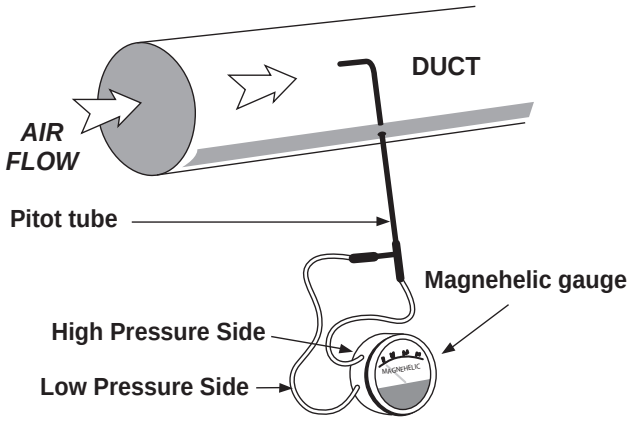
Continuous, excessive, positive pressure may drive moist indoor air into the external walls of the building. Once inside the external walls, moist air may condense (in cold weather) and degrade structural components or cause locks to freeze.

Continuous, excessive, negative pressure may have several undesirable effects. In some geographic locations, soil gases such as methane and radon gas may be drawn into the home through basement or ground contact areas, and may also cause the backdrafting of vented combustion equipment.



Magnehelic Gauge with a scale of 0 to .25” w.c.

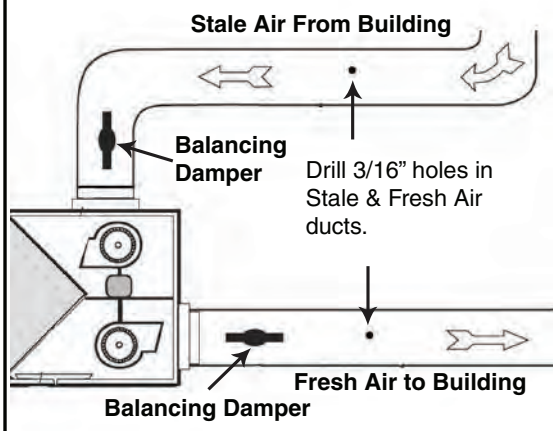
Pitot tube and gauge



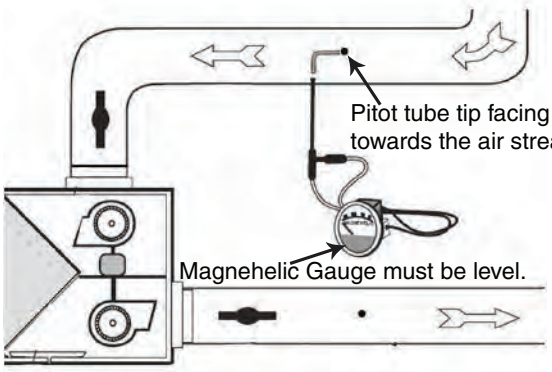
Magnehelic Gauge (scale of 0 to .25” w.c.) with a Pitot Tube Attachment

Balancing the Air Flows with a Pitot Tube

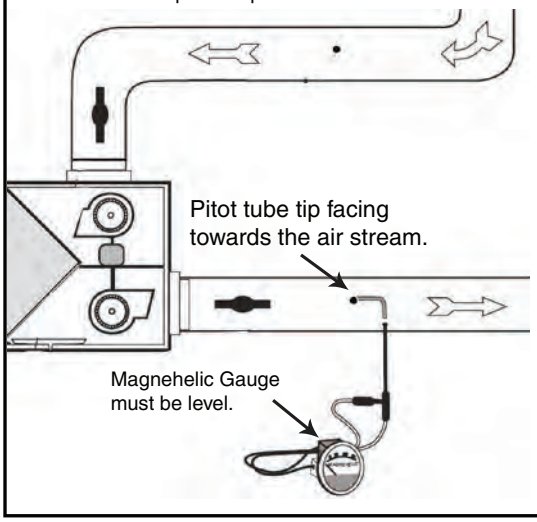
STEP 1. Drill a 3/16" hole in the duct (ideally 3 feet downstream of any elbows or bends and 1 foot upstream of any elbows or bends) in the Fresh Air and Stale air streams.



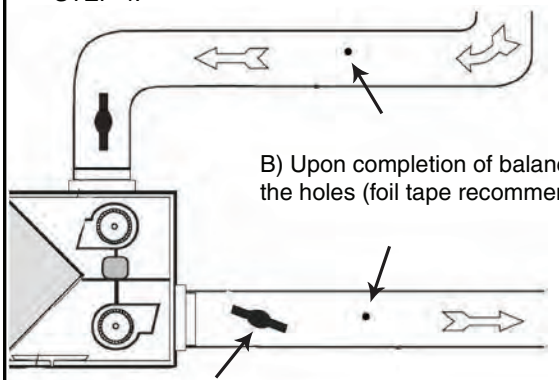
STEP 2. Insert the Pitot tube with the tip facing towards the air stream in the Stale Air From Building air stream. Move the Pitot tube around in the duct (facing towards the airflow) and take an average reading. Record the reading.



STEP 3. Repeat Step 2 to measure the Fresh Air to Building duct.



STEP 4.



A) Review the readings and damper down the duct with the highest duct velocity pressure. Repeat Step 2 and Step 3 until both ducts show indentical readings. For this example, the Fresh Air to Building air stream has the highest duct velocity pressure.

Determining the cfm

After balancing the air flows, calculate the cfm flow rate.

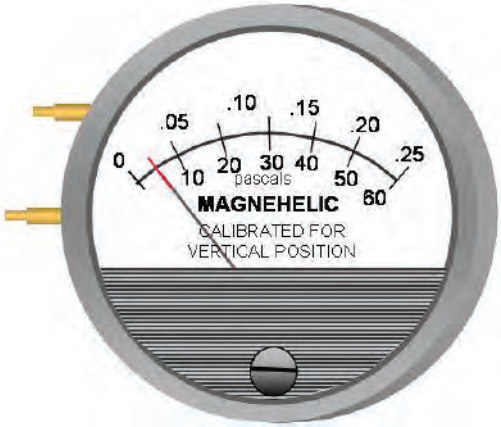
Example

This example shows how to determine the air flow for a 6" diameter duct. As shown in the illustration, the duct velocity pressure reads 0.025" w.c. on the magnehelic gauge. Use the chart that came with the magnehelic gauge to determine a duct velocity of 640 feet per minute for a duct velocity pressure of 0.025" w.c.

Cfm Calculation

cfm = feet per minute x cross section area of duct
= 640 x 0.196
= 125

Cross Section Area of some common round duct sizes:
0.087 for 4" diameter duct
0.136 for 5" diameter duct
0.196 for 6" diameter duct
0.267 for 7" diameter duct



Magnehelic Gauge reading .025" w.c.

Air Flow Balancing using the Door Ports — Available on Selected Models

Door balancing ports (not on all models) are designed to be used in conjunction with a Magnehelic Gauge or Digital Manometer to measure the Stale and Fresh airflows for balancing.

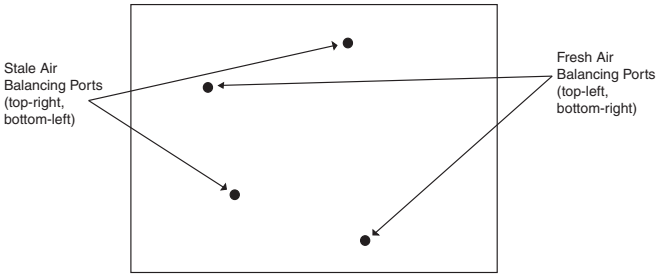


Illustration of a door with door ports

Step 1

Prepare the air flow measuring device (i.e. Magnehelic Gauge or Digital Manometer) by connecting the hoses to the low and high pressure side of the gauge.

Step 2

Insert the hoses into the rubber fittings from the optional Door Port Adapter Kit (part # 99-182). Use light pressure and rotate until fitting is snug. Do not extend the hose past the rubber fitting.

Step 3

Open the HRV Door. Remove the 4 Door Port Covers by carefully pushing them out from the back side of the door (use the blunt end of a large drill bit etc.).

Step 4

Close the HRV Door. Initiate power and operate the HRV on high speed. Operate the forced air system on high speed (if the HRV is connected to the forced air system) .

Step 5

Insert the 2 rubber fittings from the gauge to the STALE AIR Balancing Ports (upper right and lower left). Seal the FRESH AIR Balancing Ports (upper left and lower right) with tape. Record your reading.

Step 6

Insert the 2 rubber fittings from the gauge to the FRESH AIR Balancing Ports (upper left and lower right). Seal the STALE AIR Balancing Ports (upper right and lower left) with tape. Record your reading.

Step 7

Refer to the "Airflow Reference Chart" for your model and determine the FRESH AIR and STALE AIR flow rates (the chart is located on the lower portion of this page).

Step 8

Damper down the higher airflow and repeat Steps 5 to 7 as required until both airflows are identical (balanced).

Step 9

Remove the tape and rubber fittings and reinstall the 4 Door Port Covers.

Airflow Reference Charts

MODEL 155		
Manometer Reading	Airflow Numbers (CFM)	
Pressure (in. w.g.)	Fresh Air	Stale Air
0.100	93	80
0.105	96	83
0.110	99	86
0.115	102	89
0.120	105	92
0.125	108	96
0.130	111	99
0.135	114	102
0.140	117	105
0.145	120	108
0.150	123	111
0.160	130	117
0.170	136	123
0.180	142	129
0.190	148	135
0.200	154	141
0.210	160	147
0.220	166	154
0.230	172	160
0.240	178	166
0.250	184	172
0.260	191	178
0.270	197	184
0.280	203	190
0.290	209	196
0.300	215	202
0.310	221	209

MODEL 200		
Manometer Reading	Airflow Numbers (CFM)	
Pressure (in. w.g.)	Fresh Air	Stale Air
0.100	98	91
0.110	102	96
0.120	107	101
0.130	111	107
0.140	115	112
0.150	120	117
0.160	124	122
0.170	128	127
0.180	133	132
0.190	137	137
0.200	141	142
0.210	145	147
0.220	149	152
0.230	153	156
0.240	157	161
0.250	161	166
0.260	165	171
0.270	169	175
0.280	173	180
0.290	177	184
0.300	181	189
0.310	185	193
0.320	189	198
0.330	192	202
0.340	196	207
0.350	200	211
0.360	203	215

Magnehelic Gauge hoses connected to STALE AIR balancing ports

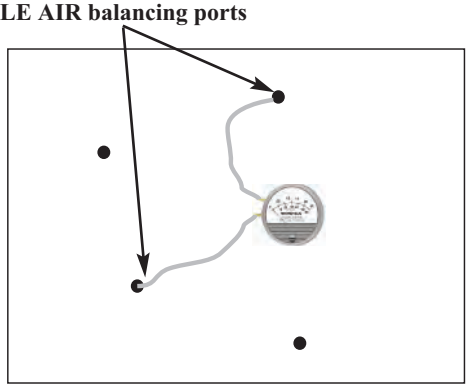


Illustration of measuring STALE airflow using a Magnehelic Gauge.

Magnehelic Gauge hoses connected to FRESH AIR balancing ports

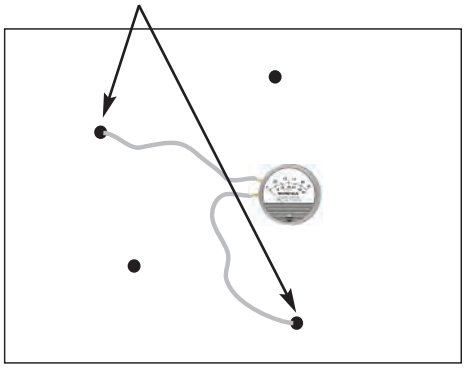


Illustration of measuring FRESH airflow using a Magnehelic Gauge.

Airflow Reference Charts

RNC5-TPD Models have 3 airflow charts, since they have an installer-adjustable high speed. Refer to your model's Technical Data Sheet for instructions on how to adjust the high speed and balance according to the following charts.

Hi 3

RNC5-TPD		
Manometer Reading	Airflow Numbers (CFM)	
Pressure (in. w.g.)	Fresh Air	Stale Air
0.055	45	42
0.060	50	46
0.065	55	49
0.070	60	53
0.075	65	57
0.080	70	61
0.085	74	65
0.090	79	69
0.095	84	73
0.100	88	76
0.105	92	79
0.110	96	82
0.115	100	85
0.120	104	87
0.125	108	89
0.130	112	90
0.135	116	92
0.140	119	96
0.145	123	99
0.150	126	102
0.155	129	106
0.160	132	109
0.165	136	111
0.170	138	114
0.175	141	117
0.180	144	119
0.185	147	122
0.190	149	124
0.195	152	127
0.200	154	130
0.205	156	133
0.210	158	136
0.215		139
0.220		143
0.225		146
0.230		150
0.235		154

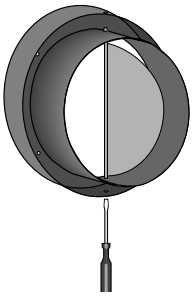
Hi 2

RNC5-TPD		
Manometer Reading	Airflow Numbers (CFM)	
Pressure (in. w.g.)	Fresh Air	Stale Air
0.055	47	42
0.060	53	45
0.065	58	49
0.070	64	53
0.075	69	57
0.080	74	61
0.085	79	65
0.090	84	69
0.095	88	72
0.100	93	76
0.105	98	79
0.110	102	82
0.115	106	84
0.120	110	86
0.125	115	88
0.130	119	89
0.135	122	92
0.140	126	95
0.145	130	99
0.150	133	102
0.155	137	105
0.160	140	108
0.165	143	111
0.170	146	113
0.175	149	116
0.180	152	119
0.185	155	121
0.190	158	124
0.195		127
0.200		129
0.205		132
0.210		135
0.215		138
0.220		142
0.225		146
0.230		149
0.235		154
0.240		158

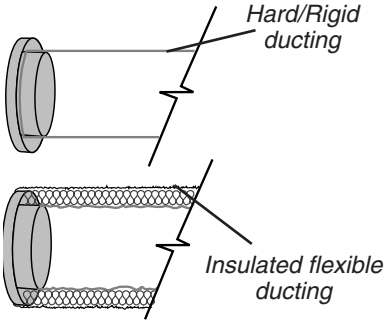
Hi 1

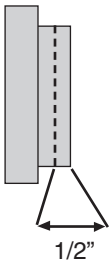
RNC5-TPD		
Manometer Reading	Airflow Numbers (CFM)	
Pressure (in. w.g.)	Fresh Air	Stale Air
0.055	50	40
0.060	56	44
0.065	61	48
0.070	67	52
0.075	72	55
0.080	78	59
0.085	83	63
0.090	88	67
0.095	93	70
0.100	98	73
0.105	103	76
0.110	108	79
0.115	112	82
0.120	116	84
0.125	121	85
0.130	125	87
0.135	129	89
0.140	133	92
0.145	137	96
0.150	141	99
0.155	144	102
0.160	148	105
0.165	151	108
0.170	154	110
0.175	158	113
0.180		115
0.185		118
0.190		120
0.195		123
0.200		126
0.205		128
0.210		131
0.215		134
0.220		138
0.225		141
0.230		145
0.235		149
0.240		154
0.245		158

Balancing Collar Instructions



Push and turn with slotted screwdriver. Damper automatically locks when pressure is released.





When connecting ductwork to the collar, take note where screws are located. Screws should be located no further than 1/2” from outside edge of collar, so as not to impede operation of the damper.

The 155 and 200 models have balancing collars located on the “Fresh Air to Building” and “Stale Air from Building” sides.

Install these units with the dampers fully open and damper down the duct with the higher air flow to equal the lower air flow. Refer to the Air Flow Balancing Procedures found in this manual.

All other units require dampers for balancing air flows installed into the “Fresh Air to Building” and “Stale Air from Building” ductwork.

NOTE

Installations where the HRV is ducted directly to the return of a furnace may require additional dampening on the *fresh air to building* duct.
This is due to the high return static pressures found in some furnace installations.

Balancing Instruments and Kits

Magnehelic Gauge with pitot tube Air Flow Balancing Kit Part No. 99-167

Use this kit to determine airflow in the HRV ductwork.
1 - Magnehilic Gauge (scale 0 to 0.25" w.c.)
1 - Carry Case
1 - Pitot Tube
1 - Instruction page

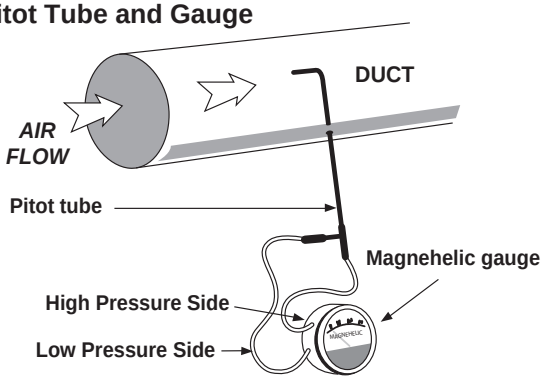
Magnehelic Guage with Door Port Adapter Kit Part No. 99-181

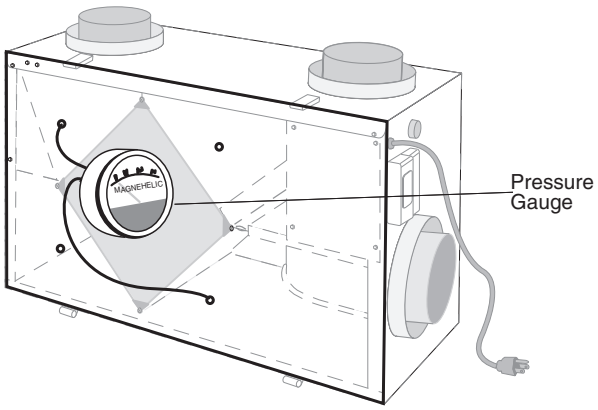
Use this kit to determine airflow via HRV Door Ports
1 - Magnehilic Gauge (scale 0 to 0.50" w.c.)
1 - Carry Case
2 - Connection Hoses
4 - Rubber Fittings
1 - Instruction page

Door Port Adapter Kit (Magnehelic Gauge not included) Part No. 99-182

Use this kit to adapt your Magenhelic Gauge or digital manometer for door port balancing.
2 - Connection Hoses
4 - Rubber Fittings
1 - Instruction Sheet

Pitot Tube and Gauge





Maintenance Routine for HRV

1. Inspect Exterior Hoods at least once a month.

Make sure exhaust and fresh air supply hoods are not blocked or restricted by leaves, grass, or snow. In winter, it is especially important to make sure snow is not blocking the hoods or that frost has not built up on the wire mesh (bird screen).

WARNING: *Blockage of hoods may cause an imbalance.*

2. Clean Air Filters (clean twice a year)

The standard filters equipped with your HRV are removable and washable.

a) simply open access door and slide core out

b) remove filter clips

c) once clips are removed filters can be taken off the core to be rinsed with water or a combination of mild soap and water. Do not clean in the dishwasher

d) to re-assemble, place clean filter(s) (wet or dry) back into their positions against the core and return clips to their original position

e) slide core back into its' original position

3. Clean Core Twice a Year

a) open access door.

b) carefully grip ends of core and pull evenly outward. Core may be snug, but will slide out of the channel

c) once removed from the cabinet remove filters

d) wash core in warm soapy water (do not use dishwasher)

e) install the clean filters

f) install clean core

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

To install the clean core:

a) first mount the bottom flange of the core guide into the bottom H channel approximately 1/4" (6mm)

b) mount the left or right side flange of the core guide approximately 1/4" (6mm) followed by the other side

c) mount the top flange of the core guide into the top H channel approximately 1/4" (6mm).

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.

NOTE: *Core will appear to stick out from cabinet approximately 1/8" (3mm). This is designed this way so that the access door will fit tight against the core.*

4. Motors - Maintenance Free

5. Drain (condensate) Line - Clean once a year

Inspect drain line, drain spout and "P" trap for blockage, mould or kinks. Flush with warm soapy water and replace if worn, bent or unable to clean.

6. Clean Duct Work if Required

The duct work running to and from the HRV may accumulate dirt. Wipe and vacuum the duct once every year. You may wish to contact a Heating/Ventilation company to do this.

7. General Maintenance - Twice a Year

Wipe down the inside of the cabinet with a damp cloth to remove dirt, bugs and debris that may be present.

8. Cleaning the Fans

Fans may accumulate dirt causing an imbalance and/or excessive vibration of the HRV. A reduction in the air flow may also occur. In new construction this may result within the first year due to heavy dust and may occur periodically after that over time depending on the outdoor conditions.

- unplug the HRV and open the service door
- remove the core
- remove ducting (metal and/or flexible insulated type) from the red and/or blue ports which are connected immediately in-line with the fan assembly
- use a small brush, such as an old toothbrush or pipe cleaner, and insert first

  (a) through the large opening of the fan assembly and then

  (b) through the smaller opening in the end of the fan assembly.
- scrub individual fan blades until clean. Avoid moving or damaging balancing flat weight, clip is usually found on one or more of the fan blades
- vacuum and wipe
- reassemble making sure ducting is reattached firmly and insulation and moisture barrier are sealed and taped

Before attempting this task, thought should be given to having a qualified service technician complete the service work.

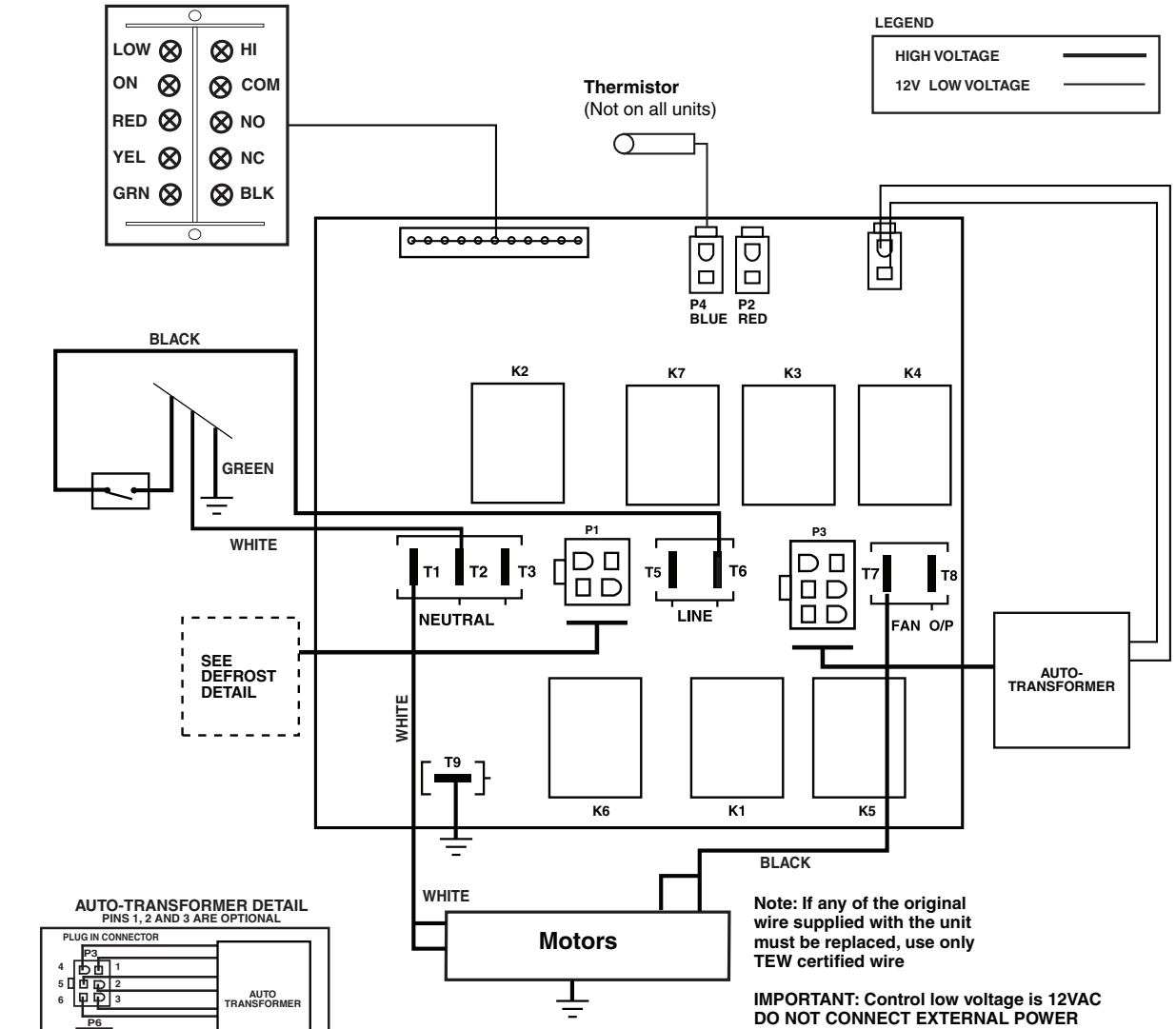
⚠ WARNING

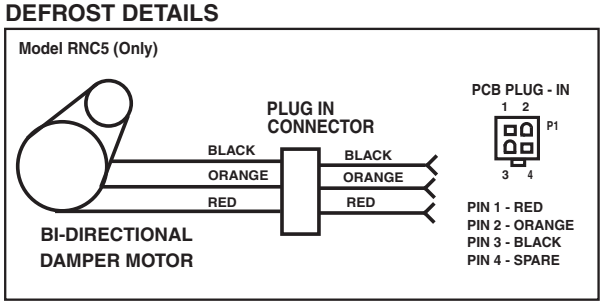
Electric shock hazard. Can cause injury or death. Before attempting to perform any service or maintenance, turn the electrical power unit OFF at disconnect switch(es). Unit may have multiple power supplies.

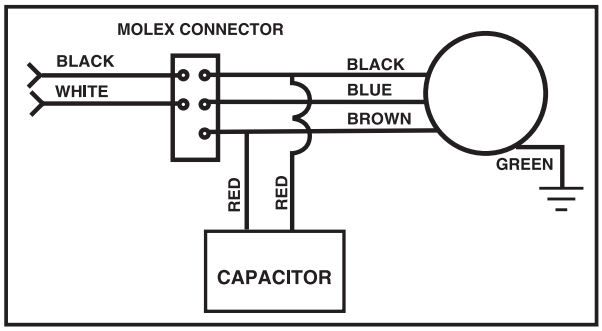
Troubleshooting your HRV System

SYMPTOM	CAUSE	SOLUTION
Poor Air Flows	• 1/4" (6 mm) mesh on the outside hoods is plugged • filters plugged • core obstructed • house grilles closed or blocked • dampers are closed if installed • poor power supply at site • ductwork is restricting HRV • improper speed control setting • HRV airflow improperly balanced	• clean exterior hoods or vents • remove and clean filter • remove and clean core • check and open grilles • open and adjust dampers • have electrician check supply voltage at house • check duct installation • increase the speed of the HRV • have contractor balance HRV
Supply air feels cold	• poor location of supply grilles, the airflow may irritate the occupant • outdoor temperature extremely cold	• locate the grilles high on the walls or under the baseboards, install ceiling mounted diffuser or grilles so as not to directly spill the supply air on the occupant (eg. over a sofa) • turn down the HRV supply speed. A small duct heater (1kw) could be used to temper the supply air • placement of furniture or closed doors is restricting the movement of air in the home • if supply air is ducted into furnace return, the furnace fan may need to run continuously to distribute ventilation air comfortably
Dehumidistat is not Operating	• outdoor temperature is above 15°C (59°F) • improper low voltage connection • external low voltage is shortened out by a staple or nail • check dehumidistat setting it may be on OFF	• dehumidistat is functioning normally (see "How the Dehumidistat Works" in this manual) • check that the correct terminals have been used • check external wiring for a short • set the dehumidistat at the desired setting
Humidity Levels are too High Condensation is appearing on the windows	• dehumidistat is set too high • HRV is undersized to handle a hot tub, indoor pool, etc. • lifestyle of the occupants • moisture coming into the home from an unvented or unheated crawl space • moisture is remaining in the washroom and kitchen areas • condensation seems to form in the spring and fall • HRV is set at too low a speed	• set dehumidistat lower • cover pools, hot tubs when they are not in use • avoid hanging clothes to dry, storing wood and venting clothes dryer inside. Heating wood may have to be moved outside • vent crawl space and place a vapour barrier on the floor of the crawl space • ducts from the washroom should be sized to remove moist air as effectively as possible, use of a bathroom fan for short periods will remove additional moisture • on humid days, as the seasons change, some condensation may appear but the homes air quality will remain high with some HRV use • increase speed of the HRV
Humidity Levels are too Low	• dehumidistat control set too low • blower speed of HRV is too high • lifestyle of occupants • HRV air flows may be improperly balanced	• set dehumidistat higher • decrease HRV blower speed • humidity may have to be added through the use of humidifiers • have a contractor balance HRV airflows
HRV and / or Ducts Frosting up	• HRV air flows are improperly balanced • malfunction of the HRV defrost system	• Note: minimal frost build-up is expected on cores before unit initiates defrost cycle functions • have HVAC contractor balance the HRV • ensure damper defrost is operating during self-test
Condensation or Ice Build Up in Insulated Duct to the Outside	• incomplete vapour barrier around insulated duct • a hole or tear in outer duct covering	• tape and seal all joints • tape any holes or tears made in the outer duct covering • ensure that the vapour barrier is completely sealed
Water in the bottom of the HRV	• drain pans plugged • improper connection of HRV's drain lines • HRV is not level • drain lines are obstructed • HRV heat exchange core is not properly installed	• ensure O-Ring on drain nozzle sits properly • look for kinks in line • check water drain connections • make sure water drains properly from pan

CAUTION: ELECTRICAL CONTROL PANEL, SERVICE BY ELECTRICIAN ONLY







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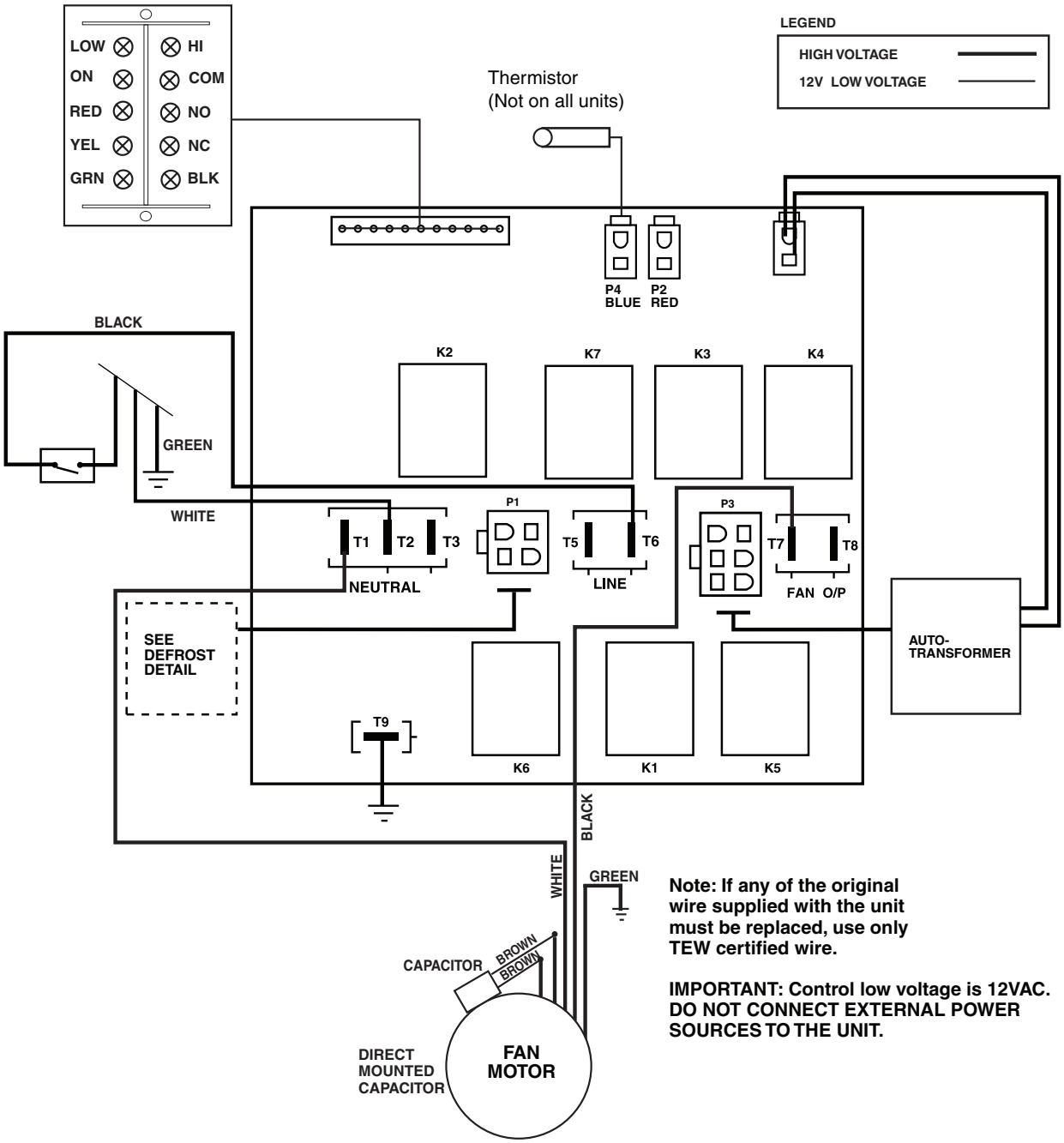
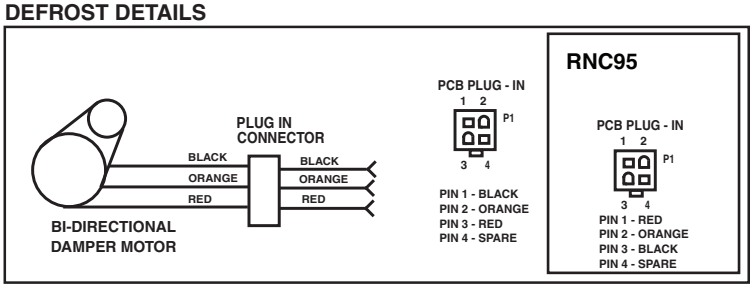


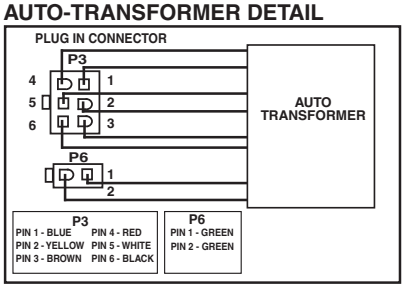
Note: If any of the original wire supplied with the unit must be replaced, use only TEW certified wire.

IMPORTANT: Control low voltage is 12VAC. DO NOT CONNECT EXTERNAL POWER SOURCES TO THE UNIT.

DEFROST DETAILS



AUTO-TRANSFORMER DETAIL



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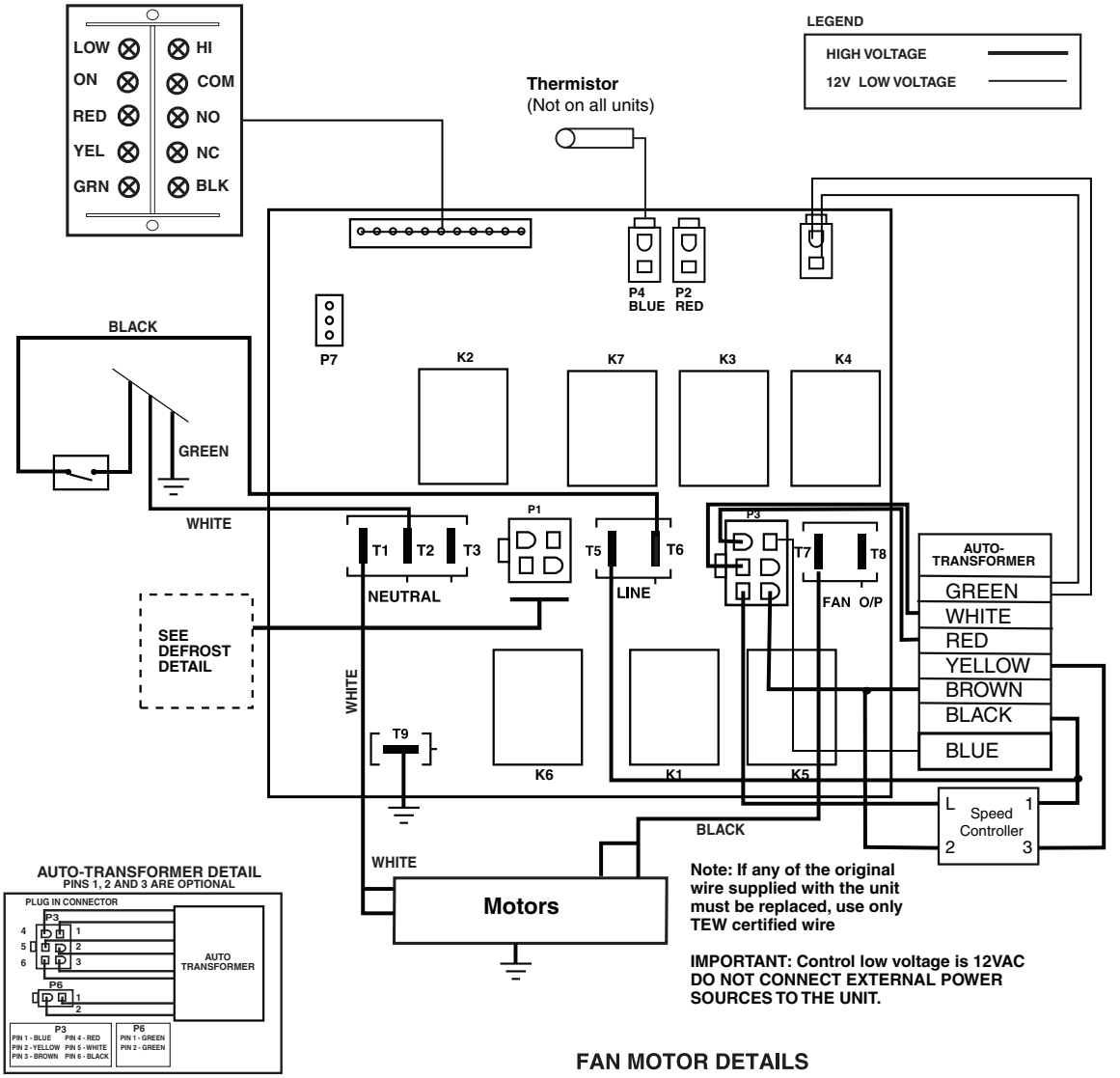

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