

SHARP SERVICE MANUAL

S9619AEXM30GR



MULITI SPLIT TYPE ROOM AIR CONDITIONERS

**MODEL OUTDOOR UNIT
AE-XM30GR**

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.

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Parts Guide

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.

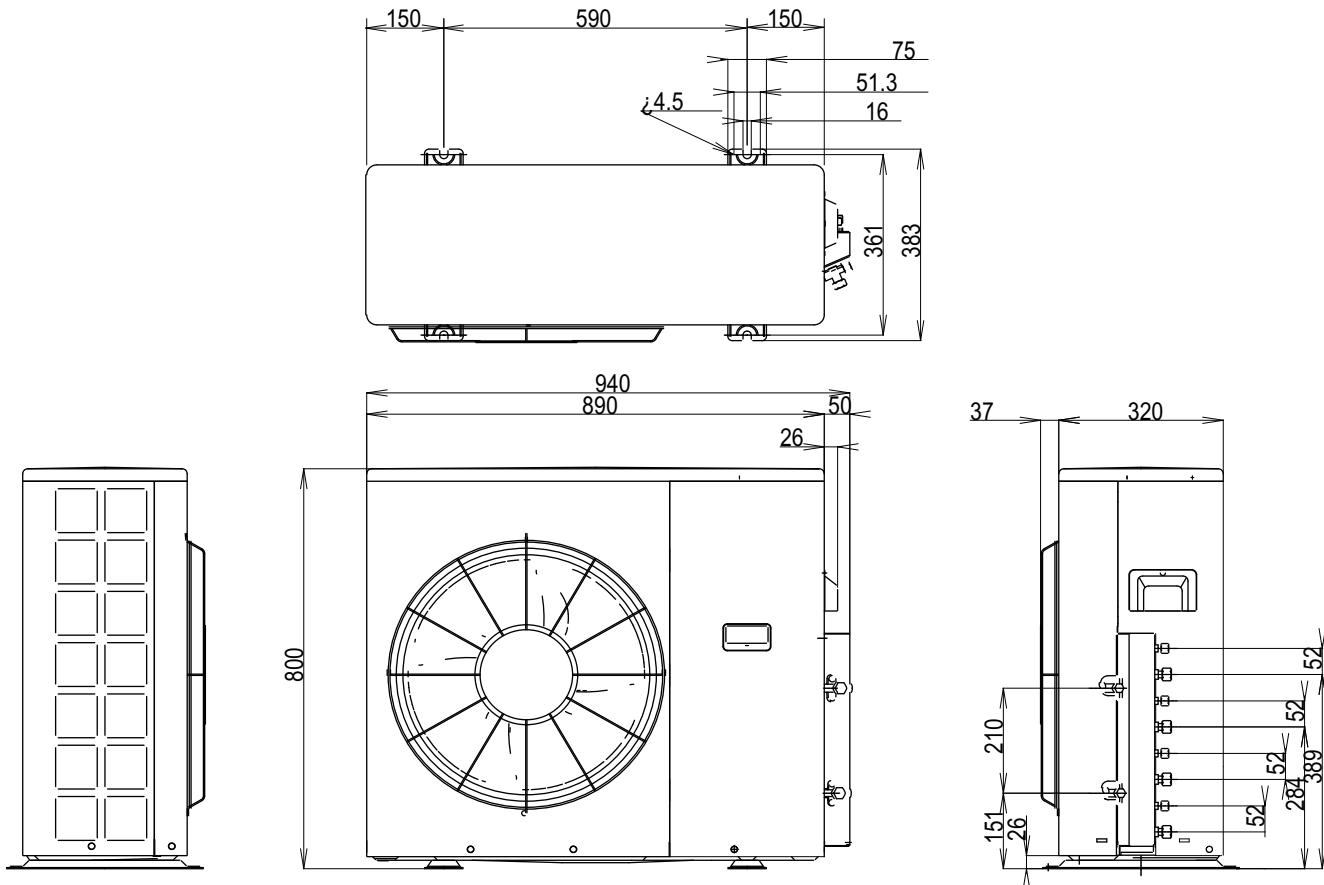
CHAPTER 1. SPECIFICATION

[1] SPECIFICATION

ITEMS	MODEL	INDOOR UNIT AY-XPM7FR/9FR/12FR	OUTDOOR UNIT AE-XM30GR
Cooling capacity	kW		
4-INDOOR OPERTION	9K&7K&7K&7K	8.4(4.3–9.0)*	
Heating capacity	kW		
4-INDOOR OPERTION	9K&7K&7K&7K	9.0(4.4–10.6)*	
Moisture removal (at cooling)☆	Liters/h	1.0&0.8X3*	
Electrical data			
Phase		Single	
Rated frequency	Hz	50	
Rated voltage	V	230V	
Rated current	Cool A Heat A	13.7(4.9– 16.0)* 11.0 (4.3 – 14.0)*	
Rated input ☆ (Min. - Max.)	Cool W Heat W	2990 (1070– 3490)* 2400 (940 – 3060)*	
Power factor ☆	Cool % Heat %	95 95	
Compressor	Type Model Oil charge	Hermetically sealed DC twin rotary DA220A2F-20L Ester oil VG74	
Refrigerant system	Evaporator Condenser Control Name of refrigerant Refrigerant volume	Silt Fin and Grooved tube type Corrugate Fin and Grooved tube type Expansion valve R410A 2400g	
Noise level (at cooling)	dB(A)	High/Med/Low 7FR: 37/34/28 9FR: 39/36/28 12FR: 40/37/29	57
Fan system			
Drive		Direct drive	
Air flow quantity (at cooling)	m ³ /min.	High/Med/Low 7FR: 8.0/7.4/5.4 9FR: 8.6/7.9/5.6 12FR: 9.8/8.6/8.6	52
Fan		Cross flow fan	Propeller fan
Connections			
Refrigerant coupling		Flare type	
Refrigerant tube size Gas, Liquid		1/2", 1/4"(18class only),3/8",1/4"	
Maximum length (per unit)	m	20	
Maximum length (total)	m	50	
Maximum charge-less length	m	50	
Maximum height difference	m	10	
Drain joint	mm	O.Dφ18	
Others			
Safety device		Compressor: Thermistor Fan motors: Thermal fuse (indoor unit). Thermal protector (Out door unit) Fuse, Micro computer control	
		Anti-mold polypropylene net of injection type (Washable)	
Net dimensions	Width mm Height mm Depth mm	790 278 198	940 800 357
Net weight	kg	10	70

NOTE: The condition of star “☆”marked item are ‘ISO5151’: *: Representative connection

[2] EXTERNAL DIMENSION



[3] CAPACITY TABLE

Recommended Combination

Outdoor Units	Indoor Units			
	AY-XPM7/9/12FR, GS-XPM9/12/18FGR, GS-XPM7/9/12FR			
AE-XM30FR	18	12	7	-
	18	9	9	-
	18	9	7	-
	18	7	7	-
	12	12	7	7
	12	9	9	7
	9	9	9	9
	12	9	7	7
	9	9	9	7
	12	7	7	7
	9	7	7	7
	7	7	7	7

AE-XM30GR

COOLING CAPACITY TABLE

Operating Status	Combination of Indoor Units				Cooling Capacity (kW)					Running Current (A)	Power Consumption (W)
	A	B	C	D	A	B	C	D	RATING (Min.-Max.)	RATING (Min.-Max.)	RATING (Min.-Max.)
4-Room	12	12	07	07	2.65	2.65	1.55	1.55	8.4 (4.3-9.0)	13.7 (4.9-16.0)	2990 (1070-3490)
	12	09	09	07	2.73	2.04	2.04	1.59	8.4 (4.3-9.0)	13.7 (4.9-16.0)	2990 (1070-3490)
	09	09	09	09	2.10	2.10	2.10	2.10	8.4 (4.3-9.0)	13.7 (4.9-16.0)	2990 (1070-3490)
	12	09	07	07	2.88	2.16	1.68	1.68	8.4 (4.3-9.0)	13.7 (4.9-16.0)	2990 (1070-3490)
	09	09	09	07	2.22	2.22	2.22	1.74	8.4 (4.3-9.0)	13.7 (4.9-16.0)	2990 (1070-3490)
	12	07	07	07	3.06	1.78	1.78	1.78	8.4 (4.3-9.0)	13.7 (4.9-16.0)	2990 (1070-3490)
	09	09	07	07	2.36	2.36	1.84	1.84	8.4 (4.3-9.0)	13.7 (4.9-16.0)	2990 (1070-3490)
	09	07	07	07	2.52	1.96	1.96	1.96	8.4 (4.3-9.0)	13.7 (4.9-16.0)	2990 (1070-3490)
	07	07	07	07	2.00	2.00	2.00	2.00	8.0 (4.3-9.0)	12.7 (4.9-16.0)	2780(1070-3490)
	18	12	07	-	4.04	2.69	1.57	-	8.3 (4.3-8.9)	13.7 (4.9-16.0)	2990 (1070-3490)
3-Room	18	09	09	-	4.15	2.08	2.08	-	8.3 (4.3-8.9)	13.7 (4.9-16.0)	2990 (1070-3490)
	18	09	07	-	4.39	2.20	1.71	-	8.3 (4.3-8.9)	13.7 (4.9-6.0)	2990 (1070-3490)
	18	07	07	-	4.67	1.82	1.8	-	8.3 (4.3-8.9)	13.7 (4.9-16.0)	2990 (1070-3490)
	12	12	07	OFF	3.0	3.0	1.8	OFF	7.8 (3.6-8.4)	13.7 (4.0-15.1)	2990 (880-3300)
	12	09	09	OFF	3.2	2.3	2.3	OFF	7.8 (3.6-8.4)	13.7 (4.0-15.1)	2990 (880-3300)
	09	09	09	OFF	2.5	2.5	2.5	OFF	7.4(3.6-8.4)	12.1 (4.0-15.1)	2650 (880-3300)
	12	09	07	OFF	3.3	2.4	1.9	OFF	7.6 (3.6-8.4)	12.8 (4.0-5.1)	2800 (880-3300)
	12	07	07	OFF	3.4	1.9	1.9	OFF	7.2 (3.6-8.4)	11.7 (4.0-15.1)	2550 (880-3300)
	09	09	07	OFF	2.5	2.5	2.0	OFF	7.0 (3.6-8.4)	11.0 (4.0-15.1)	2400 (880-3300)
	09	07	07	OFF	2.6	2.0	2.0	OFF	6.6 (3.6-8.2)	9.9 (4.0-14.6)	2160 (880-3200)
	07	07	07	OFF	2.0	2.0	2.0	OFF	6.0(3.6-7.8)	8.8 (4.0-14.2)	1920 (880-3100)
2-Room	18	12	OFF	-	4.56	3.04	OFF	-	7.6 (3.6-8.0j)	13.7 (4.0-15.6)	2990 (880-3400)
	18	9	OFF	-	4.80	2.40	OFF	-	7.2 (3.6-8.0j)	11.9 (4.0-15.6)	2600 (880-3400)
	18	7	OFF	-	4.90	1.90	OFF	-	6.8 (3.6-8.0j)	10.8 (4.0-15.6)	2350 (880-3400)
	12	12	OFF	OFF	3.1	3.1	OFF	OFF	6.2 (2.6-7.5j)	10.3 (3.2-16.9)	2250 (700-3700)
	12	09	OFF	OFF	3.2	2.4	OFF	OFF	5.6 (2.6-7.1j)	8.9 (3.2-14.6)	1950 (700-3200)
	12	07	OFF	OFF	3.3	2.0	OFF	OFF	5.3 (2.6-6.8)	7.9 (3.2-12.7)	1720(700-2770)
	09	09	OFF	OFF	2.5	2.5	OFF	OFF	5.0 (2.6-6.3)	7.5 (3.2-11.9)	1630 (700-2600)
	09	07	OFF	OFF	2.6	2.0	OFF	OFF	4.6 (2.6-5.9)	6.4 (3.2-10.3)	1400 (700-2250)
1-Room	07	07	OFF	OFF	2.0	2.0	OFF	OFF	4.0 (2.6-5.3)	5.5 (3.2-8.7)	1200 (700-1900)
	18	OFF	OFF	OFF	5.0	OFF	OFF	-	5.0 (2.6-5.7)	7.3 (3.2-11.0)	1600 (700-2400)
	12	OFF	OFF	OFF	3.4	OFF	OFF	OFF	3.4 (1.8-4.0)	5.0 (2.9-6.6)	1100 (630-450)
	09	OFF	OFF	OFF	2.6	OFF	OFF	OFF	2.6 (1.8-3.3)	3.6 (2.9-4.9)	790 (630-1080)
	07	OFF	OFF	OFF	2.0	OFF	OFF	OFF	2.0 (1.8-2.7)	3.4 (2.9-3.9)	750 (630-850)

HEATING CAPACITY TABLE

Operating Status	Combination of Indoor Units				Heating Capacity (kW)					Running Current (A)	Power Consumption (W)
	A	B	C	D	A	B	C	D	RATING (Min.-Max.)	RATING (Min.-Max.)	RATING (Min.-Max.)
4-Room	12	12	07	07	2.84	2.84	1.66	1.66	9.0 (4.4-10.6)	11.0 (4.3-14.0)	2400 (940-3060)
	12	09	09	07	2.92	2.19	2.19	1.70	9.0 (4.4-10.6)	11.0 (4.3-14.0)	2400 (940-3060)
	09	09	09	09	2.25	2.25	2.25	2.25	9.0 (4.4-10.6)	11.0 (4.3-14.0)	2400 (940-3060)
	12	09	07	07	3.09	2.31	1.80	1.80	9.0 (4.4-10.6)	11.0 (4.3-14.0)	2400 (940-3060)
	09	09	09	07	2.38	2.38	2.38	1.85	9.0 (4.4-10.6)	11.0 (4.3-14.0)	2400 (940-3060)
	12	07	07	07	3.27	1.91	1.91	1.91	9.0 (4.4-10.6)	11.0 (4.3-14.0)	2400 (940-3060)
	09	09	07	07	2.53	2.53	1.97	1.97	9.0 (4.4-10.6)	11.0 (4.3-14.0)	2400 (940-3060)
	09	07	07	07	2.70	2.10	2.10	2.10	9.0 (4.4-10.6)	11.0 (4.3-14.0)	2400 (940-3060)
	07	07	07	07	2.13	2.13	2.13	2.13	8.5 (4.4-9.8)	10.2 (4.3-13.0)	2230(940-2850)
	18	12	07	-	4.33	2.89	1.68	-	8.9 (4.4-10.5)	11.0 (4.3-14.0)	2400 (940-3060)
3-Room	18	09	09	-	4.45	2.33	2.23	-	8.9 (4.4-10.5)	11.0 (4.3-14.0)	2400 (940-3060)
	18	09	07	-	4.71	2.36	1.83	-	8.9 (4.4-10.5)	11.0 (4.3-14.0)	2400 (940-3060)
	18	07	07	-	5.01	1.95	1.95	-	8.9 (4.4-10.5)	11.0 (4.3-14.0)	2400 (940-3060)
	12	12	07	OFF	3.4	3.4	2.0	OFF	8.8 (3.6-10.0)	12.1(3.8-14.4)	2650(830-3150)
	12	09	09	OFF	3.6	2.6	2.6	OFF	8.8 (3.6-10.0)	12.1(3.8-14.4)	2650(830-3150)
	09	09	09	OFF	2.9	2.9	2.9	OFF	8.8 (3.6-10.0)	12.1(3.8-14.4)	2650(830-3150)
	12	09	07	OFF	3.8	2.8	2.2	OFF	8.8 (3.6-10.0)	12.1(3.8-14.4)	2650(830-3150)
	12	07	07	OFF	3.9	2.3	2.3	OFF	8.5 (3.6-10.0)	11.4 (3.8-14.4)	2500 (830-3150)
	09	09	07	OFF	3.0	3.0	2.2	OFF	8.2 (3.6-10.0)	11.0 (3.8-14.4)	2400 (830-3150)
	09	07	07	OFF	3.0	2.4	2.4	OFF	7.8 (3.6-9.4)	9.8 (3.8-13.7)	2150 (830-2990)
	07	07	07	OFF	2.4	2.4	2.4	OFF	7.1(3.6-8.8)	8.6 (3.8-12.2)	1870 (830-2660)

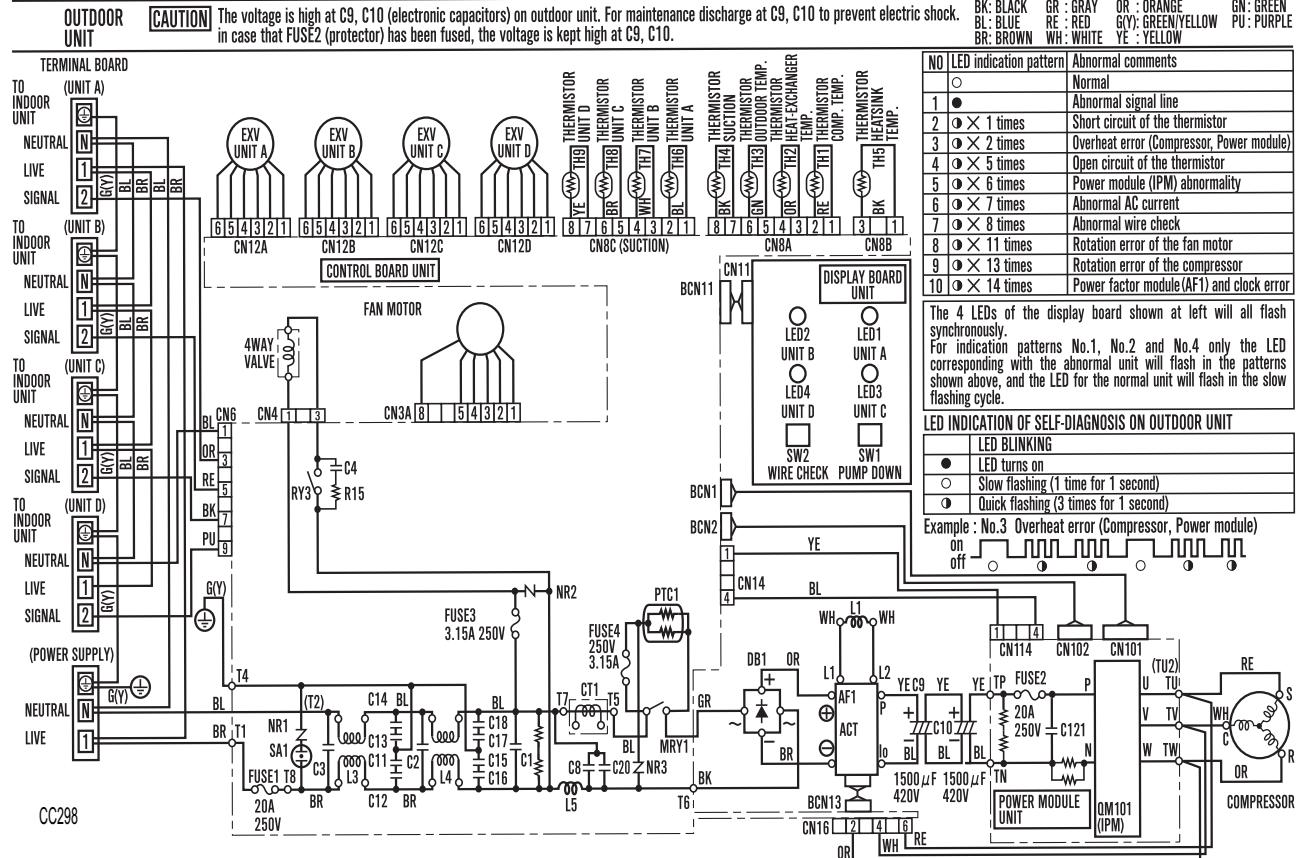
Oper- ing Status	Combination of Indoor Units				Heating Capacity (kW)				Running Current (A) RATING (Min.-Max.)	Power Consumption (W) RATING (Min.-Max.)
	A	B	C	D	A	B	C	D		
2-Room	18	12	OFF	-	4.86	3.24	OFF	-	8.1 (3.6-9.0j)	2450 (830-3300)
	18	9	OFF	-	5.40	2.70	OFF	-	8.1 (3.6-9.0j)	2450 (830-3300)
	18	7	OFF	-	5.54	2.16	OFF	-	7.7 (3.6-9.0j)	10.1 (3.8-15.1)
	12	12	OFF	OFF	3.8	3.8	OFF	OFF	7.6 (2.6-8.0j)	2600 (730-2900)
	12	09	OFF	OFF	3.8	2.9	OFF	OFF	6.7 (2.6-8.0j)	10.3 (3.3-13.3)
	12	07	OFF	OFF	3.9	2.2	OFF	OFF	6.1 (2.6-8.0)	8.7 (3.3-13.3)
	09	09	OFF	OFF	2.9	2.9	OFF	OFF	5.8 (2.6-8.0)	8.5 (3.3-13.3)
	09	07	OFF	OFF	3.0	2.3	OFF	OFF	5.3 (2.6-7.3)	6.9 (3.3-11.0)
1-Room	07	07	OFF	OFF	2.4	2.4	OFF	OFF	4.8 (2.6-6.4)	6.2 (3.3-9.2)
	18	OFF	OFF	OFF	5.0	OFF	OFF	-	6.2 (2.6-7.4)	10.1 (3.3-13.7)
	12	OFF	OFF	OFF	3.8	OFF	OFF	OFF	3.8 (1.8-5.2)	7.3 (2.9-10.1)
	09	OFF	OFF	OFF	2.9	OFF	OFF	OFF	2.9 (1.8-4.0)	5.2 (2.9-8.0)
	07	OFF	OFF	OFF	2.4	OFF	OFF	OFF	2.4 (1.8-3.4)	4.0 (2.9-6.2)

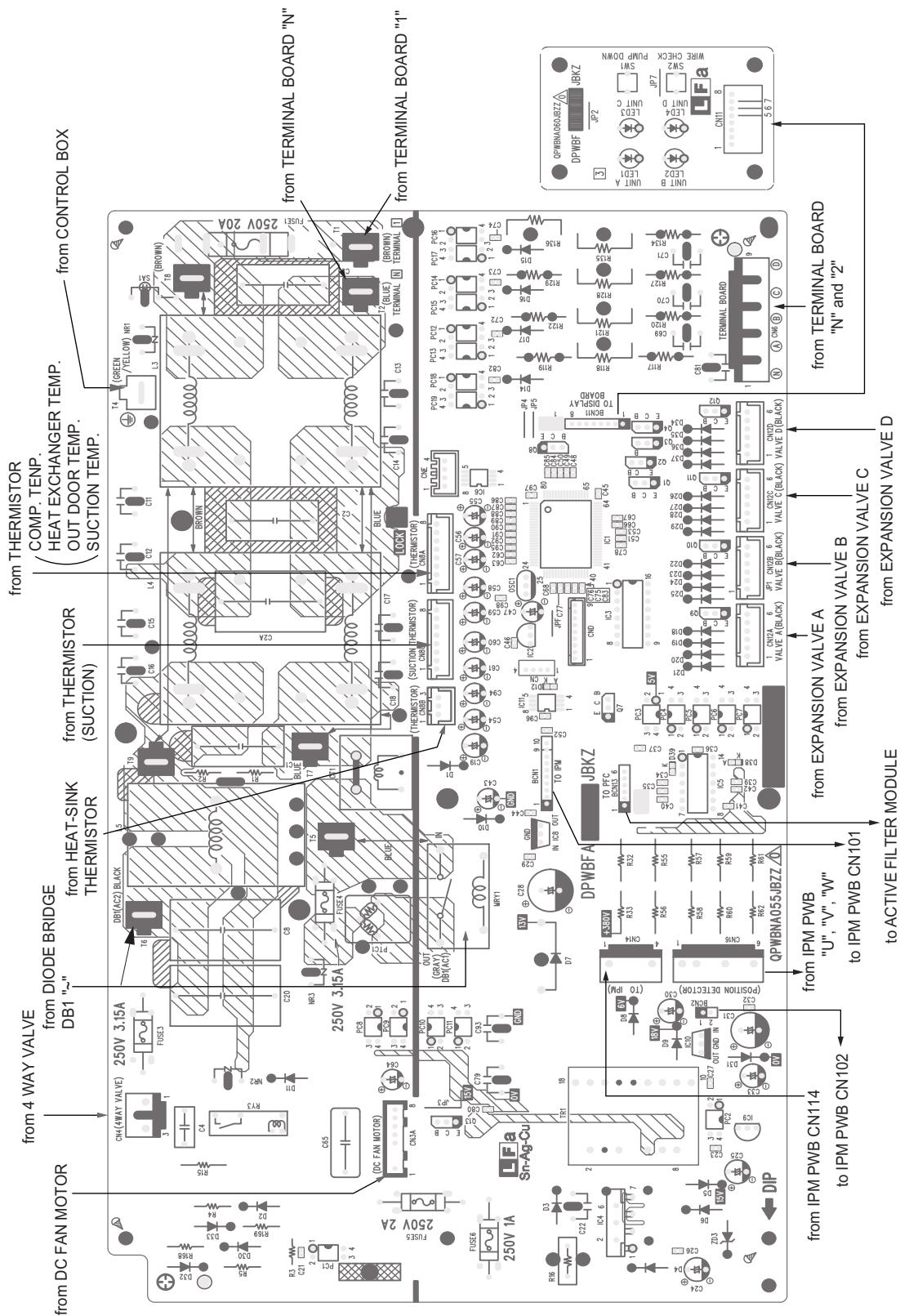
[4] ELECTRICAL PARTS

Compressor	DA220A2F-20L	Hermetically sealed DC twin rotary
Outdoor fan motor	MLB051	230V, 50Hz
Outdoor fan motor capacitor	—	500V, 3μF
Fuse 1,2	—	QFS-GA065JBZZ(20A,250V)
Fuse 6	—	QFS-GA064JBZZ(1A,250V)
Fuse 3,4	—	QFS-GA062JBZZ(3.15A,250V)

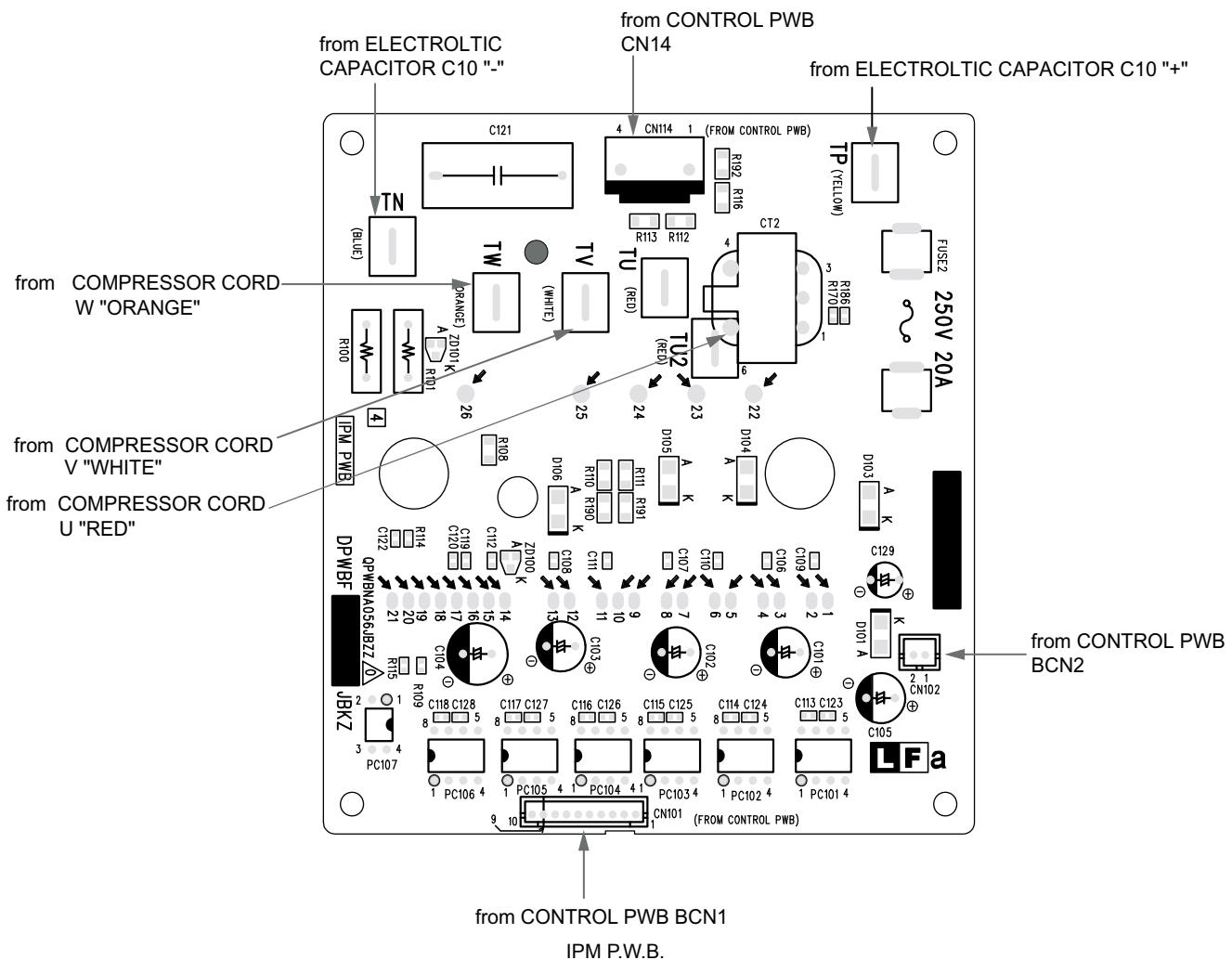
[5] WIRING DIAGRAMS

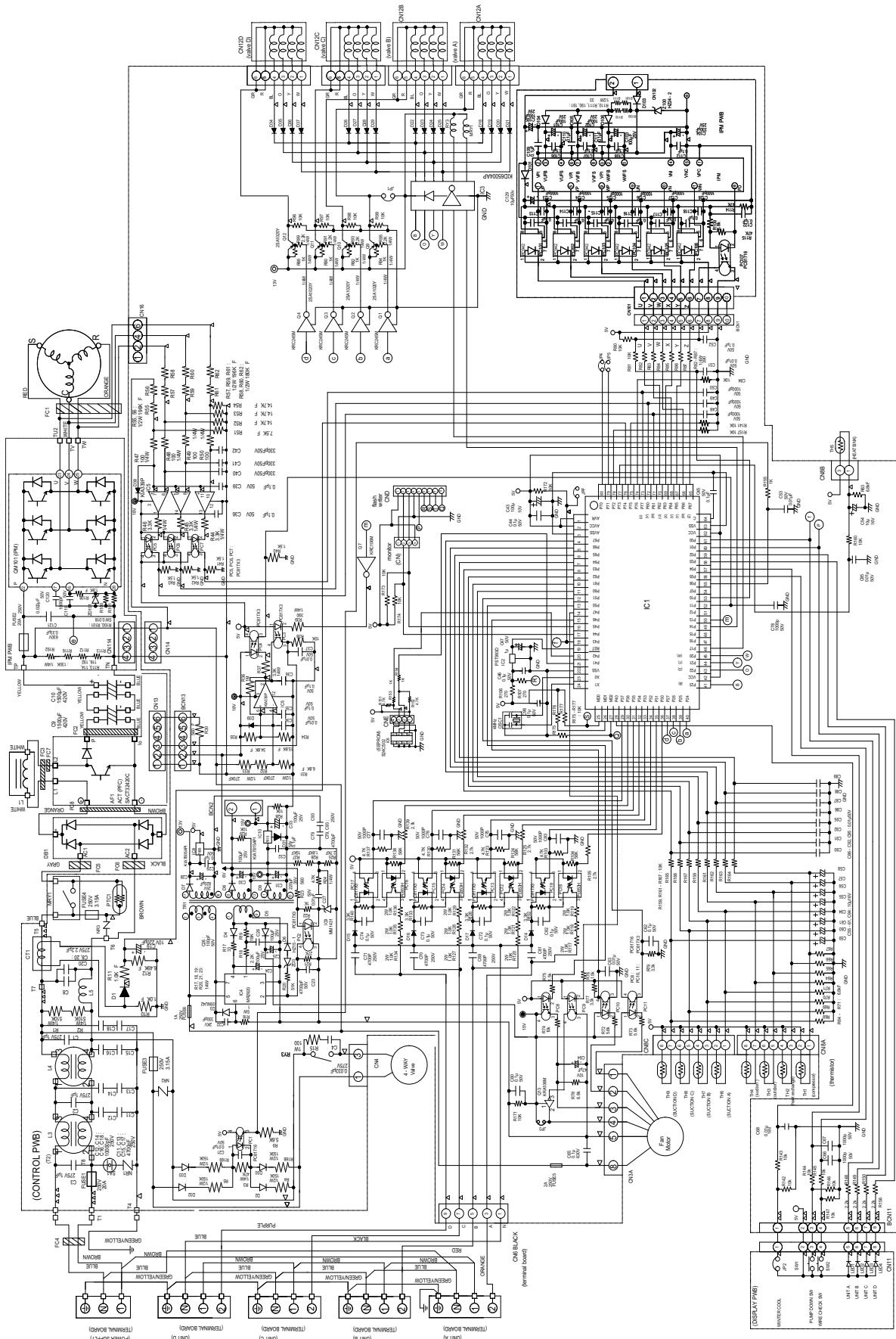
WIRING DIAGRAM





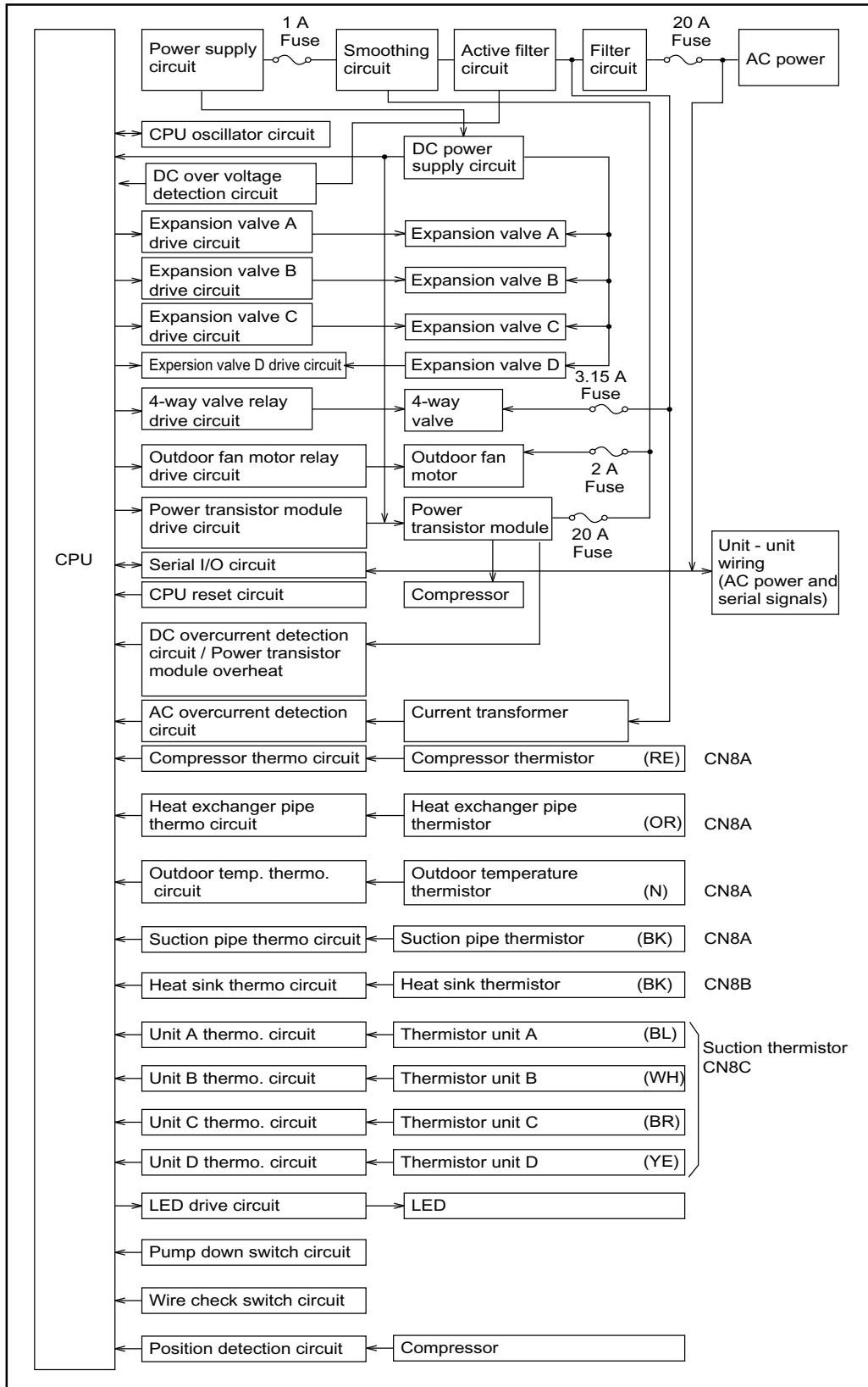
CONTROL P.W.B and DISPLAY P.W.B





CHAPTER 2. EXPLANATION OF CIRCUIT AND OPERATION

[1] BLOCK DIAGRAM



[2] FUNCTIONS

1. FREQUENCY CONTROL

1) AC current peak control

Cooling mode	Heating mode
16.5A	16.5A

2) Prevention control of outdoor heat exchanger overheating

If the temperature of the outdoor heat exchanger exceeds the overheating prevention line 1 or 2 during cooling, the operating frequency is lowered by approximately 5 to 15Hz. After that, the frequency is lowered approximately 5Hz once every 60 seconds or approximately 15Hz once every 120 seconds. When the temperature of the outdoor heat exchanger goes below the overheating prevention clear line, the frequency is raised by approximately 5Hz once every 60 seconds, and normal operation is restored. If the frequency is lowered to minimum frequency without the temperature of the outdoor heat exchanger decreasing and this condition lasts for 1 minute, the compressor will be stopped.

Overheating Prevention line 1	55°C	Lower 5Hz once every 60 seconds
Overheating Prevention line 2	57°C	Lower 15Hz once every 120 seconds
Overheating Prevention clear line	54°C	

3) Prevention control of compressor overheating

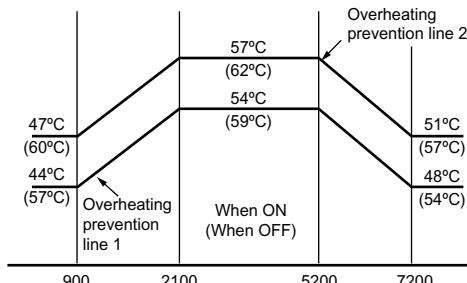
If the temperature of the compressor exceeds approximately 108 °C, the operating frequency is lowered approximately 5Hz. After that, the frequency is lowered approximately 5Hz once every 60 seconds. When the compressor temperature drops below approximately 108°C, the frequency is raised approximately 5Hz once every 60 seconds, and normal operation is restored. If the frequency is lowered to minimum frequency without the temperature of the compressor decreasing, and this condition lasts for 1 minute, the compressor will be stopped.

4) Prevention control of indoor heat exchanger overheating

Two minutes after room several decrease If the temperature of any of indoor heat exchangers exceeds the overheating prevention line 1 or 2 during heating, the operating frequency is lowered to minimum frequency. When the temperature of all of indoor heat exchangers go below the overheating prevention line 1, the frequency is raised by approximately 5Hz once every 60 seconds, and normal operation is restored. If the condition that the frequency is minimum lasts for 2 minutes, the compressor will be stopped.

<when normal >

If the temperature of any of indoor heat exchangers exceeds the overheating prevention line 1 or 2 during heating, the operating frequency is lowered by approximately 5 to 15Hz. After that, the frequency is lowered approximately 5Hz once every 60 seconds or approximately 15Hz once every 90 seconds. When the temperature of all of indoor heat exchangers go below the overheating prevention line 1, the frequency is raised by approximately 5Hz once every 60 seconds, and normal operation is restored. If the condition that the frequency is minimum lasts for 2 minutes, the compressor will be stopped.



2. OVER CURRENT PROTECTION

DC over current detection, AC over current detection To protect against over current due to sudden change in load, the compressor is stopped if 55A DC is exceeded in the DC section. If the set value of AC current is exceeded in the AC section, the compressor is stopped. 90 seconds after the compressor has been stopped, another starting try will be made. Three retries are allowed. On the fourth retry, a complete stop request signal is sent to the indoor unit, and the outdoor unit will remain stopped until the indoor operation is stopped. DC over current is detected by the power module. AC over current is detected by CT1, on the outdoor PWB.

Cooling mode	Heating mode
19.3A	19.3A

3. COMPRESSOR PROTECTION CONTROL

If the temperature of the compressor exceeds 113°C, the compressor is stopped. In this case, the outdoor fan is not stopped until the temperature of compressor drops below 99°C. In 90 seconds after the compressor is stopped, if the temperature is below 90°C, another starting try will be made. Three retries are allowed. On the fourth retry, a complete stop request signal is sent to the indoor unit, and the outdoor unit will remain stopped until the indoor operation is stopped.

4. POWER TRANSISTOR MODULE PROTECTION

If the temperature of the chips in the power transistor module exceeds 100°C, the compressor is stopped. In this case, the outdoor fan is not stopped until the temperature of power module drops below 85°C. In 90 seconds after the compressor is stopped, if the temperature is below 85°C, another starting try will be made. Three retries are allowed. On the fourth retry, a complete stop request signal is sent to the indoor unit, and the outdoor unit will remain stopped until the indoor operation is stopped.

5. SERIAL SIGNALS

Serial signals consist of all 96-bit signals. If the condition as outdoor unit unable to receive a serial signal from the indoor unit continues for 30 seconds, it closes the expansion valve which corresponds to the room which can not be communicated. If all indoor units can not communicate with the outdoor unit, the compressor is stopped.

6. THERMISTOR OPEN OR SHORT

When compressor, heat exchanger, outdoor thermistor, suction thermistor (CN8A) are in OPEN or SHORT condition, even if they are in the condition which an operation signal is transmitted from indoors, the compressor will not start. If any suction thermistors (CN8C) become OPEN or SHORT resistance, the protective procedure will work only for the cycle corresponding to the malfunctioning suction thermistor.

7. MISWIRING CHECK

"Mis-wiring check" is conducted by detecting the indoor heat exchanger temp. For example, when the expansion valve for only room A is open, and the wiring is correct, the indoor heat exchanger temp for room A will reduce. If the wiring is incorrect, the indoor heat exchanger temp for a different room will reduce.

8. SAFETY TIME

When the unit is operated by the remote control after the breaker is turned on, the safety device of the compressor will work and the compressor will not operate for 90 seconds.

9. PUMP DOWN SWITCH

When the PUMP DOWN SWITCH (SW1) is pressed for 5 seconds or more, the total A/C system will start its TEST RUN automatically and the compressor frequency will be 55 Hz. When operating only the outdoor unit (cooling 55 Hz fixed mode) To make only the outdoor unit run in cooling mode, and apply a voltage of 230 V AC to N and 1 on the terminal board and push the pump down switch. (SW1) (Avoid operating the outdoor unit alone for long periods of time.)

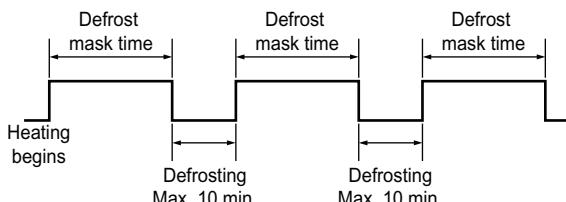
10. CONTROL OF COMPRESSOR OR AND EXPANSION VALVE

For 90 seconds after turning on the AC power, the compressor will not be activated even if indoor units request the compressor to do so. If the compressor receives a request from one or more indoor units after 90 seconds have passed, it will be turned on and the expansion valve corresponding to the requesting indoor unit will be opened. When the indoor unit of a room requests for the cooling operation to the outdoor unit and it runs responding to the request, requests for the heating can't be accepted if the indoor units in other rooms send individual requests. If the indoor unit in another room sends a request for the heating operation, the operation lamp and timer lamp of the indoor unit in that room start flashing in turn to inform that the unit is in the stand-by mode. If the operation in one room is stopped while the indoor unit in another room is in the stand-by mode, the operation mode requested by the indoor unit which is now in the stand-by mode will be accepted. At this time, the compressor will be temporarily stopped to switch the four-way valve and restart after 90 seconds. During the cooling or dry operation, the expansion valve corresponding to the indoor unit that is not running is closed. Therefore, the refrigerant will not flow into those units. However, if the heating operation is in progress, it is possible that it flows into indoor units which are out of operation depending on the cycle conditions. As a result, the indoor exchanger may be heated up even if it is not activated. This is not abnormal. When the operations in all rooms are stopped, the compressor is off and the expansion valves in all rooms are fully opened.

11. DEFROST OPERATION

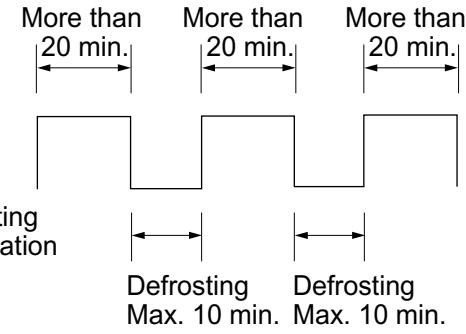
1) Overview

Defrosting begins during heating if the conditions for compressor operation time and outdoor heat exchanger temperature are met. When defrosting begins, the indoor and outdoor fans stop. Defrosting stops when the temperature of the outdoor heat exchanger goes above approximately 15°C or defrosting time exceeds 10 minutes.



2) Defrosting

If the compressor operation time is more than 20 minutes in the heating mode and the outdoor air temperature and outdoor heat exchange temperature satisfy the defrosting conditions, the defrosting operation is started. When the defrosting operation is started, the indoor fan starts to run intermittently. When the outdoor heat exchanger temperature reaches approx. 15°C or above or when the defrosting time exceeds 10 minutes, the defrosting operation is quit.



3) During defrosting

When defrosting begins, the compressor stops. Approximately 1 minute later, the compressor reactivates in the refrigeration cycle, and the outdoor heat exchanger is defrosted. Each mode is as follows:

The outdoor fan is stopped

The operating frequency is as shown in the table below.

The indoor fan is stopped.

All expansion valve are open.

for 5 minutes 3900 rpm

after that 3700 rpm

4) Defrost stop

When defrosting time exceeds 10 minutes When the temperature of the outdoor heat exchanger rises above approximately 15°C Defrost stop is determined by either of the above conditions, and the compressor is stopped. At the same time, the outdoor fan goes ON. The compressor is reactivated in the heating cycle 1 minutes after it was stopped, and normal control resumes.

CHAPTER 3. FUNCTION AND OPERATION OF PROTECTIVE PROCEDURES

[1] PROTECTIVE FUNCTIONS AND OPERATIONS

NO.	Function	Operation					
		Description	Detection time	Restart condition			
1	DC over current	Compressor is stopped if a current approximately 25A or more flows in the power transistor module.	During compressor operation	Automatically restarts after safety time (180 seconds)	4 times	Yes	Yes
2	AC over current	Lowers the operating frequency if the compressor AC current exceeds set value(19.3). Stops the compressor if the current exceeds at minimum frequency.	During compressor operation	Automatically restarts after safety time (180 seconds)	4 times	Yes	Yes
3	Compressor overheat prevention control	Lowers the operating frequency if the temperature of the compressor thermistor (TH1) rises above 108°C. Compressor is stopped if the thermistor stays above 108°C for 2 minutes at minimum frequency.	During compressor operation	Automatically restarts after safety time (180 seconds)	No limit	No	No
4	Compressor high temperature error	Compressor is stopped if the compressor thermistor is above 113°C (Or when TH1 shorts)	During compressor operation	Automatically restarts when thermistor (TH1) temperature falls below 99°C (approximately 30 minutes)	4 times	Yes	Yes
5	Outdoor heat exchanger overheat prevention control	Lowers the operating frequency if the temperature of the outdoor heat exchanger rises above 57°C during cooling. Stops the compressor if the temperature stays above 57°C for 2 minutes at minimum frequency	During compressor operation	Automatically restarts after safety time (180 seconds)	No limit	No	No
6	Thermistor short	Compressor is stopped, if heat exchanger or outdoor thermistor shorts.Close the expansion valve of the corresponding room, if some suction thermistor shorts.	When the room is activated-turns ON and the compressor starts.	Operation OFF	1 time	Yes	Yes
7	Thermistor open	Compressor is stopped, if compressor or heat exchanger or outdoor thermistor opens. Close the expansion valve of the corresponding room, if some suction thermistor shorts. opens.	When the room turns ON and the compressor starts.	Operation OFF	1 time	Yes	Yes
8	AC abnormal current	Compressor is stopped, if the operating frequency is above 70Hz and the compressor current is below 0.8A.	During compressor operation	Automatically re-starts after safety time.(180 sec.)	4 times	Yes	Yes
9	Serial signal error	INDOOR If open, while timer LED blinks, operation is continued. If short, operation is continued. OUTDOOR loses the expansion valve of the corresponding room if the outdoor unit does not receive a serial signal from one or more indoor unit for 30 seconds. Compressor is stopped, if the outdoor unit does not receive a serial signal from all indoor units.	During operation	Automatically re-starts as soon as the serial communication becomes possible.	No limit	Yes	Yes
10	Miswiring check error	Compressor is stopped, and miswiring check operation ends.	During miswiring operation	Miswiring check operation will not re-start automatically.	4 times	Yes	Yes
11	Indoor heat exchanger overheat prevention control	Lowers the operating frequency if the temperature of any of indoor heat exchanger rises high temperature during heating. Stops the compressor if the temperature stays high for 2 minutes at minimum frequency.	During compressor operation	Automatically re-starts after safety time.(180 sec.)	No limit	No	No
12	Power factor module (Active filter) error	When a power factor module error input is detected.	During compressor operation	Automatically re-starts after safety time.(180 sec.)	4 times	Yes	Yes
13	DC Compressor rotation error	In the case that the feed back signal from the compressor is not input or abnormal.	During compressor operation	Automatically re-starts after safety time.(180 sec.)	8 times	Yes	Yes

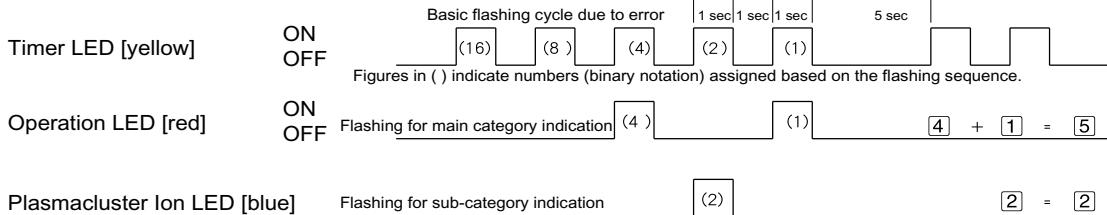
NO.	Function	Operation				
		Description	Detection time	Restart condition		
14	IPM overheat prevention control. IPM high temperature error	Lowers the operating frequency if the temperature of IPM rises high temperature. Stops the compressor if the temperature stays high for 2 minutes at minimum frequency.	During compressor operation	Automatically restarts after safety time.(180 sec.)	No limit	No No

[2] 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), Plasmacluster Ion LED (blue), and Plasmacluster Ion LED (green) 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-diagnose is 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-diagnose is 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 [Main category Sub-category]
[Malfunction No. 5 — 2]

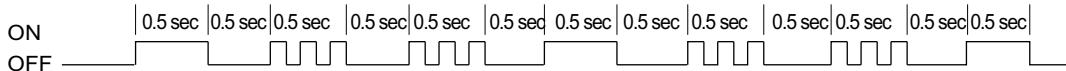


*2: The self-diagnosis display function of the outdoor unit indicates the error information by flashing LED1 on the outdoor unit according to the content of self-diagnosis.

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



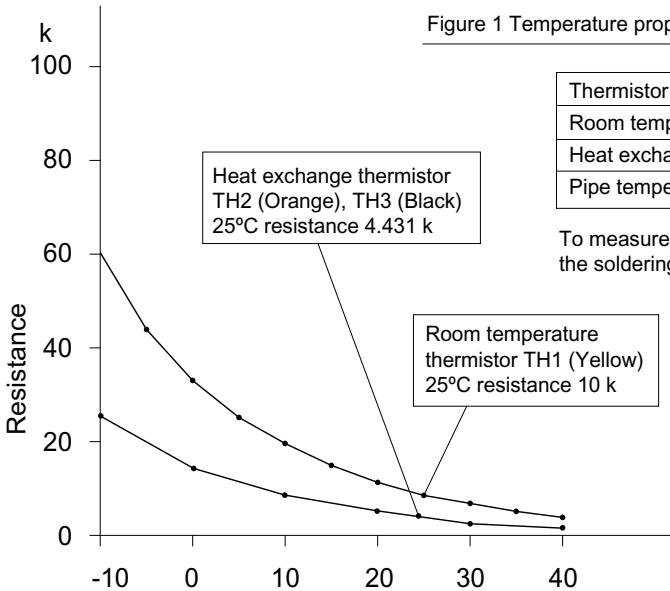
⊗Flashes in 1-sec intervals (normal) : 1sec ON / 1sec OFF X : OFF O : Flashes 3 times in 0.2-sec intervals

Status of indoor/outdoor units	Indication by LED on outdoor unit	Indication on indoor unit				Content of diagnosis	Inspection location/method	Remedy
		Floor / ceiling	Wall (Panel)	Main	Sub			
Indoor/outdoor units in operation	Normal flashing		0 - 0	0		Normal		
Indoor/outdoor units incomplete shutdown	O 1 time	● Operation lamp(RED) Cluster lamp(BLUE)	1 - 0	1		Outdoor unit thermistor short-circuit error	(1)Measure resistance of the outdoor unit thermistor. (TH2~4.6~9 - Approx. 4.4 at 25 C) (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.
Indoor/outdoor units in complete shutdown	O 2 time	● Operation lamp(RED) Cluster lamp(BLUE)	2 - 0	2	Cycle temperature	Thermistor Unit A - D thermistor short-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. (TH1~4.6~9 or 53 k at 25 C) (5)Check the expansion valve for proper operation. (Temporary stop for cycle protection)	(1)Ensure unobstructed air flow from the outdoor unit air outlet. (2)Check the specified amount of refrigerant. (3)Replace the outdoor unit compressor thermistor assembly. (4)Replace the outdoor unit control PCB assembly.
Indoor/outdoor units in temporary stop	O 5 time	● Operation lamp(RED) Cluster lamp(BLUE)	-1	0		IPM high temperature error	(1)Check the heat-sink thermistor (CN8B)	(1)Change the heat-sink thermistor.
Indoor/outdoor units in complete shutdown	O 6 time	● Operation lamp(RED) Cluster lamp(BLUE)	5 - 0	5	Outdoor unit thermistor open-circuit error	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 TH1~4.6~9. (3)Check the lead wires of thermistors TH1~4.6~9 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. (5)Replace the compressor.
Indoor/outdoor units in complete shutdown	O 7 time	● Operation lamp(RED) Cluster lamp(BLUE)	7 - 0	7	Outdoor unit AC Current	AC overcurrent error	(1)IPM continuity check (2)Check the outdoor unit fan motor.	(1)Replace the outdoor unit control PCB assembly. (2)Correct the installation (tighten the screws). (3)Apply silicon grease. (4)Replace the outdoor unit fan motor. (5)Replace the outdoor unit control PCB assembly.
Indoor/outdoor units in complete shutdown	O 8 time	● Operation lamp(RED) Cluster lamp(BLUE)	8 - 0	8	Abnormal wire check	Abnormal wire check error	(1)Ensure unobstructed air flow from the outdoor unit air outlet. (2)Check the outdoor unit fan motor. (3)Check the wiring between units.	(1)Replace the outdoor unit control board assembly. (2)Reattach (3)Check the wiring between units.
Indoor/outdoor units in complete shutdown	O 11 time	● Operation lamp(RED) Cluster lamp(BLUE)	11 - 0	11	Outdoor unit DC Fan (AE-X0130FR)	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. (3)Check the wiring between units. (4)Replace the outdoor unit control PCB assembly.	(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.

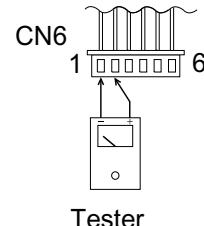
⑧Flashes in 1-sec intervals (normal) : 1sec ON / 1sec OFF X: OFF Or: Flashes 3 times in 0.2-sec intervals

Status of indoor/outdoor units	Indication by LED1 on outdoor unit *2	Indication on indoor unit				Content of diagnosis	Inspection location/method	Remedy
		Floor ceiling		Wall (Panel)	Wall (Grill)			
		Main	Sub	Main category	Sub category			
Indoor/outdoor units in complete shutdown	O 13 time	● ● ● Operation lamp(RED) Cluster lamp(BLUE)	■ ■ ■ →X for 5 seconds	13 -0	13	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 (Hand 2). (4)No abnormality found in above inspections (1)through (3).
Indoor/outdoor units in complete shutdown	O 14 time	● ● ● Operation lamp(RED) Cluster lamp(BLUE)	● ● ● Operation lamp(RED) Cluster lamp(BLUE)	-1		Compressor rotation error		(1)Connect stable power supply. (2)Replace the outdoor unit control PCB assembly. (1)Replace the outdoor unit control PCB assembly.
Indoor unit in operation Outdoor unit in complete shutdown	X	● ● ● Operation lamp(RED) Cluster lamp(BLUE)	● ● ● Operation lamp(RED) Cluster lamp(BLUE)	14 -0	14	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)Check the clock for proper input.
Indoor unit in operation Outdoor unit in complete shutdown	X	● ● ● Operation lamp(RED) Cluster lamp(BLUE)	● ● ● Operation lamp(RED) Cluster lamp(BLUE)	17 -0	17	Wires between units	Serial open/circuit	(1)Check the wires between units. (2)Check voltage between N and 1 the indoor/outdoor unit terminal boards. (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
Indoor unit in operation Outdoor unit in complete shutdown	X	● ● Operation lamp(RED) Cluster lamp(BLUE)	● ● Operation lamp(RED) Cluster lamp(BLUE)	18 -0	18	Wires between units	Serial short-circuit	(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
Indoor unit in complete shutdown	X	● ● Operation lamp(RED) Cluster lamp(BLUE)	● ● Operation lamp(RED) Cluster lamp(BLUE)	19 -0	19	Indoor unit fan	Serial erroneous wiring	(1)Check the wires between units. (1)Check the wiring.
Indoor/outdoor units in complete shutdown	X	● ● Operation lamp(RED) Cluster lamp(BLUE)	● ● Operation lamp(RED) Cluster lamp(BLUE)	20 -0	20	Indoor unit control PCB	EEPROM data 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 connector of the indoor unit fan motor for secure installation. (4)No abnormality found in above inspections (1)through (3). (EEPROM read data error)
Indoor/outdoor units in operation	X	● ● ● Operation lamp(RED) Cluster lamp(BLUE)	● ● ● Operation lamp(RED) Cluster lamp(BLUE)	30 -0	30	Drain pump unit	Drain pump unit error	(1)Check connector CN2 and CN10. (2)Re-insertion of CN2 and CN10.

Figure 1 Temperature properties of indoor thermistors



Room temperature
thermistor TH1 (CN6 ③ - ④)
Heat exchange
thermistor TH2 (CN6 ① - ②)
Pipe temperature
thermistor TH3 (CN6 ⑤ - ⑥)



CAUTION: when attaching or removing the board

When operating only the outdoor unit (cooling 55 Hz fixed mode) To make only the outdoor unit run in cooling mode, and apply a voltage of 220 ~ 240V AC to 1 and N on the terminal board and push the pump down switch (SW1).

(Avoid operating the outdoor unit alone for long periods of time.)

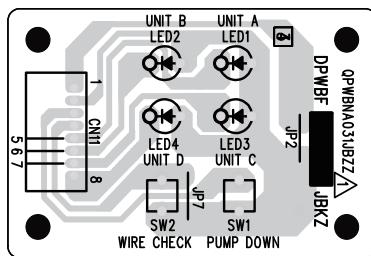
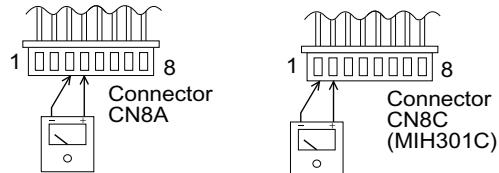
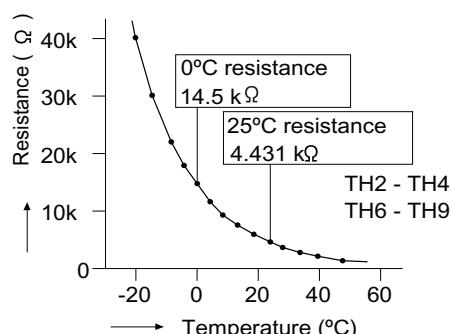
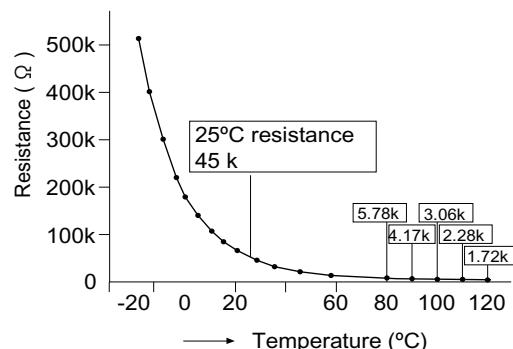


Figure 2 Temperature properties of outdoor thermistors

TH2 : Heat exchanger pipe thermistor (CN8A ③ - ④)
TH3 : Outdoor temp. thermistor (CN8A ⑤ - ⑥)
TH4 : Suction thermistor (CN8A ⑦ - ⑧)
TH6 : Thermistor unit A (CN8C ① - ②)
TH7 : Thermistor unit B (CN8C ③ - ④)
TH8 : Thermistor unit C (CN8C ⑤ - ⑥)
TH9 : Thermistor unit D (CN8C ⑦ - ⑧)



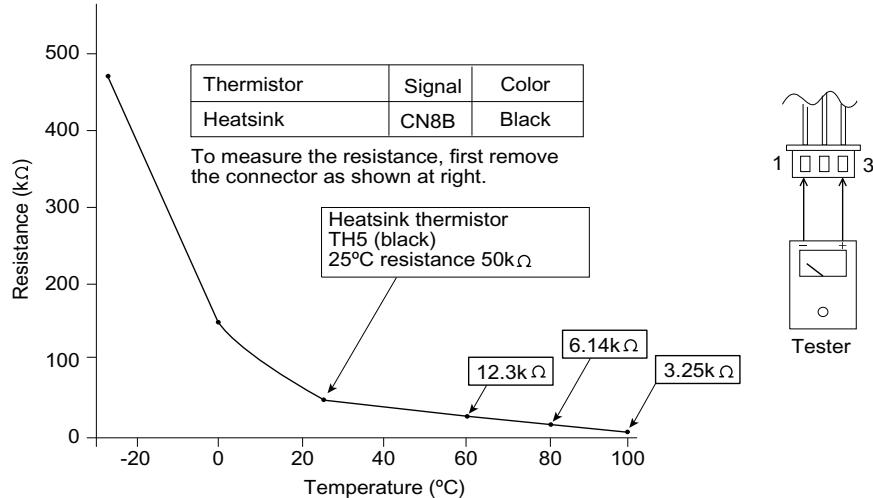
TH1 compressor thermistor
(CN8A ① - ②)



Thermistor	No.	Connector	Color	Connector pin
Compressor thermistor	TH1	CN8A	Red	No. 1 to 2
Heat exchanger pipe thermistor	TH2	CN8A	Orange	No. 3 to 4

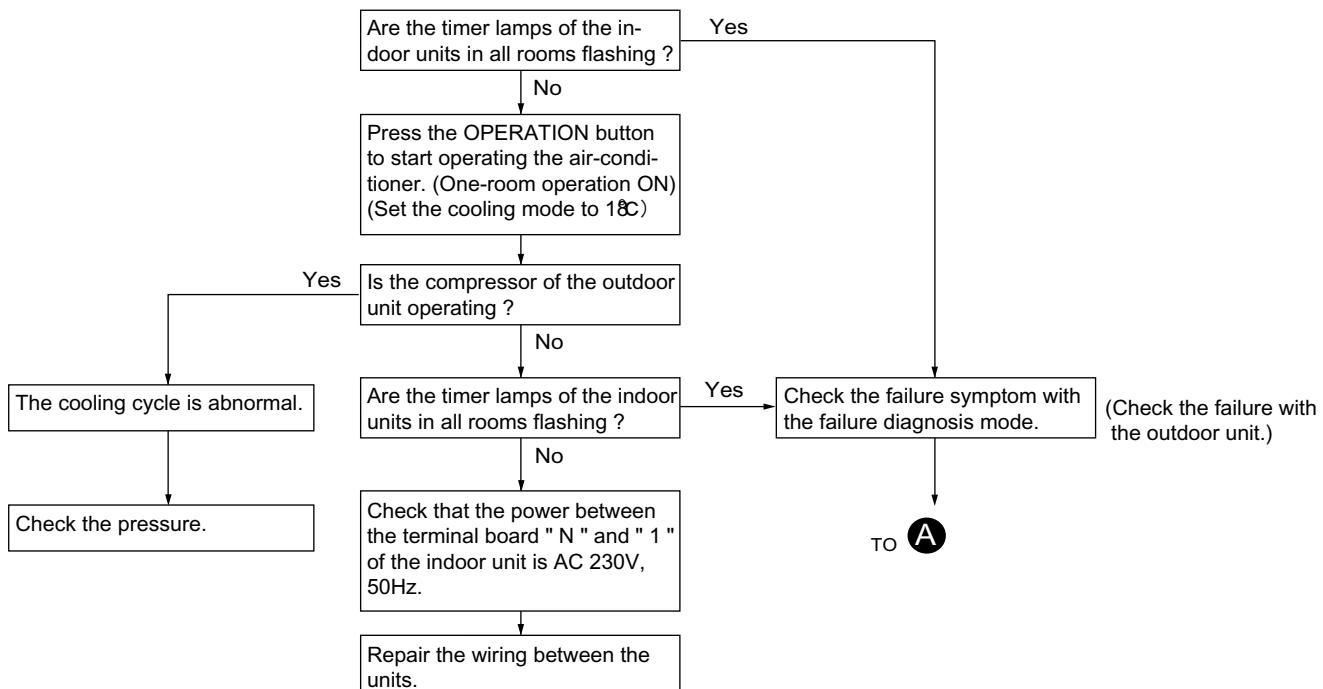
Thermistor	No.	Connector	Color	Connector pin
Outdoor temp. thermistor	TH3	CN8A	Green	No. 5 to 6
Suction thermistor	TH4	CN8A	Black	No. 7 to 8
Thermistor unit A (suction)	TH6	CN8C	Blue	No. 1 to 2
Thermistor unit B (suction)	TH7	CN8C	White	No. 3 to 4
Thermistor unit C (suction)	TH8	CN8C	Brown	No. 5 to 6
Thermistor unit D (suction)	TH9	CN8C	Yellow	No. 7 to 8

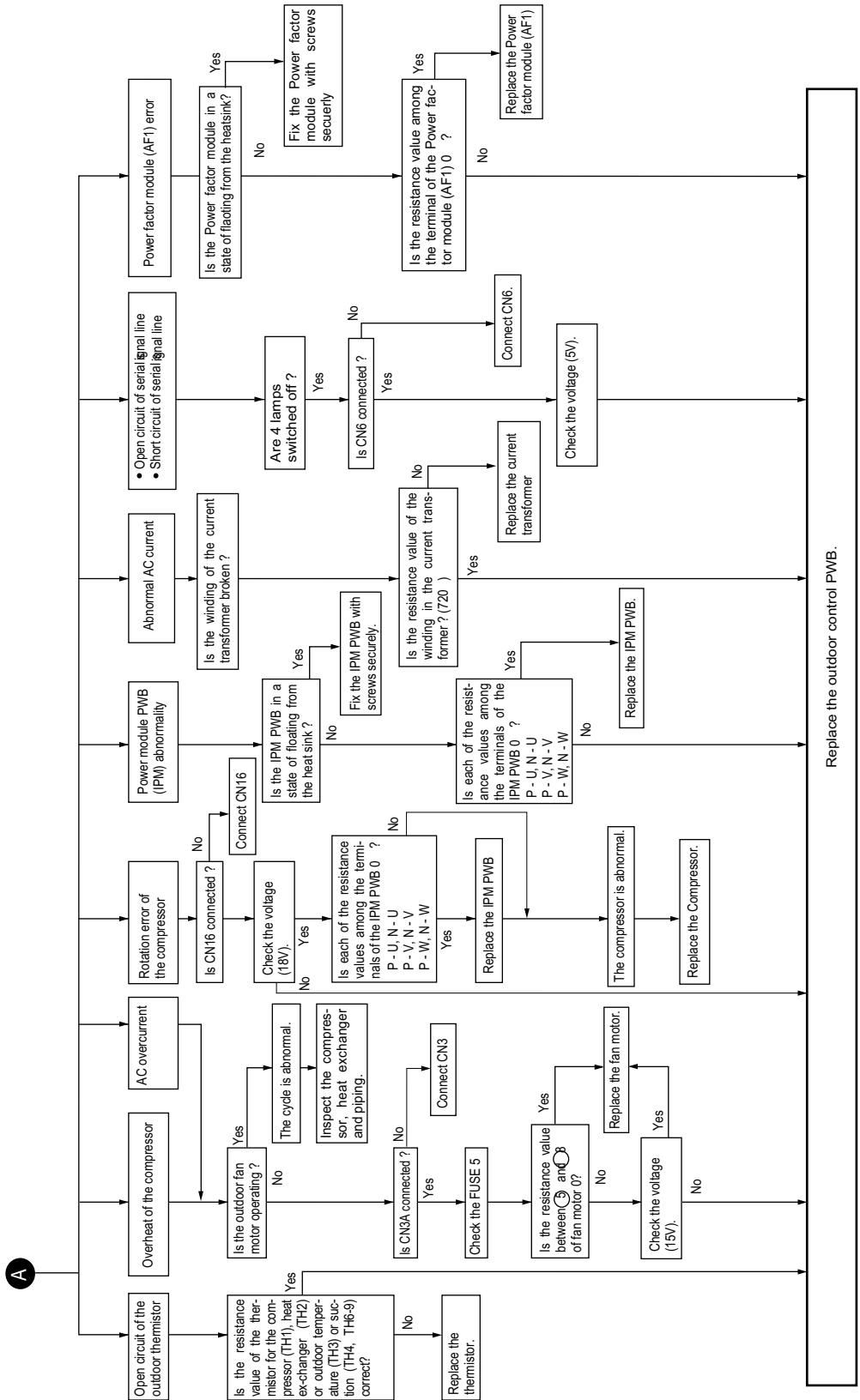
Figure 3 Temperature properties of heatsink thermistor



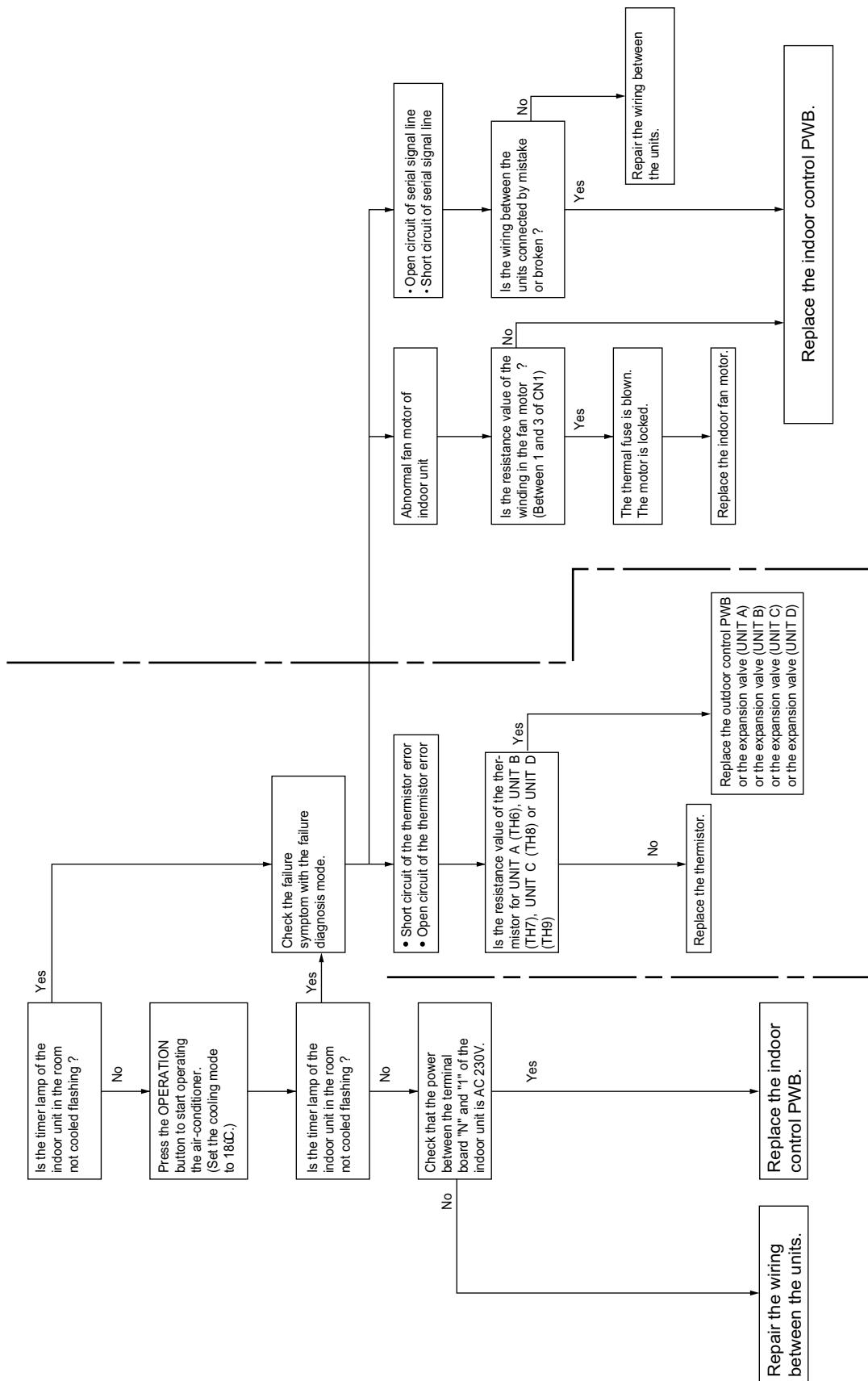
2. How to distinguish the defective parts

- When all rooms are not cooled

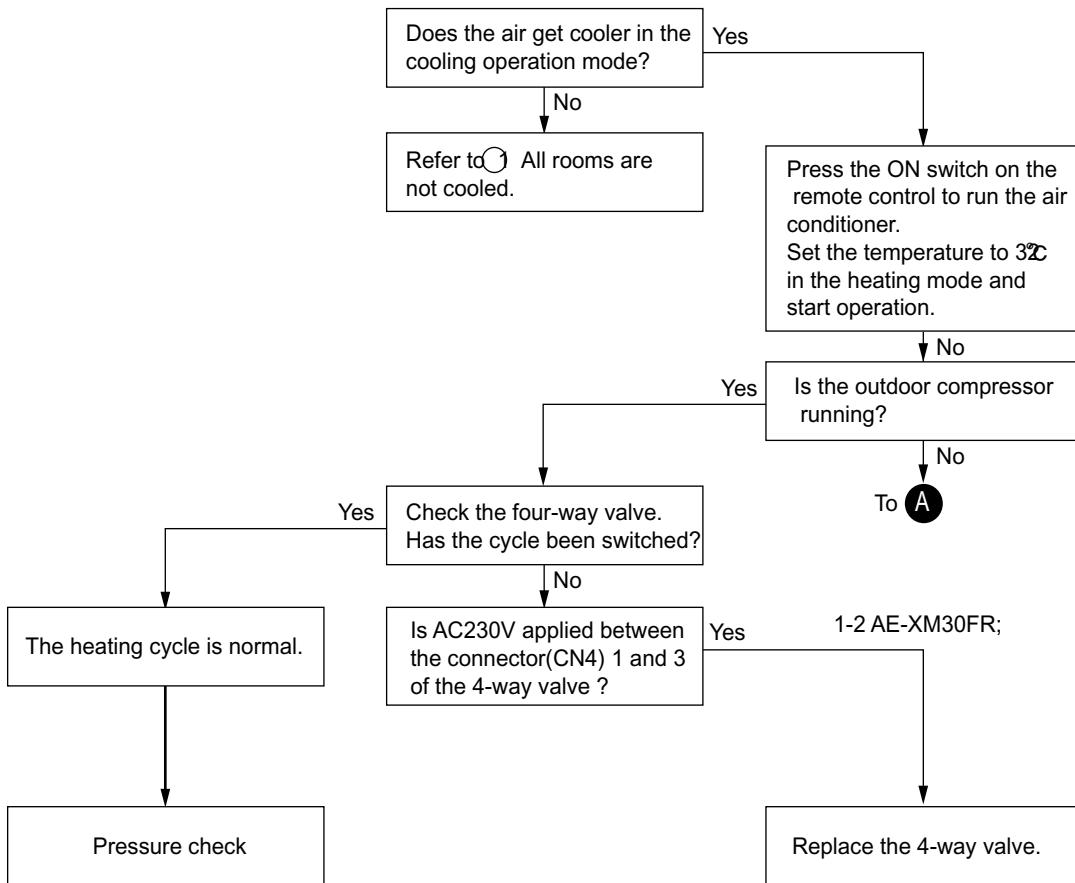




2. When one room is not cooled (other rooms are cooled)



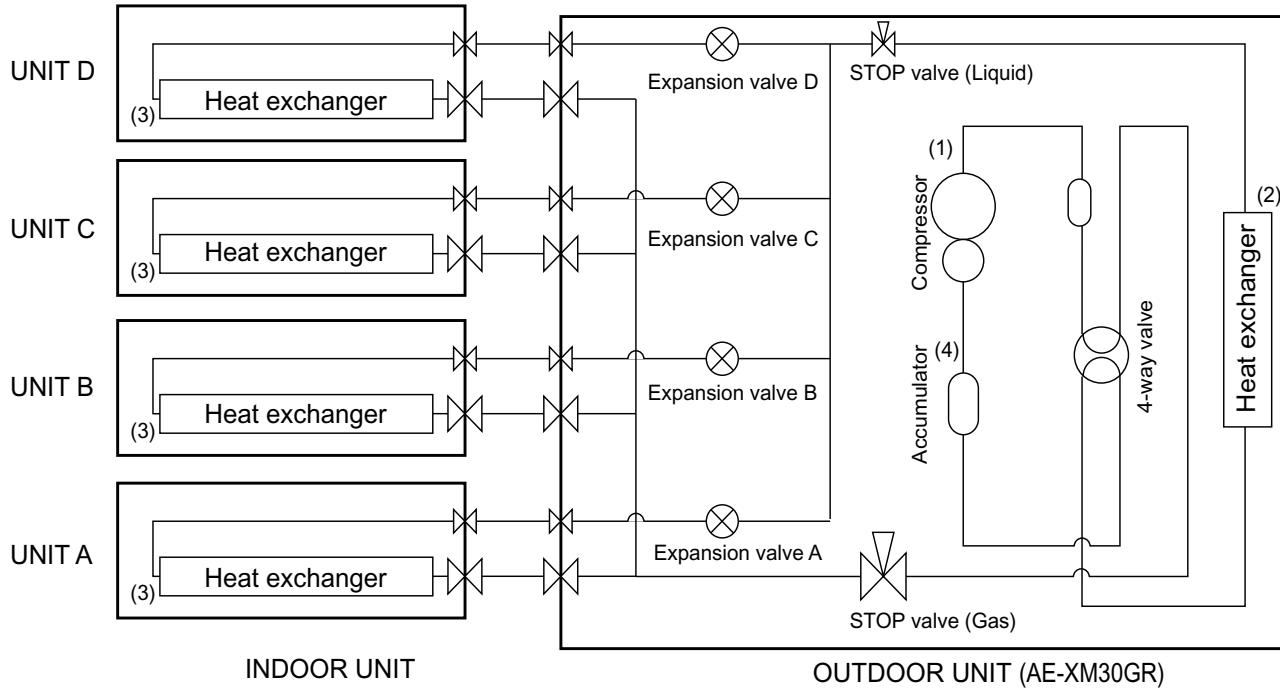
3. When all rooms are not heated



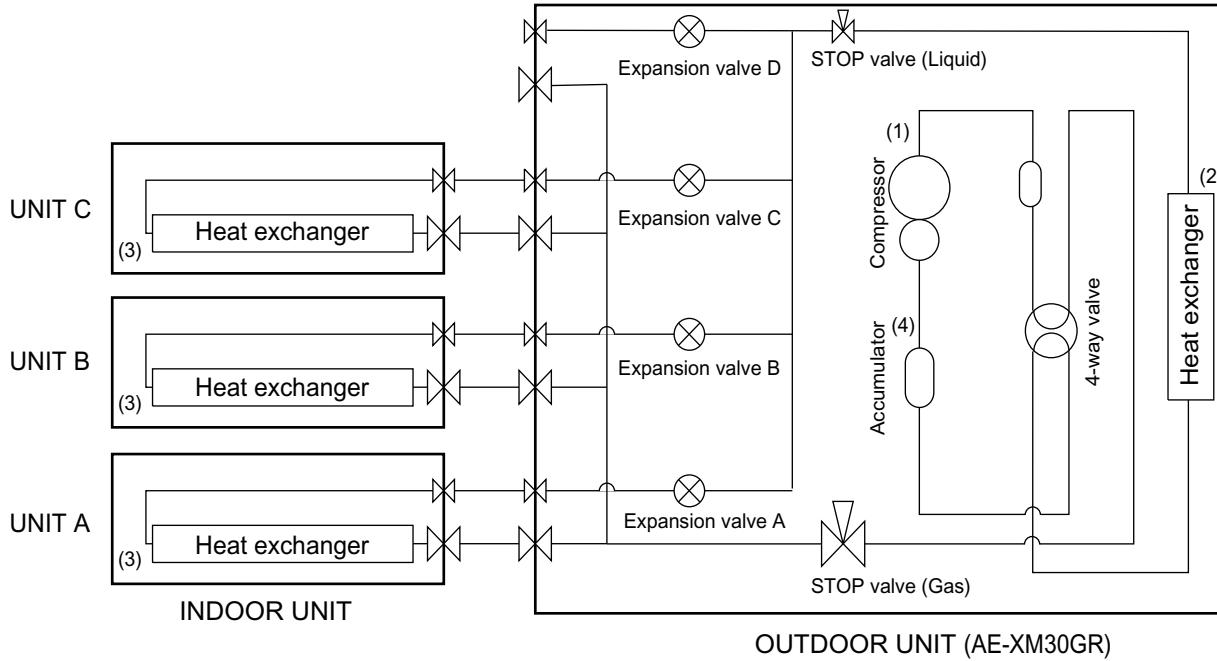
CHAPTER 4. REFRIGERATION CYCLE

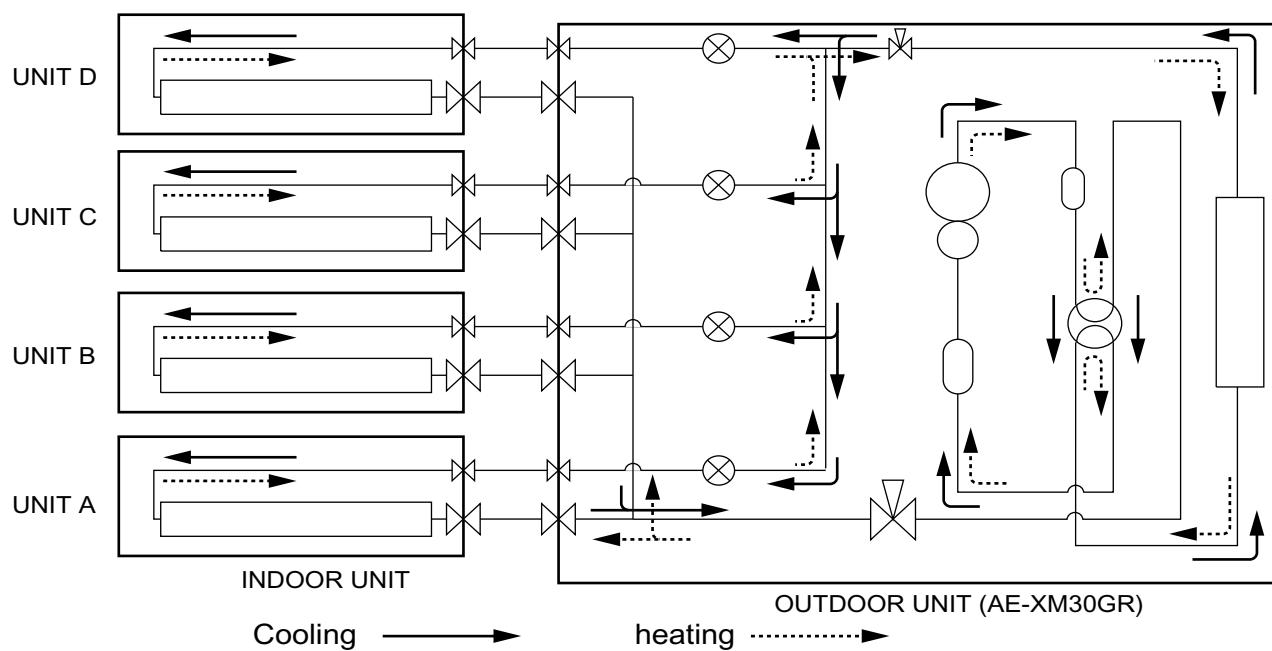
[1] REFRIGERATION CYCLE

1. [7 / 9 / 12] class indoor unit is connected UNITA



2. [18] class indoor unit is connected UNITA





3. Cycle temperature and pressure in stop valve (AE-XM30GR)

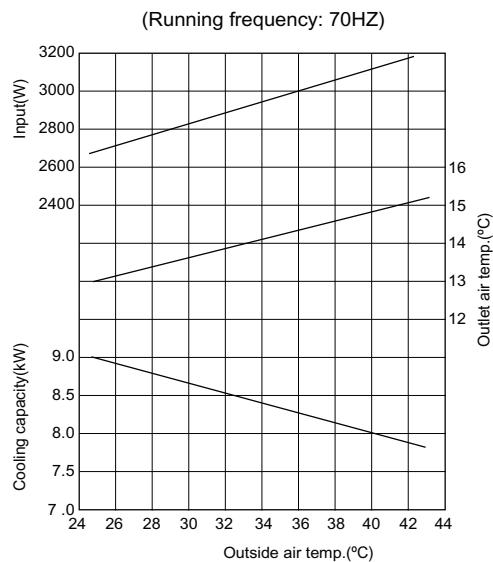
Running unit	no operation mode	Cool (MAX)	Cool (Test run)	Heat (MAX)	Heat (Test run)
AY-XPM9FR & AY-XPM7FR & AY-XPM7FR & AY-XPM7FR (4 units)	(1)	94	80	77	55
	(2)	40	36	15	6
	(3)	11	13	29	25
	(4)	13	16	-3	6
	stop valve (gas side)	0.92MPa(abs)	1.1MPa(abs)	2.53MPa(abs)	1.93MPa(abs)
	Frequency	80Hz	50Hz	90Hz	38Hz
	(1)	92	77	91	70
	(2)	37	36	19	8
GS-XPM18FGR	(3)	9	11	38	34
	(4)	10	16	3	6
	stop valve pressure	0.83MPa(abs)	1.03.MPa(abs)	3.58MPa(abs)	2.57MPa(abs)
	Frequency	62Hz	35Hz	72Hz	38Hz
	Frequency	62Hz	35Hz	72Hz	38Hz
	(1)	83	76	82	62
AY-XPM12FR (1 unit)	(2)	36	35	13	6
	(3)	10	13	43	7
	(4)	11	19	4	7
	stop valve pressure	0. 86MPa (abs)	1.07MPa (abs)	3.15MPa (abs)	2.37MPa (abs)
	Frequency	41Hz	23Hz	50Hz	25Hz
	Frequency	41Hz	23Hz	50Hz	25Hz
AY-XPM9FR (1 unit)	(1)	78	69	83	58
	(2)	36	35	12	6
	(3)	9	11	36	24
	(4)	13	19	5	7
	stop valve pressure	0.94MPa (abs)	1.11.MPa (abs)	3.20MPa (abs)	2.21MPa (abs)
	Frequency	31Hz	30Hz	45Hz	20Hz
AY-XPM7FR (1 unit)	(1)	74	69	75	59
	(2)	35	35	10	6
	(3)	9	11	32	24
	(4)	16	19	6	7
	stop valve pressure	0.99MPa (abs)	1.09.MPa (abs)	3.00MPa (abs)	2.24MPa (abs)
	Frequency	24Hz	17Hz	35Hz	20Hz

Standard conditions (AE-XM30GR)

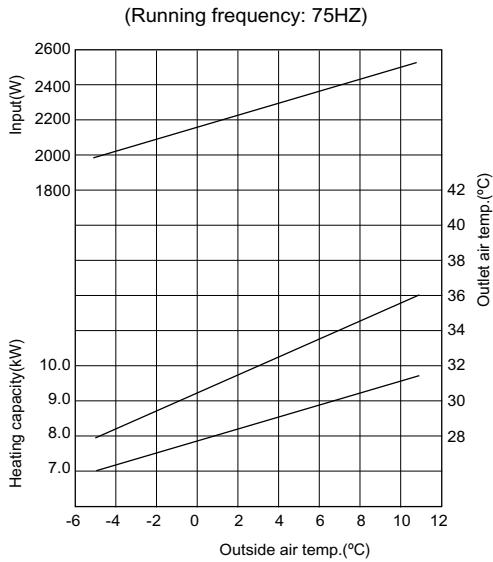
	indoor side		Outdoor side	
	Dry-bulb temp. (°C)	Relative humidity (%)	Dry-bulb temp. (°C)	Relative humidly (%)
Cooling	27	47	35	40
Heating	20	–	7	87

4. PERFORMANCE CURVES

NOTE: Total cooling capacity and total input with 4 units running.



At Cooling for AY-XPM9FR (for AE-XM30GR)



[2] REFRIGERANT PIPE INSTALLATION WORKS

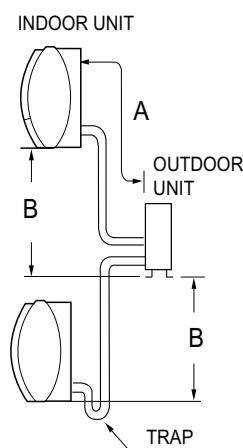
1. Piping

Max. piping length A ----- 20m

Max. total piping length of all unit --- 50m

Max. level difference B ----- 10m

When the outdoor unit is placed at a higher level than the indoor units, provide a trap near the hose's lead-in port.

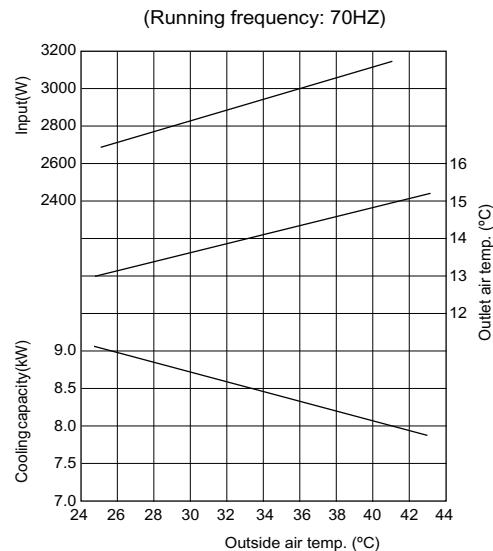


2. Air-removing

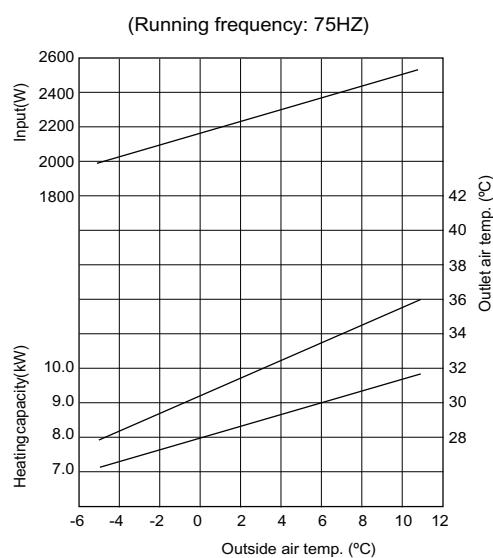
Use an adapter for preventing vacuum pump oil from flowing back to the gauge manifold hose. ON/OFF operation of the vacuum pump should be made by the adapter switch.

- 1) Remove both valve shaft caps of the stop valves.
- 2) Remove the service port cap of the stop valve (gas side).
- 3) Connect the gauge manifold hose to the service port and the vacuum pump. Be sure that the hose end to be connected to the service port has a valve core pusher.
- 4) Open the gauge manifold valve and operate the vacuum pump for 10-15 minutes. Make sure the compound gauge reads -0.1MPa (-76cmHg).
- 5) Close the gauge manifold valve.
- 6) Turn off the vacuum pump.
- 7) Fully open the stop valve (liquid side) with hexagon socket screw key. Turn all the way up to contact.

At Heating for AY-XPM9FR (for AE-XM30GR)



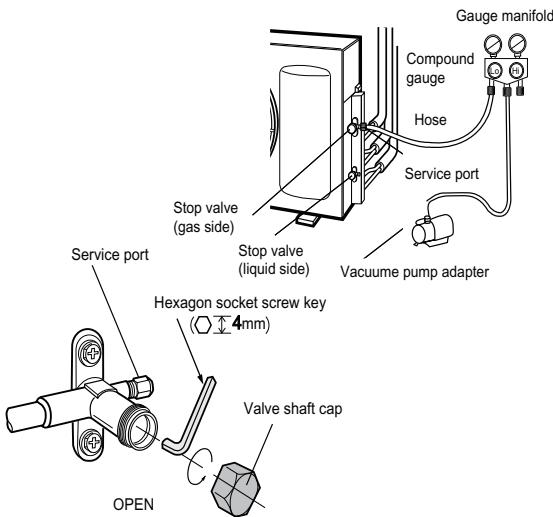
At Cooling for AY-XPM7FR (for AE-XM30GR)



At Heating for AY-XPM7FR (for AE-XM30GR)

AE-XM30GR

- 8) Fully open the stop valve (gas side) with hexagon socket screw key. Turn all the way up to contact.
 - 9) Disconnect the gauge manifold hose from the service port.
 - 10) Replace the service port cap and both valve shaft caps tightly. Turn until the torque suddenly increases. Now tighten a 1/6-turn more.
- NOTE: * Use a gauge manifold and hoses exclusive for R410A.
- * After air removal, check the tube connections for gas leak using a leakage detector or soapy water. Regarding leakage detector, use high-sensitivity type designed specially for R410A.

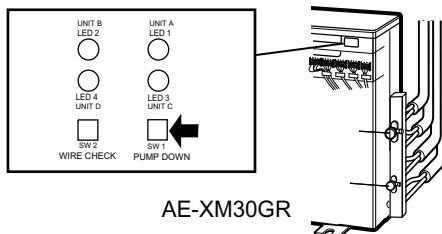


3. Pump down

(Pump down is adopted in the case of unit removal for reinstallation, abandonment, repair etc.) Pump down is to collect the refrigerant into the outdoor unit by control of the stop valves and the compressor.

- 1) Turn the circuit breaker on.
- 2) Check that all LED (LED1, 2, 3, 4) on the display board unit are flashing synchronously in a slow (one flash per second) cycle.
- 3) Stop the air conditioner operation.
- 4) Remove both valve shaft caps of the stop valves.
- 5) Press the PUMP DOWN SWITCH (SW1) on the display board unit for 5 seconds or more. The indoor/outdoor unit will start operation in the pump down mode. (the OPERATION lamp on the indoor unit will flash and three BEEP will be emitted.)
- 6) After 5 – 10 minutes, fully close the stop valve (liquid side) by turning the hexagon socket screw key clockwise.
- 7) After 2 – 3 minutes, immediately close the stop valve (gas side) fully.
- 8) Press the PUMP DOWN SWITCH (SW1) on the display board unit for 5 seconds or more. The operation of indoor/outdoor unit will stop.
- 9) Replace the service port cap and both valve shaft caps tightly.

NOTE: Wait more than 90 seconds after finishing pump down, and turn off the circuit breaker off.



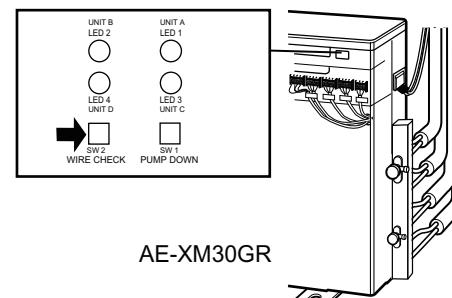
4. MISWIRING CHECK

Miswiring check must be performed after installation, reinstallation and service. This multi-type air conditioner is designed with a WIRE CHECK SWITCH on the outdoor unit, and miswiring of unit-to-unit wiring will be self-corrected by microcomputer. Miswiring check may not be performed when the outdoor temperature is below 5.

- 1) Complete the unit-to-unit wiring/piping and perform the air removing of the pipes. Turn the electrical circuit breaker ON. Before turning the circuit breaker ON, make sure no one is working on the indoor units installation. Electrical shock or injury may occur.
- 2) Check that all LED (LED1, 2, 3, 4) on the display board unit are flashing synchronously in a slow (one flash per second) cycle. If either one or more of all LED is/are kept lighted on, check and correct the wrong wirings among, N, 1, 2, terminals so that all LED will flash slowly, showing normal condition.
- 3) Press the WIRE CHECK SWITCH (SW2) on the display board unit for 5 seconds or more. The flashing of all LED will change. Miswiring (mis-piping) check will start and the indoor and outdoor units will start operating. (The red operation lamp on the indoor unit will flash, and three BEEP will be emitted.) Miswiring of unit-to-unit wiring will be self-corrected.
- 4) Wrong piping works cannot be corrected, and will be detected as an error. When an error is detected during checking, all LED will show triple flash for eight times. The indoor and outdoor operation will stop. Turn the circuit breaker OFF and check and correct the miswiring (mispiping)*. After correction, return to step 1 and repeat the miswiring (mispiping) check again. If error is still detected, or other types of LED signal should be indicated, please contact a service technician. (Refer to wiring diagram attached inside the outdoor unit cabinet for self diagnosis signal.)
- 5) All LED (LED1, 2, 3, 4) will flash synchronously in a slow (one flash per second) cycle when miswiring (mispiping) check is completed with no error detection (3–6 minutes), and the operation of indoor and outdoor units will stop. (The red operation lamp flashing on the indoor unit will go off.)
- 6) Place the control box cover back in the reverse order.

*Correction points on error detection

- a) Are all piping the total multi air conditioner system connected?
- b) Are the stop valves open?



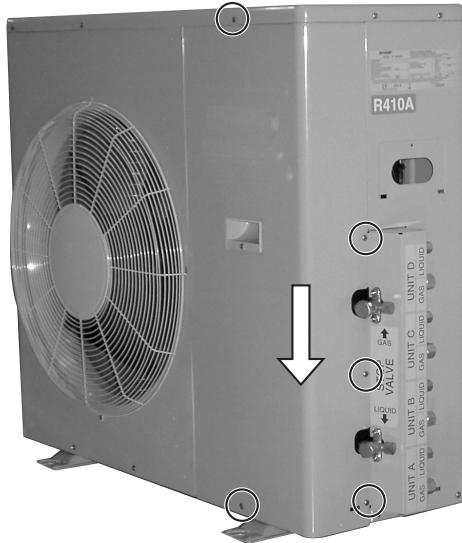
AE-XM30GR

CHAPTER 5. DISASSEMBLING PROCEDURE

[1] OUTDOOR UNIT

1. PROCEDURE

1. Remove the 5 screws fixing the front panel R and slide the front panel R down.



2. Remove the 10 screws fixing the top cover.



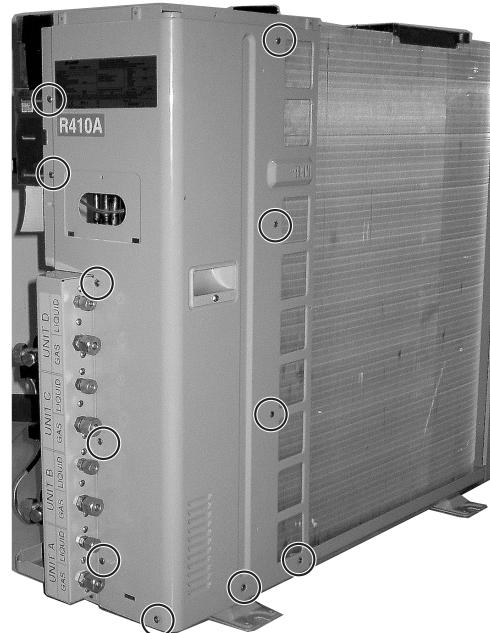
3. Remove the 6 screws fixing the front panel L.



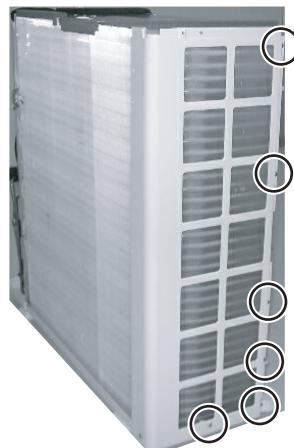
4. Remove the 6 screws fixing the rear guard.



5. Remove the 11 screws fixing the side cover R.



6. Remove the 6 screws fixing the side cabinet L.

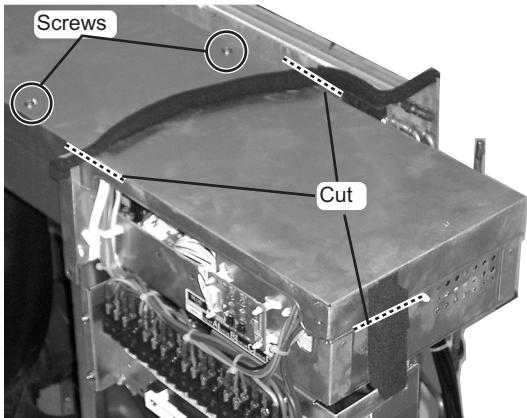


AE-XM30GR

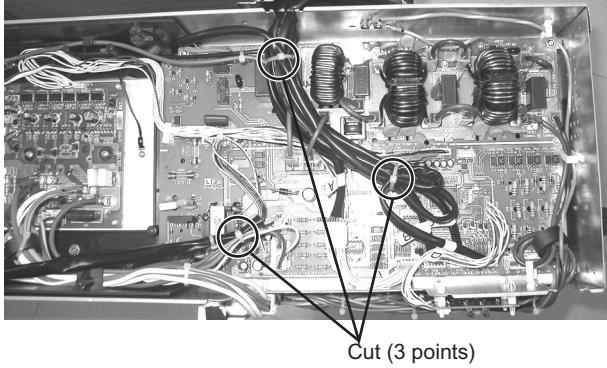
7. Cut the insulators.

8. Remove the 2 screws fixing the control box cover.

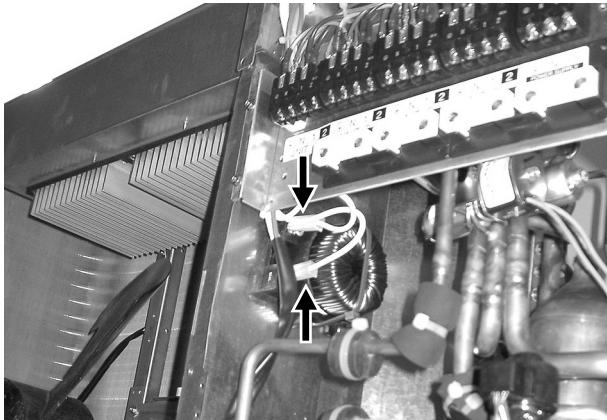
CAUTION: Discharge electrolytic capacitor before touching this capacitor or other components or wirings.



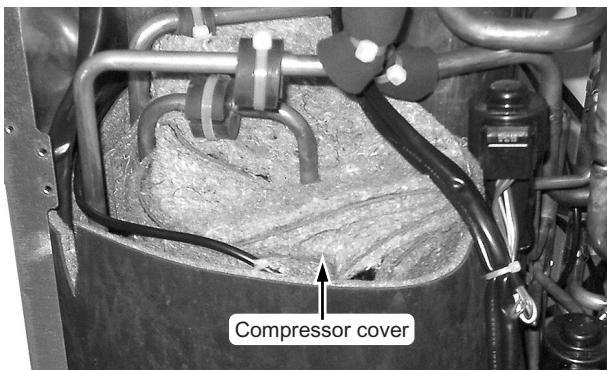
9. Cut the wire fixing bands (3 points). Disconnect the 7 connectors. Fan motor / Reverse valve Thermistor/ Expansion valve



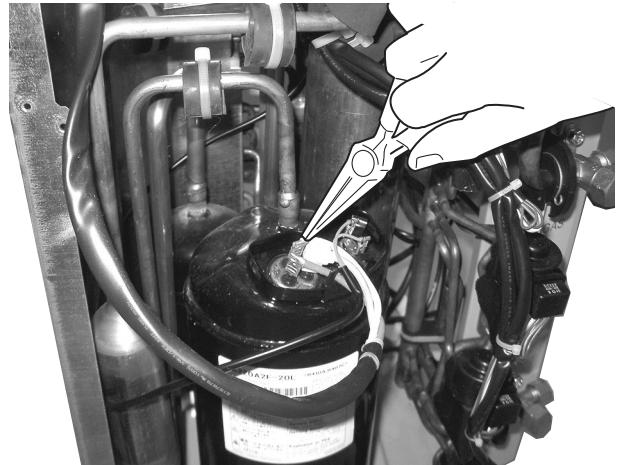
10. Disconnect the 2 terminals.



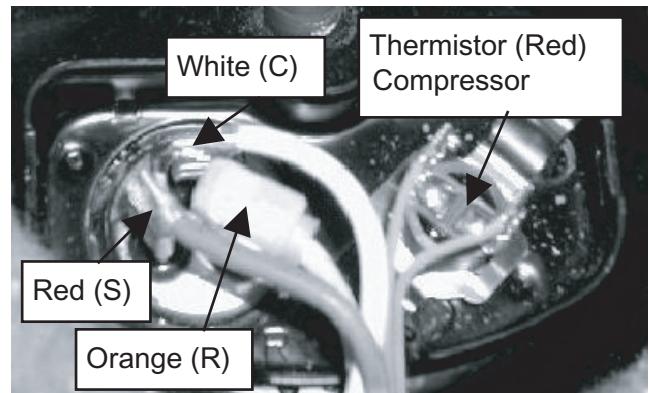
11. Remove the compressor cover.



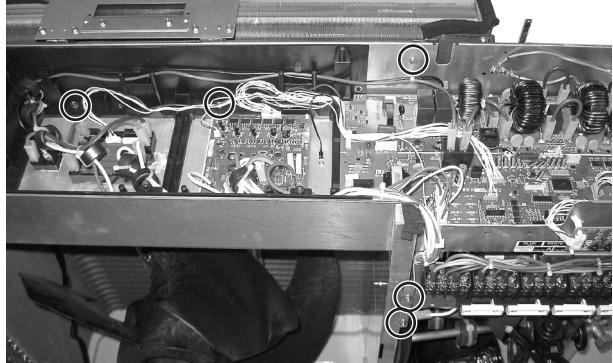
12. Remove the terminal cover and disconnect 3 terminals.



NOTE: Caution to the connectors' position when reinstalling.



13. Remove the 5 screws fixing the control box assembly.



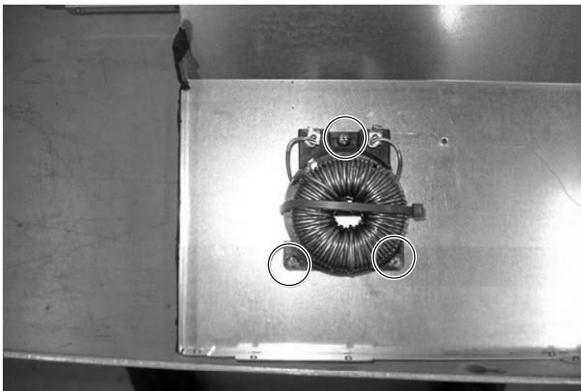
14. Cut the 2 insulator.



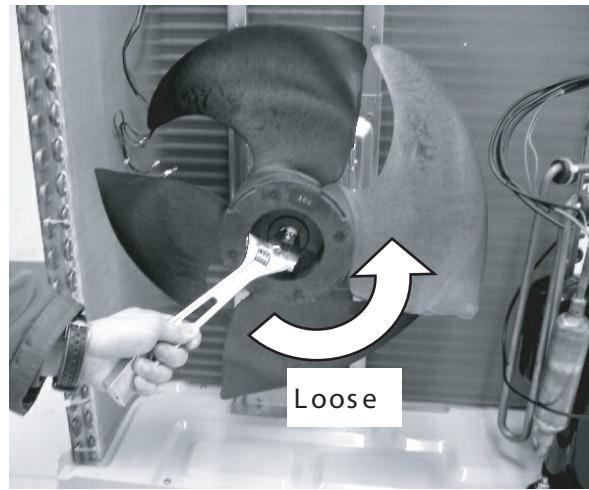
15..Remove the 3 screws fixing the bulkhead.



16.Remove the 3 screws fixing the active coil.



17.Remove the 1 nut fixing the propeller fan.



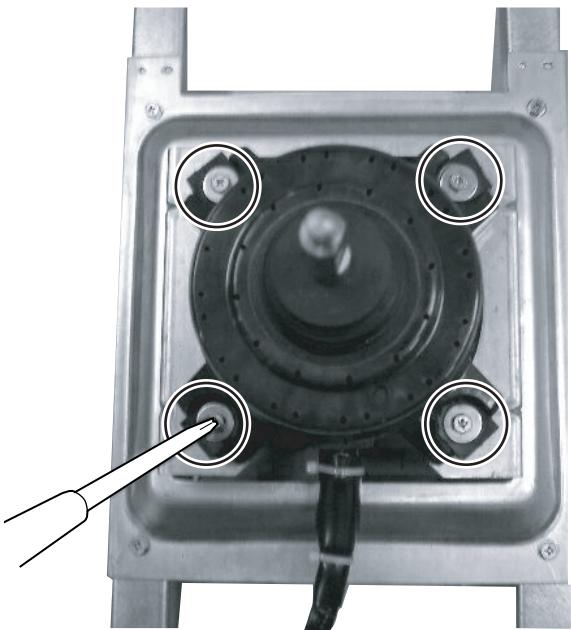
18.remove the 2 screws fixing the motor angle.



19.Cut the fixing bands.

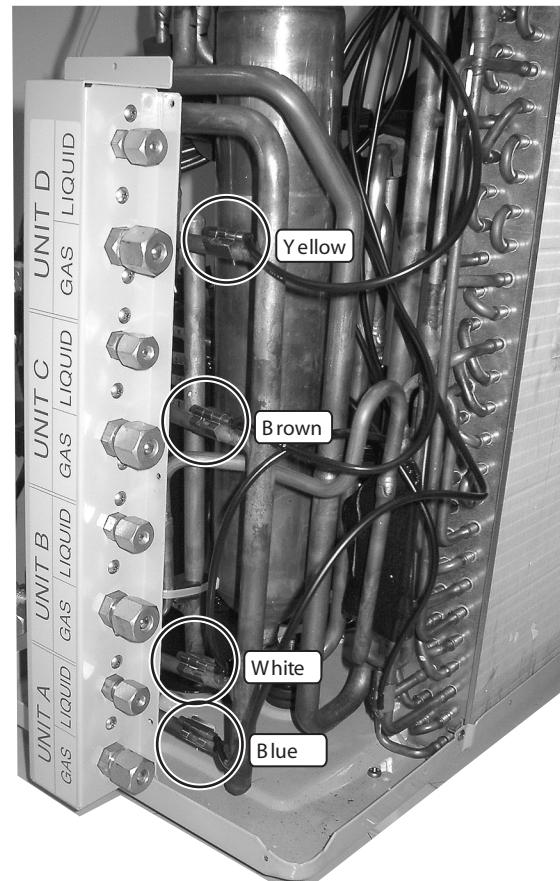
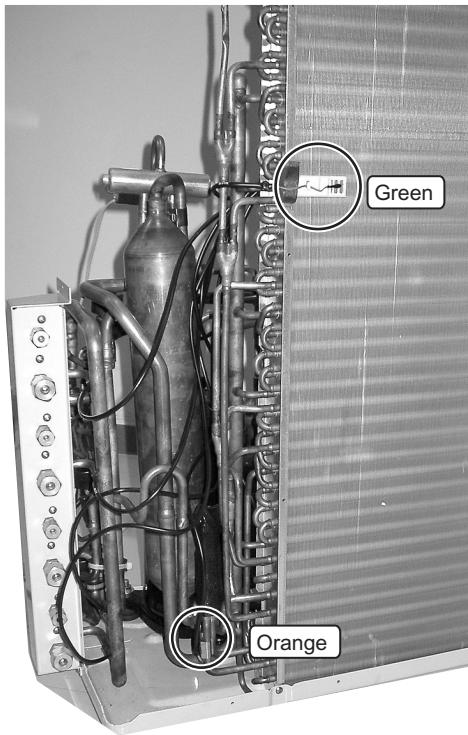


20. Remove the 4 screws fixing the fan motor.



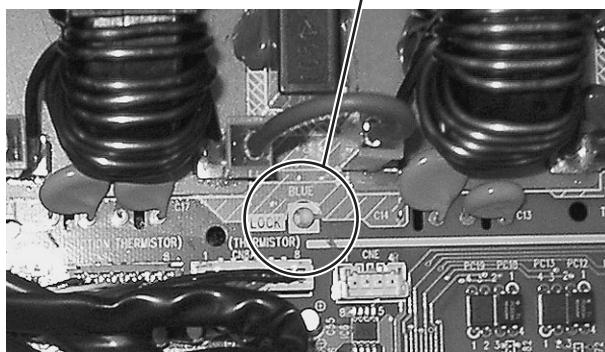
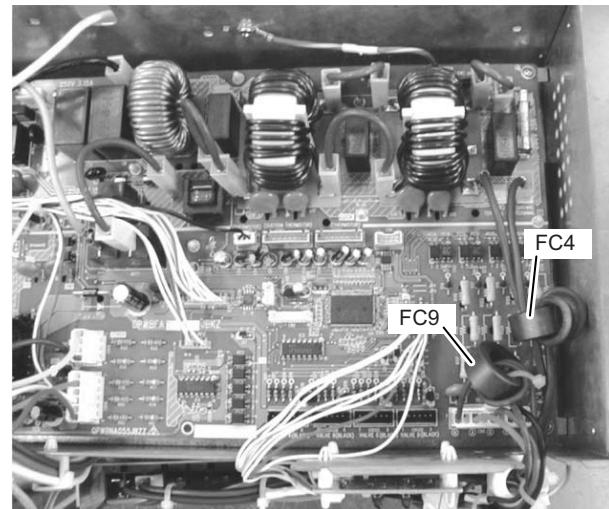
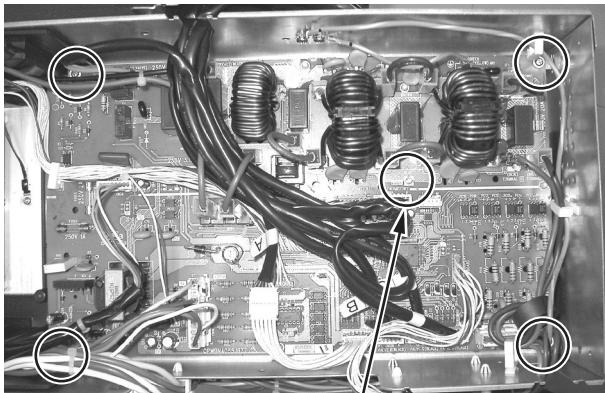
2. Position of the thermistors

NOTE: Caution to the position when reinstalling.

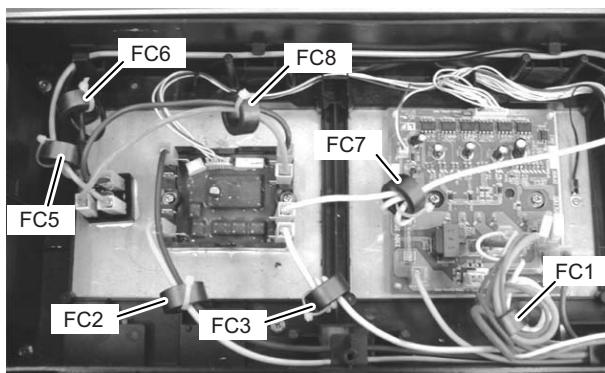
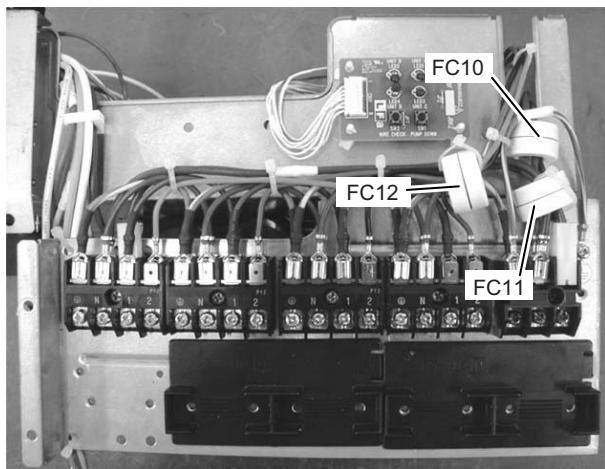


3. How to disassemble the control box assembly

1. Remove the 4 screws fixing the PWB.
2. Unlock the spacer's lock.



The position of setting Ferrite core (FC1 – FC12)



4. Mounting position of thermistors and expansion valves

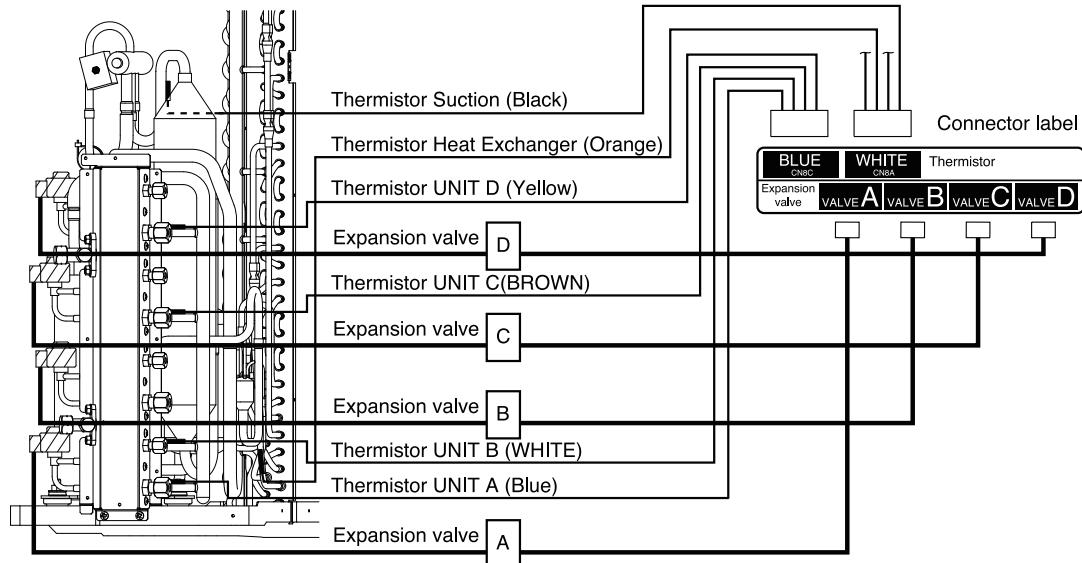
Mounting position of thermistors and expansion valves are shown below.

Thermistor

- Check the cord color of thermistor before mounting.
- Thermistor Suction, UNIT A, UNIT B, UNIT C and UNIT D are mounted on GAS side pipes.
- Thermistor Heat exchanger is mounted on LIQUID side pipe.

Expansion valve

- Check the labels before connecting to the Control Board Unit.



CAUTION: Mismounting and misconnecting will cause error or failure.

SHARP PARTS GUIDE

MULTI SPLIT TYPE
ROOM AIR CONDITIONERS

OUTDOOR UNIT
MODEL AE-XM30GR

CONTENTS

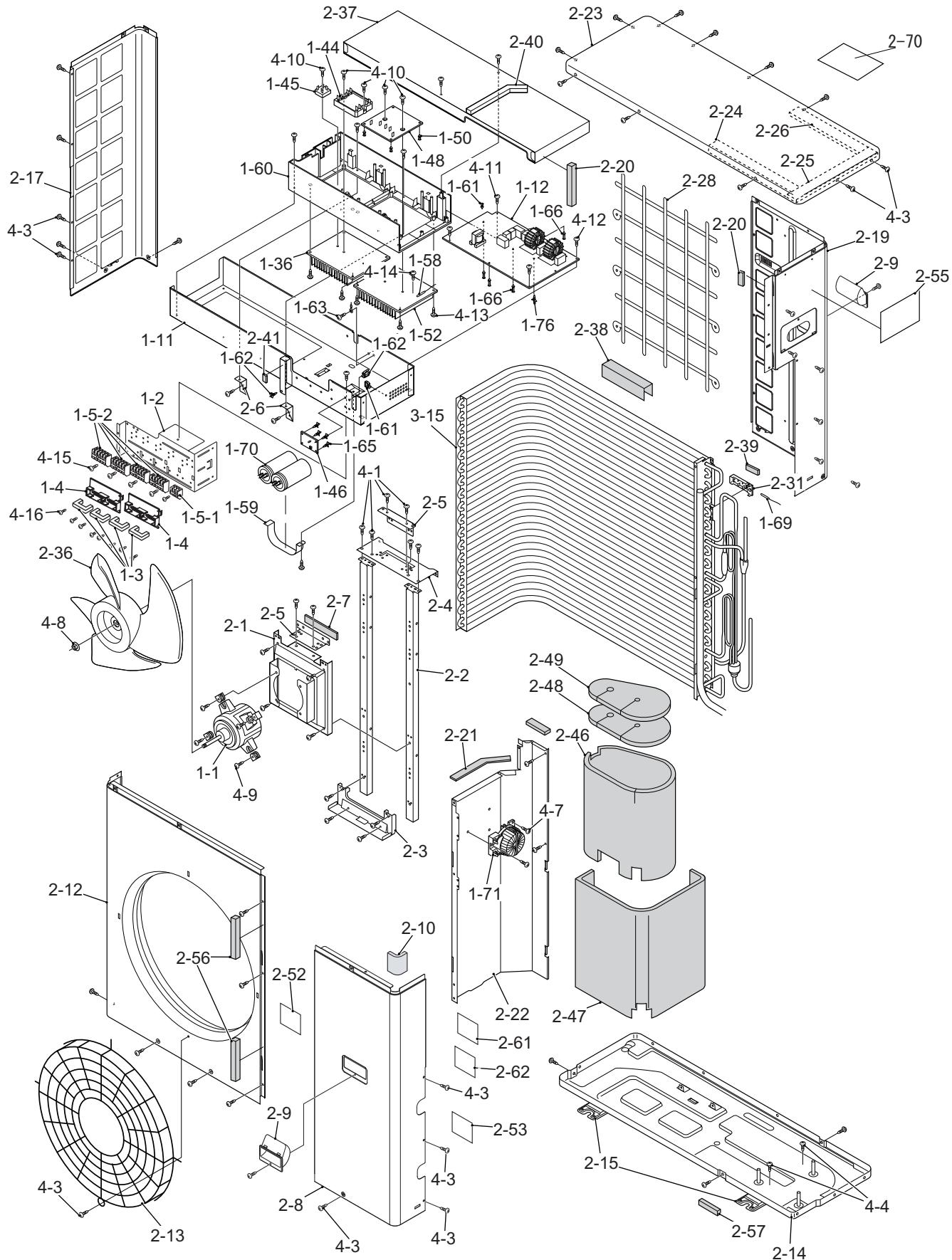
- [1] OUTDOOR UNIT PARTS 1
- [2] OUTDOOR UNIT PARTS 2
- [3] OTHER OUTDOOR UNIT
- [4] PACKING PARTS
- INDEX

HOW TO ORDER REPLACEMENT PARTS

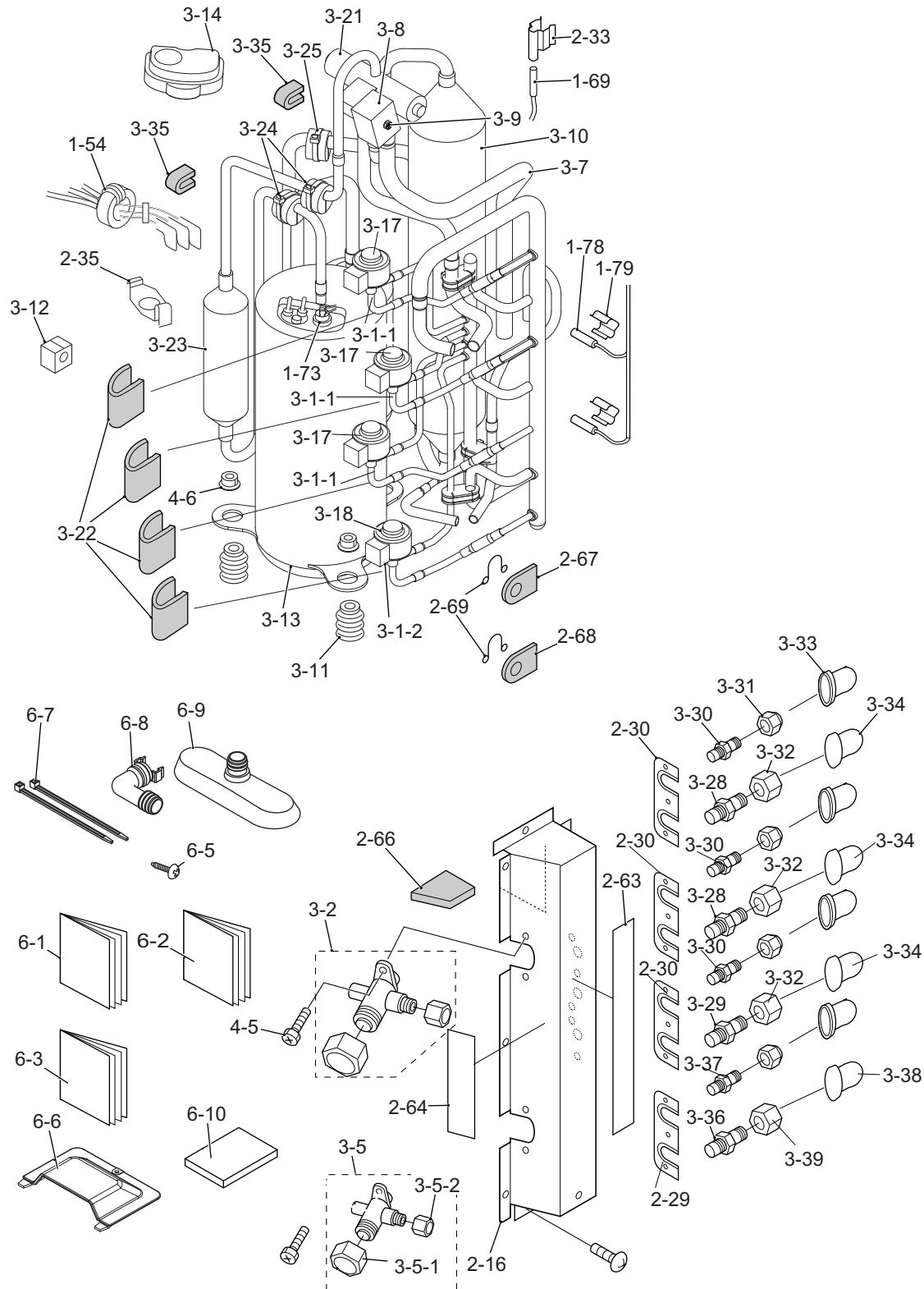
To have your order filled promptly and correctly, please furnish the following information.

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

[1] OUTDOOR UNIT PARTS 1



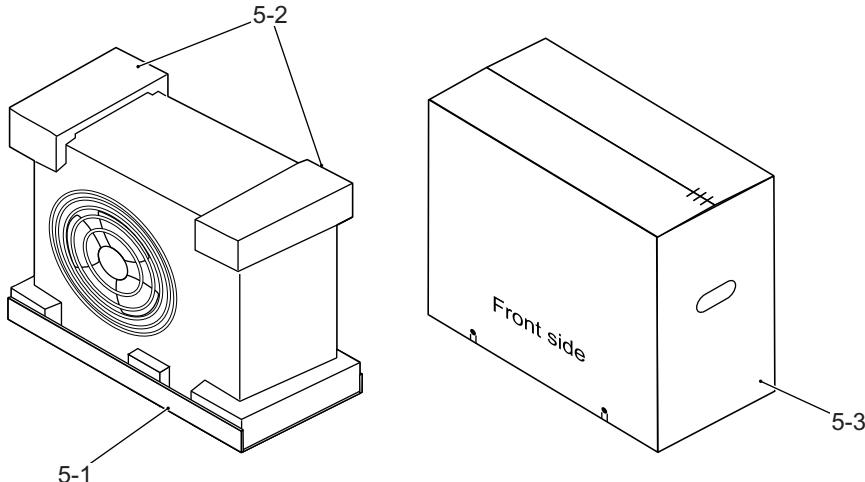
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[1] OUTDOOR UNIT PARTS 1					
1-1	CMOTLB051JBEZ	BX			Fan motor
1-2	LANG-A540JBWZ	AU			Terminal board angle
1-3	LHLD-A539JBFA	AE			Cord holder
1-4	LHLD-A544JBFA	AG			Cord clamp holder
1-5-1	QTANZA020JBZZ	AQ			Terminal board
1-5-2	QTANZA021JBZZ	AN			Terminal board
1-11	DBOX-A044JBWZ	AT			Control box ass'y
1-12	DPWBFA513JBKZ	BT			Control board unit
1-36	PRDAFA172JBEZ	BA			Haet sink
1-44	RH-TXA006JBZZ	BS			Active filter(SACT32430D)
1-45	VHDD25VB60+-1	AN			Diode
1-46	DPWBFA436JBKZ	AU			Display board unit
1-48	DPWBFA437JBKZ	BY			Power transistor
1-50	RH-iZA105JBE0	AQ			Photo coupler (PC101-106)
1-52	PRDAFA173JBEZ	BA			Heat sink
1-58	RHOG-A169JBE0	AK			Thermistor(HEATSINK)
1-59	LBNDKA113JBWZ	AS			Capacitor clamp
1-60	LHLD-A656JBZF	AQ			Heat sink holder
1-61	LHLDWA039JBEZ	AC			Wire holder
1-62	LHLDWA040JBEZ	AC			Wire holder
1-63	LX-BZA075JBE0	AA			Special screw
1-65	PSPA-A146JBE0	AC			Spacer
1-66	PSPA-A173JBE0	AE			PWB spacer
1-69	RH-HXA032JBZ	AX			Thermistor
1-70	RC-AZA046JBE0	BE			Electrolytic capacitor
1-71	RTRN-A297JBZZ	BK			Active coil
1-76	PSPA-A082JBE0	AB			Pwb spacer
2-1	LANGKA164JBPZ	AQ			Motor base
2-2	LANGKA165JBPZ	AN			Motor angle
2-3	LANGKA166JBPZ	AQ			Motor angle B
2-4	LANGKA163JBPZ	AX			Motor angle T
2-5	LSUB-A029JBPZ	AE			Motor angle sub A
2-6	LSUB-A030JBPZ	AE			Motor angle sub B
2-7	PSEL-C642JBZ	AA			M.ang sub a seal
2-8	GCAB-A303JBTA	BE			Front panel R
2-9	JHNDPA016JBFA	AE			Handle
2-10	PSEL-C637JBZ	AD			Front panel seal A
2-12	GCAB-A247JBTB	BE			Front panel L
2-13	GGADFA028JBTA	AZ			Fan guard
2-14	CCHS-A856JBKZ	BK			Base pan sub ass'y
2-15	GLEGMA043JBTB	AX			Base stand
2-17	GPLTMA062JBTB	AX			Side cabinet L
2-19	GPLTMA066JBTB	BC			Side cabinet R
2-20	PSEL-C641JBZ	AD			Side cover R seal
2-21	PSEL-C597JBZ	AC			Bulkead insulator
2-22	PSKR-A329JBWZ	BC			Bulkead
2-23	GCAB-A248JBTB	BB			Top cover
2-24	PSEL-C598JBZ	AK			Top cover seal A
2-25	PSEL-C640JBZ	AG			Top cover seal B
2-26	PSEL-C702JBZ	AE			Top cover seal C
2-28	GGADRA001JBTA	AV			Rear guard
2-31	LHLD-A574JBFA	AE			Thermistor holder
2-36	NFANPA108JBFA	BA			Protector fan
2-37	PCOV-A940JBWZ	AP			Control box cover
2-38	PSEL-C281JBZ	AC			Cushion
2-39	PSEL-C373JBZ	AC			Seal
2-40	PSEL-C634JBZ	AE			Panel seal A
2-41	PSEL-C635JBZ	AD			Panel seal B
2-46	PSPF-A897JBZ	AT			Compressor cover A
2-47	PSPF-A898JBZ	AR			Compressor cover B
2-48	PSPF-A899JBZ	AF			Compressor cover C
2-49	PSPF-A900JBZ	AG			Compressor cover D
2-52	TLABBA146JBRA	AN			Badge
2-53	TLABCC298JBRZ	AH			Wiring diagram
2-55	TSPC-F617JBRZ	AN			Name label
2-56	PSEL-C760JBZ	AB			Fr.panel I seal A
2-57	PSEL-C761JBZ	AB			Base pan seal A
2-61	TLAB-C771JBRZ	AR			Service label
2-62	TLAB-C773JBRZ	AN			Label
2-70	TLAB-D081JBZ	AH			Ee energy label
3-15	PCON-A553JBZ	CC			Condenser
4-1	LX-BZA354JBEZ	AC			Special screw
4-3	LX-BZA364JBEZ	AC			Special screw
4-4	LX-BZA380JBEZ	AK			Special screw
4-7	LX-BZA367JBZ	AC			Special screw
4-8	LX-NZA319JBEZ	AE			Special nut
4-9	LX-BZA363JBZ	AE			Special screw
4-10	XBPS740P20J00	AF			Machine screw
4-11	XTPS730P12XS0	AF			Tapping screw
4-12	XCPS730P12XS0	AF			Tapping screw
4-13	XTTUW40P16000	AB			Tapping screw
4-14	XBPS730P10000	AF			Machine screw
4-15	XCPS740P16000	AC			Tapping screw
4-16	XCTS740P30000	AF			Tapping screw

[2] OUTDOOR UNIT PARTS 2

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[2] OUTDOOR UNIT PARTS 2					
1-54	QW-iZA100JBZZ	AZ			Compressor cord
1-69	RH-HXA032JBZZ	AX			Thermistor
1-73	RTHM-A022JBE0	AN			Thermistor
1-78	RH-HXA054JBZZ	AX			Thermistor
1-79	MSPR-A027JBE0	AB			Thermistor spring
2-16	PDA-iA114JBTB	BB			Flare coupling base
2-29	LSUB-A021JBWZ	AE			Flare cou. Sub-s
2-30	LSUB-A020JBWZ	AE			Flare cou. Sub-s
2-33	MSPR-A026JBE0	AB			Spring
2-35	MSPR-A046JBE0	AC			Protector spring
2-63	T LAB-C770JBRA	AR			Unit label
2-64	T LAB-B709JBRA	AH			Label
2-66	PSEL-C006JBEZ	AC			Insulator
2-67	PGUM-A119JBEZ	AG			Valve rubber
2-68	PGUM-A120JBEZ	AG			Valve rubber
2-69	MSPR-A129JBE0	AD			Cycle spring
3-1-1	PVLVRA040JBEZ	BM			Expansion valve
3-1-2	PVLVRA045JBEZ	BD			Expansion valve
3-2	DVLV-A668JBKZ	AZ			3Way valve unit
3-5	DVLV-A669JBKZ	AN			3Way valve unit
3-5-2	LX-NZA228JBEZ	AD			Service nut
3-5-1	LX-NZA227JBEZ	AF			Bonnet
3-7	DVLV-A702JBKZ	BF			Reverse valve ass'Y
3-8	CC1L-A112JBEZ	AX			Coil
3-9	LX-BZA268JBEZ	AB			Special screw
3-10	PACU-A043JBEZ	BW			Accumulator
3-11	GLEG-A116JBEZ	AK			Compressor cushion
3-12	LBSHCA004JBE0	AD			Terminal seal
3-13	PCMPRA407JBEZ	CT			Compressor
3-14	PCOV-A014JBE0	AG			Terminal cover
3-17	RMOTSA024JBZZ	BC			Coil
3-18	RMOTSA030JBZZ	BC			Coil
3-21	PVLVXA061JBEZ	BD			Reverse valve
3-22	PGUMSA319JBEZ	AF			Damper rubber
3-23	PMUF-A081JBEZ	AY			Muffer
3-24	PGUM-0035JBE0	AG			Dumper rubber (3/8)inch
3-25	PGUM-0036JBE0	AG			Dumper rubber (1/2)inch
3-28	DVLV-A703JBKZ	AZ			Flare union unit 3s
3-29	DVLV-A704JBKZ	AZ			Flare union unit 3s
3-30	DVLV-A705JBKZ	AZ			Flare union unit 2s
3-31	LX-NZA250JBEZ	AE			Flare nut
3-32	LX-NZA251JBEZ	AG			Flare nut
3-33	PCAP-A083JBEZ	AC			Nut bonnet
3-34	PCAP-A084JBEZ	AC			Nut bonnet
3-35	PTUB-A196JBEZ	AK			Pipe insulator
3-36	DVLV-A794JBKZ	BM			Flare union unit 4s
3-37	DVLV-A796JBKZ	BM			Flare union unit 2s
3-38	PCAP-A103JBEZ	AF			Nut bonnet
3-39	LX-NZA280JBEZ	AG			Flare nut(4)
4-5	LX-BZA355JBEZ	AE			Special screw
4-6	LX-NZA313JBEZ	AE			Special nut
6-1	TINS-B048JBRZ	AH			Insulator manual
6-2	TINS-B049JBRZ	AH			Insulator manual
6-3	TINS-B050JBRZ	AH			Insulator manual
6-5	LX-BZA354JBEZ	AC			Hex screw 10
6-6	GFTASA002JBFA	AM			Cable cover
6-7	LBND-A046JBE0	AE			Wire fixing band
6-8	LPFT-A134JBFZ	AF			Drain joint
6-9	LPFT-A135JBFZ	AH			Drain tray
6-10	PTUB-A218JBZ	AB			Tube insulator
[3] OTHER OUTDOOR UNIT					
1-6	QW-VZE592JBZZ	AP			Lead wire (TBN-T2)
1-7	QW-VZE593JBZZ	AP			Lead wire (TBL-T1)
1-8	QW-VZF079JBZZ	AU			Lead wire (TB-CN6)
1-9	QW-VZF212JBZZ	AK			Lead wire (TBE-BOX)
1-10-1	RFIL-A064JBE0	AF			Ferrite core (FC1-9)
1-10-2	RNF--A001VBE0	AF			Ferrite core (FC10-12)
1-13	RH-VXA002JBZZ	AF			Varistor
1-14	QFS-GA065JBZZ	BA			Fuse 20A AC250V(FUSE1/2)
1-15	QFS-GA062JBZZ	AF			Fuse 3.15A C250V(FUSE3-4)
1-16	QFS-GA063JBZZ	AE			Fuse 2A C250V(FUSE5)
1-17	QFS-GA064JBZZ	AF			Fuse 1A C250V(FUSE6)
1-18	QSPGCA003JBZZ	AH			Surge absorbt(SA1)
1-19	QTAN-0129JBE0	AB			Fuse CLIP(Fuse1-2)
1-20	QW-VZF080JBZZ	AU			Lead wire (IPM 10A LEAD)
1-21	QW-VZE581JBZZ	AP			Lead wire (IPM 2P LEAD)
1-22	QW-VZF081JBZZ	AU			Lead wire (DISPLAY LEAD)
1-23	QW-VZE585JBZZ	AP			Lead wire (AF LEAD)
1-25	QW-VZE624JBZZ	AP			Lead wire (BLUE)
1-26	QW-VZE625JBZZ	AP			Lead wire (BROWN)
1-27	RH-iXA882JBZZ	BK			Micro computer(IC1)
1-28	RH-QXA005JBZZ	AW			Ptc thermistor (PTC1)
1-29	RRLYDA008JBZZ	AH			Relay(RY3)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[3] OTHER OUTDOOR UNIT					
1-30	RRLYDA012JBZZ	AR			Relay(MRY1)
1-31	VHGPC817X3+1BS	AD			Photo coupler(PC2-11,13,15,17,19)
1-32	VHGPC81716N1BS	AQ			Photo coupler(PC1)
1-33	VHKA7815AP-1	AE			15V regurater(IC10)
1-34	VHGPC853X++-1S	AN			Photo coupler(PC12,14,16,18)
1-37	QW-VZE596JBZZ	AP			Lead wire(AF1(L)-COIL)
1-38	QW-VZE597JBZZ	AP			Lead wire(AF1(Io)-C9(-))
1-39	QW-VZE598JBZZ	AP			Lead wire(AF1(P)-C9(+))
1-40	QW-VZE599JBZZ	AP			Lead wire(DB1(-)-AF(-))
1-41	QW-VZE600JBZZ	AP			Lead wire(DB1(+)-AF(+))
1-42	QW-VZE601JBZZ	AP			Lead wire(MRY(OUT)-DB1(AC1))
1-43	QW-VZE602JBZZ	AP			Lead wire(MRY(T6-DB1(AC2))
1-47	QSW-PA016DREO	AB			Tact switch(sw1)
1-49	PH-iXAT82JBZZ	BV			Power module (PS21869)
1-51	VHGPC81716N1BS	AQ			Photo coupler (PC107)
1-53	PSPA-A150JBZZ	AF			Pwb spacer
1-55	QW-VZE605JBZZ	AK			Lead wire (DC VOLTAGE)
1-56	QW-VZF210JBZZ	AK			Lead wire (C10(+)-TP)
1-57	QW-VZF211JBZZ	AK			Lead wire (C10(-)-TN)
1-64	PSHE-A218JBEZ	AP			Protect sheet
1-67	QW-VZD806JBZZ	AD			Lead wire
1-68	QW-VZE603JBZZ	AP			Lead wire(C9(+)-C10(+))
1-72	QW-VZF172JBZZ	AK			Lead wire(T4-BOX)
1-74	RTRN-A256JBE0	AG			Transformer(CT1)
1-75	VHMR2920++-1S	AU			Integrated circuit(IC4)
1-81	QW-VZF208JBZZ	AK			Lead wire
1-82	QW-VZF209JBZZ	AK			Lead wire
1-83	QW-VZD798JBZZ	AD			Lead wire
1-84	QW-VZD820JBZZ	AE			Lead wire
1-85	QW-VZD799JBZZ	AE			Lead wire
1-86	TLAB-C832JBRZ	AN			Label
1-89	RH-HXA054JBZZ	AX			Thermistor
1-90	TLAB-C831JBRZ	AN			Label
1-91	LX-BZA354JBEZ	AC			Hex screw 10
2-34	MSPR-A036JBE0	AB			Thermistor spring
3-27	FCMPRA150JBKZ	CU			Compressor ass'y(3-11,3-12,3-13,3-14)
4-2	LX-BZA140JBE0	AB			Special screw
6-11	CPiPCB059JBKZ	BQ			JOINT 1/2-3/8 assembly
6-11-1	LX-NZA251JBEZ	AG			FLARE NUT

[4] PACKING PARTS



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[4] PACKING PARTS					
5-1	CPADBA072JBKZ	AR			Bottom pad ass'y
5-2	CPADBA073JBKZ	AH			Packing pad ass'y
5-3	SPAKCC226JBEZ	BD			Packing case

■INDEX

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
【 C 】				
CCHS-A856JBKZ	1-2-14	BK		
CCiL-A112JBZ	2-3-8	AX		
CMOTLB051JBZ	1-1-1	BX		
CPADBA072JBKZ	4-5-1	AR		
CPADBA073JBKZ	4-5-2	AH		
CPIPCB059JBKZ	3-6-11	BQ		
【 D 】				
DBOX-A044JBWZ	1-1-11	AT		
DPWBFA436JBKZ	1-1-46	AU		
DPWBFA437JBKZ	1-1-48	BY		
DPWBFA513JBKZ	1-1-12	BT		
DVLV-A668JBKZ	2-3-2	AZ		
DVLV-A669JBKZ	2-3-5	AN		
DVLV-A702JBKZ	2-3-7	BF		
DVLV-A703JBKZ	2-3-28	AZ		
DVLV-A704JBKZ	2-3-29	AZ		
DVLV-A705JBKZ	2-3-30	AZ		
DVLV-A794JBKZ	2-3-36	BM		
DVLV-A796JBKZ	2-3-37	BM		
【 F 】				
FCMPRA150JBKZ	3-3-27	CU		
【 G 】				
GCAB-A247JBZB	1-2-12	BE		
GCAB-A248JBZB	1-2-23	BB		
GCAB-A303JBTA	1-2-8	BE		
GFTASA002JBFA	2-6-6	AM		
GGADRA001JBTA	1-2-28	AV		
GGADFA028JBTA	1-2-13	AZ		
GLEG-A116JBZ	2-3-11	AK		
GLEGMA043JBZB	1-2-15	AX		
GPLTMA062JBZB	1-2-17	AX		
GPLTMA066JBZB	1-2-19	BC		
【 J 】				
JHNDPA016JBFA	1-2-9	AE		
【 L 】				
LANG-A540JBWZ	1-1-2	AU		
LANGKA163JBZ	1-2-4	AX		
LANGKA164JBZ	1-2-1	AQ		
LANGKA165JBZ	1-2-2	AN		
LANGKA166JBZ	1-2-3	AQ		
LBND-A046JBEO	2-6-7	AE		
LBNDKA113JBWZ	1-1-59	AS		
LBSHCA004JBEO	2-3-12	AD		
LHLD-A539JBFA	1-1-3	AE		
LHLD-A544JBFA	1-1-4	AG		
LHLD-A574JBFA	1-2-31	AE		
LHLD-A656JBZ	1-1-60	AQ		
LHLDWA039JBZ	1-1-61	AC		
LHLDWA040JBZ	1-1-62	AC		
LPFT-A134JBZ	2-6-8	AF		
LPFT-A135JBZ	2-6-9	AH		
LSUB-A020JBWZ	2-2-30	AE		
LSUB-A021JBWZ	2-2-29	AE		
LSUB-A029JBZ	1-2-5	AE		
LSUB-A030JBZ	1-2-6	AE		
LX-BZA075JBEO	1-1-63	AA		
LX-BZA140JBEO	3-4-2	AB		
LX-BZA268JBZ	2-3-9	AB		
LX-BZA354JBZ	1-4-1	AC		
"	2-6-5	AC		
"	3-1-91	AC		
LX-BZA355JBZ	2-4-5	AE		
LX-BZA363JBZ	1-4-9	AE		
LX-BZA364JBZ	1-4-3	AC		
LX-BZA367JBZ	1-4-7	AC		
LX-BZA380JBZ	1-4-4	AK		
LX-NZA227JBZ	2-3-5-1	AF		
LX-NZA228JBZ	2-3-5-2	AD		
LX-NZA250JBZ	2-3-31	AE		
LX-NZA251JBZ	2-3-32	AG		
"	3-6-11-1	AG		
LX-NZA280JBZ	2-3-39	AG		
LX-NZA313JBZ	2-4-6	AE		
LX-NZA319JBZ	1-4-8	AE		
【 M 】				
MSPR-A026JBEO	2-2-33	AB		
MSPR-A027JBEO	2-1-79	AB		
MSPR-A036JBEO	3-2-34	AB		

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
MSPR-A046JBEO	2-2-35	AC		
MSPR-A129JBEO	2-2-69	AD		
【 N 】				
NFANPA108JBFA	1-2-36	BA		
【 P 】				
PACU-A043JBZ	2-3-10	BW		
PCAP-A083JBZ	2-3-33	AC		
PCAP-A084JBZ	2-3-34	AC		
PCAP-A103JBZ	2-3-38	AF		
PCMPPRA407JBZ	2-3-13	CT		
PCON-A553JBZ	1-3-15	CC		
PCOV-A014JBEO	2-3-14	AG		
PCOV-A940JBWZ	1-2-37	AP		
PDA-I-A114JBZB	2-2-16	BB		
PGUM-0035JBEO	2-3-24	AG		
PGUM-0036JBEO	2-3-25	AG		
PGUM-A119JBZ	2-2-67	AG		
PGUM-A120JBZ	2-2-68	AG		
PGUMSA319JBZ	2-3-22	AF		
PH-iXA782JBZ	3-1-49	BV		
PMUF-A081JBZ	2-3-23	AY		
PRDFA172JBZ	1-1-36	BA		
PRDFA173JBZ	1-1-52	BA		
PSEL-C006JBZ	2-2-66	AC		
PSEL-C281JBZ	1-2-38	AC		
PSEL-C373JBZ	1-2-39	AC		
PSEL-C597JBZ	1-2-21	AC		
PSEL-C598JBZ	1-2-24	AK		
PSEL-C634JBZ	1-2-40	AE		
PSEL-C635JBZ	1-2-41	AD		
PSEL-C637JBZ	1-2-10	AD		
PSEL-C640JBZ	1-2-25	AG		
PSEL-C641JBZ	1-2-20	AD		
PSEL-C642JBZ	1-2-7	AA		
PSEL-C702JBZ	1-2-26	AE		
PSEL-C760JBZ	1-2-56	AB		
PSEL-C761JBZ	1-2-57	AB		
PSHE-A218JBZ	3-1-64	AP		
PSKR-A329JBWZ	1-2-22	BC		
PSPA-A082JBEO	1-1-76	AB		
PSPA-A146JBZ	1-1-65	AC		
PSPA-A150JBZ	3-1-53	AF		
PSPA-A173JBZ	1-1-66	AE		
PSPF-A897JBZ	1-2-46	AT		
PSPF-A898JBZ	1-2-47	AR		
PSPF-A899JBZ	1-2-48	AF		
PSPF-A900JBZ	1-2-49	AG		
PTUB-A196JBZ	2-3-35	AK		
PTUB-A218JBZ	2-6-10	AB		
PVLVRA040JBZ	2-3-1-1	BM		
PVLVRA045JBZ	2-3-1-2	BD		
PVLVXA061JBZ	2-3-21	BD		
【 Q 】				
QFS-GA062JBZ	3-1-15	AF		
QFS-GA063JBZ	3-1-16	AE		
QFS-GA064JBZ	3-1-17	AF		
QFS-GA065JBZ	3-1-14	BA		
QSPGCA003JBZ	3-1-18	AH		
QSW-PA016DREO	3-1-47	AB		
QTAN-0129JBZ	3-1-19	AB		
QTANZA020JBZ	1-1-5-1	AQ		
QTANZA021JBZ	1-1-5-2	AN		
QW-iZA100JBZ	2-1-54	AZ		
QW-VZD798JBZ	3-1-83	AD		
QW-VZD799JBZ	3-1-85	AE		
QW-VZD806JBZ	3-1-67	AD		
QW-VZD820JBZ	3-1-84	AE		
QW-VZE581JBZ	3-1-21	AP		
QW-VZE585JBZ	3-1-23	AP		
QW-VZE592JBZ	3-1-6	AP		
QW-VZE593JBZ	3-1-7	AP		
QW-VZE596JBZ	3-1-37	AP		
QW-VZE597JBZ	3-1-38	AP		
QW-VZE598JBZ	3-1-39	AP		
QW-VZE599JBZ	3-1-40	AP		
QW-VZE600JBZ	3-1-41	AP		
QW-VZE601JBZ	3-1-42	AP		
QW-VZE602JBZ	3-1-43	AP		
QW-VZE603JBZ	3-1-68	AP		

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
QW-VZE605JBZZ	3-1-55	AK		
QW-VZE624JBZZ	3-1-25	AP		
QW-VZE625JBZZ	3-1-26	AP		
QW-VZF079JBZZ	3-1-8	AU		
QW-VZF080JBZZ	3-1-20	AU		
QW-VZF081JBZZ	3-1-22	AU		
QW-VZF172JBZZ	3-1-72	AK		
QW-VZF208JBZZ	3-1-81	AK		
QW-VZF209JBZZ	3-1-82	AK		
QW-VZF210JBZZ	3-1-56	AK		
QW-VZF211JBZZ	3-1-57	AK		
QW-VZF212JBZZ	3-1-9	AK		
【 R 】				
RC-AZA046JBE0	1-1-70	BE		
RFIL-A064JBE0	3-1-10-1	AF		
RH-HXA032JBZZ	1-1-69	AX		
"	2-1-69	AX		
RH-HXA054JBZZ	2-1-78	AX		
"	3-1-89	AX		
RH-iXA882JBZZ	3-1-27	BK		
RH-iZA105JBE0	1-1-50	AQ		
RHOG-A169JBE0	1-1-58	AK		
RH-QXA005JBZZ	3-1-28	AW		
RH-TXA006JBZZ	1-1-44	BS		
RH-VXA002JBZZ	3-1-13	AF		
RMOTSA024JBZZ	2-3-17	BC		
RMOTSA030JBZZ	2-3-18	BC		
RNF--A001VBE0	3-1-10-2	AF		
RRLYDA008JBZZ	3-1-29	AH		
RRLYDA012JBZZ	3-1-30	AR		
RTHM-A022JBE0	2-1-73	AN		
RTRN-A256JBE0	3-1-74	AG		
RTRN-A297JBZZ	1-1-71	BK		
【 S 】				
SPAKCC226JBEZ	4-5-3	BD		
【 T 】				
TINS-B048JBRZ	2-6-1	AH		
TINS-B049JBRZ	2-6-2	AH		
TINS-B050JBRZ	2-6-3	AH		
TLAB-B709JBRA	2-2-64	AH		
TLABBA146JBRA	1-2-52	AN		
TLAB-C770JBRA	2-2-63	AR		
TLAB-C771JBRZ	1-2-61	AR		
TLAB-C773JBRZ	1-2-62	AN		
TLAB-C831JBRZ	3-1-90	AN		
TLAB-C832JBRZ	3-1-86	AN		
TLABCC298JBRZ	1-2-53	AH		
TLAB-D081JBEZ	1-2-70	AH		
TSPC-F617JBRZ	1-2-55	AN		
【 V 】				
VHDD25VB60+-1	1-1-45	AN		
VHGPC81716N1BS	3-1-32	AQ		
"	3-1-51	AQ		
VHGPC817X3+1BS	3-1-31	AD		
VHGPC853X++-1S	3-1-34	AN		
VHKA7815AP-1	3-1-33	AE		
VHIMR2920++-1S	3-1-75	AU		
【 X 】				
XBPS730P10000	1-4-14	AF		
XBPS740P20J00	1-4-10	AF		
XCPS730P12XS0	1-4-12	AF		
XCPS740P16000	1-4-15	AC		
XCTS740P30000	1-4-16	AF		
XTPS730P12XS0	1-4-11	AF		
XTTUW40P16000	1-4-13	AB		

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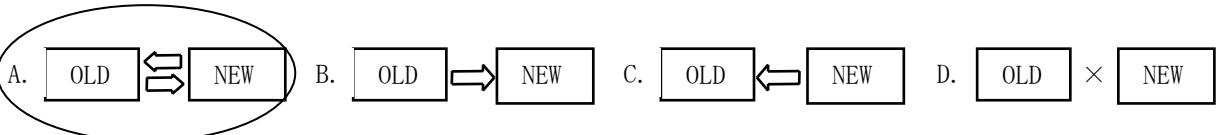
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Air Conditioner
AE-X24GR , AE-XM30GR , AE-X2M18KR , others
CHANGE COIL FOR EXPANSION VALVE

Date: 17/May/2010

Ref. No. : EHH - 299

Technical Report

General	The service parts of the coil for expansion valve is changed.																																											
Model	<table border="1"> <thead> <tr> <th>No.</th> <th>Model name</th> <th>Serial number</th> <th>Destinations</th> </tr> </thead> <tbody> <tr><td></td><td>GU-XR18ER , GU-XR24ER , GU-XR27ER , GU-XR18FR , GU-XR24FR , GU-XR27FR , AE-X24GR , AE-XM18FR , AE-XM24FR , AE-XM30FR , AE-XM30GR , AE-XM24HR , AE-X3M18JR AE-X2M18KR CFI180H , CFI240H , CFI181H , CFI241H , CWI241H , MIH181C , MIH241C , MIH301C , MIH302C , MIH183C , MIH244C , AOM30XM4 , AOM24XM3 , AOM18XM2 , AOM18XM3.UE , AOM24XM4.UE , GU-PJ80J , GU-PJ80JS , GU-PJ50J GU-PJ50JS AE-S70EP2 , AE-S68GP2 AE-X30EJ</td><td>From Mar.2010 Product Running Change</td><td>Europe Europe , Singapore Italy (AERMEC) France (ATLANTIC) Japan Taiwan Australia</td></tr> </tbody> </table>				No.	Model name	Serial number	Destinations		GU-XR18ER , GU-XR24ER , GU-XR27ER , GU-XR18FR , GU-XR24FR , GU-XR27FR , AE-X24GR , AE-XM18FR , AE-XM24FR , AE-XM30FR , AE-XM30GR , AE-XM24HR , AE-X3M18JR AE-X2M18KR CFI180H , CFI240H , CFI181H , CFI241H , CWI241H , MIH181C , MIH241C , MIH301C , MIH302C , MIH183C , MIH244C , AOM30XM4 , AOM24XM3 , AOM18XM2 , AOM18XM3.UE , AOM24XM4.UE , GU-PJ80J , GU-PJ80JS , GU-PJ50J GU-PJ50JS AE-S70EP2 , AE-S68GP2 AE-X30EJ	From Mar.2010 Product Running Change	Europe Europe , Singapore Italy (AERMEC) France (ATLANTIC) Japan Taiwan Australia																																
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Interchangeability																																												
Refer to	Service Manual (Parts guide)																																											
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Note	<p>※ Ref No. is the representative model's. Please confirm each service manual in case of other models. (RMOTSA017JBZZ : AE-X24GR , RMOTSA024JBZZ : AE-XM30GR , RMOTSA031JBZZ : AE-X2M18KR)</p> <p>These changed parts are used in Mar.2010 by running change.</p>																																											

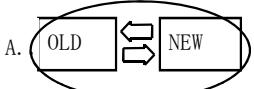
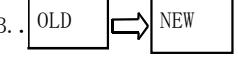
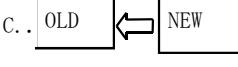
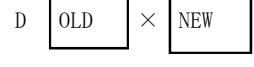
Air conditioner
AE-XM30GR, etc.

Date: 24/Mar/2009

Change of Active filter

Ref. No. : EHH-276

Technical Report

General	Active filter has been changed as follows.																					
Model	<table border="1"><tr><td>Model name</td><td>Destination</td><td>Effective from</td></tr><tr><td>AE-XM30GR</td><td>Europe</td><td>Jun-06</td></tr></table>			Model name	Destination	Effective from	AE-XM30GR	Europe	Jun-06													
Model name	Destination	Effective from																				
AE-XM30GR	Europe	Jun-06																				
Reason	Standardization																					
Interchangeability	<p>A. </p> <p>B. </p> <p>C. </p> <p>D. </p>																					
Parts	<table border="1"><thead><tr><th rowspan="2">Description</th><th colspan="5">Part code</th><th rowspan="2">Effective from</th></tr><tr><th>Old</th><th>Q' ty</th><th>New</th><th>Q' ty</th><th>P/code</th></tr></thead><tbody><tr><td>Active filter</td><td>RH-TXA006JBZZ</td><td>1</td><td>RH-TXA008JBZZ</td><td>1</td><td>BR</td><td>Jun-06</td></tr></tbody></table>			Description	Part code					Effective from	Old	Q' ty	New	Q' ty	P/code	Active filter	RH-TXA006JBZZ	1	RH-TXA008JBZZ	1	BR	Jun-06
Description	Part code					Effective from																
	Old	Q' ty	New	Q' ty	P/code																	
Active filter	RH-TXA006JBZZ	1	RH-TXA008JBZZ	1	BR	Jun-06																
Note																						