



No. TCH031

**REVISED EDITION-C**

# TECHNICAL & SERVICE MANUAL

## Series PLFY Ceiling Cassettes R410A

**WIRED REMOTE  
CONTROLLER  
(Option)**

# CITY MULTI

## Cautions for units utilizing refrigerant R410A

**Do not use the existing refrigerant piping.**

The old refrigerant and lubricant in the existing piping contain a large amount of chlorine which may cause the lubricant deterioration of the new unit.

**Use “low residual oil piping”**

If there is a large amount of residual oil (hydraulic oil, etc.) inside the piping and joints, deterioration of the lubricant will result.

**Store the piping indoors, and both ends of the piping sealed until just before brazing. (Leave elbow joints, etc. in their packaging.)**

If dirt, dust or moisture enters into refrigerant cycle, that can cause deterioration of refrigerant oil or malfunction of compressor.

**The refrigerant oil applied to flare and flange connections must be ester oil, ether oil or alkylbenzene oil in a small amount.**

If large amount of mineral oil enters, that can cause deterioration of refrigerant oil, etc.

**Charge refrigerant from liquid phase of gas cylinder.**

If the refrigerant is charged from gas phase, composition change may occur in refrigerant and the efficiency will be lowered.

**Do not use refrigerant other than R410A.**

If other refrigerant (R22, etc.) is used, chlorine in refrigerant can cause deterioration of refrigerant oil, etc.

**Use a vacuum pump with a reverse flow check valve.**

Vacuum pump oil may flow back into refrigerant cycle and that can cause deterioration of refrigerant oil, etc.

**Use the following tools specifically designed for use with R410A refrigerant.**

The following tools are necessary to use R410A refrigerant.

Tools for R410A	
Gauge manifold	Flare tool
Charge hose	Size adjustment gauge
Gas leak detector	Vacuum pump adaptor
Torque wrench	Electronic refrigerant charging scale

**Handle tools with care.**

If dirt, dust or moisture enters into refrigerant cycle, that can cause deterioration of refrigerant oil or malfunction of compressor.

**Do not use a charging cylinder.**

If a charging cylinder is used, the composition of refrigerant will change and the efficiency will be lowered.

**Use the specified refrigerant only.****Never use any refrigerant other than that specified.**

Doing so may cause a burst, an explosion, or fire when the unit is being used, serviced, or disposed of.

Correct refrigerant is specified in the manuals and on the spec labels provided with our products.

We will not be held responsible for mechanical failure, system malfunction, unit breakdown or accidents caused by failure to follow the instructions.

**Ventilate the room if refrigerant leaks during operation. If refrigerant comes into contact with a flame, poisonous gases will be released.**

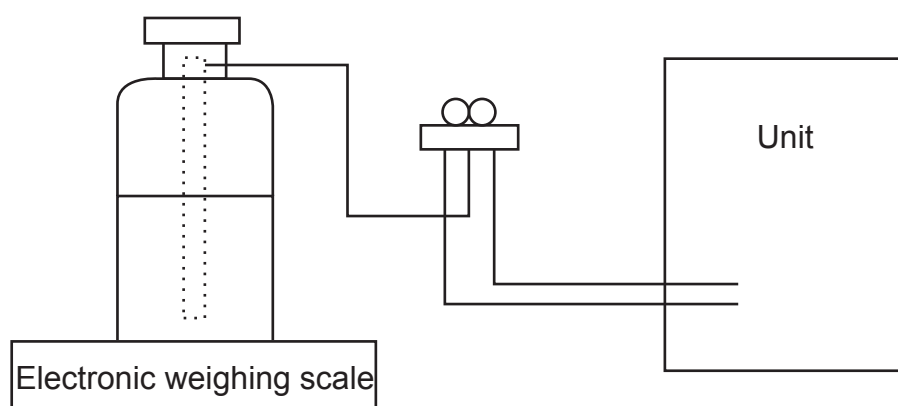
## [1] Cautions for service

- (1) Perform service after recovering the refrigerant left in unit completely.
- (2) Do not release refrigerant in the air.
- (3) After completing service, charge the cycle with specified amount of refrigerant.
- (4) When performing service, install a filter drier simultaneously.  
Be sure to use a filter drier for new refrigerant.

## [2] Additional refrigerant charge

### When charging directly from cylinder

- (1) Check that cylinder for R410A available on the market is syphon type.
- (2) Charging should be performed with the cylinder of syphon stood vertically. (Refrigerant is charged from liquid phase.)

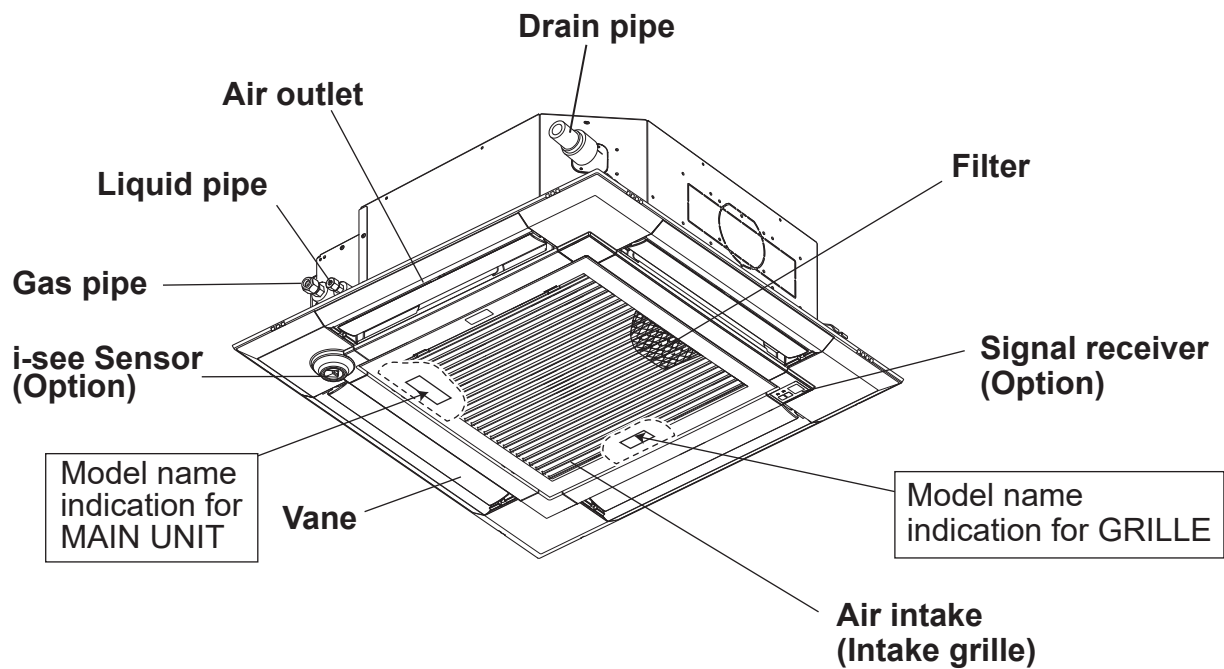


## [3] Service tools

Use the below service tools as exclusive tools for R410A refrigerant.

No.	Tool name	Specifications
①	Gauge manifold	· Only for R410A
		· Use the existing fitting specifications. (UNF1/2)
		· Use high-tension side pressure of 5.3MPa·G or over.
②	Charge hose	· Only for R410A
		· Use pressure performance of 5.09MPa·G or over.
③	Electronic weighing scale	—
④	Gas leak detector	· Use the detector for R134a, R407C or R410A.
⑤	Adaptor for reverse flow check	· Attach on vacuum pump.
⑥	Refrigerant charge base	—
⑦	Refrigerant cylinder	· Only for R410A    · Top of cylinder (Pink)
		· Cylinder with syphon
⑧	Refrigerant recovery equipment	—

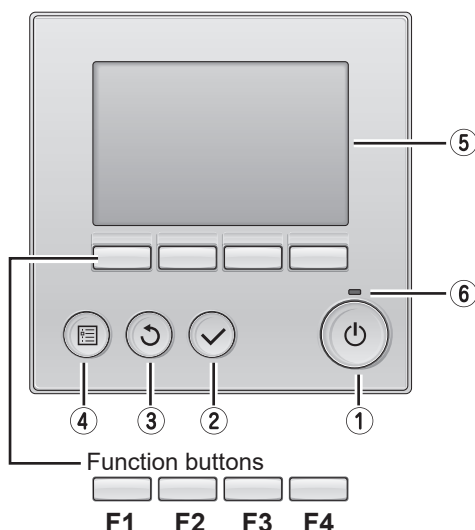
## 2-1. Indoor unit





## 2-2. WIRED REMOTE CONTROLLER <PAR-32/33MAA>

### Wired remote controller function



#### 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.

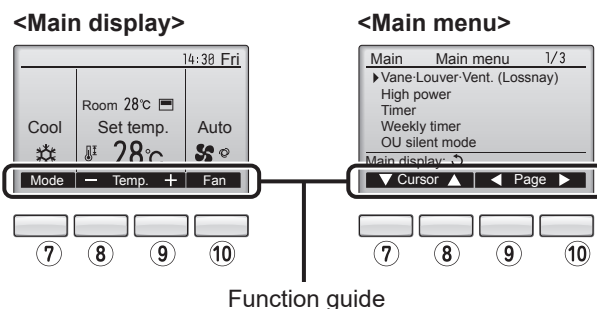
#### ⑤ Backlit LCD

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.  
Main menu : Press to move the cursor down.

#### ⑧ Function button **F2**

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

#### ⑨ Function button **F3**

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

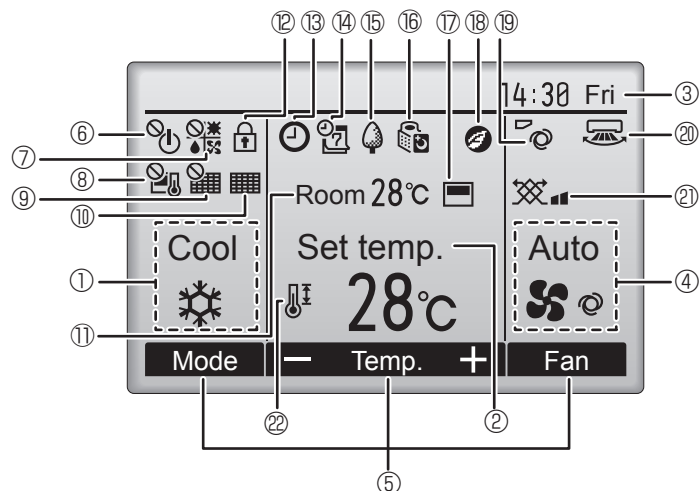
#### ⑩ Function button **F4**

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

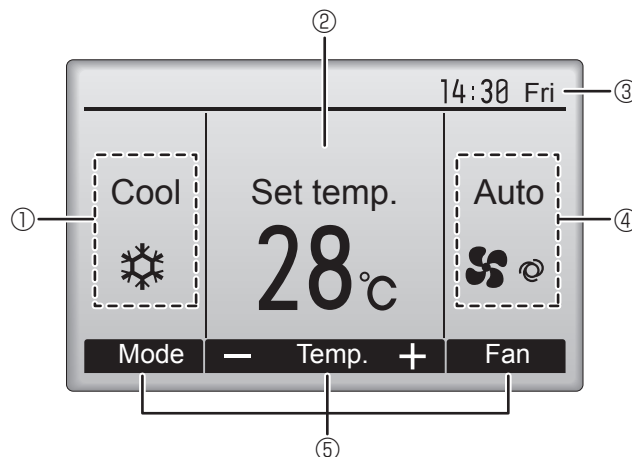
The main display can be displayed in 2 different modes: "Full" and "Basic".  
The initial setting is "Full". To switch to the "Basic" mode, change the setting on the Main display setting.

### <Full mode>

All icons are displayed for explanation.



### <Basic mode>



#### ① Operation mode

Indoor unit operation mode appears here.

#### ② Preset temperature

Preset temperature appears here.

#### ③ Clock (See the Installation Manual.)

Current time appears here.

#### ④ Fan speed

Fan speed setting appears here.

#### 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 (See the Installation Manual.)

Current room temperature appears here.



Appears when the buttons are locked.



Appears when the On/Off timer or Night setback function is enabled.



Appears when the Weekly timer is enabled.



Appears while the units are operated in the energy-save mode.



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



Appears when the built-in thermistor on the remote controller is activated to monitor the room temperature.  
Appears when the thermistor on the indoor unit is activated to monitor the room temperature.



Appears when the units are operated in the energy-saving mode with 3D i-see Sensor.



Indicates the vane setting.



Indicates the louver setting.



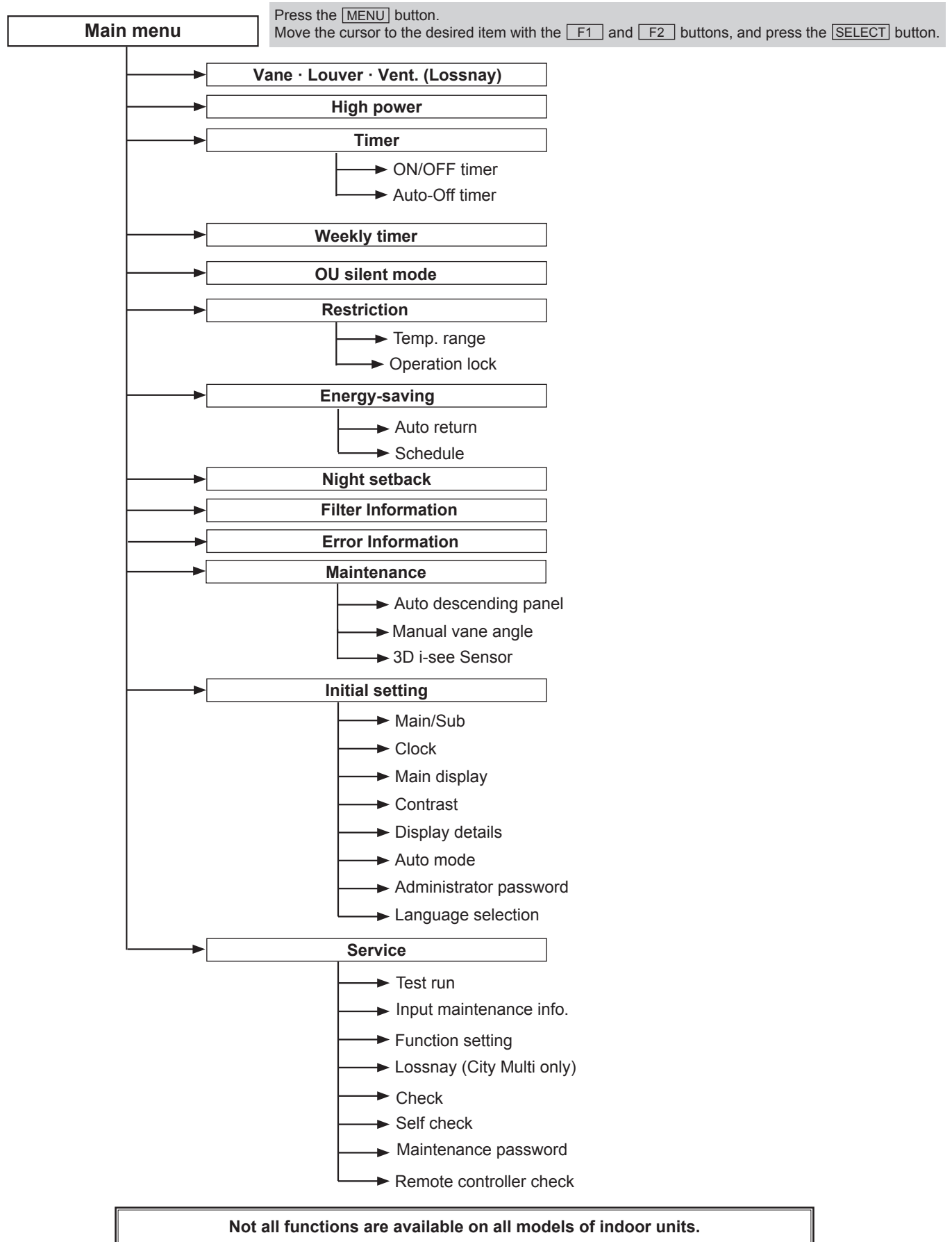
Indicates the ventilation setting.



Appears when the preset temperature range is restricted.

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

## Menu structure





## Main menu list

Setting and display items		Setting details
<b>Vane · Louver · Vent. (Lossnay)</b>		<b>Use to set the vane angle.</b> • Select a desired vane setting from 5 different settings. <b>Use to turn ON/OFF the louver.</b> • Select a desired setting from "ON" and "OFF." <b>Use to set the amount of ventilation.</b> • Select a desired setting from "Off," "Low," and "High."
<b>High power</b>		<b>Use to reach the comfortable room temperature quickly.</b> • Units can be operated in the High-power mode for up to 30 minutes.
<b>Timer</b>	<b>ON/OFF timer*</b>	<b>Use to set the operation ON/OFF times.</b> • Time can be set in 5-minute increments.
	<b>Auto-Off timer</b>	<b>Use to set the Auto-Off time.</b> • Time can be set to a value from 30 to 240 in 10-minute increments.
<b>Weekly timer*</b>		<b>Use to set the weekly operation ON/OFF times.</b> • Up to 8 operation patterns can be set for each day. (Not valid when the ON/OFF timer is enabled.)
<b>OU silent mode*</b>		<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> • Select the desired silent level from "Normal", "Middle" and "Quiet".
<b>Restriction</b>	<b>Temp. range</b>	<b>Use to restrict the preset temperature range.</b> • Different temperature ranges can be set for different operation modes.
	<b>Operation lock</b>	<b>Use to lock selected functions.</b> • The locked functions cannot be operated.
<b>Energy-saving</b>	<b>Auto return</b>	<b>Use to get the units to operate at the preset temperature after performing energy-saving operation for a specified time period.</b> • 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.)
	<b>Schedule*</b>	<b>Set the start/stop times to operate the units in the energy-save mode for each day of the week, and set the energy-saving rate.</b> • Up to 4 energy-saving operation patterns can be set for each day. • Time can be set in 5-minute increments. • Energy-saving rate can be set to a value from 0% or 50 to 90% in 10% increments.
<b>Night setback*</b>		<b>Use to make Night setback settings.</b> • Select "Yes" to enable the setting, and "No" to disable the setting. The temperature range and the start/stop times can be set.
<b>Filter information</b>		<b>Use to check the filter status.</b> • The filter sign can be reset.
<b>Error information</b>		<b>Use to check error information when an error occurs.</b> • 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.)
<b>Maintenance</b>	<b>Auto descending panel</b>	<b>Auto descending panel (Optional parts) UP/DOWN you can do.</b>
	<b>Manual vane angle</b>	<b>Use to set the vane angle for each vane to a fixed position.</b>
	<b>3D i-see Sensor</b>	<b>Use to set the following functions for 3D i-see Sensor.</b> • Air distribution • Energy saving option • Seasonal airflow

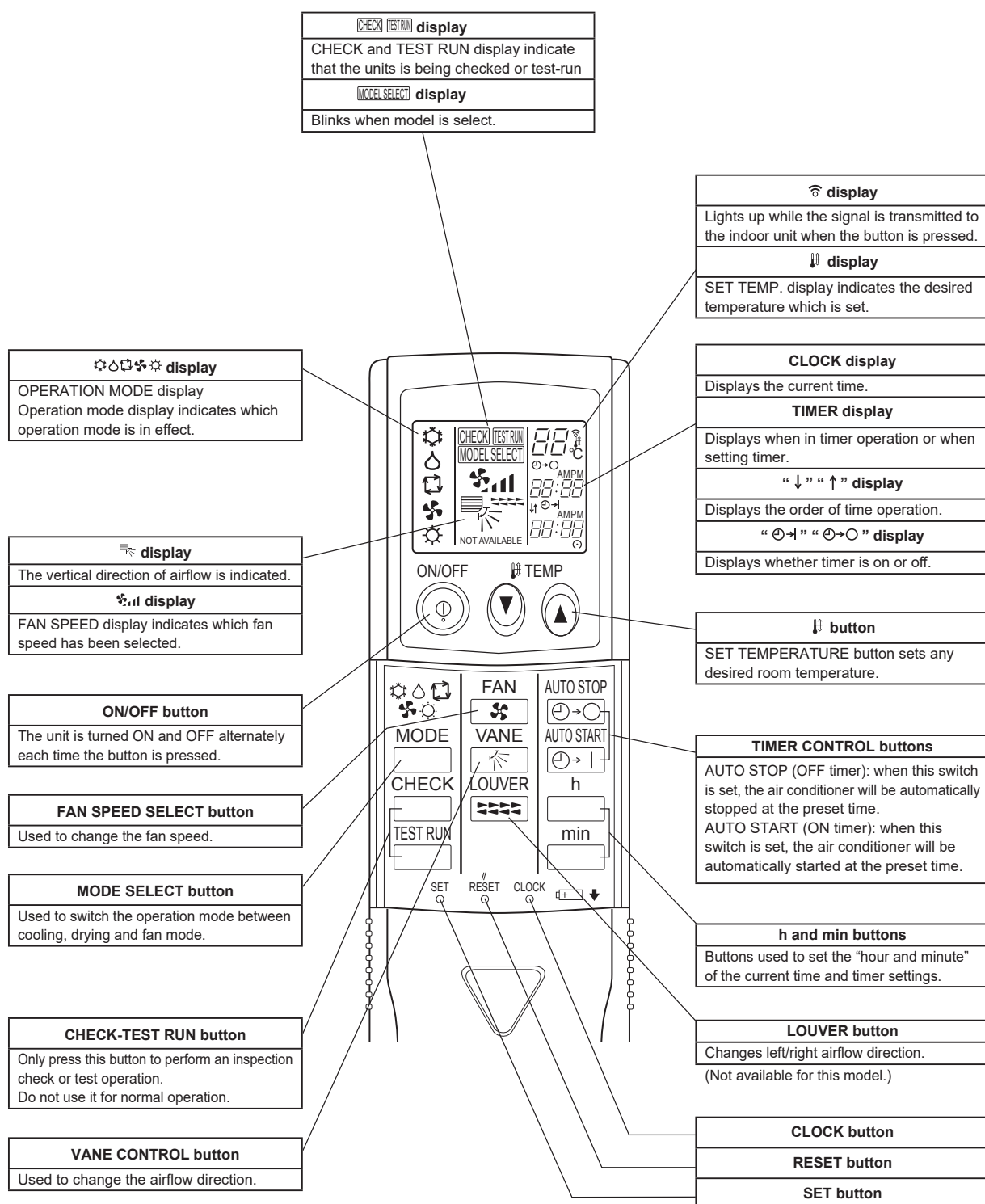
\* Clock setting is required.

Continue to the next page

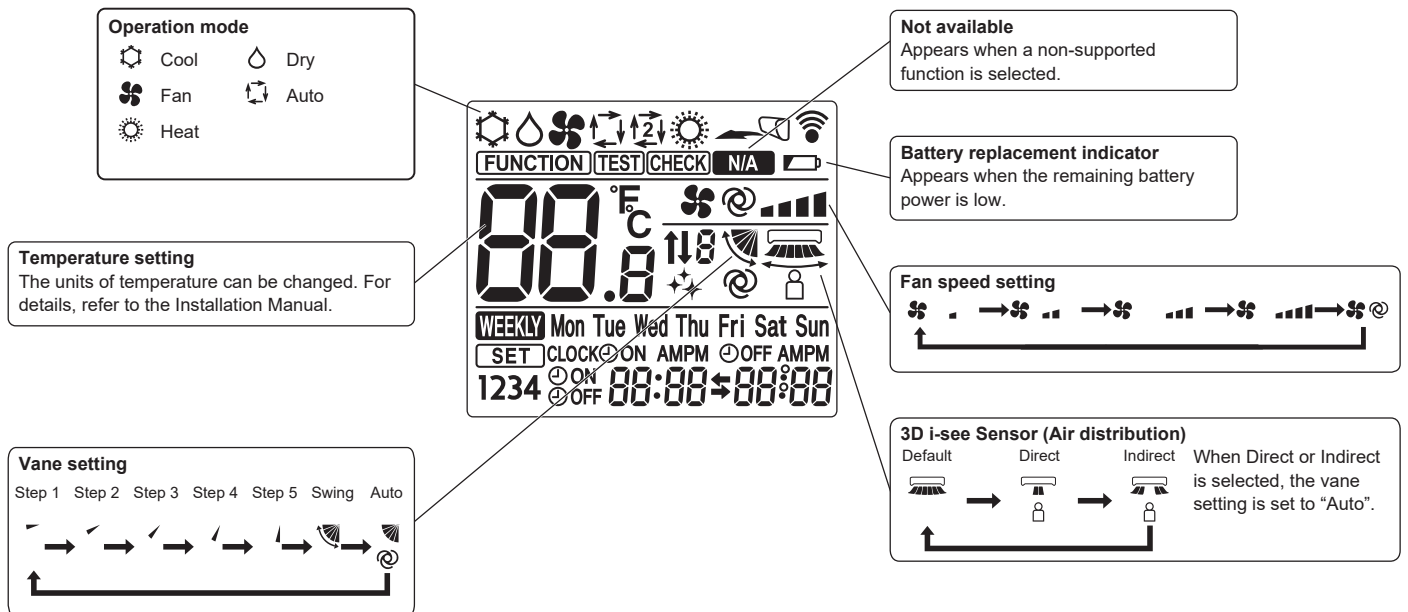
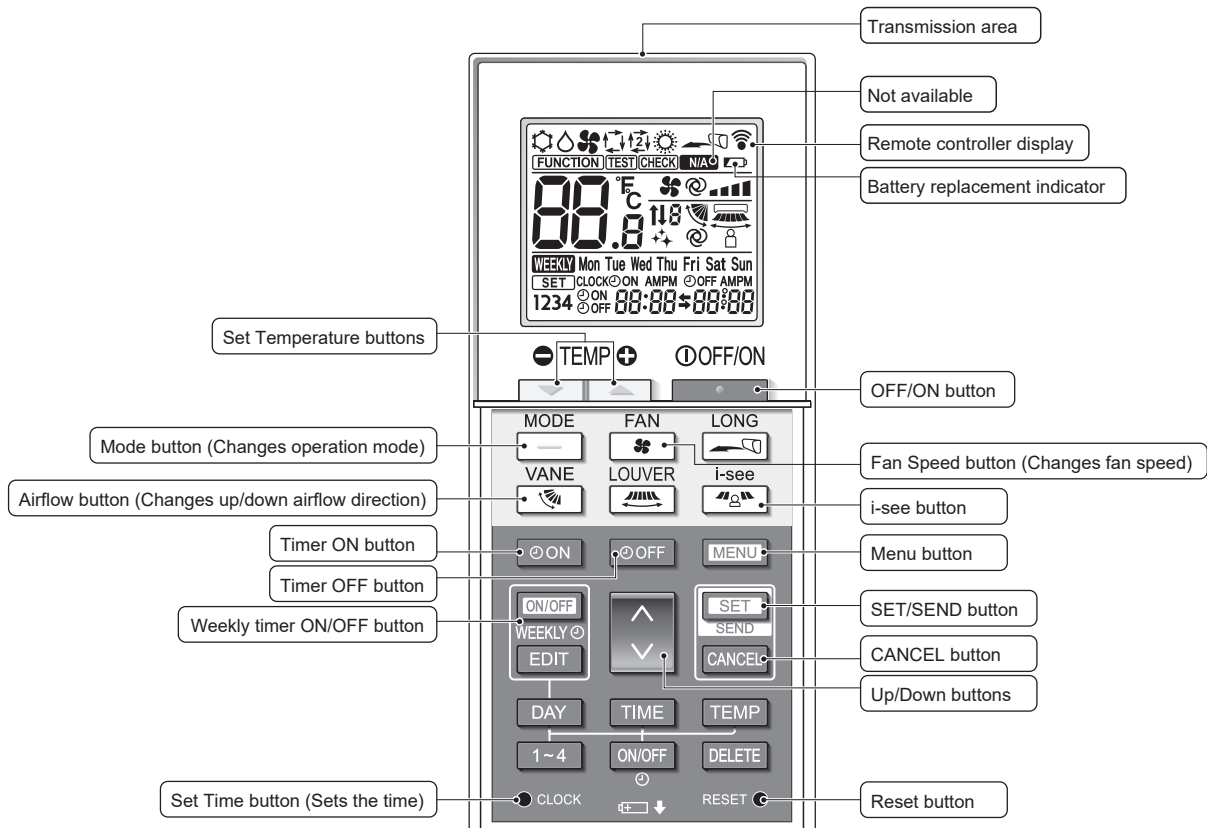
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Setting and display items		Setting details
Initial setting	Main/Sub	When connecting 2 remote controllers, one of them needs to be designated as a sub controller.
	Clock	Use to set the current time.
	Main display	Use to switch between "Full" and "Basic" modes for the Main display. • The initial setting is "Full."
	Contrast	Use to adjust screen contrast.
	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.
	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.
	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
	Language selection	Use to select the desired language.
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 info.	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
	Function setting (City Multi)	Make the settings for the indoor unit functions via the remote controller as necessary.
	LOSSNAY (City Multi only)	This setting is required only when the operation of City Multi units is interlocked with LOSSNAY units.
	Check	<b>Error history:</b> Display the error history and execute delete error history. <b>Refrigerant leak check:</b> Refrigerant leaks can be judged. <b>Smooth maintenance:</b> The indoor and outdoor maintenance data can be displayed. <b>Request code:</b> Details of the operation data including each thermistor temperature and error history can be checked.
	Self check	Error history of each unit can be checked via the remote controller.
	Maintenance password	Use to change the maintenance password.
	Remote controller check	When the remote controller does not work properly, use the remote controller checking function to troubleshoot the problem.

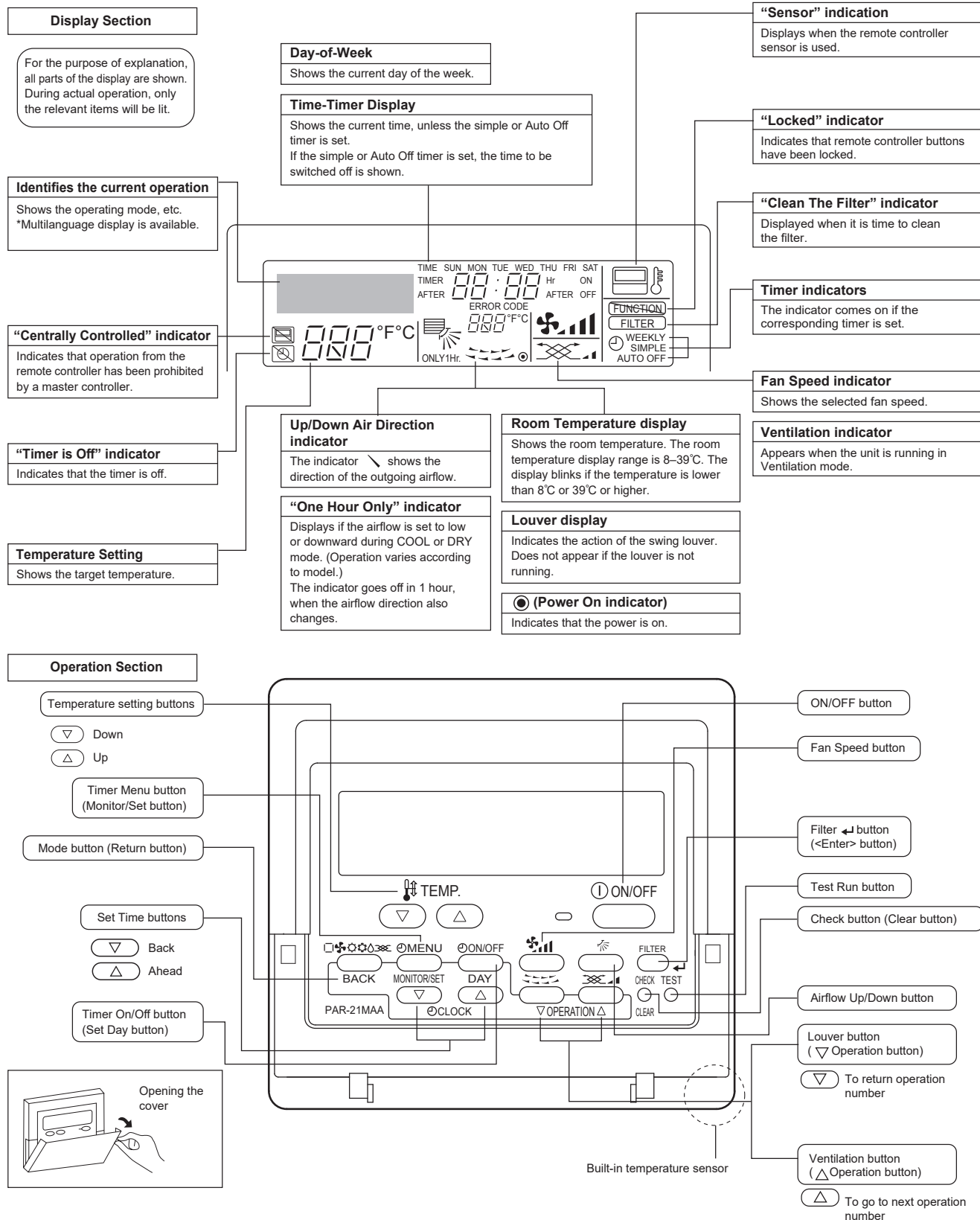
## 2-3. WIRELESS REMOTE CONTROLLER <PAR-SL97A-E>



## 2-4. WIRELESS REMOTE CONTROLLER <PAR-SL101A-E>



## 2-5. WIRED REMOTE CONTROLLER <PAR-21MAA>





## 3-1. SPECIFICATIONS

Model			PLFY-P32VEM-A/-PA/-DA	PLFY-P40VEM-A/-PA/-DA	PLFY-P50VEM-A/-PA/-DA	PLFY-P63VEM-A/-PA/-DA
Power source			1-phase 220–240V 50Hz, 1-phase 220-230V 60Hz			
Cooling capacity (Nominal)	*1	kW	3.6	4.5	5.6	7.1
	*1	kcal/h	3,100	3,900	4,800	6,100
	*1	BTU/h	12,300	15,400	19,100	24,200
	Power input	kW	0.03	0.03	0.03	0.03
	Current input	A	0.32	0.32	0.32	0.36
Heating capacity (Nominal)	*2	kW	4.0	5.0	6.3	8.0
	*2	kcal/h	3,400	4,300	5,400	6,900
	*2	BTU/h	13,600	17,100	21,500	27,300
	Power input	kW	0.03	0.03	0.03	0.03
	Current input	A	0.25	0.25	0.25	0.29
External finish			Galvanized steel sheet			
External dimension H × W × D		mm	258 × 840 × 840			
		inch	10-3/16 × 33-3/32 × 33-3/32			
Net weight		kg (lb)	19 (42)	19 (42)	19 (42)	21 (46)
Grille	model		PLP-6EA	PLP-6EA	PLP-6EA	PLP-6EA
	External finish		MUNSELL (1.0Y 9.2/0.2)			
	Dimension H × W × D	mm	40 × 950 × 950			
		inch	1-9/16 × 37-13/32 × 37-13/32			
	Net weight		kg (lb)	5 (11)		
Heat exchanger			Micro slit fin (Aluminum fin and copper tube)			
FAN			Turbo fan × 1	Turbo fan × 1	Turbo fan × 1	Turbo fan × 1
	External static press.	Pa	0	0	0	0
		mmH <sub>2</sub> O	0	0	0	0
	Motor type		DC motor			
	Motor output	kW	0.050	0.050	0.050	0.050
	Driving mechanism		Direct-drive			
	Airflow rate (Low-Mid2- Mid1-High)	m <sup>3</sup> /min	13 - 14 - 16 - 17	13 - 14 - 16 - 18	13 - 14 - 16 - 19	15 - 16 - 17 - 19
L/s		217 - 233 - 267 - 283	217 - 233 - 267 - 300	217 - 233 - 267 - 317	250 - 267 - 283 - 317	
cfm		459 - 494 - 565 - 600	459 - 494 - 565 - 636	459 - 494 - 565 - 671	530 - 565 - 600 - 671	
Sound pressure level (Low-Mid-High) (measured in anechoic room)		dB <A>	26 - 27 - 29 - 31	26 - 27 - 29 - 31	26 - 27 - 29 - 31	28 - 29 - 30 - 32
Insulation material			PS			
Air filter			PP honeycomb			
Protection device			Fuse			
Refrigerant control device			LEV			
Connectable outdoor unit			R410A CITY MULTI			
Diameter of refrigent pipe	Liquid (R410A)	mm (inch)	φ6.35 (φ1/4) Flare	φ6.35 (φ1/4) Flare	φ6.35 (φ1/4) Flare	φ9.52 (φ3/8) Flare
	Gas (R410A)	mm (inch)	φ12.7 (φ1/2) Flare	φ12.7 (φ1/2) Flare	φ12.7 (φ1/2) Flare	φ15.88 (φ5/8) Flare
Field drain pipe size		mm (inch)	O.D. φ32 (VP-25)			
Standard attachment	Document Accessory	Installation Manual, Instruction Book				
Remark	Optional parts					
	Grille **1		PLP-6EA	PLP-6EA	PLP-6EA	PLP-6EA
	Air outlet shutter plate		PAC-SJ37SP-E	PAC-SJ37SP-E	PAC-SJ37SP-E	PAC-SJ37SP-E
	High efficiency filter element **2		PAC-SH59KF-E	PAC-SH59KF-E	PAC-SH59KF-E	PAC-SH59KF-E
	Multi-function casement		PAC-SJ41TM-E	PAC-SJ41TM-E	PAC-SJ41TM-E	PAC-SJ41TM-E
			**1. PLFY-P-VEM-A/-PA/-DA should be used together with PLP-6EA. **2. PAC-SJ41TM-E is necessary to use with filter PAC-SH59KF-E.			
	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 : 7.5 m (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)	Unit converter kcal/h = kW × 860 Btu/h = kW × 3,412 cfm = m <sup>3</sup> /min × 35.31 lb = kg/0.4536 *Above specification data is subject to rounding variation.
Notes: 1. Nominal conditions*1 and *3 are subject to JIS B8615-1. 2. Due to continuing improvement, above specification may be subject to change without notice.						



Model			PLFY-P80VEM-A/-PA/-DA	PLFY-P100VEM-A/-PA/-DA	PLFY-P125VEM-A/-PA/-DA	PLFY-P140VEM-A/-PA/-DA
Power source			1-phase 220~240V 50Hz, 1-phase 220-230V 60Hz			
Cooling capacity (Nominal)	*1	kW	9.0	11.2	14.0	16.0
	*1	kcal/h	7,700	9,600	12,000	13,800
	*1	BTU/h	30,700	38,200	47,800	54,600
		Power input	kW	0.05	0.07	0.11
		Current input	A	0.50	0.67	1.06
Heating capacity (Nominal)	*2	kW	10.0	12.5	16.0	18.0
	*2	kcal/h	8,600	10,800	13,800	15,500
	*2	BTU/h	34,100	42,700	54,600	61,400
		Power input	kW	0.05	0.07	0.11
		Current input	A	0.43	0.60	0.99
External finish			Galvanized steel sheet			
External dimension H × W × D		mm	258 × 840 × 840	298 × 840 × 840		
		inch	10-3/16 × 33-3/32 × 33-3/32	11-3/4 × 33-3/32 × 33-3/32		
Net weight		kg (lb)	21(46)	24(53)	24(53)	26(57)
Grille	model		PLP-6EA	PLP-6EA	PLP-6EA	PLP-6EA
	External finish		MUNSELL (1.0Y 9.2/0.2)			
	Dimension H × W × D	mm	40 × 950 × 950			
		inch	1-9/16 × 37-13/32 × 37-13/32			
		Net weight	kg (lb)	5 (11)		
Heat exchanger			Micro slit fin (Aluminum fin and copper tube)			
FAN	Type × Quantity		Turbo fan × 1	Turbo fan × 1	Turbo fan × 1	Turbo fan × 1
	External static press.	Pa	0	0	0	0
		mmH <sub>2</sub> O	0	0	0	0
	Motor type		DC motor			
	Motor output	kW	0.050	0.120	0.120	0.120
	Driving mechanism		Direct-drive			
	Airflow rate (Low-Mid2- Mid1-High)	m <sup>3</sup> /min	15 - 18 - 20 - 23	20 - 23 - 26 - 29	24 - 26 - 30 - 35	22 - 27 - 31 - 35
		L/s	250 - 300 - 333 - 383	333 - 383 - 433 - 483	400 - 433 - 500 - 583	367 - 450 - 517 - 583
cfm		530 - 636 - 706 - 812	706 - 812 - 918 - 1024	847 - 918 - 1060 - 1236	777 - 953 - 1095 - 1235	
Sound pressure level (Low-Mid-High) (measured in anechoic room)		dB <A>	28 - 31 - 34 - 37	34 - 37 - 39 - 41	35 - 39 - 42 - 45	36 - 39 - 42 - 45
Insulation material			PS			
Air filter			PP honeycomb			
Protection device			Fuse			
Refrigerant control device			LEV			
Connectable outdoor unit			R410A CITY MULTI			
Diameter of refrigant pipe	Liquid (R410A)	mm (inch)	φ9.52 (φ3/8) Flare	φ9.52 (φ3/8) Flare	φ9.52 (φ3/8) Flare	φ9.52 (φ3/8) Flare
	Gas (R410A)	mm (inch)	φ15.88 (φ5/8) Flare	φ15.88 (φ5/8) Flare	φ15.88 (φ5/8) Flare	φ15.88 (φ5/8) Flare
Field drain pipe size		mm (inch)	O.D. φ32 (VP-25)			
Standard attachment	Document Accessory		Installation Manual, Instruction Book			
Remark	Optional parts					
	Grille **1		PLP-6EA	PLP-6EA	PLP-6EA	PLP-6EA
	Air outlet shutter plate		PAC-SJ37SP-E	PAC-SJ37SP-E	PAC-SJ37SP-E	PAC-SJ37SP-E
	High efficiency filter element **2		PAC-SH59KF-E	PAC-SH59KF-E	PAC-SH59KF-E	PAC-SH59KF-E
	Multi-function casement		PAC-SJ41TM-E	PAC-SJ41TM-E	PAC-SJ41TM-E	PAC-SJ41TM-E
			**1. PLFY-P-VEM should be used together with PLP-6EA. **2. PAC-SJ41TM-E is necessary to use with filter PAC-SH59KF-E.			
	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				*2 Nominal heating condition		Unit converter
Indoor : 27°CDB/19°CWB (81°FDB/66°FWB)				20°CDB (68°FDB)		kcal/h = kW × 860
Outdoor : 35°CDB (95°FDB)				7°CDB/6°CWB (45°FDB/43°FWB)		Btu/h = kW × 3,412
Pipe length : 7.5 m (24-9/16 ft)				7.5 m (24-9/16 ft)		cfm = m <sup>3</sup> /min × 35.31
Level difference : 0 m (0 ft)				0 m (0 ft)		lb = kg/0.4536
Notes:				*Above specification data is subject to rounding variation.		
1. Nominal conditions*1 and *3 are subject to JIS B8615-1.						
2. Due to continuing improvement, above specification may be subject to change without notice.						

### 3-2. ELECTRICAL PARTS SPECIFICATIONS

Service Ref. Parts name	Symbol	PLFY-P32VEM-A/-PA/-DA.TH	PLFY-P40VEM-A/-PA/-DA.TH	PLFY-P50VEM-A/-PA/-DA.TH	PLFY-P63VEM-A/-PA/-DA.TH
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			
Liquid 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			
Gas 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 (Indoor controller board)	FUSE	250V 6.3A			
Fan motor	MF	8-pole OUTPUT 50W			
Vane motor	MV	MSBPC20M13 DC12V 300Ω/phase			
Drain pump	DP	PMD-12D13ME INPUT 3W 24 ℓ /Hr			
Drain float switch	FS	Open / Short detection			
Linear expansion valve	LEV	DC12V Stepping motor drive port dimension ϕ3.2 (0–2000pulse) EFM-40YGME			
Power supply terminal block	TB2	(L, N) Rated to 330V 30A *			
Transmission terminal block	TB5	(M1, M2, S) Rated to 250V 20A *			
MA remote controller terminal block	TB15	(1, 2) Rated to 250V 10A *			

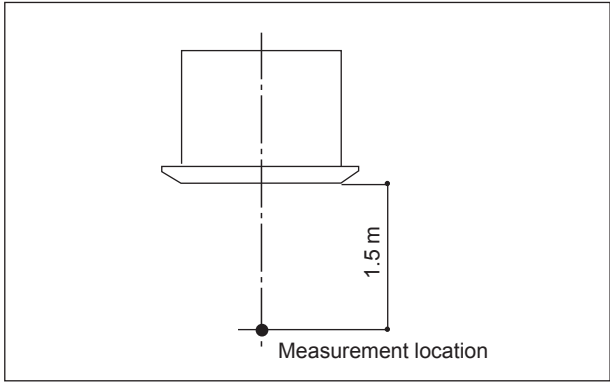
\*Refer to WIRING DIAGRAM for the supplied voltage.

Model Parts name	Symbol	PLFY-P80VEM-A/-PA/-DA.TH	PLFY-P100VEM-A/-PA/-DA.TH	PLFY-P125VEM-A/-PA/-DA.TH	PLFY-P140VEM-A/-PA/-DA.TH
Room temperature thermistor	TH21	Resistance 0℃ /15kΩ, 10℃ /9.6kΩ, 20℃ /6.3kΩ, 25℃ /5.4kΩ, 30℃ /4.3kΩ, 40:3.0kΩ			
Liquid pipe thermistor	TH22	Resistance 0℃ /15kΩ, 10℃ /9.6kΩ, 20℃ /6.3kΩ, 25℃ /5.4kΩ, 30℃ /4.3kΩ, 40℃ /3.0kΩ			
Gas pipe thermistor	TH23	Resistance 0℃ /15kΩ, 10℃ /9.6kΩ, 20℃ /6.3kΩ, 25℃ /5.4kΩ, 30℃ /4.3kΩ, 40℃ /3.0kΩ			
Fuse (Indoor controller board)	FUSE	250V 6.3A			
Fan motor	MF	8-pole OUTPUT 50W	8-pole OUTPUT 120W		
Vane motor	MV	MSBPC20M13 DC12V 300Ω/phase			
Drain pump	DP	PMD-12D13ME INPUT 3W 24R/Hr			
Drain float switch	FS	Open / Short detection			
Linear expansion valve	LEV	DC12V Stepping motor drive port dimension ϕ5.2 (0–2000pulse) EFM-80YGME			DC12V Stepping motor drive port dimension ϕ6.4 (0–2000pulse) EFM-A0YGME
Power supply terminal block	TB2	(L, N) Rated to 330V 30A *			
Transmission terminal block	TB5	(M1, M2, S) Rated to 250V 20A *			
MA remote controller terminal block	TB15	(1, 2) Rated to 250V 10A *			

\*Refer to WIRING DIAGRAM for the supplied voltage.

3-3. SOUND PRESSURE LEVEL

PLFY-P-VEM-A/-PA/-DA/-TH.TH

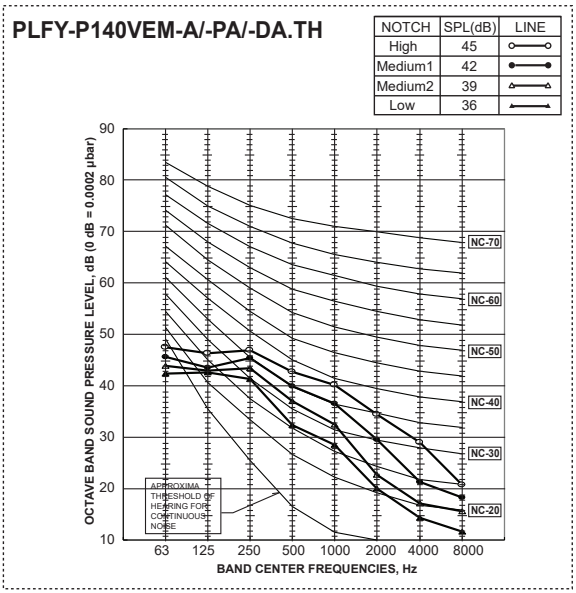
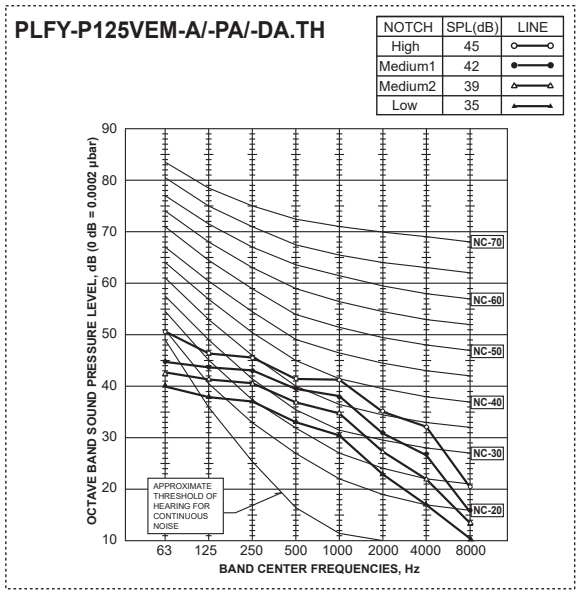
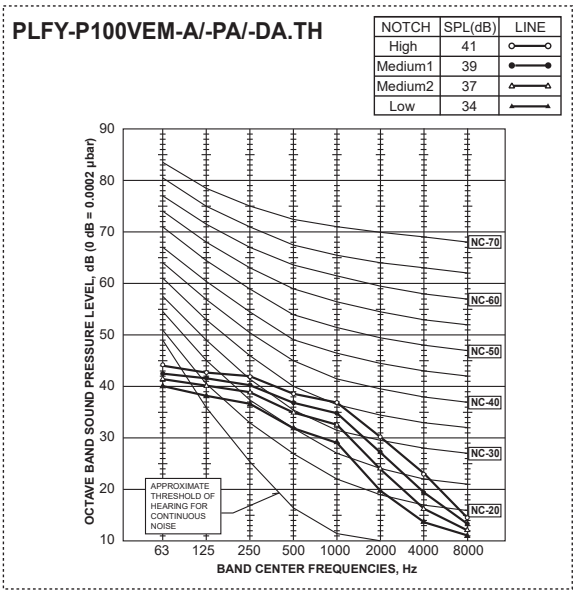
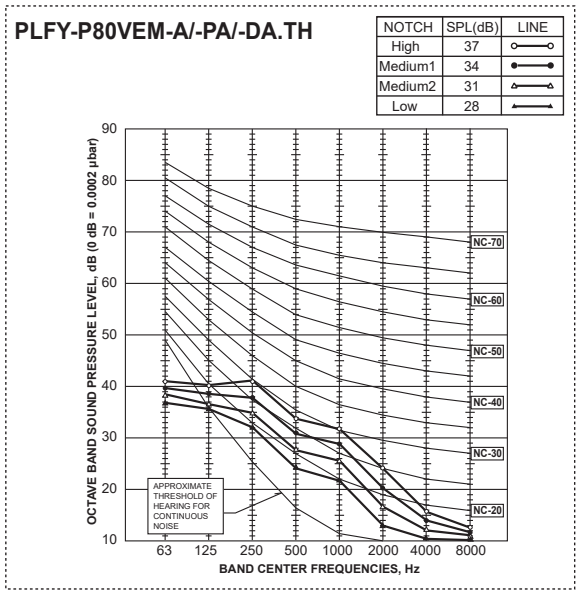
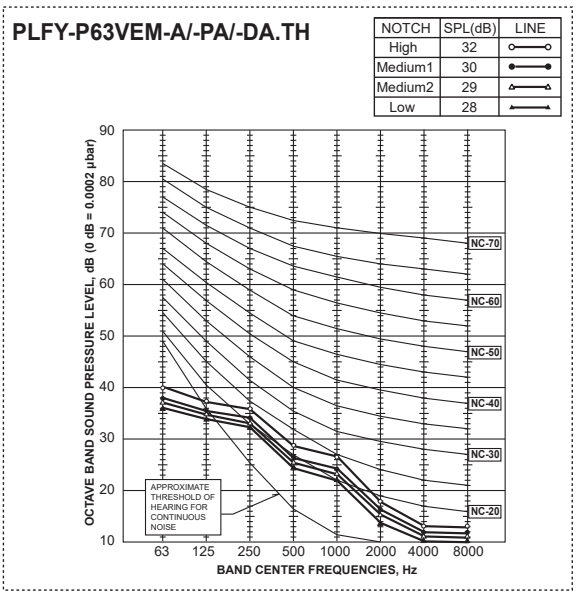
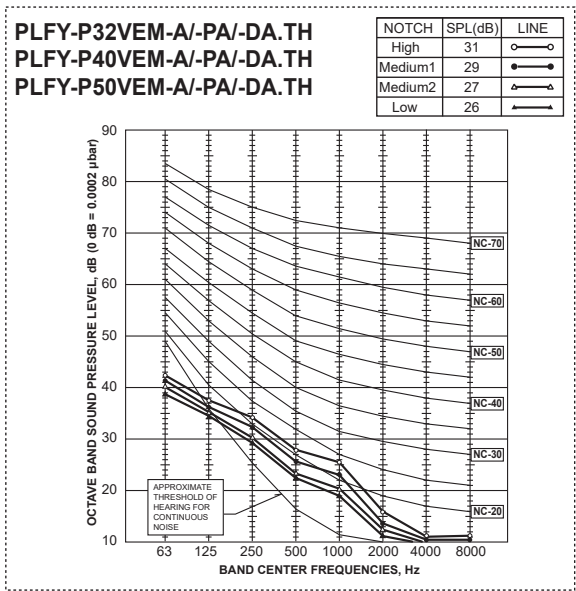


Note: Measured in anechoic room.

Sound pressure level at anechoic room : Low-Mid2-Mid1-High

Service Ref.	Sound pressure level dB (A)
PLFY-P32VEM-A/-PA/-DA.TH PLFY-P40VEM-A/-PA/-DA.TH PLFY-P50VEM-A/-PA/-DA.TH	26-27-29-31
PLFY-P63VEM-A/-PA/-DA.TH	28-29-30-32
PLFY-P80VEM-A/-PA/-DA.TH	28-31-34-37
PLFY-P100VEM-A/-PA/-DA.TH	34-37-39-41
PLFY-P125VEM-A/-PA/-DA.TH	35-39-42-45
PLFY-P140VEM-A/-PA/-DA.TH	36-39-42-45

3-4. NC CURVES




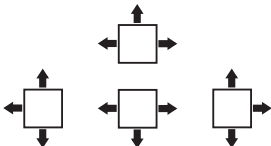
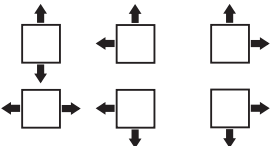
### 4-1. PLACEMENT OF THE AIR OUTLETS

- For this grille, the blowout direction comes in 11 patterns.

Also, by setting switch on the controller board to the appropriate settings, you can adjust the airflow and speed. Select the settings from Table1 according to the location in which you want to install the unit.

1) Decide on the pattern of the airflow direction.

<Table 1>

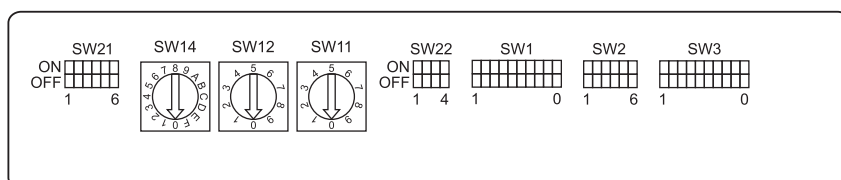
	4-direction	3-direction	2-direction
Blowout direction pattern	<b>Pattern 1</b> Initial setting 	<b>Pattern 4</b> 1 air outlet fully closed 	<b>Pattern 6</b> 2 air outlet fully closed 

Note1.

For 3- and 2-direction settings, please use the air outlet shutter plate (option).

2) According to the number of air outlets and height of the ceiling to install the unit, be sure to set up the switch (SW21) on the circuit board to the appropriate setting.

- Correspondence of ceiling heights to the number of air outlets



			PLFY-P32/40/50/63/80VEM-A/-PA/-DA						PLFY-P100/125/140VEM-A/-PA/-DA					
			Silent		Standard		High ceiling		Silent		Standard		High ceiling	
			SW21-1	SW21-2	SW21-1	SW21-2	SW21-1	SW21-2	SW21-1	SW21-2	SW21-1	SW21-2	SW21-1	SW21-2
			OFF	ON	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF	ON	OFF
4 direction	SW21-3	OFF	2.5 m		2.7 m		3.5 m		2.7 m		3.2 m		4.5 m	
	SW21-4	ON												
3 direction	SW21-3	OFF	2.7 m		3.0 m		3.5 m		3.0 m		3.6 m		4.5 m	
	SW21-4	OFF												
2 direction	SW21-3	ON	3.0 m		3.3 m		3.5 m		3.3 m		4.0 m		4.5 m	
	SW21-4	OFF												

## 4-2. BRANCH DUCT HOLE AND FRESH AIR INTAKE HOLE

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

- A fresh air intake hole for the optional multi-functional casement can also be made.

Note:

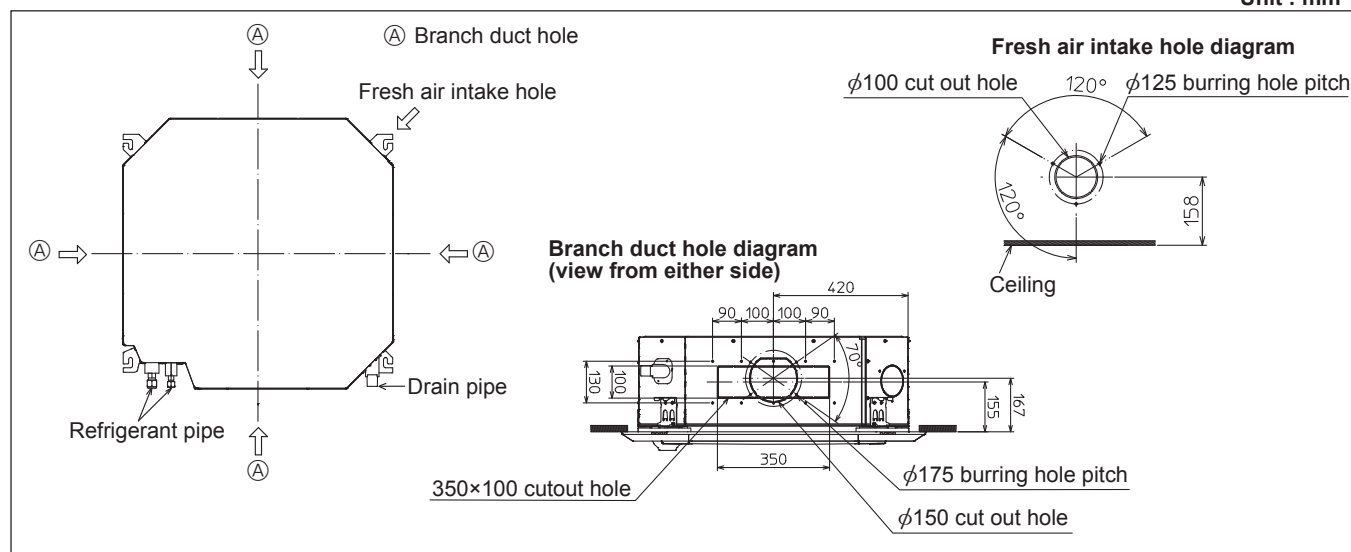
The figures marked with \* in the drawing below represent the dimensions of the main unit excluding those of the optional multifunctional casement.

When installing the optional multifunctional casement, add 135 mm to the dimensions marked on the figure.

When installing the branch ducts, be sure to insulate adequately.

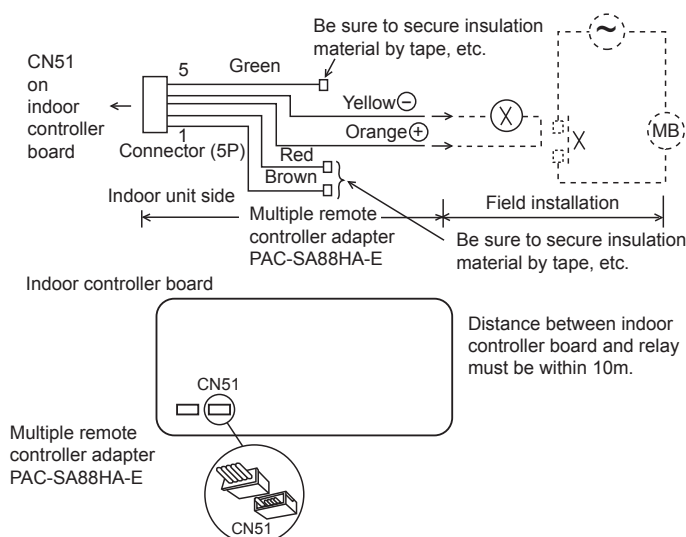
Otherwise, condensation and dripping may occur.

Unit : mm



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

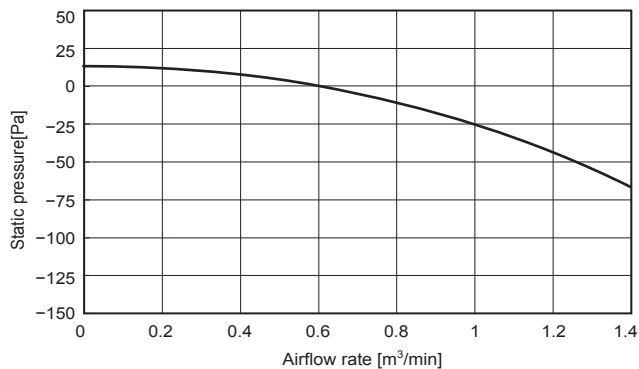
- Whenever the indoor unit is operating, the duct fan also operates.
  - (1) Connect the optional multiple remote controller adapter (PAC-SA88HA-E) to the connector CN51 on the indoor controller board.
  - (2) Drive the relay after connecting the 12 V DC relay between the Yellow and Orange connector lines.
- MB: Electromagnetic switch power relay for duct fan.  
X: Auxiliary relay (For 12 V DC, coil rating: 1.0W or smaller)



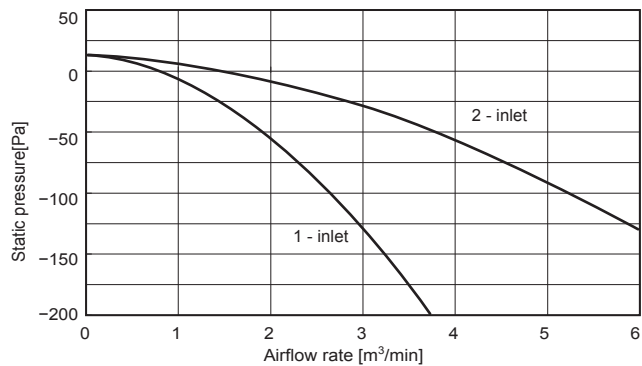
## 4-4. FRESH AIR INTAKE AMOUNT & STATIC PRESSURE CHARACTERISTICS

### 1 PLFY-P32/40/50/63/80VEM-A/-PA/-DA.TH

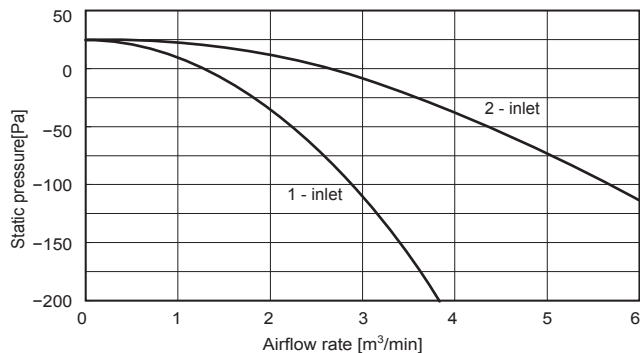
Taking air into the unit



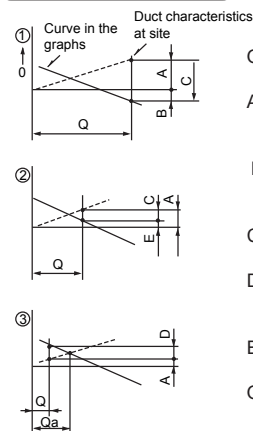
Multi-functional casement + Standard filter



Multi-functional casement + High efficiency filter



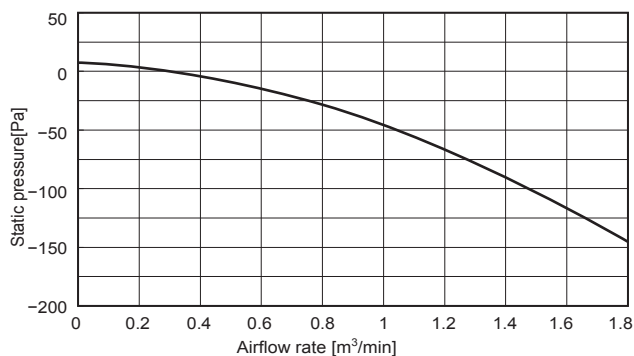
#### How to read curves



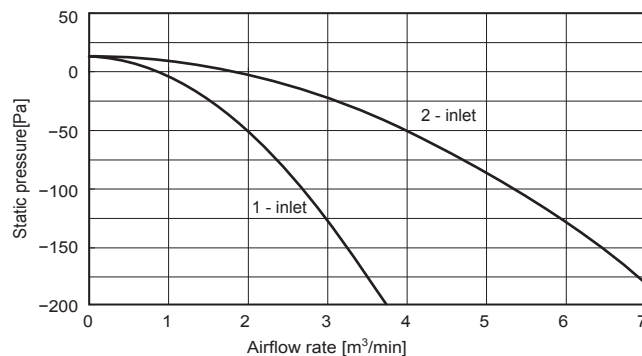
- Q...Designed amount of fresh air intake <m³/min>
- A...Static pressure loss of fresh air intake air duct system with airflow amount Q <Pa>
- B...Forced static pressure at air conditioner inlet with airflow amount Q <Pa>
- C...Static pressure of booster fan with airflow amount Q <Pa>
- D...Static pressure loss increase amount of fresh air intake duct system for airflow amount Q <Pa>
- E...Static pressure of indoor unit with airflow amount Q <Pa>
- Qa...Estimated amount of fresh air intake without D <m³/min>

### 2 PLFY-P100/125/140VEM-A/-PA/-DA.TH

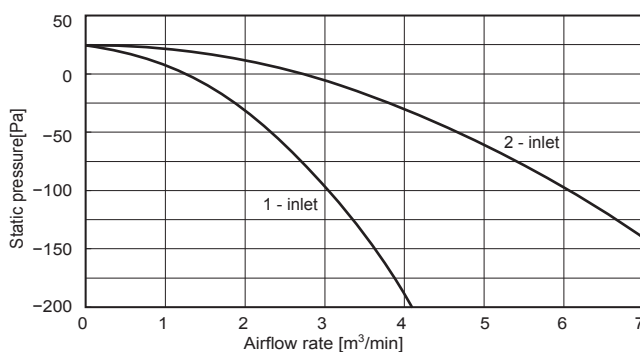
Taking air into the unit



Multi-functional casement + Standard filter



Multi-functional casement + High efficiency filter

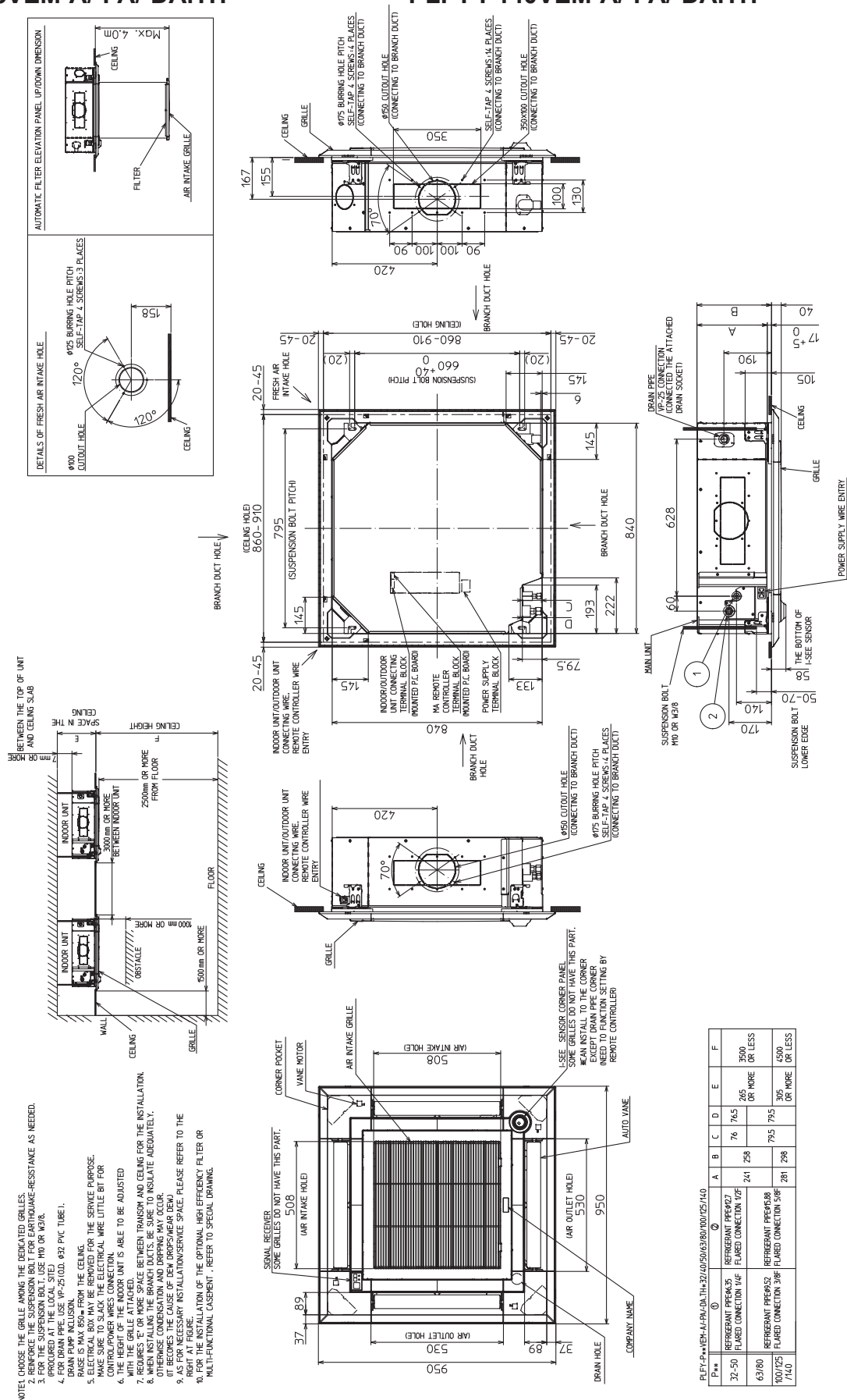




PLFY-P32VEM-A/-PA/-DA.TH  
PLFY-P50VEM-A/-PA/-DA.TH  
PLFY-P80VEM-A/-PA/-DA.TH  
PLFY-P125VEM-A/-PA/-DA.TH

PLFY-P40VEM-A/-PA/-DA.TH  
PLFY-P63VEM-A/-PA/-DA.TH  
PLFY-P100VEM-A/-PA/-DA.TH  
PLFY-P140VEM-A/-PA/-DA.TH

Unit: mm



P	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
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PLFY-P32VEM-A.TH    PLYF-P40VEM-A.TH    PLYF-P50VEM-A.TH    PLYF-P63VEM-A.TH  
 PLYF-P80VEM-A.TH    PLYF-P100VEM-A.TH    PLYF-P125VEM-A.TH    PLYF-P140VEM-A.TH

## 【LEGEND】

SYMBOL	NAME	SYMBOL	NAME
DP	DRAIN PUMP	OPTION PART	
FS	DRAIN FLOAT SWITCH	MT	I-SEE SENSOR MOTOR
I.B	INDOOR CONTROLLER BOARD	W.B	PCB FOR WIRELESS REMOTE CONTROLLER
CN27	CONNECTOR DAMPER	BZ	BUZZER
CN32	REMOTE SWITCH	LED1	LED (OPERATION INDICATION : GREEN)
CN51	CENTRALLY CONTROL	LED2	LED (PREPARATION FOR HEATING : ORANGE)
CN52	REMOTE INDICATION	RU	RECEIVING UNIT
F1	FUSE (T 6.3AL 250V)	SW1	EMERGENCY OPERATION (HEAT/DOWN)
SW1	SWITCH MODE SELECTION	SW2	EMERGENCY OPERATION (COOL/UP)
SW11	ADDRESS SETTING 1s DIGIT	TB15	TERMINAL BLOCK MA-REMOTE CONTROLLER
SW12	ADDRESS SETTING 10s DIGIT	TB2	BLOCK POWER SUPPLY
SW14	BRANCH NO.	TB5	TRANSMISSION
SW2	CAPACITY CODE	TH21	THERMISTOR ROOM TEMP. DETECTION (0°C / 15kΩ, 25°C / 5.4kΩ)
SW21	CEILING HEIGHT DISCHARGE OUTLET NUMBER OPTION SELECTOR	TH22	PIPE TEMP. DETECTION/LIQUID (0°C / 15kΩ, 25°C / 5.4kΩ)
SW22	PAIR NO. SETTING	TH23	PIPE TEMP. DETECTION/GAS (0°C / 15kΩ, 25°C / 5.4kΩ)
SW3	MODE SELECTION		
SWE	DRAIN PUMP (TEST MODE)		
LEV	LINEAR EXPANSION VALVE		
MF	FAN MOTOR		
MV	VANE MOTOR		

## NOTES:

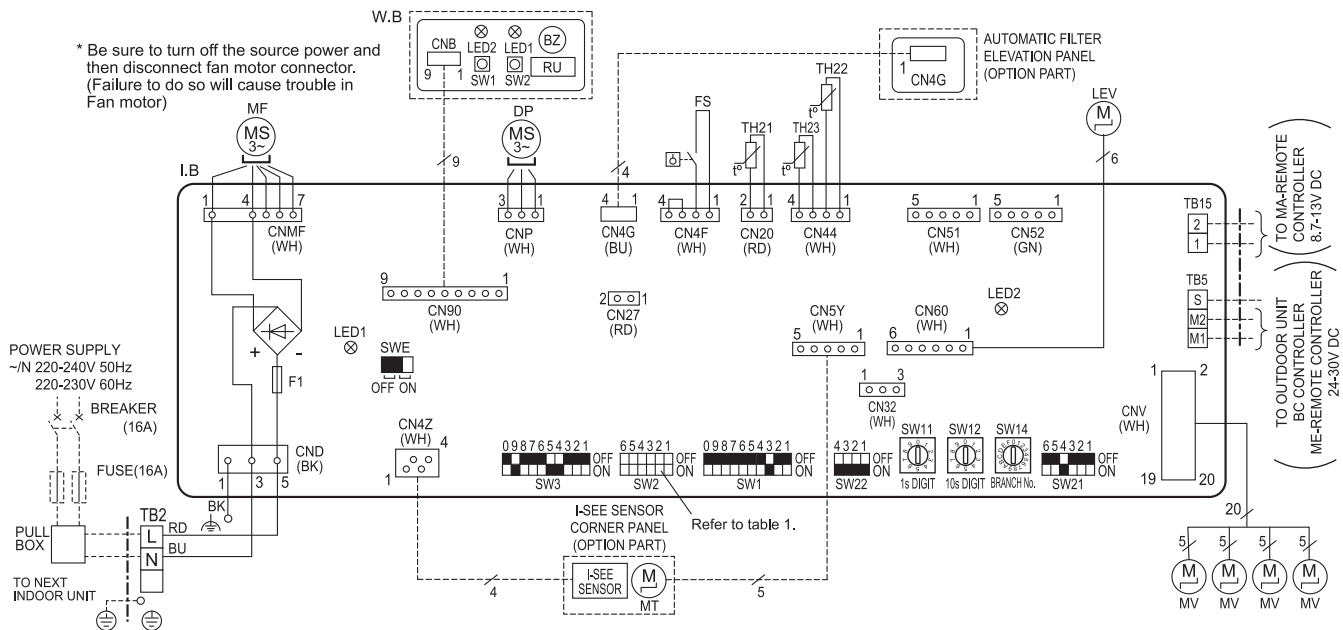
- At servicing for outdoor unit, always follow the wiring diagram of outdoor unit.
- In case of using MA-Remote controller, please connect to TB15. (Remote controller wire is non-polar.)
- In case of using ME-Remote controller, please connect to TB5. (Transmission line is non-polar.)
- Symbol [S] of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

## LED on indoor board for service

Mark	Meaning	Function
LED1	Main power supply	Main Power supply (Indoor unit:220-240V AC) power on → lamp is lit
LED2	Power supply for MA-Remote controller	Power supply for MA-Remote controller on → lamp is lit

&lt;Table 1&gt; SW2 (CAPACITY CODE)

MODELS	SW2	MODELS	SW2	MODELS	SW2
32	ON OFF 1 2 3 4 5 6	63	ON OFF 1 2 3 4 5 6	125	ON OFF 1 2 3 4 5 6
40	ON OFF 1 2 3 4 5 6	80	ON OFF 1 2 3 4 5 6	140	ON OFF 1 2 3 4 5 6
50	ON OFF 1 2 3 4 5 6	100	ON OFF 1 2 3 4 5 6		



**PLFY-P32VEM-PA.TH   PLFY-P40VEM-PA.TH   PLFY-P50VEM-PA.TH   PLFY-P63VEM-PA.TH**  
**PLFY-P80VEM-PA.TH   PLFY-P100VEM-PA.TH   PLFY-P125VEM-PA.TH   PLFY-P140VEM-PA.TH**

**[LEGEND]**

SYMBOL	NAME	SYMBOL	NAME
DP	DRAIN PUMP	OPTION PART	
FS	DRAIN FLOAT SWITCH	MT	I-SEE SENSOR MOTOR
I. B	INDOOR CONTROLLER BOARD	W.B	PCB FOR WIRELESS REMOTE CONTROLLER
CN27	CONNECTOR DAMPER	BZ	BUZZER
CN32	CONNECTOR REMOTE SWITCH	LED1	LED (OPERATION INDICATION : GREEN)
CN51	CONNECTOR CENTRALLY CONTROL	LED2	LED (PREPARATION FOR HEATING : ORANGE)
CN52	CONNECTOR REMOTE INDICATION	RU	RECEIVING UNIT
F1	FUSE (T 6.3AL 250V)	SW1	EMERGENCY OPERATION (HEAT/DOWN)
SW1	SWITCH MODE SELECTION	SW2	EMERGENCY OPERATION (COOL/UP)
SW11	SWITCH ADDRESS SETTING 1s DIGIT	TB15	TERMINAL MA-REMOTE CONTROLLER
SW12	SWITCH ADDRESS SETTING 10s DIGIT	TB2	BLOCK POWER SUPPLY
SW14	SWITCH BRANCH NO.	TB5	TRANSMISSION
SW2	SWITCH CAPACITY CODE	TH21	THERMISTOR ROOM TEMP. DETECTION (0°C / 15kΩ, 25°C / 5.4kΩ)
SW21	SWITCH CEILING HEIGHT DISCHARGE OUTLET NUMBER OPTION SELECTOR	TH22	PIPE TEMP. DETECTION/LIQUID (0°C / 15kΩ, 25°C / 5.4kΩ)
SW22	SWITCH PAIR NO. SETTING	TH23	PIPE TEMP. DETECTION/GAS (0°C / 15kΩ, 25°C / 5.4kΩ)
SW3	SWITCH MODE SELECTION		
SWE	SWITCH DRAIN PUMP (TEST MODE)		
LEV	LINEAR EXPANSION VALVE		
MF	FAN MOTOR		
MV	VANE MOTOR		

**NOTES:**

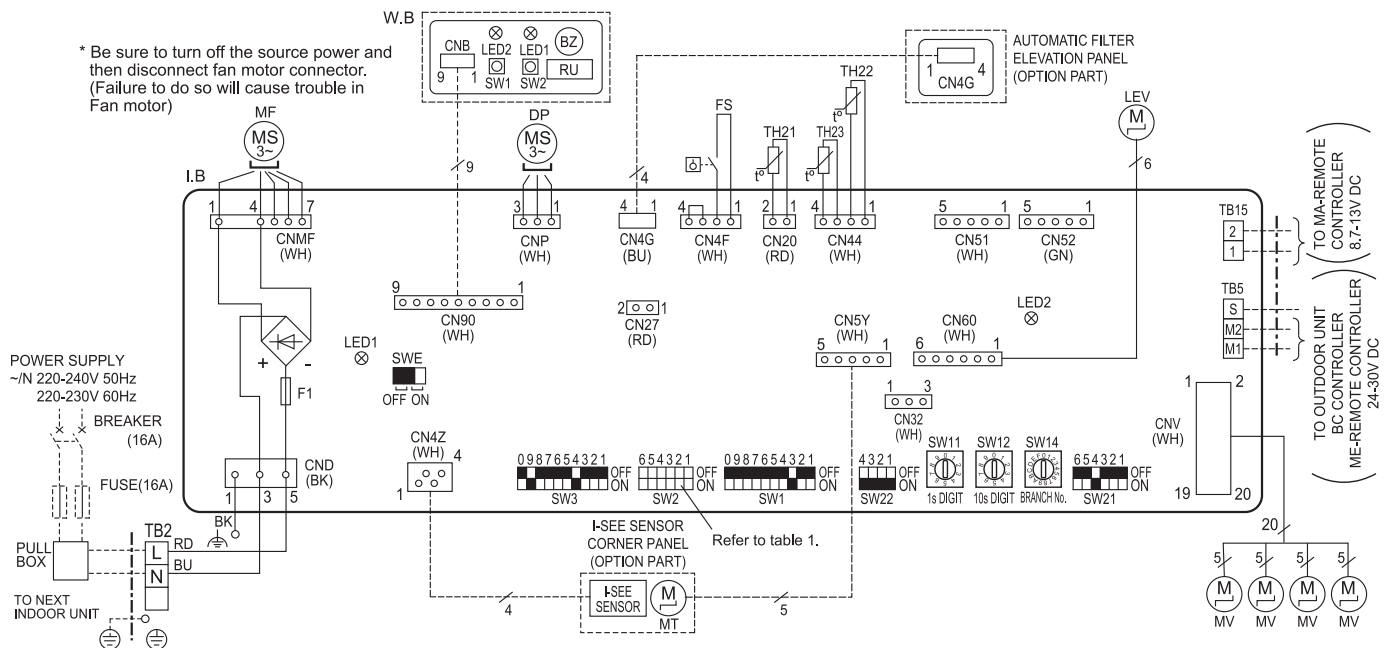
- At servicing for outdoor unit, always follow the wiring diagram of outdoor unit.
- In case of using MA-Remote controller, please connect to TB15. (Remote controller wire is non-polar.)
- In case of using ME-Remote controller, please connect to TB5. (Transmission line is non-polar.)
- Symbol [S] of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

**LED on indoor board for service**

Mark	Meaning	Function
LED1	Main power supply	Main Power supply (Indoor unit:220-240V AC) power on → lamp is lit
LED2	Power supply for MA-Remote controller	Power supply for MA-Remote controller on → lamp is lit

**<Table 1> SW2 (CAPACITY CODE)**

MODELS	SW2	MODELS	SW2	MODELS	SW2
32		63		125	
40		80		140	
50		100			



PLFY-P32VEM-DA.TH    PLYF-P40VEM-DA.TH    PLYF-P50VEM-DA.TH    PLYF-P63VEM-DA.TH  
 PLYF-P80VEM-DA.TH    PLYF-P100VEM-DA.TH    PLYF-P125VEM-DA.TH    PLYF-P140VEM-DA.TH

【LEGEND】

SYMBOL	NAME	SYMBOL	NAME
DP	DRAIN PUMP	OPTION PART	
FS	DRAIN FLOAT SWITCH	MT	I-SEE SENSOR MOTOR
I. B	INDOOR CONTROLLER BOARD	W.B	PCB FOR WIRELESS REMOTE CONTROLLER
CN27	CONNECTOR DAMPER	BZ	BUZZER
CN32	REMOTE SWITCH	LED1	LED (OPERATION INDICATION : GREEN)
CN51	CENTRALLY CONTROL	LED2	LED (PREPARATION FOR HEATING : ORANGE)
CN52	REMOTE INDICATION	RU	RECEIVING UNIT
F1	FUSE (T 6.3AL 250V)	SW1	EMERGENCY OPERATION (HEAT/DOWN)
SW1	SWITCH	SW2	EMERGENCY OPERATION (COOL/UP)
SW11	MODE SELECTION	TB15	TERMINAL MA-REMOTE CONTROLLER
SW12	ADDRESS SETTING 1s DIGIT	TB2	BLOCK POWER SUPPLY
SW14	ADDRESS SETTING 10s DIGIT	TB5	TRANSMISSION
SW21	BRANCH NO.	TH21	THERMISTOR ROOM TEMP. DETECTION (0°C / 15kΩ, 25°C / 5.4kΩ)
SW2	CAPACITY CODE	TH22	PIPE TEMP. DETECTION/LIQUID (0°C / 15kΩ, 25°C / 5.4kΩ)
SW21	CEILING HEIGHT DISCHARGE OUTLET NUMBER OPTION SELECTOR	TH23	PIPE TEMP. DETECTION/GAS (0°C / 15kΩ, 25°C / 5.4kΩ)
SW22	PAIR NO. SETTING		
SW3	MODE SELECTION		
SWE	DRAIN PUMP (TEST MODE)		
LEV	LINEAR EXPANSION VALVE		
MF	FAN MOTOR		
MV	VANE MOTOR		

NOTES:

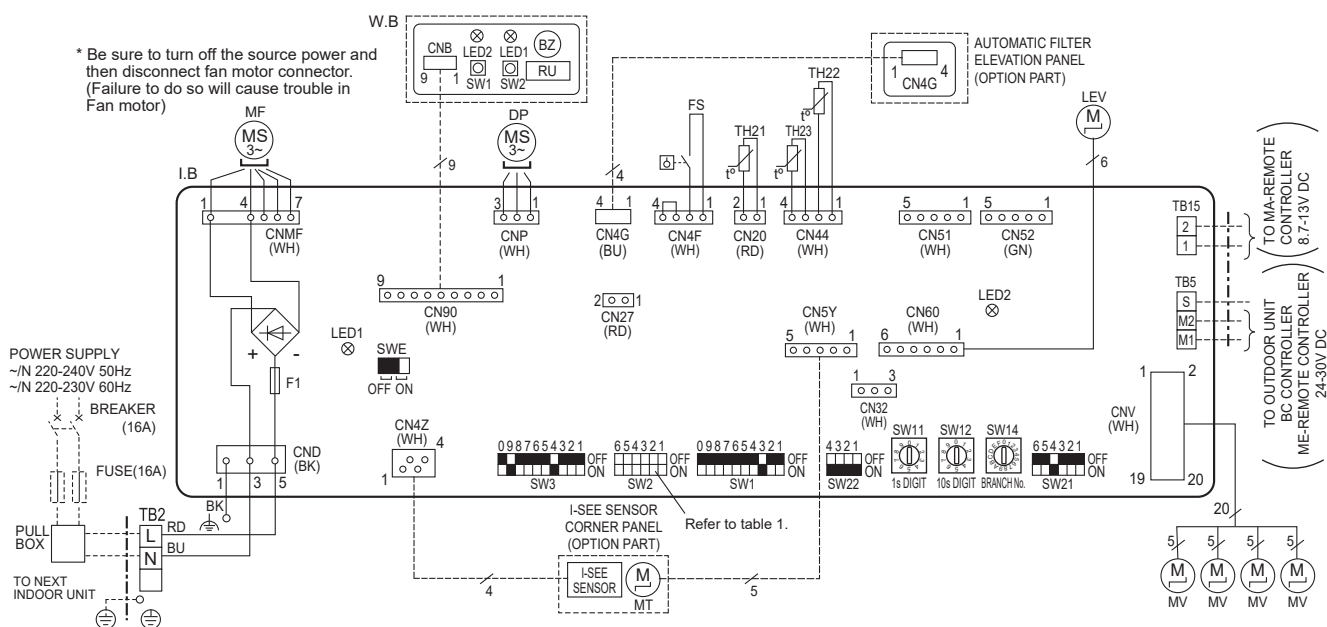
- At servicing for outdoor unit, always follow the wiring diagram of outdoor unit.
- In case of using MA-Remote controller, please connect to TB15. (Remote controller wire is non-polar.)
- In case of using ME-Remote controller, please connect to TB5. (Transmission line is non-polar.)
- Symbol [S] of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

LED on indoor board for service

Mark	Meaning	Function
LED1	Main power supply	Main Power supply (Indoor unit:220-240V AC) power on → lamp is lit
LED2	Power supply for MA-Remote controller	Power supply for MA-Remote controller on → lamp is lit

<Table 1> SW2 (CAPACITY CODE)

MODELS	SW2	MODELS	SW2	MODELS	SW2
32	ON OFF 1 2 3 4 5 6	63	ON OFF 1 2 3 4 5 6	125	ON OFF 1 2 3 4 5 6
40	ON OFF 1 2 3 4 5 6	80	ON OFF 1 2 3 4 5 6	140	ON OFF 1 2 3 4 5 6
50	ON OFF 1 2 3 4 5 6	100	ON OFF 1 2 3 4 5 6		



PLFY-P32VEM-A/-PA/-DA.TH

PLFY-P40VEM-A/-PA/-DA.TH

PLFY-P50VEM-A/-PA/-DA.TH

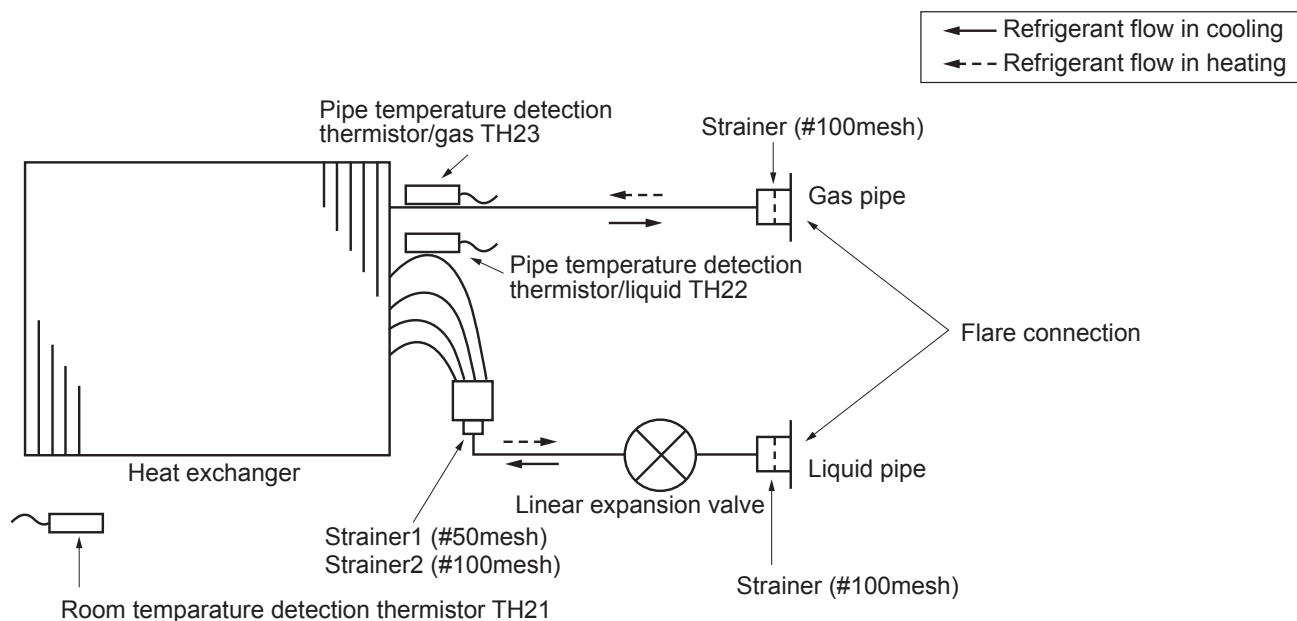
PLFY-P63VEM-A/-PA/-DA.TH

PLFY-P80VEM-A/-PA/-DA.TH

PLFY-P100VEM-A/-PA/-DA.TH

PLFY-P125VEM-A/-PA/-DA.TH

PLFY-P140VEM-A/-PA/-DA.TH

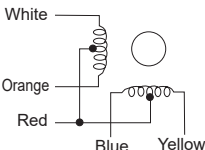
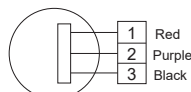
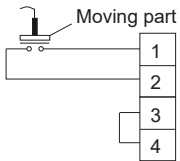
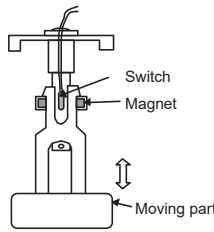
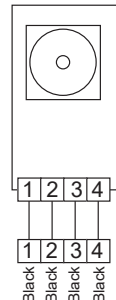
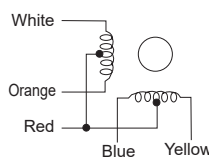
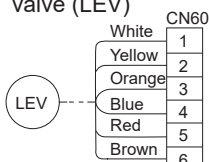


Unit : mm (inch)

Service Ref.	PLFY-P32/40/50VEM-A/-PA/-DA.TH	PLFY-P63/80/100/125/140VEM-A/-PA/-DA.TH
Item		
Gas pipe	$\phi 12.7$ (1/2)	$\phi 15.88$ (5/8)
Liquid pipe	$\phi 6.35$ (1/4)	$\phi 9.52$ (3/8)

## 8-1. HOW TO CHECK THE PARTS

PLFY-P32VEM-A/-PA/-DA.TH    PLFY-P40VEM-A/-PA/-DA.TH    PLFY-P50VEM-A/-PA/-DA.TH  
 PLFY-P63VEM-A/-PA/-DA.TH    PLFY-P80VEM-A/-PA/-DA.TH    PLFY-P100VEM-A/-PA/-DA.TH  
 PLFY-P125VEM-A/-PA/-DA.TH    PLFY-P140VEM-A/-PA/-DA.TH

Parts name	Check points		
Room temperature detection thermistor (TH21) Pipe temperature detection thermistor/liquid (TH22) Pipe temperature detection thermistor/gas (TH23)	Disconnect the connectors, then measure the resistance with a tester. (At ambient temperatures of 10 to 30℃)		
	Normal	Abnormal	
	4.3–9.6 kΩ	Open or short	
	(Refer to “8-1-1. Thermistor”).		
Vane motor (MV)	Measure the resistance between the terminals with a tester. (At ambient temperatures of 20 to 30℃)		
	Connector	Normal	Abnormal
	Red - Yellow (⑤-③, ⑩-⑧, ⑮-⑬, ⑳-⑱)	300 Ω	Open or short
	Red - Blue (⑤-①, ⑩-⑥, ⑮-⑪, ⑳-⑱)		
	Red - Orange (⑤-④, ⑩-⑨, ⑮-⑭, ⑳-⑱)		
	Red - White (⑤-②, ⑩-⑦, ⑮-⑫, ⑳-⑰)		
Drain pump (DP)	<p>① Check if the drain float switch works properly.</p> <p>② Check if the drain pump works and drains water properly in cooling operation.</p> <p>③ If no water drains, confirm that the check code 2502 will not be displayed 10 minutes after the operation starts.</p> <p>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.</p> <p>Normal</p> <p>Red–Black: Input 13 V DC → The fan starts to rotate.</p> <p>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.</p>		
			
Drain float switch (FS)	Measure the resistance between the terminals with a tester.		
	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 (MT) (Option)	Measure the resistance between the terminals with a tester. (At ambient temperatures of 20 to 30℃)		
	Connector	Normal	Abnormal
	Red - Yellow	250 Ω	Open or short
	Red - Blue		
	Red - Orange		
	Red - White		
Linear expansion valve (LEV)	Disconnect the connector then measure the resistance valve with a tester. (At the coil temperatures of 10 to 30℃)		
	Connector	Normal	Abnormal
	White-Red	200 Ω ± 10%	Open or short
	Yellow-Brown		
	Orange-Red		
	Blue-Brown		
	Refer to “8-1-2. Linear expansion valve”.		

### 8-1-1. Thermistor

<Thermistor characteristic graph>

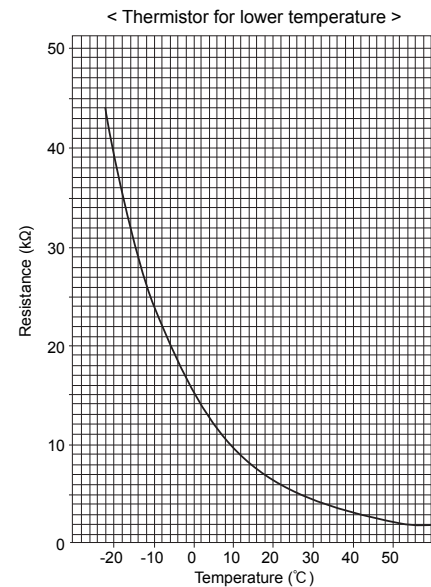
Thermistor for lower temperature

Room temperature detection thermistor (TH21)  
Pipe temperature detection thermistor/liquid (TH22)  
Pipe temperature detection thermistor/gas (TH23)

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

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

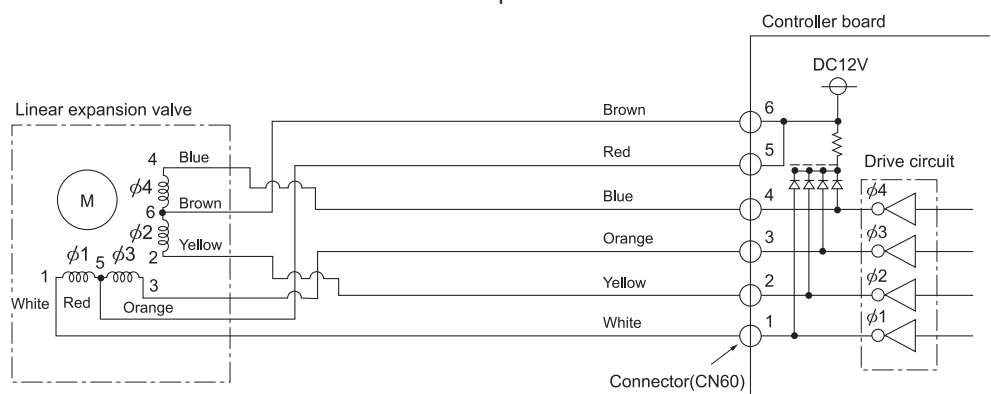
0°C	15 kΩ
10°C	9.6 kΩ
20°C	6.3 kΩ
25°C	5.4 kΩ
30°C	4.3 kΩ
40°C	3.0 kΩ



### 8-1-2. Linear expansion valve

#### ① Operation summary of the linear expansion valve

- Linear expansion valves open/close through the use of a stepping motor after receiving the pulse signal from the indoor controller board.
  - Valve position can be changed in proportion to the number of pulse signals.
- <Connection between the indoor controller board and the linear expansion valve>





## <Output pulse signal and the valve operation>

Output (Phase)	Output			
	1	2	3	4
φ1	ON	OFF	OFF	ON
φ2	ON	ON	OFF	OFF
φ3	OFF	ON	ON	OFF
φ4	OFF	OFF	ON	ON

Closing a valve : 1 → 2 → 3 → 4 → 1  
 Opening a valve : 4 → 3 → 2 → 1 → 4  
 The output pulse shifts in above order.

Note:

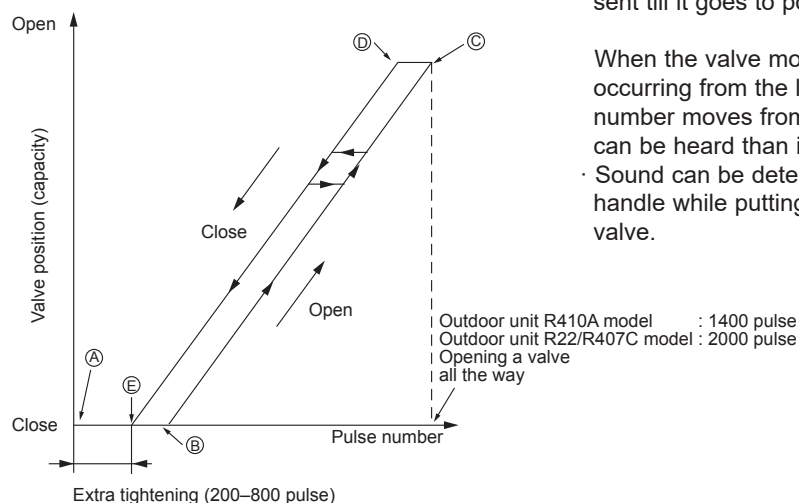
- When linear expansion valve operation stops, all output phases become OFF.
- At phase interruption or when phase does not shift in order, motor does not rotate smoothly and motor will lock and vibrate.

- When the power is turned on, 2200 pulse closing valve signal will be sent till it goes to point ㉔ in order to define the valve position.

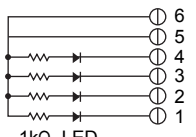
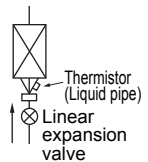
When the valve moves smoothly, there is no sound or vibration occurring from the linear expansion valves, however, when the pulse number moves from ㉔ to ㉓ or when the valve is locked, more sound can be heard than in a normal situation.

- Sound can be detected by placing the ear against the screw driver handle while putting the screw driver tip to the linear expansion valve.

### ② Linear expansion valve operation



### ③ Troubleshooting

Symptom	Check points	Countermeasures
Operation circuit failure of the micro processor	Disconnect the connector on the controller board, then connect LED for checking.  1kΩ LED When power is turned on, pulse signals will output for 10 seconds. There must be some defects in the operation circuit if the LED does not light while the signals are output or keeps lighting even after the signals stop.	Exchange the indoor controller board at drive circuit failure.
Linear expansion valve mechanism is locked.	Motor will idle and make a ticking noise when the motor is operated while the linear expansion valve is locked. This ticking sound is a sign of abnormality.	Exchange the linear expansion valve.
Short or breakage of the motor coil of the linear expansion valve	Measure the resistance between each coil (white-red, yellow-brown, orange-red, blue-brown) using a tester. It is normal if the resistance is in the range of 200Ω ±10%.	Exchange the linear expansion valve.
Valve does not close completely.	To check the linear expansion valve, operate the indoor unit in fan mode and at the same time operate the other indoor units in cooling mode, then check the pipe temperature <liquid pipe temperature> of the indoor unit by the outdoor multi controller board operation monitor. During fan operation, linear expansion valve is closed completely and if there is any leaking, detecting temperature of the thermistor will go lower. If the detected temperature is much lower than the temperature indicated on the remote controller, it means the valve is not closed all the way. It is not necessary to exchange the linear expansion valve, if the leakage is small and not affecting normal operation. 	If a large amount of refrigerant is leaked, exchange the linear expansion valve.
Wrong connection of the connector or contact failure	Check the color of lead wire and missing terminal of the connector.	Disconnect the connector on the controller board, then check for continuity.



### 8-1-3. DC Fan motor (fan motor/indoor controller board)

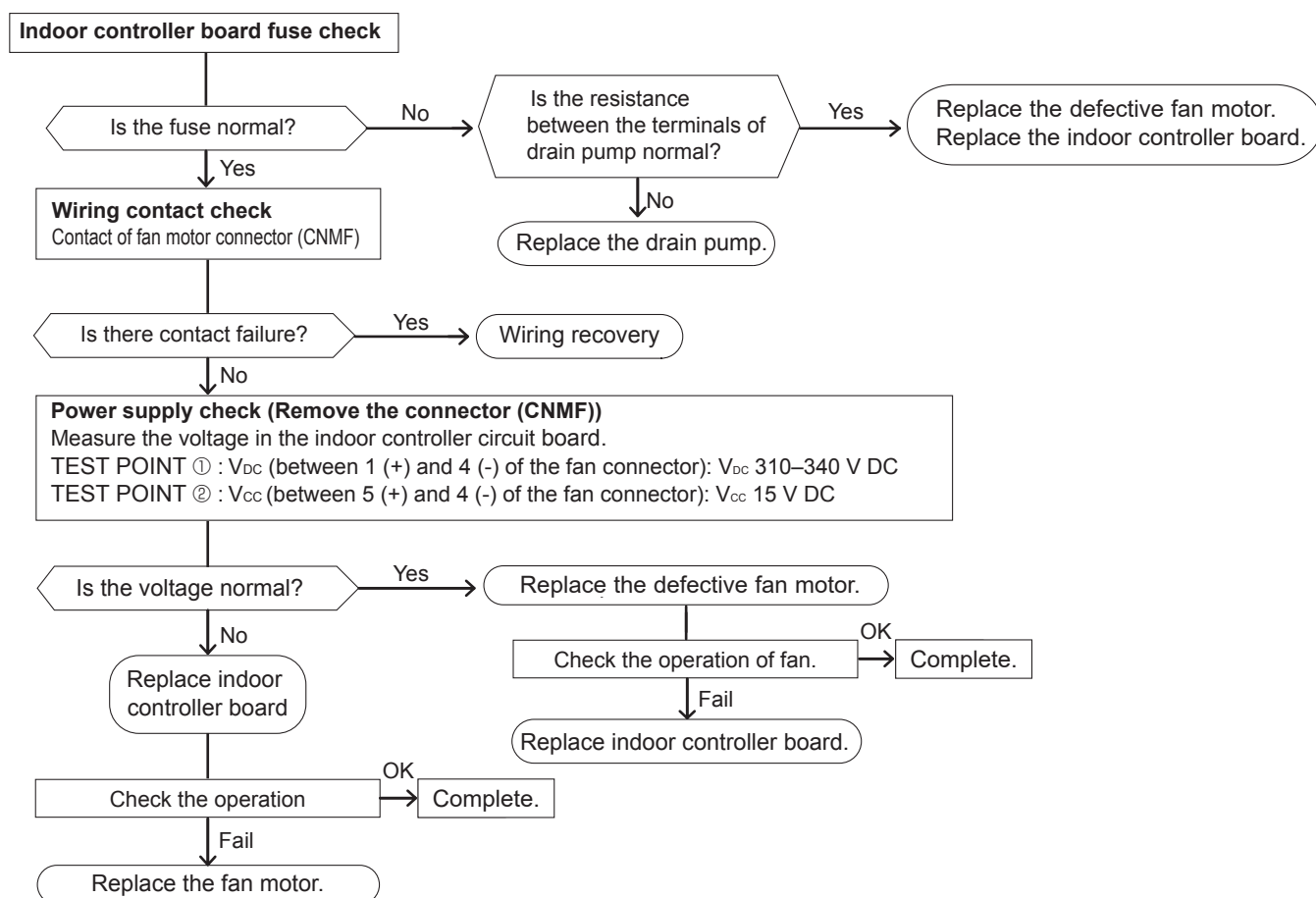
Check method of indoor fan motor (fan motor/indoor controller board)

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 rotate.



## 8-2. FUNCTION OF DIP SWITCH

The black square (■) indicates a switch position.

### <PLFY-P32/40/50/63/80/100/125/140VEM-A.TH>

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>Address board</div>  <div>&lt;Initial setting&gt;</div> <div>ON <table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></div> <div>OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></div> <div>1 2 3 4 5 6 7 8 9 0</div>																																																																																																																									
	2	Filter clogging detection	Provided	Not provided																																																																																																																											
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7	Air flow set in case of thermo-OFF at heating mode	Low*1	Extra low*1																																																																																																																												
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9	Power ON/OFF by breaker	Effective	Not effective																																																																																																																												
SW2 Capacity code setting	1-6	<table><tr><td>MODELS</td><td>SW2</td><td>MODELS</td><td>SW2</td><td>MODELS</td><td>SW2</td></tr><tr><td>32</td><td>ON OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></td><td>40</td><td>ON OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></td><td>50</td><td>ON OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></td></tr><tr><td>63</td><td>ON OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></td><td>80</td><td>ON OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></td><td>100</td><td>ON OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></td></tr><tr><td>125</td><td>ON OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></td><td>140</td><td>ON OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></td><td></td><td></td></tr></table>				MODELS	SW2	MODELS	SW2	MODELS	SW2	32	ON OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>													40	ON OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>													50	ON OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>													63	ON OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>													80	ON OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>													100	ON OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>													125	ON OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>													140	ON OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>															Before power supply ON	<div>Indoor controller board</div> Set while the unit is off.  <div>&lt;Initial setting&gt;</div> Set for each capacity.
		MODELS	SW2	MODELS	SW2	MODELS	SW2																																																																																																																								
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SW3 Function setting	1	Heat pump/Cooling only	Cooling only	Heat pump	Under suspension	<div>Indoor controller board</div>  <div>&lt;Initial setting&gt;</div> <div>ON <table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></div> <div>OFF <table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></div> <div>1 2 3 4 5 6 7 8 9 0</div>																																																																																																																									
	2	—	—	—	Before power supply ON																																																																																																																										
	3	3D i-see Sensor positioning	The setting depends on the combination of SW3-3 and SW3-4. Refer to <Table B> below.																																																																																																																												
	4	—	—	—	Under suspension																																																																																																																										
	5	Vane horizontal angle ①	Second setting*2	First setting*2																																																																																																																											
6	Vane horizontal angle ②	Third setting*2	Depends on SW3-5																																																																																																																												
7	Changing the opening of linear expansion valve	Effective	Not effective																																																																																																																												
8	Heat 4 degrees up	Not effective	Effective																																																																																																																												
9	3D i-see Sensor ceiling height setting	The setting depends on the combination of SW3-9 and SW3-10. Refer to <Table C> below.																																																																																																																													

<Table A>

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

<Table B>

SW3-3	SW3-4	
OFF	OFF	Setting ①
ON	OFF	Setting ②
OFF	ON	Setting ③
ON	ON	Setting ④

<Table C>

SW3-9	SW3-10	
OFF	OFF	Low ceiling
ON	OFF	Standard
OFF	ON	High ceiling
ON	ON	(High ceiling)

<Table D>

SW3-5	SW3-6	Vane setting	Initial setting	Setting	Vane position
OFF	OFF	Setting ①		Less smudging	Downward position than the standard
ON	OFF	Setting ②	●	Less draft*3	Upward position than the standard
OFF	ON	Setting ③		Standard	Standard
ON	ON	Unused		—	—

\*3 Be careful of the smudge on ceiling.

Continue to the next page

**<PLFY-P32/40/50/63/80/100/125/140VEM-PA/-DA.TH>** The black square (■) indicates a switch position.

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>Address board</div>  <div>&lt;Initial setting&gt;</div> <div>ON </div> <div>OFF </div> <div>1 2 3 4 5 6 7 8 9 0</div> <div>*1 Refer to &lt;Table A&gt; below.</div>																									
	2	Filter clogging detection	Provided	Not provided																											
	3	Filter cleaning	2,500 hr	100 hr																											
	4	Fresh air intake	Effective	Not effective																											
	5	Switching remote display	Thermo-ON signal display	Indicating fan operation ON/OFF																											
	6	—	—	—																											
	7	Air flow set in case of thermo-OFF at heating mode	Low*1	Extra low*1																											
	8	Auto restart function	Setting airflow*1	Depends on SW1-7																											
	9	Power ON/OFF by breaker	Effective	Not effective																											
SW2 Capacity code setting	1-6	<table><tr><td>MODELS</td><td>SW2</td><td>MODELS</td><td>SW2</td><td>MODELS</td><td>SW2</td></tr><tr><td>32</td><td>ON OFF </td><td>40</td><td>ON OFF </td><td>50</td><td>ON OFF </td></tr><tr><td>63</td><td>ON OFF </td><td>80</td><td>ON OFF </td><td>100</td><td>ON OFF </td></tr><tr><td>125</td><td>ON OFF </td><td>140</td><td>ON OFF </td><td></td><td></td></tr></table>				MODELS	SW2	MODELS	SW2	MODELS	SW2	32	ON OFF	40	ON OFF	50	ON OFF	63	ON OFF	80	ON OFF	100	ON OFF	125	ON OFF	140	ON OFF			Before power supply ON	<div>Indoor controller board</div> <div>Set while the unit is off.</div>  <div>&lt;Initial setting&gt;</div> <div>Set for each capacity.</div>
		MODELS	SW2	MODELS	SW2	MODELS	SW2																								
		32	ON OFF	40	ON OFF	50	ON OFF																								
		63	ON OFF	80	ON OFF	100	ON OFF																								
		125	ON OFF	140	ON OFF																										
SW3 Function setting	1	Heat pump/Cooling only	Cooling only	Heat pump	Under suspension	<div>Indoor controller board</div>  <div>&lt;Initial setting&gt;</div> <div>ON </div> <div>OFF </div> <div>1 2 3 4 5 6 7 8 9 0</div> <div>*2 Refer to &lt;Table D&gt; below for SW3-5 and SW-3-6.</div>																									
	2	—	—	—	Before power supply ON																										
	3	3D i-see Sensor positioning	The setting depends on the combination of SW3-3 and SW3-4. Refer to <Table B> below.																												
	4	Vane horizontal angle ①	Second setting*2	First setting*2	Under suspension																										
	5	Vane horizontal angle ②	Third setting*2	Depends on SW3-5																											
	6	Changing the opening of linear expansion valve	Effective	Not effective																											
	7	Heat 4 degrees up	Not effective	Effective																											
	8	3D i-see Sensor ceiling height setting	The setting depends on the combination of SW3-9 and SW3-10. Refer to <Table C> below.																												
	9																														

<Table A>

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

<Table B>

SW3-3	SW3-4	
OFF	OFF	Setting ①
ON	OFF	Setting ②
OFF	ON	Setting ③
ON	ON	Setting ④

<Table C>

SW3-9	SW3-10	
OFF	OFF	Low ceiling
ON	OFF	Standard
OFF	ON	High ceiling
ON	ON	(High ceiling)

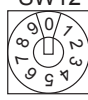







<Table D>

SW3-5	SW3-6	Vane setting	Initial setting	Setting	Vane position
OFF	OFF	Setting ①	●	Less smudging	Downward position than the standard
ON	OFF	Setting ②		Less draft*3	Upward position than the standard
OFF	ON	Setting ③		Standard	Standard
ON	ON	Unused		—	—

\*3 Be careful of the smudge on ceiling.



Continue to the next page

<PLFY-P32/40/50/63/80/100/125/140VEM-A.TH>  
<PLFY-P32/40/50/63/80/100/125/140VEM-PA/-DA.TH>

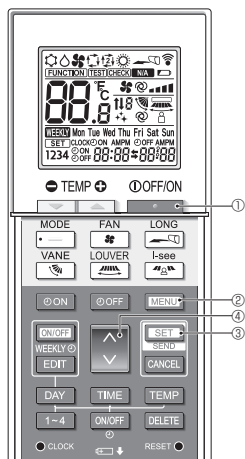
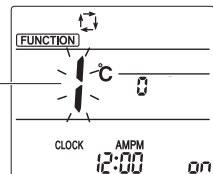
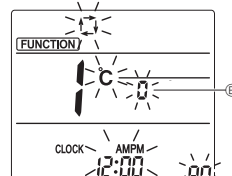
Switch	Pole	Function	Operation by switch		Effective timing	Remarks
			ON	OFF		
SW11 1s digit address setting  SW12 10s digit address setting	Rotary switch	<div><div>SW12</div></div> <div><div>SW11</div></div> <div>10      1</div>	Address setting should be done when M-NET remote controller is being used.		Before power supply ON	<div>Indoor controller board</div> <div>&lt;Initial setting&gt;</div> <div><div>SW12</div></div> <div><div>SW11</div></div>
SW14 Connection No. setting	Rotary switch	<div>SW14</div> 	This is the switch to be used when the indoor unit is operated with R2 series outdoor unit as a set.			<div>Indoor controller board</div> <div>&lt;Initial setting&gt;</div> <div><div>SW14</div></div>
SW21 Function Selection	1	Setting the ceiling height	Depending on the combination of SW21-1 and SW21-2. Refer to <Table E> below.		Under suspension	<div>Indoor controller board</div> <div>&lt;Initial setting&gt;</div> <div>ON </div> <div>OFF </div> <div>1 2 3 4 5 6</div>
	2	Setting the ceiling height				
	3	Setting the number of air outlet	Depending on the combination of SW21-3 and SW21-4. Refer to <Table E> below.			
	4	Setting the number of air outlet				
	5	Setting for optional parts	Option	Standard		
	6	Not used	Not used	Not used		

<Table E>

Ceiling height Blowout directions			PLFY-P32/40/50/63/80VEM-A/-PA/-DA.TH						PLFY-P100/125/140VEM-A/-PA/-DA.TH					
			Silent		Standard		High ceiling		Silent		Standard		High ceiling	
			SW21-1	SW21-2	SW21-1	SW21-2	SW21-1	SW21-2	SW21-1	SW21-2	SW21-1	SW21-2	SW21-1	SW21-2
			OFF	ON	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF	ON	OFF
4 directions	SW21-3	OFF	2.5 m		2.7 m		3.5 m		2.7 m		3.2 m		4.5 m	
	SW21-4	ON												
3 directions	SW21-3	OFF	2.7 m		3.0 m		3.5 m		3.0 m		3.6 m		4.5 m	
	SW21-4	OFF												
2 directions	SW21-3	ON	3.0 m		3.3 m		3.5 m		3.3 m		4.0 m		4.5 m	
	SW21-4	OFF												

Note: The setting with  indicates the initial setting; To change it to other than , switch setting is necessary.

<PLFY-P32/40/50/63/80/100/125/140VEM-A.TH>  
<PLFY-P32/40/50/63/80/100/125/140VEM-PA/-DA.TH>

Switch	Pole	Function	Operation by switch		Effective timing	Remarks																																						
			ON	OFF																																								
SW22 Function selection	Switch	<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 the combination of SW22-3 and 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.</li><li>Make setting for SW22-3, 22-4 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>① Setting for indoor unit<ul style="list-style-type: none"><li>Set SW22-3, 22-4 on the indoor controller board according to the table below.</li></ul></li><li>② Wireless remote controller pair number:<ul style="list-style-type: none"><li>Setting operation (Fig. 1 ①)<ul style="list-style-type: none"><li>1. Press the  button ① to stop the air conditioner.</li><li>2. Press the  button ②.</li><li>3. Check that function No."1" is displayed, and then press the  button ③. The Screen display setting screen will be displayed. (Fig. 2.)</li></ul></li><li>Pair No. changing operation (Fig. 2 ②)<ul style="list-style-type: none"><li>1. Press the  button ④.</li><li>2. Each time the  button ④ is pressed, the pair No.0–3 changes.</li><li>3. Press the  button ③ to check the setting.</li><li>4. Press the  button ②.</li></ul></li></ul></li></ul></li></ul> <table border="1"><thead><tr><th colspan="2">Indoor unit SW22</th><th rowspan="2">Pair No. of wireless remote controller</th><th rowspan="2"></th></tr><tr><th>SW22-3</th><th>SW22-4</th></tr></thead><tbody><tr><td>ON</td><td>ON</td><td>0</td><td>Initial setting</td></tr><tr><td>OFF</td><td>ON</td><td>1</td><td>—</td></tr><tr><td>ON</td><td>OFF</td><td>2</td><td>—</td></tr><tr><td>OFF</td><td>OFF</td><td>3–9</td><td>—</td></tr></tbody></table>		Function	ON	OFF	1	—	—	—	2	—	—	—	3	Pair No. of wireless remote controller	Depends on the combination of SW22-3 and 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 the combination of SW22-3 and 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><div><div>SWE</div><div><div></div><div></div><div></div></div><div>OFFON</div></div><div>→</div><div><div>SWE</div><div><div></div><div></div><div></div></div><div>OFFON</div></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> <div><div></div><div></div><div></div></div> <p>OFFON</p>																																								

### 8-3. TEST POINT DIAGRAM

#### Indoor controller board

PLFY-P32VEM-A/-PA/-DA.TH  
PLFY-P63VEM-A/-PA/-DA.TH  
PLFY-P125VEM-A/-PA/-DA.TH

PLFY-P40VEM-A/-PA/-DA.TH  
PLFY-P80VEM-A/-PA/-DA.TH  
PLFY-P140VEM-A/-PA/-DA.TH

PLFY-P50VEM-A/-PA/-DA.TH  
PLFY-P100VEM-A/-PA/-DA.TH

TB15  
MA-Remote controller connecting wire  
①-③: 8.7-13 V DC (Pin① (+))

TB5  
M-NET transmission connecting wire  
24-30 V DC (non-polar)

LED2  
Power supply for  
MA-Remote controller

CN52  
Remote indicator

CN60  
Linear expansion valve (LEV) output  
12 V DC pulse output

CN51  
Centrally controlled

CN5Y  
i-see Sensor motor output  
12 V DC pulse output

CN44  
Pipe temperature thermistor  
①-②: Liquid (TH22)  
③-④: Gas (TH23)

CN20  
Room temperature  
thermistor (TH21)

CN4F  
Drain float switch (FS)

CN4G  
Auto grille signal output

CN27  
Damper signal output  
12 V DC (①: +)

CNP  
Drain pump output (DP)  
①-③: 220-240 V AC

CNMF  
Connect to the fan motor (MF)  
①-④: 310-340 V DC  
⑤-④: 15 V DC

CNV  
Vane motor output  
12 V DC pulse

SW21  
Ceiling height and discharge outlet  
number selector

SW14  
Branch No.

SW12  
Address setting 10s digit

SW11  
Address setting 1s digit

CN32  
Remote switch

SW22  
Pair No. setting for wireless  
remote controller

SW1  
Function setting

SW2  
Capacity setting

SW3  
Function setting

SW4  
Model selection

CN4Z  
i-see Sensor

SWE  
Test run (Drain pump)

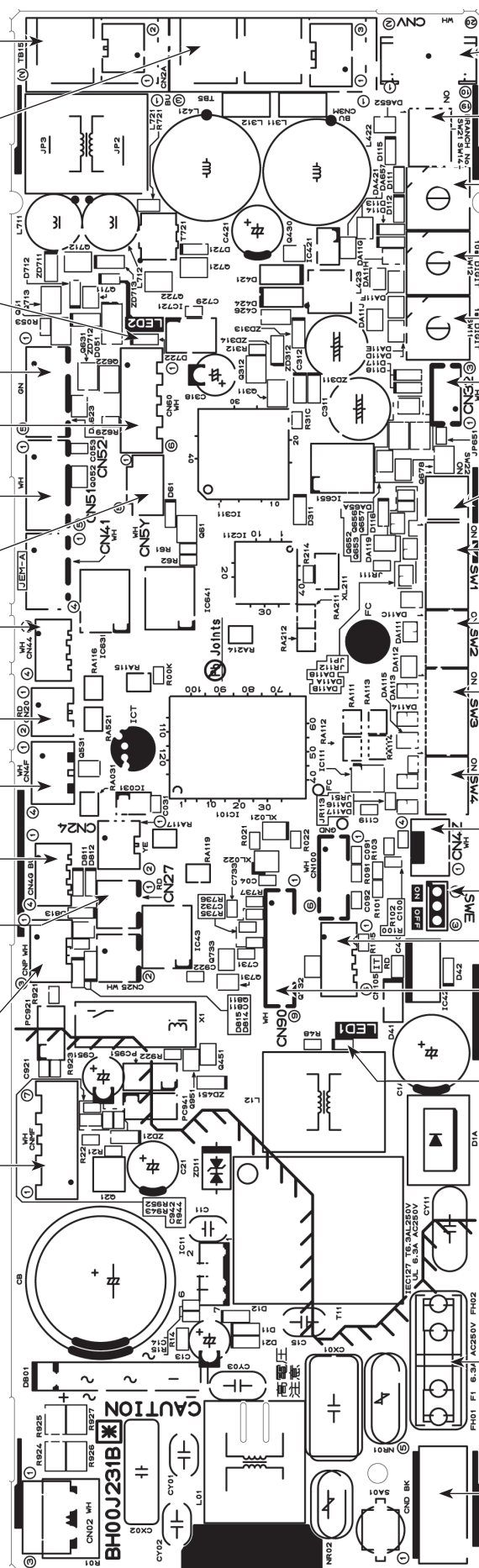
CN105  
IT Terminal

CN90  
Connect to the wireless remote  
controller board (W.B)

LED1  
Main power supply  
(Indoor unit: 220-240 V)

FUSE  
6.3 A 250 V

CND  
Power supply for indoor controller board  
③-⑤: 220-240 V AC



## 9-1. OPERATION (AUTOMATIC FILTER ELEVATION GRILLE: PLP-6EAJ/PLP-6EAJE)

### (1) Normal operation

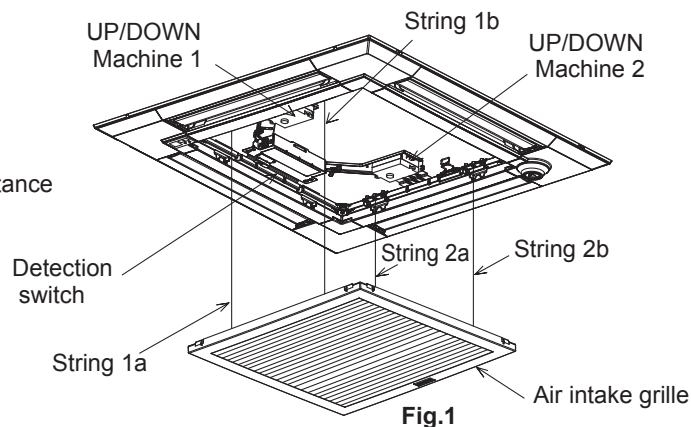
#### ① UP/DOWN

Air intake grille is raised/lowered by commands of UP and DOWN.  
Air intake grille does not move under the state of no-load detection or obstacle detection.  
Air intake grille stops automatically at the set lowering distance from the ceiling level.

#### ② STOP

It stops in the cases below :

- When it reaches the set lowering distance from the ceiling level.  
It automatically stops after a predetermined period of lowering.
- When it is stored in the panel.  
The air intake grille is judged to be stored in the panel when the storage detection switch is pressed for 5 seconds continuously.
- When receiving commands of STOP, DOWN while moving up or UP while moving down.  
The STOP button is only available on the automatic filter elevation panel remote controller.  
When the wired remote controller is used, there will be a slight delay in stopping due to transmission speed.
- When both string 1b and 2b are not loaded.  
Only the string b in each UP/DOWN Machine has a tension detection switch.



### (2) Special operation

#### ① Re-storage operation

Case : Obstruction of the raising air intake grille before storage or malfunction of storage detection switch  
Re-storage operation will be performed when the intake grille has been raised the set distance but the storage detection switch is not engaged.  
In this case, the operation below will be repeated up to 4 times.  
10 cm down → 30 cm up → ... → 10 cm down → 30 cm up

#### ② No-load detection

Case : UP/DOWN commands with no grille suspended.  
When both string 1b and string 2b are not loaded, the strings will not move.

#### ③ Obstacle detection

Case : Making contact with something while lowering.  
Should the loads on the string 1b and string 2b be removed due to the air intake grille making contact with something while lowering, the lowering operation will stop. The air intake grille will then be raised 10 cm and stop again.

#### [EMERGENCY OPERATION]

1. If the wireless remote controller for ELEVATION PANEL is faulty or lost, operation will be possible using the emergency up/down switch at the wireless signal receiver or wired remote controller.
  - For the operation using the emergency up/down switch at the wireless signal receiver, refer to SW1 and SW2 on the [LEGEND] in the next page.
2. When machine for ELEVATION PANEL breaks down, a intake grille is fixed for a while, and the operation of the unit can be done.
  - Refer to installation manual with the grille for the details such as an installation method.







## 9-3. TROUBLESHOOTING

### • Check the following points.

Problem	Possible Reason	Corrective Action
Intake grille does not function with operation of the remote controller.	Air-conditioner is running.	Stop running the air-conditioner and try again.
	Power failure.	After recovering from power failure, try again.
	Batteries are not inserted into the wireless remote controller. Or battery power is running low.	Install or replace the battery.
	There is something on the intake grille. Or something is stuck in the intake grille.	Remove the objects or obstacles from the intake grille. Or, remove the stuck object.
Intake grille cannot be placed in the correct position.	There is something on the intake grille.	Remove the objects or obstacles from the intake grille.
	Filter is not properly installed.	Lower the intake grille again and check whether the filter is installed in the correct position.
	Intake grille is not hung with all 4 hooks.	Lower the intake grille again and hang the hook on the intake grille.
Intake grille stops lowering in mid flow. (Intake grille would not lower any further.)	Because the intake grille has finished lowering to the auto-stop position.	This is normal. Note: If you want to change the setting for the lowering distance, contact your dealer.
Noises are made during up/down operation. (While intake grille is moving up/down.)	This is the noise made when the string is winded and unwound.	This is normal.
Noises are made while placing the intake grille in.	This is the operational noise for placing the intake grille in securely.	
Intake grille repeats rising and lowering several times while being placed in the correct position.	This is the operation for placing the intake grille in securely.	
Intake grille leans toward one side during the up/down operation.	The speeds of winding each string is slightly different.	

PLFY-P32VEM-A/-PA/-DA.TH

PLFY-P40VEM-A/-PA/-DA.TH

PLFY-P50VEM-A/-PA/-DA.TH

PLFY-P63VEM-A/-PA/-DA.TH

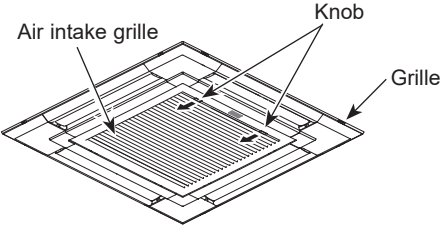
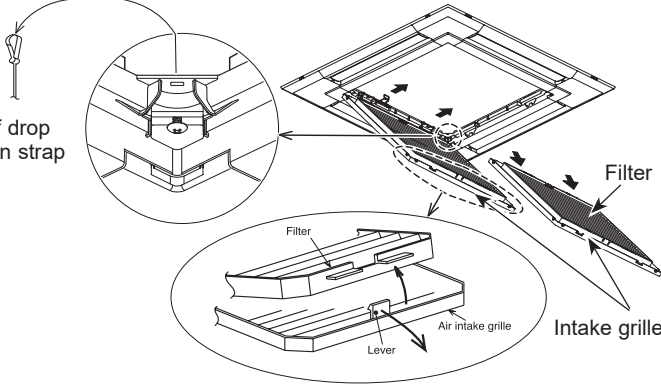
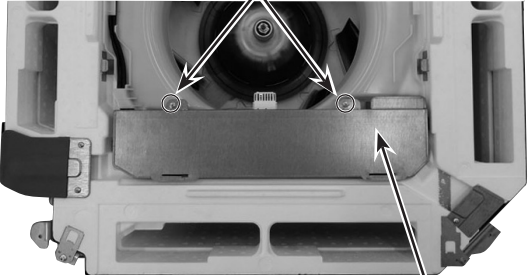
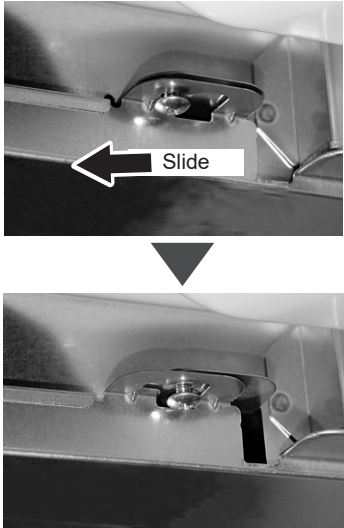
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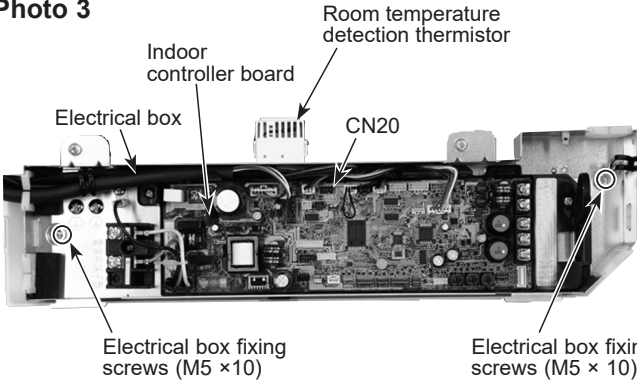
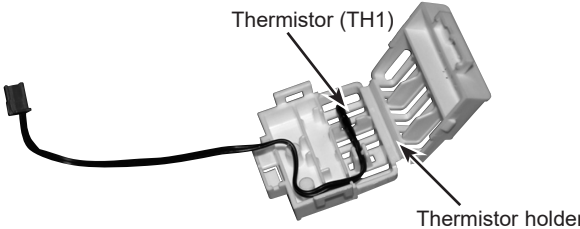
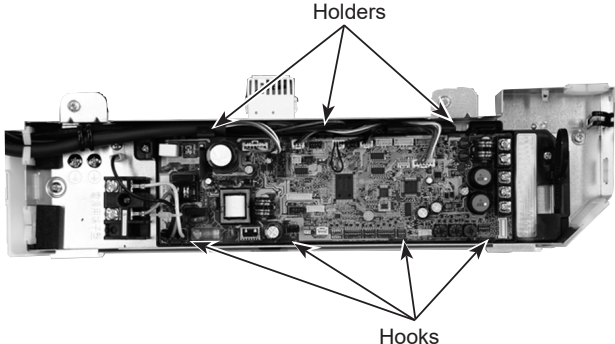
PLFY-P100VEM-A/-PA/-DA.TH

PLFY-P125VEM-A/-PA/-DA.TH

PLFY-P140VEM-A/-PA/-DA.TH

Be careful when removing heavy parts.

OPERATING PROCEDURE	PHOTOS & ILLUSTRATIONS
<b>1. Removing the filter</b> (1) Slide the knob of air intake grille toward the arrow to open the air intake grille. (See Figure 1) (2) Pull down the lever of the air intake grille to remove the filter. (See Figure 2)	<b>Figure 1</b> 
<b>2. Removing the air intake grille</b> (1) Slide the knob of air intake grille toward the arrow to open the air intake grille. (See Figure 1) (2) Remove the hook of drop prevention strap from the panel. (3) Remove the air intake grille.	<b>Figure 2</b> 
<b>3. Removing the electrical box cover</b> (1) Remove the air intake grille and the filter. (Refer to procedure 2) (2) Loosen the 2 electrical box cover fixing screws (M4×10) approximately 2 to 3 mm. (See Photo 1) (3) Slide the electrical box cover toward the arrow to remove. (See Photo 2)	<b>Photo 1</b> Electrical box cover fixing screws  <b>Photo 2</b> 

OPERATING PROCEDURE	PHOTOS
<p><b>4. Removing the room temperature thermistor (TH21)</b></p> <ol style="list-style-type: none"> <li>(1) Remove the electrical box cover. (See Photo 1 and 2)</li> <li>(2) Disconnect the connector CN20 (Red) from the indoor controller board.</li> <li>(3) Remove the room temperature thermistor with its holder. (See Photo 4)</li> </ol>	<p><b>Photo 3</b></p>  <p><b>Photo 4</b></p> 
<p><b>5. Removing the indoor controller board (I.B)</b></p> <ol style="list-style-type: none"> <li>(1) Remove the electrical box cover. (See Photo 1 and 2)</li> <li>(2) Disconnect the connectors: <ul style="list-style-type: none"> <li>CNMF (White) for fan motor</li> <li>CNV (White) for vane motor</li> <li>CN5Y (White) for motor for i-see Sensor (Option)</li> <li>CN4Z (White) for sensor for i-see Sensor (Option)</li> <li>CN90 (White) for signal receiver (Option)</li> <li>CNP (White) for drain pump</li> <li>CN4F (White) for float switch</li> <li>CN44 (White) for thermistor (TH22/TH23)</li> <li>CN60 (White) for LEV</li> <li>CN01 (Black) for Indoor/Outdoor connecting line</li> <li>CN3C (Blue) for Indoor/Outdoor transmission</li> </ul> </li> </ol> <p>Disconnect the connectors for optional parts, if any.</p> <ol style="list-style-type: none"> <li>(3) Disconnect the lead wire connected to the TB5 on the indoor controller board. TB5: M-NET transmission connecting wire</li> <li>(4) For the unit controlled with the wireless remote controller, disconnect the lead wire connected to the TB15 on the indoor controller board.</li> <li>(5) Remove the indoor controller board (3 holders/4 hooks). (See Photo 5)</li> </ol>	<p><b>Photo 5</b></p> 

## OPERATING PROCEDURE

### 6. Removing the electrical box

- (1) Remove the electrical box cover (See Photo 1 and 2) and the connectors (Refer to procedure 5).
- (2) Remove the electrical box fixing screws (M5×10: 2 screw). (See Photo 3)
- <Electrical parts in the electrical box>
  - Terminal block for earth and reactor
  - Indoor controller board
  - Thermistor (TH)
- (3) Remove the electrical box (2 hooks).

### 7. Removing the turbo fan

- (1) Remove the electrical box. (See Photo 3 and refer to procedure 6)
- (2) Remove the bell mouth (tapping screw 4×10: 2 screws). (See Photo 6)

#### < With nut and square washer >

- (3) Remove the nut and square washer. (See Photo 6 and 7)
- (4) Remove the turbo fan.

#### < With nut and washer >

- (3) Remove the nut (M8 × 1) and square washer. (See Photo 7 and 8.)
- (4) Remove the turbo fan.

**Note 1:** When assembling the turbo fan, attach it so that its tabs fit the holes of washer.

**Note 2:** Nut tightening torque:  $4.5 \pm 0.5$  Nm.

Turbo fan

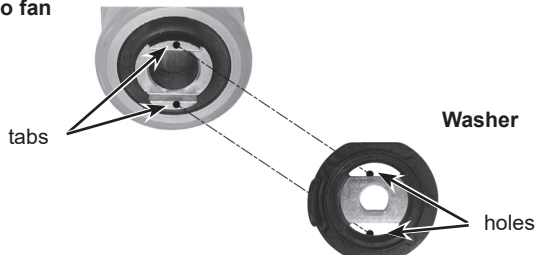


Photo 8



Turn this way to tighten. Turn this way to loosen.  
(The same directions as the fan rotation.)

## PHOTOS & ILLUSTRATIONS

Photo 6

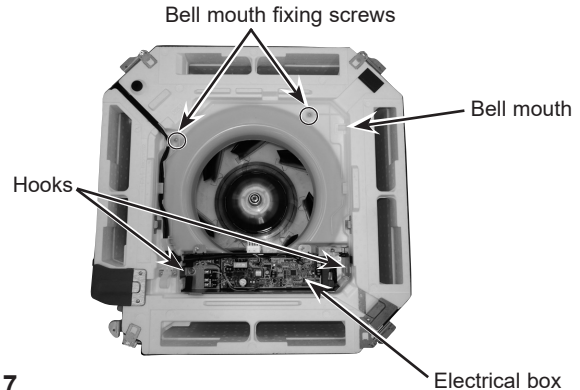
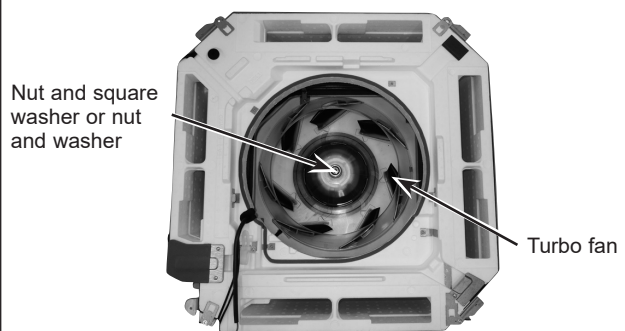


Photo 7



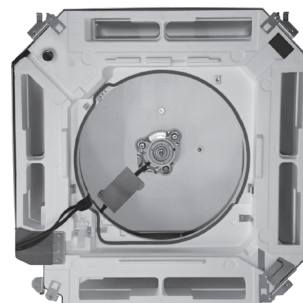
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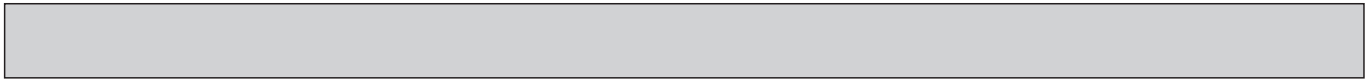


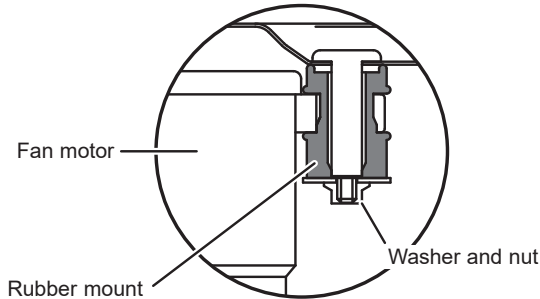
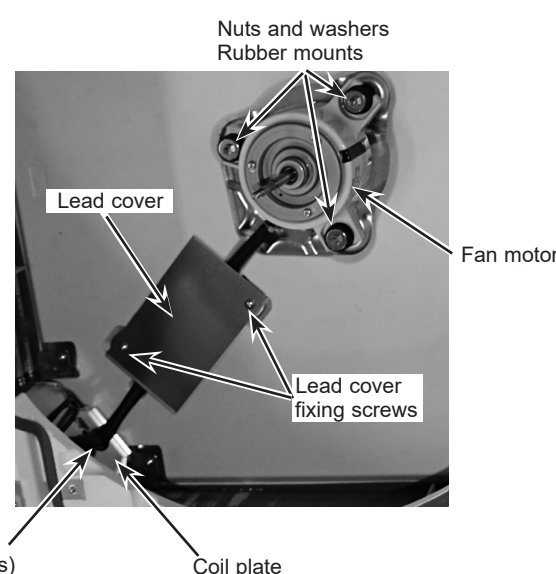
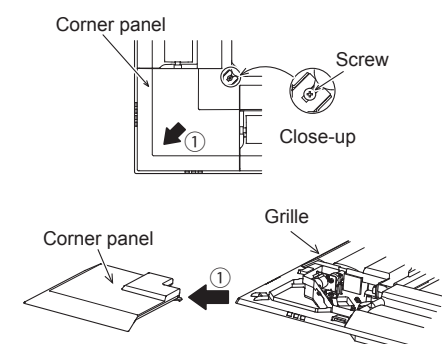
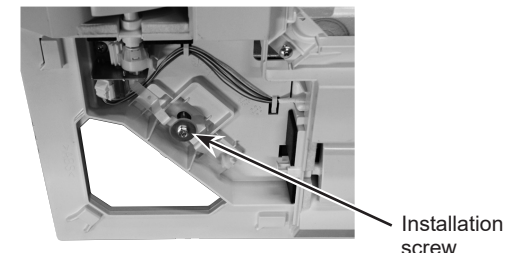

#### < Nut and washer >

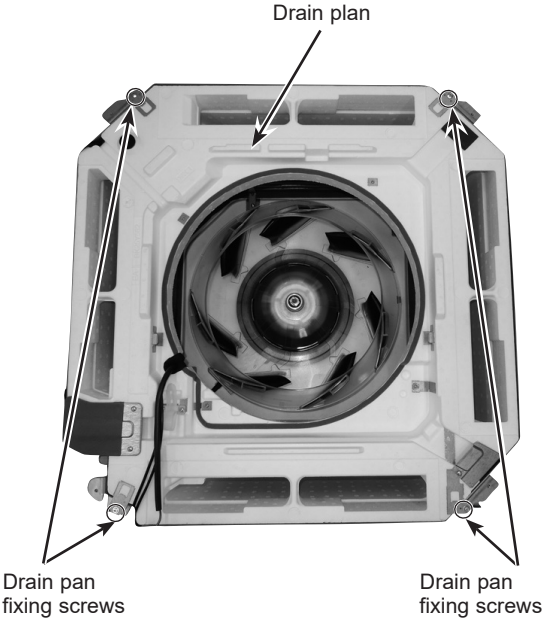



Photo 9

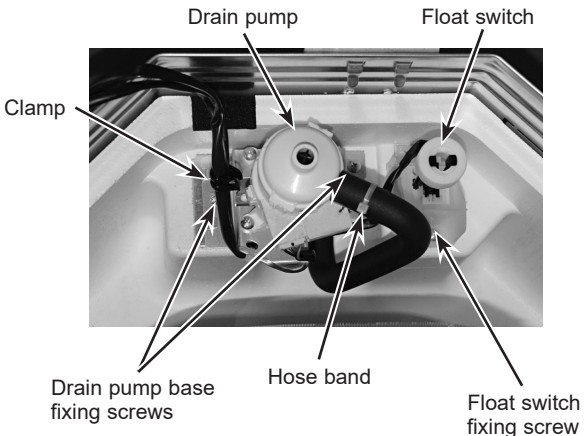
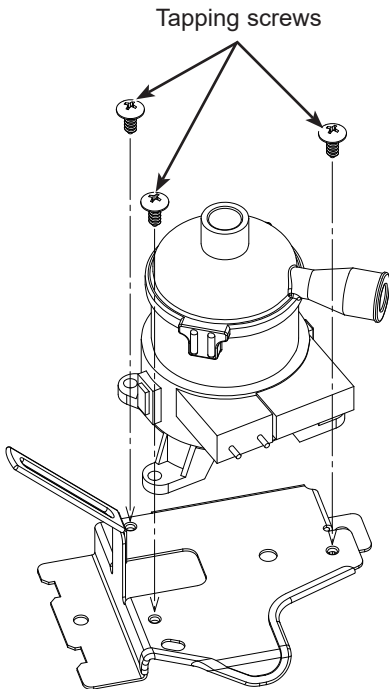
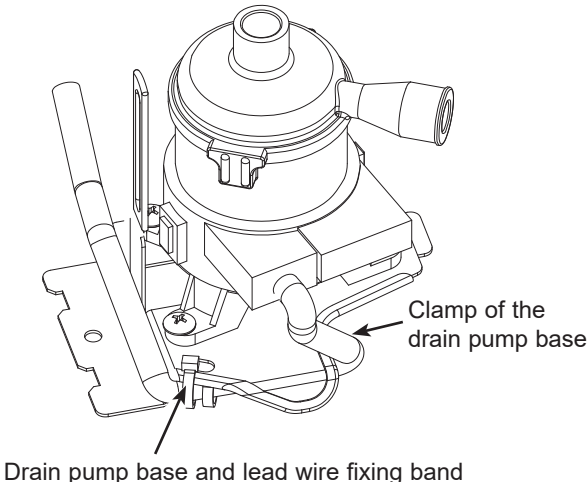




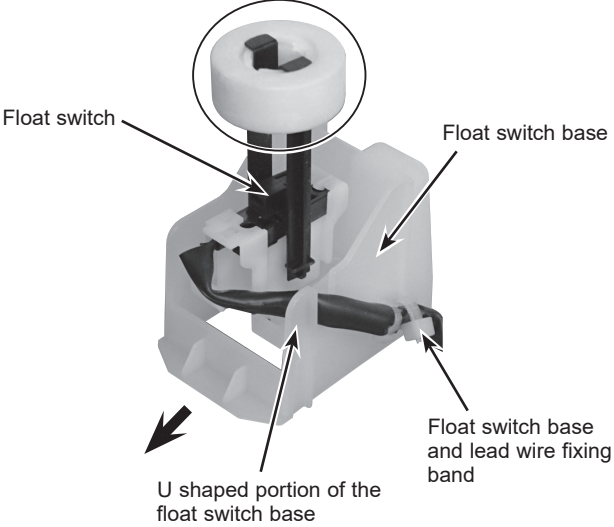
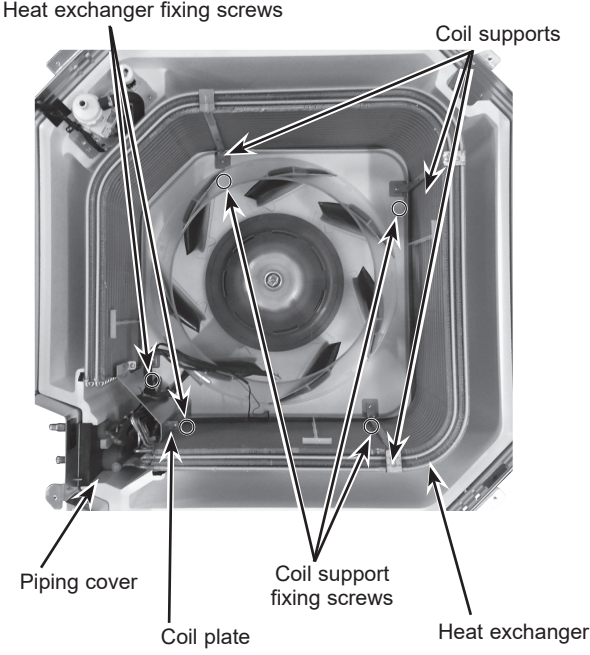
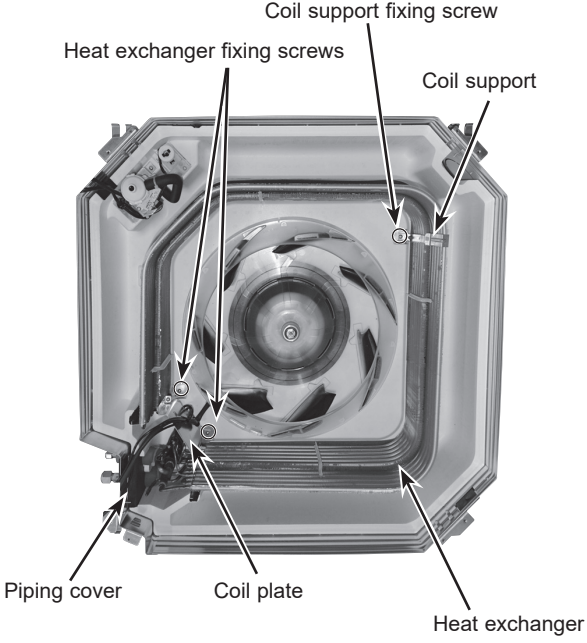
OPERATING PROCEDURE	PHOTOS & ILLUSTRATIONS
<p><b>8. Removing the fan motor (MF)</b></p> <ol style="list-style-type: none"><li>(1) Remove the turbo fan. (See Photo 8 and refer to procedure 7)</li><li>(2) Remove the lead cover (tapping screw 4×10: 2 screws).(See Photo 10)</li><li>(3) Loosen the 2 clamps.</li><li>(4) Remove the 3 nuts and washers (M5) .</li><li>(5) Remove the fan motor.</li><li>(6) Remove the 3 rubber mounts.</li></ol> <p><b>Figure 3: Partial cross section</b></p>  <p><b>Note: When re-attaching the motor mount, make sure that the thicker end faces the motor shaft.</b></p>	<p><b>Photo 10</b></p> 
<p><b>9. Removing the panel</b></p> <ol style="list-style-type: none"><li>(1) Remove the electrical box fixing cover. (See Photo 1)</li><li>(2) Disconnect the connector for vane motor (CNV: White). (Refer to procedure 5)</li><li>(3) Loosen the 4 corner panel fixing screws (tapping screw 4×16). (See Figure 4)</li><li>(4) Slide the corner panel to the direction of the arrow 1, and remove the corner panel. (See Figure 4)</li><li>(5) Remove the 4 installation screws (M5×28). (See Photo 11)</li><li>(6) Release the 2 temporary hanging hooks to remove the grille. (See Photo 12)</li></ol>	<p><b>Figure 4</b></p>  <p><b>Photo 11</b></p>  <p><b>Photo 12</b></p> 

OPERATING PROCEDURE	PHOTOS/FIGURES
<p><b>10. Removing the drain pan</b></p> <p>(1) Remove the electrical box. (See photo 3 and refer to procedure 6)</p> <p>(2) Remove the bell mouth (tapping screw 4×10 : 2 screws). (See Photo 6)</p> <p>(3) Remove the drain pan (screw M5×10: 4 screws).</p>	<p><b>Photo 13</b></p>  <p>The diagram shows a top-down view of a square drain pan assembly. A central circular fan is visible. Four screws are indicated by arrows and labeled 'Drain pan fixing screws'. The top edge of the pan is labeled 'Drain pan'.</p>
<p><b>11. Removing the pipe temperature/liquid thermistor (TH22) and condenser/evaporator temperature thermistor (TH23)</b></p> <p>(1) Remove the drain pan (Refer to procedure 10) and loosen the 2 clamps of the coil plate. (See Photo 10)</p> <p>(2) Remove the coil plate (tapping screw 4×10: 2 screws).</p> <p>(3) Disconnect the pipe temperature/liquid thermistor (TH22) and condenser/evaporator temperature thermistor (TH23) from the holder.</p>	<p><b>Photo 14</b></p>  <p>The photograph shows two electronic components, thermistors, mounted on a metal coil plate. One component is labeled 'Pipe temperature detection thermistor/gas (TH23)' and the other is labeled 'Pipe temperature detection thermistor/liquid (TH22)'. Both are connected by wires to a holder.</p>



OPERATING PROCEDURE	PHOTOS/FIGURES
<p><b>12. Removing the drain pump (DP)</b></p> <ol style="list-style-type: none"> <li>(1) Remove the drain pan. (Refer to procedure 10)</li> <li>(2) Cut the hose band and remove the hose.</li> <li>(3) Loosen the clamp of the drain pump.</li> <li>(4) Remove the drain pump (tapping screw 4×10: 2 screws/2 hooks).</li> <li>(5) Cut the drain pump base and lead wire fixing band. (See Figure 5)</li> <li>(6) Remove the lead wire of the drain pump from the clamp of the drain pump base. (See Figure 5)</li> <li>(7) Remove the drain pump (tapping screw: 3 screws). (See Figure 6)</li> </ol>	<p><b>Photo 15</b></p> 
<p><b>Figure 6</b></p> 	<p><b>Figure 5</b></p> 



OPERATING PROCEDURE	PHOTOS/FIGURES
<p><b>13. Removing the float switch (FS)</b></p> <ol style="list-style-type: none"><li>(1) Remove the drain pan. (Refer to procedure 10)</li><li>(2) Loosen the clamp of the drain pump. (See Photo 15)</li><li>(3) Remove the float switch (tapping screw 4×10: 1 screw/1 hook). (See Photo 15)</li><li>(4) Remove the float switch base and the lead wire fixing band. (See Photo 16)</li><li>(5) Remove the lead wire from the U shaped portion of the float switch base. (See Photo 16)</li><li>(6) Slide the float switch towards the arrow to remove from the float switch base.</li></ol>	<p><b>Photo 16</b></p> <p>Do not hold this floating part when lifting; Doing so will cause malfunction.</p>  <p>Float switch</p> <p>Float switch base</p> <p>U shaped portion of the float switch base</p> <p>Float switch base and lead wire fixing band</p>
<p><b>14. Removing the heat exchanger</b></p> <ol style="list-style-type: none"><li>(1) Remove the drain pan. (Refer to procedure 10)</li><li>(2) Remove the piping cover (tapping screw 4×10: 3 screws).</li><li>(3) Remove the coil plate (tapping screw 4×10: 2 screws).</li><li>(4) Remove the heat exchanger fixing screws (tapping screw 4×10: 2 screws).</li><li>(5) Remove the coil support (tapping screw 4×10: 1 screw each)<ul style="list-style-type: none"><li>■ P32–80: 1 coil support (See photo 17)</li><li>■ P100, 125: 3 coil supports (See photo 18)</li></ul></li><li>(6) Remove the heat exchanger.</li></ol> <p><b>Photo 18</b></p>  <p>Heat exchanger fixing screws</p> <p>Coil supports</p> <p>Piping cover</p> <p>Coil plate</p> <p>Coil support fixing screws</p> <p>Heat exchanger</p>	<p><b>Photo 17</b></p>  <p>Coil support fixing screw</p> <p>Heat exchanger fixing screws</p> <p>Coil support</p> <p>Piping cover</p> <p>Coil plate</p> <p>Heat exchanger</p>





# CITY MULTI

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