SAMSUNG

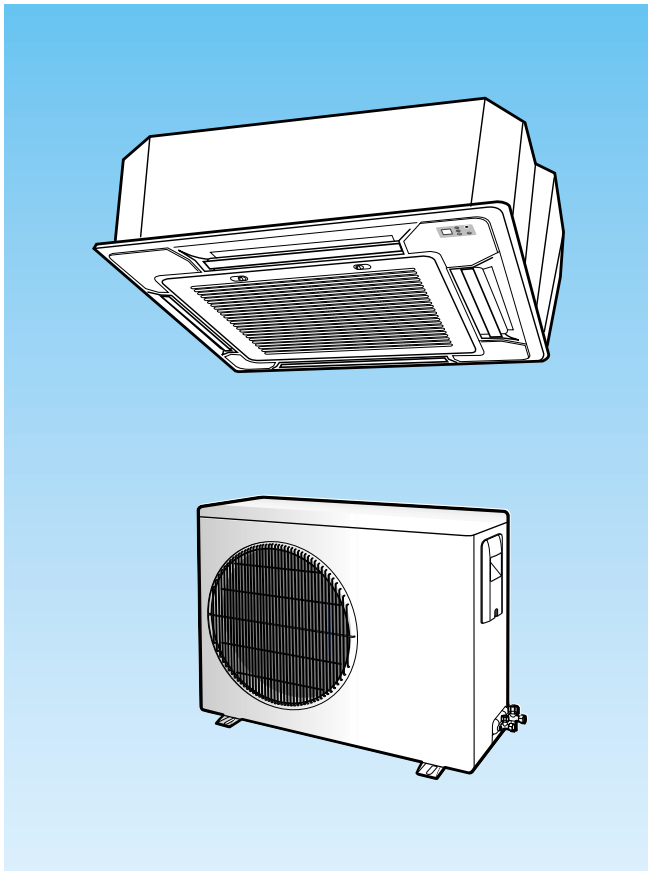
CASSETTE TYPE AIR CONDITIONER

(Cool and Heat)

Type	Indoor Unit	Outdoor Unit	Panel
ACH1800E(1)	ICH1800E	UBH1800E	IFS095G00/01
ACH2400E(1)	ICH2400E	UBH2400E	IFS095G00/01
ACH3600G(1)	ICH3600G	UCH3600G	IFS095G00/01
ACH4400G(1)	ICH4400G	UCH4400G	IFS095G00/01
CH18ZA	CH18ZA	CH18ZAX	CH01(02)ZAP
CH24ZA	CH24ZA	CH24ZAX	CH01(02)ZAP
CH36ZA	CH36ZA	CH36ZAX	CH01(02)ZAP
CH44ZA	CH44ZA	CH44ZAX	CH01(02)ZAP
CH18CA	CH18CA	CH18CAX	CH01(02)ZAP
CH24CA	CH24CA	CH24CAX	CH01(02)ZAP
CH36CA	CH36CA	CH36CAX	CH01(02)ZAP
CH44CA	CH44CA	CH44CAX	CH01(02)ZAP

SERVICE Manual

AIR CONDITIONER



CONTENTS

1. Precautions

1. Warning: Prior to repair, disconnect the power cord from the circuit breaker.

2. Use proper parts: Use only exact replacement parts. (Also, we recommend replacing parts rather than repairing them.)

3. Use the proper tools: Use the proper tools and test equipment, and know how to use them. Using defective tools or test equipment may cause problems later-intermittent contact, for example.

4. Power Cord: Prior to repair, check the power cord and replace it if necessary.

5. Avoid using an extension cord, and avoid tapping into a power cord. This practice may result in malfunction or fire.

6. After completing repairs and reassembly, check the insulation resistance. Procedure: Prior to applying power, measure the resistance between the power cord and the ground terminal. The resistance must be greater than 30 megohms.

7. Make sure that the grounds are adequate.

8. Make sure that the installation conditions are satisfactory. Relocate the unit if necessary.

9. Keep children away from the unit while it is being repaired.

10. Be sure to clean the unit and its surrounding area.

11. Be sure that the installed conditions are satisfactory and correct according to the specifications.

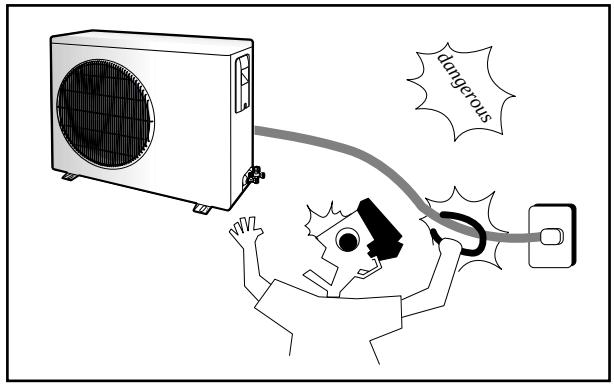


Fig. 1-1 Avoid Dangerous Contact

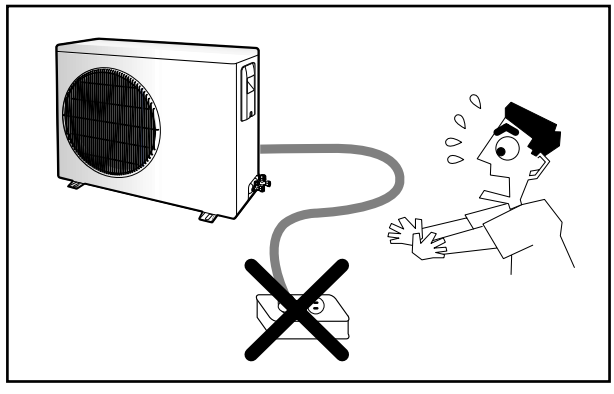


Fig. 1-2 No Tapping and No Extension Cords

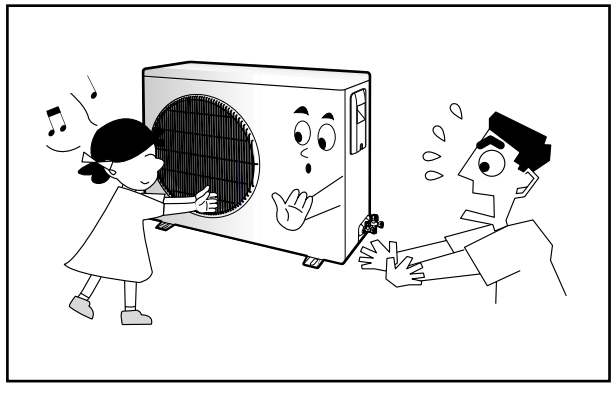


Fig. 1-3 No Kids Nearby!

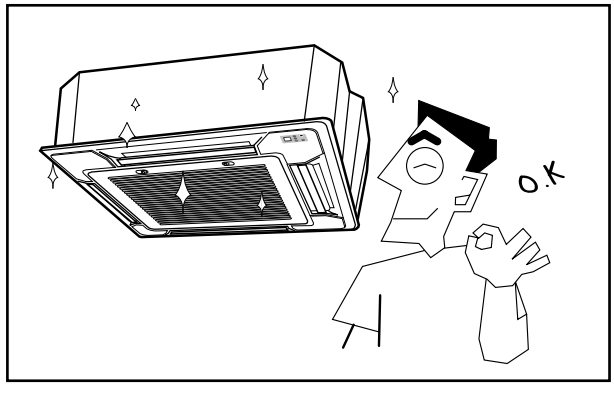


Fig. 1-4 Clean the Unit

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2. Product Specifications

2-1 Table of Specifications

MODEL	INDOOR UNIT			ICH1800E/CH18ZA	ICH2400E/CH24ZA	ICH3600G/CH36ZA	ICH4400G/CH44ZA	CH18CA	CH24CA	CH36CA	CH44CA
	OUTDOOR UNIT			UBH1800E/CH18ZAX	UBH2400E/CH24ZAX	UCH3600G/CH36ZAX	UCH4400G/CH44ZAX	CH18CAX	CH24CAX	CH36CAX	CH44CAX
Capacity	Cooling		Btu/h	17,400	23,000	34,500	43,000	17,400	22,100	32,400	38,500
			W	5,100	6,700	10,100	12,600	5,100	6,500	9,500	11,300
	Heating		Btu/h	18,400	24,500	38,600	46,000	19,400	25,500	42,000	47,500
			W	5,400	7,200	11,300	13,500	5,700	7,500	12,300	14,000
Power supply				220-240~ 50Hz		380-415V 3~ 50Hz		220-240~ 50Hz		380-415V 3 ~ 50Hz	
Power input	Cooling		kW	1.75	2.30	3.40	4.30	1.85	2.45	3.4	4.45
	Heating		kW	1.80	2.65	3.90	4.90	1.90	2.6	4.0	5.4
Running current	Cooling		A	8.0	10.5	6.0	7.7	8.6	11.5	5.9	8.2
	Heating		A	8.2	12.3	6.7	8.8	8.7	12.5	6.7	9.5
EER	Cooling		W/W	2.8	2.7	2.8	2.7	2.7	2.5	2.6	2.5
	Heating		W/W	2.9	2.8	2.9	2.8	3.0	2.8	3.0	2.6
Indoor unit	Fan speed	H.H	r.p.m.	(410)	(480)	(710)	(740)	(410)	(480)	710	740
		Hi	r.p.m.	370	440	630	660	370	440	630	660
		Med	r.p.m.	330	400	550	580	340	400	550	580
		Low	r.p.m.	290	360	470	500	290	360	470	500
	Air circulation	H.H	m^3/min	16	18	29	31	14	18	29	31
		Hi	m^3/min	14	16	25	27	12	16	25	27
		Med	m^3/min	12	14	21	23	10	14	21	23
		Low	m^3/min	10	12	17	19	8	12	17	19
	Noise Level (Sound pressure)	Hi	dB(A)	39	41	50	52	41	43	50	52
		Med	dB(A)	37	39	47	49	39	41	48	50
		Low	dB(A)	35	37	45	47	37	39	46	48
	Heat exchanger	type		slit fin coil	slit fin coil	slit fin coil	slit fin coil	slit fin coil	slit fin coil	slit fin coil	slit fin coil
		row x stages x fin pitch		2x8x1.4(890/980)	2x8x1.4(890/980)	3x10x1.5(890/980)	3x10x1.5(890/980)	2x8x1.4(890/980)	2x8x1.4(890/980)	3x10x1.5(890/980)	3x10x1.5(890/980)
	Fan	type		Turbo	Turbo	Turbo	Turbo	Turbo	Turbo	Turbo	Turbo
		motor output	W	35	35	70	80	35	35	70	80
	Dimensions	H	mm	230	230	288	288	230	230	288	288
		W	mm	840	840	840	840	840	840	840	840
		D	mm	840	840	840	840	840	840	840	840
	Weight	kg	Net/Gross	29/34	29/34	34/40	34/40	29/34	29/34	34/40	34/40
Panel	Dimensions	H	mm	42	42	42	42	42	42	42	42
		W	mm	950	950	950	950	950	950	950	950
		D	mm	950	950	950	950	950	950	950	950
	Weight	kg	Net/Gross	5/10	5/10	5/10	5/10	5/10	5/10	5/10	5/10
Outdoor unit	Fan speed	Hi	r.p.m.	950	750	750	900	930	750	750	900
		Low	r.p.m.	500	400	400	450	480	400	450	450

MODEL	INDOOR UNIT			ICH1800E/CH18ZA	ICH2400E/CH18ZA	ICH3600G/CH36ZA	ICH4400G/CH44ZA	CH18CA	CH24CA	CH36CA	CH44CA
	OUTDOOR UNIT			UBH1800E/CH18ZAX	UBH2400E/CH24ZAX	UCH3600G/CH36ZAX	UCH4400G/CH44ZAX	CH18CAX	CH24CAX	CH36CAX	CH44CAX
Outdoor unit	Air circulation (Hi)		m^3/min	35	45	80	90	35	45	80	90
	Sound pressure level		dB(A)	55	56	62	63	54	55	61	62
	Fan	type		propeller	propeller	propeller	propeller	propeller	propeller	propeller	propeller
		motor output	W	35	60	73	114	35	60	73	114
	Compressor	type		scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
		model		ZR22K3-PFJ	ZR28K3-PFJ	ZR47KC-TFD	ZR61KC-TFD	ZR22K3E-PFJ	ZR28K3E-PFJ	ZR47KCE-TFD	ZR61KCE-TFD
		motor output	kW	1.37	1.74	2.92	3.79	1.37	1.74	2.92	3.79
		protection		Internal	Internal	Internal	Internal	Internal	Internal	Internal	Internal
	Heat exchanger	type		wave fin coil	D fin coil	wave fin coil	wave fin coil	wave fin coil	D fin coil	wave fin coil	wave fin coil
		row x stages x fin pitch		2x24x1.7(824)	2x24x1.7(896)	2x48x1.7(935/915)	2x48x1.7(935/915)	2x24x1.7(824)	2x24x1.7(896)	2x48x1.7(935/915)	2x48x1.7(935/915)
		face area	m^2	0.494	0.538	1.122	1.122	0.494	0.538	1.122	1.122
	Refrigerant	control		Capillary	Capillary	Capillary	Capillary	Capillary	Capillary	Capillary	Capillary
		(R22)charge	g	2,000	2,400	2,700	3,300	1,800(R407C)	2,000(R407C)	2,250(R407C)	2,800(R407C)
	Dimensions	(HXWXD)	mm	620x787x320	638x880x310	1240x930x385	1240x930x385	620x787x320	638x880x310	1,240x930x305	1,240x930x385
	Weight	kg	Net/Gross	63/68	67/72	120/130	123/133	63/68	67/72	120/130	123/133
Condition	Indoor unit	Cool(DB/WB)	℃	27/19	27/19	27/19	27/19	27/19	27/19	27/19	27/19
		Heat(DB/WB)	℃	20/15	20/15	20/15	20/15	20/15	20/15	20/15	20/15
	Outdoor unit	Cool(DB/WB)	℃	35/24	35/24	35/24	35/24	35/24	35/24	35/24	35/24
		Heat(DB/WB)	℃	7/6	7/6	7/6	7/6	7/6	7/6	7/6	7/6
Piping	Pipe O.D. size	Liquid	mm(inch)	9.52(3/8")	9.52(3/8")	9.52(3/8")	9.52(3/8")	9.52(3/8")	9.52(3/8")	9.52(3/8")	9.52(3/8")
		Gas	mm(inch)	15.88(5/8")	15.88(5/8")	19.05(3/4")	19.05(3/4")	15.88(5/8")	15.88(5/8")	19.05(3/4")	19.05(3/4")
	Connection method			Flare	Flare	Flare	Flare	Flare	Flare	Flare	Flare
	Between	Height	m	Max. 15	Max. 15	Max. 25	Max. 25	Max. 15	Max. 15	Max. 25	Max. 25
		Pipe length	m	Max. 30	Max. 30	Max. 50	Max. 50	Max. 30	Max. 30	Max. 50	Max. 50

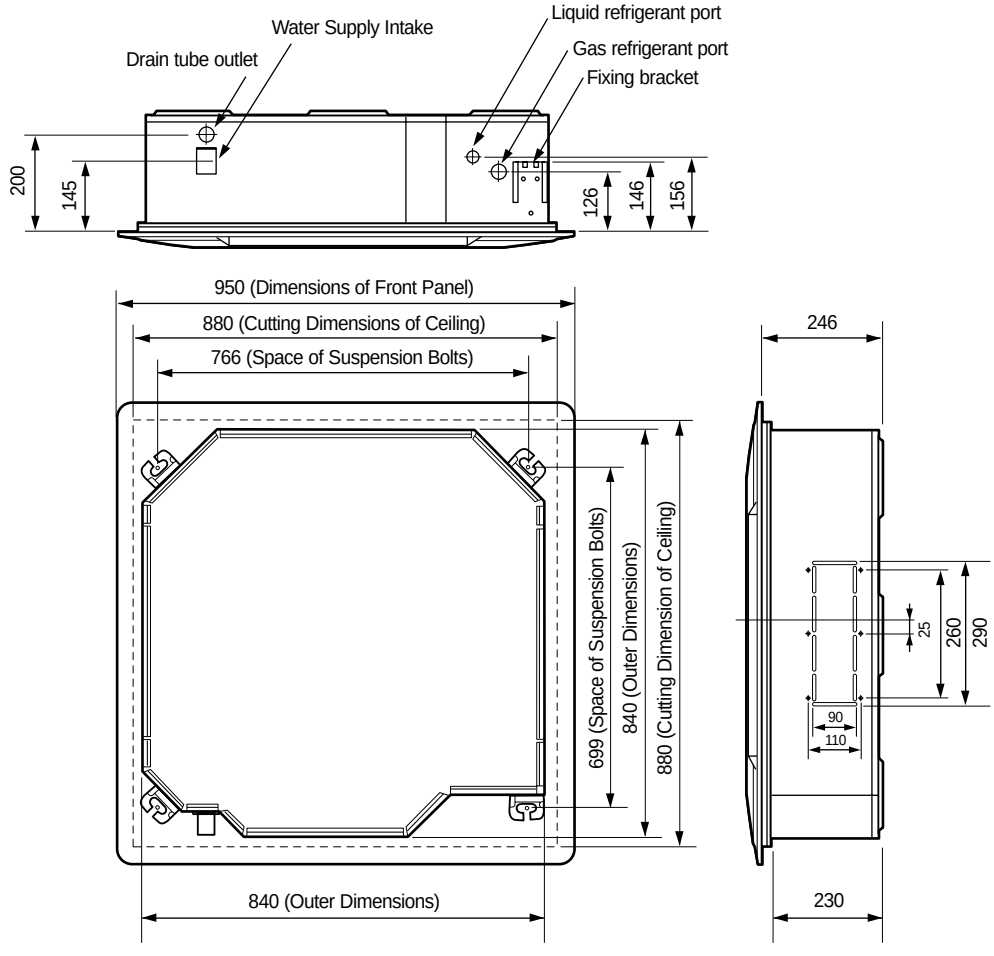
* Wind flow : It is data of heating standard opertion.

2-2 Dimensions

2-2-1 Indoor unit

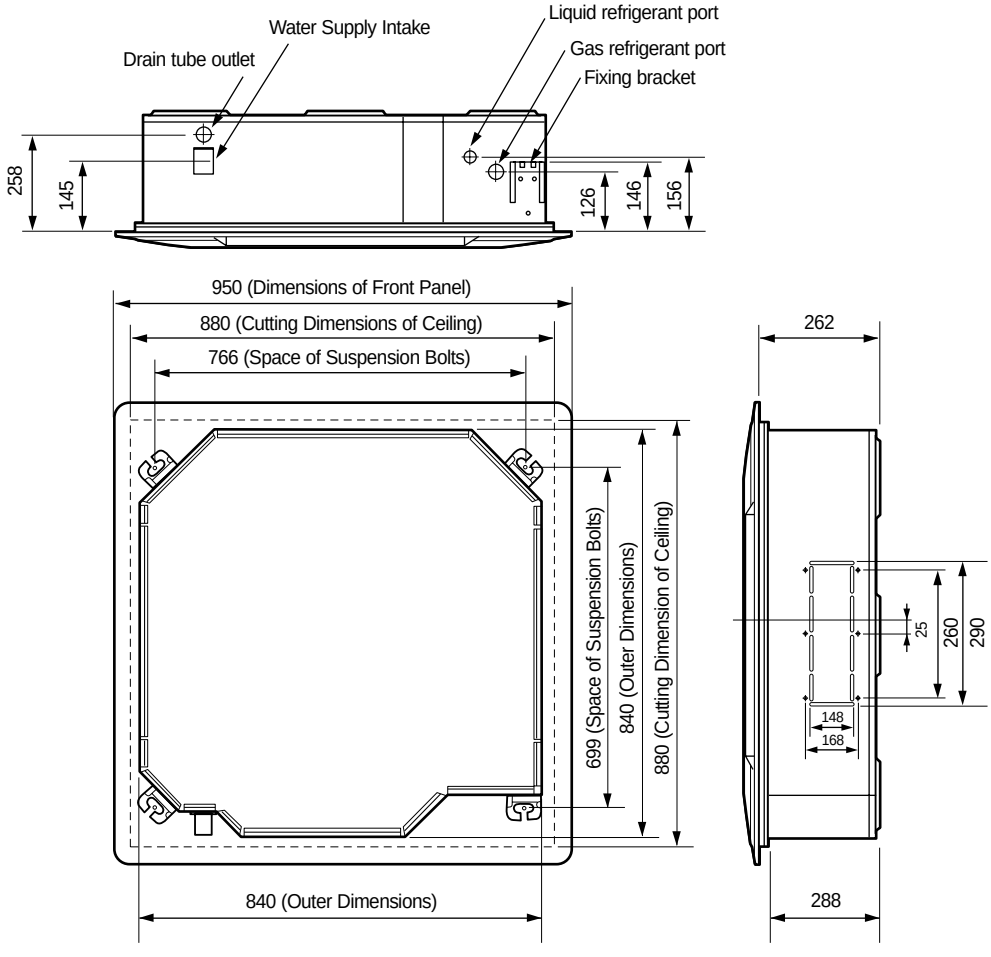
• Indoor Unit Dimensions (ICH1800E/ICH2400E/CH18ZA/CH24ZA/CH18CA/CH24CA)

Unit : mm



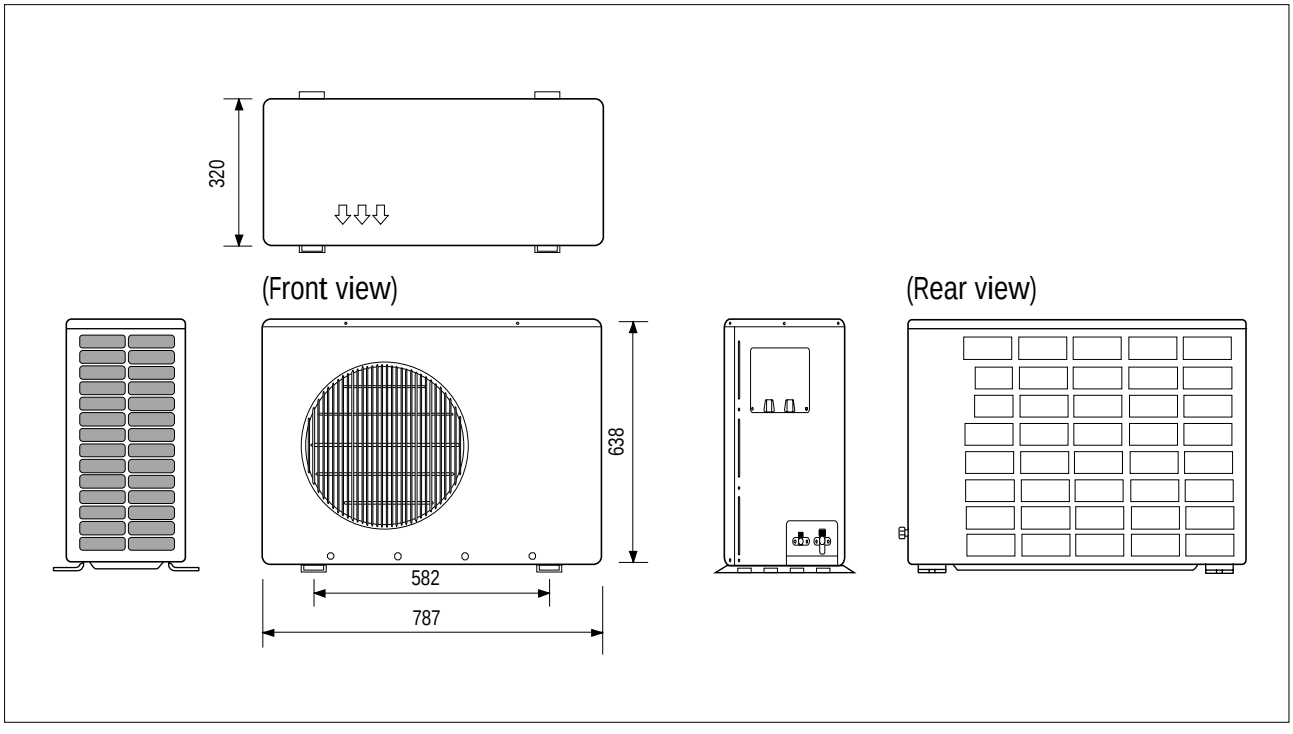
• Indoor Unit Dimensions (ICH3600G/ICH4400G/CH36ZA/CH44ZA/CH36CA/CH44CA)

Unit : mm

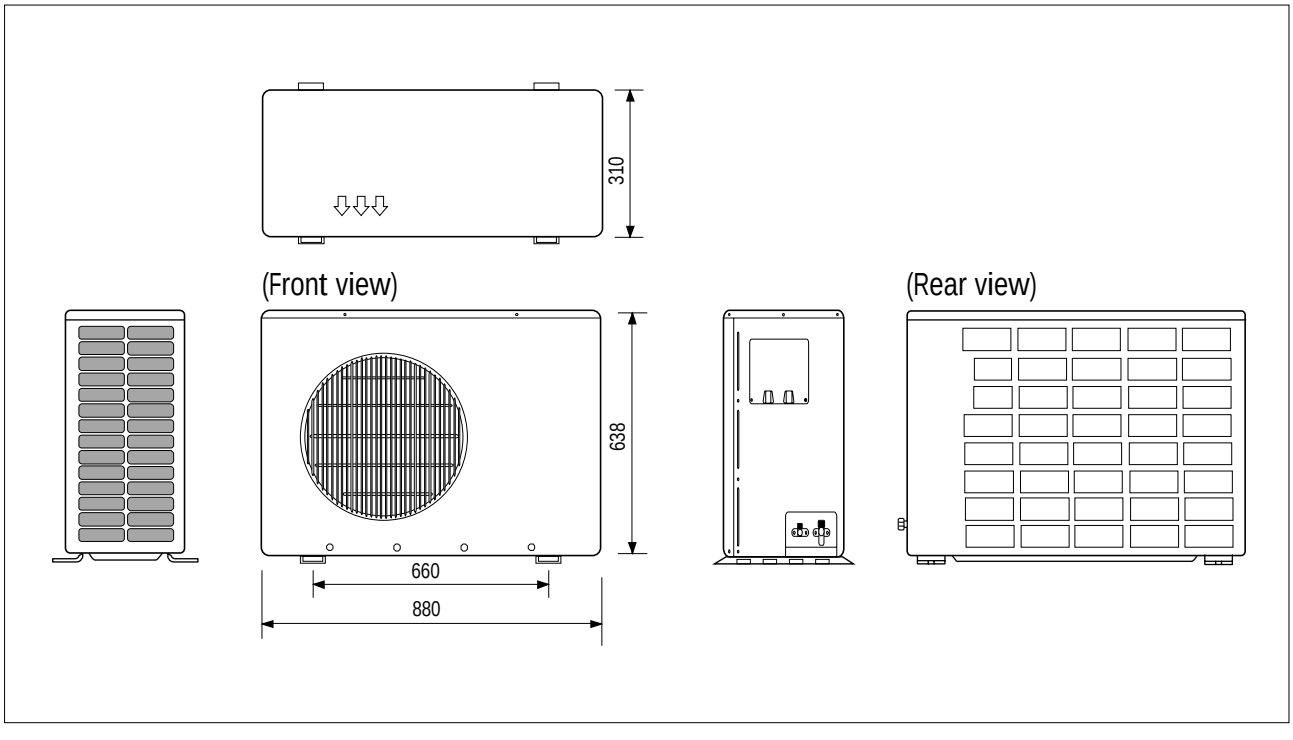


2-2-2 Outdoor Unit

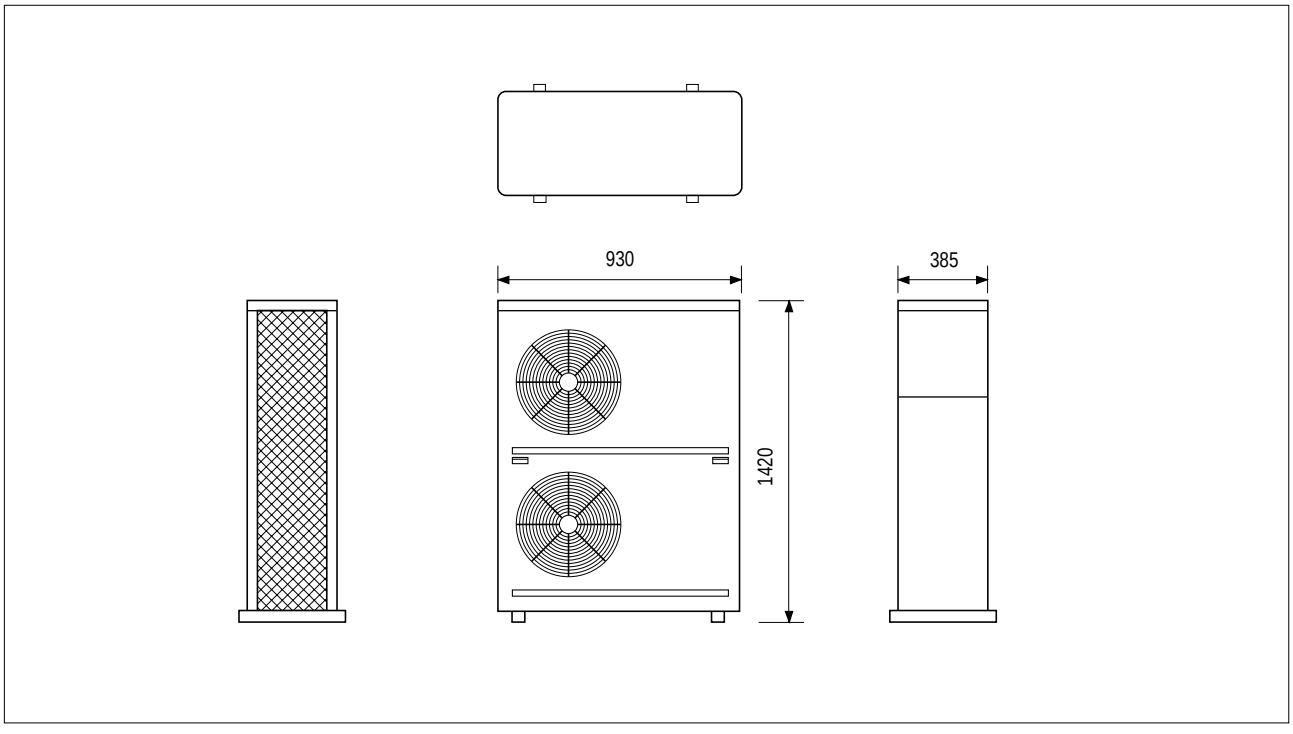
• Outdoor Unit Dimensions (UBH1800E/CH18ZAX/CH18CAX)



• Outdoor Unit Dimensions (UBH2400E/CH24ZAX/CH24CAX)

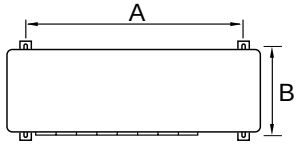


• Outdoor Unit Dimensions (UCH3600G/CH36ZAX/UCH4400G/CH44ZAX/CH36CAX/CH44CAX)



Input bolt fixing dimension

A	B
840mm	415mm

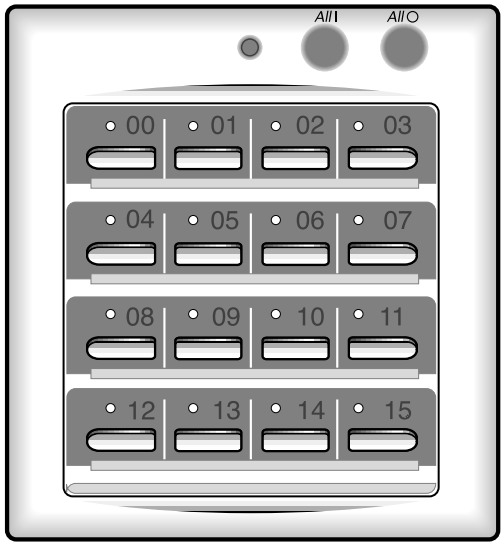


2-2-3 Remote control

• Wired Remote Controller-Buttons and Display

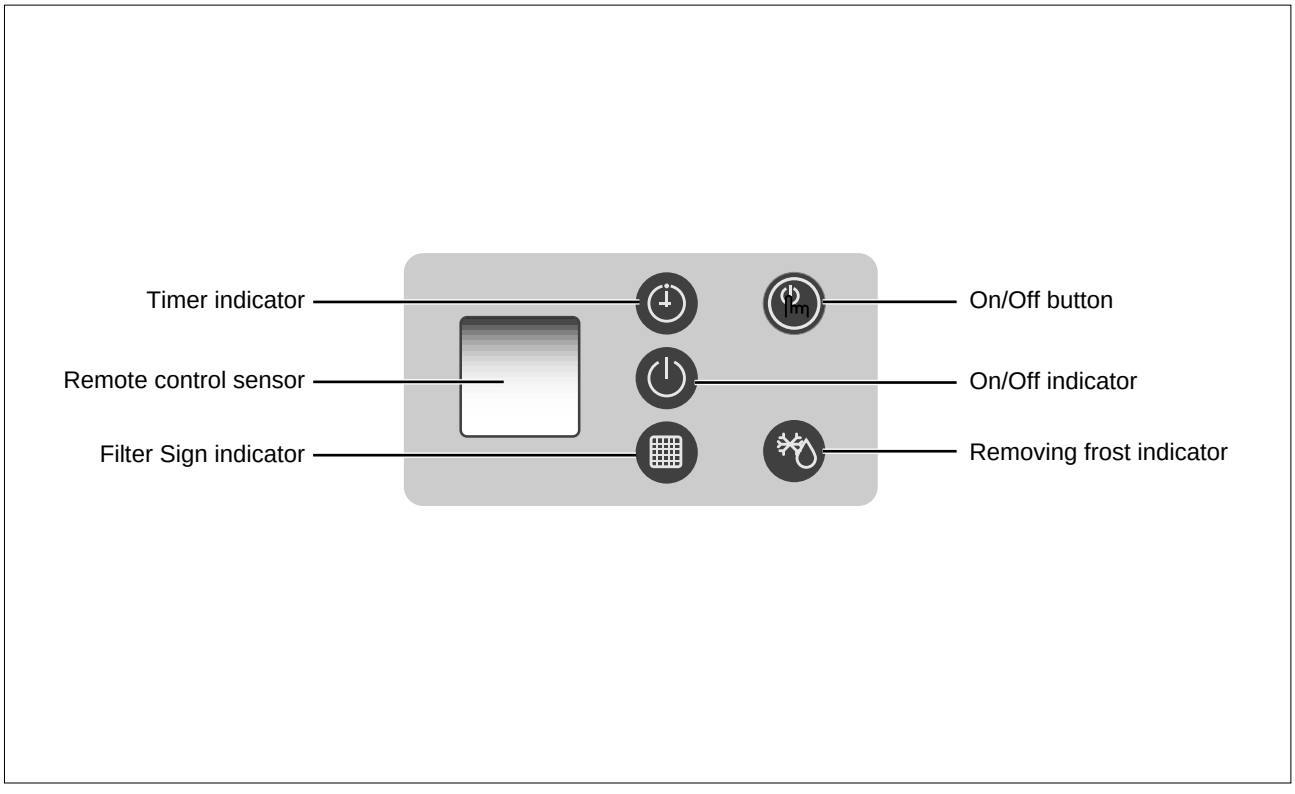
• Wireless Remote Controller-Buttons and Display

• Centralized Controller



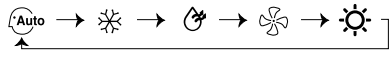
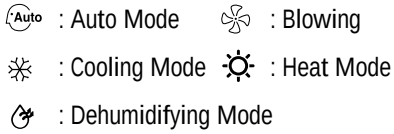
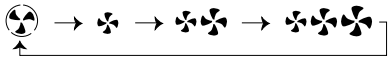
3. Operating Instructions

3-1 Display on Indoor unit

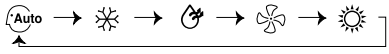
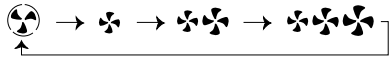


3-2 Name & Functions in Remote Control

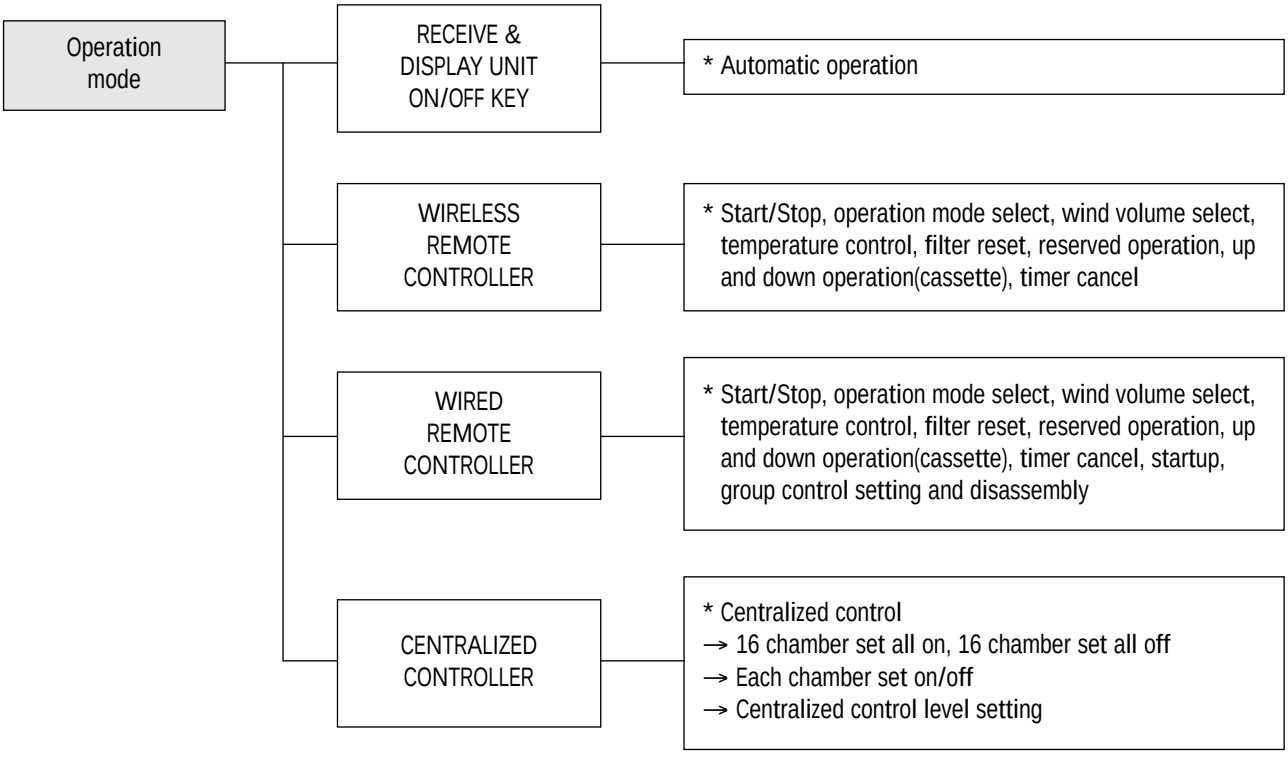
3-2-1 Wired Remote Controller-Buttons

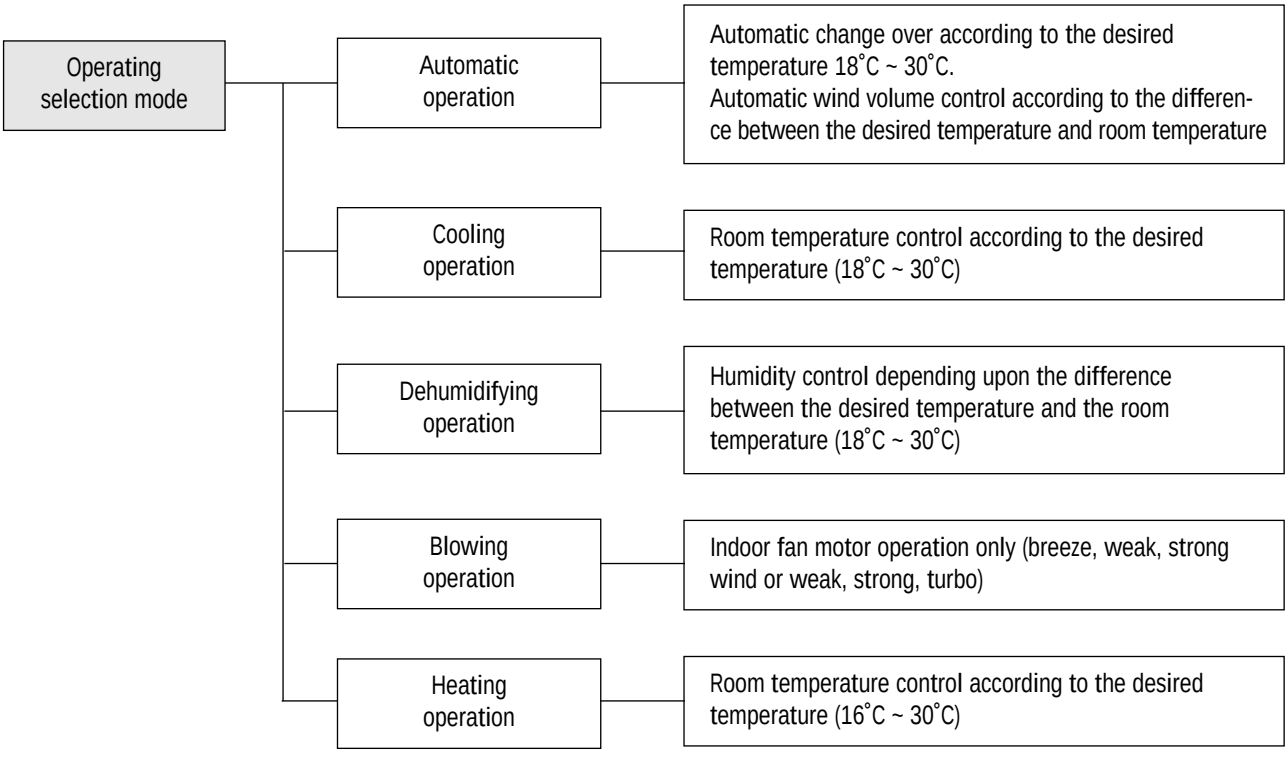
NO	NAMED OF KEY	FUNCTION OF KEY
1		Power On/Off button to start and stop airconditioner or timer set up
2	 (UP)	Temp. up button. To increase the temperature by the pressing the temperature button
	 (DOWN)	Temp. down button. To decrease the temperature by the pressing the temperature button
3		Each time you press this button Mode is changed in the following order  
4		To complete the installation, checks and tests to ensure that the air conditioner is operating correctly.
		When the **FILTER SIGN** indicator appeard on the remocon screen, cleaning the air conditioner filter. After that, press this button.
5		Each time you press this button, FAN SPEED is changed in the following order. 
6		Adjust air flow vertically.
7		The ON Timer enables you to **switch on** the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours. To cancel the On Time, press the (Set/Cancel) button.
8		The Off Timer enables you to **switch off** the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours. To cancel the On Time, press the (Set/Cancel) button.

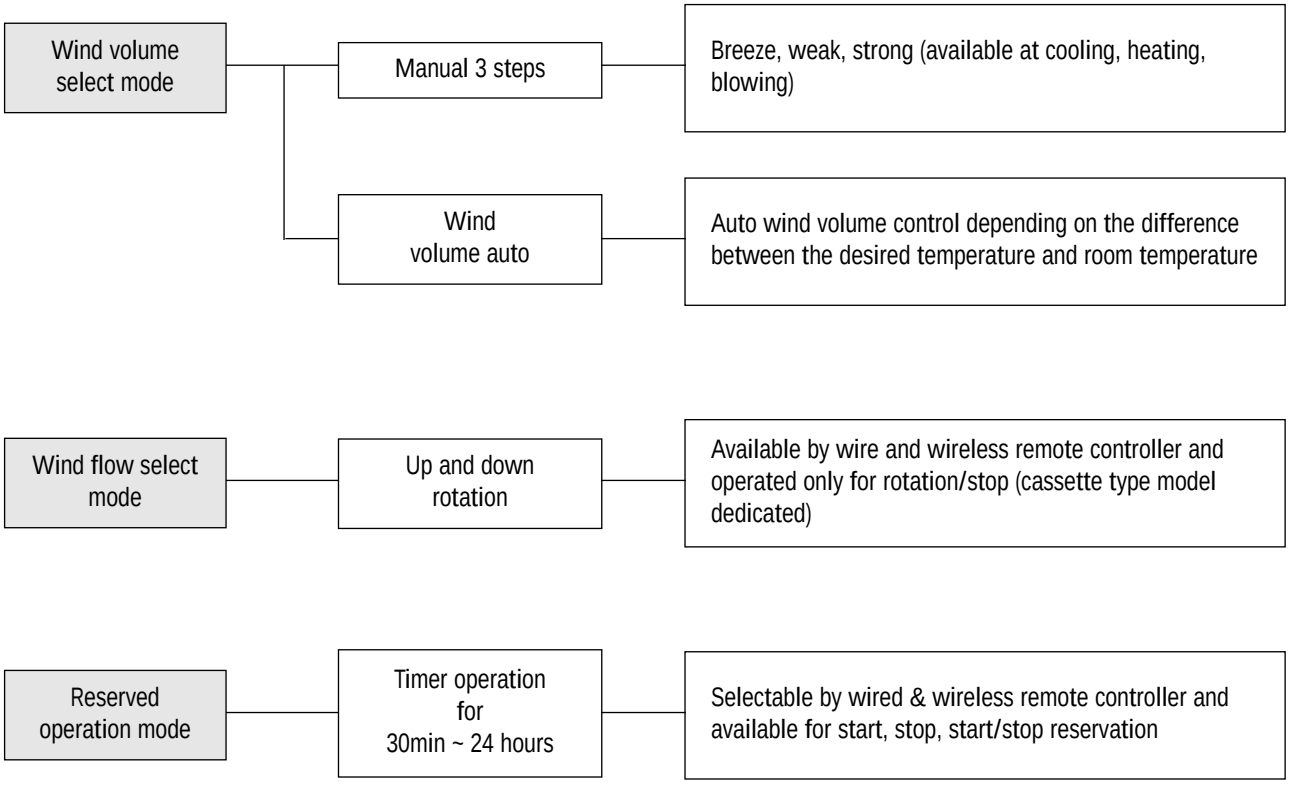
3-2-2 Wireless Remote Controller

NO	NAMED OF KEY	FUNCTION OF KEY
1		Power On/Off button to start and stop airconditioner or timer set up
2	 (UP)	Temp. up button. To increase the temperatute by the pressing the temperature button
	 (DOWN)	Temp. down button. To decrease the temperature by the pressing the temperature button
3		Each time you press this button Mode is changed in the following order  : Auto Mode : Blowing : Cooling Mode : Heat Mode : Dehumidifying Mode
4		When the **FILTER SIGN** indicator appeard on the remoconscreen, cleaning the air conditioner filter. After that, press the this button.
5		Each time you press this button, FAN SPEED is changed in the following order. 
6		Adjust air flow vertically.
7		The ON Timer enables you to **switch on** the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours. To cancel the On Time, press the (Set/Cancel) button.
8		The Off Timer enables you to **switch off** the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours. To cancel the On Time, press the (Set/Cancel) button.

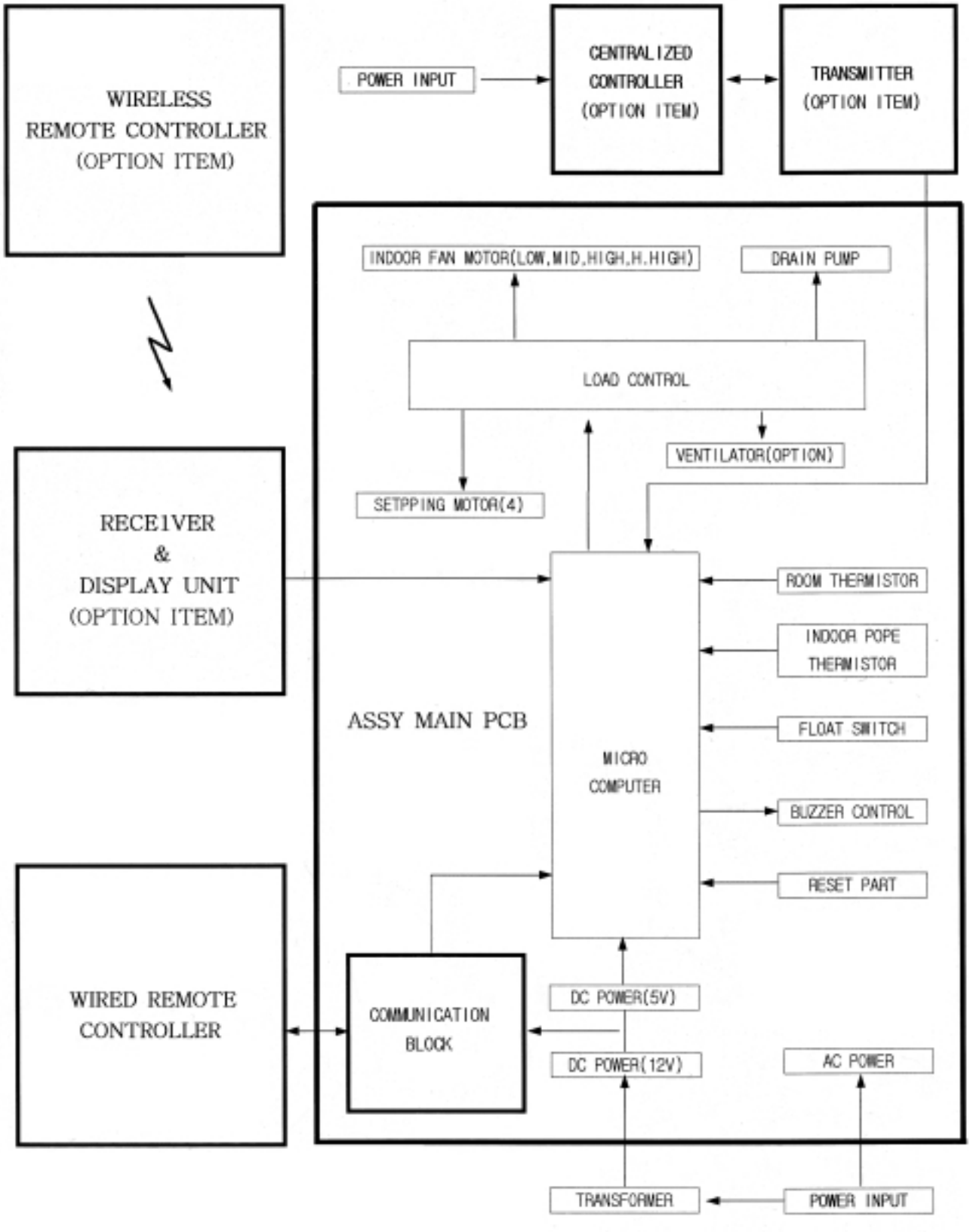
3-3 Control system diagram



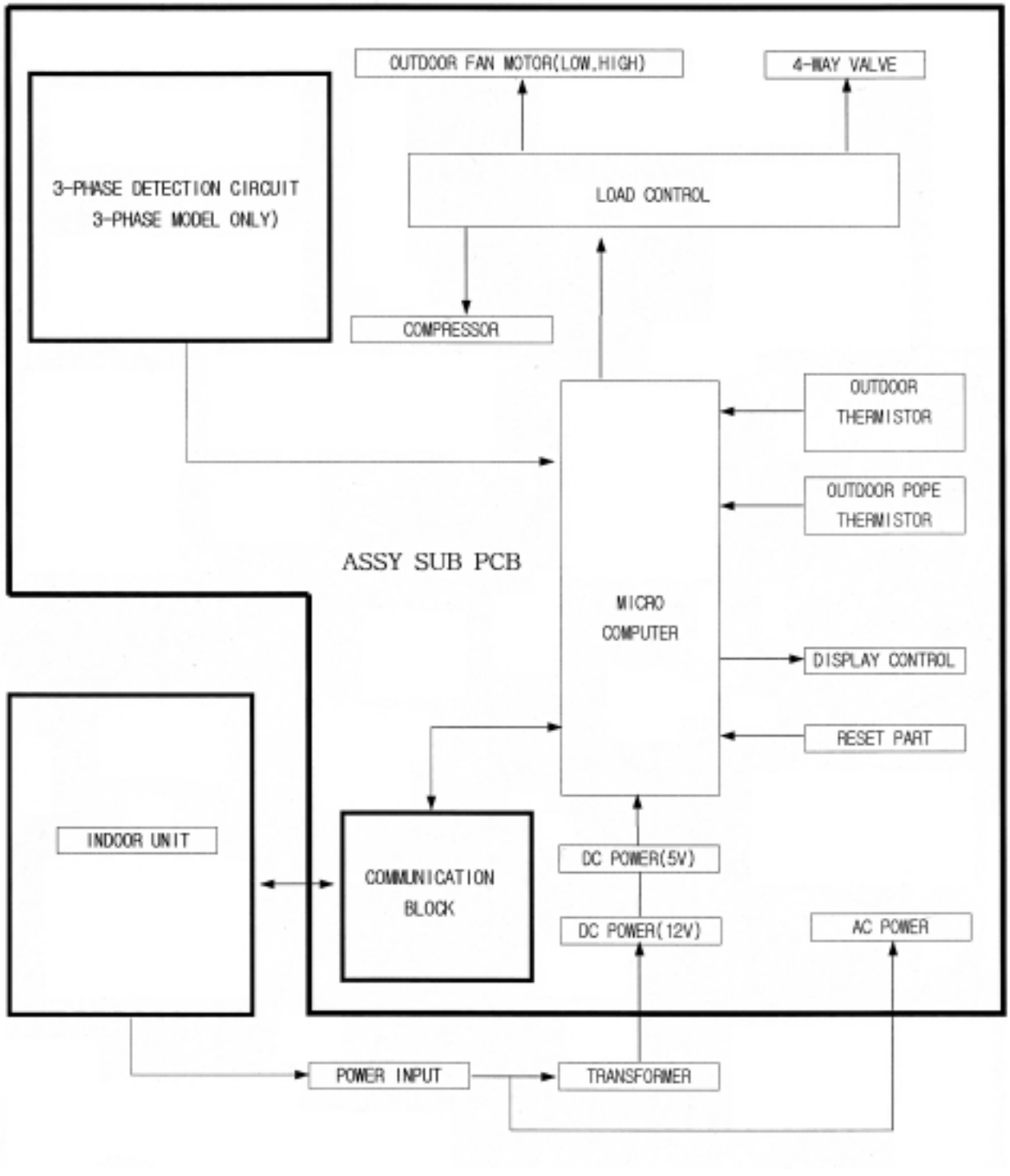



Wind volume select mode
Manual 3 steps
Breeze, weak, strong (available at cooling, heating, blowing)
Wind volume auto
Auto wind volume control depending on the difference between the desired temperature and room temperature
Wind flow select mode
Up and down rotation
Available by wire and wireless remote controller and operated only for rotation/stop (cassette type model dedicated)
Reserved operation mode
Timer operation for 30min ~ 24 hours
Selectable by wired & wireless remote controller and available for start, stop, start/stop reservation

3-4 Micro Computer Block Diagram (Cassette) - Indoor



3-5 Micro Computer Block Diagram - Outdoor



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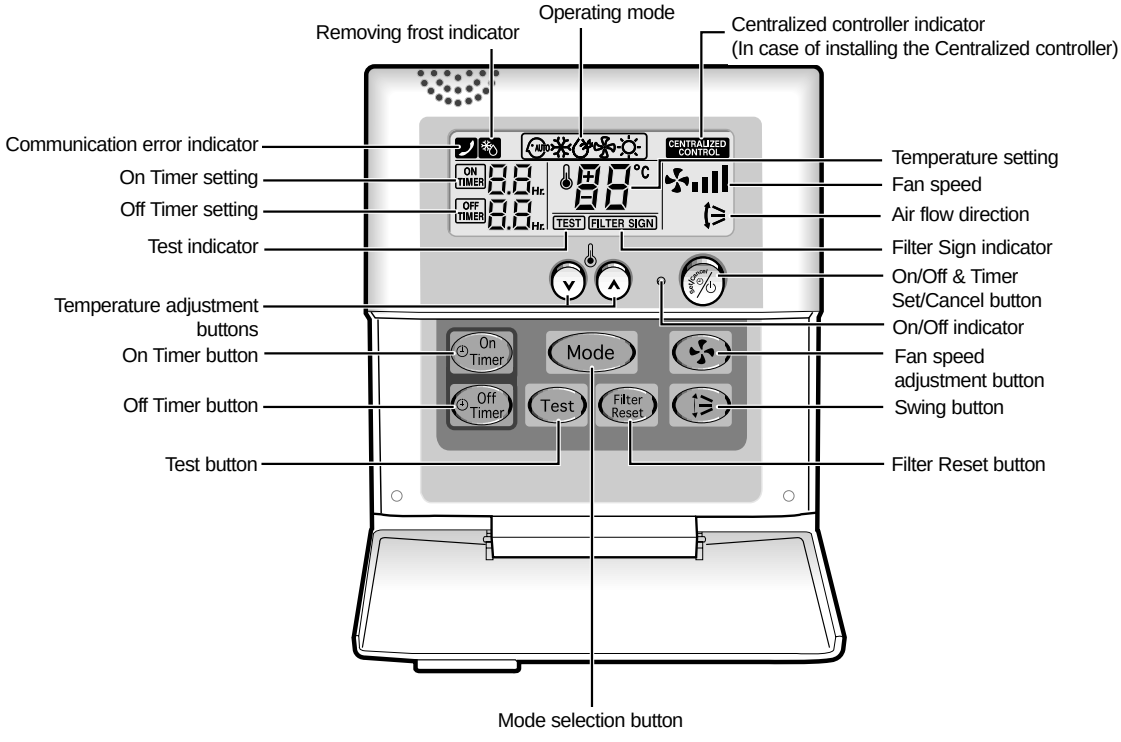
4. Installation

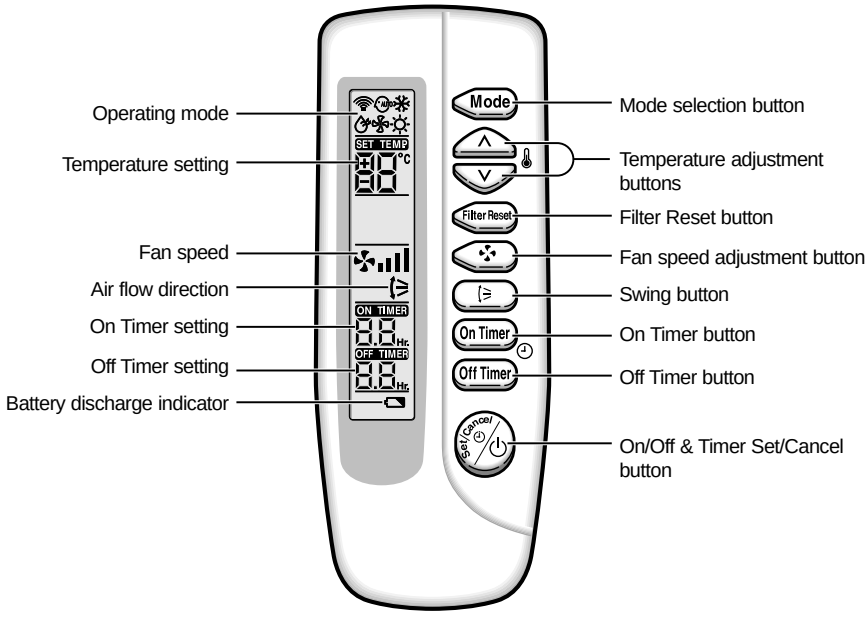
4-1 Operation of the Remote Controller (Wired/Wireless receiving board)

4-1-1 Name and function of each part for the wired remote controller



BUTTON NAME	FUNCTION
On/OFF & Timer Set/Cancle	• Start and stop of operation - To toggle the operation On and Off. • When making the reservation - The reservation time can be set or canceled when pushing the Timer Set/ Cancel button after adjusting the reservation time with On Timer or Off Timer.
Temperature adujustment (▲, ▼)	• To increase (▲) or decrease (▼) the desired temperature. • One cycle or continuous operation is available.
On Timer	• To increase the On reservation time • One cycle or continuous operation is available.
Off Timer	• To increase the Off reservation time • One cycle or continuous operation is available.
Test	• Pressing the key for more than 3 seconds with the SET off starts the initial operation (forced cooling operation for 3 minutes).
Mode Selection	• To rotate in the order of AUTO → Cooling → Dehumidifying → Blowing → heating.
Filter Reset	• When the filter sign display starts to show the replacement time of filter of indoor unit, pressing the key after cleaning the filter resets the filter sign.
Fan Speed	• The wind mode to rotate in the order of wind select button, Breeze → Weak → Strong → Wind auto → Breeze.
Flow Direction	• The blades ard moving between up and down.

4-1-2 Name and function of each part for the wireless remote controller



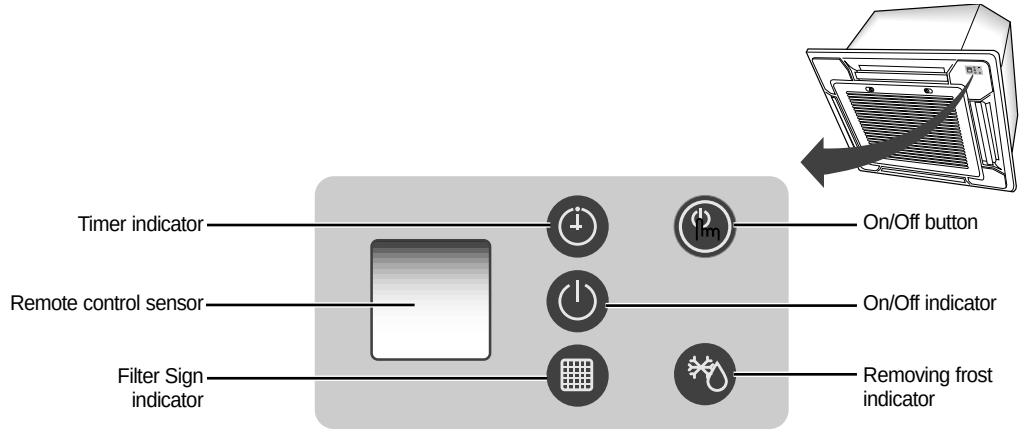
BUTTON NAME	FUNCTION
On/OFF & Timer Set/Cancle	• Start and stop of operation - To toggle the operation On and Off. • When making the reservation - The reservation time can be set or canceled when pushing the Timer Set/ Cancel button after adjusting the reservation time with On Timer or Off Timer.
Temperature adjustment (▲, ▼)	• To increase (▲) or decrease (▼) the desired temperature. • One cycle or continuous operation is available.
On Timer	• To increase the On reservation time • One cycle or continuous operation is available.
Off Timer	• To increase the Off reservation time • One cycle or continuous operation is available.
Mode	• To rotate in the order of Auto → Cooling → Dehumidifying → Blowing → Heating
Filter Reset	• When the filter sign display starts to show the replacement time of filter of indoor unit, pressing the key after cleaning the filter resets the filter sign.
Fan Speed( )	• The wind mode to rotate in the order of wind select button, Breeze → Weak → Strong → Wind auto → Breeze.
Swing button (Timer Cancel)	• The blades are moving between up and down. (In case of Cassette model) • To cancel the reservation setting (In case of Duct model).

There is no test key separately assigned to the wireless remote controller.

<When doing the test operation with wireless remote controller...>

1. Remove both batteries from the wireless remote controller.
2. At the state of simultaneous pressing of On Timer key and Off Timer key, insert the batteries in the wireless remote controller.
3. When the wireless remote controller is on the TEST MODE, press On/Off key to make the SET for the Test operation.

4-1-3 Appearance and function wireless receiving board



4-1-4 Opeartion specification of wireless receiving board

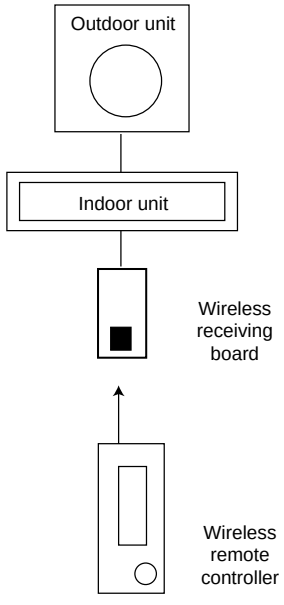
PART NAME	SOURCE & OPERATION SPEC.	REMARK
DEFROST LAMP	RED, lamp on during defrost operation	in ERROR DISPLAY : flickering
FILTER SIGN LAMP	Green, display during filter cleaning	in ERROR DISPLAY : filickering
TIMER LAMP	Green, lamp when setting the reserve operation	in ERROR DISPLAY : flickering
ON-OFF LAMP	Red, lamp during operation on	in ERRO DISPLAY : flickerning
ON-OFF BUTTON	On/Off toggle operation	Operated only for automatic mode operation

4-1-5 Wireless receiving board and outdoor unit PCB display specification when error occurs

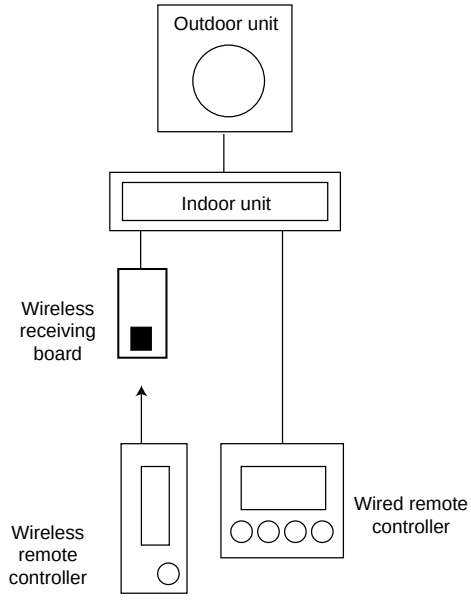
ERROR MODE (OUTDOOR DISPLAY)	CONTENTS OF ERROR	WIRELESS RECEIVING BOARD DISPLAY (INDOOR UNIT)	REMARK
E1	Abnormal on indoor temperature sensor (4.9[V] and higher, 0.5[V] and lower	Reservation LED flickering (1Hz period)	Restored when the indoor temperature sensor is normal
E5	Abnormal on indoor pipe temperature sensor (4.9[V] and higher, 0.5[V] and lower	Operation LED and reservation LED flickering (1Hz period)	Restored when the indoor pipe temperature sensor is normal
E6	Abnormal on outdoor temperature sensor (4.9[V] and higher, 0.5[V] and lower	Operation LED and filter LED flickering (1Hz period)	Restored when the outdoor temperature sensor is normal
E9	Float switch detection	Reservation LED and filter LED alternating flickering (1Hz period)	Float switch detection
EA	Indoor ↔ outdoor communication defect	Reservation LED and filter LED flickering (1Hz period)	Re-detecting by operating off signal after restoring
EC	Indoor unit ↔ wired remote controller communication defect	Operation LED and reservation LED alternating flickering (1Hz period)	
Ed	Abnormal on outdoor pipe temperature sensor (4.9[V] and higher, 0.5[V] and lower	Filter LED flickering (1Hz period)	Restored when outdoor pipe temperature sensor is normal

4-1-6 Example of remote controller control

1 chamber wireless remote controller single operation and 1 chamber wireless remote controller + wired remote controller combination control



Example of 1 chamber single operation (wireless remote controller)



Example of 1 chamber single operation (wireless + wired remote controller)

* In case of 1 chamber single operation (wireless remote controller+wired remote controller), both setting of wired remote controller to MASTER/SLAVE is available.

<Setting of wired remote controller to MASTER MODE >

1. Put off the power.
2. For the combined use of wired remote controller and wireless remote controller, put on the option switch(DS01)4 of wired remote controller.
3. Putting off the option switch 4 of wired remote controller disables the control by wireless remote controller.
4. Put on the power.

✻ After resetting the option in the wired remote controller, be sure to put the power on again so that the set option can be applied.

4-1-7 PCB option and switch(DS01) setting of wired remote controller

DIP SWITCH NO	OPTION ITEM	SW ON	SW OFF	DEFAULT
1	Basic specification	-	-	Fixed to OFF
2	Indoor unit control	Group control	Indoor unit 1 chamber control	OFF
3	Basic specification	-	-	Fixed to OFF
4	Combined use of wireless remote controller	Able to operate of wired remote controller (SLAVE MODE)	Disable to operate the wireless remote controller (MASTER MODE)	OFF

4-1-8 Function comparison of wired remote controller vs wireless remote controller

In case of control for the wired remote controller and wireless remote controller installed individually, almost similar functions are performed, and in case of combined use of wired and wireless remote controllers, Enalbe/Disable can be set at the wired remote controller for the wireless remote controller but the 16 chambers operation can be done only from wired remote controller.

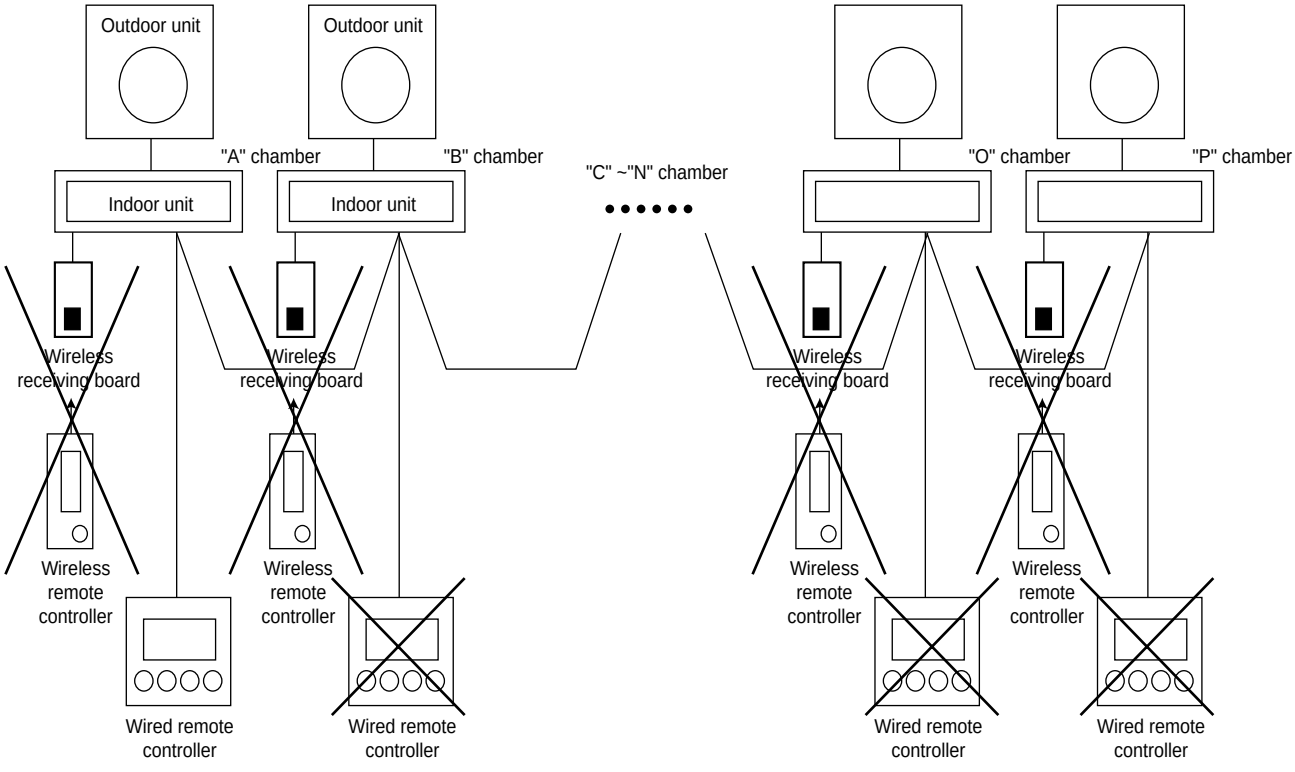
PART NAME	WIRED REMOTE CONTROLLER	WIRELESS REMOTE CONTROLLER
Operation ON/OFF	ON/OFF available	ON/OFF available
Wind flow setting	Up and down control available (Cassette model)	Up and down control available (Cassette model)
Wind volume setting	Breeze/Weak/Strong/Wind auto adjustment available	Breeze/Weak/Strong/Wind auto adjustment available
Group operation	16 chamber group operation available	16 chamber group function not available
Test operation	Test operation by test button	Available by combination of button during the power reset without test button
Operation mode setting	Settable of auto/cooling/ dehumidifying/blowing/heating	Settable of auto/cooling/ dehumidifying/blowing/heating
Reservation function	Start/stop/start-stop reservation available	Start/stop/start-stop reservation available
Timer cancel	Timer cancel button provided (Duct model)	No timer cancel button
Temperature setting	Cooling : 18˚C ~ 30˚C Heating : 16˚C ~ 30 ˚C settable	Cooling : 18°C ~30°C Heating : 16°C ~30°C settable
Filter reset	Filter reset button provided	Filter reset button provided
Centralized control display	Displayed as centralized control	No function
Self-diagnosis among the group control	To display while scanning the installed set during reset	No function
Error display	Displayed as 2 digit segment	No function
Master/slave setting	Master/slave settable by PCB option switch	No function

4-1-9 Option and dip switch setting(SW2) of ass'y main in PCB

DIP SWITCH	OPTION ITEM	SW ON	SW OFF	DEFAULT
1	VENTILATOR FAN	Not installed	Installed	-
2	DRAIN PUMP	Installed	Not installed	-
3	FLOAT SWITCH	Installed	Not installed	-
4	FILTER CLEANING PERIOD	1000 Hr	2000 Hr	-
5	INDOOR FAN MOTOR SPEED	NORMAL SPEED	HIGH SPEED	-

4-2 Control of the Remote Controller

4-2-1 Chamber Group Control(Wireless remote controller + Wired remote controller system)



- The 16 chamber remote controller operation by wired remote controller can be simultaneously performed all for 16 chambers through setting the 16 chambers to one group through one wired remote controller.
- While operated in Group, the control by wireless remote controller installed in all chambers (“A” ~ “F”) is disabled except the wired remote controller installed in the “A” chamber and the simultaneous use with the option item, the centralized controller is also disabled.

4-2-2 The group operation of 16 chambers and operation method by wired remote controller

1. Setting of indoor unit Main PCB

- Put off all of set power installed in each room.
- Remove the centralized controller if any is used already.
- Remove CN20 connector and wire of main PCB of Indoor unit except the one installed in “A” with reference of the figure.
- Connect the communicating line from “A” chamber to “F” chamber.(R1<->R1, R3<->R3)
- Connect the “R1”, “R2” and “R3” of indoor terminal board installed to the “R1”,”R2”,”R3” of wired remote controller, respectively.
- Adjust the address of digital switch of indoor unit PCB in “A” chamber to “0”.

Adjust the address of digital switch of indoor unit PCB in “B” chamber to “1”. In such a way, adjust the address of digital switch up to chamber “F”.

• Put on the set power installed in each chamber.

Caution :

- During the connection, connect the “R1” of indoor unit terminal board installed in each chamber with “R1”.
- During the connection, connect the “R3” of indoor unit terminal board installed in each chamber with “R3”.
- Do not connect the terminal R2 of indoor unit terminal board from “B” to “F” chamber except A” chamber.
- The option item, centralized controller shall be removed since the simultaneous use with wired remote controller is disable during the group control.
- Adjust the address of indoor unit digital switch installed in each chamber so that it might not be duplicated.

2. Setting of wired remote controller

• Put off the set power where the wired remote controller is installed.
• Put on the option switch SW2(DS01) of wired remote controller.
• Put on the set power where the wired remote controller is installed.

Caution :

- The option can be applied when the power is put again after resetting the option of wired remote controller. Be sure to keep the set power on/off after option setting.

4-2-3 Operation method of wired remote controller

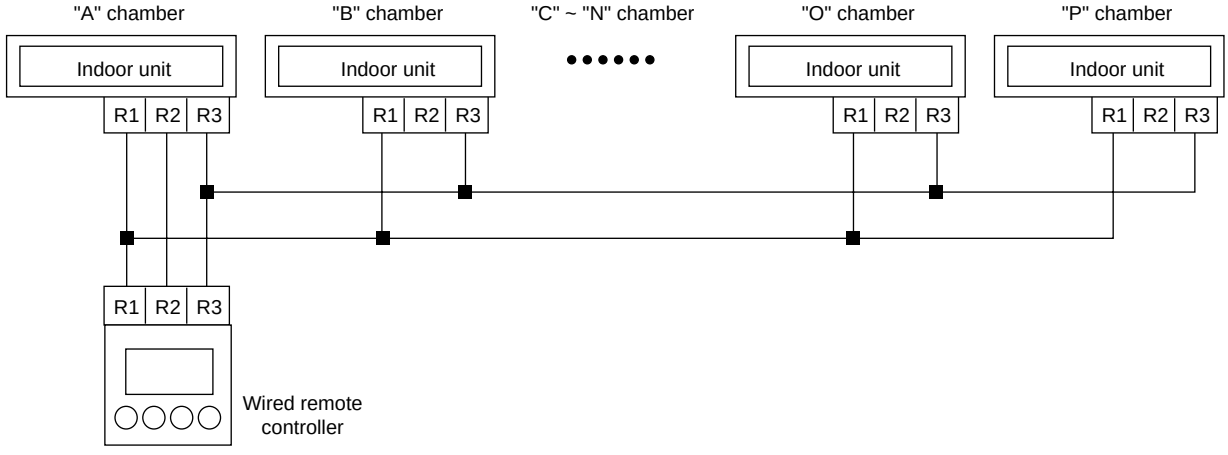
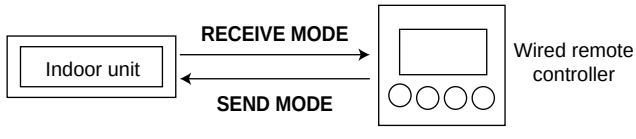


Figure. 16 Chamber Group Control Connection Diagram

- Press the ON/OFF button of wired remote controller to be on.
  At the time, the set installed from A chamber to F chamber is getting on in order with the interval of 2 seconds.
- Select the operation of auto/cooling/dehumidi-fying/blowing/heating by pressing MODE BUTTON.
- Select breeze/weak/strong/wind auto by pressing the wind volume button.
- Adjust the temperature set button to set the desired temperature.

✻ For reference

- The communication between wired remote controller and indoor unit is made through the synchronization with the output signal of zero cross detect circuit, and when 50Hz power is used, it has the 50bps transmission speed and when it has 60Hz power it has 60bps transmission speed. The transmission data between the wired remote controller and indoor unit is shown as in the figure.



Since the communication data between wired remote controller and indoor unit is consisting of total 10Byte, 2 seconds are required when using 50Hz power.

- For the communicating time with 16 chambers during the normal operation, 32 seconds are required and for the time with 16 chamber during the reservation operation, 64 seconds are required due to the increase of communicating data.

Caution :

- The power of each chamber shall be used with the one having the same frequency during the group operation by use of wired remote controller.
- The communicating line between the wired remote controller and indoor unit shall be of 100 m at maximum.

4-2-4 Startup method by wired remote controller

Startup in case of the "A" chamber single operation

- Put on the set power.
- Adjust the address of digital switch of indoor unit PCB to "0".
- Put ON the option switch(DS01) N02 of wired remote controller PCB.
- Put on the set power.
- Press the test button of wired remote controller for more than 3 seconds.
- The set is operated for 3 minutes by the forced cooling operation and the set is off after 3 minutes.
- The error occurring during the test operation is displayed on the wired remote controller windows and it shall be referred to the following table.

Error Code	Meaning	Checking Area
01	Indoor unit room thermistor error	• Indoor unit thermistor available or not and disconnected • Indoor unit PCB
05	Indoor unit pipe thermistor error	• Indoor unit pipe thermistor • Indoor unit PCB
06	Outdoor unit thermistor error	• Outdoor unit thermistor • Outdoor unit PCB
09	Float switch open error	• Drain pump, float switch • Drain system • Dip SW2 of indoor unit main PCB (If the drain pump is not installed, SW2 and SW4 shall be at the Off position.)
0A	Indoor unit ↔ outdoor unit communicating error	• Indoor unit ↔ outdoor unit communicating error • Indoor unit ↔ outdoor unit communicating cable • Indoor unit PCB, Outdoor unit PCB
0C	Wired remote controller ↔ indoor unit communication error	• Wired remote controller ↔ indoor unit communication cable • Indoor unit main PCB
0D	Outdoor unit pipe thermistor error	• Outdoor unit pipe thermistor • Outdoor unit PCB

Caution :

- Unless the address of digital switch of indoor unit PCB is set to "0" in case of "A" chamber single operation, the control by the wired remote controller is disabled.
- The power of SET shall be put on again after the resetting of wired remote controller option so that the the set option can be applied. Be sure to keep the power on/off of SET before and after the setting.
- The first digit of error code displayed during the single operation and group operation may be different. The first digit(MSB) stands for the address of the set where the error occurs. Since it is the single operation, the address of SET is "0".

Startup of group operation

- Put off the power of SET.
- Adjust the addresses of digital switch of indoor unit PCB to "0"~"15", respectively.
- Put on the option switch SW2 of wired remote controller PCB.
- Put on the power of SET.
- On the wired remote controller display, the digits "00" → "11" → "22" → are displayed up to "FF". After "FF" display, the wired remote controller is automatically set to the preserved operation status of indoor unit of chamber "A".
- If the current SET of chamber "A" is ON, put the set off by pressing the ON/OFF button.

Only at the SET off of chamber "A", the TEST mode is enabled.

- Press the TEST BUTTON of wired remote controller for more than 3 seconds.
- If the SET is operating for 3 minutes through forced cooling operation, the SET is off after 2 minutes.
- The Error occurring in the TEST operation displays in the wired remote controller display window and is referred to the following table.

Error Code	Meaning	Checking Area
*1	Indoor unit room thermistor error	• Indoor unit thermistor exist or not disconnected • Indoor unit PCB
*5	Indoor pipe thermistor error	• Indoor unit pipe thermistor • Indoor unit PCB
*6	Outdoor unit thermistor error	• Outdoor unit thermistor • Outdoor unit PCB
*9	Float switch open error	• Drain pump, float switch • Drain system • Dip SW2 of indoor unit main PCB (If drain pump is not installed, SW2 and SW4 shall be at OFF position.)
*A	Indoor unit ↔ outdoor unit communication error	• Indoor unit ↔ Outdoor unit communication cable • Indoor unit PCB, outdoor unit PCB
*C	Wired remote controller ↔ indoor unit communication error	• Wired remote controller ↔ indoor unit communication cable • Indoor unit main PCB
*D	Outdoor unit pipe thermistor error	• Outdoor unit pipe thermistor • Outdoor unit PCB

Caution :

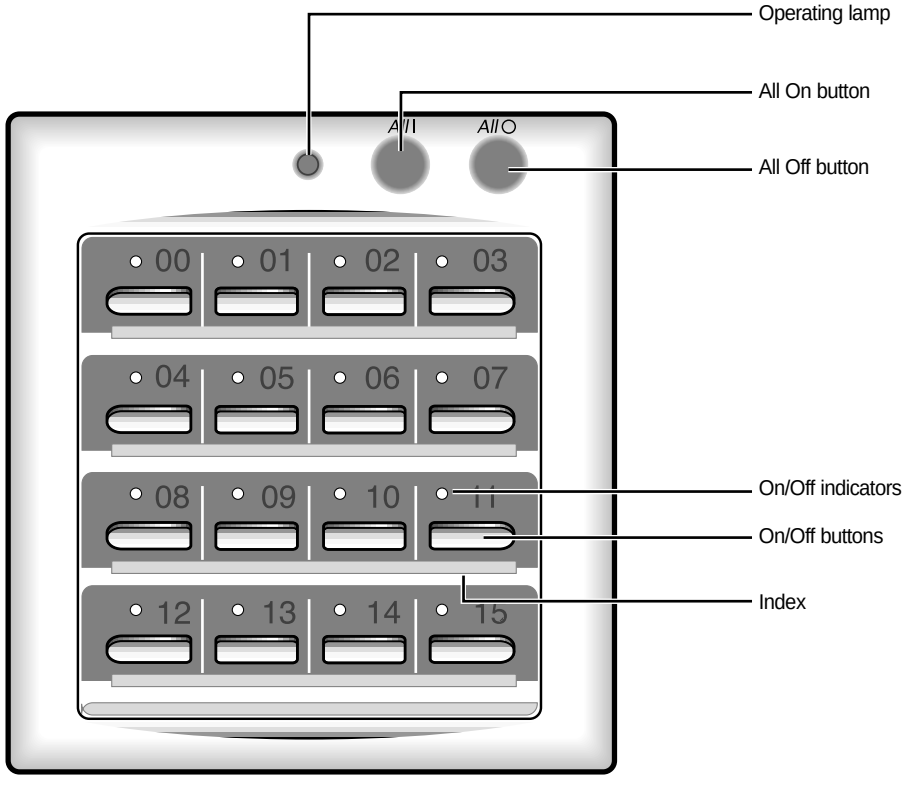
- Test operation is disabled when the chamber "A" is on after initialization of wired remote controller.
- The communication time between wired remote controller and indoor unit is required for 2 seconds. If any one of set is ON, be sure to put it off by pressing the ON/OFF button and start the TEST operation after 35 seconds at minimum.(The communication time with all chambers : 16 x 2 seconds = 32seconds)
- For the reservation operation, the communication time between all 16 chambers is required for 64 seconds due to the increase of communication data.
- The first digit (MSB) of error code displayed during the group operation stands for the address of SET where the error occurs.

4-3 Controller

4-3-1 Appearance and characteristics of Centralized Controller

The centralized controller is installed on the wall.

The centralized controller is an optional accessory.



NOTE : Operating lamp comes on when at least one air conditioner connected to the centralized controller is operating.

- Since the centralized controller has the relay equipment, the option mounted on the indoor unit, the On/Off can be set for 16 chambers through the modem communication.
- Linkage of wired remote controller to wired remote controller is available by 3 kinds of level.
- The maximum extended distance of 1 Km is possible through modem communication. (the relay equipment is installed at the option item, indoor unit)
- The connection by non-polarity method is easy.

BUTTON NAME	FUNCTION
ALL1	• To put on all 16 chambers' set.
ALL0	• To put off all 16 chambers' set.
"01" ~ "16"	• To put on/off set assigned with the number.

4-3-2 Example of the centralized control system configuration

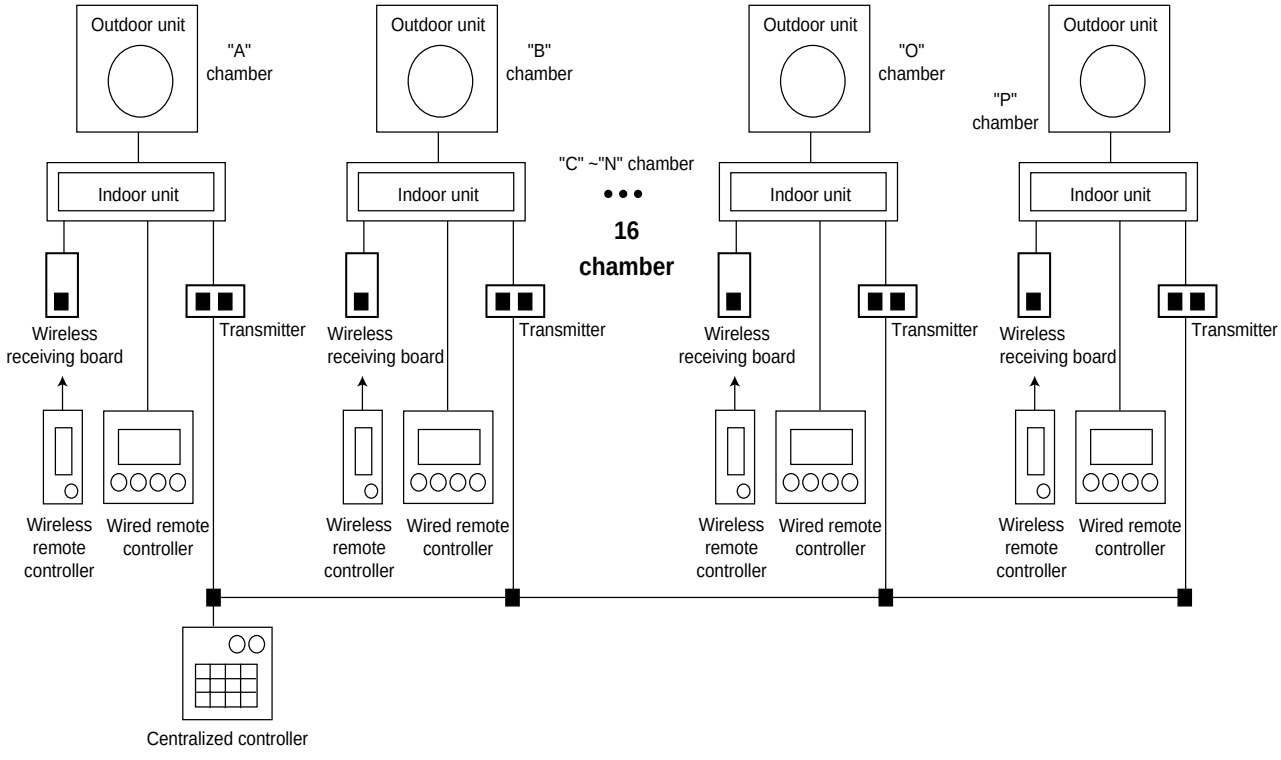
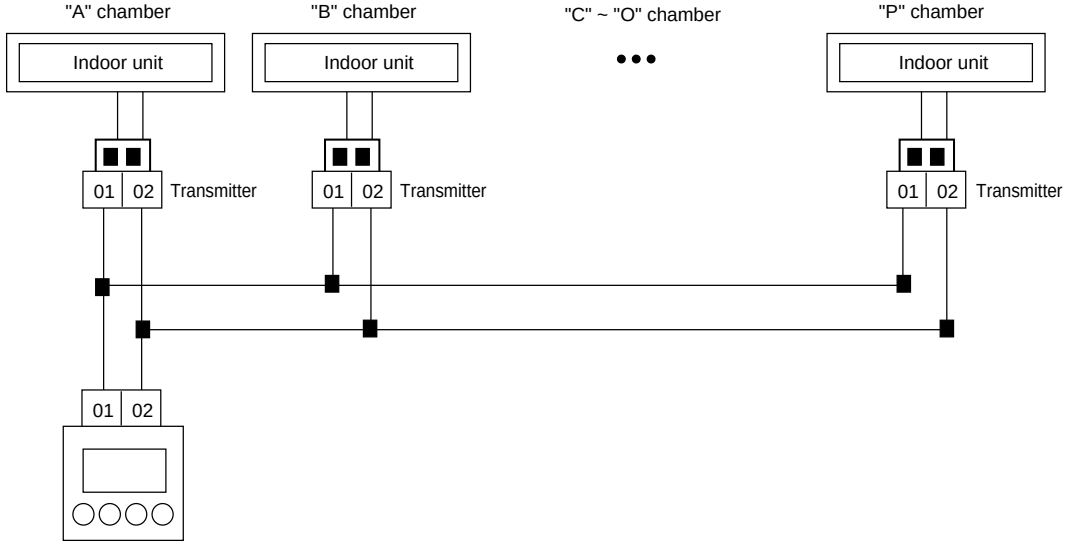


Figure. 16 Chambers Centralized Control (wireless remote controller + wired remote controller + centralized controller) System

4-3-3 Chambers Cnetralized Control System Connection Diagram



4-3-4 Centralized control operation method

1. Setting of indoor unit
   - Put off the set to be installed.
   - Put off the power of the centralized controller.
   - Mount the Transmitter, the option item on the indoor unit set terminal board.
   - Adjust the address of digital switch of Transmitter mounted. (Adjust the address of Transmitter mounted in chamber "A" to "0" and "B" to "1"... continue the adjustment up to "F" to "F")
   - Connect the terminals O1 and O2 of the terminal board mounted on the centralized controller to the O1 and O2 of the terminal board installed in chamber "A".
   - If the wired remote controller is installed, be sure to put off the SW2(DS01) of PCB option switch.
   - Remove the centralized controllers installed at chamber "B" to chamber "F" if any except the A chamber.
   - Adjust the address of digital switch of indoor unit PCB to "0".
   - Connect O1 and O2 of terminal board installed in chamber A to O1 and O2 of terminal board installed in chamber B.
   - Continue to connect O1 and O2 of terminal board mounted on indoor unit in chamber B ~ F to O1 and O2 of terminal board of centralized controller(recommended).

2. Setting at centralized control side
   - Adjust the applicable level of centralized controller with the reference of the table.

3. When the setting is finished at indoor unit and centralized controller,
   - Put on the power of installation completed set of each chamber.
   - Put on the power of centralized controller.

DIP SWITCH	SW1	SW2	SW3	SW4	REMARK
LEVEL 0	OFF	OFF	OFF	OFF	Set operation according to the final controlled one among the centralized controller, wire, and wireless
LEVEL 1	OFF	OFF	OFF	ON	When centralized controller OFF : disable to control wired and wireless When centralized controller ON : enable to control wired and wireless
LEVEL 2	OFF	OFF	ON	OFF	Enable to control only in the centralized controller Disable to control the wired and wireless remote controller

Error Code	Meaning	Checking Area
LED flickering	Communication error between indoor unit and centralized controller	Transmitter, indoor unit, centralized controller

Caution :

- The communication between centralized controller and Transmitter is modem method and there is no polarity but connect "O1" terminal to "O1" terminal and "O2" terminal to "O2"terminal.
- The address of Transmitter mounted on each indoor unit shall not be duplicated.
- After the resetting of operation level of centralized controller, it is not necessary to reset the power differently from that of wired remote controller. In other words, the operation level can be reset even during the operation if required.

4-3-5 Operation specification of wireless and wired remote controller while using the centralized controller.

Wired remote controller / Centralized controller	MASTER Wired remote controller has the priority of control over the wireless.	SLAVE Wired remote controller has not the priority of control over the wireless.
LEVEL 0	**A area** : to be operated be the final input of centralized controller and wired remote controller, and the wireless remote controller does not work even through installed.	**D area** : to be operated by the final input of centralized controller, wired remote controller and wireless remote controller.
LEVEL 1	**B area** : The wired remote controller operates only when the centralized controller is on but the wireless remote.	**E area** : the wired and wireless remote controller operate only when the centralized controller in on.
LEVEL 2	**C area** : only the centralized controller operates but the wired and wireless remote controller do not work.	**F area** : only the centralized controller operates but the wired and wireless remote controller do not work.

4-4 Selecting Area for Installation

Select an area for installation that is suitable to the customer's needs.

4-4-1 Indoor Unit

1. Make sure that you install the indoor unit in an area providing good ventilation. It must not be blocked by an obstacle affecting the airflow near the air inlet or the air outlet.

2. Make sure that you install the indoor unit in an area allowing good air handling and endurance of vibration of the indoor unit.

3. Make sure that you install the indoor unit in an area where there is no source of heat or vapor nearby or direct sunlight.

4. Make sure that you install the indoor unit in an area from which hot or cool air will spread evenly in the room.

5. Make sure that you install the indoor unit in an area that provides easy pipe connection with the outdoor unit, and easy drainage for condensed water.

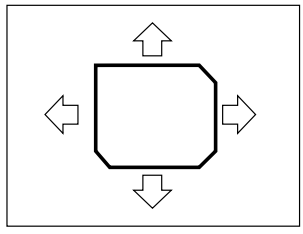
6. The ceiling should not be inclined by more than 2 degrees.

7. The distance between the indoor unit and the outdoor unit should not be longer than A. (recommended distance between two units is 5m.). and the height difference between the indoor unit and the outdoor unit should be less than B.

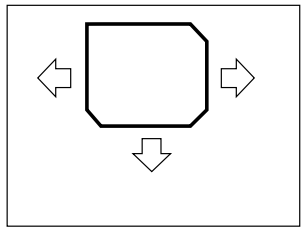
		Model
A	30m	**18/24**
	50m	**36/44**
B	15m	**18/24**
	25m	**36/44**

8. There should be enough space around the indoor unit to provide easy installation and service.

9. There are 4 ways to select the number of air outlets (see the figure). The selection depends on the shape of the room and installation location of indoor units.



Air flow out 4 directions

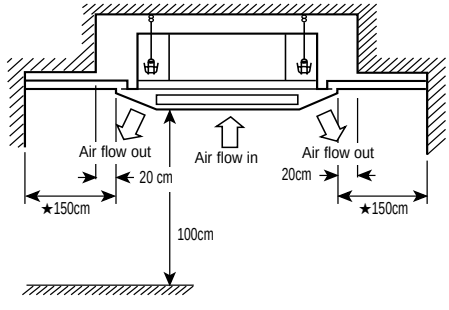


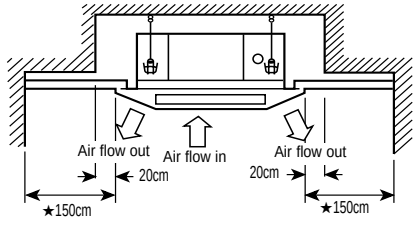
Air flow out 3 directions

10. Please use the given accessories to install the indoor unit. (set of slings)

    - Check that the installed location is strong enough to hang the indoor unit on.

    - The distances of the following should be limited:
      The lengths of refrigerant tube 30 m.
      The height difference between indoor and outdoor unit should be less than 15 m.





Remark : The distance of "★" sign will equal 20 cm , if you close the air outlet on that side.

4-4-2 Outdoor unit

1. Make sure that you install the outdoor unit in an area not exposed to the rain or direct sunlight. (Install a separate sunblind if exposed to direct sunlight.)

2. Make sure that you install the outdoor unit in an area, not amplifying noise or vibration, especially to avoid disturbing neighbours. (Fix the unit firmly if it is mounted on a high place.)

3. Make sure that you install the outdoor unit in an area providing good ventilation and which is not dusty. It must not be blocked by any obstacle affecting the airflow near the air inlet and the air outlet.

4. Make sure that you install the outdoor unit in an area free from animals or plants.

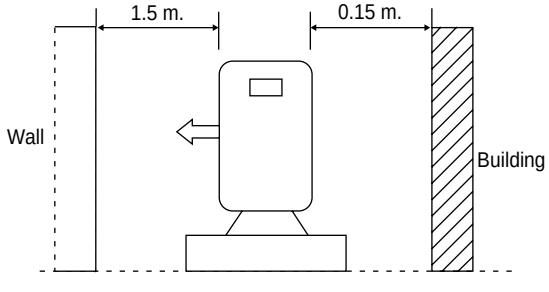
5. Make sure that you install the outdoor unit in an area not blocking the traffic.

6. Make sure that you install the outdoor unit in area easy to drain condensed water.

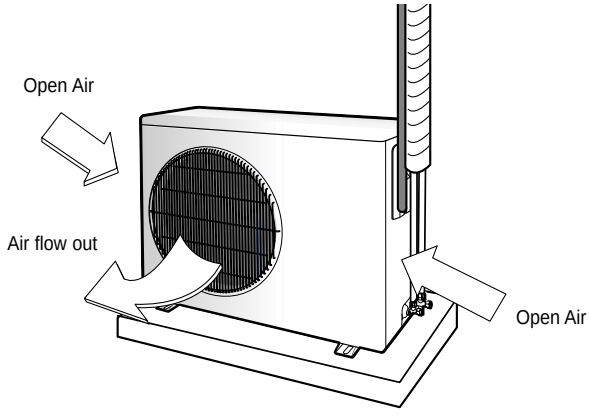
7. If installed on a desk, it should not be installed in a direction that puts open airflow is against airflow from the outdoor unit. It will make the air conditioner malfunction.

8. Do not let hot air flow into the outdoor unit because the air conditioner will malfunction. The hot air may come from other near-by the outdoor unit or heating equipment or itself.

9. If install the outdoor unit directly against the wall, the minimum distance between the outdoor unit and the wall should be 1.5 m.

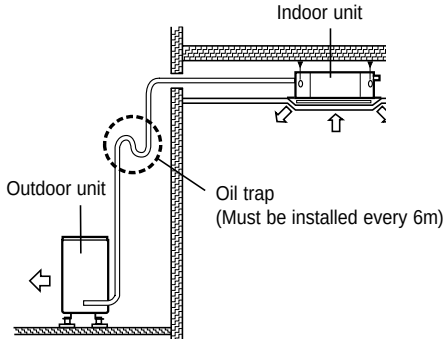


10. If you install the outdoor unit in a location that has open airflow, you should install the outdoor unit in a direction that airflow out from the outdoor unit is perpendicular to the open air flow direction.

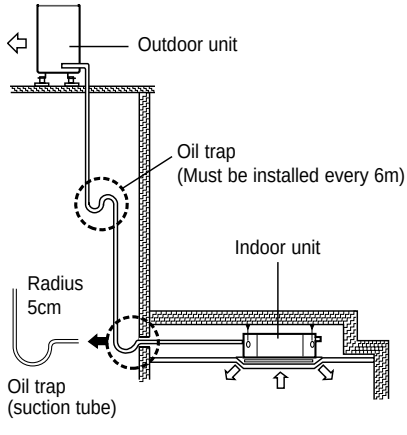


11. Install the oil trap according to the installation condition. (see the figure)

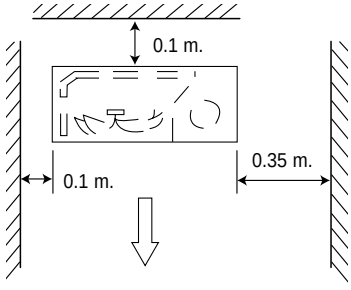
a. When the indoor unit is above the outdoor unit



b. When the outdoor unit is above the indoor unit



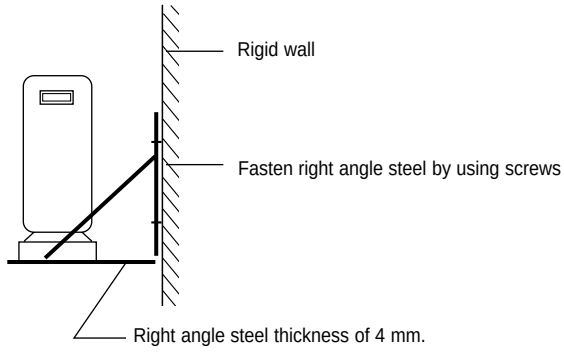
12. You should leave spacing around the outdoor unit at least according to the figure for easy installation, service and ventilation.



13. Install the outdoor unit on a rigid base.

14. Fasten the outdoor unit to the base by using bolts or nuts.

15. In case of hanging the outdoor unit, you should hang it on a rigid wall area and use right angle steel thickness of 4 mm. as a holder.



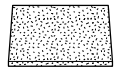
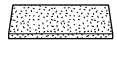
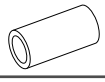
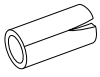
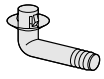
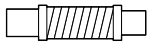
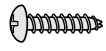
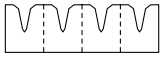
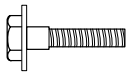
Caution :

It is harmful to the air conditioner if it is used in the following environments: greasy areas (including near machines), salty areas such as coast areas, areas where sulfuric gas is present such as hot spring areas, large variance in electricity voltage such as in a factory. Contact your dealer for advice.

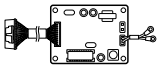
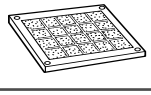
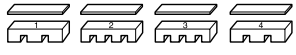
4-4-3. Air Conditioner and Accessories

The following accessories are supplied with the air conditioner. The quantities are indicated in parantheses.

Basic Accessories

Owner's Instructions(1) 	Installation Manual(1) 	Pattern Sheet(1) 	Insulation Cover Drain(1) 	Insulation Cover Pipe(2) 	Insulation Cover Band(1) 
Insulation Pipe 3/8"(1) Insulation Pipe 5/8"(1) Insulation Pipe 3/4"(1) 	Insulation Drain Pipe(1) 	Cable-Tie(5) 	Drain Plug(1) 	Flexible Hose(1) 	M4 X 12 Tapped Screw(4) 
Pad Stopper(1) 	Insulation Drain Sub (1) 	Bolt(4) 	Flare Nut 3/8"(1) Flare Nut 5/8"(1) Flare Nut 3/4"(1) 	Rubber Leg (4) 	

Optional Accessories

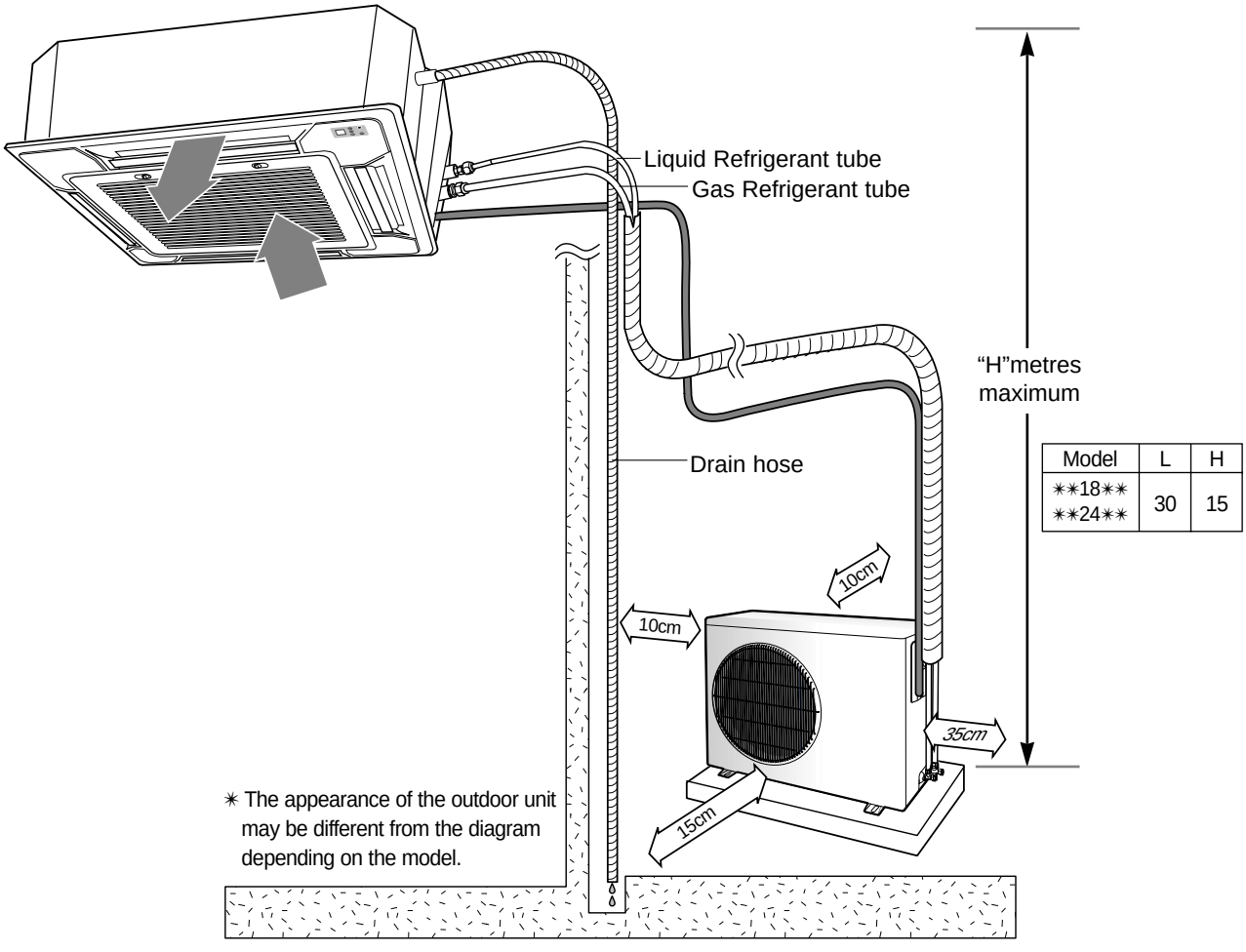
Wired Remote Controller(1) KR-H50210 	Cable-Tie(2) 	Cable Clamp(5) 	M4 X 16 Tapped Screw(7) 
Wireless Remote Controller(1) KR-H40200 	Battery(2) 	M4 X 16 Tapped Screw(2) 	Remote Controller Holder(1) 
Receiver & Display Unit(1) (KRE-H1000) 			
Centralized Controller(1) KR-H60110 	Cable-Tie(2) 	Cable Clamp(5) 	M4 X 16 Tapped Screw(7) 
Transmitter(1) KT-A00 	Spacer Support(4) 	Cable-Tie(2) 	
Bio-Pure Filter(1) KF-C1B0 	M4 X 10 Tapped Screw(4) 	Air blocking Kit(1) KAB-A00 	

NOTE : Refrigeration pipes and their insulating materials, power cables are not supplied.

4-5 Installation Diagram of Indoor Unit and Outdoor Unit

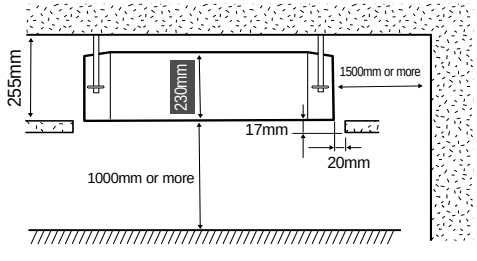
4-5-1 Piping, Drain Hose Direction

Respect the clearances and maximum lengths indicated in the diagram below when installing the unit.



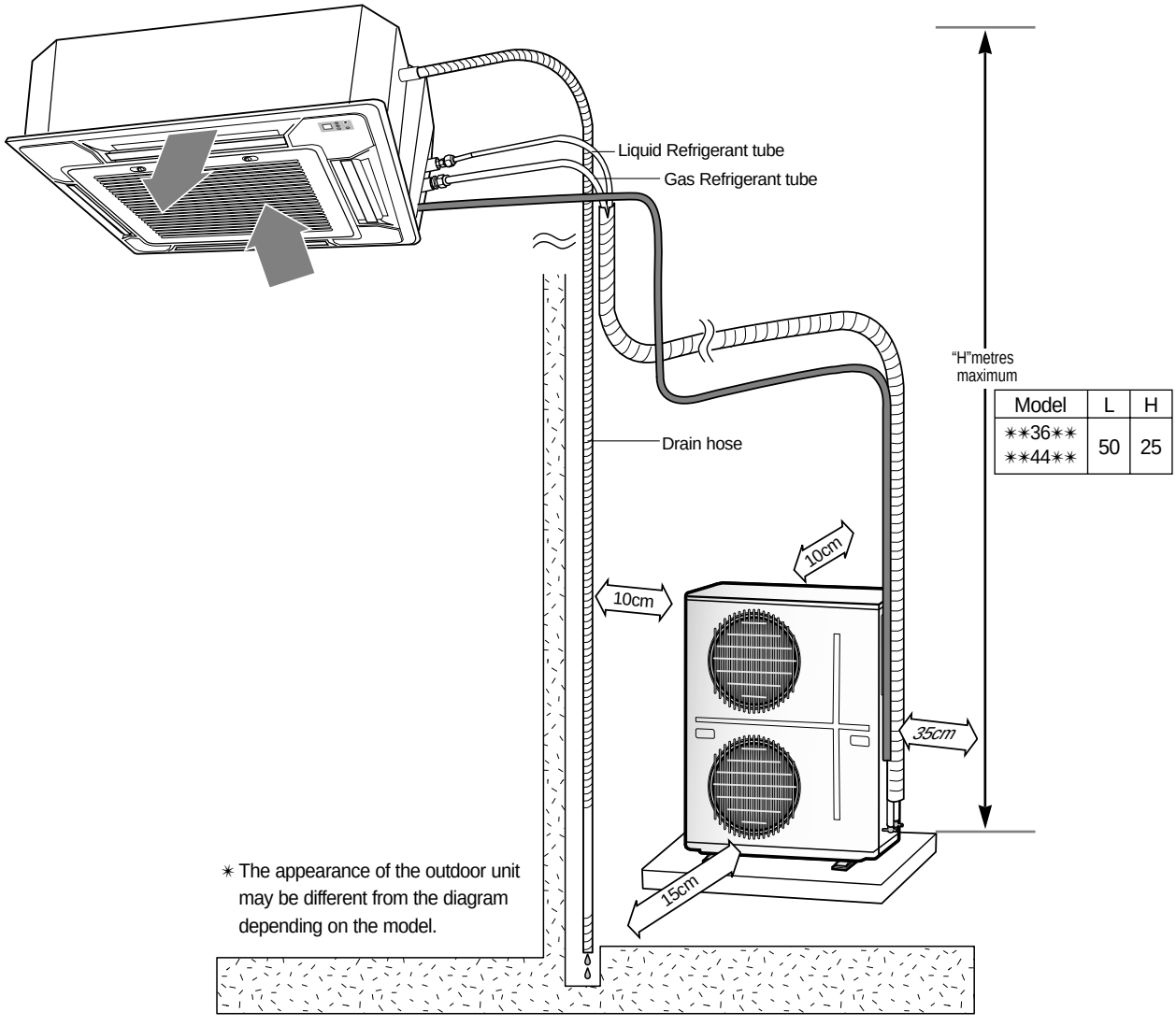
Model	L	H
✳✳18✳✳ ✳✳24✳✳	30	15

Space requirement when installing the indoor unit



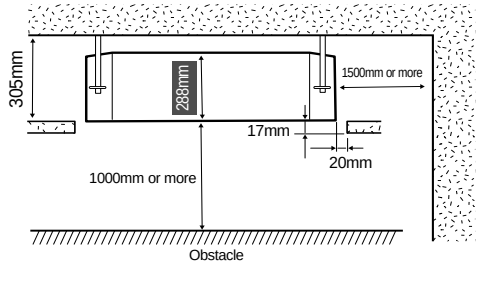
4-5-1 Piping, Drain Hose Direction

Respect the clearances and maximum lengths indicated in the diagram below when installing the unit.



Model	L	H
✳✳36✳✳ ✳✳44✳✳	50	25

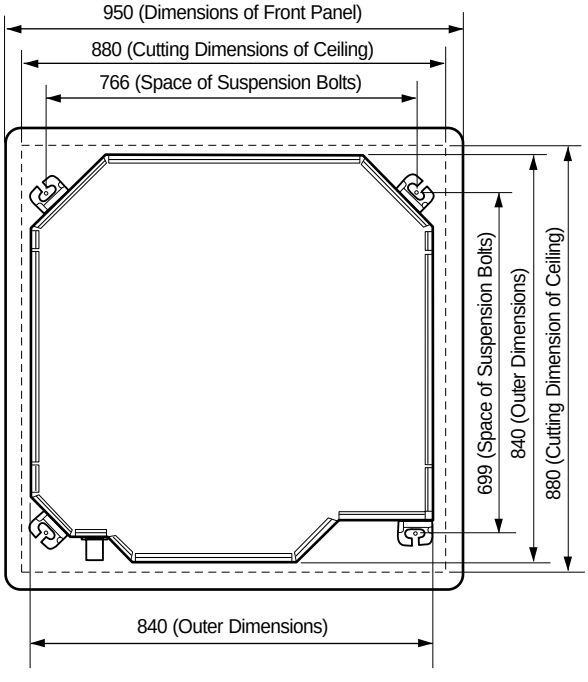
Space requirement when installing the indoor unit (In case of ✳✳36✳✳/✳✳44✳✳)

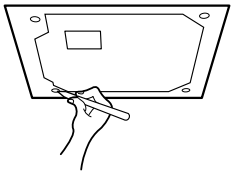


4-5-2 Preparing the Area for Installation

Preparing the Area for Installation of Indoor Unit

1. Measure the distance between ceiling and ceiling wall.
2. Place the pattern sheet on the ceiling.
3. Cut the ceiling to install the indoor unit by attaching the pattern sheet onto the ceiling. Then cut the pattern sheet and ceiling in section A and make a hole in the ceiling at the position of the hook. Use the plummet to mark the position on the ceiling wall, which is vertically in line with the hole in the ceiling, and make these 4 holes in the ceiling wall.
4. Insert bolt anchors, use existing ceiling supports or construct a suitable support as shown in figure.



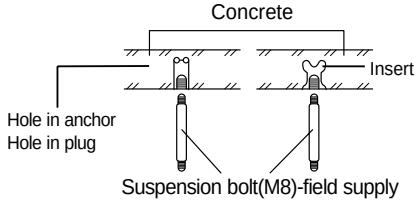


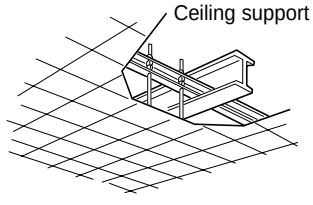
NOTE :

◆ Since the diagram is made of paper, it may shrink or stretch slightly due to temperature or humidity. For this reason, before drilling the holes maintain the correct dimensions between the markings; refer to page 2-3.

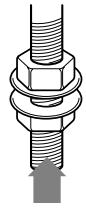
5. Install the suspension bolts depending on the ceiling type.

IMPORTANT : Ensure that the ceiling is strong enough to support the weight of the indoor unit. Before hanging the unit, test the strength of each attached suspension bolt.





6. Screw eight nuts to the suspension bolts making space for hanging the indoor unit.

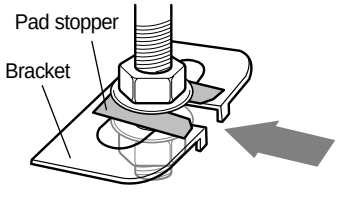


IMPORTANT : You must install the suspension bolts more than four when installing the indoor unit.

7. Hang the indoor unit to the suspension bolts between two nuts.

NOTE: ◆ Tubing must be laid and connected inside the ceiling when suspending the unit. If the ceiling is already constructed, lay the tubing into position for connection to the unit before placing the unit inside the ceiling.

8. Screw the nuts to suspend the unit. Cut a pad stopper and place it on the bracket at this time.



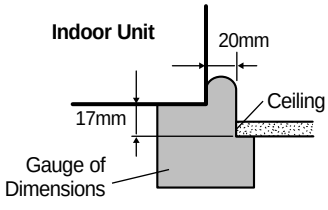
9. Adjust the unit to the appropriate position considering the installation area for the front panel.

   9-1 Place the pattern sheet on the indoor unit.

   9-2 Adjust a space between the ceiling and the indoor unit by using the gauge of dimensions.

   9-3 Fix the indoor unit securely after adjusting level of the unit by using a leveler.

   9-4 Remove the pattern sheet, connect the other cables and install the front panel.



4-5-3 Connecting the connection cord

The indoor unit is powered from the outdoor unit via the connection cord.

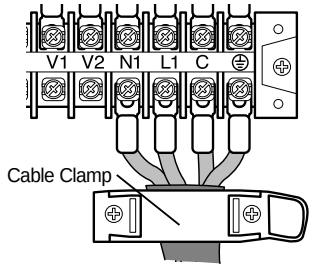
1. Remove the screws on the electrical component box and remove the cover plates.

2. Route the connection cord through the side of the indoor unit and connect the cable to terminals as shown in page 4-23, 4-24.

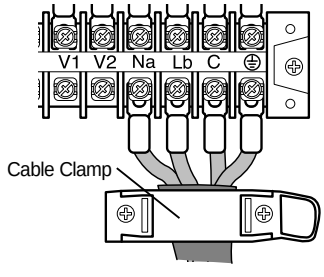
3. Route the other end of the cable to the outdoor unit through the ceiling & the hole on the wall.

4. Reassemble the electrical component box cover, carefully tightening the screws.

5. For further details on how to plug the other end of the connection cord into the outdoor unit, refer to page 4-25, 4-26.

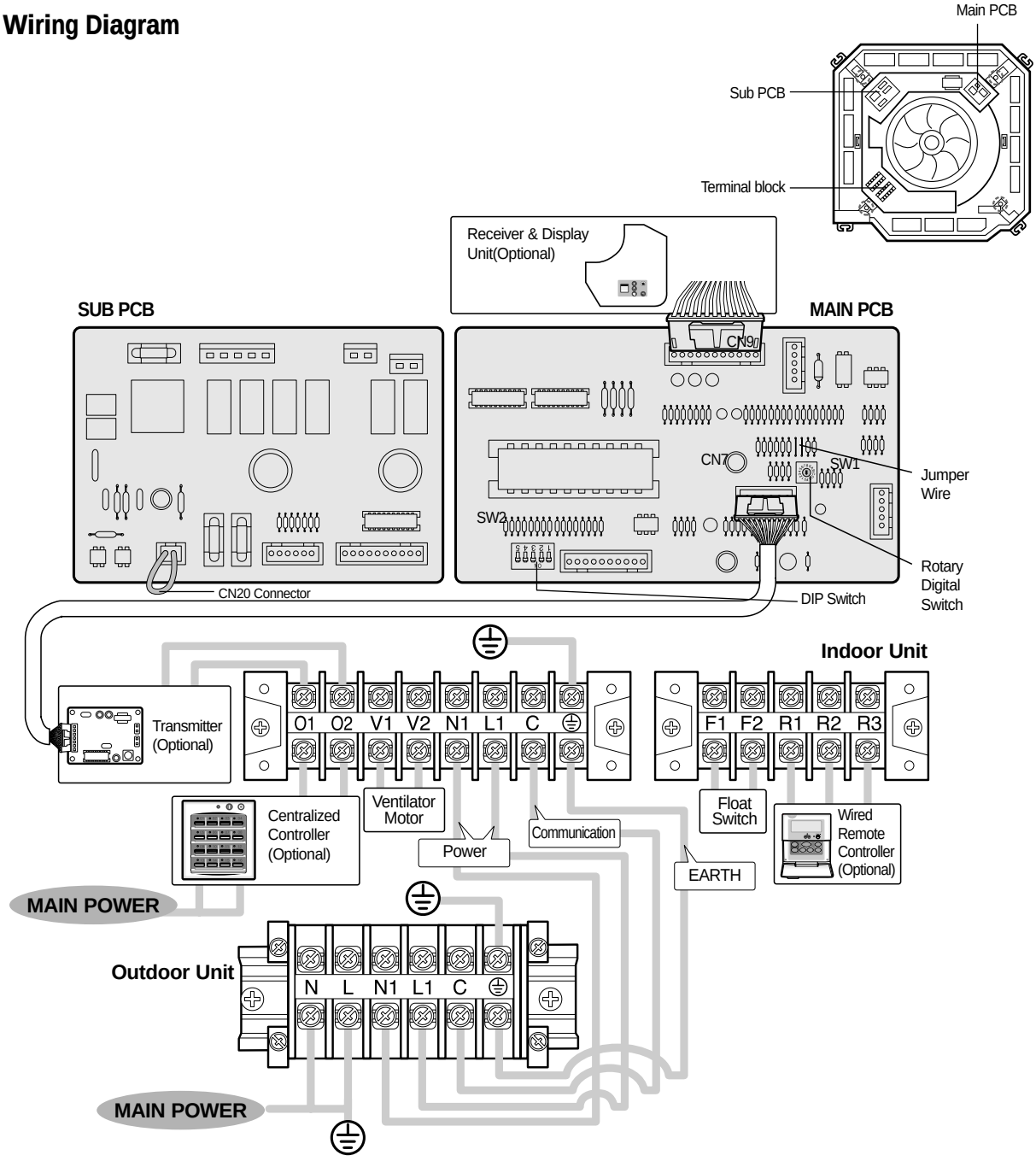


(1ø, 220V-240V~, 50Hz)



(3ø, 380V-415V~, 50Hz)

Wiring Diagram

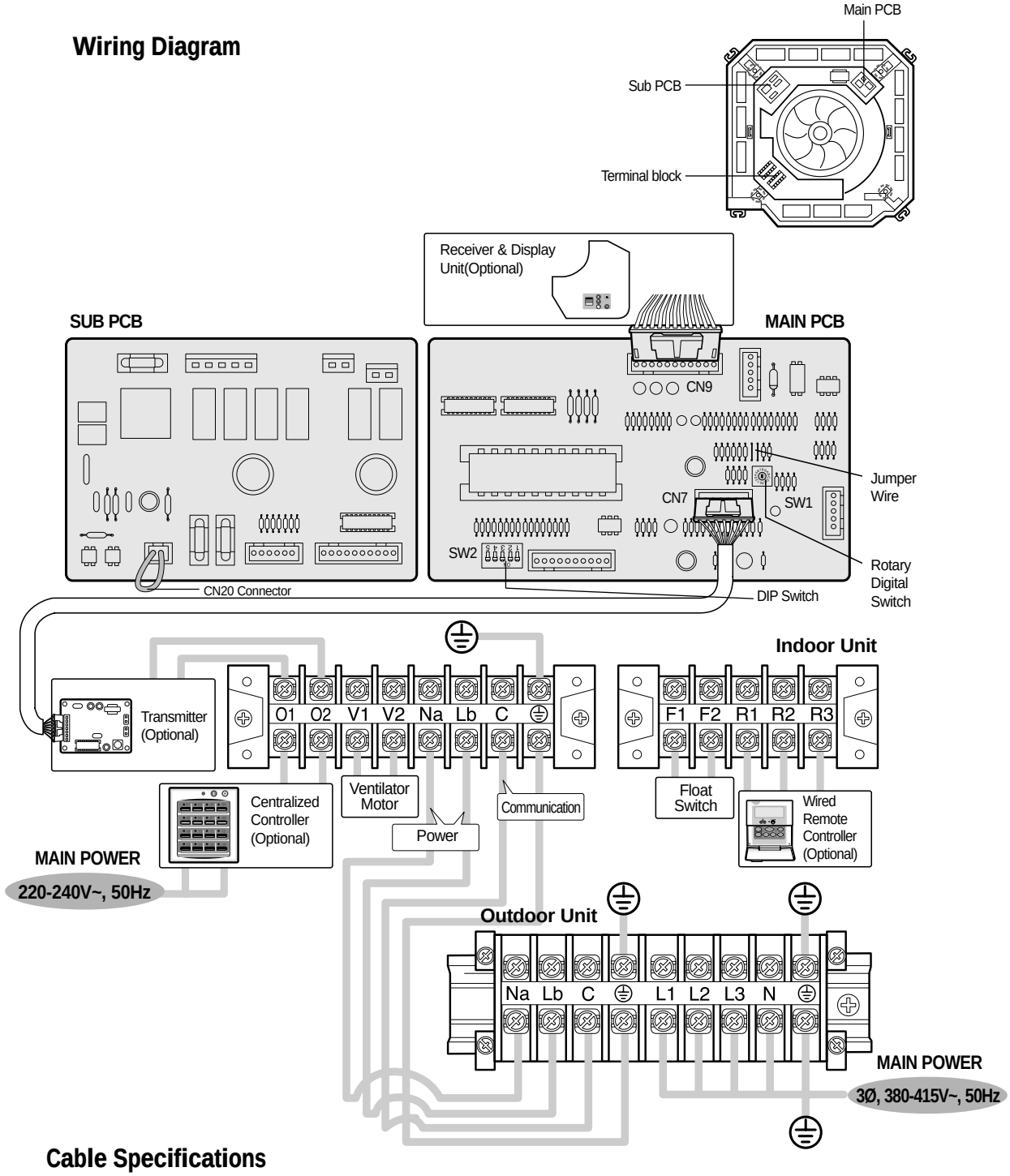


Cable Specifications

The following electrical characteristics must be respected.

MODEL		ACH1800E/2400E, CH18ZA/24ZA, CH18CA/24CA	Note
Power		1Ø - 220V-240V~, 50Hz	The power cables are not supplied with the air conditioner. The user should purchase them separately.
Sub switch		30A	
Fuse		30A	
Min. size of electric Wires from/to the indoor/outdoor unit		H07RN-F, 4G, 1.0mm^2	
Size of electric input wires	20m or less	H07RN-F, 3G, 2.5mm^2	
	50m or less	H07RN-F, 3G, 4.0mm^2	

Wiring Diagram



Cable Specifications

The following electrical characteristics must be respected.

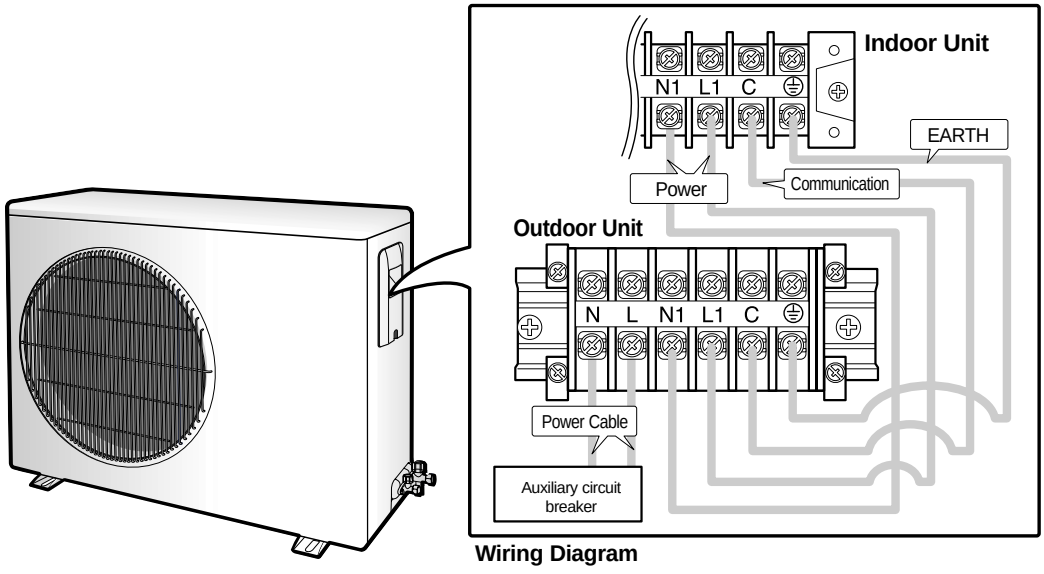
MODEL		ACH3600G/4400G, CH36ZA/44ZA, CH36CA/44CA	Note
Power		3Ø, 380V-415V~, 50Hz	◆ The power cables are not supplied with the air conditioner. The user should purchase them separately. ◆ When connecting the cables to the main power, you should connect each cable(L1, L2 & L3) properly.
Sub switch		30A	
Fuse		30A	
Min. size of electric Wires from/to the indoor/outdoor unit		H07RN-F, 4G, 1.0mm^2	
Size of electric input wires	20m or less	H07RN-F, 3G, 2.5mm^2	
	50m or less	H07RN-F, 3G, 4.0mm^2	

4-5-4 Connecting the Cables to the Outdoor Unit

Two electric cables must be connected to the outdoor unit.

- *The connection cord connecting the indoor unit to the outdoor unit*
- *The power cable connecting the auxiliary circuit breaker to the outdoor unit*

1. Remove the terminal board cover on the side of the outdoor unit.
2. Connect the connection cord(L1, N1, C1, ⏚) and power cable(N, L) to terminals as shown in the diagram.
3. Connect the power cable to the auxiliary circuit breaker.
   An all pole disconnection from the power supply must be incorporated in the fixed wiring(≥3mm).
4. Replace the terminal board cover, carefully tightening the screw.



Wiring Diagram

Caution :
Keep the power cable and the connection cord in a steel pipe to protect them against liquids, outside impacts and so on.

Two electric cables must be connected to the outdoor unit.

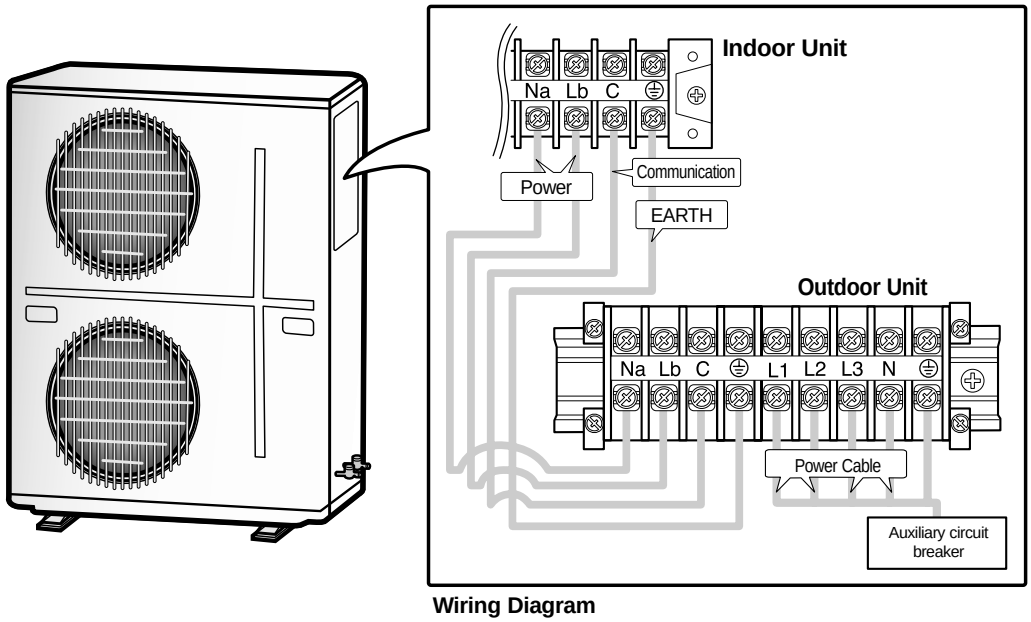
- *The connection cord connecting the indoor unit to the outdoor unit*
- *The power cable connecting the auxiliary circuit breaker to the outdoor unit*

1. Remove the terminal board cover on the side of the outdoor unit.

2. Connect the connection cord (Na, Lb, C, ⏚) and power cable(L1, L2, L3, N, ⏚) to terminals as shown in the diagram.

3. Connect the power cable to the auxiliary circuit breaker.
   An all pole disconnection from the power supply must be incorporated in the fixed wiring(≥3mm).

4. Replace the terminal board cover, carefully tightening the screw.



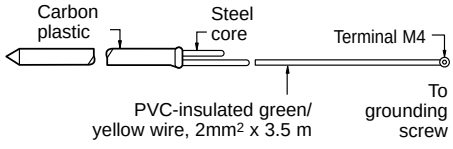
Wiring Diagram

Caution :
Keep the power cable and the connection cord in a steel pipe to protect them against liquids, outside impacts and so on.

4-5-5 Checking Correct Grounding

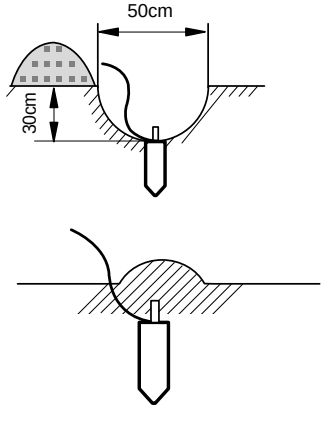
If the power distribution circuit does not have an earth or the ground does not comply with specifications, an grounding electrode must be installed.
The corresponding accessories are not supplied with the air conditioner.

1. Select an grounding electrode that complies with the specifications given in the illustration.



2. Determine a suitable location for the grounding electrode:
   - In damp hard soil rather than loose sandy or gravel soil that has a higher grounding resistance
   - Away from underground structures or facilities, such as gas pipes, water pipes, telephone lines and underground cables
   - At least two metres away from a lightening concassetteor grounding electrode and its cable

   NOTE : ◆ The grounding wire for the telephone line cannot be used to ground the air conditioner.



3. Finish wrapping insulating tape around the rest of the pipes leading to the outdoor unit.

4. Install a green/yellow coloured grounding wire (Ø1.6 mm, section 2 mm² or greater):
   - If the grounding wire is too short, connect an extension lead, in a mechanical way and wrapping it with insulating tape (do not bury the connection)
   - Secure the grounding wire in position with staples

   NOTE : ◆ If the grounding electrode is installed in an area of heavy traffic, its wire must be connected securely.

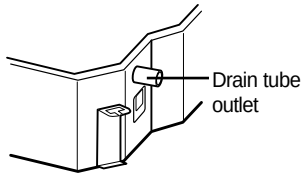
5. Carefully check the installation, by measuring the grounding resistance with an ground resistance tester. If the resistance is above required level, drive the electrode deeper into the ground or increase the number of grounding electrodes.

6. Connect the grounding wire to the electrical component box inside of the outdoor unit.

4-5-6 Drain Hose Installation

Care must be taken when installing the drain hose for the indoor unit to ensure that any condensate water is correctly drained outside.

1. Insert the flexible hose to the drain tube outlet, if necessary.

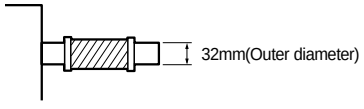


   NOTE : ◆ Attach the drain hose to the drain tube outlet with the adhesives to prevent water leaks, then secure the hose with a band etc..(The band is not supplied with the air conditioner.)

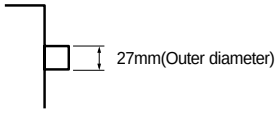
2. Install the drain hose so that its length can be as short as possible. Internal diameter of the drain hose should be the same or slightly bigger than the external diameter.

   • **Inner diameter of the drain hose**

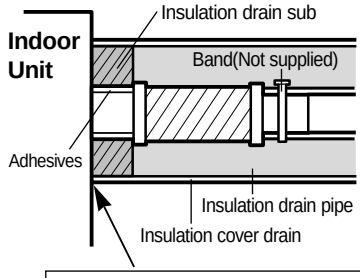
Flexible hose is connected



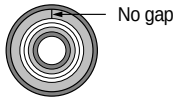
Flexible hose is not connected



NOTE : ◆ Give a slightly slant to the drain hose for proper drainage of condensate.
◆ Secure the drain hose with the band joint and the cable-tie not to be separated from the unit.



Caution :
Must fit tightly against body without any gap.



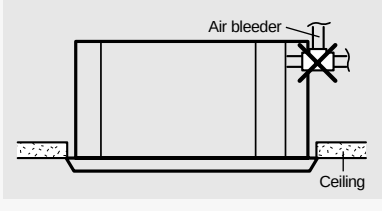
3. Wrap the drain hose with the insulation drain as shown in figure and secure it.

NOTE : ◆ When connecting the drain hose without the flexible hose, you should attach it to the drain tube outlet with adhesives and tapes to prevent water leaks.

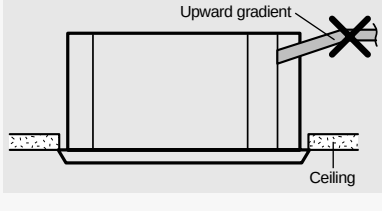
Caution :

Check that the indoor unit is level with the ceiling by using the leveler.

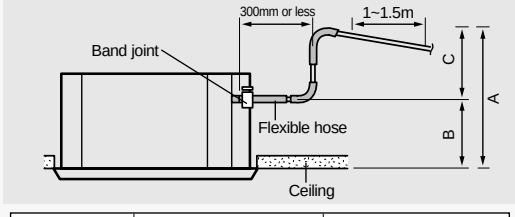
Do not install air bleeding tubes, as this may cause water to spray from the drain tube outlet.



Do not give the hose and upward gradient after the connection port.
This will cause water to flow backwards when the unit is stopped, resulting in water leaks.

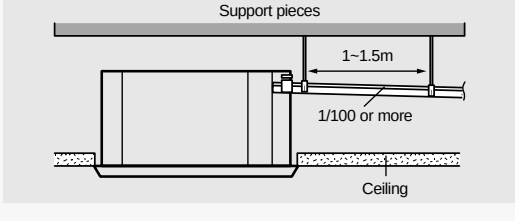


If it is necessary to increase the height of the drain hose somewhat, the portion directly after 30cm. If it is raised higher than 50cm, there can be water leaks.



	✻✻18/✻✻24	✻✻36/✻✻44
A	750 mm	750 mm
B	200 mm	258 mm
C	550 mm	482 mm

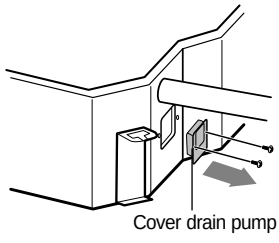
Do not apply force to the piping on the unit side when connecting the drain hose. The hose should not be allowed to hang loose from its connection to the unit. Fasten the hose to a wall, frame or other support as close to the unit as possible.



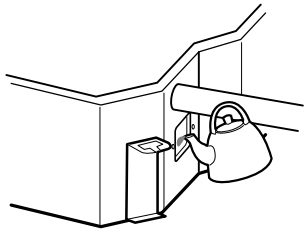
Testing the drainage

You should test the drainage after completing the installation.
Prepare a little water about 2.0 liter.

1. Remove two screws on the cover drain pump and pull out the cover.



2. Pour water into the indoor unit as shown in figure.



NOTE : ◆ If you do not pour water inside the water supply intake, water may spill from the indoor unit.

3. Confirm that the water flows out through the drain hose.

NOTE : ◆ You can check the drainage only when the air conditioner is turned on.

4. Reassemble the cover drain pump and the screws.

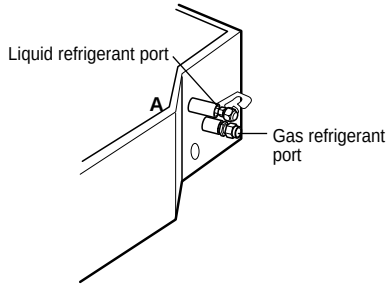
4-5-7 Connecting the Indoor Unit Assembly Piping

There are two refrigerant pipes of differing diameters:

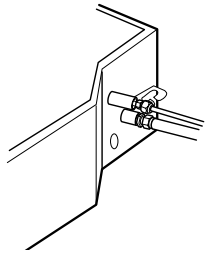
- A smaller one(9.52mm, 3/8") for the liquid refrigerant
- A larger one(15.88mm, 5/8") for the gas refrigerant
- The thickness of tube should not less than 1.0mm.
- The inside of copper tube must be clean & has no dust.

The connection procedure for the refrigerant pipes varies according to the exit position of the pipes from the indoor unit, as seen when facing the indoor in the "A" side.

- Liquid refrigerant port
- Gas refrigerant port



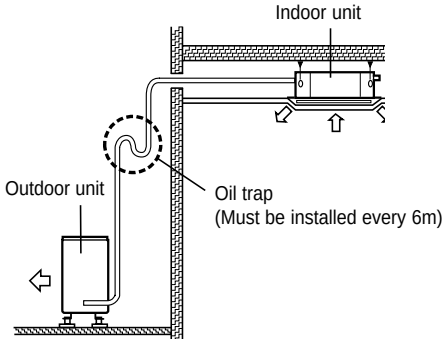
1. Remove the protection caps on the pipes and connect the assembly pipes to each pipe, tightening the nuts, first manually and then with a wrench, a spanner applying the following torque.



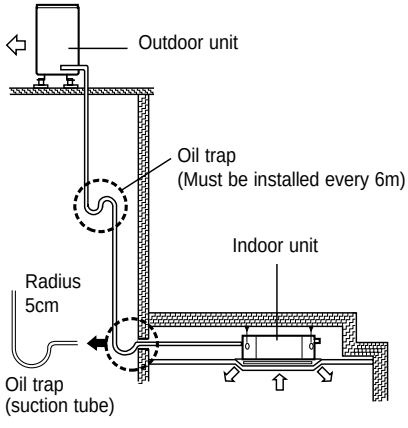
Outer Diameter	Torque (kgf·cm)
9.52 mm (3/8")	300
15.88 mm (5/8")	750

2. Must use insulator which is thick enough to cover more than 10mm the refrigerant tube to protect the condensate water on the outside of pipe falling onto the floor and the efficiency of the unit will be better.

a. When the indoor unit is above the outdoor unit



b. When the outdoor unit is above the indoor unit



3. Cut off any excess foam insulation.

4. Be sure that there must be no crack or wave on the bended area.

5. It would be necessary to double the insulation thickness to prevent condensation even on the insulator when if the installed area is warm and humid.

6. Shape an oil trap as shown in figure. The oil trap must be formed every level difference of 6m.

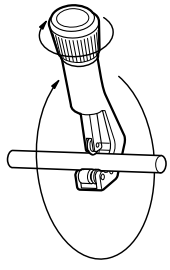
7. For further details on connecting up to the outdoor unit and purging the refrigerant circuit.

NOTE : ◆ For further details on connecting up to the outdoor unit and purging the refrigerant circuit.

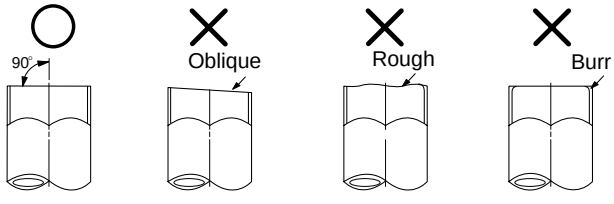
4-5-8 Cutting/Flaring the Pipes

Connect the pipe within 30m and cutting pieces will not be gone into the pipe as being clean to pipe section

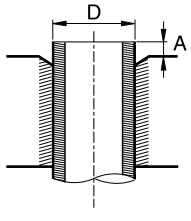
1. Make sure that you have the required tools available (pipe cutter, reamer, flaring tool and pipe holder).



2. If you wish to shorten the pipes, cut it with a pipe cutter, taking care to ensure that the cut edge remains at a 90° angle with the side of the pipe. Refer to the illustrations below for examples of edges cut correctly and incorrectly.



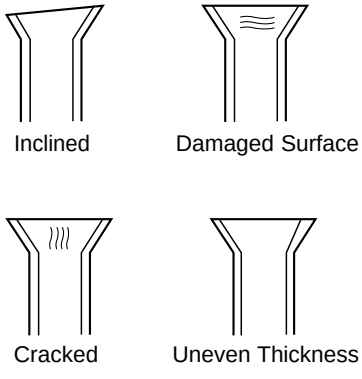
3. To prevent any gas from leaking out, remove all burrs at the cut edge of the pipe, using a reamer.

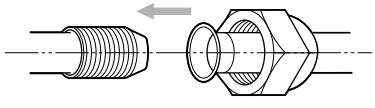


4. Slide a flare nut on to the pipe and modify the flare.

Outer Diameter(D)	Depth (A)
9.52 mm (3/8")	1.8 mm
15.88 mm (5/8")	2.2 mm
19.05 mm (3/4")	2.2 mm

5. Check that the flaring is correct, referring to the illustrations below for examples of incorrect flaring.





6. Align the pipes and tighten the flare nuts first manually and then with a wrench, applying the following torque.

Outer Diameter(D)	Torque(kgf·cm)
9.52 mm (3/8")	300
15.88 mm (5/8")	750
19.05 mm (3/4")	750

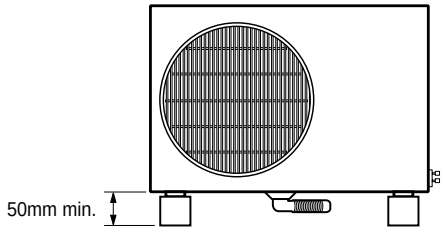
7. For further details on how to connect up to the outdoor unit and purge the circuit.

> **Caution :**
> In case of welding the pipe, you must weld with nitrogen gas blowing.

4-5-9 Connecting the Drain Hose to the Outdoor Unit

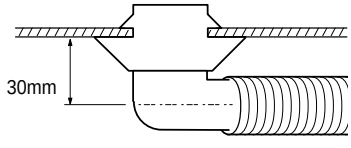
When using the air conditioner in the heating mode, ice may accumulate. During de-icing, the condensed water must be drained off safely. Consequently, you must install a drain hose on the outdoor unit, following the instructions below.

1. Make space more than 50mm between the bottom of the outdoor unit and the ground for installation of the drain hose, as shown in figure.



2. Insert the drain plug into the hole on the underside of the outdoor unit.

3. Connect the drain hose to the drain plug. [Drain hose: ID(18mm), Drain plug: OD(18mm)]



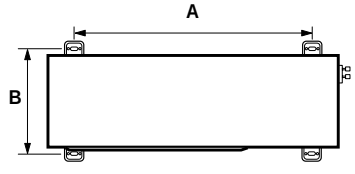
4. Ensure that the drained water runs off correctly and safely.

4-5-10 Fixing the Unit in Position

The outdoor unit must be installed on a rigid and stable base to avoid any increase in the noise level and vibration, particularly if the outdoor unit is to be installed close to a neighbour. If it is to be installed in a location exposed to strong winds or at a height, the unit must be fixed to an appropriate support (wall or ground).

1. Position the outdoor unit so that the air flow is directed towards the outside.

2. Attach the outdoor unit to the appropriate support using anchor bolts.

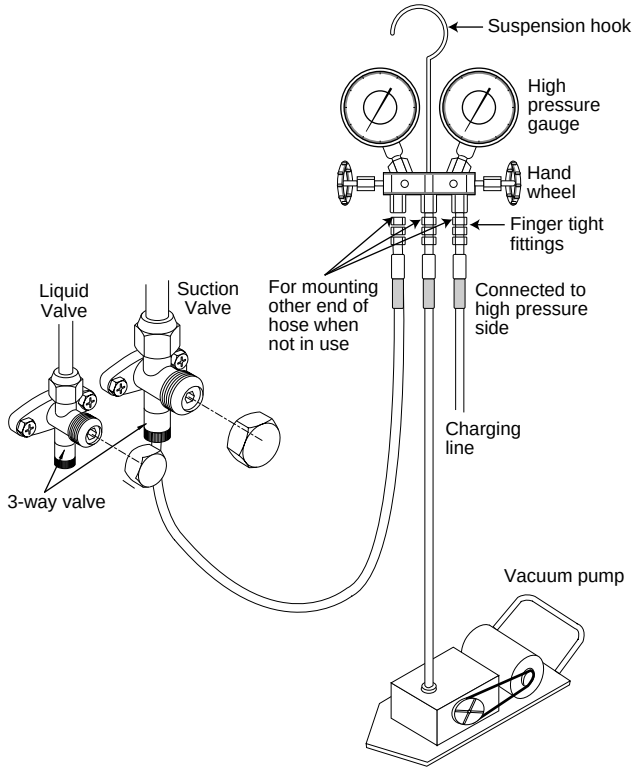


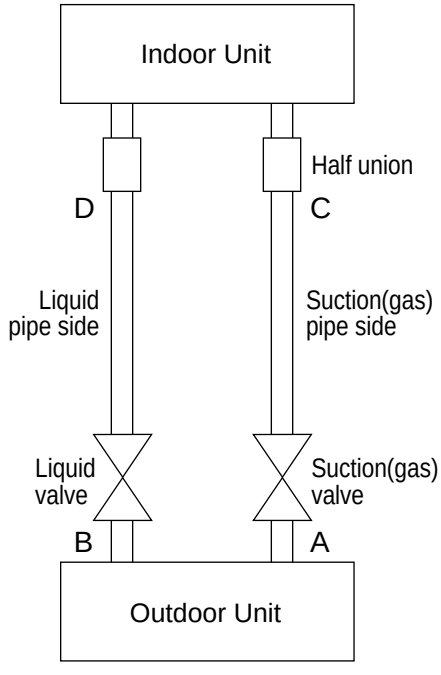
Capacity	A	B
UBH1800E, CH18ZAX, CH18CAX	582mm	340mm
UBH2400E, CH24ZAX, CH24CAX	660mm	340mm
UCH3600G, UCH4400G CH36ZAX, CH44ZAX CH36CAX, CH44CAX	840mm	415mm

3. If the outdoor unit is exposed to strong winds, install shield plates around the outdoor unit, so that the fan can operate correctly.

• Use the vacuum pump to remove N2 gas or air inside the indoor unit and pipes.

1. Tighten all pipe connections (A, B, C, D) to prevent any leakage.
2. Check that the suction and liquid valves are turned off clockwise to close the outdoor unit.
3. Remove the cap on the opposite side of the Suction tube connection (A) and connect a hose from the pressure guage of which other end is connected to the vacuum pump.
4. Operate the vacuum pump enough until the pressure guage indicates “0”.
5. Disconnect the hose from the suction valve cafully not to break the vacuum.
6. Turn on the suction and liquid valves counterclockwise to open the outdoor unit to the indoor unit.
7. Check the leakage on the connections. (A, B, C, D)
8. Check each valve for leakage.





4-5-11 Refrigerant Refill Procedure

1. Refrigerant Refill

• Refill the air-conditioner with refrigerant when the refrigerant has leaked during the installing or using

1. Turn the suction valve clockwise to close, connect the pressure gauge(low pressure side) to the service valve, and open the suction valve again.

↓

2. Connect the tank to refill with Refrigerant

↓

3. Set the unit to cool operation mode.

↓

4. Check the pressure indicated by the pressure gauge(low pressure side). *Standard pressure should be 4.5~5.5kg/cm^2 in a regular, operation mode.

↓

5. Open the refrigerant tank and fill with refrigerant until the rated pressure is reached. *It is recommended not to pour the refrigerant in too quickly, but gradually while operating a pressure valve.

↓

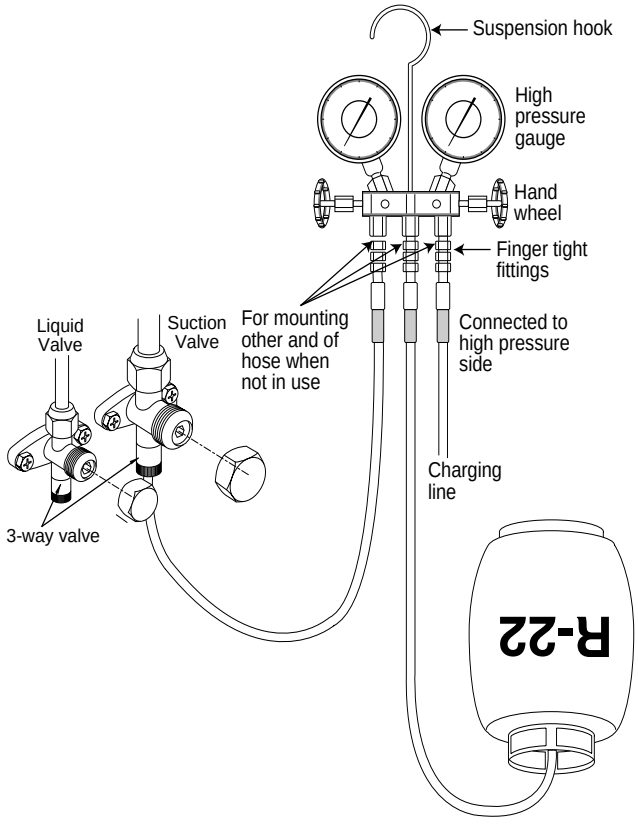
6. Stop operation of the air conditioner.

↓

7. Close the suction valve, disconnect the pressure gauge, and open the suction valve again.

↓

8. Close the cap of each valve.



Caution :

- You must not add the R407C refrigerant without purging and vacuum procedure.

2. Refrigerant Adjustment (Supplement)

Adding Refrigerant

Refrigerant must be added if the piping measures more than 5 metres in length (maximum of "A" metres). The quantity of additional refrigerant is variable according to the installation situation. Thus, make sure the outdoor unit situation before adding refrigerant. This operation can only be performed by a qualified refrigeration specialist.

☛	If you have used...	Then...
	More than 5 metres of the pipes	"B"g of refrigerant ("C") must be added for each extra metre.
	Less than 5 metres of piping	The purge time is normal.

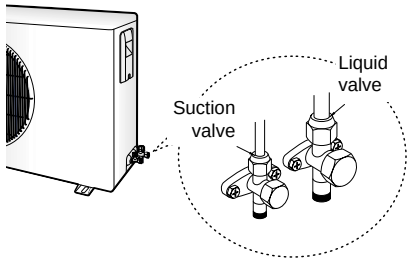
Type	A	B		C
		a	b	
ACH1800E, CH18ZA	30	40	50	R-22
ACH2400E, CH24ZA	30	40	50	
ACH3600G, CH36ZA	50	60	45	
ACH4400G, CH44ZA	50	50	35	
CH18CA	30	50	50	R407C
CH24CA	30	40	50	
CH36CA	50	45	40	
CH44CA	50	40	40	

For details about the installation situation(a or b)
✻ refer to 4-30 page

4-5-12 "Pump down" Procedure

• 'Pump down' shall be carried out when an evaporator replaced or when the unit is relocated in another area.

1. Remove the caps from the liquid valve and the suction valve.
2. Turn the suction valve clockwise to close and connect a pressure gauge(low pressure side) to the service valve, and open the suction valve again.
3. Set the unit to cool operation mode. (Check if the compressor is operating.)
4. Turn the liquid valve clockwise to close.
5. When the pressure gauge indicates "0" turn the suction valve clockwise to close.
6. Stop operation of the air conditioner.
7. Close the cap of each valve.



Relocation of the Air Conditioner

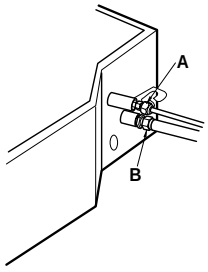
• Refer to this procedure when the unit is relocated.

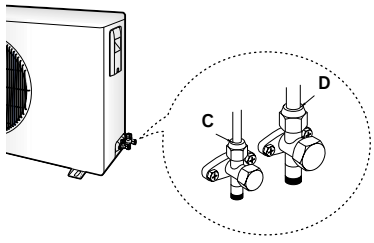
1. Carry out the pump down procedure (refer to the details of 'pump down').
2. Remove the power cord.
3. Disconnect the assembly cable from the indoor and outdoor units.
4. Remove the flare nut connecting the indoor unit and the pipe.
5. Disconnect the pipe connected to the outdoor unit. At this time, cover the valve of the outdoor unit and the other pipe using a cap or vinyl plug to prevent foreign material from entering.
6. Make sure you do not bend the connection pipes in the middle and store together with the cables.
7. Move the indoor and outdoor units to a new location.
8. Remove the mounting plate for the indoor unit and move it to a new location.

4-5-13 Performing Leak Tests

Before completing the installation (insulation of the hose and piping), you must check that there are no gas leaks.

To check for gas leaks on the...	Then, using a leak detector, check the...
Indoor unit	Flare nuts at the end of sections A and B.
Outdoor unit	Valves on sections C and D.





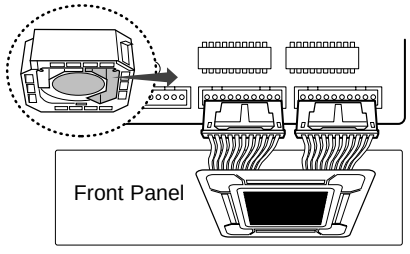
Caution :

- The CH✳✳CAmodels need a new refrigerant, R407C.
  Thus, when refrigerant leakage occurs in use, you must purge and make vacuous with a vacuum pump before adding the refrigerant.
  Then put the optimal quantity of refrigerant newly.
  In addition, the refrigerant must be added in liquid phase.

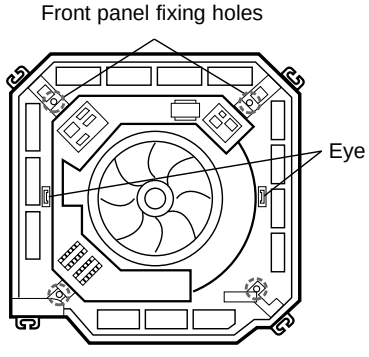
4-5-14 Installing the Front Panel

1. Open the electrical component box cover removing the screws.

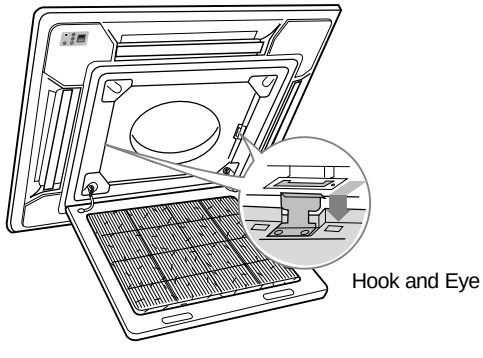
2. Connect the cables of the front panel to the PCB as shown in figure.



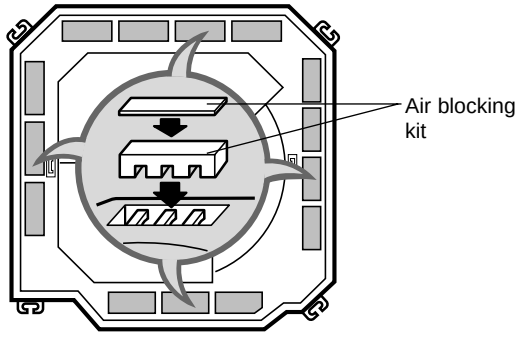
3. Close the electrical component box cover and secure the screws.



4. Install the front panel using two hooks on the both sides of the indoor unit.



5. Secure the front panel to the indoor unit using the bolts(4EA). HEX ; M6 x L30



NOTE : ◆ When user's optional accessory is a wireless remote controller, you have to install the receiver & display unit.

◆ There are four kinds of air blocking kits. Fill up the air outlet(s) with one or more kits depending on the situation, then install the insulation to block air completely.

◆ After removing the cushion Blocking that is installed in the air outlet of ACH3600G/4400G and CH36ZA/44ZA to install the air blocking.

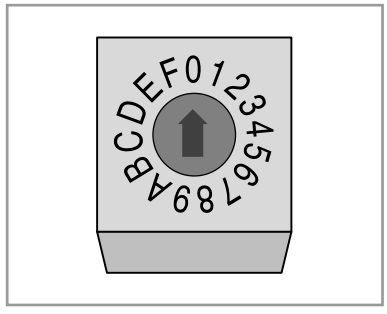
4-5-15 Setting Up Option Switches

IMPORTANT : Before setting up the option switches, always make sure that you have turned off the main power.

Main PCB in the Indoor Unit

Rotary Digital Switch(SW1)

A user can operate up to sixteen air conditioners by using the wired remote controller. Before controlling more than one air conditioner, you should connect the air conditioner each other. And you must assign addresses to the air conditioners. For further details on connecting air conditioners.
If the user would like to controller only one air conditioner, make sure that the arrow is at "0" position.



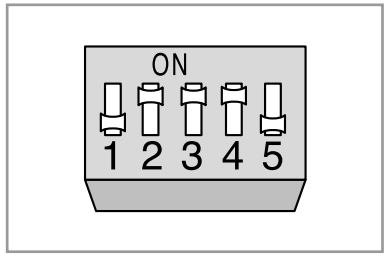
Turn the arrow to the desired position referring to the table below.

Switch No.	Number of indoor unit(s)	Switch No.	Number of indoor unit(s)
0	One	8	Nine
1	Two	9	Ten
2	Three	A	Eleven
3	Four	B	Twelve
4	Five	C	Thirteen
5	Six	D	Fourteen
6	Seven	E	Fifteen
7	Eight	F	Sixteen

DIP Switch(SW2)

Adjust the switch to the desired position referring to the table below.

Switch No.	Option Item	Switch Position		Note
		ON	OFF	
1	Ventilator Fan	Not installed	Installed	Not supplied
2	Drain Pump	Installed	Not installed	
3	Float Switch	Installed	Not installed	
4	Filter Cleaning Cycle	1,000 hours	2,000 hours	
5	Indoor Fan Motor Speed	Normal	High speed	



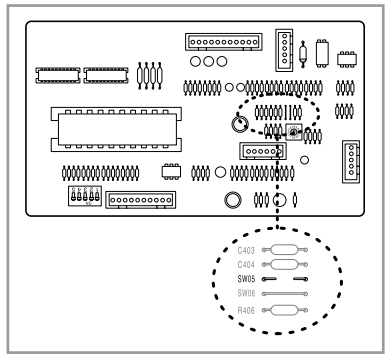
Note : ◆ Make sure that the No.2 and No.3 switches are at "ON" position.

4-5-16 Setting Up Option Switches (Cont.)

Jumper Wire(SW05)

You can adjust the setting temperature for heating. Cut off the SW05, depending on the situation.

Option Item	Situation of the Switch	Note
Setting temperature +2°C	Short	Preset Position
Setting temperature +5°C	Open	



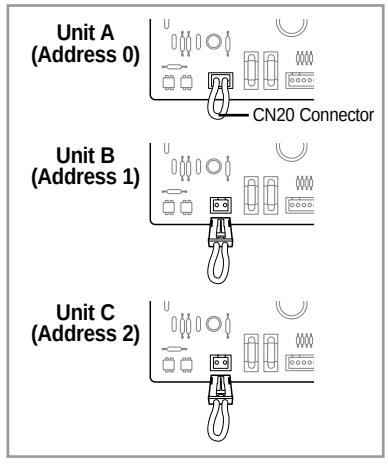
Sub PCB in the Indoor Unit

CN20 Connector

Remove the CN20 connector in the sub PCB, if necessary, referring to the table below. (This procedure is needed only when the user would like to control a group by using the wired remote controller.)

Address	Situation of the CN20 Connector
0	Connected
1 - F	Removed

Note : ◆ Up to 16 air conditioners can be controlled with one wired remote controller.
◆ If the user does not want to control a group, do not remove the CN20 Connector.

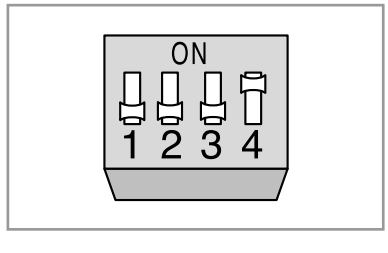


Sub PCB in the Indoor Unit

Dip Switch(DS01)

Adjust the DIP switch No.2 and/or No.4 to the desired position referring to the table below. You must not adjust the switch 1 and 3. They should be in "OFF" position at all times.

Switch No.	Option Item	Switch Position	
		ON	OFF
2	Number of air conditioner(s) controlled by the wired remote controller	Group controlling	One indoor unit controlling
4	Using wireless remote controller	Can be used	Cannot be used

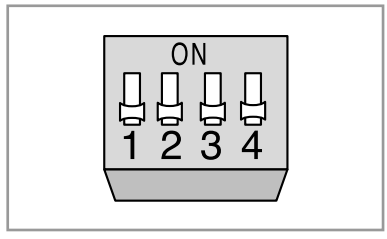


Centralized Controller

DIP Switch(DS01)

Adjust the DIP switch to the desired position referring to the table below.

Switch No.	1	2	3	4	Meaning
Switch Position	OFF	OFF	OFF	OFF	The air conditioner is operated by the controller adjusted last among the wired remote controller, wireless remote controller and centralized controller.
	OFF	OFF	OFF	ON	A user can use wired/wireless remote controller when the centralized controller is switched on. And he/she cannot use the remote controller(s) when the centralized controller is switched off.
	OFF	OFF	ON	OFF	The air conditioner(s) can be controlled by only the centralized controller. The user cannot use the wired/wireless remote controller in this case.



Note : ◆ You cannot install the centralized controller when the wired remote controller for a group has already been installed.

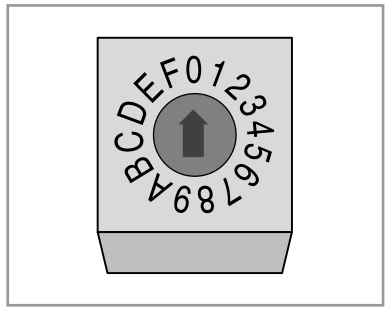
Transmitter

Rotary Digital Switch(DS01)

A user can turn on/off up to sixteen air conditioners by using the centralized controller. To use the controller, you must assign addresses to the air conditioners. For further details on connecting air conditioners.
If the user would like to controller only one air conditioner, make sure that the arrow is at "0" position.

Turn the arrow to the desired position referring to the table below.

Switch No.	Number of indoor unit(s)	Switch No.	Number of indoor unit(s)
0	One	8	Nine
1	Two	9	Ten
2	Three	A	Eleven
3	Four	B	Twelve
4	Five	C	Thirteen
5	Six	D	Fourteen
6	Seven	E	Fifteen
7	Eight	F	Sixteen



Original Position of Option Switches

The option switches are preset by the manufacturer. Refer to the table below, if necessary.

Option Place	Component No.	State
Main PCB in the indoor unit	Rotary Digital Switch(SW1)	0
	DIP Switch(SW2)	ON
	Jumper Wire(SW05)	SHORT
Sub PCB in the indoor unit	CN20 Connector	Connected
Wired Remote Controller	DIP Switch(DS01)	ALL OFF
Centralized Controller	DIP Switch(DS01)	ALL OFF
Transmitter	Rotary Digital Switch(DS01)	0

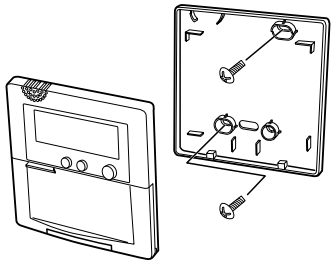
Note : ◆ Before setting up the options, always make sure that you have switched off the main power.
◆ After adjusting the options, you should supply the power. Otherwise, the options will not be applied.

4-5-17 Wired Remote Controller Installation (Optional)

Accessories

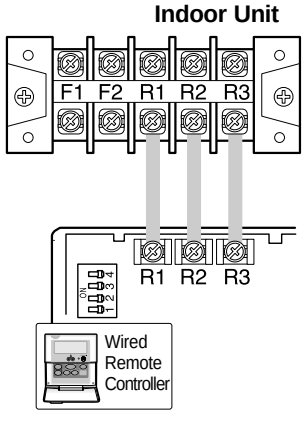
Wired Remote Controller(1) KR-H50210	Cable-Tie(2)	Cable Clamp(5)	M4 X 16 Tapped Screw(7)
			

1. Disassemble the wired remote controller by using two grooves on the top of it.



2. Secure the rear cover of the wired remote controller on the wall with two screws.

3. Connect the R1, R2 and R3 terminals in the wired remote controller to the R1, R2 and R3 terminals on the electrical component box each.



Caution :

- Do Not keep the wired remote controller cables with a 220V cable because the remote controller cables have low voltage.
- Do Not input 220V power to the R1, R2 and R3 in the wired remote controller.

Note : Cable Specifications

Cable type	Double-insulation, 3G
Size of cables	0.3mm²~0.75mm²
Max. length of electric wires from the indoor unit to the wired remote controller	100m

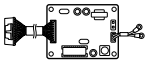
4. Reassemble the wired remote controller.

Caution :

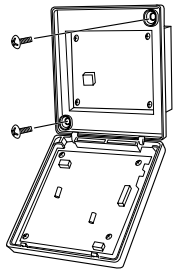
- The optional kits must be installed by an installation specialist.
- Before installing the optional kits, ensure that you have turned off the main power.
- All optional kits cables should be installed according to the national wiring rules and you must install them in the wall not to be touched by users.

4-5-18 Centralized Controller Installation (Optional)

Accessories

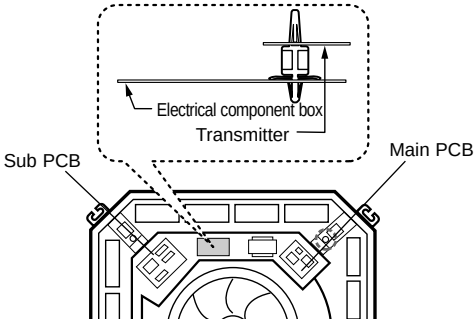
Centralized Controller(1) KR-H60110 	Cable-Tie(2) 	Cable Clamp(5) 	M4 X 16 Tapped Screw(7) 
Transmitter(1) KT-A00 	Spacer Support(4) 	Cable-Tie(2) 	

1. Open the centralized controller cover by using two grooves on the top of it.

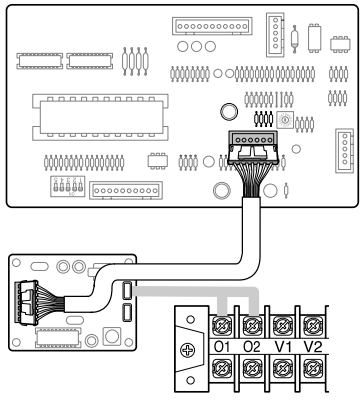


2. Secure the rear cover of the centralized controller on the wall with two screws.

3. Secure the transmitter with four spacer supports into the electrical component box.



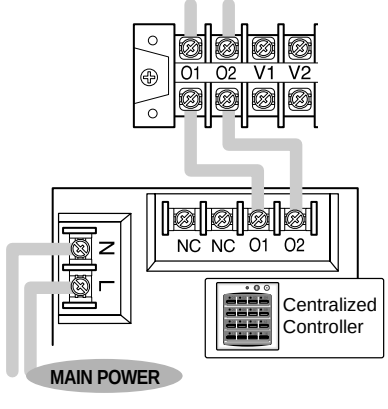
4. Connect the cable from the PCB to the transmitter.
   And connect another cable from the O1, O2 terminals to the transmitter as shown in figure.



5. Connect the O1 and O2 terminals of the centralized controller to the O1 and O2 terminals on the electrical component box as shown in figure.

Caution :

- Do NOT keep the centralized controller cables with a 220V cable because the centralized controller cables have low voltage.



Note : Cable Specifications

Cable type	Double-insulation, 2G(Shield Cable)
Size of cables	0.75mm²~1.25mm²
Max. length of electric wires from the indoor unit to the centralized controller	1km

6. Connect the power cables.

Note : Cable Specifications

Cable type	Double-insulation, 2G	Power Supply
Size of cables	0.75mm²~1.25mm²	220V-240V~, 50Hz

7. Reassemble the centralized controller.

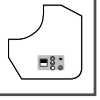
Caution :

- The optional kits must be installed by an installation specialist.
- Before installing the optional kits, ensure that you have turned off the main power.
- All optional kits cables should be installed according to the national wiring rules and you must install them in the wall not to be touched by users.

4-2-19 Receiver & Display Unit Installation (Optional)

Accessories

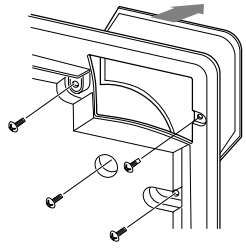
Wireless Remote Controller(1) KR-H40200	Battery(2)	M4 X 16 Tapped Screw(2)	Remote Controller Holder(1)
			

Receiver & Display Unit(1) (KRE-H1000)


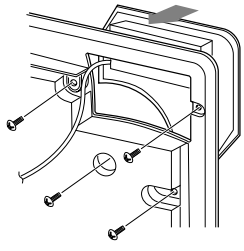
In case of using the wireless remote controller, you must install the receiver & display unit to the front panel before fixng the panel.

1. Disassemble three screws on the place where you would like to install the receiver & display unit, inside the front panel.

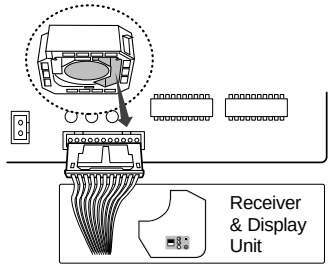
2. Remove the part of the front panel.



3. Secure the receiver & display unit with the screws.



4. Connect the end of the connector wire to the receiver & display unit and connect the other end of the wire to the electrical component box as shown in figure.



Caution :

- Do NOT keep the wired remote controller cables with a 220V cable because the remote controller cables have low voltage.

Caution :

- Optional kits must be installed by an air conditioner specialist.
- Before installing the optional kits, ensure that you have turned off the main power.

4-5-20 Bio-Pure Filter Installation (Optional)

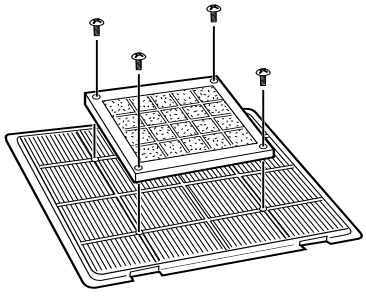
The air conditioner can be fitted with a Bio-Pure filter to remove minute dust particles. The service life of the filter is approximately three months depending on the time during which the air conditioner is used.

1. Remove the vinyl packing from the filter.

   Note : Do not remove the packing from a bio-pure filter until you wish to use the filter, as it will lose its properties.

2. Open the front grille by pulling the tabs on the grille.

3. Remove the safety clips to open the grille completely.



4. Pull out the air filter.

5. Locate the bio-pure filter on the center of the air filter.

6. Secure the bio-pure filter with four screws.

7. Reinstall the filter and the front grille.

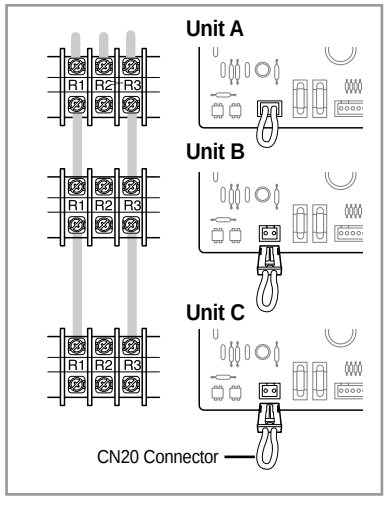
4-5-21. Controlling a Group

* You should adjust the option switches in the electrical component box or on the PCB of the wired remote controller.
*** Before setting up the option switches, always make sure that you have turned off the main power.**
* After adjusting the options, you should supply the power. Otherwise, the options will not be applied.

With Wired Remote Controller

1. Connect the R1, R2 and R3 terminals in the wired remote controller to the R1, R2 and R3 terminals in any indoor unit "A" each.

2. Connect the R1 and R3 terminals in the indoor unit "A" to the R1 and R3 terminals in another indoor unit "B".



> **Caution :**
> When connecting the cables, you must keep these :
> • The R1 terminals must be connected to the R1s.
> • The R3 terminals must be connected to the R3s.
> • Do not connect the R2 terminals to anywhere.
> If you connect R2 terminals, the PCB will be damaged.

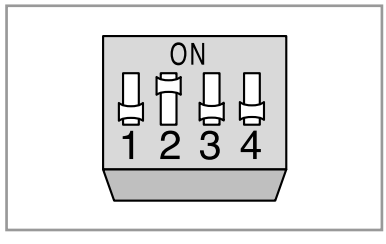
3. Connect the R1 and R3 terminals of "B" to any indoor unit "C" and connect the others as the same way.

4. Adjust the rotary digital switch in the main PCB to the desired position referring to the table below.

Switch No.	Number of indoor unit(s)	Switch No.	Number of indoor unit(s)
0	One	8	Nine
1	Two	9	Ten
2	Three	A	Eleven
3	Four	B	Twelve
4	Five	C	Thirteen
5	Six	D	Fourteen
6	Seven	E	Fifteen
7	Eight	F	Sixteen

5. Remove the CN20 connectors on the sub PCBs except the unit connected with remote controller(Address 0).

6. Adjust the DIP switch No. 2 in the wired remote controller to "ON" position.



Note : You cannot install the centralized controller when the wired remote controller for a group has already been installed.

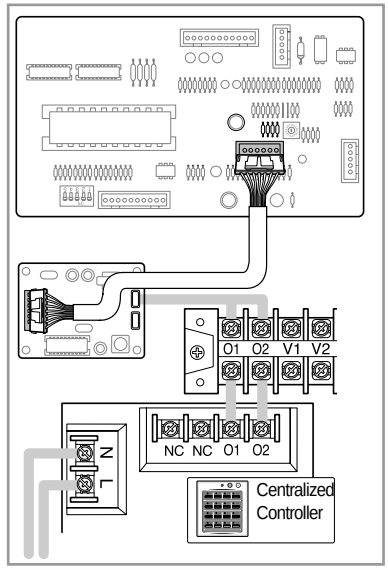
With Centralized Controller

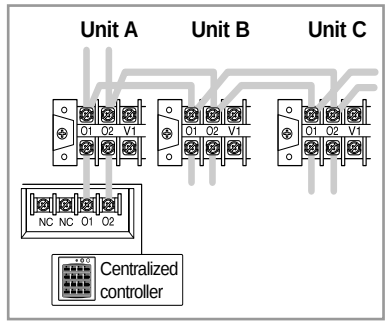
A user can turn on/off up to sixteen air conditioners by using the centralized controller.
In this case, the user can turn on/off all air conditioners or a specific air conditioner connected with the centralized controller. And each air conditioner can be controlled by its own remote controller(s) depending on the setting.

1. Connect the O1 and O2 terminals in the centralized controller to the O1 and O2 terminals in the indoor unit "A".
2. Connect the O1 and O2 terminals in the indoor unit "A" to the O1 and O2 terminals in another indoor unit "B".
3. Connect the O1 and O2 terminals of "B" to any indoor unit "C" and connect the others as the same way.
4. Adjust the DIP switch(DS01) in the centralized controller to the desired position referring to the table below.

Switch No.	1	2	3	4	Meaning
Switch Position	OFF	OFF	OFF	OFF	The air conditioner is operated by the controller adjusted last among the wired remote controller, wireless remote controller and centralized controller.
	OFF	OFF	OFF	ON	A user can use wired/wireless remote controller when the centralized controller is switched on. And he/she cannot use the remote controller(s) when the centralized controller is switched off.
	OFF	OFF	ON	OFF	The air conditioner(s) can be controlled by only the centralized controller. The user cannot use the wired/wireless remote controller in this case.

5. Adjust the rotary digital switch on the transmitter to the desired position referring to the table on page 4-40.





Note : You cannot install the centralized controller when the wired remote controller for a group has already been installed.

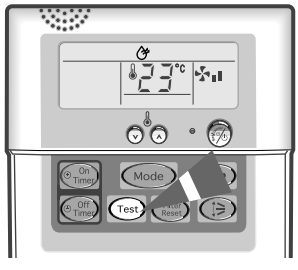
4-5-22. Checking and Testing Operations

To complete the installation, perform the following checks and tests to ensure that the air conditioner is operating correctly.
Review all the following elements in the installation:

- **Piping connection tightness to detect any gas leakages**
- **Connecting wiring**
- **Heat-resistant insulation of the piping**
- **Drainage**
- **Earthing wire connection**
- **Correct operations(follow the steps below)**

Wired Remote Controller

1. Supply the power and switch on the air conditioner.



2. Press Test button more than 3 seconds without selecting any mode.
   Result: The air conditioner runs in COOL mode for 3 minutes.

   Note : If the error code is displayed, fix the error. And supply the power, restart testing.

3. Check that user's option(s) and the outdoor unit operate properly.

   Note : Do not attempt to select the operating mode or to adjust the temperature. It may switch the outdoor unit off.

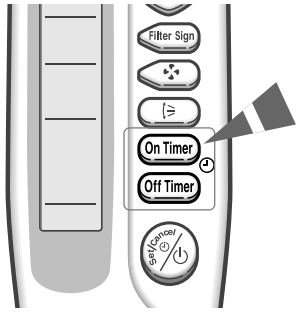
4. Press the Swing( ) button and check that the air flow blades work properly.

5. The air conditioner will switch it off automatically after 3 minutes.

Note : If the air conditioner does not work because of switching off the thermistor sensor caused by the room temperature, you can operate the air conditioner by using Test button.

Wireless Remote Controller

1. Supply the power and switch on the air conditioner.



2. Remove the remote controller batteries.

3. Insert the batteries pressing the On Timer and Off Timer buttons at the same time.

4. Stop pressing the buttons after inserting the batteries.

5. Press the (ON/OFF) button.
   Result: The air conditioner runs in COOL mode for 3 minutes.

6. Check that user's option(s) and the outdoor unit operate properly.

   Note : Do not attempt to select the operating mode or to adjust the temperature. It may switch the outdoor unit off.

7. Press the Swing( ) button and check that the air flow blades work properly.

8. The air conditioner will switch it off automatically after 3 minutes.

4-5-23. Troubleshooting

Wired Remote Controller

If the error occurs, ◪ and the error code are displayed on the wired remote controller.
The error code blinks for 5 seconds and it disappears. If you would like to see the error code after disappearing it, press the Test button.

Meaning of Error Code
The error code is composed of two-digit figures or letters. The first means (∗) an indoor unit address and the second means an error code.

Error Code	Meaning	Checking area
∗ 1	Indoor unit thermistor sensor error	◆ Indoor unit thermistor sensor ◆ PCB of the indoor unit
∗ 5	Indoor unit pipe sensor error	◆ Indoor unit pipe sensor ◆ PCB of the indoor unit
∗ 6	Outdoor unit thermistor sensor error	◆ Outdoor unit thermistor sensor ◆ PCB of the outdoor unit
∗ 9	Float switch error	◆ Drain pump, Float switch ◆ Drain system ◆ DIP switch(SW2) of the indoor unit (The No.2 and No.4 switches must be at “ON” postion.)
∗ A	A Indoor and Outdoor communication error	◆ Communication cables of indoor and outdoor units ◆ PCB of indoor and outdoor units
∗ C	Wired remote controller communication error	◆ Wired remote controller cables, Wired remote controller ◆ Main/Sub PCB of the indoor unit
∗ D	Outdoor pipe sensor error	◆ Outdoor pipe sensor ◆ PCB of the outdoor unit
∗ L	Three phase power incorrect connecting error(In case of three phase power models)	◆ Three phase power connecting ◆ PCB of the outdoor unit

Example : “39” means the address “3” indoor unit has a trouble with a float switch.

Wireless Remote Controller

If the error occurs, the indicators on the receiver & display unit displays the error.

Meaning of Error Code

Indicators			Meaning	Checking area
Timer	Operating	Filter		
◗	○	○	Indoor unit thermistor sensor error	◆ Indoor unit thermistor sensor ◆ PCB of the indoor unit
▲	▲	○	Indoor unit pipe sensor error	◆ Indoor unit pipe sensor ◆ PCB of the indoor unit
○	▲	▲	Outdoor unit thermistor sensor error	◆ Outdoor unit thermistor sensor ◆ PCB of the outdoor unit
■	○	■	Float switch error	◆ Drain pump, Float switch ◆ Drain system
▲	○	▲	Indoor and Outdoor communication error	◆ Communication cables of indoor and outdoor units ◆ PCB of indoor and outdoor units
■	■	○	Wireless remote controller communication error	◆ Wireless remote controller cables, Wireless remote controller ◆ Main/Sub PCB of the indoor unit
○	○	◗	Outdoor pipe sensor error	◆ Outdoor pipe sensor ◆ PCB of the outdoor unit
○	■	■	Three phase power incorrect connecting error(In case of three phase power models)	◆ Three phase power connecting ◆ PCB of the outdoor unit

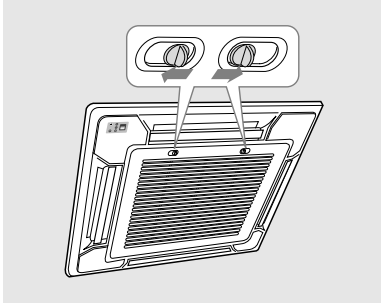
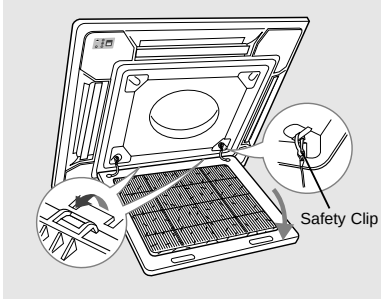
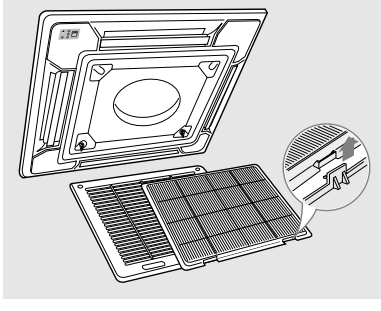
○ : OFF ◗ : Blinking ▲▲ : Blinking at once ■■ : Blinking alternately

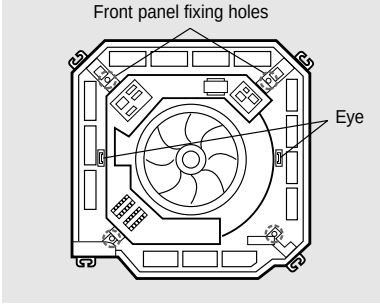
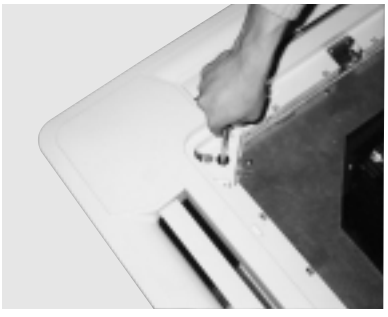
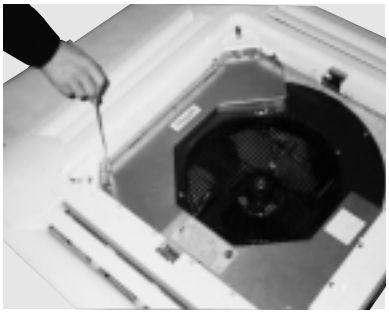
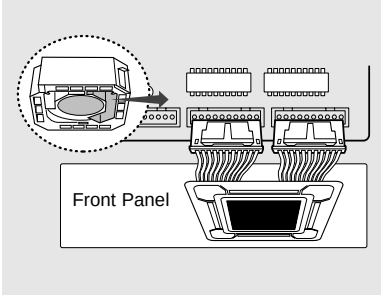
MEMO

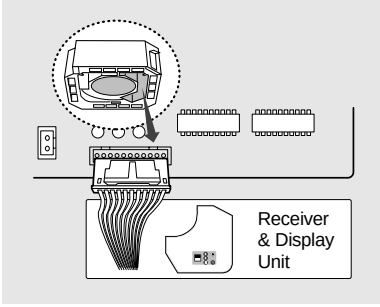
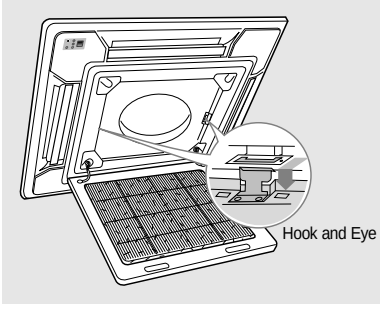
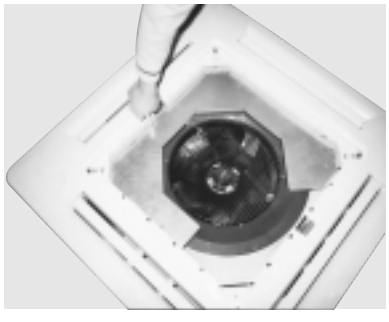
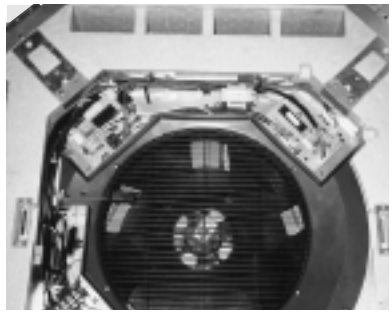
5. Disassembly and Reassembly

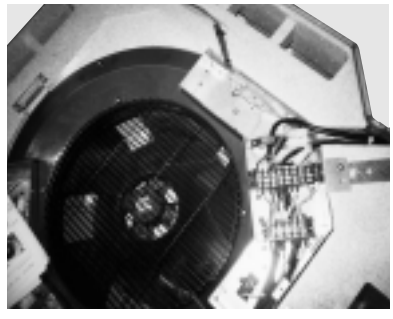
Stop operation of the air conditioner and remove the power cord before repairing the unit.

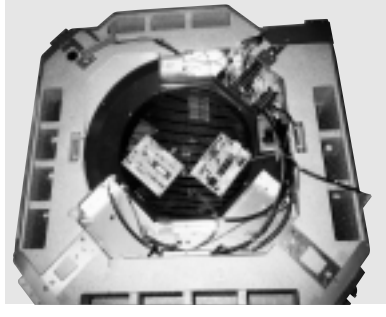
Indoor Unit

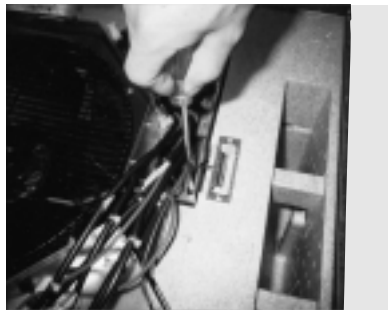
No.	Part name	Procedures	Picture
①	Front Grille & Filter	1. Open the front grille by pushing the tabs on the grille. **IMPORTANT** You must give attention when disassembling the front grille and must check the safety clips have been installed. If you don't ensure them, the front grille will drop suddenly and you will be hurt.	
		2. Remove the front grille. 2-1. Remove the safety clips. 2-2. Open the front grille about 45˚ and pull it forward.	
		3. Pull out the filter air.	
			

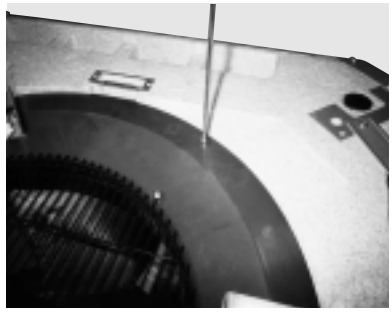
No.	Part name	Procedures	Picture
		4. Slowly loosen the four bolts holding the panel to the assembly.	
			
		5. Open the electrical component box cover removing the screws. (3EA)	
		6. Disconnect the two cables between the assembly and the panel. - Stepping motor connectors. 6-1. Disconnect the three cables between the assembly and the panel. - Stepping motor connector - Receiver & Display unit connector (Optional)	

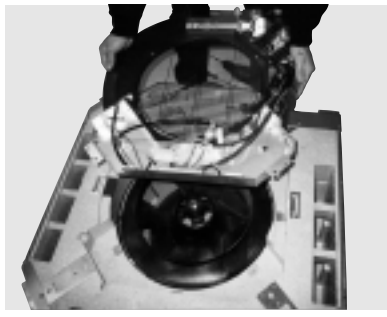
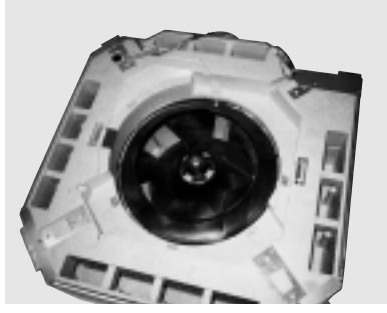
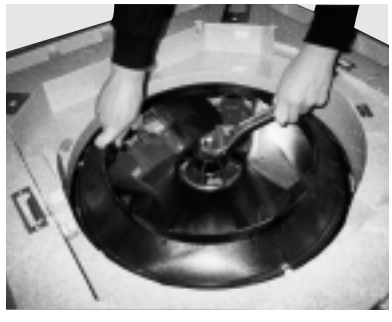
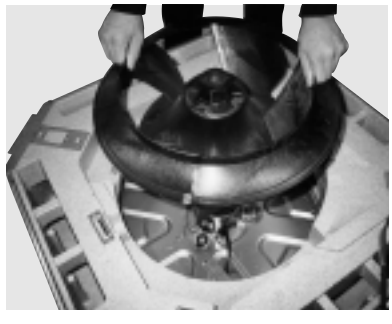
No.	Part name	Procedures	Picture
			<*Optional> 
		7. Separate the front panel using two hooks on the both sides of the indoor unit.	
②	Electronic part	Do ①-1, ①-2, ①-3 and ①-4 above 1. Remove the screws(6EA) on the electrical component box and remove the cover plates.	
		2. Open the control box.	

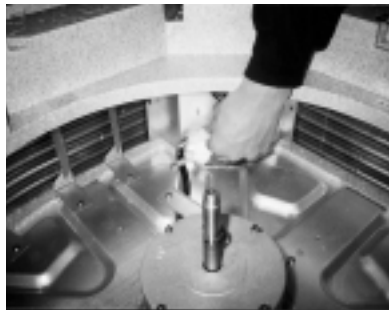
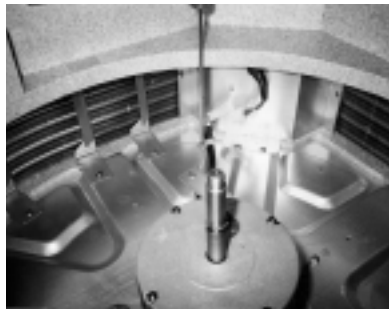
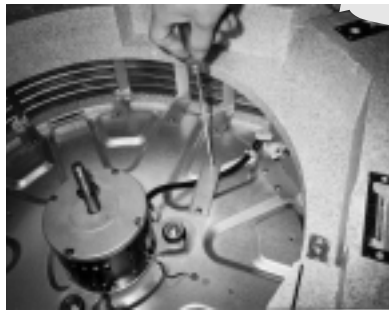
No.	Part name	Procedures	Picture
		3. Disconnect the other end of the cable to the outdoor unit through the ceiling & the hole on the wall between the control box and the assembly.	 
③	**Method 1** Fan and motor	Do ① above 1. Disconnect FAN MOTOR wire connector, thermistor wire connector, drain pump wire connector. 2. Disconnect wire connects to capacitor.	 

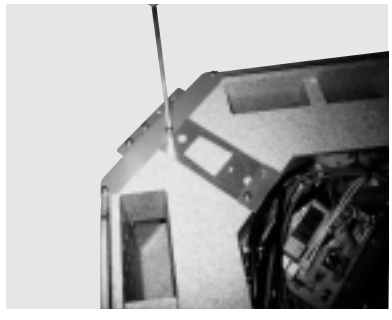
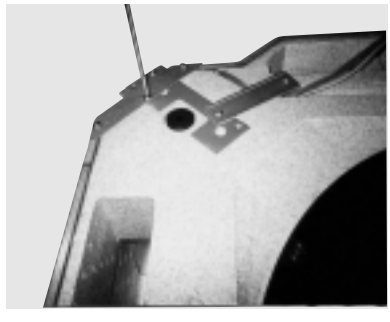
No.	Part name	Procedures	Picture
	Fan and motor	3. Disconnect float switch wire connected to terminal board (F1, F2).	
		4. Disconnect all connectors connected to PCB.	
		5. Remove PCB's from assy case PCB.	
		6. Remove the screws(9EA) for disconnection of Bell mouth and cushion drain.	

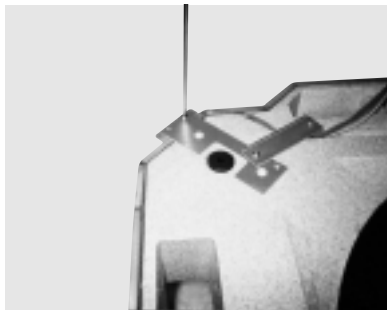
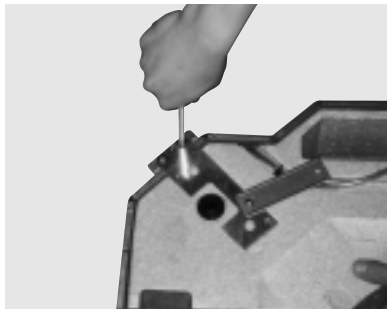
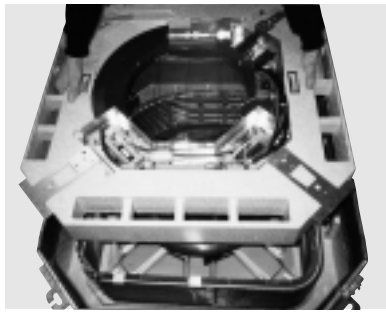
No.	Part name	Procedures	Picture
	Fan and motor		
			
	Pump		
			

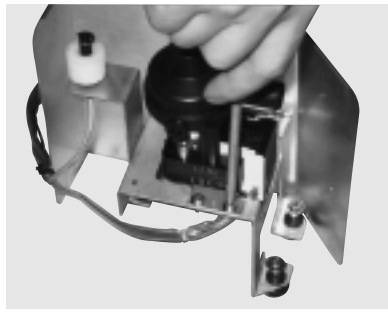
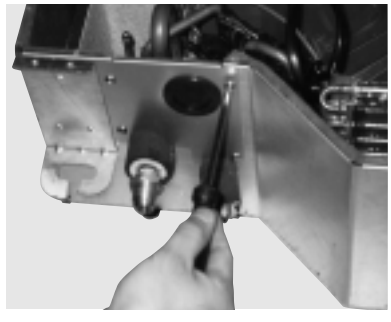
No.	Part name	Procedures	Picture
	Pump		   

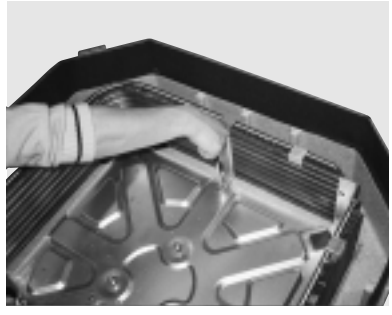
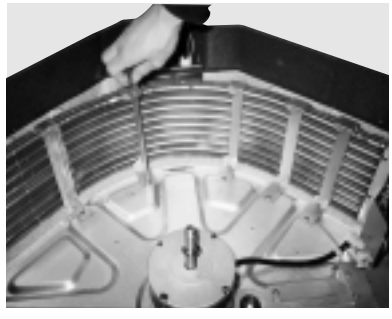
No.	Part name	Procedures	Picture
	Fan and motor	7. Seperate Bell mouth and Box Ass'y from cushion drain.	
			
		8. Loosen the nut and separate the assy holder fan.	
		9. Lift down carefully the Ass'y fan.	

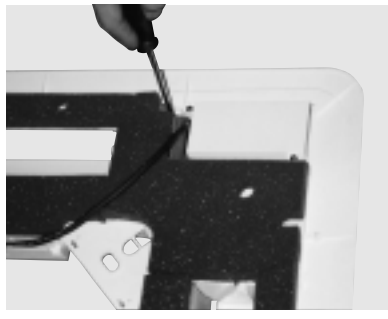
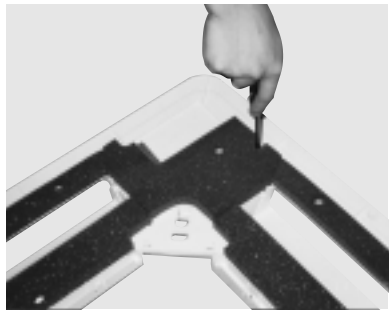
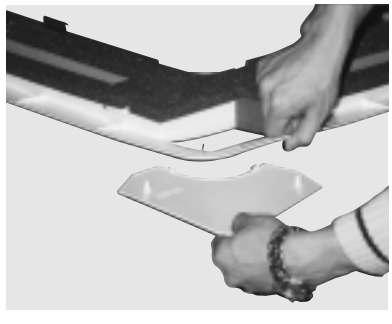
No.	Part name	Procedures	Picture
	Fan and motor	10. Separate the motor connector wire and separate the wire holder fixed the bottom floor.	
			
		11. Remove the screw fixed onto the bracket wire fixed on the bottom of product and remove screw fixed noto earth wire and separate carefully the ass'y motor in from the product after separation of nut of ass'y motor in and grommet mount motor.	
			

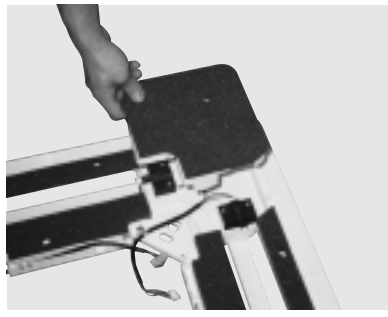
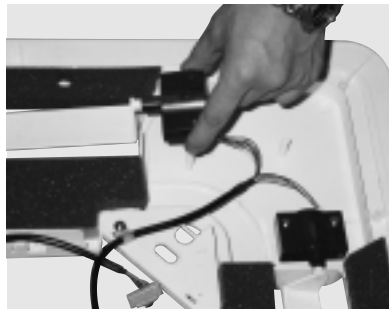
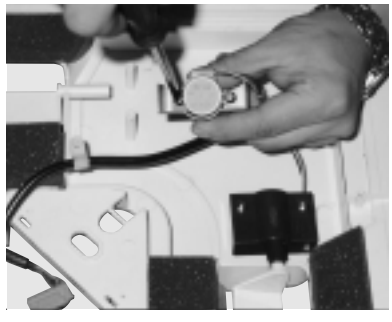
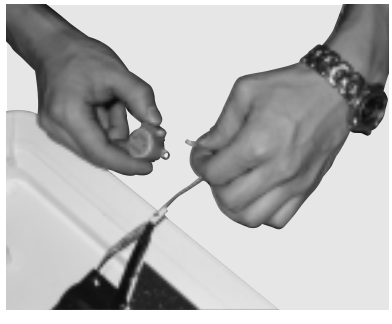
No.	Part name	Procedures	Picture
	Fan and motor		
④	**Method 2.** Pump	❋ Do ③-1, 2, 3 above 1. For separation of Ass'y cushion drain from the main body ① Cabinet guide A (2EA) ② Cabinet guide B (1EA) ③ Remove each cabinet power cord. ④ Remove the obstacles of pump drain and ass'y sensor float wire due to the movement of BKT wire.	  

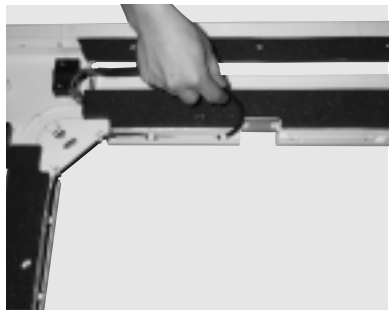
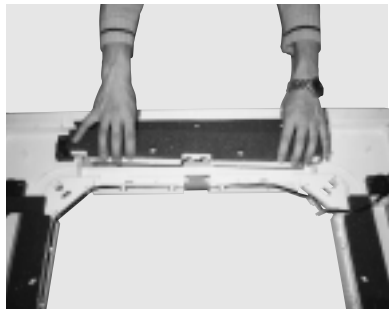
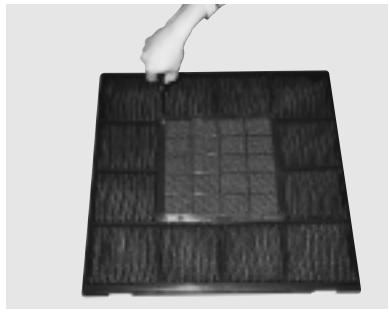
No.	Part name	Procedures	Picture
	Pump	2. For the separation of ass'y cushion drain form the main body, remove the fixing screw of bracket at each corner of cushion drain.	
		3. Take out the CAP drain socket inserted in the ass'y drain cushion to remove the condensate in the drain cushion. * Care must be taken for the taking out the condensate water.	
		4. Lift down carefully the Ass'y cushion drain from the main body.	
		5. Loosen three screws fixing the pump drain.	

No.	Part name	Procedures	Picture
	Pump	6. Separate the hose drain inserted in the outlet of pump drain.	
		7. Separate from the BKT pump the pump drain separated from the main body from the BKT pump.	
⑤	Heat exchanger	❋ Do ④-1 ~ ④-4 1. Separate the cover pipe at the side of main body from main body.	
		2. Separate the partition front evap fixing the heat exchanger to the base of main body.	

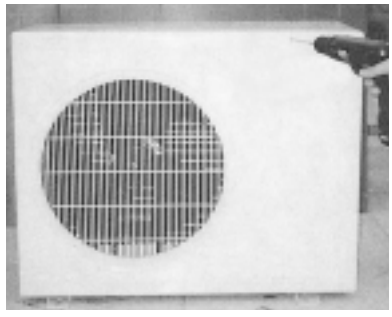
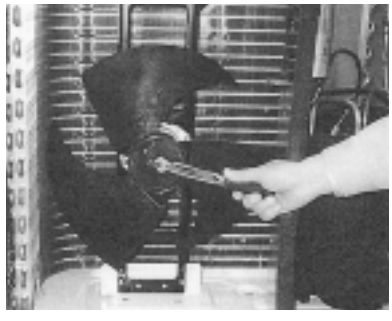
No.	Part name	Procedures	Picture
		3. Separate the holder evap (2 EA) fixing the heat exchanger to the base of main body.	
		4. Separate holder guide evap (4 EA).	
		5. Lift up the heat exchanger from the main body.	

No.	Part name	Procedures	Picture
⑥	Front panel -Cover Front	❋ Do ① above Push 3 cover front fixing screws inside the front panel and snap fixing part to separate the cover front.	   

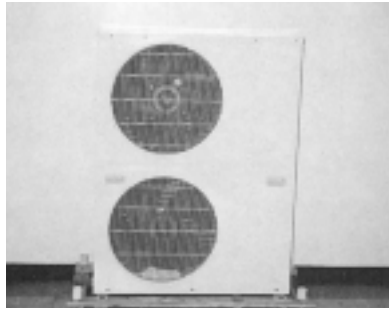
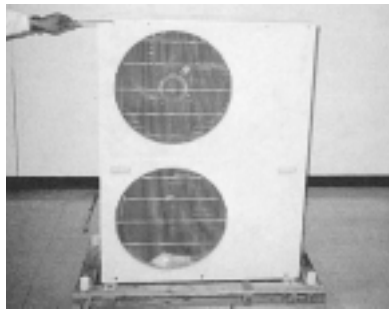
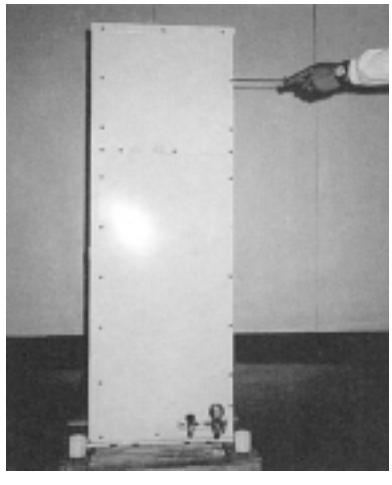
No.	Part name	Procedures	Picture
⑦	Front panel - Stepping Motor	❋ Do ① above 1. Loosen each one of fixing screw at the corner part, ① cushion side-A and cushion side-B inside the front panel, and then lift it up.	
		2. Remove ① the screw of housing motor L/R fixed at the corner part of front panel inside and separate ② Blade-H.	
		3. ① Separate the stepping motor from the housing motor L/R and ② separate the motor wire connected.	
			

No.	Part name	Procedures	Picture
			
⑧	Front panel - Cushion-A	❋ Do ① above Remove two screws fixing cushion-A inside the front and lift it up.	
⑨	Front panel - Bio-pure filter (Optional)	❋ Do 1-①, 1-② and 1-③ above 1. Separate the bio pure filter from the filter air. (remove 4 fixingscrews)	
		2. Lift up the bio pure filter case to take the filter out.	

Outdoor Unit (18K/24K)

No.	Part name	Procedures	Picture
①	Cabinet	1) Turn off the unit and remove the power cable 2) Remove the top cover. 3) Remove the control box cover. 4) Unplug the ass'y cable. 5) Remove the cabi-side. 6) Remove the cabi-front. * When you assemble the parts, check if the each parts and electric connectors are fixed firmly.	
②	Fan Motor & Propeller Fan	1) Do Procedure 1 above. 2) Remove the nut flange. (Turn to the right to remove as it is a left turned screw) 3) Disassemble the propeller fan.	

Outdoor Unit (36K/44K)

No.	Part name	Procedures	Picture
①	Outdoor unit	1) Packaged air conditioner outdoor unit	
		2) The binders of the front side should be separated.	
		3) The flank and the binders should be separated from each other.	
②	Control box	1) Connect distributed wires in the control box.	

6. Trouble Shooting

■ Trouble shooting by outdoor unit error code

ERROR CODE	ERROR DESCRIPTION	REFERENCE PART
E1	Indoor unit room thermistor error	EC01
E5	Indoor unit pipe thermistor error	EC02
E6	Outdoor unit thermistor error	EC03
E9	Float switch open error	EC04
EA	Communication error between indoor unit and outdoor unit	EC05
EC	Communication error between wired remote controller and indoor unit	EC06
ED	Outdoor unit pipe thermistor error	EC07
EL	Reverse power of 3 phase power source detected (3 phase model)	EC08

■ Trouble shooting by indoor unit receive board

ERROR CODE	ERROR CODE	REFERENCE PART
Reservation LED flickering(1Hz period)	Indoor temperature sensor abnormal	EC01
Operation LED and reservation LED flickering (1Hz period)	Indoor pipe temperature sensor abnormal	EC02
Operation LED and filter LED flickering (1Hz period)	Outdoor temperature sensor abnormal	EC03
Reservation LED filter LED alternating flickering (1Hz period)	Float switch open abnormal	EC04
Reservation LED and filter LED flickering (1Hz period)	Indoor and outdoor communication abnormal	EC05
Operation LED and reservation LED alternating flickering (1Hz period)	Wired remote controller communication abnormal	EC06
Filter LED flickering (1Hz period)	Outdoor pipe temperature sensor abnormal	EC07

■ Trouble shooting by outdoor unit error code

ERROR CODE	ERROR DESCRIPTION	REFERENCE PART
*1	Indoor unit room thermistor error	EC01
*5	Indoor unit pipe thermistor error	EC02
*6	Outdoor unit thermistor error	EC03
*9	Float switch open error	EC04
*A	Communication error between indoor unit and outdoor unit	EC05
*C	Communication error between wired remote controller and indoor unit	EC06
*D	Outdoor unit pipe thermistor error	EC07
*L	Three phase power incorrect connecting error (In case of three phase power models)	EC08

✻ The asterisk mark " * " + "ERROR" CODE of wired remote controller stands for the set number.
ex) ERROR CODE "39" is the FLOAT SWITCH OPEN ERROR of SET no.3.

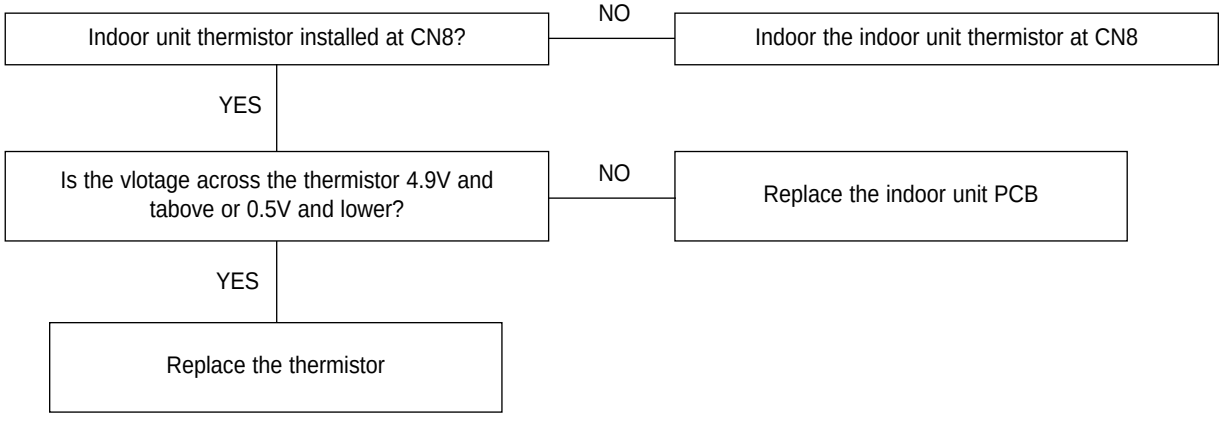
■ Trouble shooting by outdoor unit error code

ERROR CODE	ERROR DESCRIPTION	REFERENCE PART
LED flickering	Communication error between indoor unit and centralized controller	EC20

■ EC01 : Trouble on the thermistor related part of indoor unit.

- EC01 : Trouble on the room thermistor related part of indoor unit.
  - E1 of outdoor unit PCB 7-segment
  - Reservation lamp of wireless receiving board is flickering with 1 Hz.
  - Action items when “*1” display s on the wired rem

Check point :
- Defect of indoor unit
- Indoor unit thermistor defect

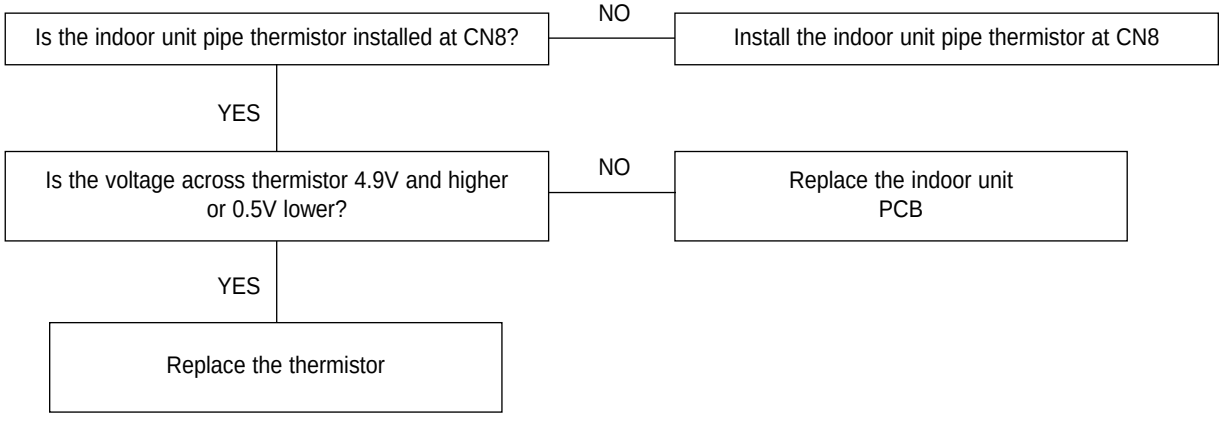


✻ “*” stands for the indoor unit address.

■ EC02 : Trouble on the pipe thermistor related part of indoor unit.

- E5 of outdoor unit PCB 7-segment.
- Reservation lamp of wireless receiving board is flickering with 1 Hz.
- Action items when “*5” displays on the wired remote controller.

Check point :
- Indoor unit PCB defect
- Indoor unit pipe thermistor defect

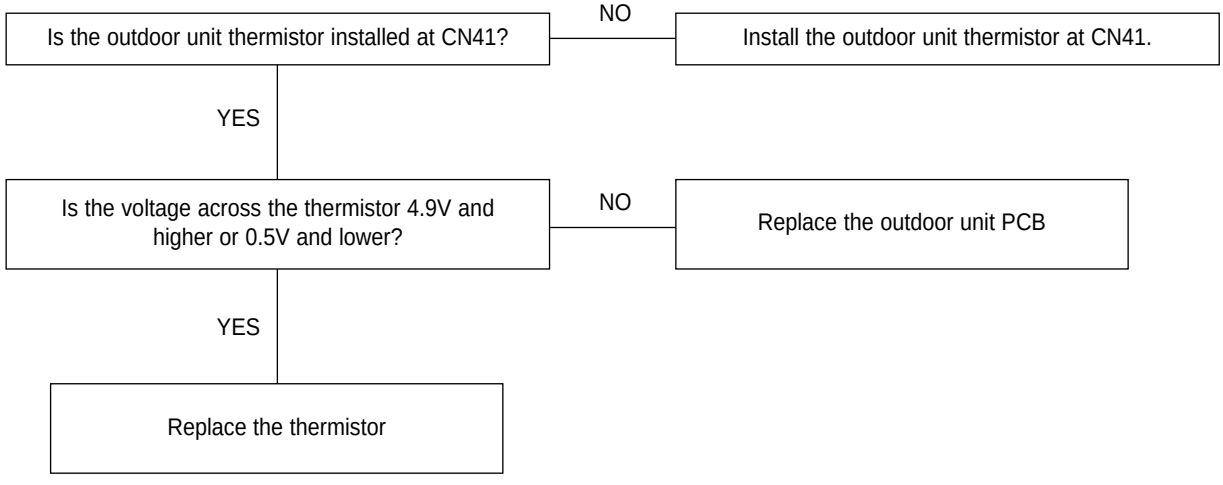


■ EC03 : When the trouble is found on the part related to the outdoor unit thermistor.

- E6 of outdoor unit PCB 7-segment
- Operation lamp and filter lamp of wireless receiving board are flickering with 1Hz.
- Action items when “*6” displays on the wired remote controller.

Check point :

- Defect of indoor unit
- Indoor unit thermistor defect



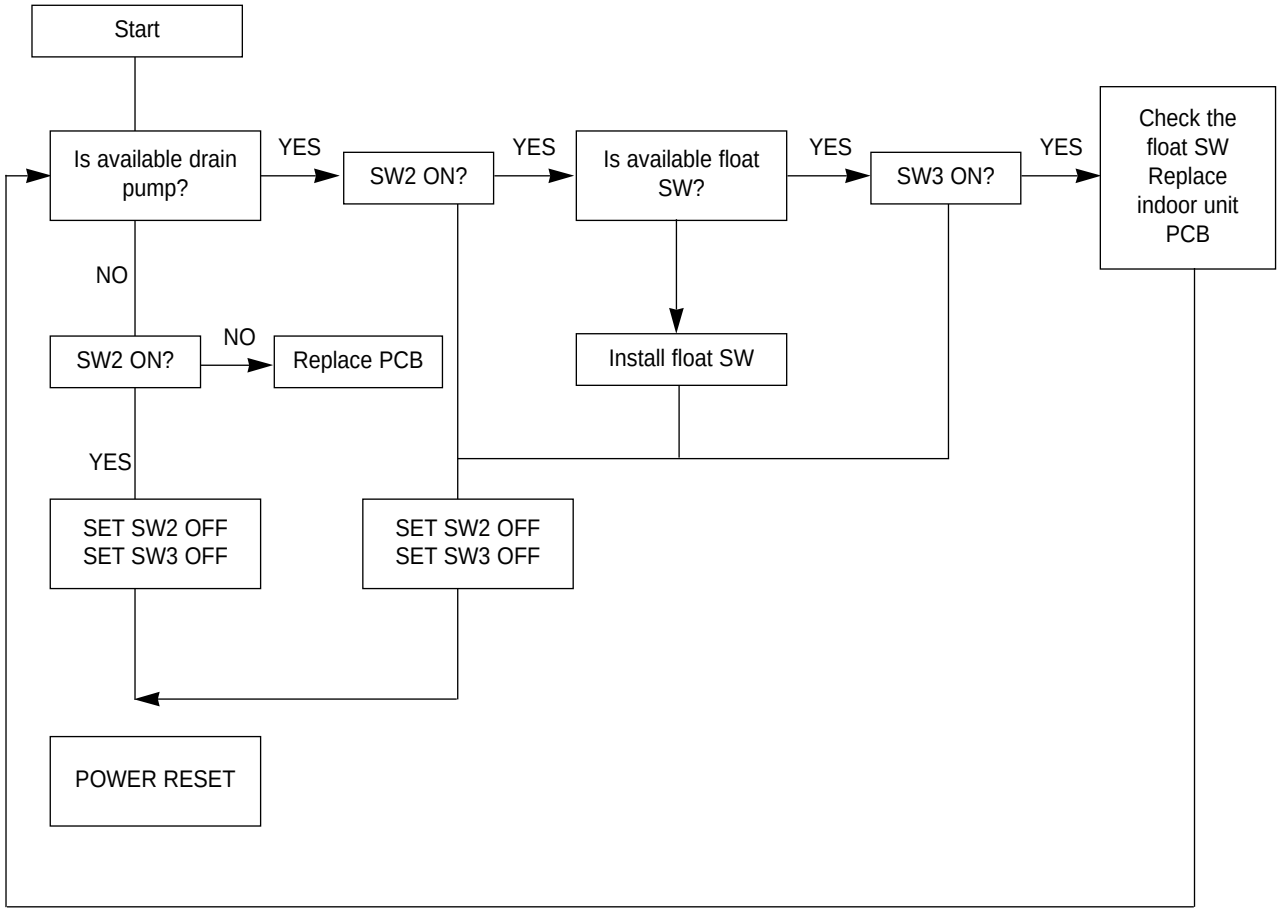
✻ “*” stands for the indoor unit address.

■ EC04 : When the trouble is found on the drain pump and float switch installed on the indoor unit.

EC01 : Trouble on the thermistor related part of indoor unit.
- E9 of 7-segment of outdoor unit PCB
- Reservation lamp of wireless receiving board and filter lamp are flickering with 1 Hz.
- Action item when “*9” displays on the wireless remote controller.

Check point :

- Indoor unit defect
- Drain pump, float switch defect



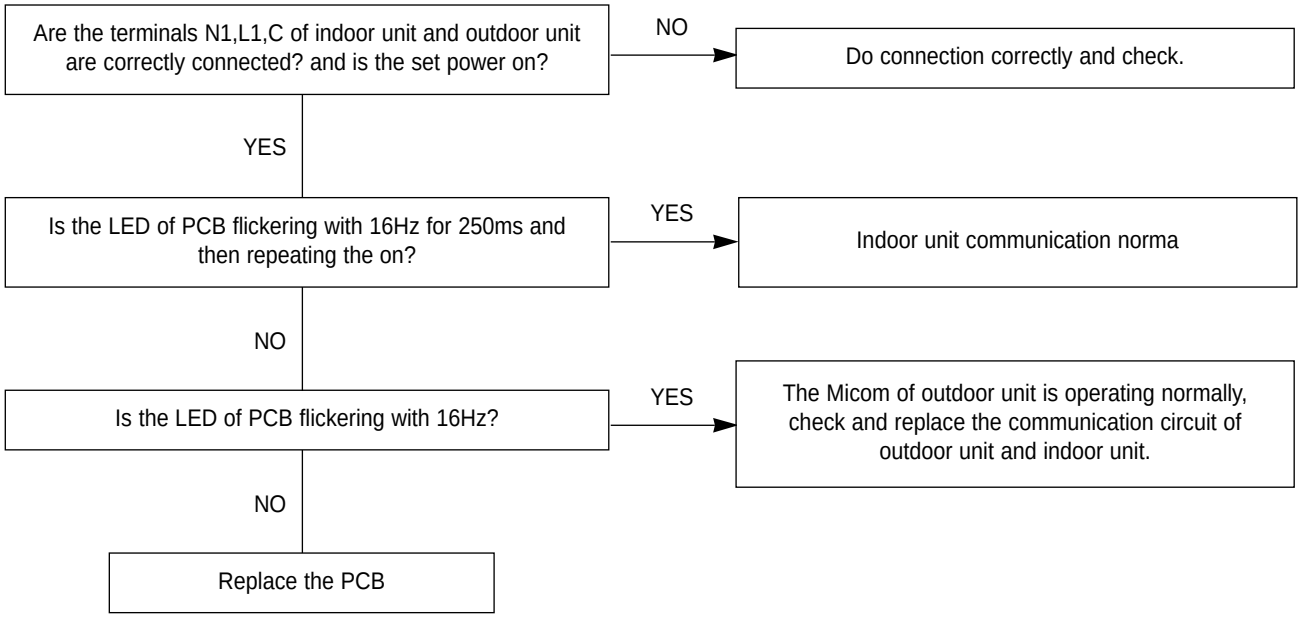
✻ “*” stands for the indoor unit address.

■ EC05 : When the trouble is found in the communication related part between indoor unit and outdoor unit.

- EA of 7-segment of outdoor unit PCB.
- Reservation lamp and filter lamp of wireless receiving board is flickering with 1 Hz.
- Action item when “*A” displays on the wired remote controller.

Check point :

- Indoor unit ↔ outdoor unit mis-connection
- Indoor unit PCB defect
- Outdoor unit PCB defect



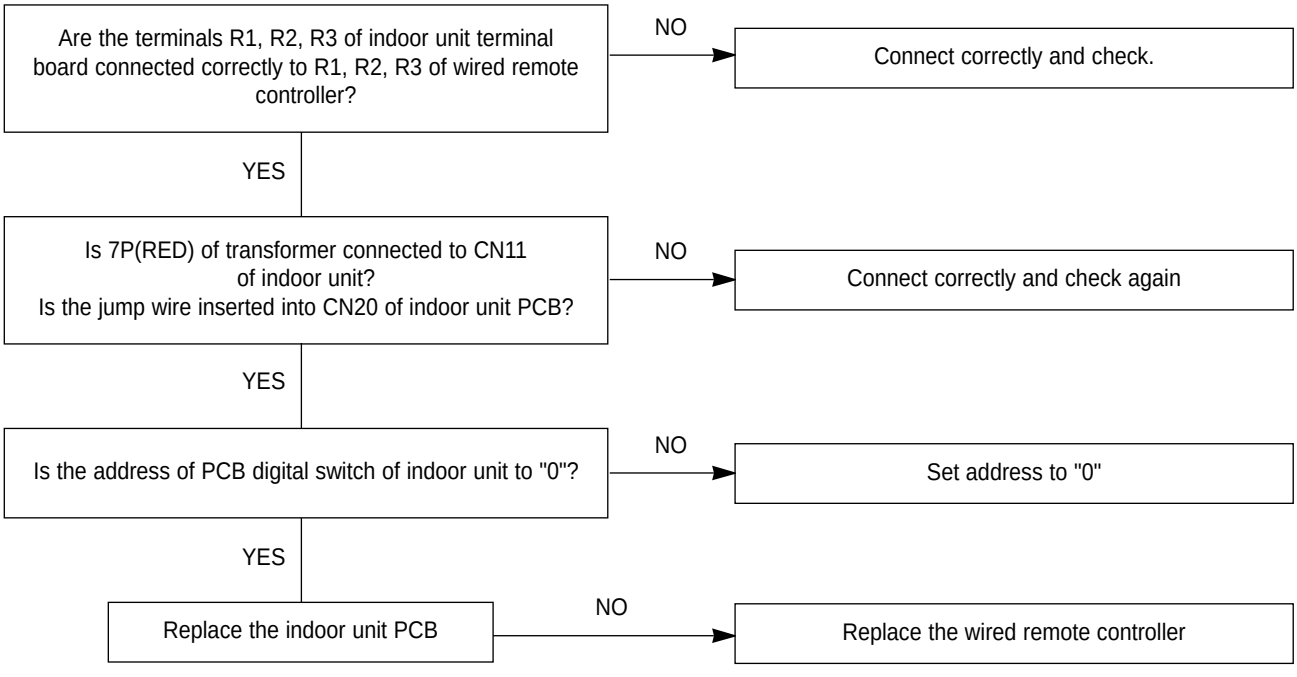
✻ “*” stands for the indoor unit address.

■ EC06 : When the trouble is found in the communication related part between indoor unit and wired remote controller. (during single operation, not group control)

- EC of 7-segment of outdoor unit PCB.
- Wireless receiving board lamp and reservation lamp is flickering with 1Hz.
- Action item when “C” displays on the wired remote controller.

Check point :

- Short circuit or mis-connection of the communication line between indoor unit and wireless remote controller
- Indoor unit PCB defect
- Wired remote controller PCB defect



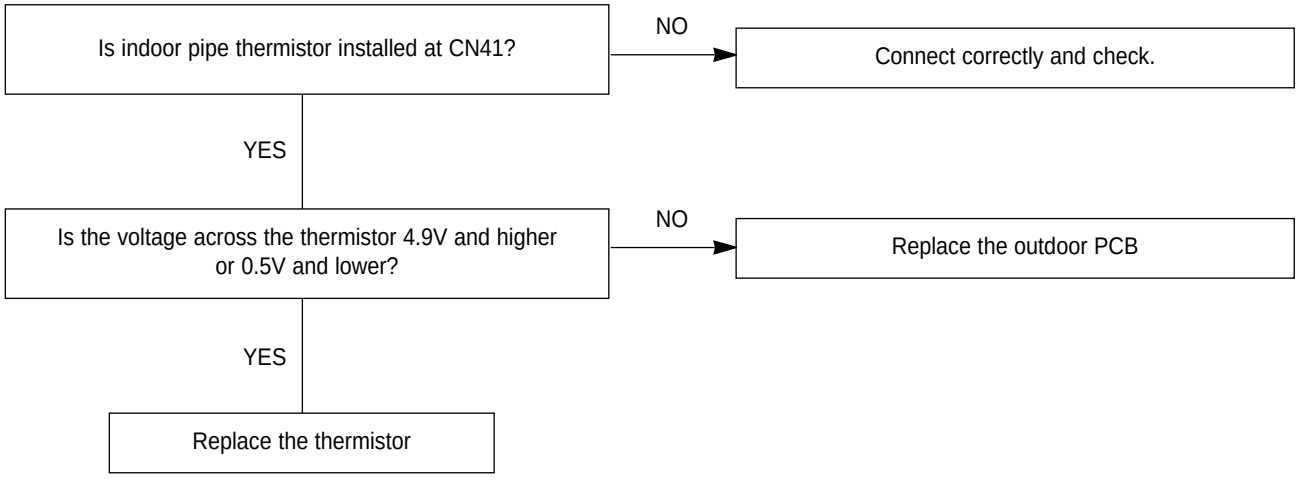
✻ “0” stands for the indoor unit address.

■ EC07 : When the trouble is found in the communication related part between outdoor unit pipe thermistor.

- ED of 7-segment of outdoor unit PCB.
- Reservation lamp and filter lamp of wireless receiving board is flickering with 1Hz.
- Action item when “D” displays on the wired remote controller.

Check point :

- Indoor unit pipe thermistor available or not
- Indoor unit PCB defect

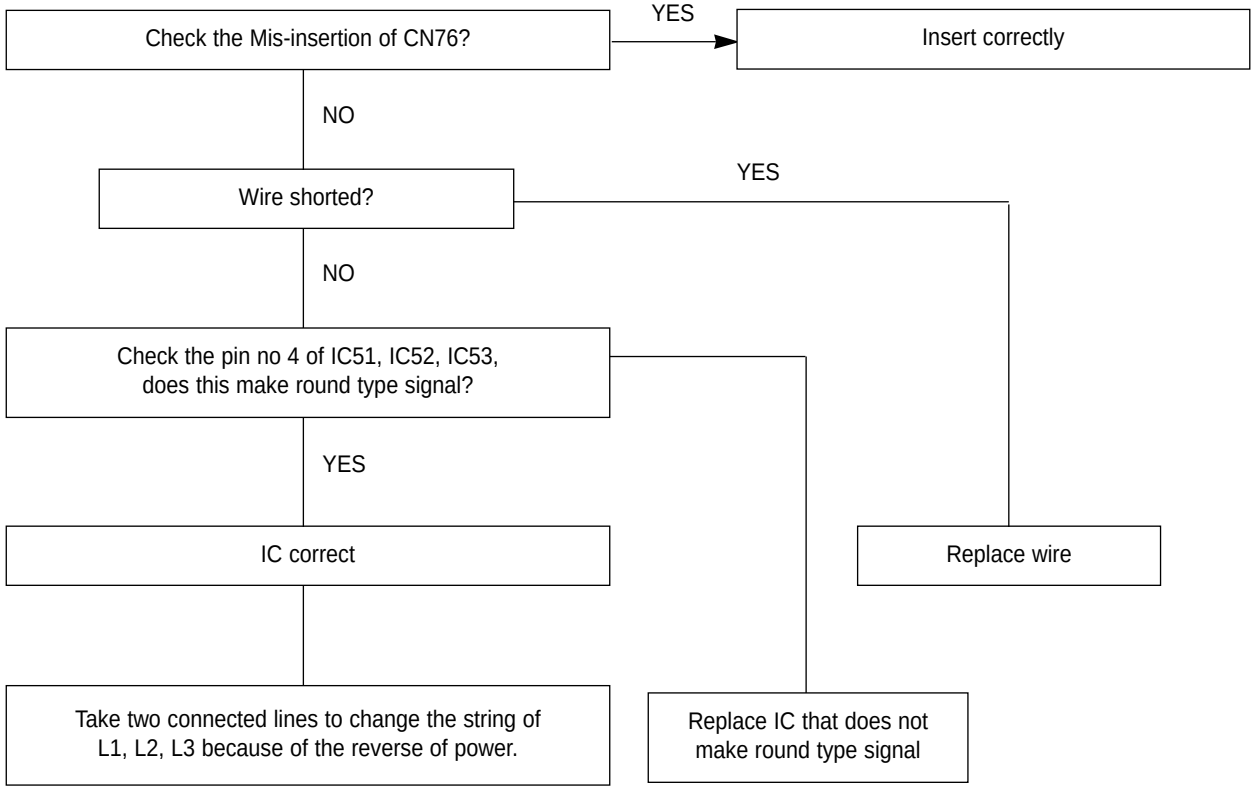


✻ “*” stands for the indoor unit address.

■ EC08 : When the reverse of three phase power is found.

Check point :

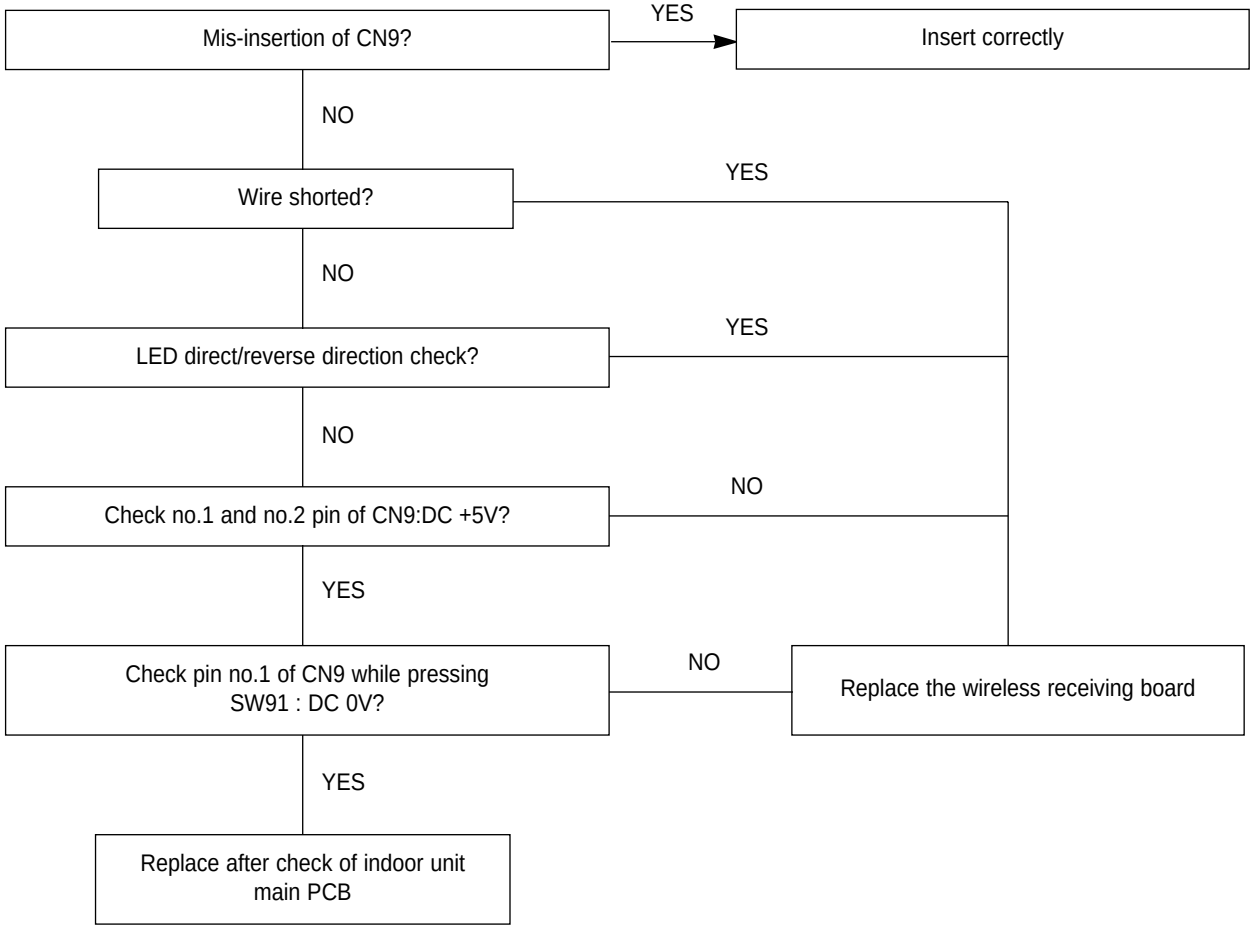
- Con check CN76 to connect correctly.
- Check IC51, IC52, IC53 to connect correctly.



■ EC09 : When the trouble is found on the part related to the wireless receiving board of the indoor unit.

Check point :

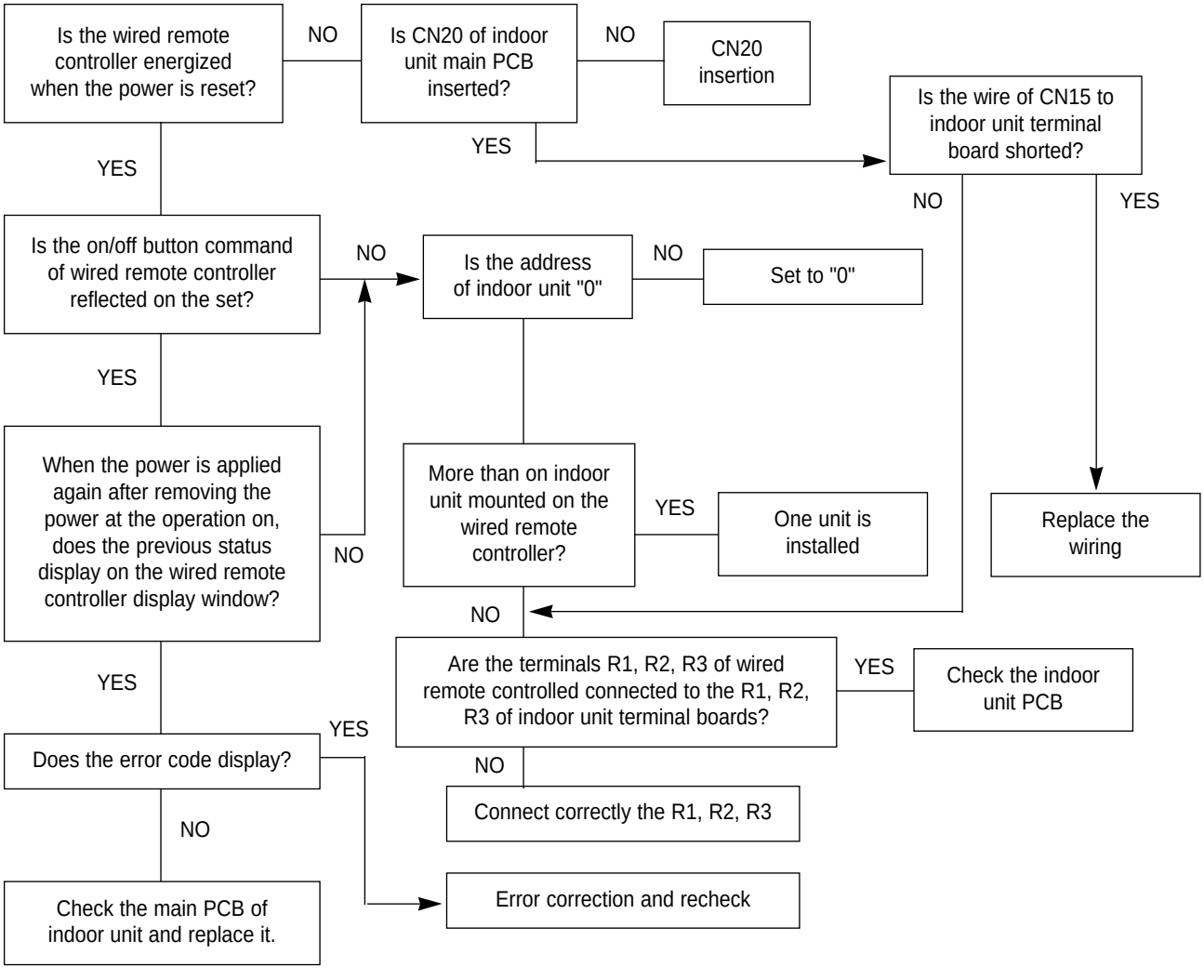
- Defect of wireless remote controller PCB
- Defect of wireless remote controller receiving board PCB
- Indoor unit PCB defect



■ EC10 : When the trouble is found on the part related to the wired remote controller. (single operation)

Check point :

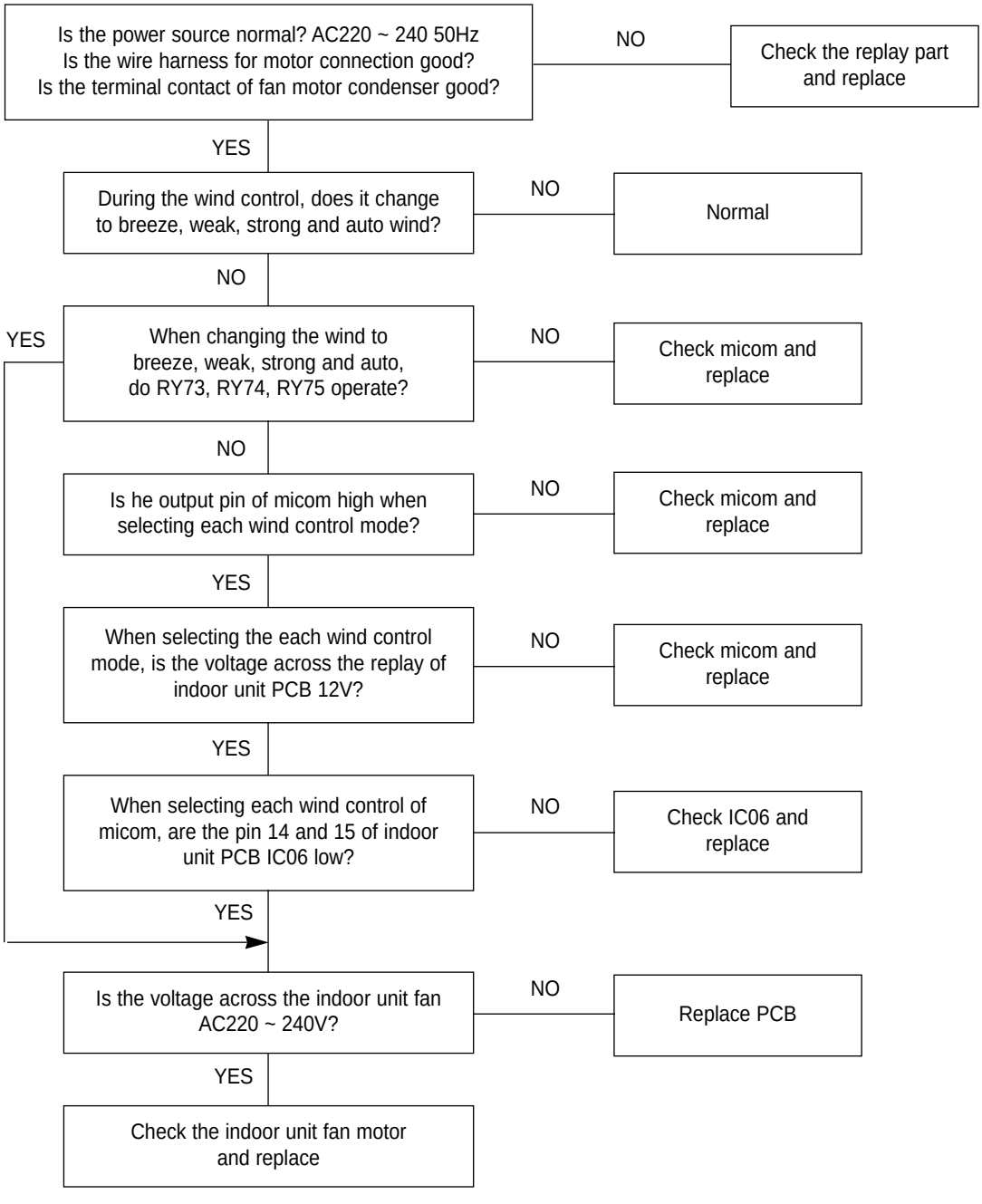
- Defect of communication line between indoor unit and wired remote controller.
- Output of indoor unit Micom
- Defect of wired remote controller PCB
- Indoor unit PCB defect



■ EC11 : When the trouble is found on the part related to the fan motor of indoor unit.

Check point :

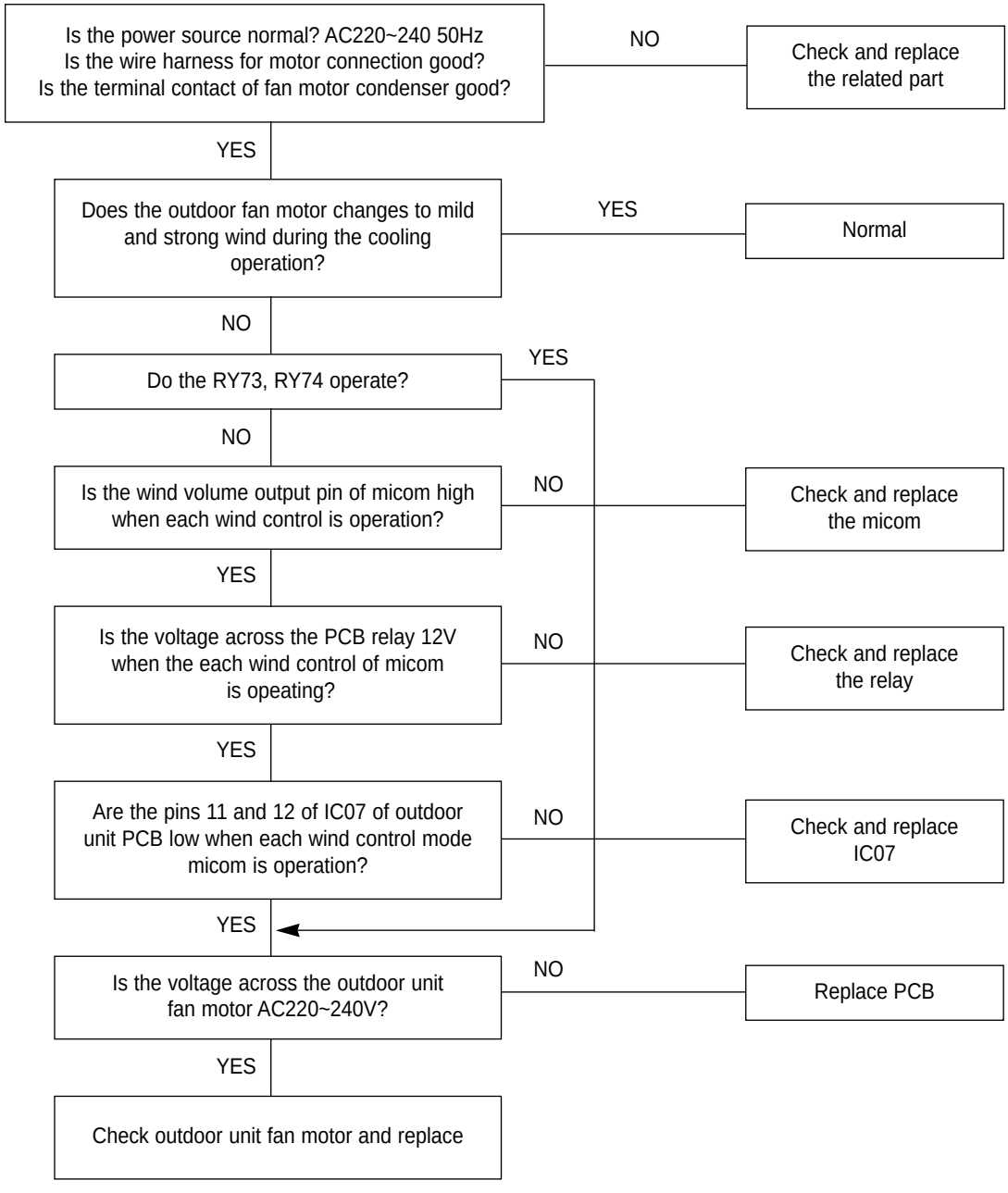
- Defect of PCB relay of indoor unit.
- Output of indoor unit Micom
- Indoor fan motor defect
- Defect of PCB IC06 of indoor unit



■ EC12 : When the trouble is found on the part related to the fan motor of outdoor unit.

Check point :

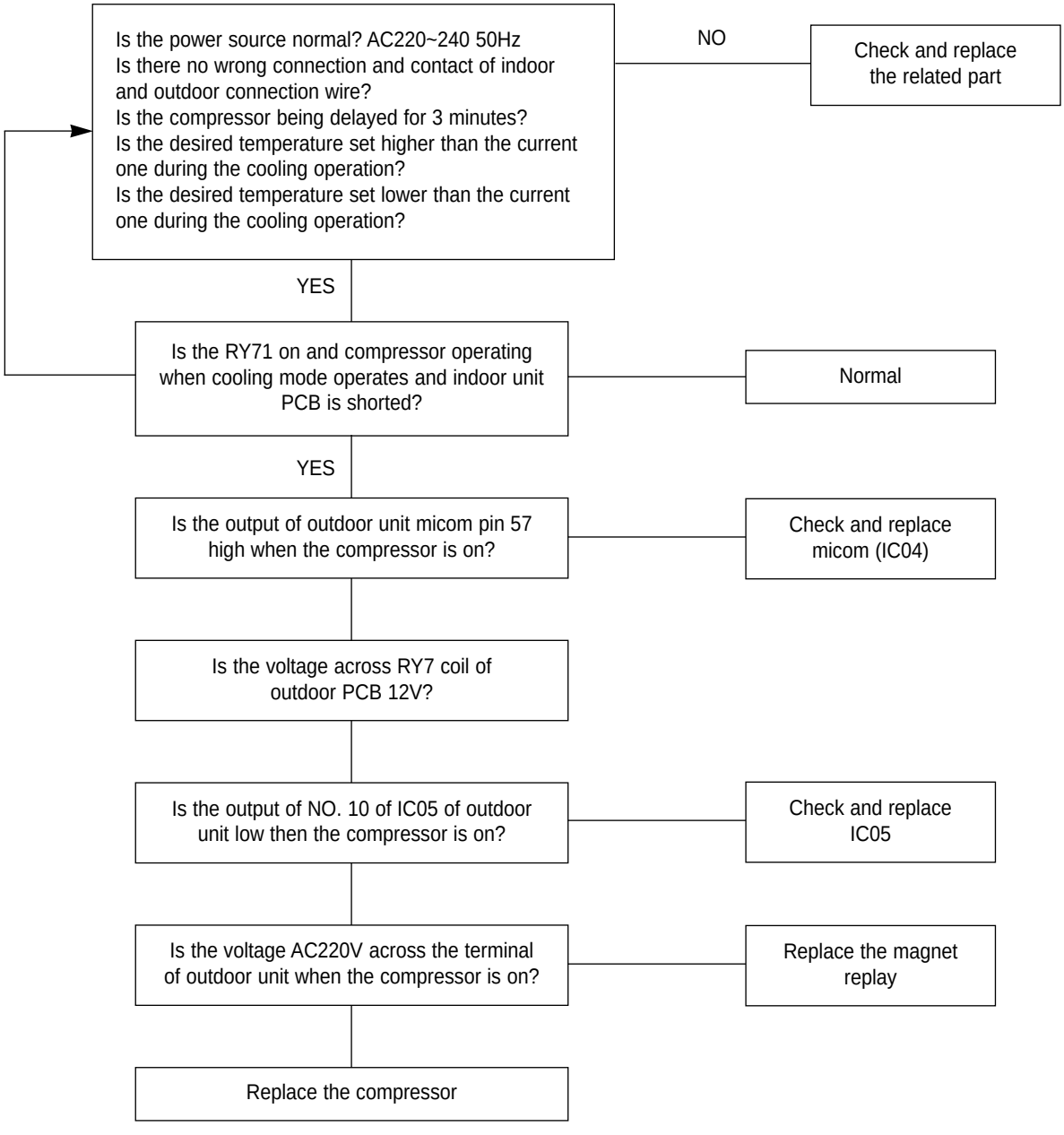
- Outdoor unit PCB relay defect
- Output of outdoor unit micom
- Outdoor unit fan motor defect
- Defect of IC07 of outdoor unit PCB



■ EC13 : When the trouble is found on the part related to comp of outdoor unit.

Check point :

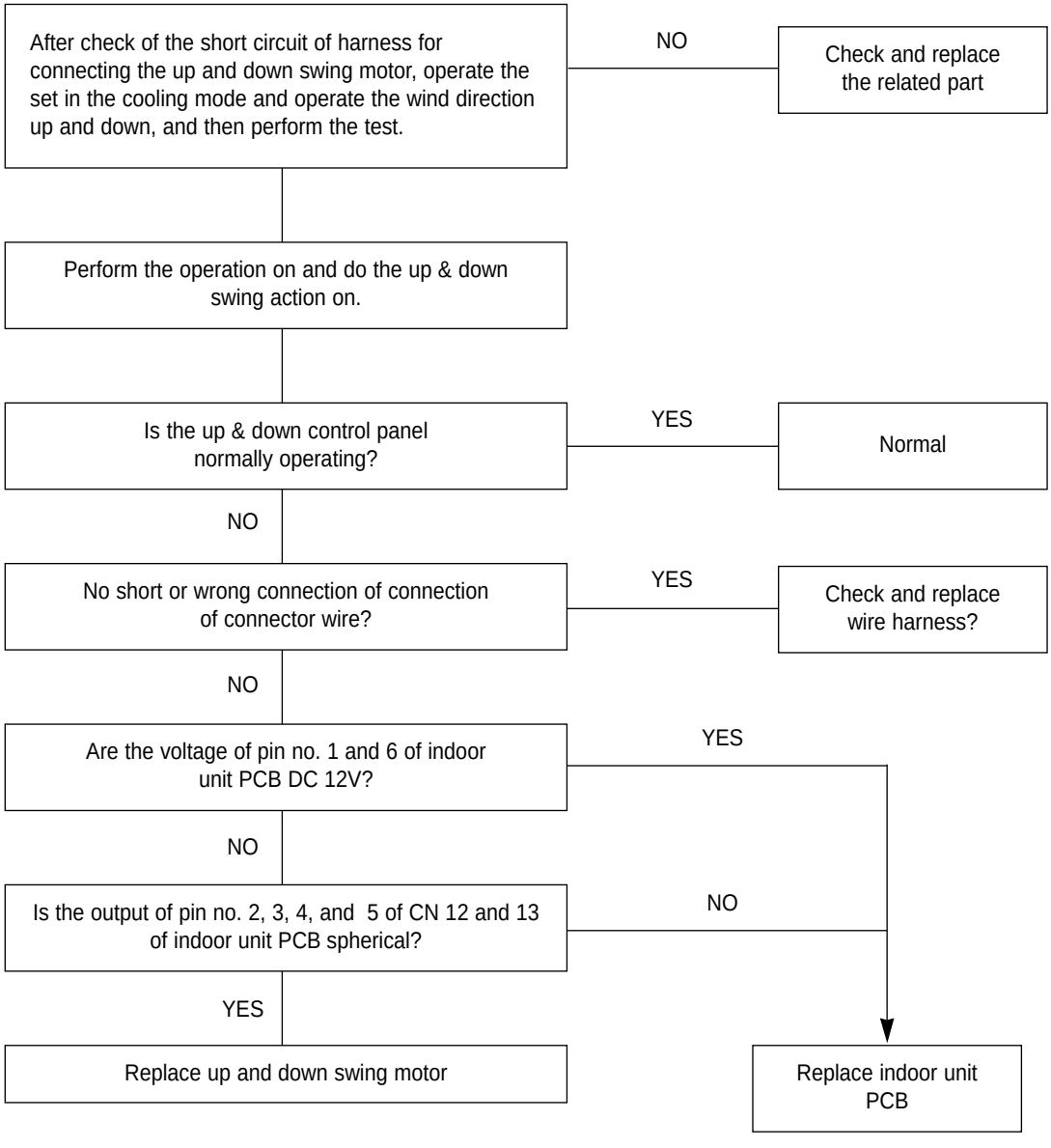
- Indoor unit PCB relay defect
- Output of indoor unit micom
- Comp defect
- Magnet switch defect



■ EC14 : When the trouble is found on the part related to the up & down swing motor of indoor unit (cassette model)

Check point :

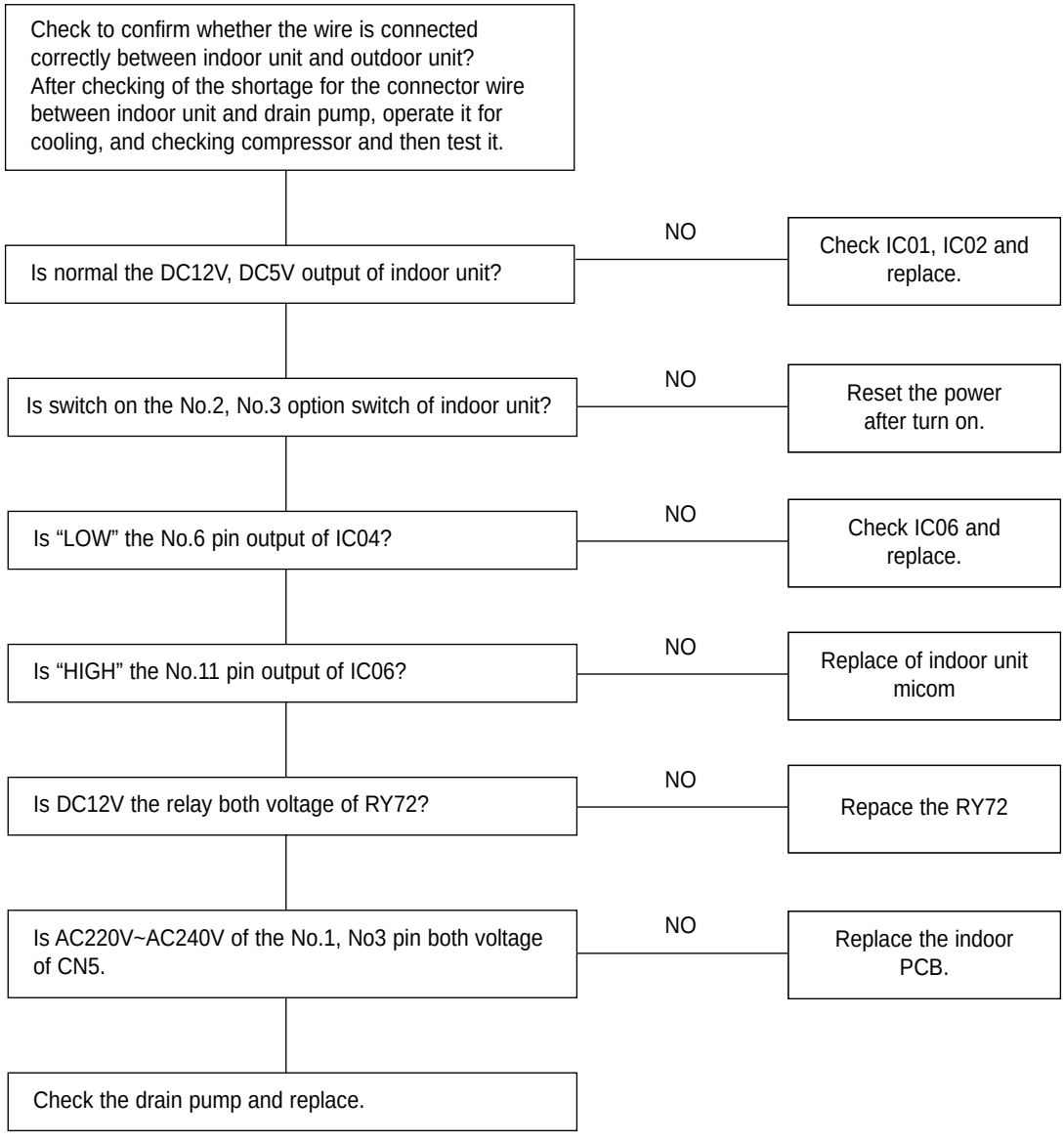
- Wire short between indoor unit PCB up & down swing motor connector or bad contact.
- Output of indoor unit micom
- Defect of up and down swing motor



■ EC15 : When the trouble is found on the part related to drain pump of indoor unit.

Check point :

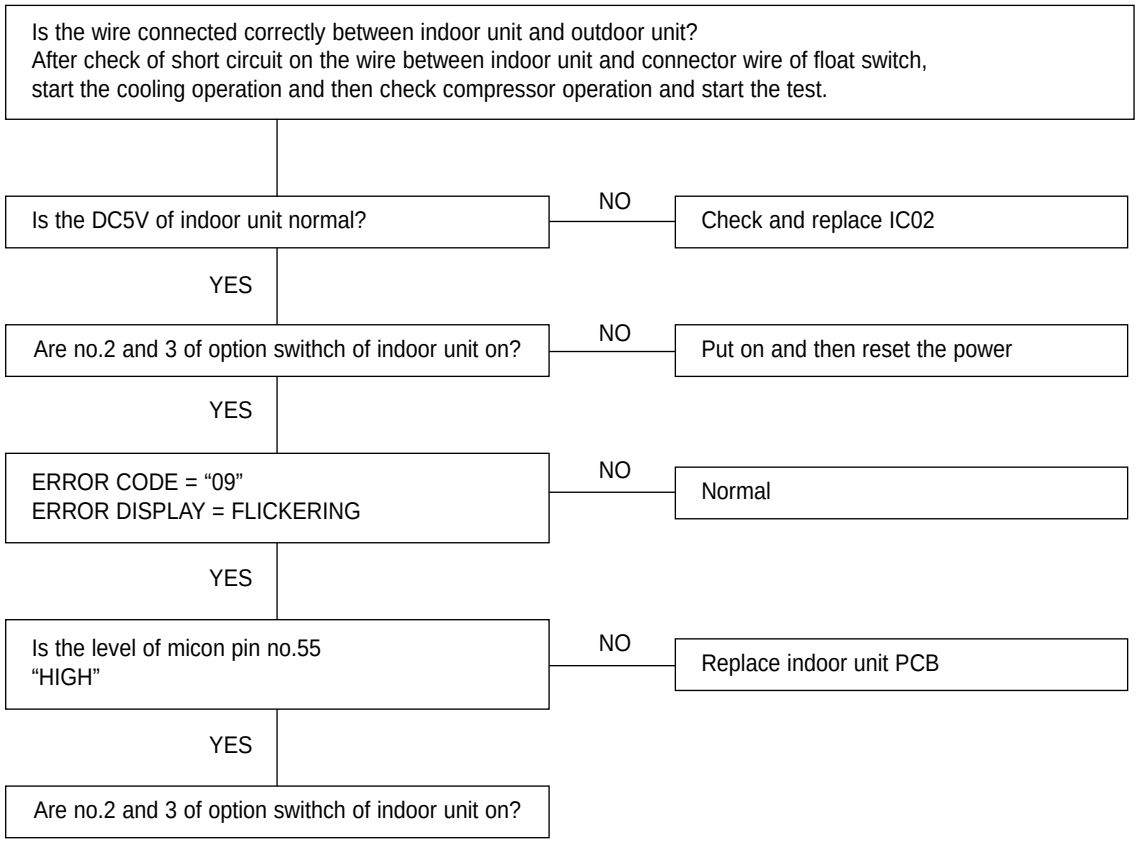
- Indoor unit PCB ↔ Drain pump connector wire, indoor unit Micom No.6 Pin output, IC06 No.6 Pin output.
- Drain pump, RY72, DC12V power, AC220~240V 50Hz power, indoor unit option switch.



■ EC16 : When the trouble is found on the part related to float switch of indoor unit.

Check point :

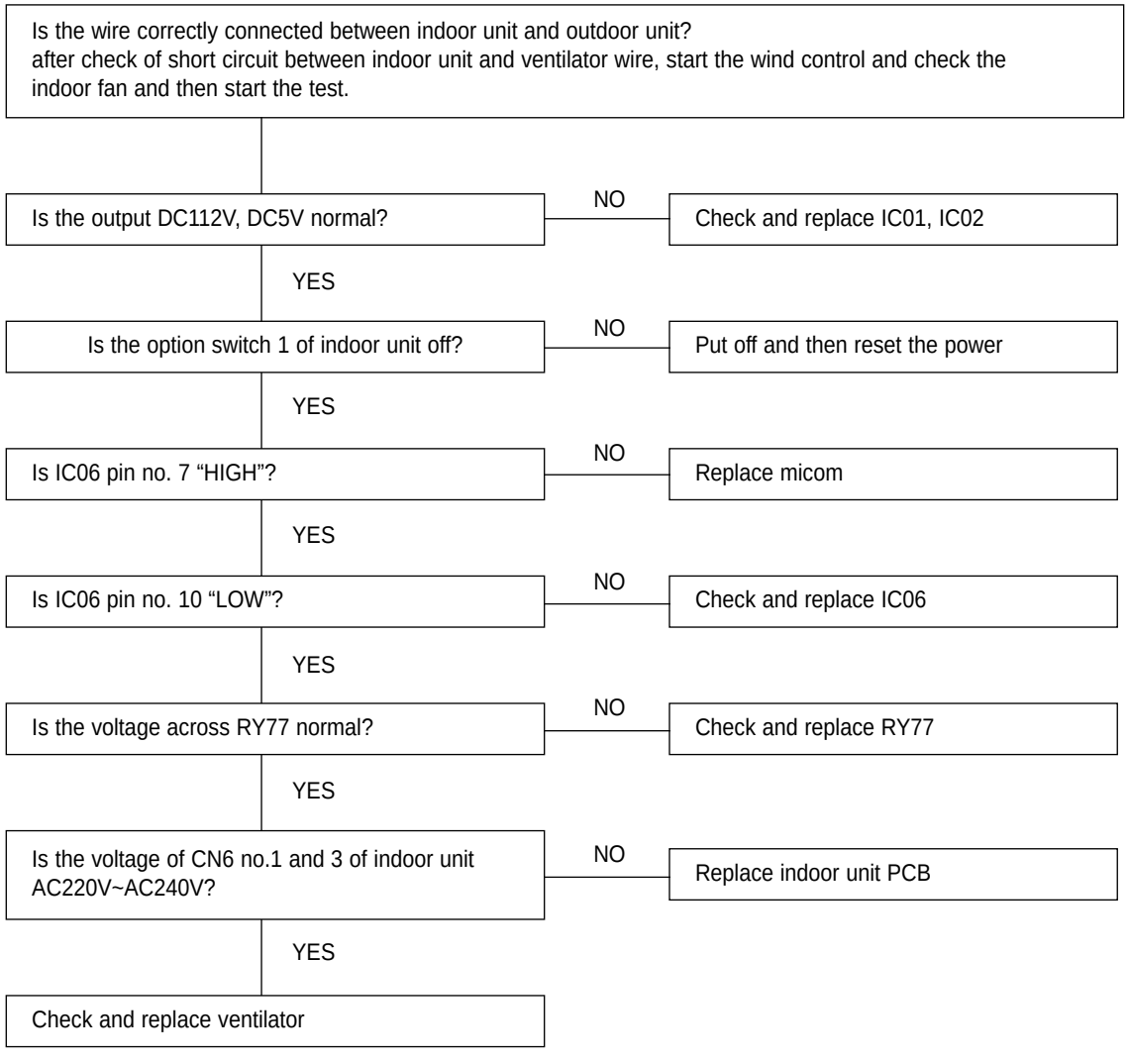
- Indoor unit PCB ↔ float switch connector wire, voltage level of indoor unit micom pin no. 55
- Float switch, DC5V power, indoor unit option switch



■ EC17 : When the trouble is found on the part related to ventilator of indoor unit.

Check point :

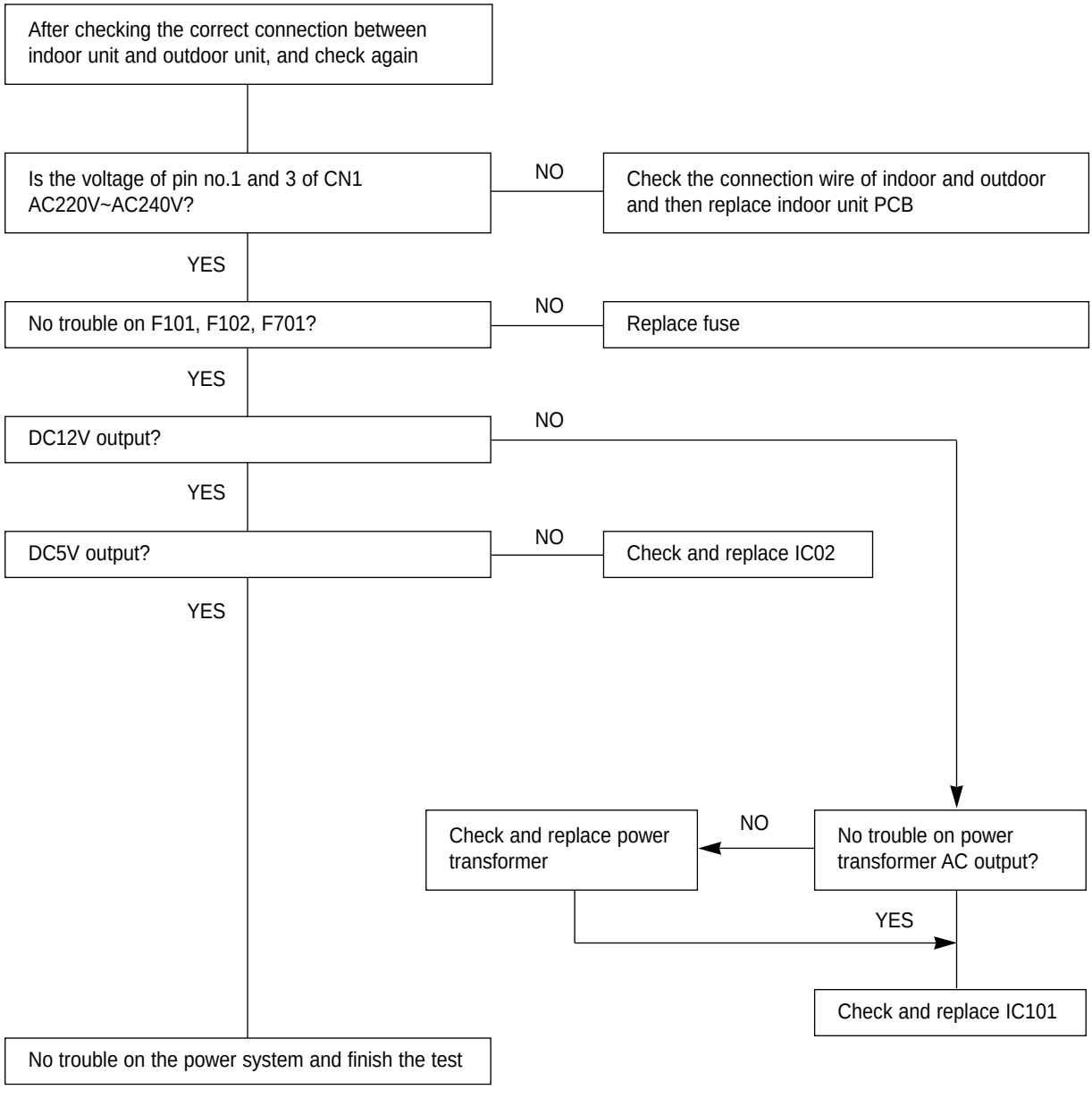
- Indoor unit PCB ↔ ventilator connector wire, output voltage of indoor unit micom pin No. 5
- Ventilator, DC 12V power, DC5V power, indoor unit option switch.



■ EC18 : When the trouble is found on the part related to power system of indoor unit.

Check point :

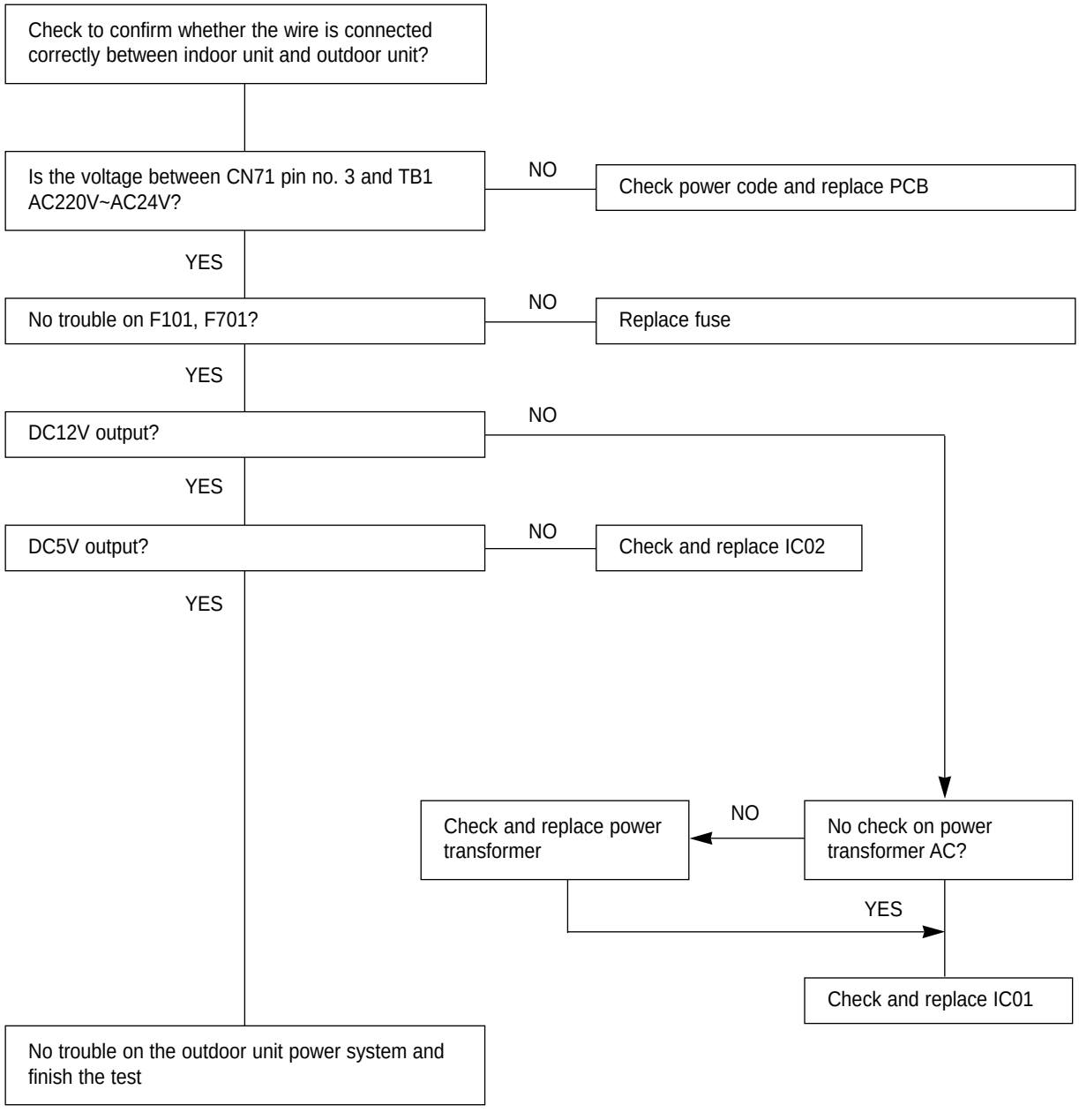
- Indoor unit AC220V~AC240V input voltage, DC12V output, DC5V output, output voltage of pin no.2 and 3 of CN15.
- Power transformer, F101, F102, F701



■ EC19 : When the trouble is found on the part related to power system of output unit.

Check point :

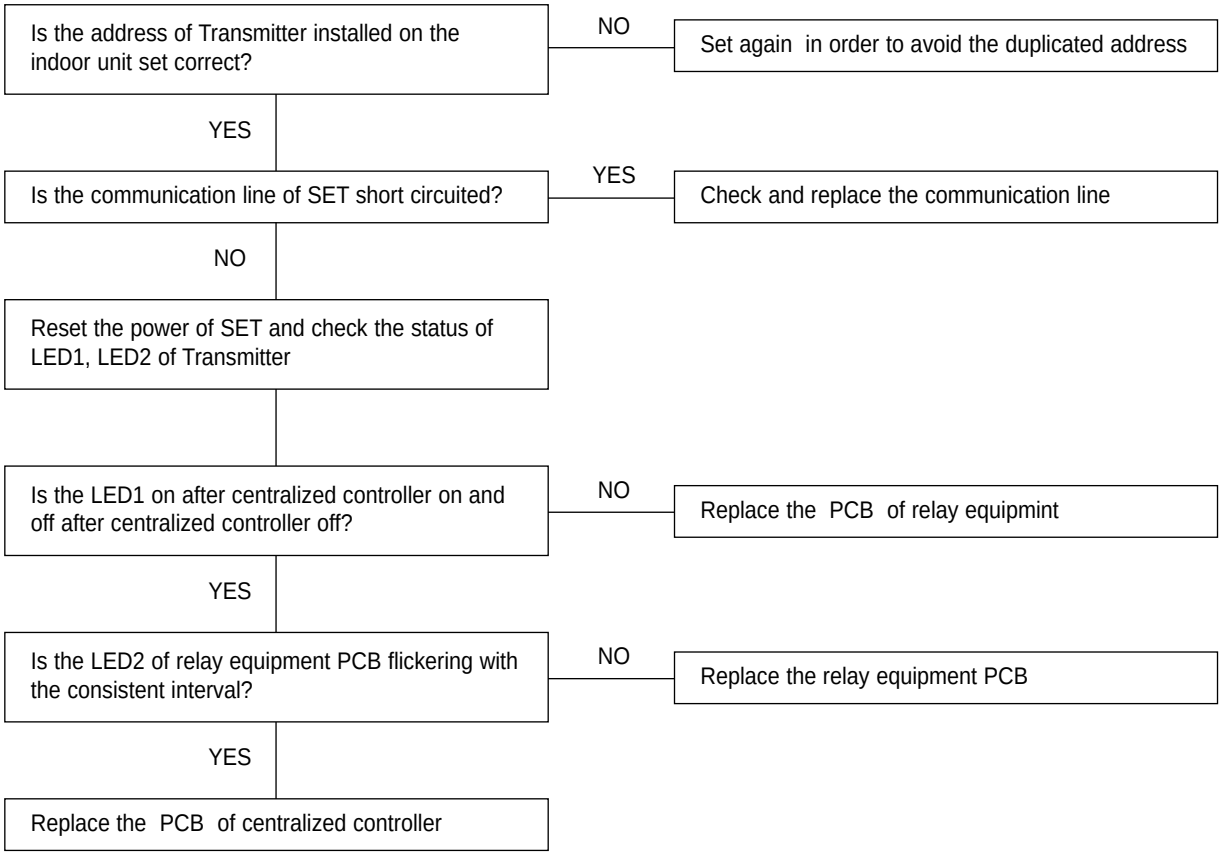
- Outdoor unit AC220V~AC240V input power, DC12V output, DC5V output
- Power transformer, F101, F701



■ EC20 : When the centralized controller lamp is flickering. (during centralized control)

Check point :

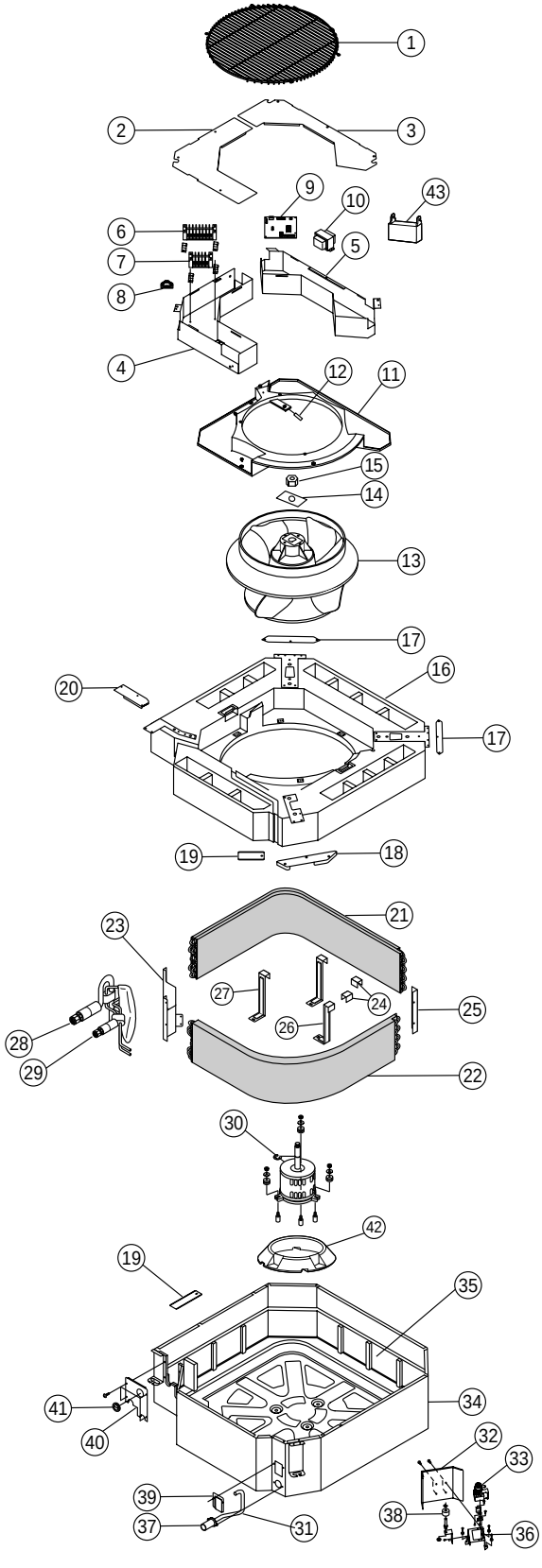
- Defect on the address assignment for the relay equipment connected with centralized controller.
- Defect on centralized controller PCB
- Defect on the indoor unit PCB



MEMO

7. Exploded Views and Part LIst

7-1 Indoor Unit

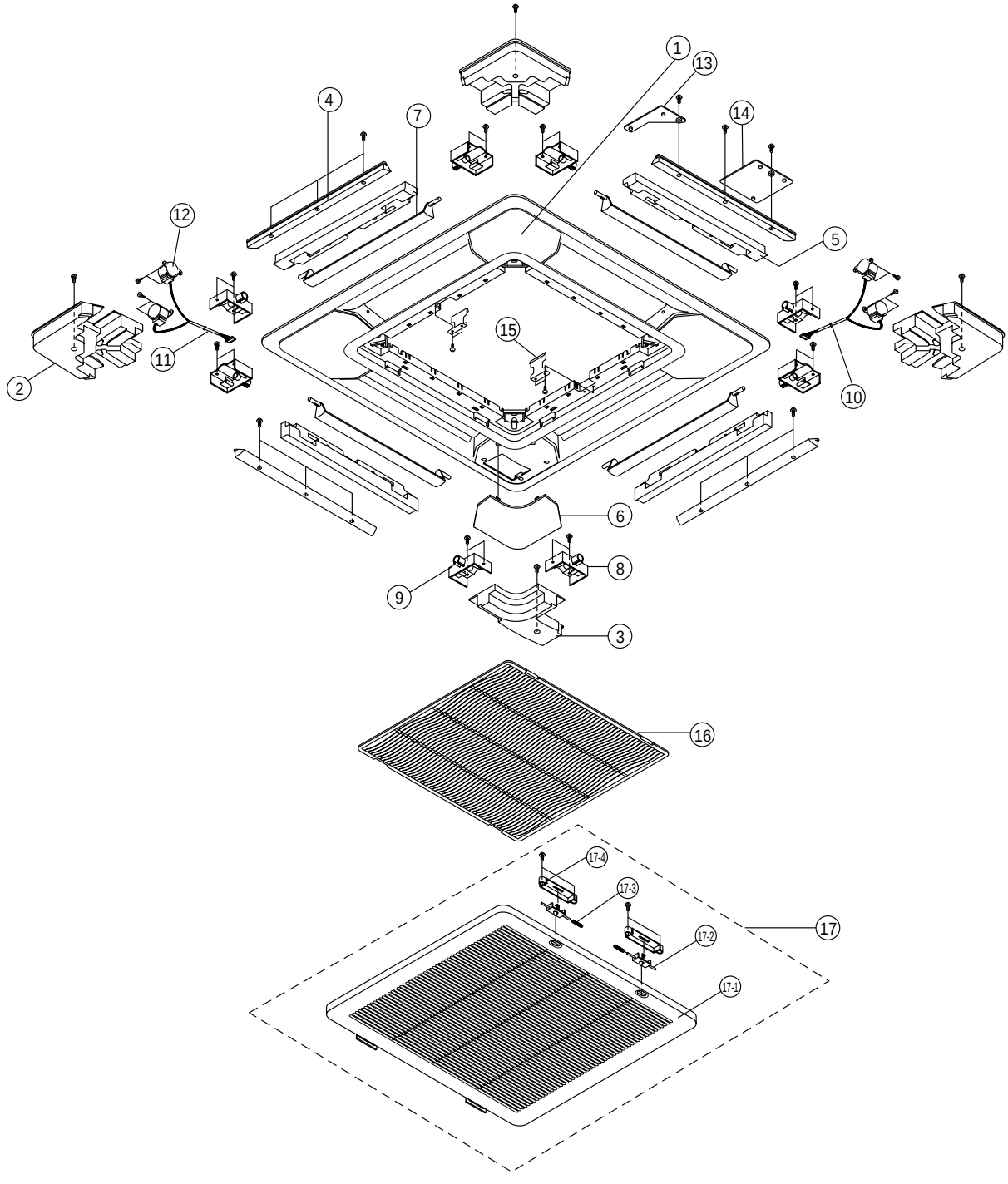


■ Part List

No.	Code No.	Description	Specification	Q'TY								Remarks
				ACH1800E CH18ZA	ACH2400E CH24ZA	ACH3600G CH36ZA	ACH4400G CH44ZA	CH18CA	CH24CA	CH36CA	CH44CA	
1	DB63-00058A	GUARD-SAFETY	BLK	1	1	1	1	1	1	1	1	
2	DB63-00050A	COVER-CONTROL	SGCCM, T0.7	1	1	1	1	1	1	1	1	
3	DB63-00049A	COVER-PCB	SGCCM, T0.7	1	1	1	1	1	1	1	1	
4	DB90-00127A	ASSY-CASE-CONTROL	P/D SPOT ASSY	1	1	1	1	1	1	1	1	
5	DB90-00128A	ASSY-CASE-PCB	P/D SPOT ASSY	1	1	1	1	1	1	1	1	
6	DB65-00029B	TERMINAL-BOARD-8P	250V 20A, 8P	1	1	-	-	1	1	-	-	
	DB65-00029D	TERMINAL-BOARD-8P	250V 20A, 8P	-	-	1	1	-	-	1	1	
7	DB65-00029A	TERMINAL-BOARD-5P	250V 20A, 5P, M3.5, 30x21, 5x79	1	1	1	1	1	1	1	1	
8	DB61-40291B	HOLDER-WIRE	PP, T2.0	1	1	1	1	1	1	1	1	
9	PD-DH2400-01	ASSY PCB PARTS		1	1	-	-	1	1	-	-	
	PD-DH3200-01	ASSY PCB PARTS		-	-	1	1	-	-	1	1	
10	DB26-00002A	TRANS-POWER	250V, 50HZ	1	1	1	1	1	1	1	1	
11	DB67-00019A	FAN-BELL MOUTH	PS, 0D530	1	1	1	1	1	1	1	1	
	DB67-00020A	FAN-BELL MOUTH	PP, 0D530	-	-	1	1	-	-	1	1	
12	DB32-00012A	THERMISTOR	103AT, 10K	1	1	1	1	1	1	1	1	
13	DB94-00016A	ASSY-FAN-TURBO	TB461	1	1	1	1	1	1	1	1	
14	DB90-00106A	ASSY-HOLDER-FAN	PI460	1	1	1	1	1	1	1	1	
15	6021-000131	NUT-HEXAGON	2C, M12	1	1	1	1	1	1	1	1	
16	DB94-00011A	ASSY-DRAIN-CUSHION	EPS, ASSY	1	1	1	1	1	1	1	1	
17	DB64-00055A	CABINET-GUIDE A	SGCCM, T0.8	2	2	2	2	2	2	2	2	
18	DB64-00056A	CABINET-GUIDE B	SGCCM, T0.8	1	1	1	1	1	1	1	1	
19	DB61-00134A	BRACKET-WIRE	SGCCM, T0.8	2	2	2	2	2	2	2	2	
20	DB63-00046A	COVER-POWER CORD	SGCCM, T0.8	1	1	1	1	1	1	1	1	
21	DB75-00025A	EVAPORATOR-ASSY-LF	1.4SLIT, P21, 1398, 8EA	1	1	-	-	1	1	-	-	
	DB96-00326A	EVAPORATOR-ASSY-LF	1.5SLIT, P21	-	-	1	1	-	-	1	1	
22	DB75-00024A	EVAPORATOR-ASSY-RH	1.4SLIT, P21, 1270, 8EA	1	1	-	-	1	1	-	-	
	DB96-00325A	EVAPORATOR-ASSY-RH	1.5SLIT, P21	-	-	1	1	-	-	1	1	
23	DB67-00023A	PARTITION-FRONT EVAP	SGCCM, T0.8	1	1	-	-	1	1	-	-	
	DB67-00024A	PARTITION-FRONT EVAP	SGCCM, T0.8	-	-	1	1	-	-	1	1	
24	DB65-00020A	CLIP-EVAP A	SGCCM, T0.7	2	2	-	-	2	2	-	-	
25	DB67-00021A	PARTITION-BACK EVAP	SGCCM, T0.8	1	1	-	-	1	1	-	-	
	DB67-00022A	PARTITION-BACK EVAP	SGCCM, T0.8	-	-	1	1	-	-	1	1	
26	DB61-00131A	HOLDER-EVAP	SGCCM, T0.7	2	2	-	-	2	2	-	-	
	DB61-00142A	HOLDER-EVAP	SGCCM, T0.7	-	-	2	2	-	-	2	2	
27	DB61-00231A	HOLDER-EVAP	SGCCM, T0.8	4	4	-	-	4	4	-	-	
	DB61-00251A	HOLDER-GUIDE-AIR	SGCCM, T0.8	-	-	4	4	-	-	4	4	
28	DB96-00164A	ASSY-COLLECTOR	0D 15.88 4PASS	1	1	-	-	1	1	-	-	
	DB96-00331A	ASSY-COLLECTOR-3/4	0D 19.05 10PASS	-	-	1	1	-	-	1	1	
29	DB96-00165A	ASS'Y TUBE INLET PART	4PASS	1	1	-	-	1	1	-	-	
	DB96-00332A	ASS'Y TUBE INLET PART	10PASS	-	-	1	1	-	-	-	-	
	DB96-00475A	ASS'Y TUBE INLET PART	4PASS	-	-	-	-	1	1	-	-	
	DB96-00332B	ASS'Y TUBE INLET PART	10PASS	-	-	-	-	-	-	1	1	
30	DB31-00026D	MOTOR FAN	0SME-506SAC	1	1	-	-	1	1	-	-	
	DB31-00061A	MOTOR FAN	0SME-1646SAC	-	-	1	1	-	-	1	1	
31	DB62-00137A	HOSE-DRAIN	EPDM	1	1	-	-	1	1	-	-	
	DB62-00250A	HOSE-DRAIN	EPDM	-	-	1	1	-	-	1	1	
32	DB67-00027A	PARTITION-DRAIN PUMP	SGCCM, T0.7	1	1	-	-	1	1	-	-	
	DB67-00025A	PARTITION-DRAIN PUMP	SGCCM, T0.7	-	-	1	1	-	-	1	1	
33	DB66-00058A	PUMP-DRAIN	SAGINOMIYA	1	1	-	-	1	1	-	-	
	DB66-00148A	PUMP-DRAIN	SAUREMANN	-	-	1	1	-	-	1	1	
34	DB90-00111A	ASSY-CABI-WELD	WELD ASSY	1	1	-	-	1	1	-	-	
	DB90-00167A	ASSY-CABI-WELD	WELD ASSY	-	-	1	1	-	-	1	1	
35	DB90-00097A	ASSY-BASE-CUSHION	EPS ASSY	1	1	-	-	1	1	-	-	
	DB90-00148A	ASSY-BASE-CUSHION	EPS ASSY	-	-	1	1	-	-	1	1	
36	DB61-00120A	BRACKET-PUMP	SGCCM, T2.0	1	1	-	-	1	1	-	-	
	DB61-00121A	BRACKET-PUMP	SGCCM, T2.0	-	-	1	1	-	-	1	1	
37	DB67-00059A	DRAIN-HOSE-SOCKET	ABS, BLK	1	1	-	-	1	1	-	-	
	DB67-00018A	DRAIN-HOSE-SOCKET	ABS, BLK	-	-	1	1	-	-	1	1	
38	DB95-00082A	ASSY-SENSOR-FLOAT	WS-1H L43	1	1	1	1	1	1	1	1	
39	DB63-00059A	COVER-DRAIN PUMP	SGCCM, T0.8	1	1	1	1	1	1	1	1	
40	DB63-00052A	COVER-PIPE	SGCCM, T0.7	1	1	1	1	1	1	1	1	
41	DB73-00023A	RUBBER-COVER WIRE	NBR, T3	1	1	1	1	1	1	1	1	
42	DB69-00181A	CUSHION-BELL-MOUTH	EPS	-	-	1	1	-	-	1	1	
43	2301-001371	CAPACITOR MOTOR	2μF, EAF45205	1	-	-	-	1	-	-	-	
	2301-001370		2.5μF, EAF45255	-	1	-	-	-	1	-	-	
	2301-001368		5μF, EAF45505	-	-	1	-	-	-	1	-	
	2301-001367		6μF, EAF45605	-	-	-	1	-	-	-	1	
	2301-001369		3μF	-	-	-	-	-	1	-	-	

7-2 Panel Front Disassembly Diagram

• Panel Front

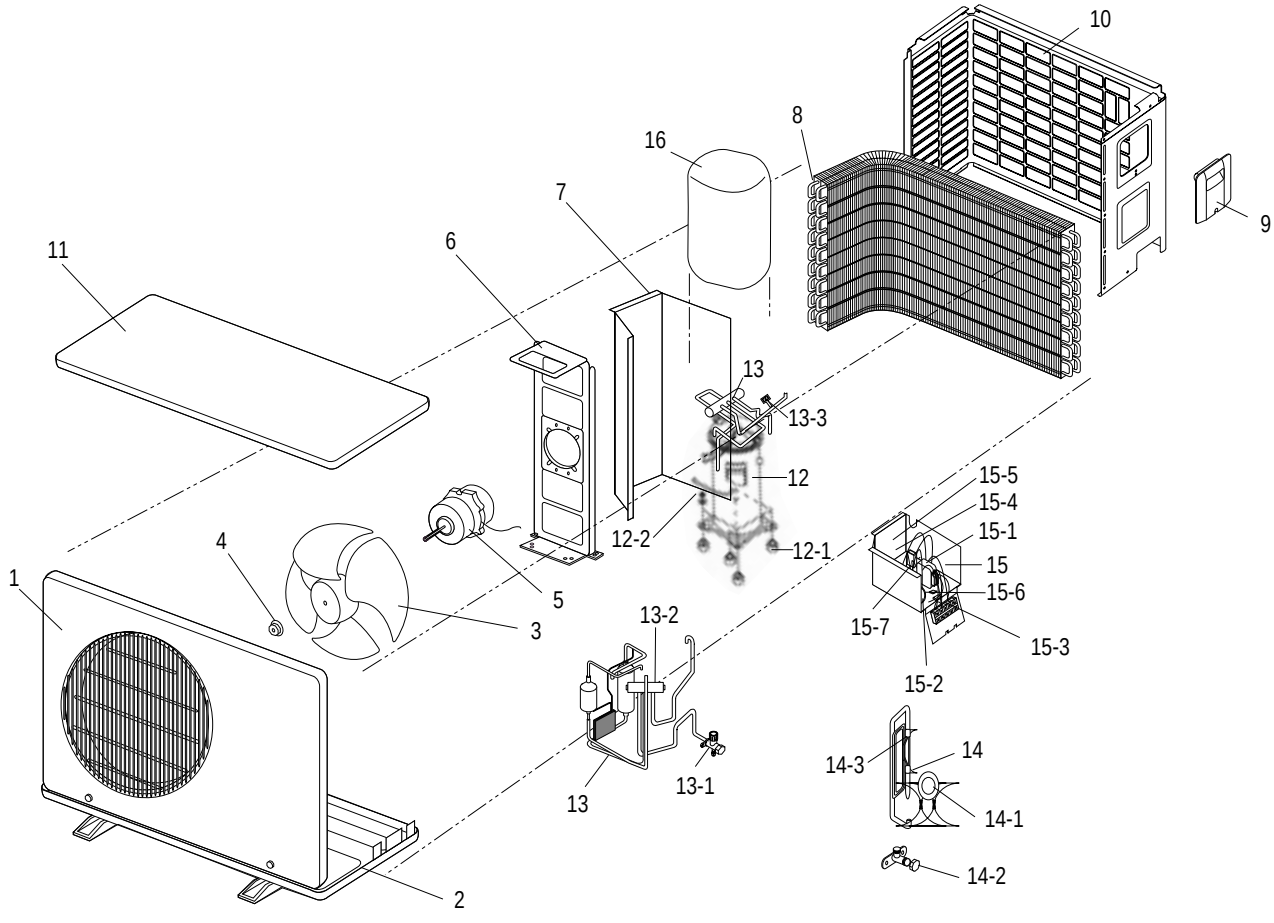


■ ASSY PANEI PART LIST (CH01ZAP, IFS095G00 : Wire typ, CH02ZAP, IFS095G01 : Wireless type)

No.	Code No.	Description	Specification	Q'TY		Remarks
				IFS095G00 CH01ZAP	IFS095G01 CH02ZAP	
1	DB64-00051A	PANEL-FRONT	HIPS, 950x950	1	1	
2	DB69-00091A	CUSHION-SIDE-A	EPS, T38.5, W182, L182, GR	3	3	
3	DB69-00092A	CUSHION-SIDE-B	EPS, T34.6, W182, L182, GR	1	1	
4	DB69-00093A	CUSHION-A	EPS, T18.4, W28, L526, GRY	4	4	
5	DB69-00094A	CUSHION-B	EPS, T37.5, W66, L490, GRY	4	4	
6	DB63-00041A	COVER-FRONT	HIPS	1	-	
	DB90-00096B	ASSY COVER FRONT(RE)	ASSY	-	1	
7	DB66-00029A	BLADE-H	ABS	4	4	
8	DB61-00107A	HOUSING-MOTOR L	HIPS	4	4	
9	DB61-00108A	HOUSING-MOTOR R	HIPS	4	4	
10	DB39-00078A	CONNECT WIRE-MOTOR	AWG24/10, AWG#24	1	1	
11	DB39-00079A	CONNECT WIRE-MOTOR	AWG24/10, AWG#24	1	1	
12	DB31-10129C	MOTOR-STEPPING	GSP-24RW-045, DC12V	4	4	
13	DB63-00051A	COVER-OUT A	ABS, T2, BLK	1	1	
14	DB63-00054A	COVER-OUT B	ABS, T2, BLK	1	1	
15	DB70-00031A	PLATE-HANGER	STS304, T0.6	2	2	
16	DB74-00002A	FILTER-AIR	PP, T20, BLK	1	1	
17	DB92-00029A	ASSY-GRILLE IN	ASSY	1	1	
17-1	DB64-00050A	GRILLE-AIR INLET	HIPS	1	1	
17-2	DB64-00052A	KNOB-SLIDE	HIPS	2	2	
17-3	DB67-00030A	SPRING-KNOB	0D 5.5, STS304, L34	2	2	
17-4	DB63-00040A	COVER-KNOB	HIPS	2	2	
18	DB97-00254A	ASSY-WIRED REMOTE CONTROL	ASSY	1	-	
	DB97-00255A	ASSY-WIRELESS REMOTE CONTROL	ASSY	-	1	

7-3 Outdoor Unit

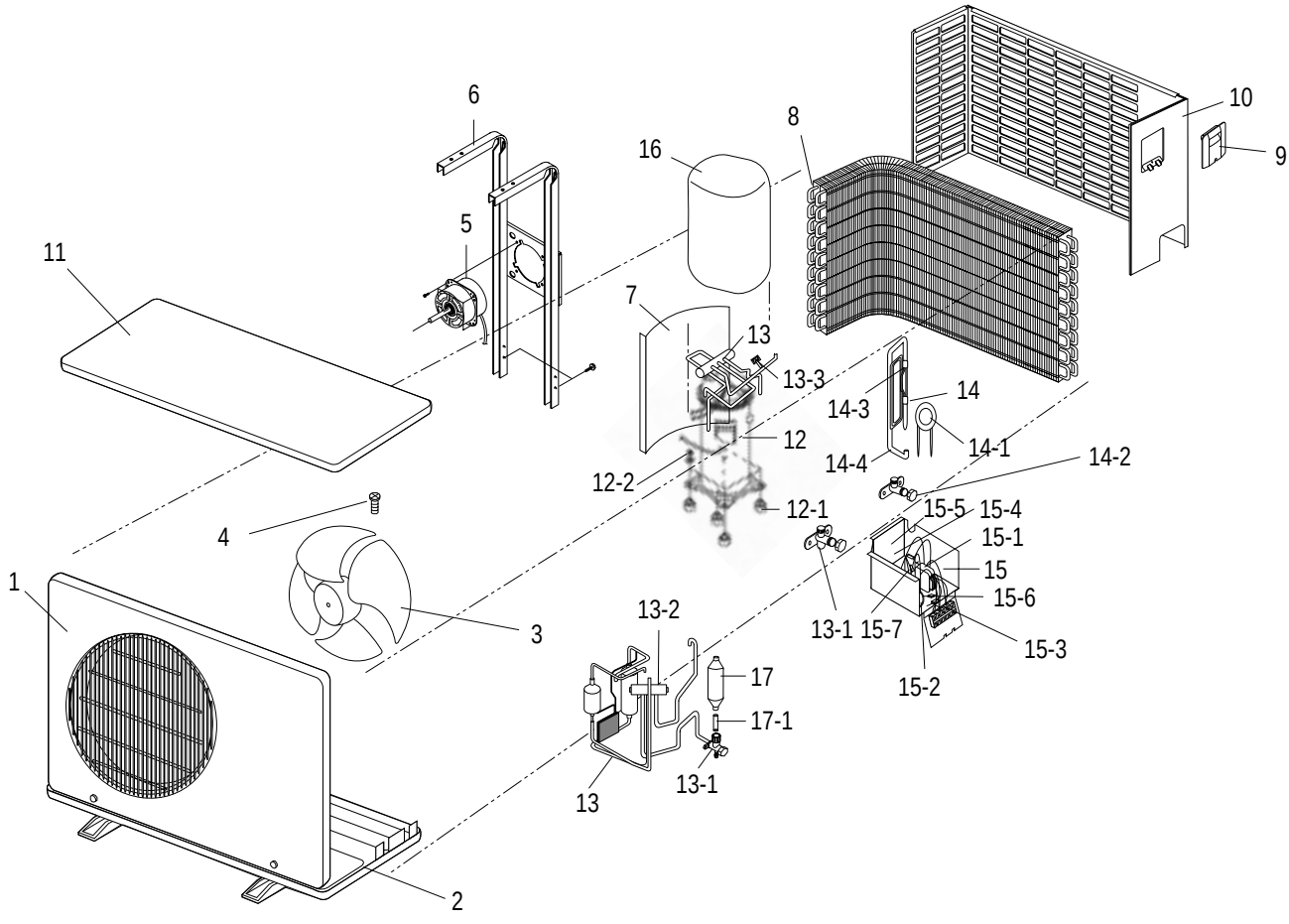
• 18K



■ Outdoor Unit Parts list (18K)

NO	CODE NO	Description	Specification	Q'TY	Remark
1	DB90-10673C	ASS'Y-CABI, FRONT	AP-4350/5350	1	
2	DB90-20160E	ASS'Y-BASE, OUT	UBH1800E	1	
3	DB67-50063A	FAN-PROPELLER	AS+G/F20%, D405	1	
4	DB60-30020A	NUT-FLANGE	M6, FEFZY, LF	1	
5	DB31-00056A	MOTOR-FAN	ASS030AVEA	1	
6	DB61-20008C	BASE-MOTOR	SGCC-M, T=1.2	1	
7	DB94-50034B	ASS'Y-PARTITION	ASH-1807ER ADD, SEAL	1	
8	DB96-00184A	ASS'Y-CONDENSER	2X24 WAVE 1.7	1	
9	DB90-40176B	ASS'Y-COVER CONTROL	ABS	1	
10	DB90-10671G	ASS'Y-CABI, BACK	AP-4350	1	
11	DB90-00074B	ASS'Y-CABI-UP	M-18	1	
12	DB95-10057N	ASS'Y-COMP	ZR22K3-PFJ	1	
	DB95-10057U	ASS'Y-COMP	ZR22K3E-PFJ	1	CH18CA
12-1	DB73-10023A	GROMMET COMP	EPDM, T41, BLK	4	
12-2	DB60-30028A	NUT-WASHER	HEX, 2C, M8, ZPC	4	
13	DB96-00189A	ASS'Y-TUBE 4WAY V/V	ADH1800E, 5/8"	1	
	DB96-00189B	ASS'Y TUBE 4WAY V/V	CH18CA	1	CH18CA
13-1	DB62-40055F	VALVE-SERVICE 5/8	5/8"	1	
	DB62-00424A	VALVE-SERVICE 5/8	5/8"	1	CH18CA
13-2	DB62-40036A	VALVE-4WAY	ASS'Y	1	
	DB62-00261A	VALVE-4WAY	RANCO (VT1100B)	1	CH18CA
13-3	DB34-00004A	SWITCH-PRESSURE	ASS'Y	1	
14	DB96-00190A	ASS'Y-TUBE, CHECK, V/V	ADH1800E(3/8")	1	
	DB96-00476B	ASS'Y-TUBE, CHECK, V/V	CH18CA	1	CH18CA
14-1	DB62-00218A	TUBE-CAPILLARY CHECK	C1220T-0, ID2.0X500	1	
	DB62-00436A	TUBE-CAPILLARY CHECK	C1220T-0, ID1.7x700	1	CH18CA
14-2	DB62-00287A	VALVE-SERVICE, 3/8	3/8"	1	
	DB62-00425A	VALVE-SERVICE 3/8	3/8"	1	CH18CA
14-3	DB62-40105D	VALVE-CHECK	CHV0201	1	
15	DB93-00252E	ASS'Y-CONTROL BOX	UDH1800E	1	
15-1	DB34-90057C	SWITCH-MAGNET	45CG20ALB	1	
15-2	2501-001214	CAPACITOR	40UF/400V, COMP	1	
15-3	DB65-40022G	TERMINAL-BLOCK	6P, 600V, 35A	1	
15-4	PD-DH2400-S0	ASS'Y-PCB PART	ASS'Y	1	
15-5	DB61-00152A	CASE-PCB, OUT	T2.5, ABS, BLK	1	
15-6	DB26-10070A	TRANS-POWER	DC17, AC230	1	
15-7	2301-001370	CAPACITOR MOTOR	2.5µF, EAF45255	1	
16	DB72-00122A	CLOTH-SOUND, COMP	T12, W800, L350	1	

• 24K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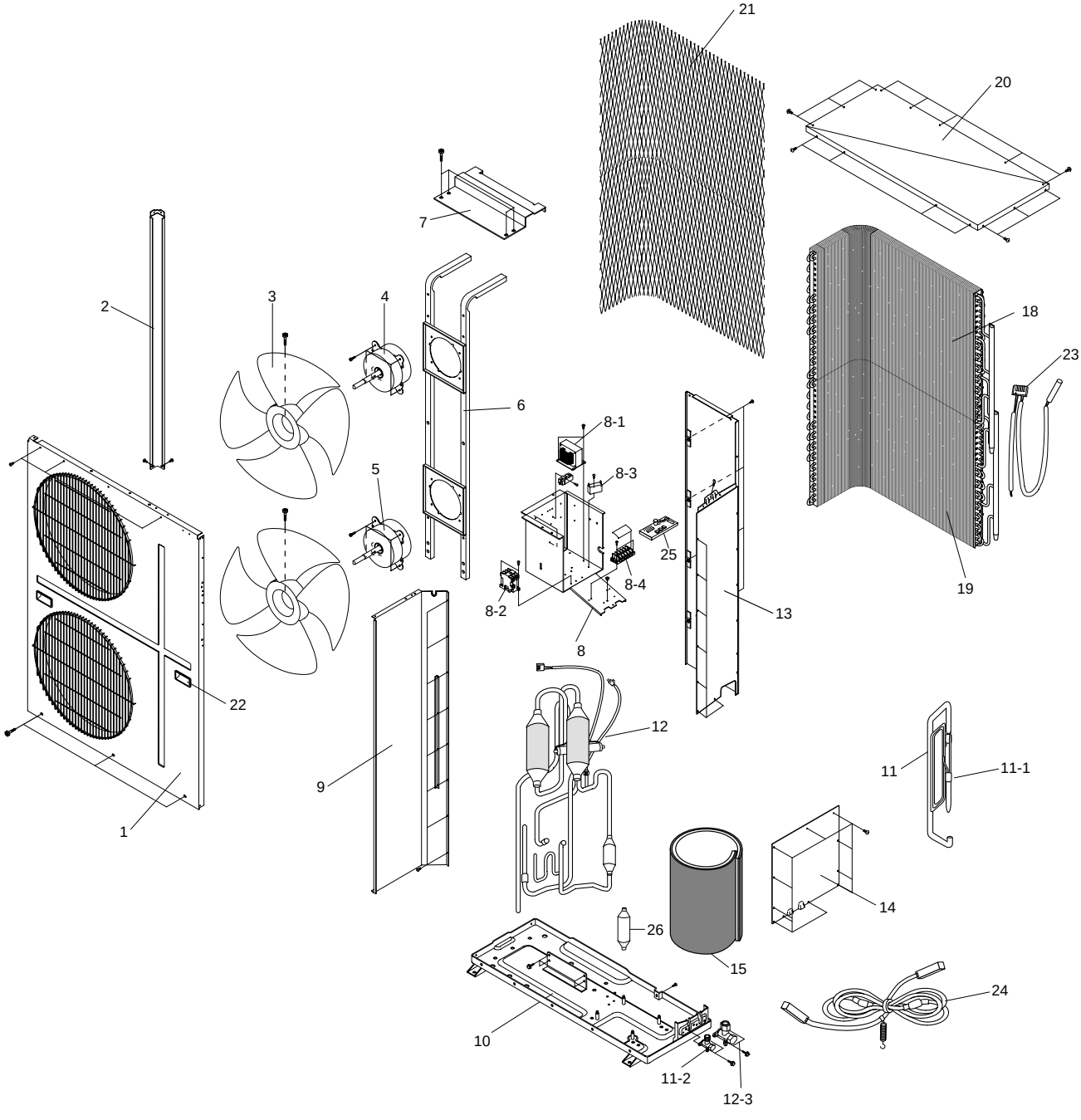
■ Outdoor Unit Parts list (24K)

NO	CODE NO	Description	Specification	Q'TY	Remark
1	DB90 - 10634L	ASS'Y-CABI, FRONT	ASH-3500	1	
2	DB90 - 20157L	ASS'Y-BASE, OUT	AP-7650	1	
3	DB67 - 50074A	FAN-PROPELLER	AS-1569	1	
4	-	BOLT-SPECIAL	M6	1	
5	DB31 - 00027A	MOTOR-FAN	OSME-806SRC	1	
6	DB95 - 20147A	ASS'Y-MOTOR, B/K	AS-1569, ASSY	1	
7	DB94 - 50039C	ASS'Y-PARTITION	ASM-3500A	1	
8	DB96 - 00180A	ASS'Y-CONDENSER	2X24, D-5, 1.7mm	1	
9	DB90 - 40176B	ASS'Y-COVER CONTROL	AS-126/1210	1	
10	DB64 - 60160C	CABINET-SIDE	SECC-P, SC-90073T	1	
11	DB90 - 10616D	ASS'Y-CABI, UP	ADH2400E, ASS'Y	1	
12	DB95 - 10057G	ASS'Y-COMP, SCROLL	ZR28K3-PFJ	1	
	DB95 - 10057V	ASS'Y-COMP-SCROLL	ZR28K3E-PFJ	1	CH24CA
12-1	DB73 - 10023A	GROMMET COMP	EPDM, T41, BLK	4	
12-2	DB60 - 30028A	NUT-WASHER	HEX, 2C, M8, ZPC	4	
13	DB96 - 00177A	ASS'Y-TUBE 4WAY V/V	ADH2400E, 5/8"	1	
	DB96 - 00177B	ASS'Y-TUBE 4WAY V/V	CH24CA	1	CH24CA
13-1	DB62 - 40055F	VALVE-SERVICE	5/8"	1	
	DB62 - 00424A	VALVE-SERVICE	5/8"	1	CH24CA
13-2	DB62 - 40036A	VALVE-4WAY	ASS'Y	1	
	DB62 - 00261A	VALVE-4WAY	RANCO	1	CH24CA
13-3	DB34 - 00004A	SWITCH-PRESSURE	ASS'Y	1	
14	DB96 - 00178A	ASS'Y-TUBE, CHECK, V/V	ADH2400E, 3/8"	1	
	DB96 - 00476A	ASS'Y-TUBE, CHECK, V/V	CH24CA	1	CH24CA
14-1	DB62 - 00217A	TUBE-CAPILLARY CHECK	C1220T-0, ID2.0X700	1	
	DB62 - 00218A	TUBE-CAPILLARY CHECK	ID2.0X500	1	CH24CA
14-2	DB62 - 40011G	VALVE-SERVICE	3/8"	1	CH24CA
	DB62 - 00425A	VALVE-SERVICE 3/8	3/8"	1	CH24CA
14-3	DB62 - 40105D	VALVE-CHECK	CHV0201	1	
15	DB93 - 00250G	ASS'Y-CONTROL BOX	ADH2400E, ASS'Y	1	
15-1	DB34 - 90057C	SWITCH-MAGENT	45CG20ALB	1	
15-2	2501 - 001215	C-OIL	45µF/400V	1	
15-3	DB65 - 40022G	TERMINAL-BLOCK	6P, 600V, 35A	1	
15-4	PD - DH2400 - S0	ASS'Y-PCB PART	ASS'Y	1	
15-5	DB61 - 00152A	CASE-PCB, OUT	T2.5, ABS, BLK	1	
15-6	DB26 - 10070A	TRANS-POWER	DC17, AC230	1	
15-7	2301 - 001369	CAPACITOR MOTOR	3µF, EAF45305	1	
16	DB72 - 00122A	CLOTH-SOUND, COMP	T12, W800, L350	1	
17	DB96 - 00477A	ASS'Y DRIER	CH24CA	1	CH24CA
17-1	DB62 - 00426A	TUBE DRIER	NEW REFRIGERANT	1	

• 36K/44K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■ Outdoor Unit Parts list (36K/44K)

NO	CODE NO	Description	Specification	UCH3600G CH36ZAX	UCH4400G CH44ZAX	CH36CAX	CH44CAX	Remark
1	DB90-10565A	ASSY-CABI OUT AIR	SC-91438T	1	1	1	1	
2	DB63-30028C	GUARD-INLET	SC-91438T	1	1	1	1	
3	DB67-50067A	FAN-PROPELLER	ABS+GF20, D495	2	2	2	2	
4	DB31-00060A	MOTOR FAN UP	OSME-1146SRC	-	1	-	1	
	DB31-00060B		OSME-686SRC	1	-	1	-	
5	DB31-00060C	MOTOR FAN LOW	OSME-1146SRC	-	1	-	1	
	DB31-00060D		OSME-686SRC	1	-	1	-	
6	DB90-30028E	ASSY-MOUNT MOTOR OUT	SC-91438T	1	1	1	1	
7	DB61-40088A	HOLDER-FRAME	SGCC1, T1.6	1	1	1	1	
8	DB93-00317A	ASSY CONTROL OUT	3P380V50HZ, 44K	-	1	-	1	
	DB31-00317B		3P380V50HZ, 36K	1	-	1	-	
8-1	DB26-10070A	TRANS-POWER	DC17, AC230	1	1	1	1	
8-2	DB34-90090A	SWITCH-MAGNET	FURNAS	1	1	1	1	
8-3	2301-001367		6µF, EAF45605	2	2	2	2	
8-4	DB65-40022H	TERMINAL BLOCK	600V35A, 9P	1	1	1	1	
9	DB67-30025A	PARTITION	SGCCM T1.0	1	1	1	1	
10	DB90-20085K	ASSY BASE OUT	SGCCM T1.0	1	1	1	1	
11	DB96-00309A	ASSY CHECK V/V	ASSY	-	1	-	-	
	DB96-00356A	ASSY CHECK V/V	ASSY	1	-	-	-	
	DB96-00575A	ASSY CHECK V/V	ASSY	-	-	1	-	
11-1	DB62-40018A	VALVE CHECK	4/8", C1220T	1	1	1	1	
11-2	DB62-40011F	VALVE SVC	3/8"	1	1	-	-	
	DB62-00425B	VALVE SVC	3/8"	-	-	1	1	
12	DB96-00304A	ASSY-4WAY V/V	UCH4400G, -	-	1	-	-	
	DB96-00543A		CH44CA	-	-	-	1	
	DB96-00363A		UCH3600G	1	-	-	-	
	DB96-00363B		CH36CA	-	-	1	-	
12-1	DB34-00004A	SWITCH-PRESSURE	OFF33KG/cm^2	1	1	1	1	
12-2	DB62-40019A	VALVE-4WAY	ASSY 3/4"	1	1	1	1	
12-3	DB62-40092A	VALVE-SERVICE	VALVE 3/4"	1	1	-	-	
	DB62-00450A	VALVE-SERVICE	VALVE 3/4"	-	-	1	1	
13	DB90-10582A	ASSY-CABI OUT SD	SC-91438T	1	1	1	1	
14	DB90-10085B	ASSY-CABI OUT UP SD	SC-91438T	1	1	1	1	
15	DB72-00236A	INSULATION-SOUND	T12	-	1	-	1	
	DB72-00237A		T12	1	-	1	-	
16	DB95-10057J	ASSY-COMP-SCROLL	ZR61KC-TFD, SCROLL	-	1	-	-	
	DB95-10057X	ASSY-COMP-SCROLL	ZR61KCE-TFD, SCROLL	-	-	-	1	
	DB95-10057H	ASSY-COMP-SCROLL	ZR47KC-TFD, SCROLL	1	-	-	-	
	DB95-10057W	ASSY-COMP-SCROLL	ZR47KCE-TFD, SCROLL	-	-	1	-	
17	DB73-10023A	GROMMET-COMP	EPDM	4	4	4	4	
18	DB96-00313A	ASSY COND-UP	UCH4400G	-	1	-	1	
	DB96-00357A		UCH3600G	1	-	1	-	
19	DB96-00312A	ASSY COND-LOW	UCH4400G	-	1	-	-	
	DB96-00313A	ASSY COND-LOW	CH44CA	-	-	-	1	
	DB96-00358A	ASSY COND-LOW	UCH3600G	1	-	1	-	
20	DB90-00194A	ASSY-PLATE TOP	SC-91438T	1	1	1	1	
21	DB63-30110C	SCREEN-GUARD	P.E.H 100%	1	1	1	1	
22	DB67-90017B	HANDLE	ABS	2	2	2	2	
23	DB32-00021B	THERMISTOR	103AT, 10KOHM	1	1	1	1	
24	DB95-30013F	ASSY HEATER-COMP	SCH80W	-	1	-	1	
	DB95-30013G		SCH40W	1	-	1	-	
25	PD-DH3200-S2	ASSY PCB PARTS:ADH44	OUTDOOR PCB	1	1	1	1	
26	DB96-00542A	ASS'Y TUBE DRYER	ASS'Y	-	-	1	1	

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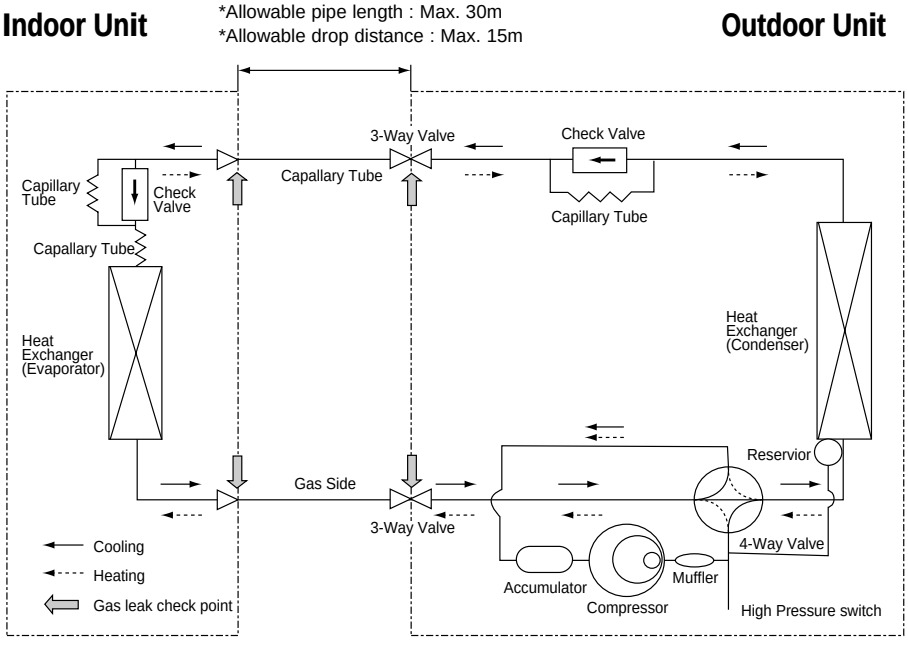
8. Block Diagrams

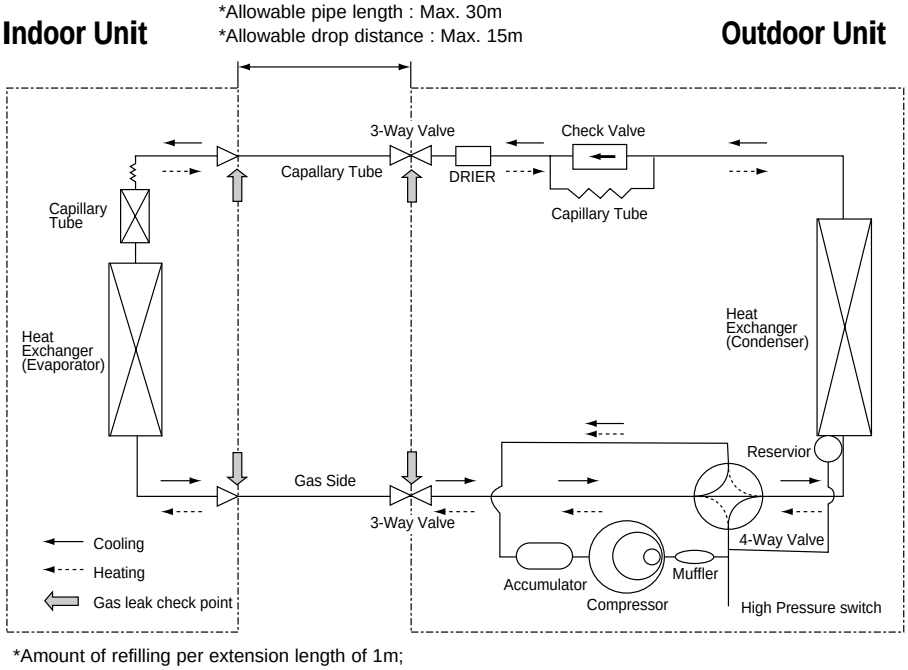
8-1 Refrigerating Cycle Block Diagram

•Model : ACH1800E, ACH2400E, CH18ZA, CH24ZA



*Amount of refilling per extension length of 1m;
When extending the pipe length by more than 5m, 40gr(50gr: Outdoor Unit is higher than Indoor Unit) of R-22 refrigerant should be refilled per extension length of 1m.

•Model : CH18CA, CH24CA

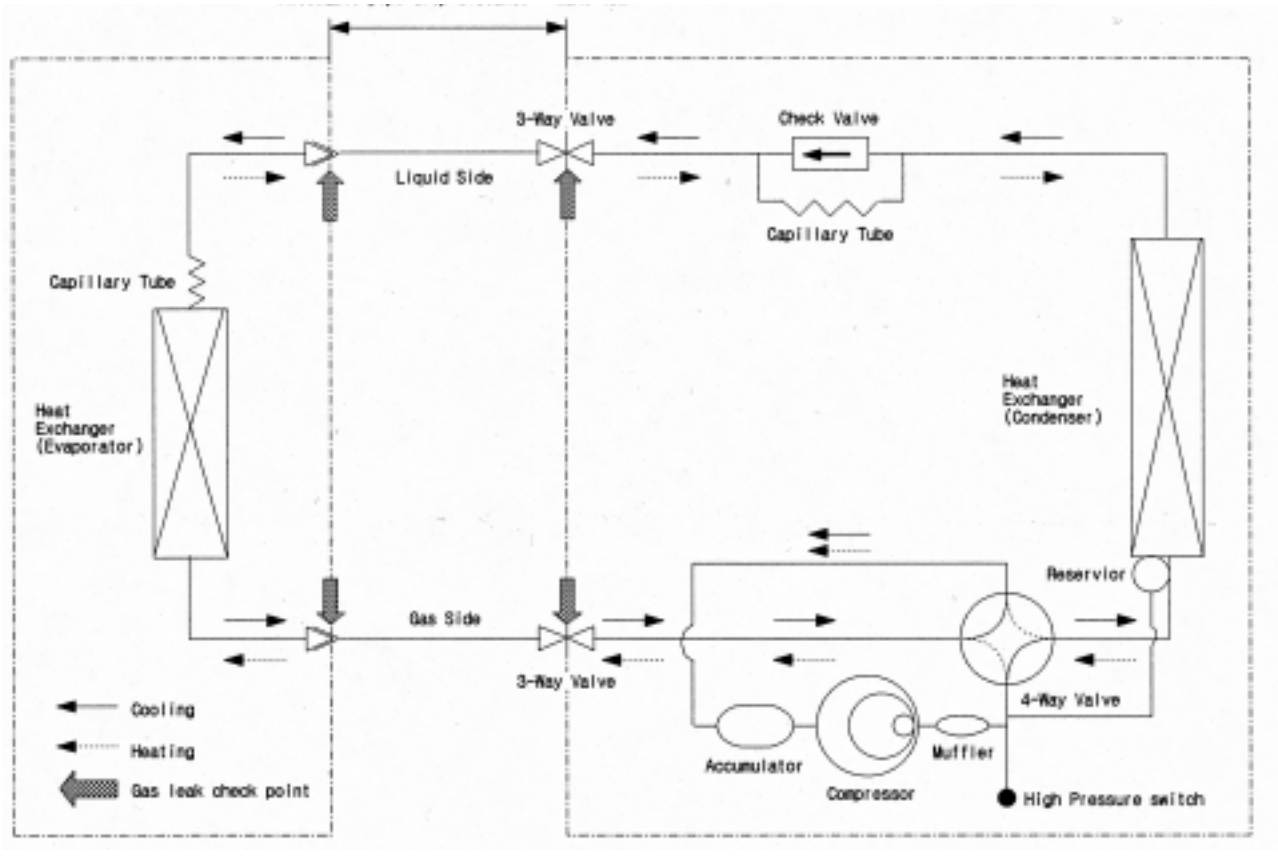


*Amount of refilling per extension length of 1m;
When extending the pipe length by more than 5m, 50g of R-407C refrigerant should be refilled per extension length of 1m.

• Model : ACH3600G, ACH4400G, CH36ZA, CH44ZA, CH36CA, CH44CA

Indoor Unit **Outdoor Unit**

*Allowable pipe length : Max. 50m
*Allowable drop distance : Max. 25m



*Amount of refilling per extension length of 1m;

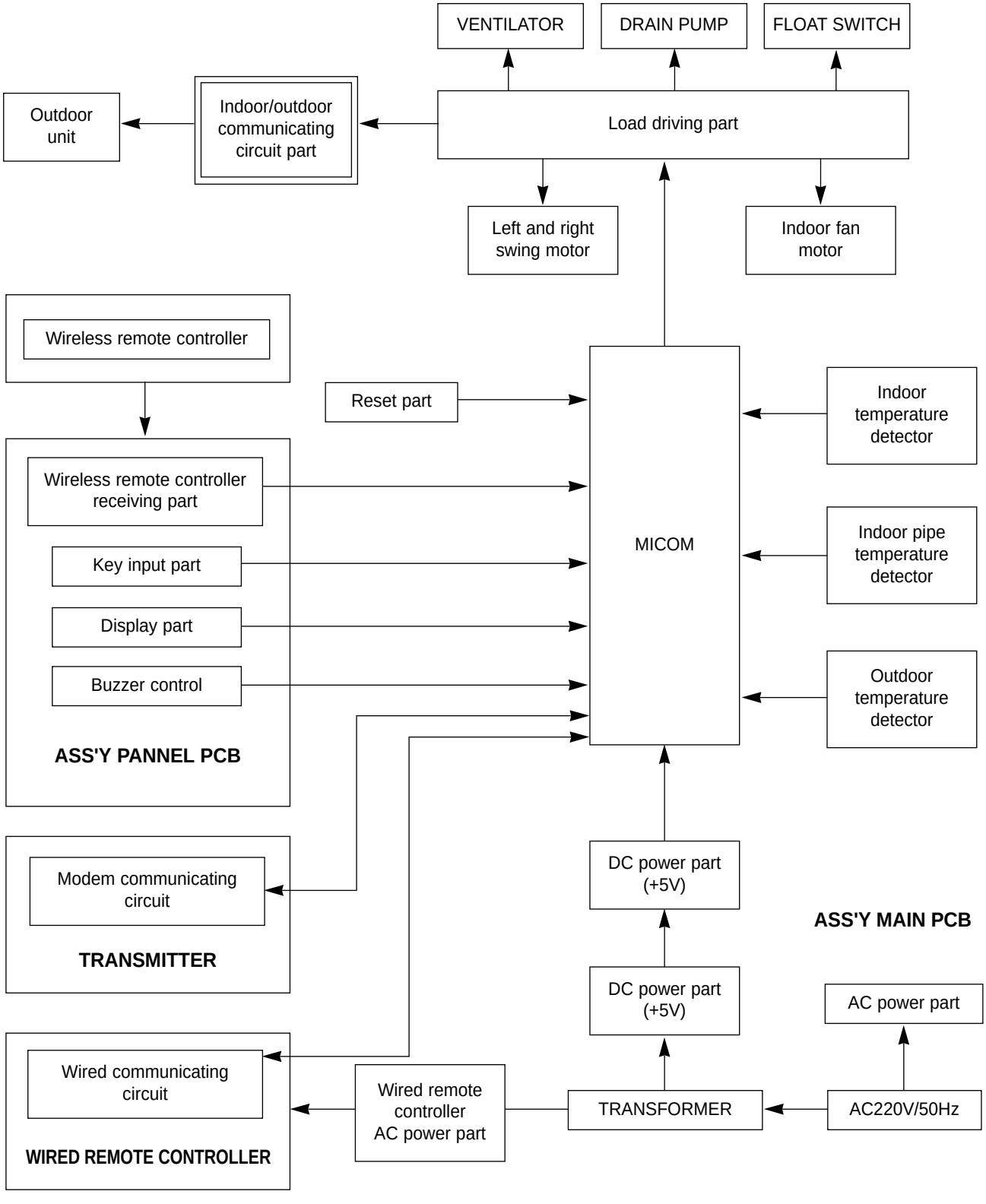
When extending the pipe length by more than 5m, 50gr(35gr: Outdoor Unit is higher than Indoor Unit) of R-22 refrigerant should be refilled per extension length of 1m. : ACH4400G, CH44ZA

When extending the pipe length by more than 5m, 60gr(45gr: Outdoor Unit is higher than Indoor Unit) of R-22 refrigerant should be refilled per extension length of 1m. : ACH3600G, CH36ZA

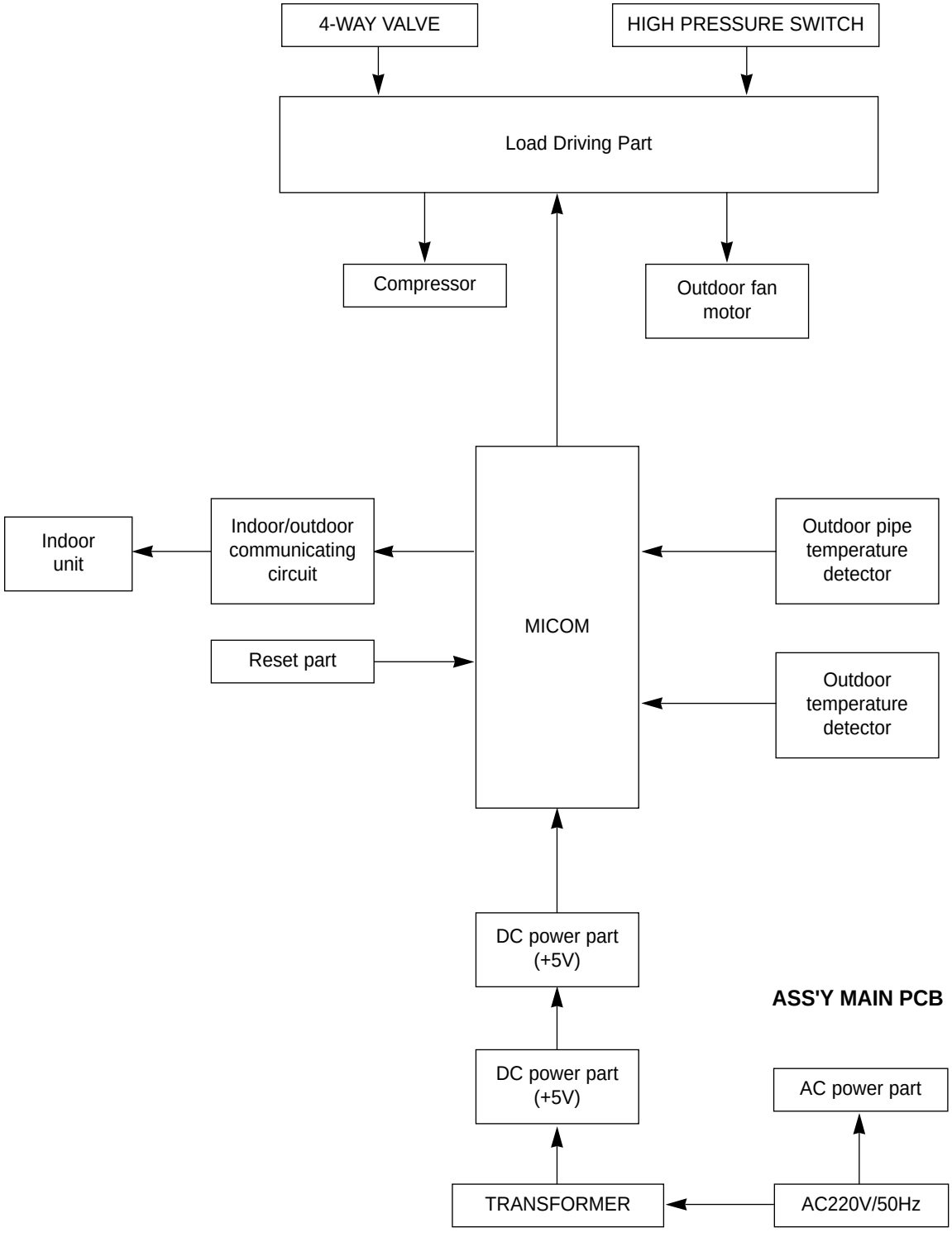
When extending the pipe length by more than 5m, 40gr(40gr: Outdoor Unit is higher than Indoor Unit) of R407C refrigerant should be refilled per extension length of 1m. : CH44CA

When extending the pipe length by more than 5m, 45gr(40gr: Outdoor Unit is higher than Indoor Unit) of R407C refrigerant should be refilled per extension length of 1m. : CH36CA

8-2 Micom control system configuration (indoor unit)



8-3 Micro Computer Block Diagram - Outdoor



8-4 THERMISTOR

THERMISTOR MODEL : 103AT			
THMPERATURE [˚C]	THERMISTOR [Kohm]	THMPERATURE [˚C]	THERMISTOR [Kohm]
70	2.229		
69	2.296	29	8.622
68	2.365	28	8.944
67	2.437	27	9.281
66	2.512	26	9.632
65	2.589	25	10
64	2.669	24	10.380
63	2.752	23	10.780
62	2.838	22	11.200
61	2.928	21	11.630
60	3.021	20	12.090
59	3.116	19	12.560
58	3.216	18	13.060
57	3.319	17	13.570
56	3.426	16	14.120
55	3.537	15	14.680
54	3.652	14	15.280
53	3.772	13	15.900
52	3.897	12	16.550
51	4.026	11	17.240
50	4.161	10	17.960
49	4.300	9	18.700
48	4.444	8	19.480
47	4.594	7	20.290
46	4.749	6	21.150
45	4.912	5	22.050
44	5.080	4	22.990
43	5.256	3	23.990
42	5.439	2	25.030
41	5.630	1	26.130
40	5.828	0	27.280
39	6.033	-1	28.470
38	6.246	-2	29.720
37	6.468	-3	31.040
36	6.699	-4	32.430
35	6.941	-5	33.890
34	7.192	-6	35.430
33	7.455	-7	37.050
32	7.729	-8	38.760
31	8.015	-9	40.560
30	8.313		

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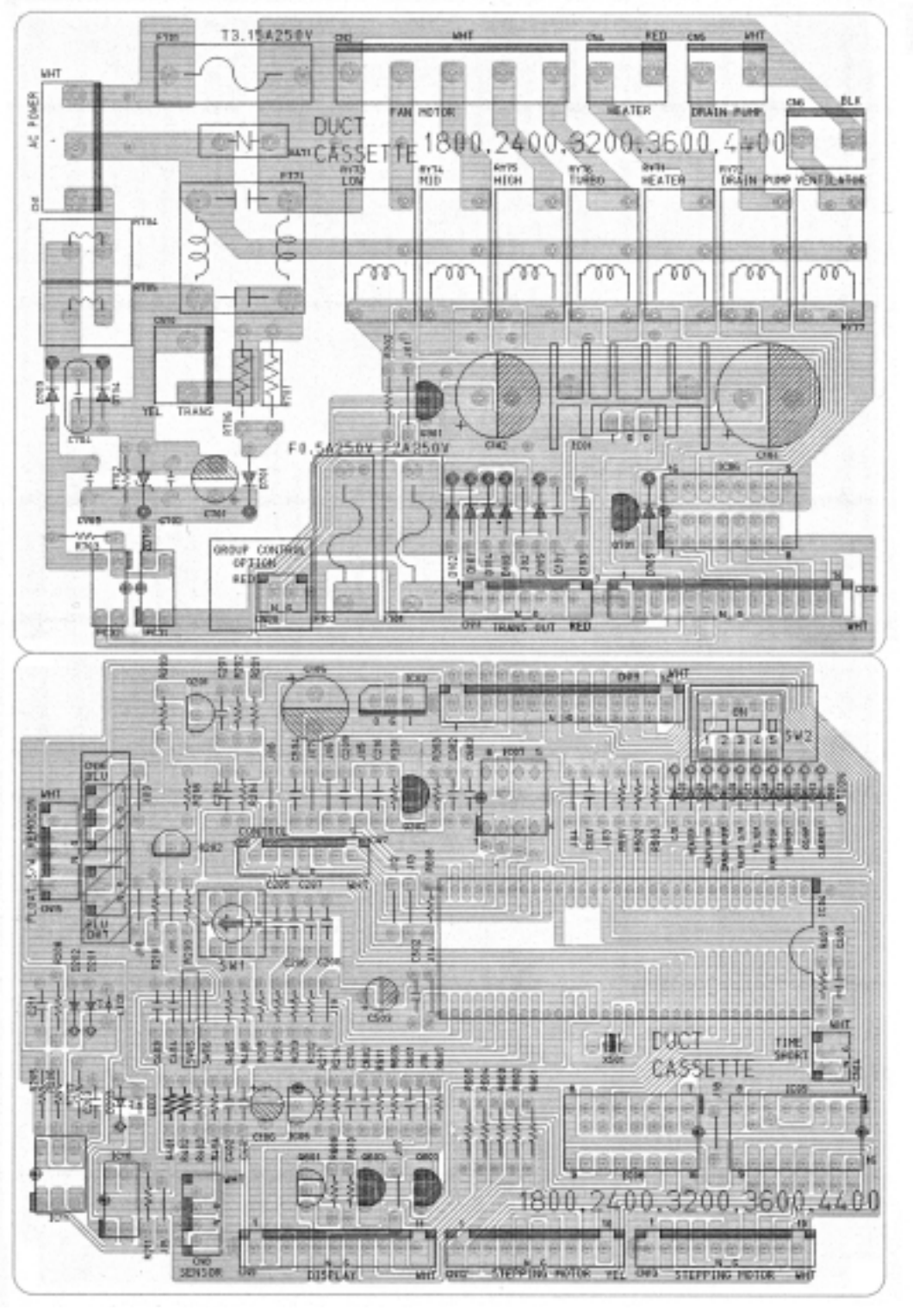
9. PCB Diagrams

9-1 Main PCB

9-1-1 Indoor Unit (18K/24K)

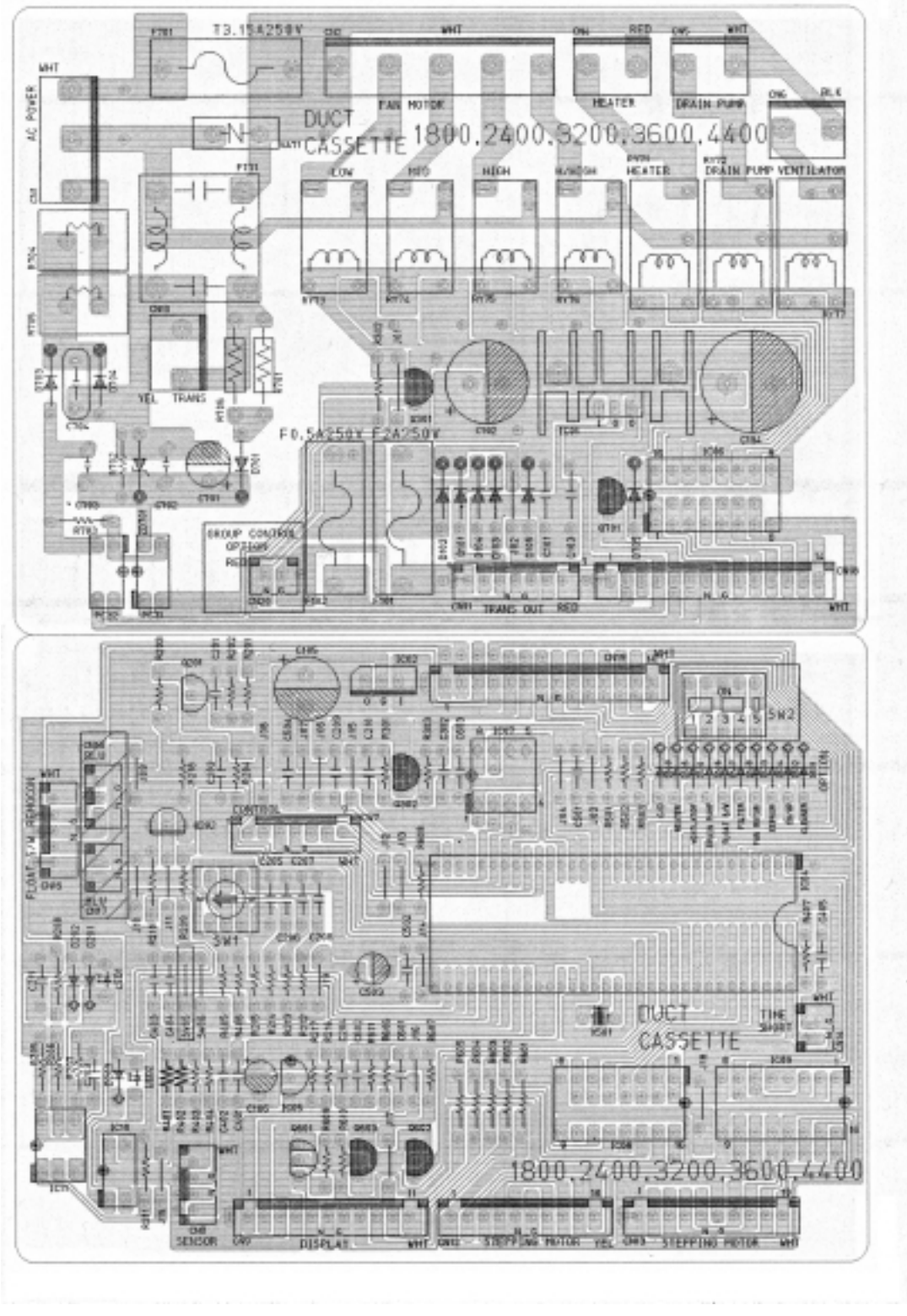


■ Indoor Part List (ACH1800, CH18ZA, CH18CA, ACH2400, CH24ZA, CH24CA) : PD-DH2400-01

Mark	Parts Name	Specification
J01, J02, J04 - J19,SW05,SW05	JUMP WIRE	PI 0.6 SN T 52MM
IC04	IC-MCU	UPD780032
IC06,IC08,IC09	IC-LINEAR	KA2657
IC07	IC-EEPROM	93LC56B-I/P
IC05	IC-RESET	KA7533
PC31,PC32,IC10	PHOTO-COUPLER	PC817
IC02	IC-VOLTAGE-REG	KA7805
IC01	IC-VOLTAGE-REG	KA7812
IC11	PHOTO-THYRISTOR	S12MD1V
X501	CERAMIC-RESONATOR	4MHz CST4MTW TC
D101 - D105,D701,D703,D704,D705	DIODE-RECTIFIER	1N4007
ZD701	DIODE-ZENER	ZD24
C/D,HEATER,VENTLATOR,DRAIN PUMP	DIODE-SWITCHING	1N4148M,100V
FLOAT S/W,FILTER,FAN MOTOR,EEPROM	“	“
CLEANER,D201-D203	“	“
CN18,CN19	CONNECTOR-HEADER	SMW250-14-WHT
CN13	CONNECTOR-HEADER	SMW250-10-WHT
CN12	CONNECTOR-HEADER	SMW250-10-YEL
CN9	CONNECTOR-HEADER	SMW250-11-WHT
CN11	CONNECTOR-HEADER	SMW250-07-RED
CN8	CONNECTOR-HEADER	SMW250-04-WHT
CN14	CONNECTOR-HEADER	SMW250-02-WHT
CN7	CONNECTOR-HEADER	SMW250-07-WHT
CN20	CONNECTOR-HEADER	SMW250-02-RED
CN15	CONNECTOR-HEADER	SMW250-05-WHT
CN5	CONNECTOR HEADER	YW396-03AV-WHT
CN2	CONNECTOR HEADER	YW396-09AV-WHT
CN10	CONNECTOR HEADER	YW396-03AV-YEL
CN1	CONNECTOR HEADER	YW396-05AV-WHT
CN6	CONNECTOR HEADER	YW396-03AV-BLK
Q601	TR-SMALL	A708,NPN
Q201	TR-SMALL	KSC945,NPN
Q301,Q701,Q302,Q602,Q603	TR-DIGITAL	KSR1002
Q202	TR-DIGITAL	KSR2002
LED1	LED-LAMP	RED
LED2	LED-LAMP	GREEN
C702,C703	C-FILM	DISK,4.7NF
C602	C-CERAMIC	AXIAL,4.7NF(472)
C101,C103,C105,C209,C210,C501,C302,C603	C-CERAMIC	AXIAL,100NF(104)
C205-C208,C402-C404,C502,C204,C405	-	-
C202,C203	C-CERAMIC	AXIAL,10NF(103)
C704	C-FILM	DISK,10NF(103)
C601	C-CERAMIC	AXIAL,101
C211	C-CERAMIC	AXIAL,1NF(102)
C102	C-AL	1000uF/35V
C104	C-AL	2200uF/25V
C105	C-AL	470uF/25V
C106	C-AL	1uF/16V

Mark	Parts Name	Specification
C503,C701	C-AL	100uF/16V
R201,R218,R501-R503,R608,R405,R406,R215	R-CARBON	10K-J 1/8W
R212-R214,R607,R610,R407	-	-
R302	R-CARBON	1K-J 1/4W
R203,R204,R301,R217,R216,R609	R-CARBON	1K-J 1/8W
R202	R-CARBON	3.3K-J 1/8W
R209	R-CARBON	12K-J 1/8W
R207	R-CARBON	27K-J 1/4W
R210,R208	R-CARBON	2.4K-J 1/4W
R211	R-CARBON	330-J 1/4W
R601-R605	R-CARBON	330-J 1/2W
R403,R404,R606	R-CARBON	330-J 1/8W
R401, R402	R-METAL	6.8K-F 1/8W
R611	R-CARBON	100K-J 1/8W
R205, R205	R-CARBON	10-J 1/4W
R703	R-CARBON	4.7K-J 1/4W
R706, 701	R-CARBON	100K-J 2W
R702	R-CARBON	100K-J 1/4W
R704, R705	R-CELENT	10K-J 5W
RY72 ~ RY77	RELAY-MINIATURE	JQ1A-12V
F701	FUSE	T3.15A 250V
HOLDER	HOLDER	FH-51H 7.5A
F101	FUSE	F2A250V
HOLDER	HOLDER	FH-51M 7.5A
F102	FUSE	F0.5A 250
HOLDER	HOLDER	FH-51M 7.5A
FT71	NOISE FILTER	HP1-P16
VA71	VARISTOR	1NR14D471

• **Indoor Unit (18K/24K/36K/44K)**

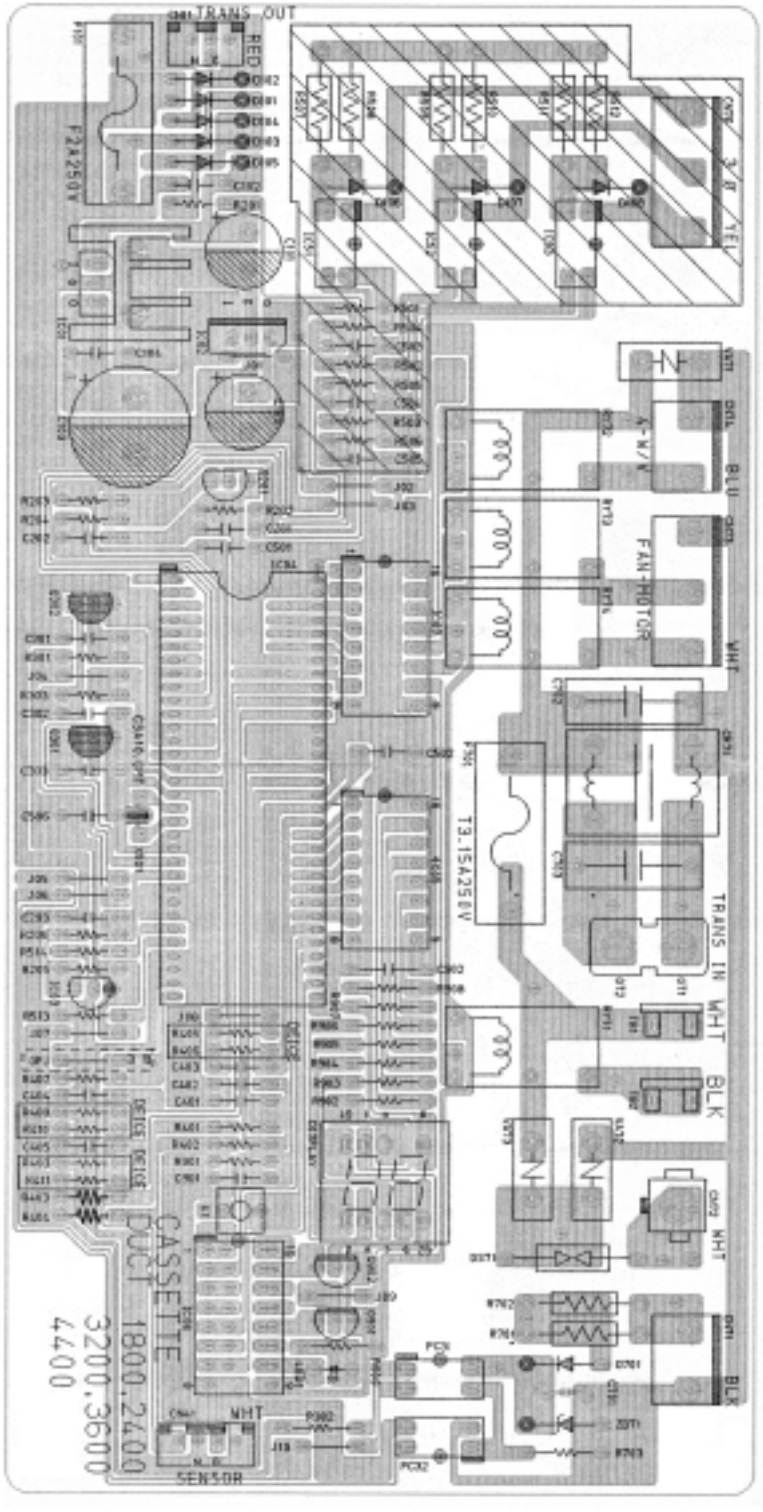


■ Indoor Part List (ACH1800, CH18ZA, CH18CA, ACH2400, CH24ZA, CH24CA, ACH3600, CH36ZA, ACH4400, CH44ZA) : PD-DH3200-01

Mark	Parts Name	Specification
J01, J02, J04 - J19,SW05,SW05	JUMP WIRE	PI 0.6 SN T 52MM
IC04	IC-MCU	UPD780032
IC06,IC08,IC09	IC-LINEAR	KA2657
IC07	IC-EEPROM	93LC56B-I/P
IC05	IC-RESET	KA7533
PC31,PC32,IC10	PHOTO-COUPLER	PC817
IC02	IC-VOLTAGE-REG	KA7805
IC01	IC-VOLTAGE-REG	KA7812
IC11	PHOTO-THYRISTOR	S12MD1V
X501	CERAMIC-RESONATOR	4MHz CST4MTW TC
D101 - D105,D701,D703,D704,D705	DIODE-RECTIFIER	1N4007
ZD701	DIODE-ZENER	ZD24
D501,D503 - D510,D201-D203	DIODE-SWITCHING	1N4148M,100V
CN18,CN19	CONNECTOR-HEADER	SMW250-14-WHT
CN13	CONNECTOR-HEADER	SMW250-10-WHT
CN12	CONNECTOR-HEADER	SMW250-10-YEL
CN9	CONNECTOR-HEADER	SMW250-11-WHT
CN11	CONNECTOR-HEADER	SMW250-07-RED
CN8	CONNECTOR-HEADER	SMW250-04-WHT
CN14	CONNECTOR-HEADER	SMW250-02-WHT
CN7	CONNECTOR-HEADER	SMW250-07-WHT
CN20	CONNECTOR-HEADER	SMW250-02-RED
CN15	CONNECTOR-HEADER	SMW250-05-WHT
CN5	CONNECTOR HEADER	YW396-03AV-WHT
CN2	CONNECTOR HEADER	YW396-09AV-WHT
CN10	CONNECTOR HEADER	YW396-03AV-YEL
CN1	CONNECTOR HEADER	YW396-05AV-WHT
CN6	CONNECTOR HEADER	YW396-03AV-BLK
Q601	TR-SMALL	A708,NPN
Q201	TR-SMALL	KSC945,NPN
Q301,Q701,Q302,Q602,Q603	TR-DIGITAL	KSR1002
Q202	TR-DIGITAL	KSR2002
LED1	LED-LAMP	RED
LED2	LED-LAMP	GREEN
C702,C703	C-FILM	DISK,4.7NF
C602	C-CERAMIC	AXIAL,4.7NF(472)
C101,C103,C105,C209,C210,C501,C302,C603	C-CERAMIC	AXIAL,100NF(104)
C205-C208,C402-C404,C502,C204,C405	-	-
C202,C203	C-CERAMIC	AXIAL,10NF(103)
C704	C-FILM	DISK,10NF(103)
C601	C-CERAMIC	AXIAL,101
C211	C-CERAMIC	AXIAL,1NF(102)
C102	C-AL	1000uF/35V
C104	C-AL	2200uF/25V
C105	C-AL	470uF/25V
C106	C-AL	1uF/16V
C503,C701	C-AL	100uF/16V
R201,R218,R501-R503,R608,R405,R406,R215	R-CARBON	10K-J 1/8W

Mark	Parts Name	Specification
R212-R214,R607,R610,R407	-	-
R302	R-CARBON	1K-J 1/4W
R203,R204,R301,R217,R216,R609	R-CARBON	1K-J 1/8W
R202	R-CARBON	3.3K-J 1/8W
R209	R-CARBON	12K-J 1/8W
R207	R-CARBON	27K-J 1/4W
R210,R208	R-CARBON	2.4K-J 1/4W
R211	R-CARBON	330-J 1/4W
R601-R605	R-CARBON	330-J 1/2W
R403,R404,R606	R-CARBON	330-J 1/8W
R401, R402	R-METAL	6.8K-F 1/8W
R611	R-CARBON	100K-J 1/8W
R205, R206	R-CARBON	10-J 1/4W
R703	R-CARBON	4.7K-J 1/4W
R706, 701	R-CARBON	100K-J 2W
R702	R-CARBON	100K-J 1/4W
R704, R705	R-CELENT	10K-J 5W
RY72 ~ RY77	RELAY-MINIATURE	JQ1A-12V
RY73 ~ RY76	RELAY-MINIATURE	CS11-12SH
F701	FUSE	T3.15A 250V
HOLDER	HOLDER	FH-51H 7.5A
F101	FUSE	F2A250V
HOLDER	HOLDER	FH-51M 7.5A
F102	FUSE	F0.5A 250
HOLDER	HOLDER	FH-51M 7.5A
FT71	NOISE FILTER	HP1-P16
VA71	VARISTOR	1NR14D471

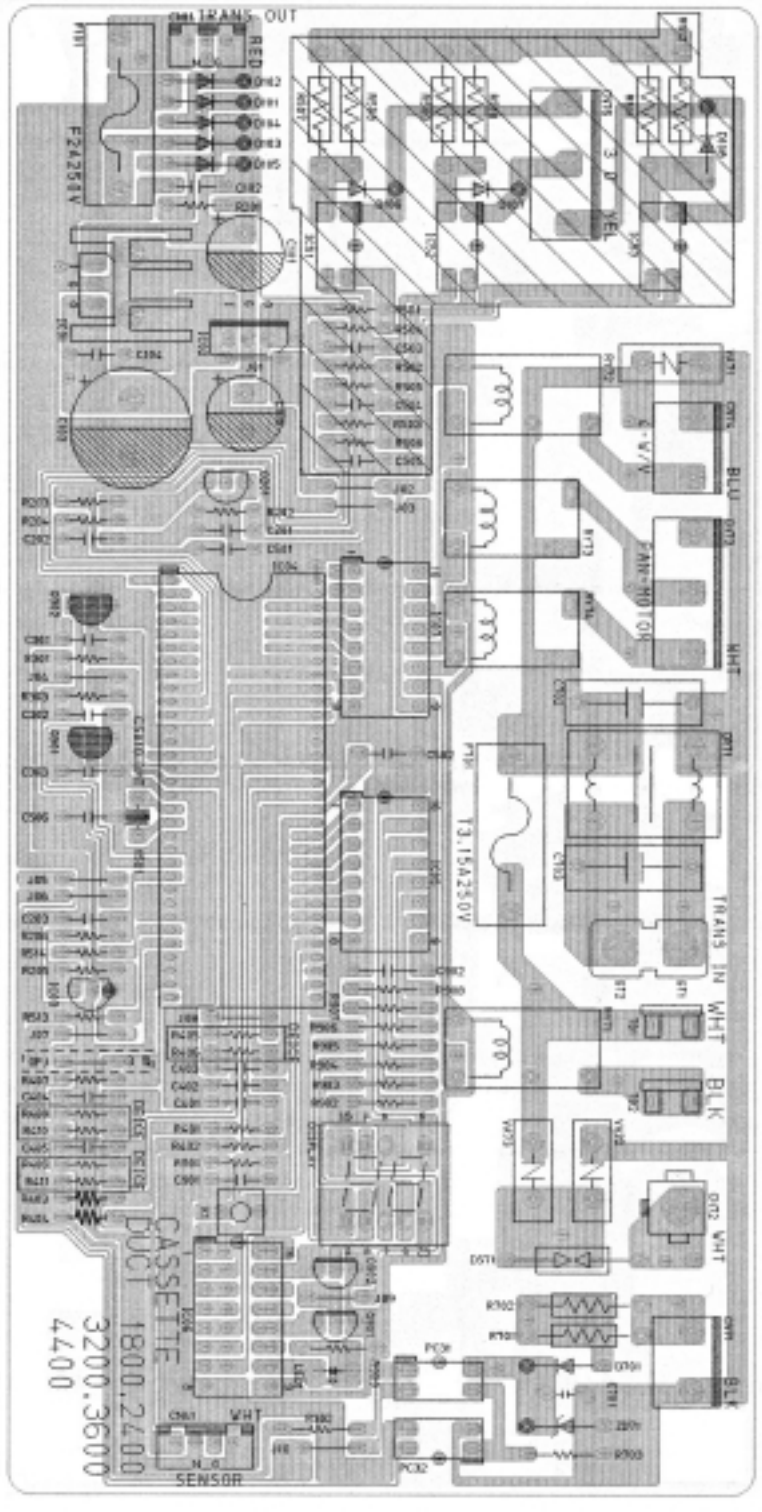
9-1-2 Outdoor Unit (18K/24K)



■ Outdoor Part List (ACH1800E, CH18CA, ACH2400E, CH24CA) : PD-DH2400-S0

Mark	Parts Name	Specification
J01-J03,J05-J10,OPJ	JUMP WIRE	PI 0.6 SN T 52MM
IC4	IC-MCU	KS88C46
IC05-IC07	IC-LINEAR	KA2657
PC31,PC32	PHOTO-COUPLER	PC817
IC03	IC-RESET	KA7533
IC02	IC-VOLTAGE-REG	KA7805
IC01	IC-VOLTAGE-REG	KA7812
X501	CERAMIC-RESONATOR	10MHz
D101-D105,D701	DIODE-RECTIFIER	1N4007
ZD71	DIODE-ZENER	ZD30
Q301,Q302	TR-DIGITAL	KSR1002
Q901,Q902	TR-DIGITAL	KSR2002
Q201	TR-SIGNAL	C945Y
LED1	LED-LAMP	RED
C701	C-FILM	DISK,4.7NF
C702,C703	C-X2	X-CAP,100NF(X2)
C502,C902,C201,C501,C104	C-CERAMIC	AXIAL,100NF(104)
C401-C403,C901,C202,C303	-	-
C506,C203,C404,C405,C102	-	-
C302	C-CERAMIC	AXIAL,1NF(102)
C101	C-AL	1000uF/35V
C103	C-AL	2200uF/25V
C105	C-AL	470uF/25V
R201,R901,R514,R513,R407	R-CARBON	10K-J 1/8W
R409	-	-
R405,R203,R204,R206,R205, R411	R-CARBON	1K-J 1/8W
R410	-	-
R406,R408, R409	R-CARBON	3.9K-J 1/8W
R703	R-CARBON	4.7K-J 1/4W
R301	R-CARBON	620-J 1/8W
R302	R-CARBON	470 1/4W
R902-R909	R-CARBON	470 1/2W
R303	R-CARBON	12K-J 1/8W
R202	R-CARBON	3.3K-J 1/8W
R401,R402	R-CARBON	330-J 1/8W
R403,R404	R-METAL	18K-F 1/8W
R701,R702	R-CARBON	5.6K 2W
RY71-RY74	RELAY-MINIATURE	JQ1a-12V
F101	FUSE	FST,250V,2A
F701	FUSE	FST,250V,3.15A
-	FUSE HOLDER	FH-51H 7.5A
-	HEAT SINK	A6063,L30LW23.5
CR71	COIL	L4460
VA71	VARISTOR	470V,4500A
CN73	CONNECTOR HEADER	YW396-05AV-WHT
CN71	CONNECTOR HEADER	YW396-03AV-BLK
CN74	CONNECTOR HEADER	YW396-03AV-BLU
CN41	CONNECTOR HEADER	SMW250-04-WHT
CN11	CONNECTOR HEADER	SMW250-03-RED
CN72	CONNECTOR HEADER	YDW236-01-WHT
GT1,GT2	GT PIN	GTP
TB1,TB2	TERMINAL	1P,TAB
K1	SWITCH	TACT
DISPLAY	7-SEG	2-DIGIT
DS71	DISCHARGER	MP-332MA

• **Outdoor Unit (18K/24K/36K/44K)**



■ Outdoor Part List (PD-DH3200-S1(Cassette))

Mark	Parts Name	Specification
J01-J03,J05-J10,OPJ	JUMP WIRE	PI 0.6 SN T 52MM
IC4	IC-MCU	KS88C46
IC05-IC07	IC-LINEAR	KA2657
PC31,PC32	PHOTO-COUPLER	PC817
IC03	IC-RESET	KA7533
IC02	IC-VOLTAGE-REG	KA7805
IC01	IC-VOLTAGE-REG	KA7812
X501	CERAMIC-RESONATOR	10MHz
D101-D105,D701	DIODE-RECTIFIER	1N4007
ZD71	DIODE-ZENER	ZD30
Q301,Q302	TR-DIGITAL	KSR1002
Q901,Q902	TR-DIGITAL	KSR2002
Q201	TR-SIGNAL	C945Y
LED1	LED-LAMP	RED
C701	C-FILM	DISK,4.7NF
C702,C703	C-X2	X-CAP,100NF(X2)
C502,C902,C201,C501,C104	C-CERAMIC	AXIAL,100NF(104)
C401-C403,C901,C202,C303	-	-
C506,C203,C404,C405,C102	-	-
C302	C-CERAMIC	AXIAL,1NF(102)
C101	C-AL	1000uF/35V
C103	C-AL	2200uF/25V
C105	C-AL	470uF/25V
R201,R901,R514,R513,R407	R-CARBON	10K-J 1/8W
R409	-	-
R405,R203,R204,R206,R205,R411	R-CARBON	1K-J 1/8W
R410	-	-
R406,R408,R409	R-CARBON	3.9K-J 1/8W
R703	R-CARBON	4.7K-J 1/4W
R301	R-CARBON	620-J 1/8W
R302	R-CARBON	470 1/4W
R902-R909	R-CARBON	470 1/2W
R303	R-CARBON	12K-J 1/8W
R202	R-CARBON	3.3K-J 1/8W
R401,R402	R-CARBON	330-J 1/8W
R403,R404	R-METAL	18K-F 1/8W
R701,R702	R-CARBON	5.6K 2W
RY71,RY74	RELAY-MINIATURE	JQ1a-12V
RY72,RY73	RELAY-MINIATURE	CS11-12SH
F101	FUSE	FST,250V,2A
F701	FUSE	FST,250V,3.15A
-	FUSE HOLDER	FH-51H 7.5A
-	HEAT SINK	A6063,L30LW23.5
CR71	COIL	L4460
VA71	VARISTOR	470V,4500A
CN73	CONNECTOR HEADER	YW396-05AV-WHT
CN71	CONNECTOR HEADER	YW396-03AV-BLK
CN74	CONNECTOR HEADER	YW396-03AV-BLU
CN41	CONNECTOR HEADER	SMW250-04-WHT
CN11	CONNECTOR HEADER	SMW250-03-RED
CN72	CONNECTOR HEADER	YDW236-01-WHT
GT1,GT2	GT PIN	GTP
TB1,TB2	TERMINAL	1P,TAB
K1	SWITCH	TACT
DISPLAY	7-SEG	2-DIGIT
DS71	DISCHARGER	MP-332MA

■ Outdoor Part List (PD-DH3200-S2(Cassette))

Mark	Parts Name	Specification
J01-J03,J05-J10,OPJ	JUMP WIRE	PI 0.6 SN T 52MM
IC4	IC-MCU	KS88C46
IC05-IC07	IC-LINEAR	KA2657
PC31,PC32, IC51~IC53	PHOTO-COUPLER	PC817
IC03	IC-RESET	KA7533
IC02	IC-VOLTAGE-REG	KA7805
IC01	IC-VOLTAGE-REG	KA7812
X501	CERAMIC-RESONATOR	10MHz
D101-D108,D701	DIODE-RECTIFIER	1N4007
ZD71	DIODE-ZENER	ZD30
Q301,Q302	TR-DIGITAL	KSR1002
Q901,Q902	TR-DIGITAL	KSR2002
Q201	TR-SIGNAL	C945Y
LED1	LED-LAMP	RED
C701	C-FILM	DISK,4.7NF
C702,C703	C-X2	X-CAP,100NF(X2)
C502,C902,C201,C501,C104	C-CERAMIC	AXIAL,100NF(104)
C401-C403,C901,C202,C303	-	-
C506,C203,C404,C405,C102,C503~C505	-	-
C302	C-CERAMIC	AXIAL,1NF(102)
C101	C-AL	1000uF/35V
C103	C-AL	2200uF/25V
C105	C-AL	470uF/25V
R201,R901,R514,R513,R407	R-CARBON	10K-J 1/8W
R409	-	-
R405,R203,R204,R206,R205,R411	R-CARBON	1K-J 1/8W
R410	-	-
R406,R408,R409	R-CARBON	3.9K-J 1/8W
R703	R-CARBON	4.7K-J 1/4W
R301	R-CARBON	620-J 1/8W
R302	R-CARBON	470 1/4W
R902-R909	R-CARBON	470 1/2W
R507-R512	R-METAL	150K-J 2W
R303	R-CARBON	12K-J 1/8W
R501~R503	R-CARBON	27K-J 1/8W
R202	R-CARBON	3.3K-J 1/8W
R401,R402,R504~R506	R-CARBON	330-J 1/8W
R403,R404	R-METAL	18K-F 1/8W
R701,R702	R-CARBON	5.6K 2W
RY71,RY74	RELAY-MINIATURE	JQ1a-12V
CN76	CONNECTOR HEADER	YW396-05AV-YEL
F101	FUSE	FST,250V,2A
F701	FUSE	FST,250V,3.15A
-	FUSE HOLDER	FH-51H 7.5A
-	HEAT SINK	A6063,L30LW23.5
CR71	COIL	L4460
VA71	VARISTOR	470V,4500A
CN73	CONNECTOR HEADER	YW396-05AV-WHT
CN71	CONNECTOR HEADER	YW396-03AV-BLK
CN74	CONNECTOR HEADER	YW396-03AV-BLU
CN41	CONNECTOR HEADER	SMW250-04-WHT
CN11	CONNECTOR HEADER	SMW250-03-RED
CN72	CONNECTOR HEADER	YDW236-01-WHT
RY72,RY73	RELAY-MINIATURE	CS11-12SH
GT1,GT2	GT PIN	GTP
TB1,TB2	TERMINAL	1P,TAB
K1	SWITCH	TACT
DISPLAY	7-SEG	2-DIGIT
DS71	DISCHARGER	MP-332MA

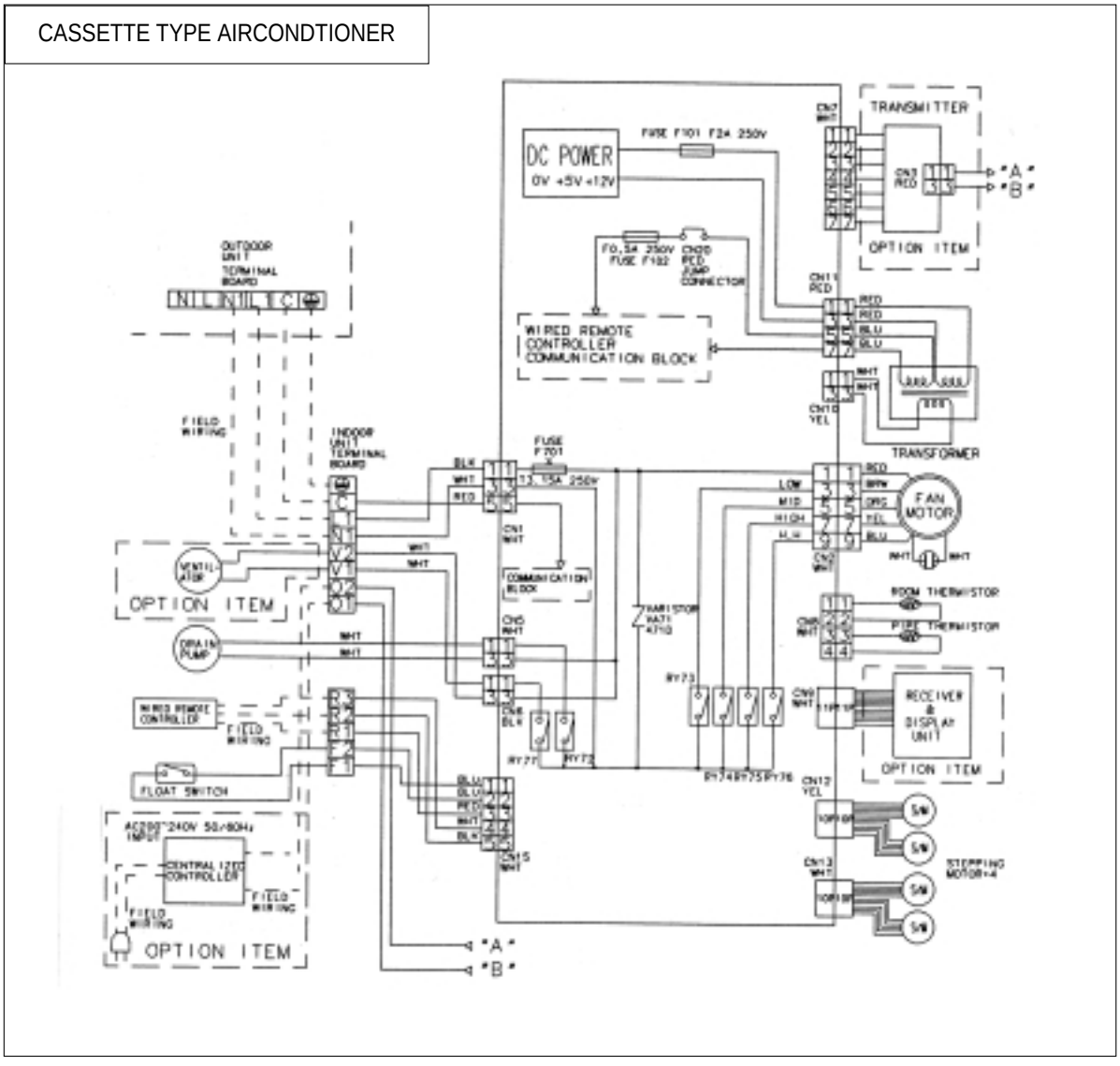
MEMO

10. Wiring Diagrams

10-1 Indoor Unit

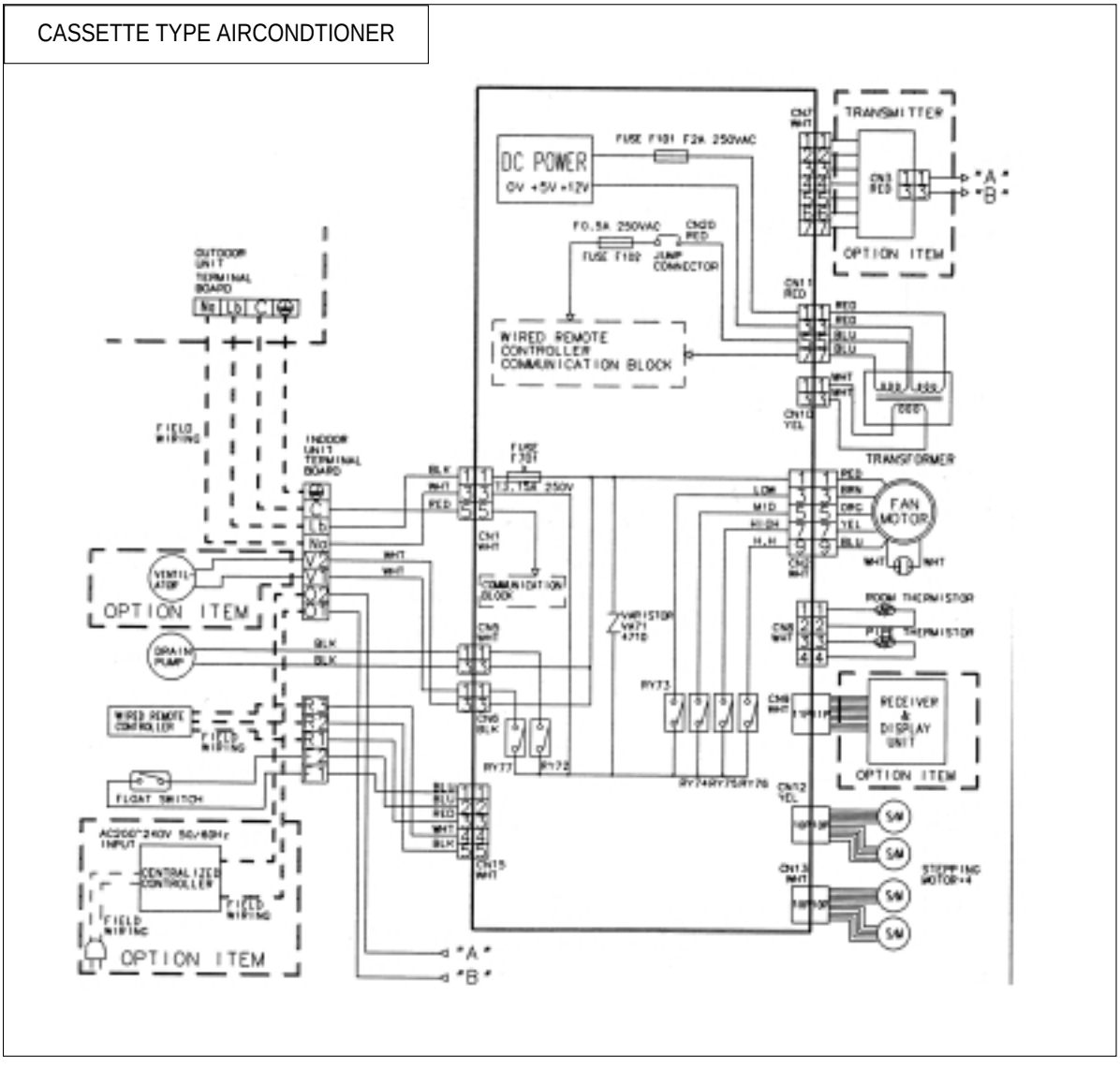
• 18K/24K

CASSETTE TYPE AIRCONDTIONER



• 36K/44K

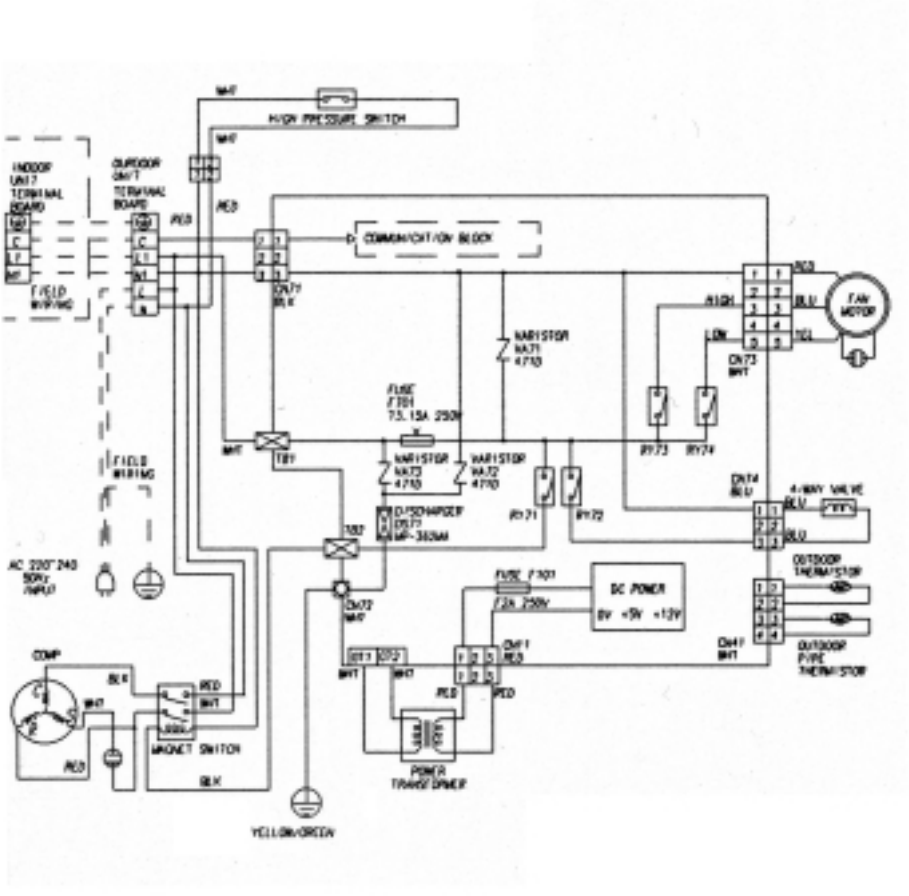
CASSETTE TYPE AIRCONDTIONER



10-2 Outdoor Unit

- **18K/24K**

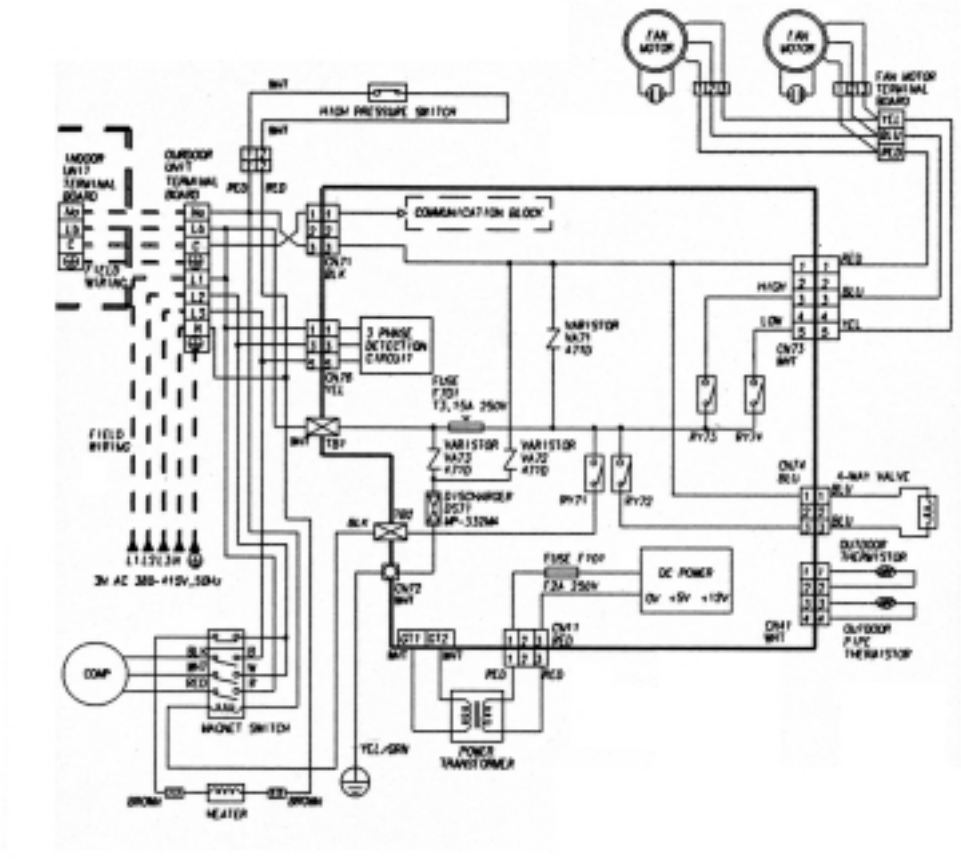
BUILT-IN AIRCONDITIONER



CODE NO : DB68-00866A

• 36K/44K

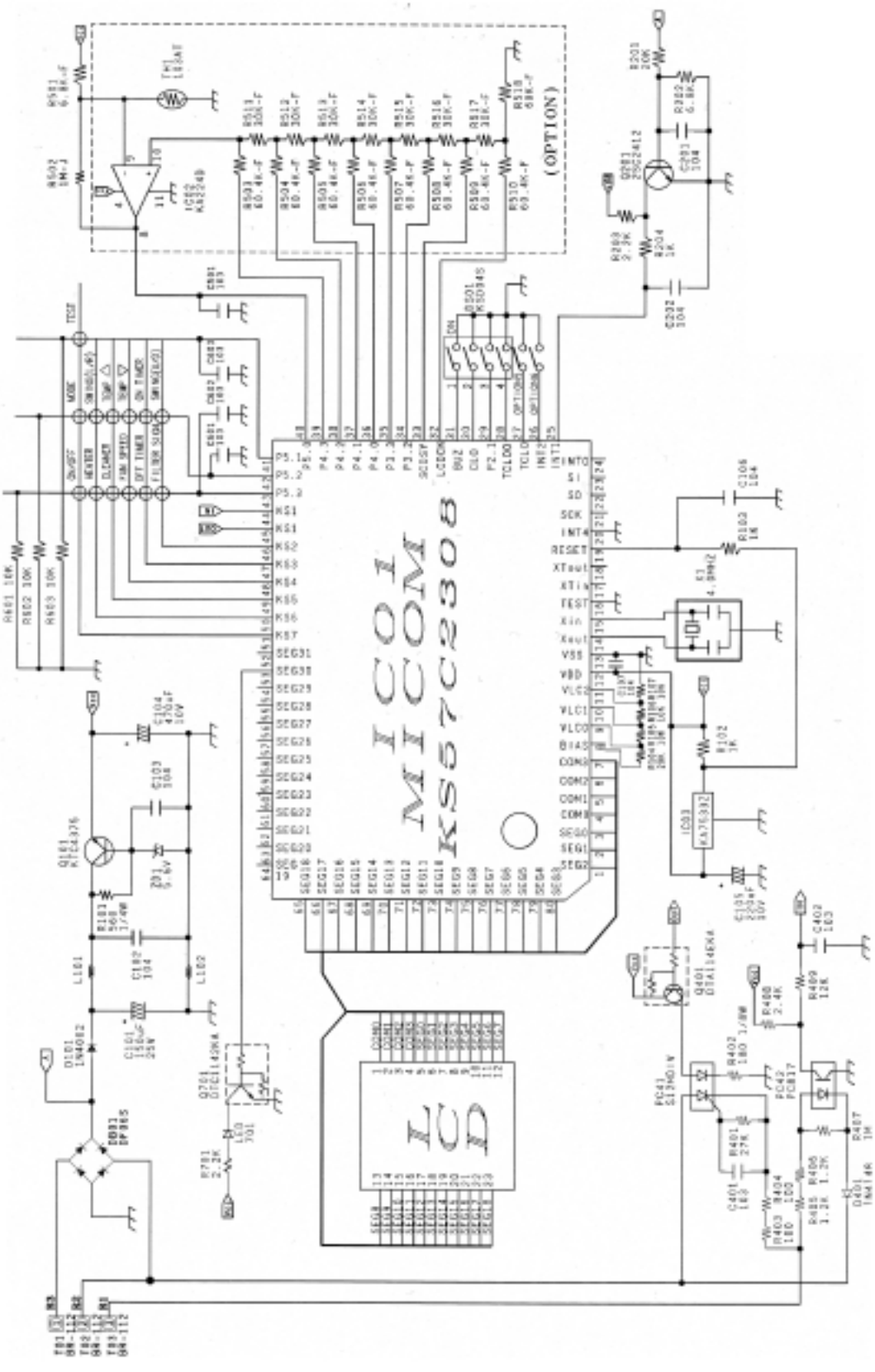
BUILT-IN AIRCONDITIONER



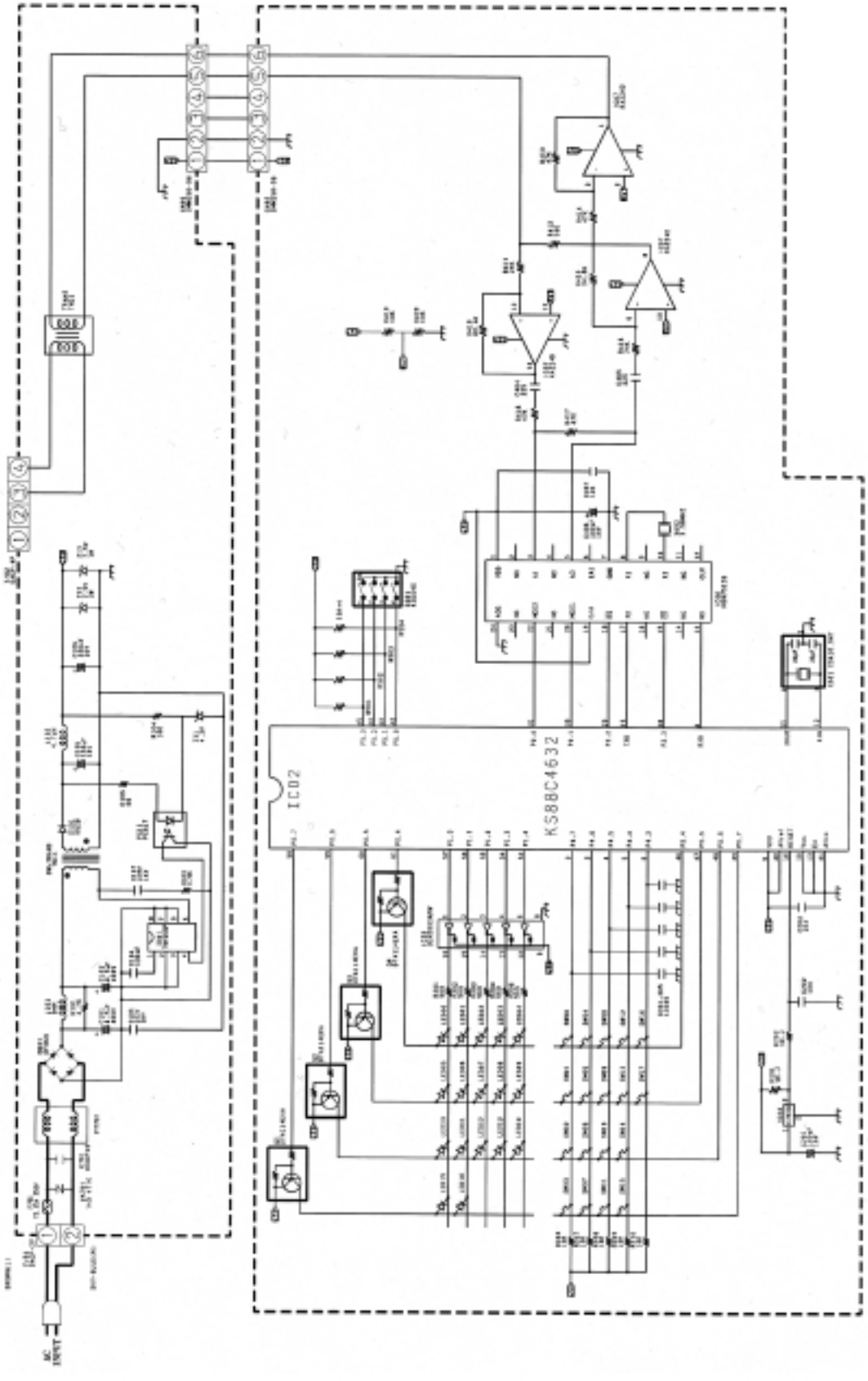
CODE NO : DB68-00866A

11. Schematic Diagrams

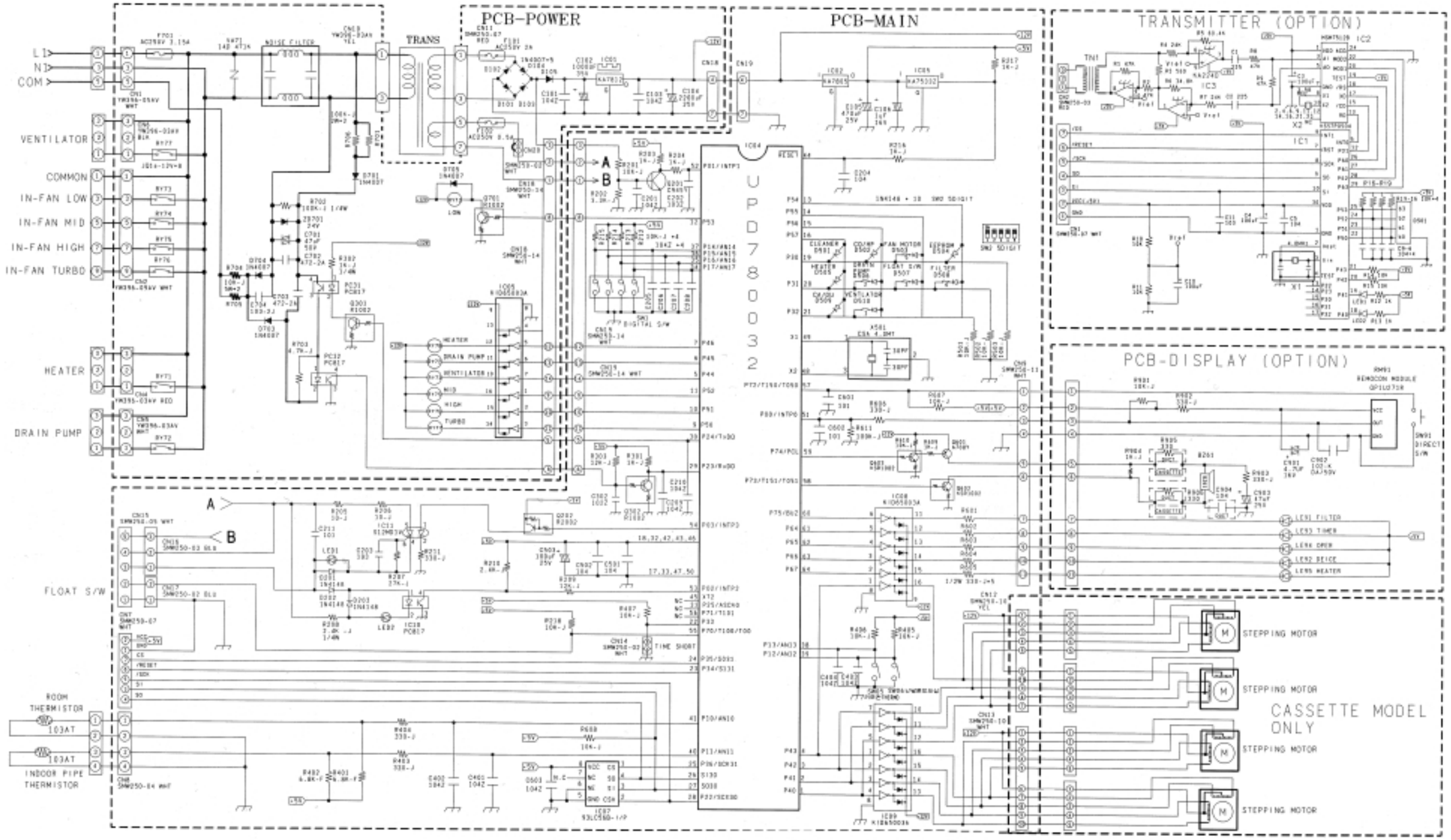
11-1 Wired Remote Controller



11-2 Centralized Controller

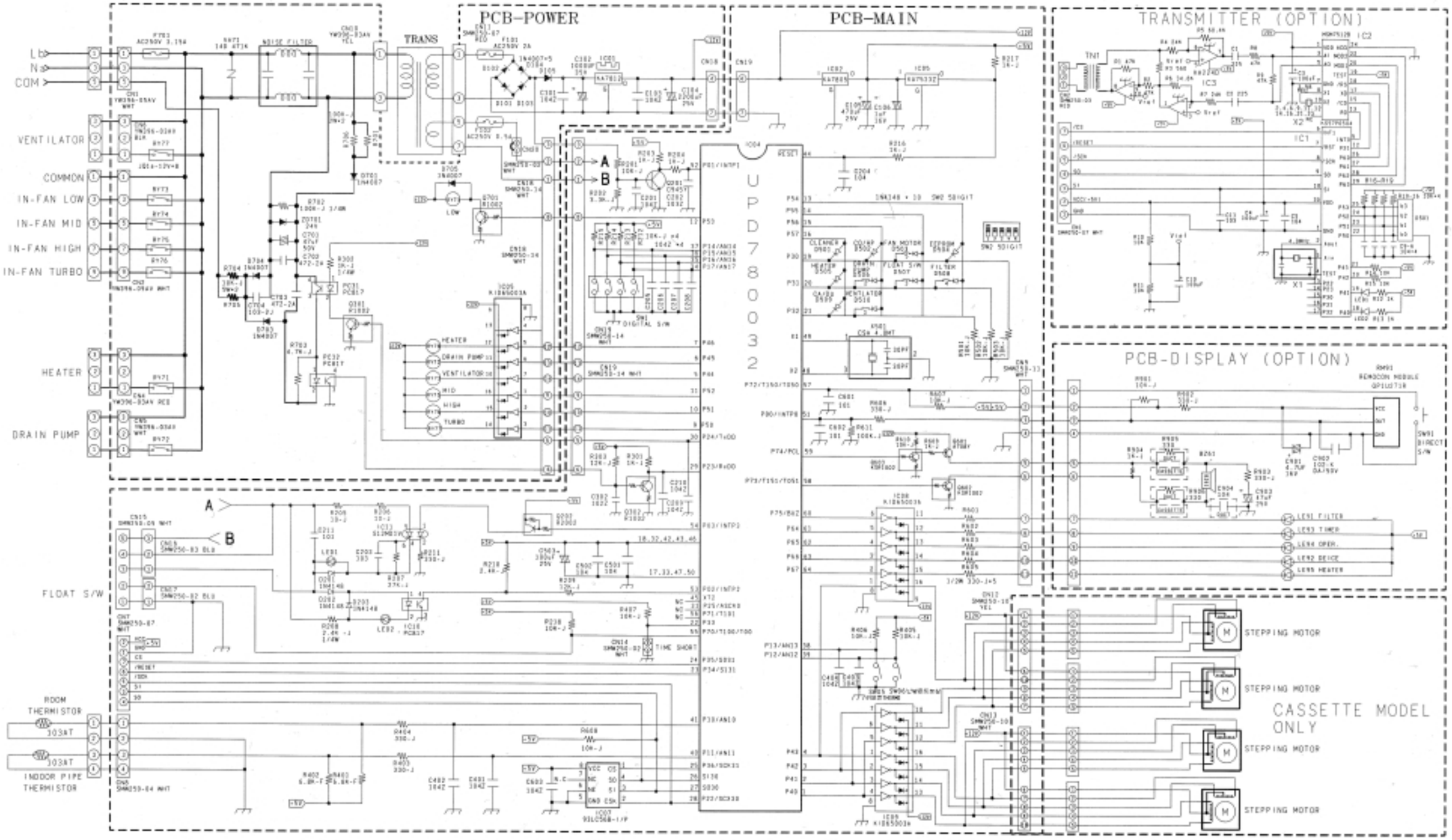


11-3. Indoor Unit (18K/24K)



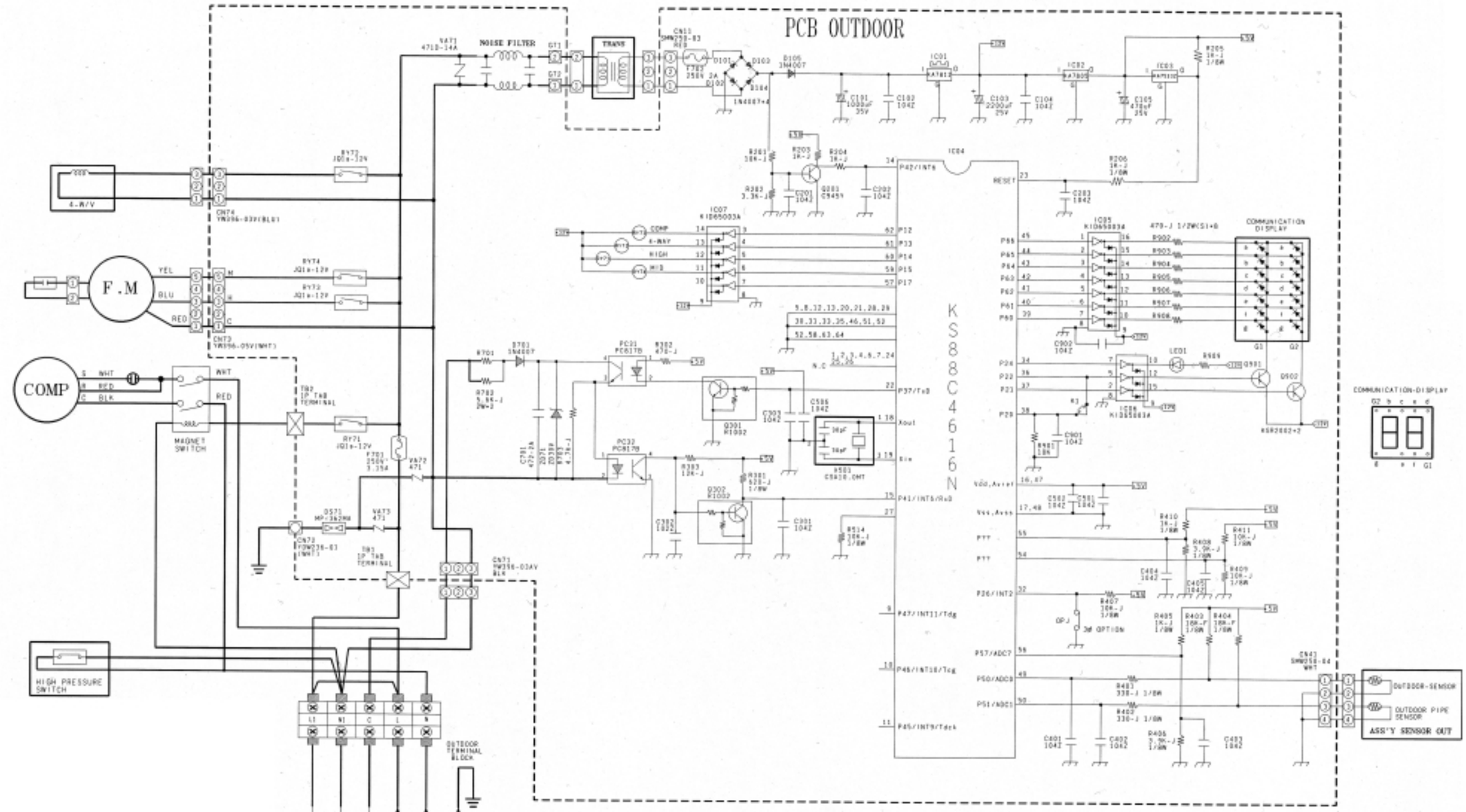
	OPTION SW2	SW ON	SW OFF
1	VENTILATOR	X	O
2	DRAIN PUMP	O	X
3	FLOAT SW	O	X
4	FILTER	2000HR	1000HR
5	FAN MOTOR RPM	L/M/H	M/H/T

• Indoor Unit (36K/44K)



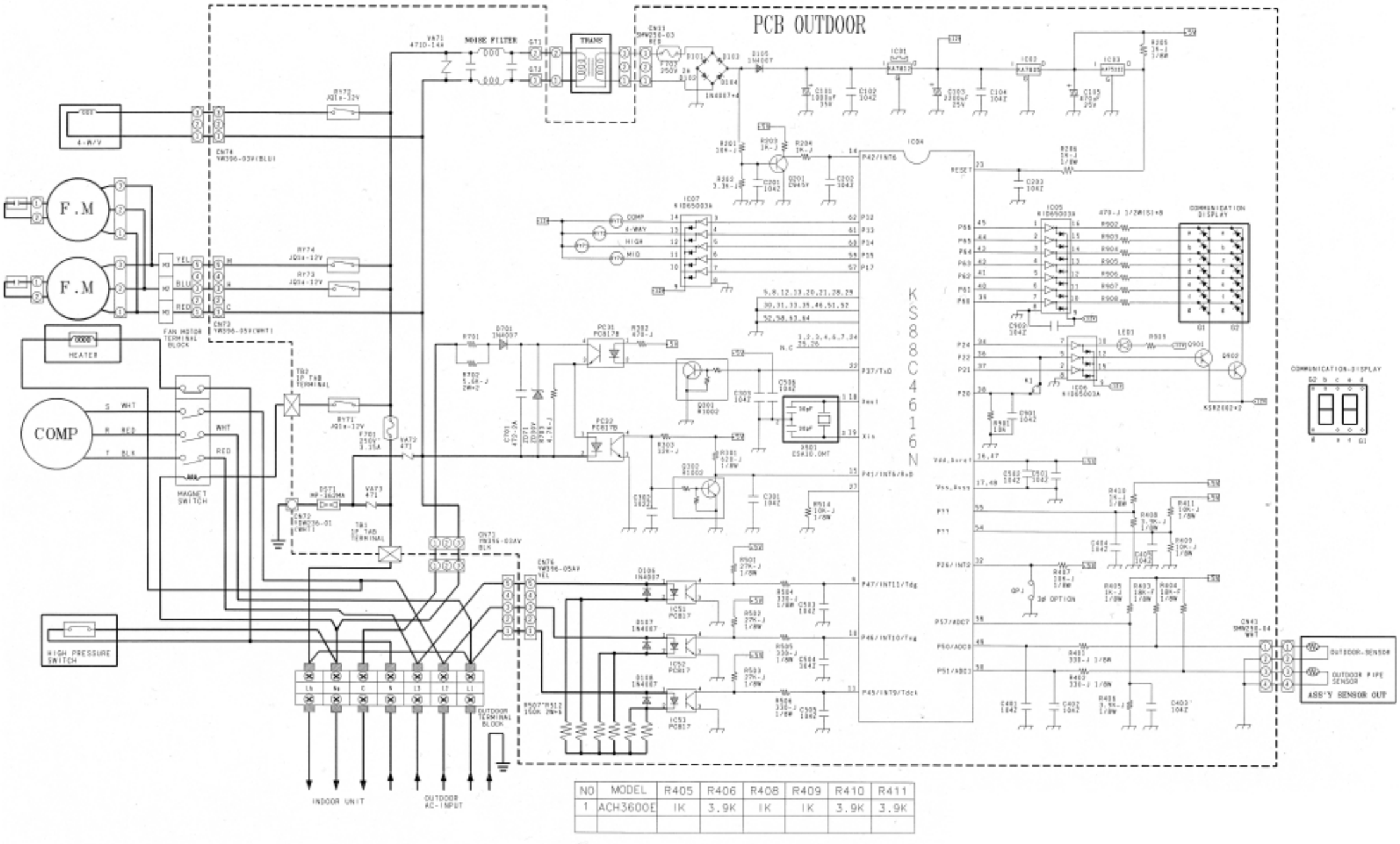
	OPTION SW2	SW ON	SW OFF
1	VENTILATOR	X	O
2	DRAIN PUMP	O	X
3	FLOAT SW	O	X
4	FILTER	2000HR	1000HR
5	FAN MOTOR RPM	L/M/H	M/H/T

11-4. Outdoor Unit (18/24K)



NO	MODEL	R405	R406	R408	R409	R410	R411
1	AXH1800X	1K	3.9K	3.9K	3.9K	1K	1K
2	AXH2400X	1K	3.9K	3.9K	3.9K	1K	1K
3	AXH3200X	1K	3.9K	1K	1K	3.9K	3.9K

• Outdoor Unit (36K/44K)



NO	MODEL	R405	R406	R408	R409	R410	R411
1	ACH3600E	1K	3.9K	1K	1K	3.9K	3.9K

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UPDATE LOG SHEET				
Application date	**Page**	**Part#**	**Note(Cause & Solution)**	**S/Bulletin#**

Use this page to keep any special servicing information.(Service Bulletin, etc.)
If only parts number changes, Just change parts number directly on parts list.
And if you need more information, please see the service bulletin

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