



SPLIT-TYPE, HEAT PUMP AIR CONDITIONERS

2001

No. OC253

TECHNICAL & SERVICE MANUAL**Series PLFY Ceiling Cassettes** **R407C** / **R22**

Indoor unit

[Model names]

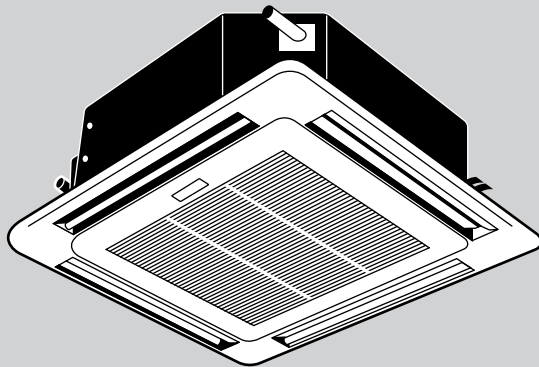
PLFY-P32VKM-A

PLFY-P40VKM-A

PLFY-P50VKM-A

PLFY-P63VKM-A

[Service Ref.]

PLFY-P32VKM-A**PLFY-P40VKM-A****PLFY-P50VKM-A****PLFY-P63VKM-A**

INDOOR UNIT

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Cautions for using with the outdoor unit which adopts R407C refrigerant.

- **Do not use the existing refrigerant piping.**
 - The old refrigerant and lubricant in the existing piping contains 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 to be used during installation indoors with keep both ends 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 ESTR , ETHER or HAB as the lubricant to coat flares and flange connection parts.**
- Use liquid refrigerant to seal the system.**
-If gas refrigerant is used to seal 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 lubricant deterioration.
 - **Use a vacuum pump with a reverse flow check valve.**
 - The vacuum pump oil may flow back into the refrigerant cycle and cause the lubricant deterioration.

[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 3.43MPa·G or over.
②	Charge hose	·Only for R407C.
		·Use pressure performance of 5.10MPa·G 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.	

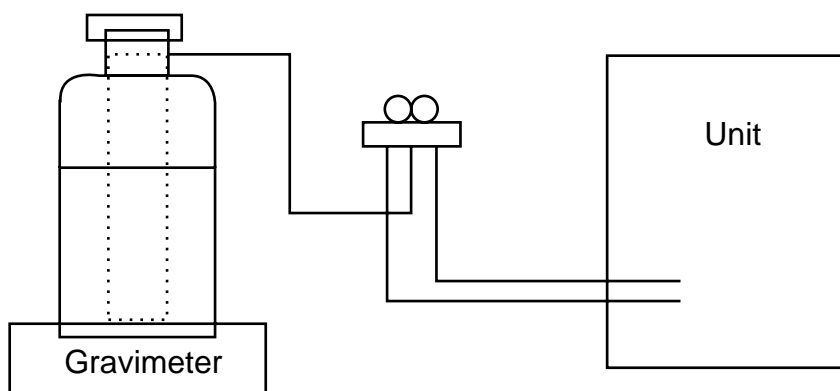
[2] Notice on repair service

- After recovering the all refrigerant in the unit, proceed to working.
- Do not release refrigerant in the air.
- After completing the repair service, recharge the cycle with the specified amount of liquid refrigerant.

[3] Refrigerant recharging

(1) Refrigerant recharging process

- ①Direct charging from the cylinder.
 - R407C cylinder are available on the market has a syphon pipe.
 - Leave the syphon pipe cylinder standing and recharge it.(By liquid refrigerant)



(2) Recharge in refrigerant leakage case

- After recovering the all refrigerant in the unit, proceed to working.
- Do not release the refrigerant in the air.
- After completing the repair service, recharge the cycle with the specified amount of liquid refrigerant.

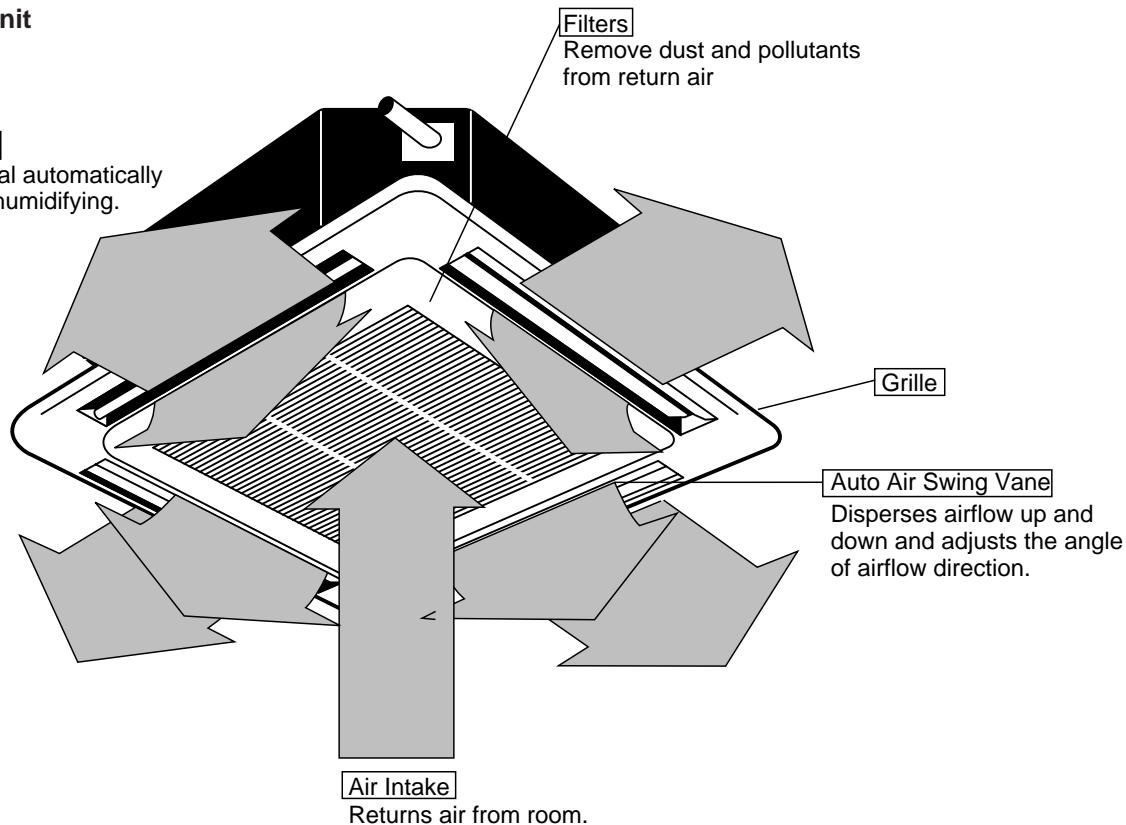
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PART NAMES AND FUNCTIONS

● Indoor (Main) Unit

Horizontal Air Outlet

Sets airflow horizontal automatically during cooling or dehumidifying.

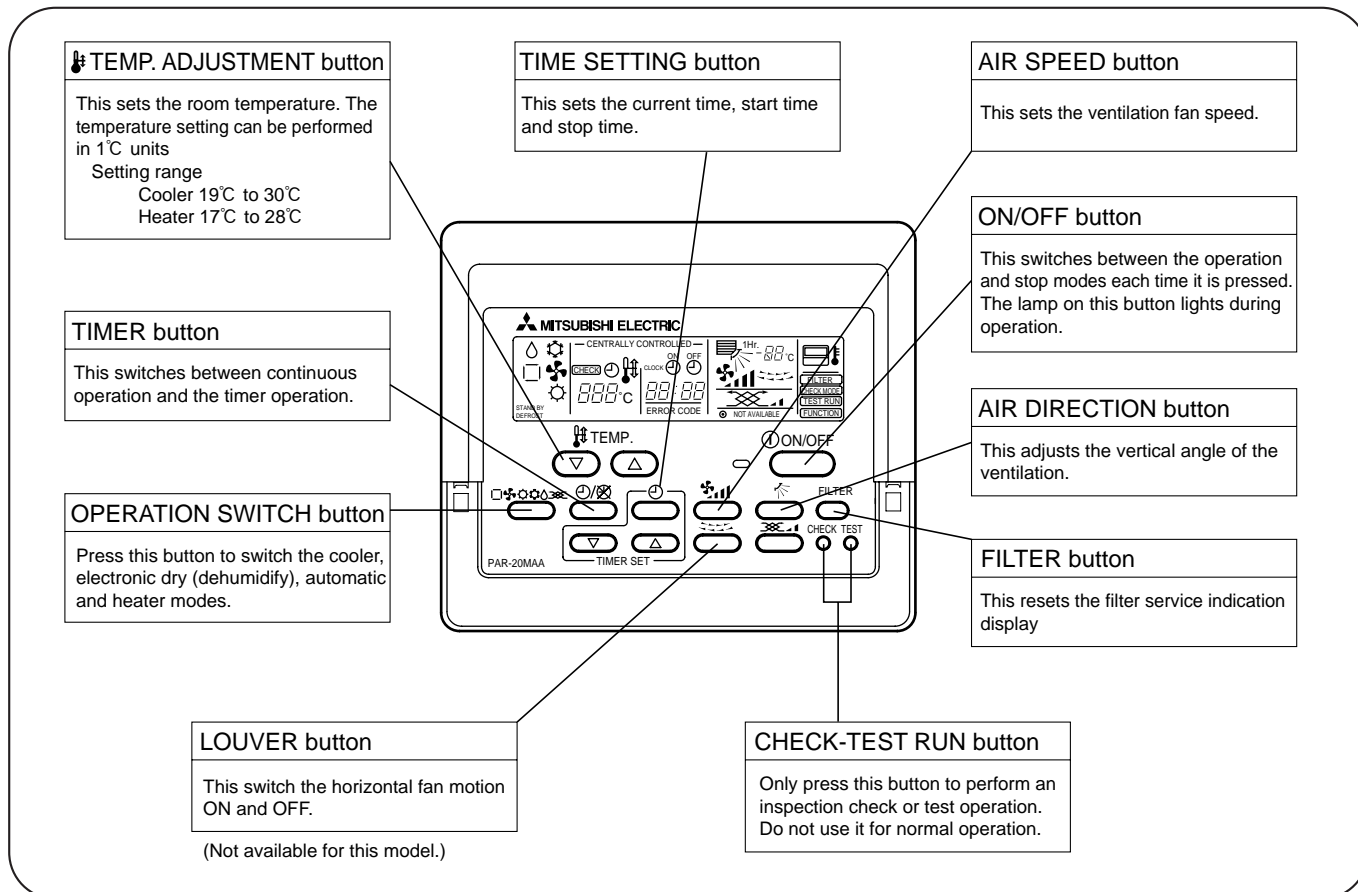


● Remote controller

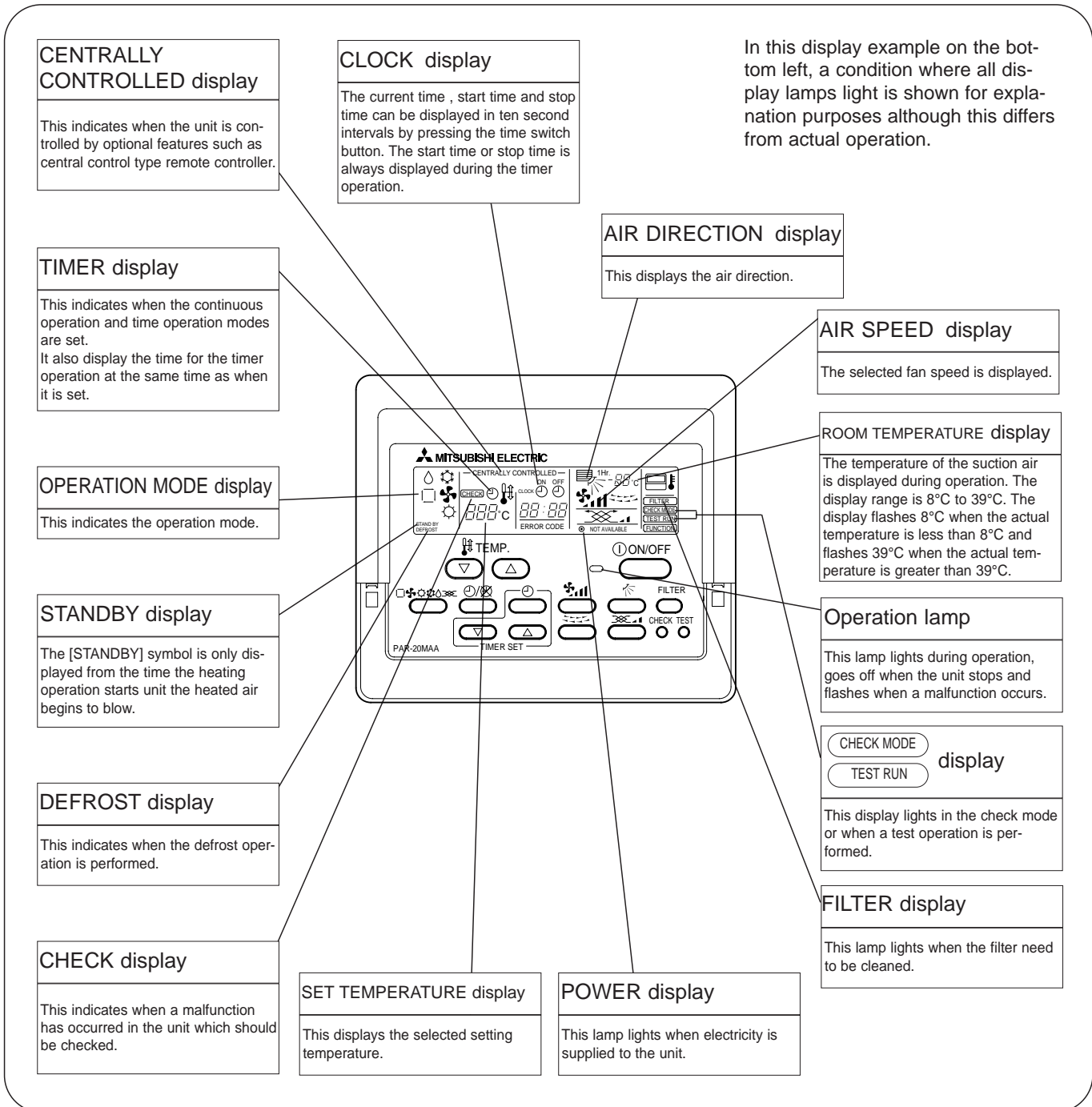
[PAR-20MAA]

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

● Operation buttons



● Display



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 TEMP. 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-P32VKM-A	PLFY-P40VKM-A	PLFY-P50VKM-A	PLFY-P63VKM-A		
Power	V·Hz	Single phase 220-230-240V 50Hz Single phase 220V 60Hz					
Cooling capacity	kW	3.6	4.5	5.6	7.1		
Heating capacity	kW	4.0	5.0	6.3	8.0		
Electric characteristic	Input	Cooling	kW	0.13	0.13	0.14	0.15
		Heating	kW	0.13	0.13	0.14	0.15
	Current	Cooling	A	0.60	0.60	0.64	0.68
		Heating	A	0.60	0.60	0.64	0.68
Exterior (munsell symbol)	—	Unit : Galvanized sheets · Standard grills : ABS resin acrylic coating Munsell<0.70Y 8.59/0.97>					
Dimensions	Height	mm	298<30>				
	Width	mm	660<760>				
	Depth	mm	660<760>				
Heat exchanger	—	Cross fin					
Fan	Fan X No	—	Turbo fan X 1				
	Air flow ※3	m ³ /min	15-14.5-14-13	16-15-14-13	17-16-15-14		
	External static pressure	Pa	0				
	Fan motor output	kW	0.030				
Insulator	—	Polyethylene sheet					
Air filter	—	PP honey comb					
Pipe dimensions	Gas side	φmm(in.)	12.7(1/2")	15.88(5/8")			
	Liquid side	φmm(in.)	6.35(1/4")	9.52(3/8")			
Unit drain pipe size	φmm	O.D.32 (PVC pipe VP-25 connectable)					
Noise level ※3	dB	35-34-32.5-31	37-35.5-34-32	39-38-36.5-35			
Product weight	kg	19<3.7>			20<3.7>		

- Note 1. Rating conditions(JIS B 8616)
Cooling : Indoor : D.B. 27°C W.B. 19.0°C
 outdoor : D.B. 35°C
Heating : Indoor : D.B. 20°C
 outdoor : D.B. 7°C W.B. 6°C

Note 2. The number indicated in < > is just for the grill.

- ※ 3. Air flow and the noise level are indicated as High-Middium 1-Middium 2-Low.

3-2. Electrical parts specifications

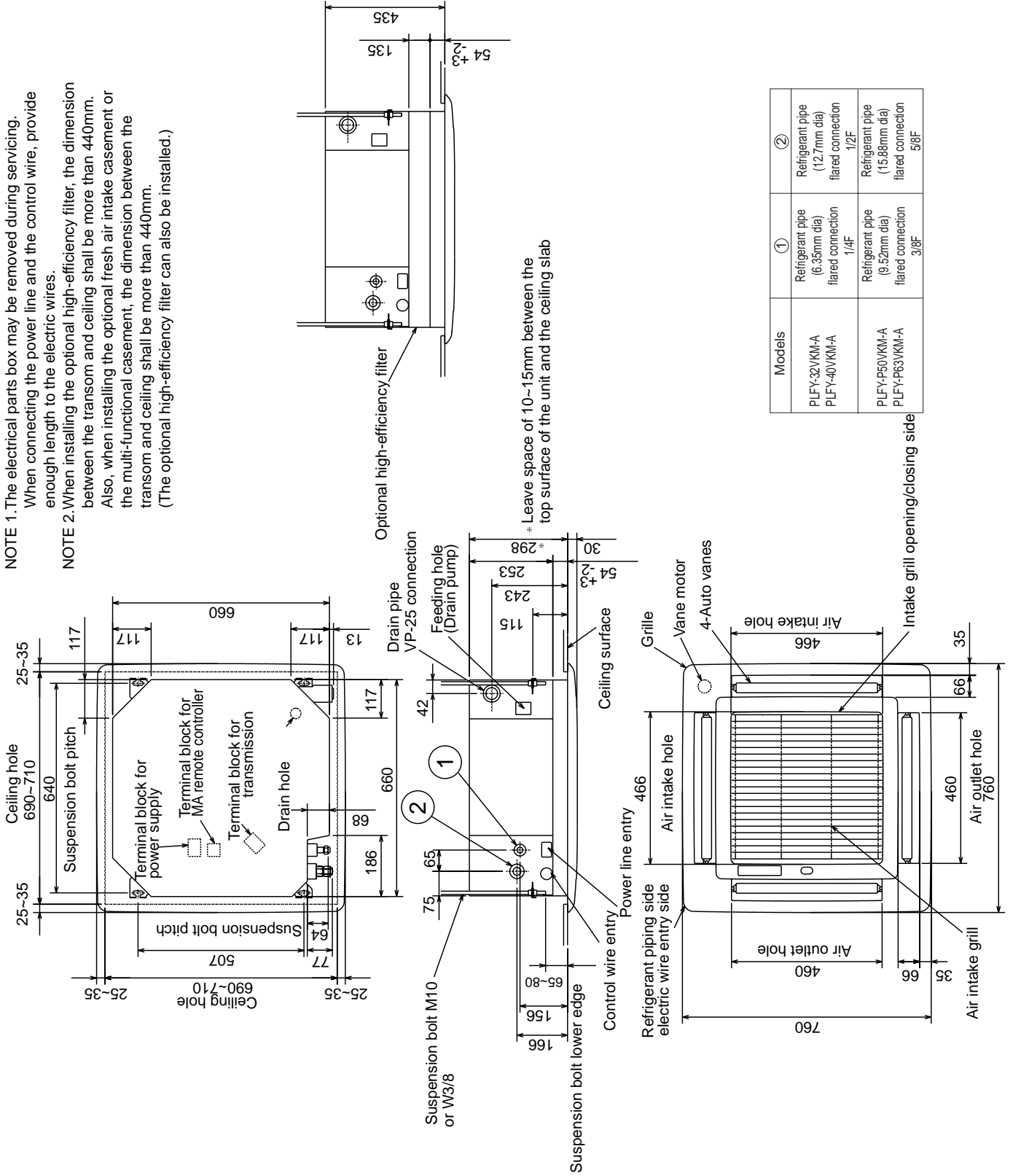
Parts name	Model	Symbol	PLFY-P32VKM-A	PLFY-P40VKM-A	PLFY-P50VKM-A	PLFY-P63VKM-A
Room temperature thermistor	TH21	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.2kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ				
Liquid pipe thermistor	TH22	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.2kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ				
Gas pipe thermistor	TH23	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.2kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ				
Fuse (Indoor controller board)	FUSE	250V 6.3A				
Fan motor (with Inner-thermostat)	MF	6-pole OUTPUT 30W PA1-V30F				
		Inner-thermostat	OFF 125°C ±5°C ON 85°C ±20°C			
Fan motor capacitor	C	2.5μF x 400V				
Vane motor (with limit switch)	MV	MC8 200V-240V 2.5/2W 5/6R.P.M				
Drain-up mechanism	DP	PCD-4N230ME INPUT 17/15W 36 ℓ /Hr				
Drain sensor	DS	Heater resistance 0°C/6kΩ, 10°C/3.9kΩ, 20°C/2.6kΩ, 25°C/2.2kΩ, 30°C/1.8kΩ, 40°C/1.3kΩ				
Linear expansion valve	LEV	DC12V Stepping motor drive port dimension 3.2 Ω (0~2000pulse) EDM-402ME				
Electric heater (Condensation proof)	H2	240V 28.8W				
Power supply terminal block	TB2	(L,N,⊕) 330V 30A				
Transmission terminal block	TB5	(M1,M2,S) 250V 20A				
MA remote controller terminal block	TB15	(1,2) 250V 10A				

PLFY-P32VKM-A
 PLY-P40VKM-A
 PLY-P50VKM-A
 PLY-P63VKM-A

Unit : mm

NOTE 1. The electrical parts box may be removed during servicing. When connecting the power line and the control wire, provide enough length to the electric wires.

NOTE 2. When installing the optional high-efficiency filter, the dimension between the transom and ceiling shall be more than 440mm. Also, when installing the optional fresh air intake casement or the multi-functional casement, the dimension between the transom and ceiling shall be more than 440mm. (The optional high-efficiency filter can also be installed.)



Models	①	②
PLFY-32VKM-A PLFY-40VKM-A	Refrigerant pipe (6.35mm dia) flared connection 1/4F	Refrigerant pipe (12.7mm dia) flared connection 1/2F
PLFY-P50VKM-A PLFY-P63VKM-A	Refrigerant pipe (9.52mm dia) flared connection 3/8F	Refrigerant pipe (15.88mm dia) flared connection 5/8F

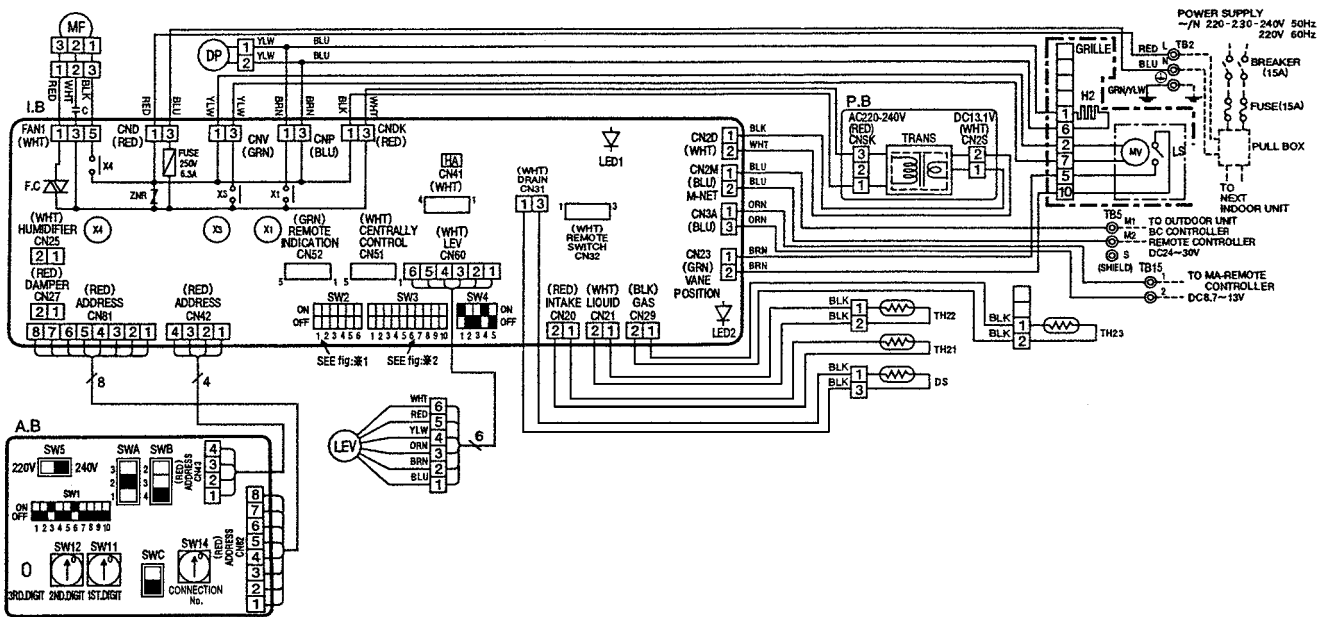
PLFY-P32VKM-A, PLYF-P40VKM-A
 PLYF-P50VKM-A, PLYF-P63VKM-A

LEGEND

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
I.B	INDOOR CONTROLLER BOARD	TH21	THERMISTOR ROOM TEMPERATURE DETECTION (0°C/15kΩ, 25°C/ 5.4kΩ)	A.B	CIRCUIT BOARD (ADDRESS)
CN25	CONNECTOR HUMIDIFIER	TH22	PIPE TEMPERATURE DETECTION/LIQUID (0°C/15kΩ, 25°C/ 5.4kΩ)	SW1	SWITCH MODE SELECTION
CN27	DAMPER	TH23	PIPE TEMPERATURE DETECTION / GAS (0°C/15kΩ, 25°C/ 5.4kΩ)	SW5	VOLTAGE SELECTION
CN32	REMOTE SWITCH			SW11	ADDRESS SETTING 1ST DIGIT
CN41	HA TERMINAL-A			SW12	ADDRESS SETTING 2ND DIGIT
CN51	CENTRALLY CONTROL			SW14	CONNECTION No.
CN52	REMOTE INDICATION	P.B	INDOOR POWER BOARD	SWA	CEILING HEIGHT SELECTOR
SW2	SWITCH CAPACITY CODE	DS	DRAIN SENSOR	SWB	DISCHARGE OUTLET NUMBER SELECTOR
SW3	MODE SELECTION	DP	DRAIN WATER LIFTING-UP MACH.	SWC	OPTION SELECTOR
SW4	MODEL SELECTION	MF	FAN MOTOR (WITH INNER THERMO.)		
ZNR	VARIATOR	C	CAPACITOR (FAN MOTOR)		
FUSE	FUSE (6.3A)	MV	VANE MOTOR		
F.C	FAN PHASE CONTROL	LS	LIMIT SWITCH		
X1	AUX. RELAY DRAIN WATER LIFTING-UP MACH.	H2	DEW PREVENTION HEATER		
X3	VANE	LEV	LINEAR EXPANSION VALVE		
X4	FAN MOTOR	TB2	TERMINAL POWER SUPPLY		
LED1	POWER SUPPLY (LB)	TB5	BLOCK TRANSMISSION		
LED2	POWER SUPPLY (LB)	TB15	MA-REMOTE CONTROLLER		

LED on Indoor board for service

Mark	Meaning	Function
LED1	Main power supply	Main power supply (Indoor unit : 220-230-240V) power on → lamp is lit.
LED2	Power supply for MA-Remote controller	Power supply for MA-Remote controller on → lamp is lit.



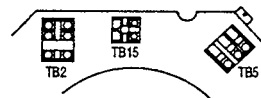
(fig : ※1)

MODELS	SW2	MODELS	SW2
P32	ON OFF 1 2 3 4 5 6	P50	ON OFF 1 2 3 4 5 6
P40	ON OFF 1 2 3 4 5 6	P63	ON OFF 1 2 3 4 5 6

(fig : ※2)

MODELS	SW3
P32, P40	ON OFF 1 2 3 4 5 6 7 8 9 10
P50, P63	ON OFF 1 2 3 4 5 6 7 8 9 10

Position of TB2, TB5, TB15, (For Control box)



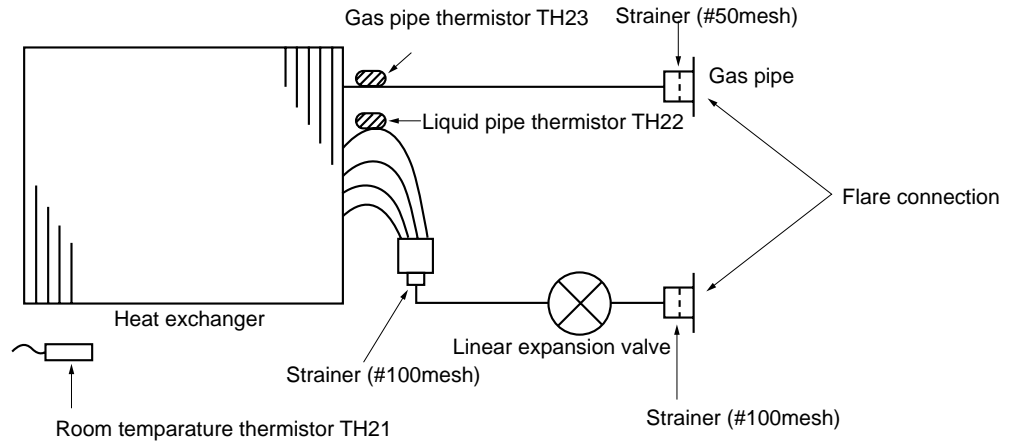
Note

- 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 M-NET, please connect to TB5. (Transmission line is non-polar.)
- Symbol [S] of TB5 is the shield wire connection.
- Symbol used in wiring diagram are, ⊙: TERMINAL BED □□□: CONNECTOR.
- The setting of the SW2 dip switches differs in the capacity. For the detail, refer to the fig: ※1.
- Please set the switch SW5 according to the power supply.
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.

6

REFRIGERANT SYSTEM DIAGRAM

PLFY-P32VKM-A
 PLY-P40VKM-A
 PLY-P50VKM-A
 PLY-P63VKM-A

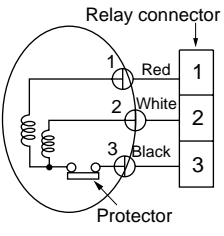
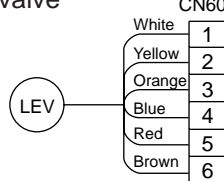
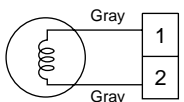
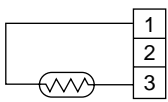


Capacity	PLFY-P32VKM-A PLFY-P40VKM-A	PLFY-P50VKM-A PLFY-P63VKM-A
Gas pipe	φ12.7(1/2")	φ15.88(5/8")
Liquid pipe	φ6.35(1/4")	φ9.52(3/8")

7

TROUBLE SHOOTING

7-1. How to check the parts PLFY-P•VKM-A

Parts name	Check points														
Room temperature thermistor (TH21) Liquid pipe thermistor (TH22) Gas pipe thermistor (TH23)	Disconnect the connector, then measure the resistance using a tester. (Surrounding temperature 10°C~30°C) <table border="1" style="margin-left: 20px;"> <tr> <td>Normal</td> <td>Abnormal</td> </tr> <tr> <td>4.3kΩ~9.6kΩ</td> <td>Open or short</td> </tr> </table> (Refer to the next page for a detail.)	Normal	Abnormal	4.3kΩ~9.6kΩ	Open or short										
Normal	Abnormal														
4.3kΩ~9.6kΩ	Open or short														
Vane motor	Measure the resistance between the terminals using a tester. (Surrounding temperature 20°C~30°C) <table border="1" style="margin-left: 20px;"> <tr> <td>Normal</td> <td>Abnormal</td> </tr> <tr> <td>Approx.14kΩ</td> <td>Open or short</td> </tr> </table>	Normal	Abnormal	Approx.14kΩ	Open or short										
Normal	Abnormal														
Approx.14kΩ	Open or short														
Fan motor 	Measure the resistance between the terminals using a tester. <table border="1" style="margin-left: 20px;"> <tr> <td rowspan="2">Motor terminal or Relay connector</td> <td>Normal</td> <td rowspan="2">Abnormal</td> </tr> <tr> <td>PLFY-P•VKM P32,P40,P50,P63</td> </tr> <tr> <td>Red-Black</td> <td>136.2Ω</td> <td rowspan="2">Open or short</td> </tr> <tr> <td>White-Black</td> <td>197.5Ω</td> </tr> </table>	Motor terminal or Relay connector	Normal	Abnormal	PLFY-P•VKM P32,P40,P50,P63	Red-Black	136.2Ω	Open or short	White-Black	197.5Ω					
Motor terminal or Relay connector	Normal		Abnormal												
	PLFY-P•VKM P32,P40,P50,P63														
Red-Black	136.2Ω	Open or short													
White-Black	197.5Ω														
Linear expansion valve 	Disconnect the connector then measure the resistance valve using a tester. <table border="1" style="margin-left: 20px;"> <tr> <td colspan="4">Normal</td> <td rowspan="2">Abnormal</td> </tr> <tr> <td>(1)-(5) White-Red</td> <td>(2)-(6) Yellow-Blown</td> <td>(3)-(5) Orange-Red</td> <td>(4)-(6) Blue-Brown</td> </tr> <tr> <td colspan="4">150Ω ±10%</td> <td>Open or short</td> </tr> </table> (Refer to the next page for a detail.)	Normal				Abnormal	(1)-(5) White-Red	(2)-(6) Yellow-Blown	(3)-(5) Orange-Red	(4)-(6) Blue-Brown	150Ω ±10%				Open or short
Normal				Abnormal											
(1)-(5) White-Red	(2)-(6) Yellow-Blown	(3)-(5) Orange-Red	(4)-(6) Blue-Brown												
150Ω ±10%				Open or short											
Drain-up mechanism 	Measure the resistance between the terminals using a tester.(Surrounding temperature : 20°C~30°C) <table border="1" style="margin-left: 20px;"> <tr> <td>Normal</td> <td>Abnormal</td> </tr> <tr> <td>327Ω</td> <td>Open or short</td> </tr> </table>	Normal	Abnormal	327Ω	Open or short										
Normal	Abnormal														
327Ω	Open or short														
Drain sensor 	Measure the resistance after 3 minutes have passed since the power supply was intercepted. (Surrounding temperature : 0°C ~ 60°C) <table border="1" style="margin-left: 20px;"> <tr> <td>Normal</td> <td>Abnormal</td> </tr> <tr> <td>0.6kΩ~6.0kΩ</td> <td>Open or short</td> </tr> </table> (Refer to the next page for a detail.)	Normal	Abnormal	0.6kΩ~6.0kΩ	Open or short										
Normal	Abnormal														
0.6kΩ~6.0kΩ	Open or short														

<Thermistor characteristic graph>

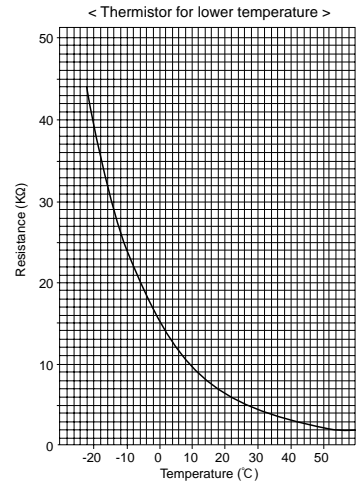
Thermistor for lower temperature

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

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

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

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

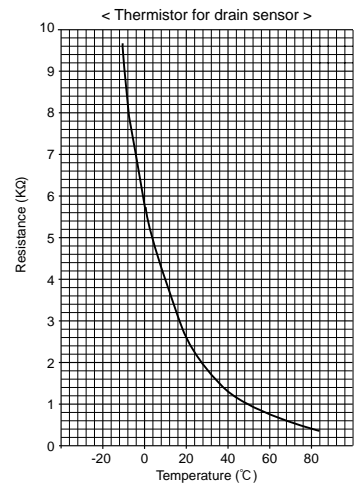


Thermistor for drain sensor

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

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

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

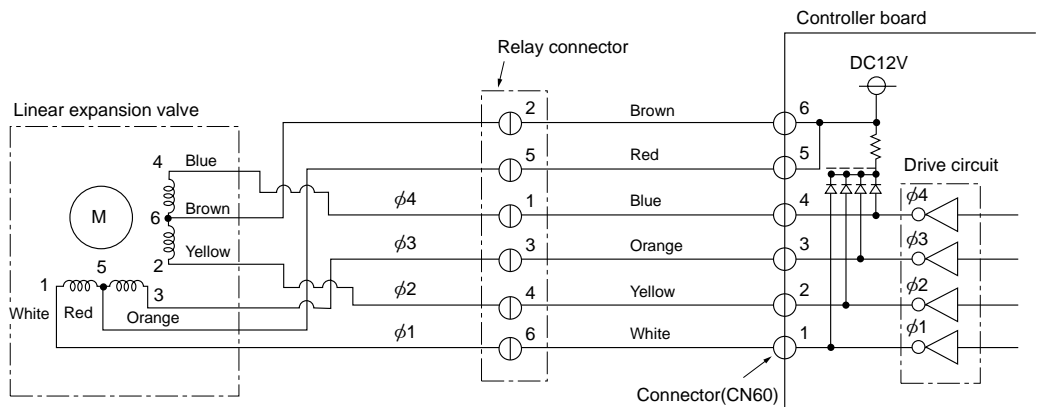


Linear expansion valve

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>

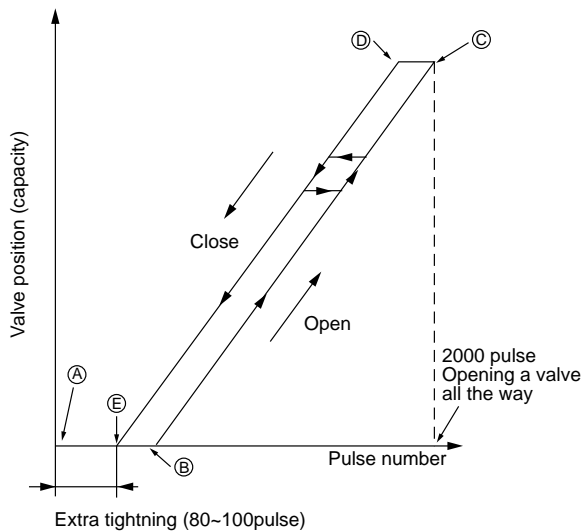
Output (Phase)	Output			
	1	2	3	4
φ1	ON	OFF	OFF	ON
φ2	ON	ON	OFF	OFF
φ3	OFF	ON	ON	OFF
φ4	OFF	OFF	ON	ON

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 locks and vibrates.

② Linear expansion valve operation

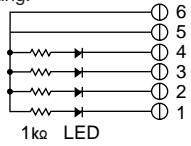
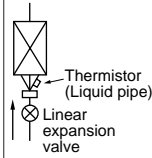


- * When the switch is turned on, 2200 pulse closing valve signal will be send till it goes to ① point in order to define the valve position.


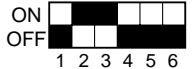
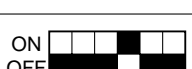



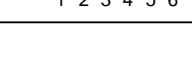

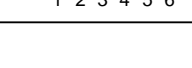
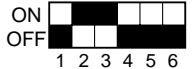
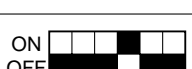



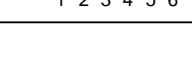

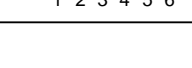
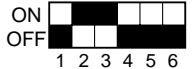
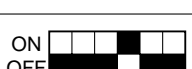



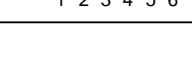

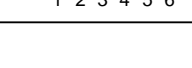


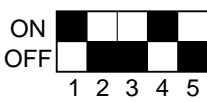

When the valve move smoothly, there is no noise or vibration occurring from the linear expansion valve : however, when the pulse number moves from ② to ① or when the valve is locked, more noise can be heard than normal situation.

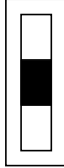
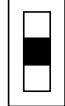
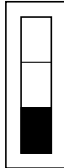
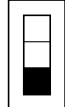

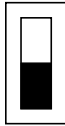
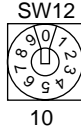


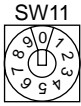


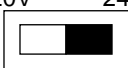
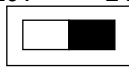
- * Noise can be detected by placing the ear against the screw driver handle while putting the screw driver to the linear expansion valve.

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.  Pulse signal will be sent out for 10 seconds as soon as the main switch is turn on. If there is LED 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 $150 \pm 10\%$.	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.

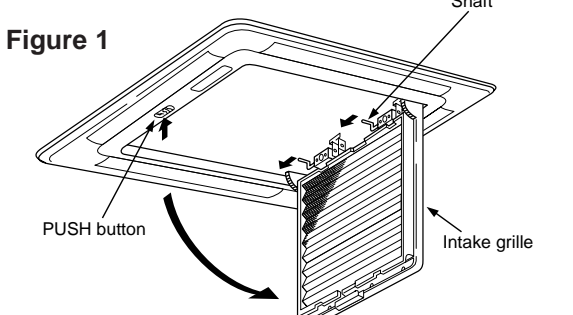
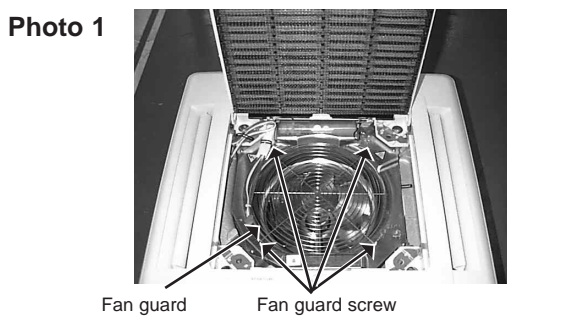
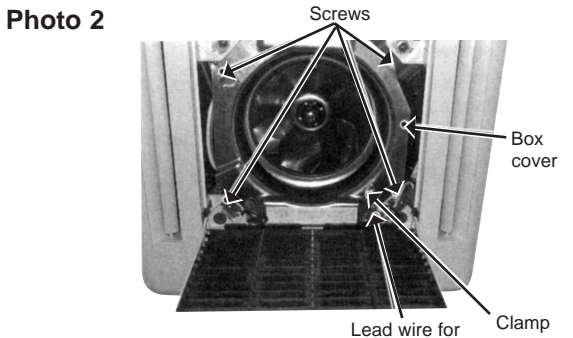
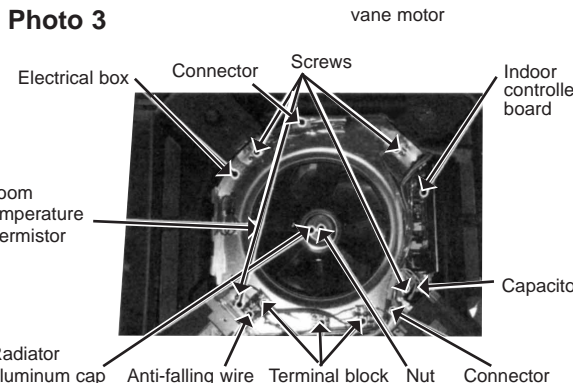
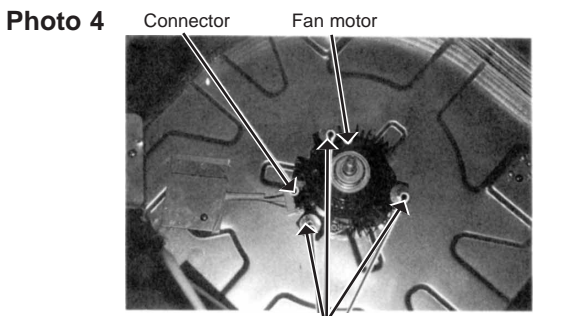
7-2. FUNCTION OF DIP SWITCH

Switch	Pole	Function	Operation by switch		Remarks												
			ON	OFF													
SW1 Mode Selection	1	Thermistor <intake temperature detection> position	Built-in remote controller	Indoor unit	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Address board</div> <At delivery>  Note : *1 Fan operation at Heating mode. *2 Heater thermo 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.												
	2	Filter clogging detection	Provided	Not provided													
	3	Filter cleaning	2,500hr	100hr													
	4	Fresh air intake	Effective	Not effective													
	5	Remote indication switching	Thermostat ON signal indication	Fan output indication													
	6	Humidifier control	Always operated while the heat is ON *1	Operated depends on the condition *2													
	7	Air flow set in case of	Low *3	Extra low *3													
	8	Heat thermostat OFF	Setting air flow *3	Depends on SW1-7													
	9	Auto restart function	Effective	Not effective													
	10	Power ON/OFF	Effective	Not effective													
SW2 Capacity code setting	1~6	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>MODELS</th> <th>SW 2</th> <th>MODELS</th> <th>SW 2</th> </tr> </thead> <tbody> <tr> <td>PLFY-P32VKM-A</td> <td>ON  OFF </td> <td>PLFY-P50VKM-A</td> <td>ON  OFF </td> </tr> <tr> <td>PLFY-P40VKM-A</td> <td>ON  OFF </td> <td>PLFY-P63VKM-A</td> <td>ON  OFF </td> </tr> </tbody> </table>			MODELS	SW 2	MODELS	SW 2	PLFY-P32VKM-A	ON  OFF 	PLFY-P50VKM-A	ON  OFF 	PLFY-P40VKM-A	ON  OFF 	PLFY-P63VKM-A	ON  OFF 	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Indoor controller board</div> Set while the unit is off. <At delivery> Set for each capacity.
MODELS	SW 2	MODELS	SW 2														
PLFY-P32VKM-A	ON  OFF 	PLFY-P50VKM-A	ON  OFF 														
PLFY-P40VKM-A	ON  OFF 	PLFY-P63VKM-A	ON  OFF 														
SW3 Function Selection	1	Heat pump / Cooling only	Cooling only	Heat pump	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Indoor controller board</div> Set while the unit is off. <At delivery> PLFY-P32VKM-A PLFY-P40VKM-A  PLFY-P50VKM-A PLFY-P63VKM-A  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.												
	2	Louver	Available	Not available													
	3	Vane	Available	Not available													
	4	Vane swing function	Available	Not available													
	5	Vane horizontal angle	Second setting	First setting													
	6	Vane cooling limit angle setting *4	Horizontal angle	Down B, C													
	7	Indoor linear expansion valve opening	Effective	Not effective													
	8	Heat 4degrees up	Not effective	Effective													
	9	Superheat setting temperature *5	9(5)degrees	6(2)degrees													
	10	Sub cool setting temperature	15degrees	10degrees													
SW4 Unit Selection	1~5				<div style="border: 1px solid black; padding: 2px; display: inline-block;">Indoor controller board</div> Set while the unit is off. <At delivery> 												

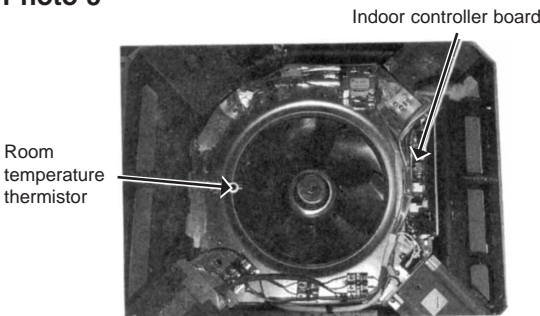
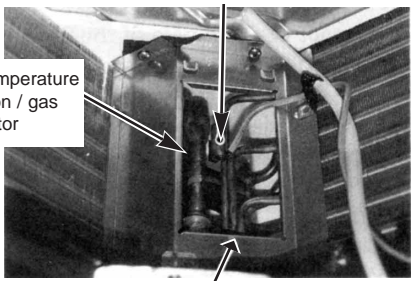
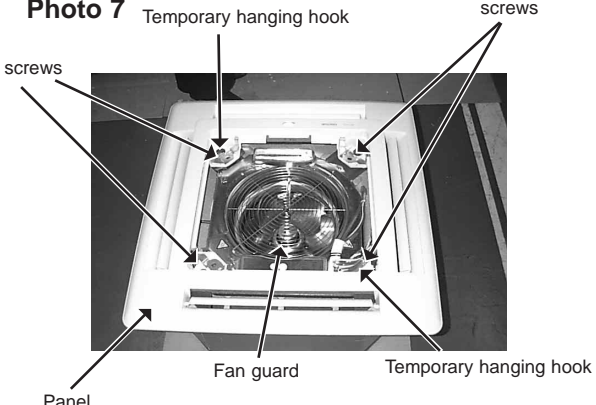
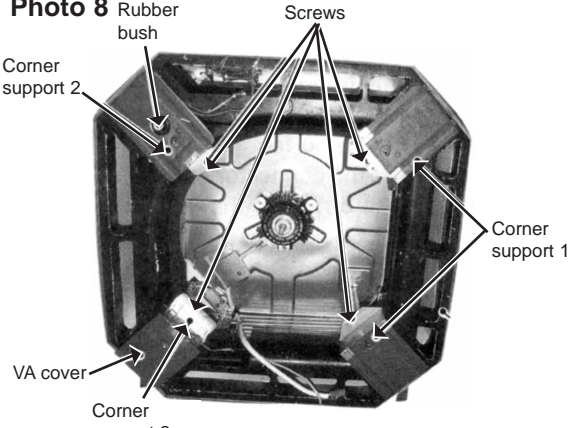
Switch	Pole	Operation by switch	Remarks																	
SWA Ceiling height selector	1~3	<p>(High ceiling) 3 (Standard) 2 (Silent) 1</p>  <p>* Ceiling height can be changed depends on SWB setting.</p> <table border="1" data-bbox="571 470 1082 645"> <thead> <tr> <th colspan="2" rowspan="2"></th> <th colspan="3">SWA</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> </tr> </thead> <tbody> <tr> <th rowspan="2">SWB</th> <th>4 4 direction</th> <td>2.7m</td> <td>2.7m</td> <td>3.0m</td> </tr> <tr> <th>3 3 direction</th> <td>2.4m</td> <td>3.0m</td> <td>3.3m</td> </tr> </tbody> </table>			SWA			1	2	3	SWB	4 4 direction	2.7m	2.7m	3.0m	3 3 direction	2.4m	3.0m	3.3m	<p>Address board</p> <p><At delivery></p> 
		SWA																		
		1	2	3																
SWB	4 4 direction	2.7m	2.7m	3.0m																
	3 3 direction	2.4m	3.0m	3.3m																
SWB Discharge outlet number selector	3	<p>(Not used) 2 (3 direction) 3 (4 direction) 4</p> 	<p>Address board</p> <p><At delivery></p> 																	
SWC Option selector	2	<p>Option Standard</p>  <p>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.</p>	<p>Address board</p> <p><At delivery></p> <p>Option Standard</p> 																	
SW11 1st digit address setting SW12 2nd digit address setting	Rotary switch	  <p>Address setting should be done when M-NET Remote controller is being used.</p>	<p>Address board</p> <p>Address can be set while the unit is stopped.</p> <p><At delivery></p>  																	
SW14 Connection No. setting	Rotary switch	 <p>This is the switch to be used when the indoor unit is operated with R2 series outdoor unit as a set.</p>	<p>Address board</p> <p><At delivery></p> 																	
SW5 Voltage Selection	2	<p>220V 240V</p>  <p>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.</p>	<p>Address board</p> <p><At delivery></p> <p>220V 240V</p> 																	

**INDOOR UNIT
PLFY-P63VKM-A**

Be careful on removing heavy parts.

OPERATING PROCEDURE	PHOTOS&ILLUSTRATIONS
<p>1. Removing the air intake grille</p> <ol style="list-style-type: none"> (1) Press the PUSH button. (2) Open the intake grille 90°. (3) Remove the chip. (4) Slide the shaft in the hinge to the left and remove the intake grille. 	<p>Figure 1</p> 
<p>2. Removing the fan guard</p> <ol style="list-style-type: none"> (1) Open the intake grille. (2) Remove the 4 screws of the fan guard. 	<p>Photo 1</p> 
<p>3. Removing the electrical parts box</p> <ol style="list-style-type: none"> (1) Remove the fan guard. (2) Disconnect the lead wire of the vane motor from the clamp, and disconnect the red connector (10P). (3) Remove 2 of 4 screws from the electrical parts cover. (4) Remove the electrical parts cover. (5) Disconnect the following connectors from the box. <ul style="list-style-type: none"> Red (3P) for the fan motor White (2P) for pipe temperature detection / liquid thermistor Black (2P) for pipe temperature detection / gas thermistor Blue (2P) for the drain pump White (3P) for the drain sensor (6) Disconnect the green anti-falling wire of the electrical parts box. (7) Remove 3 of 4 screws from the electrical parts box, and loosen the other screw. (8) Pull out the electrical parts box. <ul style="list-style-type: none"> Electrical parts inside the box Terminal block Indoor fan capacitor Room temperature thermistor Indoor controller board 	<p>Photo 2</p>  <p>Photo 3</p> 
<p>4. Removing the fan motor</p> <ol style="list-style-type: none"> (1) Remove the fan guard. (2) Remove the turbo-fan nut and radiator aluminum cap. (3) Pull out the turbo fan. (4) Disconnect the connector of the fan motor lead wire. (5) Remove the 3nuts of fan motor. 	<p>Photo 4</p> 



OPERATING PROCEDURE	PHOTOS&ILLUSTRATIONS
<p>5. Removing the room temperature thermistor</p> <ol style="list-style-type: none">(1) Remove the fan guard.(2) Remove the electrical box cover(3) Remove the holder and the room temperature thermistor by pulling the catch.(4) Disconnect the red connector, CN20, on the indoor controller board.	<p>Photo 5</p>  <p>Indoor controller board</p> <p>Room temperature thermistor</p>
<p>6. Removing the pipe temperature detection / liquid thermistor and the pipe temperature detection / gas thermistor</p> <ol style="list-style-type: none">(1) Remove the fan guard.(2) Remove the electrical box cover.(3) Remove the electrical box.(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 the each 2-pin white(liquid) and black(gas) connector.	<p>Photo 6</p>  <p>Pipe temperature detection / liquid thermistor</p> <p>Pipe temperature detection / gas thermistor</p> <p>Mounting hole</p>
<p>7. Removing the panel</p> <ol style="list-style-type: none">(1) Open the intake grille.(2) Disconnect the connector the vane motor.(3) Remove 4 screws of the panel.(4) Pulling the temporary hanging hook, remove the panel.	<p>Photo 7</p>  <p>Temporary hanging hook</p> <p>screws</p> <p>screws</p> <p>Panel</p> <p>Fan guard</p> <p>Temporary hanging hook</p>
<p>8. Removing the drain pan</p> <ol style="list-style-type: none">(1) Remove the panel.(2) Remove the fan guard.(3) Remove the rubber bushing.(4) Drain the remaining water in the drain pan.(5) Remove the electrical box cover.(6) Remove the electrical box.(7) Remove the screw of the V.A. cover, and remove the V.A. cover.(8) Remove each screw of the corner supports 1,2, and 3, and remove the corner supports 1,2 and 3.(9) Pull out the drain pan. *Pull the left and right of the pan gradually. Be careful not to crack or damage the pan.	<p>Photo 8</p>  <p>Rubber bush</p> <p>Screws</p> <p>Corner support 2</p> <p>Corner support 1</p> <p>VA cover</p> <p>Corner support 3</p>

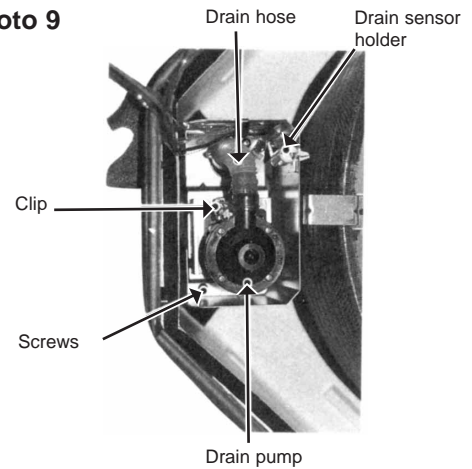
OPERATING PROCEDURE

9. Removing the drain pump and drain sensor

- (1) Remove the panel.
- (2) Remove the fan guard.
- (3) Remove the electrical parts cover.
- (4) Remove the electrical parts box.
- (5) Remove the drain pan.
- (6) Remove 4 screws of the drain pump.
- (7) Pulling the clip of the drain hose, pull out the drain hose from the drain pump.
- (8) Remove the drain sensor and the holder.
- (9) Pull out the drain pump.

PHOTOS&ILLUSTRATIONS

Photo 9



10. Removing the heat exchanger

- (1) Remove the panel.
- (2) Remove the fan guard.
- (3) Remove the electrical parts cover.
- (4) Remove the electrical parts box.
- (5) Remove the drain pan.
- (6) Remove the turbo fan.
- (7) Remove the screw of the coil support A.
- (8) Remove 2 screws of the coil support B.
- (9) Remove 2 screws of the coil.
- (10) Remove 4 screws of the piping cover of the outer wall, and pull out the piping cover.

Photo 10

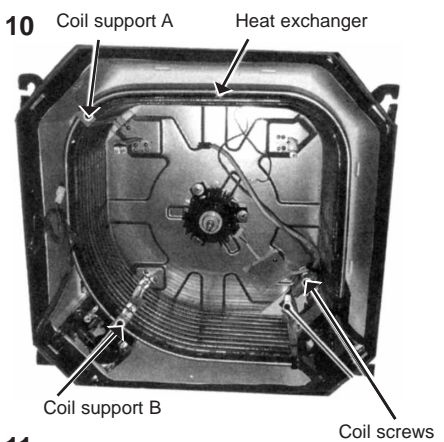
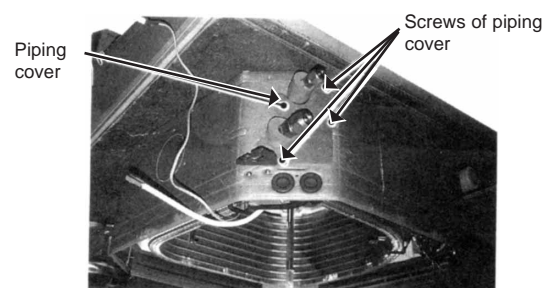
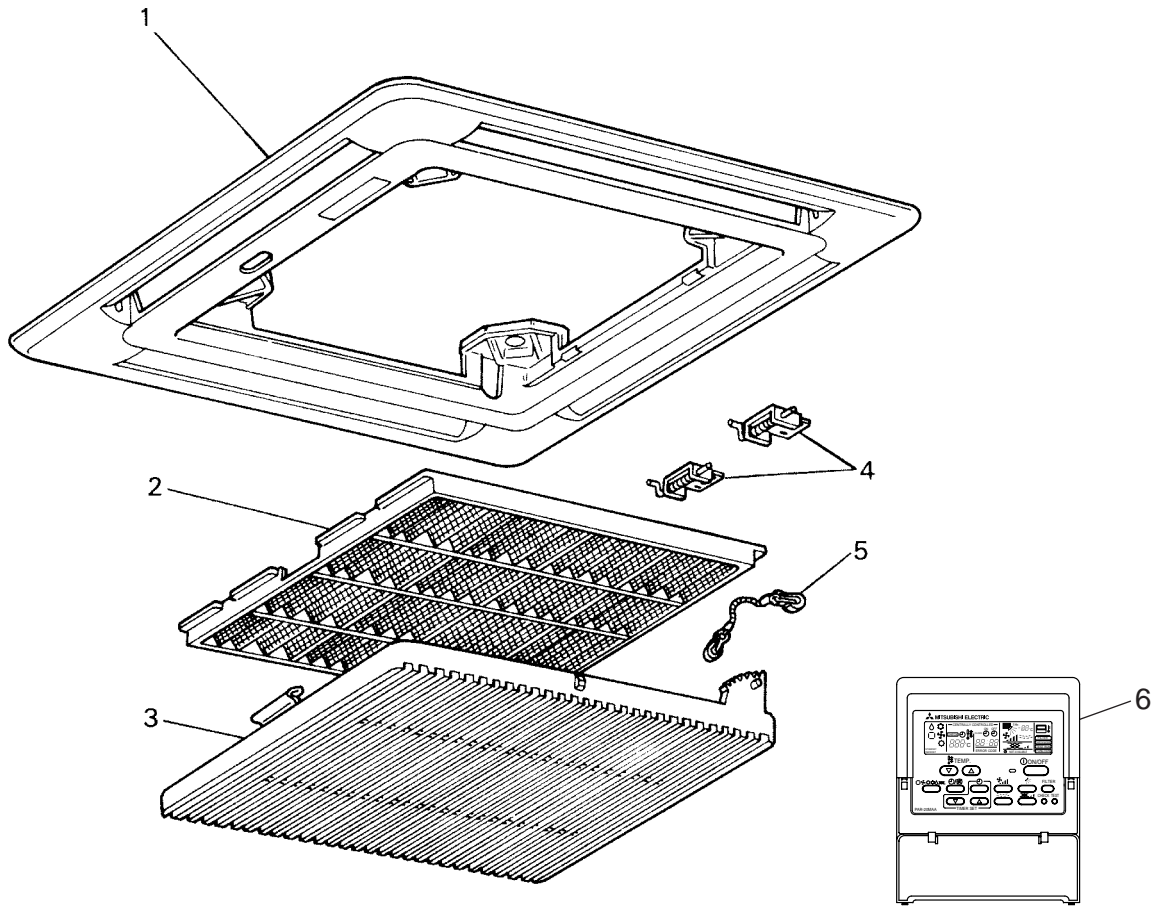


Photo 11

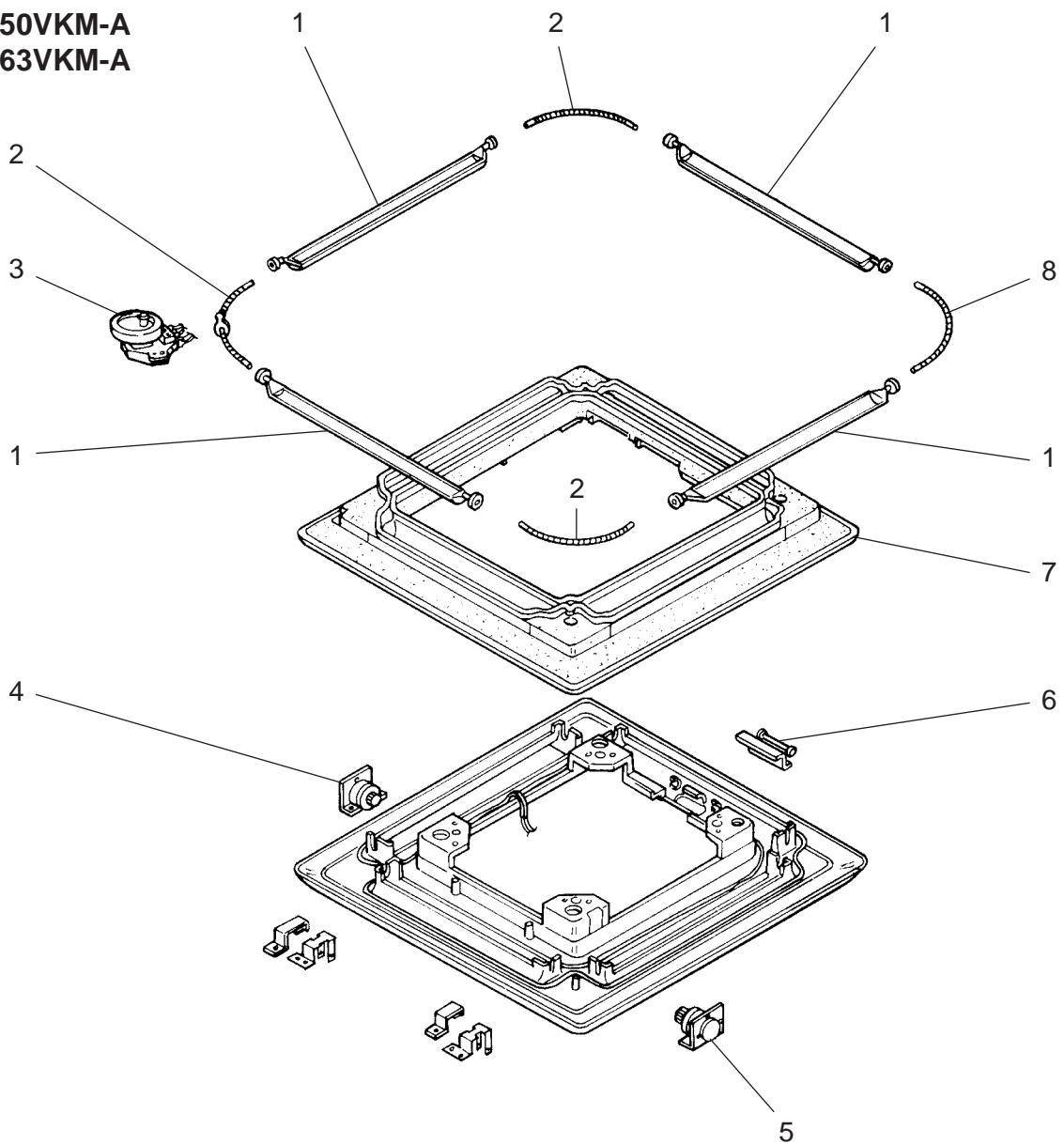


PANEL PARTS
 PLFY-P32VKM-A
 PLFY-P40VKM-A
 PLFY-P50VKM-A
 PLFY-P63VKM-A



No.	Part No.	Part Name	Specification	Q'ty/set	Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PLFY-P32/P40/ P50/P63 VKM-A				Unit	Amount
1	R01 29H 003	AIR OUTLET GRILLE		1					
2	R01 29H 500	AIR FILTER		1					
3	R01 29H 691	INTAKE GRILLE		1					
4	R01 29H 061	HINGE		2					
5	—	GRILLE HANGER		1	(BG88P485H02)				
6	—	REMOTE CONTROLLER	(PAR-20MAA)	1		R.B			

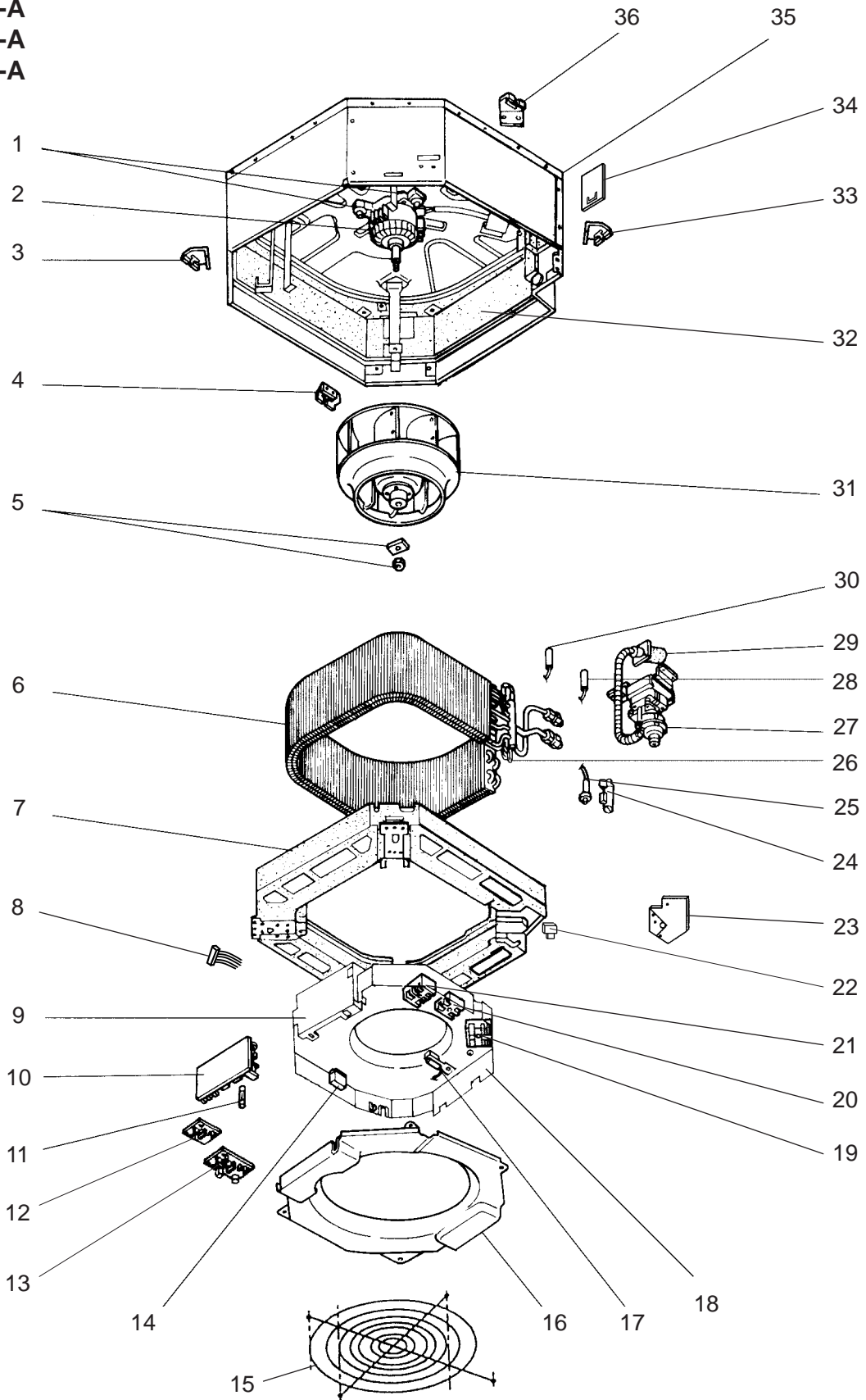
PANEL PARTS
PLFY-P32VKM-A
PLFY-P40VKM-A
PLFY-P50VKM-A
PLFY-P63VKM-A



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

No.	Part No.	Part Name	Specification	Q'ty/set	Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PLFY-P32/P40 /P50/P63 VKM-A				Unit	Amount
1	R01 29H 002	AUTO VANE		4					
2	R01 29H 063	SPRING JOINT 1		1	<3/SET>				
3	R01 29H 223	VANE MOTOR		1		MV			
4	R01 29H 041	GRILLE GEAR (LEFT)		1					
5	R01 29H 040	GRILLE GEAR (RIGHT)		1					
6	R01 29H 056	PUSH BUTTON		1					
7	R01 29H 085	AIR GUIDE		1					
8	R01 31H 063	SPRING JOINT 3		1					
⑨	R01 E00 673	SCREW ASSY		1					

FUNCTIONAL PARTS
PLFY-P32VKM-A
PLFY-P40VKM-A
PLFY-P50VKM-A
PLFY-P63VKM-A



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

No.	Part No.	Part Name	Specification	Q'ty/set				Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PLFY- - VKM-A							Unit	Amount
				P32	P40	P50	P63					
1	R01 29H 105	MOTOR MOUNT		3	3	3	3					
2	T7W E00 762	FAN MOTOR	PAI-V30F	1	1	1	1		MF			
3	—	LEG		1	1	1	1	(BG00T672G09)				
4	—	LEG		1	1	1	1	(BG00T672G10)				
5	R01 08K 097	SPL WASHER		1	1	1	1					
6	R01 55W 480	HEAT EXCHANGER		1	1							
	R01 57W 480	HEAT EXCHANGER				1						
	R01 58W 480	HEAT EXCHANGER					1					
7	T7W E01 529	DRAIN PAN		1	1	1	1					
8	R01 71N 304	ADDRESS CABLE		1	1	1	1					
9	—	CONTROLLER CASE		1	1	1	1	(BG25J080H01)				
10	T7W E10 310	INDOOR CONTROLLER BOARD		1	1	1	1		I.B			
11	T7W 520 239	FUSE	250V 6.3A	1	1	1	1		FUSE			
12	T7W B01 294	ADDRESS BOARD		1	1	1	1		A.B.			
13	R01 E02 313	POWER BOARD		1	1	1	1		P.B			
14	R01 29H 255	CAPACITOR	2.5 μ F 400V	1	1	1	1		C			
15	T7W 29H 675	FAN GUARD		1	1	1	1					
16	—	ELECTRICAL PARTS COVER		1	1	1	1	(BG00A662G21)				
17	T7W E10 202	ROOM TEMPERATURE THERMISTOR		1	1	1	1		TH21			
18	—	BELL MOUTH		1	1	1	1	(BG00L601G26)				
19	T7W E00 716	TERMINAL BLOCK	3P(M1, M2, S)	1	1	1	1		TB5			
20	T7W 512 716	TERMINAL BLOCK	2P(1, 2)	1	1	1	1		TB15			
21	T7W A14 716	TERMINAL BLOCK	3P(L, N, $\text{\textcircled{C}}$)	1	1	1	1		TB2			
22	R01 A48 524	DRAIN PLUG		1	1	1	1					
23	—	CORNER COVER		1	1	1	1	(BG00T713G05)				
24	R01 31K 241	SENSOR HOLDER		1	1	1	1					
25	T7W E00 266	DRAIN SENSOR		1	1	1	1		DS			
26	R01 AJ8 401	LINEAR EXPANSION VALVE		1	1	1	1		LEV			
27	T7W E00 355	DRAIN PUMP		1	1	1	1		DP			
28	R01 79N 202	PIPE TEMPERATURE THERMISTOR	GAS	1	1	1	1		TH23			
29	R01 41N 523	DRAIN SOCKET		1	1	1	1					
30	R01 08K 202	PIPE TEMPERATURE THERMISTOR	LIQUID	1	1	1	1		TH22			
31	R01 41N 114	TURBO FAN		1	1	1	1					
32	—	INNER COVER		1	1	1	1	(BG00T718G11)				
33	—	LEG		1	1	1	1	(BG00T673G02)				
34	—	COVER (DRAM)		1	1	1	1	(BG00T712G09)				
35	—	BASE		1	1	1	1	(BG02Y348G07)				
36	—	LEG		1	1	1	1	(BG00T672G08)				
③⑦	R01 W28 527	DRAIN HOSE		1	1	1	1					
③⑧	R01 31K 535	D/S PROTECTOR		1	1	1	1					

10**OPTIONAL PARTS****10-1. Multi-functional casement**

Part No.	PAC-SE21TM-E
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10-2. Air outlet shutter plate

Part No.	PAC-SE14SP-E
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10-3. High-efficiency filter (PAC-SE21TM-E is required in using this optional part)

Part No.	PAC-SE13KF-E
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10-4. Wide panel

Part No.	PAC-SE06WP-E
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10-5. Space panel

Part No.	PAC-SE01AS-E
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