SHARP SERVICE MANUAL

S6616GSXPM9GRC

SPLIT TYPE ROOM AIR CONDITIONER

INDOOR UNIT

MODELS GS-XPM9FGR
GS-XPM12FGR
GS-XPM18FGR

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

CONTENTS

SHARP CORPORATION

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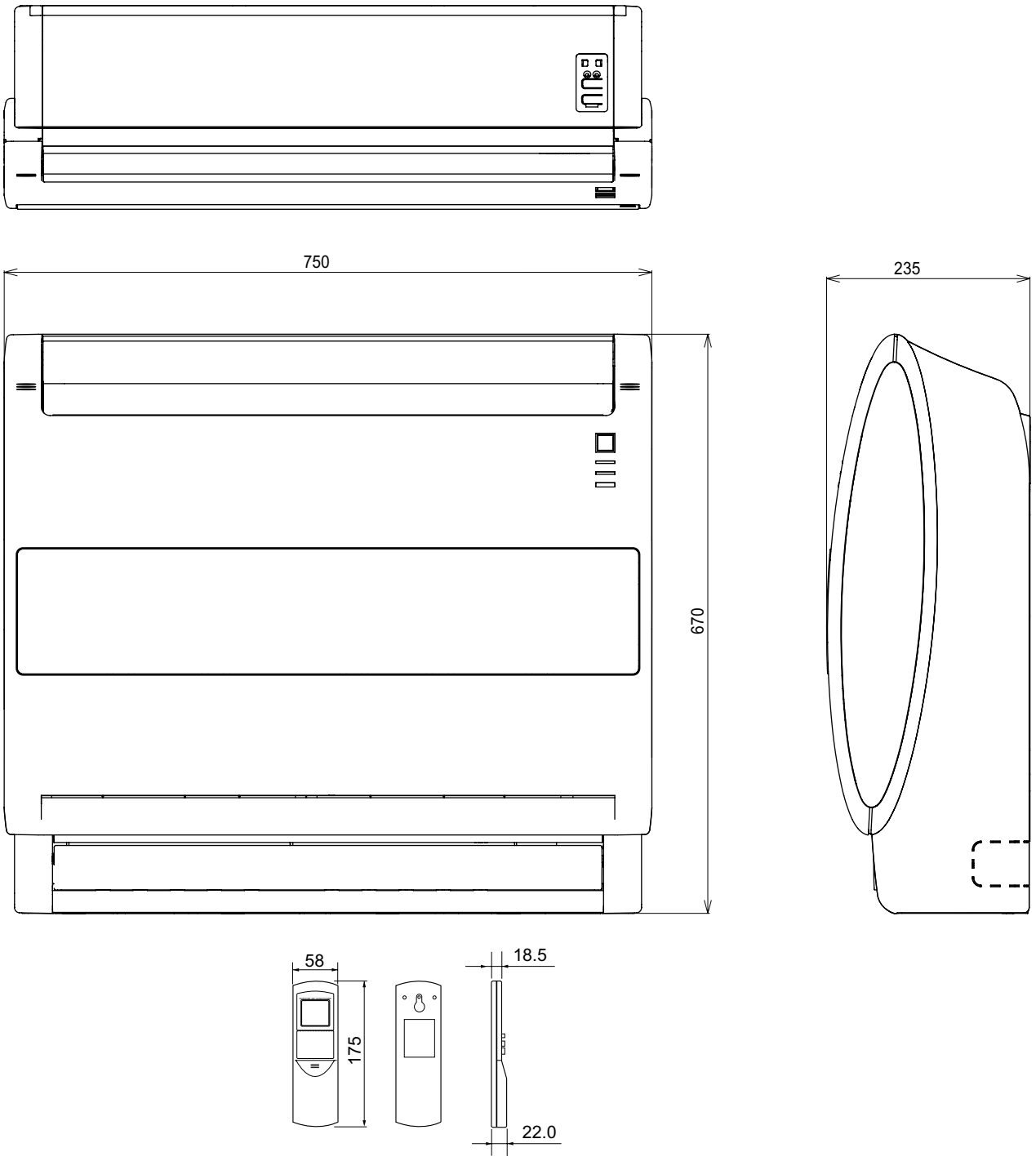
The contents are subject to change without notice.

CHAPTER 1. SPECIFICATION

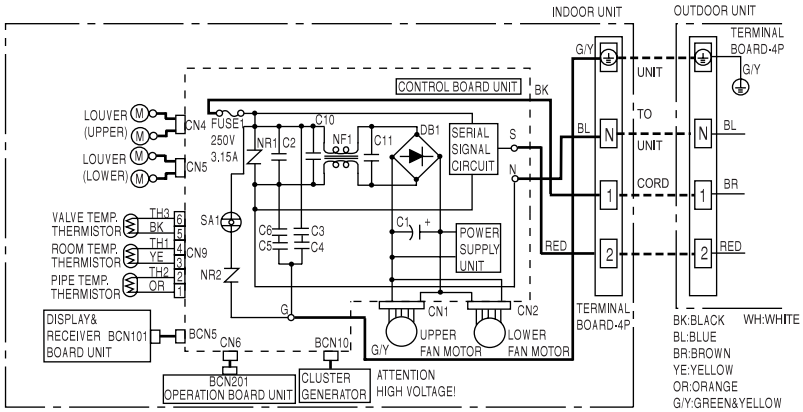
[1] SPECIFICATION

ITEMS			MODEL		
			GS-XPM9FGR	GS-XPM12FGR	GS-XPM18FGR
Electrical data					
Phase			Single		
Rated frequency		Hz	50		
Rated voltage		V	230		
Refrigerant system	Evaporator		Slit Fin and Grooved tube type		
	Refrigerant		R410A		
Noise level (at cooling)	High	dB(A)	38	40	44
	Low	dB(A)	—	—	—
	Soft	dB(A)	25	26	35
Fan system					
Drive			Direct drive		
Air flow quantity (Cooling / Heating)	High	m^3/min.	9.3 / 9.8	10.6 / 11.6	14.2 / 14.6
	Low	m^3/min.	7.7 / 8.5	8.4 / 9.4	11.7 / 12.1
	Soft	m^3/min.	5.5 / 7.1	5.9 / 7.6	8.2 / 9.5
Fan			Cross flow fan		
Connections					
Refrigerant coupling			Flare type		
Refrigerant tube size Gas, Liquid			3/8", 1/4"	3/8", 1/4"	1/2", 1/4"
Drain piping mm			O.D ϕ18		
Others					
Safety device			Fan motors: Thermal fuse		
			Fuse, Micro computer control		
Air filters			Polypropylene net (Washable)		
Net dimensions	Width	mm	750		
	Height	mm	670		
	Depth	mm	235		
Net weight		kg	17		

[2] EXTERNAL DIMENSION



[3] WIRING DIAGARM



LED INDICATION FOR SELF-DIAGNOSIS

<LED yellow blinking> LED yellow blinks 5 times in 10 seconds.	Blink steps	Abnormal contents
<LED red blinking> Abnormal condition is indicated by the blinking pattern of LED red.	×××○	Short circuit of the outdoor thermistor
	××○×	Overheat error (compressor and cycle)
	××○○	Open circuit of the outdoor thermistor
	××○○	Abnormal DC current
	××○○	Abnormal AC current
	×○××○	Abonormal Thermistor or four way vavle
	×○×○○	Abonormal outdoor fan motor
	×○○××○	Rotation error of compressor or cpmpressor lock
	×○○○×	Abonormal PAM or AF voltage and PAM or AF clock signal
	○×××○	Open circuit of serial signal line
	○××○×	Short circuit of serial signal line
	○××○○	Abnormal fan motor of indoor unit
	○×○××○	Limit switch error

○:LED blink
×:LED no blink

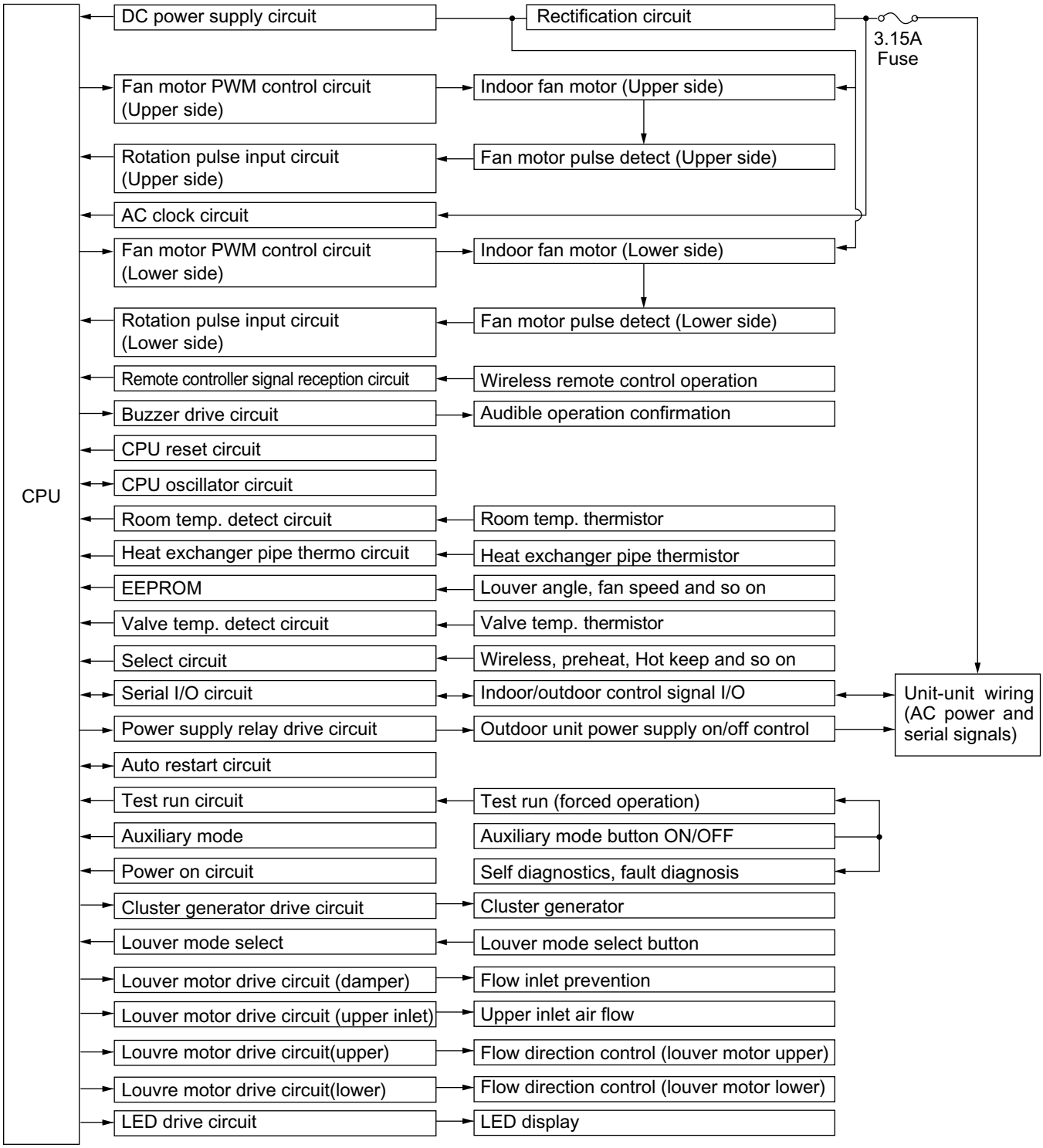
<Indication of the abnormal condition>
LED yellow and LED red indicate automatiacally, if the set is in abnormal condition.

[4] ELECTRICAL PARTS

DESCRIPTION	MODEL	REMARKS
Indoor fan motor (Upper)	MLB225	DC Motor
Indoor fan motor (Lower)	MLB226	DC Motor
Transformer	—	—
FUSE1	—	QFS-GA052JBZZ (250V, 3.15A)

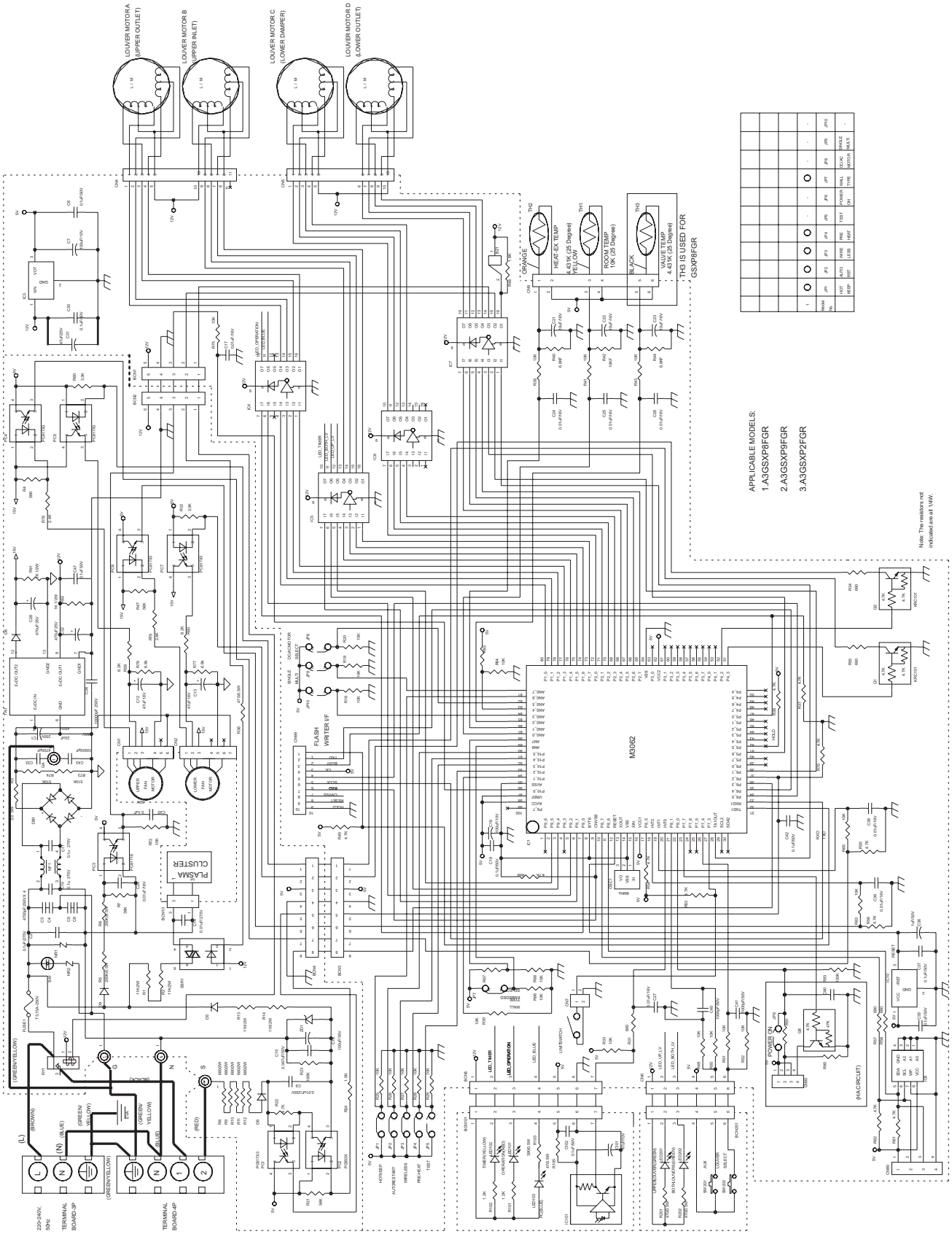
CHAPTER 2. EXPLANATION OF CIRCUIT AND OPERATION

[1] BLOCK DIAGRAMS

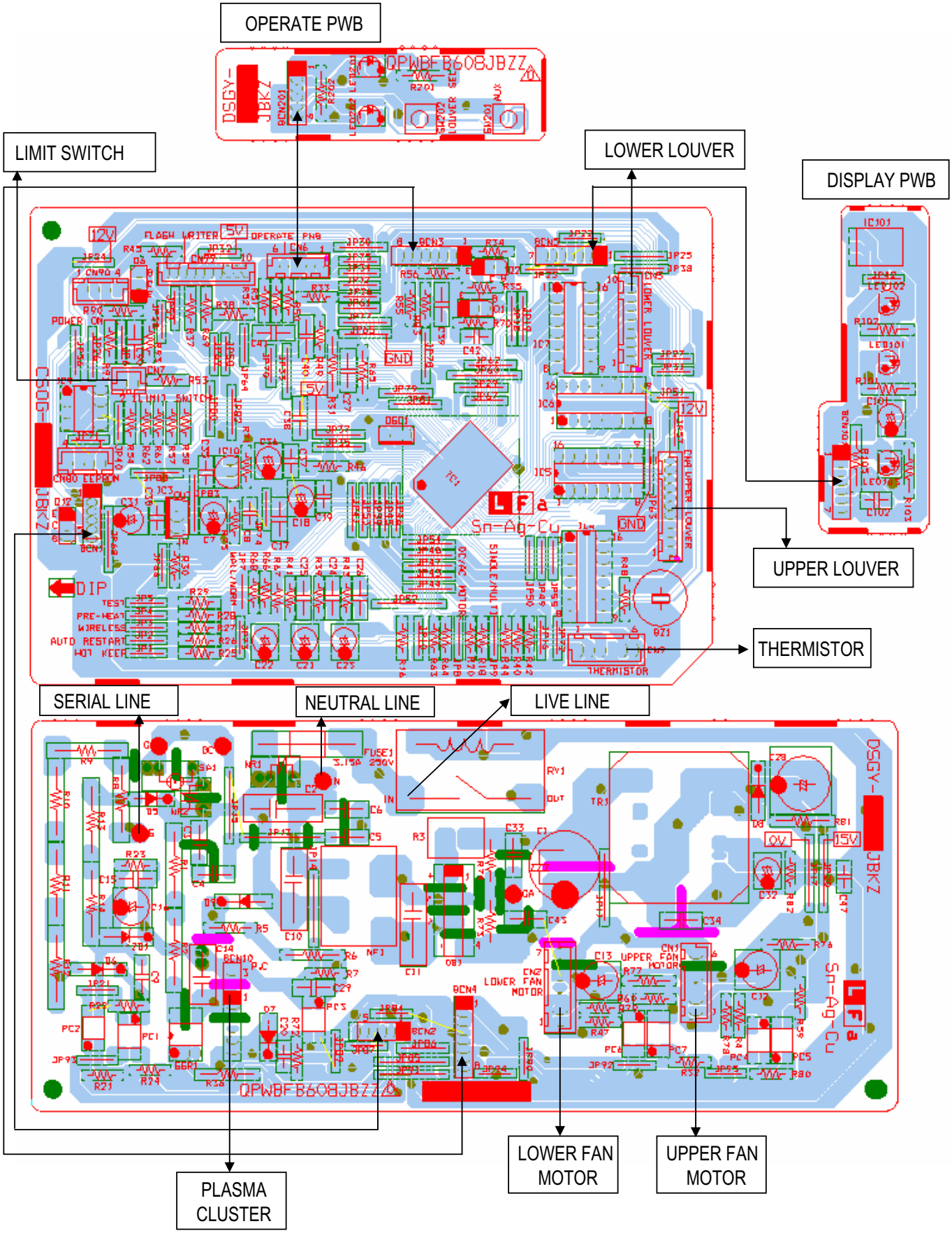


[2] MICROCOMPUTER CONTROL SYSTEM

1. Electronic control circuit diagram



2. Printed wiring board



[3] FUNCTION

1. INDOOR UNIT

1.1. Temperature Adjustment

1.1.1 Cooling

When the room temperature is higher than the preset temperature by 2°C or more, the unit runs at the maximum operation frequency until the temperature comes down to the preset temperature.

When reaching the preset temperature, the unit runs at the frequency calculated by the fuzzy operation and switches to the normal control.

1.1.2 Heating

When the room temperature is lower than the preset temperature by 3.5°C or more, the unit runs at the maximum operation frequency until the temperature comes down to the preset temperature.

When reaching the preset temperature, the unit runs at the frequency calculated by the fuzzy operation and switches to the normal control.

1.1.3 Dry

After operation begins, 2 minutes of the room temperature is stored in memory, and that becomes the set value.

1.2. Indoor fan control

1.2.1 Cooling

The fan speed can be selected from “Auto”, “Soft”, “Low”,and “HIgh”.When “Soft”, “Low” or “HIgh” is selected, the fanspeed is constant regardless of the room temperature.When “Auto” is selected, the fan speed automatically changes between “Soft” and “HIgh” depending on the difference between the room and preset temperature.

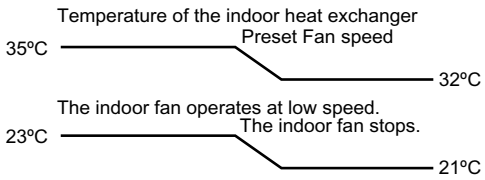
Control for indoor freezing prevention

If the temperature of the indoor heat exchanger stays below approximately 0°C for 4 minutes during cooling or dry, this control stops the compressor. Over 2°C the compressor will run again.

1.2.2 Heating

Control for cold air blowing prevention

When heating begins, this control stops the indoor fan until the temperature of the indoor heat exchanger reaches 23°C. It also stops the fan if the temperature goes below 21°C during operation.



1.3. Hot keep

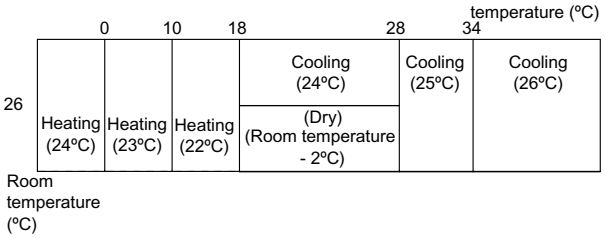
If the room temperature is in the Hot keep(1) or Hot keep(2) zone during heating, the compressor is turned on and off to prevent overheating.

The fan goes off 30 seconds after the compressor goes off.

Zone	Compressor intermittent time		Fan
Hot keep 1 (When room temperature reaches setting temperature.)	Up to 3 times	3min. On 3min. Off	Same as Compressor
	After 4th	3min. On 6min. Off	
Hot keep 2 (Room temperature becomes higher 1°C or more than setting temperature.)	Up to 1st	3min. On 6min. Off	
	After 2nd	off	The fan continues to repeat "3min. on - 8min. off".

1.4. Automatic operation

The operating mode and temperature setting are determined by the room temperature and the external air temperature.



1.5. ON-timer

The ON-timer is set by pressing the ON-timer button.

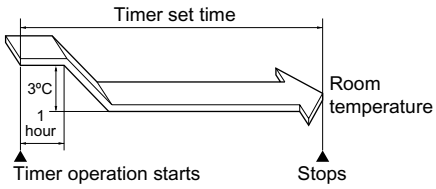
In order to attain the set temperature at the set time.

1.6. OFF-timer

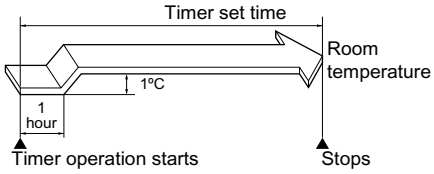
The OFF-timer is set by pressing the OFF-timer button. Operation is as follows:

	Set temperature
Cooling Heating	By fuzzy computing Set the shift up time Final Cooling setting + 1°C Heating setting - 3°C
Dry	Same as above (Final setting + 1°C)

* During Heating



* During Cooling / Dry



1.7. One-hour operation

If this button is pressed when operation is stopped, operation will begin and then stop after 1 hour.

If pressed when it is operating, will stop after one hour.

1.8. Full power operation

Immediately begins cooling or heating at maximum power and air flow.

(During heating)

Operates at setting of 32 °C.

(During cooling)

Operates at setting of 18 °C.

1.9. Power ON start

If a jumper wire is inserted into the place indicated JP99 on the indoor control board, and the power plug is inserted. cooling or heating will be automatically determined by the room temperature sensor on the main unit, and operation will begin.

1.10. Auto Restart

When power failure occures, after power is recovered, the unit will automatically restart in the same setting which were active before the power failure.

Operating mode (Cool, Heat, Dry)

- Temperature adjustment (within 2°C range) automatic operation
- Temperature setting
- Fan setting
- Air flow direction
- Power ON/OFF
- Automatic operation mode setting
- Swing louver
- Plasmacluster operation mode

Setting not memorized

- Timer setting
- Full power setting

1.11. Error diagnostic display

Indoor unit

1) If the operation is stopped and the emergency operation button is pressed down for 5 seconds or more, the self-diagnosis memory can be recalled.
2) Details of self-diagnosis (error mode) are informed by the flashing number as well as the lighting pattern of the operation lamp which flashes with the timer lamp.(For details, refer to Error diagnostic method.)

1.12. Plasmacluster Ion function

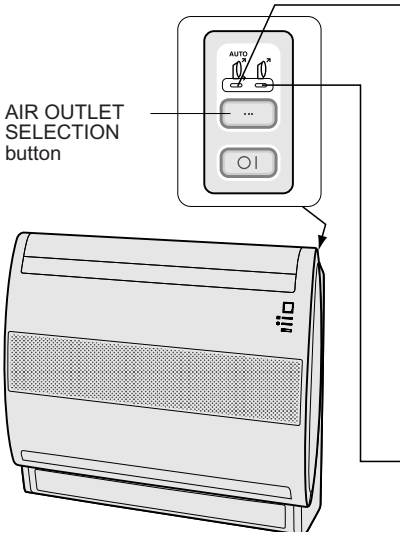
Operating the Plasmacluster Ion button while the air conditioner is in operation or in non-operation allows the switching of the operation mode in the following sequence: “Air Clean operation” → “Stop”.

If the Plasmacluster Ion generation function is operated together with the air conditioner operation, the indoor unit fan speed and louver direction are in accordance with the air conditioner settings.

If the Plasmacluster Ion generation function is used without operating the air conditioning function, the indoor unit fan operates at a very low speed. (The airflow volume and direction can be changed by using the remote control.)

1.13. Airflow control

Press AIR OUTLET SELECTION button, and choose" (Upper and lower automatic air outlets)" or " (Upper air outlet)".



When setting air outlet to ".

Air is blown out automatically from the upper and lower air outlet as shown below.

MODE	CONDITION	AIR OUTLET
COOL	When room temperature is higher than temperature setting.	Upper and lower air outlet.
	When room temperature is close to temperature setting. When fan speed is set the soft.	Upper air outlet
DRY	———	Upper air outlet
HEAT	When outlet air temperature is low. (operation start up, deicing)	Upper air outlet
	When outlet air temperature is high.	Upper and lower air outlet. (Lower air flow is greater than upper air flow)

When setting air outlet to " ".

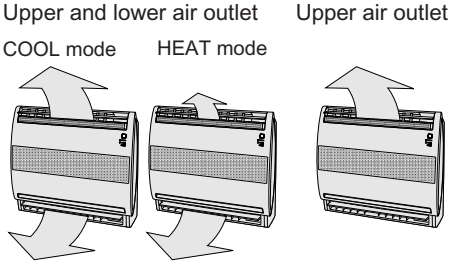
Air is blown out from the upper air outlet, regardless to the mode and condition.

TIPS ABOUT UPPER AND LOWER AUTOMATIC AIR OUTLET

Air outlet is automatically selected according to room temperature and outlet air temperature, to keep comfortable room condition.

During cooling operation
When room temperature is higher thantemperature setting, air is blown out fromupper and lower air outlet to make theroom cool rapidly. When room tempera-ture is close to temperature setting, air isblown out from upper air outlet to avoidfeeling the cold air flow.

During heating operation
When outlet air temperature is low, air isblown out from upper air outlet to pre-vent cold air blowing to the floor. Whenoutlet air temperature be-comes high, airis blown out from both air outlet withmain air flow from low-er outlet to deliverwarm air to the floor.



1.14. Difference of operation in Auto and Manual modes

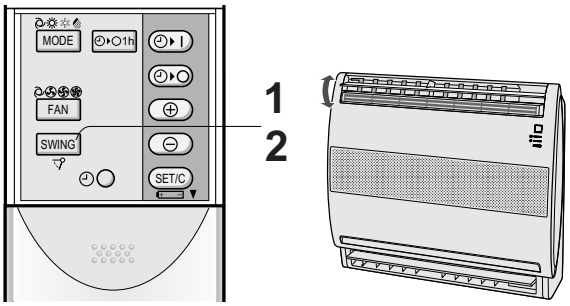
In the Auto mode, the temperature setting is automatically determined based on the outside air temperature. In addition, the air conditioner operation differs from the operation in the Manual mode as explained below.

1.14.1 Difference relating to set temperature

		Temperature setting method
Auto mode	Cooling	Automatic temperature setting based on outside air temperature. Can be changed within ±2°C using remote control.
	Heating	
	Dehumidifying	
Manual mode	Cooling	Can be changed between 18 and 32°C using remote control.
	Heating	Can be changed between 18 and 32°C using remote control.
	Dehumidifying	Automatic setting. Can be changed within ±2°C.

1.15. Swing louver

VERTICAL AIR FLOW DIRECTION



1 Press the SWING button.
- The vertical adjustment louvre for upper outlet will change its angle continuously.

2 Press the SWING button again when the vertical adjustment louvre for upper outlet is at the desired position.
- The louvre will stop moving within the range shown in the diagram.
- The adjusted position will be memorized and will be automatically set to the same position when operated the next time.

NOTE:
The vertical adjustment louvre for lower outlet is automatically set and cannot be changed.

CHAPTER 3. TROUBLESHOOTING GUIDE

[1] SELF-DIAGNOSIS FUNCTION AND DISPLAY MODE

1) To call out the content of the self-diagnosis memory, hold down the emergency operation button for more than five seconds when the indoor unit is not operating.

   a) According to the content of the self-diagnosis memory, the Operation LED (main category) and the Plasmacluster Ion LEDs (sub-category) flash in sync with the Timer LED on the indoor unit.

   b) In the event a complete shutdown occurs due to a malfunction, the Operation LED (red), Timer LED (yellow) and Plasmacluster Ion LED (blue) flash to indicate the general information of the generated malfunction.

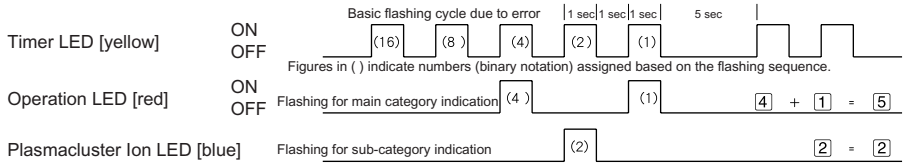
   c) If the power cord is unplugged from the AC outlet or the circuit breaker is turned off, the self-diagnosis memory loses the stored data.

2) Display of detailed self-diagnosis result with main category and sub-category indications

   When malfunction information is called out, the main category and sub-category of the self-diagnosis result are indicated by the Operation, Timer, and Plasmacluster Ion LEDs on the indoor unit.

   * 1:Example of self-diagnosis result displayed on indoor unit: Suction thermistor open-circuit error

*1: Example of self-diagnosis result displayed on indoor unit: Suction thermistor open-circuit error (Malfunction No. 5 — 2; Main category, Sub-category)

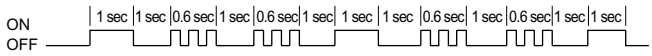


   * 2:The self-diagnosis display function of the outdoor unit indicates the error information by flashing LED1 on the outdoor unit according to the content of self-diagnosis.

     The self-diagnosis display function of the outdoor unit is active only for about 3 to 10 minutes after self-diagnosis is performed during operation, and the display returns to normal condition after this display period.

     The content of self-diagnosis cannot be called out by the self-diagnosis display function of the outdoor unit.

Example of self-diagnosis display on outdoor unit : Compressor high-temperature abnormality



   * 3:The content of diagnosis is transferred to the indoor unit via serial communication, but it does not trigger a complete shutdown operation.

⊗Flashes in 1-sec intervals (normal) : 1sec ON / 1sec OFF X : OFF ○ : Flashes 3 times in 0.2-sec intervals

Status of indoor/outdoor units	Indication by LED1 on outdoor unit *2	Indication on indoor unit Floor / ceiling Lighting pattern at the time of timer lamp lighting ● ● ● ● ●→X for 5 seconds		Content of diagnosis Main category	Content of diagnosis Sub category	Inspection location/method	Remedy
Indoor/outdoor units in operation	Normal flashing				Normal	–	–
Indoor/outdoor units incomplete shutdown	○ 1 time	●	Operation lamp(RED) Cluster lamp(BLUE)	Outdoor unit thermistor short-circuit	Heat exchanger thermistor short circuit error	(1)Measure resistance of the outdoor unit thermistors. (TH2 to TH9:Approx.4.4 k at 25 ûC) (2)Check the lead wire of the outdoor unit thermistor for torn sheath and short-circuit. (3)No abnormality found in above inspections (1)and (2).	(1)Replace the outdoor unit thermistor assembly. (2)Replace the outdoor unit thermistor assembly. (3)Replace the outdoor unit control PCB assembly.
		● ●	Operation lamp(RED) Cluster lamp(BLUE)		Outdoor temperaturethermistor short-circuit error		
		● ●	Operation lamp(RED) Cluster lamp(BLUE)		Suction thermistor short-circuit error		
		● ● ●	Operation lamp(RED) Cluster lamp(BLUE)		Thermistor Unit A - D thermistor short-circuit error		
Indoor/outdoor units in complete shutdown	○ 2 time	●	Operation lamp(RED) Cluster lamp(BLUE)	Cycle temperature	Compressor high temperature error Suction thermistor open circuit error	(1)Check the outdoor unit air outlet for blockage. (2)Check if the power supply voltage is 90 V or higher at full power. (3)Check the pipe connections for refrigerant leaks. (4)Measure resistance of the outdoor unit compressor thermistor. (TH1:Approx.53 k at 25 ûC) (5)Check the expansion valve for proper operation.	(1)Ensure unobstructed air flow from the outdoor unit air outlet. (2)Connect power supply of proper voltage. (3)Charge the specified amount of refrigerant. (4)Replace the outdoor unit compressor thermistor assembly. (5)Replace the expansion valve coil,expansion valve or outdoor unit control PCB assembly.
Indoor unit in operation Outdoor unit in temporary stop		● ●	Operation lamp(RED) Cluster lamp(BLUE)		Temporary stop due to compressor discharge overheat *3	(Temporary stop for cycle protection)	–
		● ●	Operation lamp(RED) Cluster lamp(BLUE)		Temporary stop due to out door unit heat exchanger overheat *3	(Temporary stop for cycle protection)	–
		● ● ●	Operation lamp(RED) Cluster lamp(BLUE)		Temporary stop due to indoor unit heat exchanger overheat *3	(Temporary stop for cycle protection)	–
		● ●	Operation lamp(RED) Cluster lamp(BLUE)		Temporary stop due to IPM overheat *3	(Temporary stop for parts protection)	–
		● ● ●	Operation lamp(RED) Cluster lamp(BLUE)		IPM high temperature error	(1)Measure resistance of the heat-sink thermistor.(CN8B)	(1)Charge the heat-sink thermistor.
Indoor/outdoor units in complete shutdown	○ 5 time	● ●	Operation lamp(RED) Cluster lamp(BLUE)	Outdoor unit thermistor open-circuit	Heat exchanger thermistor open-circuit error	(1)Check connector CN8A and CN8C of the outdoor unit thermistor for secure installation. (2)Measure resistance of outdoor thermistors TH1 to TH9. (3)Check the lead wires of thermistors TH1 through TH9 on the outdoor unit control PCB for open-circuit. (4)No abnormality found in above inspections (1)through (3).	(1)Correct the installation. (2)Replace the outdoor unit thermistor assembly. (3)Replace the outdoor unit thermistor assembly. (4)Replace the outdoor unit control PCB assembly.
		● ●	Operation lamp(RED) Cluster lamp(BLUE)		Outdoor temperature thermistor open-circuit error		
		● ● ●	Operation lamp(RED) Cluster lamp(BLUE)		Suction thermistor open circuit error		
		● ●	Operation lamp(RED) Cluster lamp(BLUE)		Discharge thermistor open-circuit error		
		● ● ●	Operation lamp(RED) Cluster lamp(BLUE)		Thermistor Unit C - D thermistor open-circuit error		
Indoor/outdoor units in complete shutdown	○ 6 time	● ● ● ●	Operation lamp(RED) Cluster lamp(BLUE)	Outdoor unit DC Current	DC overcurrent error	(1)IPM continuity check (2)Check the IPM and heat sink for secure installation. (3)Check the outdoor unit fan motor for proper rotation. (4)No abnormality found in above inspections (1)through (3). (5)No abnormality found in above inspections (1)through (4).	(1)Replace the outdoor unit control PCB assembly. (2)Correct the installation (tighten the screws). Apply silicon grease. (3)Replace the outdoor unit fan motor. (4)Replace the outdoor unit control PCB assembly. (5)Replace the compressor.
Indoor/outdoor units in complete shutdown	○ 7 time	● ● ●	Operation lamp(RED) Cluster lamp(BLUE)	Outdoor unit AC Current	AC overcurrent error	(1)Ensure unobstructed air flow from the outdoor unit air outlet. (2)Check the outdoor unit fan motor.	(1)Ensure unobstructed air flow from the outdoor unit air outlet. (2)Check the outdoor unit fan motor.
		● ● ●	Operation lamp(RED) Cluster lamp(BLUE)		AC current error when OFF	(1)IPM continuity check	(1)Replace the outdoor IPM PWB
		● ● ●	Operation lamp(RED) Cluster lamp(BLUE)		AC maximum current error	(1)Ensure unobstructed air flow from the outdoor unit air outlet. (2)Check the outdoor unit fan motor.	(1)Ensure unobstructed air flow from the outdoor unit air outlet. (2)Check the outdoor unit fan motor.
		● ● ●	Operation lamp(RED) Cluster lamp(BLUE)		AC current deficiency error	(1)Replace the outdoor unit control PCB assembly. (2)Charge the specified amount of refrigerant. (3)Correct refrigerant clogs. (Stop valve,pipe,expansion valve)	(1)Replace the outdoor unit control PCB assembly. (2)Charge the specified amount of refrigerant. (3)Correct refrigerant clogs. (Stop valve,pipe,expansion valve)
Indoor/outdoor units in complete shutdown	○ 8 time	●	Operation lamp(RED) Cluster lamp(BLUE)	Abnormal wire check	Abnormal wire check error	(1)Check the expansion valve. (unit A - D) (2)Are four expansion valves connected by mistake (3)Check the wiring between units.	(1)Replace the outdoor control board assembly. (2)Reattach (3)Check the wiring between units.
Indoor/outdoor units in complete shutdown	○ 11 time	● ● ●	Operation lamp(RED) Cluster lamp(BLUE)	Outdoor unit DC Fan	Outdoor unit DC fan rotation error	(1)Check connector CN3A of the outdoor unit DC fan motor for secure installation. (2)Check the outdoor unit fan motor for proper rotation. (3)Check fuse FUSE5. (4)Outdoor unit control PCB	(1)Correct the installation. (2)Replace the outdoor unit fan motor. (3)Replace the outdoor unit control PCB assembly. (4)Replace the outdoor unit control PCB assembly.

⊗Flashes in 1-sec intervals (normal) : 1sec ON / 1sec OFF　X : OFF　○ : Flashes 3 times in 0.2-sec intervals

Status of indoor/outdoor units	Indication by LED1 on outdoor unit *2	Indication on indoor unit Floor / ceiling Lighting pattern at the time of timer lamp lighting ● ● ● ● ● → X → for 5 seconds		Content of diagnosis Main category	Sub category	Inspection location/method	Remedy
Indoor/outdoor units in complete shutdown	○ 13 time	● ● ●	Operation lamp(RED) Cluster lamp(BLUE)	DC compressor	Compressor startup error	(1)Check the colors (red,white,orange)of the compressor cords for proper connection.(PCB side,compressor side) (2)Check if the IPM terminal resistance values are uniform. (3)No abnormality found in above inspections (1)and (2). (4)No abnormality found in above inspections (1)through (3).	(1)Correct the installation. (U:Red,V:White,W:Orange) (2)Replace the outdoor unit control PCB assembly. (3)Replace the outdoor unit control PCB assembly. (4)Replace the compressor.
		● ● ● ●	Operation lamp(RED) Cluster lamp(BLUE)		Compressor rotation error		
Indoor/outdoor units in complete shutdown	○ 14 time	● ● ●	Operation lamp(RED) Cluster lamp(BLUE)	Outdoor unit active filter	Active filter overvoltage error	(1)Check the AC power supply voltage for fluctuation. (2)No abnormality found in above inspection (1).	(1)Connect stable power supply. (2)Replace the outdoor unit control PCB assembly.
		● ● ● ●	Operation lamp(RED) Cluster lamp(BLUE)		Clock error	(1)Check the clock for proper inputt	(1)Replace the outdoor unit control PCB assembly.

Status of indoor/outdoor units	Indication by LED1 on outdoor unit *2	Indication by operation lamp on indoor unit Lighting pattern at the time of timer lamp lighting ● X ● X ● X ● X ● → Off for 5 seconds		Malfunction No. Main category	Sub-category	Content of diagnosis Main category	Sub-category	Inspection location/method	Remedy
Indoor unit in operation Outdoor unit in complete shutdown	●	● ●	Operation lamp(RED) Cluster lamp(BLUE)	17	-0	Wires between units	Serial open-circuit	(1) Check the wires between units. (2) Check voltage between Nos. 1 and 2 on the indoor/outdoor unit terminal boards.	(1) Connect stable power supply. (2) Replace the outdoor unit control PCB assembly.
	X	● ●	Operation lamp(RED) Cluster lamp(BLUE)				Outdoor unit does not turn on due to erroneous wiring	(1) Check the wires between units. (2) Check the outdoor unit fuse. (3) Check 15-V, 13-V and 5-V voltages on the PCB. Check resistance between IPM terminals. (4) Check pins No. 5 and 8 of connector CN3A of the outdoor unit fan motor for short-circuit. (5) Outdoor unit control PCB	(1) Correct the wiring. (2) Replace the fuse/outdoor unit control PCB assembly. (3) Replace the outdoor unit control PCB assembly. (4) Replace the outdoor unit fan motor. (5) Replace the outdoor unit control PCB board.
	●	● ●	Operation lamp(RED) Cluster lamp(BLUE)	18	-0	Wires between units	Serial short-circuit	(1) Check the wires between units.	(1) Correct the wiring.
		● ● ●	Operation lamp(RED) Cluster lamp(BLUE)		-1		Serial erroneous wiring	(1) Check the wires between units.	(1) Correct the wiring.
Indoor/outdoor units in complete shutdown	X	● ● ●	Operation lamp(RED) Cluster lamp(BLUE)	19	-0	Indoor unit fan	Indoor unit fan (upper) error	(1) Check the indoor fan motor for proper rotating operation. (Check fan lock.) (2) Check the lead wire of the indoor fan motor for open-circuit. (3) Check CN1 of the indoor unit fan motor for secure installation. (4) No abnormality found in above inspections (1) through (3).	(1) Replace the indoor fan motor. (2) Replace the indoor fan motor. (3) Correct the installation of CN1 of the indoor fan motor. (4) Replace the indoor unit control PCB.
	X	● ● ● ●	Operation lamp(RED) Cluster lamp(BLUE)	19	-1	Indoor unit fan	Indoor unit fan (lower) error	(1) Check the indoor fan motor for proper rotating operation. (2) Check the lead wire of the indoor fan motor for open-circuit. (3) Check CN2 of the indoor unit fan motor for secure installation. (4) No abnormality found in above inspections (1) through (3).	(1) Replace the indoor fan motor. (2) Replace the indoor fan motor. (3) Correct the installation of CN2 of the indoor fan motor. (4) Replace the indoor unit control PCB.
Indoor/outdoor units in operation	X	● ●	Operation lamp(RED) Cluster lamp(BLUE)	20	-0	Indoor unit control PCB	EEPROM data error	(EEPROM read data error)	(1) Replace the indoor unit control PCB.
	X	● ● ●	Operation lamp(RED) Cluster lamp(BLUE)	21	1	Limit switch	Limit switch error	(1) Check theconnector CN7.	(1) Replace the limit switch unit. (2) Re-insertion of CN7.

3) In addition to those described above, the following error, which does not result in a complete shutdown, is notified by the flashing LED on the indoor unit.

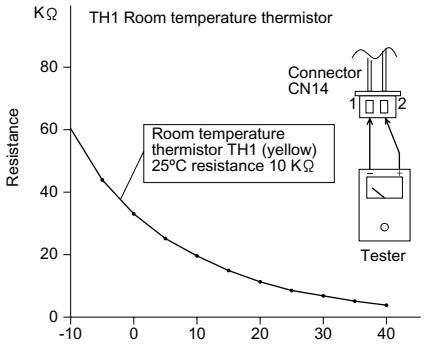
Malfunction	Flashing LED (☢ : flashing in 1-sec intervals)				Malfunction No. (main category)
	Operation	Timer	Cluster (blue)	Cluster (green)	
Serial open-circuit error	(The Operation and Cluster LED conditions vary based on the equipment operation.)	☢			17 Serial open-circuit error

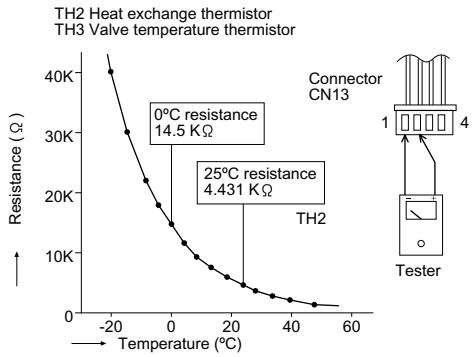
[2] THERMISTOR TEMPERATURE CHARACTERISTICS

1. Temperature properties of indoor thermistors

Thermistor	Signal	Color
Room temperature	TH1	Yellow
Pipe temperature	TH2	Orange
Valve temperature	TH3	Black

Room temperature thermistor TH1 (CN14 1 - 2)
Heat exchanger temperature thermistor TH2 (CN13 1 - 2)
Valve temperature thermistor TH3 (CN13 3 - 4)





CHAPTER 4. DISASSEMBLING PROCEDURE

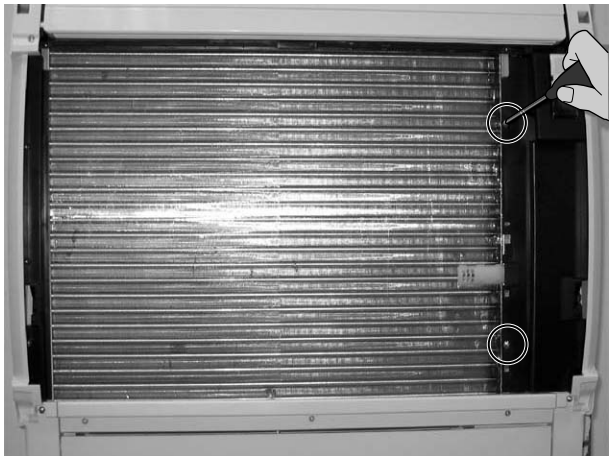
[1] DISASSEMBLY OF INDOOR UNIT

CAUTION: DISCONNECT THE UNIT FROM POWER SUPPLY BEFORE ANY SERVICING.

1. PROCEDURE

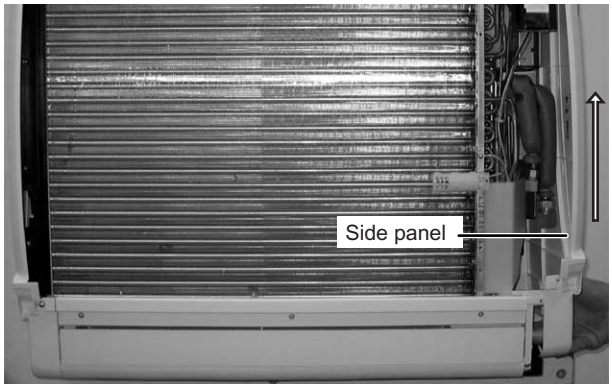
1. .Open the open panel.

2. Remove the screw fixing the seal cover R

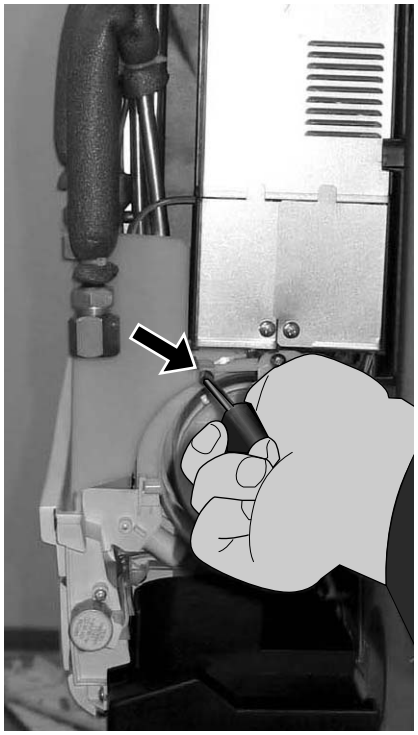


3. Remove the screw fixing the side panel.

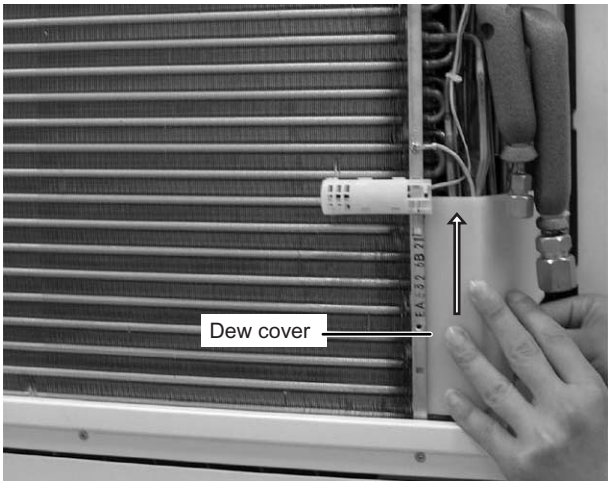
4. Remove side panel



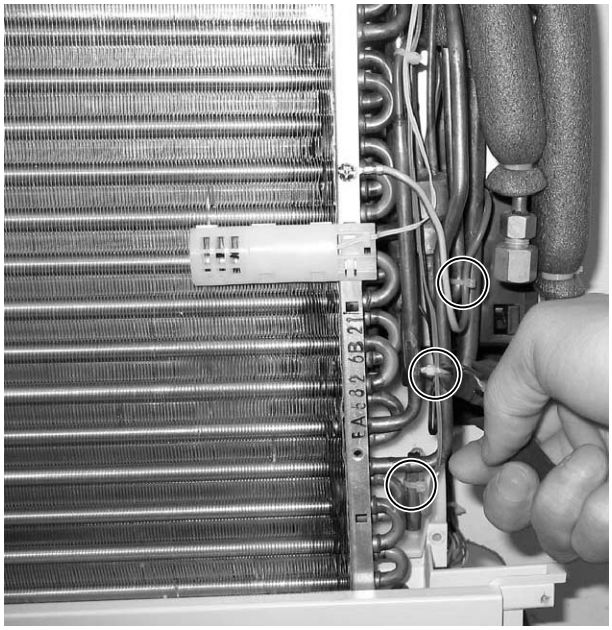
5. Remove the screw of the dew cover.



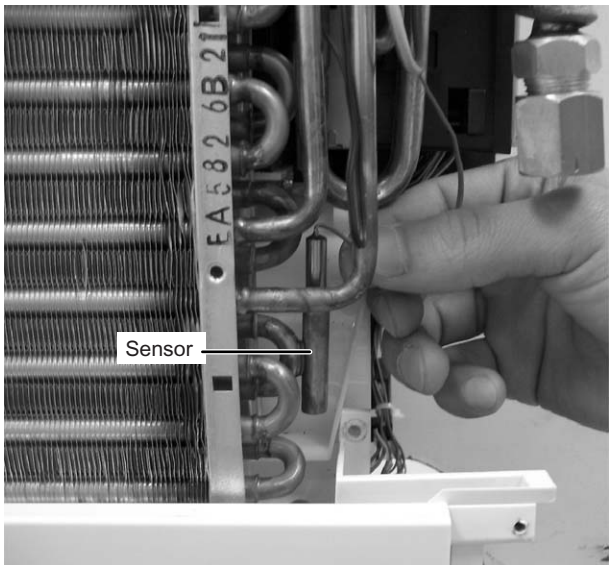
6. Remove the dew cover.



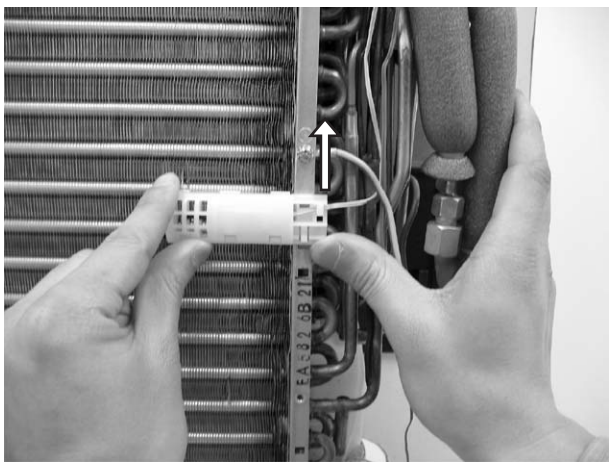
7. Cut the band.



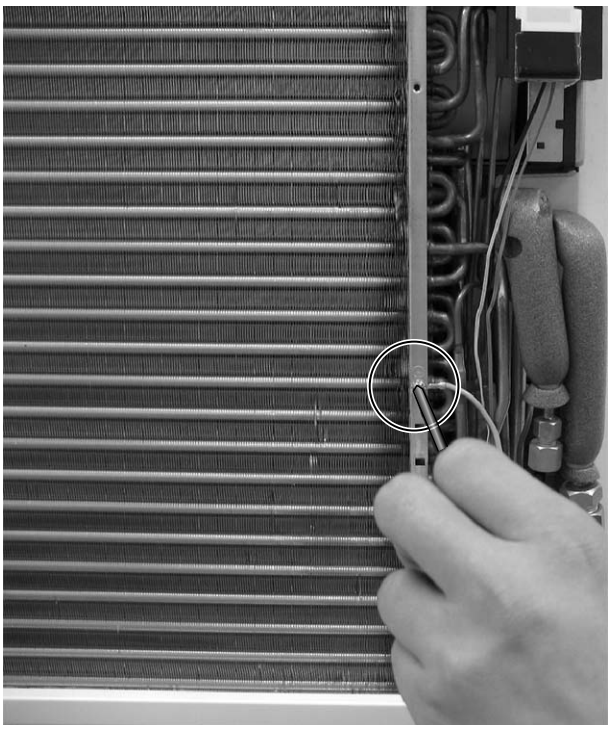
8. Take out the sensor from sensor holder.



9. Remove the thermistor holder.

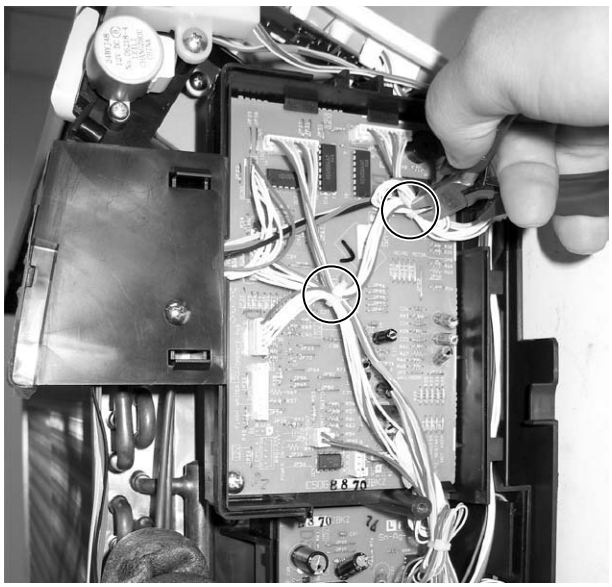


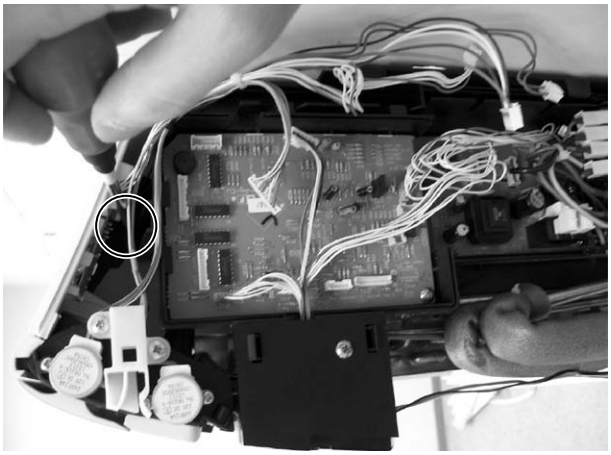
10. Remove the screws fixing the earth wire.



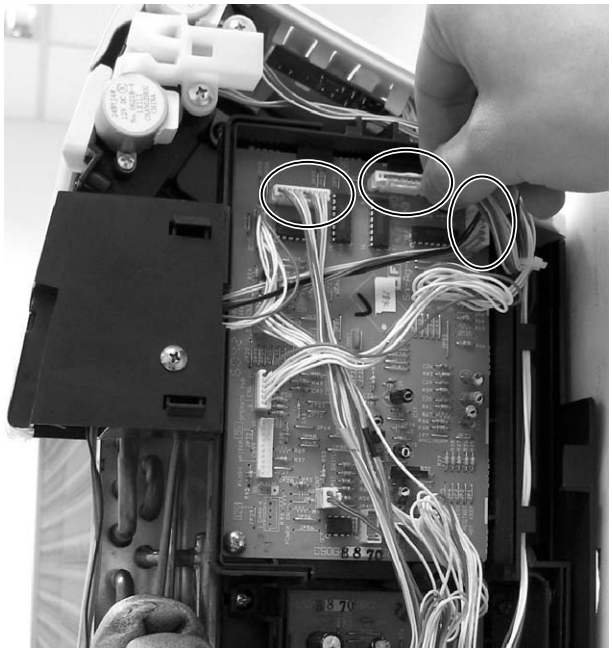
11. Remove the screws fixing the control box cover.

12.Cut the band.





13.Remove the connectors.

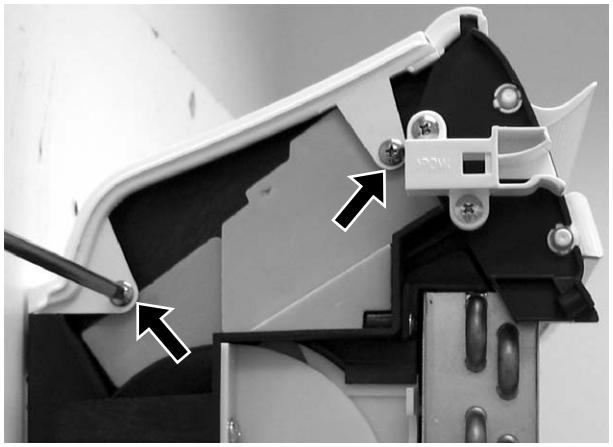


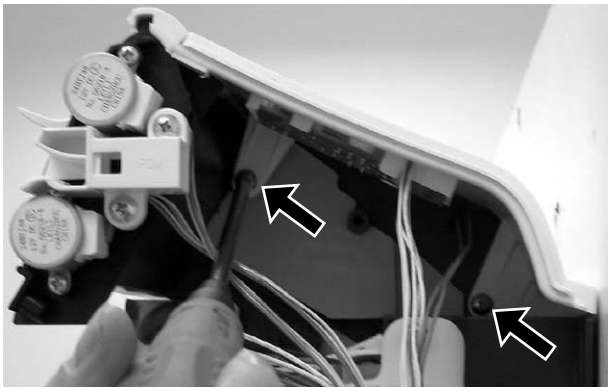
14.Remove the screws fixing the control box.

15.Remove the control box.

16.Remove the screws fixing the supporter.

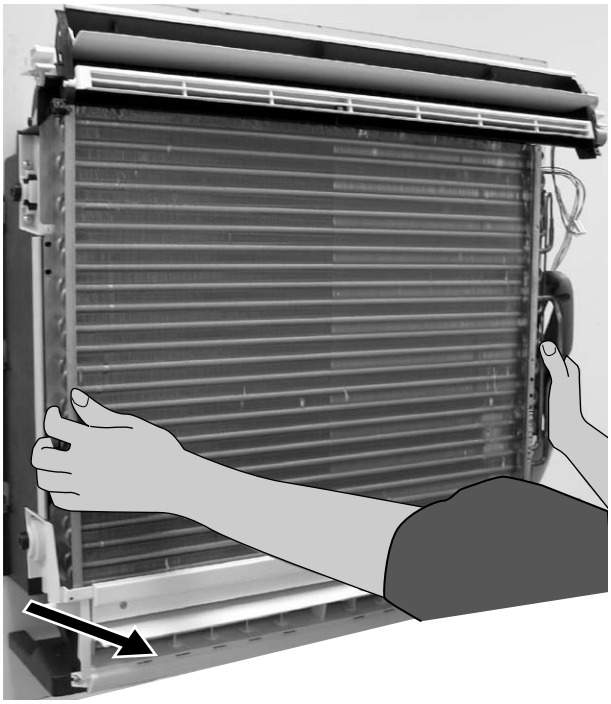
17.Remove the screws fixing the up cabinet.



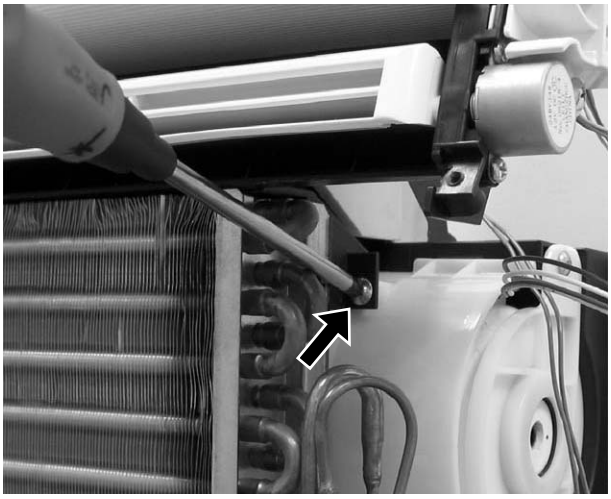


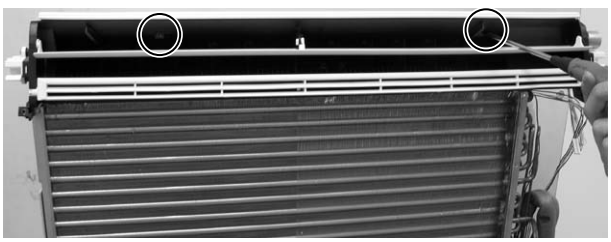
18.Remove the screws fixing the evaporator.

19.Move the evaporator.



20.Remove screws fixing the up discharge frame.

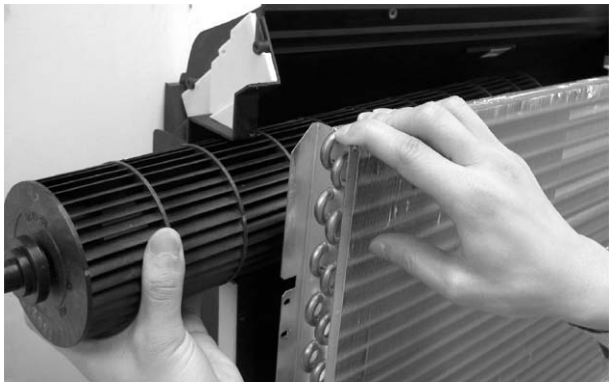




21.Remove the up discharge frame.

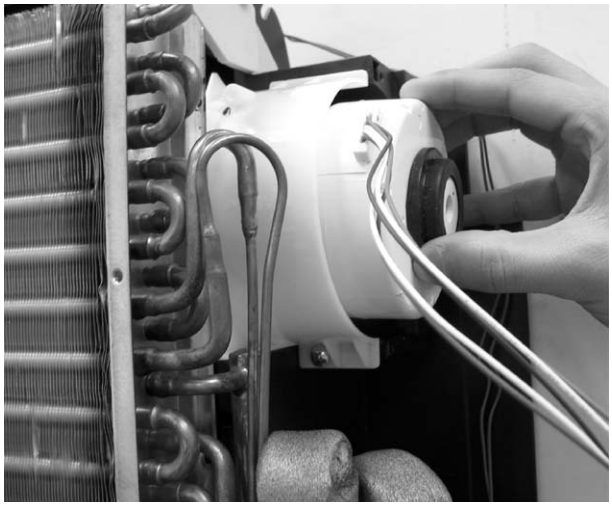
22.Release the screw fixing up cross fan.

23.Take out the up cross fan.



24.Remove 2 screws fixing the motor stay.

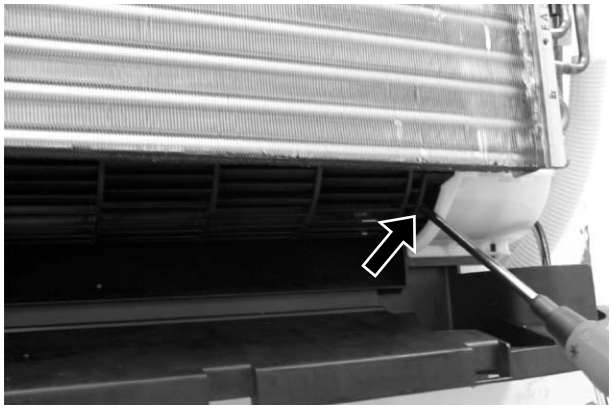
25.Take out the up motor.



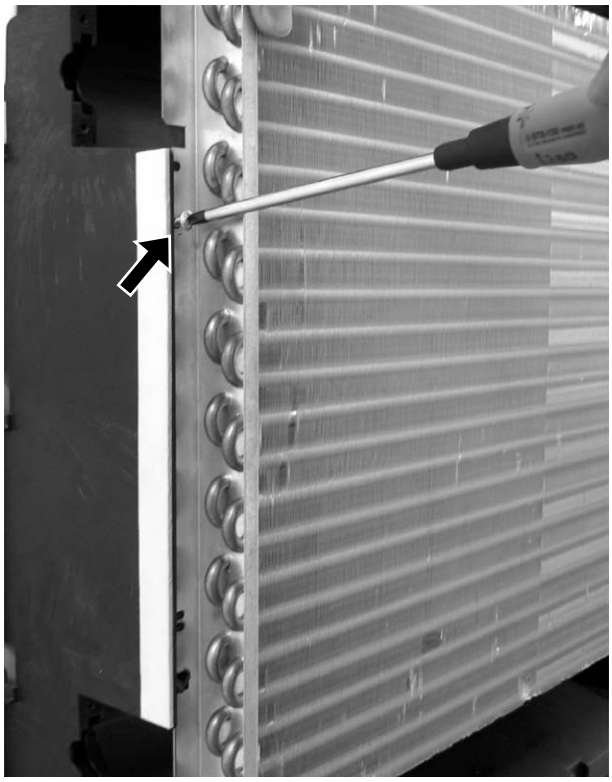
26.Remove the screw fixing the drain pan.

27.Remove the drain pan.

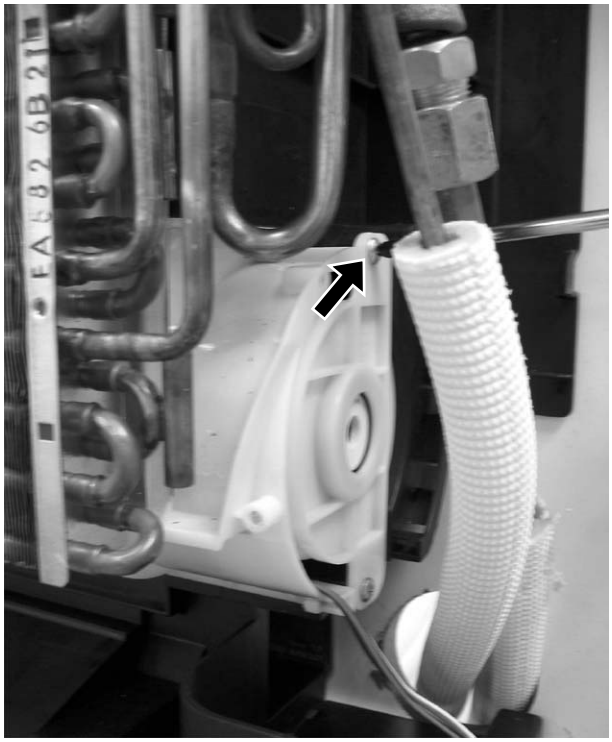
28.Release the screw fixing the down cross fan.



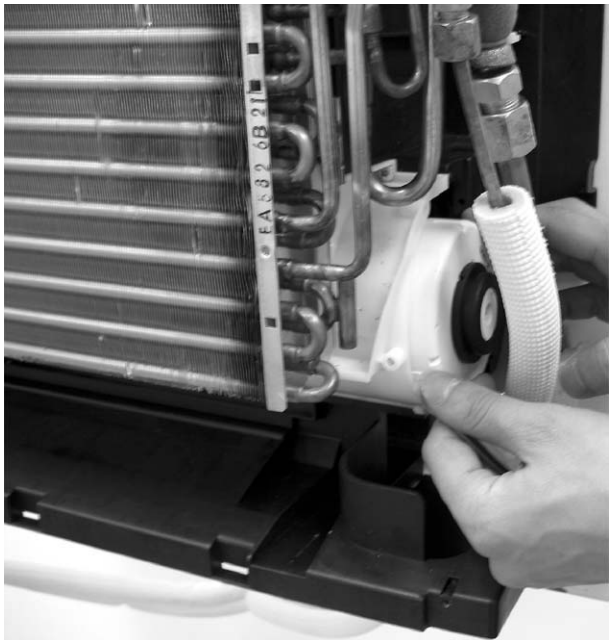
29.Fix the evaporator.



30.Remove the screws fixing the motor stay.



31.Take out the down motor.



SHARP PARTS LIST

SPLIT TYPE
ROOM AIR CONDITIONER

INDOOR UNIT

MODELS **GS-XPM9FGR**
GS-XPM12FGR
GS-XPM18FGR

CONTENTS

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following information.

1. MODEL NUMBER
2. REF. No.
3. PART NO.
4. DESCRIPTION

★ MARK: SPARE PARTS-DELIVERY SECTION

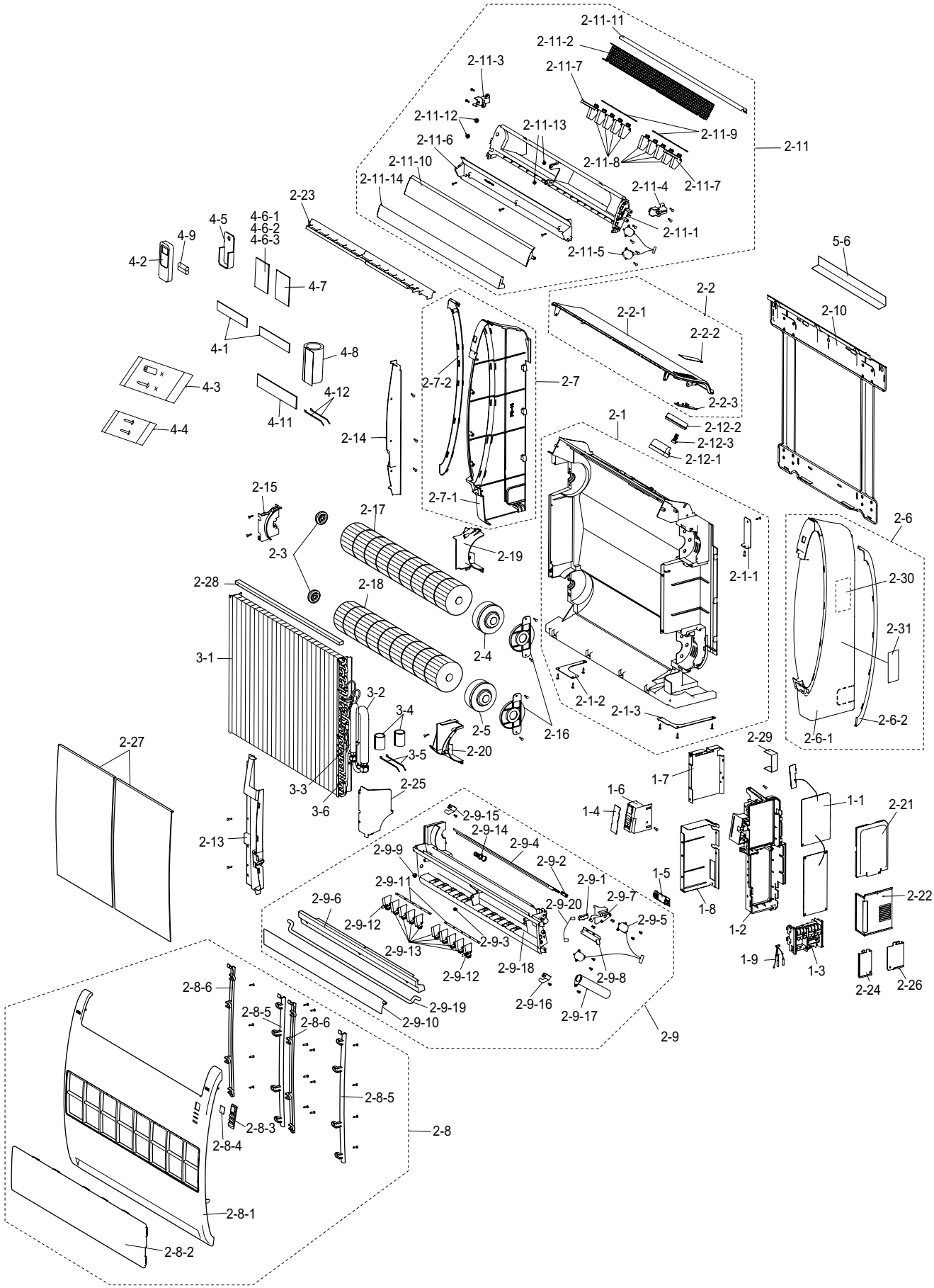
Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

GSXPM18FGR

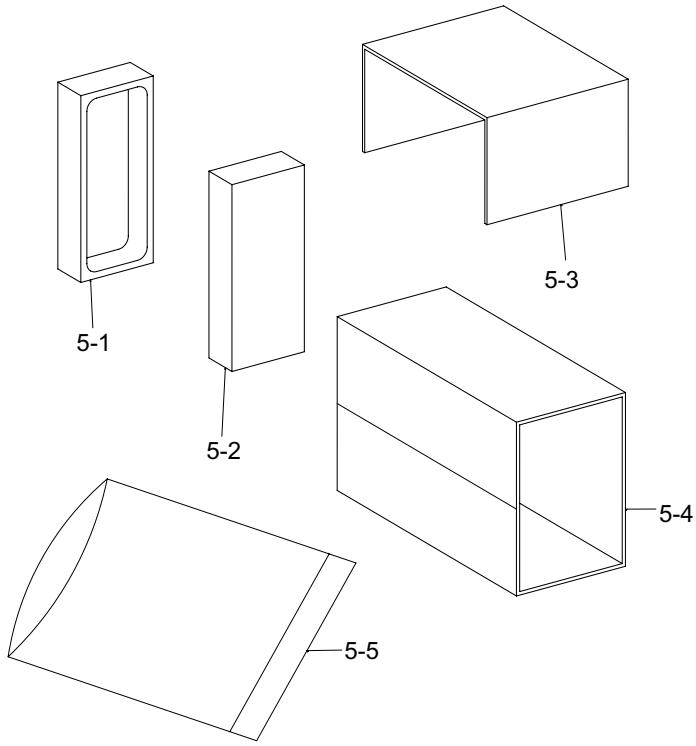
[1] INDOOR UNIT PARTS



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[1] INDOOR UNIT PARTS					
CONTROL BOX PARTS					
1-1	DSGY-B986JBKZ	BN			CONTROL BOARD UNIT [GSXPM9FGR]
1-1	DSGY-B987JBKZ	BN			CONTROL BOARD UNIT [GSXPM12FGR]
1-1	DSGY-B991JBKZ	BP			CONTROL BOARD UNIT [GSXPM18FGR]
1-2	PBOX-A485JBFA	AP			CONTROL BOX
1-3	DDAI-A068JBKZ	AP			TERMINAL BOARD ASSEMBLY
1-4	HPNLCA895JBEA	AF			DISPLAY PANEL
1-5	LHLD-A840JBFZ	AH			THERMISTOR HOLDER
1-6	PCOV-B273JBFZ	AD			LED GUIDE
1-7	PCOV-B274JBWZ	AG			CONTROL BOX COVER A
1-8	PCOV-B275JBWZ	AL			CONTROL BOX COVER B
1-9	RH-HXA067JBZZ	AR			THERMISTOR
CABINET AND UNIT PARTS					
2-1	DCHS-A556JBKZ	BL			CABINET ASS'Y
2-1-1	PPLT-A509JBPZ	AE			BACK SUPPORT
2-1-2	PPLT-A510JBPZ	BB			BOTTOM-SHEET-L
2-1-3	PPLT-A511JBPZ	BC			BOTTOM-SHEET-R
2-2	CCHS-A969JBKZ	AY			UP CABINET ASS'Y
2-2-1	LCHS-A518JBFA	AS			UP CABINET
2-2-2	DSGY-B867JBKZ	AK			OPERATION C-B-U-K
2-2-3	HPNLCA891JBEA	AF			CONTROL PANEL
2-3	CHLD-A112JBKZ	AZ			BEARING ASS'Y
2-4	CMOT-A453JBKZ	BK			FAN MOTOR SUB ASS'Y
2-5	CMOT-A491JBKZ	BK			FAN MOTOR SUB ASS'Y
2-6	CPNL-A548JBKZ	AU			SIDE PANEL R ASS'Y
2-6-1	HPNL-A820JBFA	AT			SIDE PANEL R
2-6-2	HPNL-A793JBFA	AF			DECORATION PANEL R
2-7	CPNL-A549JBKZ	AU			SIDE PANEL L ASS'Y
2-7-1	HPNL-A821JBFA	AT			SIDE PANEL L
2-7-2	HPNL-A796JBFA	AF			DECORATION PANEL L
2-8	CPNL-A550JBKZ	BH			OPEN PANEL ASS'Y
2-8-1	HPNL-A824JBRA	BB			OPEN PANEL
2-8-2	HPNL-A802JBTA	AW			PUNCHING METAL
2-8-3	HPNLCA894JBFA	AF			DISPLAY PANEL
2-8-4	HBDG-A002KKEA	AE			AL BADGE
2-8-5	PGID-A135JBFA	AF			FILTER GUIDE L
2-8-6	PGID-A136JBFA	AF			FILTER GUIDE R
2-9	CSRA-A665JBKZ	BF			DRAIN PAN ASS'Y
2-9-1	QSW-MA005JBZZ	AG			LIMIT SWITCH
2-9-2	PJNT-A019JBFA	AC			DAMPER BUSHING
2-9-3	NBRG-A038JBFA	AC			BEARING C
2-9-4	MLOV-A447JBFA	AM			DAMPER
2-9-5	RMOT-A131JBZZ	AS			LOUVER MOTOR ASS'Y
2-9-6	PCOV-B280JBFA	AL			DRAIN COVER
2-9-7	LHLD-A825JBFA	AC			DAMPER MOTOR HOLDER
2-9-8	LHLD-A823JBFZ	AC			MOTOR WIRE HOLDER
2-9-9	NBRG-A028JBFH	AB			BEARING
2-9-10	MLOV-A446JBFA	AK			BOTTOM LOUVER
2-9-11	MJNT-A031JBFA	AC			LOUVER LINK
2-9-12	MLOV-A450JBFA	AC			BOTTOM V-LOUVER A
2-9-13	MLOV-A451JBFA	AC			BOTTOM V-LOUVER B
2-9-14	PGUMMA381JBEZ	AD			DRAIN PLUG
2-9-15	LPFT-A144JBFZ	AD			DRAIN JOINT L
2-9-16	LPFT-A147JBFZ	AD			DRAIN JOINT
2-9-17	CHOS-A023JBKZ	AL			DRAIN HOSE ASS'Y
2-9-18	DSRA-A284JBKZ	AX			DRAIN PAN SUB ASSY
2-9-19	GGAD-A066JBKZ				WIRE GUARD
2-9-20	QW-VZF483JBZZ	AE			LEAD WIRE
2-10	DPLT-A073JBKZ	AV			MOUNTING ANGLE ASS'Y
2-11	DWAK-A938JBKZ	BF			UP-DISCHARGE ASS'Y
2-11-1	GWAK-A333JBFA	AT			UP-DISCHARGE FRAME ASSY
2-11-2	GGAD-A064JBTA	AN			WIRE GUARD
2-11-3	LHLD-A827JBFA	AD			LATCH HOLDER L
2-11-4	LHLD-A826JBFA	AD			LATCH HOLDER R
2-11-5	RMOT-A132JBZZ	AT			LOUVER MOTOR ASS'Y
2-11-6	PSTB-A001JBFA	AM			STABILIZER
2-11-7	MLOV-A453JBFA	AC			UP V LOUVER A
2-11-8	MLOV-A454JBFA	AC			UP V LOUVER B
2-11-9	MJNT-A031JBFB	AC			LOUVER LINK
2-11-10	MLOV-A459JBFA	AM			H-LOUVER-UP
2-11-11	HDEC-B198JBFA	AG			UPPER DECORATION
2-11-12	NBRG-A028JBFI	AB			BEARING
2-11-13	NBRG-A038JBFA	AC			BEARING C
2-11-14	DLOV-A015JBKZ	AP			SUCTION LOUVER K
2-12-1	CKITTA071AKKZ	BD			PLASMACLUSTER UNIT

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[1] INDOOR UNIT PARTS					
2-12-2	LHLD-A819JBFA	AD			PC HOLDER
2-12-3	QW-VZF305JBZZ	AF			LEAD WIRE
2-13	HPNL-A792JBFA	AF			SEAL COVER R
2-14	HPNL-A795JBFA	AF			SEAL COVER L
2-15	LHLD-A817JBFZ	AD			BEARING HOLDER
2-16	LSTY-A068JBFA	AD			MOTOR STAY
2-17	NFANCA108JBKZ	AX			CROSS FLOW FAN
2-18	NFANCA109JBKZ	AX			CROSS FLOW FAN
2-19	PCOV-B261JBFZ	AE			MOTOR COVER UP
2-20	PCOV-B262JBFZ	AE			MOTOR COVER BOTTOM
2-21	PCOV-B276JBPZ	AG			CONTROL COVER A
2-22	PCOV-B278JBPZ	AH			CONTROL COVER B
2-23	PCOV-B279JBFA	AG			SUPPORT
2-24	PCOV-B281JBWZ	AE			TERMINAL BOARD COV A
2-25	PCOV-B282JBFA	AD			DEW COVER
2-26	PCOV-B286JBWZ	AE			TERMINAL BOARD COV B
2-27	PFILMA233JBEA	AF			AIR FILTER
2-28	PFPFPD082JBEZ	AG			EVAPORATOR INSULATOR [GSXPM9FGR/12FGR]
2-29	PPLT-A532JBPZ	AD			UP SUPPORT
2-30	TLABCC258JBRZ	AC			WIRING DIAGRAM
2-31	TSPC-F566JBRZ	AB			NAME BADGE [GSXPM9FGR]
2-31	TSPC-F567JBRZ	AB			NAME BADGE [GSXPM12FGR]
2-31	TSPC-F588JBRA	AC			NAME BADGE [GSXPM18FGR]
CYCLE PARTS					
3-1	DEVA-A302JBKZ	BU			EVAPORATOR ASS'Y [GSXPM18FGR]
3-1	PEVA-A598JBPZ	BT			EVAPORATOR ASS'Y [GSXPM9FGR/12FGR]
3-2	DPIPCA145JBKZ	AW			TUBE L ASS'Y [GSXPM18FGR]
3-2	DPIPCA151JBKZ	AX			TUBE L ASS'Y [GSXPM9FGR/12FGR]
3-3	DPIPCA144JBKZ	AZ			PIPE S ASS'Y [GSXPM18FGR]
3-3	DPIPCA158JBKZ	AT			PIPE S ASS'Y [GSXPM9FGR/12FGR]
3-4	PFPFPD181JBEZ	AB			TUBE INSULATOR [GSXPM18FGR]
3-5	LBND-A052JBE0	AD			WIRE FIXING BAND [GSXPM18FGR]
3-6	PPIPCH812JB1Z	AL			PIPE B [GSXPM18FGR]
ACCESSORY PARTS					
4-1	CFIL-A104JBKZ	AU			PURIFY FILTER ASSY
4-2	CRMC-A674JBEZ	BD			REMOTE CONTROL
4-3	FFZK-A212JBKZ	AM			SCREW KIT
4-4	FFZK-A190JBKZ	AD			SCREW KIT
4-5	LHLD-A428JBFF	AE			HOLDER
4-6-1	TINS-B034JBRZ	AC			INSTALLATION MANUAL
4-6-2	TINS-B036JBRZ	AC			INSTALLATION MANUAL
4-6-3	TINS-B037JBRZ	AC			INSTALLATION MANUAL
4-7	TINSJA973JBRZ	AN			OPERATION MANUAL
4-8	PFPFPD034JBEZ	AF			TUBE INSULATOR
4-9	UBATUA027JBE0	AE			BATTERY PACK
4-11	PFPFPD101JBEZ	AD			TUBE SEAL
4-12	LBND-A038JBE0	AA			WIRE FIXING BAND
PACKING PARTS					
5-6	SPADSA032JBEZ	AG			HARD BOARD ANGLE

[2] PACKING PARTS



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[2] PACKING PARTS					
5-1	SPADBA375JBEZ	AP			PACKING PAD L
5-2	SPADBA376JBEZ	AP			PACKING PAD R
5-3	SPADBA384JBEZ	AM			PROTECT PAPER
5-4	SPAKCC210JBEZ	AR			PACKING CASE [GSXPM9FGR]
5-4	SPAKCC211JBEZ	AT			PACKING CASE [GSXPM12FGR]
5-4	SPAKCC216JBEZ	AR			PACKING CASE [GSXPM18FGR]
5-5	SSAKAA124JBEZ	AG			BAG

■INDEX

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
[C]				
CCHS-A969JBKZ	1-2-2	AY		
CFIL-A104JBKZ	1-4-1	AU		
CHLD-A112JBKZ	1-2-3	AZ		
CHOS-A023JBKZ	1-2-9-17	AL		
CKITTA071AKKZ	1-2-12-1	BD		
CMOT-A453JBKZ	1-2-4	BK		
CMOT-A491JBKZ	1-2-5	BK		
CPNL-A548JBKZ	1-2-6	AU		
CPNL-A549JBKZ	1-2-7	AU		
CPNL-A550JBKZ	1-2-8	BH		
CRMC-A674JBEZ	1-4-2	BD		
CSRA-A665JBKZ	1-2-9	BF		
[D]				
DCHS-A556JBKZ	1-2-1	BL		
DDAI-A068JBKZ	1-1-3	AP		
DEVA-A302JBKZ	1-3-1	BU		
DLOV-A015JBKZ	1-2-11-14	AP		
DPIPCA144JBKZ	1-3-3	AZ		
DPIPCA145JBKZ	1-3-2	AW		
DPIPCA151JBKZ	1-3-2	AX		
DPIPCA158JBKZ	1-3-3	AT		
DPLT-A073JBKZ	1-2-10	AV		
DSGY-B867JBKZ	1-2-2-2	AK		
DSGY-B986JBKZ	1-1-1	BN		
DSGY-B987JBKZ	1-1-1	BN		
DSGY-B991JBKZ	1-1-1	BP		
DSRA-A284JBKZ	1-2-9-18	AX		
DWAK-A938JBKZ	1-2-11	BF		
[F]				
FFZK-A190JBKZ	1-4-4	AD		
FFZK-A212JBKZ	1-4-3	AM		
[G]				
GGAD-A064JBTA	1-2-11-2	AN		
GGAD-A066JBKZ	1-2-9-19			
GWAK-A333JBFA	1-2-11-1	AT		
[H]				
HBDG-A002KKEA	1-2-8-4	AE		
HDEC-B198JBFA	1-2-11-11	AG		
HPNL-A792JBFA	1-2-13	AF		
HPNL-A793JBFA	1-2-6-2	AF		
HPNL-A795JBFA	1-2-14	AF		
HPNL-A796JBFA	1-2-7-2	AF		
HPNL-A802JBTA	1-2-8-2	AW		
HPNL-A820JBFA	1-2-6-1	AT		
HPNL-A821JBFA	1-2-7-1	AT		
HPNL-A824JBRA	1-2-8-1	BB		
HPNLCA891JBEA	1-2-2-3	AF		
HPNLCA894JBFA	1-2-8-3	AF		
HPNLCA895JBEA	1-1-4	AF		
[L]				
LBND-A038JBE0	1-4-12	AA		
LBND-A052JBE0	1-3-5	AD		
LCHS-A518JBFA	1-2-2-1	AS		
LHLD-A428JBFF	1-4-5	AE		
LHLD-A817JBFZ	1-2-15	AD		
LHLD-A819JBFA	1-2-12-2	AD		
LHLD-A823JBFZ	1-2-9-8	AC		
LHLD-A825JBFA	1-2-9-7	AC		
LHLD-A826JBFA	1-2-11-4	AD		
LHLD-A827JBFA	1-2-11-3	AD		
LHLD-A840JBFZ	1-1-5	AH		
LPFT-A144JBFZ	1-2-9-15	AD		
LPFT-A147JBFZ	1-2-9-16	AD		
LSTY-A068JBFA	1-2-16	AD		
[M]				
MJNT-A031JBFA	1-2-9-11	AC		
MJNT-A031JBFB	1-2-11-9	AC		
MLOV-A446JBFA	1-2-9-10	AK		
MLOV-A447JBFA	1-2-9-4	AM		
MLOV-A450JBFA	1-2-9-12	AC		
MLOV-A451JBFA	1-2-9-13	AC		
MLOV-A453JBFA	1-2-11-7	AC		
MLOV-A454JBFA	1-2-11-8	AC		
MLOV-A459JBFA	1-2-11-10	AM		
[N]				
NBRG-A028JBFH	1-2-9-9	AB		
NBRG-A028JBFI	1-2-11-12	AB		
NBRG-A038JBFA	1-2-9-3	AC		
"	1-2-11-13	AC		
NFANCA108JBKZ	1-2-17	AX		
NFANCA109JBKZ	1-2-18	AX		
[P]				
PBOX-A485JBFA	1-1-2	AP		
PCOV-B261JBFZ	1-2-19	AE		
PCOV-B262JBFZ	1-2-20	AE		
PCOV-B273JBFZ	1-1-6	AD		
PCOV-B274JBWZ	1-1-7	AG		
PCOV-B275JBWZ	1-1-8	AL		
PCOV-B276JBPZ	1-2-21	AG		
PCOV-B278JBPZ	1-2-22	AH		
PCOV-B279JBFA	1-2-23	AG		
PCOV-B280JBFA	1-2-9-6	AL		
PCOV-B281JBWZ	1-2-24	AE		
PCOV-B282JBFA	1-2-25	AD		
PCOV-B286JBWZ	1-2-26	AE		
PEVA-A598JBPZ	1-3-1	BT		
PFILMA233JBEA	1-2-27	AF		
PFPFPD034JBEZ	1-4-8	AF		
PFPFPD082JBEZ	1-2-28	AG		
PFPFPD101JBEZ	1-4-11	AD		
PFPFPD181JBEZ	1-3-4	AB		
PGID-A135JBFA	1-2-8-5	AF		
PGID-A136JBFA	1-2-8-6	AF		
PGUMMA381JBEZ	1-2-9-14	AD		
PJNT-A019JBFA	1-2-9-2	AC		
PPIPCH812JB1Z	1-3-6	AL		
PPLT-A509JBPZ	1-2-1-1	AE		
PPLT-A510JBPZ	1-2-1-2	BB		
PPLT-A511JBPZ	1-2-1-3	BC		
PPLT-A532JBPZ	1-2-29	AD		
PSTB-A001JBFA	1-2-11-6	AM		
[Q]				
QSW-MA005JBZZ	1-2-9-1	AG		
QW-VZF305JBZZ	1-2-12-3	AF		
QW-VZF483JBZZ	1-2-9-20	AE		
[R]				
RH-HXA067JBZZ	1-1-9	AR		
RMOT-A131JBZZ	1-2-9-5	AS		
RMOT-A132JBZZ	1-2-11-5	AT		
[S]				
SPADBA375JBEZ	2-5-1	AP		
SPADBA376JBEZ	2-5-2	AP		
SPADBA384JBEZ	2-5-3	AM		
SPADSA032JBEZ	1-5-6	AG		
SPAKCC210JBEZ	2-5-4	AR		
SPAKCC211JBEZ	2-5-4	AT		
SPAKCC216JBEZ	2-5-4	AR		
SSAKAA124JBEZ	2-5-5	AG		
[T]				
TINS-B034JBRZ	1-4-6-1	AC		
TINS-B036JBRZ	1-4-6-2	AC		
TINS-B037JBRZ	1-4-6-3	AC		
TINSJA973JBRZ	1-4-7	AN		
TLABCC258JBRZ	1-2-30	AC		
TSPC-F566JBRZ	1-2-31	AB		
TSPC-F567JBRZ	1-2-31	AB		
TSPC-F588JBRA	1-2-31	AC		
[U]				
UBATUA027JBE0	1-4-9	AE		

SHARP