

# INVERTER SPLIT TYPE AIR CONDITIONER (50Hz)

## DUCT type

# SERVICE MANUAL



### Models

Indoor unit

Outdoor unit

ARY18LUAD

AOY18LMAKL

ARY24LUAN

AOY24LMAKL

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# SPECIFICATIONS

TYPE	COOLING & HEATING	
INDOOR UNIT	ARY18LUAD	ARY24LUAN
OUTDOOR UNIT	AOY18LMAKL	AOY24LMAKL
COOLING CAPACITY	5.20 kW	7.10 kW
HEATING CAPACITY	6.20 kW	8.00 kW

## ELECTRICAL DATA

POWER SOURCE		230 V	
FREQUENCY		50 Hz	
RUNNING CURRENT (A)	COOLING	7.4	11.1
	HEATING	8.3	10.6
INPUT WATTS (kW)	COOLING	1.70	2.53
	HEATING	1.90	2.43
E.E.R. (kW/kW)	COOLING	3.06	2.81
	HEATING	3.26	3.29
STARTING CURRENT (A)		10	
MOISTURE REMOVAL (ℓ/hr)		1.7	1.5

Note : The above list shows values at the external static pressure of 0Pa [ARY18L] / 30Pa [ARY24L] , setting the fan speed high notch.

## COMPRESSOR

TYPE	Hermetic type, 4 poles, DC motor, Twin Rotary		
DISCRIMINATION	TNB220FPCM		
REFRIGERANT	R410A	1,500 g	1,800 g

FAN SPEED	IN	DISCRIMINATION	MFA-18NTT	MFA-30PTT
		HIGH	1,040 r.p.m.	980 r.p.m.
		MED	890 r.p.m.	890 r.p.m.
		LOW	750 r.p.m.	810 r.p.m.
	OUT	DISCRIMINATION	MFB-24JTAT	
		HIGH	780 r.p.m.	
LOW		400 r.p.m.		
AIR FLOW (m <sup>3</sup> /h)	INDOOR	HIGH	800	1,490
		MED	640	1,340
		LOW	500	1,200
	OUTDOOR	2,800		
DIMENSIONS H x W x D	INDOOR	217 x 953 x 595 mm	270 x 1,135 x 700 mm	
	OUTDOOR	650 x 830 x 320 mm		
WEIGHT GROSS / NET	INDOOR	29 kg / 25 kg	48 kg / 41 kg	
	OUTDOOR	58 kg / 54 kg		
MAX PIPE LENGTH / HEIGHT (m)		25 / 15		
REMOTE CONTROLLER TYPE		WIRED		

Note : The above list shows values at the external static pressure of 0Pa [ARY18L] (10mm Ag) / 30Pa [ARY24L] (10mm Ag), setting the fan speed high notch.

TYPE	COOLING & HEATING	
INDOOR UNIT	ARY18LUAD	ARY24LUAN
OUTDOOR UNIT	AOY18LMAKL	AOY24LMAKL

### NOISE LEVEL

INDOOR UNIT	HIGH SPEED	38 dB	34 dB
	MED SPEED	34 dB	32 dB
	LOW SPEED	30 dB	29 dB
OUTDOOR UNIT	(dB)	COOL 50 / HEAT 52	COOL 52 / HEAT 54

Note : Static pressure : 0Pa [ARY18L], 30Pa [ARY24L]

Duct length : Inlet 1m, Outlet 2m

FULL CHARGE AMOUNT	PIPE LENGTH	10 m	1,500 g	1,800 g
		15 m	1,600 g	2,000 g
		20 m	1,700 g	2,200 g
		25 m	1,800 g	2,400 g
ADDITIONAL REFRIGERANT			20 g / m	40 g / m

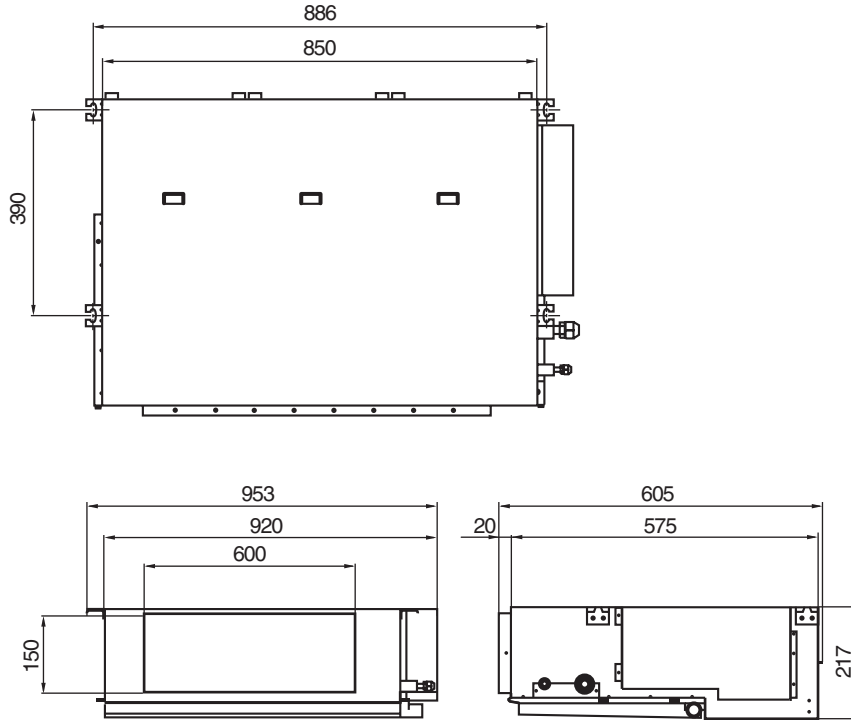
When you dismantle indoor units which are installed,  
take care not to make parts fall down, especially motors.

# DIMENSIONS

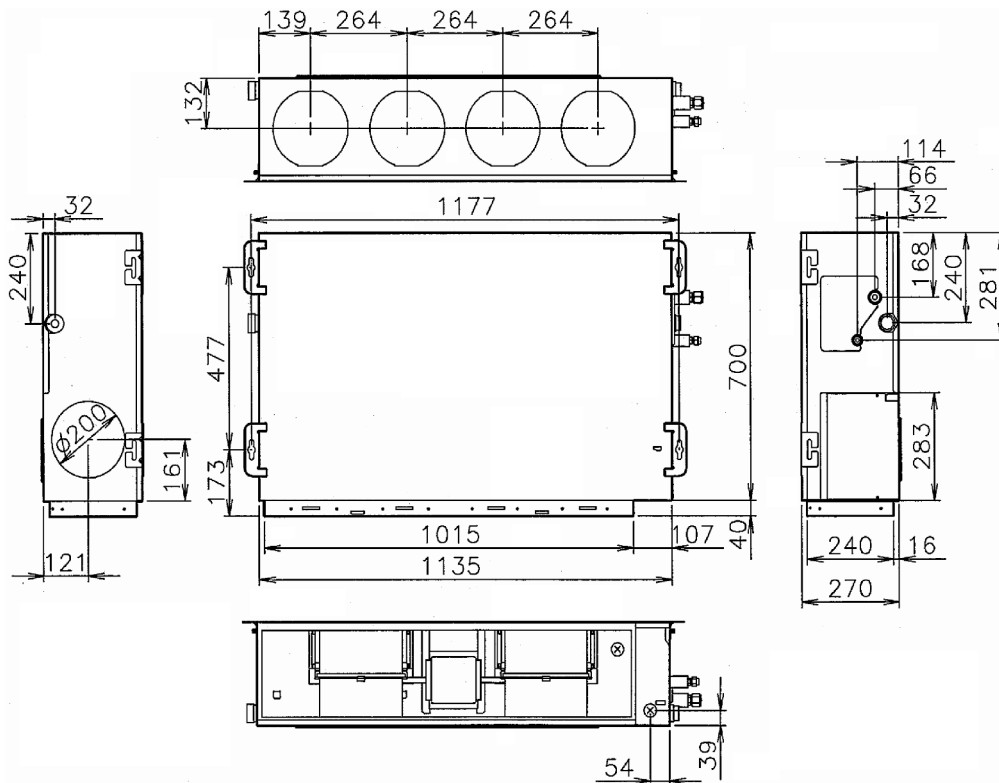
## INDOOR UNIT

Model : ARY18LUAD

(Unit : mm)



Model : ARY24LUAN

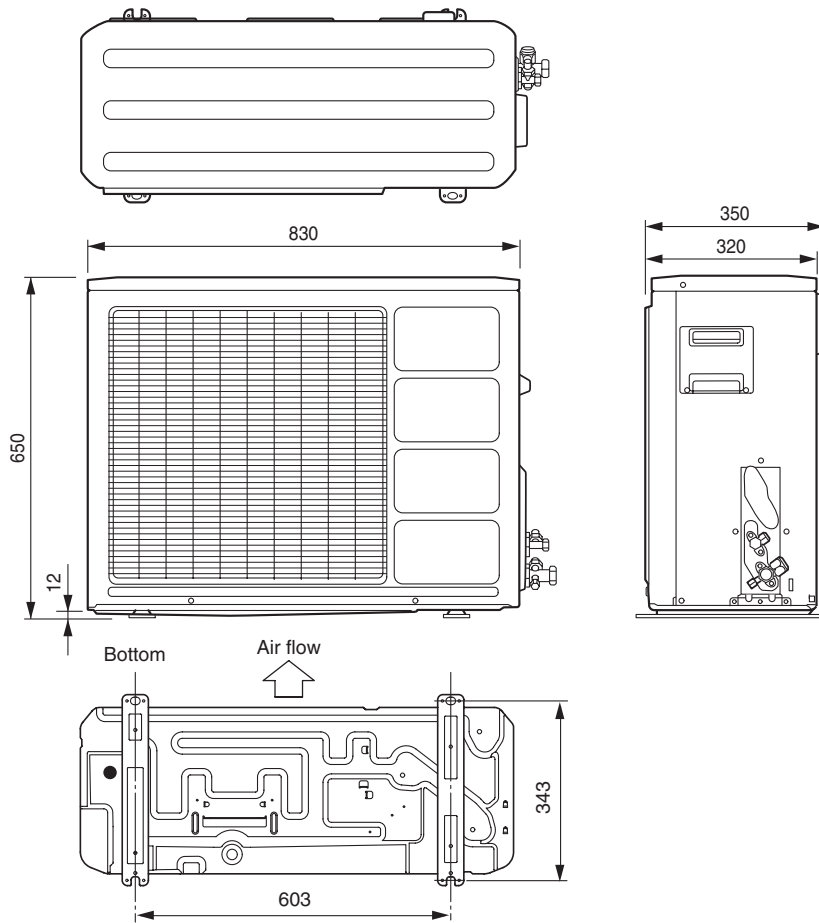




# OUTDOOR UNIT

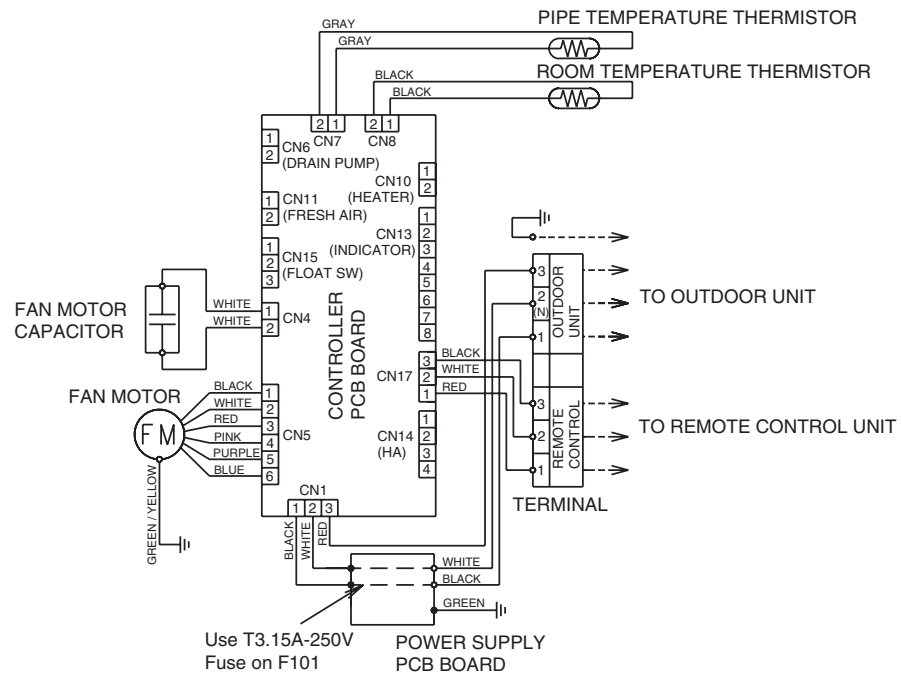
Models : AOY18LMAKL  
AOY24LMAKL

(Unit : mm)

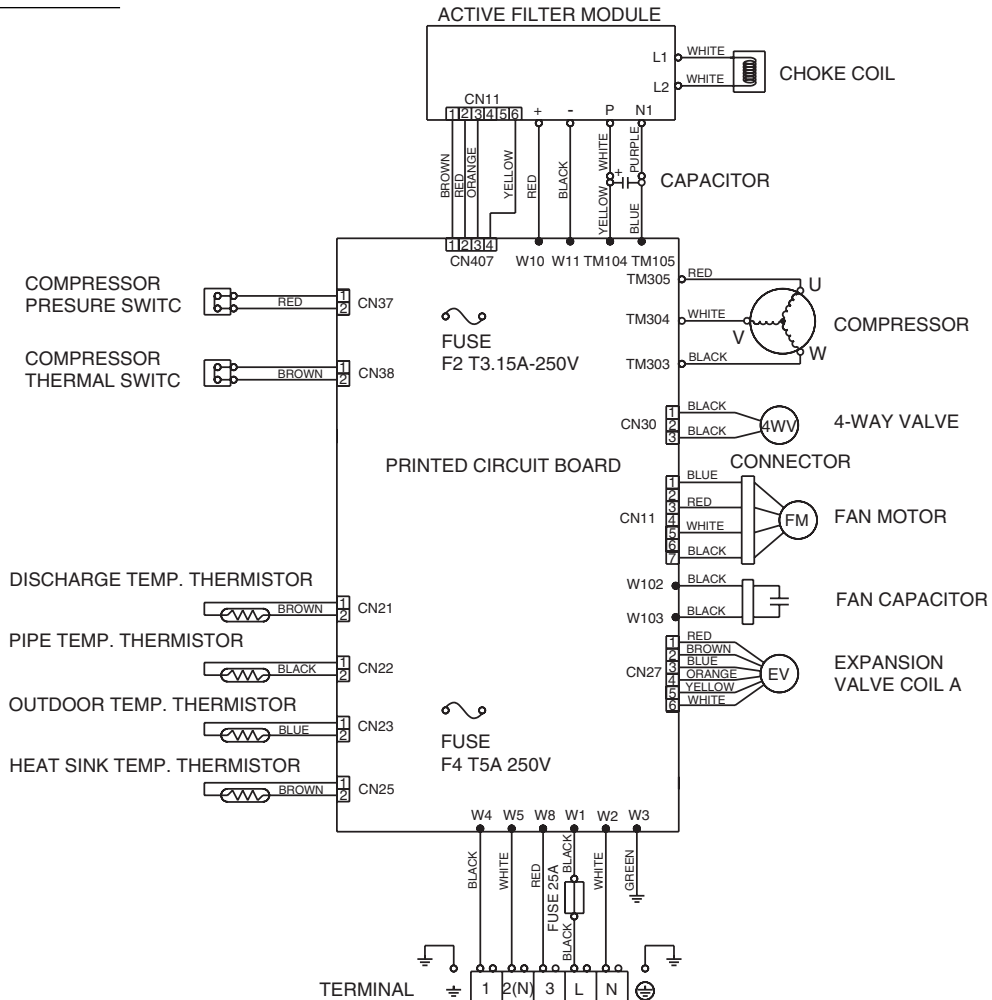


# CIRCUIT DIAGRAM

**Model : ARY18LUAD**



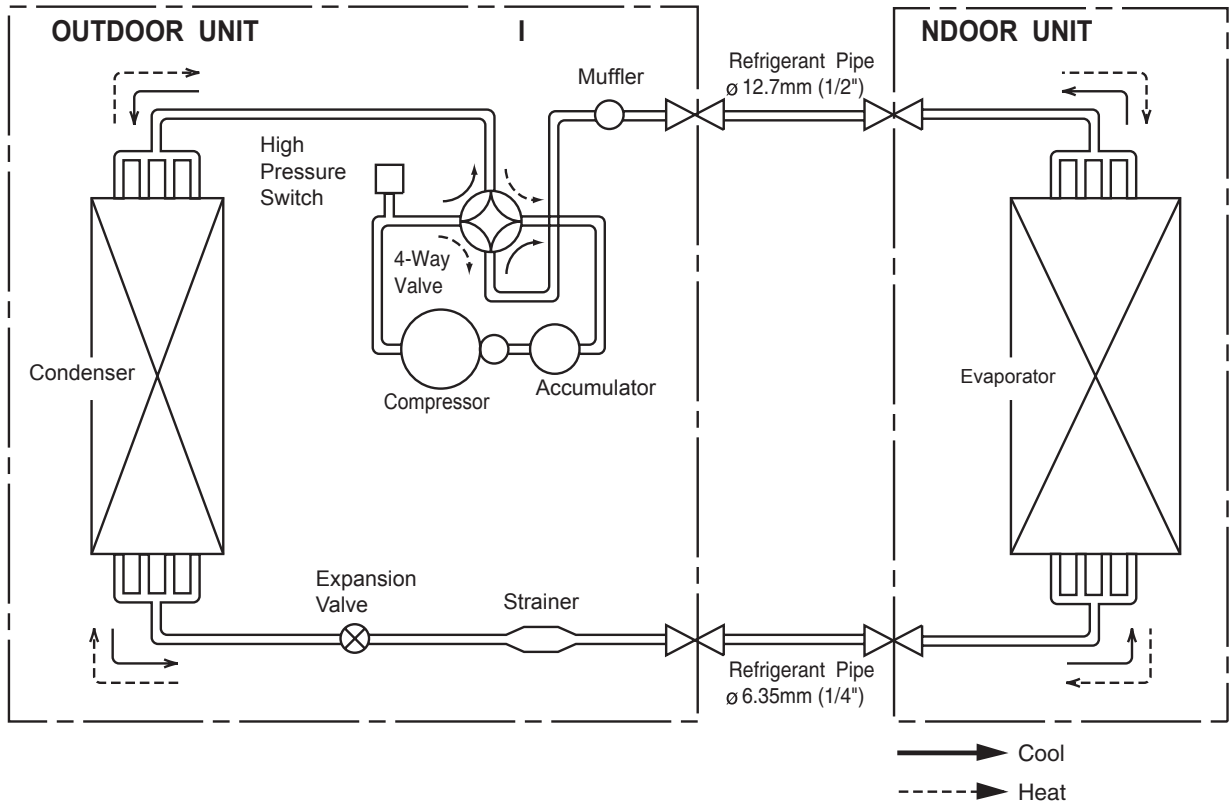
**Model : AOY18LMAKL**



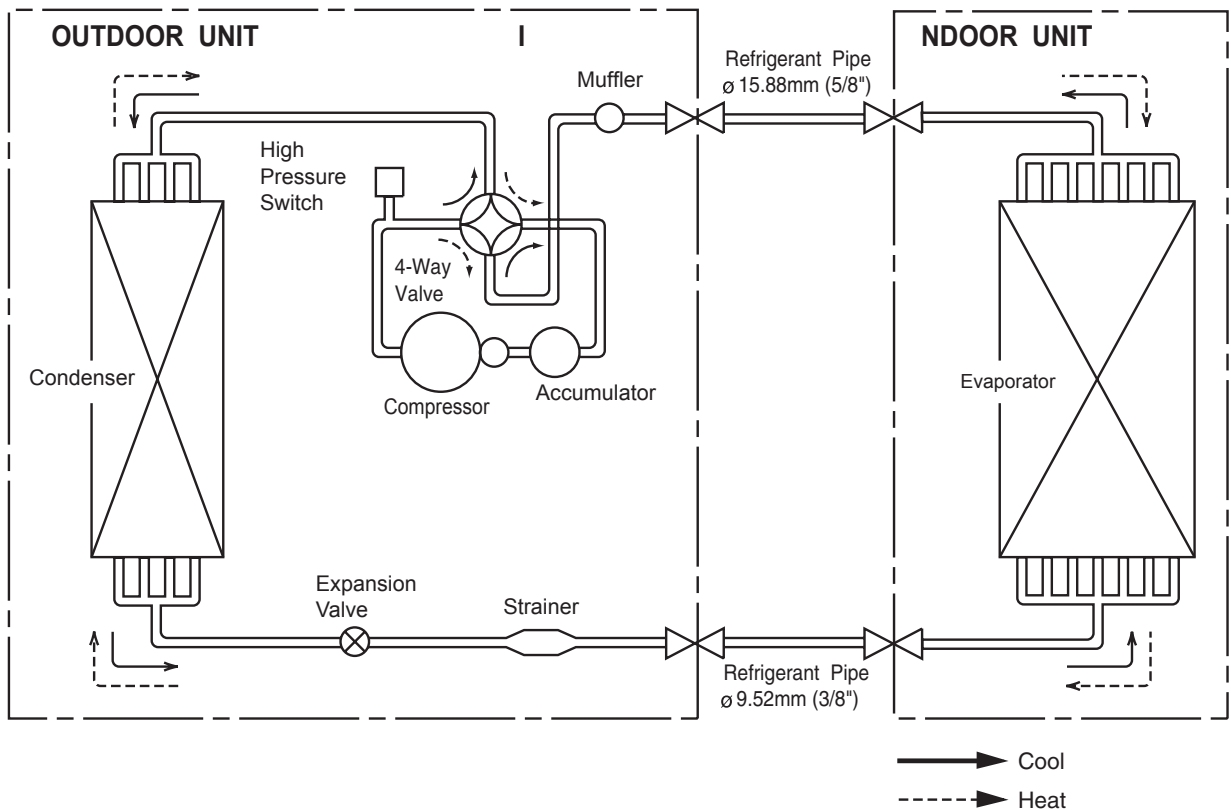


# REFRIGERANT SYSTEM DIAGRAM

**Models : ARY18LUAD / AOY18LMAKL**

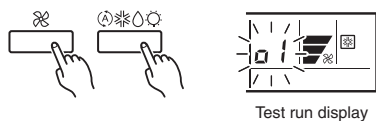


**Models : ARY24LUAN / AOY24LMAKL**



# E R R O R   C O N T E N T S

- (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.



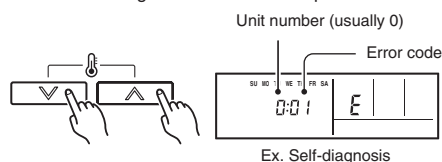
- (3) Press the start/stop button to stop the test run.

## [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.

## 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.



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

Error code	Error contents
<b>00</b>	Communication error (indoor unit $\leftrightarrow$ remote controller)
<b>01</b>	Communication error (indoor unit $\leftrightarrow$ outdoor unit)
<b>02</b>	Room temperature sensor open
<b>03</b>	Room temperature sensor short-circuited
<b>04</b>	Indoor heat exchanger temperature sensor open
<b>05</b>	Indoor heat exchanger temperature sensor short-circuited
<b>06</b>	Outdoor heat exchanger temperature sensor
<b>08</b>	Power source connection error
<b>09</b>	Float switch operated
<b>0A</b>	Outdoor temperature sensor
<b>0c</b>	Discharge pipe temperature sensor
<b>0E</b>	Outdoor high pressure abnormal
<b>11</b>	Model abnormal
<b>12</b>	Indoor fan abnormal
<b>13</b>	Outdoor signal abnormal
<b>14</b>	Outdoor EEPROM abnormal
<b>15</b>	Compressor temperature sensor
<b>16</b>	Pressure switch error
<b>17</b>	IPM error
<b>18</b>	CT error
<b>19</b>	Active filter module (AFM) error

Error code	Error contents
<b>1A</b>	Compressor does not operate
<b>1b</b>	Outdoor unit fan error
<b>1c</b>	Communication error (inverter $\rightarrow$ multicontroller)
<b>1d</b>	2 way valve sensor error
<b>1E</b>	Expansion valve error
<b>1F</b>	Connection indoor unit error

## OUTDOOR UNIT

- (1) Is there any abnormal noise and vibration during operation?
- (2) Will noise, wind or drain water from the unit disturb the neighbors?
- (3) Is there any gas leakage?

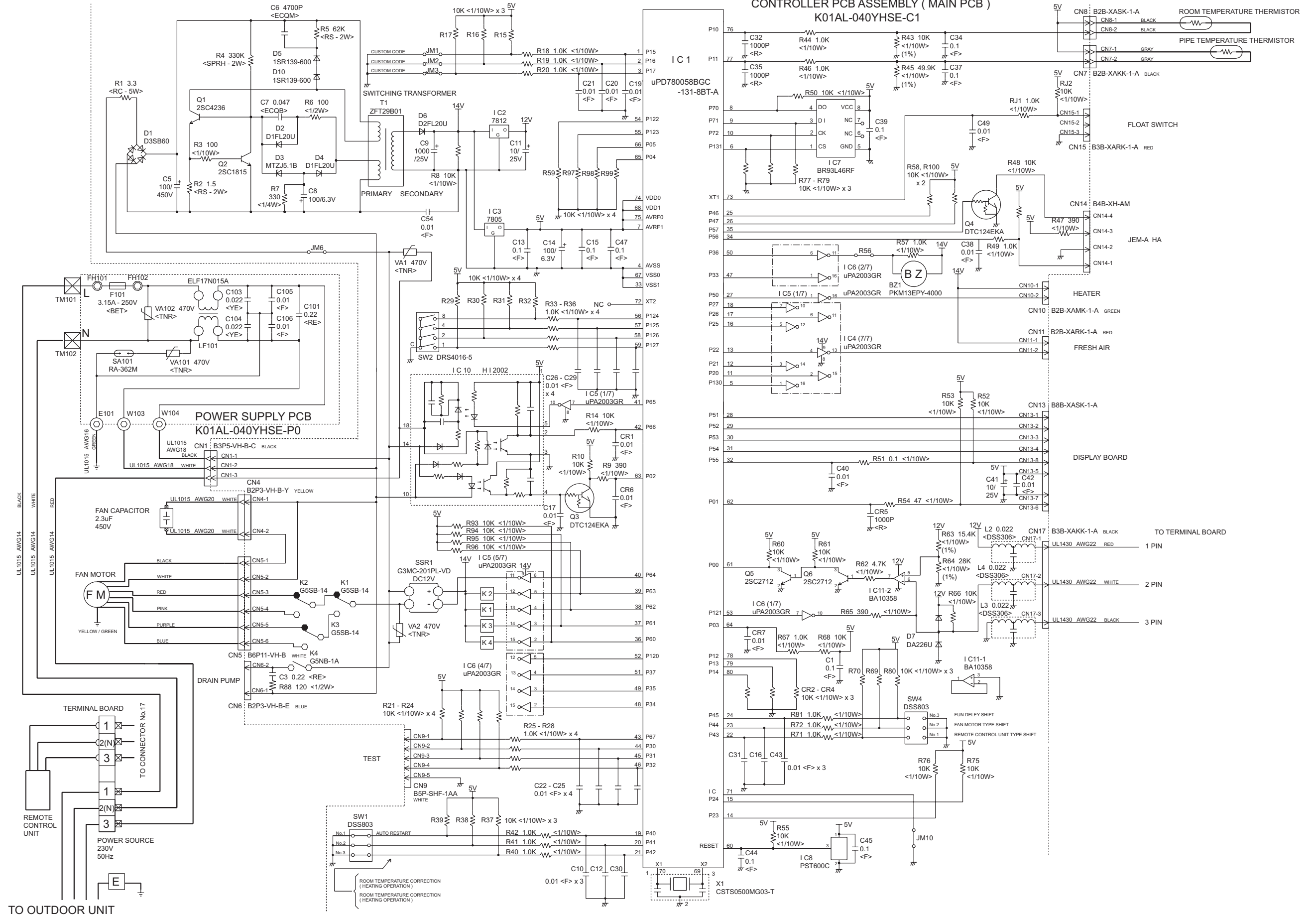
- Do not operate the air conditioner in the test running state for a long time.

## OUTDOOR UNIT

Error contents	LED (RED)
Serial signal error	1 time blink
Discharge pipe thermistor error	2 times blink
Heat exchanger thermistor error	3 times blink
Outdoor temperature thermistor error	4 times blink
2 - way valve thermistor A, B error	5 times blink
3 - way valve thermistor A, B error	6 times blink
Compressor thermistor error	7 times blink
Pressure switch error	8 times blink
Indoor unit communication error	9 times blink
Current trip error	10 times blink
CT error	11 times blink
Compressor position detection error	12 times blink
Compressor starting error	13 times blink
Timer error	14 times blink

# INDOOR PRINTED CIRCUIT BOARD CIRCUIT DIAGRAM

Model : ARY18LUAD



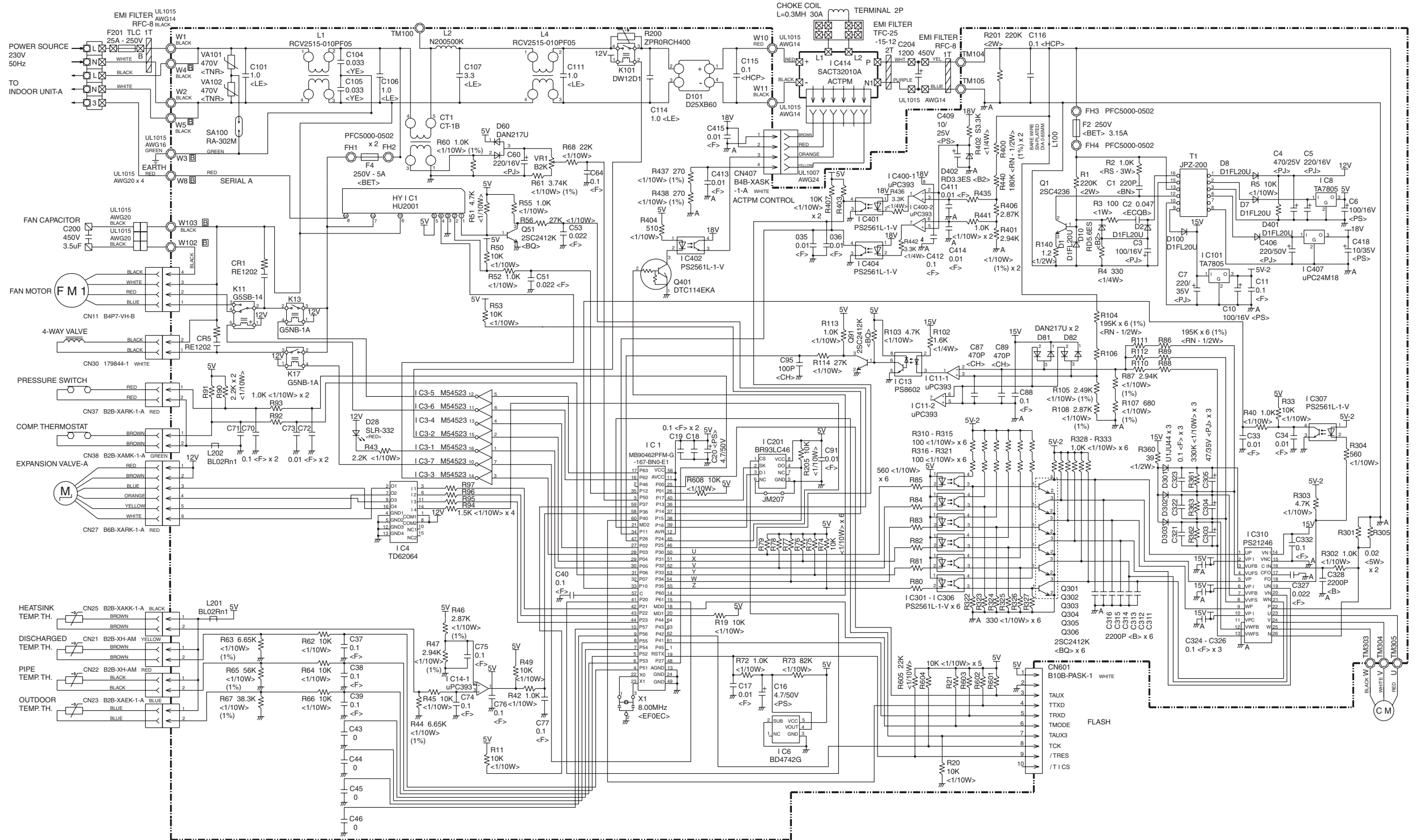




# OUTDOOR PRINTED CIRCUIT BOARD CIRCUIT DIAGRAM

Models : AOY18LMAKL  
AOY24LMAKL

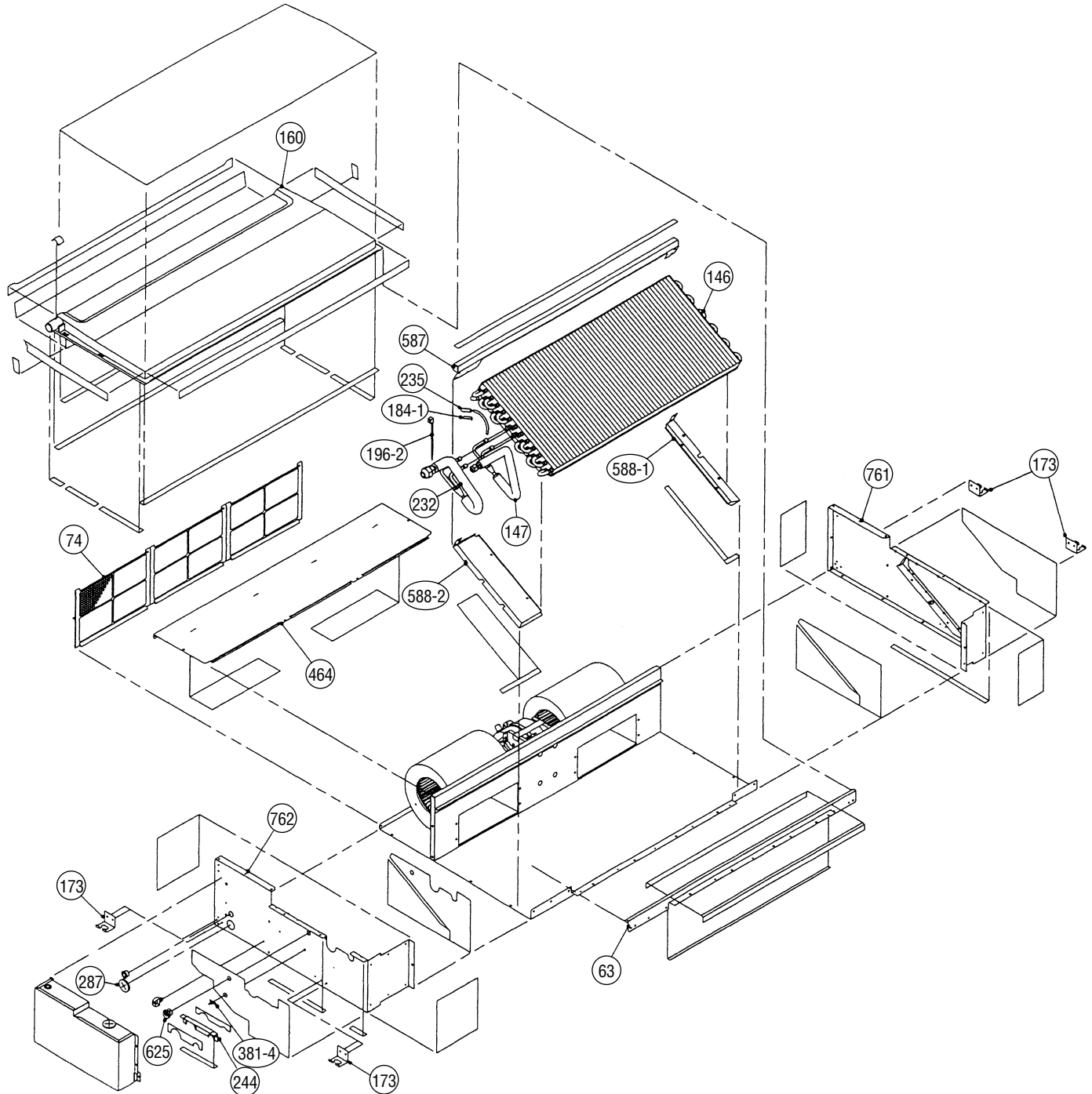
CONTROLLER PCB ASSEMBLY  
AOY18LMAKL : K03AV-0401HUE-C1  
AOY24LMAKL : K03AV-0402HUE-C1



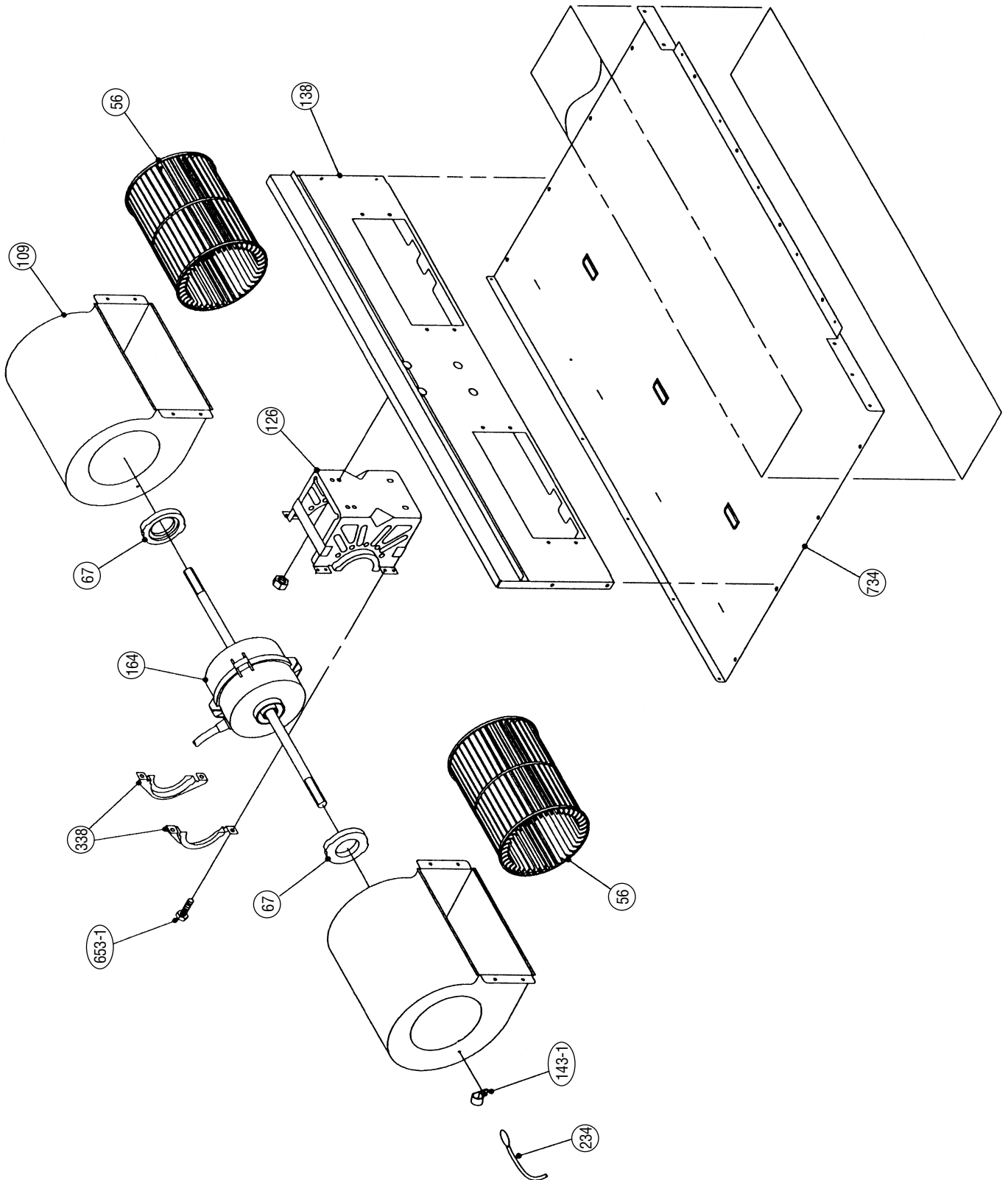


# DISASSEMBLY ILLUSTRATION

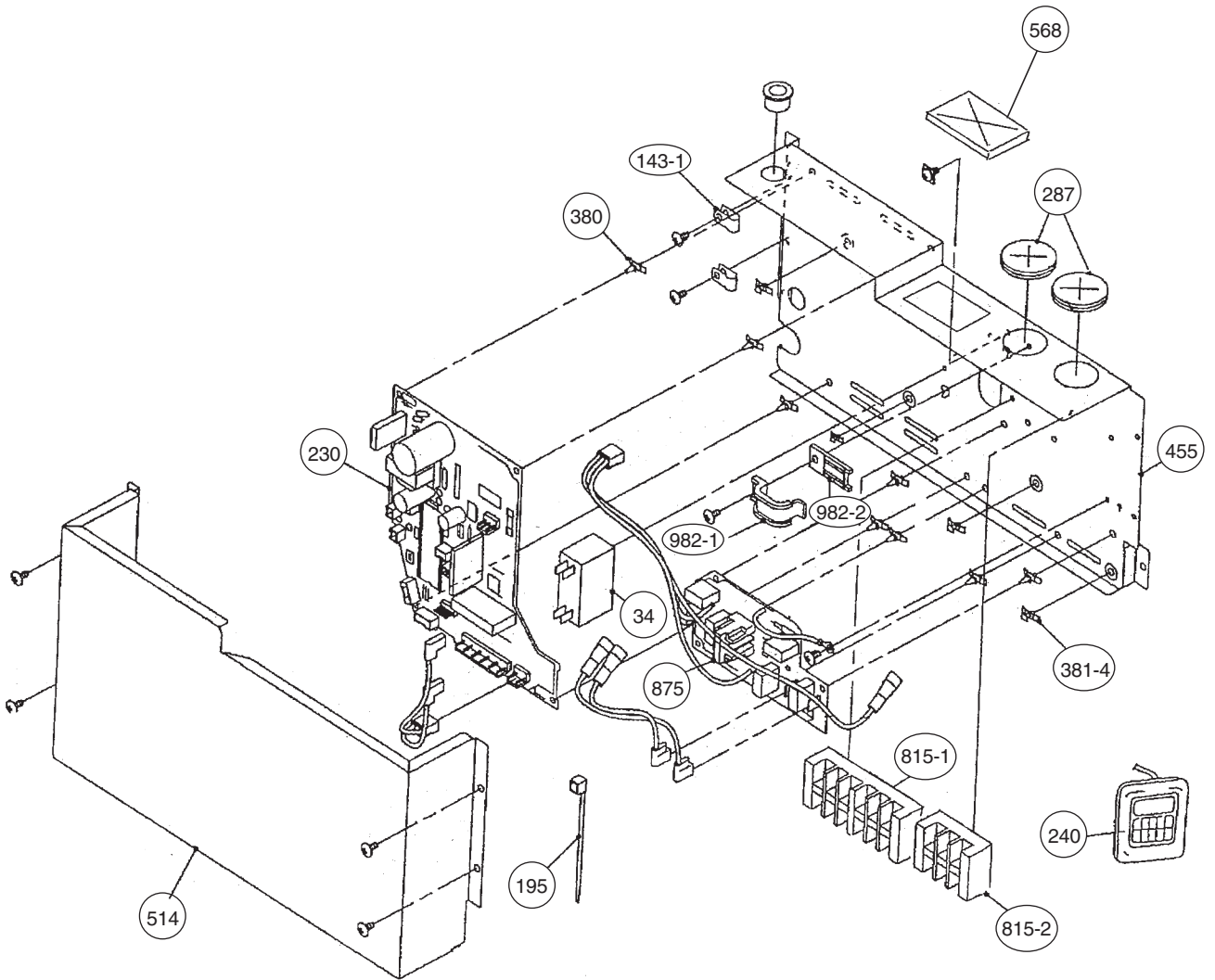
Model : ARY18LUAD



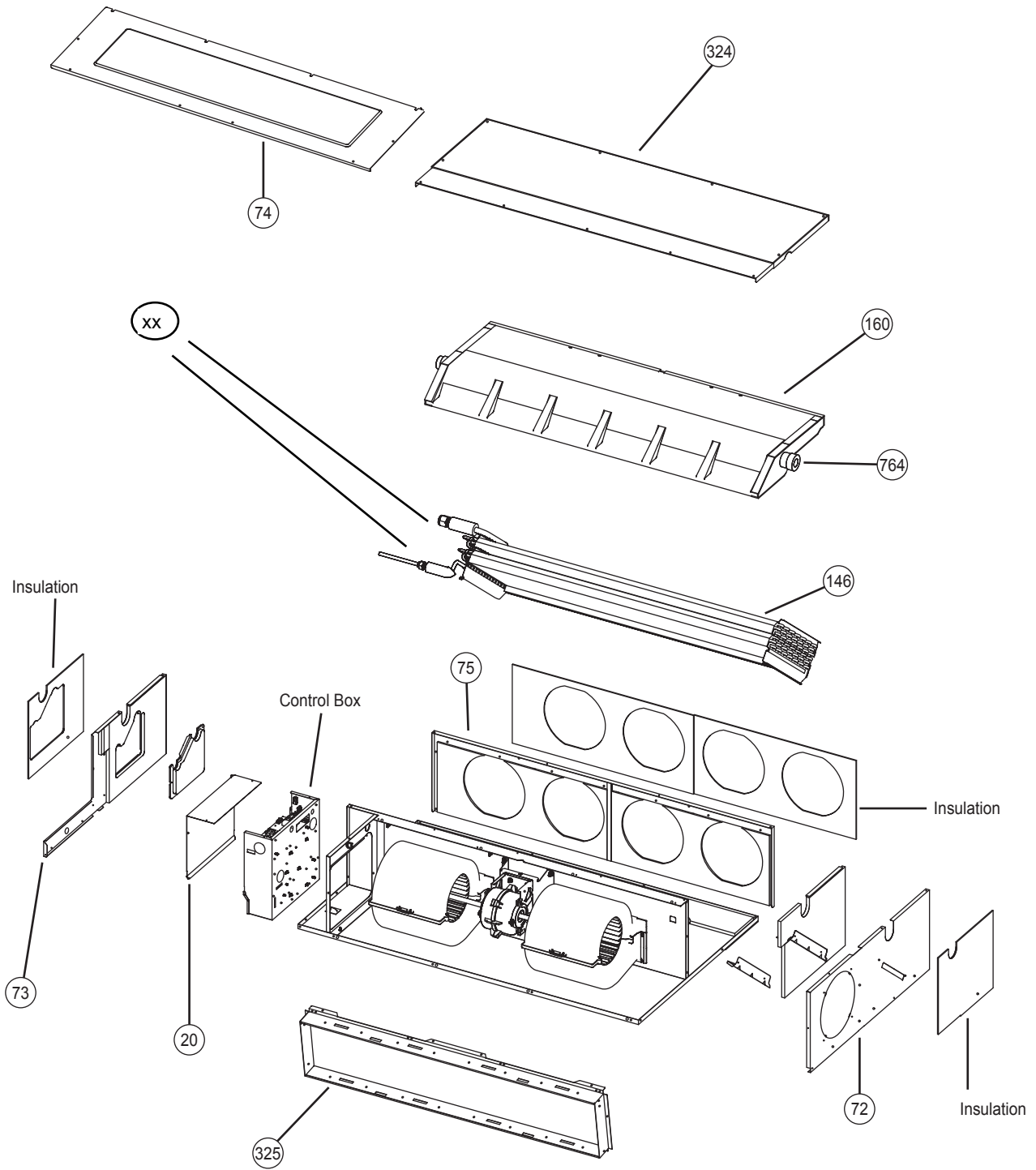
**Model : ARY18LUAD**



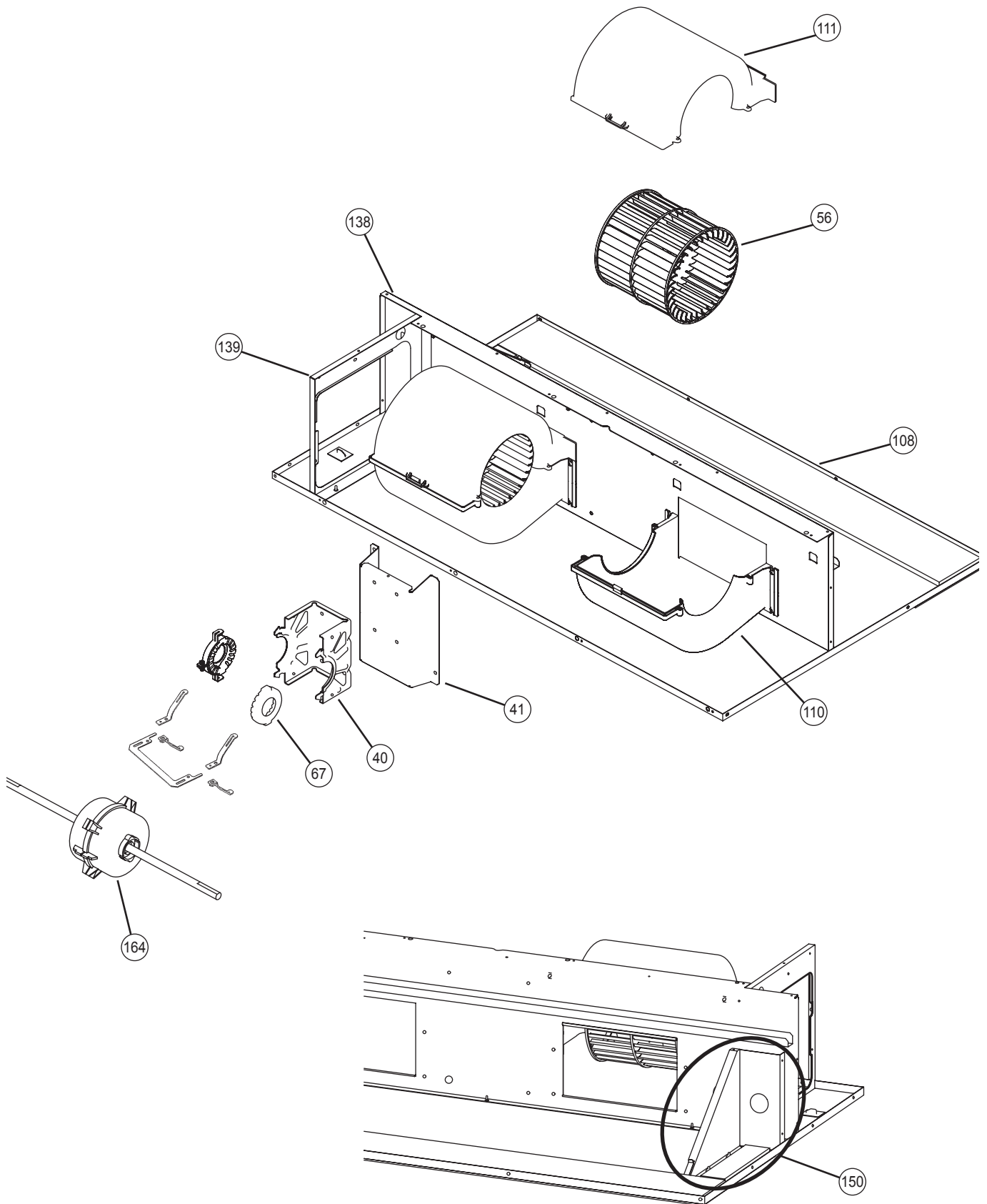
**Model : ARY18LUAD**



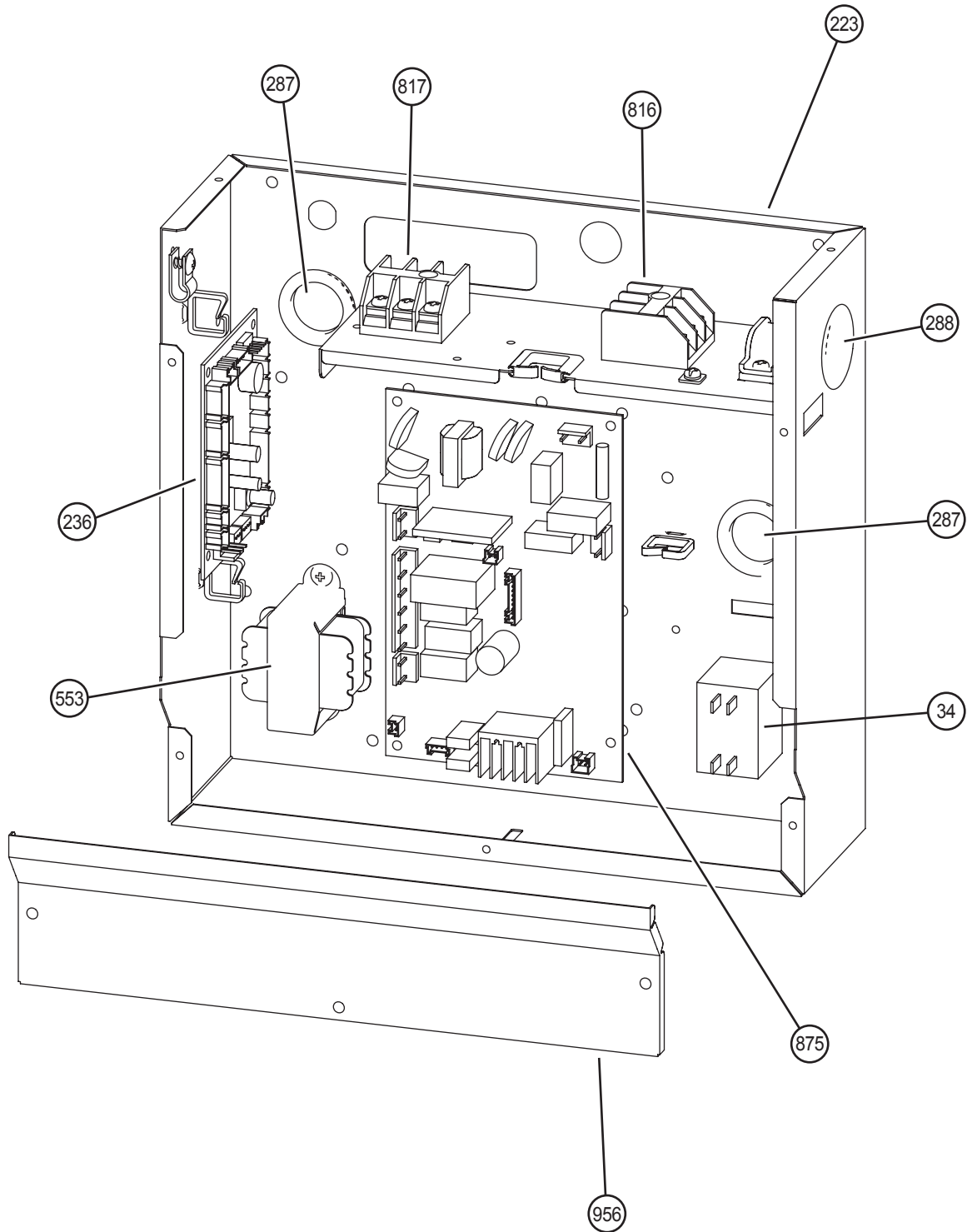
Model : ARY24LUAN



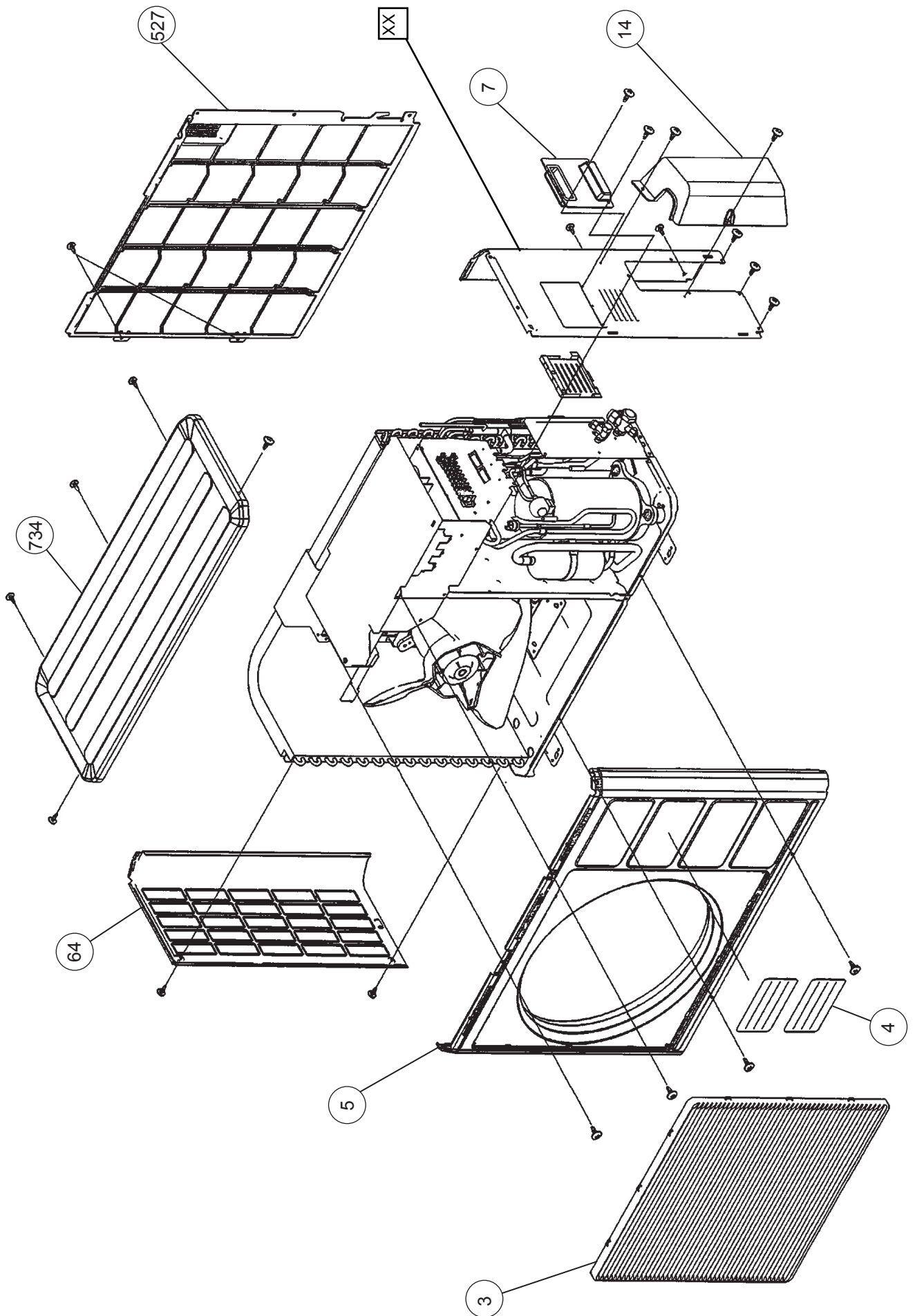
**Model : ARY24LUAN**



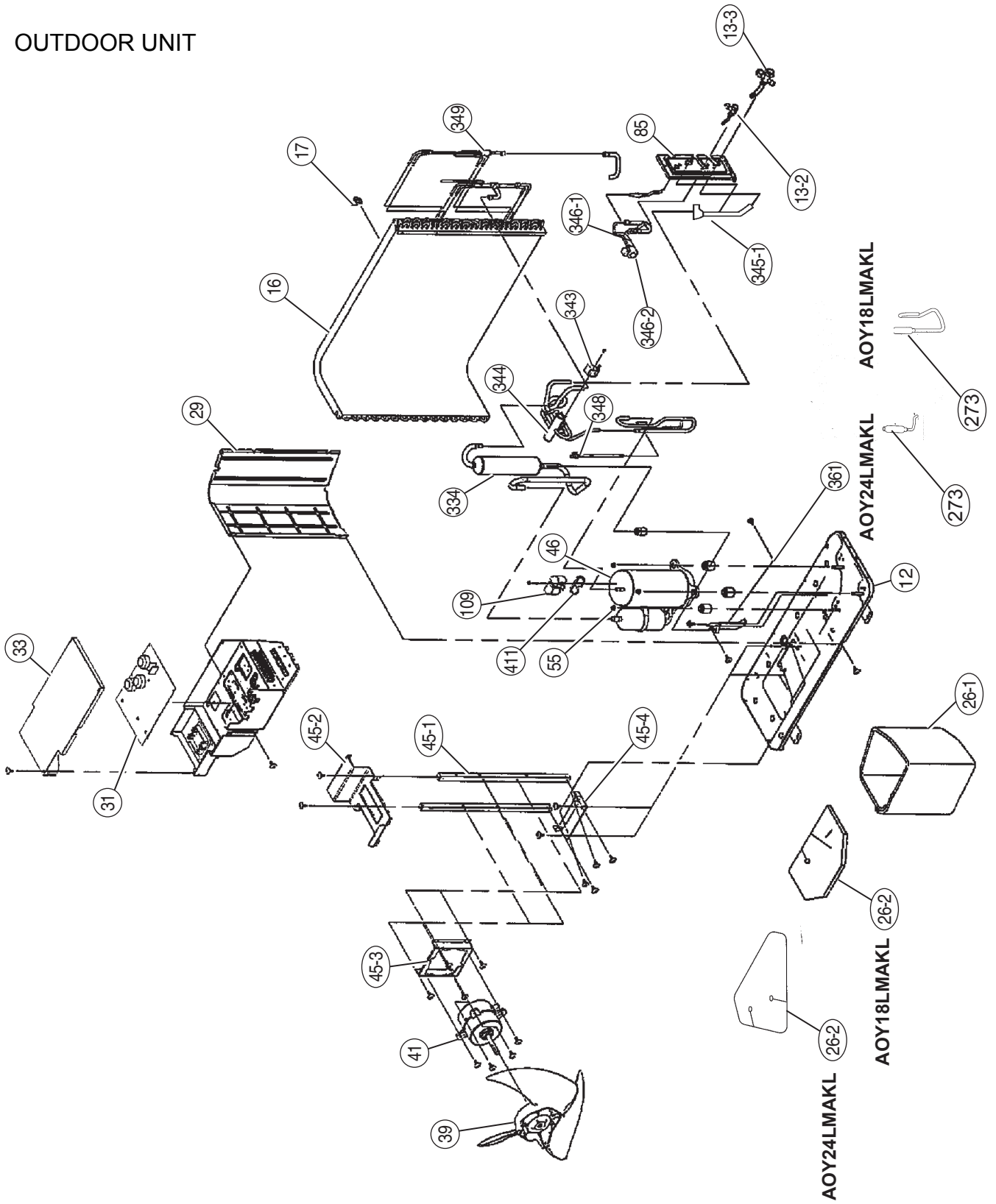
**Model : ARY24LUAN**



OUTDOOR UNIT



# OUTDOOR UNIT





# PARTS LIST

## INDOOR UNIT

Ref. No.	Description	Part No.	Ord. Q'ty
		<b>ARY18LUAD</b>	
34	Capacitor (Fan Motor)	9703306044	
56	Sirocco Fan Assy	9358621004	
63	Front Panel Assy	9363723007	
67	Rubber (Vibration-proof)	313659068604	
74	Air Filter	9366833017	
109	Casing Assy	9363322002	
126	Motor Fixing Table Assy	9358591000	
138	Panel Assy (Motor)	9363401004	
143-1	Clamp NK-3N	313361274700	
146	Evaporator Assy	9372972014	
147	Distributor	9368859008	
160	Drain Pan Assy	9364502021	
164	Fan Motor Assy	9600778210	
173	Hook Metal	9363195002	
184-1	Thermistor Spring-A	313728262708	
195	Clamp SKB-100	313361275805	
196-2	Clamp SKB-150	313035356905	
234	Room Temperature Thermistor	9703299018	
235	Pipe Temperature Thermistor	9703297090	
236	Controller PCB Assy	9704557957	
240	Remote Control Unit	9372266014	
244	Pipe Cover	9363327007	
287	Power Cap	9352173011	
338	Motor Fixture	9358594001	
380	Locking Spacer	313209391403	
381-4	Spacer	0600118075	
455	Control Box	9366299004	
464	Cover (Cabinet)	9363400007	
514	Control Box Cover	9363201000	
568	Rubber Bushing	9357376004	
587	Support Plate (Evaporator)	9363404005	
588-1	Bracket Evaporator-R	9363199000	
588-2	Bracket Evaporator-L	9363198003	
625	Cord Bushing	9359240006	
653-1	Screw Cap	9385089020	
734	Top Panel	9363504002	
761	Side Panel-R Assy	9363507003	
762	Side Panel-L Assy	9363505009	
815-1	Terminal-6P	9900016036	
815-2	Terminal-3P	9703403019	
875	Power Supply PCB Assy	9704560506	
982-1	Cord Clamp	9356857009	
982-2	Cord Clamp-B	9356858006	

Ref. No.	Description	Part No.	Ord. Q'ty
		<b>ARY24LUAN</b>	
20	Control Cover-A Sub Assy	9374516018	
34	Capacitor (Fan Motor)	9900270209	
40	Motor Mount	9374281015	
41	Bracket Motor Assy	9374230013	
56	Sirocco Fan Assy	9356531022	
67	Rubber	313659068604	
72	Cabinet-L Sub Assy	9374509010	
73	Cabinet-R Sub Assy	9374508013	
74	Intake Cover Sub Assy	9374512010	
75	Outlet Panel Sub Assy	9374510016	
108	Base Sub Assy	9374504015	
110	Casing-A	9374233014	
111	Casing-B	9374234011	
138	Separate Wall Assy	9374228010	
139	Panel (Control Box) Sub Assy	9374506019	
146	Evaporator Assy	9374518029	
150	Bracket (Evaporator)-R	9374207015	
160	Drain Pan Sub Assy	9374513017	
164	Fan Motor Assy-IN	9600830086	
223	Control Box-A	9374219018	
236	Controller PCB Assy	9705246126	
287	Power Cap	9352173011	
324	Main Panel Sub Assy	9374511013	
325	Intake Frame Assy	9374216017	
553	Power Transformer	9704129017	
764	Drain Cap	9356541007	
816	Terminal-3P	9703345012	
817	Terminal-3P	9306489045	
875	Power Supply PCB ASSY	9705668065	
956	Control Cover-B	9374222018	
---	Room Thermistor	9703299025	
---	Pipe Thermistor	9703297021	
---	Remote Control Unit	9372266014	
XX	DISTRIBUTOR	9371325187	
XX	COLECTOR	9371333052	

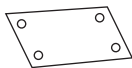








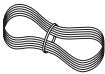


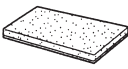
## OUTDOOR UNIT

Ref. No.	Description	Part No.		Ord. Q'ty
		AOY18LMAKL	AOY24LMAKL	
3	Fan Guard	9371187013	9371187013	
4	Emblem-Rear	9351355005	9351255005	
5	Front Panel	9371924014	9371924014	
7	Connector Cover (Cabinet)	9366398004	9366398004	
12	Base Assy	9371920078	9371920078	
13-2	2-Way Valve	9372204054	9372204023	
13-3	3-Way Valve	9372205051	9372205075	
14	Valve Cover	9372796016	9372796016	
16	Condenser Assy	9372181096	9372181096	
17	Thermistor Holder Pipe	313714262805	313714262805	
26-1	Compressor Cover-A	9373730019	9374430055	
26-2	Compressor Cover-B	9373730026	9374431052	
29	Separate Wall	9372795019	9372795019	
31	Controller PCB Assy	9705285033	9705285040	
33	Control Cover	9372792018	9372792018	
34	Capacitor, Plastic	9704305077	9704305077	
39	Propeller Fan Assy	9366378013	9366378013	
41	Fan Motor Assy	9601671046	9601671046	
45-1	Motor Bracket	9371929019	9371929019	
45-2	Motor Bracket-Top	9371931012	9371931012	
45-3	Motor Bracket-Center	9371930015	9371930015	
45-4	Motor Bracket-Bottom	9371932019	9371932019	
46	Compressor Assy	9373262015	9373262015	
55	Special Nut M8	9355091008	9355091008	
64	Side Panel-L	9371926018	9371926018	
85	Valve Plate	9371928036	9371928036	
109	Terminal Cover (For Comp. )	9373264019	9373264019	
199	BR Sheet	9363708042	9363708042	
218-3	Relay	9900117016	9900117016	
273-1	Strainer Assy	9372524015	9372524015	
334	Accumulator	9368391003	9368391003	
343	Solenoid	9900165079	9900165079	
344	4-Way Valve	9900163013	9900163013	
345-1	Muffler	9372369029	9372369029	
346-1	Expansion Valve Assy	9373729518	9373729518	
346-2	Coil (Expansion Valve)	9900057022	9900057022	
348	Pressure Switch Assy	9373729044	9373729044	
349	Capillary Assy	9373729433	9373729433	
----	Choke Coil	9703458019	9703458019	
361	Accumulator Support Assy	9372252017	9372252017	
411	Gasket	9373266013	9373266013	
527	Protective Net	9371934013	9371934013	
734	Top Plate	9371925011	9371925011	
----	Compressor Presure Switch	9900186012	9900186012	
----	Compressor Thermal Switch	9373263012	9373263012	
----	Discharge Temperature Thermistor	9704219039	9704219039	
----	Heart Exchanger Thermistor	9704220059	9704220059	
----	Outdoor TemperatureThermistor	9703516047	9703516047	
----	Heat Sink Thermistor	9900195014	9900195014	
----	ACTPM	9703457012	9703457012	
----	Capacitor, Elec.	9705387010	9705387010	
----	Fuse	0600086039	0600086039	
----	Fuse Holder	0501454012	0501454012	
----	Terminal-5P	9900203023	9900203023	
----	Terminal-2P	9701971015	9701971015	
xx	side panel r sub assy	9372306048	9372306048	

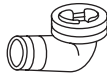

# S T A N D A R D   A C C E S S O R I E S

Models : A RY18LUAD / AOY18LMAKL

## INDOOR UNIT ACCESSORIES










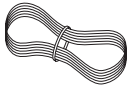
Name and Shape	Q'ty	Application	Part No.
Installation template 	1	For positioning the indoor unit	9364225005
Hanger 	4	For suspending the indoor unit from ceiling	9363195002
Tapping screw (φ 4 x 10) 	8	For installing the hanger	301171164104
Special nut A (large flange) 	4	For suspending the indoor unit from ceiling	313005446653
Special nut B (small flange) 	4		313005446759
Coupler heat insulation (large) 	1	For indoor side pipe joint (large pipe)	9350716029
Coupler heat insulation (small) 	1	For indoor side pipe joint (small pipe)	9352766015
Binder 	(Small) 1	For remote controller and remote controller cord binding	313361275805
	(Large) 4	For fixing the coupler heat insulation	312300787605
Remote controller 	1	Heat & Cooling model	9372266014
Remote controller cord 	1	For connecting the remote controller	9372714010
Tapping screw (φ 4 x 16) 	2	For installing the remote controller	0700181108
Filter 	3	1200 - 22000 BTU/h models	9366833017
Drain hose insulation 	1	Insulates the drain hose and vinyl hose connection	313806217708

## OUTDOOR UNIT ACCESSORIES

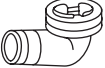

Name and Shape	Q'ty	Application	Part No.
Drain pipe 	1	For outdoor unit drain piping work [Heat & Cool model (Reverse cycle) only]	9303029015
Cap (drain) 	1		313166024302

**Models : ARY24LUAN / AOY24LMAKL**

**INDOOR UNIT ACCESSORIES**

Name and Shape	Q'ty	Application	Part No.
Hanger 	4	For suspending the indoor unit from ceiling	9356563009
Special nut A (large flange) 	4	For suspending the indoor unit from ceiling	313005446653
Special nut B (small flange) 	4		313005446759
Coupler heat insulation (large) 	1	For indoor side pipe joint (large pipe)	9350716029
Coupler heat insulation (small) 	1	For indoor side pipe joint (small pipe)	9352766015
Nylon fastener 	1 (large)	For fixing the drain hose	312300787605
	1 (small)	For fixing the remote controller cord	31361275805
Remote control unit 	1		9372266014
Tapping screw 	2	For installing the remote control unit cord clamp	0700181108
Drain hose insulation 	1	Insulates the drain hose and vinyl hose connection	313806217708
Remote controller cord 	1		9372714010

**OUTDOOR UNIT ACCESSORIES**

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

