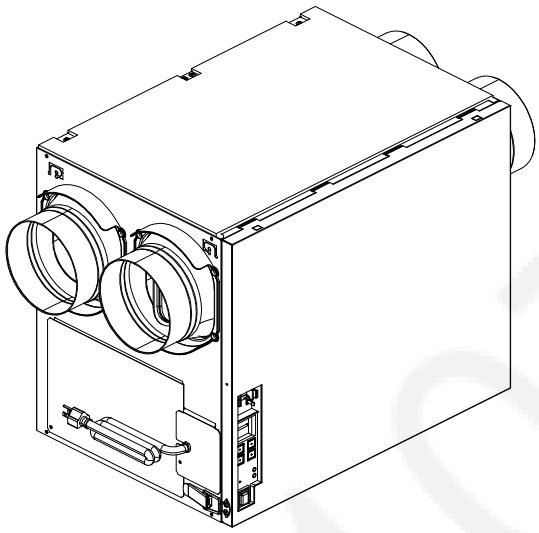
PESMX24120002CE
Version:2401

Service Manual

Energy Recovery Ventilator

FV-16VEC1S



⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacture.
We suggest to handle such parts after the static electricity prevention.
It is forbidden to touch the PCB parts by bare hands during the repairing process.

CONTENTS

Panasonic®

1. Specifications

<Ventilation Performance>

Model No.	Voltage (V)	Frequency (Hz)	Duct	Static pressure	Net air flow (CFM)		Power consumption (W)	Weight lb.(kg)
					Exhaust	Supply	Fan unit	
FV-16VEC1S	120	60	6"	0.1"WG	160	160	170	46 (20.9)
				0.4"WG	160	160	200	

<Energy Performance>

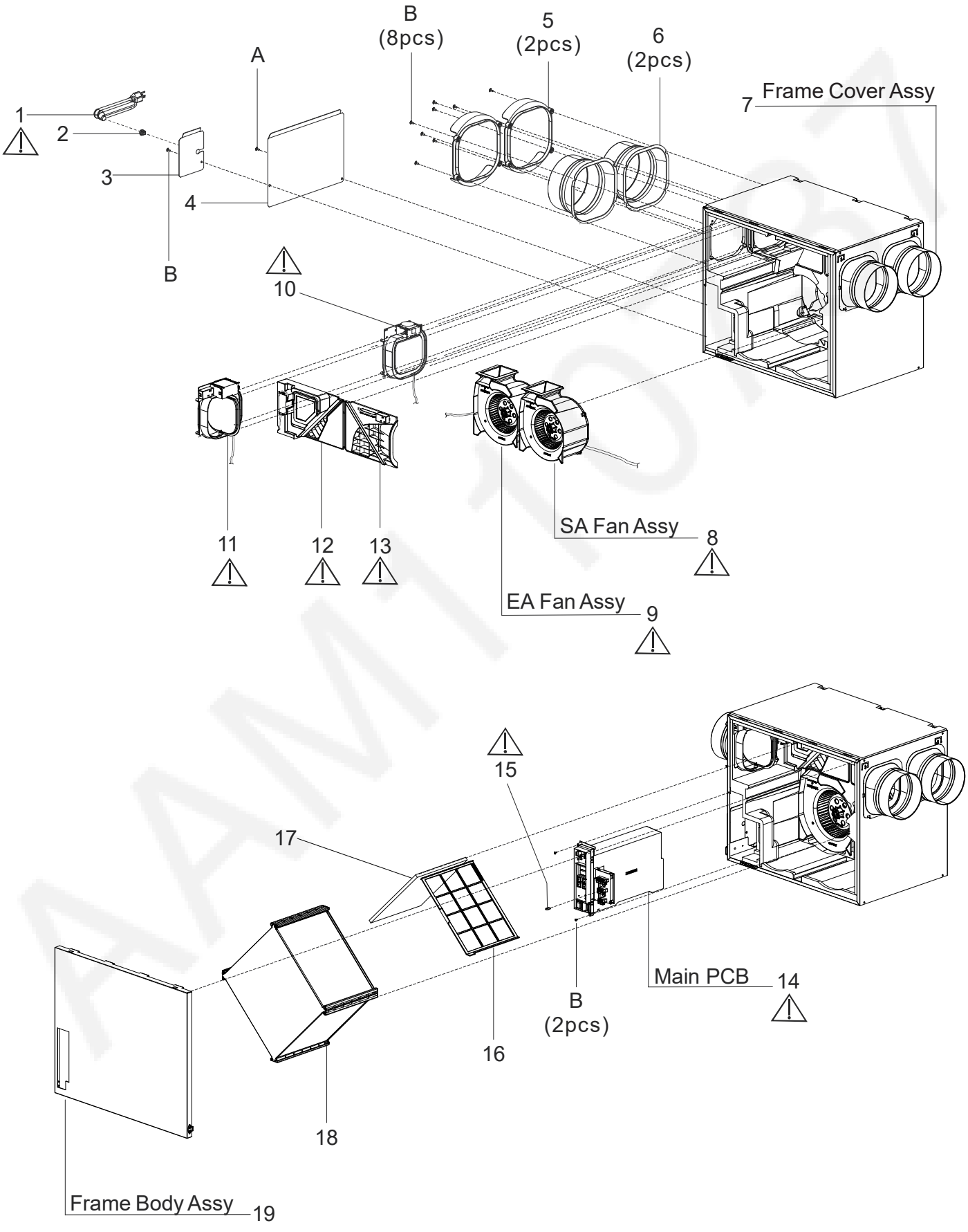
Model No.	Mode	Supply temperature		Net air flow		Power consumption (W)	Sensible recovery efficiency	Adjusted sensible recovery efficiency	Net moisture transfer
		°F	°C	L/s	CFM				
FV-16VEC1T	Heating	32	0	17	36	25	82	84	0.81
		32	0	31	66	44	79	81	0.74
		32	0	61	130	109	73	75	0.64
		-13	-25	31	65	163	60	65	0.60
	Cooling						Total recovery efficiency		
		95	35	17	36	26	73		
		95	35	31	66	48	68		
		95	35	57	120	110	61		

The testing of the ventilation performance and the energy performance is in accordance with CSA-C439-18 standard.

2. Parts Identification

FV-16VEC1S

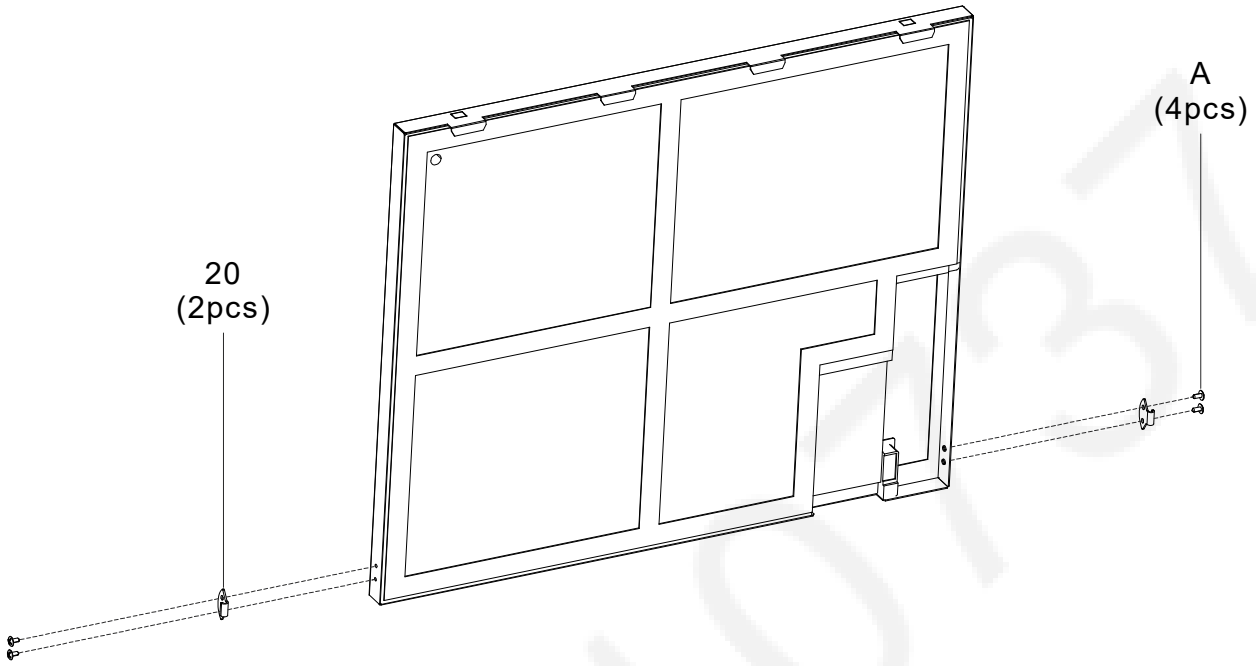
Main Body Section



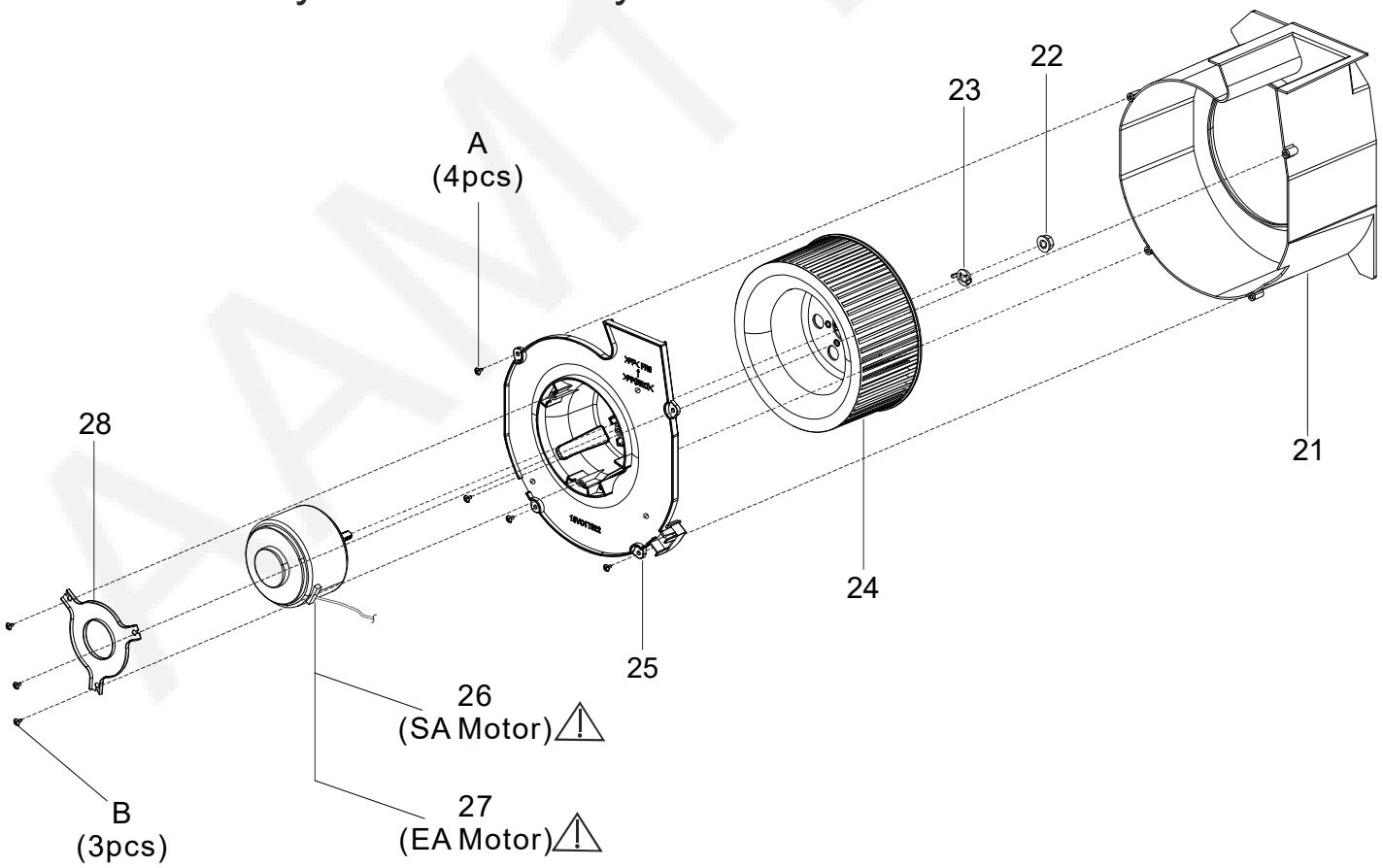
2. Parts Identification

FV-16VEC1S

Frame Body Assy



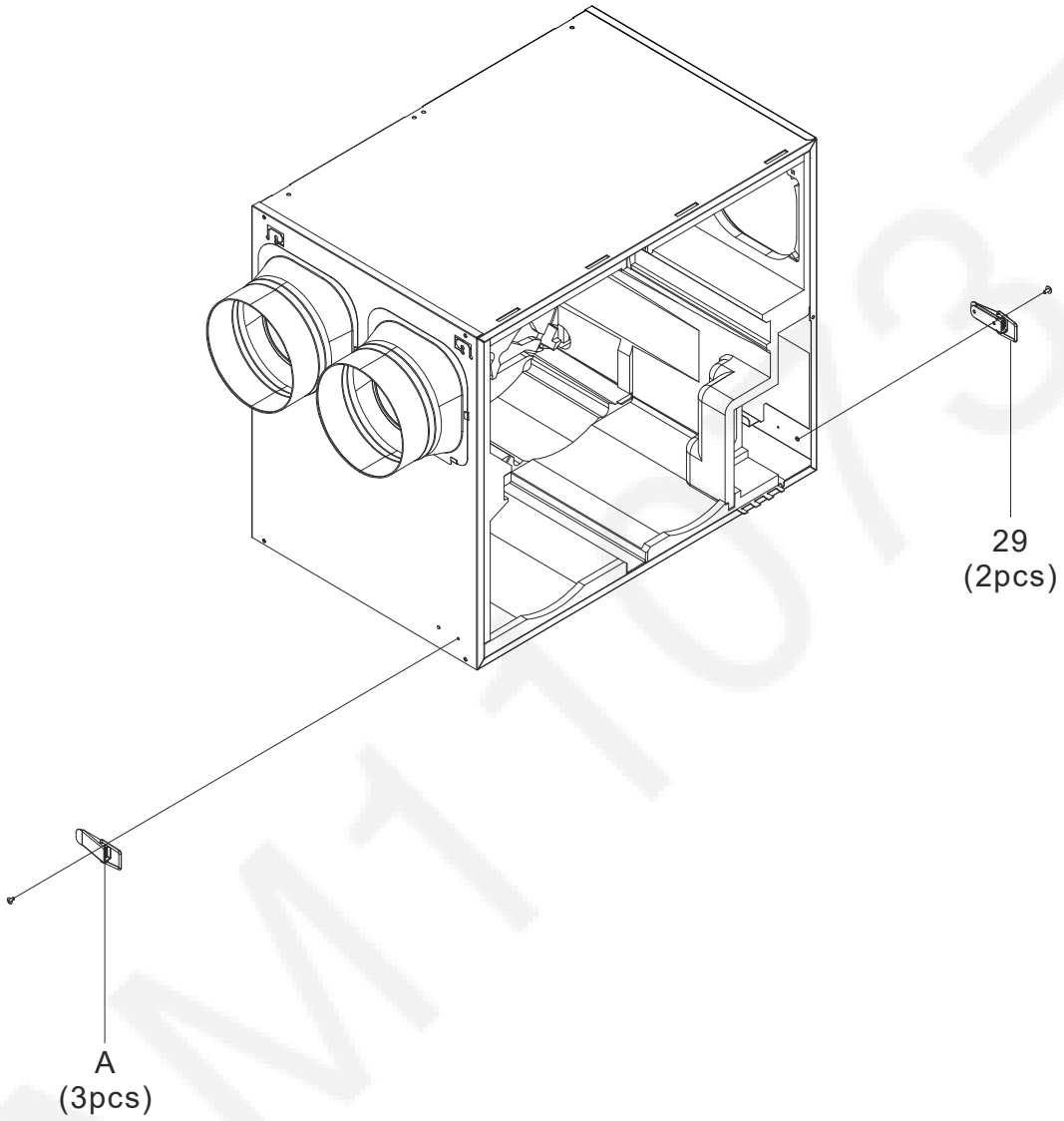
SA Fan Assy / EA Fan Assy



2. Parts Identification

FV-16VEC1S

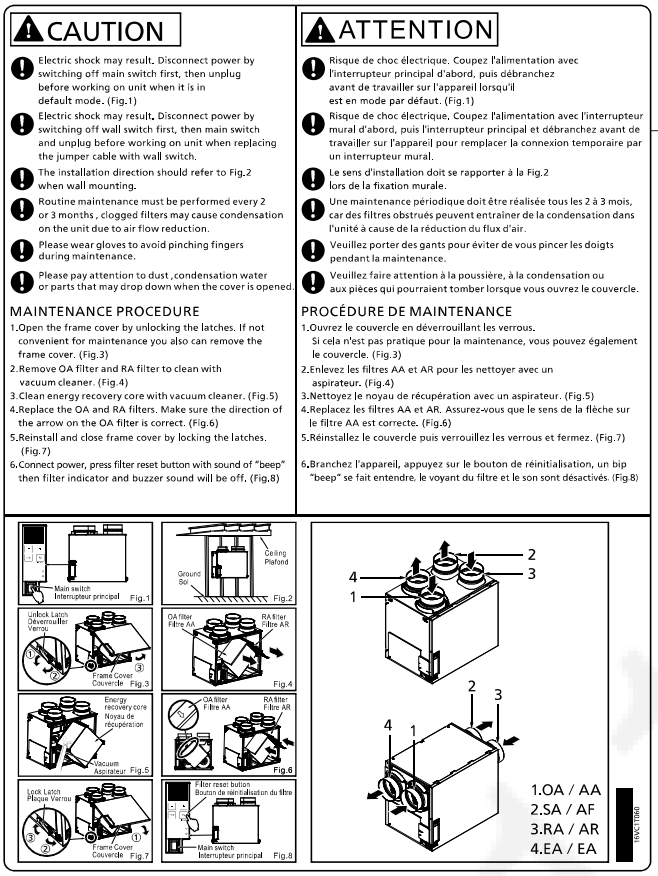
Frame Cover Assy



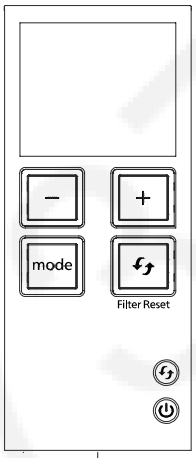
2. Parts Identification

FV-16VEC1S

Main Labels

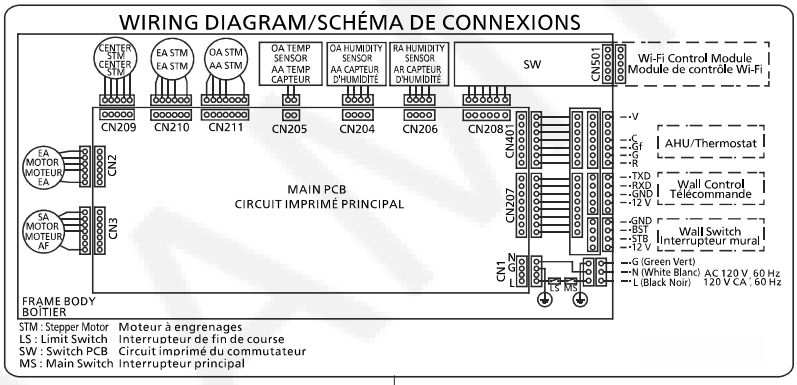


30



31

32

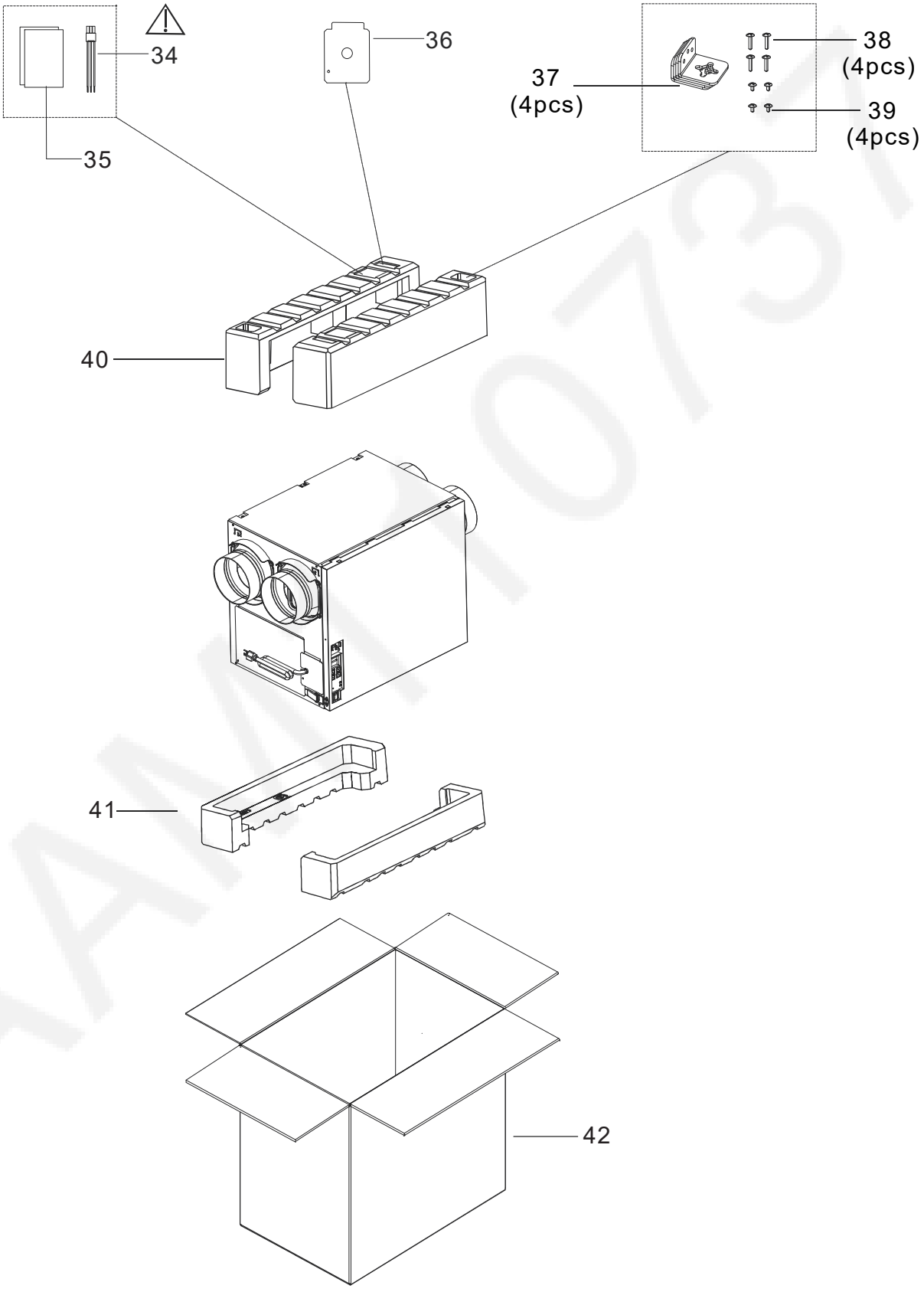


33

2. Parts Identification

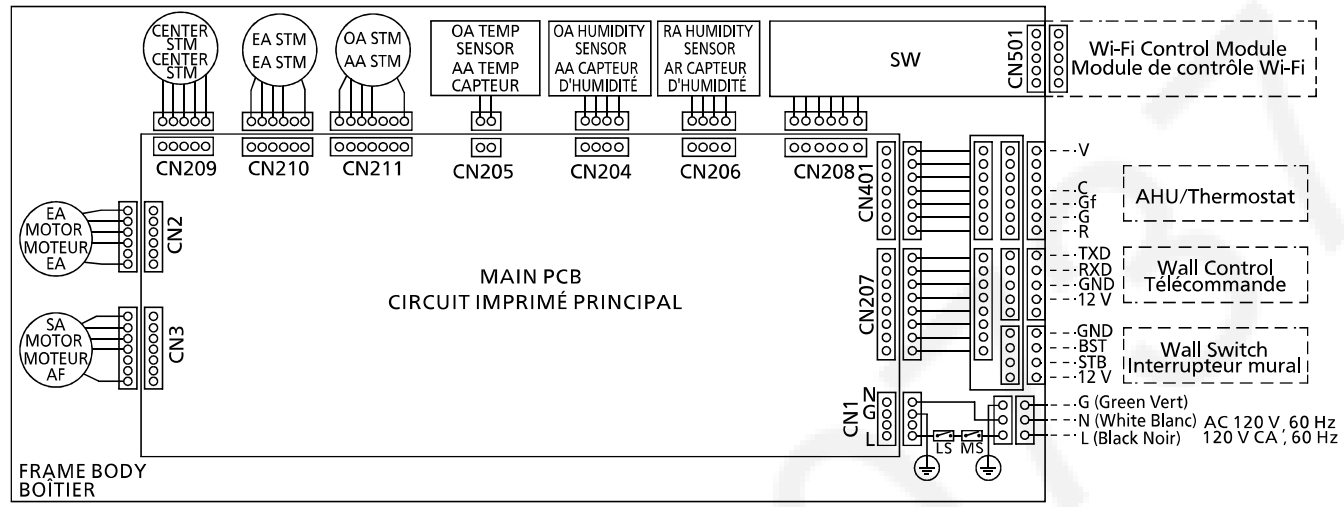
FV-16VEC1S

Packing Case Assy



3. Wiring diagram

FV-16VEC1S

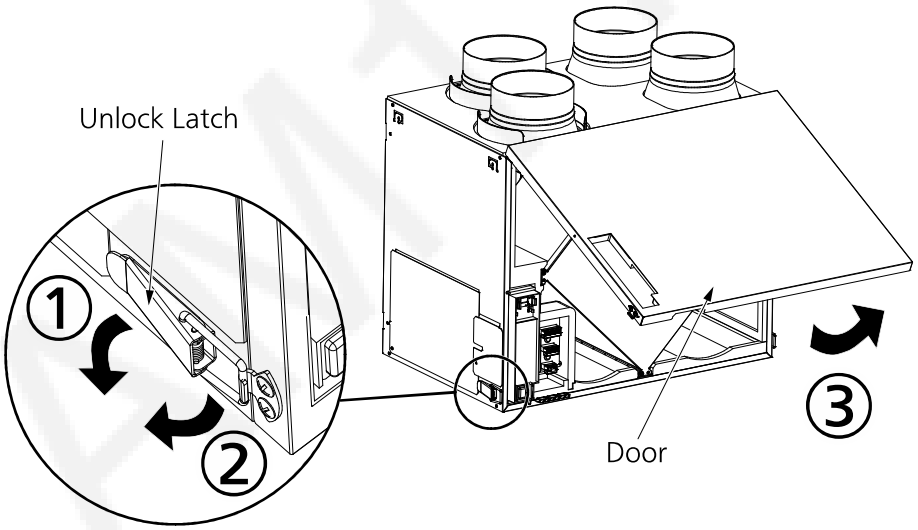


STM : Stepper Motor Moteur à engrenages
LS : Limit Switch Interrupteur de fin de course
SW : Switch PCB Circuit imprimé du commutateur
MS : Main Switch Interrupteur principal

⚠ CAUTION

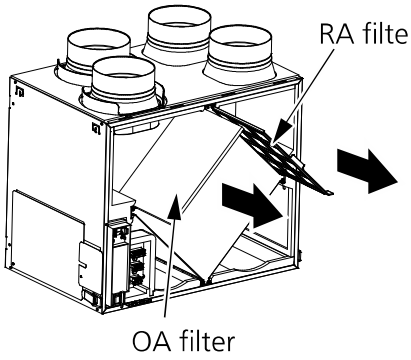
- Electric shock may result. Disconnect power by switching off main switch, then unplug before working on the unit. If a standby switch is connected, it is recommended to switch it off first.
- Routine maintenance must be performed every 2 or 3 months. clogged filters may cause condensation on the unit due to air flow reduction.
- Please wear gloves to avoid pinching fingers during maintenance.
- Please pay attention to dust, condensation water, or parts that may drop down when the door is opened.
- Never use gasoline, benzene, thinner or any other such chemicals to clean the ERV.
- Do not allow water to enter ERV.
- Do not immerse resin parts in water over 60 °C.

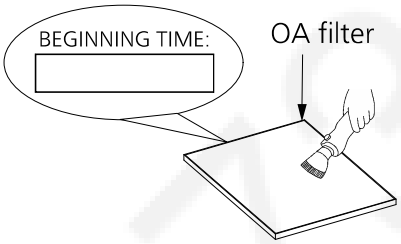
1 Open the door by unlocking the latches.

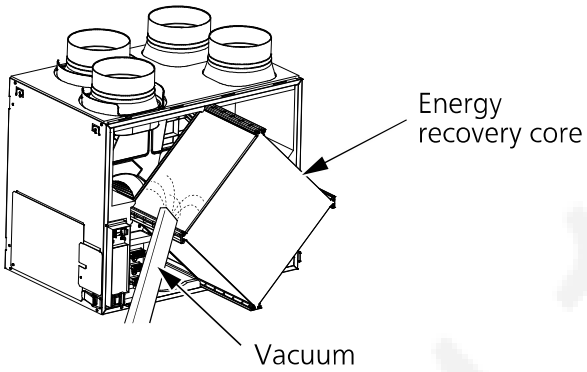


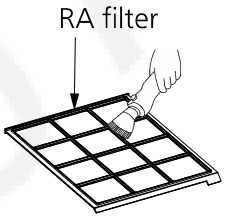
2 Clean the OA filter, RA filter and energy recovery core.

It is suggested to replace the OA filter every 6 months. Please fill in beginning time on new OA filter before replacing.

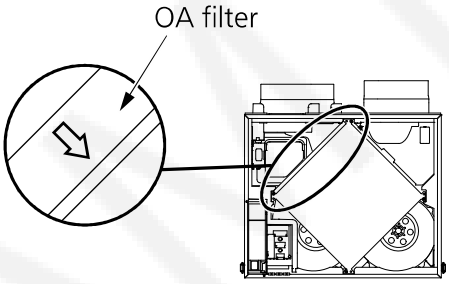


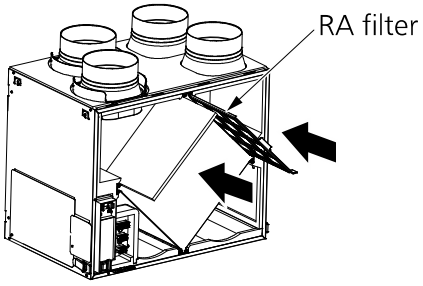






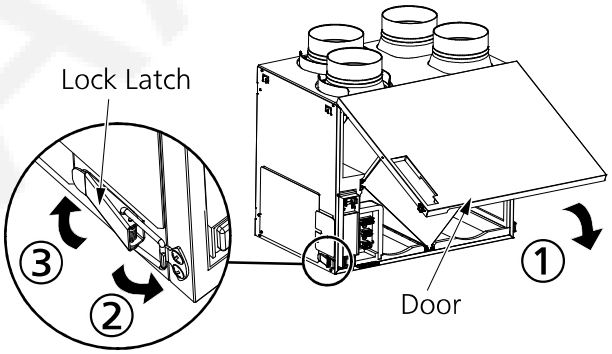
3 Reinstall the filters.

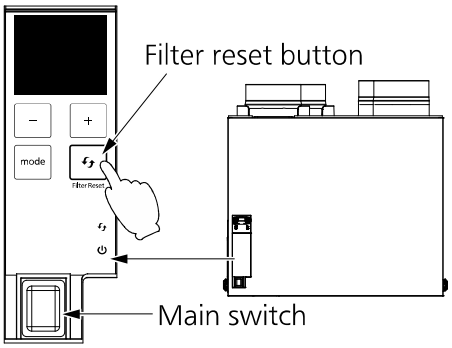




4 Reinstall and close door by locking the latches.

5 Connect power and press filter reset button. When the unit beeps, the filter reset timer will be reset.





5. Troubleshooting

FV-16VEC1S

If a problem is encountered, please investigate it by going through the following items.
If the problem still persists, please disconnect the power and contact the dealer for repair.

Problem	Display	Running indicator (Green)	Filter indicator (Orange)	Action
1.The ERV doesn't work.	-	Off	Off	■ Check the power is connected. ■ Check the door is closed. ■ Check that the main switch on the product is on. ■ Check if the spring on the inside of the door is damaged or deformed.
		On	Off	■ ERV running interval according to the ASHRAE time setting. ■ When outdoor temperature is very low ERV stops operating automatically.(see P.4) ■ Damper may be frozen shut, please wait for maximum 24 hours for defrosting.
2.The HVAC/AHU doesn't work when ERV works.	-	On	Off	■ Check the wiring connection. (P.6-7)
3.Alarm sounds (10 sec every hour) and ERV works.	-	On	On	■ The RA filter and OA filter need to be maintained. If you do not want the buzzer notification, see configuration setting (p.16-17).
4.Alarm sounds (30 sec every hour) and ERV doesn't work.	F03	Blink	Off	■ PCB error, please disconnect the power and contact the dealer for repair.
	F10	Blink	Off	■ OA temperature sensor error, please disconnect the power and contact the dealer for repair.
	F20	Off	Off	■ SA motor error, please disconnect the power and contact the dealer for repair.
	F21	Off	Off	■ EA motor error, please disconnect the power and contact the dealer for repair.
	F30	Off	Off	■ Damper error, please disconnect the power and contact the dealer for repair.
	F60	Blink	Off	■ Supply air flow is significantly decreasing. Check the ducting and the filter.
	F61	Blink	Off	■ Exhaust air flow is significantly decreasing. Check the ducting and the filter.
5.Alarm sounds (30 sec every hour) and ERV works.	F01	Blink	Off	■ Wall control communication error. Check the wall control wiring.(P.6-7)
	F04	Blink	Off	■ PCB communication error. Contact the dealer for repair. *
	F11	Blink	Off	■ OA humidity sensor error. Contact the dealer for repair. *
	F12	Blink	Off	■ RA temperature sensor error. Contact the dealer for repair. *
	F13	Blink	Off	■ RA humidity sensor error. Contact the dealer for repair. *
	F60	Blink	Off	■ Supply air flow is decreasing. Check the ducting and the filter.
	F61	Blink	Off	■ Exhaust air flow is decreasing. Check the ducting and the filter.

*Some functions will be limited when this error is encountered.

5. Troubleshooting

Problem	Display	Running indicator (Green)	Filter indicator (Orange)	Action
6. ERV behaves differently from the selected air flow settings.	-	Blink	Off	■ When product runs in recirculation mode for frost prevention, the air volume will be more than setting and sound will be slightly louder than normal operation. ■ When outdoor temperature is less than 14 °F (-10 °C), the product will restrict air volume automatically to protect energy recovery core.

Main Body Section

No.	Part No.	Part Name	Q´ty	Remark
1	FFV16VC1T204	Power Cord	1	⚠
2	FFV0720012S	Cord Bushing	1	
3	FFV16VC1T954	Wiring Cover P	1	
4	FFV16VC1T951	Main PCB Cover	1	
5	FFV16VC1T911	Adapter Cover	2	
6	FFV16VC1T917	Adapter	2	
7	FFV16VC1S901	Main Frame	1	
8	FFV16VC1T120	EA Fan Assy	1	⚠
9	FFV16VC1T110	SA Fan Assy	1	⚠
10	FFV16VC1T520	Damper EA Assy	1	⚠
11	FFV16VC1T530	Damper OA Assy	1	⚠
12	FFV16VC1T532	Separator L Assy	1	⚠
13	FFV16VC1S560	Separator R Assy	1	
14	FFV16VC1T510	PCB Case Assy	1	⚠
15	FFV2800028S	Jumper Cable	1	⚠
16	FFV16VC1T811	RA Filer	1	
17	FFV16VC1T801	OA Filter M13	1	
18	FFV16VC1T990	Element Comp Unit	1	
19	FFV16VC1T934	Frame Cover Assy	1	
A	FFVXTT4+8FFJ	Truss Taptite S	1	
B	FFVXTT412GFJ	Truss Taptite P	12	

Frame Body Assy

No.	Part No.	Part Name	Q´ty	Remark
20	FFV3440022S	Latch Base	2	
A	FFVXTT4+8FFJ	Truss Taptite S	4	

SA Fan Assy/EA Fan Assy

No.	Part No.	Part Name	Q´ty	Remark
21	FFV16VC1T921	Casing	2	
22	FFV10VC2M920	Flange Nut	2	
23	FFV10VC2R9	Fan fix Plate	2	
24	FFV16VC1T925	Fan	2	
25	FFV16VC1T92	Motor Base	2	
26	FFV16VC1TM21C	SA Motor Assembly	1	⚠
27	FFV16VC1TM23C	EA Motor Assembly	1	⚠
28	FFV16VC1T924	Motor Holder	2	
B	FFVXTT412GFJ	Truss Taptite P	7	

Frame Cover Assy

No.	Part No.	Part Name	Q´ty	Remark
29	FFV3440021S	Latch	2	
A	FFV06VE1900	Truss Taptite S	2	

Main Labels

No.	Part No.	Part Name	Q´ty	Remark
30	FFV16VC1T060	Maintenance Label	1	
31	FFV16VC1T053	Switch Label	1	
32	FFV51VHL1053	HVI Mark	1	
33	FFV16VC1T054	Wiring Label	1	

Packing Case Assy

No.	Part No.	Part Name	Q´ty	Remark
34	FFV16VCT205	Power Cord H	1	
35	FFV16VC1T450	Installation Inst US	1	⚠
36	FFV16VC1T955	Wiring Cover H	1	
37	FFVXTT4-8FFJ	Truss Taptites S	4	
38	FFVXTT430AFJ	Truss Tap Screw	4	
39	FFV16VC1T970	L Plate	1	
40	FFV16VC1T401	Packing Pad Top	1	
41	FFV16VC1S402	Packing Pad Bottom	1	
42	FFV16VC1S420	Packing Case Assy	1	