



SPLIT TYPE
ROOM AIR CONDITIONER
CEILING type (50Hz)

SERVICE
MANUAL

Models

Indoor unit

RY-30LA

RY-36LA

Outdoor unit

RO-30LC

RO-36LB



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SPECIFICATIONS

TYPE	COOLING & HEATING	
INDOOR UNIT	RY-30LA	RY-36LA
OUTDOOR UNIT	RO-30LC	RO-36LB
COOLING CAPACITY	8.50 kW	10.0 kW
HEATING CAPACITY	10.0 kW	10.8 kW

ELECTRICAL DATA

POWER SOURCE		230 V	
FREQUENCY		1 ø 50Hz	
RUNNING CURRENT	COOLING	13.1 A	18.0 A
	HEATING	12.7 A	14.2 A
INPUT WATTS	COOLING	3.0 kW	4.12 kW
	HEATING	2.90 kW	3.26 kW
E.E.R.	COOLING	2.83 kW/kW	2.43 kW/kW
	HEATING	3.45 kW/kW	3.31 kW/kW
MOISTURE REMOVAL		2.5 L/hr	3.0 L/hr
AIR CIRCULATION		1,660 m3/hr	1,850 m3/hr

COMPRESSOR

TYPE	Hermetic type, 4 poles, Inverter, Twin rotary
DISCRIMINATION	TNB220FPBM9

FAN MOTOR

POWER SOURCE		230 V	
INDOOR UNIT	DISCRIMINATION	MFA-45DZM	
	HIGH-SPEED	1,000 r.p.m.	1,100 r.p.m.
	MED-SPEED	900 r.p.m.	1,000 r.p.m.
	LOW-SPEED	750 r.p.m.	850 r.p.m.
OUTDOOR UNIT	DISCRIMINATION	MFE-60PO	
	HIGH-SPEED	850 r.p.m.	
	LOW-SPEED	900 r.p.m.	

DIMENSIONS

INDOOR UNIT	H x W x D	240 x 1,660 x 700 mm
OUTDOOR UNIT	H x W x D	830 x 900 x 330 mm

WEIGHT

INDOOR UNIT	NET / GROSS	48 kg / 61 kg
OUTDOOR UNIT	NET / GROSS	64 kg / 70 kg

ADDITIONAL REFRIGERANT CHARGE (R410A)

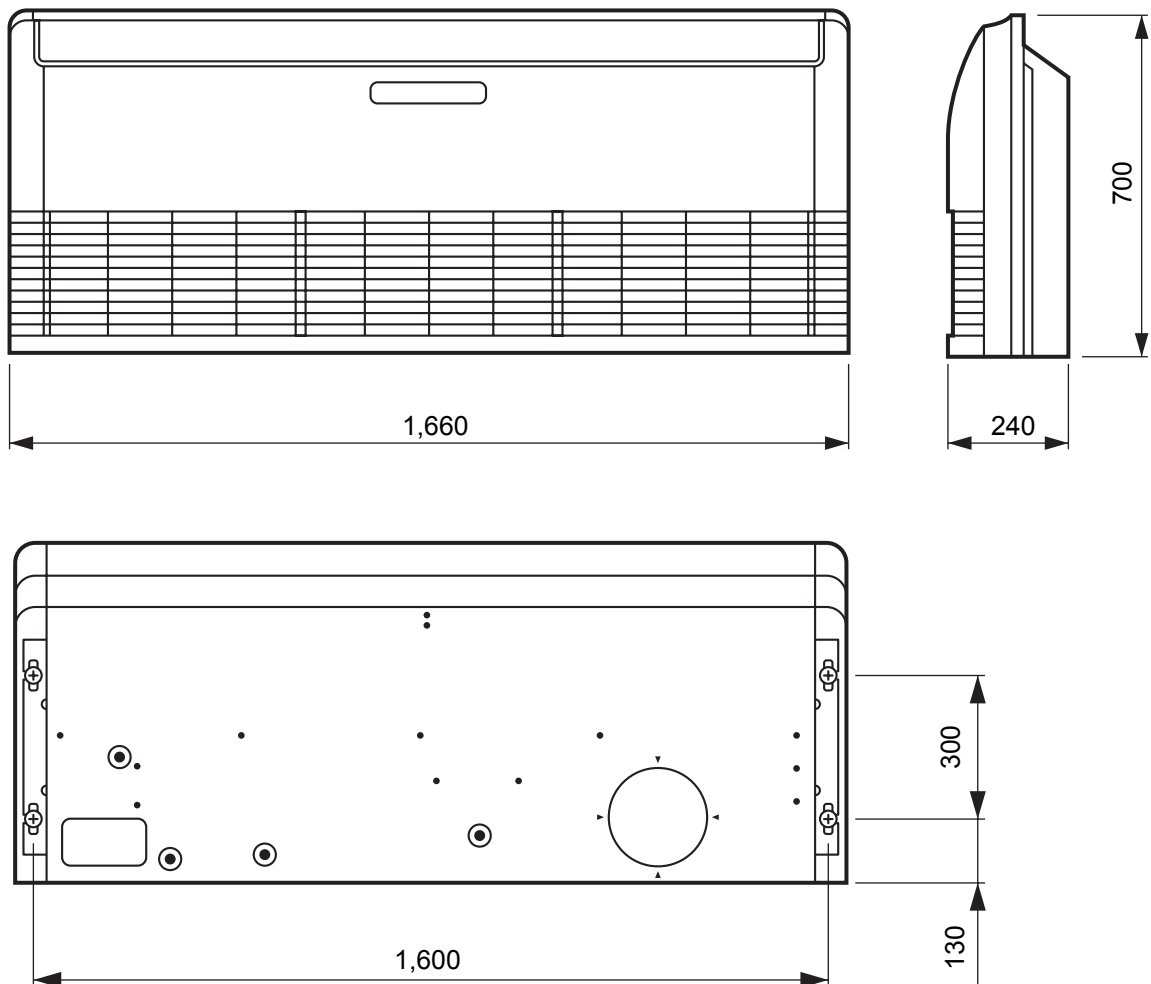
FULL CHARGE AMOUNT	Pipe Length	15 m (49 ft)	2,200 g (77.7 oz)
		20 m (66 ft)	2,400 g (84.7 oz)
		30 m (99 ft)	2,800 g (98.8 oz)
		40 m (132 ft)	3,200 g (112.9 oz)
		50 m (165 ft)	3,600 g (127.0 oz)
ADDITIONAL CHARGE			40 g / m (0.43 oz/ft)

OUTLINE AND DIMENSIONS

(Unit : mm)

INDOOR UNIT

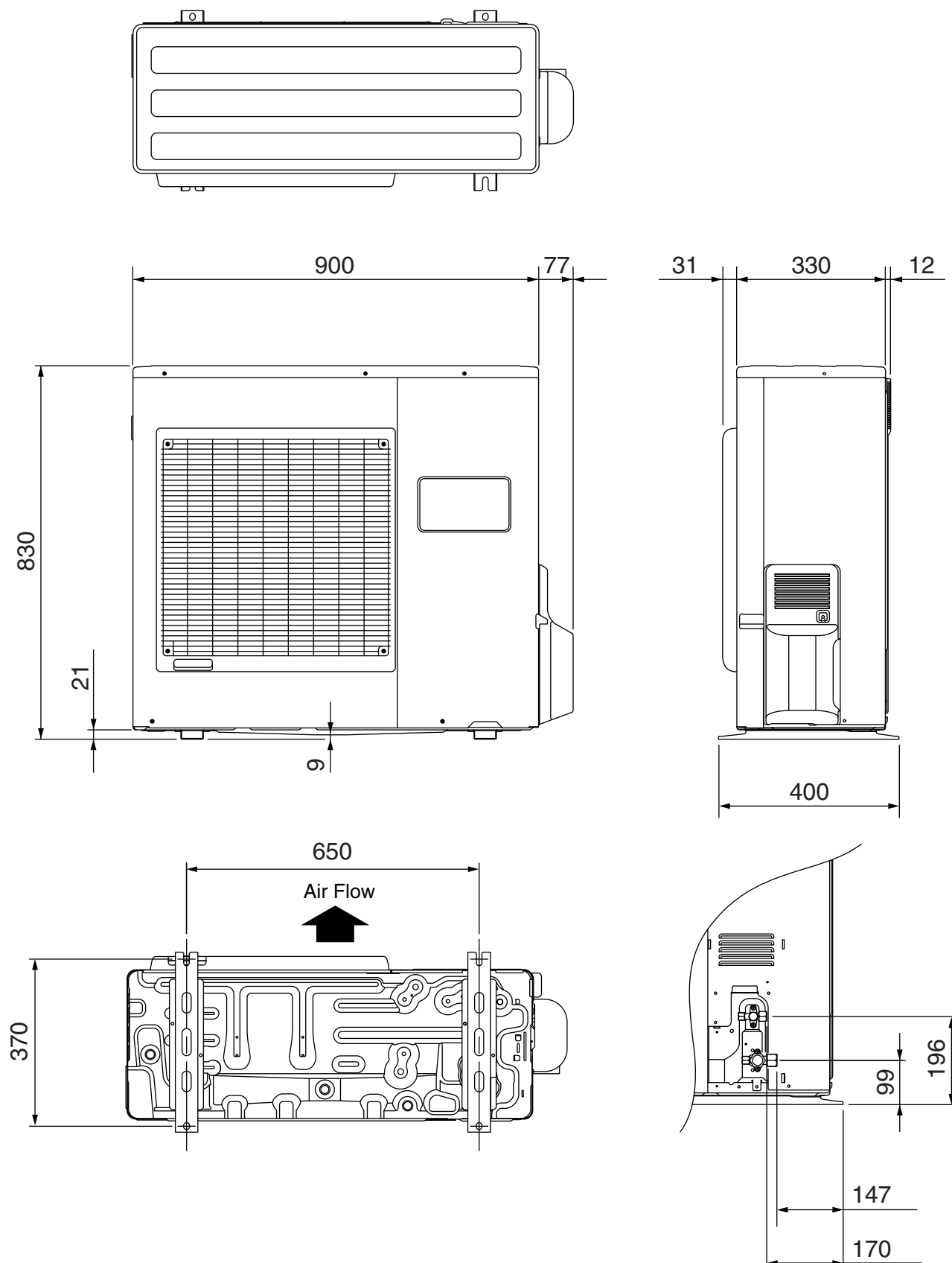
Models : RY-30LA
RY-36LA



OUTDOOR UNIT

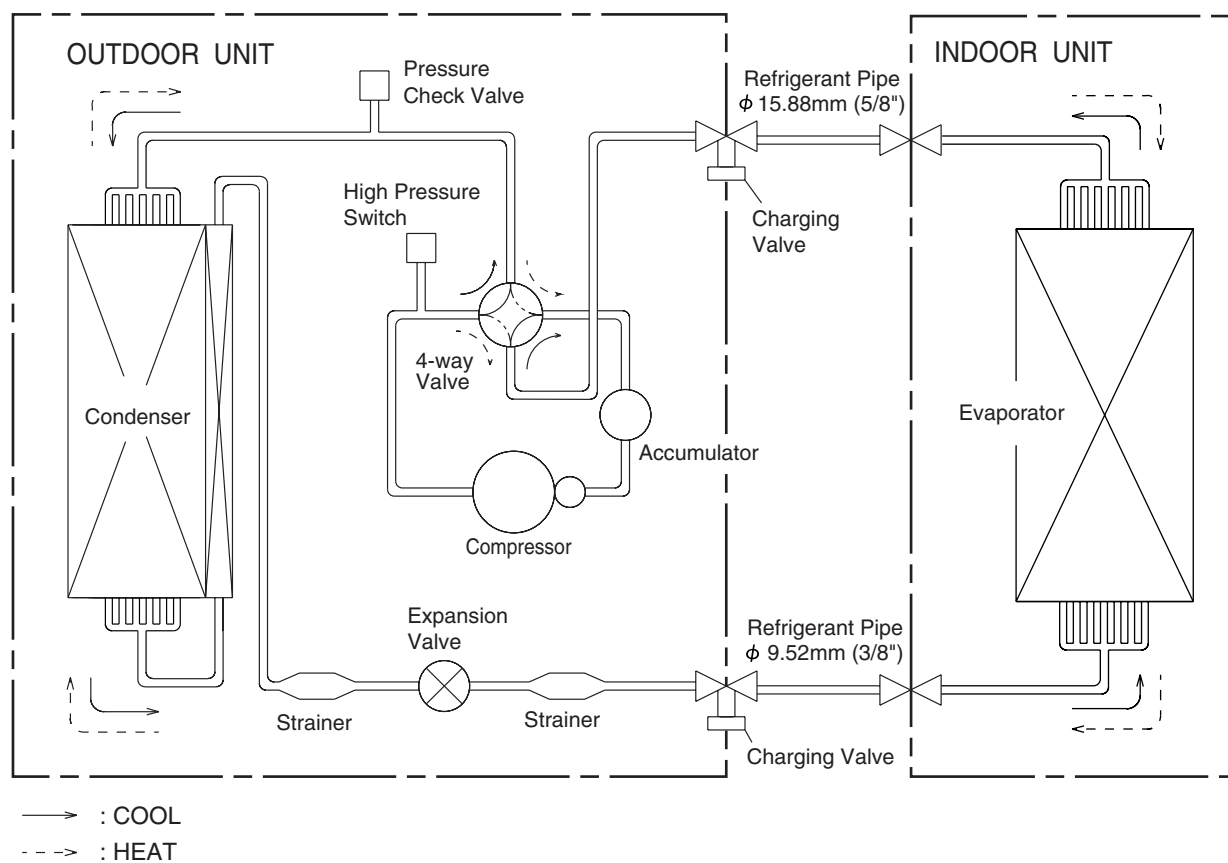
(Unit : mm)

Models : RO-30LC
RO-36LB



REFRIGERANT SYSTEM DIAGRAM

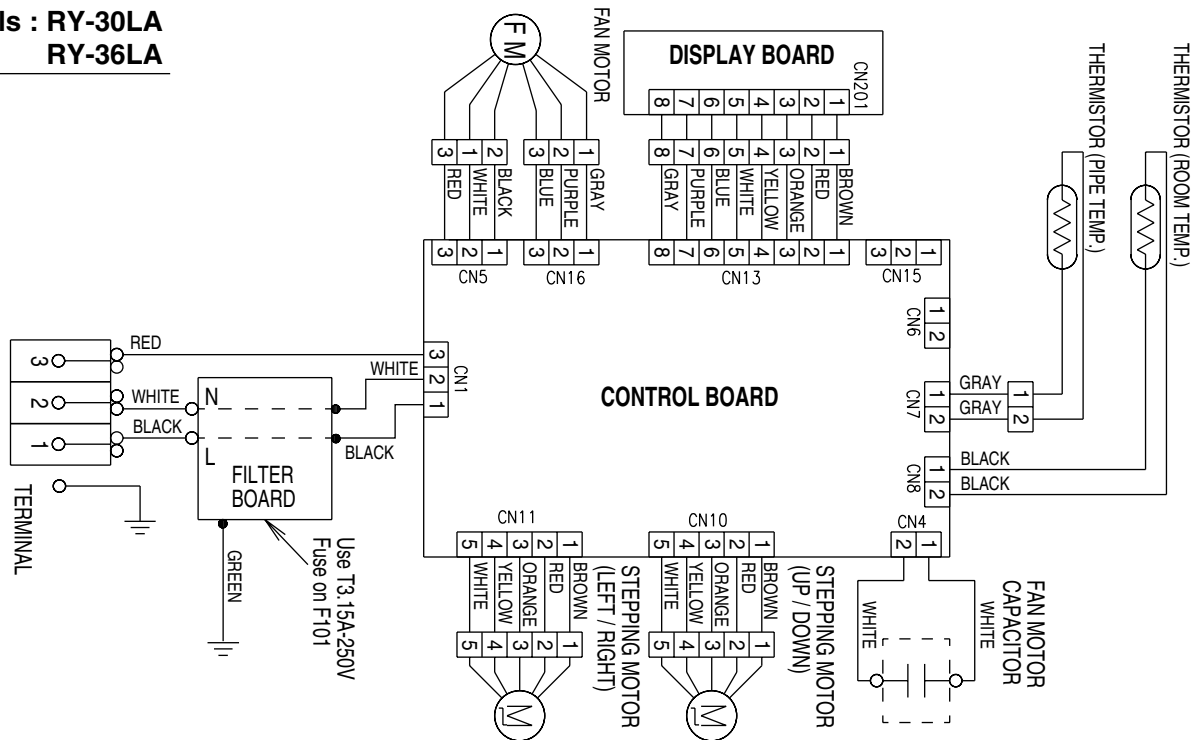
Models : RY-30LA / RO-30LC
RY-36LA / RO-36LB



CIRCUIT DIAGRAM

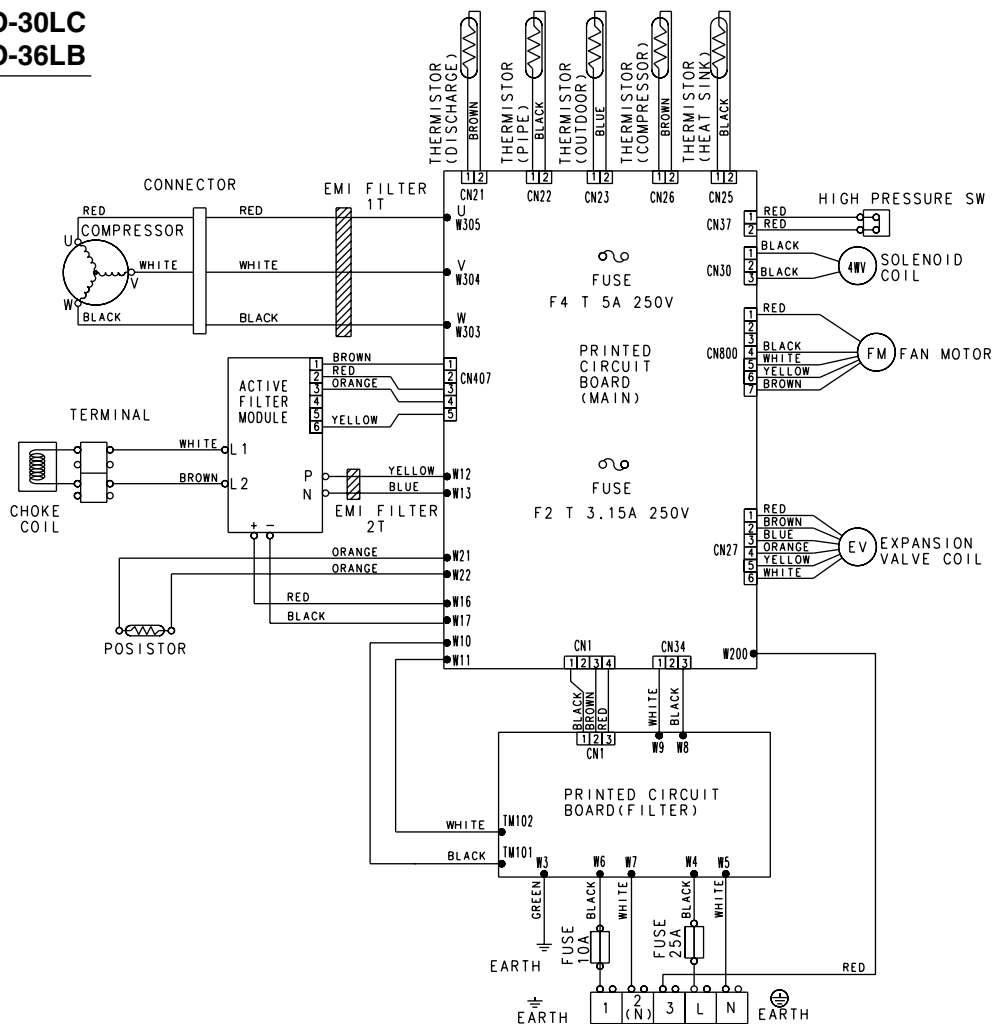
INDOOR UNIT

Models : RY-30LA
RY-36LA



OUTDOOR UNIT

Models : RO-30LC
RO-36LB

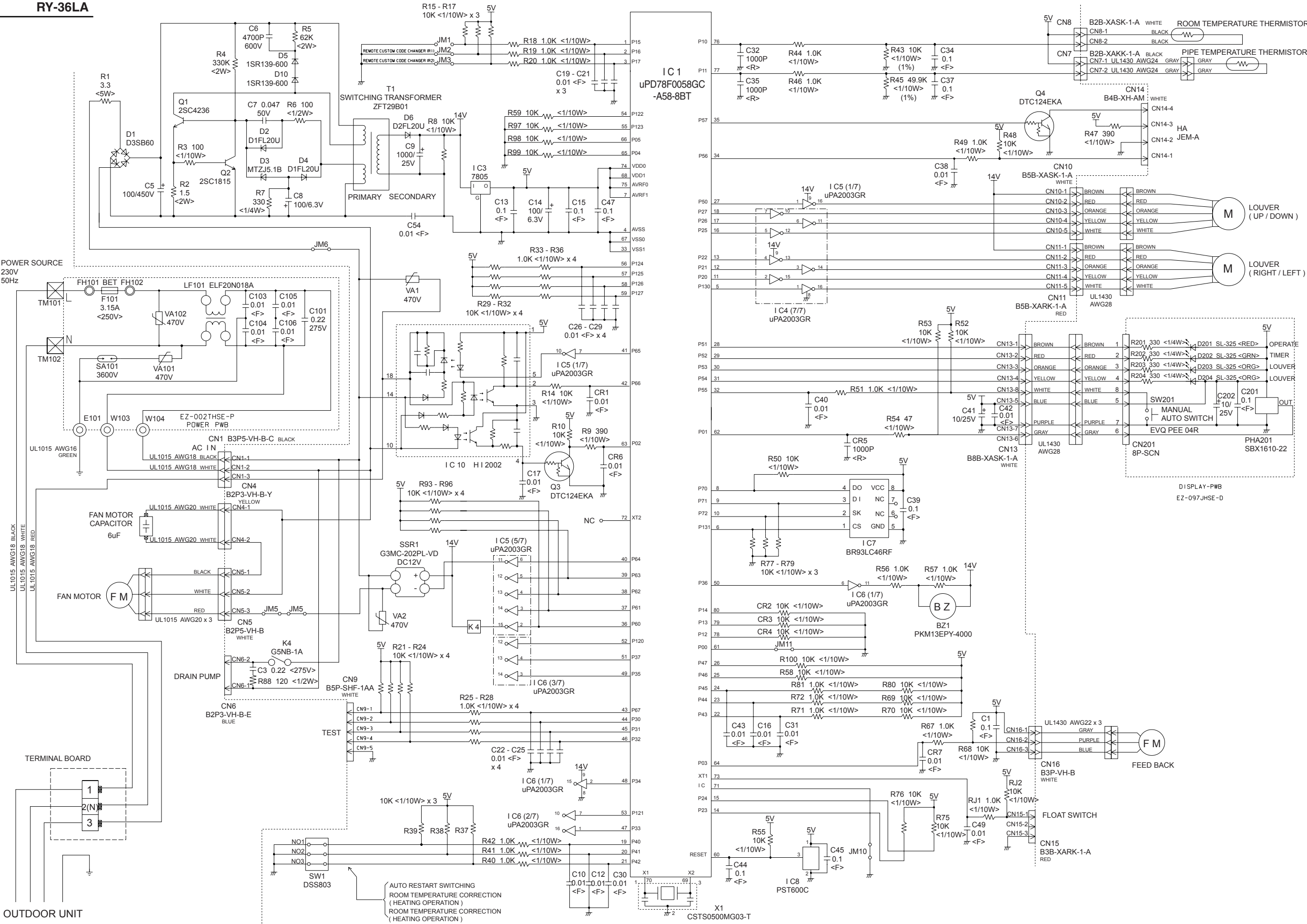


INDOOR PCB CIRCUIT DIAGRAM

Models : RY-30LA
RY-36LA

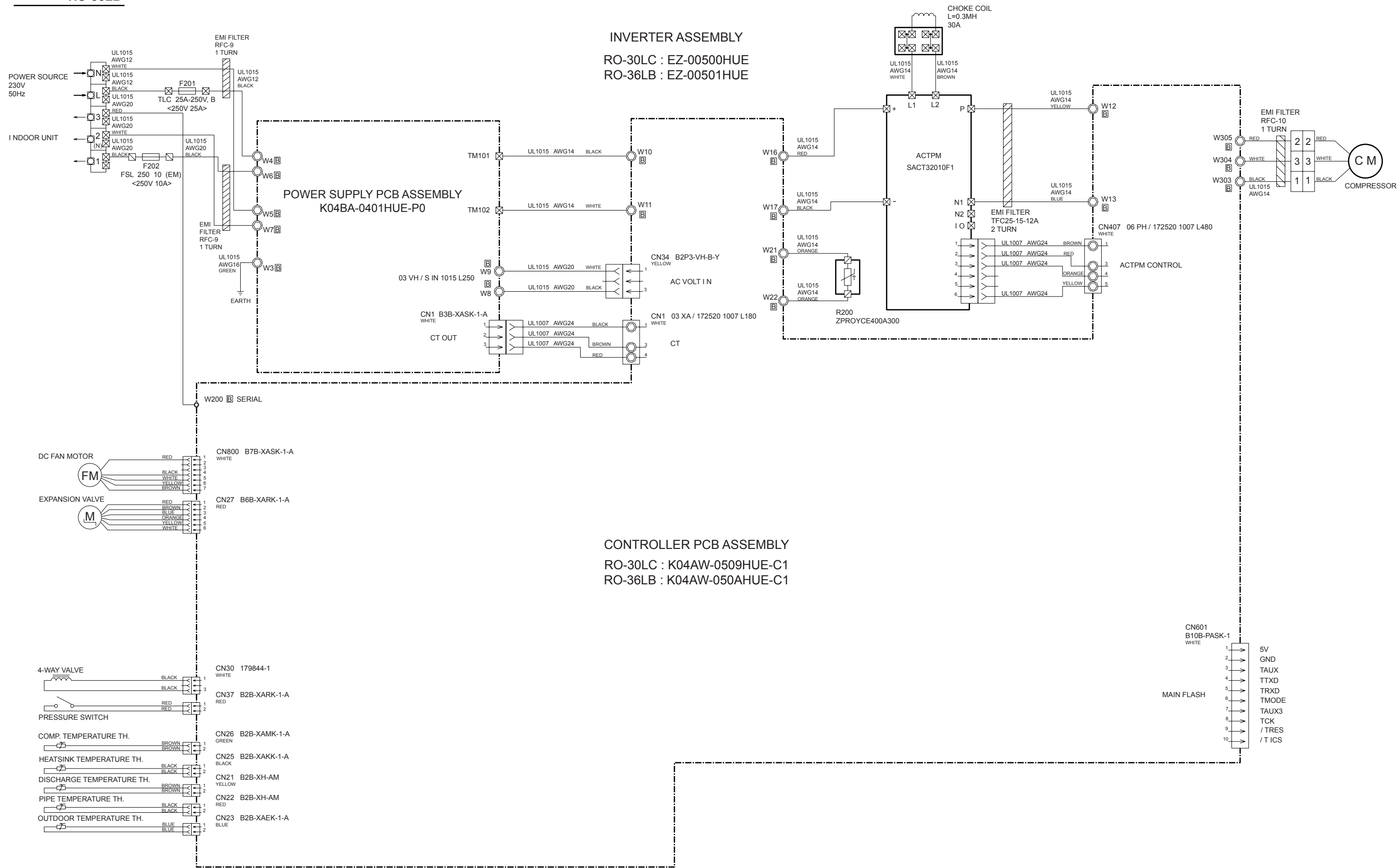
CONTROLLER PCB ASSEMBLY (MAIN PCB)

RY-30LA : K01AL-050FHSE-C1
RY-36LA : K01AL-050GHSE-C1



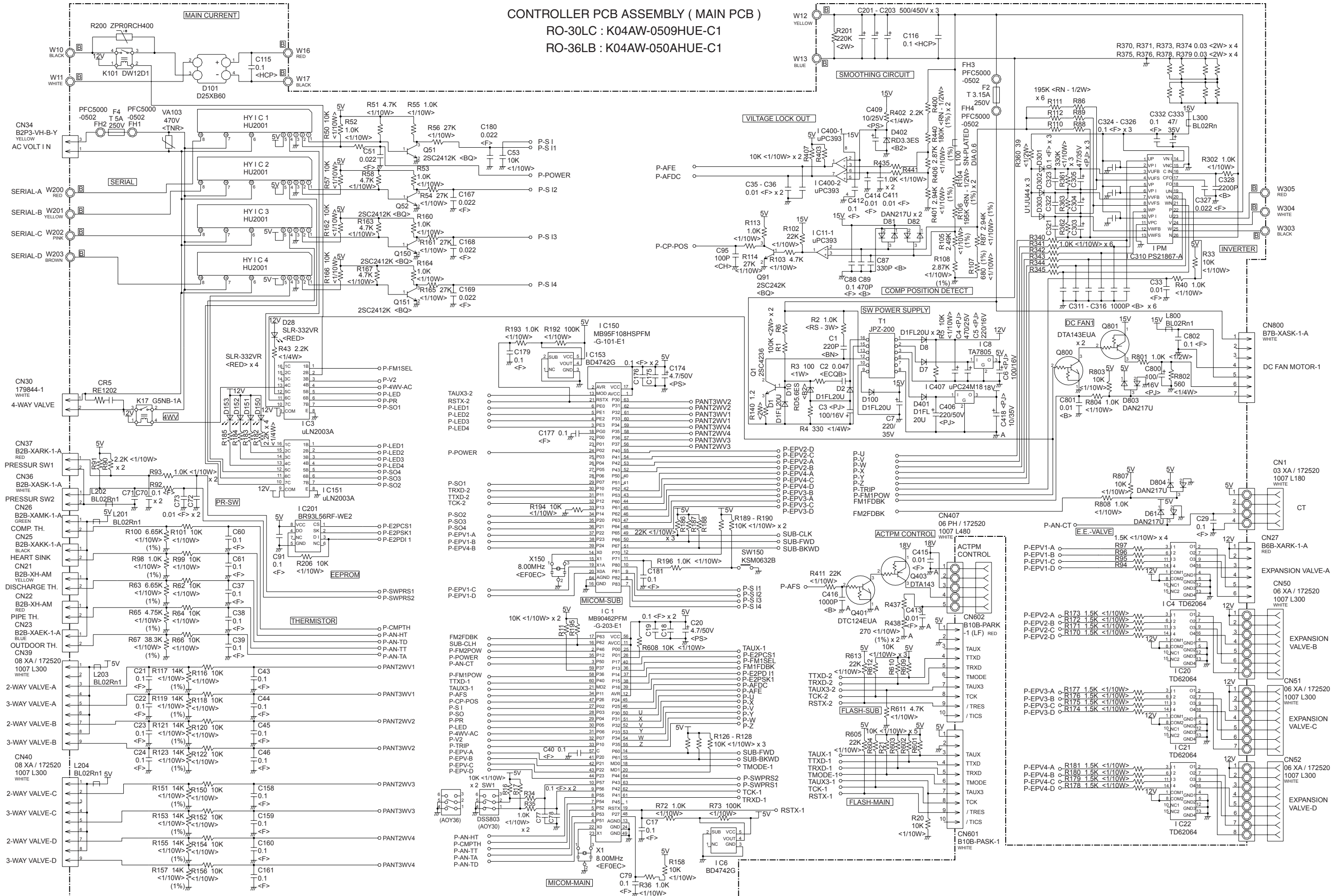
OUTDOOR PCB CIRCUIT DIAGRAM

Models : RO-30LC
RO-36LB



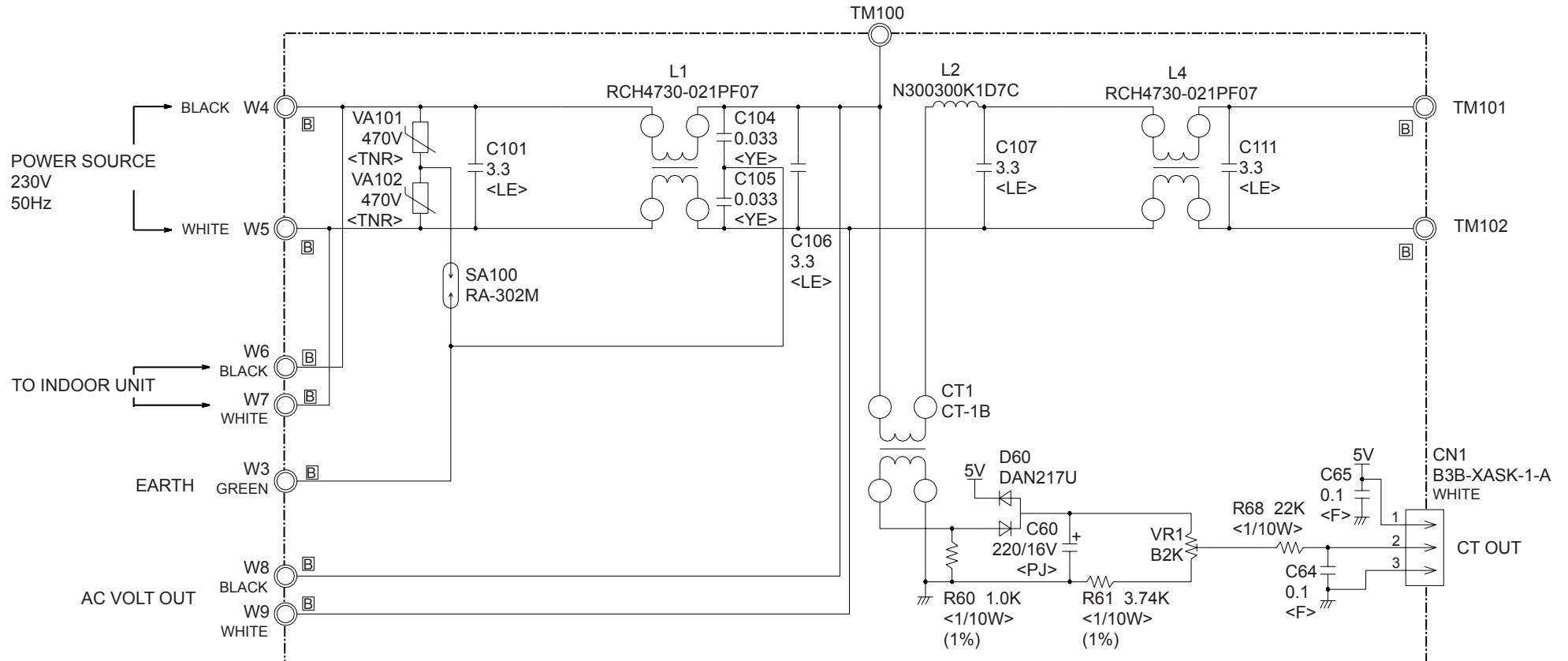
Models : RO-30LC
RO-36LB

CONTROLLER PCB ASSEMBLY (MAIN PCB)
RO-30LC : K04AW-0509HUE-C1
RO-36LB : K04AW-050AHUE-C1



Models : RO-30LC
RO-36LB

POWER SUPPLY PCB ASSEMBLY K04BA-0401HUE-P0

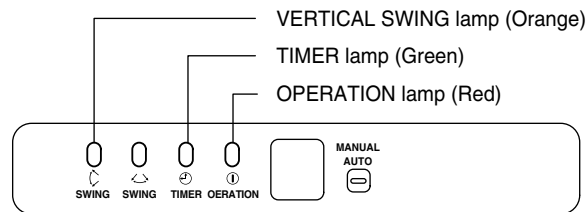


ERROR CONTENTS

(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.

OPERATION lamp (RED)	TIMER lamp (GREEN)	SWING lamp (ORANGE)	Error contents
○	○	×	Indoor EEPROM abnormal
○	○	○	Outdoor EEPROM abnormal
(2 times) ●	○	×	Indoor room temperature sensor open
(2 times) ●	○	○	Indoor room temperature sensor shortcircuited
(3 times) ●	○	×	Indoor heat exchanger temperature sensor open
(3 times) ●	○	○	Indoor heat exchanger temperature sensor shortcircuited
(4 times) ●	○	×	Float switch operated
(5 times) ●	○	×	Indoor signal abnormal
(5 times) ●	○	○	Outdoor signal abnormal
(6 times) ●	○	×	Indoor fan abnormal
○	(2 times) ●	×	Outdoor power source connection abnormal
○	(3 times) ●	×	Outdoor heat exchanger temperature sensor open
○	(3 times) ●	○	Outdoor heat exchanger temperature sensor shortcircuited
○	(4 times) ●	×	Outdoor temperature sensor open
○	(4 times) ●	○	Outdoor temperature sensor shortcircuited
○	(5 times) ●	×	Outdoor discharge pipe temperature sensor or compressor temperature sensor open
○	(5 times) ●	○	Outdoor discharge pipe temperature sensor or compressor temperature sensor shortcircuited
○	(6 times) ●	×	Outdoor high pressure abnormal
○	(7 times) ●	×	Outdoor discharge pipe temperature or compressor temperature sensor abnormal

○ : 0.1s ON/0.1s OFF (flash) × : OFF

● : 0.5s ON/0.5s OFF (flash)

ERROR CONTENTS (outdoor unit)

⚠ CAUTION

Always turn on the power 12 hours prior to the start of the operation in order to ensure compressor protection

1. Make a TEST RUN in accordance with the installation instruction sheet for the indoor unit.

2. OUTDOOR UNIT LEDS

When a malfunction occurs in the outdoor unit, the LED on the circuit board lights to indicate the error. Refer to the following table for the description of each error according to the LED.

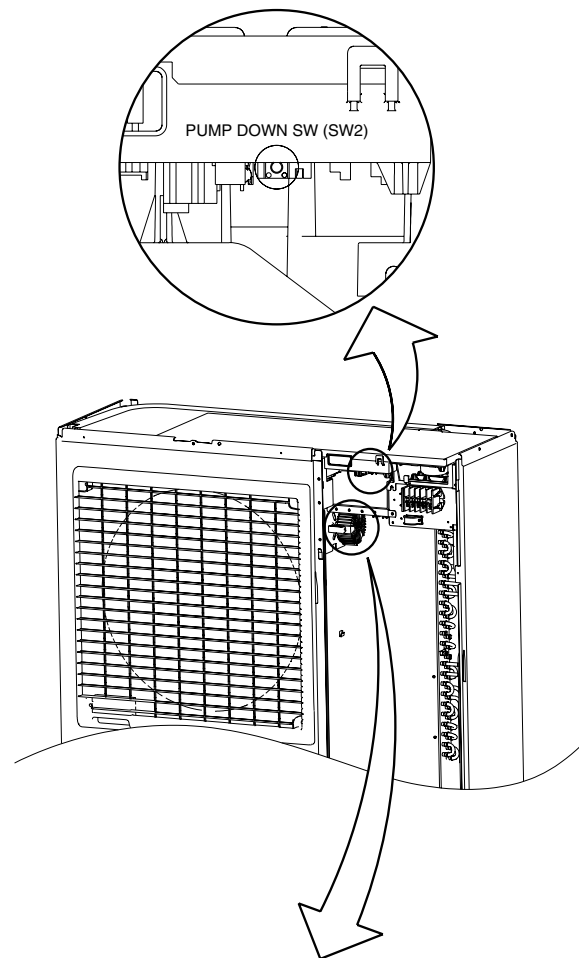
LED	Error contents
1 flash	Communication error (Indoor unit - Outdoor unit)
2 flash	Discharg pipe temperature sensor
3 flash	Outdoor heat exchanger temperature sensor
4 flash	Outdoor temperature sensor
7 flash	Compressor temperature sensor
8 flash	Heat sink temperature sensor
9 flash	Pressure switch abnormal
12 flash	IPM error
13 flash	Compressor rotor position cannot detect
14 flash	Compressor cannot operate
15 flash	Outdoor fan abnormal (upper fan)
16 flash	Outdoor fan abnormal (lower fan)
5 sec. ON/ 1 sec. OFF repeated	Protect operation
lighting	No error

SPECIAL INSTALLATION SETTING

PUMP DOWN (Refrigerant collecting operation)

Perform the following procedures to collect the refrigerant when moving the indoor unit or the outdoor unit.

- (1) Press the push-button switch (SW2) on the circuit board once.
The LED on the circuit board starts flashing (one second ON/one second OFF). This indicates the start of PUMP DOWN operation.
When the switch is pressed while the compressor is in operation, PUMP DOWN operation starts automatically.
When the switch is pressed while the compressor is in stop, the compressor starts to operate automatically, and then move on to PUMP DOWN operation.
- (2) PUMP DOWN operation continues for about 1 minute. When PUMP DOWN operation is completed, the compressor stops automatically.
Then close the 2-way valve and 3-way valve immediately.
- (3) Turn the power off.



⚠ DANGER

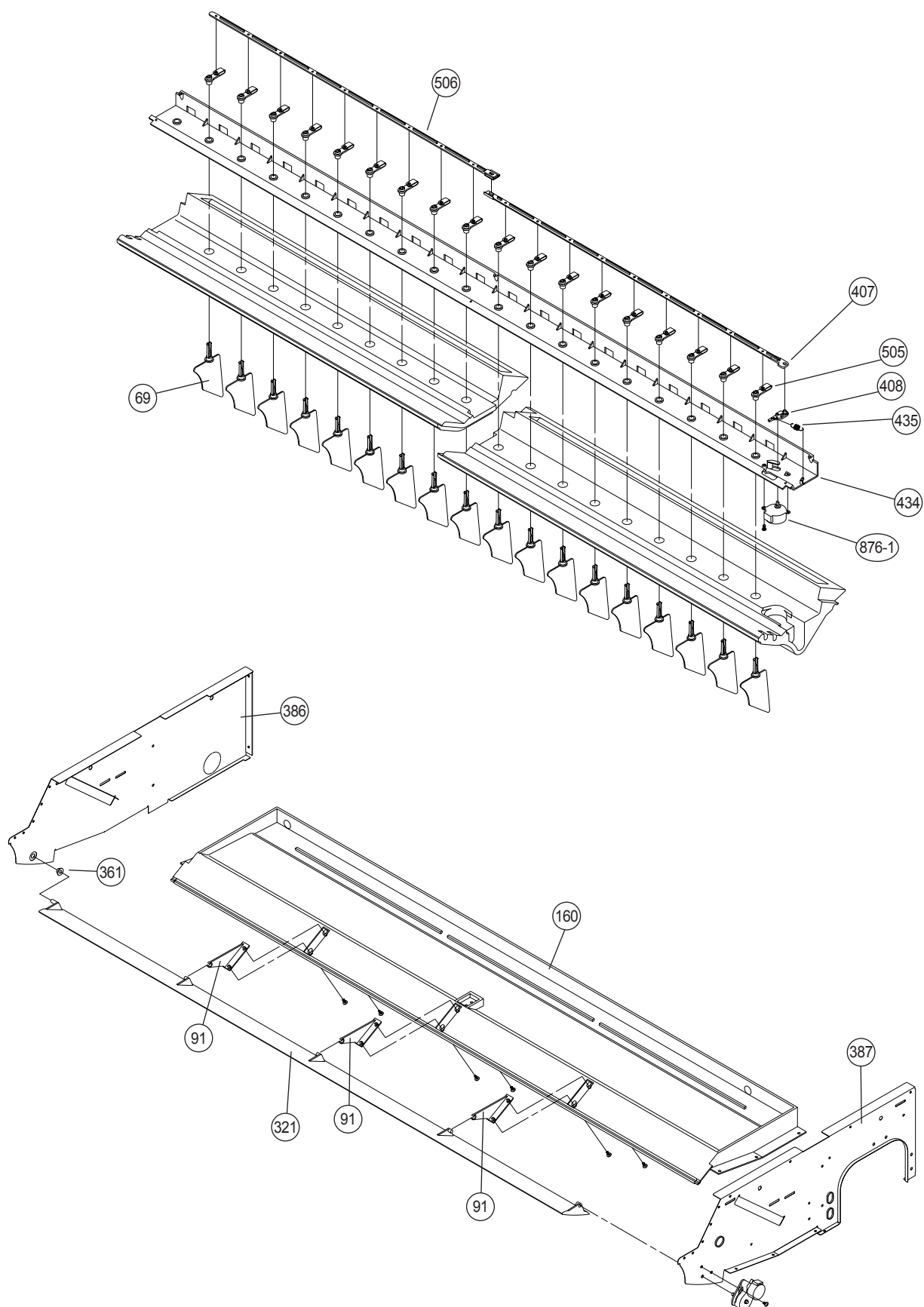
This part (Choke coil) generates high voltages.
Never touch this part.

INDOOR UNIT

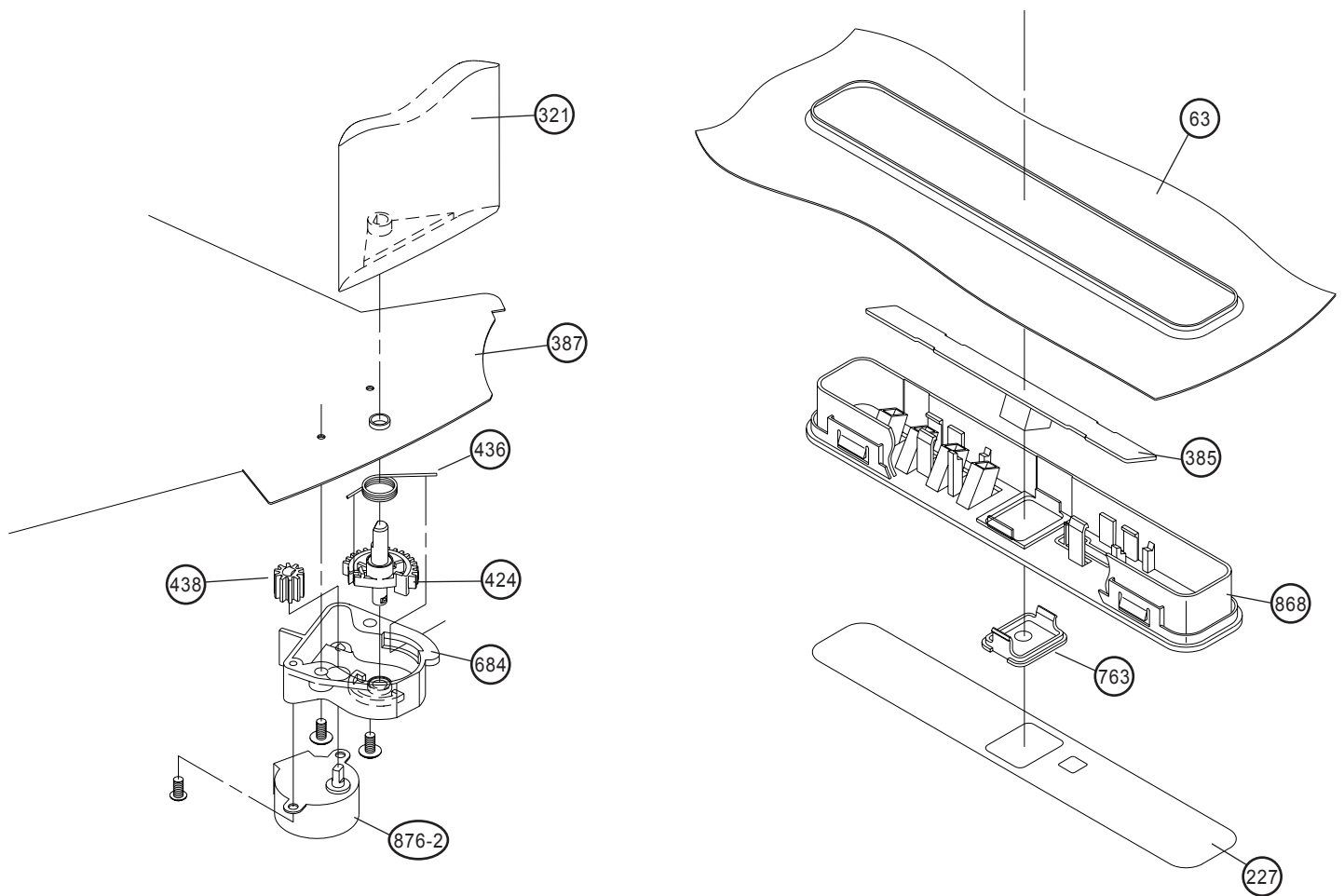
This exploded perspective view illustrates the assembly of a vehicle interior trim component, likely a door sill or side panel. The main assembly is shown in the center, with various sub-components and fasteners arranged around it. Key parts include:

- Main Trim Piece (12):** The central, elongated component with a complex profile.
- Fasteners and Spacers:** Numerous screws (e.g., 122, 164, 174, 181, 379, 403), washers (e.g., 126, 338-1, 338-2), and spacers (e.g., 56, 384) are shown for securing the assembly.
- Decorative and Functional Elements:** Includes a series of cylindrical components (e.g., 388, 389), a set of three curved pieces (755), and a series of rectangular pieces (223, 472).
- Side Components:** On the right, a long, narrow component (74) is shown with associated fasteners (345-1, 345-2, 446).
- Bottom Components:** At the bottom, a large, curved component (63) is shown with a handle (868) and a mounting bracket (240-1). Other parts include a series of rectangular pieces (580, 506, 407, 434, 435, 505, 408) and a series of small, rectangular pieces (228, 69, 684).
- Internal Structure:** A component (138) is shown with a series of rectangular cutouts, and a component (321) is shown with a series of rectangular cutouts.
- Mounting Hardware:** A series of screws (329, 361) and a component (735) are shown for mounting the assembly to the vehicle body.
- Other Components:** A component (146) is shown with a series of rectangular cutouts, and a component (752) is shown with a series of rectangular cutouts.

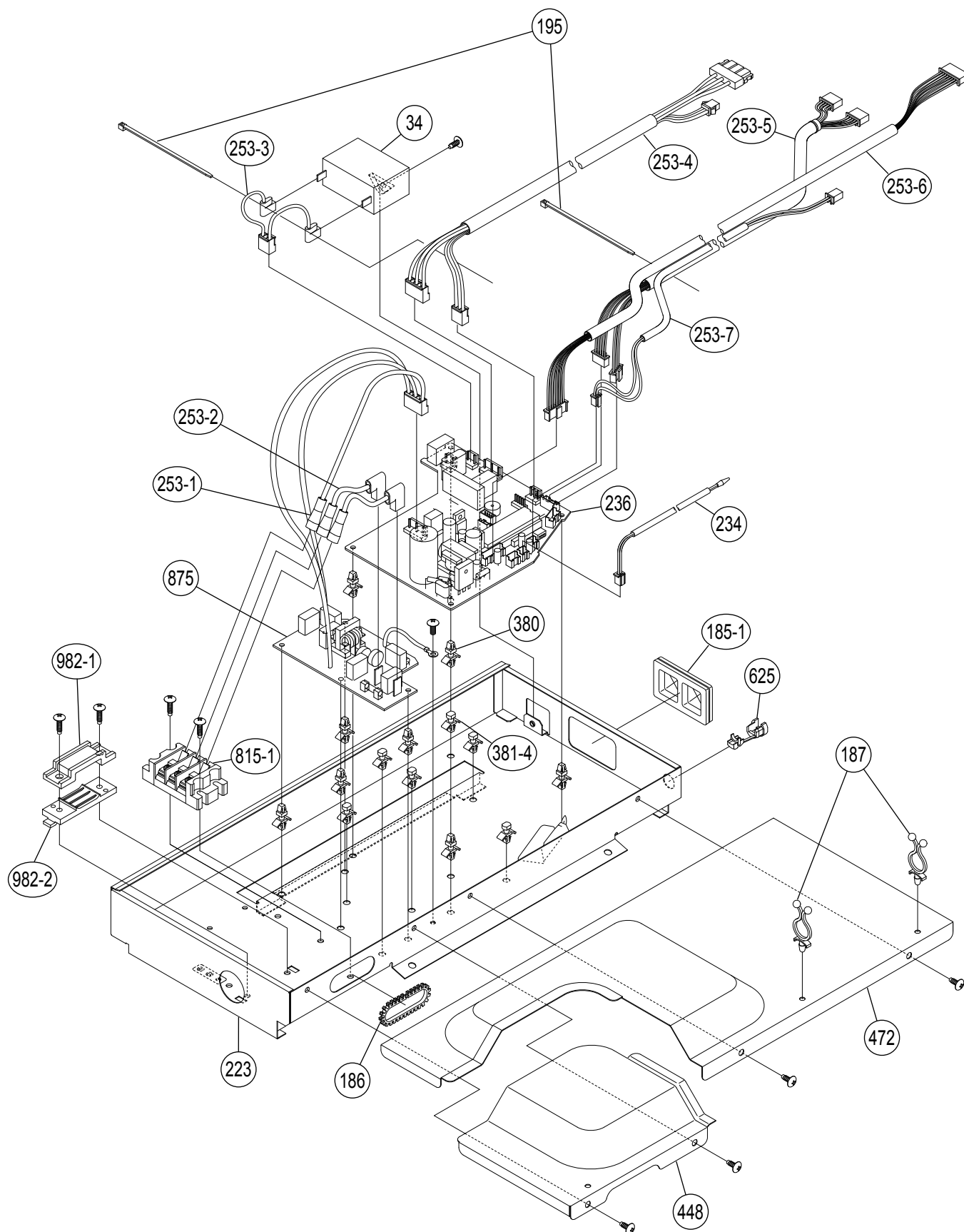
Models : RY-30LA
RY-36LA



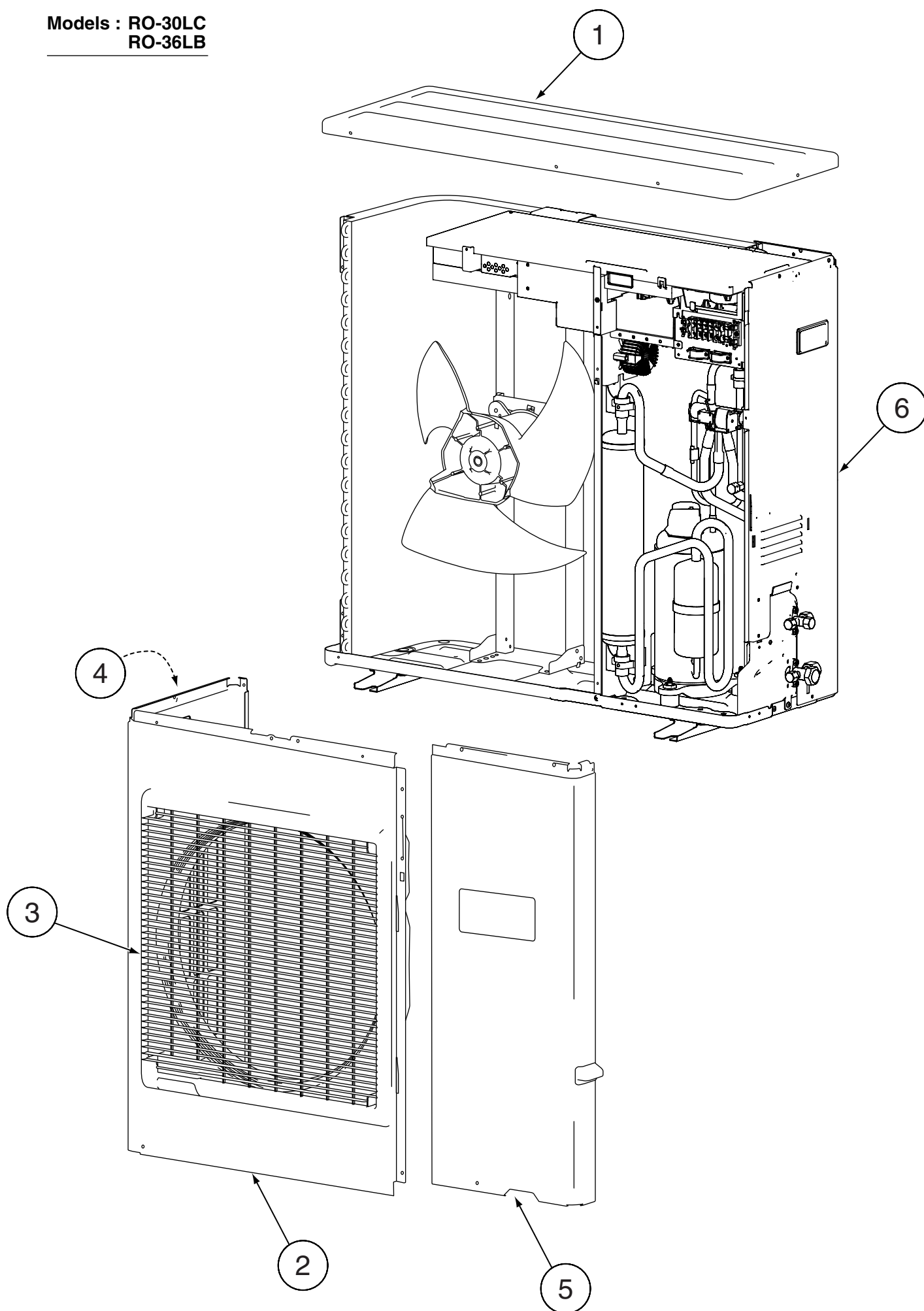
**Models : RY-30LA
RY-36LA**



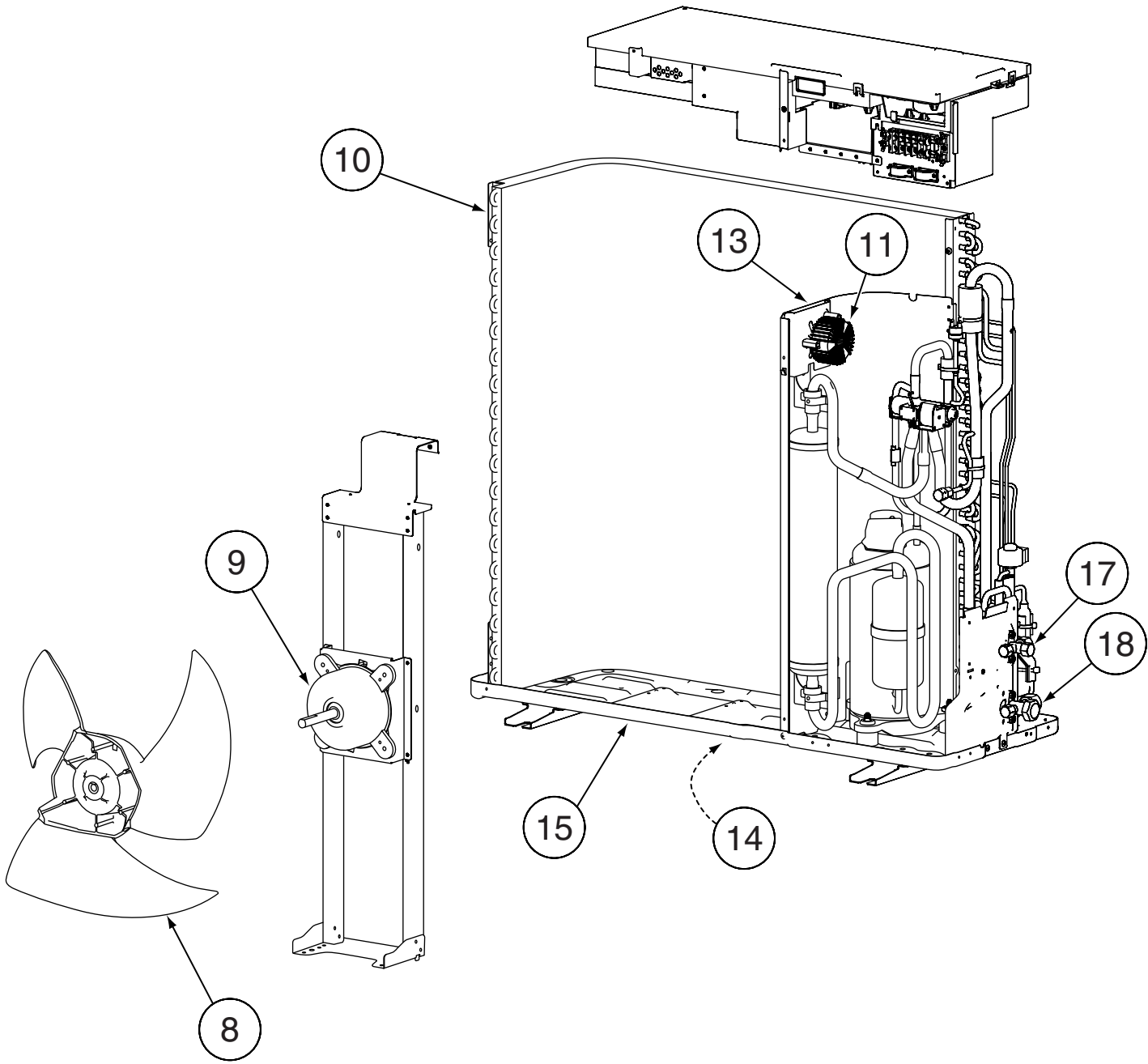
**Models : RY-30LA
RY-36LA**



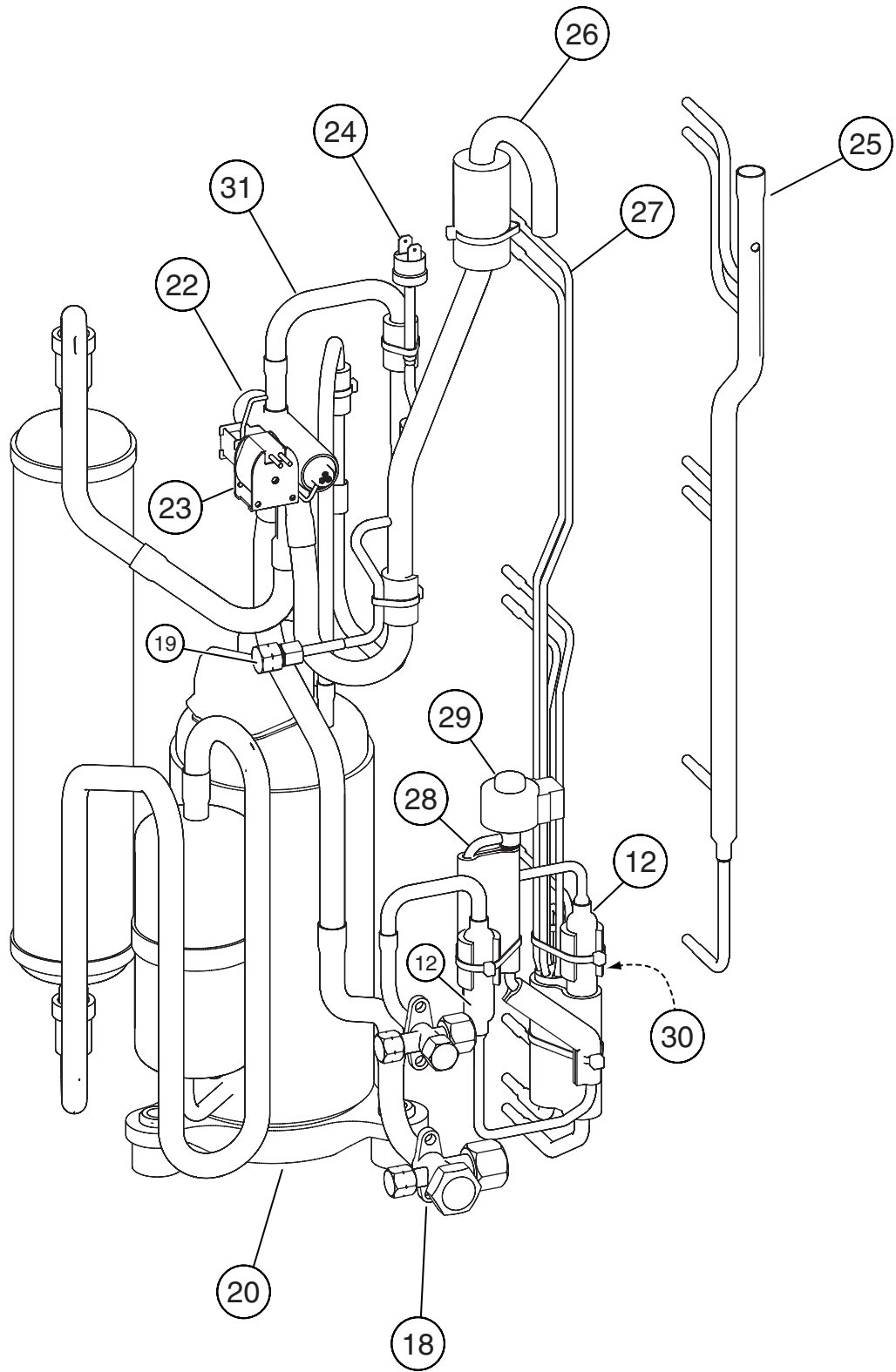
Models : RO-30LC
RO-36LB



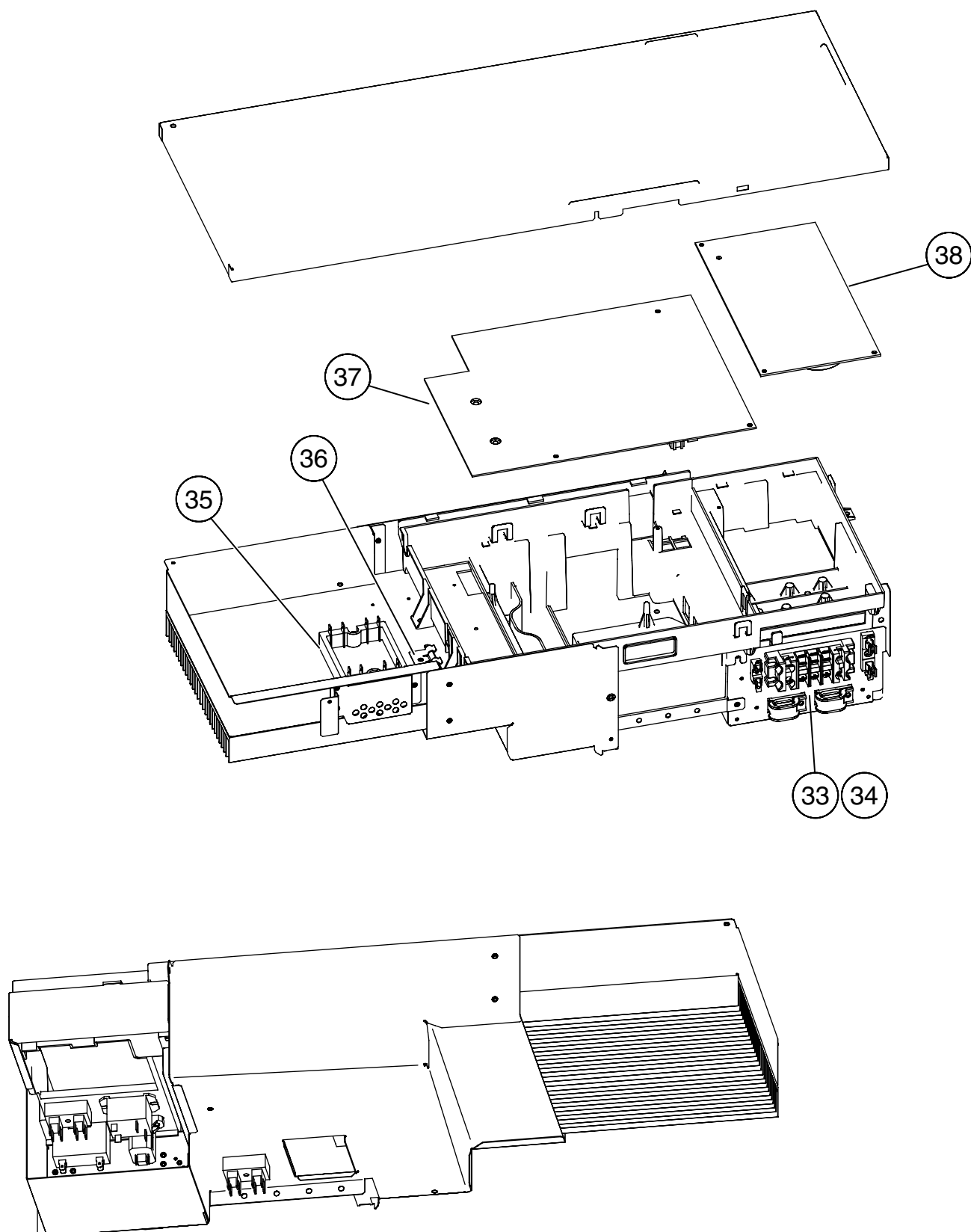
Models : RO-30LC
RO-36LB



Models : RO-30LC
RO-36LB



Models : RO-30LC
RO-36LB



PARTS LIST

INDOOR UNIT

Ref. No.	Description	Part No.		Ord. Q'ty	Ref. No.	Description	Part No.		Ord. Q'ty
		RY-30LA	RY-36LA				RY-30LA	RY-36LA	
8	Air Filter	9359739005	9359739005		345-1	Filter Guide-R	9359692003	9359692003	
12	Base Assy	9359680000	9359680000		345-2	Filter Guide-L	9359693000	9359693000	
34	Capacitor	9900270216	9900270216		361	Bushing	9359733003	9359733003	
56	Sirocco Fan Assy	9359701002	9359701002		379	Hinge Plate (Grille)	9359694007	9359694007	
63	Panel (Front)	9359734000	9359734000		380	Locking Spacer KGLS-6S	313209391403	313209391403	
69	Louver	9359719007	9359719007		381-4	Spacer	0600118075	0600118075	
74	Intake Grille	9359738008	9359738008		382	Cover (Decoration)-R	9359744009	9359744009	
91	Hinge	9359699002	9359699002		383	Cover (Decoration)-L	9359745006	9359745006	
109	Casing	9359704003	9359704003		384	Shaft	9359707004	9359707004	
122	Bearing-B Assy	9357921006	9357921006		385	Indicator PCB Assy	9702260019	9702260019	
126	Bracket (Motor)	9359681007	9359681007		386	Panel Left Assy	9359685005	9359685005	
138	Separate Wall	9359700005	9359700005		387	Panel Right Assy	9359683001	9359683001	
146	Evaporator Assy	9371073040	9371073040		388	Joint Assy	9359706007	9359706007	
160	Drain Pan	9359698005	9359698005		396	Rfm Bracket Metal	9359697008	9359697008	
164	Fan Motor Assy-IN	9360457004	9360457004		403	Fixture (Bearing)	9359687009	9359687009	
174	Hanger	9359742005	9359742005		407	Rod (Motor)	9359723004	9359723004	
181	Hole Cover	9359691006	9359691006		408	Link (Louver)	9359726005	9359726005	
185-1	Rubber Bushing	9357376004	9357376004		424	Sector Gear	9359729006	9359729006	
186	Cover (Edge)	9361049017	9361049017		434	Base (Louver)	9359718000	9359718000	
187	Clamp No.1219	313361271706	313361271706		435	Louver Spring	9359720003	9359720003	
195	Clamp SKB-100	313361275805	313361275805		436	Flap Spring	9359730002	9359730002	
223	Control Box Assy	9359708001	9359708001		438	Pinion Gear	9359728009	9359728009	
227	Badge	9359735045	9359735045		448	Control Box-B	9359713005	9359713005	
228	Insulation (Louver)-R	9359721000	9359721000		472	Control Box-A	9359712008	9359712008	
229	Insulation (Louver)-L	9359722007	9359722007		505	Stopper (Louver)	9359724001	9359724001	
234	Thermistor (Room)	9703299025	9703299025		506	Rod (Louver)	9359725008	9359725008	
236	Controller PCB Assy	9705914193	9705914209		580	Cover (Top)	9359737001	9359737001	
		(K01AL-050FHSE-C1)	(K01AL-050GHSE-C1)		625	Cord Bushing	9359240006	9359240006	
240	Remote Control Unit	9371190013	9371190013		684	Motor Base	9359727002	9359727002	
240-1	Cover Panel (Pipe)-L	9359690009	9359690009		735	Distributor Assy	9360455000	9360455000	
240-2	Cover Panel (Pipe)-R	9359689003	9359689003		743	Remote Control Holder Case	9305642014	9305642014	
253-1	Wire Assy (Terminal)	9702321017	9702321017		752	Bracket Panel (Pipe)	9359688006	9359688006	
253-2	Wire Assy (Terminal)	9702322014	9702322014		755	Cover (Casing)	9359705000	9359705000	
253-3	Wire Assembly	9702311018	9702311018		761	Cover (Side)-R	9359740001	9359740001	
253-4	Wire Assy (Connector)	9702323011	9702323011		762	Cover (Side)-L	9359741008	9359741008	
253-5	Wire Assy (Connector)	9702319014	9702319014		763	Cover (Receiver)	9359714002	9359714002	
253-6	Wire Assy (Connector)	9702317010	9702317010		815-1	Terminal-3P	9900203016	9900203016	
253-7	Wire Assy (Connector)	9702318017	9702318017		868	PCB Holder	9359736004	9359736004	
286	Bracket (Bearing)	9359686002	9359686002		875	Power Supply PCB Assy	9704561060	9704561060	
321	Flap Assy	9359731009	9359731009		876-1	Motor, Step-H	9360479013	9360479013	
329	Coupling Pipe Assy	9373038214	9373038214		982-1	Cord Clamp-A	9359820017	9359820017	
338-1	Fixture (Motor)	9359702009	9359702009		982-2	Cord Clamp-B	9359821014	9359821014	
338-2	Fixture (Motor)-B	9359703006	9359703006		---	Thermistor (Pipe)	9900022020	9900022020	

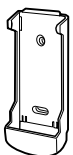
OUTDOOR UNIT

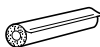
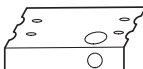
Ref. No.	Description	Part No.		Ord. Q'ty
		RO-30LC	RO-36LB	
1	Top Panel Sub Assy	9374417025	9374417025	
2	Front Panel	9374094066	9374094066	
3	Fan Guard	9374330010	9374330010	
4	Grip Side	9374173013	9374173013	
5	Service Panel Sub Assy	9374415038	9374415038	
6	Right Panel Sub Assy	9374416066	9374416066	
8	Propeller Fan Assy	9366378020	9366378020	
9	Motor, Induction	9601882015	9601882015	
10	Condenser-A Assy	9374433056	9374433056	
11	Coil Choke	9703458019	9703458019	
12	Strainer Assy	9372524015	9372524015	
13	Separate Wall Assy	9374629022	9374629022	
14	Cap Foot	9374345014	9374345014	
15	Base Assy	9374166084	9374166084	
17	3-Way Valve Assy (3/8)	9372205044	9372205044	
18	3-Way Valve Assy (5/8)	9372205075	9372205075	
19	Check Joint Assy	9372802038	9372802038	
20	Compressor Assy	9373711018	9373711018	
22	4-Way Valve	9900164010	9900164010	
23	Solenoid	9900165055	9900165055	
24	Pressure Switch	9900186012	9900186012	
25	Inlet Pipe Cond A Assy	9373461067	9373461067	
26	Inlet Pipe Cond B Assy	9373463054	9373463054	
27	Outlet Pipe Cond A Assy	9374266050	9374266050	
28	Expansion Valve Assy	9370947113	9370947113	
29	Coil (Expansion Valve)	9900057039	9900057039	
30	Distributor	9369128004	9369128004	
31	Discharge Pipe A Assy	9372264126	9372264126	
33	Terminal 2P	9701971015	9701971015	
34	Terminal 5P	9900203023	9900203023	
35	ACTPM	9703457012	9703457012	
36	Holder Thermo	9372797013	9372797013	
37	Inverter PCB Assy	9705642157	9705642164	
38	Power PCB Assy	9705647022	9705647022	
----	Fuse 25A-250V	0600086039	0600086039	
----	Fuse 3.15A-250V	0600222512	0600222512	
----	Fuse 5A-250V	0600222529	0600222529	
----	Thermistor (Outdoor Temp.)	9703516078	9703516078	
----	Thermistor (Heat Exchanger)	9704220042	9704220042	
----	Thermistor (PTC)	9704265012	9704265012	
----	Thermistor (Discharge)	9704219114	9704219114	
----	Thermistor (Compressor)	9900156022	9900156022	
----	Thermistor	9704265012	9704265012	
----	Heatsink Thermistor	9900311018	9900311018	
----	Transformer	9702334024	9702334024	
----	Varistor	0000361224	0000361224	
----	Arrester	0600280147	0600280147	
----	Relay	9900117016	9900117016	
----	Relay	9900007010	9900007010	
----	Switch Push	9703476013	9703476013	
----	Switch Slide	9701392018	9701392018	
----	Drain Pipe (I-Type)	9301102000	9301102000	
----	Drain Pipe Packing	9301143003	9301143003	
----	Drain Cap	313166024302	313166024302	

STANDARD ACCESSORIES

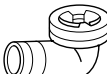
The following installation parts are furnished. Use them as required.

INDOOR UNIT ACCESSORIES

Name and Shape	Q'ty	Application
Remote control unit 	1	Use for air conditioner operation
Battery (penlight) 	2	For remote control unit
Remote control unit holder 	1	For mounting the remote control unit
Tapping screw (ø3 x 12) 	2	For remote control unit holder installation
Drain hose insulation 	1	Adhesive type 70 x 230
VT wire 	1	For fixing the drain hose L 280 mm

Name and Shape	Q'ty	Application
Coupler heat insulator (large) 	2	For indoor side pipe joint (Gas pipe)
Coupler heat insulator (small) 	1	For indoor side pipe joint (Liquid pipe)
Nylon fastener 	Large 4 Small 4	For fixing the coupler heat insulator
Special nut A (large flange) 	4	For installing indoor unit
Special nut B (small flange) 	4	For installing indoor unit
Installation template 	1	For positioning the indoor unit
Auxiliary pipe assembly 	1	For connecting the piping

OUTDOOR UNIT ACCESSORIES

Name and Shape	Q'ty	Application
Drain pipe 	1	For outdoor unit drain piping work (May not be supplied, depending on the model.)
Drain cap 	2	
Insulation (seal) 	1	For filling in a gap at the entrance of connection cords

OPTIONAL PARTS

The following options are available.

DRAIN PUMP UNIT : UTR-DPB241 (P/N 9034087001)

