

SPLIT TYPE  
AIR CONDITIONER  
CEILING TYPE (50Hz)

# SERVICE MANUAL



Indoor unit	Outdoor unit
ABYA30LBT	AOYA30LBTL
ABYA36LBT	AOYA36LBTL

## CONTENTS

SPECIFICATIONS.....	1
DIMENSIONS .....	2
REFRIGERANT SYSTEM DIAGRAM.....	4
CIRCUIT DIAGRAM.....	5
INDOOR PCB CIRCUIT DIAGRAM.....	6
OUTDOOR PCB CIRCUIT DIAGRAM.....	10
ERROR CONTENTS .....	15
PARTS (INDOOR UNIT).....	18
PARTS (OUTDOOR UNIT).....	23
ACCESSORIES.....	27

# SPECIFICATIONS

## ELECTRICAL DATA

TYPE		Cooling & Heating	
INDOOR UNIT		ABYA30LBT	ABYA36LBT
OUTDOOR UNIT		AOYA30LBTL	AOYA36LBTL
COOLING CAPACITY		8.5 kW	9.4 kW
HEATING CAPACITY		10.0 kW	11.2 kW
POWER SOURCE		230 V 50 Hz	230 V 50 Hz
RUNNING CURRENT	Cooling	11.6 A	12.8 A
	Heating	12.1 A	13.2 A
INPUT WATTS	Cooling	2.65 kW	2.93 kW
	Heating	2.77 kW	3.02 kW
E.E.R.	Cooling	3.21 kW/kW	3.21 kW/kW
	Heating	3.61 kW/kW	3.71 kW/kW
STARTING CURRENT		15 A	15 A
MOISTURE REMOVAL		2.5 L/hr	3.0 L/hr
AIRCIRCULATION INDOOR		1,660 m3/hr	1,900 m3/hr
AIRCIRCULATION OUTDOOR		3,600 m3/hr	4,000 m3/hr
MAXIMUM CURRENT		17.0 A	20.0 A

## COMPRESSOR AND REFRIGERANT

COMPRESSOR TYPE		Hermetic type, Inverter, 4 poles, 3 phase, DC motor, Twin Rotary	
DISCRIMINATION		5KD240XAD21	
WEIGHT (with oil)		16.3 kg	
STANDARD REFRIGERANT		2,100 g	
REFRIGERANT TYPE		R410A	
MAX PIPE LENGTH		50 m	
MAX PIPE HEIGHT		30 m	
FULL CHARGE	Pipe length	20 m	2,100 g
		30 m	2,500 g
		40 m	2,900 g
		50 m	3,300 g
ADDITIONAL CHARGE		40 g/m	

## FAN SPEED

INDOOR UNIT	Discrimination	MFH-45RV	MFH-45RV
	High speed	1,000 r.p.m.	1,100 r.p.m.
	Med speed	910 r.p.m.	910 r.p.m.
	Low speed	750 r.p.m.	750 r.p.m.
	Quiet	650 r.p.m.	650 r.p.m.
OUTDOOR UNIT	Discrimination	MFE-36TV	MFE-36TV
	Speed	850 r.p.m.	950 r.p.m.

## NOISE LEVEL

INDOOR UNIT	High speed	45 dB	47 dB
	Med speed	43 dB	43 dB
	Low speed	37 dB	37 dB
	Quiet	32 dB	32 dB
OUTDOOR UNIT	Cooling	53 dB	54 dB
	Heating	55 dB	55 dB

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

## DIMENSIONS

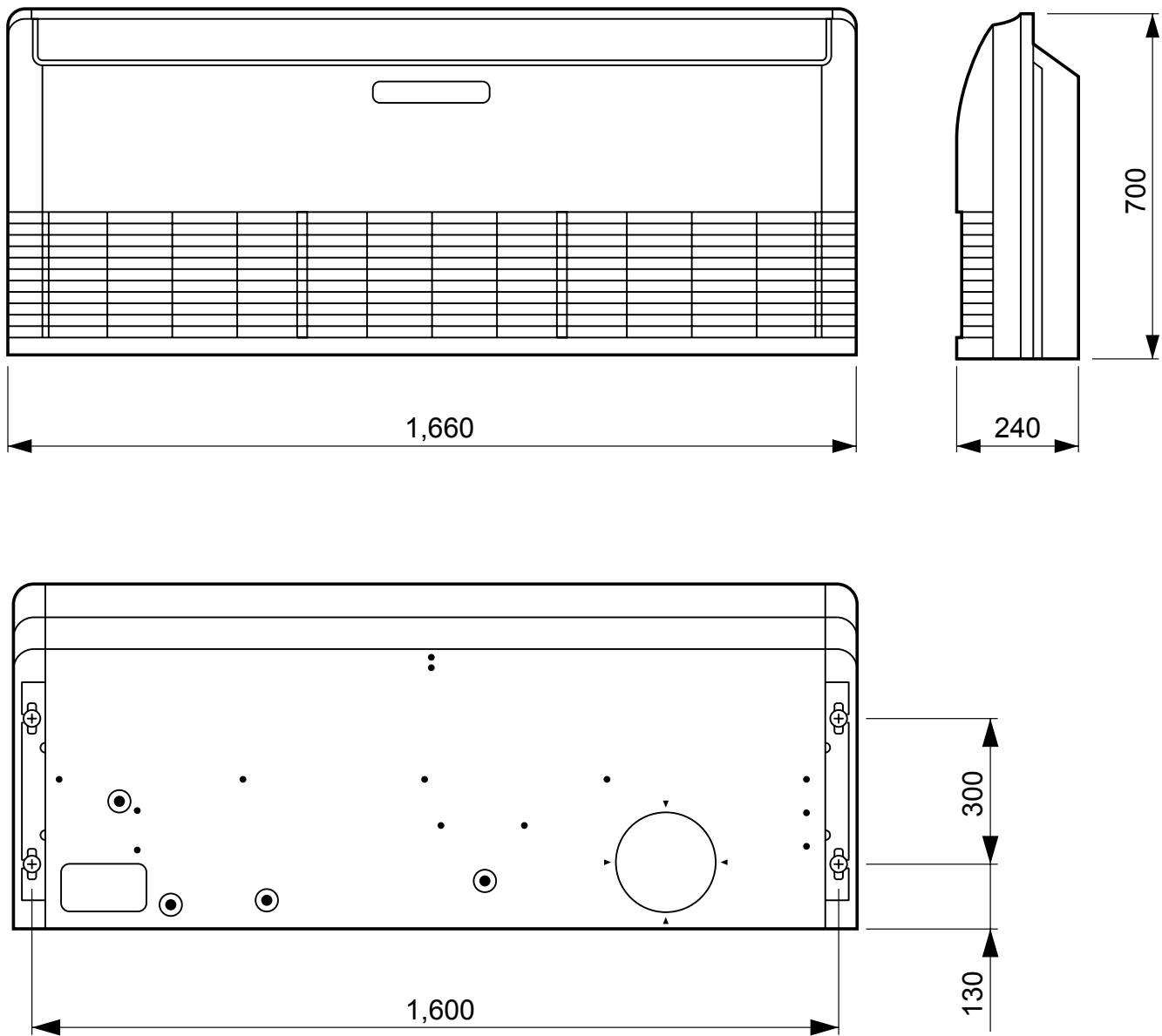
INDOOR UNIT	H x W x D	240 x 1,660 x 700 mm
OUTDOOR UNIT	H x W x D	830 x 900 x 330 mm

## WEIGHT

INDOOR UNIT	Gross / Net	58 kg / 46 kg
OUTDOOR UNIT	Gross / Net	70 kg / 62 kg

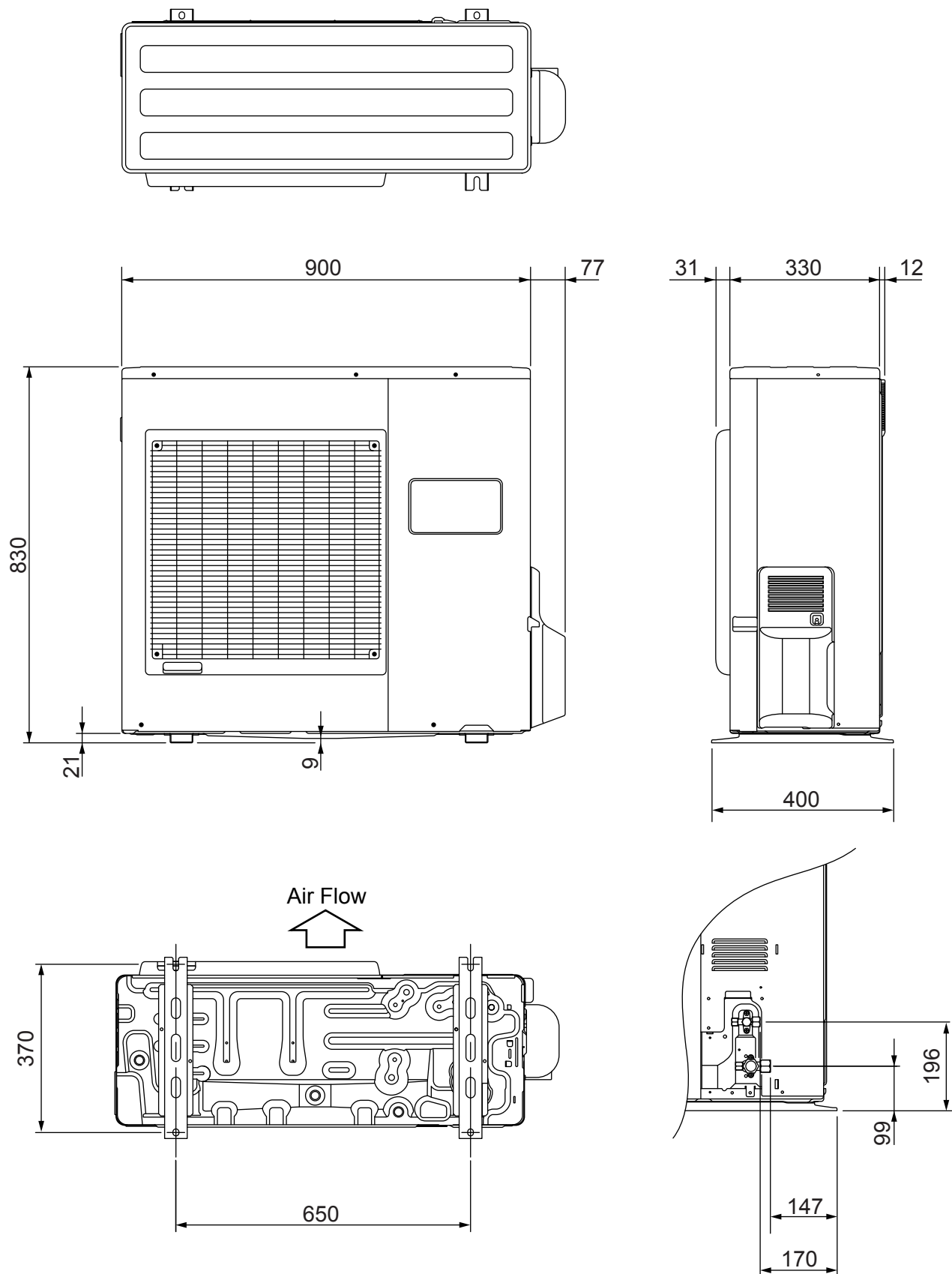
DIMENSIONS

INDOOR UNIT  
(Unit : mm)



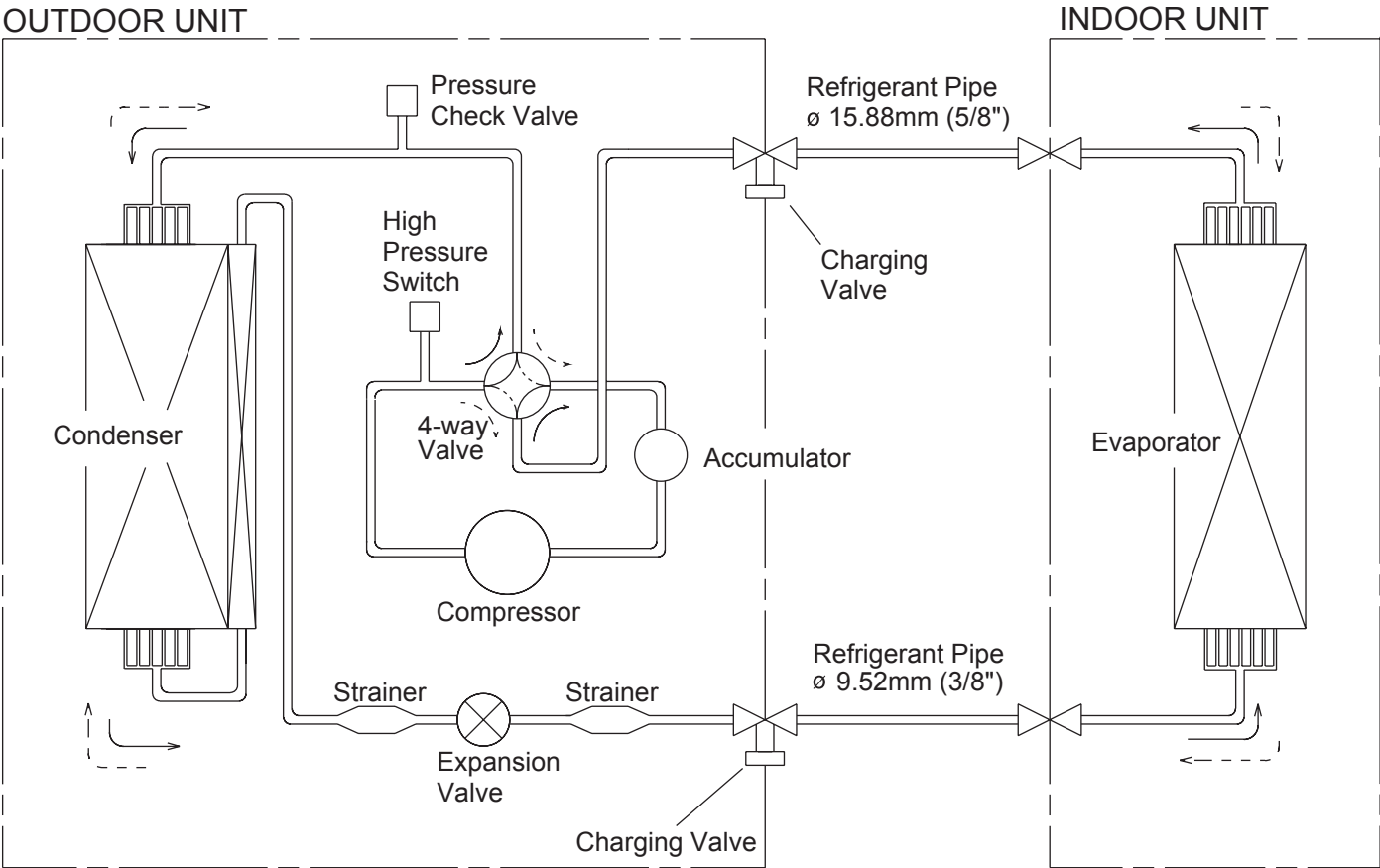
# OUTDOOR UNIT

(Unit : mm)



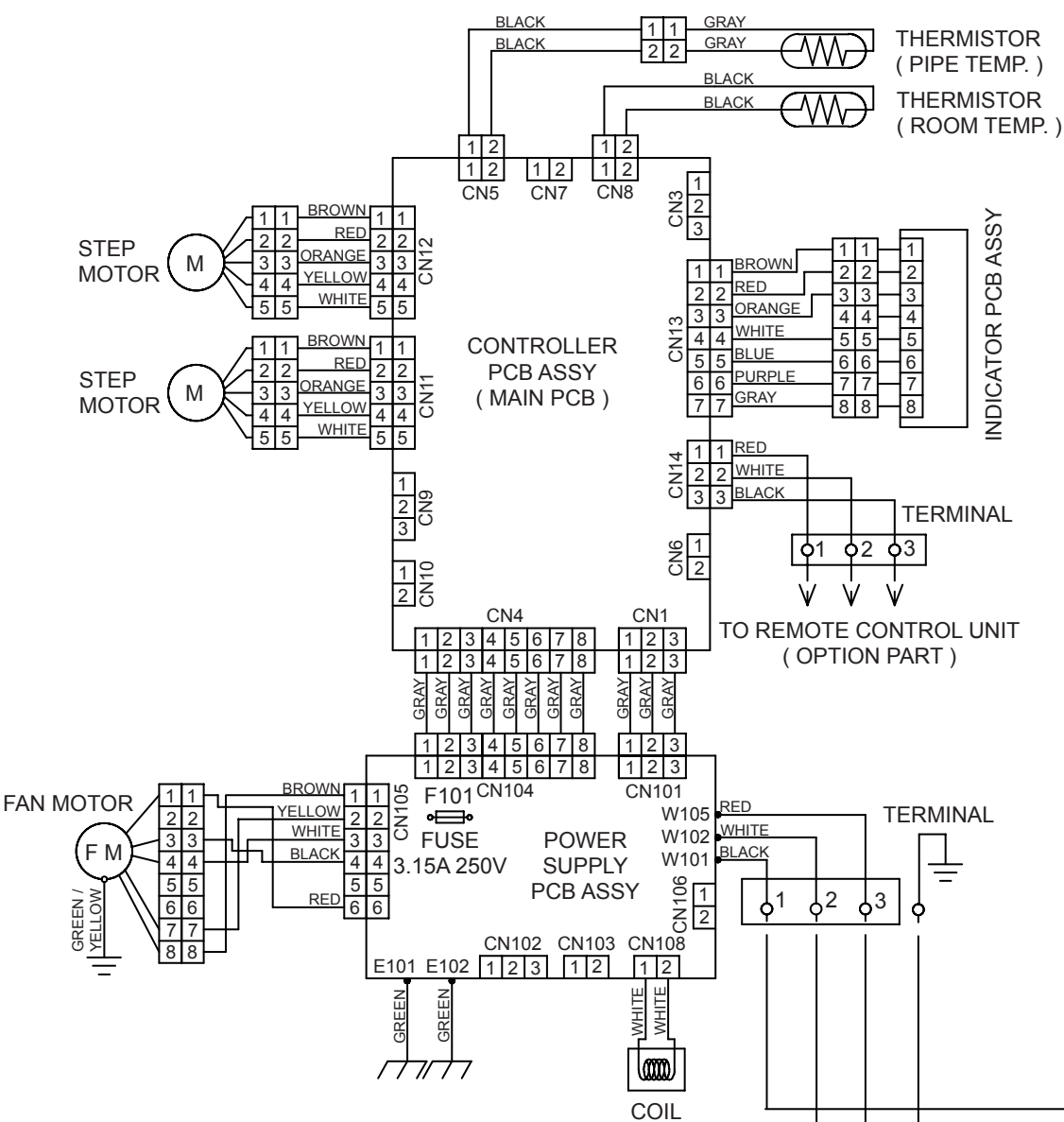
REFRIGERANT SYSTEM DIAGRAM

Refrigerant direction  
——> : Cool  
---> : Heat

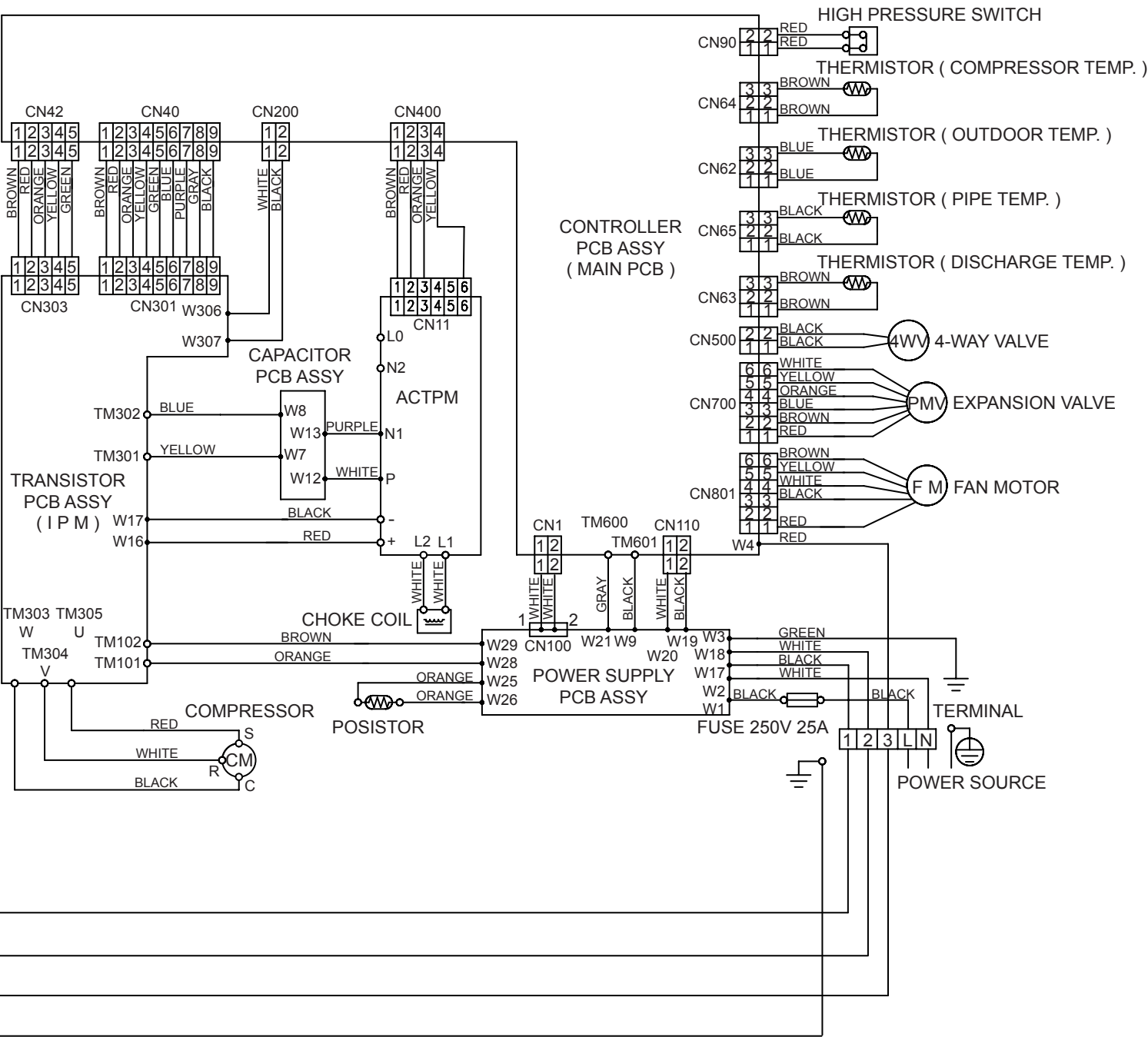


CIRCUIT DIAGRAM

INDOOR UNIT



OUTDOOR UNIT



# **PCB Circuit Diagrams**

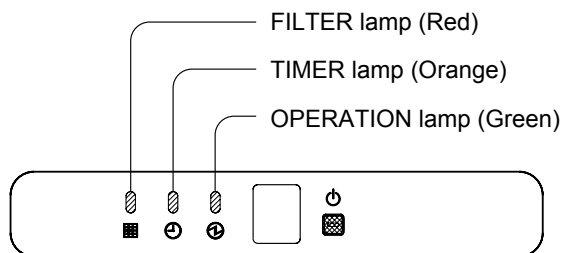
not available at time of publication

# ERROR CONTENTS

## INDOOR UNIT

(Troubleshooting with the indoor display)

Troubleshooting at the display is possible either on the wired or wireless remote control.



The OPERATION, TIMER and FILTER lamps operate according to the following error contents.

Error contents	OPERATION lamp (Green)	TIMER lamp (Orange)	FILTER lamp (Red)
Indoor signal error	×	○	×
Wired remote controller abnormal	×	(8 times) ○	×
Indoor room temperature sensor error	(2 times) ○	(2 times) ○	×
Indoor heat exchanger temperature sensor (middle) error	(2 times) ○	(3 times) ○	×
Indoor heat exchanger temperature sensor (inlet) error	(2 times) ○	(4 times) ○	×
Float switch operated	(2 times) ○	(6 times) ○	×
Outdoor discharge pipe temperature sensor error	(3 times) ○	(2 times) ○	×
Outdoor heat exchanger temperature sensor (outlet) error	(3 times) ○	(3 times) ○	×
Outdoor temperature sensor error	(3 times) ○	(4 times) ○	×
Heatsink thermistor error	(3 times) ○	(7 times) ○	×
Compressor temperature sensor error	(3 times) ○	(8 times) ○	×
2-way valve temperature sensor error	(3 times) ○	×	(2 times) ○
3-way valve temperature sensor error	(3 times) ○	×	(3 times) ○
Outdoor heat exchanger temperature sensor (middle) error	(3 times) ○	×	(4 times) ○
Indoor manual auto switch abnormal	(4 times) ○	(2 times) ○	×
Power supply frequency detection error	(4 times) ○	(4 times) ○	×
IPM protection	(5 times) ○	(2 times) ○	×
CT error	(5 times) ○	(3 times) ○	×
Compressor location error	(5 times) ○	(5 times) ○	×
Outdoor fan error	(5 times) ○	(6 times) ○	×
Connected indoor unit abnormal	(5 times) ○	(7 times) ○	×
Outdoor unit computer communication error	(5 times) ○	(8 times) ○	×
Indoor fan abnormal	(6 times) ○	(2 or 3 times) ○	×
Discharge temperature error	(7 times) ○	(2 times) ○	×
Excessive high pressure protection on cooling	(7 times) ○	(3 times) ○	×
4-way valve abnormal	(7 times) ○	(4 times) ○	×
Pressure switch abnormal	(7 times) ○	(5 times) ○	×
Compressor temperature error	(7 times) ○	(6 times) ○	×
Active filter abnormal	(8 times) ○	(2 or 3 times) ○	×
PFC circuit error	(8 times) ○	(4 times) ○	×

○: 0.5s ON/0.5s OFF (Flash)    ×: OFF



## TROUBLESHOOTING AT THE REMOTE CONTROL LCD

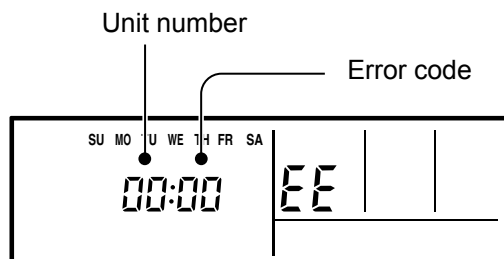
You will find this on the wired remote control LCD. (option)

If an error occurs, the following display will be shown.

("EE" will appear in the set room temperature display.)

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	Serial reverse transfer error
13	Serial forward transfer error
26	Communication error ( Main PCB → Display PCB )
27	Communication error ( Display PCB → Main PCB )
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
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
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
12	Indoor fan abnormal
0F	Discharge temperature error
24	Excessive high pressure protection on cooling
2c	4-way valve abnormal
16	Pressure switch abnormal
2b	Compressor temperature error
19	Active filter abnormal
25	PFC circuit error

## 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.

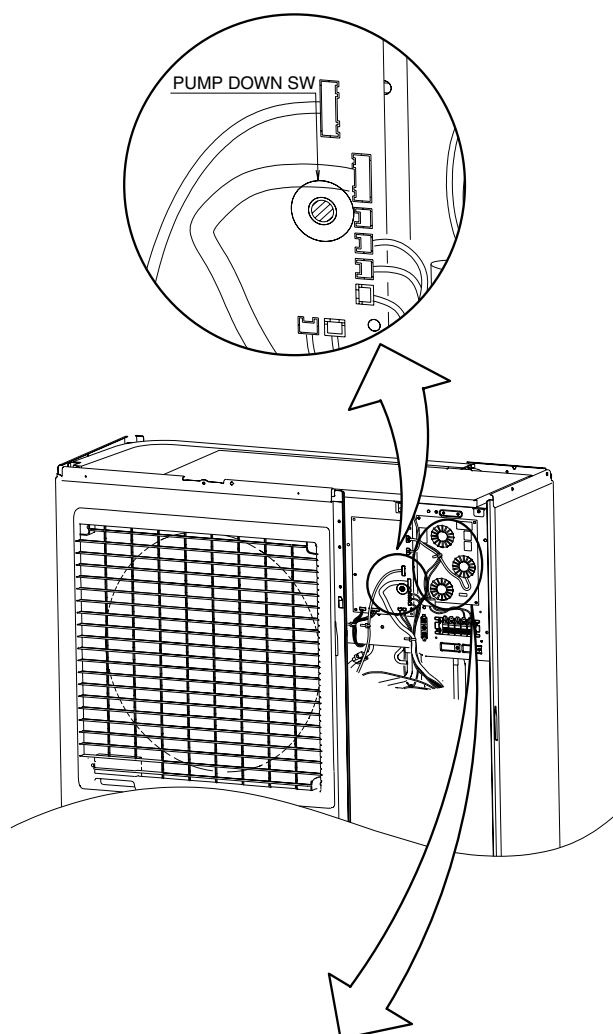
LED	ERROR CONTENTS
FLASH (0.1sec ON/0.1sec OFF)	Temperature sensor error
FLASH (0.5sec ON/0.5sec OFF)	IPM protection
FLASH (2sec ON/2sec OFF)	Current trans. error
FLASH (5sec ON/5sec OFF)	Outdoor fan error
FLASH (0.1sec ON/2sec OFF)	Compressor rotor position cannot be detected
FLASH (5sec ON/0.1sec OFF)	ACTPM error
Lighting	Overheat discharge temperature protection

## 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 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.

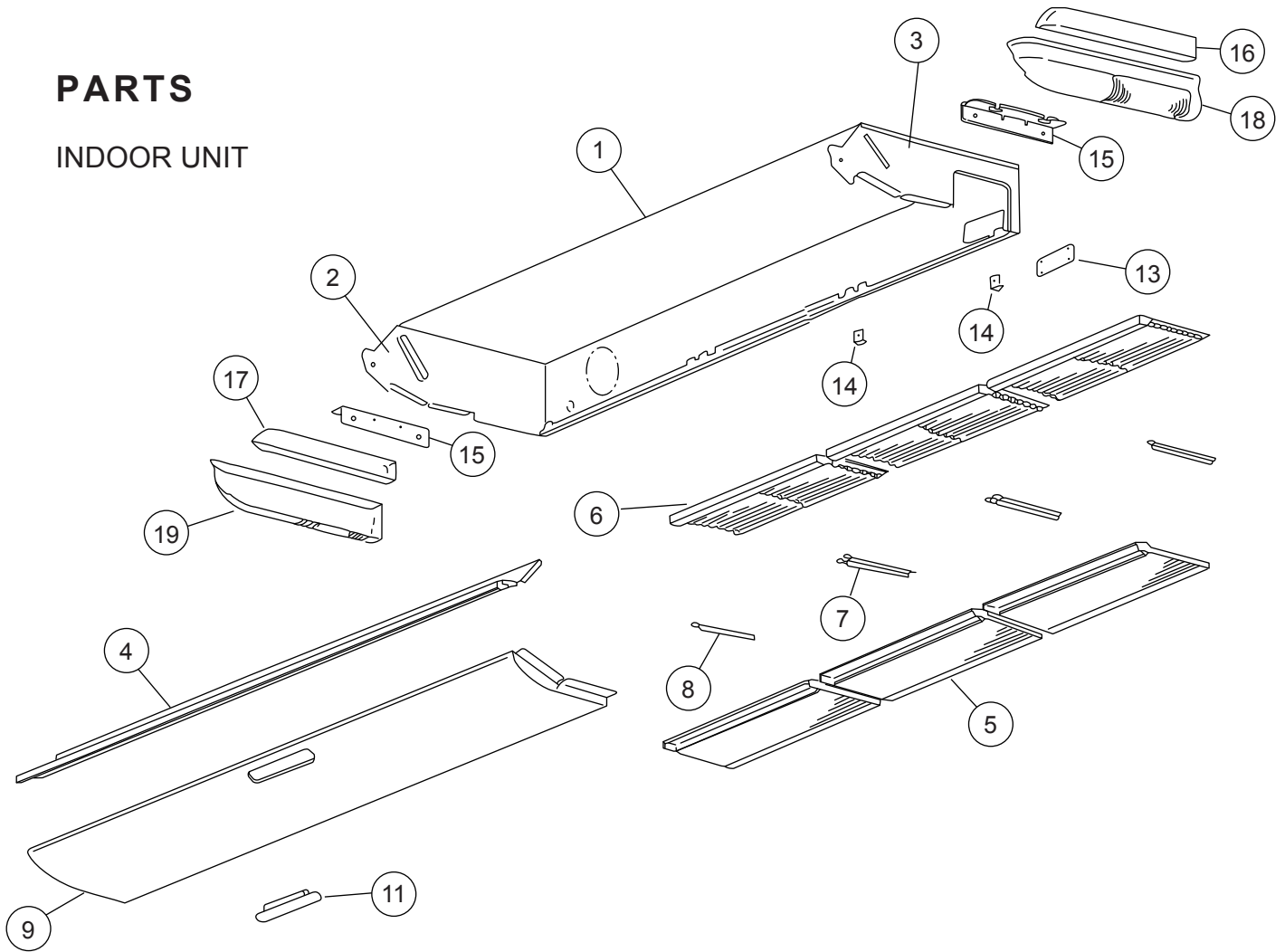


### DANGER

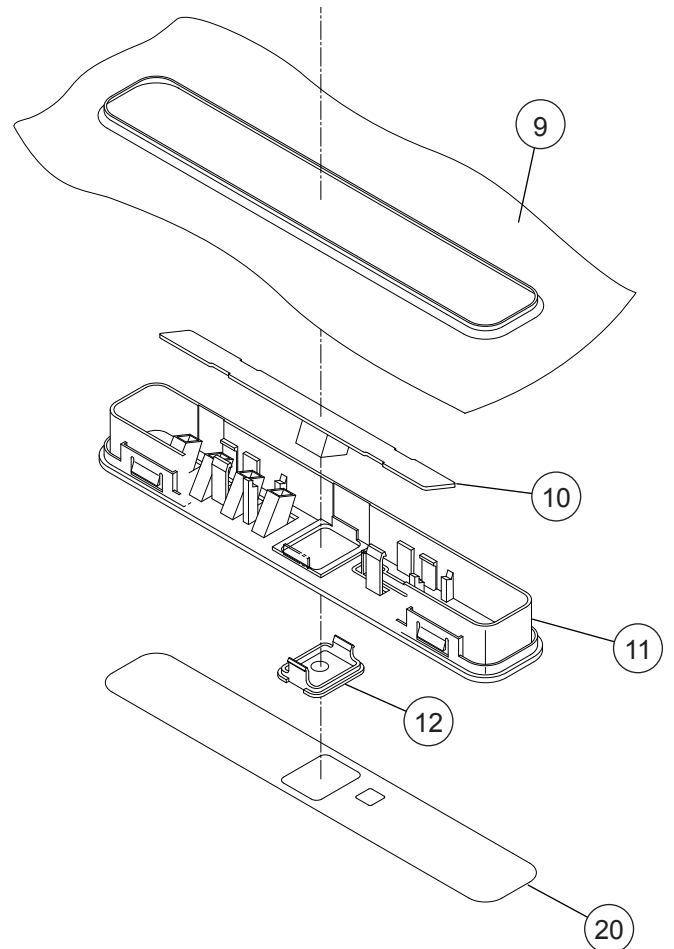
This part (Choke coil) generates high voltages. Never touch this part.

# PARTS

## INDOOR UNIT



Ref.	Description	Part number
1	Kit (Base Sub Assy)	9371360010
2	Panel Left Sub Assy	9360427014
3	Kit (Panel Right Assy)	9371361017
4	Cover (Top)	9359737001
5	Intake Grille	9359738008
6	Air Filter	9359739005
7	Filter Guide R	9359692003
8	Filter Guide L	9359693000
9	Front Panel	9359734000
10	Indicator PCB Assy	9705891043
11	PCB Holder	9359736004
12	Receiver Cover	9359714002
13	Hole Cover	9359691006
14	Hinge Plate (Grille)	9359694007
15	Hanger Bracket	9359742005
16	Cover (Decoration)-R	9359744009
17	Cover (Decoration)-L	9359745006
18	Kit (Side Cover R)	9371364018
19	Kit (Side Cover L)	9371365015
20	Badge	9359735083

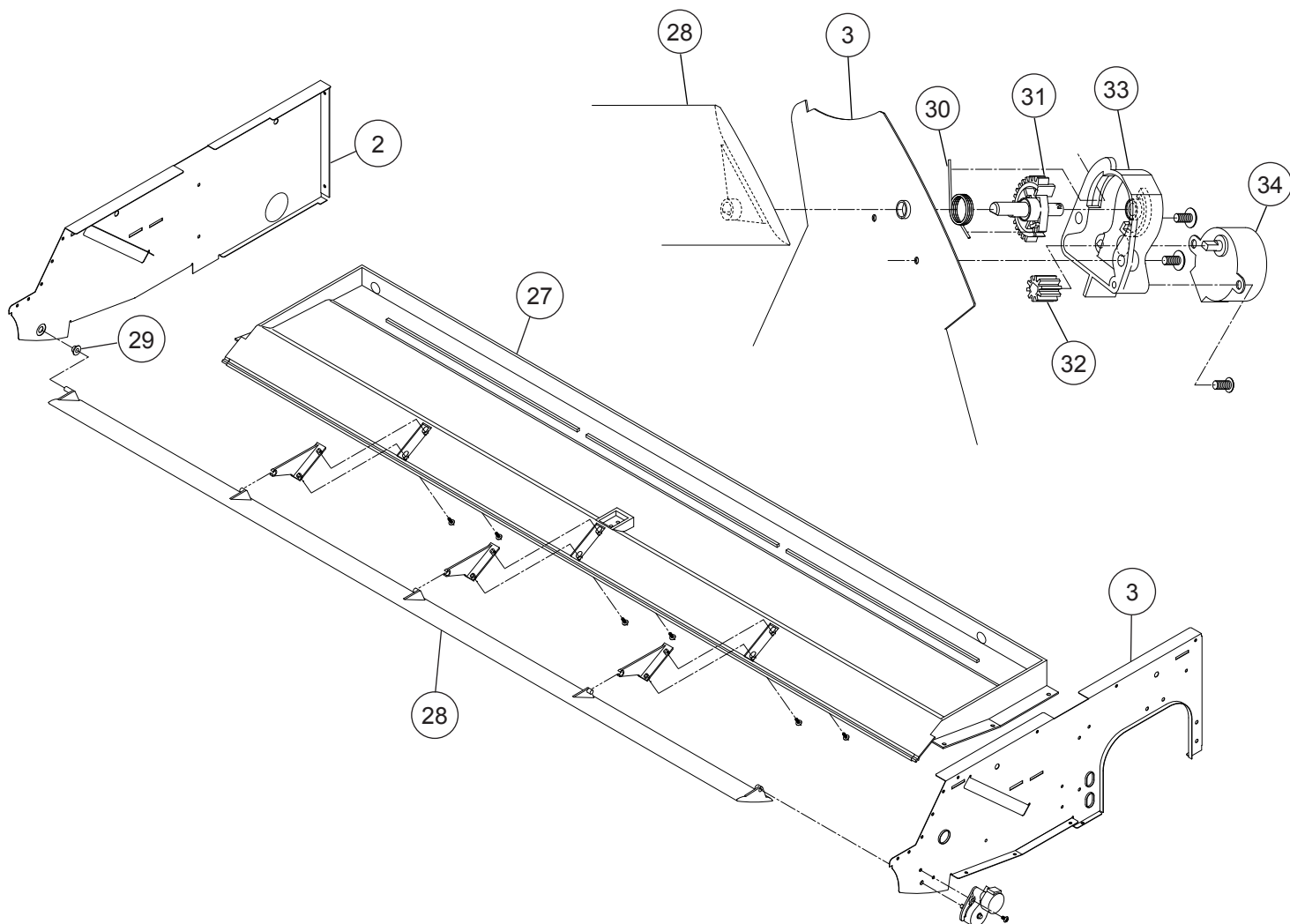
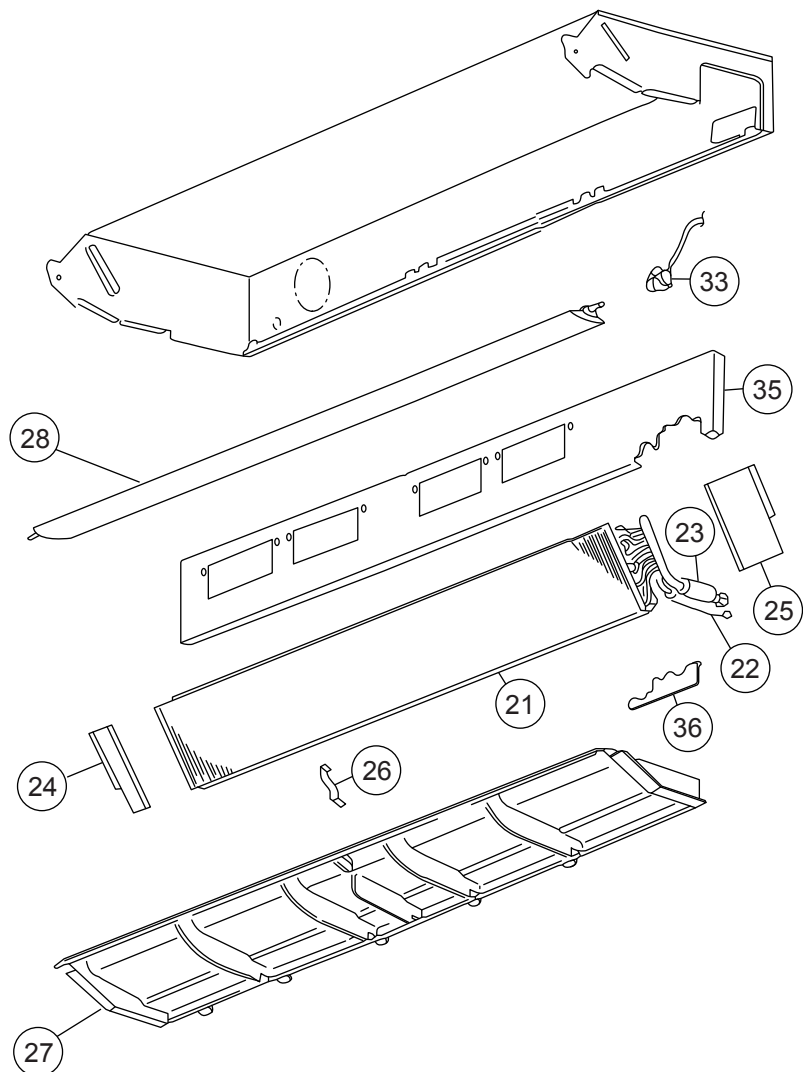


# INDOOR UNIT

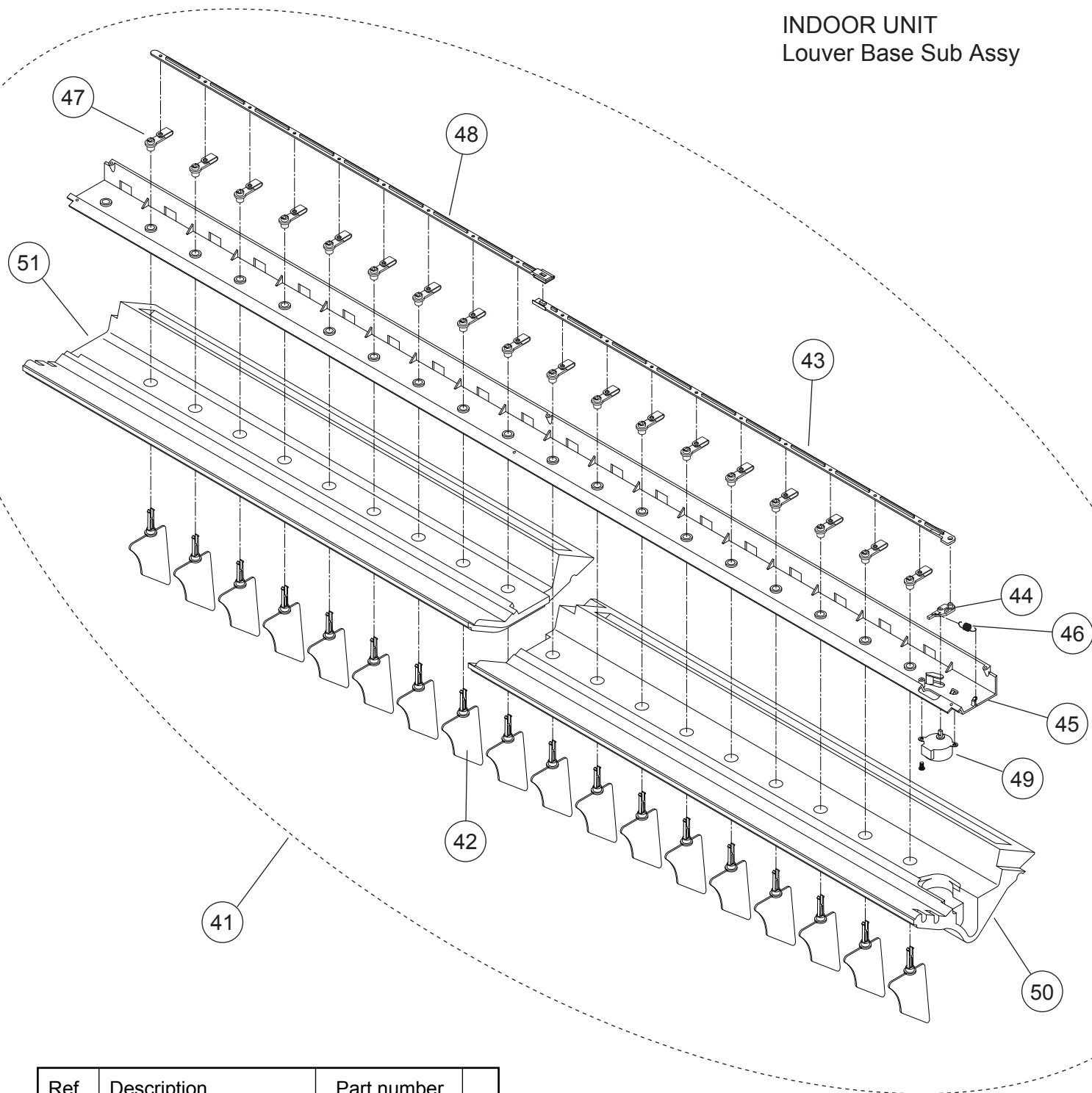
Drain pan

Flap

Ref.	Description	Part number
2	Panel Left Sub Assy	9360427014
3	Kit (Panel Right Assy)	9371361017
21	Evaporator Assy	9372585078
22	Distributor Assy	9371325378
23	Coupling Pipe Assy	9373038405
24	Kit (Panel pipe-L) Sub Assy	9371362014
25	Kit (Panel pipe-R) Sub Assy	9371363011
26	Reinforcement Metal	9359697008
27	Drain Pan Sub Assy	9360429018
28	Flap Assy	9359731009
29	Bushing	9359733003
30	Flap Spring	9359730002
31	Sector Gear	9359729006
32	Pinion	9359728009
33	Motor Base	9359727002
34	Step Motor V	9900297015
35	Kit (Separate Wall Sub Assy)	9371366029
36	Pipe Fixture Metal	9359688006
--	Drain Cap	9358746004
--	Pipe Thermistor	9900022020
--	Thermistor Spring A	313728262708

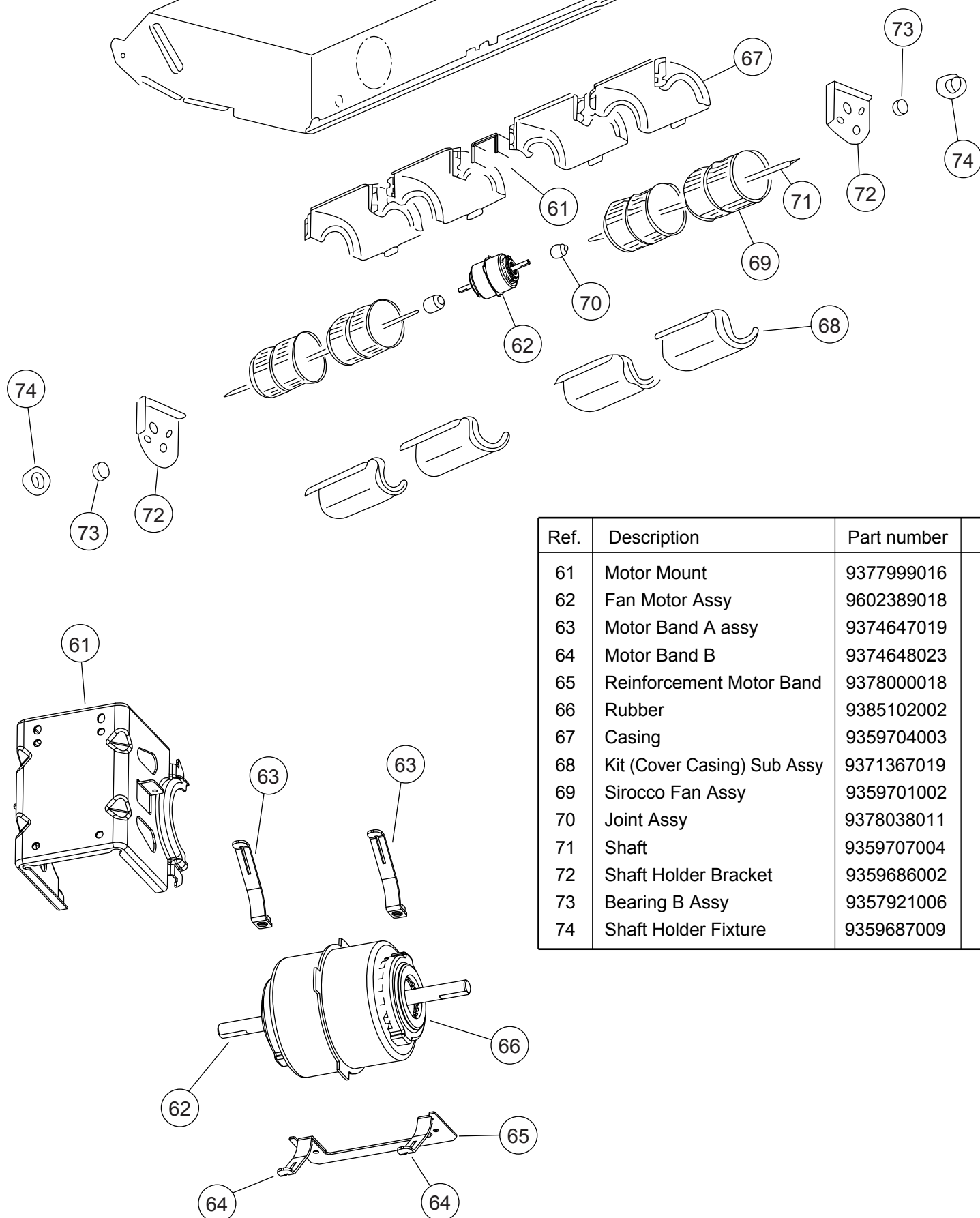


INDOOR UNIT  
Louver Base Sub Assy



Ref.	Description	Part number	
41	Louver Base Sub Assy	9360432025	
42	Louver	9359719007	
43	Rod (Motor)	9359723004	
44	Louver Link	9359726005	
45	Louver Base	9359718000	
46	Louver Spring	9359720003	
47	Louver Stopper	9359724001	
48	Louver Rod	9359725008	
49	Step Motor H	9900297015	
50	Louver Insulation R	9359721000	
51	Louver Insulation L	9359722007	

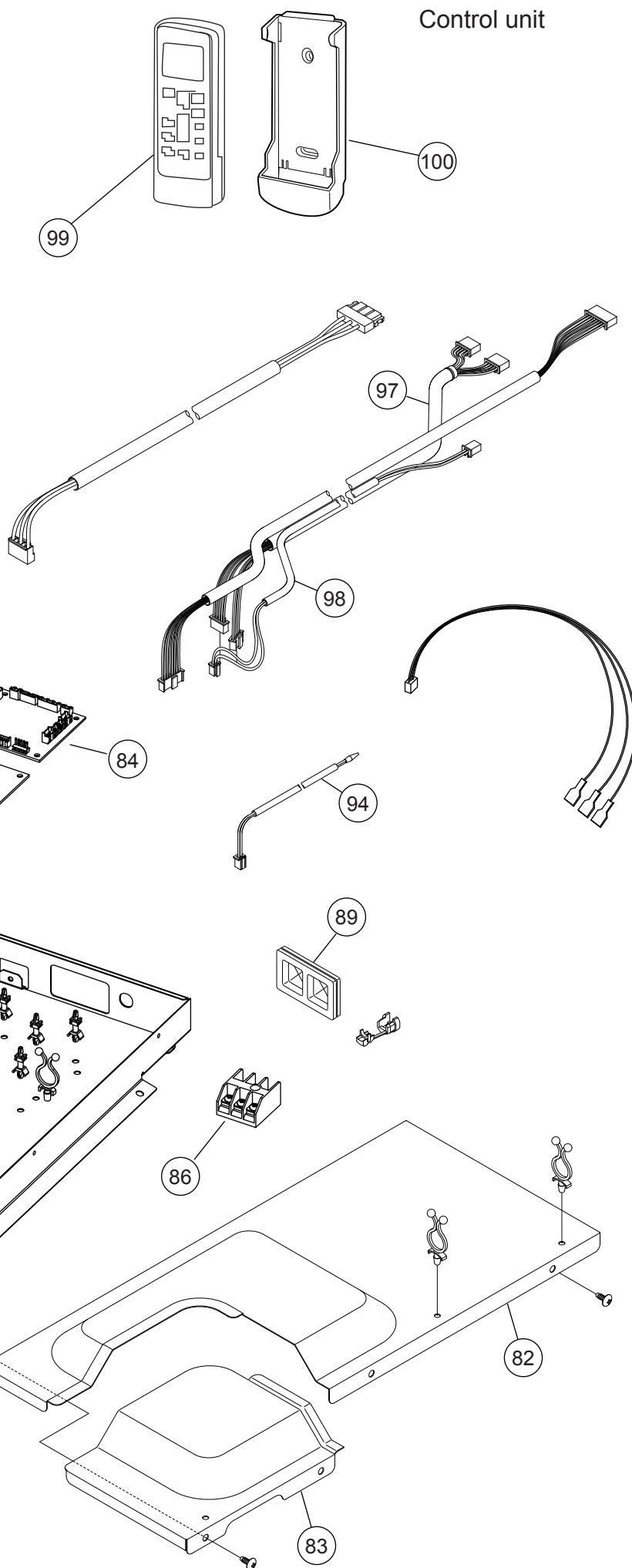
# INDOOR UNIT Fan motor



Ref.	Description	Part number	
61	Motor Mount	9377999016	
62	Fan Motor Assy	9602389018	
63	Motor Band A assy	9374647019	
64	Motor Band B	9374648023	
65	Reinforcement Motor Band	9378000018	
66	Rubber	9385102002	
67	Casing	9359704003	
68	Kit (Cover Casing) Sub Assy	9371367019	
69	Sirocco Fan Assy	9359701002	
70	Joint Assy	9378038011	
71	Shaft	9359707004	
72	Shaft Holder Bracket	9359686002	
73	Bearing B Assy	9357921006	
74	Shaft Holder Fixture	9359687009	

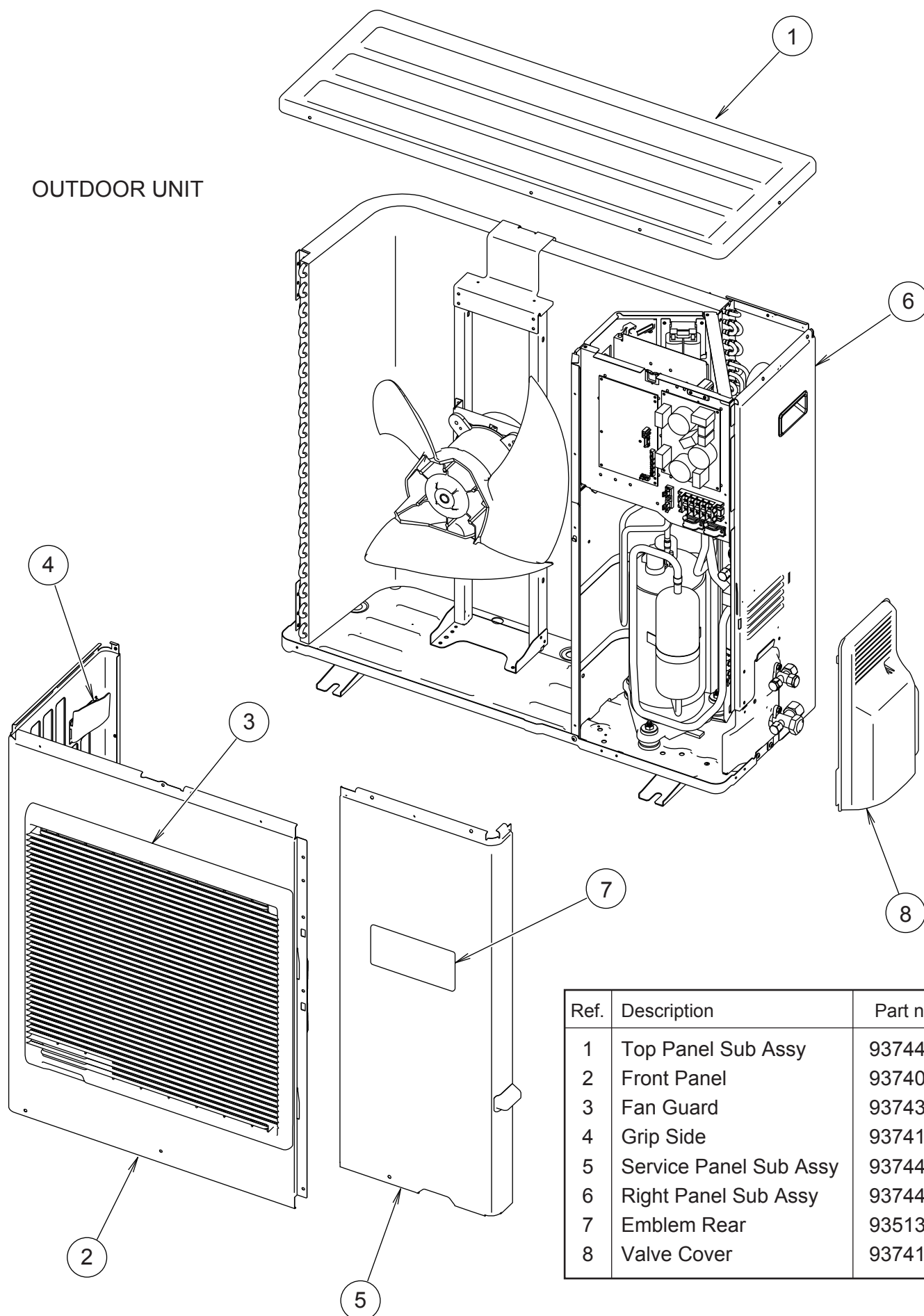
Ref.	Description	Part number
81	Control Box Assy	9377912015
82	Control Box A	9359712008
83	Control Box B	9359713005
84	Controller PCB Assy (30LBT)	9707393279
84	Controller PCB Assy (36LBT)	9707393286
85	Power Supply PCB Assy	9707398076
86	Terminal 3P	9703345012
87	Terminal 3P	9306489045
88	Reactor Assy	9707457018
89	Rubber Bushing	9357376004
91	Cord Clamp-A	9359820017
92	Cord Clamp-B	9359821014
93	Reactor Assy	9707457018
94	Room Thermistor	9703299025
95	Wire Assy (Connector)	9707442021
96	Wire Assy (Connector)	9703339028
97	Wire Assy (Connector)	9702319014
98	Wire Assy (Connector)	9702318017
99	Remote Control	9315885012
100	Remote Control Holder	9305642014

## INDOOR UNIT Control unit





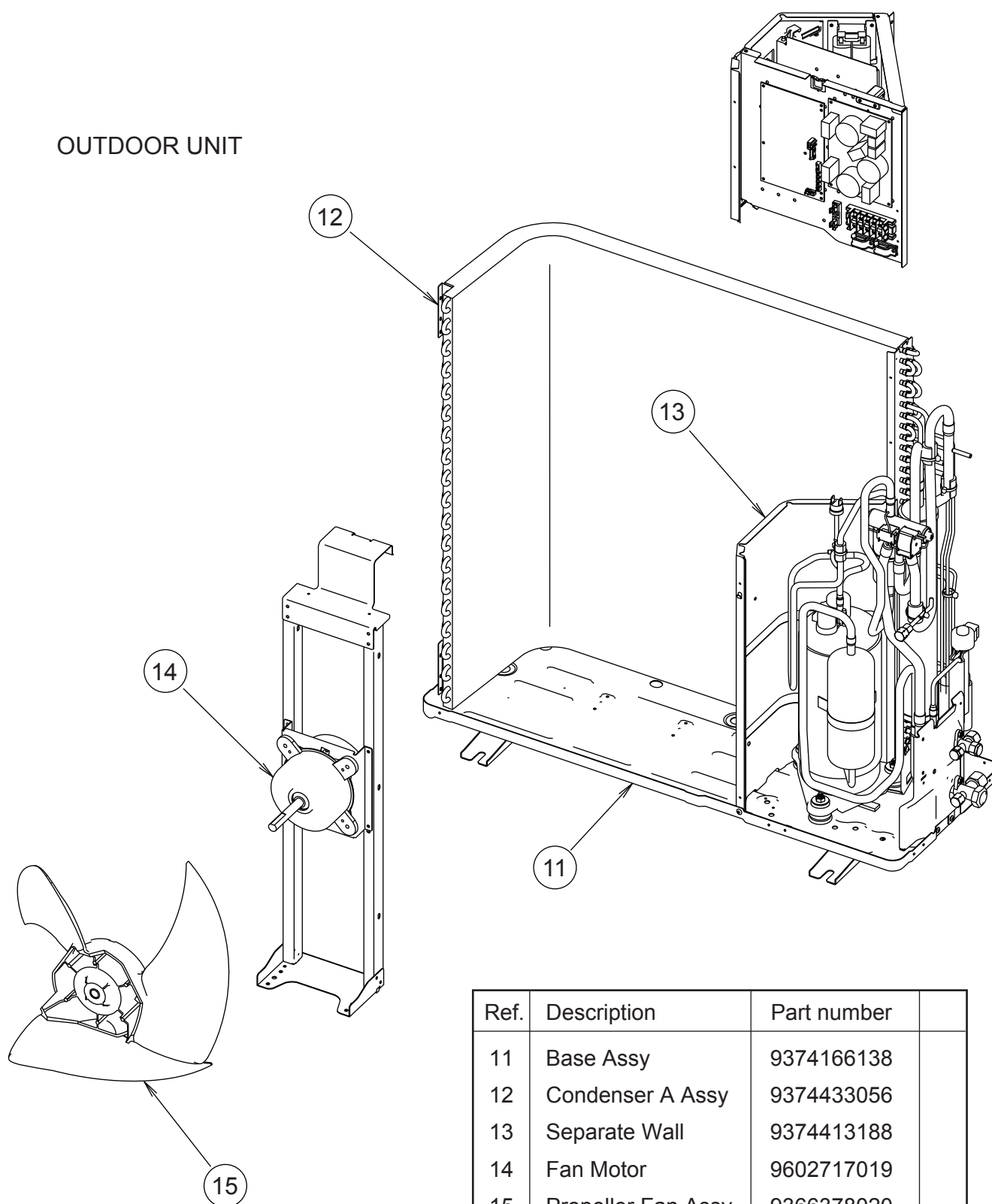
## OUTDOOR UNIT



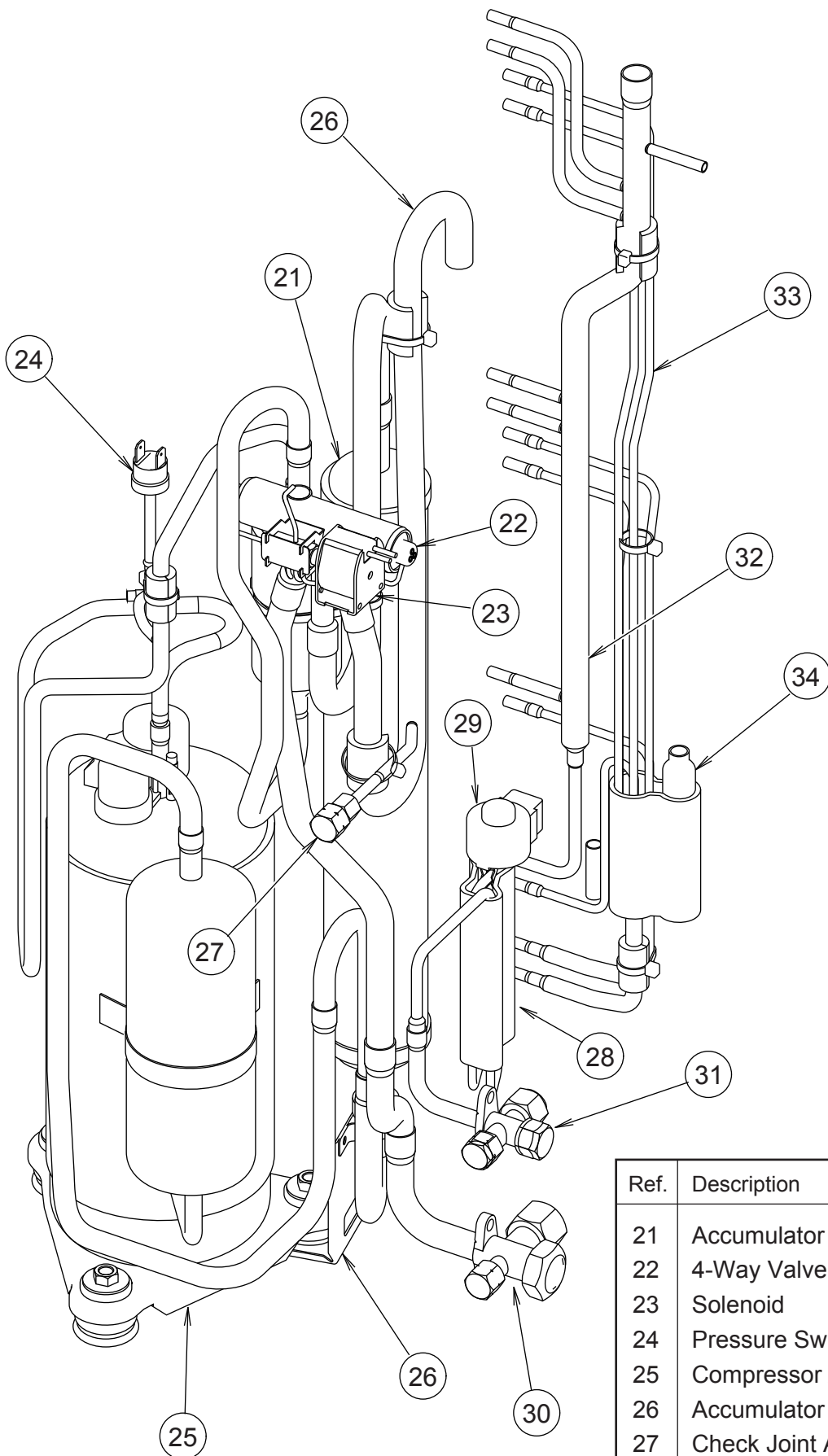
Ref.	Description	Part number	
1	Top Panel Sub Assy	9374417032	
2	Front Panel	9374094066	
3	Fan Guard	9374330010	
4	Grip Side	9374173013	
5	Service Panel Sub Assy	9374415052	
6	Right Panel Sub Assy	9374416127	
7	Emblem Rear	9351355005	
8	Valve Cover	9374174010	



## OUTDOOR UNIT



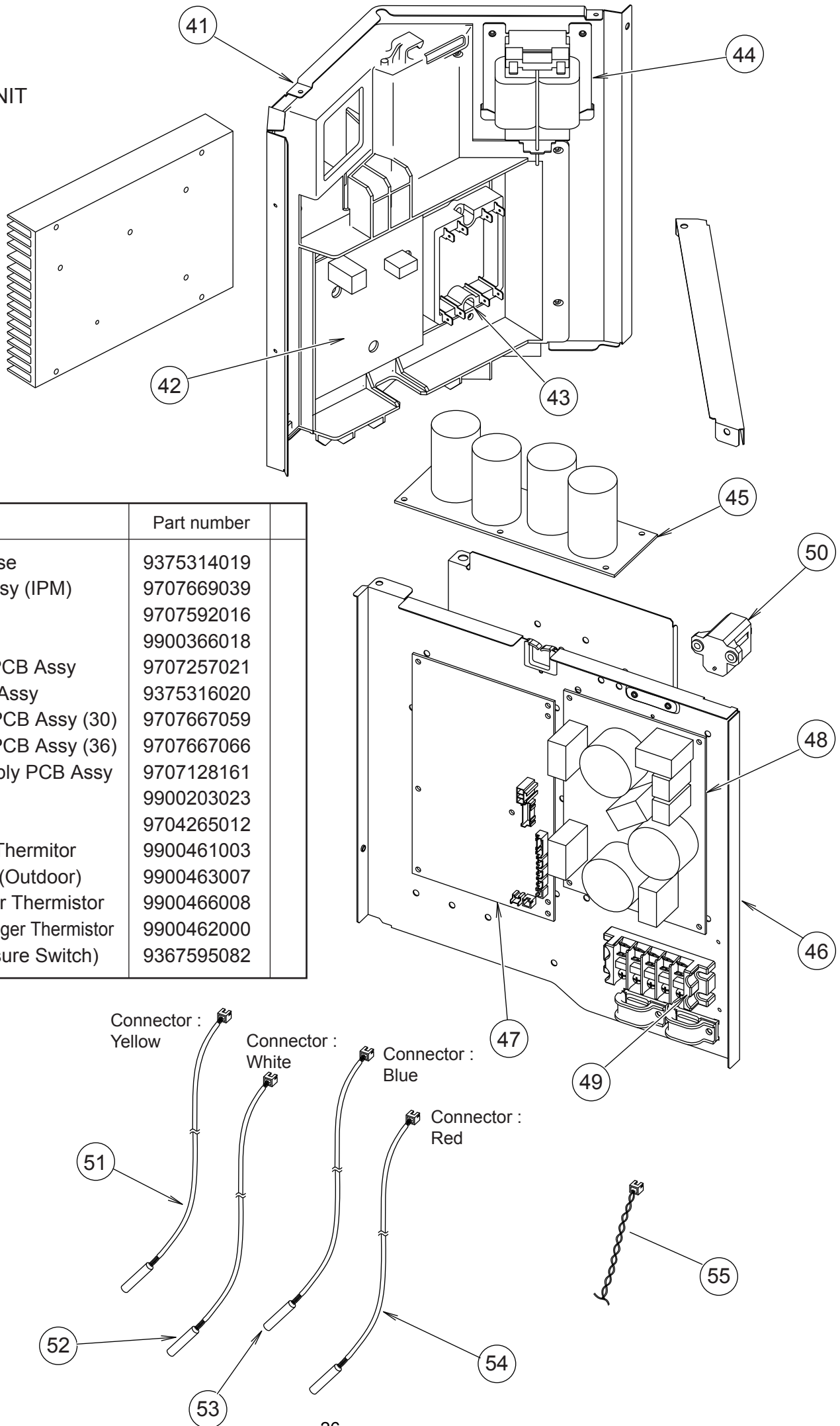
Ref.	Description	Part number	
11	Base Assy	9374166138	
12	Condenser A Assy	9374433056	
13	Separate Wall	9374413188	
14	Fan Motor	9602717019	
15	Propeller Fan Assy	9366378020	



## OUTDOOR UNIT

Ref.	Description	Part number	
21	Accumulator	9385005006	
22	4-Way Valve	9900164010	
23	Solenoid	9970055034	
24	Pressure Switch	9900186012	
25	Compressor Assy	9372558126	
26	Accumulator Support Assy	313986353804	
27	Check Joint Assy	9372802038	
28	Expansion Valve Assy	9370947144	
29	Coil (Expansion Valve)	9900057039	
30	3-Way Valve Assy	9377959010	
31	3-Way Valve Assy	9377958013	
32	Inlet Pipe (Cond) A Assy	9373461067	
33	Outlet Pipe (Cond) A Assy	9374266104	
34	Strainer Assy	9372524015	

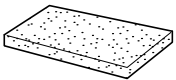

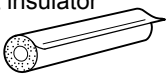




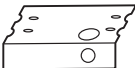





## OUTDOOR UNIT



Ref.	Description	Part number
41	Inverter Case	9375314019
42	TR PCB Assy (IPM)	9707669039
43	ACTPM	9707592016
44	Choke Coil	9900366018
45	Capacitor PCB Assy	9707257021
46	PCB Case Assy	9375316020
47	Controller PCB Assy (30)	9707667059
47	Controller PCB Assy (36)	9707667066
48	Power Supply PCB Assy	9707128161
49	Terminal	9900203023
50	Thermistor	9704265012
51	Discharge Thermistor	9900461003
52	Thermistor (Outdoor)	9900463007
53	Compressor Thermistor	9900466008
54	Heat Exchanger Thermistor	9900462000
55	Wire (Pressure Switch)	9367595082

# ACCESSORIES

## INDOOR UNIT

Name and Shape	Q'ty	Application	Part number
Drain hose insulation 	1	Adhesive type 70 x 230	9360464002
VT wire 	1	For fixing the drain hose L 280 mm	313806350303
Coupler heat insulator (large) 	2	For indoor side pipe joint (large pipe)	9378173569
Coupler heat insulator (small) 	1	For indoor side pipe joint (small pipe)	9378173521
Nylon fastener 	Large 4	For fixing the coupler heat insulator	9301501001
	Small 4		312300787605
Special nut A (large flange) 	4	For installing indoor unit	313005446653
Special nut B (small flange) 	4	For installing indoor unit	313005446759
Installation template 	1	For positioning the indoor unit	9360022004
Auxiliary pipe assembly 	1	For connecting the piping	9374714025
Remote control 	1	For air conditioner operation	9315885012
Remote control holder 	1	For installing remote control on the wall	9305642014
Battery 	2	For remote control	0600185534
Tapping screw 	2	For mounting the remote control holder	0700019098

## OPTIONAL PARTS



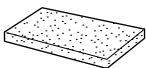
The following options are available

Drain pump unit : UTR-DPB241 (P/N 9034087001)

Round duct : UTD-RF204 (P/N 9093160004)

Wired remote control : UTB-\*UD

## OUTDOOR UNIT

Name and Shape	Q'ty	Application	Part number
Drain pipe 	1	For outdoor unit drain piping work (May not be supplied, depending on the model)	9303029015
Drain cap 	2		313166024302
Installation (seal) 	1	For filling in a gap at the entrance of connection cords	9374756018

0801G3348