

# SERVICE MANUAL



Indoor unit	Outdoor unit
ASYG07KMCC	AOYG07KMCC
ASYG09KMCC	AOYG09KMCC
ASYG12KMCC	AOYG12KMCC
ASYG14KMCC	AOYG14KMCC

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# Specifications ( Indoor unit )

Model name			ASYG07KMCC	ASYG09KMCC	ASYG12KMCC	ASYG14KMCC	
Power supply			1Ø 230 V ~50 Hz				
Available voltage range			198—264 V				
Capacity	kW class		2.0	2.5	3.5	4.0	
Input power	W		23	27	27	33	
Running current	A		0.20	0.24	0.24	0.30	
Fan	Airflow rate	Cooling	HIGH	650	700	700	770
			MED	540	560	560	600
			LOW	430	430	430	450
			QUIET	270	270	270	280
		Heating	HIGH	720	750	770	800
			MED	580	610	640	660
			LOW	460	470	520	520
			QUIET	330	330	330	340
	Type × Q'ty	Cross flow fan × 1					
	Motor output	W		30	30	49	
Sound pressure level *1	Cooling	HIGH	38	40	40	43	
		MED	33	34	35	36	
		LOW	29	29	30	30	
		QUIET	21	21	21	21	
	Heating	HIGH	41	42	42	44	
		MED	35	36	38	39	
		LOW	31	31	33	33	
		QUIET	22	22	22	24	
Sound power level	Cooling	dB (A)	55	55	55	57	
	Heating		56	57	58	59	
Heat exchanger type	Dimensions (H × W × D)	mm	Main1: 210 × 670 × 26.6 Main2: 112 × 670 × 20.0			Main1: 210 × 670 × 26.6 Main2: 112 × 670 × 20.0 Sub: 84 × 670 × 13.3	
	Fin pitch	mm	Main1: 1.2, Main2: 1.1			Main1: 1.2, Main2: 1.1 Sub: 1.4	
	Rows × Stages		Main1: 2 × 10, Main2: 2 × 7			Main1: 2 × 10 Main2: 2 × 7 Sub: 1 × 4	
	Pipe type		Copper tube				
	Fin type		Aluminum				
Enclosure	Material		Polystyrene				
	Color		White + Pearl white (painted) Approximate color of Munsell N 9.25/				
Dimensions (H × W × D)	Net	mm	270 × 834 × 222				
	Gross		277 × 914 × 332				
Weight	Net	kg	10.0				
	Gross		12.5			13.0	
Connection pipe	Size	Liquid	Ø6.35 (Ø1/4)				
		Gas	Ø9.52 (Ø3/8)				
	Method		Flare				
Drain hose	Material		PP + HDPE				
	Size	mm	Ø13.8 (I.D.), Ø15.8 to Ø16.7 (O.D.)				
Operation range	Cooling	°C	18 to 32				
		%RH	80 or less				
	Heating	°C	16 to 30				
Remote controller type	Wireless (Option: Wired, Mobile app*2 [FGLair™])						
<b>NOTES:</b>							
<ul style="list-style-type: none"> <li>The protective function might work when using it outside the operation range.</li> <li>*1: Sound pressure level: <ul style="list-style-type: none"> <li>These are the measured values in the manufacturer's anechoic chamber.</li> <li>Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.</li> </ul> </li> <li>*2: Available on Google Play™ store or on App Store®. Optional WLAN adapter is also required. For details, refer to the setting manual.</li> </ul>							

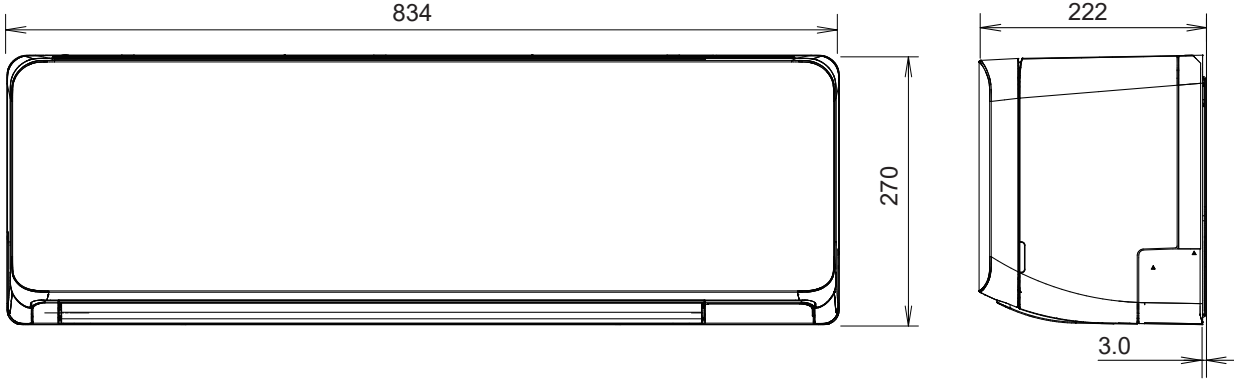
# Specifications ( Outdoor unit )

Type				Inverter heat pump				
Model name				AOYG07KMCC	AOYG09KMCC	AOYG12KMCC	AOYG14KMCC	
Power supply				230 V ~ 50 Hz				
Available voltage range				198—264 V				
Starting current				A	3.0	3.4	5.1	6.8
Fan	Airflow rate	Cooling	m <sup>3</sup> /h	1,650	1,650	1,700	1,680	
		Heating		1,450	1,450	1,470	1,580	
	Type × Q'ty	Propeller fan × 1						
Motor output				W				
Sound pressure level *1		Cooling	dB (A)	46		50		
		Heating		46		50		
Sound power level		Cooling	dB (A)	61		65		
		Heating		61	62	65	66	
Heat exchanger type	Dimensions (H × W × D)		mm	504 × 650 × 18.2		504 × 630 × 36.4	504 × 881 × 36.4	
	Fin pitch			1.3				
	Rows × Stages		1 × 24		2 × 24			
	Pipe type		Copper					
	Fin type	Type (Material)		Corrugate (Aluminum)				
		Surface treatment		Corrosion resistance				
Compressor	Type × Q'ty		W	Rotary × 1				
	Motor output			550		900		
Refrigerant	Type (Global warming potential)		R32 (675)					
	Charge		g		600	700	850	
Refrigerant oil	Type		RB74AF				RB68A	
	Amount		cm <sup>3</sup>		240		340	
Enclosure	Material		Steel sheet					
	Color		Beige					
Dimensions (H × W × D)	Net		mm	541 × 663 × 290			542 × 799 × 290	
	Gross			602 × 804 × 375				
Weight	Net		kg	23		25	31	
	Gross			26		29	35	
Connection pipe	Size	Liquid	mm (in)	Ø 6.35 (Ø 1/4)				
		Gas		Ø 9.52 (Ø 3/8)				
	Method		Flare					
	Pre-charge length		m	15				
	Max. length			20				
Max. height difference		15						
Operation range		Cooling	°C	-10 to 46				
		Heating		-15 to 24				
Drain hose	Material		PP+LLDPE					
	Size		mm					
				Ø 13.0 (I. D.), Ø 16.0 to Ø 16.8 (O. D.)				
<b>NOTES:</b>								
<ul style="list-style-type: none"> <li>• Specifications are based on the following conditions: <ul style="list-style-type: none"> <li>– Cooling: Indoor temperature of 27 °CDB/19 °CWB, and outdoor temperature of 35 °CDB/24 °CWB.</li> <li>– Heating: Indoor temperature of 20 °CDB/15 °CWB, and outdoor temperature of 7 °CDB/6 °CWB.</li> <li>– Pipe length: 5 m, Height difference: 0 m.</li> </ul> </li> <li>• Protective function might work when using it outside the operation range.</li> <li>• *1: Sound pressure level <ul style="list-style-type: none"> <li>– Measured values in manufacturer's anechoic chamber.</li> <li>– Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.</li> </ul> </li> </ul>								

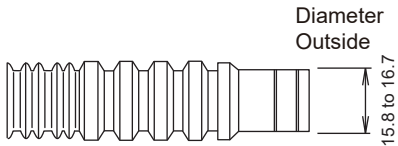
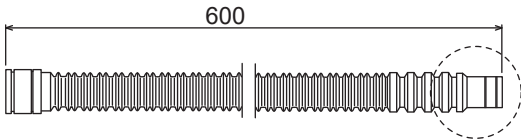
# Dimensions

Models: ASYG07KMCC, ASYG09KMCC, ASYG12KMCC, and ASYG14KMCC

Unit: mm



Drain hose

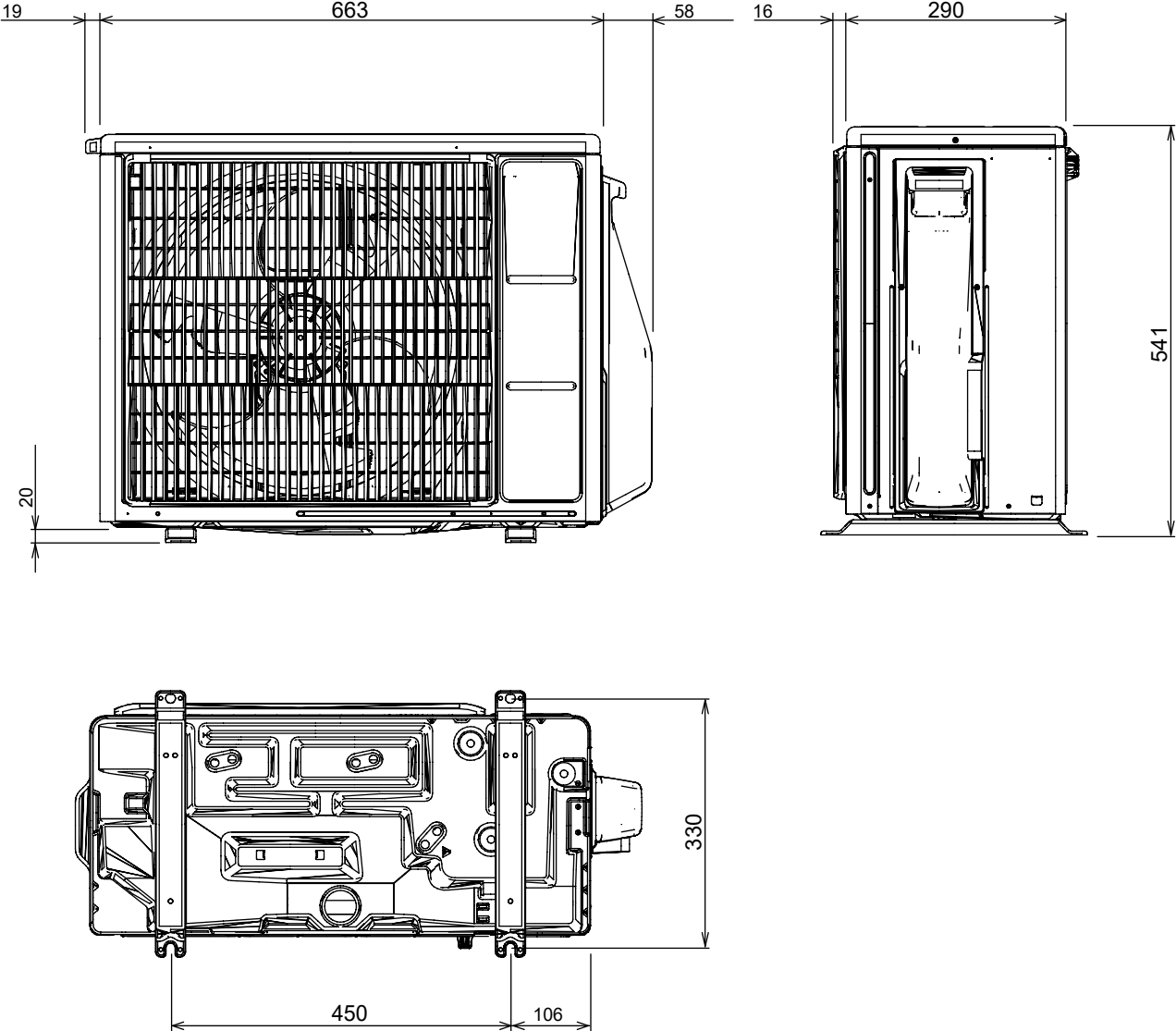


Inside : 13.8



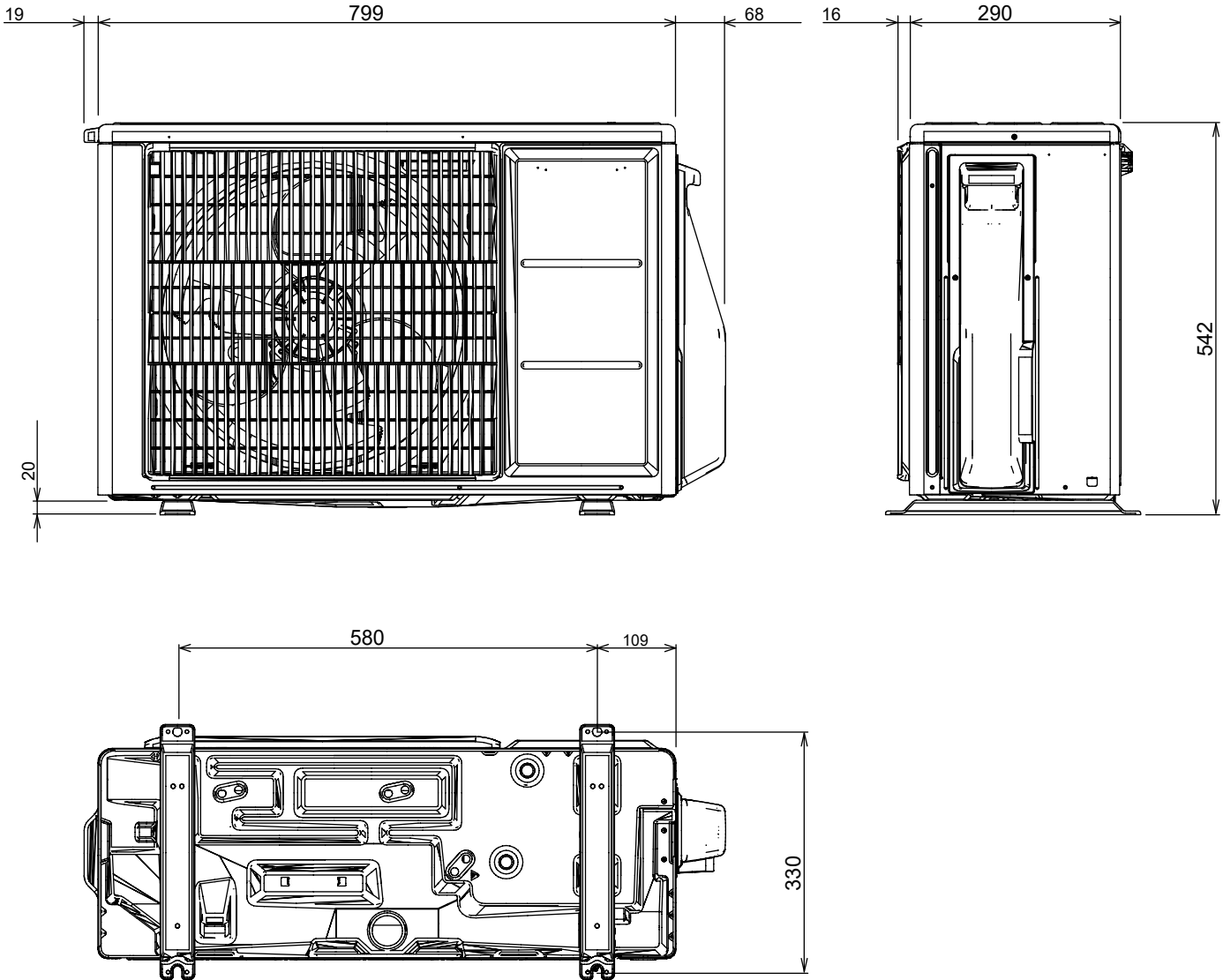
**Models: AOYG07KMCC, AOYG09KMCC, and AOYG12KMCC**

Unit: mm



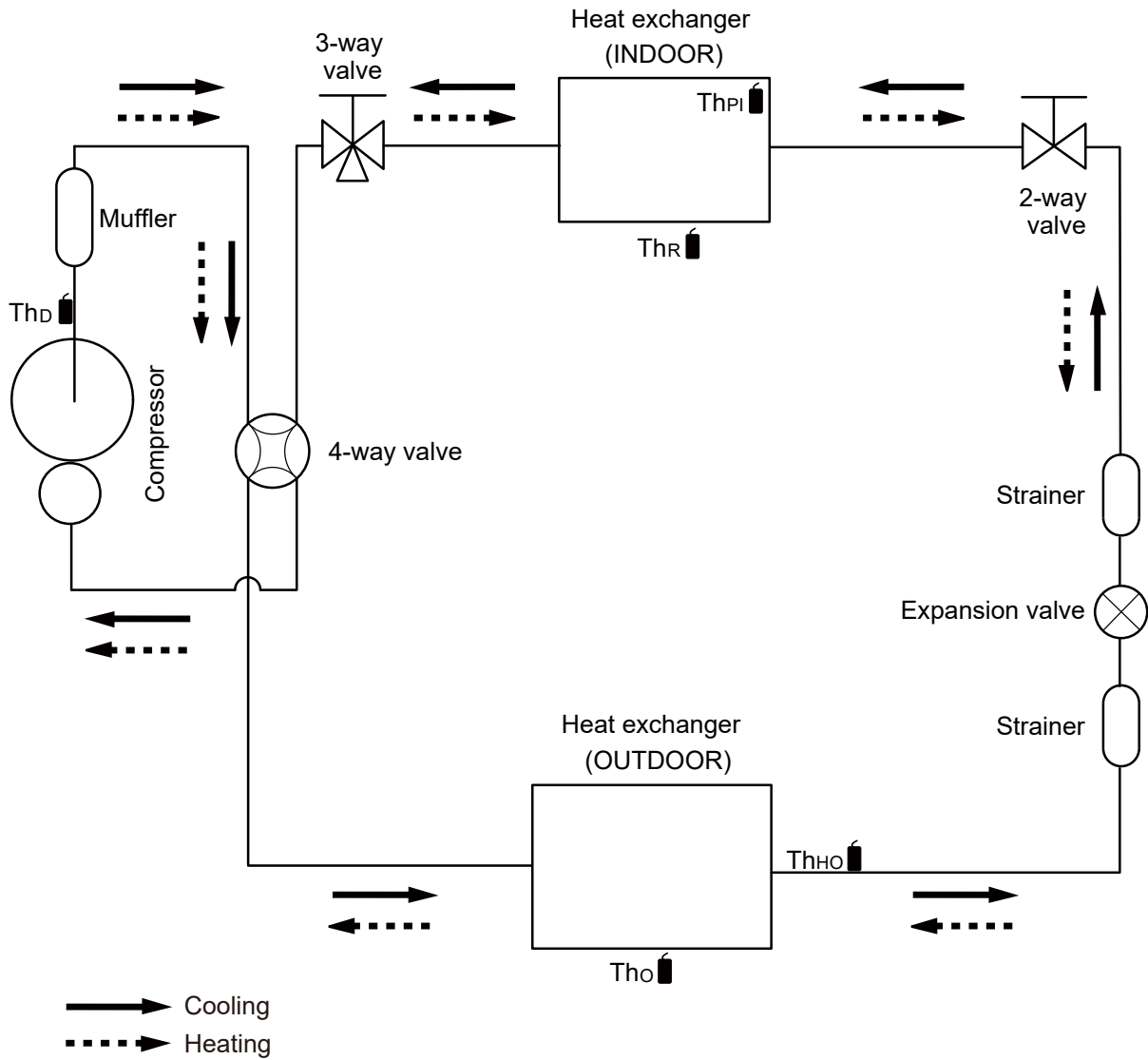
# Model: AOYG14KMCC

Unit: mm



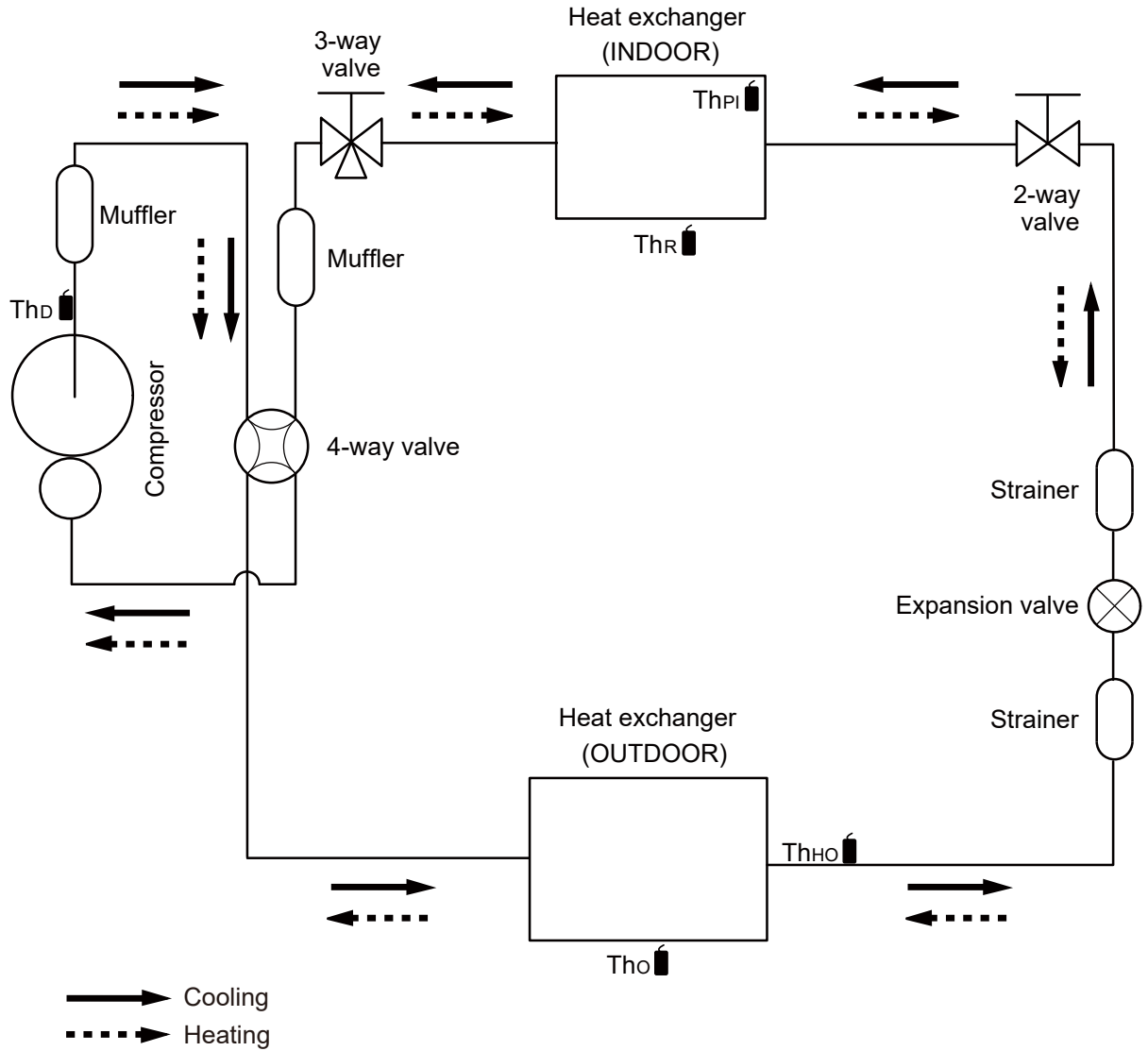
# Refrigerant circuit

**Models: ASYG07KMCC/AOYG07KMCC,  
ASYG09KMCC/AOYG09KMCC, and ASYG12KMCC/AOYG12KMCC**



- 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>R</sub> : Thermistor (Room temperature)
- Th<sub>PI</sub> : Thermistor (Pipe temperature)

# Models: ASYG14KMCC/AOYG14KMCC

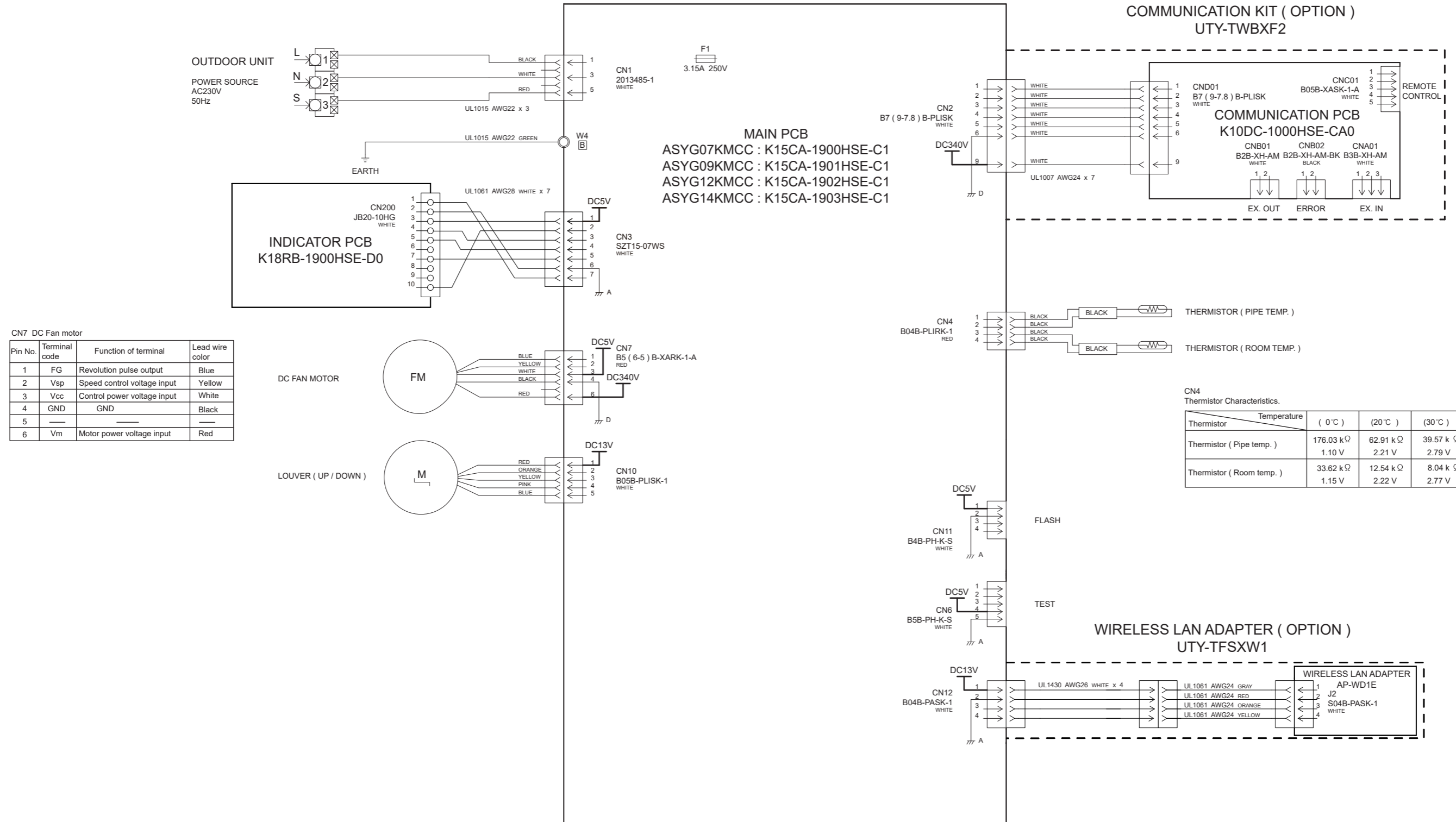


- Th<sub>D</sub> : Thermistor (Discharge temperature)
- Th<sub>O</sub> : Thermistor (Outdoor temperature)
- Th<sub>HO</sub> : Thermistor (Heat exchanger out temperature)
- Th<sub>R</sub> : Thermistor (Room temperature)
- Th<sub>PI</sub> : Thermistor (Pipe temperature)

# INDOOR PRINTED CIRCUIT BOARD CIRCUIT DIAGRAM

Models : ASYG07KMCC  
 ASYG09KMCC  
 ASYG12KMCC  
 ASYG14KMCC

**CONTROL UNIT**  
 ASYG07KMCC : EZ-019CHSE  
 ASYG09KMCC : EZ-019DHSE  
 ASYG12KMCC : EZ-019EHSE  
 ASYG14KMCC : EZ-019FHSE



CN7 DC Fan motor

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

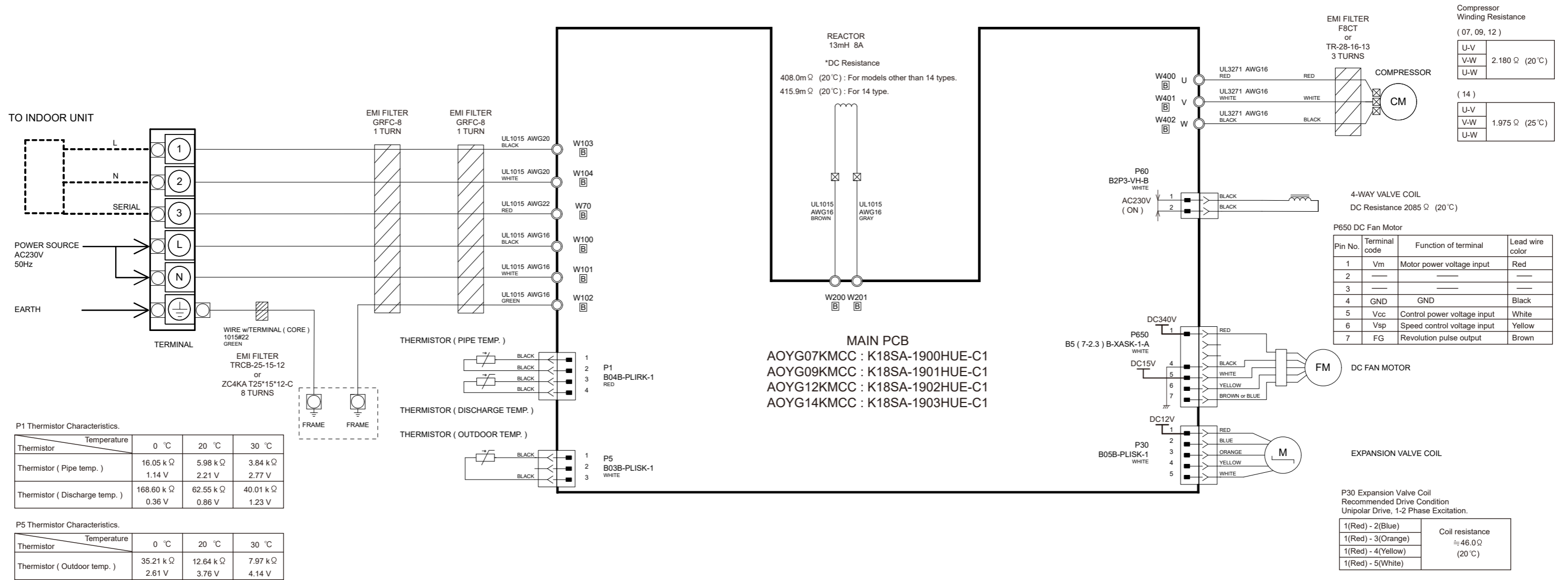
CN4 Thermistor Characteristics.

Thermistor	Temperature		
	( 0°C )	( 20°C )	( 30°C )
Thermistor ( Pipe temp. )	176.03 k Ω	62.91 k Ω	39.57 k Ω
	1.10 V	2.21 V	2.79 V
Thermistor ( Room temp. )	33.62 k Ω	12.54 k Ω	8.04 k Ω
	1.15 V	2.22 V	2.77 V

# OUTDOOR PRINTED CIRCUIT BOARD CIRCUIT DIAGRAM

Models : AOYG07KMCC  
AOYG09KMCC  
AOYG12KMCC  
AOYG14KMCC

**INVERTER ASSEMBLY**  
AOYG07KMCC : EZ-01909HUE  
AOYG09KMCC : EZ-0190AHUE  
AOYG12KMCC : EZ-0190BHUE  
AOYG14KMCC : EZ-0190CHUE



# Error detection

If you use a wireless remote controller, the lamp on the photo detector unit will output error codes by way of blinking patterns. If you use a wired remote controller, error codes will appear on the remote control display. Refer to the lamp blinking patterns and error codes in the table. An error display is displayed only during operation.

Error display			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 • Server room control communication error
●(1)	●(5)	◇	15	Check run unfinished Automatic airflow adjustment error
●(1)	●(6)	◇	16	Peripheral unit transmission PCB connection error
●(1)	●(8)	◇	18	External communication error
●(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)	●(6)	◇	26	Indoor unit address setting error
●(2)	●(7)	◇	27	Primary unit, secondary unit setup error [Simultaneous Multi]
●(2)	●(9)	◇	29	Connection unit number error in wired remote controller system
●(3)	●(1)	◇	31	Power supply interruption error
●(3)	●(2)	◇	32	Indoor unit PCB model information error
●(3)	●(3)	◇	33	Indoor unit motor electricity consumption detection error
●(3)	●(5)	◇	35	Manual auto switch error
●(3)	●(9)	◇	39	Indoor unit power supply error for fan motor
●(3)	●(10)	◇	3A	Indoor unit communication circuit (wired remote controller) error
●(4)	●(1)	◇	41	Room temp. sensor error
●(4)	●(2)	◇	42	Indoor unit heat ex. middle temp. sensor error
●(4)	●(4)	◇	44	Human sensor error
●(5)	●(1)	◇	51	Indoor unit fan motor error
●(5)	●(3)	◇	53	Drain pump error
●(5)	●(4)	◇	54	Electric air cleaner reverse VDD error
●(5)	●(5)	◇	55	Filter set error
●(5)	●(7)	◇	57	Damper error
●(5)	●(8)	◇	58	Intake grille error
●(5)	●(9)	◇	59	Indoor unit fan motor 2 error (Left side fan)
●(5)	●(10)	◇	5A	Indoor unit fan motor 3 error (Right side fan)
●(5)	●(15)	◇	5U	Indoor unit error
●(6)	●(1)	◇	61	Outdoor unit reverse/missing phase and wiring error

Error display			Error code	Description
OPERATION lamp (green)	TIMER lamp (orange)	ECONOMY lamp (green)		
●(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)	●(8)	◇	68	Outdoor unit rush current limiting resistor temp. rise 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
●(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

## ■ Error display on the indoor unit



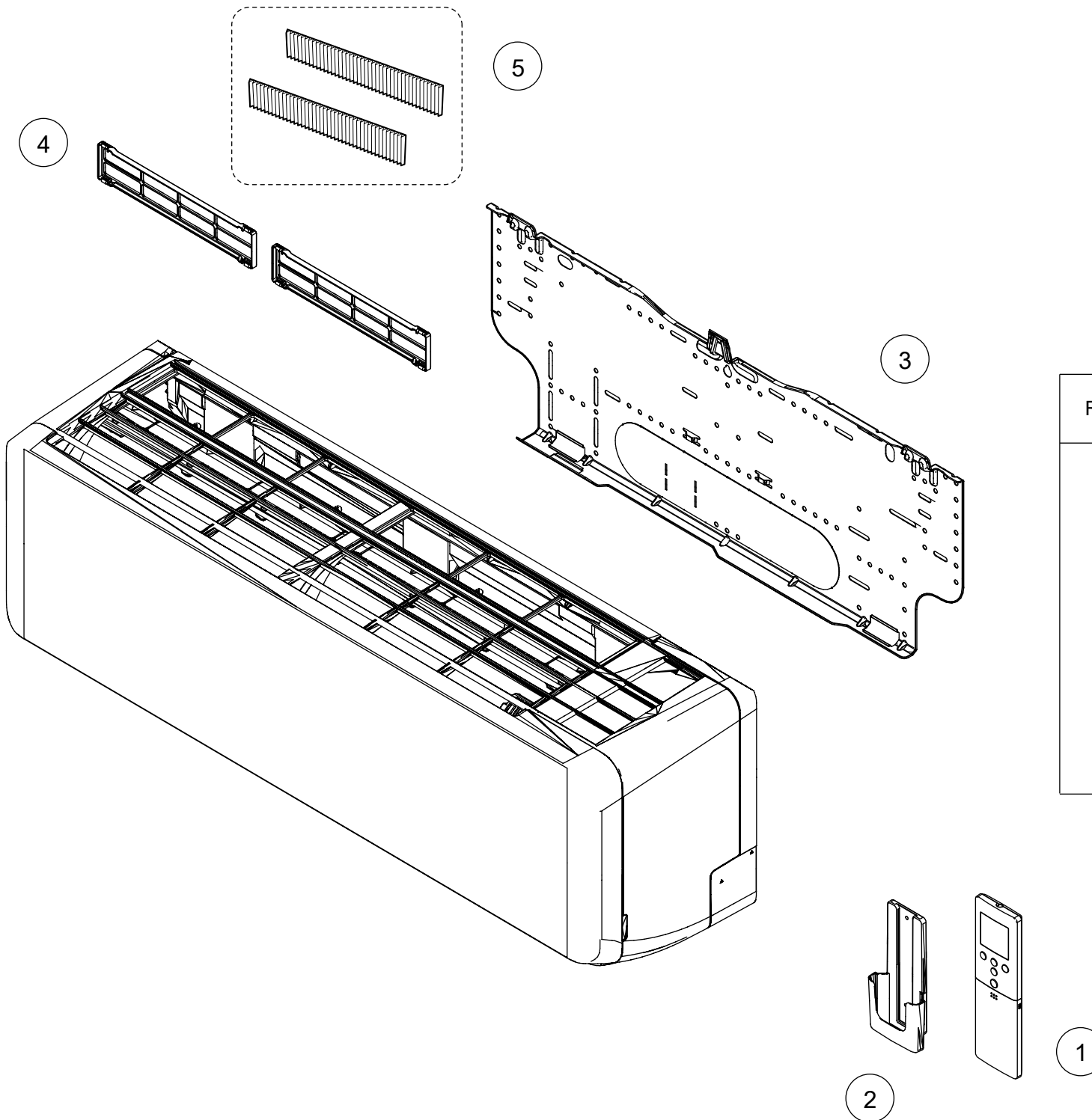
OPERATION indicator lamp (green)

TIMER indicator lamp (orange)

ECONOMY indicator lamp (green)

# Parts

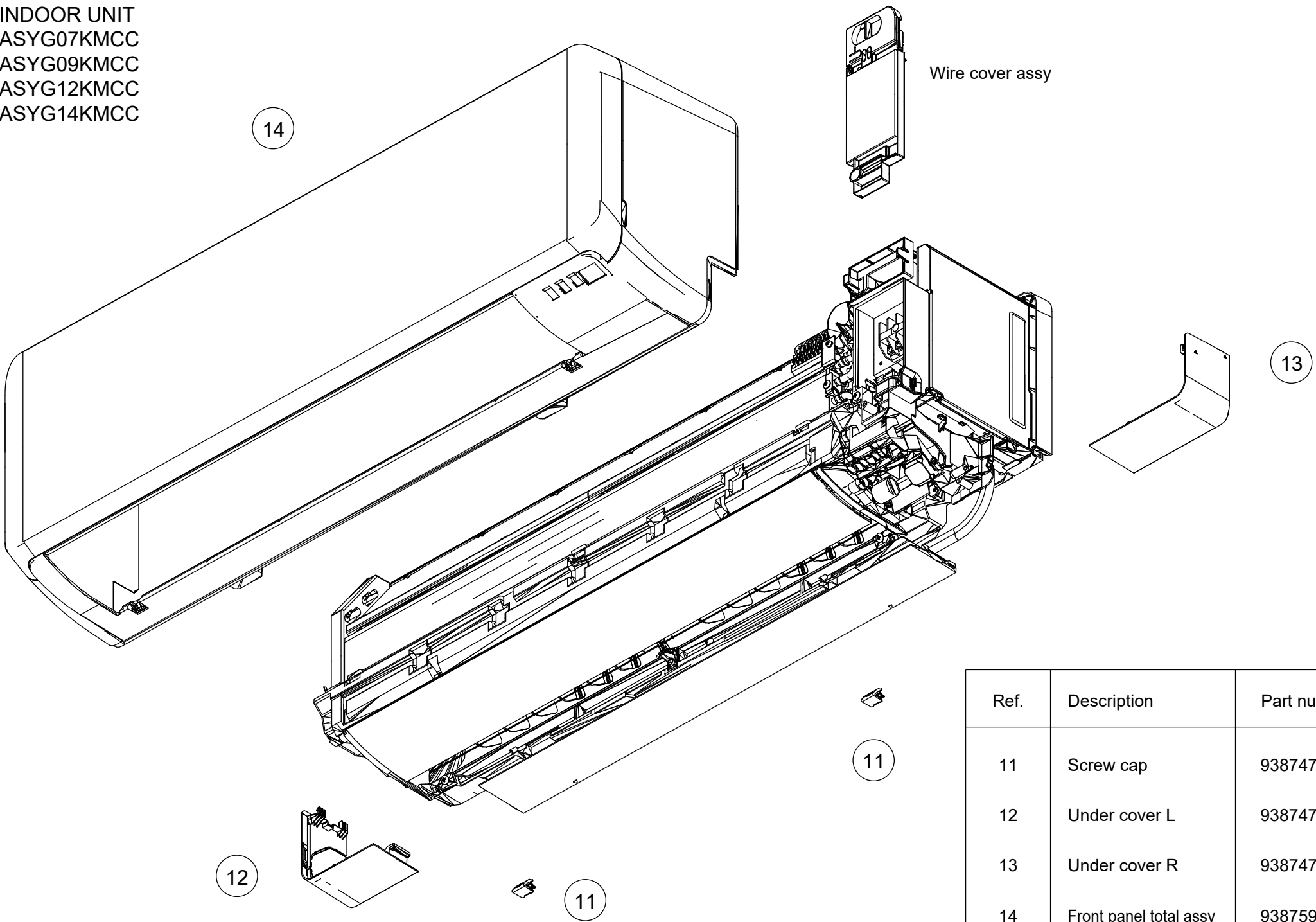
INDOOR UNIT  
 ASYG07KMCC  
 ASYG09KMCC  
 ASYG12KMCC  
 ASYG14KMCC



Ref.	Description	Part number
1	Remote control (no brand)	9319208008
2	Remote control holder	9318912005
3	Bracket panel	9387480030
4	Electric filter holder	9332911008
5	Air clean filter assy	9317250009



INDOOR UNIT  
 ASYG07KMCC  
 ASYG09KMCC  
 ASYG12KMCC  
 ASYG14KMCC

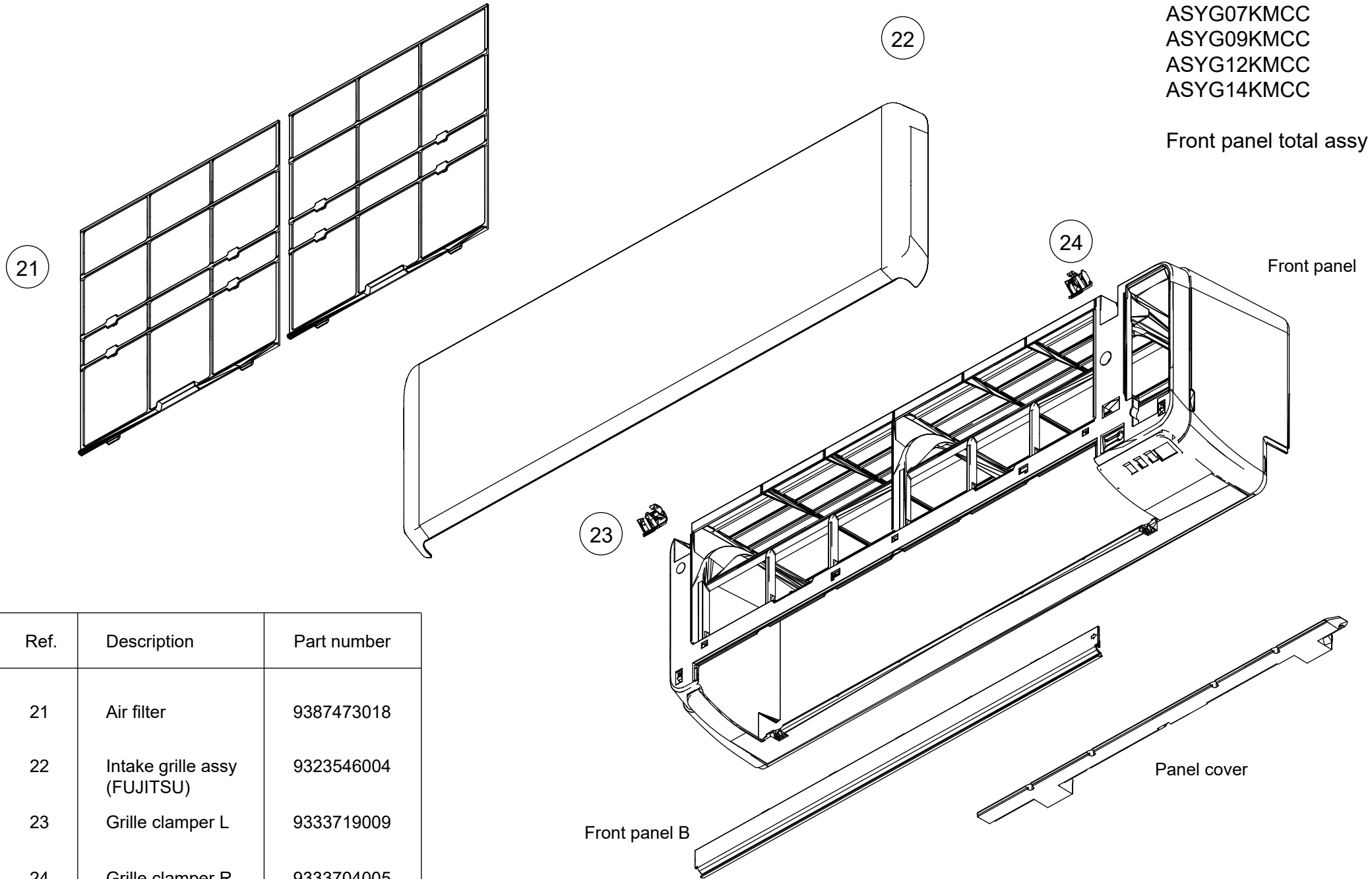


Wire cover assy

Ref.	Description	Part number
11	Screw cap	9387476002
12	Under cover L	9387477009
13	Under cover R	9387478006
14	Front panel total assy	9387596410

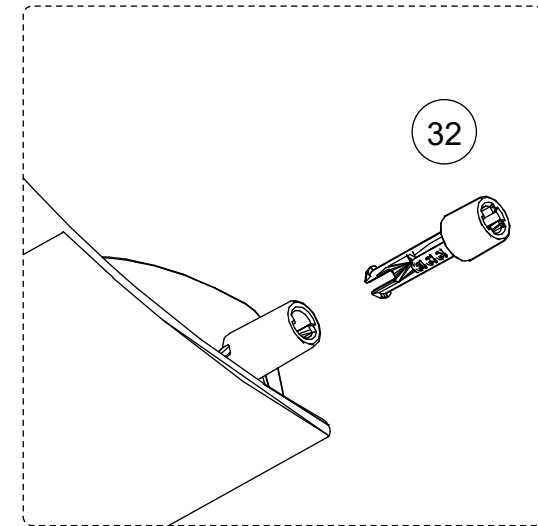
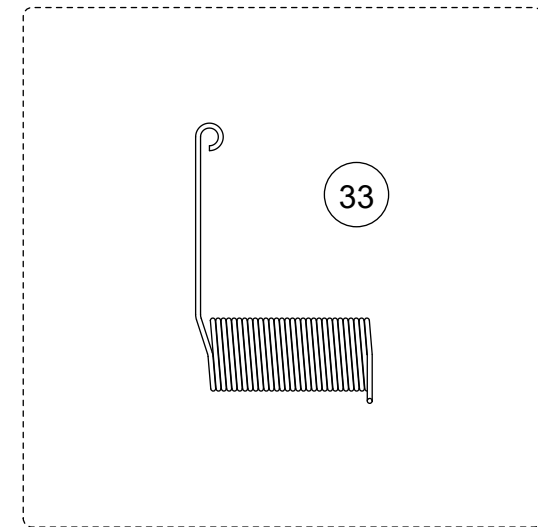
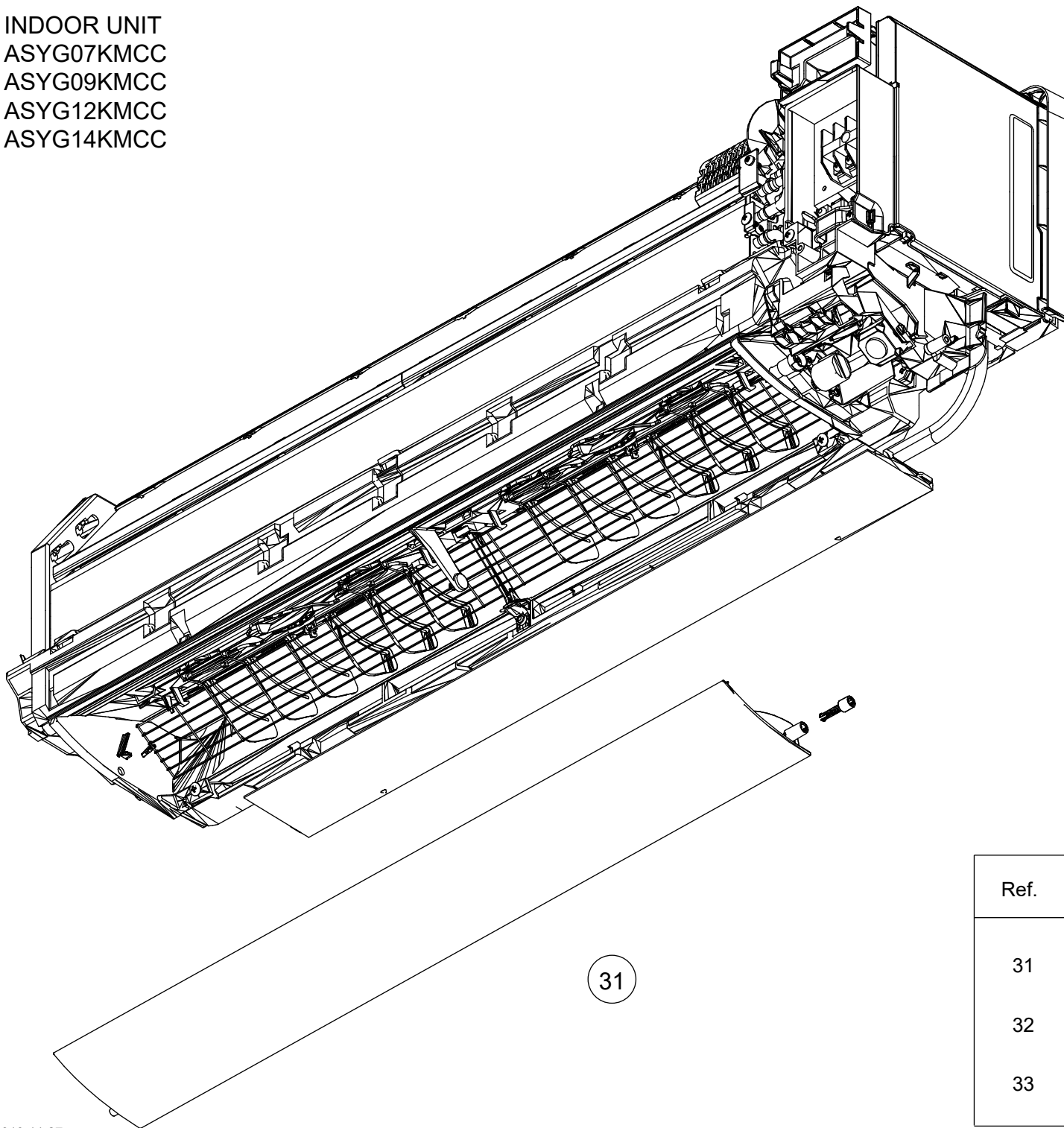
INDOOR UNIT  
 ASYG07KMCC  
 ASYG09KMCC  
 ASYG12KMCC  
 ASYG14KMCC

Front panel total assy

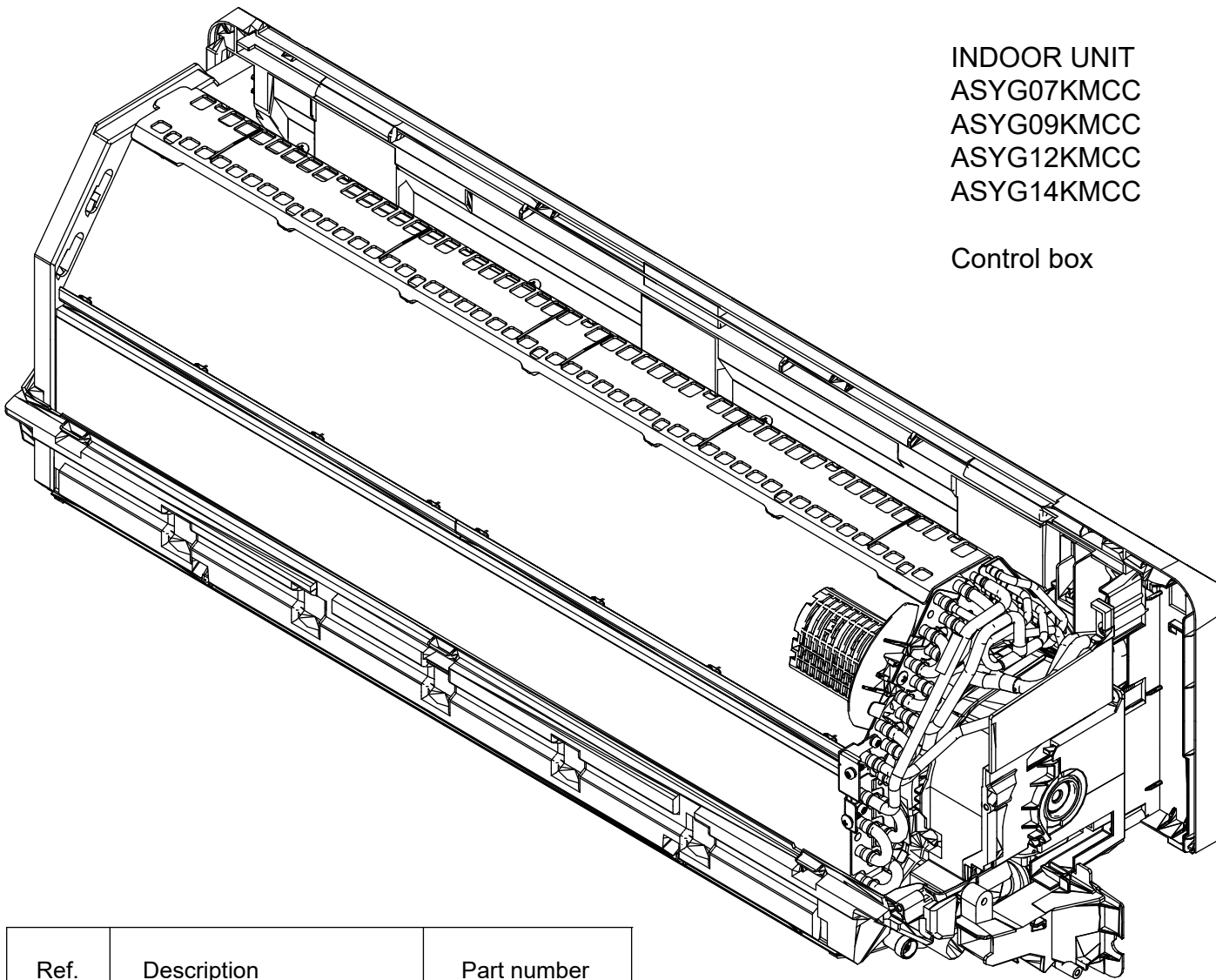


Ref.	Description	Part number
21	Air filter	9387473018
22	Intake grille assy (FUJITSU)	9323546004
23	Grille clamber L	9333719009
24	Grille clamber R	9333704005

INDOOR UNIT  
 ASYG07KMCC  
 ASYG09KMCC  
 ASYG12KMCC  
 ASYG14KMCC

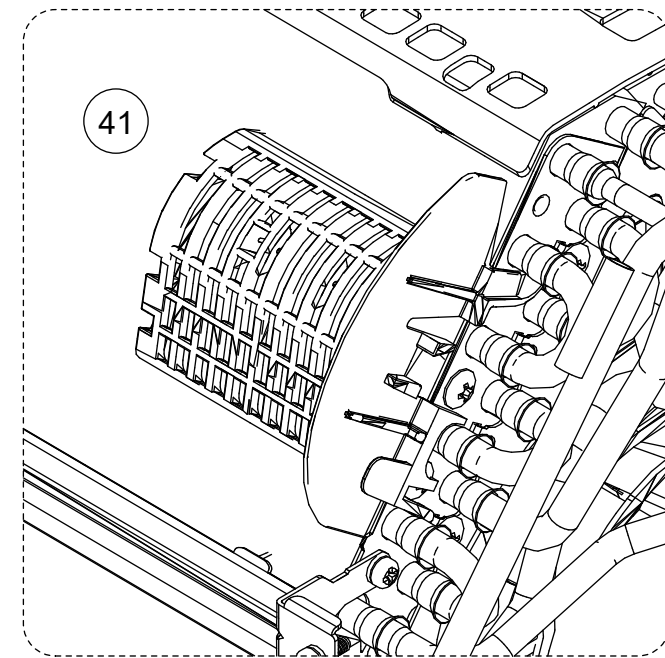


Ref.	Description	Part number
31	U/D louver assy	9387479041
32	Shaft cover	9332861006
33	Louver spring P	9333951003

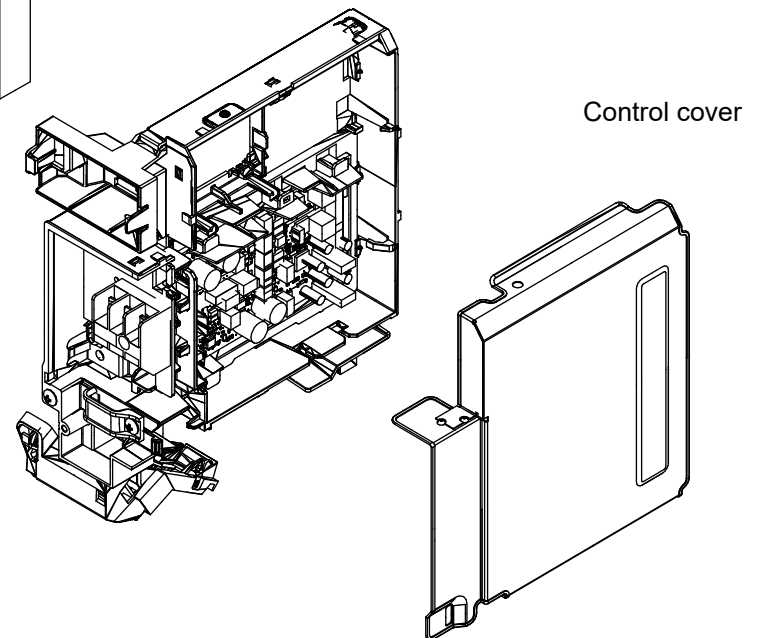


INDOOR UNIT  
 ASYG07KMCC  
 ASYG09KMCC  
 ASYG12KMCC  
 ASYG14KMCC

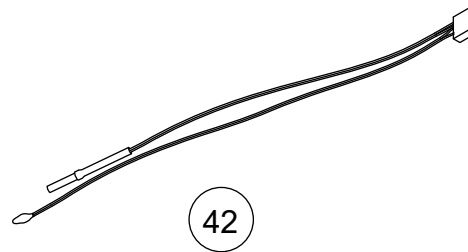
Control box



41



Control cover



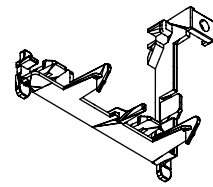
42

Ref.	Description	Part number
41	Room thermistor holder	9387467017
42	Thermistor assy	9900627027

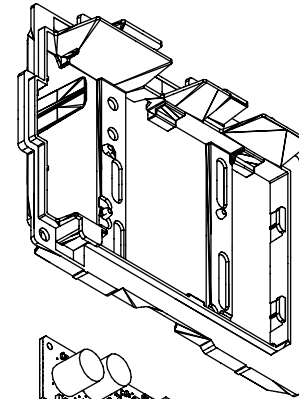
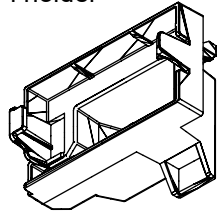
INDOOR UNIT  
 ASYG07KMCC  
 ASYG09KMCC  
 ASYG12KMCC  
 ASYG14KMCC

Control box

Wi-Fi holder

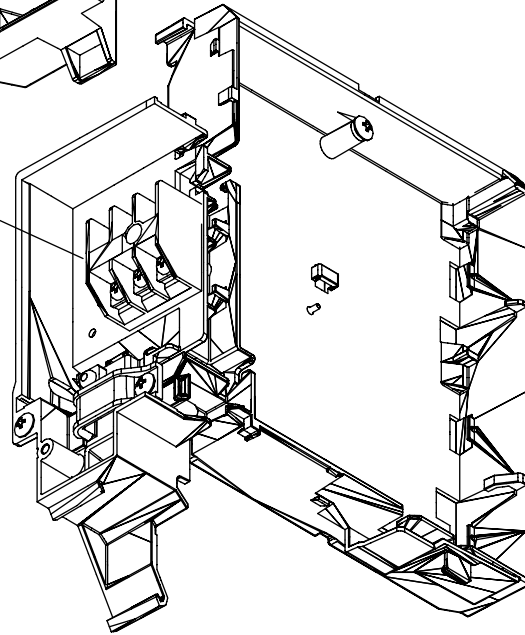


PWB holder A



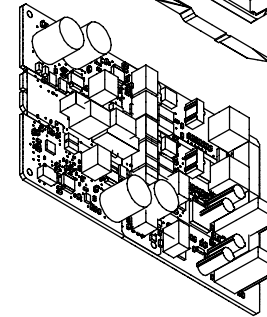
PWB holder B

52

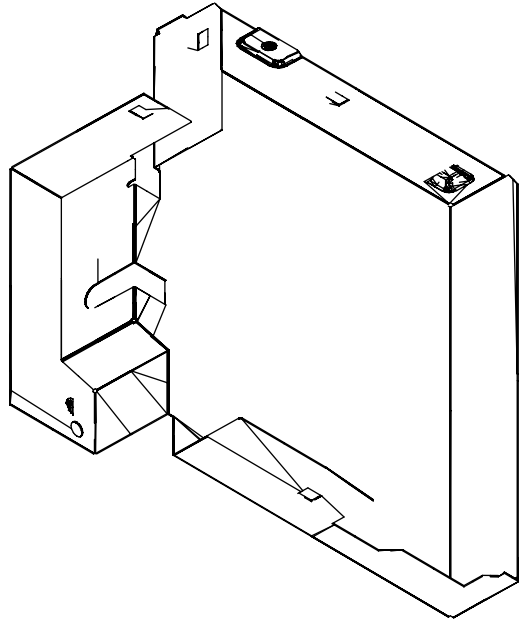


Control box

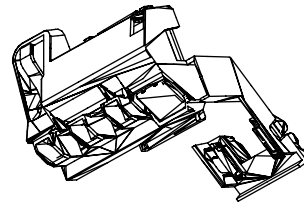
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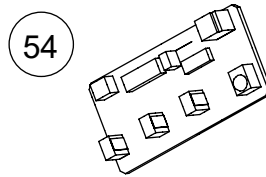
Box shield



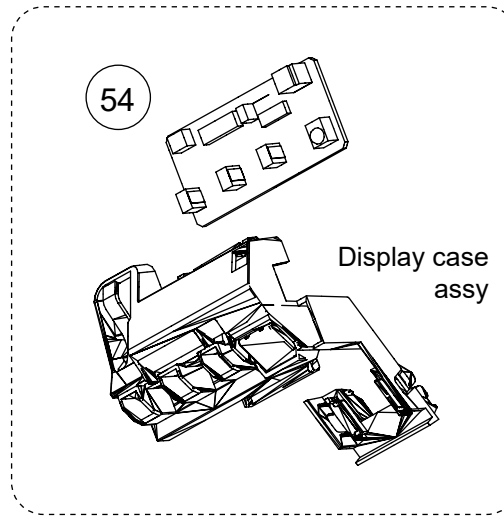
53



54

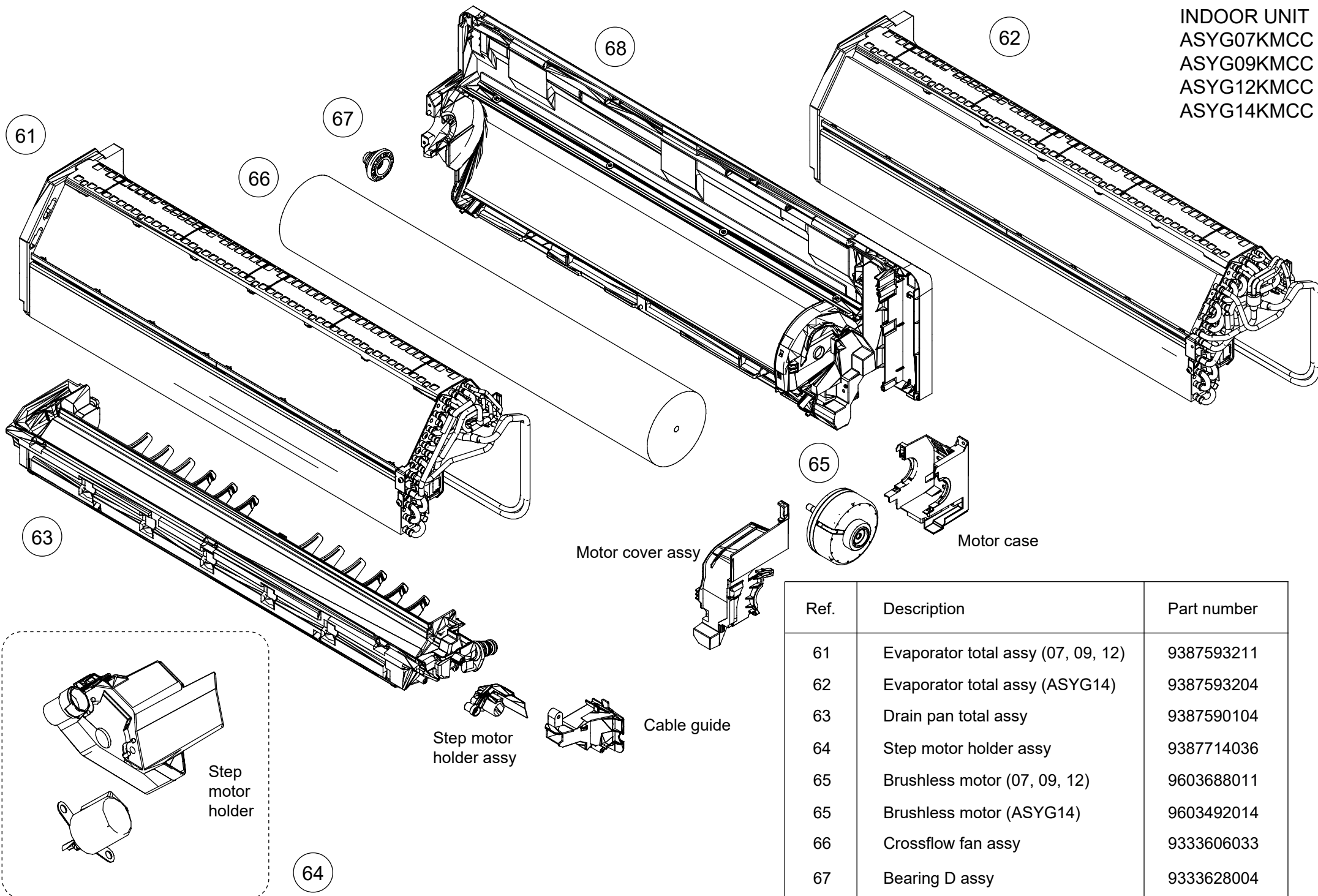


Display case  
 assy



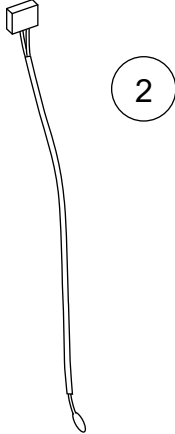
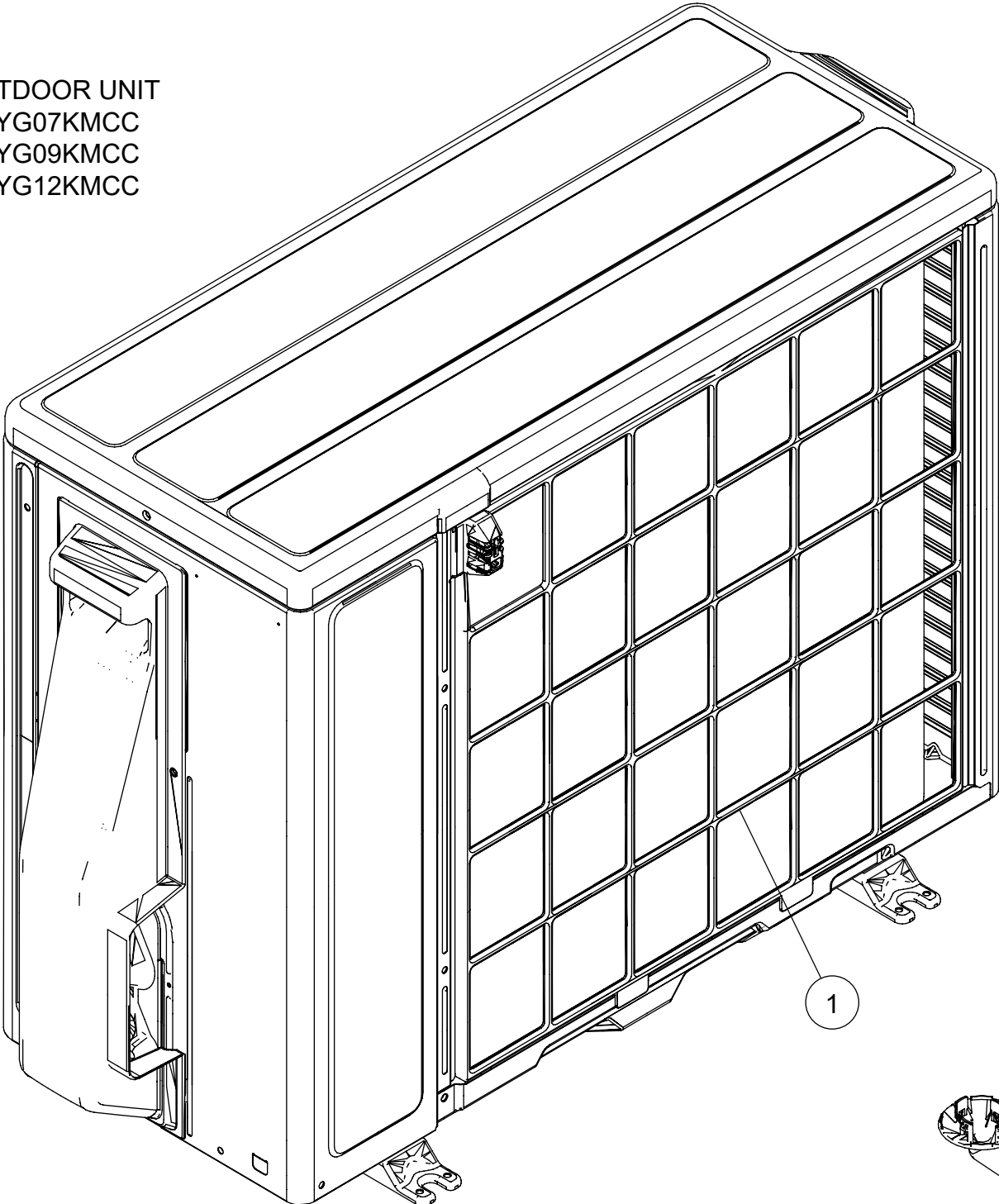
Ref.	Description	Part number
51	Main PCB (ASYG07)	9710368370
51	Main PCB (ASYG09)	9710368387
51	Main PCB (ASYG12)	9710368394
51	Main PCB (ASYG14)	9710368400
52	Terminal	9901013027
53	Display assy	9711146069
54	Indicator PCB	9711147042

INDOOR UNIT  
 ASYG07KMCC  
 ASYG09KMCC  
 ASYG12KMCC  
 ASYG14KMCC

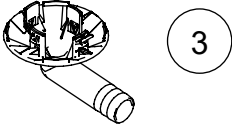


Ref.	Description	Part number
61	Evaporator total assy (07, 09, 12)	9387593211
62	Evaporator total assy (ASYG14)	9387593204
63	Drain pan total assy	9387590104
64	Step motor holder assy	9387714036
65	Brushless motor (07, 09, 12)	9603688011
65	Brushless motor (ASYG14)	9603492014
66	Crossflow fan assy	9333606033
67	Bearing D assy	9333628004
68	Base assy	9387587074

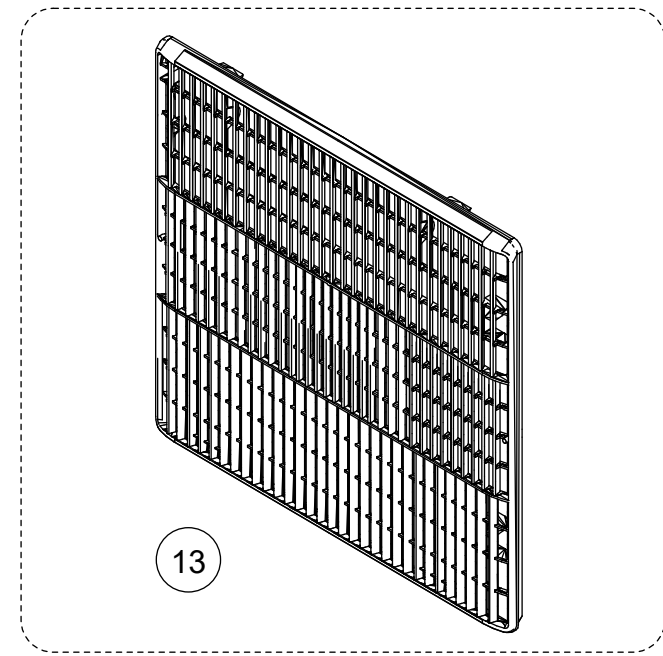
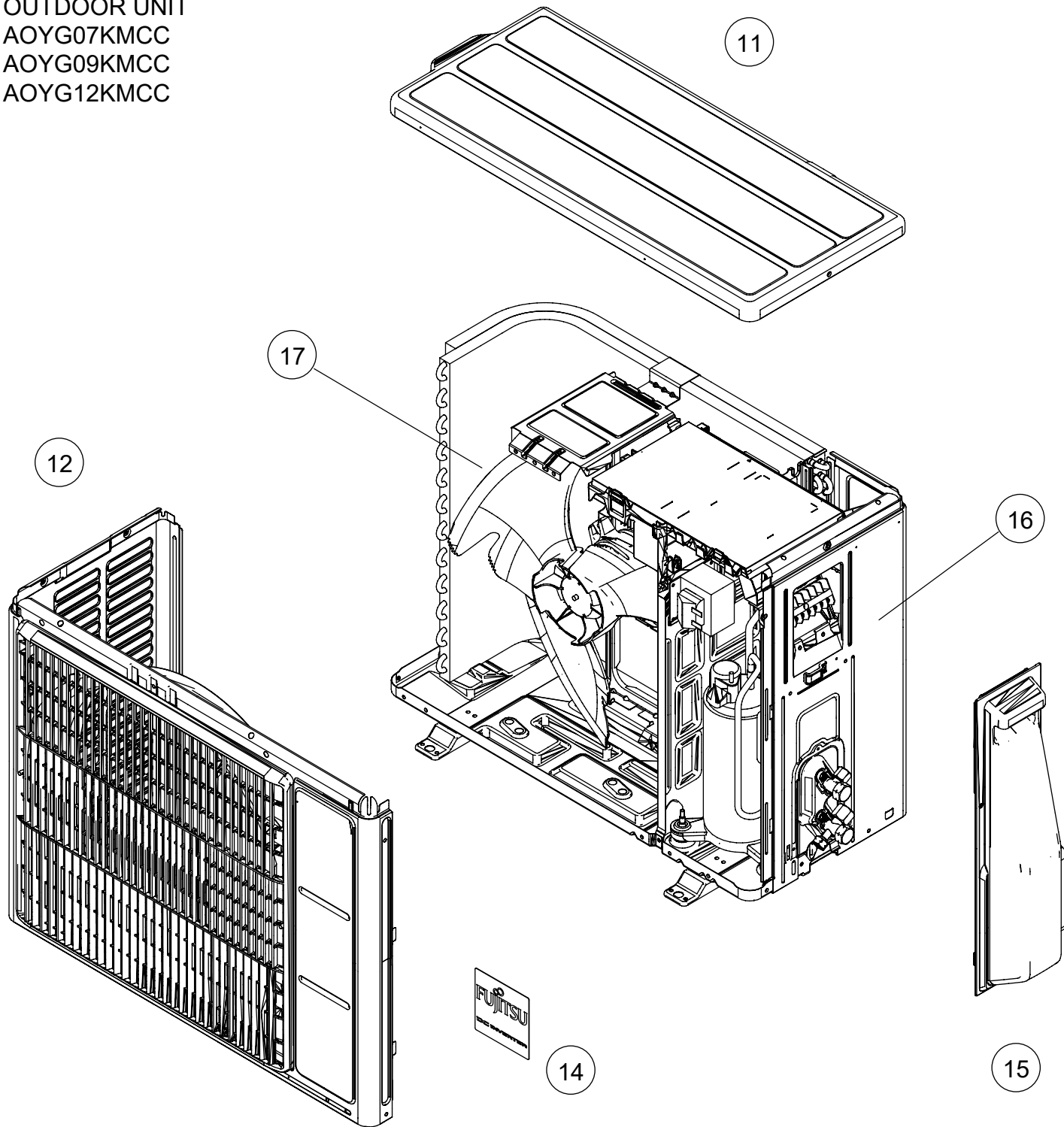
OUTDOOR UNIT  
 AOYG07KMCC  
 AOYG09KMCC  
 AOYG12KMCC



Ref.	Description	Part number
1	Protective net assy	9322811059
2	Outdoor thermistor	9900565053
3	Drain pipe	9322144003



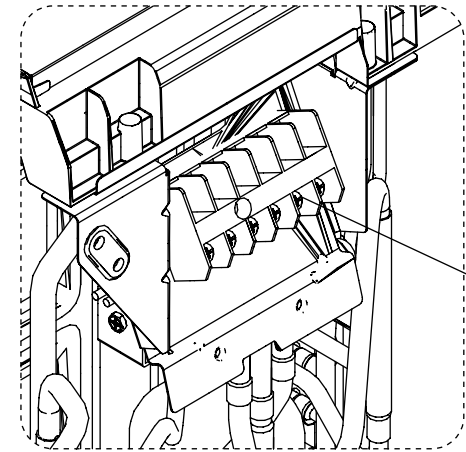
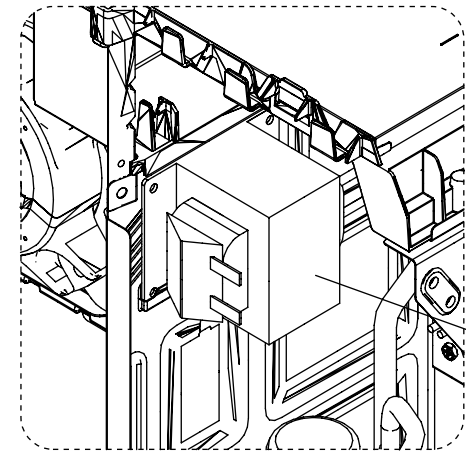
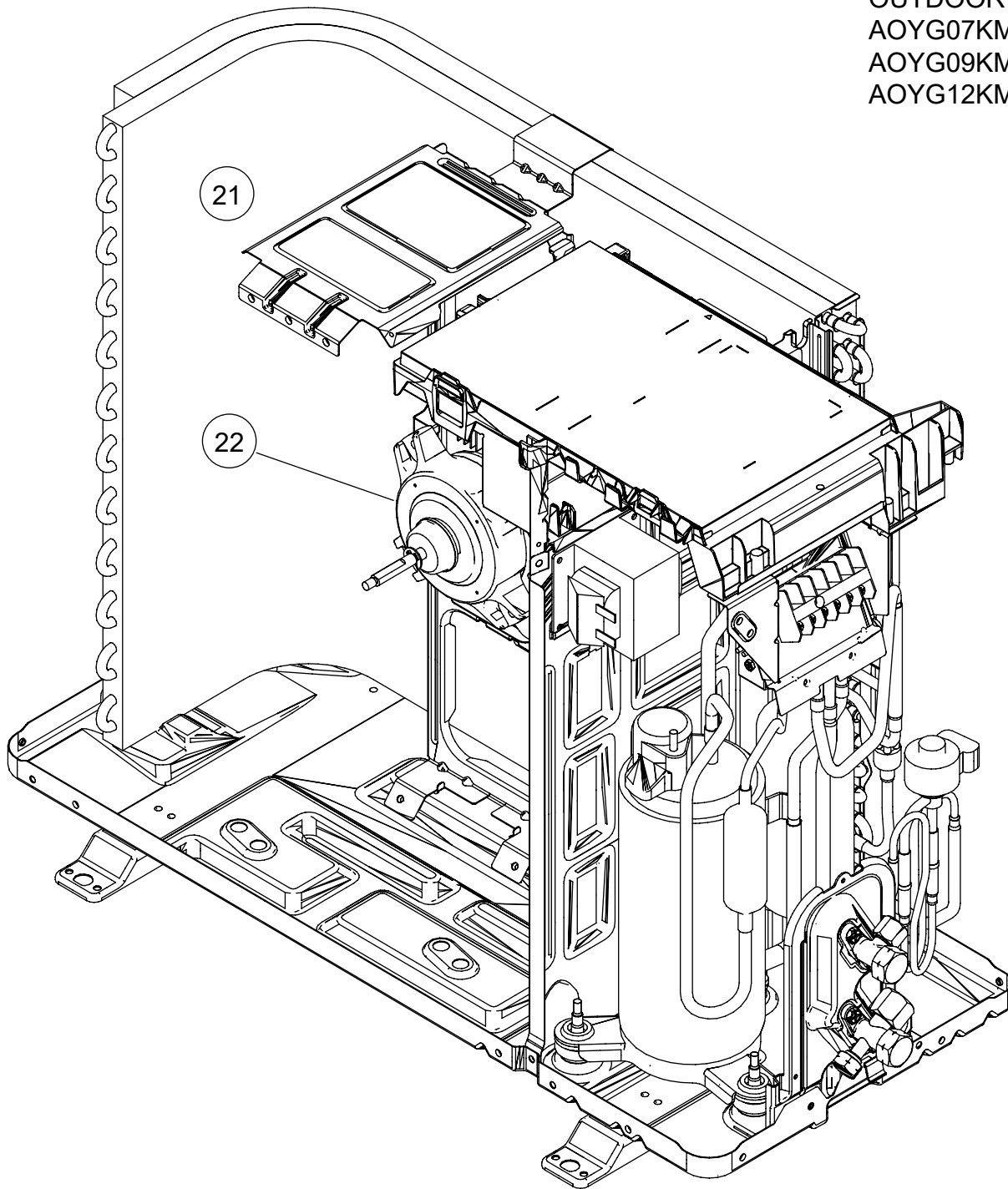
OUTDOOR UNIT  
 AOYG07KMCC  
 AOYG09KMCC  
 AOYG12KMCC



Ref.	Description	Part number
11	Top panel assy	9322556103
12	Front panel assy	9322555106
13	Blow grille	9322135001
14	Emblem	9387859003
15	Switch cover assy	9322570000
16	Cabinet right assy	9322552112
17	Propeller Fan	9322136008

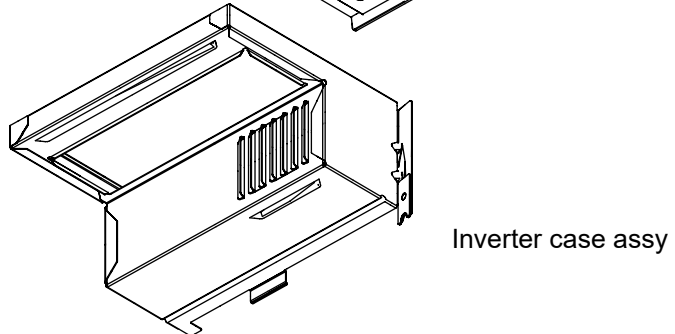
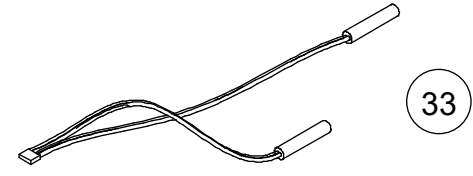
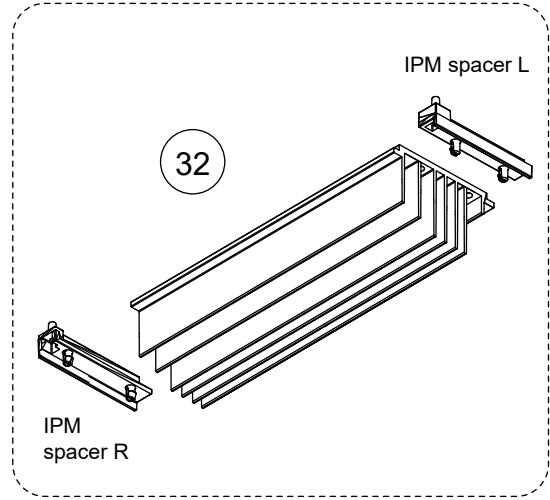
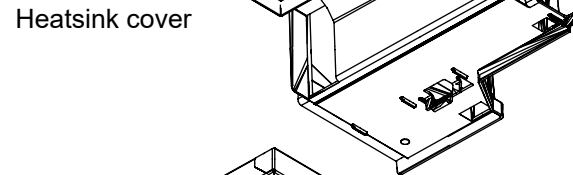
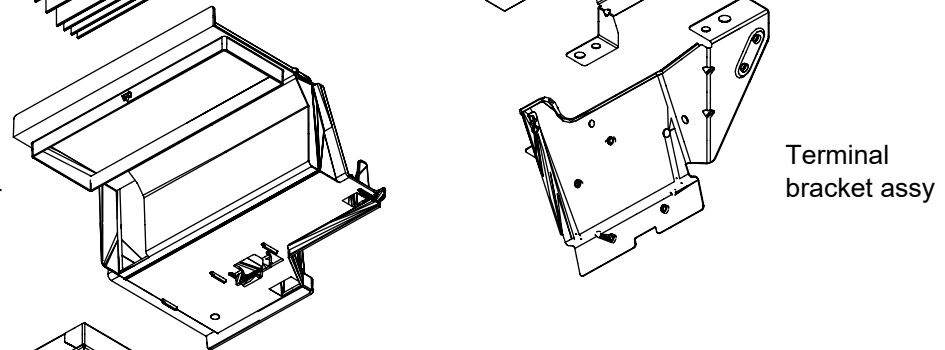
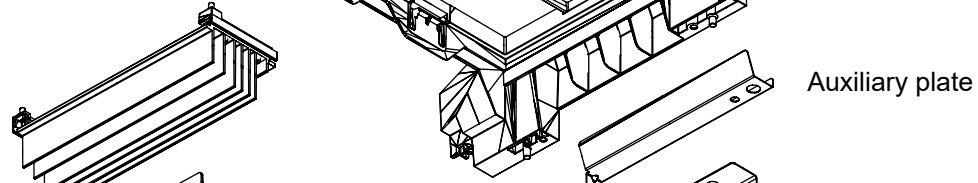
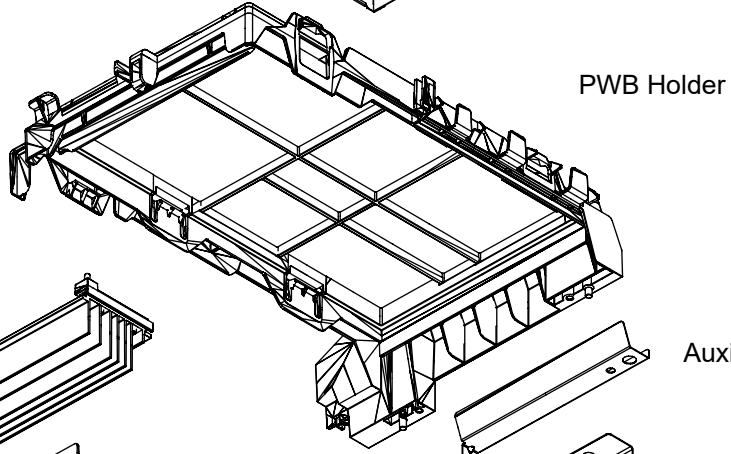
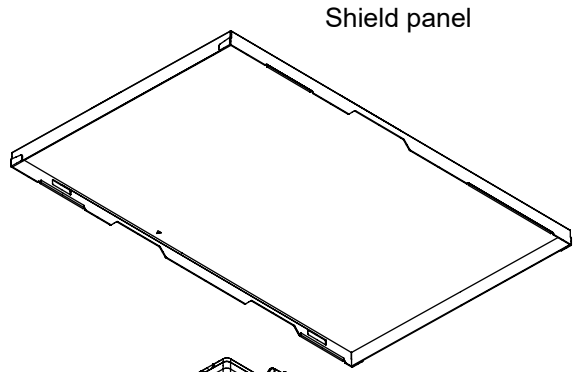
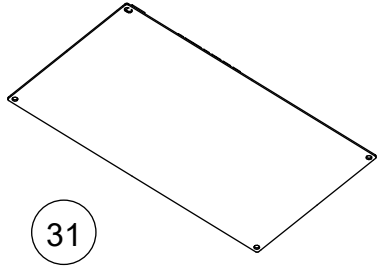


OUTDOOR UNIT  
 AOYG07KMCC  
 AOYG09KMCC  
 AOYG12KMCC



Ref.	Description	Part number
21	Motor bracket assy (07, 09)	9322553089
21	Motor bracket assy (AOYG12)	9322553096
22	Brushless motor	9603553005
23	Reactor assy	9901012013
24	Terminal	9900721107

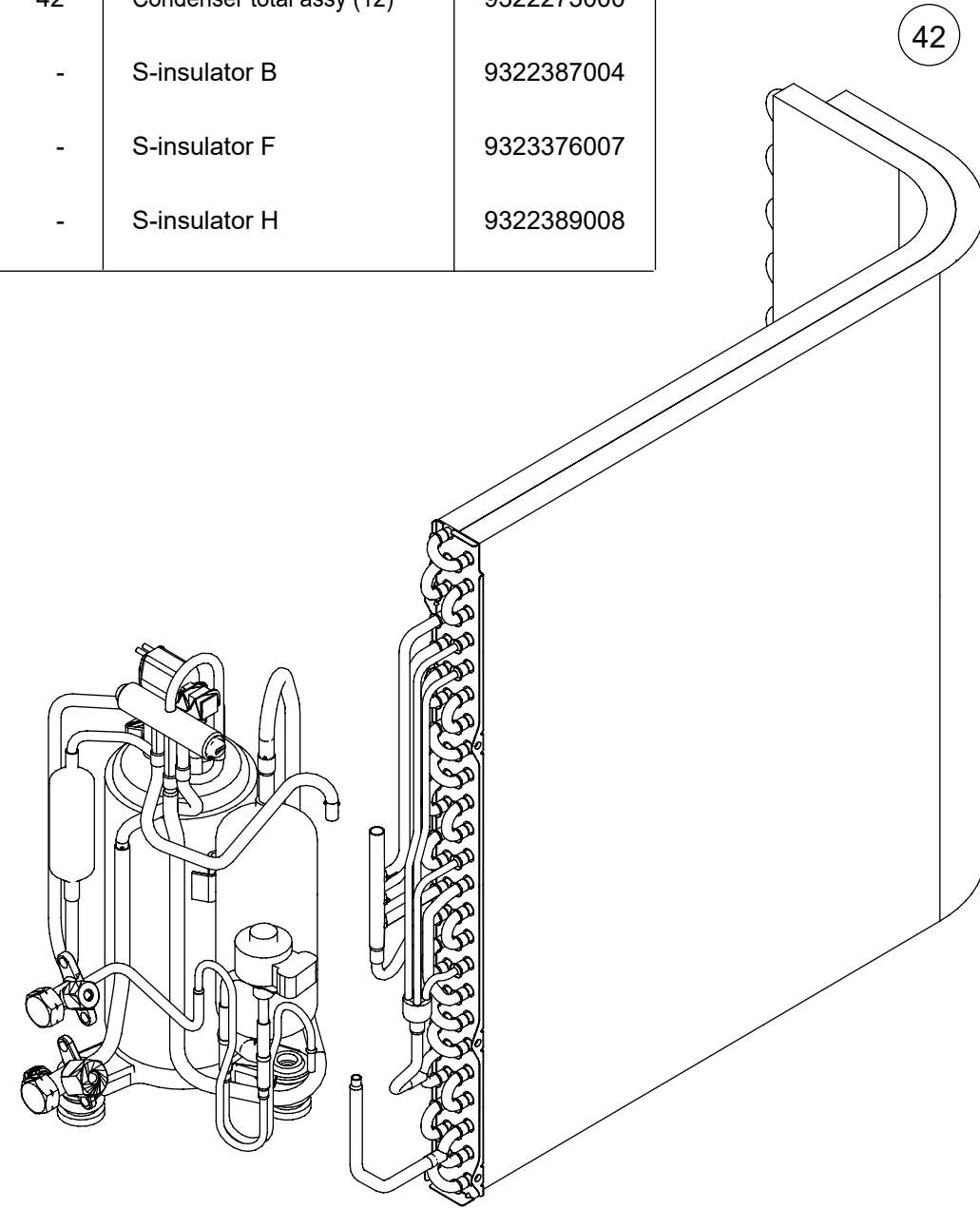
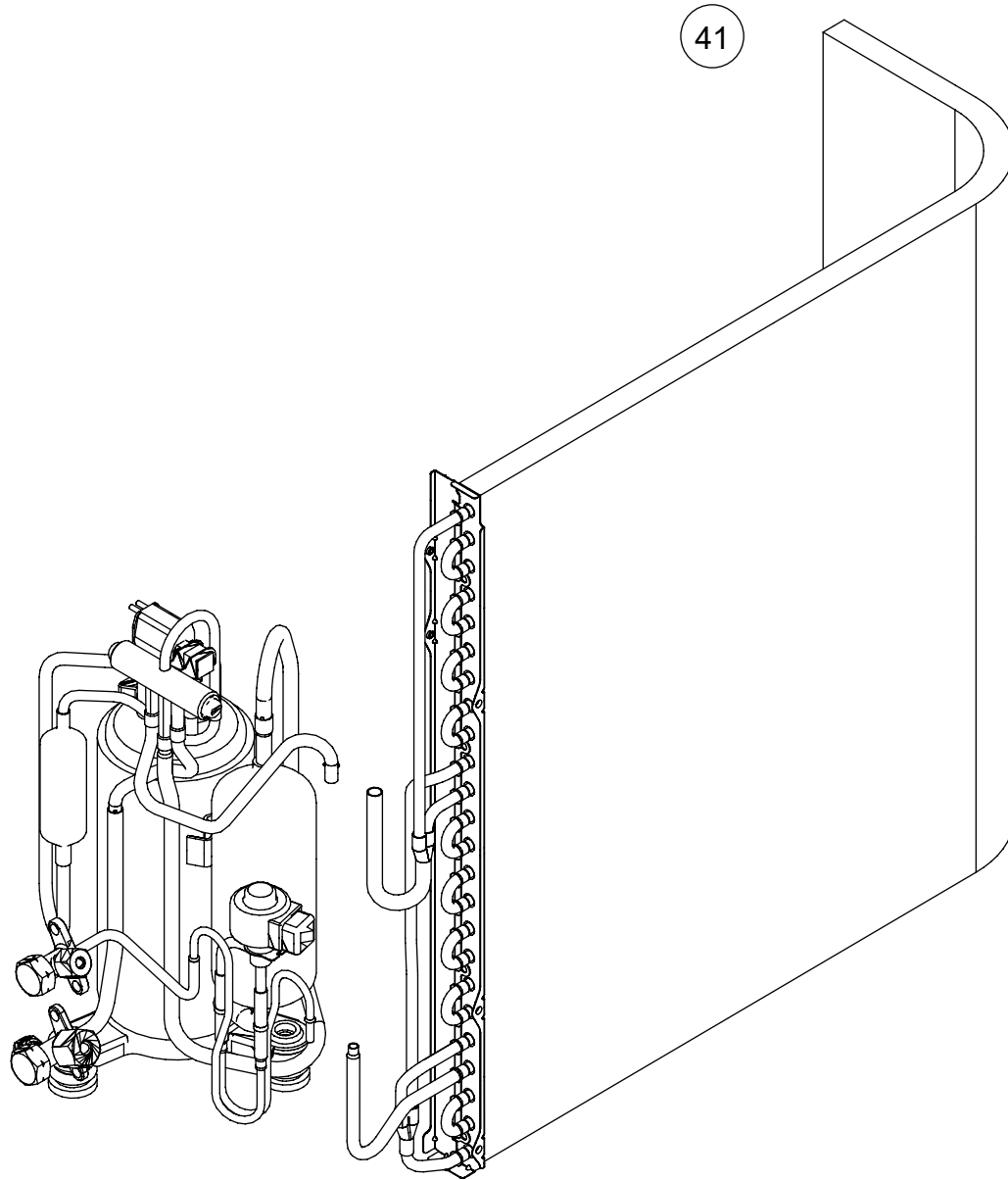
OUTDOOR UNIT  
 AOYG07KMCC  
 AOYG09KMCC  
 AOYG12KMCC



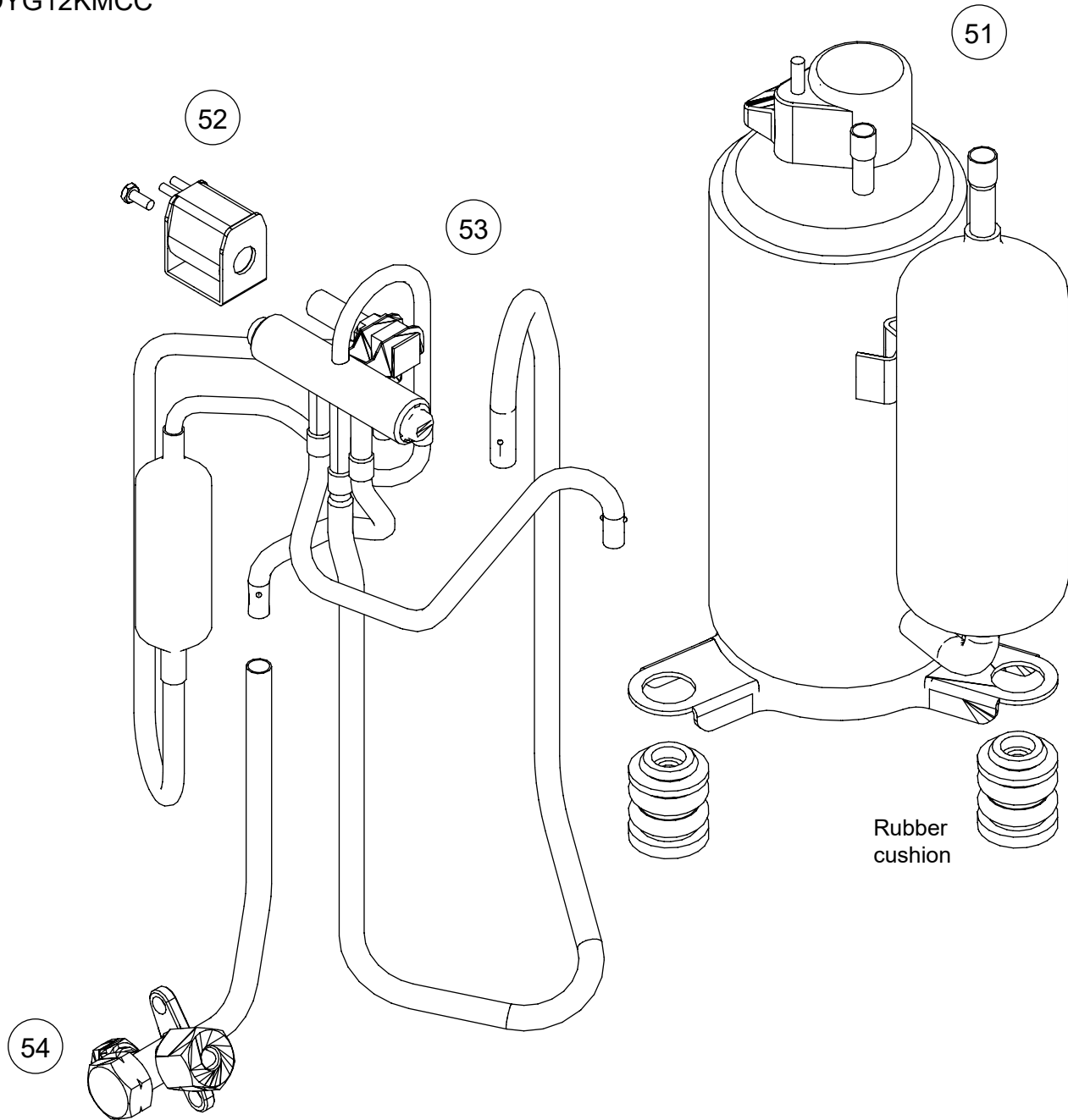
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31	Main PCB (07) with terminal (Ref.24)	9711221049
31	Main PCB (09) with terminal (Ref.24)	9711221056
31	Main PCB (12) with terminal (Ref.24)	9711221063
32	Heatsink	9333787008
33	Thermistor assy	9900727062

OUTDOOR UNIT  
 AOYG07KMCC  
 AOYG09KMCC  
 AOYG12KMCC

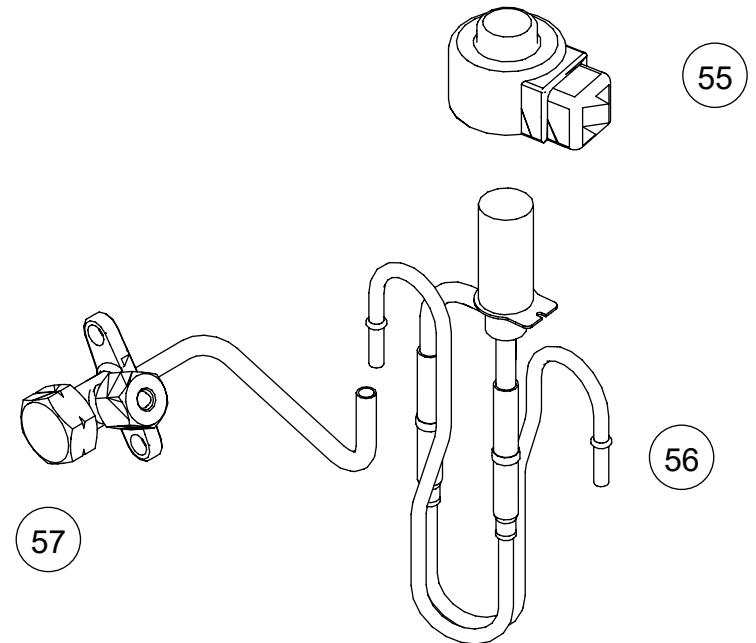
Ref.	Description	Part number
41	Condenser total assy (07, 09)	9322272003
42	Condenser total assy (12)	9322273000
-	S-insulator B	9322387004
-	S-insulator F	9323376007
-	S-insulator H	9322389008



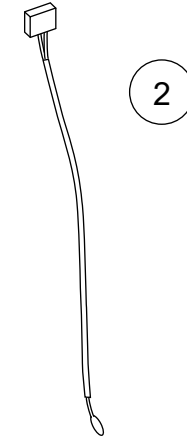
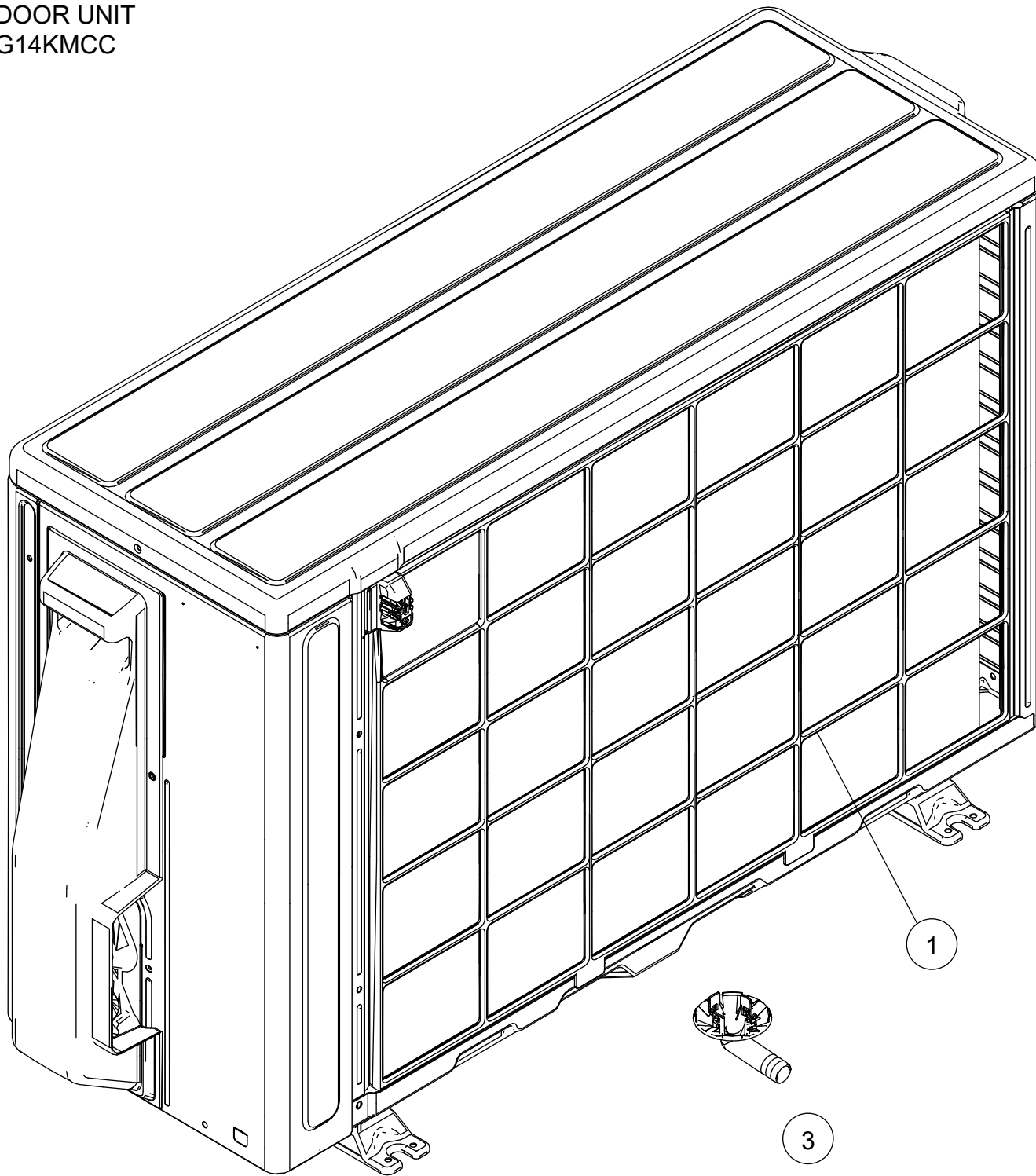
OUTDOOR UNIT  
 AOYG07KMCC  
 AOYG09KMCC  
 AOYG12KMCC



Ref.	Description	Part number
51	Compressor assy (07, 09)	9322423009
51	Compressor assy (12)	9322425003
52	Solenoid	9970110153
53	4-way valve assy	9322392008
54	3-way valve assy	9322473004
55	Expansion valve coil	9970173011
56	Pulse motor valve assy	9322403001
57	2-way valve assy	9322472007

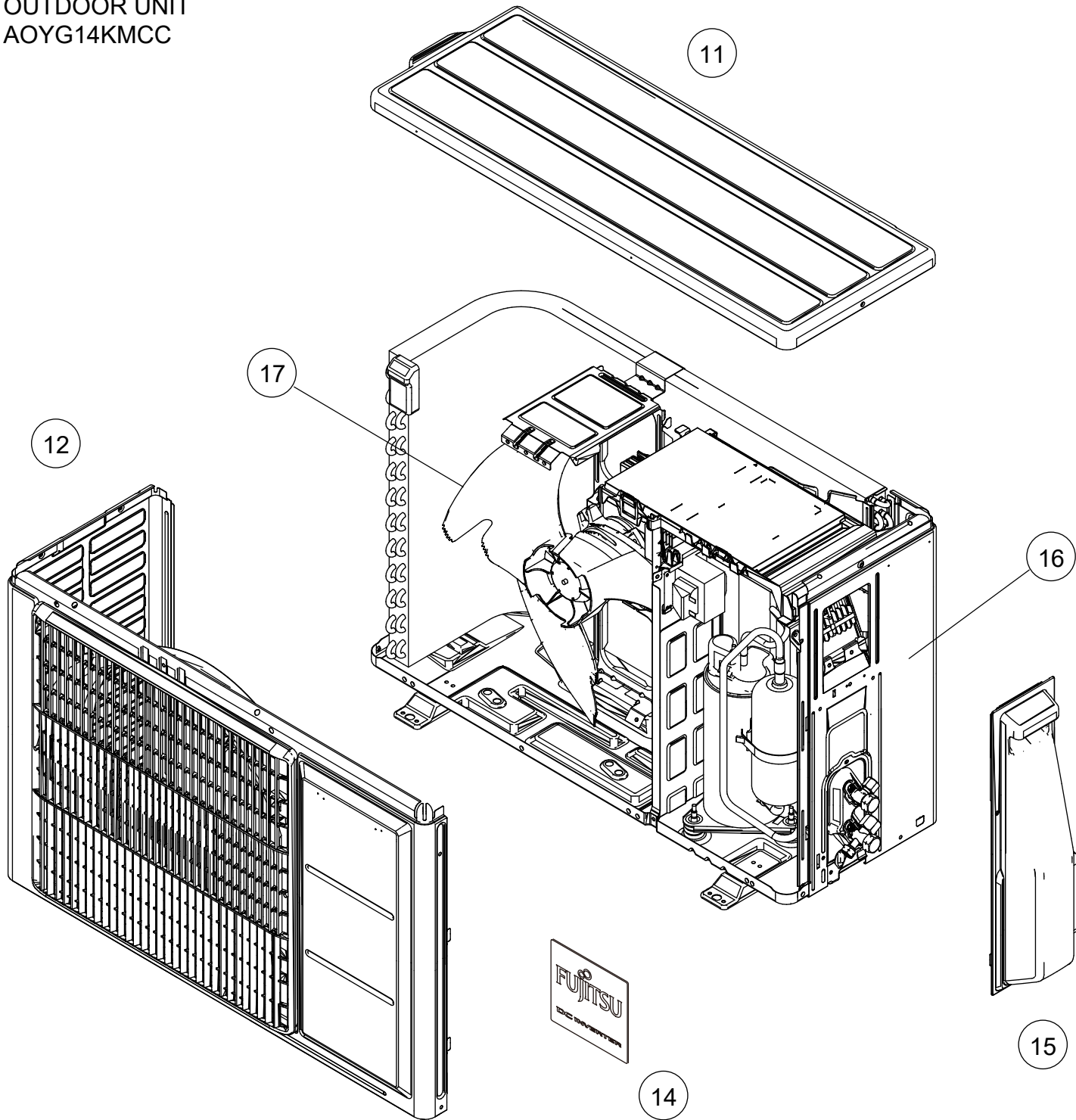


OUTDOOR UNIT  
AOYG14KMCC

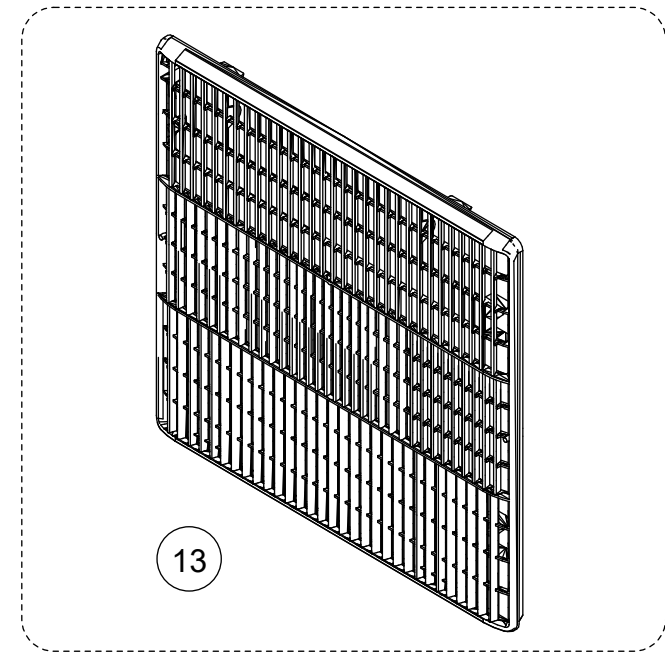


Ref.	Description	Part number
1	Protective net assy	9322811011
2	Outdoor thermistor	9900850012
3	Drain pipe	9322144003

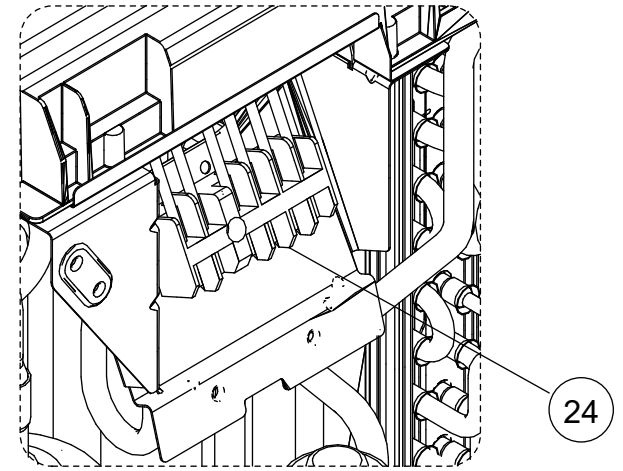
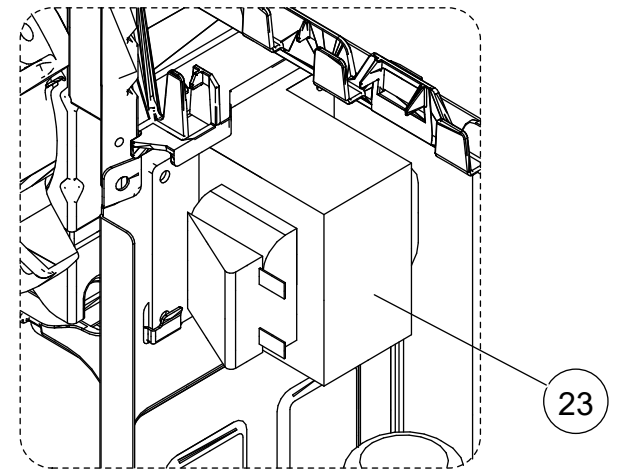
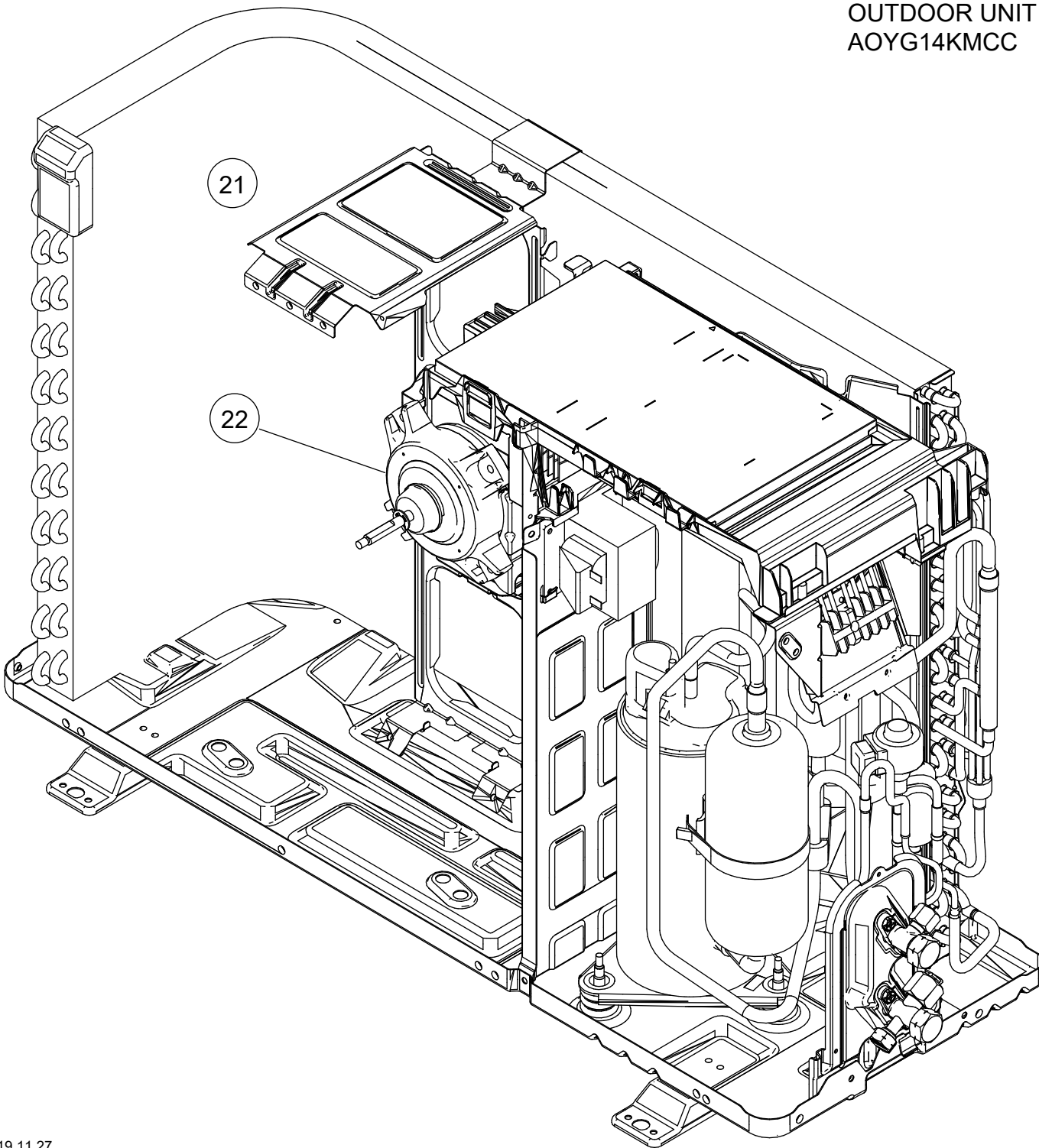
OUTDOOR UNIT  
AOYG14KMCC



Ref.	Description	Part number
11	Top panel assy	9322556028
12	Front panel assy	9322555014
13	Blow grille	9322135001
14	Emblem	9319151007
15	Switch cover assy	9322570000
16	Cabinet right assy	9322552020
17	Propeller fan	9322136008

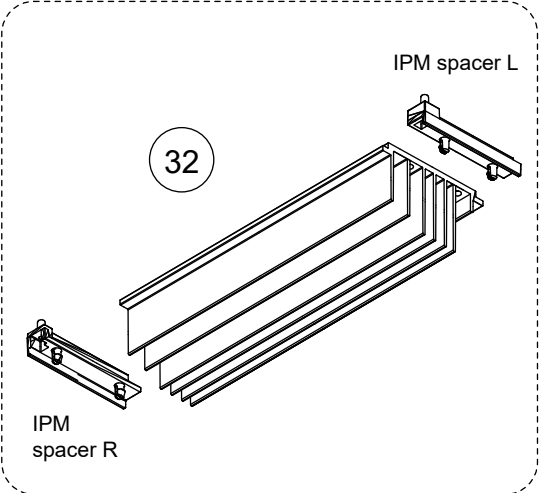
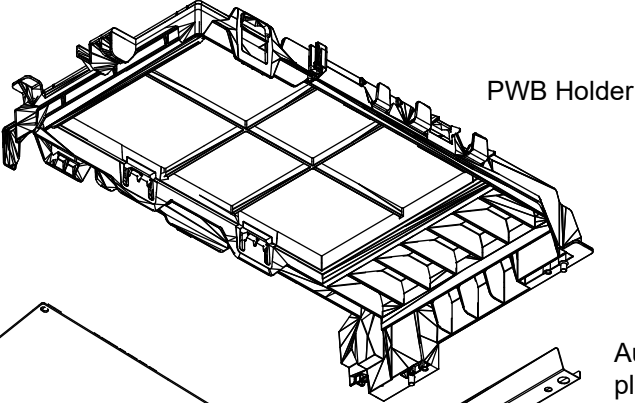
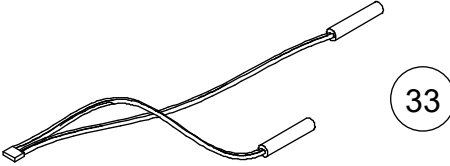
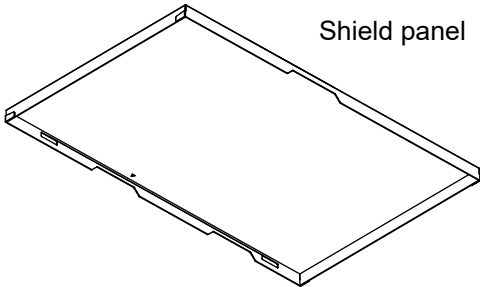


OUTDOOR UNIT  
AOYG14KMCC

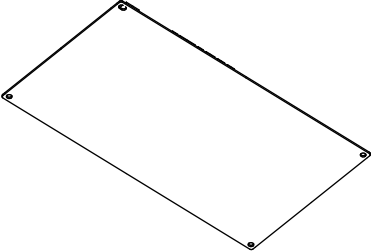


Ref.	Description	Part number
21	Motor bracket assy	9322553010
22	Brushless motor	9603553005
23	Reactor assy	9900583019
24	Terminal	9900721107

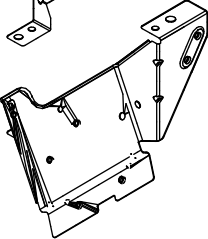
OUTDOOR UNIT  
AOYG14KMCC



31



Auxiliary plate









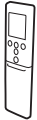
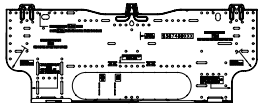
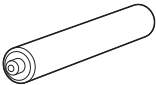


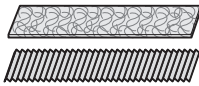
Terminal bracket assy

Ref.	Description	Part number
31	Main PCB with terminal (Ref.24)	9711221070
32	Heatsink	9322419002
33	Thermistor assy	9900727062

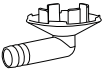


# Accessories

## Models: ASYG07, 09, 12 and 14KMCC

Part name	Exterior	Q'ty	Part name	Exterior	Q'ty
Operating manual		1	Cloth tape		1
Operating manual (CD-ROM)		1	Tapping screw (large)		5
Installation manual		1	Tapping screw (small)		2
Remote controller		1	Wall hook bracket		1
Battery		2	Filter holder		2
Remote controller holder		1	Air cleaning filters		1

## Models: AOYG07, 09, 12 and 14KMCC

Part name	Exterior	Q'ty
Drain pipe (For outdoor unit drain piping work.)		1