



SPLIT TYPE
ROOM AIR CONDITIONER

CEILING type (50Hz)

**SERVICE
MANUAL**



Models	Indoor unit	Outdoor unit
	RY-36EB	RO-36EP
	RY-45EB	RO-45EP
	RY-54EB	RO-54EA

C O N T E N T S

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SPECIFICATIONS

TYPE	COOLING		
INDOOR UNIT	RY-36EB	RY-45EB	RY-54EB
OUTDOOR UNIT	RO-36EP	RO-45EP	RO-54EA
COOLING CAPACITY (kW)	10.3 - 10.5	12.4 - 12.7	13.9 - 14.1

ELECTRICAL DATA

POWER SOURCE	3N ~ 380 - 415V 50Hz		
RUNNING CURRENT (A)	7.0 - 6.9	8.6 - 8.8	9.6 - 9.3
INPUT WATTS (kW)	4.05 - 4.05	4.76 - 4.80	5.65 - 5.65
EER (kW/kW)	2.54 - 2.59	2.60 - 2.65	2.46 - 2.50
MOISTURE REMOVAL (ℓ /hr)	4.0	5.5	6.0
AIR CIRCULATION-Hi (m³/hr)	1,660	1,850	2,100

COMPRESSOR

TYPE	Hermetic type, 2 pole, 3-phase, Induction motor		
CODE	ZR48K3E-TFD	ZR61KCE-TFD	ZR72KCE-TFD
REFRIGERANT R407C (g)	2,300	3,400	3,700

FAN MOTOR

POWER SOURCE (V)	220 - 240		
INDOOR UNIT	TYPE	MFA-45DZM	
	HI-SPEED (r.p.m.)	1,000	1,100
	MED-SPEED (r.p.m.)	900	1,000
	LO-SPEED (r.p.m.)	750	850
OUTDOOR UNIT	TYPE	MFB-362FT	
	HI-SPEED (r.p.m.)	790	
	LO-SPEED (r.p.m.)	-----	

DIMENSIONS

INDOOR UNIT	H x W x D (mm)	240 x 1,660 x 700
OUTDOOR UNIT		1,152 x 940 x 370

WEIGHTS

INDOOR UNIT	GROSS / NET (kg)	61 / 48	62 / 49
OUTDOOR UNIT		108 / 94	106 / 102

MODELS				RY-36EB	RY-45EB	RY-54EB	
				RO-36EP	RO-45EP	RO-54EA	
REFRIGERANT CIRCUIT	DISCHARGE PRESSURE	kg/cm²G		21.5	21.5	22.0	
	SUCTION PRESSURE			5.0	4.8	4.8	
	DISCHARGE TEMP.	°C		85	80	80	
	REFRIG. PIPE LENGTH	m		7.5	7.5	7.5	
	DISCHARGE AIR TEMP.	°C		12	12	12	
CONDITION	INDOOR ENTERING AIR TEMP.	DB/WB °C		27.0 / 19.0			
	OUTDOOR ENTERING AIR TEMP.	DB/WB °C		35.0 / 24.0			
PIPING	PIPE DIA. SIZE		LIQUID	mm	9.53		
			GAS		19.05		
	CONNECTION METHOD			Flare			
	BETWEEN		HEIGHT		m	Max. 30	
			PIPE LENGTH			Max. 50	

REFRIGERANT CHARGE

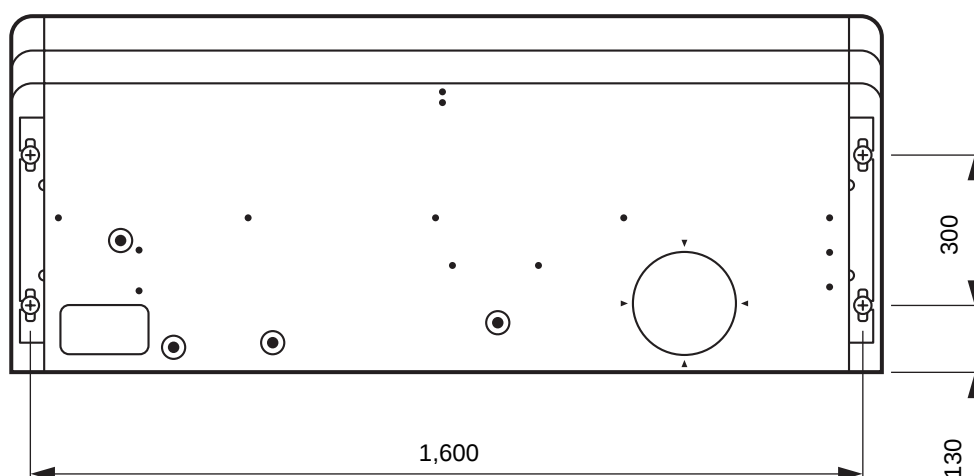
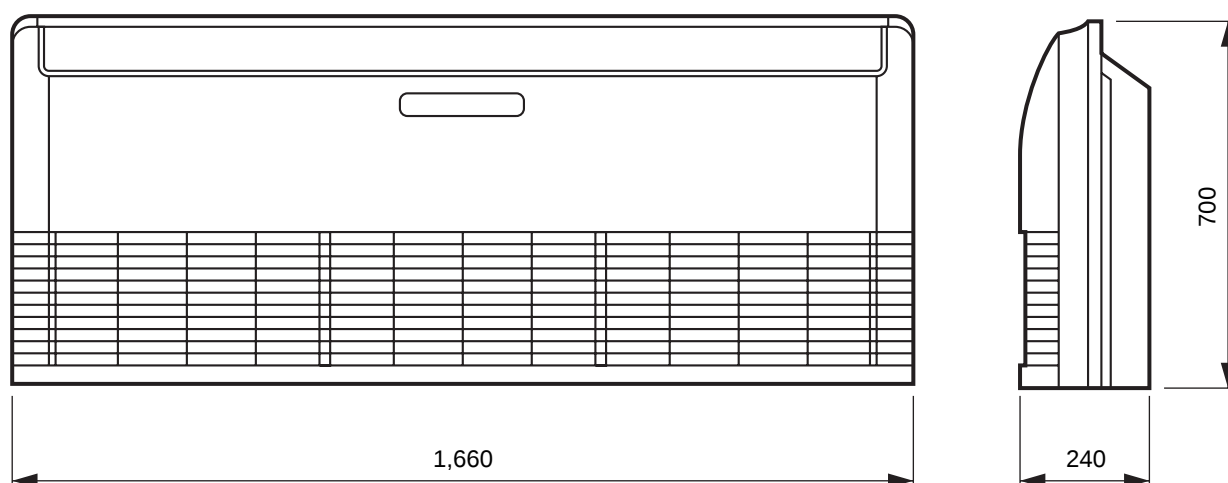
MODELS		PIPE LENGTH	10 m (33 ft)	20 m (66 ft)	30 m (99 ft)	40 m (132 ft)	50 m (164 ft)
FULL CHARGE AMOUNT (R407C)	RY-36EB		2,300 g (81.1 oz)		2,600 g (91.7 oz)	2,900 g (102.3 oz)	3,200 g (112.9 oz)
	RY-45EB		3,400 g (119.9 oz)		3,700 g (130.5 oz)	4,000 g (141.1 oz)	4,300 g (151.7 oz)
	RY-54EB		3,700 g (130.5 oz)		4,000 g (141.1 oz)	4,300 g (151.7 oz)	4,600 g (162.3 oz)

Note : Between 20 m and 50 m, when using a connection pipe other than that in the table, charge additional refrigerant with 30 g (1.06 oz) / 1 m (3.3 ft) as the criteria.

OUTLINE AND DIMENSIONS

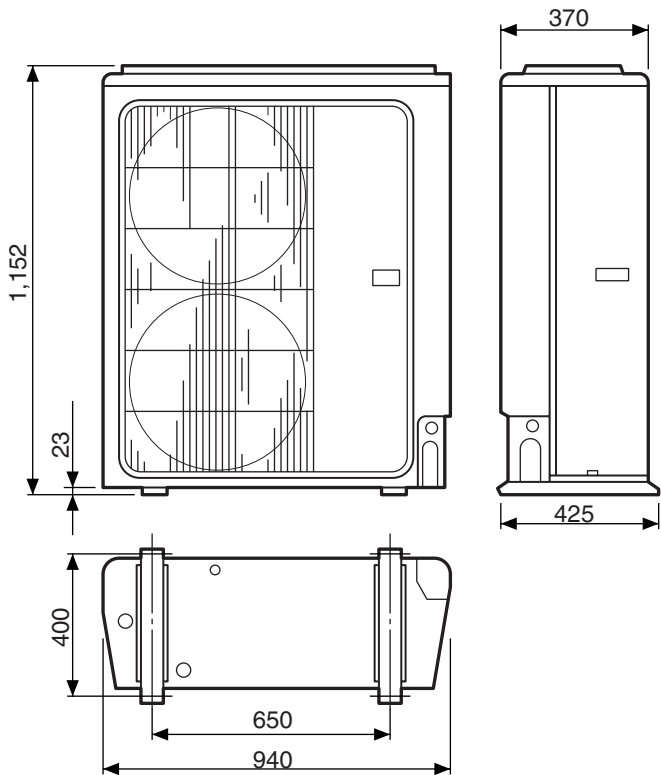
INDOOR UNIT

(Unit : mm)



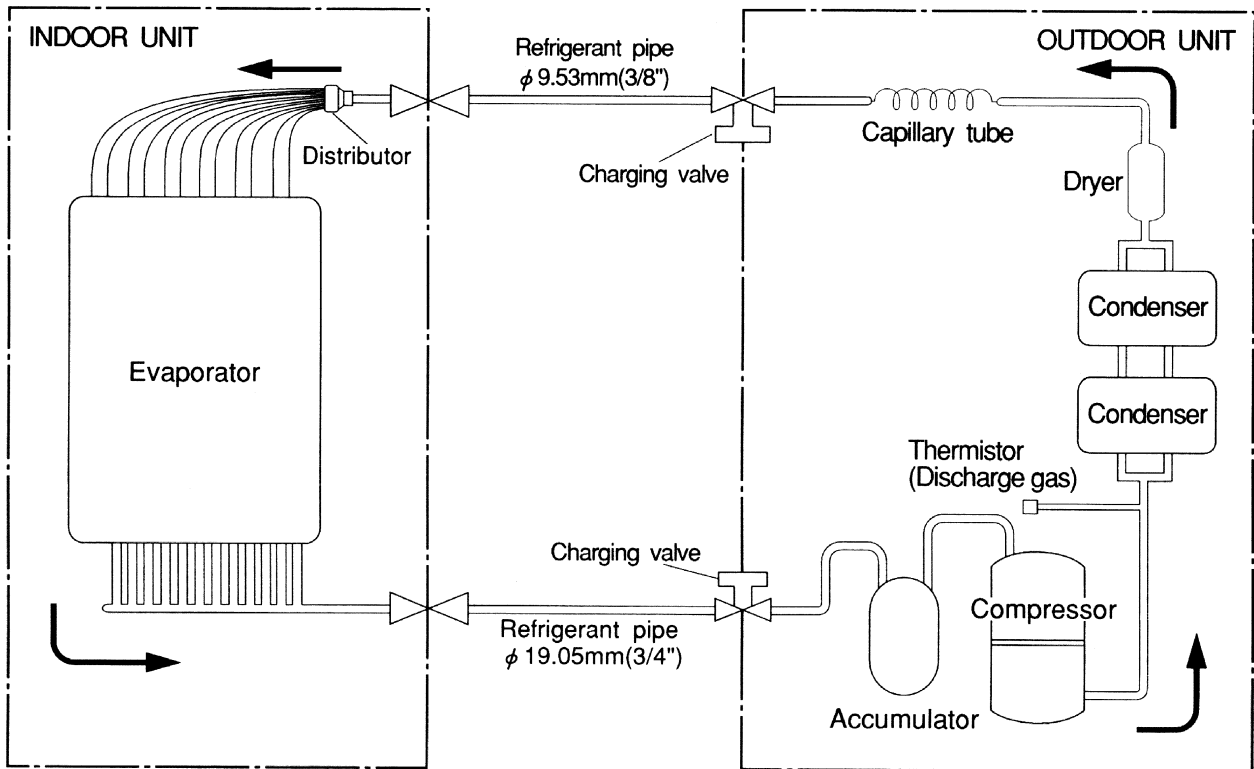
OUTDOOR UNIT

(Unit : mm)

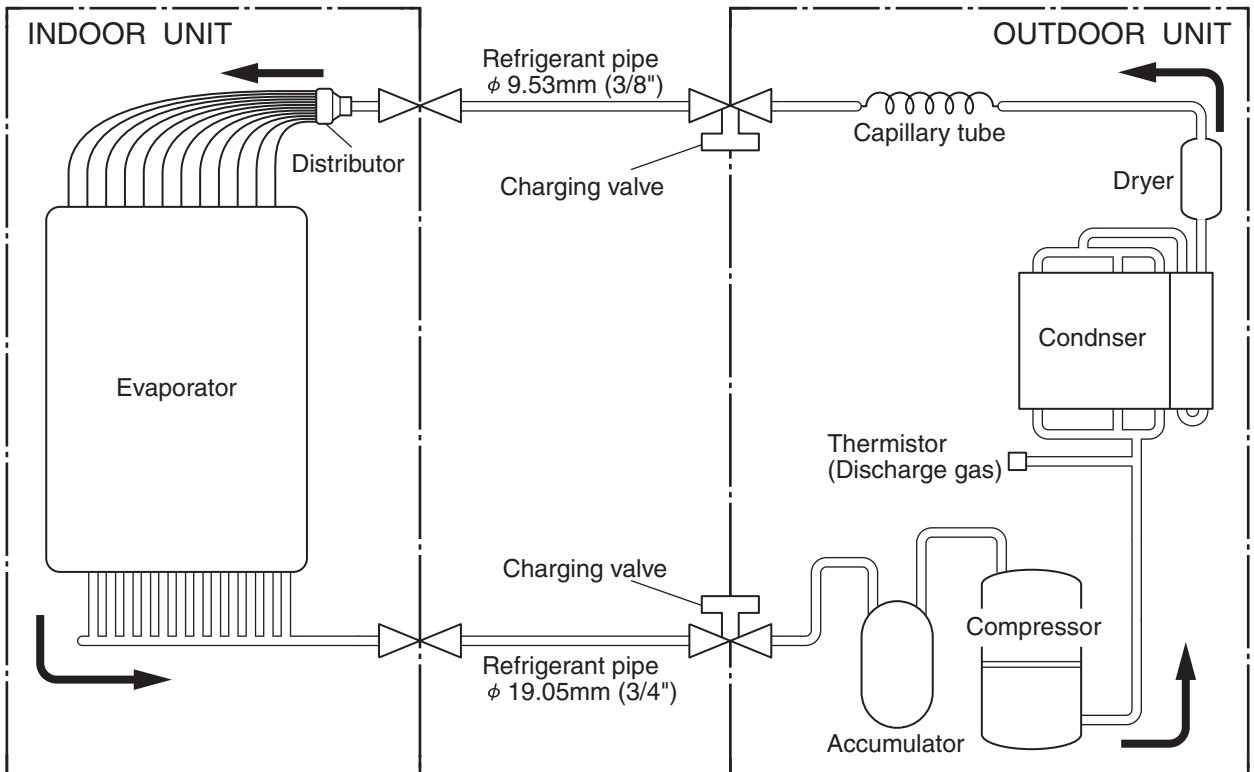


REFRIGERANT SYSTEM DIAGRAM

Model : RY-36EB / RO-36EP



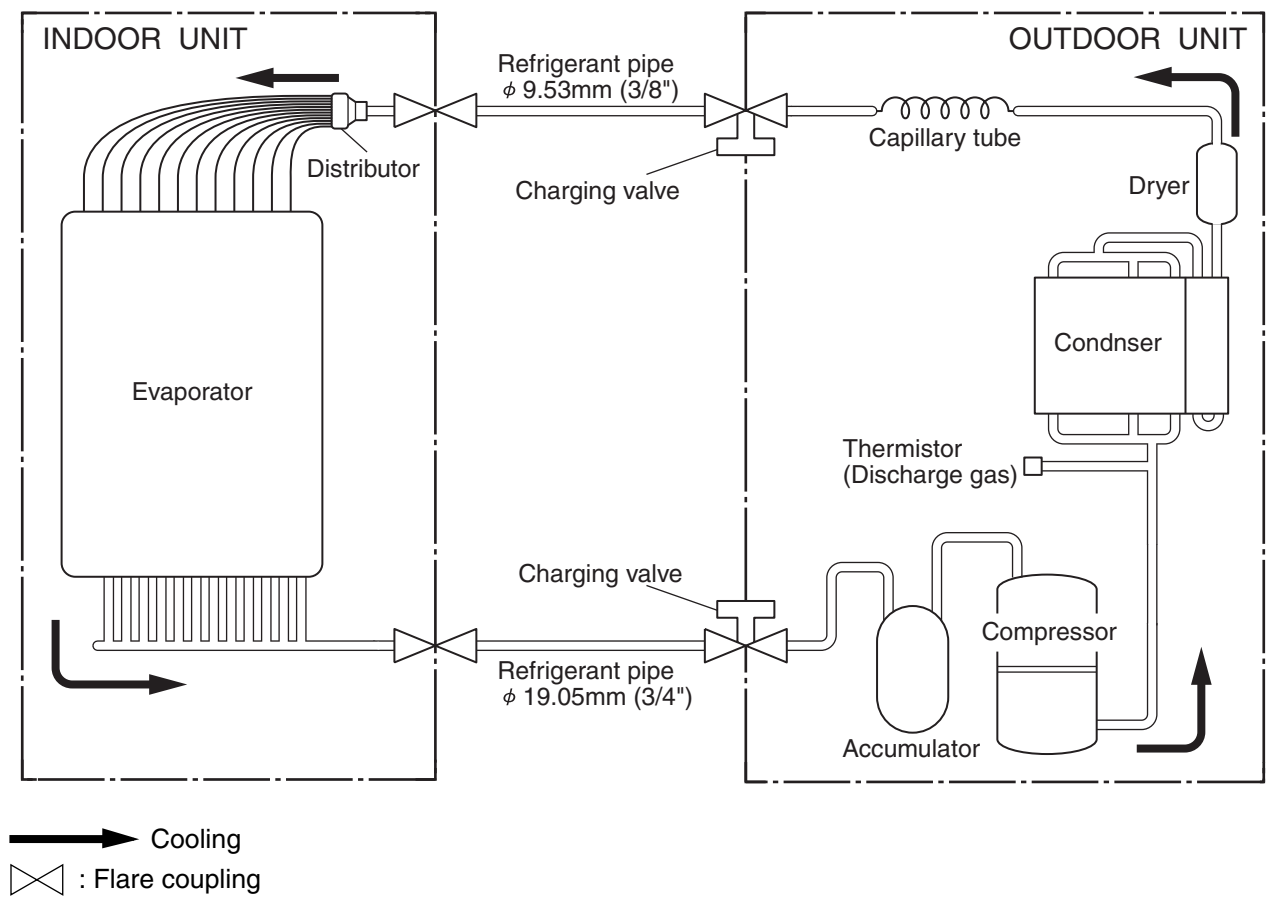
Model : RY-45EB / RO-45EP



→ Cooling

⊗ : Flare coupling

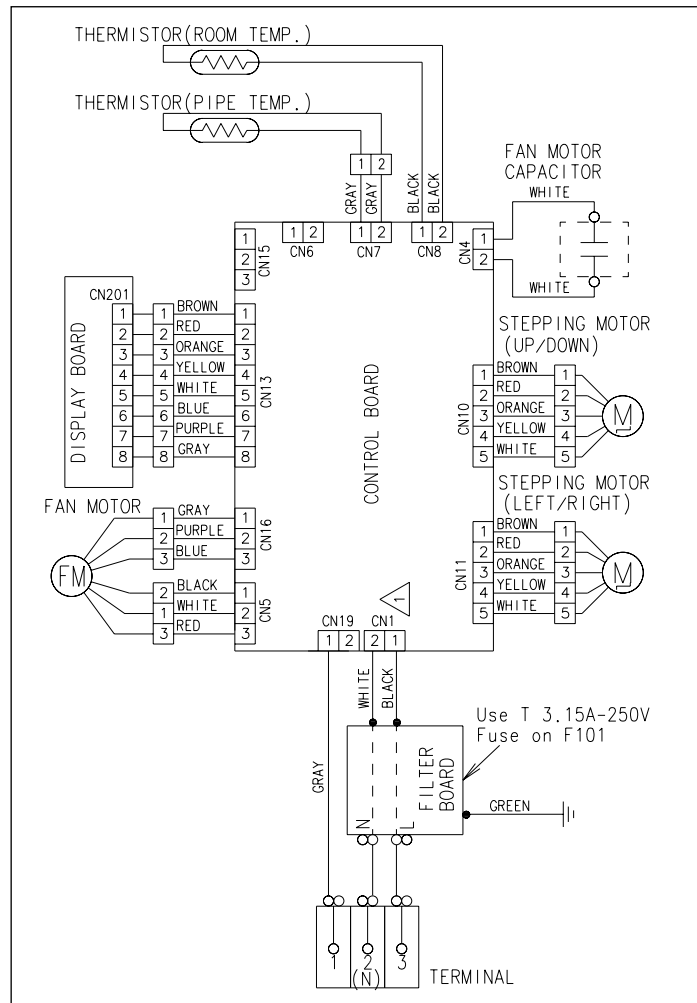
Model : RY-54EB / RO-54EA



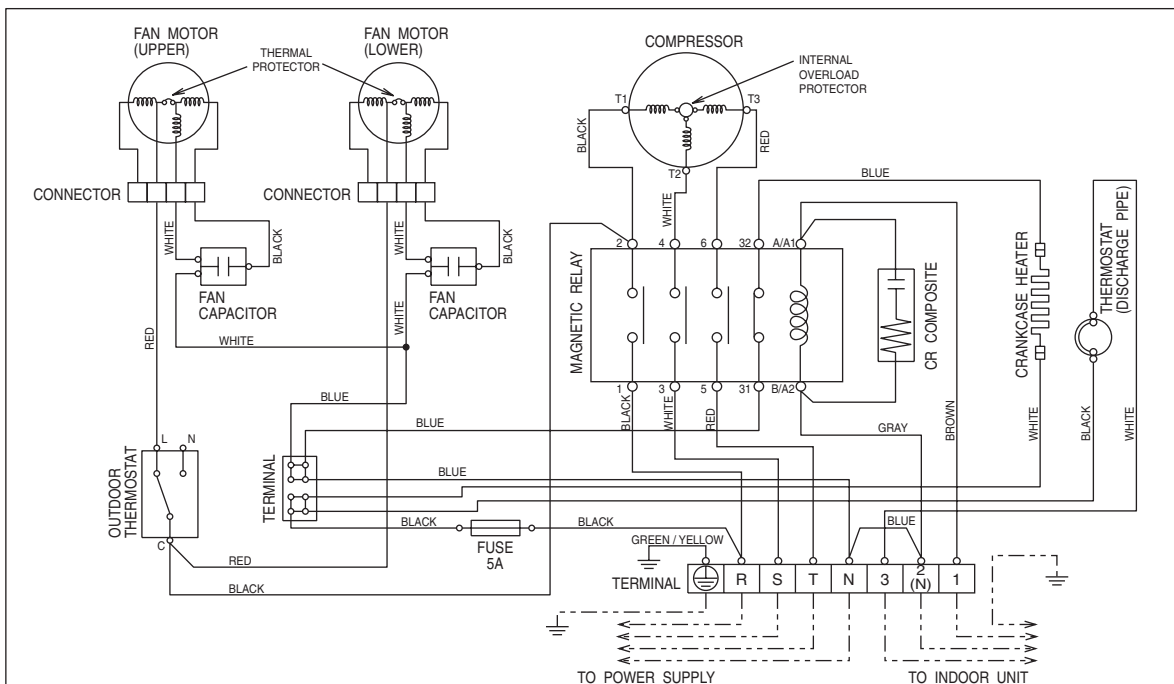
CIRCUIT DIAGRAM

Models : RY-36EB / RO-36EP
RY-45EB / RO-45EP
RY-54EB / RO-54EA

INDOOR UNIT



OUTDOOR UNIT

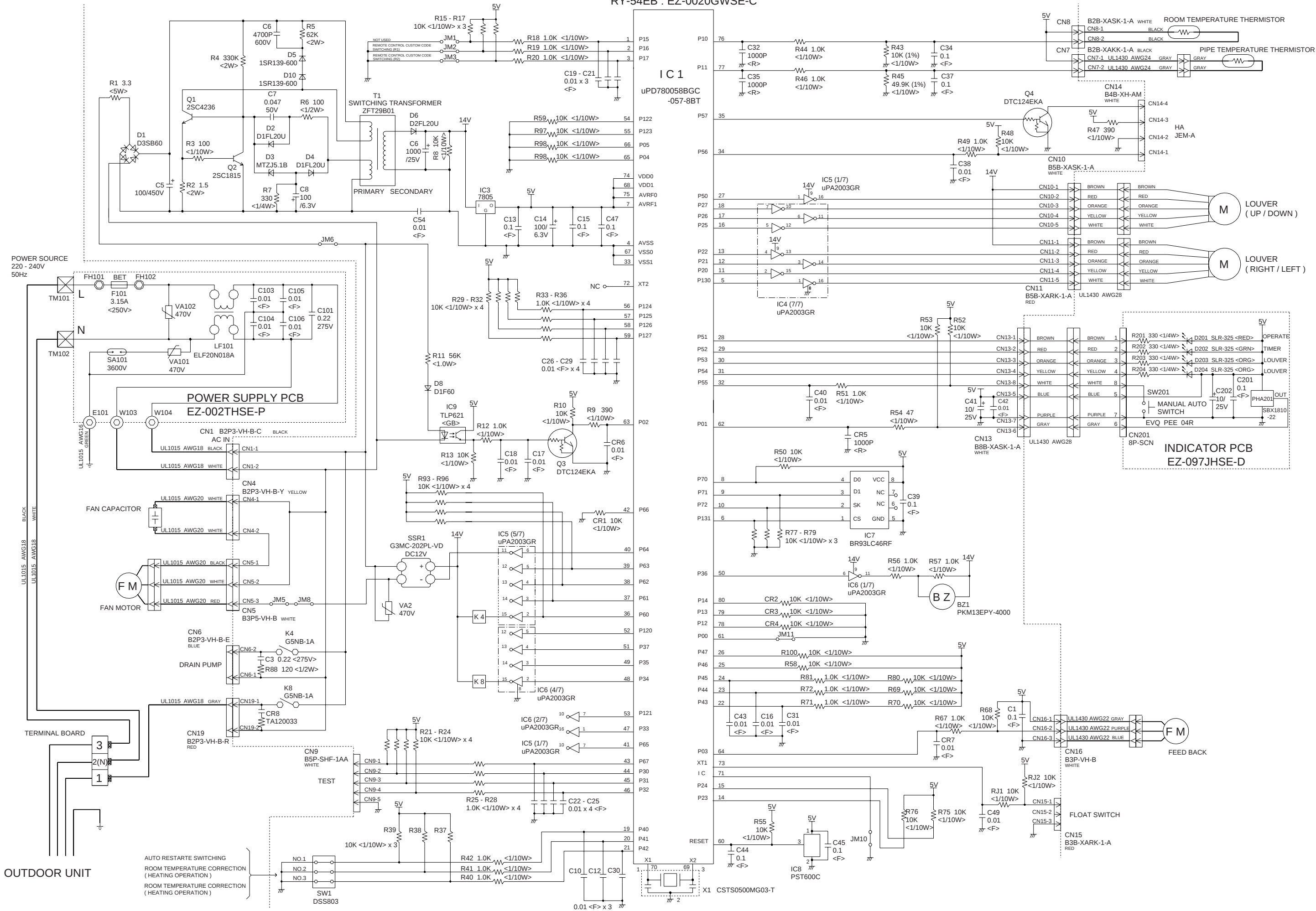


Models : RY-36EB
RY-45EB
RY-54EB

RY-36EB : EZ-0035WSE-C

RY-45EB : EZ-0036WSE-C

RY-54EB : EZ-0020GWSE-C

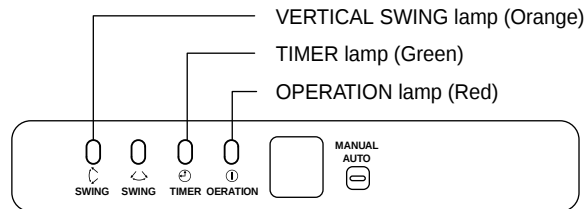


ERROR CONTENTS

1. INDOOR UNIT

Operation can be checked by lighting and flashing of the display section OPERATION, TIMER, and VERTICAL SWING lamps.

Perform judgment in accordance with the following.



TEST RUNNING

When the air conditioner is run by pressing the remote control unit test run button, the OPERATION, TIMER, and VERTICAL SWING lamps flash slowly at the same time.

ERROR

The OPERATION, TIMER, and VERTICAL SWING lamps operate as follows (Table 1) according to the error contents.

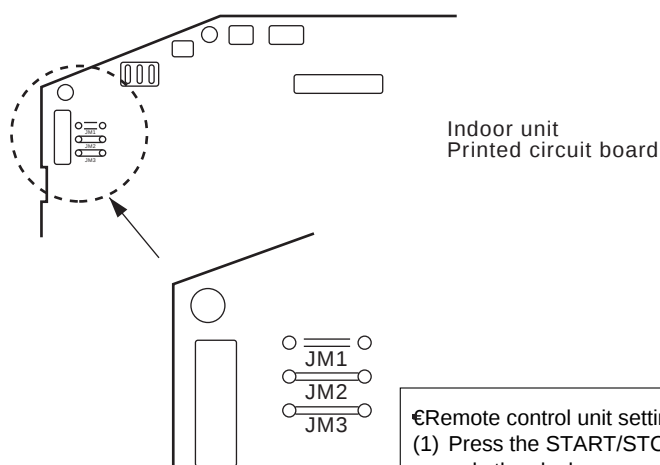
Table 1

Error contents	Error display		
	OPERATION lamp	TIMER lamp	VERTICAL SWING lamp
Indoor EEPROM abnormal	O	O	X
Outdoor EEPROM abnormal	O	O	O
Indoor room temperature sensor open	(2 times) ●	O	X
Indoor room temperature sensor short-circuited	(2 times) ●	O	O
Indoor heat exchanger temperature sensor open	(3 times) ●	O	X
Indoor heat exchanger temperature sensor short-circuited	(3 times) ●	O	O
Float switch operated	(4 times) ●	O	X
Indoor signal abnormal	(5 times) ●	O	X
Outdoor signal abnormal	(5 times) ●	O	O
Indoor fan abnormal	(6 times) ●	O	X
Outdoor power source connection abnormal	O	(2 times) ●	X
Outdoor heat exchanger temperature sensor open	O	(3 times) ●	X
Outdoor heat exchanger temperature sensor short-circuited	O	(3 times) ●	O
Outdoor temperature sensor open	O	(4 times) ●	X
Outdoor temperature sensor short-circuited	O	(4 times) ●	O
Outdoor discharge pipe temperature sensor open	O	(5 times) ●	X
Outdoor discharge pipe temperature sensor short-circuited	O	(5 times) ●	O
Outdoor high pressure abnormal	O	(6 times) ●	X
Outdoor discharge pipe temperature abnormal	O	(7 times) ●	X

O : 0.1s ON / 0.1s OFF (flash) X : OFF

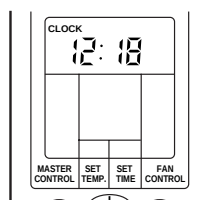
● : 0.5s ON / 0.5s OFF (flash)

REMOTE CONTROL UNIT CODE SWITCHING

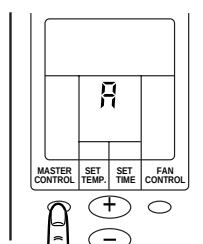


Remote control unit settings

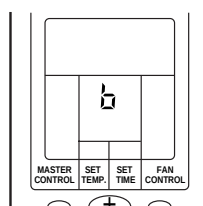
- (1) Press the START/STOP button and display only the clock.



- (2) Press the MASTER CONTROL button continuously for more than five seconds to display the current signal code.



- (3) Change the signal code with the $\oplus/\ominus$ button (A → b → c → d).



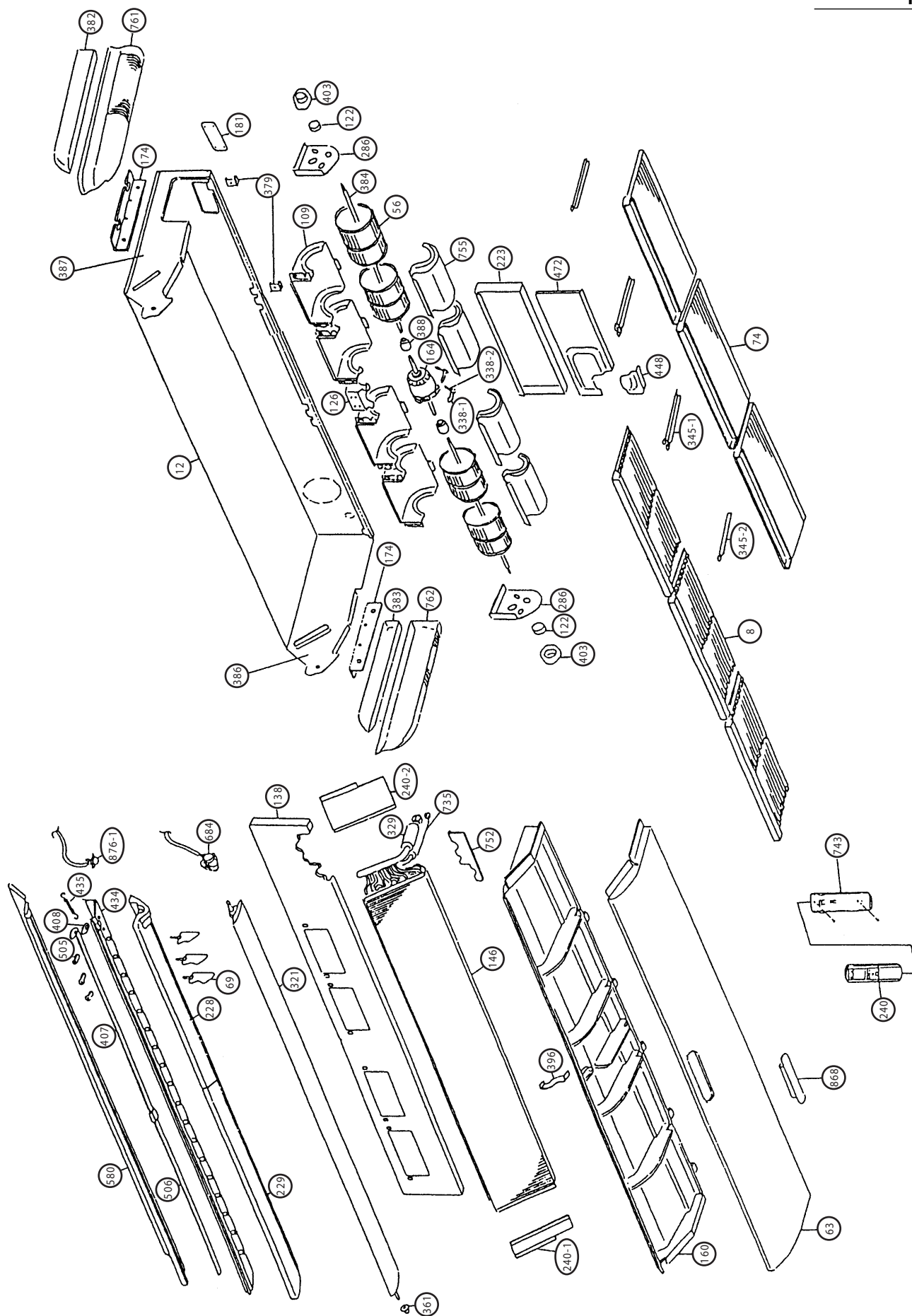
- (4) Press the MASTER CONTROL button again to return to the clock display and change the signal code.

Confirm the setting of the remote control unit signal codes setting and the printed circuit board setting.
If these are not confirmed, the remote control unit cannot be used to operate for the air conditioner.

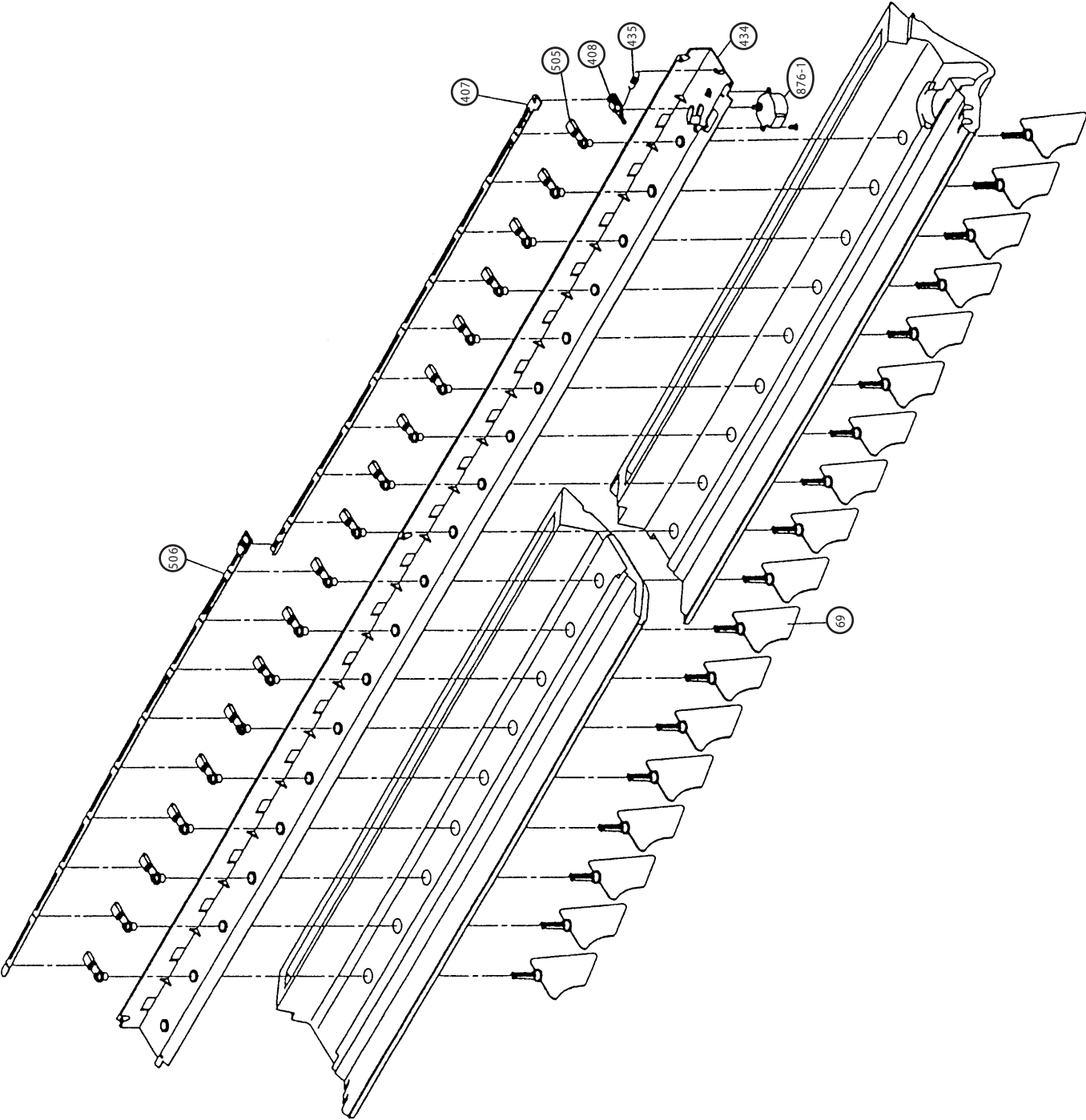
Jumper wire		Remote control unit signal selector switch
JM 2	JM 3	
Connect	Connect	A (Primary setting)
Connect	Disconnect	B
Disconnect	Connect	C
Disconnect	Disconnect	D

DISASSEMBLY ILLUSTRATION

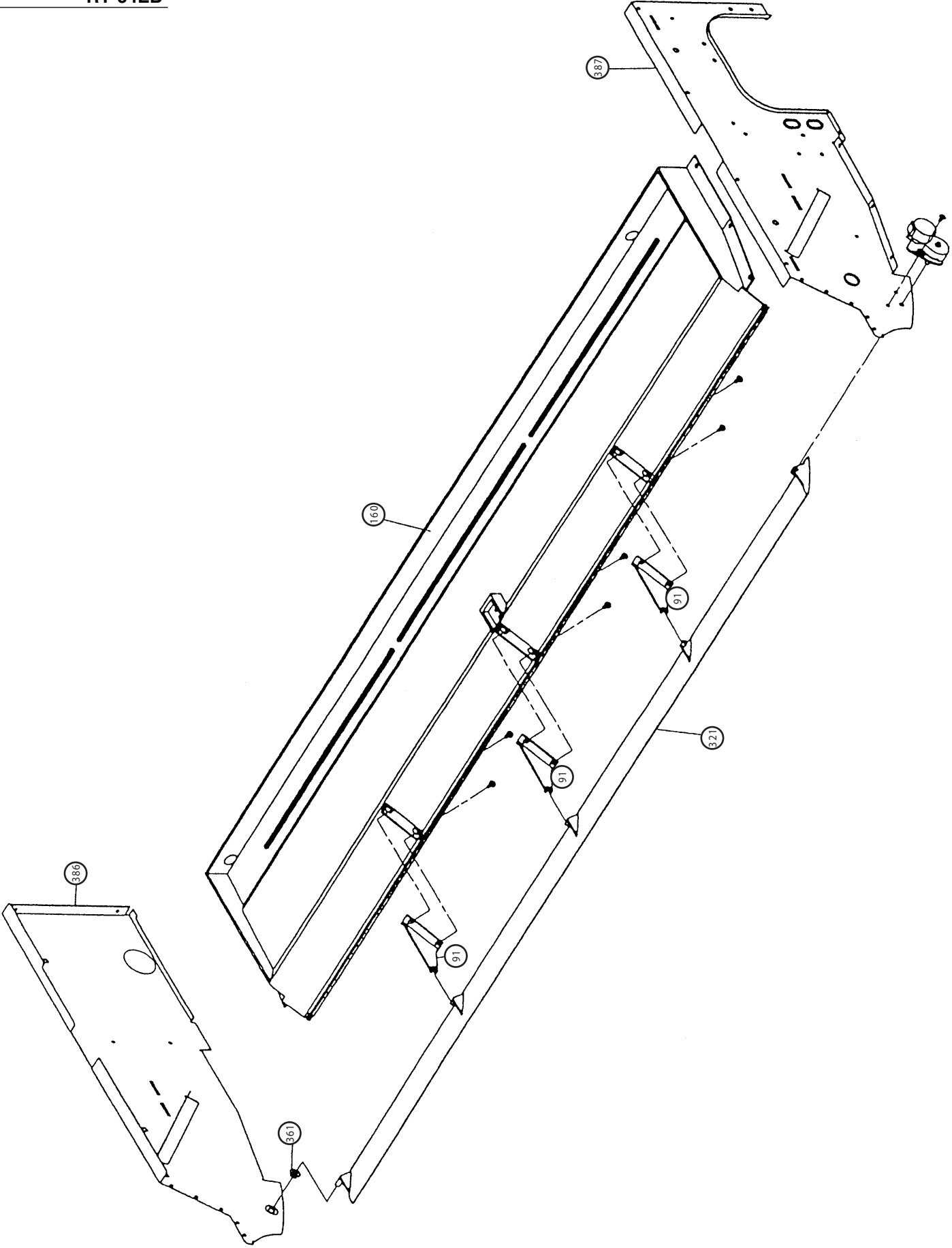
Models : RY-36EB
RY-45EB
RY-54EB



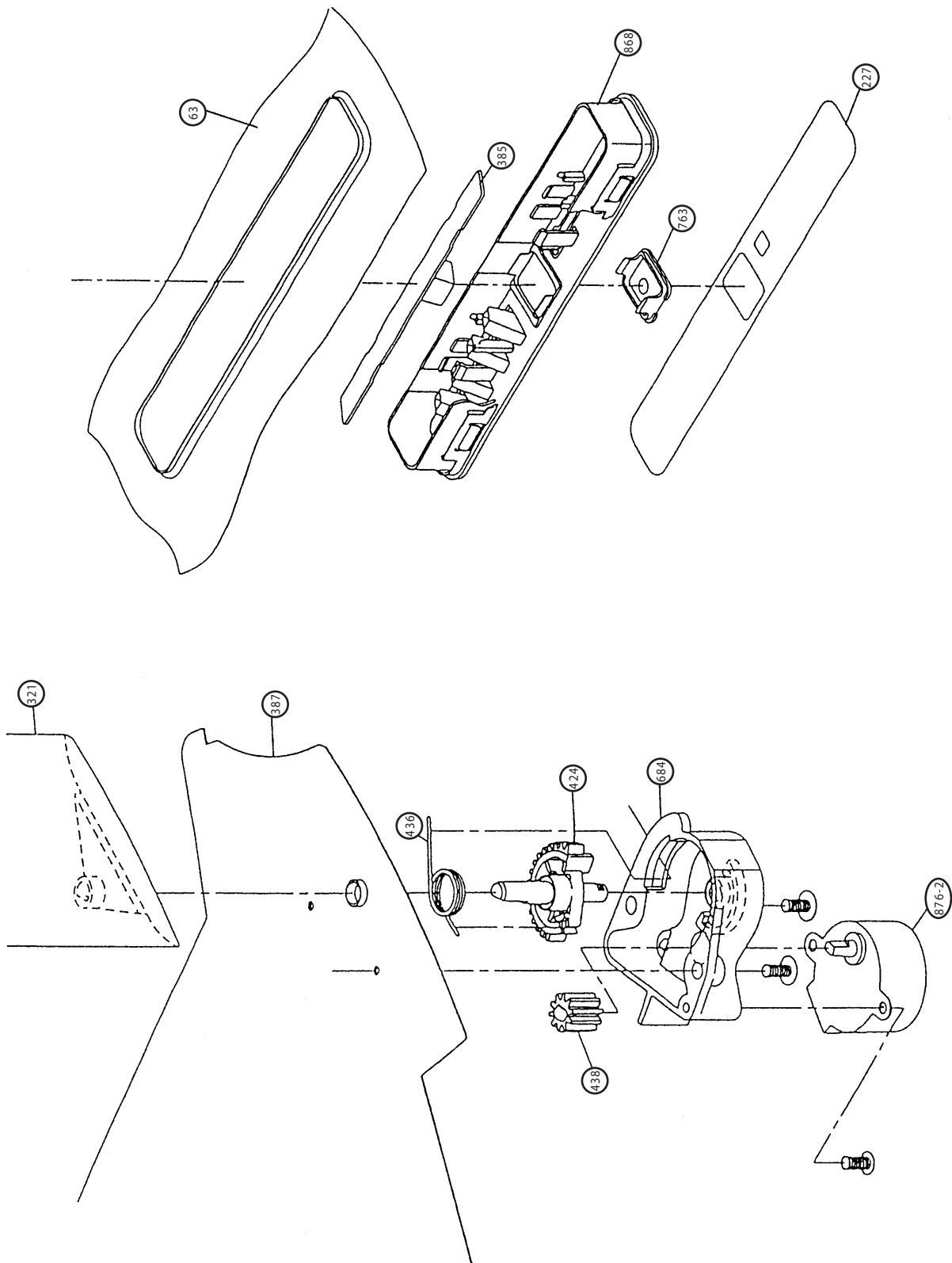
Models : RY-36EB
RY-45EB
RY-54EB



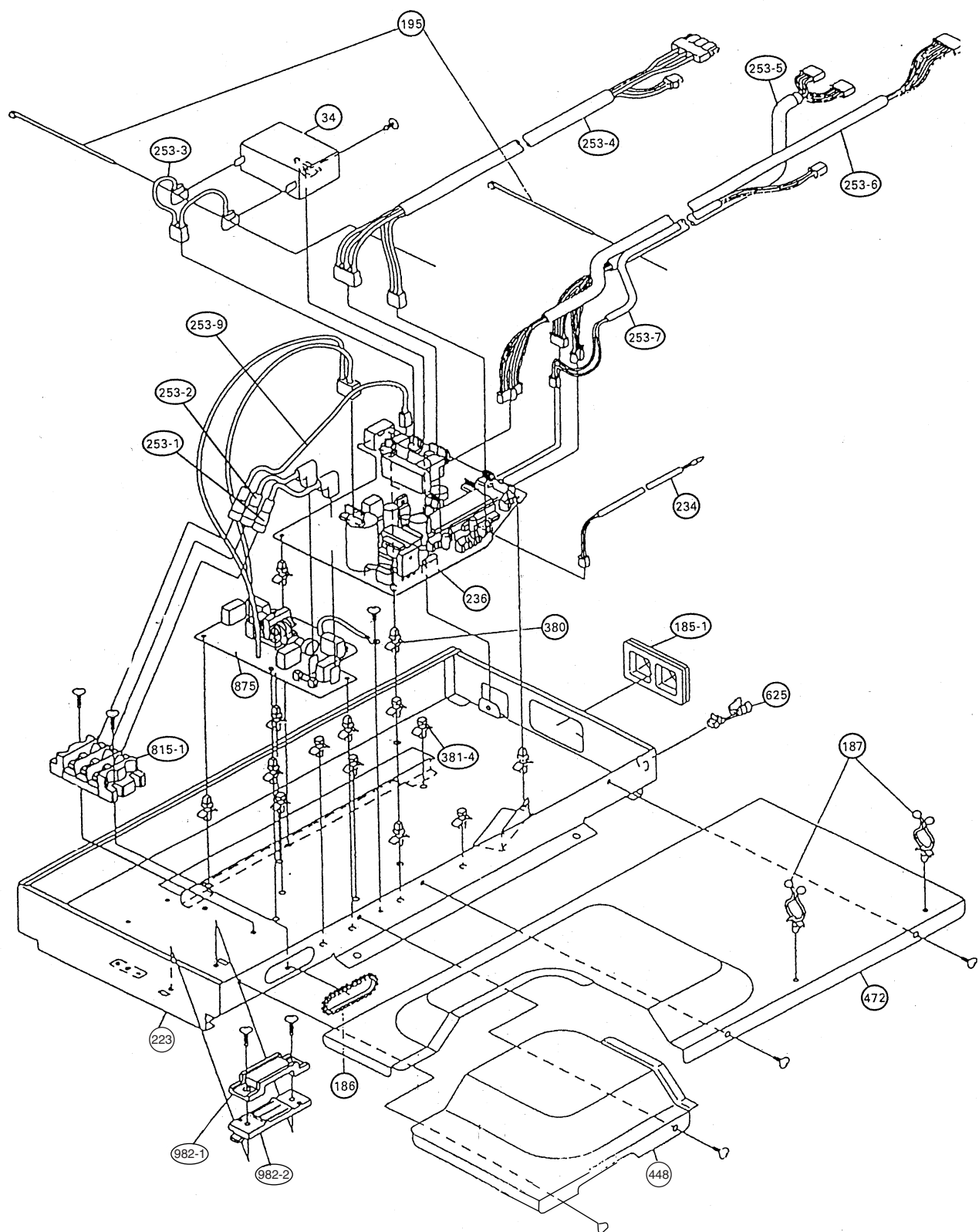
Models : RY-36EB
RY-45EB
RY-54EB

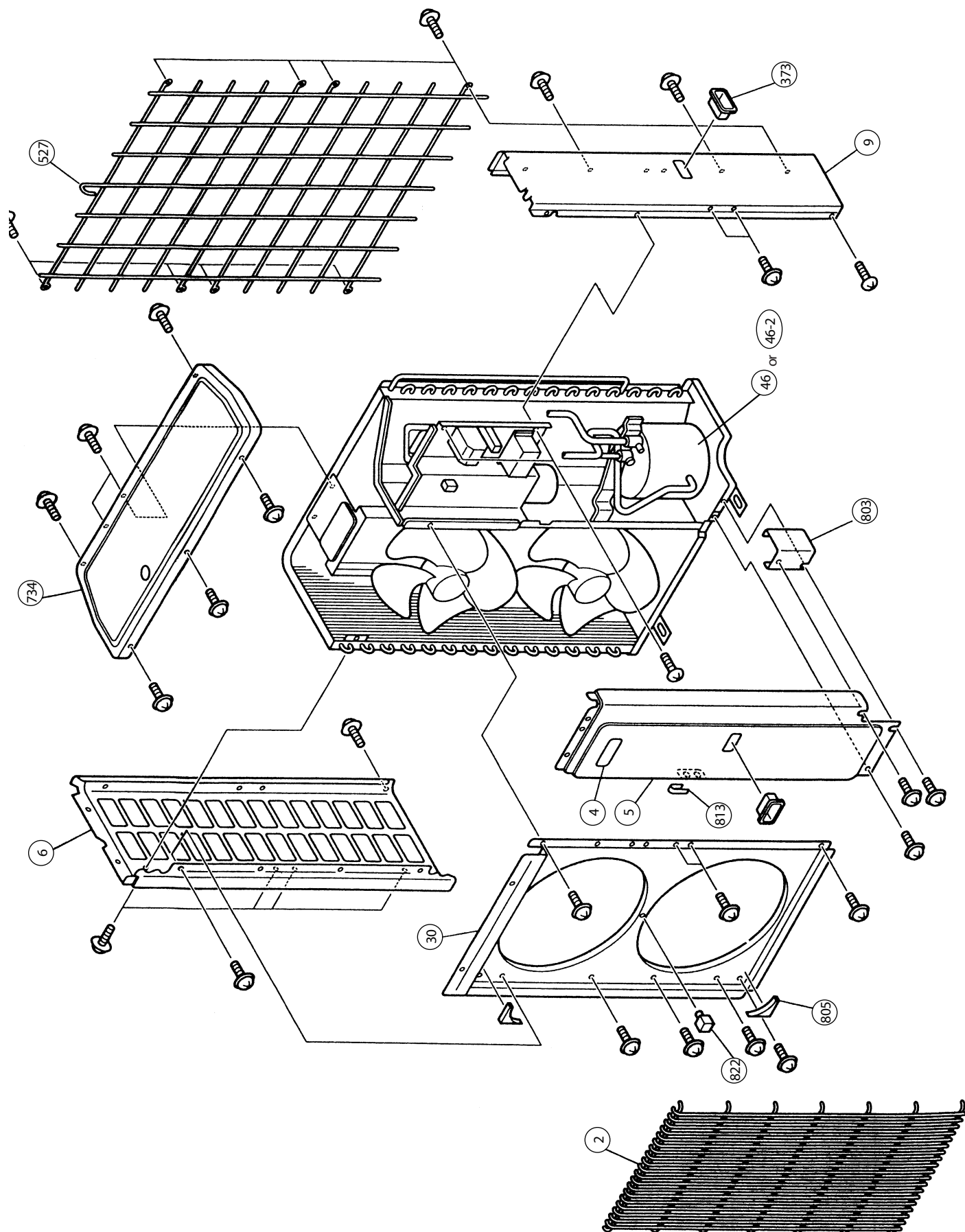


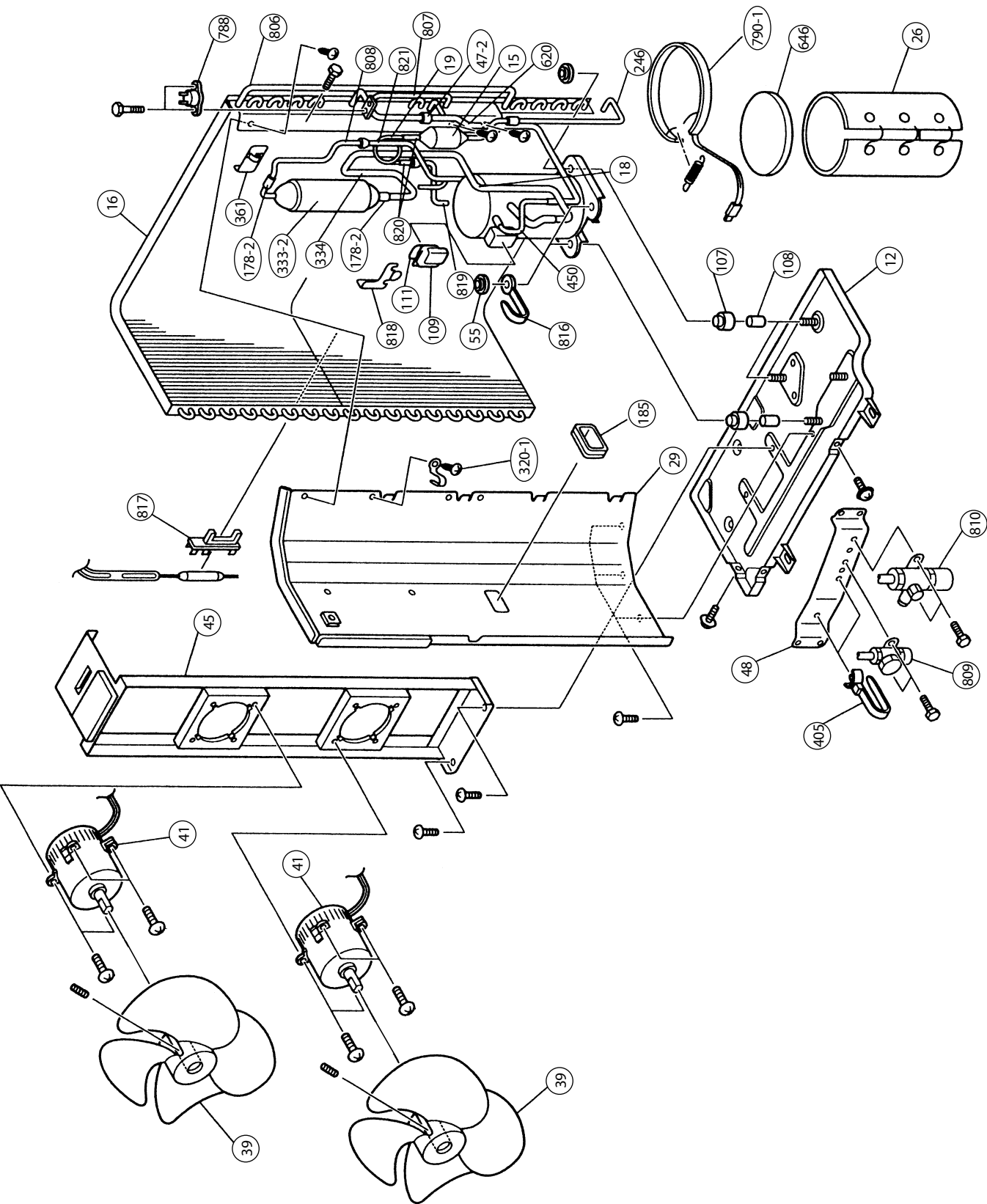
Models : RY-36EB
RY-45EB
RY-54EB

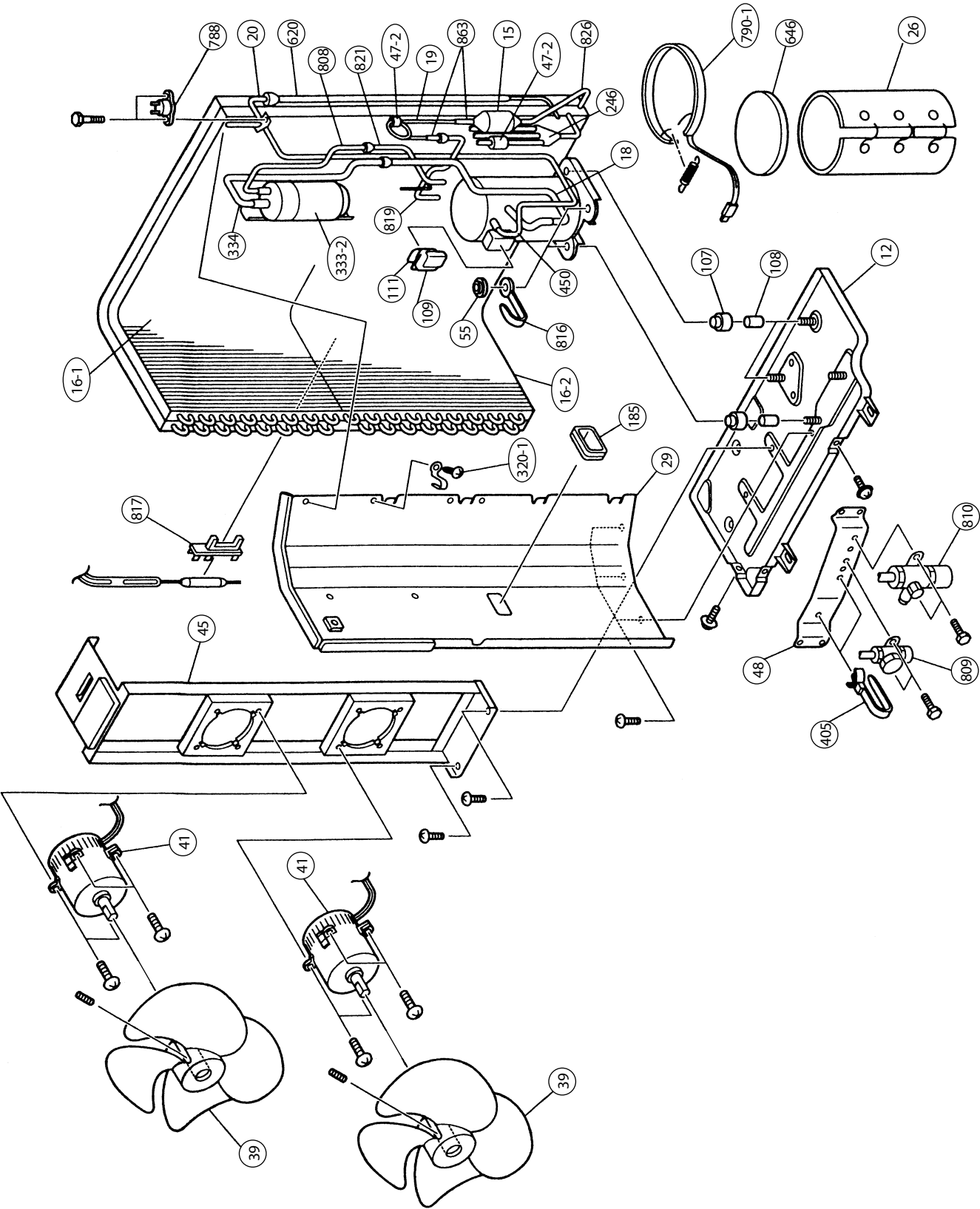


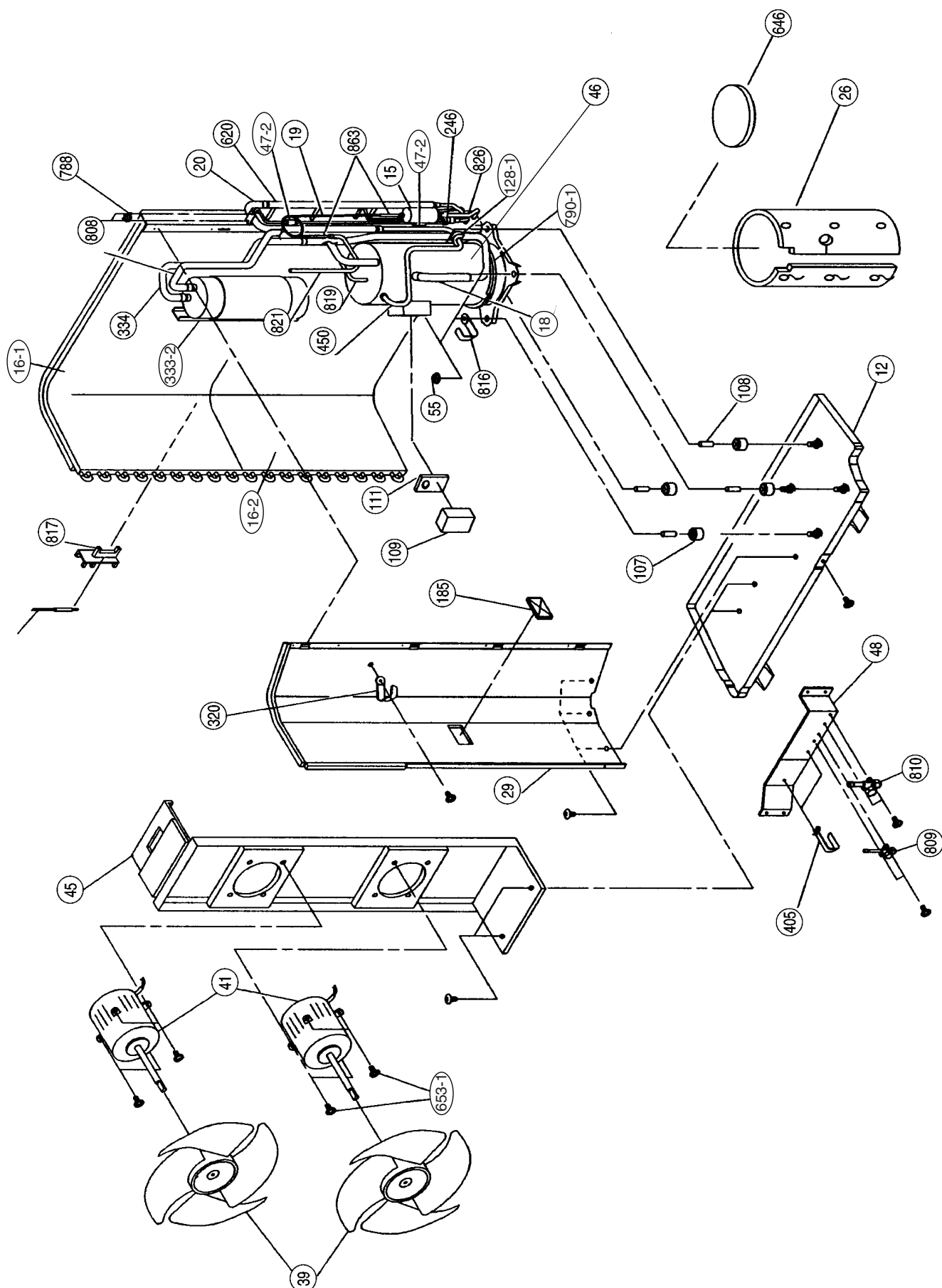
Models : RY-36EB
RY-45EB
RY-54EB



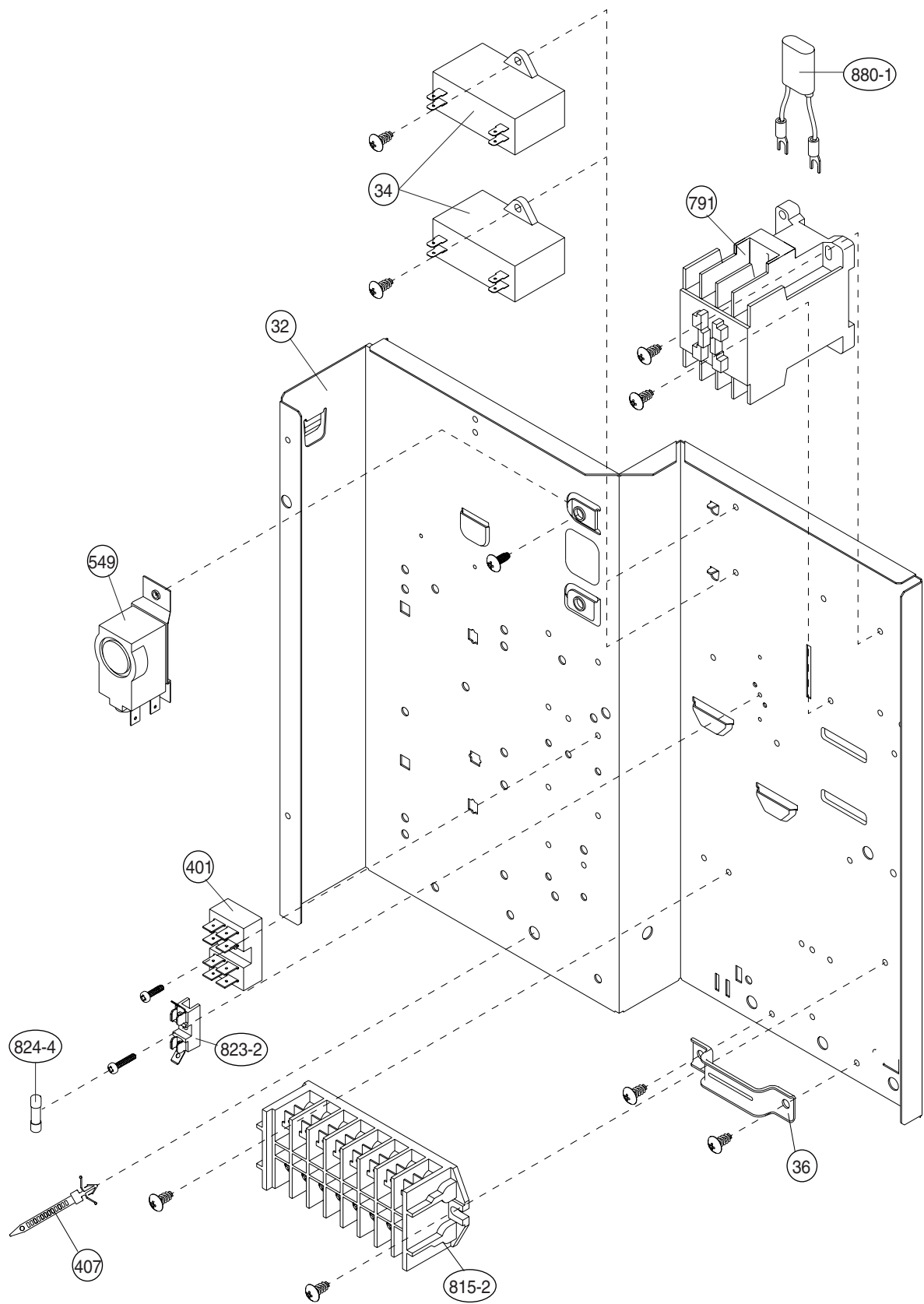








Models : RO-36EP
RO-45EP
RO-54EA



PARTS LIST

INDOOR UNIT

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.			Ord.
		RY-36EB	RY-45EB	RY-54EB	Q'ty
8	Air Filter	9359739005	9359739005	9359739005	
12	Base Assy	9359680000	9359680000	9359680000	
34	Capacitor (Fan Motor)	9703306068	9703306068	9703306068	
56	Sirocco Fan Assy	9359701002	9359701002	9359701002	
63	Panel (Front)	9359734000	9359734000	9359734000	
69	Louver	9359719007	9359719007	9359719007	
74	Intake Grille	9359738008	9359738008	9359738008	
91	Hinge	9359699002	9359699002	9359699002	
109	Casing	9359704003	9359704003	9359704003	
122	Shaft Holder-B	9357921006	9357921006	9357921006	
126	Motor Fixing Table	9359681007	9359681007	9359681007	
138	Separate Wall	9359700005	9359700005	9359700005	
146	Evaporator Assy	9364045009	9364045009	9364045009	
160	Drain Pan	9359698005	9359698005	9359698005	
164	Fan Motor Assy-IN	9360457004	9360457004	9360457004	
174	Hanger Bracket	9359742005	9359742005	9359742005	
181	Hole Cover	9359691006	9359691006	9359691006	
185-1	Rubber Bushing	9357376004	9357376004	9357376004	
186	Edge Cover	9361049017	9361049017	9361049017	
187	Clamp No.1219	313361271706	313361271706	313361271706	
195	Clamp SKB-100	313361275805	313361275805	313361275805	
223	Control Box Assy	9359708001	9359708001	9359708001	
227	Badge "FUJI"	9359735045	9359735045	9359735045	
228	Insulation (Louver)-R	9359721000	9359721000	9359721000	
229	Insulation (Louver)-L	9359722007	9359722007	9359722007	
234	Thermistor Assy-Room	9703299025	9703299025	9703299025	
236	Controller PCB Assy	9704557353	9704557360	9704557254	
240	Remote Control Unit	9371190020	9371190020	9371190020	
240-1	Cover Panel (Pipe)-L	9359690009	9359690009	9359690009	
240-2	Cover Panel (Pipe)-R	9359689003	9359689003	9359689003	
253-1	Wire Assy (Connector)	9702321017	9702321017	9702321017	
253-2	Wire Assy (Connector)	9702322014	9702322014	9702322014	
253-3	Wire Assembly	9702311018	9702311018	9702311018	
253-4	Wire Assy (Connector)	9702323011	9702323011	9702323011	
253-5	Wire Assy (Connector)	9702319014	9702319014	9702319014	
253-6	Wire Assy (Connector)	9702317010	9702317010	9702317010	
253-7	Wire Assy (Connector)	9702318017	9702318017	9702318017	
253-9	Wire Assembly	9704847010	9704847010	9704847010	
286	Shaft Holder Bracket	9359686002	9359686002	9359686002	
321	Flap Assy	9359731009	9359731009	9359731009	
329	Coupling Pipe Assy	9364047003	9364047003	9364047003	
338-1	Fixture (Motor)	9359702009	9359702009	9359702009	
338-2	Fixture (Motor)-B	9359703006	9359703006	9359703006	
345-1	Filter Guide-R	9359692003	9359692003	9359692003	
345-2	Filter Guide-L	9359693000	9359693000	9359693000	
361	Bushing	9359733003	9359733003	9359733003	
379	Hinge Plate (Grille)	9359694007	9359694007	9359694007	
380	Locking Spacer KGLS-6S	313209391403	313209391403	313209391403	
381-4	Locking Spacer KGPS-6S	0600118075	0600118075	0600118075	
382	Cover (Decoration)-R	9359744009	9359744009	9359744009	
383	Cover (Decoration)-L	9359745006	9359745006	9359745006	
384	Shaft	9359707004	9359707004	9359707004	
385	Indicator PCB Assy	9702260019	9702260019	9702260019	
386	Panel-Left Assy	9359685005	9359685005	9359685005	
387	Panel-Right Assy	9359683001	9359683001	9359683001	
388	Joint Assy	9359706007	9359706007	9359706007	
396	Reinforcement Metal	9359697008	9359697008	9359697008	
403	Shaft Holder Fixture	9359687009	9359687009	9359687009	

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

INDOOR UNIT (Continued)

Ref. No.	Description	Part No.			Ord.
		RY-36EB	RY-45EB	RY-54EB	Q'ty
407	Rod (Motor)	9359723004	9359723004	9359723004	
408	Louver Link	9359726005	9359726005	9359726005	
424	Sector Gear	9359729006	9359729006	9359729006	
434	Louver Base	9359718000	9359718000	9359718000	
435	Louver Spring	9359720003	9359720003	9359720003	
436	Flap Spring	9359730002	9359730002	9359730002	
438	Pinion Gear	9359728009	9359728009	9359728009	
448	Control Box-B	9359713005	9359713005	9359713005	
472	Control Box-A	9359712008	9359712008	9359712008	
505	Louver Stopper	9359724001	9359724001	9359724001	
506	Louver Rod	9359725008	9359725008	9359725008	
580	Cover (Top)	9359737001	9359737001	9359737001	
625	Cord Bushing	9359240006	9359240006	9359240006	
684	Motor Base	9359727002	9359727002	9359727002	
735	Distributor Assy	9364046006	9364046006	9364046006	
743	Remote Control Holder Case	9305642014	9305642014	9305642014	
752	Pipe Fixture Metal	9359688006	9359688006	9359688006	
755	Cover (Casing)	9359705000	9359705000	9359705000	
761	Cover (Side)-R	9359740001	9359740001	9359740001	
762	Cover (Side)-L	9359741008	9359741008	9359741008	
763	Cover (Receiver)	9359714002	9359714002	9359714002	
815-1	Terminal-3P	9358660027	9358660027	9358660027	
868	PCB Holder	9359736004	9359736004	9359736004	
875	Filter PCB Assy	9704561138	9704561138	9704561138	
876-1	Motor, Step-H	9360479013	9360479013	9360479013	
876-2	Motor, Step-V	9360307026	9360307026	9360307026	
982-1	Cord Clamp-A	9359820017	9359820017	9359820017	
982-2	Cord Clamp-B	9359821014	9359821014	9359821014	

OUTDOOR UNIT

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

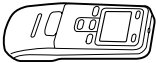
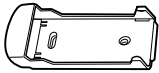
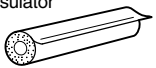
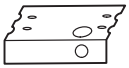
Ref. No.	Description	Part No.			Ord. Q'ty
		RO-36EP	RO-45EP	RO-54EA	
2	Fan Cover	9352159015	9352159015	9352159015	
4	Emblem-Rear	9361328006	9361328006	9361328006	
5	Cabinet-A, Painted	9352146015	9352146015	9352146015	
6	Cabinet-C, Painted	9352149016	9352149016	9352149016	
9	Cabinet-B, Painted	9352147012	9352147012	9352147012	
12	Base Assy, Painted	9352136016	9352136016	9352136016	
15	Dryer	9369978036	9369978036	9369978036	
16	Condenser Assy	9364074009	-----	-----	
16-1	Condenser-A Assy	-----	9364064000	9364064000	
16-2	Condenser-B Assy	-----	9364061009	9364061009	
18	Suction Pipe Assy	9370948028	9364514000	9364514000	
19	Capillary Tube	9364083001	9364053004	9364053004	
20	Discharge Pipe-A Assy	-----	9364132006	9366223009	
26	Compressor Cover-A	9364088006	9364088006	9364088006	
29	Separate Wall	9355277013	9355277013	9355277013	
30	Blower Cover, Painted	9352151019	9352151019	9352151019	
32	Control Box Metal	9352134012	9352134012	9352134012	
34	Capacitor (Fan Motor)	9357965024	9357965024	9357965024	
36	Cord Holder Metal	9356934007	9356934007	9356934007	
39	Propeller Fan Assy	9300855013	9300855013	9300855013	
41	Fan Motor Assy-Out	9600832028	9600832028	9600832028	
45	Bracket (Motor) Assy	9352141003	9352141003	9352141003	
46	Compressor Assy	-----	9367376001	9367377008	
46-2	Compressor-B Assy	9370772012	-----	-----	
47-2	Rubber (Discharge Pipe)	313185159802	313185159802	313185159802	
48	Bracket (Coupler) Assy	9355281010	9355281010	9355281010	
55	Special Nut M8 (For Comp.)	9355091008	9355091008	9355091008	
107	Rubber Seat-A (For Comp.)	9364084008	9364084008	9364084008	
108	Sleeve-A (For Comp.)	9364085005	9364085005	9364085005	
109	Terminal Cover (For Comp.)	9364087009	9364087009	9364087009	
111	Terminal Packing	9364086002	9364086002	9364086002	
128-1	Rubber (Discharge Pipe)	-----	-----	313155086308	
178-2	Capillary Holder Rubber	313394274808	-----	-----	
185	Rubber Bushing	313005066051	313005066051	313005066051	
246	Outlet Pipe (Cond.) Assy	9364178004	9364060002	9364060002	
320-1	Wire Clamp Metal	313483219905	313483219905	313483219905	
333-2	Accumulator (B)	9301942019	9368463007	9368463007	
334	Suction Pipe-B	9364065007	9362557009	9362557009	
361	Accumulator Support Assy	9355351003	-----	-----	
401	Terminal -2P	9701971015	9701971015	9701971015	
405	Clamp No.1763	313816345304	313816345304	313816345304	
407	Clip (Cable) No.1259	313739340109	313739340109	313739340109	
450	Discharge Pipe-A	9370951035	9364079004	9366224006	
527	Protection Net	9352163012	9352163012	9352163012	
549	Thermistor Outdoor	9352426001	9352426001	9352426001	
620	Inlet Pipe (Cond.) Assy	9364068008	9364090009	9364090009	
646	Compressor Cover-B	9364089003	9364089003	9364089003	
653-1	Bolt (Fan Motor Fixing)	0700156014	0700156014	0700156014	
734	Cabinet Top Plate	9352161018	9352161018	9352161018	
788	Thermistor-Overheat	9354061002	9354061002	9354061002	
790-1	Belt Heater-A	-----	9361140042	9361140042	
790-2	Belt Heater-A	9361140066	-----	-----	
791	Magnetic Relay	9363277005	9363277005	9352552007	
803	Cabinet-D, Painted	9352150012	9352150012	9352150012	
805	Blower Cover Corner	9352160011	9352160011	9352160011	
806	Cond. Pass Pipe-A Assy	9364075006	-----	-----	
807	Cond. Pass Pipe-B	9364076003	-----	-----	
808	Inlet Pipe (Accumulator)-A	9364666004	9362558006	9362558006	
809	Ball Valve-A	9371799018	9371799018	9371799018	
810	Ball Valve-B	9371799032	9371799032	9371799032	

OUTDOOR UNIT(Continued)

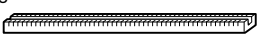
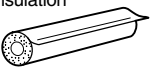
When you order parts, please make a photocopy of this page and fill the number of the parts in the "Order" column.

Ref. No.	Description	Part No.			Ord. Q'ty
		RO-36EP	RO-45EP	RO-54EA	
373	Grip	9352157004	9352157004	9352157004	
813	Cabinet Hook	9352148002	9352148002	9352148002	
815-2	Terminal-8P	9363276022	9363276022	9363276022	
816	Wire Clamp Metal	313584219902	313584219902	313584219902	
817	Thermostat Fixture	9352164019	9352164019	9352164019	
818	Accumulator Supprot-B Assy	9355350006	-----	-----	
819	Valve-A Coupl. Pipe	9364081007	9364052007	9364052007	
820	Joint Pipe (capillary)	9364082004	-----	-----	
821	Joint Pipe (Valve-B)	9364080000	9362564007	9362564007	
822	Fan Cover Fixture-A	9352158018	9352158018	9352158018	
823-2	Fuse Holder	0500063024	0500063024	0500063024	
824-2	Fuse	0600222529	0600222529	0600222529	
826	Condensing Pipe-B	-----	9364062006	9364062006	
863	Joint Pipe (capillary)-B	-----	9362563000	-----	
880-1	Network	9700987017	9700987017	9700987017	

INDOOR UNIT ACCESSORIES

Name and Shape	Q'ty	Application	Parts No.
Remote control unit 	1	Use for air conditioner operation	9371190020 (AR-JW2)
Battery (pen light) 	2	For remote control unit	0600185534
Remote control unit holder 	1	For mounting the remote control unit	9305642014
Tapping screw (φ 3 x 12) 	3	For remote control unit holder installation	301141533125
Drain hose insulation 	1	Adhesive type 70 x 230	9360464002
VT wire 	1	For fixing the drain hose L 280 mm	313806350303
Coupler heat insulator (large) 	2	For indoor side pipe joint (large pipe)	9350716029
Coupler heat insulator (small) 	1	For indoor side pipe joint (small pipe)	9352766015
Nylon fastener 	Large 4	For fixing the coupler heat insulator	9301501001
	Small 4		312300787605
Special nut A (large flange) 	4	For installing indoor unit	313005446653
Special nut B (small flange) 	4	For installing indoor unit	313005446759
Installation template 	1	For positioning the indoor unit	9360022004
Auxiliary pipe assembly 	1	For connecting the piping	9360463005

OUTDOOR UNIT ACCESSORIES

Name and Shape	Q'ty	Application	Parts No.
Power cap 	1	For power cord installation	9352173011
Auxiliary pipe assembly 	1	For wiring conduit (gas side) connection (May not be supplied, depending on the model)	9355292016
Edge cover 	1	For wiring conduit installation hole edge protection	9352436000
Tapping screw 	2	· For cabinet A and cabinet D mounting (1) · Spare (1)	301463040100
Binder 	1	For power cord binding	313035356905
Putty 	1	For sealing	303020200114
Coupler heat insulation 	1	For outdoor side pipe joint	313005074759



MANUFACTURER :

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