

# SERVICE MANUAL



Indoor unit	Outdoor unit
RDG22KMLA RDG22KMLB	ROG22KBTB

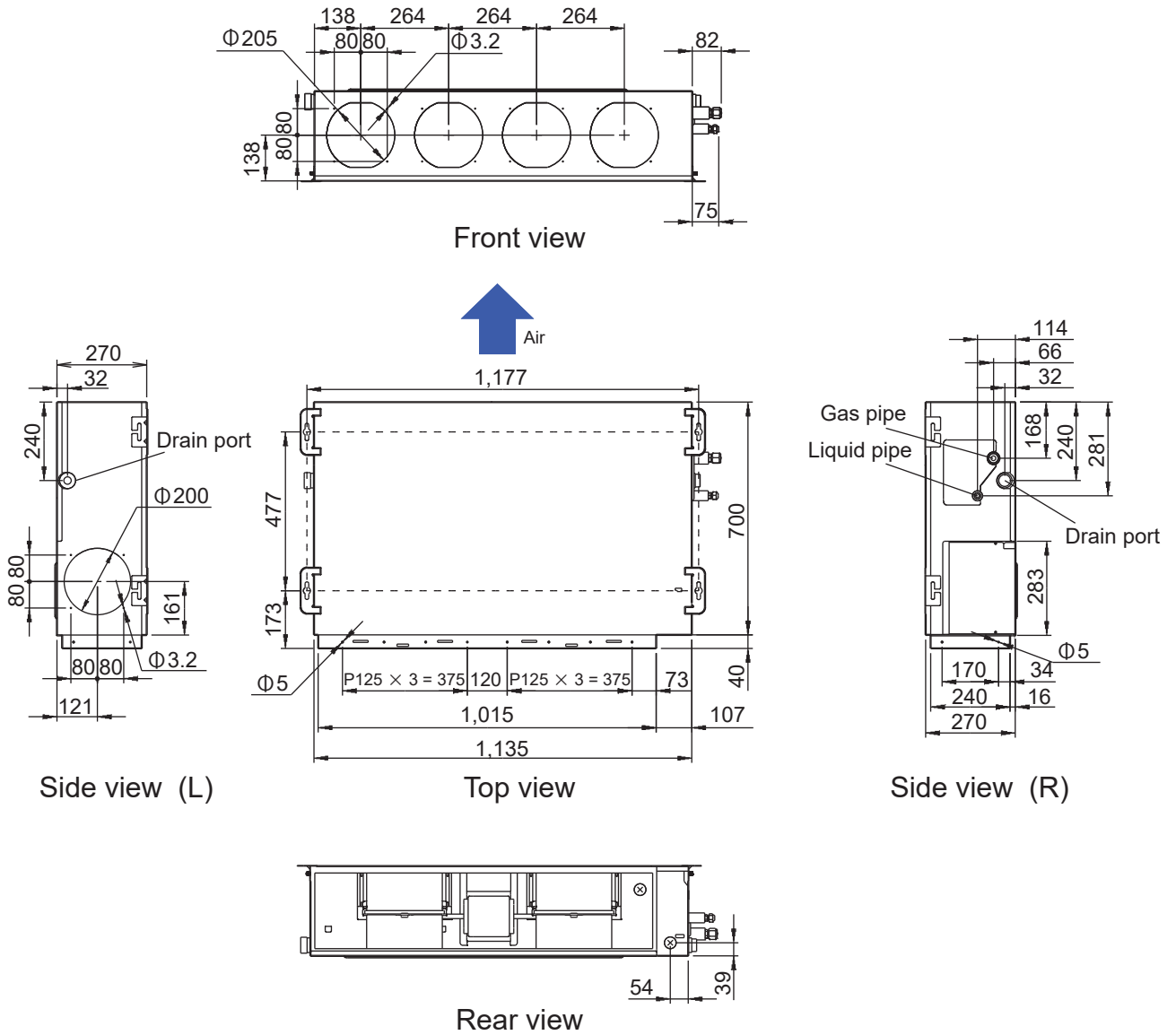
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# Dimensions ( Indoor unit )

## Models: RDG22KMLA and RDG22KMLB

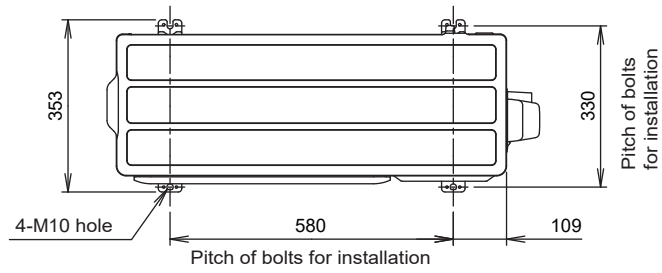
Unit: mm



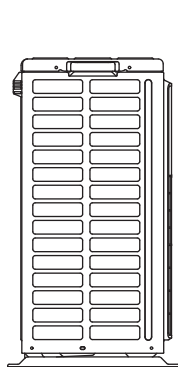
# Dimensions ( Outdoor unit )

## Model: ROG22KBTB

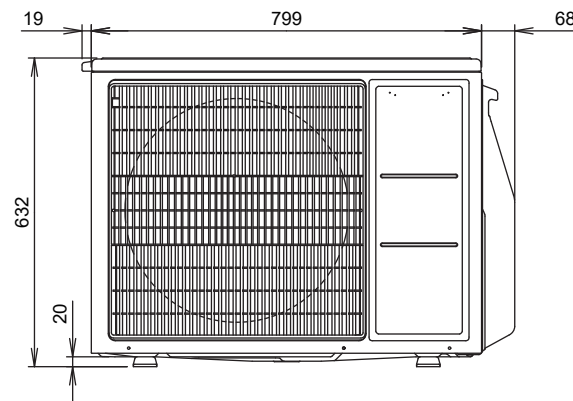
Unit: mm



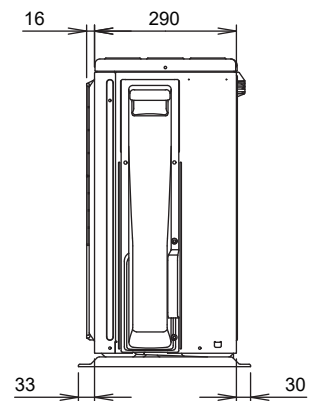
Top view



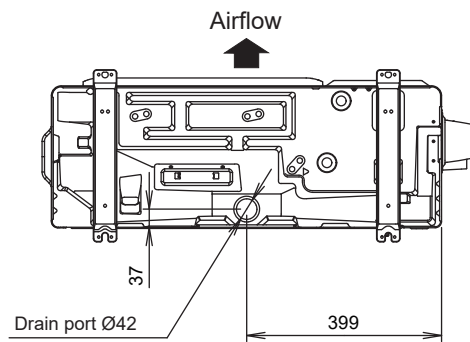
Side view



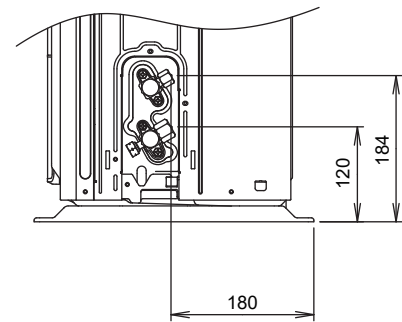
Front view



Side view



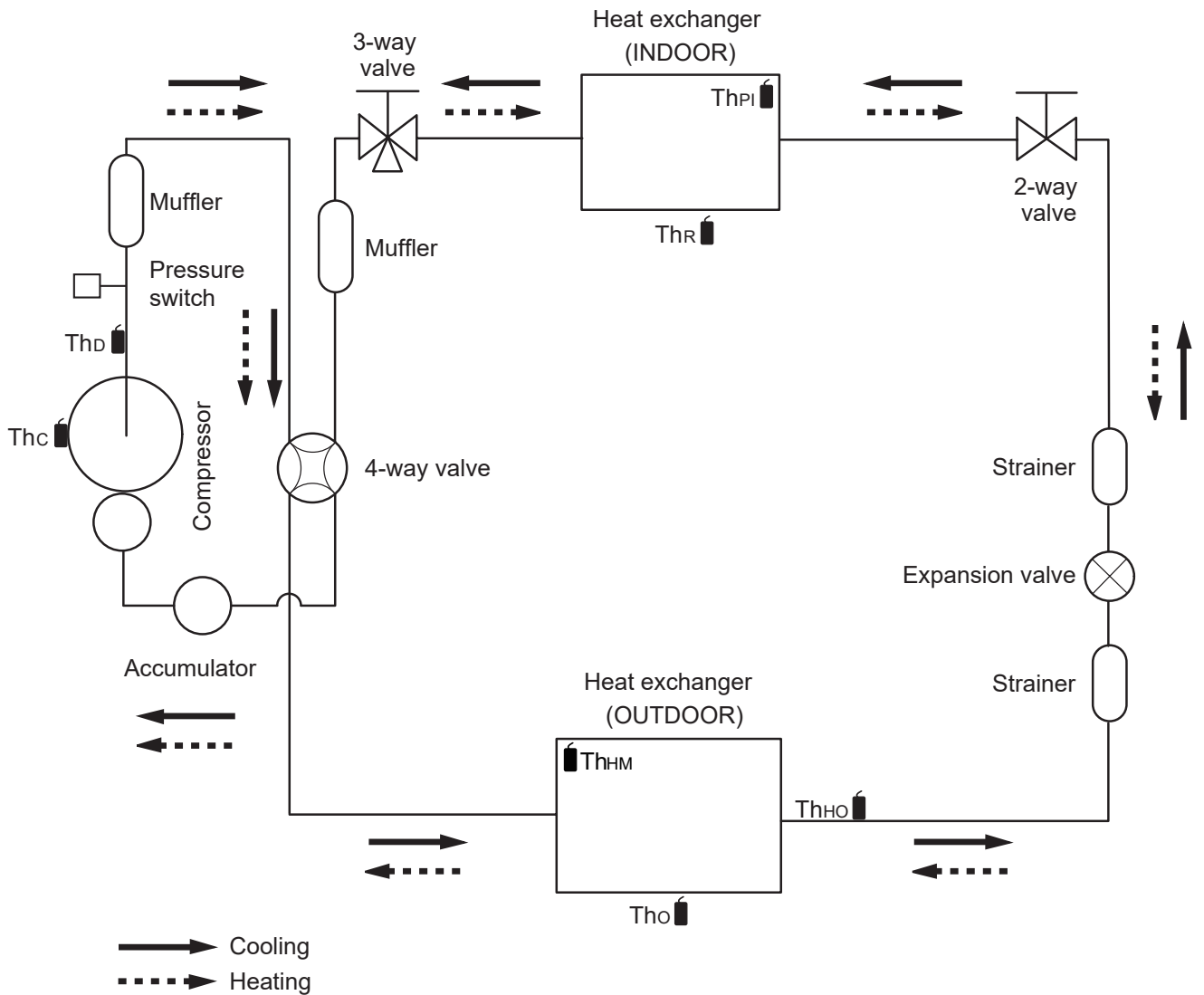
Bottom view



Side view (Valve part)

# Refrigerant circuit

## Model: ROG22KBTB



- Th<sub>c</sub> : Thermistor (Compressor temperature)
- Th<sub>d</sub> : Thermistor (Discharge temperature)
- Th<sub>o</sub> : Thermistor (Outdoor temperature)
- Th<sub>Ho</sub> : Thermistor (Heat exchanger out temperature)
- Th<sub>HM</sub> : Thermistor (Heat exchanger middle temperature)
- Th<sub>R</sub> : Thermistor (Room temperature)
- Th<sub>PI</sub> : Thermistor (Pipe temperature)

# INDOOR PRINTED CIRCUIT BOARD CIRCUIT DIAGRAM

Models : RDG22KMLA and RDG22KMLB

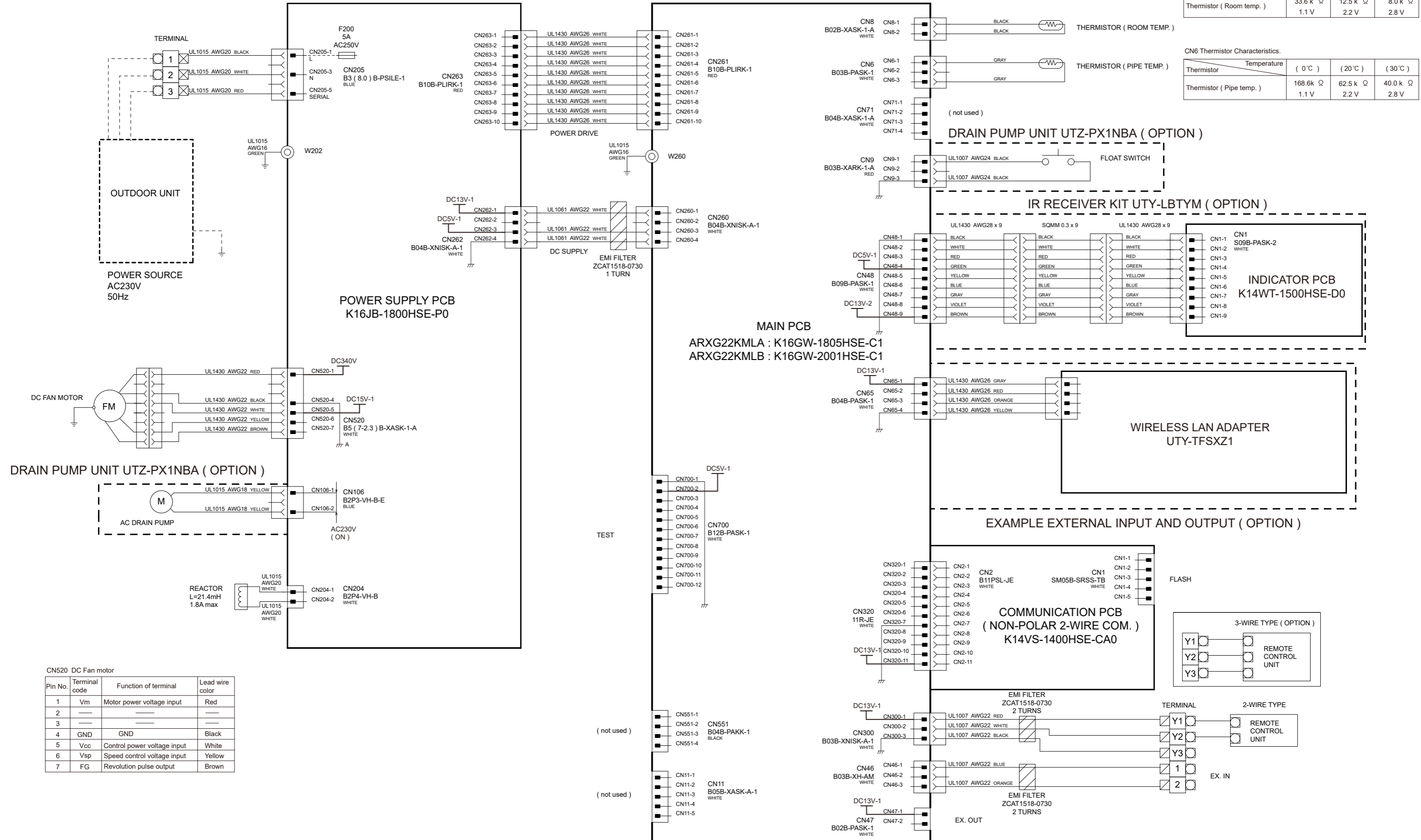
CONTROL UNIT :  
RDG22KMLA : EZ-01811HSE  
RDG22KMLB : EZ-02004HSE

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

CN6 Thermistor Characteristics.

Thermistor	Temperature	( 0°C )	( 20°C )	( 30°C )
Thermistor ( Pipe temp. )		168.6 k Ω	62.5 k Ω	40.0 k Ω
		1.1 V	2.2 V	2.8 V



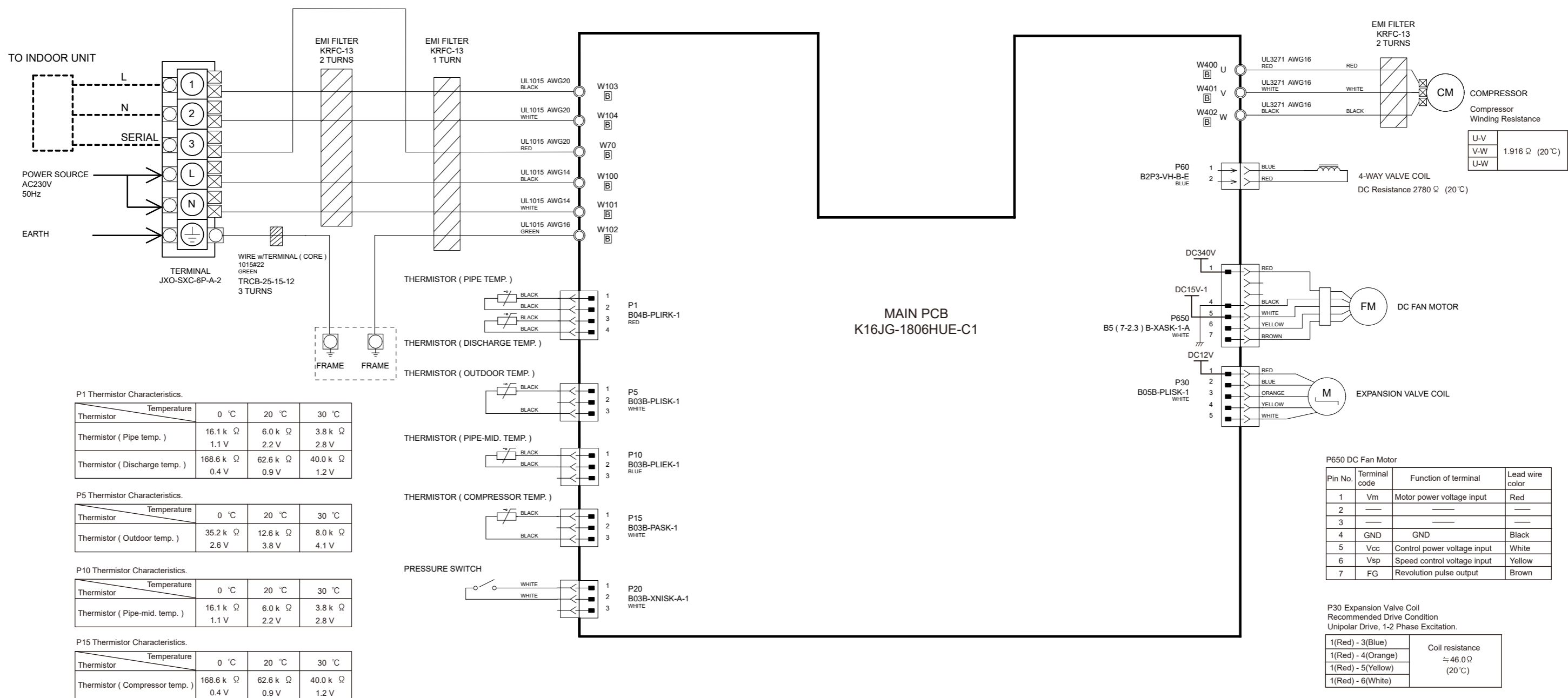
CN520 DC Fan motor

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

# OUTDOOR PRINTED CIRCUIT BOARD CIRCUIT DIAGRAM

Model : ROG22KBTB

INVERTER ASSEMBLY  
EZ-0118YHUE



**P1 Thermistor Characteristics.**

Thermistor	Temperature	0 °C	20 °C	30 °C
Thermistor ( Pipe temp. )		16.1 k Ω	6.0 k Ω	3.8 k Ω
		1.1 V	2.2 V	2.8 V
Thermistor ( Discharge temp. )		168.6 k Ω	62.6 k Ω	40.0 k Ω
		0.4 V	0.9 V	1.2 V

**P5 Thermistor Characteristics.**

Thermistor	Temperature	0 °C	20 °C	30 °C
Thermistor ( Outdoor temp. )		35.2 k Ω	12.6 k Ω	8.0 k Ω
		2.6 V	3.8 V	4.1 V

**P10 Thermistor Characteristics.**

Thermistor	Temperature	0 °C	20 °C	30 °C
Thermistor ( Pipe-mid. temp. )		16.1 k Ω	6.0 k Ω	3.8 k Ω
		1.1 V	2.2 V	2.8 V

**P15 Thermistor Characteristics.**

Thermistor	Temperature	0 °C	20 °C	30 °C
Thermistor ( Compressor temp. )		168.6 k Ω	62.6 k Ω	40.0 k Ω
		0.4 V	0.9 V	1.2 V

**Compressor Winding Resistance**

U-V	1.916 Ω (20 °C)
V-W	
U-W	

**P650 DC Fan Motor**

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

**P30 Expansion Valve Coil**  
Recommended Drive Condition  
Unipolar Drive, 1-2 Phase Excitation.

1(Red) - 3(Blue)	Coil resistance ≈ 46.0 Ω (20 °C)
1(Red) - 4(Orange)	
1(Red) - 5(Yellow)	
1(Red) - 6(White)	

# Error codes

If you use a wired type remote controller, error codes will appear on the remote controller display. If you use a wireless remote controller, the lamps on the IR receiver unit will output error codes by way of blinking patterns. See the lamp blinking patterns and error codes in the table below. An error display is displayed only during operation.

Error display			Wired remote controller Error code	Description
OPERATION lamp (green)	TIMER lamp (orange)	ECONOMY lamp (green)		
●(1)	●(1)	◇	11	Serial communication error
●(1)	●(2)	◇	12	Wired remote controller 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	• Connection unit number error (indoor secondary unit) [Simultaneous Multi] • Connection unit number error (indoor unit or branch unit) [Flexible Multi]
●(2)	●(7)	◇	27	Primary unit, secondary unit setup 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	Room 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 L error
●(6)	●(10)	◇	6A	Display PCB microcomputers communication error
●(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

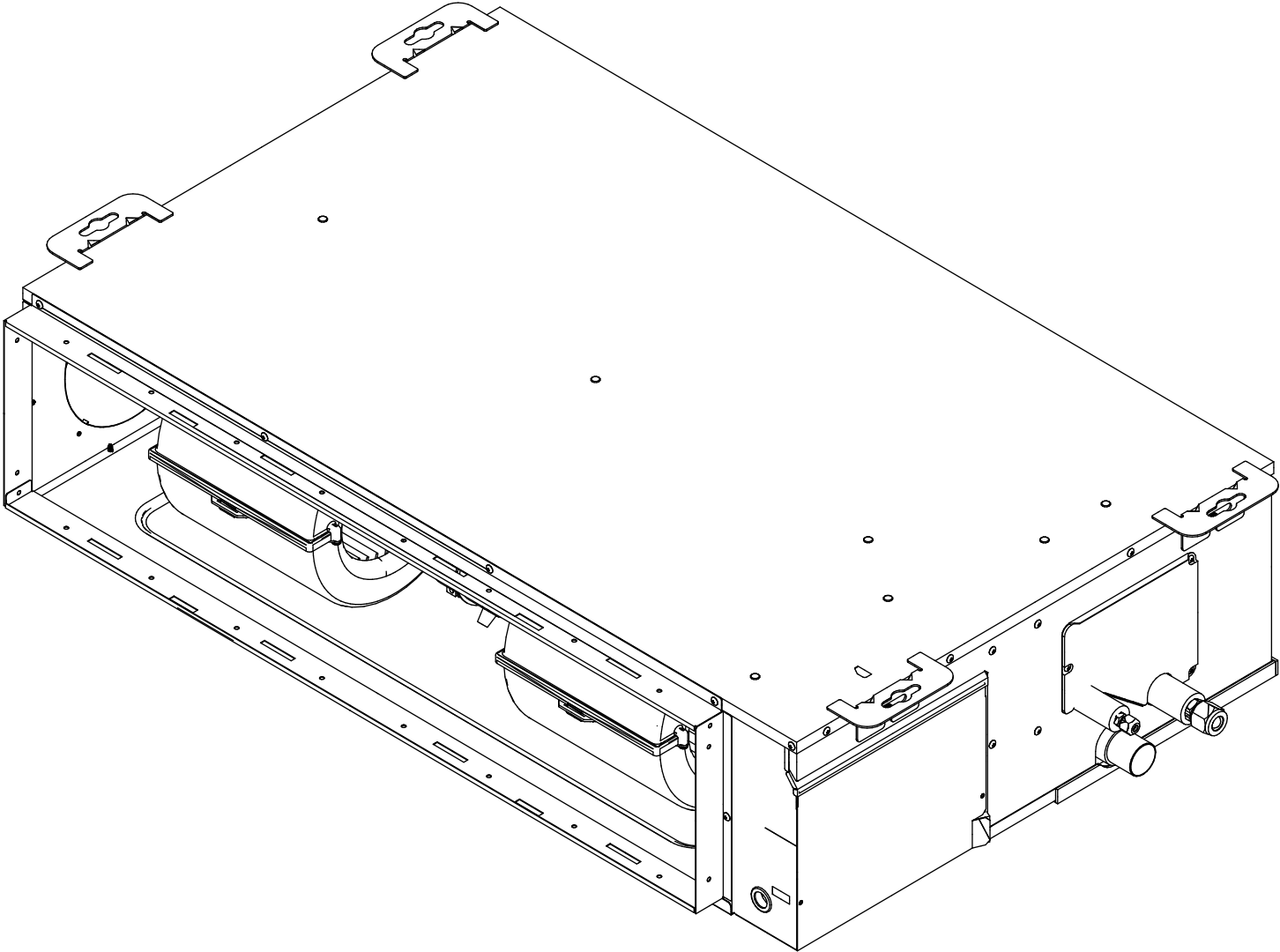
Error display			Wired remote controller Error code	Description
OPERATION lamp (green)	TIMER lamp (orange)	ECONOMY lamp (green)		
●(7)	●(4)	◇	74	Outdoor temp. sensor error
●(7)	●(5)	◇	75	Suction Gas temp. sensor error
●(7)	●(6)	◇	76	• 2-way valve temp. sensor error • 3-way valve temp. sensor error
●(7)	●(7)	◇	77	Heat sink temp. sensor error
●(8)	●(2)	◇	82	• Sub-cool Heat Ex. gas inlet temp. sensor error • Sub-cool Heat Ex. gas outlet temp. sensor error
●(8)	●(3)	◇	83	Liquid pipe temp. sensor error
●(8)	●(4)	◇	84	Current sensor error
●(8)	●(6)	◇	86	• Discharge pressure sensor error • Suction pressure sensor error • High pressure switch error
●(9)	●(4)	◇	94	Trip detection
●(9)	●(5)	◇	95	Compressor rotor position detection error (permanent stop)
●(9)	●(7)	◇	97	Outdoor unit fan motor 1 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]

Display mode ● : 0.5s ON / 0.5s OFF  
◇ : 0.1s ON / 0.1s OFF  
( ) : Number of flashing

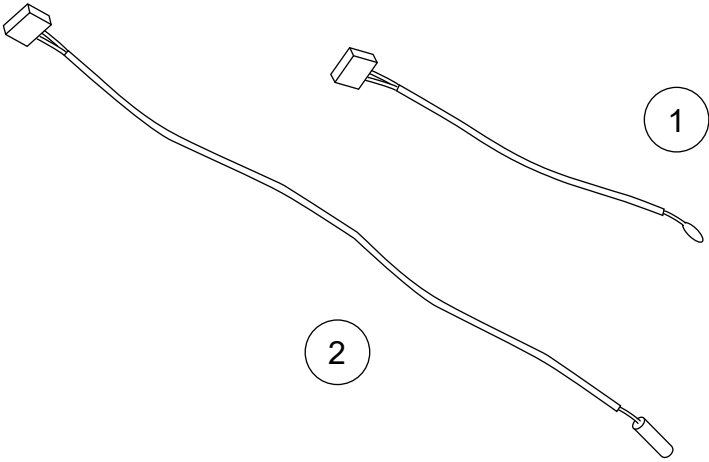
# Parts

INDOOR UNIT  
RDG22KMLA  
RDG22KMLB

Hook metal

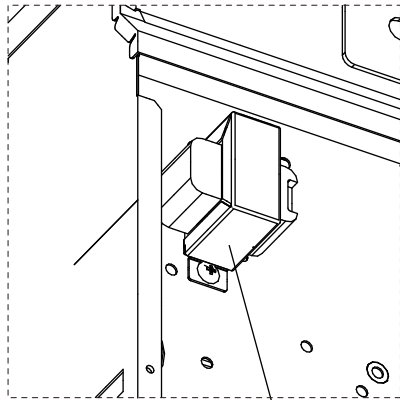


Ref.	Description	Part number
1	Room thermistor	9900826048
2	Pipe thermistor	9900942045

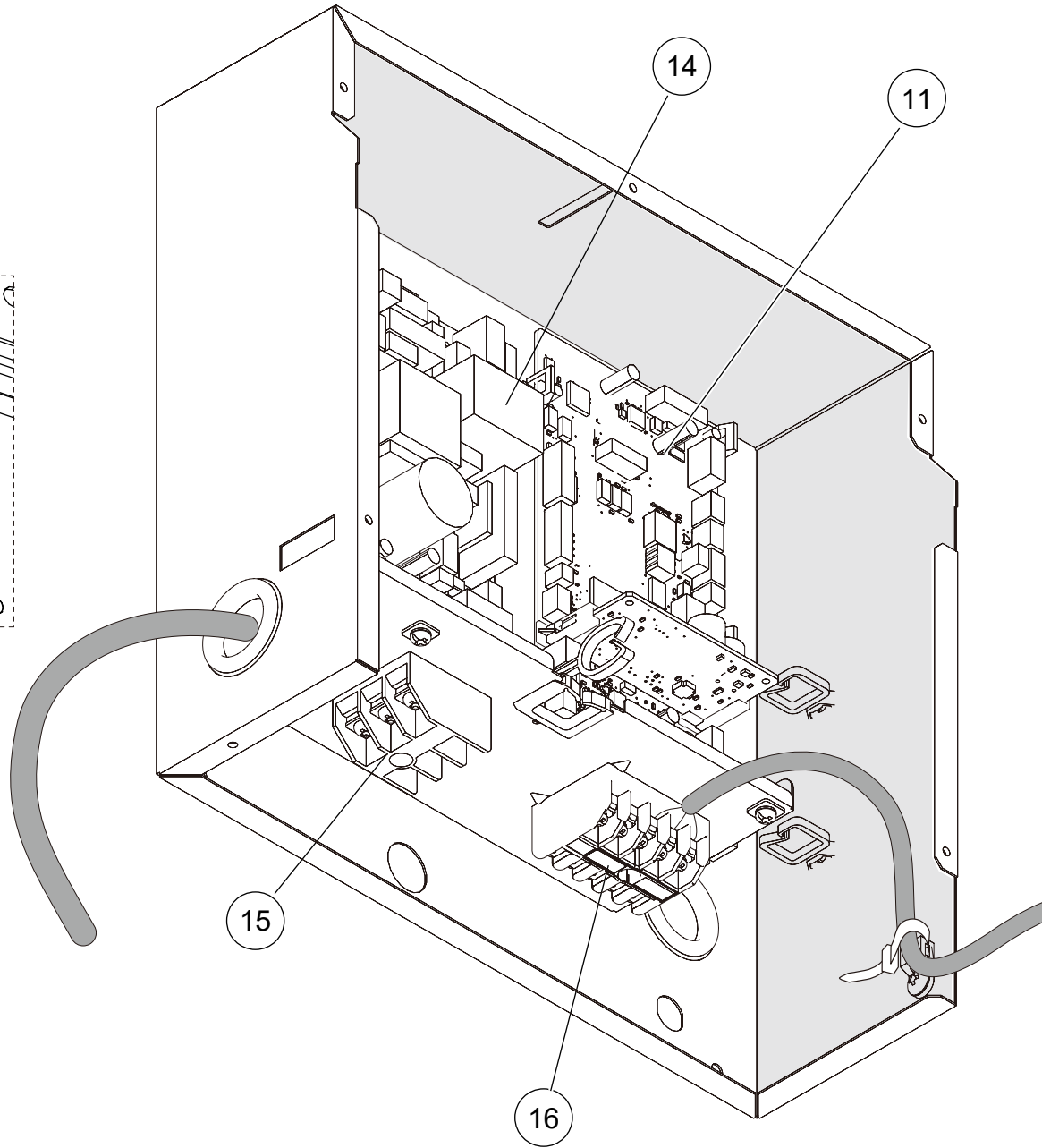




INDOOR UNIT  
RDG22KMLA  
RDG22KMLB



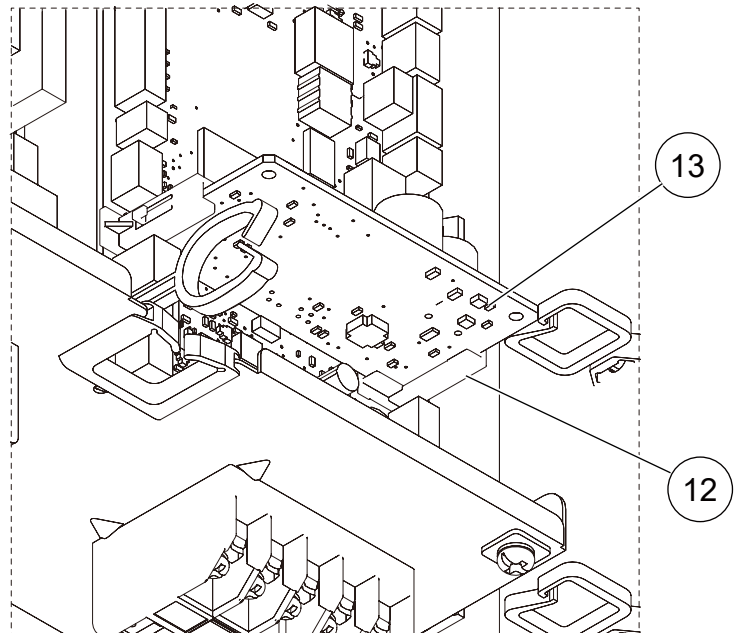
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15

16

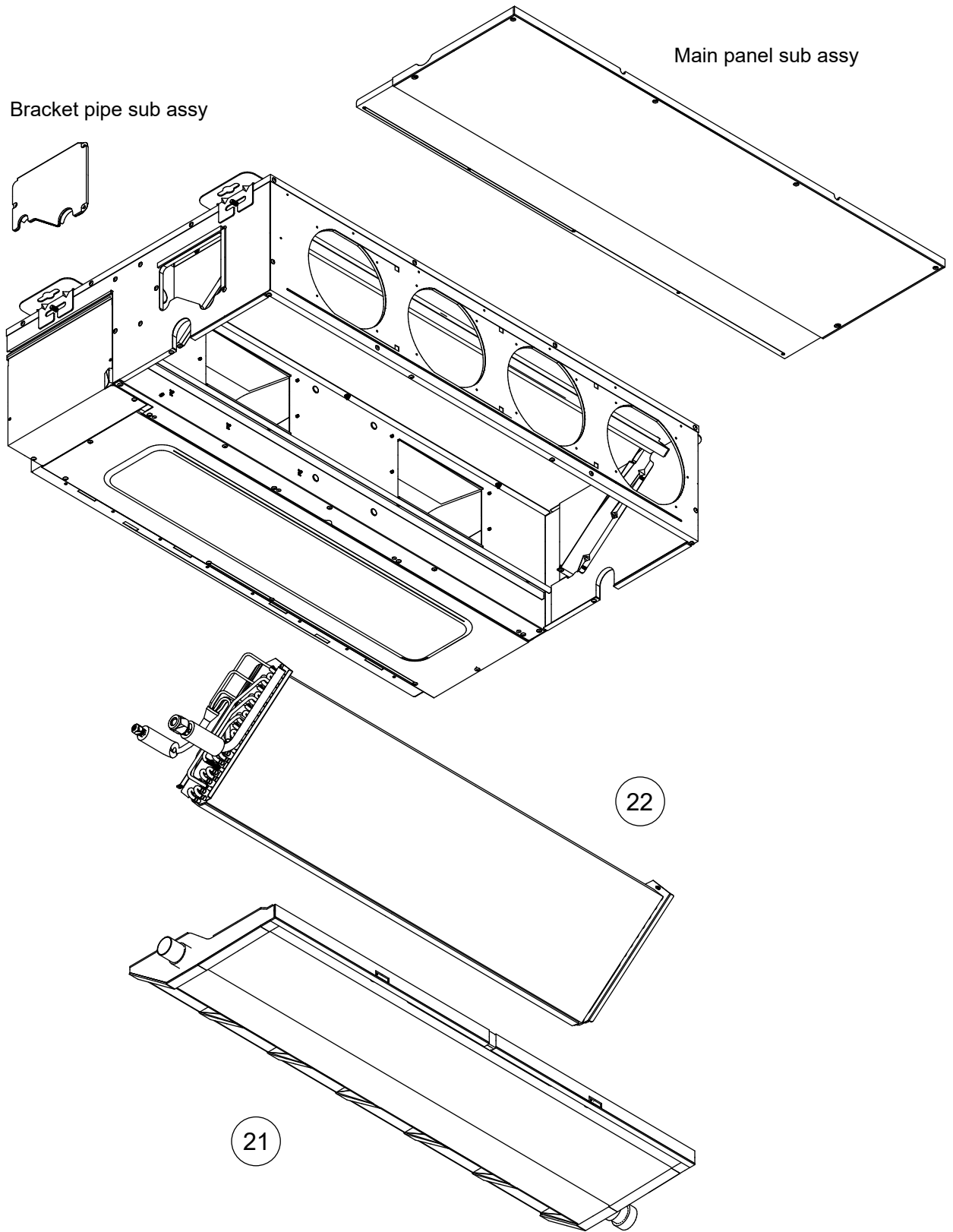
Ref.	Description	Part number
11	Main PCB (22KMLA)	9710624124
11	Main PCB (22KMLB)	9710624322
12	Holder	0600063023
13	Communication PCB	9710019005
14	Power supply PCB	9710661013
15	Terminal 3P	9306489045
16	Terminal 5P	9900896003
17	Reactor assy	9707457049



13

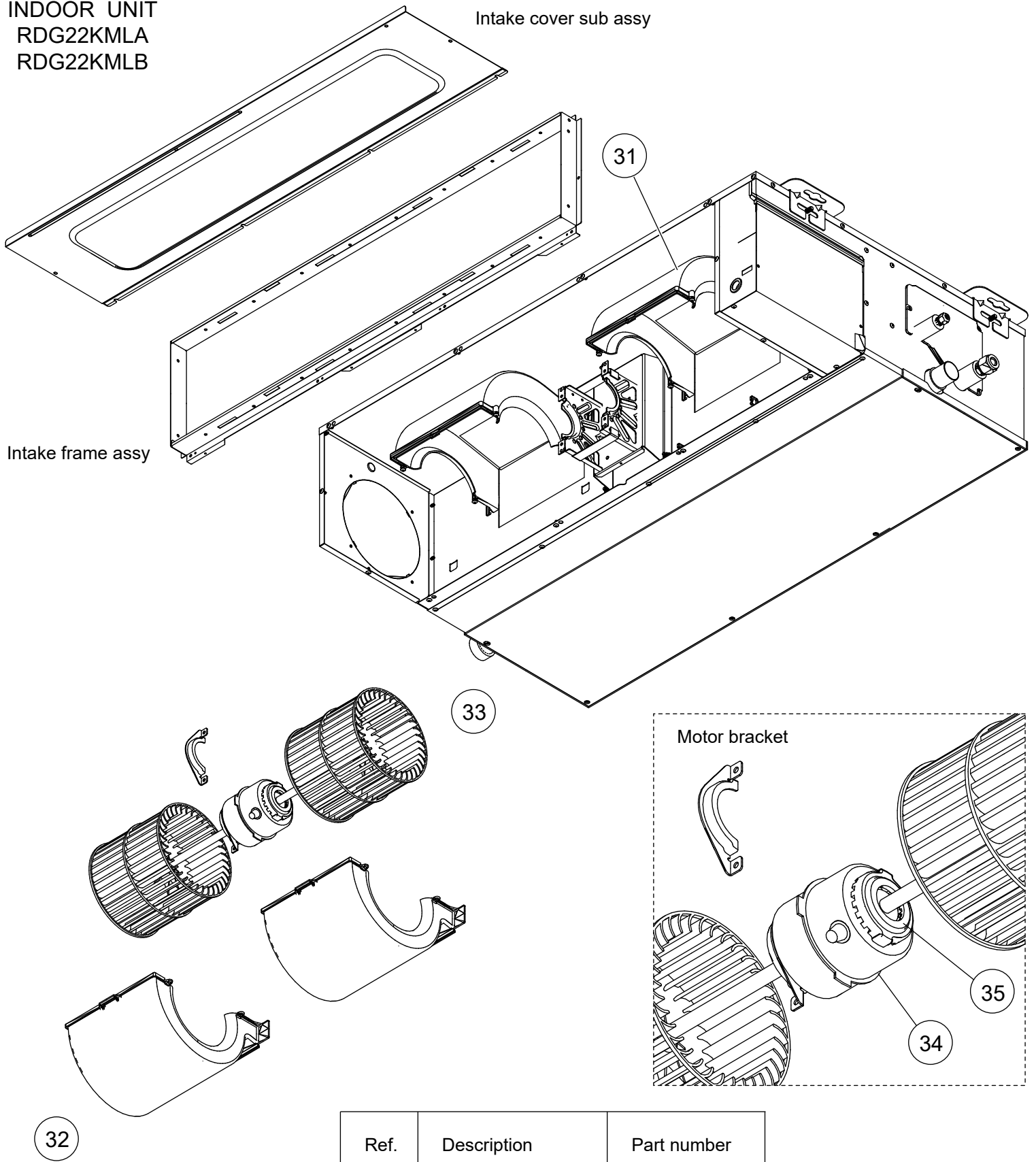
12

INDOOR UNIT  
RDG22KMLA  
RDG22KMLB



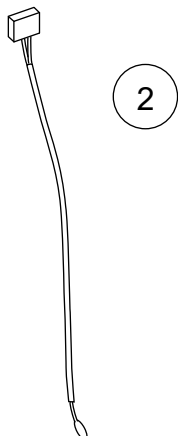
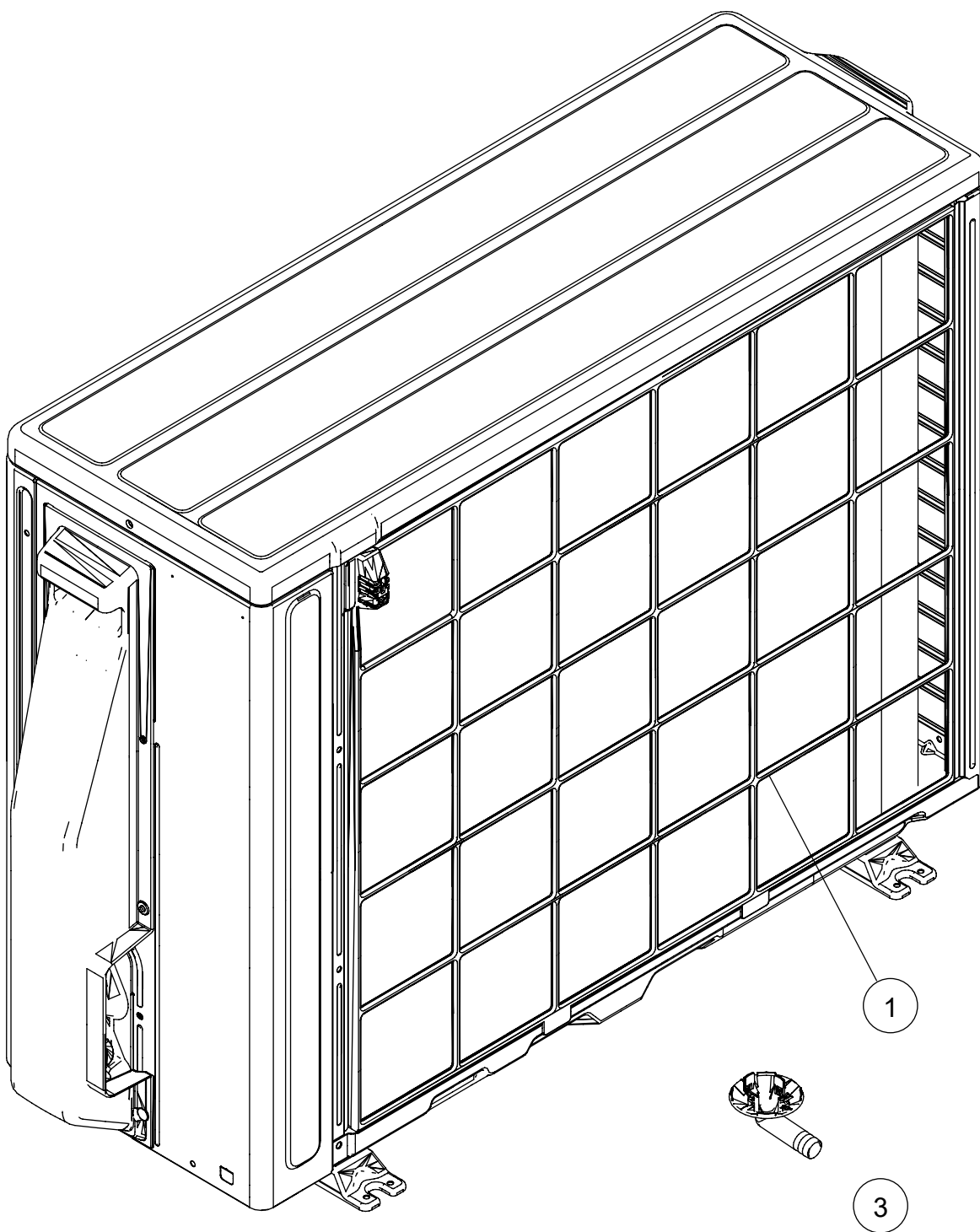
Ref.	Description	Part number
21	Drain pan sub assy	9374513017
22	Evaporator Total Assy	9374517978

INDOOR UNIT  
RDG22KMLA  
RDG22KMLB



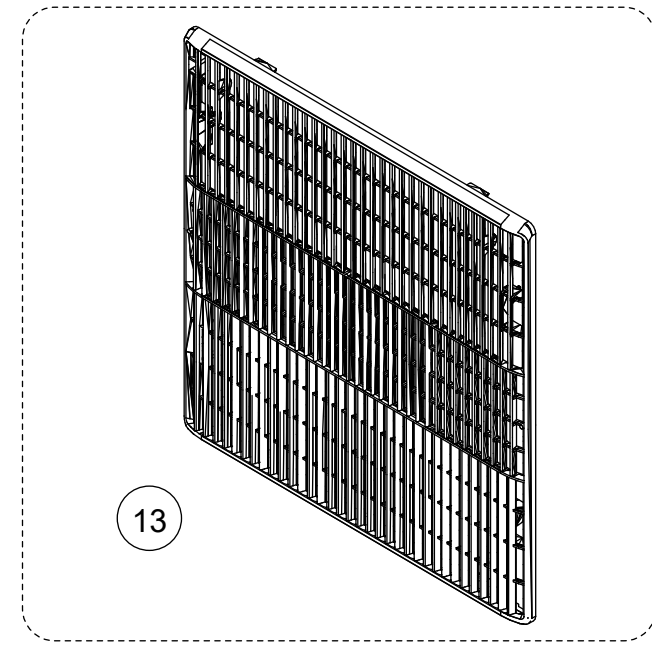
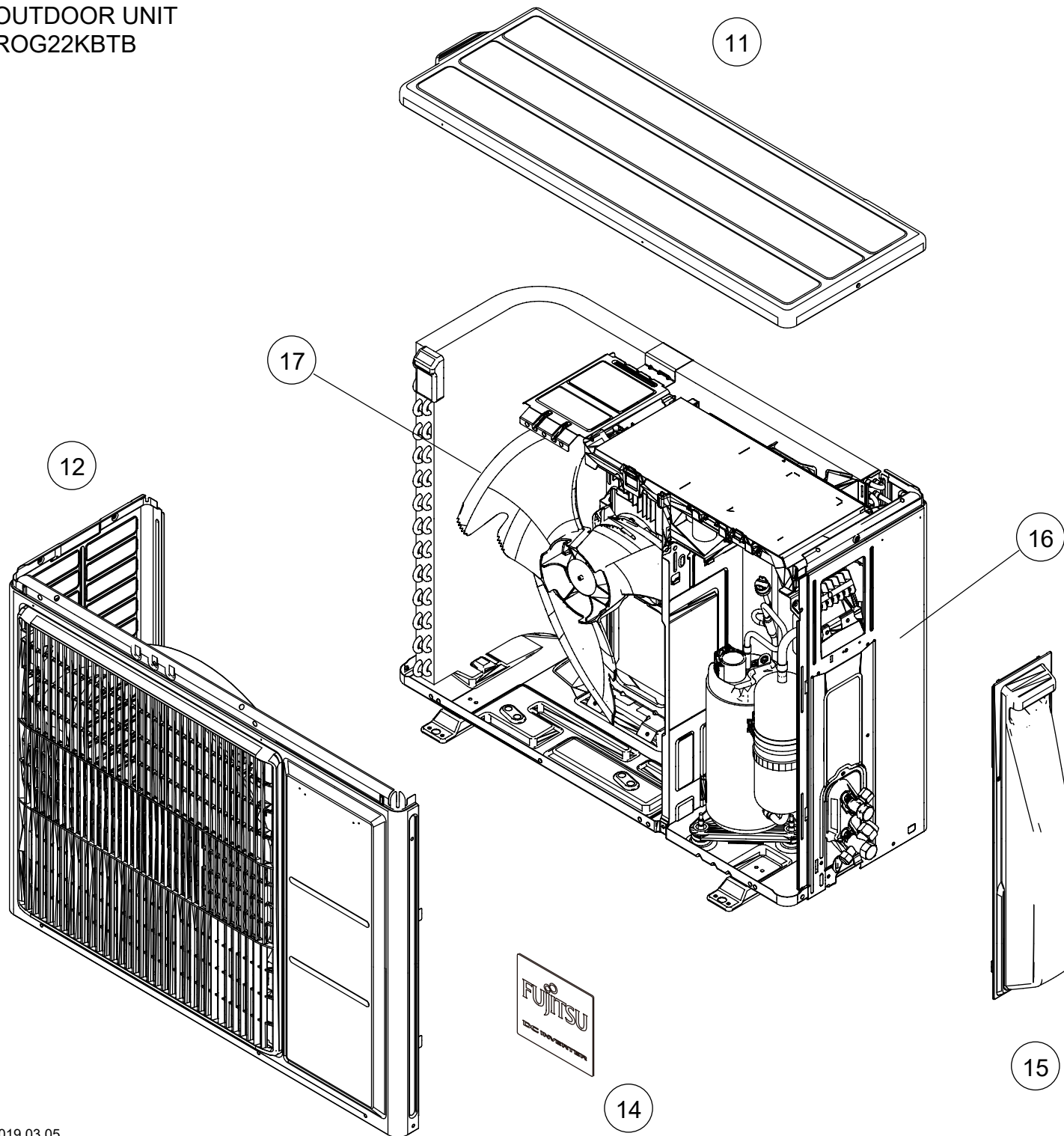
Ref.	Description	Part number
31	Casing A	9374233021
32	Casing B	9374234028
33	Sirocco fan assy	9356531060
34	Fan motor assy	9380718031
35	Rubber	9385102002

OUTDOOR UNIT  
ROG22KBTB



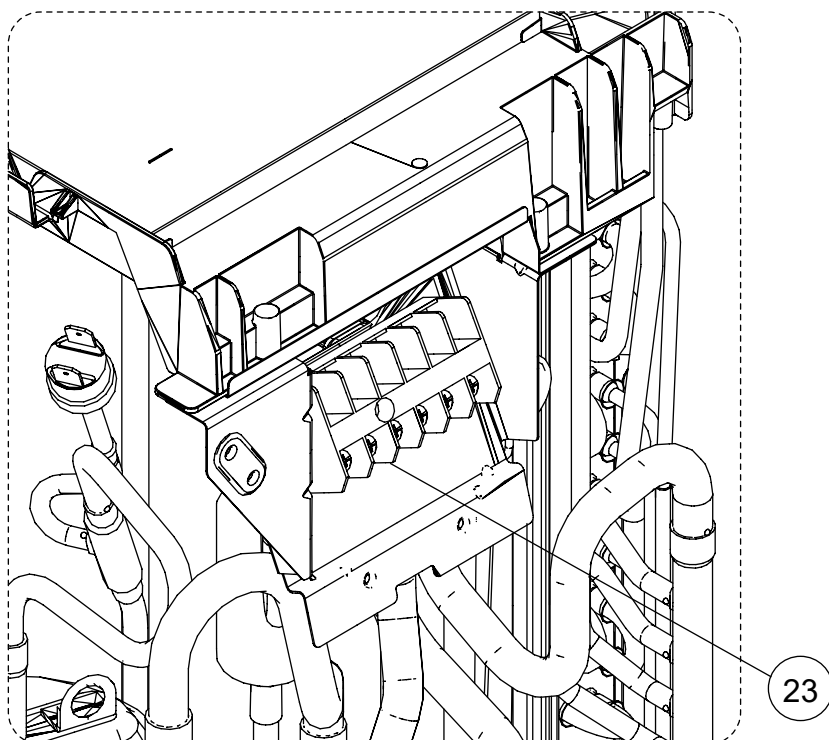
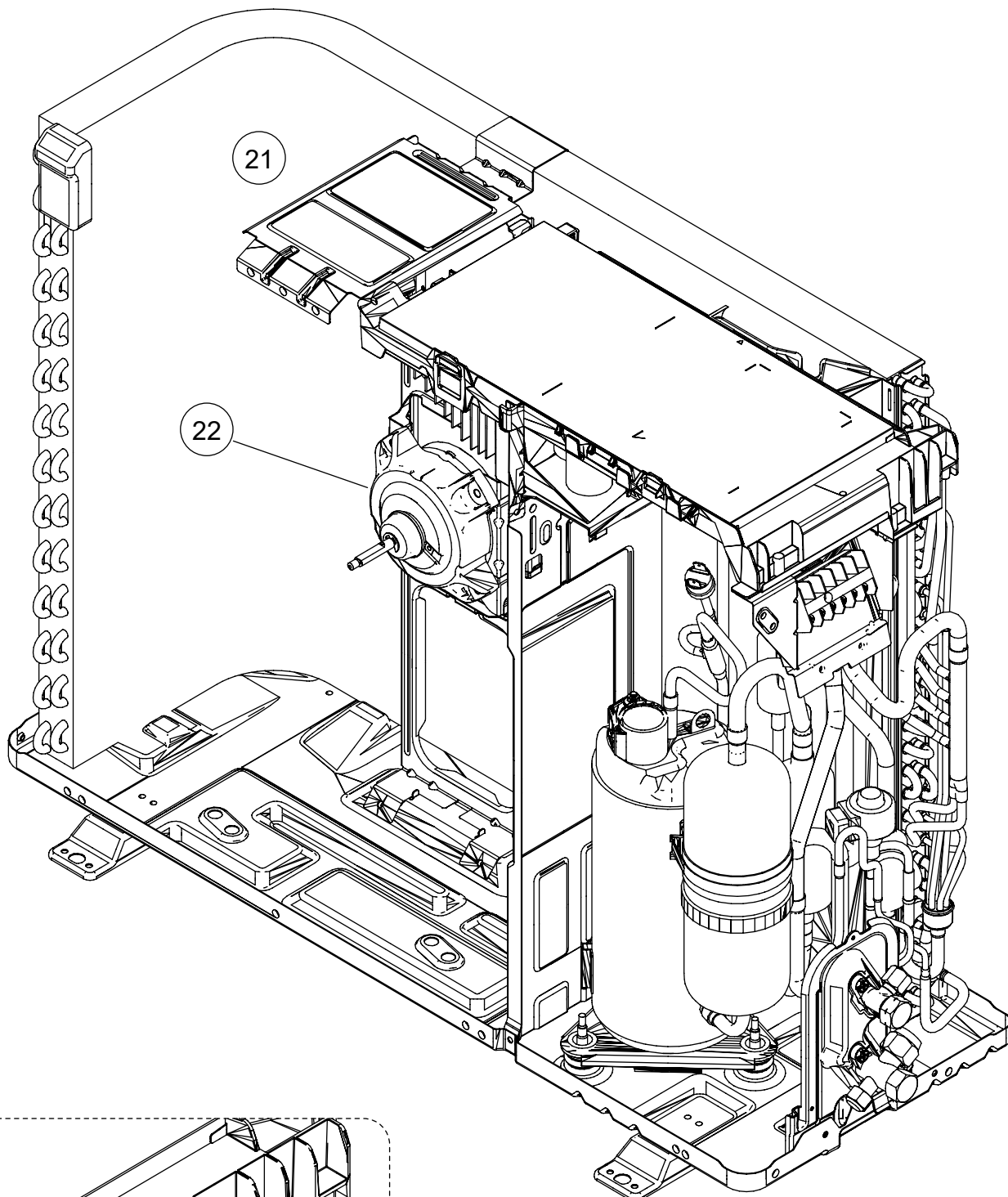
Ref.	Description	Part number
1	Protective net assy	9322811028
2	Outdoor thermistor	9900565060
3	Drain pipe	9322144003

OUTDOOR UNIT  
ROG22KBTB



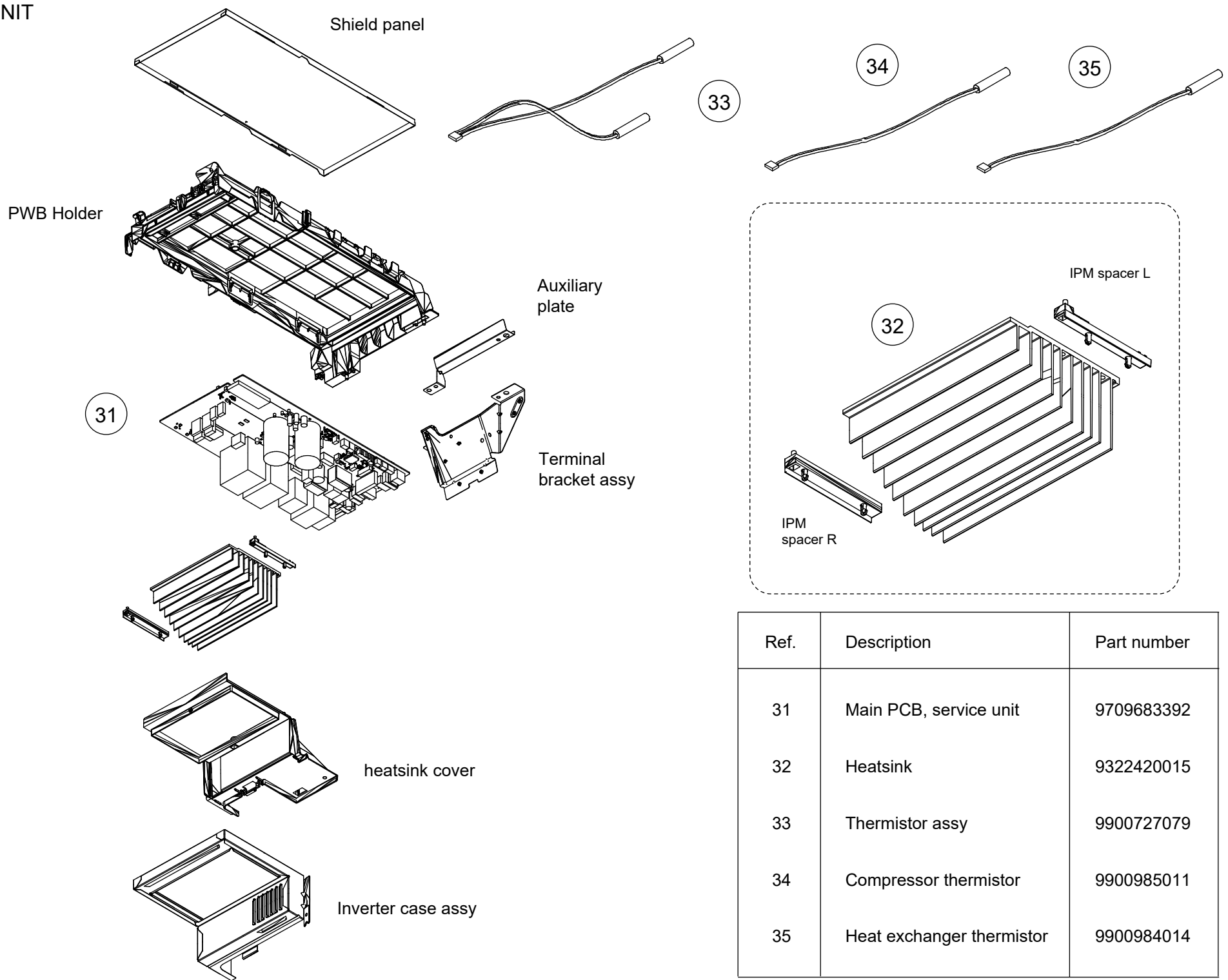
Ref.	Description	Part number
11	Top panel assy	9322556028
12	Front panel assy	9322555021
13	Blow grille	9322149008
14	Emblem	9319151007
15	Switch cover assy	9322570024
16	Cabinet right assy	9322552099
17	Propeller fan	9322150004

OUTDOOR UNIT  
ROG22KBTB



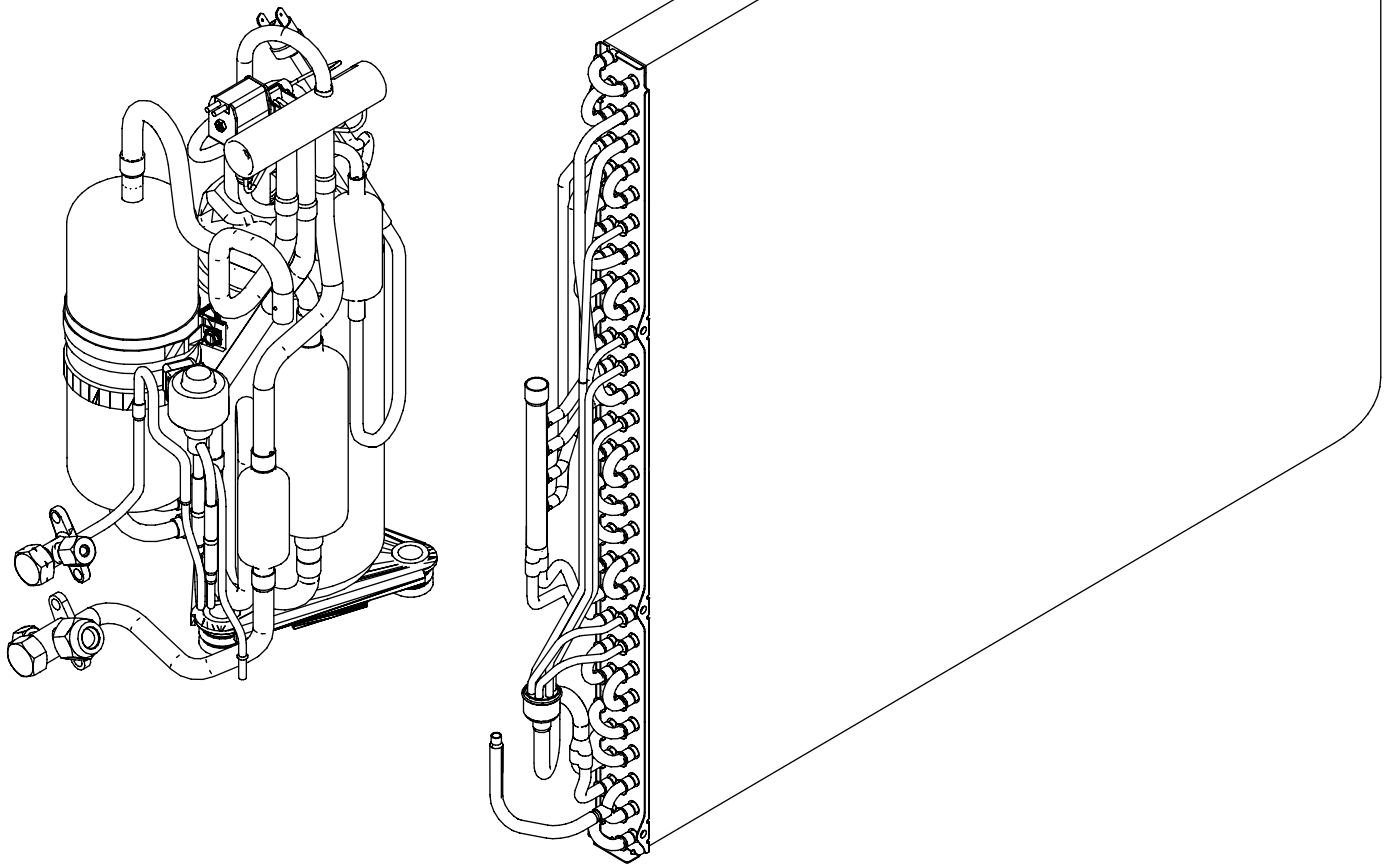
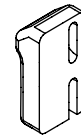
Ref.	Description	Part number
21	Motor bracket assy	9322553027
22	Brushless motor	9603601003
23	Terminal	9900435028

OUTDOOR UNIT  
ROG22KBTB



Ref.	Description	Part number
31	Main PCB, service unit	9709683392
32	Heatsink	9322420015
33	Thermistor assy	9900727079
34	Compressor thermistor	9900985011
35	Heat exchanger thermistor	9900984014

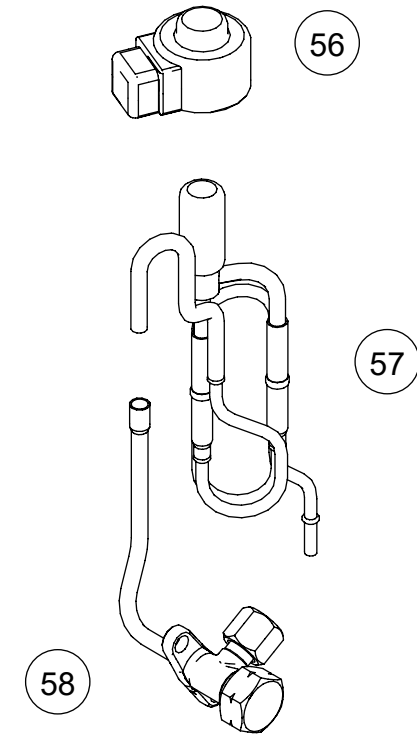
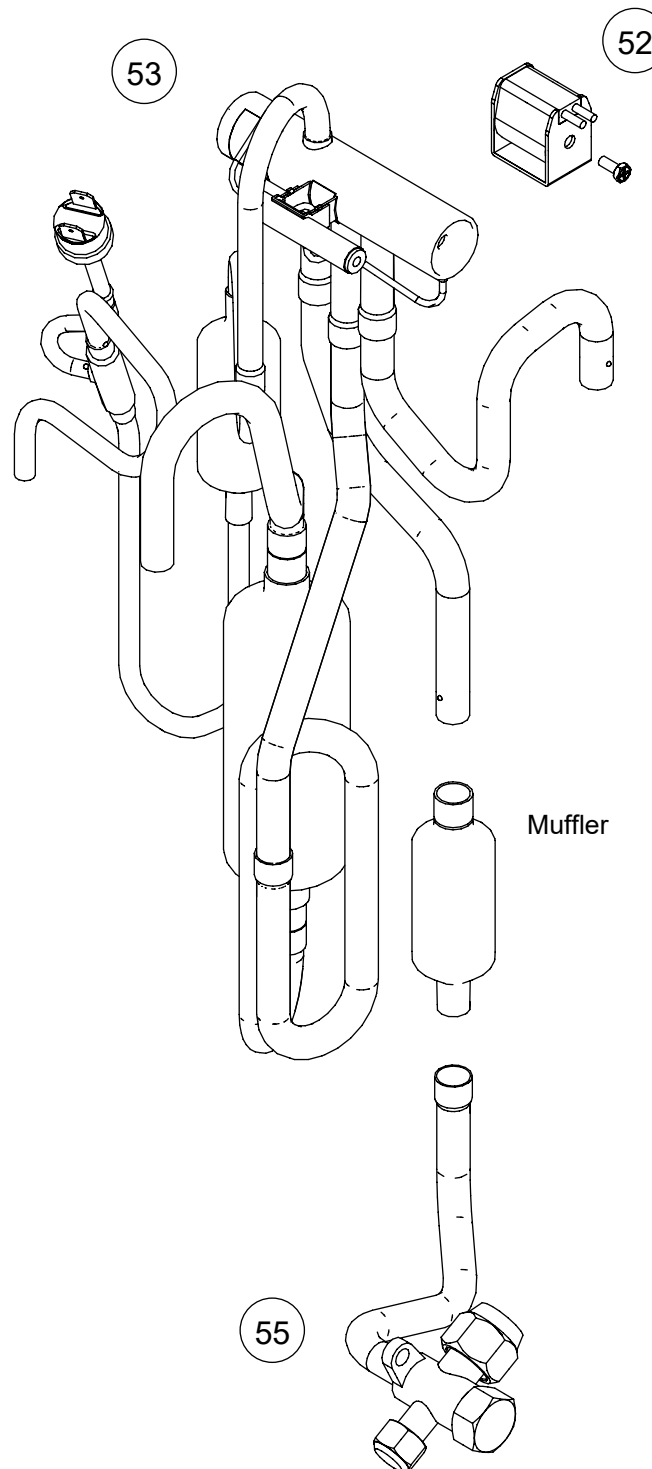
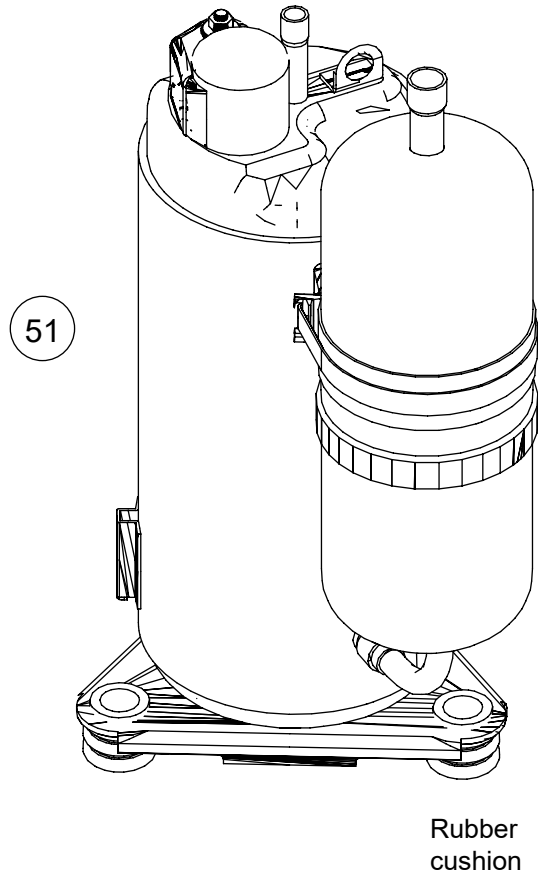
Hair pin  
cushion



Ref.	Description	Part number
41	Condenser total assy	9317089654
-	S-insulator B	9322503008
-	S-insulator F	9322847003
-	S-insulator H	9322501004
-	S-insulator V	9323045002
-	S-insulator K	9322824004





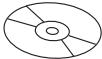


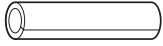

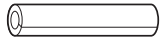
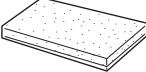



OUTDOOR UNIT  
ROG22KBTB





Ref.	Description	Part number
51	Compressor	9810521002
52	Solenoid	9970195006
53	4-way valve assy	9383129018
55	3-way valve assy	9387831016
56	Expansion valve coil	9970173028
57	Pulse motor valve assy	9322463029
58	2-way valve assy	9322474001

# Accessories

## Model: RDG22KMLA and RDG22KMLB

Part name	Exterior	Q'ty	Part name	Exterior	Q'ty
Operating manual		1	Cable tie (medium)		1
Operating manual (CD-ROM)		1	Cable tie (small)		1
Installation manual		1	Coupler heat insulation (large)		1
Hanger		4	Coupler heat insulation (small)		1
Drain hose insulation		1	M10 nut A (with flange)		4
Cable tie (large)		1	M10 nut B (with spring lock washer)		4

# Model: ROG22KBTB

Part name	Exterior	Q'ty	Part name	Exterior	Q'ty
Installation manual		1	Drain pipe		1

1903G4804