

SERVICE MANUAL



Indoor unit

RC-45LA

RC-54LA

Outdoor unit

RO-45LB

RO-54LB

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SPECIFICATIONS

ELECTRICAL DATA

TYPE		Cooling & heating	Cooling & heating
INDOOR UNIT		RC-45LA	RC-54LA
OUTDOOR UNIT		RO-45LB	RO-54LB
COOLING CAPACITY		12.5 kW	13.3 kW
HEATING CAPACITY		14.0 kW	16.0 kW
POWER SOURCE		230V 50Hz	230V 50Hz
RUNNING CURRENT	Cooling	19.5 A	23.8 A
	Heating	17.3 A	21.6 A
INPUT WATTS	Cooling	4.45 kW	5.45 kW
	Heating	3.95 kW	4.95 kW
E.E.R.	Cooling	2.81 kW/kW	2.44 kW/kW
	Heating	3.54 kW/kW	3.23 kW/kW
STARTING CURRENT		15 A	15 A
MOISTURE REMOVAL		4.5 L/hr	5.5 L/hr
AIR CIRCULATION HIGH		1,700 m3/hr	1,700 m3/hr

DIMENSIONS

INDOOR UNIT H x W x D	296 x 830 x 830 mm
OUTDOOR UNIT H x W x D	1,290 x 900 x 330 mm

WEIGHT

INDOOR UNIT Gross / Net	55 kg / 40 kg
OUTDOOR UNIT Gross / Net	112 kg / 105 kg

FAN MOTOR

INDOOR UNIT	Discrimination	MFA-54PZM
	High speed	680 r.p.m.
	Middle speed	580 r.p.m.
	Low speed	500 r.p.m.
	Super low	300 r.p.m.
OUTDOOR UNIT	Discrimination	MFE-60PO
	Up fan	850 r.p.m.
	Down fan	750 r.p.m.

NOISE LEVEL

INDOOR UNIT	High speed	50.0 dB
	Middle speed	48.0 dB
	Low speed	45.0 dB
OUTDOOR UNIT	Cooling	54.0 dB
	Heating	55.5 dB

Note : Static pressure : 30Pa

Duct length : Inlet 1m, Outlet 2m

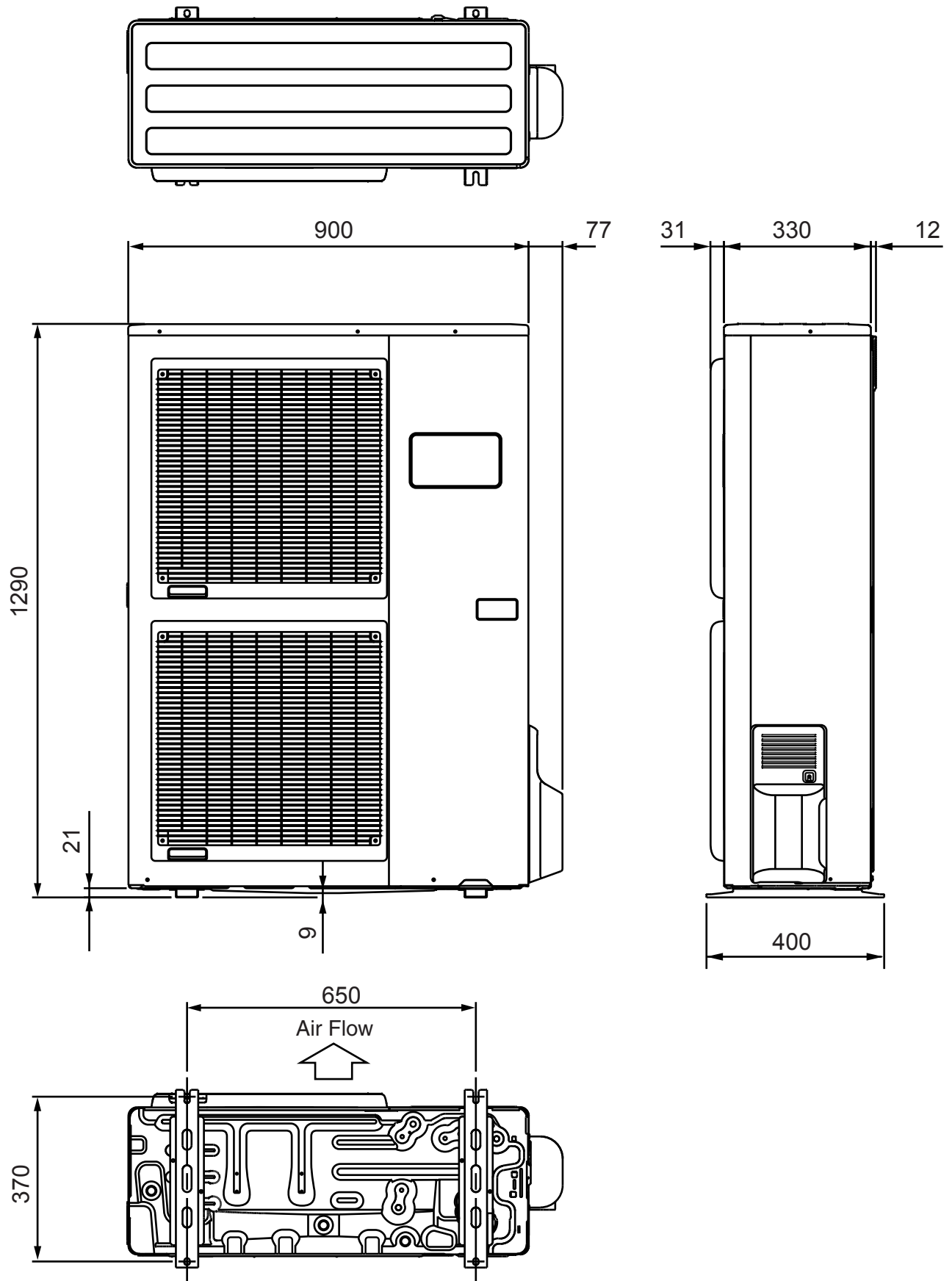
COMPRESSOR AND REFRIGERANT

TYPE		Hermetic type, 6 poles, Inverter, Scroll
DISCRIMINATION		ANB33FCMMT
STANDARD REFRIGERANT		3,400 g
REFRIGERANT TYPE		R410A
FULL CHARGE	Pipe length 20 m	3,400 g
	40 m	4,200 g
	70 m	5,400 g
ADDITIONAL CHARGE		40 g/m
MAX PIPE HEIGHT		30 m

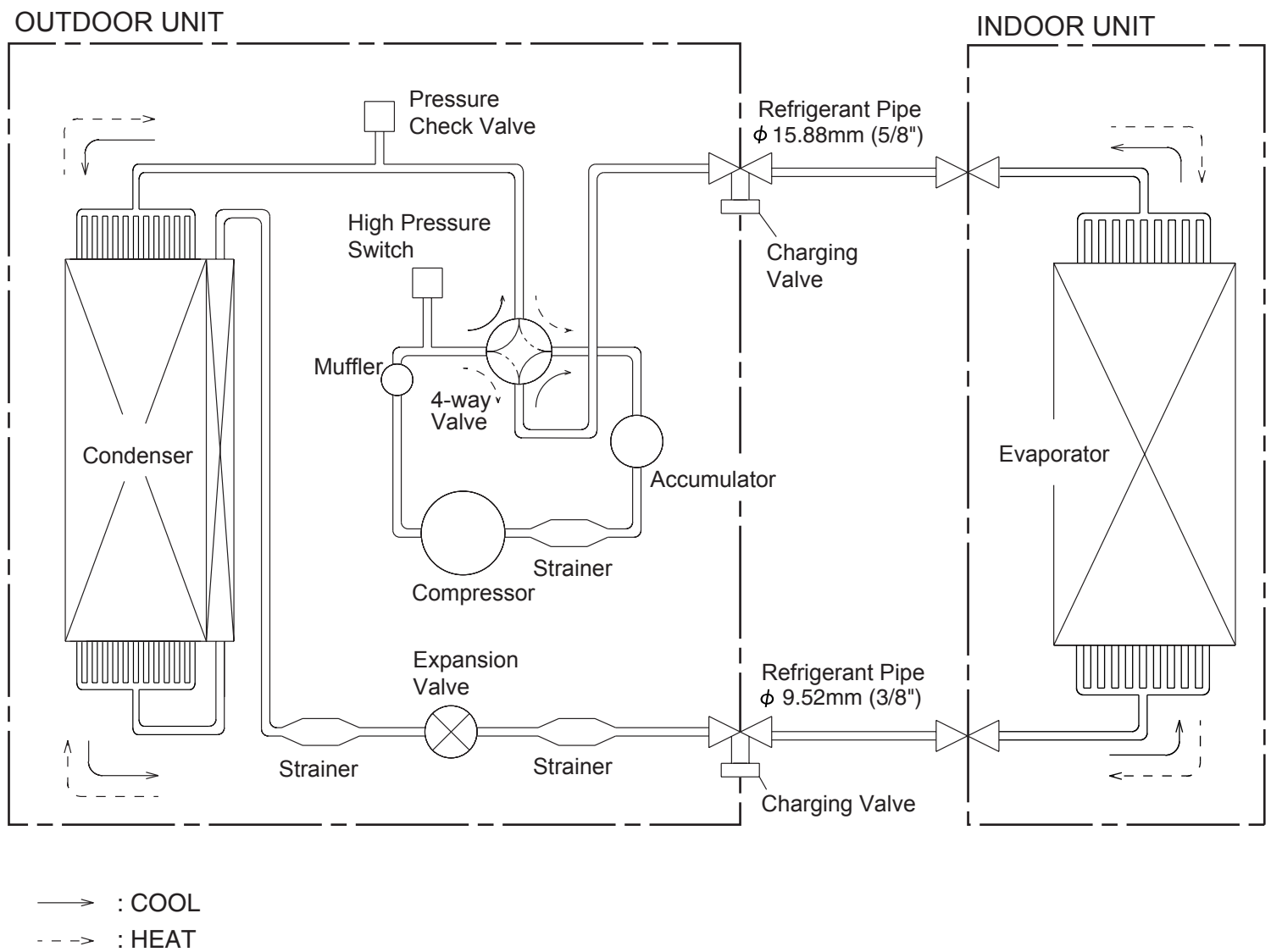
INDOOR UNIT



OUTDOOR UNIT
(Unit : mm)

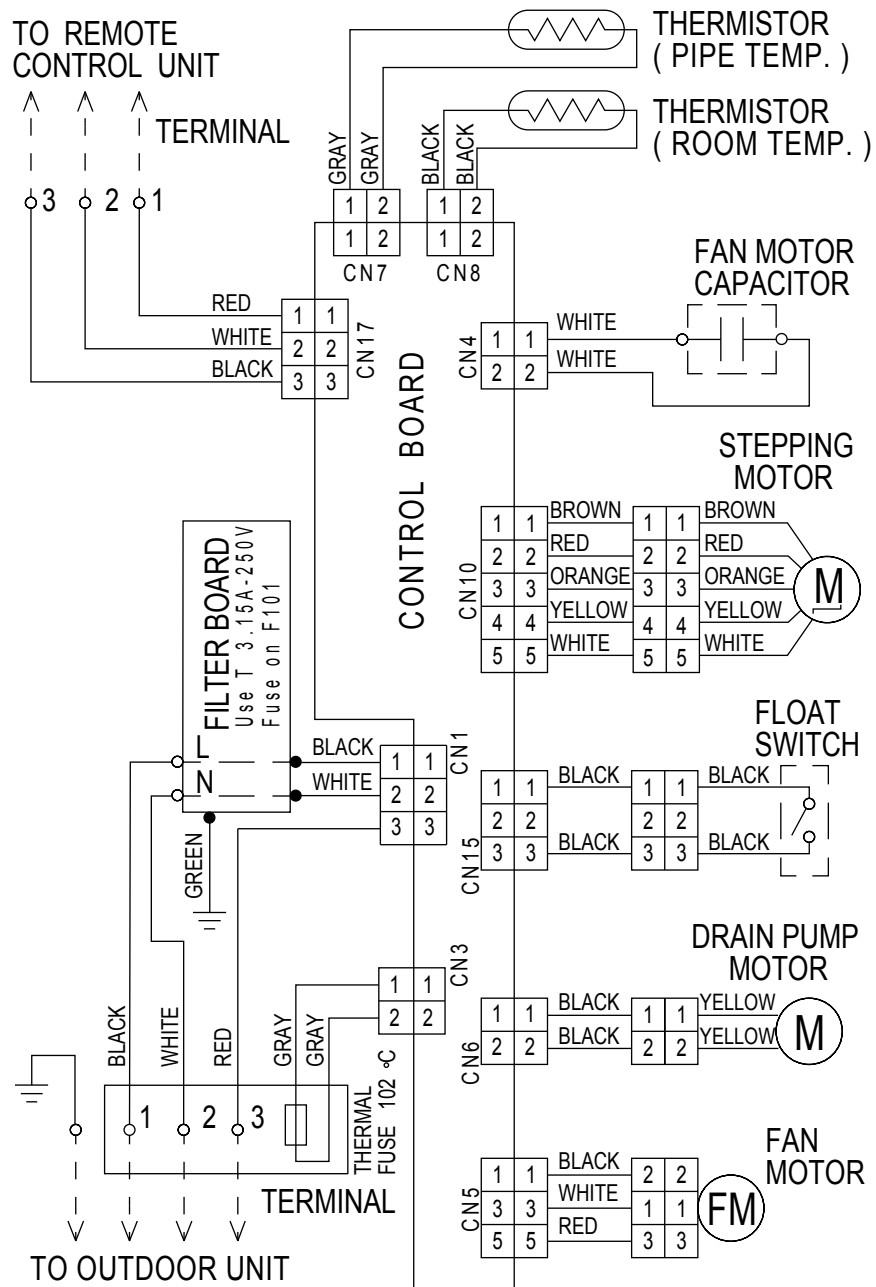


REFRIGERANT SYSTEM DIAGRAM

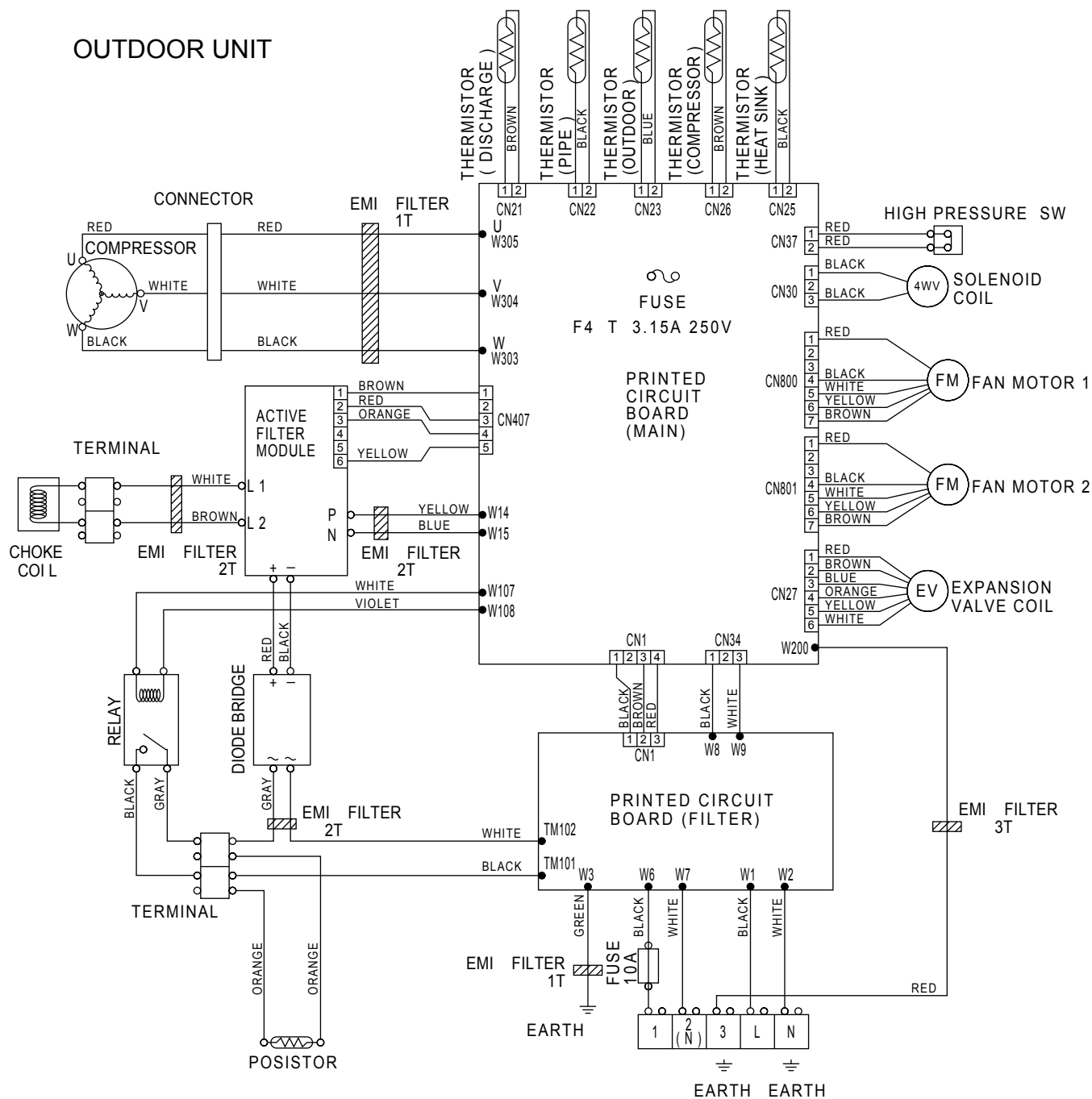


CIRCUIT DIAGRAM

INDOOR UNIT



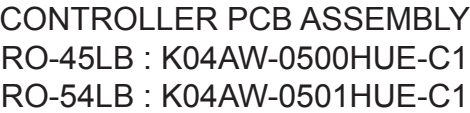
OUTDOOR UNIT



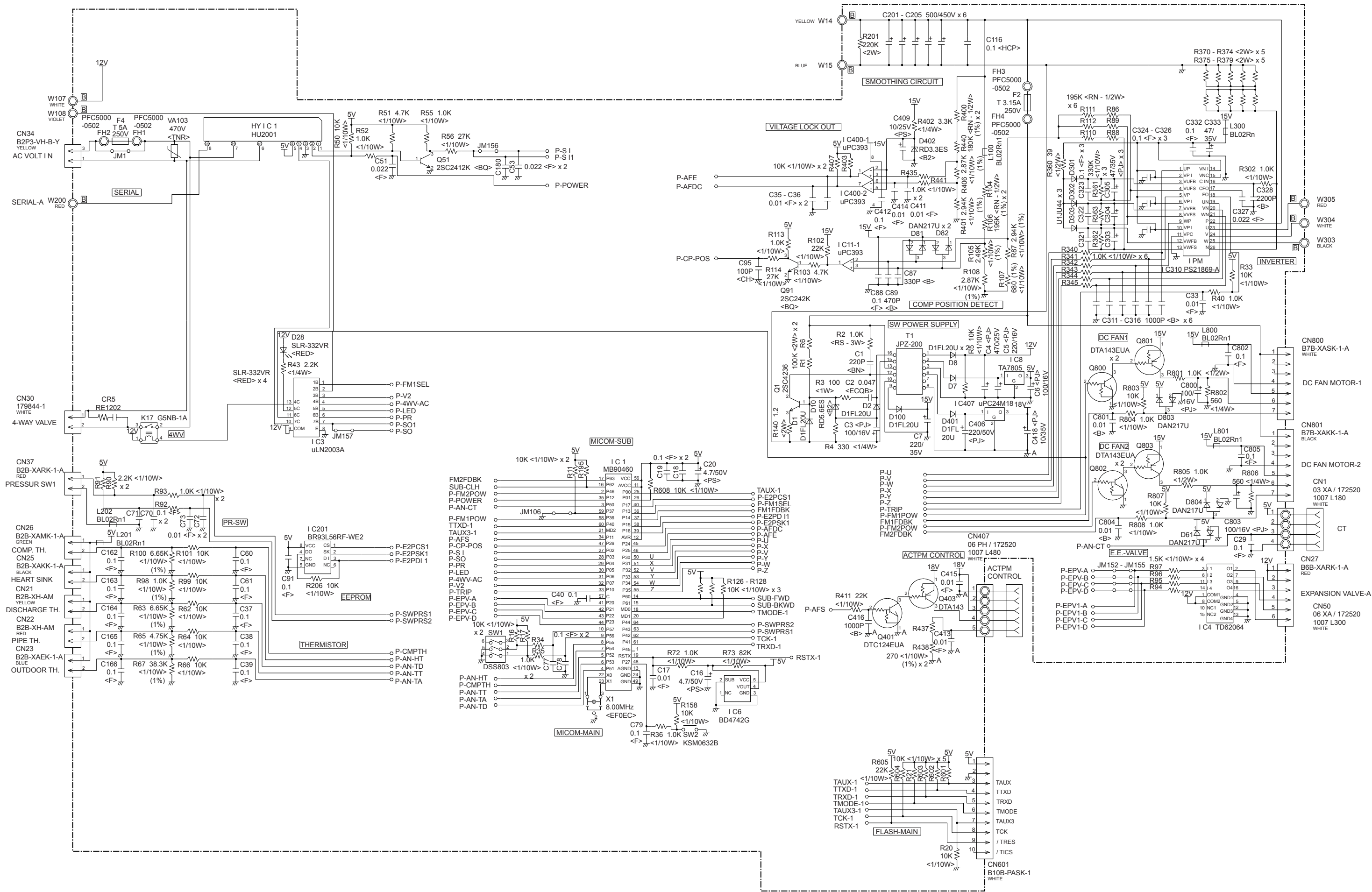
RC-54LA : K01AL-0503HSE-C1



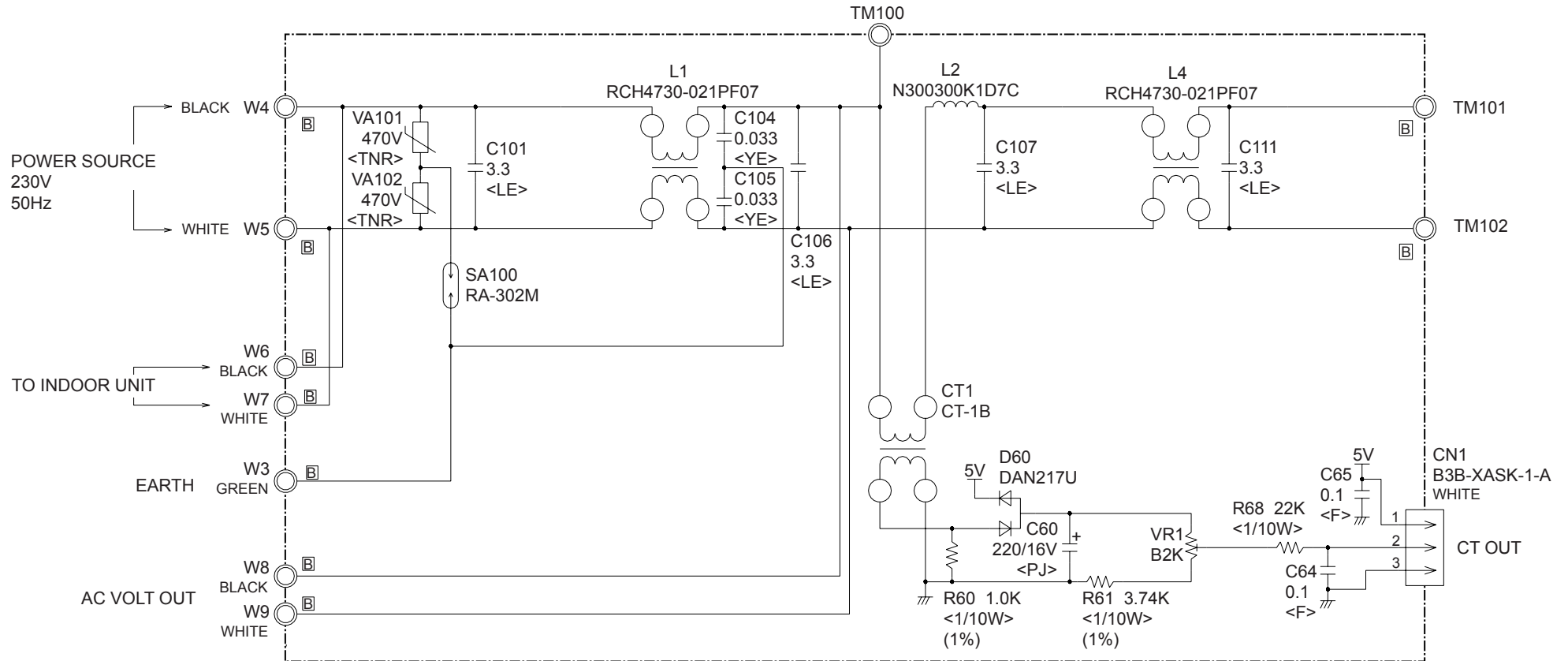
INVERTER ASSEMBLY
RO-45LB : EZ-0052HUE
RO-54LB : EZ-0057HUE



OUTDOOR UNIT
CONTROLLER PCB ASSEMBLY
RO-45LB : K04AW-0500HUE-C1
RO-54LB : K04AW-0501HUE-C1



OUTDOOR UNIT
POWER SUPPLY PCB ASSEMBLY
K04BA-0400HUE-P0

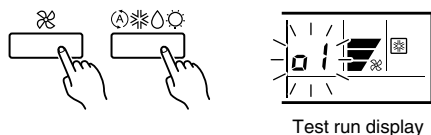


ERROR CONTENTS (indoor unit)

⚠ CAUTION
Supply power to the crankcase heater for at least 12 hours before the start of operation in winter.

- (1) Stop the air conditioner operation.
- (2) Press the master control button and the fan control button simultaneously for 2 seconds or more to start the test run.

Fig. 48



- (3) Press the start/stop button to stop the test run.

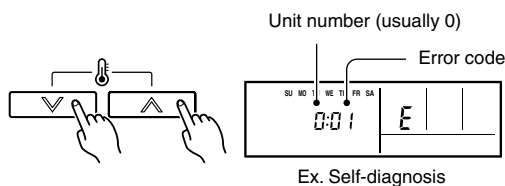
[SELF-DIAGNOSIS]

When the error indication "E:EE" is displayed, follow the following items to perform the self-diagnosis. "E:EE" indicates an error has occurred.

1. REMOTE CONTROLLER DISPLAY

- (1) Stop the air conditioner operation.
- (2) Press the set temperature buttons $\wedge / \vee$ simultaneously for 5 seconds or more to start the self-diagnosis.
Refer to the following tables for the description of each error code.

Fig. 49



- (3) Press the set temperature buttons $\wedge / \vee$ simultaneously for 5 seconds or more to stop the self-diagnosis.

Table 7

Error code	Error contents
01	Indoor unit doesn't accept the signal from outdoor unit.
02	Room temperature sensor open
03	Room temperature sensor short-circuited
04	Indoor heat exchanger temperature sensor open
05	Indoor heat exchanger temperature sensor short-circuited
06	Outdoor heat exchanger temperature sensor
08	Power source connection error
09	Float switch operated
0A	Outdoor temperature sensor
0c	Discharge pipe temperature sensor
11	Model abnormal
12	Indoor fan abnormal

Error code	Error contents
13	Outdoor unit doesn't accept the signal from indoor unit.
14	Excessive outdoor pressure (permanent stop)
15	Compressor temperature sensor
16	Pressure switch error
17	IPM error
18	CT error
19	Active filter module (AFM) error
1A	Compressor does not operate
1b	Outdoor unit fan error
1c	Communication error (inverter → multicontroller)
1d	2 way valve sensor error
1E	Expansion valve error
1F	Connection indoor unit error

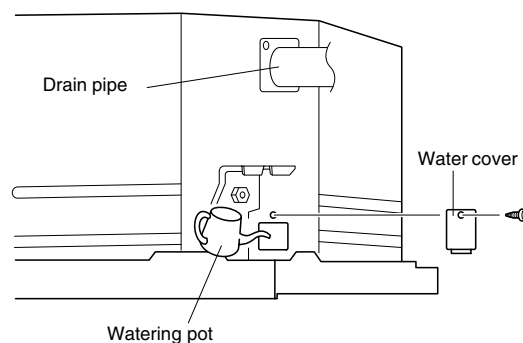
* 1c, 1d, 1E, 1F errors are only for multi type.

2. CHECKING DRAINAGE

To check the drain, remove the water cover and fill with 2 to 3 of water as shown in Fig. 50.

The drain pump operates when operating in the cooling mode.

Fig. 50



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.

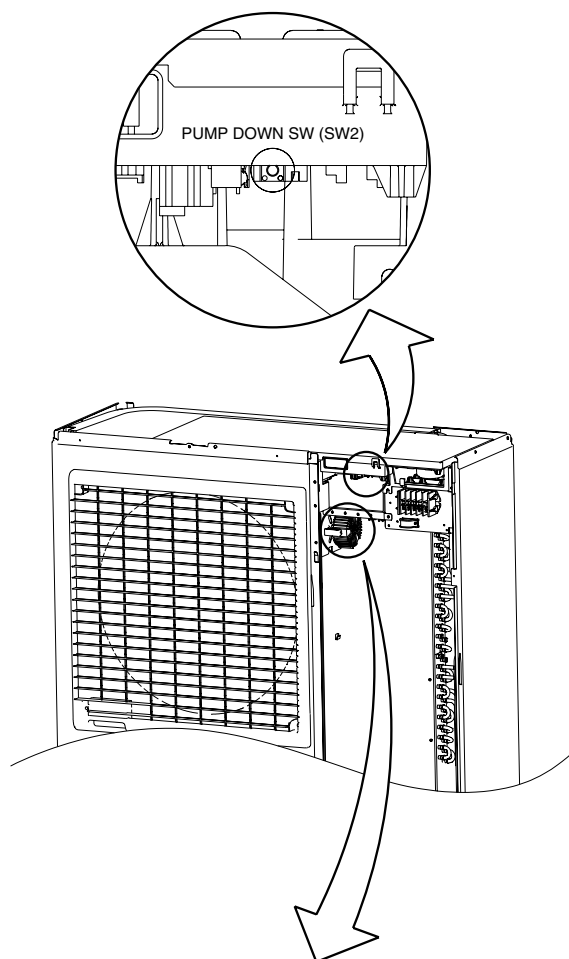
LED	Error contents
1 flash	Communication error (Indoor unit - Outdoor unit)
2 flash	Discharg pipe temperature sensor
3 flash	Outdoor heat exchanger temperature sensor
4 flash	Outdoor temperature sensor
7 flash	Compressor temperature sensor
8 flash	Heat sink temperature sensor
9 flash	Pressure switch 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.

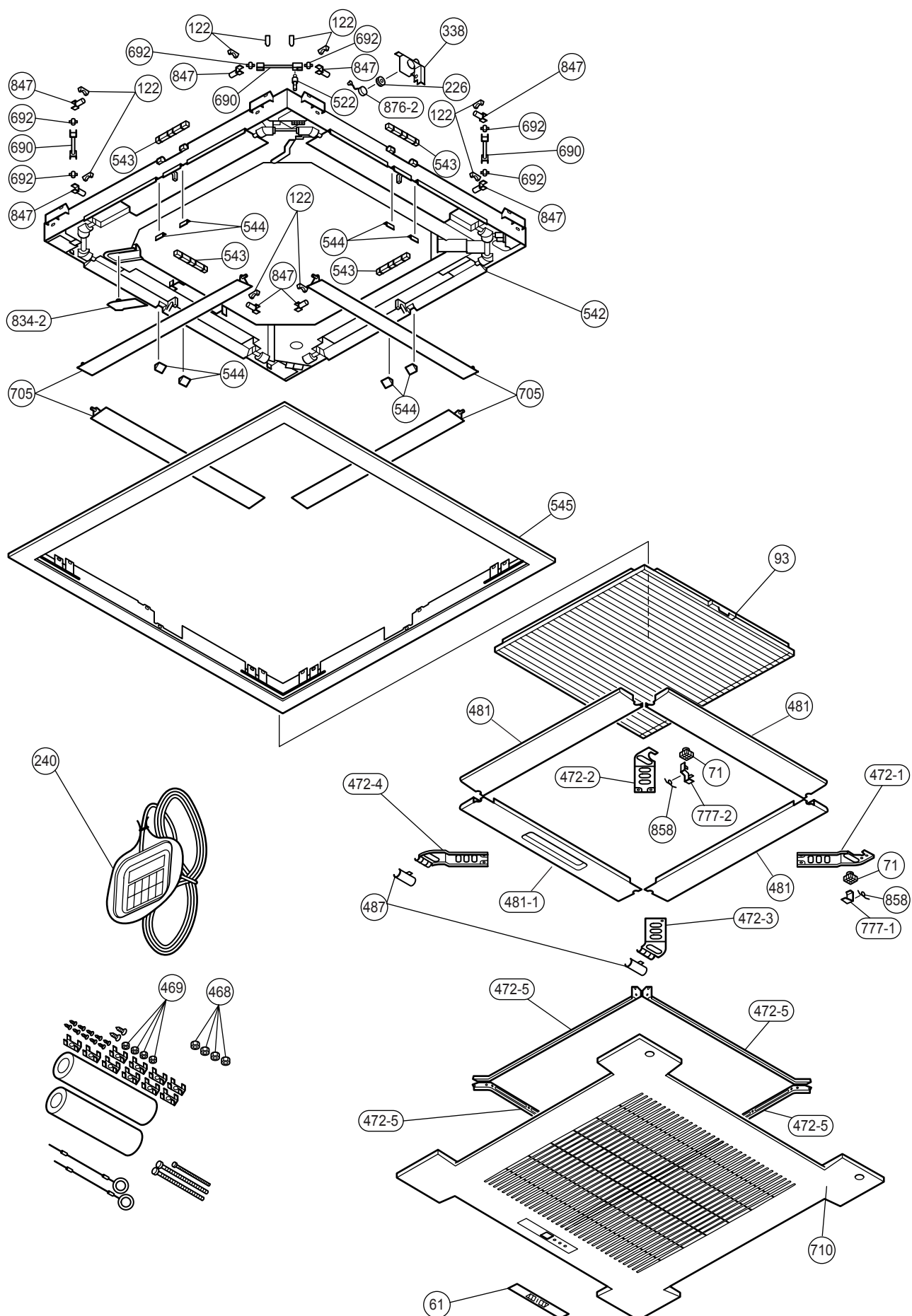


⚠ DANGER

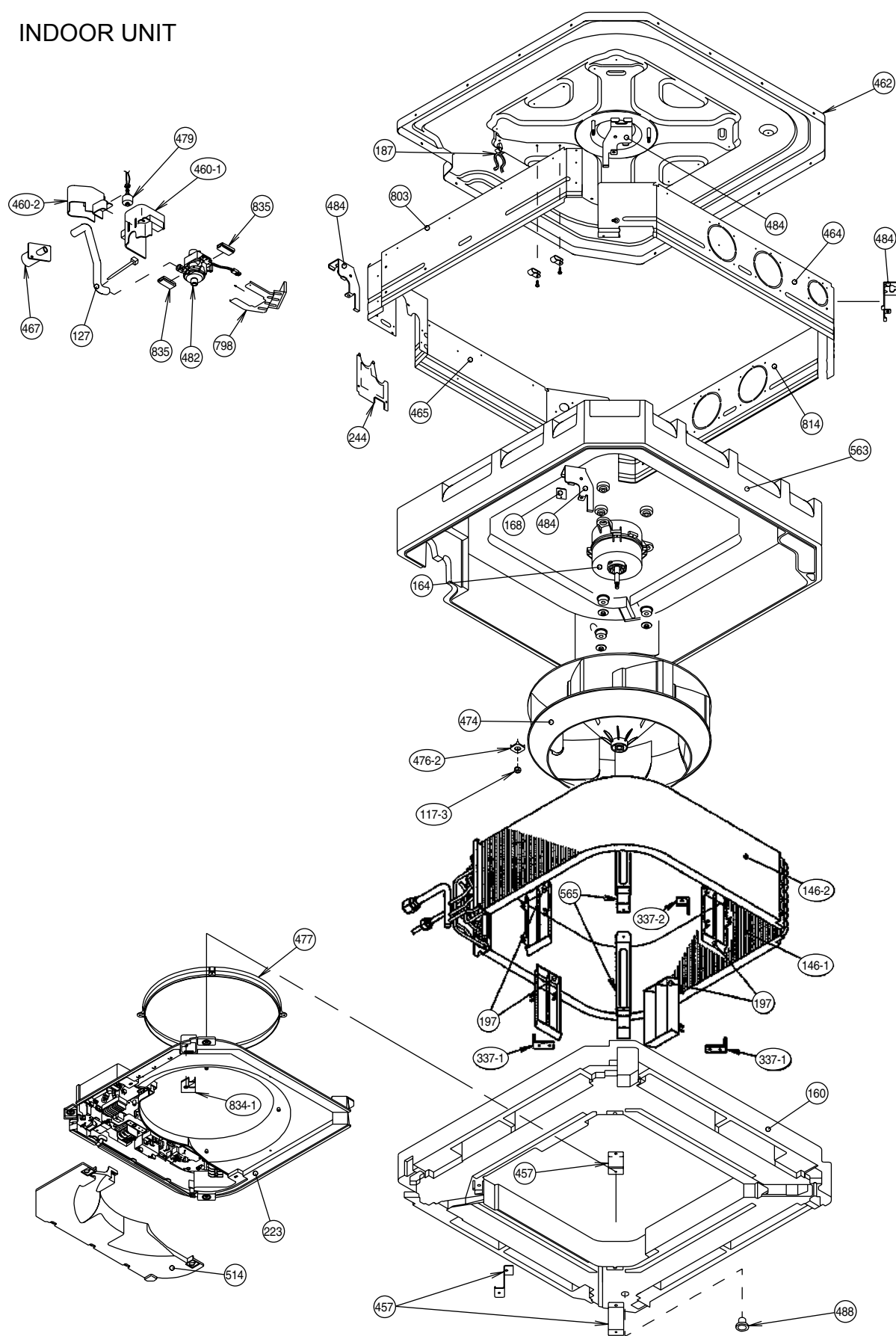
This part (Choke coil) generates high voltages.
Never touch this part.

DISASSEMBLY ILLUSTRATION

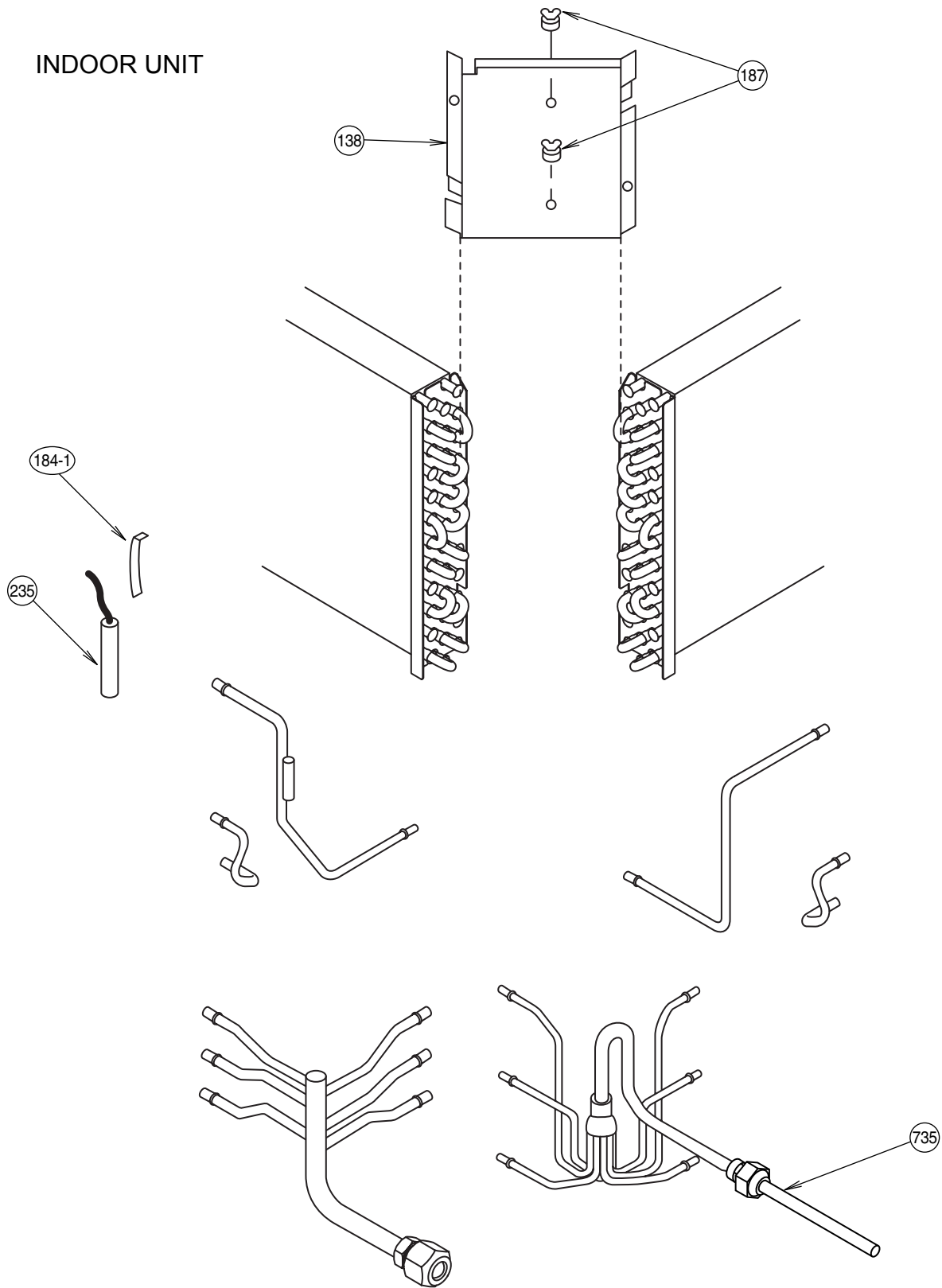
INDOOR UNIT



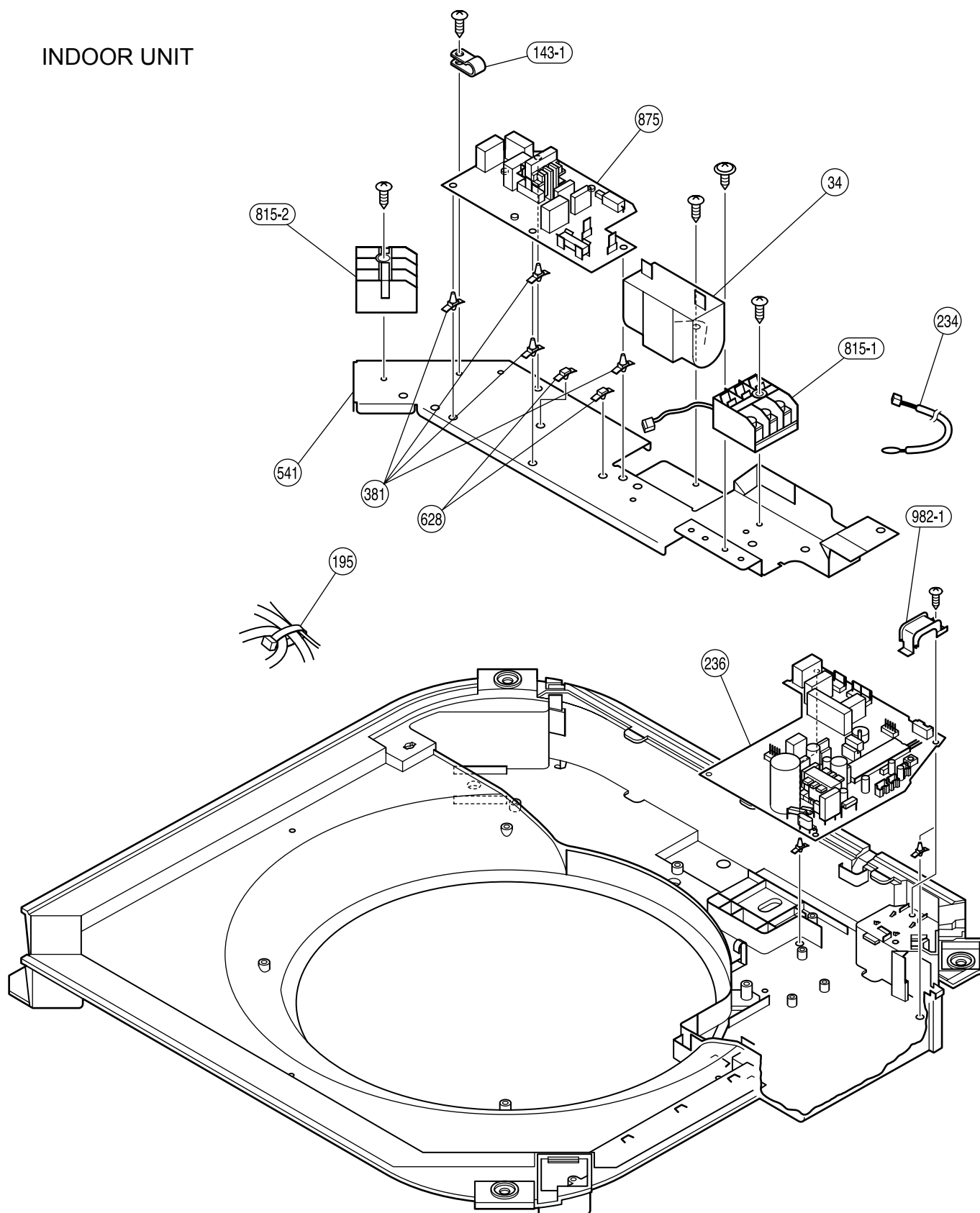
INDOOR UNIT



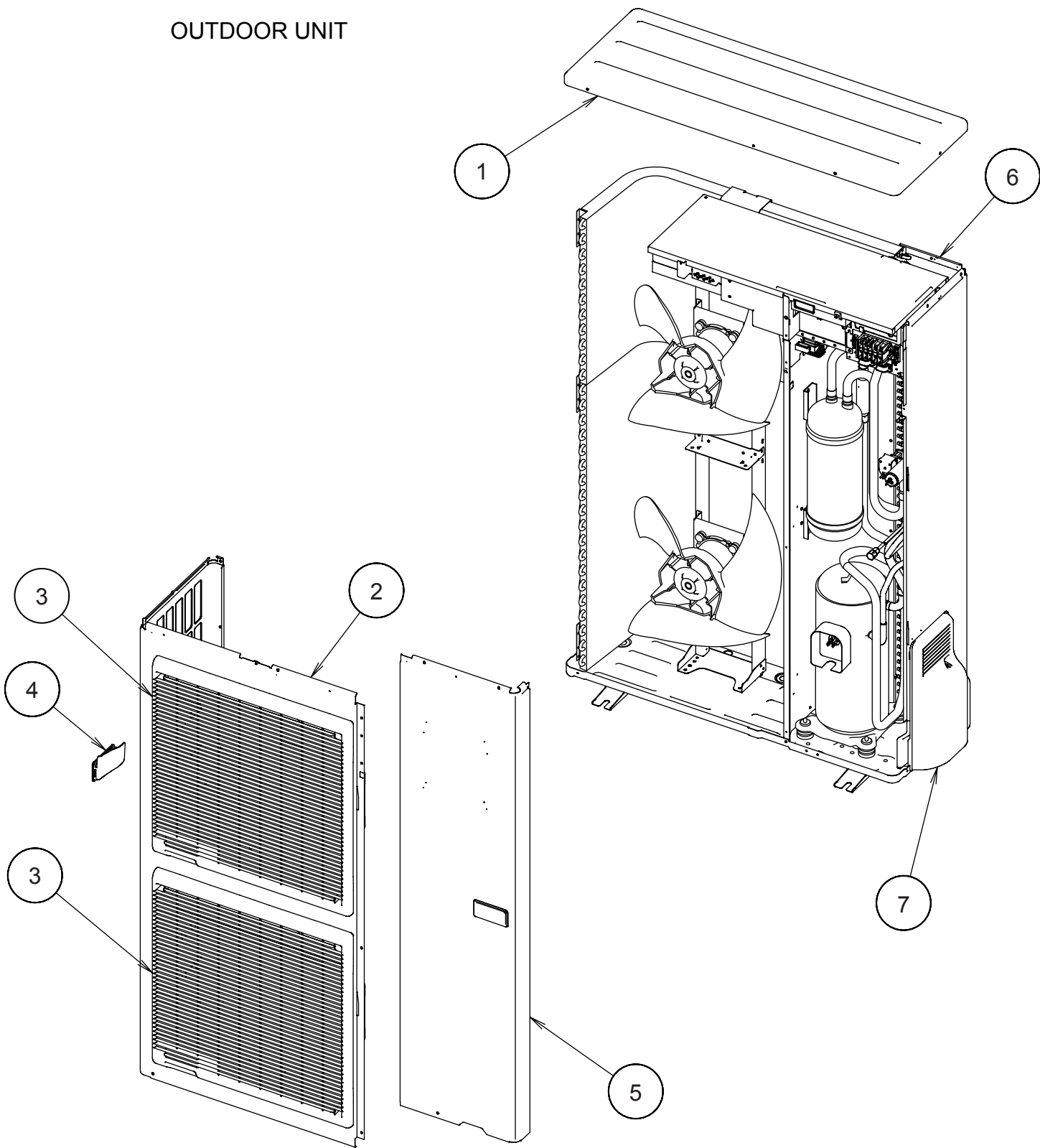
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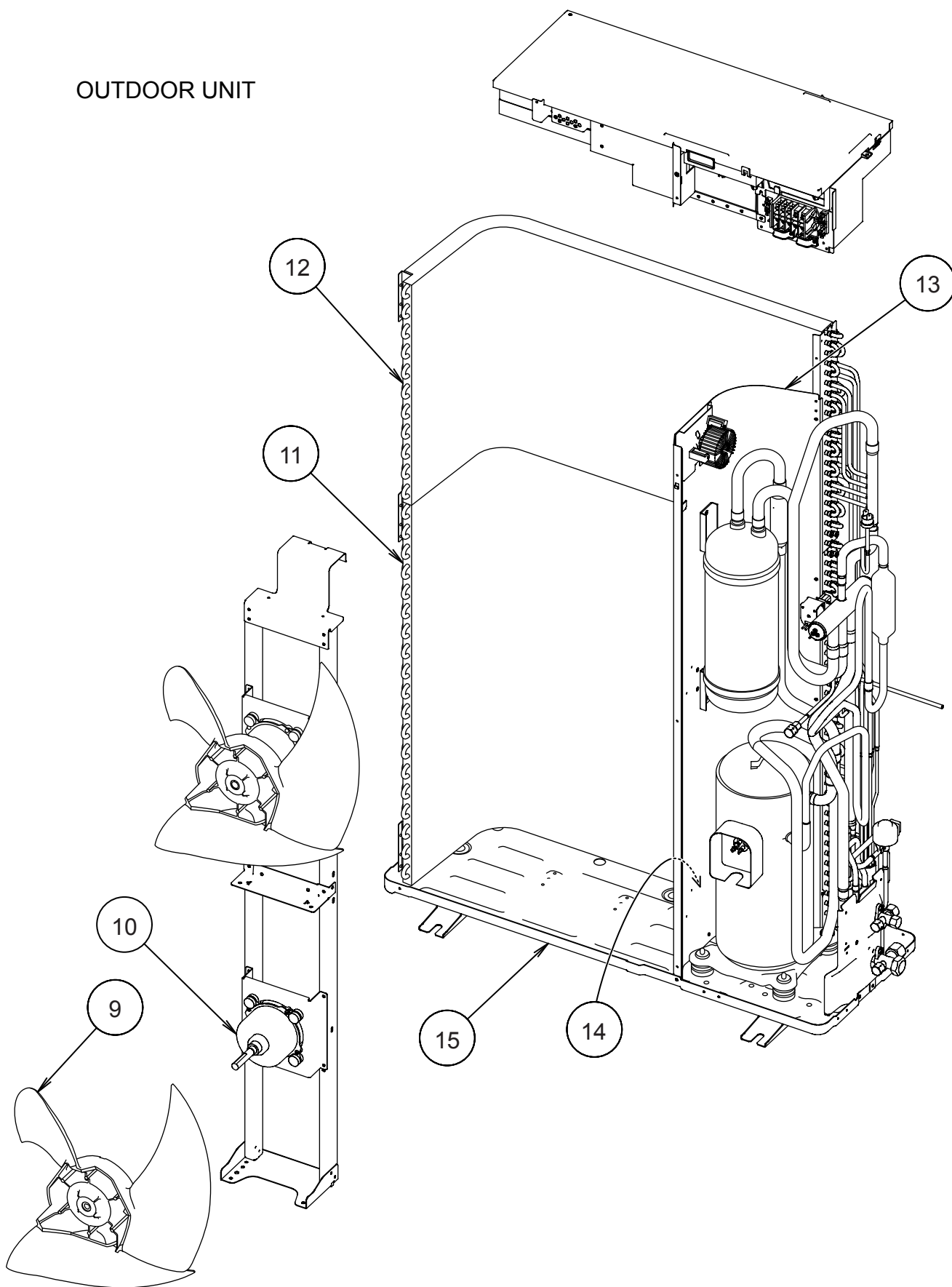
INDOOR UNIT



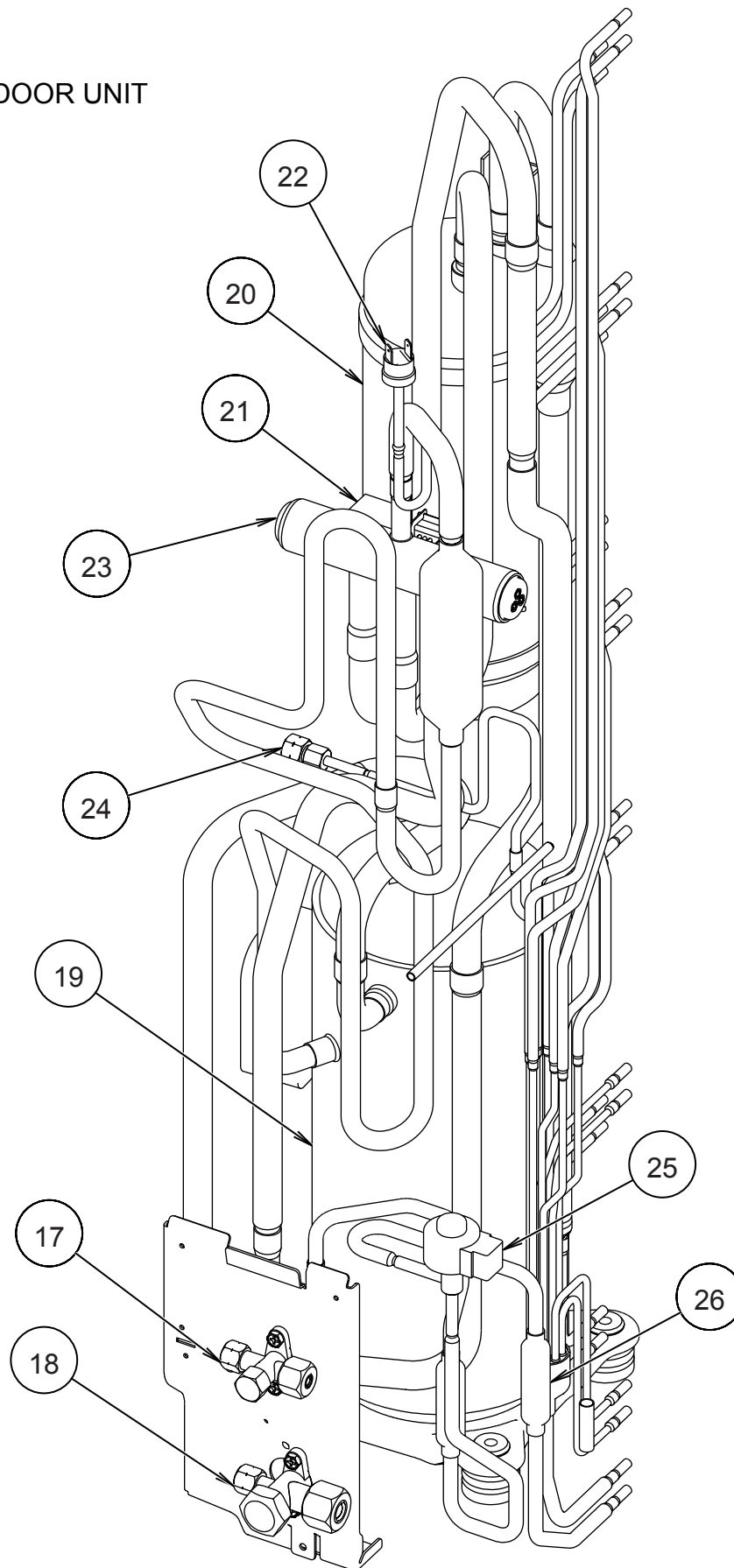
OUTDOOR UNIT



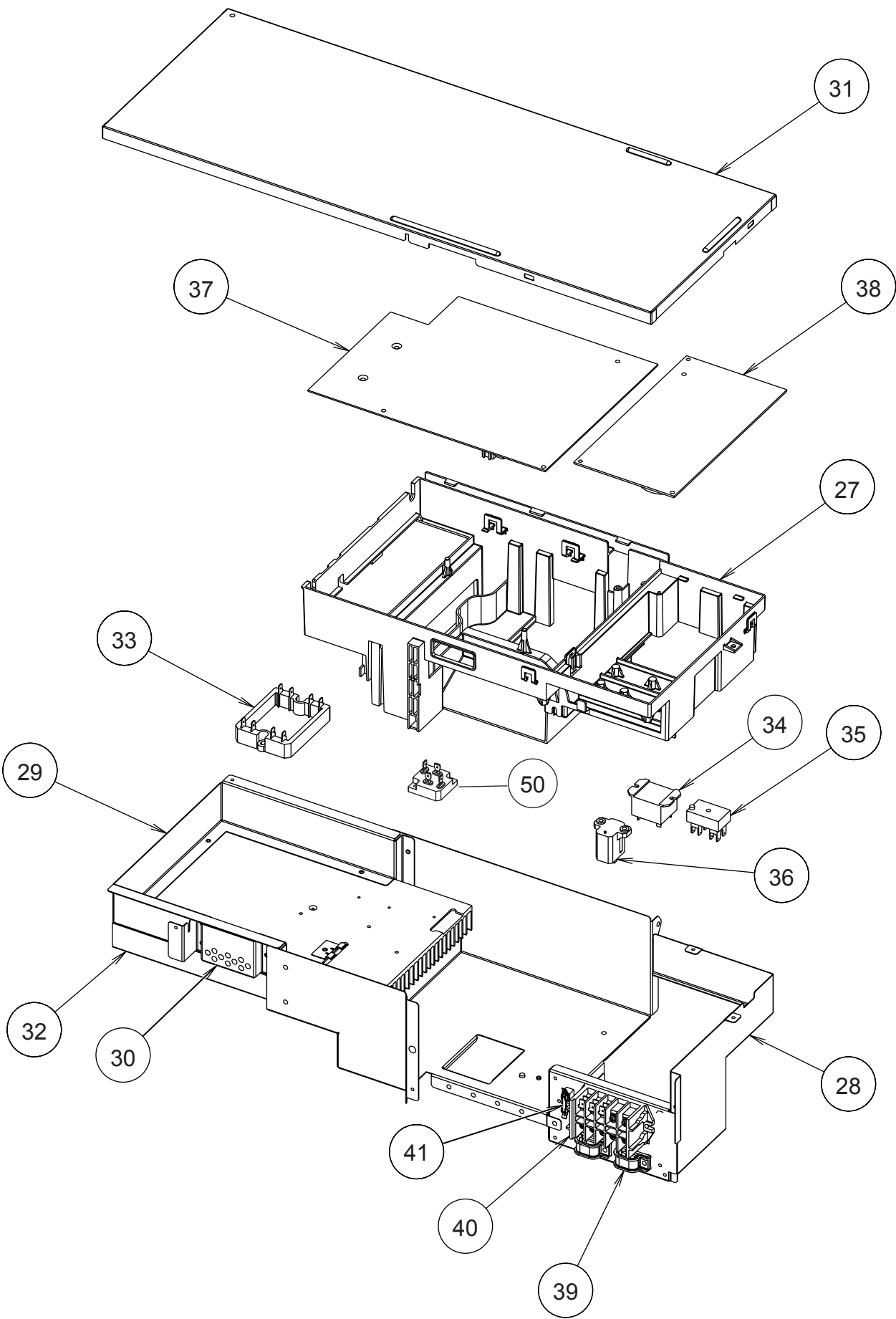
OUTDOOR UNIT



OUTDOOR UNIT



OUTDOOR UNIT



PARTS LIST

INDOOR UNIT

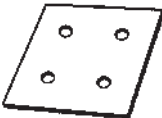
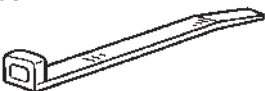
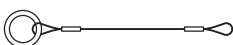
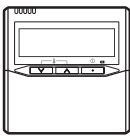
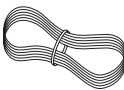
Ref.	Description	Parts number		Ref.	Description	Parts number	
34	Capacitor (Fan Motor)	9900270162		474	Turbo Fan Assy	9362803014	
61	Decoration Plate	9363133004		476-2	Spacial Washer	9362756006	
71	Grille Hook Holder	9362782005		477	Bellmouth-B	9362774000	
93	Filter	9362766005		479	Float Switch	9703285004	
117-3	Hex. Nut w/Spring Washer	9375072018		481	Insulation (Grille)-A	9362780001	
122	Rubber Support Holder	9362799003		481-1	Insulation (Grille)-B	9362781008	
127	Drain Hose	9362784009		482	Pump Unit	9703125010	
138	Separate Wall	9362737005		484	Hook	9362736008	
143-1	Clamp NK-3N	313361274700		487	Grille Hinge Wire	9362754002	
146-1	Evaporator-A Assy	9373799047		488	Drain Pan Plug	313005174654	
146-2	Evaporator-B Assy	9373800040		514	Control Box Cover	9362763004	
160	Kit (Drain Pan Assy)	9370934014		522	Joint Gear	9362772006	
164	Fan Motor Assy	9601915010		541	Terminal Plate	9363642001	
168	Cabinet-E	9362735001		542	Panel Base	9362759014	
184-1	Thermistor Spring-A	313728262708		543	Panel Frame Holder	9362761017	
187	Clamp No. 1219	313361271706		544	Panel Base Holder	9362760010	
195	Clamp SKB-100	313361275805		545	Panel Frame	9362758017	
197	Wind Guide Board	9373444015		563	Inner Box	9362768009	
223	Control Box	9362762007		565	Evaporator Holder Assy	9362802017	
226	Motor Gear	9362764001		---	Noise Insulation	9363143003	
234	Room Thermistor	9703299025		628	Locking Spacer-B	313005446558	
235	Pipe Thermistor	9703297014		690	Joint-A	9362773003	
236	Controller PCB Assy (45)	9705914063		692	Joint Shaft	9362771009	
236	Controller PCB Assy (54)	9705914070		705	Louver Assy	9362836012	
240	Remote Control	9372266052		710	Intake Grille B	9362854016	
244	Pipe Cover Assy	9362819015		735	Distributor Assy	9371325101	
337-1	Reinforcement (Eva.)-A	9362749008		777-1	Grille Hook-A	9362779012	
337-2	Reinforcement (Eva.)-B	9362750004		777-2	Grille Hook-B	9362778015	
338	Motor Holder	9362765008		798	Pump Hook Bracket	9362753005	
381	Locking Spacer	313209391506		803	Cabinet-D	9362734004	
457	Reinforcement (Drain Pan)	9362757003		814	Cabinet-C	9362733007	
460-1	Pump Cover-A	9362775007		815-1	Terminal-3P	9306489069	
460-2	Pump Cover-B	9362776004		815-2	Terminal-3P	9703345012	
462	Top Cover Plate	9362806015		834-1	Wire Cover-A	9362789004	
464	Cabinet-A	9362800013		834-2	Wire Cover-B	9362788007	
465	Cabinet-B	9362801010		835	Cushion Rubber (Pump)	9362777001	
467	Drain Port	9362786003		847	Louver Supporter	9362770019	
468	Spacial Nut-A (Large)	313005446653		858	Grille Spring	9362755009	
469	Spacial Nut-B (Small)	313005446759		875	Power Supply PCB Assy	9704561220	
472-1	Grille Reinforcement-T (A)	9362738002		876-2	Motor, Step	9900362027	
472-2	Grille Reinforcement-T (B)	9362739009		982-1	Cord Clamp	9356857009	
472-3	Grille Reinforcement-T (C)	9362740005		---	Bypass Pipe-B	9371346069	
472-4	Grille Reinforcement-T (D)	9362741002		---	Rubber (Discharge Pipe)	313194159807	
472-5	Grille Reinforcement-T (E)	9362742009					

OUTDOOR UNIT

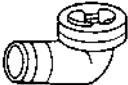
Ref.	Description	Parts number	
1	Top Panel Sub Assy	9374417025	
2	Front Panel X	9374094028	
3	Fan Guard	9374330010	
4	Grip Side	9374173013	
5	Service Panel Sub Assy	9374415014	
6	Right Panel Sub Assy	9374416042	
7	Valve Cover	9374174010	
9	Propeller Fan Assy	9366378020	
10	Motor DC Brushless	9601882015	
11	Condenser A Assy	9374433018	
12	Condenser B Assy	9374434015	
13	Sepa Wall	9374135028	
14	Cap Foot	9374345014	
15	Base Assy	9374166060	
17	3-Way Valve Assy	9372205044	
18	3-Way Valve Assy	9372205075	
19	Compressor Assy	9374653010	
20	Accumulator Assy	9371615011	
21	Solenoid	9900165055	
22	Pressure Switch	9900186012	
23	4-Way Valve	9970035029	
24	Check Valve Assy	9374274017	
25	Coil (Expansion Valve)	9900190033	
26	Strainer Assy	9372524015	
27	Inverter Box A	9374603015	
28	Inverter Box B	9374625017	
29	Inverter Box C	9374605019	
30	Inverter Box Duct	9374609017	
31	Inverter Box Cover	9374608010	
32	Heat Sink A	9374607013	
33	Act-Module	9707278019	
34	Relay	9900262013	
35	Terminal	9701971015	
36	Posistor	9704265012	
37	Inverter PCB Assy (45)	9705642065	
37	Inverter PCB Assy (54)	9705642072	
38	Power PCB Assy	9705647015	
39	Clamp (Cord)	9356857009	
40	Terminal	9900184025	
41	Fuse	0600376116	
50	Diode, Power(Bridge)	0100122039	
--	Expansion Valve	9900170028	
--	Thermistor (Dischage)	9704219084	
--	Thermistor (Heat Exchange)	9900374037	
--	Thermistor (Out Temp)	9900378035	
--	Compressor Thermistor	9900156039	
--	Holder Thermo	9372797013	
--	Fuse 3.15A-250V	0600222512	
--	Fuse 5A-250V	0600222529	
--	Heatsink Thermistor	9900311018	
--	Varistor	0000361224	
--	Arrester	0600280147	
--	Relay	9900007010	
--	Switch Slide	9701392018	
--	Drain Pipe (I-Type)	9301102000	
--	Drain Pipe Packing	9301143003	

STANDARD ACCESSORIES

INDOOR UNIT

Name and Shape	Q'ty	Application
Coupler heat insulation 	2	For indoor side pipe joint
Screw 	2	For installing the remote controller
Special nut A (large flange) 	4	For installing indoor unit
Special nut B (small flange) 	4	For installing indoor unit
Template 	1	For ceiling hole cutting
Binder 	1 (small)	For remote controller and remote controller cord binding
Blower cover insulation 	2	For discharged air
Hook wire 	2	For installing intake grille
Remote control 	1	
Remote control cord 	1	For connecting the remote controller

OUTDOOR UNIT

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

0601G3017