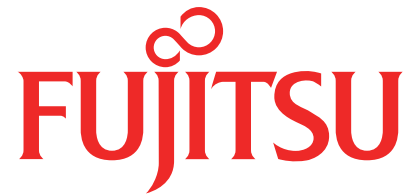


Split type air conditioner  
Ceiling type (50Hz)



# SERVICE MANUAL



Indoor unit	Outdoor unit
ABYG24LVTA	AOYG24LBCB

## CONTENTS

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# SPECIFICATIONS

## ELECTRICAL DATA

INDOOR UNIT		ABYG24LVTA
OUTDOOR UNIT		AOYG24LBCB
POWER SUPPLY		Single phase, 230 V, 50 Hz
Cooling	Capacity	6.80 kW
	Power consumption	2.21 kW
	EER	3.08 kW/kW
	Operating current	9.7 A
	Max operating current	14.7 A
	Dehumidification	2.7 L/h
Heating	Capacity	8.00 kW
	Power consumption	2.26 kW
	COP	3.54 kW/kW
	Operating current	9.9 A
	Max operating current	15.7 A

## DIMENSIONS

H x W x D

INDOOR UNIT	199 x 990 x 655 mm
OUTDOOR UNIT	716 x 820 x 315 mm

## WEIGHT

Net / Shipping

INDOOR UNIT	27 kg / 36 kg
OUTDOOR UNIT	42 kg / 47 kg

## FAN MOTOR DISCRIMINATION

INDOOR UNIT	MFH-24RVL
OUTDOOR UNIT	MFE-S60VD2F

## FAN SPEED

INDOOR UNIT Cool / Heat	High	1,330 rpm / 1,300 rpm
	Medium	1,150 rpm / 1,150 rpm
	Low	1,000 rpm / 1,000 rpm
	Quiet	780 rpm / 780 rpm
OUTDOOR UNIT	Cooling	1,000 rpm
	Heating	940 rpm

## AIR CIRCULATION

INDOOR UNIT	High	980 m <sup>3</sup> /h
	Medium	820 m <sup>3</sup> /h
	Low	680 m <sup>3</sup> /h
	Quiet	540 m <sup>3</sup> /h
OUTDOOR UNIT	Cooling	2,850 m <sup>3</sup> /h
	Heating	2,700 m <sup>3</sup> /h

## NOISE LEVEL

INDOOR UNIT	High	48 dB
	Medium	44 dB
	Low	40 dB
	Quiet	35 dB
OUTDOOR UNIT	Cooling	53 dB
	Heating	54 dB

## COMPRESSOR

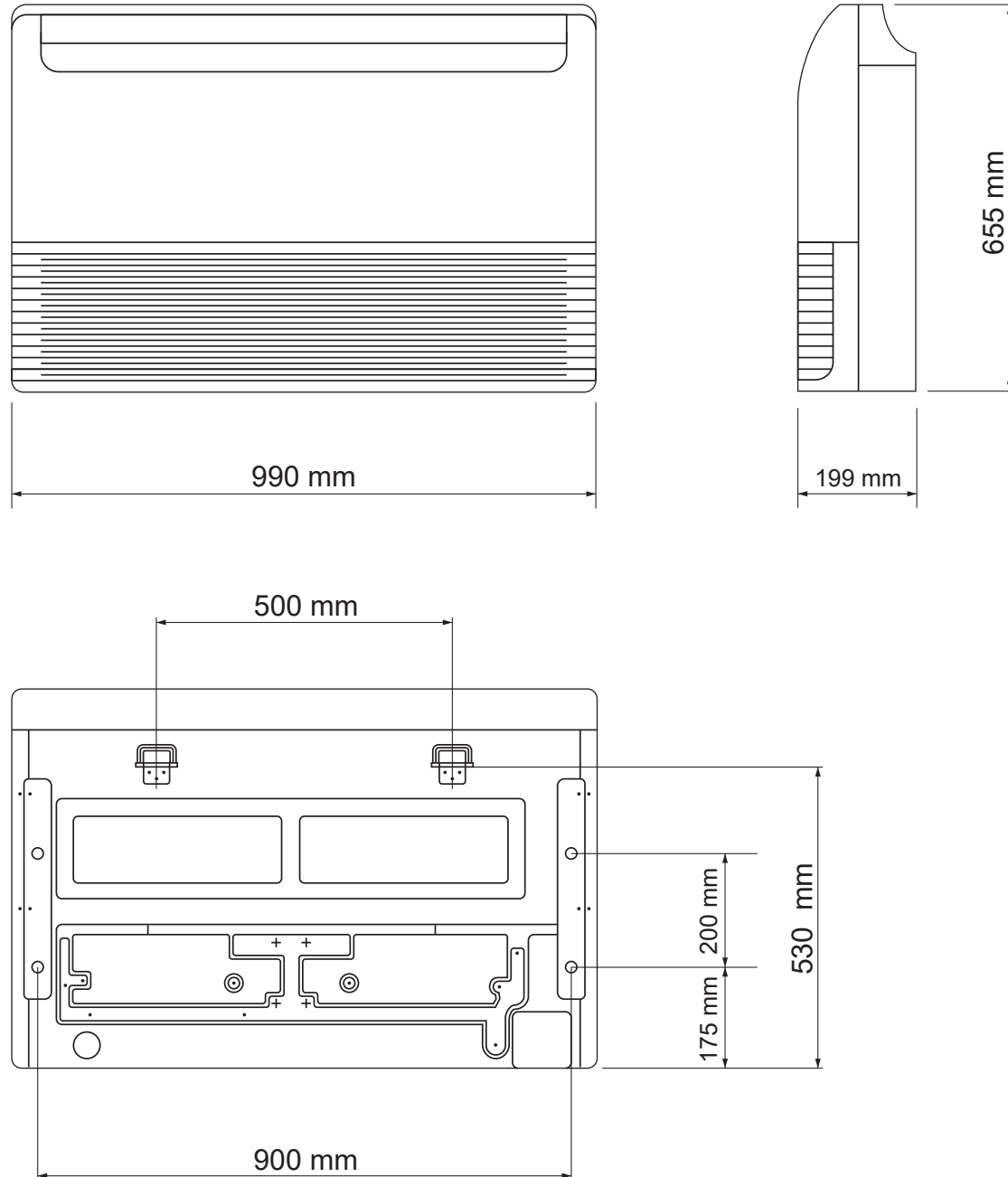
DISCRIMINATION	N-SF17ND2C
WEIGHT (with oil)	10.6 kg
DATA	Hermetic motor, 2-cylinder rotary compressor

## REFRIGERANT

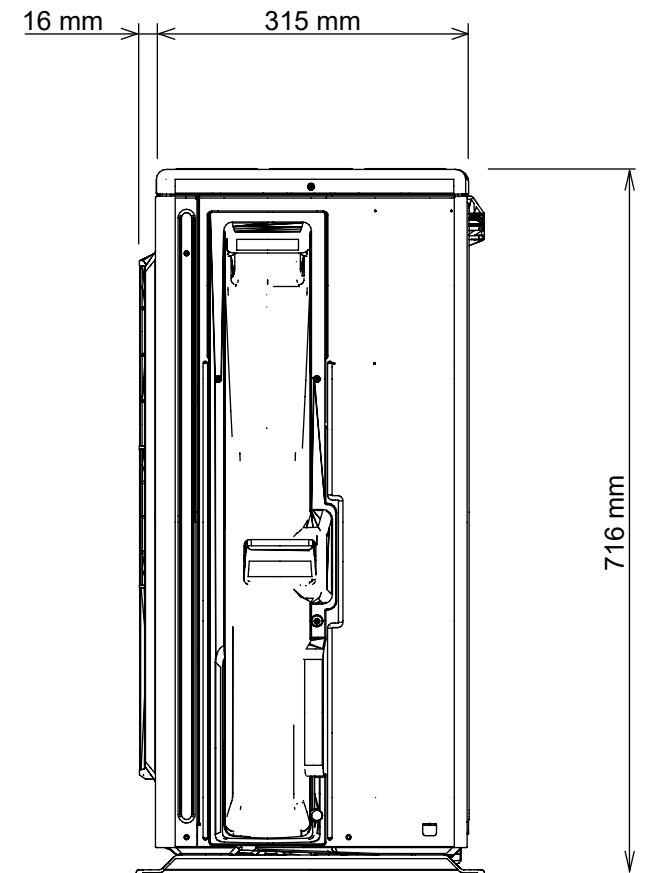
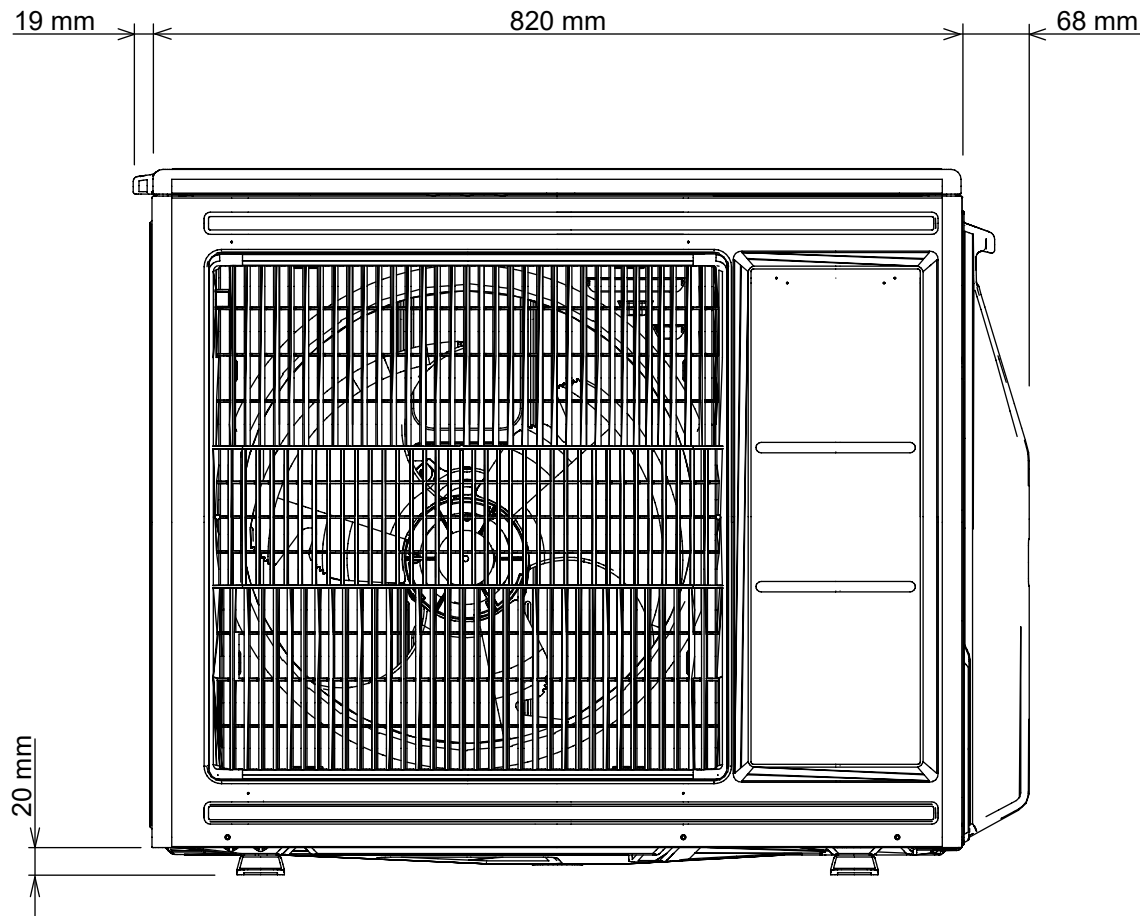
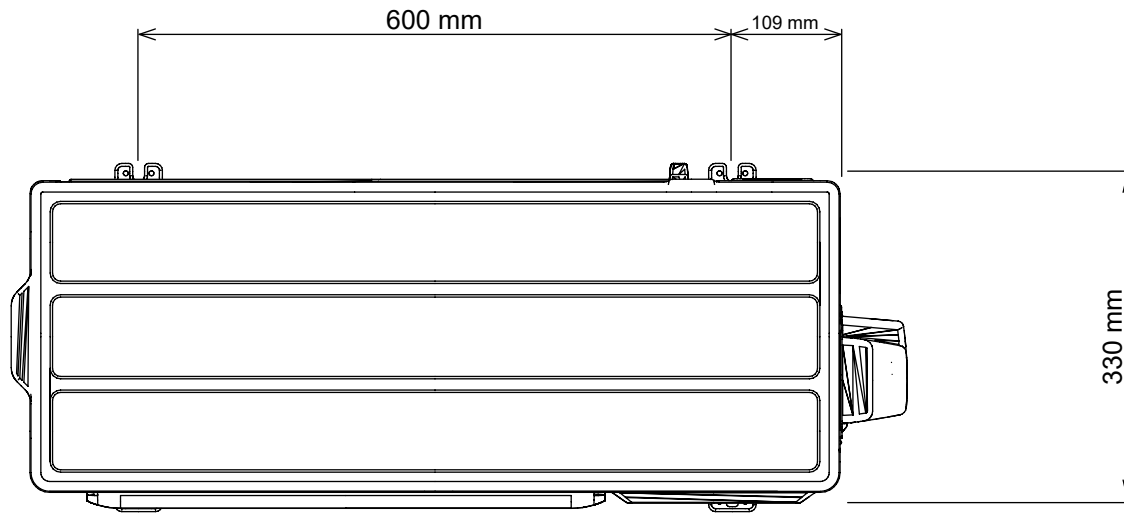
TYPE	R410A		
PRECHARGED	1,500 g		
FULL CHARGE	Pipe length	15 m	1,500 g
		20 m	1,600 g
		25 m	1,700 g
		30 m	1,800 g
ADDITIONAL CHARGE	20 g/m		
MAX PIPING HEIGHT DIFFERENCE	20 m		

# DIMENSIONS

INDOOR UNIT  
ABYG24LVTA



OUTDOOR UNIT  
AOYG24LBCB



# REFRIGERANT SYSTEM DIAGRAM

Refrigerant direction

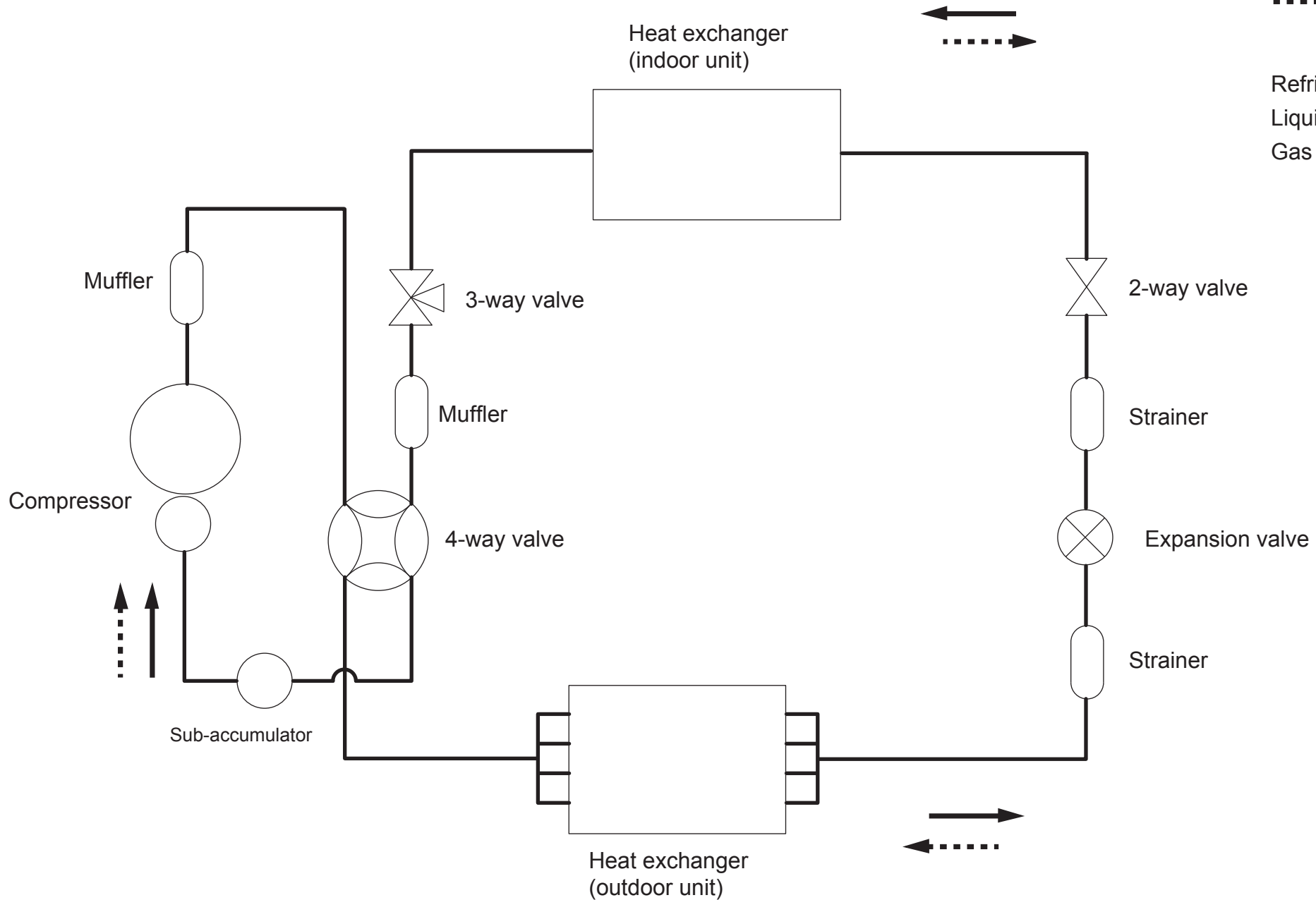
—————▶ Cooling

.....▶ Heating

Refrigerant pipe diameter

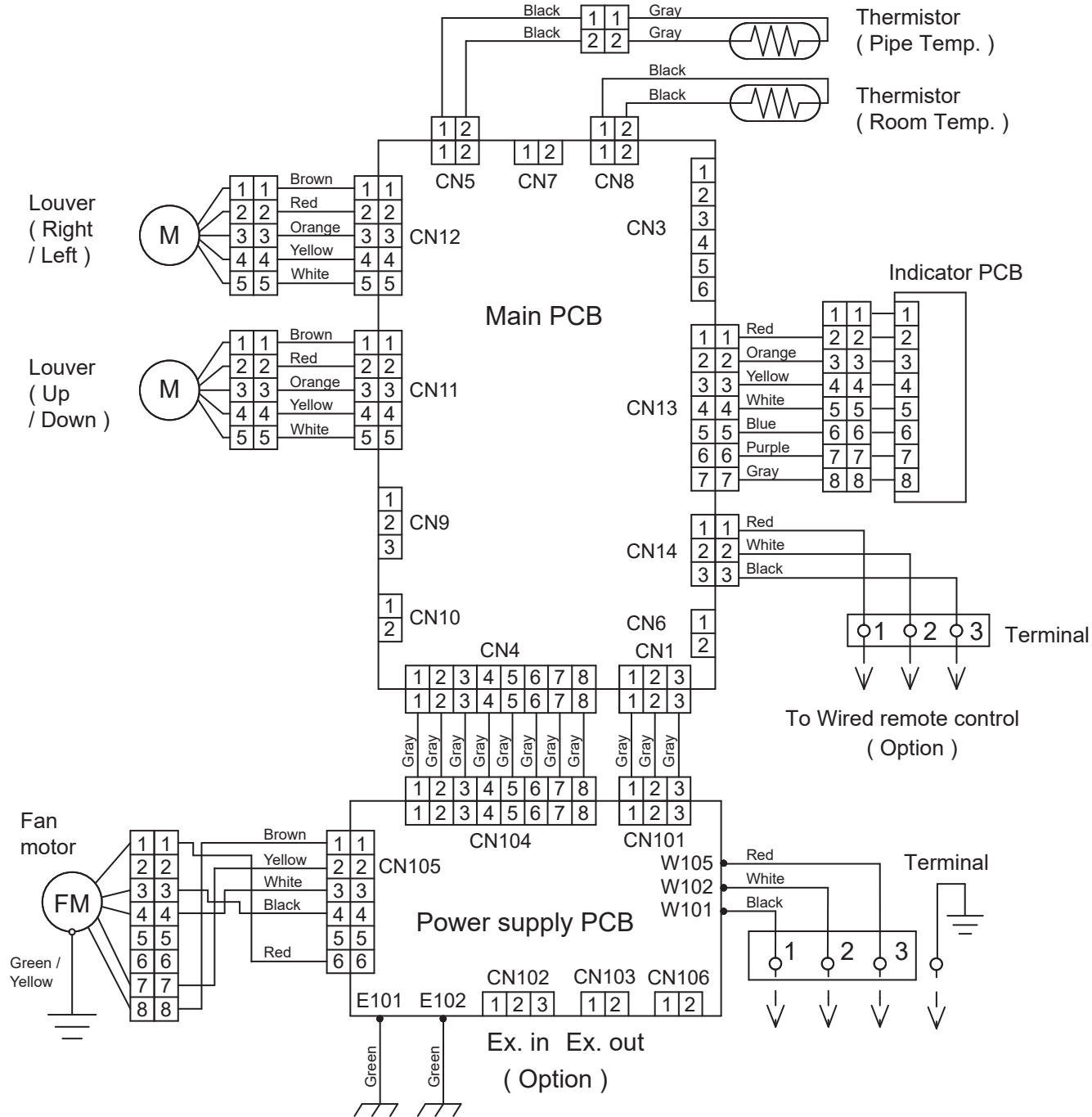
Liquid : 1/4" (6.35 mm)

Gas : 5/8" (15.88 mm)

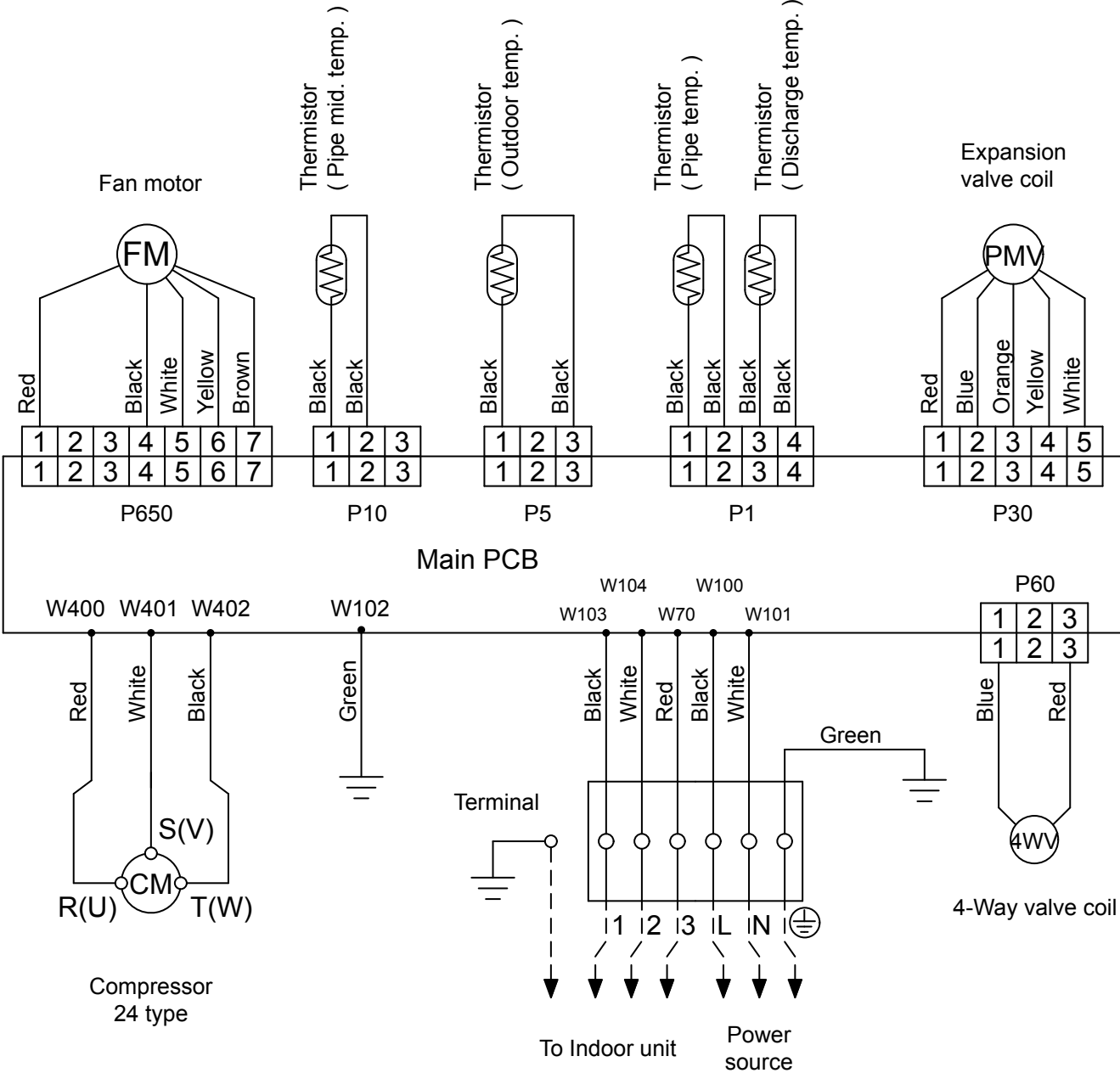


# CIRCUIT DIAGRAM

INDOOR UNIT  
ABYG24LVTA



OUTDOOR UNIT  
AOYG24LBCB



# PCB CIRCUIT DIAGRAM

INDOOR UNIT  
ABYG24LVTA

CONTROL UNIT  
EZ-0122CHSE

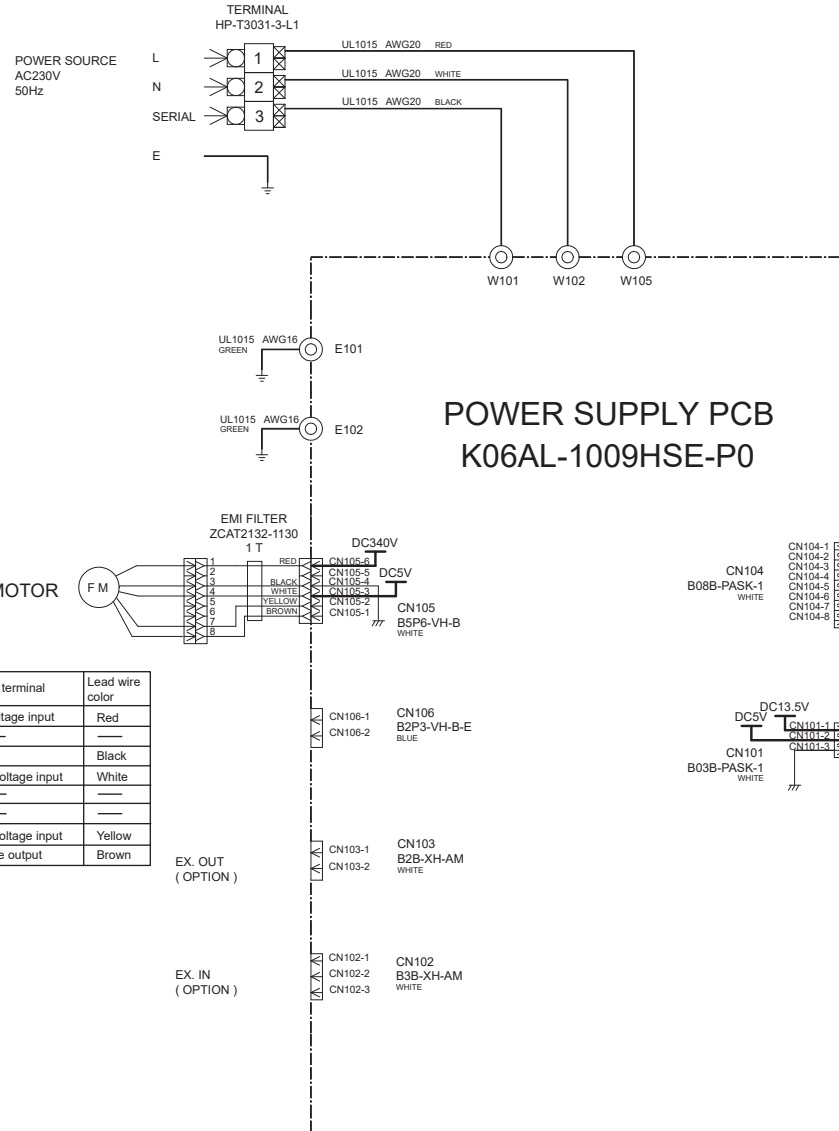
CN8  
Thermistor Characteristics.

Thermistor	Temperature	(0°C)	(20°C)	(30°C)
Thermistor ( Room temp. )		33.6 k Ω	12.5 k Ω	8.0 k Ω
		1.1 V	2.2 V	2.8 V

CN5  
Thermistor Characteristics.

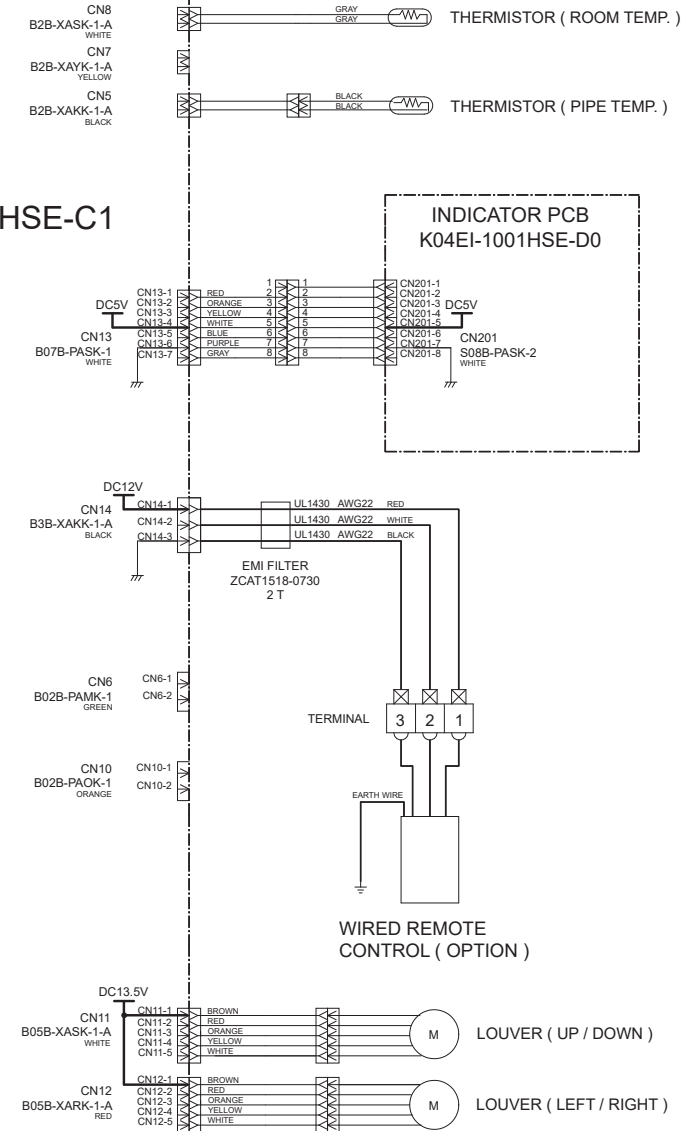
Thermistor	Temperature	(0°C)	(20°C)	(30°C)
Thermistor ( Pipe temp. )		176.0 k Ω	62.9 k Ω	39.6 k Ω
		1.1 V	2.2 V	2.8 V

MAIN PCB  
K06AK-1211HSE-C1



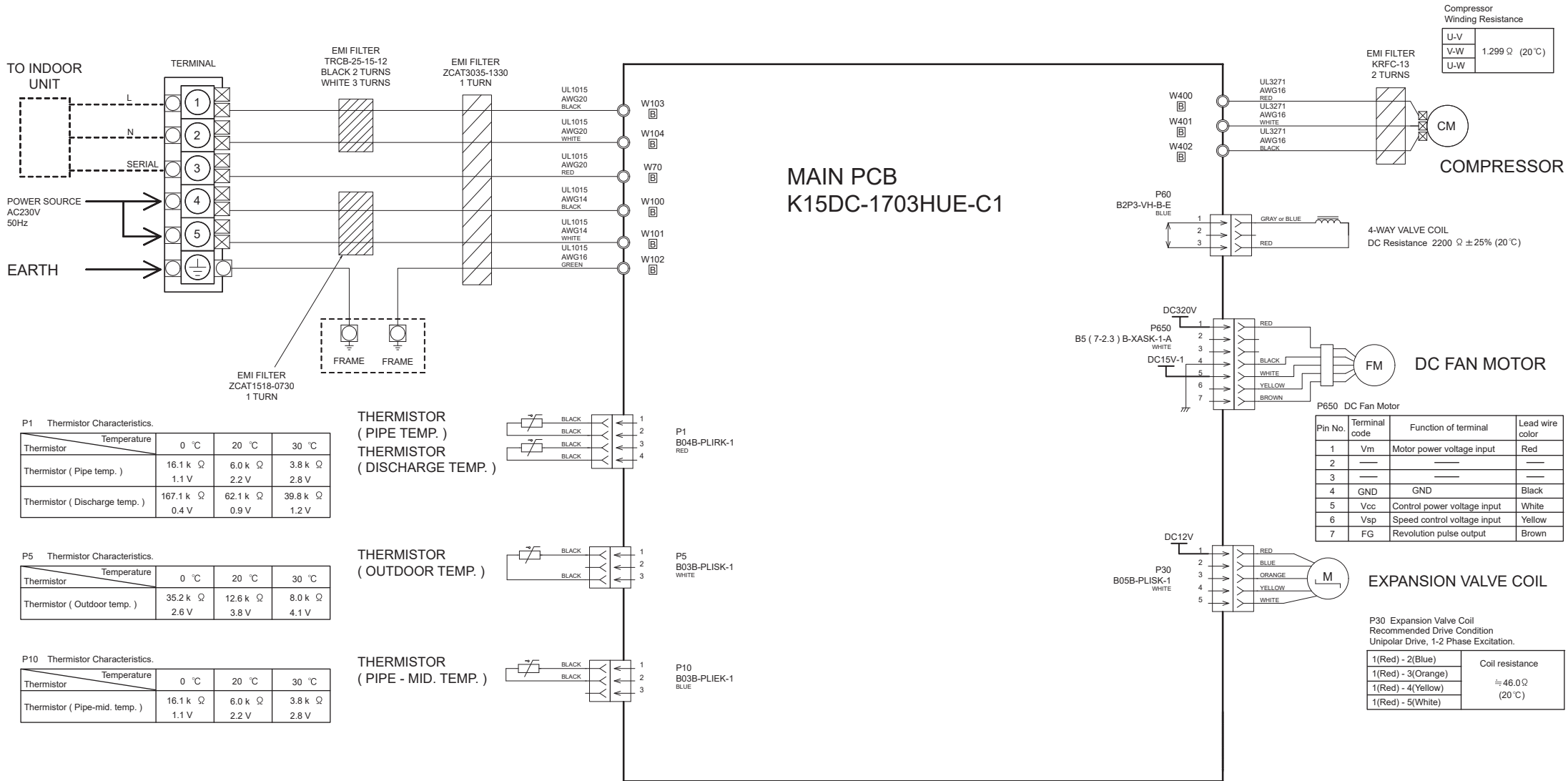
CN105 DC Fan motor

Pin No.	Terminal code	Function of terminal	Lead wire color
1	Vm	Motor power voltage input	Red
2	—	—	—
3	GND	GND	Black
4	Vcc	Control power voltage input	White
5	—	—	—
6	—	—	—
7	Vsp	Speed control voltage input	Yellow
8	FG	Revolution pulse output	Brown





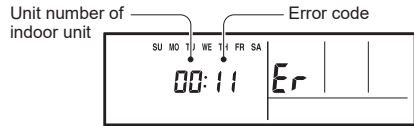
INVERTER ASSEMBLY  
EZ-01704HUE



# ERROR DETECTION

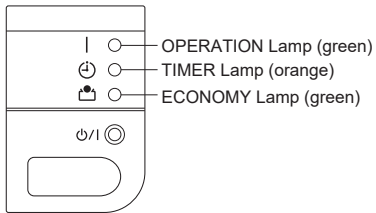
## WIRED REMOTE CONTROL

This is possible only on a wired remote control.  
If an error occurs, the following display will be shown.  
("Er" will appear in the set room temperature display.)



EX. Self-diagnosis

## INDOOR UNIT



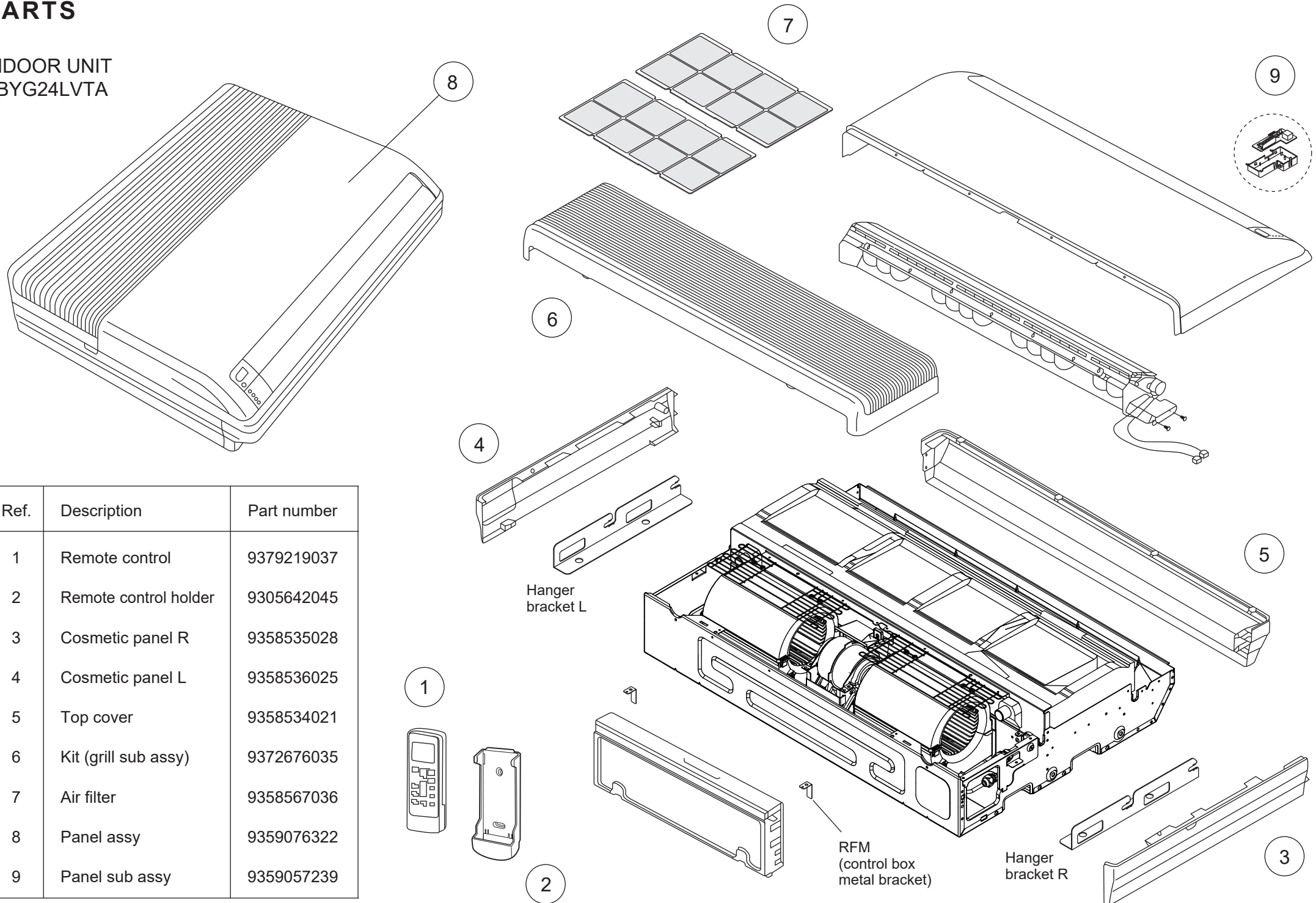
- : 0.5s on / 0.5s off
- ◇ : 0.1s on / 0.1s off
- ( ) : Number of flashing

Indoor unit			Wired remote control	Description
OPERATION lamp (green)	TIMER lamp (orange)	ECONOMY lamp (green)		
● (1)	● (1)	◇	11	Serial communication error
● (1)	● (2)	◇	12	Wired remote control communication error
● (1)	● (5)	◇	15	Check run unfinished
● (2)	● (1)	◇	21	Unit number or Refrigerant circuit address setting error [Simultaneous Multi]
● (2)	● (2)	◇	22	Indoor unit capacity error
● (2)	● (3)	◇	23	Combination error
● (2)	● (4)	◇	24	<ul style="list-style-type: none"> <li>• Connection unit number error (indoor slave unit) [Simultaneous Multi]</li> <li>• Connection unit number error (indoor unit or branch unit) [Flexible Multi]</li> </ul>
● (2)	● (7)	◇	27	Master unit, slave unit set-up error [Simultaneous Multi]
● (3)	● (1)	◇	31	Power supply interruption error
● (3)	● (2)	◇	32	Indoor unit PCB model information error
● (3)	● (5)	◇	35	Manual auto switch error
● (4)	● (1)	◇	41	Inlet air temp. sensor error
● (4)	● (2)	◇	42	Indoor unit Heat Ex. Middle temp. sensor error
● (5)	● (1)	◇	51	Indoor unit fan motor error
● (5)	● (3)	◇	53	Drain pump error
● (5)	● (7)	◇	57	Damper error
● (5)	● (15)	◇	5U	Indoor unit error
● (6)	● (2)	◇	62	Outdoor unit main PCB model information error or communication error
● (6)	● (3)	◇	63	Inverter error
● (6)	● (4)	◇	64	Active filter error, PFC circuit error
● (6)	● (5)	◇	65	Trip terminal Error
● (6)	● (10)	◇	6A	Display PCB microcomputers communication error

Indoor unit			Wired remote control	Description
OPERATION lamp (green)	TIMER lamp (orange)	ECONOMY lamp (green)		
● (7)	● (1)	◇	71	Discharge temp. sensor error
● (7)	● (2)	◇	72	Compressor temp. sensor error
● (7)	● (3)	◇	73	Outdoor unit Heat Ex. liquid temp. sensor error
● (7)	● (4)	◇	74	Outdoor temp. sensor error
● (7)	● (5)	◇	75	Suction Gas temp. sensor error
● (7)	● (6)	◇	76	<ul style="list-style-type: none"> <li>• 2-way valve temp. sensor error</li> <li>• 3-way valve temp. sensor error</li> </ul>
● (7)	● (7)	◇	77	Heat sink temp. sensor error
● (8)	● (2)	◇	82	<ul style="list-style-type: none"> <li>• Sub-cool Heat Ex. gas inlet temp. sensor error</li> <li>• Sub-cool Heat Ex. gas outlet temp. sensor error</li> </ul>
● (8)	● (3)	◇	83	Liquid pipe temp. sensor error
● (8)	● (4)	◇	84	Current sensor error
● (8)	● (6)	◇	86	<ul style="list-style-type: none"> <li>• Discharge pressure sensor error</li> <li>• Suction pressure sensor error</li> <li>• High pressure switch error</li> </ul>
● (9)	● (4)	◇	94	Trip detection
● (9)	● (5)	◇	95	Compressor rotor position detection error (permanent stop)
● (9)	● (7)	◇	97	Outdoor unit fan motor error
● (9)	● (8)	◇	98	Outdoor unit fan motor 2 error
● (9)	● (9)	◇	99	4-way valve error
● (9)	● (10)	◇	9A	Coil (expansion valve) error
● (10)	● (1)	◇	A1	Discharge temp. error
● (10)	● (3)	◇	A3	Compressor temp. error
● (10)	● (4)	◇	A4	High pressure error
● (10)	● (5)	◇	A5	Low pressure error
● (13)	● (2)	◇	J2	Branch boxes error [Flexible Multi]

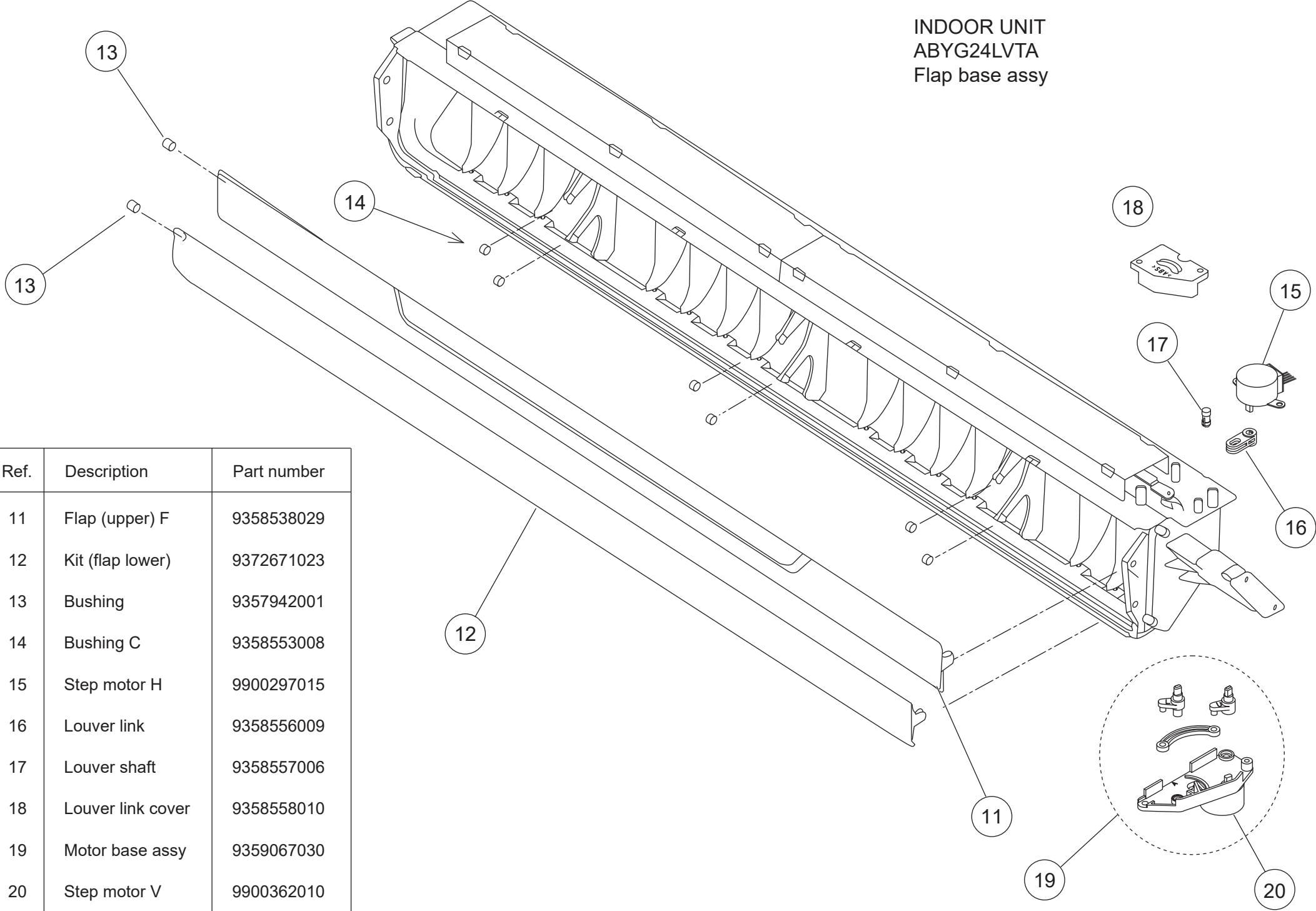
# PARTS

INDOOR UNIT  
ABYG24LVTA



Ref.	Description	Part number
1	Remote control	9379219037
2	Remote control holder	9305642045
3	Cosmetic panel R	9358535028
4	Cosmetic panel L	9358536025
5	Top cover	9358534021
6	Kit (grill sub assy)	9372676035
7	Air filter	9358567036
8	Panel assy	9359076322
9	Panel sub assy	9359057239

INDOOR UNIT  
 ABYG24LVTA  
 Flap base assy

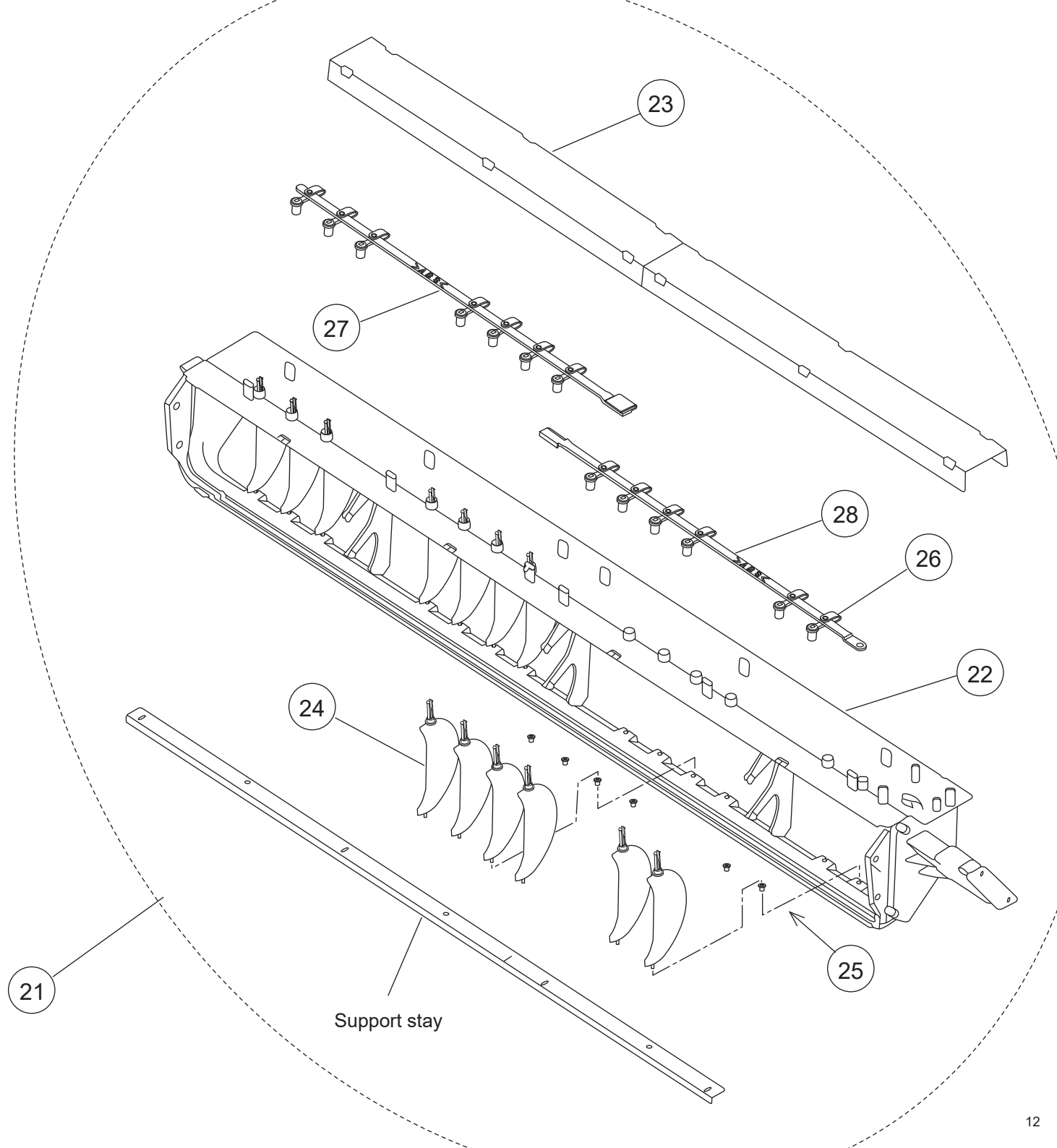


Ref.	Description	Part number
11	Flap (upper) F	9358538029
12	Kit (flap lower)	9372671023
13	Bushing	9357942001
14	Bushing C	9358553008
15	Step motor H	9900297015
16	Louver link	9358556009
17	Louver shaft	9358557006
18	Louver link cover	9358558010
19	Motor base assy	9359067030
20	Step motor V	9900362010

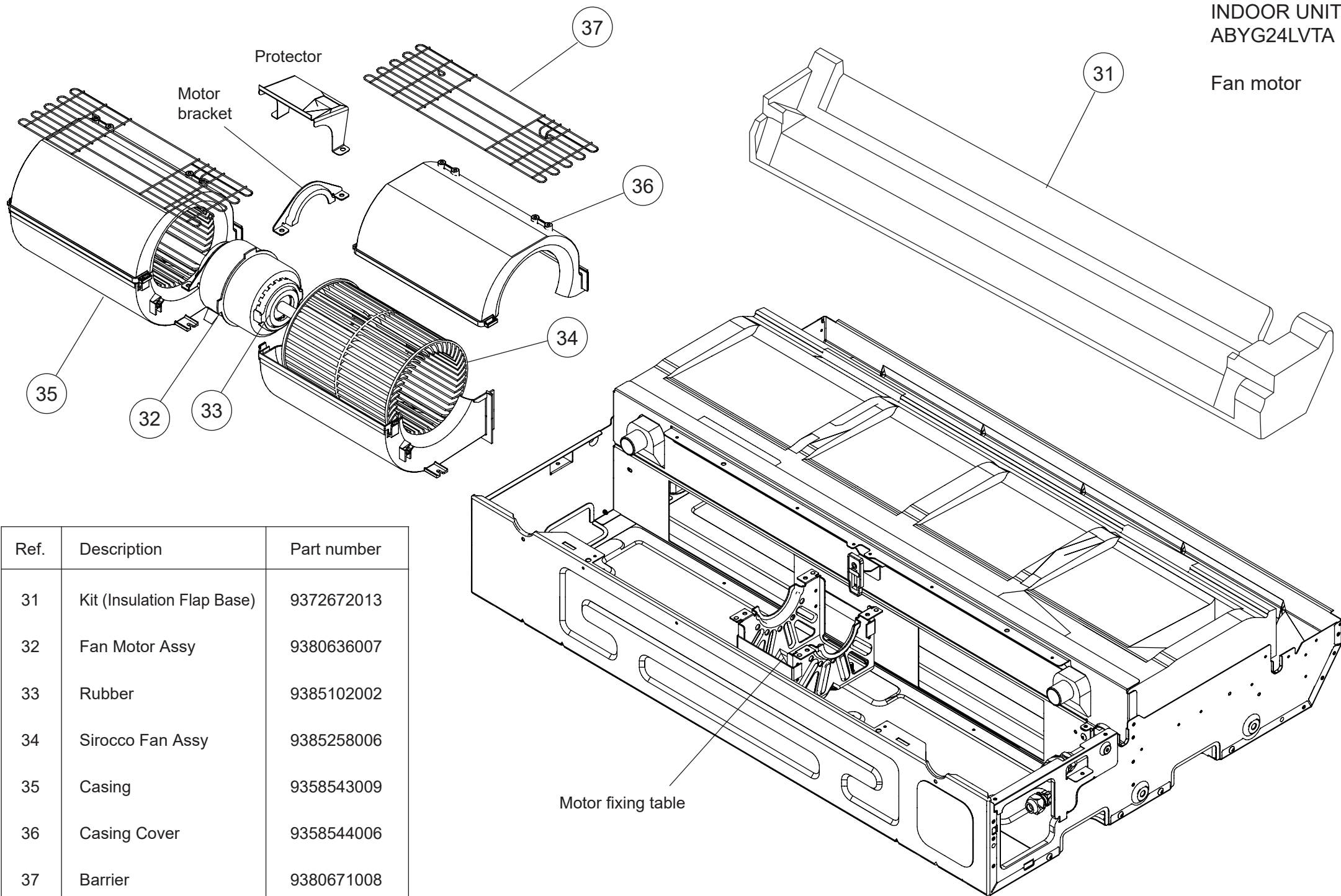
INDOOR UNIT  
 ABYG24LVTA

Kit (flap base sub assy)

Ref.	Description	Part number
21	Kit (Flap Base Sub Assy)	9372670040
22	Flap Base	9358537022
23	Protect Cover	9358564011
24	Louver	9358561027
25	Bushing B	9358554005
26	Louver Stopper	9358555002
27	Louver Rod	9358559017
28	Motor Rod	9358560013



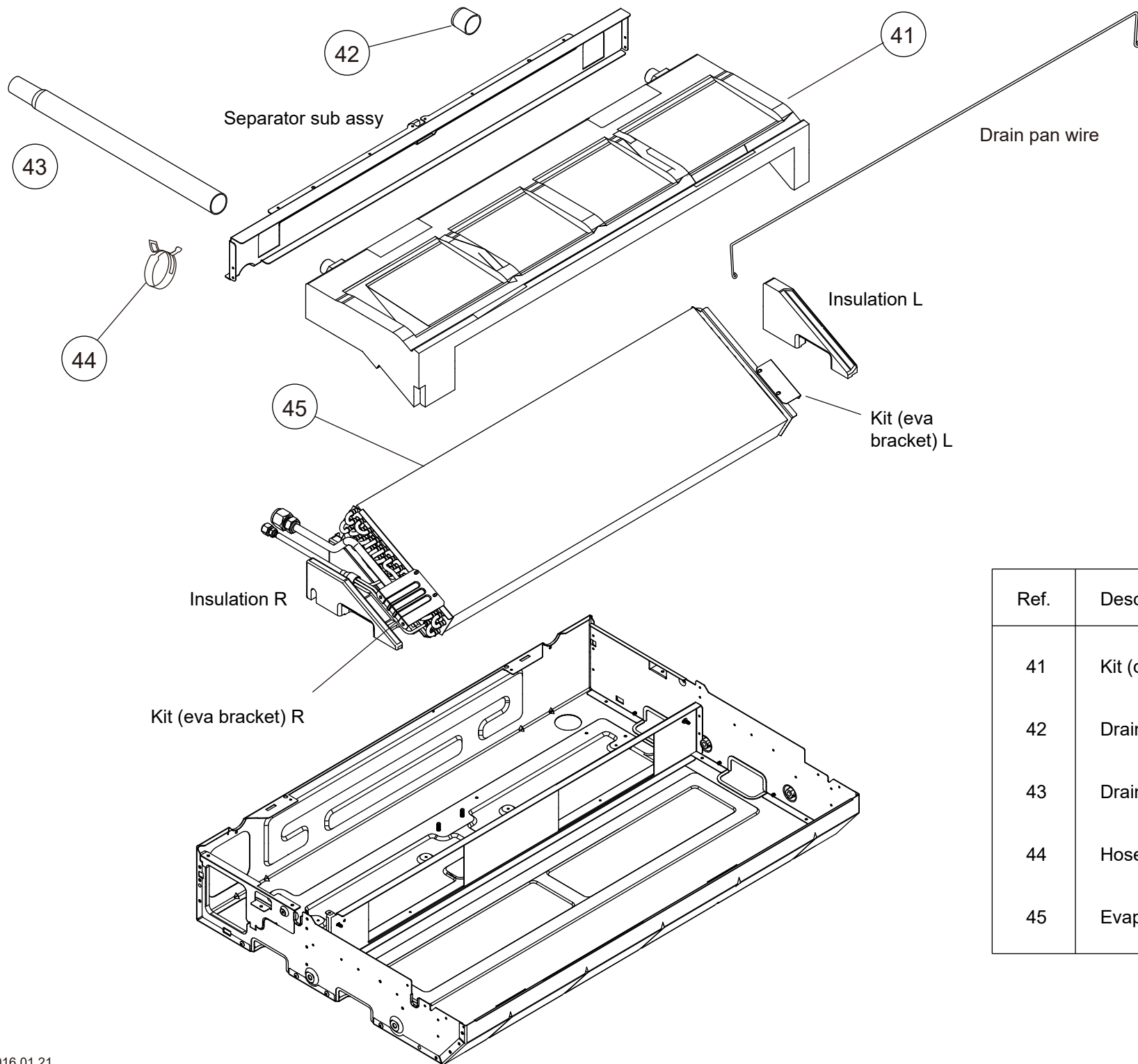
Fan motor



Ref.	Description	Part number
31	Kit (Insulation Flap Base)	9372672013
32	Fan Motor Assy	9380636007
33	Rubber	9385102002
34	Sirocco Fan Assy	9385258006
35	Casing	9358543009
36	Casing Cover	9358544006
37	Barrier	9380671008

INDOOR UNIT  
ABYG24LVTA

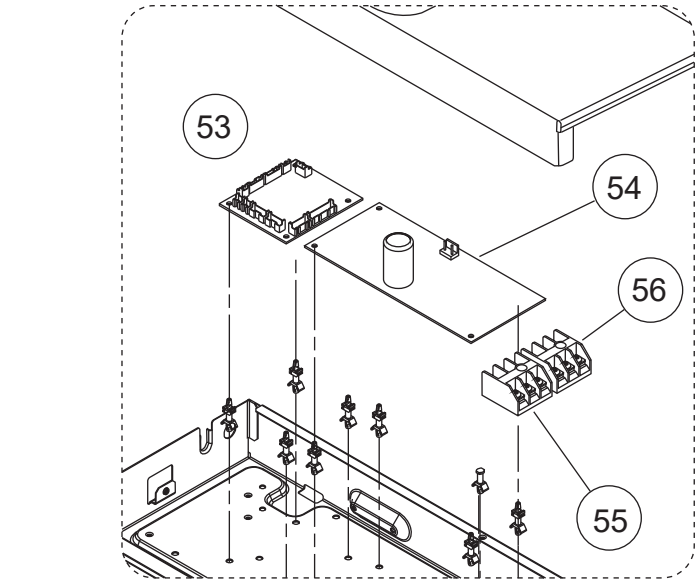
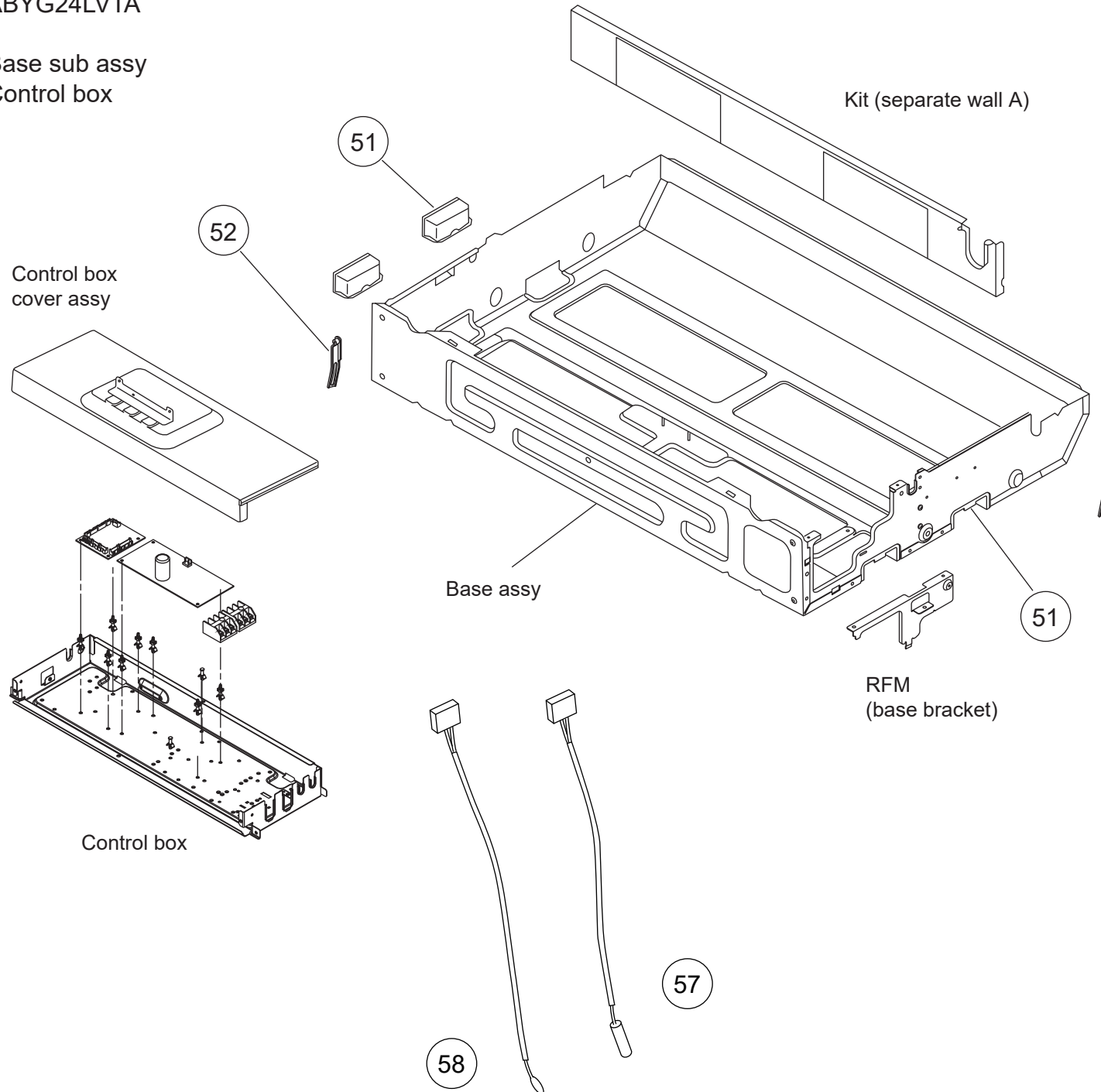
Evaporator  
Drain pan



Ref.	Description	Part number
41	Kit (drain pan sub assy)	9372669013
42	Drain cap	9358746004
43	Drain hose assy	9377785060
44	Hose band	9379757003
45	Evaporator sub assy	9359051268

INDOOR UNIT  
ABYG24LVTA

Base sub assy  
Control box



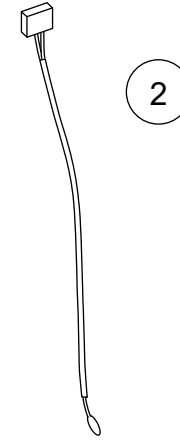
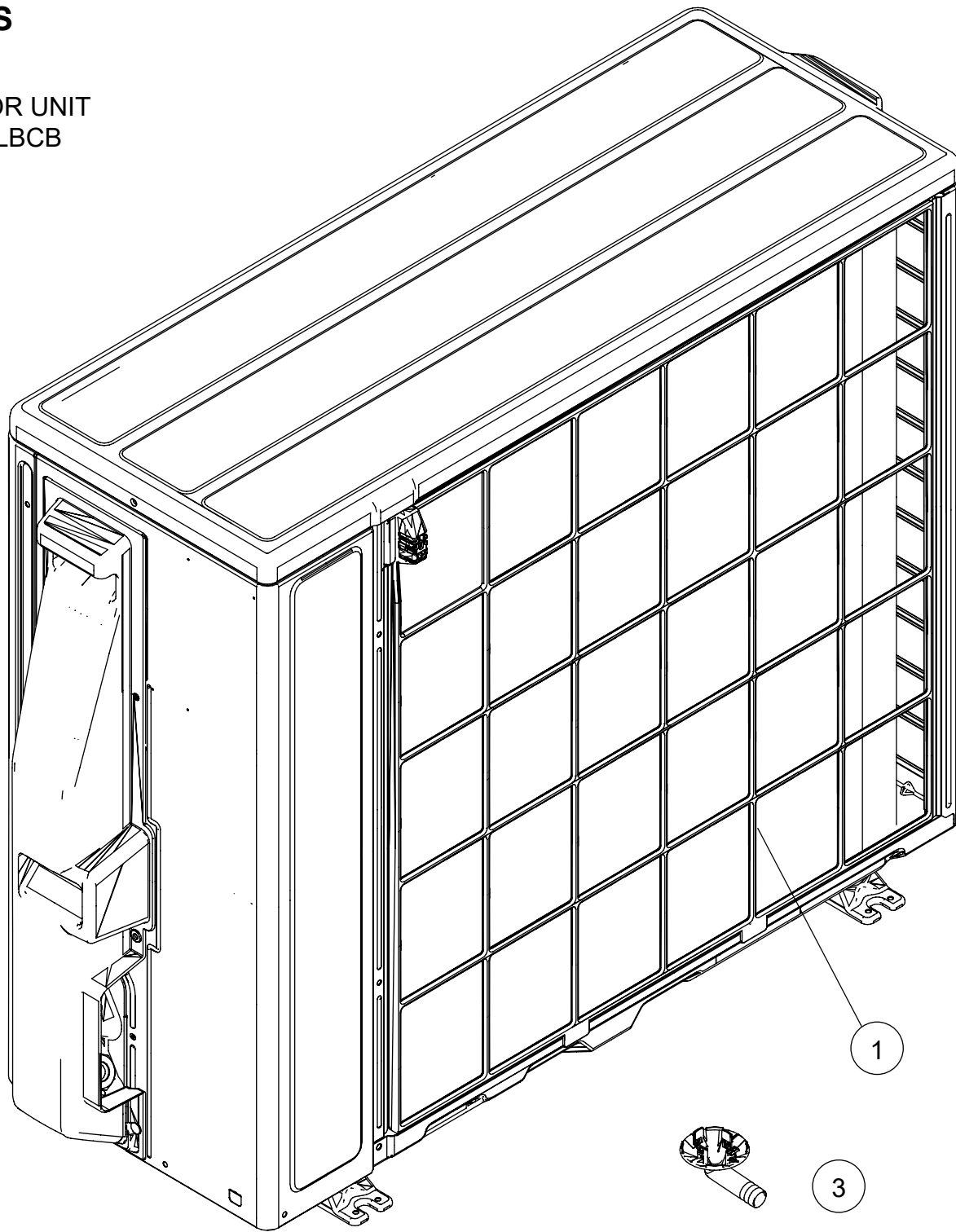
52

Ref.	Description	Part number
51	Cap	9358563007
52	Arm	9358565001
53	Main PCB	9710621277
54	Power supply PCB	9707398274
55	Terminal 3P	9306489045
56	Terminal 3P	9703345012
57	Pipe thermistor	9900022020
58	Room thermistor	9703299087



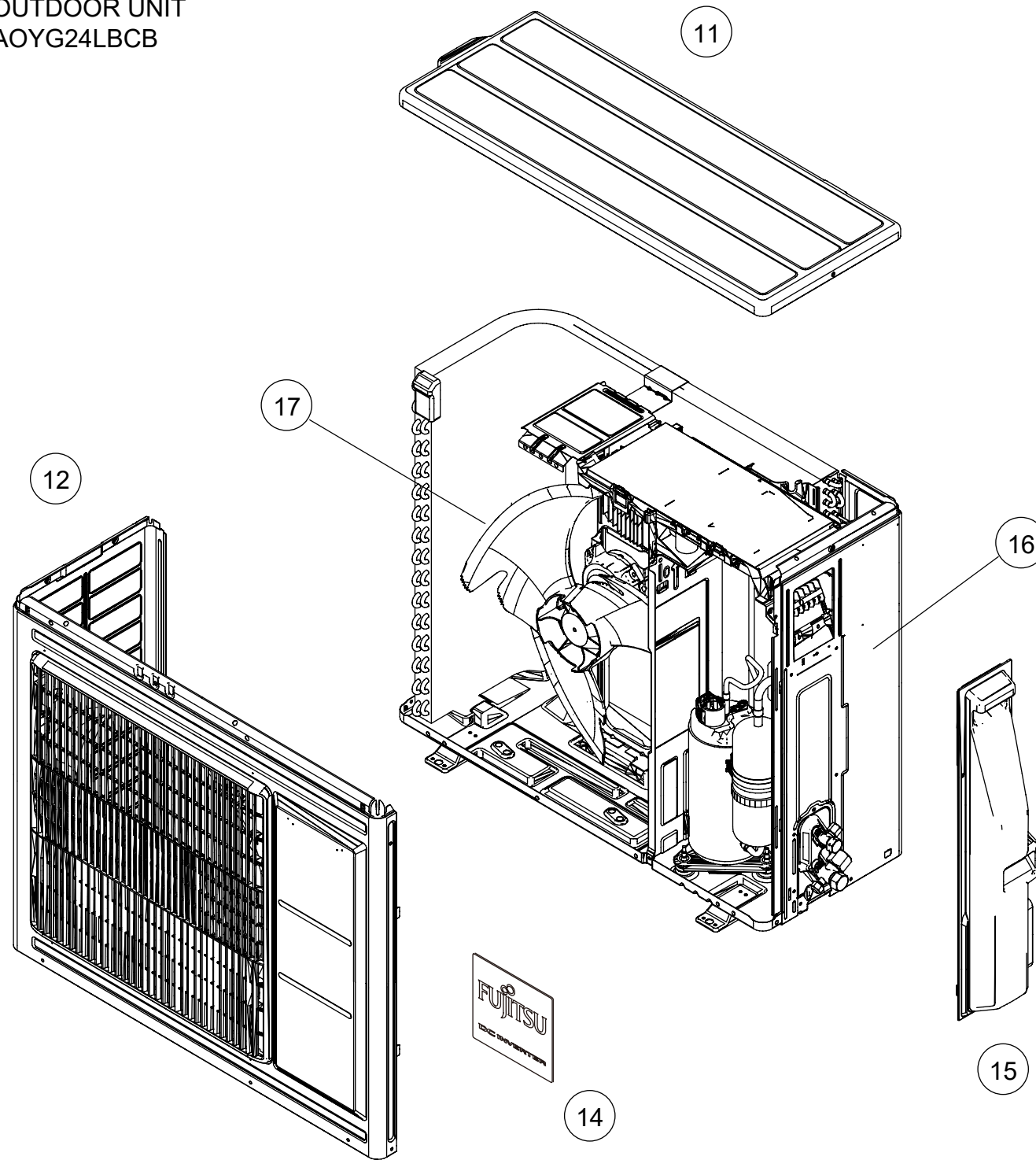
# PARTS

OUTDOOR UNIT  
AOYG24LBCB

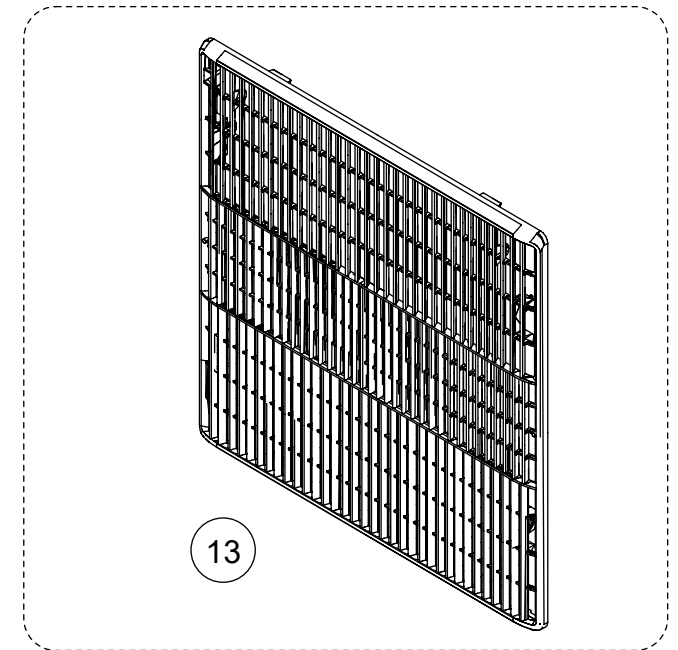


Ref.	Description	Part number
1	Protective net assy	9322811035
2	Outdoor thermistor	9900850012
3	Drain pipe	9322144003

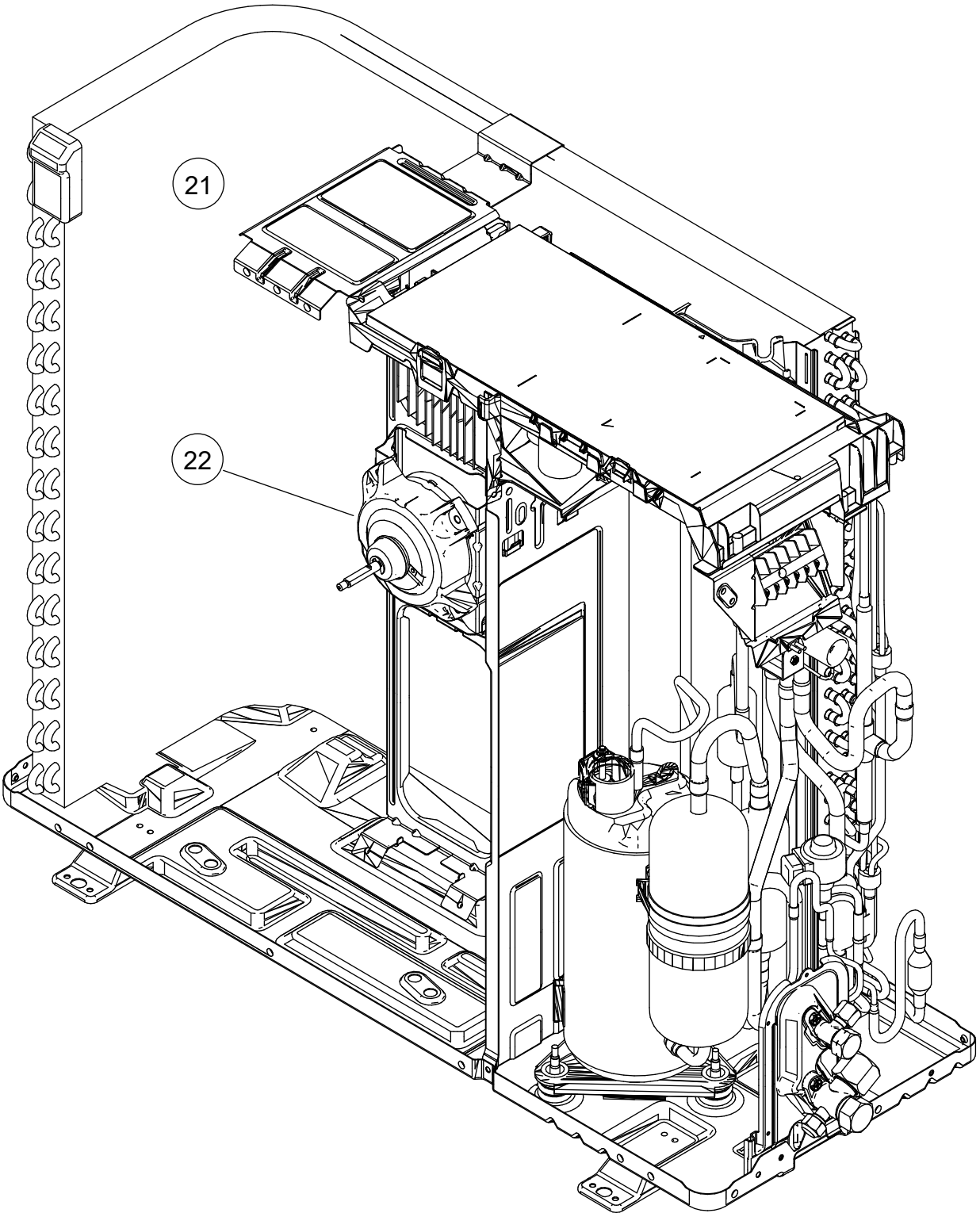
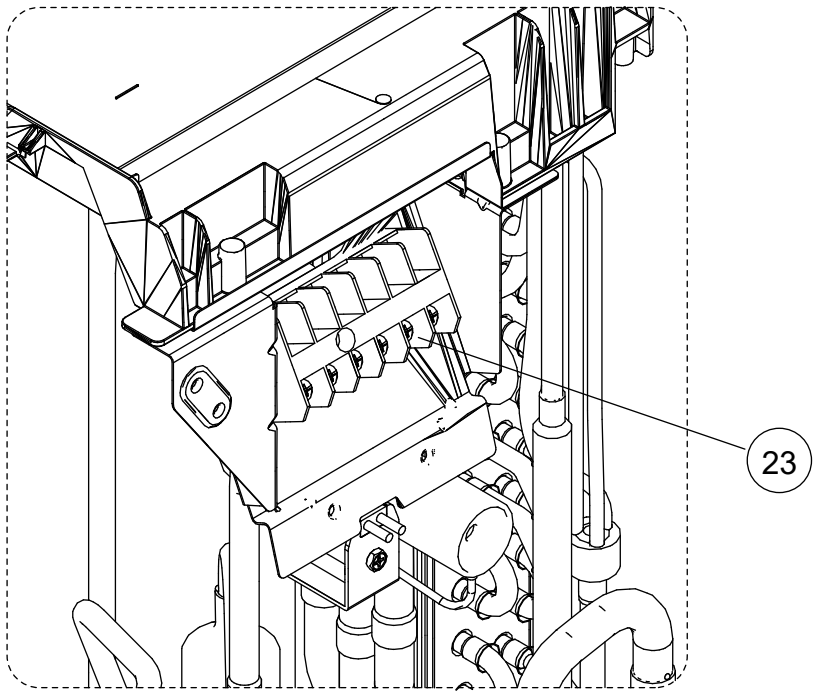
OUTDOOR UNIT  
AOYG24LBCB



Ref.	Description	Part number
11	Top panel assy	9322556073
12	Front panel assy	9322555038
13	Blow grille	9322149008
14	Emblem	9319151007
15	Switch cover assy	9322570031
16	Cabinet right Assy	9322552082
17	Propeller fan	9322150004

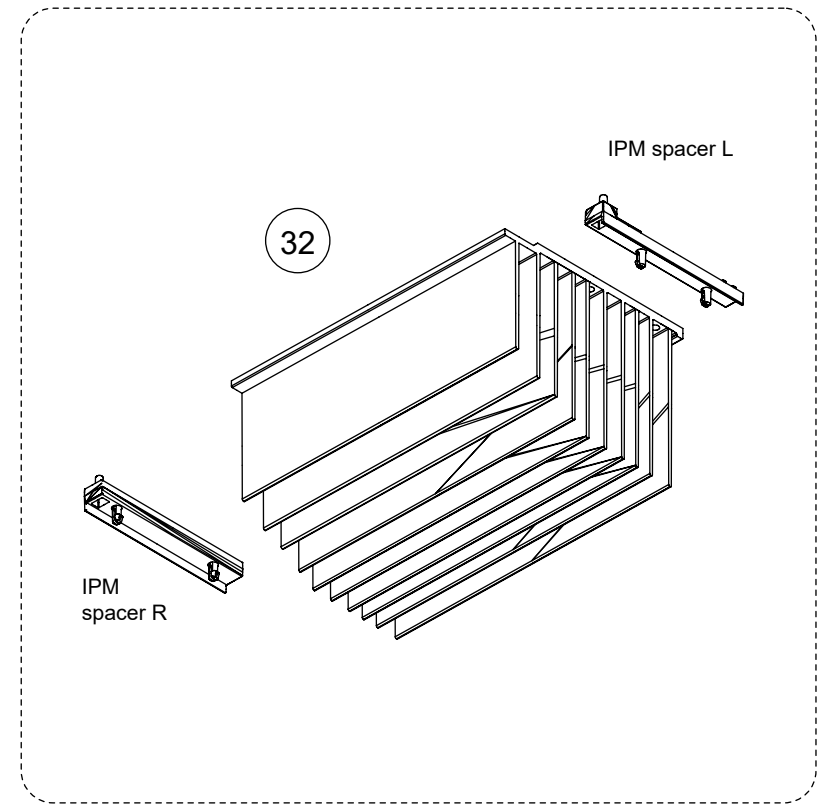
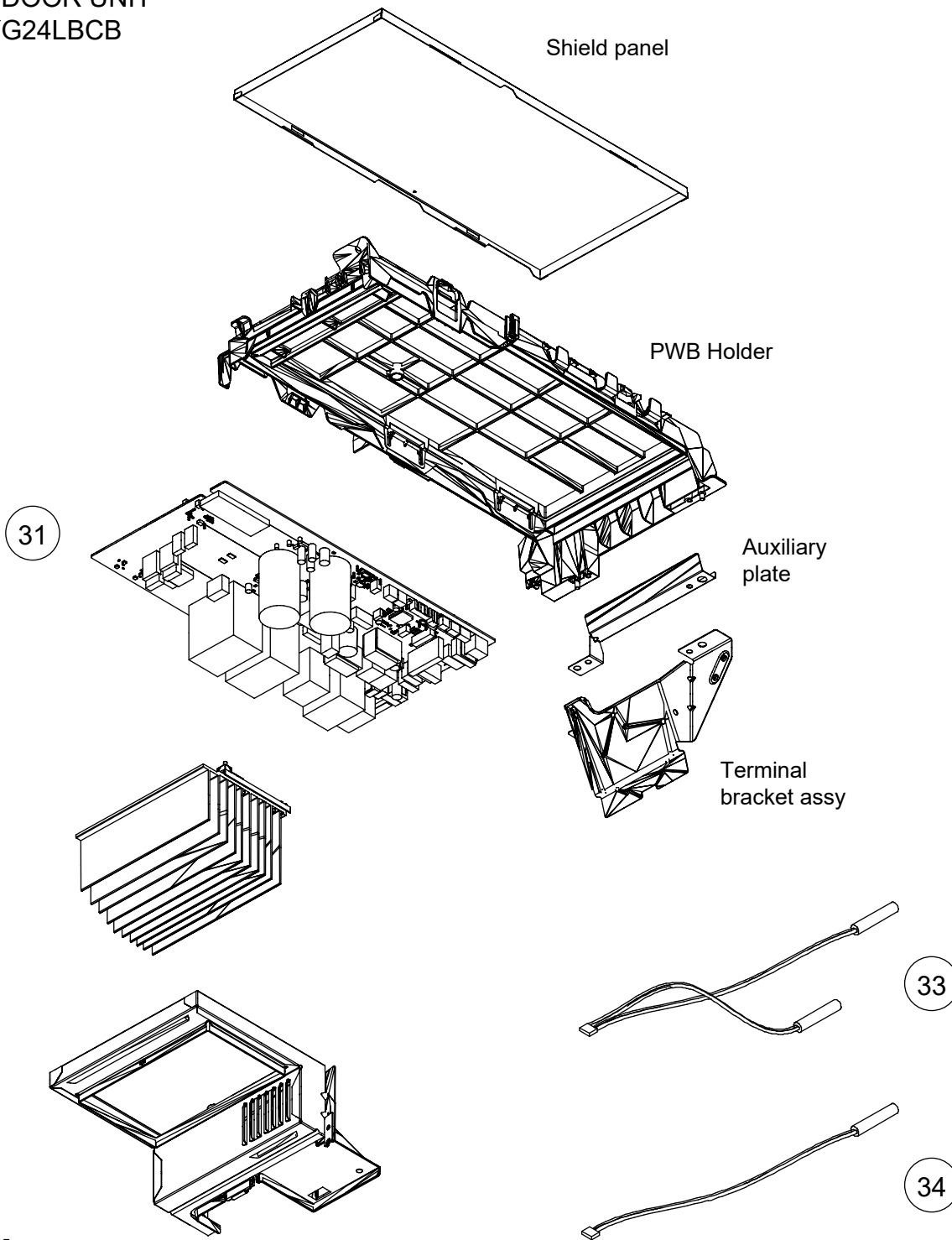


OUTDOOR UNIT  
AOYG24LBCB



Ref.	Description	Part number
21	Motor bracket assy	9322553034
22	Brushless motor	9603601003
23	Terminal	9900435028

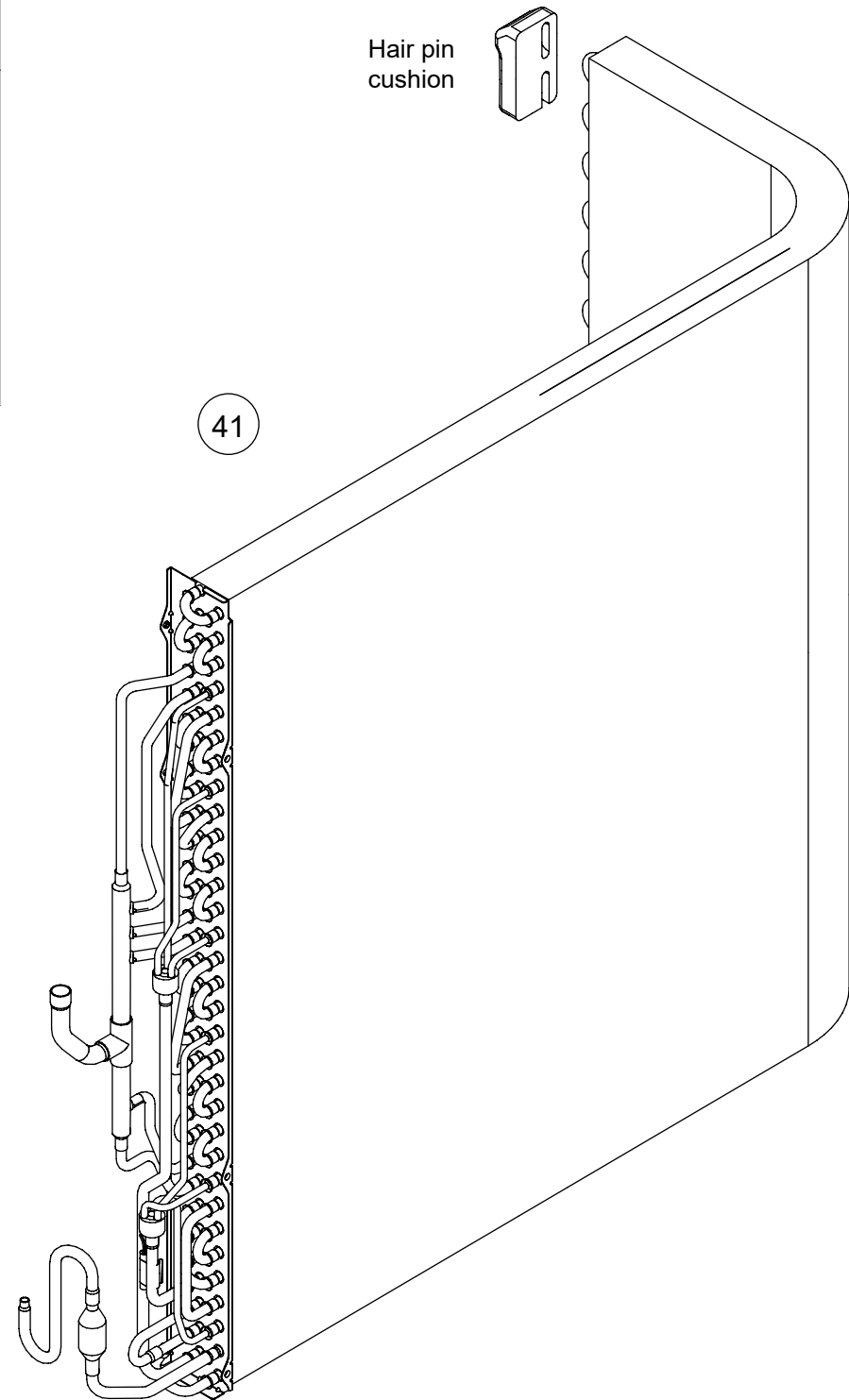
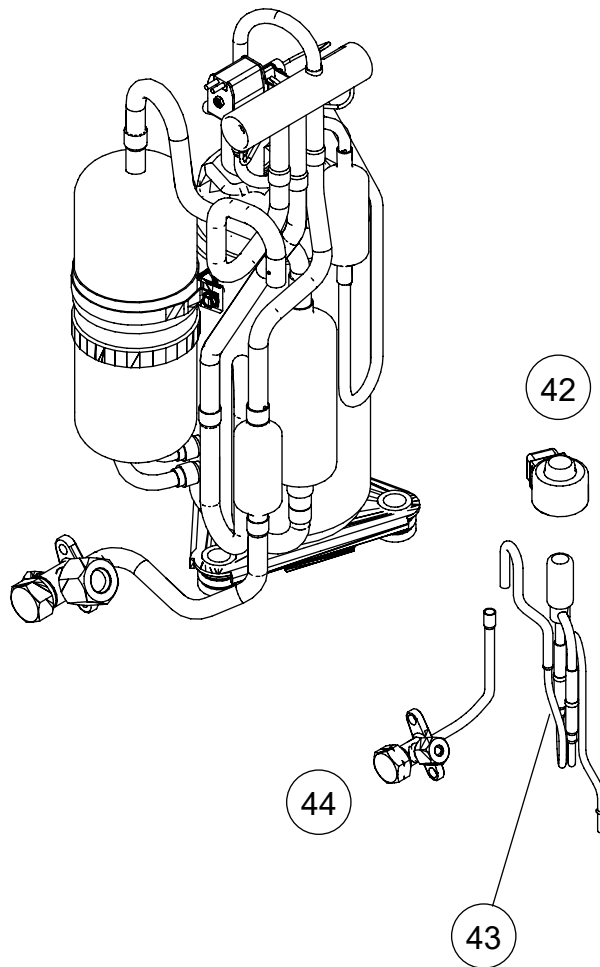
OUTDOOR UNIT  
AOYG24LBCB



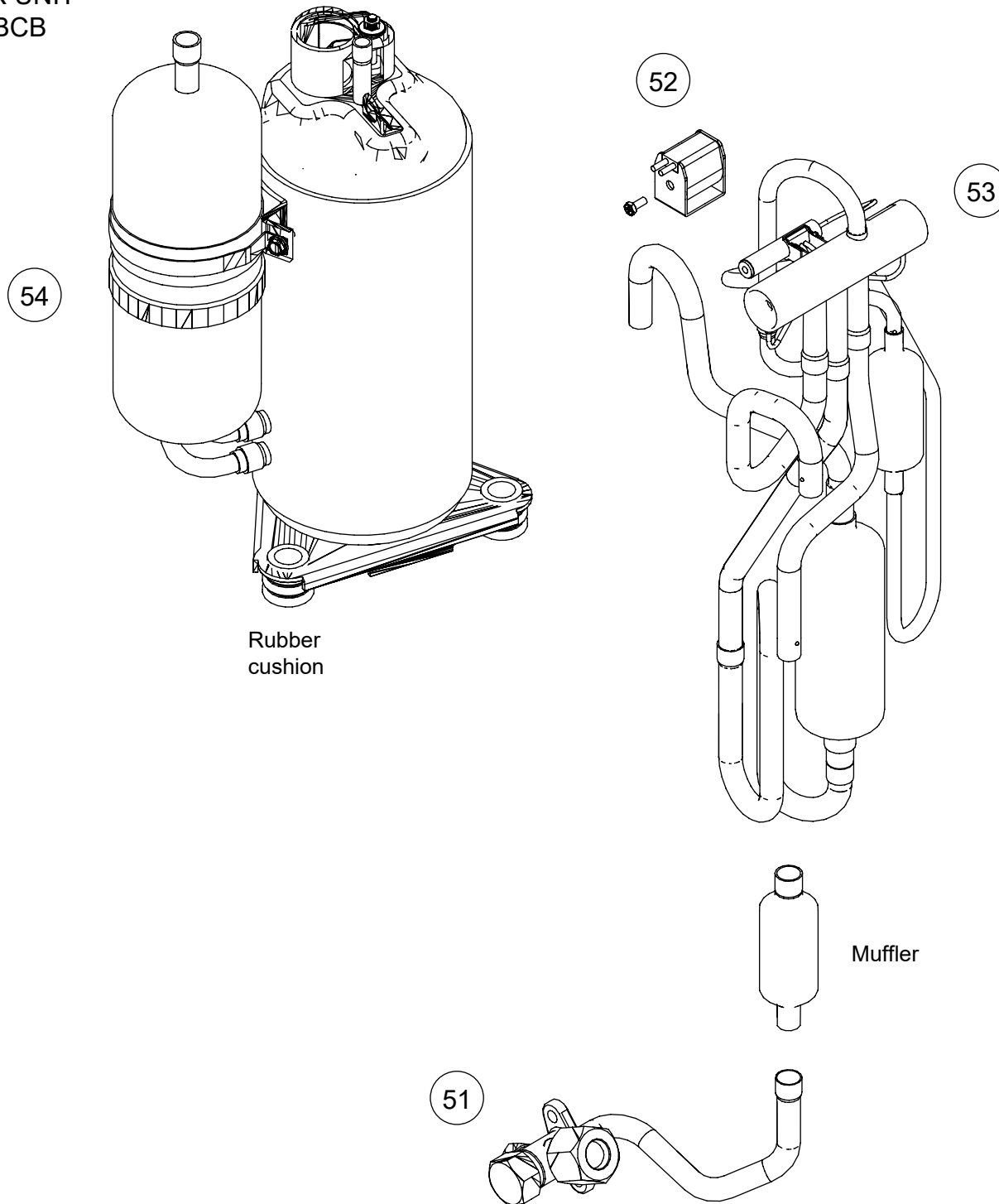
Ref.	Description	Part number
31	Main PCB	9710408069
32	Heatsink	9322421012
33	Thermistor assy	9900849030
34	Heat exchanger thermistor	9900984014

OUTDOOR UNIT  
AOYG24LBCB

Ref.	Description	Part number
41	Condenser total assy	9317089630
42	Expansion valve coil	9970095122
43	Pulse motor valve assy	9322463005
44	2-way valve assy	9322476005



OUTDOOR UNIT  
AOYG24LBCB



Ref.	Description	Part number
51	3-way valve assy	9322477019
52	Solenoid	9970195006
53	4-way valve assy	9322447005
54	Compressor	9810540003
-	S-insulator B	9322503008
-	S-insulator F	9322529008
-	S-insulator H	9322501004
-	S-insulator V	9323045002
-	S-insulator K	9322824004

# ACCESSORIES

## INDOOR UNIT ABYG24LVTA

Name and Shape	Q'ty	Name and Shape	Q'ty	Name and Shape	Q'ty
Cover plate (Left) 	1	Special nut  For suspending the indoor unit from ceiling	4	Binder (Small)  For electrical wiring	2
Cover plate (Right) 	1	Wall bracket  For suspending the indoor unit on the wall	2	Wire clammer  For electrical wiring	1
Screw (M4 × 10mm) 	2	Screw (M4 × 20mm)  For fixing the wall bracket	6	Drain hose 	1
Installation template  Positioning for under ceiling type	1	Coupler heat insulator (Large)  For indoor side pipe joint(Large pipe)	1	Hose band  For installing drain hose	1
Bracket (Left)  For suspending the indoor unit from ceiling	1	Coupler heat insulator (Small)  For indoor side pipe joint (Small pipe)	1	Insulation (Drain hose)  Adhesive type 100 x 220(mm)	1
Bracket (Right)  For suspending the indoor unit from ceiling	1	Binder (Large)  For fixing drain hose	1	VT wire  For fixing drain hose L 280mm	1

## OUTDOOR UNIT AOYG24LBCB

Name and Shape	Q'ty
Remote control 	1
Drain pipe 9322144003  For drain piping work	1

Name and Shape	Q'ty
Battery 	2
Remote control holder 	1
Screw (M3 × 12mm)  For remote control holder installation	2

1801G4692