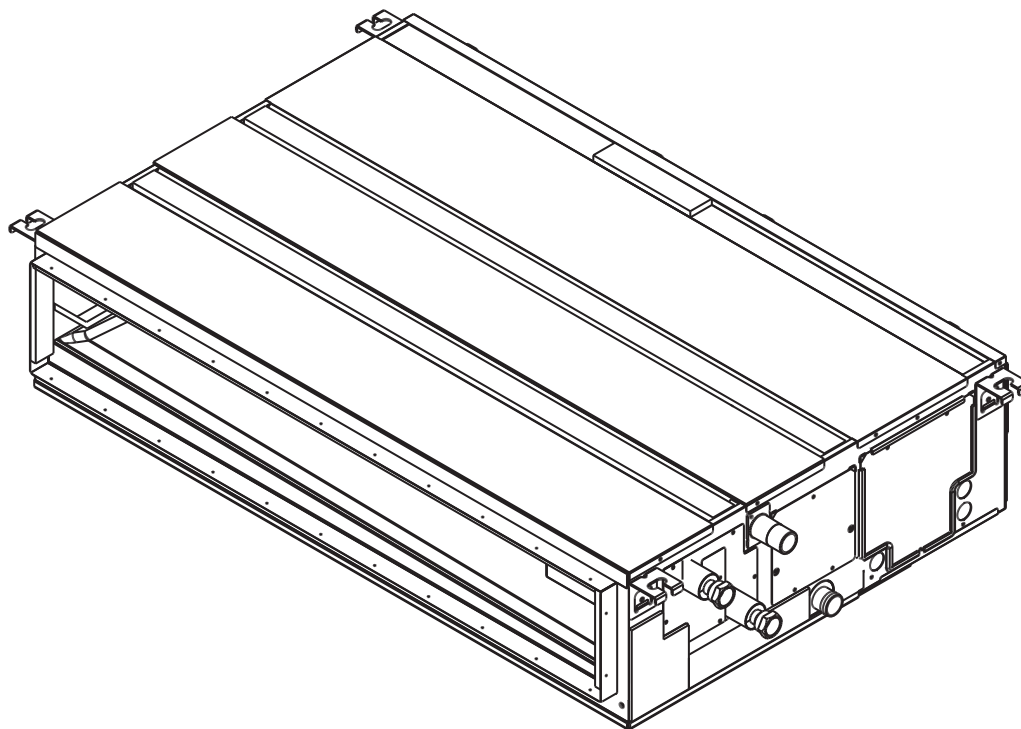


2017

TECHNICAL & SERVICE MANUAL

Model name

PEFY-WP20VMA-E	PEFY-WP63VMA-E
PEFY-WP25VMA-E	PEFY-WP71VMA-E
PEFY-WP32VMA-E	PEFY-WP80VMA-E
PEFY-WP40VMA-E	PEFY-WP100VMA-E
PEFY-WP50VMA-E	PEFY-WP125VMA-E



3rd edition

CITY MULTI

Safety Precautions

Read before installation and performing electrical work

- Thoroughly read the following safety precautions prior to installation.
- Observe these safety precautions for your safety.
- This equipment may have adverse effects on the equipment on the same power supply system.
- Contact the local power authority before connecting to the system.

Symbol explanations



WARNING

This symbol indicates that failure to follow the instructions exactly as stated poses the risk of serious injury or death.



CAUTION

This symbol indicates that failure to follow the instructions exactly as stated poses the risk of serious injury or damage to the unit.



Indicates an action that must be avoided.



Indicates important instructions.



Indicates a parts that requires grounding.



Indicates that caution must be taken with rotating parts. (This symbol is on the main unit label.) <Color: Yellow>



Indicates that the parts that are marked with this symbol pose a risk of electric shock. (This symbol is on the main unit label.) <Color: Yellow>



WARNING

Carefully read the labels affixed to the main unit.



WARNING

- Do not use refrigerant other than the type indicated in the manuals provided with the unit and on the nameplate.
- Doing so may cause the unit or pipes to burst, or result in explosion or fire during use, during repair, or at the time of disposal of the unit.
- It may also be in violation of applicable laws.
- MITSUBISHI ELECTRIC CORPORATION cannot be held responsible for malfunctions or accidents resulting from the use of the wrong type of refrigerant.
- Ask your dealer or a qualified technician to install the unit.
- Improper installation by the user may result in water leakage, electric shock, or fire.
- Properly install the unit on a surface that can withstand its weight.
- Unit installed on an unstable surface may fall and cause injury.
- Only use specified cables. Securely connect each cable so that the terminals do not carry the weight of the cable.
- Improperly connected cables may produce heat and start a fire.

- Take appropriate safety measures against wind gusts and earthquakes to prevent the unit from toppling over.
- Improper installation may cause the unit to topple over and cause injury or damage to the unit.
- Only use accessories (i.e., air cleaners, humidifiers, electric heaters) recommended by Mitsubishi Electric.
- Do not make any modifications or alterations to the unit.
- Consult your dealer for repair.
- Improper repair may result in water leakage, electric shock, or fire.
- Do not touch the heat exchanger fins with bare hands.
- The fins are sharp and pose a risk of cuts.
- Properly install the unit according to the instructions in the Installation Manual.
- Improper installation may result in water leakage, electric shock, or fire.

WARNING

Have all electrical work performed by an authorized electrician according to the local regulations and the instructions in this manual. Use a dedicated circuit.

Insufficient power supply capacity or improper installation of the unit may result in malfunctions of the unit, electric shock, or fire.

Keep electrical parts away from water.

Wet electrical parts pose a risk of electric shock, smoke, or fire.

Securely attach the control box cover.

If the cover is not installed properly, dust or water may infiltrate and pose a risk of electric shock, smoke, or fire.

Only use the type of water that is indicated on the unit when installing or relocating the unit.

Infiltration of any other types of refrigerant or air into the unit may adversely affect the refrigerant cycle and may cause the pipes to burst or explode.

Consult your dealer or a qualified technician when moving or reinstalling the unit.

Improper installation may result in water leakage, electric shock, or fire.

After completing the service work, check for water leakage.

To avoid water damage to the furnishings, check for water leak at the completion of all work.

Do not try to defeat the safety features of the unit.

Forced operation of the pressure switch or the temperature switch by defeating the safety features for these devices, or the use of accessories other than the ones that are recommended by Mitsubishi Electric may result in smoke, fire, or explosion.

Consult your dealer for proper disposal method.

Precautions for handling units for use with water

CAUTION

Do not use the existing water piping.

Store the piping materials indoors, and keep both ends of the pipes sealed until immediately before installation. Keep the joints wrapped in plastic bags. If dust or dirt enters the water circuit, it may damage the heat exchanger and cause water leakage.

Only use water.

Only use clean water as a refrigerant. The use of water outside the specification may damage the refrigerant circuit.

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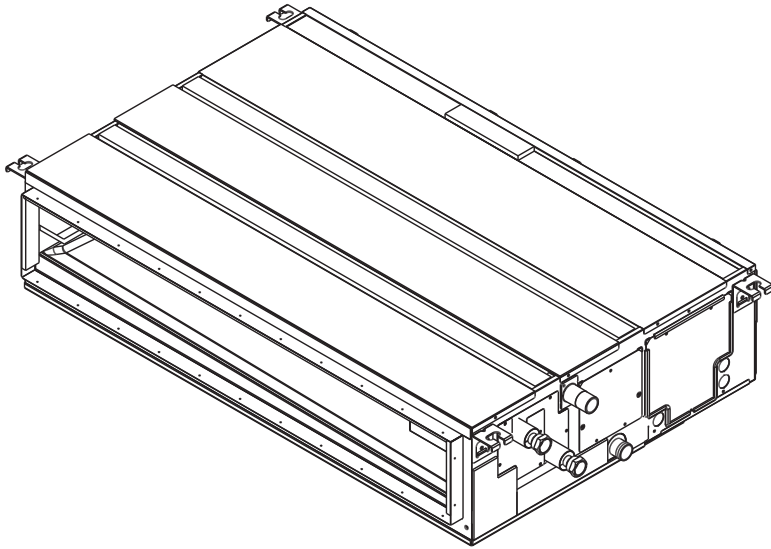
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[1] Features

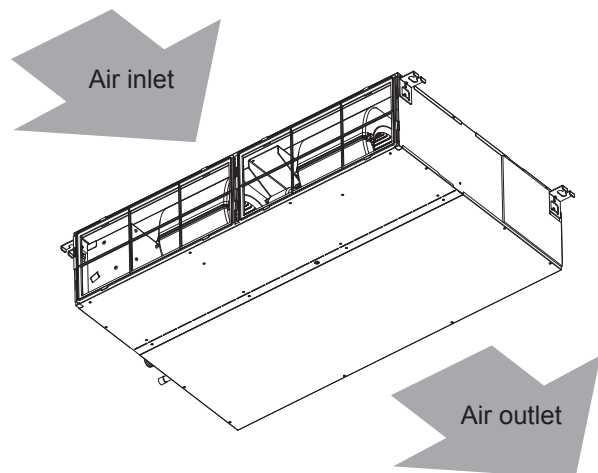


Model	Cooling capacity/Heating capacity
	kW
PEFY-WP20VMA-E	2.2/2.5
PEFY-WP25VMA-E	2.8/3.2
PEFY-WP32VMA-E	3.6/4.0
PEFY-WP40VMA-E	4.5/5.0
PEFY-WP50VMA-E	5.6/6.3
PEFY-WP63VMA-E	7.1/8.0
PEFY-WP71VMA-E	8.0/9.0
PEFY-WP80VMA-E	9.0/10.0
PEFY-WP100VMA-E	11.2/12.5
PEFY-WP125VMA-E	14.0/16.0

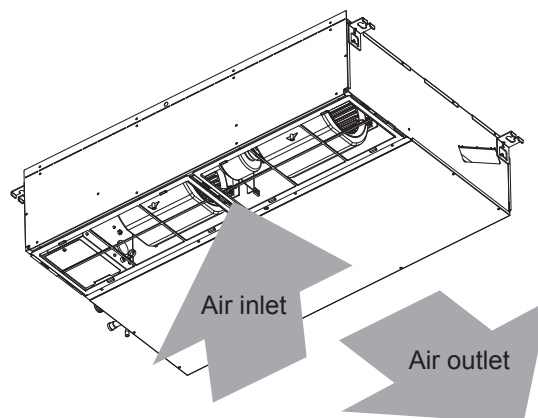
[1] Components and Functions

1. Indoor (Main) Unit

(1) In case of rear inlet



(2) In case of bottom inlet

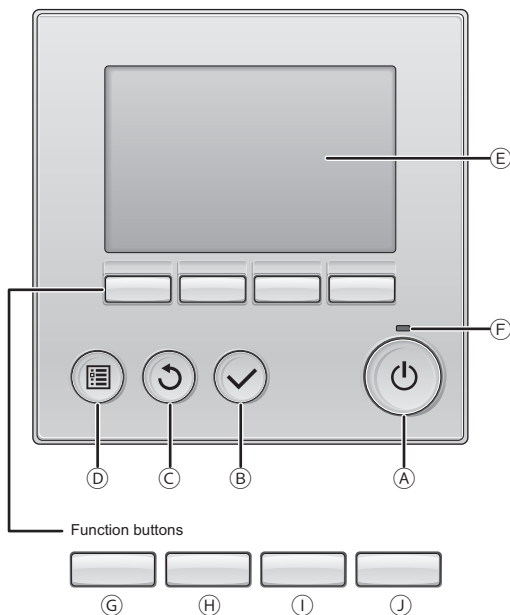


2. Remote Controller

[PAR-32MAA]

Once the operation mode is selected, the unit will remain in the selected mode until changed.

(1) Remote Controller Buttons



A [ON/OFF] button

Press to turn ON/OFF the indoor unit.

B [SELECT] button

Press to save the setting.

C [RETURN] button

Press to return to the previous screen.

D [MENU] button

Press to bring up the Main menu.

E Backlit LCD

Operation settings will appear.

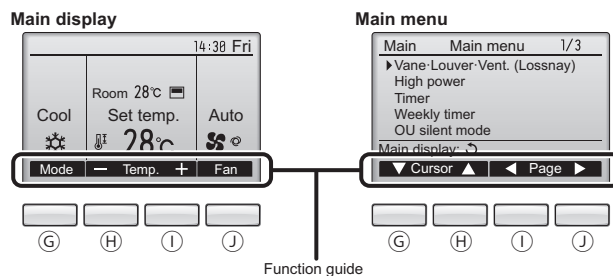
When the backlight is off, pressing any button turns the backlight on and it will stay lit for a certain period of time depending on the screen.

When the backlight is off, pressing any button turns the backlight on and does not perform its function. (except for the [ON/OFF] button)

F ON/OFF lamp

This lamp lights up in green while the unit is in operation. It blinks while the remote controller is starting up or when there is an error.

The functions of the function buttons change depending on the screen. Refer to the button function guide that appears at the bottom of the LCD for the functions they serve on a given screen. When the system is centrally controlled, the button function guide that corresponds to the locked button will not appear.



G Function button [F1]

Main display: Press to change the operation mode.
Main menu: Press to move the cursor down.

H Function button [F2]

Main display: Press to decrease temperature.
Main menu: Press to move the cursor up.

I Function button [F3]

Main display: Press to increase temperature.
Main menu: Press to go to the previous page.

J Function button [F4]

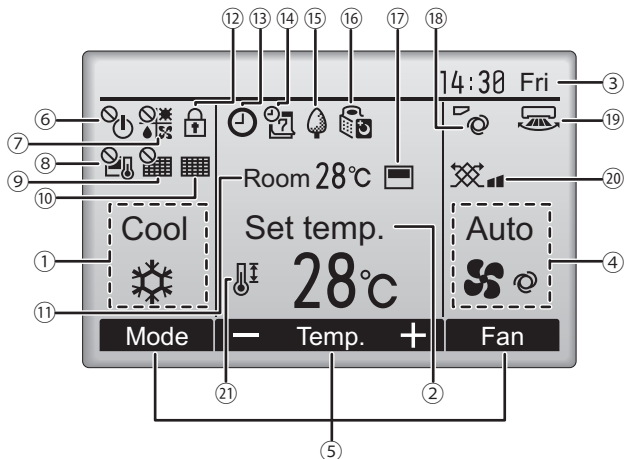
Main display: Press to change the fan speed.
Main menu: Press to go to the next page.

(2) Remote Controller Display

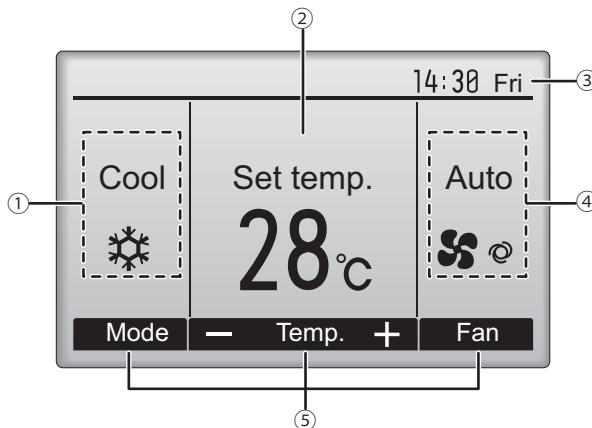
The main display can be displayed in two different modes: "Full" and "Basic."
 The factory setting is "Full." To switch to the "Basic" mode, change the setting on the "Main display" setting screen (Main menu > Initial setting > Main display).

Full mode

* All icons are displayed for explanation.



Basic mode



① Operation mode

Indoor unit operation mode appears here.

② Set temperature

Set temperature appears here.

③ Clock

Current time appears here.

④ Fan speed

Fan speed setting appears here.

⑤ Button function guide

Functions of the corresponding buttons appear here.

⑥

Appears when the ON/OFF operation is centrally controlled.

⑦

Appears when the operation mode is centrally controlled.

⑧

Appears when the set temperature is centrally controlled.

⑨

Appears when the filter reset function is centrally controlled.

⑩

Indicates when filter needs maintenance.

⑪ Room temperature

Current room temperature appears here.

⑫

Appears when the buttons are locked.

⑬

Appears when the On/Off timer, Night setback, or Auto-off timer function is enabled.

⊘ appears when the timer is disabled by the centralized control system.

⑭

Appears when the Weekly timer is enabled.

⑮

Appears while the units are operated in the energy-save mode. (Will not appear on some models of indoor units)

⑯

Appears while the outdoor units are operated in the silent mode.

⑰

Appears when the built-in thermistor on the remote controller is activated to monitor the room temperature (⑪).

☑ appears when the thermistor on the indoor unit is activated to monitor the room temperature.

⑱

Indicates the vane setting.

⑲

Indicates the louver setting.

⑳

Indicates the ventilation setting.

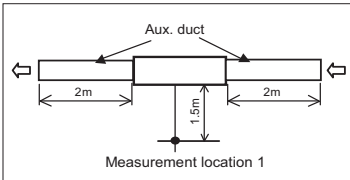
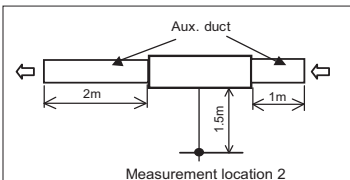
㉑

Appears when the set temperature range is restricted.

Most settings (except ON/OFF, mode, fan speed, temperature) can be made from the Main menu.

[1] Specifications

1. Specifications

Model			PEFY-WP20VMA-E	PEFY-WP25VMA-E		
Power supply	Voltage	V	1-phase 220-230-240			
	Frequency	Hz	50/60			
Cooling capacity *1		kW	2.2	2.8		
Heating capacity *1		kW	2.5	3.2		
Power consumption	Cooling	kW	0.07	0.09		
	Heating	kW	0.05	0.07		
Current consumption	Cooling	kW	0.55	0.64		
	Heating	kW	0.44	0.53		
External finish			Galvanized			
Dimensions	Height	mm	250			
	Width	mm	700	900		
	Depth	mm	732			
Net weight		kg	21	26		
Heat exchanger			Cross fin (Aluminium fin and copper tube)			
Fan	Type		Sirocco fan x 1			
	Airflow rate (Low-Mid-High)	m ³ /min	7.5-9.0-10.5	10.0-12.0-14.0		
	External static pressure	Pa	35/50/70/100/150			
Motor	Output	kW	0.085			
Air filter			PP Honeycomb fabric (washable)			
Diameter of water pipe	Inlet	in	Rc3/4 screw			
	Outlet	in	Rc3/4 screw			
Drain pipe dimensions		mm [in.]	O.D. 32[1-1/4]			
Operating noise (Low-Mid-High)	 <p>Measurement location 1</p> <p>* Measured in anechoic room.</p>		35Pa	dB (A)	23-25-28	23-26-29
			50Pa		23-26-29	23-27-30
			70Pa		24-27-30	24-28-31
			100Pa		25-28-32	26-29-33
			150Pa		28-32-36	29-33-37
	 <p>Measurement location 2</p> <p>* Measured in anechoic room.</p>		35Pa		28-30-34	28-30-34
			50Pa		28-30-34	28-30-34
			70Pa		29-32-36	29-32-36
			100Pa		29-33-37	29-33-37
			150Pa		31-35-40	32-36-40

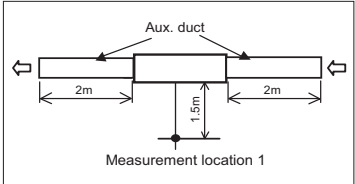
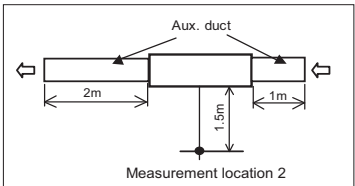
*1 <Cooling> Indoor temperature: 27°CDB/19°CWB (81°FDB/66°FWB) Outdoor temperature: 35°CDB (95°FDB)
 <Heating> Indoor temperature: 20°CDB (68°FWB) Outdoor temperature: 7°CDB/6°CWB (45°FDB/43°FWB)

[III Specifications]

Model			PEFY-WP32VMA-E	PEFY-WP40VMA-E	PEFY-WP50VMA-E		
Power supply	Voltage	V	1-phase 220-230-240				
	Frequency	Hz	50/60				
Cooling capacity *1		kW	3.6	4.5	5.6		
Heating capacity *1		kW	4.0	5.0	6.3		
Power consumption	Cooling	kW	0.11	0.14	0.14		
	Heating	kW	0.09	0.12	0.12		
Current consumption	Cooling	kW	0.74	1.15	1.15		
	Heating	kW	0.63	1.04	1.04		
External finish			Galvanized				
Dimensions	Height	mm	250				
	Width	mm	900	1100			
	Depth	mm	732				
Net weight		kg	26	31			
Heat exchanger			Cross fin (Aluminium fin and copper tube)				
Fan	Type		Sirocco fan x 1	Sirocco fan x 2			
	Airflow rate (Low-Mid-High)	m ³ /min	12.0-14.5-17.0	14.5-18.0-21.0	14.5-18.0-21.0		
	External static pressure	Pa	35/50/70/100/150				
Motor	Output	kW	0.085	0.121			
Air filter			PP Honeycomb fabric (washable)				
Diameter of water pipe	Inlet	in	Rc3/4 screw				
	Outlet	in	Rc3/4 screw				
Drain pipe dimensions		mm [in.]	O.D. 32[1-1/4]				
Operating noise (Low-Mid-High)		35Pa	<p>Measurement location 1</p> <p>* Measured in anechoic room.</p>	dB (A)	24-28-31	26-29-33	26-29-33
		50Pa			25-29-32	26-29-34	26-29-34
		70Pa			26-30-33	26-30-35	26-30-35
		100Pa			27-31-34	29-33-37	29-33-37
		150Pa			29-34-38	32-37-41	32-37-41
		35Pa			28-31-35	30-33-37	30-33-37
		50Pa			28-32-35	30-34-38	30-34-38
		70Pa			29-33-37	31-36-39	31-36-39
		100Pa			30-34-38	33-37-41	33-37-41
		150Pa			32-37-41	36-41-44	36-41-44
			<p>Measurement location 2</p> <p>* Measured in anechoic room.</p>				

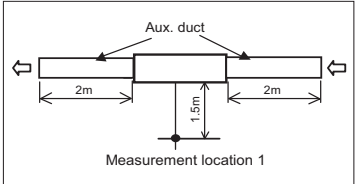
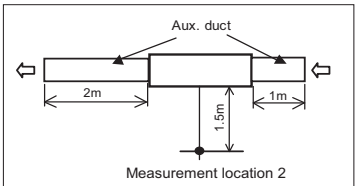
*1 <Cooling> Indoor temperature: 27°CDB/19°CWB (81°FDB/66°FWB) Outdoor temperature: 35°CDB (95°FDB)
 <Heating> Indoor temperature: 20°CDB (68°FWB) Outdoor temperature: 7°CDB/6°CWB (45°FDB/43°FWB)

[III Specifications]

Model			PEFY-WP63VMA-E	PEFY-WP71VMA-E	PEFY-WP80VMA-E	
Power supply	Voltage	V	1-phase 220-230-240			
	Frequency	Hz	50/60			
Cooling capacity *1		kW	7.1	8.0	9.0	
Heating capacity *1		kW	8.0	9.0	10.0	
Power consumption	Cooling	kW	0.14	0.24	0.24	
	Heating	kW	0.12	0.22	0.22	
Current consumption	Cooling	kW	1.15	1.47	1.47	
	Heating	kW	1.04	1.38	1.38	
External finish			Galvanized			
Dimensions	Height	mm	250			
	Width	mm	1100	1400		
	Depth	mm	732			
Net weight		kg	31	40		
Heat exchanger			Cross fin (Aluminium fin and copper tube)			
Fan	Type	Sirocco fan x 2				
	Airflow rate (Low-Mid-High)	m ³ /min	14.5-18.0-21.0	23.0-28.0-33.0	23.0-28.0-33.0	
	External static pressure	Pa	35/50/70/100/150			
Motor	Output	kW	0.121	0.244		
Air filter			PP Honeycomb fabric (washable)			
Diameter of water pipe	Inlet	in	Rc1-1/4 screw			
	Outlet	in	Rc1-1/4 screw			
Drain pipe dimensions		mm [in.]	O.D. 32[1-1/4]			
Operating noise (Low-Mid-High)		35Pa	dB (A)	26-29-33	28-32-36	28-32-36
 <p>* Measured in anechoic room.</p>		50Pa		26-29-34	28-33-37	28-33-37
		70Pa		26-30-35	30-35-39	30-35-39
		100Pa		29-33-37	31-36-40	31-36-40
		150Pa		32-37-41	33-38-43	33-38-43
		35Pa		30-33-37	31-36-40	31-36-40
 <p>* Measured in anechoic room.</p>		50Pa		30-34-38	32-37-41	32-37-41
		70Pa		31-36-39	33-38-42	33-38-42
		100Pa		33-37-41	35-39-43	35-39-43
		150Pa		36-41-44	37-42-45	37-42-45

*1 <Cooling> Indoor temperature: 27°CDB/19°CWB (81°FDB/66°FWB) Outdoor temperature: 35°CDB (95°FDB)
 <Heating> Indoor temperature: 20°CDB (68°FWB) Outdoor temperature: 7°CDB/6°CWB (45°FDB/43°FWB)

[III Specifications]

Model			PEFY-WP100VMA-E	PEFY-WP125VMA-E	
Power supply	Voltage	V	1-phase 220-230-240		
	Frequency	Hz	50/60		
Cooling capacity *1		kW	11.2	14.0	
Heating capacity *1		kW	12.5	16.0	
Power consumption	Cooling	kW	0.24	0.36	
	Heating	kW	0.22	0.34	
Current consumption	Cooling	kW	1.47	2.21	
	Heating	kW	1.38	2.1	
External finish			Galvanized		
Dimensions	Height	mm	250		
	Width	mm	1400	1600	
	Depth	mm	732		
Net weight		kg	40	42	
Heat exchanger			Cross fin (Aluminium fin and copper tube)		
Fan	Type	Sirocco fan x 2			
	Airflow rate (Low-Mid-High)	m ³ /min	23.0-28.0-33.0	29.5-33.5-42.0	
	External static pressure	Pa	35/50/70/100/150		
Motor	Output	kW	0.244		
Air filter			PP Honeycomb fabric (washable)		
Diameter of water pipe	Inlet	in	Rc1-1/4 screw		
	Outlet	in	Rc1-1/4 screw		
Drain pipe dimensions		mm [in.]	O.D. 32[1-1/4]		
Operating noise (Low-Mid-High)		35Pa	dB (A)	28-32-36	31-35-40
 <p>Measurement location 1</p> <p>* Measured in anechoic room.</p>		50Pa		28-33-37	33-37-42
		70Pa		30-35-39	34-38-43
		100Pa		31-36-40	35-39-44
		150Pa		33-38-43	37-41-45
		35Pa		31-36-40	36-41-45
 <p>Measurement location 2</p> <p>* Measured in anechoic room.</p>		50Pa		32-37-41	36-41-45
		70Pa		33-38-42	38-42-46
		100Pa		35-39-43	39-43-47
		150Pa		37-42-45	40-45-48

*1 <Cooling> Indoor temperature: 27°CDB/19°CWB (81°FDB/66°F WB) Outdoor temperature: 35°CDB (95°FDB)
 <Heating> Indoor temperature: 20°CDB (68°F WB) Outdoor temperature: 7°CDB/6°CWB (45°FDB/43°F WB)

2. Electrical component specifications

Component	Sym- bol	PEFY-WP20VMA-E
Room temperature thermistor	TH21	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ
Water inlet pipe thermistor	TH22	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ
Water outlet pipe thermistor	TH23	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ
Fuse	FUSE	250V 6.3A
Fan motor		8-pole, Output 85W SIC-70CW-D885-1
Power supply terminal block	TB2	(L, N, ⊕) 250V 20A
Transmission terminal block	TB5 TB15	(1, 2) 250V 15A, (M1, M2, S) 250V 20A
Drain float switch	DS	Open/short detection Initial contact resistance 500 mΩ or less

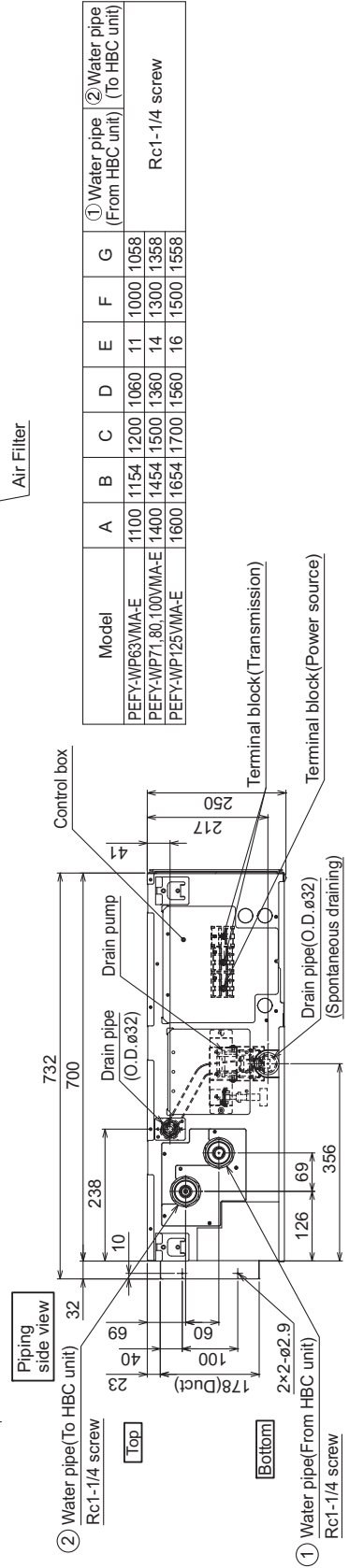
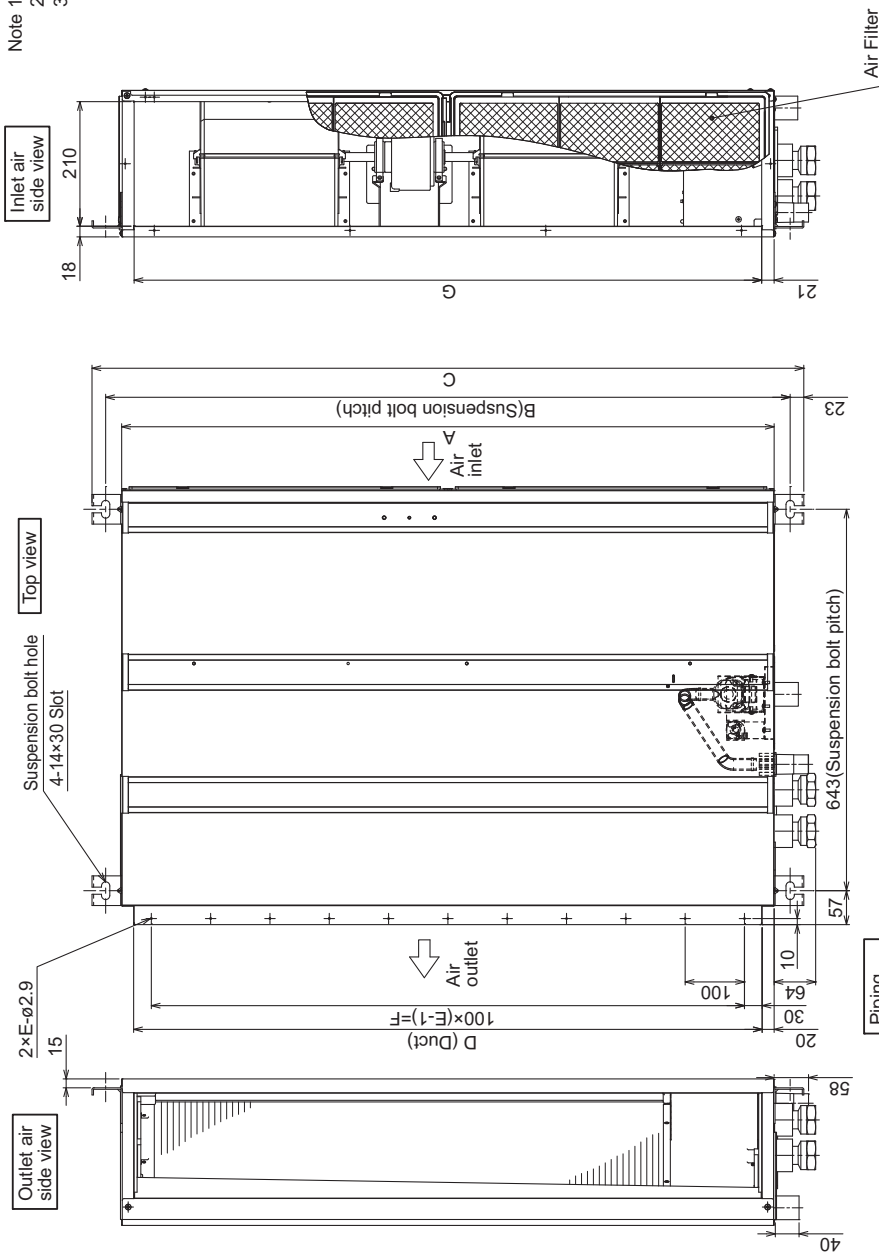
Component	Sym- bol	PEFY- WP25VMA-E	PEFY- WP32VMA-E	PEFY- WP40VMA-E
Room temperature thermistor	TH21	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ		
Water inlet pipe thermistor	TH22	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ		
Water outlet pipe thermistor	TH23	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ		
Fuse	FUSE	250V 6.3A		
Fan motor		8-pole, Output 85W SIC-70CW-D885-2		8-pole, Output 121W SIC-70CW-D8121-1
Power supply terminal block	TB2	(L, N, ⊕) 250V 20A		
Transmission terminal block	TB5 TB15	(1, 2) 250V 15A, (M1, M2, S) 250V 20A		
Drain float switch	DS	Open/short detection Initial contact resistance 500 mΩ or less		

Component	Sym- bol	PEFY- WP50VMA-E	PEFY- WP63VMA-E	PEFY- WP71VMA-E
Room temperature thermistor	TH21	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ		
Water inlet pipe thermistor	TH22	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ		
Water outlet pipe thermistor	TH23	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ		
Fuse	FUSE	250V 6.3A		
Fan motor		8-pole, Output 121W SIC-70CW-D8121-1		8-pole, Output 244W SIC-70CW-D8244-1
Power supply terminal block	TB2	(L, N, ⊕) 250V 20A		
Transmission terminal block	TB5 TB15	(1, 2) 250V 15A, (M1, M2, S) 250V 20A		
Drain float switch	DS	Open/short detection Initial contact resistance 500 mΩ or less		

Component	Sym- bol	PEFY- WP80VMA-E	PEFY- WP100VMA-E	PEFY- WP125VMA-E
Room temperature thermistor	TH21	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ		
Water inlet pipe thermistor	TH22	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ		
Water outlet pipe thermistor	TH23	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ		
Fuse	FUSE	250V 6.3A		
Fan motor		8-pole, Output 244W SIC-70CW-D8244-1		
Power supply terminal block	TB2	(L, N, ⊕) 250V 20A		
Transmission terminal block	TB5 TB15	(1, 2) 250V 15A, (M1, M2, S) 250V 20A		
Drain float switch	DS	Open/short detection Initial contact resistance 500 mΩ or less		

2. PEFY-WP63, 71, 80, 100, 125VMA-E

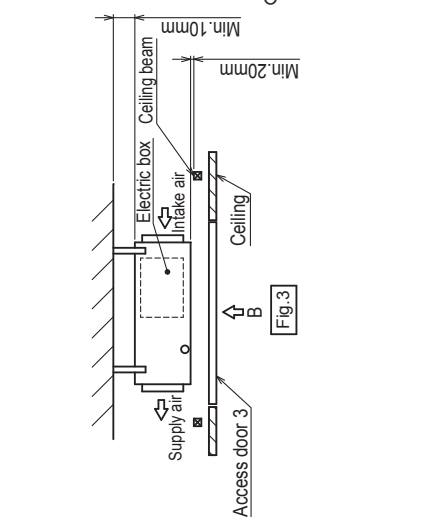
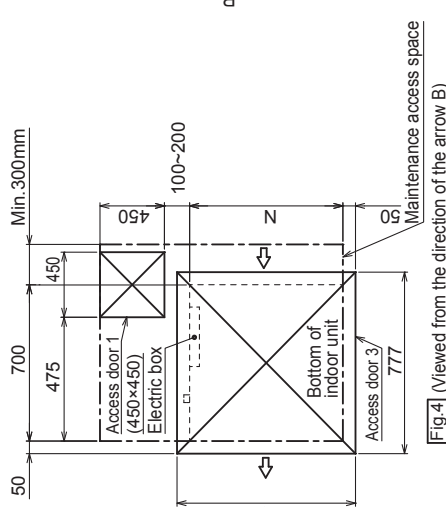
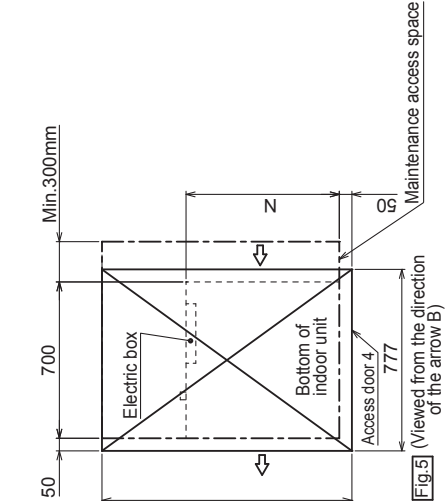
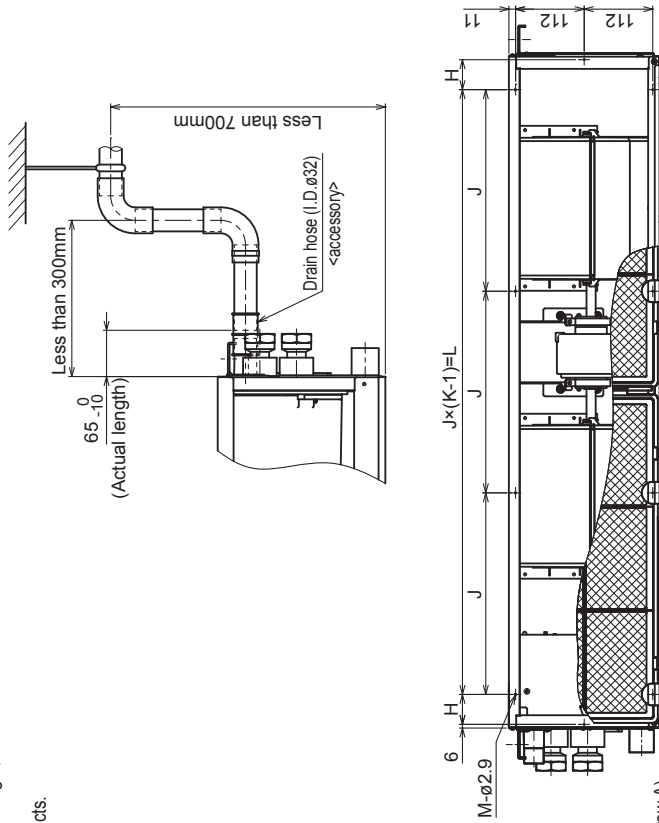
- Note 1. Use an M10 screw for the Suspension bolt (field supply).
 2. Keep the service space for the maintenance at the bottom.
 3. In case of the inlet duct is used, then remove the air filter (supply with the unit), then install the filter (field supply) at suction side.



Model	A	B	C	D	E	F	G	Water pipe	
								① (From HBC unit)	② (To HBC unit)
PEFY-WP63VMA-E	1100	1154	1200	1060	11	1000	1058	Rc1-1/4 screw	
PEFY-WP71,80,100VMA-E	1400	1454	1500	1360	14	1300	1358		
PEFY-WP125VMA-E	1600	1654	1700	1560	16	1500	1558		

[Maintenance access space]
 Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and electric box in one of the following ways.
 Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.

- (1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
 - Create access door 1 and 2 (450x450mm each) as shown in Fig.2.
 (Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)
- (2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
 (At least 20mm of space should be left below the unit as shown in Fig.3.)
 - Create access door 1 diagonally below the electric box and access door 3 below the unit as shown in Fig.4.
 or
 - Create access door 4 below the electric box and the unit as shown in Fig.5.



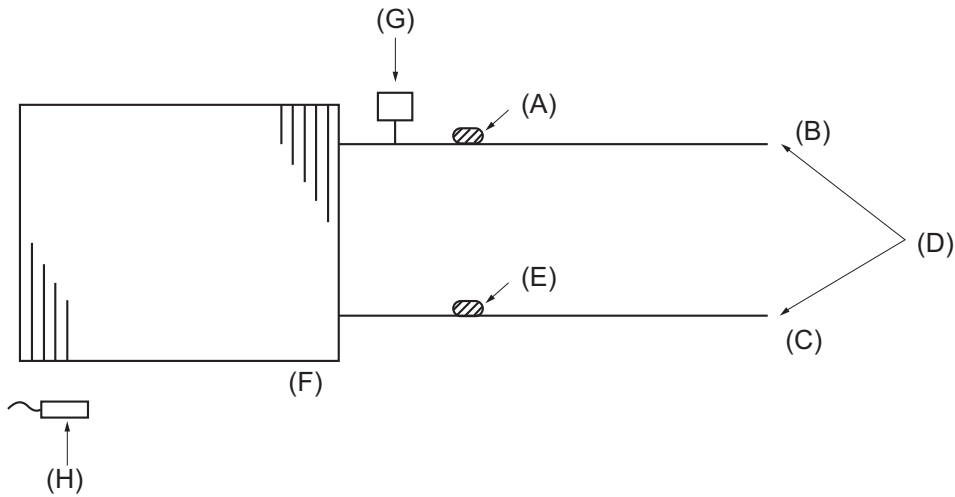
Model	H	J	K	L	M	N	P	Q	R
PEFY-WP63VMA-E	49	330	4	990	10	1100	250~350	1200	1700
PEFY-WP71.80.100VMA-E	54	320	5	1280	12	1400	400~500	1500	2000
PEFY-WP125VMA-E	54	370	5	1480	12	1600	500~600	1700	2200

Table.1 SYMBOL EXPLANATION

SYM-BOL	NAME	SYM-BOL	NAME	SYM-BOL	NAME
I.B.	Indoor controller board	CN32	Connector (Remote switch)	SW2 (I.B.)	Switch (for capacity code)
P.B.	Power supply board	CN41	Connector (HA terminal-A)	SW3 (I.B.)	Switch (for mode selection)
TB2	Power source terminal block	CN51	Connector (Centrally control)	SW4 (I.B.)	Switch (for model selection)
TB5	Transmission terminal block	CN52	Connector (Remote indication)	SW5 (I.B.)	Switch (for mode selection)
TB15	Transmission terminal block	CN90	Connector (Wireless)	SWE (I.B.)	Connector (emergency operation)
F01	Fuse AC 250V 6.3A	CN105	Connector (IT terminal)	SW11 (I.B.)	Switch (1s digit address set)
ZNR01, 02	Varistor	CN2A	Connector (0-10V Analog input)	SW12 (I.B.)	Switch (10ths digit address set)
DSA	Arrester	FS	Float switch	SW14 (I.B.)	Switch (BRANCH No.)
X01	Aux. relay	TH21	Thermistor (inlet air temp. detection)	SWA (I.B.)	Switch (for static pressure selection)
X10	Aux. relay	TH22	Thermistor (piping temp. detection / water inlet)	SWC (I.B.)	Switch (for static pressure selection)
ACL	AC reactor (Power factor improvement)	TH23	Thermistor (piping temp. detection / water outlet)		
CN27	Connector (Damper)	SW1 (I.B.)	Switch (for mode selection)		

- Note 1 Wiring to TB2, TB5, and TB15 indicated by the double-dashed lines is on-site work.
 2 ⊙ terminal block, ⊖ connector.

[1] Refrigerant system diagram



- (A) Water outlet thermistor TH23
- (B) Water outlet
- (C) Water inlet
- (D) Screw connections
- (E) Water inlet thermistor TH22
- (F) Heat exchanger
- (G) Manual air purge valve
- (H) Room temperature thermistor TH21

Capacity	PEFY-WP20, 25, 32, 40, 50VMA-E	PEFY-WP63, 71, 80, 100, 125VMA-E
Water outlet	Rc3/4 screw	Rc1-1/4 screw
Water inlet	Rc3/4 screw	Rc1-1/4 screw

[1] Troubleshooting

1. Check methods

1. Component and check points

(1) Thermistor

- Room temperature thermistor (TH21)
- Water inlet thermistor (TH22)
- Water outlet thermistor (TH23)

Disconnect the connector and measure the resistance between terminals with a volt meter.
(Ambient temperature 10°C - 30°C)

Normal	Abnormal
4.3kΩ - 9.6kΩ	Open or short

(Refer to the thermistor characteristic graph below.)

1) Thermistor characteristic graph

Low-temperature thermistor

- Room temperature thermistor (TH21)
- Water inlet pipe thermistor (TH22)
- Water outlet thermistor (TH23)
- Drain sensor (DS)

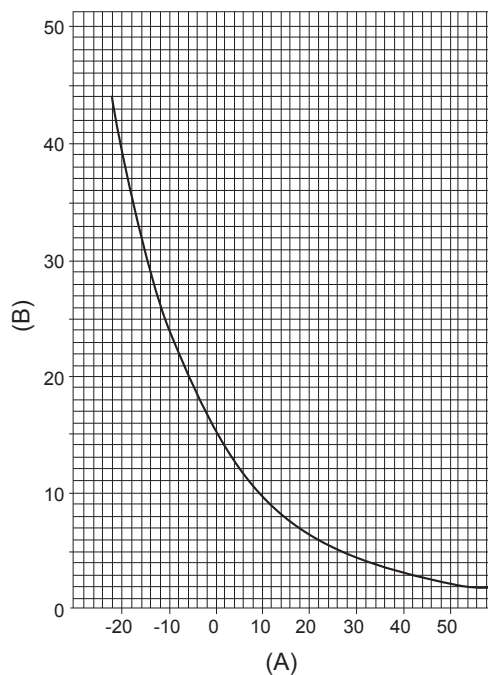
- Thermistor $R_0 = 15\text{ k}\Omega \pm 3\%$
- Multiplier of B = $3480\text{ k}\Omega \pm 2\%$

$$R_t = 15 \exp \left\{ 3480 \left(\frac{1}{273+t} - \frac{1}{273} \right) \right\}$$

- 0°C 15kΩ
- 10°C 9.6kΩ
- 20°C 6.3kΩ
- 25°C 5.2kΩ
- 30°C 4.3kΩ
- 40°C 3.0kΩ

(A) Temperature (°C)

(B) Resistance (kΩ)

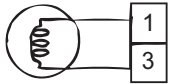


(2) Fan motor (CNMF)

Refer to the page on "DC fan motor (fan motor/indoor control board)."

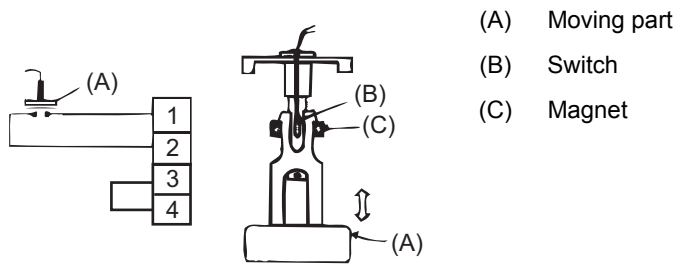
(3) Drain-up mechanism

Measure the resistance between the terminals with a tester.
(coil temperature 20°C)

	Normal	Abnormal
	340 Ω	Open or short

(4) Drain float switch (CN4F)

Disconnect the connector, and measure the resistance between terminals with a volt meter.



Position of the moving part	Normal	Abnormal
Up	Short	(any position but short)
Down	Open	(any position but open)

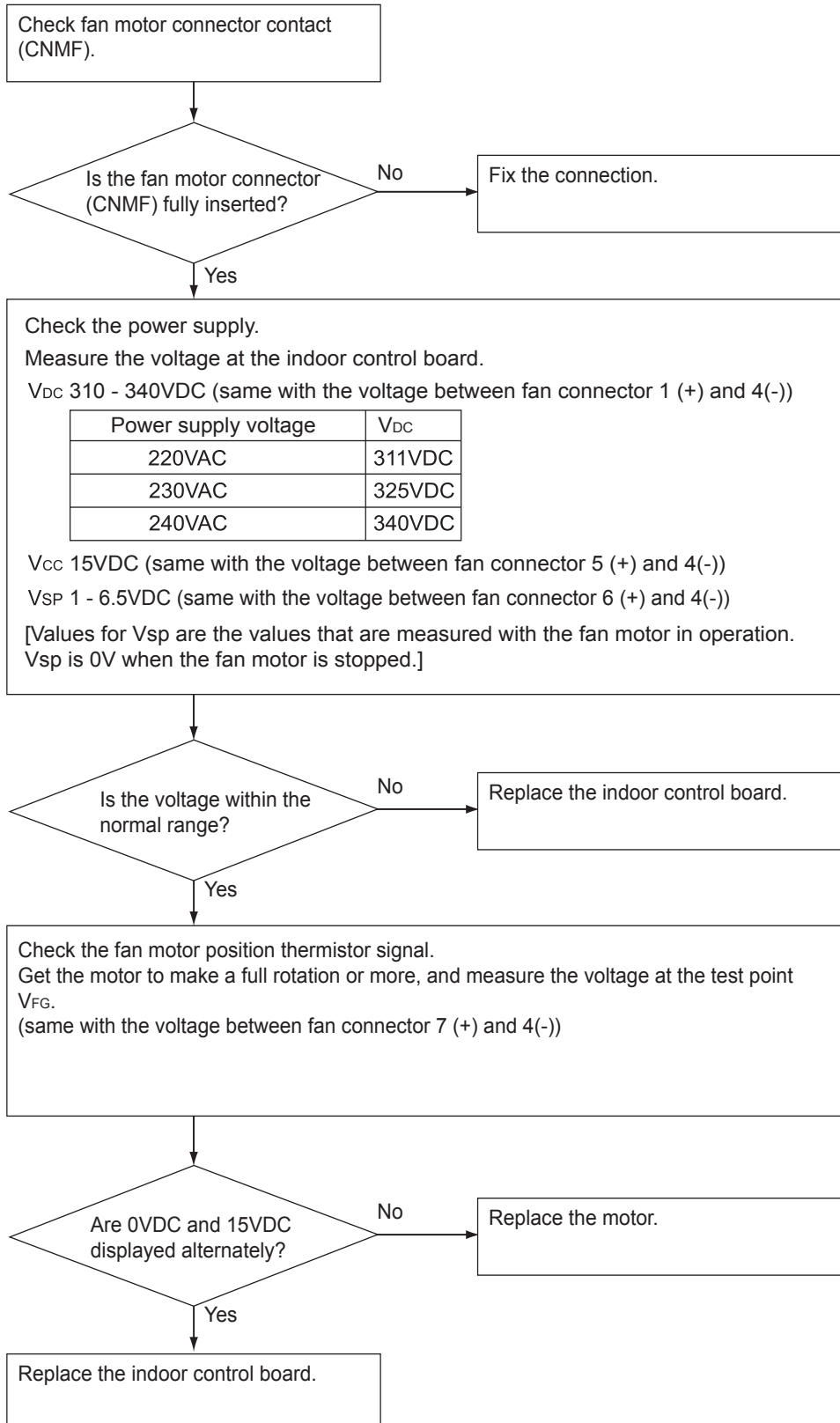
2. DC fan motor (fan motor/indoor control board)

1. CAUTION

- A high voltage is applied to the connector for connection to the fan motor (CNMF).
- Do not unplug the connector CNMF with the unit energized to avoid damage to the indoor control board and fan motor.

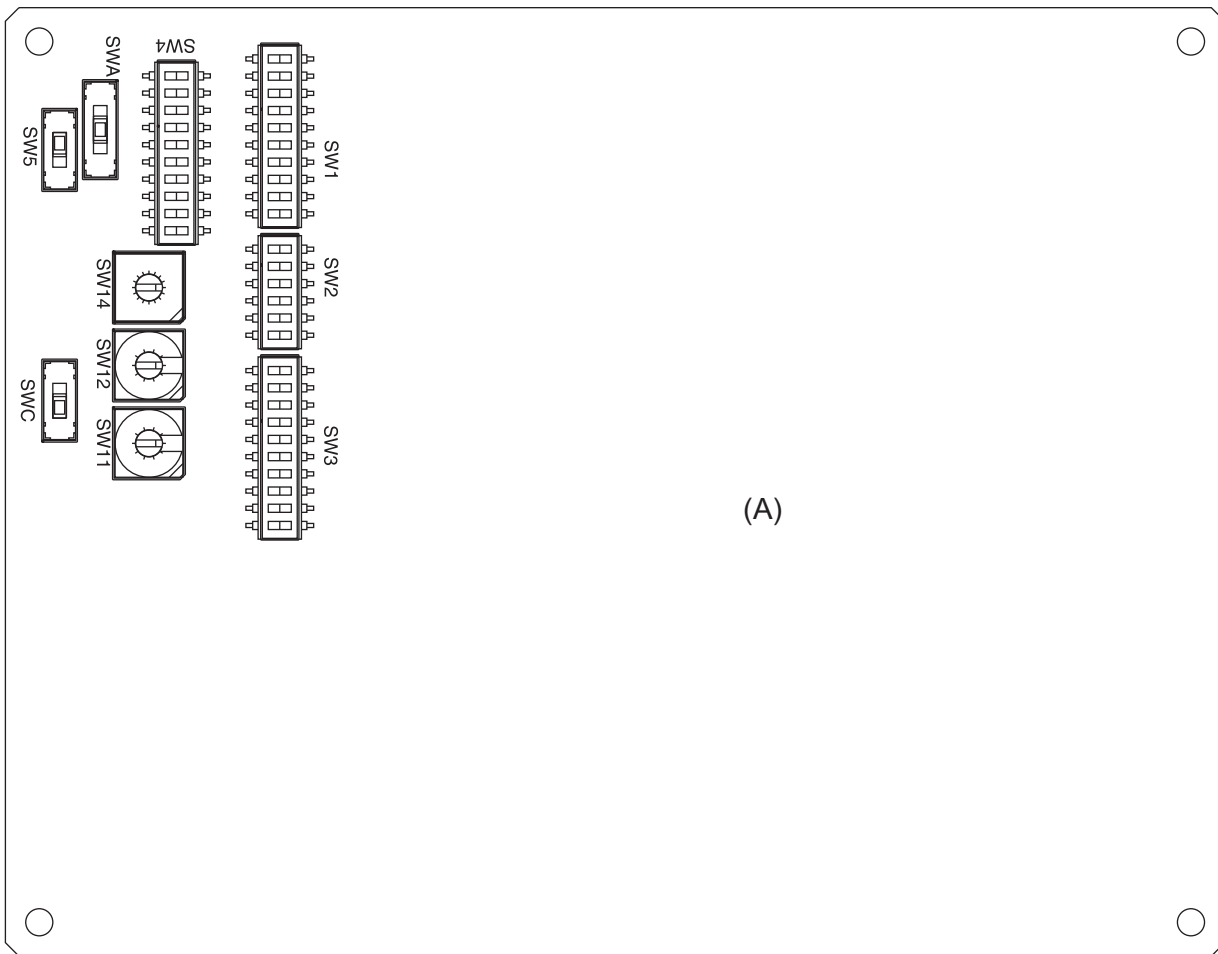
2. Troubleshooting

- Symptom: Indoor unit fan does not run.



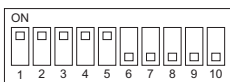
3. Address switch setting

Make sure that power to the unit is turned off.



(A)

(B)



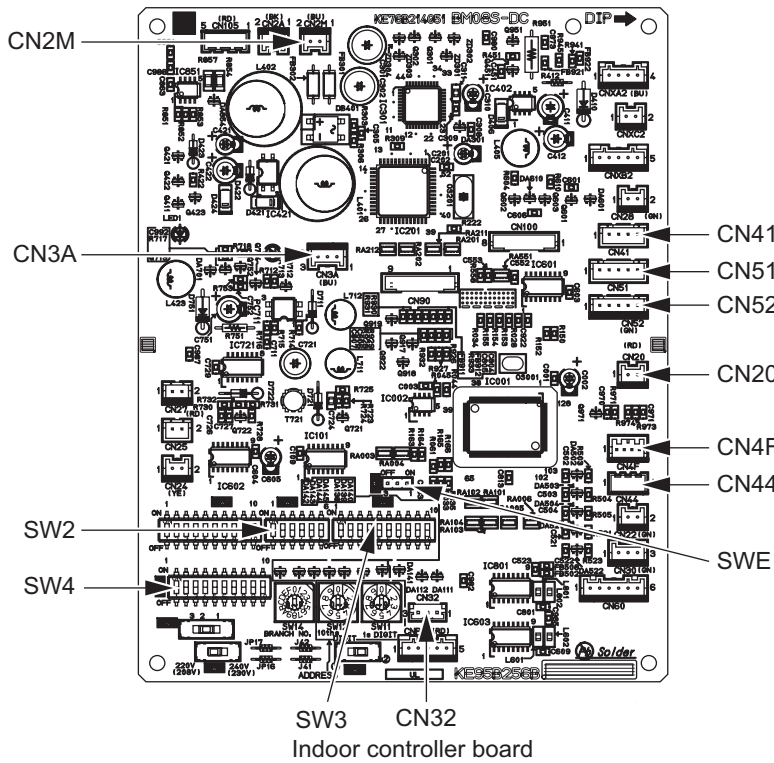
The figure at left shows that the switches 1 through 5 are set to ON and 6 through 10 are set to OFF.

- (A) Indoor unit control board
- (B) Factory setting (all models)

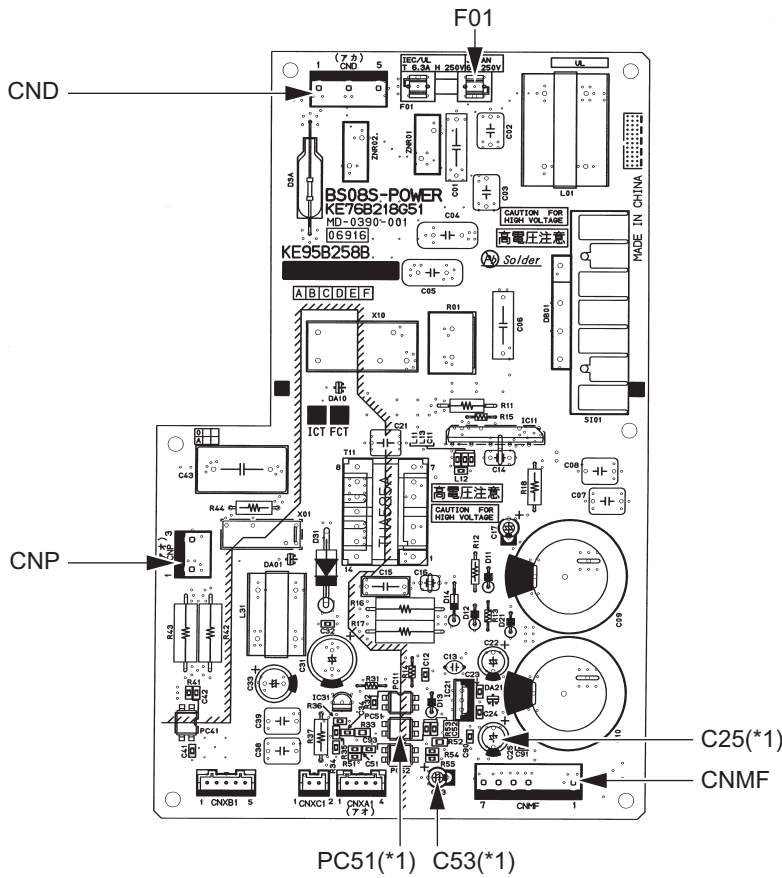
1. When using an ME remote controller, set the address with the rotary switches (SW11, SW12).
 •Address setting is not required when the unit remote controller is used.
On-site address setting is required for the indoor units to run.
2. Address settings vary in different systems.
 Refer to the section on address setting in the outdoor unit installation manual.
3. Address is set with a combination of SW12 (10's digit) and SW11 (1's digit).
 To set the address to "3," set SW12 to "0" and SW11 to "3."
 To set the address to "25," set SW 12 to "2" and SW 11 to "5."

4. Voltage test points on the control board

1. PEFY-WP20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA-E



Indoor controller board



Power supply board

- F01 Fuse (AC 250V 6.3A)
 - CND Power supply voltage (220 - 240VAC)
 - CN2M For M-NET transmission cable connection (24 - 30VDC)
 - SWE Emergency operation
 - SW2 Capacity setting
 - SW4 Function setting
 - SW3 Function setting
 - CN32 Remote start/stop adapter
 - CN3A For MA remote controller cable connection (10 - 13 VDC (Between 1 and 3.))
 - CN52 Remote display
 - CN51 Centralized control
 - CN41 JAMA standard HA terminal A
 - CN44 Thermistor (water inlet / water outlet temperature)
 - CN4F Float thermistor
 - CN20 Thermistor (Inlet temperature)
 - CNMF Fan motor output
 - 1 - 4: 310 - 340 VDC
 - 5 - 4: 15 VDC
 - 6 - 4: 0 - 6.5 VDC
 - 7 - 4: Stop 0 or 15 VDC
 - Run 7.5 VDC (0 - 15 pulse)
 - CNP Drain-up mechanism output (200VAC)
- (*1)
- V_{FG} Voltage on the (-) side of PC51 and C25 (Same with the voltage between 7 (+) and 4 (-) of CNMF)
 - V_{CC} Voltage between the C25 pins 15 VDC (Same with the voltage between 5 (+) and 4 (-) of CNMF)
 - V_{sp} Voltage between the C53 pins 0VDC (with the fan stopped) 1 - 6.5VDC (with the fan in operation) (Same with the voltage between 6 (+) and 4 (-) of CNMF)

5. Dipswitch setting (Factory setting)

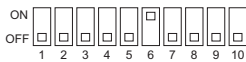
1. Function setting

(1) SW1

Switch position	Function	Switch setting	
		ON	OFF
1	Active Thermistor (Intake air thermistor)	Built-in thermistor on the remote controller	Indoor unit
2	Filter clogging detection	Available	Unavailable
3	Filter life	2500 hr	100 hr
4	Outdoor air intake	Enabled	Disabled
5	Remote display	Thermo-ON signal	Fan output
6	Humidifier operation	During heating mode	During heating operation
7	Fan speed	Low	Very low
8	Fan speed at heating Thermo-OFF	Preset fan speed	Follows the setting of SW1-7
9	Auto restart after power failure	Enabled	Disabled
10	Power start/stop	Enabled	Disabled

1) Address board

Factory setting



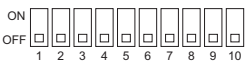
(2) SW3

Switch position	Function	Switch setting	
		ON	OFF
1	Unit type	Cooling only	Heat pump
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	Heating 4-deg up	Disabled	Enabled
9	-	-	-
10	-	-	-

1) Indoor control board

Dipswitch settings must be made while the unit is stopped.

Factory setting



The figure at left shows that the switches 1 through 5 are set to ON and 6 through 10 are set to OFF.

2. Capacity code setting

(1) SW2

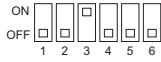
1) Indoor control board

Dipswitch settings must be made while the unit is stopped.

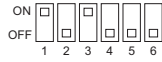
Factory setting

The switches are set to correspond to the unit capacity.

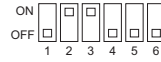
PEFY-WP20VMA-E



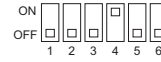
PEFY-WP25VMA-E



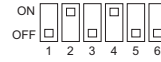
PEFY-WP32VMA-E



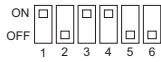
PEFY-WP40VMA-E



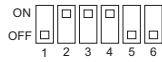
PEFY-WP50VMA-E



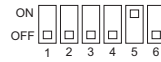
PEFY-WP63VMA-E



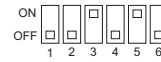
PEFY-WP71VMA-E



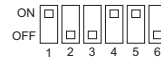
PEFY-WP80VMA-E



PEFY-WP100VMA-E



PEFY-WP125VMA-E



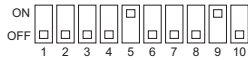
3. Model setting

(1) SW4

1) Indoor control board

Dipswitch settings must be made while the unit is stopped.

Factory setting



Note:

Changes made to the dipswitches SW1, SW2, and SW3 will become effective when the unit comes to a stop (remote controller off). There is no need to power cycle the unit.

4. Power voltage setting

(1) SW5

1) Indoor control board

Dipswitch settings must be operated with the main power turned OFF.

Factory setting



Set SW5 to 240V side when the power supply is 240 volts.
When the power supply is 220 and 230 volts, set SW5 to 220V side.



The figure at left shows that the switches 1 through 5 are set to ON and 6 through 10 are set to OFF.

5. External static pressure

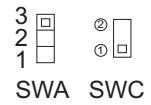
(1) SWA, SWC

1) Indoor control board

All models

35Pa		50Pa		70Pa		100Pa		150Pa	
3 2 1		3 2 1		3 2 1		3 2 1		3 2 1	
	SWA		SWC		SWA		SWC		SWC

Factory setting



Note:

Changes that are made to the dipswitches SWA and SWC immediately become effective regardless of the unit's operation status (RUN/STOP) or the remote controller status (ON/OFF).

6. 1s and 10ths digits

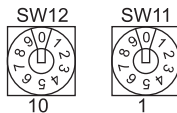
(1) SW11, SW12 (Rotary switch)

The use of a network remote controller (PAR-F27MEA) requires address setting.

1) Indoor control board

Address settings must be made while the unit is stopped.

Factory setting



7. Connection No. setting

(1) SW14 (Rotary switch)

This switch is used when the unit connected to an R2 series of outdoor unit.

1) Indoor control board

Factory setting



Note:

Changes to the dipswitches SW11, SW12, SW14, and SW15 must be made while the unit is stopped and the remote controller is OFF.



The figure at left shows that the switch is set to 1.

[1] Disassembly Procedure

1. Control box

Exercise caution when removing heavy parts.

1. Removing the control box cover
 - (1) Remove the three fixing screws on the cover (A) to remove it.

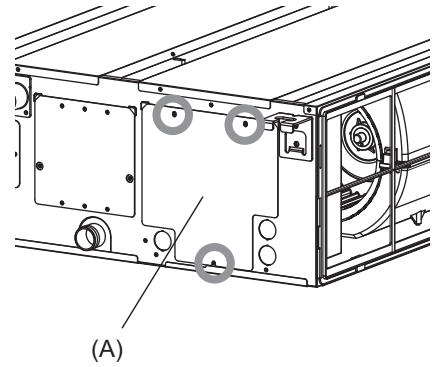


Fig.1

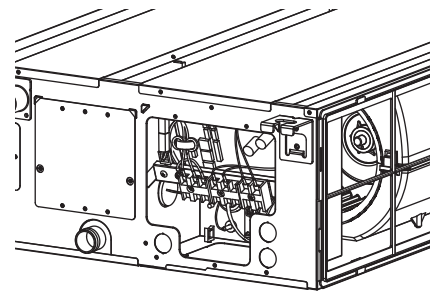


Fig.2

2. Thermistor (Intake air)

Exercise caution when removing heavy parts.

1. Remove the control box cover according to the procedure in **section 1**.
2. Remove the thermistor.
 - (1) Pull out the thermistor holder (B) and thermistor (C) on the control box.

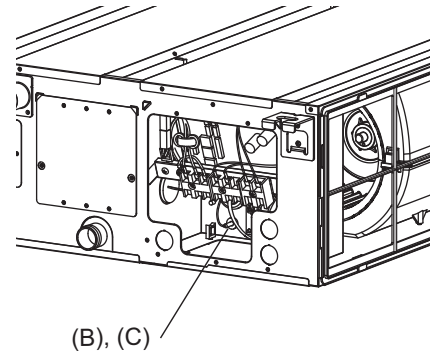


Fig.3

3. Drainpan

Exercise caution when removing heavy parts.

1. Removing the filter and the bottom plate

- (1) Push down the tab on the filter, and pull out the filter in the direction of the arrow 1.
- (2) Remove the fixing screws on the bottom plate (D), (E) to remove it.

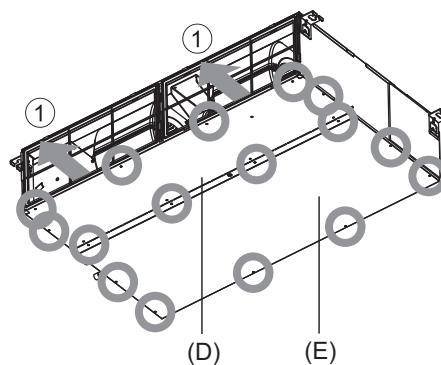


Fig.4

2. Removing the drainpan

- (1) Pull out the drain pan in the direction of the arrow 2.

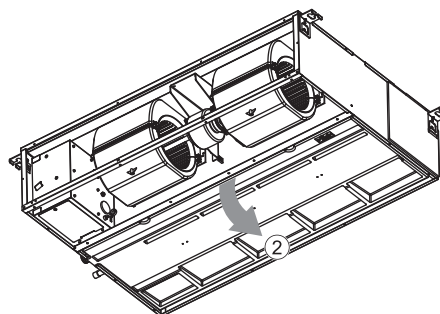


Fig.5

Note
•Drain the water out of the drain pan before removing it.

4. Thermistor (Water outlet) (Water inlet)

Exercise caution when removing heavy parts.

1. Remove the drain pan according to the procedure in **section 3**.
2. Removing the Heat exchanger cover
 - (1) Remove the four fixing screws on the heat exchanger cover (F) to remove it.

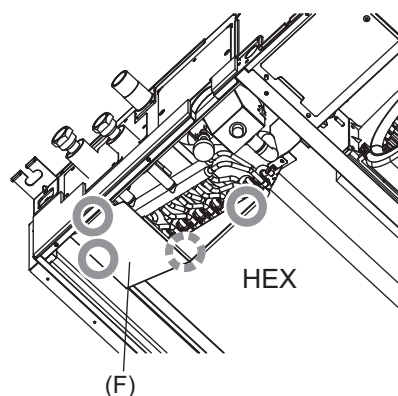


Fig.6

3. Removing the thermistor
 - (1) Remove the thermistor (G) from the thermistor holder (H) on the copper tube.

Thermistor size
Water inlet: $\varnothing 8\text{mm}$
Water outlet: $\varnothing 6\text{mm}$

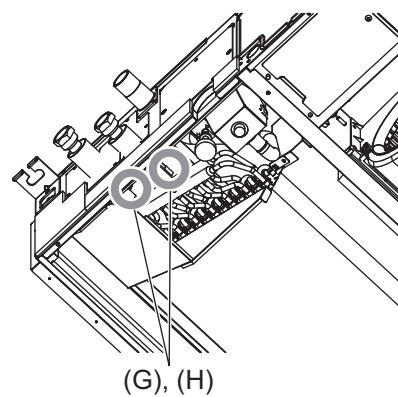


Fig.7

5. Fan and fan motor

Exercise caution when removing heavy parts.

1. Removing the filter and the bottom plate

- (1) Push down the tab on the filter, and pull out the filter in the direction of the arrow 1.
- (2) Remove the fixing screws on the bottom plate (J) to remove it.

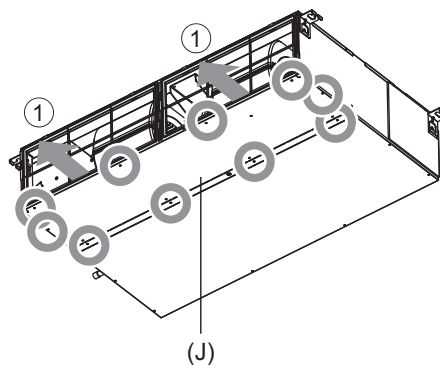


Fig.8

(a) Tab

2. Removing the fan casing (bottom half)

- (1) Squeeze the tabs on the fan casing to remove it in the direction of arrow 2.

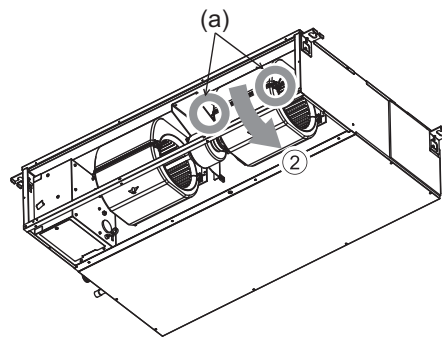


Fig.9

3. Removing the motor cable

- (1) Remove the motor cable through the rubber bush.

4. Removing the fan motor and the Sirocco fan

- (1) Remove the two motor fixing screws to remove the motor and the Sirocco fan in the direction of arrow 3.

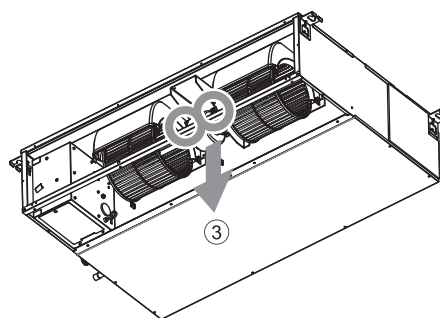


Fig.10

- (2) Remove the four fan case fixing screws to take the top half of the fan casing off.

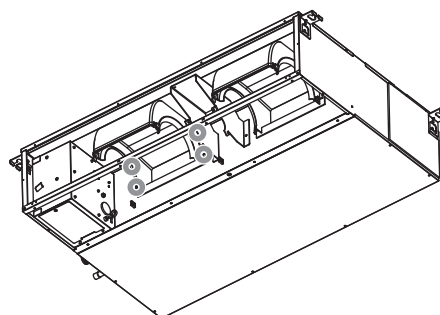


Fig.11

6. Heat exchanger

Exercise caution when removing heavy parts.

1. Remove the drain pan according to the procedure in **section 3**.
2. Remove the heat exchanger cover according to the procedure in **section 4. 2**.
3. Removing the cover
 - (1) Remove the five fixing screws on the cover (K) to remove it.

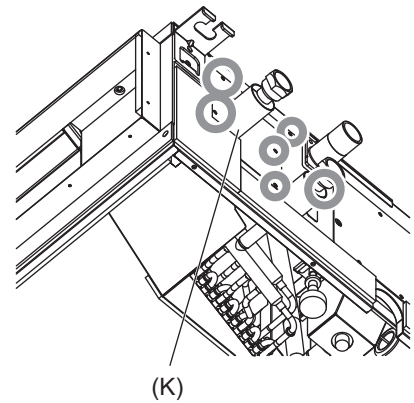


Fig.12

(K) Pipe support plate

4. Removing the Heat exchanger
 - (1) Remove the fixing screws on the heat exchanger (M) to remove it.

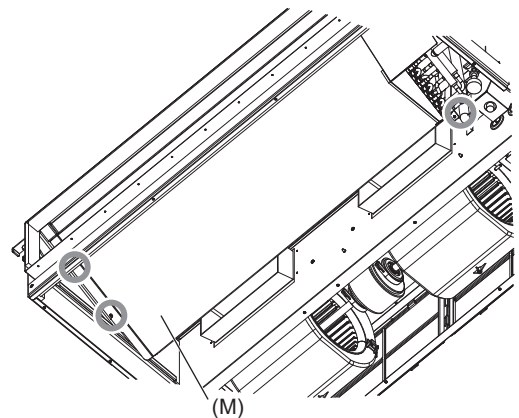


Fig.13

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