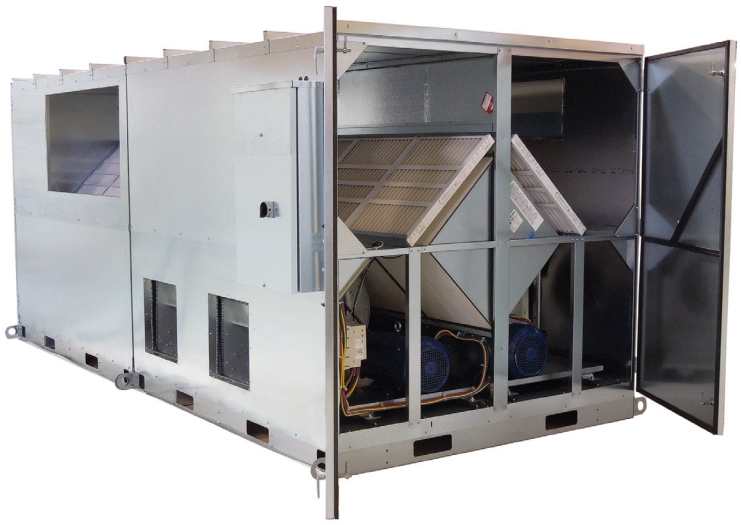
RenewAire®
Energy Recovery Ventilation

INSTALLATION, OPERATION & MAINTENANCE MANUAL

ENERGY RECOVERY VENTILATOR

LE8XIN



Model LE8XINV Shown
(also available as separate modules for field assembly)

C ETL LISTED US
Intertek

AHRI CERTIFIED®
www.ahridirectory.org
Globally Recognized. Industry Respected.

IMPORTANT SAFETY INFORMATION

⚠ WARNING

ARC FLASH AND ELECTRIC SHOCK HAZARD

Arc flash and electric shock hazard. Disconnect all electric power supplies, verify with a voltmeter that electric power is off and wear protective equipment per NFPA 70E before working within electric control enclosure. Failure to comply can cause serious injury or death.
Customer must provide earth ground to unit, per NEC, CEC and local codes, as applicable.
Before proceeding with installation, read all instructions, verifying that all the parts are included and check the nameplate to be sure the voltage matches available utility power.
The line side of the disconnect switch contains live high-voltage. The only way to ensure that there is NO voltage inside the unit is to install and open a remote disconnect switch and verify that power is off with a volt meter. Refer to unit electrical schematic. Follow all local codes.

⚠ CAUTION

RISK OF ELECTRIC SHOCK OR EQUIPMENT DAMAGE

Whenever electrical wiring is connected, disconnected or changed, the power supply to the ERV and its controls must be disconnected. Lock and tag the disconnect switch or circuit breaker to prevent accidental reconnection of electric power.

NOTICE

This unit is intended for general ventilating only. Do not use to exhaust hazardous or explosive materials and vapors. Do not connect this equipment to range hoods, fume hoods or collection systems for toxics.

NOTICE

This unit is for ventilating finished structures only. It is not to be used until after all construction has been completed and construction debris and dust are cleaned from the Occupied Space.

⚠ CAUTION

RISK OF CONTACT WITH HOT SURFACES

The blower motor and other electrical components are extremely hot during operation. Allow sufficient time for them to cool before working within the unit cabinet. Use extreme caution and wear protective gloves and arm protection when working on or near hot blower motors and electrical components.

⚠ CAUTION

RISK OF CONTACT WITH HIGH SPEED MOVING PARTS.

Disconnect all local and remote power supplies, verify with a voltmeter that electric power is off and all fan blades have stopped rotating before working on the unit.
Do not operate this unit with any cabinet panels removed or prior to assembly of the modules

⚠ CAUTION

RISK OF DAMAGE TO ENTHALPIC CORES

Whenever working within the ERV cabinet, protect the enthalpic cores from accidental damage. The core media is subject to damage from dropped tools or other foreign objects.

NOTICE

This equipment is to be installed by following Industry Best Practices and all applicable codes. Any damage to components, assemblies, subassemblies or the cabinet which is caused by improper installation practices will void the warranty.

IMPORTANT USER INFORMATION

READ AND SAVE THIS MANUAL/LIRE ET CONSERVER CE MANUEL

IMPORTANT

If this unit is installed in an area where it may draw air from a nearby fuel-burning device such as a gas furnace or water heater, verify that the air being extracted by the ERV does not conflict with proper operation of the fuel-burning device.

IMPORTANT

This unit can be delivered in two modules for on-site assembly or as a completely assembled unit (additional charges apply).

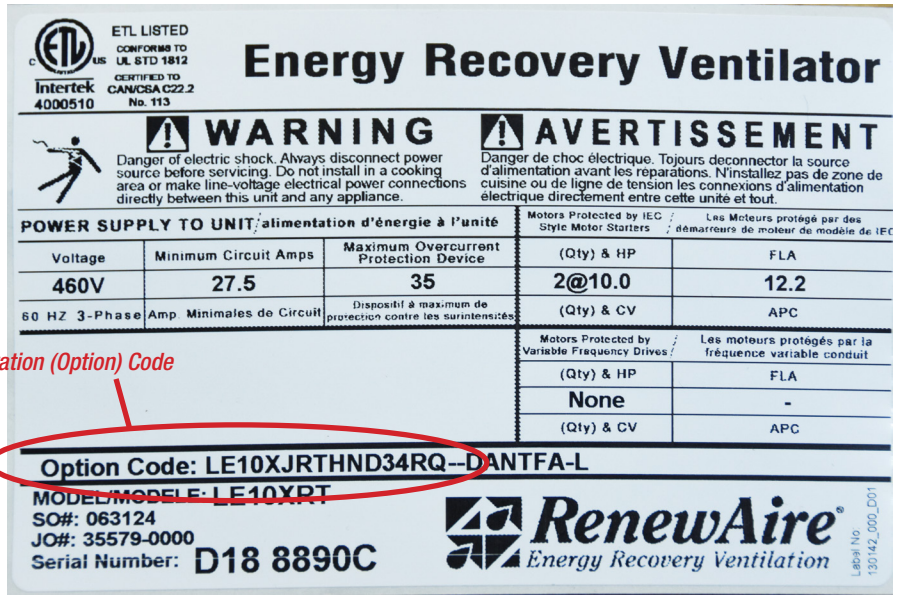
See separate SHIPPING & RIGGING manual for information on shipping considerations, rigging, moving and lifting the unit as separate modules or as a complete unit.

IMPORTANT

This manual contains space for maintaining written records of unit maintenance and / or repairs. See Section 11.9, Maintenance Records. At the time the ERV is commissioned, a maintenance schedule should be developed by the user to incorporate monthly and seasonal maintenance and include start-up maintenance tasks as described in this manual.

UNIT INFORMATION

In the unlikely event that factory assistance is ever required, information located on the unit label will be needed.



Configuration (Option) Code

Unit Label (typical)

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TABLE OF WIRING SCHEMATICS

TABLE OF ILLUSTRATIONS

CONFIGURATION CODE FOR LE8XIN MODELS

Note: Not all options are available on every model.

MODEL NUMBER	L	E				J										-	-								
DIGIT NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

Digits 1–5:	Model
"LE-6X"	
"LE-8X"	
"LE10X"	

Digits 7–8:	Location
"IN" = Indoor	
"RT" = Rooftop	

Digit 9:	Orientation
"V", "H" (Indoor Units)	
"V", "H", "R", "F" (Rooftop Units)	

Digit 10:	Vibration Isolation
"N" = Neoprene Isolators	
"S" = Spring Isolators	

Digit 11:	Wall Type
"S" = Single	
"D" = Double	

Digit 12:	Phase (See Restriction 2)
"1" = Single Phase	
"3" = Three Phase	

Digit 13:	Voltage (see Restriction 1)
"4" = 460V	
"5" = 208–230V	
"8" = 575V	

Digit 14:	FA Horsepower (see Restrictions 2, 3 & 4)
"D" = 3 HP Low Speed	
"F" = 3 HP Medium Speed	
"G" = 3 HP High Speed	
"J" = 5 HP Low Speed	
"K" = 5 HP Medium Speed	
"L" = 5 HP High Speed	
"M" = 7.5 HP Low Speed	
"N" = 7.5 HP Medium Speed	
"P" = 7.5 HP High Speed	
"Q" = 10 HP Medium Speed	
"R" = 10 HP High Speed	

Digit 15:	EA Horsepower (see Restrictions 2, 3 & 4)
"D" = 3 HP Low Speed	
"F" = 3 HP Medium Speed	
"G" = 3 HP High Speed	
"J" = 5 HP Low Speed	
"K" = 5 HP Medium Speed	
"L" = 5 HP High Speed	
"M" = 7.5 HP Low Speed	
"N" = 7.5 HP Medium Speed	
"P" = 7.5 HP High Speed	
"Q" = 10 HP Medium Speed	
"R" = 10 HP High Speed	

Digit 18:	Flow Control
"-" = No Isolation Damper	
"D" = Motorized Damper both Airstreams	
"E" = Motorized Damper EA or RA Airstream	
"F" = Motorized Damper FA or OA Airstream	

Digit 19:	Unit Control (see Restrictions 6 & 7)
"A" = Standard Unit Control Wiring	
"V" = Onboard VFD Both Airstreams	

Digit 20:	Disconnect
"N" = Non-Fused (Standard)	
"F" = Fused	

Digit 21:	Unit Control Enhancements
"T" = Transformer with Isolation Relay (Standard)	
"1" = Enhanced Controls	
"2" = Premium Controls	
"3" = Enhanced Controls with BACnet License	
"4" = Premium Controls with BACnet License	

Digit 22:	Filter Options (see Restriction 8)
"-" = None (Standard)	
"F" = Filter Monitor Both Airstreams	

Digit 23:	Flexible Packaging
"A" = Assembled (single piece flat bed)	
"M" = Modular (two pieces for enclosed trailer)	

Digit 24:	Paint and Customization
"-" = None	
"W" = White Paint	
"C" = Custom Paint	
"X" = Custom Unit	

Digit 25:	Safety Listing (see Restriction 5)
"L" = Listed	
"N" = Non-Listed	

NOTE: When the Configuration Code is printed on the unit label, it is identified as the "Option Code". See illustration on Page 3.

***NOTES:**
Digit 6 "J" = G5 Core Type. Digits 16 and 17 are not used in these models.

Restrictions:
1: Voltage Codes "4" & "8" only available with Phase Code "3" (Three-Phase).
2: Phase Code "1" only available in Motor Codes "D", "F", & "G".
3: Motor Code "P" (7.5 HP High Speed) not available in LE-6X.
4: Motor Codes "Q" and "R" (all 10 HP Speeds) not available in LE-6X & LE-8X.
5: Some units with Customization Code "X" are not safety listed.
6: Unit Control Code "V" only available with Motor Codes "G", "L", & "N" in LE-6X.
7: Unit Control Code "V" only available with Motor Codes "G", "L", "P", & "R" in LE-8X & LE10X.
8: Filter Code "F" not available with Unit Control Enhancements Codes "1", "2", "3", & "4". Filter Monitor is provided with those options.

LE 8XINH

Energy Recovery Ventilator
Standard

Intertek

INDOOR UNIT

LE8XINV shown

Energy Recovery Core is AHRI Certified®

AHRI CERTIFIED®
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Air-to-Air ERV
AHRI Standard 1060
Energy Recovery COMPONENT is certified. Actual performance in packaged equipment may vary.

SPECIFICATIONS

Ventilation Type:
Static plate, heat and humidity transfer

Typical Airflow Range: 2,000-8,800 CFM

AHRI 1060 Certified Core: Eight L125-G5

Standard Features:
TEFC Premium efficiency motors
Motor starters
Non-fused disconnect
24 VAC transformer/relay package
Cross-core differential pressure ports

Filters: Total qty. 16, MERV 8: 20" x 25" x 2"

Unit Weight:
Modular (per module) 1,214-1,672 lbs., varies by option(s)
Assembled (1-piece) 2,479-3,279 lbs., varies by option(s)

Max. Shipping Dimensions & Weight (on pallet):
Modular (2-modules) 100" L x 90" W x 78" H
Module 1 - 1,852 lbs., Module 2 - 1,789 lbs.
Assembled (1-piece) 200" L x 90" W x 78" H - 3,638 lbs.

Motor(s):
Qty. 2, Belt drive blower/standard motor packages with choice of adjustable sheaves for low, medium or high blower speed (see table below)

Options:
Spring vibration isolators
Onboard variable frequency drives (VFDs) - both airstreams
Shaft grounding ring on motors with VFDs
Fused disconnect
Integrated programmable controls - enhanced, premium
Class 1 low leakage motorized isolation dampers - OA, RA or both airstreams
Qty. 2, Factory mounted filter alarms - both airstreams
Double wall construction
Exterior paint - white, custom colors

Accessories:
Filters - MERV 13, 2" or 4"; MERV 8, 4" (shipped loose)
Automatic balancing damper - 4", 5", 6"
Digital time clock - wall mount (TC7D-W), in exterior enclosure (TC7D-E)
Carbon dioxide sensor/control - wall mount (CO2-W), duct mount (CO2-D)
IAQ sensor - wall mount (IAQ-W), duct mount (IAQ-D)
Motion occupancy sensor/control - ceiling mount (MC-C), wall mount (MC-W)
Smoke Detector - duct mount (SD-D)
Electric duct heater - EK series (1–175 kW)
Indirect gas-fired duct furnace - GH series (50-400 MBH), installed downstream of any fans

AIRFLOW PERFORMANCE

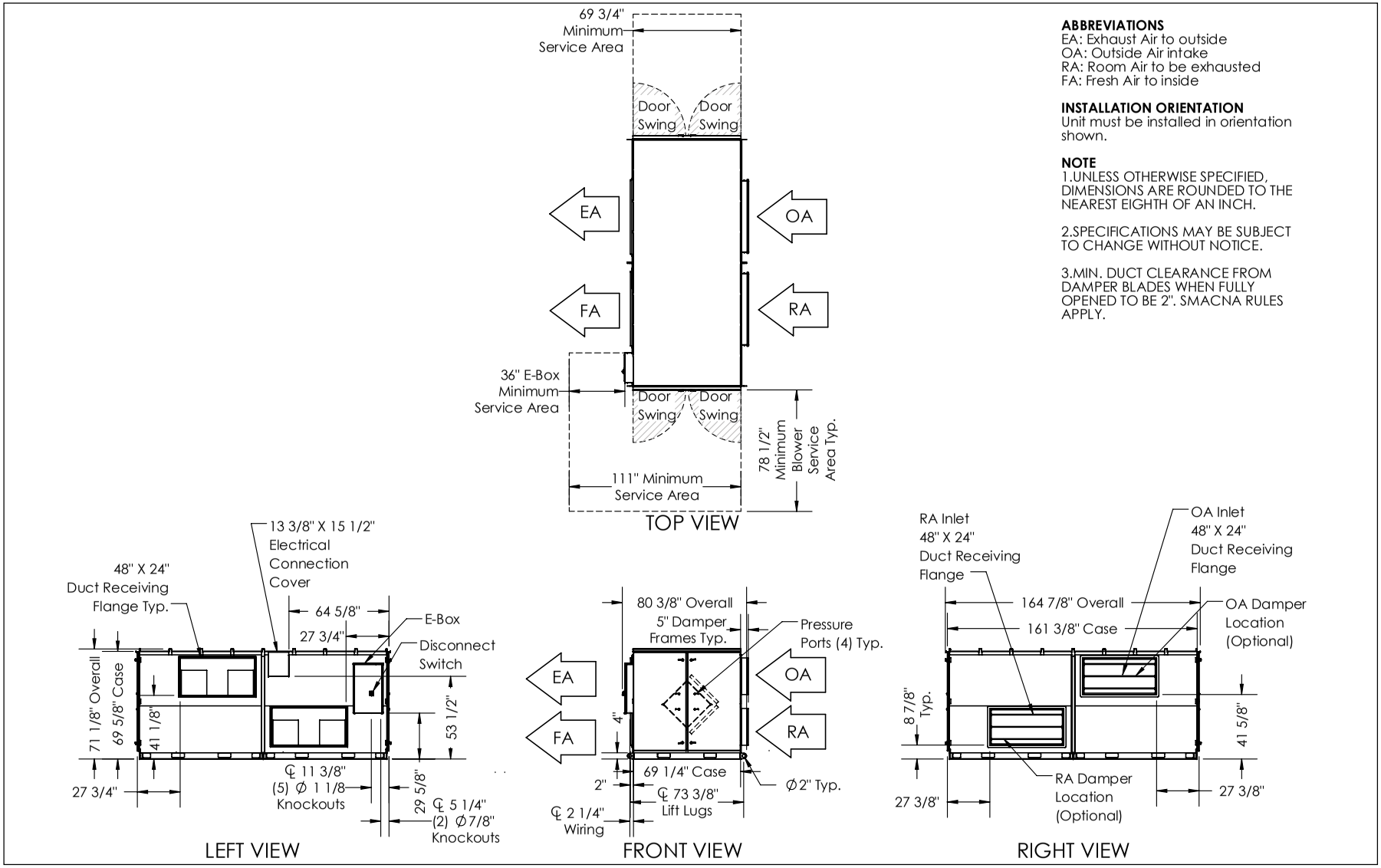
Airflow CFM	External Static Pressure (in.w.g.)																			
	0.00		0.25		0.50		0.75		1.00		1.25		1.50		1.75		2.00			
	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM		
							3 HP LOW SPEED				3 HP MED SPEED		3 HP HIGH SPEED							
2000							1.0	680	1.3	790	1.5	870	1.8	940	2.0	1000	2.2	1060		
3000					1.1	640	1.4	740	1.7	820	2.0	890	2.3	960	2.6	1020	2.9	1070		
4000					1.6	710	1.9	790	2.2	860	2.6	920	2.9	990	3.2	1040	3.6	1100	5 HP HIGH SPEED	
4500			1.5	660	1.8	740	2.2	810	2.5	880	2.9	940	3.2	1000	3.6	1060	4.0	1110		
5000			1.7	690	2.1	770	2.5	840	2.8	900	3.2	960	3.6	1020	4.0	1070	4.5	1130		
5500		1.7	650	2.0	730	2.4	800	2.8	860	3.2	930	3.6	980	4.0	1040	4.5	1090	4.9	1140		
6000		1.9	690	2.3	760	2.7	830	3.1	890	3.6	950	4.0	1010	4.5	1060	5.0	1110	5.5	1160	7.5 HP	
6250		2.1	710	2.5	780	2.9	840	3.3	910	3.8	960	4.3	1020	4.7	1070	5.2	1120	5.7	1170		
6500	3 HP LOW SPEED	2.3	720	2.7	790	3.1	860	3.6	920	4.0	980	4.5	1030	5.0	1080	5.5	1130	6.0	1180	7.5 HP HIGH SPEED	
6750		2.4	740	2.9	810	3.3	870	3.8	930	4.3	990	4.8	1040	5.3	1100	5.8	1140	6.3	1190		
7000		2.6	760	3.1	830	3.5	890	4.0	950	4.5	1000	5.0	1060	5.6	1110	6.1	1160	6.6	1200		
7250		2.8	780	3.3	850	3.7	910	4.3	960	4.8	1020	5.3	1070	5.8	1120	6.4	1170	7.0	1210		
7500		3.0	800	3.5	860	4.0	920	4.5	980	5.0	1030	5.6	1080	6.2	1130	6.7	1180	7.3	1220		
7750		3.2	820	3.7	880	4.2	940	4.8	990	5.3	1050	5.9	1100	6.5	1140	7.1	1190				
8000		3.5	840	4.0	900	4.5	960	5.1	1010	5.6	1060	6.2	1110	6.8	1160	7.4	1200				
8250	5 HP LOW SPEED	3.7	860	4.2	920	4.8	970	5.4	1030	5.9	1080	6.5	1120	7.1	1170						
8500		4.0	880	4.5	930	5.1	990	5.7	1040	6.3	1090	6.9	1140	7.5	1180						
8800		4.3	900	4.9	960	5.5	1010	6.1	1060	6.7	1110	7.3	1150								
				5 HP MED SPEED		7.5 HP LOW SPEED		7.5 HP MED SPEED													

Note: Airflow performance includes effect of clean, standard filter supplied with unit.

ELECTRICAL DATA

Standard Electrical Specifications							Optional Factory Installed VFD Electrical Specifications		
HP	Volts	HZ	Phase	FLA per motor	Min. Cir. Amps	Max. Overcurrent Protection Device	FLA per motor	Min. Cir. Amps	Max. Overcurrent Protection Device
3.0	208-230	60	Single	14.7-14	33.1	40	9.38-8.48	40.2	45
3.0	208-230	60	Three	9.38-8.48	21.1	25	9.38-8.48	23.2	25
	460	60	Three	4.24	9.5	15	4.24	10.5	15
	575	60	Three	3.3	7.4	15	3.3	8.2	15
5.0	208-230	60	Three	14.5-13.4	32.6	45	14.5-13.4	35.9	45
	460	60	Three	6.7	15.1	20	6.7	16.6	20
	575	60	Three	5.3	11.9	15	5.3	13.1	15
7.5	208-230	60	Three	21.0-19.0	47.3	60	21.0-19.0	52.0	60
	460	60	Three	9.5	21.4	25	9.5	23.5	25
	575	60	Three	7.6	17.1	20	7.6	18.8	20

LE8XINH Energy Recovery Ventilator Standard



AIRFLOW ORIENTATION
Available as shown in dimension drawing.

UNIT MOUNTING & APPLICATION
Must be mounted as shown. RA/EA airstream can be switched with OA/FA airstream unless certain options are selected.

RenewAire Energy Recovery Ventilation

LE 8XINV

Energy Recovery Ventilator
Standard

INDOOR UNIT

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SPECIFICATIONS

Ventilation Type:
Static plate, heat and humidity transfer

Typical Airflow Range: 2,000-8,800 CFM

AHRI 1060 Certified Core: Eight L125-G5

Standard Features:
TEFC Premium efficiency motors
Motor starters
Non-fused disconnect
24 VAC transformer/relay package
Cross-core differential pressure ports

Filters: Total qty. 16, MERV 8: 20" x 25" x 2"

Unit Weight:
Modular (per module) 918-1,984 lbs., varies by option(s)
Assembled (1-piece) 2,495-3,295 lbs., varies by option(s)

Max. Shipping Dimensions & Weight (on pallet):
Modular (2-modules) 100" L x 90" W x 78" H
Module 1 - 2,164 lbs., Module 2 - 1,493 lbs.
Assembled (1-piece) 200" L x 90" W x 78" H - 3,654 lbs.

Motor(s):
Qty. 2, Belt drive blower/standard motor packages with choice of adjustable sheaves for low, medium or high blower speed (see table below)

Options:
Spring vibration isolators
Onboard variable frequency drives (VFDs) - both airstreams
Shaft grounding ring on motors with VFDs
Fused disconnect
Integrated programmable controls - enhanced, premium
Class 1 low leakage motorized isolation dampers - OA, RA or both airstreams
Qty. 2, Factory mounted filter alarms - both airstreams
Double wall construction
Exterior paint - white, custom colors

Accessories:
Filters - MERV 13, 2" or 4"; MERV 8, 4" (shipped loose)
Automatic balancing damper - 4", 5", 6"
Digital time clock - wall mount (TC7D-W), in exterior enclosure (TC7D-E)
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Motion occupancy sensor/control - ceiling mount (MC-C), wall mount (MC-W)
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Electric duct heater - EK series (1–175 kW)
Indirect gas-fired duct furnace - GH series (50-400 MBH), installed downstream of any fans

AIRFLOW PERFORMANCE

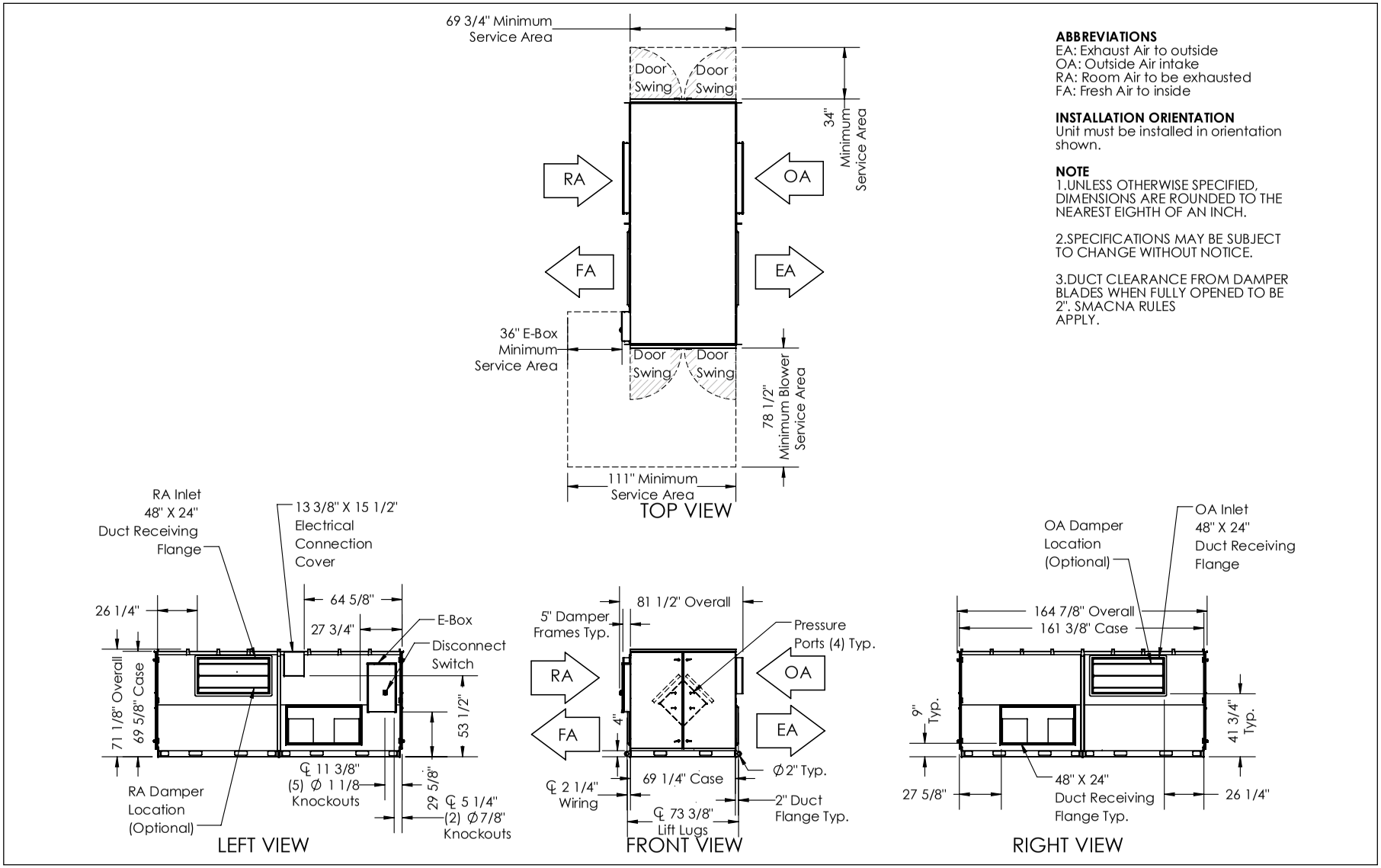
Airflow CFM	External Static Pressure (in.w.g.)																			
	0.00		0.25		0.50		0.75		1.00		1.25		1.50		1.75		2.00			
	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM		
							3 HP LOW SPEED				3 HP MED SPEED		3 HP HIGH SPEED							
2000							1.0	680	1.3	790	1.5	870	1.8	940	2.0	1000	2.2	1060		
3000					1.1	640	1.4	740	1.7	820	2.0	890	2.3	960	2.6	1020	2.9	1070		
4000					1.6	710	1.9	790	2.2	860	2.6	920	2.9	990	3.2	1040	3.6	1100		
4500			1.5	660	1.8	740	2.2	810	2.5	880	2.9	940	3.2	1000	3.6	1060	4.0	1110	5 HP HIGH SPEED	
5000			1.7	690	2.1	770	2.5	840	2.8	900	3.2	960	3.6	1020	4.0	1070	4.5	1130		
5500		1.7	650	2.0	730	2.4	800	2.8	860	3.2	930	3.6	980	4.0	1040	4.5	1090	4.9	1140		
6000		1.9	690	2.3	760	2.7	830	3.1	890	3.6	950	4.0	1010	4.5	1060	5.0	1110	5.5	1160	7.5 HP	
6250	3 HP LOW SPEED	2.1	710	2.5	780	2.9	840	3.3	910	3.8	960	4.3	1020	4.7	1070	5.2	1120	5.7	1170		
6500		2.3	720	2.7	790	3.1	860	3.6	920	4.0	980	4.5	1030	5.0	1080	5.5	1130	6.0	1180		
6750		2.4	740	2.9	810	3.3	870	3.8	930	4.3	990	4.8	1040	5.3	1100	5.8	1140	6.3	1190	7.5 HP HIGH SPEED	
7000		2.6	760	3.1	830	3.5	890	4.0	950	4.5	1000	5.0	1060	5.6	1110	6.1	1160	6.6	1200		
7250		2.8	780	3.3	850	3.7	910	4.3	960	4.8	1020	5.3	1070	5.8	1120	6.4	1170	7.0	1210		
7500		3.0	800	3.5	860	4.0	920	4.5	980	5.0	1030	5.6	1080	6.2	1130	6.7	1180	7.3	1220		
7750		3.2	820	3.7	880	4.2	940	4.8	990	5.3	1050	5.9	1100	6.5	1140	7.1	1190				
8000		3.5	840	4.0	900	4.5	960	5.1	1010	5.6	1060	6.2	1110	6.8	1160	7.4	1200				
8250	5 HP LOW SPEED	3.7	860	4.2	920	4.8	970	5.4	1030	5.9	1080	6.5	1120	7.1	1170						
8500		4.0	880	4.5	930	5.1	990	5.7	1040	6.3	1090	6.9	1140	7.5	1180						
8800		4.3	900	4.9	960	5.5	1010	6.1	1060	6.7	1110	7.3	1150								
				5 HP MED SPEED		7.5 HP LOW SPEED		7.5 HP MED SPEED													

Note: Airflow performance includes effect of clean, standard filter supplied with unit.

ELECTRICAL DATA

Standard Electrical Specifications							Optional Factory Installed VFD Electrical Specifications		
HP	Volts	HZ	Phase	FLA per motor	Min. Cir. Amps	Max. Overcurrent Protection Device	FLA per motor	Min. Cir. Amps	Max. Overcurrent Protection Device
3.0	208-230	60	Single	14.7-14	33.1	40	9.38-8.48	40.2	45
3.0	208-230	60	Three	9.38-8.48	21.1	25	9.38-8.48	23.2	25
	460	60	Three	4.24	9.5	15	4.24	10.5	15
	575	60	Three	3.3	7.4	15	3.3	8.2	15
5.0	208-230	60	Three	14.5-13.4	32.6	45	14.5-13.4	35.9	45
	460	60	Three	6.7	15.1	20	6.7	16.6	20
	575	60	Three	5.3	11.9	15	5.3	13.1	15
7.5	208-230	60	Three	21.0-19.0	47.3	60	21.0-19.0	52.0	60
	460	60	Three	9.5	21.4	25	9.5	23.5	25
	575	60	Three	7.6	17.1	20	7.6	18.8	20

LE8XINV Energy Recovery Ventilator Standard



ABBREVIATIONS
EA: Exhaust Air to outside
OA: Outside Air intake
RA: Room Air to be exhausted
FA: Fresh Air to inside

INSTALLATION ORIENTATION
Unit must be installed in orientation shown.

NOTE
1.UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE ROUNDED TO THE NEAREST EIGHTH OF AN INCH.

2.SPECIFICATIONS MAY BE SUBJECT TO CHANGE WITHOUT NOTICE.

3.DUCT CLEARANCE FROM DAMPER BLADES WHEN FULLY OPENED TO BE 2". SMACNA RULES APPLY.

AIRFLOW ORIENTATION
Available as shown in dimension drawing.

UNIT MOUNTING & APPLICATION
Must be mounted as shown. RA/EA airstream can be switched with OA/FA airstream unless certain options are selected.

RenewAire Energy Recovery Ventilation

1.0 OVERVIEW

1.1 DESCRIPTION

The LE8XIN ERV is a total enthalpy energy recovery ventilator. It recovers both sensible and latent energy from a building Exhaust Airstream and transfers that energy into a fresh Outdoor Air stream, which it then introduces into the building Supply Air. The result is a constant supply of fresh outdoor air in the Occupied Space with very little energy loss, enhancing Indoor Air Quality (IAQ). Each ERV has enthalpic cores through which both the EA and SA airstreams pass and each air stream has its own fan motor/blower. Each ERV has a high voltage control panel and a separate low voltage terminal strip for connection to user-specified control devices.

NOTE: This unit is an Energy Recovery Ventilator. It is commonly referred to throughout this manual as an "ERV".

Fan speed can be adjusted either by means of adjustable sheaves on the fan motors, by means of an optional VFD or a combination of microprocessor controls and a VFD. Several control options are offered for the unit. *See Section 2.7 Optional Control Accessories.*

1.2 FACTORY ASSEMBLY OF MODULES

The LE8XIN ERV is built as two modules that are to be assembled in the field. The customer may optionally order the modules to be assembled into one unit in the factory. *See Digit 23 of the Configuration Code.*

1.3 MODELS

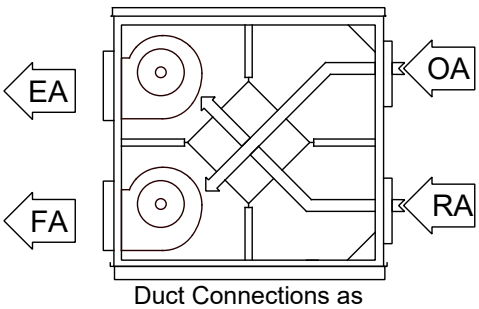
The LE8XIN is offered in two different models, the LE8XINH and the LE8XINV. The LE8XINH and the LE8XINV are both for indoor installations and differ from each other in the location of the air stream ducting. Each of the indoor models has an optional alternate duct connection. *See below.*

NOTE: There is also a rooftop version of this ERV, known as the LE8XRT. It has a separate manual.

1.3.1 LE8XINH

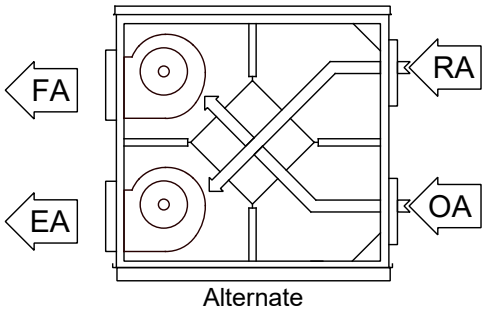
The LE8XINH features Outside Air (OA) and Room Air (RA) on one side of the unit and Exhaust Air (EA) and Fresh Air (FA) on the other side. The standard duct configuration and the optional alternate duct configurations are shown below.

RA = Room Air into unit
OA = Outside Air into unit
FA = Fresh Air to inside
EA = Exhaust Air to outside



LE8XINH Standard Duct Configuration

Room Air (RA) enters lower right side of unit. Exhaust Air (EA) exits upper left side of unit. Outside Air (OA) enters upper right side of unit. Fresh Air (FA) exits lower left side of unit.



LE8XINH Alternate Duct Configuration

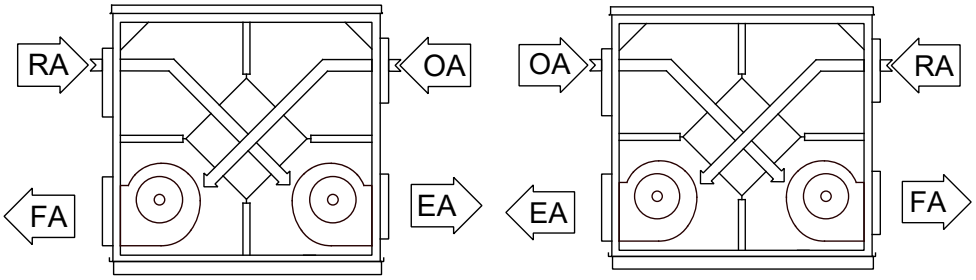
Room Air (RA) enters upper right side of unit. Exhaust Air (EA) exits lower left side of unit. Outside Air (OA) enters upper left side of unit. Fresh Air (FA) exits lower right side of unit.

The LE8XINH is always supplied from the factory in the Standard Configuration, as shown above. If the optional Alternate Duct Configuration is desired, specify FA and EA dampers and motor horsepower for the "opposite" airstreams. Keep this reversal in mind when making control connections. Also note that the addition of certain options to the unit may not permit selection of the alternate duct connections.

1.3.2 LE8XINV

The LE8XINV features Outside Air (OA) and Exhaust Air (EA) on one side of the unit and Room Air (RA) and Fresh Air (FA) on the other side. The standard duct configuration and the optional alternate duct configurations are shown below.

RA = Room Air into unit
OA = Outside Air into unit
FA = Fresh Air to inside
EA = Exhaust Air to outside



LE8XINV Standard Duct Configuration

Room Air (RA) enters upper left side of unit.
Exhaust Air (EA) exits lower right side of unit.
Outside Air (OA) enters upper right side of unit.
Fresh Air (FA) exits lower left side of unit.

LE8XINV Alternate Duct Configuration

Room Air (RA) enters upper right side of unit.
Exhaust Air (EA) exits lower left side of unit.
Outside Air (OA) enters upper left side of unit.
Fresh Air (FA) exits lower right side of unit.

The LE8XINV is always supplied from the factory in the Standard Configuration, as shown above. If the optional Alternate Duct Configuration is desired, specify FA and EA dampers and motor horsepower for the "opposite" airstreams. Keep this reversal in mind when making control connections. Also note that the addition of certain options to the unit may not permit selection of the alternate duct connections.

2.0 COMPONENT DESCRIPTION

2.1 CABINET CONSTRUCTION

The LE8XIN is available in either single-wall or double-wall construction. *See Digit 11 of the Configuration Code.*
The sheet metal exterior of the unit is constructed of 20 gauge galvanized steel, if left unpainted.
All units are lined with 2 inches of high density fiberglass insulation in the floor of the unit and 1 inch of insulation elsewhere. The insulation used has an R-value of 4.3 per inch.
All units are equipped with lifting lugs for hoisting by a crane and all units have integral openings located in the unit base for use of a fork lift.
Each unit is equipped with hinged access doors on both ends.

2.1.1 Cabinet Paint

Three options are offered for exterior finishes of the unit. *See Digit 24 of the Configuration Code.*
- None (galvanized)
- White paint
- Custom paint

2.2 FAN MOTORS

Each LE8XIN unit is equipped with 2 belt-drive blower / motor packages as standard. The motors are TEFC Premium Efficiency. Motor sizes are specified by the customer at time of order. *See Digits 14 and 15 of the Configuration Code*. The motor and blower assembly is mounted on rails with either neoprene vibration isolators or spring vibration isolators, depending on the option selected at time of order. *See Digit 10 of the Configuration Code.*

2.3 FAN SPEED CONTROL

Fan speed control is accomplished by either adjustable sheaves on the fan motors, by an optional VFD or a combination of a VFD and microprocessor controls. Units equipped with VFDs have fixed-diameter sheaves. *See Digit 19 of the Configuration Code.*

2.4 DAMPERS

Dampers are specified by the customer at time of order. Order options are:
- None
- Dampers both airstreams
- Damper EA/RA airstream
- Damper FA/OA airstream

See digit 18 of the Configuration Code.

2.5 ENTHALPIC CORE

Every LE8XIN ERV is equipped with eight L125-G5 enthalpic cores. All cores are similar in construction. *See Digit 6 of the Configuration Code.*

The cores used in all ERVs are 5th generation, static plate enthalpic cores. They are commonly referred to in this manual as “cores”.

2.6 FILTERS

Filters are an essential part of the ERV and the ERV should never be operated without properly installed filters. Filters are typically shipped loose inside the unit. The standard filter is a 2 inch thick MERV 8. Optionally available are 4 inch thick MERV 8, 2 inch thick or 4 inch thick MERV 13 filters.

2.6.1 Filter Monitors

LE8XIN ERVs can be ordered with optional filter monitors. When the monitor system detects increased pressure drop across the filters, it provides an indication that the air filters are partially clogged and require changing. *See digit 22 of the Configuration Code.* Note that units ordered with integrated programmable controls have filter monitoring supplied.

2.7 CONTROLS

RenewAire offers five different control options for the ERV, ranging from the basic factory-installed 24 VAC, 75 VA transformer with isolation relay to a Premium Integrated Microprocessor control package with BACnet license. *See digit 21 of the Configuration Code*. For further information on RenewAire microprocessor controls, *see the RenewAire Integrated Microprocessor Controls manual.*

When using the standard factory-installed transformer with an isolation relay, the ERV can be configured with a number of different control accessories that must be field-installed and wired to the low voltage terminal strip. *See Section 2.8 Optional Control Accessories.* These accessories serve as simple ON/OFF control devices. Example: The digital time clock will simply activate and deactivate the unit at user-selected times.

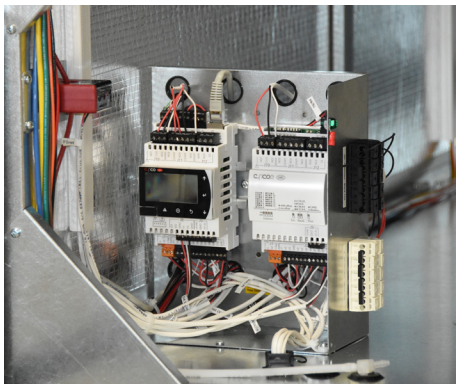
When optional VFDs are ordered and there is no microprocessor controller, the optional CO2 sensor or the optional IAQ sensor may be wired directly to the VFD, producing modulation of the unit. The sensors must be wired in accordance with instructions provided with the factory-installed VFD package.

2.7.1 Integrated Microprocessor Controls

RenewAire offers an integrated microprocessor controller as an option for ERVs. It is available in either an Enhanced or a Premium version. See the RenewAire Integrated Microprocessor Controls Manual for further information. The controller is a multi-function device that monitors both the operation of the ERV and air conditions in the Occupied Space. It evaluates conditions such as temperatures, air flows and air quality and then modulates the operation of the ERV to meet owner-specified set points. The controller can function as a stand-alone device or it can also be connected to a BMS.

RenewAire Microprocessor Controller

RenewAire Microprocessor Controller Expansion Board

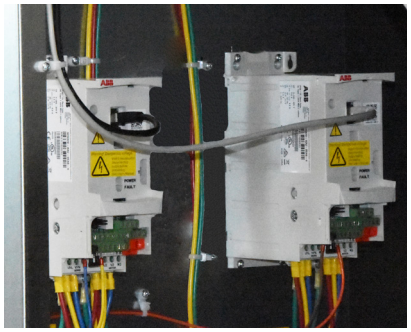


Premium Microprocessor Controls Installed

2.7.2 Variable Frequency Drive

Optional VFD control of the fans provides continuous modulation of fan speed. VFDs can be ordered for either the EA or the FA fan, or for both. The VFDs can be used as stand-alone speed controllers or they can be used in conjunction with either a BMS or with the Integrated Microprocessor Controls package. *See digit 19 of the Configuration Code.*

Any fan motor that is controlled by a VFD will have a fixed sheave instead of a variable sheave.



VFDs Mounted Inside ERV

VFD Keypads Found in E-Box

Further information on the optional VFDs is to be found in the VFD manual supplied with the unit. If optional microprocessor controls are also ordered, the VFD manual is not included.

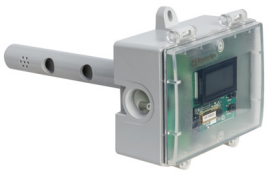
2.8 OPTIONAL CONTROL ACCESSORIES

RenewAire offers a number of control accessories as options that are to be field-installed and wired directly to the ERV low voltage terminal strip. When wired to the ERV low voltage terminal strip, each device functions as an ON/OFF switch for the ERV but they will not modulate the ERV. All of the optional control accessories shown in this section may also be ordered as part of an integrated microprocessor controls package. If they are ordered as part of a controls package, they are to be wired according to instructions provided with the Integrated Microprocessor Controls package. When they are used as part of a controls package, they will modulate the ERV or function as ON/OFF devices, depending on user programming.

2.8.1 Carbon Dioxide Control

RenewAire offers two different types of CO2 sensors as optional control accessories: room/wall mount and duct mount. These sensors can be wired directly to the low-voltage terminal strip and function as ON/OFF switching controllers or can modulate ERVs equipped with VFDs. *See the description in Section 2.7 Controls.* The CO2 sensor uses 4.44 VA.

Carbon Dioxide Sensor, Room/Wall Mount



Carbon Dioxide Sensor, Duct Mount

2.8.2 Digital Time Clock

A digital time clock is offered as an optional control device. It is available in either a panel mount or an exterior enclosure. Time clocks can be wired directly to the low voltage terminal strip and function as ON/OFF switching controllers. The time clock draws 2.4 VA.

Time clocks are typically not used when VFDs are installed. VFDs have an internal time clock.

Time Clock, Panel Mount

Time Clock, Exterior

2.8.3 Indoor Air Quality Sensor (IAQ)

An Indoor Air Quality Sensor can be purchased to continuously monitor indoor air quality based on levels of total VOCs and function as an ON/OFF switch for the ERV or can modulate ERVs that are equipped with a VFD. *See the description in Section 2.7 Controls.* It uses 0.84 VA.

IAQ Sensor, Room/Wall Mount

IAQ Sensor, Duct Mount

2.8.4 Motion Occupancy Control

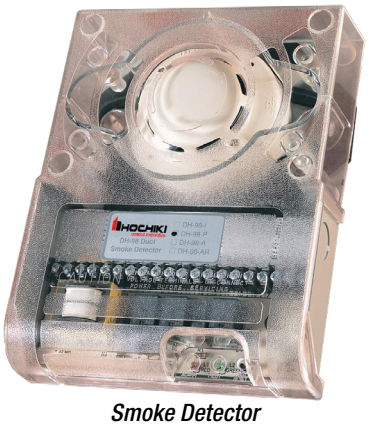
A motion occupancy sensor is available as an optional control device in either ceiling mount or wall mount styles. These sensors can be wired directly to the low voltage terminal strip in the ERV and function as ON/OFF controllers. It uses 0.7 VA.

Ceiling Mount Occupancy Sensor

Wall Mount Occupancy Sensor

2.8.5 Smoke Detector

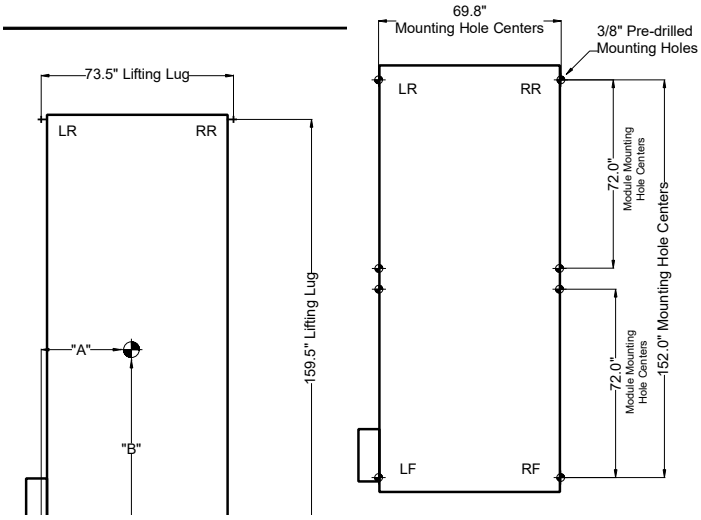
A duct-mounted smoke detector is available to monitor for smoke and act as an ON/OFF switch for the ERV. It draws 2.3 VA.



Smoke Detector

3.0 UNIT WEIGHTS

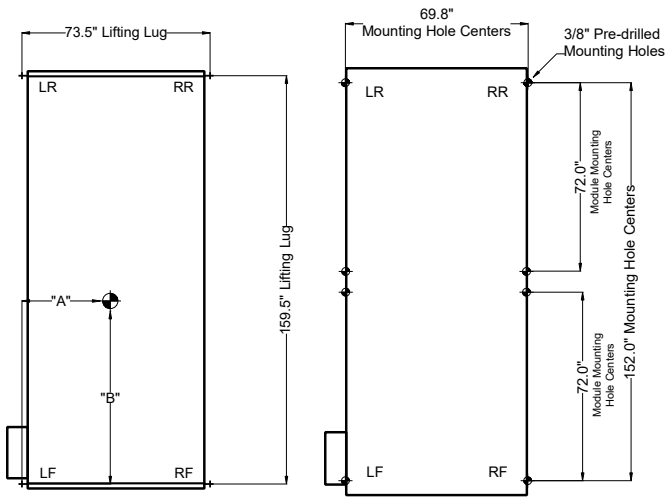
3.1 LE8XINH CORNER WEIGHTS



BASIC UNIT WEIGHTS (lbs.)					
Motors	UNIT	LF	LR	RR	RF
3 HP	2480	732	637	517	594
5 HP	2493	724	693	526	550
7.5 HP	2611	769	737	541	564
ADDITIONAL WEIGHTS FOR OPTIONS (lbs.)					
Options	UNIT	LF	LR	RR	RF
Double Wall	524	131	131	131	131
VFDs	12	10	1	0	1
RA or EA Damper	66	3	1	20	42
OA or FA Damper	66	1	3	42	20
Total Selected Weights					
Add the additional weights for options to the Basic Unit weights determined by motor size to determine Unit and Corner weights for a specific unit.					
Center of gravity: A=32" B=80" (+/- 2")					

LE8XINH Corner Weights

3.2 LE8XINV CORNER WEIGHTS



BASIC UNIT WEIGHTS (lbs.)					
Motors	UNIT	LF	LR	RR	RF
3 HP	2495	727	524	521	723
5 HP	2509	733	524	522	730
7.5 HP	2627	787	530	527	783
ADDITIONAL WEIGHTS FOR OPTIONS (lbs.)					
Options	UNIT	LF	LR	RR	RF
Double Wall	524	131	131	131	131
VFDs	12	10	1	0	1
RA or EA Damper	66	20	42	3	1
OA or FA Damper	66	1	3	42	20
Total Selected Weights					
Add the additional weights for options to the Basic Unit weights determined by motor size to determine Unit and Corner weights for a specific unit.					
Center of gravity: A=32" B=75" (+/- 2")					

LE8XINV Corner Weights

4.0 SHIPPING / RECEIVING / HANDLING

All ERVs are palletized and then shipped by common carrier. It is the installer's / customer's responsibility to coordinate delivery and properly handle the shipment during unloading and storage. RenewAire also provides a manual for shipping, rigging, lifting and assembly of LE units that is available online at www.renewaire.com.

⚠ CAUTION

RISK OF DAMAGE TO ERV CABINET

Whenever the ERV is rigged for hoisting, ALL LIFTING LUGS must be used. If the ERV modules have already been joined, all eight lifting lugs must be used to avoid wracking or twisting the cabinet. See the shipping, rigging, lifting and assembly manual for detailed information.

4.1 UNIT WEIGHTS / DIMENSIONS

4.1.1 Unit Dimensions and Weight

For unit dimensions and weight, see the RenewAire product submittal. Also *see Sections 3.3 and 3.4 Corner Weights* in this manual.

4.1.2 Shipping Dimensions and Weight

For unit shipping dimensions and weight, see the RenewAire product submittal. Also *see Sections 3.3 and 3.4 Corner Weights* in this manual.

4.2 RECEIVING

Upon delivery of the ERV, inspect it carefully for shipping damage and completeness. Verify the presence of any accessories such as external hoods that are to be field-installed or filters that are shipped loose. If shipping damage is discovered, take digital pictures and note the visible damage on the shipping manifest. Notify your RenewAire dealer immediately.

4.3 RIGGING

For rigging instructions, refer to the LE manual for shipping, rigging, lifting and assembly that is also available online at www.renewaire.com.

4.4 HANDLING AND STORAGE

ERVs that are delivered to a job site should ideally be placed and installed immediately. If the ERV cannot be installed immediately, the unit should be protected from the weather, either by moving it indoors or by covering with tarps. When placing the ERV on the ground, the placement area should be flat and level. Take care to avoid twisting or wracking of the unit.

5.0 UNIT PLACEMENT

5.1 SOUND ATTENUATION OUTSIDE THE BUILDING

The exhaust hood is the primary source of noise outside the building. When practical, orient the exhaust air hood on external building walls to point away from houses or public areas.

5.2 PLACEMENT CAUTIONS

ERVs are typically placed in a location specified by others. There are a number of situations that may demand relocation:

- The outside air intake must be at least 10’ away from exhausts such as dryer vents, chimneys, furnace and water heater exhausts or other sources of contamination or carbon monoxide.
- Do not locate outside air intake where vehicles may be serviced or left idling.
- Never locate the outside air inlet inside a structure.
- Do not install the unit inside a garage or parking structure.

NOTICE

This ERV must be installed in compliance with SMACNA guidelines and all applicable local building codes.

5.3 SERVICE CLEARANCES

See Section 3.0 Unit Drawings for required service clearances.

6.0 INSTALLATION

6.1 ASSEMBLY OF MODULES

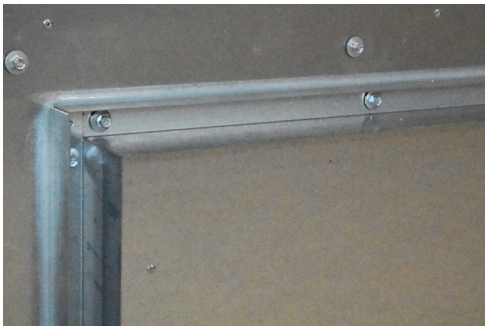
Many ERVs are ordered pre-assembled at the factory. For those units that are to be assembled in the field, follow the assembly instructions found in the accompanying LE Models: Shipping, Rigging, Lifting, Assembly manual, to be found in the documentation package shipped with each unit and available online at www.renewaire.com.

6.2 DUCT CONNECTIONS

Ducts inside a building that are connected to the outside must be insulated with a sealed vapor barrier on both the inside and the outside of the insulation.

All duct connections to the sides of the unit are equipped with double-flanged duct connections. These allow for connection of ductwork insulated on the inside or the outside, or for installation of lined ducts.

If the unit has factory-installed dampers on the sides of the unit, no duct flanges are provided at the dampers. Ducts can be attached directly to the dampers.



Double-Flange Duct Connection

6.3 INDOOR SOUND ATTENUATION

Duct stiffness:
Make sure the ductwork at the unit outlets is stiff enough to resist the flexing and resulting booming noise associated with system start-up and shutdown, as well as the turbulent flow conditions at the blower outlets.

In general, provide smooth transitions from the ERV outlets to the duct. The ducts connecting to the outlets should be straight for a sufficient distance , with gradual transitions to the final duct size. These guidelines are consistent with SMACNA recommended duct layout practices for efficient and quiet air movement.

Radiated noise:
LE units are insulated with high density fiberglass. This provides significant attenuation of radiated sound from the unit itself.

The outlet ducts can be significant sources of radiated sound, as well. The FA duct should be insulated for sound control. This insulation should start at the unit. At a minimum, the first ten feet of duct should be insulated. All parts of the FA and RA ducts located in a mechanical space with noise-generating equipment should also be insulated for sound control, both to minimize sound radiation out of the FA and RA ducts and also to control sound radiation into both ducts.

6.4 ELECTRICAL CONNECTIONS

⚠ WARNING

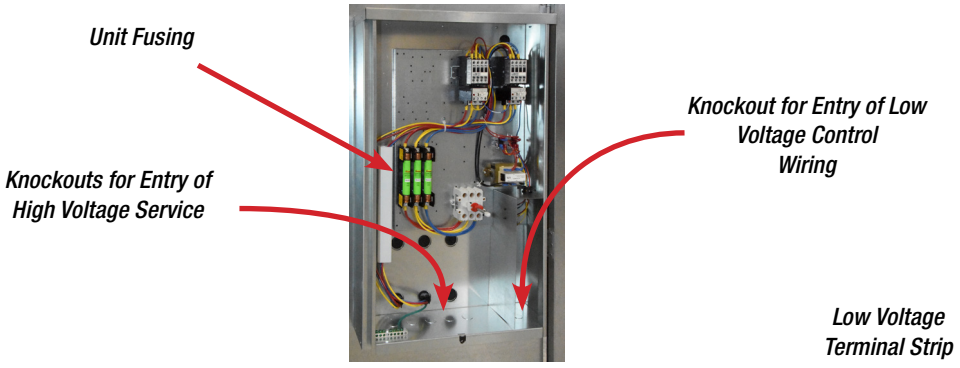
ARC FLASH AND ELECTRIC SHOCK HAZARD

Arc flash and electric shock hazard. Disconnect all electric power supplies, verify with a voltmeter that electric power is off and wear protective equipment per NFPA 70E before working within electric control enclosure. Failure to comply can cause serious injury or death.
Customer must provide earth ground to unit, per NEC, CEC and local codes, as applicable.
Before proceeding with installation, read all instructions, verifying that all the parts are included and check the nameplate to be sure the voltage matches available utility power.
The line side of the disconnect switch contains live high-voltage.
The only way to ensure that there is NO voltage inside the unit is to install and open a remote disconnect switch and verify that power is off with a volt meter. Refer to unit electrical schematic.
Follow all local codes.

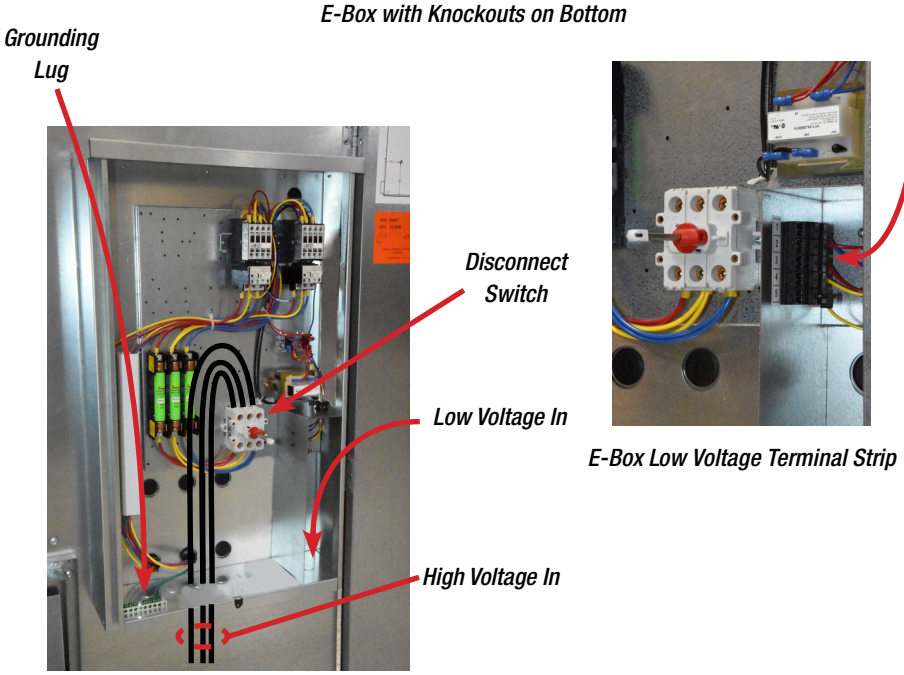
6.4.1 Factory-Recommended Electric Service Entry

The underside of the E-Box has a set of knockouts for installation of high voltage and low voltage wiring. High voltage wiring is to go through the bottom of the E-box and be terminated on the terminals located on the top of the disconnect switch.

Every ERV has an electrical junction box, commonly referred to as an "E-Box".



E-Box with Knockouts on Bottom



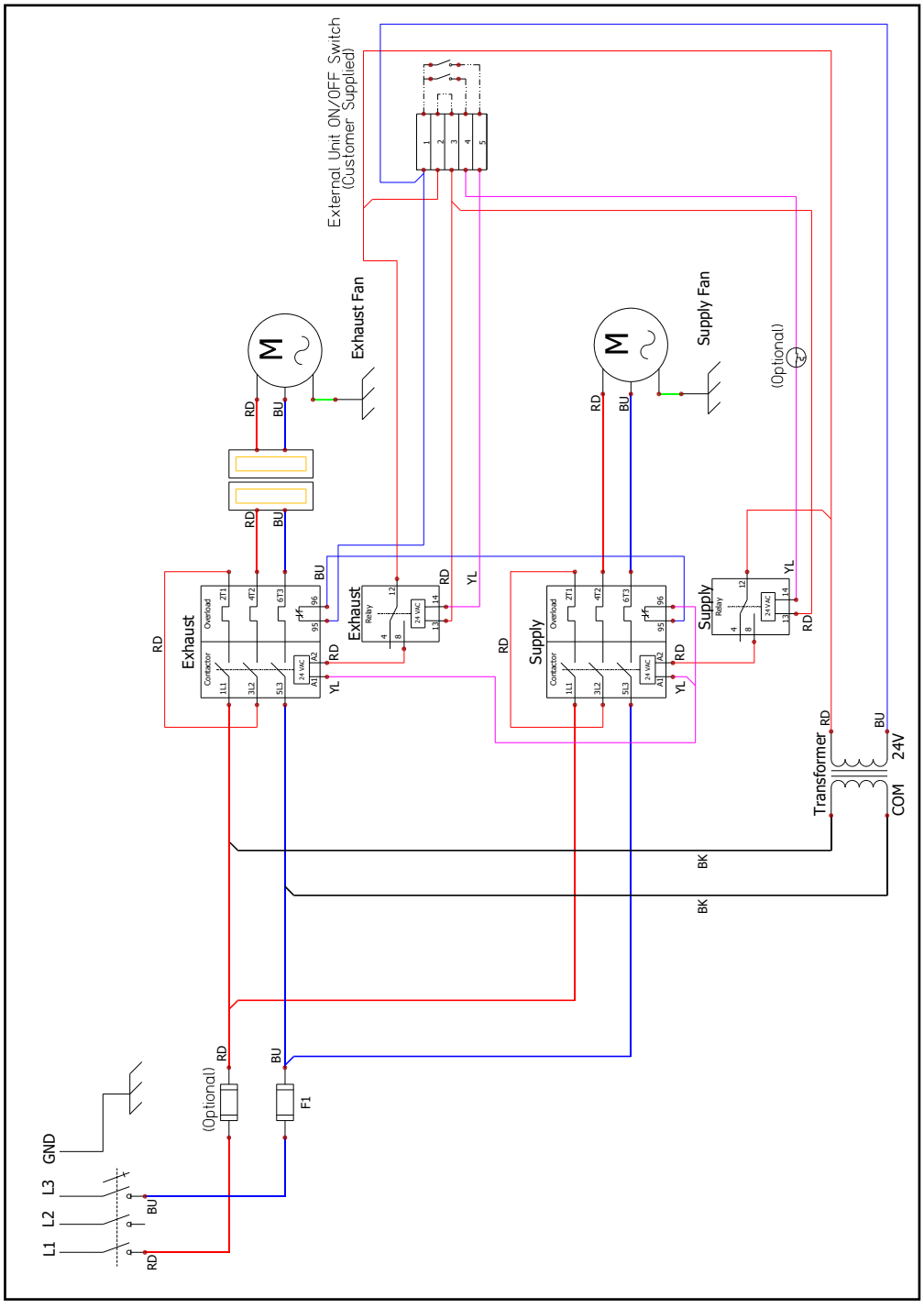
E-Box Main Disconnect Switch

E-Box Low Voltage Terminal Strip

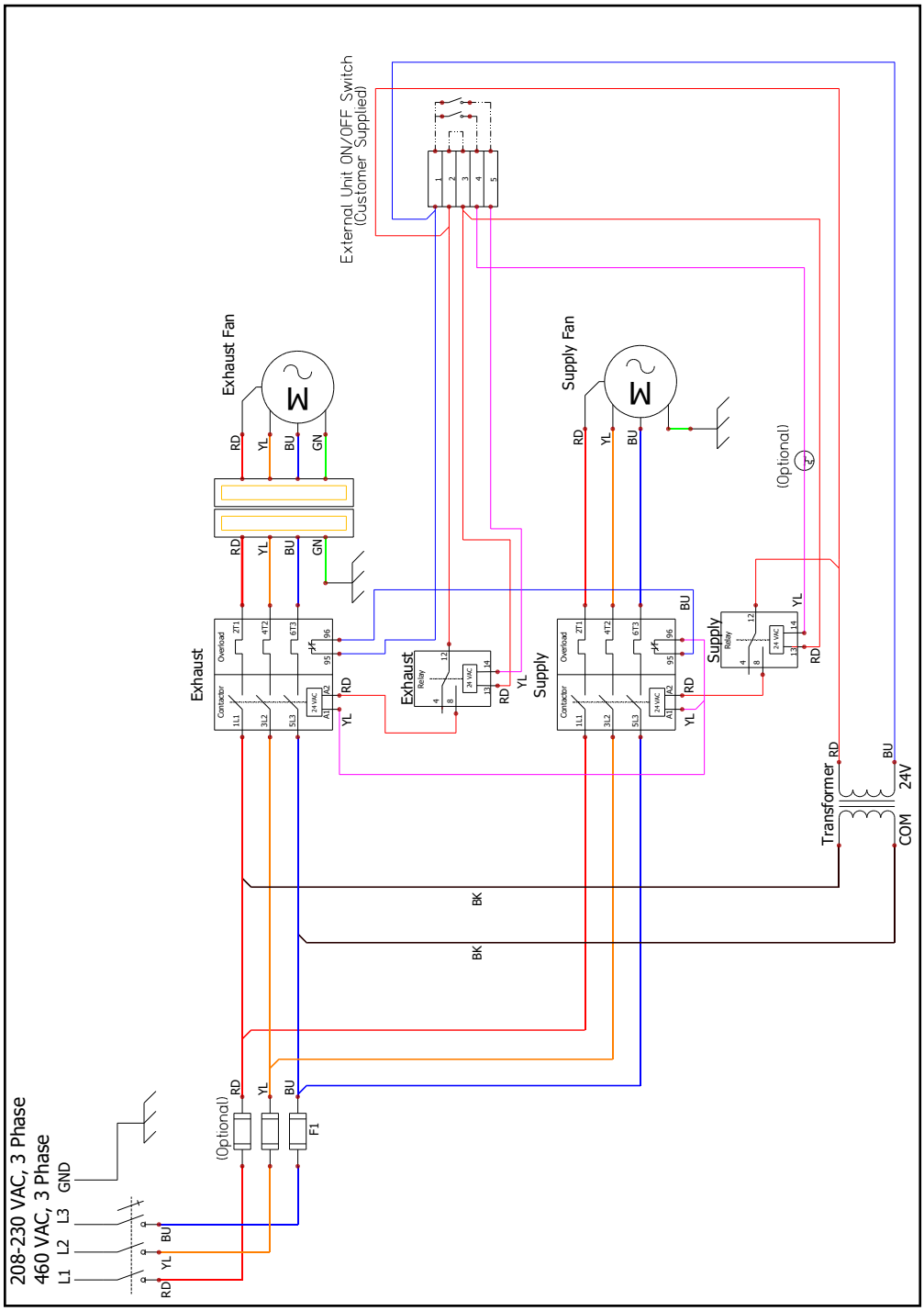
LE8XIN ERV

6.5 WIRING SCHEMATICS

This schematic is for reference only. The wiring schematic attached to the unit is as-built. Contact RenewAire Customer Service for wiring diagrams of specific configurations.



Single Phase Wiring Schematic



This schematic is for reference only. The wiring schematic attached to the unit is as-built. Contact RenewAire Customer Service for wiring diagrams of specific configurations.

Three Phase Wiring Schematic

6.6 CONTROL CONNECTIONS

Control wiring is to enter the E-Box through a knockout at the bottom of the E-Box and is then terminated on the low voltage terminal strip. *See Section 6.5 Wiring Schematics* for further information.

7.0 CONTROL CONTRACTOR INFORMATION

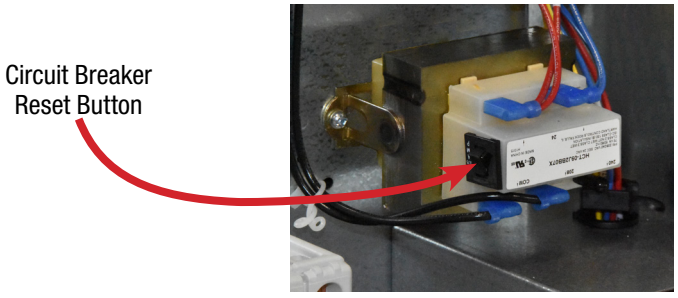
Prior to connection and activation of any external controls, the ERV is to be tested for correct operation. Verify that all Pre Start-Up and Start-Up steps as described in Sections 8 and 9 of this manual have been completed.

7.1 24 VAC CLASS II POWER SUPPLY

This unit is equipped with a Class II 24 VAC power supply transformer (see image below) that operates the unit's contactors, dampers and / or relays. The ERV's 24 VAC, 75VA power supply can also be used to power externally installed control systems requiring less than 8 VA of power. More power may be available on units not equipped with factory-installed dampers. The transformer is located in the unit's E-Box.

The unit's power supply system includes isolation relays with contact ratings as low as 50 mA (1.2 VA). It is also possible to operate the isolation relays with 24 VAC power from an external source.

A built-in circuit breaker on the 24 VAC transformer prevents damage to the transformer and other low voltage components in the event of a short-circuit or overload. The transformer itself is designed to fail safely in extreme cases.



24 VAC Power Supply Transformer

Transformer Specifications:
Nominal output voltage under load: 24 VAC
Typical output voltage at no load: 29 - 31 V
Minimum contact rating for connected control device: 50 mA (1.2 VA)
Circuit breaker trip point: 3.75 A

Limits of Class II Power Output:
Control devices drawing a total of 8 VA may be connected to the blue and red wires. More than one device may be connected. Observe the following wire guidelines:

Wire Gauge	#22	#20	#18	#16	#14	#12
Circuit Length	100'	150'	250'	400'	700'	1000'

Resetting the Circuit Breaker:
If the transformer is subjected to excessive load or a short circuit, the integral circuit breaker will trip.

Shut off the primary-side power to the unit and remove the excessive load or the short circuit. The circuit breaker can be reset about 15 seconds after it trips.

⚠ CAUTION

RISK OF DAMAGE TO POWER SUPPLY AND CONNECTED COMPONENTS

UNITS WITH 230 VAC POWER SOURCE:
The ERV is shipped from the factory with the transformer set for 208 VAC primary power. If the actual power source is 230 VAC, move the black primary-side lead from the transformer's "208 V" terminal to the transformer's "230 V" terminal.

Connect only to components intended for use with a 24 VAC power supply.

Do not interconnect the unit's Class II power supply with an external Class II power supply.

Do not use undersized low voltage wiring to connect this device. Observe the wire gauge / wire length chart on the previous page.

Do not overload the power supply. Verify that the combined load of all devices connected to the power supply do not exceed 8 VA.

Any external 24 VAC power supply connected to this device must be connected to the terminals as shown on the wiring schematics. Connect only Class II power to the terminals on this unit.

This unit is not designed to accept analog control signals unless the unit is equipped with Integrated Microprocessor controls and/or VFDs.

This unit is not designed to communicate directly with a Building Management System (BMS) such as BACnet unless the unit is equipped with microprocessor controls. The unit can be controlled by powered or non-powered contacts operated by any kind of control system.

Units that are equipped with VFDs or optional Integrated Microprocessor Controls can communicate directly with BACnet systems.

7.2 MOTOR PROTECTION

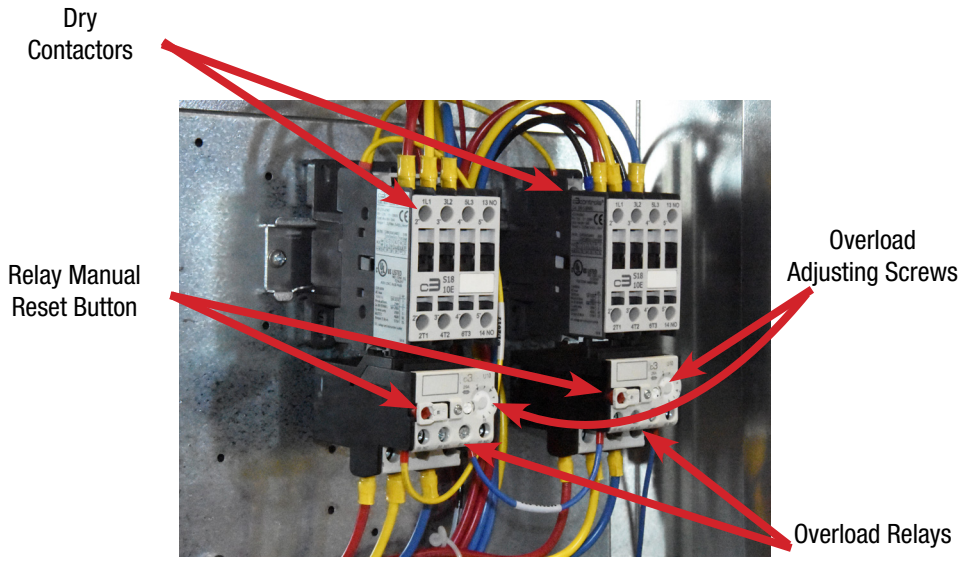
7.2.1 Units Equipped with Motor Starters

Units that are not equipped with optional VFD drives are supplied with IEC-style motor starters to operate the motors and to protect the motors against overload. IEC-style motor starters use overload relays (see image on following page) to detect excessive current and interrupt the control circuit that engages the motor's contactors.

The overload relays are sized to Full Load Amp (FLA) rating of the protected motor and can be adjusted to trip the control circuit at a specific setting within a range. Overload relays should initially be set at the FLA rating of the controlled motor. See the unit rating label. If the overload relays trip at unit start-up, they can be adjusted to trip at no higher than 115% of the motor's FLA rating.

NOTE: Units are factory-wired so that if one blower motor is shut down due to starter overload, the second motor will also be shut down.

Terminals 96 and 97 on the overload relays and terminals 14 and 13 of the contactors are Normally Open (NO) dry contacts and may be used to signal that the contactors are closed and / or that the overload relays have tripped.



Dry Contactors and Overload Relays

7.2.2 Units With Variable Frequency Drives (VFDs)

In units equipped with a VFD(s), motor overload protection is provided by the VFD. See separate documentation supplements.

NOTE: Some units are equipped with only one VFD, which controls a single motor. The second motor (without a VFD) is then protected by an overload relay as described before.

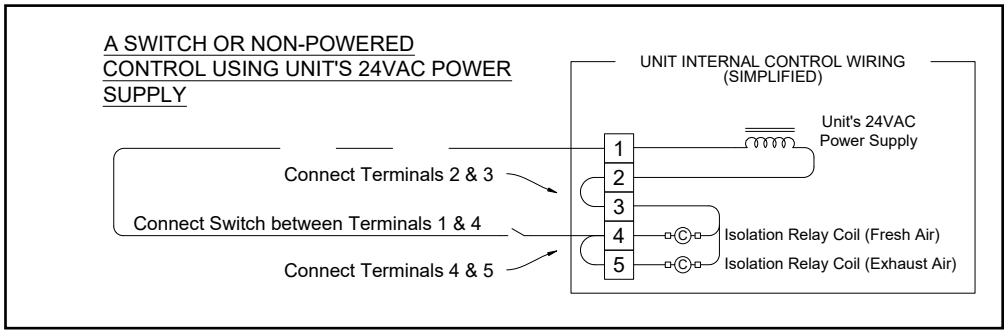
7.3 EXTERNAL CONTROL CONNECTIONS

External control wiring is to be terminated on the low voltage terminal strip in the E-Box as shown in Section 6.4.1 of this manual.

7.3.1 Single 2 - Wire Control, Unpowered

Use the schematic below if the control requires no power from the ERV and acts as a simple ON / OFF switch. The control must not supply any power to the ERV.

- Install jumper (provided) between terminals 2 and 3.
- Connect the control's contacts to terminals 1 and 4 to operate the isolation relays for OA / FA blower.
- Install jumper between terminals 4 and 5 to operate the ERV's isolation relays for the RA / EA blower.



Single 2-Wire Control, Unpowered

7.3.2 Single 2 - Wire Control, Separate Power

Use the schematic shown in Section 7.3.1 if the control is on a separate power supply with no power present at control output.

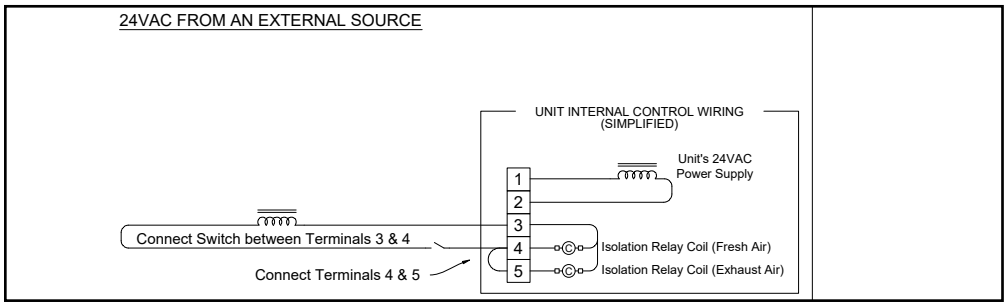
7.3.3 Control Sending 24 VAC "ON" Signal

Use the schematic below if a 24 VAC "ON" signal is to be sent from an external power source to the ERV.

- Verify that a jumper is NOT installed between terminals 2 and 3.

24 VAC can be safely applied to terminals 3 and 4 to operate the ERV's isolation relay for the OA / FA blower.

- Install a jumper (provided) between terminals 4 and 5 to operate the ERV's isolation relay for the RA / EA blower.
- Supply only 24 VAC (not VDC) from a Class II power source.

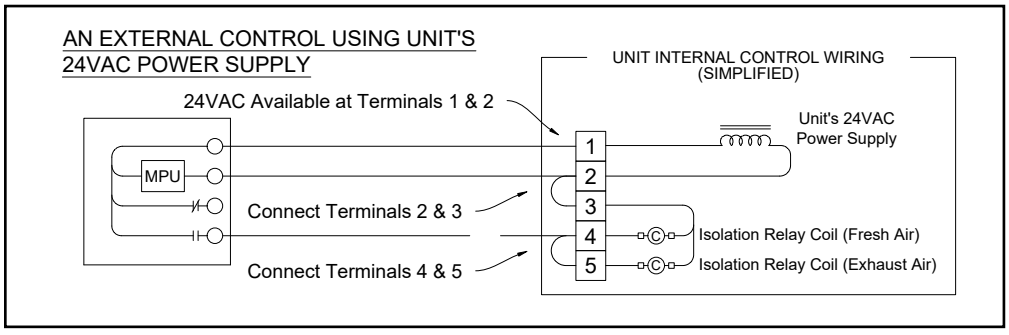


24 VAC From External Source

7.3.4 External Control Using ERV Power Supply

Use the schematic below if external control is to be applied using 24 VAC from the ERV power supply.

- External control system must not draw more than 8 VA.
- Install jumper (provided) between terminals 2 and 3.
- Connect the switched output of the control to terminal 4 to operate the ERV's isolation relay for the OA / FA blower.
- Install jumper between terminals 4 and 5 to operate the ERV's isolation relay for the RA / EA blower.

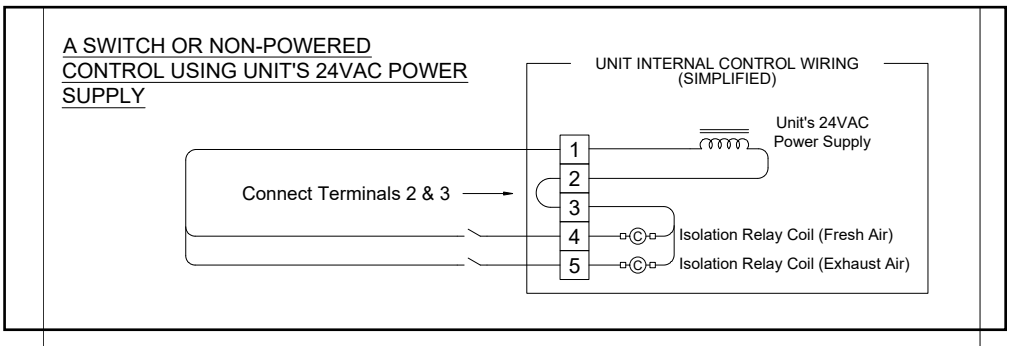


External Control Using ERV 24 VAC

7.3.5 Control with 2 Non-Powered Relay Contacts

Use the following schematic if the external control system provides no voltage or current at its output contacts.

- Install jumper between terminals 2 and 3.
- Connect one side of each of the output contacts to terminal 1.
- Connect the other side of the output contact to terminal 4 in order to control the FA blower.
- Connect the other side of the output contact to terminal 5 in order to control the EA blower.

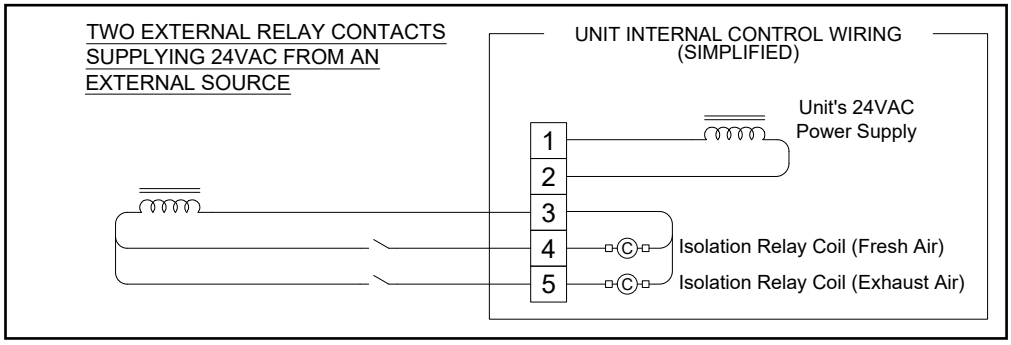


Control with 2 Non-Powered Relay Contacts

7.3.6 Control with 2 "ON" Signals, External Power

Use the following schematic if the controller is sending two 24 VAC "ON" signals from an external power source.

- Verify there is NO jumper between terminals 2 and 3.
- Apply one 24 VAC signal to terminals 3 and 4 to operate the isolation relay for the FA blower.
- Apply the second 24 VAC signal to terminals 3 and 5 to operate the isolation relay for the EA blower.
- Verify that the polarity of each wire connected to terminal 3 is the same.



Control with 2 "ON" Signals, External Power

7.4 SEQUENCE OF OPERATION

Basic Sequence of Operation (SOO)

Operating sequences are different, depending on whether the unit is:

- Controlled for simultaneous blower operation, as in Sections 7.3.1 through 7.3.4 in this manual, or controlled for independent blower operation, as Sections 7.3.5 and 7.3.6.
- Factory-provided with OA - FA Damper, EA - RA Damper, or both;
- Factory-provided with VFD control of one or both motors.
- Simultaneous or Independent Blower Operation:

When set up for Simultaneous Blower Operation, both blowers should respond to a call for unit operation at the same time, unless only one of the blowers is controlled by a VFD or unless only one of the blowers is in an airstream with a Damper.

When set up for Independent Blower Operation, each blower will follow an independent operating sequence.

Dampers

When one or both of the airstreams are factory-provided with Dampers, the control sequence for that airstream's blower is as follows:

- External control calls for operation and damper immediately starts to open.
- After about 30 seconds, damper is open fully and the damper actuator end switch closes.
- The damper actuator end switch completes a low-voltage circuit that turns on the appropriate blower, either through the blower's motor starter, or through the blower's VFD.
- If that blower is controlled by a motor starter, it starts immediately

Variable Frequency Drives (VFDs)

When one or both of the blowers are factory-provided with VFDs, the response of the Blower Motor depends on the VFD's settings and connected control signal.

Typically, the VFD will be connected to a control device which provides a variable analog signal (0-10VDC or 4-20mA) as an input to the VFD. The VFD must be set to respond to this input with appropriate motor operating speeds.

Alternately, the VFD might be controlled by a Time Clock, which defines different operating periods (e.g. "occupied" and "unoccupied"). Each period calls on one of up to three different VFD presets to provide different motor speeds in different operating periods.

8.0 PRE START-UP

8.1 VERIFY VOLTAGES

Using a voltmeter, test the input voltages as supplied to the disconnect switch. Refer to Digit 13 of the unit Configuration Code to find the rated voltage. The supplied voltage must be within +/- 10% of the rated voltage.

8.2 VERIFY TRANSFORMER WIRING

Units with 230VAC power source are shipped with the transformer wired for 208VAC. If the unit is receiving 230VAC, make sure the black primary-side wire on the transformer's 208V terminal has been moved to the 230V terminal.

8.3 INSPECT FILTERS

Filters must be installed prior to fan start-up. Filters must be clean and butted tightly against each other, allowing no air circulation around them. A total of four filter spacers must be installed with the foam gasketing positioned toward the filter. One filter retainer is used for each set of four filters in LE8X units, positioned as shown in the installation instructions.

8.4 INSPECT FOAM GASKETING

Proper installation of foam gasketing inside the ERV is critical to proper operation. Inspect the gasketing to make sure that it is present where indicated in the installation instructions and that it is in good condition. There should be no gaps allowing air movement around the cores or the filters.

8.5 INSPECT MOTOR VIBRATION ISOLATORS

The optional spring-type motor vibration isolators are adjustable in height. The height adjustment is for holding the fan assembly sled at a uniform height. Verify that the fan sled height is uniform at all the spring-loaded vibration isolators if they are present.

8.6 INSPECT BELTS AND VERIFY SHEAVE ALIGNMENT

Prior to shipment from the factory, sheaves are carefully aligned and belts are tensioned. Inspect the motor mount to verify that it did not shift during shipment of the unit. Verify that belts are still properly tensioned and that they track correctly in the sheaves.

8.7 INSPECT FAN

Prior to start-up, the fan should be rotated by hand to make sure that the impeller is not rubbing anywhere and that it turns freely.

8.8 INSPECT AND CLEAN THE INTERIOR

During the construction and installation phases of a project, dust, dirt and debris will often accumulate inside a unit. Thoroughly clean the inside of the unit by vacuuming and/or wiping metal surfaces with a damp rag.

8.9 INSPECT DUCTWORK CONNECTIONS

Ducts attached to the ERV must be firmly attached, sealed and supported in accordance with installation instructions and SMACNA guidelines.

9.0 START-UP

9.1 VERIFY CORRECT FAN ROTATION DIRECTION

The first time power is applied to the fan motors, it should be just a brief pulse so that the fans will begin spinning. Verify that the fans are turning the correct direction. If a fan is turning the wrong direction, it will be because a three-phase power source has been improperly connected.

9.2 BASIC OPERATIONAL CHECK

PREPARE FOR TESTING

- Disconnect power to the unit at the branch circuit supply. Lock and tag the disconnect. Place the unit disconnect switch (on the front of the E-Box) in the OFF position.
- Remove the cover to the E-Box.
- Confirm that internal wiring from the Unit E-Box to the Exhaust Air Blower is complete.
- If optional Exhaust Air or Fresh Air Outside Air Dampers are provided, confirm that internal wiring from the Unit E-Box to the Damper Actuators has been connected.
- Confirm Overload Relays on the Motor Starters are set correctly.
- At the low-voltage terminals, install a jumper between terminals 2 & 3. Install jumpers between terminals 1 and 4, and between 4 and 5. This will call for unit operation as soon as power is supplied to the unit. *See wiring schematics in Section 6.5 of this manual.*
- Reinstall the E-Box cover. If the ERV has any VFDs, remove the upper portion of the E-Box cover, which houses the VFD keypads.
- Turn on the branch circuit supply power at the fuse box.

ERVs that are equipped with dampers should be tested at start-up to verify that the dampers will open fully.

- Turn the Disconnect Switch on the face of the E-Box to the ON position.

9.2.1 Motor Starter Units

Units without dampers - both motors should begin running immediately.

Units with dampers - dampers should begin opening immediately. After about 30 seconds, damper actuator end switches will engage and provide a call for operation to the appropriate motor starter. The controlled motor should then start.

- Turn Disconnect Switch on the face of the E-Box to the OFF position. Disconnect power at the branch circuit supply. Lock and tag the disconnect.

- Disconnect jumper from terminal 1 to terminal 4, but otherwise leave the jumpers in place for the convenience of following contractors.

9.2.2 VFD Units

- Turn the Disconnect Switch on the face of the E-Box to the ON position.

Units without dampers - if there is only one VFD, the motor that is not controlled by a VFD should begin to run immediately. Any motor controlled by a VFD will not start until the VFD is activated.

- To activate a controlling VFD, wait for a display to appear on the keypad(s), located near the top of the E-Box.
- On each keypad, press the HAND button. The controlled motor should begin running at a slow speed.
- On each keypad, press the UP / DOWN hard buttons to set the motor speed as desired.

- Verify that the motor's amps are no greater than the motor FLA as listed on the nameplate.

Units with dampers – the dampers should start opening immediately. After about 30 seconds the damper actuator end switches will engage.

- Turn Disconnect Switch on the face of the E-Box to the OFF position. Disconnect power at the branch circuit supply. Lock and tag the disconnect.
- Disconnect jumper from terminal 1 to terminal 4, but otherwise leave the jumpers in place for the convenience of following contractors.

9.3 ADJUST MOTOR SHEAVES

Many units are equipped with adjustable sheaves on the fan motors. Any motor that is not controlled by a VFD will have an adjustable sheave. All adjustable sheaves are pre-set at the factory to turn the fans at a slower speed in order to reduce the possibility of over-amping at start-up . The sheaves have been turned out 2 full turns and they must be re-set after start-up to achieve the desired fan speed. Changes to a building's air handling system or even changes in the Occupied Space may demand a change in fan speed. Using the pressure test ports on the cabinet doors, check the pressure drop across the core in the OA/FA and RA/EA airstreams and determine if the motor sheaves need to be readjusted. When checking the core pressure drop, make sure that clean filters are in place. *See Sections 11.7 and 11.8* for more detailed adjustment information.

10.0 MAINTENANCE

RenewAire ERVs are built to operate with minimal maintenance. After unit commissioning, the primary areas of attention are the air filters and periodic lubrication of the fan motors and fan bearings.

10.1 MAINTENANCE 24 HRS. AFTER START-UP

24 hours after unit start-up:

- Readjust the tension on the motor drive belts.
- In new installations, check the air filters since they will often collect dust, dirt and debris at time of start-up.

10.2 MAINTENANCE 30 DAYS AFTER START-UP

After 30 days of operation:

- Tighten all electrical connections, paying special attention to VFD wiring (if present).
- Readjust the tension on motor drive belts.
- Check the air filters as part of the normal monthly maintenance.

10.3 MAINTENANCE SCHEDULE

Experience on the part of the service person is the most important issue in establishing a maintenance schedule. There will be times of the year when frequent inspection of the filters will be required, such as spring and summer when there may be pollen, dust, dirt or debris from budding trees and bushes that can clog the filters. Also *see Section 11.9 Maintenance Records* in this manual.

10.4 FILTERS

Filter cleanliness and replacement is the most important and frequent maintenance issue. Dirty filters will cause an immediate reduction in operating efficiency of the ERV. Normally, filters should be inspected and changed when they are dirty. Paper filters are not to be cleaned, they are to be replaced. In general, if a filter looks dirty, replace it. The best indication of dirty filters is to check the pressure drop across the filter banks with an optional filter monitor. If it is not possible to check the pressure drop, the rule of thumb would be to change the filters every two months.

Clean Filter Pressure Drop Table (in. w.g.)

LE8X Airflow (CFM)	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
2" MERV 8	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.16	0.17
2" MERV 13	0.04	0.05	0.06	0.07	0.08	0.10	0.11	0.12	0.14	0.15	0.17	0.18	0.20	0.22
4" MERV 8	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.07	0.08	0.09
4" MERV 13	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.12	0.13	0.14	0.16	0.17	0.19
NOTE: Pressure drop of clean 2" MERV 8 filters is included in the Unit Performance Ratings Table														

10.5 ELECTRIC MOTOR MAINTENANCE

The most important issues in motor maintenance are:

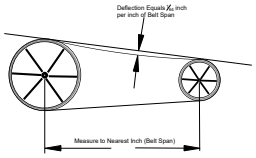
- Belt condition and belt tension
- Sheave condition
- Motor cleanliness
- Motor lubrication

10.5.1 Belt Tension

Premature or frequent belt failures can be caused by improper belt tension (either too loose or too tight) or misaligned sheaves. Abnormally high belt tension or drive misalignment will cause excessive bearing loads and may result in failure of the fan and / or motor bearings. Conversely, loose belts will cause squealing on start-up, excessive belt flutter, slippage and overheated sheaves. Both loose and tight belts can cause fan vibration.

When replacing belts on multiple groove drives, all belts should be changed to provide uniform drive loading. Do not pry belts on or off the sheave. Loosen belt tension until the belts can be removed by simply lifting the belts off the sheaves. After replacing belts, ensure that slack in each belt is on the same side of the drive. Belt dressing should never be used.

The proper belt setting is the lowest tension at which the belts will not slip under peak load operation. For initial tensioning, set the belt deflection at 1/64-inch for each inch of belt span (measured half-way between sheave centers). Example: If the belt span is 16 inches, the belt deflection should be 16/64 inch, or 1/4 inch (using moderate thumb pressure at mid-point of the drive). Check belt tension two times during the first 24 hours of operation and periodically thereafter.



Fan Belt Tensioning

10.5.2 Sheave Condition

Do not install new belts on worn sheaves. If the sheaves have grooves worn in them, they must be replaced before new belts are installed.

10.5.3 Motor Cleanliness

Removing dust and grease buildup on the motor housing assists proper cooling. Never wash-down the motor with high pressure spray.

10.5.4 Motor Lubrication

High efficiency motors have unique maintenance requirements that vary from motor to motor. Many smaller horsepower motors have sealed bearings that do not require periodic greasing. Larger horsepower motors come equipped with grease fittings. Before greasing any motor, consult the motor manufacturer's web site to determine the correct maintenance and greasing schedule.

Each motor manufacturer specifies the frequency of maintenance and the amount and type of grease to use on the bearings. Do not mix different types of grease. Check the manufacturer's web site for each specific motor.

LE8XIN ERV

The high-efficiency electric motors used in RenewAire ERVs require greater care than what was needed years ago. Improper bearing lubrication can result in:

- Failed bearings due to under-lubrication
- Catastrophic motor failure due to over-lubrication

Smaller motors often have permanently lubricated bearings and do not require any lubrication at all.

In all cases, read the motor manufacturer's operating and maintenance instructions for each motor.

Before attempting to lubricate any motor,

- Identify the type of grease that the motor manufacturer recommends for each motor.
- Either purchase a new grease gun that is to be used only for these motors or else clean any old grease from an existing grease gun.
- Calibrate the grease gun so that you know the actual amount of grease being pumped out with each stroke. Tag the grease gun with this information.
- Determine how much grease is needed for each bearing and establish a lubrication schedule.

Do not use general purpose or EP type greases. Do not mix different types of grease.

Different types of greases are formulated for different application requirements such as shaft speed and shaft size, operating temperature and the load on the bearing. Grease is basically a carrier for specific oils that are needed for each application. Greases are made with different thickeners and these thickeners are often incompatible with other types of thickeners, so once the correct grease has been determined, you must continue with that grease.

Determine the correct grease:
First examine the data plate on each motor. The data plate may have lubrication instructions that supersede instructions that are found online.

Go to the motor manufacturer's web site and find the operating instructions for each motor, referencing the frame and motor type.

The most commonly used motors in RenewAire ERVs are made by Baldor. If you are viewing this document on a computer connected to the internet, click the button below to go directly to their web site.

http://www.baldor.com/support/

For other motor manufacturers, verify the manufacturer name and go to their site manually.

Determine a lubrication schedule:
The same web site will have information needed for determining a lubrication schedule. Some of the needed information will change periodically, such as the duty cycle of the motor. Example: a fan used for heated Supply Air may only run in the winter and its lubrication needs are not the same in the summer.

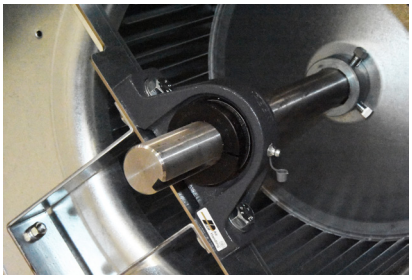
Record the manufacturer's lube requirements in Section 11.6 Maintenance Records. Show the lube requirements separately for each fitting (there may be a different lube requirement for front or rear bearings).

Greasing process:

- Run the motor and get it up to normal operating temperature.
- Make sure the grease gun has the correct type of grease.
- Clean the areas around the grease fill fittings.
- Grease the bearing with the correct amount of grease as shown on the lubrication schedule you have determined. Inject the grease very slowly to avoid damaging the seals.
- Remember that a grease gun can produce up to 15,000 pounds of pressure, which can blow out seals or pump the grease to areas where it should not go.
- If you are re-greasing when the motor is out of service, run the motor until the bearing is at normal operating temperature. This will allow for thermal expansion of the grease.
- After greasing, run the motor for a while (at least five minutes) to allow the motor to discharge any excess grease.

10.6 PILLOW BLOCKS

LE model ERVs use pillow block bearings to support the fan shaft. Maintenance requirements for pillow blocks depend on a combination of shaft size and shaft RPMs. The fan shaft diameter is typically 1.44 inches.



Fan Pillow Block

To grease pillow blocks, the fan should be at normal operating speed and temperature prior to greasing.

- The recommended interval for greasing of pillow block bearings is 3 - 6 months, based on 1,000 to 2,000 hours of operation.
- The recommended grease is Mobil Polyrex. If Mobil Polyrex is not available, use an NGLI#2 grease that is compatible with a lithium thickener, mineral base oil and a temperature range of -10 to + 260 degrees F.
- The recommended amount of grease is 2 grams.
- Clean the grease fitting (zerk) before attaching the grease gun.
- Grease slowly and stop when the first sign of grease seepage from the bearing's seals is observed.
- Leave a small amount of grease on the zerk as a protective coating.
- In all cases, Industry Best Practices should be observed. Maintain a record of every lubrication and the type of lubricant used.

When cores are removed from the ERV, they should be immediately protected from accidental damage, water, high heat or flames.

10.7 ENTHALPIC CORE MAINTENANCE

The enthalpic core media is a fibrous material that must be kept clean at all times. As a minimum, cores should be cleaned once per year.

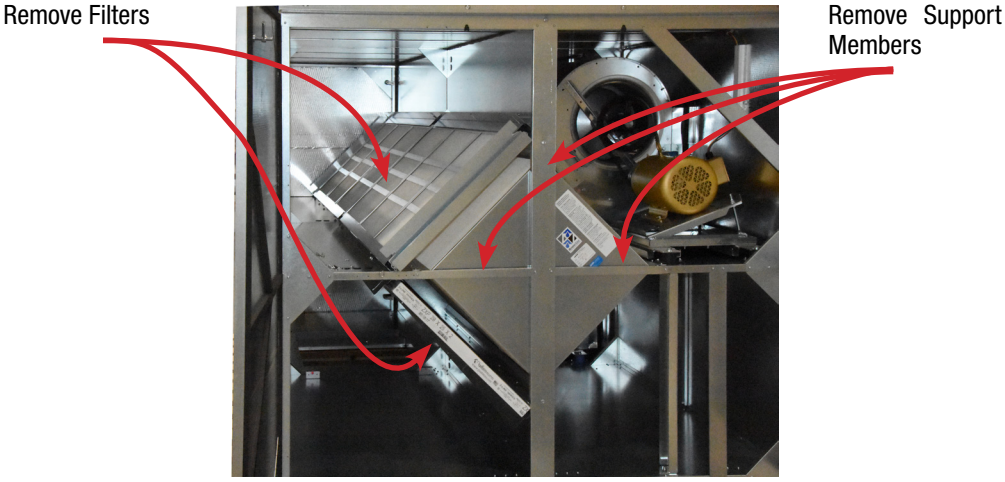
- DO NOT WASH OR ALLOW THE ENTHALPIC CORES TO GET WET.
- DO NOT EXPOSE THE ENTHALPIC CORES TO HIGH HEAT OR FLAMES.
- DO NOT DIRECT COMPRESSED AIR AT THE CORE MEDIA.
- DO NOT REMOVE THE ENTHALPIC CORES FROM THE ERV UNLESS NECESSARY.
- USE CAUTION WHEN WORKING AROUND THE ENTHALPIC CORES. DO NOT DROP TOOLS OR OTHER OBJECTS ON THE CORES, DO NOT BUMP OR TWIST THE CORES.

To access enthalpic cores for cleaning, remove the air filters.

To clean enthalpic cores, all exposed surfaces must be vacuumed with an attachment having long, soft bristles. The greatest buildup of dirt and dust will normally be on the leading 1 - 2 inches of the inlet side (closest to the air filters).

10.7.1 Removal of Enthalpic Cores

There are two sets of four cores in each LE8X ERV. Four cores are in the front module and four are in the back module. Each set of three cores can be removed for major motor or blower repairs by opening the access doors on the end of the module, removing the filters to provide better access and then the support members that secure the cores. Carefully pull out the cores one at a time.

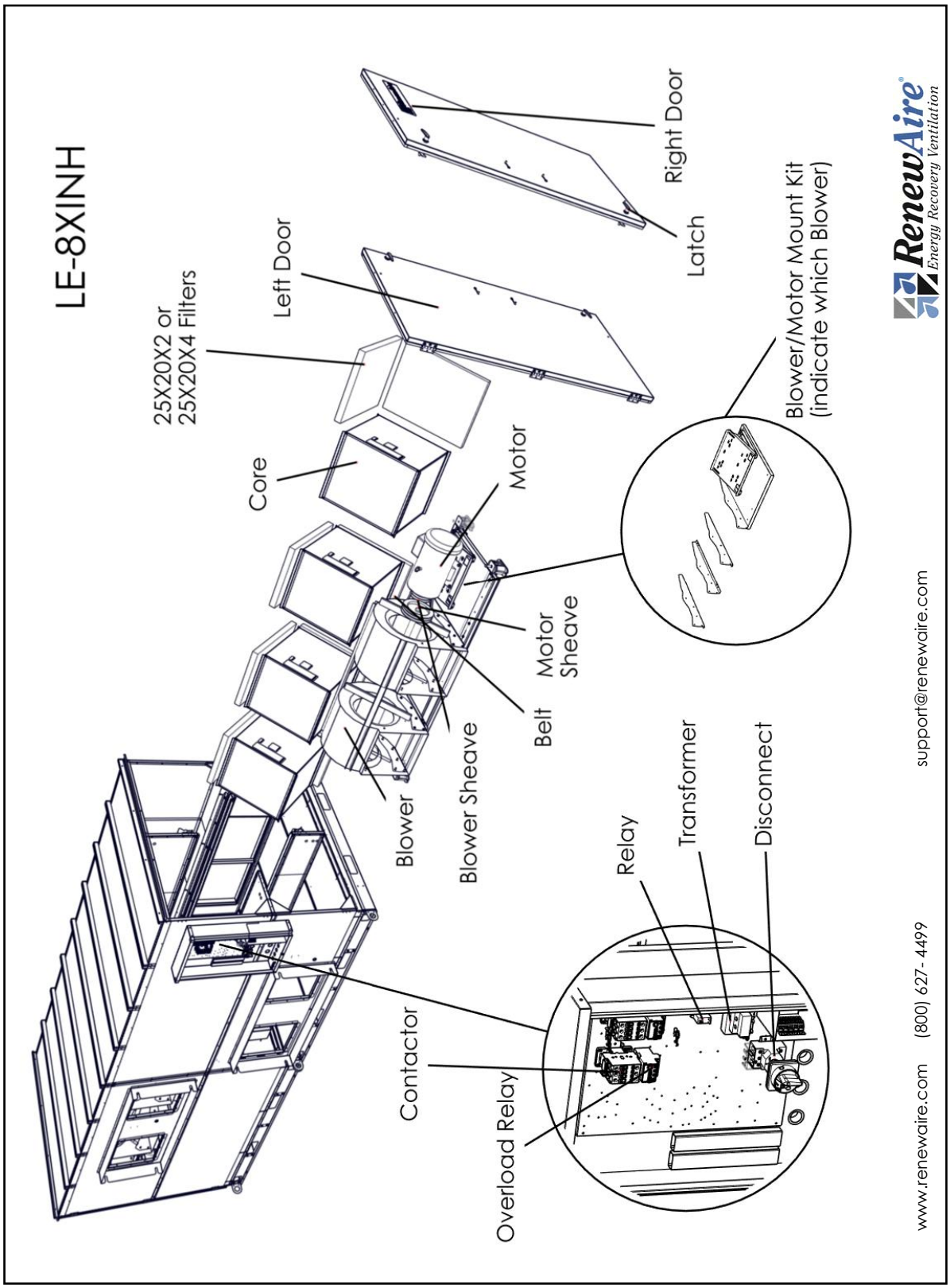


End View of Core Support Assembly

10.7.2 Reinstallation of Enthalpic Cores

To reinstall the cores, reverse the process shown above.

10.8 SERVICE PARTS



LE8XINH and LE8XINV Service Parts

11.0 MAINTENANCE REFERENCE

11.1 PLENUM DIVIDERS

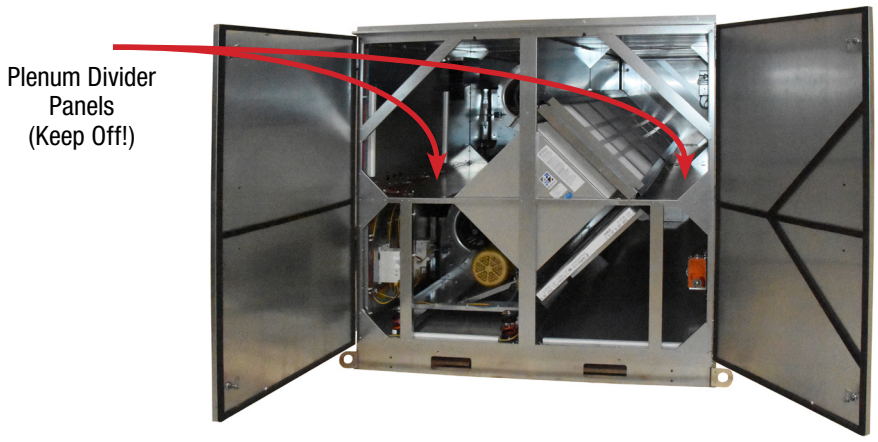
⚠ CAUTION

RISK OF DAMAGE TO PLENUM DIVIDERS

Whenever working within the ERV cabinet, do not place significant weight on the plenum dividers. They are not intended to be load-bearing.

Inside each ERV, there are two vertical and two horizontal metal panels that separate the plenums. These panels are not intended to be load-bearing. When performing maintenance on the ERV, do not crawl on or place significant weight on these divider panels!

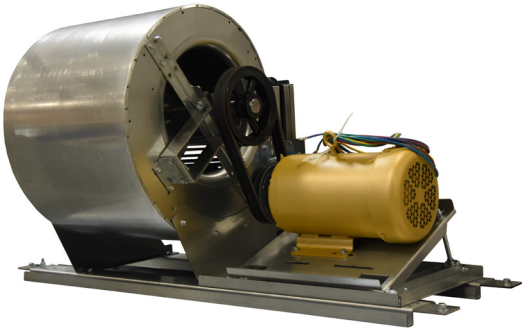
If it is necessary to go inside the ERV cabinet for maintenance purposes, it is recommended that the cores be removed to provide access. The floor of the ERV is reinforced to accept a person's weight.



Plenum Divider Panels

11.2 FAN / MOTOR REMOVAL

The fan and fan motor are part of an assembly that is mounted on a "sled", which is then installed in the ERV on vibration isolators. *See the Service Parts illustration* on the preceding page. Also *see photograph below.* If it is ever necessary to remove a fan, it may be easier to remove the entire sled from the ERV. For some maintenance issues, it may be easier to remove the enthalpic cores and go inside the ERV.



Fan and Motor Sled

11.3 VIBRATION ISOLATOR ADJUSTMENT

Spring-type vibration isolators can optionally be used in LE model ERVs. Depending on fan and motor size, either four or six isolators are installed on each motor and blower sled assembly. Two different isolator spring strengths may be used and they cannot be interchanged. Each isolator has a support

disc that is threaded and will move up or down on the threaded bolt. The up or down movement determines the upward force on the sled. With age, the supporting springs may require adjustment by repositioning the support disc.

Typical Spring-Type Vibration Isolator

11.4 RISK OF CORE DAMAGE

⚠ CAUTION

RISK OF DAMAGE TO ENTHALPIC CORES

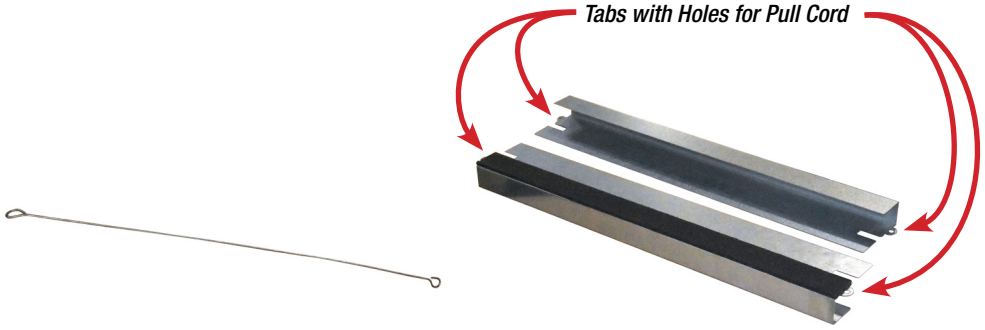
Whenever working within the ERV cabinet, protect the enthalpic cores from accidental damage. The core media is subject to damage from dropped tools or other foreign objects.

The core media is a fibrous material that is subject to damage through careless work habits. Whenever foreign objects such as tools are taken inside the ERV cabinet, the core media should be protected by placing stiff cardboard or some other protective material on top. Make certain the protective material is clean and dust-free before placing it on the media.

11.5 FILTER REPLACEMENT PRACTICES

RenewAire has provided a filter replacement tool called a filter extractor hook. *See picture below.* In addition, the filter spacers have a tab on the ends where a pull cord can be inserted. With a cord installed in the tab holes, it is possible to simply pull the cords and withdraw six filters at once. *See image below.* When installing the filter spacers, the foam strip is to be placed against the filter.

Note that when new filters are installed, the filter spacers may tend to fall off the end of the filter receiving channels. If this happens, simply install the spacers between the first two filters in from the door, instead of locating them against the access doors.

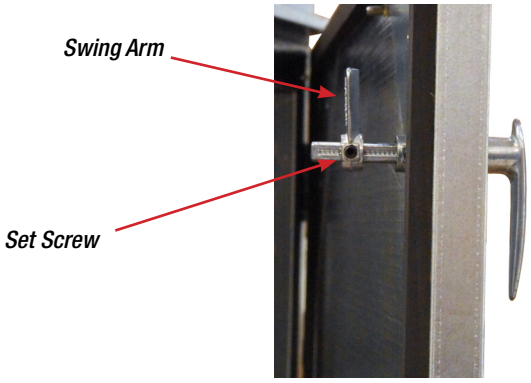


Filter Extractor Hook *Filter Spacers*

If filter thickness is ever changed from 2” to 4” or from 4” to 2” thickness, each of 8 filter receivers will need to be adjusted up or down to accomodate the desired filter thickness. To make this adjustment, remove the second bolt set in from the door on each filter receiver and slide the moveable filter receiver up or down against the fixed filter receiver bracket, following the “C” channel paths and replace the positioning bolt set in the proper hole that lines up at the other end of the “C” channel paths. The same filter spacers are used with either 2” or 4” filters.

11.6 DOOR LATCH ADJUSTMENT

With age and use, the door gaskets may become compressed and no longer provide a complete seal against air leakage. The door latches can be easily adjusted by changing the position of the swing arm on the inside of the door. *See photo below.*

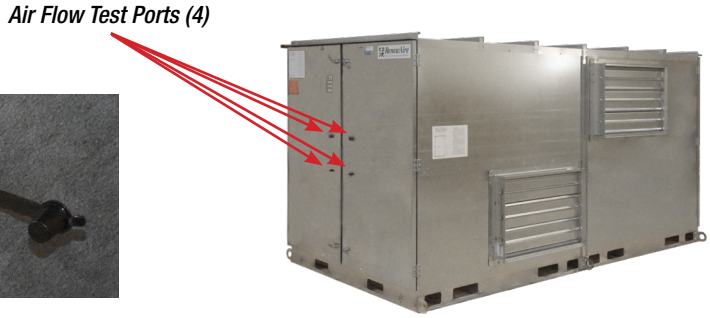


Door Latch Adjustment

11.7 MEASURING AIRFLOW

On every LE8X unit, a set of four air flow test ports are installed on the end doors of both the front and rear modules. *See images below.*

Air Flow Test Port



Air Flow Test Port Location

Tubing should be inserted into the test port about 1 inch.

Equipment required:

- A magnehelic gauge or other device capable of measuring 0 to 1.0 in w.g..
- 2 pieces of natural rubber latex tubing, 1/8" I.D., 1/16" wall thickness.

Procedure:

- The differential static pressures (DSP) can be measured using the installed pressure test ports shown above. Airstream pressure readings are to be taken across the cores by testing at diagonally-located test ports.
- To read the SCFM of Fresh Air (FA), install the "high" pressure side (+) of the measuring device in the Outside Air (OA) port and the "low" pressure side (-) in the FA port.
- To read the SCFM of Room Air (RA), install the "high" pressure side of the measuring device in the RA port and the "low" pressure side in the Exhaust Air (EA) port.
- Use the reading displayed on the measuring device to cross reference the CFM output using the following conversion chart.

Be sure to reinsert the test port cap when air flow measuring is finished.

Motors that are controlled by factory-installed VFDs are equipped with fixed sheaves. The entire speed range that can be obtained with variable sheaves can be obtained by adjusting the VFD.

LE8XIN	Differential Pressure Measured Across Core								
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
FA Airflow (CFM)	2160	3110	4030	4930	5800	6660	7510	8350	9170
RA Airflow (CFM)	2160	3110	4030	4930	5800	6660	7510	8350	9170

11.8 SHEAVE ADJUSTMENT

All fan motors that are not controlled by a VFD are equipped with an adjustable sheave. These adjustable sheaves must be re-set in the field to attain optimum performance of the ERV. This adjustment is to be done after all ductwork is connected.

Use only BX-type cogged drive belts.

Adjustable sheaves are held in position on the drive motor shaft by a set screw that is normally hidden until the belt(s) is removed. One flange is fixed-position, the others are adjustable-position. The adjustable flanges of the sheave have a set screw located in an exposed position on the collar of the flange.

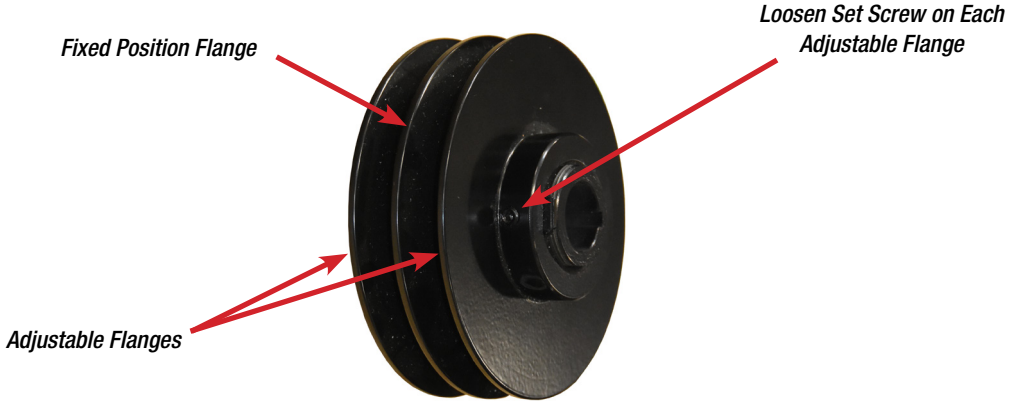
To adjust the flanges:

- Remove the drive belt(s)
- Loosen the set screws on both adjustable flanges
- IN HALF-TURN INCREMENTS, turn the adjustable flanges in or out the same number of turns
- Tighten the set screws on the adjustable flanges, making certain that the set screws are landing on the machined “flat” on the sheave.

Motor HP	Blower Speed	Blower RPM Available by Variable Motor Sheave Adjustment											Motor Sheave	Blower Sheave
3 HP	LOW	633	655	676	695	714	735	755	776	796	817	837	1VP44	BC90
3 HP	MED	755	776	796	817	837	858	878	898	918	939	959	1VP50	BC90
3 HP	HIGH	878	902	925	949	972	996	1020	1044	1067	1091	1115	1VP50	BK80
5 HP	LOW	755	776	796	817	837	858	878	898	918	939	959	2VP50	D4900
5 HP	MED	878	902	925	949	972	996	1020	1044	1067	1091	1115	2VP50	D4780
5 HP	HIGH	1000	1021	1041	1062	1082	1102	1122	1143	1163	1184	1204	2VP62	D4900
7.5 HP	LOW	878	898	918	939	959	980	1000	1021	1041	1062	1082	2VP56	D4900
7.5 HP	MED	1000	1021	1041	1062	1082	1102	1122	1143	1163	1184	1204	2VP62	D4900
7.5 HP	HIGH	1122	1143	1163	1184	1204	1225	1245	1266	1286	1306	1326	2VP68	D4900

Table of Sheave Adjustments

Note that Low, Medium and High Blower RPM sheave settings overlap allowing some adjustability into lower or higher blower speed zones.



Two-Belt Adjustable Sheave (typ)

11.9 MAINTENANCE RECORDS

AIR FILTER REPLACEMENT RECORD

FILTERS REPLACED DATE:

ENTHALPIC CORES CLEANING RECORD

CORES CLEANED DATE:

EA FAN MOTOR

MOTOR TYPE:
REQUIRED LUBRICANT (from motor manufacturer's website):
FRONT BEARING LUBE REQUIREMENTS:
REAR BEARING LUBE REQUIREMENTS:

LUBRICATION PERFORMED DATE:

EA FAN PILLOW BLOCKS

REQUIRED LUBRICANT (from pillow block manufacturer's website):
BEARING LUBE REQUIREMENTS:

LUBRICATION PERFORMED DATE:

FA FAN MOTOR

MOTOR TYPE:
REQUIRED LUBRICANT (from motor manufacturer's website):
FRONT BEARING LUBE REQUIREMENTS:
REAR BEARING LUBE REQUIREMENTS:

LUBRICATION PERFORMED DATE:

FA FAN PILLOW BLOCKS

REQUIRED LUBRICANT (from pillow block manufacturer's website):
BEARING LUBE REQUIREMENTS:

LUBRICATION PERFORMED DATE:

RenewAire®
Energy Recovery Ventilation

ABOUT RENEWAIRE

For over 30 years, RenewAire has been a pioneer in enhancing indoor air quality (IAQ) in commercial and residential buildings of every size. This is achieved while maximizing sustainability through our fifth-generation, static-plate, enthalpic-core Energy Recovery Ventilators (ERVs) that optimize energy efficiency, lower capital costs via load reduction and decrease operational expenses by minimizing equipment needs, resulting in significant energy savings. Our ERVs are competitively priced, simple to install, easy to use and maintain and have a quick payback. They also enjoy the industry's best warranty with the lowest claims due to long-term reliability derived from innovative design practices, expert workmanship and Quick Response Manufacturing (QRM).

As the pioneer of static-plate core technology in North America, RenewAire is the largest ERV producer in the USA. We're committed to sustainable manufacturing and lessening our environmental footprint, and to that end our Waunakee, WI plant is 100% powered by wind turbines. The facility is also one of the few buildings worldwide to be LEED and Green Globes certified, as well as having achieved ENERGY STAR Building status. In 2010, RenewAire joined the Soler & Palau (S&P) Ventilation Group in order to provide direct access to the latest in energy-efficient air-moving technologies. For more information, visit: renewaire.com

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