

Service Manual

Room Air Conditioners



CS/CU-PA7DKD
CS/CU-PC7DKD
CS/CU-PA9DKD
CS/CU-PC9DKD

WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

CONTENTS

	Page		Page
1 Features	2	10 2-way,3-way Valve	49
2 Functions	3	11 Disassembly of The Parts	56
3 Product Specifications	6	12 Troubleshooting Guide	59
4 Dimensions	14	13 Technical Data	61
5 Refrigeration Cycle Diagram	16	14 Exploded View	64
6 Block Diagram	17	15 Replacement Parts List	65
7 Wiring Diagram	19	16 Exploded View	66
8 Operation Details	21	17 Replacement Parts List	67
9 Installation	35	18 Electronic Circuit Diagram	68

Panasonic®

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1 Features

■ High Efficiency

■ Air Quality Indicator

■ Auto Restart Control

Automatically restart after power failure

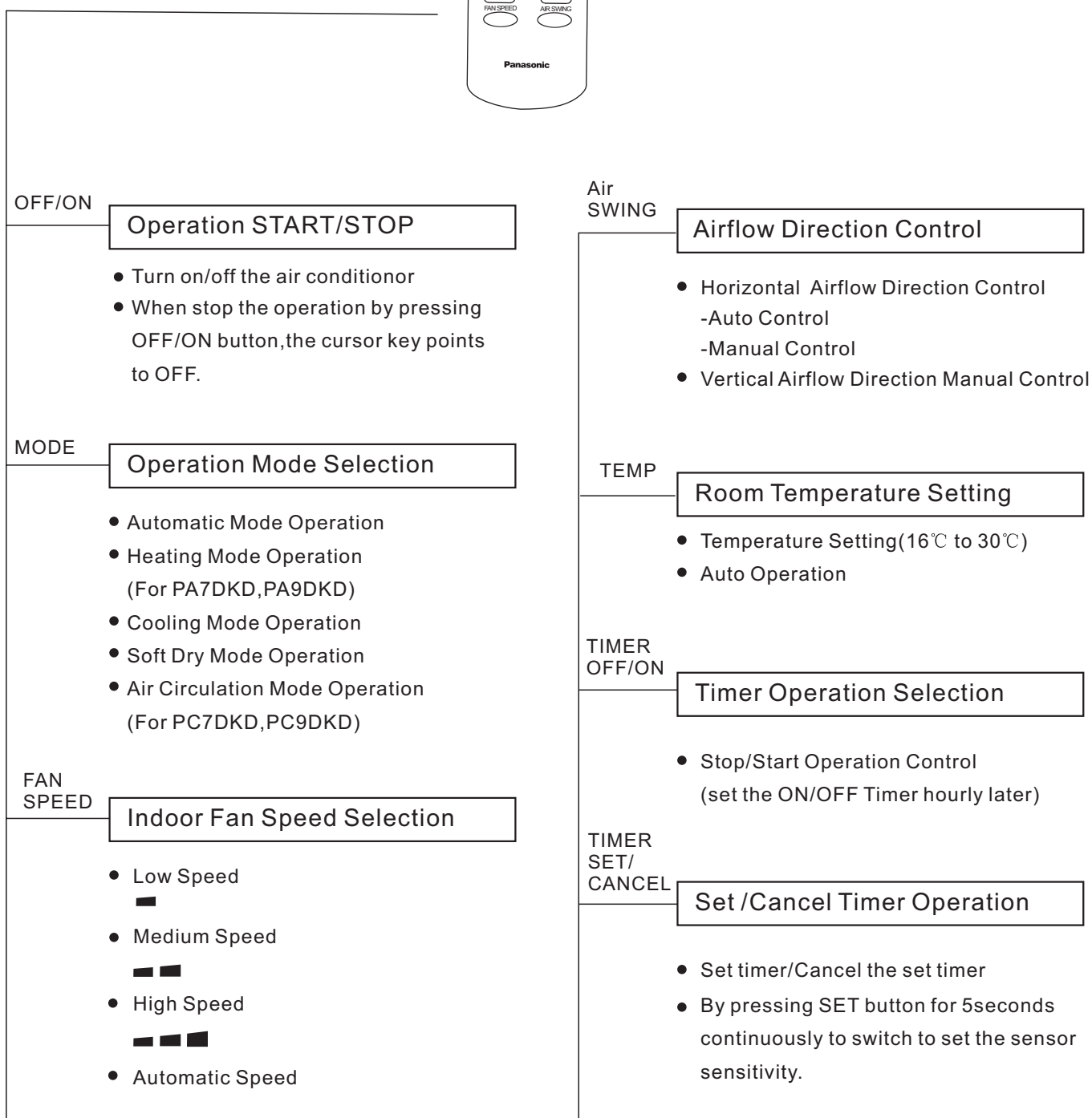
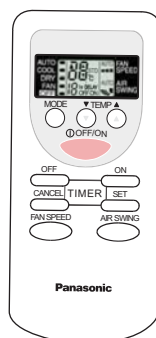
■ Comfort Environment

Air filter with function to reduce dust and smoke

■ 12-hour Timer Setting

2 Functions

Remote Control



Indoor Unit



Auto Switch Button

Power Switch ON/OFF

- When the remote control cannot be used or for repairing and testing ,please use this button.

Demonstration Mode

- Keep pressing this button for 15seconds to start or end the Demonstration Mode.

Signal Receiving Sound Control

- Keep pressing this button for 10seconds to turn on or turn off the signal receiving sound.

Operation Indication Lamps

- Power (green) — Lights up in operation; Blinks during Test Run operation and determining Auto Operation mode
- Timer(orange) — Timer in operation
- Air quality { Green
Orange
Red

Operation Mode

- Cooling/Heating/Soft Dry /Auto Operation / Air circulation

Time Delay Safety Control

- The unit will restart operation in 3-4 minutes after each pause.

7-Minutes Time Save Control

- 7-minutes automatic restarting at Cooling Operation

Anti-freezing Control for the Evaporator

- Cooling or Soft Dry Operation

Warm Booting Control

(For PA7DKD, PA9DKD only)

- Indoor fan starts running when temperature of evaporator reaches 30°C or above.
- When temperature of evaporator is between 30°C and 34°C, indoor fan will run at Super Low or Low speed.
- When temperature of evaporator reaches 34°C, Warm Booting Operation ends.

Indoor Fan Speed Control

- High, Med, Low
- Auto Fan Speed

Airflow Direction Control

- Automatic Airflow Direction Control
The louver automatically swings up and down
- Airflow Direction Manual Control

Delayed On-timer Control

- For cooling or soft dry mode, the unit starts 15 minutes before the set time with the remote control, but for heating mode 30 minutes before the set time.

Outdoor Unit



Anti-reverse Protection

- To protect the compressor from reverse rotation when power off suddenly.

Overload Protector

- The 2-step Overload Protector is to protect the compressor when
 - 1)Temperature of compressor reaches 150°C (PA7DKD,PC7DKD,PA9DKD) or 145°C (PC9DKD)
 - 2)High temperature or current enters into the compressor

60-seconds Test Operation Control

- Once the compressor is activated, it does not stop for 60 seconds. It stops immediately with remote control ON/OFF button.

Deicing Control

- Anti-freezing operation for outdoor unit(during Heating Mode Operation only)
- Temperature of the condenser is tested by TRS. (For PA7DKD,PA9DKD only)

Overload Protection Control

(For PA7DKD,PA9DKD only)



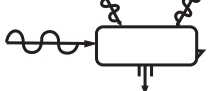
- When the temperature of evaporator reaches 51°C, outdoor fan stops, and will restart when the temperature of evaporator declines to 49°C.
- When the temperature of evaporator reaches 65°C, compressor will stop.

4-way Valve Control

(Only for PA7DKD,PA9DKD)

- If the unit is stopped during Heating Operation, the 4-way valve will remain in heating mode operation for 5 minutes.



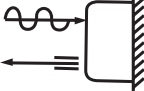

3 Product Specifications

		Unit	CS-PA7DKD	CU-PA7DKD	
Cooling Capacity		kW	2.10		
Heating Capacity		kW	2.30		
Moisture Removal		L/h	1.2		
Power Source		Phase V Cycle	Single 220 50		
Airflow Method		OUTLET  INTAKE	SIDE VIEW 	TOP VIEW 	
Air Circulation	Indoor Air (low)	m ³ /min	7.40	-	
	Indoor Air (medium)	m ³ /min	8.66	-	
	Indoor Air (high)	m ³ /min	9.50	-	
	Outdoor Air	m ³ /min	-	-	
Noise Level		dB(A)	Cooling:high37,Low29 Heating:high37,Low29	Cooling:high47 Heating:high48	
Electrical Data	Input	W	Cooling:695 Heating:620		
	Running Current	A	Cooling:3.40 Heating:3.00		
	EER/COP	W/W	Cooling:3.02 Heating:3.71		
	Starting Current	A	18		
Piping Connection Port(Flare piping)		Inch Inch	G:half union3/8" L:half union1/4"	G:3-way valve3/8" L:2-way valve1/4"	
Piping Size(Flare piping)		Inch Inch	G:gas side3/8" L:liquid side1/4"	G:gas side3/8" L:liquid side1/4"	
Drain Hose	Inner Diameter	mm	14	-	
	Length	m	0.5	-	
Power Supply Cord Length (Number of core-wire)		m	1.3 3 core-wire/1.0mm ²	- -	
Dimensions	Height	mm	250	530	
	Width	mm	770	650	
	Depth	mm	205	230	
Net Weight		kg	7.5	23	
Compressor	Type		-	Rotary(1 cylinder) Rolling piston type	
	Motor Type		-	Induction(2 pole)	
	Rated output	W	-	600	
Air Circulation	type		Cross-flow fan	Propeller fan	
	Motor type		Induction(4 pole)	Induction(6 pole)	
	Input	W	-	-	
	Rated Output	W	13	28	
	Fan Speed	Low	rpm	880±60	-
		Med	rpm	1030±60	-
		High	rpm	1130±50	800±60

		Unit	CS-PA7DKD	CU-PA7DKD
Heat Exchanger	Description		Evaporator	Condenser
	Tube Material		Copper	Copper
	Fin Type		Slot type	Corrugation type
	Rows/Stage		(Plate fin configuration, forced draft)	
	FPI		2 x 12	1X24
Dimensions	mm	18	17	
Refrigerant Control Device		610x252x25.4	269.1x504x18.19	
Refrigerant Control Device		-	Capillary Tube	
Refrigeration Oil	(c.c)	-	SUNISO 4GDID or ATMOS M60 or ATMOS 56M	
Refrigerant (R-22)	g	-	530(*)	
Thermostat		Electronic Control	-	
Protection Device		-	O.L.P.(230V,30A)	
Capillary	Length	mm	-	655±20
	Circulation	L/min	-	9.5±0.2
	Inner Diameter	mm	-	1.4
Air Filter			P.P. Honeycomb	
Refrigerant Circulation Control Device			Capillary	
Compressor Capacitor		μF, V	-	20 μF, 370V
Fan Motor Capacitor		μF, V	1.5 μF, 400V	2.0μF, 400V

* 60g for air purging is not included.



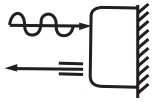
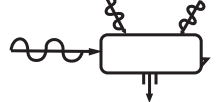
- Specifications are subject to change without notice for further improvement.

		Unit	CS-PA9DKD	CU-PA9DKD	
Cooling Capacity		kW	2.60-2.65		
Heating Capacity		kW	3.00-3.05		
Moisture Removal		L/h	1.40		
Power Source		Phase V Cycle	Single 220/230 50		
Airflow Method		OUTLET  INTAKE 	SIDE VIEW 	TOP VIEW 	
Air Circulation	Indoor Air (low)	m ³ /min	7.72	-	
	Indoor Air (medium)	m ³ /min	8.54	-	
	Indoor Air (high)	m ³ /min	10.10	-	
	Outdoor Air	m ³ /min	-	-	
Noise Level		dB(A)	Cooling:high38,Low29 Heating:high38,Low29	Cooling:high47 Heating:high48	
Electrical Data	Input	W	Cooling:830-850 Heating:790-820		
	Running Current	A	Cooling:3.90-3.80 Heating:3.65-3.65		
	EER/COP	W/W	Cooling:3.13-3.12 Heating:3.80-3.72		
	Starting Current	A	16		
Piping Connection Port(Flare piping)		Inch Inch	G:half union3/8" L:half union1/4"	G:3-way valve3/8" L:2-way valve1/4"	
Piping Size(Flare piping)		Inch Inch	G:gas side3/8" L:liquid side1/4"	G:gas side3/8" L:liquid side1/4"	
Drain Hose	Inner Diameter	mm	14	-	
	Length	m	0.5	-	
Power Supply Cord Length (Number of core-wire)		m	1.3 3 core-wire/1.0mm ²	- -	
Dimensions	Height	mm	250	530	
	Width	mm	770	650	
	Depth	mm	205	230	
Net Weight		kg	7.5	27	
Compressor	Type		-	Rotary(1 cylinder) Rolling piston type	
	Motor Type		-	Induction(2 pole)	
	Rated output	W	-	700	
Air Circulation	type		Cross-flow fan	Propeller fan	
	Motor type		Induction(4 pole)	Induction(6 pole)	
	Input	W	-	-	
	Rated Output	W	13	28	
	Fan Speed	Low	rpm	940±60	-
		Med	rpm	1090±60	-
		High	rpm	1230±60	800±60

		Unit	CS-PA9DKD	CU-PA9DKD
Heat Exchanger	Description		Evaporator	Condenser
	Tube Material		Copper	Copper
	Fin Type		Slot type	Corrugation type
	Rows/Stage		(Plate fin configuration, forced draft)	
	FPI		2 x 12	2X24
Dimensions	mm	18	17	
Refrigerant Control Device			610x252x25.4	569.1 X504x36.38 540.5
Refrigerant Control Device			-	Capillary Tube
Refrigeration Oil	(c.c)		-	SUNISO 4GDID or ATMOS M60 or ATMOS 56M
Refrigerant (R-22)	g		-	860(*)
Thermostat			Electronic Control	-
Protection Device			-	O.L.P.(230V,37A)
Capillary	Length	mm	-	609±10 495±20
	Circulation	L/min	-	10.0±0.2 9.0±0.2
	Inner Diameter	mm	-	1.4 1.3
Air Filter			P.P. Honeycomb	
Refrigerant Circulation Control Device				Capillary
Compressor Capacitor		μF , V	-	30 μF , 370V
Fan Motor Capacitor		μF , V	1.5 μF , 400V	2.0μF , 400V

* 60g for air purging is not included.



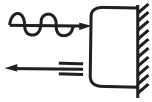
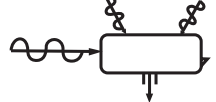
- Specifications are subject to change without notice for further improvement.

		Unit	CS-PC7DKD	CU-PC7DKD	
Cooling Capacity		kW	2.10		
Moisture Removal		L/h	1.20		
Power Source		Phase V Cycle	Single 220 50		
Airflow Method		OUTLET  INTAKE 	SIDE VIEW 	TOP VIEW 	
Air Circulation	Indoor Air (low)	m ³ /min	4.9	-	
	Indoor Air (medium)	m ³ /min	5.7	-	
	Indoor Air (high)	m ³ /min	6.8	-	
	Outdoor Air	m ³ /min	-	-	
Noise Level		dB(A)	High36,Low28	High47	
Electrical Data	Input	W	680		
	Running Current	A	3.20		
	EER	W/W	3.09		
	Starting Current	A	15		
Piping Connection Port(Flare piping)		Inch inch	G:half union3/8" L:half union1/4"	G:3-way valve3/8" L:2-way valve1/4"	
Piping Size(Flare piping)		Inch inch	G:gas side3/8" L:liquid side1/4"	G:gas side3/8" L:liquid side1/4"	
Drain Hose	Inner Diameter	mm	14	-	
	Length	m	0.5	-	
Power Supply Cord Length (Number of core-wire)		m	1.3 3 core-wire/1.0mm ²	- -	
Dimensions	Height	mm	250	530	
	Width	mm	770	650	
	Depth	mm	205	230	
Net Weight		kg	7.5	21	
Compressor	Type		-	Rotary(1 cylinder) Rolling piston type	
	Motor Type		-	Induction(2 pole)	
	Rated Output	W	-	660	
Air Circulation	Type		Cross-flow fan	Propeller fan	
	Motor Type		Induction(4 pole)	Induction(6pole)	
	Input	W	-	-	
	Rated Output	W	13	28	
	Fan Speed	Low	rpm	810±60	-
		Med	rpm	940±60	-
		High	rpm	1130±60	800±60

		Unit	CS-PC7DKD	CU-PC7DKD
Heat Exchanger	Description		Evaporator	Condenser
	Tube Material		copper	copper
	Fin Type		slot type	Corrugation type
	Rows/Stage		(Plate fin configuration, forced draft)	
			2 x 8	1 x 24
	FPI		18	17
	Dimensions	mm	610x168x25.4	575.8x504x12.7
Refrigerant Control Device			-	Capillary Tube
Refrigeration Oil		(c.c)	-	SUNISO 4GDID or ATMOS M60(M56)
Refrigerant (R-22)		g	-	450(*)
Thermostat			Electronic Control	O.L.P.(25A/230V)
Protection Device			-	
Capillary	Length	mm	-	810±10
	Circulation	L/min	-	7.0±0.2
	Inner Diameter	mm	-	1.3
Air Filter			P.P Honeycomb	-
Refrigerant Circulation Control Device			Capillary	
Compressor Capacitor		µF , V	-	20µF , 400V
Fan Motor Capacitor		µF , V	1.5µF , 400V	2.0µF , 400V

* 60g for air purging is not included.

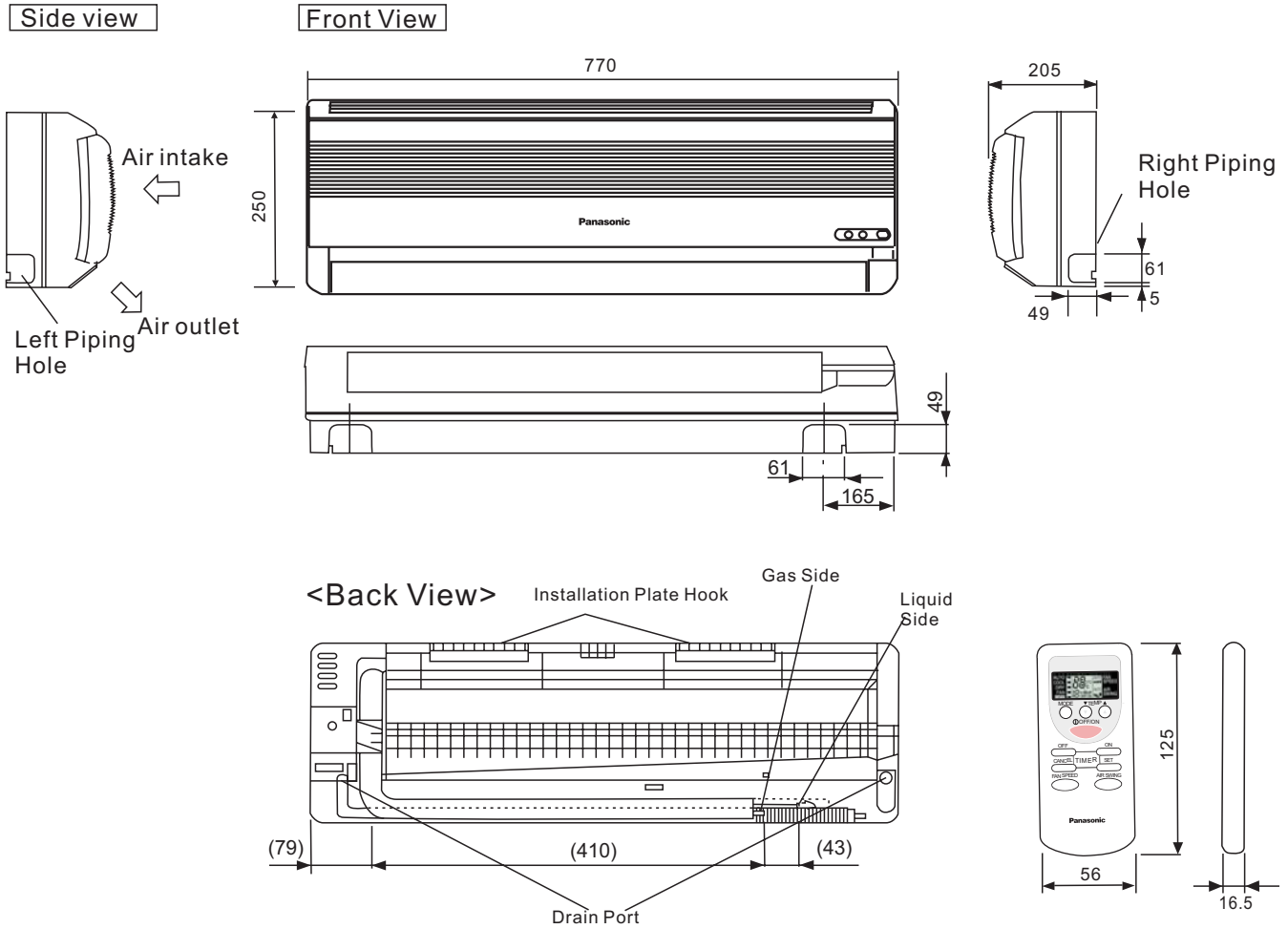
- Specifications are subject to change without notice for further improvement.

		Unit	CS-PC9DKD	CU-PC9DKD	
Cooling Capacity		kW	2.50		
Moisture Removal		L/h	1.40		
Power Source		Phase V Cycle	Single 220 / 230 50		
Airflow Method		OUTLET  INTAKE 	SIDE VIEW 	TOP VIEW 	
Air Circulation	Indoor Air (low)	m ³ /min	6.5	-	
	Indoor Air (medium)	m ³ /min	7.4	-	
	Indoor Air (high)	m ³ /min	8.5	-	
	Outdoor Air	m ³ /min	-	-	
Noise Level		dB(A)	High30,Low28	High48	
Electrical Data	Input	W	860		
	Running Current	A	4.00		
	EER	W/W	2.91		
	Starting Current	A	20.0		
Piping Connection Port(Flare piping)		Inch inch	G:half union3/8" L:half union1/4"	G:3-way valve3/8" L:2-way valve1/4"	
Piping Size(Flare piping)		Inch inch	G:gas side3/8" L:liquid side1/4"	G:gas side3/8" L:liquid side1/4"	
Drain Hose	Inner Diameter	mm	14	-	
	Length	m	0.5	-	
Power Supply Cord Length (Number of core-wire)		m	1.3 3 core-wire/1.0mm ²	- -	
Dimensions	Height	mm	250	530	
	Width	mm	770	650	
	Depth	mm	205	230	
Net Weight		kg	7.5	23	
Compressor	Type		-	Rotary(1 cylinder) Rolling piston type	
	Motor Type		-	Induction(2 pole)	
	Rated Output	W	-	750	
Air Circulation	Type		Cross-flow fan	Propeller fan	
	Motor Type		Induction(4 pole)	Induction(6pole)	
	Input	W	-	-	
	Rated Output	W	13	28	
	Fan Speed	Low	rpm	870±60	-
		Med	rpm	980±60	-
		High	rpm	1130±60	800±60

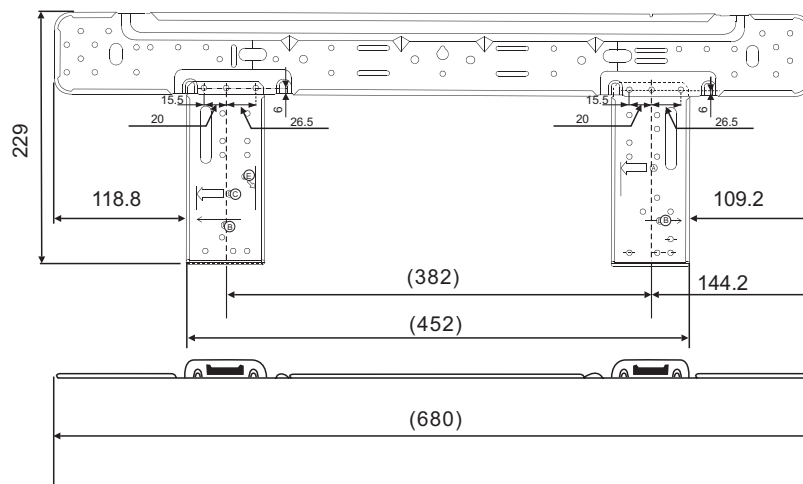
4 Dimensions

Indoor Unit

Unit : mm



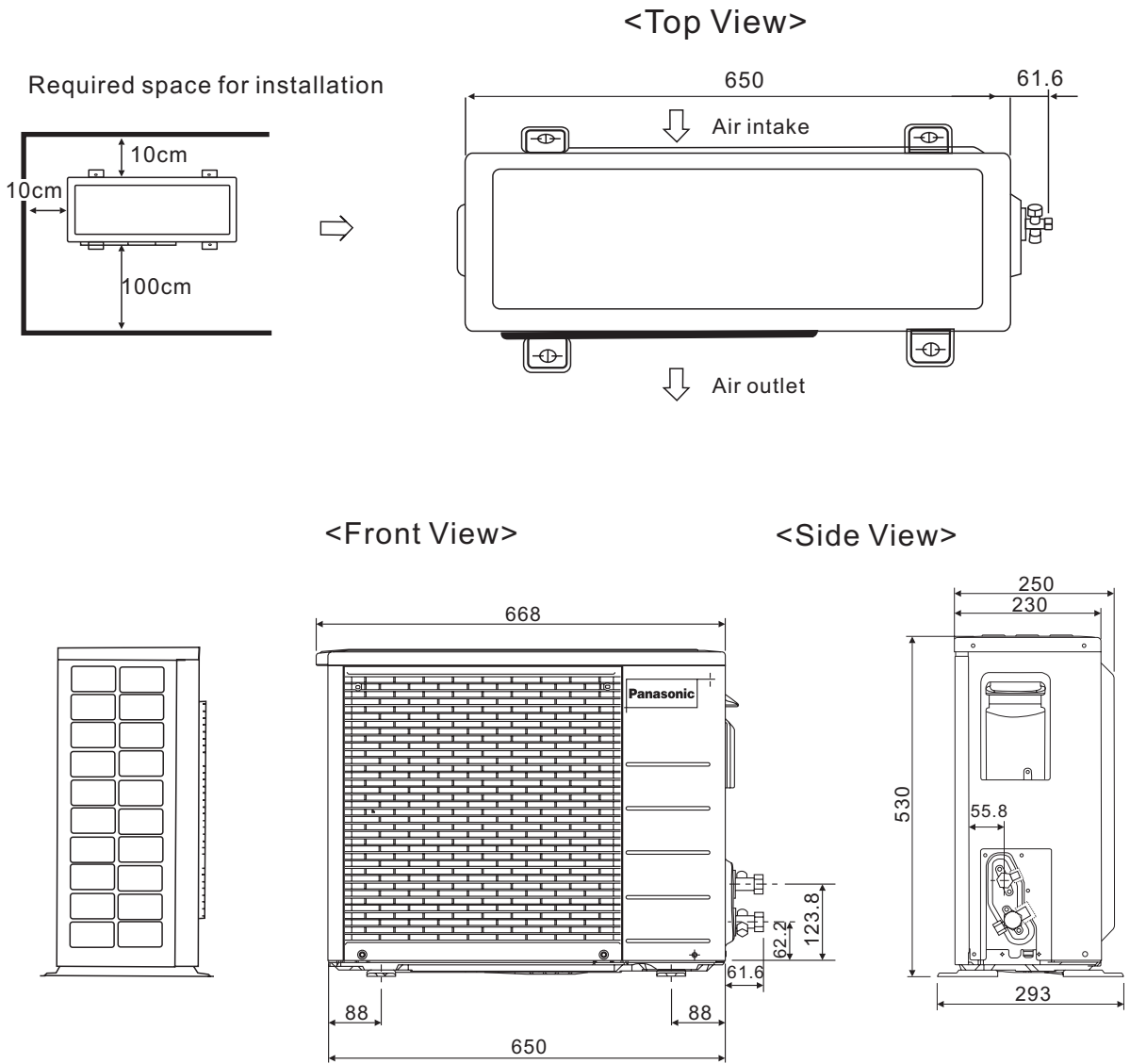
Relative position between the unit and the installation plate (Front View)



Outdoor Unit

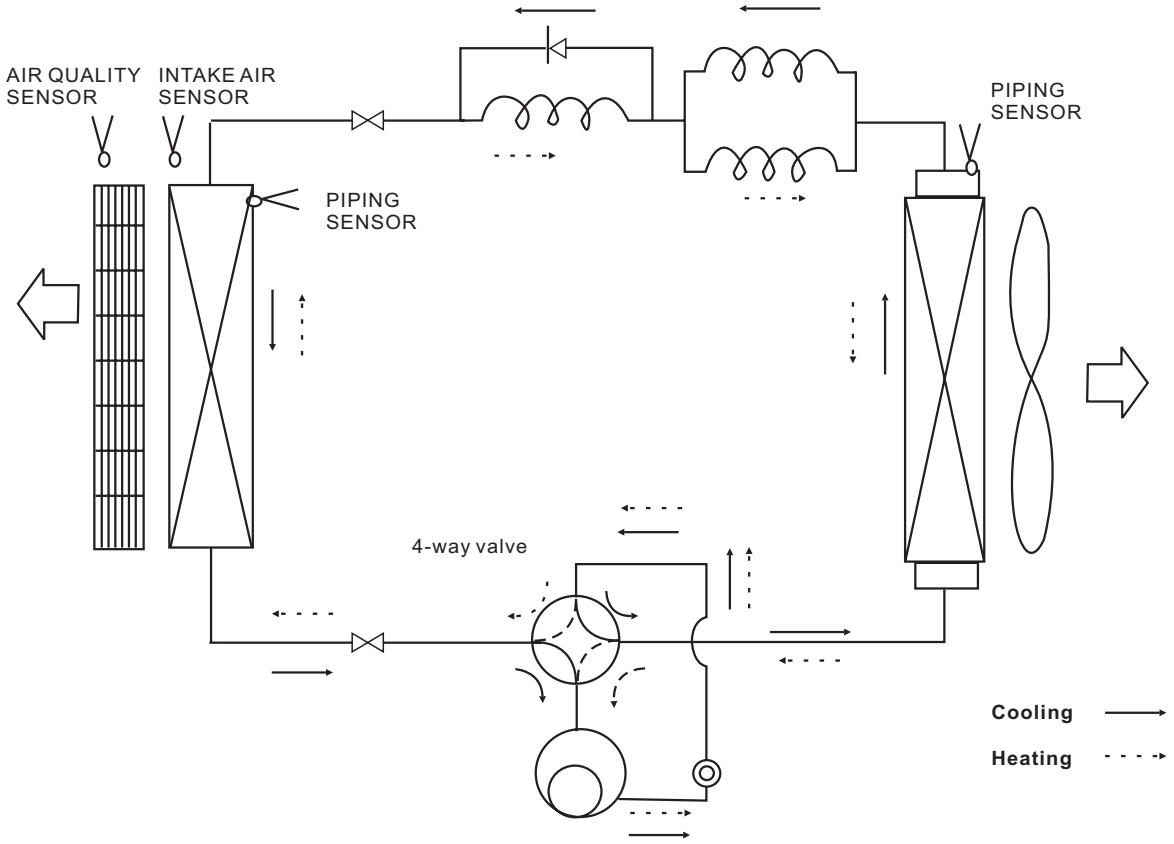
CU-PA7DKD
 CU-PA9DKD
 CU-PC7DKD
 CU-PC9DKD

Unit : mm

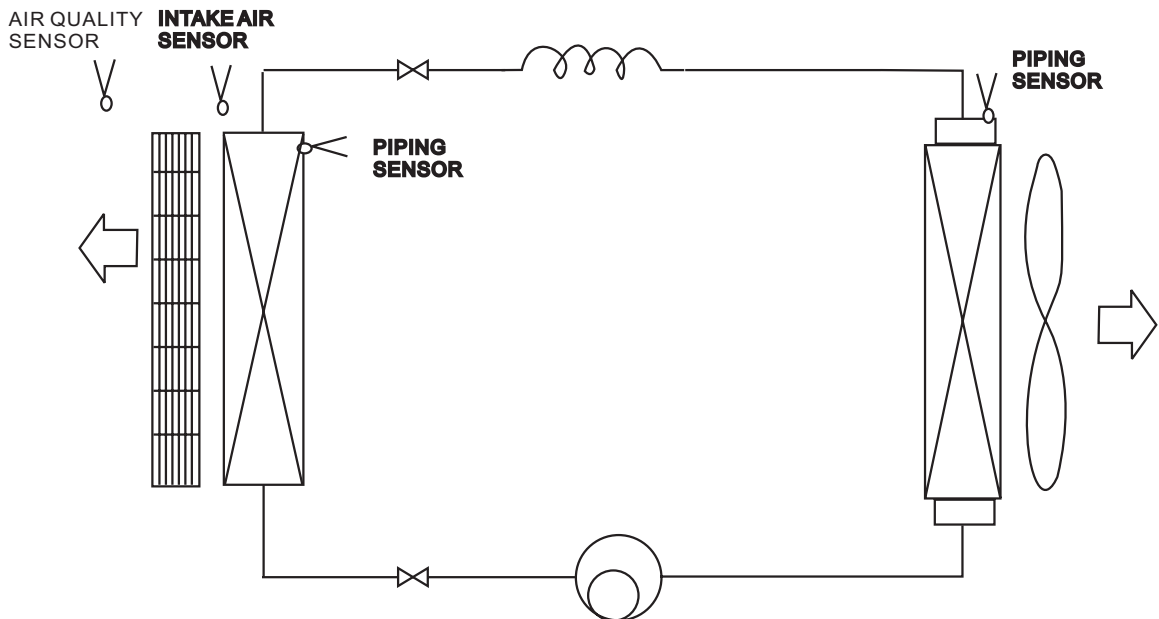


5 Refrigeration Cycle Diagram

CS/CU-PA7DKD
CS/CU-PA9DKD

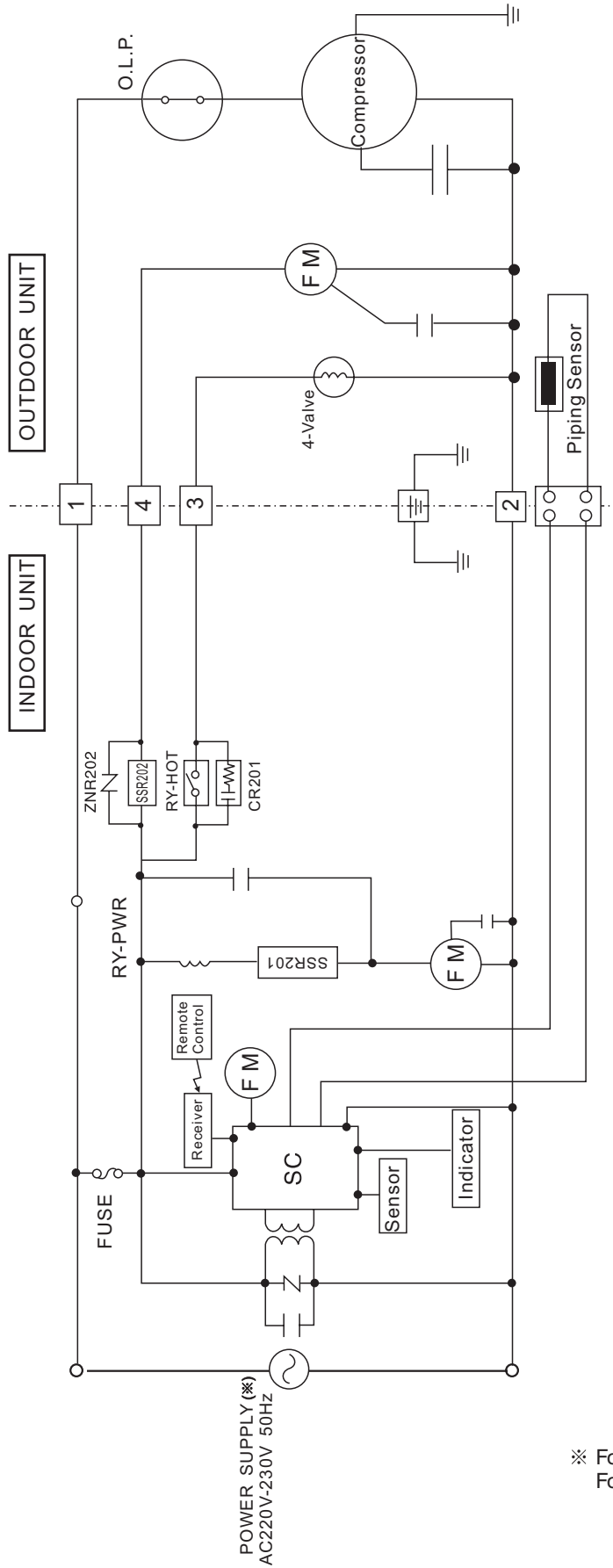


CS/CU-PC7DKD
CS/CU-PC9DKD



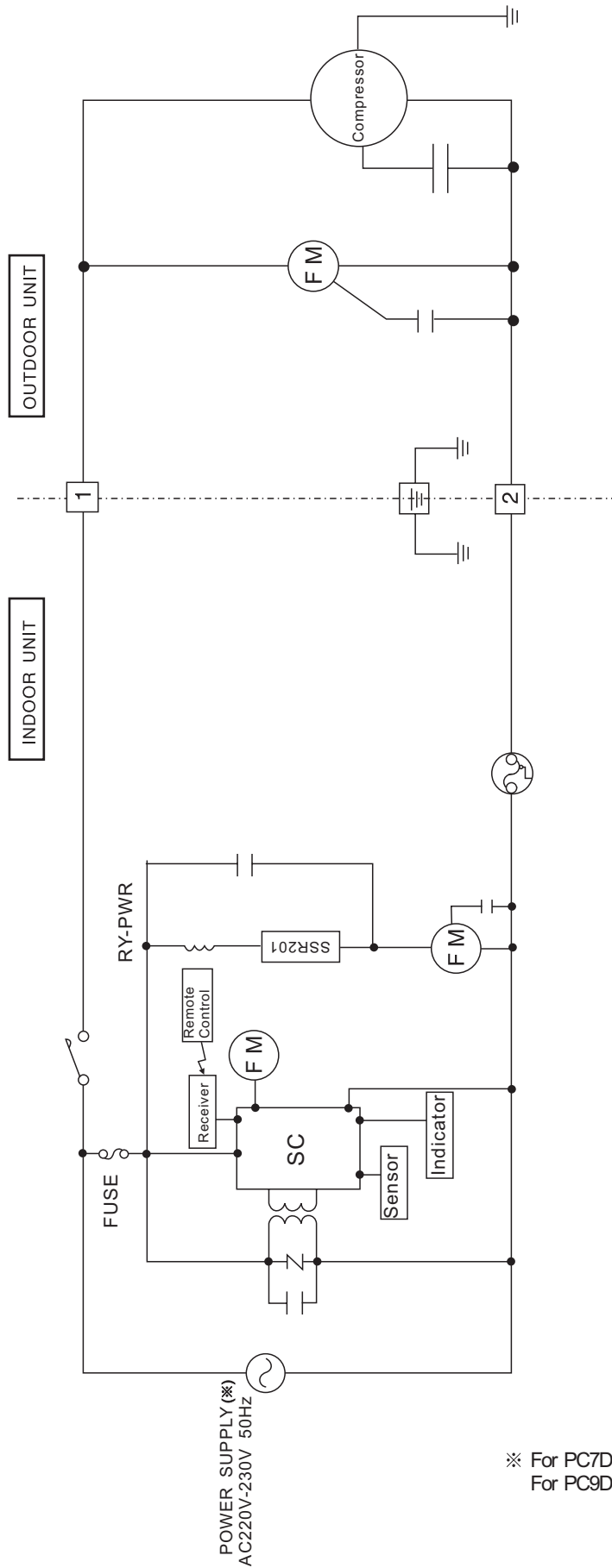
6 Block Diagram

CS-PA7DKD/CU-PA7DKD
 CS-PA9DKD/CU-PA9DKD



※ For PA7DKD, the power source is 220V.
 For PA9DKD, the power source is 220V-230V.

CS-PC7DKD/CU-PC7DKD CS-PC9DKD/CU-PC9DKD

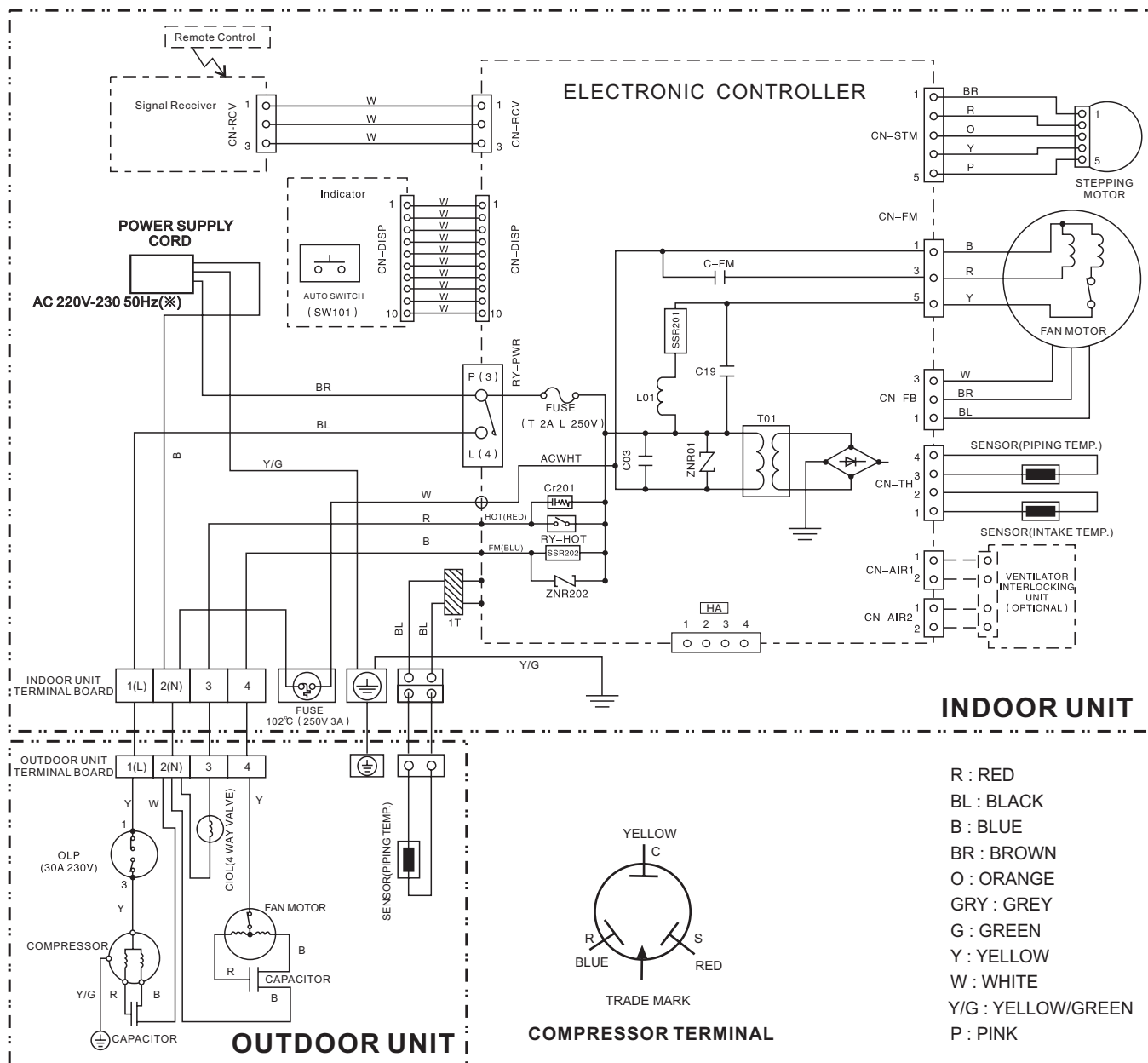


※ For PC7DKD, the power source is 220V.
For PC9DKD, the power source is 220V-230V.

7 Wiring Diagram

CS-PA7DKD/ CU-PA7DKD

CS-PA9DKD/ CU-PA9DKD



INDOOR FAN MOTOR RESISTANCE (Ω)

	CS-PA7DKD	CS-PA9DKD
CONNECTING	CWA921308	CWA921329
Y-B (M)	395	390
Y-R (A)	325	390

OUTDOOR FAN MOTOR RESISTANCE (Ω)

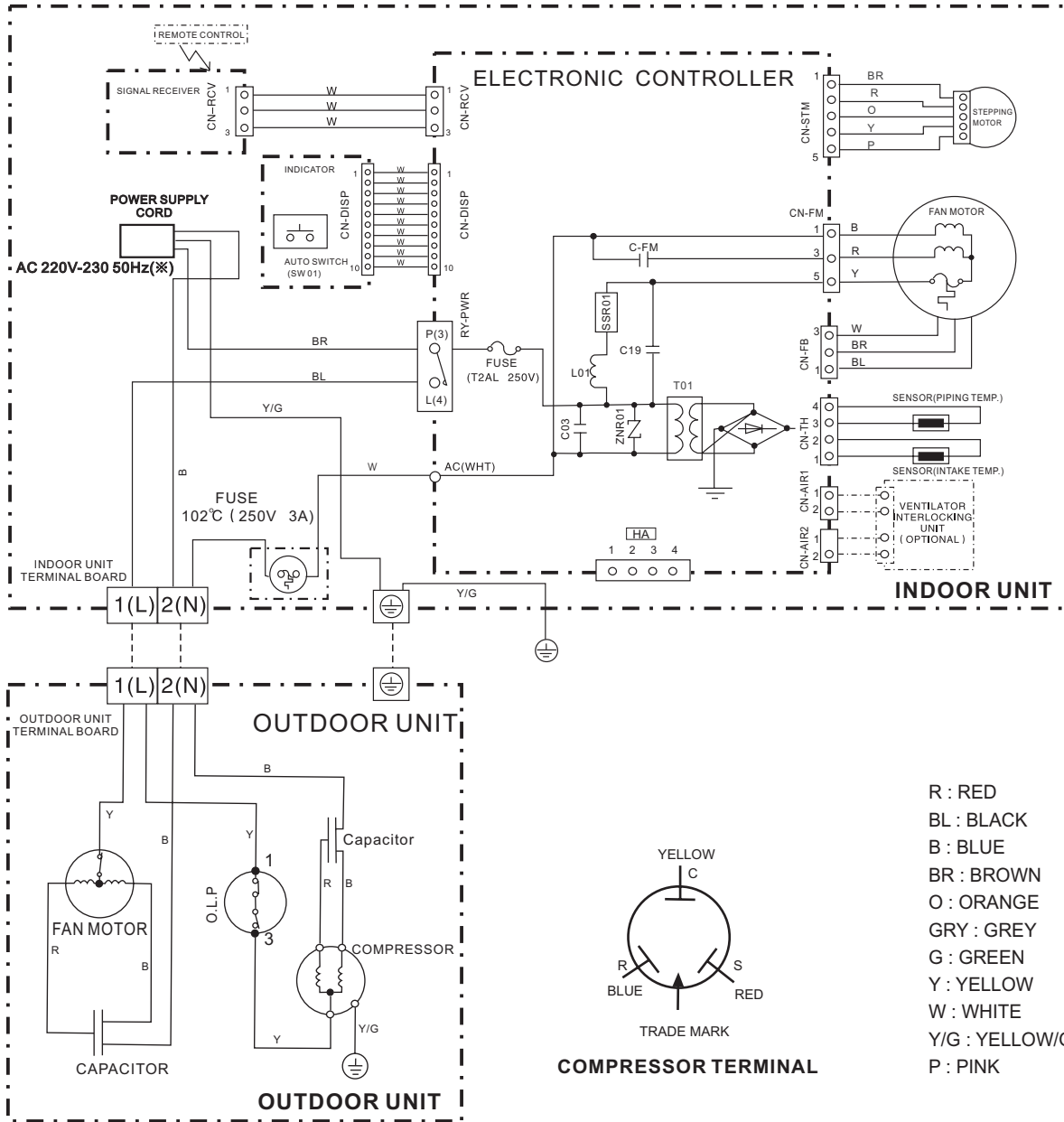
	CU-PA7DKD	CU-PA9DKD
CONNECTING	CWA951419	CWA951419
Y-B	275	275
Y-R	260	260

COMPRESSOR RESISTANCE (Ω)

	CU-PA7DKD	CU-PA9DKD
CONNECTING	CWB092128	CWB092312
C - R	3.678	3.466
C - S	7.240	3.843

※ For PA7DKD, the power source is 220V.
 For PA9DKD, the power source is 220V-230V.

CS-PC7DKD/CU-PC7DKD CS-PC9DKD/CU-PC9DKD



INDOOR FAN MOTOR RESISTANCE(Ω)

	CS-PC7DKD	CS-PC9DKD
CONNECTING	CWA921308	CWA921329
Y-B (M)	395	390
Y-R (A)	325	390

OUTDOOR FAN MOTOR RESISTANCE(Ω)

	CU-PC7DKD	CU-PC9DKD
CONNECTING	CWA951427	CWA951427
Y-B	275	275
Y-R	260	260

COMPRESSOR RESISTANCE(Ω)

	CU-PC7DKD	CU-PC9DKD
CONNECTING	CWB092129	CWB092279
C - R	4.307	3.072
C - S	7.668	5.216

※ For PC7DKD, the power source is 220V.
For PC9DKD, the power source is 220V-230V.

8 Operation Details

8.1 Cooling Mode Operation.

When selecting the Cooling Mode Operation, the unit will operate according to the setting by the Remote Controller or the control panel on the indoor unit and the operation is as the following.

Time Delay Safety Control

- 3 min.----If the compressor stops, it will not restart within 3 minutes.(Protection of compressor).

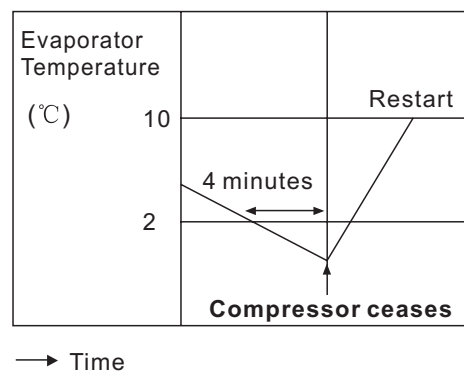
7 Minutes Time Save Control

- 7 min.----The unit will automatically operate in 7 minutes even if the room temperature is not reached. (Prevention of raising the humidity)

Anti-Freezing Control

- If temperature of evaporator is lower than 2°C continuously for 4 minutes, the compressor will cease to prevent the evaporator from freezing. Fan speed setting will not be changed.
- When temperature of evaporator reaches 10°C, compressor will restart.

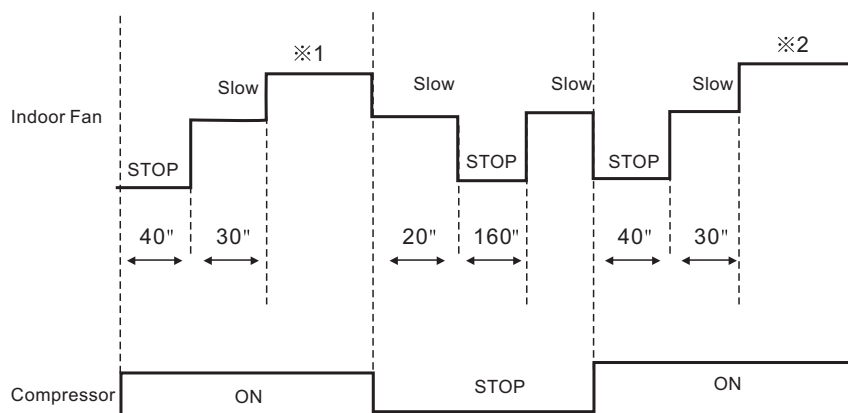
※ During Cooling Mode Operation, the Time Delay Safety Control is available.



Automatic Fan Speed Mode

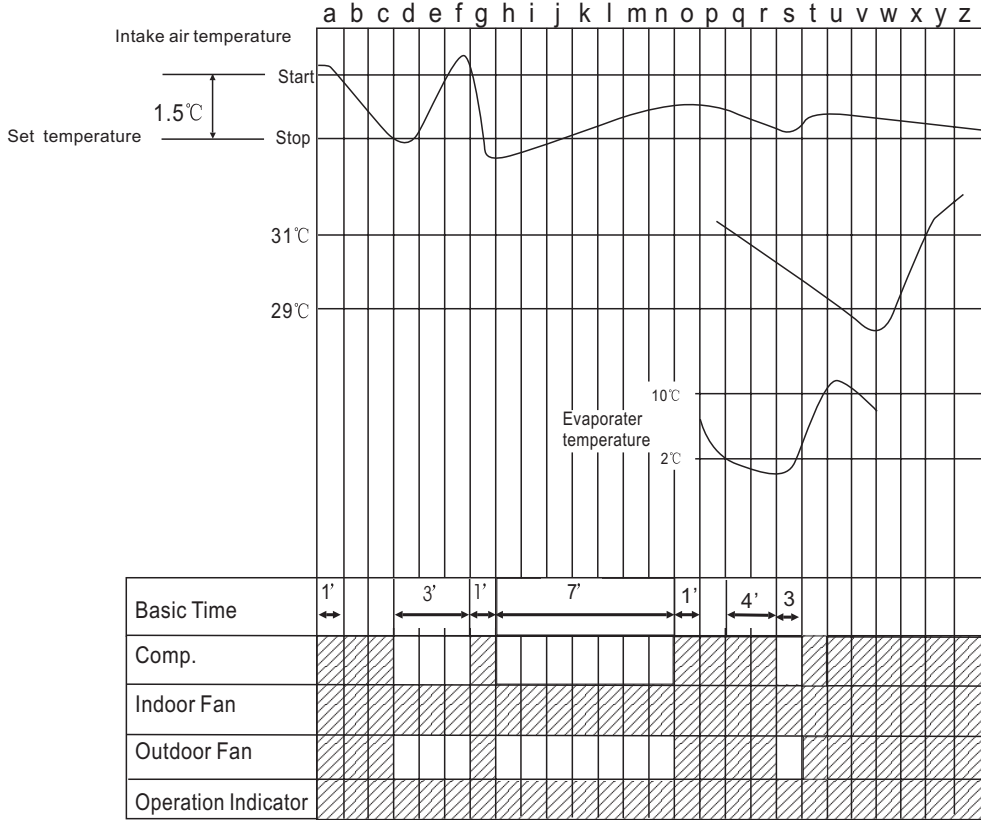
During Cooling Mode Operation, use remote controller to select Automatic Fan Speed.

- Fan speed will be at the point between "High speed" and "Medium speed".
- Deodorization control.



- ※ 1 Fan speed will be at "Hi" till the compressor ceases (set temperature reached).
- ※ 2 Fan speed will be at "Me" when the compressor restarts.

Time Graph for Cooling Operation

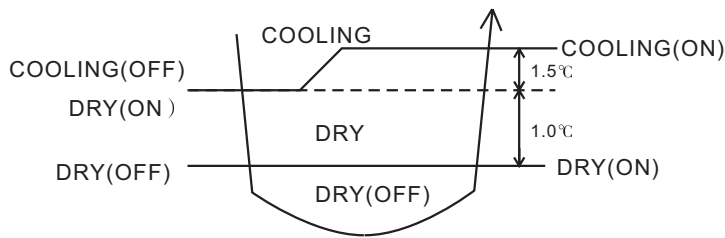


〈Operation status〉
 d-g : Time delay safety control
 g-h : Compressor Test control
 h-o : Auto restart control
 q-t : Anti-freezing Control

→ Time
 Operate
 Stop

8.2. Soft Dry Mode Operation

- Operation area



- When selecting Soft Dry mode operation, the operation will be cooling until the room temperature reaches the set temp on remote control, and then Soft Dry will be activated. (During Soft Dry Mode the fan of indoor unit will operate at super low speed. The soft dry mode will run for less than 10 minutes.)
- Once Soft Dry mode operation is turned off, indoor fan, compressor and outdoor fan will stop for 6 minutes.

Time Delay Safety Protection

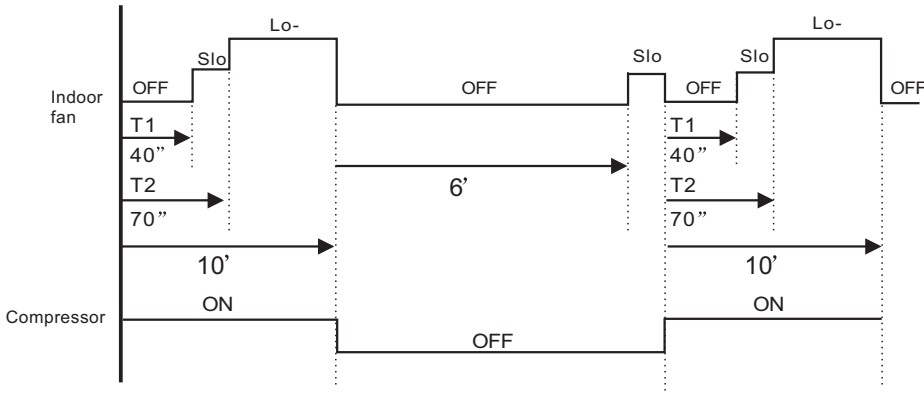
- During cooling mode operation, if the compressor ceased, it will not restart within 3 minutes.

Anti Freezing Control

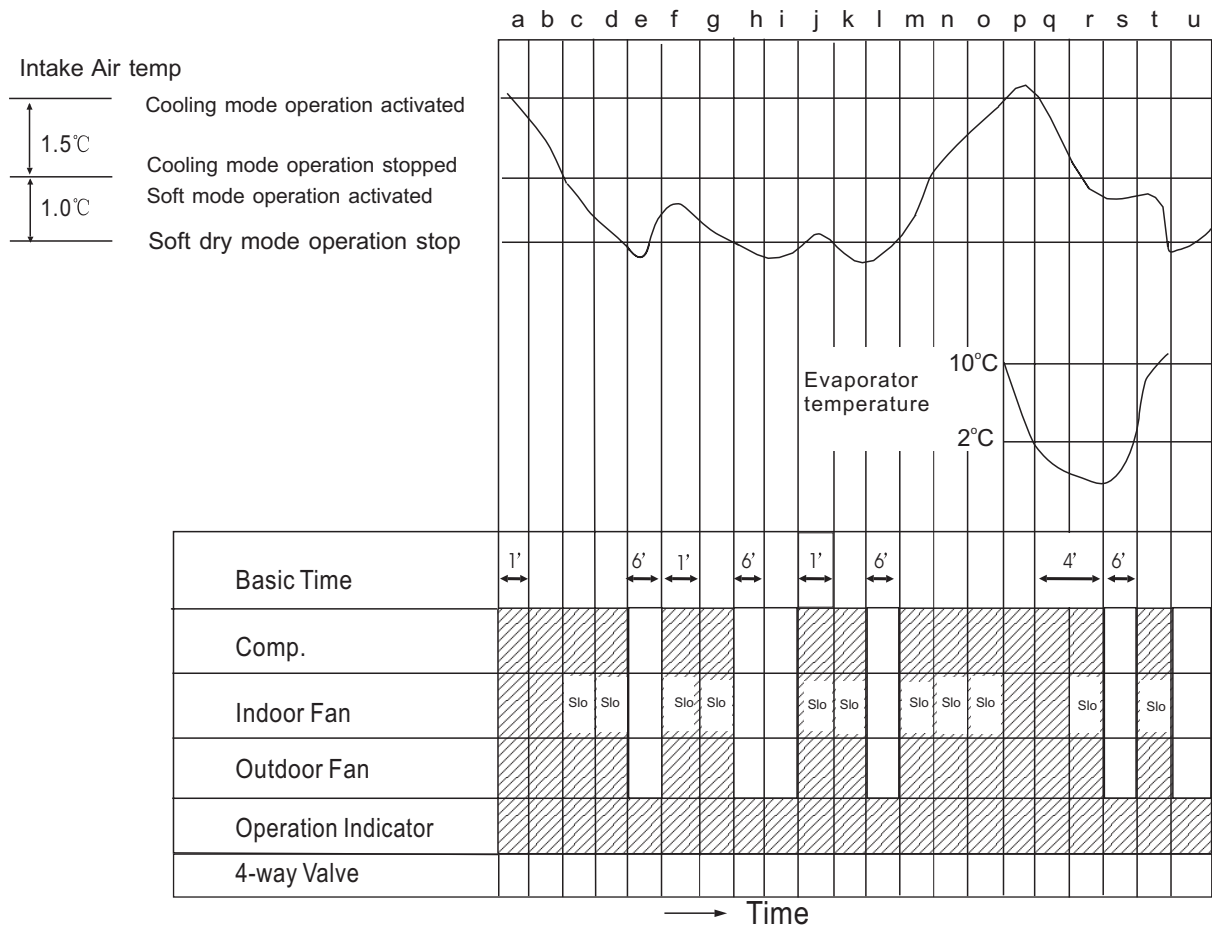
- Same as the denotation in Cooling Operation.(P21)
(During Soft Dry Mode Operation, compressor will stop for at least 6 min.)

Automatic Fan Speed

- During Soft Dry Operation, use remote controller to select Auto Fan Speed mode. Indoor Fan Speed is at "Lo-"



Time Graph for soft dry operation



<Operation status>

- a - c, p - r : Cooling Mode Operation
- c - p, r - u : Soft Dry Mode Operation
- e - f : Soft Dry Mode Operation Stopped
- j - l : Compressor Test Operation Control
- q - t : Anti Freezing Control

- Cooling mode operation
- - - Soft Dry Mode operation
- ▨ Operate
- Stop

8.3. Heating Mode Operation(Only for PA7DKD,PA9DKD)

When selecting the Heating Mode Operation, the unit will operate according to the setting by the Remote Controller and the operation is as the following.

Time Delay Safety Control

- If the compressor stopped by switching off, turning off by remote controller, or power off, it will not restart within 3 minutes.
- When room temperature reaches the set temperature on the remote controller, compressor stops and will not restart within 4 minutes.
- 3 minutes after the compressor stopped, indoor fan will stop for 1 minute. Then indoor fan will resume operation with the speed at "super low".

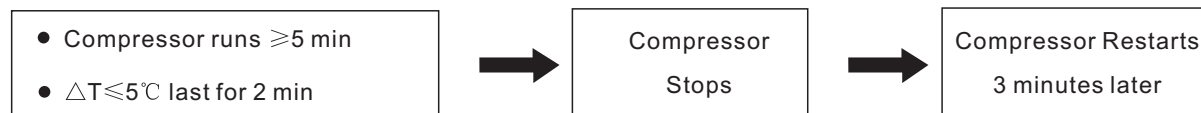
Over Load protection Control

- When temperature of indoor heat exchanger rises to 51°C, outdoor fan will stop when temperature of indoor heat exchanger falls to 49°C, outdoor fan will restart.
- When temperature of indoor heat exchanger rises to 65°C or above, compressor stops, and will restart 4 minutes later.



Anti-reversing Control

- If the compressor has been continuously running for 5 minutes or longer, and the difference of temperature between intake air and evaporator is continuously lower than 5.0°C or below for 2 minutes, the compressor will stop, and then restart 3 minutes later. (Time Delay Protection Control is effective.)



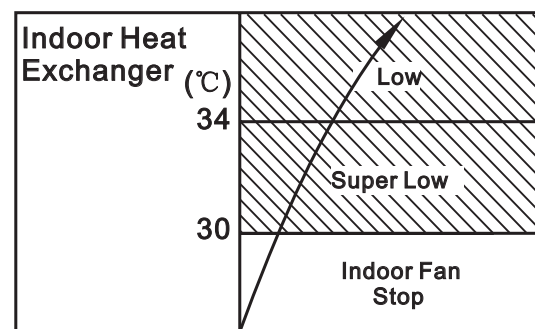
ΔT = intake air temperature - evaporator temperature

4-way valve control

- During heating mode operation, 4-way valve is at "open" mode.
- During heating mode operation, if the unit turned off, the 4-way valve will remain at "open" mode for 5 minutes.

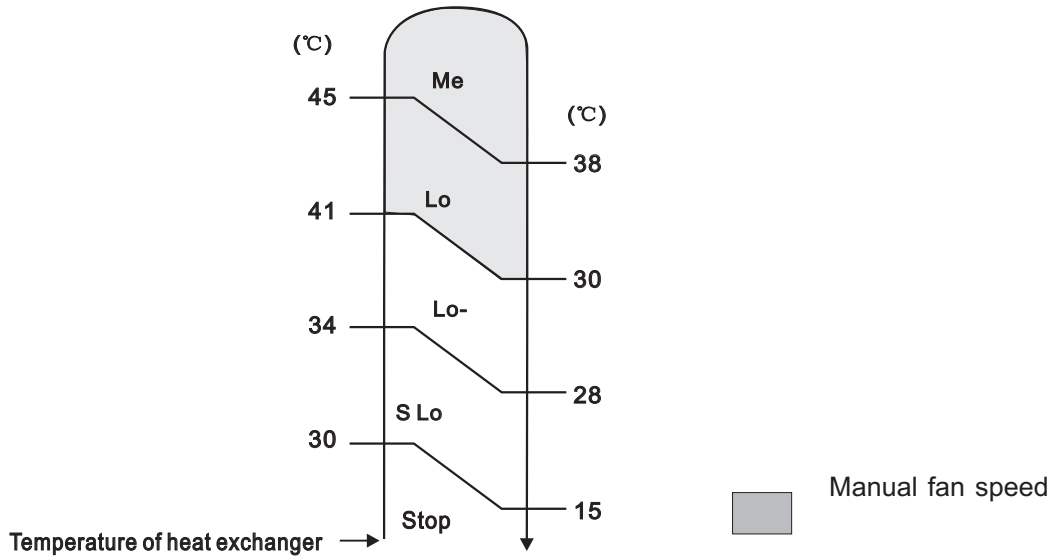
Warm Booting Control

- When turning on the unit by heating mode operation, indoor fan will be activated when temperature of indoor heat exchanger reaches 30°C. (See the figure on the right)
- Warm boot operation ends when temperature of indoor heat exchanger reaches 34°C.

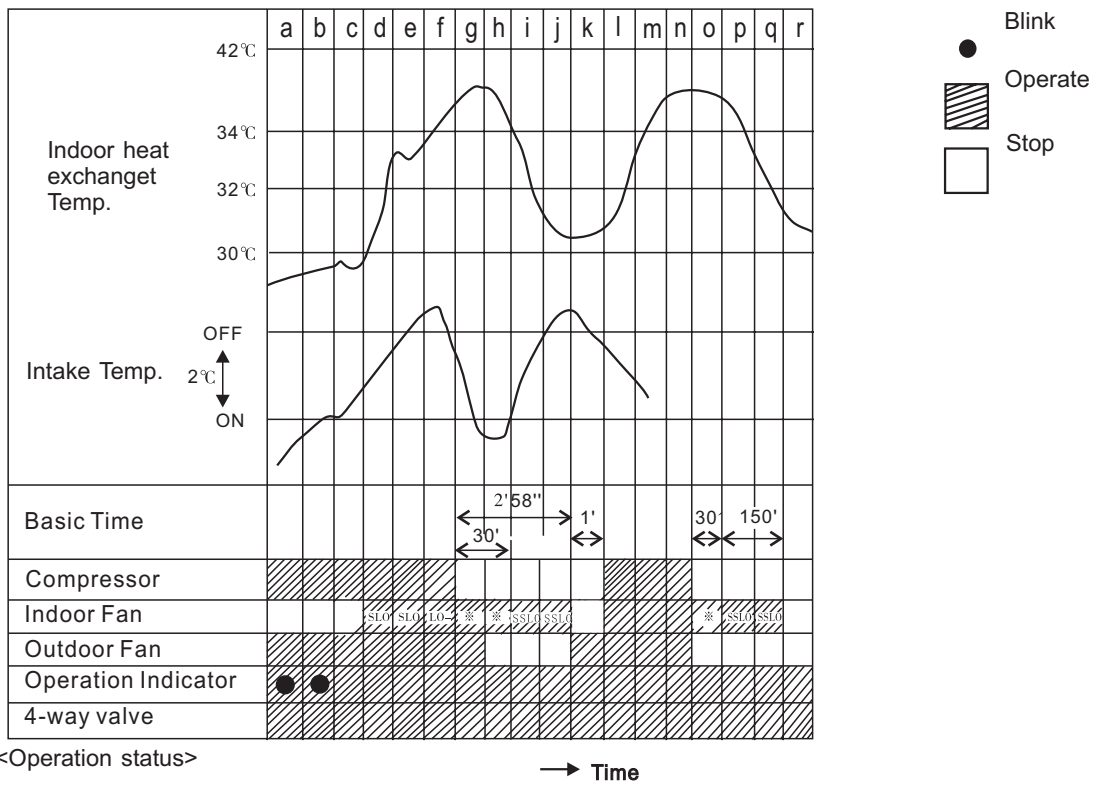


Automatic Fan Speed

During Heating Operation, use remote controller to select Auto Fan Speed mode. Indoor Fan Speed is between "Me" and "SLo".



Time Graph for Heating Operation



- a - b : Warm booting control(indoor fan Off)
- c - d : Warm booting control(indoor fan Super Slo)
- h - k, o - r : Prevent cool air blowing out

Deice Control

Deice operation is to protect the outdoor unit from freezing.

● Normal Deice Operation

Deicing starts 30 minutes after heating mode operation or 60 minutes after the latest deicing operation. If temperature of outdoor piping, tested by TRS, falls to -3°C (TRS OFF) or below for continuously 50 seconds, deicing operation starts.

● Overload Deicing Operation

During heating operation, if the accumulative stopping time of outdoor fan reaches 60 minutes, deicing operation will start 1 minute after compressor starts.

● Deicing operation ends under conditions below

(a) After 12 minutes.

(b) Temperature of outdoor unit rises to 4°C.

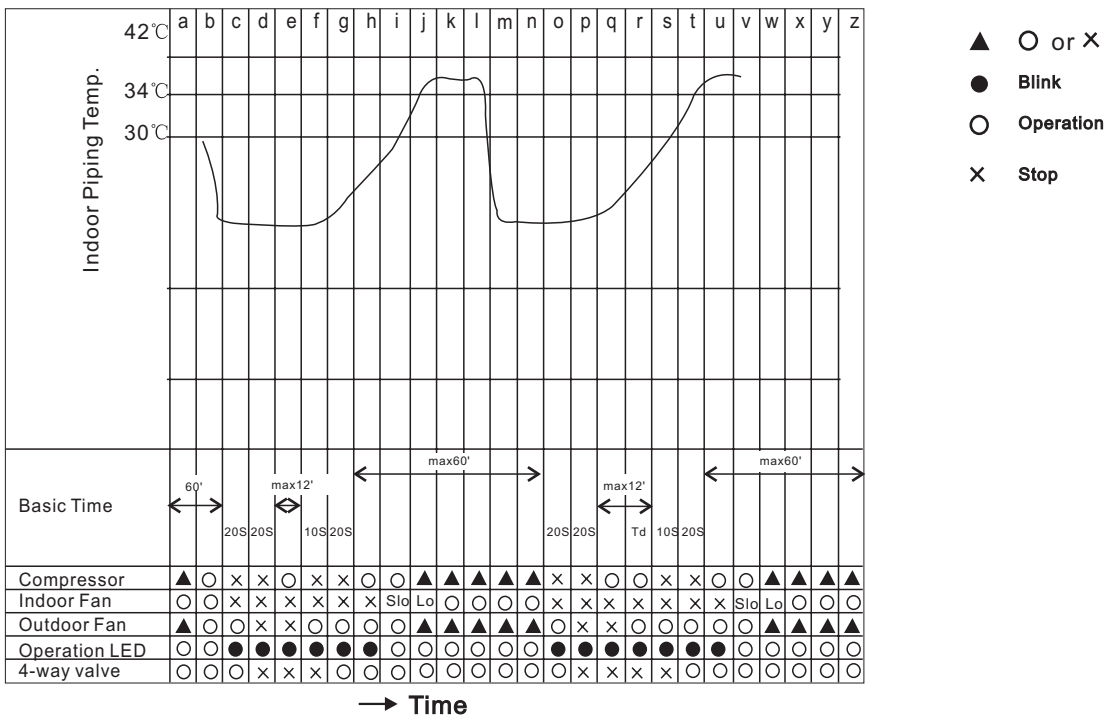
(c) As the illustration showed bellow and due to Time Delay (Td), deicing won't ends immediately.

Deicing Operation Time(T)	Td(s)
<3 min	0
3min ≤ T < 7min	60
7 min ≤ T < 9min	120
T ≥ 9min	180

● Once deicing operation starts, it won't end until 60 seconds later.

● When deicing operation ends, compressor will stop for 30 seconds, and 4-way valve remains at cooling mode operation for 10 seconds.

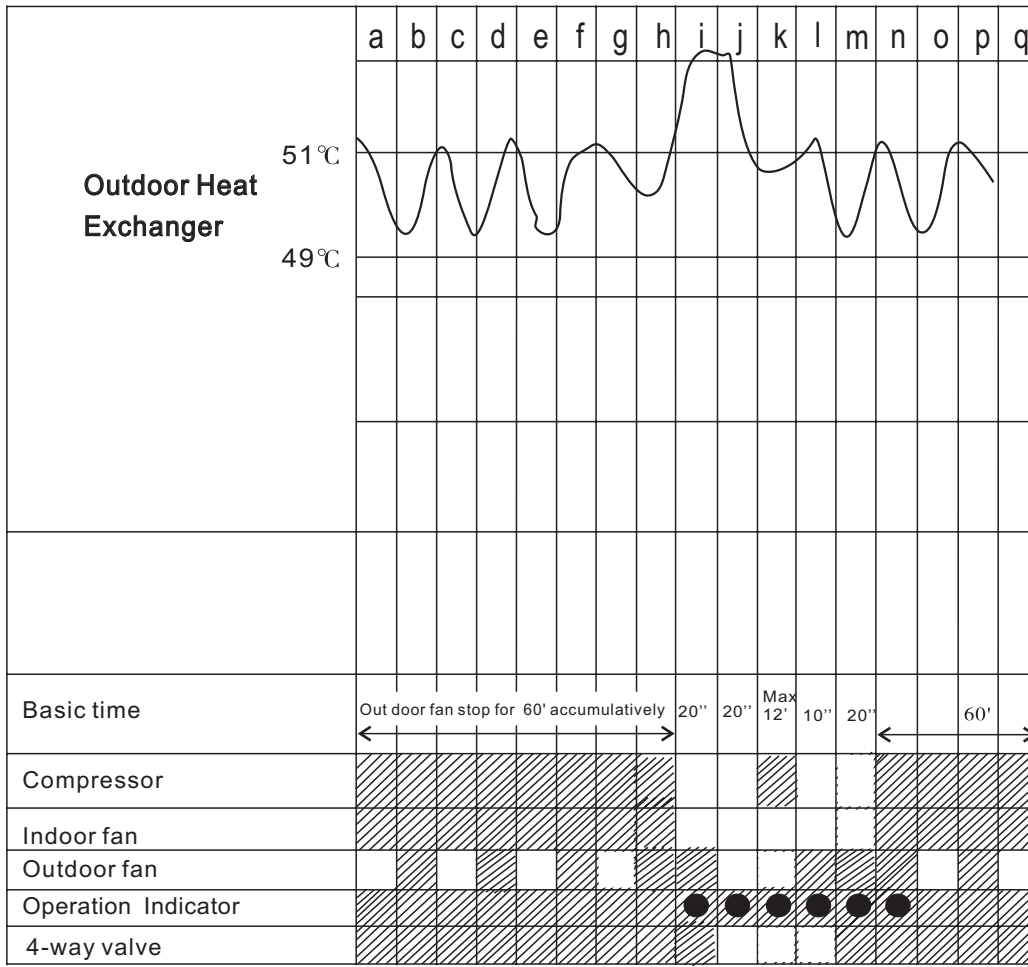
Time Graph for Normal Deicing Operation



<Operation status>

- a-c : Deicing confirmation
- c-g : Deicing operation(time reset)
- h-j,u-w : Warm Booting
- o-r : Deicing(TRS)

Time Graph for Overload Deicing



→ Time

<Operation status>

- a-i: Overload control
- i-l: Overload deicing(timer)
- l-m: Warm booting control
- m-r: Overload control

- Blink
- ▨ Operation
- Stop

8.4. Automatic Mode Operation

Standard for Determining Operation Mode

- First Determination:

Intake Air temperature	23°C	Cooling mode	Setting Temperature (Standard)	Cooling mode	25°C
		Soft Dry mode		Soft Dry mode	22°C
	20°C	Heating mode	Heating mode	21°C	

- Second Determination:

One hour after the above determination, the unit will operate according to the table below.

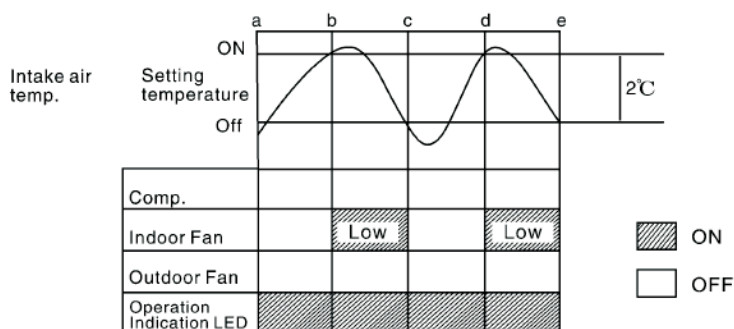
		Second Determination		
		Cooling	Dry	Heating
First determination	Cooling	23°C or above	————	23°C below
	Dry	————	20°C or above	20°C below
	Heating	25°C or above	————	25°C below

- A) Indoor fan operates at super low speed for 25 seconds.
- B) After judging indoor air temperature, the operation is determined and operation continued at the mode determined.
- C) If indoor temperature is less than 16°C, heating operation will immediately operate.
- D) After the operation mode has been determined, the mode does not change. However, Soft Dry mode operation includes cooling mode operation.
- E) If automatic mode operation is started while the unit is operating, operation will continue. If current operation is in cooling mode (including the cooling mode operation when is a part of Soft Dry mode operation) it will be maintained, and if current operation is not cooling mode, the appropriate operation mode is determined for 25seconds at super slow fan speed. Then the selected mode will continue.
- F) Room temperature adjustment

Higher	→	+2°C
Standard	→	±0°C
Lower	→	-2°C

8.5. Air Circulation Mode Operation(Only for PC7DKD,PC9DKD)

1. An additional heater may make the warm air evenly covering each corner of the room.
2. When the temperature near the ceiling reaches the setting temperature, Air Circulation Mode Operation commences at low airflow volume. It stops when the temperature drops to 2°C below the setting temperature.
3. The vertical airflow direction louver will not swing.



8.6 Air Quality Sensor Control

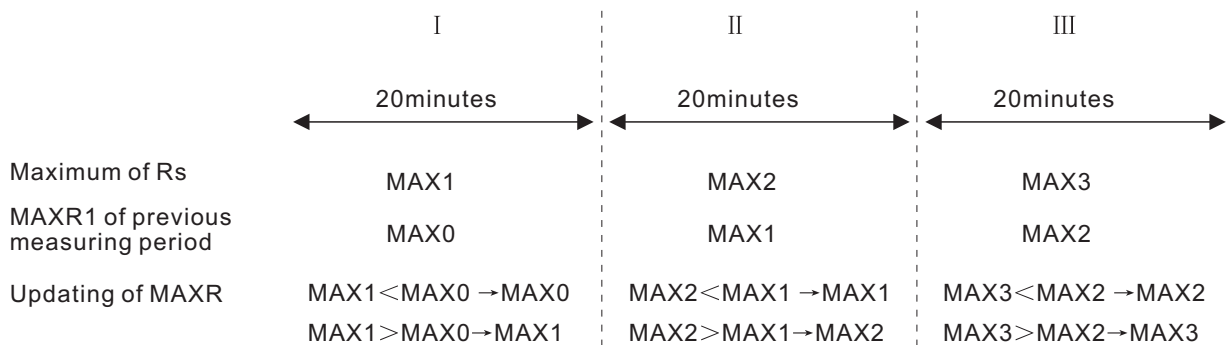
- Resistance of air quality sensor: $R_s(\text{air})=10\text{k}\Omega\sim 50\text{k}\Omega$ (The worse the air quality, the smaller the resistance.)

Basic Operation

- Detecting and indicating of the air quality will not stop during the operation of the air conditioner.
- The power of the air quality sensor is always on during the operation of the air conditioner. When the air conditioner stops (The air conditioner is on standby.), the air conditioner will provide power to the air quality sensor intermittently (It will be on for 3 minutes after each 109 minutes.) for the purpose of air quality detecting.
- Within 2 minutes after the air conditioner starts to operate, the air quality sensor is in the process of preheating and the air quality indicator is red.

Resistance Reference

- Detecting of air quality(During the operation of the air conditioner):
 - (a) The measuring period is 20 minutes; The air conditioner will measure the resistance (R_s) of the air quality sensor once each 2 seconds and record the data. The maximum R_s within the 20 minutes will be selected as $R_s(\text{MAX})$ for this measuring period.
 - (b) Suppose the current $R_s(\text{MAX})$ as MAX and the resistance reference of the previous measuring period is as MAXR1 .; If $\text{MAX}>\text{MAXR1}$, the resistance reference of the current measuring period is $\text{MAXR}=\text{MAX}$; If $\text{MAX}<\text{MAXR1}$, $\text{MAXR}=\text{MAXR1}$;
 - (c) Within 2 minutes after the power of the air quality sensor is turned on, the resistance reference of this measuring period is the maximum resistance of the sensor during this period.



The following conditions should be fulfilled

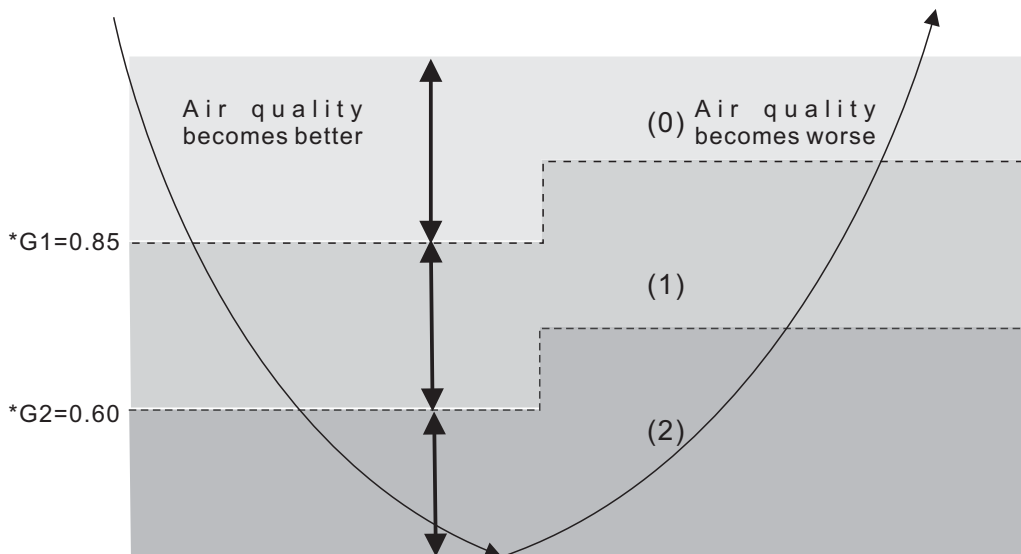
- (d) The initial MAXR after the preheating of the air quality sensor when the air conditioner is turned on:
The air conditioner will compare the maximum value of the current measuring period (MAX) with the resistance reference 109 minutes before (MAXR0) and select the bigger one as the current resistance
- (e) reference(MAXR).
When the air conditioner determines the air quality is getting worse: Air quality level 1 Air quality level 2,
MAXR will not be updated; When the air quality gets better (air quality level 0), R_s detected at this time will be
- (f) MAX and MAXR.
The air conditioner will not detect the air quality during deicing operation. The indication prior to the deicing operation will be held during the deicing operation.

- Detecting of air quality(When the air conditioner is on standby.)
 - (a) After the air conditioner stops operation, it will provides power to the air quality sensor intermittently to detect the air quality and update the resistance reference (MAXR). The power of the air quality sensor will be on for 3 minutes after each 109 minutes.
 - (b) During these 3 minutes, the air quality sensor will be in preheating process for 2 minutes and the other time is for measuring the resistance. The air conditioner will compare the maximum resistance measured in this period with the maximum value in the previous 109 minutes and the bigger one will be selected as resistance

Air Quality Control

- Detecting of air quality(When the air conditioner is on standby.)
 Rs/MAXR will be calculated automatically every 2 seconds and the air quality level will be determined in accordance with the value below,

	Signal of Air Quality Sensor	Air Quality Level
Air Quality Getting Worse	$R_s/MAXR \leq G1$	(0)→(1)
	$R_s/MAXR \leq G2$	(1)→(2)
Air Quality Getting Better	$R_s/MAXR \geq G3$	(2)→(1)
	$R_s/MAXR \geq G4$	(1)→(0)



※ Set the sensitivity number of the air quality sensor as 2 (Standard)

Air Quality Level and Indicator

- During preheating of the air quality sensor the air quality indicator is red.
- The color of the air quality indicator varies with the air quality level:
 - Air Pollution Level 0: Green
 - Air Pollution Level 1:Orange
 - Air Pollution Level 2:Red

Forced Resetting

- Forced Resetting Time (The added operation time mentioned later not included.)
 - (a) Air Pollution Level 2: Red: 5 minutes Orange: 8 minutes Green
 - (B) Air Pollution Level 1: Red: 5 minutes Orange: 8 minutes Green
- Timer Resetting

When the forced resetting mode is determined and the following conditions are fulfilled, the timer is reset.

 - 1) The air quality changes which results in the changing of the color of the air quality indicator.
 - 2) Compare Rs detected in current 2 seconds with R1 detected in previous 2 seconds and $R_s/R_1 < 0.95$.
 - 3) Suppose Rs detected in previous 3 minutes is R2 and $R_s/R_2 \leq 0.87$.

Added Operation of Air Quality Sensor

- When the air quality getting worse

If the air pollution level changes from 0 to 2, the color of the air quality indicator changes as below,
Green → Orange (2 Sec.) → Red
- When the air quality getting better (added operation)

If the air pollution level changes from 2 to 0, the color of the air quality indicator changes as below,
Red (60 Sec.) → Orange(60Sec.) → Green
- Judgment during added operation

During added operation, if the air quality sensor judges that the air quality is getting worse, the added operation will be stopped immediately and the air quality indicator will shift to normal indication. If the air quality getting better, the air conditioner will judge the air quality until the added operation is finished.

Sensitivity Control of Air Quality Sensor

- The sensitivity number can be changed through the following procedure

<Setting Sensitivity Number>

 1. Keep the SET button on the remote control depressed continuously for 5 seconds to select sensitivity control mode.
 2. The previous sensitivity setting will be displayed in the temperature display.
 - “0”=Turn off the air quality indicator
 - “1”= Low Sensitivity.....G1=0.70, G2=0.45, G3=0.48, G4=0.73
 - “2”=Standard Sensitivity.....G1=0.85, G2=0.60, G3=0.63, G4=0.88
 - “3”=High Sensitivity.....G1=0.90, G2=0.65, G3=0.68, G4=0.93
 3. Press ▽ or △ button on the remote control to change the sensitivity
- Within 10 seconds after the sensitivity setting is finished, other settings are not available. The display of the remote control will change back to normal without pressing any button.

8.7 Demo Mode (Outdoor unit not needed)

Activate the demo mode:

Keep the AUTO button on the indoor unit depressed continuously for 15 seconds until 3 beeps are heard and the demo mode is activated.

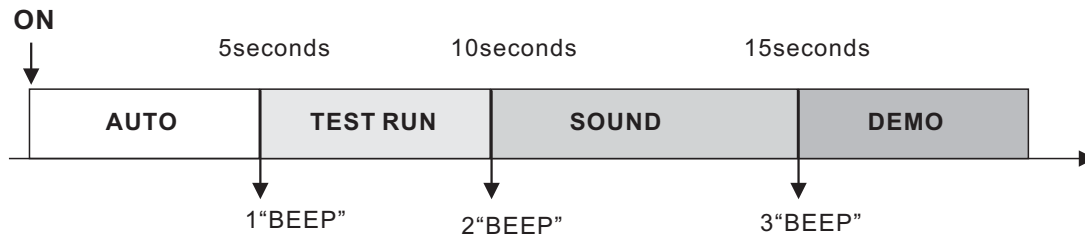
Turn off the air conditioner

Demo mode operation will be restarted automatically in 1 minute.

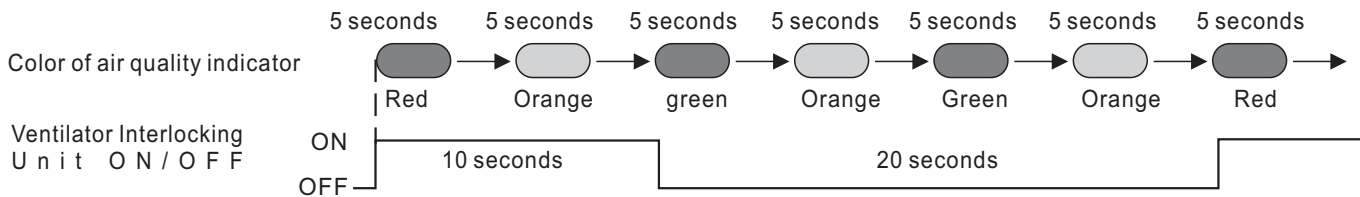
- In demo mode, the air conditioner can be operated (if the outdoor unit is connected to the indoor unit); Whenever you turned off the air conditioner, it will restart automatically into demo mode operation.

Cancel the demo mode:

- Keep the AUTO button on the indoor unit depressed continuously for 15 seconds until 3 beeps are heard.

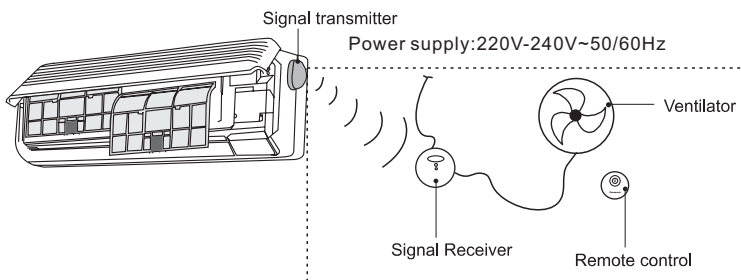


- Demo operation control (Air quality indicator and Ventilator Interlocking Unit signal)



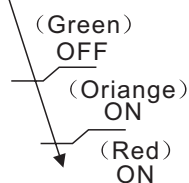
8.8 Ventilator Interlocking Unit Control (Optional)

- Purpose: The air conditioner will control the operation of the ventilator (optional) according to the signal of the air quality sensor when displaying the air quality.
- Devices: Ventilator, Ventilator Interlocking Unit (wireless)
- ※ To use this function, a ventilator and a ventilator interlocking unit should be purchased.

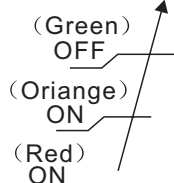


- Control Specification:

Air quality getting worse



Air quality getting better



15 minutes after the air conditioner is Turned on:

- Ventilator ON: Air quality indicator is red or orange.
- Ventilator OFF: Air quality indicator is green or the air conditioner is turned off.

※ Within 15 minutes after the air conditioner is turned on, the ventilator will not operate even though the air quality indicator is red.

8.9 About Cursor Key Which Points To “OFF” On Remote Control

- When the ON/OFF button on the remote control is pressed, the cursor key which points to “OFF” will appear or disappear to indicate the ON/OFF status of the air conditioner.



- For some reason (Ex. The signal of the remote control does not reach the signal receiver of the indoor unit.), the display of the remote control will not correspond with the actual ON/OFF status of the indoor unit:
 - The air conditioner is running but the cursor key which points to “OFF” appears. The air conditioner can be stopped with any button (Except for “ON/OFF”, “TIMER SET”, “TIMER ON”) pressed.
 - The air conditioner is on standby, but the cursor key which points to “OFF” disappears. The air conditioner can be started with any button(Except for “ON/OFF”, “TIMER SET”, “TIMER OFF”) pressed.

8.10. Indoor Fan Motor Control

- Automatic fan speed control
When automatic fan speed set, the available range for fan speed is from Hi to SLo.
- Manual Fan Speed Control
Basic fan speed can be manually adjusted (Lo, Med, Hi) by using the fan speed selection button.
- Basic Fan Speed

Category		Hi	Me	Lo	Lo-	SLo	SSLo
Cooling Mode Operation	Manual	○	○	○			
	Auto	○	○			○	
Soft Dry Operation	Manual				○	○	
	Auto				○	○	
Heating Mode Operation	Manual	○	○	○	○	○	○
	Auto		○	○	○	○	○

8.11. Auto restart control

- If the operation is stopped due to a power failure under any operation mode, it will restart automatically under the previous operation mode when the power supply is resumed.

8.12. Airflow Direction Control






Airflow Direction Auto-control

- When set at airflow direction auto-control with remote control, the louver swings up and down as shown in the table below.
- The louver does not swing when the indoor fan stops during operation.
- When stop the unit with remote control, the discharge vent is closed with the louver.
- When temperature of indoor heat exchanger reaches 38°C during heating mode operation, if temperature falls to 35°C, airflow direction will change from the lower limit to horizontal.
- ※ The left and right airflow direction louver can be adjusted manually.

Airflow direction manual control

- When the airflow direction set button is pressed, the automatic airflow is released and the airflow direction louver moves up and down as shown in the table below. The louver can be stopped by releasing the button at the desired position.
- When the remote control is used to stop the operation, the discharge vent is closed with airflow direction louver.

Angles Of Airflow Direction Louver

Operating Mode						
Cooling Soft dry	Manual	12°	17°	26°	32°	36°
	Auto	12° ~36°				
Heating	Manua	9°	21°	29°	44°	55°
	Auto	9° ~55°				
Determining operation mode		9°				

Notes:

- In heating mode operation
 1. Airflow direction automatic control:
Airflow direction is automatically adjusted to horizontal direction when the temperature of indoor heat exchanger is low and it will be automatically adjusted downward while the indoor temperature rises.
 2. Airflow direction manual control:
The airflow direction is automatically adjusted to horizontal direction when temperature of indoor heat exchanger is low. While temperature of indoor heat temperature rises, the airflow direction is automatically adjusted to the place set by the remote control.
- In cooling or soft dry mode operation
If the compressor continues to operate for 60 minutes, and the louver direction is at No 5, the fan speed is below Med, the intake air temperature is below 29 °C and continues to change between 2 °C for 30 minutes, the louver direction will be at No 2 in order to prevent dew around the discharge vent.






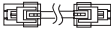
9 Installation

9.1. Before Installation

WARNING

- Engage dealer or specialist for installation. If installation done by the user is defective, it will cause water leakage, electrical shock or fire.
- Use the specified cable (1.5mm²) and connect tightly for indoor/outdoor connection.
- Power supply connection to a circuit breaker for the permanent connection. Use an approved 10A circuit breaker for the permanent connection. It must be a double pole switch with a minimum 3 mm contact gap.
- The unit must be earthed, or it will cause fire or electric shock.

Attached accessories

No.	Accessories parts	Qty
1	Installation plate 	1
2	Installation plate fixing screw 	5
3	Battery 	2
4	Remote controller 	1
5	Drain elbow (Only for models: PA7DKD, PA9DKD) 	1
6	Connecting Wire (Connector) (Only for models: PA7DKD, PA9DKD) 	1

SELECT THE BEST LOCATION

INDOOR UNIT

- There should not be any heat source or steam near the unit.
- There should not be any obstacles blocking the air circulation.
- A place where air circulation in the room is good.
- A place where drainage can be easily done.
- A place where noise prevention is taken into consideration.
- Do not install the unit near the door way.
- Ensure the spaces indicated by arrows from the wall, ceiling, fence or other obstacles.
- Recommended installation height for indoor unit shall be at least 2.5m.

OUTDOOR UNIT

- If an awning is built over the unit to prevent direct sunlight or rain, be careful that heat radiation from the condenser is not obstructed.
- There should not be any animal or plant which could be affected by hot air discharged.
- Keep the spaces indicated by arrows from wall, ceiling, fence or other obstacles.
- Do not place any obstacles which may cause a short circuit of the discharged air.
- If piping length is over the common length, additional refrigerant should be added.

Indoor/Outdoor Unit Installation Diagram

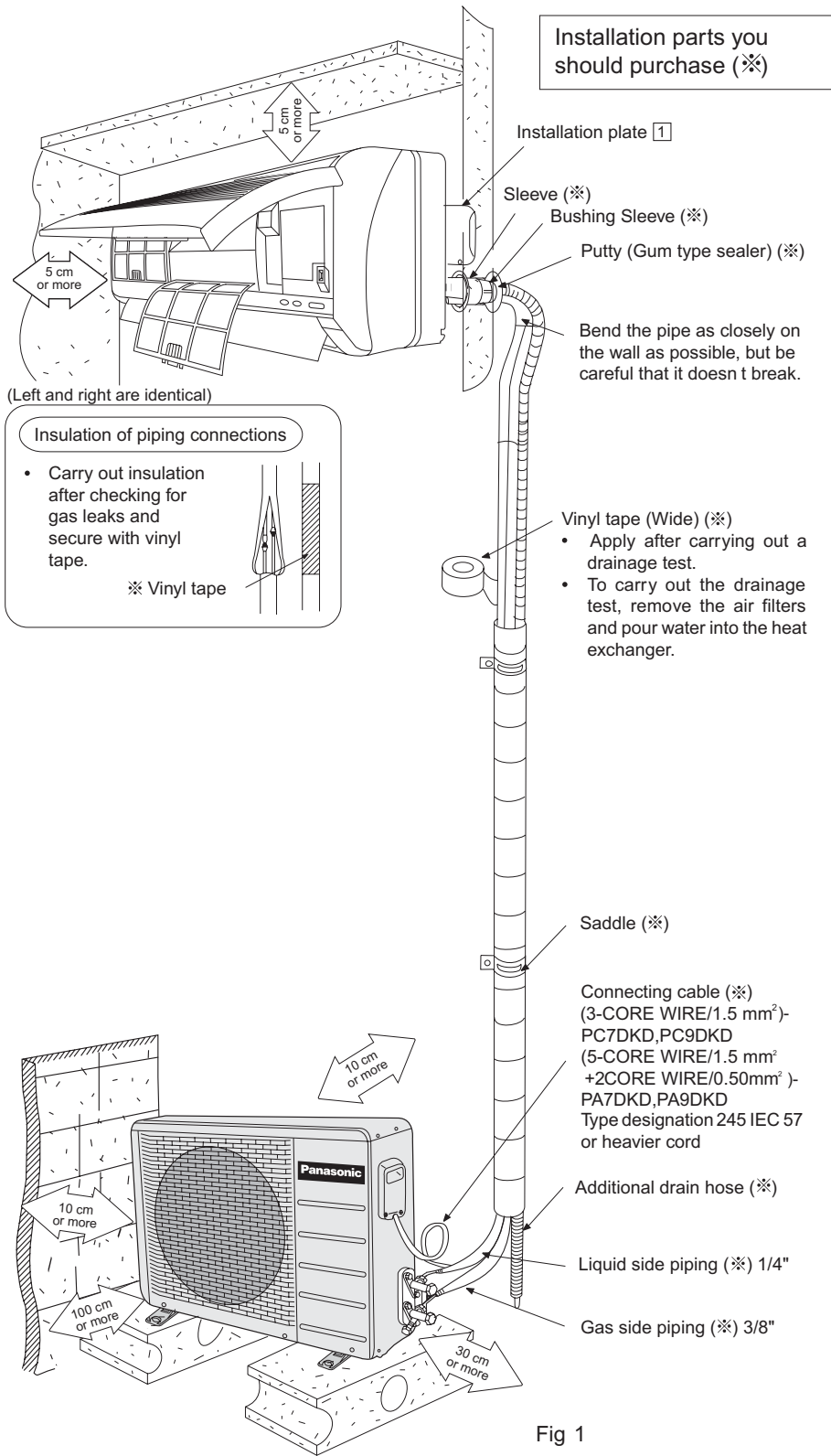


Fig 1

- This illustration is for explanation purposes only. The indoor unit will actually face a different way.

9.2. Outline of installation

Installation works	Installation parts	Required tools
1. Installation of indoor, outdoor unit 1) Select the best location..... 38 2) Indoor unit installation..... 39	<ul style="list-style-type: none"> ● Installation plate ● 4 wooden screws ● 4 anchor bolts 	<ul style="list-style-type: none"> ● A level gauge ● Philips screw driver ● Electric drill hole-core drill(Φ70mm) ● Side cutter or electrical pliers
2. Piping and drainage of indoor unit 1) Prepare of piping 40 2) Connection of piping 41 For the right piping 41 For the left piping 42	<ul style="list-style-type: none"> ● Pipes: Gas side.....3/8" <li style="padding-left: 20px;">Liquid side1/4" ● Insulated drain hose ● Insulation materials 	<ul style="list-style-type: none"> ● Flaring tools set Specified torque wrenches 18N.m.....Liquid side piping 42N.m.....Gas side piping Spanner.....Half union
3. In case of Embedded Piping For the embedded piping 44	<ul style="list-style-type: none"> ● Pipes: Gas side.....3/8" <li style="padding-left: 20px;">Liquid side 1/4" ● Insulated drain hose ● Insulation materials 	<ul style="list-style-type: none"> ● Flaring tools set Specified torque wrenches 18N.m..... Liquid side piping 42N.m..... Gas side piping Spanner.....Half union
4. Connecting piping and cable to the outdoor unit 1) Connecting the piping to the outdoor unit 45 2) Connecting the cable 45	<ul style="list-style-type: none"> ● Additional drain hose (Outer diameter.....1.5mm) ● Connecting cable (3-core wire/1.5mm²) Locally approved cable 	<ul style="list-style-type: none"> ● Specified torque wrenches 18N.m..... Liquid side 42N.m..... Gas side
5. Checking the drainage and connecting the cable to indoor unit 1) Checking the drainage 46 2) Connect the cable to the indoor unit 47	<ul style="list-style-type: none"> ● Connecting cable (3-core wire/1.5mm²) ● Locally approved cable 	<ul style="list-style-type: none"> ● A glass of water ● Phillips screw driver
6. Test Running 1) Connect the power supply 48 2) Evaluation of the performance 48		<ul style="list-style-type: none"> ● Circuit breaker or time delay fuse(consult an electrician) ● Operating instructions ● Thermometer

9.3. Outline of installation

9.3.1. Select the best location

1. Indoor unit

- There should not be any heat source of steam near the unit.
- There should not be any obstacles to prevent the air circulation.
- A place where air circulation will be good.
- A place where drainage can be easily obtained.
- A place where noise prevention is taken into consideration.
- Do not install the unit near the doorway.
- Ensure the spaces indicated by arrows from the wall, ceiling, fence, or other obstacles.(Fig 2)
- Recommended installation height for indoor unit shall be at least 2.5m.

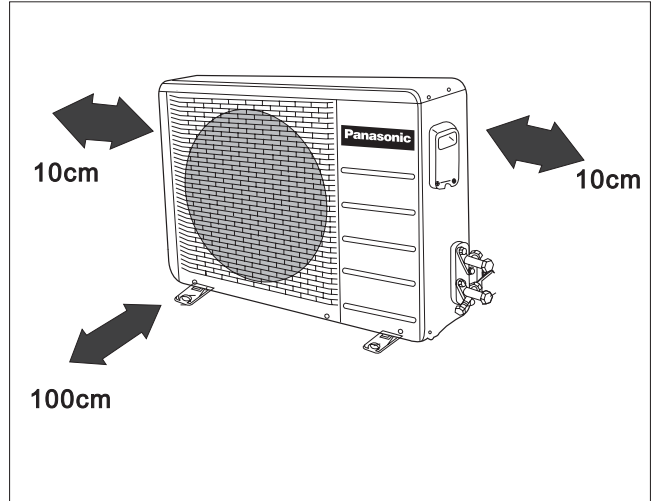


Fig.3

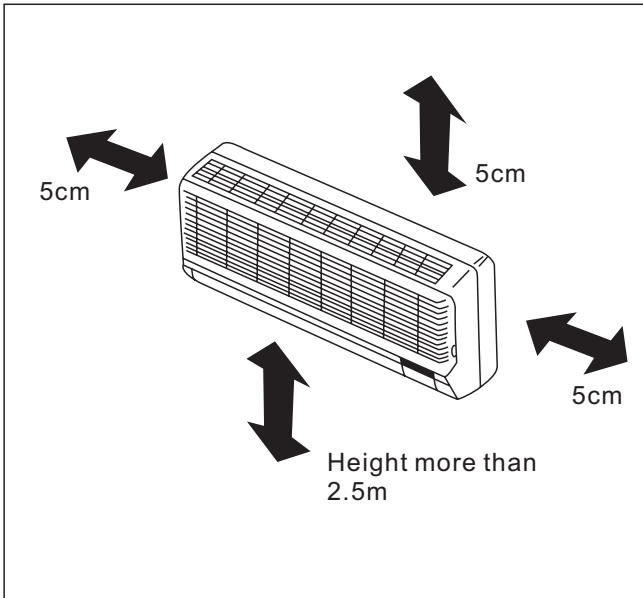


Fig.2

3. Piping length and elevation

Model	Piping size		Max piping length(m)	Max piping elevation(m)
	Gas	Liquid		
PA7DKD/PC7DKD PA9DKD/PC9DKD	3/8"	1/4"	7	5

2. Outdoor unit

- If an awning is built over the unit to prevent direct sunlight or rain exposure, be careful that heat radiation from the condenser is not restricted.
- There should not be any animals or plants which could be affected by hot air discharged.
- Ensure the spaces indicated by arrows from the wall, ceiling, fence, or other obstacles.(Fig 3)

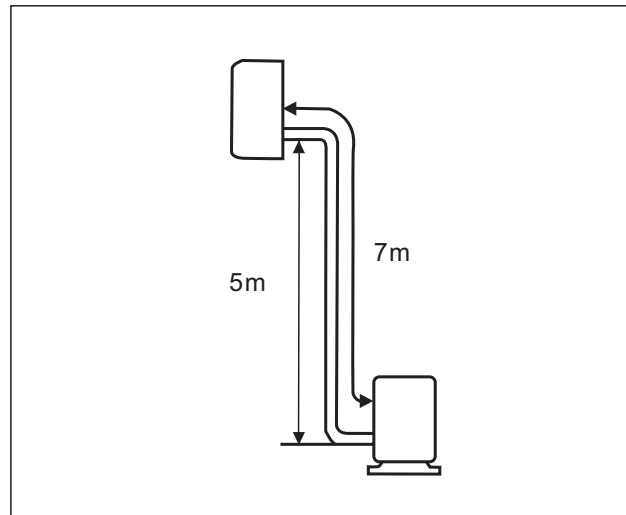


Fig.4

9.3.2. Indoor unit Installation

The mounting wall is strong and solid enough to prevent it from vibration.

1. Mount the installation plate on the wall with four installation plate fixing screws.

(If mounting the unit on the concrete wall, consider using anchor bolts.)

- Always mount the installation plate horizontally by aligning the mark-off line with the thread and use a level gauge.

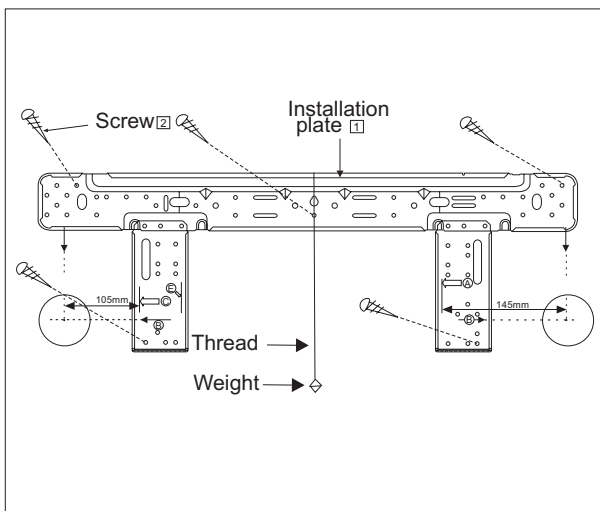


Fig.5

2. Drill the piping hole with $\phi 70\text{mm}$ hole-core drill.

- Line according to the arrows marked on the lower left and right side of the installation plate.

To drill a hole in the wall and install a sleeve for tube ass'y

- Drill a $\phi 70\text{mm}$ hole sloping downward toward the outside of the wall.
- Insert the sleeve for tube ass'y through the hole.
- Fix the bushing to the sleeve.
- Extrude 15mm of the sleeve then cut

Caution

When the wall is hollow please be sure to use the sleeve for tube ass'y to prevent dangers caused by mice biting the connecting cable.

- Finish by sealing the sleeve with putty or caulking compound at the final stage.

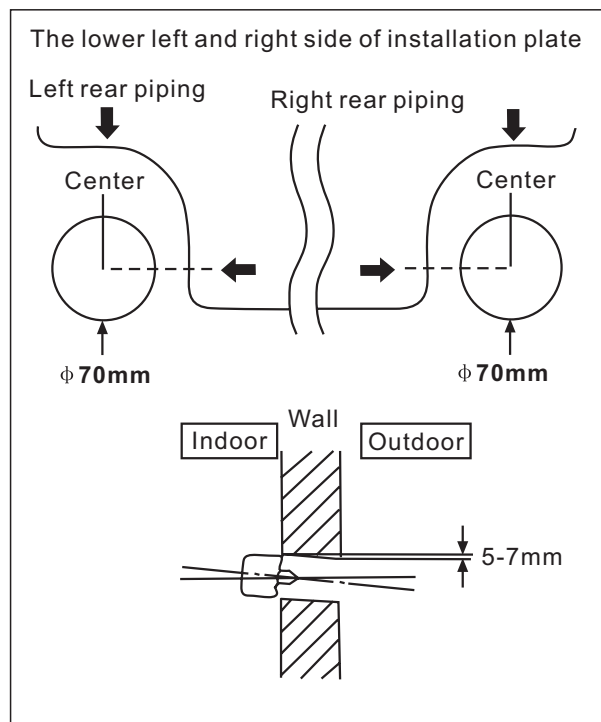


Fig.6

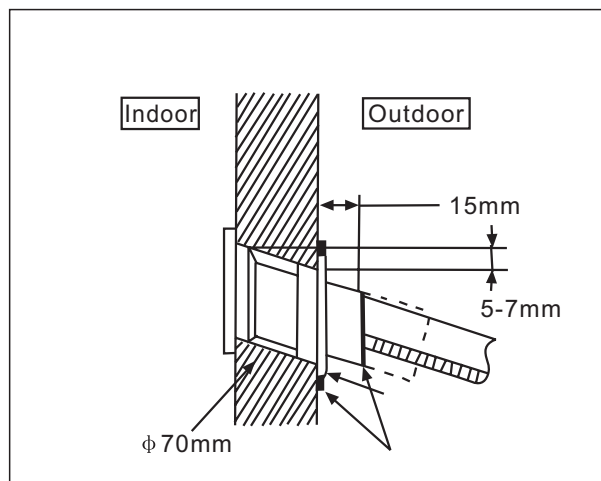


Fig.7

9.4. Piping and Drainage of Indoor Unit

9.4.1. Preparation of piping

1. Cut the pipes and the cable

- Use the accessory piping kit or pipes purchased locally
- Measure the distance between the indoor and the outdoor unit.
- Cut the pipes a little longer than the measured distance.
- Cut the cable a little longer than the pipe length.

Model	Pipe size	
	Gas side	Liquid side
PA7DKD/PC7DKD	3/8"	1/4"
PA9DKD/PC9DKD		

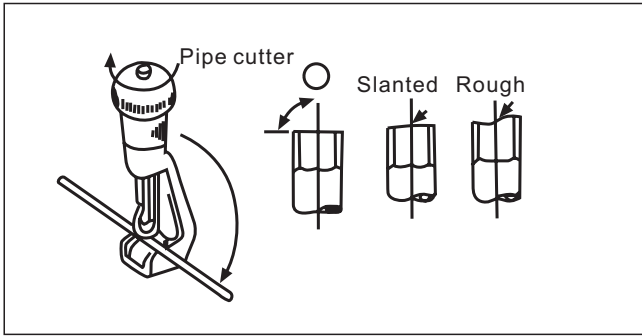


Fig.8

2. Remove burrs

- Remove burrs from cut edges of pipes.
- Turn the pipe end down to avoid the metal powder entering the pipe.

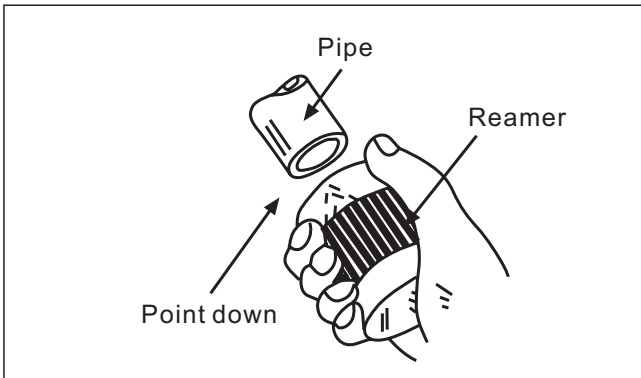


Fig.9

Caution

If burrs are not removed, they may cause a gas leakage.

3. Flaring the pipe

- Insert the flare nuts, mounted on the connection ports of both indoor and outdoor unit, onto the copper pipes.
- Fit the copper pipe end into the bar of flare tool about 0.5-1.5mm higher. (See Fig.10)
- Flare the pipe ends.

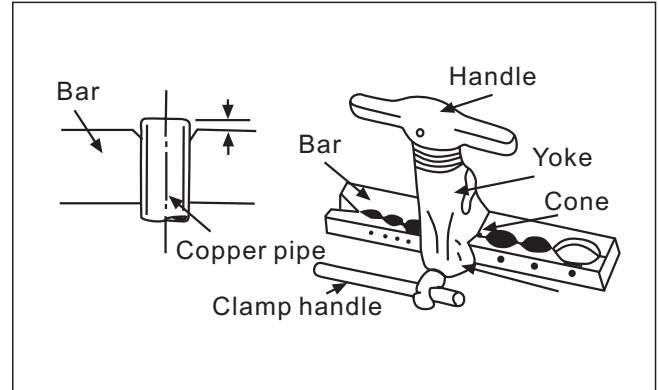


Fig.10

4. Tape the flaring portion to protect it from dust or damage.

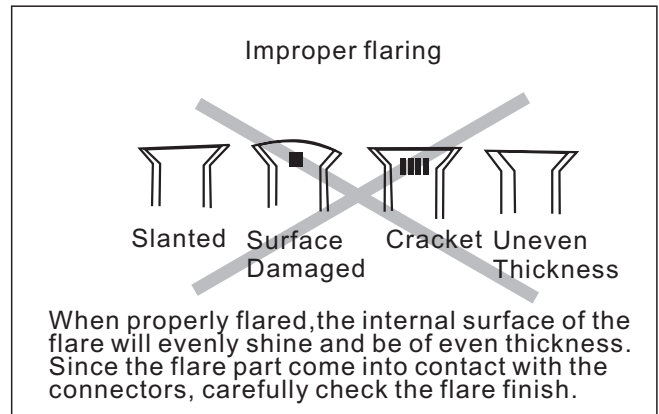


Fig.11

9.4.2. Connection of piping

Remove the indoor piping

- Pull the tube out of chassis.

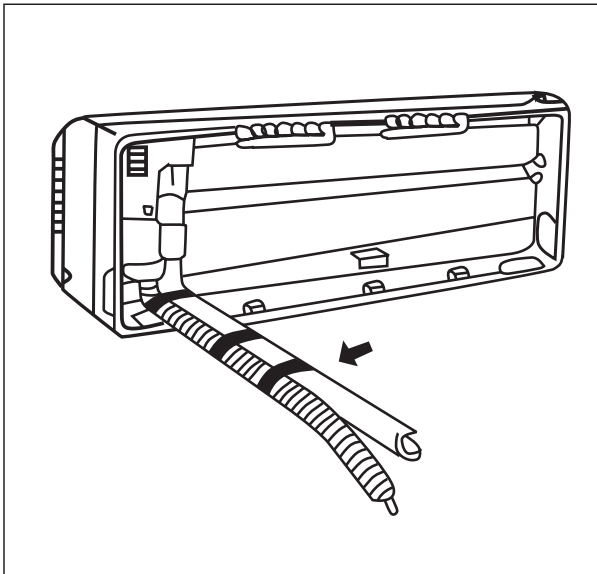


Fig.12

For the right piping

1. Pull the tube out of chassis.
2. Insert the tube and drain hose into the hole.
3. Insert the connecting cable into the indoor unit through the hole.
 - Do not connect the unit to power supply.
 - Make a small loop with the cable for easy connection later.
4. Tape the tube, drain hose and cable.

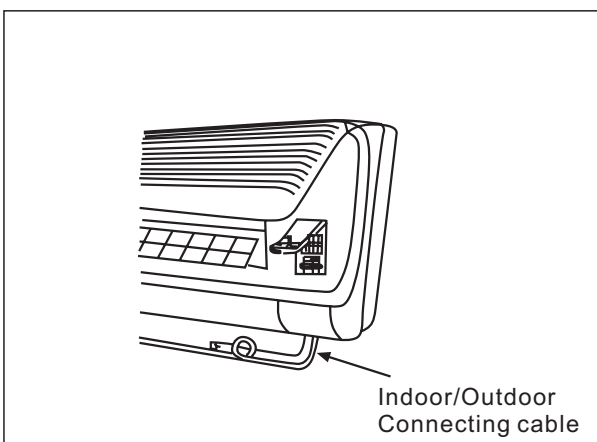


Fig.13

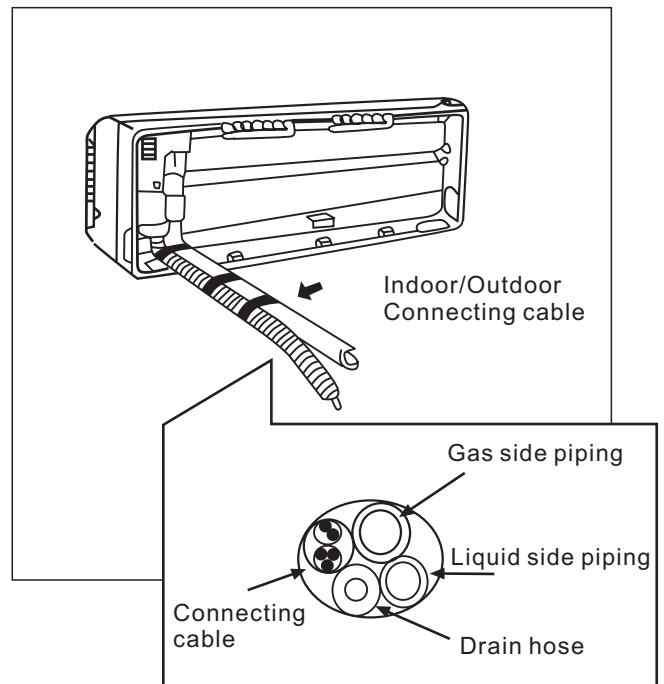


Fig.14

5. Indoor unit installation

- Hook the indoor unit onto the upper portion of installation plate. (Engage the two hooks of the rear top of the indoor unit with the upper edge of the installation plate.)
- Ensure the hooks are properly seated on the installation plate by moving it left and right.

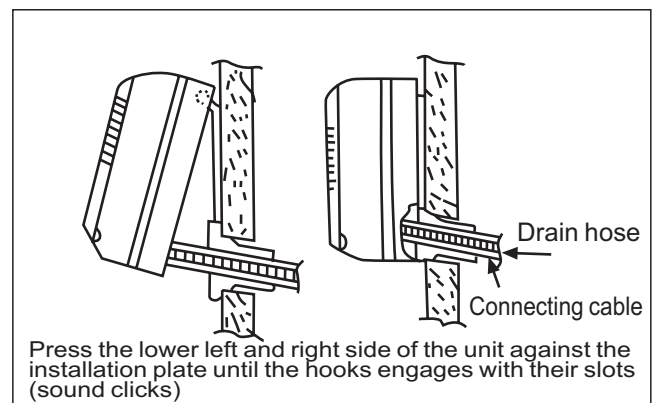


Fig.15

6. Connecting the piping to the indoor unit

- Align the center of the piping and sufficiently tighten the flare nut with fingers.
- Finally, tighten the flare nut with torque wrench until the wrench clicks. When tightening the flare nut with torque wrench, ensure the direction for tightening follows arrow on the wrench.

Model	Piping side	Torque
PA7DKD PA9DKD PC7DKD PC9DKD	Liquid side 1/4"	18N·m
	Gas side 3/8"	42N·m

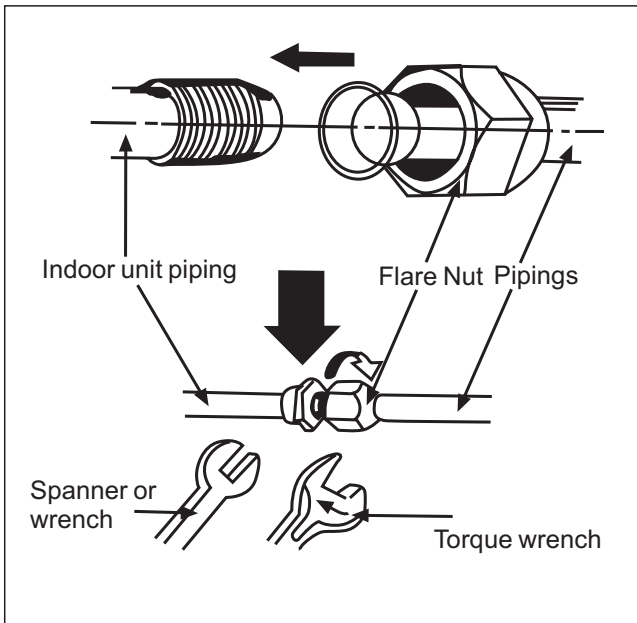


Fig.16

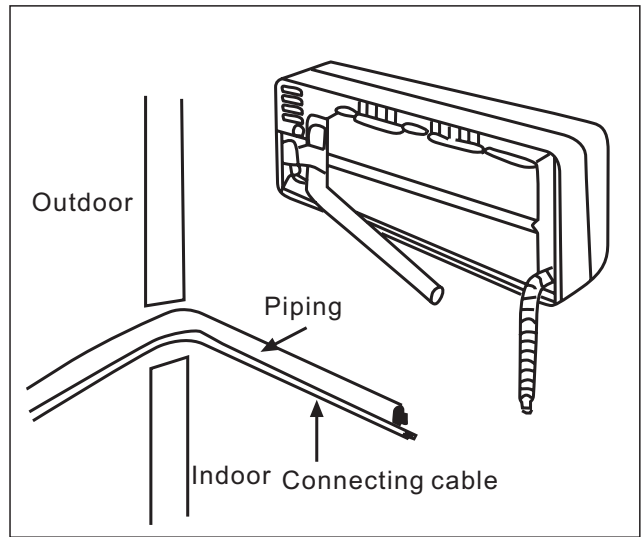


Fig.18

3. Insert the connecting cable into the indoor unit

- Do not connect the cable to the indoor unit.
- Make a small loop with the cable for easy connection.

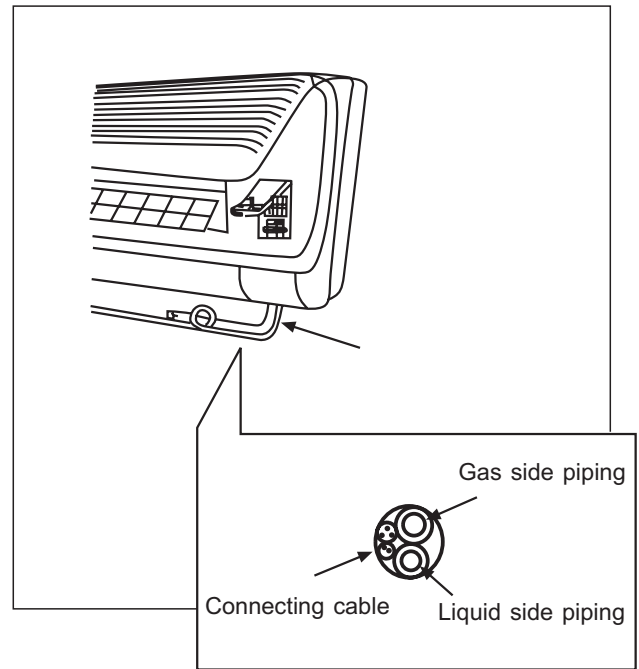


Fig.19

For the left piping

1. Route the indoor tubing with the drain hose to the hole.

- Pull out the drain hose.
- Exchange the hose and cap.

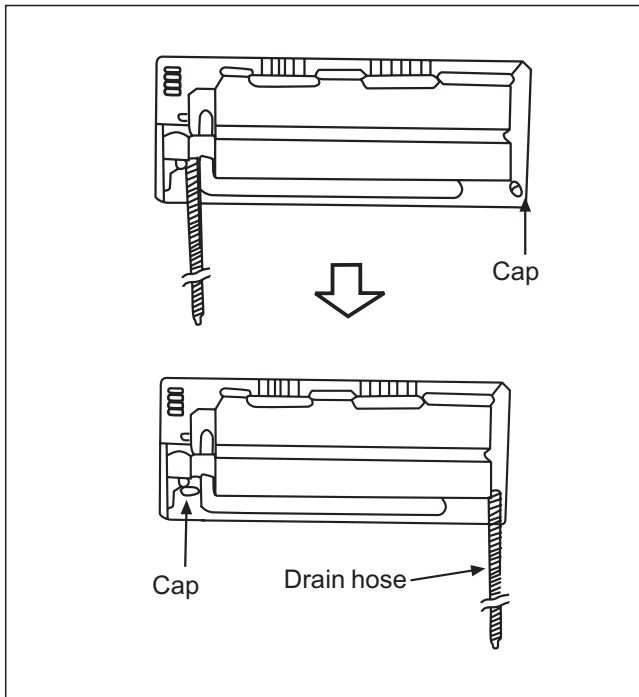


Fig.17

2. Insert the piping and connecting cable to indoor side through the hole.

4. Indoor unit installation

- Hook the indoor unit onto the upper portion of installation plate. (Engage the two hooks of the rear top of the indoor unit with the upper edge of the installation plate.)
- Ensure the hooks are properly seated on the installation plate by moving it left and right.

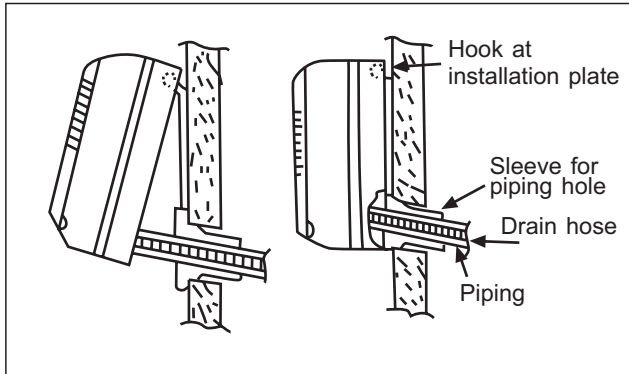


Fig.21

5. Connecting the piping to the indoor unit

- Align the center of the piping and sufficiently tighten the flare nut with fingers.
- Finally, tighten the flare nut with torque wrench until the wrench clicks.

When tightening the flare nut with torque wrench, ensure the direction for tightening follows arrow on the wrench.

Model	Piping side	Torque
PA7DKD PA9DKD	Liquid side 1/4"	18N·m
PC7DKD PC9DKD	Gas side 3/8"	42N·m

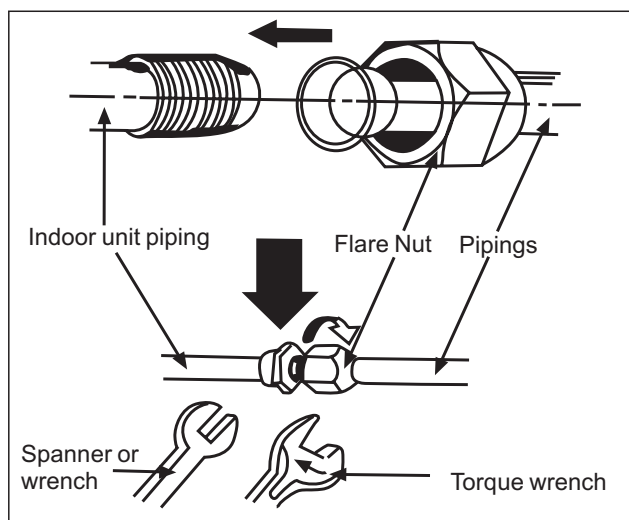


Fig.22

6. Set the piping and the connecting cable to the back of chassis with the clamping cover.

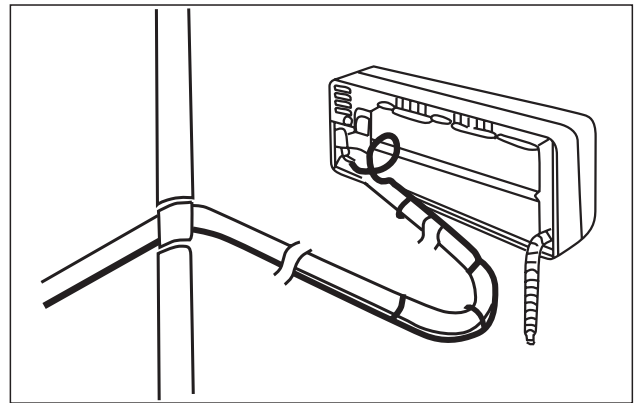


Fig.23

7. Tape the piping, drain hose and connecting cable.

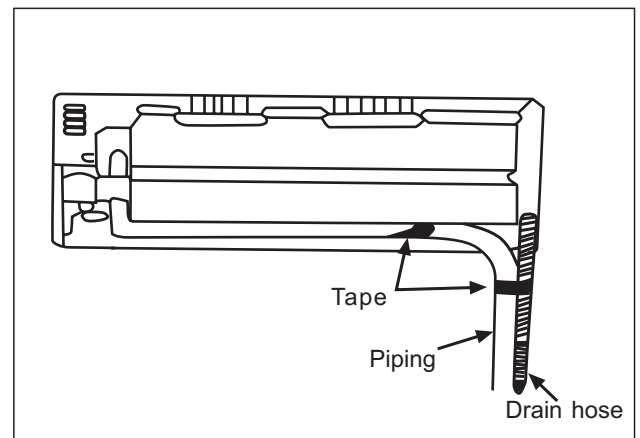


Fig.24

9.5. In case of embedded Piping

For the embedded piping

Follow the same procedure for left rear and left piping.

9.5.1. Replace the drain hose

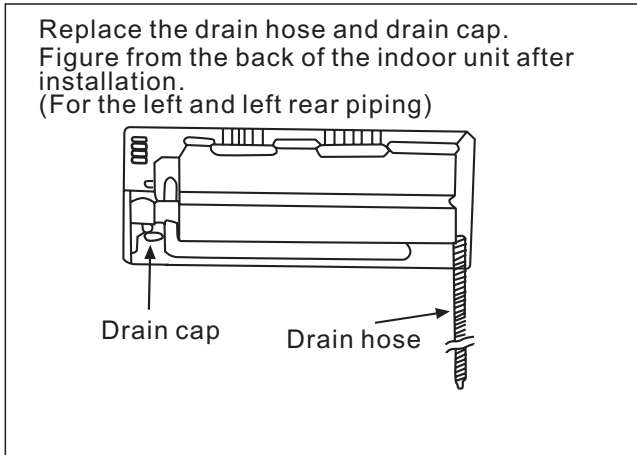


Fig.25

9.5.2. Bend the embedded piping

- Use a spring bender or equivalent to bend the piping so that the piping is not crushed.

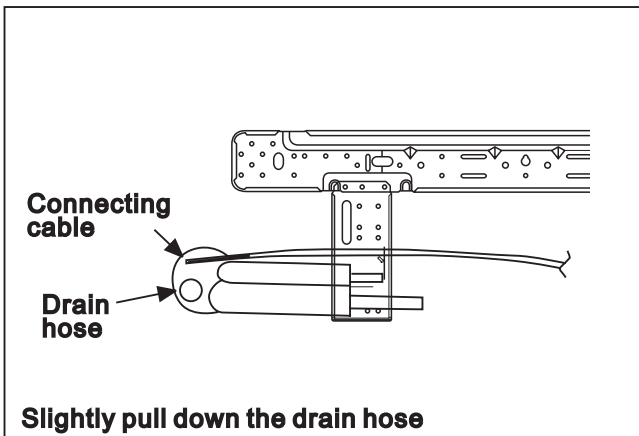


Fig.26

9.5.3. Install the indoor unit.

9.5.4. Cut and flaring the embedded piping

- When determining the dimensions of the piping, slide the unit all the way to the left on the installation plate.
- Refer to the section "cut and flaring the piping" in the directions for the outdoor unit. (Refer page 40)

9.5.5. Pull the connecting cable into the indoor unit.

9.5.6. Connecting the piping

- Refer to the section "connecting the piping" in the directions for the indoor unit. (Connecting the piping to the outdoor unit and checking the gas leakage.)

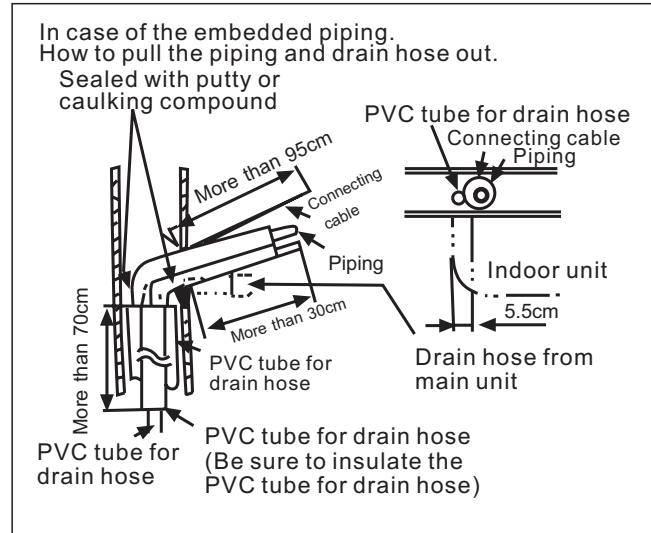


Fig.27

9.5.7. Connecting the cable to the indoor unit

- The cable can be connected without removing the front grille.

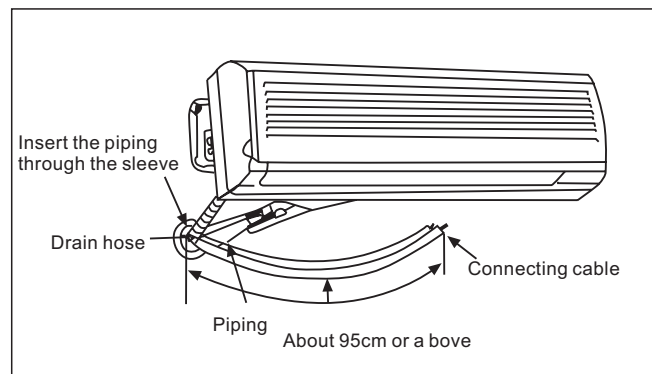


Fig.28

9.5.8. Install the indoor unit fixly. [REFERENCE Fig.28, Fig.29]

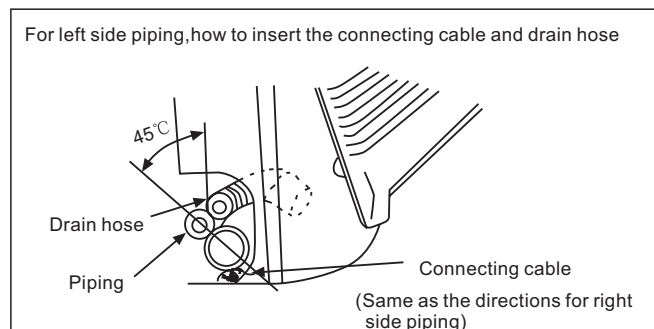


Fig.29

9.6. Connecting piping and the cable to outdoor unit

9.6.1. Connecting the piping to outdoor unit

1. Align the center of the piping and sufficiently tighten the flare nut with fingers.
2. Finally tighten the flare nut with torque wrench until the wrench clicks.
 - When tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrow of the wrench.


Piping side	Torque
Liquid side 1/4"	18N·m
Gas side 3/8"	42N·m

Caution






When connecting the piping, always use a torque wrench. Other tools may cause damage to the flare nut because of improper force.

3. Ensure not to let the piping exposed to air.










9.6.2. Connecting the cable to the outdoor unit

1. Remove the control board cover of the outdoor unit from the unit by loosening the screw.
2. Connecting cable between indoor unit and outdoor unit shall be approved polychloroprene sheathed 3 (PC7DKD, PC9DKD) or 5 (PA7DKD, PA9DKD)x 1.5 mm² flexible cord, type designation 245 IEC 57 or heavier cord.
For PA7DKD, PA9DKD the attached wire  with two connectors should be applied.

CS/CU-PC7DKD,CS/CU-PC9DKD

Indoor Connecting Terminal	1(L)	2(N)	
Colours of wires			
Outdoor Connecting Terminal	1(L)	2(N)	

CS/CU-PA7DKD,CS/CU-PA9DKD

Indoor Connecting Terminal	1(L)	2(N)	3	4		
Colours of wires						
Outdoor Connecting Terminal	1(L)	2(N)	3	4		Connector

3. Secure the cable onto the control board with the holder (clamper).
4. Attach the control board cover to the original position with the screws.

9.7. Checking the drainage and connecting the cable to indoor unit

9.7.1. Checking the drainage

1. Remove the front grille from the cabinet

When removing the front grille for maintenance purposes etc, carry out by the following procedures.

- Set the vertical airflow direction louver to the horizontal position.
- Remove the two caps on the front grille as shown in the illustration at right, and then remove the two mounting screws.
- Pull the lower section of the front grille toward you to remove the front grille.

When reinstalling the front grille, first set the vertical airflow direction louver to the horizontal position, and then carry out by steps "c" and "b" in that order. At this time check to sure that the fixing tabs on the top inside edge of the front grille are securely inserted into the respective slots.

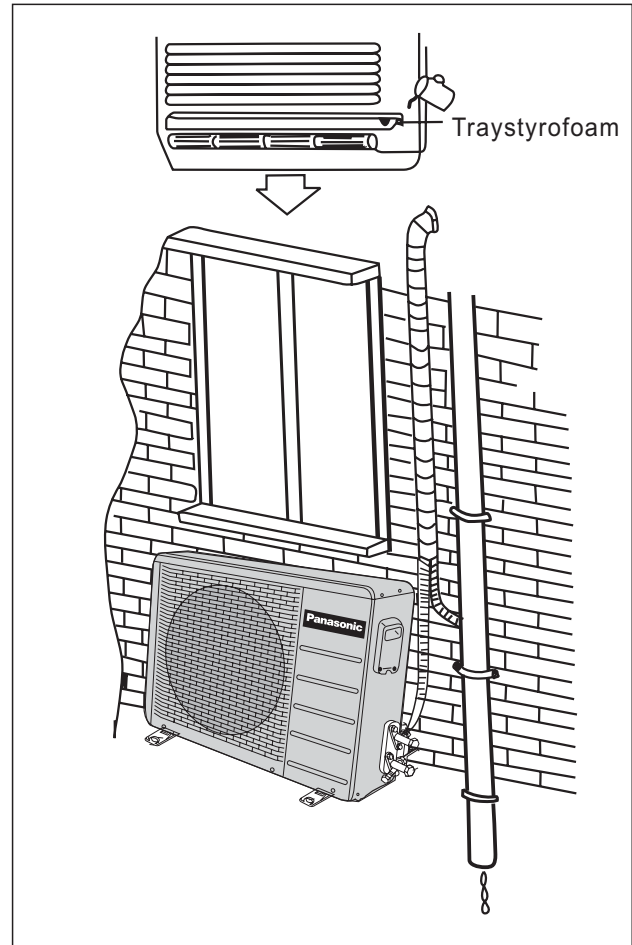
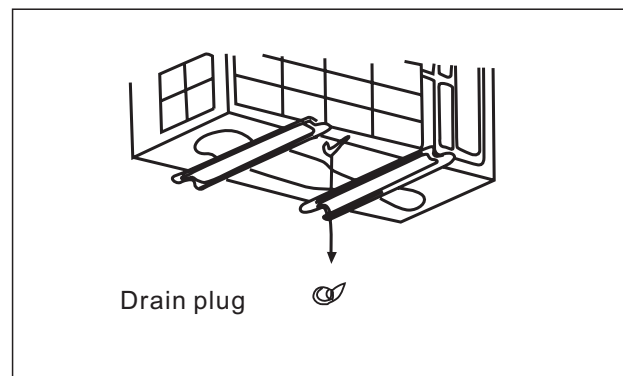


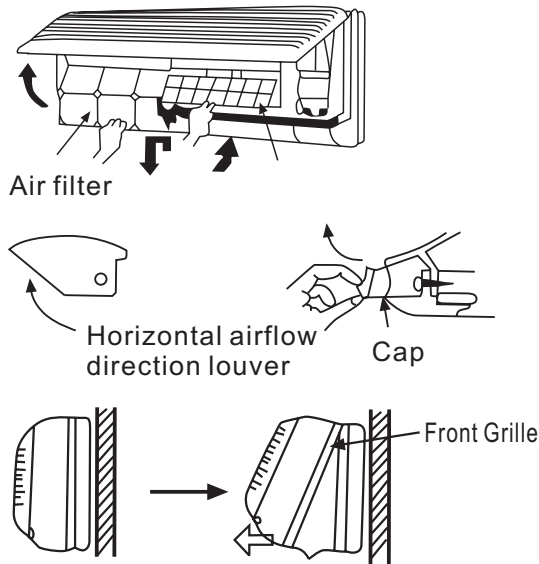
Fig.31

3. Drainage control for outdoor unit (For heating pump models only)

- If a drainage plug is applied, the outdoor unit should at least be 3 centimeters high from the floor.
- It is better not to use the drainage plug if the temperature is lower than 0°C, since icing of the condensed water may block the water flow.



Drain plug



Manually adjust the horizontal airflow direction louver to horizontal position

Pull the lower section of the front grille toward you to remove the front grille.

Fig.30

2. Checking the drainage

- Pour a glass of water into the drain tray traystyrofoam.
- Ensure water flow out from drain hose of indoor unit.

9.7.2. Connect the cable to the indoor unit

1. The inside and outside connecting cable can be connected without removing the front grille.
2. Connecting cable between indoor unit and outdoor unit shall be approved polychloroprene sheathed 3 (PC7DKD, PC9DKD,) or 5 (PA7DKD, PA9DKD) x 1.5mm² flexible cord, type designation 245 IEC 57 or heavier cord. For PA7DKD, PA9DKD, the attached wire [6] with two connectors should be applied.

- Ensure the colour of wires of outdoor unit and the terminal number are the same as the indoor's respectively.
- Secure the cable onto the board with the holder (clammer).
- Both the unit and the power supply socket should be properly grounded.

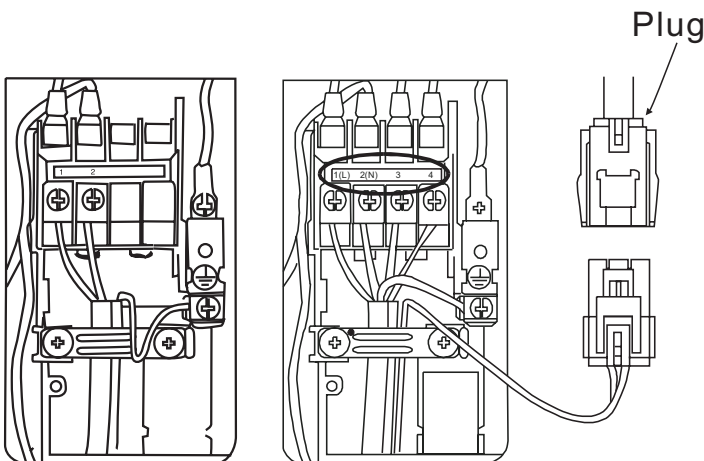
CS/CU-PC7DKD, CS/CU-PC9DKD

Indoor Connecting Terminal	1(L)	2(N)	
Colours of wires			
Outdoor Connecting Terminal	1(L)	2(N)	

CS/CU-PA7DKD, CS/CU-PA9DKD

Indoor Connecting Terminal	1(L)	2(N)	3	4		
Colours of wires						
Outdoor Connecting Terminal	1(L)	2(N)	3	4		Connector

- Secure the cable onto the control board with the holder (clammer).



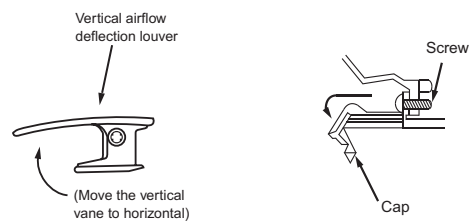
CS-PC7DKD
CS-PC9DKD

CS-PA7DKD
CS-PA9DKD

HOW TO TAKE OUT THE FRONT GRILLE

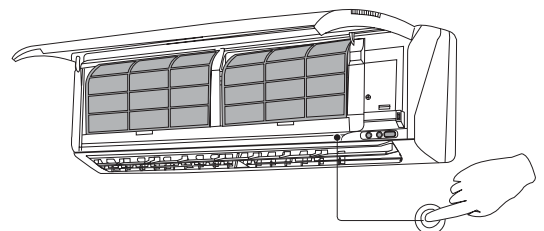
- Please follow the steps below to take out front grille
 1. If necessary such as when servicing.
 2. Set the vertical airflow direction louver to the horizontal position.
 3. Slide down the two caps on the front grille as shown in the illustration below, and then remove the two mounting screw. Pull the lower section of the front grille towards you to remove the front grille.

When reinstalling the front grille, first set the vertical airflow direction louver to the horizontal position and then carry out above steps 2-3 in the reverse order.



AUTO SWITCH OPERATION

- The below operation will be performed by pressing the "Auto" switch.
 1. AUTO OPERATION MODE
The Auto operation will be activated immediately once the Auto Switch is pressed.
 2. TEST RUN OPERATION (FOR PUMP DOWN / SERVICING PURPOSE)
The Test Run operation will be activated if the Auto Switch is pressed continuously for more than 5 sec. to below 10 sec. A "pep" sound will occur at the fifth sec., in order to identify the starting of Test Run operation.
 3. REMOTE CONTROLLER RECEIVING SOUND ON/OFF
The ON/OFF of Remote Controller receiving sound can be changed over by pressing the "AUTO" Switch continuously for 10 sec. and above. A "pep", "pep" sound will occur at the tenth sec., in order to indicate the "ON/OFF" changed over of remote control receiving sound.



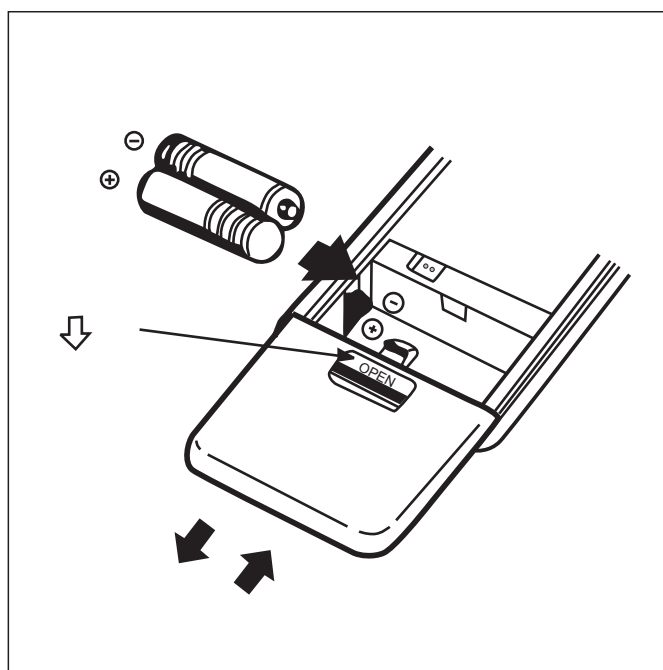
9.8. Test Running

9.8.1. Connect the power supply

1. Connect the power supply cord to independent power supply.
 - Circuit breaker is necessary.
2. Prepare the remote control
 - Insert two batteries
 - Remove the cover from the back of the remote control.

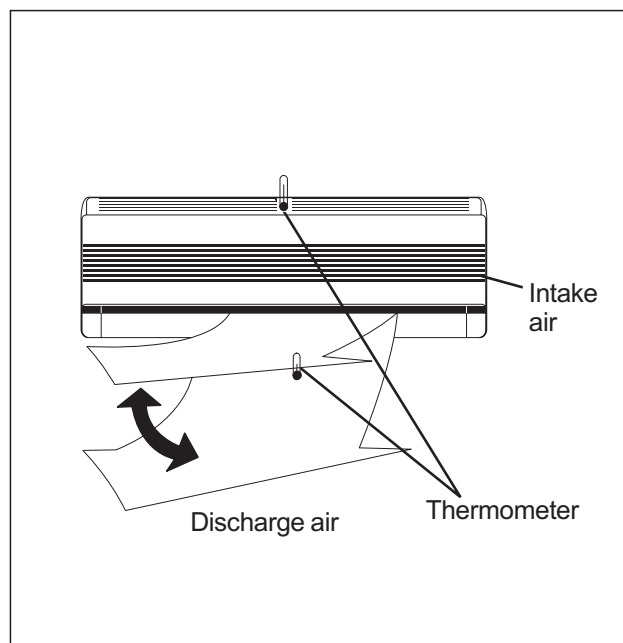
Insert two batteries

- Be sure that the (+) and (-) directions are correct.
 - Be sure that both batteries are new.
 - Re-attach the cover.
 - Slide the cover back into position.
3. Operate the unit at cooling mode operation for 15 minutes or more.



9.8.2. Evaluation of the performance

1. Operate the air conditioner for 15 minutes.
2. Measure the temperature of the intake and discharge air.
3. Ensure the difference of temperature between the intake and discharge air is more than 8°C in cooling operation, or more than 14°C in heating operation.



CAUTION

Connecting cable between the indoor and outdoor unit shall be approved cable and the size of the conductor shall be 1.5mm².

10 2-way,3-way Valve

	2-way Valve (Liquid Side)	3-way Valve (Gas Side)	
Works	Shaft Position	Shaft Position	Service Port
Shipping	Close (With valve cap)	Closed (With valve cap)	Closed (With cap)
Air purging(Installation and Re-installation)	Open (Counter-clockwise)	Closed (clockwise)	Open (Push-pin)
Operation	Open (Counter-clockwise)	Open (With valve cap)	Closed (With cap)
Pumping down (Transferring)	Closed (Clockwise)	Open (Counter-clockwise)	Open (Connected manifold gauge)
Evacuation (Servicing)	Open	Open	Open (With vacuum pump)
Charging (Servicing)	Open	Open	Open (With charging cylinder)
Pressure check (Servicing)	Open	Open	Open (Connected manifold gauge)
Gas releasing (Servicing)	Open	Open	Open (Connected manifold gauge)

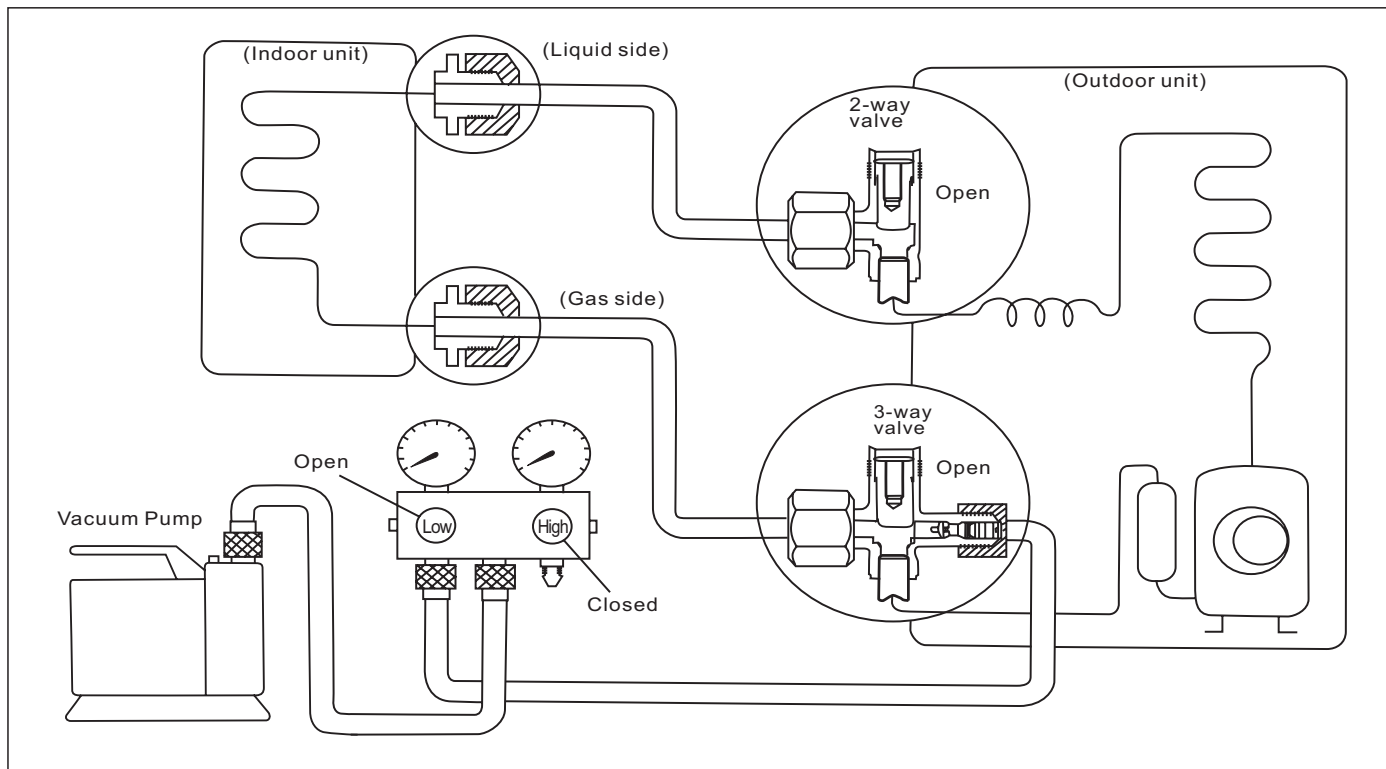
10.1. Evacuation of Installation

When installing an air conditioner, be sure to evacuate the air inside the indoor unit and pipes in the following procedure.

Required tools:

Hexagonal wrench, adjustable wrench, torque wrench, wrench to hold the joints, gas leak detector, charging set and vacuum pump.

The air in the indoor unit and in the piping must be purged. If air remains in the refrigeration piping, it will affect the compressor, reduce cooling capacity, and could lead to a malfunction.



Service port cap

Be sure, using a torque wrench to tighten the service port cap(after using the service port),so that it prevents the gas leakage from the refrigeration cycle.

Procedure:

1.Connect a charging hose with a push pin to the Low side of a charging set and the service port of the 3-way valve.

Be sure to connect the end of the charging hose with the push pin to the service port.

2.Connect the centre hose of the charging set to a vacuum pump.

3.Turn on the power switch of the vacuum pump and make sure that the needle in the gauge moves from 0 cmHg (0 Mpa) to -76 cmHg (-0.1 Mpa). Then evacuate the air for approximately 10 minutes.

4.Close the valve of the Low side of the charging set and turn off the vacuum pump. Make sure that the needle in the gauge does not move after approximately 5 minutes.

BE SURE TO TAKE THIS PROCEDURE IN ORDER TO AVOID GAS REFRIGERANT LEAKAGE.

5.Disconnect the charging hose from the vacuum pump and from the service port of the 3-way valve.

6.Tighten the service port caps of both the 3-way valve and the 2-way valve at a torque of 18 N.m with a torque wrench.

7.Remove the valve caps of both the 3-way and the 2-way valves.

Position both of the valves to "open" using a hexagonal wrench (4 mm).

8.Mount valve caps onto both of the 3-way valve and the 2-way valve.

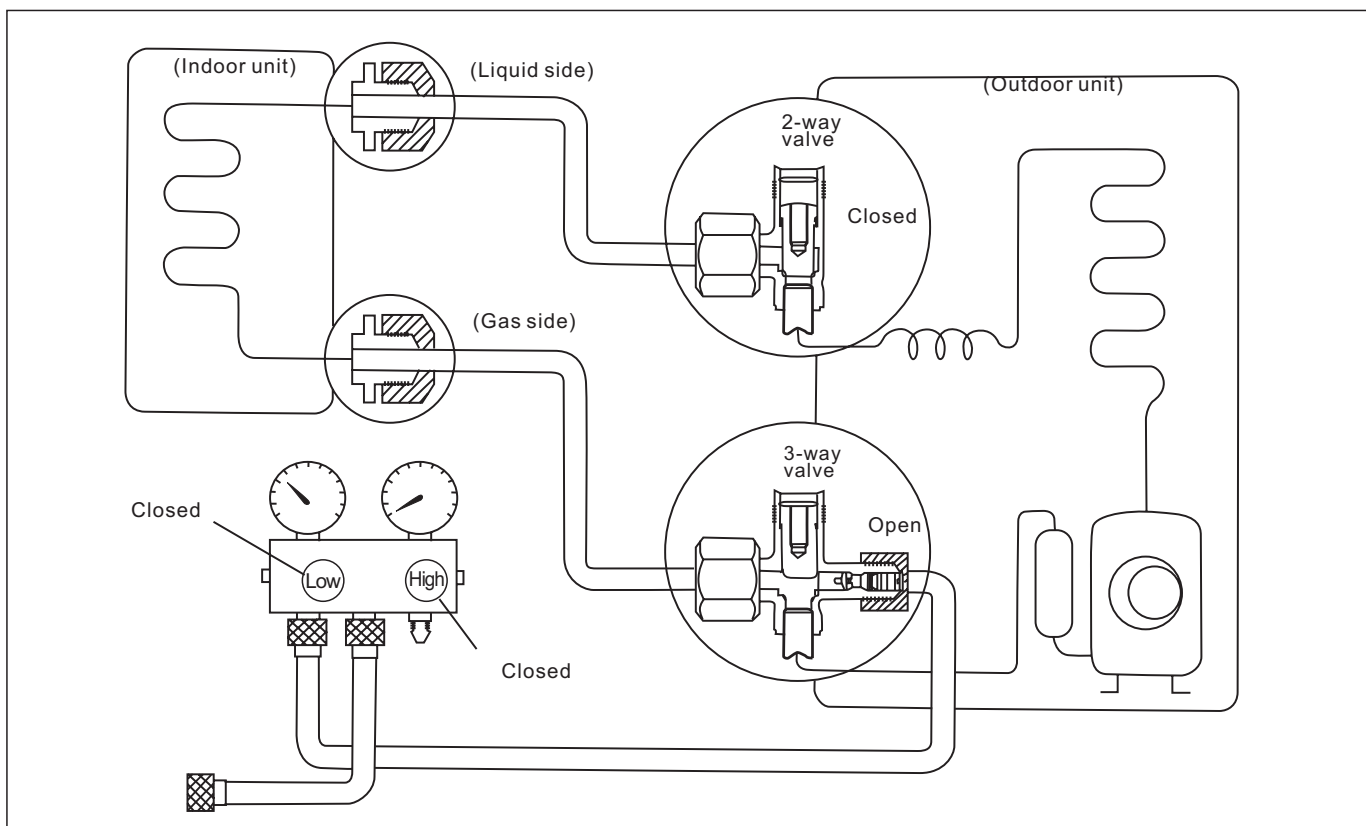
Be sure to check for gas leakage.

Caution

If gauge needle does not move from 0 cmHg(0 Mpa) to -76cmHg (-0.1MPa) in step (3) above, take the following measures:
If the leaks stop when the piping connections are tightened further, continue working from step (3).
If the leaks do not stop when the connections are retightened, repair the location of the leak.

10.2. Pumping down

(For Re-Installation)

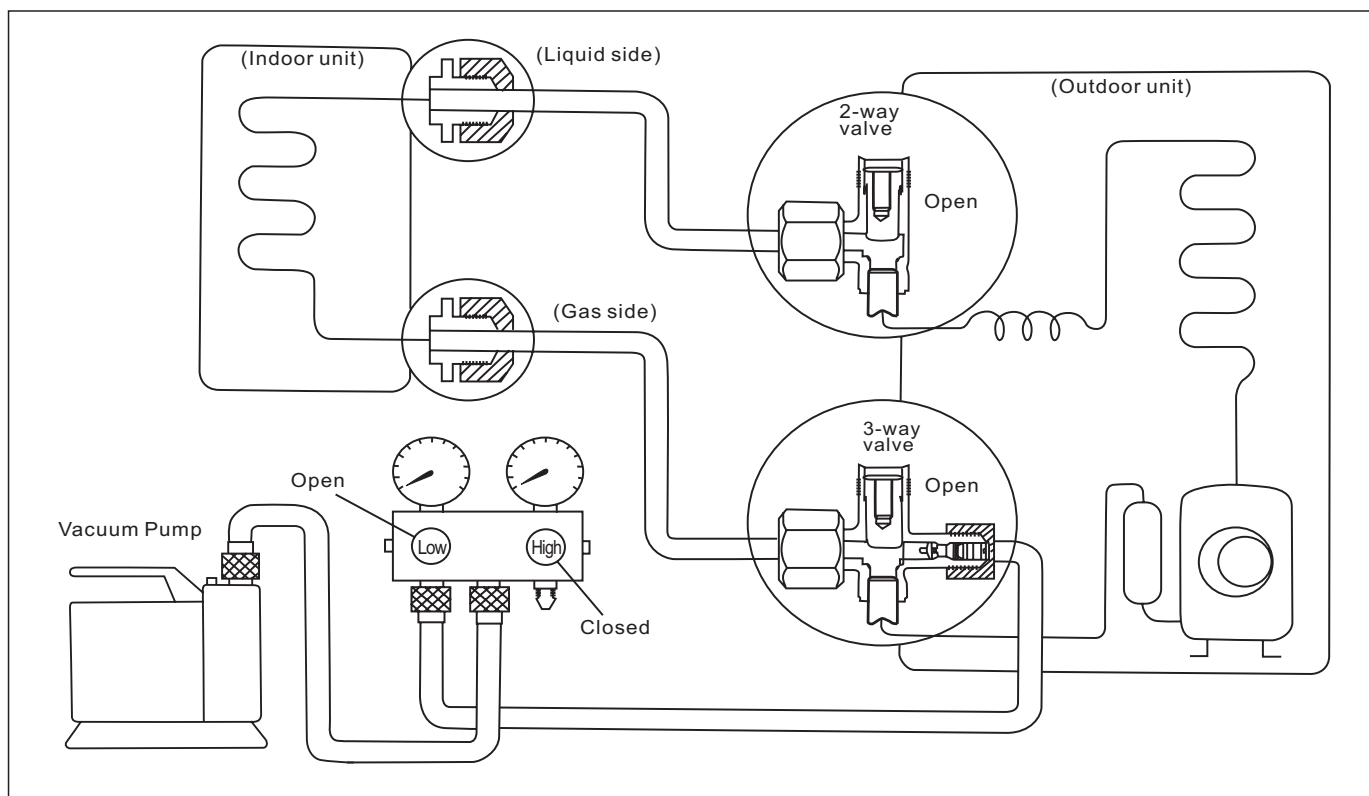


Procedure

- Confirm that both 2-way and 3-way valves are set to open positions.
 - Remove the valve stem cap and confirm that the valve stems are in the open position.
 - Be sure using a hexagonal wrench to operate the valve stems.
- Operate the unit for 10-15 minutes.
- Stop operation and wait for 3 minutes, then connect the charge set to the service port of the 3-way valve.
 - Connect the charge hose with the push pin to the service port.
- Air purging of the charge hose.
 - Open the low-pressure valve of the charge set slightly to purge air from the charge hose.
- Set the 2-way valve to the close position.
- Operate the air conditioner at the cooling cycle and stop it when the gauge indicates 2 kg/cm²G (0.1Mpa).
 - If the unit cannot be operated at the cooling mode operation (weather is rather cold), short the Pumping Down pins on the Main Control P.C.B.
- Immediately set 3-way valve to the closed position.
 - Do this quickly so that the gauge ends up indicating 1 to 3kg/cm²G (0.1 to 0.3 Mpa).
- Use refrigerant reclaiming equipment to collect refrigerant from indoor unit and pipes.
- Disconnect the charge set, and mount the 2-way and 3-way valve stem's nuts and service port cap.
 - Use torque wrench to tighten the service port cap to a torque 1.8kgf.m (18N.m).
 - Be sure to check for gas leakage.
- Disconnect pipes from indoor unit and outdoor unit.

10.3.Re-air Purging

(Re-installation)



1. Connect a charging hose with a push pin to the Low side of a charging set and the service port of a 3-way valves.

Be sure to connect the end of the charging hose with the push pin to the service port.

2. Connect the centre hose of the charging set to a vacuum pump.

3. Turn on the power switch of the vacuum pump and make sure that the needle in the gauge moves from 0 cmHg (0 Mpa) to -76 cmHg (-0.1 Mpa). Then evacuate the air for approximately 10 minutes.

4. Close the valve of the Low side of the charging set and turn off the vacuum pump. Make sure that the needle in the gauge does not move after approximately 5 minutes.

BE SURE TO TAKE THIS PROCEDURE IN ORDER TO AVOID GAS REFRIGERANT LEAKAGE.

5. Disconnect the charging hose from the vacuum pump

6. Charge the pipes and indoor unit with gas refrigerant from 3-way valve service port, and then discharge the refrigerant until low side (gas side) gauge needle indicates 0.3 Mpa (3 kg/cm²).

7. Tighten the service port caps of both the 3-way valve and the 2-way valve at a torque of 18 N.m with a torque wrench.

8. Remove the valve caps of both the valves. Position both of the valves to "open" using a hexagonal wrench (4 mm).

9. Mount valve caps onto both the valves.

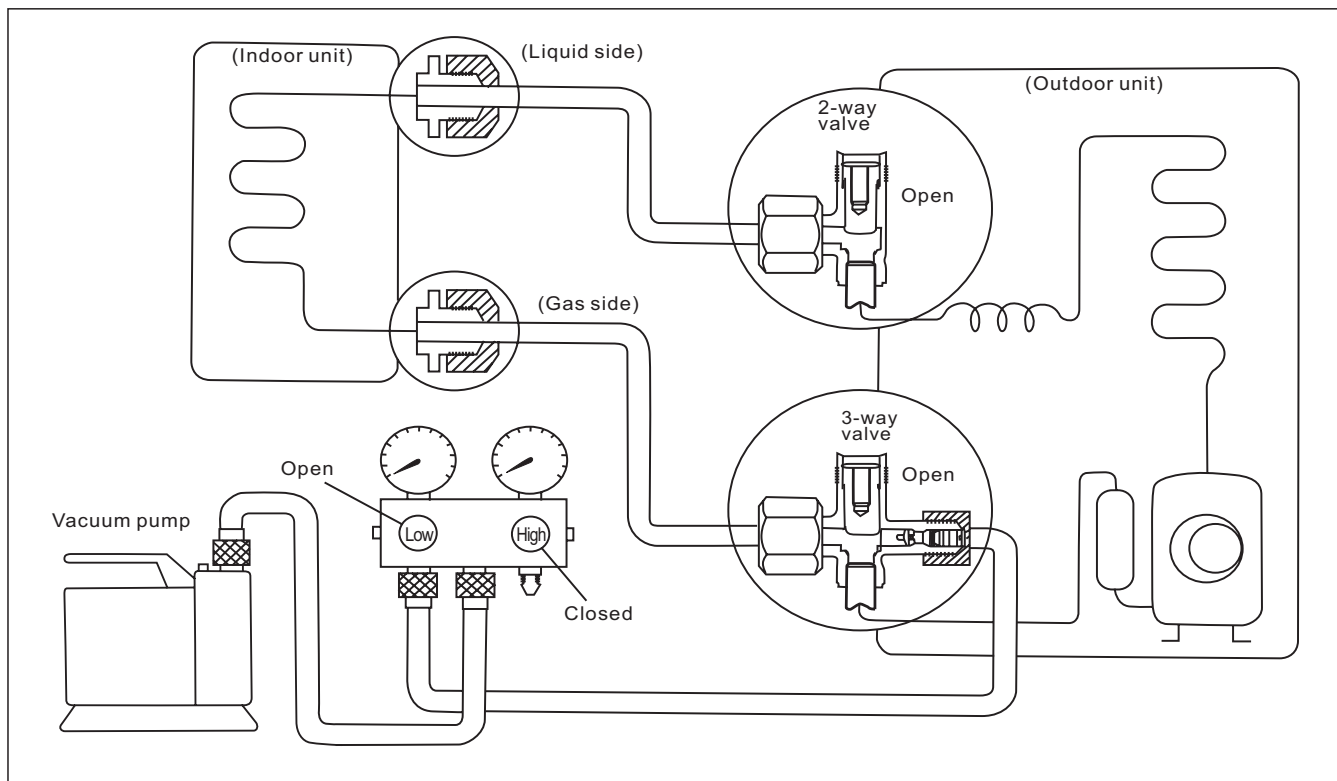
- BE SURE TO USE REFRIGERANT RECLAIMING EQUIPMENT WHILE DISCHARGING THE REFRIGERANT.
- Purge the air from charge set's centre hose.
- Be sure to check for gas leakage.

Caution

If gauge needle does not move from 0 cmHg(0 Mpa) to -76cmHg (-0.1MPa) in step (3) above, take the following measures:
If the leaks stop when the piping connections are tightened further, continue working from step (3).
If the leaks do not stop when the connections are retightened, repair the location of the leak.

10.4. Balance refrigerant of the 2-way,3-way valves

(Gas leakage)

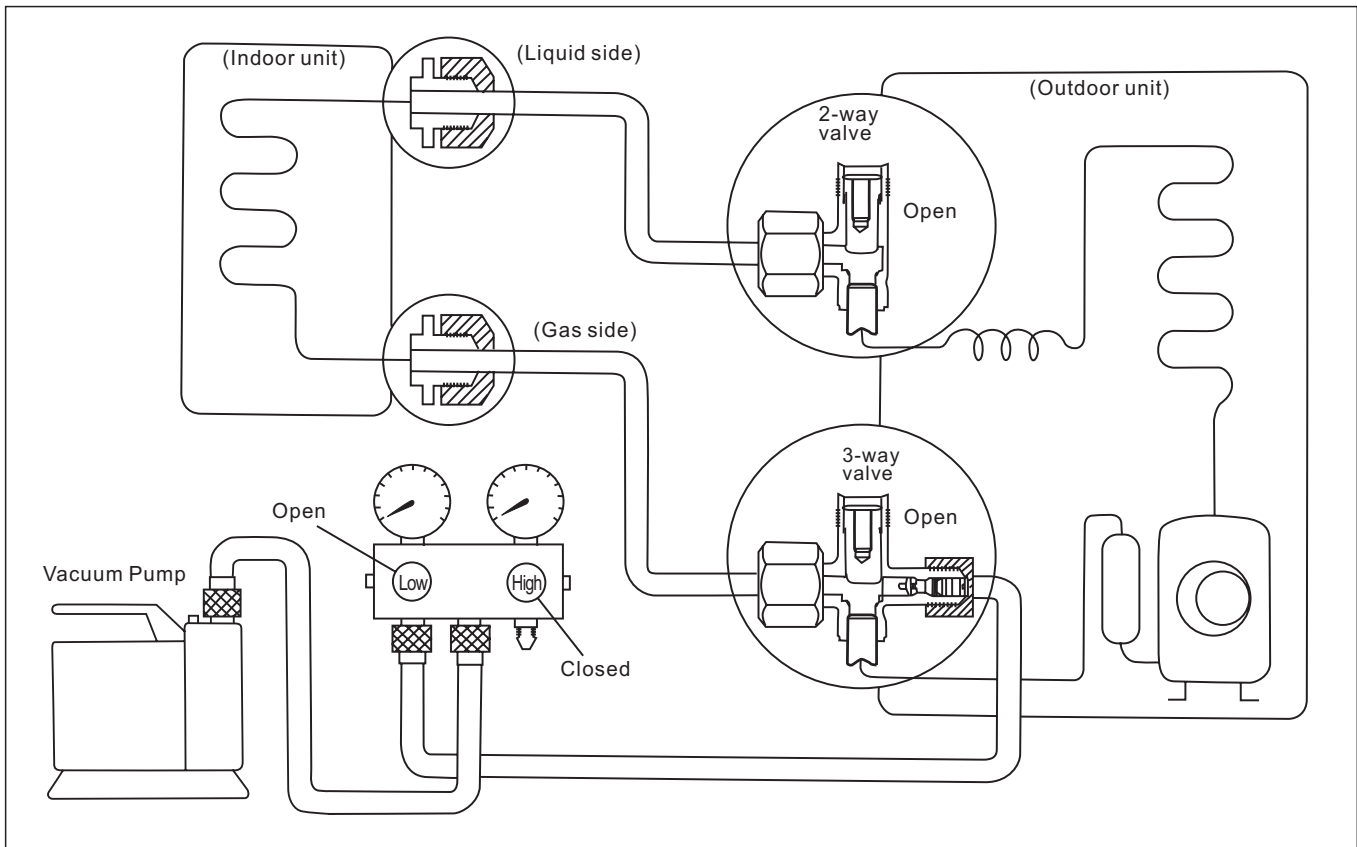


Procedure

1. Confirm that both the 3-way valve and 2-way valve are set to the open position.
2. Connect the charge set to the 3-way valve's service port.
 - Leave the valve on the charge set closed.
 - Connect the charge hose with the push-pin to the service port.
 - Confirm whether the pressure indicates more than 1 kg/cm²G (0.1MPa).
3. Connect the charge set's centre hose to refrigerant reclaiming equipment.
4. Open the valve (Low side) on the charge set and discharge the refrigerant until the gauge indicates 0.05 MPa (0.5 kg/cm²G) to 0.1 MPa (1 kg/cm²G).
 - If there is no air in the refrigeration cycle (the pressure when the air conditioner is not running is higher than 0.1 MPa (1 kg/cm²G), discharge the refrigerant until the gauge indicates 0.05 MPa (0.5 km/cm²G) to 0.1 MPa (1 kg/cm²G). If this is the case, it will not be necessary to apply a evacuation.
 - Discharge the refrigerant gradually; if it is discharged too suddenly, the refrigeration oil will also be discharged.
5. Turn on refrigerant reclaiming equipment to collect the refrigerant until the needle indicates 0 (no refrigerant is remaining).

10.5. Evacuation (Installation)

(No refrigerant in the refrigeration cycle)



Procedure

1. Connect the vacuum pump to the charge set's centre hose.

2. Evacuation for approximately 1 hour.

- Confirm that the gauge needle has moved toward -76cmHg (-0.1MPa) [vacuum of 4 mmHg or less].

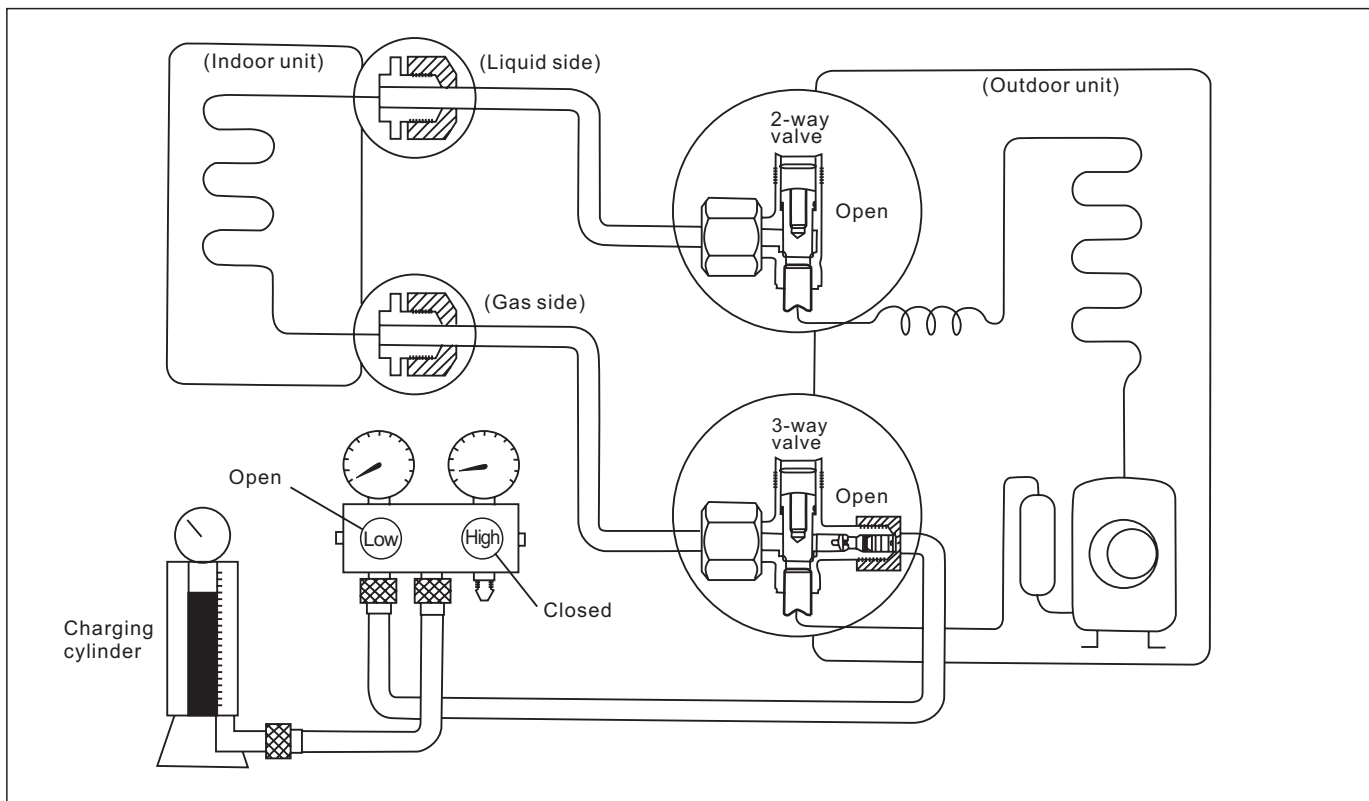
3. Close the valve (Low side) on the charge set, turn off the vacuum pump, and confirm that the gauge needle does not move (approximately 5 minutes after turning off the vacuum pump).

4. Disconnect the charge hose from the vacuum.

- Vacuum oil
If the vacuum pump oil becomes dirty or depleted, replenish as needed.

10.6. Gas charging

(After Evacuation)



Procedure

1. Connect the charge hose to the charging cylinder.

- Connect the charge hose which was disconnected from the vacuum pump to the valve at the bottom of the cylinder.
- If you are using a gas cylinder also use a scale and reverse the cylinder so that the system can be charged with liquid.

2. Purge the air from the charge hose.

- Open the valve at the bottom of the cylinder and use a screwdriver to press the check valve on the charge set to purge the air. (Be careful of the liquid refrigerant.)
- The procedure is the same if using a gas cylinder.

3. Open the valve (Low side) on the charge set and charge the system with liquid refrigerant.

- If the system cannot be charged with the specified amount of refrigerant, it can be charge with a little at a time (approximately 150g each time) while operating the air conditioner in the cooling cycle.

However, one time is not sufficient, wait approximately 1 minute and then repeat the procedure. (Pumping down pin)

This is different from previous procedures. Because you are charging with liquid refrigerant from the gas side, absolutely do no attempt to charge with large amount of liquid refrigerant while operating the air conditioner.

4. Immediately disconnect the charge hose from the 3-way valve's service port.

- Stopping part-way will allow the refrigerant to be discharged.
- If the system has been charged with liquid refrigerant while operating the air conditioner, turn off the air conditioner before disconnecting the hose.

5. Mount the valve stem nuts and the service port.

- Use a torque wrench to tighten the service port cap to a torque of 1.8kgf.m (18 N.m)
- Be sure to check for gas leakage.

11 Disassembly of the parts

Removal Procedure For Intake Grille

1. Open the intake grille and pull it to the horizontal position. (Fig. 1)



Fig. 1

2. Pull up the intake grille until it falls off. (Fig. 2)

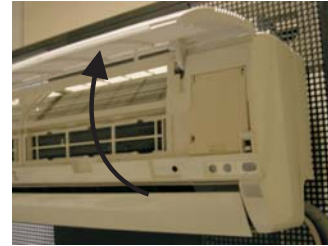


Fig. 2

Removal Procedure For Front Grille

1. Remove the two caps at the discharge port (right and left) (Fig. 3)

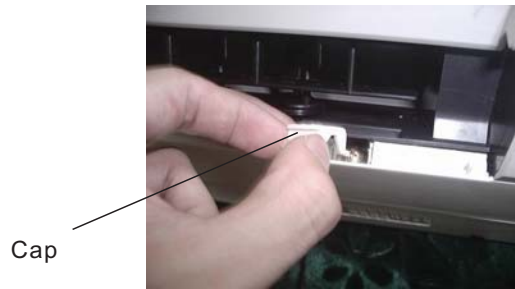


Fig. 3

2. Release the two screws under the both caps. (Fig. 4)



Fig. 4

3. Pull out the front grille from the unit body. (Fig. 5)

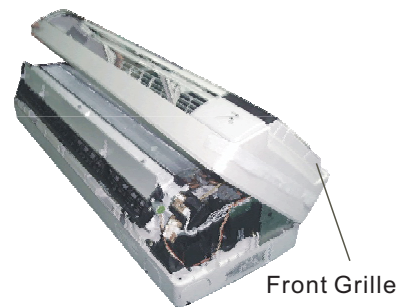


Fig. 5

Removal Procedure For Electronic Controller

1. Release tabs of the control box cover and detach the control box cover .
Release the fixing screws of the control box. (Fig. 6)

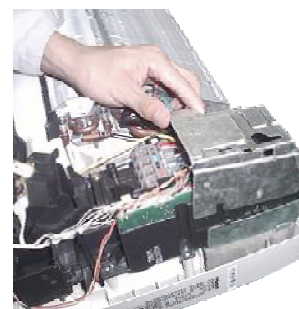


Fig 6

2. Release the lead wire CN-FM, CN-FB, CN-AIR, CN-STM,CN-RCV ,
CN-DISP and earth wire(Yellow/Green). Pull out the whole electronic
controller.

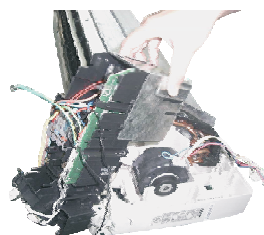


Fig 7

Removal Procedure For the Discharge Grille

1. Separate the drain hose and the drain plate(Fig. 8)



Fig 8

2. Pull out the discharge grille slightly (Fig. 9)



Fig. 9

Removal Procedure For Cross Flow Fan

1. Release the two fixing screws on the left side of the evaporator and lift up the evaporator slightly. (Fig. 10)

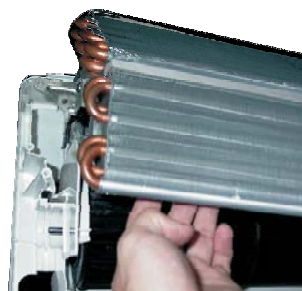


Fig. 10

2. Loose the fixing screw of the cross flow fan. (Fig. 11)



Fixing Screw

Fig. 11

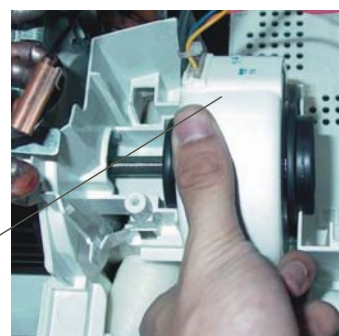
3. After removing the bearing (refer to fig12), indoor fan can be taken out from the left side.



Bearing

Fig 12

4. Lift up the indoor fan slightly, and then pull the fan motor out. (Fig13)



Fan motor

Fig 13

Remote control reset

If the display is chaotic or can not be adjusted, Remove the back lid of the remote control and you will find the resetting terminals and shorten the two terminals using a screw driver to reset.

Resetting terminals

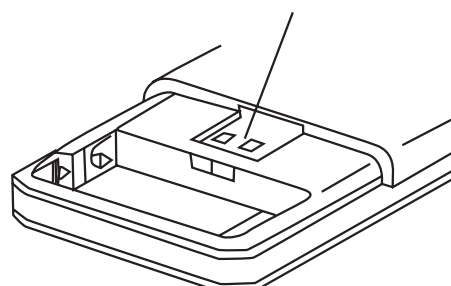


Fig 14

12 Troubleshooting Guide

12.1. Refrigeration cycle system

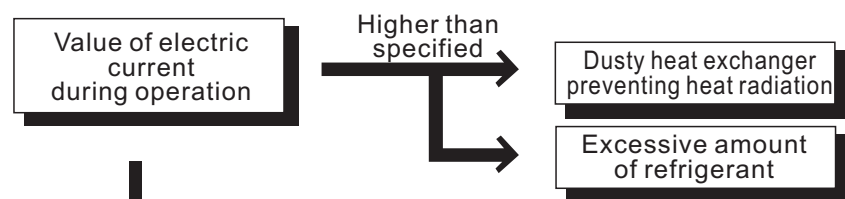
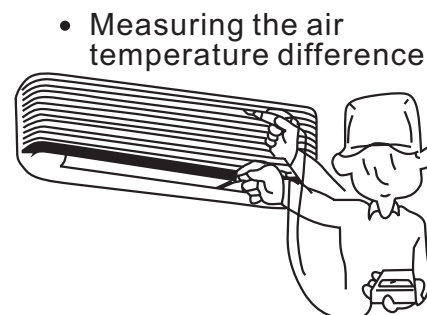
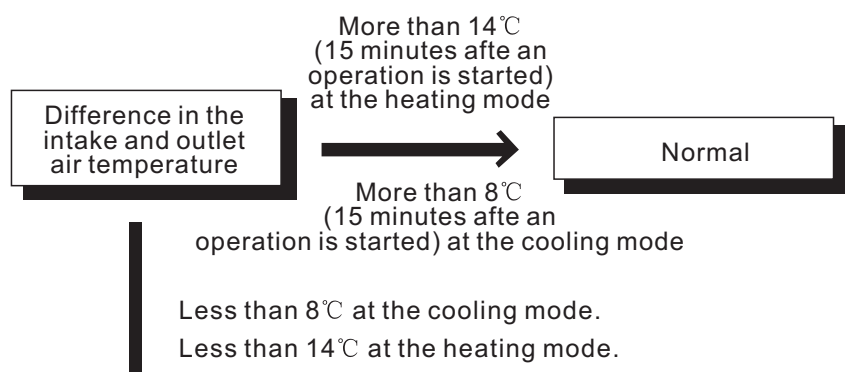
In order to diagnose malfunctions, make sure that there are no electrical problems before inspecting the refrigeration cycle. Such problems include insufficient insulation, problem with the power source, malfunction of compressor or fan.

The normal outlet air temperature and pressure of the refrigeration cycle depends on various conditions, the standard values for them are shown in the table to the right.

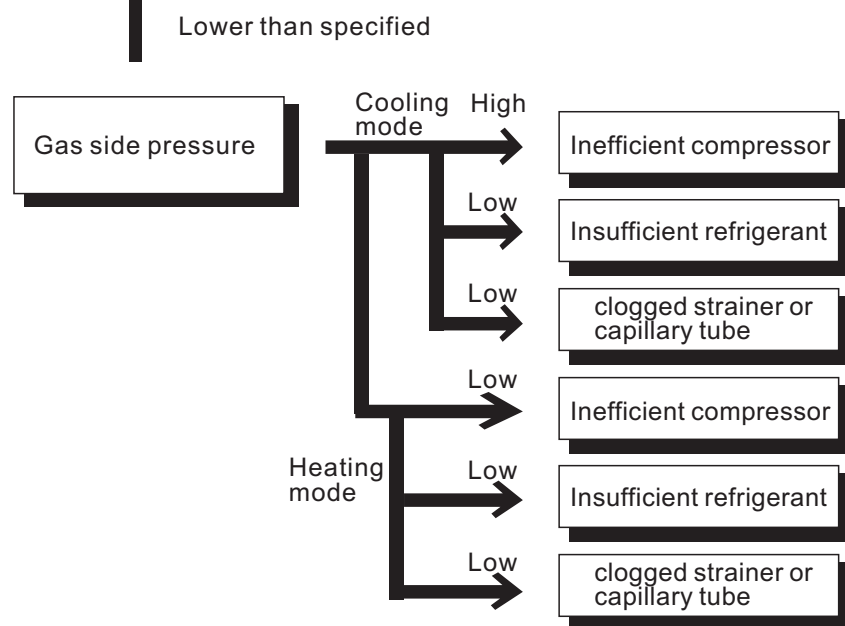
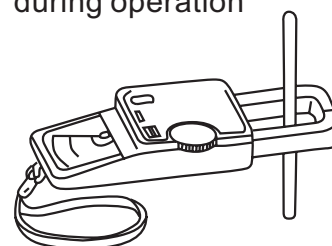
Normal pressure and outlet air temperature(standard)

	Gas side pressure Mpa (kg/cm ² G)	Outlet air temperature (°C)
Cooling mode	0.4~0.6(4~6)	12~16
Heating mode	1.5~2.1(15~21)	36~45

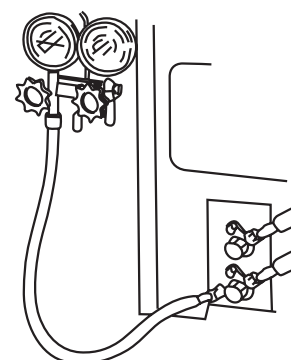
★ Condition: indoor fan speed: high
 outdoor temperature:
 35°C (Cooling mode)
 7°C (Heating mode)



- Measuring electric current during operation



- Measuring gas side pressure



12.2. Relationship between the condition of air conditioner and pressure and electric current

Condition of the air conditioner	Cooling mode			Heating mode		
	Low pressure	High pressure	Electric current during operation	Low pressure	High pressure	Electric current during operation
Insufficient refrigerant (gas leakage)	↘	↘	↘	↘	↘	↘
Clogged capillary tube	↘	↘	↘	↘	↘	↘
Short circuit in the indoor unit	↘	↘	↘	↗	↗	↗
Heat radiation deficiency of the outdoor unit	↗	↗	↗	↘	↘	↘
Insufficient compression	↗	↘	↘	↗	↘	↘

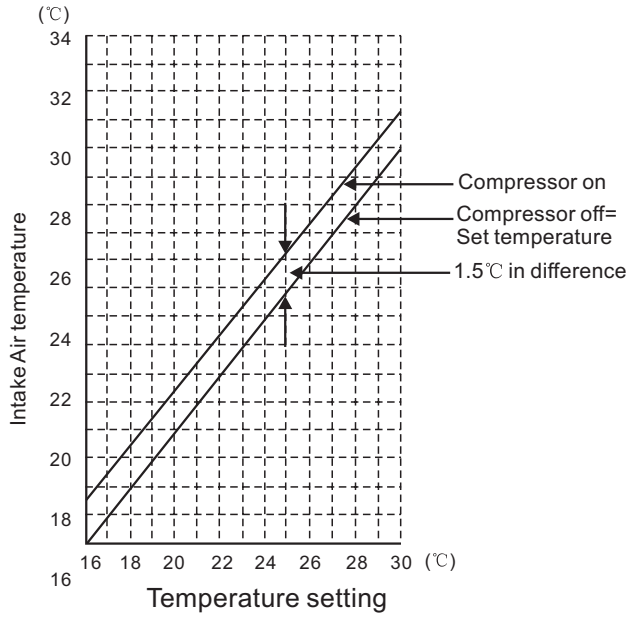
12.3. Diagnosis methods of a malfunction of a compressor .

Nature of fault	Symptom
Insufficient compressing of a compressor	<ul style="list-style-type: none"> • Electric current during operation becomes approximately 80% lower than the normal level. • The discharge tube of the compressor becomes abnormally hot (normally 70~90°C). • The difference between high pressure and low pressure becomes almost zero.
Locked compressor	<ul style="list-style-type: none"> • Electric current reaches a high level abnormally, and the value exceeds the limit of an ammeter. In some cases, a breaker turns off. • The compressor has a humming sound.
Inefficient switches of the 4-way valves	<ul style="list-style-type: none"> • Electric current during operation becomes approximately 20% lower than the normal value. • The temperature difference between from the discharge tube to the 4-way valve and from suction tube to the 4-way valve becomes almost zero.

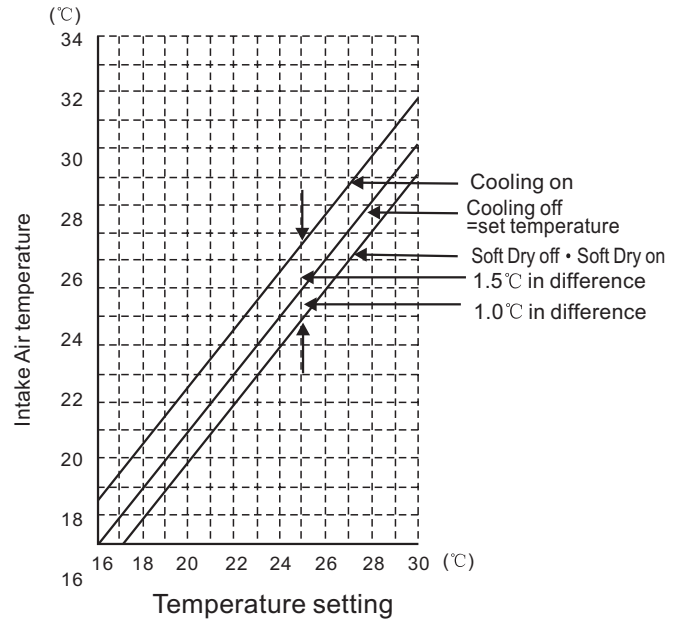
13 Technical Data

■ Thermostat characteristics

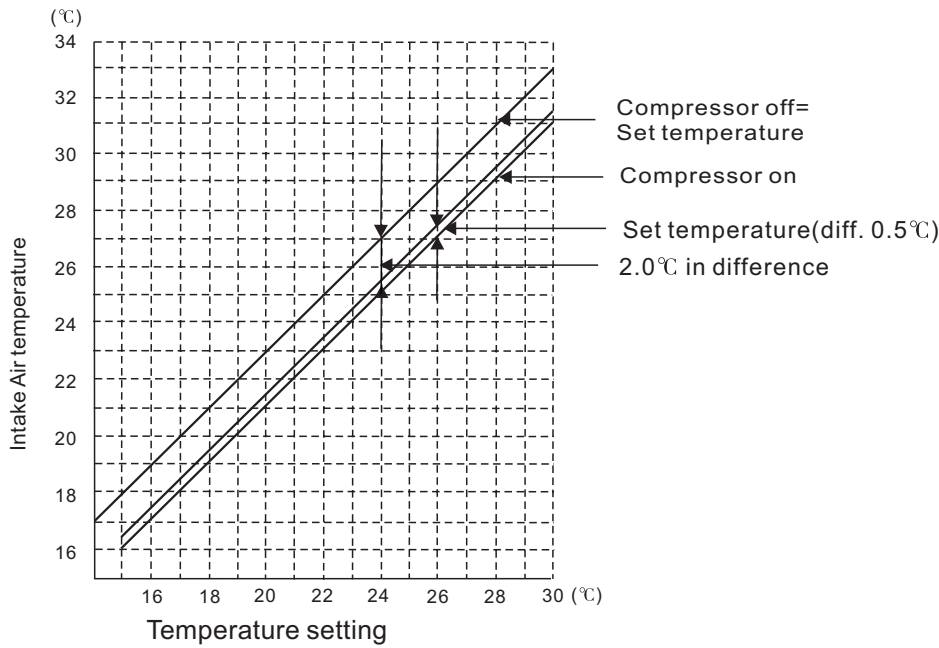
- Cooling mode



- Soft dry mode

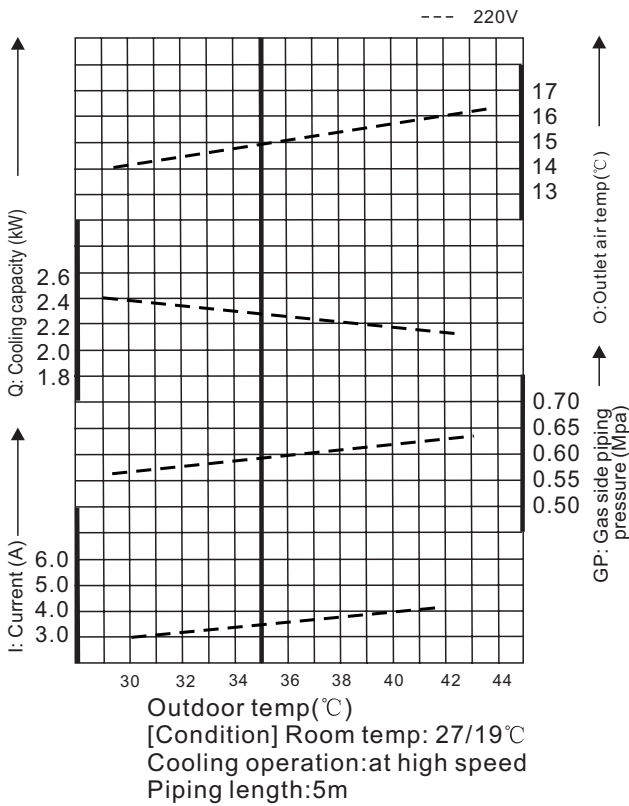


- Heating mode (Only for CS-PA7DKD/CS-PA9DKD)

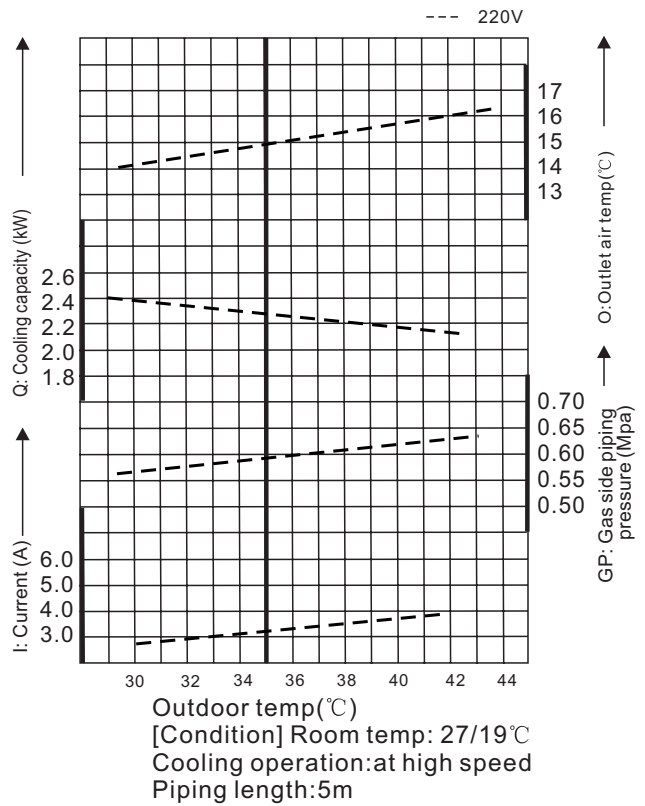


■ Cooling characteristics

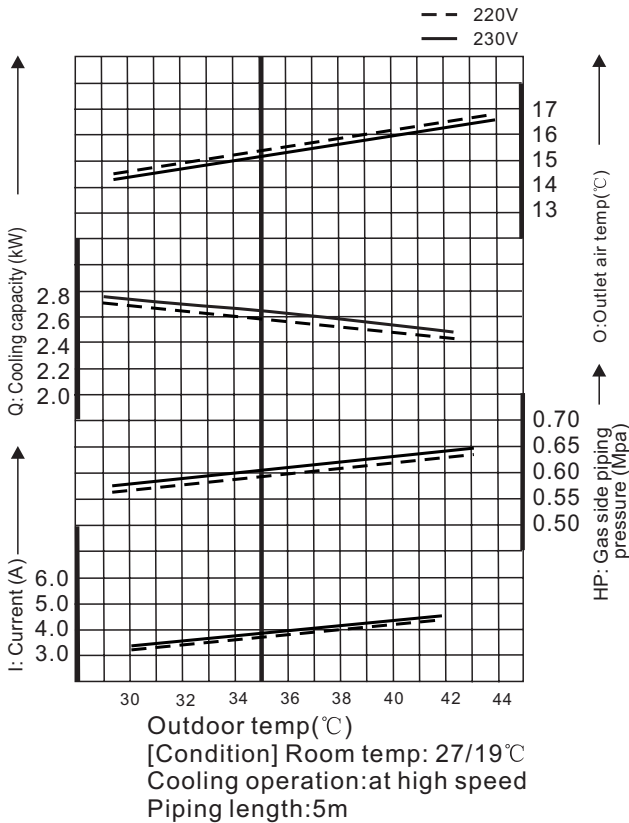
● CS/CU-PA7DKD



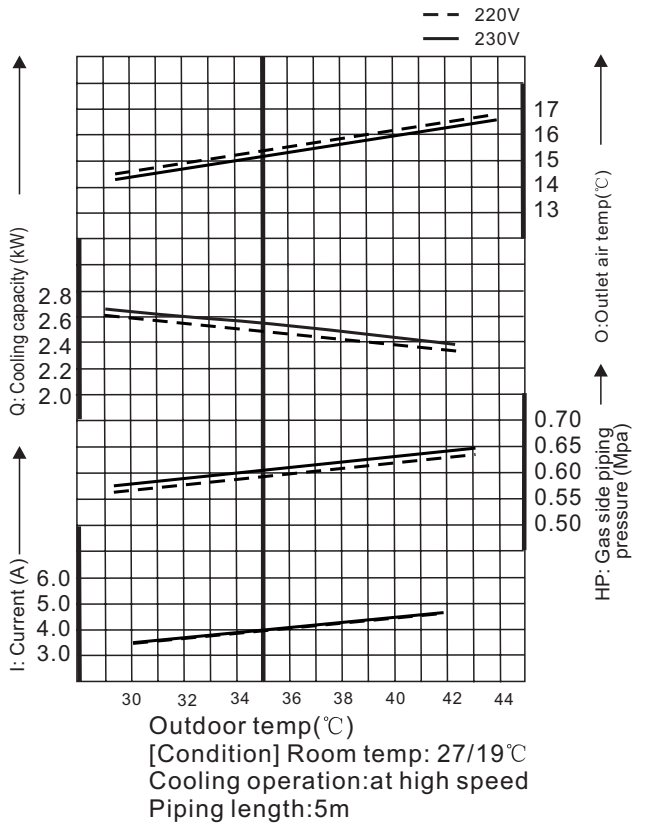
● CS/CU-PC7DKD



● CS/CU-PA9DKD

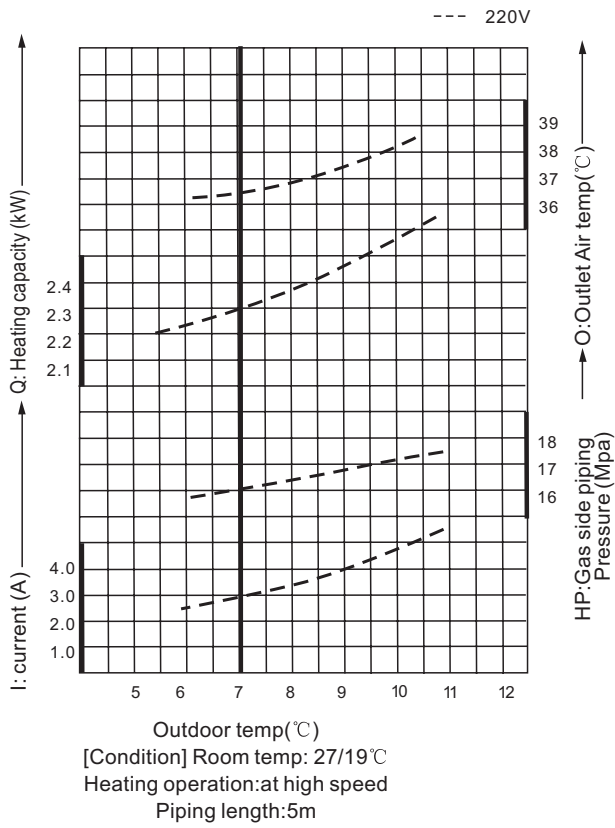


● CS/CU-PC9DKD

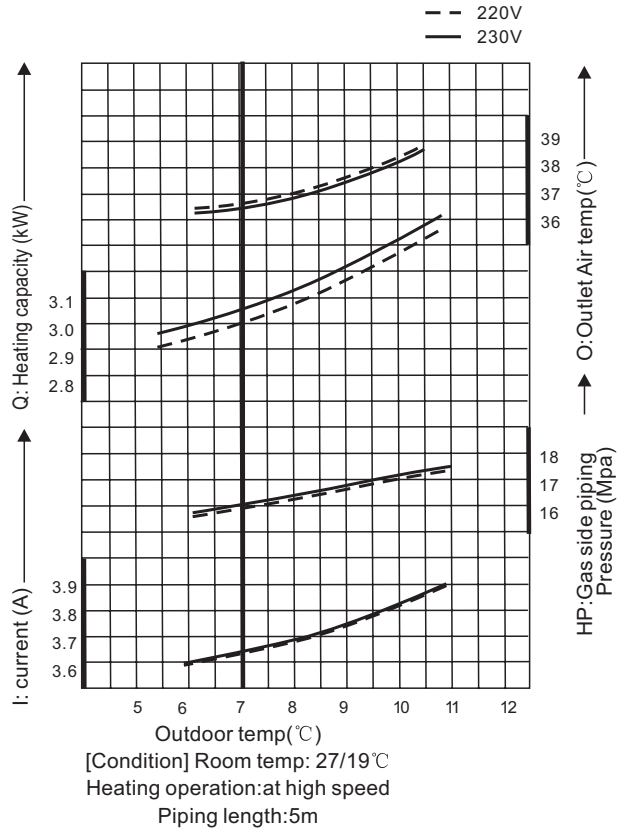


■ Heating characteristics

● CS/CU-PA7DKD

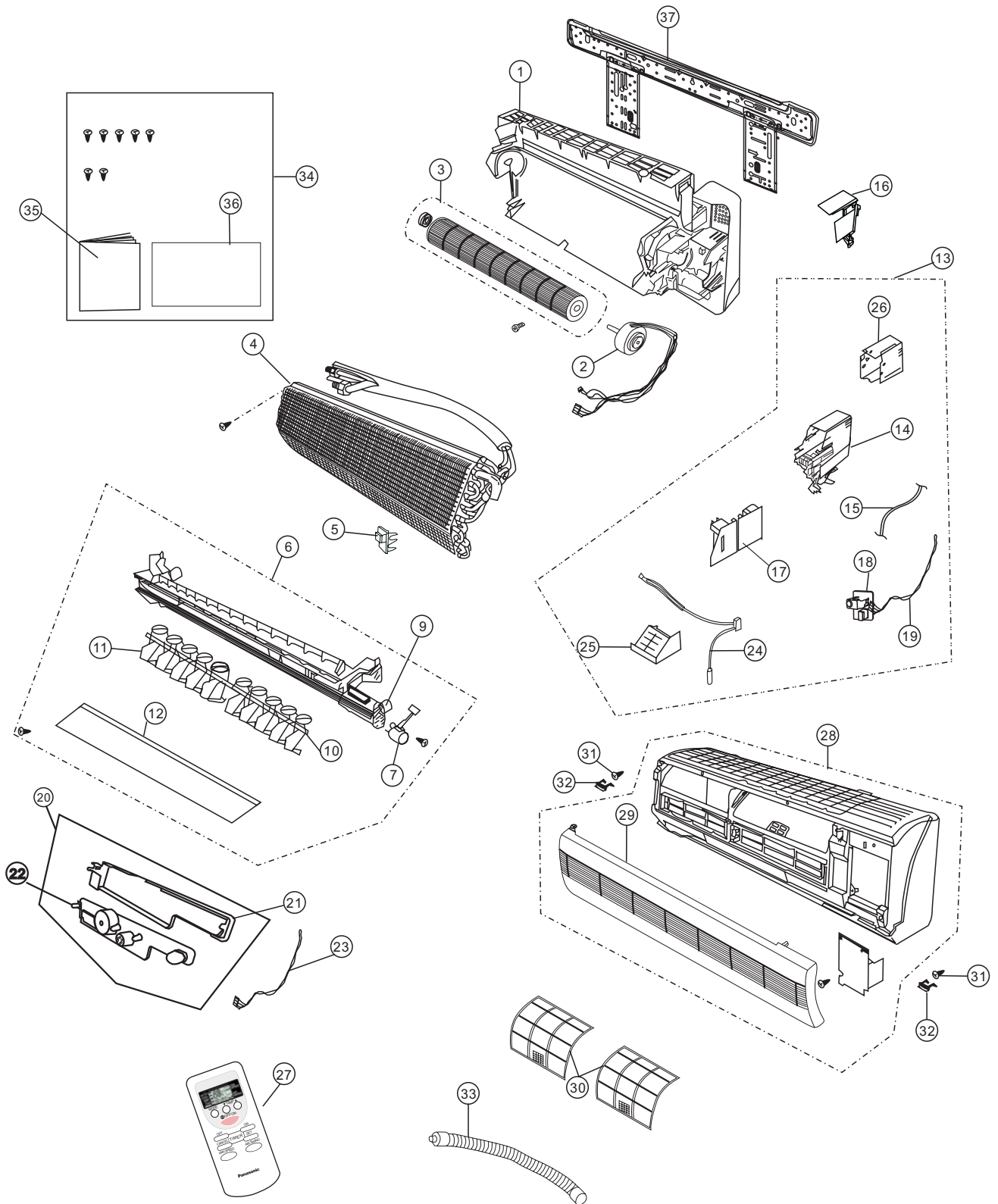


● CS/CU-PA9DKD



14 Exploded View

CS-PA7DKD/CS-PC7DKD
CS-PA9DKD/CS-PC9DKD



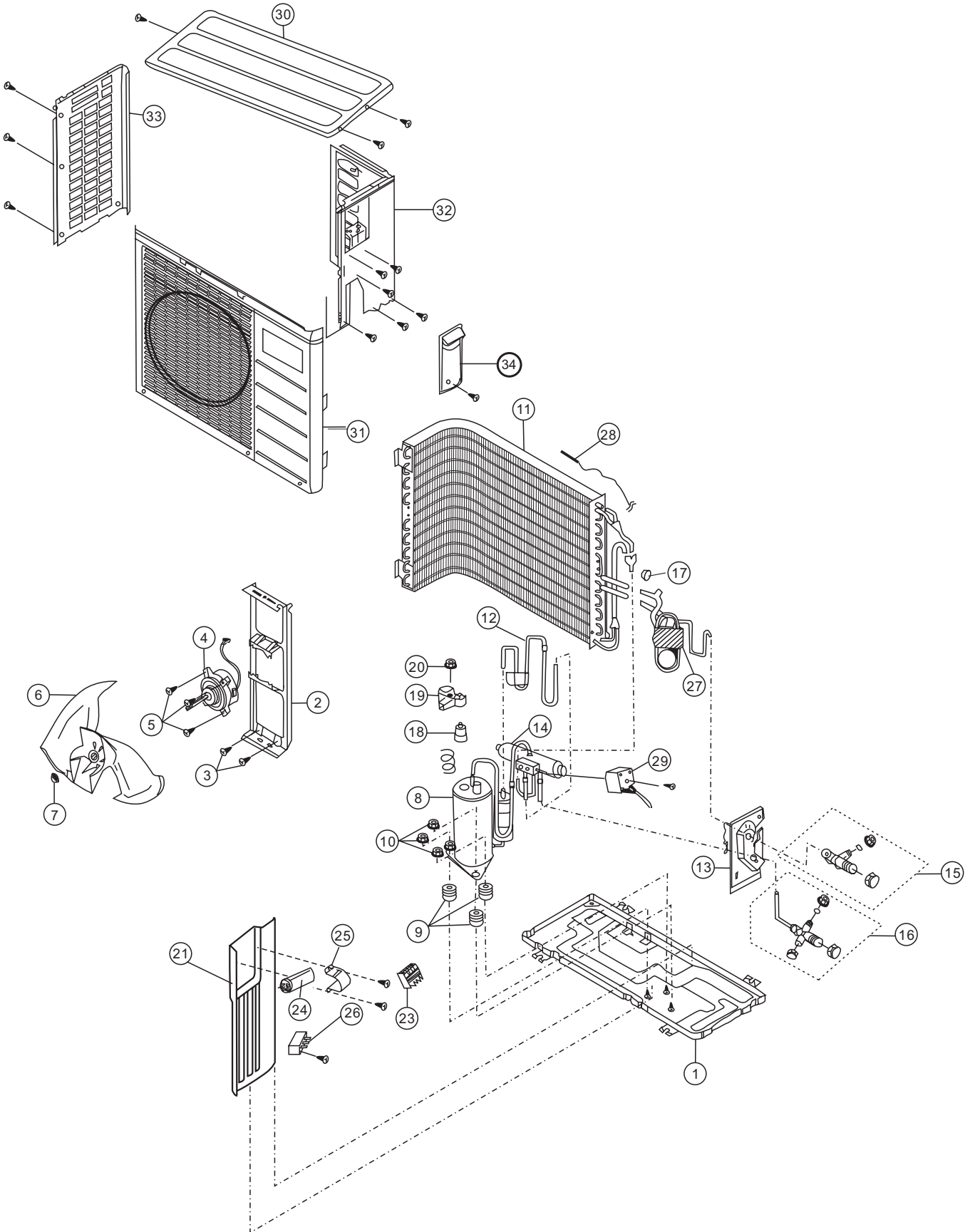
15 Replacement Parts List

CS-PA7DKD/CS-PC7DKD
CS-PA9DKD/CS-PC9DKD

No.	DESCRIPTION&NAME	Qty	CS-PA7DKD	CS-PC7DKD	CS-PA9DKD	CS-PC9DKD	RE
1	CHASSIS COMPLETE	1	CWD50C1348	CWD50C1348	CWD50C1348	CWD50C1348	
2	FAN MOTOR	1	CWA921308	CWA921308	CWA921329	CWA921329	
3	CROSS FLOW FAN COMPLETE	1	CWH02C1030	CWH02C1030	CWH02C1030	CWH02C1030	
4	EVAPORATOR	1	CWB30C1629	CWB30C1447	CWB30C1629	CWB30C1631	
5	INTAKE AIR SENSOR HOLDER	1	CWH711013	CWH711013	CWH711013	CWH711013	
6	DISCHARGE GRILLE COMPLETE	1	CWE20C2361	CWE20C2361	CWE20C2362	CWE20C2361	
7	AIR SWING MOTOR	1	CWA981158	CWA981158	CWA981158	CWA981158	
9	DAIN ELBOW	1	CWH52160C	CWH52160C	CWH52160C	CWH52160C	
10	VERTICAL VANE (RIGHT)	1	CWE24C1058	CWE24C1058	CWE24C1058	CWE24C1058	
11	VERTICAL VANE (LEFT)	1	CWE24C1059	CWE24C1059	CWE24C1059	CWE24C1059	
12	HORIZONTAL VANE	1	CWE241137	CWE241137	CWE241144	CWE241137	
13	C-BOX	1	CWH14C4458	CWH14C4460	CWH14C4459	CWH14C4461	
14	CONTROL BOARD	1	CWH102261J	CWH102211J	CWH102261J	CWH102211J	
15	POWER SUPPLY CORD COMPLETE	1	CWA20C2418	CWA20C2362	CWA20C2418	CWA20C2362	
16	PARTICULAR PIECE	1	CWD932090C	CWD932090C	CWD932090C	CWD932090C	
17	MAIN PCB	1	CWA743760	CWA743752	CWA743761	CWA743754	
18	RECEIVER COMPLETE	1	CWA743353	CWA743353	CWA743353	CWA743353	
19	CONNECTING LEAD(S-RECEIVER)	1	CWA67C5171	CWA67C5490	CWA67C5171	CWA67C5490	
20	INDICATOR COMPLETE	1	CWE39C1117	CWE39C1117	CWE39C1117	CWE39C1117	
21	INDICATOR HOLDER	1	CWD932447	CWD932447	CWD932447	CWD932447	
22	INDICATOR PCB	1	CWA743603	CWA743603	CWA743603	CWA743603	
23	CONNECTING LEAD (INDICATOR)	1	CWA67C5169	CWA67C5169	CWA67C5169	CWA67C5169	
24	SENSOR COMPLETE	1	CWA50C2275	CWA50C2275	CWA50C2275	CWA50C2275	
25	CONTROL BOARD FRONT COVER	1	CWH131190	CWH131175	CWH131190	CWH131175	
26	CONTROL BOARD TOP COVER	1	CWH131189	CWH131176	CWH131189	CWH131176	
27	REMOTE CONTROL	1	CWA75C2712	CWA75C2710	CWA75C2712	CWA75C2710	
28	FRONT GRILLE COMPLETE	1	CWE11C3153	CWE11C3153	CWE11C3153	CWE11C3153	
29	FRONT GRILLE	1	CWE22K1233	CWE22K1233	CWE22K1233	CWE22K1233	
30	AIR FILTER	2	CWD001110	CWD001110	CWD001110	CWD001110	
31	SCREW-FRONT GRILLE	2	XTT4+14C	XTT4+14C	XTT4+14C	XTT4+14C	
32	CAP-FRONT GRILLE	2	CWH521025F	CWH521025F	CWH521025F	CWH521025F	
33	DRAIN HOSE	1	CWH851095	CWH851095	CWH851095	CWH851095	
34	INSTRUCTIONS COMPLETE	1	CWF56C4533	CWF56C4533	CWF56C4533	CWF56C4533	
35	OPERATING INSTRUTIONS	1	CWF564523	CWF564523	CWF564523	CWF564523	
36	INSTALLATION INSTRUCTIONS	1	CWF612699	CWF612699	CWF612699	CWF612699	
37	INSTALLATION PLATE	1	CWH36K1019	CWH36K1019	CWH36K1019	CWH36K1019	

16 Exploded View

CU-PA7DKD/CU-PC7DKD
CU-PA9DKD/CU-PC9DKD



17 Replacement Parts List

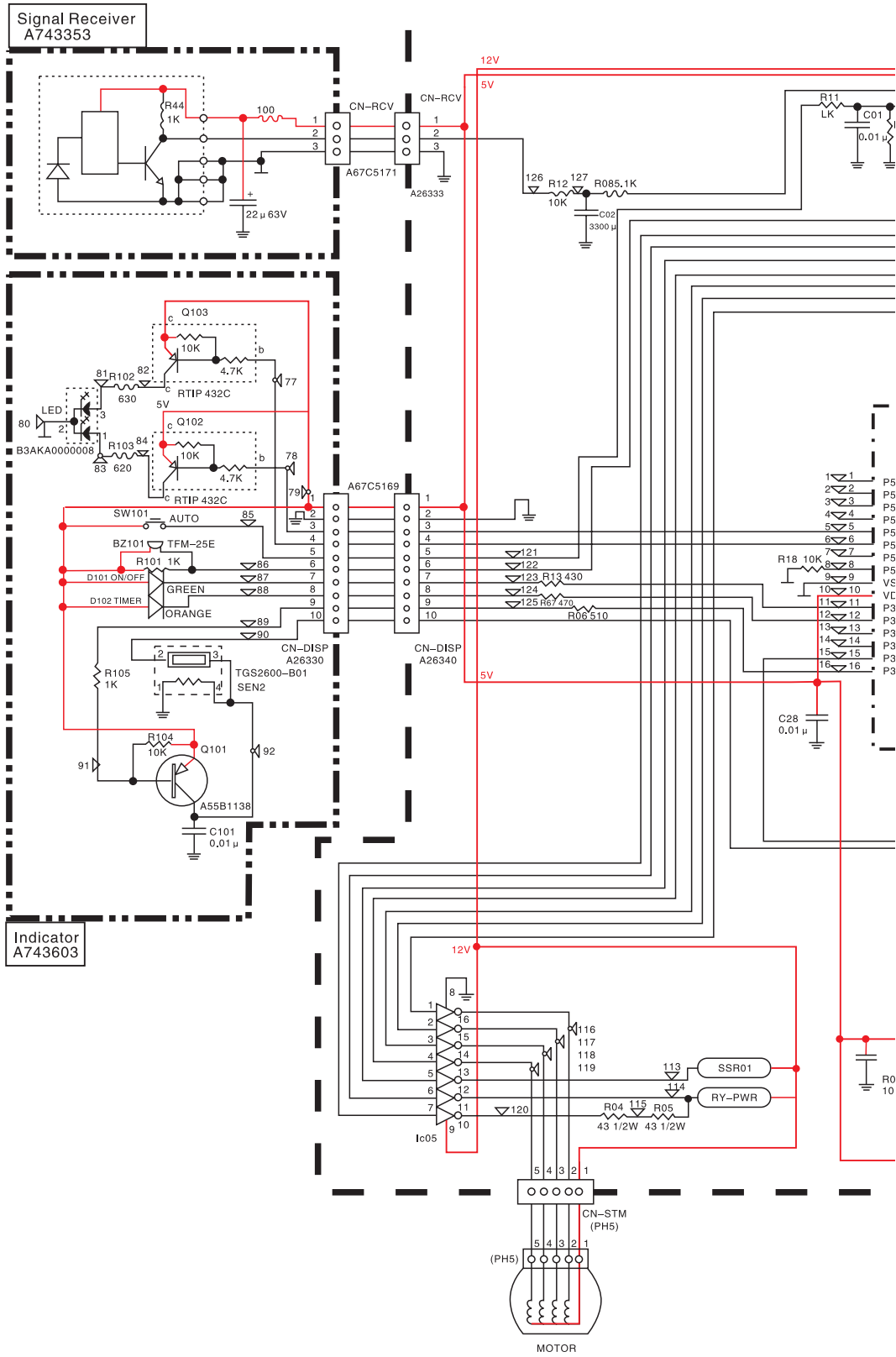
CU-PA7DKD/CU-PC7DKD
CU-PA9DKD/CU-PC9DKD

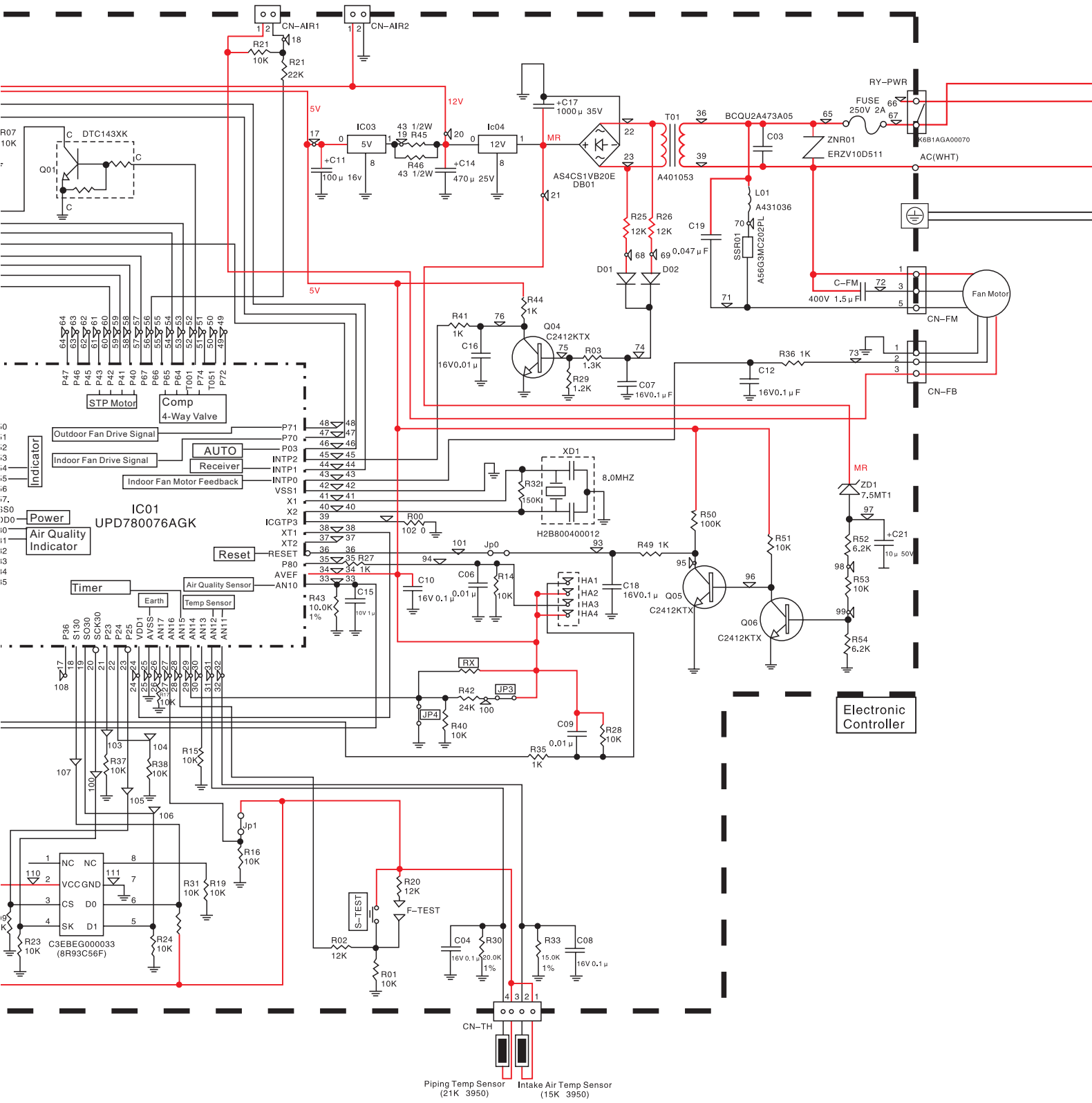
No.	DESCRIPTION&NAME	Q'ty	CU-PA7DKD	CU-PC7DKD	CU-PA9DKD	CU-PC9DKD	RE
1	BASE ASS'Y	1	CWD52K1108A	CWD52K1106A	CWD52K1108A	CWD52K1106A	
2	HOLDER-FAN MOTOR	1	CWD541076	CWD541072	CWD541077	CWD541072	
3	SCREW-F.M. HOLDER	2	XTT4D10CFJ	XTT4D10CFJ	XTT4D10CFJ	XTT4D10CFJ	
4	FAN MOTOR	1	CWA951419	CWA951427	CWA951419	CWA951427	
5	FIXING SCREW-FAN MOTOR	3	CWH55406J	CWH55406J	CWH55406J	CWH55406J	
6	PROPELLER FAN	1	CWH03K1025	CWH03K1025	CWH03K1025	CWH03K1025	
7	NUT-P.FAN	1	CWH561036J	CWH561036J	CWH561036J	CWH561036J	
8	COMPRESSOR	1	CWB092128	CWB092129	CWB092312	CWB092279	
9	MOUNT RUBBER(COMP.)	3	CWH501022	CWH501022	CWH501022	CWH501022	
10	NUT-COMP.MOUNT	3	CWH561047A	CWH561047A	CWH561047A	CWH561047A	
11	CONDENSER	1	CWB32C1606	CWB32C1483	CWB32C1607	CWB32C1484	
12	TUBE ASS'Y(RECEIVER)	1	CWT01C3163	CWT023555	CWT01C3165	CWT023556	
13	HOLDER-COUPLING	1	CWH351049A	CWH351049A	CWH351049A	CWH351049A	
14	4-WAY VALVE	1	CWB001045	--	CWB001045	--	
15	2-WAY VALVE	1	CWB021247	CWB021247	CWB021247	CWB021247	
16	3-WAY VALVE	1	CWB011301	CWB011301	CWB011301	CWB011301	
17	STRAINER	1	CWB111026	CWB111026	CWB111026	CWB111026	
18	OVER LOAD PROTECTOR	1	CWA121201	CWA12146+C	CWA121226	CWA121199	
19	TERMINAL COVER	1	CWH17006	CWH17006	CWH17006	CWH17006	
20	NUT-TERMINAL COVER	1	7080300	7080300	7080300	7080300	
21	SOUND PROOF PANEL	1	CWH151080	CWH151080	CWH151080	CWH151080	
23	TERMINAL BOARD ASS'Y	1	CWA28K1104	CWA28K1105	CWA28K1104	CWA28K1105	
24	CAPACITOR-COMPRESSOR	1	F0GAG2060001	DS401206CPXB	F0GAG3060001	F0GAG2560001	
25	HOLDER-CAPACITOR	1	CWH301037	CWH301037	CWH301037	CWH301037	
26	CAPACITOR-FAN MOTOR	1	F0DAH2050001	F0DAH2050001	F0DAH2050001	F0DAH2050001	
27	TUBE ASS'Y(CAPILLARY)	1	CWT01C3300	CWT01C3303	CWT01C3302	CWT01C3304	
	CAPILLARY	1	CWB15373	CWB15303	CWB15195	CWB15259	
28	SENSOR	1	CWA50C2276	--	CWA50C2276	--	
29	V-COIL COMPLETE	1	CWA43C2175	--	CWA43C2175	--	
30	SURFACE COVER	1	CWE031044A	CWE031044A	CWE031044A	CWE031044A	
31	CABINET FRONT PLATE	1	CWE06K1049	CWE06K1049	CWE06K1049	CWE06K1049	
32	CABINET SIDE PLATE(R)	1	CWE041125A	CWE041125A	CWE041125A	CWE041125A	
33	CABINET SIDE PLATE(L)	1	CWE041124A	CWE041124A	CWE041124A	CWE041124A	
34	CONTROL BOARD COVER	1	CWH131223	CWH131223	CWH131223	CWH131223	

18 Electronic Diagram

18.1 CS/CU-PC7DKD CS/CU-PC9DKD

F
E
D
C
B
A





Piping Temp Sensor (21K 3950) Intake Air Temp Sensor (15K 3950)

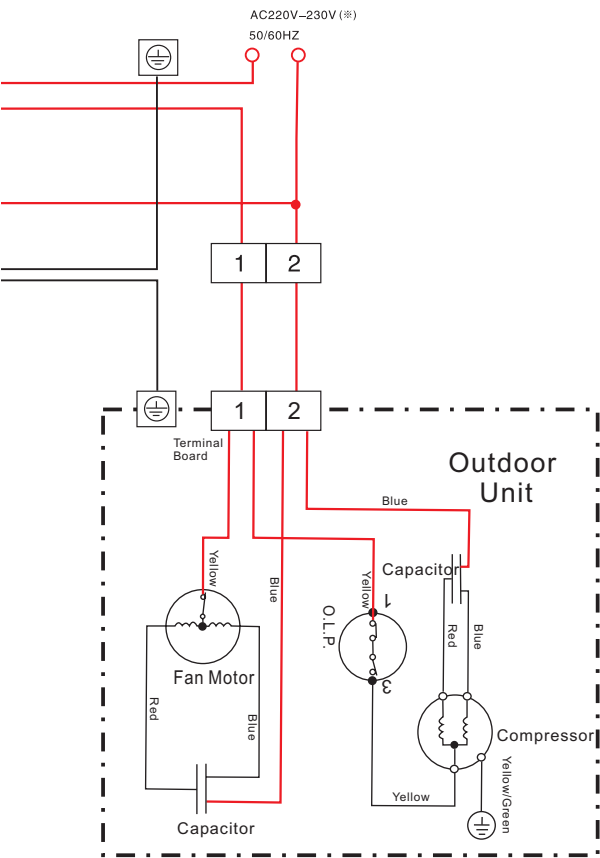


Table 1

Model	CS-PC7DKD	CS-PC9DKD
P.C.B.	CWA743752	CWA743754

Table 2

No	Jp3	Jp4	RX
0	Close	Close	—
1	Close	Open	—
2	Open	Open	10K
3	Close	Open	10K

※ For PA7DKD, the power source is 220V.
 For PA9DKD, the power source is 220V-230V.

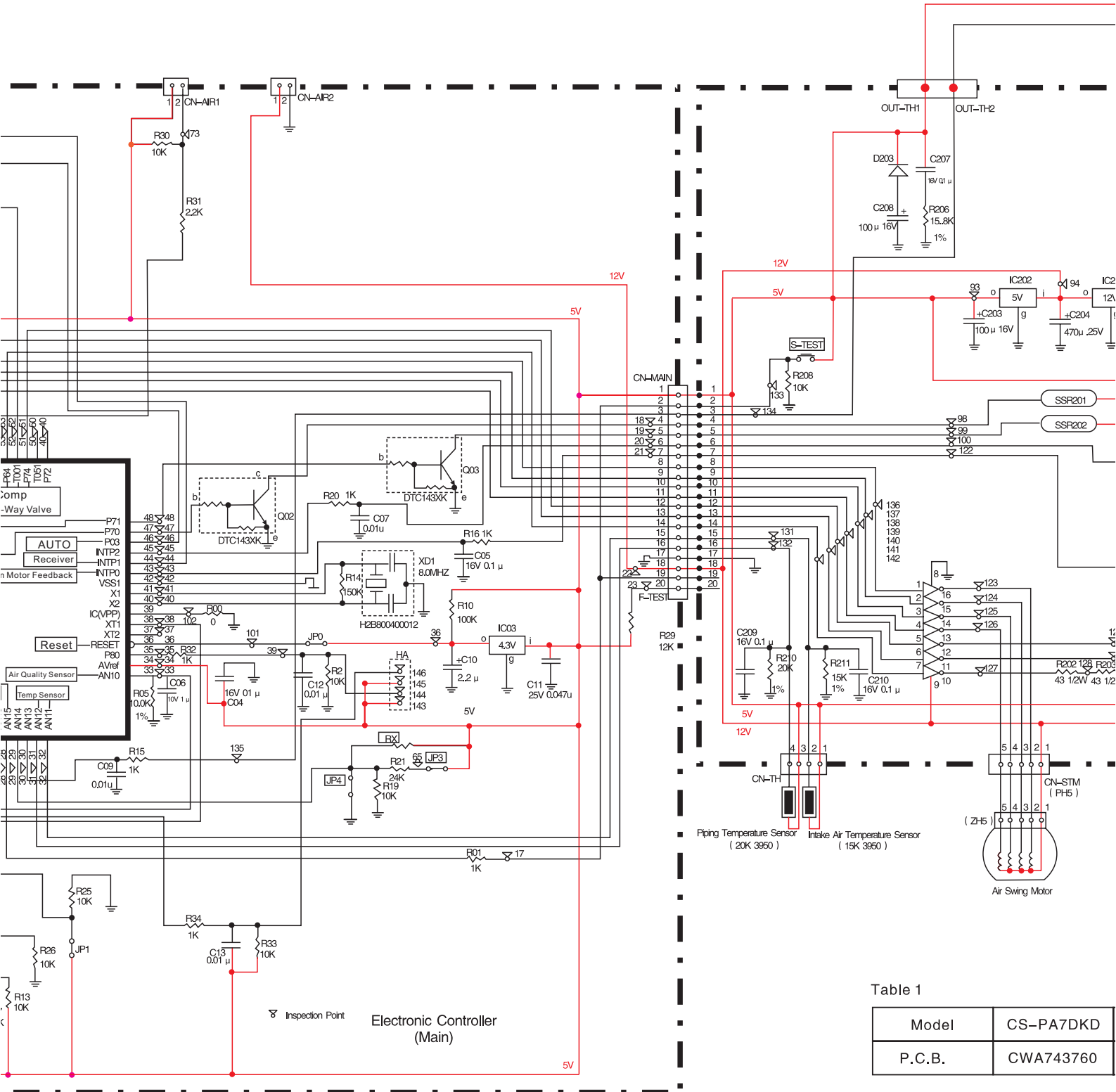


Table 1

Model	CS-PA7DKD
P.C.B.	CWA743760

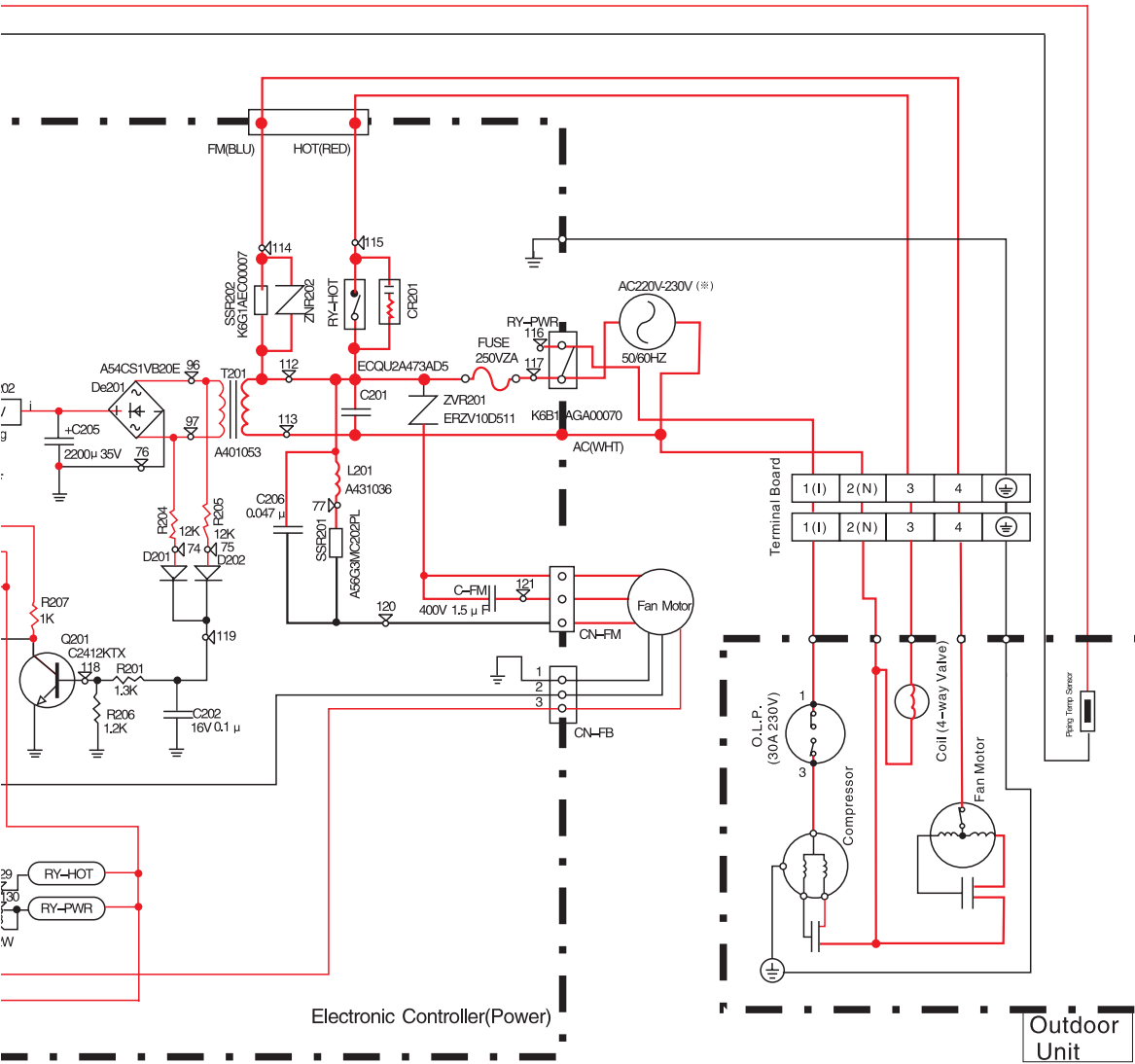


Table 2

No	Jp3	Jp4	RX
0	Close	Close	—
1	Close	Open	—
2	Open	Open	10K
3	Close	Open	10K

※ For PA7DKD, the power source is 220V.
For PA9DKD, the power source is 220V-230V.

