ERVCCSVB, ERVCCSHB
Energy Recovery Ventilators
HRVCCSVB, HRVCCSHB
Heat Recovery Ventilators

Carrier
turn to the experts

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 07/19/16

Product Data

A05229

Fig. 1 - ERVCCSVB / HRVCCSVB

A05330

Fig. 2 - ERVCCSHB / HRVCCSHB

Energy Recovery Ventilation (ERV) and Heat Recovery Ventilation (HRV) systems offered by Carrier are the finest on the market today. These units provide efficient and cost effective heat and energy recovery during the heating and cooling season when needed most.

As temperatures drop below 23°F (-5°C), indoor air is recirculated periodically through the heat exchanger core to prevent frost from forming. Competitors' methods of supplementary electric defrost waste energy. Unlike rotary wheel heat exchangers which mix air streams, these cross-flow or counterflow heat exchangers ensure that there is no mixing of the stale air stream with the fresh outdoor air stream.

A filter installed on the incoming outdoor air stream removes large airborne particles from the intake air stream before they enter the heat exchanger and reduces the maintenance required. The units' acoustically engineered design makes the Carrier ERVs and HRVs are the quietest on the market and ensures that comfort is felt, not heard.

Unlatching two (2) suitcase style latches allows easy removal of the filters and core for cleaning.

NOTE: The HRV should not be installed in an attic or unconditioned space unless provisions are made for drain-line freezing and condensation.

STANDARD FEATURES

- Drainless design - ERVs / Drains provided - HRVs
- Integrated airflow balancing points
- High pressure blowers
- Onboard control for continuous high/low ventilator operation
- Energy saving defrost cycle
- Cross-flow, counterflow heat exchangers
- One filter on incoming air; one filter on outgoing air to protect core
- No-tools maintenance
- Enthalpic heat exchanger core - ERVs
- Polypropylene heat exchanger core - HRVs

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MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12
E	R	V	C	C	S	H	B	1	1	0	0

Product Type
ERV - Energy Recovery Ventilator
HRV - Heat Recovery Ventilator

Brand
CC - Carrier

Style
SHB - Small Horizontal
SVB - Small Vertical

Electrical Supply
1 - 115 Volts

Maximum Capacity
100 - 100 CFM

These products earned the ENERGY STAR® by meeting strict energy efficiency guidelines set by Natural Resources Canada and the US EPA. They meet ENERGY STAR requirements only when used in Canada.

TESTED/CERTIFIED
HOME VENTILATING INSTITUTE®
DIVISION OF AMCA

Climate Map for Energy and Heat Recovery Ventilators

VENTILATOR ACCESSORY NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12
K	V	B	C	N	0	1	0	1	C	B	S

Product
KV - Ventilator Accessory Kit

Series
A - Original Series
B - Second Series

Type
AC01 - Accessory
CN01 - Control
TM01 - Timer

Package Quantity
01 - Single Pack

Control Description
CBS - Carrier Basic Control
CLC - Carrier Latent Control
CLT - Carrier OneTouch Control
CST - Carrier Standard Control

Accessory Description
HCO - Concentric Intake/Exhaust Hood
HOD - Intake Hood
KIT - Airflow Measuring Kit

Timer Description
20C - 20 Minute Timer Kit
60M - 60 Minute Timer Kit

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KIT NUMBER	DESCRIPTION	WHERE USED
KVAAC0101HOD	Exterior Intake and Exhaust Hood	2 Required
KVAAC0101HCO	Concentric Intake and Exhaust Hood	Used as a single intake/exhaust for SVB1100, SHB1100 models only
KVBCN0101CBS	Basic HRV Control	Used with all HRVs
KVBCN0101CLC	Latent Control	Used with ERVs only
KVBCN0101CLT	Carrier OneTouch Control	Used with all ERVs and HRVs as a main wall control
KVBCN0101CST	Standard HRV Control	Used with all HRVs
KVATM010120C	20 Minute Push Button Timer	Used with all HRVs when 20 minute manual operation is required
KVATM010160M	60 Minute Timer	Used with all HRVs, time is adjustable between 10 and 60 minutes
KVBAC0101KIT	Airflow Measuring Kit	Used with all ERVs and HRVs to balance intake/exhaust airflow

CONTROL DESCRIPTION	FAN SPEED CONTROL	HUMIDISTAT CONTROL	DEHUMIDISTAT CONTROL	CONTINUOUS MODE	INTERMITTENT MODE
Latent	Yes	Yes	No	Yes	Yes
OneTouch	Yes	No	No	Yes	Yes
Basic	Yes	No	No	Yes	No
Standard	Yes	Yes	Yes	Yes	Yes

Control features

Basic Control:

Allows the user to manually set fan speed to low or high as required to maximize comfort.

Standard Control:

Offers automatic dehumidistat control and the option to select continuous or intermittent fan operation. Setting the wall control to low will activate the continuous mode.

OneTouch Control:

Allows control of ventilator with the touch of a button. This control will operate as a main wall control. The OneTouch will operate the unit in Intermittent Mode (20 minutes per hour), continuous low speed, continuous high speed, and off.

Latent Control (ERVs only):

Low Exchange Mode—If the relative humidity inside the building is lower than selected, air exchange would occur with the outside at high speed. If the relative humidity inside the building is higher than selected, air exchange would occur with the outside at low speed. This ensures continuous air exchange for constant air quality.

Intermittent Mode—If the relative humidity inside the building is higher than selected, no air exchange would occur and the system would turn off. If the relative humidity inside the building is lower than selected, air exchange would occur with the outside at high speed. This mode is ideal for maintaining the proper humidity level when the continuous mode cannot.

Automatic Defrost Cycle Features

All models offer a non-electric defrost cycle feature which prevents frost and ice buildup within the heat recovery core. When the outside air temperature falls below 23°F (-5°C) it is electronically sensed and the dampers close the outside air ports. This allows warm indoor air to recirculate within the heat recovery core. The frequency of this cycle increases as the outside air temperature decreases.

MODEL	23°F TO −17°F (−5°C TO −27°C)		BELOW −17°F (−27°C)	
	DEFROST*	EXCHANGE†	DEFROST*	EXCHANGE
ERVCCSHB HRVCCSHB	8 Minutes	25 Minutes	10 Minutes	22 Minutes
ERVCCSVB HRVCCSVB	8 Minutes	25 Minutes	10 Minutes	22 Minutes

* All defrost times are in the standard mode (as shipped)
† Time between defrost when within specified temperature range

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Fig. 3 - ERVCCSHB and HRVCCSHB Unit Dimensions

Key to Unit Port Locations

① Fresh air to building
② Stale air from building
③ Fresh air from outside
④ Stale air to outside

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Fig. 4 - ERVCCSVB and HRVCCSVB Unit Dimensions

PHYSICAL DATA

MODEL	ERVCCSVB1100	ERVCCSHB1100	HRVCCSVB1100	HRVCCSHB1
Port Locations	Top	Side	Top	Side
Core Type	Enthalpic transfer media with plastic stack	Enthalpic transfer media with plastic stack	Polypropylene Cross Flow	Polypropylene C Flow
Core Exchange Area	56 sq. ft. (5.2m^2)	56 sq. ft. (5.2m^2)	55 sq. ft. (5.1m^2)	55 sq. ft. (5.1r
Weight lb (kg)	42 (19)	42 (19)	42 (19)	42 (19)
Shipping Weight lb (kg)	48 (22)	48 (22)	48 (22)	48 (22)
Shipping Dimensions in. (mm) Height Width Depth	25.5 (648) 17.5 (445) 23.0 (584)	30.0 (762) 15.0 (381) 23.0 (584)	25.5 (648) 17.5 (445) 23.0 (584)	30.0 (762) 15.0 (381) 23.0 (584)
Voltage	120	120	120	120
Max Power (Watts)	104	104	100	100
Max Amps	0.87	0.87	0.85	0.85

NOTE: Drain Connector Kits are supplied with HRVs only. They are not necessary with ERVs.

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Ventilator Sizing

Tables 1 and 2 should be used to determine the required airflow for a home. These guidelines are taken from ASHRAE 62.2-2007.

Table 1 – Ventilation Air Requirements, cfm

FLOOR AREA (ft^2)	BEDROOMS				
	0–1	2–3	4–5	6–7	>7
<1500	30	45	60	75	90
1501–3000	45	60	75	90	105
3001–4500	60	75	90	105	120
4501–6000	75	90	105	120	135
6001–7500	90	105	120	135	150
>7500	105	120	135	150	165

Table 2 – Ventilation Air Requirements, L/s

FLOOR AREA (m^2)	BEDROOMS				
	0–1	2–3	4–5	6–7	>7
<139	14	21	28	35	42
139.1–279	21	28	35	42	50
279.1–418	28	35	42	50	57
418.1–557	35	42	50	57	64
557.1–697	42	50	57	64	71
>697	50	57	64	71	78

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PERFORMANCE DATA

HVI Rated Energy Performance

MODEL	MODE	SUPPLY TEMP		NET AIR FLOW		POWER CONSUMED (WATTS)	SENSIBLE RECOVERY EFFICIENCY	APPARENT SENSIBLE EFFECTIVENESS	LATENT RECOVERY MOISTURE TRANSFER	TOTAL RECOVERY EFFICIENCY
		°C	°F	L/S	CFM					
ERVCCSH B1100	Heating	0	32	21	45	42	68	79	0.63	
		0	32	27	58	46	68	76	0.58	
		0	32	41	87	70	63	71	0.48	
		−25	−13	22	47	58	55	78	0.60	
	Cooling	35	95	21	44	42				52
ERVCCSVB 1100	Heating	0	32	21	45	42	68	79	0.63	
		0	32	27	58	46	68	76	0.58	
		0	32	41	87	70	63	71	0.48	
		−25	−13	22	47	58	55	78	0.60	
	Cooling	35	95	21	44	42				52
HRVCCSH B1100	Heating	0	32	18	39	37	66	78	0.03	
		0	32	24	50	44	65	74	0.01	
		0	32	40	85	68	59	68	0.01	
		−25	−13	23	48	56	57	84	0.03	
	Cooling	35	95							
HRVCCSV B1100	Heating	0	32	18	39	37	66	78	0.03	
		0	32	24	50	44	65	74	0.01	
		0	32	40	85	68	59	68	0.01	
		−25	−13	23	48	56	57	84	0.03	
	Cooling	35	95							

Ventilation Performance

MODEL	EXT. STATIC PRESSURE		NET SUPPLY AIR FLOW		GROSS AIR FLOW			
					SUPPLY		EXHAUST	
	PA	IN WC	L/S	CFM	L/S	CFM	L/S	CFM
ERVCCSHB1100	25	0.1	55	116	56	119	55	116
	50	0.2	53	113	54	115	53	112
	100	0.4	50	105	51	108	50	105
	200	0.8	42	89	43	92	41	87
	250	1.0	38	80	39	83	37	78
ERVCCSVB1100	25	0.1	55	116	56	119	55	116
	50	0.2	53	113	54	115	53	112
	100	0.4	50	105	51	108	50	105
	200	0.8	42	89	43	92	41	87
	250	1.0	38	80	39	83	37	78
HRVCCSHB1100	25	0.1	52	110	53	112	57	121
	50	0.2	50	106	51	108	54	115
	100	0.4	46	97	47	100	50	106
	200	0.8	37	79	38	81	42	90
	250	1.0	33	70	34	72	37	79
HRVCCSVB1100	25	0.1	52	110	53	112	57	121
	50	0.2	50	106	51	108	54	115
	100	0.4	46	97	47	100	50	106
	200	0.8	37	79	38	81	42	90
	250	1.0	33	70	34	72	37	79

NOTE: For additional data points, refer to HVI Directory at www.hvi.org

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VENTILATOR INSTALLED WITH FORCED AIR SYSTEM

A10105

VENTILATOR INSTALLED WITH INDEPENDENT AIR DISTRIBUTION

A10106

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