

**AIR TO WATER HEAT PUMP
MONOBLOC type**

**SERVICE
MANUAL**



Models

Outdoor unit



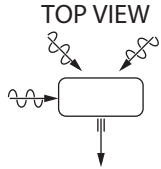
WPYA100LA

WPYA080LA

CONTENTS



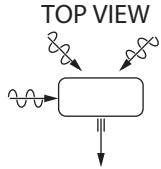
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SPECIFICATION

		Unit	WPYA100LA	
Cooling Capacity		kW	7.1	
Heating Capacity		kW	10.0	
Power source		phase	Single	
		V	230	
		Hz	50	
Airflow Method		OUTLET  INTAKE 	TOP VIEW 	
Electrical Data		Input	W	Cooling ; 2060 Heating ; 2300
		Running Current (MAX.)	A	Cooling ; 9.2(14.5) Heating ; 10.2(18.3)
Water Pipe Size			Out ; R1(25A) Return ; R1(25A)	
Power Cord	Number of core-wire		core-wire / 3.5~4.0mm ²	
Dimensions		Height	mm	881.5
		Width	mm	850
		Depth	mm	330
Net Weight		kg	82	
Air Circulation		Type		Propeller Fan
		Motor Type		DC brushless (8-pole)
		Rated Output	W	100
Heat Exchanger			Plate fin configuration,forced draft 18.1 FPI	
Refrigerant Control Device			Expansion Valve	
Refrigerant (R410A)		g	1500	
Thermostat			Electronic Control	

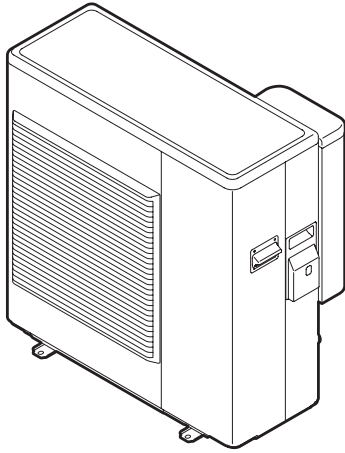
- Specifications are subject to change without notice.

SPECIFICATION

		Unit	WPYA080LA	
Cooling Capacity		kW	6.4	
Heating Capacity		kW	8.0	
Power source		phase	Single	
		V	230	
		Hz	50	
Airflow Method		OUTLET  INTAKE 	TOP VIEW 	
Electrical Data		Input	W	Cooling ; 1780 Heating ; 1780
		Running Current (MAX.)	A	Cooling ; 8.0(13.1) Heating ; 8.0(16.1)
Water Pipe Size			Out ; R1(25A) Return ; R1(25A)	
Power Cord	Number of core-wire		core-wire / 3.5~4.0mm ²	
Dimensions		Height	mm	881.5
		Width	mm	850
		Depth	mm	330
Net Weight		kg	82	
Air Circulation		Type		Propeller Fan
		Motor Type		DC brushless (8-pole)
		Rated Output	W	100
Heat Exchanger			Plate fin configuration,forced draft 18.1 FPI	
Refrigerant Control Device			Expansion Valve	
Refrigerant (R410A)		g	1500	
Thermostat			Electronic Control	

- Specifications are subject to change without notice.

UNIT



Operation mode

Cold water mode.
Hot water mode.

Inverter control

Inverter control reduce the ON/OFF times of compressor, so can keep the water temperature changeless during operation.

Electricity consumption

Inverter control can operate with less electricity consumption than normal air to water heat pump.

Defrost control

Defrosting operation is controlled by the temperature of outdoor heat exchanger sensed by the thermistor.

Anti-freezing control for the circulation water

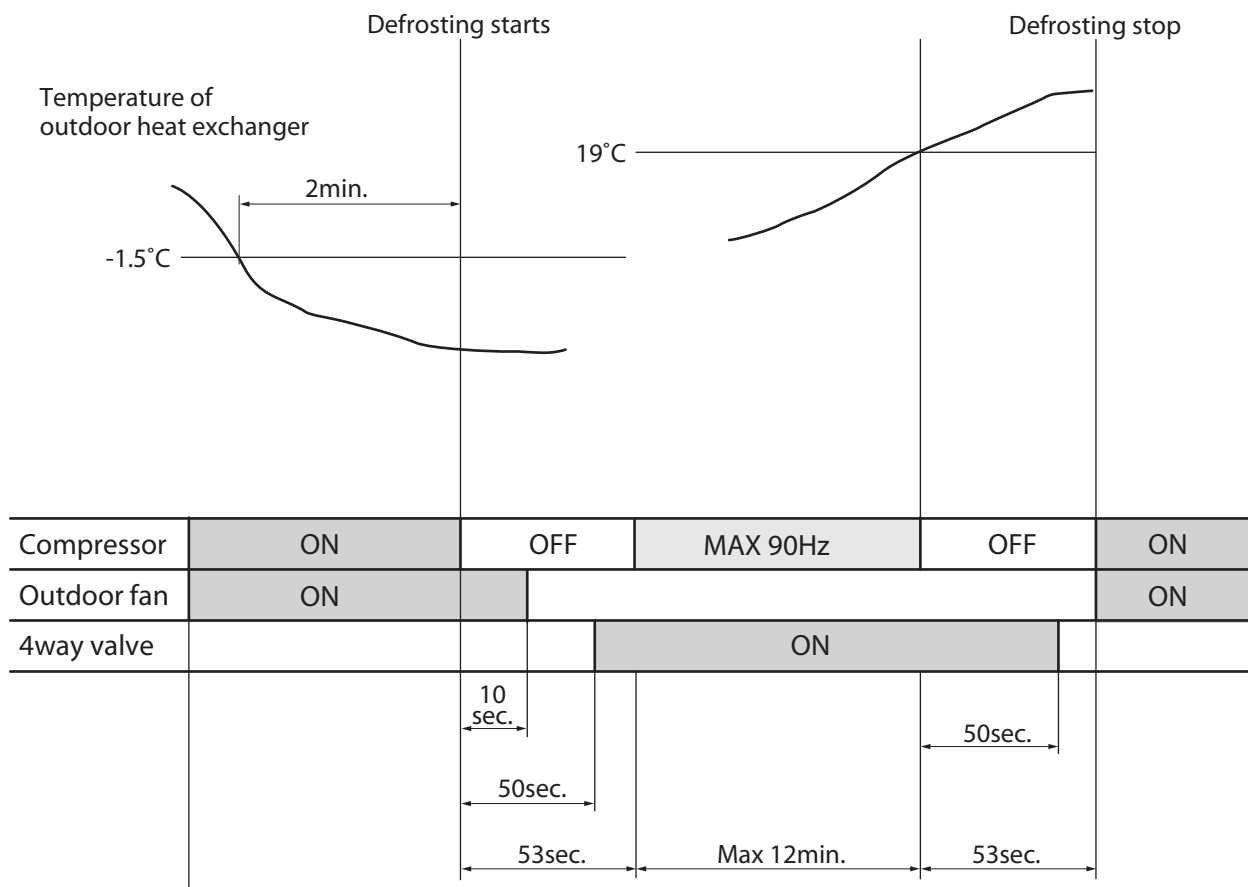
Anti-freeze operation automatically starts when the outdoor temperature is lower than 2°C.

Time delay safety control

Restarting is inhibited for approximately 3 minutes.

DEFROSTING OPERATION(FOR A UNIT HEAT EXCHANGER)

- Defrosting operation is controlled by the temperature of outdoor heat exchanger sensed by the thermistor and the timer switch.
- Defrosting operation starts when the both of the following conditions are met at the same time.
 - 35 minutes' of continuous run of the compressor after the start of heating operation or after the completion of previous defrosting operation.
 - The temperature of the outdoor heat exchanger stays lower than -1.5°C continuously for two minutes.
- Defrosting operating is called off if either of the following conditions is met.
 - The temperature of outdoor heat exchanger rises to 19°C while 4-way-valve is ON.
 - 12 minutes has passed since compressor turned ON.





- Working condition of frost protection heater for expansion vessel






The heater turns ON if the outdoor temperature keeps below 3 degree for 1 minute.
 The heater turns OFF if the outdoor temperature keeps above 5 degree for 1 minute.










FOR YOUR SAFETY USE

- For the safety and proper use and handling of the product, please read and follow the instructions carefully.
- The meaning of the marks below are as follows.

 Danger	Improper use will cause the significant risk of death or serious injury of the user.
 Warning	Improper use may cause the risk of death or serious injury of the user.

- Please refer the marks below.

 Caution	 High Voltage	 Prohibited
 Strict enforcement	 Connect the earthing cable	

 Danger		
Check Point	<ul style="list-style-type: none"> • If leakage of refrigerant occur in the installation, ventilate a room. If the leaked refrigerant is exposed fire, poisonous gas may be generated. 	
	<ul style="list-style-type: none"> • Boosting capacitor make the control box assembly high voltage. Make the capacitor discharge enough when servicing. Otherwise will be struck by electricity. 	
	<ul style="list-style-type: none"> • Never remodel appliance. Use designated parts or accessories to avoid accidents. 	
	<ul style="list-style-type: none"> • In case of gas leakage, not only refill the required amount of the refrigerant gas but also find out the gas leakage point and mend it. If the service work has to be suspended before mending the leakage points, be sure to collect the refrigerant gas in the unit by using pump then fasten the service ports to avoid any further leakage. Poisonous gas may be generated when the leaked refrigerant is exposed to fire. 	
	<ul style="list-style-type: none"> • Be sure to change the cable if it is damaged. Do not use damaged cable. 	
	<ul style="list-style-type: none"> • Do not use power supply cord extended or connected in halfway. 	
 Warning		
Check Point	<ul style="list-style-type: none"> • Be sure to put the units to earthing works. 	
	<ul style="list-style-type: none"> • Be sure to check the insulated resistance, more than 1M Ω. 	

ERROR CODES

The error codes displayed on the unit display board indicate the location of the breakdown or abnormality.

UNIT ERROR CODES	APPEARANCE, PORTION, PARTS SEEMED WRONG	METHOD OF CHECK	TROUBLESHOOTING
—	POWER SUPPLY	check the power supply	confirm the power supply.
	FUSE CF3 (250V T5A)	check the electric continuity by tester [see fig. 1]	if CF3 is blown, it should be replaced and check if there is a short-circuit at a connector of the 4-way valve coil, the heater for tank, or the circulation pump. [see fig 4,5,6] if a short-circuit is found, the parts should be replaced.
	FUSE CF1 (250V T25A)	check the electric continuity by tester [see fig. 1]	if CF1 is blown, PCB(CONTROLLER) should be replaced and check the resistances between pink-gray and orange-blue in the connector of POWER MODULE. [see fig 7] if these values are below 100kΩ, POWER MODULE should be replaced.
A0	FAN MOTOR FUSE CF4 (250V T3.15A) POWER MODULE	take off the connector [9], and check the resistance between red-black in the connector if the resistance is over 100kΩ, FAN MOTOR is normal take off the terminals (orange and blue) and check the resistance between orange-blue if the resistance is over 100kΩ, POWER MODULE is normal check the power supply	if FAN MOTOR is abnormal, it should be replaced, and check the electric continuity fuse CF4 by tester. [see fig 2] if CF4 is blown, it should be replaced. if these values are below 100kΩ, POWER MODULE should be replaced.
A1	DISCHARGE TEMPERATURE ERROR SENSOR, TEMP. DISCHARGE SENSOR, TEMP. SUCTION GAS LEAKAGE	check the resistance by tester [see table 2] check the resistance by tester [see table 1] check the service valve and refrigerant circuit (pipe)	confirm the power supply. SENSOR, TEMP. DEFROST should be replaced. SENSOR, TEMP. SUCTION should be replaced. collect refrigerant once, then recharge with prescribed mass.
A2	PROTECTIVE ACTION AGAINST EXCESS CURRENT/DC CURRENT DETECTION UNREASONABLE OPERATION UNDER OVERLOAD DROP OF POWER VOLTAGE POWER MODULE	check the place of installation (blockage of air inlet & outlet) check the excess gas check the power voltage (230V) operate without the junction connector of compressor lead wire check the electric continuity FUSE CF2 (250V T1.5A) by tester other than described above	ensure the installation position to avoid blockage of air inlet & outlet. if excess gas is observed, collect all refrigerant once, then recharge with prescribed mass. confirm the power supply voltage. (230V) if the same error code appears again, POWER MODULE should be replaced. if CF2 is blown, PCB(CONTROLLER) should be replaced. COMPRESSOR should be replaced.
A3	CT DISCONNECTION PCB (CONTROLLER)	—	PCB(CONTROLLER) should be replaced.
A4	PROTECTIVE ACTION AGAINST EXCESS CURRENT/AC CURRENT DETECTION UNREASONABLE OPERATION UNDER OVERLOAD DROP OF POWER VOLTAGE MOMENTARY STOP OF POWER (IN CASE OF LIGHTNING)	check the place of installation (blockage of air inlet & outlet) check the excess gas check the power voltage (230V)	ensure the installation position to avoid blockage of air inlet & outlet. if excess gas is observed, collect all refrigerant once, then recharge with prescribed mass. confirm the power supply voltage. (230V) restart operation.
A5	ABNORMAL REVOLUTION OF COMPRESSOR UNREASONABLE OPERATION UNDER OVERLOAD DROP OF POWER VOLTAGE FUSE CF2 (250V T1.5A) POWER MODULE COMPRESSOR	check the place of installation (blockage of air inlet & outlet) check the excess gas check the power voltage (230V) check the electric continuity FUSE CF2 (250V T1.5A) by tester check the resistance of POWER MODULE by tester take off the junction connector of compressor lead wire measure resistance between the connector pins of junction connector, six times between white-black, black-red, red-white respectively by changing the polarity → if all the figures show over 100kΩ, POWER MODULE is normal other than described above	ensure the installation position to avoid blockage of air inlet & outlet. if excess gas is observed, collect all refrigerant once, then recharge with prescribed mass. confirm the power supply voltage (230V) if CF2 is blown, POWER MODULE and PCB(CONTROLLER) should be replaced. if any of these values is below 100kΩ, POWER MODULE should be replaced. COMPRESSOR should be replaced.

(*1) When checking fan motor and/or pump, turn off the power supply completely and touch their terminal or connector

ERROR CODES

UNIT ERROR CODES	APPEARANCE, PORTION, PARTS SEEMED WRONG	METHOD OF CHECK	TROUBLESHOOTING
A6	Suction temp. sensor Error SENSOR, TEMP. SUCTION	check the resistance by tester [see table 1]	if the sensor is faulty, it should be replaced.
A7	Defrost temp. sensor Error SENSOR, TEMP. DEFROST	check the resistance by tester [see table 1]	if the sensor is faulty, it should be replaced.
A8	Discharge temp. sensor Error SENSOR, TEMP. DISCHARGE	check the resistance by tester [see table 2] (*2)	if the sensor is faulty, it should be replaced.
C0	Power module Error POWER MODULE	—	POWER MODULE should be replaced.
C2	Outdoor temp. sensor Error SENSOR, TEMP. OUTDOOR	check the resistance by tester [see table 1]	if the sensor is faulty, it should be replaced.
C3	FUSE CF4 (250V T3.15A)	check the electric continuity FUSE CF4 (250V T3.15A) by tester	if CF4 is blown, FAN MOTOR and CF4 should be replaced. if CF4 is not blown, check the voltage of FAN MOTOR [see fig 2] if the voltage is normal, FAN MOTOR should be replaced. if the voltage is faulty, PCB(CONTROLLER) should be replaced.
	FAN MOTOR (*1) PCB (CONTROLLER)		
C4	rise of temperature (above 110°C) of POWER MODULE	check the place of installation (blockage of air inlet & outlet)	ensure the installation position to avoid blockage of air inlet & outlet.
	Power module sensor Error SENSOR, TEMP. POWER MODULE	—	POWER MODULE should be replaced.
C5	Power module sensor Error SENSOR, TEMP. POWER MODULE	—	POWER MODULE should be replaced.
C6	PCB (Controller) Error PCB (CONTROLLER)	—	PCB(CONTROLLER) should be replaced.
C7	MIS-WIRING (PCB (CONTROLLER) - I/F PCB CONNECTING CABLE) OR RARE CONTACT	check the wiring connection and rare contact	after correcting mis wiring, restart operation.
	I/F PCB serial error I/F PCB	other than described above	I/F PCB should be replaced.
C8	PCB (CONTROLLER)	other than described above	PCB(CONTROLLER) should be replaced.
	CONNECTOR () is RARE CONTACT OR POWER MODULE and PCB(CONTROLLER)	Turn off the power supply , wait for about 3 minutes take off and insert the connector (), and then power up again after replacing POWER MODULE, restart operation again	if the same error code appears, POWER MODULE should be replaced. if the same error code appears, PCB(CONTROLLER) should be replaced.
CC	MIS-WIRING (I/F PCB-HEAT PUMP REGULATOR) OR RARE CONTACT	check the wiring connection and rare contact	check wiring connection and rare contact then restart operation.
	I/F PCB serial error I/F PCB	other than described above	I/F PCB should be replaced.
E4	Heat pump regulator sensor Error Heat pump regulator	other than described above	HEAT PUMP REGULATOR PCB should be replaced.
	Outgoing circulating water temp. sensor Error SENSOR, TEMP. OUTGOING CIRCULATING WATER	check the resistance by tester [see table 1]	if the sensor is faulty, it should be replaced.
E5	Return circulating water temp. sensor Error SENSOR, TEMP. RETURN CIRCULATING WATER	check the resistance by tester [see table 1]	if the sensor is faulty, it should be replaced.
	Pump Error PUMP PCB (CONTROLLER) (*1)	check the voltage of PUMP [see fig. 3]	if the voltage is normal, PUMP should be replaced. if the voltage is abnormal, PCB(CONTROLLER) should be replaced.
U5	CLOGGED THE CIRCULATION PUMP AND/OR HEATING CIEUIT	check the pump and heating circuit	remove the clog, then restart operation.
	low-outside air temperature limit THE OUTDOOR TEMP. FALLS BELOW -20°C	below -20°C, it is likely not to operate for the protection of the equipment	When the temperature rises, the unit automatically restarts the operation.
not cool down not warm up	SENSOR TEMP. OUTDOOR 4-WAY VALVE	check the resistance by tester [see table 1] check the resistance by tester [see fig. 4]	if the sensor is faulty, it should be replaced. if the value is abnormal, the coil s should be replaced.
	SHORT CYCLE (INSUFFICIENT AIR CIRCULATION)	check the blockage of air inlet & outlet	ensure the installation position to avoid blockage of air inlet & outlet.
not cool down not warm up	SENSOR,TEMP. OUTGOING AND RETURN CIRCULATING WATER	check the resistance by tester [see table 1]	if any of these sensors is faulty, it should be replaced.
	GAS LEAKAGE	check the service valve and refrigerant circuit (pipe)	after fixing the leakage point, collect the refrigerant once, then recharge with prescribed mass.
CLOGGED HEATING CIRCUIT	check temperature difference heating flow/return [see page 11] large difference means flow rate is too low	check temperature difference heating flow/return [see page 11] large difference means flow rate is too low	remove the clog, then restart operation.

(*1) When checking fan motor and/or pump, turn off the power supply completely and touch their terminal or connector.
(*2) In case of detecting open circuit of the discharge temperature thermistor, error display appears 10 minutes after start operating.
In case of detecting short circuit of the discharge temperature thermistor, error display appears immediately.

ELECTRIC CHARACTER

[table 1] Sensor, temp. defrost
 Sensor, temp. outdoor
 Sensor, temp. suction
 Sensor, temp. outgoing
 and return circulating water

Temp.(°C)	Resistance(kΩ)
0	31
5	24
10	19
15	15
20	12
25	10
30	8
35	6.7
40	5.5
45	4.6
50	3.8
55	3.2

[table 2] Sensor, temp. discharge

Temp.(°C)	Resistance(kΩ)
10	1,000
20	600
35	300
40	250
50	160
80	50

DISPLAY OF ERRORS IN THE PAST

1. Display method

- **For a unit display board**

Press and hold the PUMP SW. and RESET SW. at the same time for 5 seconds to display a past error code and its sequence number.

The PUMP SW. can then be used to select between a maximum of 8 past error codes to display. (If there are no error codes, " - - " is displayed.)

2. Display cancellation

- **For a unit display board**

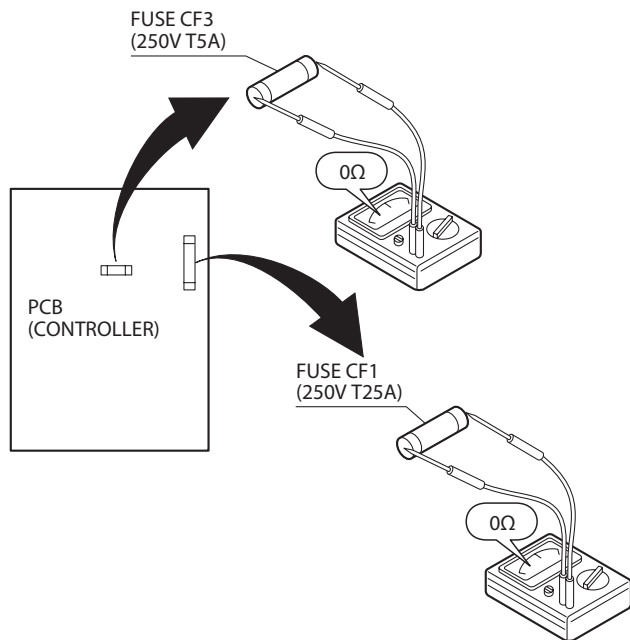
While an error code is being displayed, press and hold the PUMP SW. and RESET SW. at the same time for 5 seconds to cancel the error code display and turn off the display.

Alternatively, if no operations are performed for 5 minutes, the error code display is automatically cancelled and the display turned off.

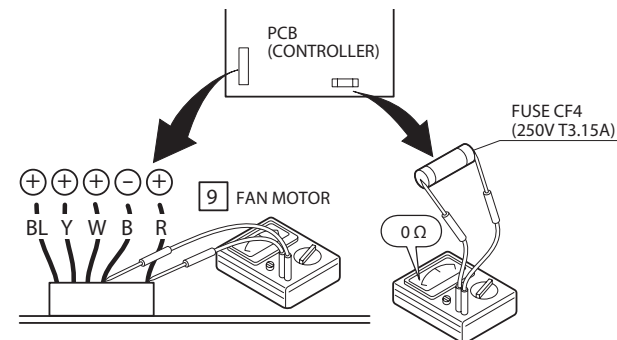
While an error code is being displayed, press and hold the reset switch for 10 seconds or more to delete all past error codes. The display turns to " - - ".

CHECK FOLLOWING STEPS

[fig. 1] Continuity of current fuse on the PCB (CONTROLLER)



[fig. 2] Voltage of fan motor on the PCB(CONTROLLER)



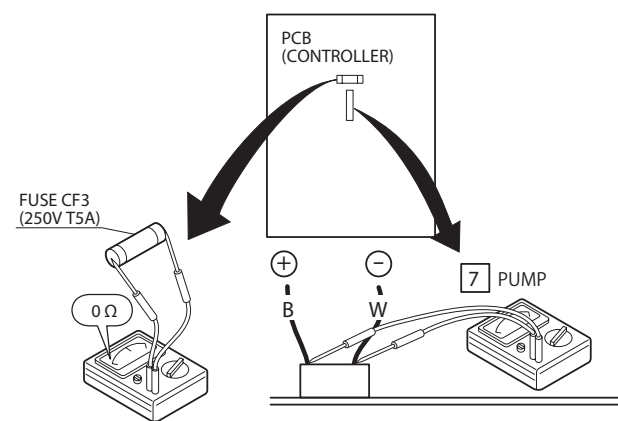
Measure voltage between the connector pins of connector [9]. Connector [9] shall be checked during heating or cooling operation. Measure voltage as follows without taking off the connector [9].

between red ⊕ and black ⊖ approx. DC200~370V
 between yellow ⊕ and black ⊖ approx. DC3~7V
 between white ⊕ and black ⊖ approx. DC15V

PCB (CONTROLLER) is Normal

→ Fan motor Error

[fig. 3] Voltage of PUMP on the PCB(CONTROLLER)



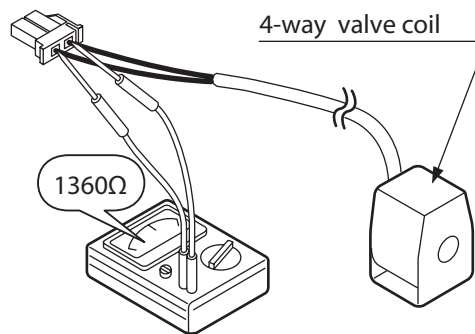
Measure voltage between the connector pins of connector [7]. Connector [7] shall be checked during heating or cooling operation. Measure voltage as follows without taking off the connector [7].

between black ⊕ and white ⊖ approx. AC207~253V

PCB (CONTROLLER) is Normal

→ Pump Error

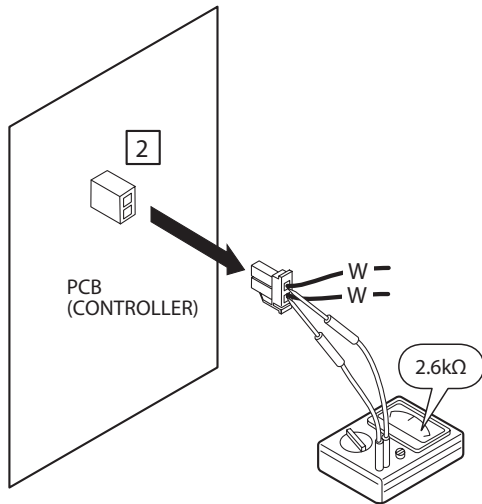
[fig. 4] Resistance of 4-way valve coil



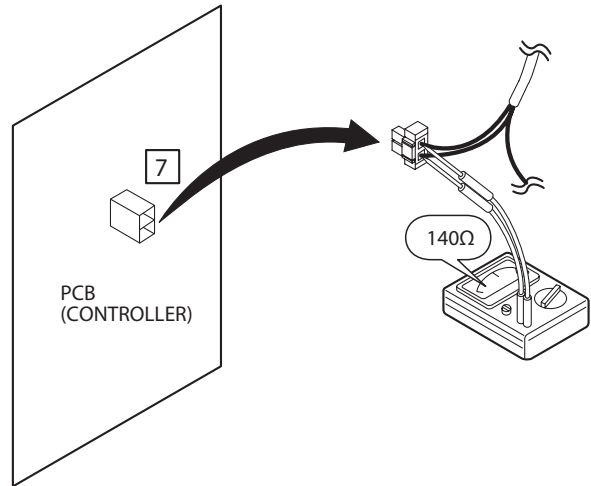
Take off the connector and check the resistance 4-way valve coil.

CHECK FOLLOWING STEPS

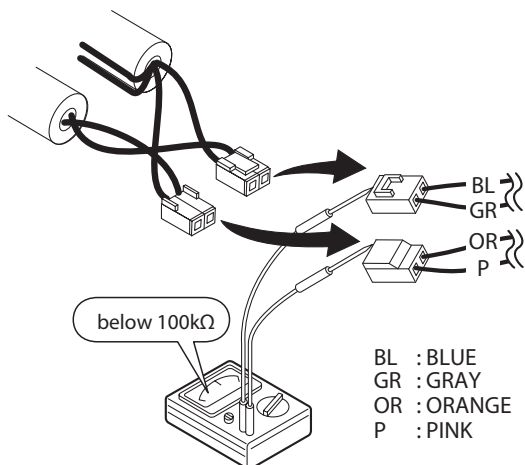
[fig. 5] Resistance of the heater for tank



[fig. 6] Resistance of the circulation pump

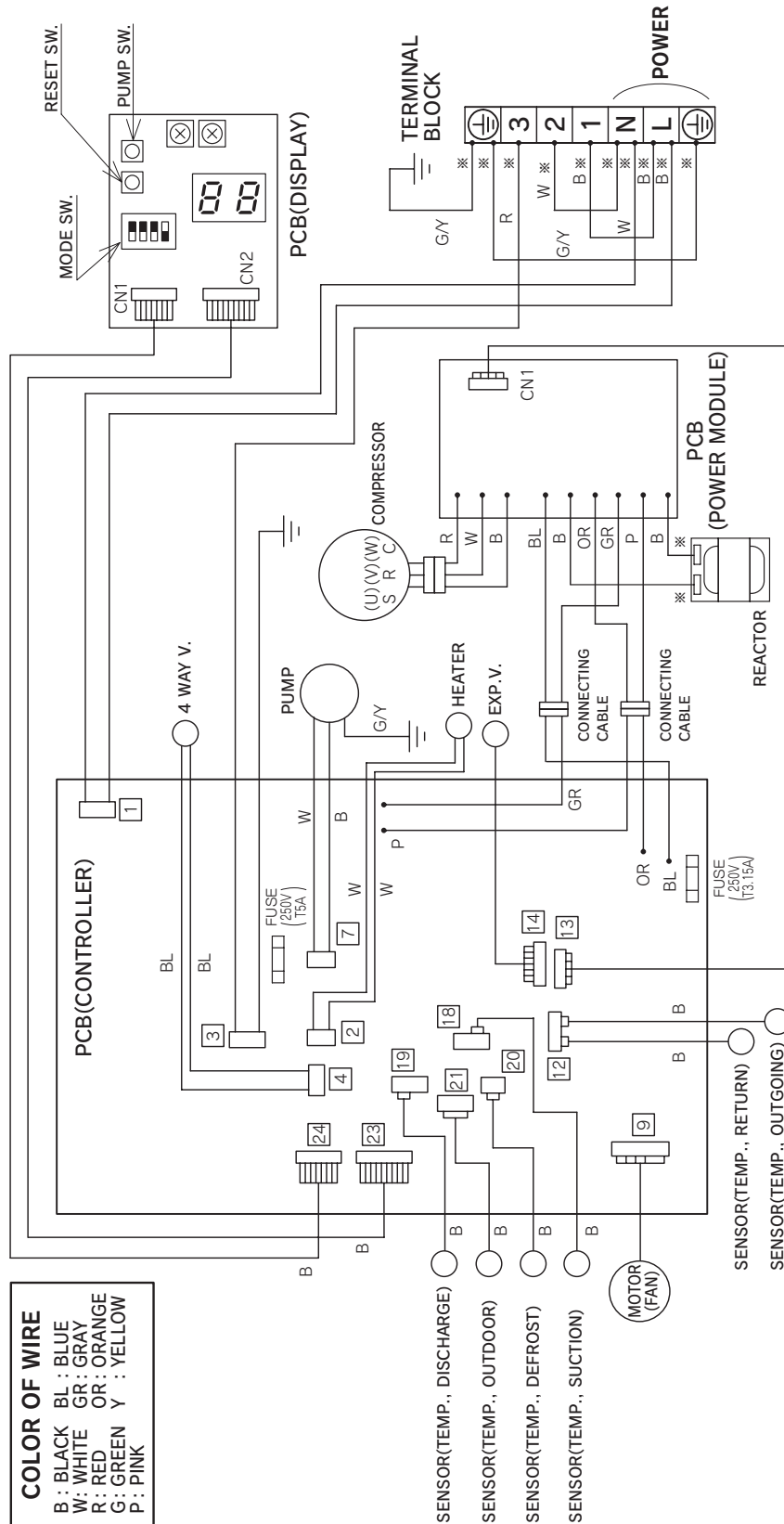


[fig. 7] Resistance of POWER MODULE



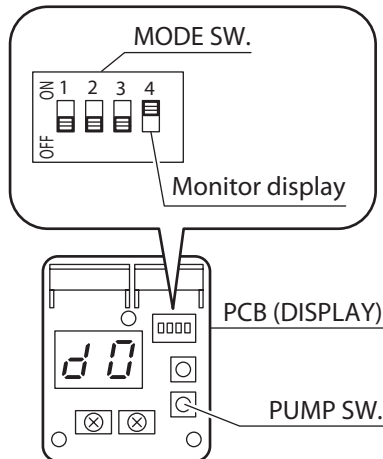
WIRING DIAGRAM

WPYA100LA
WPYA080LA



MONITOR DISPLAY METHOD

- Switch " ON " the MODE SW. 4 on the unit PCB (DISPLAY).
The monitor number and monitor data are alternately displayed.
- Push the PUMP SW. of the unit PCB (DISPLAY).
Every time the PUMP SW. is pressed the display changes in the sequence below.
- Switch " OFF " the MODE SW. 4 after completing the check.

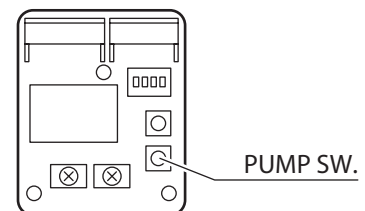


• Monitor display contents

Monitor	Monitor data display contents	
d0	Circulating water return temperature	Units of 1°C
d1	Compressor operating frequency	Units of 1Hz
d2	Discharge temperature	Units of 1°C
d3	Power consumption value	Units of 100W
d4	Interface voltage	Units of 0.1V
d5	—————	
d6	Ambient air temperature	Units of 1°C
d7	External thermistor temperature	Units of 1°C
d8	Suction temperature	Units of 1°C
d9	Circulating water outgoing temperature	Units of 1°C

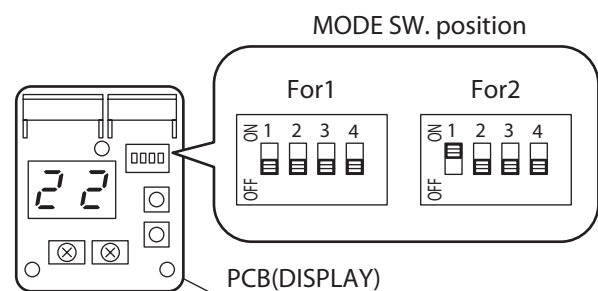
CHARGE THE CIRCULATION WATER AND AIR PURGE IN WATER CIRCUIT

- When you push PUMP SW on display PCB, the water pump is started to operate to circulate the water.
The each digital segment of right side on display PCB lights in sequence during operating the pump.
- The pump is automatically stopped after operating for 10 minutes.
If it is not enough to let the air out of water circuit, please push PUMP SW once again after the pump stopped.
When you would like to stop operating the pump before the pump is automatically stopped, please push PUMP SW once again.



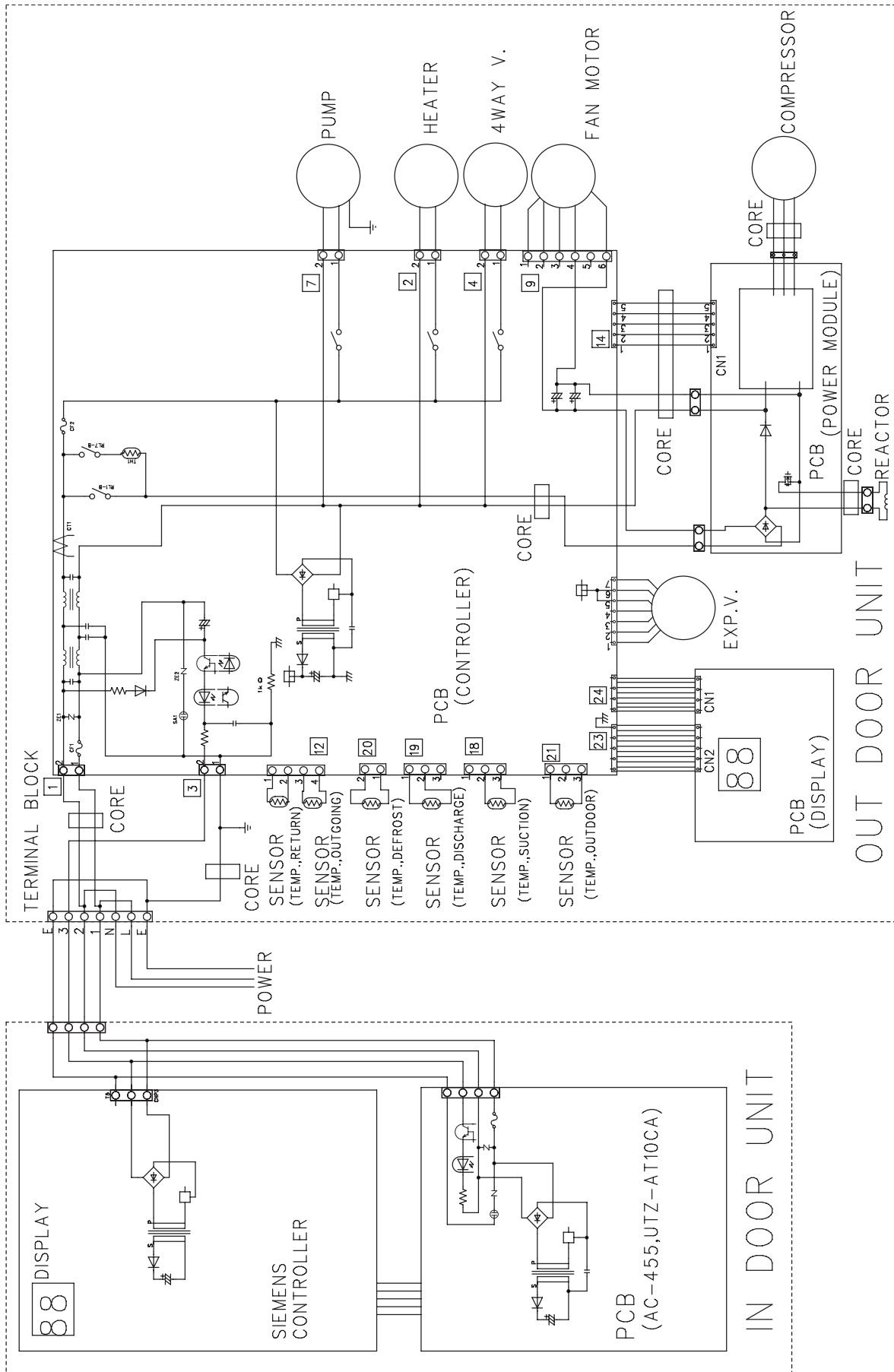
FREEZE PREVENTION SETTING

- If the outside temperature falls below about 2°C, freeze prevention operation is possible depending on the unit MODE SW. 1
 - OFF : 1.No freeze prevention operation (When using anti-freeze)
 - ON : 2. Freeze prevention operation (When the outdoor temperature falls below about 2°C , the circulating water is warmed and circulated.)
- The factory setting is " ON : 2. Freeze prevention operation " .



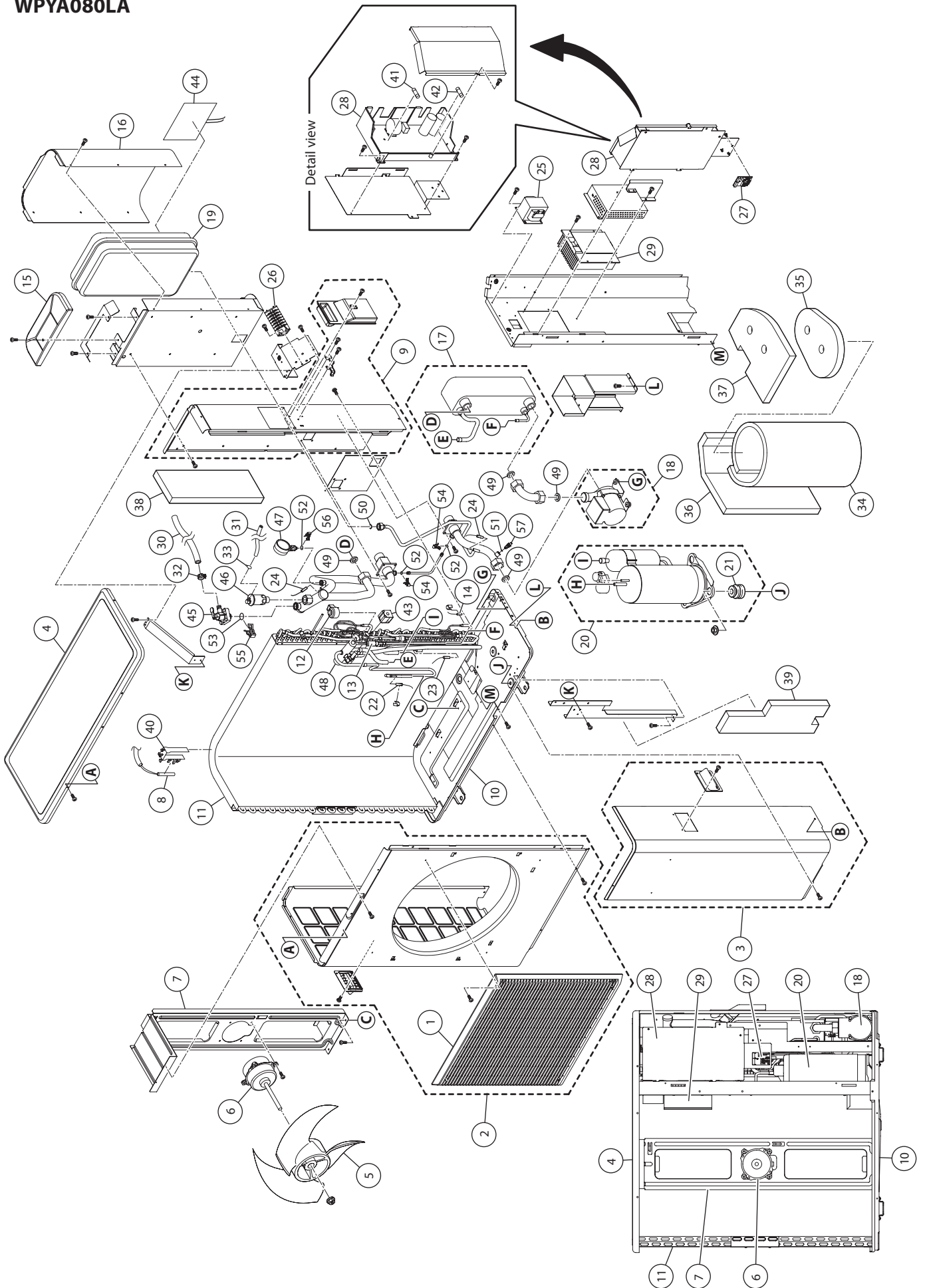
ELECTRIC CIRCUIT DIAGRAM

WPYA100LA
WPYA080LA



EXPLODED VIEW

WPYA100LA
WPYA080LA



WPYA100LA
WPYA080LA

No.	PARTS NAME	PARTS No.
1	OUTLET GRILLE	30112520
2	FRONT PANEL ASSY.(LEFT)	20600350
3	FRONT PANEL ASSY.(RIGHT)	20600380
4	TOP PANEL ASSY.	20600401
5	PROPELLER FAN	52630190
6	MOTOR	30112580
7	BRACKET,MOTOR	20605280
8	SENSOR (TEMP.OUTDOOR)	30114360
9	BACK PANEL ASSY.	20600421
10	BOTTOM PANEL ASSY.	20600441
11	CONDENSOR ASSY.	20605621
12	COIL,EXPANSION VALVE	51914531
13	EXPANSION VALVE	30112630
14	SENSOR (TEMP.DEFROST)	30114350
15	TANK COVER (TOP)	20605930
16	TANK COVER (SIDE)	20605920
17	HEAT EXCHANNGER ASSY.	20606791
18	PUMP ASSY.	20605960
19	TANK	30112640
20	COMPRESSOR	30113070
21	VIBRATION PROOF RUBBER	30001110
22	SENSOR (TEMP.DISCHARGE)	51100870
23	SENSOR (TEMP.SUCTION)	30089900
24	SENSOR (TEMP.CIRCULATING WATER)	30112980
25	REACTOR	30112530
26	TERMINAL BLOCK	30112970
27	PCB (DISPLAY)	30051560
28	PCB (CONTROLLER) with CASE (WPYA100LA)	30112540+20605320
	PCB (CONTROLLER) with CASE (WPYA080LA)	30116780+20605320
29	PCB (POWER MODULE) ASSY. WITH HEAT SINK	20605341
30	RUBBER HOSE (FOR RELEIF VALVE)	30114420
31	RUBBER HOSE (FOR AIR PURGE VALVE)	30114430
32	HOSE BAND (FOR RELIEF VALVE)	30084480
33	HOSE BAND (FOR AIR PURGE VALVE)	68616090
34	SOUND PROOF MATERIAL1	20611960
35	SOUND PROOF MATERIAL2	20611970
36	SOUND PROOF MATERIAL3	20611980
37	SOUND PROOF MATERIAL4	20611990
38	SOUND PROOF MATERIAL5	20612000
39	SOUND PROOF MATERIAL6	20612010
40	OUTDOOR THERMISTOR HOLDER	20040100
41	FUSE(5A)	40016410
42	FUSE(3.15A)	40016400
43	COIL, 4-WAY VALVE	30112610
44	TANK HEATER	30114370
45	RELIEF VALVE	30112670
46	AIR PURGE VALVE	30112680
47	PRESSURE GAUGE	30112690
48	4-WAY VALVE	30104090
49	PACKING B	30113030
50	PACKING C	30113060

No.	PARTS NAME	PARTS No.
51	O RING (P4)	01107120
52	O RING (P6)	01107600
53	O RING (P14)	01107150
54	QUICK FASTENER	52775700
55	QUICK FASTENER	00633600
56	QUICK FASTENER	00601690
57	DRAIN PLUG	30078010

UTW-SCB*A (Control box)

No.	PARTS NAME	PARTS No.
1	Regulation card	20612051

DISASSEMBLY PROCESS

WARNING

Before servicing the unit, the power supply switch OFF,
Then, do not touch electric parts for 10 minutes due to the risk of electric shock

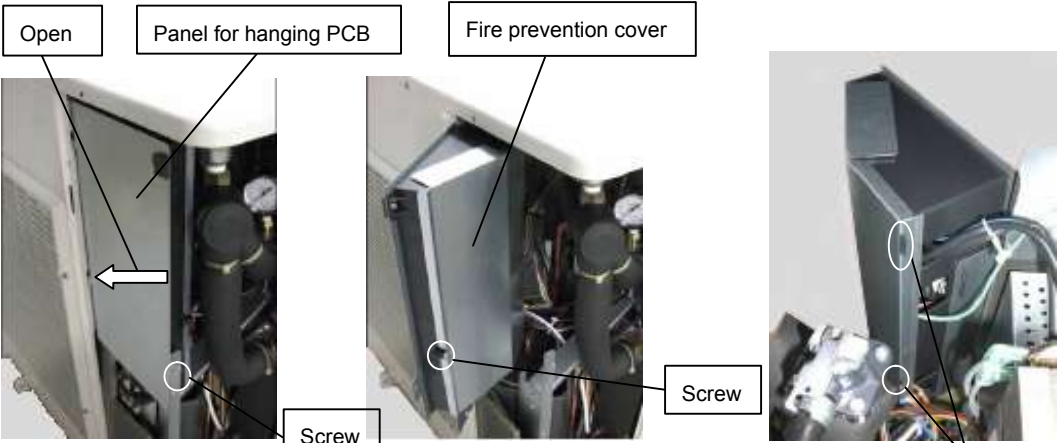
1 .Appearance



2 .SERVICE PANEL removal

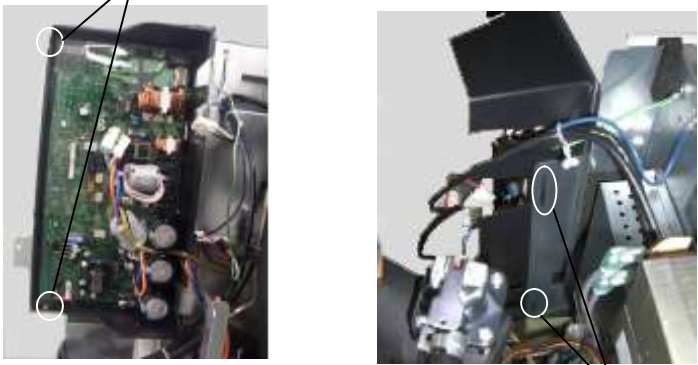


3.MAIN PCB removal



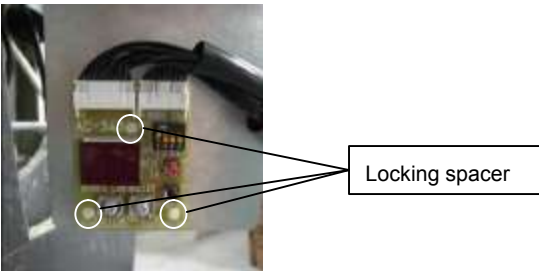
Remove the screw for fixing the panel. (1 place)
Open the panel for hanging PCB.

Remove the screw for fixing the cover. (1 place)
Remove the fire prevention cover.



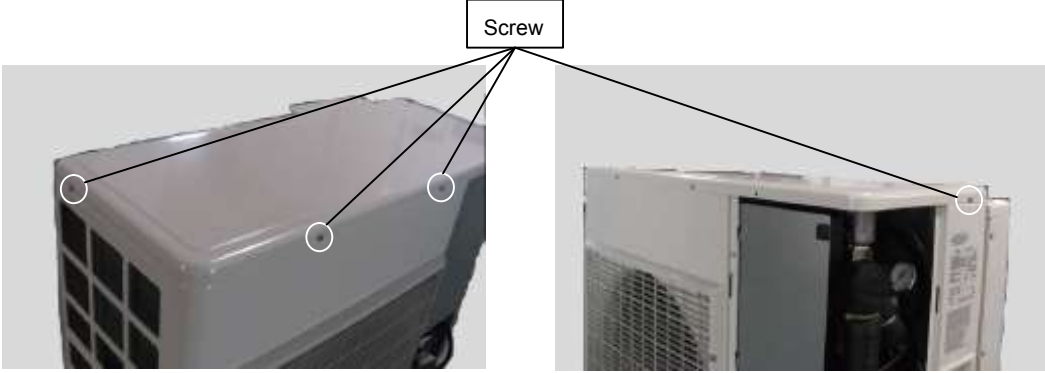
Remove connectors.
Remove the screws for PCB box (2 places) to detach PCB box whole.

4 . PCB (DISPLAY) removal



Remove the locking spacers. (3 places)
Remove the PCB (DISPLAY).

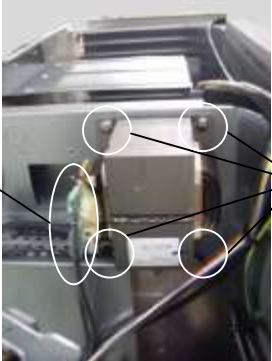
5 .TOP PANEL removal



Screw

Remove the screws. (4 places)
Remove the TOP PANEL.

6 .REACTOR removal

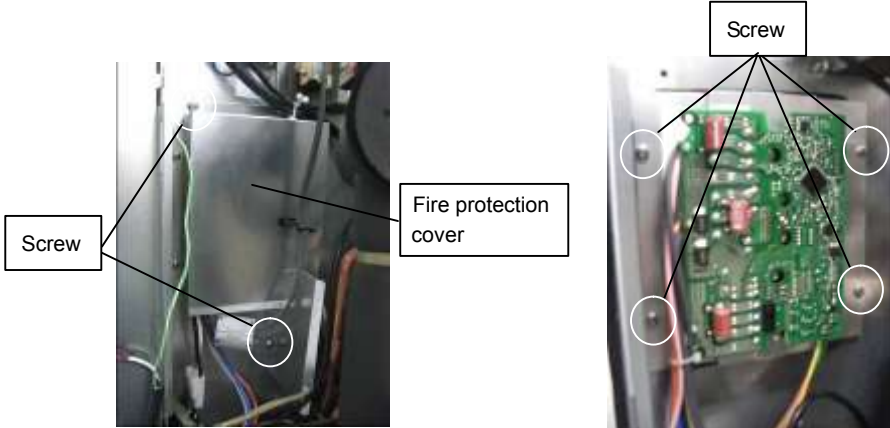


Connector

Screw

Remove the connectors.
Remove the screws. (4 places)
Remove the REACTOR.

7 .MODULE PCB removal



Screw

Fire protection cover

Screw

Remove the screws. (2 places)
Remove the cover.

Remove the screws. (4 places)
Remove MODULE PCB with the heat sink.

8.SOLENOID COIL (4way valve) removal



Screw

Remove the screw. (1 place)
Remove the SOLENOID COIL (4way valve).

9.EEV COIL removal



Remove the EEV COIL by hand.

10.FRONT PANEL(LEFT) removal

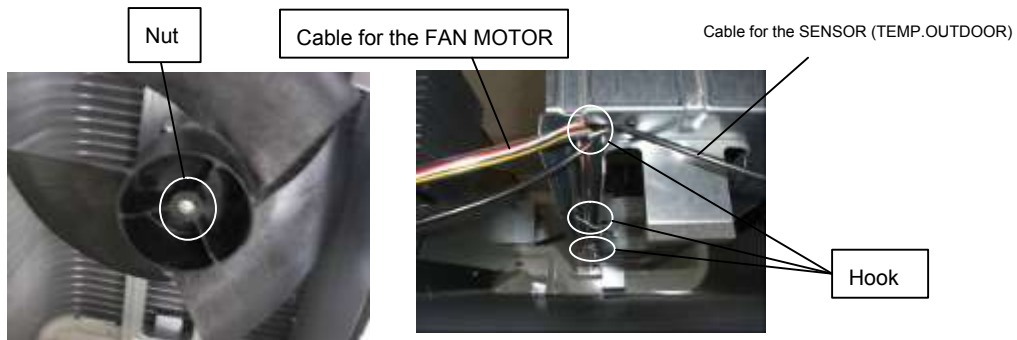


Screw



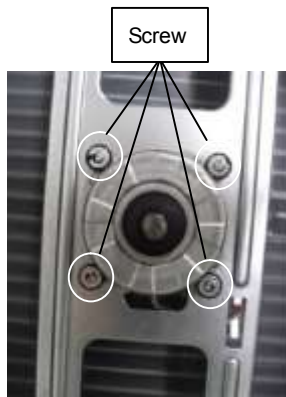
Remove the screws. (8 places)
Remove the FRONT PANEL(LEFT).

11 .FAN MOTOR removal



Remove the fixing nut.
Remove the PRPELLER FAN.
Note at the installation.
Tightening torque is from 4.0 to 6.0 N·m.

Remove the cable for the FAN MOTOR.
from the hooks in the fan bracket. (3 places)

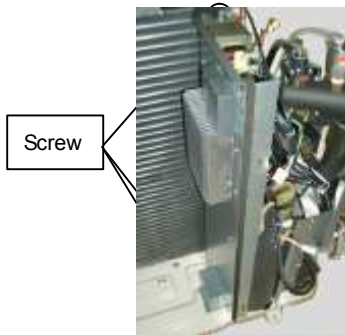


Remove the screws. (4 places)
Remove the FAN MOTER.

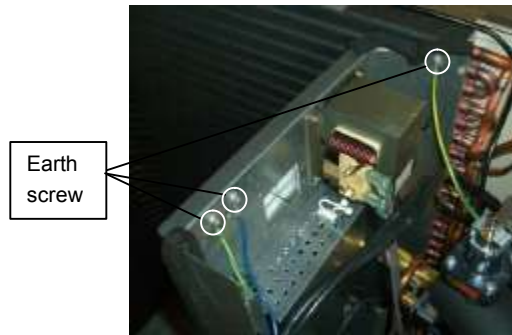
12 .FAN BRACKET and SEPARATE WALL removal



Remove the screws. (2 places)
Remove the FAN BRACKET.



Remove the screws. (3 places)



Remove the screws. (3 places)
Remove the SEPARATE WALL.

13 .COMPRESSOR removal

Precautions for exchange of Compressor.

Do not allow moisture or debris to get inside refrigerant pipes during work.

Procedure for Compressor removal.

Collect the refrigerant from the CHECK JOINT.

Start the following work after completely collecting the refrigerant.

Do not reuse the refrigerant that has been collected.



Check joint

Cover ①



Cover ②

Cover ③

Cover ④



Cover ⑥

Cover ⑤



Remove the SENSOR (TEMP.DISCHARGE) and the SENSOR. (TEMP.SUCTION) (※see chapter 25 and 26)
Remove the COMPRESSOR COVER ①, COVER ②, and COVER ③.

Remove the COMPRESSOR COVER ④, COVER ⑤, and COVER ⑥

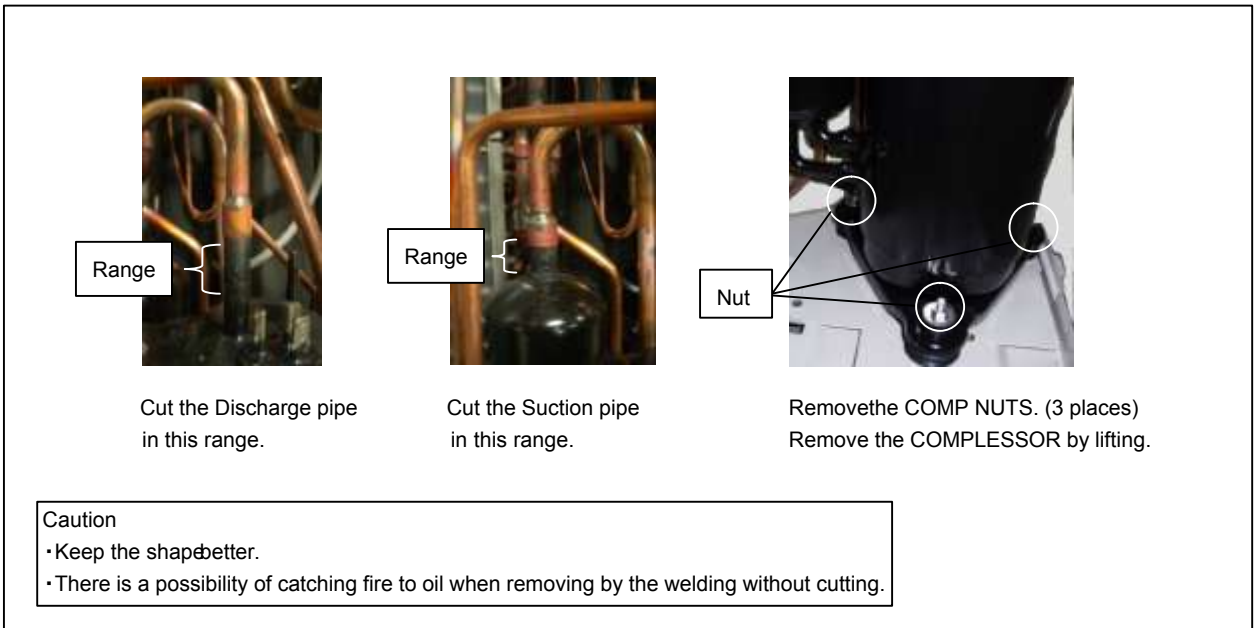


Nut

Remove the nut.
Remove the TERMINAL COVER.



Remove the connectors.
[S(U) : BLACK, R(V) : WHITE, C(W) : RED]



Range

Cut the Discharge pipe in this range.

Range

Cut the Suction pipe in this range.

Nut

Remove the COMP NUTS. (3 places)
Remove the COMPRESSOR by lifting.

Caution

- Keep the shape better.
- There is a possibility of catching fire to oil when removing by the welding without cutting.

Procedure for compressor installation.

Reverse procedure to removing the compressor.

Precautions for installation of compressor.

- (1) When brazing, do not apply the flame to the terminal.
- (2) When brazing, be sure to replace the air in the pipe with nitrogen gas to prevent forming oxidation scale.

14 .CIRCULATION PUMP removal

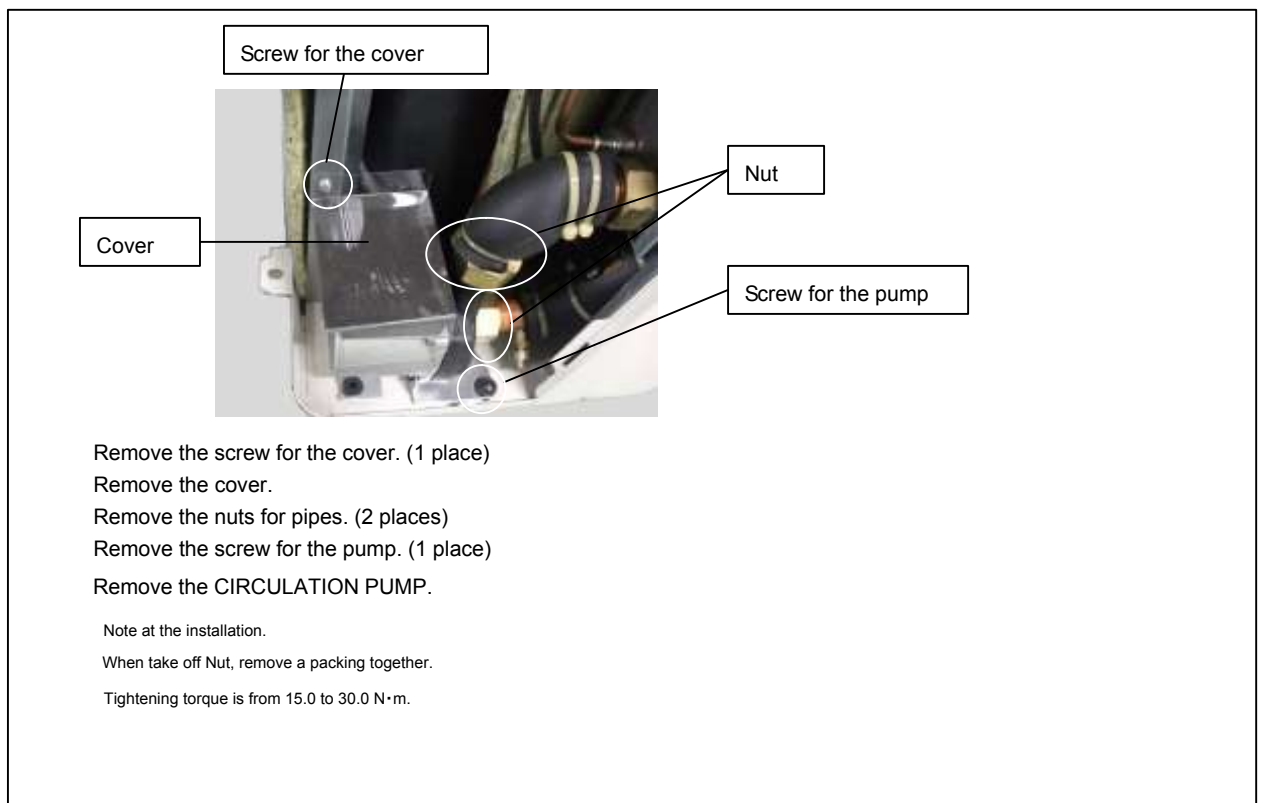
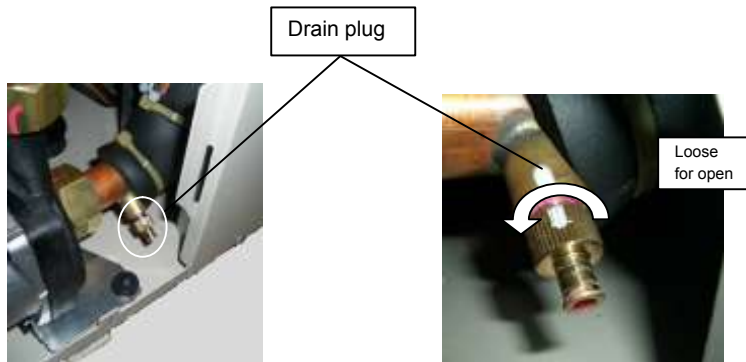
Precautions for exc hange of Pump.

Drain in the water - cycle before work.

Procedure for drain in the water - cycle.

Install a drain pan or drain hose to the DRAIN PLUG.

Open the DRAIN PLUG and drain.



Remove the screw for the cover. (1 place)

Remove the cover.

Remove the nuts for pipes. (2 places)

Remove the screw for the pump. (1 place)


Remove the CIRCULATION PUMP.

Note at the installation.

When take off Nut, remove a packing together.

Tightening torque is from 15.0 to 30.0 N·m.

15.TANK COVER removal



Screw

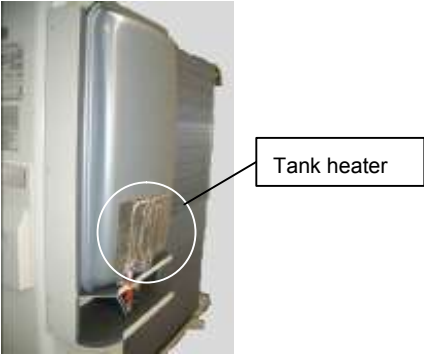
Screw

Screw

Remove the screw. (1 place)
Remove the TANK COVER (TOP).

Remove the screws. (6 places)
Remove the TANK COVER (SIDE).


16.TANK HEATER removal




Tank heater

Remove the TANK HEATER by hand and exchange.

17. TANK removal



Nut



Screw

Remove the nut for the tank.

Note at the installation

When take off Nut, remove a packing together.

Tightening torque is from 15.0 to 30.0 N·m.

Remove the screw. (2 places)

Remove the panel for fixing the tank.

Remove the TANK.

18. BACK PANEL removal



Screw



Insulation sheet



Insulation sheet

Remove the screw. (1 place)

Remove the terminal cover.

Remove the insulation sheet for the terminal.

Remove the insulation sheet for the tank.



Screw

Screw × 4

Screw × 4

Screw



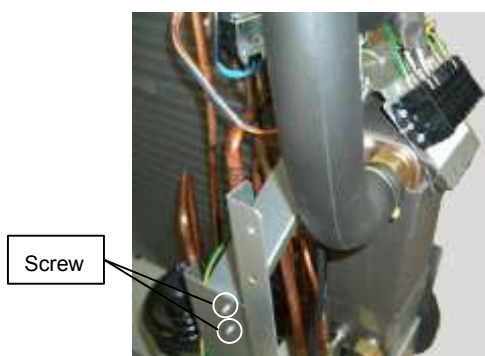
Screw



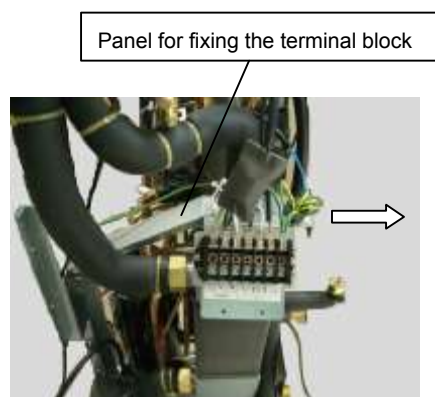
Remove the BACK PANEL.

Remove the screws. (16 places)

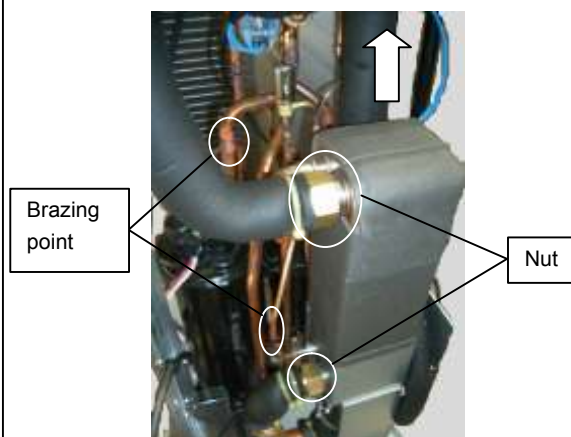
19 .HEAT EXCHANGER removal



Remove the screws. (2 places)



Remove the panel for fixing the terminal block with the terminal block.



Remove the EEV COIL. (see chapter 9)

Remove the pipes in the refrigerant - cycle by brazing. (2 places, see chapter 30)

Remove the nuts.

Remove the HEAT EXCHANGER by lifting.

Note at the installation.

When take off Nut, remove packing together.

Tightening torque is from 15.0 to 30.0 N·m.

20 .MANOMETER removal

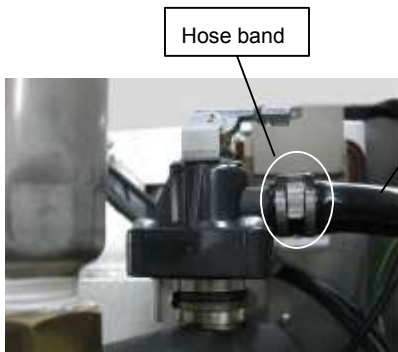


Quick fastener



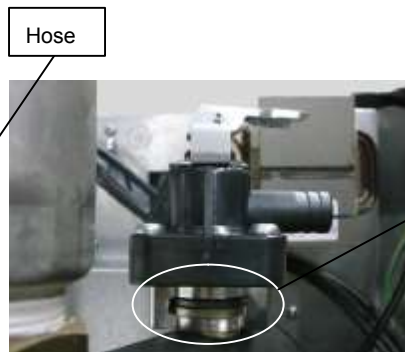
Remove the quick fastener by pulling.
Remove the MANOMETER.

21 .PRESSURE RELIEF VALVE removal



Hose band

Remove the clip for the hose.
Remove the hose.



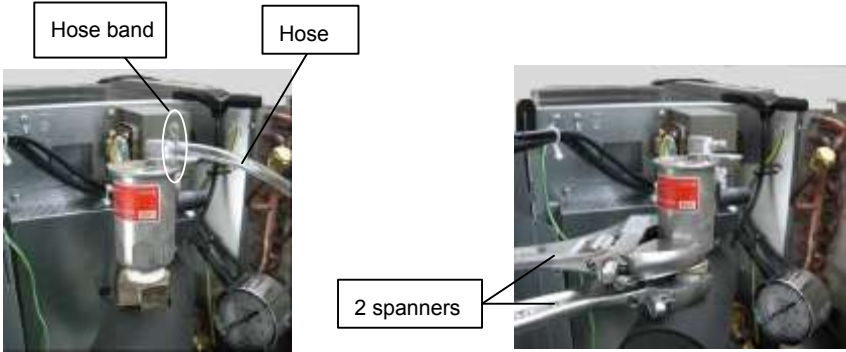
Hose

Quick fastener

Remove the quick fastener by pulling.
Remove the PRESSURE RELIEF VALVE.



22. AIR PURGE VALVE removal



Hose band


Hose

2 spanners

Remove the clip for the hose
Remove the hose.

Remove the AIR PURGE VALVE
by using 2 spanners.

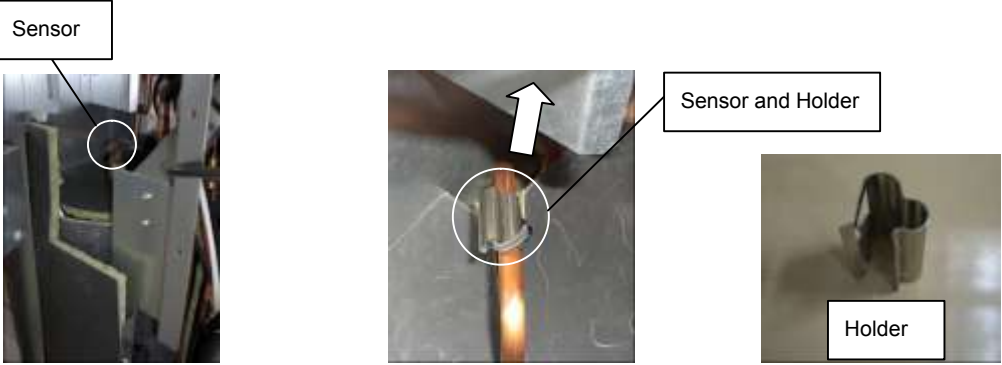
23. SENSOR (TEMP.OUTDOOR) removal



Sensor

Remove the SENSOR (TEMP.OUTDOOR) by hand.

24. SENSOR (TEMP.DISCHARGE) removal



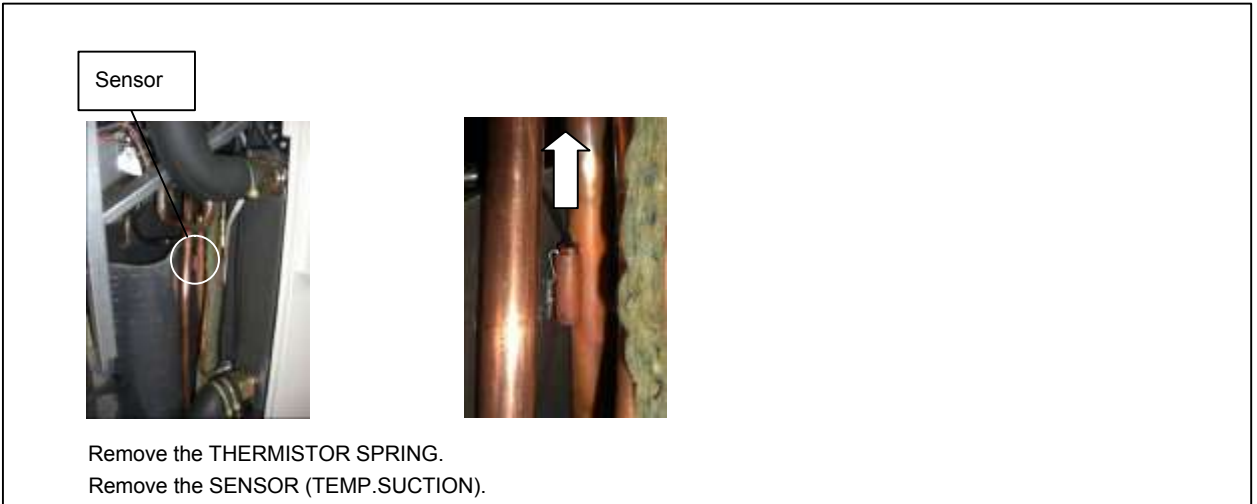
Sensor

Sensor and Holder

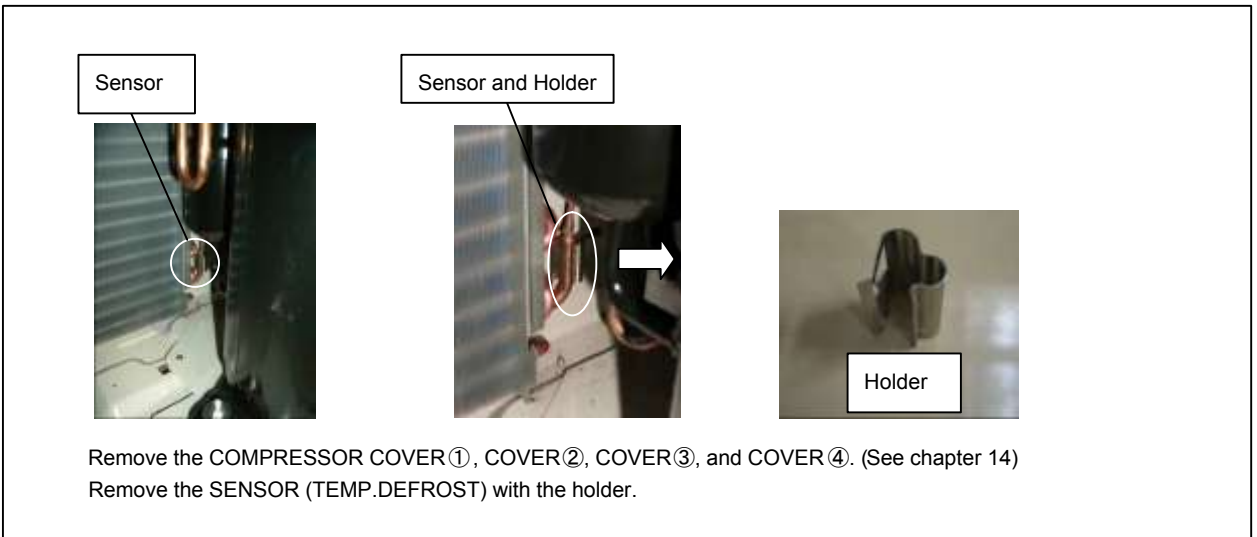
Holder

Remove the SENSOR (TEMP.DISCHARGE) with the holder.

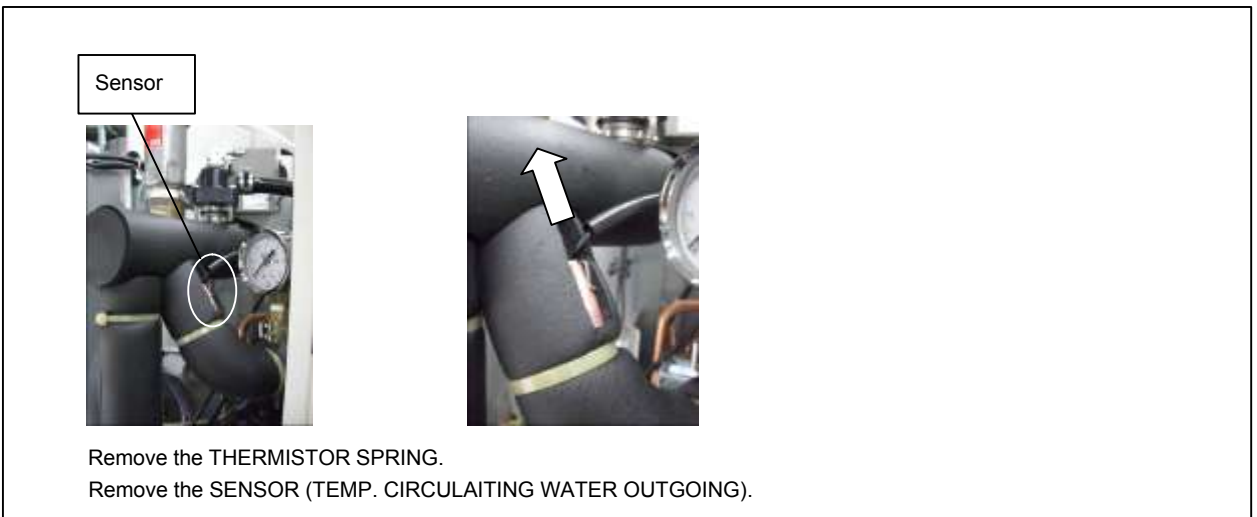
25 .SENSOR (TEMP.SUCTION) removal



26 .SENSOR (TEMP.DEFROST) removal



27 .SENSOR (TEMP.CIRCULAITING WATER OUTGOING) removal



28 .SENSOR (TEMP.CIRCULAITING WATER RETURN) removal

Sensor





Remove the THERMISTOR SPRING.
Remove the SENSOR (TEMP. CIRCULAITING WATER RETURN).

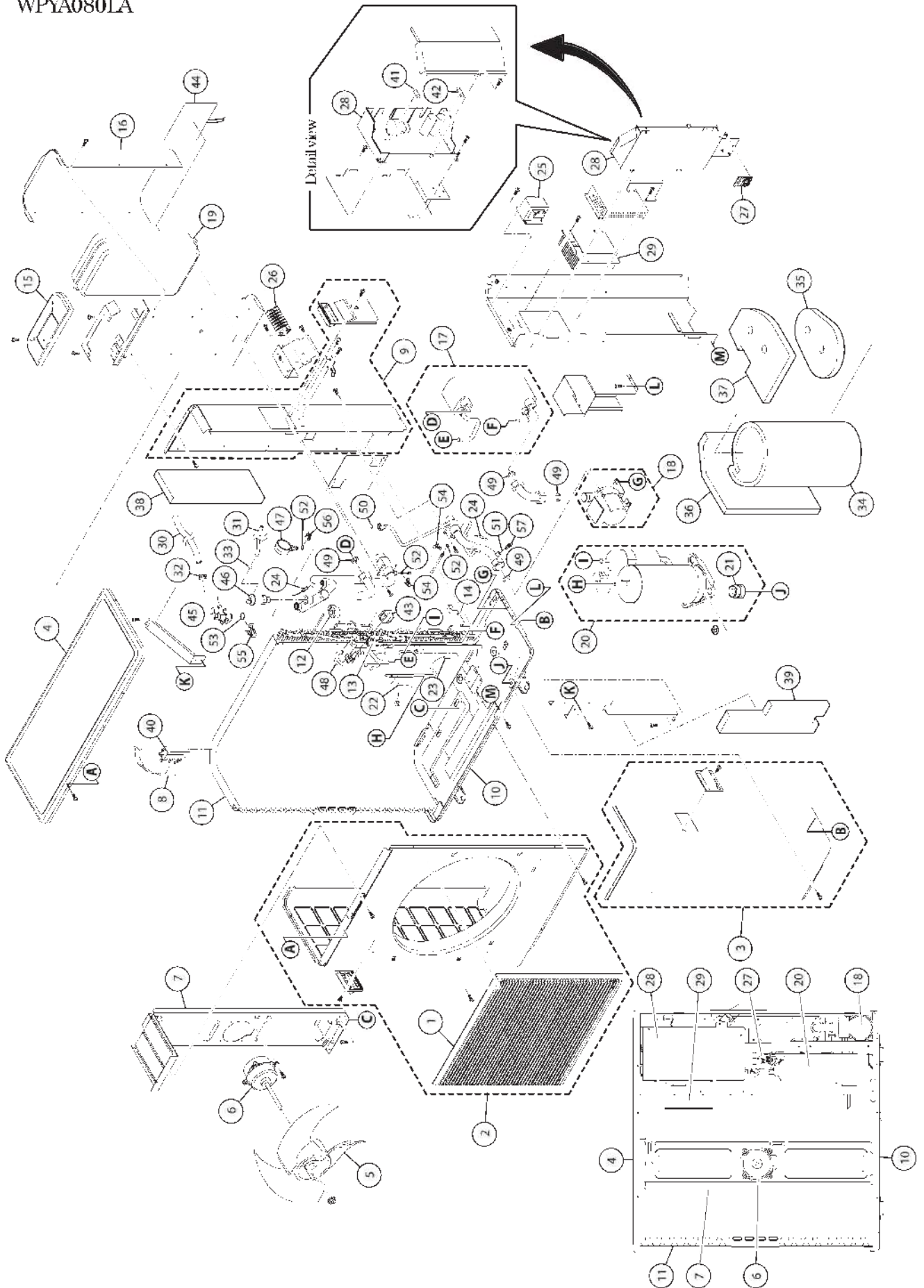
29 .Precautions for exchange of refrigerant - cycle parts and pipes.

- (1) During exchange the following parts shall be protected by wet rag and not makes the allowable temperature or more.
- (2) Remove the heat insulation when there is the heat insulation near the welding place.
Move and cool it when its detaching is difficult.
- (3) Cool the parts when there are parts where heat might be transmitted besides the replacement part.
- (4) Interrupt the flame with fireretardant board when the flame seems to hit the following pats directly.
- (5) Do not allow moisture or debris to get inside refrigerant pipes during work.
- (6) When brazing, be sure to replace the air in the pipe with nitrogen gas to prevent forming oxidization scale.

Part name	Allowable temperature	Precautions in work
EXPANSION VALVE	120°C	Remove the coil before brazing. And install the coil after brazing. Detaching necessity Sensor.
4WAY VALVE	120°C	Remove the coil before brazing. And install the coil after brazing.

EXPLODED VIEW

WPYA100LA
WPYA080LA



PARTS LIST

WPYA100LA
WPYA080LA

Nb.	PARTS NAME	PARTS No.
1	OUTLET GRILLE	30112520
2	FRONT PANEL ASSY (LEFT)	20600350
3	FRONT PANEL ASSY (RIGHT)	20600380
4	TOP PANEL ASSY	20600401
5	PROPELLER FAN	52630190
6	MOTOR	30112580
7	BRACKET MOTOR	20605280
8	SENSOR (TEMP OUTDOOR)	30114360
9	BACK PANEL ASSY	20600421
10	BOTTOM PANEL ASSY	20600441
11	CONDENSOR ASSY	20605621
12	COIL EXPANSION VALVE	51914531
13	EXPANSION VALVE	30112630
14	SENSOR (TEMP DEFROST)	30114350
15	TANK COVER (TOP)	20605930
16	TANK COVER (SIDE)	20605920
17	HEAT EXCHANGER ASSY	20606791
18	PUMP ASSY	20605960
19	TANK	30112640
20	COMPRESSOR	30113070
21	VIBRATION PROOF RUBBER	30001110
22	SENSOR (TEMP DISCHARGE)	51100870
23	SENSOR (TEMP SUCTION)	30089900
24	SENSOR (TEMP CIRCULATING WATER)	30112980
25	RF FACTOR	30112530
26	TERMINAL BLOCK	30112970
27	PCB (DISPLAY)	30051560
28	PCB (CONTROLLER) with CASE (WPYA100LA)	30112540+20605320
	PCB (CONTROLLER) with CASE (WPYA080LA)	30116780+20605320
29	PCB (POWER MODULE) ASSY WITH HEAT SINK	20605341
30	RUBBER HOSE (FOR RELIEF VALVE)	30114420
31	RUBBER HOSE (FOR AIR PURGE VALVE)	30114430
32	HOSE BAND (FOR RELIEF VALVE)	30084480
33	HOSE BAND (FOR AIR PURGE VALVE)	68616090
34	SOUND PROOF MATERIAL 1	20611960
35	SOUND PROOF MATERIAL 2	20611970
36	SOUND PROOF MATERIAL 3	20611980
37	SOUND PROOF MATERIAL 4	20611990
38	SOUND PROOF MATERIAL 5	20612000
39	SOUND PROOF MATERIAL 6	20612010
40	OUTDOOR THERMISTOR HOLDER	20040100
41	FUSE (5A)	40016410
42	FUSE (3.15A)	40016400
43	COIL, 4-WAY VALVE	30112610
44	TANK HEATER	30114370
45	RELIEF VALVE	30112670
46	AIR PURGE VALVE	30112680
47	PRESSURE GAUGE	30112690
48	4-WAY VALVE	30104090
49	PACKING B	30113030
50	PACKING C	30113060
51	O RING (P4)	01107120
52	O RING (PG)	01107600
53	O RING (P14)	01107150
54	QUICK FASTENER	52775700
55	QUICK FASTENER	00633600
56	QUICK FASTENER	00601690
57	DRAIN PLUG	30078010

RA-70-[4]

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