

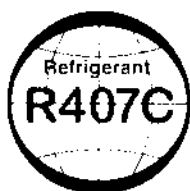
FUJI ELECTRIC

SPLIT TYPE
AIR CONDITIONER

CASSETTE type (50Hz)

SERVICE MANUAL

Models	Indoor unit	Outdoor unit
	RC-12E	RO-12ES
	RC-18E	RO-18EM



CONTENTS

SPECIFICATIONS.....	1
OUTLINE AND DIMENSIONS.....	2
CIRCUIT DIAGRAM.....	4
REFRIGERANT SYSTEM DIAGRAM.....	6
REMOTE CONTROL UNIT CIRCUIT DIAGRAM.....	7
P. C. BOARD LAYOUTS.....	8
INDOOR PRINTED CIRCUIT BOARD CIRCUIT DIAGRAM.....	9
DISASSEMBLY ILLUSTRATION.....	10
PARTS LIST.....	20

S P E C I F I C A T I O N S

TYPE	COOL	
INDOOR UNIT	RC-12E	RC-18E
OUTDOOR UNIT	RO-12ES	RO-18EM
COOLING CAPACITY (kW)	3.65 - 3.75	4.95 - 5.10

ELECTRICAL DATA

POWER SOURCE (V)	220-240	
FREQUENCY (Hz)	50	
RUNNING CURRENT (A)	6.5 - 6.6	9.2 - 9.1
INPUT WATTS (kW)	1.35 - 1.42	2.00 - 2.10
EER (kW/kW)	2.70 - 2.64	2.48 - 2.43
MOISTURE REMOVAL (ℓ/hr)	1.6	2.1
AIR CIRCULATION-Hi (m ³ /hr)	550	650

COMPRESSOR

TYPE	Hermetic type	
CODE	802 356 45 (E) 220 - 240V 50Hz	PE33VPEM (T) 220 - 240V 50Hz
REFRIGERANT R407C (g)	1,180	1,400

FAN MOTOR

POWER SOURCE (V)	240		
INDOOR UNIT	TYPE	MFA-14ETH	MFA-18ETH
	HI-SPEED (r.p.m.)	740	820
	MED-SPEED (r.p.m.)	660	740
	LO-SPEED (r.p.m.)	580	620
OUTDOOR UNIT	TYPE	MFB-14FT	MFB-30DF
	HI / LO (r.p.m.)	610 / 300	720 / 450

DIMENSIONS

INDOOR UNIT	H x W x D (mm)	235 x 580 x 580 + 70
OUTDOOR UNIT		700 x 900 x 350
GRILLE		35 x 650 x 650

WEIGHTS

INDOOR UNIT	GROSS/NET (kg)	18 / 23	18 / 23
OUTDOOR UNIT		49 / 61	59 / 71
GRILLE		2.2 / 4.3	2.2 / 4.3

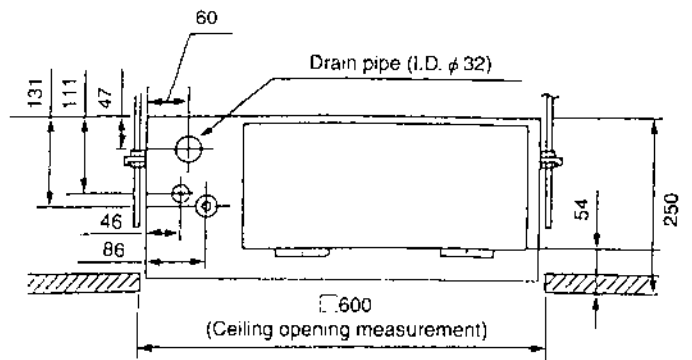
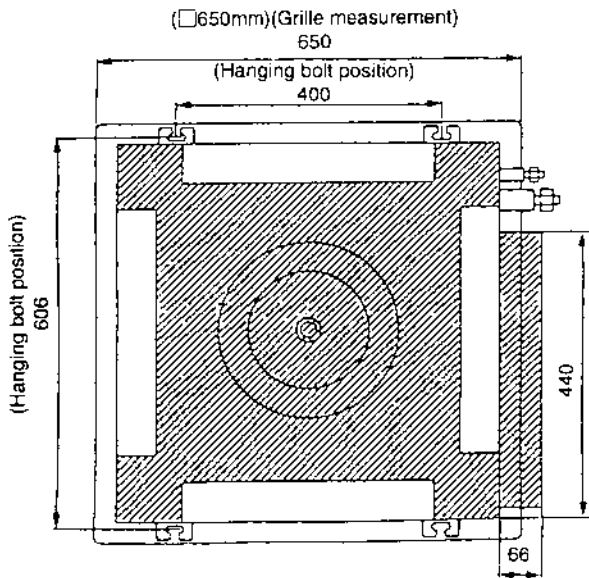
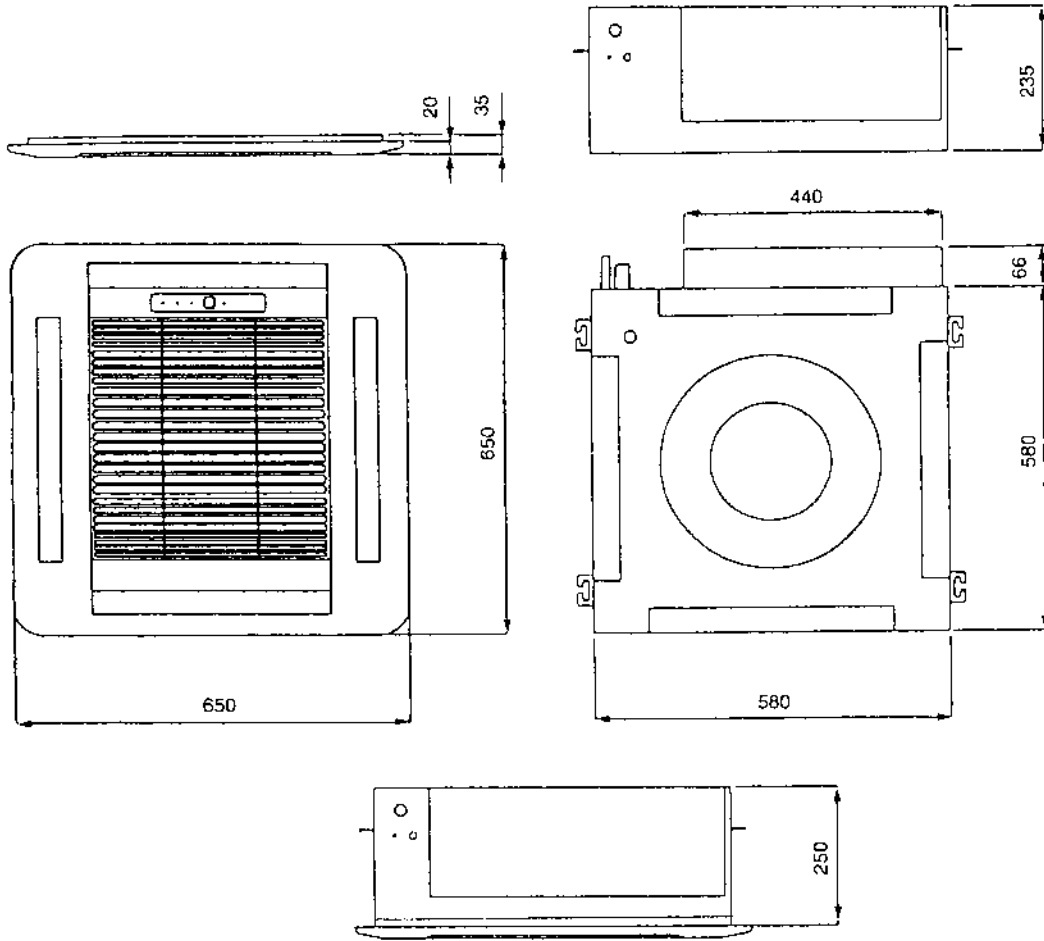
This is chargeless air conditioner

		Pipe length	5 m (16 ft.)	10 m (33 ft.)	15 m (49 ft.)	20 m (66 ft.)
FULL CHARGE AMOUNT	RC-12E	1,180 g				
	RC-18E	1,400 g				

OUTLINE AND DIMENSIONS

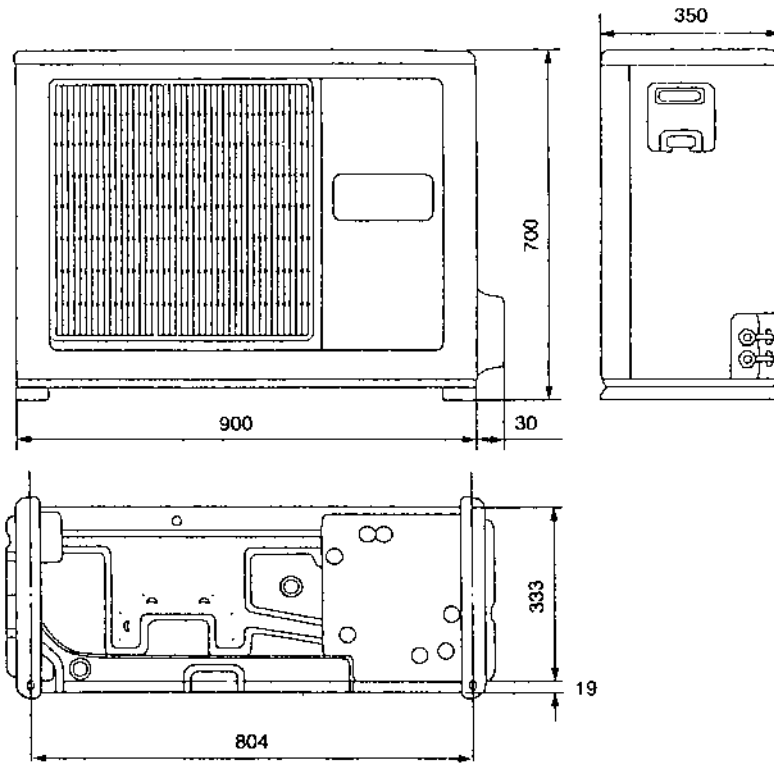
INDOOR UNIT

Unit : mm



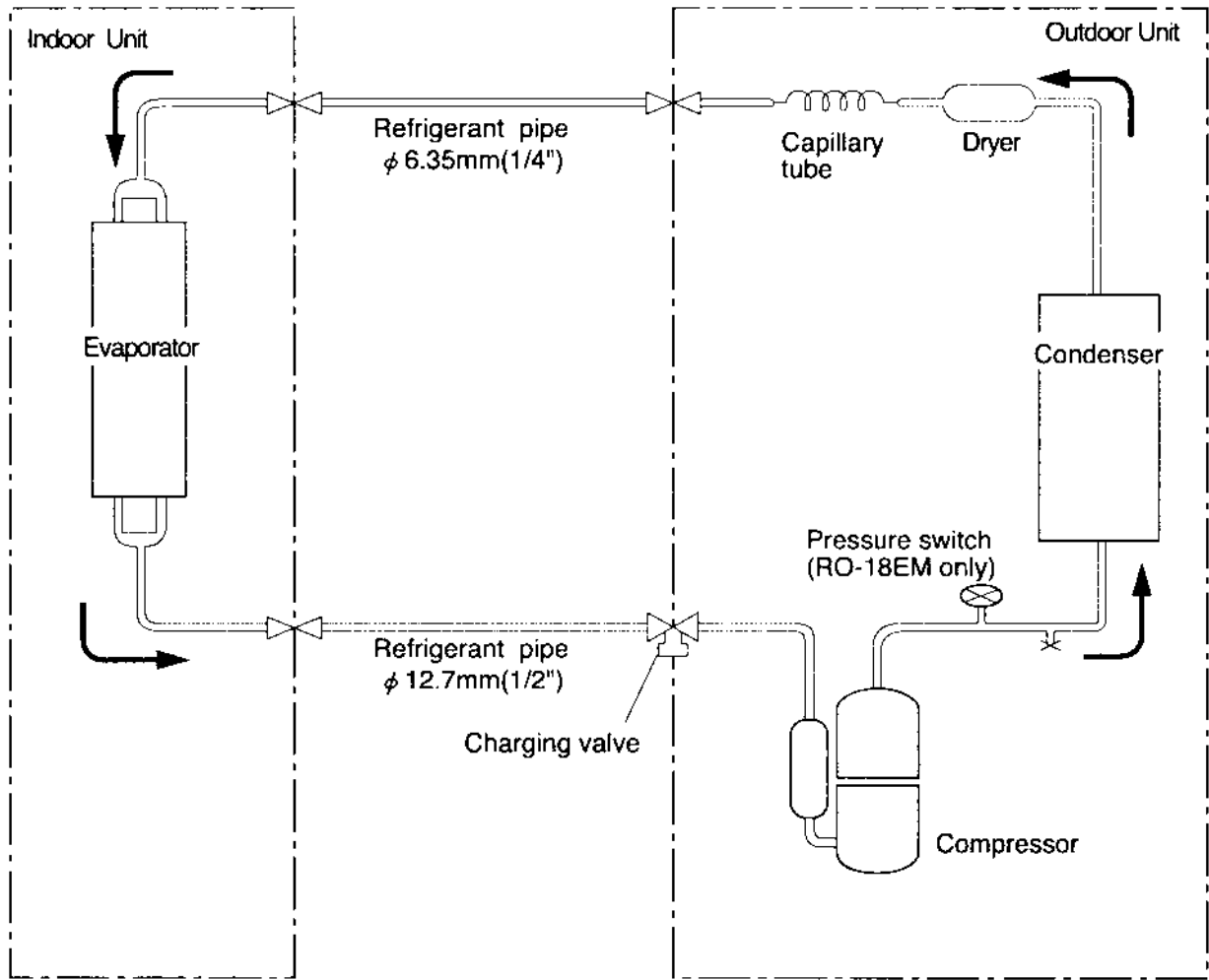
OUTDOOR UNIT

Unit : mm



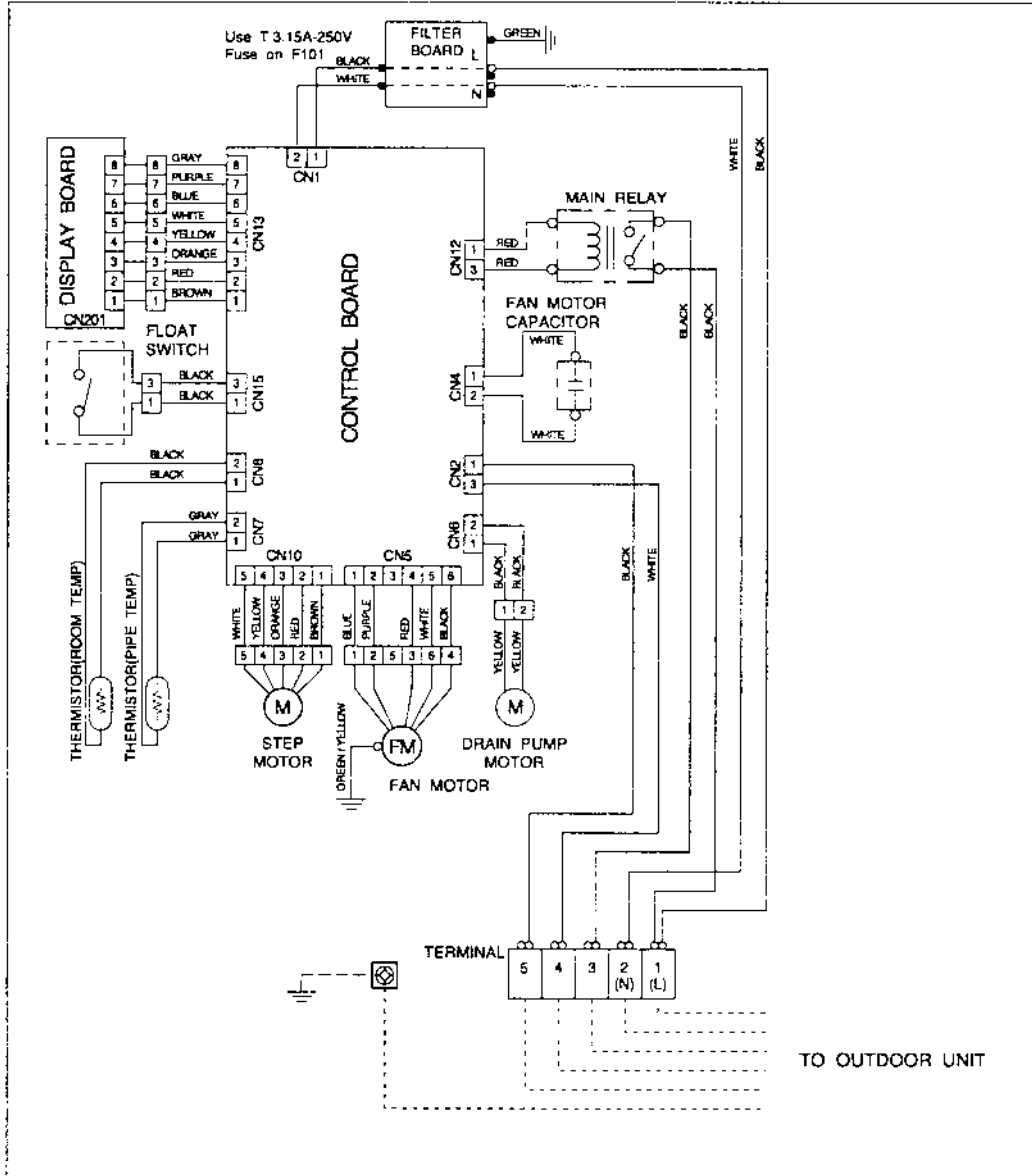
REFRIGERANT SYSTEM DIAGRAM

Models : RC-12E / RO-12ES
RC-18E / RO-18EM

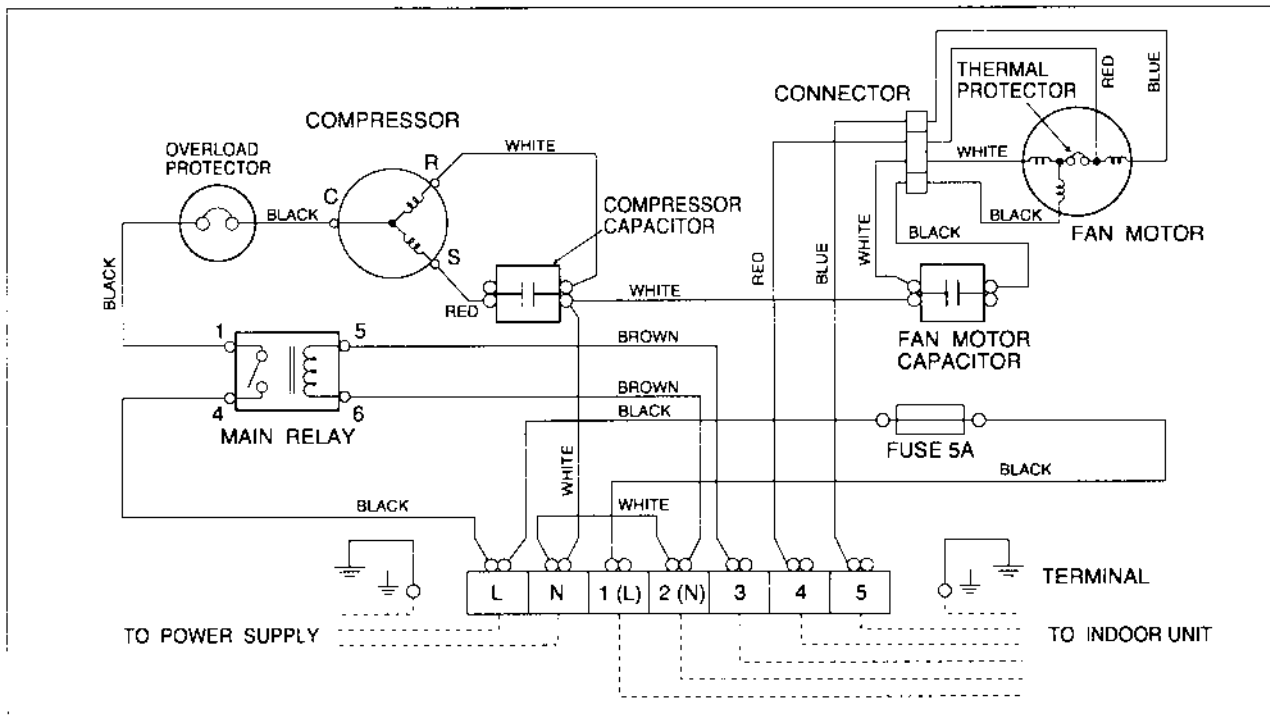


CIRCUIT DIAGRAM

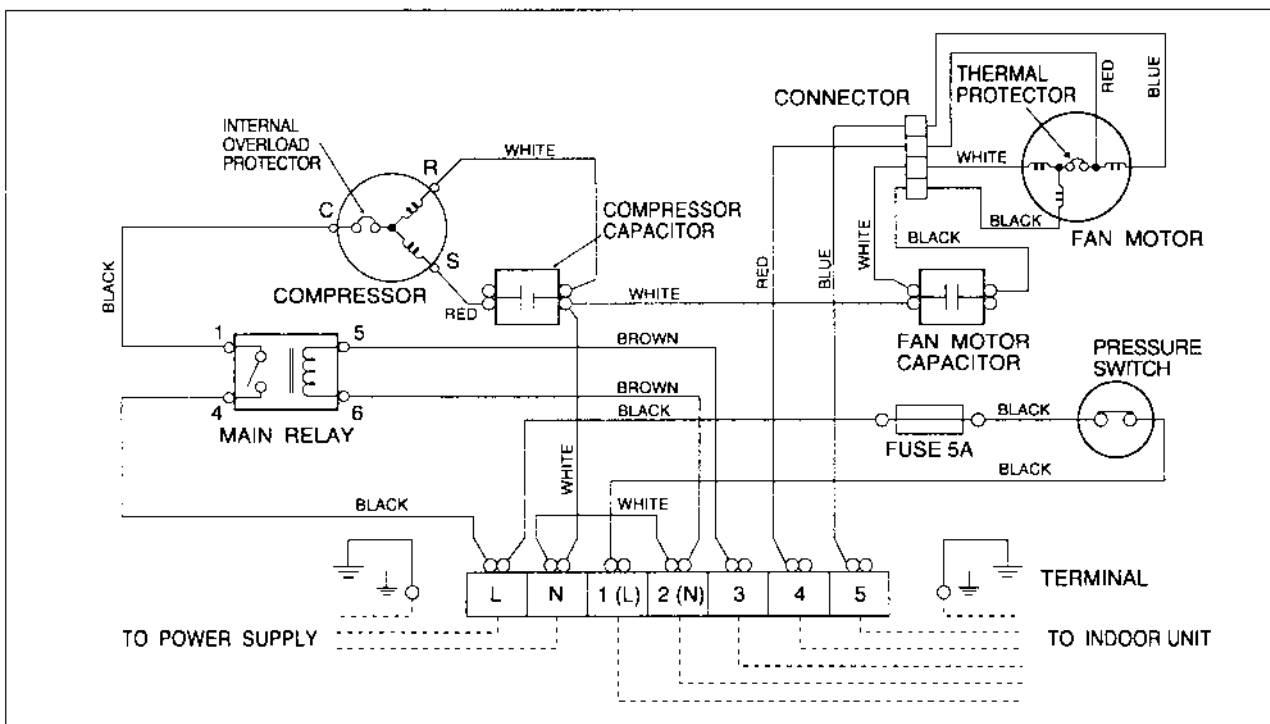
Models : RC-12E
RC-18E



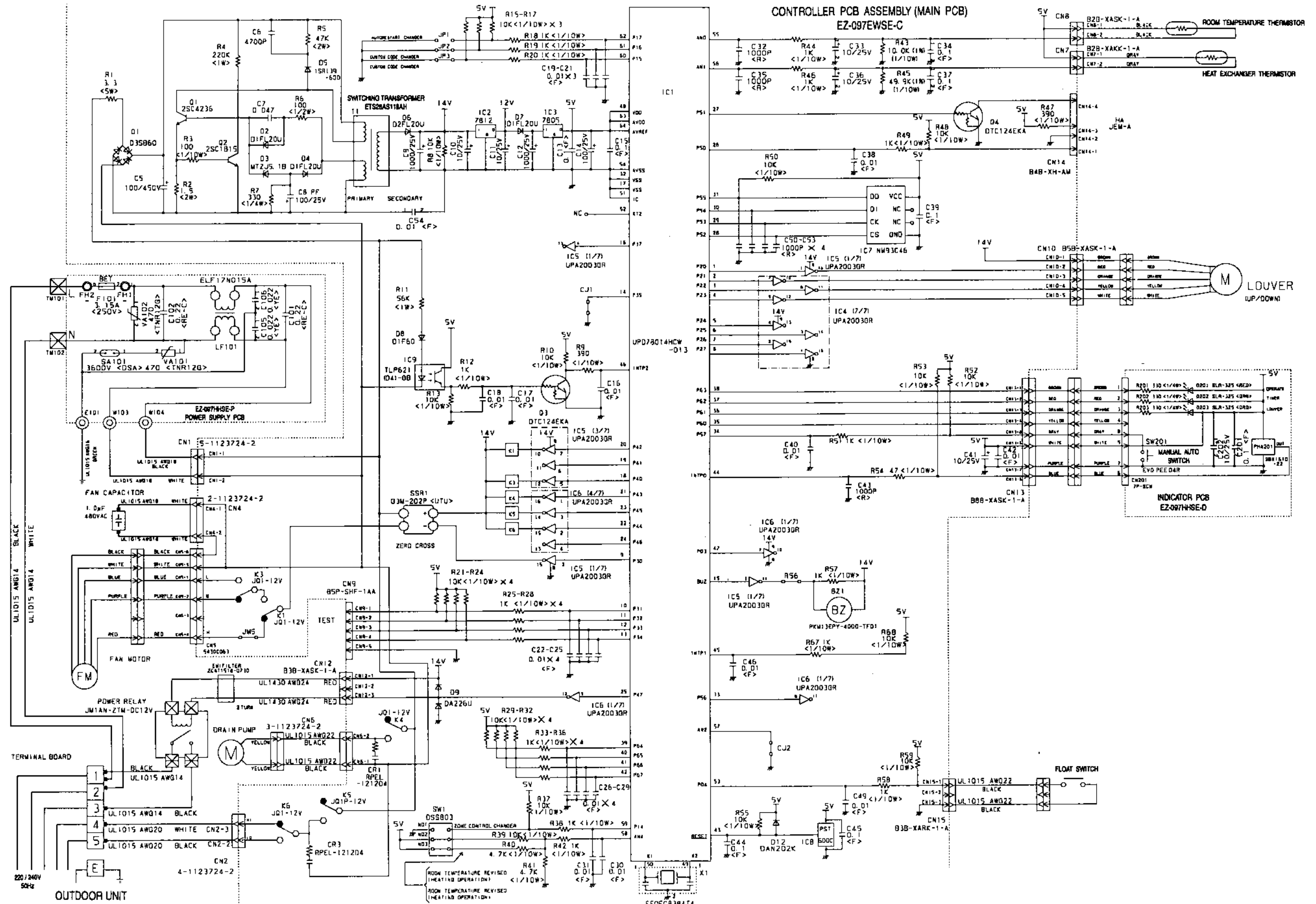
Model : RO-12ES



Model : RO-18EM



INDOOR PRINTED CIRCUIT BOARD CIRCUIT DIAGRAM



REMOTE CONTROL UNIT CIRCUIT DIAGRAM

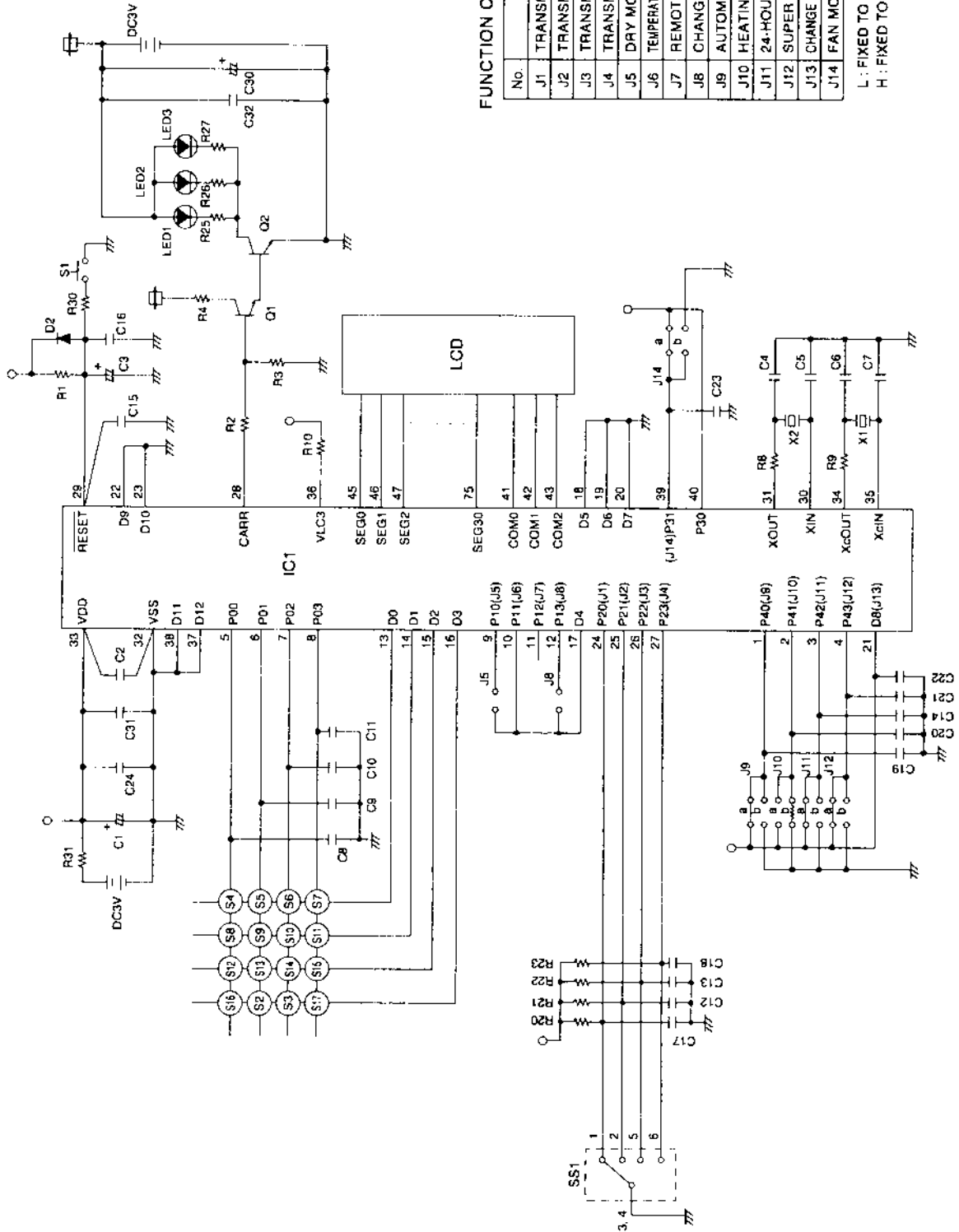
KEY NO. : KEY FUNCTION
CORRESPONDENCE TABLE

No.	KEY FUNCTION
S1	ACL
S2	TIMER ADJUST
S3	TEST RUN
S4	START/STOP
S5	MASTER CONTROL
S6	SET TEMP (+) SET TIME(+)
S7	SET TEMP (-) SET TIME(-)
S8	FAN CONTROL
S9	
S10	
S11	UP AND DOWN SWING
S12	UP AND DOWN WIND
S13	ENERGY SAVE
S14	RIGHT AND LEFT SWING
S15	TIMER SELECTOR
S16	SLEEP
S17	RIGHT AND LEFT WIND

FUNCTION CHANGE BY THE JUMPER WIRE

No.	FUNCTION
J1	TRANSMITTING CODE CHANGE L
J2	TRANSMITTING CODE CHANGE H
J3	TRANSMITTING CODE CHANGE H
J4	TRANSMITTING CODE CHANGE H
J5	DRY MODE H
J6	TEMPERATURE DISPLAY OF AUTOMATIC OPERATION L
J7	REMOTE CONTROL SELECTOR H
J8	CHANGE OF TEMPERATURE UNIT H
J9	AUTOMATIC OPERATION H
J10	HEATING MODE L
J11	24-HOUR/12-HOUR H
J12	SUPER QUIET H
J13	CHANGE OF AUTOMATIC OPERATION DISPLAY H
J14	FAN MODE H

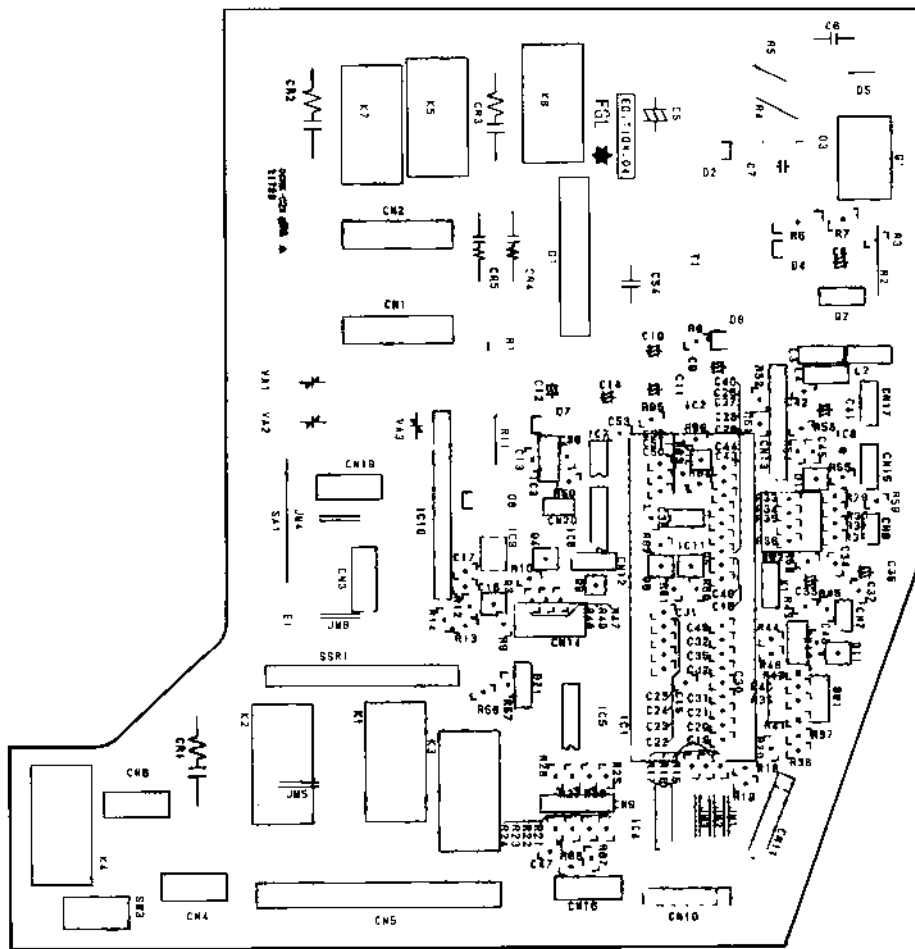
L : FIXED TO LOW LEVEL
H : FIXED TO HIGH LEVEL



P. C. BOARD LAYOUTS

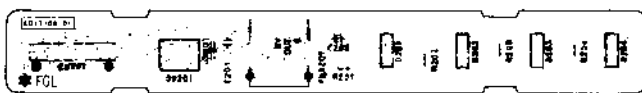
CONTROLLER P.C. BOARD ASSEMBLY

(Viewed from the solder side)



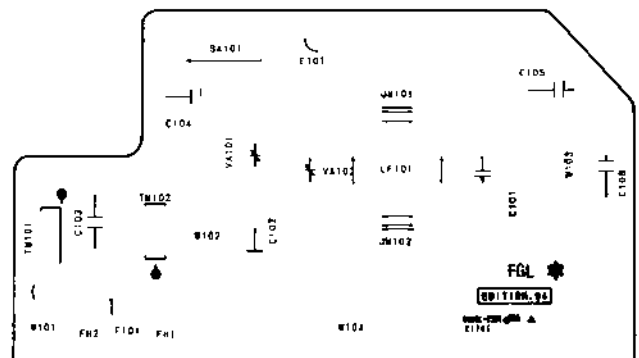
INDICATOR P.C. BOARD ASSEMBLY

(Viewed from the solder side)



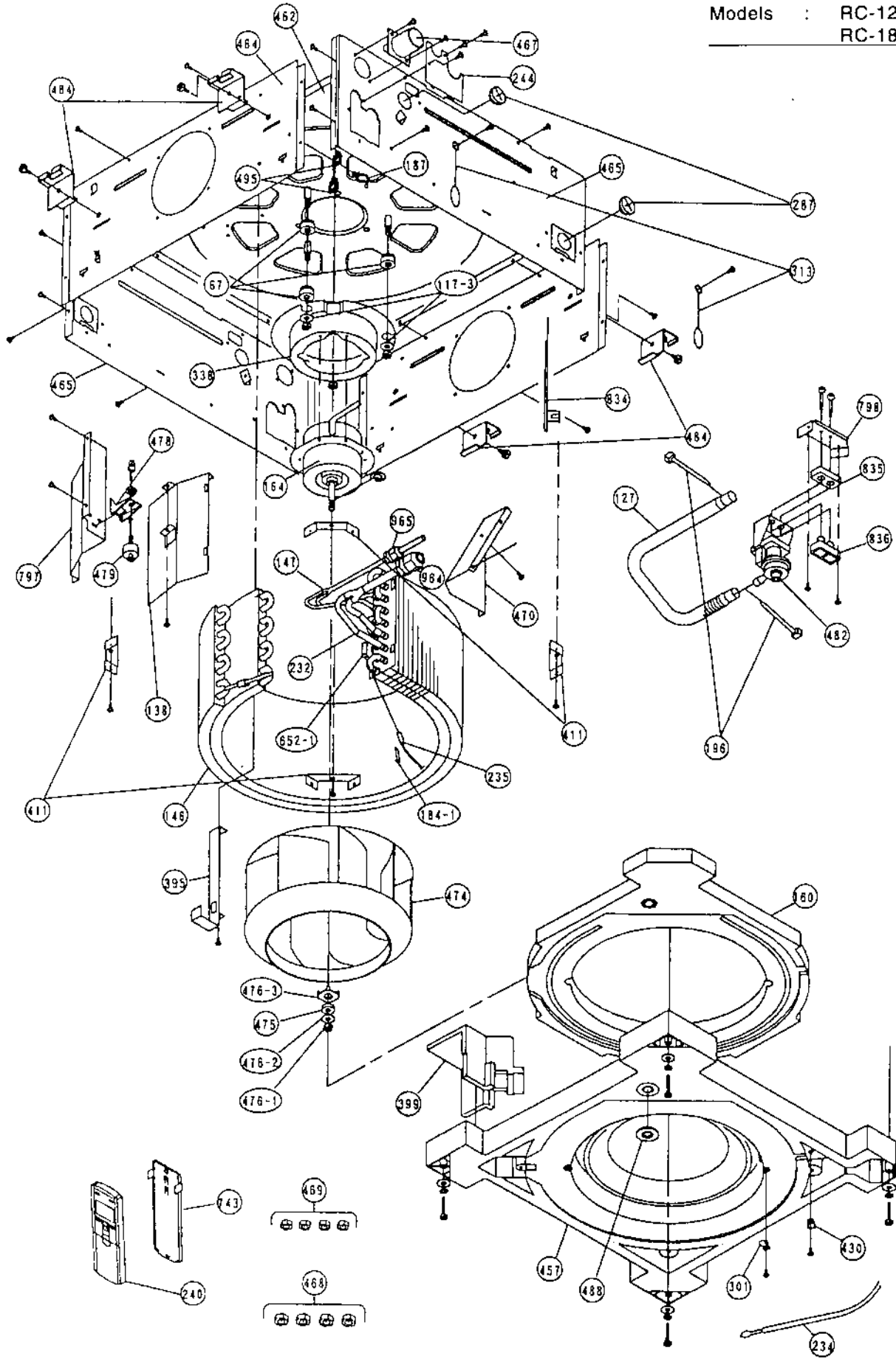
FILTER P.C. BOARD ASSEMBLY

(Viewed from the solder side)

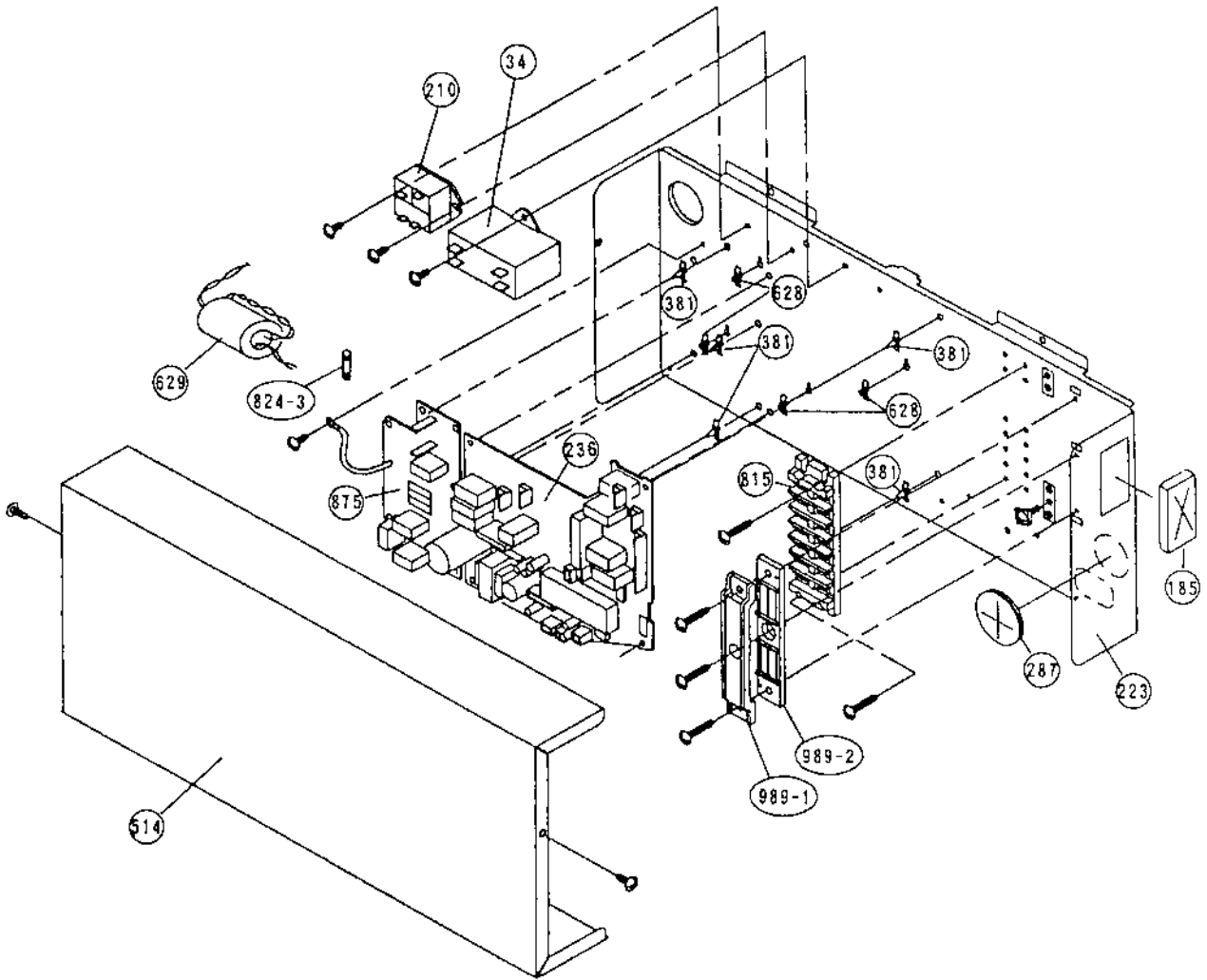


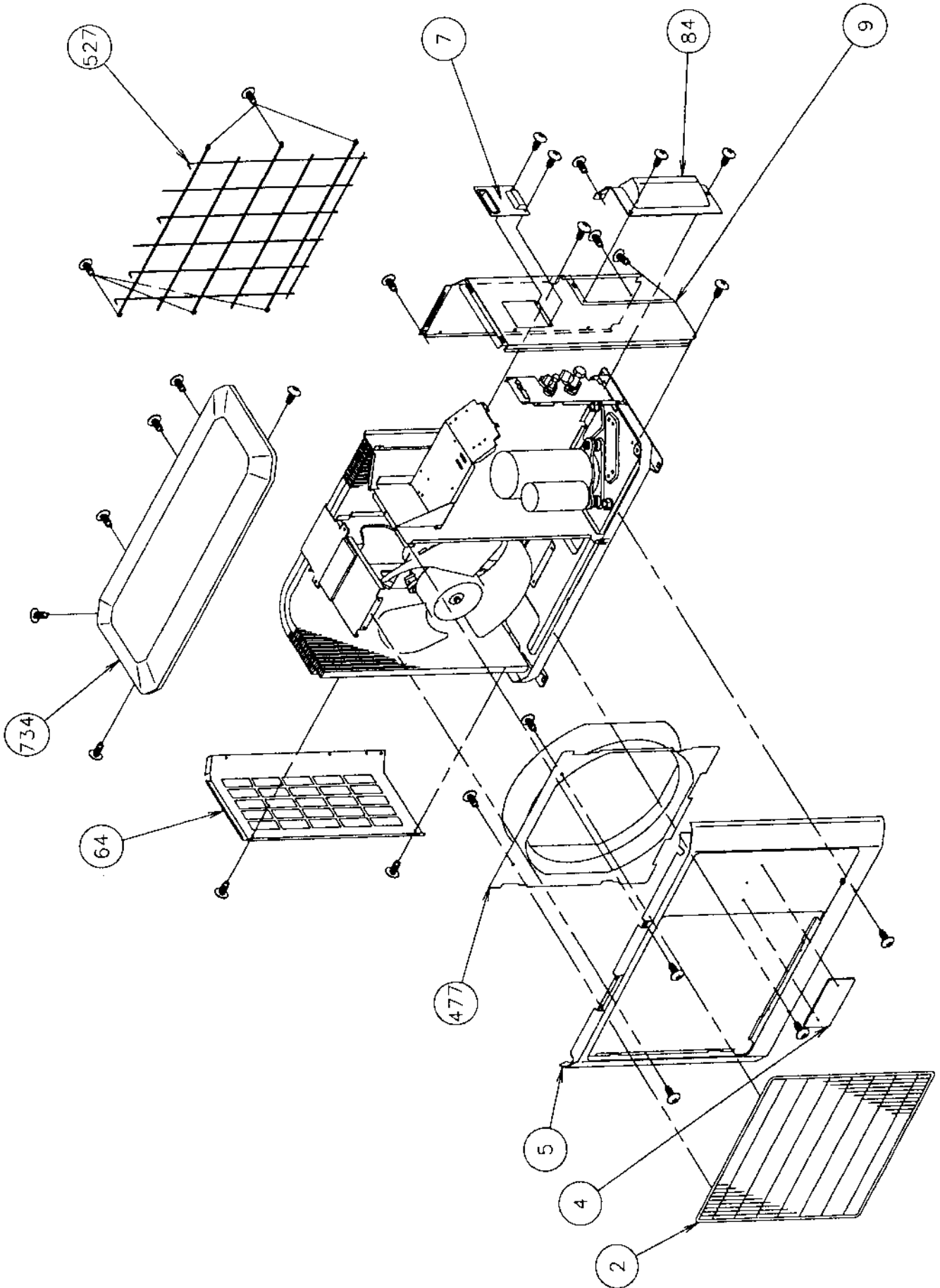
DISASSEMBLY ILLUSTRATION

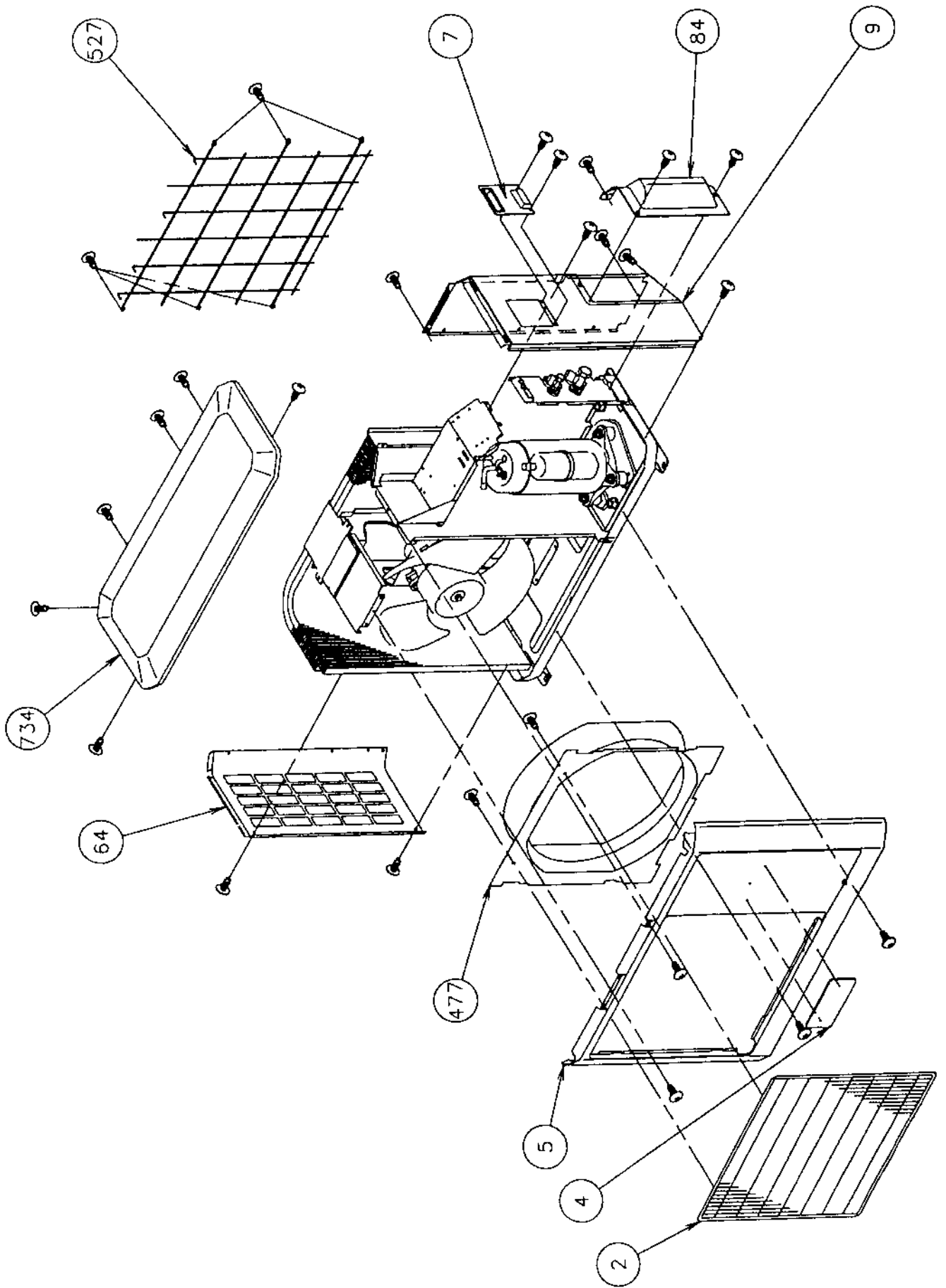
Models : RC-12E
RC-18E

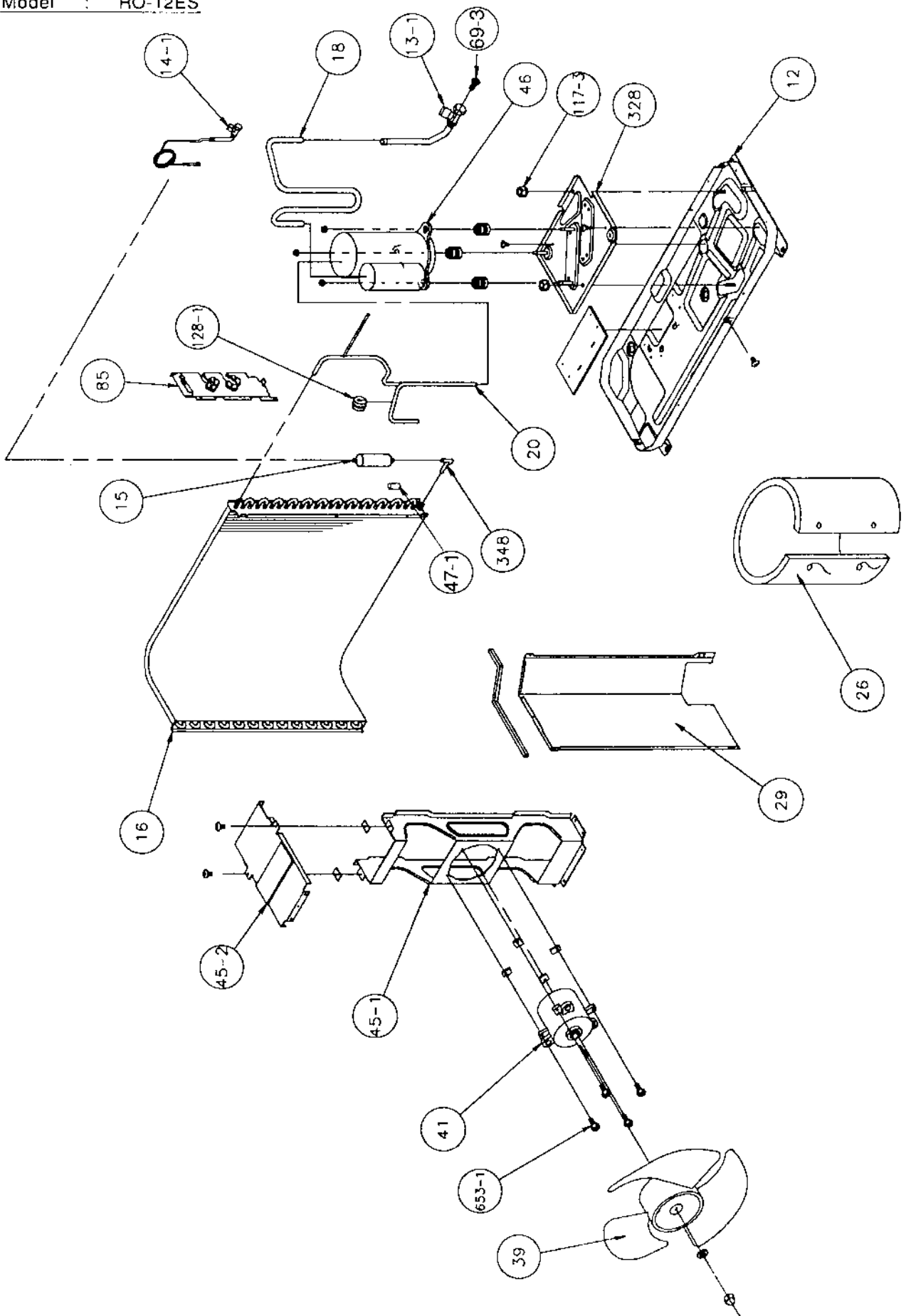


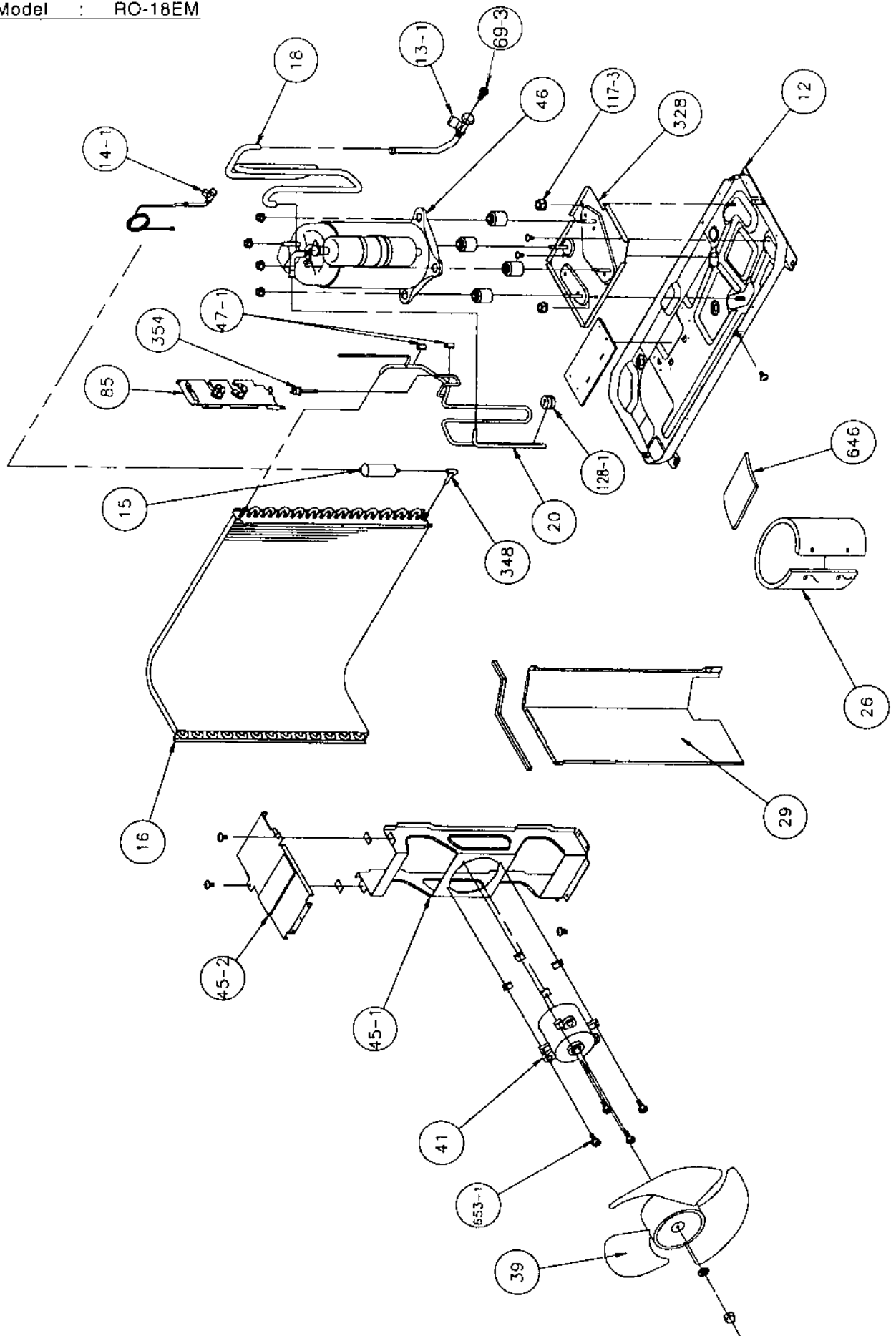
Models : RC-12E
RC-18E



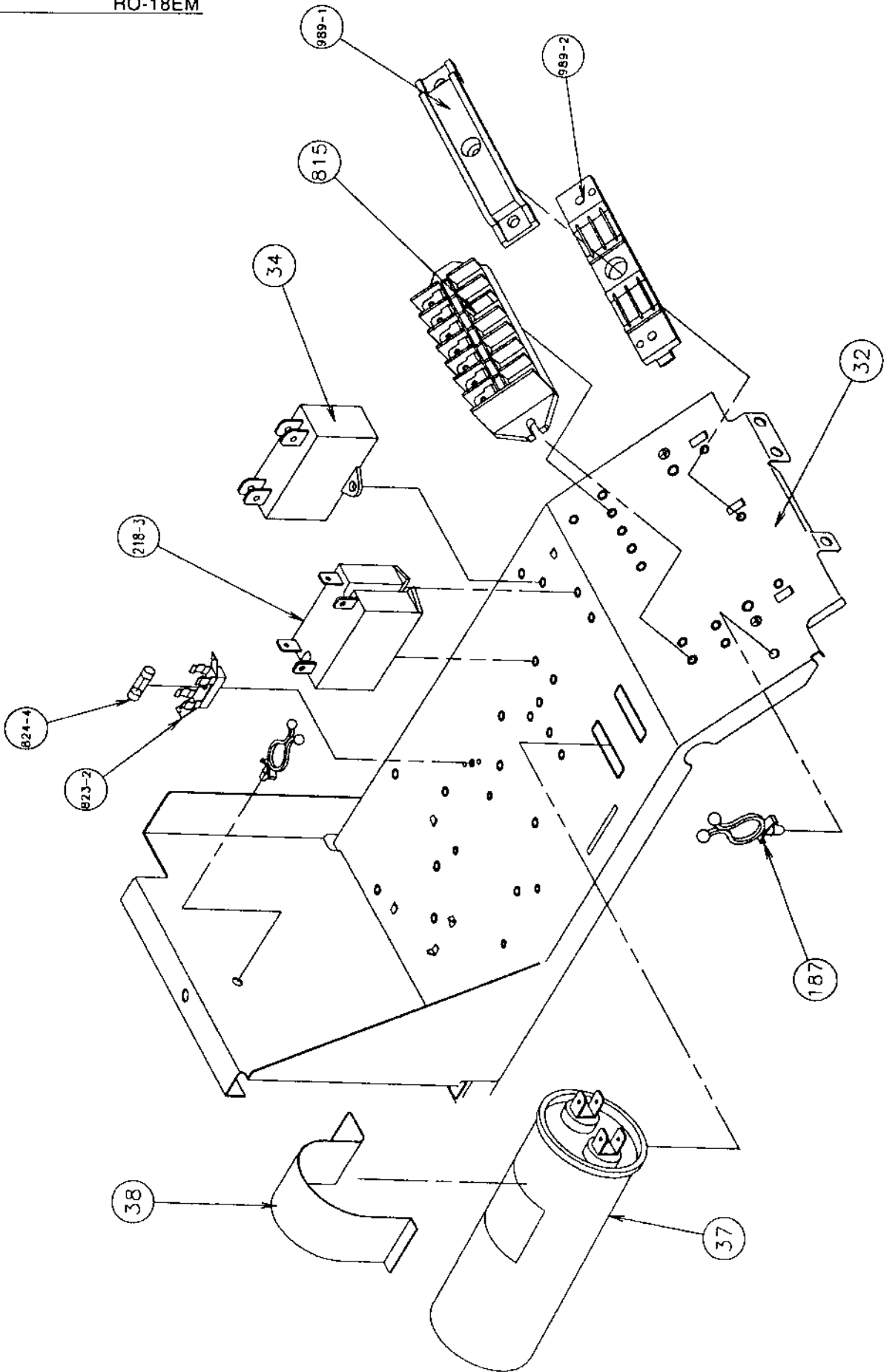




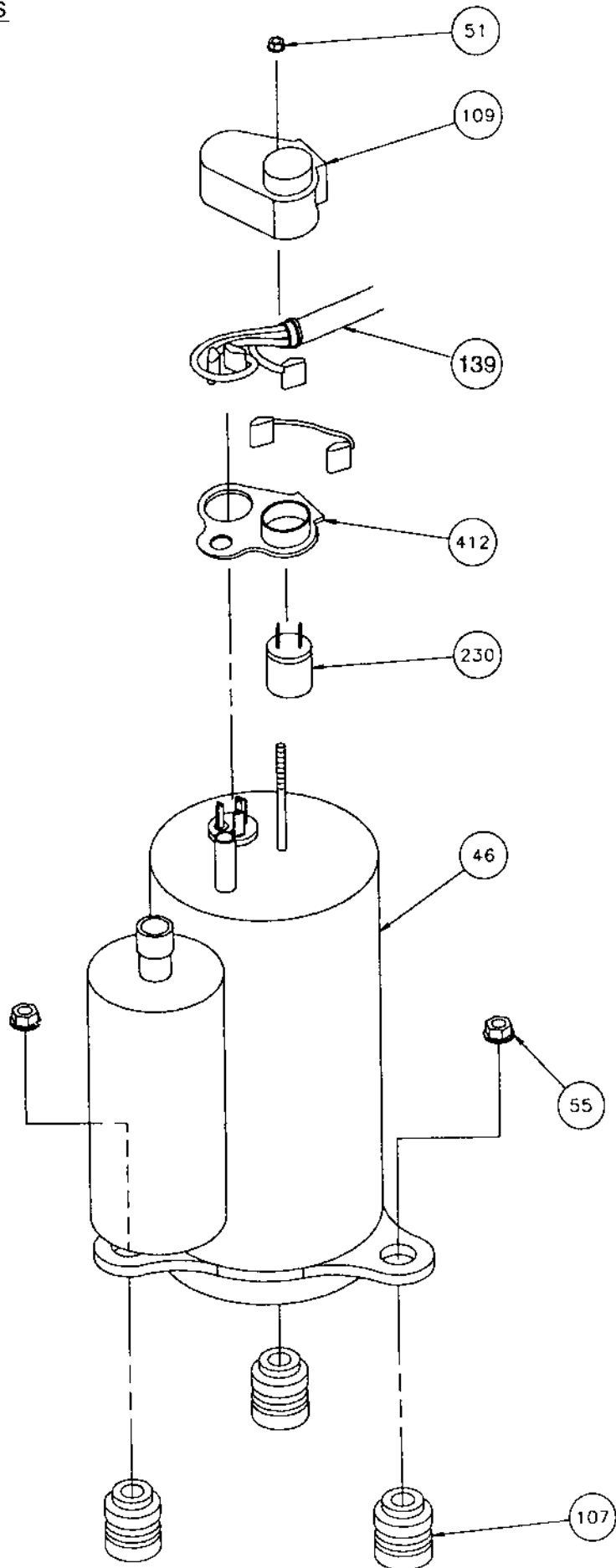




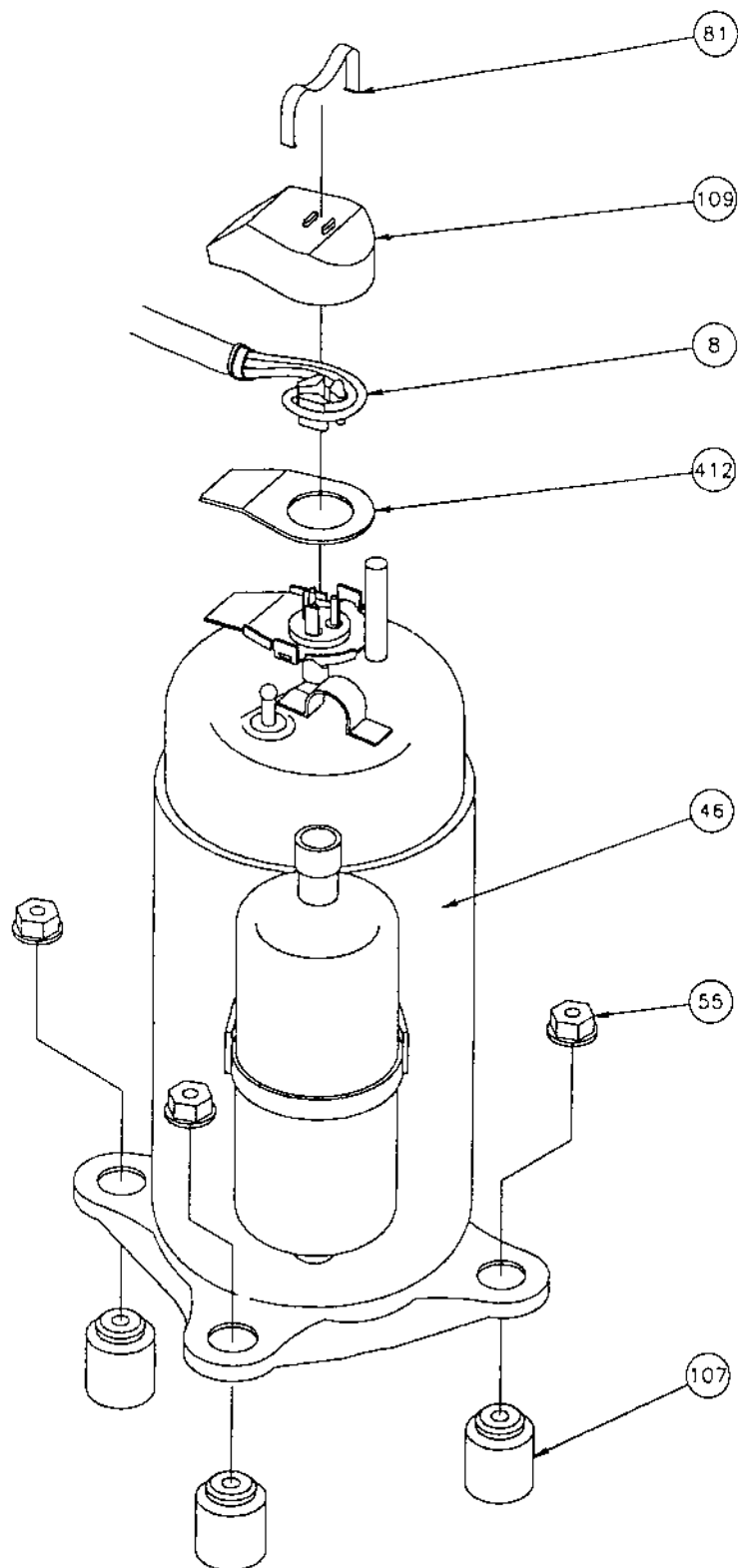
Models : RO-12ES
RO-18EM

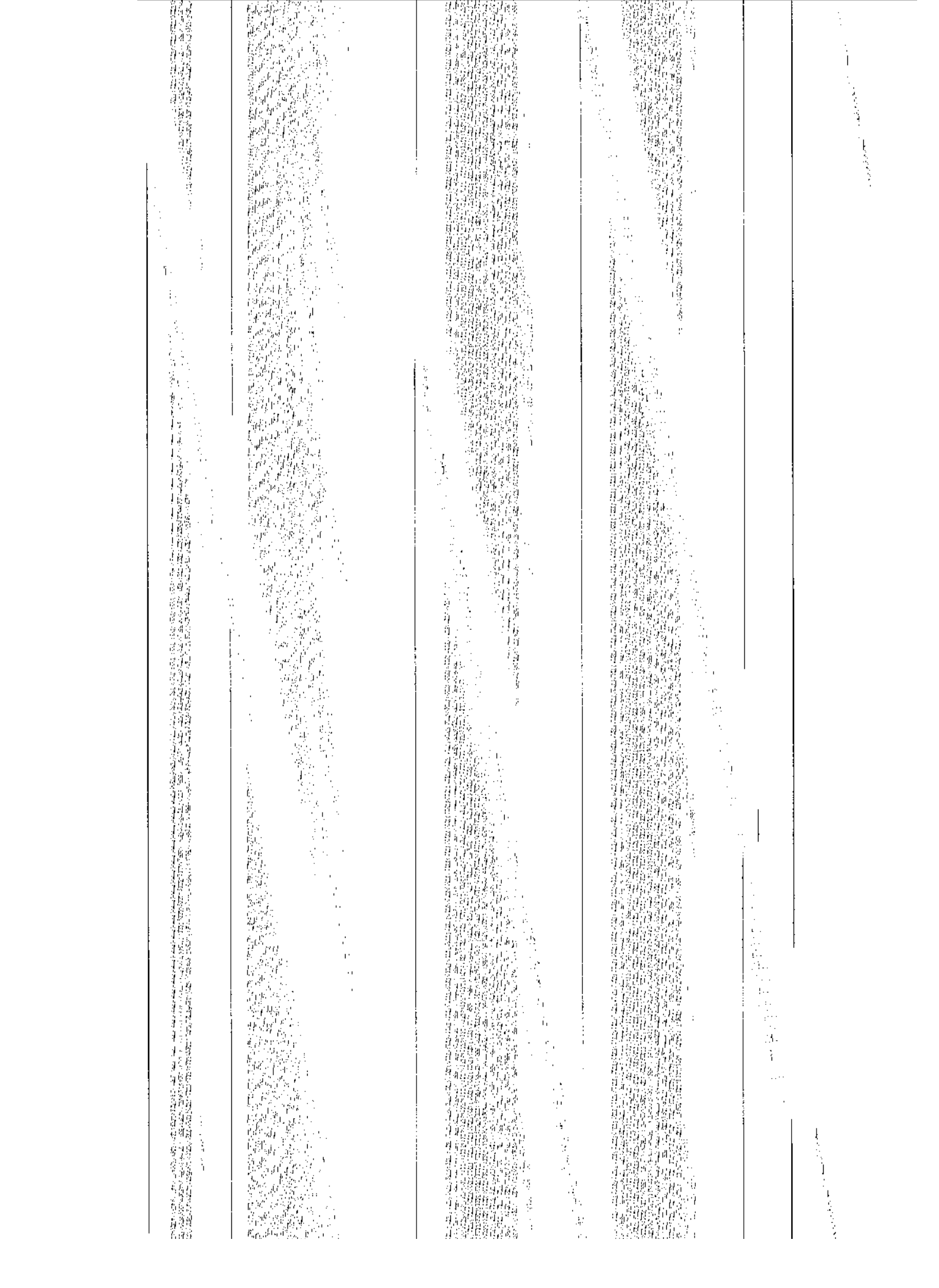


Model : RO-12ES



Model : RO-18EM





OUTDOOR UNIT

When you order parts, please make a photocopy of this and fill the number of the parts in the "Order" column.

Order Q'ty	Ref. No.	Description	Part No.	
			RO-12ES	RO-18EM
	2	Fan Cover	9359808015	9359808015
	4	Emblem-Rear "FUJI"	9361328006	9361328006
	5	Cabinet-A, Painted	9359797043	9359797043
	7	Connector Cover (Panel Top)	9358011010	9358011010
	8	Wire Assy (Shield)-D	-	9359904052
	9	Cabinet-B, Painted	9361323025	9361323025
	12	Base Assy, Painted	9359813019	9359813019
	13-1	3-Way Valve (1/2)	9363245004	9363245004
	14-1	2-Way Valve (1/4)	9363247008	9363247008
	15	Dryer	9362385008	9362498005
	16	Condenser Assy	9362546003	9362546003
	18	Suction Pipe Assy	9363876000	9362541008
	20	Discharge Pipe Assy	9363872002	9362537001
	26	Compressor Cover-A	9363879001	9362535007
	29	Separate Wall	9359805014	9359805014
	32	Control Box Assy-A	9361409019	9361409019
	34	Capacitor (Fan Motor)	9357965024	9357965024
	37	Running Capacitor	9356386035	9703107108
	38	Capacitor Clamp Metal	313468061808	9351770013
	39	Propeller Fan	9359837015	9359837015
	41	Fan Motor Assy-Out	9600266052	9600266045
	45-1	Motor Bracket	9359802013	9359802013
	45-2	Motor Bracket-Top	9359803010	9359803010
	46	Compressor Assy	9363592009	9362574006
	47-1	Rubber (Discha. Pipe)	313194159807	313194159807
	51	Special Nut M5(For Comp.)	313199233602	-
	55	Special Nut M8(For Comp.)	313199233006	9355091008
	64	Cabinet-Left, Painted	9359840046	9359840046
	69-3	Bolt, Hexagon Socket	301210060360	301210060360
	81	Strap(For Comp.)	-	9362371001
	84	Valve Cover	9361325012	9361325012
	85	Valve Fixing Plate	9361324015	9361324015
	107	Rubber Mount(For Comp.)	9351813017	9362368001
	109	Terminal Cover(For Comp.)	9351920012	9362369008
	117-3	Hexagon Nut	301721180114	301721180114
		(Spring Lock Washer)		
	128-1	Rubber(Discha. Pipe) (Counter Weight)	313155086308	313155086308
	139	Wire Assy(Comp.)-A	9363084009	-
	187	Clamp No.1219	313361271706	313361271706
	218-3	Power Relay	9353619006	9353619006
	230	Overload Relay	9363648003	-
	328	Compressor Plate Assy	9363881011	9362273022
	348	Outlet Pipe	9363880007	9362547000
	354	Pressure Switch	-	9363259001
	412	Terminal Gasket(For Comp.)	9351921019	9362370004
	477	Bell Mouth	9359809012	9359809012
	527	Protection Net(Condenser)	9359845010	9359845010
	646	Compressor Cover-B	-	9362876001
	653-1	Bolt(Fan Motor Fixg.)	0700156014	0700156014
	734	Cabinet Top Plate, Painted	9359799023	9359799023
	815	Terminal-7P	9358660102	9358660102
	823-2	Fuse Holder	0500063024	0500063024
	824-4	Fuse	0600222529	0600222529
	989-1	Cord Clamp-A	9359822011	9359822011
	989-2	Cord Clamp-B	9359823018	9359823018

Part No.	Order Q'ty
9359628002	
9359619017	
9359624011	
9360543011	
9359634003	
9359635000	
9360862013	
9359630005	
9359633013	
9359761006	
9360307019	

GRILLE ASSY (CG-E)

Ref. No.	Description	Part No.	Order Q'ty	Ref. No.	Description
93	Filter	9359632009		694	Cam Gear
165	Motor Cover	9359623014		700	Panel
196	Clamp SKB-150	313035356905		705	Louver
226	Motor Gear	9359629009		710	Intake Grille
385	Indicator PCB Assy	9702224011		711-1	Filter Clamp-A
392	Cover-A	9359622017		711-2	Filter Clamp-B
416	Insulation (Panel)-A	9359620006		758	Decoration Plate-A
417	Insulation (Panel)-B	9359621003		763	Receiver Cover
690	Joint-A	9359626008		776	Grille Stopper
691	Joint-B	9359627005		777	Grille Hook
692	Joint Shaft	9359625001		876-2	Step Motor-V

CONTROLLER PCB ASSEMBLY (Ref. No. 236)

When you order parts, please make a photocopy of this page and fill the number of the parts in the "Order" column.

Ref. No.	Description	Part No.	Order Q'ty	Ref. No.	Description	Part No.	Order Q'ty
IC1	IC μ PD78014HCW-013	9702426026		CJ1.2.R56	Res. 0 Ω	0200212012	
IC2	IC NJM7812FA	0100462104		C5	Cap.Elec. 450V 100 μ F	0300256060	
IC3	IC NJM7805FA	0100462081		C6	Cap.Plastic 4700pF	0300269091	
IC4~6	Xstr μ PA2003GR	0100028041		C7	Cap.Plastic 50V 0.047 μ F	0300169339	
IC7	IC NM93C46M8-X	0101622026		C8	Cap.Elec. 25V 100 μ F	0301197560	
IC8	IC PST600CMTR	0101461120		C9	Cap.Elec. 25V 1000 μ F	0301196495	
IC9	Photocoupler TLP621(D4)-GB	0000117074		C10.11,33.36,41	Cap.Elec. 25V 10 μ F	0301192312	
Q1	Xstr 2SC4236	0000164047		C12	Cap.Elec. 25V 1000 μ F	0301158264	
Q2	Xstr 2SC1740S	0000699235		C13,15,34,37,39,44,45	Cap.Ceramic 50V 0.1 μ F	0300311752	
Q3,4	Xstr DTC124EKA	0000936033		C14	Cap.Elec. 25V 100 μ F	0301192350	
D1	Diode D3SB60	0000689045		C16~31,38,40,42,46,49	Cap.Ceramic 50V 0.01 μ F	0300311738	
D2,4,7	Diode D1FL20U	0000746519		C32,35,43,50~53	Cap.Ceramic 50V 1000pF	0300308509	
D3	Diode MTZJ5.1B	0000852166		C54	Cap.Ceramic 50V 0.01 μ F	0300727539	
D5	Diode 1SR139-600	0000353120		K1.3,4,6	Relay JQ1-12V	9701316014	
D6	Diode D2FL20U	0000906500		K5	Relay JQ1P-12V	9701794010	
D8	Diode D1F60	0000208024		SSR1	Relay G3M-202P-UTU	9701829019	
D9	Diode DA226U	0000625036		T1	Switching Transformer ETS28AS118AH	9702727017	
D12	Diode DAN202K	0000684019		X1	Ceramic Resonator EF0EC8384T4	9701261017	
R1	Res. Cement 5W 3.3 Ω \pm 5%	0200244372		BZ1	Buzzer PKM13EPY-4000-TF01	9701298013	
R2	Res. Metal 2W 1.5 Ω \pm 5%	0201107119		CR1,3	Network RPEL-121204	9701125012	
R3	Res. 1/10W 100 Ω \pm 5%	0200212500		CN1	Plug. PCB B2P3-VH-B-C	0500011773	
R4	Res. Carbon 1W 220k Ω \pm 5%	0200111353		CN2	Plug. PCB B3P5-VH-B-R	0500011803	
R5	Res. Metal 2W 47k Ω \pm 5%	0201107652		CN4	Plug. PCB B2P3-VH-B-Y	0500011827	
R6	Res. 1/2W 100 Ω \pm 5%	0200731506		CN5	Plug. PCB 5430C063	0500957026	
R7	Res. 1/4W 330 Ω \pm 5%	0200708621		CN6	Plug. PCB B2P3-VH-B-E	0500011759	
R8,10,13,15~17,21~24,29~32,37,39,48,50,52,53,55,59,68	Res. 10k Ω \pm 5%	0200213019		CN7	Plug. PCB B2B-XAKK-1-A	0501045227	
R9,47	Res. 1/10W 390 Ω \pm 5%	0200212647		CN8	Plug. PCB B2B-XASK-1-A	0501045012	
R11	Res. Metal 1W 56k Ω \pm 5%	0201106662		CN9	Plug. PCB B2P-SHF-1AA	0500006069	
R12,18~20,25~28,33~36,38,42,44,46,49,51,57,58,67	Res. 1/10W 1k Ω \pm 5%	0200212746		CN10	Plug. PCB B5B-XASK-1-A	0501045043	
R40,41	Res. 1/10W 4.7k Ω \pm 5%	0200212906		CN12	Plug. PCB B3B-XASK-1-A	0501045029	
R43	Res. 1/10W 10k Ω \pm 1%	0200279497		CN13	Plug. PCB B8B-XASK-1-A	0501045074	
R45	Res. 1/10W 49.9k Ω \pm 1%	0200279824		CN14	Plug. PCB B4B-XH-AM	0500005314	
R54	Res. 1/10W 47k Ω \pm 5%	0200212425		CN15	Plug. PCB B3B-XARK-1-A	0501045319	

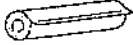



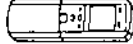
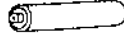
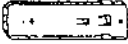

INDICATOR PCB ASSEMBLY (Ref. No. 385)

Ref. No.	Description	Part No.	Order Q'ty	Ref. No.	Description	Part No.	Order Q'ty
D201	Diode SLR-325VC RED	0000813259		PHA201	Remote Control Amplifier SBX1810-22	0101525129	
D202	Diode SLR-325MC GRN	0000813242		SW201	Switch. EVQ-PAG-04K	9700450016	
D203	Diode SLR-325DC ORG	0000813235		CN201	Wire w/Connector L=150 Lamp Holder 94N40	9702266011	
C201	Cap.Ceramic 0.1 μ F	0300988251				9358548004	
C202	Cap.Elec. 25V 10 μ F	0300004258					
R201~203	Res.Carbon 1/4W 330 Ω \pm 5%	0201038659					


FILTER PCB ASSEMBLY (Ref. No. 875)

Ref. No.	Description	Part No.	Order Q'ty	Ref. No.	Description	Part No.	Order Q'ty
C101,102	Cap.Plastic 0.22 μ F	0300304099		LF101	EMI Filter ELF17N015A	0400197119	
C105,106	Cap.Plastic 0.022 μ F	0301052098		F101	Fuse BET3.15A-250V	0600222512	
SA101	Arrestor DSA-362MA-05	0600168032		FH1,2	Fuse Holder PFC5000-0502	0500158072	
VA101,102	Varistor TNR12G471K	0000038010		E101	Wire w/Terminal GRN L=100	9702313012	
TM101,102	Plug Contact 86028	0500536016		W103,104	Wire #18 2P	9702288013	




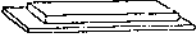
INDOOR UNIT ACCESSORIES

Name and Shape	Application	Parts No.
Coupler heat insulation 	For indoor side pipe joint	9350716029
		9352766015
Special nut A (large flange) 	For installing indoor unit	313005446653
Special nut B (small flange) 	For installing indoor unit	313005446759
Template 	For ceiling hole cutting	9360256003
Remote control unit 	Use for air conditioner operation	9359913085
Battery (penlight) 	For remote control unit	0600185534
Remote control unit holder 	For mounting the remote control unit	9359955016
Tapping screw (#3X12) 	For remote control unit holder installation	301141533125

OUTDOOR UNIT ACCESSORIES

Name and Shape	Application	Parts No.
Hexagon wrench 	For opening the refrigerant valve on the outdoor unit	9351228019

GRILLE ACCESSORIES

Name and Shape	Application	Parts No.
Bolt 	For mounting grille	9360120021
Washer 	For mounting grille	301801155020
Spring washer 	For mounting grille	301821150218
Blower cover insulation 	For discharged air	9360047D07



MANUFACTURER

Fuji Denki Sosetsu Co., Ltd.

Tokyo, Japan