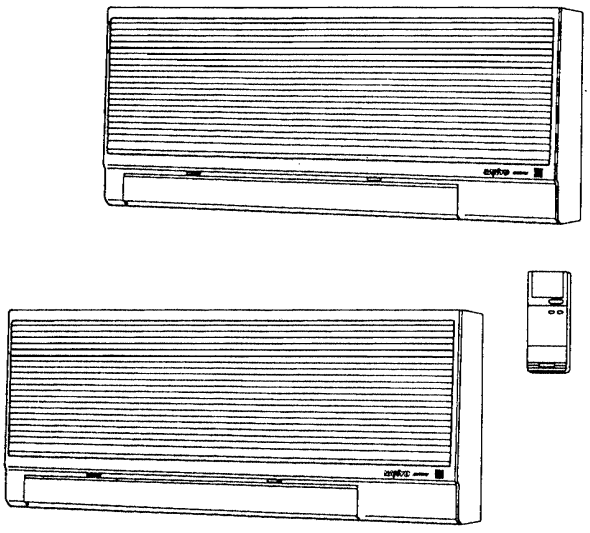
SERVICE MANUAL (Expanded Information)

CM1812 / KMS0912(×2)

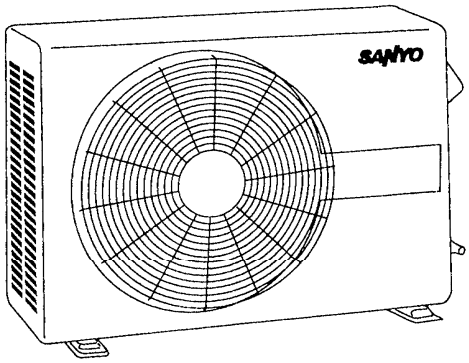
SPLIT SYSTEM AIR CONDITIONER

Indoor Unit



KMS0912

Outdoor Unit



CM1812

8526481022700

REFERENCE NO. WM-700827

SERVICE MANUAL

CM1812 / KMS0912(×2)

(Expanded Information)

IMPORTANT!
Please Read Before Starting

This air conditioning system meets strict safety and operating standards. As the installer or service person, it is an important part of your job to install or service the system so it operates safely and efficiently.

For safe installation and trouble-free operation, you must:

- Carefully read this instruction booklet before beginning
- Follow each installation or repair step exactly as shown
- Observe all local, state, and national electrical codes
- Pay close attention to all warning and caution notices given in this manual

WARNING: This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

CAUTION: This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

If Necessary, Get Help

These instructions are all you need for most installation sites and maintenance conditions. If you require help for a special problem, contact our sales/service outlet or your certified dealer for additional instructions.

In Case of Improper Installation

The manufacturer shall in no way be responsible for improper installation or maintenance service, including failure to follow the instructions in this document.

SPECIAL PRECAUTIONS

When Wiring

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY A QUALIFIED, EXPERIENCED ELECTRICIAN SHOULD ATTEMPT TO WIRE THIS SYSTEM.

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause **accidental injury or death.**
- **Ground the unit** following local electrical codes.
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.

When Transporting

Be careful when picking up and moving the indoor and outdoor units. Get a partner to help, and bend your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut your fingers.

When Installing...

...In a Ceiling or Wall
Make sure the ceiling/wall is strong enough to hold the unit's weight. It may be necessary to construct a strong wood or metal frame to provide added support.

...In a Room
Properly insulate any tubing run inside a room to prevent "sweating" that can cause dripping and water damage to walls and floors.

...In Moist or Uneven Locations
Use a raised concrete pad or concrete blocks to provide a solid, level foundation for the outdoor unit. This prevents water damage and abnormal vibration.

...In an Area with High Winds
Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable air baffle.

...In a Snowy Area (for Heat Pump-type Systems)
Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.

When Connecting Refrigerant Tubing

- Keep all tubing runs as short as possible.
- Use the flare method for connecting tubing.
- Apply refrigerant lubricant to the matching surfaces of the flare and union tubes before connecting them, then tighten the nut with a torque wrench for a leak-free connection.
- Check carefully for leaks before starting the test run.

NOTE:
Depending on the system type, liquid and gas lines may be either narrow or wide. Therefore, to avoid confusion the refrigerant tubing for your particular model is specified as either "narrow" or "wide" rather than as "liquid" or "gas."

When Servicing

- Turn the power OFF at the main power box (mains) before opening the unit to check or repair electrical parts and wiring.
- Keep your fingers and clothing away from any moving parts.
- Clean up the site after you finish, remembering to check that no metal scraps or bits of wiring have been left inside the unit being serviced.

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1. SPECIFICATIONS

1-1 Unit Specifications

(1) CM1812

Model No.		Outdoor unit		CM1812	
		Applicable indoor unit		KMS0912	
Performance				Cooling	
	No. of indoor units			1	2
	Capacity		BTU/h	9,000 / 8,800	18,000 / 17,600
			kW	2.64 / 2.58	5.27 / 5.16
Electrical Rating	Phase, Frequency		Hz	Single, 60	Single, 60
	Voltage rating		V	230 / 208	230 / 208
	Available voltage range		V	187 to 253	187 to 253
	Running amperes		A	4.3 / 4.5	8.6 / 9.0
	Power input		W	930 / 910	1,860 / 1,820
	Power factor		%	94 / 97	94 / 97
	Starting amperes		A	27	27 × 2
	S. E. E. R.		BTU/Wh	10.0 / 10.0	10.0 / 10.0
Features	Fan speeds			1	
	Compressor			Rotary	
	Refrigerant amount charged at shipment		lbs. (kg)	R22: 2.16 × 2 (980 × 2)	
	Refrigerant control			Capillary tube	
	Operation sound		dB-A	54	
	Refrigerant tubing connections			Flare type	
	Max. allowable tubing length at shipment		ft. (m)	33 (10)	
	Limit of tubing length		ft. (m)	50 (15)	
	Limit of elevation difference between the 2 units		ft. (m)	23 (7)	
	Refrigerant tube o.d.	Narrow tube	in. (mm)	1/4 (6.35)	
		Wide tube	in. (mm)	3/8 (9.52)	
	Refrigerant tube kit			Optional	
Dimensions & Weight	Height		in. (mm)	24-13/16 (630)	
	Width		in. (mm)	32-11/16 (830)	
	Depth		in. (mm)	12-13/32 (315)	
	Net weight		lbs. (kg)	130 (58.96)	
	Shipping volume		cu. ft. (cu. m)	10.34 (0.96)	
	Shipping weight (Approx.)		lbs. (kg)	136.4 (61.9)	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Remarks: Rating conditions are: Outside air temperature 95°F DB/75°F WB
Indoor unit entering air temperature 80°F DB/67°F WB

(2) Applicable Indoor Unit

Model No.				KMS0912
Type				Wall-mounted
Performance				Cooling
	Capacity		BTU/h	9,000 / 8,800
			kW	2.64 / 2.58
	Air circulation (High)		cu. ft./min.	220 / 210
	Moisture removal (High)		pints/h	2.2 / 2.1
Electrical Rating	Phase, Frequency		Hz	Single, 60
	Voltage rating		V	230 / 208
	Available voltage range		V	187 to 253
Features	Controls			Microprocessor
	Control unit			Wireless remote control unit
	Temperature control			IC thermostat
	Timer			ON/OFF, 24-hours & Program
	Fan speeds			3
	Air deflector		Horizontal / Vertical	Manual / Manual
	Air filter			Washable, easy access
	Operation sound	Hi / Me / Lo	dB-A	45 / 35 / 30
	Refrigerant tubing connections			Flare type
	Refrigerant tube o.d.	Narrow tube	in. (mm)	1/4 (6.35)
		Wide tube	in. (mm)	3/8 (9.52)
	Refrigerant tube kit			Optional
	Accessories			Hanging wall bracket
Dimensions & Weight	Height		in. (mm)	13-19/32 (345)
	Width		in. (mm)	31-1/2 (800)
	Depth		in. (mm)	7-3/32 (180)
	Net weight		lbs. (kg)	24 (11)
	Shipping volume		cu. ft. (cu. m)	3.3 (0.093)
	Shipping weight		lbs. (kg)	29 (13)

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Remarks: Rating conditions are: Outside air temperature 95°F DB/75°F WB
Indoor unit entering air temperature 80°F DB/67°F WB

1-2 Major Component Specifications

(1) Outdoor Unit

Unit Model No.					CM1812	
Fuse					AC 250V, 3A	
Compressor	Type				Rotary (hermetic)	
	Model ... Number				C-R70H6V ... 2	
	No. of cyl. ... rpm				1 ... 3,500	
	Nominal output			W (H.P.)	700 (1) × 2	
	Compressor lubricant			cc	500 × 2	
	Coil resistance (Ambient temp. 77°F)			Ω	C – R: 2.51 C – S: 5.58	
	Safety devices	Type			Internal	External
		Overload relay models			—	MRA98735-9201 × 2
		Operating temp.	Open	°F	—	311 ± 9
			Close	°F	—	156 ± 20
		Operating amp. (Ambient temp. 77°F)			—	Trip in 6 to 16 sec. at 24A
	Run capacitor			μF	17.5 × 2	
				VAC	370	
	Crank case heater				—	
Fan	Type				Propeller	
	Number ... Dia.			in. (mm)	1 ... 15-3/4 (400)	
Fan Motor	Model				SG6S-51C6P	
	No. of pole ... rpm (230V, High)				6 ... 990	
	Nominal output			W (H.P.)	50 (1/15)	
	Coil resistance (Ambient temp. 68°F)			Ω	WHT – GRY: 89.9 WHT – YEL: 180.0 WHT – PNK: 155.8	
	Safety device	Type			Internal	
		Operating temp.	Open	°F	266 ± 14	
			Close	°F	174 ± 27	
	Run capacitor			μF	2	
				VAC	440	
Heat Exch.	Coil				Aluminum plate fin / Copper tube	
	Rows ... Fins per inch				2 ... 14.1	
	Face area			$ft.^2$ (m^2)	5.19 (0.48)	
External Finish					Acrylic baked-on enamel finish	

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

(2) Indoor Unit

Unit Model No.					KMS0912
Remote Control Unit					RCS-KS0911
Controller PCB					POW-KS0911
	Control circuit fuse				AC 250V, 3A
Fan	Type				Cross-flow
	Noumber ... Dia. and length			in. (mm)	1 ... O.D. 3-17/32 (90), L 24-5/8 (626)
Fan Motor	Model ... Number				SV4T-11D6P ... 1
	No. of pole ... rpm (230V, High)				4 ... 1,450
	Nominal output			W(H.P.)	10 (1/75)
	Coil resistance (Ambient temp. 68°F)			Ω	WHT – GRY: 464.8 WHT – VLT: 209.8 VLT – YEL: 93.4 YEL – PNK: 539.6
	Safety devices	Type			Internal
		Operating temp.	Open	°F	266 ± 14
			Close	°F	174 ± 27
	Run capacitor			μF	0.6
				VAC	440
Heat Exch.	Coil				Aluminum plate fin / Copper tube
	Rows ... Fins per inch				2 ... 14.1
	Face area			ft.^{2} (m^2)	1.63 (0.15)

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

1-3 Other Component Specifications

(1) Outdoor Unit

Auxiliary Relay		MY2F-T1-USTS
Coil rating		AC 240V, 60Hz
Coil resistance	kΩ (at 77°F)	18.8 ± 15%
Contact rating		AC 240V, 5A

(2) Indoor Unit

Transformer		ATR-H122U
Rated	Primary	AC 220V, 60Hz
	Secondary	10V, 1.2A
	Capacity	12VA
Coil resistance	Ω (at 77°F)	Primary (WHT – WHT): 146 ± 15%
		Secondary (BRN – BRN): 0.5 ± 15%
Thermal cut-off temp.		259°F, 2A, 250V

Relay		DFU12D1-F(M)
Coil rating		DC 12V
Coil resistance	Ω (at 68°F)	160 ± 10%
Contact rating		AC 250V, 20A

Thermistor (coil sensor)		PBC-41E-S4			
Resistance	kΩ	14°F	23.7 ± 5%	77°F	5.3 ± 5%
		32°F	15.0 ± 5%	86°F	4.4 ± 5%
		50°F	9.7 ± 5%	104°F	3.1 ± 5%
		68°F	6.5 ± 5%		

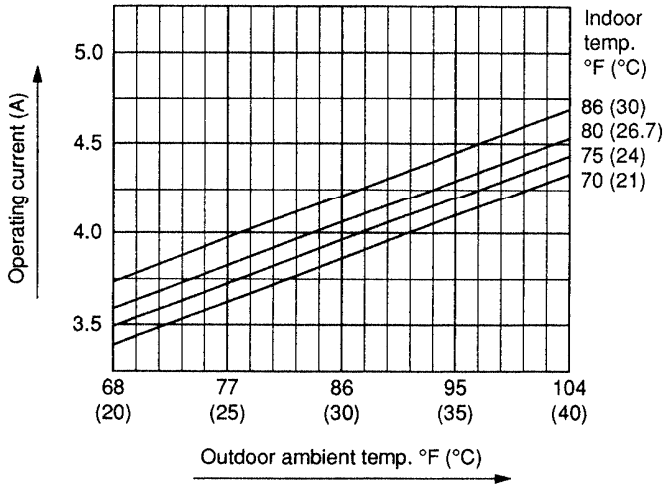
Thermistor (room sensor)		SDT-500B6-2			
Resistance	kΩ	50°F	10.3 ± 4%	86°F	4.0 ± 4%
		59°F	8.0 ± 4%	104°F	2.6 ± 4%
		68°F	6.3 ± 4%	122°F	1.8 ± 4%
		77°F	5.0 ± 4%		

2. PERFORMANCE CHARTS

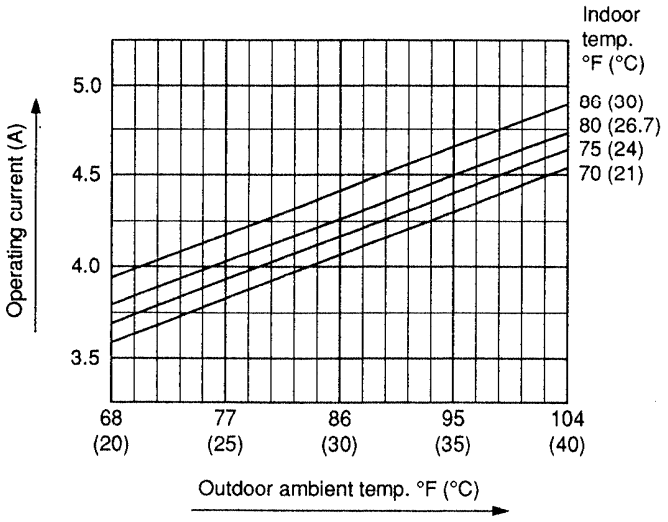
2-1 Operating Current

Operating current characteristics versus outdoor ambient temperature and indoor temperature
(Indoor relative humidity: 50%, Indoor fan speed: High)

230V



208V

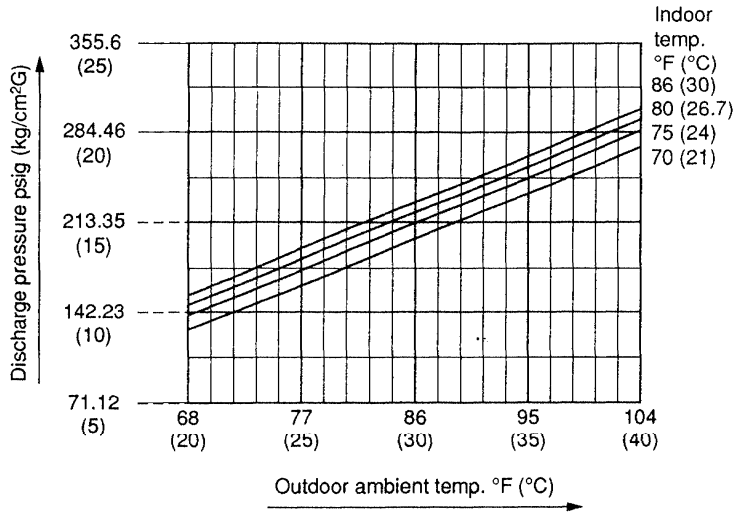


2-2 High and Low Pressure

● High Pressure

High pressure characteristics versus outdoor ambient temperature and indoor temperature
(Indoor relative humidity: 50%, Indoor fan speed: High)

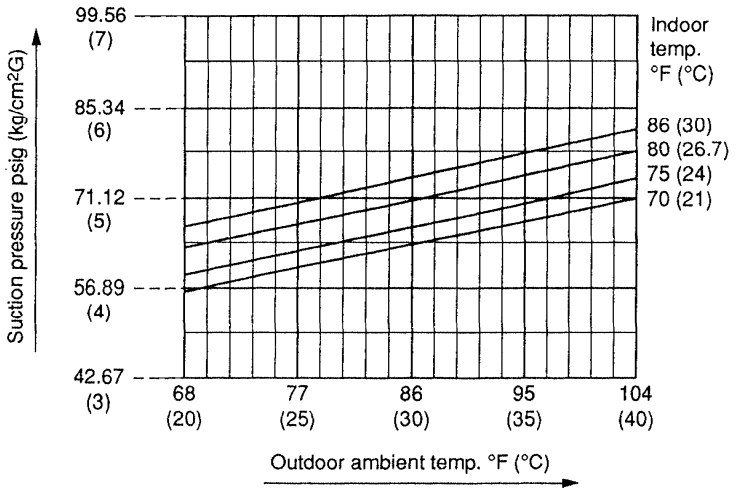
230V / 208V



● Low Pressure

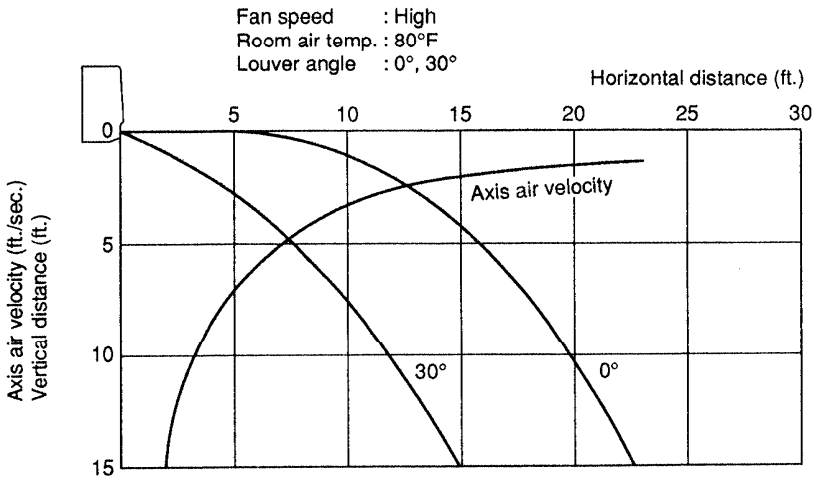
Low pressure characteristics versus outdoor ambient temperature and indoor temperature
(Indoor relative humidity: 50%, Indoor fan speed: High)

230V / 208V



3. AIR THROW DISTANCE CHART

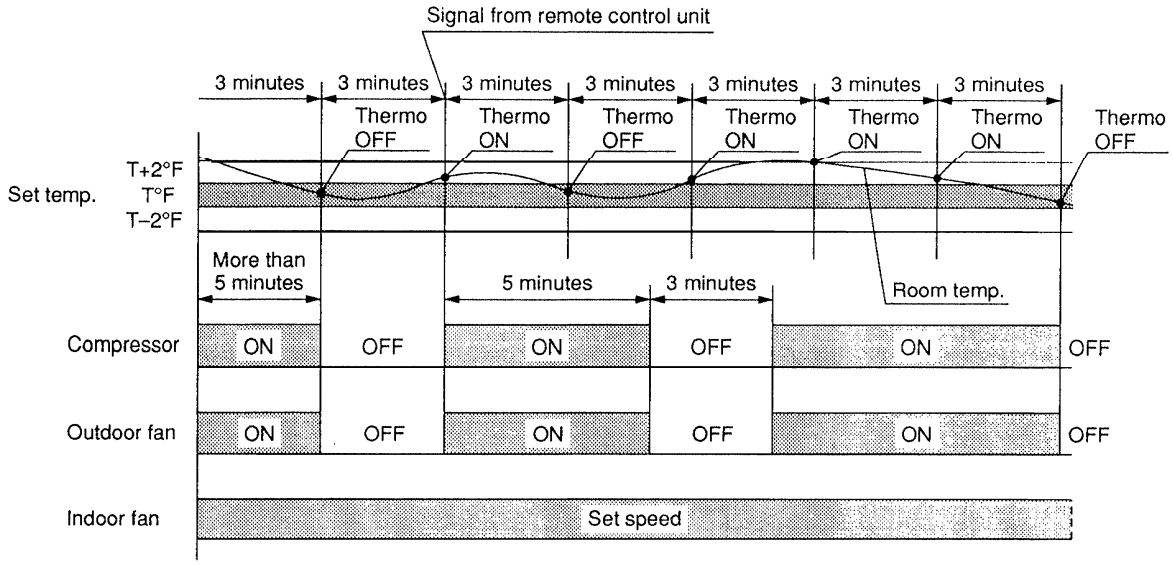
Model: KMS0912



4. FUNCTION

4-1 Room Temperature Control

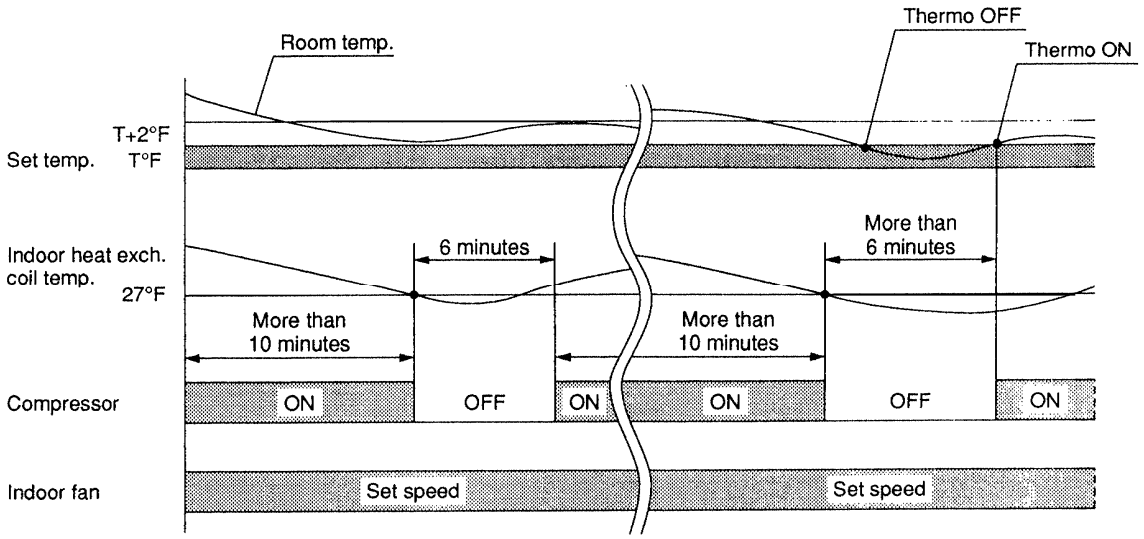
- Room temperature control is obtained by cycling the compressor ON and OFF under control of the room temperature sensor in the remote control unit.
- The room temperature (and other information) is transmitted every 3 minutes by the remote control unit to the controller in the indoor unit.



- The control circuit will not attempt to turn the compressor ON until the compressor has been OFF for at least 3 minutes. To protect the compressor from stalling out when trying to start against the high side refrigerant pressure, the control circuit has a built-in automatic time delay to allow the internal pressure to equalize.
- As a protective measure, the control circuit switches the compressor OFF after 5 minutes or more of compressor operation.
- Thermo ON : When the room temperature is above T + 2°F (T°F is set temperature).
  Compressor → ON
- Thermo OFF : When the room temperature is equal to or below set temperature T°F.
  Compressor → OFF

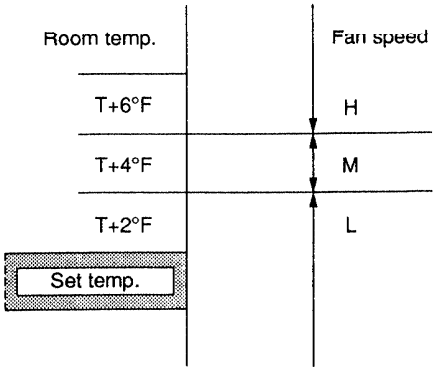
4-2 Freeze Prevention

- This function prevents freezing of the indoor heat exchange coil.
- When the compressor has been running for 10 minutes or more and the temperature of the indoor heat exchange coil falls below 27°F, the control circuit stops the compressor for at least 6 minutes.



4-3 Fan Speed Auto (Indoor Fan)

- The fan speed does not change within 1 minute.
- The number shows temperature for REMOCON sensor.

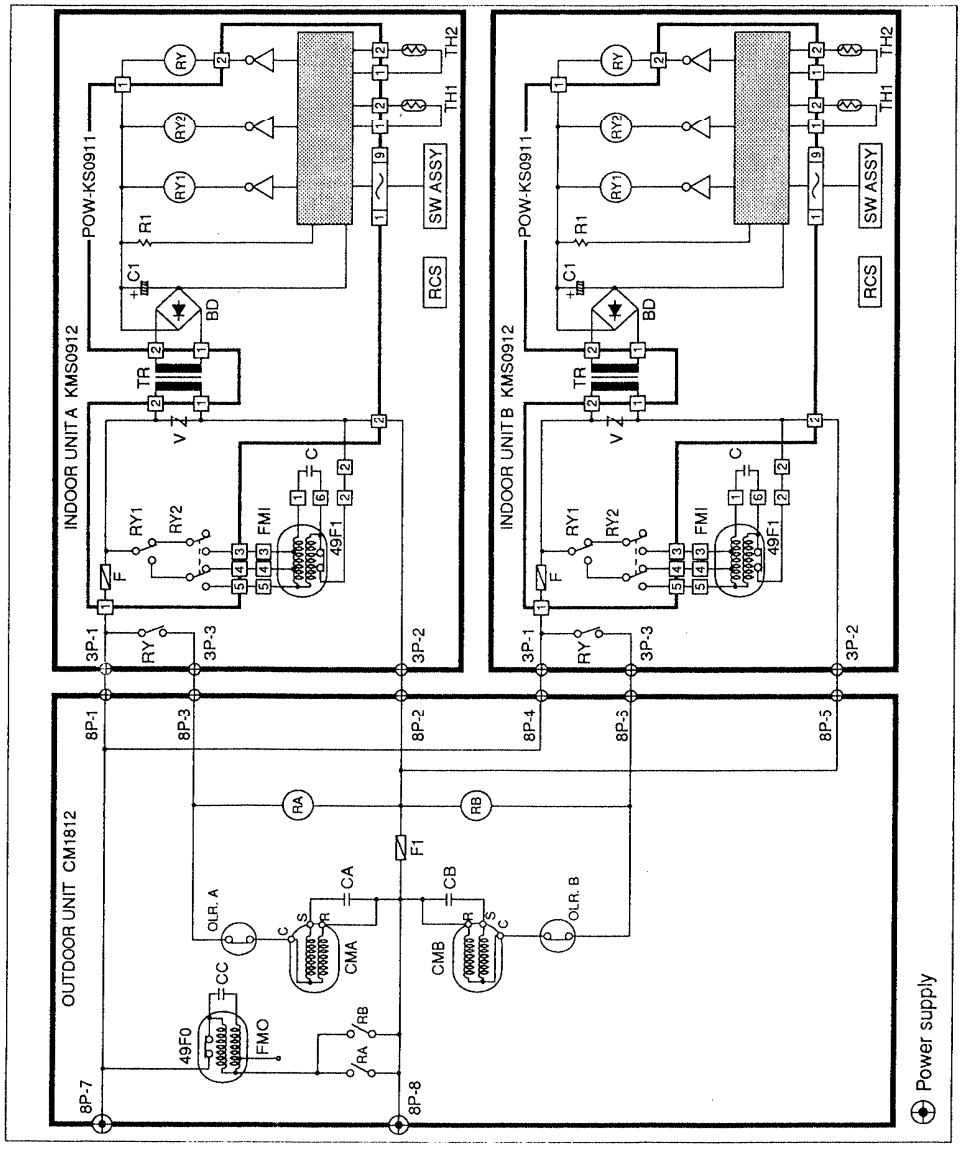


5. ELECTRICAL DATA

● Schematic Diagram

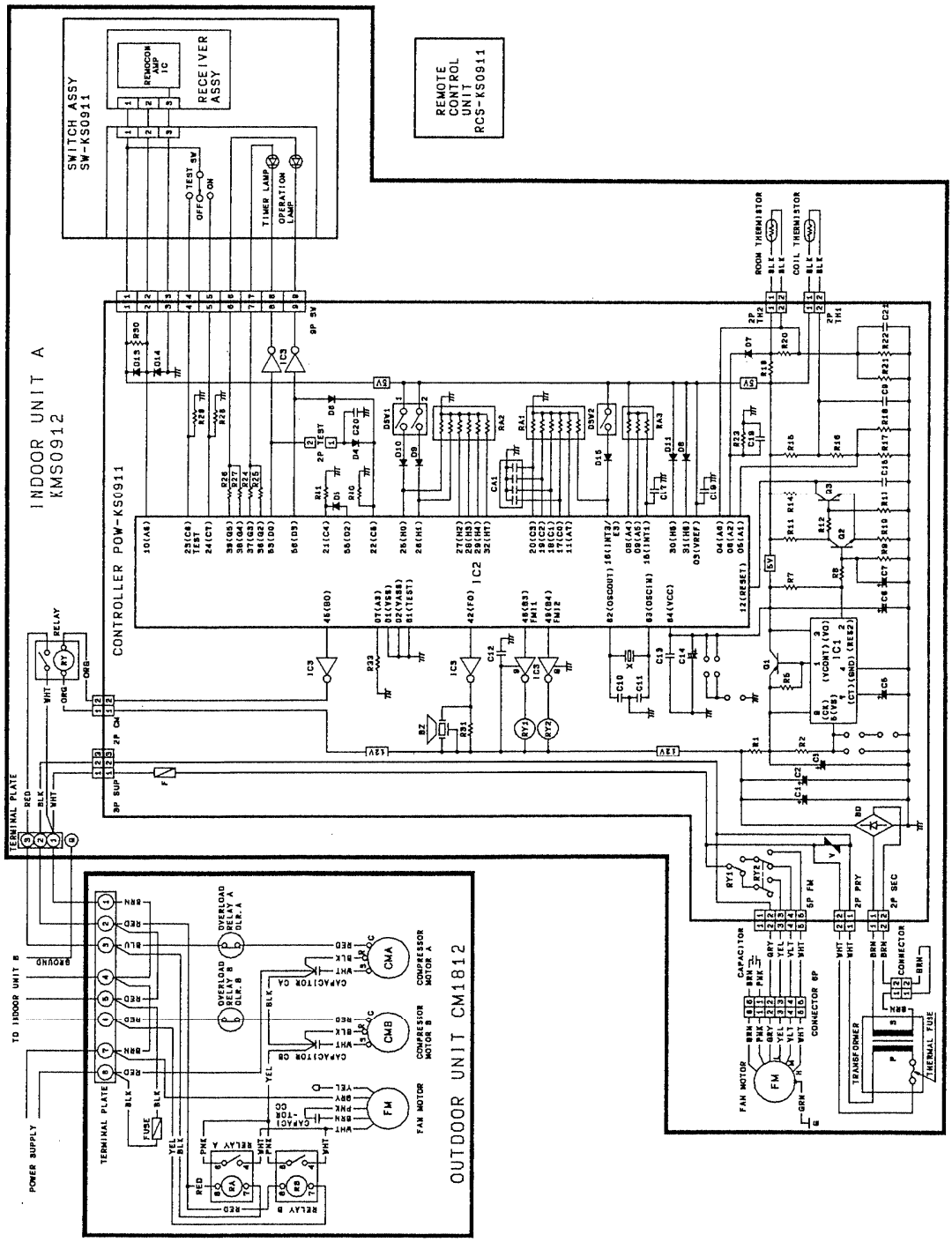
CM1812 / KMS0912 (×2)

Symbol	Description
OUTDOOR UNIT	
FMO	OUTDOOR FAN MOTOR
49F0	OUTDOOR FAN MOTOR INTERNAL PROTECTOR
OLR, A, OLR, B	COMPRESSOR MOTOR OVERLOAD RELAY
CMA, CMB	COMPRESSOR MOTOR
CA, CB, CC	CAPACITOR
RA, RB	RELAY
F1	FUSE 250V, 3A
INDOOR UNIT	
FMI	INDOOR FAN MOTOR
49FI	INDOOR FAN MOTOR INTERNAL PROTECTOR
C	CAPACITOR
TR	TRANSFORMER
RY	POWER RELAY
TH1	THERMISTOR (COIL TEMP. SENSOR)
TH2	THERMISTOR (ROOM TEMP. SENSOR)
SW ASSY	SWITCH ASS'Y SW-KS0911
RCS	WIRELESS REMOTE CONTROL UNIT RCS-KS0911
POW-KS0911	CONTROLLER PCB ASS'Y
F	FUSE 250V, 3A
V	VARISTOR
BD	BRIDGE DIODE
C1	CAPACITOR
R1	RESISTOR
RY1, RY2	AUXILIARY RELAY



● Electric Wiring Diagram (PCB Ass'y)

CM1812 / KMS0912



Symbol	Description	Specifications
BZ101	BUZZER	PKM24SP3807
C1	CAPACITOR	2200μF 25V
C2	CAPACITOR	1μF 50V
C3	CAPACITOR	10μF 50V
C5	CAPACITOR	1μF 50V
C6	CAPACITOR	220μF 16V
C7	CAPACITOR	1μF 50V
C9	CAPACITOR	0.1μF 50V
C10	CAPACITOR	0.00003μF 50V
C11	CAPACITOR	0.00003μF 50V
C12	CAPACITOR	0.022μF 50V
C13	CAPACITOR	0.1μF 50V
C14	CAPACITOR	100μF 10V
C15	CAPACITOR	0.022μF 50V
C17	CAPACITOR	0.0047μF 50V
C18	CAPACITOR	0.022μF 50V
C19	CAPACITOR	0.022μF 50V
C20	CAPACITOR	0.022μF 50V
C21	CAPACITOR	0.1μF 50V
CA1	CAPACITOR	0.0047μF-4 50V
D4	DIODE	DS446
D5	DIODE	DS446
D6	DIODE	DS446
D7	DIODE	DS446
D8	DIODE	DS446
D9	DIODE	DS446
D10	DIODE	DS446
D11	DIODE	DS446
D13	DIODE	DS446
D14	DIODE	DS446
D15	DIODE	DS446
DSW1	SWITCH	SSGM 2P
DSW2	SWITCH	JKS1120-0401
DB	BRIDGE DIODE	DBA10C
F	FUSE	250V, 3A
IC1	IC	LA5693D
IC2	IC	TMS73C161-C76577
IC3	IC	LB1234
Q1	TRANSISTOR	2SA1289
Q2	TRANSISTOR	2SC536-E
Q3	TRANSISTOR	2SC536-E

POW-KS0911

Symbol	Description	Specifications
R1	RESISTOR (CARBON)	5.6Ω ±5% 1/2W
R2	RESISTOR (CARBON)	27KΩ ±5% 1/4W
R5	RESISTOR (CARBON)	390Ω ±5% 1/4W
R7	RESISTOR (CARBON)	1KΩ ±5% 1/4W
R8	RESISTOR (CARBON)	27KΩ ±5% 1/4W
R9	RESISTOR (CARBON)	22KΩ ±5% 1/4W
R10	RESISTOR (CARBON)	560Ω ±5% 1/4W
R11	RESISTOR (CARBON)	4.7KΩ ±5% 1/4W
R12	RESISTOR (CARBON)	5.6KΩ ±5% 1/4W
R13	RESISTOR (CARBON)	8.2KΩ ±5% 1/4W
R14	RESISTOR (CARBON)	4.7KΩ ±5% 1/4W
R15	RESISTOR (METAL)	12KΩ ±1% 1/4W
R16	RESISTOR (METAL)	750Ω ±1% 1/4W
R17	RESISTOR (METAL)	6.8KΩ ±1% 1/4W
R18	RESISTOR (METAL)	10KΩ ±1% 1/4W
R19	RESISTOR (METAL)	180Ω ±1% 1/4W
R20	RESISTOR (METAL)	15KΩ ±1% 1/4W
R21	RESISTOR (METAL)	6.2KΩ ±1% 1/4W
R22	RESISTOR (METAL)	11KΩ ±1% 1/4W
R23	RESISTOR (CARBON)	100KΩ ±5% 1/4W
R24	RESISTOR (CARBON)	270Ω ±5% 1/4W
R25	RESISTOR (CARBON)	270Ω ±5% 1/4W
R26	RESISTOR (CARBON)	270Ω ±5% 1/4W
R27	RESISTOR (CARBON)	270Ω ±5% 1/4W
R28	RESISTOR (CARBON)	5.6KΩ ±5% 1/4W
R29	RESISTOR (CARBON)	5.6KΩ ±5% 1/4W
R30	RESISTOR (CARBON)	100KΩ ±5% 1/4W
R31	RESISTOR (CARBON)	6.8KΩ ±5% 1/4W
R33	RESISTOR (CARBON)	56KΩ ±5% 1/4W
R40	RESISTOR (CARBON)	56KΩ ±5% 1/4W
R41	RESISTOR (CARBON)	56KΩ ±5% 1/4W
RA1	RESISTOR	56KΩ-6 ±5% 1/4W
RA2	RESISTOR	56KΩ-6 ±5% 1/4W
RA3	RESISTOR	20KΩ-3 ±5% 1/4W
RY1	RELAY	LZG-12HE
RY2	RELAY	VB12TBU
V	VARISTOR	SNR681KD14
X	CRYSTAL	CSA-4MG
3P SUP	CONNECTOR	2-173270-3
5P FM	CONNECTOR	2-173270-5
2P PRY	CONNECTOR	8-173270-2
2P SEC	CONNECTOR	5273-02A
2P TEST	CONNECTOR	NHK-P2T-N
2P TH1	CONNECTOR	8-171825-2
2P TH2	CONNECTOR	2-171825-2
2P CM	CONNECTOR	5273-02A-BL
9P SW	CONNECTOR	171825-9

6. TROUBLESHOOTING

6-1 Check before and after troubleshooting.

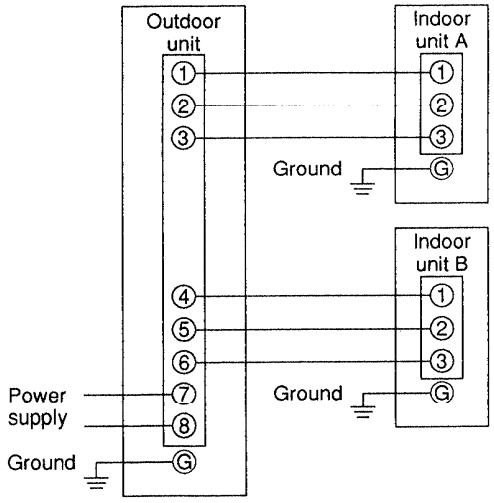
(1) Check power supply wiring.

- Check that power supply wires are correctly connected to terminals No. 7 and No. 8 on the 8P terminal plate in the outdoor unit.

(2) Check inter-unit wiring.

- Check that inter-unit wires are correctly connected to indoor unit from outdoor unit.

Power supply:
60Hz, single-phase, 230/208V



(3) Check power supply.

- Check that voltage is in specified range (±10% of the rating).
- Check that power is being supplied.

WARNING:

If the following troubleshooting must be done with power being supplied, be careful about any uninsulated live part that can cause ELECTRIC SHOCK.

(4) Check lead wires and connectors in indoor and outdoor units.

- Check that coating of lead wires is not damaged.
- Check that lead wires and connectors are connected firmly.
- Check that wiring is correct.

(5) Reference

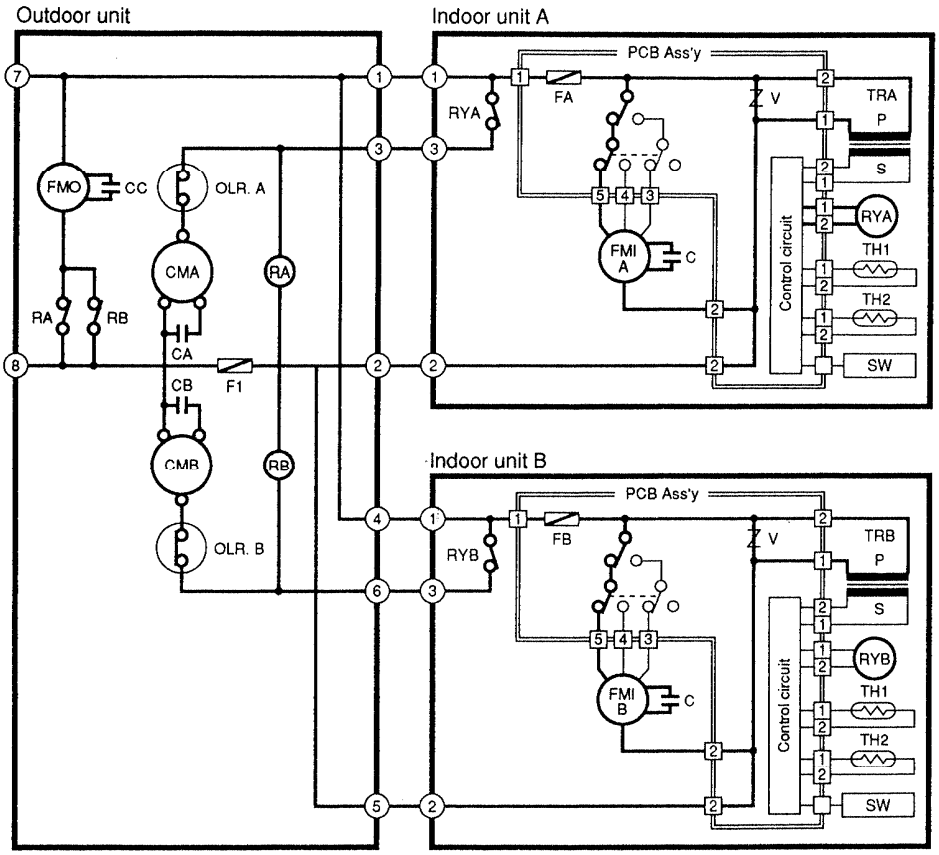
(a) Condition of general cooling operation

ON/OFF operation button..... ON

COOL/FAN selector switch ..... COOL

Indoor fan speed ..... HIGH

Thermo..... ON



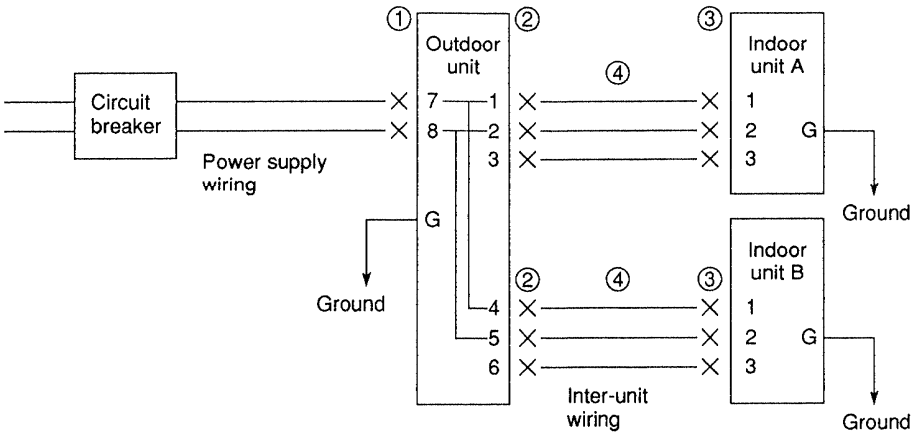
6-2 Air conditioner does not operate.

(1) Circuit breaker trips (or fuse blows).

(a) When circuit breaker is set to ON, it trips in a few moments (resetting is not possible).

- There is a possibility of ground fault.
- Measure insulation resistance.

  If resistance value is 1MΩ or less, insulation is defective ("NO").



*Set circuit breaker to OFF.

① Remove power supply wires from terminal plate in outdoor unit.
- Measure insulation resistance of power supply wires.

NO → Do rewiring.

② Remove inter-unit wires from terminal plate in indoor unit.
- Measure insulation resistance of indoor unit.

NO → Insulation of indoor unit is defective.
- Measure insulation resistance of electrical parts in indoor unit.

③ Remove inter-unit wires from terminal plate in outdoor unit.
- Measure insulation resistance of outdoor unit.

NO → Insulation of outdoor unit is defective.
- Measure insulation resistance of electrical parts in outdoor unit.

④ Measure insulation resistance of inter-unit wires.

NO → Do rewiring.

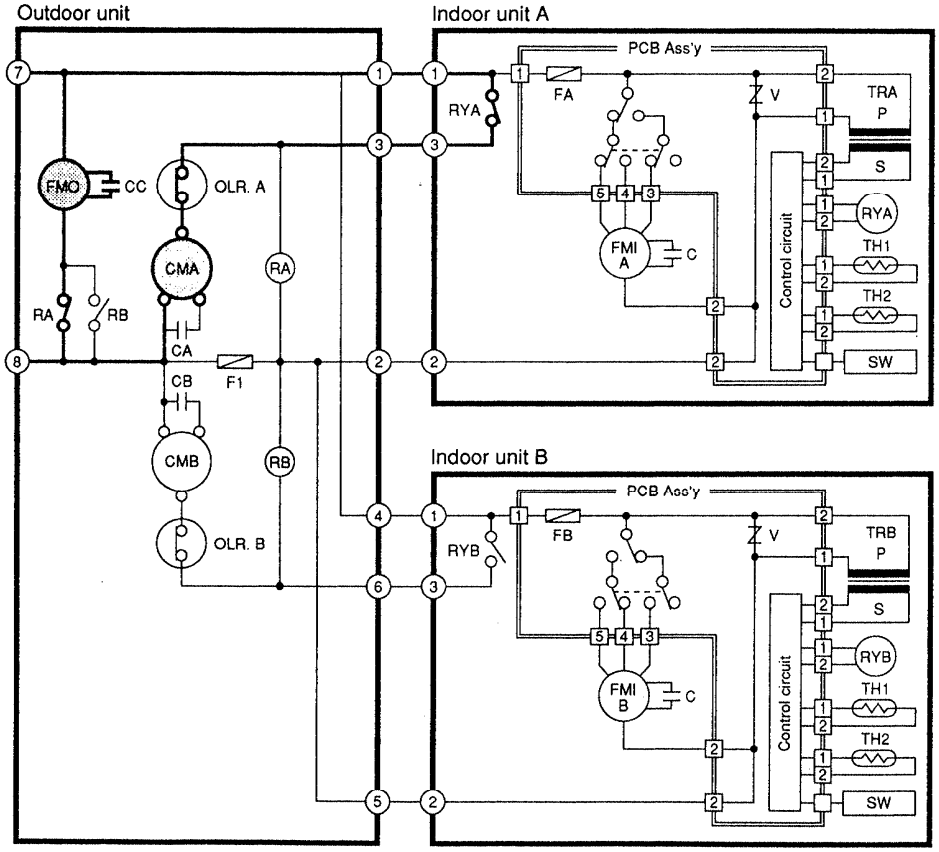
(b) Circuit breaker trips in several minutes after turning air conditioner ON.

- There is a possibility of short circuit. (Below figure is a case of indoor unit A being turned on.)

• Check capacity of circuit breaker. Is capacity of circuit breaker suitable?	→ Replace it with suitable one (larger capacity).

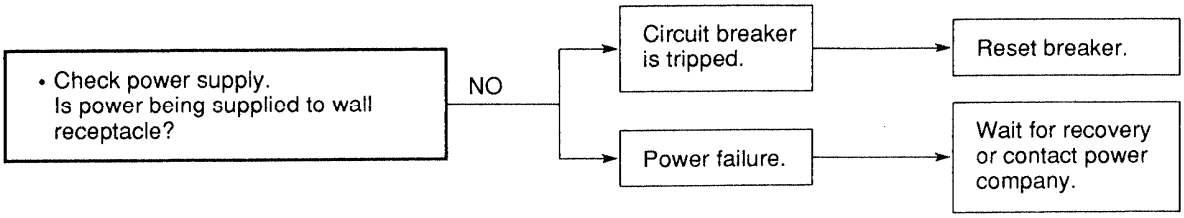
• Measure resistance of compressor motor winding.

• Measure resistance of outdoor fan motor winding.

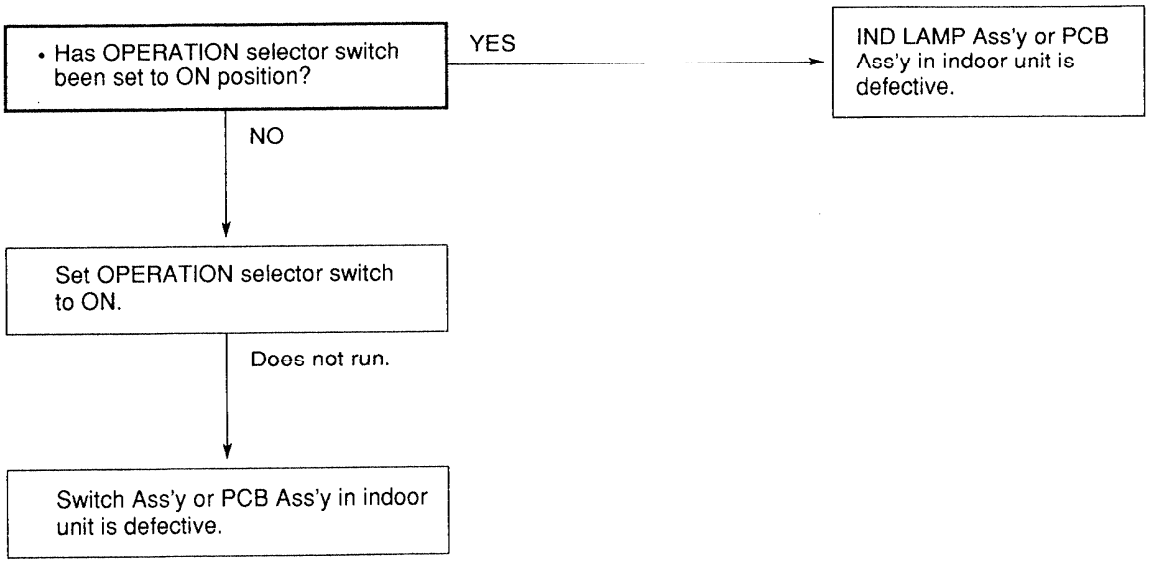


(2) **All unit (indoor and outdoor) do not run.**

(a) Power is not supplied.



(b) Check OPERATION selector switch in indoor unit.



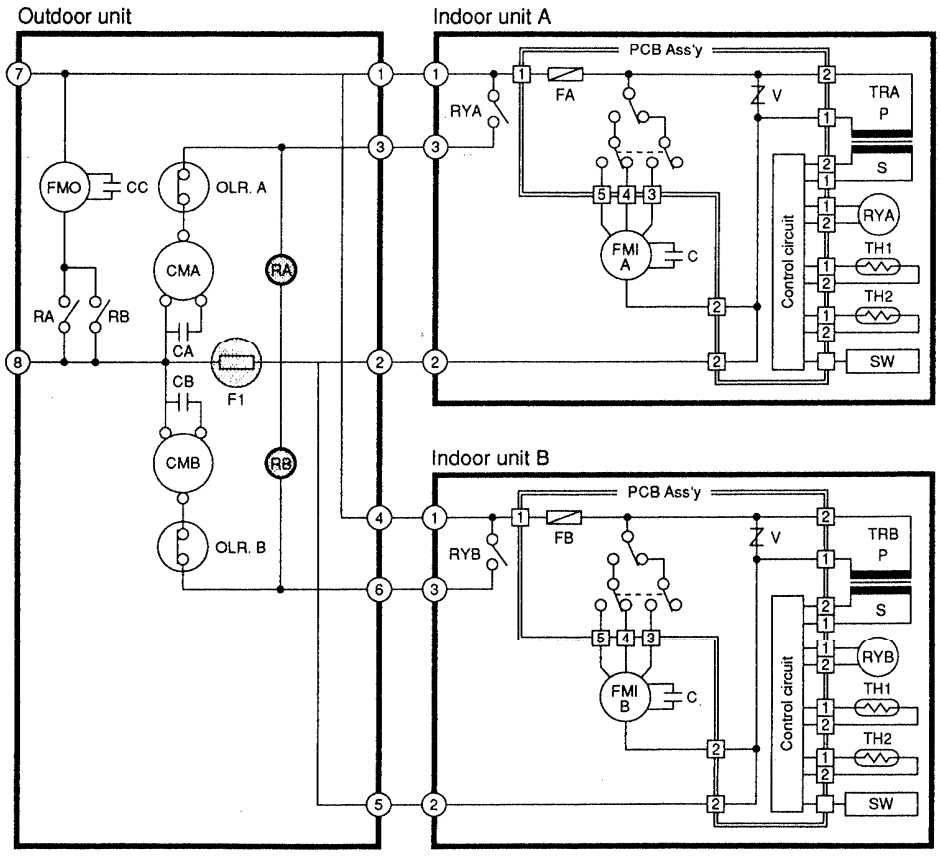
All unit (indoor and outdoor) do not run. (cont'd)

(c) Check fuse F1 in indoor unit.

- Check fuse F1 in outdoor unit for continuity.

If fuse blows,

- Measure coil resistance of relays RA and RB.

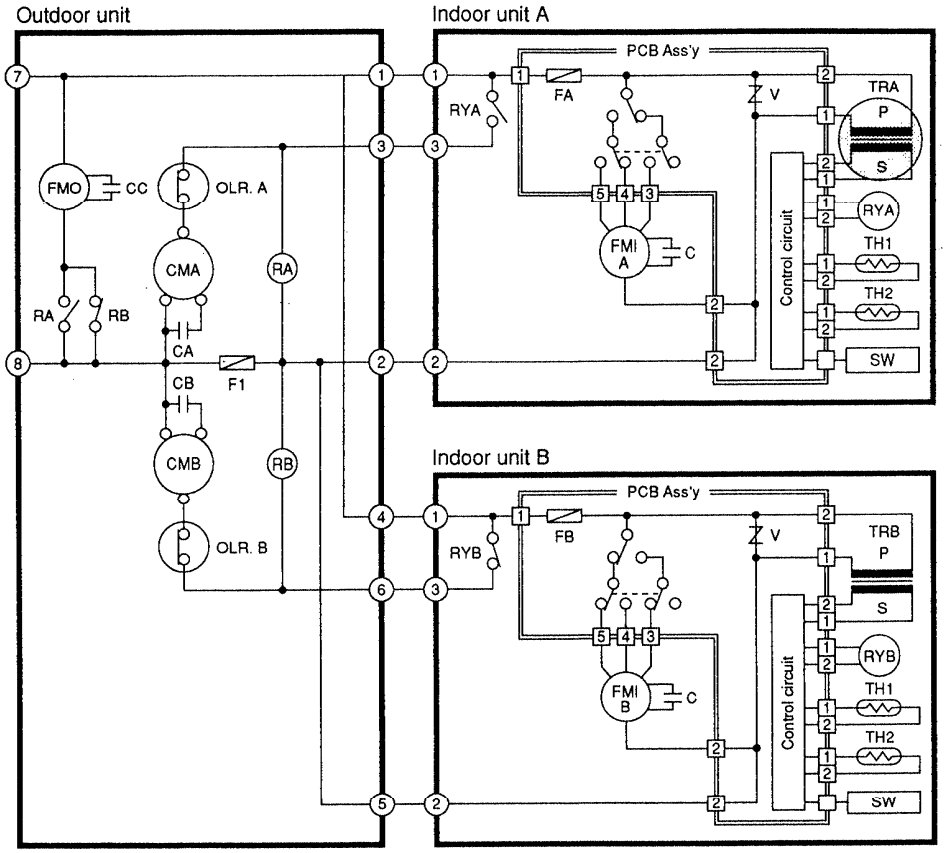


(3) Neither indoor unit A nor compressor motor A runs.

(Or, neither indoor unit B nor compressor motor B runs.)

(a) Check transformer in indoor unit A (or B).

- Measure resistance of transformer winding.



Neither indoor unit A nor compressor motor A runs. (cont'd)

(or neither indoor unit B nor compressor motor B runs.)

(b) Check fuse on PCB Ass'y in indoor unit A (or B).

- Check fuse on PCB Ass'y in indoor unit for continuity.

If fuse blows,

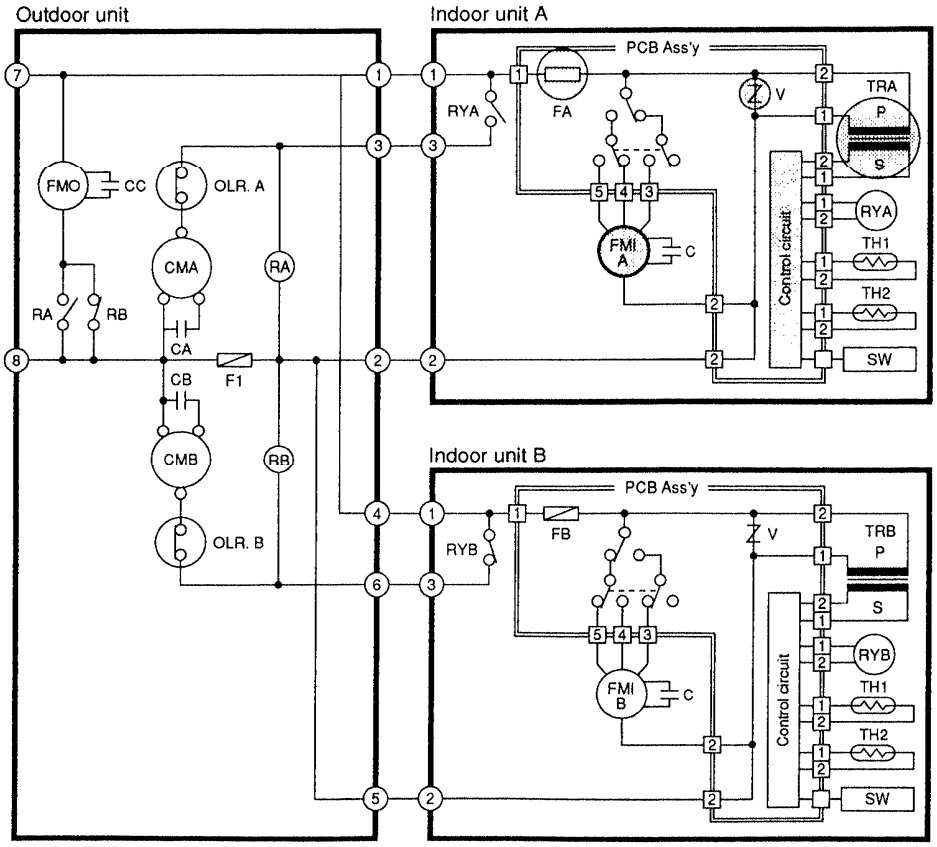
- Measure resistance of primary winding of transformer.

OK

- Measure resistance of indoor fan motor winding.

OK

- PCB Ass'y is defective.



6-3 A particular component of air conditioner does not operate.

(1) Only compressor motor A does not run (or B).

- Measure coil resistance of power relay in indoor unit.

OK

- Measure resistance of compressor motor winding.

OK

- Check compressor motor capacitor.

- Check overload relay.

It has tripped.

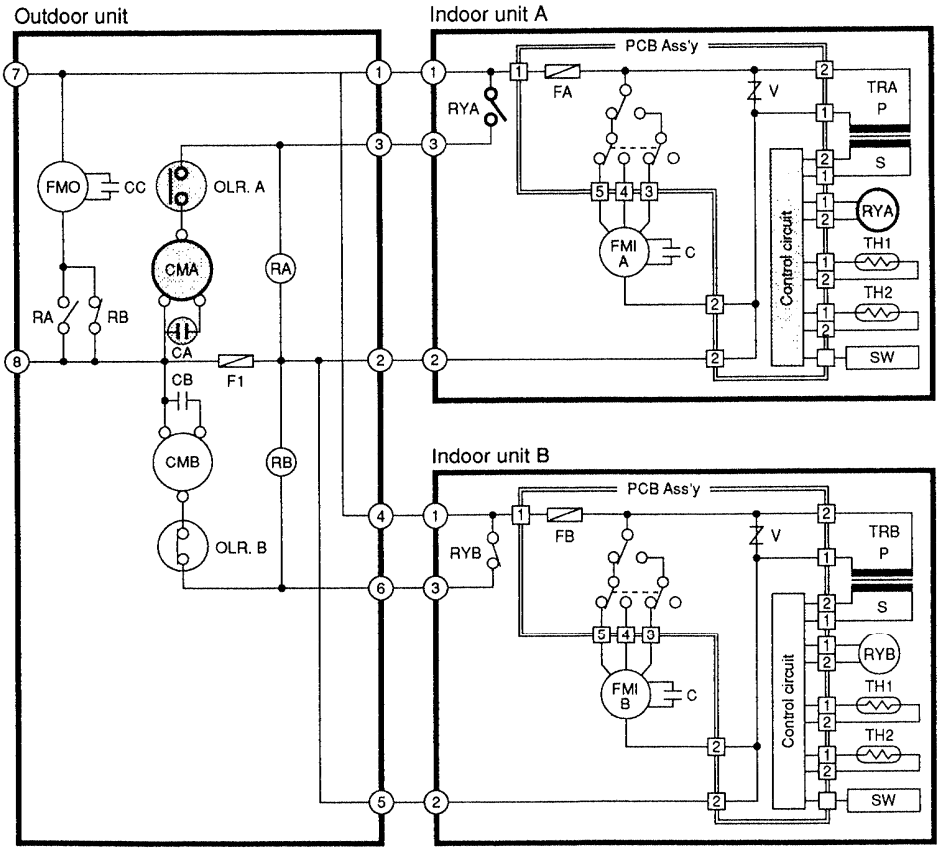
- Is outdoor heat exchanger coil dirty or are there obstacles near air suction inlet of outdoor unit?

NO

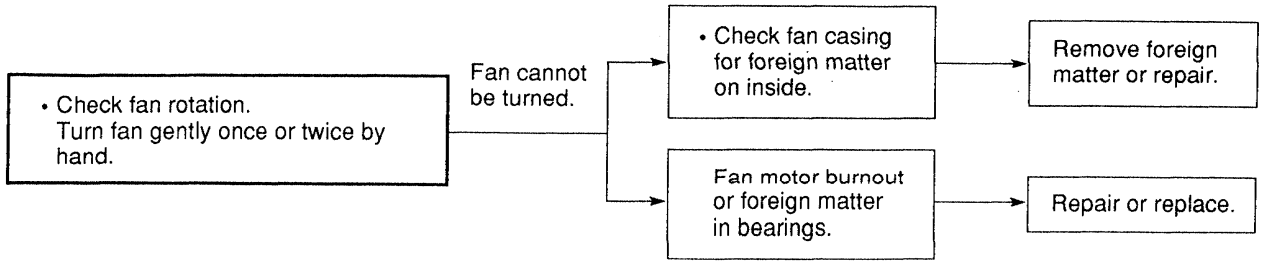
- Is temperature of compressor abnormally high?

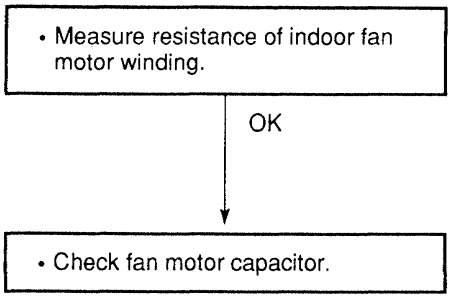
YES

Refrigerant gas shortage.

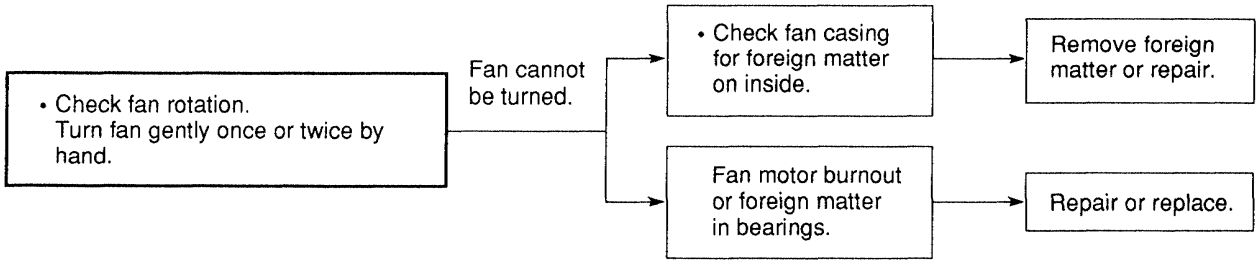


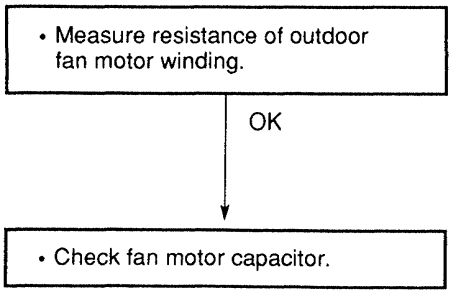
(2) Only indoor fan does not run.





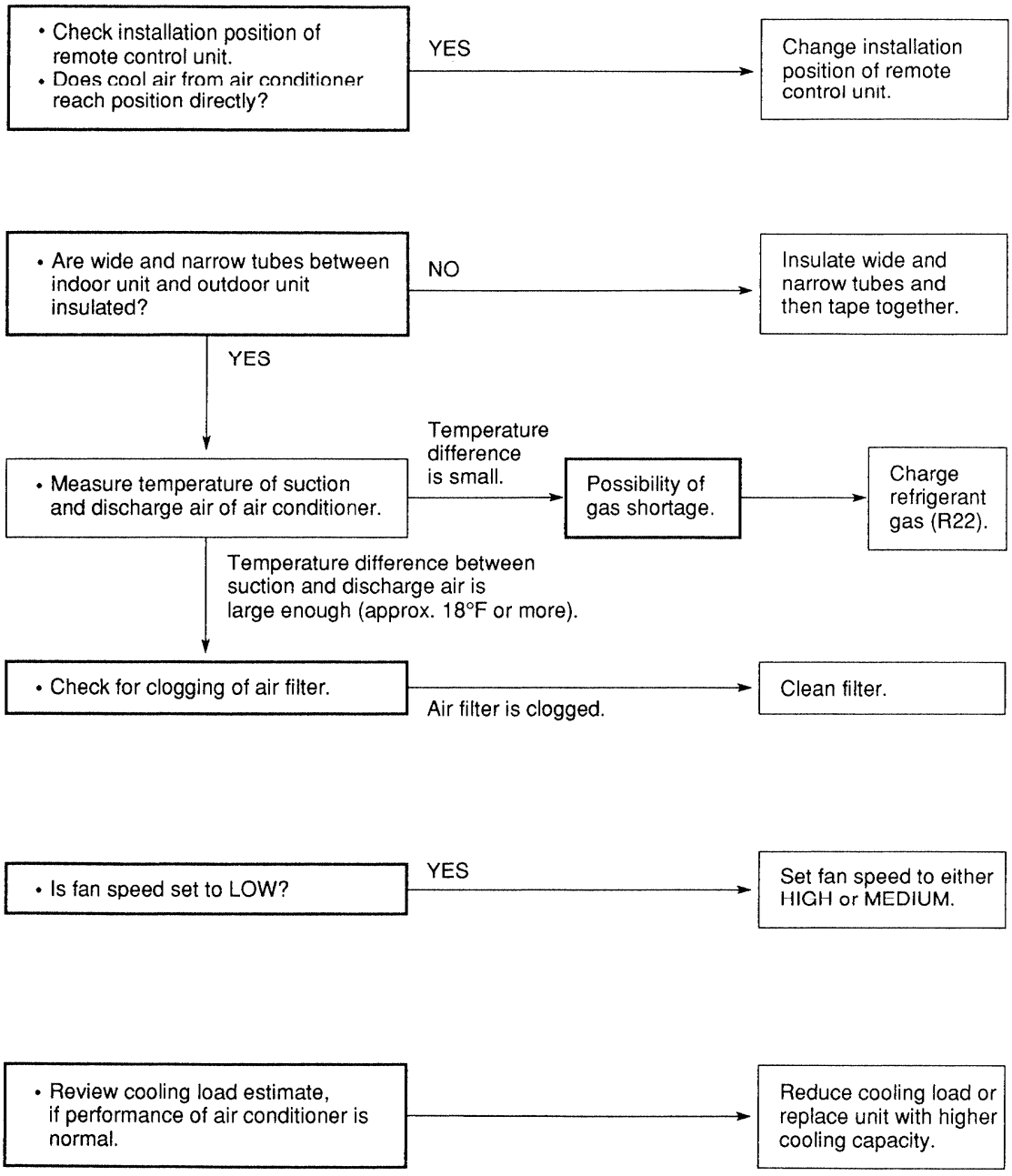
(3) Only outdoor fan does not run.



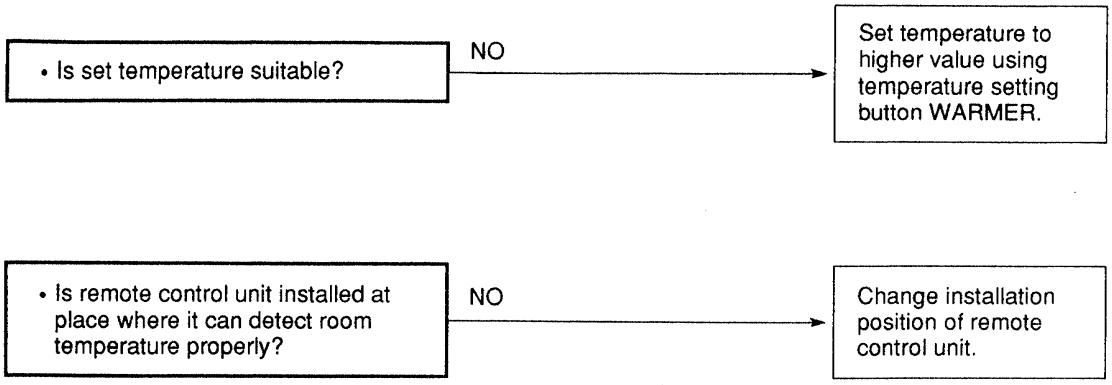


6-4 Air conditioner operates, but abnormalities occur.

(1) Poor Cooling



(2) Excessive Cooling



6-5 Indoor (heat exchanger) coil temperature sensor (TH1) is defective.

(1) Open

Even though the air conditioner does not thermo OFF, compressor and outdoor fan repeat ON for 10 minutes and OFF for 6 minutes.

(2) Shortage

When dehumidified water freezes in the indoor coil, the freeze prevention function does not work.

7. CHECKING ELECTRICAL COMPONENTS

7-1 Measurement of Insulation Resistance

- The insulation is in good condition if the resistance exceeds 1 MΩ.

(1) Power Supply Wires

Clamp the grounded wire of the power supply wires with the lead clip of the insulation resistance tester and measure the resistance by placing a probe on either of the power wires. (Fig. 1)

Then measure the resistance between the grounded wire and the other power wires. (Fig. 1)

(2) Indoor Unit

Clamp an aluminum plate fin or copper tube with the lead clip of the insulation resistance tester and measure the resistance by placing a probe on ①, and then ② on the terminal plate. (Fig. 2)

(3) Outdoor Unit

Clamp a metallic part of the unit with the lead clip of the insulation resistance tester and measure the resistance by placing a probe on ①, and then ② on the 2P terminal plate. (Fig. 2)

(4) Measurement of Insulation Resistance for Electrical Parts

Disconnect the lead wires of the desired electric part from terminal plate, PCB Ass'y, capacitor, etc. Similarly disconnect the connector. Then measure the insulation resistance. (Figs. 1 to 4)

Refer to Electric Wiring Diagram.

Note: If the probe cannot enter the poles because the hole is too narrow then use a probe with a thinner pin.

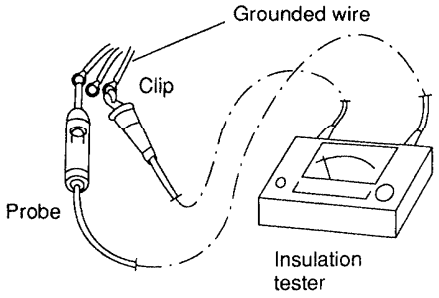


Fig. 1

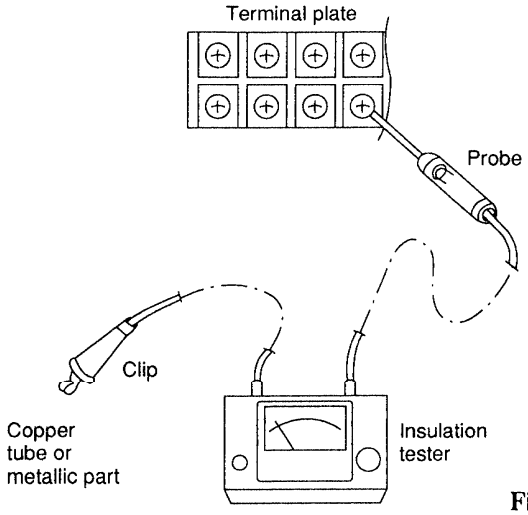


Fig. 2

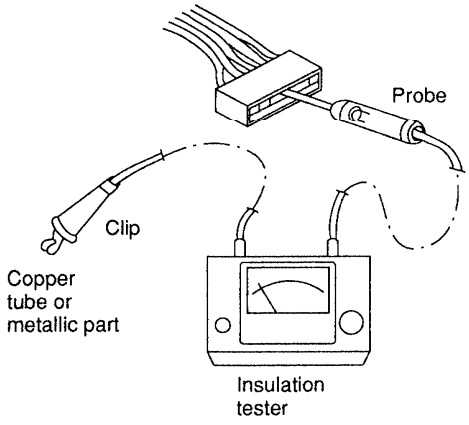


Fig. 3

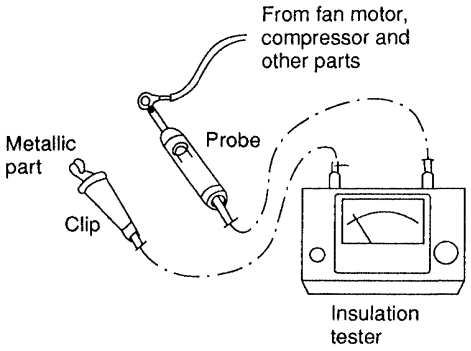


Fig. 4

7-2 Checking Continuity of Fuse on PCB Ass'y

- Check for continuity using a multimeter as shown in Fig. 5.

Note:

Method Used to Replace Fuse on PCB Ass'y

1. Remove the PCB Ass'y from the electrical component box.
2. Pull out the fuse at the metal clasp using pliers while heating the soldered leads on the back side of the PCB Ass'y with a soldering iron (30W or 60W). (Fig. 6)
3. Remove the fuse ends one by one. For replacement, insert a fuse of the same rating and solder it. (Allow time to radiate heat during soldering so that the fuse does not melt.)

When replacing the fuse, be sure not to break down the varistor.

7-3 Checking Motor Capacitor

Remove the lead wires from the capacitor terminals, and then place a probe on the capacitor terminals as shown in Fig. 7. Observe the deflection of the pointer, setting the resistance measuring range of the multimeter to the maximum value.

The capacitor is "good" if the pointer bounces to a great extent and then gradually returns to its original position.

The range of deflection and deflection time differ according to the capacity of the capacitor.

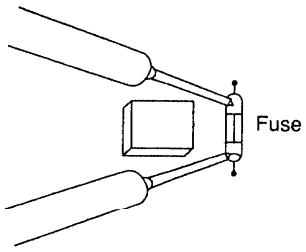


Fig. 5

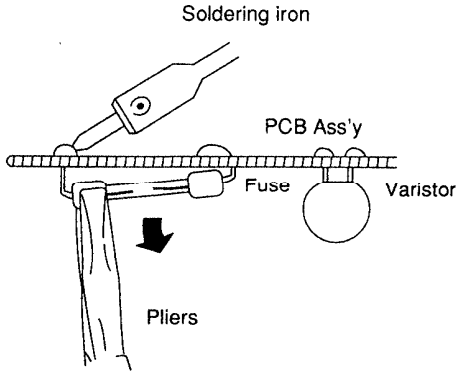


Fig. 6

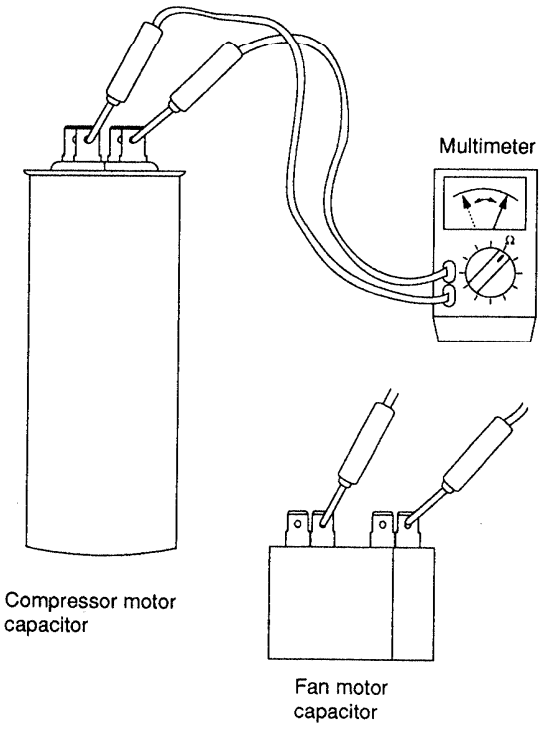


Fig. 7

7-4 Appearance of Electrical Parts

(1) Auxiliary Relay

MY2F-T1-USTS

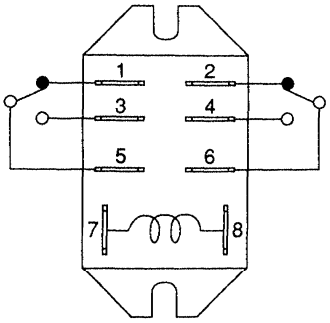


Fig. 8

(2) Relay

DFU12D1-F (M)

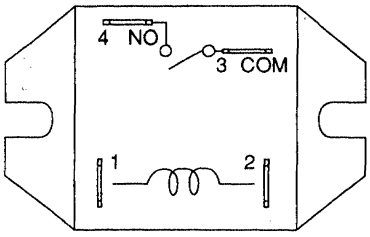


Fig. 9