

SERVICE MANUAL

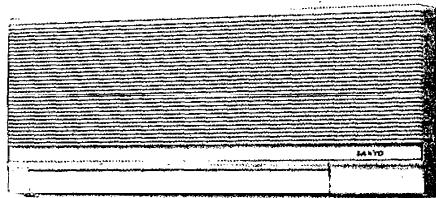
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32KM12W, X

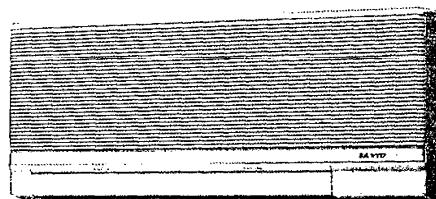
SPLIT SYSTEM AIR CONDITIONER

Apr. 1990

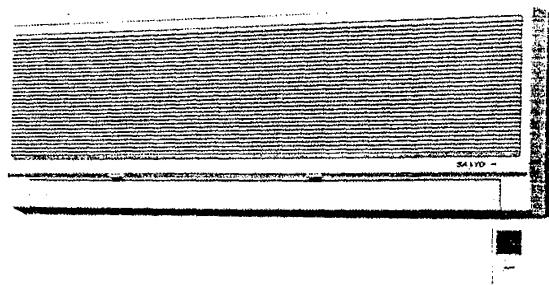
Indoor Unit



KM0712W, X

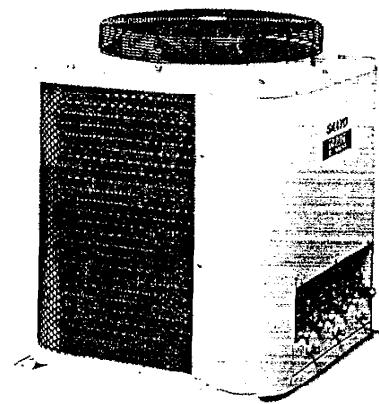


KM0712W, X



KM1812W, X

Outdoor Unit



CM3212

8526481012400

WM-700335

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1. SPECIFICATIONS

1) Unit Specifications

Model No.		32KM12W,X		
Unit Model No. Indoor units/Outdoor unit		KM0712W,X KM1812W,X / CM3212		
Nos. of Indoor Unit	1 - Unit	1 - Unit	3 - Unit	
	KM0712W,X	KM1812W,X	KM0712W,X × 2 KM1812W,X × 1	
PERFORMANCE		Cooling		
Capacity	BTU/hr.	7,000/7,000	18,000/18,000	32,000/32,000
Air circulation (High)	cu. ft. / min.	220 / 210	440 / 420	-
Moisture removal (High)	Pints/hr.	2.2 / 2.1	5.3 / 5.2	-
ELECTRICAL RATING				
Frequency	Hz	60		
Phase		Single		
Voltage rating	V	230 / 208		
Available voltage range	V	187 ~ 253		
Running amperes	A	3.3 / 3.5	8.9 / 9.5	15.0 / 16.0
Power input	W	750 / 720	2,000 / 1,950	3,400 / 3,300
Power factor	%	99 / 99		
S.E.E.R.	BTU/Whr.	10.0		
FEATURES				
Controls		Microcomputer		
Control switch		Remote control		
Temperature control		IC Thermostat		
Timer		ON/OFF 12-hours		
Fan speeds	Indoor fan / Outdoor fan	3 / 2(Auto)		
Air deflection	Horizontal / Vertical	Manual / Manual		
Air filter		Washable, easy access		
Compressor		Rotary		
Refrigerant amount charged at shipment	lbs	R-22	1.83 × 2, 4.14	
Refrigerant control		Capillary tube		
Operation sound	In-Hi/Med/Low dB-A	40/35/30	47/44/40	-
	Out-Hi dB-A		62	
Refrigerant tubing connections		Flare type		
Max allowable tubing length at ship	ft. (m)	50 (15)	50 (15)	-
Limit of elevation difference	ft. (m)	16 (5)	23 (7)	-
Refrigerant tube o.d.	Narrow tube in. (mm)	1/4 (6.35)	1/4 (6.35)	-
	Wide tube in. (mm)	3/8 (9.52)	1/2 (12.7)	-
Refrigerant tube kit		Optional		
Accessories		Hanging wall bracket		
DIMENSIONS & WEIGHT		KM0712W,X	KM1812W,X	CM3212
Height	in. (mm)	13-19/32 (345)	14- 3/16 (360)	32- 1/16 (815)
Width	in. (mm)	31- 1/2 (800)	38-31/32 (900)	26- 3/8 (670)
Depth	in. (mm)	7- 3/32 (180)	7-25/32 (198)	26- 3/8 (670)
Net weight	lbs. (kg)	24 (11)	30 (13.5)	220 (100)
Shipping volume	cu. ft. (cu. m)	3.3 (0.093)	4.8 (0.130)	19.5 (0.552)
Shipping weight (Approx.)	lbs. (kg)	29 (13)	37.4 (17)	242 (110)

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

Remarks: 1. Rating conditions are: Outdoor unit entering air temperature 95°F D.B./75°F W.B.
Indoor unit entering air temperature 80°F D.B./67°F W.B.

2) Major Component Specifications

Unit Model No.	KM0712W, X	KM1812W, X
Controller P.C.B.	POW-K0911	POW-K182G
Control circuit fuse	250V - 3A	
Remote control unit	-	RCS-K2412W

Unit Model No.	CM3212		
Compressors	Rotary		
Compressor model....number	C-1R50H6L × 2, C-2R140H6S × 1		
No. of cyl.....rpm.	1.....2,900		
Nominal output	W	500 × 2, 1,400	
Compressor oil	cc	400 × 2, 800	
Coil resistance (Ambient temp. 77°F)	Ω	C - R: 4.01 C - S: 5.79	C - R: 1.10 C - S: 1.95
Safety Devices, Compressor			
Overload relay model	MRA98818-9201		Internal type
Operating temp.	Open °F	302 ± 9	320 ± 9
	Close °F	156 ± 20	198 ± 27
Operating amperes (Ambient temp. 77°F)	Trip in 6 ~ 16 sec. at 19.5 A		-
Run capacitor	μF	15	35
	VAC	370	400
Crankcase heater	V - W	-	

Unit Model No.	KM0712W, X	KM1812W, X	CM3212
Fan	Cross-flow	Cross-flow	Propeller
Number....dia.	mm	1...φ 90	1...φ 100
Fan motor model		SV4T-11D6P	KFH4T-31C6P
No. of pole....rpm (230V, Hi.)		4..1,518/1,455	4..1,584/1,547
Nominal output	W	10	30
Coil resistance (Ambient temp. 68°F)	Ω	WHT - GRY: 464.8 WHT - VLT: 209.8 VLT - YEL: 93.4 YEL - PNK: 539.6	WHT - BRN: 129.1 WHT - VLT: 47.7 VLT - YEL: 34.8 YEL - PNK: 63.2
Safety Devices			
Fan motor, internal type	Open °F	266 ± 18	248 ± 9
Operating temp.	Close °F	174 ± 27	171 ± 27
Run capacitor	μF	0.6	1.5
	VAC	440	440

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3) Other Component Specifications

Transformer	ATR-J122U		
Rating	Primary Secondary	AC 220V 60Hz 19V 0.63A 12VA	
Resistance	Ω (at 79 °F)	Primary : (WHT - WHT): 143.5 Secondary : (BRN - BRN): 1.2	
Thermal cutoff		259 °F 2A 250V	
Unit Model No.	KM0712W,X / KM1812W,X		

Thermistor(Indoor Coil Temperature Sensor)	PTC-51H-S3		
Resistance	kΩ	32 °F 185.5 ± 5% , 86 °F 45.1 ± 5%	
		50 °F 112.2 ± 5% , 104 °F 29.7 ± 5%	
		68 °F 70.1 ± 5% , 122 °F 20.0 ± 5%	
Unit Model No.	KM0712W,X / KM1812W,X		

Relay	DFU24D1-F(M)		
Coil		DC24V	
Coil resistance	Ω (at 68 °F)	650 ± 10%	
Contact		2 HP 265VAC	
Unit Model No.	KM0712W,X / KM1812W,X		

Relay	MY2F-T1-USTS		
Coil		AC 240V	
Coil resistance	kΩ(at 68 °F)	18.8 ± 15%	
Contact		AC 240V 5A	
Unit Model No.	CM3212		

Thermostat(for outdoor fan speed control)	MQT8S 27Y		
Operating Temperature	°F	OFF 69 °F ON 81 °F	
Rating		AC 250V 0.6A	
Unit Model No.	CM3212		

Fuse			
Rating		250V 3A	
Dimensions	mm	5.2 dia. L 20	
Unit Model No.	CM3212		

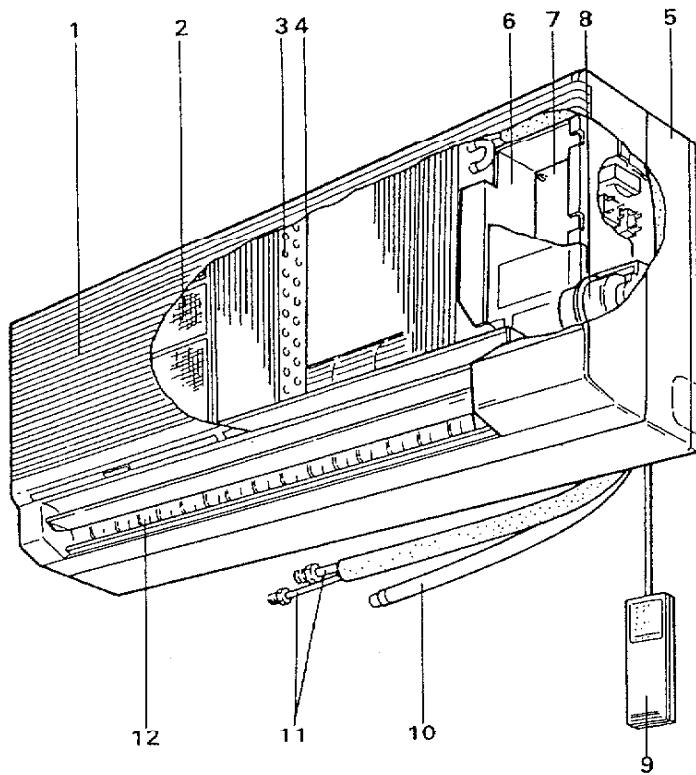
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2. OPERATING RANGE

Temperature	Indoor air intake temp.	Outdoor air intake temp.
Maximum	95 °F DB / 71 °F WB	115 °F DB
Minimum	67 °F DB / 57 °F WB	67 °F DB

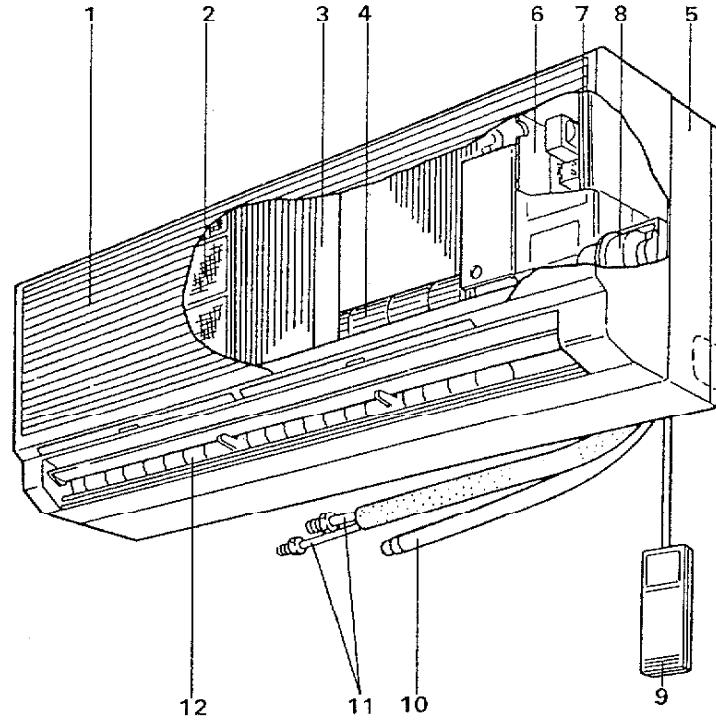
3. CONSTRUCTION OF THE UNIT

INDOOR KM0712W, X

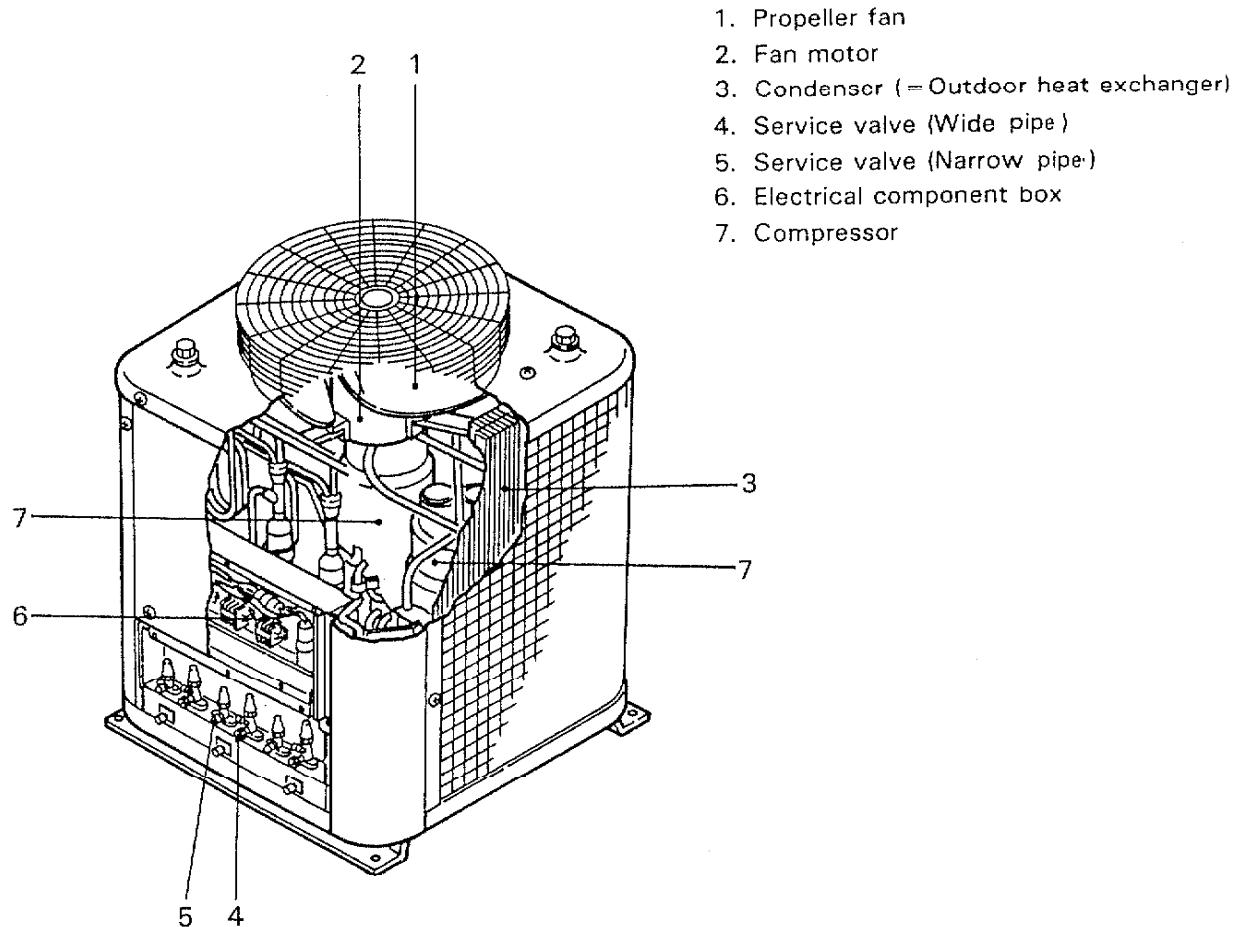


1. Air intake
2. Air filter (Slide-out)
3. Evaporator (= Indoor heat exchanger)
4. Indoor fan
5. Casing
6. Electrical component box
7. PCB Ass'y
8. Fan motor
9. Remote control unit
10. Drain hose
11. Refrigerant piping
12. Air outlet

INDOOR KM1812W, X

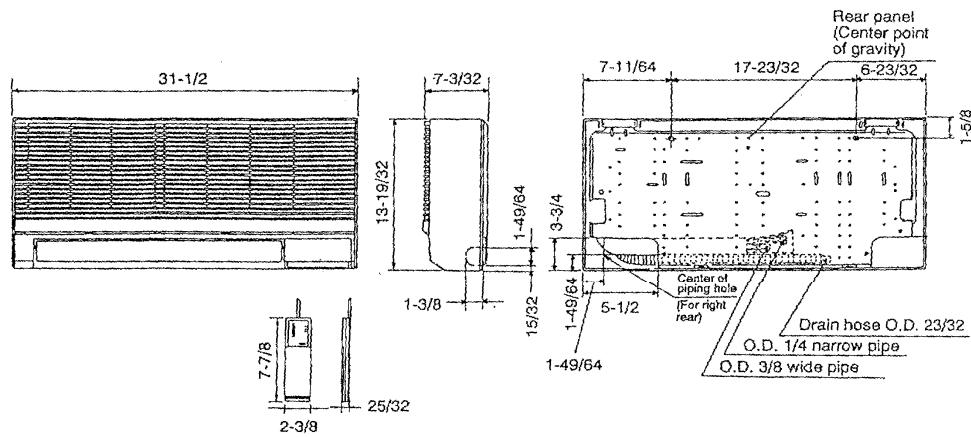


1. Air intake
2. Air filter (Slide-out)
3. Evaporator (= Indoor heat exchanger)
4. Indoor fan
5. Casing
6. Electrical component box
7. PCB Ass'y
8. Fan motor
9. Remote control unit
10. Drain hose
11. Refrigerant piping
12. Air outlet

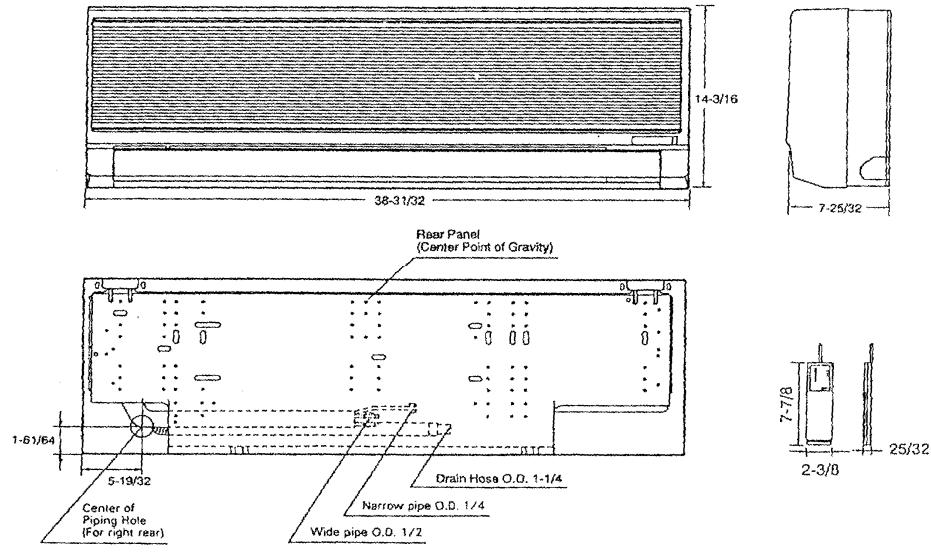


4. DIMENSIONAL DATA

Indoor Unit : KM0712W/KM0712X

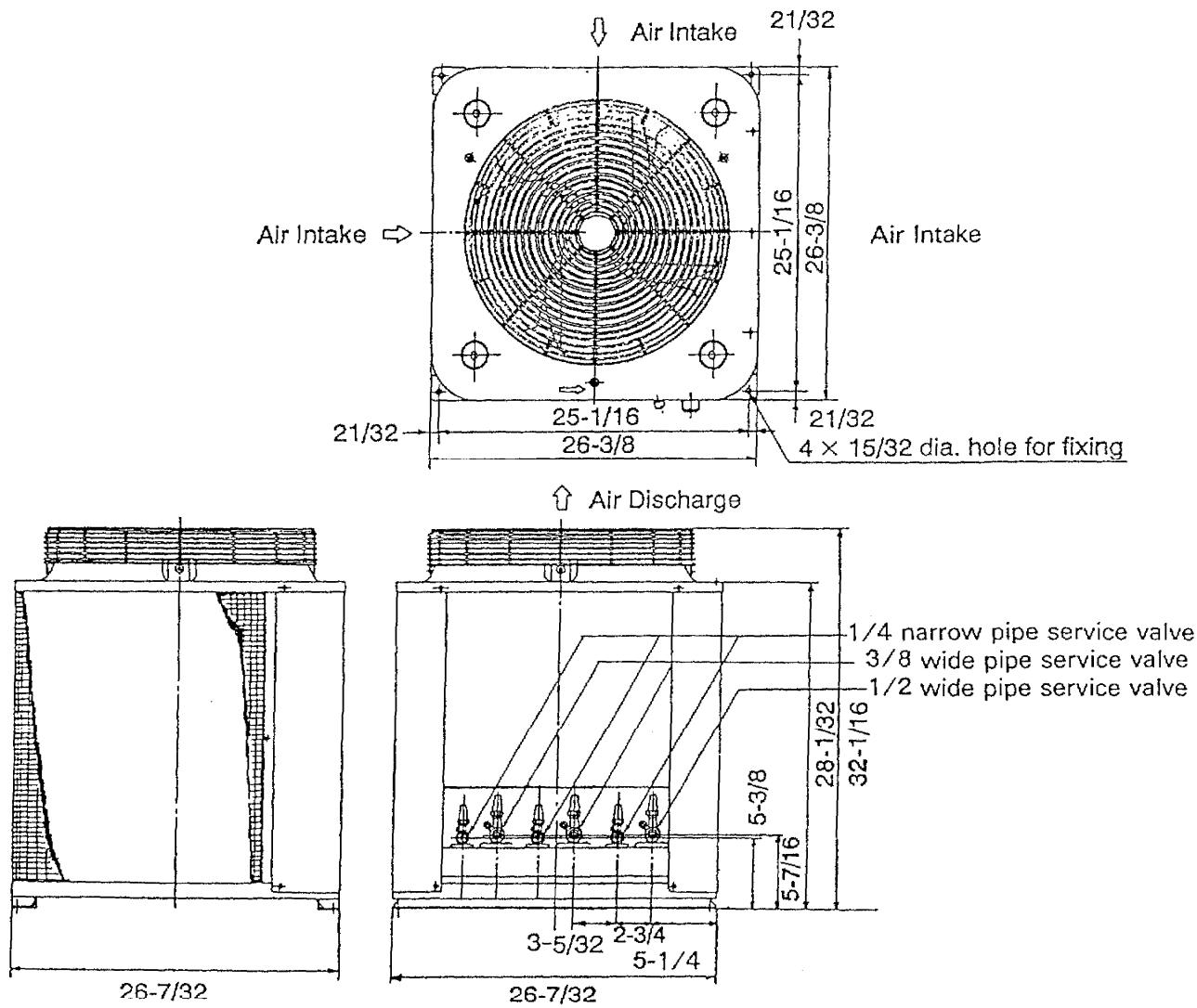


Indoor Unit : KM1812W/KM1812X



DIMENSIONAL DATA

Outdoor Unit : CM3212



5. COOLING CAPACITY

COOLING CAPACITY 1PHASE 60Hz 230 V

MODEL NAME : KM0712W/X

EVAPORATOR		CONDENSER					
ENTERING TEMP °F(°C)		AMBIENT TEMP °F(°C)					
W.B	D.B		75(23.9)	85(29.4)	95(35)	105(40.6)	115(46.1)
59 (15.0)		TC KW	6,930 0.48	6,620 0.53	6,300 0.58	5,940 0.62	5,460 0.69
	72 (22.2)	SHC	5,490	5,340	5,190	5,030	4,810
	76 (24.4)	SHC	6,300	6,150	6,010	5,840	5,460
	80 (26.7)	SHC	5,930	6,620	6,300	5,940	5,460
	84 (28.9)	SHC	6,930	6,620	6,300	5,940	5,460
	88 (31.1)	SHC	6,930	6,620	6,300	5,940	5,460
		TC KW	7,170 0.49	6,940 0.54	6,670 0.59	6,310 0.64	5,810 0.70
	72 (22.2)	SHC	4,520	4,420	4,300	4,150	3,940
	76 (24.4)	SHC	5,330	5,240	5,120	4,960	4,760
	80 (26.7)	SHC	6,190	6,090	5,970	5,820	5,610
63 (17.2)	84 (28.9)	SHC	7,000	6,910	6,670	6,310	5,810
	88 (31.1)	SHC	7,170	6,940	6,670	6,310	5,810
		TC KW	7,360 0.49	7,250 0.54	* 7,000 0.59	6,620 0.64	6,160 0.72
	72 (22.2)	SHC	3,520	3,480	3,380	3,230	3,060
	76 (24.4)	SHC	4,340	4,290	4,200	4,050	3,870
	80 (26.7)	SHC	5,190	5,150	5,050	4,900	4,730
	84 (28.9)	SHC	6,010	5,960	5,870	5,720	5,540
	88 (31.1)	SHC	6,830	6,780	6,680	6,530	6,160
		TC KW	7,800 0.50	7,470 0.55	7,280 0.60	6,950 0.66	6,550 0.73
	72 (22.2)	SHC	2,500	2,450	2,390	2,270	2,130
71 (21.7)	76 (24.4)	SHC	3,320	3,270	3,200	3,090	2,950
	80 (26.7)	SHC	4,170	4,120	4,080	3,940	3,800
	84 (28.9)	SHC	4,990	4,940	4,870	4,760	4,620
	88 (31.1)	SHC	5,800	5,760	5,690	5,570	5,430
		TC KW	7,740 0.51	7,680 0.56	7,490 0.61	7,220 0.68	6,930 0.75
	76 (24.4)	SHC	2,300	2,280	2,220	2,140	2,040
	80 (26.7)	SHC	3,160	3,130	3,080	2,990	2,900
	84 (28.9)	SHC	3,970	3,950	3,890	3,810	3,710
	88 (31.1)	SHC	4,790	4,760	4,710	4,620	4,530

TC:Total Cooling Capacity (BTU/H)

SHC:Sensible Heat Capacity (BTU/H)

KW:Compressor Input (Kw)

Rating conditions(*MARK) are

:Outdoor Ambient Temp. 95°F D.B.

:Indoor Unit Entering Air Temp. 80°F D.B./67°F W.B.

COOLING CAPACITY 1PHASE 60Hz 208 V

MODEL NAME : KM0712WXX

		RATED CAPACITY : 7,000 BTU/H		AIR FLOW RATE : 210 CFM					
EVAPORATOR		CONDENSER							
ENTERING TEMP °F(°C)		AMBIENT TEMP °F(°C)							
W.B	D.B		75(23.9)	85(29.4)	95(35)	105(40.6)			
59 (15.0)		TC KW	6,930 0.48	6,820 0.53	6,300 0.58	5,940 0.62			
	72 (22.2)	SHC	5,410	5,260	5,110	4,940			
	76 (24.4)	SHC	5,190	6,040	5,890	5,720			
	80 (26.7)	SHC	6,930	6,620	6,300	5,940			
	84 (28.9)	SHC	6,930	6,620	6,300	5,940			
	88 (31.1)	SHC	6,930	6,620	6,300	5,940			
63 (17.2)		TC KW	7,170 0.49	6,940 0.54	6,870 0.59	6,310 0.64			
	72 (22.2)	SHC	4,470	4,370	4,250	4,100			
	76 (24.4)	SHC	5,250	5,150	5,040	4,980			
	80 (26.7)	SHC	6,070	5,970	5,860	5,700			
	84 (28.9)	SHC	6,860	6,760	6,640	6,310			
	88 (31.1)	SHC	7,170	6,940	6,670	6,310			
67 (19.4)		TC KW	7,360 0.49	7,250 0.54	* 7,000 0.59	6,620 0.64			
	72 (22.2)	SHC	3,510	3,460	3,360	3,210			
	76 (24.4)	SHC	4,290	4,240	4,150	3,990			
	80 (26.7)	SHC	5,110	5,080	4,970	4,810			
	84 (28.9)	SHC	5,890	5,850	5,750	5,600			
	88 (31.1)	SHC	6,680	6,630	6,530	6,380			
71 (21.7)		TC KW	7,600 0.50	7,470 0.55	7,280 0.50	6,950 0.66			
	72 (22.2)	SHC	2,520	2,470	2,400	2,290			
	76 (24.4)	SHC	3,300	3,280	3,190	3,070			
	80 (26.7)	SHC	4,120	4,070	4,010	3,890			
	84 (28.9)	SHC	4,900	4,860	4,790	4,670			
	88 (31.1)	SHC	5,690	5,640	5,570	5,460			
75 (23.9)		TC KW	7,740 0.51	7,660 0.56	7,490 0.51	7,220 0.68			
	76 (24.4)	SHC	2,320	2,290	2,240	2,150			
	80 (26.7)	SHC	3,140	3,110	3,060	2,970			
	84 (28.9)	SHC	3,920	3,900	3,840	3,760			
	88 (31.1)	SHC	4,710	4,680	4,630	4,540			

TC:Total Cooling Capacity (BTU/H)

SHC:Sensible Heat Capacity (BTU/H)

KW:Compressor Input (KW)

Rating conditions(*MARK) are

:Outdoor Ambient Temp. 95°F D.B.

:Indoor Unit Entering Air Temp. 80°F D.B./67°F W.B.

COOLING CAPACITY 1PHASE 60Hz 230 V MODEL NAME : KM1812W-K

		RATED CAPACITY : 18,000 BTU/H AIR FLOW RATE : 440 CFM						
EVAPORATOR		CONDENSER						
ENTERING TEMP *F(*C)		AMBIENT TEMP *F(*C)						
W.B	D.B	TC KH	75(23.9) 1.30	85(29.4) 1.42	95(35) 1.55	105(40.6) 1.68		
59 (15.0)	72 (22.2)	SHC	12,700	12,220	11,850	11,390		
	76 (24.4)	SHC	14,230	13,800	13,390	12,920		
	80 (25.7)	SHC	15,830	15,410	14,990	14,520		
	84 (26.9)	SHC	17,370	16,940	16,200	15,290		
	88 (31.1)	SHC	17,820	17,010	16,290	15,290		
63 (17.2)	TC KH	18,430 1.30	17,860 1.44	17,150 1.57	16,220 1.71	14,940 1.88		
	72 (22.2)	SHC	10,750	10,470	10,130	9,700		
	76 (24.4)	SHC	12,260	12,000	11,670	11,230		
	80 (25.7)	SHC	13,890	13,810	13,270	12,830		
	84 (26.9)	SHC	15,420	15,140	14,810	14,370		
88 (31.1)	SHC	16,950	16,600	16,340	15,900			
67 (19.4)	TC KH	18,940 1.33	18,530 1.45	* 18,000 1.55	17,010 1.73	15,840 1.92		
	72 (22.2)	SHC	8,730	8,530	8,320	7,890		
	76 (24.4)	SHC	10,250	10,130	9,950	9,430		
	80 (25.7)	SHC	11,870	11,730	11,460	11,030		
	84 (26.9)	SHC	13,400	13,270	12,990	12,570		
88 (31.1)	SHC	14,940	14,800	14,530	14,100			
71 (21.7)	TC KH	19,530 1.34	19,210 1.47	19,720 1.61	17,870 1.78	16,830 1.96		
	72 (22.2)	SHC	5,260	5,530	5,740	5,910		
	76 (24.4)	SHC	6,190	6,060	6,870	7,540		
	80 (25.7)	SHC	9,800	9,670	9,490	9,150		
	84 (26.9)	SHC	11,330	11,200	11,010	10,680		
88 (31.1)	SHC	12,870	12,740	12,540	12,210			
75 (23.9)	TC KH	19,910 1.37	19,690 1.49	19,280 1.64	18,580 1.82	17,820 2.01		
	72 (24.4)	SHC	6,120	6,050	5,890	5,850		
	80 (25.7)	SHC	7,750	7,620	7,450	7,320		
	84 (26.9)	SHC	9,280	9,180	9,030	8,790		
	88 (31.1)	SHC	10,800	10,720	10,570	10,320		

[C]:Total Cooling Capacity (BTU/H)
 SMC:Sensible Heat Capacity (BTU/H)
 KWH:Compressor Input (KWH)
 Rating conditions(*MARK) are
 :Outdoor Ambient Temp.95°F D.B.
 :Indoor Unit Entering Air Temp.80°F D.B./67°F W.B.

COOLING CAPACITY 1PHASE 60Hz 208 V

MODEL NAME : KM1812W-X

		RATED CAPACITY : 18,000 BTU/H			AIR FLOW RATE : 420 CFM					
EVAPORATOR		CONDENSER								
ENTERING TEMP °F(°C)		AMBIENT TEMP °F(°C)								
W.B	D.B		75(23.9)	85(29.4)	95(35)	105(40.6)	115(46.1)			
59 (15.0)		TC KW	17,820 1.31	17,010 1.43	16,200 1.56	15,280 1.69	14,040 1.86			
	72 (22.2)	SHC	12,580	12,150	11,730	11,260	10,630			
	76 (24.4)	SHC	14,060	13,630	13,200	12,730	12,110			
	80 (26.7)	SHC	15,600	15,170	14,740	14,270	13,650			
	84 (28.9)	SHC	17,080	16,640	16,200	15,280	14,040			
	88 (31.1)	SHC	17,820	17,010	16,200	15,280	14,040			
63 (17.2)		TC KW	18,430 1.32	17,860 1.45	17,150 1.58	16,220 1.72	14,940 1.90			
	72 (22.2)	SHC	10,690	10,410	10,070	9,630	9,030			
	76 (24.4)	SHC	12,170	11,890	11,550	11,100	10,510			
	80 (26.7)	SHC	13,710	13,430	13,090	12,640	12,050			
	84 (28.9)	SHC	15,190	14,900	14,560	14,120	13,530			
	88 (31.1)	SHC	16,660	16,380	16,040	15,590	14,940			
67 (19.4)		TC KW	18,940 1.34	18,630 1.46	* 18,000 1.60	17,010 1.74	15,840 1.94			
	72 (22.2)	SHC	8,730	8,590	8,320	7,880	7,390			
	76 (24.4)	SHC	10,210	10,070	9,790	9,360	8,860			
	80 (26.7)	SHC	11,750	11,610	11,330	10,900	10,400			
	84 (28.9)	SHC	13,220	13,090	12,810	12,380	11,880			
	88 (31.1)	SHC	14,700	14,580	14,280	13,850	13,350			
71 (21.7)		TC KW	19,530 1.35	19,210 1.48	18,720 1.62	17,870 1.79	16,830 1.98			
	72 (22.2)	SHC	6,720	6,590	6,390	6,060	5,650			
	76 (24.4)	SHC	8,190	8,060	7,870	7,530	7,130			
	80 (26.7)	SHC	9,740	9,600	9,410	9,080	8,670			
	84 (28.9)	SHC	11,210	11,080	10,890	10,550	10,150			
	88 (31.1)	SHC	12,690	12,560	12,360	12,030	11,620			
75 (23.9)		TC KW	19,910 1.38	19,690 1.50	19,260 1.65	18,580 1.83	17,820 2.02			
	76 (24.4)	SHC	6,180	6,100	5,950	5,700	5,440			
	80 (26.7)	SHC	7,720	7,640	7,490	7,240	6,980			
	84 (28.9)	SHC	9,200	9,120	8,960	8,720	8,450			
	88 (31.1)	SHC	10,670	10,590	10,440	10,190	9,930			

TC:Total Cooling Capacity (BTU/H)

SHC:Sensible Heat Capacity (BTU/H)

KW:Compressor Input (KW)

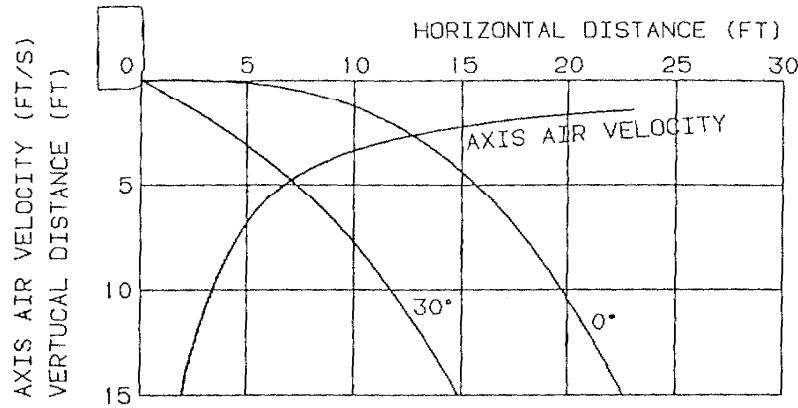
Rating conditions(*MARK) are

:Outdoor Ambient Temp. 95°F D.B.

:Indoor Unit Entering Air Temp. 80°F D.B./67°F W.B.

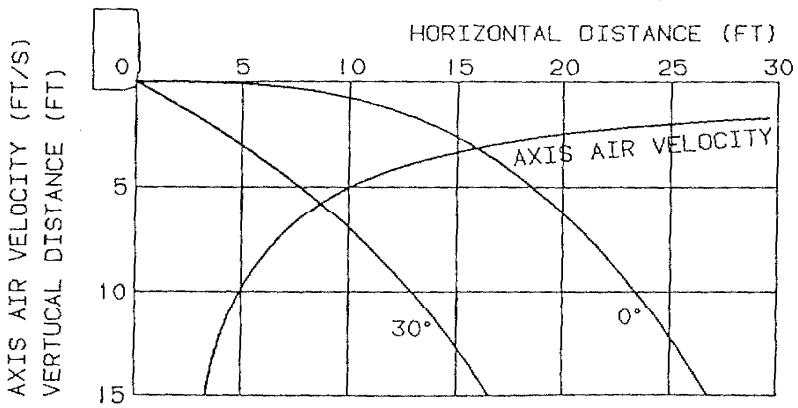
6. AIR THROW DISTANCE CHART

MODEL : KM0712W/X



FAN SPEED : HIGH
ROOM AIR TEMP. : 80°F
LOUVER ANGLE : 0°, 30°

MODEL : KM1812W/X



FAN SPEED : HIGH
ROOM AIR TEMP. : 80°F
LOUVER ANGLE : 0°, 30°

7. OPERATING INSTRUCTIONS

Name of Each Part

This air conditioner consists of three indoor units and an outdoor unit. (Tri-Zone Split System)

Air Intake

The return air in the room is drawn into this section and passes through air filters which remove dust and foreign particles.

Air Outlet

By moving the flap and vertical vanes at the air outlet grille, the air flow direction can be adjusted as desired.

Remote Control Unit

The remote control unit contains control switches for power ON/OFF, operation mode selection, temperature adjustment, fan speed, and timer setting.

Refrigerant Tubes

The indoor and outdoor units are connected by copper tubes through which refrigerant gas flows.

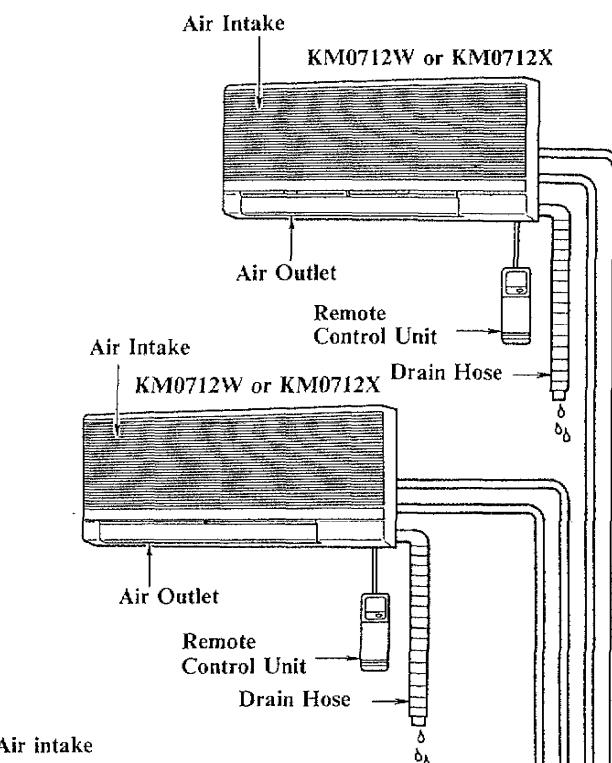
Drain Hose

Moisture in the room is condensed and drained off by means of this hose.

Outdoor (Condensing) Unit

The outdoor unit contains the compressor, fan, heat exchanger coil, and other electrical components.

INDOOR UNIT



KM1812W or KM1812X

Air intake

Air outlet

Remote Control Unit

Refrigerant Tubes

Drain Hose

Refrigerant Tubes

Controls and Indicators

A. OPERATION ON/OFF BUTTON

This button is used to turn the air conditioner ON/OFF.

B. COOLING OPERATION LAMP

This lamp lights when the "COOL" mode is selected.

C. TIMER LAMP

This lamp lights when the system is operating on the timer.

D. SAVING MODE LAMP

This lamp lights when the NIGHT SETBACK or ENERGY SAVER mode is selected.

E. ROOM TEMPERATURE INDICATOR LAMPS

These lamps indicate the approximate room temperature at the location of the remote control unit.

F. TEMPERATURE SCALE

The numbers constitute the temperature scale for cooling (°F).

G. COOL/FAN SELECTOR

Use this control to select "COOL" mode or "FAN (only)" mode without cooling.

H. OPERATION SELECTOR

This has four options:

TIMER ON: Used to start the system at the set time.

TIMER OFF: Used to stop the system at the set time.

NIGHT SETBACK ENERGY SAVER: Used for programmed energy saving operation.

MANUAL: Used for conventional temperature control operation using the thermostat.

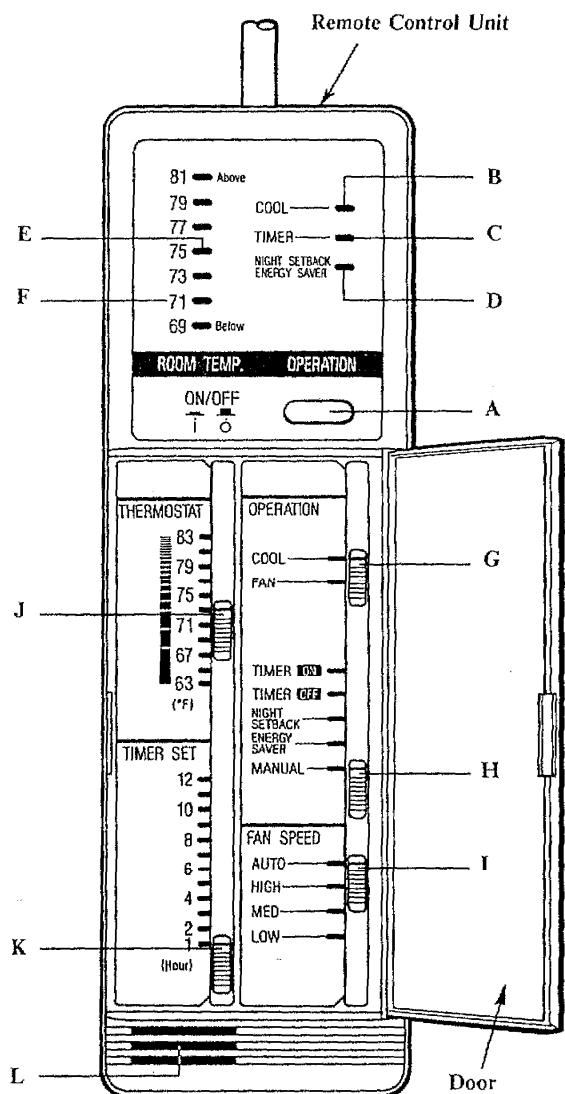
I. FAN SPEED SELECTOR

AUTO: Fan speeds are automatically decided by the microcomputer.

HIGH

MED.: You can manually select the desired fan speed.

LOW



J. THERMOSTAT KNOB

You can regulate the room temperature as desired by adjusting this knob.

K. TIMER SET KNOB

This control is used to set the time at which you wish the air conditioner to go on or off. Each number on the scale shows setting hour.

L. SENSOR

The sensor detects any change in the room temperature.

Operation Thumbnails

By setting this air conditioner once to the desired temperature, it will automatically regulate the room temperature to that value. Thus you can operate the air conditioner or stop it by simply pressing the OPERATION ON/OFF button.

First, open the door of the remote control unit to gain access to the control panel. Next, carry out the following steps while referring to the sub-section "Controls and Indicators" on the previous page.

What you wish to do



- Start the air conditioner and cool the room to the desired temperature
- To stop the air conditioner immediately while it is operating
- To use the TIMER to stop the air conditioner after several hours
- To switch the air conditioner to the ENERGY SAVING mode during manual cooling
- To use the TIMER to start the air conditioner after several hours
- To circulate the air in the room without cooling it (fan only operation)

How to do it



1. Set the "G" knob to COOL.
 2. Set the "H" knob to MANUAL.
 3. Set the "I" knob to AUTO.
 4. Set the "J" knob to the desired temperature.
 5. Press the "A" OPERATION ON/OFF button.
1. Press the "A" OPERATION ON/OFF button.
1. Set the "K" knob to the number of hours at which you wish to stop the air conditioner.
 2. Set the "H" knob to the TIMER OFF position.
1. Set the "H" knob from the MANUAL to the NIGHT SETBACK or ENERGY SAVER position.
1. Set the "K" knob to the number of hours at which you wish to start the air conditioner.
 2. Set the "H" knob to the TIMER ON position.
 3. Press the "A" OPERATION ON/OFF button.
1. Set the "G" knob to FAN.
 2. Press the "A" OPERATION ON/OFF button.

What will happen



The "B" and "E" lamps will light, then after a few minutes the air conditioner will start cooling operation.

The air conditioner will stop immediately, and all indicator lamps will go out.

The "C" lamp will light and after the set hours have elapsed the air conditioner will stop automatically.

The "D" lamp will light, the set temperature will automatically change, and the air conditioner will continue to operate in the ENERGY SAVING mode.

The "C" lamp will light and after the set hours have elapsed the air conditioner will start to operate automatically.

The air conditioner will operate as a circulation fan without changing the room temperature. In this case, only the "E" ROOM TEMPERATURE INDICATOR LAMP will light.

The above description is intended to provide you with basic knowledge of your air conditioner. For details of each function, read the relevant sections.

Operation

1. Cooling

A. Manual Cooling

The Manual mode is used for normal cooling operation.

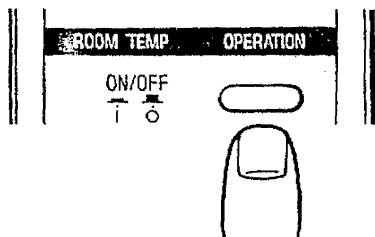
- STEP 1: Set the COOL/FAN SELECTOR knob to COOL.
- STEP 2: Set the OPERATION SELECTOR knob to MANUAL.
- STEP 3: Set the FAN SPEED as desired.
- STEP 4: Press the OPERATION ON/OFF button.
To stop the air conditioner, press the OPERATION ON/OFF button again.

NOTE

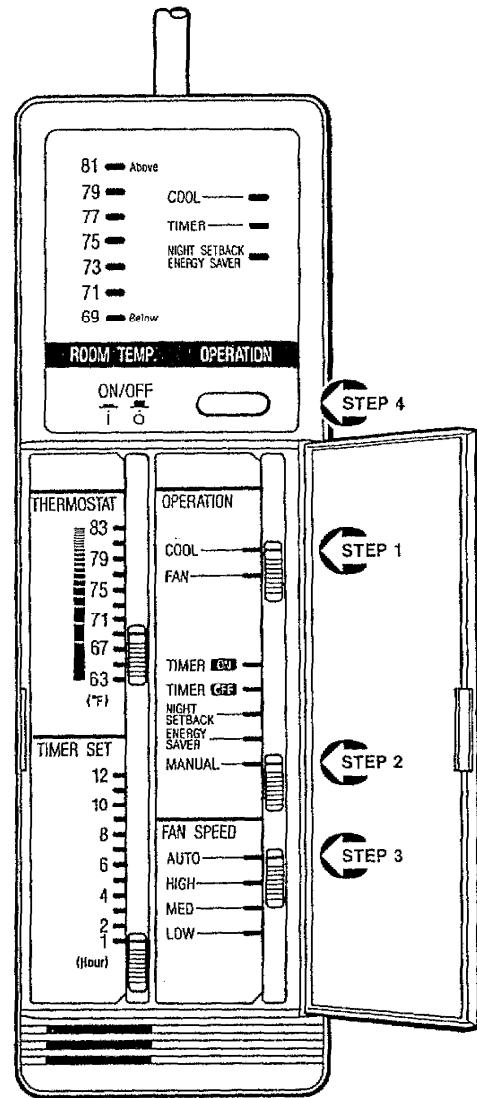
1. This appliance has a built-in 3-minute time delay circuit to ensure reliable operation. If the operation button is pressed, the compressor will start running after three minutes.
In the event of power failure, the unit will stop.
When the power is applied, unit will re-start automatically after 3 minutes.
2. To prevent the appliance from malfunctioning, do not set the selector knob between the two indicated positions. Make sure that it clicks into position.

B. Energy Saver Mode

- STEP 1: Set the OPERATION SELECTOR knob to ENERGY SAVER before turning the system on.
- STEP 2: Press the OPERATION button. The ENERGY SAVER and COOL lamps will light.

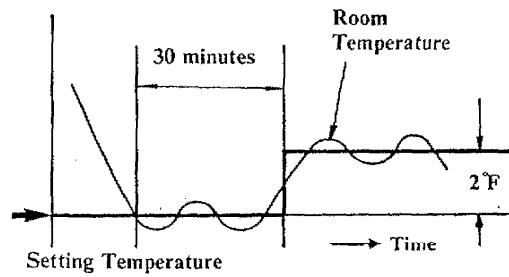


To cancel the Energy Saver mode, move the selector to MANUAL.



■ What does the Energy Saver mode mean?

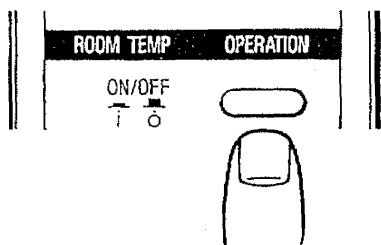
By selecting this mode then pressing the OPERATION ON/OFF button, the air conditioner will perform cooling operation until the temperature in the room reaches the set value, then the thermostat will cause the unit to pause. After about 30 minutes, the air conditioner will automatically raise the set temperature 2°F as shown in the diagram below. This enables you to save energy without sacrificing comfort. This function is convenient for when the room is vacant or soft cooling is needed.



Operation

C. Night Setback Mode

- STEP 1: Set the OPERATION SELECTOR knob to NIGHT SETBACK before turning the system on.
- STEP 2: Press the OPERATION ON/OFF button. The NIGHT SETBACK and COOL lamp will light.

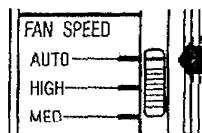


To cancel the Night Setback mode, move the selector to MANUAL.

2. Adjusting the Fan Speed

A. Automatic

Simply set the FAN SPEED selector to the "AUTO" position.



A microcomputer in the air conditioner automatically controls the fan speed when the AUTO mode is selected. When the air conditioner starts operating, the difference between the room temperature and the set temperature is detected by the microcomputer which then automatically switches the fan speed to the most suitable level.

Cooling

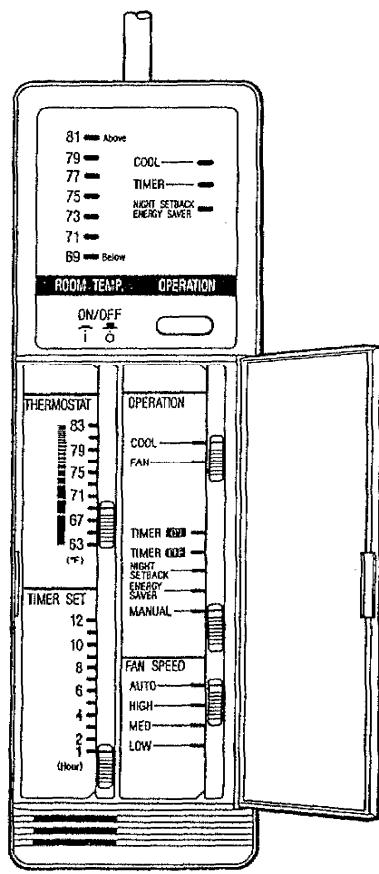
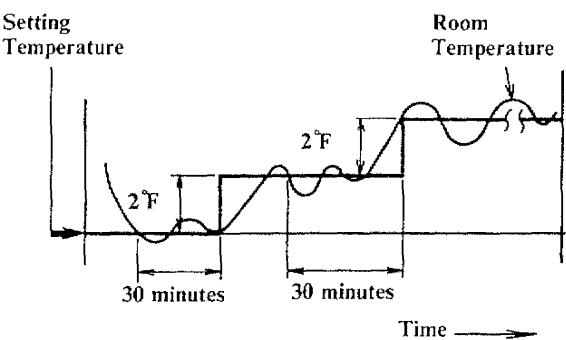
When difference between room temperature and set temperature is	FAN SPEED
4°F	High
Between 4°F and 2°F	Medium
Below 2°F	Low

B. Manual

If you want to adjust fan speed manually during cooling, just set the FAN SPEED control as desired. [HIGH, MED, or LOW]

■ What does the Night Setback mode mean?
By selecting this mode then pressing the OPERATION ON/OFF button, the air conditioner will perform cooling operation until the temperature in the room reaches the set value, then the thermostat will cause the unit to pause.

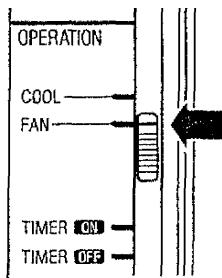
After about 30 minutes, the air conditioner will automatically raise the set temperature 2°F. When the room temperature reaches the newly set value, the thermostat will cause the unit to pause. After about 30 minutes the temperature is again raised by 2°F as shown below. This enables you to save energy. This function is convenient for when leaving the air conditioner on all night or soft cooling is needed.



3. Fan Only

If you want to circulate air without any temperature control, follow these steps:

- STEP: 1** Set the COOL/FAN selector knob to FAN.



- STEP: 2** Press the OPERATION ON/OFF button.

4. Using the Timer

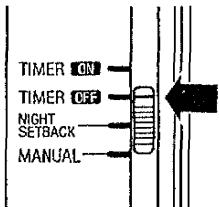
A. TIMER OFF Mode

The system stops after the set hours have elapsed.

- STEP 1:** Set the TIMER SET knob to the desired number of hours.

When the timer is set to 6, for instance, the system stops after six hours.

- STEP 2:** Set the OPERATION SELECTOR knob to TIMER OFF.



- STEP 3:** Press the OPERATION ON/OFF button. The TIMER lamp will light.

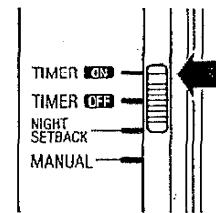
B. TIMER ON Mode

The system starts after the set hours have elapsed.

- STEP 1:** Set the TIMER SET knob to the desired number of hours.

When the timer is set to 6, for instance, the system starts after six hours.

- STEP 2:** Set the OPERATION SELECTOR knob to TIMER ON.



- STEP 3:** Press the OPERATION ON/OFF button. The TIMER lamp will light.

Power failure during timer operation

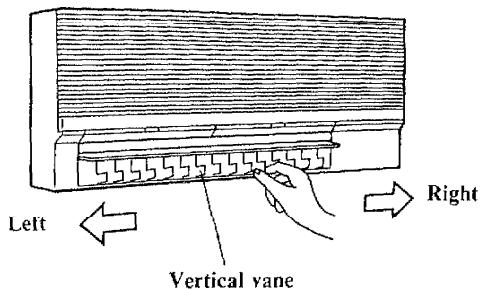
If power failure occurs, the time counted up to that point will become void. After the power is applied, the timer newly starts counting at the set time.

Operation

5. Adjusting the Air Flow Direction

A. Horizontal

The horizontal air flow can be adjusted by moving the vertical vane to the left or right.



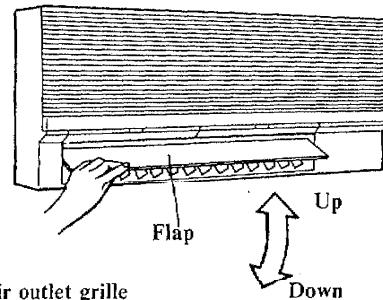
B. Vertical

Hold both ends of the flap and move the flap up and down to adjust the vertical air flow.

Recommended flap positions:

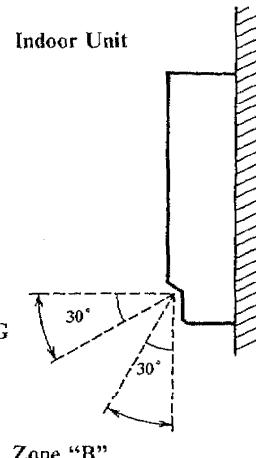
COOLING

- Be sure to set the flap within zone "A".



NOTE

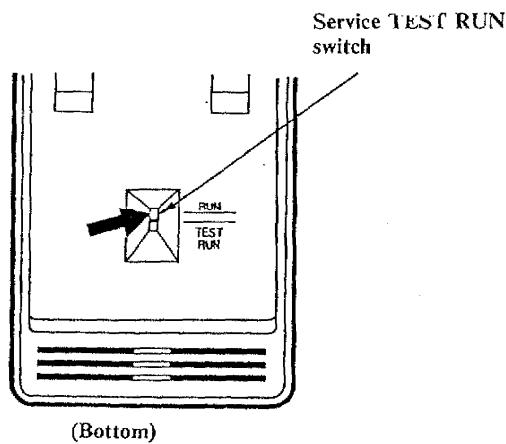
- If the flap is set within zone "B", condensation may form near the air outlet grille and drip onto the floor.



NOTE

Service TEST RUN switch (recessed*)

The Service TEST RUN switch is located at the rear bottom of the remote control unit. It is used for servicing the air conditioner. Do not touch it, therefore. During normal operation, this switch must be set in the RUN position. If the air conditioner is used with the switch in the TEST RUN position, it will not operate normally.



Remote control unit viewed from the rear

Care and Cleaning



For safety's sake, be sure to turn the air conditioner off and also disconnect it from the power mains before cleaning it.

Casing and Grille (Indoor Unit)

Clean the casing and grille of the indoor unit with a vacuum cleaner brush, or wipe them with a clean soft cloth.

If these parts are stained, use a clean cloth moistened with a mild liquid detergent.

When cleaning the grille, be careful so as not to force the vanes out of place.

CAUTION

1. Do not pour water on the unit to clean it. This will damage the internal components and cause an electric shock hazard.
2. Never use solvents, or harsh chemicals. Do not wipe the plastic casing using very hot water.

Outdoor Unit

CAUTION

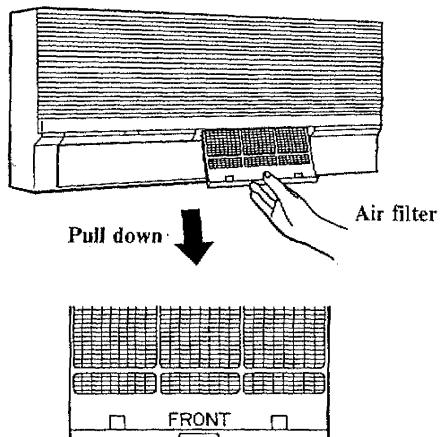
1. Certain metal edges and the condenser fins are sharp and may cause injury if handled improperly; special care should be taken when you clean these parts.
2. Periodically check the outdoor unit to see if the air outlet or air intake are clogged with dirt or soot.
3. The evaporator and other components of the outdoor unit must also be cleaned periodically. Consult your dealer or service shop.

Air Filter

The air filter behind the air intake grille should be checked and cleaned at least once every two weeks.

How to remove the filter

1. Place the flap on the air outlet grille in the bottom-most position.
2. Grasp the air filter by the tab at the bottom, and pull downward.



Use a vacuum cleaner to remove light dust. If there is sticky dust on the filter, wash the filter in lukewarm, soapy water, rinse it in clean water, and dry it.

When replacing the filter, check that the FRONT mark is facing you.

8. FUNCTION

1) Temperature Control

- Temperature control is obtained by cycling the compressor ON and OFF under control of the room temperature sensor in the remote control unit.
- The compressor turn to OFF below the setting temperature (Thermo OFF), and turn to ON above 2°F from setting temperature (Thermo ON).

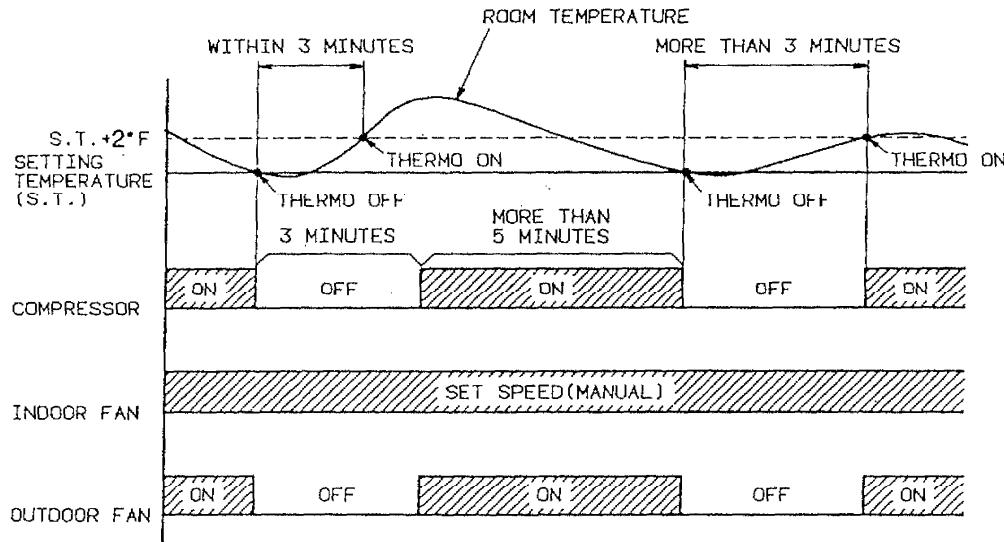


Fig. 1

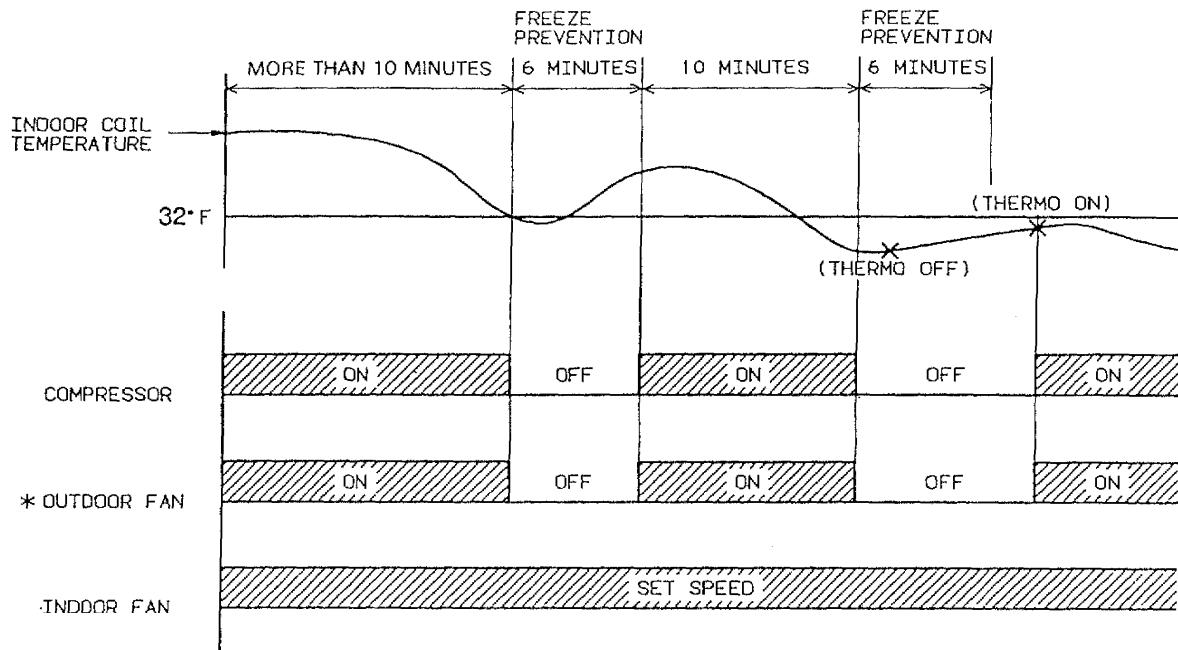
- In order to keep the compressor from stalling out when trying to start against the hight side refrigerant pressure, the control circuit has a built-in automatic time delay to allow the internal pressure to equalize. The control circuit will not try to start the compressor until it has been off for three (3) minutes.
- The compressor keep to turn forced for five (5) minutes, but the operation button is set to OFF, the compressor stop to turn.
- The compressor is not controlled by thermostat while the compressor run within five (5) minutes, or stop to run within three (3) minutes.

* The outdoor fan interlock to turn with either or both compressors.

2) Freeze prevention

If the indoor coil temperature falls below 32°F when the compressor has been turning for 10 minutes or more, the controller signals to stop turning to the compressor and outdoor fan.
The compressor and outdoor fan motor will start to turn after 6 minutes.

* But if either of three compressors is turning, the outdoor fan is also turning.



3) Outdoor fan speed control

In low temperature areas, the outdoor fan is set automatically to LOW to prevent freezing.

When the outdoor air temperature falls below 69°F, the outdoor fan is set to LOW.

When the outdoor air temperature rises to 81°F, the outdoor fan is set to HIGH.

9. INSTALLATION INSTRUCTIONS

1) Installation Site Selection

Indoor Unit

AVOID:

- areas where leakage of flammable gas may be expected.
- places where large amounts of oil mist exist.
- direct sunlight.
- nearby heat sources that may affect performance of the unit.
- locations where remote control will be splashed with water or affected by dampness or humidity.
- installing remote control unit behind curtains or furniture that obstruct air circulation.

DO:

- select an appropriate position from which every corner of the room can be uniformly cooled. (High on a wall is best.)
- select a location that will hold the weight of the unit.
- select a location where tubing and drain pipe have the shortest run to the outside. (Fig. 1)
- allow room for operation and maintenance as well as unrestricted air flow around the unit. (Fig. 2)
- install the unit within the maximum elevation difference (H) above or below the outdoor unit and within a total tubing length (L) from the outdoor unit as detailed in Table 1 and Fig. 3.
- allow room for mounting the control unit about 4 ft. (1 m) off the floor, in an area that is not in direct sunlight or in the flow of cool air from the unit.

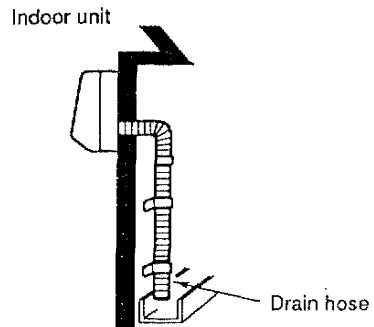


Fig. 1

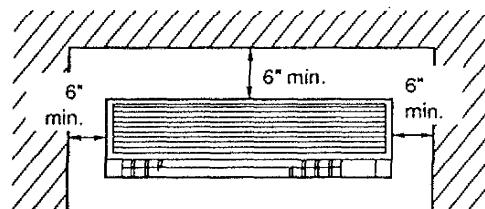


Fig. 2

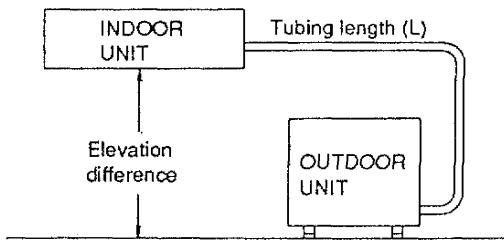


Fig. 3

Table 1

Model	Max Allowable Tubing Length (L)	Elevation Difference (H) Between Two Units
KM0712W KM0712X	50 ft. (15 m)	16 ft. (5 m)
KM1812W KM1812X		23 ft. (7 m)

Outdoor Unit

AVOID:

- heat sources, exhaust fans, etc. (Fig. 4)
- direct sunlight.
- damp, humid or uneven locations.

DO:

- choose a place as cool as possible.
- choose a place that is well ventilated and where the outside air temperature does not constantly exceed a maximum 115°F.
- allow enough room around the unit for air intake/exhaust and possible maintenance. (Fig. 6)
- also provide a solid base about 4" above ground level to reduce humidity and possible water damage to the unit and decreased service life.
- use lag bolts or equal to bolt down unit, reducing vibration and noise.

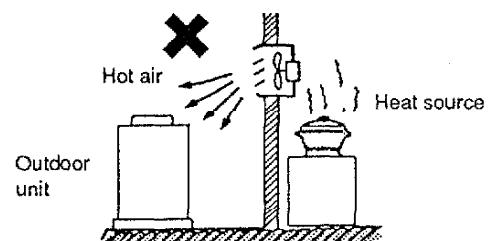


Fig. 4

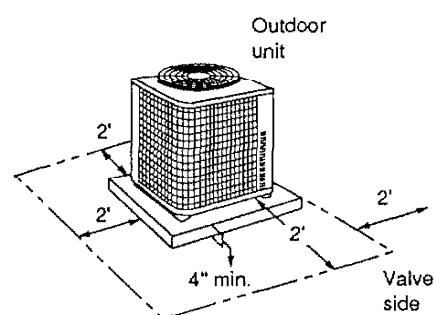


Fig. 5

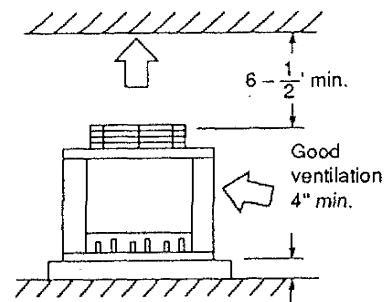


Fig. 6

2) Insulation of Refrigerant Tubing

This outdoor unit uses a system of capillary tubes, which cause both the wide and narrow tubes to become cold. To prevent heat loss and condensation, these tubes must be adequately insulated. Thickness of the insulation material should be a minimum of 0.3 in. (8 mm)

Insulation Material

The insulation material must have good insulating characteristics, must be easy to use, be age resistant, and must not easily absorb moisture. Either polyethylene or foam rubber insulation is recommended.

When applying the insulation, first connect the refrigerant tubing to the outdoor unit. After performing a leak test on the connecting part, insulate it, then wrap it with vinyl masking tape.

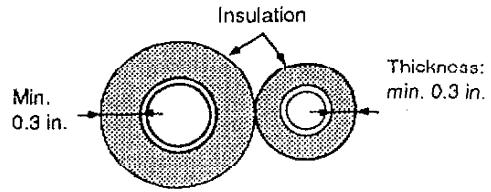


Fig. 7

CAUTION

After a tube has been insulated, never try to bend it into a narrow curve, as this may cause the tube to break or crack.

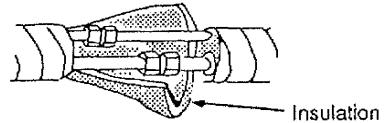


Fig. 8

3) Tubing Connection

Tighten up the union connection portion of the indoor unit using a double spanner. (Fig. 9)

Connect both the wide and narrow tubes of the outdoor unit. (Fig. 10)

When using the torque wrench, be sure to apply the correct torque according to the tubing diameter as given in Table 2.

Tubing Dia.	Tightening Torque
1/4" (6.35 mm)	Approx. 130 – 170 lbs-in
3/8" (9.52 mm)	Approx. 300 – 340 lbs-in
1/2" (12.70 mm)	Approx. 430 – 470 lbs-in

Table 2

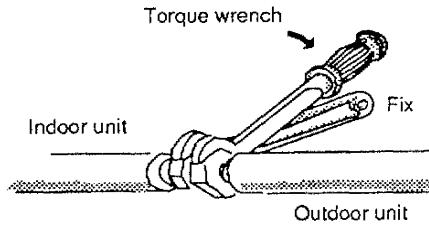


Fig. 9

Outdoor Unit

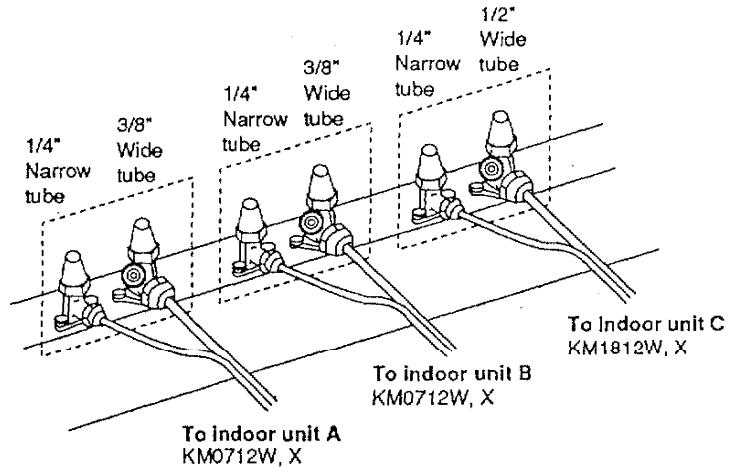


Fig. 10

NOTE

Enclosure in dotted line shows proper combination of refrigerant circuit.

4) Wiring Instructions

WIRING SYSTEM DIAGRAM

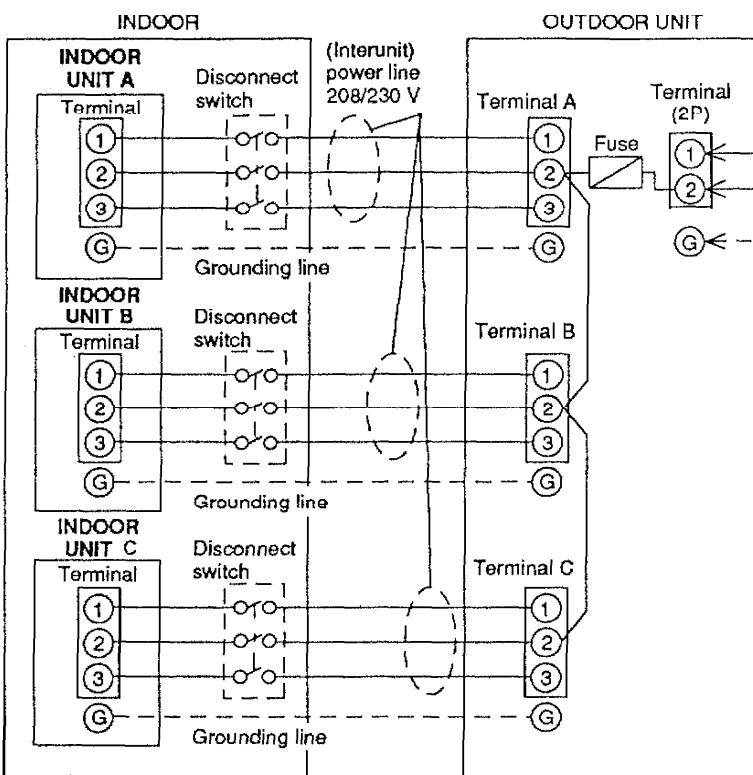


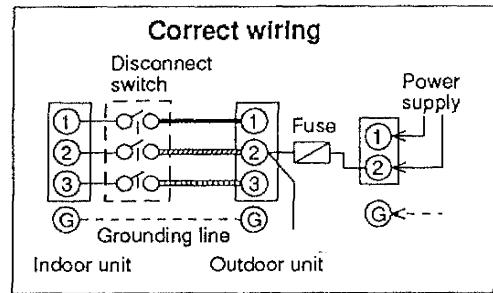
Fig. 11

NOTE

The fuse located in the outdoor unit provides power supply protection and may blow when power is applied if the system has been incorrectly wired.

CAUTION

- For correct field wiring, it is important that you closely refer to the Wiring System Diagram at left. Incorrect wiring will cause the unit to misoperate.

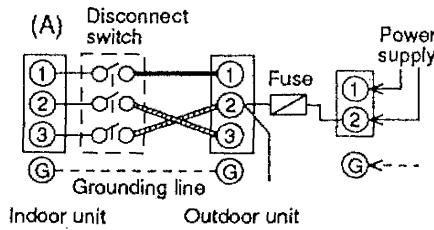


- Check local electrical codes and also any specific wiring instructions or limitations.
- Disconnect switches should be prepared in the field.

CAUTION Incorrect Wiring Examples

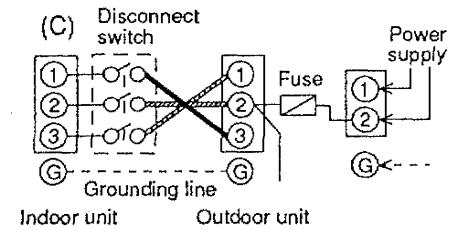
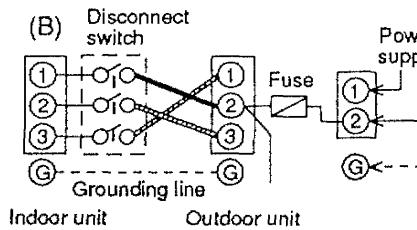
Trouble 1

- Short circuit will occur after approx. three minutes and the power circuit fuse blows.



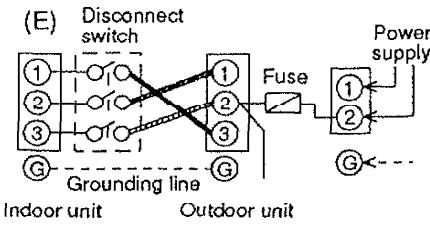
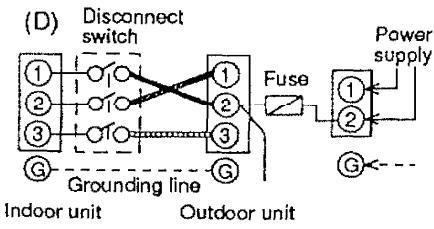
Trouble 2

- Air conditioner will not operate.



Trouble 3

- Compressor will not start; only indoor unit will operate.



5) Air Purging

5-1. Refrigerant Circuit Diagram for Air Purging

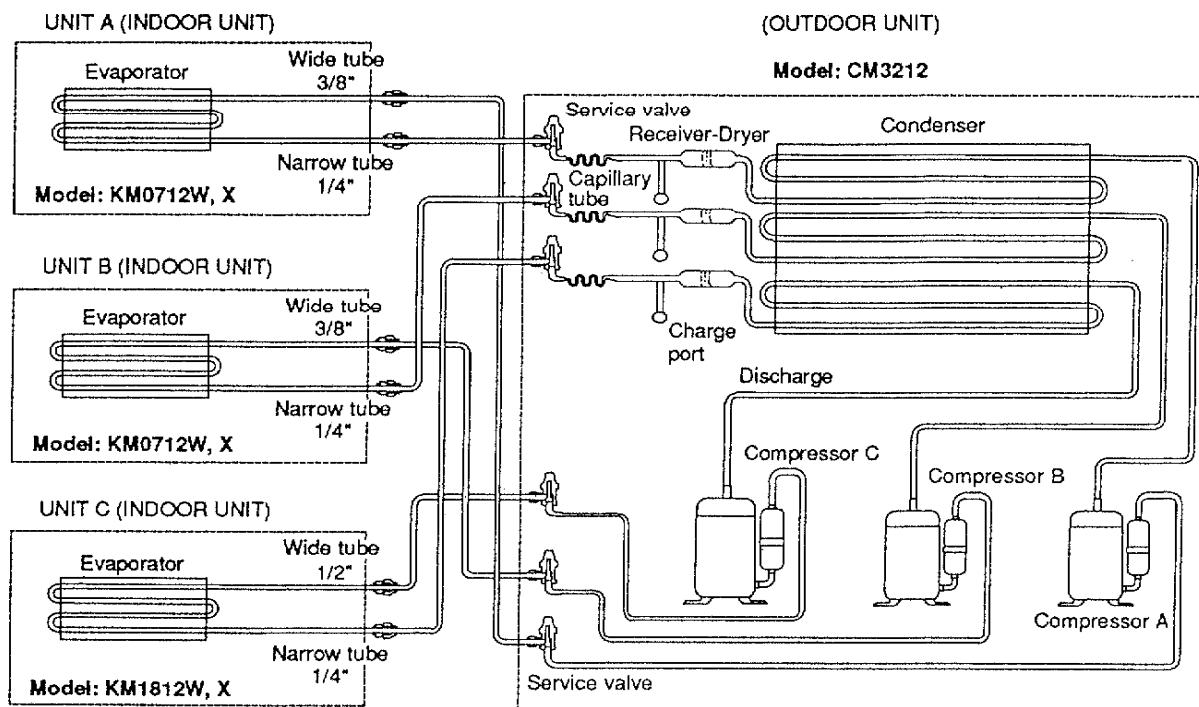


Fig. 12

5-2. Importance of Air Purging

Air does not function as a refrigerant because it cannot be liquefied in the condenser. Air and moisture remaining in the refrigerant system have undesirable effects as indicated below. Therefore, they must be purged completely.

- Pressure in narrow tubing rises.
- Operating current rises.
- Cooling and heating efficiency drops.
- Moisture in the air may freeze and block capillary tubing.
- Water may lead to corrosion of parts in the refrigerant circuit.

5-3. Air Purging Procedure

This unit is designed so that refrigerant gas can be used to purge unwanted air and moisture. Through this convenient new system, air purging is much simpler and installation time is reduced.

- * Internal required for air purging changes depending on the size of unit.

For KM0712W, X: **15 seconds**

For KM1812W, X: **30 seconds**

- Connect the tubes between the indoor and outdoor units and securely tighten the flare nuts.

In tightening the flare nuts on the narrow tube, use a torque wrench to apply the specified torque. (Fig. 13)

- Loosen the flare nut A of the wide tube by 180 degrees (1/2 turn). (Fig. 15)
- Open the narrow tube service valve stem by 90 degrees (1/4 turn) for **15 seconds** (or **30 seconds**) and close it to the original position (Fig. 14.). Even after the stem is closed, the air continues to escape out of the charge port of the wide tube service valve. (Fig. 15)

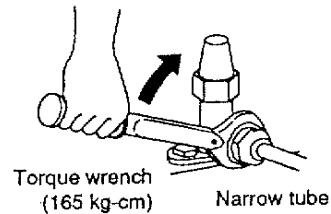


Fig. 13

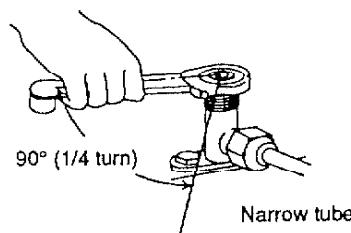


Fig. 14

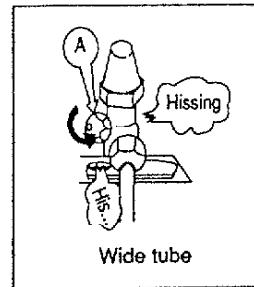


Fig. 15

- Wait until as much air purge gas as possible is released, and properly tighten up the flare nut A of the wide tube. (Fig. 16)

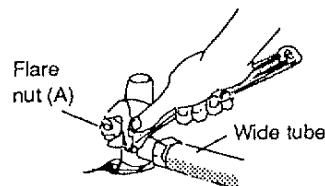


Fig. 16

- Open the wide tube service valve by a quarter turn and close it as soon as the hissing stops. Thus indicates that the tubes are filled with the refrigerant gas of the outdoor unit. (Fig. 17)

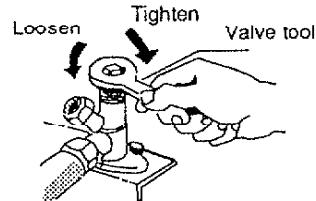


Fig. 17

- f) Leak test all joints with liquid soap. (Fig. 18)
- g) Fully open the stem of the service valves on the wide tube and the narrow tube.
- h) Next, install the valve caps using copper gaskets. (Fig. 19)
- i) This completes the air purge. The unit is ready for test operation.

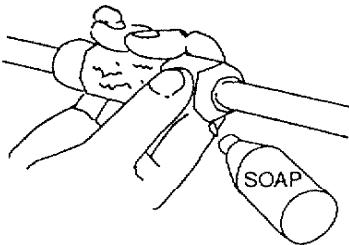


Fig. 18

■ Pump Down

Be sure to carry out the Pump Down procedure with the unit in cooling operation.

Pump Down means collecting all refrigerant in the outdoor unit without loss in refrigerant gas. Pump Down is used when the unit is to be relocated or the refrigerant circuit is serviced.

Pump Down Procedure

- 1) Connect a low-pressure gauge manifold hose to the charge port on the wide tube service valve.
- 2) Lower the stem of the wide tube service valve to position -c- and purge air in the manifold hose using the refrigerant gas.
- 3) Turn the narrow tube service valve all the way in (position -a-).
- 4) Turn on the unit's operating switch and start the cooling operation.
- 5) When the low-pressure gauge reading becomes 14.2 to 7.1 psi (1 to 0.5 kg/cm²), fully close the wide tube valve stem (position -a-), and then quickly turn off the unit. At that time, Pump Down has been completed and all refrigerant gas will have been collected from the outdoor unit.

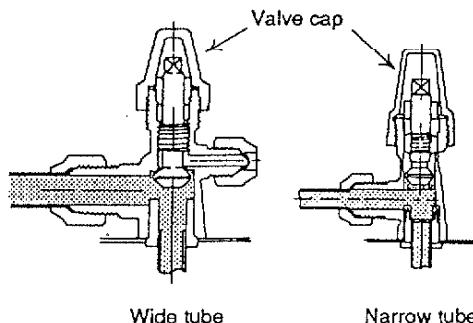


Fig. 19

CAUTION

In releasing Pump Down, flush out the tubing with the gas contained in the outdoor unit. Be sure to charge additional refrigerant from the wide tube service valve at position -c- during the cooling operation.

KM0712W, X: 1.4 oz. (40g)

KM1812W, X: 2.8 oz. (80g)

- No additional charging of refrigerant is necessary when vacuum evacuation is carried out for servicing.

■ Service Valve Construction

● Valve Position -a-

The valve stems of both wide and narrow tubes are turned all the way in. The unit is shipped from the factory in this position and it is also used for PUMP DOWN. (Fig. 20-a)

● Valve Position -b-

The valve stems of both wide and narrow tubes are turned all the way out ("BACK SEAT" position). This is the normal operating position. (Fig. 20-b)

● Valve Position -c-

With the narrow tube valve kept at BACK SEAT, only the wide tube valve stem is turned to the halfway down position. This position is used for pressure measuring and gas charging. (Fig. 20-c)

● Valve Position -d-

This is similar to position -a-, but with the flare nut of the wide tube open. This position is used for air purging. (Fig. 20-d)

CAUTION

Be sure to use a valve tool or socket wrench when opening or closing the service valve stem.

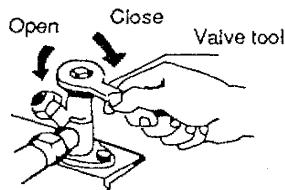
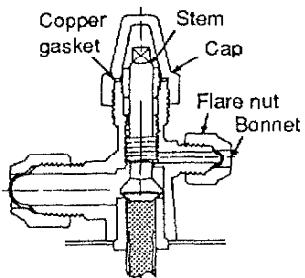


Fig. 21

Wide Tube



Narrow Tube

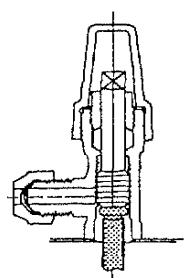


Fig. 20-a Condition at Shipping (-a-)

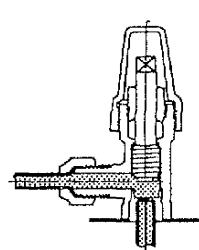
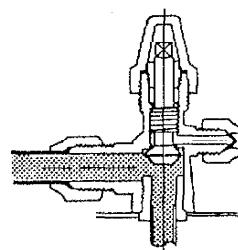


Fig. 20-b Condition for Operation (-b-)

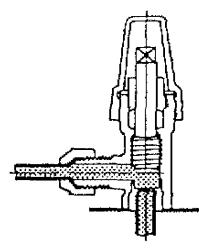
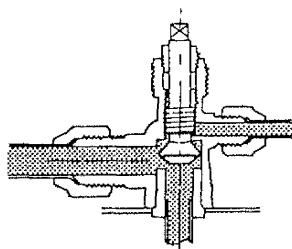


Fig. 20-c Condition at Gas Charging (-c-)

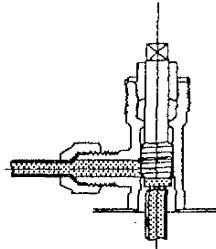
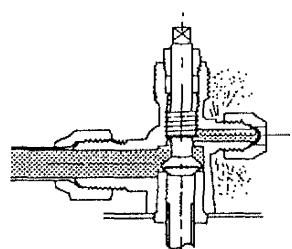
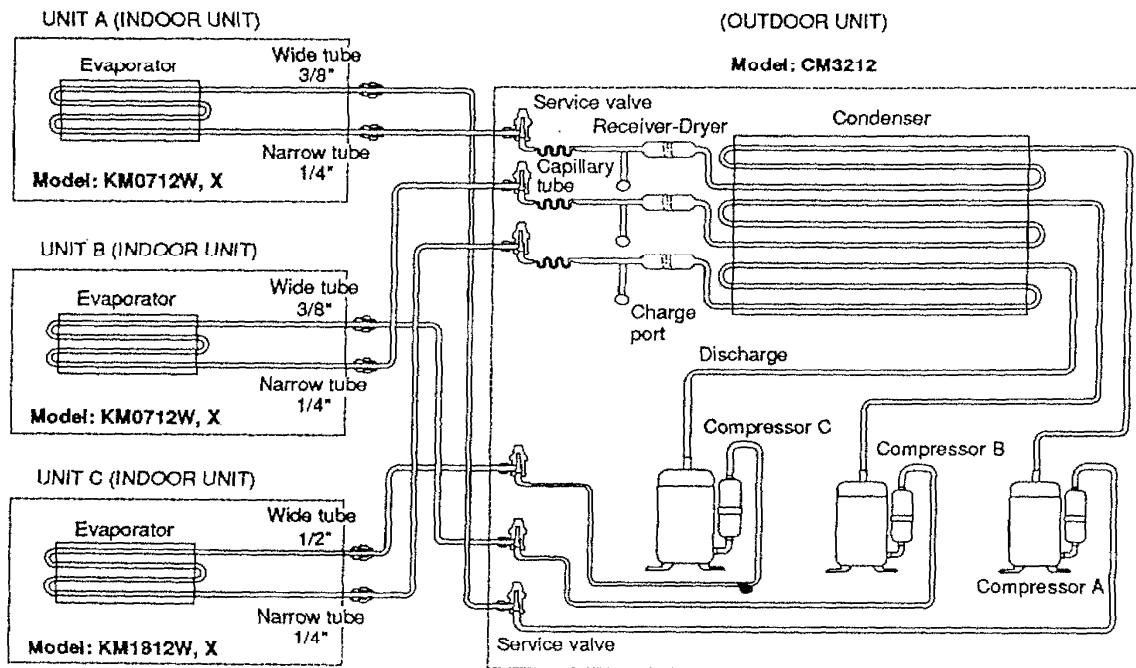


Fig. 20-d Condition at Air Purging (-d-)

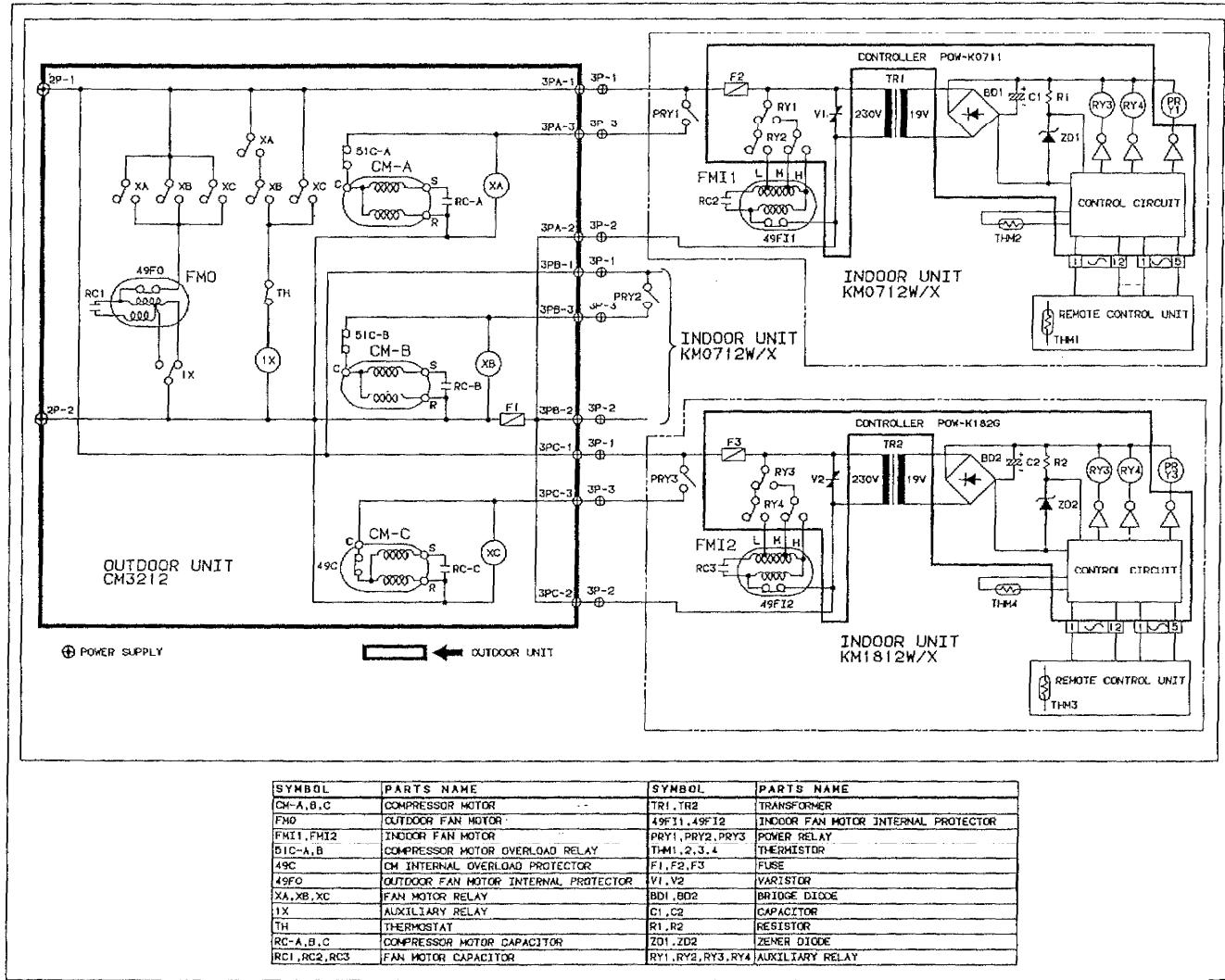
10. REFRIGERANT FLOW DIAGRAM



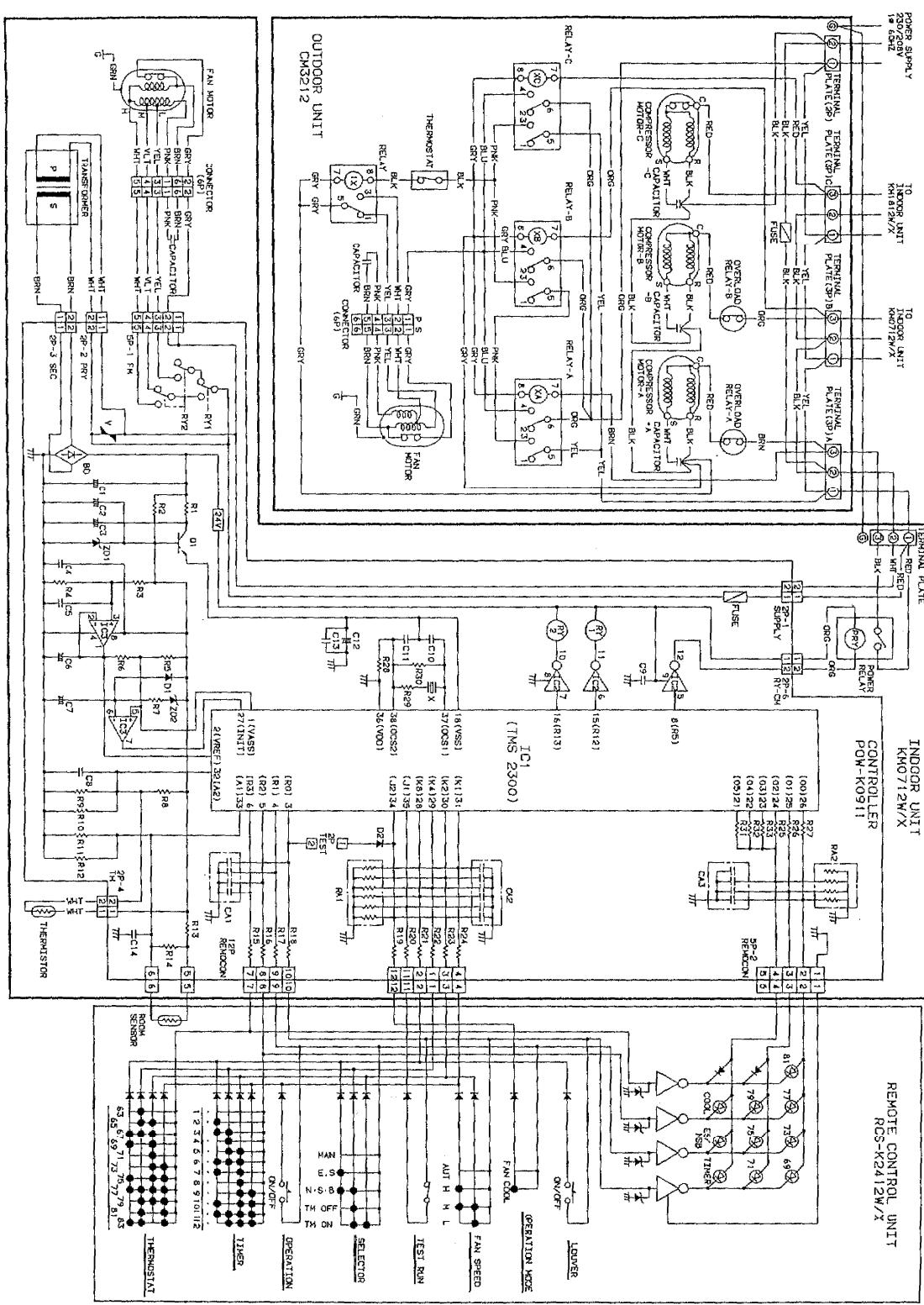
11. ELECTRICAL DATA

- Schematic Diagram

32KM12W, X



• Electric Wiring Diagram (P.C.B. Ass'y) Indoor Unit : KMO712W/X Curdoor Unit : CM3212



POW-K0911

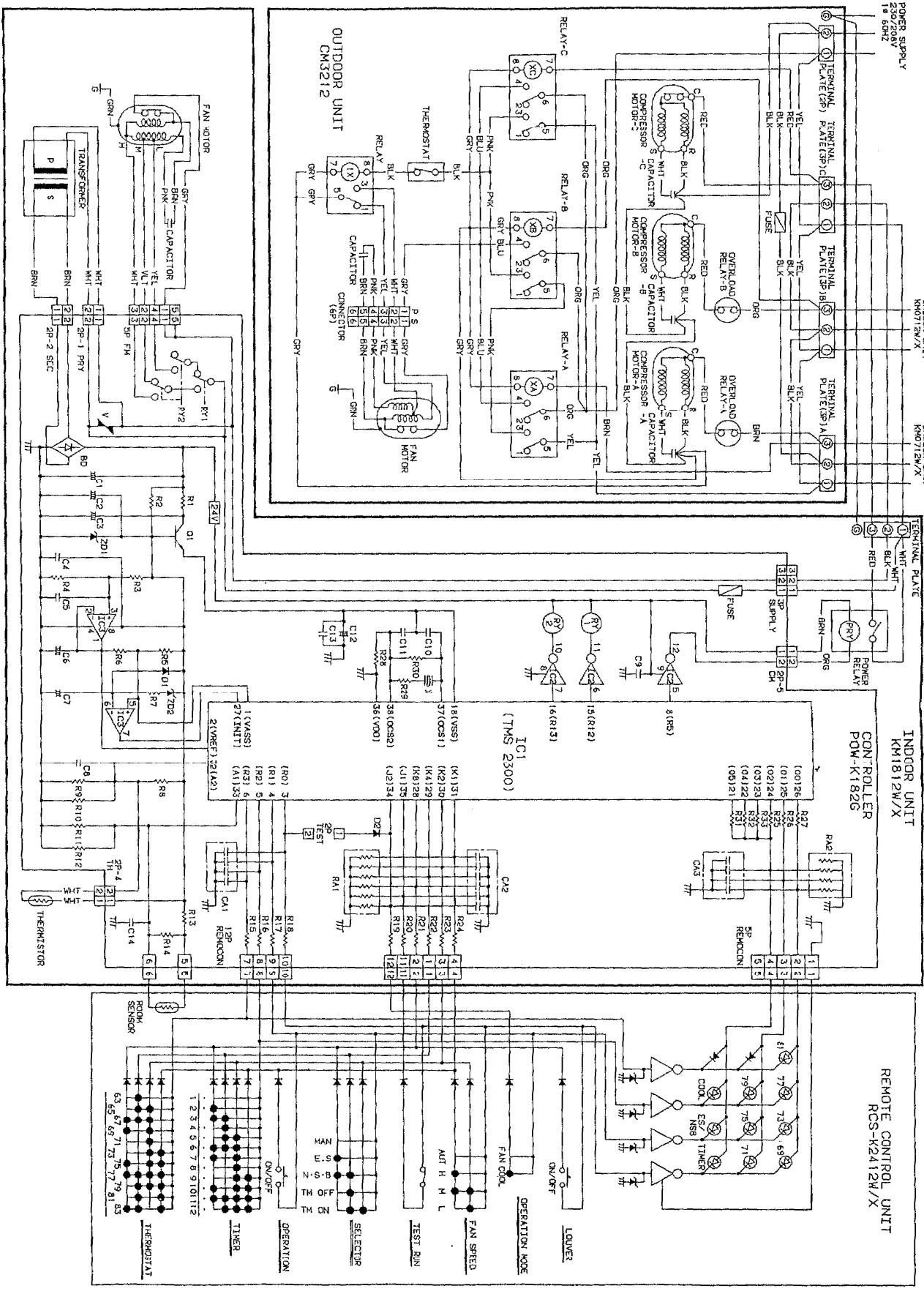
SYMBOLS	DESCRIPTION	SPECIFICATIONS
R1	RESISTOR	100 Ω 1W ±5%
R2	RESISTOR	1.5K 1W ±5%
R3	RESISTOR	30K 1/4W ±1%
R4	RESISTOR	56K 1/4W ±1%
R5	RESISTOR	1.5K 1/4W ±1%
R6	RESISTOR	1.3K 1/4W ±1%
R7	RESISTOR	56K 1/4W ±5%
R8	RESISTOR	120K 1/4W ±1%
R9	RESISTOR	300K 1/4W ±1%
R10	RESISTOR	360K 1/4W ±1%
R11	RESISTOR	15K 1/4W ±1%
R12	RESISTOR	22K 1/4W ±1%
R13	RESISTOR	180 Ω 1/4W ±1%
R14	RESISTOR	7.5K 1/4W ±5%
R15	RESISTOR	240 Ω 1/4W ±5%
R16	RESISTOR	240 Ω 1/4W ±5%
R17	RESISTOR	240 Ω 1/4W ±5%
R18	RESISTOR	240 Ω 1/4W ±5%
R19	RESISTOR	470 Ω 1/4W ±5%
R20	RESISTOR	470 Ω 1/4W ±5%
R21	RESISTOR	470 Ω 1/4W ±5%
R22	RESISTOR	470 Ω 1/4W ±5%
R23	RESISTOR	470 Ω 1/4W ±5%
R24	RESISTOR	470 Ω 1/4W ±5%
R25	RESISTOR	390 Ω 1/4W ±5%
R26	RESISTOR	270 Ω 1/4W ±5%
R27	RESISTOR	270 Ω 1/4W ±5%
R28	RESISTOR	3.3K 1/4W ±1%
R29	RESISTOR	100 Ω 1/4W ±1%
R30	RESISTOR	56K 1/4W ±1%
R31	RESISTOR	390 Ω 1/4W ±5%
R32	RESISTOR	390 Ω 1/4W ±5%
R33	RESISTOR	390 Ω 1/4W ±5%
C1	CAPACITOR	470 μ F 50V
C2	CAPACITOR	10 μ F 50V
C3	CAPACITOR	22 μ F 50V
C4	CAPACITOR	223 50V
C5	CAPACITOR	223 50V
C6	CAPACITOR	1 μ F 50V
C7	CAPACITOR	10 μ F 50V
C8	CAPACITOR	223 50V
C9	CAPACITOR	223 50V
C10	CAPACITOR	270PF±10% 50V
C11	CAPACITOR	100PF±10% 50V

POW-K0911

SYMBOLS	DESCRIPTION	SPECIFICATIONS
C12	CAPACITOR	22 μ F 16V
C13	CAPACITOR	427 50V
C14	CAPACITOR	104 50V
RA1	RESISTOR ARAY	56K 6BIT
RA2	RESISTOR ARAY	10K 4BIT
CA1	CAPACITOR ARAY	472 6BIT
CA2	CAPACITOR ARAY	472 6BIT
CA3	CAPACITOR ARAY	102 4BIT
BD	BRIDGE DIODE	DBA10C
ZD1	ZENER DIODE	GZB9.1B
ZD2	ZENER DIODE	GZA2.4X
D1	DIODE	DS442X
D2	DIODE	DS442X
IC1	IC	TMS 2300-M52074
IC2	IC	LB 1234
IC3	IC	LA 6458D
Q1	TRANSISTOR	2SD313EF

SYMBOLS	DESCRIPTION
12P REMOCON	SMK W-P5012#51
5P-2 REMOCON	SMK W-P5005#51
5P-1 FM	2-173270-5
2P-1 SUPPLY	2-173270-2
2P-2 PRY	8-173270-2
2P-3 SEC	5273-02A
2P-4 TH	5273-02A-RE
2P-5 TEST	171825-2
2P-6 RY-CM	5273-02A-BL
RY1	RELAY LZG-24HE DC24V
RY2	RELAY VB24TBU DC24V
FUSE	FUSE 250V 3A UL
X	CERAMIC OSCILLATOR
V	VARAITOR SNR-14A420K

• Electric Wiring Diagram I.P.C.B. Ass'y Indoor Unit : KM1812W/X Outdoor Unit : CM3212



POW-K182G

SYMBOLS	DESCRIPTION	SPECIFICATIONS
R1	RESISTOR	100 Ω 1W ±5%
R2	RESISTOR	1.5K 1W ±5%
R3	RESISTOR	30K 1/4W ±1%
R4	RESISTOR	56K 1/4W ±1%
R5	RESISTOR	1.5K 1/4W ±1%
R6	RESISTOR	1.3K 1/4W ±1%
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R26	RESISTOR	270 Ω 1/4W ±5%
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C1	CAPACITOR	470 μ F 50V
C2	CAPACITOR	10 μ F 50V
C3	CAPACITOR	22 μ F 50V
C4	CAPACITOR	223 50V
C5	CAPACITOR	223 50V
C6	CAPACITOR	1 μ F 50V
C7	CAPACITOR	10 μ Farad 50V
C8	CAPACITOR	223 50V
C9	CAPACITOR	223 50V
C10	CAPACITOR	270PF±10% 50V
C11	CAPACITOR	100PF±10% 50V

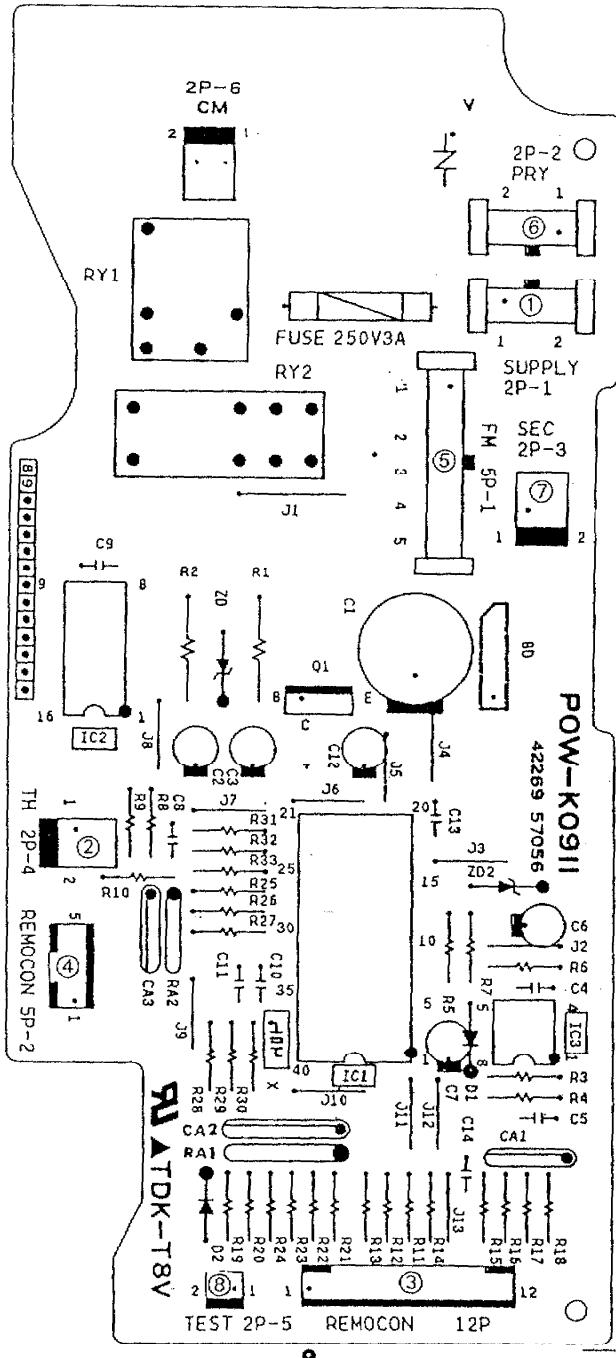
POW-K182G

SYMBOLS	DESCRIPTION	SPECIFICATIONS
C12	CAPACITOR	22 μ F 16V
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C14	CAPACITOR	104 50V
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BD	BRIDGE DIODE	DBA10C
ZD1	ZENER DIODE	GZB9.1B
ZD2	ZENER DIODE	GZA2.4X
D1	DIODE	DS442X
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2P-1 PRY	8-173270-2
2P-2 SEC	5273-02A
2P-4 TH	5273-02A-RE
2P TEST	171825-2
2P-5 CM	5273-02A-RE
RY1	RELAY LZG-24HE DC24V
RY2	RELAY VB24TBU DC24V
FUSE	FUSE 250V 3A UL
X	CERAMIC OSCILLATOR
V	VARATTOR SNRA420K-UJ

• P.C.B. Ass'y (Printed Pattern)

POW-K0911 (for KM0712W, X)

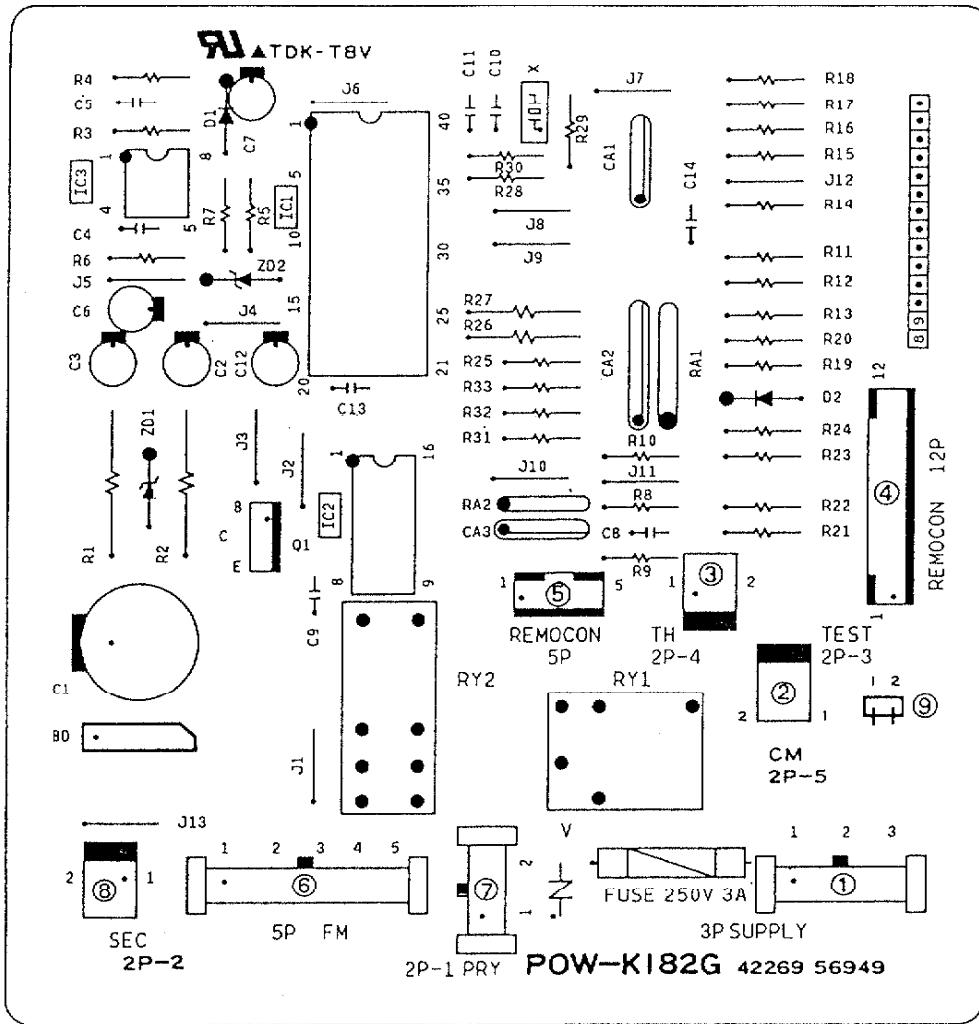


- ① Connector, Power Supply to P.C.B.*
- ② Connector, Thermistor, 9 V.D.C.
- ③ Connector, Remote Control Unit (12p), 9 V.D.C.
- ④ Connector, Remote Control Unit (5p), 9 V.D.C.
- ⑤ Connector, Fan Motor*
- ⑥ Connector, Transformer (Primary*)
- ⑦ Connector, Transformer (Secondary, 19 V.A.C.)
- ⑧ Connector, Test, 9 V.D.C.

* The asterisk "*" indicates that line voltage is applied.

● P.C.B. Ass'y (Printed Pattern)

POW-K182G (for KM1812W, X)



- ① Connector, Power Supply to P.C.B.*
- ② Connector, Compressor, 19 V.A.C.
- ③ Connector, Thermistor, 9 V.D.C.
- ④ Connector, Remote Control Unit (12p), 9 V.D.C.
- ⑤ Connector, Remote Control Unit (5p), 9 V.D.C.
- ⑥ Connector, Fan Motor*
- ⑦ Connector, Transformer (Primary*)
- ⑧ Connector, Transformer (Secondary, 19 V.A.C.)
- ⑨ Connector, Test, 9 V.D.C.

* The asterisk "*" indicates that line voltage is applied.

Electrical Characteristics

KM 0712 1 - Unit

Performance at 230 / 208V - 1φ - 60Hz		Indoor Unit		Outdoor Unit		Complete Unit
		Fan Motor	Fan Motor	Compressor		
Rated Conditions	A	0.15 / 0.14	0.62*/ 0.56*	2.53 / 2.80	3.3 / 3.5	
	W	34 / 29	125*/ 100*	591 / 591	750 / 720	
Locked Rotor Amperes	A	0.18 / 0.17	0.62*/ 0.56*	22	23	

* : Low speed

KM 1812 1 - Unit

Performance at 230 / 208V - 1φ - 60Hz		Indoor Unit		Outdoor Unit		Complete Unit
		Fan Motor	Fan Motor	Compressor		
Rated Conditions	A	0.4 / 0.4	1.45 / 1.42	7.05 / 7.68	8.9 / 9.5	
	W	80 / 70	330 / 280	1,590 / 1,600	2,000 / 1,950	
Locked Rotor Amperes	A	0.46 / 0.42	1.95 / 1.77	54	56	

KM 0712 X 2, 2 - Units

Performance at 230 / 208V - 1φ - 60Hz		Indoor Unit		Outdoor Unit		Complete Unit
		Fan Motor	Fan Motor	Compressor		
Rated Conditions	A	0.3 / 0.28	1.45 / 1.42	4.95 / 5.5	6.7 / 7.2	
	W	68 / 58	330 / 280	1,142 / 1,152	1,540 / 1,490	

KM 0712, KM 1812 2 - Units

Performance at 230 / 208V - 1φ - 60Hz		Indoor Unit		Outdoor Unit		Complete Unit
		Fan Motor	Fan Motor	Compressor		
Rated Conditions	A	0.55 / 0.54	1.45 / 1.42	9.8 / 10.64	11.8 / 12.6	
	W	114 / 99	330 / 280	2,256 / 2,221	2,700 / 2,600	

KM 0712 X 2, KM 1812 3 - Units

Performance at 230 / 208V - 1φ - 60Hz		Indoor Unit		Outdoor Unit		Complete Unit
		Fan Motor	Fan Motor	Compressor		
Rated Conditions	A	0.7 / 0.68	1.45 / 1.42	12.85 / 13.9	15.0 / 16.0	
	W	144 / 128	330 / 280	2,926 / 2,892	3,400 / 3,300	

Remarks: Rated Conditions : Outdoor unit entering air temperature 95°F DB./75°F WB.
Indoor unit entering air temperature 80°F DB./67°F WB.

12. TROUBLESHOOTING

— Quick Access Index —

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(2) Neither outdoor fan nor compressor runs	49
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1. Check before and after "TROUBLESHOOTING"

(1) Check power supply conductors

- Check if power supply conductors are connected to terminals No.1 and No.2 at 2P terminal plate in the outdoor units.

Refer to page 27 WIRING SYSTEM DIAGRAM.

(2) Check interunit power line.

- Check interunit power wires are connected properly from outdoor unit to indoor unit.

Refer to page 27 WIRING SYSTEM DIAGRAM.

(3) Check power supply.

- Is voltage in specified range ($\pm 10\%$ of the rating) ?

Refer to Unit Specifications

- Be sure whether power is presented.

If checking of following Troubleshooting must be done in conditions that power is supplied, an uninsulated live part that can cause ELECTRIC SHOCK shall be taken care so that protection against unintentional contact is provided.

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

- Check if insulation of lead wires are damaged.
- Check if lead wires and connectors are connected firmly.
- Check if wiring is correct.

2. Air conditioner does not operate

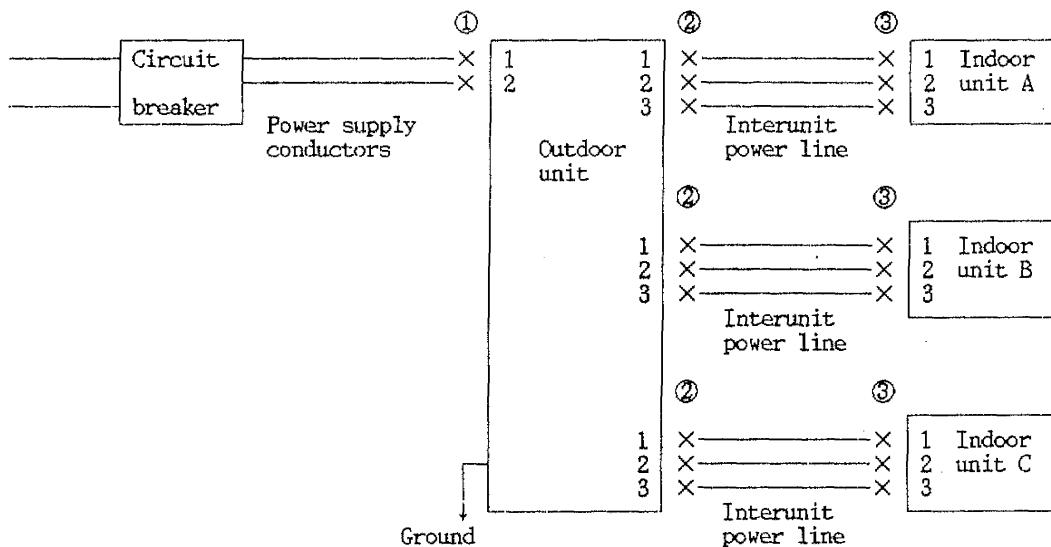
(1) Circuit breaker trips (or fuse blows).

a) When circuit breaker is set to ON, it is tripped soon.
(Resetting is not possible.)

• There is a possibility of ground fault.

• Check insulation resistance.

If resistance value is $1M\Omega$ or less, it is a defect of insulation (NO).



① Remove power supply conductors from the terminal plate in the outdoor unit.
• Check insulation resistance of power supply conductors.

Refer to page 58 (1-1)

NO

Execute rewiring

OK

② Remove interunit power line from the terminal plate in the outdoor unit.
• Check insulation resistance of outdoor unit.

Refer to page 58 (1-3)

NO

Insulation of outdoor unit is defective.

See page 44

OK

③ Remove interunit power line from the terminal plate in the indoor unit.
• Check insulation resistance of indoor unit.

Refer to page 58 (1-2)

NO

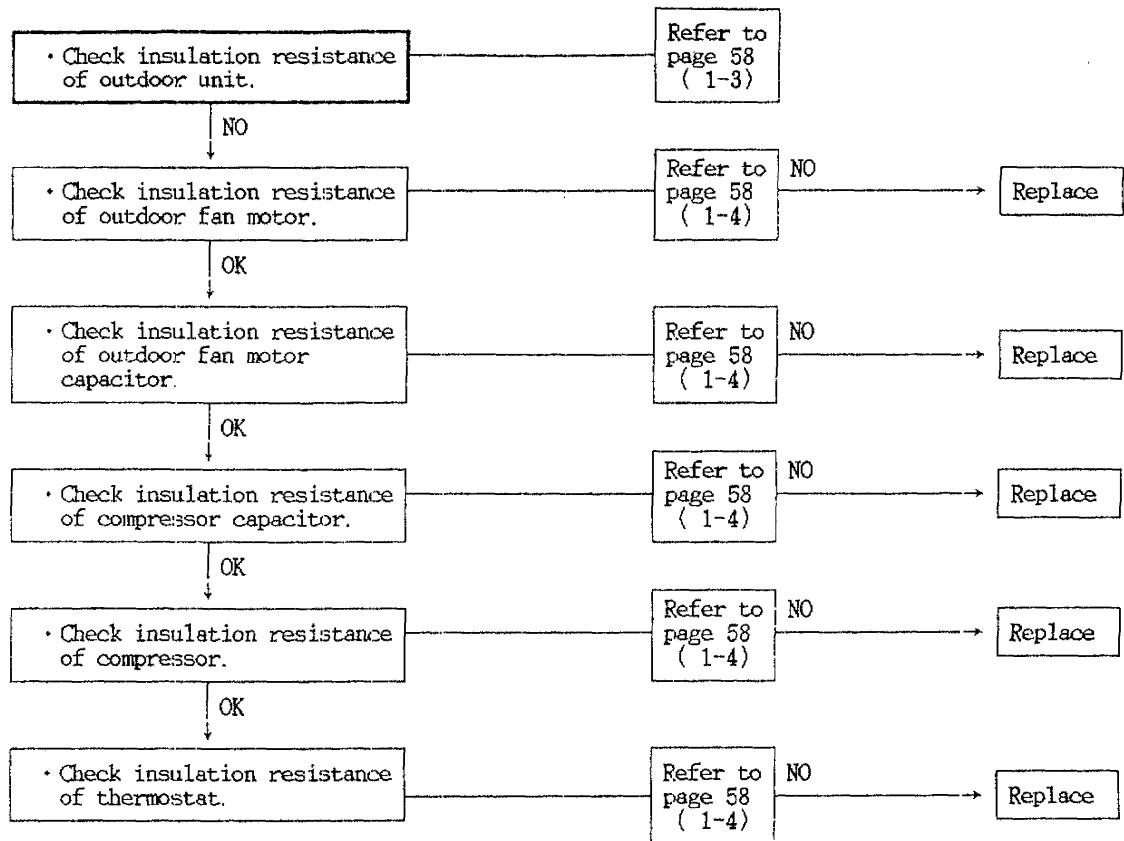
Insulation of indoor unit is defective.

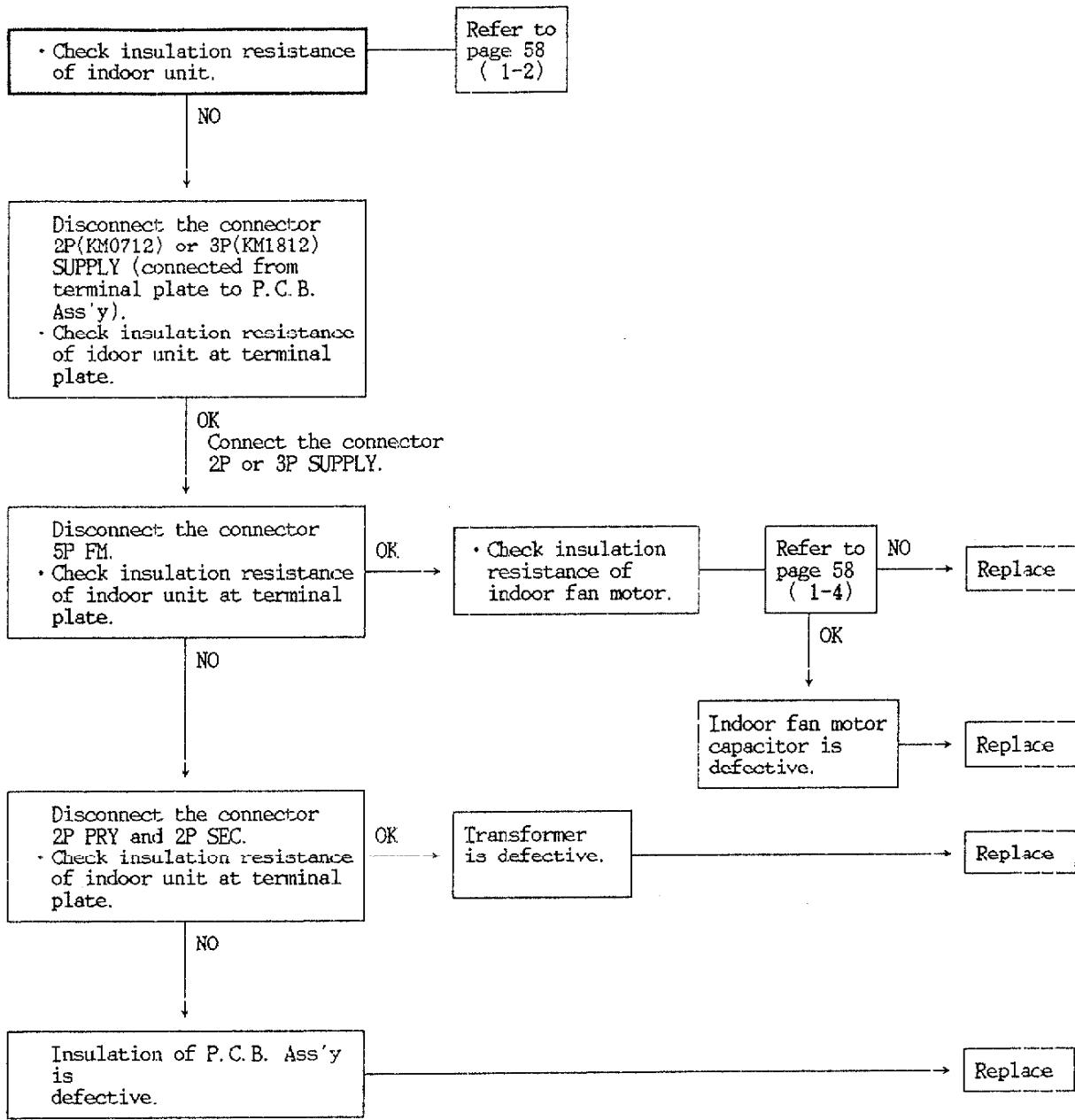
See page 45

OK

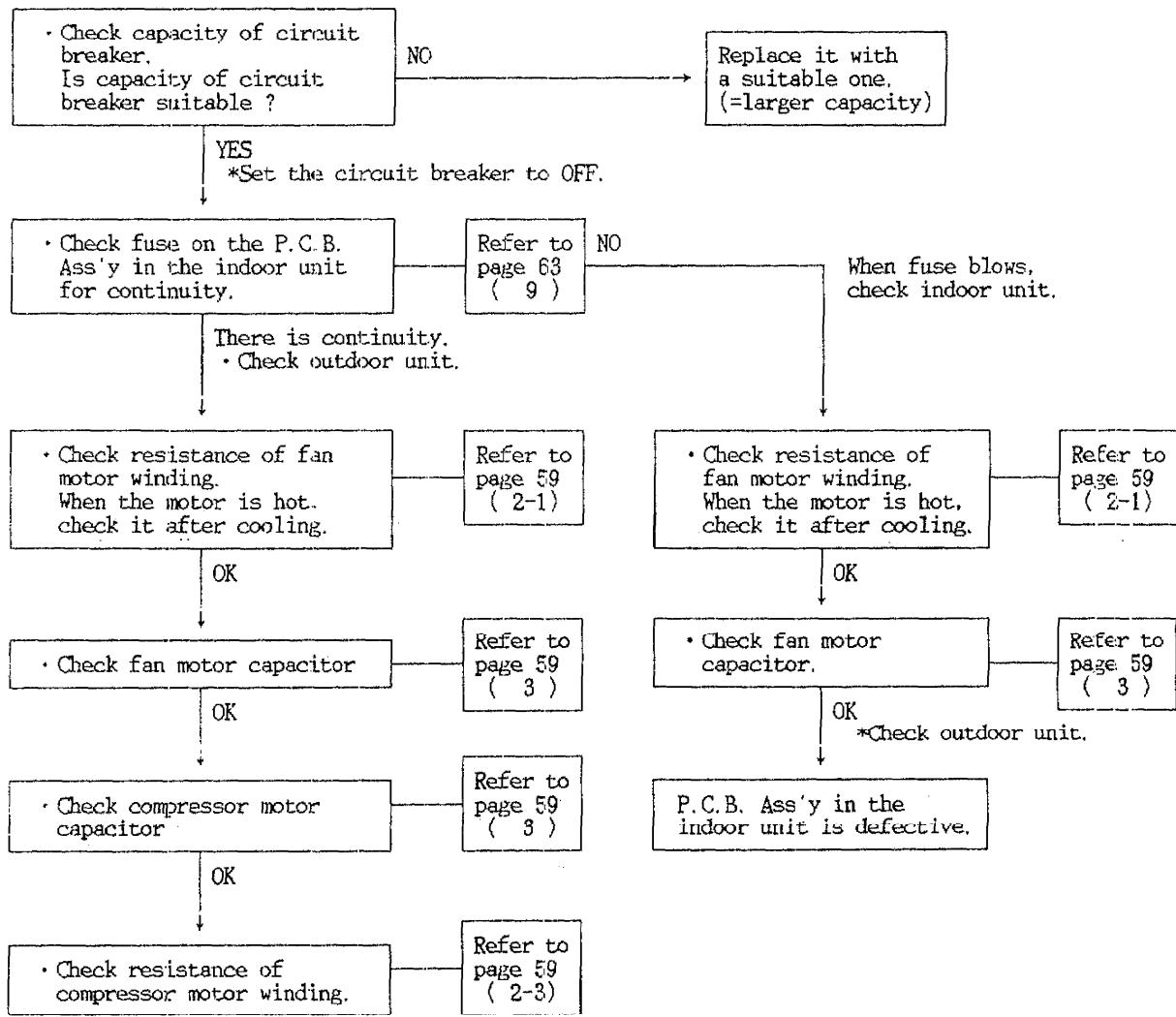
Interunit power wires are defective.

Execute rewiring



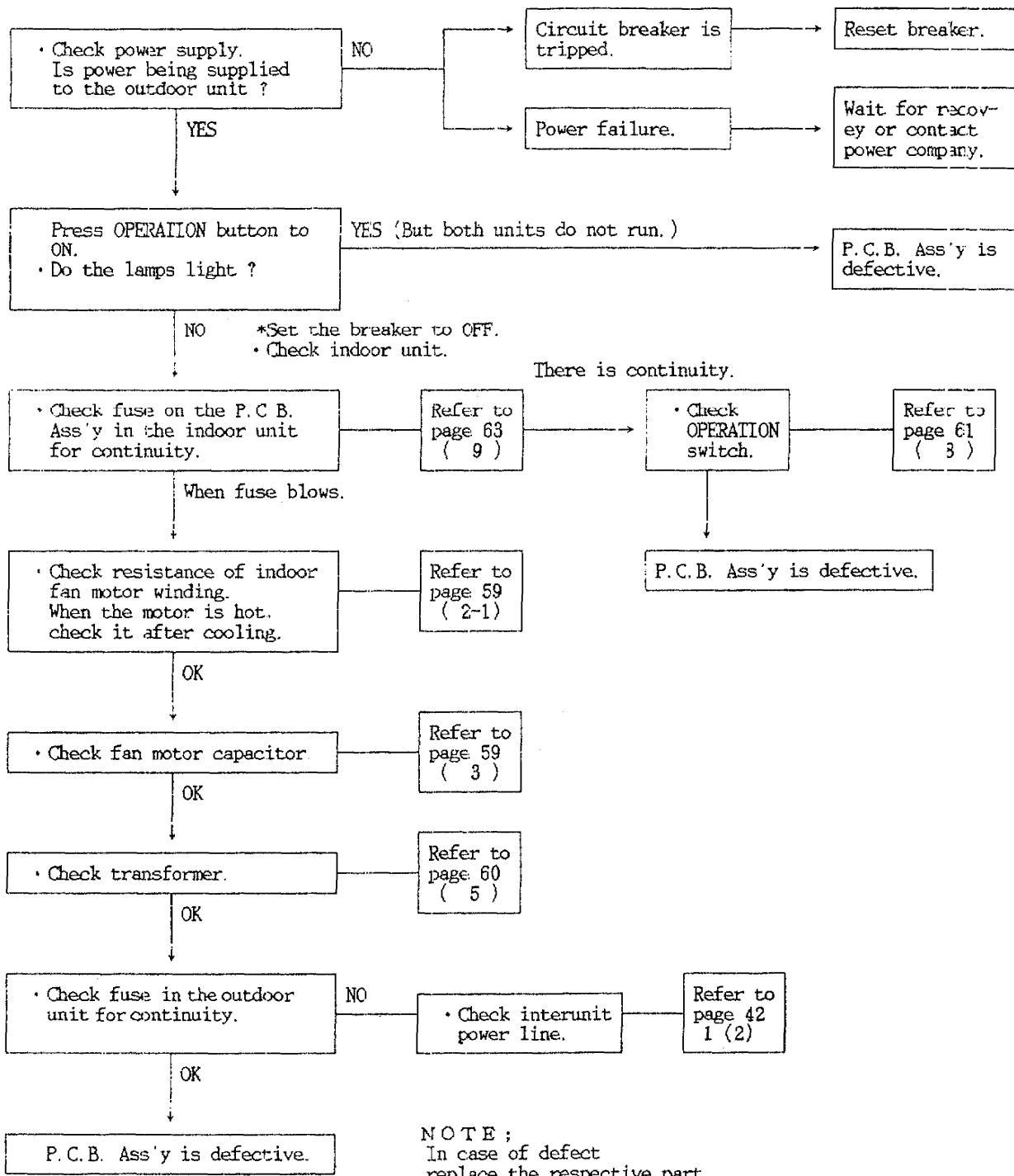


b) Circuit breaker trips when the operation button is depressed.



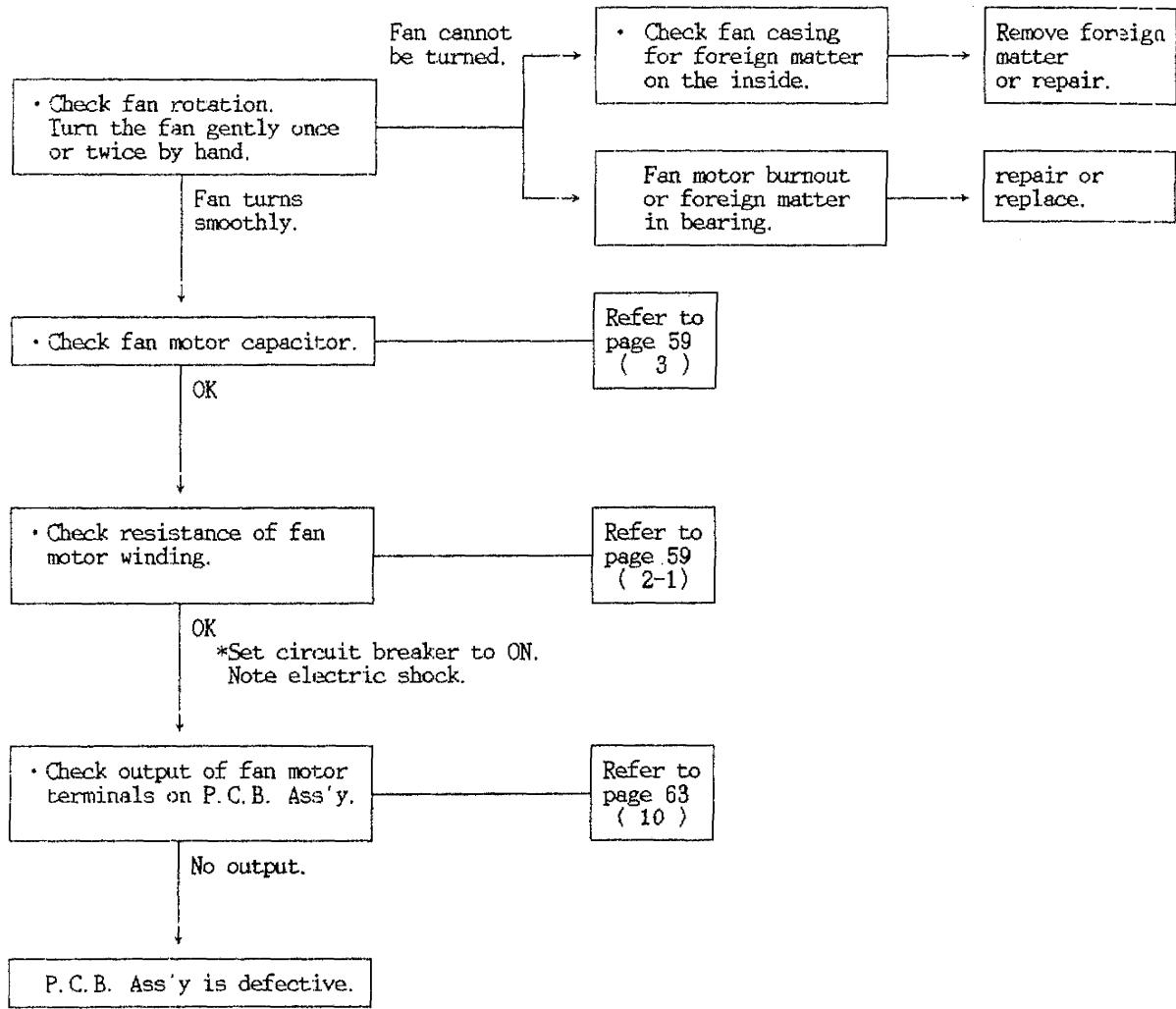
NOTE ;
In case of defect,
replace the respective part.

(2) Neither indoor unit nor outdoor unit runs.



3. Some part of air conditioner
does not operate.

(1) Only indoor fan does not run.

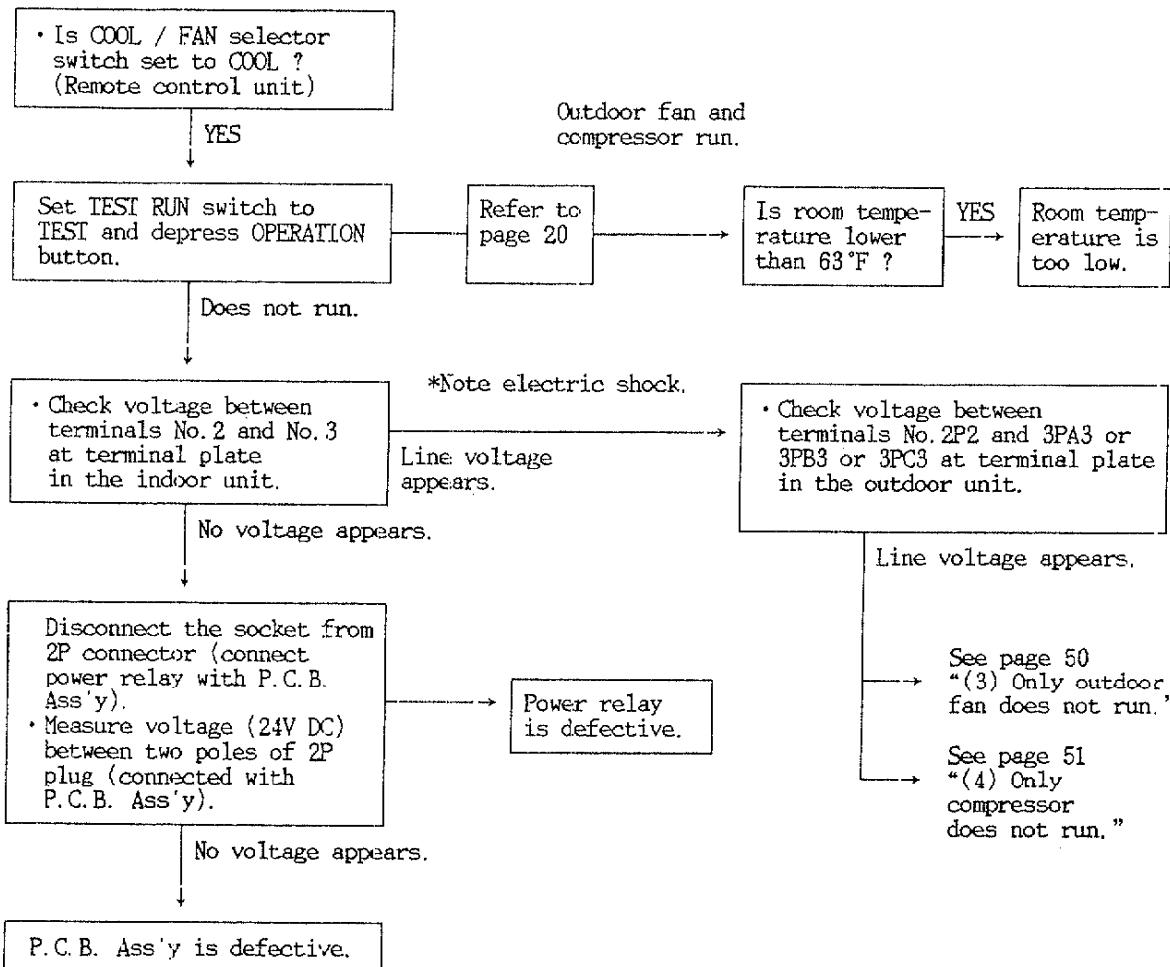


NOTE ;
In case of defect,
replace the respective part.

(2) Neither outdoor fan nor compressor runs.

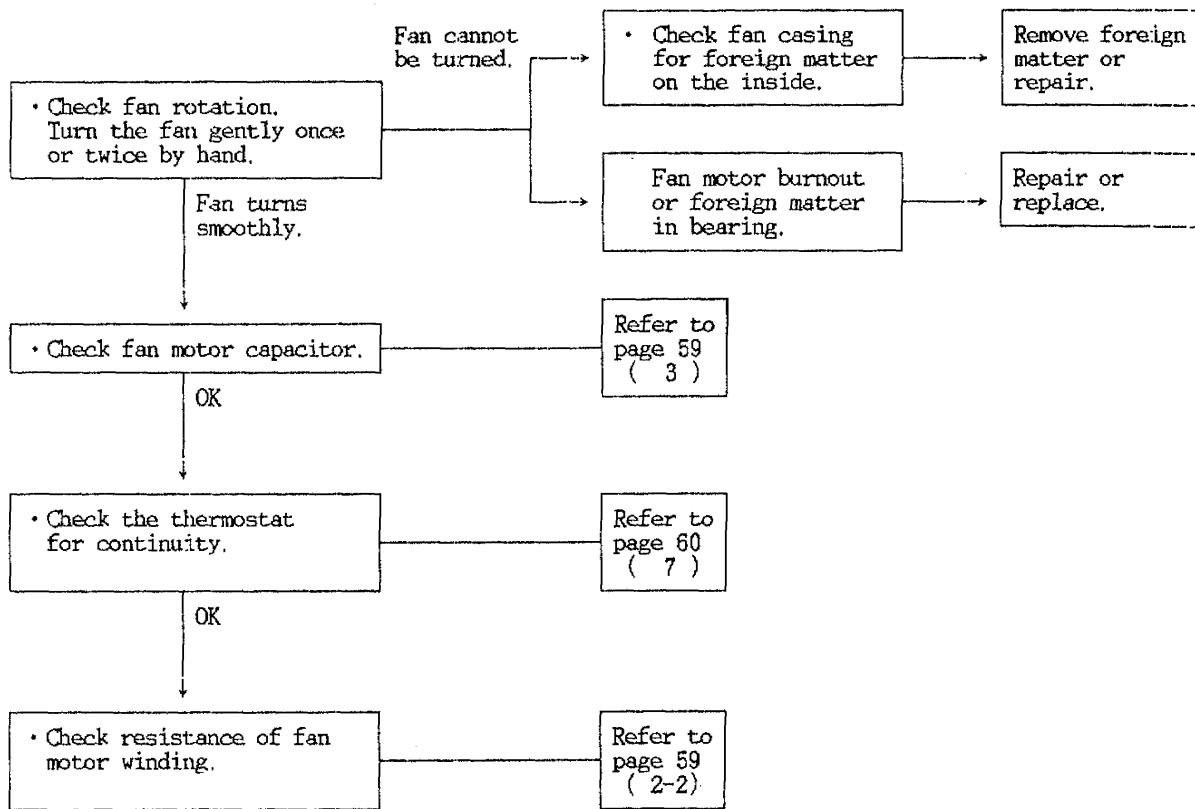
Note : Check following points at first:

1. Is thermostat setting suitable ?
2. Has 3 minutes timer operated ? (No operation for 3 minutes after power ON.)
3. Does freeze prevention thermostat operate ? (Wait for about 6 minutes.)



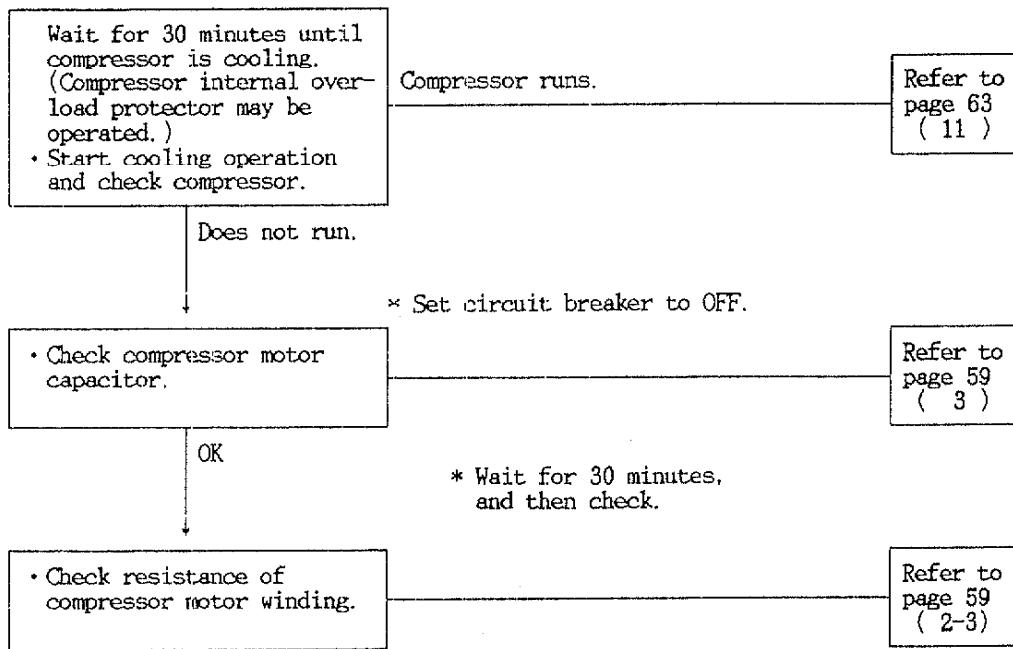
N O T E :
In case of defect,
replace the respective part.

(3) Only outdoor fan does not run.



N O T E :
In case of defect,
replace the respective part.

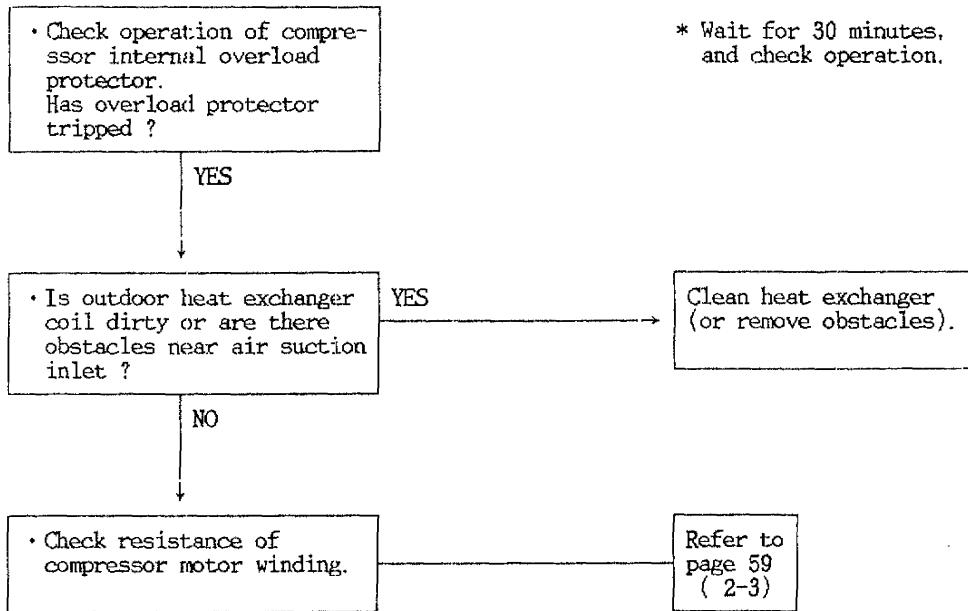
(4) Only compressor does not run.



NOTE ;
In case of defect,
replace the respective part.

(5) Compressor frequently repeats ON and OFF.

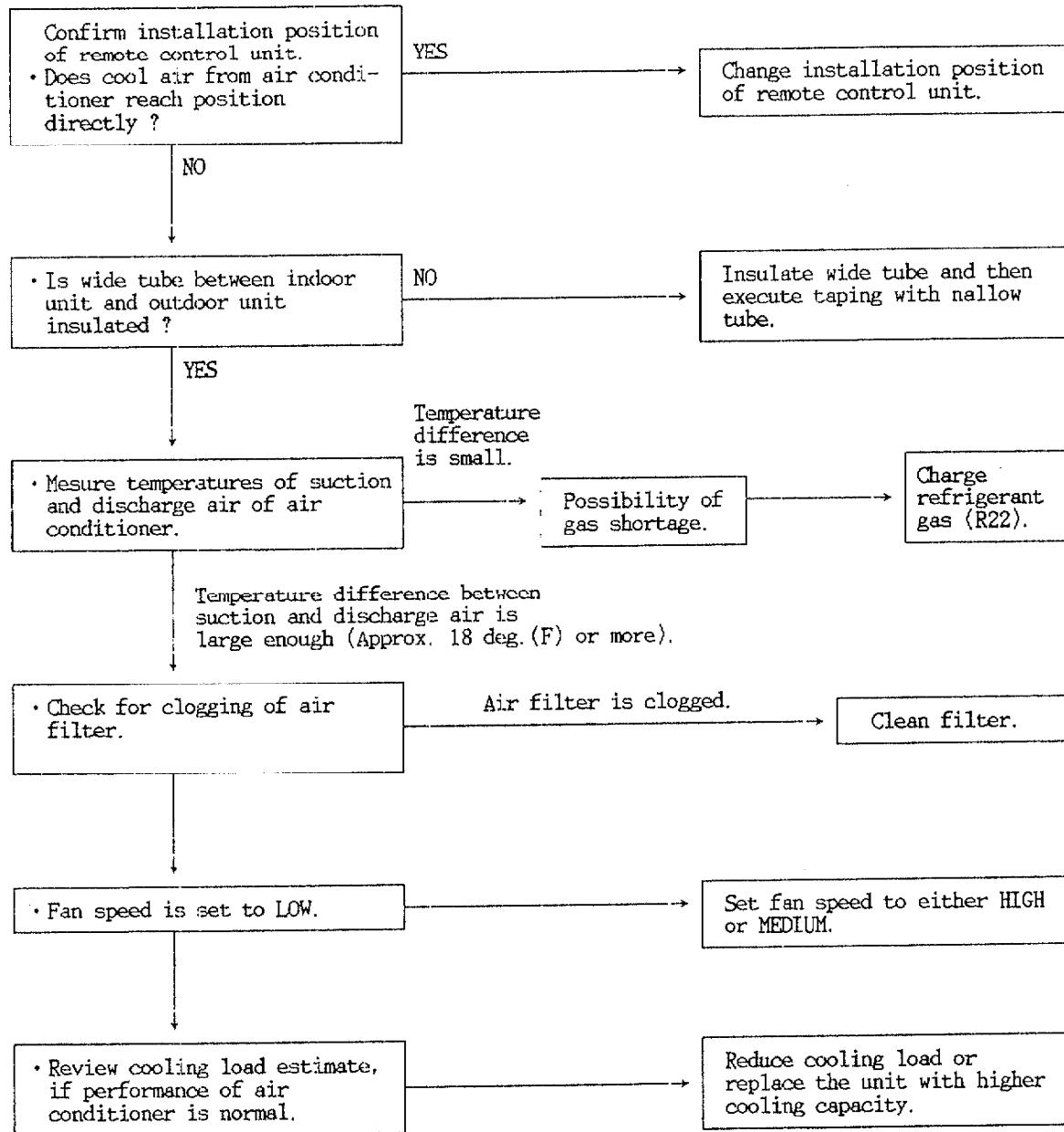
(Only compressor repeats ON and OFF, while indoor unit and outdoor fan run without fail.)



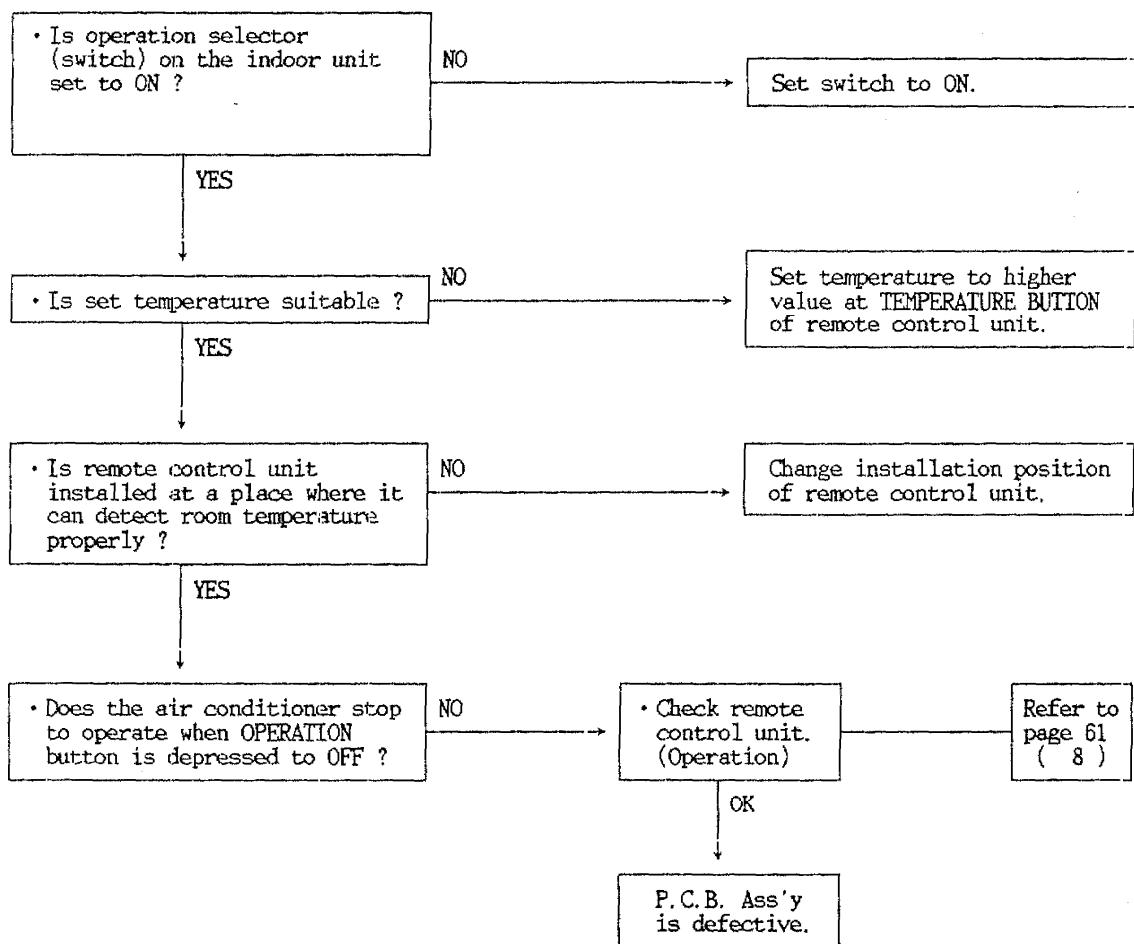
N O T E :
In case of defect,
replace the respective part.

4. Air conditioner operates, but abnormalities are observed.

(1) Poor cooling



(2) Excessive cooling



N O T E :
In case of defect,
replace the respective part.

5 . If some sensor is defective

(1) Indoor (heat exchanger) coil temp. sensor is defective.

1) Open

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

2) Shortage

When the water being dehumidified is frozen in the indoor coil, "Freeze prevention" does not operate.

(2) Room temp. sensor (in remote control unit) is defective.

1) Open (= Always Thermo. OFF)

Neither outdoor fan nor compressor runs.

2) Shortage (= Always Thermo. ON)

Outdoor fan and compressor does not stop. -- Excessive cooling.

6 . O p e r a t i o n o f m a j o r e l e c t r i c a l p a r t s

Operation Mode (Function)	Operation	Indoor unit and Remote Control unit					Outdoor unit		
		Indicator lamps				Fan	Fan	Compressor	
		Room Temp.	Cool	Time	Night setback Energy saver				
Fan		○				○			
Cool	Manual	Thermo. ON	○	○		○	○	○	
		Thermo. OFF	○	○		○			
	Energy saver	Thermo. ON	○	○	○	○	○	○	
		Thermo. OFF	○	○	○	○			
	Night setback	Thermo. ON	○	○	○	○	○	○	
		Thermo. OFF	○	○	○				
	Timer (set)	ON Timer			○				
		OFF Timer (Thermo. ON)	○	○	○	○	○	○	
		OFF Timer (Thermo. OFF)	○	○	○	○			
Freeze Prevention		○	○			○			

13. CHECKING AND REPLACING ELECTRICAL COMPONENTS

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1. Measurement of Insulation Resistance

- The insulation is in good condition if the resistance exceeds $1\text{ M}\Omega$

1-1 Power Supply Cords

Clamp the ground line of the Power Supply Cord with a lead clip of the insulation resistance tester and measure the resistance by placing a probe on either of the two power lines.

Then also measure the resistance between the ground line and the other power line. (Fig. 1)

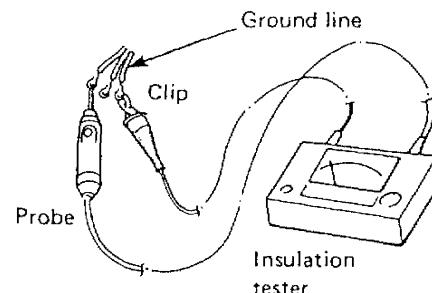


Fig. 1

1-2 Indoor Unit

Clamp the aluminum plate fin or copper tube with a 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)

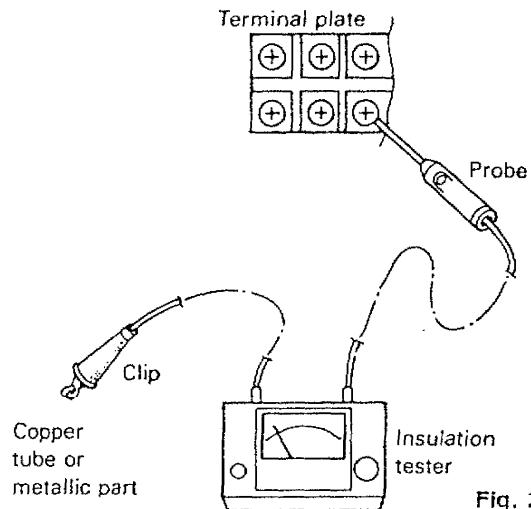


Fig. 2

1-4 Measurement of Insulation Resistance for Electric Parts.

Disconnect the lead wires of electric part from terminal plate, P.C.B. Ass'y or capacitor etc. Like remove the connector.

Then measure the insulation resistance by method of Fig. 1~4.

Refer to Electric Wiring Diagram.

Note:

If the probe does not enter the hole because the hole is too narrow then use a probe with a thinner pin.

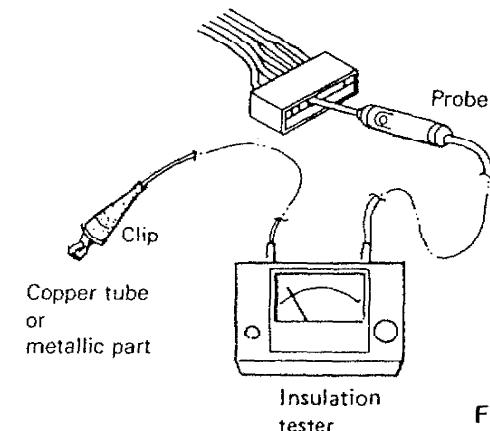


Fig. 3

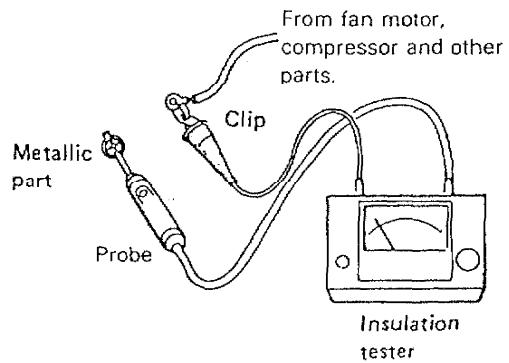


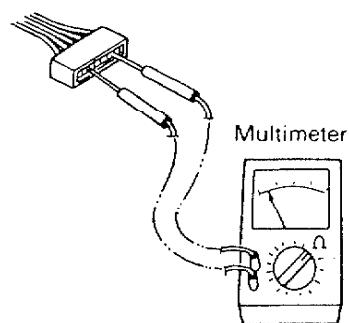
Fig. 4

2. Checking of the Motor Winding

- Refer to Major Component Specifications (Coil resistance)

2-1 Indoor Fan Motor

See page 2.



2-2 Outdoor Fan Motor

See page 2.

Fig. 5

2-3 Compressor Motor

Remove the terminal cover of the compressor motor, set the resistance measuring range of the multimeter to "X1Ω" and check the continuity between each pair out of the 3 terminals as indicated in Fig. 6

See page 2.

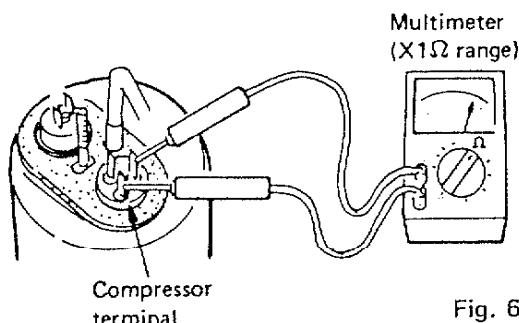


Fig. 6

3. Checking of the Motor Capacitor

Checking of any of the indoor fan motor capacitor, outdoor fan motor capacitor and compressor motor capacitor can be done by the same method.

Remove both the lead wire terminals connected to the capacitor, place the probe on the capacitor terminals as shown in the Fig. 7 and observe the deflection of the pointer, setting the resistance measuring range of the multimeter to the maximum value.

For good condition of the capacitor 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.

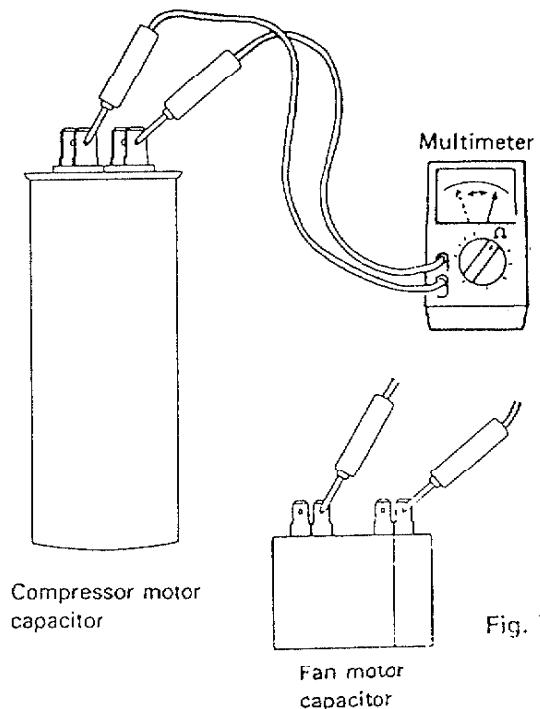


Fig. 7

4. Checking of the Relay

- Refer to Other Component Specifications.

See page 3.

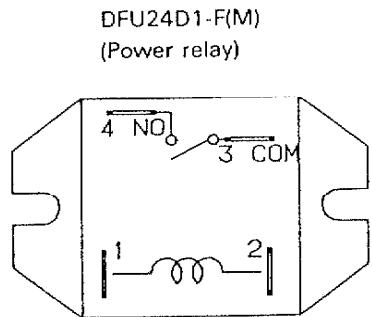


Fig. 8

MY2F-T1-USTS
(Fan motor relay)

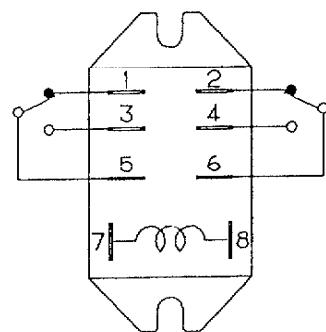


Fig. 9

5. Checking of the Transformer

- Refer to Other Component Specifications
See page 3

6. Checking of the Thermistor (Indoor coil temp. sensor)

- Refer to Other Component Specifications.
See page 3

7. Checking of the Thermostat

- Refer to Other Component Specifications.
See page 3

8. Checking of the Remote Control Unit Proper

(Check each item, referring to the P.C.B. Ass'y and the circuit diagrams)

A. Caution: Use of the Test Switch

(RUN/TEST RUN)

"TEST RUN" shows the position to run the air conditioner for the test at the installment.

If this operation is continued for a long time, there would be a bad effect on the air conditioner because of over-cooling. Therefore, use this switch only for checking, and in any case, **DO NOT KEEP ON COOLING FOR MORE THAN 15 MIN. UNDER TEST RUN MODE.**

When the checking is over, **TURN THE SWITCH BACK TO ITS ORIGINAL POSITION (= RUN) WITHOUT FAIL.**

B. Checking of the Items of the Remote Control Unit

At first, pull out the connector (12P) of the remote control unit from the P.C.B. ass'y of the unit.

(1) Checking of the Room Temperature Sensor

Measure the resistance between No. 5 and No. 6 connector.

NOTE:

If the probe does not enter the pole because the hole is too narrow then use a probe with a thinner pin.

(For an ambient temperature of 77°F, the resistance is about 5kΩ).

(2) Fan Speed Selector

Check the continuity of the connector No. 3 and No. 4 against No. 10 (place the positive (+) probe on No. 10 and negative (—) probe on No. 3 and then No. 4).

Checking points	Position of the selector			
	High	Med.	Low	Auto
10 — 3	NO	YES	YES	NO
10 — 4	YES	YES	NO	NO

NOTE: YES Continuity (Table-1)
NO Discontinuity

(3) Checking of the Operation

Measure the continuity between No. 12 and No. 9 (placing the positive (+) probe).

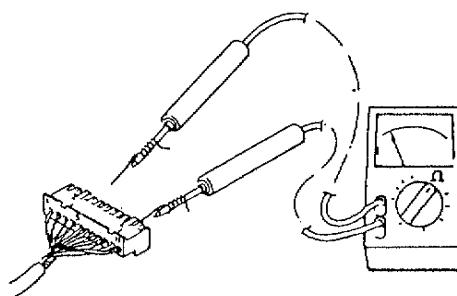


Fig. 10

Checking points	Position of the selector	
	FAN	COOL
9 — 12	NO	YES

(Table-2)

NOTE: YES Continuity
NO Discontinuity

(4) Checking of the Selector

Check the continuity of the connectors No. 1, 2 and 3 (placing the negative (-) probe) against No. 9 (placing the positive (+) probe).

Connector No.	Position of the Selector				
	MANUAL	ENERGY SAVER	NIGHT SETBACK	TIMER	
				ON	OFF
9 — 3	NO	NO	NO	YES	NO
9 — 1	NO	NO	YES	YES	YES
9 — 2	NO	YES	YES	NO	NO

NOTE
YES Continuity
NO Discontinuity

(Table-3)

(5) Checking of the Operation Button

The operating switch is in good working condition if there is continuity between No. 4 (placing the negative (-) probe) and No. 9 (placing positive (+) probe) while the button is pressed.

(6) Checking of the Timer

Measure the continuity between No. 1, 2, 3, 4, and No. 8 (placing the positive (+) probe).

Connector No.	Position of the Selector											
	1	2	3	4	5	6	7	8	9	10	11	12
8 — 4	—	—	—	—	—	—	—	—	Y	Y	Y	Y
8 — 3	—	—	—	—	Y	Y	Y	Y	Y	Y	Y	Y
8 — 1	—	—	Y	Y	Y	Y	—	—	—	—	Y	Y
8 — 2	—	Y	Y	—	—	Y	Y	—	—	Y	Y	—

Y for YES = There is continuity.

(Table-4)

(7) Checking of the Thermostat

Measure the continuity between No. 1, 2, 3, 4, and No. 7 (placing the positive (+) probe).

Connector No.	Position of the Selector											
	63	65	67	69	71	73	75	77	79	81	83	
7 — 4	—	—	—	—	—	Y	Y	Y	Y	Y	Y	Y
7 — 3	—	Y	Y	Y	Y	Y	Y	Y	Y	—	—	
7 — 1	Y	Y	Y	—	—	—	—	Y	Y	Y	Y	
7 — 2	—	—	Y	Y	—	—	Y	Y	—	—	Y	

Y for YES = There is continuity.

(Table-5)

If there is abnormality during checking at any of the above step from (1) to (7), replace the remote control unit as it is.

CAUTION:

Do not disassemble the Remote Control Unit.

It is supplied as a complete assembly and is carefully adjusted in the factory by skillful workmanship. Inexperienced disassembly will cause trouble and malfunction in the unit.

9. Checking of the Continuity of Fuse on the P.C.B. Ass'y

Check the continuity by the multimeter as shown in Fig. 11

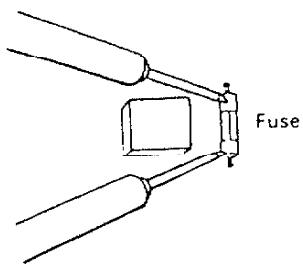


Fig. 11

NOTE

Method to Replace Fuse on the P.C.B. Ass'y

1. Remove the P.C.B. ass'y.
2. Pull out the fuse at the metal clasp by a pair of pliers while heating the soldered leads on the back side of the P.C.B. ass'y with a soldering iron (30W or 60W), Fig. 12
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).

CAUTION

: Be sure to replace the varistor adjacent to the fuse when the fuse is blown.

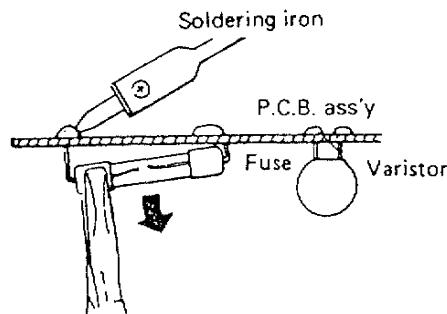


Fig. 12

10. Checking of the Output of the P.C.B. Ass'y for Fan Motor Terminals

Take out the fan motor connector from P.C.B. Ass'y and be sure that there is no danger of short circuit in other parts before supplying electricity to the unit. After that, supply electricity to the unit and set the selector to "MANUAL". Then, turn on the operation switch.

Now measure the voltage between these pins by the multimeter. The P.C.B. Ass'y is in good working condition if the voltage output becomes same as those shown in the below tables.

KM0712W/KM0712X

Pair of Pins	FAN		
	Low	Med.	High
2 — 3	*	0	0
2 — 4	0	*	0
2 — 5	0	0	*

* Line voltage

(Table-6)

KM1812W/KM1812X

Pair of Pins	FAN		
	Low	Med.	High
1 — 4	*	0	0
1 — 2	0	*	0
1 — 3	0	0	*

* Line voltage

(Table-7)

11. Checking of the Compressor Overload Relay

Remove both lead wires connected to the compressor overload relay. Set the resistance measuring range of the multimeter to "X1Ω" and check the continuity between terminals of the overload relay. After leaving the Compressor Overload Relay at room temperature at least half an hour, perform the measurement.

14. DISASSEMBLY PROCEDURES

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OUTDOOR UNIT

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INDOOR UNIT

1. Casing — Removal

KM0712W and KM0712X

- 1) Remove two screws holding the casing to the indoor unit.
- 2) Pull up the casing by hand, press down on tabs on top, then withdraw the casing by pulling it back straight. Fig. 1

NOTE

When replacing the removed casing as it was before, push two positions as shown in Fig. 1 ② until the casing clicks properly.

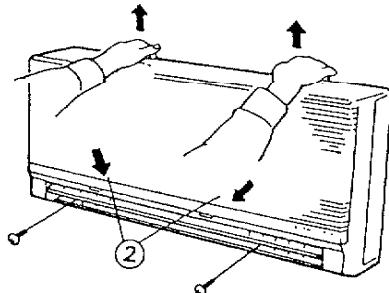


Fig. 1

KM1812W, KM1812X

Basically, these models can be installed and wired without removing the casing. If access to any internal part is needed, follow steps as mentioned below:

- 1) Set the flap in a horizontal position.
- 2) Unscrew the three screws.
- 3) Remove the casing as shown in the Fig. 2

NOTE

When replacing the casing, be careful not to crush the lead wires between the casing and the frame.

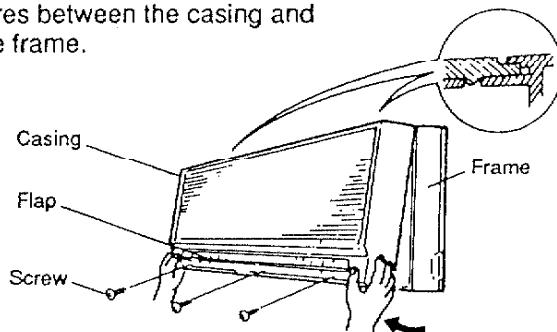


Fig. 2

2. Electrical Component Box — Access and Removal

- 1) Remove casing.
- 2) Disengage the electrical component box by the following procedure.

CAUTION

: Before accessing inside the electrical component box, be sure to check that power to the unit is disconnected.

KM0712W/KM0712X

- a) Disconnect interunit wires and power supply cords from the terminal plate.
- b) Remove four screws. Fig. 3
- c) Pull the electrical component box.

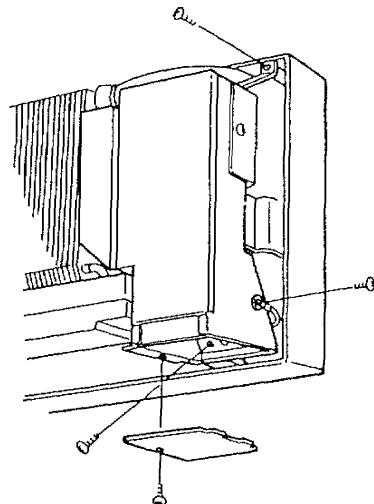


Fig. 3

KM1812W/KM1812X

- a) Disconnect interunit wires from the terminal plate.
- b) Remove the four screws. Fig. 4

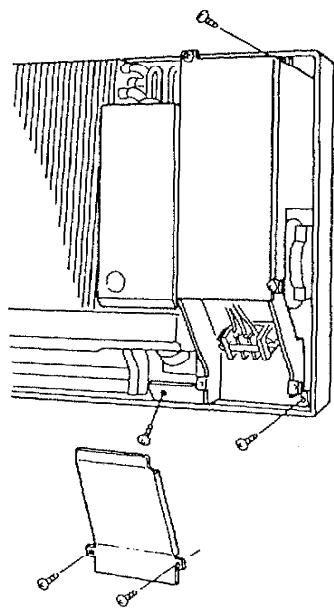


Fig. 4

3. P.C.B. Ass'y — Removal

KM0712W/KM0712X

- 1) Disconnect all connectors from P.C.B.
- 2) Pull the P.C.B. Ass'y. Fig. 5

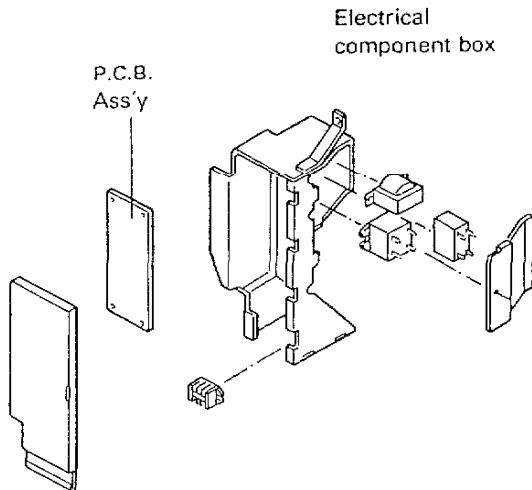


Fig. 5

KM1812W/KM1812X

- 1) Disconnect all connectors from P.C.B.
- 2) Pull the P.C.B. Ass'y. Fig. 6.

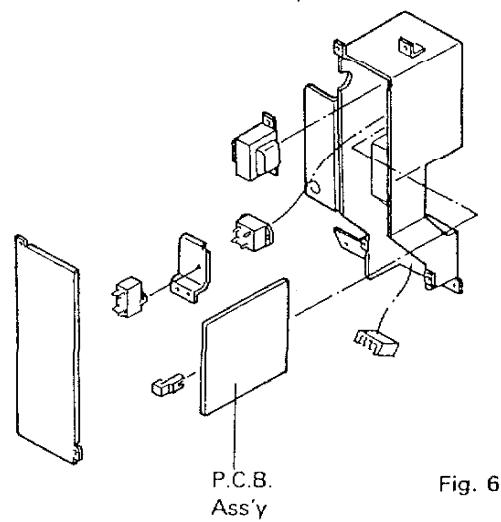


Fig. 6

4. Evaporator (= Indoor Heat Exchanger) — Removal

- 1) Remove the electrical component box.

KM0712W/KM0712X

- 2) Remove the drain pan ass'y by unfastening two screws.
- 3) Loosen the fixing screws of the evaporator mounting plates **(A)** and fan motor mounting plate **(B)**, and remove them respectively.
- 4) Lift up the evaporator with both hand, then withdraw the evaporator together with the tubing. (If the piping is fixed with a clamp or saddle, first remove the clamp.)

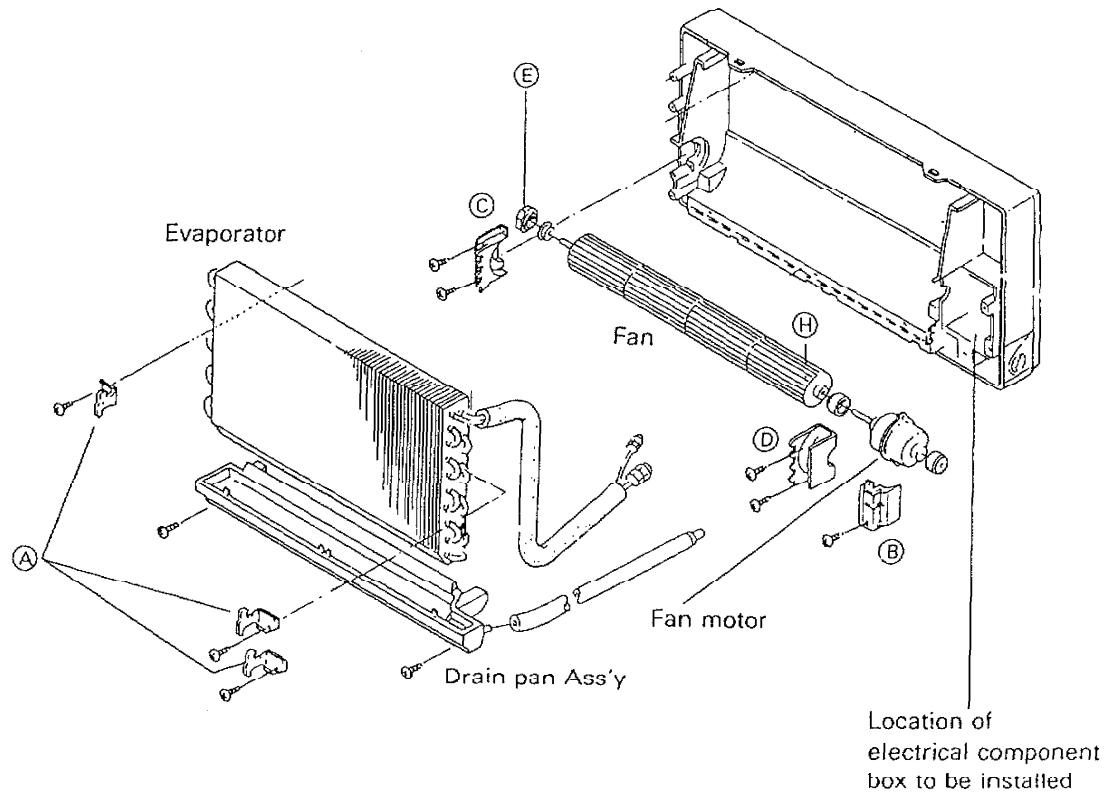


Fig. 7

- 2) Remove the drain pan ass'y by unfastening two screws.
- 3) Loosen the fixing screws of the mounting plate **(A)** and remove it, and loosen two screws **(B)**.
- 4) Lift up the evaporator with both hand, then withdraw the evaporator together with the tubing. (If the piping is fixed with a clamp or saddle, first remove the clamp.)

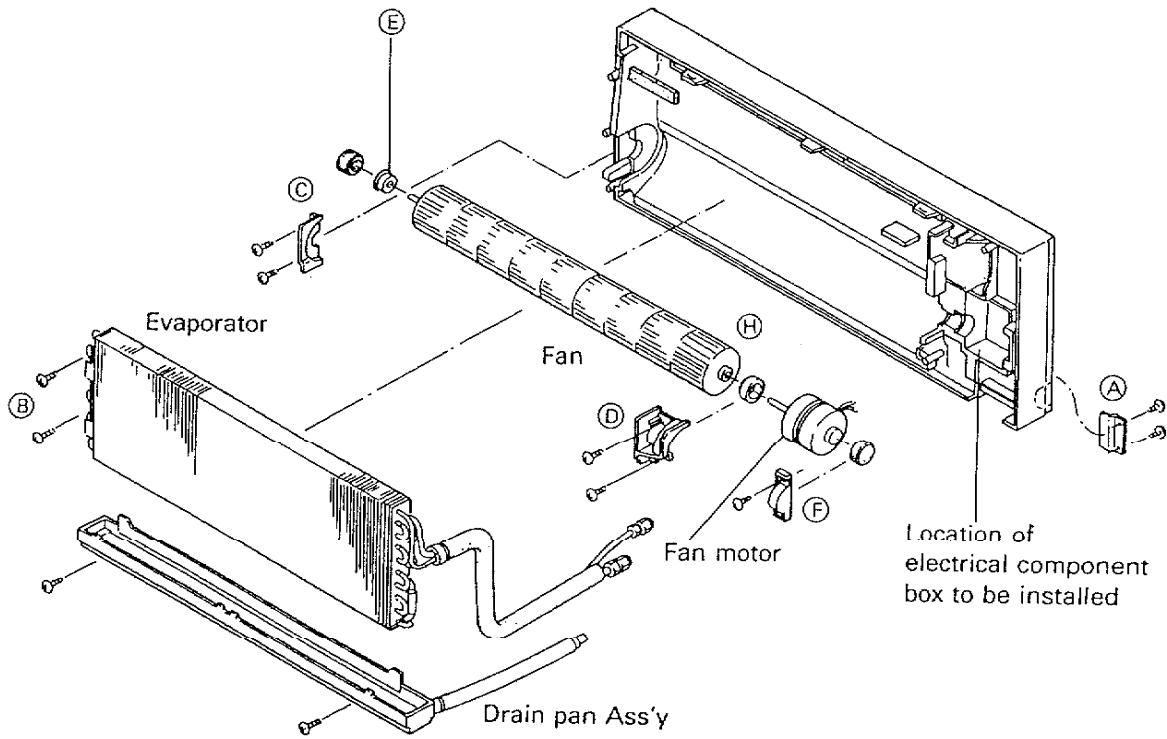


Fig. 8

5. Fan and Fan Motor — Removal

- 1) As shown in Figs. 7 and 8 loosen the screws of the plastic mounting plates **(C)** and **(D)** (and **(F)**) : KM1812W/KM1812X which secure the fan, using a Phillips screwdriver, then remove the fan and fan motor.
- 2) When withdrawing the fan from the motor, first loosen the fan fixing bolts using a hexagonal key **(H)**.
- 3) Withdraw the Bearing Ass'y **(E)** retaining the left side of the fan, by hand, then pull the fan to the left and withdraw it from the motor shaft.

OUTDOOR UNIT

6. Front Panel—Removal

- 1) Remove the Front Panel.

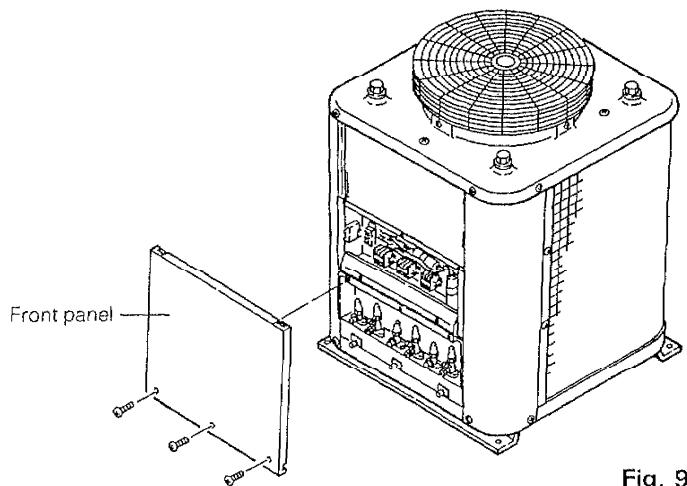


Fig. 9

7. Fan and Motor-Removal

- 1) Remove the guard first, and then remove two bolts (a) of the propeller fan to remove the propeller fan by lifting it up.
- 2) Remove the fan motor wire from the electrical component box, and remove the top cover with the fan motor fixed to the top cover. Fig. 10.

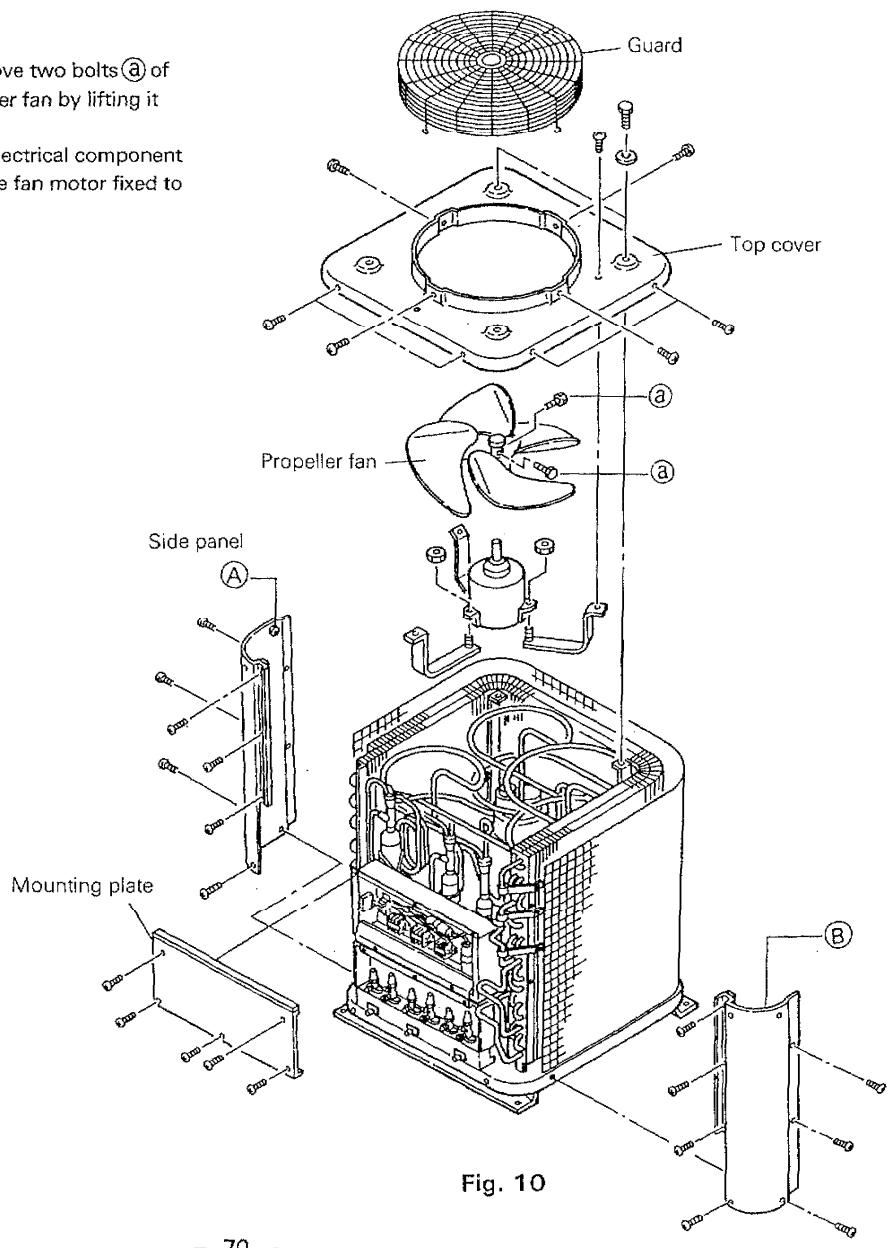


Fig. 10

8. Electrical Component Box-Removal

- 1) Remove the side panel Ⓐ, Ⓑ and mounting plate. Fig. 10.
- 2) Disconnect the following wires from the electrical component box.
 - (1) Compressor wire
 - (2) Thermostat wiring
- (3) The electrical component box can now be removed by unscrewing screw. Fig. 11.

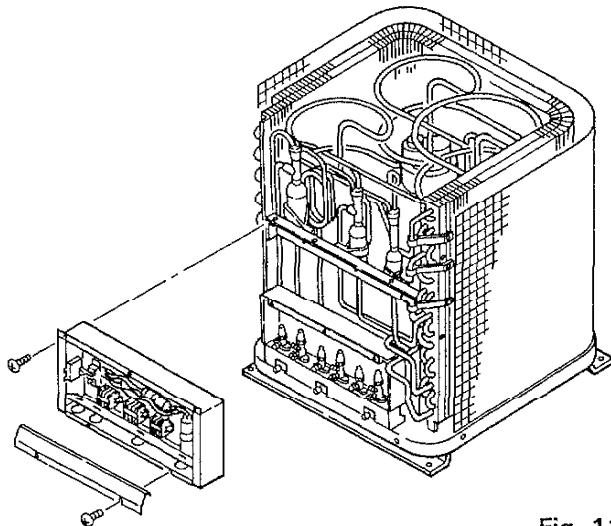


Fig. 11

9. Compressor-Removal

- 1) Remove the valve cover, Fig 13
- 2) Remove the refrigerant tubing by brazing torch, Fig. 12
- 3) Take apart three joints Ⓐ, Ⓑ brazed to the compressor by brazing torch Fig 13.

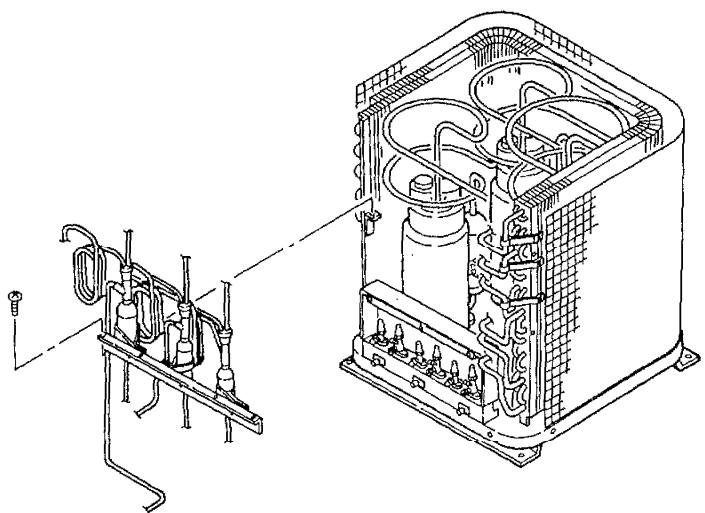


Fig. 12

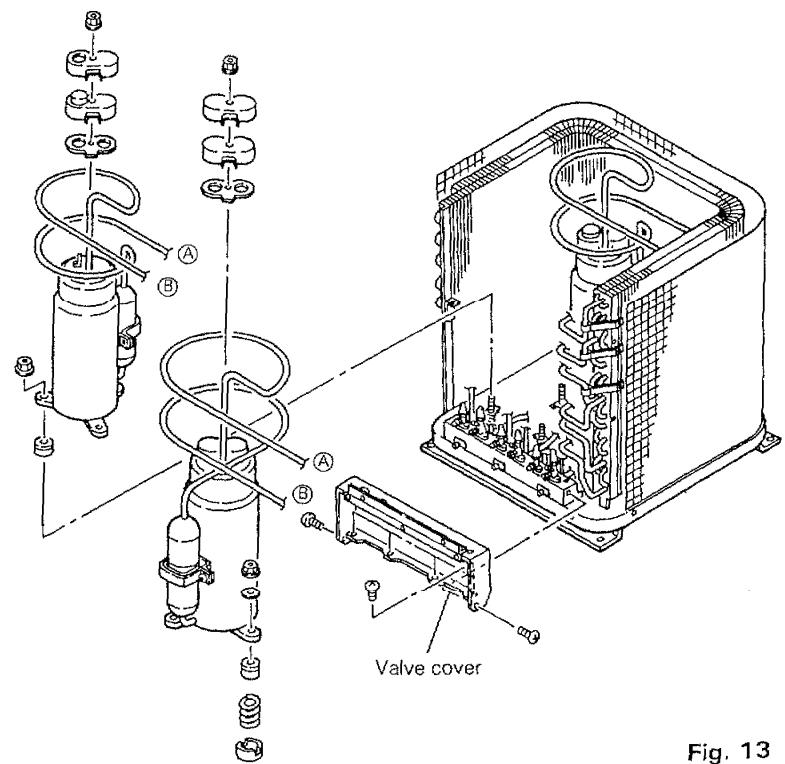
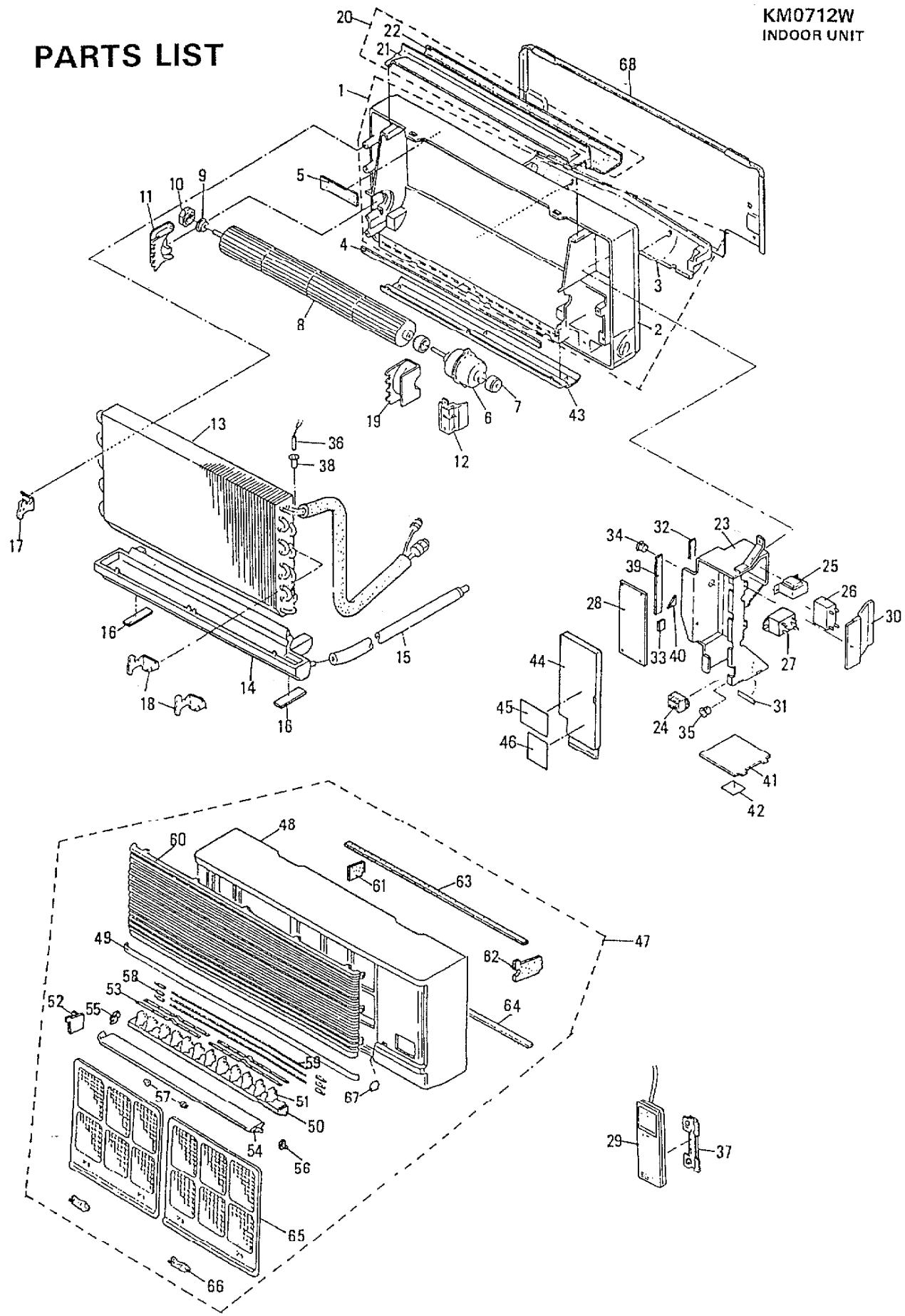


Fig. 13

15. PARTS LIST



ATTENTION !

To ensure correct parts supply, please let us know followings,
when you make service parts order:

1. Part No. 2. Description 3. Q'ty 4. Volts-Hz-Ph 5. Product Model No.

Key No.	Part No.	Description	Q'ty	Reference No.
1	623 097 3688	Frame Ass'y (incl. No. 2, 3)	1	852-2-2231-123J5
2	623 098 8347	Frame	1	852-2-2231-12331
3	623 097 3695	Insulation, Evap. Casing	1	852-2-2405-16110
4	623 109 0834	Packing	1	852-2-2412-43810
5	623 052 4354	Packing	1	852-2-2412-43900
6	623 098 8408	Fan Motor SV4T-11D6P	1	525-065-06
7	623 053 2229	Cushion Rubber, Fan Motor	2	852-2-2511-13810
8	623 041 9629	Cross-Flow Fan Ass'y	1	852-0-2509-11701
9	623 042 0069	Bearing Housing Ass'y	1	852-0-2510-11900
10	623 053 2199	Cushion Rubber, Fan Motor	1	852-2-2511-13610
11	623 053 2786	Cover	1	852-2-2515-13111
12	623 053 3479	Mounting Plate, Fan Motor	1	852-2-2520-16111
13	623 097 3718	Evaporator Ass'y	1	852-0-4101-76900
14	623 041 5959	Drain Pan Ass'y	1	852-0-2303-16617
15	623 040 9972	Drain Hose Ass'y	1	852-0-1303-12100
16	623 052 4361	Packing	2	852-2-2412-44000
17	623 050 5704	Mounting Plate	1	852-2-2309-33701
18	623 050 5636	Mounting Plate	2	852-2-2309-32701
19	623 053 3448	Mounting Plate Ass'y, Fan Motor	1	852-2-2520-160H2
20	623 050 7197	Mounting Plate Ass'y	1	852-2-2324-145H2
21	623 050 7210	Mounting Plate	1	852-2-2324-14501
22	623 109 0841	Packing	1	852-2-2412-44110
23	623 043 9108	Elec. Component Box Ass'y	1	852-0-5301-27601
24	623 003 2996	Terminal Base KTU15N-3J	1	4-2379-56159
25	623 096 4457	Transformer ATR-J122U	1	4-2519-56186
26	623 001 1786	Fixed Capacitor 440V 0.6MF	1	4-2239-56215
27	623 002 4762	Relay DFU24D1-F(M)	1	4-2329-56282
28	623 097 3749	P.C.B. Ass'y POW-K0911	1	851-0-5158-56600
29	623 096 4037	Remote Control Switch RCS-K2412W	1	851-0-0051-36100
30	623 055 3583	Cover Plate	1	852-2-5315-22601
31	623 060 3561	Label	1	852-6-4729-17300
32	623 097 8492	Packing	1	852-2-2412-62000
33	623 097 8508	Packing	1	852-2-2412-62100
34	623 038 3395	Bushing	1	851-2-5370-00500
35	623 096 4105	Bushing	1	851-2-5370-01100
36	407 109 3800	Thermistor PTC-51H-S3	1	DHP-T-C-51-H-S3N
37	623 038 4095	Mounting Plate	1	851-2-5378-01001
38	623 054 9012	Clip, Wire	1	852-2-5304-13700
39	623 097 8322	Packing	1	852-2-2524-11900
40	623 097 8539	Packing	1	852-2-2524-12000
41	623 097 3763	Cover Plate Ass'y (incl. No. 42)	1	852-2-5315-225H1
42	623 084 8269	Label	1	854-6-4729-71600
43	623 097 3770	Cover Plate	1	852-2-1119-11731
44	623 109 0858	Cover Plate (incl. No. 45, 46)	1	852-2-5315-247H6
45	623 109 0865	Elec. Wiring Diagram	1	851-2-5251-77202
46	623 059 2766	Label	1	852-6-4419-25500
47	623 098 4523	Grille Ass'y (incl. No. 48-67)	1	852-2-1501-263H5
48	623 098 8385	Grille	1	852-2-1501-26301
49	623 093 0988	Sash Grille	1	852-2-1503-18526
50	623 097 3817	Ornamental Plate Ass'y (incl. No. 51~59)	1	852-2-1516-195H1

NOTE: Metal and plastic parts will be supplied basically
with necessary heat insulation pads or packing.

ATTENTION !

To ensure correct parts supply, please let us know followings,
when you make service parts order:

1. Part No. 2. Description 3. Q'ty 4. Volts-Hz-Ph 5. Product Model No.

Key No.	Part No.	Description	Q'ty	Reference No.
51	623 097 3824	Blade	12	852-2-1519-21101
52	623 097 3831	Mounting Blade	1	852-2-2478-10801
53	623 097 3848	Mounting	4	852-2-1514-32301
54	623 097 3855	Flap	1	852-2-1523-13401
55	623 097 6603	Mounting	1	852-2-1514-32701
56	623 049 1472	Mounting	1	852-2-1514-26802
57	623 096 3387	Mounting	2	852-2-1514-32502
58	623 096 4242	Cap	6	852-2-2350-11800
59	623 097 3862	Wire	3	852-2-1315-24101
60	623 097 3879	Ornamental Plate	1	852-2-1516-18321
61	623 109 0872	Insulation, Grille	1	852-2-1406-31700
62	623 109 0889	Insulation, Grille	1	852-2-1406-31800
63	623 109 0896	Insulation, Grille	1	852-2-1406-31900
64	623 109 0902	Insulation, Grille	1	852-2-1406-32000
65	623 097 3886	Air Filter Ass'y	2	852-0-2307-16811
66	623 097 3893	Handle	2	852-2-2303-10711
67	623 093 1381	Indicator Plate	1	852-2-1308-11403
68	623 050 2475	Rear Panel	1	852-2-2230-11501
•	623 108 7094	Installation Instructions	1	852-6-4149-13500
•	623 108 7100	Operation Manual	1	852-6-4119-95700

NOTE: Metal and plastic parts will be supplied basically
with necessary heat insulation pads or packing.

No.	Parts Name	Figure	Q'ty
1	RAWL PLUG		10
2	COVER A		1
3	SCREW	 TOTA 4 X 16	10
4	COVER B		1
5	Drain Hose Adaptor		1

No.	Parts Name	Figure	Q'ty
6	CORD CLIP		2
7	MOUNTING PLATE	 For control Unit	1
8	SCREW		2
9	SCREW		2
			SATA 3 X 10

ATTENTION !

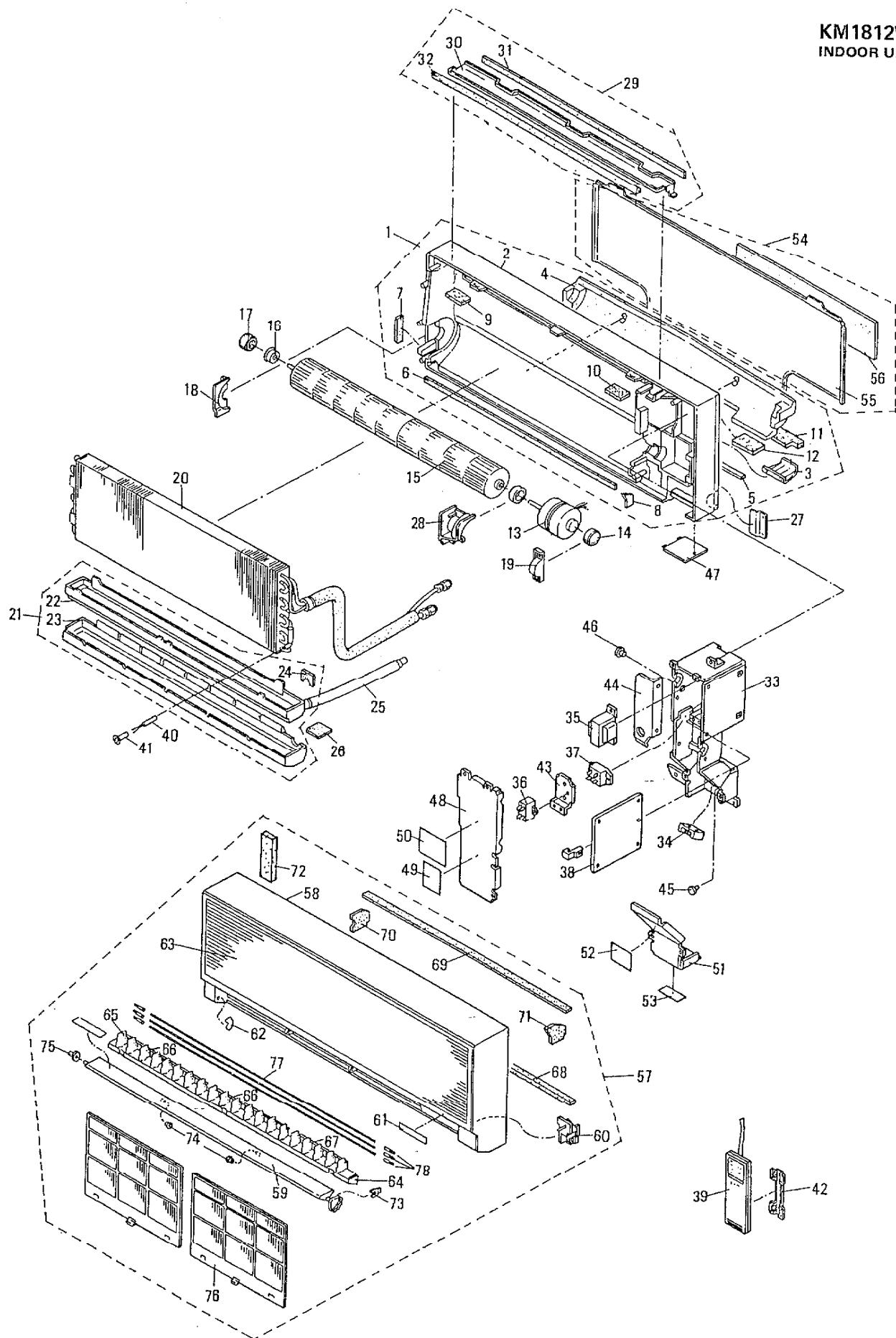
To ensure correct parts supply, please let us know followings,
when you make service parts order:

1. Part No. 2. Description 3. Q'ty 4. Volts-Hz-Ph 5. Product Model No.

Key No.	Part No.	Description	Q'ty	Reference No.
1	623 045 3685	Rawl Plug	10	852-2-1311-11600
2	623 051 5536	Cover A	1	852-2-2369-15200
3	623 090 8185	Screw TOTA 4X16	10	3-9219-41601
4	623 087 3087	Cover B	1	859-2-1124-10302
5	623 077 4384	Drain Adaptor	1	854-2-2334-13400
6	623 038 2558	Cord Clip	2	851-2-5354-00101
7	623 038 4095	Mounting Plate	1	851-2-5378-01001
8	623 090 8185	Screw TOTA 4X16	2	3-9219-41601
9	623 093 0209	Screw SATA 3X10	2	3-9222-31001

NOTE: Metal and plastic parts will be supplied basically
with necessary heat insulation pads or packing.

KM1812W
INDOOR UNIT



ATTENTION !

To ensure correct parts supply, please let us know followings,
when you make service parts order:

1. Part No. 2. Description 3. Q'ty 4. Volts-Hz-Ph 5. Product Model No.

Key No.	Part No.	Description	Q'ty	Reference No.
1	623 096 3856	Frame Ass'y (incl. No. 2~12)	1	852-2-2231-166H4
2	623 107 5800	Frame	1	852-2-2231-16610
3	623 090 6297	Mounting Plate	2	852-2-2309-41201
4	623 096 6963	Insulation, Evap. Casing	1	852-2-2405-17610
5	623 100 5067	Packing	1	852-2-2412-87101
6	623 100 4992	Packing	1	852-2-2412-87201
7	623 107 5817	Packing	1	852-2-2412-87301
8	623 100 5005	Packing	1	852-2-2412-87401
9	623 107 5824	Packing	1	852-2-2412-92510
10	623 107 5831	Packing	1	852-2-2412-87710
11	623 107 5848	Packing	1	852-2-2412-87901
12	623 107 5855	Packing	1	852-2-2412-98600
13	623 107 5190	Fan Motor KFH4T-3106P	1	525-0-0000-32706
14	623 092 8886	Cushion Rubber, Fan Motor	2	852-2-2511-15101
15	623 096 4426	Cross-Flow Fan Ass'y	1	852-0-2509-15801
16	623 042 0069	Bearing Housing Ass'y	1	852-0-2510-11900
17	623 053 2328	Cushion Rubber, Fan Motor	1	852-2-2511-14800
18	623 096 3887	Cover	1	852-2-2515-14510
19	623 096 3894	Mounting Plate, Fan Motor	1	852-2-2520-18810
20	623 096 3900	Evaporator Ass'y	1	852-0-4101-76300
21	623 096 4433	Drain Pan Ass'y (incl. No. 22~24)	1	852-2-2349-200H1
22	623 107 5862	Drain Pan	1	852-2-2349-20001
23	623 096 7380	Insulation, Drain Pan	1	852-2-2407-22201
24	623 092 9166	Packing	1	852-2-2412-87801
25	623 096 3931	Drain Pipe Ass'y	1	854-0-4297-13000
26	623 077 7170	Packing	1	854-2-2336-55800
27	623 092 8961	Mounting Plate	1	852-2-2309-42001
28	623 096 3948	Mounting Plate, Fan Motor	1	852-2-2520-18910
29	623 096 3955	Mounting Plate Ass'y (incl. No. 30~32)	1	852-2-2324-158H2
30	623 107 5879	Mounting Plate	1	852-2-2324-15801
31	623 107 5886	Insulation Partition	1	852-2-2402-15010
32	623 107 5893	Insulation Partition	1	852-2-2402-15110
33	623 096 3962	Elec. Component Box Ass'y	1	852-0-5301-81001
34	623 096 3979	Terminal Base JTU20-3	1	4-2379-56227
35	623 096 4457	Transformer ATR-J122U	1	4-2519-56186
36	623 001 1809	Fixed Capacitor 440V 1.5MFD	1	4-2239-56217
37	623 002 4762	Relay DFU24DI-F(M)	1	4-2329-56282
38	623 092 9005	P.C.B. Ass'y POW-K182G	1	851-0-5158-50500
39	623 096 4037	Remote Control Unit RCS-K2412W	1	851-0-0051-36100
40	407 109 3800	Thermistor PTC-51H-S3	1	DHP-T-C-51-H-S3N
41	623 054 9012	Clip, Wire	1	852-2-5304-13700
42	623 038 4095	Mounting Plate	1	851-2-5378-01001
43	623 096 4082	Clip, Capacitor	1	852-2-5301-25201
44	623 096 4099	Cover Plate	1	852-2-5309-19601
45	623 038 3395	Bushing	1	851-2-5370-00500
46	623 096 4105	Bushing	1	851-2-5370-01100
47	623 096 4112	Cover	1	852-2-2369-18410
48	623 108 7063	Cover Plate (incl. No. 49, 50)	1	852-2-5309-195H9
49	623 108 7070	Elec. Wiring Diagram	1	851-2-5251-69803
50	623 108 5397	Label	1	852-6-4419-39700

NOTE: Metal and plastic parts will be supplied basically
with necessary heat insulation pads or packing.

ATTENTION !

To ensure correct parts supply, please let us know followings,
when you make service parts order:

1. Part No. 2. Description 3. Q'ty 4. Volts-Hz-Ph 5. Product Model No.

Key No.	Part No.	Description	Q'ty	Reference No.
51	623 096 4136	Cover Plate Ass'y (incl. No. 52, 53)	1	852-2-5315-244H1
52	623 084 8269	Label	1	854-6-4729-71600
53	623 096 6925	Label	1	854-6-4729-17300
54	623 092 9043	Rear Panel Ass'y (incl. No. 55, 56)	1	852-2-2230-130H1
55	623 100 5173	Rear Panel	1	852-2-2230-13001
56	623 100 5180	Packing	1	852-2-2412-88001
57	623 096 6833	Grille Ass'y (incl. No. 58-78)	1	852-2-1501-248J4
58	623 096 4143	Grille	1	852-2-1501-24810
59	623 096 4150	Flap	1	852-2-1523-12510
60	623 096 4167	Mounting Blade	1	852-2-2478-10110
61	623 092 9081	Badge	1	854-2-1354-19701
62	623 093 5747	Label	1	854-2-1358-50801
63	623 096 4174	Ornamental Plate	1	852-2-1516-18810
64	623 096 4181	Ornamental Plate	1	852-2-1516-18910
65	623 096 4198	Blade	20	852-2-1519-21201
66	623 096 4204	Mounting	2	852-2-1514-31110
67	623 096 4211	Mounting	1	852-2-1514-31210
68	623 100 4824	Insulation, Grille	1	852-2-1406-30801
69	623 100 4831	Insulation, Grille	1	852-2-1406-30901
70	623 100 4848	Insulation, Grille	1	852-2-1406-31001
71	623 100 4855	Insulation, Grille	1	852-2-1406-31101
72	623 100 4862	Insulation, Grille	1	852-2-1406-31601
73	623 092 9647	Fastener Blade	1	854-2-1521-11601
74	623 096 3337	Mounting	2	852-2-1514-32502
75	623 049 1472	Mounting	1	852-2-1514-26802
76	623 096 4228	Air Filter Ass'y	2	852-0-2307-17011
77	623 096 4235	Wire	3	852-2-1315-23901
78	623 096 4242	Cap	6	852-2-2350-11800
•	623 108 7094	Installation Instructions	1	852-6-4149-13500
•	623 108 7100	Operation Manual	1	852-6-4119-95700

NOTE: Metal and plastic parts will be supplied basically
with necessary heat insulation pads or packing.

■ Accessory Parts List

No.	Parts Name	Figure	Q'ty
1	RAWL PLUG		10
2	COVER A		1
3	SCREW	 TOTAL 4 X 16	10
4	COVER B		1

No.	Parts Name	Figure	Q'ty
5	CORD CLIP		2
6	MOUNTING PLATE		1
7	SCREW		2
8	SCREW		2
			2

ATTENTION !

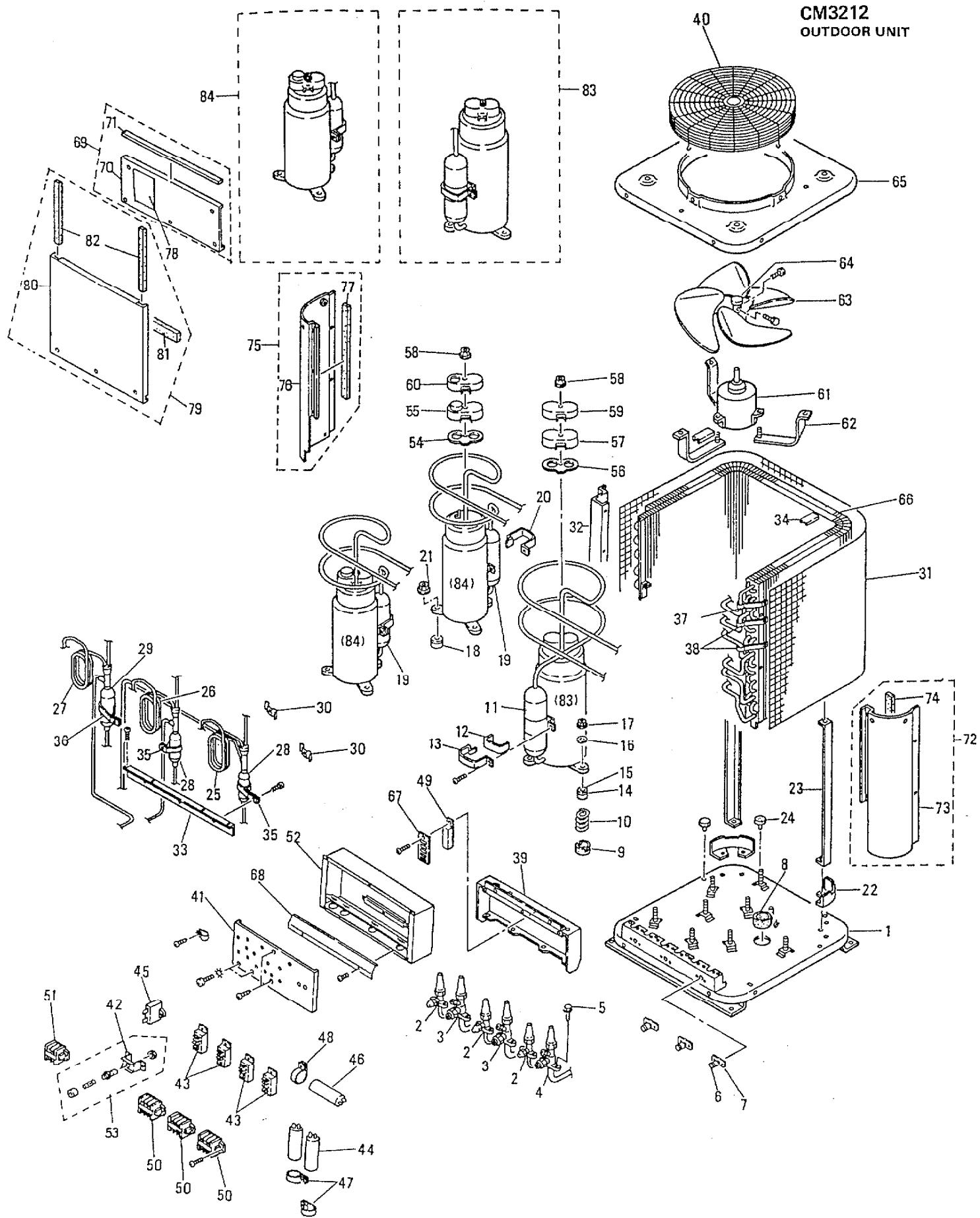
To ensure correct parts supply, please let us know followings,
when you make service parts order:

1. Part No. 2. Description 3. Q'ty 4. Volts-Hz-Ph 5. Product Model No.

Key No.	Part No.	Description	Q'ty	Reference No.
1	623 045 3685	Rawl Plug	10	852-2-1311-11600
2	623 051 5468	Cover A	1	852-2-2369-13900
3	623 090 8185	Screw TOTA 4X16	10	3-9219-41601
4	623 087 3087	Cover B	1	859-2-1124-10302
5	623 038 2558	Cord Clip	2	851-2-5354-00101
6	623 038 4095	Mounting Plate	1	851-2-5378-01001
7	623 090 8185	Screw TOTA 4X16	2	3-9219-41601
8	623 093 0209	Screw SATA 3X10	2	3-9222-31001

NOTE: Metal and plastic parts will be supplied basically
with necessary heat insulation pads or packing.

**CM3212
OUTDOOR UNIT**



ATTENTION !

To ensure correct parts supply, please let us know followings,
when you make service parts order:

1. Part No. 2. Description 3. Q'ty 4. Volts-Hz-Ph 5. Product Model No.

Key No.	Part No.	Description	Q'ty	Reference No.
1	623 108 5137	Bottom Plate Ass'y	1	854-0-2204-40501
2	623 107 3899	Valve Ass'y	3	852-0-4501-37200
3	623 107 3905	Valve Ass'y	2	852-0-4501-37300
4	623 107 3912	Valve Ass'y	1	852-0-4501-37400
5	623 090 6907	Deltite Screw	12	3-9201-61601
6	623 108 5144	Nipple Ass'y	3	852-0-4507-36200
7	623 050 4684	Mounting Plate	3	852-2-2309-19902
8	623 108 5151	Cover Plate	1	852-2-2351-15800
9	623 035 0144	Cushion Rubber	3	851-2-2390-14000
10	623 034 5836	Spring	3	851-2-2330-18201
11	623 043 6466	Accumulator Ass'y	1	852-0-4511-12901
12	623 050 9795	Packing	1	852-2-2353-15110
13	623 051 3372	Band Mounting	3	852-2-2356-10801
14	623 035 0137	Cushion Rubber	3	851-2-2390-13900
15	623 073 5088	Washer Special	3	854-2-1355-11700
16	623 051 7172	Washer Special	3	852-2-2397-12100
17	623 068 1125	Nut Special Ass'y	3	854-0-2321-10201
18	623 051 6359	Cushion Rubber	6	852-2-2390-16800
19	623 043 6626	Accumulator Ass'y	2	852-0-4511-14600
20	623 051 3907	Band Mounting	2	852-2-2356-17201
21	623 029 6534	Nut Special Ass'y	6	851-0-2395-10501
22	623 078 5205	Mounting Plate	2	854-2-2360-19100
23	623 067 5018	Frame Ass'y	2	854-0-2206-19100
24	623 073 3831	Sheet Rubber	4	854-2-1353-11000
25	623 107 6296	Tube Ass'y, Capillary	1	852-0-4202-99500
26	623 107 6302	Tube Ass'y, Capillary	1	852-0-4202-99600
27	623 107 6319	Tube Ass'y, Capillary	1	852-0-4202-99700
28	623 043 3656	Dehydrater Ass'y	2	852-0-4505-14300
29	623 043 3700	Dehydrater Ass'y	1	852-0-4505-14700
30	623 051 3556	Band Mounting	2	852-2-2356-13201
31	623 107 6289	Condenser Ass'y (incl. No. 32)	1	852-0-4102-40000
32	623 080 3206	Mounting Plate	2	854-2-4134-26300
33	623 078 3805	Reinforcement Plate	1	854-2-2345-60100
34	623 078 5199	Mounting Plate	2	854-2-2360-18900
35	623 108 5175	Clip, Dehydrater	2	852-2-4301-10500
36	623 036 6169	Clip, Dehydrater	1	851-2-4301-10701
37	623 108 5182	Mounting, Tube	2	852-2-2362-17400
38	623 108 5199	Mounting, Tube	1	852-2-2362-17500
39	623 108 5205	Cover Ass'y	1	854-0-2325-24201
40	623 071 9972	Guard	1	854-2-1113-13400
41	623 108 5212	Elec. Component Box	1	854-2-5301-64701
42	623 108 5229	Elec. Component Box	1	852-2-5307-37501
43	623 002 4809	Relay MY2F-T1-USTS	4	4-2329-56287
44	623 092 7698	Fixed Capacitor 15MFD 370V	2	4-2239-56377
45	623 001 1854	Fixed Capacitor 440V 4MFD	1	4-2239-56222
46	623 001 2530	Fixed Capacitor 440V 35MFD	1	4-2239-56339
47	623 038 0349	Clip, Capacitor	2	851-2-5301-20901
48	623 054 7971	Clip, Capacitor	1	852-2-5301-20601
49	623 107 6357	Thermostat MAT8S 27Y	1	4-2339-56302
50	623 003 2996	Terminal Base 600V 15A	3	4-2379-56159

NOTE: Metal and plastic parts will be supplied basically
with necessary heat insulation pads or packing.

ATTENTION !

To ensure correct parts supply, please let us know followings,
when you make service parts order:

1. Part No. 2. Description 3. Q'ty 4. Volts-Hz-Ph 5. Product Model No.

Key No.	Part No.	Description	Q'ty	Reference No.
51	623 003 3061	Terminal Base 30A 300V	1	4-2379-56172
52	623 108 5274	Cover Plate Ass'y	1	854-0-5304-12201
53	623 108 5281	Fuse Ass'y 250V 3A	1	851-0-5261-02500
54	626 040 0383	Gasket Terminal	2	801-2-5303-13800
55	626 040 0765	Cover Terminal	2	801-2-6194-13300
56	626 040 0338	Gasket Terminal	1	801-2-5303-13100
57	626 040 0673	Cover Terminal	1	801-2-6194-12100
58	626 040 0956	Nut, Compressor	3	819-2-6919-10100
59	623 108 5304	Cover Terminal	1	854-2-5305-11410
60	623 108 5311	Terminal Cover	2	852-2-5321-10900
61	623 009 7261	Fan Motor KFC6S-161A6P	1	525-142-06
62	623 068 6410	Support Motor Ass'y	3	854-0-2511-14401
63	623 068 3693	Centrifugal Fan Ass'y	1	854-0-2501-18900
64	623 078 3935	Cap	1	854-2-2346-11400
65	623 066 5682	Top Cover Ass'y	1	854-0-1106-20201
66	623 066 8997	Guard Ass'y	1	854-0-1113-13801
67	623 108 5335	Mounting Thermostat	1	852-2-5303-16901
68	623 108 5342	Cover Plate Ass'y	1	852-0-5302-12400
69	623 108 5359	Mounting Plate Ass'y (incl. No. 70, 71)	1	854-2-2208-212H2
70	623 109 0636	Mounting Plate Ass'y	1	854-2-2208-21201
71	623 108 6769	Packing	1	852-2-2524-20800
72	623 108 5366	Side Panel Ass'y (incl. No. 73, 74)	1	854-0-1102-299H1
73	623 109 0643	Side Panel Ass'y	1	854-0-1102-29901
74	623 108 6776	Packing	1	854-2-1351-61400
75	623 108 5373	Side Panel Ass'y (incl. No. 76, 77)	1	854-0-1102-300H1
76	623 109 0650	Side Panel Ass'y	1	854-0-1102-30001
77	623 108 6776	Packing	1	854-2-1351-61400
78	623 108 5410	Elec. Wiring Diagram	1	851-2-5252-01501
79	623 108 5427	Front Panel Ass'y (incl. No. 80-82)	1	854-0-1101-365H1
80	623 109 1541	Front Panel Ass'y	1	854-0-1101-36501
81	623 108 2181	Packing	1	854-2-1351-42610
82	623 108 5434	Packing	2	852-2-2524-20900
83	623 108 5472	Compressor Ass'y C-2R140HGS	1	852-0-4516-21900
83	623 096 5928	Compressor Ass'y (80652046)	1	852-0-4516-19900
	623 108 5458	Installation Instructions	1	852-6-4149-12400

NOTE: Metal and plastic parts will be supplied basically
with necessary heat insulation pads or packing.