MITSUBISHI ELECTRIC

SPLIT-TYPE, HEAT PUMP AIR CONDITIONERS

No. OC213

TECHNICAL & SERVICE MANUAL

Series PLFY Ceiling Cassettes R407C / R22

Indoor unit [Model names]

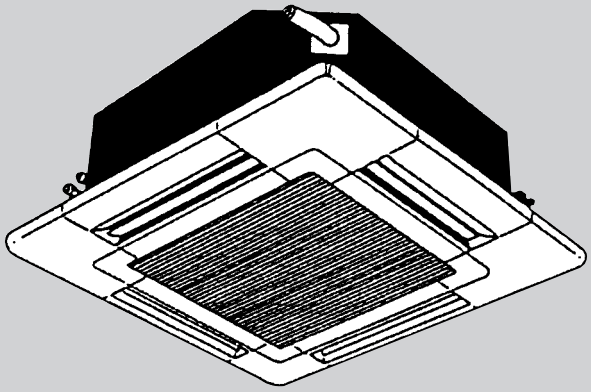
PLFY-P80VAM

PLFY-P100VAM

PLFY-P125VAM

[Service Ref.]

PLFY-P80VAM.UK
PLFY-P100VAM.UK
PLFY-P125VAM.UK



INDOOR UNIT

CONTENTS

Mr.SLIM™

1 SAFETY PRECAUTION

Cautions for devices that use R407C refrigerant.

- **Do not use the existing refrigerant piping.**
  -The old refrigerant and lubricating oil in the existing piping contains a large amount of chlorine which may cause the lubricating oil of the new unit to deteriorate.

- **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 lubricating oil will result.

- **Store the piping to be used during installation indoors and keep both ends of the piping sealed until just before brazing. (Store elbows and other joints in a plastic bag.)**
  -If dust, dirt, or water enters the refrigerant cycle, deterioration of the oil and compressor trouble may result.

- **Use Suniso 4GS or 3GS (small amount) as the lubricating oil to coat flares and flange connection parts.**
  -The lubricating oil used with the air conditioner is highly hygroscopic. If it is used, water may be mixed in and deterioration of the lubricating oil may result.

- **Use liquid refrigerant to charge the system.**
  -If gas refrigerant is used to charge the system, the composition of the refrigerant in the cylinder will change and performance may drop.

- **Do not use a refrigerant other than R407C.**
  -If another refrigerant (R22, etc.) is used, the chlorine in the refrigerant may cause the lubricating oil to deteriorate.

- **Use a vacuum pump with a reverse flow check valve.**
  -The vacuum pump oil may flow back into the refrigerant cycle and cause the lubricating oil to deteriorate.

[1] Service tools

Use the below service tools as exclusive tools for R407C refrigerant.

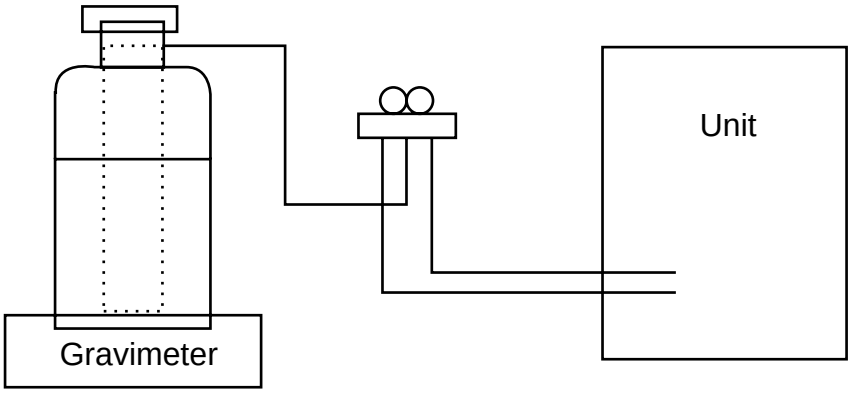
No.	Tool name	Specifications
①	Gauge manifold	·Only for R407C.
		·Use the existing fitting SPECIFICATIONS. (UNF7/16)
		·Use high-tension side pressure of 35kgf/cm^2 or over.
②	Charge hose	·Only for R407C.
		·Use pressure performance of 52kgf/cm^2 or over.
③	Electronic scale	
④	Gas leak detector	·Use the detector for R134a or R407C.
⑤	Adapter for reverse flow check.	·Attach on vacuum pump.
⑥	Refrigerant charge base.	
⑦	Refrigerant cylinder.	·For R407C ·Top of cylinder (Brown) ·Cylinder with syphon
⑧	Refrigerant recovery equipment.	

[2] Notice on repair service

·After recovering all the refrigerant in the unit, work may be started.
·Do not release the refrigerant in the air.
·After completing the repair service, recharge the system with the specified amount of the liquid refrigerant.

[3] Refrigerant recharging

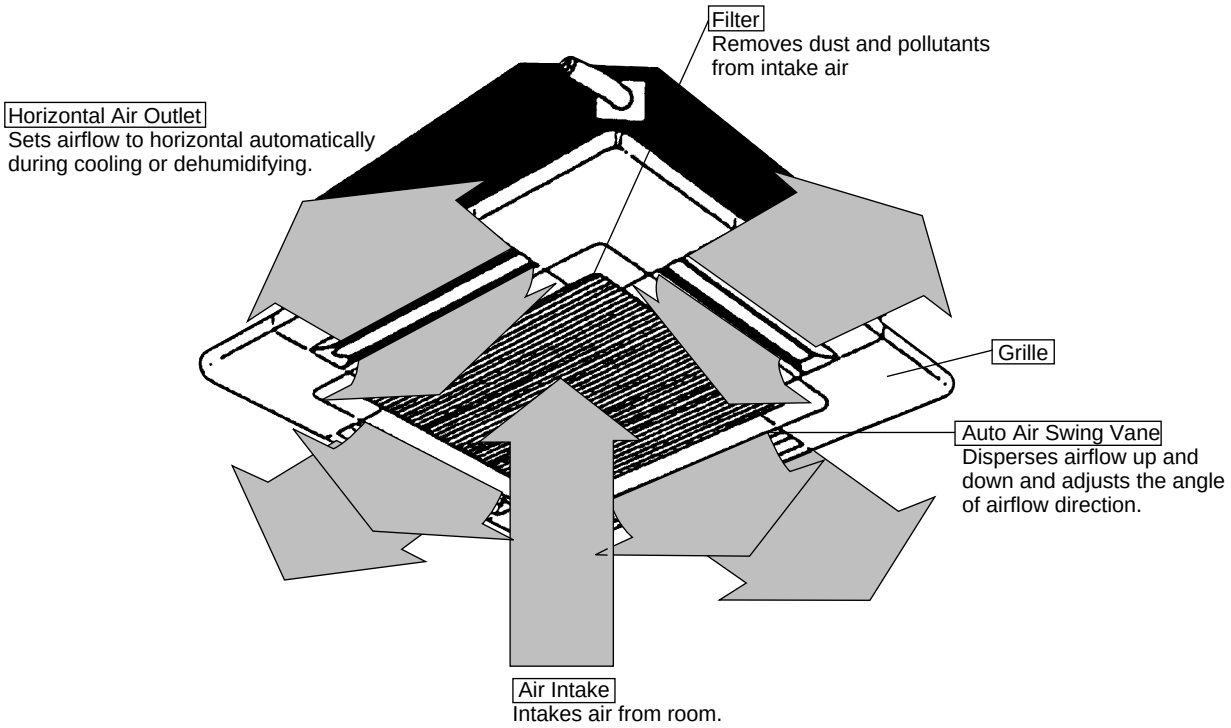
(1) Refrigerant recharging process
Direct charging from the cylinder.
·Confirm that the cylinder is suitable for syphoning.
·Raise the cylinder and recharge the unit by syphoning liquid refrigerant.



(2) Recharge when refrigerant leakage has occurred.
·After recovering all the refrigerant in the unit, work may be started.
·Do not release the refrigerant in the air.
·After completing the repair service, recharge the system with the specified amount of the liquid refrigerant.

2 PART NAMES AND FUNCTIONS

● Indoor (Main) Unit



● Remote controller **[PAR-F25MA]**

● Once the controls are set, the same operation mode can be repeated by simply pressing the ON/OFF button.

● Operation buttons

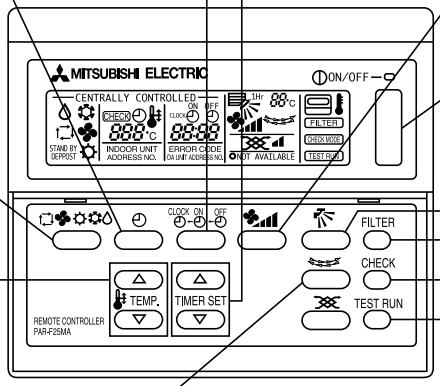
TIMER button
This switches between continuous operation and the timer operation.

TIME SETTING button
This sets the current time, start time and stop time.

AIR SPEED button
This sets the ventilation fan speed.

ON/OFF button
This switches between the operation and stop modes each time it is pressed. The lamp on this button lights during operation.

OPERATION SWITCH button
Press this button to switch the cooling, electronic dry (dehumidify), automatic and heating modes.



AIR DIRECTION button
This adjusts the vertical angle of the ventilation.

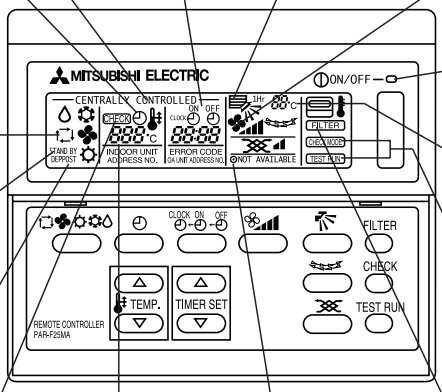
TEMPERATURE ADJUSTMENT button
This sets the room temperature. The temperature setting can be performed in 1℃ units
Setting range
Cooling 19℃ to 30℃
Heating 17℃ to 28℃

FILTER button
This resets the filter service indication display

LOUVER button
This switches the horizontal fan motion ON and OFF.
(This button does not operate on this model)

CHECK-TEST RUN button
Only press this button to perform an inspection check or test operation. Do not use it for normal operation.

● Display



CENTRALLY CONTROLLED display

This indicates when the unit is controlled by optional features such as central control type remote controller.

CLOCK display

The current time , start time and stop time can be displayed in ten second intervals by pressing the time setting button. The start time or stop time is always displayed during the timer operation.

In this display example on the bottom left, a condition where all display lamps light is shown for explanation purposes although this differs from actual operation.

AIR DIRECTION display

This displays the air direction.

TIMER display

This indicates when the continuous operation and time operation modes are set.
It also display the time for the timer operation at the same time as when it is set.

FAN SPEED display

The selected fan speed is displayed.

Operation lamp

This lamp lights during operation, goes off when the unit stops and flashes when a malfunction occurs.

OPERATION MODE display

This indicates the operation mode.

ROOM TEMPERATURE display

The temperature of the suction air is displayed during operation. The display range is 8° to 39°C. The display flashes 8°C when the actual temperature is less than 8° and flashes 39°C when the actual temperature is greater than 39°C.

STANDBY display

The [STANDBY] symbol is only dis played from the time the heating operation starts until the heated air begins to blow.

CHECK MODE / TEST RUN display

This display lights in the check mode or when a test operation is performed.

DEFROST display

This indicates when the defrost operation is performed.

FILTER display

This lamp lights when the filter needs to be cleaned.

CHECK display

This indicates when a malfunction has occurred in the unit which should be checked.

SET TEMPERATURE display

This displays the selected setting temperature.

POWER display

This lamp lights when electricity is supplied to the unit.

Caution

- Only the POWER display lights when the unit is stopped and power supplied to the unit.
- When the central control remote control unit, which is sold separately, is used the ON/OFF button, OPERATION SWITCH button and TEMPERATURE ADJUSTMENT button do not operate.
- “NOT AVAILABLE” is displayed when the AIR SPEED button are pressed.This indicates that this room unit is not equipped with the fan direction adjustment function and the louver function.
- When power is turned ON for the first time, it is normal that “H0” is displayed on the room temperature indication (For max. 2minutes). Please wait until this “H0” indication disappear then start the operation.

3 SPECIFICATION

3-1. Specification

Item				PLFY-P80VAM.UK	PLFY-P100VAM.UK	PLFY-P125VAM.UK
Power			V·Hz	Single phase 220V-240V 50 Hz		
Cooling capacity			kcal/h	8,000	10,000	12,500
			BTU/h	31,800	39,600	49.700
			kW	9.3	11.6	14.5
Heating capacity			kcal/h	9,000	11,200	14,000
			BTU/h	35,800	44,500	55,600
			kW	10.5	13.0	16.3
Electric characteristic	Power supply input	Cooling	kW	0.18	0.30	0.34
		Heating	kW	0.18	0.30	0.34
	Rated current	Cooling	A	0.86	1.43	1.64
		Heating	A	0.86	1.43	1.64
	Power factor	Cooling	%	95 - 87	95 - 87	94 - 86
		Heating	%	95 - 87	95 - 87	94 - 86
Exterior (munsell symbol)				-Unit : Galvanized sheets with gray heat insulation · Grille : ABS resin Munsell<0.70Y 8.59/0.97>		
Dimensions <Grille>		Height	mm	258<30>	298<30>	
		Width	mm	840<950>		
		Depth	mm	840<950>		
Heat exchanger				Cross fin		
Fan	Fan × No			Turbo fan × 1		
	Air flow #3		m^3/min	22-20-18-16	28-26-23-20	30-28-25-22
	External static pressure		Pa	0		
	Fan motor output		kW	0.070	0.120	
Insulator				Polyethylene sheet		
Air filter				PP honey comb fabric (long life)		
Pipe dimensions		Gas side	ϕmm	15.88(5/8")	19.05(3/4")	
		Liquid side	ϕmm	9.52(3/8")	9.52(3/8")	
Drain pipe size			ϕmm	O.D.32 (PVC pipe O.D.32 connectable)		
Noise level			dB	37-35-32-30	41-39-36-33	43-41-38-35
Product weight <Grille>			kg	24<5>	30<5>	30<5>

Note 1. Rating conditions(JIS B 8615)
Cooling : Indoor : D.B. 27°C W.B. 19.5°C
outdoor : D.B. 35°C
Heating : Indoor : D.B. 21°C
outdoor : D.B. 7°C W.B. 6°C
Note 2. The number indicated in < > is just for the grille.
Note 3. Air flow and the noise level are indicated as High-Middium 1-Middium 2-Low.

3-2. Electrical parts specifications

Model / Parts name	Symbol	PLFY-P80VAM.UK	PLFY-P100VAM.UK	PLFY-P125VAM.UK
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 (with inner-thermostat)	MF	6-pole OUTPUT 70W D17B6P70MS	6-pole OUTPUT 120W D176P120MS	
Inner-thermostat (Fan motor)		OFF 130℃ ± 5℃ ON 90℃ ± 20℃		
Fan motor capacitor	C1	3.5μF 440V	7.0μF 440V	
Vane motor	MV	MSBPC20M04 DC12V 300Ω/phase		
Drain-up mechanism	DP	PLD-12230ME-1 INPUT 12/10.8W 24 ℓ /Hr		
Drain sensor	DS	Thermistor resistance 0℃/6kΩ, 10℃/3.9kΩ, 20℃/2.6kΩ, 25℃/2.2kΩ, 30℃/1.8kΩ, 40℃/1.3kΩ		
Linear expansion valve	LEV	DC12V Stepping motor drive / Port dimension ϕ5.2 (0~2000pulse) EDM-804ME		
Electric heater (Condensation proof)	H2	240V 21.8W		
Power supply terminal block	TB2	(L, N, ⏚) 330V 30A		
Transmission terminal block	TB5	(M1, M2, S) 250V 30A		

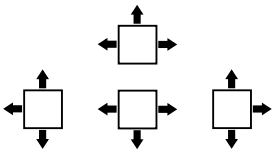
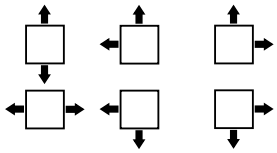
4 4-WAY AIR FLOW SYSTEM

4-1. Placement of the air outlets

For this grille, the discharge direction comes in 11 patterns.
Also, by setting the dip switches (SWA and SWB) on the indoor board to the appropriate settings, you can adjust the air flow and speed. Select the settings from the Table below according to the location in which you want to install the unit.

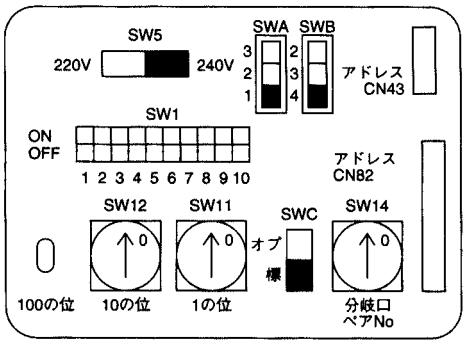
1) Decide on the pattern of the airflow direction.

<Table 1>

Discharge direction pattern	4-direction	3-direction	2-direction
	Pattern 1 Factory setting 	Pattern 4 One air outlet fully closed 	Pattern 6 Two air outlets fully closed 

Note :
For 3 and 2-directional, 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 the switches (SWA, SWB) on the indoor board to the appropriate setting.
Correspondence of ceiling heights to numbers of air outlets.



PLFY-P80VAM.UK

SWB \ SWA	① Standard	② High ceiling ①	③ High ceiling ②
4 4 direction	2.7m	3.0m	3.5m
3 3 direction	3.0m	3.3m	3.5m
2 2 direction	3.3m	3.5m	—

PLFY-P100VAM.UK
PLFY-P125VAM.UK

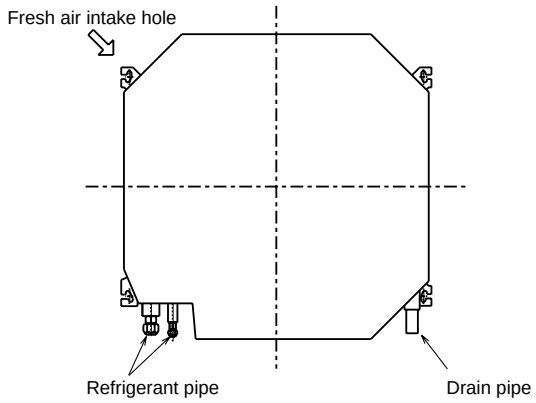
SWB \ SWA	① Standard	② High ceiling ①	③ High ceiling ②
4 4 direction	3.2m	3.6m	4.2m
3 3 direction	3.6m	4.0m	4.2m
2 2 direction	4.0m	4.2m	—

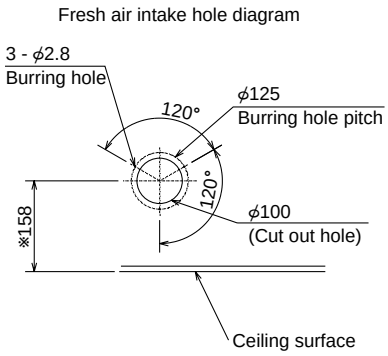
4-2. Fresh air intake (Location for installation)

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

Note :

Be sure to add 135mm to the dimensions in the diagram that are marked with a "※" if installing a multi function casement (Option)





4-3. Interlocking operation method with duct fan (Booster fan)

Whenever the indoor unit is operating, the duct fun also operates.

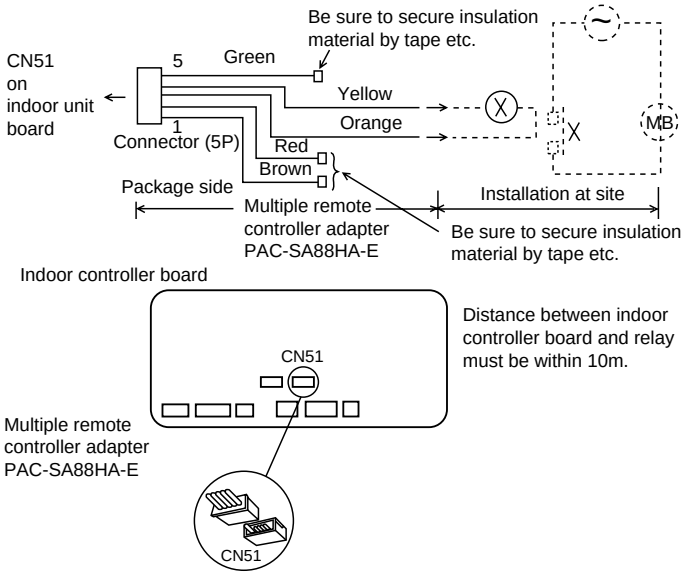
(1)Connect the optional multiple remote controller adapter(PAC-SA88HA-E)to the connector CN51 on the indoor controller board.

(2)Drive the relay after connecting the 12V DC relay between the Yellow and Orange connector lines.

(※)Use a relay under 1W.

MB: Electromagnetic switch power relay for duct fan.

X: Auxiliary relay (12V DC LY-1F)

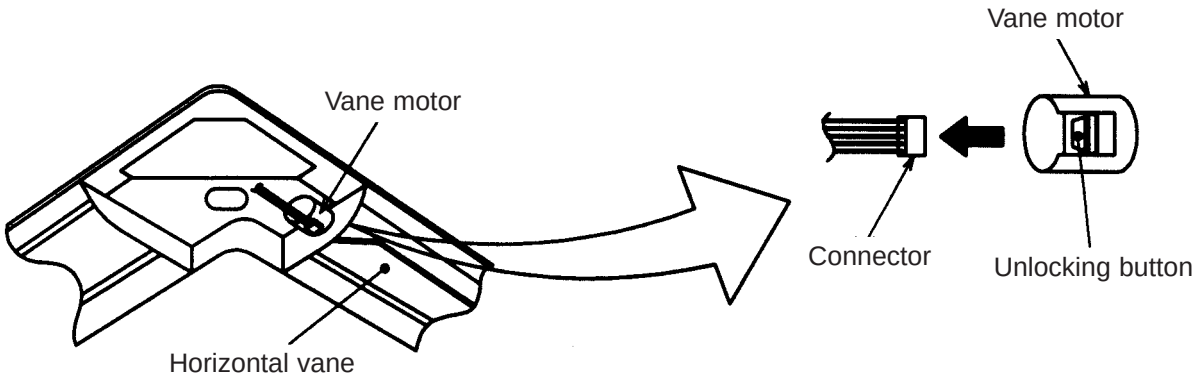


4-4. Fixing of horizontal vane

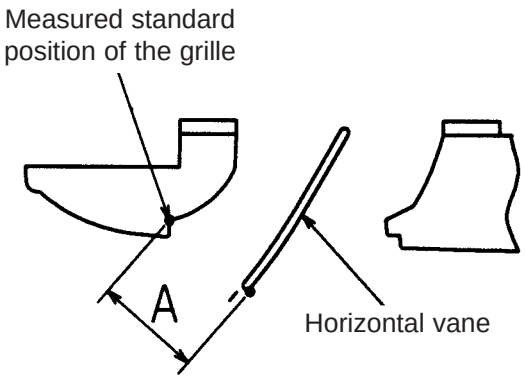
The horizontal vane of each air outlet can be fixed according to the environment, in which it is installed.

Setting procedure

1) Turn off the main power supply (Turn off the breaker).
2) Disconnect the vane motor connector of the direction of the arrow by pressing the unlocking button as shown in the figure below.
   Electrically insulate the disconnected connector with vinyl tape.



3)The vane angle can be fixed by turning the vane by hand.
The vane should remain within the angles shown in the table below.



<Set range>

Standard of horizontal position	Level 30° (Min.)	Downward 45°	Downward 55°	Downward 70° (Max.)
Dimension A (mm)	26	29	33	37

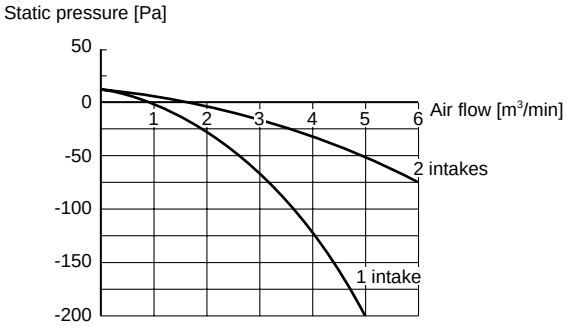
※ Dimension between 26mm and 37mm can be arbitrarily set.

Caution	Do not set the dimension out of the range.
	It could cause dew drips and stains on the ceiling, etc. and the unit may be damaged.

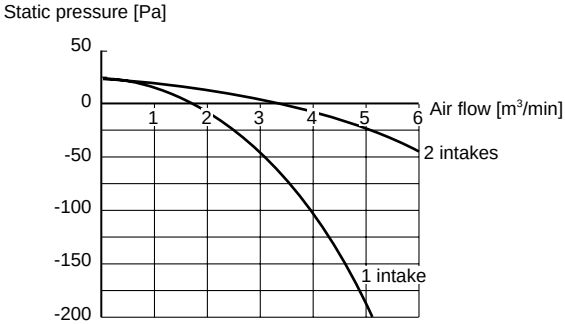
4-5. Fresh air intake amount & static pressure characteristics

(1) PLFY-P80VAM.UK

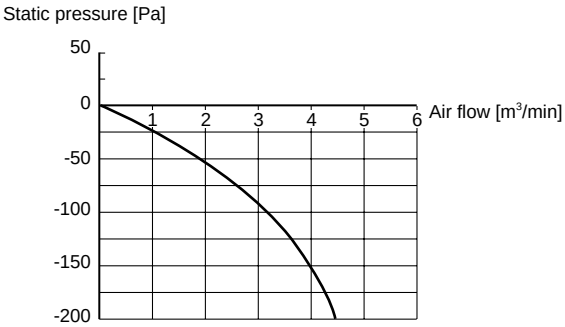
Multifunction casement + Standard filter



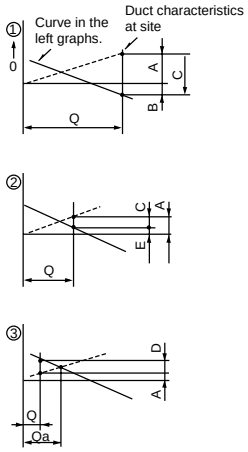
Multifunction casement + High efficiency filter



Taking air into the unit



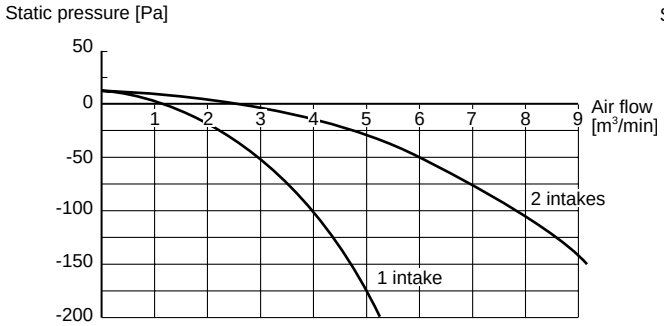
How to read curves



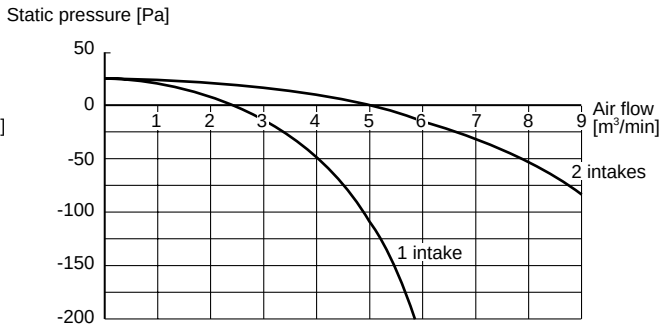
Q···Planned amount of fresh air intake <m³/min>
A···Static pressure loss of fresh air intake duct system with air flow amount Q <Pa>
B···Forced static pressure at air conditioner inlet with air flow amount Q <Pa>
C···Static pressure of booster fan with air flow amount Q <Pa>
D···Static pressure loss increase amount of fresh air intake dust system for air flow amount Q <Pa>
E···Static pressure of indoor unit with air flow amount Q <Pa>
Qa···Estimated amount of fresh air intake with out D <m³/min>

(2) PLFY-P100VAM.UK
PLFY-P125VAM.UK

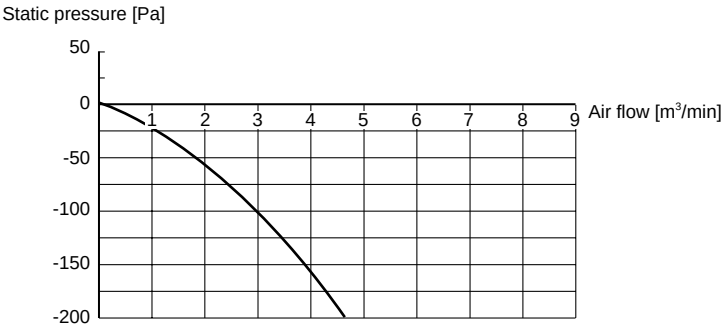
Multifunction casement + Standard filter



Multifunction casement + High efficiency filter



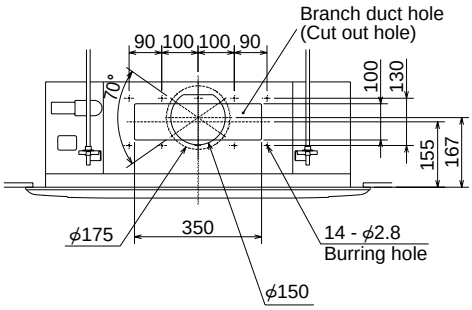
Taking air into the unit

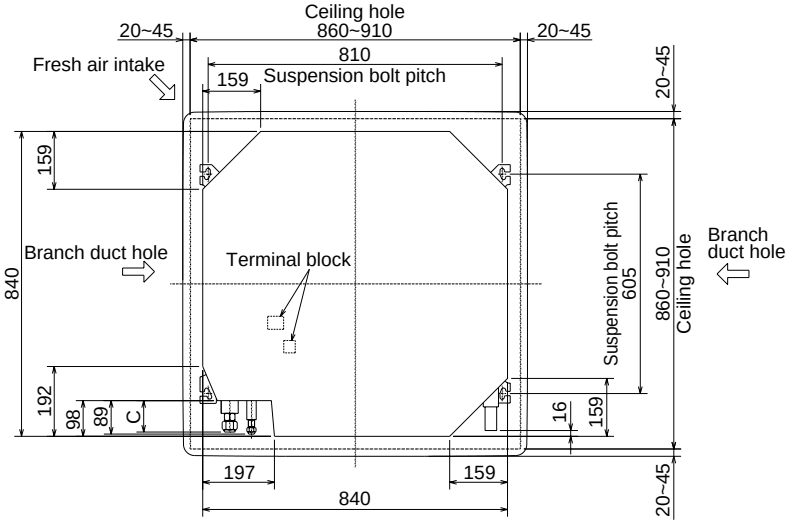


5 OUTLINES AND DIMENSIONS

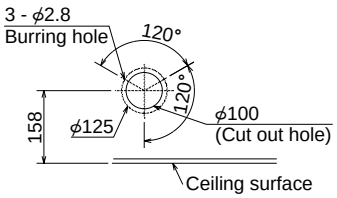
PLFY-P80VAM.UK
PLFY-P100VAM.UK
PLFY-P125VAM.UK

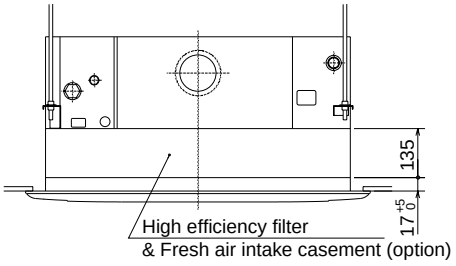
Unit : mm

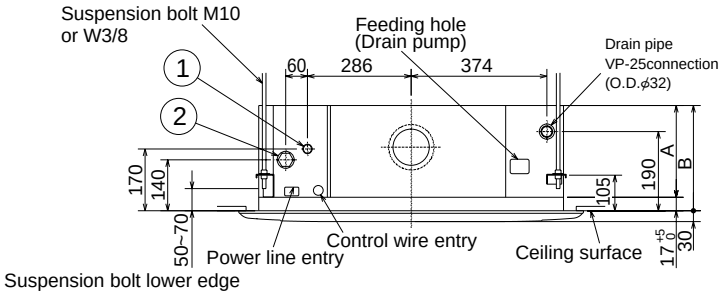


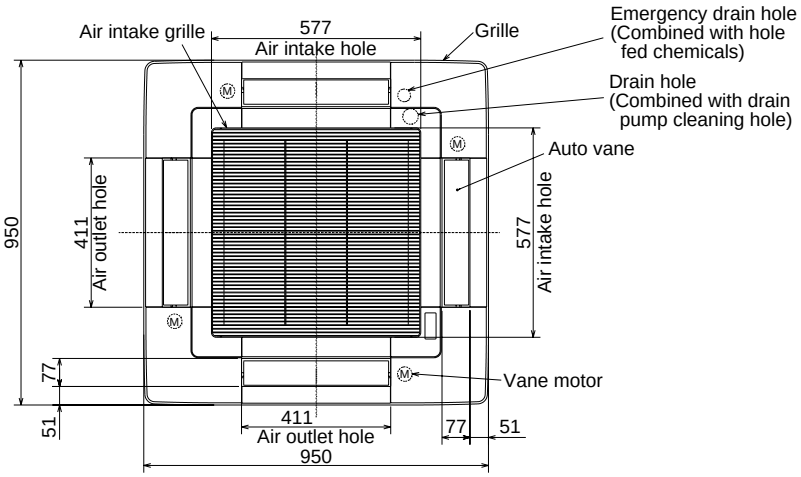


Detail drawing of fresh air intake









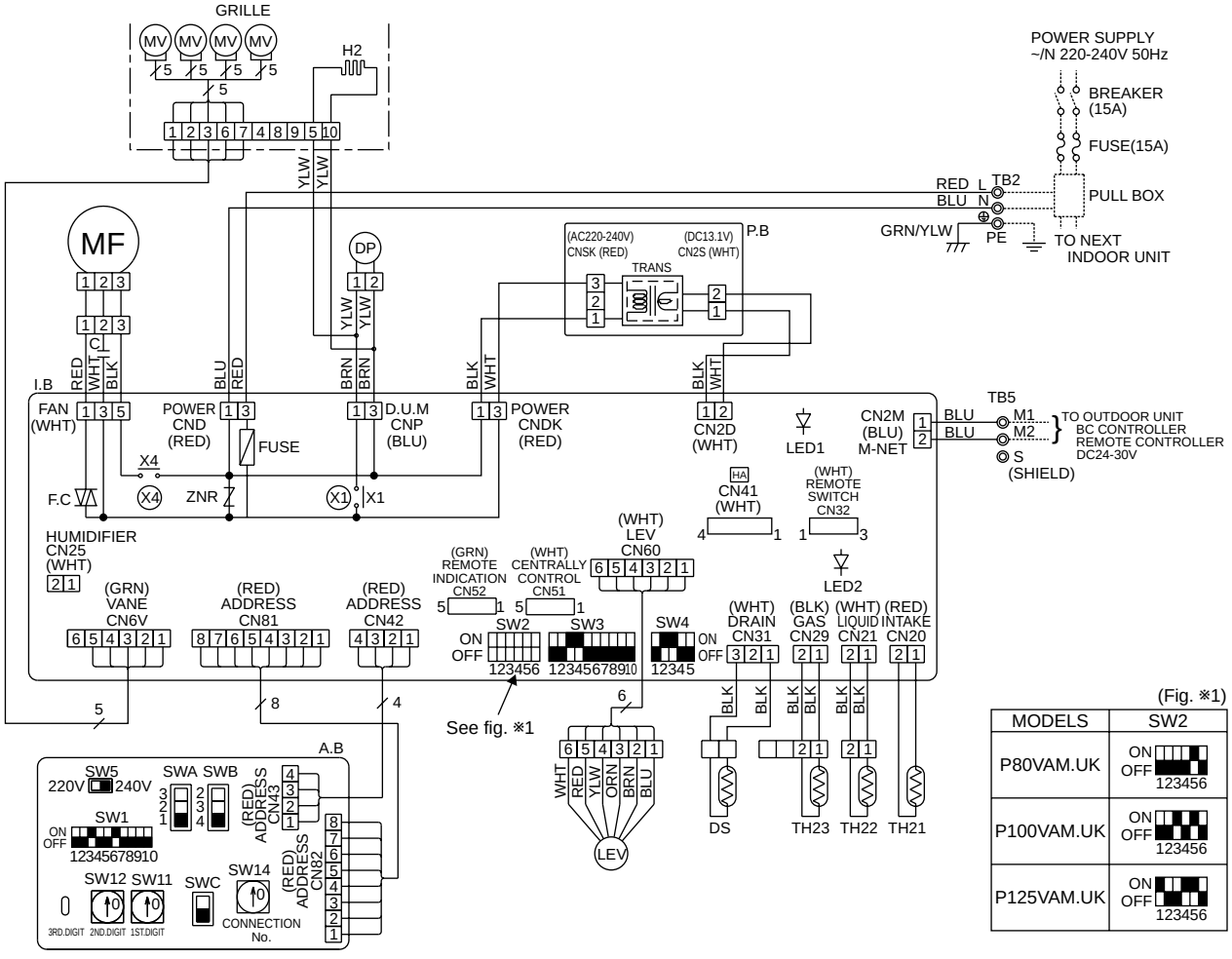
Models	①	②	A	B	C
PLFY-P80VAM.UK	Refrigerant pipe (9.52mm dia.) flared connection 3/8F	Refrigerant pipe (15.88mm dia.) flared connection 5/8F	241	258	80
PLFY-P100VAM.UK PLFY-P125VAM.UK	Refrigerant pipe (9.52mm dia.) flared connection 3/8F	Refrigerant pipe (19.05mm dia.) flared connection 3/4F	281	298	84

6 WIRING DIAGRAM

PLFY-P80VAM.UK
PLFY-P100VAM.UK
PLFY-P125VAM.UK

[LEGEND]

SYMBOL	NAME		SYMBOL	NAME		SYMBOL	NAME	
P.B	INDOOR POWER BOARD		C	CAPACITOR(FAN MOTOR)		LEV	LINEAR EXPANSION VALVE	
I.B	INDOOR CONTROLLER BOARD		MF	FAN MOTOR(WITH INNER THERMO)		A.B	CIRCUIT BOARD	
CN25	CONNECTOR	HUMIDIFIER	MV	VANE MOTOR		SW1	SWITCH	MODE SELECTION
CN32		REMOTE SWITCH	DP	DRAIN WATER LIFTING-UP MACH		SW5		VOLTAGE SELECTION
CN41		HA TERMINAL-A	DS	DRAIN SENSOR		SW11		ADDRESS SETTING 1ST DIGIT
CN51		CENTRALLY CONTROL	H2	DEW PREVENTION HEATER		SW12		ADDRESS SETTING 2ND DIGIT
CN52		REMOTE INDICATION	TB2	TERMINAL	POWER SUPPLY	SW14		CONNECTION No.
SW2	SWITCH	CAPACITY CODE	TB5	BLOCK	TRANSMISSION	SWA		CEILING HEIGHT SELECTOR
SW3		MODE SELECTION	TH21	THERMISTOR	ROOM TEMPERATURE DETECTION (0℃/15k , 25℃/5.4k)	SWB		DISCHARGE OUTLET NUMBER SELECTOR
SW4		MODEL SELECTION				SWC		OPTION SELECTOR
ZNR	VARISTOR		TH22		PIPE TEMPERATURE DETECTION / LIQUID (0℃/15k , 25℃/5.4k)			
FUSE	FUSE (6.3A/250V)		TH23		PIPE TEMPERATURE DETECTION / GAS (0℃/15k , 25℃/5.4k)			
F.C	FAN PHASE CONTROL							
X1	AUX.RELAY	DRAIN PUMP						
X4		FAN MOTOR						
LED1	POWER SUPPLY(I.B)							
LED2	POWER SUPPLY(I.B)							



(Fig. ※1)

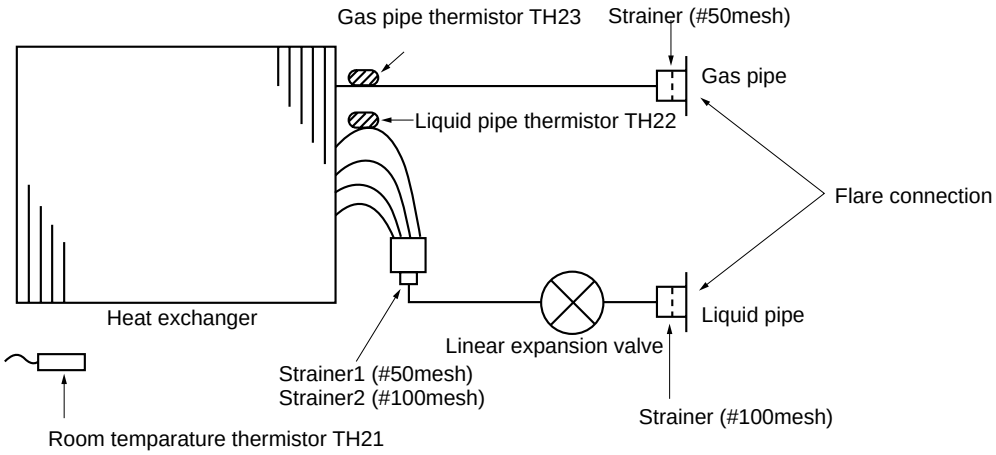
MODELS	SW2
P80VAM.UK	ON OFF 123456
P100VAM.UK	ON OFF 123456
P125VAM.UK	ON OFF 123456

NOTE

1.At servicing for outdoor unit,always follow the wiring diagram of outdoor unit.
2.Symbol(S) of TB5 is the shield wire connection.
3.Symbols used in wiring diagram above are,◎:Terminal block, □□□□:Connector.
4.The setting of the SW2 dip switches differs in the capacity for the detail, see the fig. ※1.
5.Please set the switch SW5 according to the power supply voltage.
Set SW5 to 240V side when the power supply is 230 and 240 volts.
When the power supply is 220 volts,set SW5 to 220V side.

7 REFRIGERANT SYSTEM DIAGRAM

PLFY-P80VAM.UK
PLFY-P100VAM.UK
PLFY-P125VAM.UK

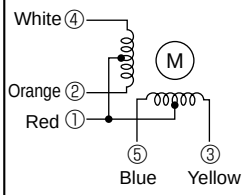
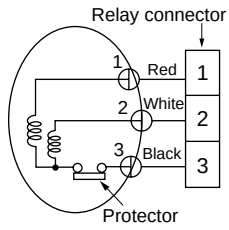
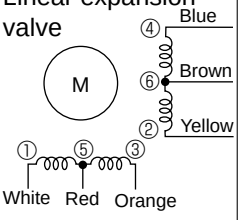
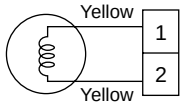
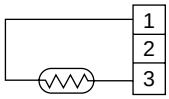


Refrigeration pipe size (Flare connection size)

Service Ref. / Item	PLFY-P80VAM.UK	PLFY-P100VAM.UK PLFY-P125VAM.UK
Gas pipe	ϕ15.88<5/8F>	ϕ19.05<3/4F>
Liquid pipe	ϕ9.52<3/8F>	ϕ9.52<3/8F>

8 TROUBLE SHOOTING

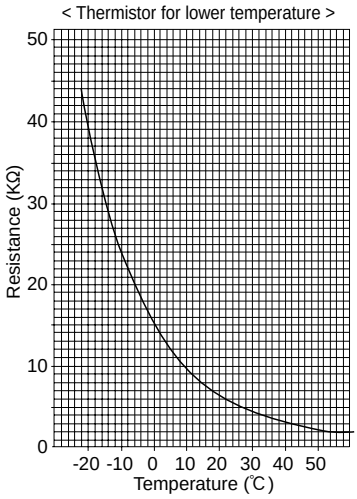
8-1. How to check the parts PLFY-P•VAM.UK

<table>
<tr><th>Parts name</th><th>Check points</th></tr>
<tr><td>Room temperature thermistor (TH21)
Liquid pipe thermistor (TH22)
Gas pipe thermistor (TH23)</td><td>Disconnect the connector then measure the resistance using a tester.
(Surrounding temperature 10℃~30℃)
<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>4.3kΩ~9.6kΩ</td><td>Open or short</td></tr></table>(Refer to the thermistor)</td></tr>
<tr><td>Vane motor
 
</td><td>Measure the resistance between the terminals using a tester.
(Surrounding temperature 20℃)
<table><tr><th>Connector</th><th>Normal</th><th>Abnormal</th></tr><tr><td>Red — Yellow</td><td rowspan="4">300Ω</td><td rowspan="4">Open or short</td></tr><tr><td>Red — Blue</td></tr><tr><td>Red — Orange</td></tr><tr><td>Red — White</td></tr></table></td></tr>
<tr><td>Fan motor
 
</td><td>Measure the resistance between the terminals using a tester.
(Surrounding temperature 20℃)
<table><tr><th rowspan="3">Motor terminal
or
Relay connector</th><th colspan="2">Normal</th><th rowspan="3">Abnormal</th></tr><tr><th colspan="2">PLFY-P·VAM</th></tr><tr><th>P80</th><th>P100, P125</th></tr><tr><td>Red-Black</td><td>87.2Ω</td><td>28.7Ω</td><td rowspan="2">Open or short</td></tr><tr><td>White-Black</td><td>104.1Ω</td><td>41.6Ω</td></tr></table></td></tr>
<tr><td>Linear expansion valve
 
</td><td>Disconnect the connector then measure the resistance valve using a tester.
Refer to the next page for detail. (Surrounding temperature 20℃)
<table><tr><th colspan="4">Normal</th><th>Abnormal</th></tr><tr><td>(1)-(5)
White-Red</td><td>(2)-(6)
Yellow-Brown</td><td>(3)-(5)
Orange-Red</td><td>(4)-(6)
Blue-Brown</td><td rowspan="2">Open or short</td></tr><tr><td colspan="4">150kΩ</td></tr></table></td></tr>
<tr><td>Drain pump
 
</td><td>Measure the resistance between the terminals using a tester.
(Surrounding temperature 20℃)
<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>290Ω</td><td>Open or short</td></tr></table></td></tr>
<tr><td>Drain sensor
 
</td><td>Measure the resistance between the terminals using a tester.
Measure the resistance after 3 minutes have passed since since the power supply was intercepted.
(Surrounding temperature 0℃~60℃)
<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>0.6kΩ~6.0kΩ</td><td>Open or short</td></tr></table>(Refer to the thermistor)</td></tr>
</table>

<Thermistor Characteristic graph>

Thermistor for lower temperature

Room temperature thermistor(TH21)
Liquid pipe thermistor(TH22)
Gas pipe temperature thermistor(TH23)

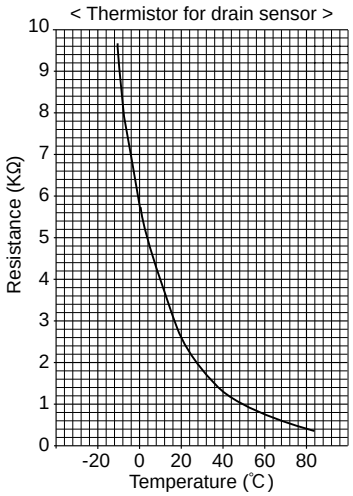


Thermistor R_0=15kΩ ± 3%
Fixed number of B=3480kΩ ± 2%

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

0℃	15kΩ
10℃	9.6kΩ
20℃	6.3kΩ
25℃	5.2kΩ
30℃	4.3kΩ
40℃	3.0kΩ

Thermistor for drain sensor



Thermistor R_0=6.0kΩ ±5%
Fixed number of B=3390kΩ ±2%

$$Rt=15\exp\{3390(\frac{1}{273+t}-\frac{1}{273})\}$$

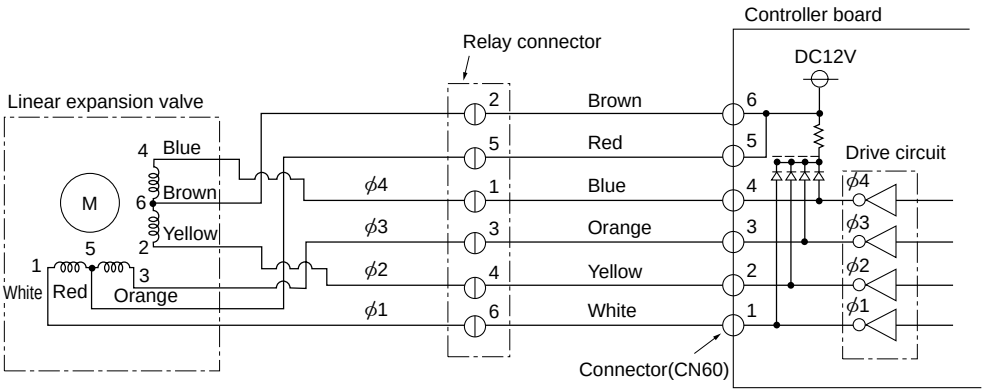
0℃	6.0kΩ
10℃	3.9kΩ
20℃	2.6kΩ
25℃	2.2kΩ
30℃	1.8kΩ
40℃	1.3kΩ

Linear expansion valve

① **Operation summary of the linear expansion valve.**

• Linear expansion valve open/close through stepping motor after receiving the pulse signal from the indoor controller board.
• Valve position can be changed in proportion to the number of pulse signal.

<Connection between the indoor controller board and the linear expansion valve>



Note : Since the number of the connector at the controller board side and the relay connector are different, follow the color of the lead wire.

<Output pulse signal and the valve operation>

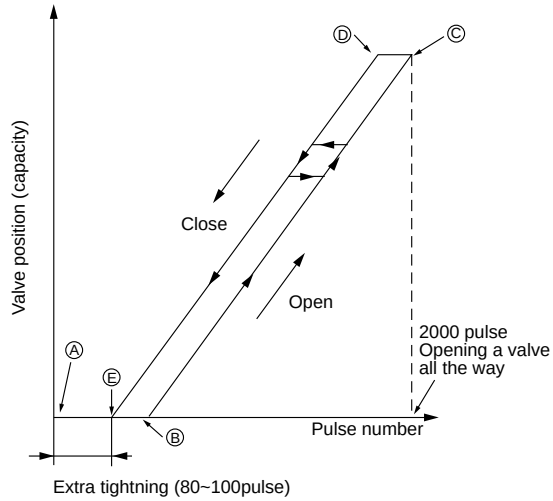
Output (Phase)	Output			
	1	2	3	4
ϕ1	ON	OFF	OFF	ON
ϕ2	ON	ON	OFF	OFF
ϕ3	OFF	ON	ON	OFF
ϕ4	OFF	OFF	ON	ON

Closing a valve : 1 → 2 → 3 → 4 → 1
Opening a valve : 4 → 3 → 2 → 1 → 4

The output pulse shifts in above order.

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

② Linear expansion valve operation

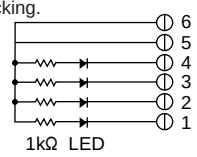
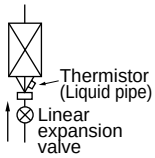


✵ When the switch is turned on, 2200 pulse opening valve signal will be send till it goes to Ⓐ point in order to define the valve position.

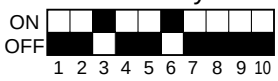
When the valve moves smoothly, there is no noise or vibration occurring from the linear expansion valve : however, when the pulse number moves from Ⓔ to Ⓐ or when the valve is locked, more noise can be heard than the normal situation.

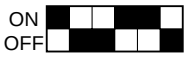
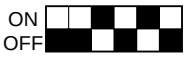
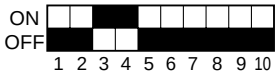
✵ Noise can be detected by placing the ear against a screw driver handle while touching the screw driver point / tip to the linear expansion valve.

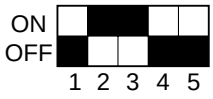
③ Trouble shooting

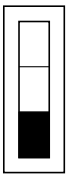
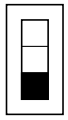
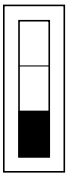
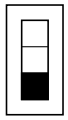
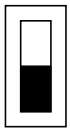
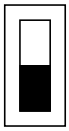
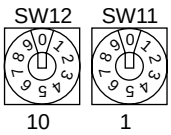
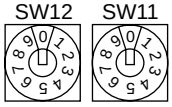
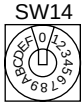
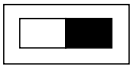
Symptom	Check points	Countermeasures
Operation circuit failure of the micro processor.	Disconnect the connector on the controller board, then connect LED for checking.  A pulse signal will be sent out for 10 seconds as soon as the main switch is turned on. If there are LEDS with lights on or lights off, it means the operation circuit is abnormal.	Exchange the indoor controller board at drive circuit failure.
Linear expansion valve mechanism is locked.	Motor will idle and make ticking noise when motor is operated while the linear expansion valve is locked. This ticking sound is the sign of the abnormality.	Exchange the linear expansion vale.
Short or breakage of the motor coil of the linear expansion valve.	Measure the resistance between the each coil (red-white, red-orange, brown-yellow, brown-blue) using a tester. It is normal if the resistance is in the range of 150 ±10%.	Exchange the linear expansion valve.
Valve doesn't close completely (thermistor leaking).	To check the linear expansion valve, operate the indoor unit in fan mode and at the same time operate 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 are some leaking, detecting temperature of the thermistor will go lower. If the detected temperature is much lower than the temperature indicated in 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 making any trouble.  	If large amount of thermistor 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 at the controller board, then check the continuity.

8-2. FUNCTION OF DIP SWITCH

<table>
<tr><th rowspan="2">Switch</th><th rowspan="2">Pole</th><th rowspan="2">Function</th><th colspan="2">Operation by switch</th><th rowspan="2">Remarks</th></tr>
<tr><th>ON</th><th>OFF</th></tr>
<tr><td rowspan="10">SW1
Mode
Selection</td><td>1</td><td>Thermistor <intake temperature detection> position</td><td>Built-in remote controller</td><td>Indoor unit</td><td rowspan="10">Address board
<At delivery>
 

Note :
※1 Fan operation at Heating mode.
※2 Heater therm ON is operating.
※3 SW 1-7=OFF, SW 1-8=ON → Setting air flow.
SW 1-7=ON, SW 1-8=ON → Indoor fan stop.</td></tr>
<tr><td>2</td><td>Filter clogging detection</td><td>Provided</td><td>Not provided</td></tr>
<tr><td>3</td><td>Filter cleaning</td><td>2,500hr</td><td>100hr</td></tr>
<tr><td>4</td><td>Fresh air intake</td><td>Effective</td><td>Not effective</td></tr>
<tr><td>5</td><td>Remote indication switching</td><td>Thermostat ON signal indication</td><td>Fan output indication</td></tr>
<tr><td>6</td><td>Humidifier control</td><td>Always operated while the heat in ON ※1</td><td>Operated depends on the condition ※2</td></tr>
<tr><td>7</td><td rowspan="2">Air flow set in case of
Heat thermostat OFF</td><td>Low ※3</td><td>Extra low ※3</td></tr>
<tr><td>8</td><td>Setting air flow ※3</td><td>Depends on SW1-7</td></tr>
<tr><td>9</td><td>Auto restart function</td><td>Effective</td><td>Not effective</td></tr>
<tr><td>10</td><td>Power ON/OFF</td><td>Effective</td><td>Not effective</td></tr>
<tr><td>SW2
Capacity code setting</td><td>1~6</td><td colspan="3"><table><tr><th>MODELS</th><th>SW 2</th><th>MODELS</th><th>SW 2</th></tr><tr><td>PLFY-P80VAM.UK</td><td> 
</td><td>PLFY-P125VAM.UK</td><td> 
</td></tr><tr><td>PLFY-P100VAM.UK</td><td> 
</td><td></td><td></td></tr></table></td><td>Indoor controller board
Set while the unit is off.
<At delivery>
Set for each capacity.</td></tr>
<tr><td rowspan="10">SW3
Function
Selection</td><td>1</td><td>Heat pump / Cooling only</td><td>Cooling only</td><td>Heat pump</td><td rowspan="10">Indoor controller board
Set while the unit is off.
<At delivery>
 

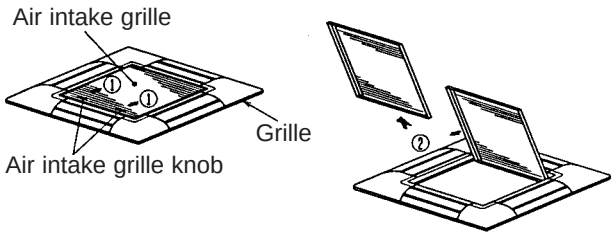
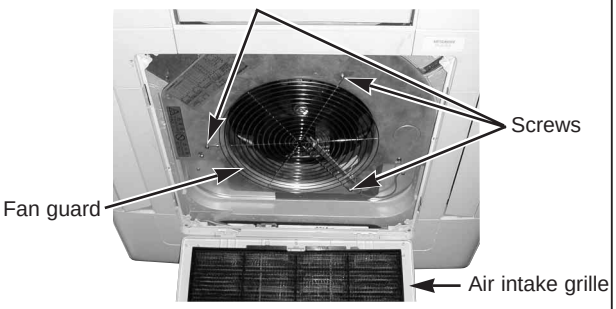
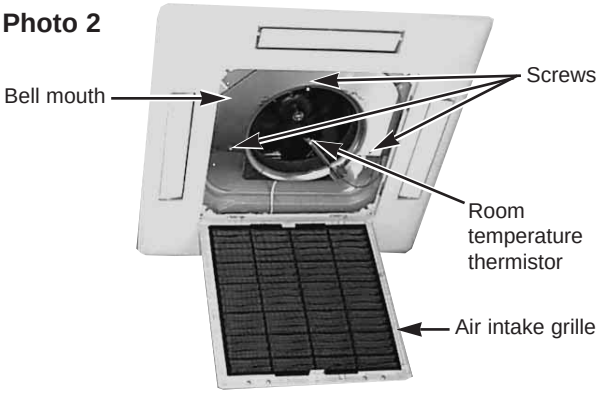
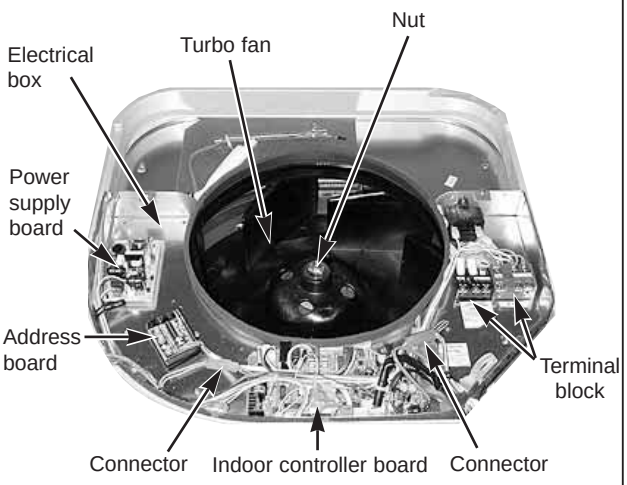
Note :
※4 At cooling mode, each angle can be used only 1 hour.
※5 The numerical valve in the parentheses shows the case which the R22 outdoor unit is connected.
※6 SW3-2 setting
Only for PLFY-P･VAM, SW is used to change whether the humidifier functions or not.
(Fixed the louver function less.)</td></tr>
<tr><td>2</td><td>Louver / humidifier ※6</td><td>Available</td><td>Not available</td></tr>
<tr><td>3</td><td>Vane</td><td>Available</td><td>Not available</td></tr>
<tr><td>4</td><td>Vane swing function</td><td>Available</td><td>Not available</td></tr>
<tr><td>5</td><td>Vane horizontal angle</td><td>Second setting</td><td>First setting</td></tr>
<tr><td>6</td><td>Vane cooling limit angle setting ※4</td><td>Horizontal angle</td><td>Down A, B, C</td></tr>
<tr><td>7</td><td>Indoor linear expansion valve opening</td><td>Effective</td><td>Not effective</td></tr>
<tr><td>8</td><td>Heat 4degrees up</td><td>Not effective</td><td>Effective</td></tr>
<tr><td>9</td><td>Superheat setting temperature ※5</td><td>9(5)degrees</td><td>6(2)degrees</td></tr>
<tr><td>10</td><td>Sub cool setting temperature</td><td>15degrees</td><td>10degrees</td></tr>
<tr><td>SW4
Unit
Selection</td><td>1~5</td><td colspan="3"> 
</td><td>Indoor controller board
Set while the unit is off.
<At delivery>
Setting in the left-shown.</td></tr>
</table>

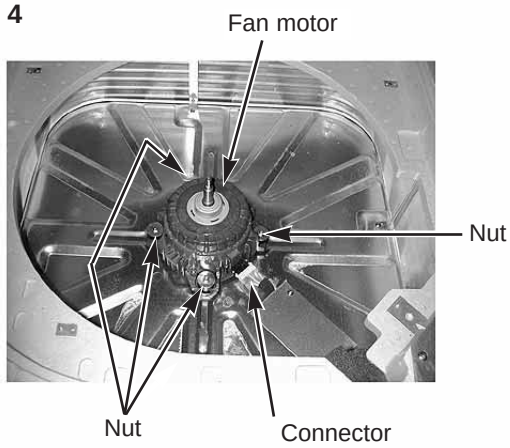
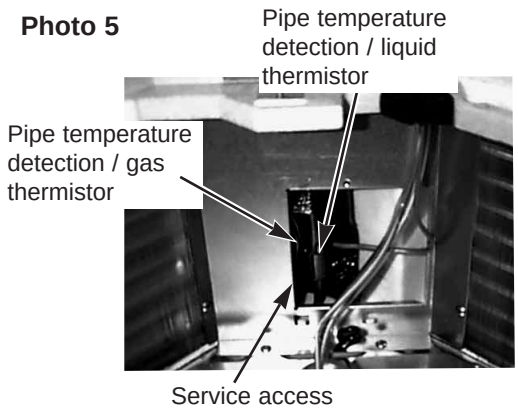
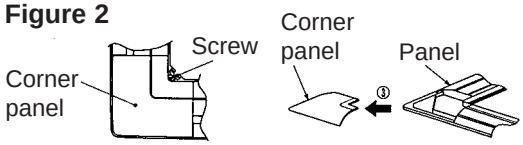
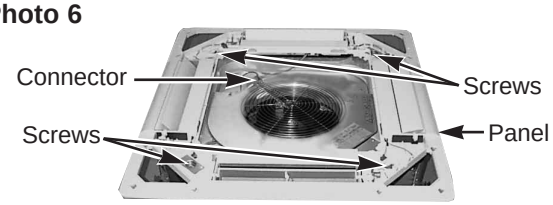
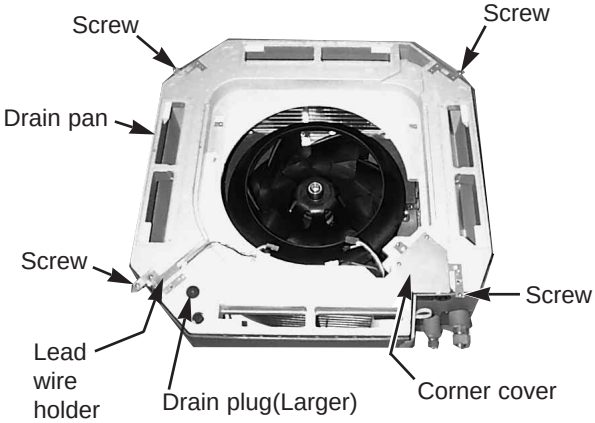
<table>
<tr><th>Switch</th><th>Pole</th><th>Operation by switch</th><th>Remarks</th></tr>
<tr><td>SWA
Ceiling height selector</td><td>1~3</td><td rowspan="2">(High ceiling②) 3
(High ceiling①) 2
(Standard) 1
 
✻ Ceiling height can be changed depends on SWB setting.
PLFY P80VAM.UK
<table><tr><th colspan="2">SWA / SWB</th><th>1</th><th>2</th><th>3</th></tr><tr><td></td><td></td><td>Standard</td><td>High ceiling①</td><td>High ceiling②</td></tr><tr><td>4</td><td>4 direction</td><td>2.7m</td><td>3.0m</td><td>3.5m</td></tr><tr><td>3</td><td>3 direction</td><td>3.0m</td><td>3.3m</td><td>3.5m</td></tr><tr><td>2</td><td>2 direction</td><td>3.3m</td><td>3.5m</td><td>—</td></tr></table></td><td>Address board
<At delivery>
3
2
1
  </td></tr>
<tr><td>SWB
Discharge outlet number selector</td><td>3</td><td>(2 direction) 2
(3 direction) 3
(4 direction) 4
 
PLFY P100VAM.UK
PLFY P125VAM.UK
<table><tr><th colspan="2">SWA / SWB</th><th>1</th><th>2</th><th>3</th></tr><tr><td></td><td></td><td>Standard</td><td>High ceiling①</td><td>High ceiling②</td></tr><tr><td>4</td><td>4 direction</td><td>3.2m</td><td>3.6m</td><td>4.2m</td></tr><tr><td>3</td><td>3 direction</td><td>3.6m</td><td>4.0m</td><td>4.2m</td></tr><tr><td>2</td><td>2 direction</td><td>4.0m</td><td>4.2m</td><td>—</td></tr></table></td><td>Address board
<At delivery>
2
3
4
  </td></tr>
<tr><td>SWC
Option selector</td><td>2</td><td>Option
Standard
 
When attach the optional high performance filter elements (multi function casement) to the unit, be sure to attach it to the option side in order to prevent the airflow reducing.</td><td>Address board
<At delivery>
Option
Standard
  </td></tr>
<tr><td>SW11
1st digit address setting
SW12
2nd digit address setting</td><td>Rotary switch</td><td> 
SW12 SW11
10 1
Address setting should be done when network remote controller (PAR-F25MA) is being used.</td><td>Address board
Address can be set while the unit is stopped.
<At delivery>
SW12 SW11
  </td></tr>
<tr><td>SW14
Connection No. setting</td><td>Rotary switch</td><td> 
SW14
This is the switch to be used when the indoor unit is operated with R2,series outdoor unit as a set.</td><td>Address board
<At delivery>
SW14
  </td></tr>
<tr><td>SW5
Voltage Selection</td><td>2</td><td> 
220V 240V
If the unit is used at the 230V or 240V area, set the voltage to 240V.
If the unit is used at the 220V, set the voltage to 220V.</td><td>Address board
<At delivery>
220V 240V
  </td></tr>
</table>

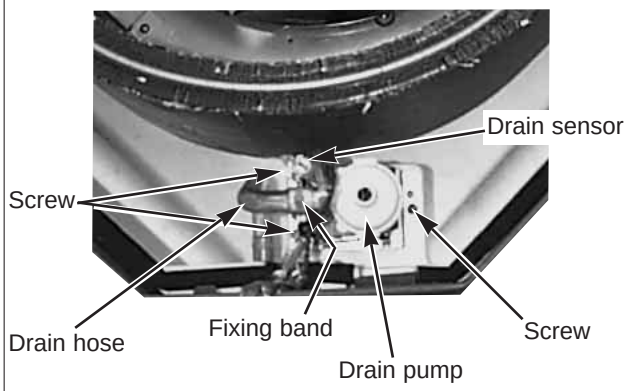
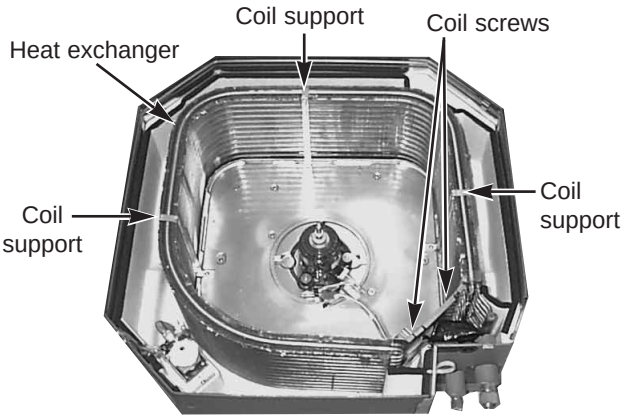
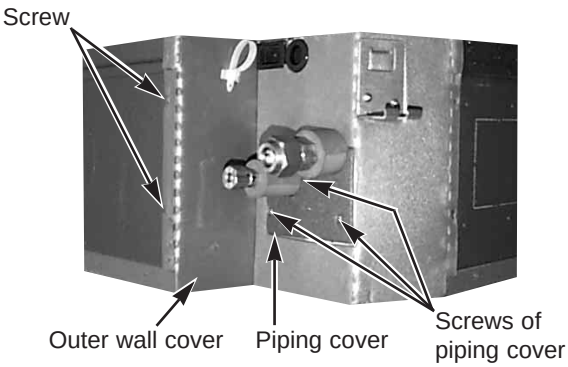
9 DISASSEMBLY PROCEDURE

PLFY-P80VAM.UK

Be careful on removing heavy parts.

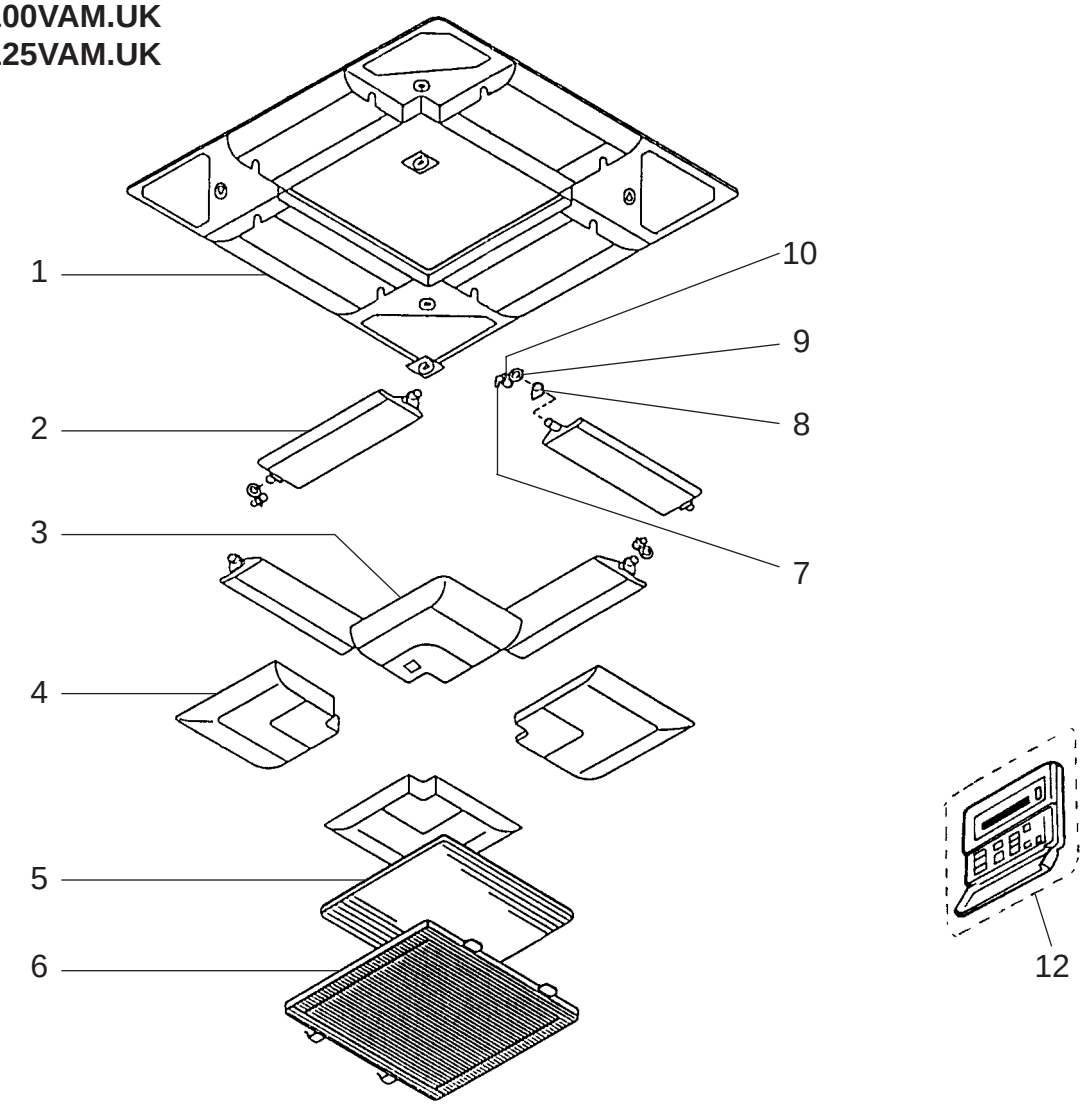
OPERATING PROCEDURE	PHOTOS & ILLUSTRATIONS
1. Removing the air intake grille (1) Slide the knob of air intake grille toward the arrow ① to open the air intake grille. (2) Remove drop prevention hook from the panel. (3) Slide the shaft in the hinge to the direction of the arrow② and remove the air intake grille.	**Figure 1** 
2. Removing the fan guard (1) Open the air intake grille. (2) Remove the 3 screws of fan guard.	**Photo 1** 
3. Removing the room temperature thermistor (1)Remove the fan guard.(See photo 1) (2) Remove the screw in the room temperature thermistor holder to remove the holder and the room temperature thermistor. (3) Remove the 1 screw from the bell mouth, and unscrew the other 2 screws (fix to the oval hole which has a different diameter) to remove the bell mouth. (4) Hold the holder claw, and remove the room temperature thermistor and holder. (5) Disconnect the connector (red) from the indoor control board.	**Photo 2** 
4. Removing the electrical box (1) Remove the fan guard.(See photo 1) (2) Disconnect the lead wire of the vane motor from the clamp, and disconnect the white connector (10P). (3) Remove the room temperature thermistor with the holder. (4) Remove the bell mouth.(See photo 2) (5) Disconnect the relay connector in the electrical box. Red (3P) for fan motor power supply White (2P) for pipe temperature detection / liquid thermistor Black (2P) for pipe temperature detection / gas thermistor Blue (2P) for drain pump White (3P) for drain sensor (6) Remove the 3 screws of the electrical box and loosen the other 2 screws to remove the box. <Electrical parts in the electrical box> Indoor controller board power supply board Terminal block (Power supply) Terminal block (Transmission) Capacitor Address board	**Photo 3** 

OPERATING PROCEDURE	PHOTOS & ILLUSTRATIONS
5. Remove the fan motor (1) Remove the fan guard.(See photo 1) (2) Remove the bell mouth.(See photo 2) (3) Remove the electrical box.(See photo 3) (4) Remove the turbo fan nut, washer and radiation cap(P100, P125). (5) Pull out the turbo fan. (6) Disconnect the connector of the fan motor lead wire. (7) Remove the 4 nuts of the fan motor.	**Photo 4** 
6. Removing the pipe temperature detection / liquid thermistor and the pipe temperature detection / gas thermistor (1) Remove the fan guard.(See photo 1) (2) Remove the bell mouth.(See photo 2) (3) Remove the electrical box.(See photo 3) (4) Remove the turbo fan. (5) Remove the screw of the service panel. (6) Remove the service panel. (7) Remove the pipe temperature detection / liquid thermistor and the pipe temperature detection / gas thermistor which is inserted into the holder installed to the thin copper pipe. (8) Disconnect each 2-pin white(liquid) and black(gas) connector.	**Photo 5** 
7. Removing the panel (1) Remove the air intake grille.(See figure 1) **Corner panel (See figure 2)** (1) Remove the corner screw. (2) Slide the corner panel to the direction of the arrow③, and remove the corner panel. **Panel (See photo 6)** (1) Disconnect the connector that connects with the unit. (2) Remove the 2 screws from the panel and loosen another 2 screws, which fix to the oval holes, have different diameters. (3) Rotate the panel a little to remove the panel.	**Figure 2**  **Photo 6** 
8. Removing the drain pan (1) Remove the panel. (See photo 6) (2) Remove the drain plug (Larger one), drain the remaining water in the drain pan. (3) Remove the corner cover. (2 screws) (4) Remove the bell mouth (See photo 2) (5) Remove the electrical box. (See photo 3) (6) Remove the lead wire holder. (1 screw) (7) Remove the 4 screws and pull out the drain pan. ※ Pull out the left and right of the pan gradually. Be careful not to crack or damage the pan.	**Photo 7** 

OPERATING PROCEDURE	PHOTOS & ILLUSTRATIONS
9. Removing the drain pump and drain sensor (1) Remove the panel. (See photo 6) (2) Remove the fan guard. (See photo 1) (3) Remove the bell mouth. (See photo 2) (4) Remove the electrical box. (See photo 3) (5) Remove the drain pan. (See photo 7) (6) Remove the 3 screws of the drain pump. (7) Cut the drain hose band, pull out the drain hose from the drain pump. (8) Pull out the drain pump. (9) Remove the drain sensor and the holder.	**Photo 8** 
10. Removing the heat exchanger (1) Remove the panel. (See photo 6) (2) Remove the fan guard. (See photo 1) (3) Remove the bell mouth. (See photo 2) (4) Remove the electrical box. (See photo 3) (5) Remove the drain pan. (See photo 7) (6) Remove the turbo fan. (See photo 4) (7) Remove the 3 screws of the piping cover, and pull out piping cover. (8) Remove the 4 screws of the outer wall cover, and pull out the outer wall cover. (9) Remove the screw of the coil support. (10) Remove the 2 screws of the coil. (11) Pull out the heat exchanger.	**Photo 9**  **Photo 10** 

10 PARTS LIST

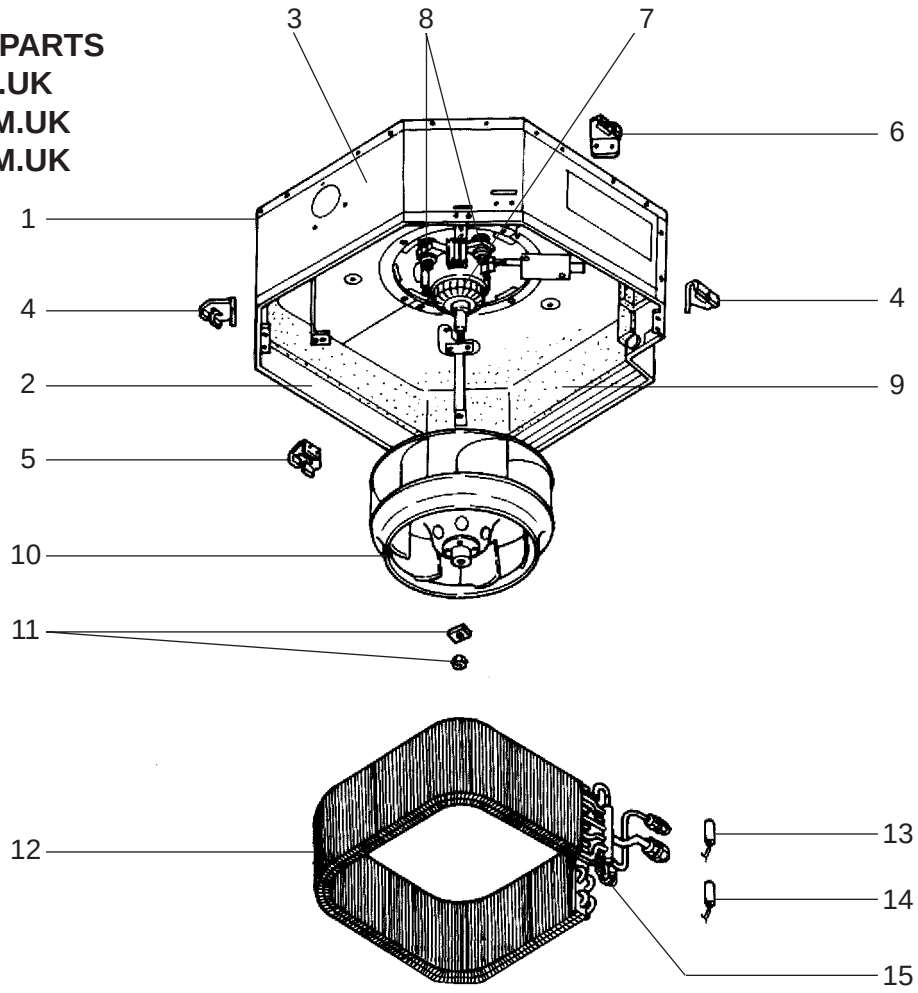
PANEL PARTS
PLFY-P80VAM.UK
PLFY-P100VAM.UK
PLFY-P125VAM.UK



Part numbers that is circled is not shown in the figure.

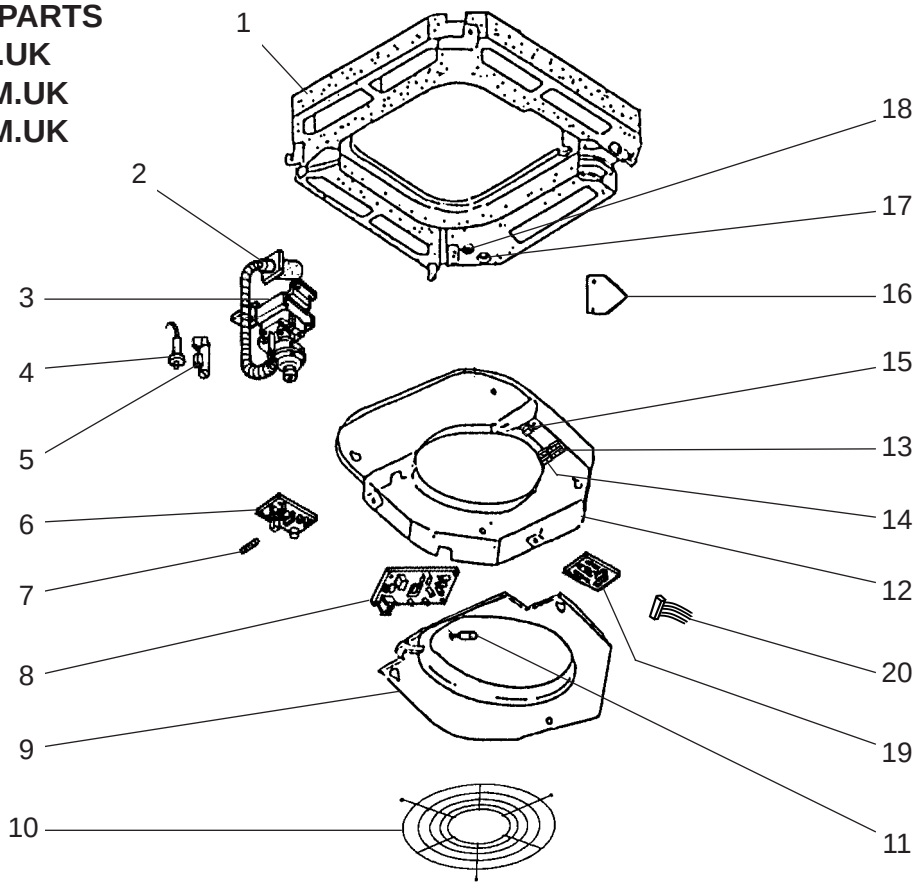
No.	Part No.	Part Name	Specification	Q'ty/set PLFY- P80 / P100 / P125 VAM.UK	Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty	Price Unit	Price Amount
1	S70 E10 003	AIR OUTLET GRILLE		1					
2	S70 E00 002	VANE ASSY		4					
3	S70 E01 638	CORNER PANEL		1					
4	S70 E00 638	CORNER PANEL		3					
5	S70 E00 500	L.L. FILTER		1					
6	S70 E00 691	GRILLE ASSY		1					
7	S70 E00 223	VANE MOTOR		4		MV			
8	S70 E00 063	VANE BUSH		8					
9	S70 E00 040	GEAR (VANE)		4					
10	S70 E01 040	GEAR (MOTOR)		4					
⑪	S70 E01 673	SCREW ASSY		1					
12	—	REMOTE CONTROLLER		1	<PAR-F25MA>	R.B			

FUNCTIONAL PARTS
PLFY-P80VAM.UK
PLFY-P100VAM.UK
PLFY-P125VAM.UK



No.	Part No.	Part Name	Specification	Q'ty/set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty	Price	
				PLFY-··VAM.UK					Unit	Amount
				P80	P100/P125					
1	S70 003 687	BASE DWG		1	1					
2	S70 005 688	DRUM 1 ASSY		1						
	S70 007 688	DRUM 1ASSY			1					
3	S70 006 688	DRUM 2 ASSY		1						
	S70 008 688	DRUM 2 ASSY			1					
4	S70 E01 130	LEG		2	2					
5	S70 E02 130	LEG		1	1					
6	S70 E00 130	LEG		1	1					
7	S70 E06 762	FAN MOTOR		1			MF			
	S70 E07 762	FAN MOTOR			1		MF			
8	S70 A41 105	MOTOR MOUNT		4	4					
9	S70 E00 659	INNER COVER ASSY		1						
	S70 E02 659	INNER COVER ASSY			1					
10	S70 E00 114	TURBO FAN		1						
	S70 E01 114	TURBO FAN			1					
11	S70 08K 097	SPL WASHER		1	1					
12	S70 E15 480	HEAT EXCHANGER		1						
	S70 E17 480	HEAT EXCHANGER			1					
13	S70 17J 202	THERMISTOR (LIQUID)		1	1		TH22			
14	S70 79N 202	THERMISTOR (GAS)		1	1		TH23			
15	S70 E08 401	LINEAR EXPANSION VALVE		1	1		LEV			

FUNCTIONAL PARTS
PLFY-P80VAM.UK
PLFY-P100VAM.UK
PLFY-P125VAM.UK



No.	Part No.	Part Name	Specification	Q'ty/set PLFY-··VAM.UK			Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty	Price	
				P80	P100	P125				Unit	Amount
1	S70 E02 529	DRAIN PAN		1							
	S70 E00 529	DRAIN PAN			1	1					
2	S70 A41 523	DRAIN SOCKET		1	1	1	<PART OF DRAIN PAN ASSY>				
3	S70 E01 355	DRAIN PUMP		1	1	1		DP			
4	S70 E00 266	DRAIN SENSOR		1	1	1		DS			
5	S70 31K 241	SENSOR HOLDER		1	1	1					
6	S70 E02 313	POWER BOARD		1	1	1		P.B			
7	S70 520 239	FUSE	250V 6.3A	1	1	1	<PART OF PCB>	FUSE			
8	S70 E10 310	CONTROLLER BOARD		1				I.B			
	S70 E11 310	CONTROLLER BOARD			1			I.B			
	S70 E12 310	CONTROLLER BOARD				1		I.B			
9	S70 003 503	BELL MOUTH (CONT. COVER ASSY)		1	1	1					
10	S70 E10 675	FAN GUARD		1	1	1					
11	S70 E00 202	THERMISTOR (ROOM)	1050XAP	1	1	1		TH21			
12	S70 E00 503	ELECTRICAL BOX (COVER)		1	1	1					
13	S70 521 716	TERMINAL BLOCK (POWER)	3P(L,N,⏚)	1	1	1		TB2			
14	S70 B02 716	TERMINAL BLOCK (TRANSMISSION)	3P(M1,M2,S)	1	1	1		TB5			
15	S70 17T 255	CAPACITOR	3.5μF 440V	1				C			
	S70 E02 255	CAPACITOR	7.0μF 440V		1	1		C			
16	S70 001 663	CORNER COVER		1	1	1					
17	S70 A41 524	DRAIN PLUG		1	1	1					
18	S70 A48 524	DRAIN PLUG		1	1	1					
19	S70 B01 294	ADDRESS BOARD		1	1	1		A.B			
20	S70 E00 304	ADDRESS CABLE		1	1	1					

11 OPTIONAL PARTS

11-1. Multi function casement

Part No.	PAC-SG03TM-E

11-2. Air outlet shutter plate (20sets, 2pcs / 1set)

Part No.	PAC-SG06SP-E

11-3. High efficiency filter (PAC-SG03TM-E is required in using this optional part.)

Part No.	PAC-SG01KF

Mr.SLIM™

MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE MITSUBISHI DENKI BLDG.MARUNOUCHI TOKYO100-8310 TELEX J24532 CABLE MELCO TOKYO

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