

SPLIT TYPE  
AIR CONDITIONER  
DUCT TYPE (50Hz)

# SERVICE MANUAL



Indoor unit	Outdoor unit
ARY30LUAN	AOY30LMAWL
ARY36LUAN	AOY36LMAWL

## CONTENTS

SPECIFICATIONS .....	1
DIMENSIONS .....	2
REFRIGERANT SYSTEM DIAGRAM .....	4
CIRCUIT DIAGRAM .....	5
INDOOR PCB CIRCUIT DIAGRAM .....	6
OUTDOOR PCB CIRCUIT DIAGRAM .....	7
ERROR CONTENTS .....	10
DISASSEMBLY ILLUSTRATION .....	12
PARTS LIST .....	19
ACCESSORIES .....	21

# SPECIFICATIONS

## ELECTRICAL DATA

TYPE		Cooling & Heating	
INDOOR UNIT		ARY30LUAN	ARY36LUAN
OUTDOOR UNIT		AOY30LMAWL	AOY36LMAWL
COOLING CAPACITY		8.5 kW	10.0 kW
HEATING CAPACITY		10.0 kW	11.2 kW
POWER SOURCE		230V 50Hz	230V 50Hz
RUNNING CURRENT	Cooling	13.0 A	17.9 A
	Heating	11.7 A	13.9 A
INPUT WATTS	Cooling	2.96 kW	4.08 kW
	Heating	2.68 kW	3.18 kW
E.E.R.	Cooling	2.87 kW/kW	2.45 kW/kW
	Heating	3.73 kW/kW	3.52 kW/kW
STARTING CURRENT		15 A	15 A
MOISTURE REMOVAL		2.5 L/hr	3.0 L/hr
AIR CIRCULATION HIGH		2,200 m3/hr	

## FAN MOTOR

INDOOR UNIT	Discrimination	MFA-45PTAT	
	High speed	1,250 r.p.m.	
	Middle speed	1,150 r.p.m.	
	Low speed	1,050 r.p.m.	
OUTDOOR UNIT	Discrimination	MFE-60PO	
	Cool	850 r.p.m.	
	Heat	900 r.p.m.	

## NOISE LEVEL

INDOOR UNIT	High speed	43.0 dB	
	Middle speed	41.0 dB	
	Low speed	39.0 dB	
OUTDOOR UNIT	Cool	53.0 dB	54.0 dB
	Heat	55.0 dB	55.0 dB

Note : Static pressure : 30Pa  
Duct length : Inlet 1m, Outlet 2m

## COMPRESSOR AND REFRIGERANT

TYPE		Total enclosed type, 4 poles, 3 phase, Inverter, Twin Rotary	
DISCRIMINATION		TNB220FPBM9	
PRECHARGED REFRIGERANT		2,200 g	
REFRIGERANT TYPE		R410A	
MAX PIPE HEIGHT		30 m	
FULL CHARGE	Pipe length	15 m	2,200 g
		20 m	2,400 g
		30 m	2,800 g
		40 m	3,200 g
		50 m	3,600 g
ADDITIONAL CHARGE		40 g / m	

## DIMENSIONS

INDOOR UNIT	H x W x D	270 x 1,135 x 700 mm
OUTDOOR UNIT	H x W x D	830 x 900 x 330 mm

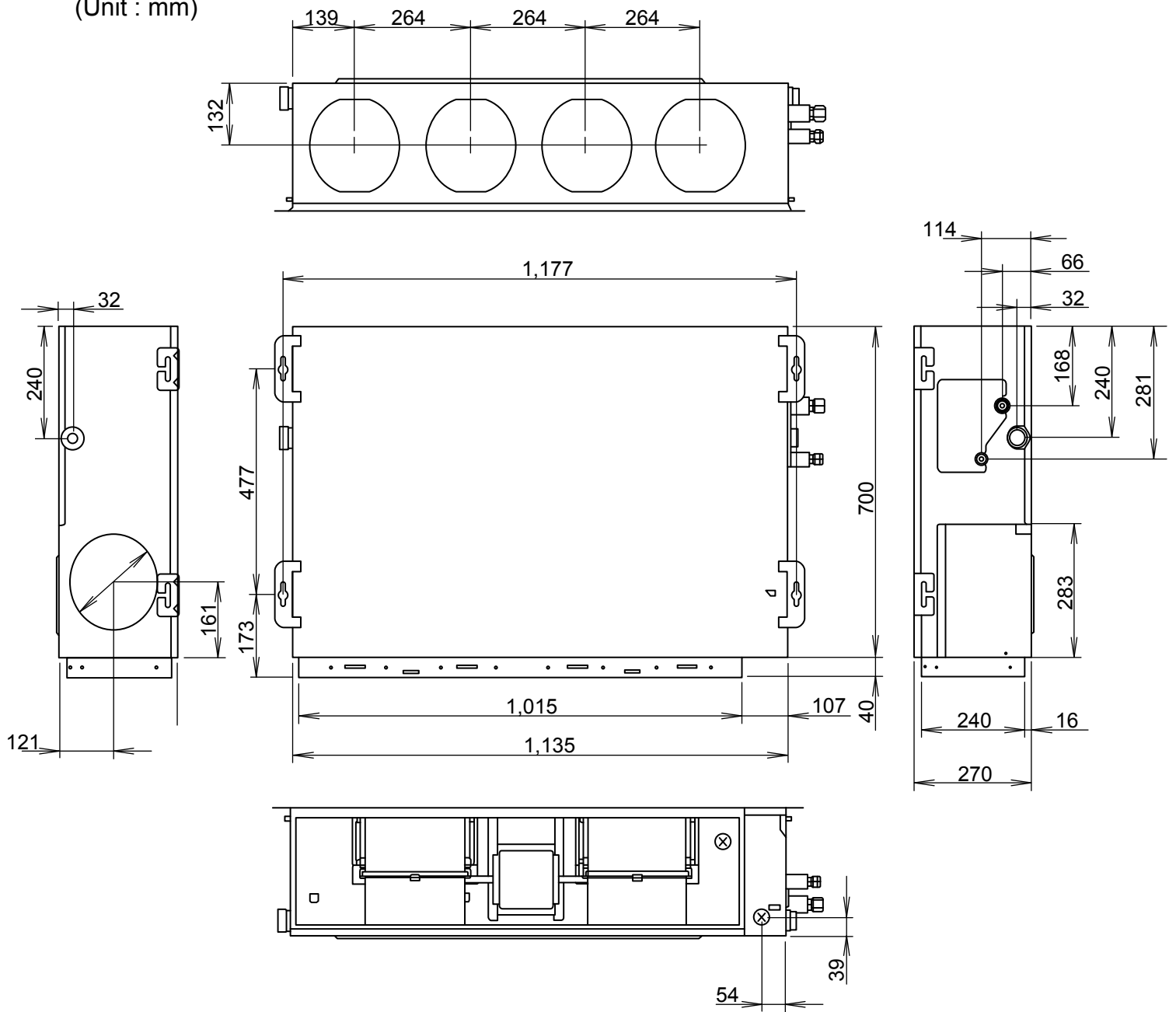
## WEIGHT

INDOOR UNIT	Gross / Net	50 kg / 43 kg
OUTDOOR UNIT	Gross / Net	70 kg / 64 kg

# DIMENSIONS

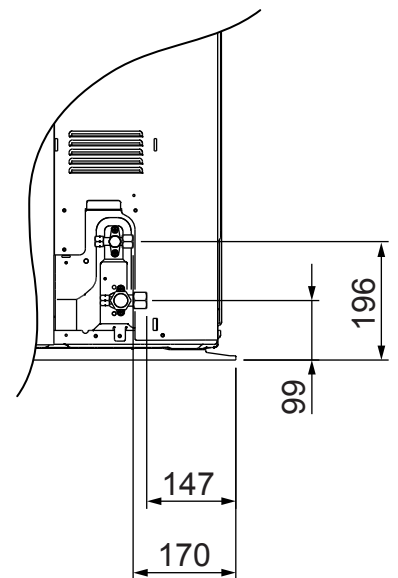
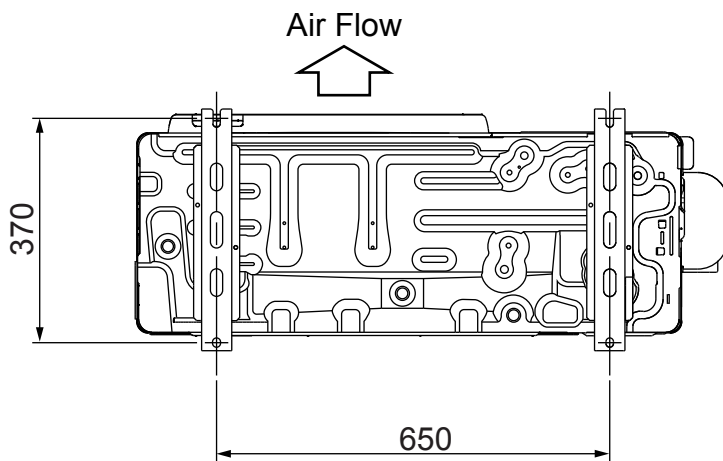
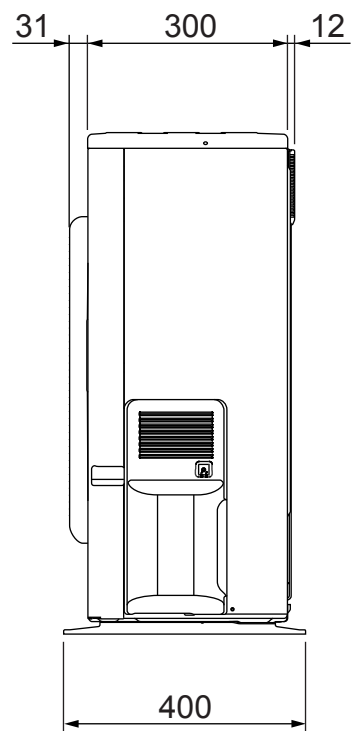
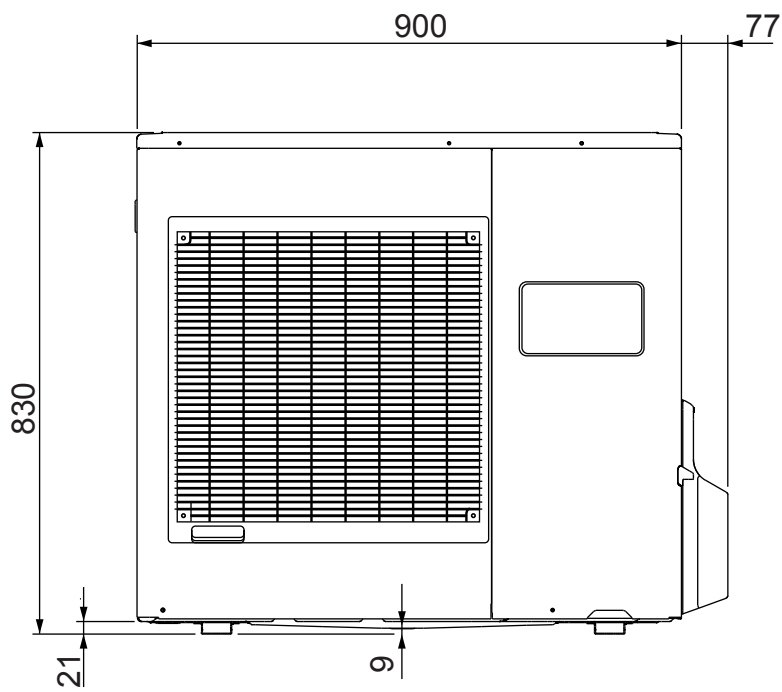
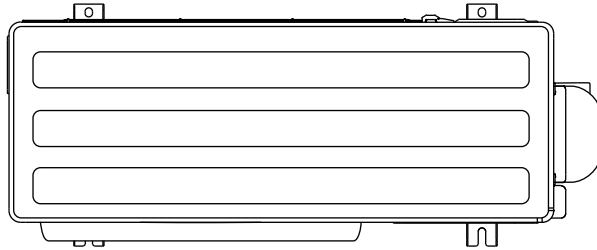
## INDOOR UNIT

(Unit : mm)

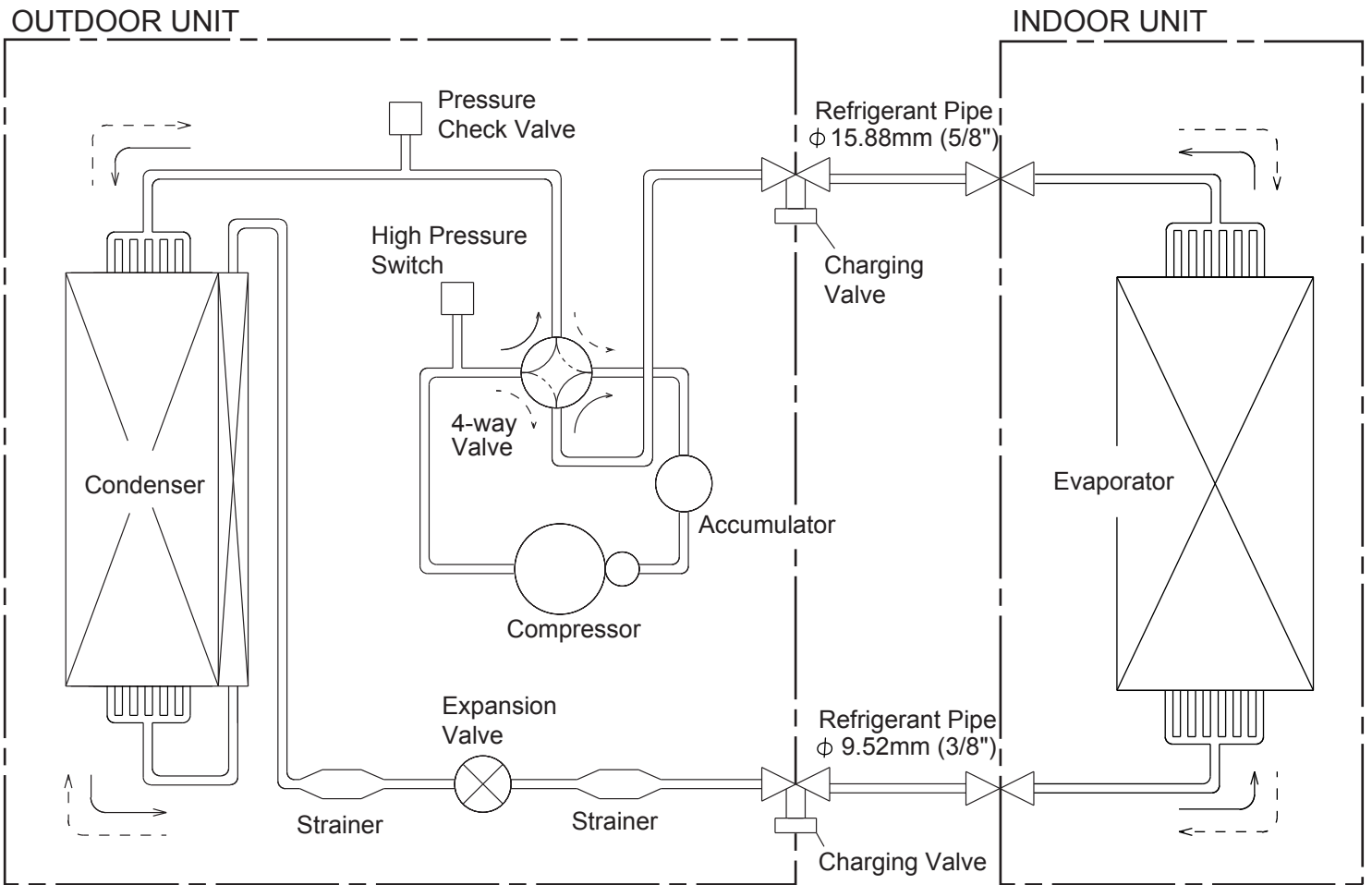


# OUTDOOR UNIT

(Unit : mm)

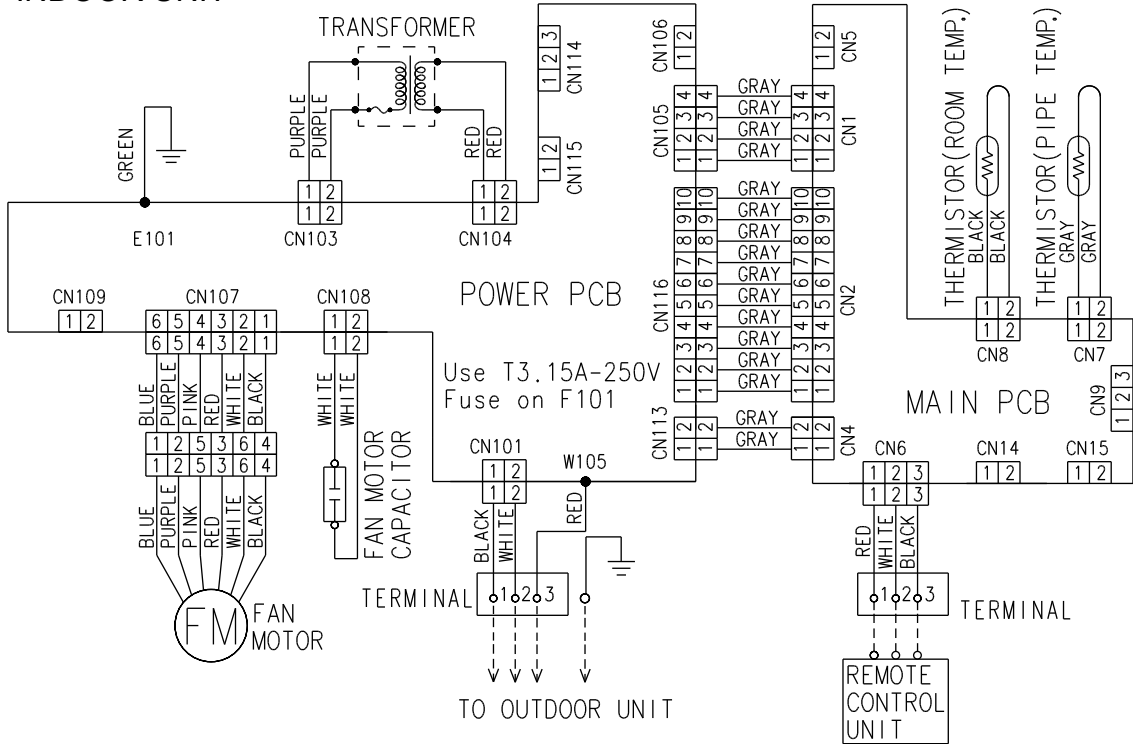


# REFRIGERANT SYSTEM DIAGRAM

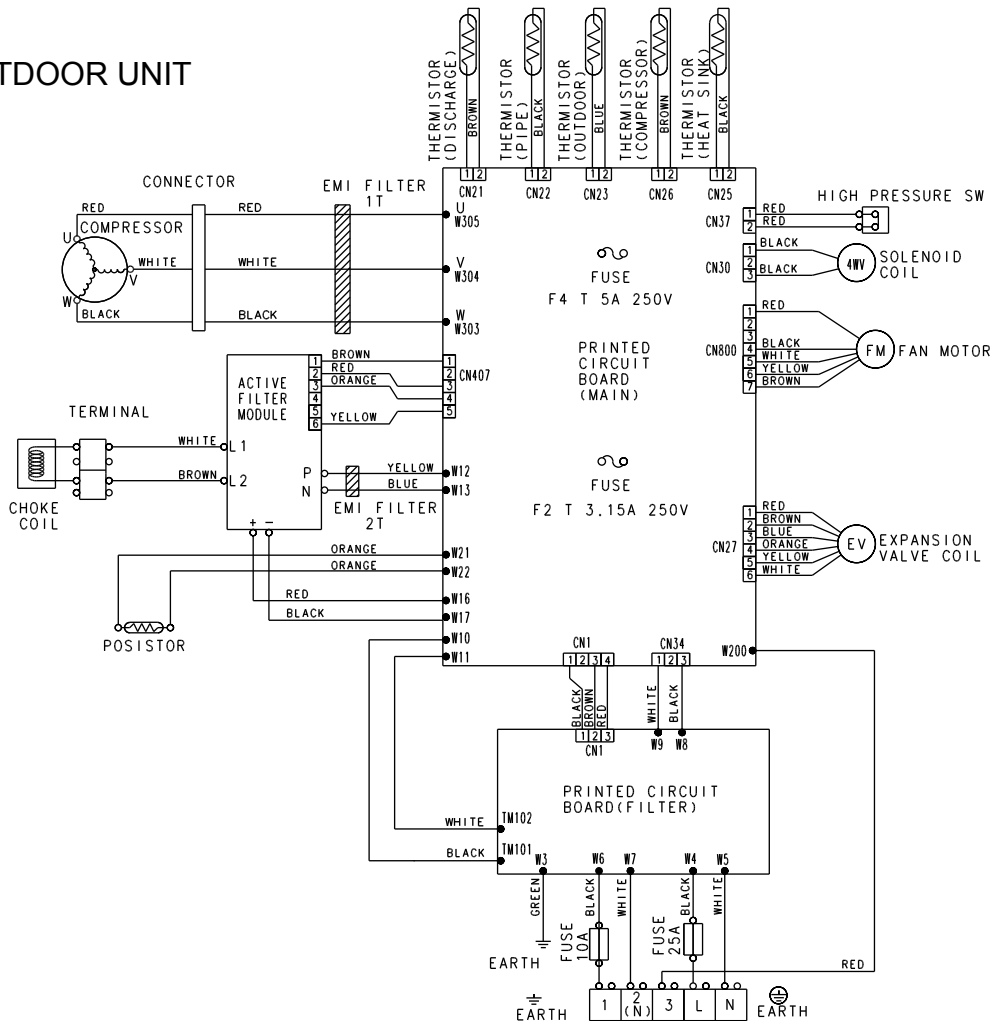


# CIRCUIT DIAGRAM

## INDOOR UNIT

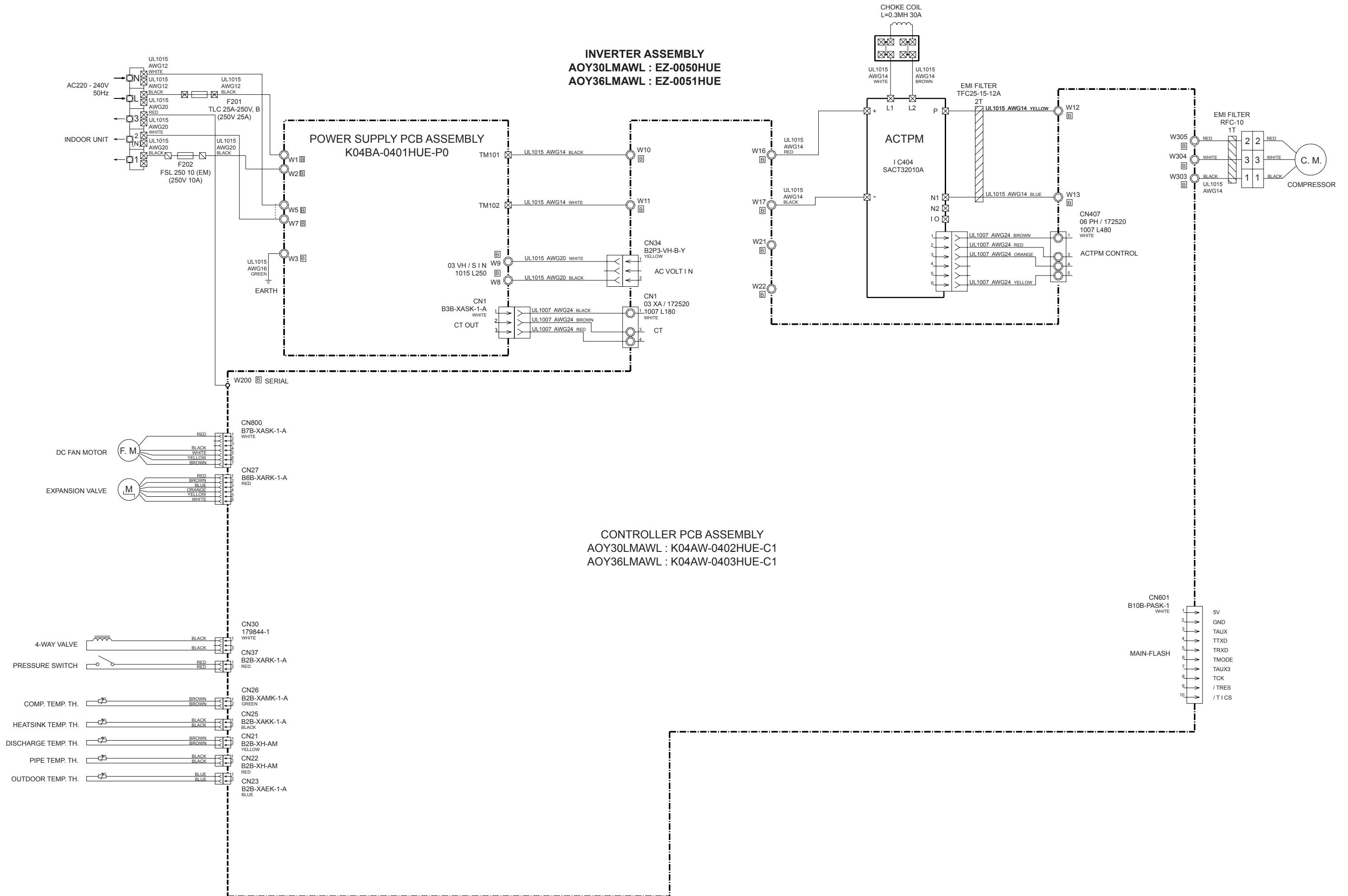


## OUTDOOR UNIT



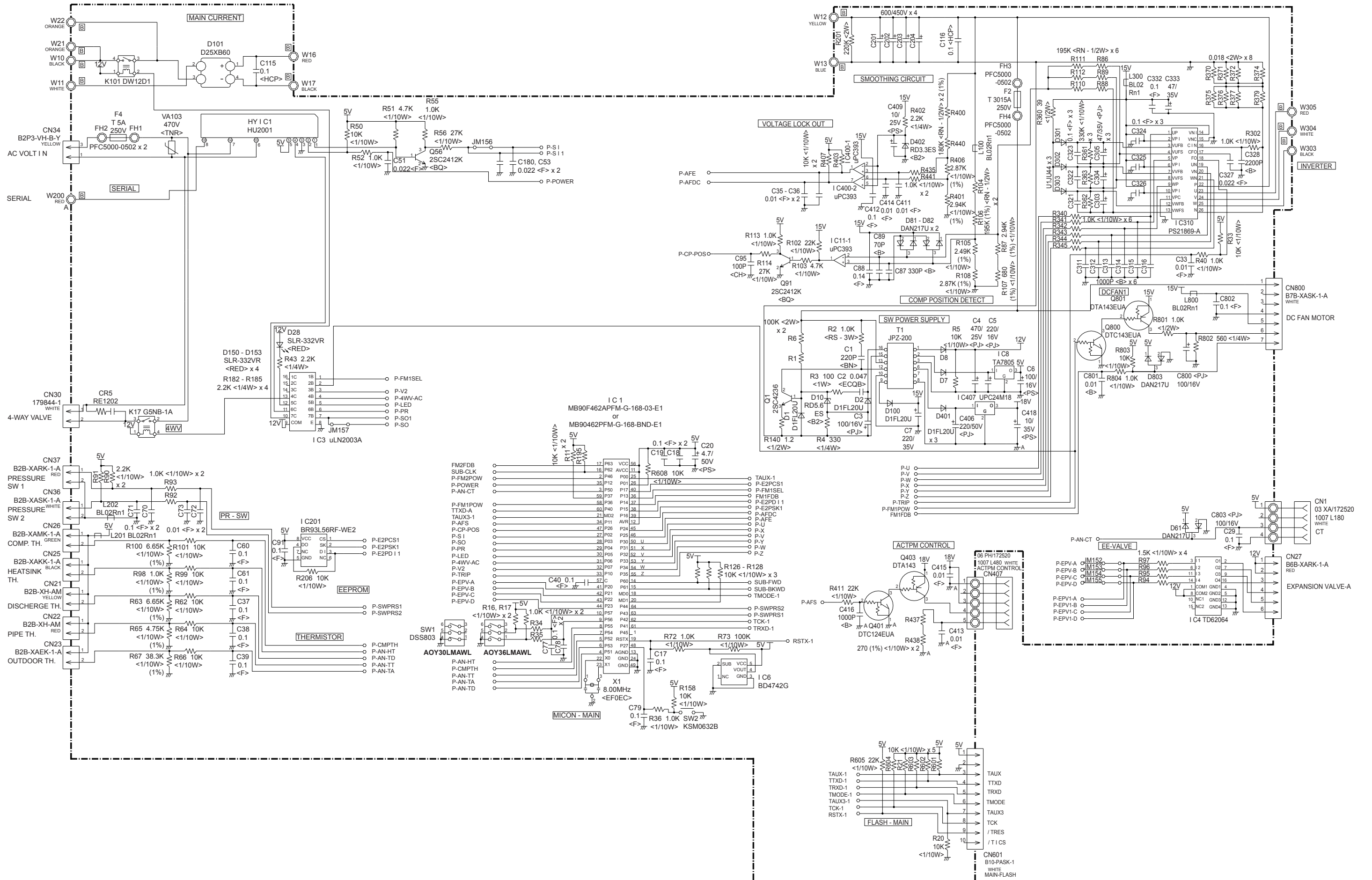


# OUTDOOR PCB CIRCUIT DIAGRAM





OUTDOOR UNIT  
 CONTROLLER PCB ASSEMBLY  
 AOY30LMAWL : K04AW-0402HUE-C1  
 AOY36LMAWL : K04AW-0403HUE-C1



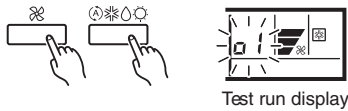


# ERROR CONTENTS (indoor unit)

**⚠ 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.



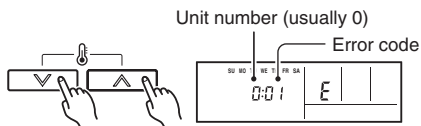
- (3) Press the start/stop button to stop the test run.

## [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>01</b>	Indoor unit doesn't accept the signal from 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 unit doesn't accept the signal from indoor unit.
<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
<b>1A</b>	Compressor does not operate
<b>1b</b>	Outdoor unit fan error
<b>1c</b>	Communication error (inverter → multicontroller)
<b>1d</b>	2 way valve sensor error
<b>1E</b>	Expansion valve error
<b>1F</b>	Connection indoor unit error

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

# 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.

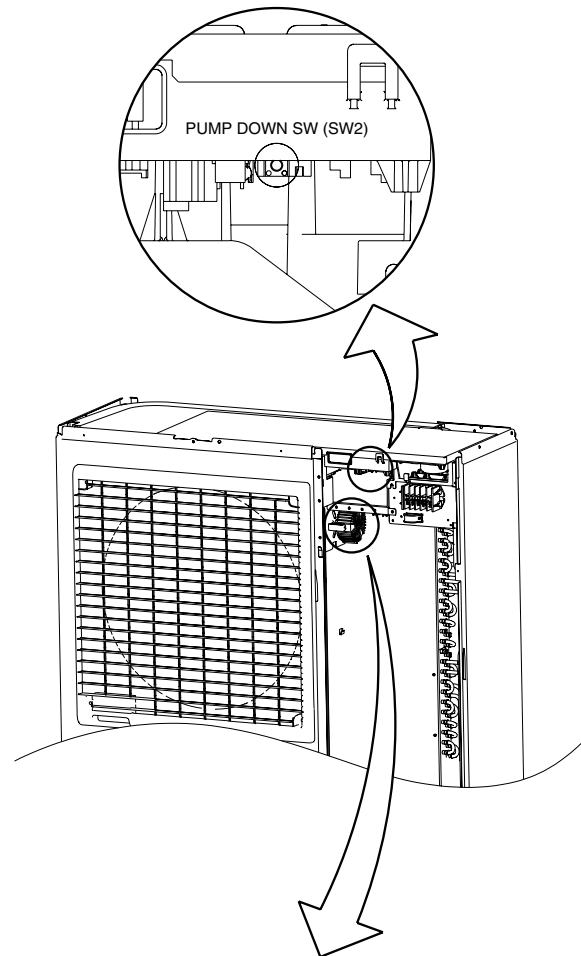
LED	Error contents
1 flash	Communication error (Indoor unit - Outdoor unit)
2 flash	Discharg pipe temperature sensor
3 flash	Outdoor heat exchanger temperature sensor
4 flash	Outdoor temperature sensor
7 flash	Compressor temperature sensor
8 flash	Heat sink temperature sensor
9 flash	Pressure switch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

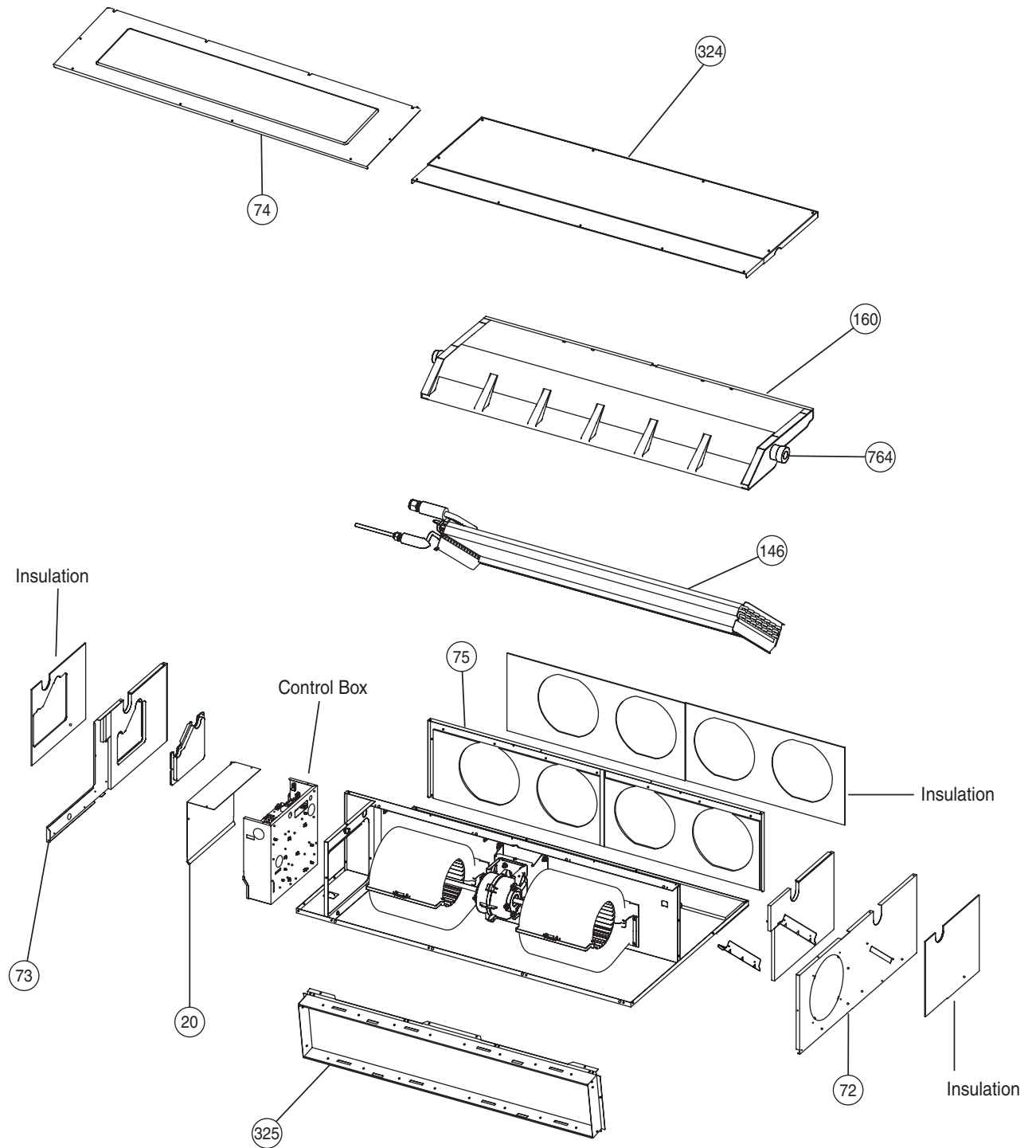


**⚠ DANGER**

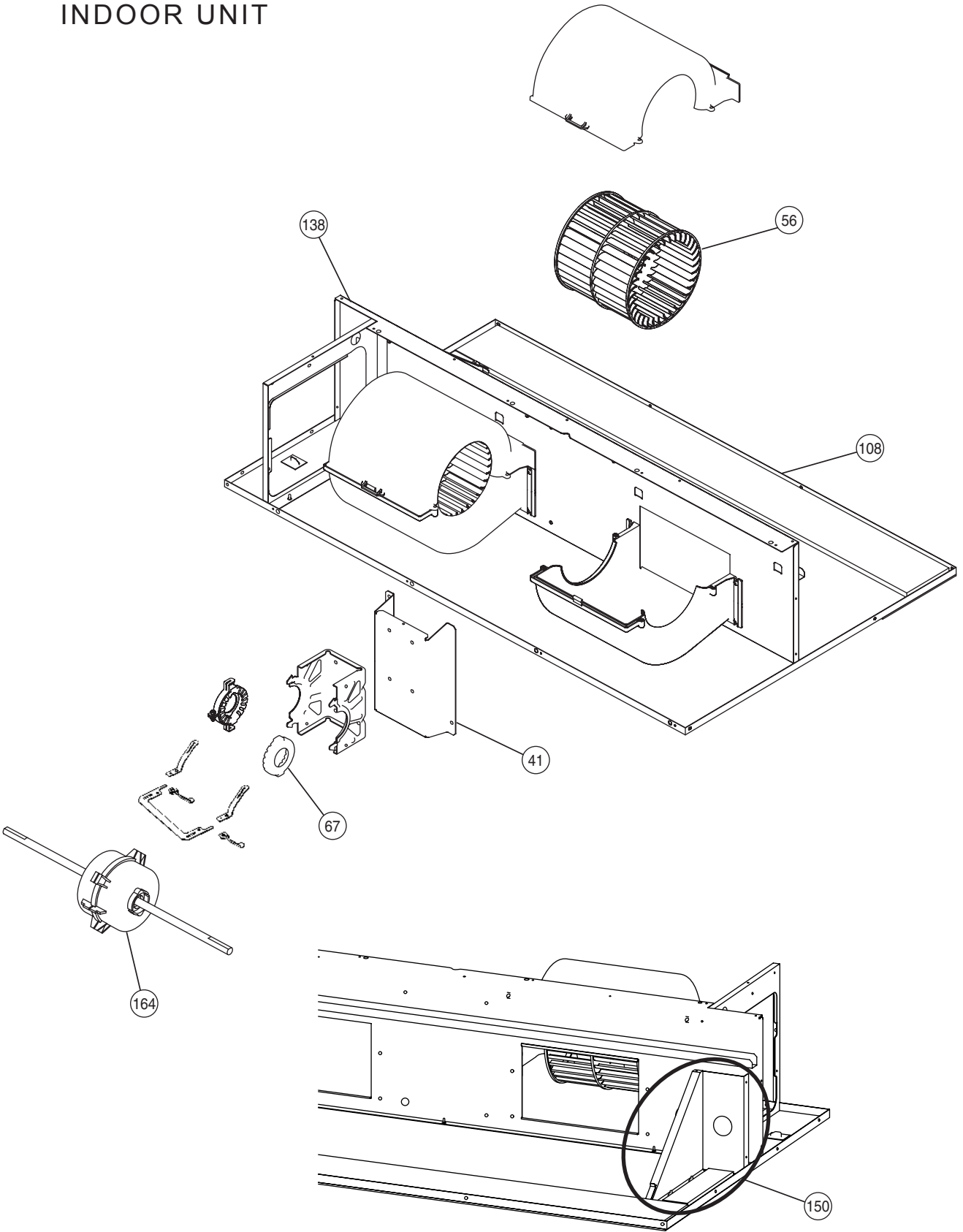
This part (Choke coil) generates high voltages. Never touch this part.

# DISASSEMBLY ILLUSTRATION

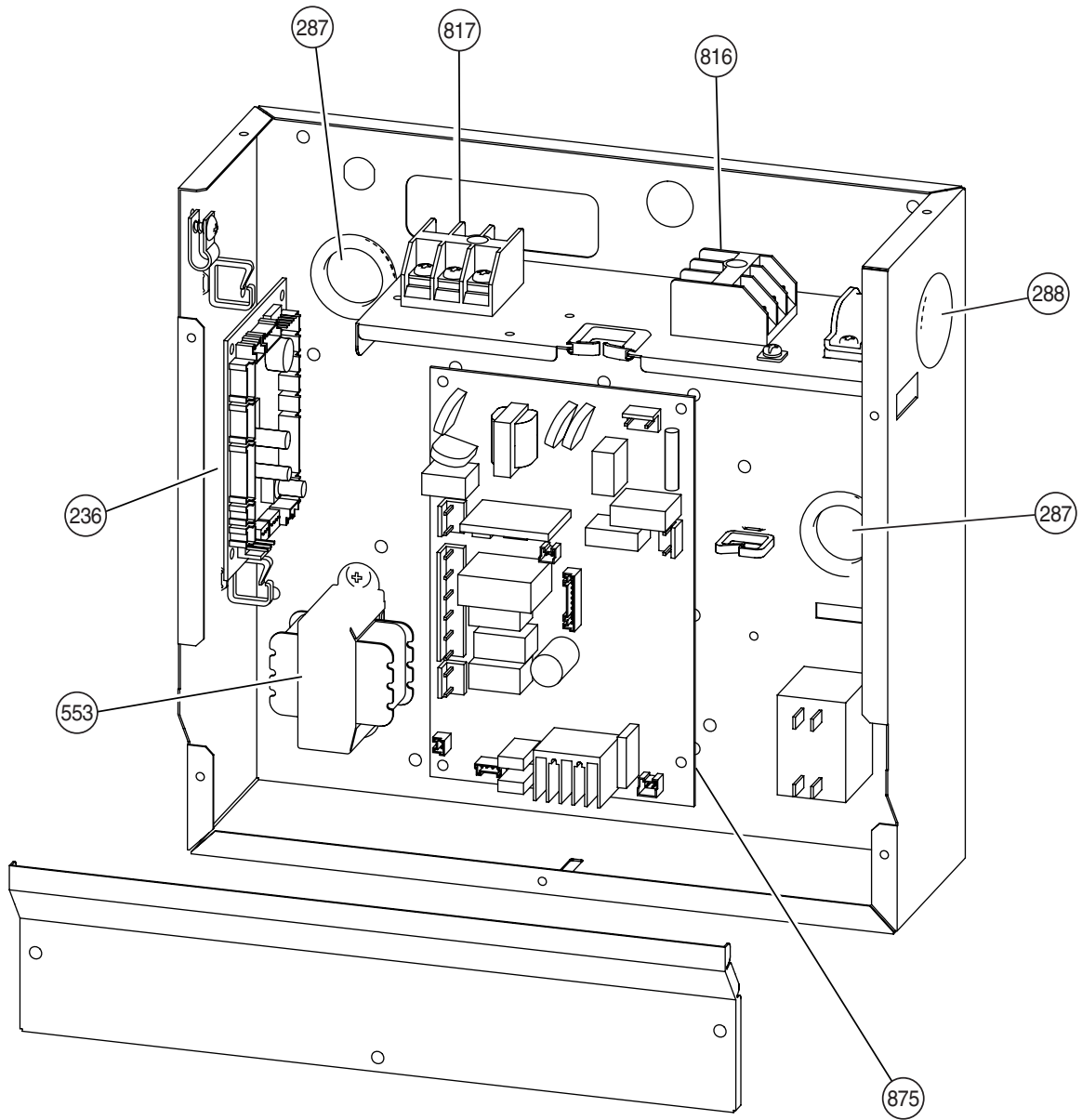
## INDOOR UNIT



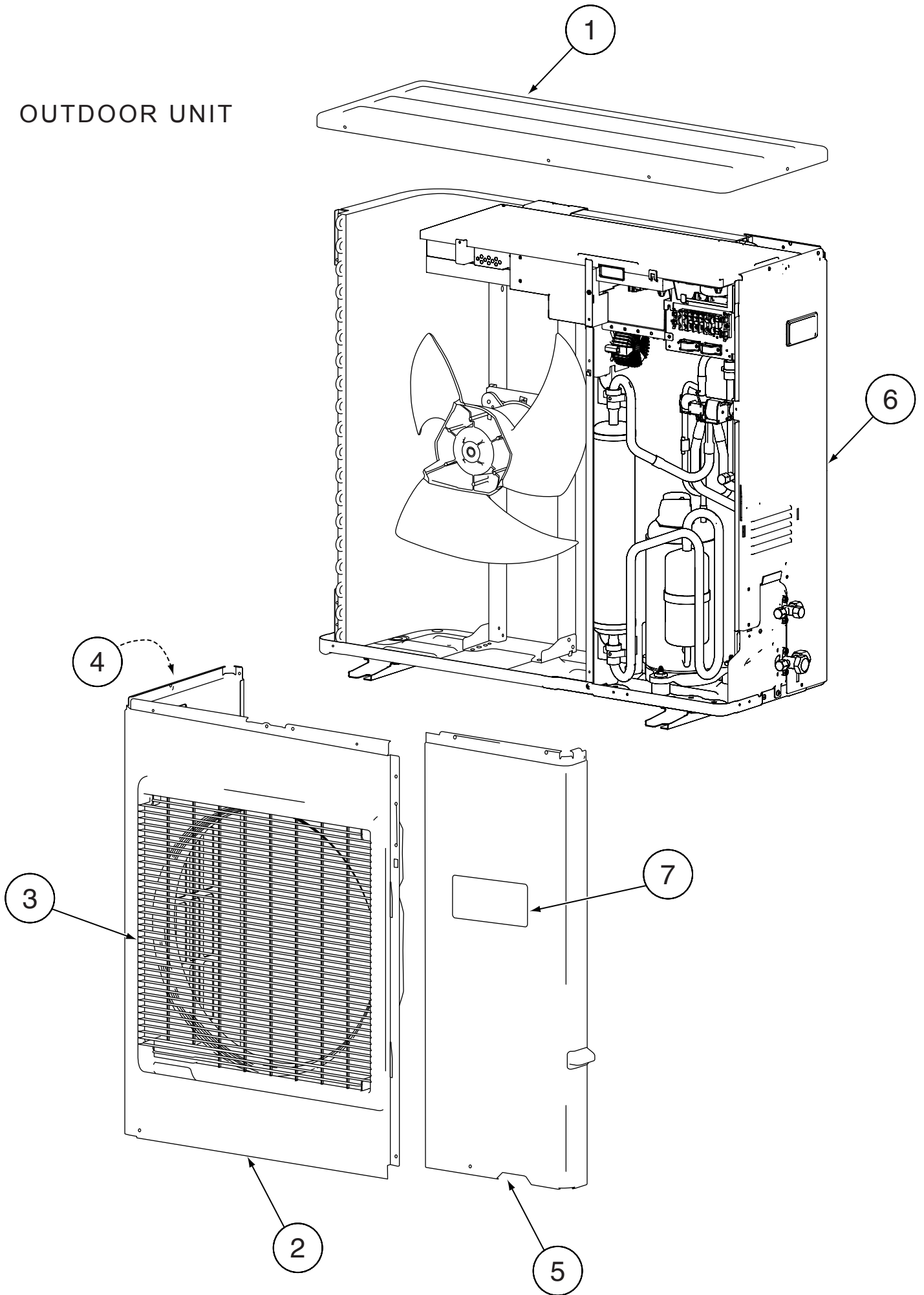
# INDOOR UNIT



# INDOOR UNIT

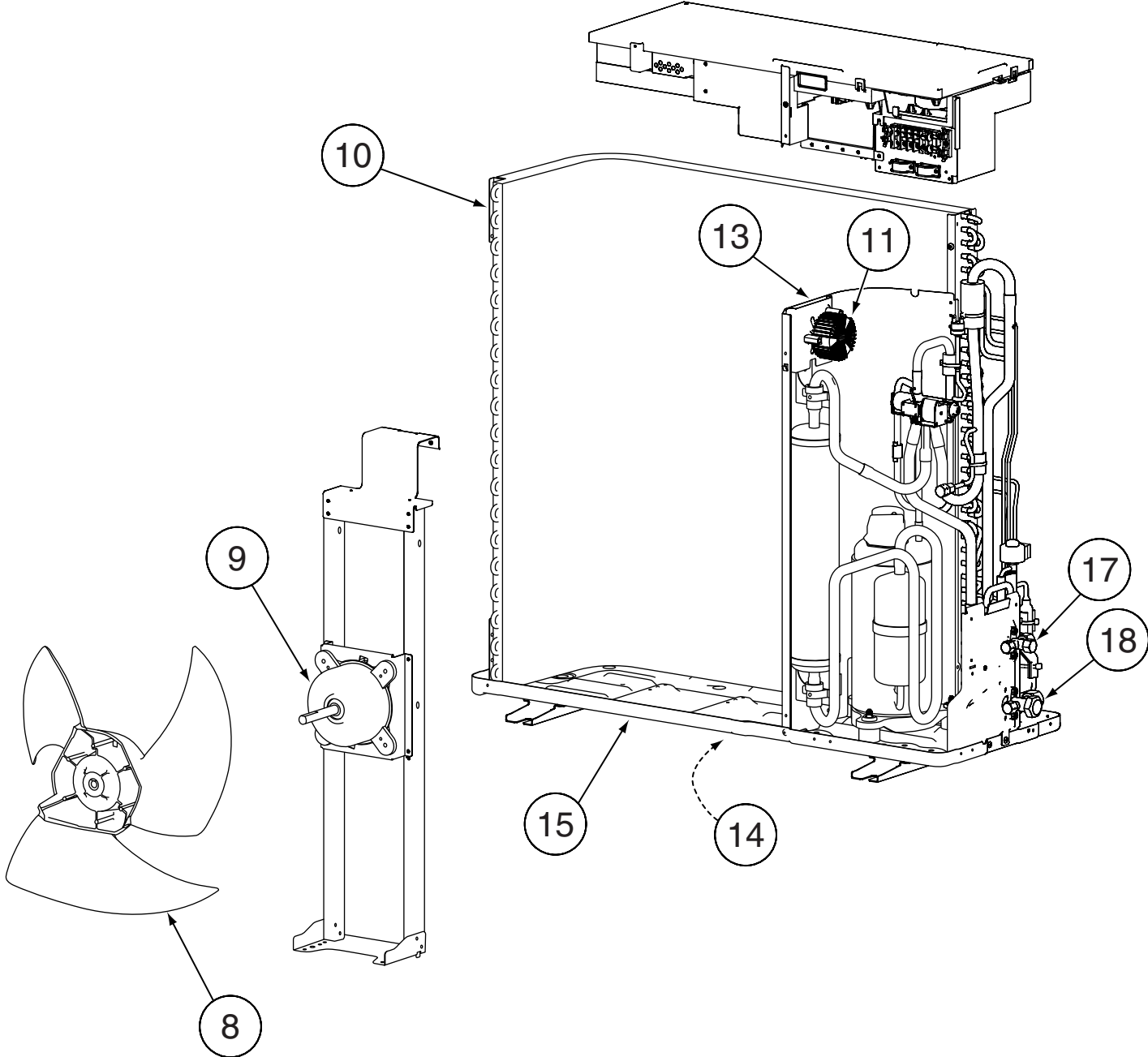


OUTDOOR UNIT

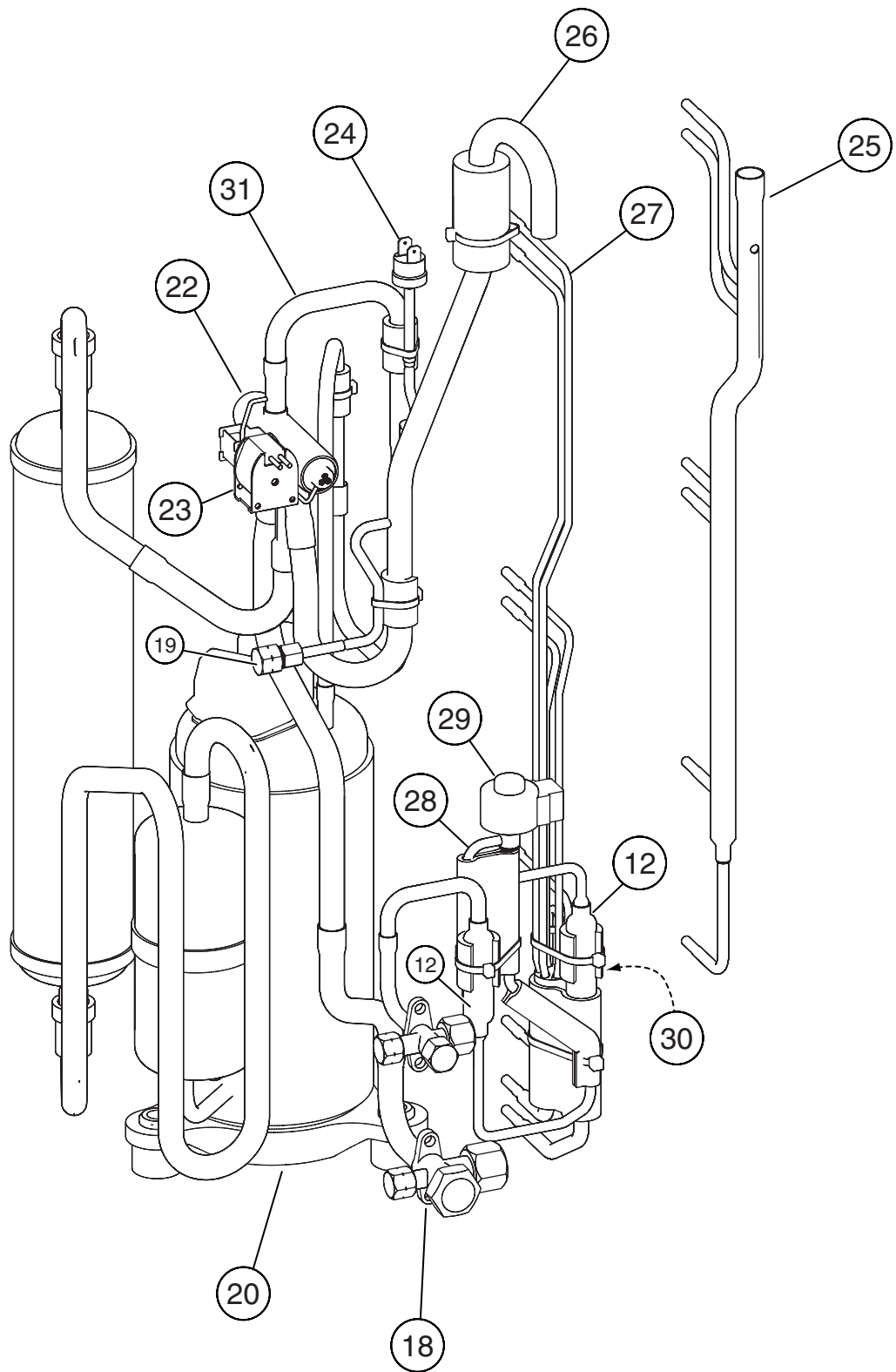




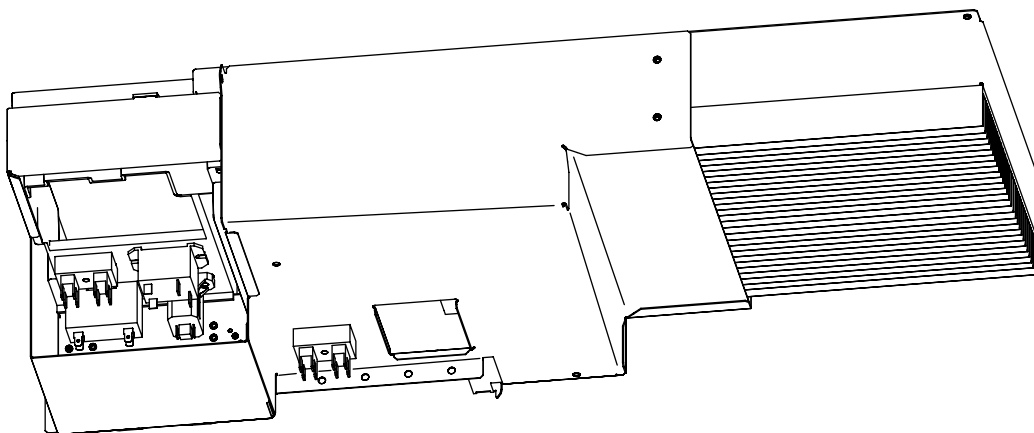
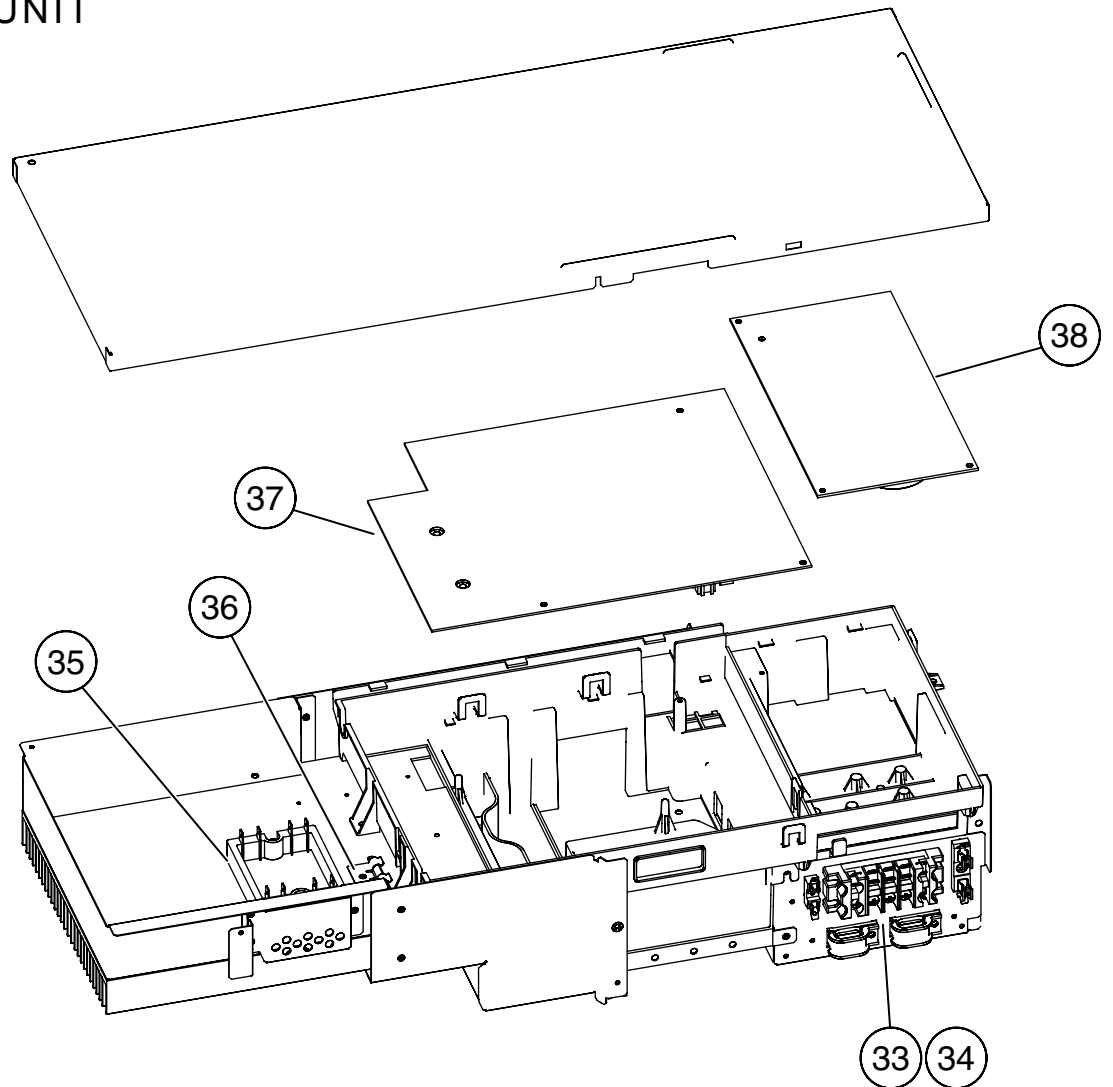
OUTDOOR UNIT



# OUTDOOR UNIT



# OUTDOOR UNIT



# PARTS LIST

## INDOOR UNIT

Ref.	Description	Part number	
20	Control Cover-A Sub Assy	9374516018	
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	
138	Separate Wall Assy	9374228010	
146	Evaporator Total Assy	9374517015	
150	Bracket (Eva. )-R	9374207015	
160	Drain Pan Sub Assy	9374513017	
164	Motor, Induction	9600830093	
236	Controller PCB Assy (30)	9705246133	
		(K03BZ-0501HSE-C1)	
236	Controller PCB Assy (36)	9705246140	
		(K03BZ-0502HSE-C1)	
287	Cap (Power)	9352173011	
288	One Touch Bush	9374407019	
324	Main Panel Sub Assy	9374511013	
325	Intake Frame Assy	9374216017	
553	Transformer (Power)	9704129017	
764	Drain Cap	9356541007	
816	Terminal-3P	9703345012	
817	Terminal-3P	9306489045	
875	Power Supply PCB Assy	9705668065	
--	Thermistor Spring-A	313728262708	
--	Room Thermistor	9703299025	
--	Pipe Thermistor	9703297021	
--	Remote Control	9372266014	
--	Motor Band-A Assy	9374647019	
--	Wire w/Connector	9704856012	
--	Wire w/Connector	9705245020	
--	Wire w/Connector	9705243026	
--	Wire w/Connector	9705244023	

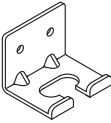




## OUTDOOR UNIT

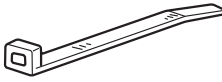



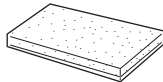
Ref.	Description	Part number
1	Top Panel Sub Assy	9374417025
2	Front Panel	9374094066
3	Fan Guard	9374330010
4	Grip Side	9374173013
5	Service Panel Sub Assy	9374415038
6	Right Panel Sub Assy	9374416066
7	Emblem Rear	9351355005
8	Propeller Fan Assy	9366378020
9	Motor, Induction	9601882015
10	Condenser-A Assy	9374433056
11	Coil Choke	9703458019
12	Strainer Assy	9372524015
13	Separate Wall Assy	9374629022
14	Cap Foot	9374345014
15	Base Assy	9374166084
17	3-Way Valve Assy (3/8)	9372205044
18	3-Way Valve Assy (5/8)	9372205075
19	Check Joint Assy	9372802038
20	Compressor Assy	9373711018
22	4-Way Valve	9900164010
23	Solenoid	9900165055
24	Pressure Switch	9900186012
25	Inlet Pipe Cond A Assy	9373461067
26	Inlet Pipe Cond B Assy	9373463054
27	Outlet Pipe Cond A Assy	9374266050
28	Expansion Valve Assy	9370947113
29	Coil (Expansion Valve)	9900057039
30	Distributor	9369128004
31	Discharge Pipe A Assy	9372264126
33	Terminal 2P	9701971015
34	Terminal 5P	9900203023
35	ACTPM	9703457012
36	Holder Thermo	9372797013
37	Inverter PCB Assy (30)	9705642034
37	Inverter PCB Assy (36)	9705642041
38	Power PCB Assy	9705647022
--	Fuse 25A-250V	0600086039
--	Fuse 3.15A-250V	0600222512
--	Fuse 5A-250V	0600222529
--	Thermistor (Outdoor Temp.)	9703516078
--	Heat Exchanger Thermistor	9704220042
--	Thermistor (Discharge)	9704219114
--	Compressor Thermistor	9900156022
--	Thermistor	9704265012
--	Heatsink Thermistor	9900311018
--	Transformer	9702334024
--	Varistor	0000361224
--	Arrester	0600280147
--	Relay	9900117016
--	Relay	9900007010
--	Switch Push	9703476013
--	Switch Slide	9701392018
--	Drain Pipe (I-Type)	9301102000
--	Drain Pipe Packing	9301143003
--	Drain Cap	313166024302

# ACCESSORIES

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

## INDOOR UNIT

Name and Shape	Q'ty	Application
Hanger 	4	For suspending the indoor unit from ceiling
Special nut A (large flange) 	4	For suspending the indoor unit from ceiling
Special nut B (small flange) 	4	
Coupler heat insulation (large) 	1	For indoor side pipe joint (large pipe)
Coupler heat insulation (small) 	1	For indoor side pipe joint (small pipe)

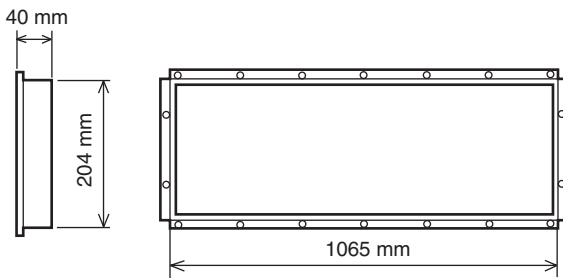
Name and Shape	Q'ty	Application
Binder 	1 (large)	For fixing the drain hose
	1 (small)	For fixing the remote controller cord
Remote controller 	1	
Tapping screw (flush heads) 	2	For installing the remote controller
Remote controller cord 	1	For connecting the remote controller
Drain hose insulation 	1	Insulates the drain hose and vinyl hose

## OPTIONAL PARTS

When connecting the square duct and round duct, use the optional square flange or round flange and flexible duct.

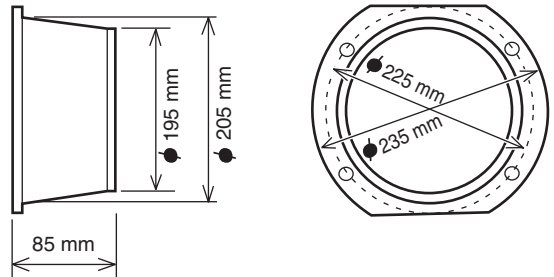
### Square flange

Model name : UTD-SF045T (P/N 9098180007)



### Round flange

Model name : UTD-RF204 (P/N 9093160004)



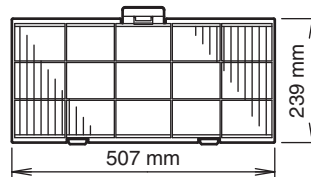
### Flexible duct

Model name : UTD-RD202 (P/N 9074165004)



### Long-life filter

Model name : UTD-LF25NA (P/N9079892004)



### Simple remote controller

Model name : UTB-YPB (P/N9077582006)

### Remote sensor

Model name : UTD-RS100 (P/N9072619004)

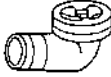


**⚠ WARNING**

- ① For the air conditioner to operate satisfactorily, install it as outlined in this installation instruction sheet.
- ② Connect the indoor unit and outdoor unit with the room air conditioner piping and cords available standards parts. This installation instruction sheet describes the correct connections using the installation set available from our standard parts.
- ③ Installation work must be performed in accordance with national wiring standards by authorized personnel only.
- ④ Also, do not use an extension cord.
- ⑤ Do not turn on the power until all installation work is complete.
- ⑥ Do not purge the air with refrigerants but use a vacuum pump to vacuum the installation.
- ⑦ There is not extra refrigerant in the outdoor unit for air purging.
- ⑧ Use a vacuum pump for R410A exclusively.
- ⑨ Using the same vacuum pump for different refrigerants may damage the vacuum pump or the unit.
- ⑩ Use a clean gauge manifold and charging hose for R410A exclusively.
- ⑪ If refrigerant leaks while work is being carried out, ventilate the area. If the refrigerant comes in contact with a flame, it produces a toxic gas.

- Be careful not to scratch the air conditioner when handling it.
- After installation, explain correct operation to the customer, using the operating manual.
- Let the customer keep this installation instruction sheet because it is used when the air conditioner is serviced or moved.

## ACCESSORIES

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

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

## CONNECTION PIPE REQUIREMENT

**⚠ CAUTION**

The maximum lengths of this product are shown in the following table. If the units are further apart than this, correct operation can not be guaranteed.

Model Type	Diameter		Pipe length		Maximum height (between indoor and outdoor)
	Liquid	Gas	MAX.	MIN.	
30,000 BTU/h class	9.52 mm (3/8 in.)	15.88 mm (5/8 in.)	50 m	5 m	30 m
36,000 BTU/h class			70 m		
45,000 BTU/h class					

- Use pipe with water-resistant heat insulation.

**⚠ CAUTION**

Install heat insulation around both the gas and liquid pipes. Failure to do so may cause water leaks.  
Use heat insulation with heat resistance above 120 IC. (Reverse cycle model only)  
In addition, if the humidity level at the installation location of the refrigerant piping is expected to exceed 70%, install heat insulation around the refrigerant piping. If the expected humidity level is 70-80%, use heat insulation that is 15 mm or thicker and if the expected humidity exceeds 80%, use heat insulation that is 20 mm or thicker.  
If heat insulation is used that is not as thick as specified, condensation may form on the surface of the insulation.  
In addition, use heat insulation with heat conductivity of 0.045 W/(mK) or less (at 20 IC).

0504G2852