SERVICE MANUAL

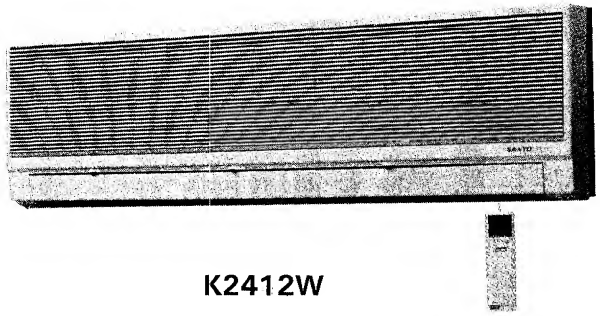
SANYO

24K12W
30K12W
36K12W

SPLIT SYSTEM AIR CONDITIONER

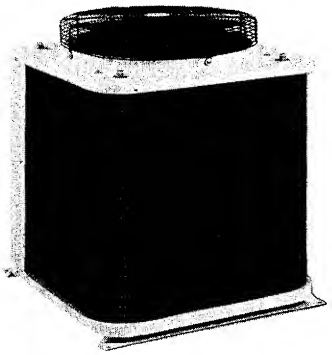
Jul. 1989

Indoor Unit

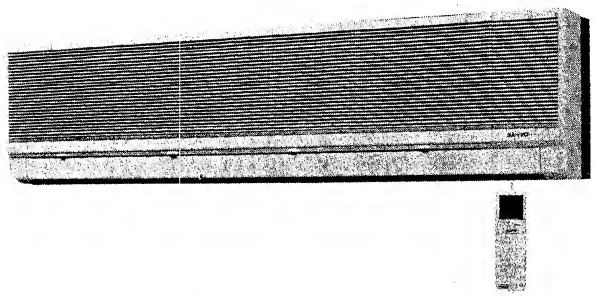


K2412W

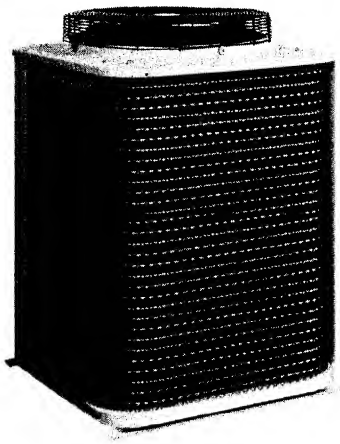
Outdoor Unit



C2412



K3012
K3612



K3012W
K3612W

REFERENCE NO. WM-700184

Table of Contents

1. SPECIFICATIONS

1) Unit Specifications

Model No.			24K12W	
Unit Model No.		Indoor unit	K2412W	
		Outdoor unit	C2412	
PERFORMANCE			Cooling	
Capacity		BTU/hr.	22,400 / 22,000	
Air circulation (High)		cu.ft./min.	540 / 510	
Moisture removal (High)		Pints/hr.	6.5 / 6.4	
ELECTRICAL RATING				
Frequency		Hz	60	
Phase			Single	
Voltage rating		V	230 / 208	
Available voltage range		V	187 ~ 253	
Running amperes		A	10.5 / 11.4	
Power input		W	2.400 / 2.350	
Power factor		%	99 / 99	
S.E.E.R.		BTU/Whr.	9.5 / 9.6	
FEATURES				
Controls			Microcomputer	
Control switch			Remote control	
Temperature control			IC Thermostat	
Timer			ON/OFF 12-hours	
Fan speeds	Indoor fan / Outdoor fan		3 / 1	
Air deflection	Horizontal / Vertical		Manual / Manual	
Air filter			Washable, easy access	
Compressor			Rotary	
Refrigerant (R-22) amount at shipment		lbs.(kg)	6.8 (3.1)	
Refrigerant control			Capillary tube	
Operation sound	In-Hi/Me/Lo	dB-A	45 / 42 / 40	
	Out-Hi	dB-A	52	
Refrigerant piping connections			Flare type	
Max allowable piping length at shipment		ft.(m)	50 (15)	
Limit of piping length		ft.(m)	100 (30)	
Limit elevation difference between two units		ft.(m)	50 (15)	
Refrigerant pipe diameter o.d.	Narrow pipe	in.(mm)	1/4 (6.35)	
	Wide pipe	in.(mm)	5/8 (15.88)	
Refrigerant piping kit			Optional	
Accessories			Hanging wall bracket	
DIMENSIONS & WEIGHT			Indoor unit	Outdoor unit
Height		in.(mm)	14-9/16 (370)	30-1/8 (765)
Width		in.(mm)	49-7/32 (1,250)	26-3/8 (670)
Depth		in.(mm)	8-9/32 (210)	26-3/8 (670)
Net weight		lbs.(kg)	40 (18)	178 (81)
Shipping volume		cu.ft.(cu.m)	6.9 (0.195)	16.3 (0.461)
Shipping weight (Approx.)		lbs.(kg)	53 (24)	195 (86)

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.

SPECIFICATIONS

1) Unit Specifications

Model No.			30K12W	
Unit Model No.		Indoor unit	K3012W	
		Outdoor unit	C3012	
PERFORMANCE			Cooling	
Capacity		BTU/hr.	28,000 / 27,000	
Air circulation (High)		cu.ft./min.	750 / 710	
Moisture removal (High)		Pints/hr.	8.1 / 7.8	
ELECTRICAL RATING				
Frequency		Hz	60	
Phase			Single	
Voltage rating		V	230 / 208	
Available voltage range		V	187 ~ 253	
Running amperes		A	13.0 / 13.9	
Power input		W	2,900 / 2,830	
Power factor		%	97 / 98	
S.E.E.R.		BTU/Whr.	10.0 / 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 / 1	
Air deflection	Horizontal / Vertical		Manual / Manual	
Air filter			Washable, easy access	
Compressor			Rotary	
Refrigerant (R-22) amount at shipment		lbs.(kg)	9.5 (4.3)	
Refrigerant control			Capillary tube	
Operation sound	In-Hi/Me/Lo	dB-A	47 / 44 / 41	
	Out-Hi	dB-A	62	
Refrigerant piping connections			Flare type	
Max allowable piping length at shipment		ft.(m)	50 (15)	
Limit of piping length		ft.(m)	100 (30)	
Limit elevation difference between two units		ft.(m)	50 (15)	
Refrigerant pipe diameter o.d.	Narrow pipe	in.(mm)	3/8 (9.52)	
	Wide pipe	in.(mm)	5/8 (15.88)	
Refrigerant piping kit			Optional	
Accessories			Hanging wall bracket	
DIMENSIONS & WEIGHT			Indoor unit	Outdoor unit
Height		in.(mm)	14-9/16 (370)	38 (965)
Width		in.(mm)	59-1/16 (1,500)	26-3/8 (670)
Depth		in.(mm)	9-7/16 (240)	26-3/8 (670)
Net weight		lbs.(kg)	64 (29)	200 (91)
Shipping volume		cu.ft.(cu.m)	9.2 (0.260)	25 (0.708)
Shipping weight (Approx.)		lbs.(kg)	79 (36)	227 (103)

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.

SPECIFICATIONS

1) Unit Specifications

Model No.			36K12W	
Unit Model No.		Indoor unit	K3612W	
		Outdoor unit	C3612	
PERFORMANCE			Cooling	
Capacity		BTU/hr.	34,000 / 33,000	
Air circulation (High)		cu.ft./min.	720 / 690	
Moisture removal (High)		Pints/hr.	10.0 / 9.6	
ELECTRICAL RATING				
Frequency		Hz	60	
Phase			Single	
Voltage rating		V	230 / 208	
Available voltage range		V	187 ~ 253	
Running amperes		A	15.8 / 16.9	
Power input		W	3,510 / 3,450	
Power factor		%	97 / 98	
S>E.E.R.		BTU/Whr.	9.8 / 9.9	
FEATURES				
Controls			Microcomputer	
Control switch			Remote control	
Temperature control			IC Thermostat	
Timer			ON/OFF 12-hours	
Fan speeds	Indoor fan / Outdoor fan		3 / 1	
Air deflection	Horizontal / Vertical		Manual / Manual	
Air filter			Washable, easy access	
Compressor			Rotary	
Refrigerant (R-22) amount at shipment		lbs.(kg)	9.9 (4.5)	
Refrigerant control			Capillary tube	
Operation sound	In-Hi/Me/Lo	dB-A	48 / 45 / 42	
	Out-Hi	dB-A	62	
Refrigerant piping connections			Flare type	
Max allowable piping length at shipment		ft.(m)	50 (15)	
Limit of piping length		ft.(m)	130 (40)	
Limit elevation difference between two units		ft.(m)	50 (15)	
Refrigerant pipe diameter o.d.	Narrow pipe	in.(mm)	3/8 (9.52)	
	Wide pipe	in.(mm)	3/4 (19.05)	
Refrigerant piping kit			Optional	
Accessories			Hanging wall bracket	
DIMENSIONS & WEIGHT			Indoor unit	Outdoor unit
Height		in.(mm)	14-9/16 (370)	38 (965)
Width		in.(mm)	59-1/16 (1,500)	26-3/8 (670)
Depth		in.(mm)	9-7/16 (240)	26-3/8 (670)
Net weight		lbs.(kg)	68 (31)	209 (95)
Shipping volume		cu.ft.(cu.m)	9.2 (0.260)	25 (0.708)
Shipping weight (Approx.)		lbs.(kg)	85 (39)	235 (107)

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.	K2412W
Controller P.C.B.	POW-K243G
Control circuit fuse	250V - 3A
Remote control unit	RCS-K2412W

Unit Model No.			C2412	
Compressor			Hermetic Rotary Type	
Compressor model No.			C-R170H6S	
Source			230/208V, 60Hz, Single phase	
Pole			2	
Nominal output		W(H.P.)	1,700 (2-1/4)	
Compressor oil		cc	1,350 (Special oil for Rotary Compressor)	
Coil resistance (Ambient temp. 77°F)		Ω	C - R : 0.73 C - S : 1.91	
Protective Devices, Compressor			Internal line type	-
Overload relay model			-	-
Operating temp.	Open	°F	320 ± 41	-
	Close	°F	198 ± 52	-
Operating amperes (Ambient temp. 77°F)			-	-
Run capacitor		μF	35	
		VAC	400	
Crankcase heater		V - W	230 - 30	

Unit Model No.			K2412W	C2412
Fan			Cross-flow	Propeller
Number....dia. (length)		mm	1....φ110, (L990)	1....φ500
Fan motor model			KFH4Q-31A6P	KFC8S-101A6P
Source			230/208V, 60Hz, Single phase	
No. of pole....rpm. (230/208V)			4....1,272/1,180(Hi.)	8....827/809
Nominal output		W	30	100
Coil resistance (Ambient temp. 68°F)		Ω	WHT - BRN : 210.4 ORG - YEL : 424.9 WHT - VLT : 45.5 VLT - ORG : 25.8 ORG - PNK : 114.4	WHT - BRN : 24.2 BLK - PNK : 53.1
Safety Devices				
Fan motor, internal type Operating temp.	Open	°F	248 ± 41	248 ± 41
	Close	°F	171 ± 59	171 ± 59
Run capacitor		μF	1.8	5
		VAC	440	440

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

2) Major Component Specifications

Unit Model No.	K3012W
Controller P.C.B.	POW-K243G
Control circuit fuse	250V - 3A
Remote control unit	RCS-K2412W

Unit Model No.			C3012	
Compressor			Hermetic Rotary Type	
Compressor model No.			C-R191H6S	
Source			230/208V, 60Hz, Single phase	
Pole			2	
Nominal output		W(H.P.)	1,900 (2-1/2)	
Compressor oil		cc	1,350 (Special oil for Rotary Compressor)	
Coil resistance (Ambient temp. 77°F)		Ω	C - R: 0.70 C - S: 1.66	
Protective Devices, Compressor			Internal line type	-
Overload relay model			-	-
Operating temp.	Open	°F	329 ± 41	-
	Close	°F	203 ± 48	-
Operating amperes (Ambient temp. 77°F)			-	-
Run capacitor		μF	40	
		VAC	370	
Crankcase heater		V - W	230 - 30	

Unit Model No.			K3012W	C3012
Fan			Cross-flow	Propeller
Number....dia. (length)		mm	1....φ120, (L1, 170)	1....φ500
Fan motor model			KFH4T-41A6P	KFC6S-161A6P
Source			230/208V, 60Hz, Single phase	
No. of pole....rpm. (230/208V)			4....1,260/1,151(Hi.)	6....828/727
Nominal output		W	40	160
Coil resistance (Ambient temp. 68°F)		Ω	WHT - GRY : 175.5 WHT - VLT : 16.9 VLT - YEL : 11.4 YEL - PNK : 35.0	WHT - BRN : 34.9 WHT - PNK : 72.1 WHT - YEL : 81.6
Safety Devices				
Fan motor, internal type Operating temp.	Open	°F	248 ± 41	248 ± 41
	Close	°F	171 ± 59	171 ± 59
Run capacitor		μF	4.5	4
		VAC	440	440

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

2) Major Component Specifications

Unit Model No.	K3612W
Controller P.C.B.	POW-K243G
Control circuit fuse	250V - 3A
Remote control unit	RCS-K2412W

Unit Model No.			C3612	
Compressor			Hermetic Rotary Type	
Compressor model No.			C-R220H6K	
Source			230/208V, 60Hz, Single phase	
Pole			2	
Nominal output		W(H.P.)	2,200 (3)	
Compressor oil		cc	1,500 (Special oil for Rotary Compressor)	
Coil resistance (Ambient temp. 77°F)		Ω	C - R : 0.55 C - S : 1.53	
Protective Devices, Compressor			Internal line type	-
Overload relay model			-	-
Operating temp.	Open	°F	320 ± 41	-
	Close	°F	189 ± 52	-
Operating amperes (Ambient temp. 77°F)			-	-
Run capacitor		μF	40	
		VAC	370	
Crankcase heater		V - W	230 - 30	

Unit Model No.			K3612W	C3612
Fan			Cross-flow	Propeller
Number....dia. (length)		mm	1....φ120, (L1, 170)	1....φ500
Fan motor model			SFG4T-51A6P	KFC6S-161A6P
Source			230/208V, 60Hz, Single phase	
No. of pole....rpm. (230/208V)			4....1,329/1,237(Hi.)	6....828/727
Nominal output		W	50	160
Coil resistance (Ambient temp. 68°F)		Ω	WHT - GRY : 118.2 WHT - VLT : 15.5 VLT - YEL : 13.6 YEL - PNK : 31.4	WHT - BRN : 34.9 WHT - PNK : 72.1 WHT - YEL : 81.6
Safety Devices				
Fan motor, internal type Operating temp.	Open	°F	248 ± 41	248 ± 41
	Close	°F	171 ± 59	171 ± 59
Run capacitor		μF	4	4
		VAC	440	440

DATA SUBJECT TO CHANGE WITHOUT NOTICE.

3) Other Component Specifications

Relay	MY2F-T1-USIS
Coil rated	AC 240V
Coil resistance kΩ (at 68°F)	18.8 ± 15%
Contact rated	AC 240V : 5A
Unit Model No.	C2412

Magnetic Contactor	FMCA-1UL
Coil rated	60Hz AC 240V
Coil resistance Ω (at 68°F)	580 ± 15%
Main Contact	AC 240V : FLA 20A
	LRA 120A
Auxiliary Contact	AC 220~240V : 3A
Unit Model No.	C2412, C3012

Magnetic Contactor	FMCA-1SUL
Coil rated	60Hz AC 240V
Coil resistance Ω (at 68°F)	580 ± 15%
Main Contact	AC 240V : FLA 26A
	LRA 156A
Auxiliary Contact	AC 220~240V : 3A
Unit Model No.	C3612

Thermistor (PTC)	TDK 101YV
Rated max. voltage	AC 400V
max. ampere	11.5A
Resistance Ω (at 77°F)	100 ± 25%
Unit Model No.	C2412,C3012,C3612

Thermister (Indoor coil temp. 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.	K2412, K3012, K3612			

Transformer		ATR-J122U
Rating	Primary	AC 220V 60HZ
	Secondary	19V 0.63A
	Capacity	12VA
Resistance Ω		Primary (WHI - WHI): 146.9
(Ambient temp. 79°F)		Secondary (BRN - BRN): 1.3
Thermal Cutoff		259°F 2A 250V
Unit Model No.		K2412, K3012, K3612

Other Component Specifications

Thermostat (Fan speed control)	YTB-4U201F
Operating Temps. °F	OFF 79 ± 3 ON 75 +3,-1
Contact rated	AC 200/240V : FLA 1A LRA 6A
Unit Model No.	C2412

Thermostat (Fan speed control)	YTB-4U305F
Operating Temps. °F	OFF 79 ± 3 ON 75 +3,-1
Contact rated	AC 200/240V : FLA 1A LRA 6A
Unit Model No.	C3012, C3612

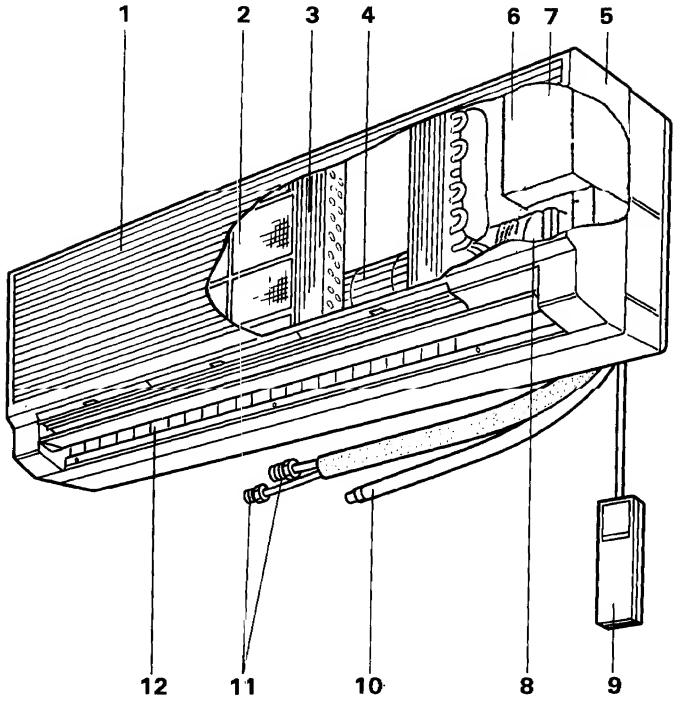
Switch (Pressure switch)	FTB-2UC01
Operating Pressure psig(kg/sq.cm.G)	OFF 412 +14,-7 (29 +1,-0.5) ON Manual
Contact rated	AC 240V : FLA 4A LRA 24A
Unit Model No.	C3012, C3612

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

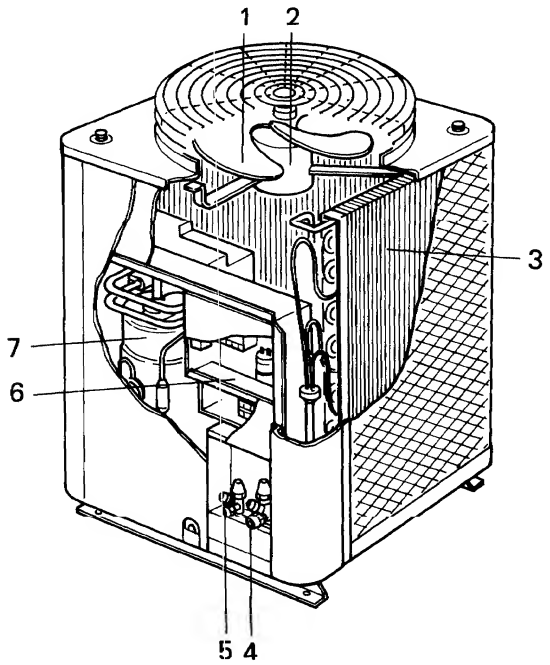
3. CONSTRUCTION OF THE UNIT

INDOOR K2412W



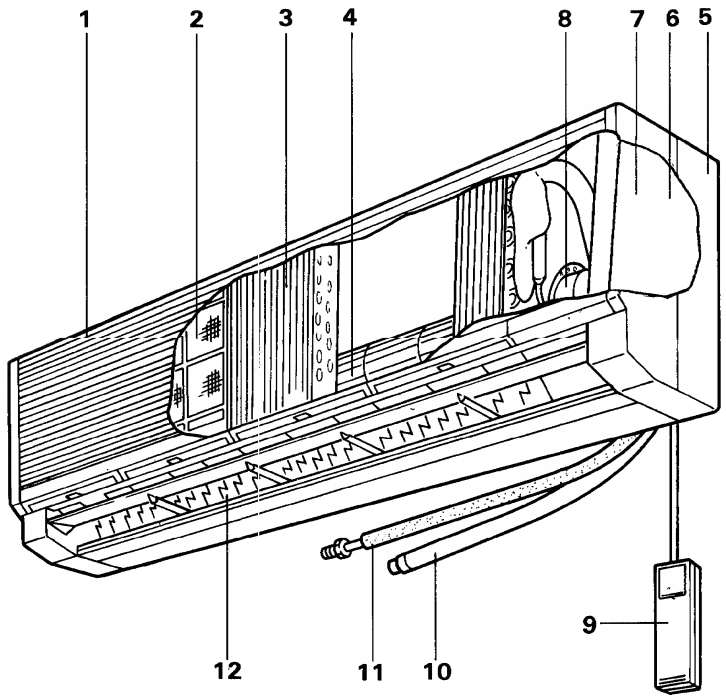
1. Air intake
2. Air filter (Slide-out)
3. Evaporator (= Indoor heat exchanger)
4. Indoor fan
5. Casing
6. Electrical component box
7. PCB Ass'y (inside component box)
8. Fan motor
9. Remote control unit
10. Drain hose
11. Refrigerant piping
12. Air outlet

OUTDOOR UNIT C2412



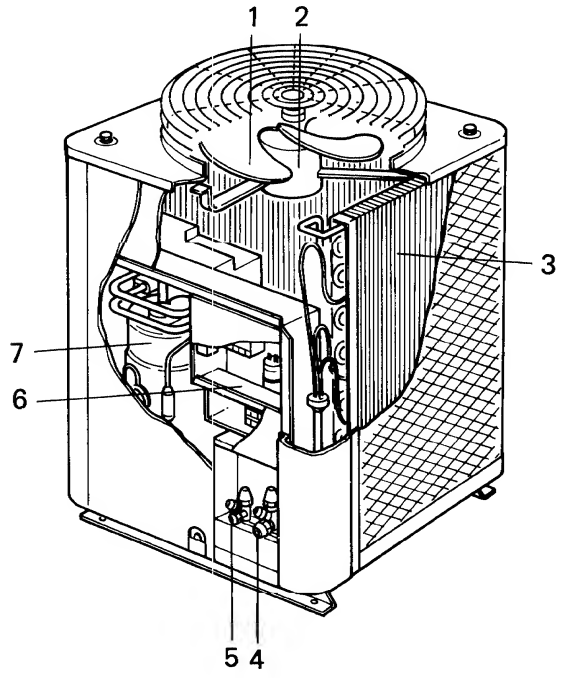
1. Propeller fan
2. Fan motor
3. Condenser (= Outdoor heat exchanger)
4. Service valve (Wide pipe)
5. Service valve (Narrow pipe)
6. Electrical component box
7. Compressor

INDOOR K3012W/K3612W



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 (inside component box)
8. Fan motor
9. Remote control unit
10. Drain hose
11. Refrigerant piping
12. Air outlet

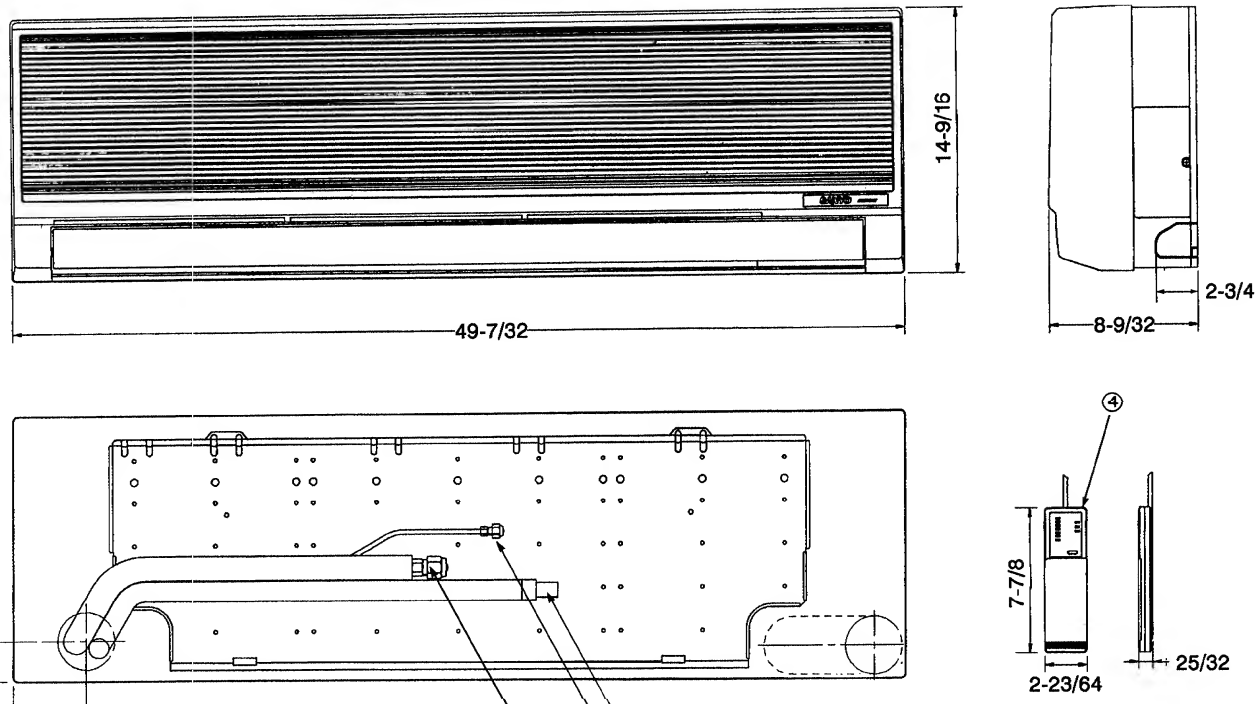
OUTDOOR UNIT C3012/C3612



1. Propeller fan
2. Fan motor
3. Condenser (=Outdoor heat exchanger)
4. Service valve (Wide pipe)
5. Service valve (Narrow pipe)
6. Electrical component box
7. Compressor

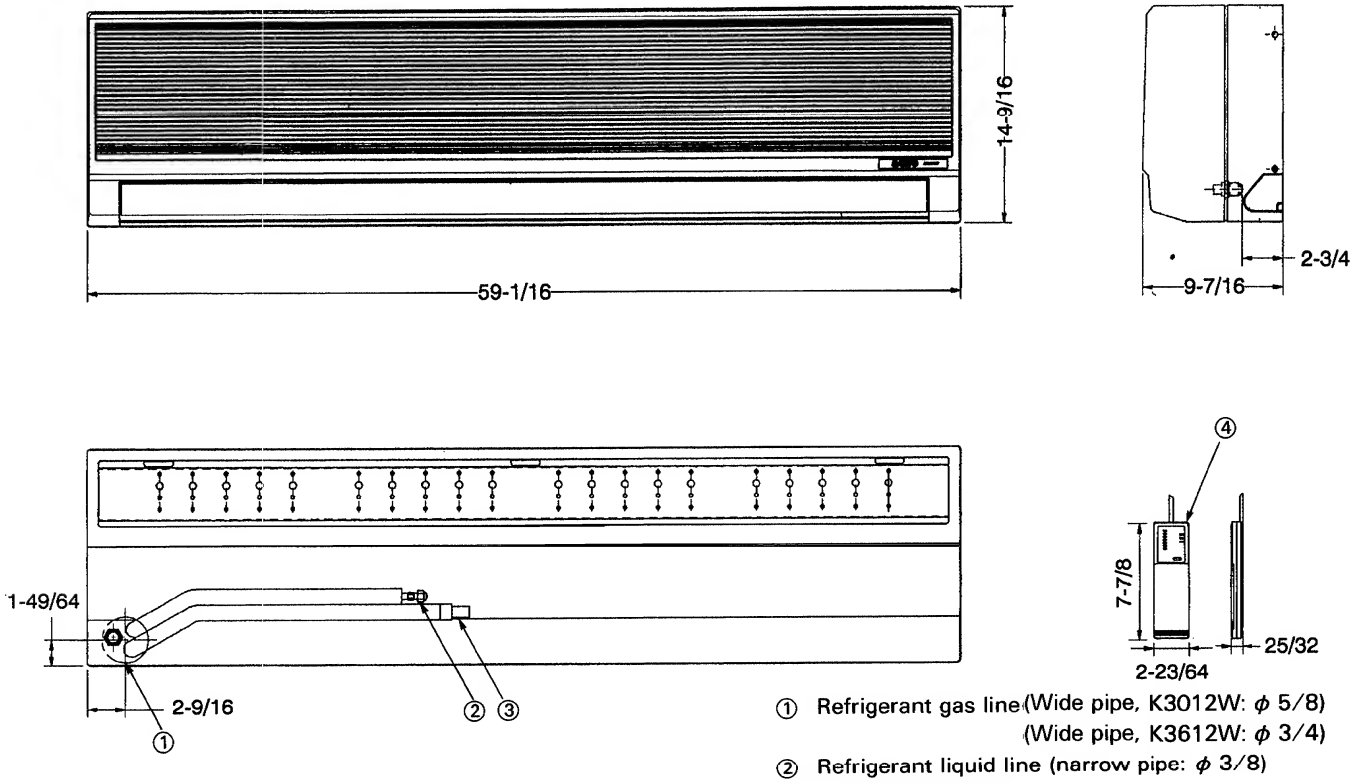
4. DIMENSIONAL DATA

Indoor Unit : K2412W



① Refrigerant gas line (wide pipe: ϕ 5/8)
② Refrigerant liquid line (narrow pipe: ϕ 1/4)
③ Drain hose OD 1-1/4
④ Remote control unit

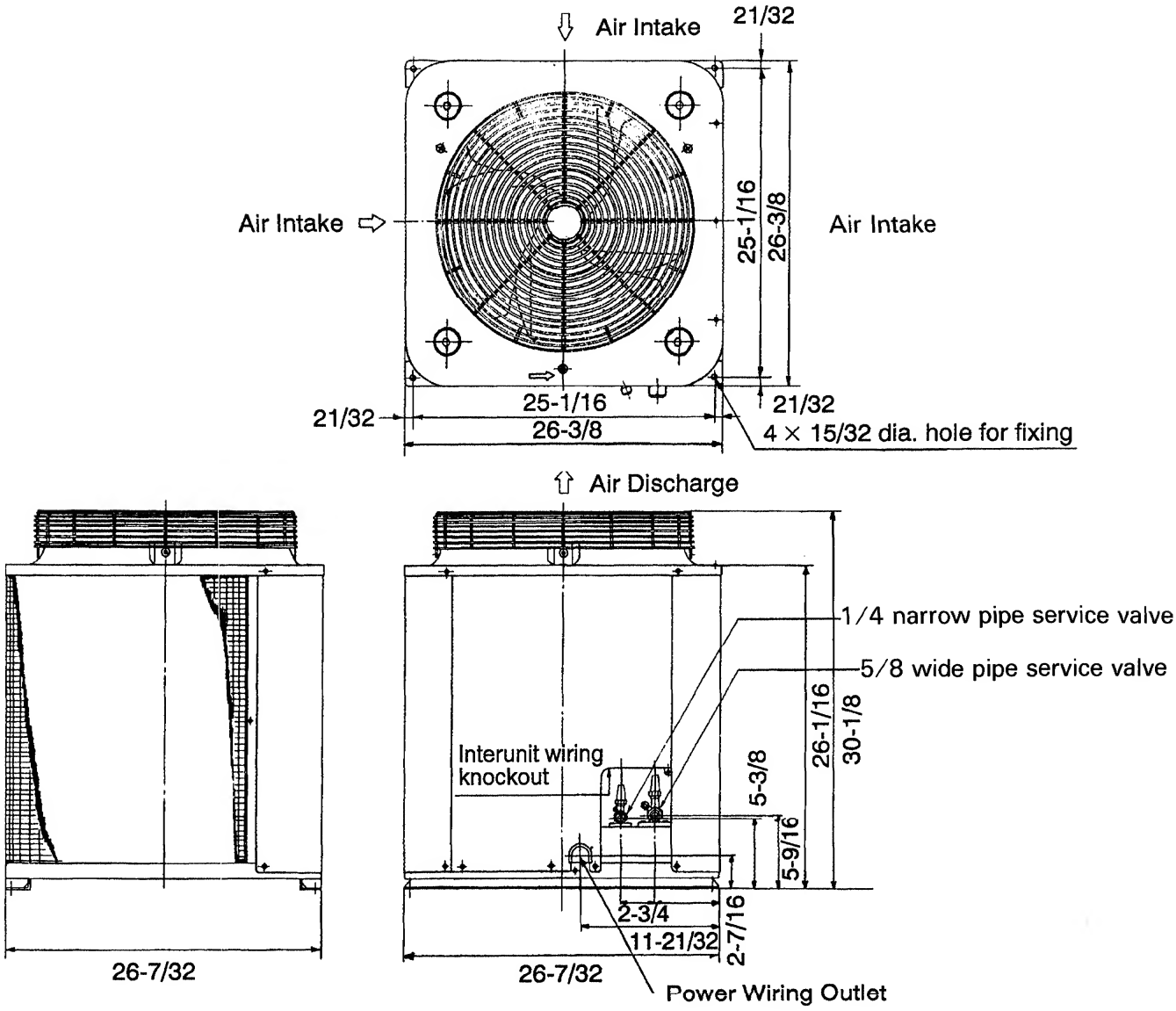
Indoor Unit : K3012W/K3612W



① Refrigerant gas line (Wide pipe, K3012W: ϕ 5/8)
(Wide pipe, K3612W: ϕ 3/4)
② Refrigerant liquid line (narrow pipe: ϕ 3/8)
③ Drain hose OD 1-1/4
④ Remote control Unit.

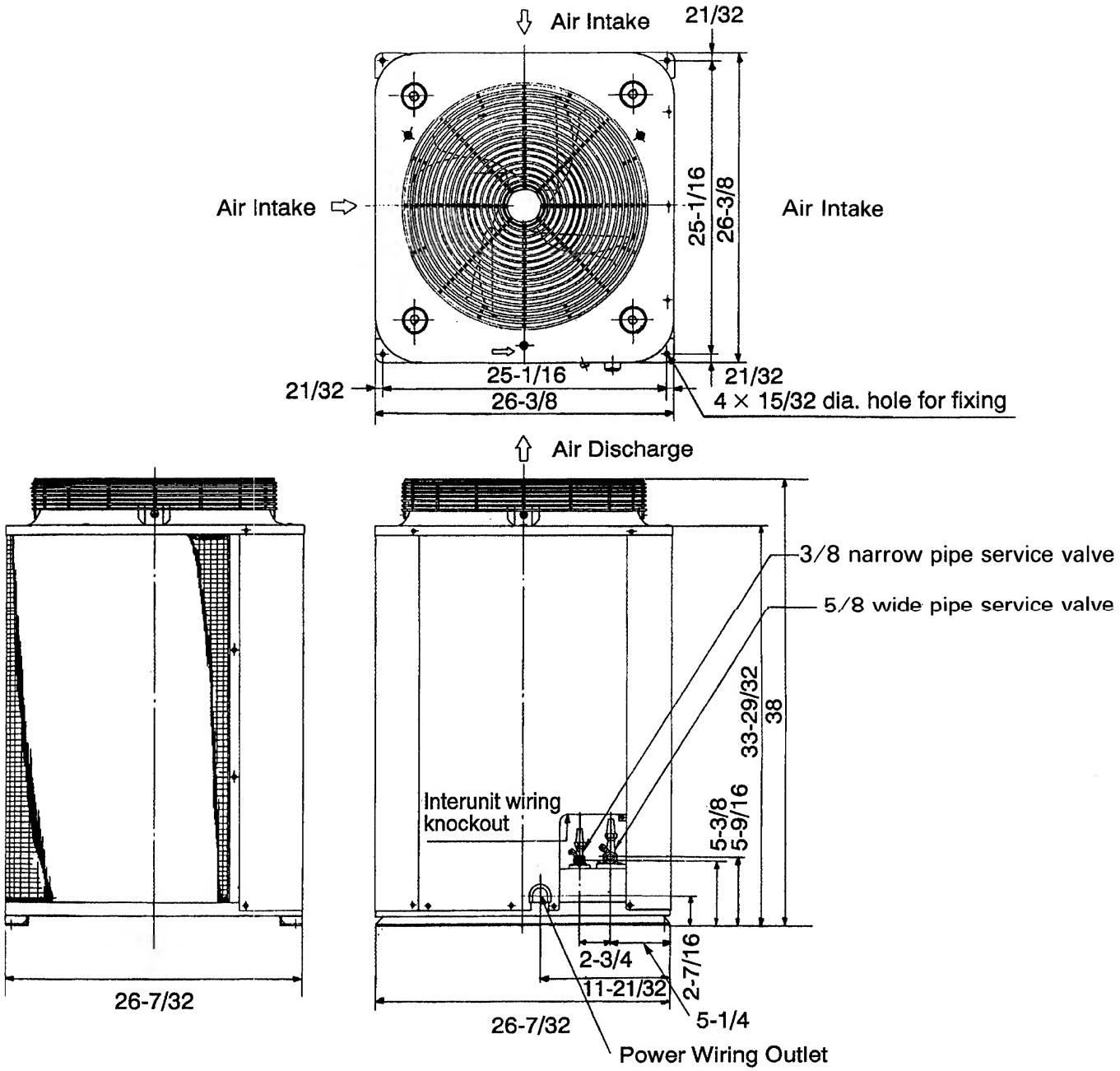
DIMENSIONAL DATA

Outdoor Unit : C2412



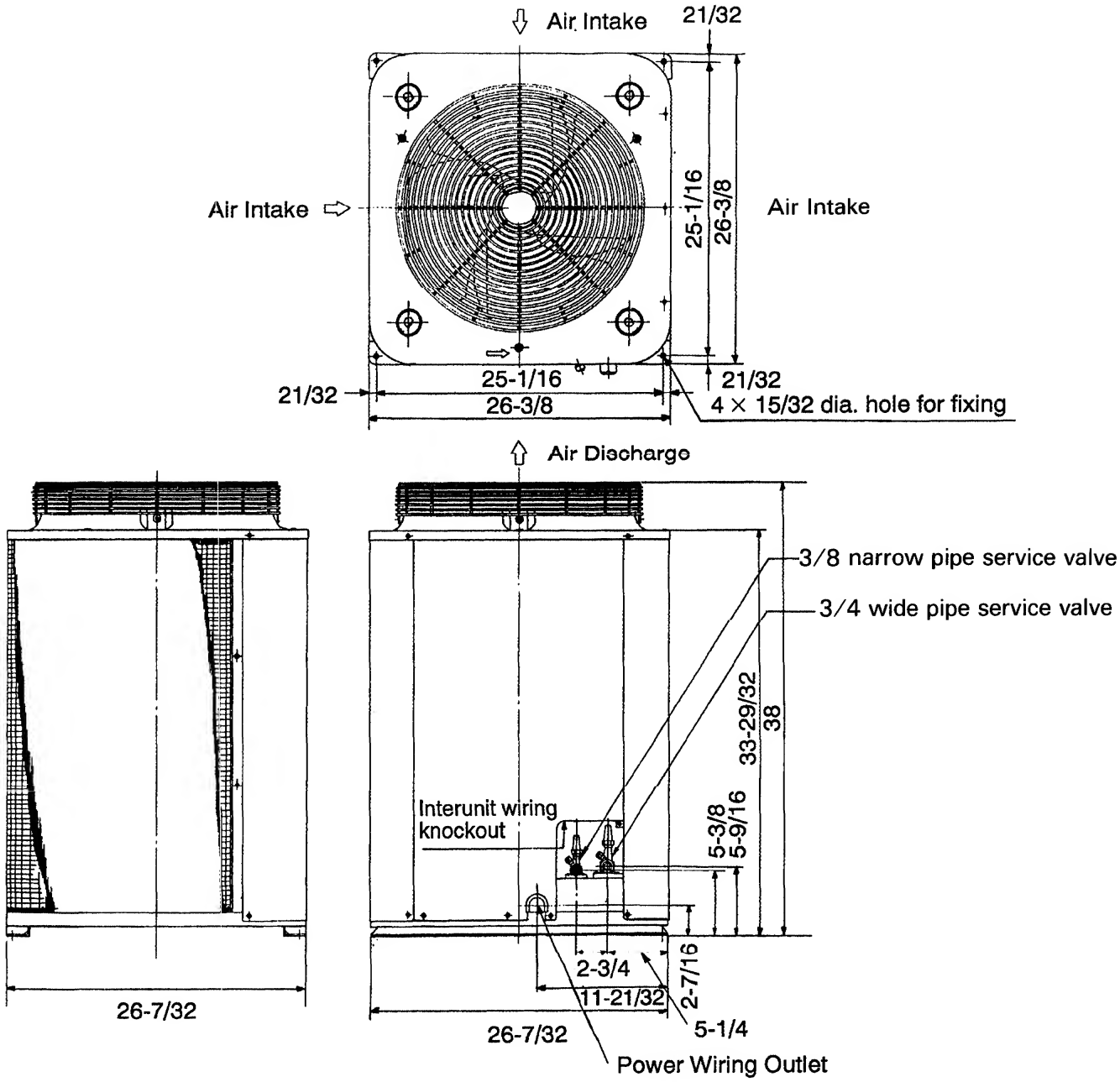
DIMENSIONAL DATA

Outdoor Unit : C3012



DIMENSIONAL DATA

Outdoor Unit : C3612



COOLING CAPACITY 1PHASE 60Hz 208 V MODEL NAME : 30K12W

RATED CAPACITY : 27,000 BTU/H AIR FLOW RATE : 710 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	26,730	25,520	24,300	22,920	21,060
		KW	2.01	2.19	2.39	2.58	2.84
	72 (22.2)	SHC	19,470	18,850	18,240	17,560	16,660
	76 (24.4)	SHC	21,940	21,320	20,710	20,030	19,130
	80 (26.7)	SHC	24,530	23,910	23,300	22,620	21,060
	84 (28.9)	SHC	26,730	25,520	24,300	22,920	21,060
	88 (31.1)	SHC	26,730	25,520	24,300	22,920	21,060
63 (17.2)		TC	27,650	26,780	25,730	24,330	22,410
		KW	2.03	2.22	2.43	2.63	2.90
	72 (22.2)	SHC	16,390	15,980	15,490	14,850	14,000
	76 (24.4)	SHC	18,860	18,450	17,970	17,330	16,470
	80 (26.7)	SHC	21,450	21,040	20,550	19,910	19,060
	84 (28.9)	SHC	23,920	23,520	23,030	22,390	21,530
	88 (31.1)	SHC	26,390	25,990	25,500	24,330	22,410
67 (19.4)		TC	28,400	27,950	* 27,000	25,520	23,760
		KW	2.05	2.24	2.45	2.67	2.96
	72 (22.2)	SHC	13,200	13,010	12,600	11,980	11,260
	76 (24.4)	SHC	15,680	15,480	15,080	14,460	13,740
	80 (26.7)	SHC	18,260	18,070	17,660	17,040	16,320
	84 (28.9)	SHC	20,740	20,540	20,140	19,520	18,800
	88 (31.1)	SHC	23,210	23,010	22,610	21,990	21,270
71 (21.7)		TC	29,300	28,810	28,080	26,810	25,250
		KW	2.07	2.27	2.49	2.74	3.03
	72 (22.2)	SHC	9,930	9,740	9,460	8,980	8,390
	76 (24.4)	SHC	12,400	12,220	11,940	11,450	10,870
	80 (26.7)	SHC	14,990	14,800	14,520	14,040	13,460
	84 (28.9)	SHC	17,460	17,280	17,000	16,510	15,930
	88 (31.1)	SHC	19,940	19,750	19,470	18,990	18,400
75 (23.9)		TC	29,860	29,540	28,890	27,860	26,730
		KW	2.11	2.30	2.52	2.81	3.10
	76 (24.4)	SHC	9,150	9,030	8,810	8,460	8,070
	80 (26.7)	SHC	11,730	11,620	11,390	11,040	10,660
	84 (28.9)	SHC	14,210	14,090	13,870	13,520	13,130
	88 (31.1)	SHC	16,680	16,570	16,340	15,990	15,610

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 : 24K12W

RATED CAPACITY : 22,000 BTU/H AIR FLOW RATE : 510 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	21,780	20,790	19,800	18,680	17,160
		KW	1.68	1.83	2.00	2.16	2.38
	72 (22.2)	SHC	15,410	14,880	14,370	13,790	13,030
	76 (24.4)	SHC	17,220	16,690	16,170	15,600	14,840
	80 (26.7)	SHC	19,110	18,580	18,060	17,480	16,730
	84 (28.9)	SHC	20,910	20,380	19,800	18,680	17,160
	88 (31.1)	SHC	21,780	20,790	19,800	18,680	17,160
63 (17.2)		TC	22,530	21,820	20,970	19,820	18,260
		KW	1.70	1.86	2.03	2.20	2.43
	72 (22.2)	SHC	13,100	12,750	12,340	11,800	11,080
	76 (24.4)	SHC	14,910	14,560	14,150	13,600	12,880
	80 (26.7)	SHC	16,790	16,450	16,030	15,490	14,770
	84 (28.9)	SHC	18,600	18,250	17,840	17,300	16,570
	88 (31.1)	SHC	20,410	20,060	19,650	19,100	18,260
67 (19.4)		TC	23,140	22,770	* 22,000	20,790	19,360
		KW	1.71	1.88	2.05	2.23	2.48
	72 (22.2)	SHC	10,700	10,530	10,190	9,670	9,060
	76 (24.4)	SHC	12,510	12,340	12,000	11,470	10,870
	80 (26.7)	SHC	14,400	14,230	13,890	13,360	12,750
	84 (28.9)	SHC	16,200	16,030	15,690	15,170	14,560
	88 (31.1)	SHC	18,010	17,840	17,500	16,970	16,360
71 (21.7)		TC	23,870	23,470	22,880	21,850	20,570
		KW	1.73	1.90	2.08	2.30	2.53
	72 (22.2)	SHC	8,240	8,080	7,840	7,430	6,940
	76 (24.4)	SHC	10,050	9,890	9,650	9,240	8,750
	80 (26.7)	SHC	11,930	11,770	11,540	11,130	10,630
	84 (28.9)	SHC	13,740	13,580	13,340	12,930	12,440
	88 (31.1)	SHC	15,550	15,390	15,150	14,740	14,250
75 (23.9)		TC	24,330	24,070	23,540	22,700	21,780
		KW	1.76	1.93	2.11	2.35	2.59
	76 (24.4)	SHC	7,590	7,490	7,300	7,000	6,680
	80 (26.7)	SHC	9,470	9,380	9,190	8,890	8,560
	84 (28.9)	SHC	11,280	11,180	10,990	10,690	10,370
	88 (31.1)	SHC	13,090	12,990	12,800	12,500	12,180

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 : 30K12W

RATED CAPACITY : 28,000 BTU/H AIR FLOW RATE : 750 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	27,720	26,460	25,200	23,770	21,840
		KW	2.02	2.20	2.40	2.60	2.85
	72 (22.2)	SHC	20,240	19,600	18,970	18,260	17,330
	76 (24.4)	SHC	22,830	22,190	21,560	20,850	19,920
	80 (26.7)	SHC	25,540	24,900	24,260	23,560	21,840
	84 (28.9)	SHC	27,720	26,460	25,200	23,770	21,840
	88 (31.1)	SHC	27,720	26,460	25,200	23,770	21,840
63 (17.2)		TC	28,670	27,780	26,680	25,230	23,240
		KW	2.04	2.23	2.44	2.64	2.92
	72 (22.2)	SHC	17,020	16,600	16,090	15,430	14,550
	76 (24.4)	SHC	19,610	19,190	18,680	18,020	17,140
	80 (26.7)	SHC	22,320	21,900	21,390	20,730	19,850
	84 (28.9)	SHC	24,910	24,490	23,980	23,320	22,440
	88 (31.1)	SHC	27,500	27,080	26,570	25,230	23,240
67 (19.4)		TC	29,460	28,980	* 28,000	26,460	24,640
		KW	2.05	2.25	2.46	2.68	2.98
	72 (22.2)	SHC	13,690	13,490	13,070	12,430	11,690
	76 (24.4)	SHC	16,280	16,080	15,660	15,020	14,280
	80 (26.7)	SHC	18,990	18,790	18,370	17,730	16,990
	84 (28.9)	SHC	21,580	21,380	20,960	20,320	19,580
	88 (31.1)	SHC	24,170	23,970	23,550	22,910	22,170
71 (21.7)		TC	30,380	29,880	29,120	27,800	26,180
		KW	2.08	2.28	2.50	2.76	3.04
	72 (22.2)	SHC	10,270	10,080	9,790	9,290	8,690
	76 (24.4)	SHC	12,860	12,670	12,380	11,880	11,280
	80 (26.7)	SHC	15,570	15,380	15,090	14,590	13,980
	84 (28.9)	SHC	18,160	17,970	17,680	17,180	16,570
	88 (31.1)	SHC	20,750	20,560	20,270	19,770	19,160
75 (23.9)		TC	30,970	30,630	29,960	28,900	27,720
		KW	2.12	2.31	2.53	2.82	3.11
	76 (24.4)	SHC	9,460	9,340	9,110	8,750	8,350
	80 (26.7)	SHC	12,170	12,050	11,820	11,450	11,060
	84 (28.9)	SHC	14,760	14,640	14,410	14,040	13,650
	88 (31.1)	SHC	17,350	17,230	17,000	16,640	16,240

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 : 30K12W

RATED CAPACITY : 27,000 BTU/H AIR FLOW RATE : 710 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	26,730	25,520	24,300	22,920	21,060
		KW	2.01	2.19	2.39	2.58	2.84
	72 (22.2)	SHC	19,470	18,850	18,240	17,560	16,660
	76 (24.4)	SHC	21,940	21,320	20,710	20,030	19,130
	80 (26.7)	SHC	24,530	23,910	23,300	22,620	21,060
	84 (28.9)	SHC	26,730	25,520	24,300	22,920	21,060
	88 (31.1)	SHC	26,730	25,520	24,300	22,920	21,060
63 (17.2)		TC	27,650	26,780	25,730	24,330	22,410
		KW	2.03	2.22	2.43	2.63	2.90
	72 (22.2)	SHC	16,390	15,980	15,490	14,850	14,000
	76 (24.4)	SHC	18,860	18,450	17,970	17,330	16,470
	80 (26.7)	SHC	21,450	21,040	20,550	19,910	19,060
	84 (28.9)	SHC	23,920	23,520	23,030	22,390	21,530
	88 (31.1)	SHC	26,390	25,990	25,500	24,330	22,410
67 (19.4)		TC	28,400	27,950	* 27,000	25,520	23,760
		KW	2.05	2.24	2.45	2.67	2.96
	72 (22.2)	SHC	13,200	13,010	12,600	11,980	11,260
	76 (24.4)	SHC	15,680	15,480	15,080	14,460	13,740
	80 (26.7)	SHC	18,260	18,070	17,660	17,040	16,320
	84 (28.9)	SHC	20,740	20,540	20,140	19,520	18,800
	88 (31.1)	SHC	23,210	23,010	22,610	21,990	21,270
71 (21.7)		TC	29,300	28,810	28,080	26,810	25,250
		KW	2.07	2.27	2.49	2.74	3.03
	72 (22.2)	SHC	9,930	9,740	9,460	8,980	8,390
	76 (24.4)	SHC	12,400	12,220	11,940	11,450	10,870
	80 (26.7)	SHC	14,990	14,800	14,520	14,040	13,460
	84 (28.9)	SHC	17,460	17,280	17,000	16,510	15,930
	88 (31.1)	SHC	19,940	19,750	19,470	18,990	18,400
75 (23.9)		TC	29,860	29,540	28,890	27,860	26,730
		KW	2.11	2.30	2.52	2.81	3.10
	76 (24.4)	SHC	9,150	9,030	8,810	8,460	8,070
	80 (26.7)	SHC	11,730	11,620	11,390	11,040	10,660
	84 (28.9)	SHC	14,210	14,090	13,870	13,520	13,130
	88 (31.1)	SHC	16,680	16,570	16,340	15,990	15,610

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 : 36K12W

RATED CAPACITY : 34,000 BTU/H AIR FLOW RATE : 720 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	33,660	32,130	30,600	28,870	26,520
		KW	2.51	2.74	2.98	3.23	3.55
	72 (22.2)	SHC	23,770	22,960	22,150	21,260	20,090
	76 (24.4)	SHC	26,550	25,730	24,930	24,040	22,870
	80 (26.7)	SHC	29,460	28,640	27,840	26,950	25,770
	84 (28.9)	SHC	32,240	31,420	30,600	28,870	26,520
	88 (31.1)	SHC	33,660	32,130	30,600	28,870	26,520
63 (17.2)		TC	34,820	33,730	32,400	30,630	28,220
		KW	2.53	2.78	3.03	3.29	3.63
	72 (22.2)	SHC	20,210	19,680	19,030	18,190	17,070
	76 (24.4)	SHC	22,990	22,450	21,810	20,970	19,850
	80 (26.7)	SHC	25,890	25,360	24,720	23,880	22,760
	84 (28.9)	SHC	28,670	28,140	27,500	26,660	25,540
	88 (31.1)	SHC	31,450	30,920	30,270	29,430	28,220
67 (19.4)		TC	35,770	35,190	* 34,000	32,130	29,920
		KW	2.56	2.80	3.06	3.34	3.70
	72 (22.2)	SHC	16,510	16,260	15,730	14,910	13,970
	76 (24.4)	SHC	19,290	19,030	18,510	17,690	16,750
	80 (26.7)	SHC	22,200	21,940	21,410	20,590	19,650
	84 (28.9)	SHC	24,980	24,720	24,190	23,370	22,430
	88 (31.1)	SHC	27,750	27,500	26,970	26,150	25,210
71 (21.7)		TC	36,890	36,280	35,360	33,760	31,790
		KW	2.58	2.83	3.11	3.43	3.78
	72 (22.2)	SHC	12,720	12,470	12,110	11,470	10,710
	76 (24.4)	SHC	15,500	15,250	14,880	14,250	13,490
	80 (26.7)	SHC	18,400	18,160	17,790	17,160	16,390
	84 (28.9)	SHC	21,180	20,940	20,570	19,930	19,170
	88 (31.1)	SHC	23,960	23,710	23,350	22,710	21,950
75 (23.9)		TC	37,600	37,200	36,380	35,090	33,660
		KW	2.63	2.88	3.15	3.50	3.87
	76 (24.4)	SHC	11,710	11,560	11,260	10,800	10,300
	80 (26.7)	SHC	14,610	14,460	14,170	13,710	13,200
	84 (28.9)	SHC	17,390	17,240	16,950	16,480	15,980
	88 (31.1)	SHC	20,170	20,020	19,720	19,260	18,760

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.

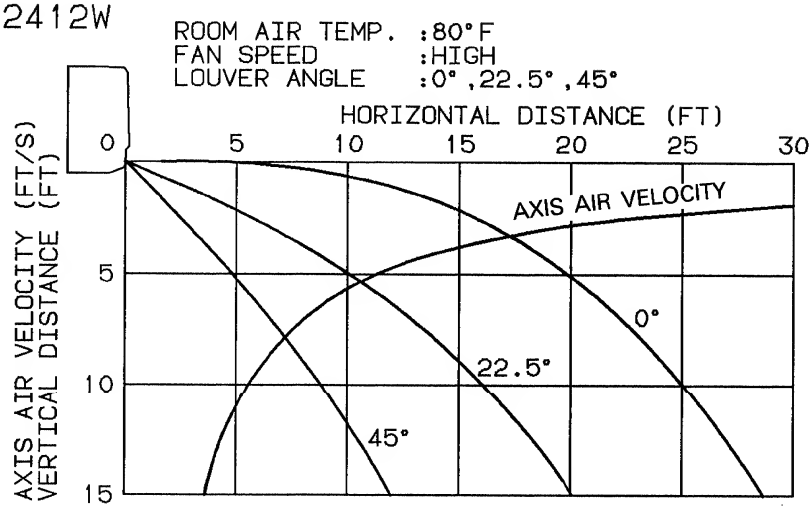
COOLING CAPACITY 1PHASE 60Hz 208 V MODEL NAME : 36K12W

RATED CAPACITY : 33,000 BTU/H AIR FLOW RATE : 690 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	32,670	31,190	29,700	28,020	25,740
		KW	2.52	2.75	2.99	3.24	3.56
	72 (22.2)	SHC	23,050	22,260	21,480	20,610	19,470
	76 (24.4)	SHC	25,730	24,930	24,150	23,290	22,140
	80 (26.7)	SHC	28,530	27,730	26,950	26,080	24,940
	84 (28.9)	SHC	31,200	30,400	29,620	28,020	25,740
	88 (31.1)	SHC	32,670	31,190	29,700	28,020	25,740
63 (17.2)		TC	33,790	32,740	31,450	29,730	27,390
		KW	2.54	2.79	3.04	3.30	3.64
	72 (22.2)	SHC	19,620	19,100	18,470	17,660	16,570
	76 (24.4)	SHC	22,290	21,770	21,150	20,330	19,240
	80 (26.7)	SHC	25,090	24,570	23,940	23,130	22,040
	84 (28.9)	SHC	27,770	27,240	26,620	25,800	24,710
	88 (31.1)	SHC	30,440	29,920	29,290	28,480	27,390
67 (19.4)		TC	34,720	34,160	* 33,000	31,190	29,040
		KW	2.56	2.81	3.07	3.35	3.71
	72 (22.2)	SHC	16,060	15,800	15,290	14,490	13,580
	76 (24.4)	SHC	18,730	18,480	17,960	17,170	16,250
	80 (26.7)	SHC	21,530	21,270	20,760	19,970	19,050
	84 (28.9)	SHC	24,200	23,950	23,430	22,640	21,720
	88 (31.1)	SHC	26,870	26,620	26,110	25,310	24,400
71 (21.7)		TC	35,810	35,210	34,320	32,770	30,860
		KW	2.59	2.84	3.12	3.44	3.79
	72 (22.2)	SHC	12,400	12,160	11,800	11,180	10,440
	76 (24.4)	SHC	15,070	14,830	14,470	13,860	13,110
	80 (26.7)	SHC	17,870	17,630	17,270	16,650	15,910
	84 (28.9)	SHC	20,540	20,300	19,940	19,330	18,580
	88 (31.1)	SHC	23,220	22,980	22,620	22,000	21,260
75 (23.9)		TC	36,500	36,100	35,310	34,060	32,670
		KW	2.64	2.89	3.16	3.52	3.88
	76 (24.4)	SHC	11,410	11,270	10,980	10,530	10,040
	80 (26.7)	SHC	14,210	14,060	13,780	13,330	12,840
	84 (28.9)	SHC	16,880	16,740	16,450	16,000	15,510
	88 (31.1)	SHC	19,560	19,410	19,120	18,680	18,190

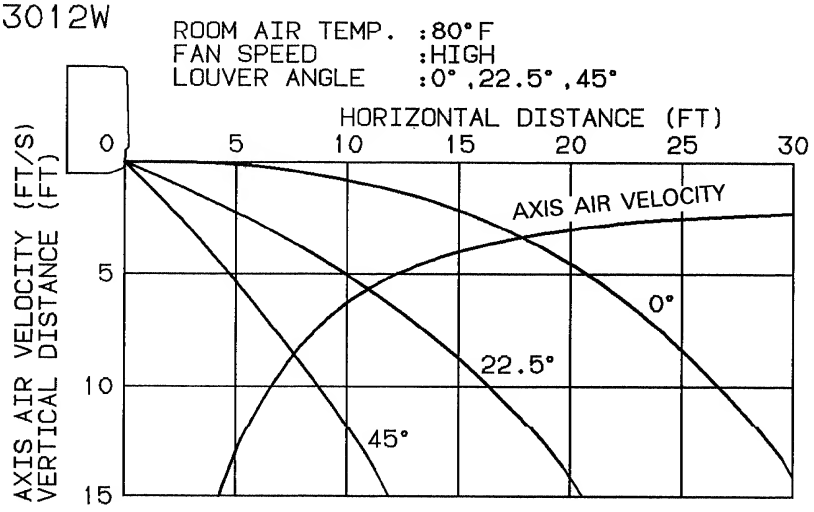
TC:Total Cooling Capacity (BTU/H)
SHC:Sensible Heat Capacity (BTU/H)
KW:Compressor Input (KW)
Rating conditions(*MARK) are
:Outdoor Ambient Temp.95°F D.B.
:Indoor Unit Entering Air Temp.80°F D.B./67°F W.B.

6. AIR THROW DISTANCE CHART

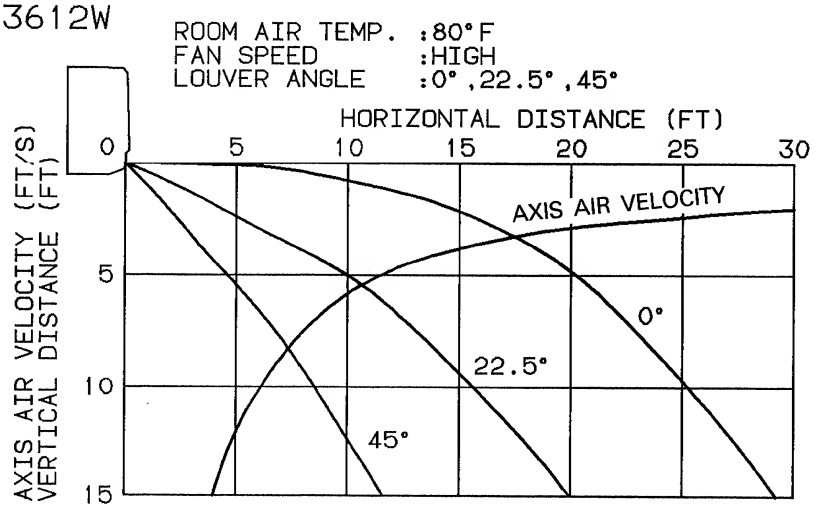
MODEL : K2412W



MODEL : K3012W



MODEL : K3612W



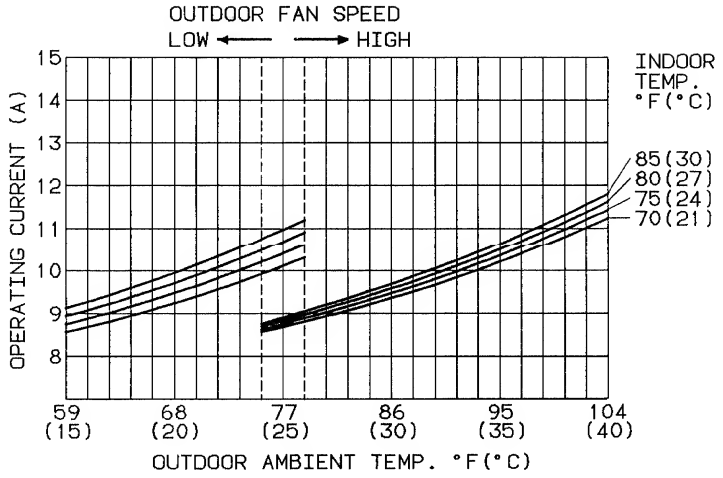
7. PERFORMANCE CHARTS

(1) 24K12W

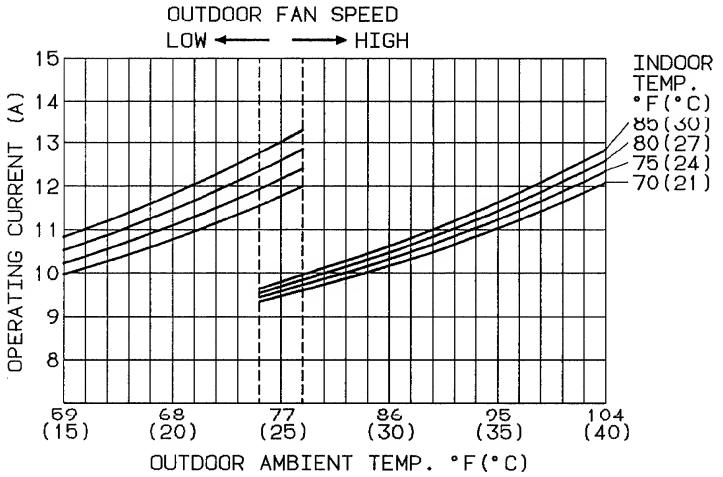
Cooling characteristics

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

230 V (60 Hz)



208 V (60 Hz)

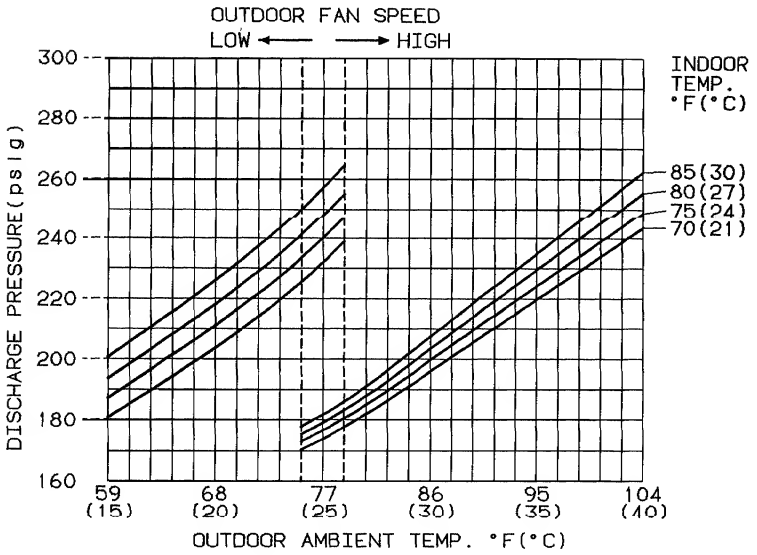


(24K12W)

230 V (60 Hz)

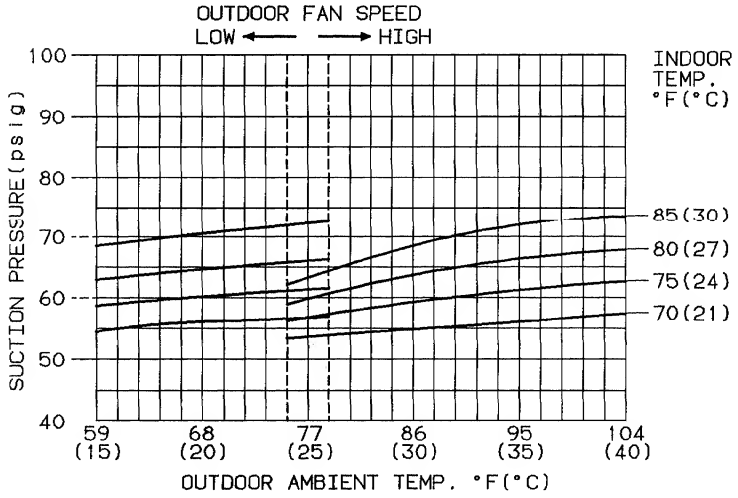
Cooling characteristics

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



Cooling characteristics

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

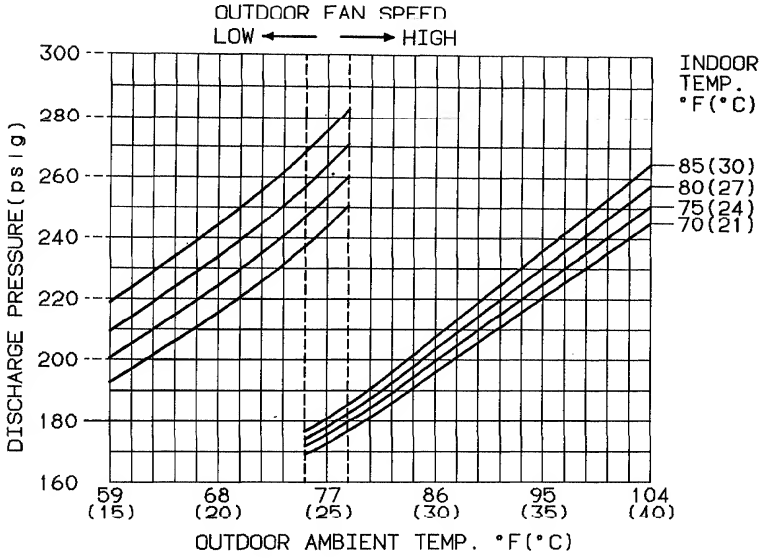


(24K12W)

208 V (60 Hz)

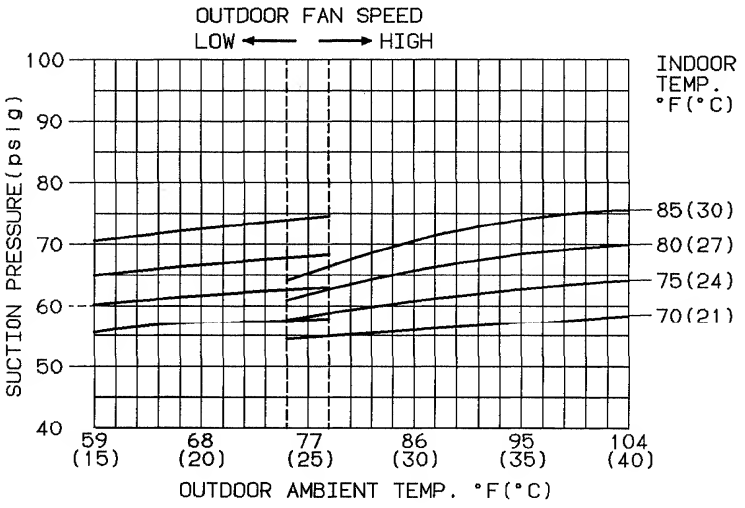
Cooling characteristics

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



Cooling characteristics

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

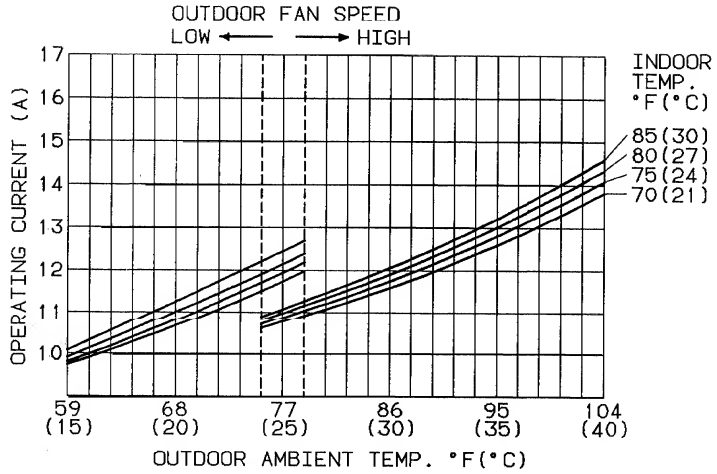


(2) 30K12W

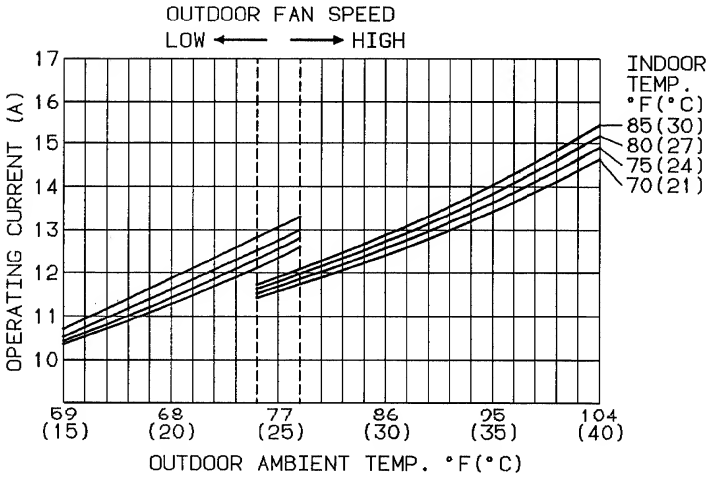
Cooling characteristics

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

230 V (60 Hz)



208 V (60 Hz)

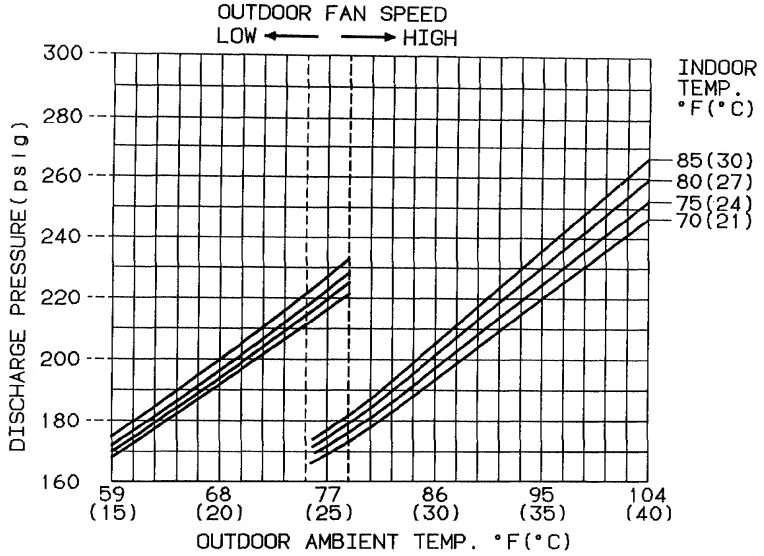


(30K12W)

230 V (60 Hz)

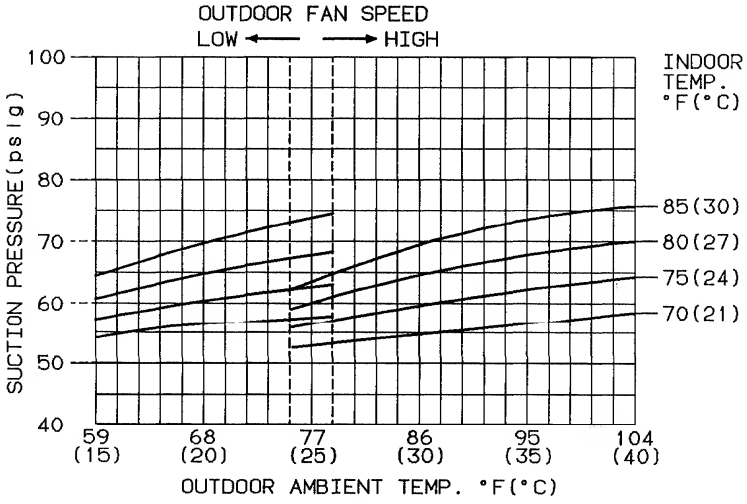
Cooling characteristics

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



Cooling characteristics

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

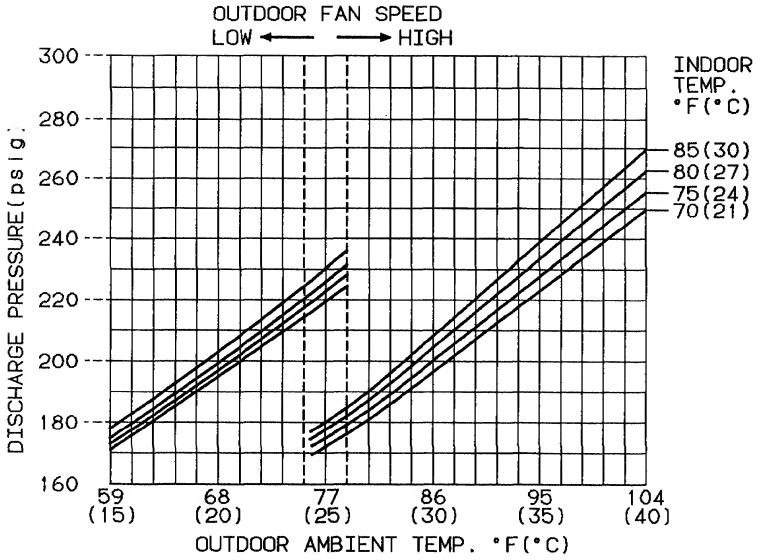


(30K12W)

208 V (60 Hz)

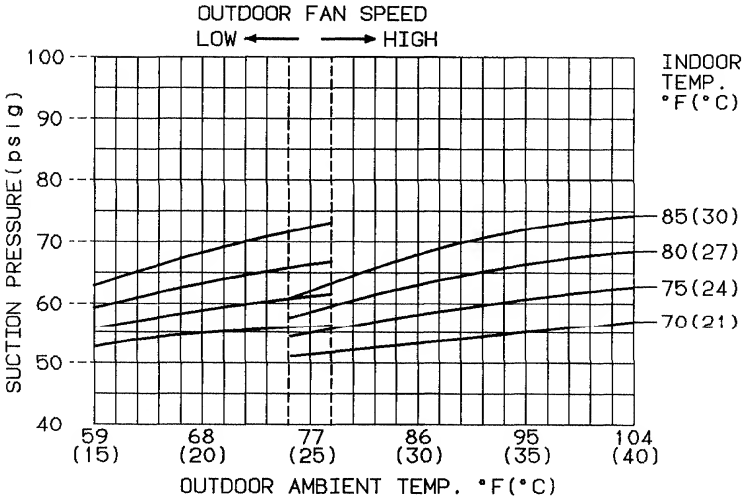
Cooling characteristics

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



Cooling characteristics

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

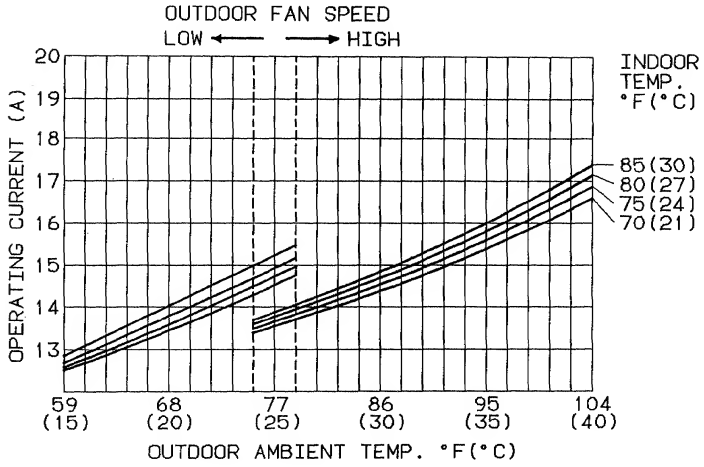


(3) 36K12W

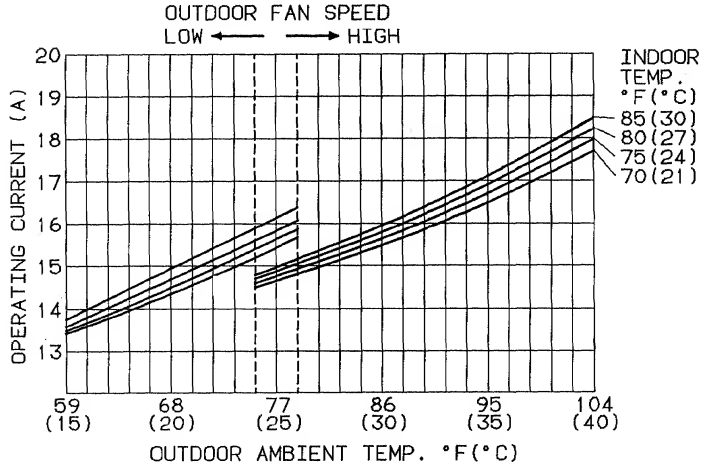
Cooling characteristics

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

230 V (60 Hz)



208 V (60 Hz)

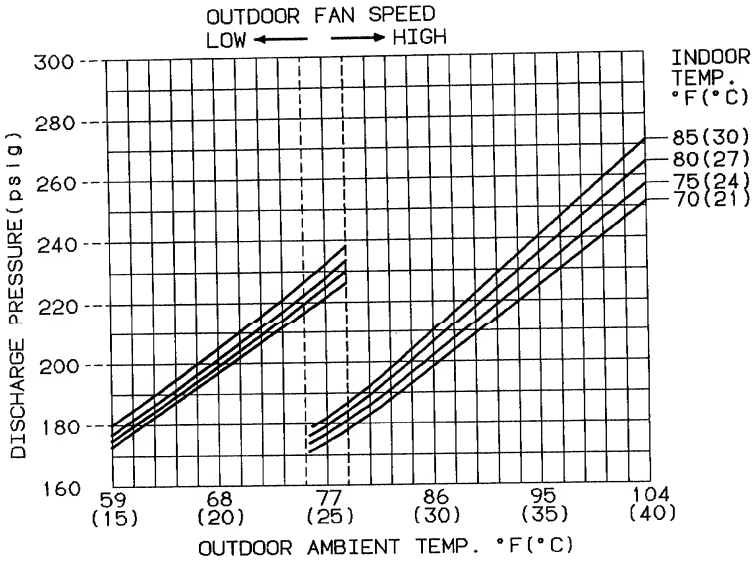


(36K12W)

230 V (60 Hz)

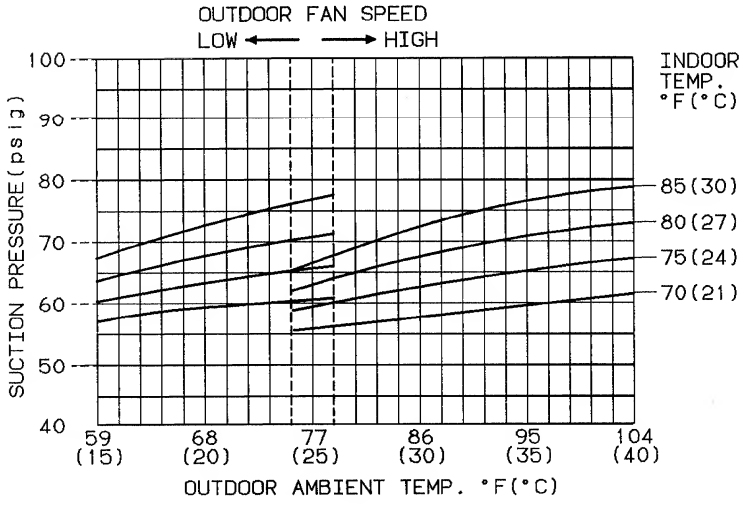
Cooling characteristics

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



Cooling characteristics

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

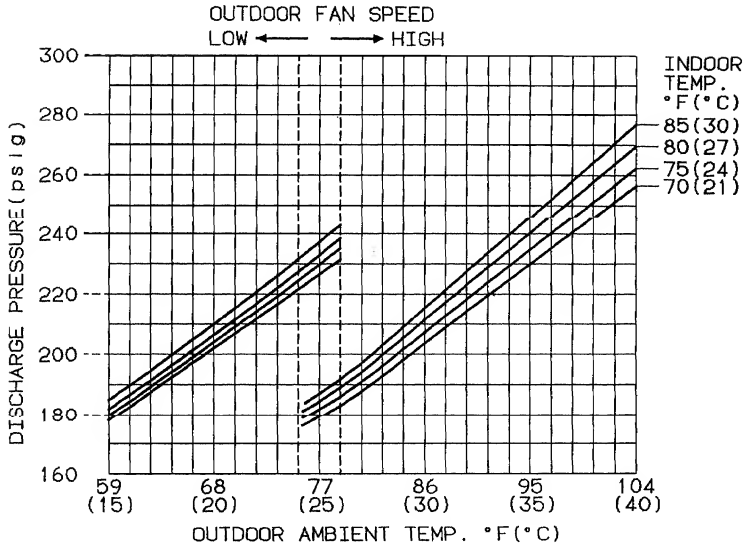


(36K12W)

208 V (60 Hz)

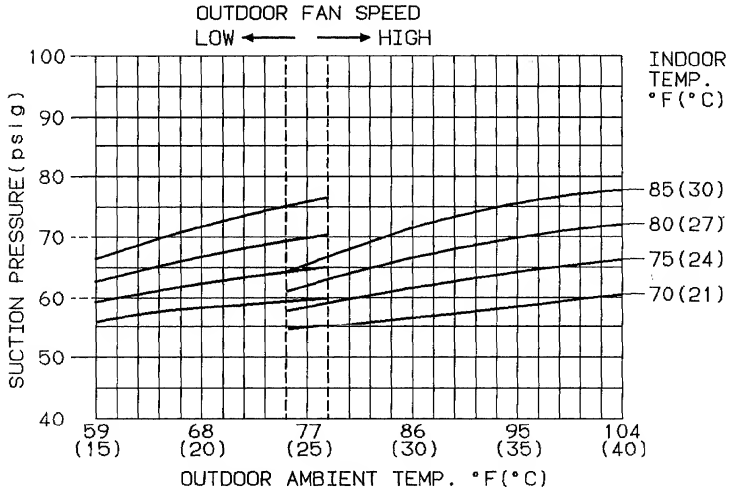
Cooling characteristics

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



Cooling characteristics

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



8. OPERATING INSTRUCTIONS

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.

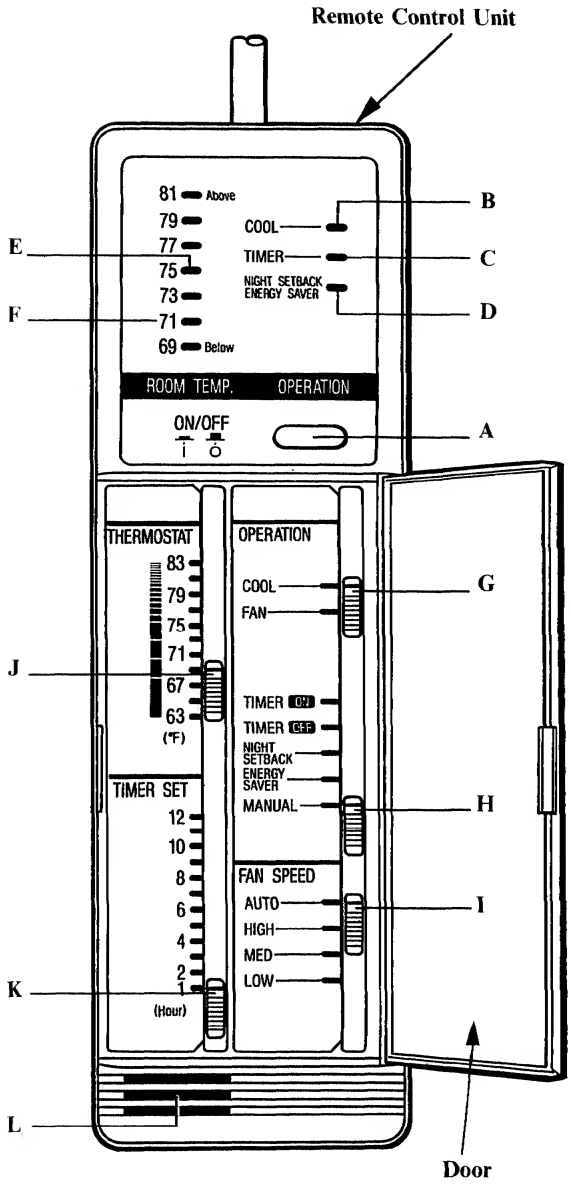
F. TEMPERATURE SCALE
The numbers constitute the temperature scale for cooling (°F).

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	How to do it	What will happen
• Start the air conditioner and cool the room to the desired temperature	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.	The "B" and "E" lamps will light, then after a few minutes the air conditioner will start cooling operation.
• To stop the air conditioner immediately while it is operating	1. Press the "A" OPERATION ON/OFF button.	The air conditioner will stop immediately, and all indicator lamps will go out.
• To use the TIMER to stop the air conditioner after several hours	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.	The "C" lamp will light and after the set hours have elapsed the air conditioner will stop automatically.
• To switch the air conditioner to the ENERGY SAVING mode during manual cooling	1. Set the "H" knob from the MANUAL to the NIGHT SETBACK or ENERGY SAVER position.	The "D" lamp will light, the set temperature will automatically change, and the air conditioner will continue to operate in the ENERGY SAVING mode.
• To use the TIMER to start the air conditioner after several hours	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.	The "C" lamp will light and after the set hours have elapsed the air conditioner will start to operate automatically.
• To circulate the air in the room without cooling it (fan only operation)	1. Set the "G" knob to FAN. 2. Press the "A" OPERATION ON/OFF button.	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

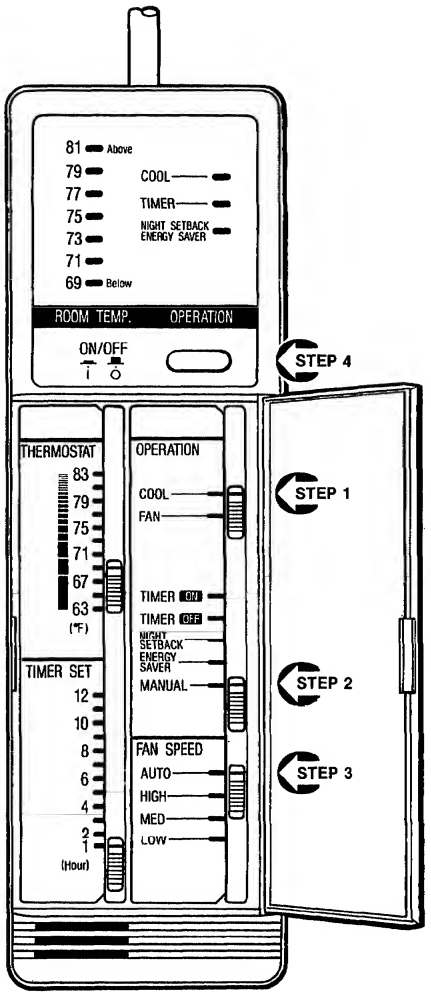
The Manual mode is used for normal cooling operation.

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.



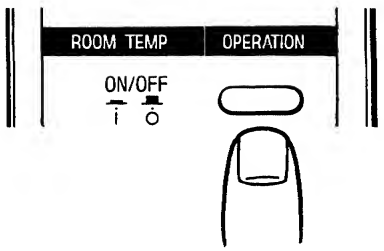
NOTE

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, the 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.

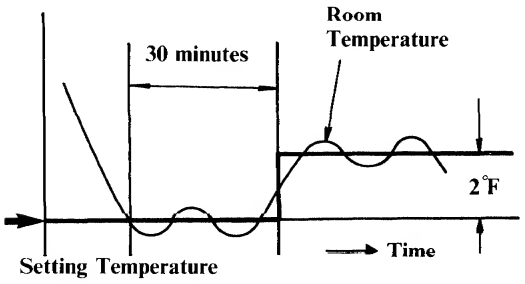
STEP 2: Press the OPERATION button. The ENERGY SAVER and COOL lamps will light.



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

■ What does the Energy Saver mode mean?

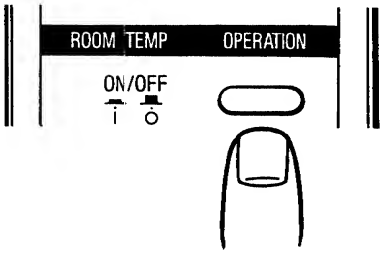
By selecting this mode then pressing the OPERATION ON/OFF button, the air conditioner will perform cooling operation until the temperature in the room reaches the set value, then the thermostat will cause the unit to pause. After about 30 minutes, the air conditioner will automatically raise the set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



C. Night Setback Mode

STEP 1: Set the "H" OPERATION SELECTOR knob to NIGHT SETBACK before turning the system on.

STEP 2: Press the "A" OPERATION ON/OFF button. The NIGHT SETBACK and COOL lamp will light.

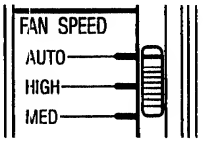


To cancel the Night Setback mode, move the selector to MANUAL.

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

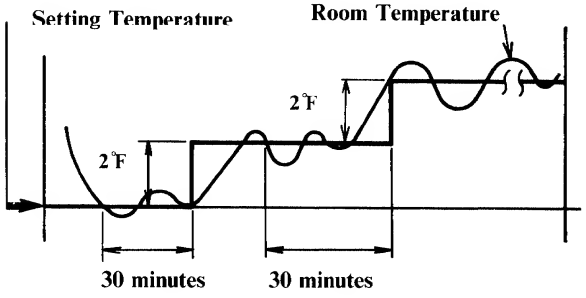
B. Manual

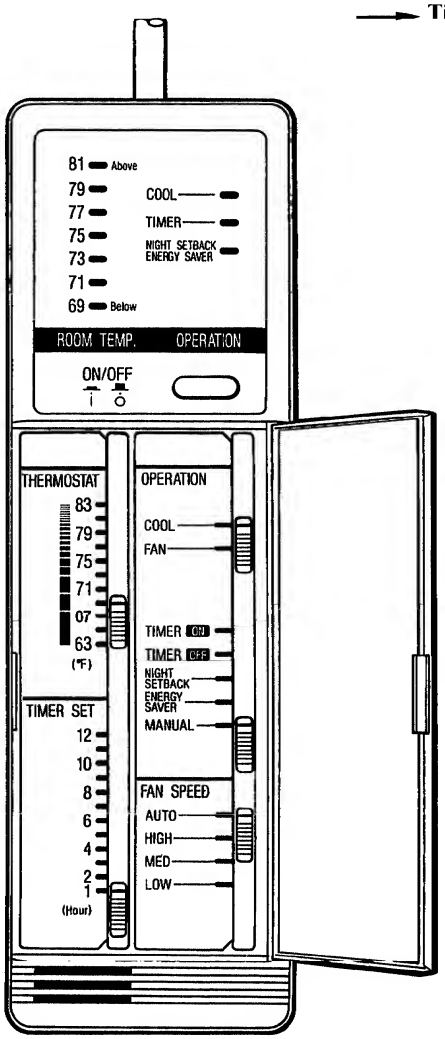
If you want to adjust the fan speed manually during cooling, just set the FAN SPEED control as desired. [HIGH, MED, or LOW]

■ 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 when leaving the air conditioner on all night or soft cooling is needed.

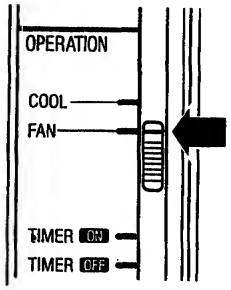




3) Fan Only

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

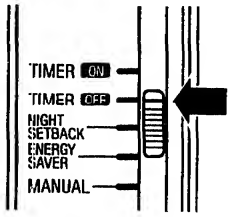
A. TIMER OFF Mode

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.



The TIMER lamp will light.

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

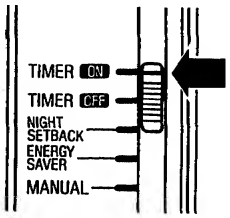
B. TIMER ON Mode

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.

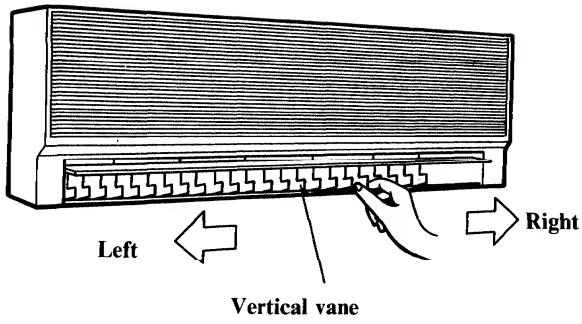
Power failure during timer operation

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.

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.

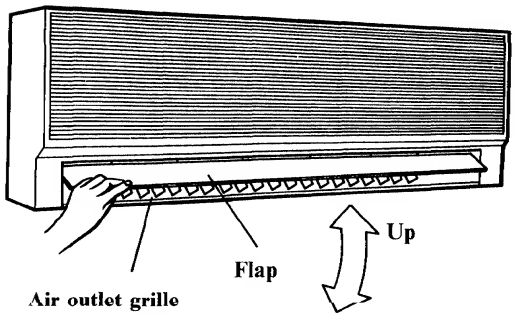
Recommended flap positions:

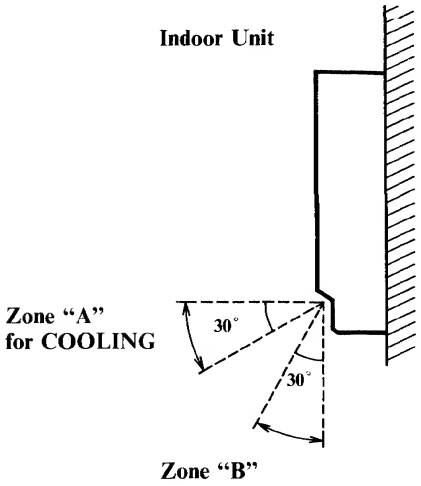
COOLING

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

NOTE

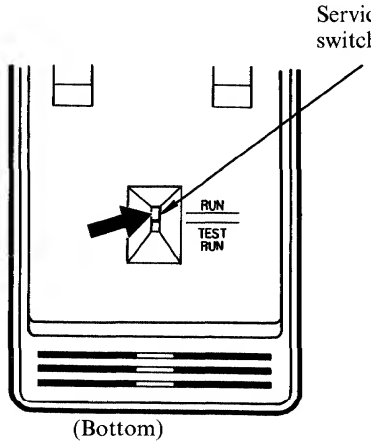
- **If the flap is set within zone "B", condensation may form near the air outlet grille and drip onto the floor.**





TEST RUN

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 heat pump. Do not touch it, therefore. *During normal operation,this switch must be set in the RUN position.* If the heat pump 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

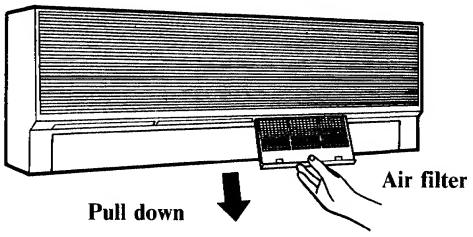
1. Certain metal edges and the condenser fins are sharp and may cause injury if handled improperly; special care should be taken when you clean these parts.
2. Periodically check the outdoor unit to see if the air outlet or air intake are clogged with dirt or soot.
3. The evaporator and other components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

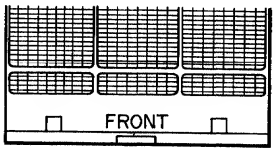
Air Filter

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.





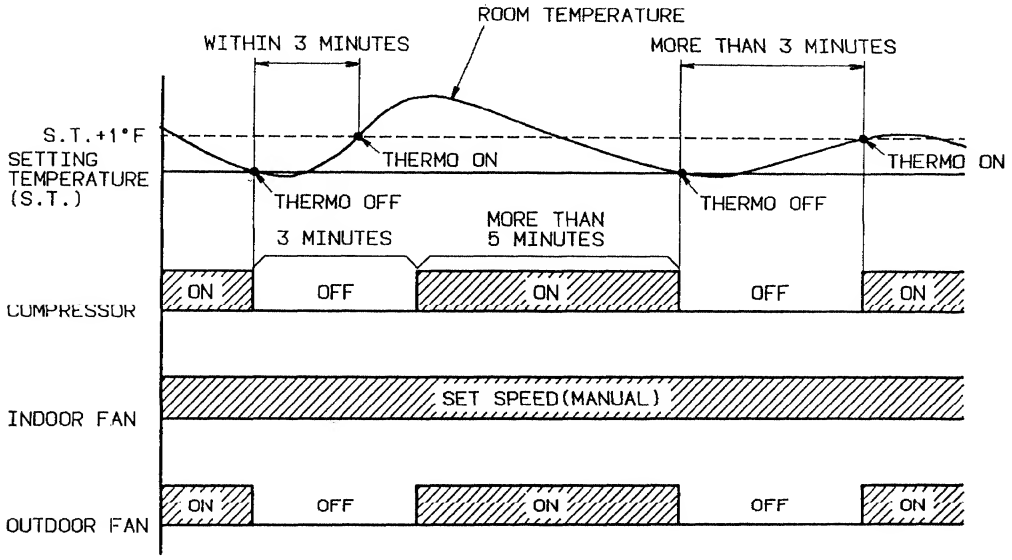
Use a vacuum cleaner to remove light dust. If there is sticky dust on the filter, wash the filter in lukewarm, soapy water, rinse it in clean water, and dry it.

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

9. FUNCTION

1) Temperature control

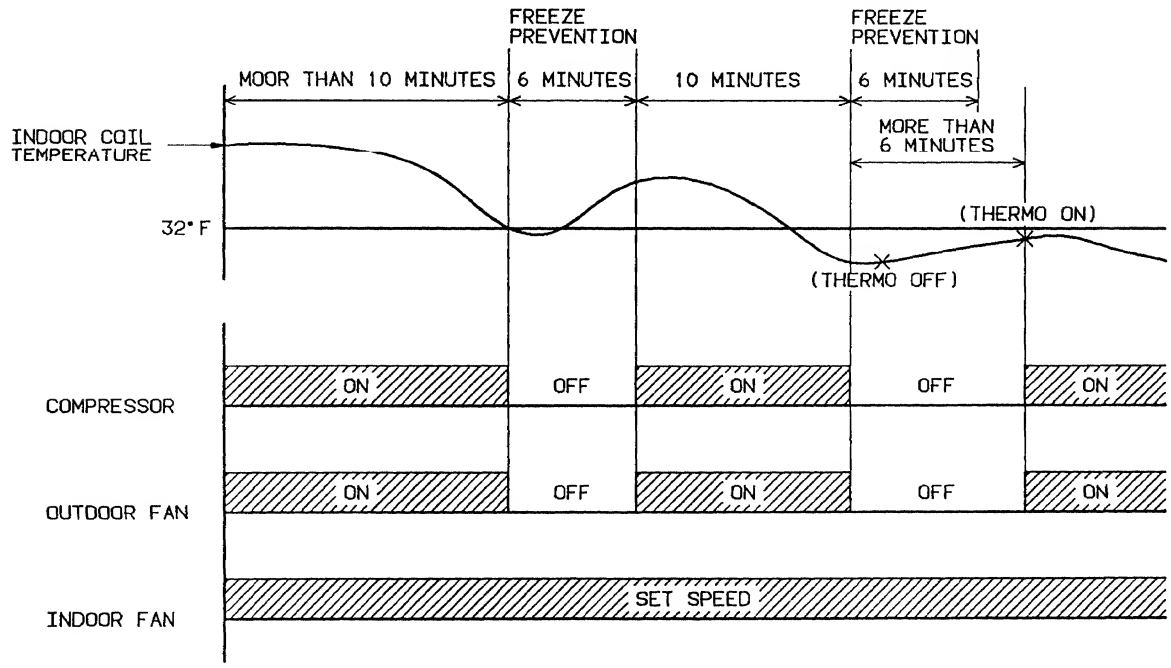
- Temperature control is obtained by cycling the compressor ON and OFF under control of the room temperature sensor in the remote control unit.
- The compressor turn to OFF below the thermostat setting temperature, and turn to ON above 1°F from setting temperature.



- 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.

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.



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 75°F , the outdoor fan is set to LOW.
When the outdoor air temperature rises to 79°F, the outdoor fan is set to HIGH.

10. INSTALLATION INSTRUCTIONS

1) Installation Site Selection

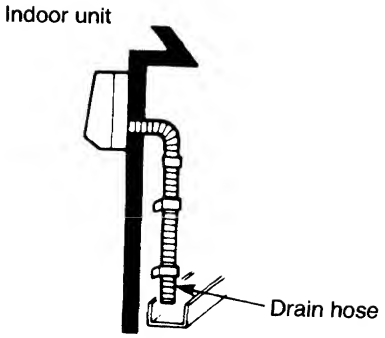
Indoor Unit

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 the wall is best.)
- select a location that will hold the weight of the unit.
- select a location where piping and drain pipe have shortest run to the outside. Fig. 1.
- allow room for operation and maintenance as well as unrestricted air flow around the unit.
- install unit within the maximum height (H) up or down of outdoor unit and within a total piping length (L) from outdoor unit stipulated in Table. 1. Fig. 2
- allow room for mounting control unit about 1 m (4 ft.) off the floor, in an area that is not in direct sunlight or in the flow of cool air from the unit.



Outside drainage

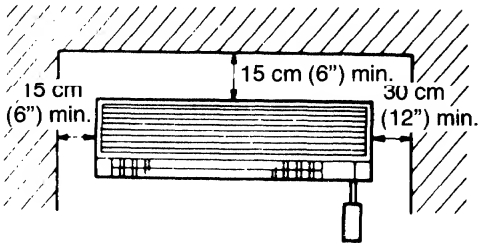


Fig. 1

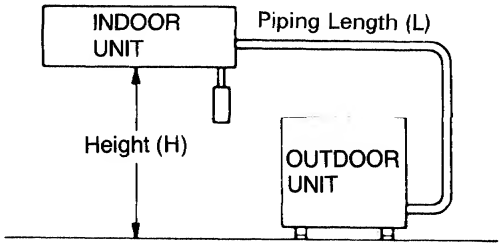


Fig. 2

Model	Max. allowable piping length at shipment (ft)	Limit of piping length (L) (ft)	Limit of elevation difference (H) (ft)	Required amount of additional refrigerant* (oz/ft)	Refrigerant amount charged at shipment (lb)
24K12W	10 ~ 50	100	50	0.38	6.8
30K12W	10 ~ 50	100	50	0.8	9.5
36K12W	10 ~ 50	130	50	0.85	9.9

* No additional charge of compressor oil is required.

Table. 1

Outdoor Unit

AVOID:

- heat sources, exhaust fans, etc. Fig. 3.
- damp, humid or uneven locations.

DO:

- choose a place that is well ventilated and outside air temperature does not exceed 115°F constantly.
- allow enough room around unit for air intake/exhaust and possible maintenance. Fig. 4
- provide a solid base; concrete, about 4" above ground level to reduce humidity and awoid possible water damage in unit and decreased service life.
- use leg bolts or equal to bolt down unit, reducing vibration and noise.

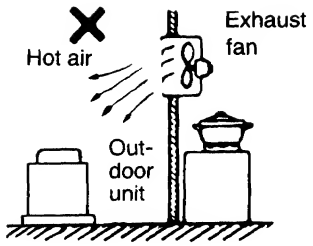


Fig. 3

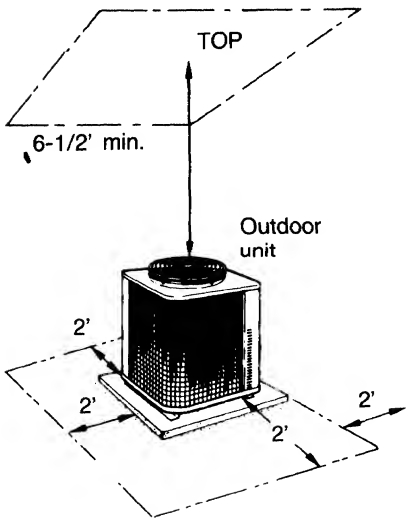


Fig. 4

2) Connecting Pipes between Indoor and Outdoor Units

(a) Connect the indoor side refrigerant piping extended from the wall with the outdoor side piping tightly.

(b) Flare nut on large dia. pipe should be torqued to 520 ~ 560 lbs. in. (5/8" pipe) and 600 ~ 680 lb. in. (3/4" pipe)
Flare nut on the narrow pipe should be torqued to 300 - 340 lbs-in. (3/8" pipe) Fig. 5

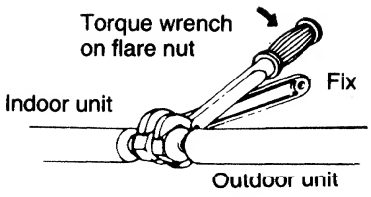


Fig. 5

(c) After performing a leak test on the connecting part, insulate it with an insulation and finish with a vinyl masking tape over it. Fig. 6

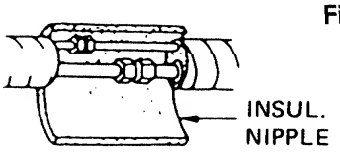


Fig. 6

3) Insulation of Refrigerant Piping

To prevent heat loss and wet floors due to dripping of condensation, wide pipe must be well insulated with proper insulation material. Thickness of insulation material should be min. 5/16". Fig. 7

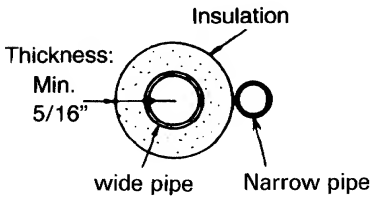


Fig. 7

4) Wiring Instructions

Wiring system diagram

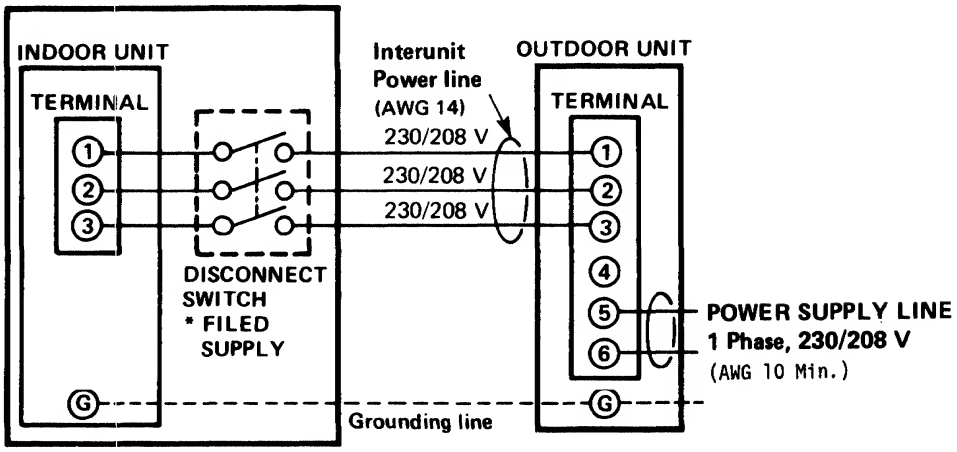


Fig. 8

5) Air Purging

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

1) The pressure in the system rises.
2) The operating current rises.
3) Cooling efficiency drops.
   Water contained in the air may freeze and block the capillary tube.
4) Water may lead to corrosion of parts in the refrigerant circuit.

CAUTION

Refrigerant has been factory charged in the outdoor unit at the time of shipment.
Don't use this refrigerant gas for air purging.

■ **TUBING DIAGRAM FOR AIR PURGING** (Example: 24K12W)

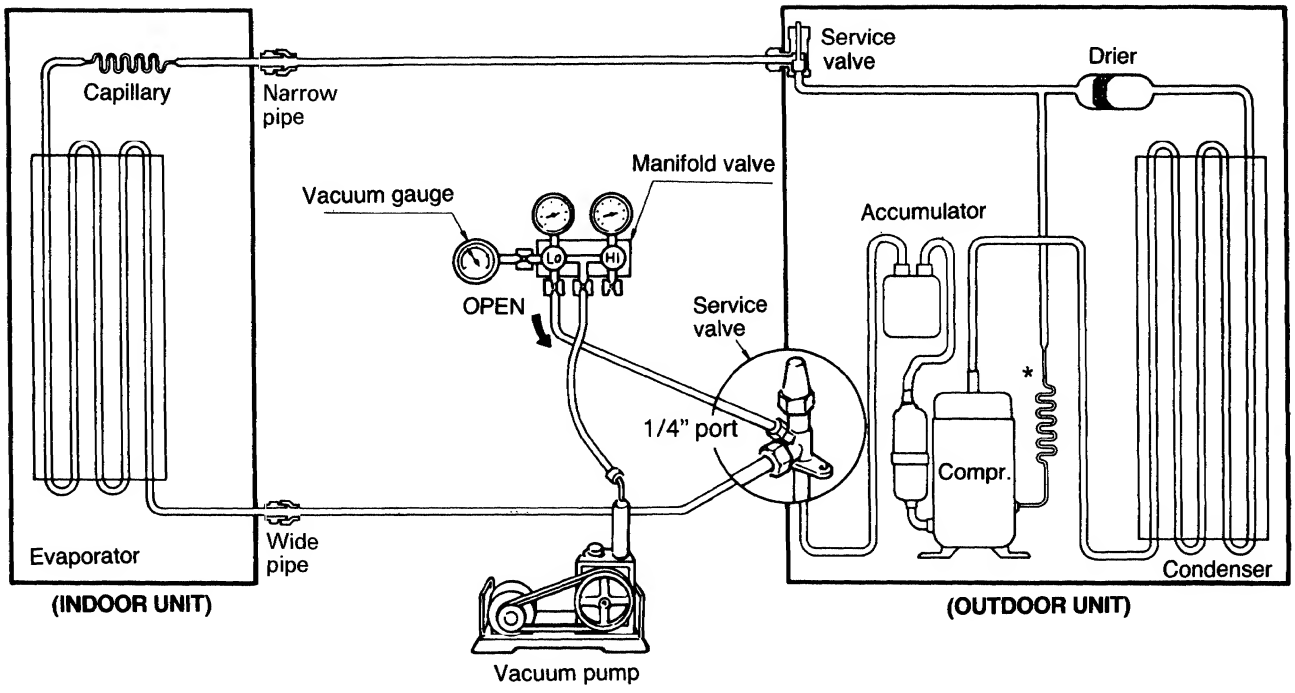


Fig. 9

Air Purging Procedure (Conventional evacuation system)

a) Check gas leakage of all joints with liquid soap. Fig. 10

b) **If no gasleakage is confirmed, connect both vacuum pump and vacuum gauge to service valve through 1/4" port with a flare nut. See Fig. 9.**

c) Next, run the vacuum pump until the pressure reaches to 1.5 mm Hg abs. or less value than that.

d) Close the low pressure side knob on the gauge manifold valve and stop evacuation.

e) **Remove the cap from the wide pipe service valve and turn the spindle gradually until it is back seated. Fig. 11.**

f) Disconnect vacuum pump and gauge manifold valve from the service valve. Then replace bonnet and flare nut to 1/4" port of service valve.

g) **The spindle of narrow pipe service valve shall be fully back seated. Then, tighten the valve seal cap with the copper gasket.**

h) The all air purge procedure has been completed and the unit is ready for trial opeeration.

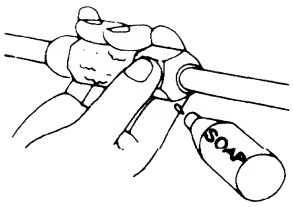


Fig. 10

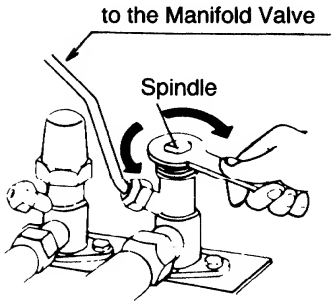


Fig. 11

Air Purging Procedure (If piping length will not exceed more than 50 ft.)

a) Connect refrigerant charging cylinder to narrow pipe service valve, and open the valve of the charging cylinder. Fig. 12.

b) When gas begins to be expelled, stop the flow for about 5 seconds by holding your finger over the outlet, then remove it and allow gas to flow out freely for about 10 seconds.
Repeat this operation 6 times.

c) Tighten the flare nuts quickly with bonnets on both charging ports right after hold no pressure before air comes in.

d) The spindle of both sevice valve shall be fully back seated. then, tighten the valve seal cap with the copper gasket.

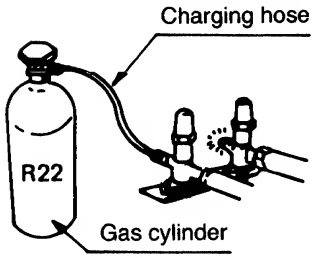


Fig. 12

■ SERVICE VALVE CONSTRUCTION

- **Valve Position -a-**
  The valve spindles of both wide & narrow pipes are turned all the way in. The unit is shipped from the factory in this position (Fig. 13-a)
- **Valve Position -b-**
  The valve spindles of both wide & narrow pipes are turned all the way out ("BACK SEAT" position). This is the normal operating position. (Fig. 13-b)
- **Valve Position -c-**
  The valve stems of both wide and narrow pipes are turned halfway-down position. This position is used for pressure measurement and gas charging. (Fig. 13-c)
- **Valve Position -d-**
  Like position -a-, but with the flare nut of wide pipe open. This position is used for air purging. (Fig. 13-d)

CAUTION

Be sure to use the service valve wrench or ratchet wrench when opening or closing the shut-off valve spindle.

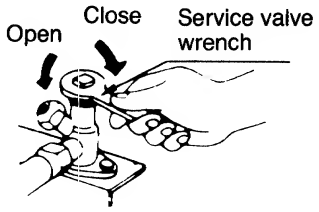


Fig. 14

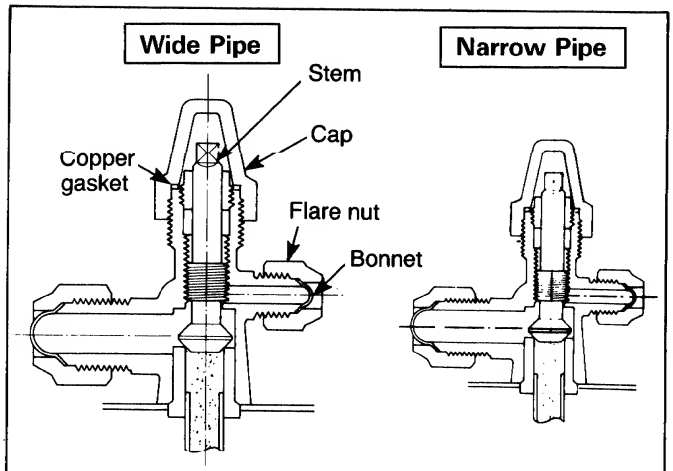


Fig. 13-d -a- Condition at Shipping

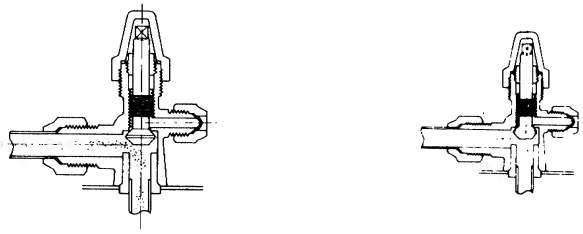


Fig. 13-a -b- Condition for Operation

Fig. 13-b -c- Condition at Gas Charging

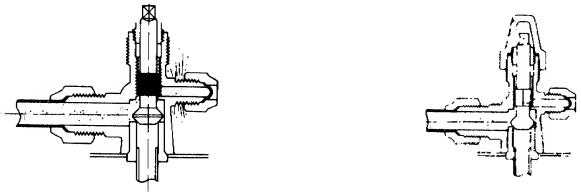


Fig. 13-c -d- Condition at Air Purging

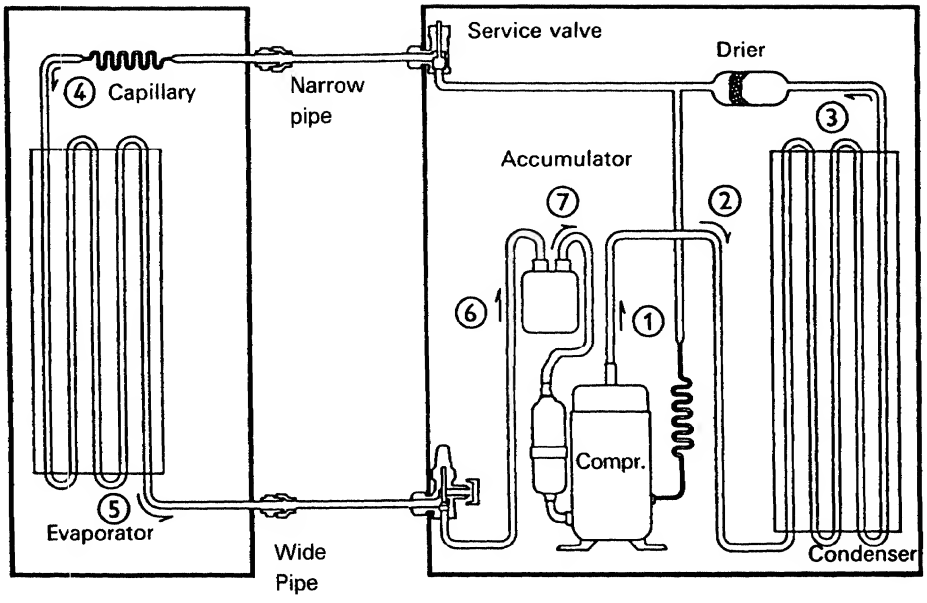
■ PUMP DOWN

Pump down means collecting all refrigerant in the system back into the outdoor unit without losing refrigerant gas. Pump down is used when unit is moved or for servicing the refrigerant circuit.

1) **Close valve on wide pipe halfway (2 turns).**
2) **Close valve on narrow pipe all the way (4 turns).**
3) **Turn unit on (cooling) for approximately 3 minutes then shut off.**
4) **Close valve on wide pipe all the way (2 additional turns).**
5) **Disconnect pipes slowly allowing pressure to equalize inside and out.**
6) **When piping is disconnected provide dust covers for both valves and pipes until unit is reconnected.**

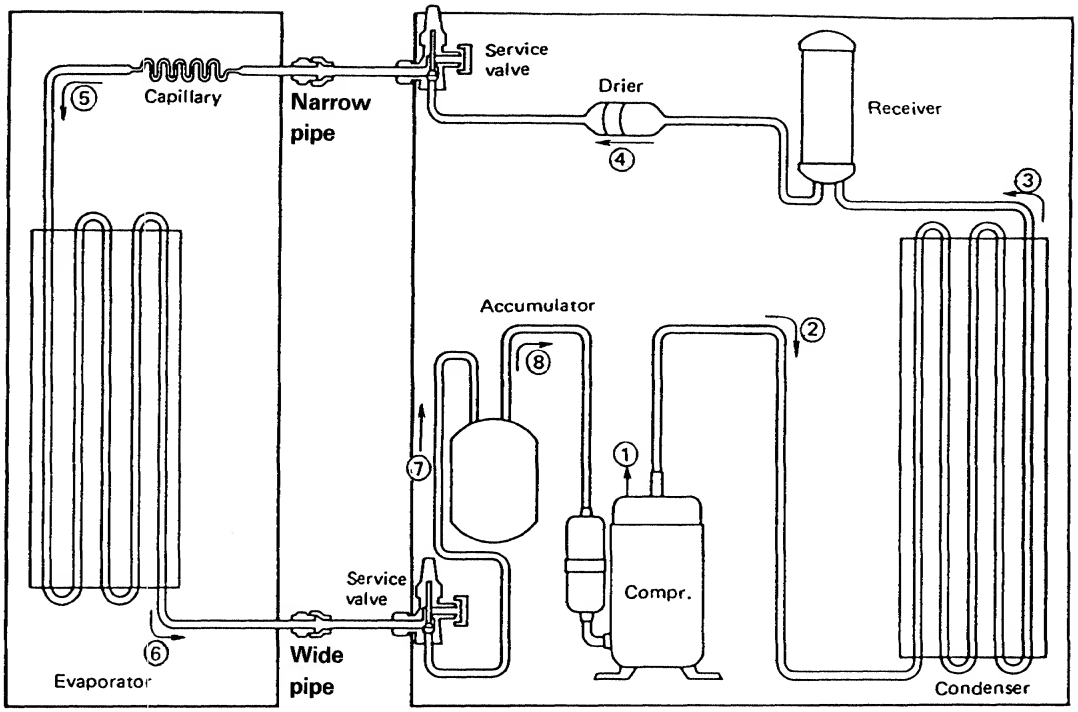
11. REFRIGERANT FLOW DIAGRAM

MODEL: 24K12W

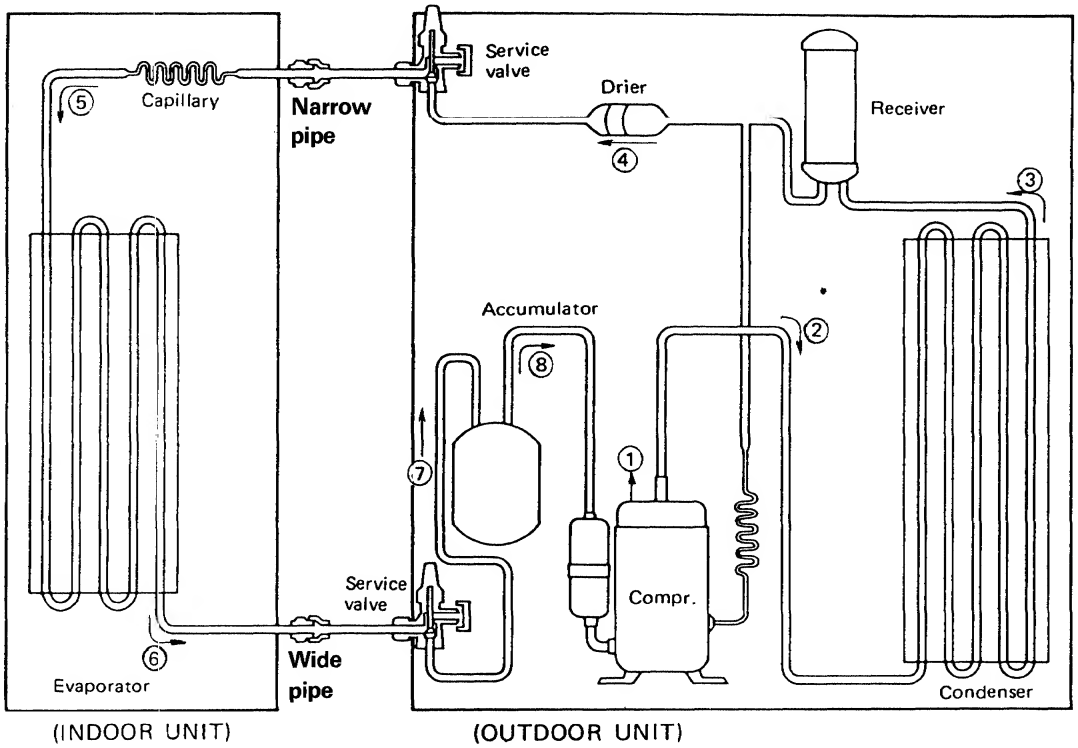


REFRIGERANT FLOW DIAGRAM

MODEL: 30K12W



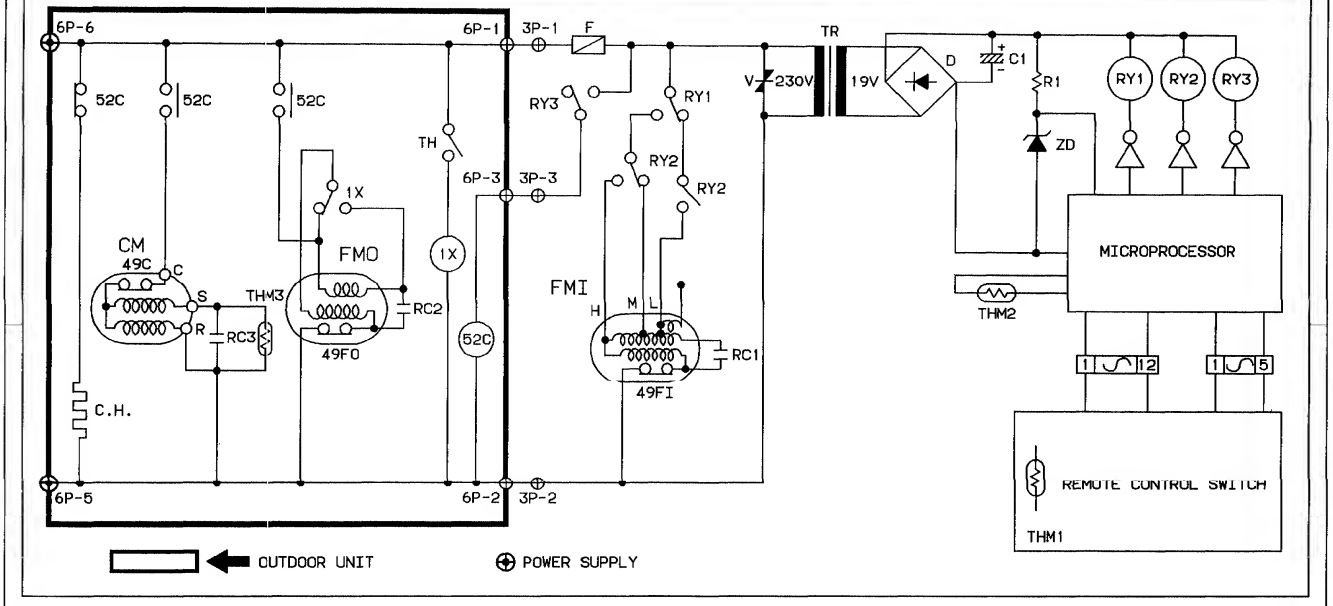
MODEL: 36K12W



12. ELECTRICAL DATA

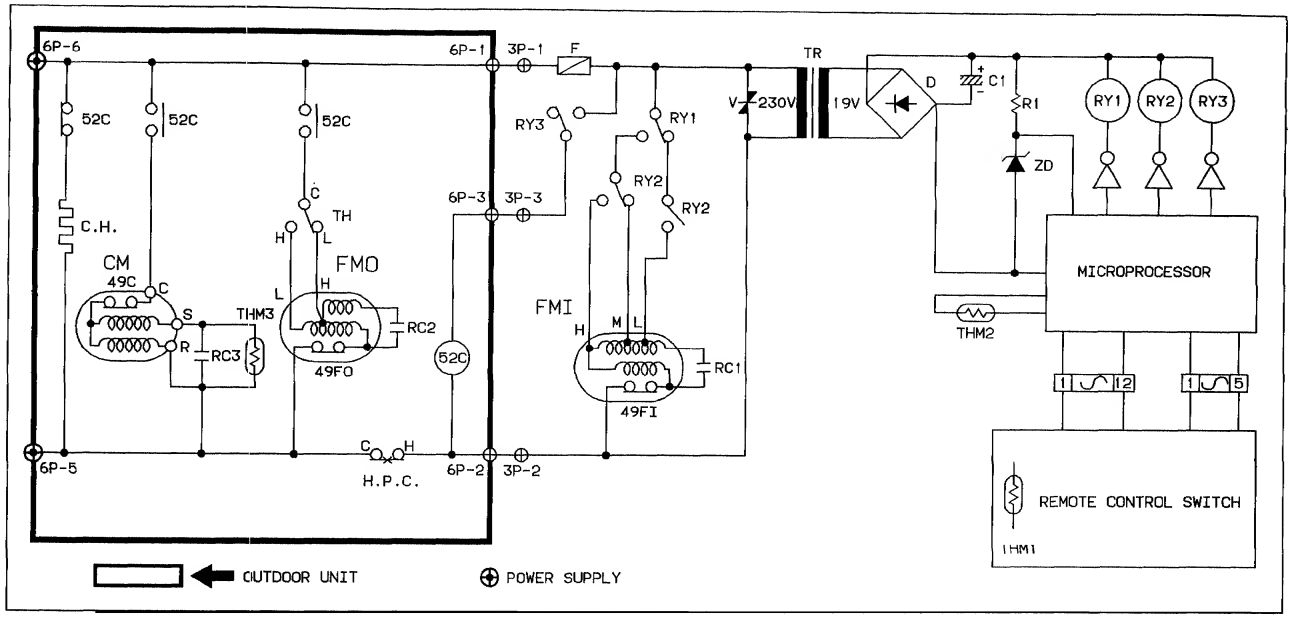
- Schematic Diagram

24K12W



SYMBOL	PARTS NAME	SYMBOL	PARTS NAME
CM	COMPRESSOR MOTOR	C.H.	CRANK CASE HEATER
FMI	INDOOR FAN MOTOR		
FMO	OUTDOOR FAN MOTOR	TR	TRANSFORMER
		ZD	ZENER DIODE
RY1,RY2,RY3	AUXILIARY RELAY	C1	CAPACITOR
1X	AUXILIARY RELAY	R1	RESISTOR
52C	ELECTRO MAGNETIC CONTACTOR	V	VARISTOR
		F	FUSE
49C	CM INTERNAL OVERLOAD PROTECTOR	D	DIODE
49FI	FMI INTERNAL OVERLOAD PROTECTOR	THM1,THM2	THERMISTOR
40FO	FMO INTERNAL OVERLOAD PROTECTOR	THM3	THERMISTOR (P.T.C.)
		TH	THERMOSTAT
RC1,RC2,RC3	CAPACITOR		

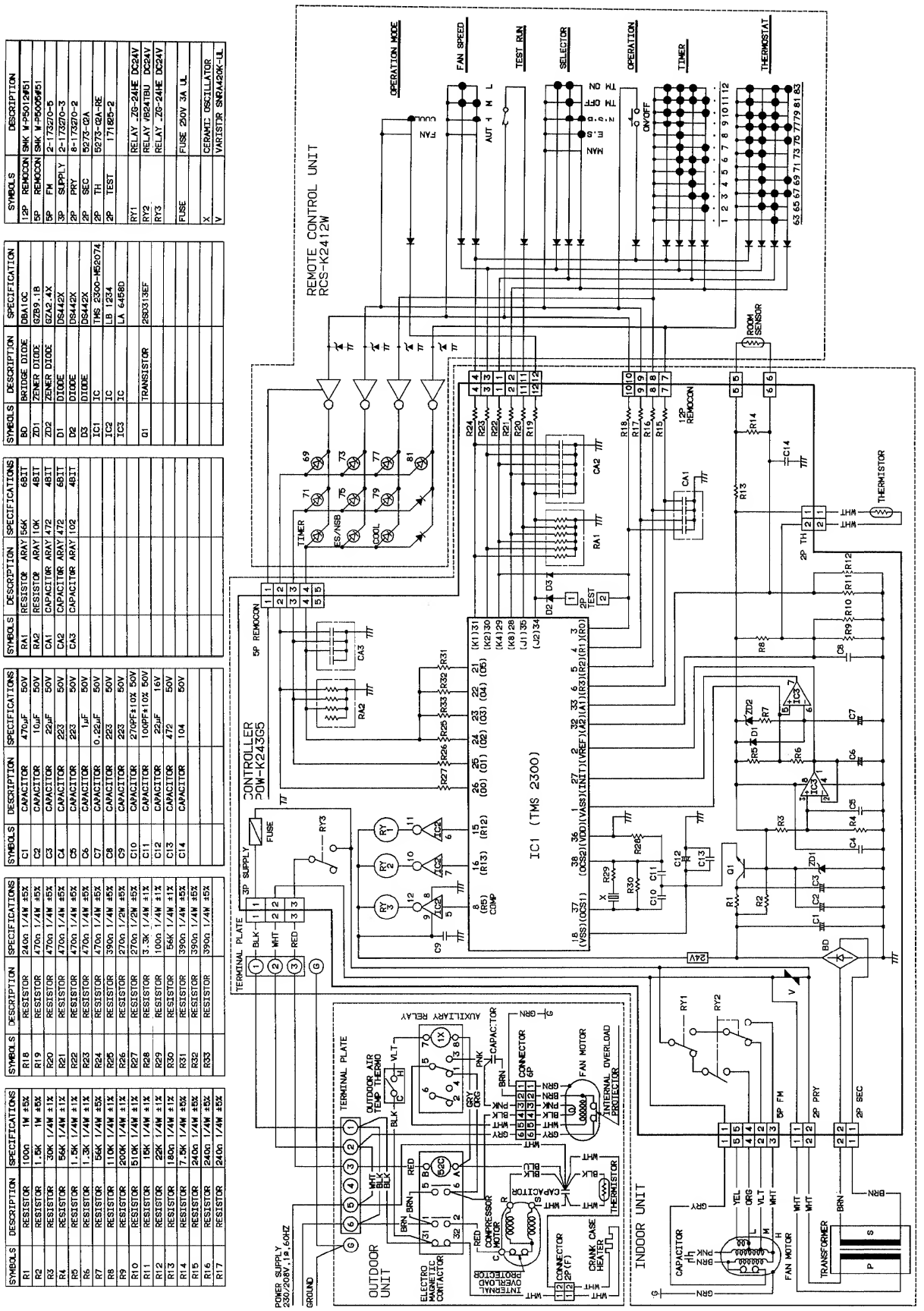
• Schematic Diagram **30K12W, 36K12W**



SYMBOL	PARTS NAME	SYMBOL	PARTS NAME
CM	COMPRESSOR MOTOR	RC1,RC2,RC3	CAPACITOR
FMI	INDOOR FAN MOTOR		
FMO	OUTDOOR FAN MOTOR	TR	TRANSFORMER
		ZD	ZENER DIODE
RY1,RY2,RY3	AUXILIARY RELAY	C1	CAPACITOR
52C	ELECTRO MAGNETIC CONTACTOR	R1	RESISTOR
		V	VARISTOR
49C	CM INTERNAL OVERLOAD PROTECTOR	F	FUSE
49FI	FMI INTERNAL OVERLOAD PROTECTOR	D	DIODE
40FO	FMO INTERNAL OVERLOAD PROTECTOR	THM1,THM2	THERMISTOR
		THM3	THERMISTOR (P.T.C.)
H.P.C.	HIGH PRESSURE SWITCH	TH	THERMOSTAT
C.H.	CRANK CASE HEATER		

- Electrical Wiring Diagram

Model: 24K12W



SYMBOLS	DESCRIPTION	SPECIFICATIONS
R1	RESISTOR	100Ω 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	110K 1/4W ±1%
R9	RESISTOR	200K 1/4W ±1%
R10	RESISTOR	510K 1/4W ±1%
R11	RESISTOR	15K 1/4W ±1%
R12	RESISTOR	22K 1/4W ±1%
R13	RESISTOR	180Ω 1/4W ±1%
R14	RESISTOR	7.5K 1/4W ±5%
R15	RESISTOR	240Ω 1/4W ±5%
R16	RESISTOR	240Ω 1/4W ±5%
R17	RESISTOR	240Ω 1/4W ±5%

SYMBOLS	DESCRIPTION	SPECIFICATIONS
R18	RESISTOR	240Ω 1/4W ±5%
R19	RESISTOR	470Ω 1/4W ±5%
R20	RESISTOR	470Ω 1/4W ±5%
R21	RESISTOR	470Ω 1/4W ±5%
R22	RESISTOR	470Ω 1/4W ±5%
R23	RESISTOR	470Ω 1/4W ±5%
R24	RESISTOR	470Ω 1/4W ±5%
R25	RESISTOR	390Ω 1/4W ±5%
R26	RESISTOR	270Ω 1/2W ±5%
R27	RESISTOR	270Ω 1/2W ±5%
R28	RESISTOR	3.3K 1/4W ±1%
R29	RESISTOR	100Ω 1/4W ±1%
R30	RESISTOR	56K 1/4W ±1%
R31	RESISTOR	390Ω 1/4W ±5%
R32	RESISTOR	390Ω 1/4W ±5%
R33	RESISTOR	390Ω 1/4W ±5%

SYMBOLS	DESCRIPTION	SPECIFICATIONS
C1	CAPACITOR	470uF 50V
C2	CAPACITOR	10uF 50V
C3	CAPACITOR	22uF 50V
C4	CAPACITOR	223 50V
C5	CAPACITOR	223 50V
C6	CAPACITOR	1μF 50V
C7	CAPACITOR	0.22uF 50V
C8	CAPACITOR	223 50V
C9	CAPACITOR	223 50V
C10	CAPACITOR	270PF±10% 50V
C11	CAPACITOR	100PF±10% 50V
C12	CAPACITOR	22μF 16V
C13	CAPACITOR	472 50V
C14	CAPACITOR	104 50V

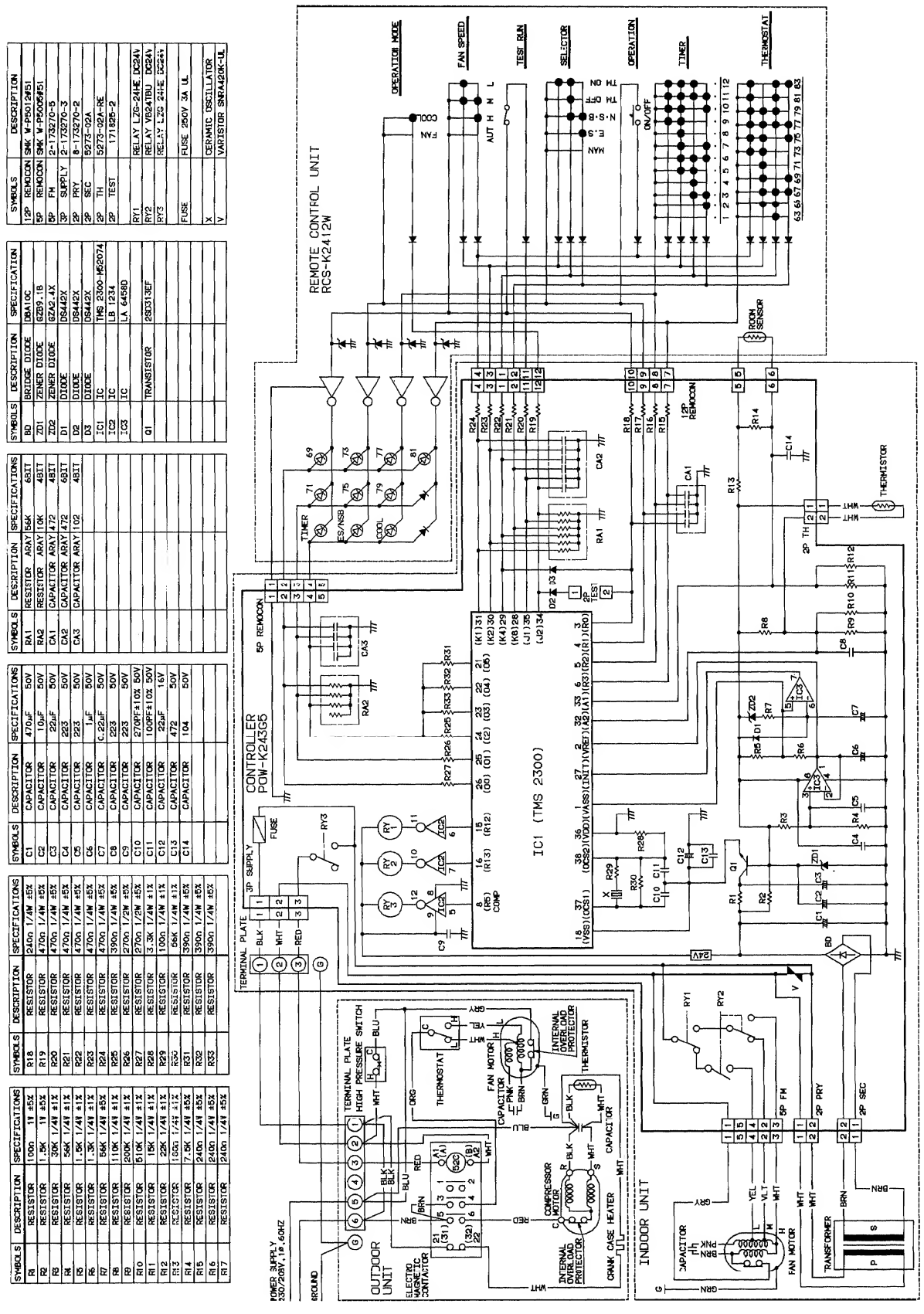
SYMBOLS	DESCRIPTION	SPECIFICATIONS
RA1	RESISTOR ARAY	56K 6BIT
RA2	RESISTOR ARAY	10K 4BIT
CA1	CAPACITOR ARAY	472 4BIT
CA2	CAPACITOR ARAY	472 6BIT
CA3	CAPACITOR ARAY	102 4BIT

SYMBOLS	DESCRIPTION	SPECIFICATION
BD	BRIDGE DIODE	DBA10C
ZD1	ZENER DIODE	6ZB9.1B
ZD2	ZENER DIODE	6ZX2.4X
D1	DIODE	DS442X
D2	DIODE	DS442X
D3	DIODE	DS442X
IC1	IC	TMS 2300-N52074
IC2	IC	LB 1234
IC3	IC	LA 6456D
Q1	TRANSISTOR	2SD313EF

SYMBOLS	DESCRIPTION
12P	REMOCON SWK W-P5012#51
5P	REMOCON SWK W-P5005#51
5P	FM 2-173270-5
3P	SUPPLY 2-173270-3
2P	PRY 8-173270-2
2P	SEC 5273-02A
2P	TH 5273-02A-RE
2P	TEST 171625-2
RY1	RELAY JZG-24HE DC24V
RY2	RELAY V62ATBU DC24V
RY3	RELAY JZG-24HE DC24V
FUSE	FUSE 250V 3A UL
X	CERAMIC OSCILLATOR
V	VARISTOR SNR420K-UL

- Electrical Wiring Diagram

Model: 30K12W, 36K12W



SYMBOLS	DESCRIPTION	SPECIFICATIONS
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R6	RESISTOR	1.3K 1/4W ±1%
R7	RESISTOR	56K 1/4W ±5%
R8	RESISTOR	110K 1/4W ±1%
R9	RESISTOR	200K 1/4W ±1%
R10	RESISTOR	510K 1/4W ±1%
R11	RESISTOR	15K 1/4W ±1%
R12	RESISTOR	22K 1/4W ±1%
R13	RESISTOR	150Ω 1/4W ±1%
R14	RESISTOR	7.5K 1/4W ±5%
R15	RESISTOR	240Ω 1/4W ±5%
R16	RESISTOR	240Ω 1/4W ±5%
R17	RESISTOR	240Ω 1/4W ±5%

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R20	RESISTOR	470Ω 1/4W ±5%
R21	RESISTOR	470Ω 1/4W ±5%
R22	RESISTOR	470Ω 1/4W ±5%
R23	RESISTOR	470Ω 1/4W ±5%
R24	RESISTOR	470Ω 1/4W ±5%
R25	RESISTOR	390Ω 1/4W ±5%
R26	RESISTOR	270Ω 1/2W ±5%
R27	RESISTOR	270Ω 1/2W ±5%
R28	RESISTOR	3.3K 1/4W ±1%
R29	RESISTOR	100Ω 1/4W ±1%
R30	RESISTOR	56K 1/4W ±1%
R31	RESISTOR	390Ω 1/4W ±5%
R32	RESISTOR	390Ω 1/4W ±5%
R33	RESISTOR	390Ω 1/4W ±5%

SYMBOLS	DESCRIPTION	SPECIFICATIONS
C1	CAPACITOR	470μF 50V
C2	CAPACITOR	10μF 50V
C3	CAPACITOR	22μF 50V
C4	CAPACITOR	223 50V
C5	CAPACITOR	223 50V
C6	CAPACITOR	1μF 50V
C7	CAPACITOR	C.22μF 50V
C8	CAPACITOR	223 50V
C9	CAPACITOR	223 50V
C10	CAPACITOR	270PF±10% 50V
C11	CAPACITOR	100PF±10% 50V
C12	CAPACITOR	22μF 16V
C13	CAPACITOR	472 50V
C14	CAPACITOR	104 50V

SYMBOLS	DESCRIPTION	SPECIFICATIONS
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RA2	RESISTOR ARAY	10K 4BIT
CA1	CAPACITOR ARAY	472 4BIT
CA2	CAPACITOR ARAY	472 6BIT
CA3	CAPACITOR ARAY	102 4BIT

SYMBOLS	DESCRIPTION	SPECIFICATION
BD	BRIDGE DIODE	D6A10C
ZD1	ZENER DIODE	6ZB9.1B
ZD2	ZENER DIODE	6ZA2.4X
D1	DIODE	DS442X
D2	DIODE	DS442X
D3	DIODE	DS442X
IC1	IC	TMS 2300-MS2074
IC2	IC	LB 1234
IC3	IC	LA 6458D
Q1	TRANSISTOR	2SD313EF

SYMBOLS	DESCRIPTION
12P REMOCON	SMK W-P501295I
5P REMOCON	SMK W-P5005#51
8P FM	2-173270-5
3P SUPPLY	2-173270-3
2P PRY	8-173270-2
2P SEC	5273-02A
2P TH	5273-02A-RE
2P TEST	171825-2
RY1	RELAY LZ6-24HE DC24V
RY2	RELAY VB24TBU DC24V
RY3	RELAY LZ6 24HE DC24V
FUSE	FUSE 250V 3A UL
X	CERAMIC OSCILLATOR
V	VARISTOR SNR420K-UL

• Electrical Characteristics

2 4 K 1 2 W

Performance at 230/208V - 1 ϕ - 60Hz		Indoor Unit	Outdoor Unit		Complete Unit
		Fan Motor	Fan Motor	Compressor	
Rated Conditions	A	0.40/0.40	1.20/1.20	8.9/9.8	10.5/11.4
	W	80/70	250/230	2,070/2,050	2,400/2,350
Locked Rotor Amperes	A	0.46/0.42	2.34/2.29	72	-

3 0 K 1 2 W

Performance at 230/208V - 1 ϕ - 60Hz		Indoor Unit	Outdoor Unit		Complete Unit
		Fan Motor	Fan Motor	Compressor	
Rated Conditions	A	0.60/0.50	1.45/1.42	10.9/11.9	13.0/13.9
	W	110/100	330/280	2,460/2,450	2,900/2,830
Locked Rotor Amperes	A	0.65/0.60	1.95/1.77	81	-

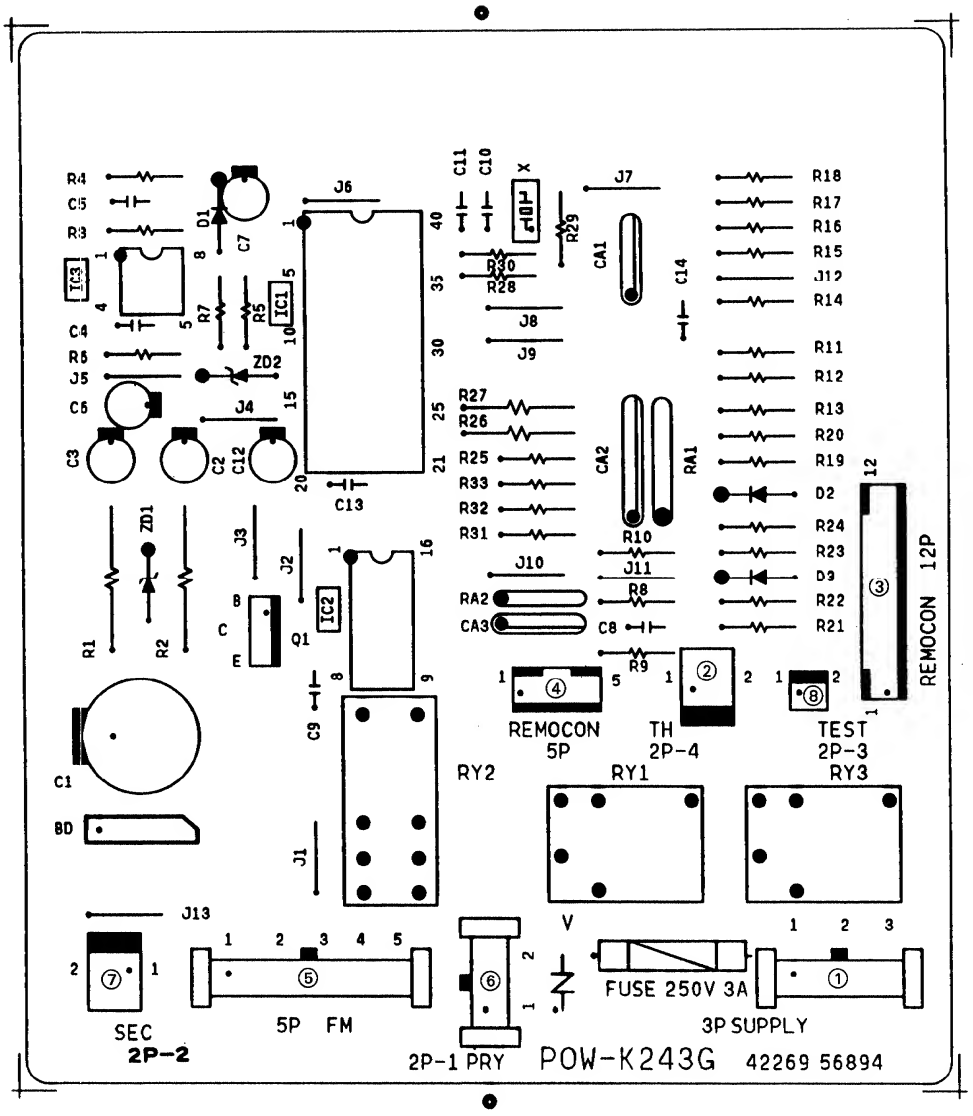
3 6 K 1 2 W

Performance at 230/208V - 1 ϕ - 60Hz		Indoor Unit	Outdoor Unit		Complete Unit
		Fan Motor	Fan Motor	Compressor	
Rated Conditions	A	0.60/0.60	1.45/1.42	13.7/14.8	15.8/16.9
	W	120/100	330/280	3,060/3,070	3,510/3,450
Locked Rotor Amperes	A	0.65/0.65	1.95/1.77	98	-

Remarks: Rated Conditions : 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.

• P.C.B. Ass'y (Printed Pattern)

POW-K243G



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.

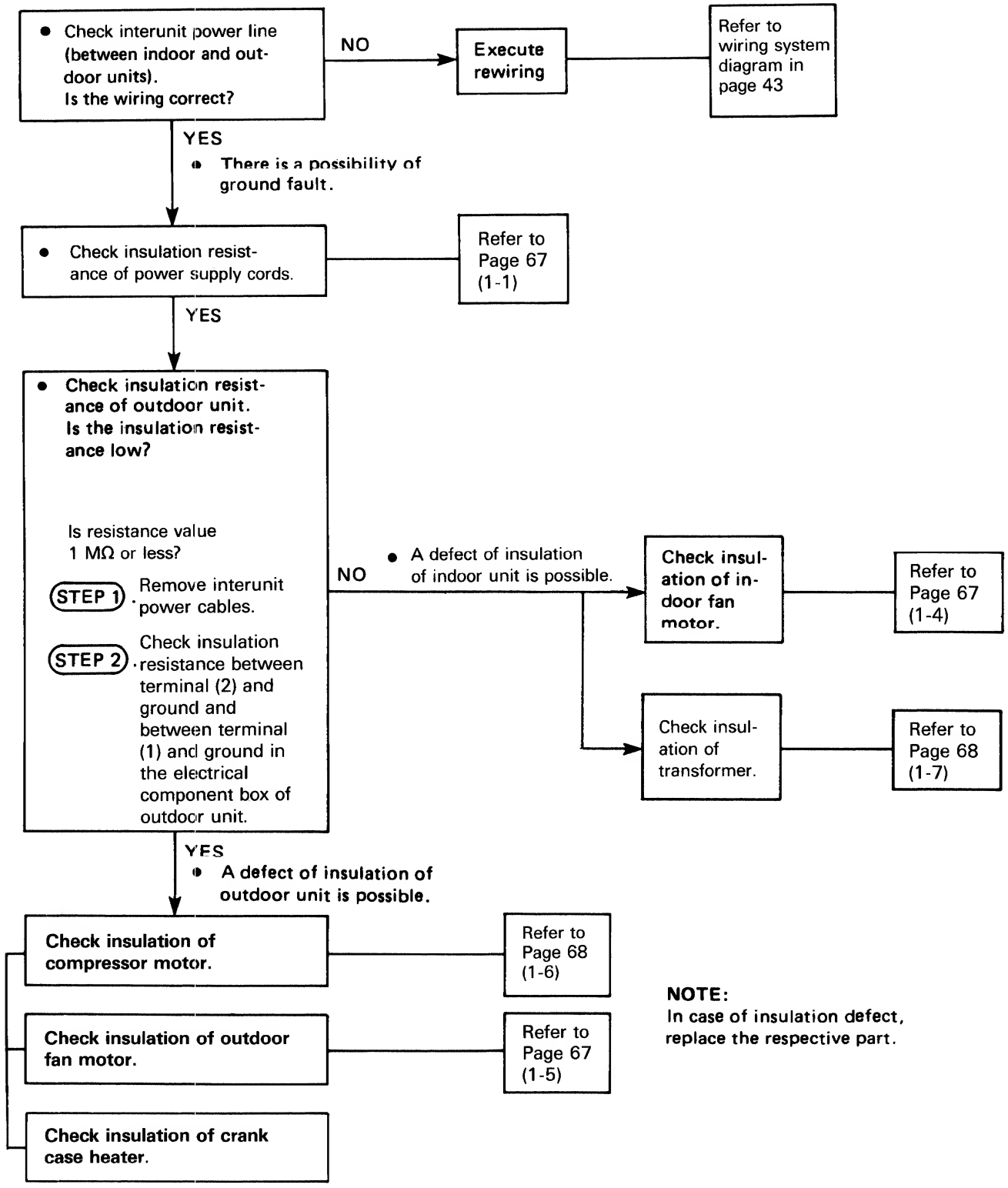
13. TROUBLESHOOTING

– Quick Access Index –

1. Air conditioner does not operate

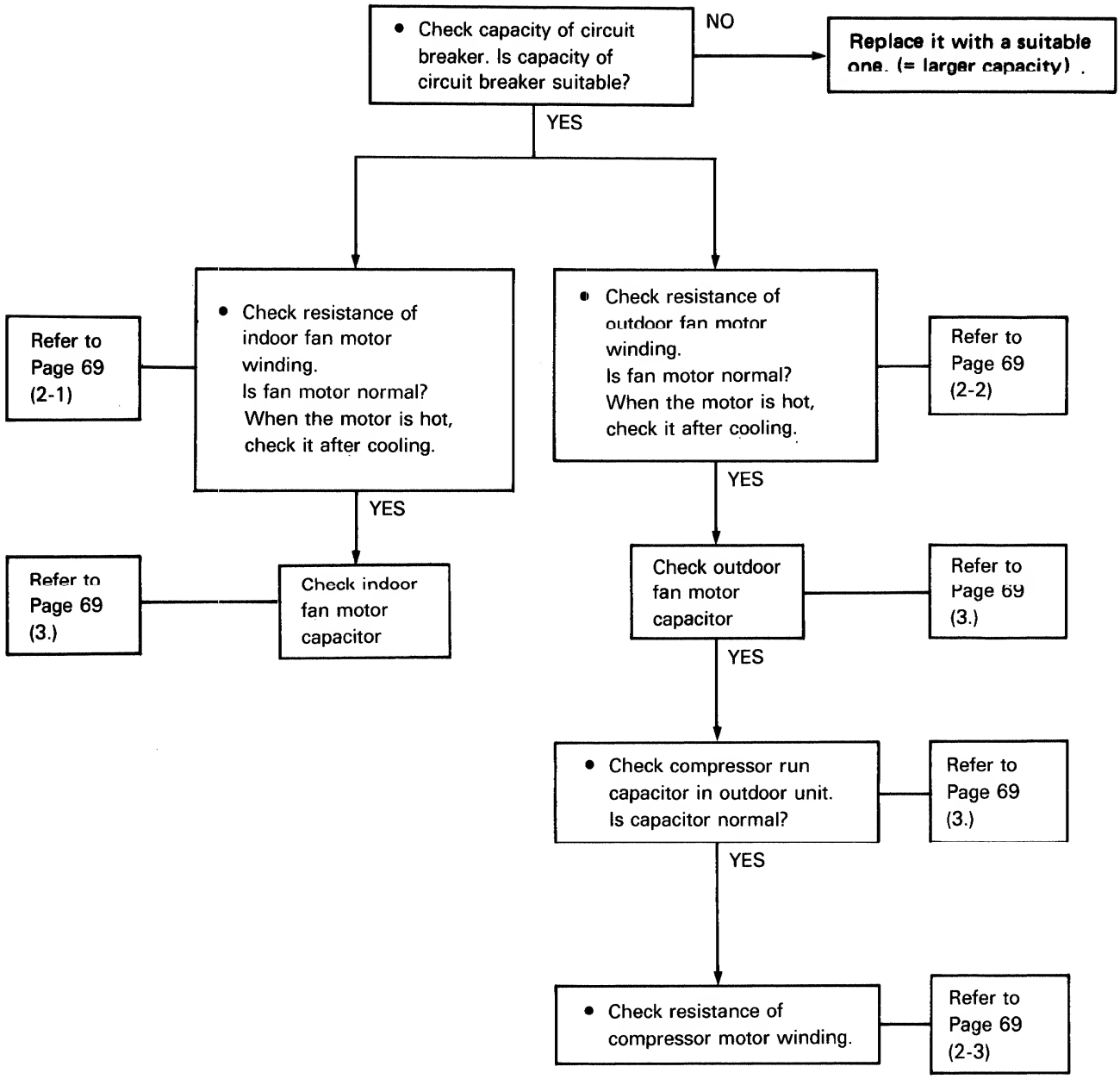
(1) Circuit breaker trips (or fuse blows)

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



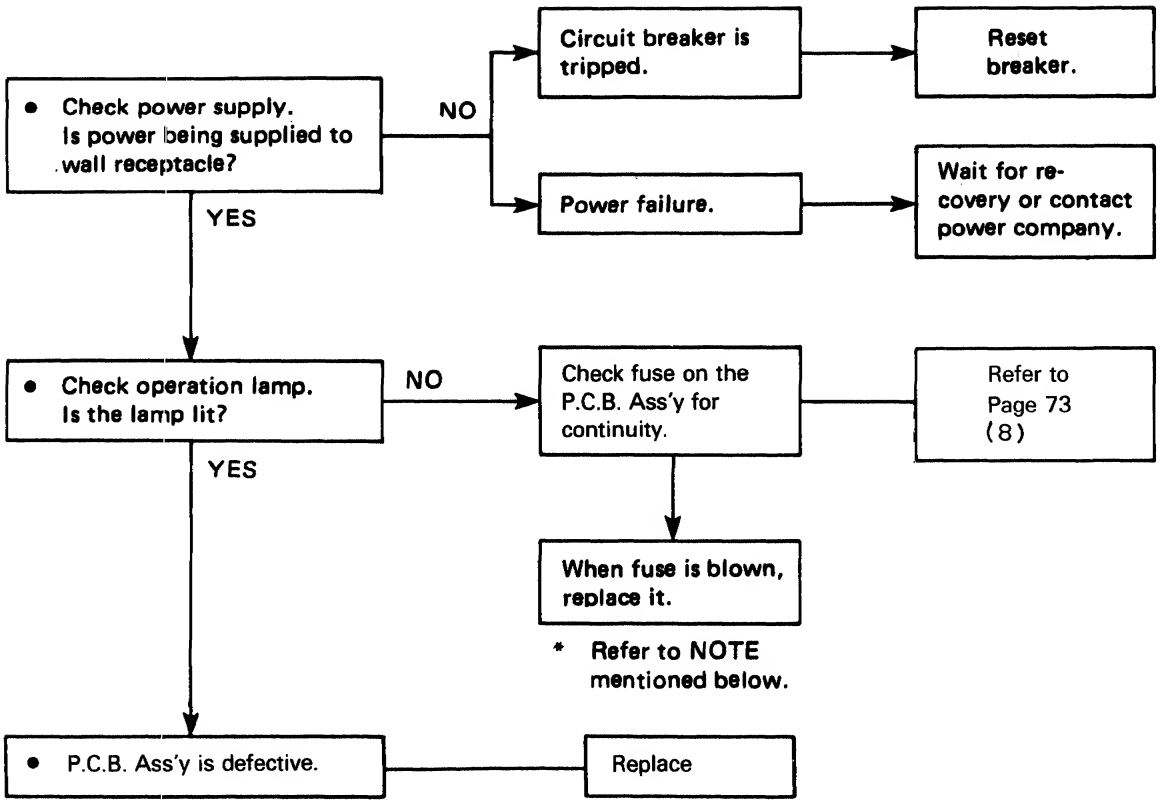
NOTE:
In case of insulation defect, replace the respective part.

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

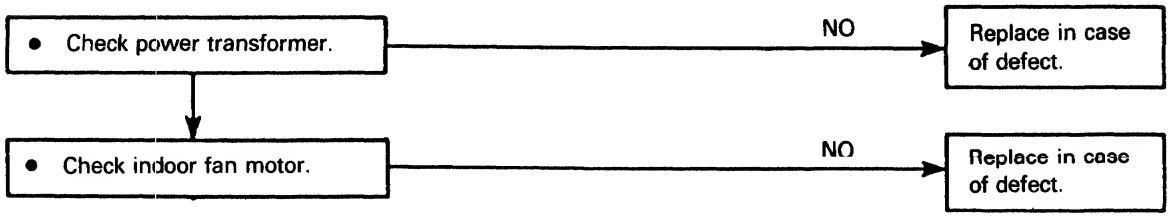


NOTE:
In case of defect,
replace the respective part.

(2) Neither indoor unit nor outdoor unit runs

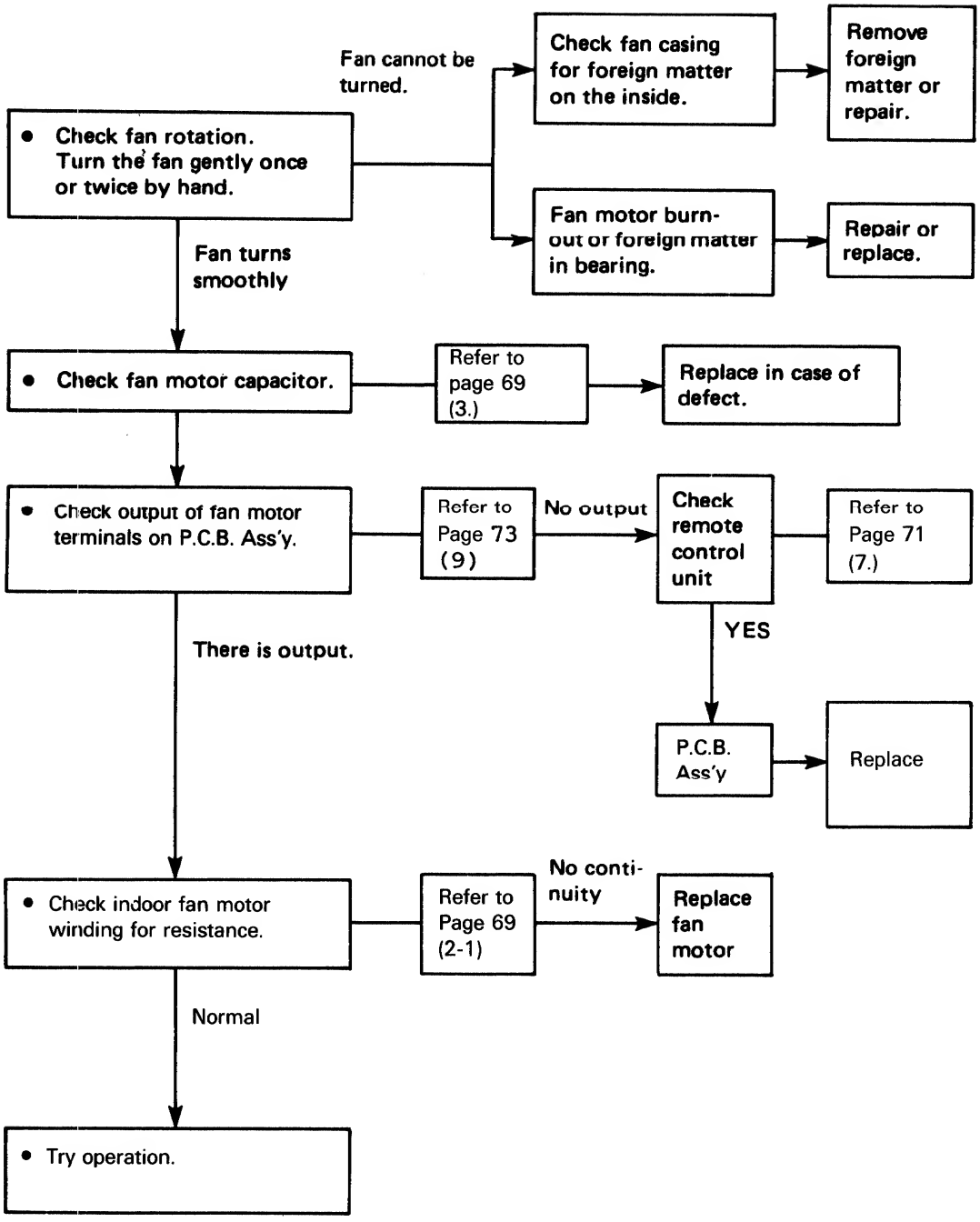


NOTE: If fuse blows again, check the following items:



2. Some part of air conditioner does not operate

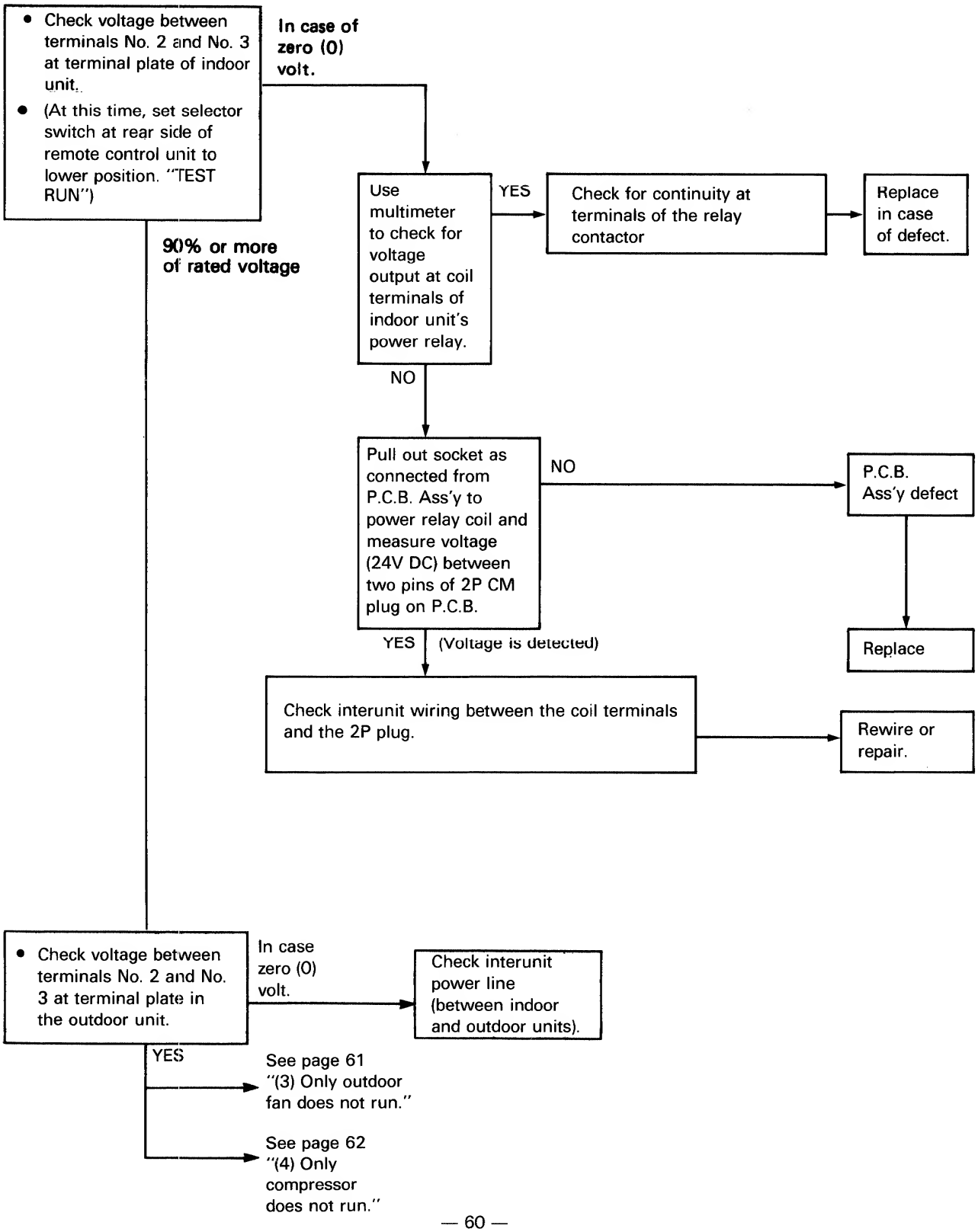
(1) Only indoor fan does not run



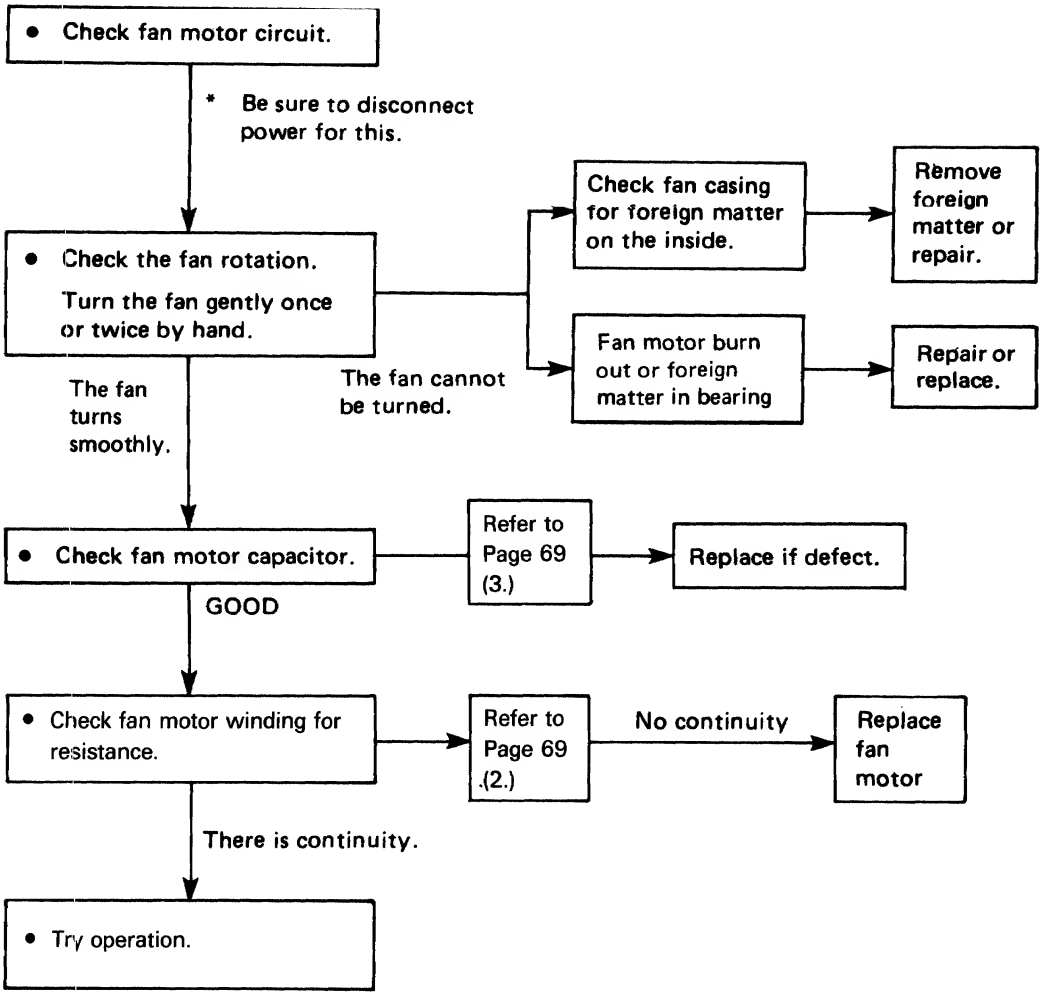
(2) Neither outdoor fan nor compressor runs

Note: Check following points at first;

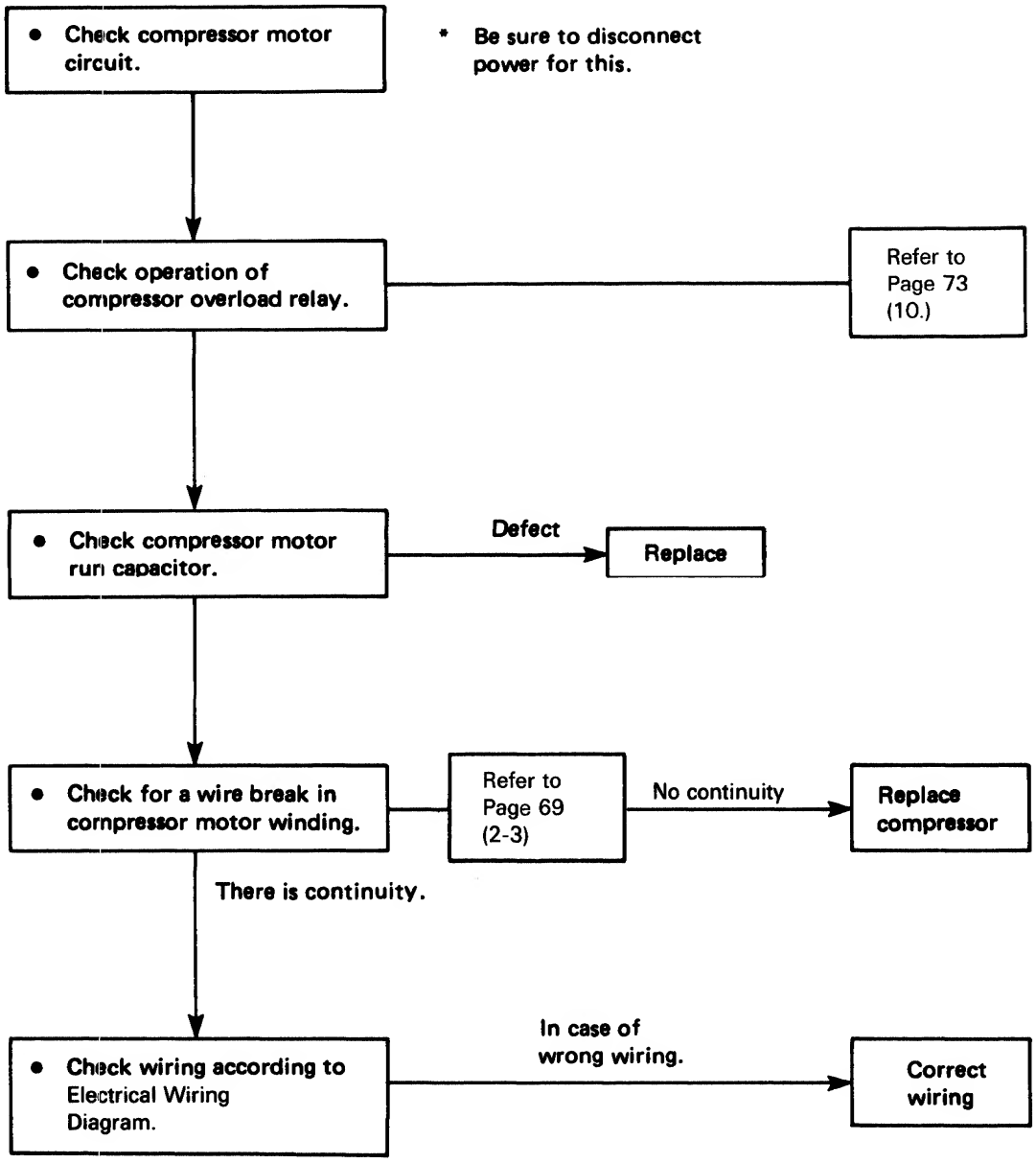
1. Is thermostat setting suitable?
2. Has 3 minute timer operated? (No operation for 3 minutes after power ON.)
3. Freeze prevention thermostat operated? (Wait for about 6 minutes.)



(3) Only outdoor fan does not run

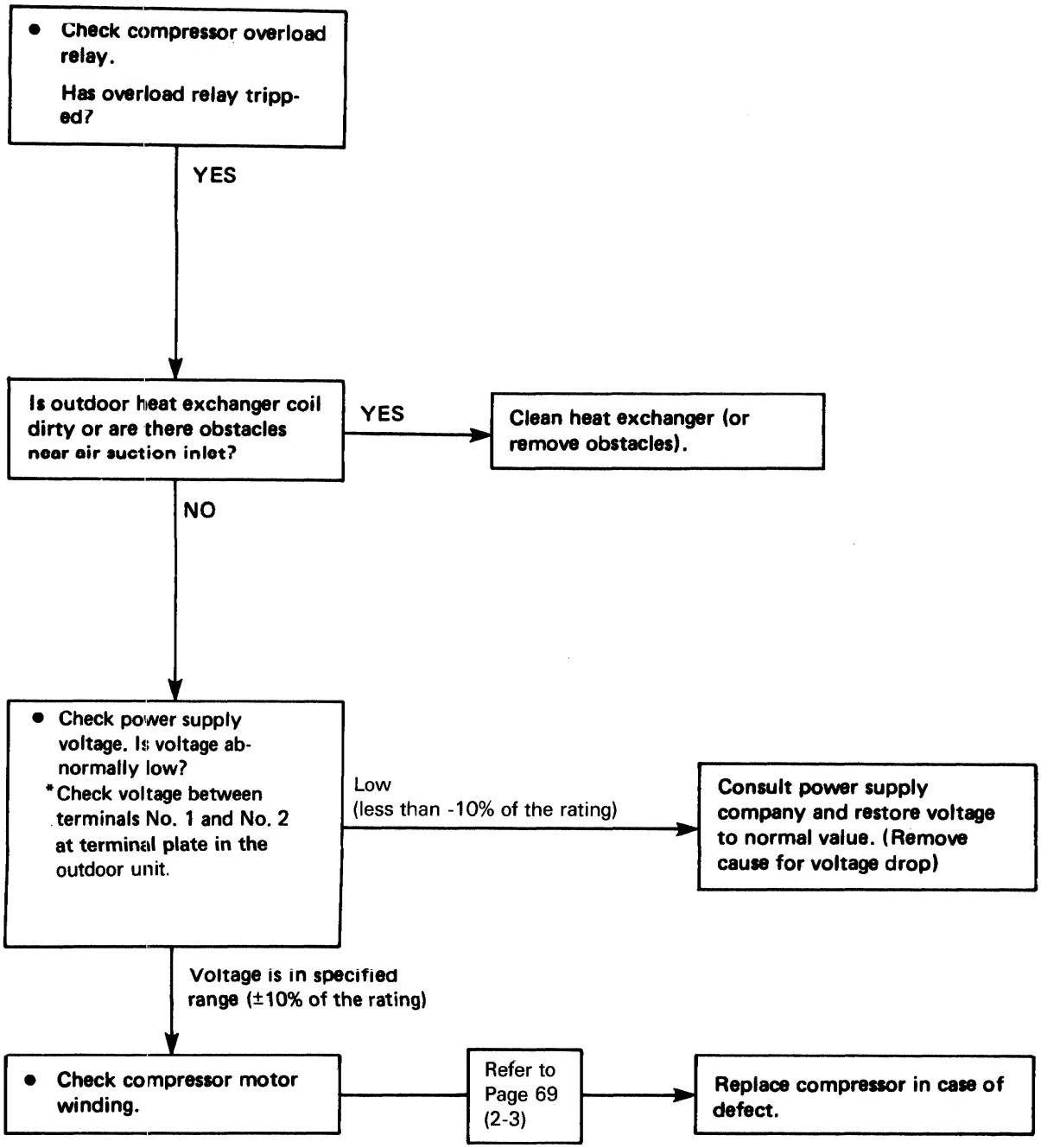


(4) Only compressor does not run



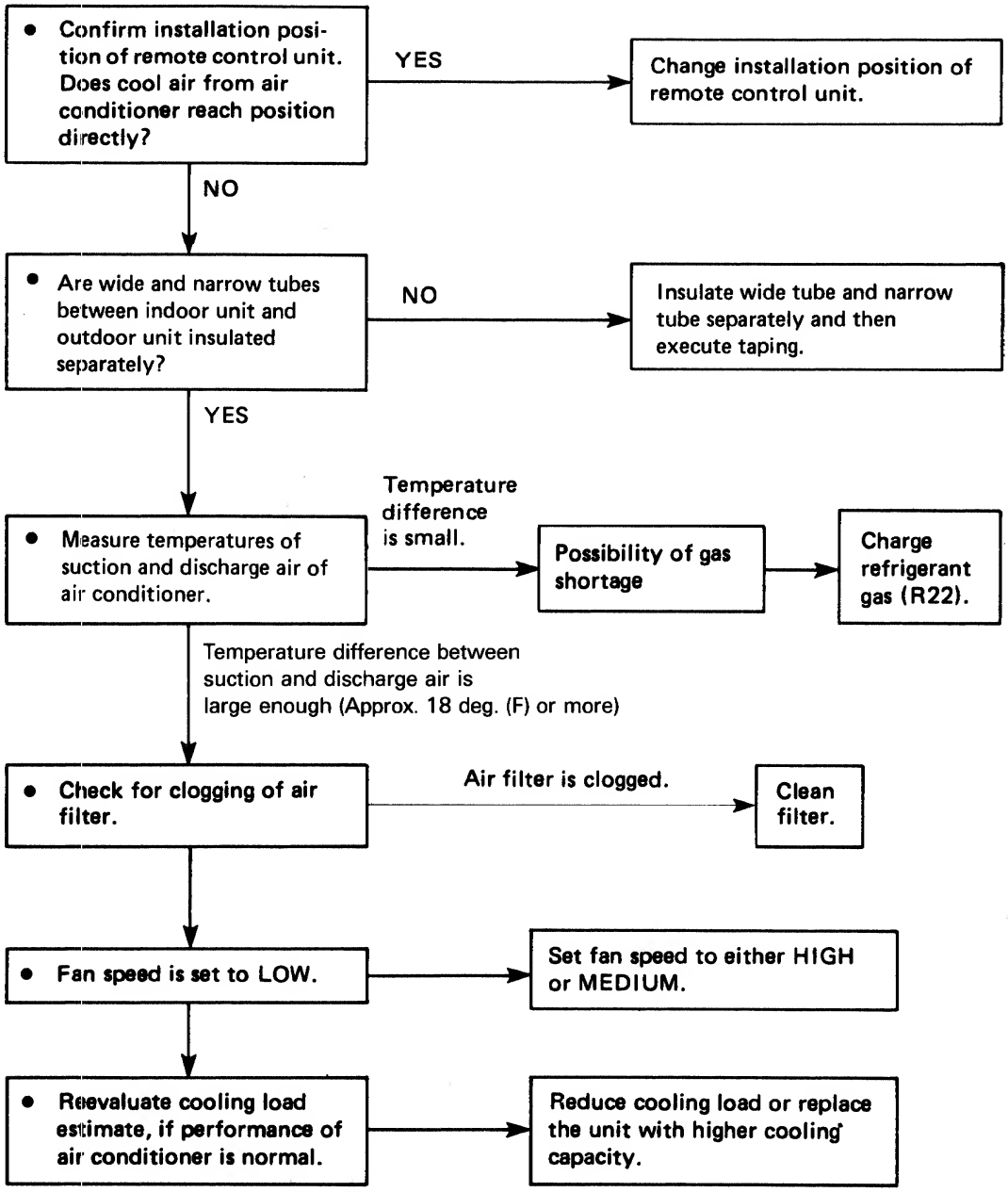
(5) Compressor frequently repeats ON and OFF

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

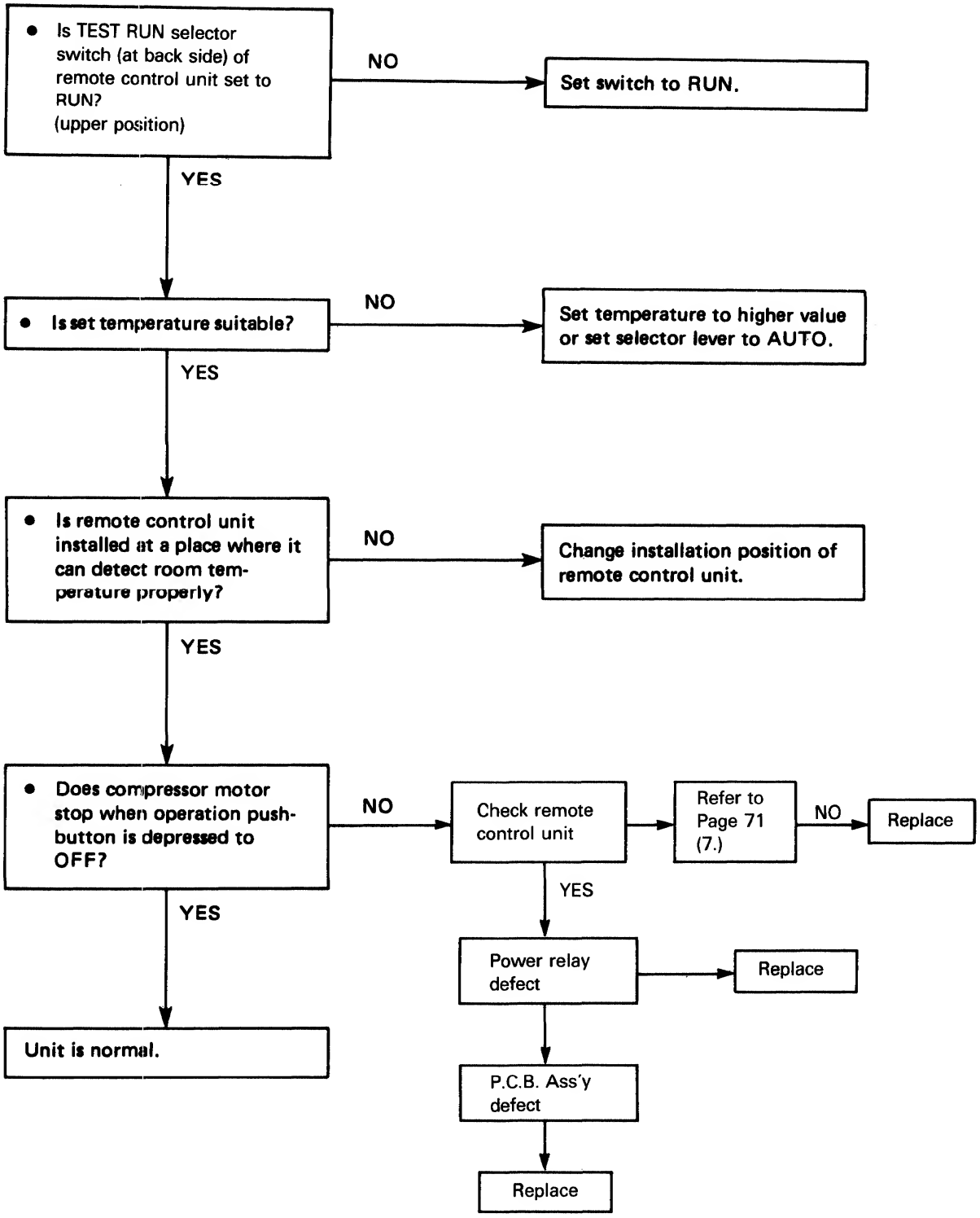


3. Air conditioner operates, but abnormalities are observed

(1) Poor cooling



(2) Excessive cooling



14. CHECKING AND REPLACING ELECTRICAL COMPONENTS

— Quick Access Index —

1. Measurement of Insulation Resistance

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

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)

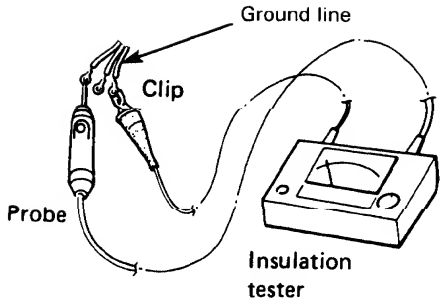


Fig. 1

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)

1-3 Outdoor Unit

Clamp the metallic part of the unit with a lead clip of the insulation resistance tester and measure the resistance by placing a probe on ②, and then ③ on the terminal plate. (Fig. 2)

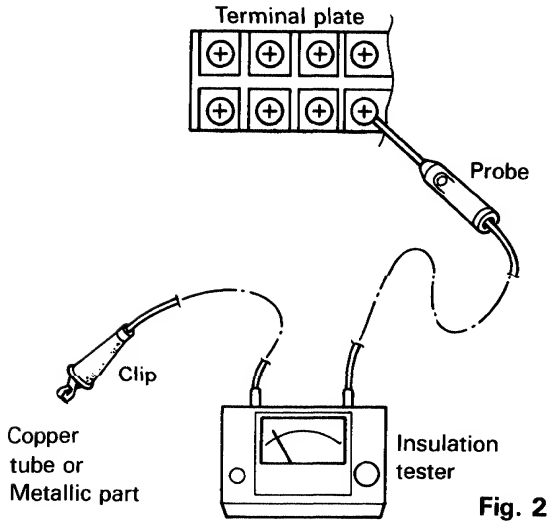


Fig. 2

1-4 Indoor Fan Motor

Remove the fan motor connector from P.C.B. ass'y. Clamp the aluminum plate fin or copper tube with a lead clip of the insulation resistance tester and measure the resistance by applying a probe to either pole of the active parts of the connector. (Fig. 3)

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

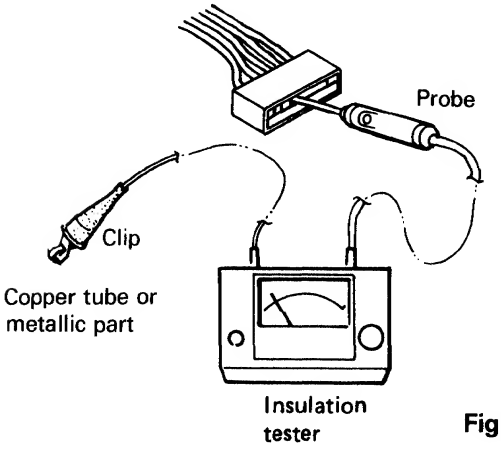


Fig. 3

1-5 Outdoor Fan Motor

a) C2412
Remove the socket from the fan motor connector.
Measure the resistance by method of 1-4 Indoor Fan Motor. (Fig. 3)

b) C3012/C3612
Disconnect white and yellow lead wires running from the thermostat to the fan motor.
Measure the resistance. (Fig. 4)

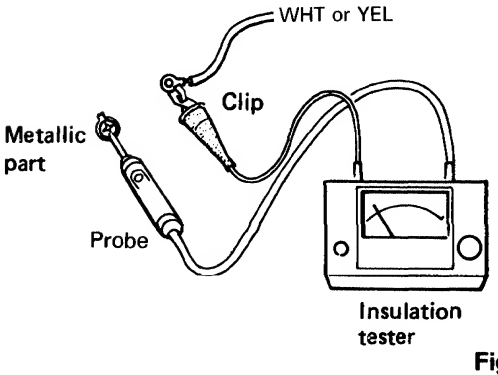


Fig. 4

1-6 Compressor

Disconnect the lead wires running from the compressor to the terminal plate and capacitor (or overload relay).
Measure the resistance. (Fig. 5)

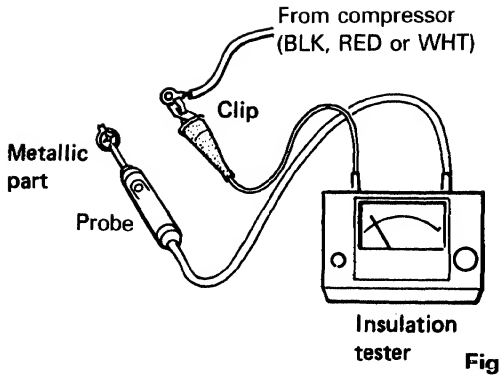


Fig. 5

1-7 Transformer

Disconnect 2P SEC and 2P PRY connectors from P.C.B. ass'y. Clamp the metallic part of the unit with a lead clip of the insulation resistance tester and measure the resistance by applying a probe to either pole of the active parts of the connector.

2. Checking of the Motor Winding

Refer to Major Component Specifications (Coil resistance)

2-1 Indoor Fan Motor

Remove the fan motor connector from P.C.B. ass'y. Measure the resistance between each lead wires out of the fan mortor. (Fig. 6)

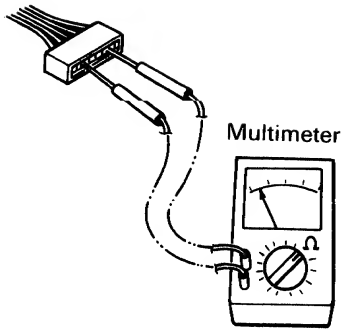


Fig. 6

2-2 Outdoor Fan Motor

Remove the lead wires out of the fan motor, or remove the socket as shown in the electric wiring diagram.

Measure the resistance between each lead wires out of fan mortor.

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. 7.

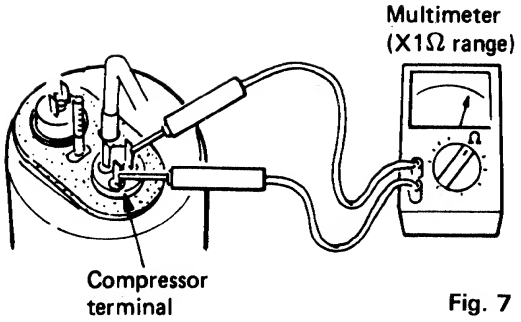


Fig. 7

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. 8 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.

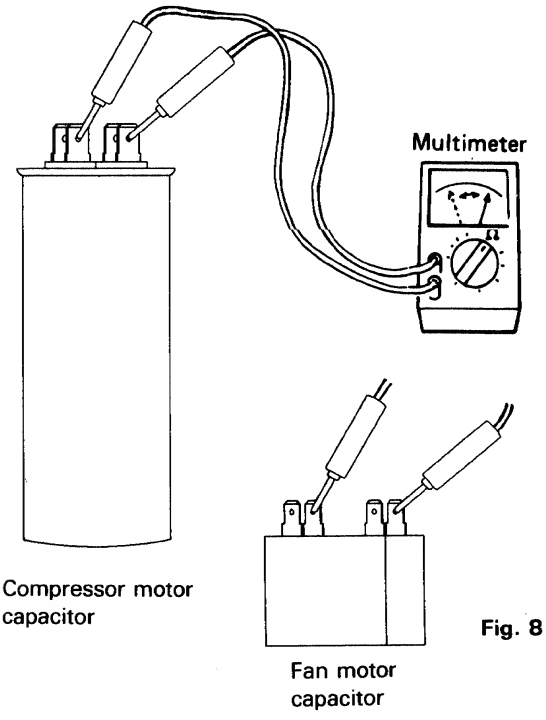


Fig. 8

4. Checking of the Relay

- Refer to Other Component Specifications.

4-1 Coil

Remove the lead wires from the coil terminals of the relay.
Measure the resistance between two coil terminals.
Refer to Fig. 9.

4-2 Continuity

Refer to Fig. 9.

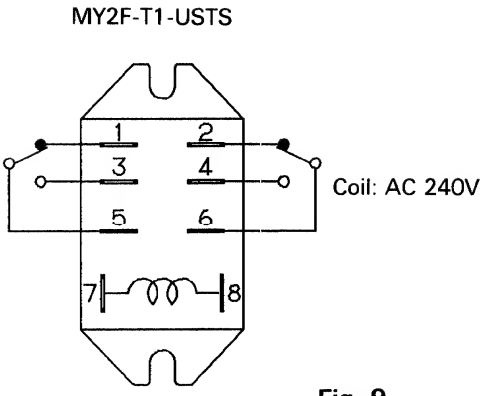


Fig. 9

5. Checking of the Electro Magnetic Contactor

- Refer to Other Component Specifications.

5-1 Coil

Measure the resistance between No. A and No. B.
Refer to Fig. 10.

5-2 Continuity

- Fig. 10 (b) shows the coil is not excited condition.
- When the push button is depressed, the coil become excited condition.

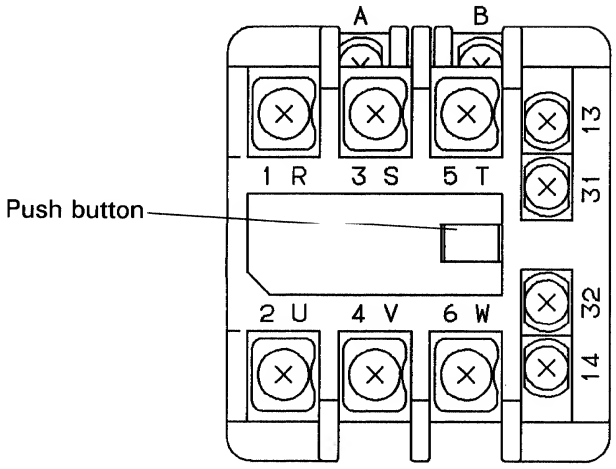


Fig. 10 (a)

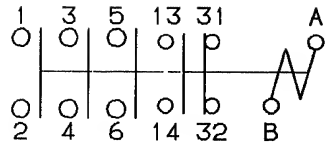


Fig. 10 (b)

6. Checking of the Thermistor (PTC)

Measure the resistance.
Refer to Other Component Specifications.

7. Checking of the Remore 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 overcooling. 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

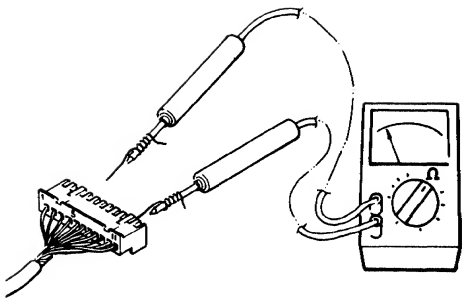


Fig. 11

(3) 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-2)

(4) Checking of the Operation Pushbutton

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 pushbutton is pressed.

(5) 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-3)

(6) 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
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-4)

If there is abnormality during checking at any of the above step from (1) to (6), 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.

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

Check the continuity by the multimeter as shown in Fig. 15.

If it is difficult to check in this way, remove the lamp board ass'y connector and then check it.

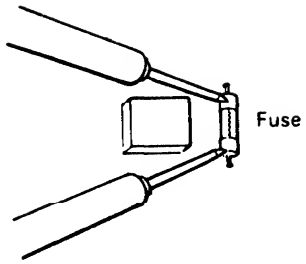


Fig. 15

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. 16.
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).

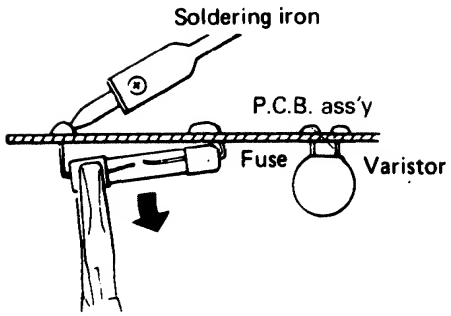


Fig. 16

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

9. 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.

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

* Line voltage

(Table-5)

10. 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.

15. DISASSEMBLY PROCEDURES

— Quick Access Index —

INDOOR UNIT

1. Casing — Removal

K2412W

1) Remove three 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.

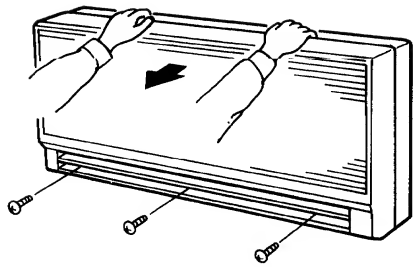


Fig. 1

K3012W, K3612W

1) Remove the side cover Ⓐ by unfastening two screws.

2) Remove the front panel Ⓑ by unfastening three screws and then Ⓑ', other panels can be done by the same method.

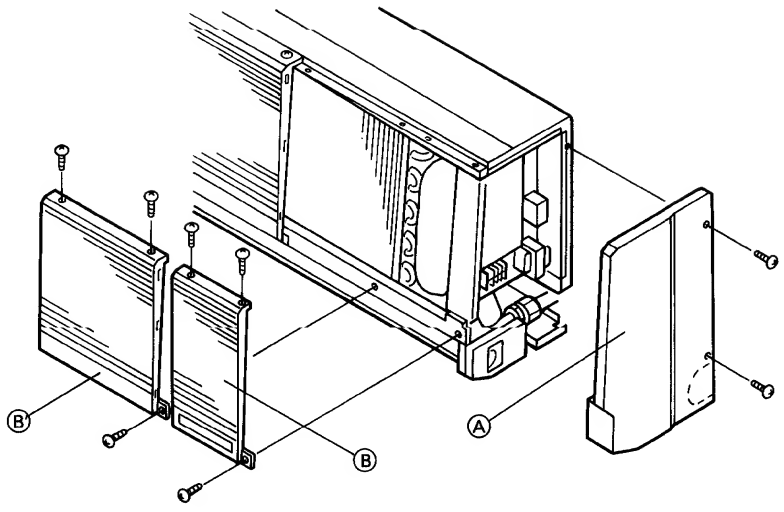


Fig. 2

2. Electrical Component Box — Access and Removal

1) Remove casing.

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

2) In case of K2412W, remove the cover plates Ⓐ and Ⓑ by unfastening a screw.
3) Disconnect the interunit wires from the terminal plate.
4) Remove or loosen the connector socket and lead wires.

CAUTION

Do not apply an excessive force when removing the connector socket or lead wires.
5) Unfasten the screws in accordance with Fig. 3,4
The electrical component box can be pulled out.

K2412W

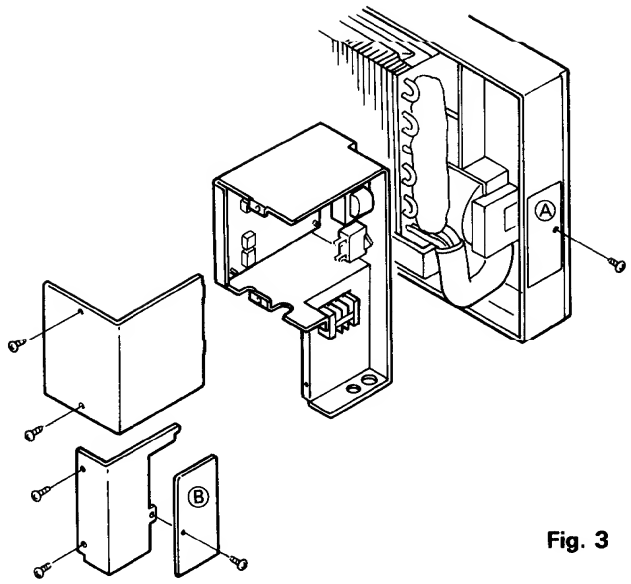


Fig. 3

K3012W, K3612W

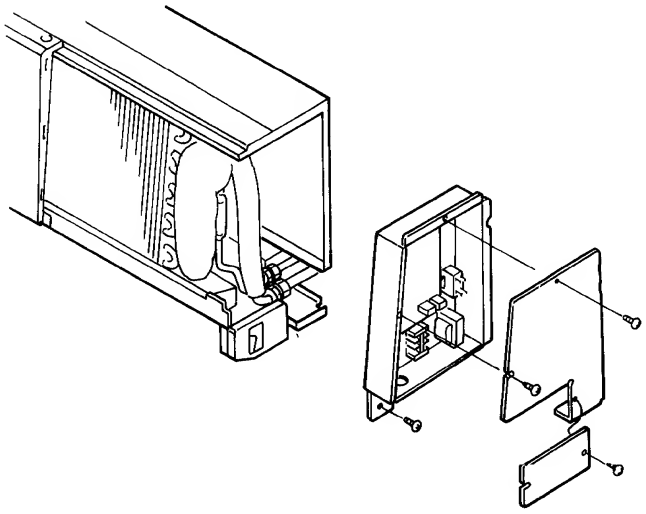


Fig. 4

3. Evaporator (Indoor Heat Exchanger) and Drain Pan—Removal

K2412W

1) Remove the electrical component box.
2) Remove the refrigerant piping holder Ⓐ.
3) The drain pan can be pulled out after removing the screws shown in Fig. 5.
4) Loosen the fixing screws of the evaporator mounting plates Ⓑ and Ⓒ, and remove them respectively.
5) Lift up the evaporator with both hand, then withdraw the evaporator together with the piping.

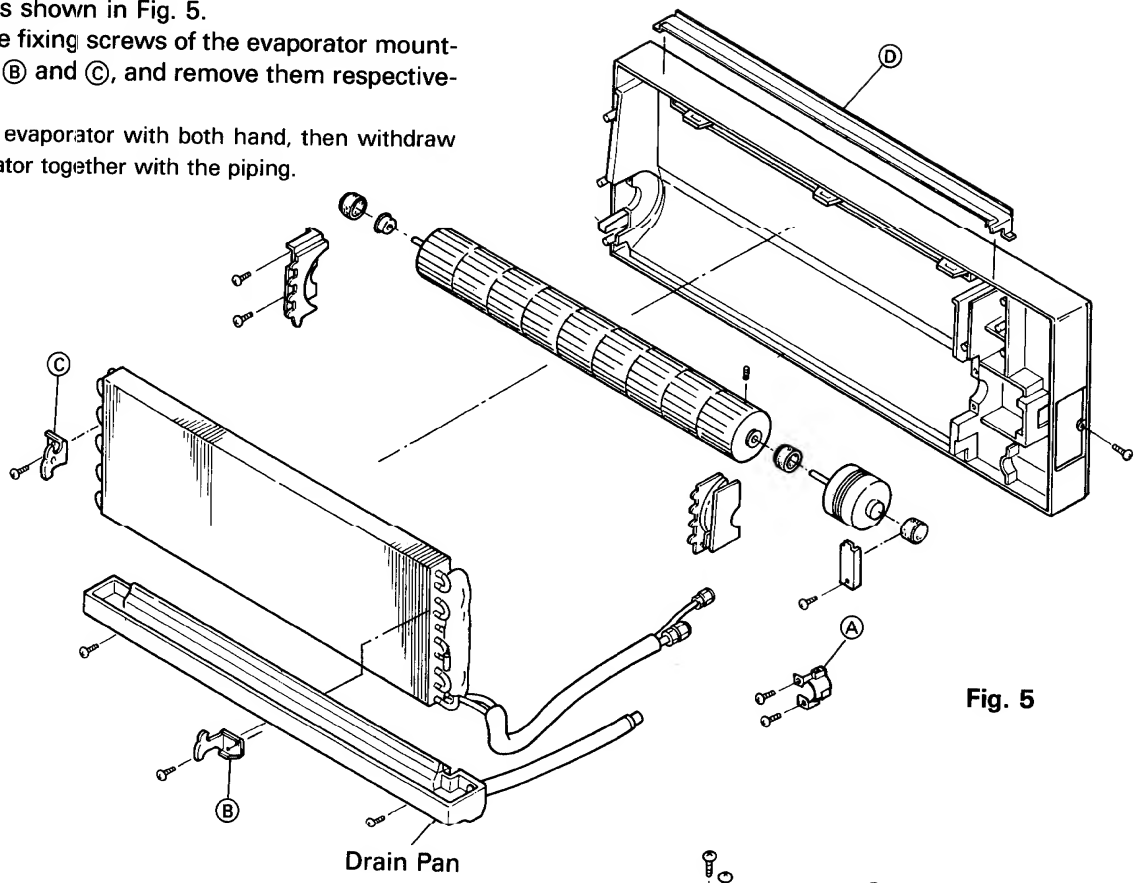


Fig. 5

K3012W, K3612W

1) Remove the electrical component box.
2) Loosen the fixing screws of the flap Ass'y and remove the flap Ass'y.
3) Remove the refrigerant piping holder Ⓐ.
4) Remove the evaporator mounting plate Ⓓ.
5) The evaporator and drain pan can be pulled out after removing the screws shown in Fig. 6.

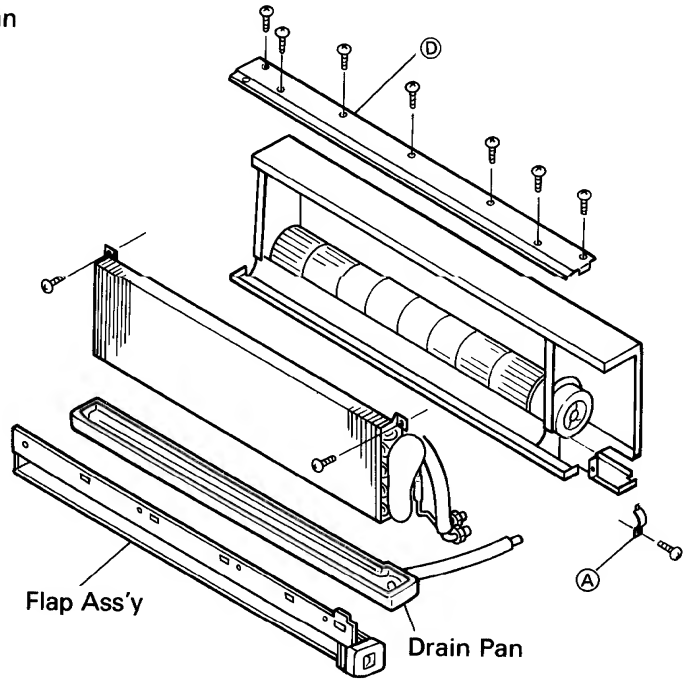


Fig. 6

4. Fan and Fan Motor—Removal

K2412W

1) As shown in Fig. 7 loosen the screws of the plastic mounting plates Ⓐ, Ⓑ and Ⓒ which secure the fan, 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.
3) Withdraw the Bearing Ass'y Ⓓ retaining the left side of the fan, by hand, then pull the fan to the left and withdraw it from the motor shaft.

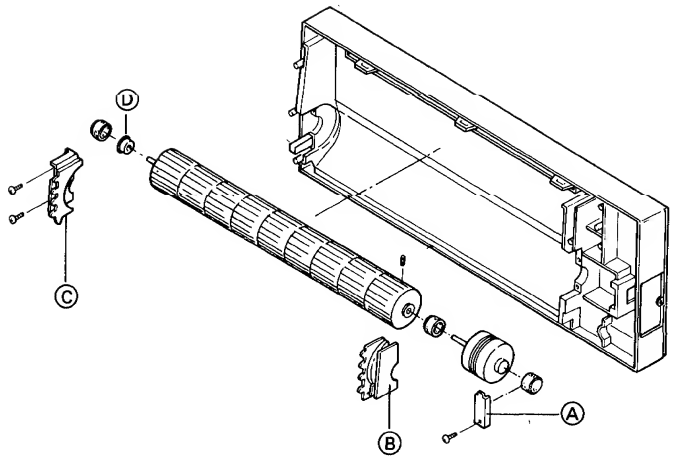


Fig. 7

K3012W, K3612W

1) Loosen the fan fixing bolts.
2) As shown in Fig. 8 loosen the four screws which secure the fan motor.
3) Pull the fan motor to the right and withdraw it from the unit.
4) Slide the fan to the right and pull out it from the bearing case retaining the left side.
5) The fan can be removed in front.

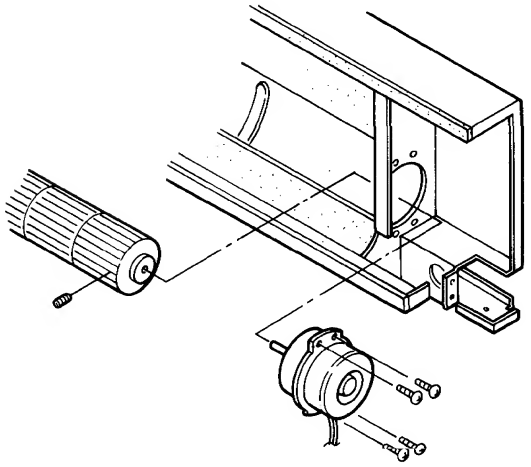


Fig. 8

OUTDOOR UNIT

5. Cabinet-Removal

1) Remove the outer panels in the order of front panel, side panel Ⓐ, and side panel Ⓑ.
2) Remove the cover plates Ⓒ and Ⓓ.
3) Remove the mounting plate. Fig. 9

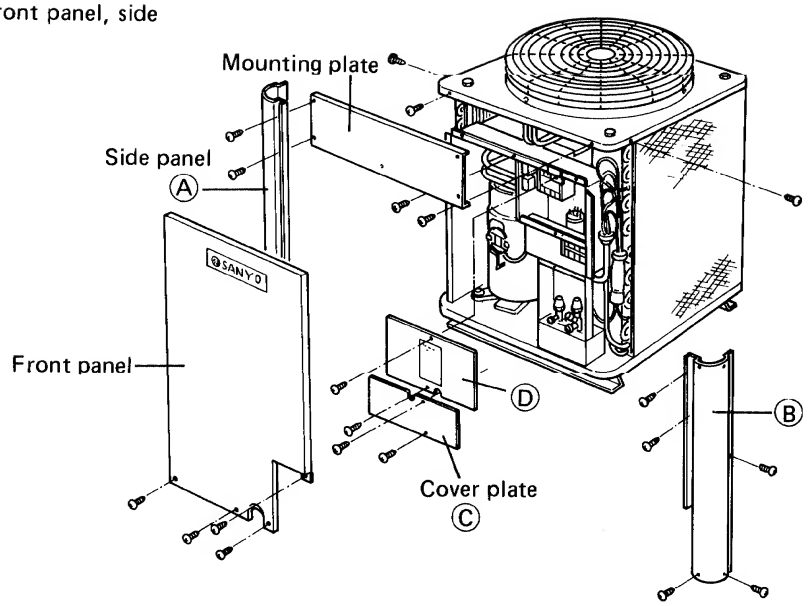


Fig. 9

6. Fan and Motor-Removal

1) Remove the guard first, and then remove two bolts ⓐ 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.

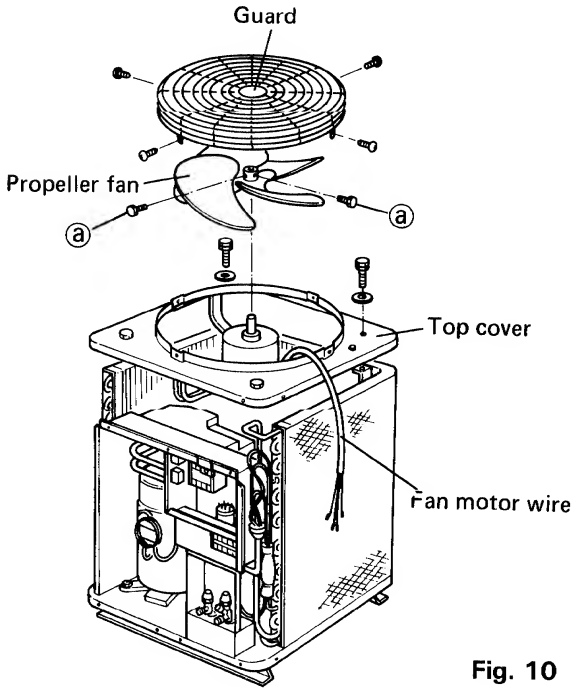


Fig. 10

7. Electrical Component Box-Removal

(1) Disconnect the following wires from the electrical component box.
   1. Compressor wire
   2. Crankcase heater wire

(2) Remove the cover plate Ⓐ and the sensor Ⓑ.

(3) The electrical compoent box can now be removed by unscrewing one screw Ⓒ. Fig. 11.

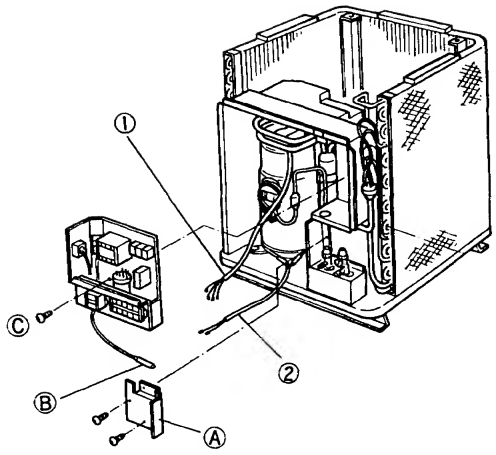


Fig. 11

8. Compressor Cover-Removal

Unfasten four screws fixing the cover Ⓐ. The cover can be removed by lifting it upward. Fig. 12.

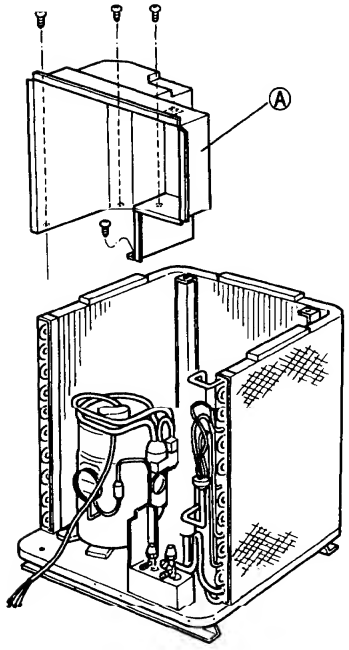


Fig. 12

9. Compressor-Removal

Take apart three joints Ⓐ, Ⓑ and Ⓒ brazed to the compressor by brazing torch (Fig. 13)

CAUTION

1) Many wires have to be removed. When removing wires, carefully check the electric diagram on the rear side of the cover plate Ⓓ Fig. 9.
   Reconnect the wires correctly after replacing the compressor.
2) Three sections of the replacement compressor Ⓐ, Ⓑ and Ⓒ are sealed to avoid entry of dust and water. Remove this seals, then connect to the unit tubing when replacing the compressor Fig. 14.

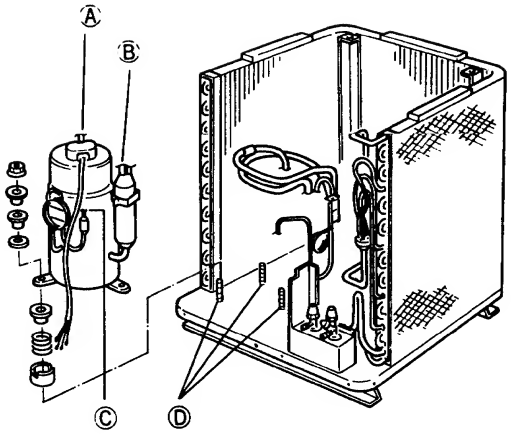


Fig. 13

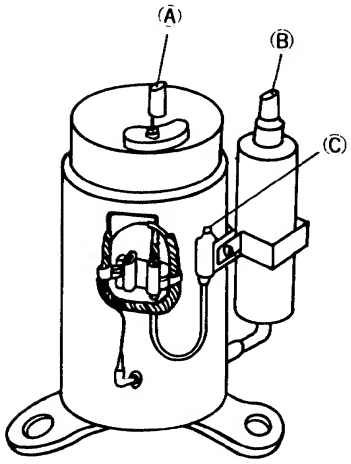
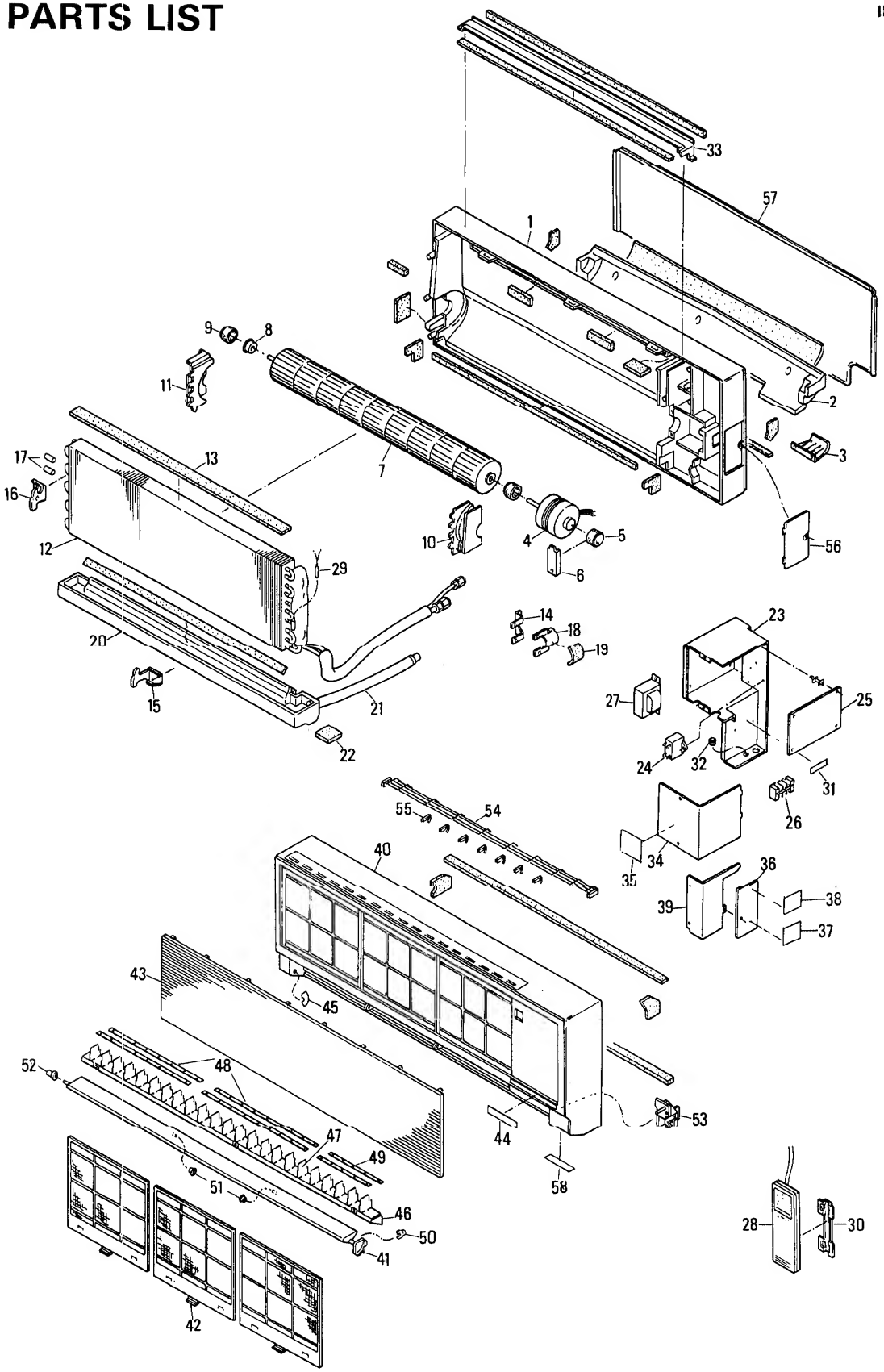


Fig. 14

16. 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
1	623 096 8592	Frame Ass'y (incl. No. 2, 3)	1
2	623 096 8608	Insulation, Rear Cover	1
3	623 050 5995	Mounting Plate	2
4	623 096 4594	Fan Motor Ass'y KFH4Q-31A6P	1
5	623 092 9463	Cushion Rubber	2
6	623 096 4600	Mounting Plate, Fan Motor	1
7	623 092 9487	Cross-Flow Fan Ass'y	1
8	623 042 0069	Bearing Housing Ass'y	1
9	623 053 2182	Cushion Rubber, Fan Motor	1
10	623 096 4617	Cover Plate	1
11	623 096 4624	Cover Plate	1
12	623 096 4631	Evaporator Ass'y	1
13	623 096 8950	Insulation, Evaporator	1
14	623 092 9531	Mounting Plate	1
15	623 050 5636	Mounting Plate	1
16	623 050 5704	Mounting Plate	1
17	623 096 8967	Sleeve	2
18	623 092 9548	Mounting Plate	1
19	623 096 8974	Packing	1
20	623 096 4662	Drain Pan Ass'y	1
21	623 096 3931	Drain Pipe Ass'y	1
22	623 096 8981	Packing	1
23	623 096 4679	Elec. Component Box Ass'y	1
24	623 001 2066	Fixed Capacitor 440V 1.8MFD	1
25	623 092 9579	P.C.B. Ass'y POW-K243C5	1
26	623 096 3979	Terminal Base JTU20-3	1
27	623 096 4636	Transformer Ass'y ATR-J122U	1
28	623 096 4037	Remote Control Unit RCS-K2412W	1
29	623 096 4709	Thermistor Ass'y PTC-51H-S3	1
30	623 038 4095	Mounting Plate	1
31	623 060 3561	Label	1
32	623 038 3395	Bushing	1
33	623 096 4716	Partition Plate Ass'y	1
34	623 096 4723	Cover Plate	1
35	623 096 4730	Elec. Wiring Diagram	1
36	623 096 4747	Cover Terminal Ass'y (incl. No. 37, 38)	1
37	623 084 8269	Label	1
38	623 074 1782	Label	1
39	623 096 4754	Cover Plate Ass'y	1
40	623 096 6840	Grille Ass'y (incl. No. 41~55)	1
41	623 096 8615	Flap	1
42	623 096 6871	Air Filter Ass'y	3
43	623 096 8622	Ornamental Plate	1
44	623 092 9081	Badge	1
45	623 093 5747	Label	1
46	623 096 4761	Ornamental Plate Ass'y (incl. No. 47~49)	1
47	623 096 8639	Blade Air Guid	23
48	623 096 8646	Fastener Blade	4
49	623 096 8653	Fastener Blade	2
50	623 092 9647	Fastener Blade	1

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

ATTENTION !

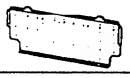
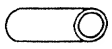
To ensure correct parts supply, please let us know followings, when you make service parts order:

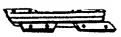
1. Part No. 2. Description 3. Q'ty 4. Volts-Hz-Ph 5. Product Model No.

Key No.	Part No.	Description	Q'ty
51	623 049 1502	Mounting	2
52	623 049 1472	Mounting	1
53	623 096 4778	Mounting Plate, Blade	1
54	623 096 4785	Guard Ass'y	1
55	623 096 4792	Mounting Plate	7
56	623 096 4808	Cover Plate	1
57	623 092 9685	Hook Plate	1
58	623 096 4815	Name Plate	1
•	623 096 8660	Installation Instructions	1
•	623 096 6741	Operation Manual	1

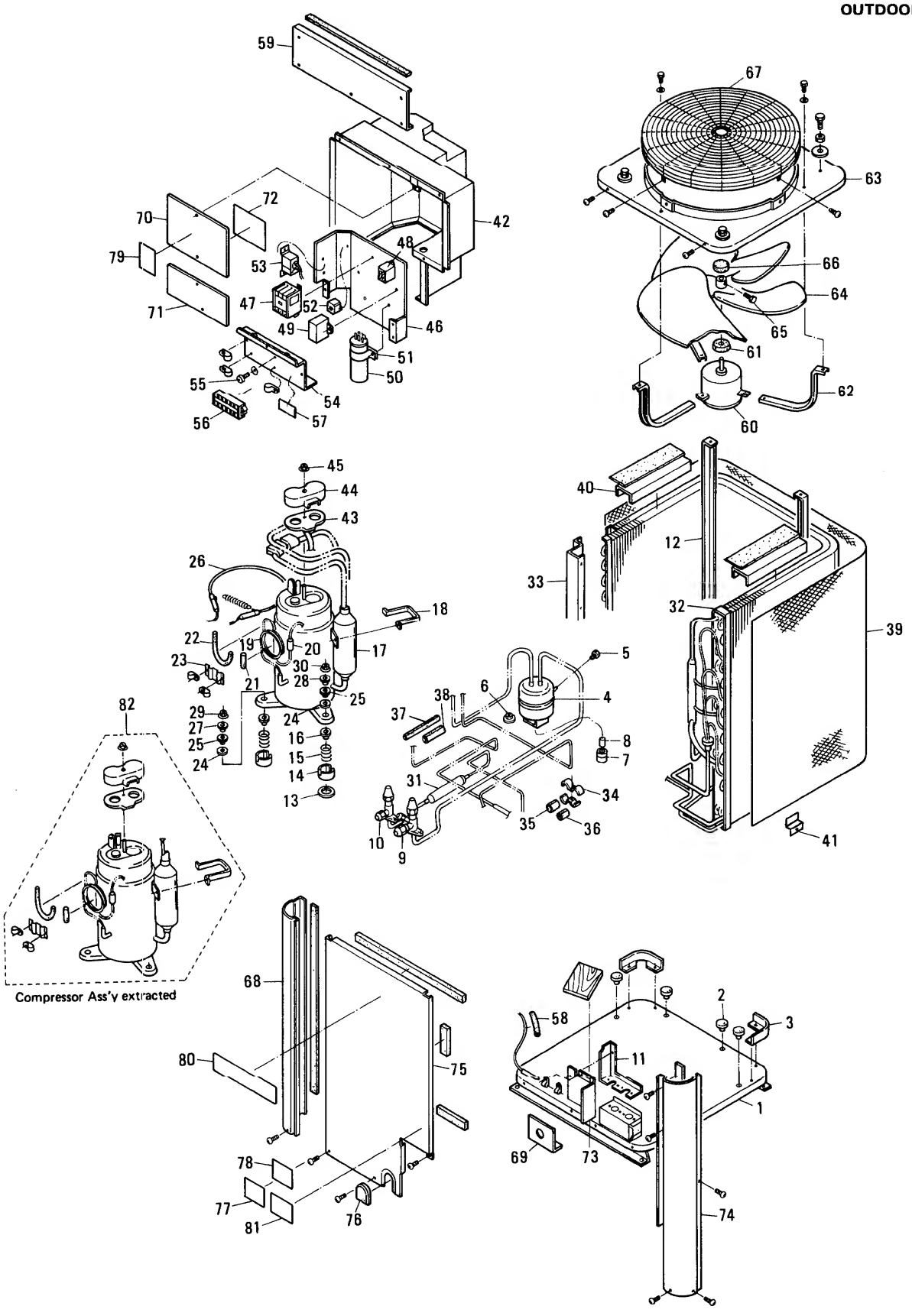
NOTE: Metal and plastic parts will be supplied basically with necessary heat insulation pads or packing.

■ Accessories Supplied with Unit for Installation

No.	Parts Name	Figure	Q'ty
1	Rear Panel		1
2	Rawl Plug		10
3	Cover		1
4	Screw	 TOTA 4 × 16 mm	10
5	Drain Hose Adaptor		1

No.	Parts Name		Figure	Q'ty
6	For Control Unit	Mounting Plate		1
7	For Control Unit	Screw	 TOTA 4 × 12 mm	2
8	For Control Unit	Code Clip		2
9	For Control Unit	Screw	 SATA 3 × 10 mm	2
10	Insulator			1

Key No.	Part No.	Description	Q'ty
1	623 092 9685	Rear Panel	1
2	623 045 3685	Rawl Plug	10
3	623 051 5468	Cover	1
4	623 090 8185	Screw TOTA 4X16	10
5	623 077 4391	Drain Hose Adaptor	1
6	623 038 4095	Mounting Plate	1
7	623 093 1473	Screw TOTA 4X12	2
8	623 038 2558	Cord Clip	2
9	623 093 0209	Screw SATA 3X10	2
10	623 052 8086	Insulator	1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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
1	623 067 4189	Bottom Plate Ass'y	1
2	623 073 3831	Sheet Rubber	4
3	623 078 5205	Mounting Plate	2
4	623 070 8495	Accumulator Ass'y	1
5	623 081 4554	Fusible Plug	1
6	623 029 6534	Nut Special Ass'y	1
7	623 077 2373	Cushion Rubber	1
8	624 081 8054	Sleeve	1
9	623 070 6156	Valve Ass'y 5/8 in.	1
10	623 070 9256	Valve Ass'y 1/4 in.	1
11	623 072 2798	Cover Plate	1
12	623 067 4936	Frame Ass'y	2
13	623 093 6423	Washer	1
14	623 035 0144	Cushion Rubber	3
15	623 034 5836	Spring	3
16	623 078 4819	Protection Rubber	3
17	623 070 8488	Accumulator Ass'y	1
18	623 034 9452	Band Mounting	1
19	623 096 9018	Capillary Tube	1
20	623 043 4059	Strainer Ass'y	1
21	623 051 0128	Packing	1
22	623 065 2422	Mounting Rubber, Capillary	1
23	623 050 5742	Mounting Plate	1
24	623 078 4826	Protection Rubber	3
25	623 078 4376	Spacer	3
26	623 096 4839	Heater Ass'y CH5700 230V 30W	1
27	623 078 4802	Protection Rubber	2
28	623 078 4833	Protection Rubber	1
29	623 068 1125	Nut Special Ass'y	2
30	623 029 6558	Nut Special Ass'y	1
31	623 043 3588	Dehydrater Ass'y	1
32	623 068 9848	Condenser Ass'y (incl. No. 33)	1
33	623 080 3435	Mounting Plate	1
34	623 081 5940	Mounting Plate, Tube	2
35	623 081 5834	Mounting Rubber, Tube	1
36	623 081 5605	Mounting Rubber, Tube	1
37	623 081 5582	Mounting Rubber, Tube	1
38	623 081 5810	Mounting Rubber, Tube	1
39	623 071 9910	Guard	1
40	623 078 5182	Mounting Plate Ass'y	2
41	623 078 5281	Mounting Plate	3
42	623 068 2771	Cover Ass'y	1
43	626 040 0338	Gasket Terminal	1
44	626 040 0673	Cover Terminal	1
45	626 040 0956	Nut, Compressor	1
46	623 071 0733	Elec. Component Box Ass'y	1
47	623 096 4884	Relay FMCA-1UL	1
48	623 002 4809	Relay MY2F-T1-USTS	1
49	623 001 1878	Fixed Capacitor 440V 5MFD	1
50	623 001 2530	Fixed Capacitor 400V 35MFD	1

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

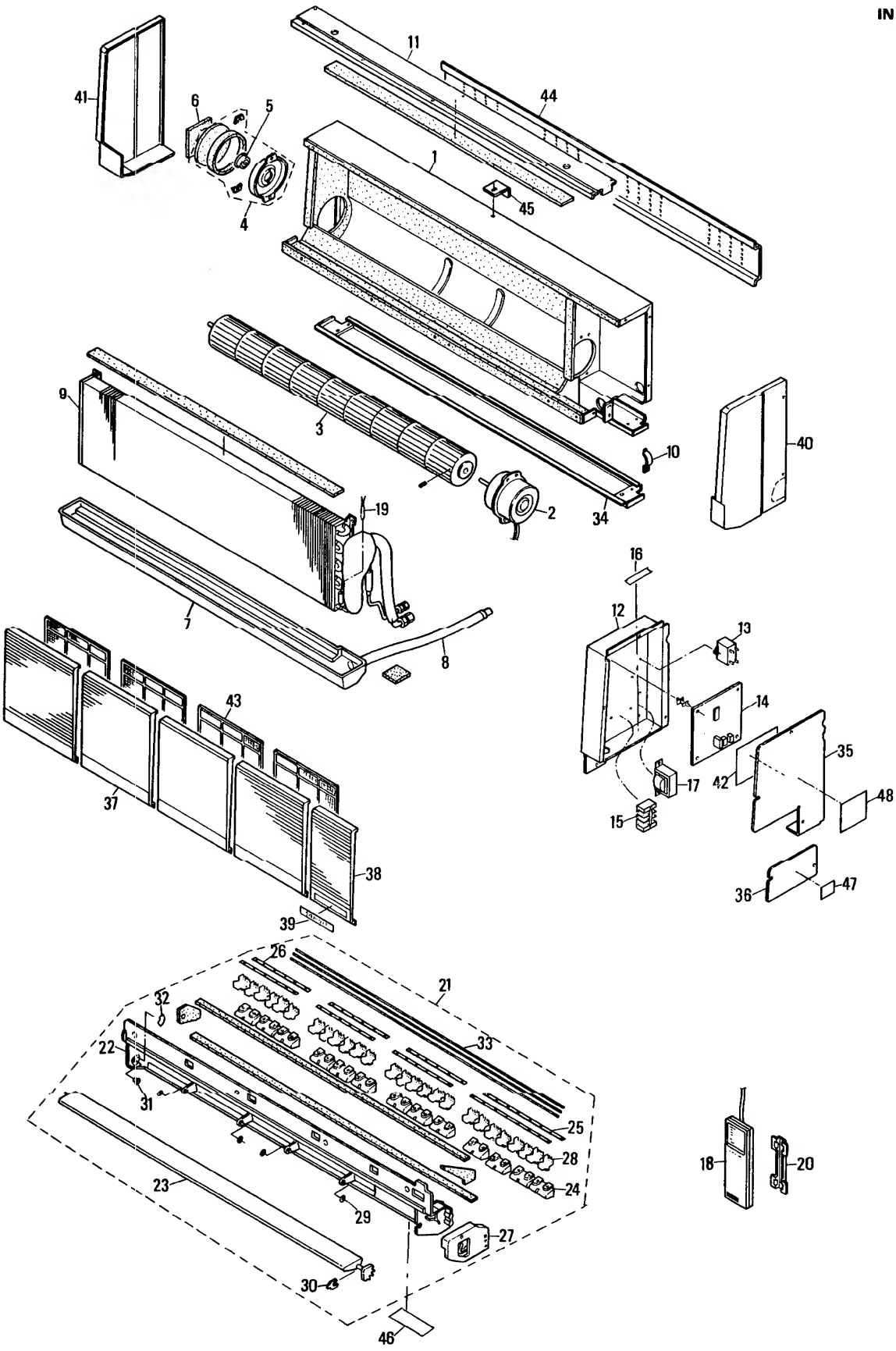
ATTENTION !

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
51	623 054 7964	Clip, Capacitor	1
52	626 100 0049	Thermistor TDK 101YV	1
53	623 002 9231	Thermostat YTB-4U201F	1
54	623 071 0962	Elec. Component Box Ass'y	1
55	623 051 6977	Screw Special M5X12	1
56	623 003 3085	Terminal Base JTU30-6	1
57	623 060 3561	Label	1
58	623 081 4622	Mounting Rubber, Capillary	1
59	623 076 7928	Mounting Plate Ass'y	1
60	623 096 4907	Fan Motor Ass'y KFC8S-101A6P	1
61	623 053 2465	Cover Rubber	1
62	623 068 6410	Support Motor Ass'y	3
63	623 066 5682	Top Cover Ass'y	1
64	623 068 3631	Propeller Fan Ass'y (incl. No. 65)	1
65	623 079 9431	Set Screw, Blower M6 L16	1
66	623 078 3935	Cap	1
67	623 066 8997	Guard Ass'y	1
68	623 066 2612	Side Panel Ass'y	1
69	623 078 5519	Mounting Plate	1
70	623 081 9788	Cover Plate	1
71	623 081 9795	Cover Plate	1
72	623 096 4921	Elec. Wiring Diagram	1
73	623 072 3030	Cover Plate	1
74	623 066 2629	Side Panel Ass'y	1
75	623 066 1370	Front Panel Ass'y (Incl. No. 76)	1
76	623 045 7690	Eyelet Rubber	1
77	623 084 8603	Label	1
78	623 084 8269	Label	1
79	623 074 1782	Label	1
80	623 089 0367	Mark	1
81	623 096 4938	Name Plate	1
82	623 096 5904	Compressor Ass'y C-R170H6S	1

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

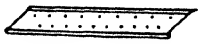
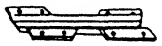
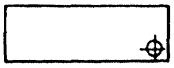
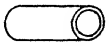
To ensure correct parts supply, please let us know followings, when you make service parts order:

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

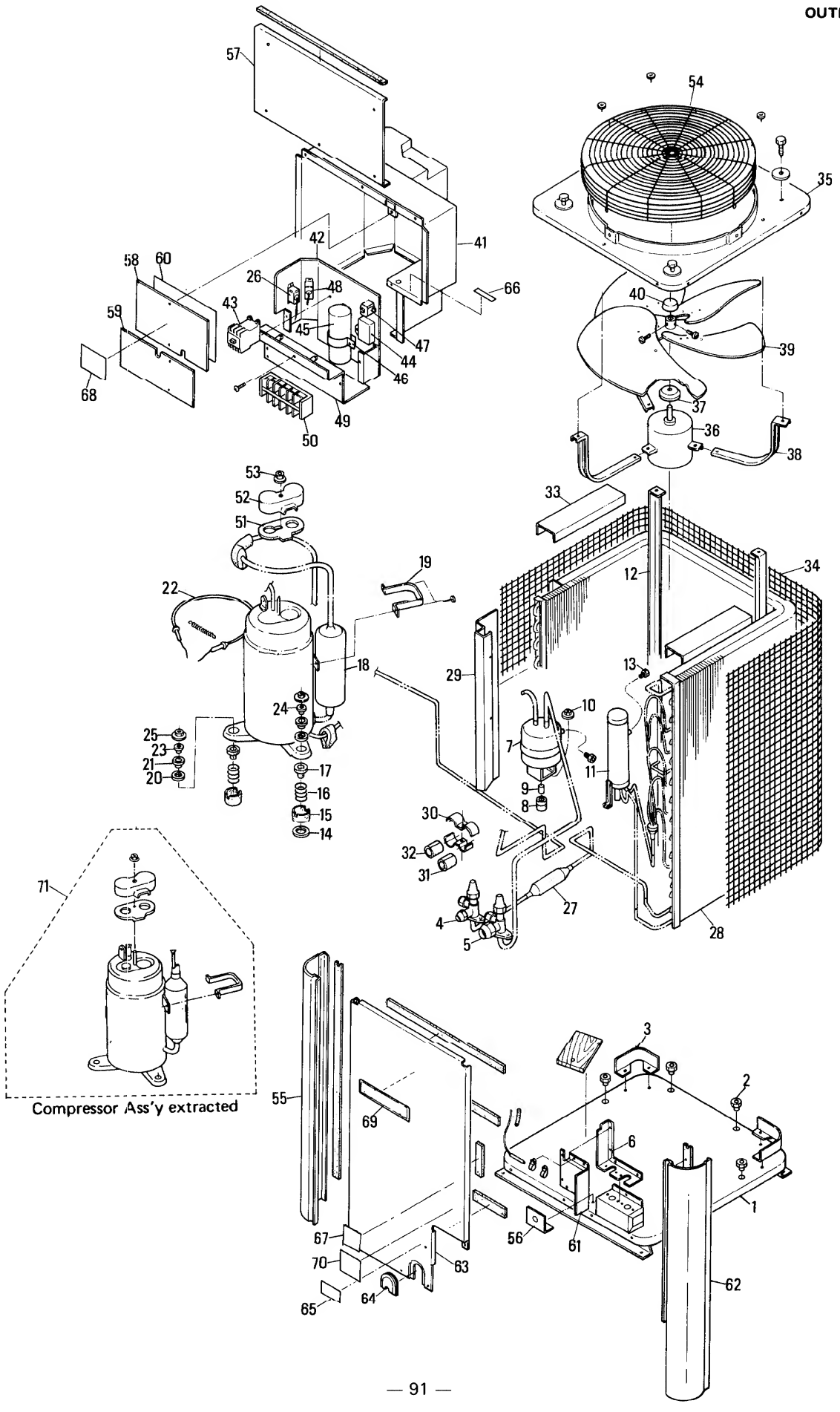
Key No.	Part No.	Description	Q'ty
1	623 099 5963	Rear Panel Ass'y	1
2	623 099 4874	Fan Motor Ass'y SFG4T-41A6P	1
3	623 093 5860	Cross-Flow Fan Ass'y	1
4	623 099 5970	Mounting Ass'y, Bearing	1
5	623 042 0083	Bearing Housing Ass'y	1
6	623 099 5987	Insulation Cover	1
7	623 093 5884	Drain Pan Ass'y	1
8	623 096 3931	Drain Pipe Ass'y	1
9	623 098 7791	Evaporator Ass'y	1
10	623 093 5914	Band	1
11	623 099 5994	Top Plate Ass'y	1
12	623 098 7944	Elec. Component Box Ass'y	1
13	623 001 1861	Fixed Capacitor 440V 4.5MF	1
14	623 092 9579	P.C.B. Ass'y POW-K243G5	1
15	623 096 3979	Terminal Base JTU20-3	1
16	623 060 3561	Label	1
17	623 099 4881	Transformer Ass'y ATR-J122U	1
18	623 096 4037	Remote Control Switch RCS-K2412W	1
19	623 099 4898	Thermistor As'y PTC-51H-S3	1
20	623 038 4095	Mounting Plate	1
21	623 099 6168	Support Louver Ass'y (incl. No. 22~33)	1
22	623 099 6007	Support Louver Ass'y	1
23	623 098 7883	Flap	1
24	623 098 7890	Mounting Plate, Blade	13
25	623 098 7906	Fastener Blade	2
26	623 098 7913	Fastener Blade	6
27	623 098 7920	Mounting Plate, Blade	1
28	623 098 7937	Blade Air Guide	26
29	623 096 3337	Mounting	4
30	623 049 1533	Mounting	1
31	623 049 1472	Mounting	1
32	623 093 5747	Label	1
33	623 099 6175	Wire	3
34	623 093 6027	Bottom Plate	1
35	623 098 7951	Cover Plate	1
36	623 098 7968	Cover Terminal	1
37	623 098 7845	Ornamental Plate	4
38	623 098 7852	Ornamental Plate	1
39	623 092 9081	Badge	1
40	623 098 7869	Side Panel (R)	1
41	623 098 7876	Side Panel (L)	1
42	623 099 8575	Elec. Wiring Diagram	1
43	623 096 6871	Air Filter Ass'y	4
44	623 072 2170	Hook Plate	1
45	623 072 2941	Cover Plate	1
46	623 098 7999	Name Plate	1
47	623 084 8269	Label	1
48	623 074 1782	Label	1
•	623 098 8002	Installation Instructions	1
•	623 096 6741	Operation Manual	1

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

Accessories Supplied with Unit for Installation

No.	Parts Name	Figure	Q'ty	No.	Parts Name		Figure	Q'ty
1	Wall Fixture		1	6	For Control Unit	Mounting Plate		1
2	Full-scale Installation Diagram		1	7		Screw	 TOTA 4 x 12mm	2
3	L-shaped Tube		1	8		Code Clip		2
4	Mounting Plate		1	9		Screw	 SATA 3 x 10mm	2
5	Screw	 TOTA 4 x 25mm	20	10	Insulator			2
				11	Drain Hose Adaptor			1

Key No.	Part No.	Description	Q'ty
1	623 072 2170	Wall Fixture	1
2	623 093 1480	Full-scale Installation Diagram	1
3	623 093 1497	L-shaped Tube	1
4	623 072 2941	Mounting Plate	1
5	623 093 1503	Screw TOTA 4X25	20
6	623 038 4095	Mounting Plate	1
7	623 093 1473	Screw TOTA 4X12	2
8	623 038 2558	Cord Clip	2
9	623 093 0209	Screw SATA 3X10	2
10	623 079 4634	Insulator	2
11	623 077 4391	Drain Hose Adaptor	1



Compressor Ass'y extracted

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
1	623 067 4189	Bottom Plate Ass'y	1
2	623 073 3831	Sheet Rubber	4
3	623 078 5205	Mounting Plate	2
4	623 070 5128	Valve Ass'y 3/8 in.	1
5	623 070 6156	Valve Ass'y 5/8 in.	1
6	623 072 2798	Cover Plate	1
7	623 070 8495	Accumulator Ass'y	1
8	623 077 2373	Cushion Rubber	1
9	624 081 8054	Sleeve	1
10	623 029 6534	Nut Special Ass'y	1
11	623 069 0523	Receiver Tank Ass'y	1
12	623 067 4943	Frame Ass'y	2
13	623 081 4554	Fusible Plug	2
14	623 000 0209	Washer	1
15	623 035 0144	Cushion Rubber	3
16	623 034 5836	Spring	3
17	623 078 4819	Protection Rubber	3
18	623 070 8488	Accumulator Ass'y	1
19	623 034 9452	Band Mounting	1
20	623 078 4826	Protection Rubber	3
21	623 078 4376	Spacer	3
22	623 099 4959	Heater Ass'y CH5700 230V 30W	1
23	623 078 4802	Protection Rubber	2
24	623 078 4833	Protection Rubber	1
25	623 068 1125	Nut Special Ass'y	3
26	623 001 8198	Switch FTB-2UC01	1
27	623 043 3465	Dehydrater Ass'y	1
28	623 069 5351	Evaporator Ass'y	1
29	623 080 3565	Mounting Plate	1
30	623 061 5940	Mounting Plate, Tube	2
31	623 081 5605	Mounting Rubber, Tube	1
32	623 081 5865	Mounting Rubber, Tube	1
33	623 078 5199	Mounting Plate	2
34	623 071 9859	Guard	1
35	623 066 5682	Top Cover Ass'y	1
36	623 099 4911	Fan Motor Ass'y KFC6S-161A6P	1
37	623 053 2465	Cover Rubber	1
38	623 068 6410	Support Motor Ass'y	3
39	623 068 3693	Propeller Fan Ass'y	1
40	623 078 3935	Cap	1
41	623 068 2832	Cover Ass'y	1
42	623 071 1075	Elec. Component Box Ass'y	1
43	623 096 4884	Relay FMCA-1UL	1
44	623 001 1854	Fixed Capacitor 440V 4MF	1
45	623 001 2721	Fixed Capacitor 370V 40MF	1
46	623 082 0838	Mounting Plate	1
47	626 100 0049	Thermistor TDK 101YV	1
48	623 096 5218	Thermostat, YTB-4U305F	1
49	623 071 1082	Elec. Component Box Ass'y	1
50	623 003 3085	Terminal Base JTU30-6	1

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

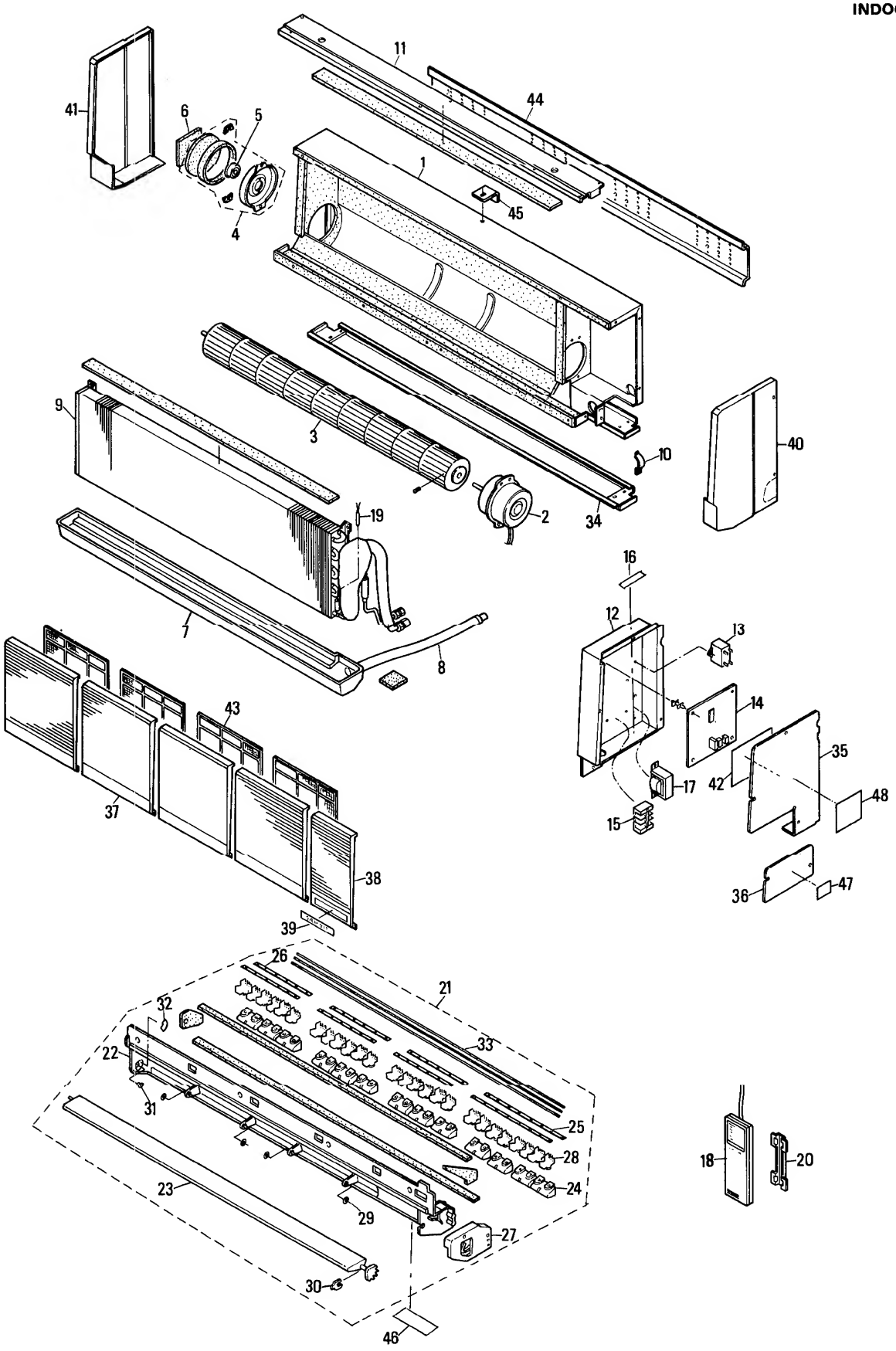
ATTENTION !

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
51	626 040 0338	Gasket Terminal	1
52	626 040 0673	Cover Terminal	1
53	626 040 0956	Nut, Compressor	1
54	623 066 8997	Guard Ass'y	1
55	623 066 2728	Side Panel Ass'y (L)	1
56	623 078 5519	Mounting Plate	1
57	623 076 7997	Mounting Plate Ass'y	1
58	623 082 0074	Cover Plate	1
59	623 082 0081	Cover Plate	1
60	623 098 8057	Elec. Wiring Diagram	1
61	623 072 3030	Cover Plate	1
62	623 066 2742	Side Panel Ass'y (R)	1
63	623 066 1486	Front Panel Ass'y	1
64	623 045 7690	Eyelet Rubber	1
65	623 084 8436	Label	1
66	623 060 3561	Label	1
67	623 084 8269	Label	1
68	623 074 1782	Label	1
69	623 089 0367	Mark	1
70	623 098 8010	Name Plate	1
71	623 098 8019	Compressor Ass'y C-R191H6S	1

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

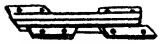
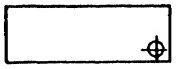
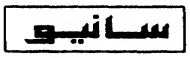
To ensure correct parts supply, please let us know followings, when you make service parts order:

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

Key No.	Part No.	Description	Q'ty
1	623 099 6182	Rear Panel Ass'y	1
2	623 099 4935	Fan Motor Ass'y SFG4T-51A6P	1
3	623 093 5860	Cross-Flow Fan Ass'y	1
4	623 099 5970	Mounting Ass'y, Bearing	1
5	623 042 0083	Bearing Housing Ass'y	1
6	623 099 5987	Insulation Cover	1
7	623 093 5884	Drain Pan Ass'y	1
8	623 096 3931	Drain Pipe Ass'y	1
9	623 098 8064	Evaporator Ass'y	1
10	623 093 5914	Band	1
11	623 099 5994	Top Plate Ass'y	1
12	623 098 7944	Elec. Component Box Ass'y	1
13	623 001 1854	Fixed Capacitor 440V 4MF	1
14	623 092 9579	P.C.B. Ass'y POW-K2412W	1
15	623 096 3979	Terminal Base JTU20-3	1
16	623 060 3561	Label	1
17	623 099 4881	Transformer Ass'y ATR-J122U	1
18	623 096 4037	Remote Control Switch RCS-K2412W	1
19	623 099 4898	Thermistor Ass'y PTC-51H-S3	1
20	623 038 4095	Mounting Plate	1
21	623 099 6168	Support Louver Ass'y (incl. No. 22~33)	1
22	623 099 6007	Support Louver Ass'y	1
23	623 098 7883	Support Louver Ass'y	1
24	623 098 7890	Mounting Plate, Blade	13
25	623 098 7906	Fastener Blade	2
26	623 098 7913	Fastener Blade	6
27	623 098 7920	Mounting Plate, Blade	1
28	623 098 7937	Blade Air Guide	26
29	623 096 3337	Mounting	4
30	623 049 1533	Mounting	1
31	623 049 1472	Mounting	1
32	623 093 5747	Label	1
33	623 099 6175	Wire	3
34	623 093 6027	Bottom Plate	1
35	623 098 7951	Cover Plate	1
36	623 098 7968	Cover Terminal	1
37	623 098 7845	Ornamental Plate	4
38	623 098 7852	Ornamental Plate	1
39	623 092 9081	Badge	1
40	623 098 7869	Side Panel (R)	1
41	623 098 7876	Side Panel (L)	1
42	623 099 8582	Elec. Wiring Diagram	1
43	623 096 6871	Air Filter Ass'y	4
44	623 072 2170	Hook Plate	1
45	623 072 2941	Cover Plate	1
46	623 098 8095	Name Plate	1
47	623 084 8269	Label	1
48	623 074 1782	Label	1
•	623 098 8002	Installation Instructions	1
•	623 096 6741	Operation Manual	1

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

Accessories Supplied with Unit for Installation

No.	Parts Name	Figure	Q'ty	No.	Parts Name		Figure	Q'ty
1	Wall Fixture		1	6	For Control Unit	Mounting Plate		1
2	Full-scale Installation Diagram		1	7		Screw	 TOTA 4 x 12mm	2
3	L-shaped Tube Mounting Plate		10	8		Code Clip		2
4	Mounting Plate		1	9		Screw	 SATA 3 x 10mm	2
5	Screw	 TOTA 4 x 25mm	20	10	Insulator			1
				11	Label (Arabic Letter)			1

Key No.	Part No.	Description	Q'ty
1	623 072 2170	Wall Fixture	1
•	623 093 1480	Full-scale Installation Diagram	1
3	623 093 1510	L-shaped Tube	1
4	623 072 2941	Mounting Plate	1
5	623 093 1503	Screw TOTA 4X25	20
6	623 038 4095	Mounting Plate	1
7	623 093 1473	Screw TOTA 4X12	2
8	623 038 2558	Cord Clip	2
9	623 093 0209	Screw SATA 3X10	2
10	623 079 4634	Insulator	2
11	623 077 4391	Drain Hose Adaptor	1

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

Key No.	Part No.	Description	Q'ty
1	623 067 4189	Bottom Plate Ass'y	1
2	623 073 3831	Sheet Rubber	4
3	623 078 5205	Mounting Plate	2
4	623 070 5128	Valve Ass'y 3/8 in.	1
5	623 070 6590	Valve Ass'y 3/4 in.	1
6	623 072 2798	Cover Plate	1
7	623 070 8495	Accumulator Ass'y	1
8	623 077 2373	Cushion Rubber	1
9	624 081 8054	Sleeve	1
10	623 029 6534	Nut Special Ass'y	1
11	623 069 0523	Receiver Tank Ass'y	1
12	623 067 4943	Frame Ass'y	2
13	623 081 4554	Fusible Plug	2
14	623 000 0209	Washer	1
15	623 035 0144	Cushion Rubber	3
16	623 034 5836	Spring	3
17	623 078 4819	Protection Rubber	3
18	623 070 8488	Accumulator Ass'y	1
19	623 034 9452	Band Mounting	1
20	623 080 9871	Capillary Tube	1
21	623 043 4059	Strainer Ass'y	1
22	623 051 0128	Packing	1
23	623 065 2422	Mounting Rubber, Capillary	1
24	623 050 5742	Mounting Plate	1
25	623 078 4826	Protection Rubber	3
26	623 078 4376	Spacer	3
27	623 099 4959	Heater Ass'y CH5700 230V 30W	1
28	623 078 4802	Protection Rubber	2
29	623 078 4833	Protection Rubber	1
30	623 068 1125	Nut Special Ass'y	3
31	623 001 8198	Switch FTB-2UC01	1
32	623 043 3465	Dehydrater Ass'y	1
33	623 069 5351	Evaporator Ass'y	1
34	623 080 3565	Mounting Plate	1
35	623 081 5940	Mounting Plate, Tube	2
36	623 081 5605	Mounting Rubber, Tube	1
37	623 081 5865	Mounting Rubber, Tube	1
38	623 078 5199	Mounting Plate	2
39	623 071 9859	Guard	1
40	623 066 5682	Top Cover Ass'y	1
41	623 099 4911	Fan Motor Ass'y KFC6S-161A6P	1
42	623 053 2465	Cover Rubber	1
43	623 068 6410	Support Motor Ass'y	3
44	623 068 3693	Propeller Fan Ass'y	1
45	623 078 3935	Cap	1
46	623 068 2832	Cover Ass'y	1
47	623 071 1075	Elec. Component Box Ass'y	1
48	623 002 5059	Relay FMCA-1SUL	1
49	623 001 1854	Fixed Capacitor 440V 4MF	1
50	623 001 2721	Fixed Capacitor 370V 40MF	1

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
51	623 082 0838	Mounting Plate	1
52	626 100 0049	Thermistor TDK 101YV	1
53	623 096 5218	Thermostat YTB-4U305F	1
54	623 071 1082	Elec. Component Box Ass'y	1
55	623 003 3085	Terminal Base JTU30-6	1
56	626 040 0338	Gasket Terminal	1
57	626 040 0673	Cover Terminal	1
58	626 040 0956	Nut, Compressor	1
59	623 066 8997	Guard Ass'y	1
60	623 066 2728	Side Panel Ass'y (L)	1
61	623 078 5519	Mounting Plate	1
62	623 076 7997	Mounting Plate Ass'y	1
63	623 082 0074	Cover Plate	1
64	623 082 0081	Cover Plate	1
65	623 098 8118	Elec. Wiring Diagram	1
66	623 072 3030	Cover Plate	1
67	623 066 2742	Side Panel Ass'y (R)	1
68	623 066 1486	Front Panel Ass'y	1
69	623 045 7690	Eyelet Rubber	1
70	623 064 8436	Label	1
71	623 060 3561	Label	1
72	623 084 8269	Label	1
73	623 074 1782	Label	1
74	623 089 0367	Mark	1
75	623 098 8101	Name Plate	1
76	623 043 7517	Compressor Ass'y (80658946)	1

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

For parts or service contact

SFS CORPORATION

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1989/Jul./TA/1500 Printed in Japan