

SPLIT TYPE
ROOM AIR CONDITIONER
**FLOOR CONSOLE /
UNDER CEILING**
DUAL type

SERVICE MANUAL

Models

Indoor unit	Outdoor unit
ABU18RULX	AOU18RLX
ABU24RULX	AOU24RLX



CONTENTS

SPECIFICATIONS	1
OUTLINE AND DIMENSIONS	2
REFRIGERANT SYSTEM DIAGRAM	4
CIRCUIT DIAGRAM	5
PCB CIRCUIT DIAGRAM	7
ERROR DISPLAY	11
DISASSEMBLY ILLUSTRATION (Indoor Unit)	13
DISASSEMBLY ILLUSTRATION (Outdoor Unit)	20
PARTS LIST (Indoor Unit)	24
PARTS LIST (Outdoor Unit)	26
ACCESSORIES	27

SPECIFICATIONS

TYPE	Cool and Heat	
INDOOR UNIT	ABU18RULX	ABU24RULX
OUTDOOR UNIT	AOU18RLX	AOU24RLX
COOLING CAPACITY	17,800 / 17,800 BTU/h	22,200 / 22,200 BTU/h
HEATING CAPACITY	21,500 / 21,500 BTU/h	24,200 / 24,200 BTU/h

ELECTRICAL DATA

POWER SOURCE	230 V / 208 V	
FREQUENCY	1 ϕ 60 Hz	
RUNNING CURRENT (Cool)	7.1 A / 7.9 A	9.8 A / 10.9 A
RUNNING CURRENT (Heat)	9.8 A / 10.9 A	10.2 A / 11.3 A
INPUT WATTS (Cool)	1.63 kW / 1.63 kW	2.25 kW / 2.25 kW
INPUT WATTS (Heat)	2.25 kW / 2.25 kW	2.33 kW / 2.33 kW
E.E.R. (Cool)	3.19 / 3.19 kW/kW	2.89 / 2.89 kW/kW
E.E.R. (Heat)	2.80 / 2.80 kW/kW	3.05 / 3.05 kW/kW
MOISTURE REMOVAL (ℓ /hr)	2.5 L/hr	3.5 L/hr
AIR CIRCULATION-Hi (m ³ /hr)	780 m ³ /hr	880 m ³ /hr

COMPRESSOR

TYPE	Hermetic type, 4 poles, Inverter, Twin Rotary	
DISCRIMINATION	TNB220FPBM9	
REFRIGERANT R410A	4 lb 3 oz (1,900 g)	

FAN MOTOR

POWER SOURCE	230 V		
INDOOR UNIT (Cool / Heat)	DISCRIMINATION	MFA-24PPT	MFA-24PPT
	HIGH-SPEED	1,060 / 1,060 r.p.m.	1,180 / 1,100 r.p.m.
	MED-SPEED	890 / 890 r.p.m.	1,000 / 1,000 r.p.m.
	LOW-SPEED	770 / 770 r.p.m.	900 / 900 r.p.m.
OUTDOOR UNIT (Cool / Heat)	DISCRIMINATION	MFE-45ROM	MFE-45ROM
	HIGH- SPEED	780 / 780 r.p.m.	850 / 900 r.p.m.

DIMENSIONS

INDOOR UNIT	H x W x D	7-7/8" x 39-1/8" x 25-7/8" inch (199 x 990 x 655 mm)
OUTDOOR UNIT	H x W x D	32-3/4" x 35-1/2" x 13" inch (830 x 900 x 330 mm)

WEIGHT

INDOOR UNIT	Gross / Net	37 kg / 28 kg
OUTDOOR UNIT	Gross / Net	70 kg / 64 kg

REFRIGERANT CHARGE (R410A)

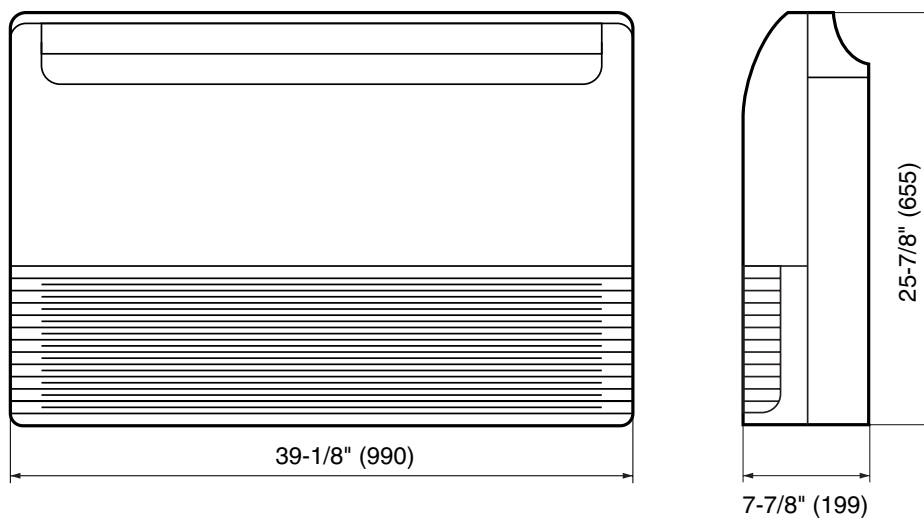
FULL CHARGE AMOUNT	Pipe Length	49 ft. (15 m)	4 lb 3oz (1,900 g)	4 lb 3oz (1,900 g)
		66 ft. (20 m)	4 lb 7oz (2,000 g)	4 lb 10oz (2,100 g)
		98 ft. (30 m)	4 lb 14oz (2,200 g)	5 lb 8oz (2,500 g)
		131 ft. (40 m)	5 lb 5oz (2,400 g)	6 lb 6oz (2,900 g)
		164 ft. (50 m)	5 lb 12oz (2,600 g)	7 lb 5oz (3,300 g)
ADDITIONAL REFRIGERANT			0.215oz / ft. (20 g / m)	0.424 oz / ft. (40 g / m)

OUTLINE AND DIMENSIONS

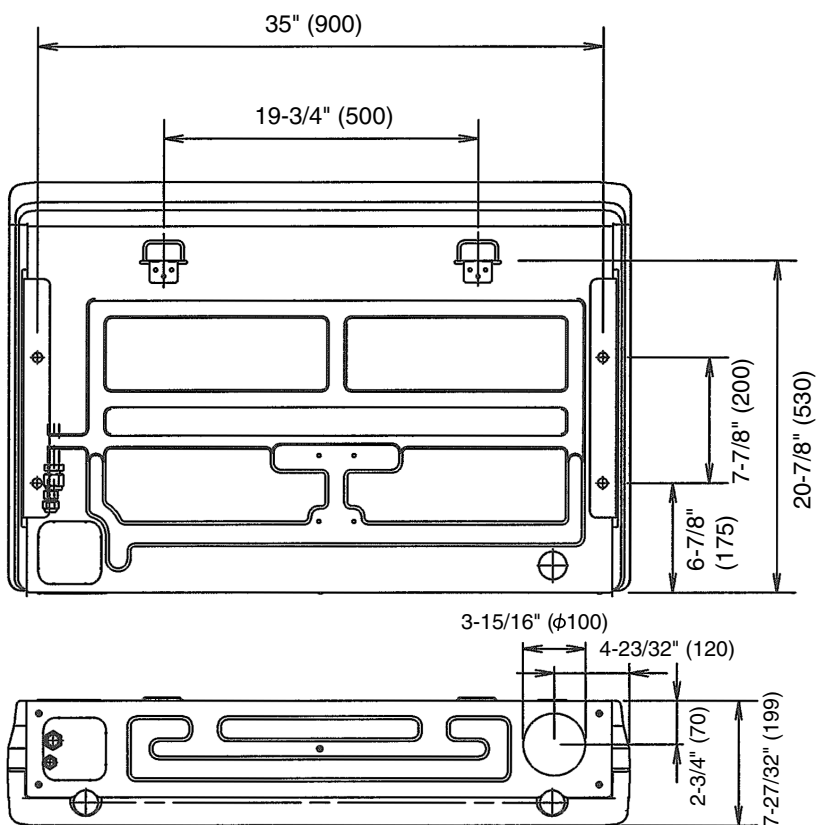
INDOOR UNIT

Models :
ABU18RULX, ABU24RULX

Unit : inch (mm)



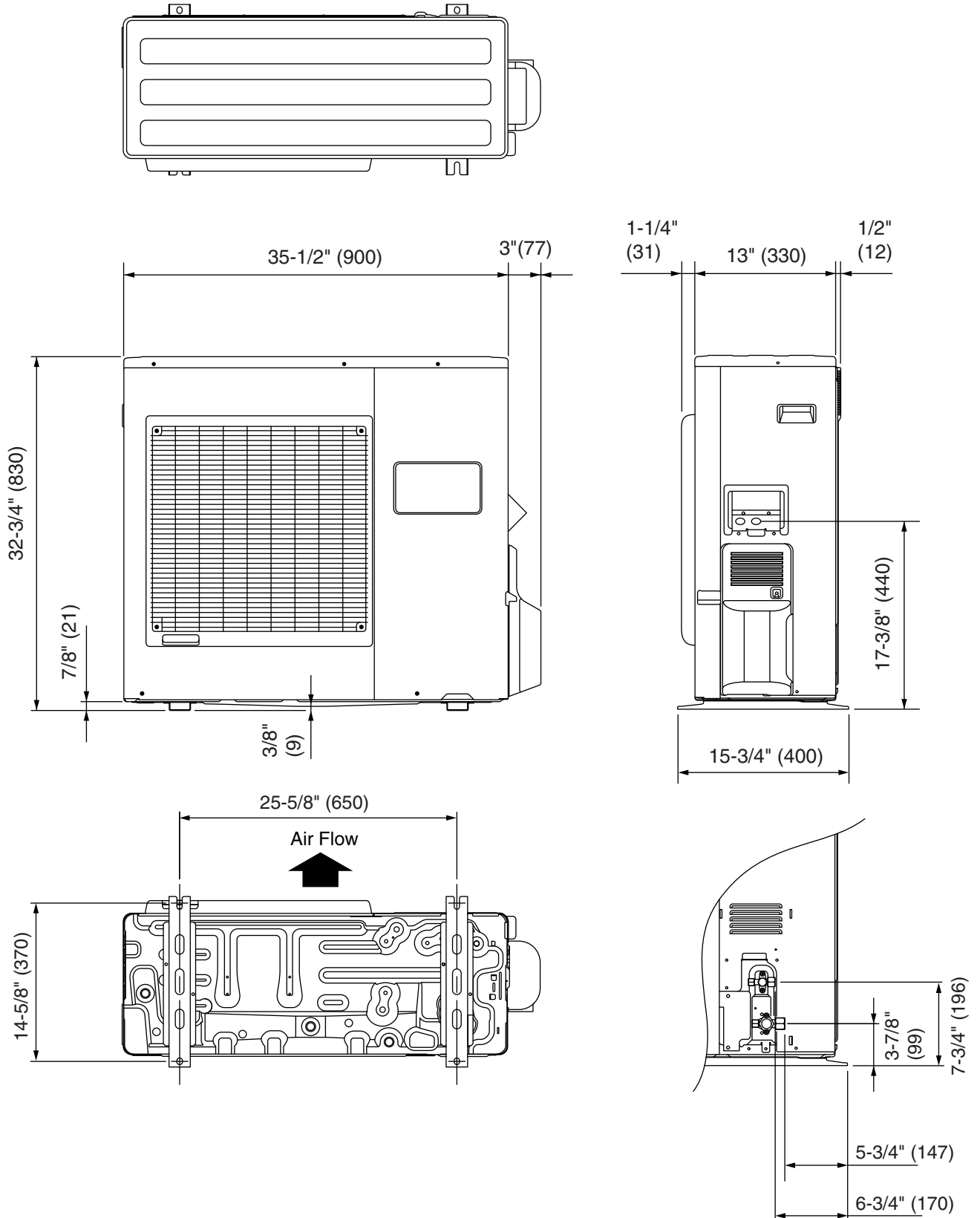
(rear view)



OUTDOOR UNIT

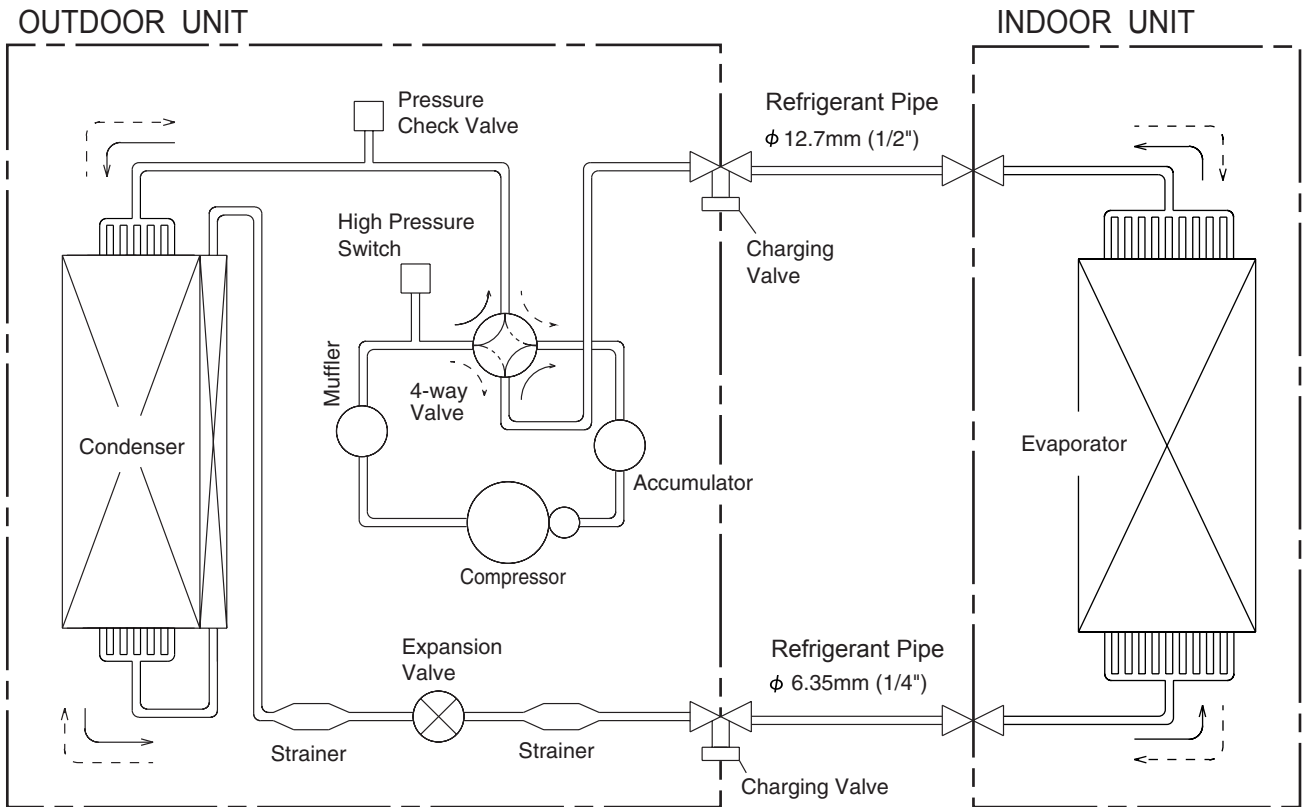
Models:
AOU18RLX, AOU24RLX

Unit : inch (mm)

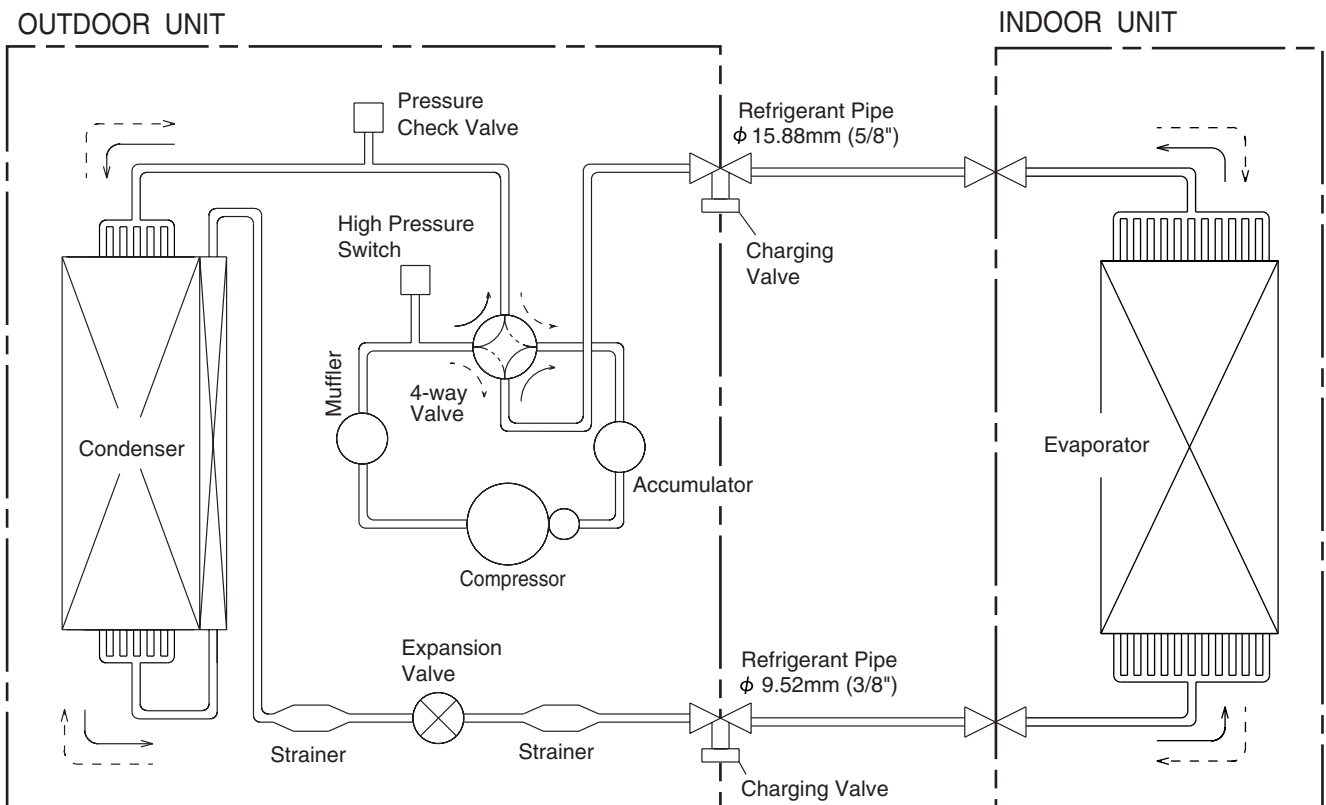


REFRIGERANT SYSTEM DIAGRAM

Models :
ABU18RCLX / AOU18RLX



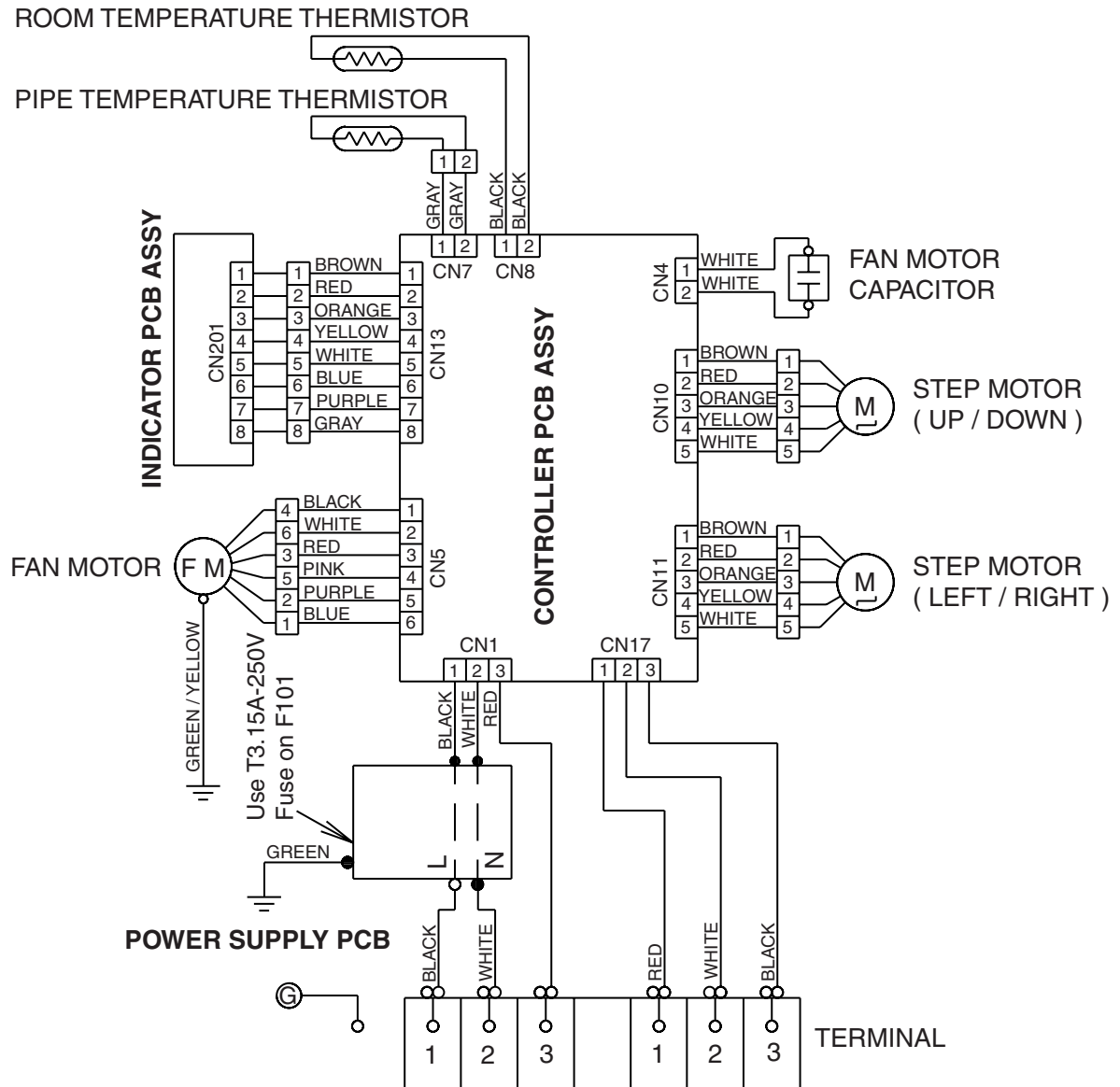
Models :
ABU24RULX / AOU24RLX



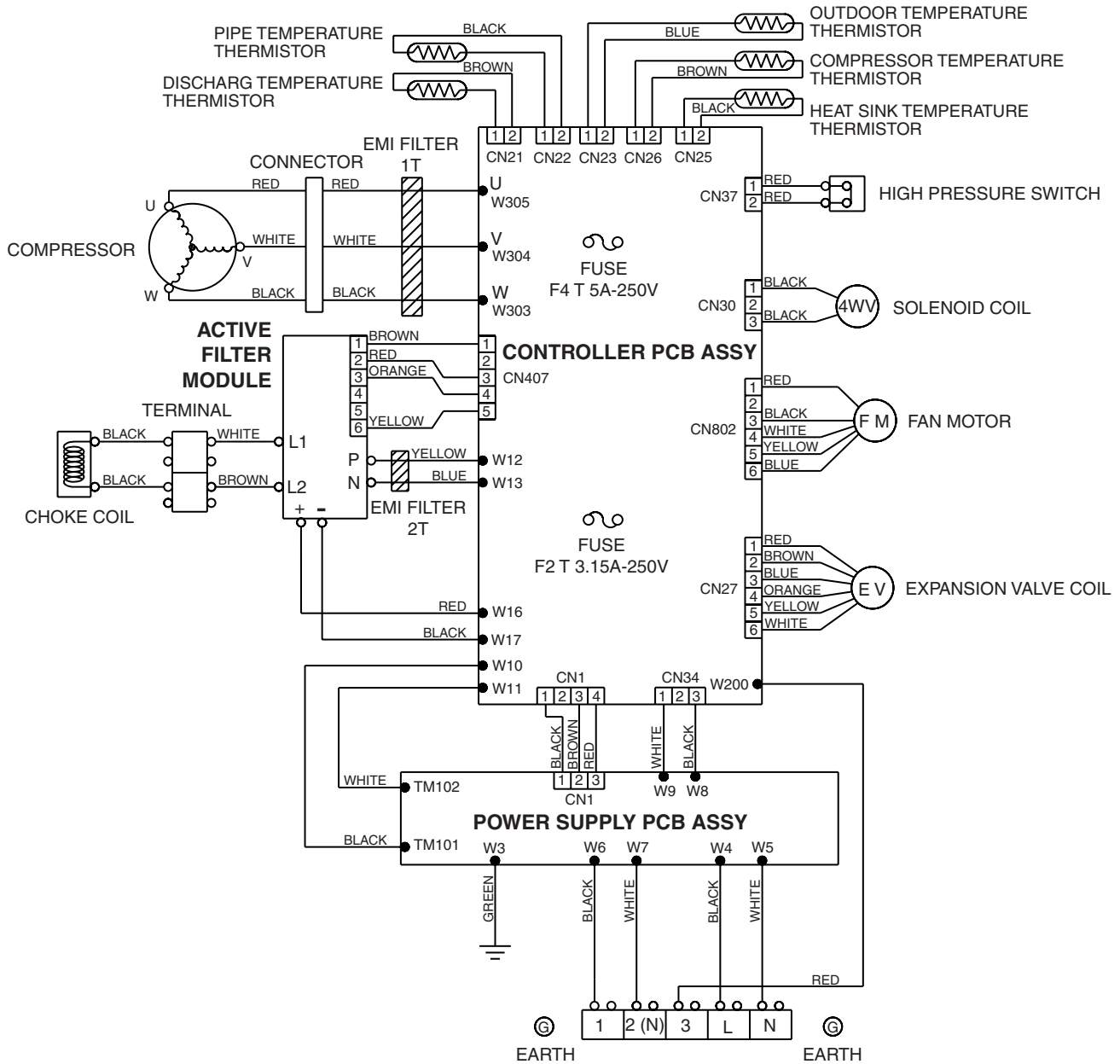
—> : COOL
- - -> : HEAT

CIRCUIT DIAGRAM

Models :
ABU18RULX, ABU24RULX



Models :
 AOU18RLX, AOU24RLX

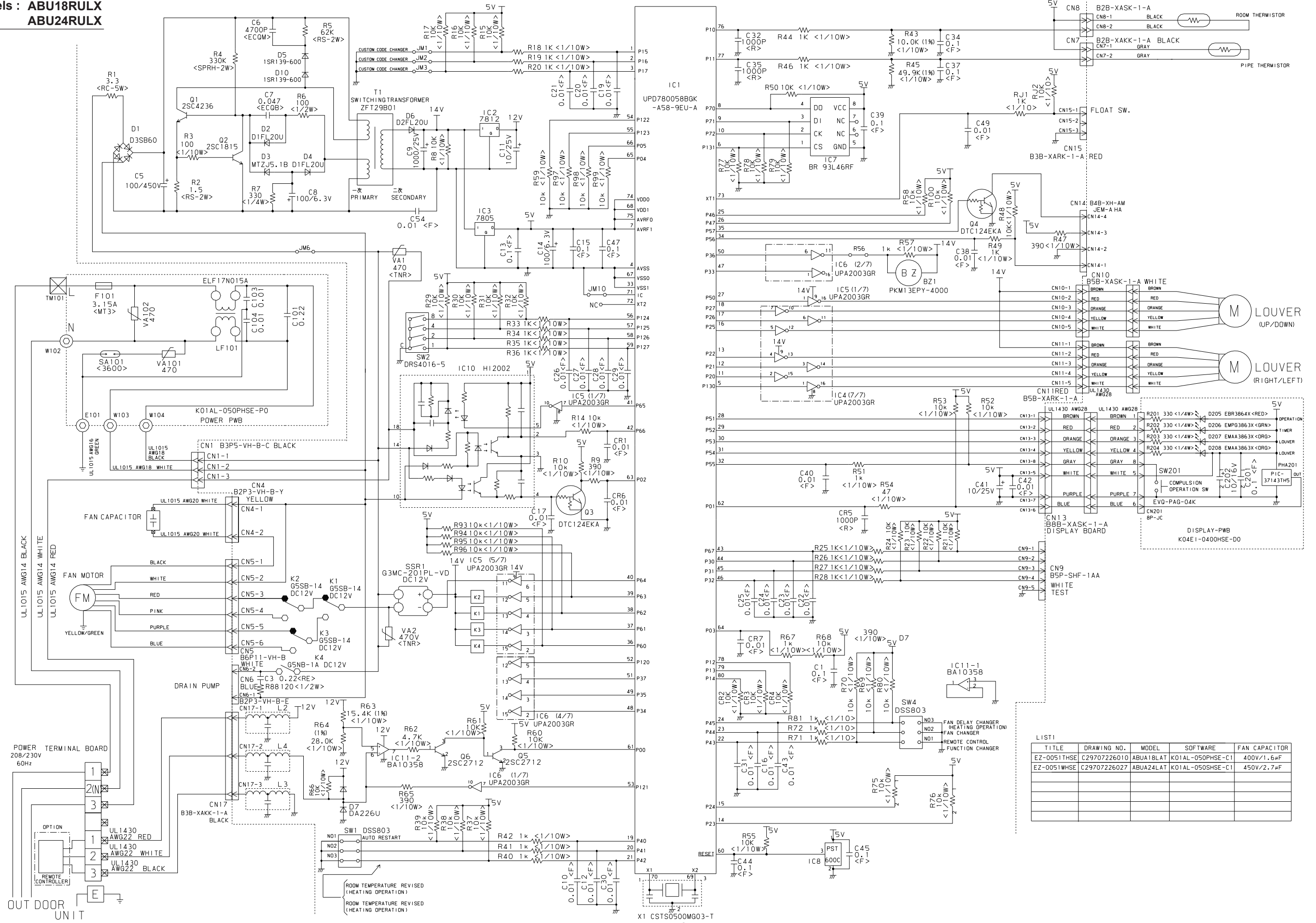


INDOOR PCB CIRCUIT DIAGRAM

Models : ABU18RULX
ABU24RULX

CONTROLLER PCB ASSY

ABU18RULX : K01AL-050PHSE-C1
ABU24RULX : K01AL-050SHSE-C1



LIST1

TITLE	DRAWING NO.	MODEL	SOFTWARE	FAN CAPACITOR
EZ-0051THSE	C29707226010	ABUA18LAT	K01AL-050PHSE-C1	400V/1.6μF
EZ-0051WHSE	C29707226027	ABUA24LAT	K01AL-050SHSE-C1	450V/2.7μF

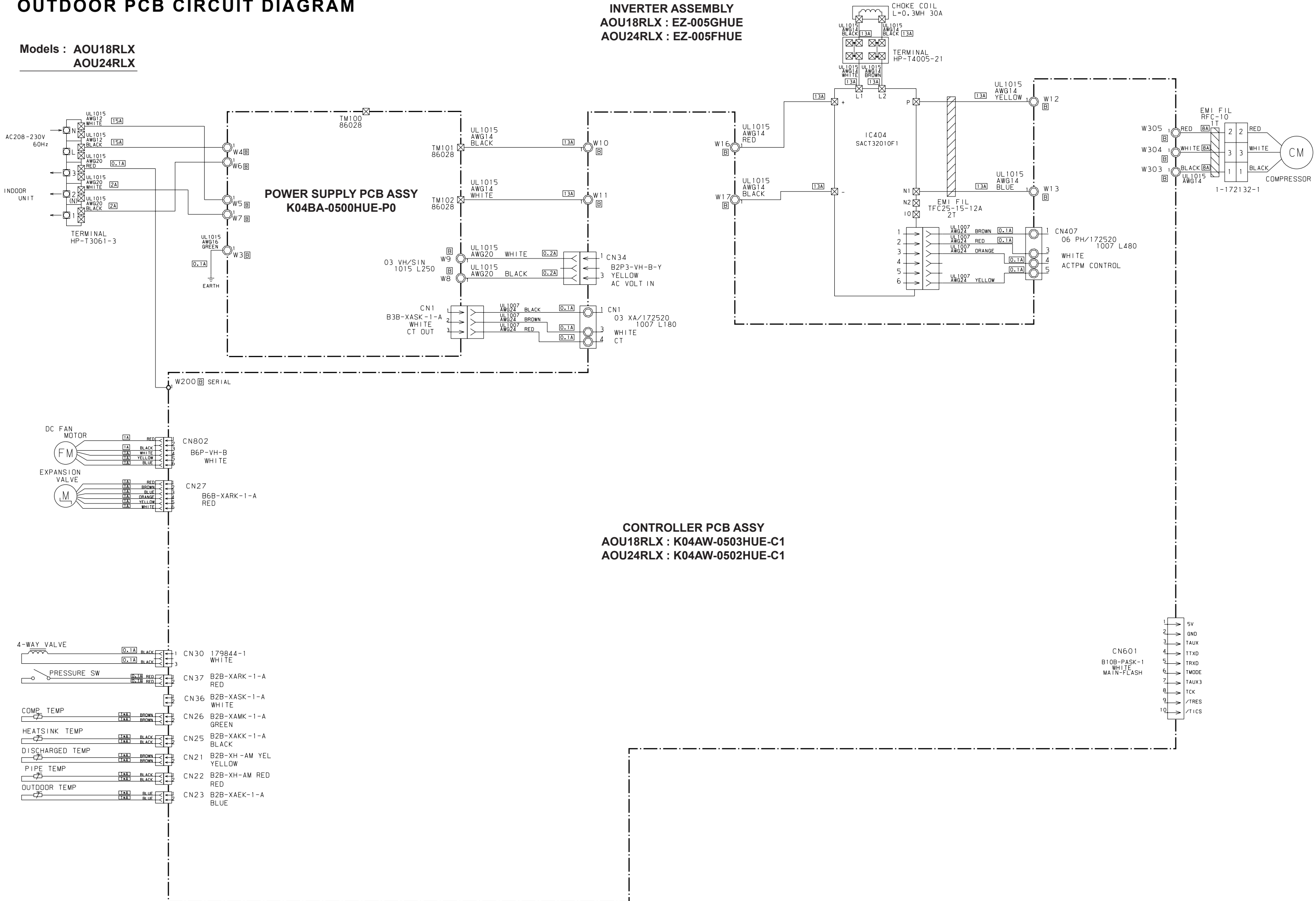
OUTDOOR PCB CIRCUIT DIAGRAM

Models : AOU18RLX
AOU24RLX

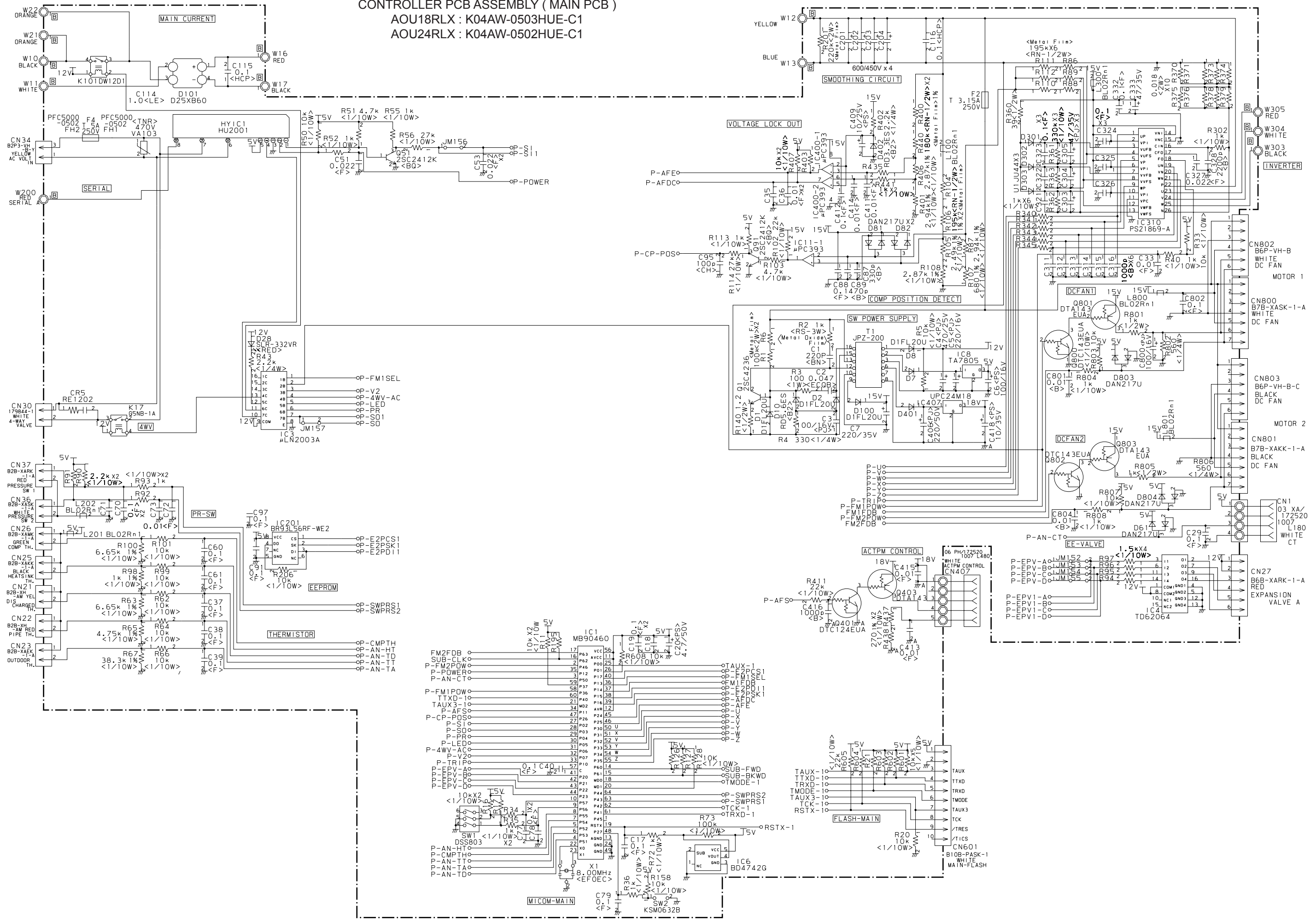
INVERTER ASSEMBLY
AOU18RLX : EZ-005GHUE
AOU24RLX : EZ-005FHUE

POWER SUPPLY PCB ASSY
K04BA-0500HUE-P0

CONTROLLER PCB ASSY
AOU18RLX : K04AW-0503HUE-C1
AOU24RLX : K04AW-0502HUE-C1

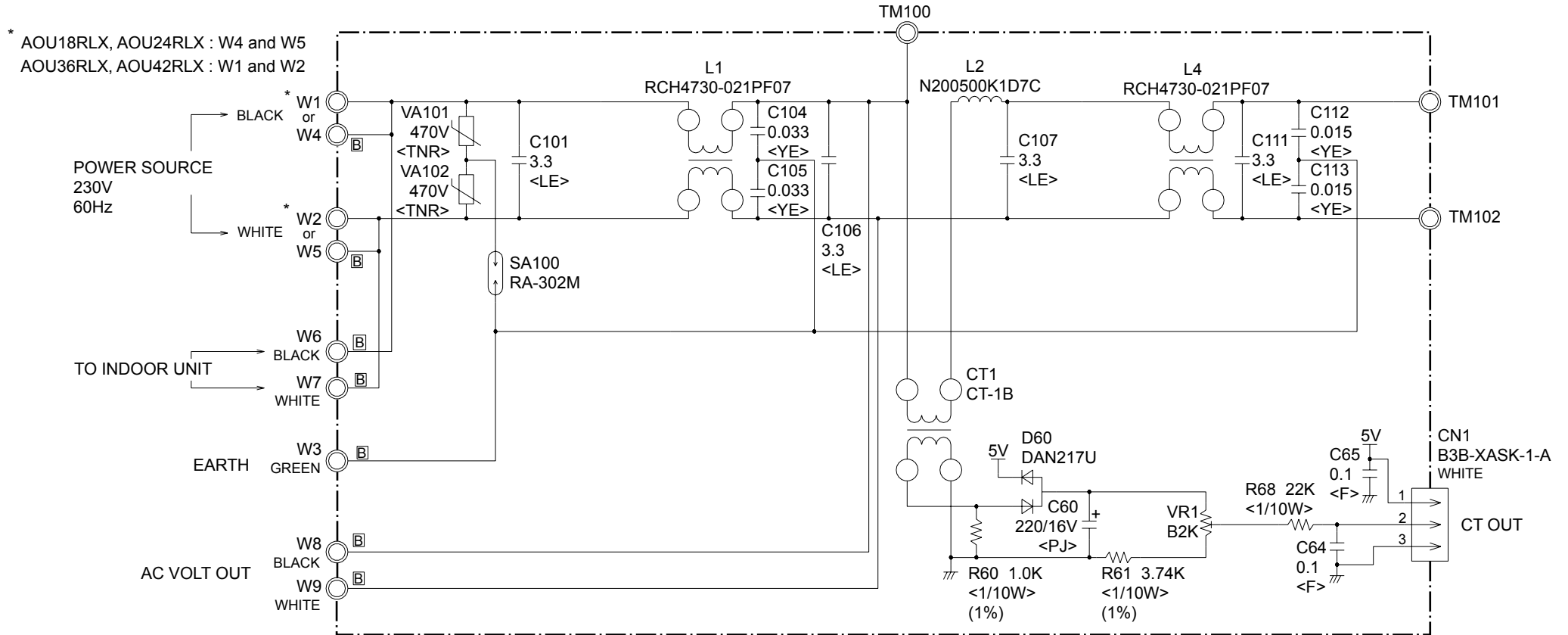


CONTROLLER PCB ASSEMBLY (MAIN PCB)
 AOU18RLX : K04AW-0503HUE-C1
 AOU24RLX : K04AW-0502HUE-C1



Models : AOU18RLX, AOU24RLX

POWER SUPPLY PCB ASSEMBLY
K04BA-0500HUE-P0

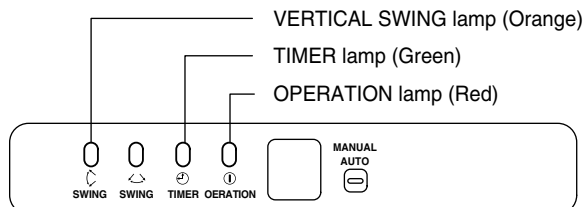


ERROR CONTENTS

(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)

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)
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. When the product is stopped:

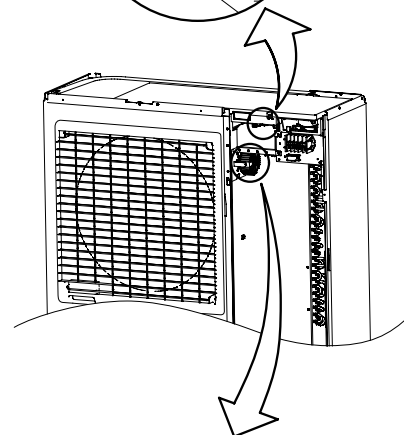
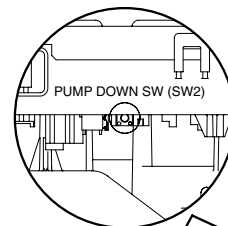
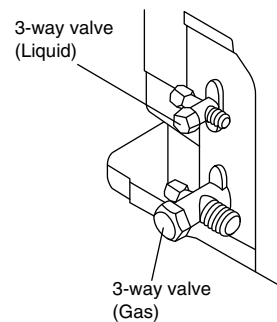
①	Press the PUMP DOWN switch on the outdoor unit. (The LED on the outdoor unit circuit board lights.)
②	The pump down operation (cooling operation) begins right away. After operation starts, close the three-way valve (liquid).
③	After 2 - 3 minutes, operation stops. Close the three-way valve (gas) within one minute after operations stops.
④	The LED will go out three minutes after it stops. Disconnect the power supply after confirming that the LED has gone out.

2. When the product is operating:

①	Press the PUMP DOWN switch on the outdoor unit. The LED on the outdoor unit circuit board lights, and operation stops. At this point, recovery has not been completed, so do not close the two- and three-way valves.
②	The pump down operation (cooling operation) begins after three minutes. Close the three-way valve (liquid) after operation starts.
③	After 2 - 3 minutes, operation stops. Close the three-way valve (gas) within one minute after operations stops.
④	The LED will go out three minutes after it stops. Disconnect the power supply after confirming that the LED has gone out.

*When the pump down operation is repeated, temporarily disconnect the power supply after opening the closed valves (both liquid and gas). Reconnect the power supply after 2 - 3 minutes and perform the pump down operation.

*When the start of the operation after pump down operation has been completed, temporarily disconnect the power supply after opening the closed valves (both liquid and gas). Reconnect the power supply after 2-3 minutes and be sure to perform a test operation for cooling.

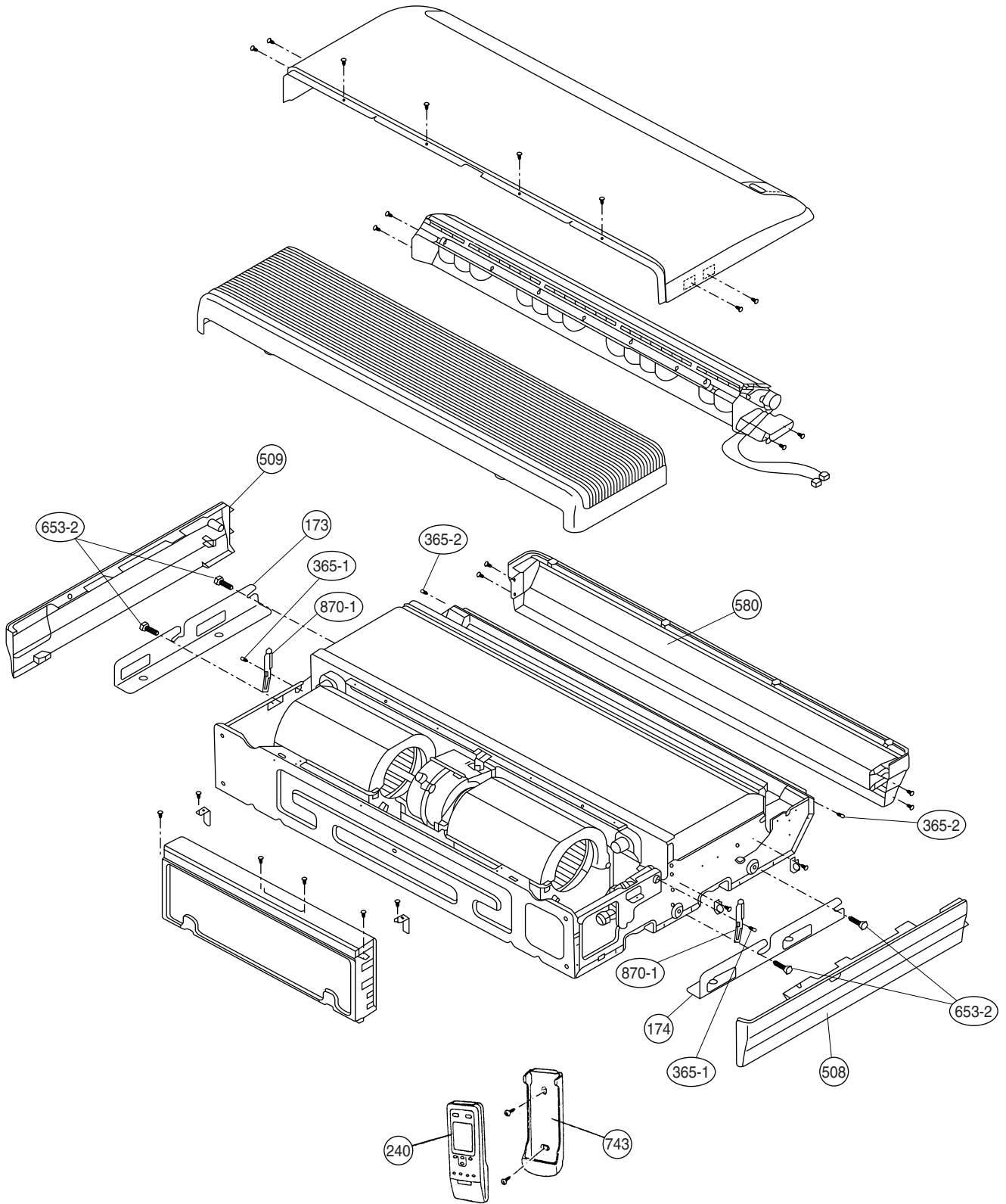


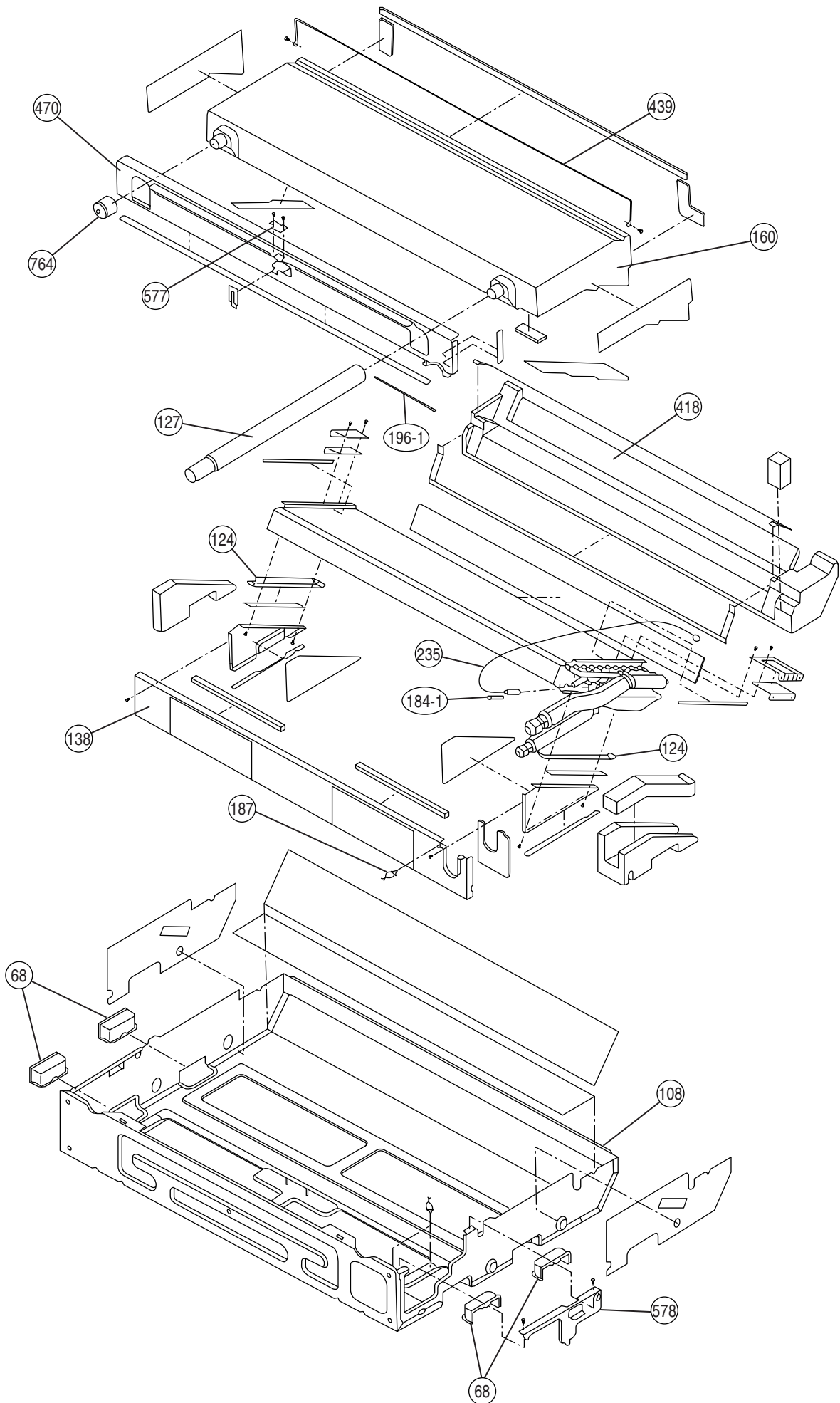
⚠ DANGER

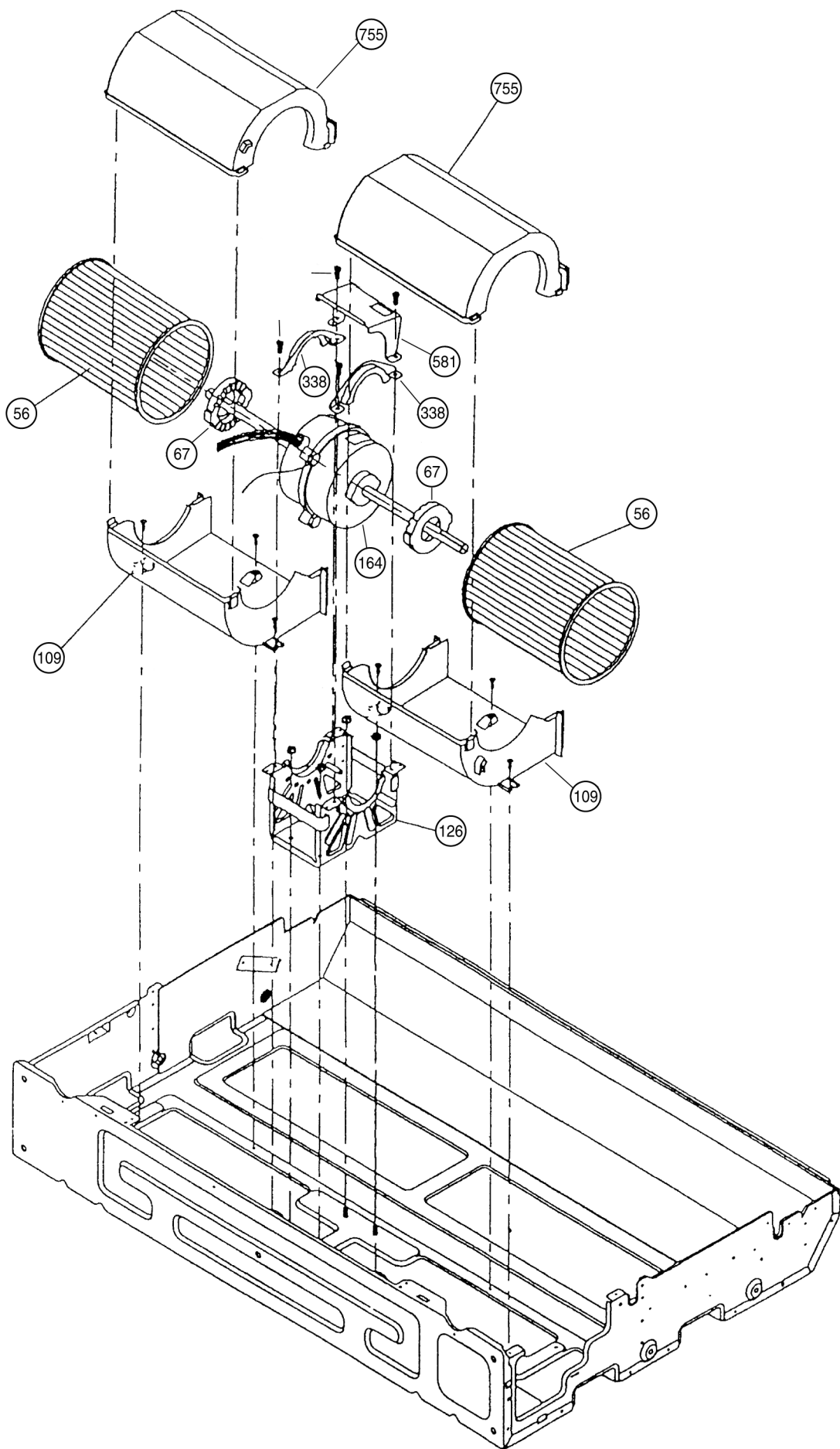
This part (Choke coil) generates high voltages. Never touch this part.

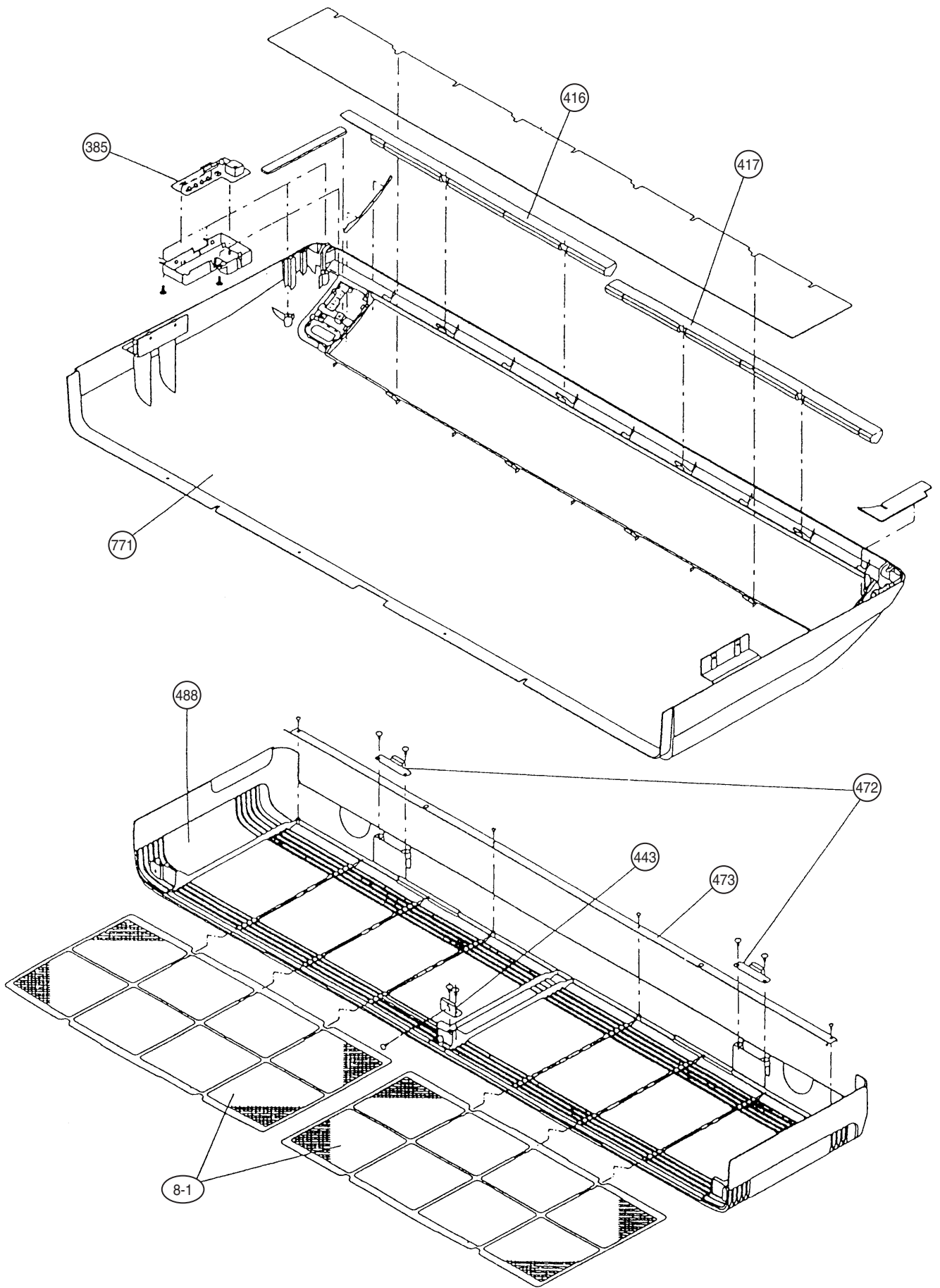
DISASSEMBLY ASSEMBLY

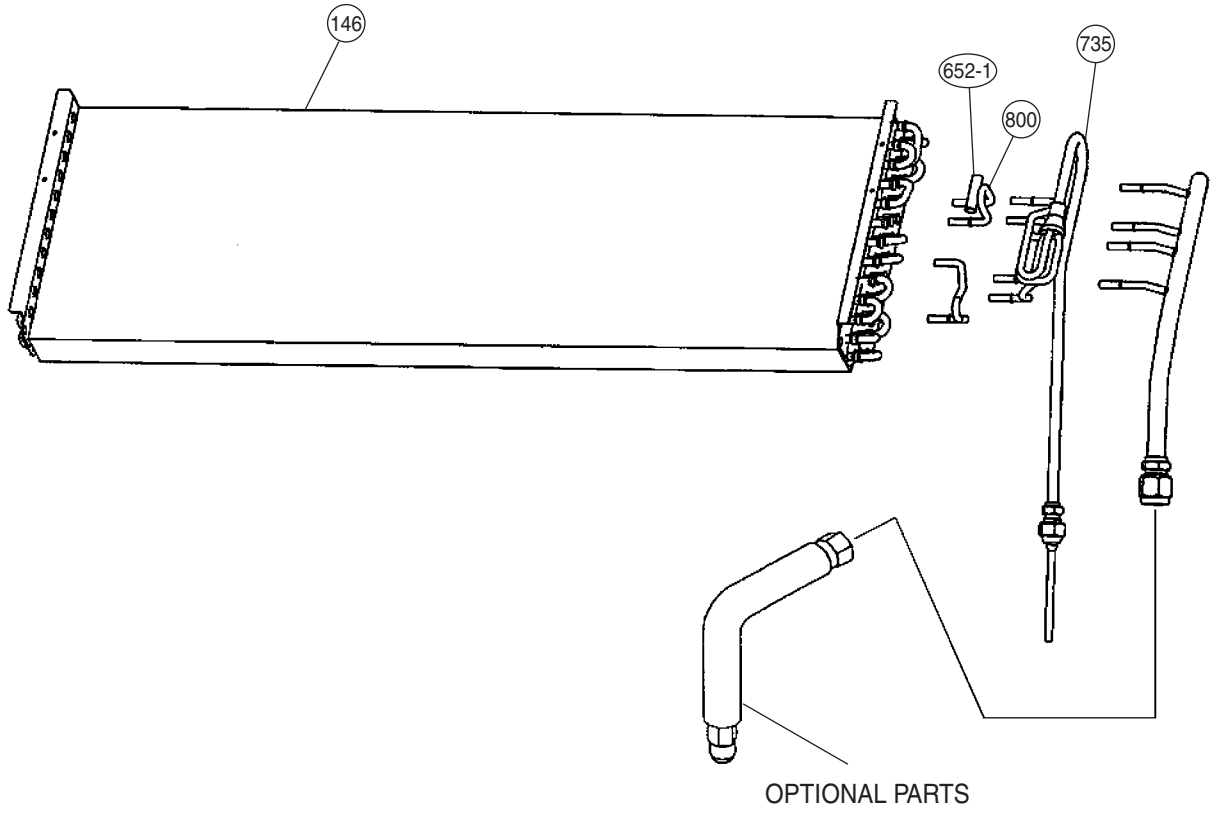
Models : ABU18RULX, ABU24RULX

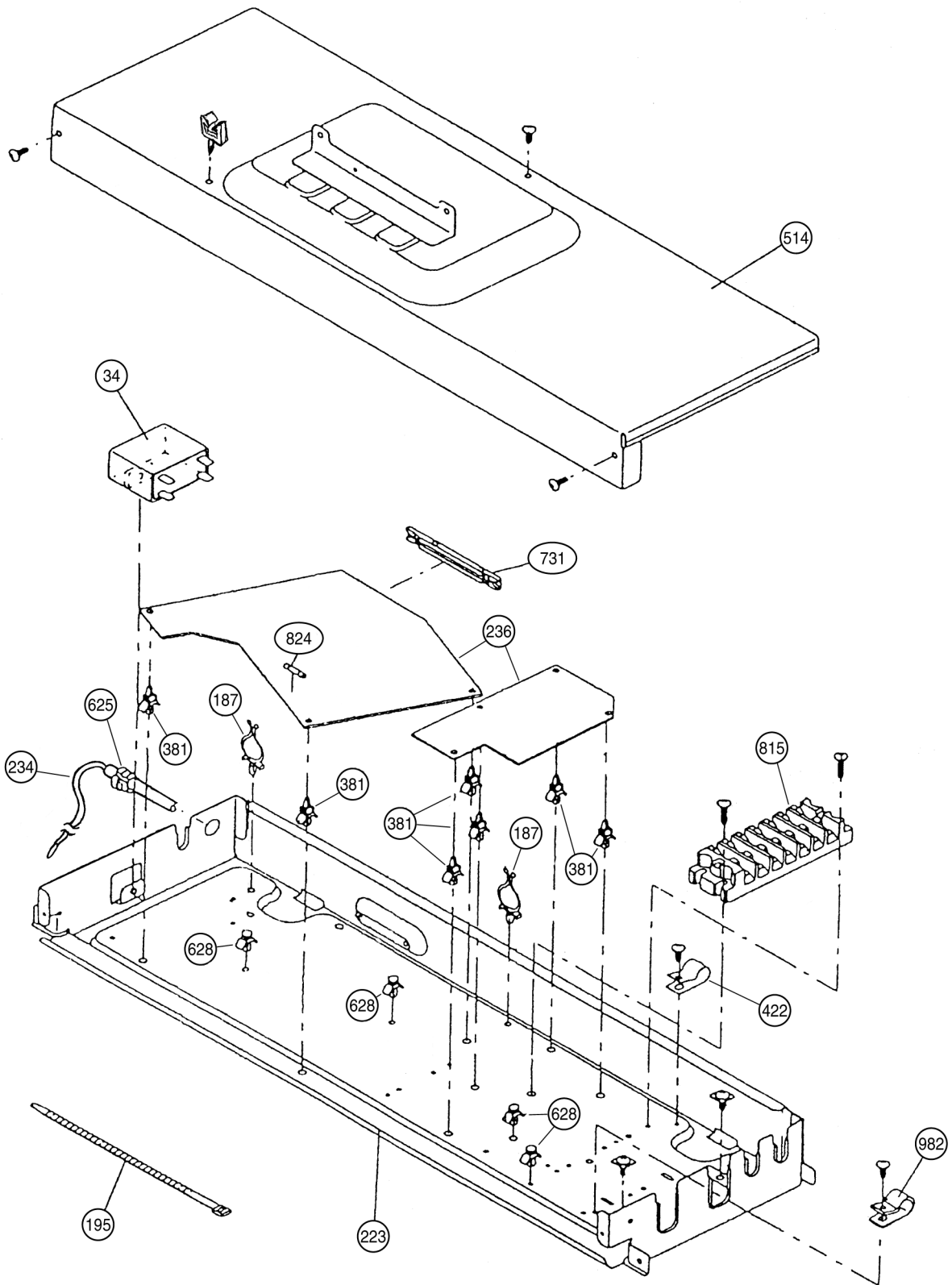




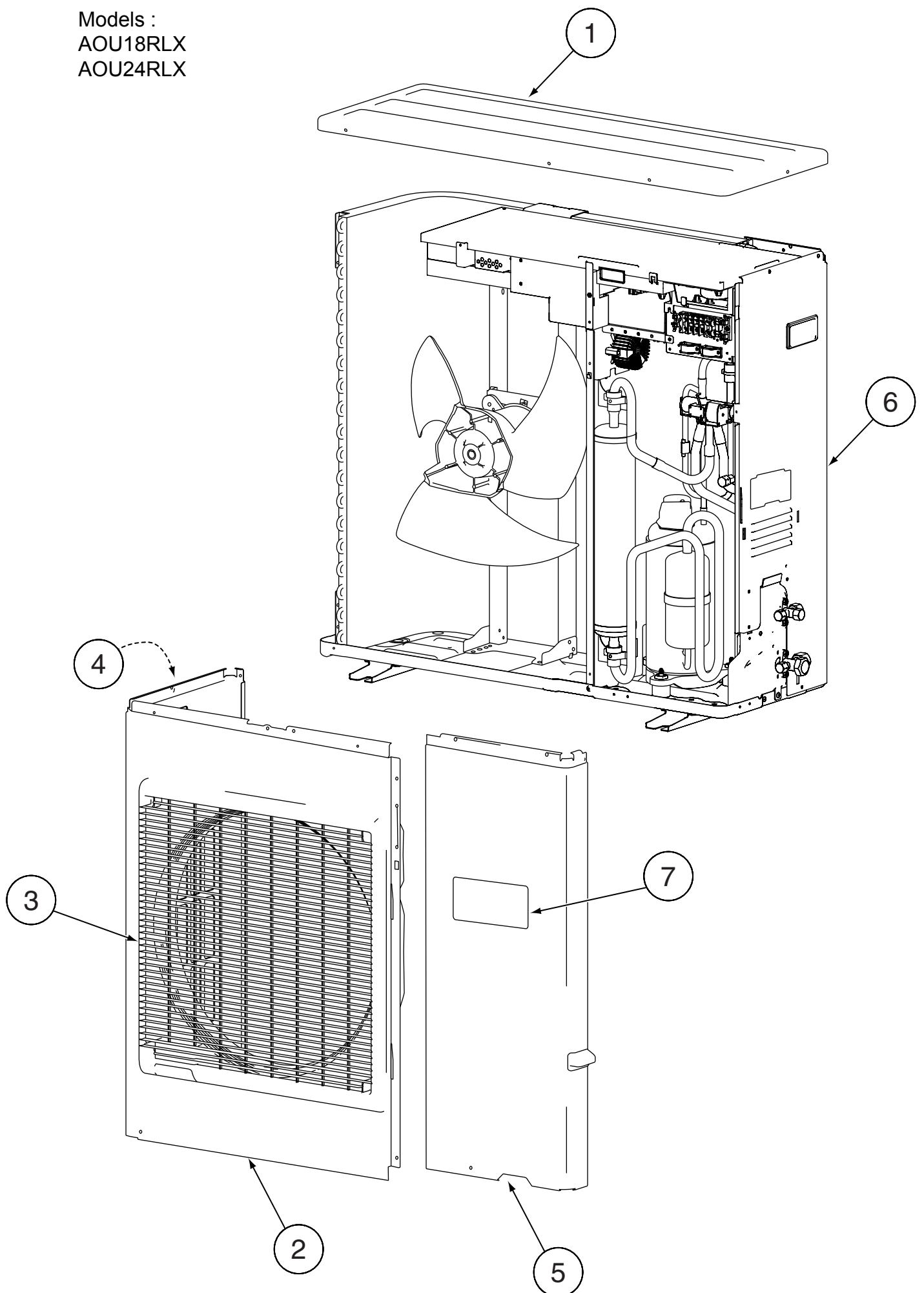




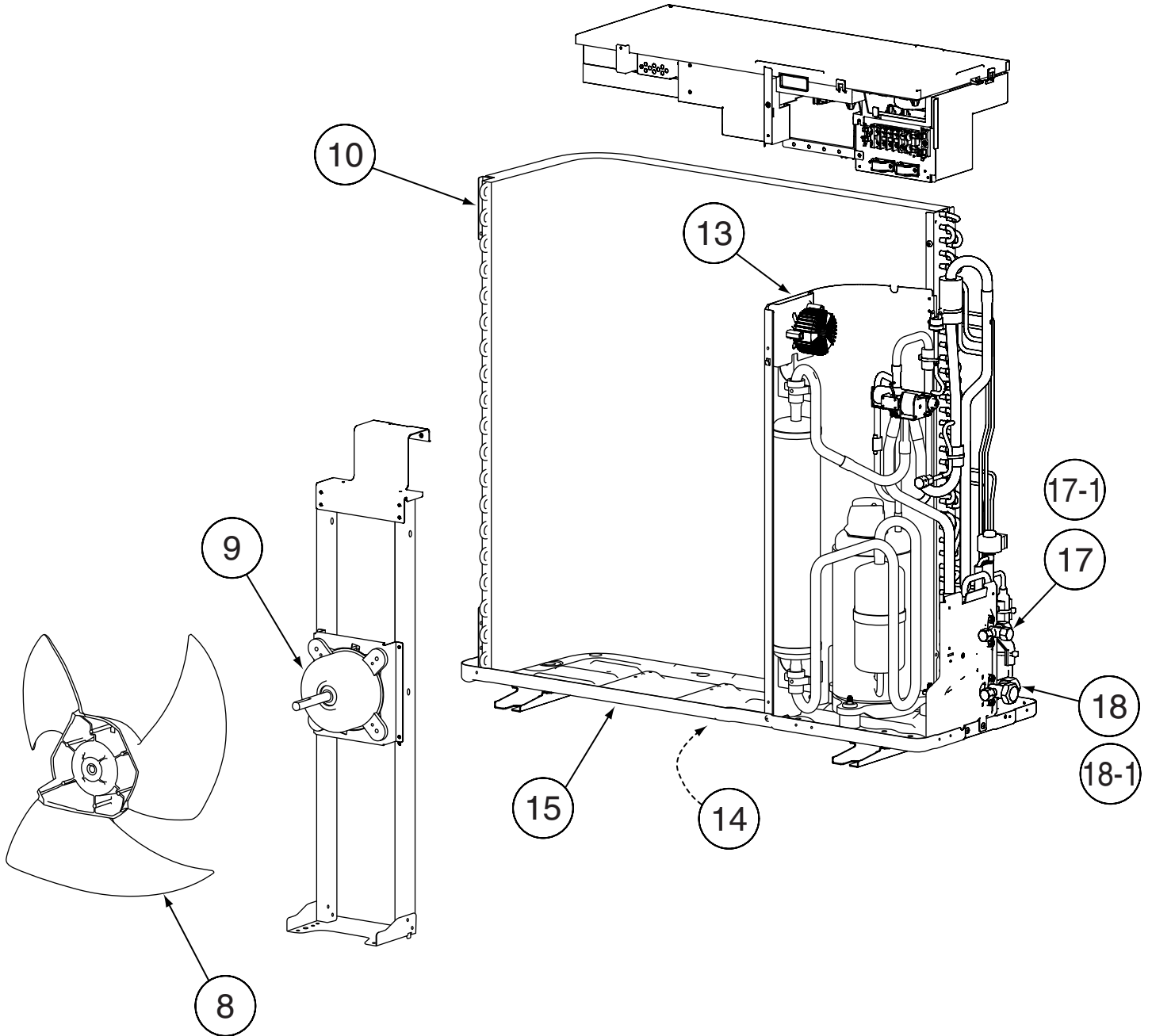




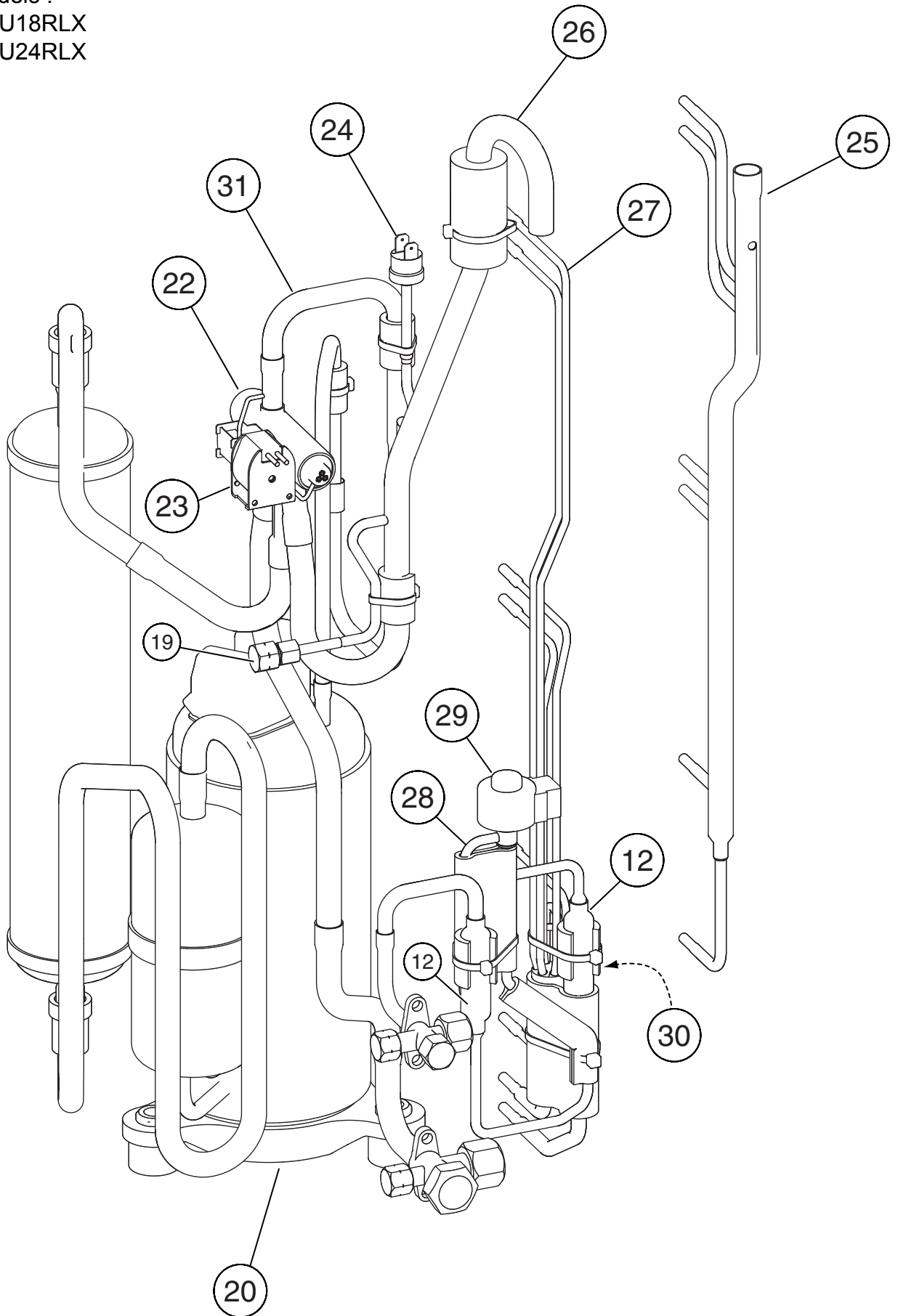
Models :
AOU18RLX
AOU24RLX



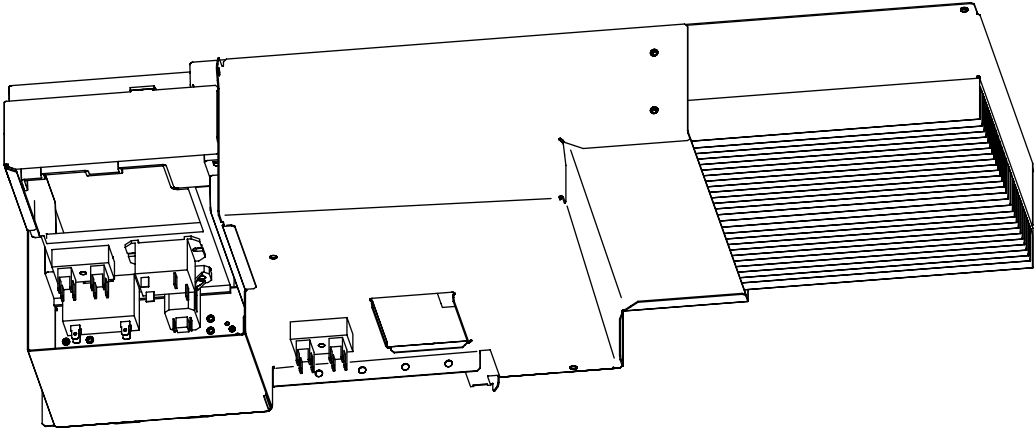
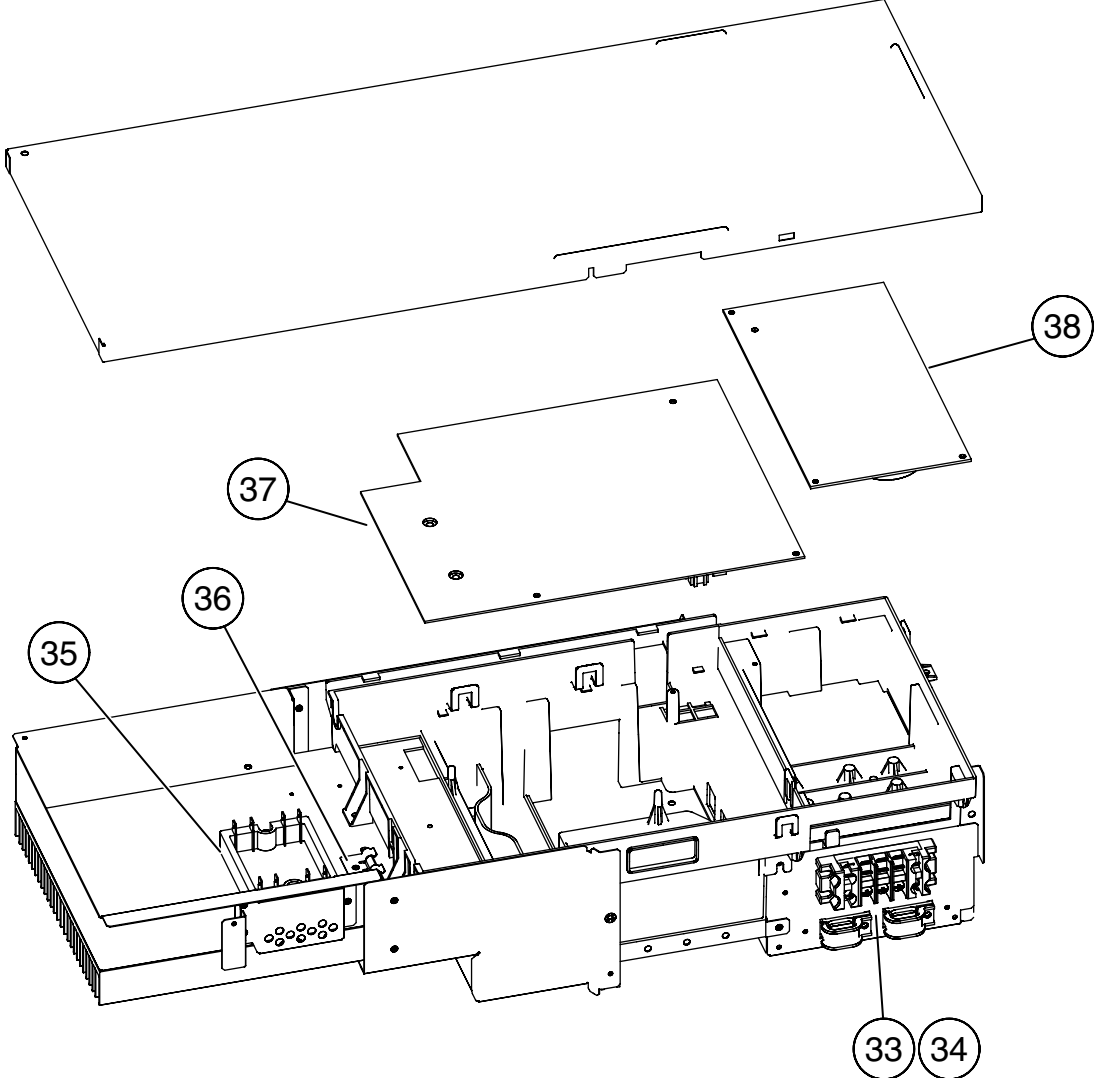
Models :
AOU18RLX
AOU24RLX



Models :
AOU18RLX
AOU24RLX



Models :
AOU18RLX
AOU24RLX



PARTS LIST

INDOOR UNIT

Ref. No.	Description	Part No.		Ord.
		ABU18RULX	ABU24RULX	Q'ty
8-1	Air Filter	9358567029	9358567029	
34	Capacitor (Fan Motor)	9900270018	9900270193	
56	Sirocco Fan Assy	9385258006	9385258006	
67	Rubber (Vibration-proof)	9385102002	9385102002	
68	Cap, Plastic	9358563007	9358563007	
69	Louver	9358561010	9358561010	
108	Base Assy	9359061021	9359061021	
109	Casing, Plastic	9358543009	9358543009	
124	Kit (Dew Proof Plate)	9372673010	9372673010	
126	Motor Fixing Table Assy	9358591000	9358591000	
127	Drain Hose Assy	9359242000	9359242000	
138	Kit (Separate Wall-A)	9372666012	9372666012	
146	Evaporator Assy KB07	9362513036	9362513036	
160	Drain Pan Assy (Kit)	9372669013	9372669013	
164	Fan Motor Assy-IN	9601527053	9601527053	
173	Hanger Bracket-L	9358596005	9358596005	
174	Hanger Bracket-R	9358595008	9358595008	
184-1	Thermistor Spring-A	313728262708	313728262708	
187	Clamp No. 1219	313361271706	313361271706	
195	Clamp SKB-100	313361275805	313361275805	
196-1	Clamp SKB-3M	312300787605	312300787605	
223	Control Box	9358600023	9358600023	
234	Thermistor Assy-Room	9703299087	9703299087	
235	Thermistor Assy-Pipe	9900022020	9900022020	
236	Controller PCB Assy	9705914261	9705914278	
240	Remote Control Unit	(K01AL-050PHSE-F1) 9371190051	(K01AL-050SHSE-F1) 9371190051	
320	Flap (Upper)-F	9358538012	9358538012	
321	Flap (Lower)	9358541012	9358541012	
338	Motor Fixture	9358594001	9358594001	
361	Bushing	9357942001	9357942001	
361-2	Bushing-B, Plastic	9358554005	9358554005	
361-3	Bushing-C, Plastic	9358553008	9358553008	
365-1	Special Screw	9359092001	9359092001	
365-2	Special Screw	9359091004	9359091004	
381	Locking Spacer, KGLS-4S	313209391506	313209391506	
385	Indicator PCB Assy	9705798014	9705798014	
407	Motor Rod	9358560006	9358560006	
408	Louver Link	9358556009	9358556009	
416	Insulation (Panel)-A	9358574003	9358574003	
417	Insulation (Panel)-B	9358914007	9358914007	
418	Insulation (Flap Base)	9358572009	9358572009	
443	Arm Bracket	9359281009	9359281009	
470	Separate Wall-B (Kit)	9373448013	9373448013	
472	Grille Support	9358602003	9358602003	
473	Filter Bracket	9358607008	9358607008	
488	Grill-F	9358532010	9358532010	

INDOOR UNIT (Continued)

Ref. No.	Description	Part No.		Ord.
		ABU18RULX	ABU24RULX	Q'ty
500	Protect Cover	9358564004	9358564004	
502	Support Stay	9358599006	9358599006	
503	Louver Shaft	9358557006	9358557006	
505	Louver Stopper	9358555002	9358555002	
506	Louver Rod	9358559000	9358559000	
508	Cosmetic Panel-R	9358535011	9358535011	
509	Cosmetic Panel-L	9358536018	9358536018	
514	Control Box Cover	9359097006	9359097006	
520	Flap Base	9358537015	9358537015	
521	Louver Link Cover	9358558003	9358558003	
554	Flap Link-Upper (Step Motor-V)	9358551004	9358551004	
555	Flap Link-Lower (Step Motor-V)	9358552001	9358552001	
558	Motor Rod-A (Step Motor-V)	9358550007	9358550007	
577	Catch TL-119	9359096009	9359096009	
578	Base Bracket (Reinforcement Metal)	9358586006	9358586006	
580	Top Cover	9358534014	9358534014	
581	Protector, Metal (Fan Motor)	9359282006	9359282006	
625	Cord Bushing KR-51	9359240006	9359240006	
628	Locking Spacer-B	313005446558	313005446558	
629-1	EMI Filter	0400100669	0400100669	
652-1	Thermistor Holder Pipe	313806262805	313806262805	
653-2	Bolt	0700190018	0700190018	
684	Motor Base	9358562000	9358562000	
731	Holder (Guide Rail)	0600241018	0600241018	
743	Remote Control Unit Holder	9305642014	9305642014	
755	Casing Cover	9358544006	9358544006	
764	Drain Cap	9358746004	9358746004	
771	Panel	9358531143	9358531143	
735	Distributor Assy	9373034032	9373034025	
800	Bypass Pipe Assy	9373032021	9373032021	
815	Terminal 7P	9703403026	9703403026	
824	Fuse BET3.15A - 250V	0600239534	0600239534	
870-1	Arm	9358565001	9358565001	
875	Power Supply PCB Assy	9704561343	9704561343	
		(K01AL-050PHSE-PO)	(K01AL-050PHSE-PO)	
876-1	Step Motor-H	9359106012	9359106012	
876-2	Step Motor-V	9359105015	9359105015	
982	Cord Clamp	9357886008	9357886008	


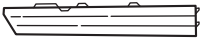

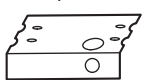


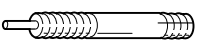



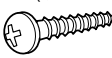

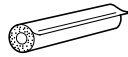




OUTDOOR UNIT

Ref. No.	Description	Part No.		Ord. Q'ty
		AOU18RLX	AOU24RLX	
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	9374095148	9374095148	
7	Emblem Rear	9351355005	9351355005	
8	Propeller Fan Assy	9366378020	9366378020	
9	Motor, Induction	9602114016	9602114016	
10	Condenser-A Assy	9374433148	9374433148	
11	Coil Choke	9900366018	9900366018	
12	Strainer Assy	9372524015	9372524015	
13	Separate Wall Assy	9375226015	9375226015	
14	Cap Foot	9374345014	9374345014	
15	Base Assy	9374166183	9374166183	
17	3-Way Valve Assy (3/8")	-----	9372205044	
17-1	2-Way Valve Assy (1/4")	9372204054	-----	
18	3-Way Valve Assy (5/8")	-----	9372205075	
18-1	3-Way Valve Assy (1/4")	9372205051	-----	
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	9372264140	9372264140	
33	Terminal 2P	9701971015	9701971015	
34	Terminal 5P	9900203023	9900203023	
35	ACTPM	9703457012	9703457012	
36	Holder Thermo	9372797013	9372797013	
37	Inverter PCB Assy	9705642096	9705642089	
38	Power PCB Assy	9705647046	9705647046	
----	Fuse 3.15A-250V	0600239534	0600239534	
----	Thermistor (Outdoor Temp.)	9703516078	9703516078	
----	Heat Exchanger Thermistor	9704220042	9704220042	
----	Thermistor (Discharge)	9704219114	9704219114	
----	Compressor Thermistor	9900156022	9900156022	
----	Thermistor	9900041014	9900041014	
----	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 Assy	9303029022	9303029022	
----	Drain Cap	313166024302	313166024302	

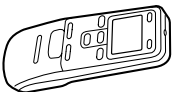

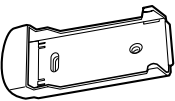

STANDARD ACCESSORIES

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


INDOOR UNIT ACCESSORIES

Name and Shape	Q'ty	Application	Part No.
Cosmetic Panel-L 	1		9358536018
Cosmetic Panel-R 	1		9358535011
Tapping screw (φ 4 x 10) 	2		301171164104
Installation template 	1	For positioning the indoor unit. For under ceiling type.	9359107002
Hanger bracket (left) 	1	For suspending the indoor unit from ceiling.	9358596005
Hanger bracket- (right) 	1		9358595008
Anchor bolt (M12) 	4		313806339400
Special nut 	4		
Spring washer 	4		0700000125
Wall bracket 	2	For suspending the indoor unit on the wall.	9358597002
Tapping screw (φ 4 x 20) 	6	For fixing the wall bracket.	301141164200
Coupler heat insulator (large) 	1	For indoor side pipe joint. (Large pipe)	9350716012
Coupler heat insulator (small) 	1	For indoor side pipe joint. (Small pipe)	313209328104
Nylon fastener 	1	For fixing the drain hose.	312300787605
Drain hose 	1		9359242000
Insulation (drain hose) 	1	Adhesive type 70 x 230	9359225003
VT wire 	1	For fixing the drain hose L 280 mm	313806350303

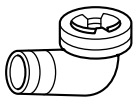
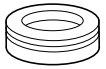
REMOTE CONTROL UNIT

Name and Shape	Q'ty	Application	Part No.
Remote control unit 	1	Use for air conditioner operation (AR-JW5)	9371190051
Battery (penlight) 	2	For remote control unit	0600185534
Remote control unit holder 	1	For mounting the remote control unit	9305642014
Tapping screw (φ 3 x 12) 	2	For remote control unit holder installation	301141533125

OPTIONAL PARTS FOR INDOOR UNIT

Name and Shape	Q'ty	Application	Part No.
Joint pipe-A 		For indoor side pipe joint (ABU24RULX)	9302812021

OUTDOOR UNIT ACCESSORIES

Name and Shape	Q'ty		Application	Part No.
	AOU18RLX	AOU24RLX		
Drain pipe 	1	1	For outdoor unit drain piping work [Heat & Cool model (Reverse cycle) only]	9303029015
Drain cap 	5	5		313166024302

0512G2982