MITSUBISHI ELECTRIC

September 2022
No. OCH449
REVISED EDITION-C

TECHNICAL & SERVICE MANUAL

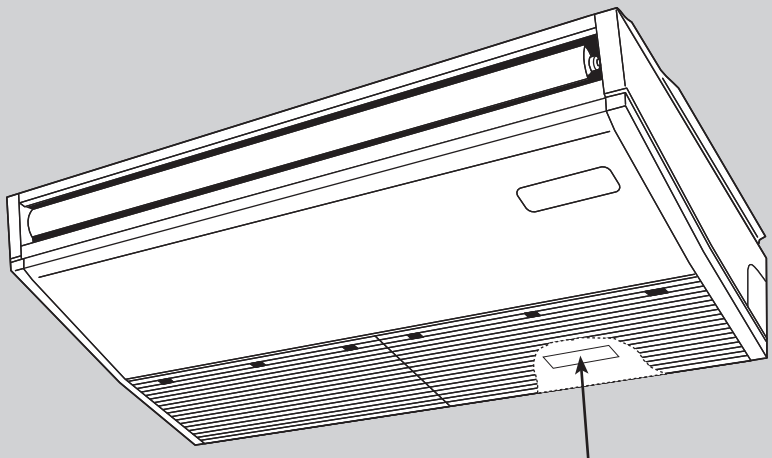
Series PCFY Ceiling Suspended R410A

Indoor unit [Model names]	[Service Ref.]
PCFY-P40VKM-E	PCFY-P40VKM-E
	PCFY-P40VKM-ER1
	PCFY-P40VKM-ER2
PCFY-P63VKM-E	PCFY-P63VKM-E
	PCFY-P63VKM-ER1
	PCFY-P63VKM-ER2
PCFY-P100VKM-E	PCFY-P100VKM-E
	PCFY-P100VKM-ER1
	PCFY-P100VKM-ER2
PCFY-P125VKM-E	PCFY-P125VKM-E
	PCFY-P125VKM-ER1
	PCFY-P125VKM-ER2

Revision:
- PCFY-P40VKM-ER2, PCFY-P63VKM-ER2, PCFY-P100VKM-ER2 and PCFY-P125VKM-ER2 have been added in REVISED EDITION-C.

OCH449B is void.

Note:
- This manual describes only service data of the indoor units.



INDOOR UNIT

CONTENTS

PARTS CATALOG (OCB449)

CITY MULTI

TECHNICAL CHANGES

PCFY-P40VKM-ER1 → PCFY-P40VKM-ER2
PCFY-P63VKM-ER1 → PCFY-P63VKM-ER2
PCFY-P100VKM-ER1 → PCFY-P100VKM-ER2
PCFY-P125VKM-ER1 → PCFY-P125VKM-ER2

• A new controller board has been developed.

PCFY-P40VKM-E → PCFY-P40VKM-ER1
PCFY-P63VKM-E → PCFY-P63VKM-ER1
PCFY-P100VKM-E → PCFY-P100VKM-ER1
PCFY-P125VKM-E → PCFY-P125VKM-ER1

• INDOOR CONTROLLER BOARD (I.B.) has been changed. (S/W version up)

1 SAFETY PRECAUTION

Cautions for units utilizing refrigerant R410A

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

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

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

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

Charge refrigerant from liquid phase of gas cylinder.

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

Do not use refrigerant other than R410A.

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

Use a vacuum pump with a reverse flow check valve.

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

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

The following tools are necessary to use R410A refrigerant.

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

Handle tools with care.

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

Do not use a charging cylinder.

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

Use the specified refrigerant only.

Never use any refrigerant other than that specified.
Doing so may cause a burst, an explosion, or fire when the unit is being used, serviced, or disposed of.
Correct refrigerant is specified in the manuals and on the spec labels provided with our products.
We will not be held responsible for mechanical failure, system malfunction, unit breakdown or accidents caused by failure to follow the instructions.

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

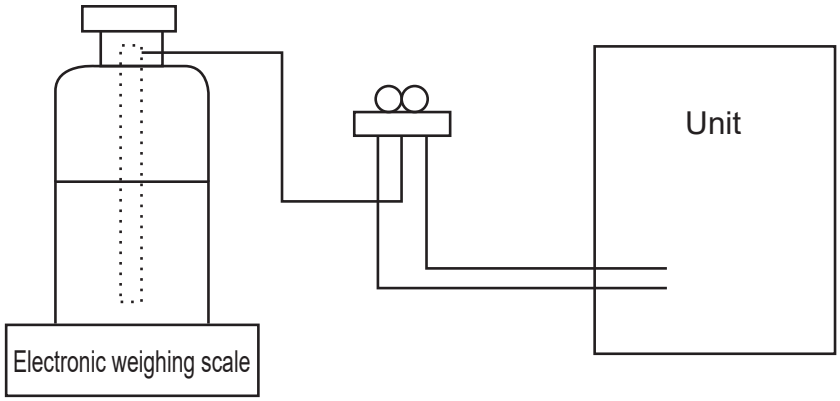
[1] Cautions for service

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

[2] Additional refrigerant charge

When charging directly from cylinder

· Check that cylinder for R410A on the market is syphon type.
· Charging should be performed with the cylinder of syphon standing vertically. (Refrigerant is charged from liquid phase.)



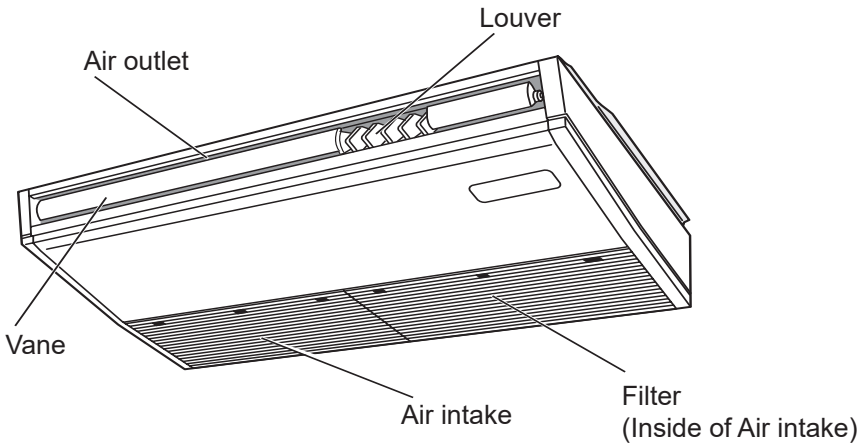
[3] Service tools

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

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

2 PART NAMES AND FUNCTIONS

2-1. INDOOR UNIT



3 SPECIFICATION

3-1. SPECIFICATIONS

Model				PCFY-P40VKM-E	PCFY-P63VKM-E	PCFY-P100VKM-E	PCFY-P125VKM-E
Power source				1-phase 220-240V 50Hz, 1-phase 220V 60Hz			
Cooling capacity (Nominal)		*1	kW	4.5	7.1	11.2	14.0
		*1	kcal/h	3,900	6,100	9,600	12,000
		*1	Btu/h	15,400	24,200	38,200	47,800
		*2	kcal/h	4,000	6,300	10,000	12,500
	Power input		kW	0.040	0.050	0.090	0.110
	Current input		A	0.28	0.33	0.65	0.76
Heating capacity (Nominal)		*3	kW	5.0	8.0	12.5	16.0
		*3	kcal/h	4,300	6,900	10,800	13,800
		*3	Btu/h	17,100	27,300	42,700	54,600
	Power input		kW	0.040	0.050	0.090	0.110
	Current input		A	0.28	0.33	0.65	0.76
External finish				MUNSELL (6.4Y 8.9/0.4)			
External dimensions H x W x D			mm	230×960×680	230×1280×680	230×1600×680	
			in.	9-1/16×37-13/16×26-3/4	9-1/16×50-3/8×26-3/4	9-1/16×63×26-3/4	
Net weight			kg (lb)	24 (53)	32 (71)	36 (79)	38 (84)
Heat exchanger				Cross fin (Aluminum fin and copper tube)			
FAN	Type x quantity			Sirocco fan × 2	Sirocco fan × 3	Sirocco fan × 4	
	External static press.		Pa	0			
			mmH_2O	0			
	Motor type			DC motor			
	Motor output		kW	0.090	0.095	0.160	
	Driving mechanism			Direct-driven by motor			
	Airflow rate (Low-Mid2-Mid1-High)		m^3/min	10-11-12-13	14-15-16-18	21-24-26-28	21-24-27-31
			L/s	167-183-200-217	233-250-267-300	350-400-433-467	350-400-450-517
			cfm	353-388-424-459	494-530-565-636	742-847-918-989	742-847-953-1095
Noise level (Low-Mid2-Mid1-High) (measured in anechoic room)			dB <A>	29-32-34-36	31-33-35-37	36-38-41-43	36-39-42-44
Insulation material				Polyeter sheet			
Air filter				PP honeycomb			
Protection device				Fuse			
Refrigerant control device				LEV			
Connectable outdoor unit				R410A CITY MULTI			
Diameter of refrigerant pipe	Liquid		mm(in)	ø6.35 (ø1/4) Flare	ø9.52 (ø3/8) Flare	ø9.52 (ø3/8) Flare	ø9.52 (ø3/8) Flare
	Gas		mm(in)	ø12.7 (ø1/2) Flare	ø15.88 (ø5/8) Flare	ø15.88 (ø5/8) Flare	ø15.88 (ø5/8) Flare
Field drain pipe size			mm(in)	O.D. 26mm (1)			
Standard attachment	Document Accessory			Installation Manual, Instruction Book			
Optional parts	Drain pump kit			PAC-SJ92DM-E	PAC-SJ93DM-E		
	High efficiency filter			PAC-SH88KF-E	PAC-SH89KF-E	PAC-SH90KF-E	
	Wireless remote controller kit			PAR-SL94B-E			
Remarks	Installation			Details on foundation work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual.			

Note :

	*1 Nominal cooling conditions	*2 Nominal cooling conditions	*3 Nominal heating conditions
Indoor :	27°CDB/19°CWB (81°FDB/66°FWB)	27°CDB/19.5°CWB (81°FDB/67°FWB)	20°CDB (68°FDB)
Outdoor :	35°CDB (95°FDB)	35°CDB (95°FDB)	7°CDB/6°CWB (45°FDB/43°FWB)
Pipe length :	7.5 m (24-9/16 ft)	5 m (16-3/8 ft)	7.5 m (24-9/16 ft)
Level difference :	0 m (0 ft)	0 m (0 ft)	0 m (0 ft)

* Nominal conditions *1, *3 are subject to JIS B8615-1.
* Due to continuing improvement, above specification may be subject to change without notice.

Unit converter

kcal/h = kW × 860
Btu/h = kW × 3,412
cfm = m^3/min × 35.31
lb = kg/0.4536

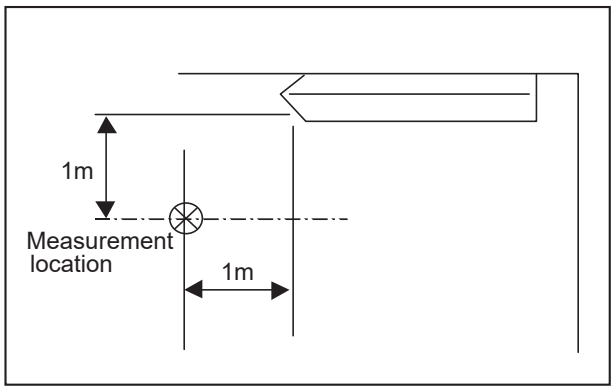
*Above specification data is subject to rounding variation.

3-2. ELECTRICAL PARTS SPECIFICATIONS

Service Ref. / Parts name	Symbol	PCFY-P40VKM-E PCFY-P40VKM-ER1 PCFY-P40VKM-ER2	PCFY-P63VKM-E PCFY-P63VKM-ER1 PCFY-P63VKM-ER2	PCFY-P100VKM-E PCFY-P125VKM-E PCFY-P100VKM-ER1 PCFY-P125VKM-ER1 PCFY-P100VKM-ER2 PCFY-P125VKM-ER2
Room temperature thermistor	TH21	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ		
Liquid pipe thermistor	TH22	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ		
Gas pipe thermistor	TH23	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ		
Fuse (Indoor controller board)	FUSE	250V 6.3A		
Fan motor	MF	8-pole OUTPUT 90W	8-pole OUTPUT 95W	8-pole OUTPUT 160W
Vane motor	MV	MSBPC20 DC12V 300Ω/phase		
Drain-pump (Option)	DP	INPUT 12/10.8W 24ℓ/Hr		
Drain float switch	FS	Open / Short detection DC 5V		
Linear expansion valve	LEV	DC12V Stepping motor drive Port dimension ø3.2 (0~2000pulse) EFM-40YGME		DC12V Stepping motor drive Port dimension ø5.2 (0~2000pulse) EFM-80YGME
Power supply terminal block	TB2	(L, N, ⏚) Rated to 330V 30A *		
Transmission terminal block	TB5	(M1, M2, S) Rated to 250V 20A *		
MA remote controller terminal block	TB15	(1, 2) Rated to 250V 10A *		

* Refer to WIRING DIAGRAM for the supplied voltage.

3-3. SOUND LEVEL



* Measured in anechoic room.

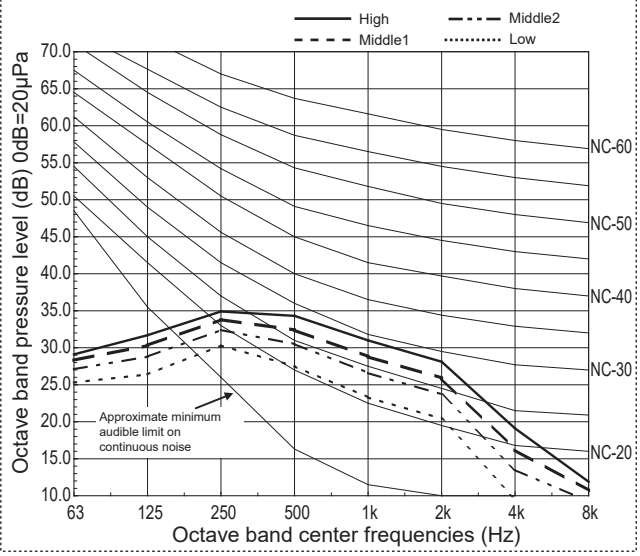
Sound level at anechoic room : Low-Mid2-Mid1-High

Service Ref.	Sound level dB (A)
PCFY-P40VKM-E PCFY-P40VKM-ER1 PCFY-P40VKM-ER2	29-32-34-36
PCFY-P63VKM-E PCFY-P63VKM-ER1 PCFY-P63VKM-ER2	31-33-35-37
PCFY-P100VKM-E PCFY-P100VKM-ER1 PCFY-P100VKM-ER2	36-38-41-43
PCFY-P125VKM-E PCFY-P125VKM-ER1 PCFY-P125VKM-ER2	36-39-42-44

3-4. NC CURVES

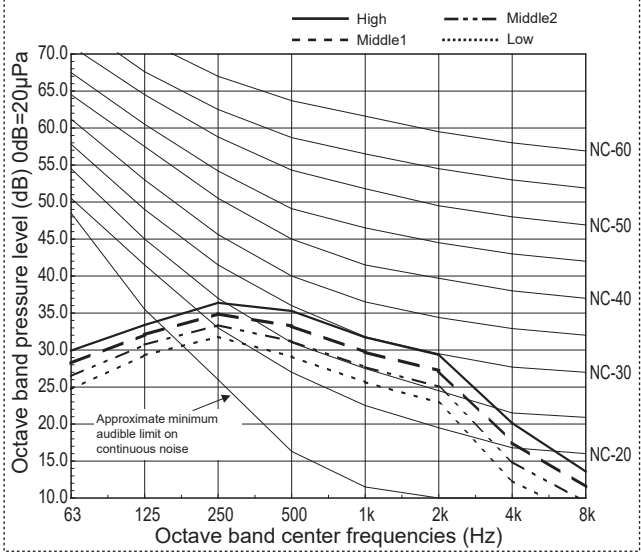
PCFY-P40VKM-E
PCFY-P40VKM-ER1
PCFY-P40VKM-ER2

External static pressure : 0Pa
Power source : 220,230,240V, 50Hz / 220V, 60Hz



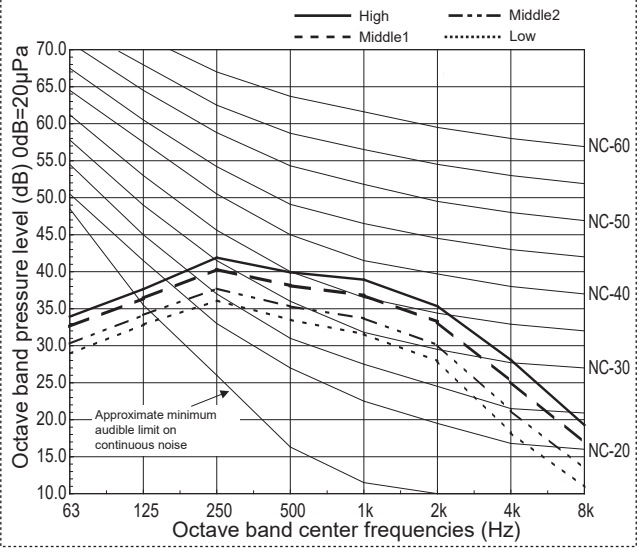
PCFY-P63VKM-E
PCFY-P63VKM-ER1
PCFY-P63VKM-ER2

External static pressure : 0Pa
Power source : 220,230,240V, 50Hz / 220V, 60Hz



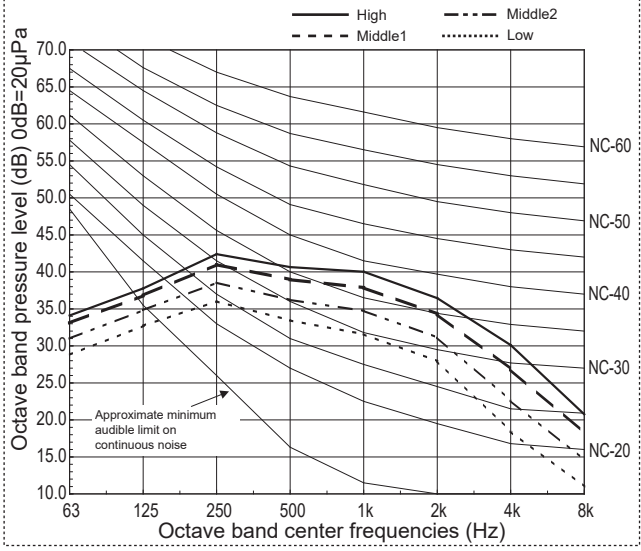
PCFY-P100VKM-E
PCFY-P100VKM-ER1
PCFY-P100VKM-ER2

External static pressure : 0Pa
Power source : 220,230,240V, 50Hz / 220V, 60Hz



PCFY-P125VKM-E
PCFY-P125VKM-ER1
PCFY-P125VKM-ER2

External static pressure : 0Pa
Power source : 220,230,240V, 50Hz / 220V, 60Hz



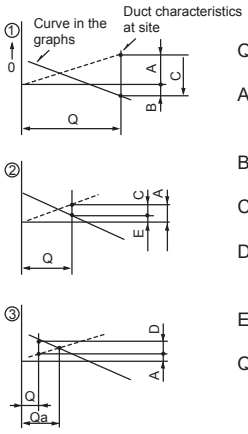
3-5. FRESH AIR INTAKE AMOUNT & STATIC PRESSURE CHARACTERISTICS

PCFY-P40VKM-E
PCFY-P40VKM-ER1
PCFY-P40VKM-ER2

PCFY-P63VKM-E
PCFY-P63VKM-ER1
PCFY-P63VKM-ER2

PCFY-P100/125VKM-E
PCFY-P100/125VKM-ER1
PCFY-P100/125VKM-ER2

How to read curves

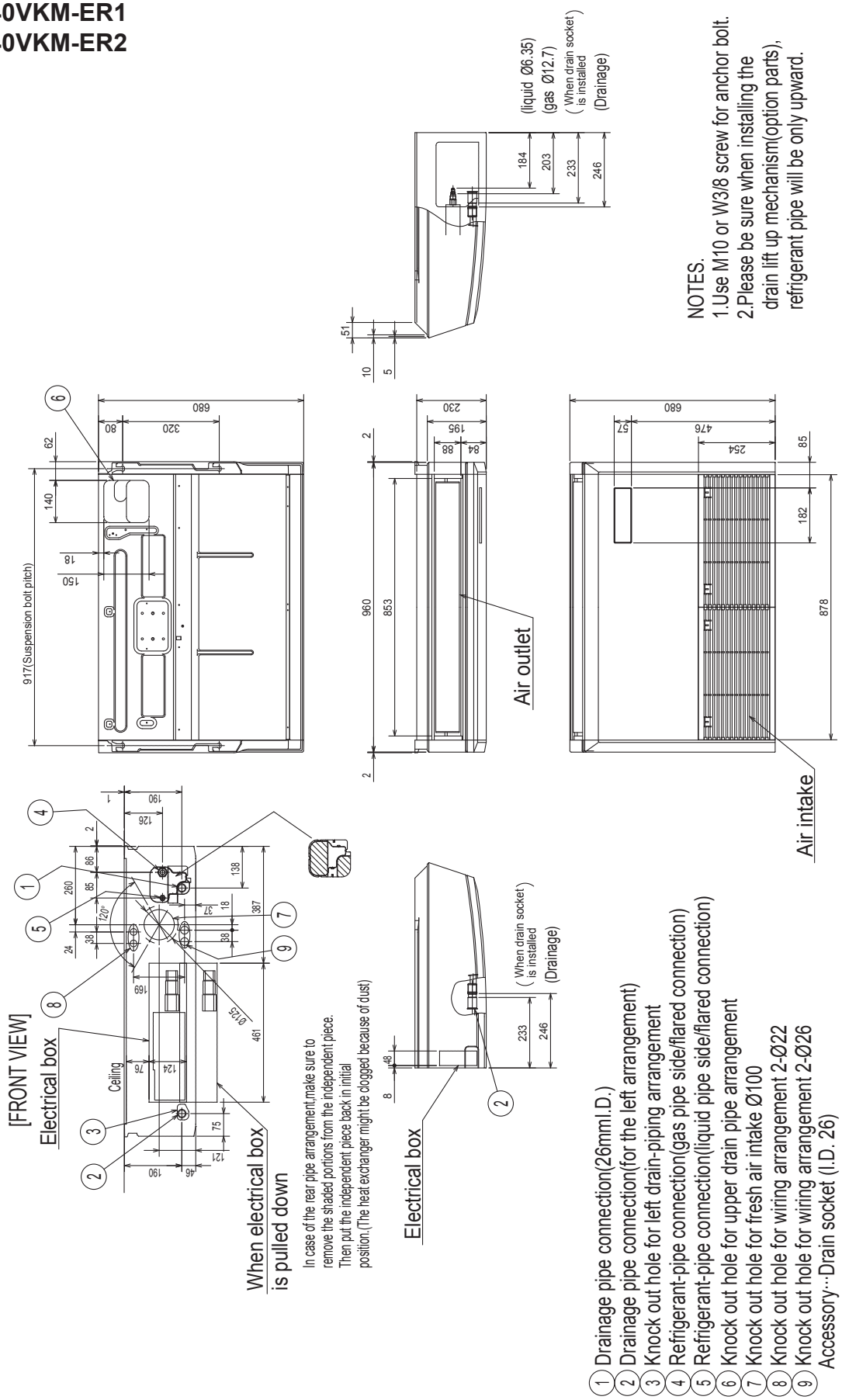


Q···Designed amount of fresh air intake <m³/min>
A···Static pressure loss of fresh air intake duct system with airflow amount Q <Pa>
B···Forced static pressure at air conditioner inlet with airflow amount Q <Pa>
C···Static pressure of booster fan with airflow amount Q <Pa>
D···Static pressure loss increase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

4 OUTLINES AND DIMENSIONS

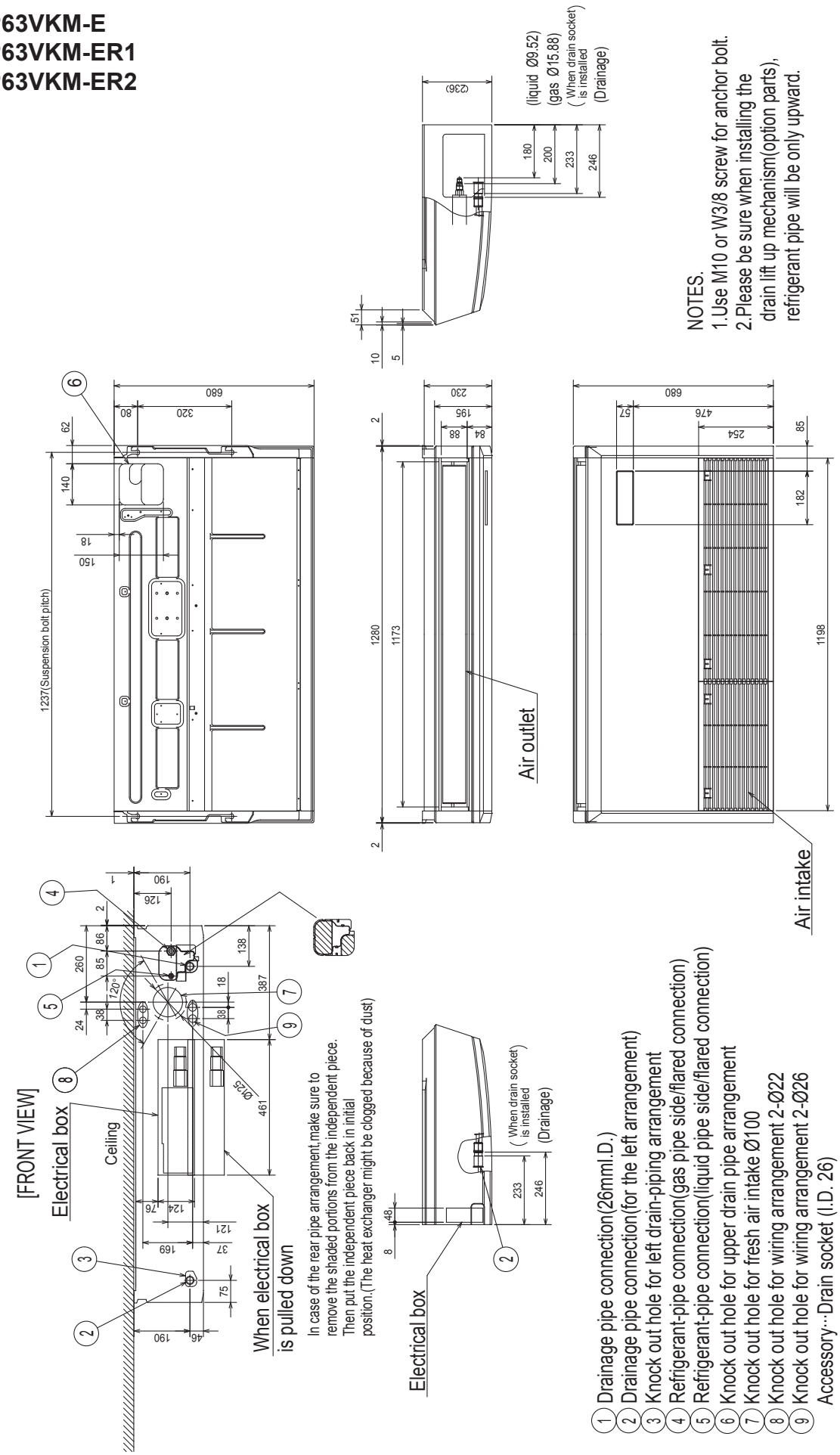
PCFY-P40VKM-E
PCFY-P40VKM-ER1
PCFY-P40VKM-ER2

Unit : mm



Unit : mm

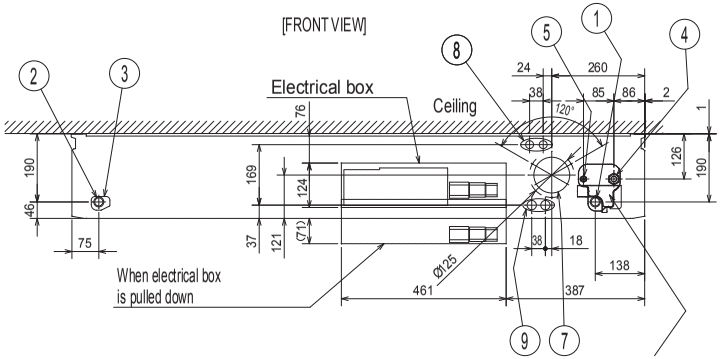
PCFY-P63VKM-E
PCFY-P63VKM-ER1
PCFY-P63VKM-ER2



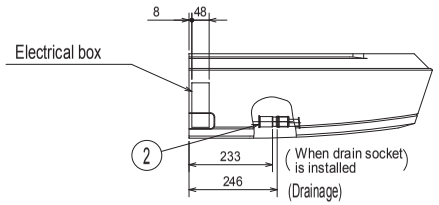
PCFY-P100VKM-E
PCFY-P125VKM-E
PCFY-P100VKM-ER1
PCFY-P125VKM-ER1
PCFY-P100VKM-ER2
PCFY-P125VKM-ER2

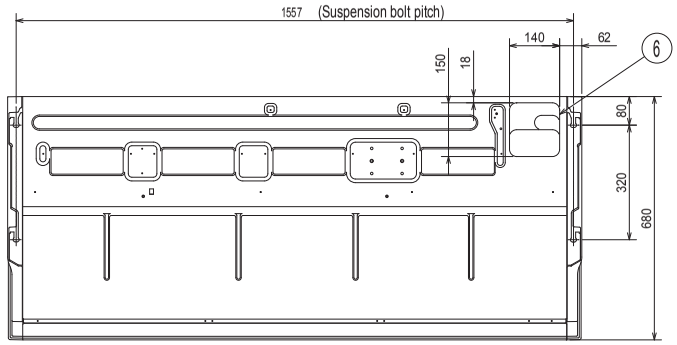
(1) Drainage pipe connection(26mmI.D.)
(2) Drainage pipe connection(for the left arrangement)
(3) Knock out hole for left drain-piping arrangement
(4) Refrigerant-pipe connection(gas pipe side/flared connection)
(5) Refrigerant-pipe connection(liquid pipe side/flared connection)

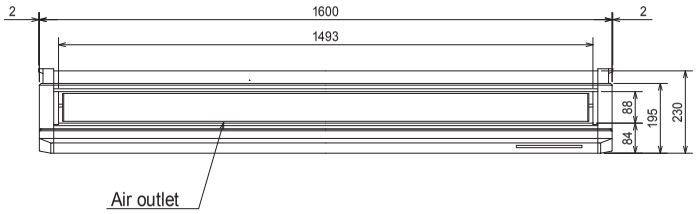
(6) Knock out hole for upper drain pipe arrangement
(7) Knock out hole for fresh air intake Ø100
(8) Knock out hole for wiring arrangement 2-Ø22
(9) Knock out hole for wiring arrangement 2-Ø26
Accessory···Drain socket (I.D. 26)

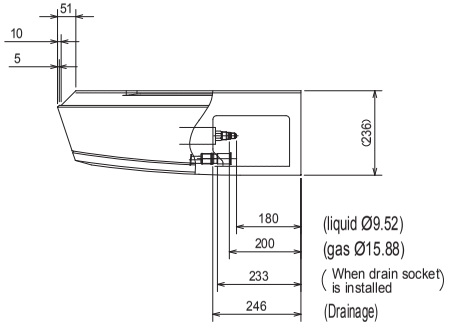


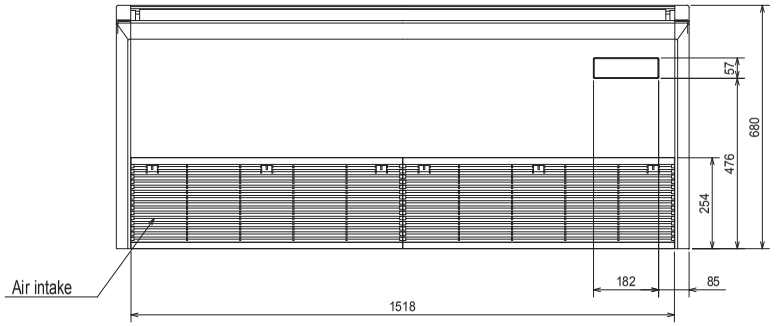
In case of the rear pipe arrangement,make sure to remove the shaded portions from the independent piece. Then put the independent piece back in initial position.(The heat exchanger might be clogged because of dust)











NOTES.
1.Use M10 or W3/8 screw for anchor bolt.
2.Please be sure when installing the drain lift up mechanism(option parts), refrigerant pipe will be only upward.

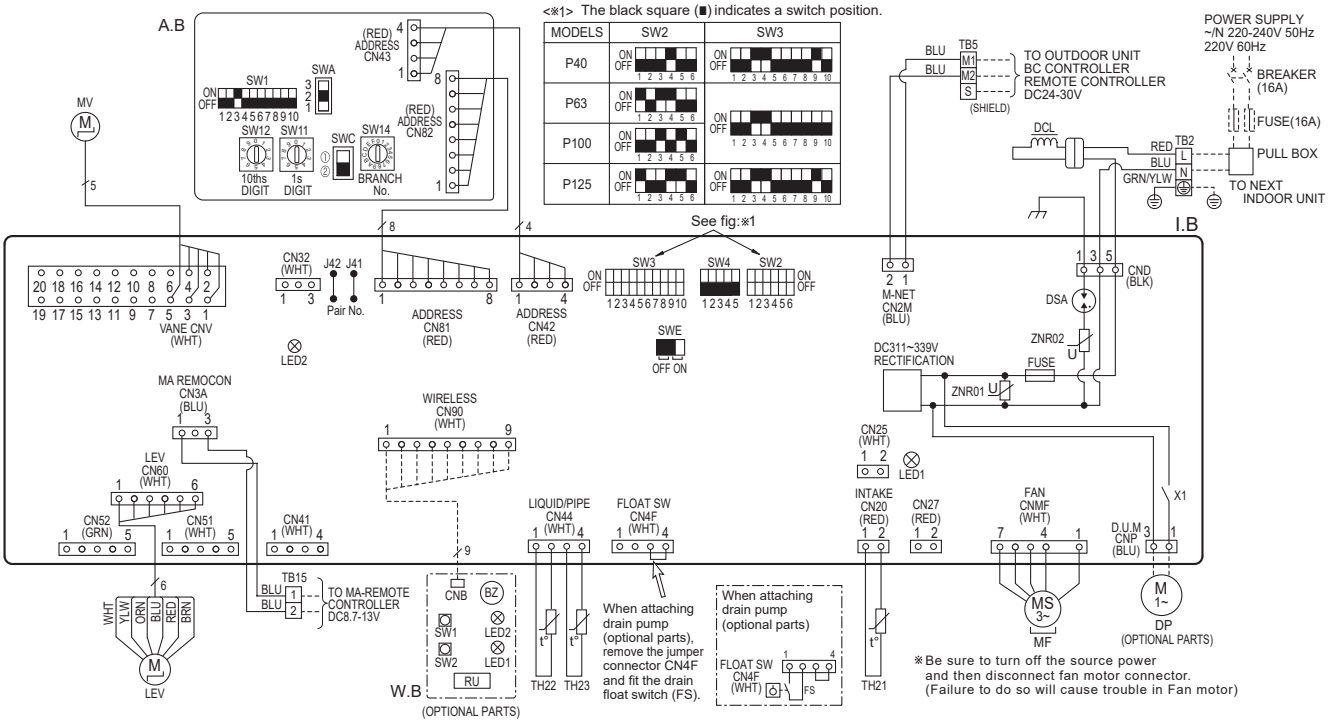
Unit : mm

5 WIRING DIAGRAM

PCFY-P40VKM-E PCFY-P63VKM-E PCFY-P100VKM-E PCFY-P125VKM-E

[LEGEND]

SYMBOL		NAME		SYMBOL		NAME	
I. B		INDOOR CONTROLLER BOARD		TH22	THERMISTOR	PIPE TEMP. DETECTION / LIQUID (0°C / 15kΩ, 25°C / 5.4kΩ)	
	CN27	CONNECTOR	DAMPER	TH23		PIPE TEMP. DETECTION / GAS (0°C / 15kΩ, 25°C / 5.4kΩ)	
	CN32		REMOTE SWITCH	A. B		ADDRESS BOARD	
	CN51		CENTRALLY CONTROL		SWA	SWITCH	CEILING HEIGHT SELECTOR
	CN52		REMOTE INDICATION		SWC		OPTION SELECTOR
	DSA	SURGE ABSORBER			SW1		MODE SELECTION
	FUSE	FUSE (T6.3AL250V)			SW11		ADDRESS SETTING 1s DIGIT
	SW2	SWITCH	CAPACITY CODE		SW12		ADDRESS SETTING 10ths DIGIT
	SW3		MODE SELECTION		SW14		BRANCH No.
	SW4		MODEL SELECTION	OPTIONAL PARTS			
	SWE		DRAIN PUMP (TEST MODE)	W.B		PCB FOR WIRELESS REMOTE CONTROLLER	
	X1	AUX. RELAY	DRAIN PUMP (OPTIONAL PARTS)		BZ	BUZZER	
	ZNR01,02	VARISTOR			LED1	LED (OPERATION INDICATION : GREEN)	
LEV		LINEAR EXPANSION VALVE			LED2	LED (PREPARATION FOR HEATING : ORANGE)	
DCL		REACTOR			RU	RECEVING UNIT	
MF		FAN MOTOR			SW1	EMERGENCY OPERATION (HEAT / DOWN)	
MV		VANE MOTOR			SW2	EMERGENCY OPERATION (COOL / UP)	
TB2		TERMINAL BLOCK	POWER SUPPLY	DP		DRAIN PUMP	
TB5			TRANSMISSION		FS	DRAIN FLOAT SWITCH	
TB15			MA-REMOTE CONTROLLER				
TH21		THERMISTOR	ROOM TEMP. DETECTION (0°C / 15kΩ, 25°C / 5.4kΩ)				



LED on indoor board for service

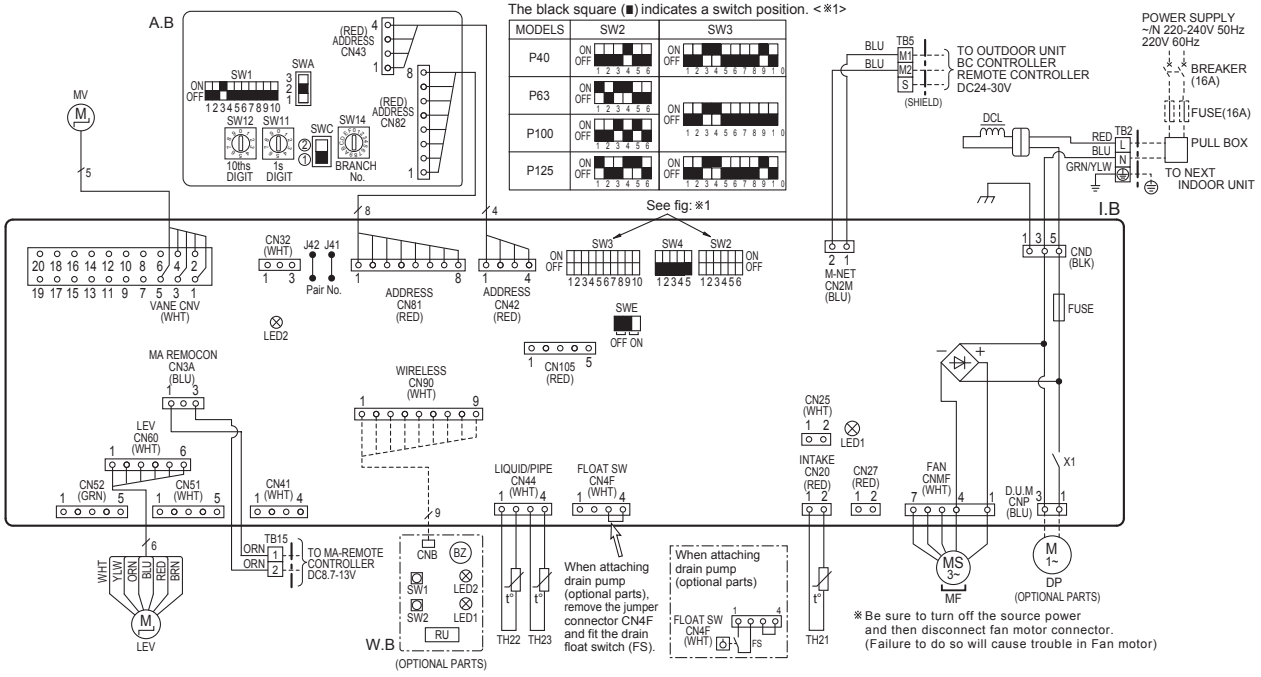
Mark	Meaning	Function
LED1	Main power supply	Main power supply (Indoor unit:220-240V) Power on → lamp is lit
LED2	Power supply for MA-Remote controller	Power supply for MA-Remote controller on → lamp is lit

NOTES:
1.At servicing for outdoor unit,always follow the wiring diagram of outdoor unit.
2.In case of using MA-Remote controller, please connect to TB15.
(Remote controller wire is non-polar.)
3.In case of using M-NET, please connect to TB5. (Transmission line is non-polar.)
4.Symbol [S] of TB5 is the shield wire connection.
5.Symbols used in wiring diagram above are, □□□: terminal block, ○○○:connecter.
6.The setting of the SW2 dip switches differs in the capacity. for the detail, refer to the fig:※1.

PCFY-P40VKM-ER1 PCFY-P63VKM-ER1 PCFY-P100VKM-ER1 PCFY-P125VKM-ER1

[LEGEND]

SYMBOL		NAME		SYMBOL		NAME	
I. B		INDOOR CONTROLLER BOARD		TH22		THERMISTOR	PIPE TEMP. DETECTION / LIQUID (0°C / 15kΩ, 25°C / 5.4kΩ)
	CN27	CONNECTOR	DAMPER	TH23			PIPE TEMP. DETECTION / GAS (0°C / 15kΩ, 25°C / 5.4kΩ)
	CN32		REMOTE SWITCH	A. B		ADDRESS BOARD	
	CN51		CENTRALLY CONTROL		SWA	SWITCH	CEILING HEIGHT SELECTOR
	CN52		REMOTE INDICATION		SWC		OPTION SELECTOR
	CN105		IT TERMINAL		SW1		MODE SELECTION
	FUSE	FUSE (T6.3AL250V)			SW11		ADDRESS SETTING 1s DIGIT
	SW2	SWITCH	CAPACITY CODE		SW12		ADDRESS SETTING 10ths DIGIT
	SW3		MODE SELECTION		SW14		BRANCH No.
	SW4		MODEL SELECTION	OPTIONAL PARTS			
	SWE		DRAIN PUMP (TEST MODE)		W.B		PCB FOR WIRELESS REMOTE CONTROLLER
	X1	AUX. RELAY	DRAIN PUMP (OPTIONAL PARTS)		BZ		BUZZER
LEV		LINEAR EXPANSION VALVE			LED1		LED (OPERATION INDICATION : GREEN)
DCL		REACTOR			LED2		LED (PREPARATION FOR HEATING : ORANGE)
MF		FAN MOTOR			RU		RECEVING UNIT
MV		VANE MOTOR			SW1		EMERGENCY OPERATION (HEAT / DOWN)
TB2		TERMINAL BLOCK	POWER SUPPLY		SW2		EMERGENCY OPERATION (COOL / UP)
TB5			TRANSMISSION		DP		DRAIN PUMP
TB15			MA-REMOTE CONTROLLER		FS		DRAIN FLOAT SWITCH
TH21		THERMISTOR	ROOM TEMP. DETECTION (0°C / 15kΩ, 25°C / 5.4kΩ)				



NOTES:

1. At servicing for outdoor unit, always follow the wiring diagram of outdoor unit.
2. In case of using MA-Remote controller, please connect to TB15.
   (Remote controller wire is non-polar.)
3. In case of using M-NET, please connect to TB5. (Transmission line is non-polar.)
4. Symbol [S] of TB5 is the shield wire connection.
5. Symbols used in wiring diagram above are, □□□: terminal block, ○○○: connecter.
6. The setting of the SW2 dip switches differs in the capacity. For the detail, refer to fig <※1>.

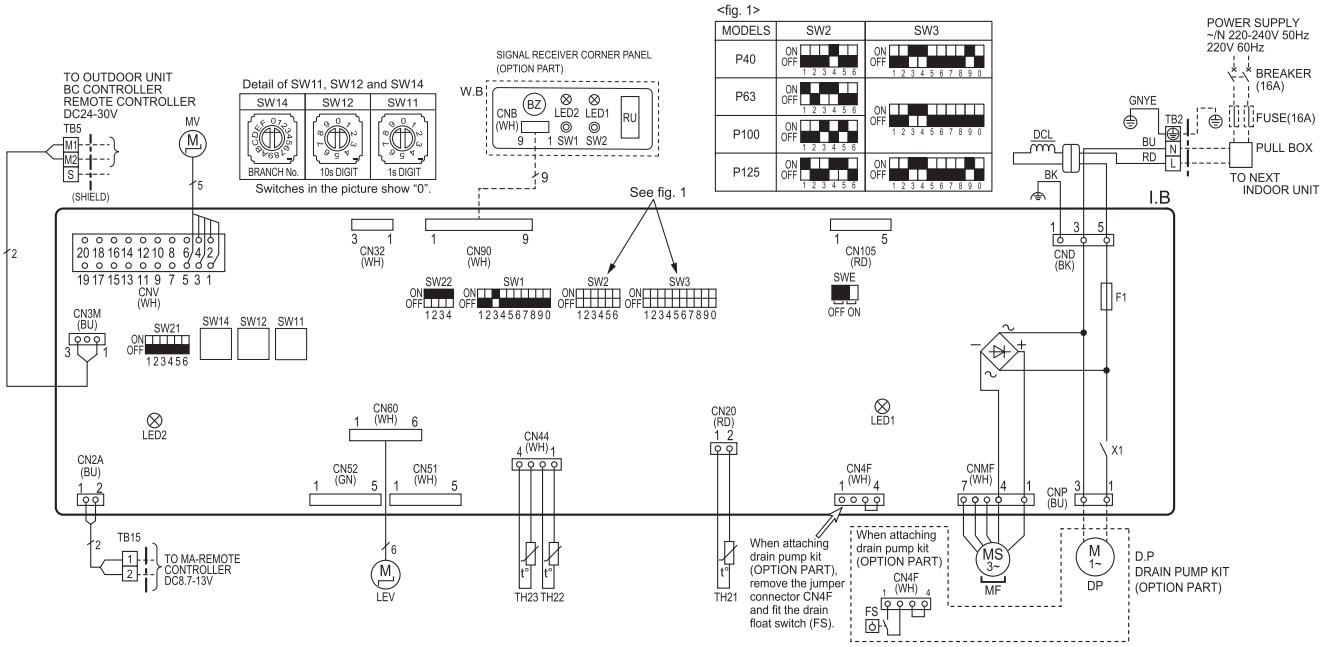
LED on indoor board for service

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

PCFY-P40VKM-ER2 PCFY-P63VKM-ER2 PCFY-P100VKM-ER2 PCFY-P125VKM-ER2

[LEGEND]

SYMBOL		NAME		SYMBOL		NAME
I. B		INDOOR CONTROLLER BOARD		TB2	TERMINAL BLOCK	POWER SUPPLY
	CN32	CONNECTOR	REMOTE SWITCH	TB5		TRANSMISSION
	CN51		CENTRALLY CONTROL	TB15		MA-REMOTE CONTROLLER
	CN52		REMOTE INDICATION	TH21	THERMISTOR	ROOM TEMP. DETECTION (0°C / 15kΩ, 25°C / 5.4kΩ)
	CN105		IT TERMINAL			
	F1	FUSE (T6.3AL250V)		TH22		PIPE TEMP. DETECTION / LIQUID (0°C / 15kΩ, 25°C / 5.4kΩ)
	SW1	SWITCH	MODE SELECTION			
	SW2		CAPACITY CODE	TH23		PIPE TEMP. DETECTION / GAS (0°C / 15kΩ, 25°C / 5.4kΩ)
	SW3		MODE SELECTION			
	SW11		ADDRESS SETTING 1s DIGIT	OPTIONAL PARTS		
	SW12		ADDRESS SETTING 10s DIGIT		W.B	PCB FOR WIRELESS REMOTE CONTROLLER
	SW14		BRANCH No.		BZ	BUZZER
	SW21		CEILING HEIGHT SELECTOR OPTION SELECTOR		LED1	LED (OPERATION INDICATION : GREEN)
					LED2	LED (PREPARATION FOR HEATING : ORANGE)
	SW22		PAIR NO. SETTING		RU	RECEIVING UNIT
	SWE		DRAIN PUMP (TEST MODE)		SW1	EMERGENCY OPERATION (HEAT / DOWN)
	X1	AUX. RELAY	DRAIN PUMP (OPTIONAL PARTS)		SW2	EMERGENCY OPERATION (COOL / UP)
LEV		LINEAR EXPANSION VALVE			D.P	DRAIN PUMP KIT
DCL		REACTOR			DP	DRAIN PUMP
MF		FAN MOTOR			FS	DRAIN FLOAT SWITCH
MV		VANE MOTOR				

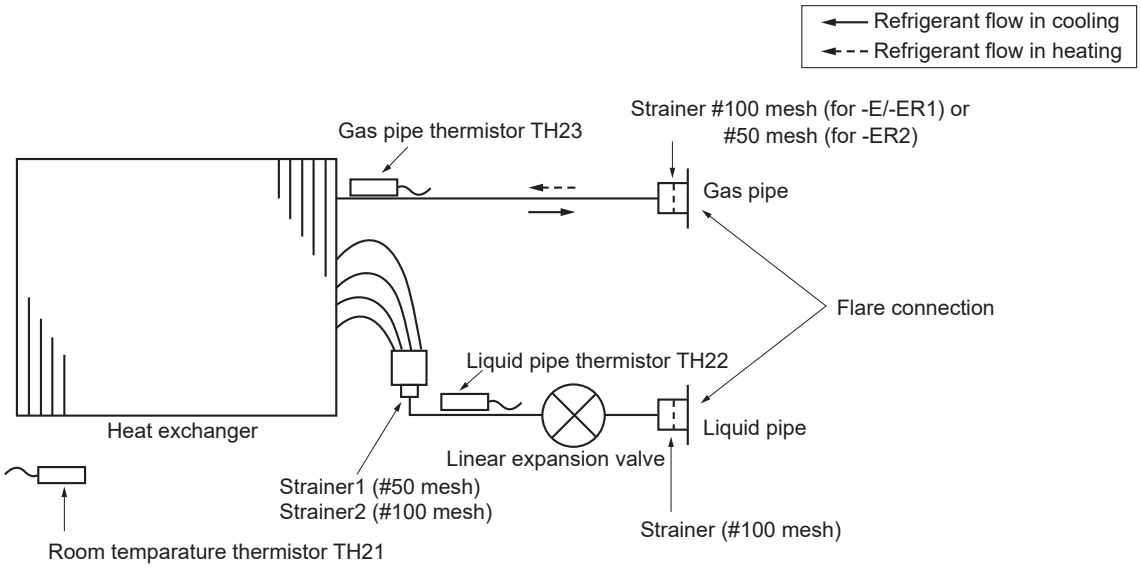


LED on indoor board for service

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

NOTES:
1. At servicing for outdoor unit, always follow the wiring diagram of outdoor unit.
2. In case of using MA-Remote controller, please connect to TB15.
   (Remote controller wire is non-polar.)
3. In case of using M-NET, please connect to TB5. (Transmission line is non-polar.)
4. Symbol [S] of TB5 is the shield wire connection.
5. Symbols used in wiring diagram above are, □□□ : terminal block, ○ ○ ○ , ▭ : connector.
6. The setting of the SW2, SW3 differs in the capacity. For the detail, refer to fig. 1.
7. The black square (■) in the wiring diagram indicates a switch position.

6 REFRIGERANT SYSTEM DIAGRAM

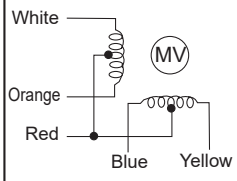
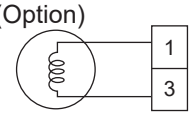
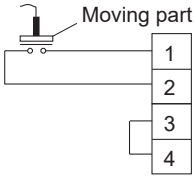


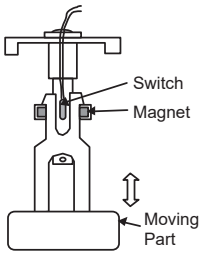
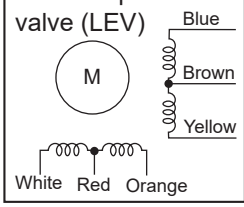
Unit : mm (in)

Service Ref. / Item	PCFY-P40VKM-E PCFY-P40VKM-ER1 PCFY-P40VKM-ER2	PCFY-P63VKM-E PCFY-P63VKM-ER1 PCFY-P63VKM-ER2 PCFY-P100VKM-E PCFY-P100VKM-ER1 PCFY-P100VKM-ER2 PCFY-P125VKM-E PCFY-P125VKM-ER1 PCFY-P125VKM-ER2
Gas pipe	ø12.7 (1/2)	ø15.88 (5/8)
Liquid pipe	ø6.35 (1/4)	ø9.52 (3/8)

7 TROUBLESHOOTING

7-1. HOW TO CHECK THE PARTS

<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 with a tester.
(At the ambient temperature of 10°C~30°C)
<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 Thermistor characteristic graph.)</td></tr>
<tr><td>Vane motor (MV)
 
</td><td>Measure the resistance between the terminals with a tester.
(At the ambient temperature of 20°C~30°C
<table><tr><th>Connector</th><th>Normal</th><th>Abnormal</th></tr><tr><td>Red - Yellow</td><td rowspan="4">300Ω ± 7%</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>Drain pump (DP)
(Option)
 
</td><td>Measure the resistance between the terminals with a tester.
(Winding temperature 20°C)
<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>333Ω ± 10%</td><td>Open or short</td></tr></table></td></tr>
<tr><td>Drain float switch (FS)
 

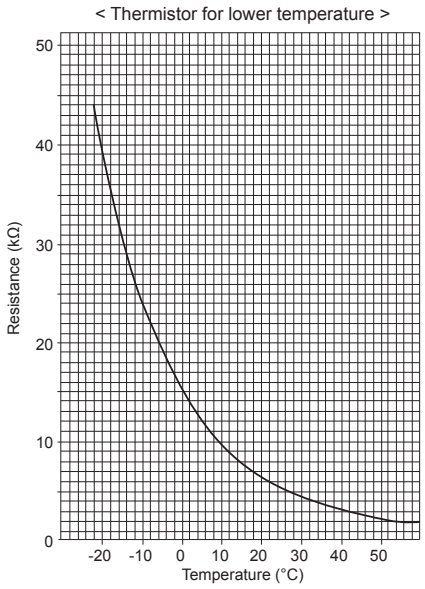
(Option)</td><td>Measure the resistance between the terminals with a tester.
<table><tr><th>State of moving part</th><th>Normal</th><th>Abnormal</th></tr><tr><td>UP</td><td>Short</td><td>Other than short</td></tr><tr><td>DOWN</td><td>Open</td><td>Other than open</td></tr></table> 
</td></tr>
<tr><td>Linear expansion valve (LEV)
 
</td><td>Disconnect the connector then measure the resistance value with a tester.
<table><tr><th colspan="4">Normal</th><th>Abnormal</th></tr><tr><td>White-Red</td><td>Yellow-Brown</td><td>Orange-Red</td><td>Blue-Brown</td><td rowspan="2">Open or short</td></tr><tr><td colspan="4">200Ω ±10%</td></tr></table>Refer to 7-1-2 for details.</td></tr>
</table>

7-1-1. Thermistor

<Thermistor characteristic graph>

Thermistors for lower temperature

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



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

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

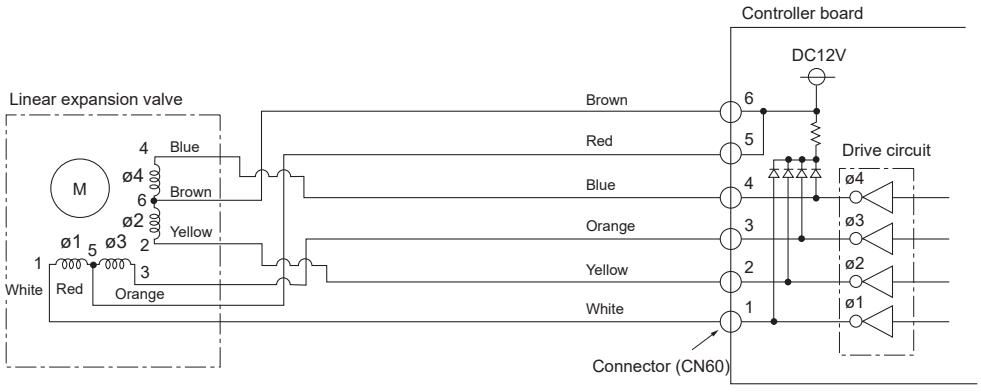
0°C	15kΩ
10°C	9.6kΩ
20°C	6.3kΩ
25°C	5.4kΩ
30°C	4.3kΩ
40°C	3.0kΩ

7-1-2. Linear expansion valve

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

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

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



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.

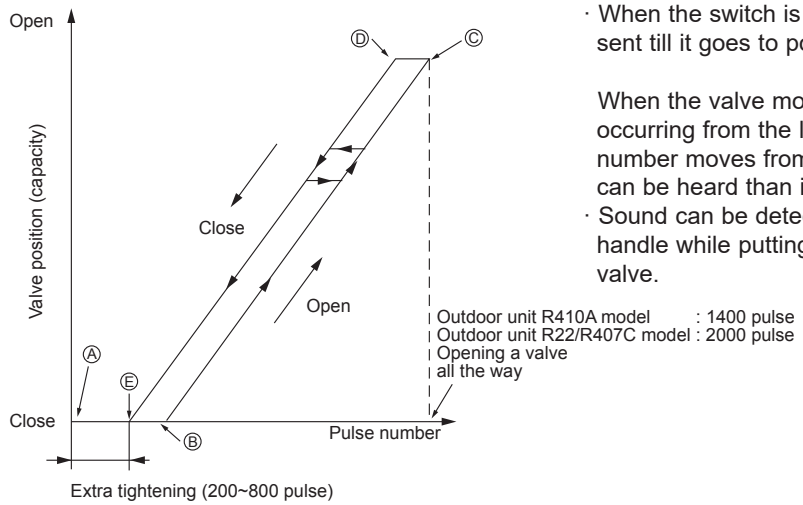
<Output pulse signal and the valve operation>

Output (Phase)	Output			
	1	2	3	4
ø1	ON	OFF	OFF	ON
ø2	ON	ON	OFF	OFF
ø3	OFF	ON	ON	OFF
ø4	OFF	OFF	ON	ON

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

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

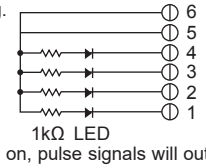
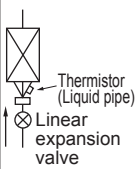
② Linear expansion valve operation



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

When the valve moves smoothly, there is no sound or vibration occurring from the linear expansion valves, however, when the pulse number moves from Ⓔ to Ⓐ or when the valve is locked, more sound can be heard than in a normal situation.
· Sound can be detected by placing the ear against the screw driver handle while putting the screw driver tip to the linear expansion valve.

③ Troubleshooting

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

7-1-3. DC Fan motor (fan motor/indoor controller circuit board)

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

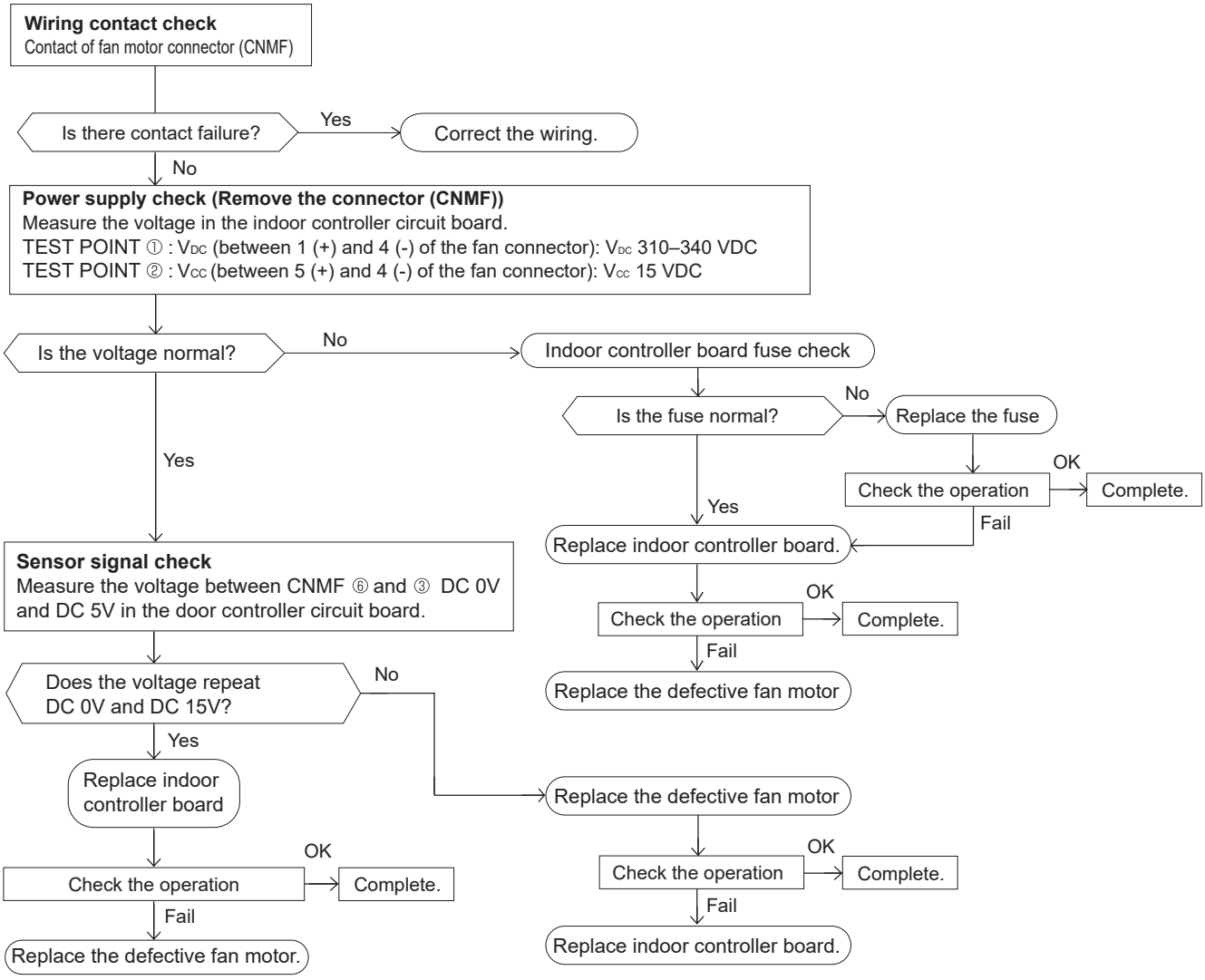
① Notes

· High voltage is applied to the connector (CNMF) for the fan motor. Pay attention to the service.

· Do not pull out the connector (CNMF) for the motor with the power supply on.
(It causes trouble of the indoor controller board and fan motor.)

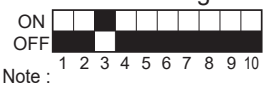
② Self check

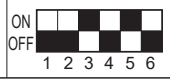
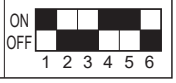
Symptom : The indoor fan cannot turn around.



7-2. FUNCTION OF DIP SWITCH

The black square (■) indicates a switch position.

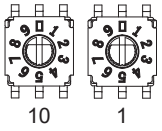
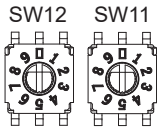
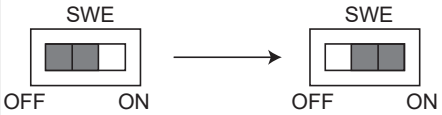
<table>
<tr><th rowspan="2">Switch</th><th rowspan="2">Pole</th><th rowspan="2">Function</th><th colspan="2">Operation by switch</th><th rowspan="2">Effective timing</th><th rowspan="2">Remarks</th></tr>
<tr><th>ON</th><th>OFF</th></tr>
<tr><td rowspan="10">SW1 Function setting</td><td>1</td><td>Thermistor <Room temperature detection> position</td><td>Built-in remote controller</td><td>Indoor unit</td><td rowspan="10">Under suspension</td><td rowspan="10"><Initial setting>
 

Note :
※1 Fan operation at heating mode
※2 Thermo ON operation at heating mode
※3
<table><tr><td>SW1-7</td><td>SW1-8</td><td></td></tr><tr><td>OFF</td><td>OFF</td><td>Extra low</td></tr><tr><td>ON</td><td>OFF</td><td>Low</td></tr><tr><td>OFF</td><td>ON</td><td>Setting airflow</td></tr><tr><td>ON</td><td>ON</td><td>Stop</td></tr></table></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>2,500 hr</td><td>100 hr</td></tr>
<tr><td>4</td><td>Fresh air intake</td><td>Effective</td><td>Not effective</td></tr>
<tr><td>5</td><td>Switching remote display</td><td>Thermo ON signal display</td><td>Indicating fan operation ON/OFF</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">Airflow set in case of Heat thermo OFF at heating mode</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 by breaker</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><td>Capacity</td><td>SW 2</td><td>Capacity</td><td>SW 2</td></tr><tr><td>P40</td><td> 
</td><td>P63</td><td> 
</td></tr><tr><td>P100</td><td> 
</td><td>P125</td><td> 
</td></tr></table></td><td>Before power supply ON</td><td><Initial setting>
Set for each capacity.</td></tr>
<tr><td rowspan="10">SW3 Function setting</td><td>1</td><td>Heat pump/Cooling only</td><td>Cooling only</td><td>Heat pump</td><td rowspan="10">Under suspension</td><td rowspan="10"><Initial setting>
 

Note :
※4 SW3-5
※5 Each angle can be used only 1 hour when fan speed setting Low and Middle 1,2
※6 Please do not use SW-3-9,10.
SW9 setting
P40,P125:ON
P63,P100:OFF</td></tr>
<tr><td>2</td><td>Louver</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 ※4</td><td>First setting ※4</td></tr>
<tr><td>6</td><td>Vane cooling limit angle setting ※5</td><td>Horizontal</td><td>Setting A,B,C,D</td></tr>
<tr><td>7</td><td>Changing the opening of linear expansion valve</td><td>Effective</td><td>Not effective</td></tr>
<tr><td>8</td><td>4-deg up (Heating mode)</td><td>Not effective</td><td>Effective</td></tr>
<tr><td>9</td><td>Superheat setting temperature ※6</td><td>—</td><td>—</td></tr>
<tr><td>10</td><td>Sub cool setting temperature ※6</td><td>—</td><td>—</td></tr>
</table>

Note : ※4 SW3-5

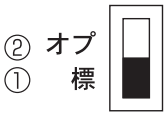
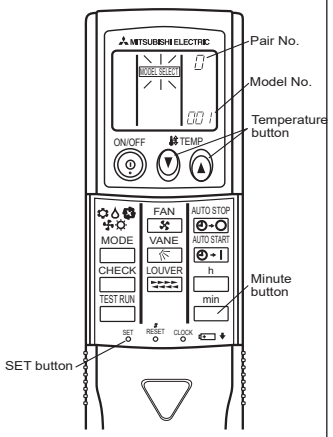
SW3-5	Vane setting	Initial setting	Setting	Vane position
OFF	Set up ①	●	Standard	Standard
ON	Set up ②		Less draft	Upward position than the standard

Switch	Pole	Function	Operation by switch		Effective timing	Remarks
			ON	OFF		
SW11 1s digit address setting SW12 10s digit address setting	Rotary switch	 How to set address Example : If address is "3", remain SW12 (for over 10) at "0", and match SW11 (for 1 to 9) with "3".			Before power supply ON	<Initial setting> 
SW14 Branch No. setting	Rotary switch	 How to set branch number SW14 (Series R2 only) Match the indoor unit's refrigerant pipe with the BC contoller's end connection number Remain other than series R2 at "0".				<Initial setting> 
SWE Test run for drain pump (Option)	Connector	Drain pump and fan are activated simultaneously after the connector SWE is set to ON and turn on the power.  The connector SWE is set to OFF after test run.			Under operation	<Initial setting> 

* Set the switch while the indoor unit and the outdoor unit are both OFF.

PCFY-P40VKM-E PCFY-P63VKM-E PCFY-P100VKM-E PCFY-P125VKM-E
PCFY-P40VKM-ER1 PCFY-P63VKM-ER1 PCFY-P100VKM-ER1 PCFY-P125VKM-ER1

The black square (■) indicates a switch position.

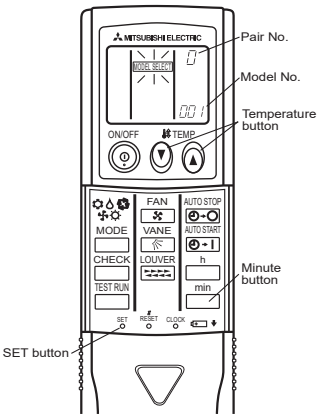
<table>
<tr><th rowspan="2">Switch</th><th rowspan="2">Pole</th><th colspan="2">Operation by switch</th><th rowspan="2">Effective timing</th><th rowspan="2">Remarks</th></tr>
<tr><th>ON</th><th>OFF</th></tr>
<tr><td>SW4
Model
Selection</td><td>1~5</td><td colspan="2">In case of replacing the indoor controller board, make sure to set the switch to the initial setting, which is shown below.
 
</td><td>Before power supply ON</td><td></td></tr>
<tr><td>SWA
Ceiling height selector</td><td>1~3</td><td colspan="2">(High ceiling) 3
(Standard) 2
(Silent) 1
 
* Ceiling height can be changed depending on SWA setting.
<table><tr><td>SWA</td><td>①
Silent</td><td>②
Standard</td><td>③
High ceiling</td></tr><tr><td>P40, P63</td><td>2.5m</td><td>2.7m</td><td>3.5m</td></tr><tr><td>P100, P125</td><td>2.6m</td><td>3.0m</td><td>4.2m</td></tr></table></td><td rowspan="2">Under operation or suspension</td><td><Initial setting>
 
</td></tr>
<tr><td>SWC
Option selector</td><td>2</td><td colspan="2">② オプ (Option)
① 標 (Standard)
 
* In this model it is not necessary to change SWC to the option side.</td><td><Initial setting>
 
</td></tr>
<tr><td>J41, J42
Wireless remote controller Pair No.</td><td>Jumper</td><td colspan="2">• To operate each indoor unit by each remote controller when installed 2 indoor units or more are near, Pair No. setting is necessary.
① Pair No. setting is available with the 4 patterns (Setting patters A to D).
② Make setting for J41, J42 of indoor controller board and the Pair No. of wireless remote controller.
• You may not set it when operating it by 1 remote controller.
① Setting for indoor unit Jumper wire J41, J42 on the indoor controller board are cut according to the table below.
② Wireless remote controller pair number:
Setting operation
1. Press the SET button (using a pointed implement). Check that the remote controller's display has stopped before continuing. MODEL SELECT flashes, and the model No. (3 digits) appears (steadily-lit).
2. Press the MINUTE button twice. The pair number appears flashing.
3. Press the temperature ▼ ▲ buttons to select the pair number to set.
4. Press the SET button (using a pointed implement). The set pair number is displayed (steadily-lit) for 3 seconds, then disappears.
<table><tr><td rowspan="2">Setting pattern</td><td colspan="2">Indoor controller Jumper wire</td><td rowspan="2">Pair No. of wireless remote controller*</td><td rowspan="2"></td></tr><tr><td>J41</td><td>J42</td></tr><tr><td>A</td><td>–</td><td>–</td><td>0</td><td>Factory setting</td></tr><tr><td>B</td><td>Cut</td><td>–</td><td>1</td><td>–</td></tr><tr><td>C</td><td>–</td><td>Cut</td><td>2</td><td>–</td></tr><tr><td>D</td><td>Cut</td><td>Cut</td><td>3</td><td>–</td></tr></table>*Pair No.4-9 of wireless remote controller is setting pattern D.</td><td>Under operation or suspension</td><td><Initial setting>
Pattern A
 
</td></tr>
</table>

PCFY-P40VKM-ER2 PCFY-P63VKM-ER2 PCFY-P100VKM-ER2 PCFY-P125VKM-ER2

The black square (■) indicates a switch position.

<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">Effective timing</th><th rowspan="2">Remarks</th></tr>
<tr><th>ON</th><th>OFF</th></tr>
<tr><td rowspan="6">SW21 Function Selection</td><td>1</td><td>Setting the ceiling height</td><td colspan="2" rowspan="2">Depending on the combination of SW21-1 and SW21-2.</td><td rowspan="6">Under Suspension</td><td rowspan="6"><Initial setting>
 
</td></tr>
<tr><td>2</td><td>Setting the ceiling height</td></tr>
<tr><td>3</td><td>Not used</td><td>Not used</td><td>Not used</td></tr>
<tr><td>4</td><td>Not used</td><td>Not used</td><td>Not used</td></tr>
<tr><td>5</td><td>Setting for optional parts</td><td>Option</td><td>Standard</td></tr>
<tr><td>6</td><td>Not used</td><td>Not used</td><td>Not used</td></tr>
<tr><td>SW22 Function Selection</td><td>Switch</td><td colspan="3">
<table>
<tr><th></th><th>Function</th><th>ON</th><th>OFF</th></tr>
<tr><td>1</td><td>—</td><td>—</td><td>—</td></tr>
<tr><td>2</td><td>—</td><td>—</td><td>—</td></tr>
<tr><td>3</td><td>Pair No. of wireless remote controller</td><td colspan="2" rowspan="2">Depends on the combination of SW22-3 and 22-4</td></tr>
<tr><td>4</td><td>Pair No. of wireless remote controller</td></tr>
</table>
• To operate each indoor unit by each remote controller when installed 2 indoor units or more are near, Pair No. setting is necessary.
• Pair No. setting is available with the 4 patterns.
• Make setting for SW22-3, 22-4 of indoor controller board and the Pair No. of wireless remote controller.

• Pair No. setting is not necessary when operating the unit by one remote controller.
• Wireless remote controller pair number:
Setting operation
1. Press the SET button (using a pointed implement). Check that the remote controller's display has stopped before continuing. MODEL SELECT flashes, and the model No. (3 digits) appears (steadily-lit).
2. Press the MINUTE button twice. The pair number appears flashing.
3. Press the temperature ⓥⓐ buttons to select the pair number to set.
4. Press the SET button (using a pointed implement).The set pair number is displayed (steadily-lit) for 3 seconds, then disappears.
<table>
<tr><th colspan="2">Indoor unit SW22</th><th rowspan="2">Pair No. of wireless remote controller</th><th rowspan="2"></th></tr>
<tr><th>SW22-3</th><th>SW22-4</th></tr>
<tr><td>ON</td><td>ON</td><td>0</td><td>Initial setting</td></tr>
<tr><td>OFF</td><td>ON</td><td>1</td><td>—</td></tr>
<tr><td>ON</td><td>OFF</td><td>2</td><td>—</td></tr>
<tr><td>OFF</td><td>OFF</td><td>3–9</td><td>—</td></tr>
</table>
</td><td>Under suspension</td><td><Initial setting>
 

 
</td></tr>
</table>

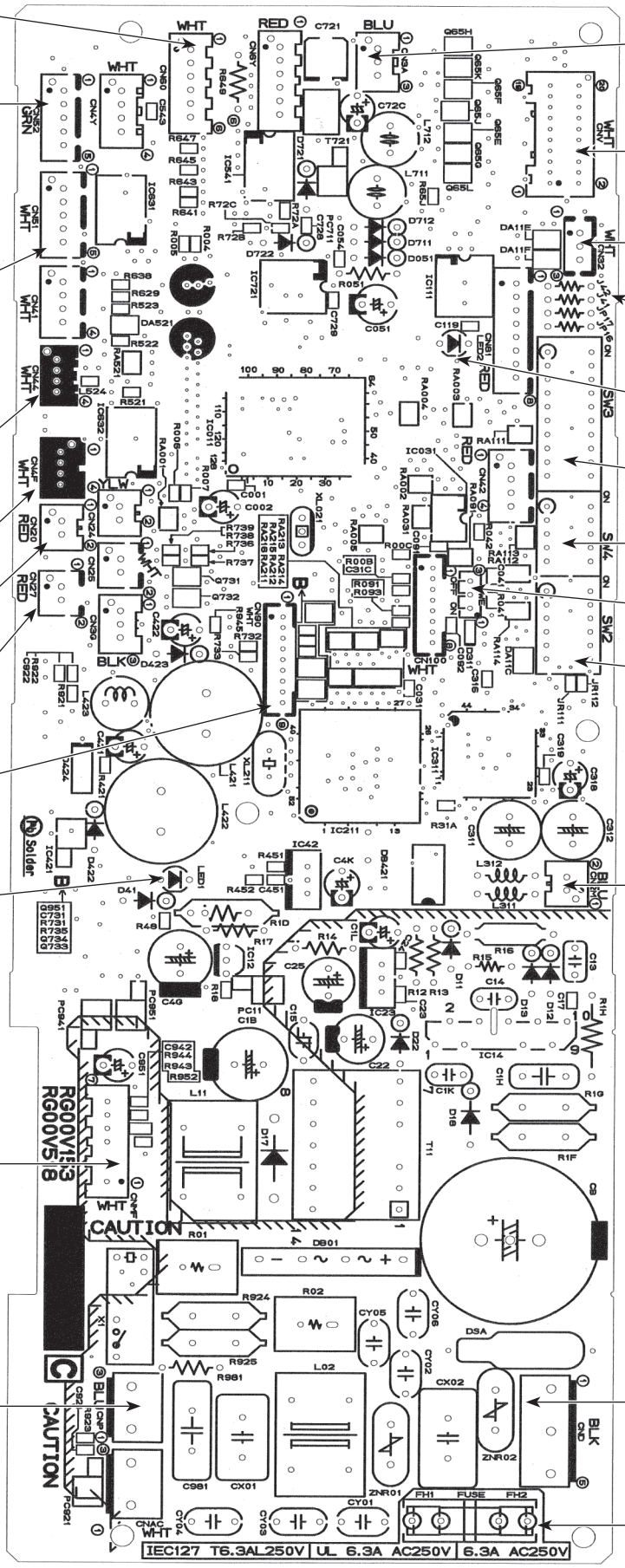
Note: SW21-1,SW21-2

	Silent		Standard		High ceiling	
	SW21-1	SW21-2	SW21-1	SW21-2	SW21-1	SW21-2
	OFF	ON	OFF	OFF	ON	OFF
P40,P63	2.5m		2.7m		3.5m	
P100,P125	2.6m		3.0m		4.2m	

7-3. TEST POINT DIAGRAM

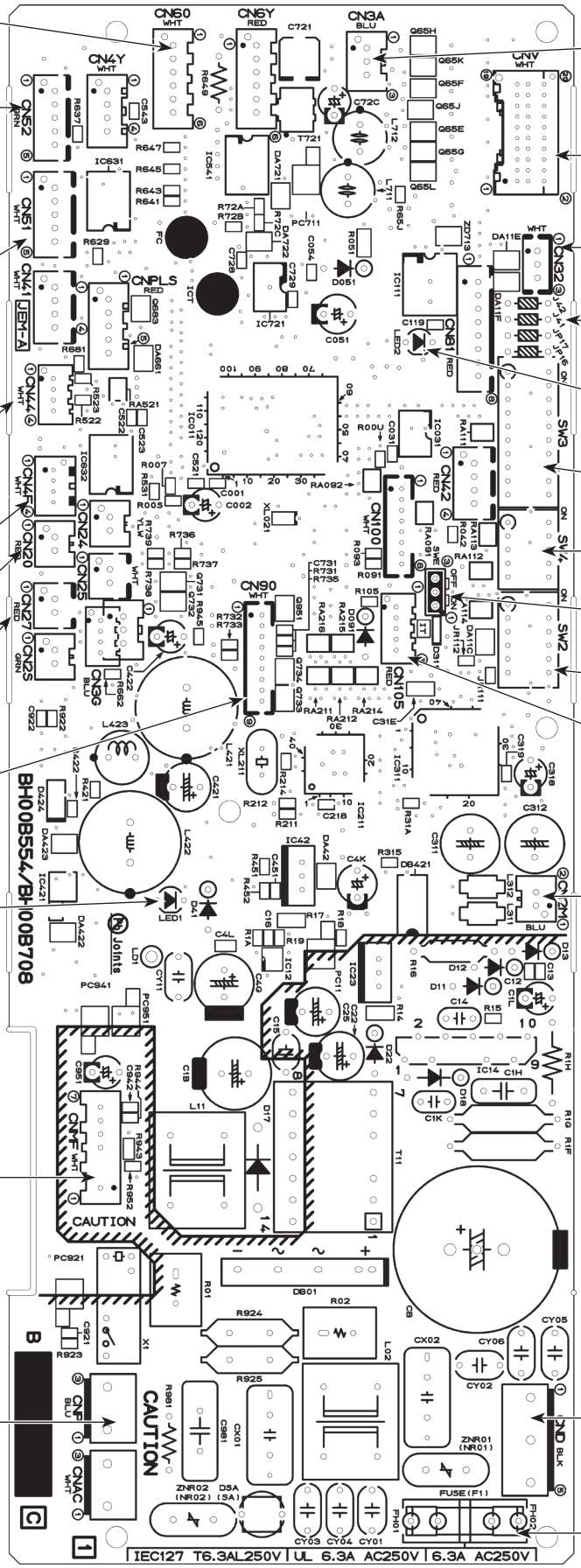
7-3-1. Indoor controller board

PCFY-P40VKM-E **PCFY-P63VKM-E** **PCFY-P100VKM-E** **PCFY-P125VKM-E**



* The voltage range of DC12V in this page is between DC11.5 V to DC 13.7 V.

PCFY-P40VKM-ER1 **PCFY-P63VKM-ER1** **PCFY-P100VKM-ER1** **PCFY-P125VKM-ER1**



CN60
Linear expansion valve (LEV) output
12 VDC pulse output

CN52
Remote indicator
①-②: Status lamp 12VDC (① : +)
Fan motor output (SW1-5 OFF)
Thermostat ON (SW1-5 ON)
①-③: Cooling/Dry status lamp
12 VDC (① : +)
①-④: Heating status lamp
12 VDC (① : +)

CN51
Centrally control
①-② : Control signal
12VDC pulse input (① : +)
③-④ : Operation indicator
12 VDC (③ : +)
③-⑤ : Malfunction indicator
12 VDC (③ : +)

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

CN4F
Drain float switch (FS)

CN20
Room temperature thermistor (TH21)

CN27
Damper signal output
12 VDC (① : +)

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

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

CNMF
Connect to the fan motor (MF)
①-④ : DC310~340V
⑤-④ : DC15V
⑥-④ : DC0~6V
⑦-④ : DC0 or DC15V

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

∗ The voltage range of DC12V in this page is between DC11.5 V to DC 13.7 V.

CN3A
Connect to the terminal block (TB15) (MA-Remote controller connecting wire)
① - ③ : 8.7-13 VDC (Pin① (+))

CNV
Vane motor output
12 VDC pulse

CN32
Remote switch

Jumper wire J41, J42
Pair No. setting for wireless remote controller

LED2
Power supply for MA-Remote controller

SW3
Function setting

SW4
Model selection

SWE
Test run (Drain pump)

SW2
Capacity setting

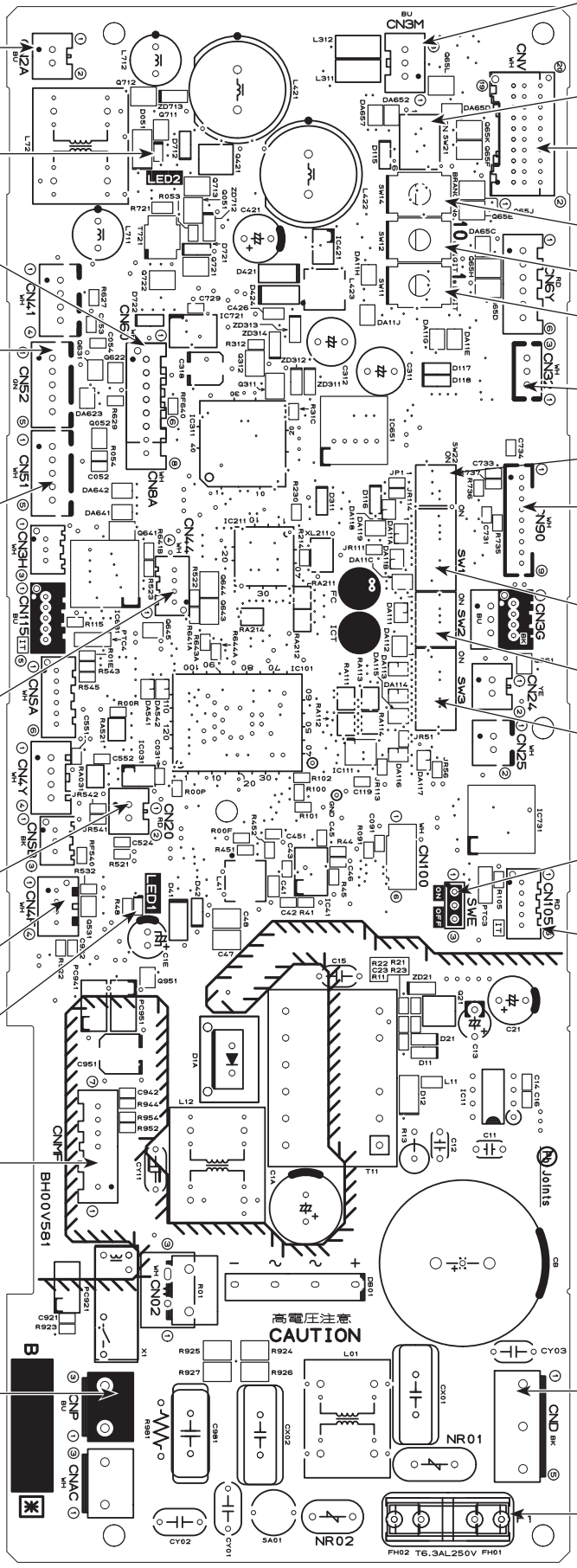
CN105

CN2M
Connect to the terminal block (TB5) (M-NET transmission connecting wire)
24-30 VDC (non-polar)

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

FUSE
6.3A 250V

PCFY-P40VKM-ER2 **PCFY-P63VKM-ER2** **PCFY-P100VKM-ER2** **PCFY-P125VKM-ER2**



CN2A
Connect to the terminal block (TB15)
(MA-Remote controller connecting wire)
①-②: 8.7-13 VDC (non-polar)

LED2
Power supply for
MA-Remote controller

CN60
Linear expansion valve (LEV)
output
12 VDC pulse output

CN52
Remote indicator
①-②: Status lamp 12VDC (① : +)
Fan motor output (SW1-5 OFF)
Thermostat ON (SW1-5 ON)
①-③: Cooling/Dry status lamp
12 VDC (① : +)
①-④: Heating status lamp
12 VDC (① : +)

CN51
Centrally control
①-② : Control signal
12 VDC pulse input (① : +)
③-④ : Operation indicator
12 VDC (③ : +)
③-⑤ : Malfunction indicator
12 VDC (③ : +)

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

CN20
Room temperature
thermistor (TH21)

CN4F
Drain float switch (FS)

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

CNMF
Connect to the
fan motor (MF)
①-④ : 310~340 VDC
⑤-④ : 15 VDC
⑥-④ : 0~6 VDC
⑦-④ : 0 VDC or 15 VDC

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

CN3M
Connect to the terminal block (TB5)
(M-NET transmission connecting wire)
①-③: 24-30 VDC (non-polar)

SW21
Function setting

CNV
Vane motor output
12 VDC pulse

SW14
Branch No.

SW12
Address setting, 10s digit

SW11
Address setting, 1s digit

CN32
Remote switch

SW22

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

SW1
Function setting

SW2
Capacity setting

SW3
Function setting

SWE
Test run (Drain pump)

CN105

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

F1
FUSE
6.3A / 250V

* The voltage range of 12 VDC in this page is between 11.5 VDC to 13.7 VDC.

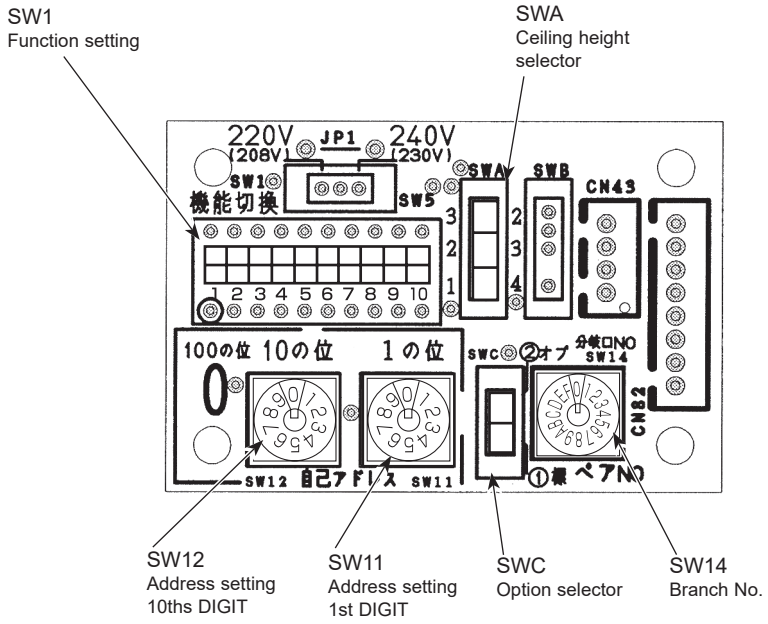
7-3-2. Address board

PCFY-P40VKM-E
PCFY-P40VKM-ER1

PCFY-P63VKM-E
PCFY-P63VKM-ER1

PCFY-P100VKM-E
PCFY-P100VKM-ER1

PCFY-P125VKM-E
PCFY-P125VKM-ER1



8 DISASSEMBLY PROCEDURE

Be careful when removing heavy parts.

(Photo: **PCFY-P125VKM-E**)

→ : Indicates the visible parts in the photos/figures.

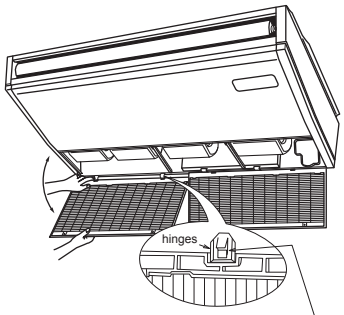
OPERATING PROCEDURE

1. Removing the air intake grille

(1) Slide the air intake grille holding knobs (at 2 or 3 locations) to the rear to open the air intake grille. (See Figure 1)

(2) While the air intake grille left open, push the stoppers on the rear hinges (at 2 or 3 locations) to pull out the air intake grille. (See Figure 2)

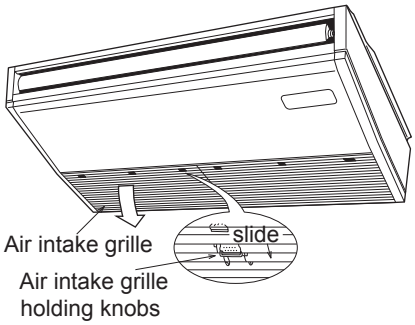
Figure 2



Pull out the air intake grille

PHOTOS/FIGURES

Figure 1



2. Removing the indoor controller board and the electrical box

(1) Remove the air intake grille. (See Figure 1,2)

(2) Remove the screw from the beam and remove the beam. (See Photo 1)

(3) Remove 2 screws from the electrical cover, and remove the electrical cover.

(4) Remove 2 screws from the electrical box and pull the electrical box downward.
Temporarily secure the electrical box using 2 hooks in the back of electrical box.

(5) Disconnect the connectors on the indoor controller board.

[Removing the electrical box]

(6) Disconnect the wires from the terminal blocks and pull out the electrical box. (See Photo 2)

[Removing the indoor controller board]

(6) Remove the 6 supports from the indoor controller board and remove the indoor controller board. (See Photo 3)

Photo 1

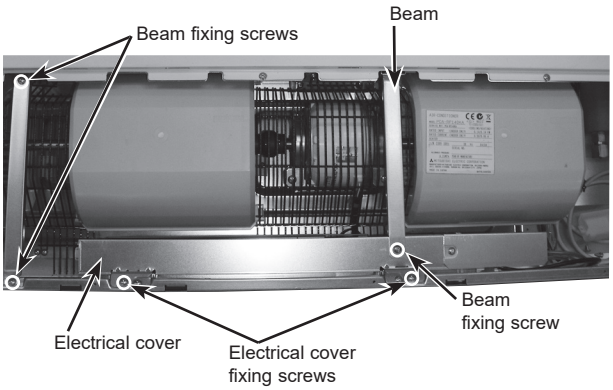


Photo 2

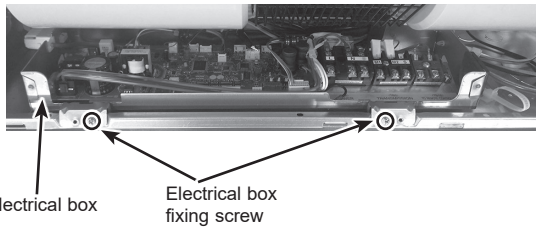
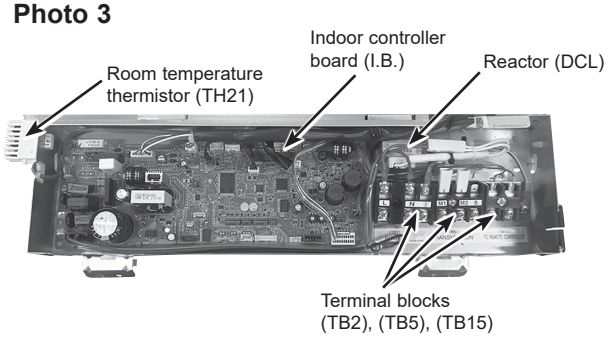
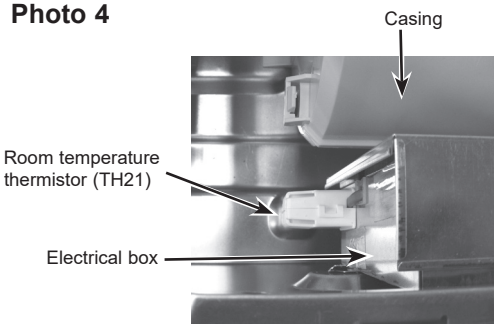
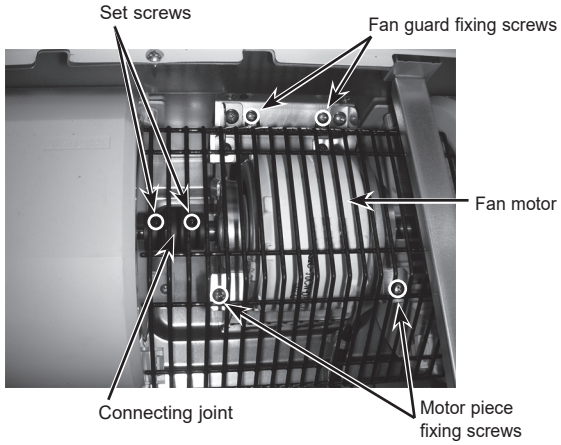
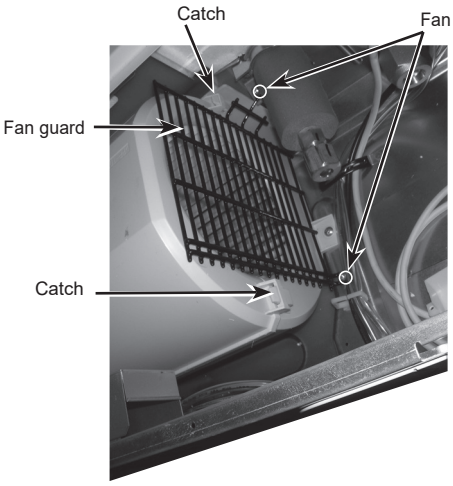
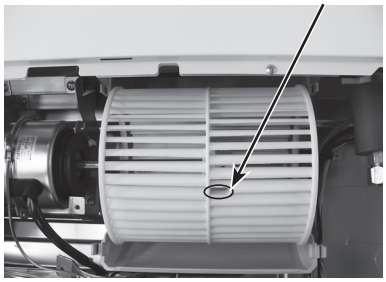
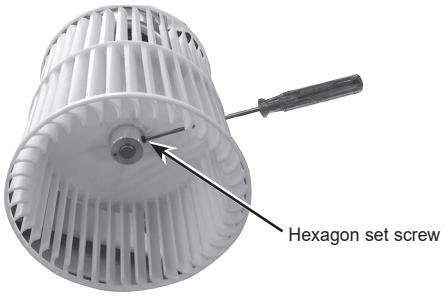


Photo 3



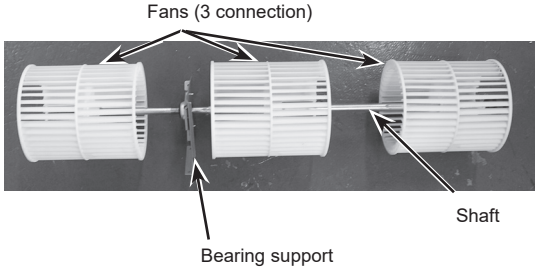
OPERATING PROCEDURE	PHOTOS/FIGURES
3. Removing the room temperature thermistor (TH21) (1) Remove the air intake grille. (See Figure 1, 2) (2) Remove the screw from the beam and remove the beam. (See Photo 1) (3) Remove 2 screws from the electrical cover, and remove the electrical cover. (4) Remove 2 screws from the electrical box and pull the electrical box downward. Temporarily secure the electrical box using 2 hooks in the back of electrical box. (5) Disconnect the connector CN20 (red) from the indoor controller board. (6) Remove the sensor holder from the electrical box and remove the thermistor form the holder.	**Photo 4** 
4. Removing the fan motor and right side fan (1) Remove the air intake grille. (See Figure 1, 2) (2) Remove the screw from the beam and remove the beam. (See Photo 1) (3) Remove 2 screws from the electrical cover, and remove the electrical cover. (4) Remove 2 screws from the electrical box and pull the electrical box downward. (5) Temporarily secure the electrical box using 2 hooks in the back of electrical box. (6) Remove 4 screws fixing fan guard of the fan motor. (2 screws : See Photo 5 / 2 screws : Upper the electrical box) (7) Remove 2 screws fixing fan guard of piping side and remove the fan guard. (See Photo 6) (8) Remove the lower casing while pressing the 4 catches of the casing (right side of the fan motor). (9) Loosen the 2 set screws (2 hexagon set screws) of connecting joint and slide the fan motor to the left. (See Photo 5) (10) Remove the motor piece (left and right, each 1 screw). (See Photo 5) (11) Remove the fan motor and right side fan together. (12) Loosen the set screw (hexagon set screw) of fan and remove the fan from the shaft. (See Photo 7, 8)	**Photo 5**  **Photo 6**  **Photo 7** 
Photo 8  	

OPERATING PROCEDURE

5. Removing the fan (3 connection)

(1) Remove the air intake grille. (See Figure 1, 2)
(2) Remove the screw from the beam and remove the beam. (See Photo 1)
(3) Remove 2 screws from the electrical cover, and remove the electrical cover.
(4) Remove 2 screws from the electrical box and pull the electrical box downward.
Temporarily secure the electrical box using 2 hooks in the back of electrical box.
(5) Remove 4 screws from the fan guard of the fan motor. (See Photo 5)
(6) Remove 2 screws from the left side beam and remove the beam. (See Photo 1)
(7) Remove the 3 screws from center fan guard and remove the fan guard. (2 screws : See Photo 9 / 1 screw : Drain pan side)
(8) Remove 2 screws from the left fan guard and remove the fan guard. (See Photo 10)
(9) Loosen 2 set screws (2 hexagon set screws) of connecting joint. (See Photo 5)
(10) Remove 3 lower casings while pressing each 4 catches of the casing.
(11) Remove the 4 screws from the bearing support. (See Photo 11)
(12) Slide the connecting joint to the left and remove the fans and shaft together. (See Photo 12)
(13) Remove the fan from the shaft. (See Photo 7, 8)

Photo 12



PHOTOS/FIGURES

Photo 9

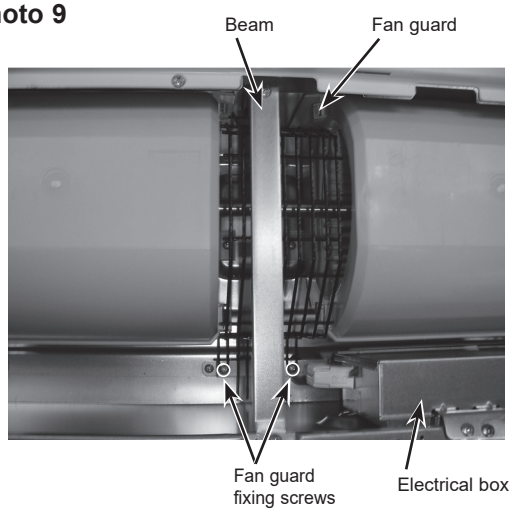


Photo 10

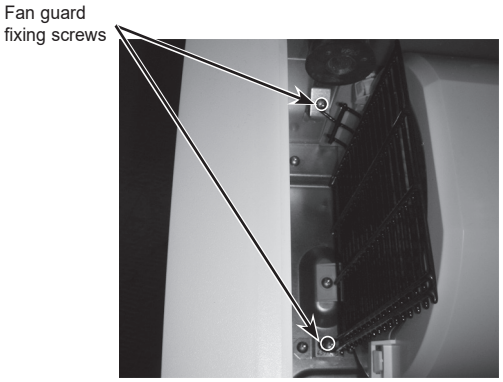
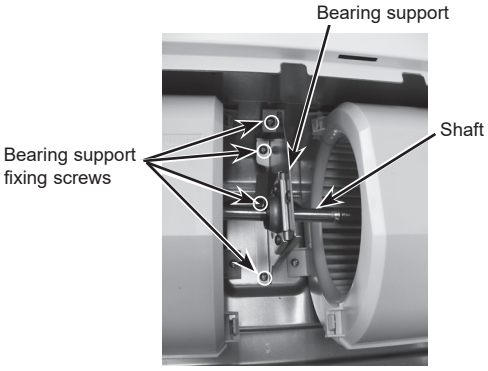


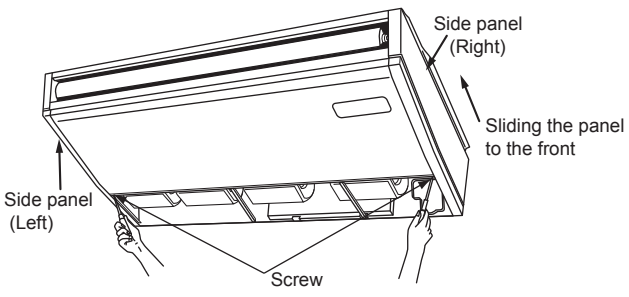
Photo 11

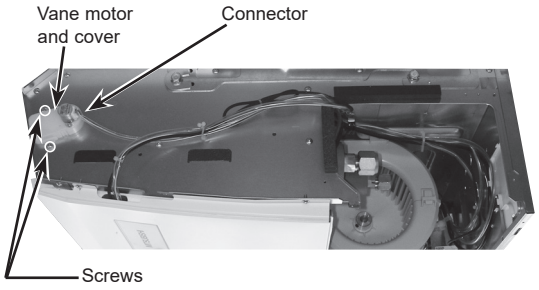
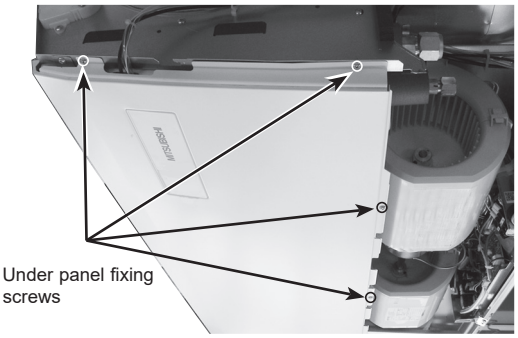
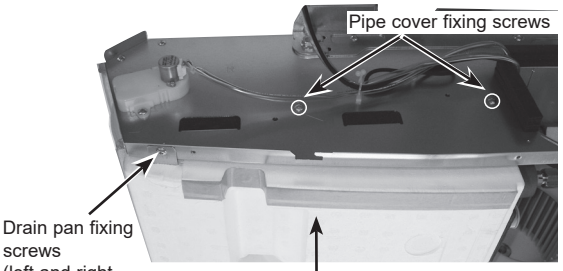
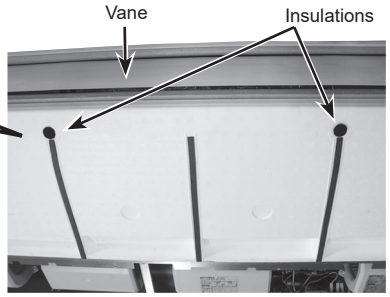
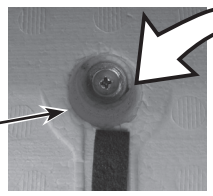


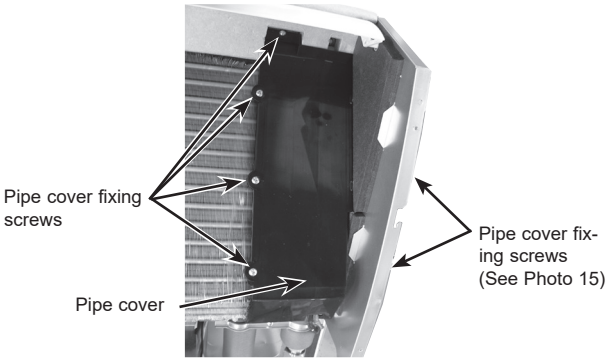
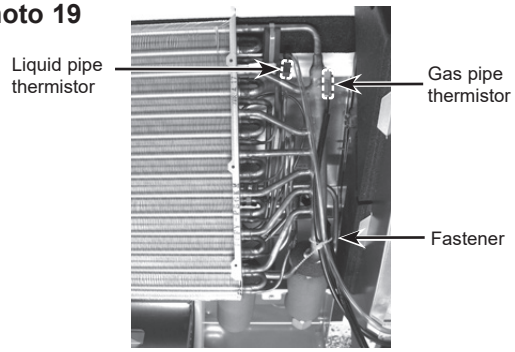
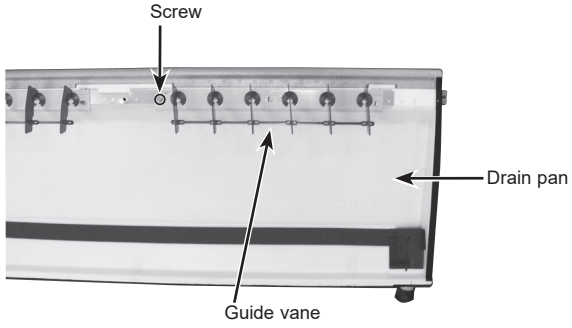
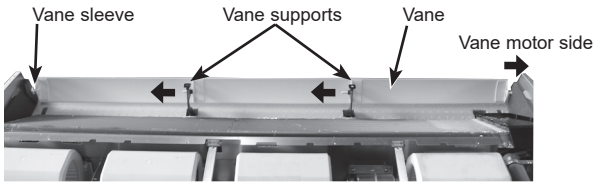
6. Removing the side panel

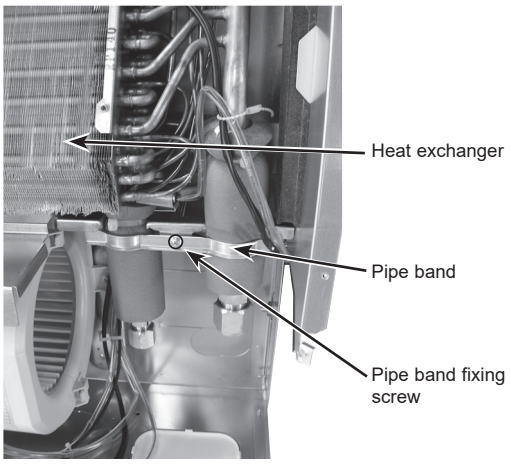
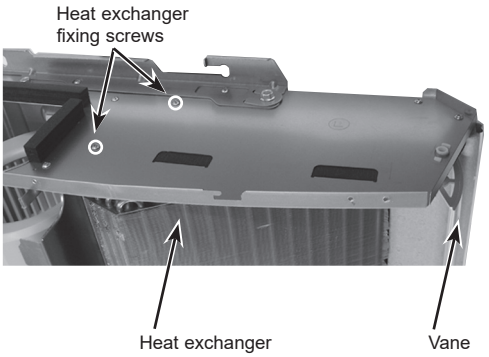
(1) Remove the air intake grille. (See Figure 1, 2)
(2) Remove the screw from the side panel, and remove the side panel by sliding the panel to the front.

Figure 3



OPERATING PROCEDURE	PHOTOS/FIGURES
7. Removing the vane motor (1) Remove the air intake. (See Figure 1, 2) (2) Remove the right side panel. (See Figure 3) (3) Remove the connector of vane motor. (4) Remove 2 screws of vane motor cover , then remove vane motor.	**Photo 13** 
8. Removing the under panel (1) Remove the air intake grille. (See Figure 1, 2) (2) Remove the left and right side panels. (See Figure 3) (3) Remove the beam. (See Photo 1) (4) Remove the electrical cover. (See Photo 1) (5) Pull the electrical box downward. (See Photo 2) (6) (Wireless remote controller receiver type only) Disconnect the connector CNB from the PCB for wireless remote controller and remove the clamp and strap for wires. (7) Remove 8 screws from the under panel. (8) Move the under panel forward by about 10mm and remove the under panel.	**Photo 14** 
9. Removing the drain pan (1) Remove the air intake grille. (See Figure 1, 2) (2) Remove the side panel (right and left). (See Figure 3) (3) Remove the under panel. (See Photo 14) Remove the screws of the right and left side drain pan. (See Photo 15) (4) Remove 2 insulation in center of the drain pan, and after removing 2 screws with washer, remove the drain pan. (See Photo 16, 17) (Note) Please be aware that there might be some drainage left in the drain pan when you remove the drain pan.	**Photo 15**  **Photo 16**  **Photo 17** 

OPERATING PROCEDURE	PHOTOS/FIGURES
10. Removing the pipe thermistors / Liquid (TH22) and Gas (TH23) (1) Remove the air intake grille. (See Figure 1, 2) (2) Remove the left and right side panels. (See Figure 3) (3) Remove the under panel. (See Photo 14) (4) Remove the drain pan. (See Photo 15, 16, 17) (5) Disconnect the connector CN44 (white) from the indoor controller board. (6) Remove 6 screws from the pipe cover and remove the pipe cover. (See Photo 15, 18) (7) Remove the fastener for wires and remove the thermistors (liquid and gas) from each holder. (See Photo 19)	**Photo 18**  **Photo 19** 
11. Removing the guide vane (1) Remove the intake grille. (See Figure 1, 2) (2) Remove the side panel (right and left). (See Figure 3) (3) Remove the under panel. (See Photo 14) (4) Remove the drain pan. (See Photo 15, 16, 17) (5) Remove the screw from the guide vane, then remove the guide vane.	**Photo 20** 
12. Removing the Auto vane (1) Remove the intake grille. (See Figure 1, 2) (2) Remove the right side panel. (See Figure 3) (3) Remove the vane motor and cover. (See Photo 13) (4) Slide the auto vane to the vane motor side. (5) Remove 2 axes from each vane support pushing the vane support to the vane sleeve side.	**Photo 21** 

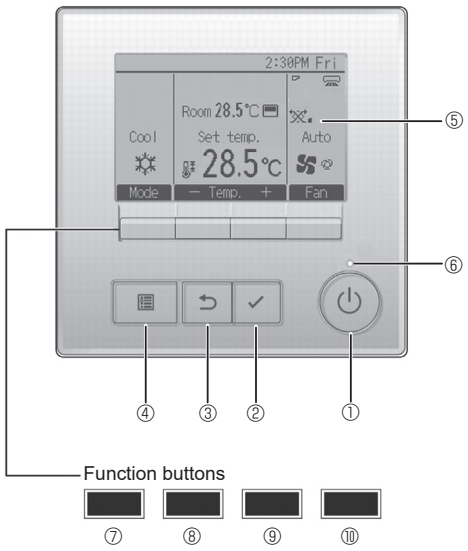
OPERATING PROCEDURE	PHOTOS/FIGURES
13. Removing the heat exchanger and LEV (1) Remove the air intake grille. (See Figure 1, 2) (2) Remove the beam. (See Photo 1) (3) Remove the electrical cover. (See Photo 1) (4) Pull the electrical box downward. (See Photo 2) (5) Disconnect the connector CN60 (white) from the indoor controller board. (6) Remove the left and right side panels. (See Figure 3) (7) Remove the under panel. (See Photo 14) (8) Remove the drain pan. (See Photo 15, 16, 17) (9) Remove the pipe cover. (See Photo 18) (10) Remove the pipe thermistors (TH22 and TH23) from each holder. (See Photo 19) (11) Remove the pipe band fixing screw and remove the pipe band. (See Photo 22) (12) Remove 2 screws from the heat exchanger and remove the heat exchanger with LEV.	**Photo 22**  **Photo 23** 

9 REMOTE CONTROLLER

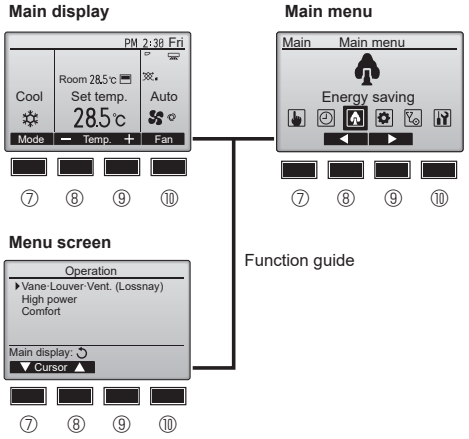
9-1. REMOTE CONTROLLER FUNCTIONS

<PAR-41MAA>

Controller interface



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



① [ON/OFF] button

Press to turn ON/OFF the indoor unit.

② [SELECT] button

Press to save the setting.

③ [RETURN] button

Press to return to the previous screen.

④ [MENU] button

Press to bring up the Main menu.

⑤ Backlit LCD

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

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

⑥ ON/OFF lamp

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

⑦ Function button [F1]

Main display: Press to change the operation mode.
Menu screen: The button function varies with the screen.

⑧ Function button [F2]

Main display: Press to decrease temperature.
Main menu: Press to move the cursor left.
Menu screen: The button function varies with the screen.

⑨ Function button [F3]

Main display: Press to increase temperature.
Main menu: Press to move the cursor right.
Menu screen: The button function varies with the screen.

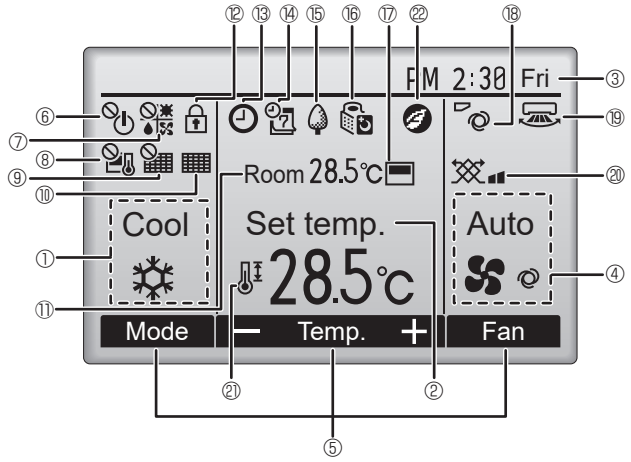
⑩ Function button [F4]

Main display: Press to change the fan speed.
Menu screen: The button function varies with the screen.

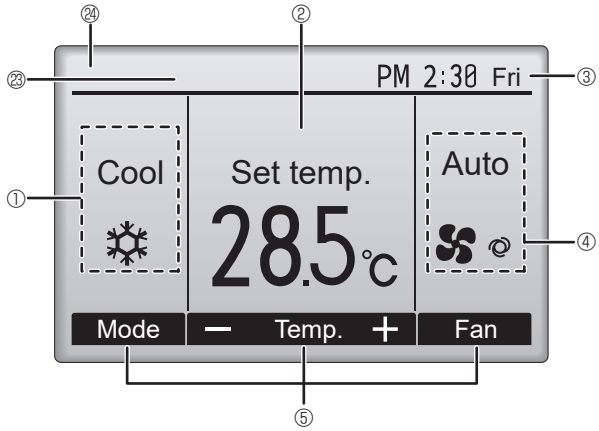
Display

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

<Full mode>
* All icons are displayed for explanation.



<Basic mode>



① Operation mode

② Preset temperature

③ Clock

④ Fan speed

⑤ Button function guide

Functions of the corresponding buttons appear here.

⑥

Appears when the ON/OFF operation is centrally controlled.

⑦

Appears when the operation mode is centrally controlled.

⑧

Appears when the preset temperature is centrally controlled.

⑨

Appears when the filter reset function is centrally controlled.

⑩

Indicates when filter needs maintenance.

⑪ Room temperature

⑫

Appears when the buttons are locked.

⑬

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

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

⑭

Appears when the Weekly timer is enabled.

⑮

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

⑯

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

⑰

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

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

⑱

Indicates the vane setting.

⑲ *1

Indicates the louver setting.

⑳

Indicates the ventilation setting.

㉑

Appears when the preset temperature range is restricted.

㉒ *1

Appears when an energy saving operation is performed using a ″3D i-See sensor″ function.

㉓ Centrally controlled

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

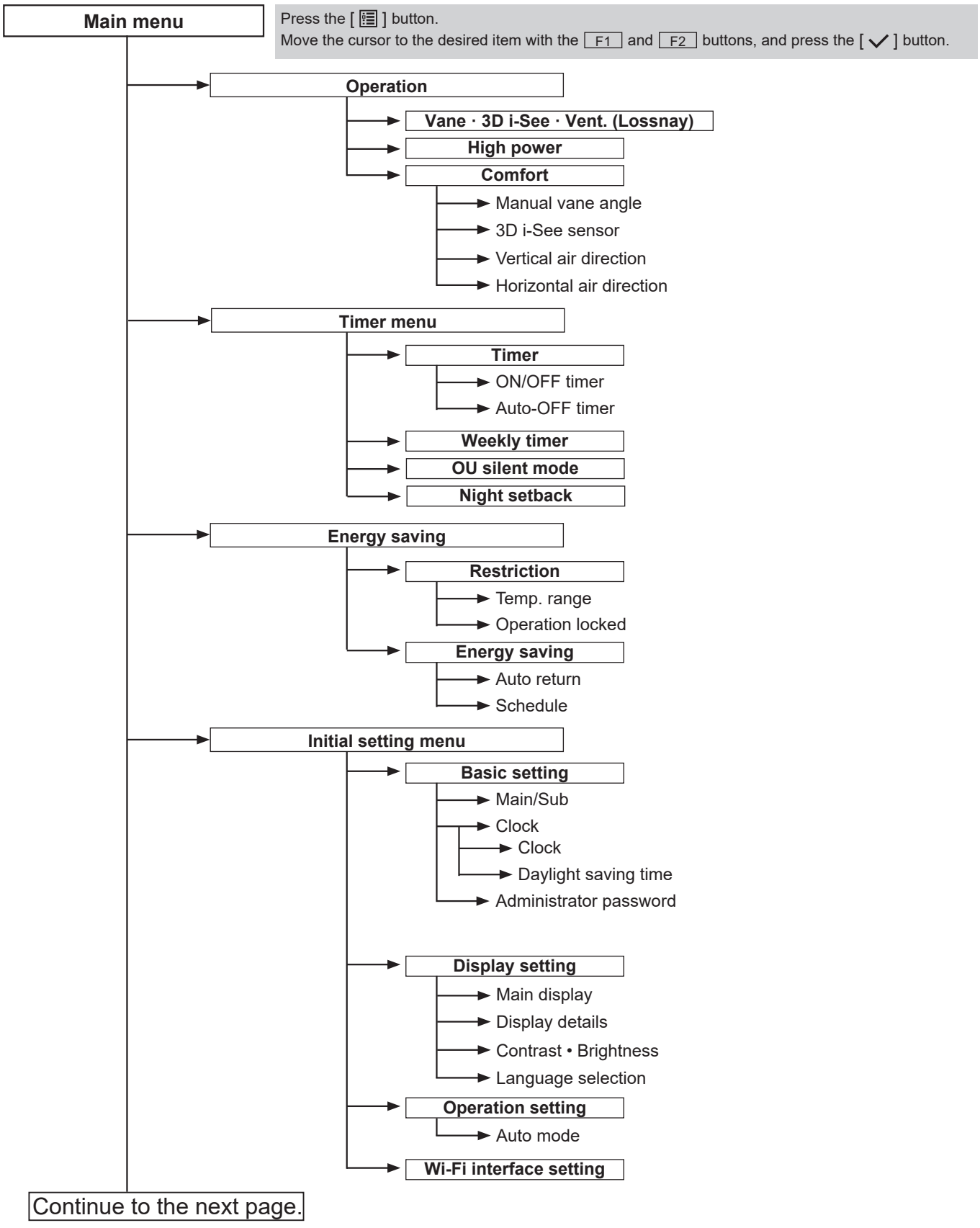
㉔ Preliminary error display

A check code appears during the preliminary error.

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

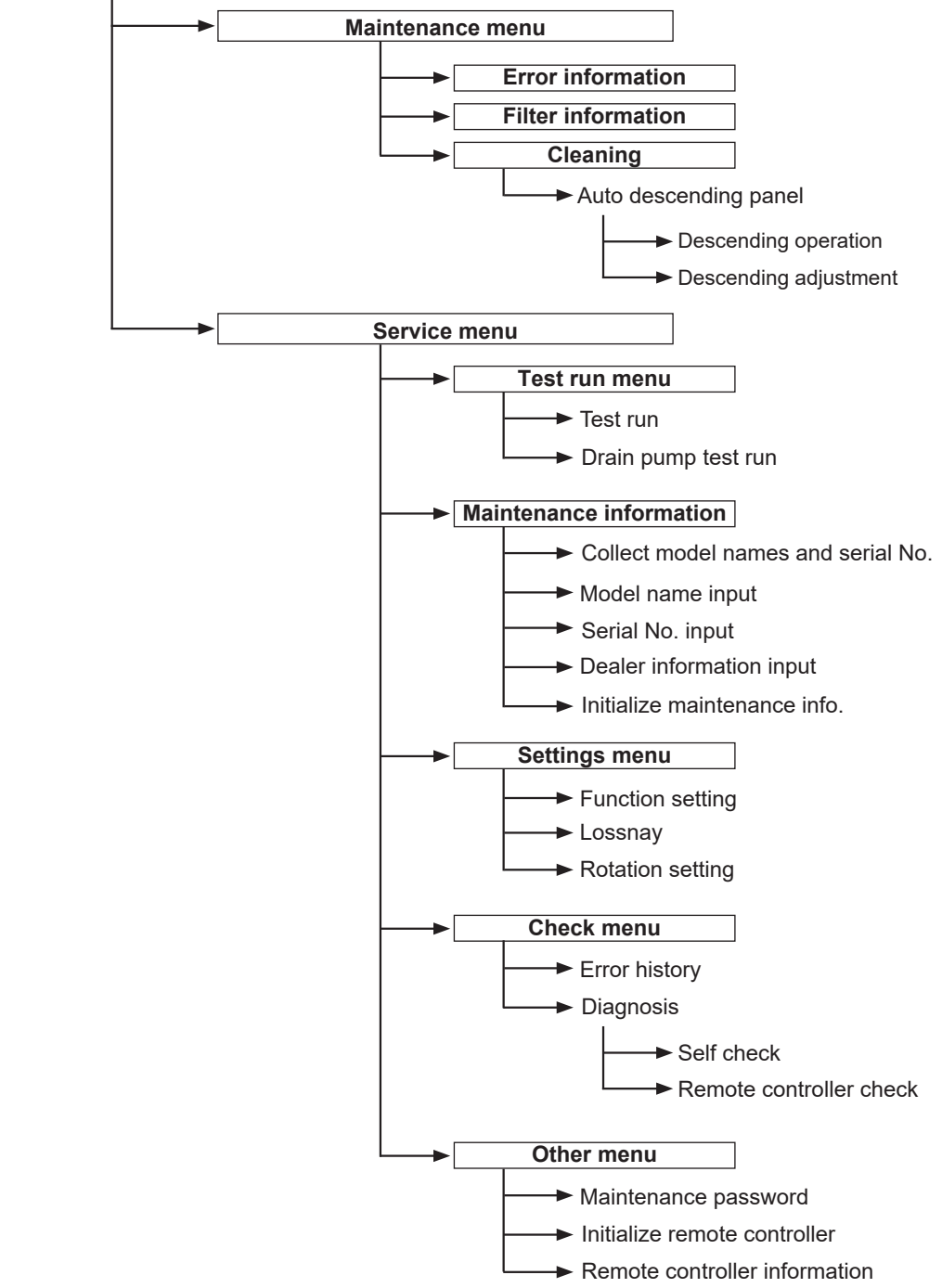
*1 These functions are not applied to the floor standing models.

Menu structure



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

Continue from the previous page.



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

Main menu list

Main menu	Setting and display items		Setting details
Operation	**Vane · 3D i-See · Vent. (Vane.Vent. (Lossnay))**		**Vane: Use to set the vertical air direction.** **Louver: Use to set the horizontal air direction.** **3D i-See sensor: This setting is available only for the air conditioners that support easy setting function of motion sensing air direction.** **Vent: Use to set the amount of ventilation.**
	High power *3		**Use to reach the comfortable room temperature quickly.** • Units can be operated in the High-power mode for up to 30 minutes.
	Comfort	**Manual vane angle**	**Vertical air direction** • Sets the vertical airflow direction (vane) of each unit.
			Horizontal air direction • Sets the horizontal airfow direction (vane) of each unit.
		3D i-See sensor	**Use to set the following functions for 3D i-See sensor.** • Air distribution • Energy saving option • Seasonal airflow
Timer	**Timer**	**ON/OFF timer** *1	**Use to set the operation ON/OFF times.** • Time can be set in 5-minute increments.
		Auto-OFF timer	**Use to set the Auto-OFF time.** • Time can be set to a value from 30 to 240 in 10-minute increments.
	Weekly timer *1, *2		**Use to set the weekly operation ON/OFF times.** • Up to 8 operation patterns can be set for each day. (Not valid when the ON/OFF timer is enabled.)
	OU silent mode *1, *3		**Use to set the time periods in which priority is given to quiet operation of outdoor units over temperature control. Set the Start/Stop times for each day of the week.** •Select the desired silent level from ″Normal,″ ″Middle,″ and ″Quiet.″
	Night setback *1		**Use to make Night setback settings.** • Select ″Yes″ to enable the setting, and ″No″ to disable the setting. The temperature range and the start/stop times can be set.
Energy saving	**Restriction**	**Temp. range** *2	**Use to restrict the preset temperature range.** • Different temperature ranges can be set for different operation modes.
		Operation lock	**Use to lock selected functions.** • The locked functions cannot be operated.
	Energy saving	**Auto return** *2	**Use to get the units to operate at the preset temperature after performing energy saving operation for a specified time period.** • Time can be set to a value from 30 and 120 in 10-minute increments. (This function will not be valid when the preset temperature ranges are restricted.)
		Schedule *1, *3	**Set the start/stop times to operate the units in the energy saving mode for each day of the week, and set the energy saving rate.** • Up to 4 energy saving operation patterns can be set for each day. • Time can be set in 5-minute increments. • Energy saving rate can be set to a value from 0% or 50 to 90% in 10% increments.
	Energy data (for unit time, month, and day)		**Displays the amount of power consumption during operation.** • Unit time data: Data for the last one-month period can be displayed in 30-minute units. • Monthly/daily data: Data for the last 14-month period are displayed in day-and-month-units. * Data can be deleted. * Data are obtained based on the power consumption estimated from the operating state.

*1 Clock setting is required.

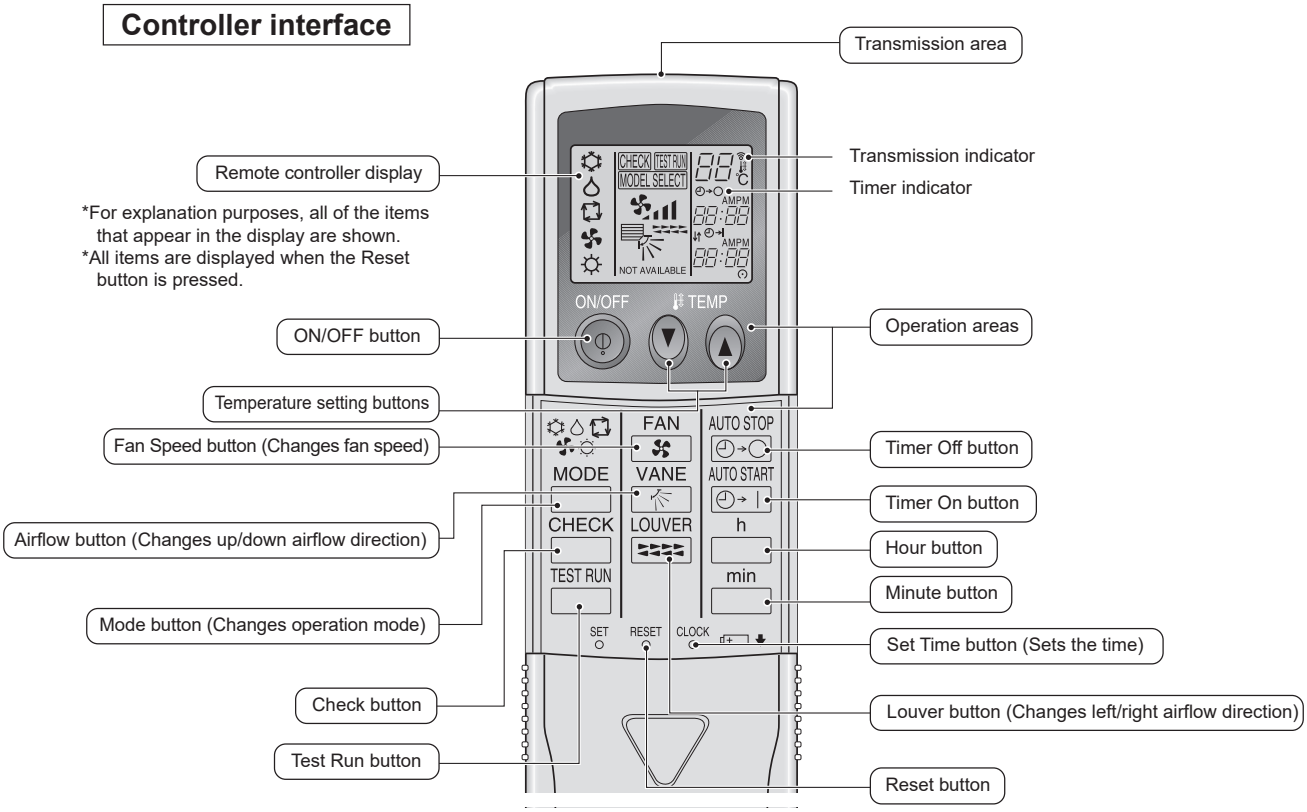
*2 1°C increments.

*3 This function is available only when certain outdoor units are connected.

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

<PAR-SL97A-E>

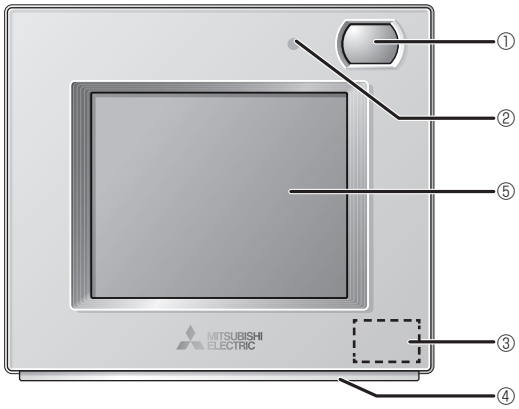
Controller interface



- When using the wireless remote controller, point it towards the receiver on the indoor unit.
- If the remote controller is operated within approximately two minutes after power is supplied to the indoor unit, the indoor unit may beep twice as the unit is performing the initial automatic check.
- The indoor unit beeps to confirm that the signal transmitted from the remote controller has been received. Signals can be received up to approximately 7 meters in a direct line from the indoor unit in an area 45 to the left and right of the unit. However, illumination such as fluorescent lights and strong light can affect the ability of the indoor unit to receive signals.
- If the operation lamp near the receiver on the indoor unit is blinking, the unit needs to be inspected. Consult your dealer for service.
- Handle the remote controller carefully! Do not drop the remote controller or subject it to strong shocks. In addition, do not get the remote controller wet or leave it in a location with high humidity.
- To avoid misplacing the remote controller, install the holder included with the remote controller on a wall and be sure to always place the remote controller in the holder after use.

<PAR-U02MEDA>

Controller interface



① Occupancy Sensor

The occupancy sensor detects vacancy for energy-save control.

② Brightness Sensor

The brightness sensor detects the brightness of the room for energy-save control.

③ Temperature & Humidity Sensor

The sensor detects the room temperature and the relative humidity.

④ LED Indicator

The LED indicator indicates the operation status in different colors.
The LED indicator lights up during normal operation, lights off when units are stopped, and blinks when an error occurs.

⑤ Touch panel & Backlit LCD

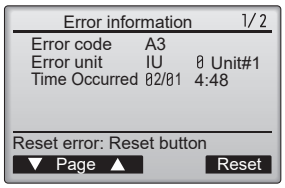
The touch panel shows the operation settings screen.
When the backlight is off, touching the panel turns the backlight on, and it will stay lit for a predetermined period of time.

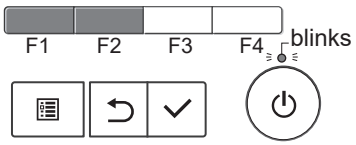
9-2. ERROR INFORMATION

When an error occurs, the following screen will appear.
Check the error status, stop the operation, and consult your dealer.

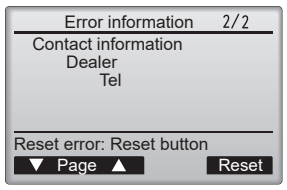
1. Check code, error unit, refrigerant address, date and time of occurrence, model name, and serial number will appear.
   The model name and serial number will appear only if the information have been registered.

   Press the F1 or F2 button to go to the next page.





Contact information (dealer's phone number) will appear if the information has been registered.



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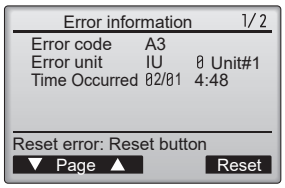
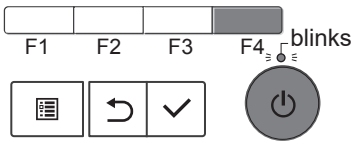
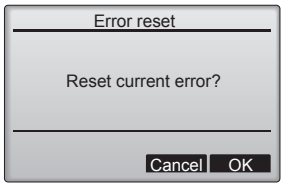
2. Press the F4 button or the ⏻ button to reset the error that is occurring.

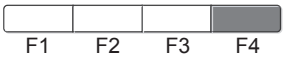
Errors cannot be reset while the ON/OFF operation is prohibited.

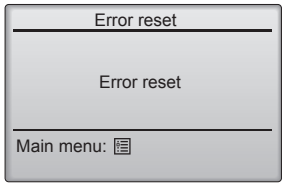




Select ″OK″ with the F4 button.



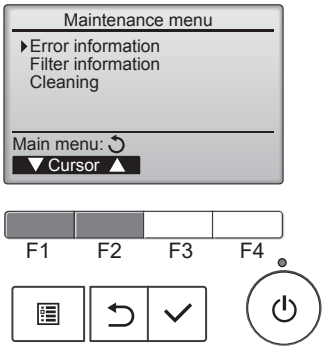




Navigating through the screens
• To go back to the Service menu ..... [☰] button

• Checking the error information

While no errors are occurring, page 2/2 of the error information can be viewed by selecting ″Error information″ from the Maintenance menu.
Errors cannot be reset from this screen.

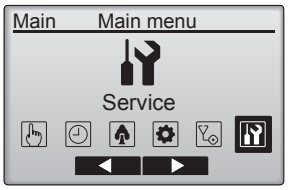


9-3. SERVICE MENU

Maintenance password is required

1. Select ″Service″ from the Main menu, and press the [✓] button.

   *At the main display, the menu button and select ″Service″ to make the maintenance setting.



2. When the Service menu is selected, a window will appear asking for the password.

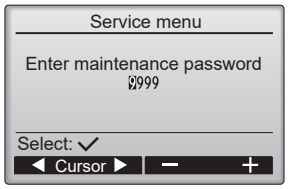
   To enter the current maintenance password (4 numerical digits), move the cursor to the digit you want to change with the F1 or F2 button.

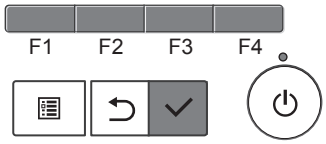
   ▼

   Set each number (0 through 9) with the F3 or F4 button.

   ▼

   Then, press the [✓] button.





Note: The initial maintenance password is ″9999″. Change the default password as necessary to prevent unauthorized access. Have the password available for those who need it.

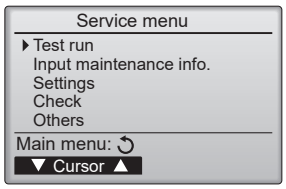
If you forget your maintenance password, you can initialize the password to the default password ″9999″ by pressing and holding the F1 button for 10 seconds on the maintenance password setting screen.

3. If the password matches, the Service menu will appear.

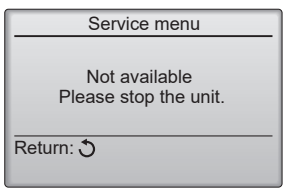
Note: Air conditioning units may need to be stopped to make only at ″Settings″. There may be some settings that cannot be made when the system is centrally controlled.

▼

A screen will appear that indicates the setting has been saved.



▼



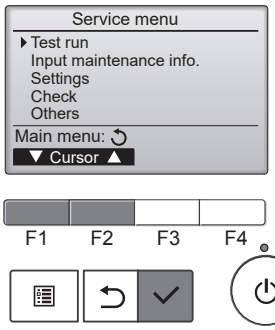
Navigating through the screens

- To go back to the Service menu .....[☰] button
- To return to the previous screen.....[⮌] button

9-4. TEST RUN

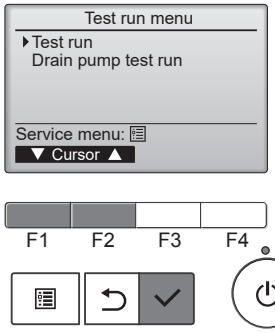
9-4-1. PAR-41MAA

1. Select ″Service″ from the Main menu, and press the [✓] button.



Select ″Test run″ with the F1 or F2 button, and press the [✓] button.

2. Select ″Test run″ with the F1 or F2 button, and press the [✓] button.



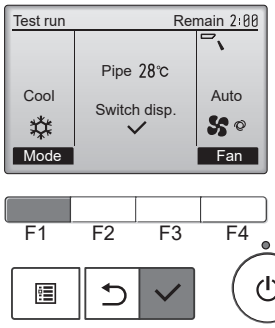
Test run operation

Press the F1 button to go through the operation modes in the order of ″Cool and Heat″.

Cool mode: Check the cold air blows out.
Heat mode: Check the heat blows out.

Check the operation of the outdoor unit's fan.

Press the [✓] button and open the Vane setting screen.



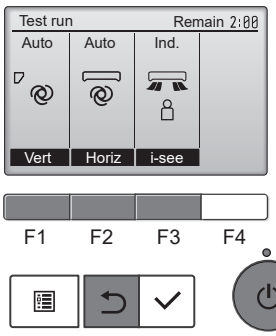
Auto vane check

Check the auto vane with the F1 F2 F3 buttons.

Press the [⮌] button to return to ″Test run operation″.

Press the ⏻ button.

When the test run is completed, the ″Test run menu″ screen will appear.
The test run will automatically stop after 2 hours.
*The function is available only for the model with vanes.

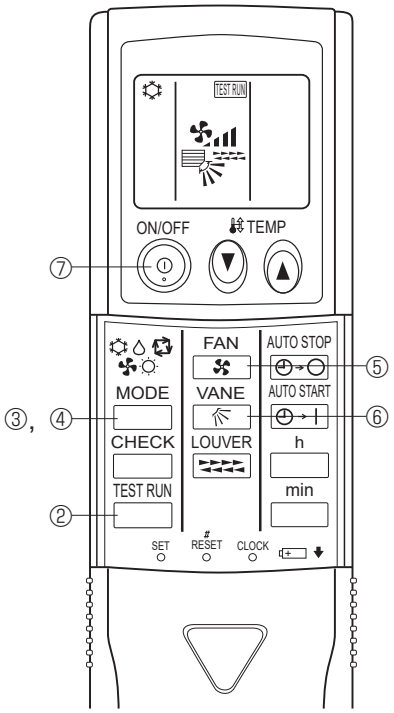


9-4-2. PAR-SL97A-E

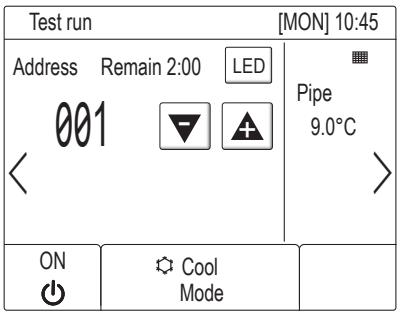
Measure an impedance between the power supply terminal block on the outdoor unit and ground with a 500 V Megger and check that it is equal to or greater than 1.0 MΩ.

1. Turn on the main power to the unit.
2. Press the TEST RUN button twice continuously.
   (Start this operation from the status of remote controller display turned off.)
   A TEST RUN and current operation mode are displayed.
3. Press the MODE (☼♢♣☼⮔) button to activate COOL ☼ mode, then check whether cool air blows out from the unit.
4. Press the MODE (☼♢♣☼⮔) button to activate HEAT ☼ mode, then check whether warm air blows out from the unit.
5. Press the FAN button and check whether strong air blows out from the unit.
6. Press the VANE button and check whether the auto vane operates properly.
7. Press the ON/OFF button to stop the test run.

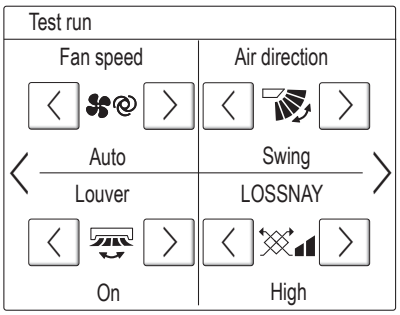
Note:
- **Point the remote controller towards the indoor unit receiver while following steps** 2 **to** 7**.**
- **It is not possible to run in FAN, DRY or AUTO mode.**



9-4-3. PAR-U02MEDA



[Test run screen]



[Indoor unit setting screen]

(a) Read the section about Test run in the indoor unit Installation Manual before performing a test run.

(b) During the test run, indoor units will be forced to operate in the Thermo-ON status.
Except the set temperature, normal operation functions are accessible during test run.

(c) By selecting the address of another indoor unit, the liquid pipe temperature of the selected unit can be monitored.

(d) The test run will automatically end in two hours.

* When AHC is controlled from the controller
To monitor the operating status of AHC, touch the [<] button on the [Test run] screen and access the [General equipment] screen.
To set the humidity setting for the humidifier (when one is connected to the AHC), touch the [>] button on the [Indoor unit setting] screen.

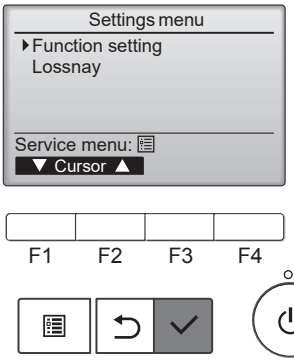
9-5. FUNCTION SETTING

9-5-1. PAR-41MAA

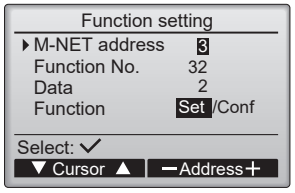
1. Select ″Service″ from the Main menu, and press the [✓] button.

   Select ″Setting″ from the Service menu, and press the [✓] button.

   Select ″Function setting″, and press the [✓] button.



2. The Function setting screen will appear.
   Press the F1 or F2 button to move the cursor to one of the following: M-NET address, function setting number, or setting value. Then, press the F3 or F4 button to change the settings to the desired settings.

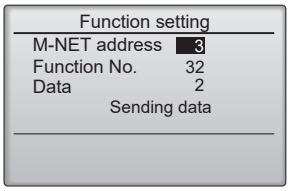


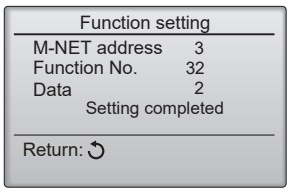
   Once the settings have been completed, press the [✓] button.

   A screen will appear indicating that the settings information is being sent.
   To check the current settings of a given unit, enter the setting for its M-NET address and function setting number, select Conf for the Function, and press the [✓] button.

   A screen will appear indicating that the settings are being searched for.
   When the search is done, the current settings will appear.

   When the settings information has been sent, a screen will appear indicating its completion.
   To make additional settings, press the [↩] button to return to the screen shown in the above step. Set the function numbers for other indoor units by following the same steps.



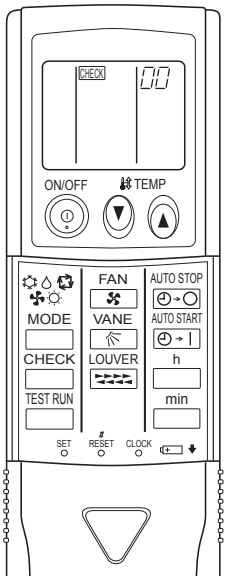


Note:
- Refer to the indoor unit Installation Manual for information about the factory settings of indoor units, function setting numbers, and setting values.
- Be sure to write down the settings for all functions if any of the initial settings has been changed after the completion of installation work.

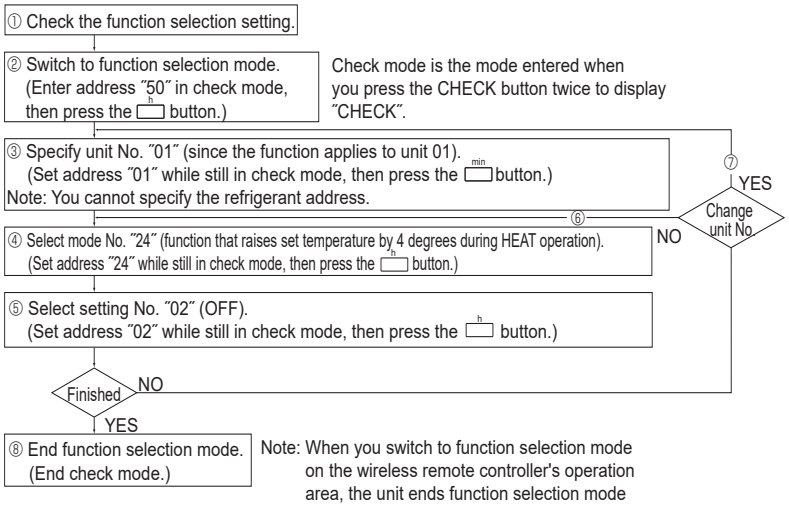
9-5-2. PAR-SL97A-E

Functions can be selected with the wireless remote controller. Function selection using wireless remote controller is available only for refrigerant system with wireless function. Refrigerant address cannot be specified by the wireless remote controller.

[Flow of function selection procedure]



The flow of the function selection procedure is shown below. This example shows how to turn off the function that raises the set temperature by 4 degrees during HEAT operation. (Mode 24: 2)
The procedure is given after the flow chart.



[Operating instructions]

1. Check the function settings.
2. Press the CHECK button twice continuously. → CHECK is lit and ″00″ blinks.
   Press the TEMP ▼ button once to set ″50″. Direct the wireless remote controller toward the receiver of the indoor unit and press the h button.
3. Set the unit number.
   Press the TEMP ▲ ▼ button to set the unit number. (Press ″01″ to specify the indoor unit whose unit number is 01.)
   Direct the wireless remote controller toward the receiver of the indoor unit and press the min button.

   (By setting unit number with the min button, specified indoor unit starts performing fan operation.
   Detect which unit is assigned to which number using this function. If unit number is set to AL, all the indoor units in same refrigerant system start performing fan operation simultaneously.)

   Notes:
   1. If a unit number that cannot be recognized by the unit is entered, 3 beeps of 0.4 seconds will be heard. Reenter the unit number setting.
   2. If the signal was not received by the sensor, you will not hear a beep or a ″double beep″ may be heard. Reenter the unit number setting.
4. Select a mode.
   Press the TEMP ▲ ▼ button to set a mode. Press ″24″ to turn on the function that raises the set temperature by 4 degrees during heat operation. Direct the wireless remote controller toward the sensor of the indoor unit and press the h button.
   → The sensor-operation indicator will blink and beeps will be heard to indicate the current setting number.
   Current setting number: 1 = 1 beep (1 second)
   2 = 2 beeps (1 second each)
   3 = 3 beeps (1 second each)

   Notes:
   1. If a mode number that cannot be recognized by the unit is entered, 3 beeps of 0.4 seconds will be heard. Reenter the mode number.
   2. If the signal was not received by the sensor, you will not hear a beep or a ″double beep″ may be heard. Reenter the mode number.
5. Select the setting number.
   Press the TEMP ▲ ▼ button to select the setting number. (02: Not available)
   Direct the wireless remote controller toward the receiver of the indoor unit and press the h button.
   → The sensor-operation indicator will blink and beeps will be heard to indicate the setting number.
   Setting number: 1 = 2 beeps (0.4 seconds each)
   2 = 2 beeps (0.4 seconds each, repeated twice)
   3 = 2 beeps (0.4 seconds each, repeated 3 times)

   Notes:
   1. If a setting number that cannot be recognized by the unit is entered, the setting will turn back to the original setting.
   2. If the signal was not received by the sensor, you will not hear a beep or a ″double beep″ may be heard. Reenter the setting number.
6. Repeat steps ④ and ⑤ to make an additional setting without changing unit number.
7. Repeat steps ③ to ⑤ to change unit number and make function settings on it.
8. Complete the function settings
   Press ◎ button.

Do not use the wireless remote controller for 30 seconds after completing the function setting.

9-5-3. PAR-SL101A-E

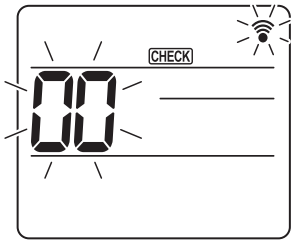


Fig. 1

1. Going to the function select mode
   Press the MENU button between of 5 seconds.
   (Start this operation from the status of remote controller display turned off.)
   [CHECK] is lit and ″00″ blinks. (Fig. 1)
   Press the ^ button to set the ″50″.
   Direct the wireless remote controller toward the receiver of the indoor unit and press the SET button.

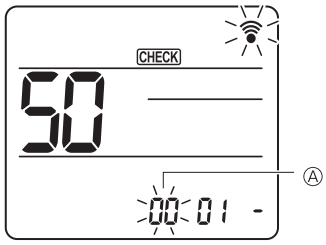


Fig. 2

2. Setting the unit number
   Press the ^ button to set unit number Ⓐ. (Fig. 2)
   Direct the wireless remote controller toward the receiver of the indoor unit and press the SET button.

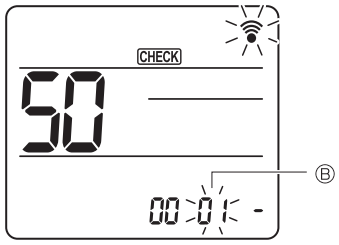


Fig. 3

3. Select a mode
   Press the ^ button to set Mode number Ⓑ. (Fig. 3)
   Direct the wireless remote controller toward the receiver of the indoor unit and press the SET button.
   Current setting number: 1=1 beep (1 second)
   2=2 beeps (1 second each)
   3=3 beeps (1 second each)

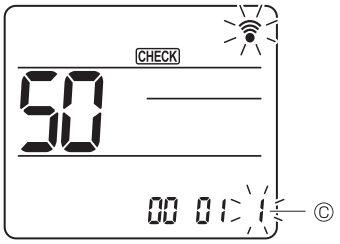


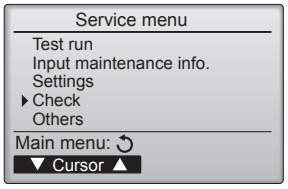
Fig. 4

4. Selecting the setting number
   Use the ^ button to change the Setting number Ⓒ. (Fig. 4)
   Direct the wireless remote controller toward the receiver of the indoor unit and press the SET button.
5. To select multiple functions continuously
   Repeat select ③ and ④ to change multiple function settings continuously.
6. Complete function selection
   Direct the wireless remote controller toward the sensor of the indoor unit and press the ⏻OFF/ON button.

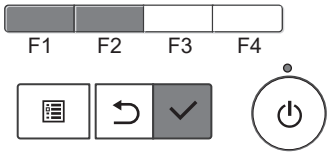
Note: Be sure to write down the settings for all functions if any of the initial settings has been changed after the completion of installation work.

9-6. ERROR HISTORY

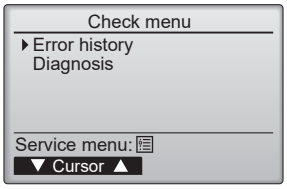
1. Select ″Service″ from the Main menu, and press the [✓] button.



Select ″Check″ with the F1 or F2 button, and press the [✓] button.

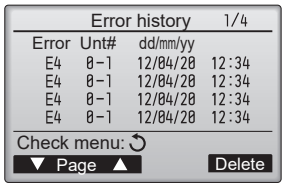


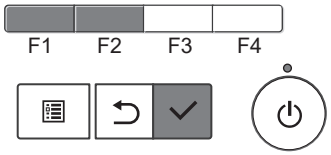
2. Select ″Error history″ with the F1 or F2 button, and press the [✓] button.



3. 16 error history records will appear.

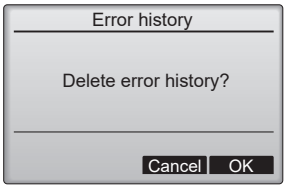
4 records are shown per page, and the top record on the first page indicates the latest error record.



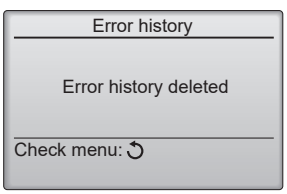


4. Deleting the error history

To delete the error history, press the F4 button (Delete) on the screen that shows error history.
A confirmation screen will appear asking if you want to delete the error history.



Press the F4 button (OK) to delete the history.



″Error history deleted″ will appear on the screen.

Press the [⮌] button to go back to the Check menu screen.

9-7. SELF-DIAGNOSIS

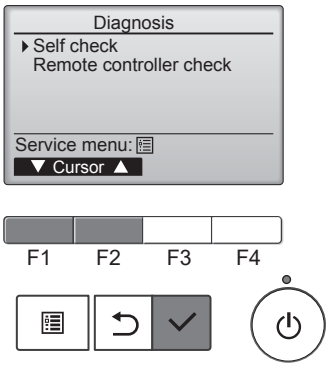
9-7-1. PAR-41MAA

1. Select ″Service″ from the Main menu,
   and press the [✓] button.

   Select ″Check″ from the Service menu,
   and press the [✓] button.

   Select ″Diagnosis″ from the Check menu,
   and press the [✓] button.

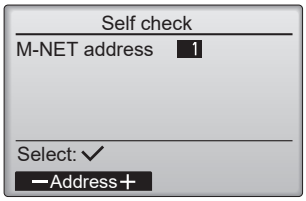
   Select ″Self check″ with the F1 or F2 button,
   and press the [✓] button.



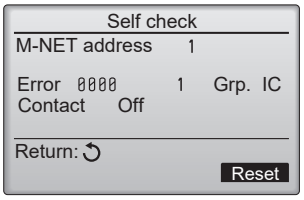
2. Select “Self check” from the Diagnosis menu, and press the [✓] button to view the Self check screen.

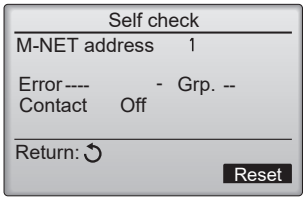
   With the F1 or F2 button, enter the M-NET address, and press the [✓] button.

   Check code, unit number, attribute, and indoor unit demand signal ON/OFF status at the contact will appear. “-” will appear if no error history is available.



When there is no error history

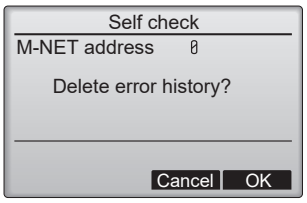


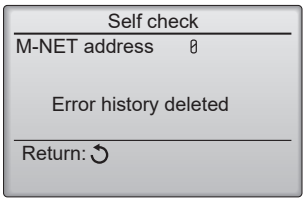


3. Resetting the error history

   Press the F4 button (Reset) on the screen that shows the error history. A confirmation screen will appear asking if you want to delete the error history.

   Press the F4 button (OK) to delete the error history. If deletion fails, “Request rejected” will appear, and “Unit not exist” will appear if indoor units that are correspond to the entered address are not found.

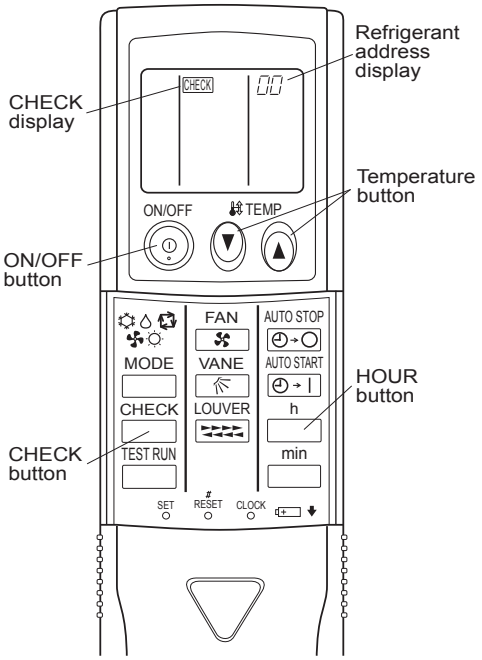




9-7-2. PAR-SL97A-E

When a malfunction occurs to air conditioner, both indoor unit and outdoor unit will stop and operation lamp blinks to inform unusual stop.

<Malfunction-diagnosis method at maintenance service>



[Procedure]

1. Press the CHECK button twice.
   - ″CHECK″ lights, and refrigerant address ″00″ blinks.
   - Check that the remote controller's display has stopped before continuing.

2. Press the TEMP ▼ ▲ buttons.
   - Select the refrigerant address of the indoor unit for the self-diagnosis.

   Note: Set refrigerant address using the outdoor unit's DIP switch (SW1). (For more information, see the outdoor unit installation manual.)

3. Point the remote controller at the sensor on the indoor unit and press the HOUR button.
   - If an air conditioner error occurs, the indoor unit's sensor emits an intermittent buzzer sound, the operation light blinks, and the check code is output. (It takes 3 seconds at most for check code to appear.)

4. Point the remote controller at the sensor on the indoor unit and press the ON/OFF button.
   - The check mode is cancelled.

9-8. REMOTE CONTROLLER CHECK

If operations cannot be completed with the remote controller, diagnose the remote controller with this function.

1. Select ″Service″ from the Main menu,
   and press the [✓] button.

   ▼

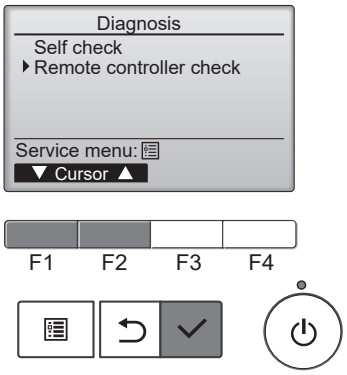
   Select ″Check″ from the Service menu,
   and press the [✓] button.

   ▼

   Select ″Diagnosis″ from the Check menu,
   and press the [✓] button.

   ▼

   Select ″Remote controller check″ with the F1 or F2 button,
   and press the [✓] button.



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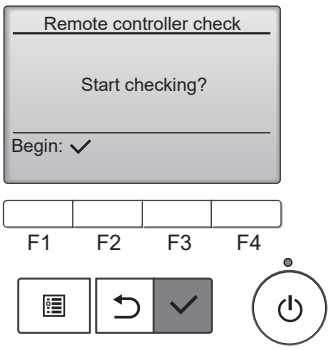
2. Select ″Remote controller check″ from the Diagnosis menu, and press the [✓] button to start the remote controller check and see the check results.

   ▼

   To cancel the remote controller check and exit the ″Remote controller check″ menu screen, press the [☰] or the [⮌] button.

   ▼

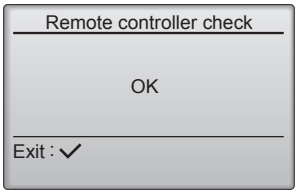
   The remote controller will not reboot itself.



3.

OK:	No problems are found with the remote controller. Check other parts for problems.
E3, 6832:	There is noise on the transmission line, or the indoor unit or another remote controller is faulty. Check the transmission line and the other remote controllers.
NG (ALL0, ALL1):	Send-receive circuit fault. The remote controller needs replacing.
ERC:	The number of data errors is the discrepancy between the number of bits in the data transmitted from the remote controller and that of the data that was actually transmitted over the transmission line. If data errors are found, check the transmission line for external noise interference.

Remote controller check results screen



▼

If the [✓] button is pressed after the remote controller check results are displayed, remote controller check will end, and the remote controller will automatically reboot itself.

Check the remote controller display and see if anything is displayed (including lines). Nothing will appear on the remote controller display if the correct voltage (8.5–12 VDC) is not supplied to the remote controller. If this is the case, check the remote controller wiring and indoor units.

9-9. SPECIAL FUNCTION OPERATION SETTING

<PAR-U02MEDA>

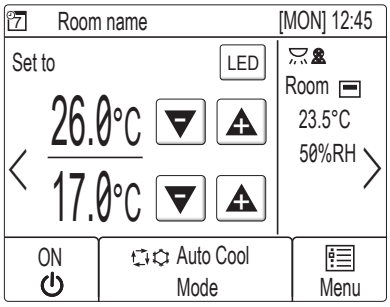
*M-NET remote controller cannot be connected with a refrigerant system which includes branch box.

It is necessary to perform “group settings” and “Interlocked LOSSNAY” at making group settings of different refrigerant systems (multiple outdoor unit).

(A) Group settings: Enter the indoor unit controlled by the remote controller, check the content of entries, and clear entries, etc.

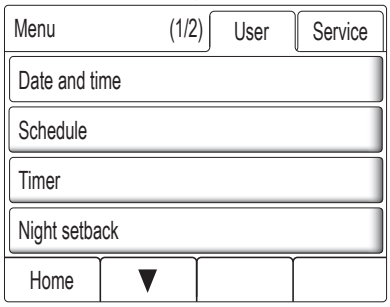
(B) Interlocked LOSSNAY: Used to set the linked operation of a Lossnay unit.

How to display the setup screen



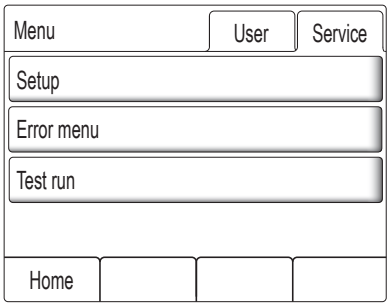
• HOME screen

Touch the [MENU] button.



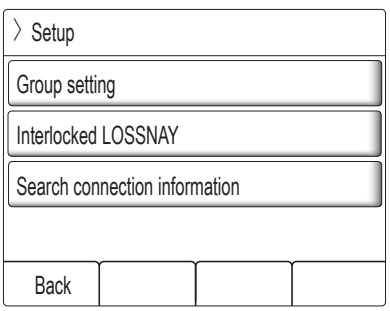
• Menu (User) screen

Touch the [Service] button.



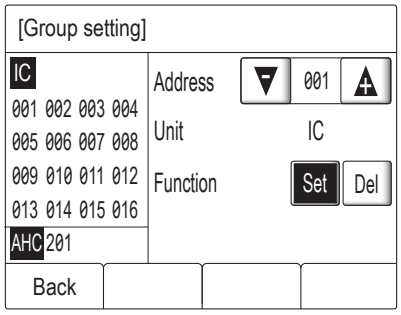
• Menu (Service) screen

Touch the [Setup] button.
Setup screen will appear.



(a) Group setting

Use this screen to register the indoor units and the AHC to be controlled from the controller.

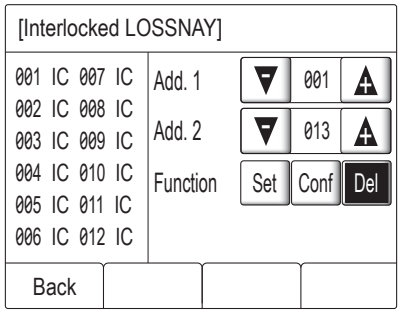


1. Select an indoor unit or an AHC address in the [Address] field.
   The number of units that can be registered.
   Indoor unit: 16 units maximum
   AHC: 1 unit maximum
   * AHC cannot be controlled from the controller unless indoor units are registered with the system.

2. Touch the [Set] button to register the address, and [Del] to delete the address.
   • Successful address registration/deletion:
   The registered address(es) will appear on the left side of the screen.
   Deleted address will not appear on the screen.
   • Error:
   "Request denied." or "Is not to be connected" will appear.

(b) Interlocked LOSSNAY

Use this function to interlock the operation of indoor units and LOSSNAY units.



1. To register LOSSNAY units
   Select the indoor unit address in the Add. 1 section.
   Select the interlocked LOSSNAY address in the Add. 2 section.
   Touch the [Set] button to save the setting.

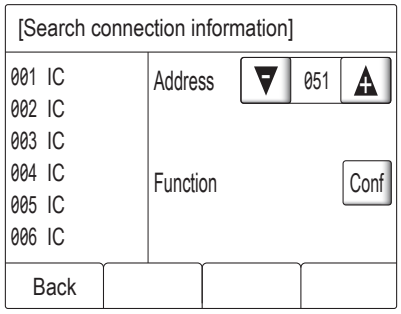
2. To search for an interlocked setting
   Touch the [Conf] button to display in the left column the addresses of the units that are interlocked with the unit whose address was set in the Add. 1 section.

3. To delete the interlock settings
   After taking Step 2 above, select the address to be deleted in the Add. 2 section, and then touch the [Del] button.

When the setting or deletion is successfully completed, “Completed” will appear below [Function] field on the screen.
If setting or deletion fails, “Request denied” will appear below [Function] field on the screen.

(c) Search connection information

Use this screen to specify a unit and search for the controllers that are connected to the unit.



1. Select an address in the [Address] field.

2. Touch the [Conf] button to search for the interlocked units.
   The results will appear in the left column. (When multiple units are found, the addresses that do not fit on the first page will appear on the successive pages.)
   • Search error:
   "Request denied." will appear.

After completing the settings, touch the [Back] button on the [Setup] screen. The message “Collecting the information from the air conditioner.” will appear, and then the screen will jump to the HOME screen. This signals the completion of the setup process. Access the Service Menu from the HOME screen to make the settings for other items as necessary.

CITY MULTI

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