

# TECHNICAL & SERVICE MANUAL

## Series PLFY Ceiling Cassettes

Indoor unit

[Model Name]

[Service Ref.]

PLFY-WL10VFM-E

**PLFY-WL10VFM-E.TH**

PLFY-WL15VFM-E

**PLFY-WL15VFM-E.TH**

PLFY-WL20VFM-E

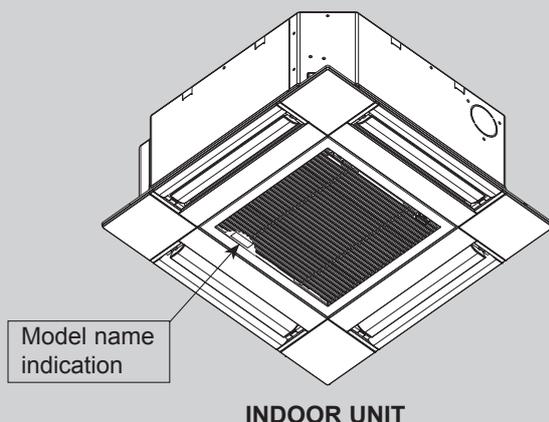
**PLFY-WL20VFM-E.TH**

PLFY-WL25VFM-E

**PLFY-WL25VFM-E.TH**

PLFY-WL32VFM-E

**PLFY-WL32VFM-E.TH**



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**PARTS CATALOG (OCB717)**

# CITY MULTI

## 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.
- **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 refrigerant 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 a refrigerant leak.**

- If leaked refrigerant is exposed to a heat source, such as a fan heater, stove, or electric grill, toxic gases will be generated.

- **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.**

- **Do not use a leak detection additive.**

### 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.**

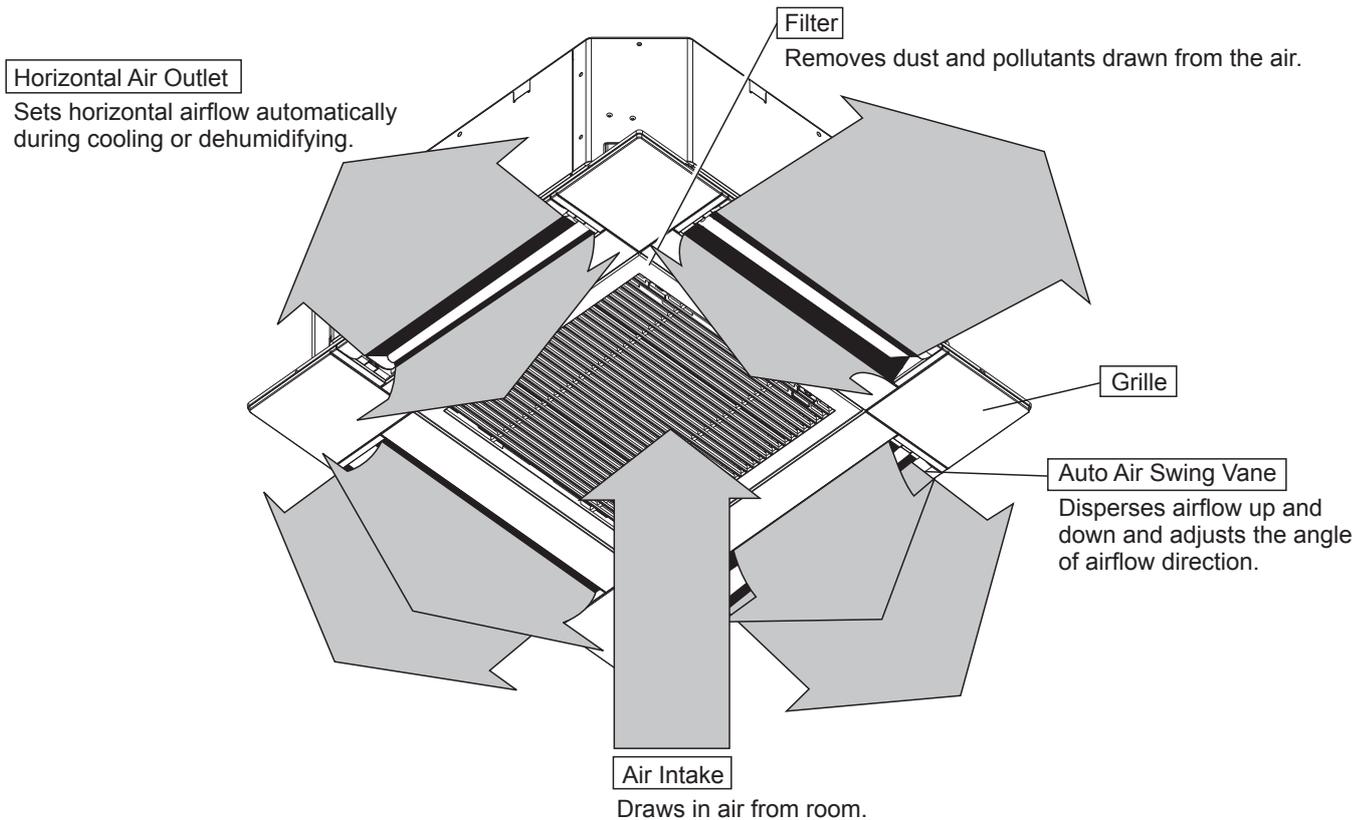
- Only use clean water as a refrigerant. The use of water outside the specification may damage the refrigerant circuit.

- **Install the unit so that external force is not applied to the water pipes.**

## 2

# PARTS NAMES AND FUNCTIONS

### 2-1. Indoor Unit



### 2-2. Wired Remote Controller <PAR-40MAA>

#### Wired remote controller function

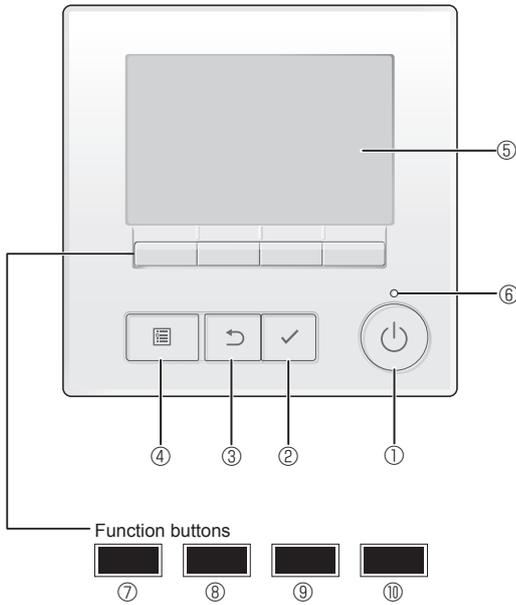
The functions which can be used are restricted according to each model.

○ : Supported ✕ : Unsupported

	Function	PAR-40MAA	
		Slim	CITY MULTI
Body	Product size H × W × D (mm)	120 × 120 × 14.5	
	LCD	Full Dot LCD	
	Backlight	○	
Energy saving	Energy saving operation schedule	○	✕
	Automatic return to the preset temperature	○	
Restriction	Setting the temperature range restriction	○	
Function*	Operation lock function	○	
	Weekly timer	○	
	ON/OFF timer	○	
	High Power	○	✕
	Manual vane angle	○	

\*Some functions may not be available depending on model types.

## Controller interface



### ① [ON/OFF] button

Press to turn ON/OFF the indoor unit.

### ② [SELECT] button

Press to save the setting.

### ③ [RETURN] button

Press to return to the previous screen.

### ④ [MENU] button

Press to bring up the Main menu.

### ⑤ Backlit LCD

Operation settings will appear.

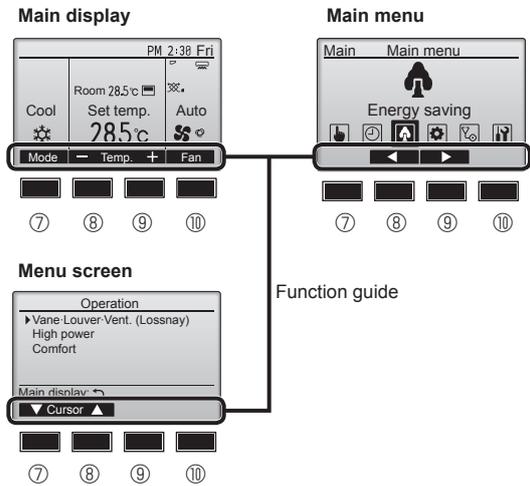
When the backlight is off, pressing any button turns the backlight on and it will stay lit for a certain period of time depending on the screen.

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

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.



### ⑥ 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.

### ⑦ Function button [F1]

Main display: Press to change the operation mode.

Menu screen: The button function varies with the screen.

### ⑧ Function button [F2]

Main display: Press to decrease temperature.

Main menu: Press to move the cursor left.

Menu screen: The button function varies with the screen.

### ⑨ Function button [F3]

Main display: Press to increase temperature.

Main menu: Press to move the cursor right.

Menu screen: The button function varies with the screen.

### ⑩ Function button [F4]

Main display: Press to change the fan speed.

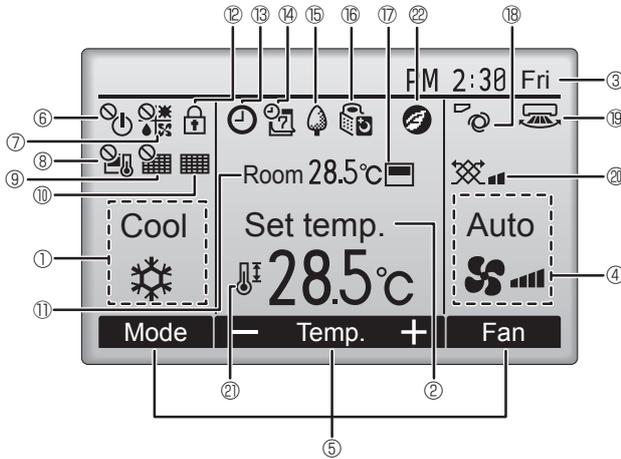
Menu screen: The button function varies with the screen.

## Display

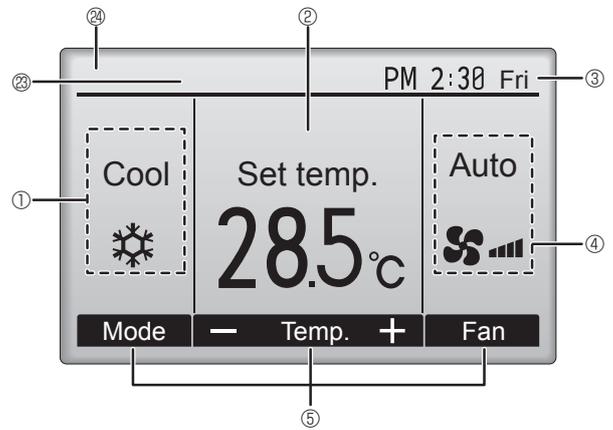
The main display can be displayed in two different modes: "Full" and "Basic". The factory setting is "Full". To switch to the "Basic" mode, change the setting on the Main display setting. (Refer to operation manual included with remote controller.)

### <Full mode>

\* All icons are displayed for explanation.



### <Basic mode>



#### ① Operation mode

#### ② Preset temperature

#### ③ Clock

Current time appears here.

#### ④ Fan speed

#### ⑤ Button function guide

Functions of the corresponding buttons appear here.



Appears when the ON/OFF operation is centrally controlled.



Appears when the operation mode is centrally controlled.



Appears when the preset temperature is centrally controlled.



Appears when the filter reset function is centrally controlled.



Indicates when filter needs maintenance.

#### ⑪ Room temperature

Current room temperature appears here.



Appears when the buttons are locked.



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.



Appears when the Weekly timer is enabled.



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



Appears while the outdoor units are operated in the silent mode. (This indication is not available for CITY MULTI models.)



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.



Indicates the vane setting.



Indicates the louver setting.



Indicates the ventilation setting.



Appears when the preset temperature range is restricted.



Appears when an energy-saving operation is performed using a "3D i-See sensor" function. (not available)

#### ② Centrally controlled

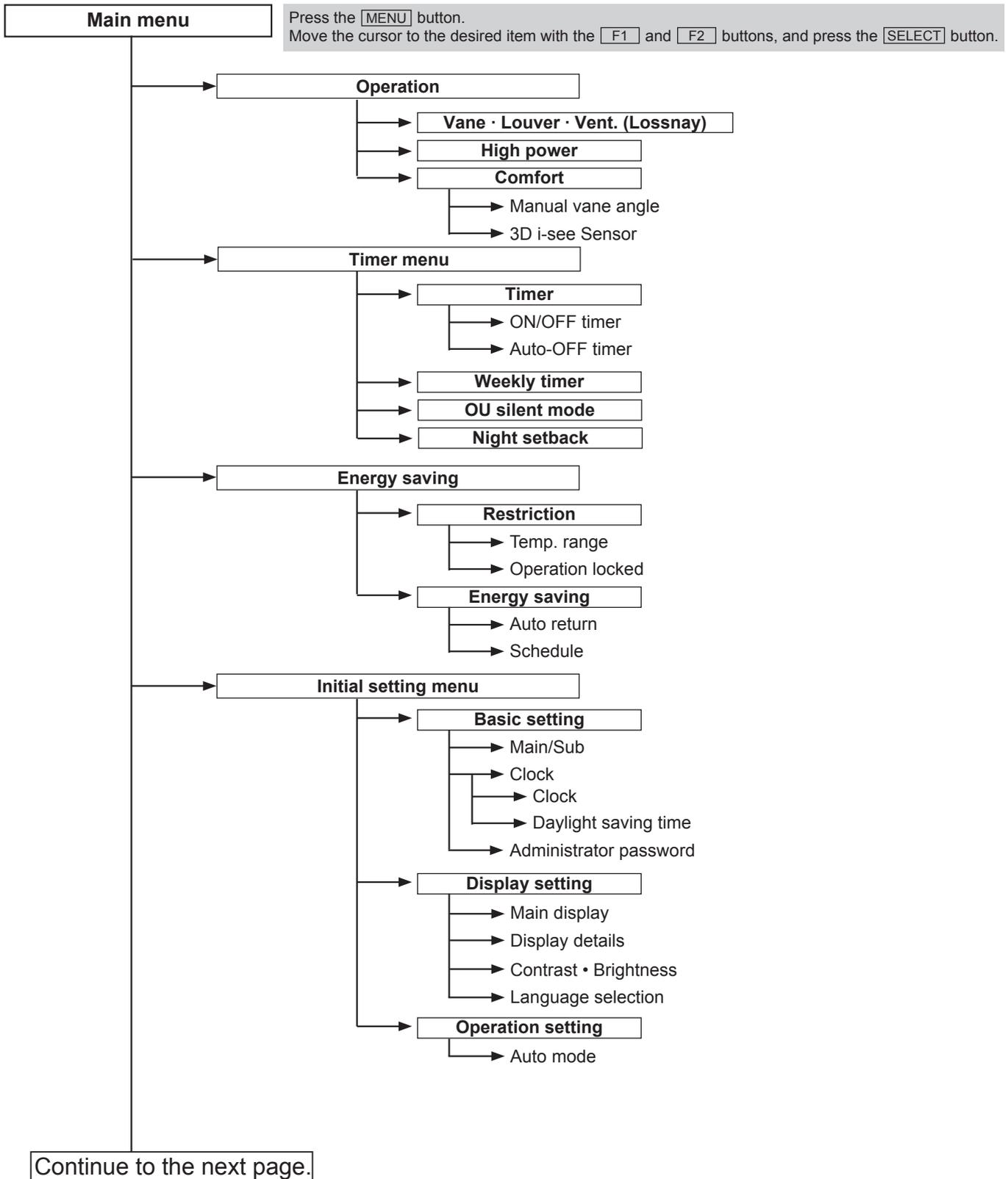
Appears for a certain period of time when a centrally-controlled item is operated.

#### ④ Preliminary error display

An error code appears during the preliminary error.

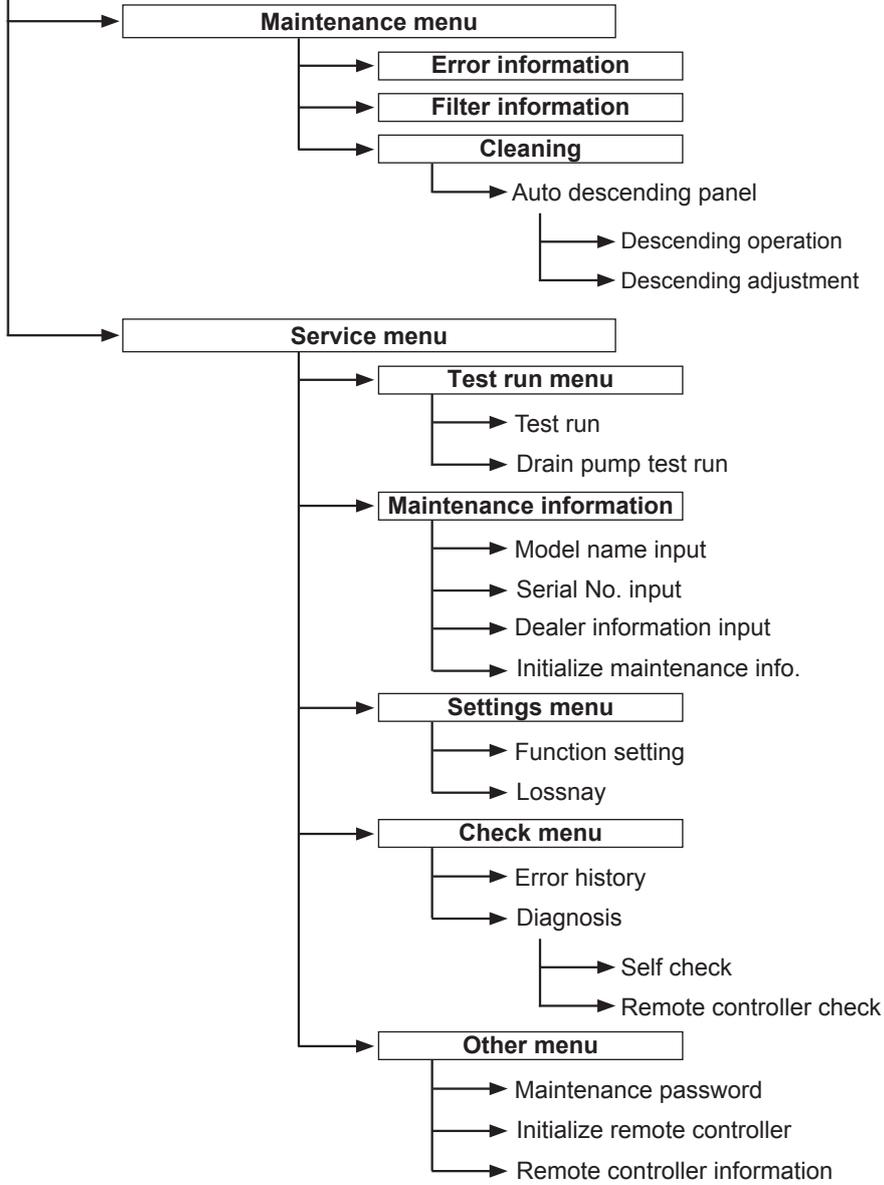
Most settings (except ON/OFF, mode, fan speed, temperature) can be made from the Main menu. (Refer to Page 10.)

## Menu structure



Not all functions are available on all models of indoor units.

Continue from the previous page.



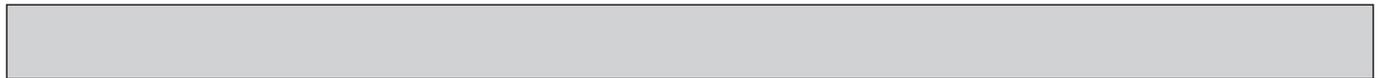
Not all functions are available on all models of indoor units.

## Main menu list

Main menu	Setting and display items		Setting details
Operation	Vane · Louver · Vent. (Lossnay)		<p><b>Use to set the vane angle.</b></p> <ul style="list-style-type: none"> <li>• Select a desired vane setting from 5 different settings.</li> </ul> <p><b>Use to turn ON/OFF the louver.</b></p> <ul style="list-style-type: none"> <li>• Select a desired setting from "ON" and "OFF."</li> </ul> <p><b>Use to set the amount of ventilation.</b></p> <ul style="list-style-type: none"> <li>• Select a desired setting from "Off," "Low," and "High."</li> </ul>
	High power		<p><b>Use to reach the comfortable room temperature quickly.</b></p> <ul style="list-style-type: none"> <li>• Units can be operated in the High-power mode for up to 30 minutes.</li> </ul>
	Comfort	Manual vane angle	Use to fix each vane angle.
		3D i-see Sensor	<p><b>Use to set the following functions for 3D i-see Sensor.</b></p> <ul style="list-style-type: none"> <li>• Air distribution</li> <li>• Energy saving option</li> <li>• Seasonal airflow</li> </ul>
Timer	Timer	ON/OFF timer *1	<p><b>Use to set the operation ON/OFF times.</b></p> <ul style="list-style-type: none"> <li>• Time can be set in 5-minute increments.</li> </ul>
		Auto-Off timer	<p><b>Use to set the Auto-Off time.</b></p> <ul style="list-style-type: none"> <li>• Time can be set to a value from 30 to 240 in 10-minute increments.</li> </ul>
	Weekly timer *1, *2		<p><b>Use to set the weekly operation ON/OFF times.</b></p> <ul style="list-style-type: none"> <li>• Up to 8 operation patterns can be set for each day. (Not valid when the ON/OFF timer is enabled.)</li> </ul>
	OU silent mode *1		<p><b>Use to set the time periods in which priority is given to quiet operation of outdoor units over temperature control. Set the Start/Stop times for each day of the week.</b></p> <ul style="list-style-type: none"> <li>• Select the desired silent level from "Normal," "Middle," and "Quiet."</li> </ul>
	Night setback *1		<p><b>Use to make Night setback settings.</b></p> <ul style="list-style-type: none"> <li>• Select "Yes" to enable the setting, and "No" to disable the setting. The temperature range and the start/stop times can be set.</li> </ul>
Energy saving	Restriction	Temp. range *2	<p><b>Use to restrict the preset temperature range.</b></p> <ul style="list-style-type: none"> <li>• Different temperature ranges can be set for different operation modes.</li> </ul>
		Operation lock	<p><b>Use to lock selected functions.</b></p> <ul style="list-style-type: none"> <li>• The locked functions cannot be operated.</li> </ul>
	Energy saving	Auto return *2	<p><b>Use to get the units to operate at the preset temperature after performing energy saving operation for a specified time period.</b></p> <ul style="list-style-type: none"> <li>• Time can be set to a value from 30 and 120 in 10-minute increments. (This function will not be valid when the preset temperature ranges are restricted.)</li> </ul>
		Schedule *1	<p><b>Set the start/stop times to operate the units in the energy saving mode for each day of the week, and set the energy saving rate.</b></p> <ul style="list-style-type: none"> <li>• Up to 4 energy saving operation patterns can be set for each day.</li> <li>• Time can be set in 5-minute increments.</li> <li>• Energy saving rate can be set to a value from 0% or 50 to 90% in 10% increments.</li> </ul>

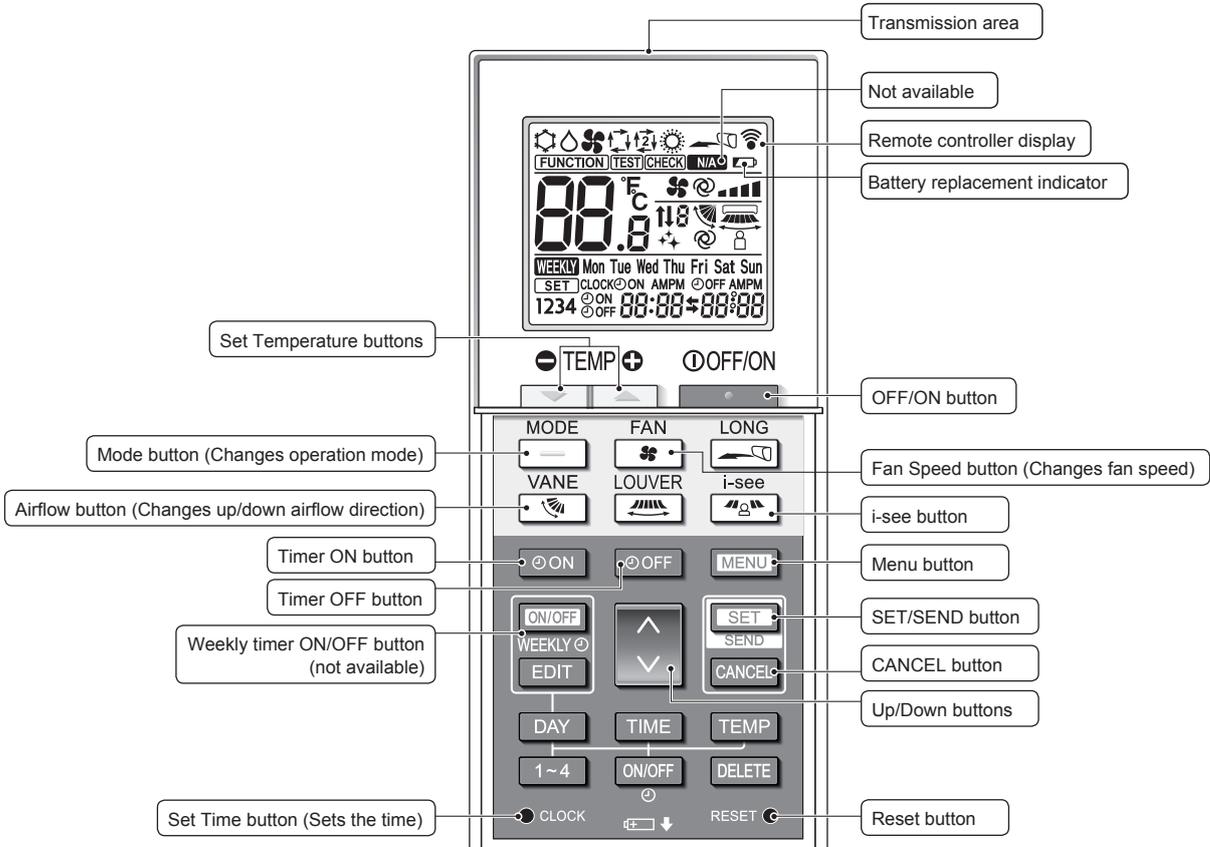
\*1 Clock setting is required.

\*2 1°C increments.



Main menu	Setting and display items		Setting details
Initial setting	Basic setting	Main/Sub	When connecting 2 remote controllers, one of them needs to be designated as a sub controller.
		Clock	Use to set the current time.
		Daylight saving time	Set the daylight saving time.
		Administrator password	The administrator password is required to make the settings for the following items. • Timer setting • Energy saving setting • Weekly timer setting • Restriction setting • Outdoor unit silent mode setting • Night set back
	Display setting	Main display	Use to switch between "Full" and "Basic" modes for the Main display. • The initial setting is "Full."
		Black and white inversion setting	Use to invert the colors of the display, turning white background to black and black characters to white.
		Display details	Make the settings for the remote controller related items as necessary. <b>Clock:</b> The initial settings are "Yes" and "24h" format. <b>Temperature:</b> Set either Celsius (°C) or Fahrenheit (°F). <b>Room temp. :</b> Set Show or Hide. <b>Auto mode:</b> Set the Auto mode display or Only Auto display.
		Contrast • Brightness	Use to adjust screen contrast and brightness.
		Language selection	Use to select the desired language.
	Operation setting	Auto mode	Whether or not to use the Auto mode can be selected by using the button. This setting is valid only when indoor units with the Auto mode function are connected.
Maintenance	Error information		Use to check error information when an error occurs. • Check code, error source, refrigerant address, unit model, manufacturing number, contact information (dealer's phone number) can be displayed. (The unit model, manufacturing number, and contact information need to be registered in advance to be displayed.)
	Filter information		Use to check the filter status. • The filter sign can be reset.
	Cleaning	Auto descending panel	Use to lift and lower the auto descending panel (Optional parts).
Service	Test run		Select "Test run" from the Service menu to bring up the Test run menu. • Test run • Drain pump test run
	Input maintenance		Select "Input maintenance Info." from the Service menu to bring up the Maintenance information screen. The following settings can be made from the Maintenance Information screen. • Model name input • Serial No. input • Dealer information input • Initialize maintenance info.
	Settings	Function setting	Make the settings for the indoor unit functions via the remote controller as necessary.
		LOSSNAY setting	This setting is required only when the operation of CITY MULTI units is interlocked with LOSSNAY units.
	Check	Error history	Display the error history and execute "delete error history".
		Diagnosis	<b>Self check:</b> Error history of each unit can be checked via the remote controller. <b>Remote controller check:</b> When the remote controller does not work properly, use the remote controller checking function to troubleshoot the problem.
	Other	Maintenance password	Use to change the maintenance password.
		Initialize remote controller	Use to initialize the remote controller to the factory shipment status.
		remote controller information	Use to display the remote controller model name, software version, and serial number.

## 2-3. Wireless remote controller



**Operation mode**

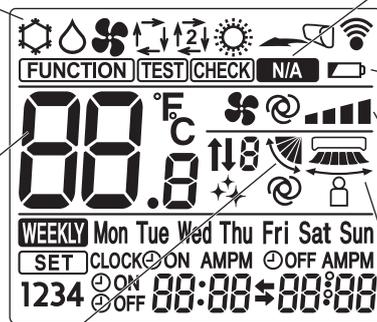
- Cool
- Dry
- Fan
- Auto
- Heat

**Temperature setting**

The units of temperature can be changed. For details, refer to the Installation Manual.

**Vane setting**

Step 1 Step 2 Step 3 Step 4 Step 5 Swing Auto



**Not available**

Appears when a non-supported function is selected.

**Battery replacement indicator**

Appears when the remaining battery power is low.

**Fan speed setting**

**3D i-see sensor (Air distribution)**

Default Direct Indirect

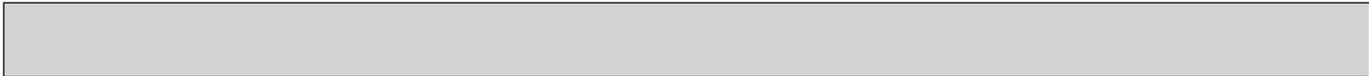
When Direct or Indirect is selected, the vane setting is set to "Auto".

# 3

# SPECIFICATIONS

## 3-1. SPECIFICATIONS

Service Ref.	PLFY-WL10VFM-E.TH	PLFY-WL15VFM-E.TH	PLFY-WL20VFM-E.TH	PLFY-WL25VFM-E.TH	PLFY-WL32VFM-E.TH		
Power source	single phase, 220-240 V, 50 Hz / 220 V, 60 Hz						
Cooling capacity *1	kW	1.2	1.7	2.2	2.8	3.6	
Power input	kW	0.02	0.02	0.02	0.03	0.04	
	A	0.23	0.24	0.26	0.29	0.38	
Heating capacity *2	kW	1.4	1.9	2.5	3.2	4.0	
Power input	kW	0.02	0.02	0.02	0.03	0.04	
	A	0.17	0.18	0.20	0.23	0.32	
External finish	Galvanized steel sheet						
External dimension H × W × D	mm	208 × 570 × 570					
Net weight	kg	13	13	14	14	14	
Decoration panel	model	SLP-2FA(L)(E)					
	External finish	Munsell 1.0Y 9.2/0.2					
	Dimension H × W × D	mm	10 × 625 × 625				
	Net weight	kg	3				
Heat exchanger	Cross fin (Aluminum fin and copper tube)						
Fan	Type	Turbo fan × 1					
	External pressure	0 Pa (0 mmH <sub>2</sub> O)					
	Motor type	DC motor					
	Motor output	kW	0.05				
	Driving mechanism	Direct driven					
	Airflow rate	m <sup>3</sup> /min	6.0-6.5-7.0	6.0-7.0-8.0	6.5-7.0-8.0	6.5-7.5-9.0	6.5-9.0-12.0
Sound pressure level (Low-Mid-High) (measured in anechoic room)	dB <A>	25-26-27	25-26-29	27-29-31	27-30-34	27-33-41	
Insulation material	PS						
Air filter	PP honeycomb fabric (long life type)						
Protection device	Fuse						
Connectable outdoor unit	HYBRID CITY MULTI/CMB-WM-V-AA, CMB-WM-V-AB/CMH-WM-V-A						
Water pipe dimensions	Water inlet	mm I.D.	20				
	Water outlet	mm I.D.	20				
Field drain pipe size	mm (in)	O.D. 32 (1-1/4") (PVC pipe VP-25 connectable)					
Standard attachment	Installation manual, Instruction book						
Remark	Optional parts	Decoration panel : SLP-2FA, SLP-2FAE, SLP-2FAL, SLP-2FALE, SLP-2FALM, or SLP-2FALME Note: PLFY-VFM series should be used together with decoration panel.					
	Installation	Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual.					
*1 Nominal cooling condition Indoor : 27°CDB/19°CWB (81°FDB/66°FWB) Outdoor : 35°CDB (95°FDB) Pipe length : 7.5m (24-9/16 ft) Level difference : 0 m (0 ft)					*2 Nominal heating condition 20°CDB (68°FDB) 7°CDB/6°CWB (45°FDB/43°FWB) 7.5 m (24-9/16 ft) 0 m (0 ft)		
Notes: 1. Nominal conditions *1 and *2 are subject to JIS B8615-1. 2. Due to continuing improvement, above specification may be subject to change without notice.					Unit converter kcal= kW × 860 BTU/h =3,412 cfm = K/min × 35.31 lb = kg/0.4536		



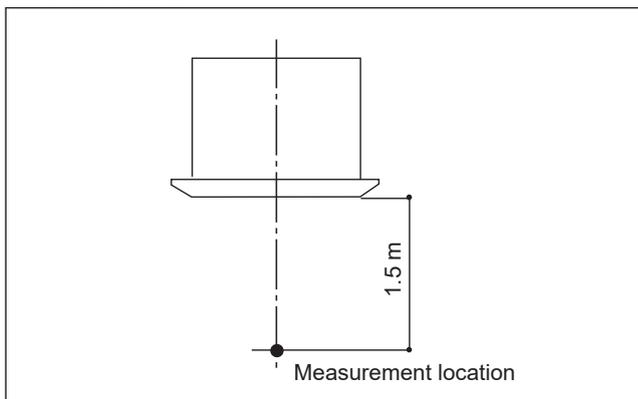
### 3-2. ELECTRICAL PARTS SPECIFICATIONS

Parts name	Service ref.	Symbol	PLFY-WL10VFM-E.TH	PLFY-WL15VFM-E.TH	PLFY-WL20VFM-E.TH	PLFY-WL25VFM-E.TH	PLFY-WL32VFM-E.TH	
Thermistor (Room temperature detection)		TH21	Resistance 0°C/15 Ω, 10°C/9.6 Ω, 20°C/6.3 Ω, 25°C/5.4 Ω, 30°C/4.3 Ω, 40°C/3.0 Ω					
Thermistor (Pipe temperature detection/inlet)		TH22	Resistance 0°C/15 Ω, 10°C/9.6 Ω, 20°C/6.3 Ω, 25°C/5.4 Ω, 30°C/4.3 Ω, 40°C/3.0 Ω					
Thermistor (Pipe temperature detection/outlet)		TH23	Resistance 0°C/15 Ω, 10°C/9.6 Ω, 20°C/6.3 Ω, 25°C/5.4 Ω, 30°C/4.3 Ω, 40°C/3.0 Ω					
Fuse (Indoor controller board)		FUSE	250 V 6.3 A					
Fan motor		MF	OUTPUT 50 W					
Vane motor		MV	MSBPC20M32 (green label)/MSBPC20M33 (blue label) DC12 V 300 Ω/phase					
Drain pump		DP	PMD-12D13ME INPUT 3 W (DC 13 V) 24 ℓ /Hr					
Drain float switch		FS	Open/short detection					
Power supply terminal block		TB2	(L, N) Rated to 330 V 30 A*					
Transmission terminal block		TB5	(M1, M2, S) Rated to 250 V 20 A*					
MA remote controller terminal block		TB15	(1, 2) Rated to 250 V 10 A*					

\* Refer to WIRING DIAGRAM for the supplied voltage.

### 3-3. SOUND PRESSURE LEVEL

#### PLFY-WL-VFM-E



Note: Measured in anechoic room.

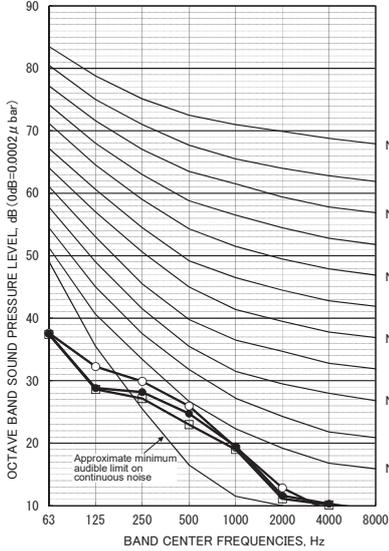
Sound pressure level at anechoic room : Low-Mid-High

Service Ref.	Sound pressure level dB (A)
PLFY-WL10VFM-E.TH	25-26-27
PLFY-WL15VFM-E.TH	25-26-29
PLFY-WL20VFM-E.TH	27-29-31
PLFY-WL25VFM-E.TH	27-30-34
PLFY-WL32VFM-E.TH	27-33-41

### 3-4. NOISE CRITERION CURVES

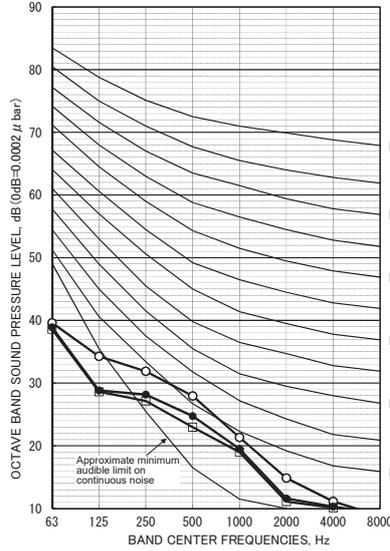
**PLFY-WL10VFM-E.TH**

FAN	SPL(dB)	LINE
High	27	○—○
Medium	26	●—●
Low	25	□—□



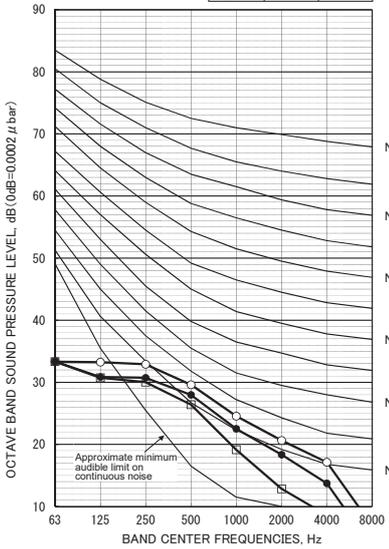
**PLFY-WL15VFM-E.TH**

FAN	SPL(dB)	LINE
High	29	○—○
Medium	26	●—●
Low	25	□—□



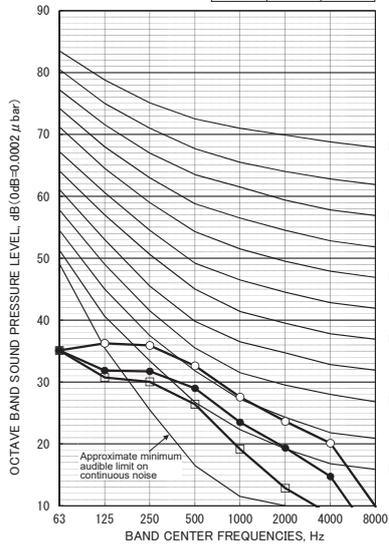
**PLFY-WL20VFM-E.TH**

FAN	SPL(dB)	LINE
High	31	○—○
Medium	29	●—●
Low	27	□—□



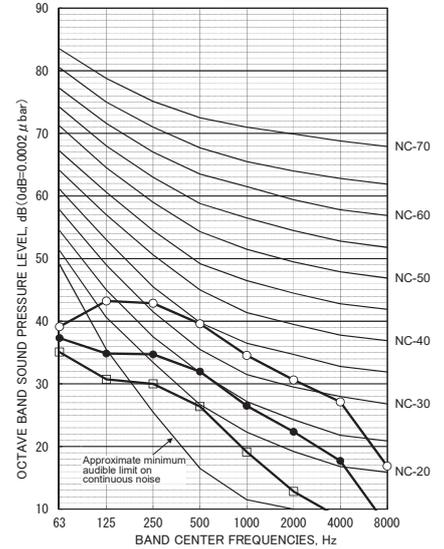
**PLFY-WL25VFM-E.TH**

FAN	SPL(dB)	LINE
High	34	○—○
Medium	30	●—●
Low	27	□—□



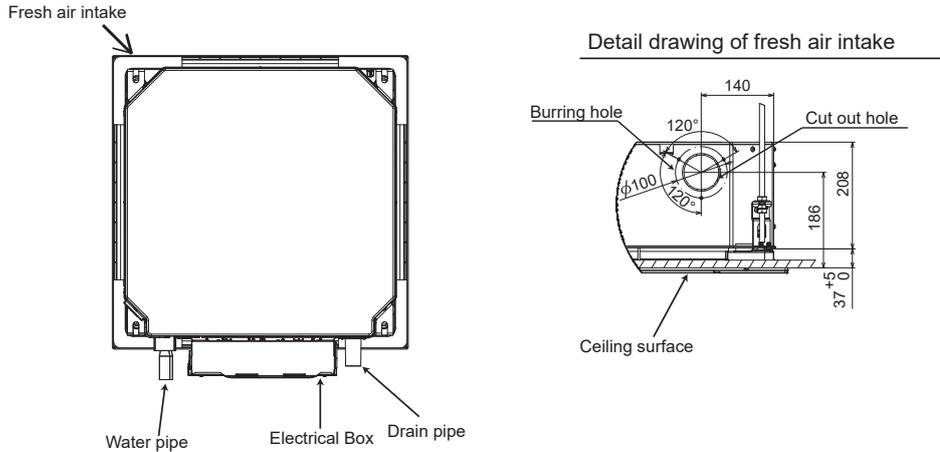
**PLFY-WL32VFM-E.TH**

FAN	SPL(dB)	LINE
High	41	○—○
Medium	33	●—●
Low	27	□—□



4-1. FRESH AIR INTAKE (Location for installation)

At the time of installation, use the duct holes (cut out) located at the positions shown in following diagram, as and when required.



4-2. FRESH AIR INTAKE AMOUNT & STATIC PRESSURE CHARACTERISTICS

PLFY-WL10VFM-E.TH

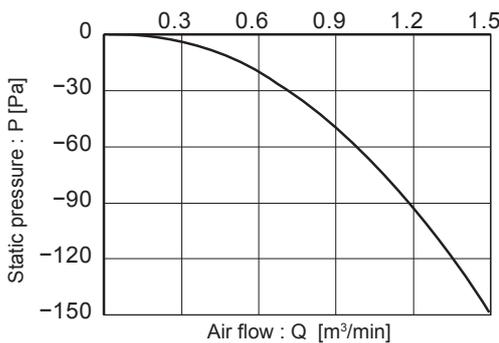
PLFY-WL15VFM-E.TH

PLFY-WL20VFM-E.TH

PLFY-WL25VFM-E.TH

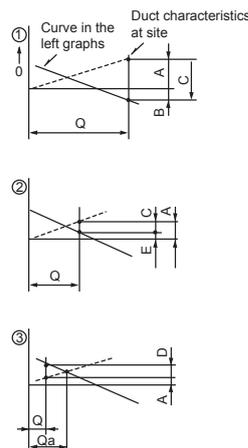
PLFY-WL32VFM-E.TH

Taking air into the unit



NOTE: Fresh air intake amount should be 10% or less of whole air amount to prevent dew dripping.

How to read curves



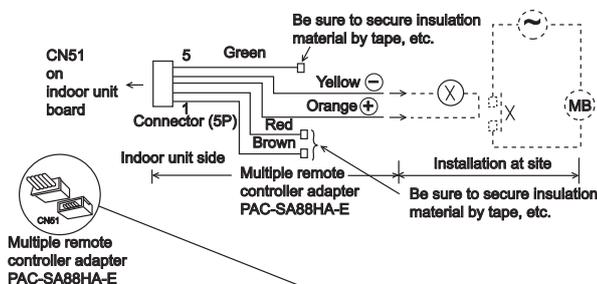
- Q...Designed amount of fresh air intake <math>\lt; m^3/min \gt</math>
- A...Static pressure loss of fresh air intake duct system with air flow amount Q <math>\lt; Pa \gt</math>
- B...Forced static pressure at air conditioner inlet with air flow amount Q <math>\lt; Pa \gt</math>
- C...Static pressure of booster fan with air flow amount Q <math>\lt; Pa \gt</math>
- D...Static pressure loss increase amount of fresh air intake duct system for air flow amount Q <math>\lt; Pa \gt</math>
- E...Static pressure of indoor unit with air flow amount Q <math>\lt; Pa \gt</math>
- Qa...Estimated amount of fresh air intake without D <math>\lt; m^3/min \gt</math>

4-3. OPERATION IN CONJUNCTION WITH DUCT FAN (Booster fan)

• Whenever the indoor unit operates, the duct fan also operates.

- (1) Connect the optional multiple remote controller adapter (PAC-SA88HA-E) to the connector CN51 on the indoor controller board.
- (2) Drive the relay after connecting the 12 V DC relay between the Yellow and Orange connector wires.

MB: Electromagnetic switch power relay for duct fan.  
X: Auxiliary relay  
(For 12 V DC, coil rating: 1.0 W or below)



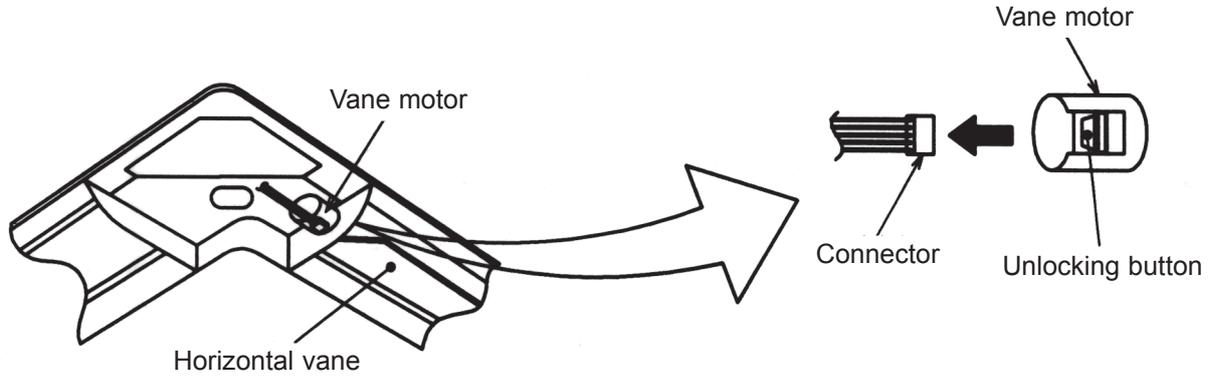
Distance between indoor controller board and relay must be within 10 m.

#### 4-4. FIXING HORIZONTAL VANE

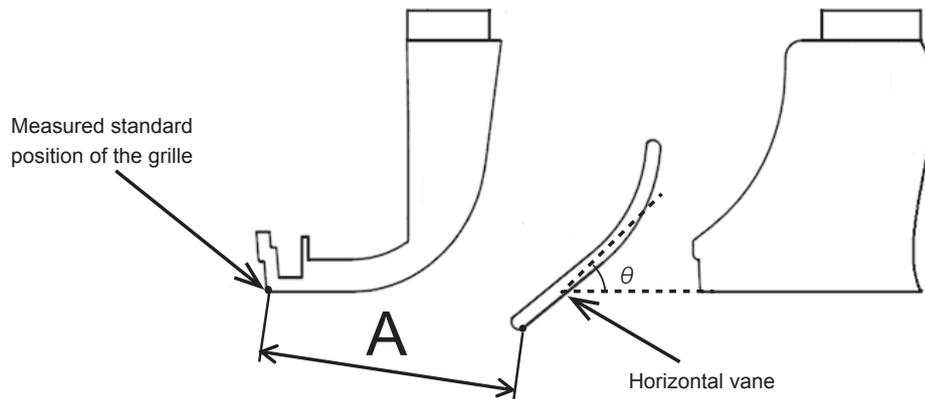
Horizontal vane of each air outlet can be fixed according to the environment where it is installed.

##### Setting procedures

- 1) Turn off a main power supply (Turn off a breaker).
- 2) Disconnect the vane motor connector of the direction of the arrow with pressing the unlocking button as shown in figure below.  
Insulate the disconnected connector with the plastic tape.



- 3) Set the vertical vane of the air outlet by hand slowly within the range in the table below.



<Set range>

Standard of horizontal position	Angle $\theta = 21^\circ$ (Horizontal)	Angle $\theta = 24^\circ$	Angle $\theta = 39^\circ$	Angle $\theta = 42^\circ$	Angle $\theta = 45^\circ$ (Downward)
Dimension A (mm)	39	41	47	48	49

Note: Dimension between 39 mm and 49 mm can be arbitrarily set.

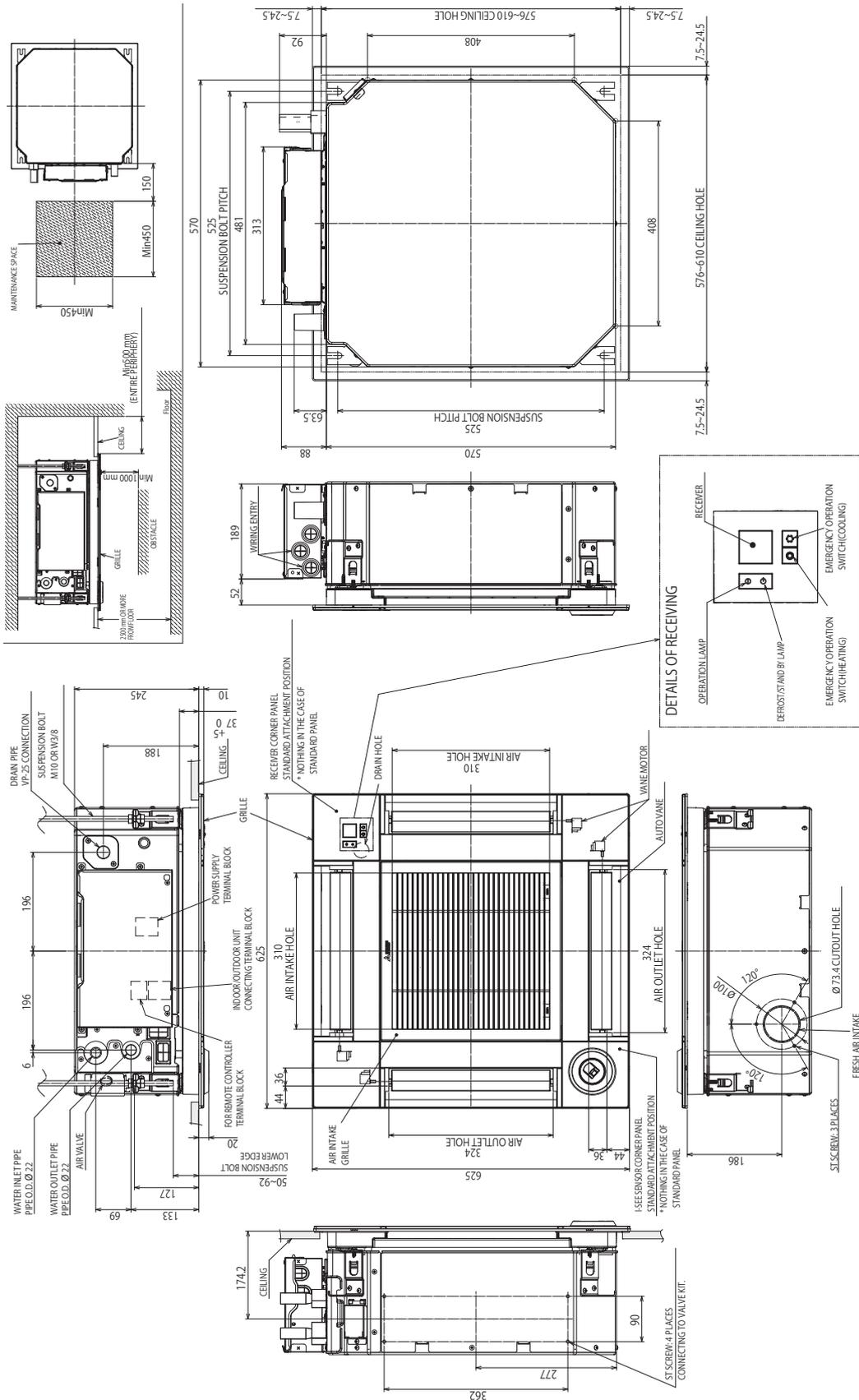
<b>Caution</b> 	Do not set the dimension out of the range.
	Erroneous setting could cause dew drips or malfunction of unit.

PLFY-WL10VFM-E.TH  
PLFY-WL25VFM-E.TH

PLFY-WL15VFM-E.TH  
PLFY-WL32VFM-E.TH

PLFY-WL20VFM-E.TH

Unit: mm



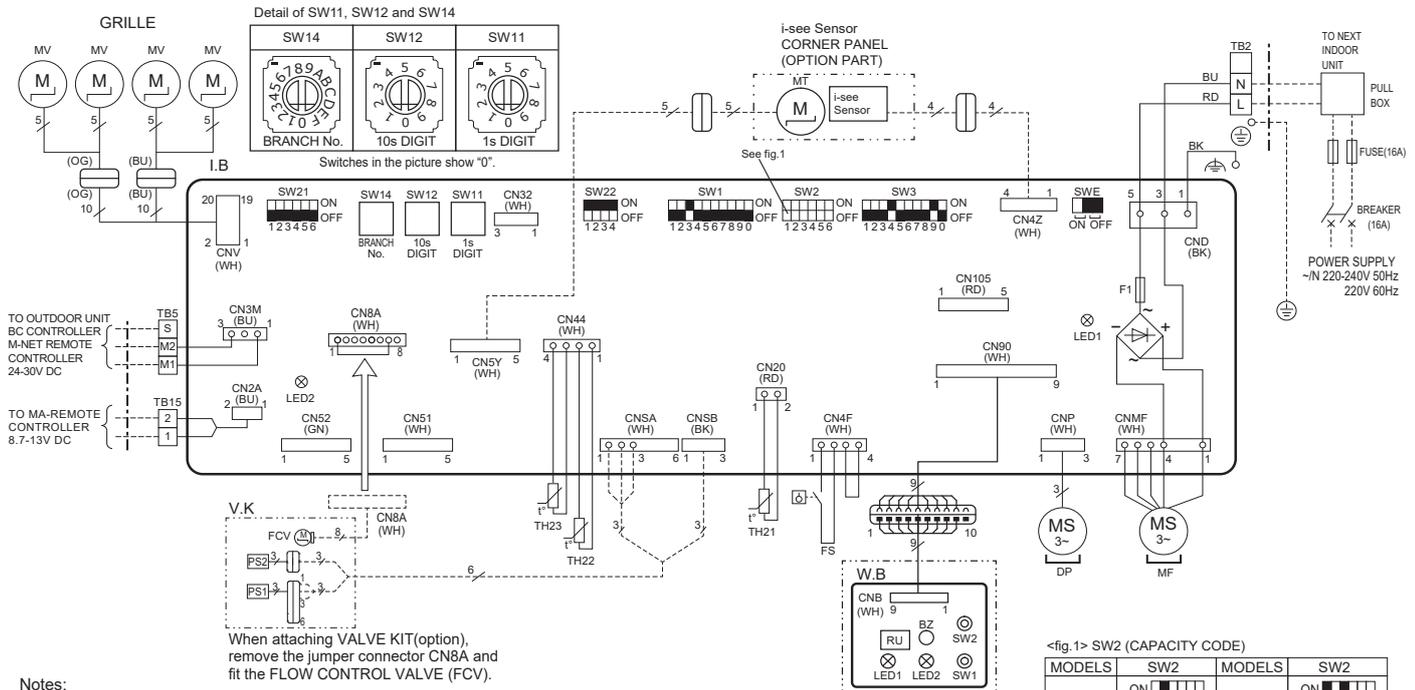
# 6

# WIRING DIAGRAM

PLFY-WL10VFM-E.TH  
PLFY-WL25VFM-E.TH

PLFY-WL15VFM-E.TH  
PLFY-WL32VFM-E.TH

PLFY-WL20VFM-E.TH



**Notes:**

1. At servicing for outdoor unit, always follow the wiring diagram of outdoor unit.
2. In case of using MA-Remote controller, please connect to TB15. (Remote controller wire is non-polar.)
3. In case of using ME-Remote controller, please connect to TB5. (Transmission line is non-polar.)
4. Symbol [S] of TB5 is the shield wire connection.
5. Symbols used in wiring diagram above are, [ ] : terminal block, [ ] : connector.
6. The setting of the SW2 differs in the capacity. For the detail, refer to the fig.1.
7. Make sure to turn off the indoor and the outdoor units before replacing indoor controller board.
8. ■ is the switch position.

<fig.1> SW2 (CAPACITY CODE)

MODELS	SW2	MODELS	SW2
WL10	ON OFF 123456	WL25	ON OFF 123456
WL15	ON OFF 123456	WL32	ON OFF 123456
WL20	ON OFF 123456		

**[LEGEND]**

SYMBOL	NAME
I.B	INDOOR CONTROLLER BOARD
CN32	REMOTE SWITCH
CN51	CENTRALLY CONTROL
CN52	REMOTE INDICATION
CN105	IT TERMINAL
F1	FUSE(T6.3AL 250V)
LED1	POWER SUPPLY (I.B)
LED2	POWER SUPPLY (MA-REMOTE CONTROLLER)
SW1	MODE SELECTION
SW2	CAPACITY CODE
SW3	MODE SELECTION
SW11	ADDRESS SETTING 1s DIGIT
SW12	ADDRESS SETTING 10s DIGIT
SW14	BRANCH No.
SW21	CEILING HEIGHT SELECTOR
SW22	PAIR NO. SETTING
SWE	DRAIN PUMP( TEST MODE)
DP	DRAIN PUMP
MF	FAN MOTOR
MV	VANE MOTOR
FS	FLOAT SWITCH
TB2	TERMINAL POWER SUPPLY
TB5	BLOCK TRANSMISSION
TB15	MA-REMOTE CONTROLLER
TH21	ROOM TEMP. THERMISTOR
TH22	PIPE TEMP. THERMISTOR (INLET)
TH23	PIPE TEMP. THERMISTOR (OUTLET)
OPTION PART	
W.B	WIRELESS REMOTE CONTROLLER BOARD
BZ	BUZZER
LED1	OPERATION (GREEN)
LED2	STAND BY (ORANGE)
RU	RECEIVING UNIT
SW1	EMERGENCY OPERATION(HEAT)
SW2	EMERGENCY OPERATION(COOL)
MT	i-see Sensor MOTOR
V.K	VALVE KIT
PS1	PRESSURE SENSOR 1 (INLET)
PS2	PRESSURE SENSOR 2 (OUTLET)
FCV	FLOW CONTROL VALVE

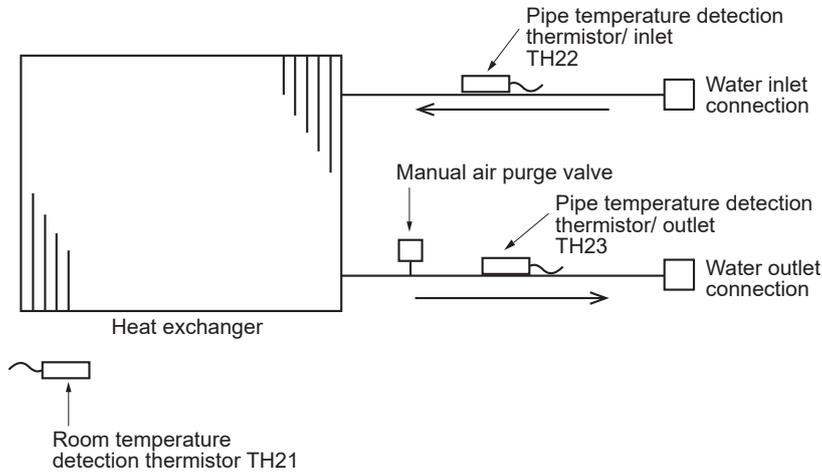
7

# REFRIGERANT SYSTEM DIAGRAM

PLFY-WL10VFM-E.TH  
 PLYF-WL25VFM-E.TH

PLFY-WL15VFM-E.TH  
 PLYF-WL32VFM-E.TH

PLFY-WL20VFM-E.TH



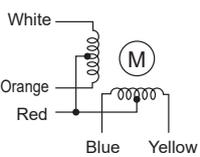
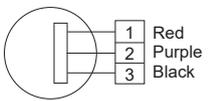
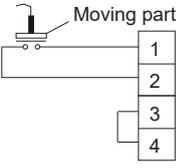
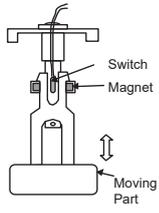
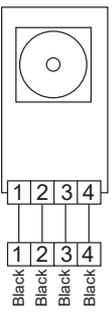
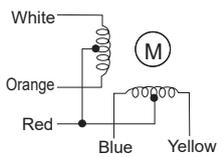
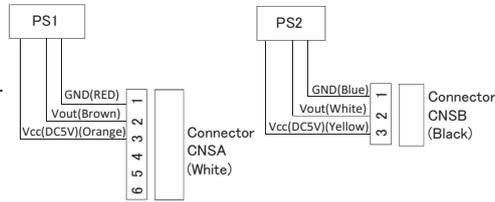
Item \ Model	PLFY-WL10/15/20/25/32VFM-E
Water outlet	I.D. 20 [mm]
Water inlet	I.D. 20 [mm]

8-1. HOW TO CHECK THE PARTS

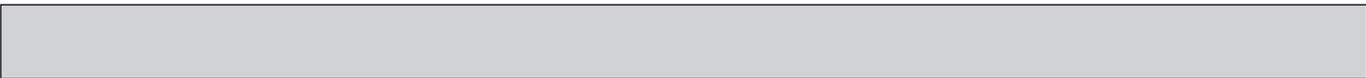
PLFY-WL10VFM-E.TH  
PLFY-WL25VFM-E.TH

PLFY-WL15VFM-E.TH  
PLFY-WL32VFM-E.TH

PLFY-WL20VFM-E.TH

Parts name	Check points														
Thermistor (TH21) (Room temperature detection) Thermistor (TH22) (Pipe temperature detection/inlet) Thermistor (TH23) (Pipe temperature detection/outlet)	Disconnect the connector then measure the resistance with a tester. (At the ambient temperature 10 to 30°C) <table border="1" style="margin: 10px auto;"> <tr> <th>Normal</th> <th>Abnormal</th> </tr> <tr> <td>4.3 to 9.6 kΩ</td> <td>Open or short</td> </tr> </table> Refer to “8-1-1. Thermistor Characteristic Graph”.	Normal	Abnormal	4.3 to 9.6 kΩ	Open or short										
Normal	Abnormal														
4.3 to 9.6 kΩ	Open or short														
Vane motor (MV) 	Measure the resistance between the terminals with a tester. (At the ambient temperature 20 to 30°C) <table border="1" style="margin: 10px auto;"> <tr> <th colspan="4">Normal</th> <th>Abnormal</th> </tr> <tr> <th>Red–Yellow</th> <th>Red–Blue</th> <th>Red–Orange</th> <th>Red–White</th> <th rowspan="2">Open or short</th> </tr> <tr> <td colspan="4" style="text-align: center;">300 Ω ± 7%</td> </tr> </table>	Normal				Abnormal	Red–Yellow	Red–Blue	Red–Orange	Red–White	Open or short	300 Ω ± 7%			
Normal				Abnormal											
Red–Yellow	Red–Blue	Red–Orange	Red–White	Open or short											
300 Ω ± 7%															
Drain pump (DP) 	① Check if the drain float switch works properly. ② Check if the drain pump works and drains water properly in cooling operation. ③ If no water drains, confirm that the check code 2502 will not be displayed 10 minutes after the operation starts. Note: The drain pump for this model is driven by the internal DC motor of controller board, so it is not possible to measure the resistance between the terminals.  Normal Red–Black: Input 13 V DC → The fan starts to rotate. Purple–Black: Abnormal (check code 2502) if it outputs 0–13 V square wave (5 pulses/rotation), and the number of rotation is not normal.														
Drain float switch (FS) 	Measure the resistance between the terminals with a tester. <table border="1" style="margin: 10px auto;"> <tr> <th>State of moving part</th> <th>Normal</th> <th>Abnormal</th> </tr> <tr> <td>UP</td> <td>Short</td> <td>Other than short</td> </tr> <tr> <td>DOWN</td> <td>Open</td> <td>Other than open</td> </tr> </table> 	State of moving part	Normal	Abnormal	UP	Short	Other than short	DOWN	Open	Other than open					
State of moving part	Normal	Abnormal													
UP	Short	Other than short													
DOWN	Open	Other than open													
i-see sensor * 	Turn the power ON while the i-see sensor connector is connected to the CN4Z on indoor controller board. A communication between the indoor controller board and i-see sensor board is made to detect the connection.  Normal: When the operation starts, the motor for i-see sensor is driven to rotate the i-see sensor. Abnormal: The motor for i-see sensor is not driven when the operation starts.  Note: The voltage between the terminals cannot be measured accurately since it is pulse output.														
i-see sensor motor * 	Measure the resistance between the terminals with a tester. (At the ambient temperature 20 to 30°C) <table border="1" style="margin: 10px auto;"> <tr> <th colspan="4">Normal</th> <th>Abnormal</th> </tr> <tr> <th>Red–Yellow</th> <th>Red–Blue</th> <th>Red–Orange</th> <th>Red–White</th> <th rowspan="2">Open or short</th> </tr> <tr> <td colspan="4" style="text-align: center;">250 Ω ± 7%</td> </tr> </table>	Normal				Abnormal	Red–Yellow	Red–Blue	Red–Orange	Red–White	Open or short	250 Ω ± 7%			
Normal				Abnormal											
Red–Yellow	Red–Blue	Red–Orange	Red–White	Open or short											
250 Ω ± 7%															
Pressure sensor (Optional parts)	<ul style="list-style-type: none"> <li>Pressure sensor (inner water) PS1</li> <li>Pressure sensor (outlet water) PS2</li> </ul> 1. Check that the pressure sensor is connected. 2. Check the pressure sensor wiring for breakage. <div style="display: flex; align-items: flex-start; margin-top: 10px;"> <div style="flex: 1;"> <p>Pressure 0-1.0 MPa [145 psi] Vout 0.5-4.5 V                                  0.392 V/ 0.098 MPa [14 psi]                                  Pressure [MPa] = 0.25 × Vout [V] - 0.125                                  Pressure [psi] = (0.25 × Vout [V] - 0.125) × 145</p> </div> <div style="flex: 1;">  </div> </div>														

\* i-see sensor is available with optional “i-see sensor corner panel” (SLP-2FAE, SLP-2FALE, and SLP-2FALME).



Parts name	Check points														
Flow control valve (FCV) 	Disconnect the connector then measure the resistance between terminals with a tester. Refer to "8-1-2. Flow control valve". <table border="1" style="margin-top: 10px;"> <thead> <tr> <th colspan="4">Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>1-5 Purple-Brown</td> <td>2-5 Orange-Brown</td> <td>3-5 Blue-Brown</td> <td>4-5 Green-Brown</td> <td rowspan="2">Open or short</td> </tr> <tr> <td colspan="4" style="text-align: center;">55 Ω ± 5.6 Ω (at 25°C)</td> </tr> </tbody> </table>	Normal				Abnormal	1-5 Purple-Brown	2-5 Orange-Brown	3-5 Blue-Brown	4-5 Green-Brown	Open or short	55 Ω ± 5.6 Ω (at 25°C)			
Normal				Abnormal											
1-5 Purple-Brown	2-5 Orange-Brown	3-5 Blue-Brown	4-5 Green-Brown	Open or short											
55 Ω ± 5.6 Ω (at 25°C)															

### 8-1-1. Thermistor Characteristic Graph

Thermistor for lower temperature

- Thermistor (TH21)  
(Room temperature detection)
- Thermistor (TH22)  
(Pipe temperature detection/ inlet)
- Thermistor (TH23)  
(Pipe temperature detection/ outlet)

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

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

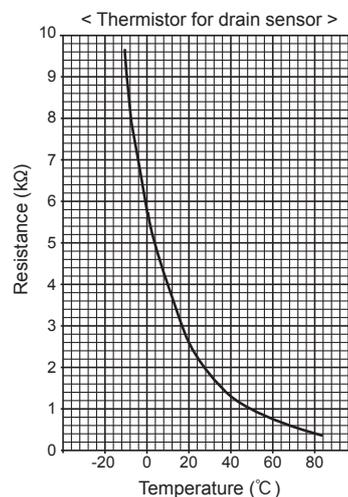
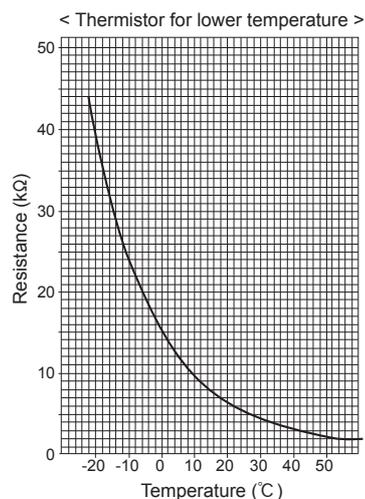
0°C	15 kΩ
10°C	9.6 kΩ
20°C	6.3 kΩ
25°C	5.4 kΩ
30°C	4.3 kΩ
40°C	3.0 kΩ

Thermistor for drain sensor

Thermistor  $R_0=6.0\text{ k}\Omega \pm 5\%$   
 Fixed number of  $B=3390 \pm 2\%$

$$R_t = 6 \exp \left\{ 3390 \left( \frac{1}{273+t} - \frac{1}{273} \right) \right\}$$

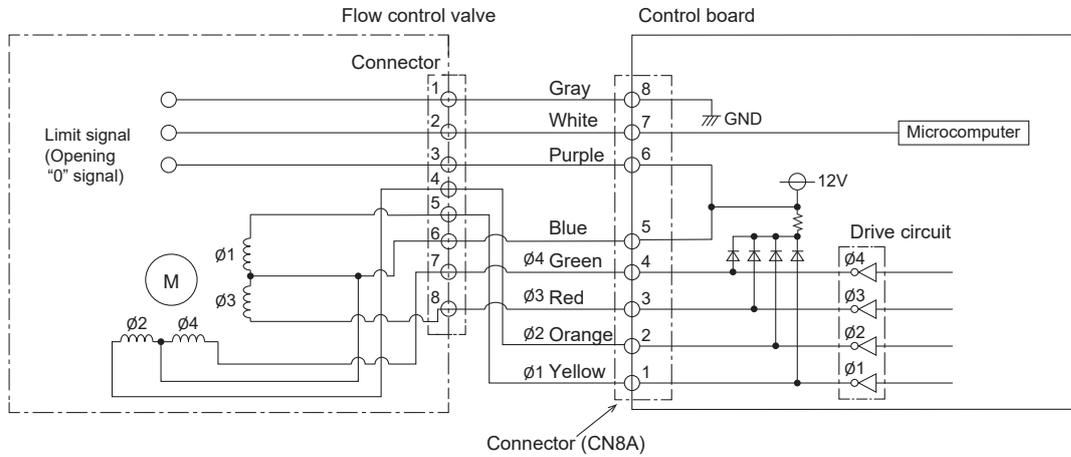
0°C	6.0 kΩ
10°C	3.9 kΩ
20°C	2.6 kΩ
25°C	2.2 kΩ
30°C	1.8 kΩ
40°C	1.3 kΩ
60°C	0.6 kΩ



## 8-1-2. Flow control valve

### 1) Summary of flow control valve (FCV) operation

- The FCV is operated by a stepping motor, which operates by receiving a pulse signal from the indoor control board.
- The FCV position changes in response to the pulse signal.

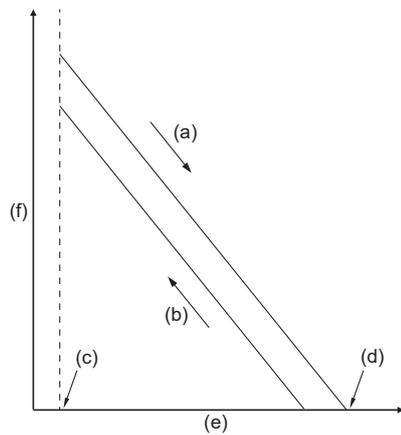


### Pulse signal output and valve operation

Output (phase) number	Output status			
	1	2	3	4
ø1	OFF	ON	ON	OFF
ø2	ON	ON	OFF	OFF
ø3	ON	OFF	OFF	ON
ø4	OFF	OFF	ON	ON

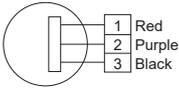
The output pulse changes in the following order:  
 When the valve closes 1 -> 2 -> 3 -> 4 -> 1  
 When the valve opens 4 -> 3 -> 2 -> 1 -> 4

### 2) FCV operation



- (a) Close
- (b) Open
- (c) Fully open valve (85 pulses)
- (d) Fully close valve (770 pulses)
- (e) No. of pulses
- (f) Valve opening degree

### 8-1-3. Drain pump



1. Check if the drain float switch works properly.
2. Check if the drain pump works and drains water properly in cooling operation.
3. If no water drains, confirm that the check code 2502 will not be displayed 10 minutes after the operation starts.

Note: The drain pump for this model is driven by the internal DC motor of controller board, so it is not possible to measure the resistance between the terminals.

Normal

Red-Black: Input 13 V DC → The fan starts to rotate.

Purple-Black: Abnormal (check code 2502) if it outputs 0-13 V square wave (5 pulses/rotation), and the number of rotation is not normal.

### 8-1-4. DC Fan Motor (Fan Motor/Indoor Controller Board)

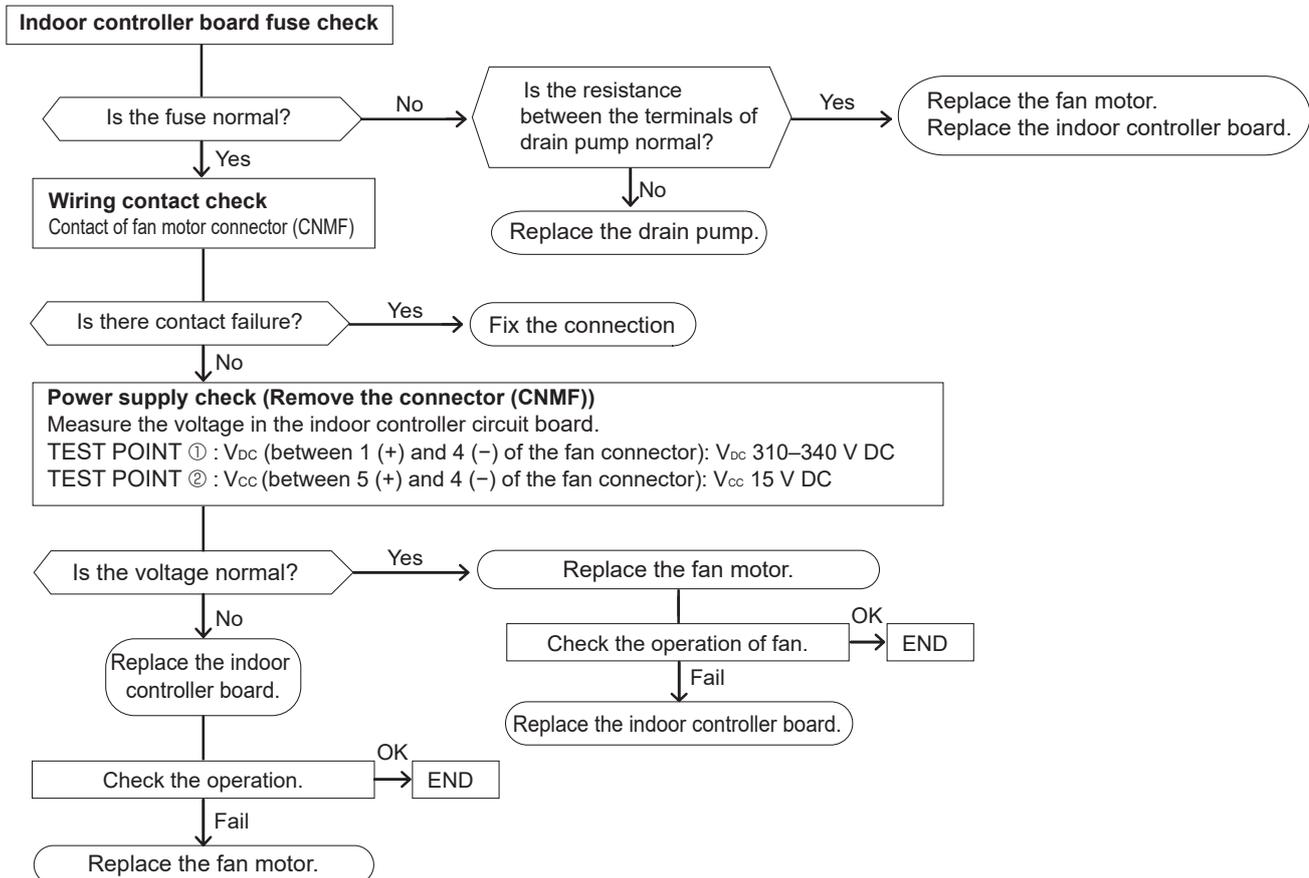
Check method of indoor fan motor (fan motor/indoor controller board)

① Notes

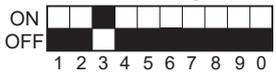
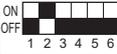
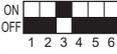
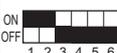
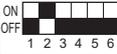
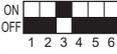
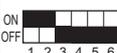
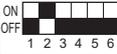
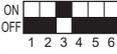
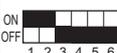
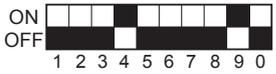
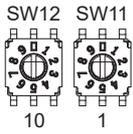
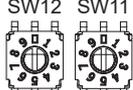
- High voltage is applied to the connector (CNMF) for the fan motor. Pay attention to the service.
- Do not pull out the connector (CNMF) for the motor with the power supply on.  
(It causes trouble of the indoor controller board and fan motor)

② Self check

Conditions : The indoor fan cannot turn around.



## 8-2. FUNCTION OF DIP SWITCH

Switch	Pole	Function	Operation by switch		Effective timing	Remarks																		
			ON	OFF																				
SW1 Function Selection	1	Thermistor <Room temperature detection> position	Built-in remote controller	Indoor unit	Under suspension	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Indoor controller board</div> <Initial setting> 																		
	2	Filter clogging detection	Provided	Not provided																				
	3	Filter cleaning	2,500h	100h																				
	4	Fresh air intake	Effective	Not effective																				
	5	Remote indication switching	Thermo ON signal indication	Fan output indication																				
	6	—	—	—																				
	7	Air flow set in case of Heat thermo OFF	Low *1	Extra low *1																				
	8	Auto restart function	Setting air flow *1	Depends on SW1-7																				
	9	Power ON/OFF	Effective	Not effective																				
	0	Power ON/OFF	Effective	Not effective																				
SW2 Capacity code setting	1-6	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Capacity</th> <th>SW 2</th> <th>Capacity</th> <th>SW 2</th> <th>Capacity</th> <th>SW 2</th> </tr> </thead> <tbody> <tr> <td>WL10</td> <td></td> <td>WL20</td> <td></td> <td>WL32</td> <td></td> </tr> <tr> <td>WL15</td> <td></td> <td>WL25</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Capacity	SW 2	Capacity	SW 2	Capacity	SW 2	WL10		WL20		WL32		WL15		WL25						Before power supply ON	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Indoor controller board</div> <Initial setting> Set for each capacity.
		Capacity	SW 2	Capacity	SW 2	Capacity	SW 2																	
WL10		WL20		WL32																				
WL15		WL25																						
SW3 Function setting	1	Heat pump/Cooling only	Cooling only	Heat pump	Under suspension	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Indoor controller board</div> <Initial setting> Set for each capacity. 																		
	2	—	—	—																				
	3	—	—	—																				
	4	Setting i-See sensor installation position	Setting pattern ③	Setting pattern ①																				
	5	Vane horizontal angle	Second setting	First setting																				
	6	—	—	—																				
	7	—	—	—																				
	8	Heat 4 degrees up	Not effective	Effective																				
	9	—	—	—																				
	0	—	—	—																				
SW11 1s digit address setting  SW12 10s digit address setting	Rotary switch		Address setting should be done when M-NET remote controller is being used.		Before power supply ON	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Indoor controller board</div> <Initial setting>  This figure means "0".																		
SW14 Connection No. setting	Rotary switch		This is the switch to be used when the indoor unit is operated with R2 series outdoor unit as a set.			<div style="border: 1px solid black; padding: 2px; display: inline-block;">Indoor controller board</div> <Initial setting>  This figure means "0".																		

\*1 Refer to the <Table A> below.

<Table A>

SW1-7	SW1-8	
OFF	OFF	Extra low
ON	OFF	Low
OFF	ON	Setting air flow
ON	ON	stop



Switch	Pole	Function	Operation by switch		Effective timing	Remarks														
			ON	OFF																
SW21 Function selection	1	Setting ceiling height	Depends on SW21-1, SW21-2		Under operation or suspension	<Initial setting> ON <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> OFF <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1 2 3 4 5 6														
	2																			
	3	—	—																	
	4	—	—																	
	5	—	—																	
	6	—	—																	
				<table border="1"> <thead> <tr> <th></th> <th>SW21-1</th> <th>SW21-2</th> <th>Height</th> </tr> </thead> <tbody> <tr> <td>Silent</td> <td>—</td> <td>ON</td> <td>2.5 m</td> </tr> <tr> <td>Standard</td> <td>OFF</td> <td>OFF</td> <td>2.7 m (default setting)</td> </tr> <tr> <td>High</td> <td>ON</td> <td>OFF</td> <td>3.0 m</td> </tr> </tbody> </table>				SW21-1	SW21-2	Height	Silent	—	ON	2.5 m	Standard	OFF	OFF	2.7 m (default setting)	High	ON
	SW21-1	SW21-2	Height																	
Silent	—	ON	2.5 m																	
Standard	OFF	OFF	2.7 m (default setting)																	
High	ON	OFF	3.0 m																	

SW22 Function selection	Jumper	<table border="1"> <thead> <tr> <th></th> <th>Function</th> <th>ON</th> <th>OFF</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>2</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>3</td> <td>Pair No. of wireless remote controller</td> <td colspan="2" rowspan="2">Depends on SW22-3, 22-4</td> </tr> <tr> <td>4</td> <td>Pair No. of wireless remote controller</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>To operate each indoor unit by each remote controller when installed 2 indoor units or more are near, Pair No. setting is necessary.           <ul style="list-style-type: none"> <li>Pair No. setting is available with the 4 patterns (Setting patterns A to D).</li> <li>Make setting for J41, J42 of indoor controller board and the Pair No. of wireless remote controller.</li> </ul> </li> <li>You may not set it when operating it by one remote controller.           <ul style="list-style-type: none"> <li>Setting for indoor unit</li> <li>Cut jumper wire J41, J42 on the indoor controller board according to the table below.</li> </ul> </li> </ul> <p>Wireless remote controller pair number:</p> <ul style="list-style-type: none"> <li>Setting operation (Fig. 1 (A))           <ol style="list-style-type: none"> <li>Press the  button ① to stop the air conditioner.</li> <li>Press the  button ②.</li> <li>Check that function No."1" is displayed, and then press the  button ③. The Screen display setting screen will be displayed. (Fig. 2.)</li> </ol> </li> <li>Pair No. changing operation (Fig. 2 (B))           <ol style="list-style-type: none"> <li>Press the  button ④.</li> <li>Each time the  button ④ is pressed, the pair No.0-3 changes.</li> <li>Press the  button ③ to check the setting.</li> <li>Press the  button ②.</li> </ol> </li> </ul> <table border="1"> <thead> <tr> <th colspan="2">Indoor unit SW22</th> <th colspan="2">Pair No. of wireless remote controller</th> <th></th> </tr> <tr> <th>SW22-3</th> <th>SW22-4</th> <th colspan="2"></th> <th></th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>ON</td> <td colspan="2">0</td> <td>Initial setting</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td colspan="2">1</td> <td>—</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td colspan="2">2</td> <td>—</td> </tr> <tr> <td>OFF</td> <td>OFF</td> <td colspan="2">3-9</td> <td>—</td> </tr> </tbody> </table>		Function	ON	OFF	1	—	—	—	2	—	—	—	3	Pair No. of wireless remote controller	Depends on SW22-3, 22-4		4	Pair No. of wireless remote controller	Indoor unit SW22		Pair No. of wireless remote controller			SW22-3	SW22-4				ON	ON	0		Initial setting	OFF	ON	1		—	ON	OFF	2		—	OFF	OFF	3-9		—	Under operation or suspension	<p>&lt;Initial setting&gt;</p> <p>Fig. 1</p> <p>Fig. 2</p>
			Function	ON	OFF																																															
1	—	—	—																																																	
2	—	—	—																																																	
3	Pair No. of wireless remote controller	Depends on SW22-3, 22-4																																																		
4	Pair No. of wireless remote controller																																																			
Indoor unit SW22		Pair No. of wireless remote controller																																																		
SW22-3	SW22-4																																																			
ON	ON	0		Initial setting																																																
OFF	ON	1		—																																																
ON	OFF	2		—																																																
OFF	OFF	3-9		—																																																

SWE Test run for Drain pump	Connector	<p>Drain pump and fan are activated simultaneously after the connector SWE is set to ON and turn on the power.</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> <p>SWE</p> <p>OFF ON</p> </div> <div style="margin: 0 20px;">→</div> <div style="text-align: center;"> <p>SWE</p> <p>OFF ON</p> </div> </div> <p>The connector SWE is set to OFF after test run.</p>	Under operation	<p>&lt;Initial setting&gt;</p> <p>SWE</p> <p>OFF ON</p>
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## 8-4. TEST POINT DIAGRAM

### Indoor controller board

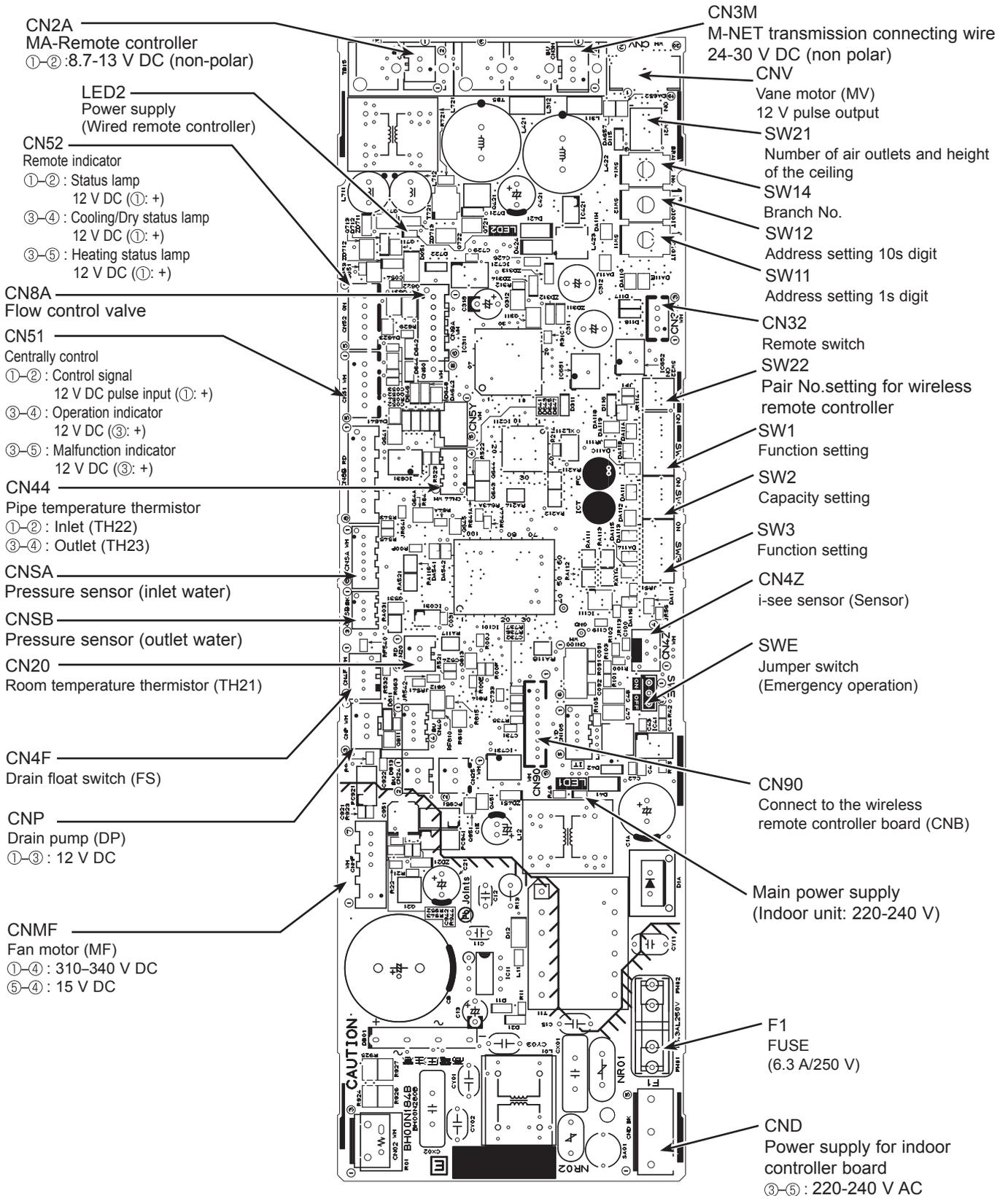
PLFY-WL10VFM-E.TH

PLFY-WL15VFM-E.TH

PLFY-WL20VFM-E.TH

PLFY-WL25VFM-E.TH

PLFY-WL32VFM-E.TH



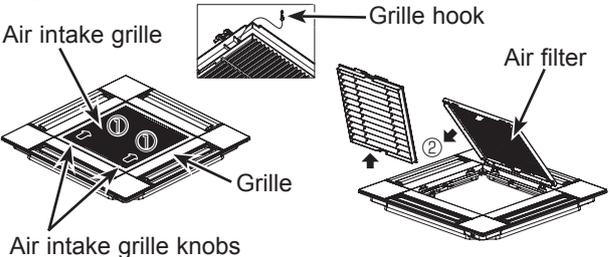
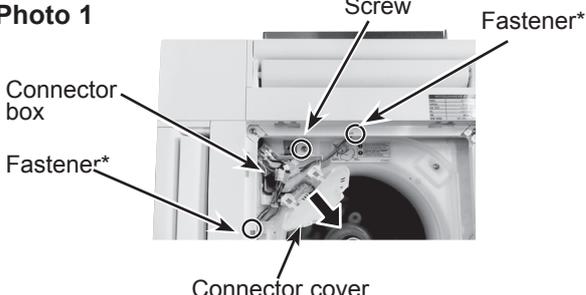
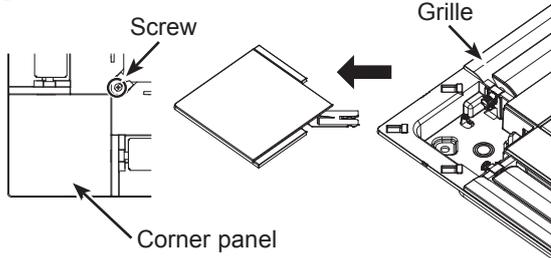
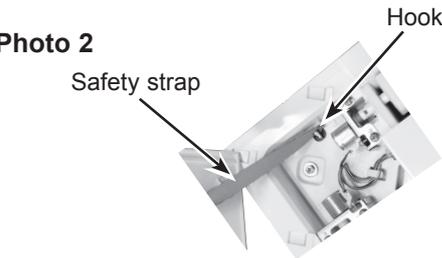
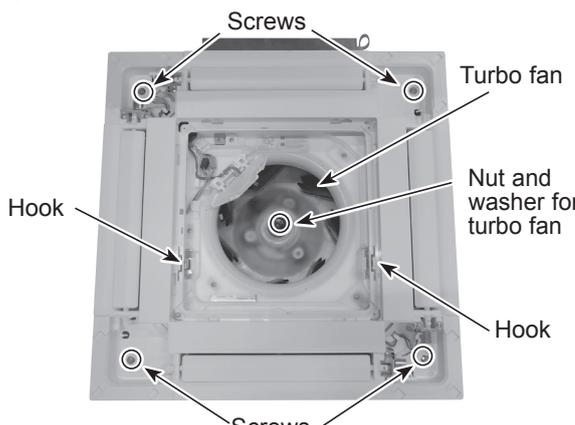
Note: The voltage range of 12 V DC in this page is between 11.5 to 13.7 V DC.

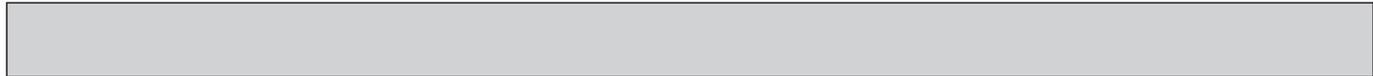
PLFY-WL10VFM-E.TH  
PLFY-WL25VFM-E.TH

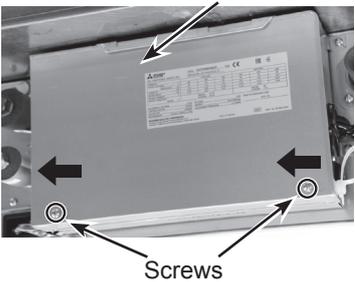
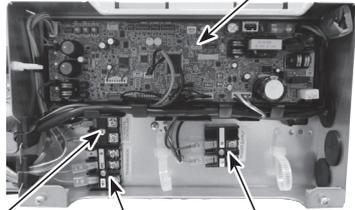
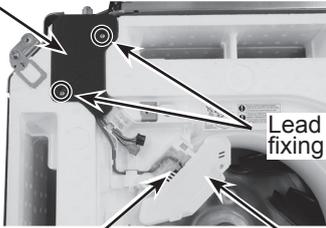
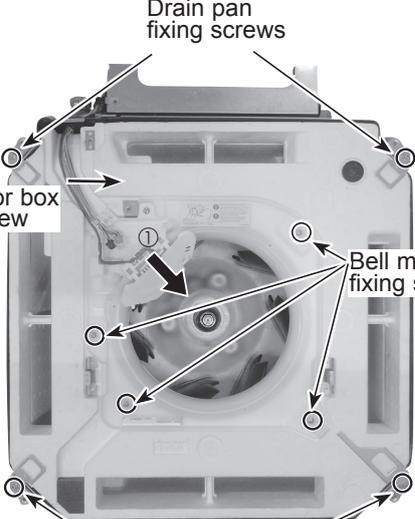
PLFY-WL15VFM-E.TH  
PLFY-WL32VFM-E.TH

PLFY-WL20VFM-E.TH

Be careful when removing heavy parts.

OPERATING PROCEDURE	PHOTOS/ FIGURES
<p><b>1. Removing the air intake grille and air filter</b></p> <p>(1) Slide the knob of air intake grille to the direction of the arrow ① to open the air intake grille.</p> <p>(2) Remove the grille hook from the panel to prevent the grille from dropping.</p> <p>(3) Slide the hinge of the intake grille to the direction of the arrow ② and remove the air filter.</p>	<p><b>Figure 1</b></p> 
<p><b>2. Removing the panel</b></p> <p>(1) Remove the air intake grille. (Refer to procedure 1)</p> <p><b>Connector box (See Photo 1)</b></p> <p>(2) Remove the screw of the connector cover.</p> <p>(3) Slide the connector cover to the direction of the arrow to open the cover.</p> <p>(4) Disconnect all the connectors, then pull out the connectors that are coming from panel side from the connector box.</p> <p><b>Corner panel (See Figure 2 and Photo 2)</b></p> <p>(5) Loosen the screw from the corner of the corner panel.</p> <p>(6) Slide the corner panel as indicated by the arrow.</p> <p>(7) Remove the safety strap from the hook, then remove the corner panel from the panel. (The safety strap is not equipped for the signal receiver panel and i-See sensor corner panel.)</p> <p>(8) Remove the fastener (*), then remove the corner panel.</p> <p><b>Panel (See Photo 3)</b></p> <p>(9) Remove the 4 screws.</p> <p>(10) Unlatch the 2 hooks.</p> <p>* Fastener is only for the signal receiver and i-see Sensor corner panel.</p>	<p><b>Photo 1</b></p>  <p><b>Figure 2</b></p>  <p><b>Photo 2</b></p>  <p><b>Photo 3</b></p> 



OPERATING PROCEDURE	PHOTOS/ FIGURES
<p><b>3. Removing the electrical parts</b></p> <p>(1) Loosen the 2 screws on the control box cover.</p> <p>(2) Slide the control box cover as indicated by the arrow to remove.</p> <p>&lt;Electrical parts in the control box&gt;</p> <ul style="list-style-type: none"><li>• Indoor controller board (I.B)</li><li>• Terminal block (TB2)</li><li>• Terminal block (TB5)</li><li>• Terminal block (TB15)</li></ul>	<p><b>Photo 4</b></p>  <p>Control box cover</p> <p>Screws</p> <p><b>Photo 5</b></p>  <p>Indoor controller board (I.B)</p> <p>Terminal block (TB15)</p> <p>Terminal block (TB2)</p> <p>Terminal block (TB5)</p>
<p><b>4. Removing the room temperature thermistor (TH21)</b></p> <p>(1) Remove the panel. (Refer to procedure 2)</p> <p><b>Room temperature thermistor (TH21) (See Photo 6)</b></p> <p>(2) Remove the 2 lead wire cover fixing screws. (See Photo 6)</p> <p>(3) Open the lead wire cover, then remove the connector cover from the connector box.</p> <p>(4) Remove the band that fixes the room temperature thermistor (TH21) to the connector box.</p> <p>(5) Remove the room temperature thermistor (TH21) from the connector box.</p> <p>(6) Remove the connector (CN20) from the indoor controller board, and disconnect the room temperature thermistor (TH21).</p> <p>Note: When fixing the thermistor, make sure to fix it to the connector box using a band.</p>	<p><b>Photo 6</b></p>  <p>Lead wire cover</p> <p>Lead wire cover fixing screws</p> <p>Room temperature thermistor (TH21)</p> <p>Connector cover</p>
<p><b>5. Removing the drain pan</b></p> <p>(1) Remove the panel. (Refer to procedure 2)</p> <p>(2) Remove the room temperature thermistor (TH21). (Refer to procedure 4)</p> <p><b>Connector box (See Photo 7)</b></p> <p>(3) Remove the connector box fixing screw.</p> <p>(4) Slide the connector box as indicated by the arrow ①, then remove the claw from bell mouth.</p> <p><b>Bell mouth (See Photo 7)</b></p> <p>(5) Remove the 4 bell mouth fixing screws, then remove the bell mouth.</p> <p><b>Drain pan (See Photo 7)</b></p> <p>(6) Remove the 4 drain pan fixing screws, then remove the drain pan.</p>	<p><b>Photo 7</b></p>  <p>Drain pan fixing screws</p> <p>Connector box fixing screw</p> <p>Bell mouth fixing screws</p> <p>Drain pan fixing screws</p>

## OPERATING PROCEDURE

### 6. Removing the pipe temperature thermistor/ inlet (TH22) and pipe temperature thermistor/ outlet (TH23)

- (1) Remove the panel. (Refer to procedure 2)
- (2) Remove the room temperature thermistor (TH21). (Refer to procedure 4)
- (3) Remove the drain pan. (Refer to procedure 5)

#### Pipe temperature thermistor/ inlet (TH22) and pipe temperature thermistor/ outlet (TH23) (See Photo 8)

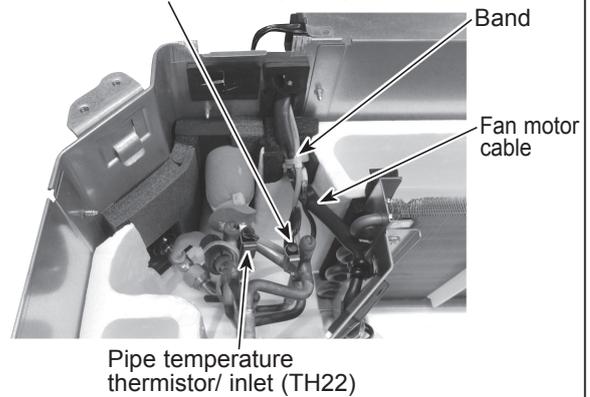
- (4) Remove the control box cover. (Refer to procedure 3)
- (5) Disconnect the thermistor connectors from the CN44 on the indoor controller board.
- (6) Cut the band fixing the thermistor connectors to the fan motor cable.
- (7) Remove the thermistors from the holders on heat exchanger.

#### Note:

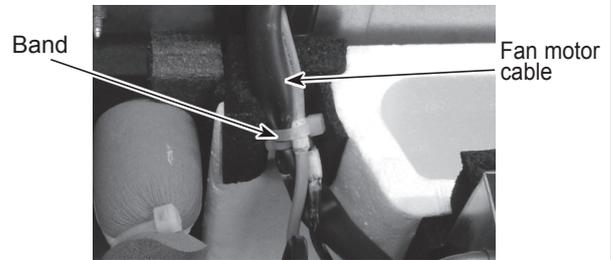
When re-attaching the thermistor connectors to the fan motor cable, make sure to put the fixed band into the groove. (See Photo 8-1)

## PHOTOS/ FIGURES

**Photo 8** Pipe temperature thermistor/ outlet (TH23)



**Photo 8-1**



### 7. Removing the fan motor (MF)

- (1) Remove the panel. (Refer to procedure 2)
- (2) Remove the room temperature thermistor (TH21). (Refer to procedure 4)
- (3) Remove the drain pan. (Refer to procedure 5)

#### Turbo fan (See Photo 3)

- (4) Remove the nut and washer from the turbo fan.
- (5) Remove the turbo fan from the motor shaft.

#### Notes:

- When assembling, make sure that the protrusions on the turbo fan fit into the holes on the washer.
- Tightening torque for the nut:  $4.5 \pm 0.5 \text{ N}\cdot\text{m}$



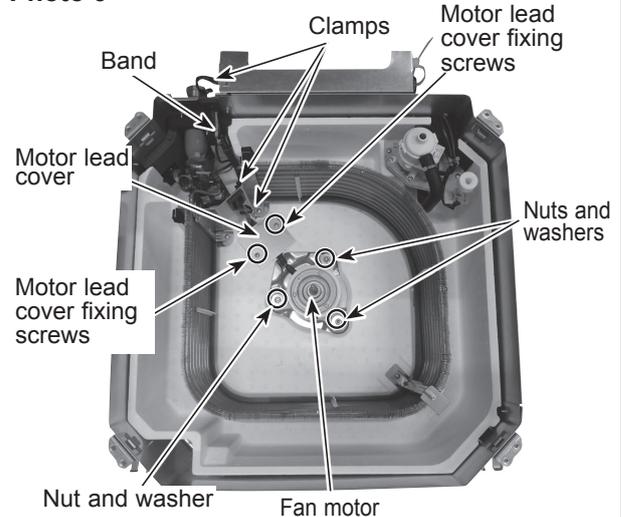
#### Fan motor (See Photo 9)

- (6) Remove the control box cover. (Refer to procedure 3)
- (7) Disconnect the fan motor cable from the CNMF on the indoor controller board.
- (8) Remove the 2 motor lead cover fixing screws, then remove the motor lead cover.
- (9) Loosen the 3 clamps fixing the fan motor cable.
- (10) Cut the band.
- (11) Remove the 3 nuts and washers, then remove the fan motor.
- (12) Remove the 3 motor mounts.

#### Notes:

1. When re-attaching the motor mount, make sure that the thicker end faces the motor shaft. (See Photo 10-1)
2. When re-attaching the turbo fan, make sure that the tightening torque for nuts is  $5 \text{ N}\cdot\text{m}$  or lower.

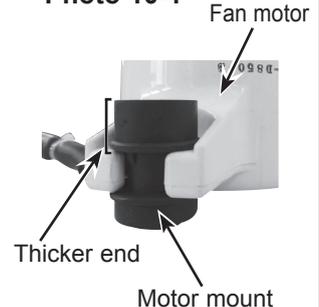
**Photo 9**

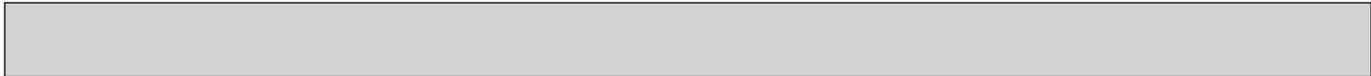


**Photo 10**



**Photo 10-1**





**OPERATING PROCEDURE**

**8. Removing the drain pump (DP) and float switch (FS)**

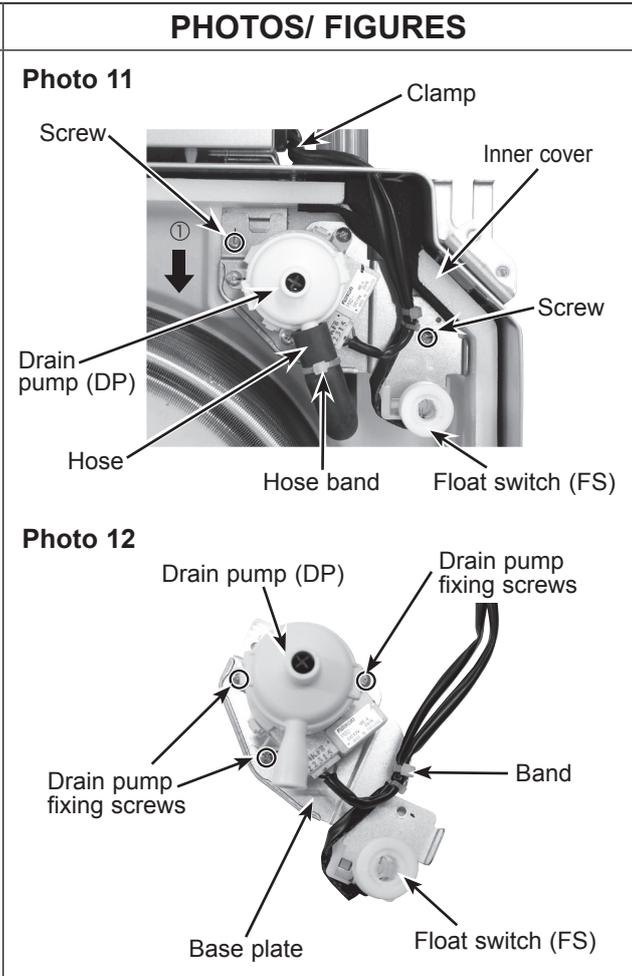
- (1) Remove the panel. (Refer to procedure 2)
- (2) Remove the room temperature thermistor (TH21). (Refer to procedure 4)
- (3) Remove the control box cover. (Refer to procedure 3)
- (4) Remove the drain pan. (Refer to procedure 5)

**Drain pump (See Photo 11 and 12)**

- (5) Disconnect the drain pump connector from the CNP and float switch connector from CN4F on the indoor controller board.
- (6) Loosen the clamp fixing the connectors on the side of the control box.
- (7) Cut the hose band and release the hose.
- (8) Remove the 2 screws fixing the drain pump and float switch to the inner cover.
- (9) Slide the base plate of the drain pump and float switch as indicated by the arrow ① to remove.
- (10) Cut the band. (See Photo 12)
- (11) Remove the 3 drain pump fixing screws, then remove the drain pump. (See Photo 12)

Notes:

1. When re-attaching the drain pump, make sure to use a band to fix the connector to the base plate.
2. Do not give a shock to the float switch. Otherwise it can cause damage or malfunction.

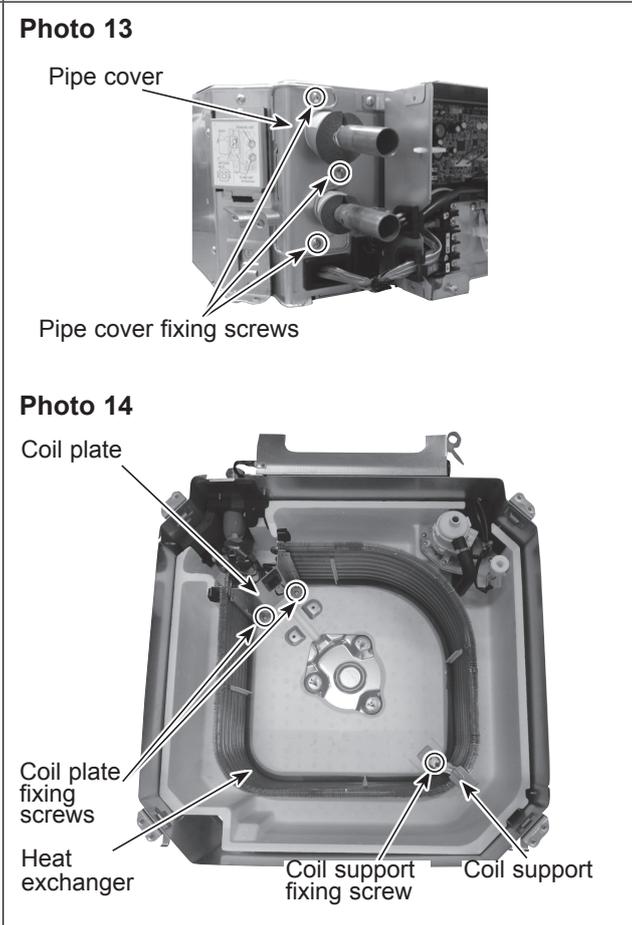


**9. Removing the heat exchanger**

- (1) Remove the panel. (Refer to procedure 2)
- (2) Remove the room temperature thermistor (TH21). (Refer to procedure 4)
- (3) Remove the drain pan. (Refer to procedure 5)
- (4) Remove the turbo fan and fan motor. (Refer to procedure 7)

**Heat exchanger (See Photo 13 and 14)**

- (5) Remove the 3 pipe cover fixing screws to remove the pipe cover.
- (6) Remove the 2 coil plate fixing screws.
- (7) Remove the coil support fixing screw, then remove the coil support.
- (8) Remove the heat exchanger.



# CITY MULTI

**mitsubishi** **ELECTRIC CORPORATION**

HEAD OFFICE : TOKYO BUILDING, 2-7-3, MARUNOUCHI, CHIYODA-KU TOKYO 100-8310, JAPAN

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