

SPLIT TYPE
AIR CONDITIONER
DUCT TYPE (50Hz)

SERVICE MANUAL



Indoor unit	Outdoor unit
ARYA45LCTU	AOYA45LBTL

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SPECIFICATIONS

ELECTRICAL DATA

TYPE		Cooling & Heating
INDOOR UNIT		ARYA45LCTU
OUTDOOR UNIT		AOYA45LBTL
COOLING CAPACITY		12.5 kW
HEATING CAPACITY		14.0 kW
POWER SOURCE		230 V 50 Hz
RUNNING CURRENT	Cooling	17.0 A
	Heating	17.0 A
INPUT WATTS	Cooling	3.89 kW
	Heating	3.88 kW
E.E.R.	Cooling	3.21 kW/kW
	Heating	3.61 kW/kW
STARTING CURRENT		15.0 A
MOISTURE REMOVAL		4.5 L/hr
AIRCIRCULATION INDOOR		2,100 m3/h
AIRCIRCULATION OUTDOOR	Cooling	6,600 m3/h
	Heating	6,600 m3/h
MAXIMUM CURRENT		20.0 A

FAN MOTOR

INDOOR UNIT	Discrimination	MFG-45RVN
	High speed	1,350 r.p.m.
	Middle speed	1,150 r.p.m.
	Low speed	910 r.p.m.
	Quiet	770 r.p.m.
OUTDOOR UNIT	Discrimination	MFE-60TVT
	Upper fan	850 r.p.m.
	Lower fan	750 r.p.m.

NOISE LEVEL

INDOOR UNIT	High speed	42 dB
	Middle speed	38 dB
	Low speed	32 dB
	Quiet	28 dB
OUTDOOR UNIT	Cooling	55 dB
	Heating	56 dB

Note : Static pressure : 60Pa

Duct length : Inlet 1m, Outlet 2m

COMPRESSOR AND REFRIGERANT

TYPE		Hermetic type, Inverter, 4 poles, 3 phase, DC motor, Twin Rotary
DISCRIMINATION		DA420A3F-21ZA
WEIGHT (with oil)		23.7 kg
REFRIGERANT TYPE		R410A
PRECHARGED REFRIGERANT		3,350 g
MAX PIPE LENGTH		50 m
MAX PIPE HEIGHT		30 m
FULL CHARGE	Pipe length 20 m	3,350 g
	30 m	3,850 g
	40 m	4,350 g
	50 m	4,850 g
ADDITIONAL CHARGE		50 g/m

DIMENSIONS

INDOOR UNIT	H x W x D	270 x 1,135 x 700 mm
OUTDOOR UNIT	H x W x D	1,290 x 900 x 330 mm

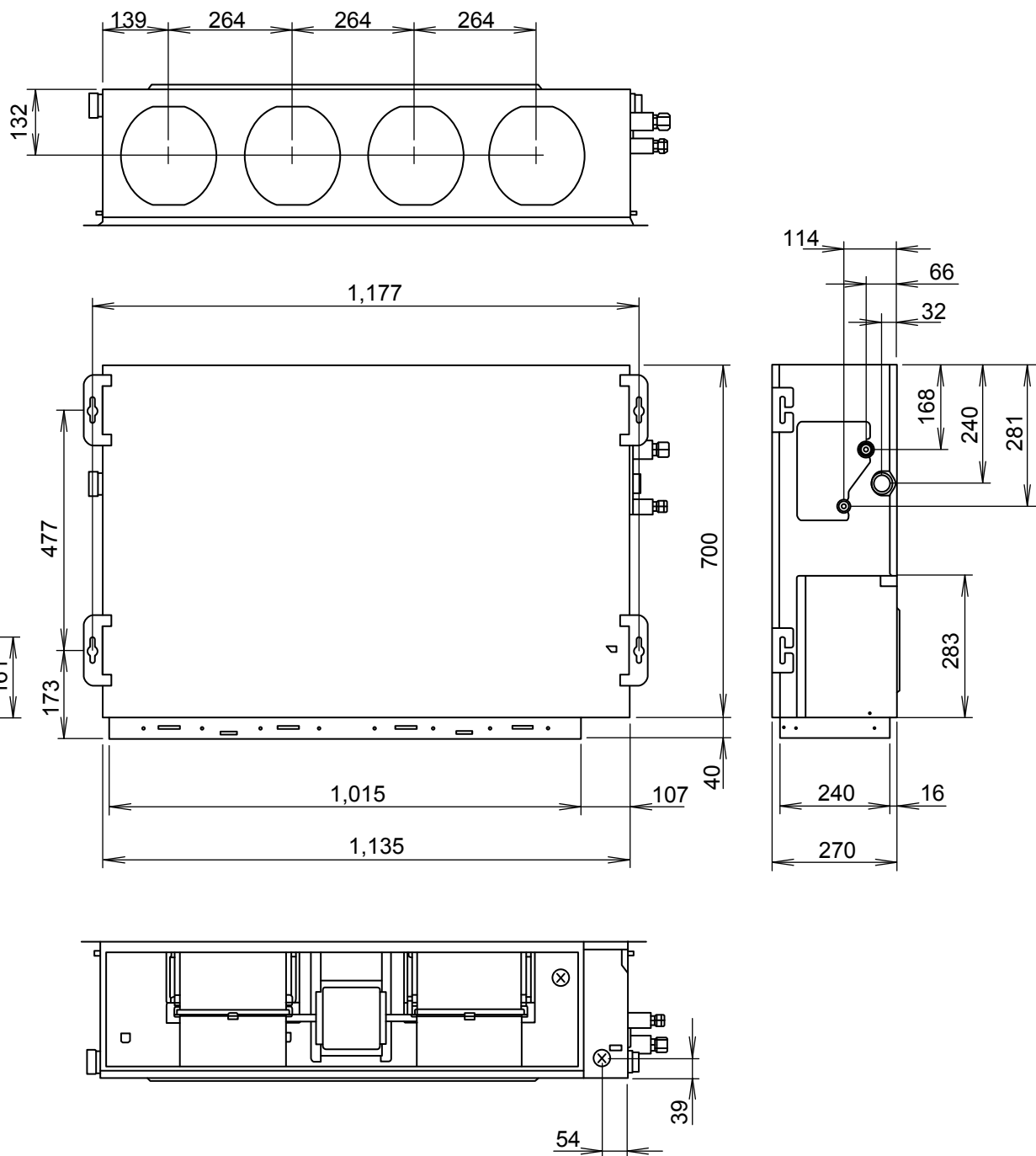
WEIGHT

INDOOR UNIT	Gross / Net	48 kg / 40 kg
OUTDOOR UNIT	Gross / Net	107 kg / 98 kg

DIMENSIONS

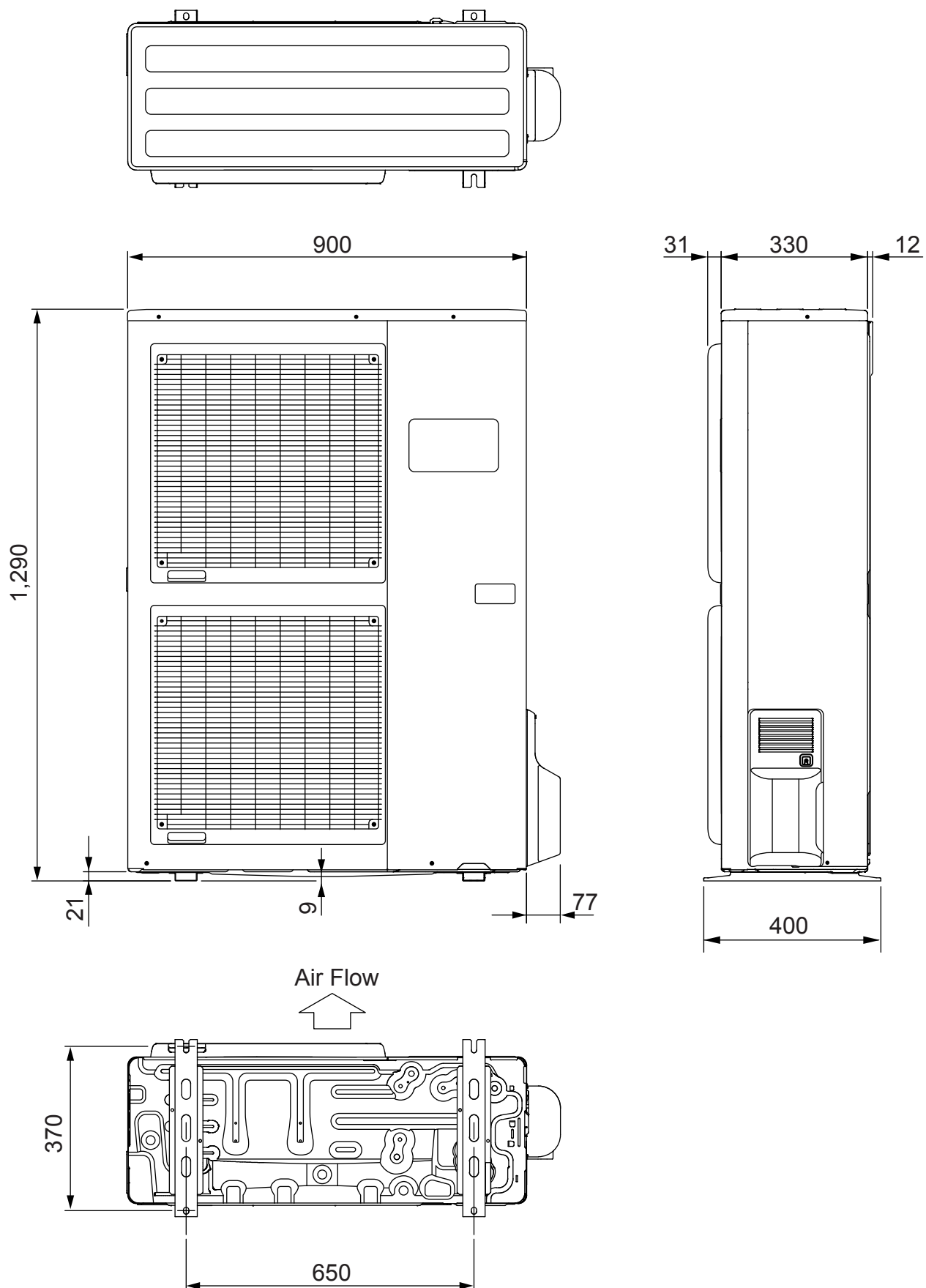
INDOOR UNIT

(Unit : mm)

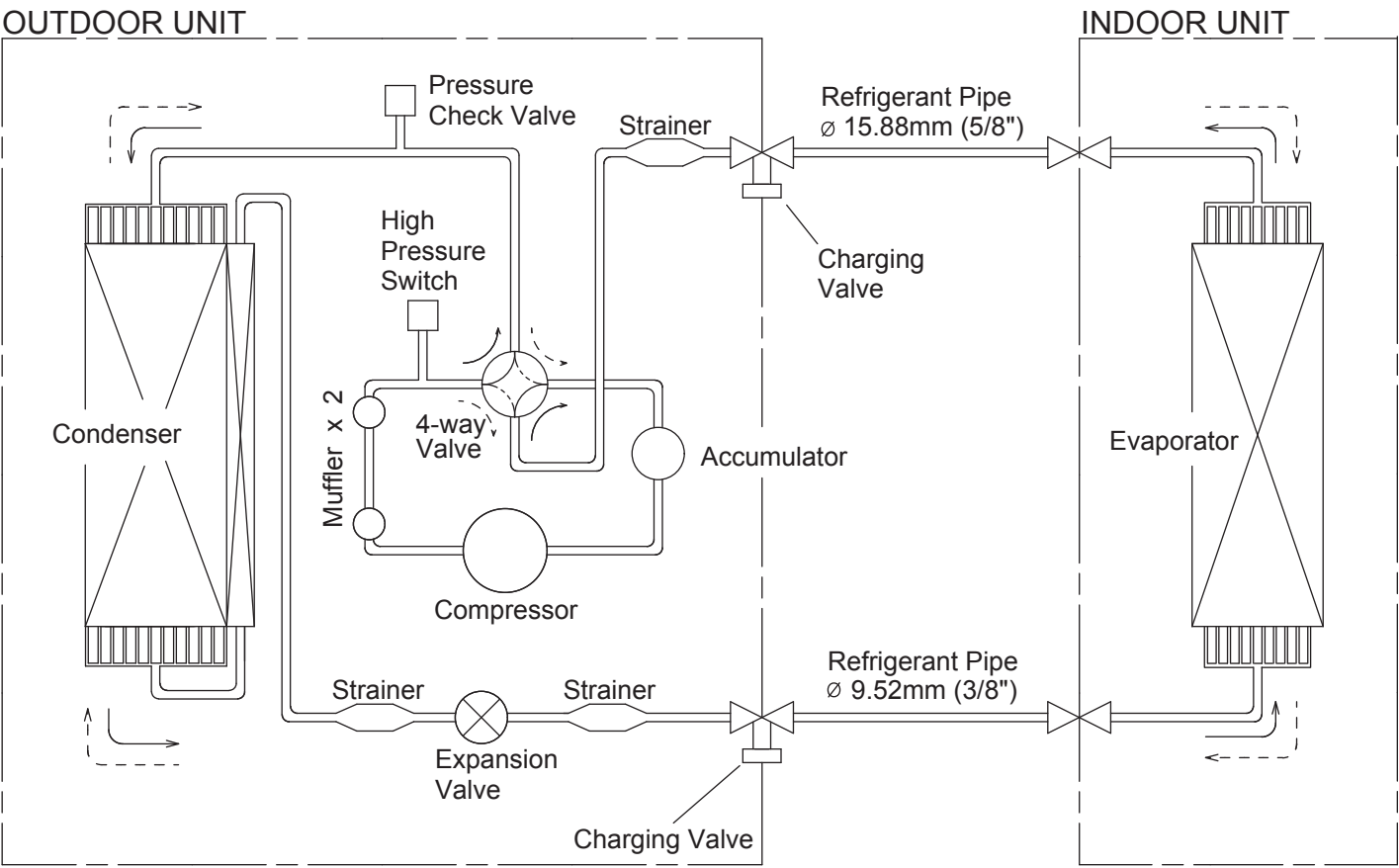


OUTDOOR UNIT

(Unit : mm)



REFRIGERANT SYSTEM DIAGRAM



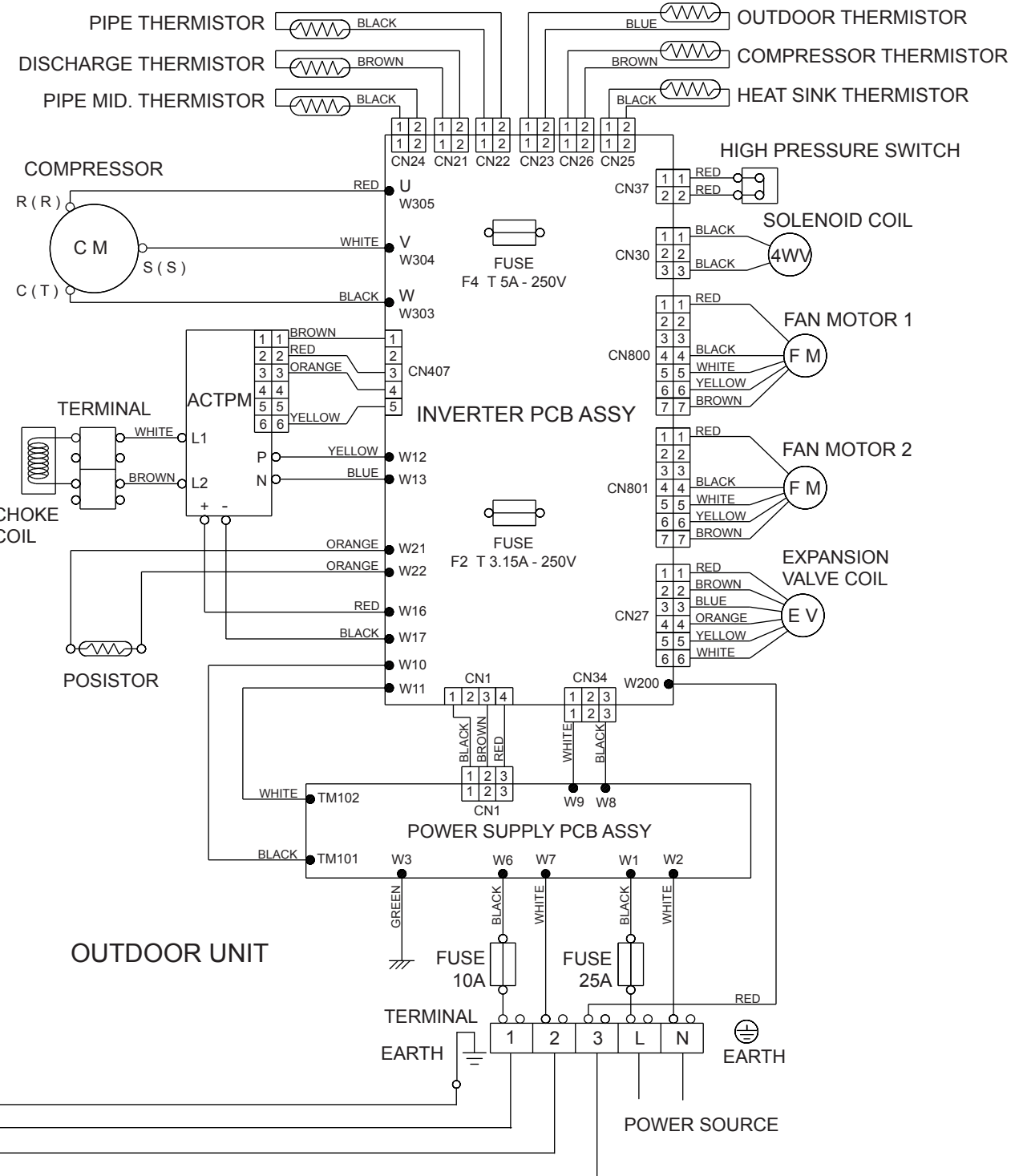
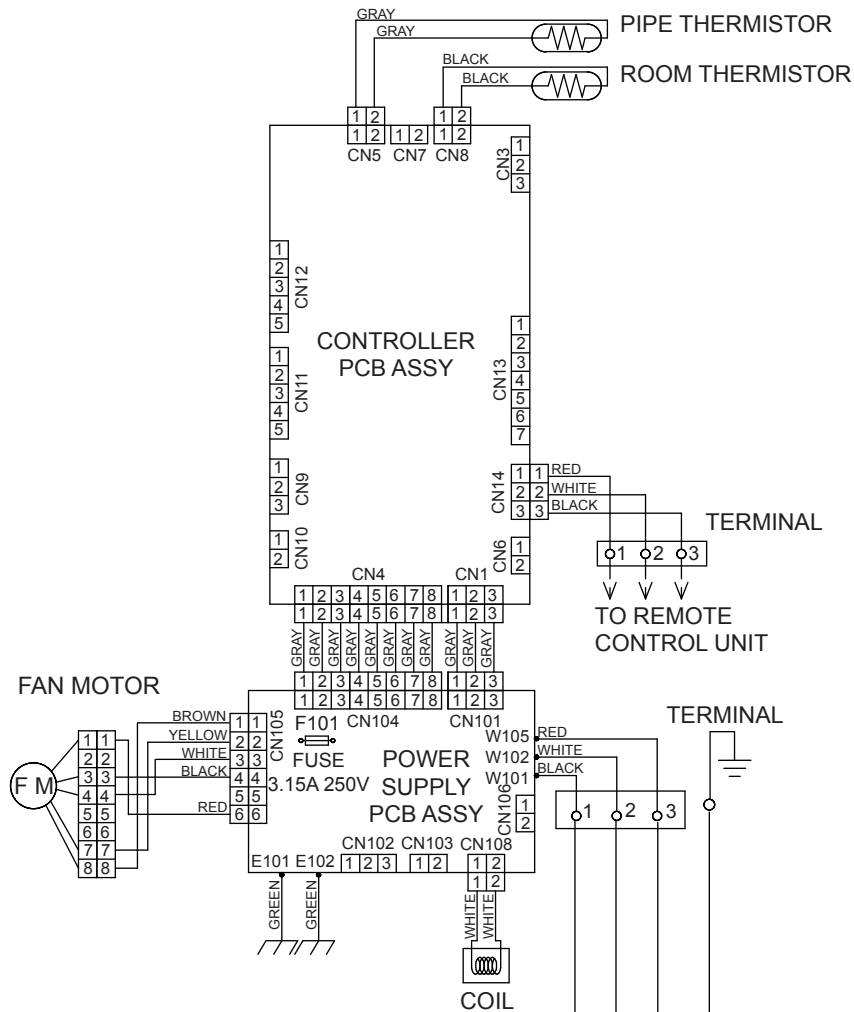
Refrigerant direction

—> : Cool

- - -> : Heat

CIRCUIT DIAGRAM

INDOOR UNIT



PCB Circuit Diagrams

not available at time of publication

ERROR DETECTION

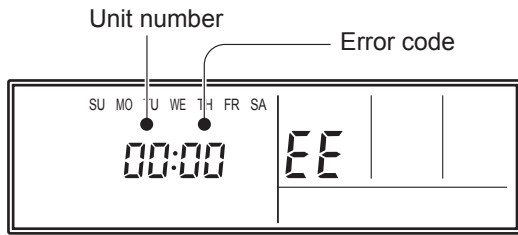
REMOTE CONTROL

Troubleshooting at the remote control LCD

This is possible only on the wired remote control.

Self-diagnosis

If an error occurs, the following display will be shown.
("EE" will appear in the set room temperature display.)



Ex. Self-diagnosis

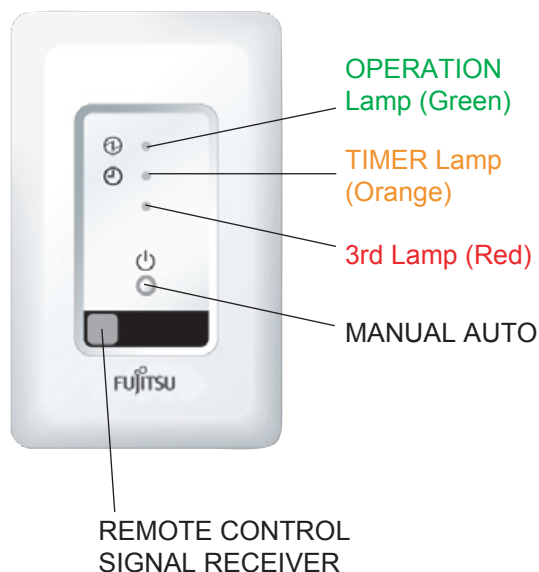
If "CO" appears in the unit number display, there is a remote control error. Refer to the installation instruction sheet included with the remote control.

Error code	Error contents
01 13 26 27	Indoor signal error
00	Wired remote controller abnormal
02	Indoor room temperature sensor error
04	Indoor heat exchanger temperature sensor (middle) error
28	Indoor heat exchanger temperature sensor (inlet) error
09	Float switch operated
0c	Outdoor discharge pipe temperature sensor error
06	Outdoor heat exchanger temperature sensor (outlet) error
0A	Outdoor temperature sensor error
0E	Heat sink thermistor (Inverter) error
15	Compressor temperature sensor error
1d	2-way valve temperature sensor error
1E	3-way valve temperature sensor error
29	Outdoor heat exchanger temperature sensor (middle) error
2d	Heat sink thermistor (P.F.C.) error
20	Indoor manual auto switch abnormal
2A	Power supply frequency detection error
17	IPM protection
18	CT error
1A	Compressor location error
1b	Outdoor fan error
1F	Connected indoor unit abnormal
1c	Outdoor unit computer communication error
2E	Inverter error
12	Indoor fan abnormal
0F	Discharge temperature error
24	Excessive high pressure protection on cooling
2c	4-way valve abnormal
16	Pressure switch abnormal, Pressure sensor abnormal
2b	Compressor temperature error
2F	Low pressure error
19	Active filter abnormal
25	P.F.C. circuit error
30	Refrigerant circuit address set-up error
31	Master unit, Slave unit set-up error
32	Connected the indoor number set-up error
33	P.F.C PCB error

INDOOR UNIT (Option)

Troubleshooting with the receiver unit display

Error is displayed on the wired and wireless remote control.



Lamps show error contents by flashing as follows.

OPERATION Lamp	TIMER Lamp	FILTER Lamp	Error contents
off	2 times	off	Indoor signal error
off	3 times	off	
off	4 times	off	
off	5 times	off	
off	8 times	off	Wired remote control abnormal
2 times	2 times	off	Indoor room temperature sensor error
2 times	3 times	off	Indoor heat exchanger temperature sensor (middle) error
2 times	4 times	off	Indoor heat exchanger temperature sensor (inlet) error
2 times	6 times	off	Float switch operated
3 times	2 times	off	Outdoor discharge pipe temperature sensor error
3 times	3 times	off	Outdoor heat exchanger temperature sensor (outlet) error
3 times	4 times	off	Outdoor temperature sensor error
3 times	7 times	off	Heat sink thermistor (Inverter) error
3 times	8 times	off	Compressor temperature sensor error
3 times	off	2 times	2-way valve temperature sensor error
3 times	off	3 times	3-way valve temperature sensor error
3 times	off	4 times	Outdoor heat exchanger temperature sensor (middle) error
3 times	off	5 times	Heat sink thermistor (P.F.C.) error
4 times	2 times	off	Indoor manual auto switch abnormal
4 times	4 times	off	Power supply frequency detection error
5 times	2 times	off	IPM protection
5 times	3 times	off	CT error
5 times	5 times	off	Compressor location error
5 times	6 times	off	Outdoor fan error
5 times	7 times	off	Connected indoor unit abnormal
5 times	8 times	off	Outdoor unit computer communication error
5 times	off	2 times	Inverter error
6 times	2 or 3 times	off	Indoor fan abnormal
7 times	2 times	off	Discharge temperature error
7 times	3 times	off	Excessive high pressure protection on cooling
7 times	4 times	off	4-way valve abnormal
7 times	5 times	off	Pressure switch abnormal, Pressure sensor abnormal
7 times	6 times	off	Compressor temperature error
7 times	7 times	off	Low pressure error
8 times	2 or 3 times	off	Active filter abnormal
8 times	4 times	off	P.F.C. circuit error
8 times	6 times	off	P.F.C. PCB error
9 times	2 times	off	Refrigerant circuit address set-up error
9 times	3 times	off	Master unit, Slave unit set-up error
9 times	4 times	off	Connected indoor number set-up error

Flash means "0.5 second on / 0.5 second off".

OUTDOOR UNIT

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

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 (outlet) sensor
4 flash	Outdoor temperature sensor
5 flash	Outdoor heat exchanger temperature (mid) sensor
6 flash	Discharge pipe temperature abnormal
7 flash	Compressor temperature sensor
8 flash	Heat sink temperature sensor
9 flash	Pressure switch abnormal
10 flash	Compressor temperature 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 repeat	Protect operation
1 sec. on/ 1 sec. off repeat	Pump down operation
off	No error

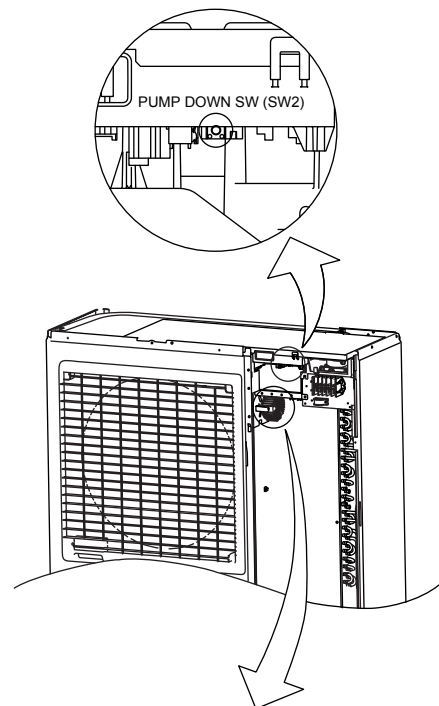
SPECIAL INSTALLATION SETTING

PUMP DOWN (Refrigerant collecting operation)

Perform the following procedures to collect the refrigerant when moving the indoor unit or 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 starts flashing.) (1 sec. on / 1 sec. off repeated)
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 starts flashing (1 sec. on / 1 sec. off repeated), and operation stops. At this point, recovery has not been completed, so do not close the three-way valves. (liquid and gas)
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.

⚠ DANGER

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

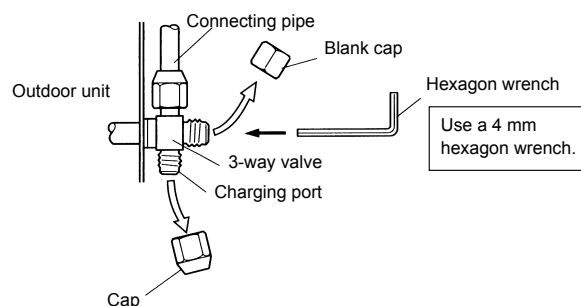
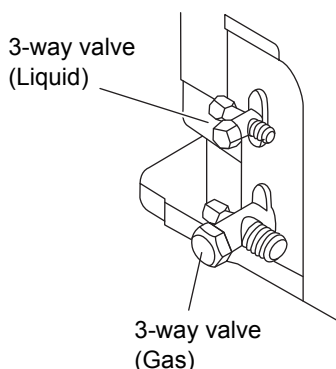
*When the pump down operation is repeated, temporarily disconnect the power supply after opening the closed valves (both liquid and gas).

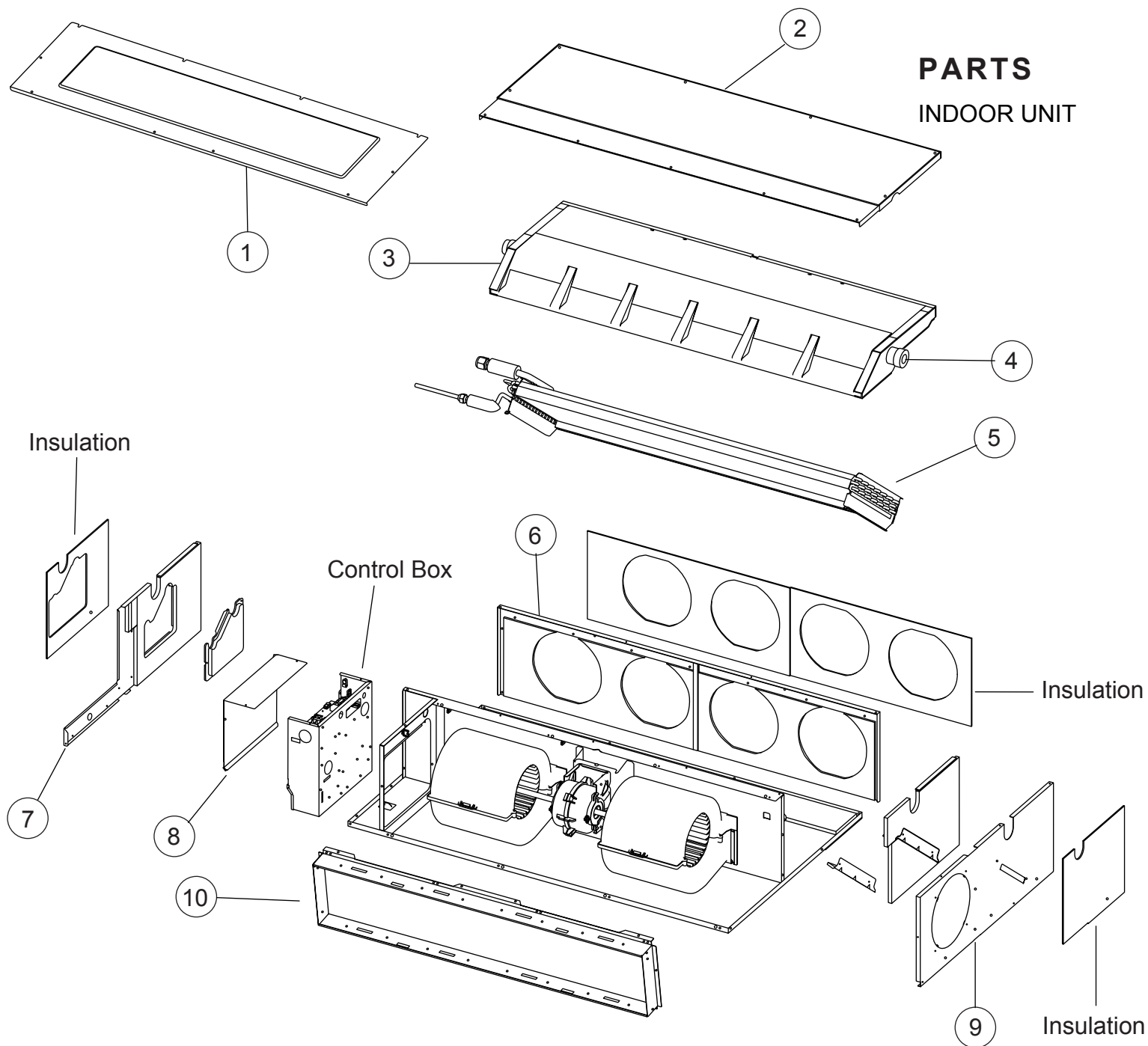
Reconnect the power supply after 2 - 3 minutes and perform the pump down operation.

*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.

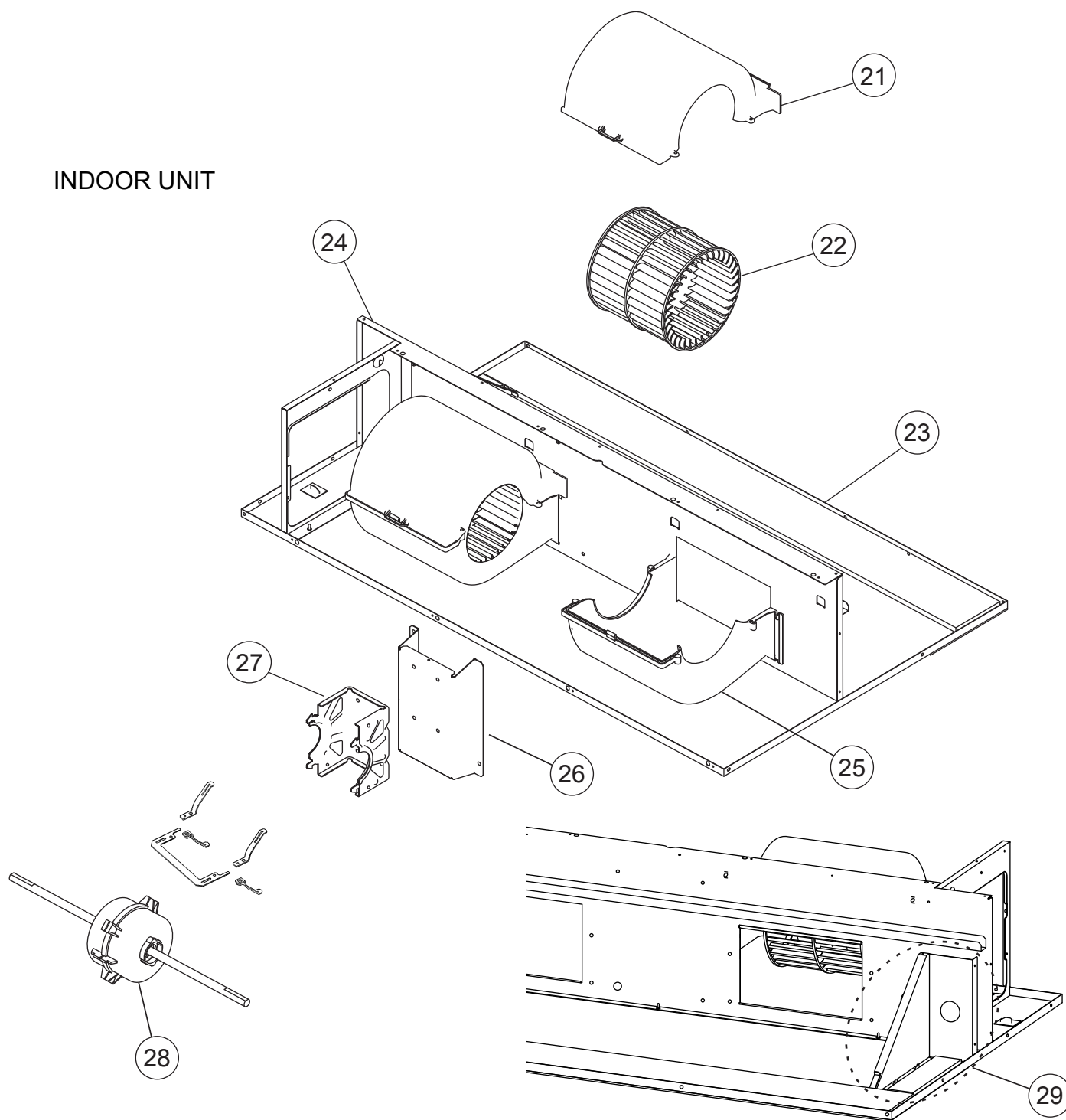
		Tightening torque
Blank cap	6.35 mm (1/4 in.)	20 to 25 N-m (200 to 250 kgf-cm)
	9.52 mm (3/8 in.)	20 to 25 N-m (200 to 250 kgf-cm)
	12.70 mm (1/2 in.)	25 to 30 N-m (250 to 300 kgf-cm)
	15.88 mm (5/8 in.)	30 to 35 N-m (300 to 350 kgf-cm)
	19.05 mm (3/4 in.)	35 to 40 N-m (350 to 400 kgf-cm)
Charging port cap		10 to 12 N-m (100 to 120 kgf-cm)
Spindle (Hexagon wrench)		6 to 7 N-m (60 to 70 kgf-cm)





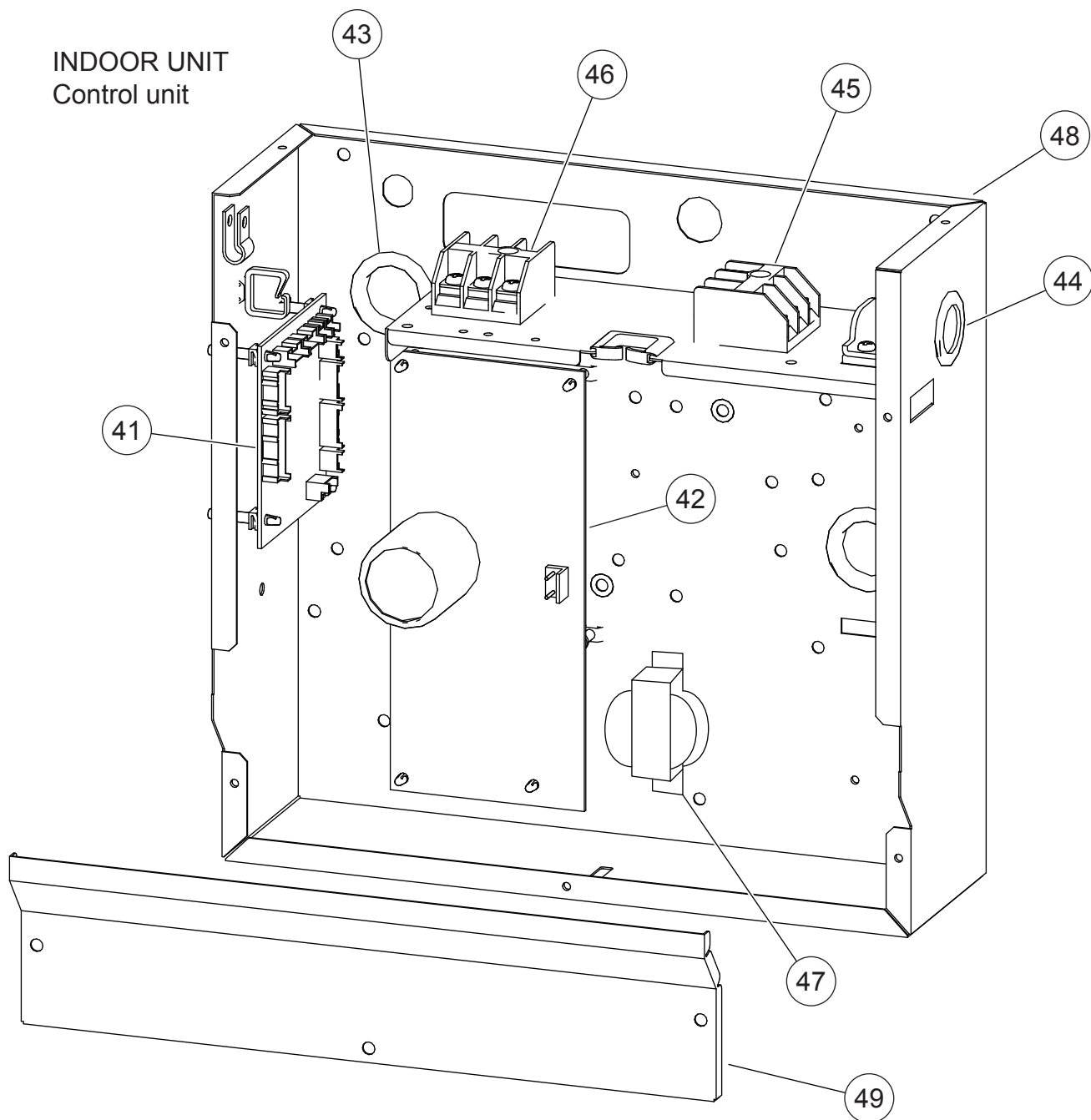
Ref.	Description	Part number
1	Intake Cover Sub Assy	9374512010
2	Main Panel Sub Assy	9374511013
3	Drain Pan Sub Assy	9374513017
4	Drain Cap	9356541007
5	Evaporator Assy	9372585047
6	Outlet Panel Sub Assy	9374510016
7	Cabinet R Sub Assy	9374508020
8	Control Cover A Sub Assy	9374516018
9	Cabinet L Sub Assy	9374509010
10	Intake Frame Assy	9374216017
--	Distributor Assy	9371325385
--	Coupling Pipe Assy	9373038283
--	Seal Panel Sub Assy	9374515011
--	Bracket Pipe Sub Assy	9374514014
--	Thermo Holder Pipe	313714262805
--	Thermistor Spring A	313728262708

INDOOR UNIT



Ref.	Description	Part number	
21	Casing B	9374234011	
22	Sirocco Fan Assy	9356531046	
23	Base Sub Assy	9374504015	
24	Separate Wall Assy	9374228010	
25	Casing A	9374233014	
26	Bracket Motor Assy	9374230013	
27	Motor Mount	9378002012	
28	Fan Motor	9602466016	
29	Bracket (Eva) R	9374207015	
--	Bracket (Eva) L	9374208012	
--	Panel (Control Box)	9374210015	
--	Cap (Power)	9352173011	
--	Motor Band	9378031012	

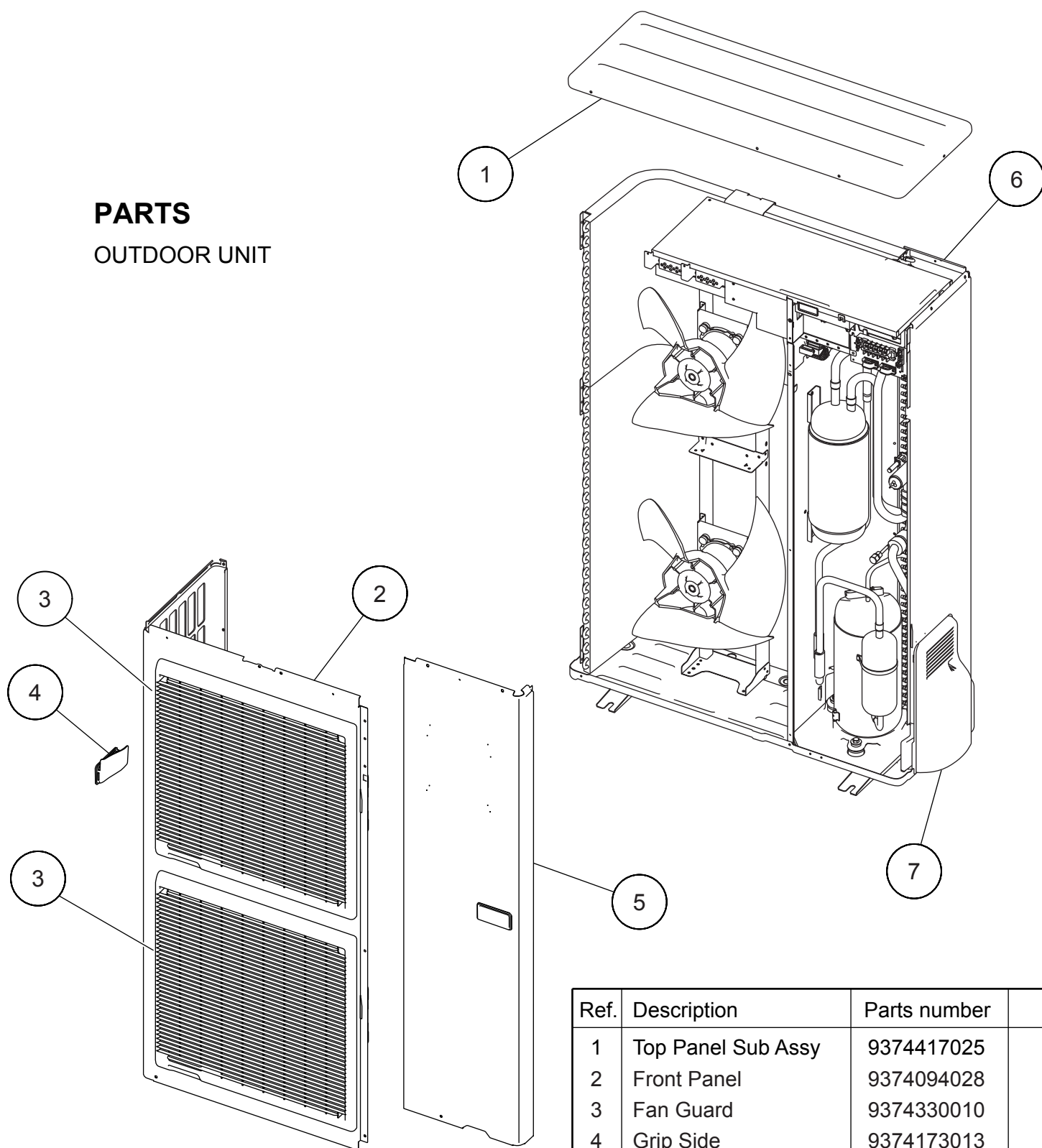
INDOOR UNIT
Control unit



Ref.	Description	Part number	
41	Controller PCB Assy	9707393477	
42	Power Supply PCB Assy	9707398151	
43	Cap (Power)	9352173011	
44	One Touch Bush	9374407019	
45	Terminal 3P	9703345012	
46	Terminal 3P	9306489045	
47	Reactor Assy	9707457018	
48	Control Box A	9374219018	
49	Control Cover B	9374222018	
--	Control Box B	9374220014	
--	Room Thermistor	9703299025	
--	Pipe Thermistor	9703297021	
--	Remote Control	9372266199	
--	Wire Assembly	9372714010	

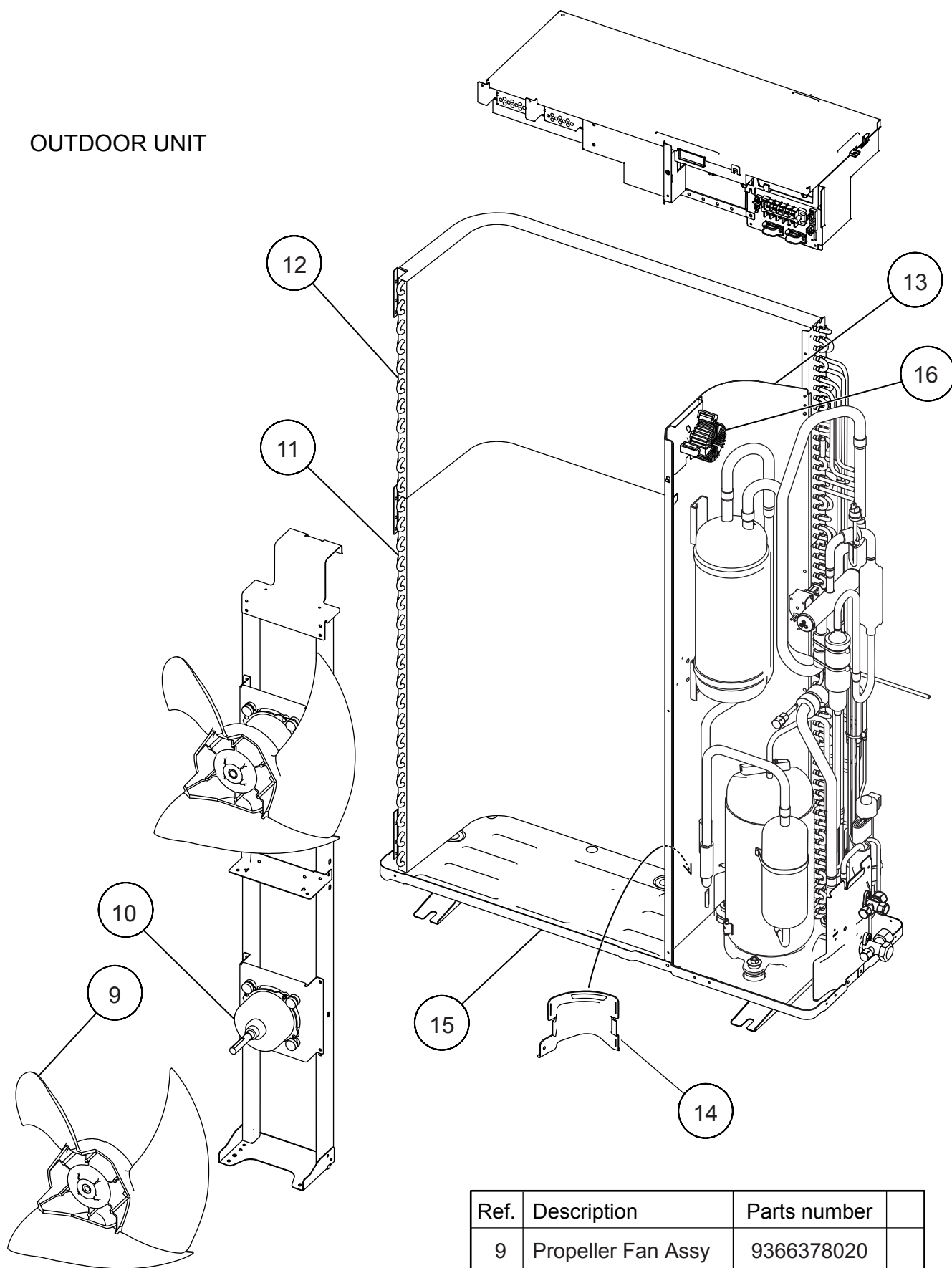
PARTS

OUTDOOR UNIT



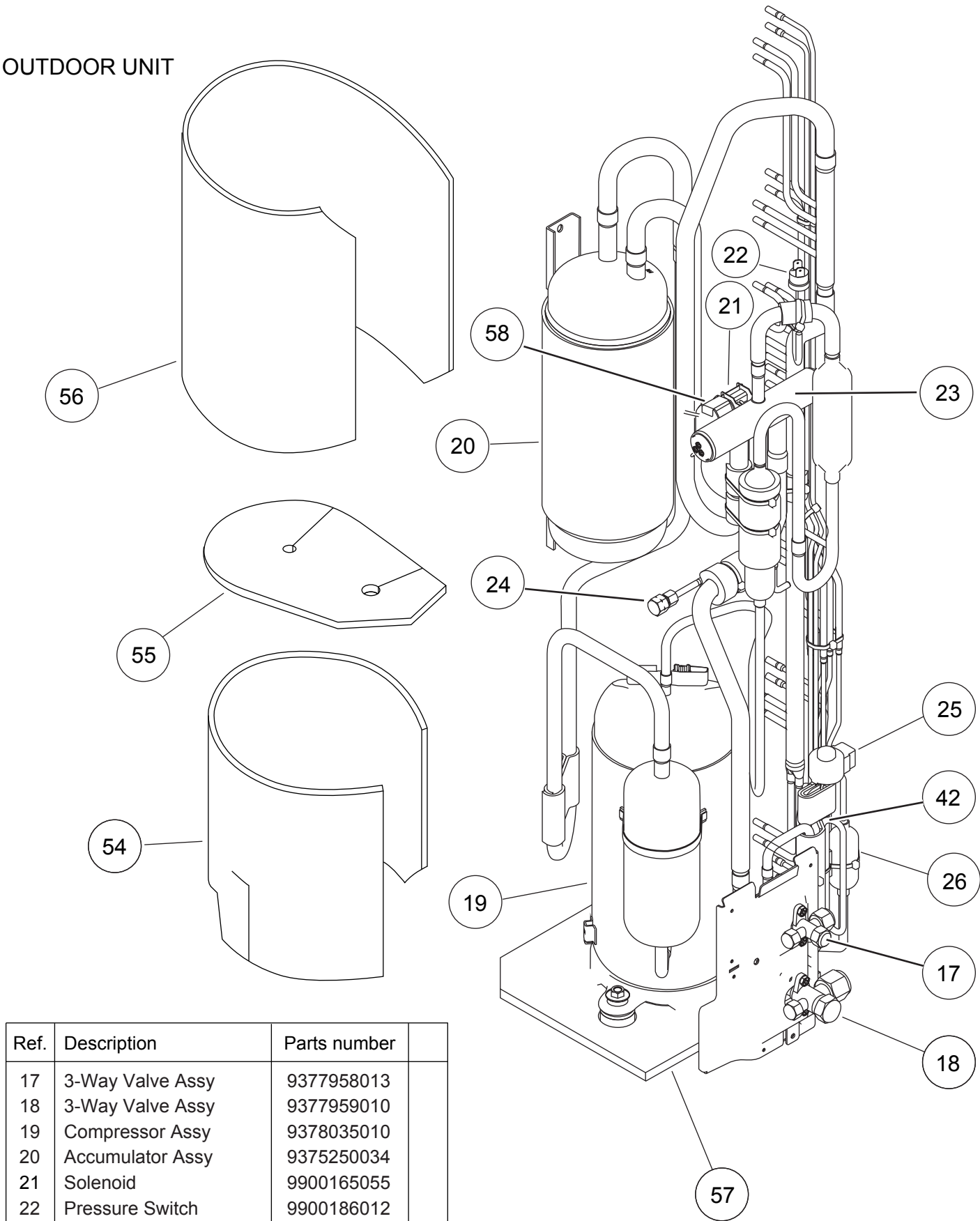
Ref.	Description	Parts number	
1	Top Panel Sub Assy	9374417025	
2	Front Panel	9374094028	
3	Fan Guard	9374330010	
4	Grip Side	9374173013	
5	Service Panel Sub Assy	9374415069	
6	Right Panel Sub Assy	9374416141	
7	Valve Cover	9374174010	
--	Emblem Rear	9351355005	

OUTDOOR UNIT



Ref.	Description	Parts number	
9	Propeller Fan Assy	9366378020	
10	Motor DC Brushless	9602843015	
11	Condenser A Assy	9374433018	
12	Condenser B Assy	9374434015	
13	Separate Wall	9374629015	
14	Cap Foot	9374345014	
15	Base Assy	9374166046	
16	Coil Choke	9703458019	

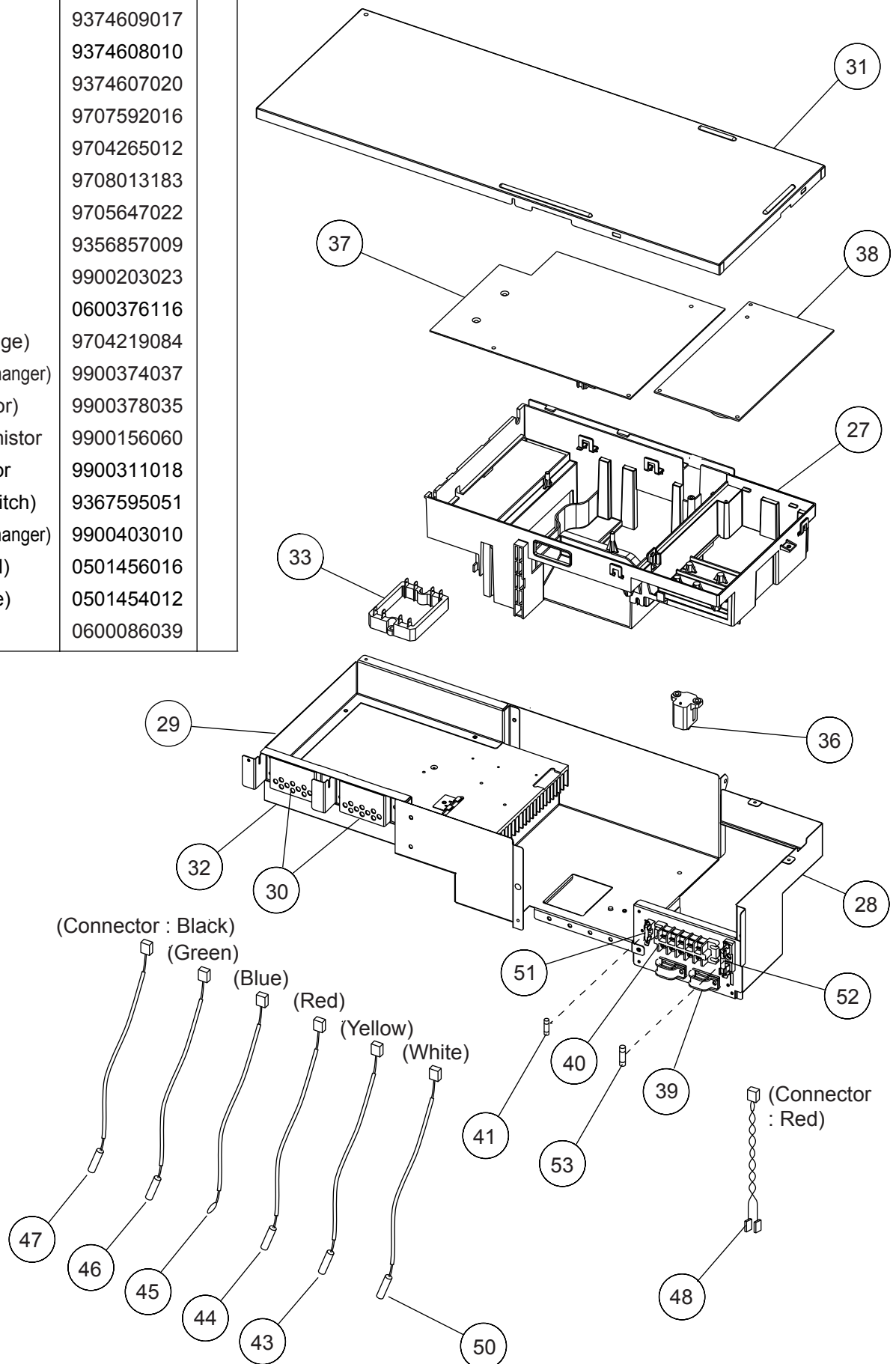
OUTDOOR UNIT



Ref.	Description	Parts number	
17	3-Way Valve Assy	9377958013	
18	3-Way Valve Assy	9377959010	
19	Compressor Assy	9378035010	
20	Accumulator Assy	9375250034	
21	Solenoid	9900165055	
22	Pressure Switch	9900186012	
23	4-Way Valve	9970035029	
24	Check Valve Assy	9374274017	
25	Coil (Expansion Valve)	9900197025	
26	Strainer Assy	9372524039	
42	Expansion Valve Assy	9370947175	
54	Compressor Cover A	9374430109	
55	Compressor Cover B	9374431106	
56	Compressor Cover C	9372067086	
57	Compressor Cover D	9375382025	
58	Solenoid	9900165055	

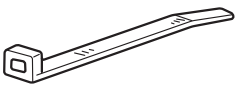
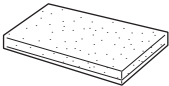
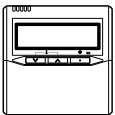
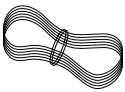
Ref.	Description	Parts number
27	Inverter Box A	9374603015
28	Inverter Box B	9374625017
29	Inverter Box C	9374605026
30	Inverter Box Duct	9374609017
31	Inverter Box Cover	9374608010
32	Heat Sink B	9374607020
33	ACTPM	9707592016
36	Posistor	9704265012
37	Inverter PCB Assy	9708013183
38	Power PCB Assy	9705647022
39	Clamp (Cord)	9356857009
40	Terminal	9900203023
41	Fuse (Small)	0600376116
43	Thermistor (Dischage)	9704219084
44	Thermistor (Heat Exchanger)	9900374037
45	Thermistor (Outdoor)	9900378035
46	Compressor Thermistor	9900156060
47	Heatsink Thermistor	9900311018
48	Wire (Pressure Switch)	9367595051
50	Thermistor (Heat Exchanger)	9900403010
51	Fuse Holder (Small)	0501456016
52	Fuse Holder (Large)	0501454012
53	Fuse (Large)	0600086039

OUTDOOR UNIT

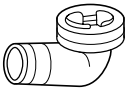
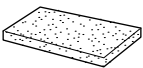


ACCESSORIES

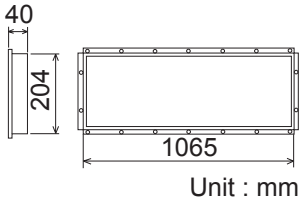
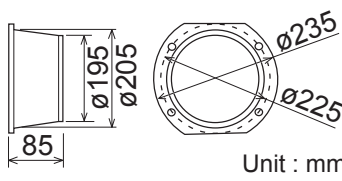
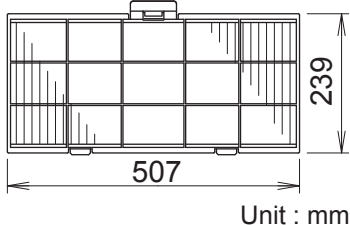
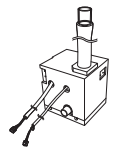
INDOOR UNIT

Name and Shape	Q'ty	Application	Part number
Hanger 	4	For suspending the indoor unit from ceiling	9356563009
Special nut A (large flange) 	4		313005446653
Special nut B (small flange) 	4		313005446759
Coupler heat insulation (large) 	1	For indoor side pipe joint (large pipe)	9378173569
Coupler heat insulation (small) 	1	For indoor side pipe joint (small pipe)	9378173521
Binder 	1	(large) For fixing the drain hose	312300787605
	1	(small) Fixing the remote cord	313361275805
Drain hose insulation 	1	Insulates the drain hose and vinyl hose	313806217708
Remote control 	1	For air conditioner operation	9372266199
Remote control cord (*1) 	1	For connecting the remote control	9372714010
Tapping screw (ø4 × 16) 	2	For installing the remote control	0700181108

OUTDOOR UNIT

Name and Shape	Q'ty	Application	Part number
Drain pipe 	1	For outdoor unit drain piping work	9303029015
Drain cap 	2		313166024302
Installation (seal) 	1	For filling in a gap at the entrance of connection cords	9374756018

OPTIONAL PARTS

Exterior	Parts name	Model No.	Summary
 Unit : mm	Square flang	UTD-SF045T	
 Unit : mm	Round flang	UTD-RF204	
 Unit : mm	Long-life filte	UTD-LF25NA	
	Remote sensor	UTD-RS100	New amen- ity space can be offered by installing the Remote sensor in the remote controller
	External control set	UTD-ECS5A	
	Drain pump unit	UTZ-PX1NBA	
	Receiver unit	UTY-LRHY1	

0902G3601