



Service Manual

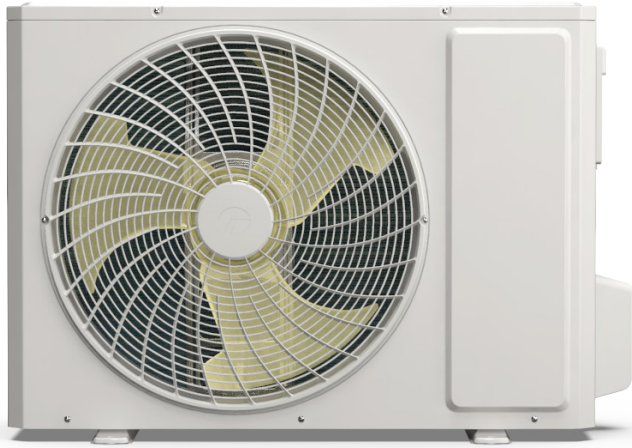
GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI



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GWH28AGEXF-K3NNA1A/O



Remote Controller:



YAW1F10



YAW1F

Model list:

No.	Model	Product code	Indoor model	Indoor product code	Outdoor model	Outdoor product code	Remote Controller
1	GWH07ALAXA-K3NNA1A	CA513005700	GWH07ALAXA-K3NNA1A/I	CA513N05700	GWH07AGAXA-K3NNA1A/O	CA385W11300	
2	GWH07ALAXA-K3NNA2A	CA532003600	GWH07ALAXA-K3NNA2A/I	CA532N03600			
3		CA532003601		CA532N03601			
4	GWH07ALAXA-K3NNA3A	CA539002100	GWH07ALAXA-K3NNA3A/I	CA539N02100			
5		CA539002101		CA539N02101			
6	GWH07ALAXA-K3NNA4A	CA540001700	GWH07ALAXA-K3NNA4A/I	CA540N01700			
7		CA540001701		CA540N01701			
8	GWH09ALAXA-K3NNA1B	CA513005600	GWH09ALAXA-K3NNA1B/I	CA513N05600	GWH09AGAXA-K3NNA1A/O	CA385W12800	YAW1F
9	GWH09ALAXA-K3NNA2A	CA532003700	GWH09ALAXA-K3NNA2A/I	CA532N03700			
10		CA532003701		CA532N03701			
11	GWH09ALAXA-K3NNA3A	CA539002400	GWH09ALAXA-K3NNA3A/I	CA539N02400			
12		CA539002401		CA539N02401			
13	GWH09ALAXA-K3NNA4A	CA540002100	GWH09ALAXA-K3NNA4A/I	CA540N02100			
14		CA540002101		CA540N02101			
15	GWH12ALBxB-K3NNA1B	CA513005300	GWH12ALBxB-K3NNA1B/I	CA513N05300	GWH12AGBxB-K3NNA1B/O	CA385W11400	
16	GWH12ALBxB-K3NNA2B	CA532001600	GWH12ALBxB-K3NNA2B/I	CA532N01600			
17		CA532001601		CA532N01601			
18	GWH12ALBxB-K3NNA3B	CA539002200	GWH12ALBxB-K3NNA3B/I	CA539N02200			
19		CA539002201		CA539N02201			
20	GWH12ALBxB-K3NNA4B	CA540001800	GWH12ALBxB-K3NNA4B/I	CA540N01800			
21		CA540001801		CA540N01801			
22	GWH18ALCxD-K3NNA1B	CA513005400	GWH18ALCxD-K3NNA1B/I	CA513N05400	GWH18AGCxD-K3NNA1B/O	CA385W10100	YAW1F10
23	GWH18ALCxD-K3NNA2B	CA532001700	GWH18ALCxD-K3NNA2B/I	CA532N01700			
24	GWH18ALCxD-K3NNA3B	CA539001800	GWH18ALCxD-K3NNA3B/I	CA539N01800			
25		CA539001801		CA539N01801			
26	GWH18ALCxD-K3NNA4B	CA540001600	GWH18ALCxD-K3NNA4B/I	CA540N01600			
27		CA540001601		CA540N01601			
28	GWH24ALDXE-K3NNA1A	CA513005500	GWH24ALDXE-K3NNA1A/I	CA513N05500			
29	GWH24ALDXE-K3NNA2A	CA532001800	GWH24ALDXE-K3NNA2A/I	CA532N01800			
30	GWH24ALDXE-K3NNA3A	CA539002300	GWH24ALDXE-K3NNA3A/I	CA539N02300			
31		CA539002301		CA539N02301			
32	GWH24ALDXE-K3NNA4A	CA540001900	GWH24ALDXE-K3NNA4A/I	CA540N01900			
33		CA540001901		CA540N01901			
34	GWH28ALEXF-K3NNA3A	CA539002500	GWH28ALEXF-K3NNA3A/I	CA539N02500	GWH28AGEXF-K3NNA1A/O	CA385W12400	
35	GWH28ALEXF-K3NNA4A	CA540002000	GWH28ALEXF-K3NNA4A/I	CA540N02000			
36		CA540002001		CA540N02001			

2. Specifications

2.1 Specification Sheet

Model			1.GWH07ALAXA-K3NNA1A 2.GWH07ALAXA-K3NNA2A 3.GWH07ALAXA-K3NNA3A 4.GWH07ALAXA-K3NNA4A	
Product Code			1.CA513005700 2.CA532003600/CA532003601 3.CA539002100/CA539002101 4.CA540001700/CA540001701	
Power Supply	Rated Voltage	V~	220-240	
	Rated Frequency	Hz	50	
	Phases		1	
Power Supply Mode			Indoor	
Cooling Capacity		W	2250	
Heating Capacity		W	2300	
Cooling Power Input		W	700	
Heating Power Input		W	637	
Cooling Power Current		A	3.5	
Heating Power Current		A	3.1	
Rated Input		W	1000	
Rated Cooling Current		A	4.7	
Rated Heating Current		A	4.6	
Air Flow Volume		m ³ /h	520/470/420/250	
Dehumidifying Volume		L/h	0.6	
EER		W/W	3.21	
COP		W/W	3.61	
SEER		W/W	/	
HSPF		W/W	/	
Application Area		m ²	10-16	
Indoor Unit	Model of indoor unit		1.GWH07ALAXA-K3NNA1A/I 2.GWH07ALAXA-K3NNA2A/I 3.GWH07ALAXA-K3NNA3A/I 4.GWH07ALAXA-K3NNA4A/I	
	Indoor Unit Product Code		1.CA513N05700 2.CA532N03600/CA532N03601 3.CA539N02100/CA539N02101 4.CA540N01700/CA540N01701	
	Fan Type		Cross-flow	
	Fan Diameter Length(DXL)		mm	Φ93×505
	Cooling Speed		r/min	1350/1200/1000/850
	Heating Speed		r/min	1300/1200/1000/900
	Fan Motor Power Output		W	20
	Fan Motor RLA		A	0.2
	Fan Motor Capacitor		μF	1
	Evaporator Form			Aluminum Fin-copper Tube
	Evaporator Pipe Diameter		mm	Φ7.94
	Evaporator Row-fin Gap		mm	1-1.2
	Evaporator Coil Length (LXD _X W)		mm	508×19.05×254
	Swing Motor Model			MP24AN
	Swing Motor Power Output		W	1.5
	Fuse Current		A	3.15
	Sound Pressure Level		dB (A)	Cooling: 40/37/35/26 Heating: 39/37/32/26
	Sound Power Level		dB (A)	Cooling: 50/47/45/36 Heating: 49/47/42/36
	Dimension (WXH _X D)		mm	696×251×191
	Dimension of Carton Box (LXWXH)		mm	742×308×251
Dimension of Package (LXWXH)		mm	747×324×262	
Net Weight		kg	7.6(A1 panel) / 7.5(A2/A3/A4 panel)	
Gross Weight		kg	8.8(A1 panel) / 8.7(A2 panel) / 8.5(A3/A4 panel)	

Outdoor Unit	Outdoor Unit Model		GWH07AGAXA-K3NNA1A/O
	Outdoor Unit Product Code		CA385W11300
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO.,LTD
	Compressor Model		QXA-A081T170
	Compressor Oil		/
	Compressor Type		Rotary
	Compressor LRA.	A	15
	Compressor RLA	A	3.2
	Compressor Power Input	W	713
	Compressor Overload Protector		UP3-MC0(MC0L)
	Throttling Method		Capillary
	Set Temperature Range	°C	16~30
	Cooling Operation Ambient Temperature Range	°C	18~43
	Heating Operation Ambient Temperature Range	°C	-15~24
	Condenser Form		Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7
	Condenser Rows-fin Gap	mm	1-1.3
	Condenser Coil Length (LXD _X W)	mm	638×12.7×419
	Fan Motor Speed	rpm	930±20
	Fan Motor Power Output	W	20
	Fan Motor RLA	A	0.3
	Fan Motor Capacitor	μF	1.5
	Outdoor Unit Air Flow Volume	m ³ /h	1400
	Fan Type		Axial-flow
	Fan Diameter	mm	Φ350
	Defrosting Method		Automatic Defrosting
	Climate Type		T1
	Isolation		I
	Moisture Protection		IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5
	Sound Pressure Level (H/M/L)	dB (A)	49
	Sound Power Level (H/M/L)	dB (A)	59
Dimension(WXHxD)	mm	710X450X293	
Dimension of Carton Box (LXWXH)	mm	761X327X500	
Dimension of Package(LXWXH)	mm	764X330X525	
Net Weight	kg	22.3	
Gross Weight	kg	24.3	
Refrigerant		R410A	
Refrigerant Charge	kg	0.55	
Connection Pipe	Connection Pipe Length	m	5
	Connection Pipe Gas Additional Charge	g/m	20
	Outer Diameter Liquid Pipe	inch	1/4
	Outer Diameter Gas Pipe	inch	3/8
	Max Distance Height	m	10
	Max Distance Length	m	15
	Note: The connection pipe applies metric diameter.		

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Outdoor Unit	Outdoor Unit Model		GWH09AGAXA-K3NNA1A/O
	Outdoor Unit Product Code		CA385W12800
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO.,LTD.
	Compressor Model		QXF-B095T170
	Compressor Oil		FW68DA or equivalent
	Compressor Type		Rotary
	Compressor LRA.	A	19.4
	Compressor RLA	A	3.6
	Compressor Power Input	W	778
	Compressor Overload Protector		HPA-420
	Throttling Method		Capillary
	Set Temperature Range	°C	16~30
	Cooling Operation Ambient Temperature Range	°C	18~43
	Heating Operation Ambient Temperature Range	°C	-15~24
	Condenser Form		Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7.94
	Condenser Rows-fin Gap	mm	1-1.3
	Condenser Coil Length (LXDXW)	mm	632×19.05×418
	Fan Motor Speed	rpm	930
	Fan Motor Power Output	W	20
	Fan Motor RLA	A	0.27
	Fan Motor Capacitor	μF	1.5
	Outdoor Unit Air Flow Volume	m ³ /h	1400
	Fan Type		Axial-flow
	Fan Diameter	mm	Φ350
	Defrosting Method		Automatic Defrosting
	Climate Type		T1
	Isolation		I
	Moisture Protection		IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5
	Sound Pressure Level (H/M/L)	dB (A)	49/-/-
	Sound Power Level (H/M/L)	dB (A)	59/-/-
Dimension(WXHxD)	mm	710X450X293	
Dimension of Carton Box (LXWXH)	mm	761X327X500	
Dimension of Package(LXWXH)	mm	764X330X525	
Net Weight	kg	24.7	
Gross Weight	kg	26.7	
Refrigerant		R410A	
Refrigerant Charge	kg	0.56	
Connection Pipe	Connection Pipe Length	m	5
	Connection Pipe Gas Additional Charge	g/m	20
	Outer Diameter Liquid Pipe	inch	1/4
	Outer Diameter Gas Pipe	inch	3/8
	Max Distance Height	m	10
	Max Distance Length	m	15
	Note: The connection pipe applies metric diameter.		

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Model			1.GWH12ALBXB-K3NNA1B 2.GWH12ALBXB-K3NNA2B 3.GWH12ALBXB-K3NNA3B 4.GWH12ALBXB-K3NNA4B	
Product Code			1.CA513005300 2.CA532001600/CA532001601 3.CA539002200/CA539002201 4.CA540001800/CA540001801	
Power Supply	Rated Voltage	V~	220-240	
	Rated Frequency	Hz	50	
	Phases		1	
Power Supply Mode			Indoor	
Cooling Capacity		W	3250	
Heating Capacity		W	3400	
Cooling Power Input		W	1009	
Heating Power Input		W	942	
Cooling Power Current		A	4.8	
Heating Power Current		A	4.6	
Rated Input		W	1350	
Rated Cooling Current		A	7	
Rated Heating Current		A	7	
Air Flow Volume		m ³ /h	590/520/400/320	
Dehumidifying Volume		L/h	1.6	
EER		W/W	3.22	
COP		W/W	3.61	
SEER		W/W	/	
HSPF		W/W	/	
Application Area		m ²	16-24	
Indoor Unit	Model of indoor unit		1.GWH12ALBXB-K3NNA1B/I 2.GWH12ALBXB-K3NNA2B/I 3.GWH12ALBXB-K3NNA3B/I 4.GWH12ALBXB-K3NNA4B/I	
	Indoor Unit Product Code		1.CA513N05300 2.CA532N01600/CA532N01601 3.CA539N02200/CA539N02201 4.CA540N01800/CA540N01801	
	Fan Type		Cross-flow	
	Fan Diameter Length(DXL)		mm	Φ93×580
	Cooling Speed		r/min	1350/1200/1100/850
	Heating Speed		r/min	1350/1200/1100/900
	Fan Motor Power Output		W	20
	Fan Motor RLA		A	0.22
	Fan Motor Capacitor		μF	1
	Evaporator Form			Aluminum Fin-copper Tube
	Evaporator Pipe Diameter		mm	Φ5
	Evaporator Row-fin Gap		mm	2-1.4
	Evaporator Coil Length (LXD _X W)		mm	584×22.8×266.7
	Swing Motor Model			MP24AN
	Swing Motor Power Output		W	1.5
	Fuse Current		A	3.15
	Sound Pressure Level		dB (A)	Cooling: 40/37/34/30 Heating: 40/37/34/28
	Sound Power Level		dB (A)	Cooling: 50/47/44/40 Heating: 50/47/44/38
	Dimension (WXH _X D)		mm	770X251X190
	Dimension of Carton Box (LXWXH)		mm	817X308X251
Dimension of Package (LXWXH)		mm	822X324X262	
Net Weight		kg	8.3	
Gross Weight		kg	9.4	

Outdoor Unit	Outdoor Unit Model		GWH12AGBXB-K3NNA1B/O
	Outdoor Unit Product Code		CA385W11400
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO,LTD.
	Compressor Model		QXA-B120C170
	Compressor Oil		RB 68EP or equivalent
	Compressor Type		Rotary
	Compressor LRA.	A	24
	Compressor RLA	A	4.5
	Compressor Power Input	W	990
	Compressor Overload Protector		HPA-522A
	Throttling Method		Capillary
	Set Temperature Range	°C	16~30
	Cooling Operation Ambient Temperature Range	°C	18~43
	Heating Operation Ambient Temperature Range	°C	-15~24
	Condenser Form		Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7
	Condenser Rows-fin Gap	mm	1-1.3
	Condenser Coil Length (LXD _X W)	mm	673×12.7×514.4
	Fan Motor Speed	rpm	900
	Fan Motor Power Output	W	35
	Fan Motor RLA	A	0.33
	Fan Motor Capacitor	μF	2.5
	Outdoor Unit Air Flow Volume	m ³ /h	1950
	Fan Type		Axial-flow
	Fan Diameter	mm	Φ400
	Defrosting Method		Automatic Defrosting
	Climate Type		T1
	Isolation		I
	Moisture Protection		IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5
	Sound Pressure Level (H/M/L)	dB (A)	52
	Sound Power Level (H/M/L)	dB (A)	62
Dimension(WXHXD)	mm	732X555X330	
Dimension of Carton Box (LXWXH)	mm	791X373X590	
Dimension of Package(LXWXH)	mm	794X376X615	
Net Weight	kg	28	
Gross Weight	kg	30.5	
Refrigerant		R410A	
Refrigerant Charge	kg	0.73	
Connection Pipe	Connection Pipe Length	m	5
	Connection Pipe Gas Additional Charge	g/m	20
	Outer Diameter Liquid Pipe	inch	1/4
	Outer Diameter Gas Pipe	inch	1/2
	Max Distance Height	m	10
	Max Distance Length	m	20
	Note: The connection pipe applies metric diameter.		

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Outdoor Unit	Outdoor Unit Model		GWH18AGCXD-K3NNA1B/O
	Outdoor Unit Product Code		CA385W10100
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO. LTD.
	Compressor Model		QXA-D19F070
	Compressor Oil		ATMOS-RB68EP or equivalent
	Compressor Type		Rotary
	Compressor LRA.	A	42
	Compressor RLA	A	7
	Compressor Power Input	W	1510
	Compressor Overload Protector		UP3-06
	Throttling Method		Capillary
	Set Temperature Range	°C	16~30
	Cooling Operation Ambient Temperature Range	°C	18~43
	Heating Operation Ambient Temperature Range	°C	-15~24
	Condenser Form		Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7
	Condenser Rows-fin Gap	mm	2-1.4
	Condenser Coil Length (LXD _X W)	mm	780×23×514
	Fan Motor Speed	rpm	880
	Fan Motor Power Output	W	45
	Fan Motor RLA	A	0.44
	Fan Motor Capacitor	μF	3
	Outdoor Unit Air Flow Volume	m ³ /h	2300
	Fan Type		Axial-flow
	Fan Diameter	mm	Φ420
	Defrosting Method		/
	Climate Type		T1
	Isolation		I
	Moisture Protection		IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5
	Sound Pressure Level (H/M/L)	dB (A)	53
	Sound Power Level (H/M/L)	dB (A)	63
Dimension(WXHXD)	mm	802X555X350	
Dimension of Carton Box (LXWXH)	mm	869X395X594	
Dimension of Package(LXWXH)	mm	872X398X620	
Net Weight	kg	38.5	
Gross Weight	kg	41	
Refrigerant		R410A	
Refrigerant Charge	kg	1	
Connection Pipe	Connection Pipe Length	m	5
	Connection Pipe Gas Additional Charge	g/m	12
	Outer Diameter Liquid Pipe	inch	1/4
	Outer Diameter Gas Pipe	inch	1/2
	Max Distance Height	m	10
	Max Distance Length	m	25
	Note: The connection pipe applies metric diameter.		

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Model			1.GWH24ALDXE-K3NNA1A 2.GWH24ALDXE-K3NNA2A 3.GWH24ALDXE-K3NNA3A 4.GWH24ALDXE-K3NNA4A	
Product Code			1.CA513005500 2.CA532001800 3.CA539002300/CA539002301 4.CA540001900/CA540001901	
Power Supply	Rated Voltage	V~	220-240	
	Rated Frequency	Hz	50	
	Phases		1	
Power Supply Mode			Indoor	
Cooling Capacity		W	6155	
Heating Capacity		W	6700	
Cooling Power Input		W	1917	
Heating Power Input		W	1856	
Cooling Power Current		A	8.89	
Heating Power Current		A	/	
Rated Input		W	2400	
Rated Cooling Current		A	/	
Rated Heating Current		A	/	
Air Flow Volume		m ³ /h	950/800/650/550	
Dehumidifying Volume		L/h	1.8	
EER		W/W	3.21	
COP		W/W	3.60	
SEER		W/W	/	
HSPF		W/W	/	
Application Area		m ²	23-34	
Indoor Unit	Model of indoor unit		1.GWH24ALDXE-K3NNA1A/I 2.GWH24ALDXE-K3NNA2A/I 3.GWH24ALDXE-K3NNA3A/I 4.GWH24ALDXE-K3NNA4A/I	
	Indoor Unit Product Code		1.CA513N05500 2.CA532N01800 3.CA539N02300/CA539N02301 4.CA540N01900/CA540N01901	
	Fan Type		Cross-flow	
	Fan Diameter Length(DXL)		mm	Φ106×739
	Cooling Speed		r/min	1350/1200/1050/900
	Heating Speed		r/min	1350/1200/1100/900
	Fan Motor Power Output		W	35
	Fan Motor RLA		A	0.35
	Fan Motor Capacitor		μF	2.5
	Evaporator Form			Aluminum Fin-copper Tube
	Evaporator Pipe Diameter		mm	Φ7
	Evaporator Row-fin Gap		mm	2-1.4
	Evaporator Coil Length (LXDXW)		mm	715×25.4×304.8
	Swing Motor Model			MP35CP
	Swing Motor Power Output		W	2.5
	Fuse Current		A	3.15
	Sound Pressure Level		dB (A)	Cooling: 48/43/39/37 Heating: 45/42/39/32
	Sound Power Level		dB (A)	Cooling: 58/53/49/47 Heating: 55/52/49/42
	Dimension (WXHxD)		mm	972X300X225
	Dimension of Carton Box (LXWXH)		mm	1017X366X289
Dimension of Package (LXWXH)		mm	1022X374X299	
Net Weight		kg	13.6	
Gross Weight		kg	15.7	

Outdoor Unit	Outdoor Unit Model		GWH24AADXE-K3NNA1A/O
	Outdoor Unit Product Code		CA476W11400
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO. LTD.
	Compressor Model		QXA-D232F070
	Compressor Oil		FW68DA or equivalent
	Compressor Type		Rotary
	Compressor LRA.	A	/
	Compressor RLA	A	/
	Compressor Power Input	W	/
	Compressor Overload Protector		/
	Throttling Method		Capillary
	Set Temperature Range	°C	16~30
	Cooling Operation Ambient Temperature Range	°C	18~43
	Heating Operation Ambient Temperature Range	°C	-15~24
	Condenser Form		Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7
	Condenser Rows-fin Gap	mm	2-1.4
	Condenser Coil Length (LXD _X W)	mm	848x38.1x528
	Fan Motor Speed	rpm	840
	Fan Motor Power Output	W	45
	Fan Motor RLA	A	0.42
	Fan Motor Capacitor	μF	3.5
	Outdoor Unit Air Flow Volume	m ³ /h	2400
	Fan Type		Axial-flow
	Fan Diameter	mm	Φ445
	Defrosting Method		Automatic Defrosting
	Climate Type		T1
	Isolation		I
	Moisture Protection		IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5
	Sound Pressure Level (H/M/L)	dB (A)	56/-/-
	Sound Power Level (H/M/L)	dB (A)	66/-/-
Dimension(WXHxD)	mm	873X555X376	
Dimension of Carton Box (LXWXH)	mm	948X428X591	
Dimension of Package(LXWXH)	mm	951X431X620	
Net Weight	kg	43	
Gross Weight	kg	46	
Refrigerant		R410A	
Refrigerant Charge	kg	1.28	
Connection Pipe	Connection Pipe Length	m	5
	Connection Pipe Gas Additional Charge	g/m	20
	Outer Diameter Liquid Pipe	inch	1/4
	Outer Diameter Gas Pipe	inch	1/2
	Max Distance Height	m	10
	Max Distance Length	m	25
	Note: The connection pipe applies metric diameter.		

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Outdoor Unit	Outdoor Unit Model		GWH28AGEXF-K3NNA1A/O
	Outdoor Unit Product Code		CA385W12400
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO., LTD.
	Compressor Model		QXAS-E305H070
	Compressor Oil		RB68EP or FVC68D or FV50S or equivalent
	Compressor Type		Rotary
	Compressor LRA.	A	60
	Compressor RLA	A	11.4
	Compressor Power Input	W	2520
	Compressor Overload Protector		HPD-456
	Throttling Method		Capillary
	Set Temperature Range	°C	16~30
	Cooling Operation Ambient Temperature Range	°C	18~43
	Heating Operation Ambient Temperature Range	°C	-15~24
	Condenser Form		Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7.94
	Condenser Rows-fin Gap	mm	2-1.4
	Condenser Coil Length (LXDXW)	mm	851×38.1×616
	Fan Motor Speed	rpm	780
	Fan Motor Power Output	W	85
	Fan Motor RLA	A	0.7
	Fan Motor Capacitor	μF	4.5
	Outdoor Unit Air Flow Volume	m ³ /h	3200
	Fan Type		Axial-flow
	Fan Diameter	mm	Φ520
	Defrosting Method		/
	Climate Type		T1
	Isolation		I
	Moisture Protection		IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5
	Sound Pressure Level (H/M/L)	dB (A)	60
	Sound Power Level (H/M/L)	dB (A)	70
Dimension(WXHxD)	mm	958X660X402	
Dimension of Carton Box (LXWXH)	mm	1029X453X715	
Dimension of Package(LXWXH)	mm	1032X456X737	
Net Weight	kg	56.9	
Gross Weight	kg	60.6	
Refrigerant		R410A	
Refrigerant Charge	kg	1.9	
Connection Pipe	Connection Pipe Length	m	5
	Connection Pipe Gas Additional Charge	g/m	50
	Outer Diameter Liquid Pipe	inch	1/4
	Outer Diameter Gas Pipe	inch	5/8
	Max Distance Height	m	10
	Max Distance Length	m	30
	Note: The connection pipe applies metric diameter.		

The above data is subject to change without notice. Please refer to the nameplate of the unit.

2.3 Cooling and Heating Data Sheet in Rated Frequency

Cooling:

Rated cooling condition(°C) (DB/WB)		Model	Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit	Fan speed of outdoor unit
Indoor	Outdoor			T1 (°C)	T2 (°C)		
27/19	35/24	07/09K	0.8 to 1.0	in:8~11 out:11~14	in:75~85 out:37~43	Super High	High
27/19	35/24	12K	0.8 to 1.1	in:10~14 out:11~14	in:69~74 out:38~45	Super High	High
27/19	35/24	18K	0.8 to 1.0	in:8~11 out:11~14	in:75~85 out:37~43	Super High	High
27/19	35/24	24K	0.9 to 1.1	in:8~12 out:11~14	in:75~85 out:37~43	Super High	High
27/19	35/24	28K	0.9 to 1.1	in:6~8 out:10~12	in:75~85 out:37~43	Super High	High

Heating:

Rated cooling condition(°C) (DB/WB)		Model	Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit	Fan speed of outdoor unit
Indoor	Outdoor			T1 (°C)	T2 (°C)		
20/-	7/6	07/09K	2.4 to 2.6	in:55~65 out:30~37	in:1~3 out:2~5	Super High	High
20/-	7/6	12K	2.4 to 2.6	in:55~65 out:25~32	in:1~3 out:2~5	Super High	High
20/-	7/6	18K	2.2 to 2.4	in:75~85 out:37~43	in:1~3 out:2~5	Super High	High
20/-	7/6	24K	2.2 to 2.4	in:70~85 out:37~43	in:1~3 out:2~5	Super High	High
20/-	7/6	28K	2.8 to 3.0	in:70~85 out:37~43	in:1~3 out:2~5	Super High	High

Instruction:

T1: Inlet and outlet pipe temperature of evaporator

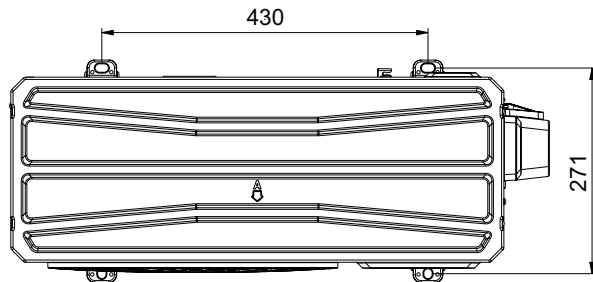
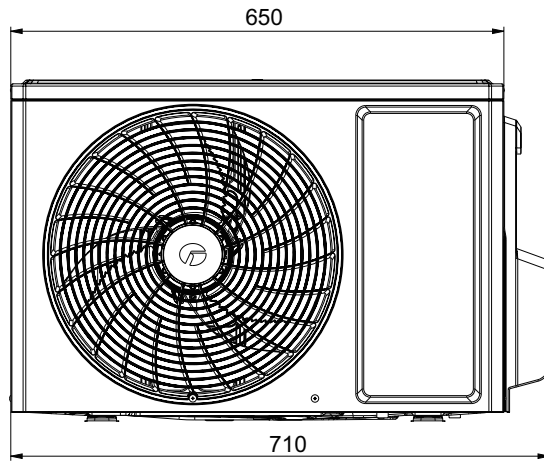
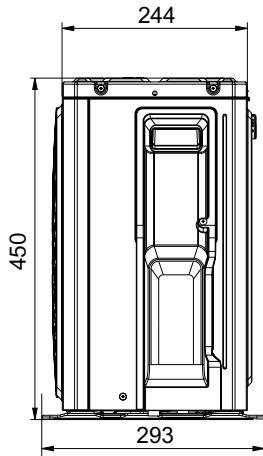
T2: Inlet and outlet pipe temperature of condenser

P: Pressure at the side of big valve

Connection pipe length: 5 m.

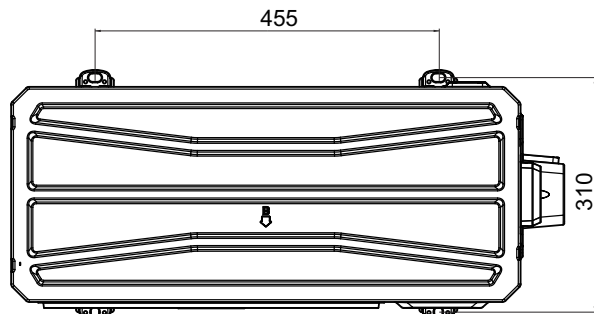
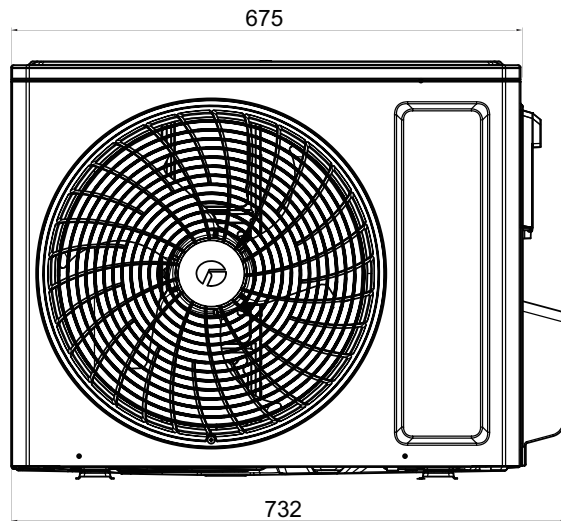
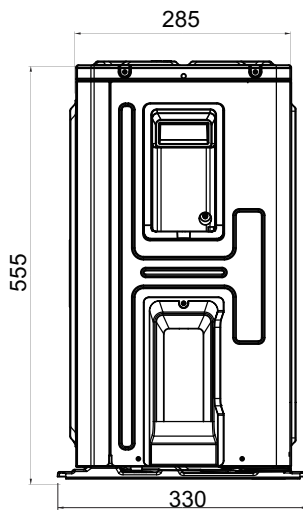
3.2 Outdoor Unit

GWH07AGAXA-K3NNA1A/O GWH09AGAXA-K3NNA1A/O



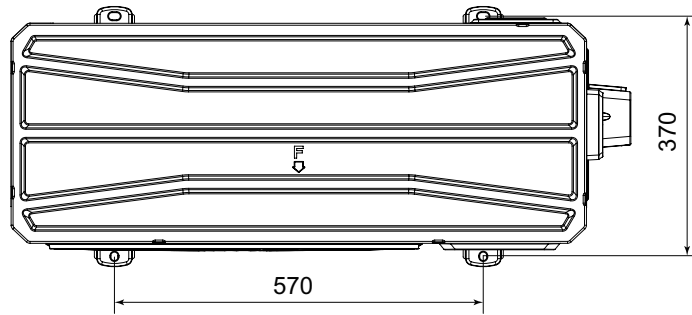
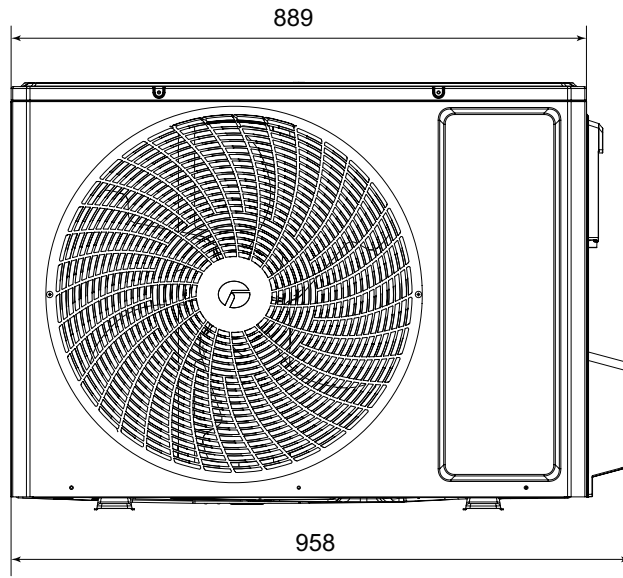
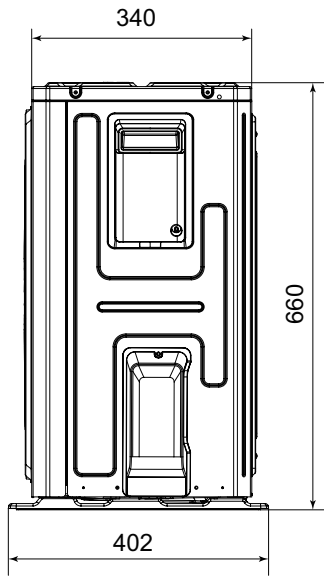
Unit:mm

GWH12AGBXB-K3NNA1B/O

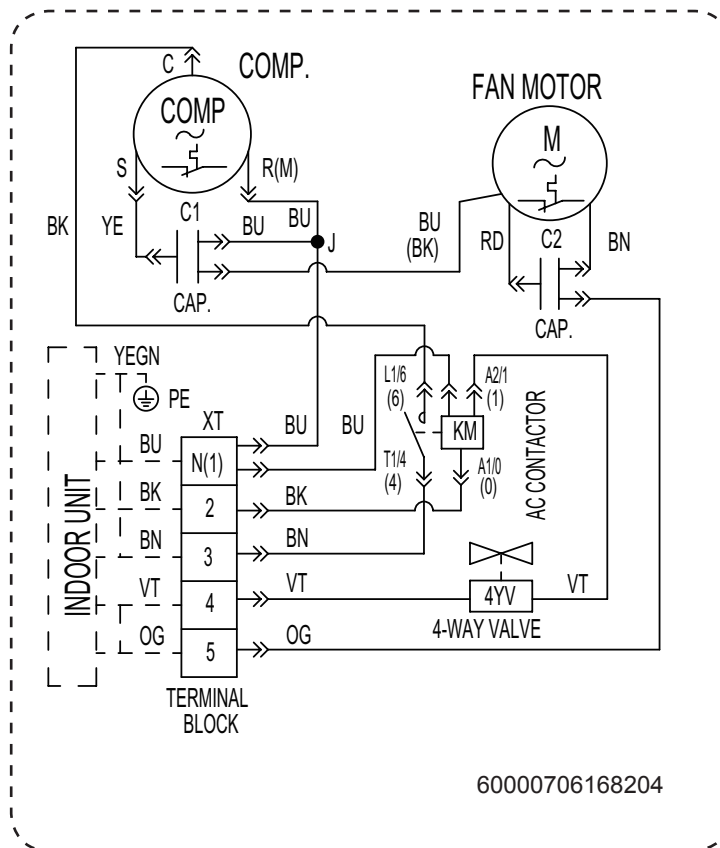
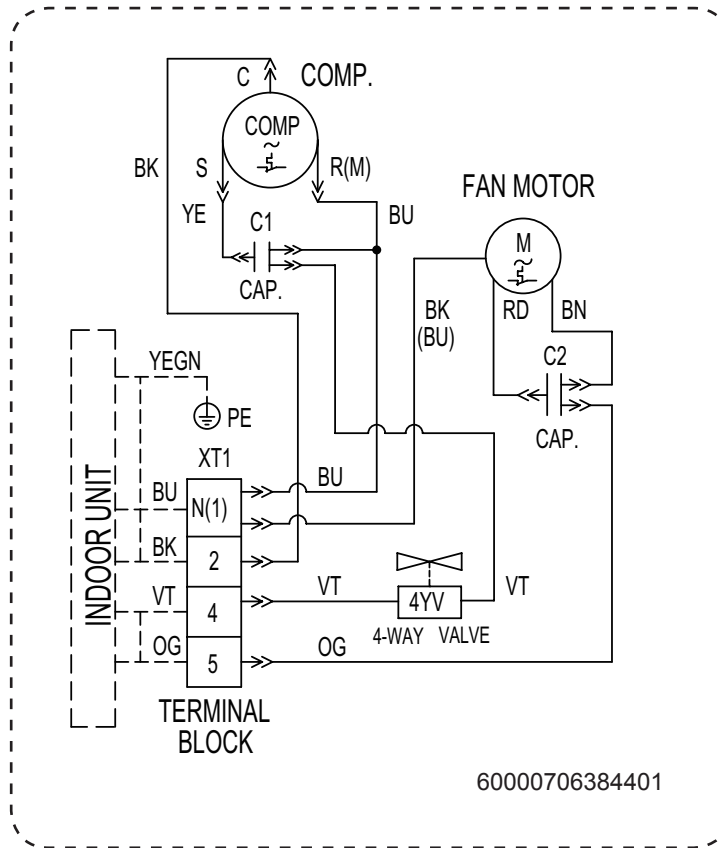


Unit:mm

GWH28AGEXF-K3NNA1A/O



Unit:mm

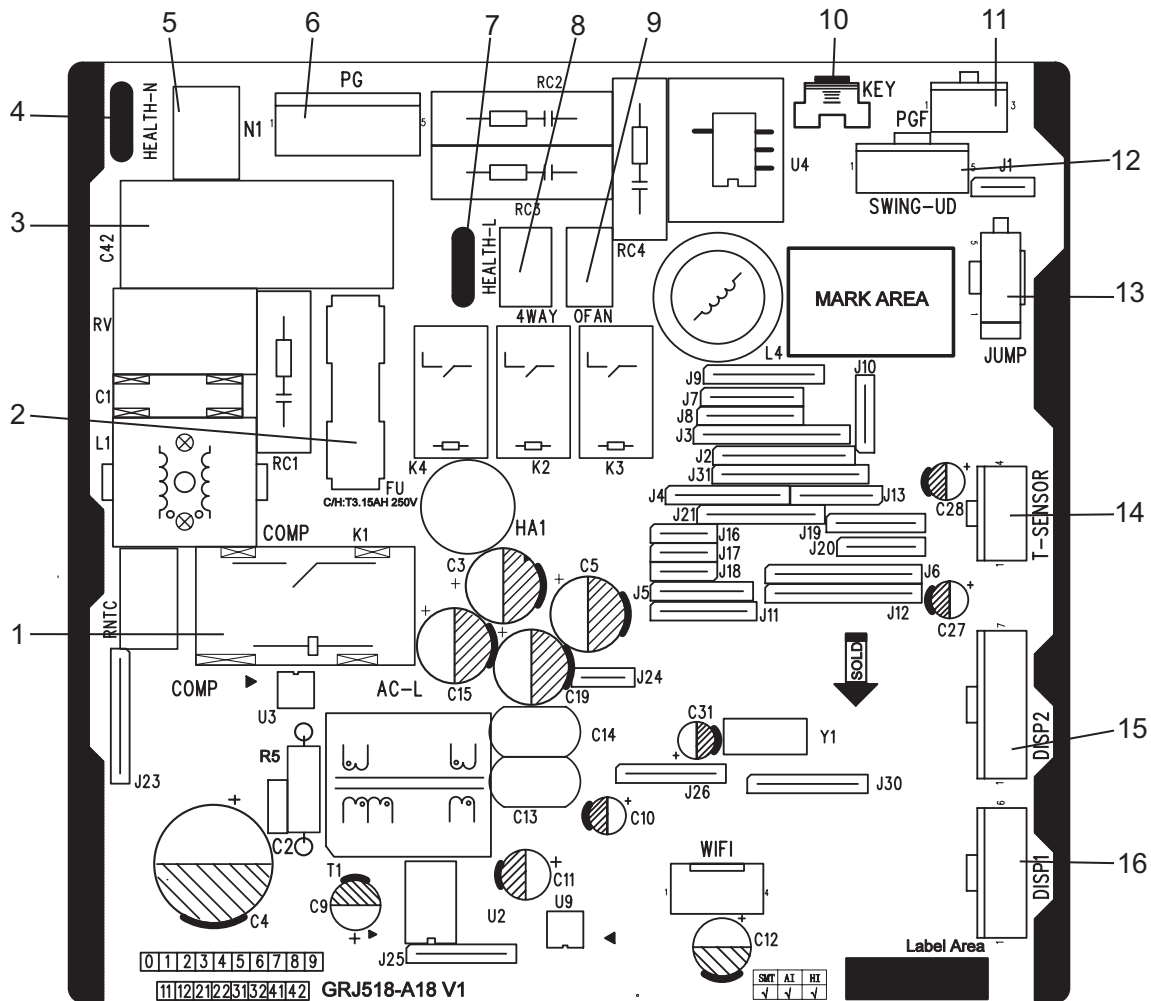


These wiring diagrams are subject to change without notice; please refer to the one supplied with the unit.

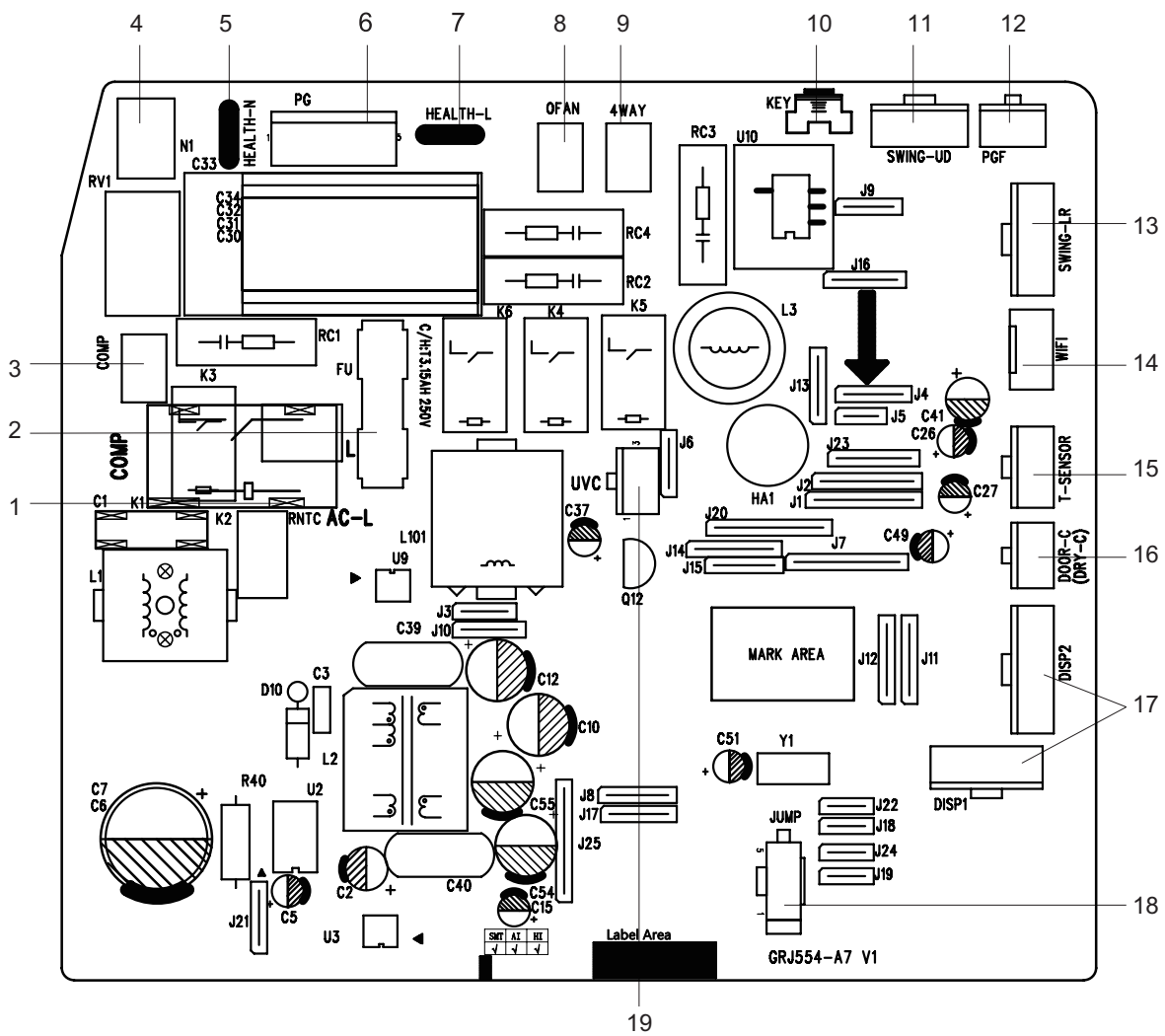
5.2 PCB Printed Diagram

• Indoor Unit

07/09/12K



No.	Name	No.	Name
1	Wiring terminal of compressor	9	Wiring terminal of 4-way valve (heat pump unit)
2	Fuse	10	Auto button
3	Fan capacitor	11	Feedback wiring terminal of PG motor
4	Neutral wire terminal of cold plasma	12	Wiring terminal of up&down swing motor
5	Terminal of neutral wire	13	Jumper cap
6	Wiring terminal of PG motor	14	Wiring terminal of indoor unit temperature sensor
7	Live wire terminal for cold plasma	15	Wiring terminal 2 for display receiving board
8	Wiring terminal of outdoor fan (heat pump unit)	16	Wiring terminal 1 of display receiving board

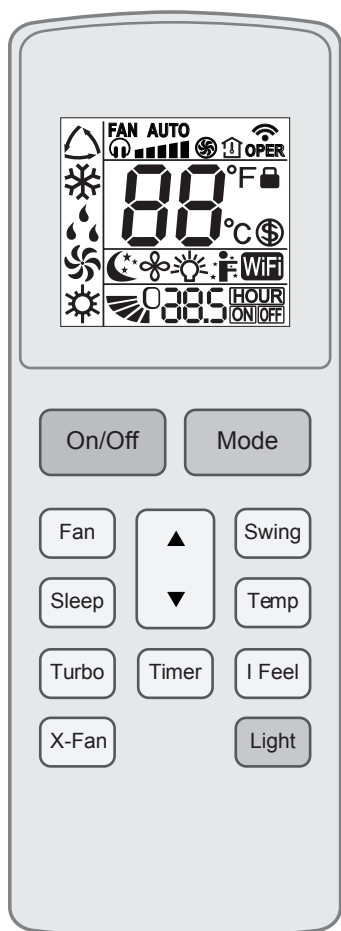


No.	Name	No.	Name
1	Interface of live wire	11	Interface of up&down swing
2	Fuse	12	Feedback interface of PG motor
3	Compressor wiring terminal	13	Left&right swing interface
4	Neutral wire	14	Needle stand for WiFi
5	Interface of health function neutral wire (only for the mode with this function)	15	Interface of temperature sensor
6	Interface of PG motor	16	Interface of gate control
7	Interface of live wire of cold plasma (only for the mode with this function)	17	Interface of display board
8	Interface of outdoor fan	18	Jumper cap
9	Interface of 4-way valve	19	UVC-Ultraviolet clean
10	Auto button		

6. Function and Control

6.1 Remote Controller Introduction of YAW1F10

Buttons on remote controller



Introduction for buttons on remote controller

Notice:

- This is a general use remote controller. It could be used for the air conditioner with multifunction. For the functions which the model doesn't have, if press the corresponding button on the remote controller, the unit will keep the original running status.
- After putting through the power, the air conditioner will give out a sound. Power indicator "⏻" is ON. After that, you can operate the air conditioner by using remote controller.
- Under on status, pressing the button on the remote controller, the signal icon "📶" on the display of remote controller will blink once and the air conditioner will give out a "di" sound, which means the signal has been sent to the air conditioner.
- As for the models with functions of WiFi or wired controller, the indoor unit must have been controlled by standard remote controller under auto mode first, and then the function of adjustable temperature under auto mode can be realized by APP or the wired controller.
- This remote controller can adjust the temperature under auto mode. When matching with the unit which is without the function of adjustable temperature under auto mode, the set temperature under auto mode may be invalid, or the displayed set temperature on the unit is not same as that on the remote controller under auto mode.

Introduction for icons on display

	Set fan speed	
	Turbo mode	
	Indoor ambient temp	
	Send signal	
Operation mode		Auto mode
		Cool mode
		Dry mode
		Fan mode
		Heat mode
	Sleep mode	
	X-FAN function	
	Light	
	I feel function	
	WiFi function	
	8°C heating function	
	Child lock	
	Set temperature	
	Up & down swing	
	Set time	
	TIMER ON / TIMER OFF	

button

Press this button to turn on the unit. Press this button again to turn off the unit.

button

Each time you press this button, a mode is selected in a sequence that goes from AUTO, COOL, DRY, FAN, and HEAT, as the following:



Notice:

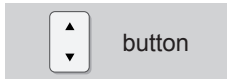
- Heat mode: Only for models with heating function.
- Under auto mode, temperature can be displayed; Under auto mode, set temperature can be adjusted.

button

This button is used for setting Fan Speed in the sequence that goes from AUTO, , , , , , to , then back to Auto.

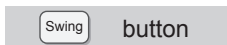
Notice:

- Fan speed under dry mode is low speed.

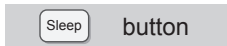


Press ▲ / ▼ button to increase / decrease set temperature.

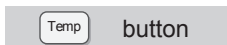
When setting Timer On or Timer Off, press "▲" or "▼" button to adjust the time.



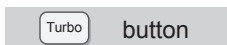
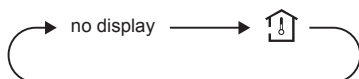
Press this button to set up & down swing angle.



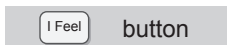
Under Cool or Heat mode, press this button to turn on Sleep function. Press this button again to cancel Sleep function. Under Fan, Auto and Dry modes, this function is unavailable.



Press this button, you can see indoor set temperature, indoor ambient temperature on indoor unit's display. The setting on remote controller is selected circularly as below:

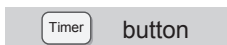


Under cool or heat mode, press this button to turn to quick cool or quick heat mode. "⚡" icon is displayed on remote controller. Press this button again to exit turbo function and "⚡" icon will disappear.



Press this button to start I FEEL function and "iF" will be displayed on the remote controller. After this function is set, the remote controller will send the detected ambient temperature to the controller and the unit will automatically adjust the indoor temperature according to the detected temperature. Press this button again to cancel I FEEL function and "iF" will disappear.

When I FEEL function is turned on, the remote controller should be put within the area where indoor unit can receive the signal sent by the remote controller.

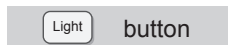


- Under ON status, press this button to set timer OFF; Under OFF status, press this button to set timer ON.
- Press this button once and the characters of HOUR ON (OFF) will flash to be displayed. Meanwhile, press "▲" button or "▼" button to adjust timer setting (time will change quickly if holding "▲" or "▼" button). Time setting range is 0.5~ 24hours.
- Press this button again to confirm timer setting and the characters of HOUR ON (OFF) will stop flashing.
- If the characters are flashing but you haven't press timer button, timer setting status will be quit after 5s. If timer is confirmed, press this button again to cancel timer.



• Press this button in COOL or DRY mode to turn on X-fan function.

• When this function is started up, indoor fan will still operate at low fan speed for a while after turning off the unit by remote controller.



Press this button to turn on the display's light and press this button again to turn off the display's light.

Function introduction for combination buttons

Combination of "▲" and "▼" buttons: about child lock

Press "▲" and "▼" buttons simultaneously 3s to lock or unlock the keypad. If the remote controller is locked, is displayed. In this case, pressing any button, blinks three times.

Combination of "Mode" and "▼" buttons: About switch between Fahrenheit and centigrade

At unit OFF, press "Mode" and "▼" buttons simultaneously to switch between °C and °F.

Combination of "Temp" and "Timer" buttons: About Energy-saving Function

Press "Temp" and "Timer" simultaneously in COOL mode to start energy-saving function.

Nixie tube on the remote controller displays "SE". Repeat the operation to quit the function.

Combination of "Temp" and "Timer" buttons: About 8°C Heating Function

Press "Temp" and "Timer" simultaneously in HEAT mode to start 8°C Heating Function. Nixie tube on the remote controller displays "8" and a selected temperature of "8°C". (46°F if Fahrenheit is adopted). Repeat the operation to quit the function.

WiFi function

Press "Mode" and "Turbo" button simultaneously to turn on or turn off WiFi function. When WiFi function is turned on, the icon will be displayed on remote controller; Long press "Mode" and "Turbo" buttons simultaneously for 10s, remote controller will send WiFi reset code and then the WiFi function will be turned on. WiFi function is defaulted ON after energization of the remote controller.

Notice:

- The function is only available for some models.

Auto clean function

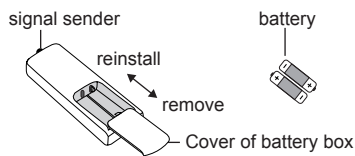
Under unit off status, hold "Mode" and "Fan" buttons simultaneously for 5s to turn on or turn off the auto clean function. When the auto clean function is turned on, indoor unit displays "CL".

During the auto clean process of evaporator, the unit will perform fast cooling or fast heating. There may be some noise, which is the sound of flowing liquid or thermal expansion or cold shrinkage. The air conditioner may blow cool or warm air, which is a normal phenomenon. During cleaning process, please make sure the room is well ventilated to avoid affecting the comfort.

Notice:

- The auto clean function can only work under normal ambient temperature. If the room is dusty, clean it once a month; if not, clean it once every three months. After the auto clean function is turned on, you can leave the room. When auto clean is finished, the air conditioner will enter standby status.
- This function is only available for some models.

Replacement of batteries in remote controller



1. Press the back side of remote controller marked with "OPEN", as shown in the fig, and then push out the cover of battery box along the arrow direction.

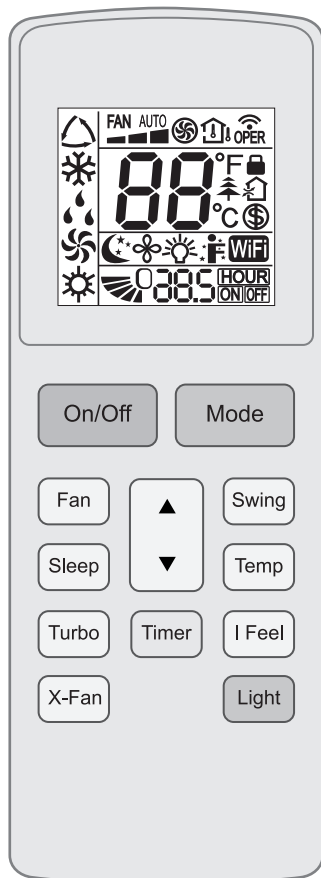
2. Replace two 7# (AAA 1.5V) dry batteries, and make sure the position of "+" polar and "-" polar are correct.
3. Reinstall the cover of battery box.

Notice:

- During operation, point the remote control signal sender at the receiving window on indoor unit.
- The distance between signal sender and receiving window should be no more than 8m, and there should be no obstacles between them.
- Signal may be interfered easily in the room where there is fluorescent lamp or wireless telephone; remote controller should be close to indoor unit during operation.
- Replace new batteries of the same model when replacement is required.
- When you don't use remote controller for a long time, please take out the batteries. If the display on remote controller is fuzzy or there's no display, please replace batteries.
- If the display on remote controller is fuzzy or there's no display, please replace batteries.

6.2 Remote Controller Introduction of YAW1F

Buttons on remote controller



Introduction for icons on display screen

	I feel	
	Set fan speed	
	Turbo mode	
	Send signal	
Operation mode		Auto mode
		Cool mode
		Dry mode
		Fan mode
		Heat mode
	Sleep mode	
	8°C heating function	
	X-FAN function	
Temp. display type		Set temp.
		Indoor ambient temp.
		Outdoor ambient temp.
	Set temperature	
	WiFi function	
	Set time	
	TIMER ON / TIMER OFF	
	Light	
	Up & down swing	
	Child lock	

Introduction for buttons on remote controller

NOTE:

- This is a general use remote controller, it could be used for the air conditioners with multifunction; For some function, which the model doesn't have, if press the corresponding button on the remote controller that the unit will keep the original running status.
- After putting through the power, the air conditioner will give out a sound. Power indicator "⏻" is ON (red indicator, the colour is different for different models). After that, you can operate the air conditioner by using remote controller.
- Under on status, pressing the button on the remote controller, the signal icon "📶" on the display of remote controller will blink once and the air conditioner will give out a "di" sound, which means the signal has been sent to the air conditioner.
- Under off status, set temperature and clock icon will be displayed on the display of remote controller (If timer on, timer off and light functions are set, the corresponding icons will be displayed on the display of remote controller at the same time); Under on status, the display will show the corresponding set function icons.

button

Press this button to turn on the unit. Press this button again to turn off the unit.

button

Each time you press this button, a mode is selected in a sequence that goes from AUTO, COOL, DRY, FAN, and HEAT, as the following:



NOTE:

- Heat mode: Only for models with heating function.

button

This button is used for setting Fan Speed in the sequence that goes from AUTO, , , to , then back to Auto.

NOTE:

- Fan speed under dry mode is low speed.

button

Press "▲" or "▼" button once increase or decrease set Press ▲ / ▼ button to increase / decrease set temperature. In AUTO mode, set temperature is not adjustable.

When setting Timer On or Timer Off, press "▲" or "▼" button to adjust the time.

button

Press this button to set up & down swing angle.

Sleep button

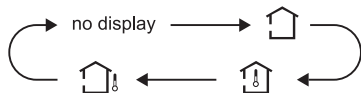
Under Cool, Dry or Heat mode, press this button to turn on Sleep function.

Press this button again to cancel Sleep function.

Under Fan and Auto modes, this function is unavailable.

Temp button

Press this button, you can see indoor set temperature, indoor ambient temperature on indoor unit's display. The setting on remote controller is selected circularly as below:



NOTE:

- Outdoor temperature display is not available for some models. At that time, indoor unit receives "🏠" signal, while it displays indoor set temperature.

Turbo button

Under cool or heat mode, press this button to turn to quick cool or quick heat mode. "⚡" icon is displayed on remote controller. Press this button again to exit turbo function and "⚡" icon will disappear.

I Feel button

Press this button to start I FEEL function and "🌡️" will be displayed on the remote controller. After this function is set, the remote controller will send the detected ambient temperature to the controller and the unit will automatically adjust the indoor temperature according to the detected temperature. Press this button again to close I FEEL function and "🌡️" will disappear.

Please put the remote controller near user when this function is set. Do not put the remote controller near the object of high temperature or low temperature in order to avoid detecting inaccurate ambient temperature. When I FEEL function is turned on, the remote controller should be put within the area where indoor unit can receive the signal sent by the remote controller.

Timer button

• Under ON status, press this button to set timer OFF; Under OFF status, press this button to set timer ON.

- Press this button once and the characters of HOUR ON (OFF) will flash to be displayed. Meanwhile, press "▲" button or "▼" button to adjust timer setting (time will change quickly if holding "▲" or "▼" button). Time setting range is 0.5~ 24hours. Press this button again to confirm timer setting and the characters of HOUR ON (OFF) will stop flashing.

If the characters are flashing but you haven't press timer button, timer setting status will be quit after 5s. If timer is confirmed,

press this button again to cancel timer.

X-Fan button

Press this button in COOL or DRY mode to turn on X-fan function.

When this function is started up, indoor fan will still operate at low fan speed for a while after turning off the unit by remote controller.

Light button

Press this button to turn on the display's light and press this button again to turn off the display's light.

Function introduction for combination buttons

Child lock function

Press "▲" and "▼" buttons simultaneously 3s to lock or unlock the keypad. If the remote controller is locked, "🔒" is displayed. In this case, pressing any button, "🔒" blinks three times.

Combination of "Mode" and "▼" buttons:

About switch between Fahrenheit and centigrade

At unit OFF, press "Mode" and "▼" buttons simultaneously to switch between °C and °F.

Combination of "Temp" and "Timer" buttons:

About Energy-saving Function

Press "Temp" and "Timer" simultaneously in COOL mode to start energy-saving function.

Nixie tube on the remote controller displays "SE". Repeat the operation to quit the function.

Combination of "Temp" and "Timer" buttons:

About 8°C Heating Function

Press "Temp" and "Timer" simultaneously in HEAT mode to start 8°C Heating Function. Nixie tube on the remote controller displays "🔥" and a selected temperature of "8°C". (46°F if Fahrenheit is adopted).

Repeat the operation to quit the function.

WiFi function

Press "Mode" and "Turbo" button simultaneously to turn on or turn off WiFi function. When WiFi function is turned on, the "WiFi" icon will be displayed on remote controller; Long press "Mode" and "Turbo" buttons simultaneously for 10s, remote controller will send WiFi reset code and then the WiFi function will be turned on. WiFi function is defaulted ON after energization of the remote controller.

NOTE:

- This function is only available for some models.

Auto clean function

Under unit off status, hold "MODE" and "FAN" buttons simultaneously for 5s to turn on or turn off the auto clean function. When the auto clean function is turned on, indoor unit displays "CL". During the auto clean process of evaporator, the unit will perform fast cooling or fast heating. There may be some noise, which is the sound of flowing liquid or thermal expansion or cold shrinkage. The air conditioner may blow cool or warm air, which is a normal phenomenon. During cleaning process, please make sure the room is well ventilated to avoid affecting the comfort.

NOTE:

- The auto clean function can only work under normal ambient temperature. If the room is dusty, clean it once a month; if not, clean it once every three months. After the auto clean function is turned on, you can leave the room. When auto clean is finished, the air conditioner will enter standby status.
- This function is only available for some models.

If "H1" is displayed on the remote controller while it's not operated by the professional person/after-sales person, it belongs to the misoperation.

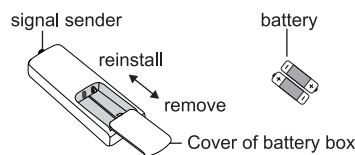
Please operate it as below to cancel it. Under the OFF status of remote controller, hold the "MODE" button and "X-FAN" buttons simultaneously for 5s to cancel "H1" display. Sub-Assy

Note:

- If remote controller displays "H1", it belongs to the normal function reminder. If the unit is defrosting under heating mode, it operates according to H1 defrosting mode. "H1" won't be displayed on the panel of indoor unit;
- Once you set H1 mode, if you turn off unit by remote controller, H1 will display 3 times on the remote controller and then disappear;

- Also, when you set H1 mode, when you change to heating mode, H1 will display 3 times on the remote controller and then disappear.

Replacement of batteries in remote controller



1. Press the back side of remote controller marked with "OPEN", as shown in the fig, and then push out the cover of battery box along the arrow direction.
2. Replace two 7# (AAA 1.5V) dry batteries, and make sure the position of "+" polar and "-" polar are correct.
3. Reinstall the cover of battery box.

NOTICE:

- During operation, point the remote control signal sender at the receiving window on indoor unit.
- The distance between signal sender and receiving window should be no more than 8m, and there should be no obstacles between them.
- Signal may be interfered easily in the room where there is fluorescent lamp or wireless telephone; remote controller should be close to indoor unit during operation.
- Replace new batteries of the same model when replacement is required.
- When you don't use remote controller for a long time, please take out the batteries.
- If the display on remote controller is fuzzy or there's no display, please replace batteries.

6.3 Brief Description of Modes and Functions

1. Summary

(1) Buzzer

When the controller is energized or receives signal from button (emergency operation switch on air conditioner) or remote controller, the buzzer will give out a beep.

(2) Temperature parameter

- ◆ Indoor set temperature (T_{preset})
- ◆ Indoor ambient temperature (T_{amb} .)
- ◆ Inner tube temperature of indoor evaporator (T_{tube})

2. Introduction of Basic Mode Function

◆ Once the compressor is energized, there should be a minimum interval of 3 mins between two start-ups.

◆ If the unit is with memory function and is off before power failure, the compressor can be restarted without an interval of 3 mins; if the unit is on before power failure, the compressor will be restarted with an interval of 3 mins.

Once compressor is started, it won't stop within 6 mins according to the change of room temp.

(1) Auto mode

① Operation condition and process for auto mode

Under auto mode, the system will automatically select operation mode (cooling, heating and fan) according to indoor ambient temperature. There will be 30s delayed for protection between mode switchover.

◆ When $T_{\text{amb}} \geq 26^\circ\text{C}$, unit will be in cooling mode. Ex-factory set temperature is 25°C .

◆ Cooling and heating unit: When $T_{\text{amb}} \leq (19^\circ\text{C} + T_{\text{compensation}})$, unit will be in heating mode. $T_{\text{preset}} = 20^\circ\text{C}$.

◆ Cooling only unit: When $T_{\text{amb}} \leq 22^\circ\text{C}$ (or 72°F), unit will be in fan mode. $T_{\text{preset}} = 25^\circ\text{C}$.

◆ For cooling and heating unit under condition that $(19^\circ\text{C} + T_{\text{compensation}}) < T_{\text{amb}} < 26^\circ\text{C}$ (For cooling only unit under condition that $22^\circ\text{C} < T_{\text{amb}} < 26^\circ\text{C}$), when unit is initially turned on in auto mode, it will operate according to auto fan mode. When unit is changed to auto mode from other modes, it will maintain its previous working status (If auto mode is turned on from drying mode, unit will operate according to auto fan mode).

② Protection function is same as that under each mode.

(2) Cooling mode

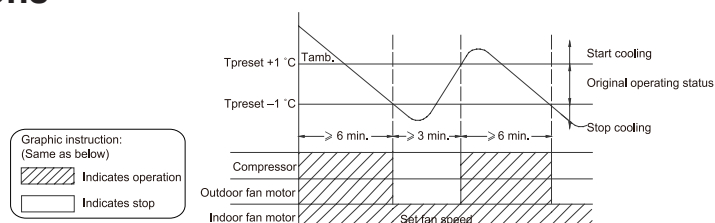
① Operation condition and process for cooling mode

◆ When $T_{\text{amb}} \geq T_{\text{set}} + 1^\circ\text{C}$, the system operates under cooling mode. In this case, the compressor, the ODU fan motor and the IDU fan motor operates at set speed.

◆ When $T_{\text{amb}} \leq T_{\text{set}} - 1^\circ\text{C}$, the compressor and the ODU fan motor stop, while the IDU fan motor operates at set speed.

◆ When $T_{\text{set}} - 1^\circ\text{C} < T_{\text{amb}} < T_{\text{set}} + 1^\circ\text{C}$, the system will maintain its previous operation status.

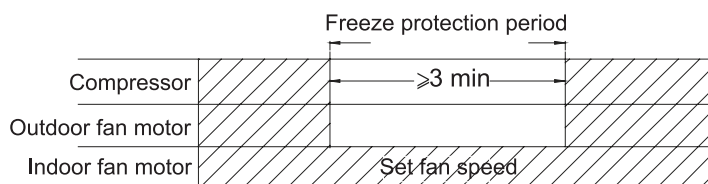
In cooling mode, the 4-way valve is de-energized (4-way valve is not available for cooling only unit). Temperature setting range is $16 \sim 30^\circ\text{C}$.



② Protection function

◆ Freeze protection

During operation, when controller detected that $T_{\text{tube}} \leq 0^\circ\text{C}$ for a consecutive period of time, the system enters into freeze protection. In that case, the compressor and the ODU fan stop operation, while the IDU operates at set fan speed. If freeze protection is released and the compressor has been out of operation for 3 mins, the unit will resume its previous operation status.



◆ Overcurrent protection (this protection function is not available for those models whose cooling capacity $\leq 12000\text{Btu/h}$)

During operation process, if controller detected that system current exceeds the limit value for 3s consecutively (overcurrent), only the fan operates. About 3 mins later, if overcurrent is released, the system will resume original operation.

If overcurrent protection occurs for 6 times consecutively, and resume operation time won't exceed 6min every time, overcurrent protection information will be displayed. After turning off the unit, display won't be displayed.

If turn on the unit again, the system will be restated up again. Overcurrent protection information will be eliminated.

Please refer to maintenance part for display information and disposal method for details.

◆ Locked protection to IDU fan motor

During operation of IDU fan motor, if controller detected that the rotation speed of IDU fan motor less than 300/min or stop rotation, the motor operates abnormally. In order to prevent damage to motor, controller will protect automatically, the system stops operation and blocked information of IDU fan motor will be displayed. After turning off the unit, display won't be displayed.

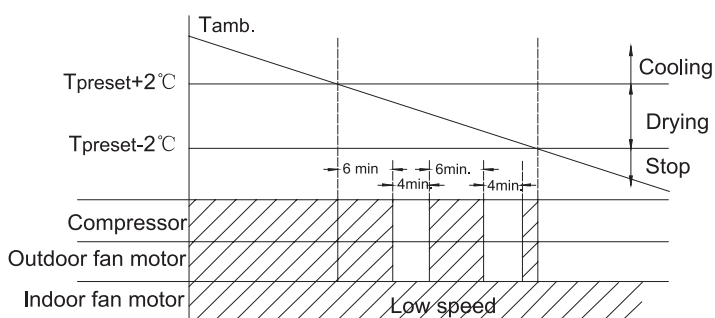
If turn on the unit again, the system will be restated up again. Blocked information of IDU fan motor will be eliminated. (For some models, they can only be restated up after re-energized.)

Please refer to maintenance part for display information and disposal method for details.

(3) Drying mode

① Operation condition and process for drying mode

- ◆ When $T_{amb.} > T_{set} + 2^{\circ}\text{C}$, the system starts drying and cooling. In this case, the compressor and the ODU fan motor operate, and the IDU fan motor operates at low speed.
 - ◆ When $T_{set} - 2^{\circ}\text{C} \leq T_{amb.} \leq T_{set} + 2^{\circ}\text{C}$, the system will start drying. In this case, the IDU fan motor operates at low speed; the compressor and the ODU fan motor operate for 6 minutes and stop for 4 minutes in cycle.
 - ◆ When $T_{amb.} < T_{set} - 2^{\circ}\text{C}$, the compressor and the ODU fan motor stop, while the IDU fan motor runs at low speed.
- In drying mode, the 4-way valve is de-energized (4-way valve is not available for cooling only unit); Temperature setting range is $16 \sim 30^{\circ}\text{C}$. Fan speed Can't be adjusted.



② Protection function

◆ Freeze protection

During drying and cooling operation, when the controller detected that $T_{tube} \leq 0^{\circ}\text{C}$ for a period of time consecutively, the system will enter into freeze protection. In that case, the compressor and the ODU fan motor stops operation, while the IDU fan motor operates at low speed. When freeze protection is release and the compressor has stopped for 3min, the system will resume original operation.

During drying operation, when the controller detected that $T_{tube} \leq 0^{\circ}\text{C}$ for a period of time consecutively, the system enters into freeze protection. In that case, the compressor, the ODU fan motor stops operation, while the IDU fan motor operates at low speed. When freeze protection is release and the compressor has stopped for 4min, the system will resume original operation.

◆ Other protection is same as that under cooling mode.

(4) Fan mode

① Operation condition and process for fan mode

In fan mode, the IDU fan motor operates at set speed, while the compressor and the ODU fan motor stop. 4-way valve is de-energized (4-way valve is not available for cooling only unit). Temperature setting range is $16 \sim 30^{\circ}\text{C}$.

② Protection function

In fan mode, there are overcurrent protection and blocked protection of IDU fan motor. Please refer to corresponding protection function under cooling mode for details.

(5) Heating mode (no heating mode is not available for cooling only unit)

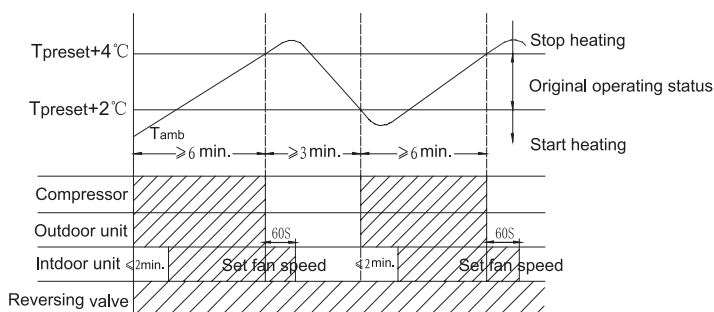
① Operation conditioner and process for heating mode

◆ When $T_{amb} - T_{compensation} \leq T_{preset} - 1^{\circ}\text{C}$, unit will operate in heating mode. 4-way valve will be energized while compressor and outdoor fan starts operation at the same time. Indoor fan will start some time later so that air condition wont blow out cold air.

◆ When $T_{amb} - T_{compensation} \geq T_{preset} + 1^{\circ}\text{C}$, compressor and outdoor fan will stop operation while 4-way valve is still power on. Indoor fan will continue operation for a while at set fan speed to blow out the residual heat so that temperature within the air conditioner wont be too high.

◆ When $T_{preset} - 1^{\circ}\text{C} < T_{amb} - T_{compensation} < T_{preset} + 1^{\circ}\text{C}$, system will maintain its previous working status.

In heating mode, 4-way valve is energized. Temperature setting range is $16 \sim 30^{\circ}\text{C}$.



② Defrosting condition and process

For ensusing heating effect, air conditioner will defrost automatically according to defrosting status on outdoor unit. During defrosting, heating icon will be on and off.

④ Protection function

◆ Overheating prevention protection

During operation, when controller detects that $T_{tube} \geq 55^{\circ}\text{C}$, the ODU fan motor stops operation; When T_{tube} is resumed normally, the ODU fan motor resumes operation.

◆ Noise silencing protection

When turning off the unit or during mode switchover, the 4-way valve is closed. In order to decrease noise, the 4-way valve will delay 2mins to be closed.

◆ Overcurrent protection (This protection function is not available for those models whose cooling capacity $\leq 12000\text{Btu/h.}$)

During operation process, if controller detected that system current exceeds the limit value for 3s consecutively (overcurrent), the system stops operation. About 3mins later, if overcurrent is released, the system will resume original operation. If overcurrent protection occurs for 6 times consecutively, and resume operation time wont exceed 6min every time, overcurrent protection information will be displayed. After turning off the unit, display wont be displayed.

If turn on the unit again, the system will be restated up again. Overcurrent protection information will be eliminated.

Please refer to maintenance part for display information and disposal method for details.

◆ Locked protection to IDU fan motor

During operation of IDU fan motor, if controller detected that the rotation speed of IDU fan motor less than 300/min or stop rotation, the motor operates abnormally. In order to prevent damage to motor, controller will protect automatically, the system stops operation and blocked information of IDU fan motor will be displayed. After turning off the unit, display wont be displayed.

If turn on the unit again, the system will be restated up again. Blocked information of IDU fan motor will be eliminated. (For some models, they can only be restated up after re-energized.)

Please refer to maintenance part for display information and disposal method for details.

3. Other Control Function Introduction

(1) Timer function

Controller has general timer function and clock timer function. When you select the remote controller with general timer function, only the general timer function of controller can be activated; when you select the remote controller with clock timer, only the clock timer function of controller can be activated.

① General timer: The precision of general timer is 0.5hour. 24hours circulated timer Can't be set.

◆ Timer ON: Timer ON can be set at unit OFF. If selected ON time is reached, the unit will start to operate according to previous setting status. Time setting range is 0.5~24hr in 30-minute increments.

◆ Timer OFF: Timer OFF can be set at unit ON. If selected OFF time is reached, the unit will stop. Time setting range is 0.5~24hr in 30-minute increments.

② Clock timer: The precision of clock timer is 1minute. 24hours circulated timer can be set.

◆ Timer ON: If timer ON is set during operation of the unit, the unit will continue to operate. If timer ON is set at unit OFF, upon ON time reaches, the unit will start to run according to previous setting status.

◆ Timer OFF: If timer OFF is set at unit OFF, the system will keep standby status. If timer OFF is set at unit ON, upon OFF time reaches, the unit will stop operation.

◆ Timer change:

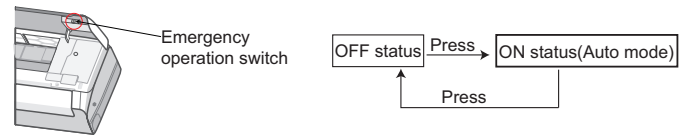
Although timer has been set, the unit still can be turned on/off by pressing ON/OFF button on the remote controller. You can also reset the timer.

If timer ON and timer OFF are set at the same time during operation of the unit, the unit will keep running at current status till OFF time reaches. Upon ON time reached, the system will be turned on automatically. The unit will operate circularly like that every 24hours.

If timer ON and timer OFF are set at unit OFF status, the system keep OFF status till ON time reaches. Upon OFF time reaches, the system will be turned OFF automatically. The unit will operate circularly like that every 24hours.

(2) Emergency operation switch

After pressing this button, the system will operate according under auto mode and the IDU fan motor operates at auto speed. Swing motor operates when the IDU fan motor operates. Press this button again to turn off the unit.



(3) Sleep function

In this mode, the system will select proper sleep curve to operate according to different set temperature.

① If start up sleep function under cooling or drying mode, the system will increase set temperature automatically within a certain range to operate.

② If start up sleep function under heating mode, the system will decrease set temperature automatically within a certain range to operate.

(4) Turbo function

Turbo function can be set under cooling and heating modes. During operation of turbo function, the system operates at the maximum fan speed.

(5) Dry function

Dry function can be set under cooling and drying modes. During operation of drying function, the fan will stop operation after operating for a period of time when turning off the unit.

(6) Auto fan speed control








Auto fan speed control can be set under cooling, heating and fan mode. During operation of auto fan speed control, the IDU fan motor will adjust the fan speed (high, medium or low speed) according to ambient temperature.

(7) Up&down swing control

① After energization, up & down swing motor will firstly have the horizontal louver rotate anticlockwise to position O to close air outlet. If swing function has not been set after start-up of the unit, horizontal louver will turn clockwise to position D in heating mode, or turn clockwise to level position L in other modes.

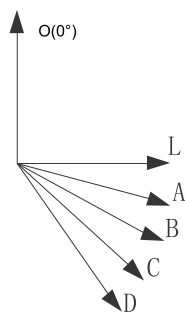
② If swing function is set when turning on the unit, the horizontal louver will swing between L and D.

Horizontal louver has 7 swing statuses:

- ◆ Stay at position L: control by remote controller: 
- ◆ Stay at position A: control by remote controller: 
- ◆ Stay at position B: control by remote controller: 
- ◆ Stay at position C: control by remote controller: 
- ◆ Stay at position D: control by remote controller: 
- ◆ Swing between L and D: control by remote controller: 

- ◆ Stop at any position between L and D (angles between L and D are equiangular) and no display on remote controller.

③ When turning off the unit, horizontal louver will close at position O.

④ Swing action is valid only when set swing command and the IDU fan motor is operating.










(8) Left&Right swing control(only for the mode with this function)

① After energization, swing motor will firstly have the vertical louver rotate anticlockwise to position O to close air outlet. If swing function has not been set after start-up of the unit, vertical louver will turn clockwise to position D in heating mode, or turn clockwise to position L in other modes.

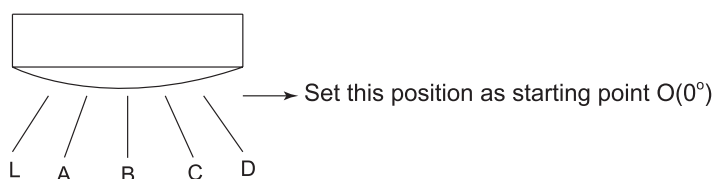
② If swing function is set when turning on the unit, the vertical louver will swing between L and D.

Vertical louver has 7 swing statuses:

- ◆ Stay at position L: control by remote controller: 
- ◆ Stay at position A: control by remote controller: 
- ◆ Stay at position B: control by remote controller: 
- ◆ Stay at position C: control by remote controller: 
- ◆ Stay at position D: control by remote controller: 
- ◆ Swing between L and D: control by remote controller: 

- ◆ Stop at any position between L and D (angles between L and D are equiangular), control by remote controller: OFF

③ When turning off the unit, vertical louver will close at position O.

④ Swing action is valid only when swing command has been set and the IDU fan motor is operating.



(9) Dual-8 nixie tube display

- ◆ When the air conditioner is turned on for the first time, dual-8 nixie tube defaulted to display current set temperature.
- ◆ When controller receives signal of display set temperature, dual-8 nixie tube displays set temperature. When received remote control signal is switched to indoor ambient temperature display status signal from other display status, dual-8 nixie tube will display indoor ambient temperature for 3-5s, and then turn back to display set temperature. If remote control to set other status, the display keeps the same.
- ◆ When air conditioner has a malfunction, dual-8 nixie tube will show relevant error code.
- ◆ When air conditioner is in auto defrosting, heating icon will be on and off.
- ◆ If turn off light button, all display will be turned off.

(10) Memory function

① Power failure when turning on the unit

- ◆ Memory content: ON status, mode, up&down swing, light, set temperature, set fan speed, general timer, Fahrenheit/ Celsius
- ◆ General timer can be memorized. Time of timer is calculated again from energization.
- ◆ Clock timer Can't be memorized.

② Power failure when turning off the unit

- ◆ Memory content: OFF status, mode, up&down swing, light, set temperature, set fan speed, general timer, Fahrenheit/ Celsius
- ◆ General timer can be memorized. Time of timer is calculated again from energization.
- ◆ Clock timer Can't be memorized.

4. Special Function

(1) Health function (for the model with health function)

During operation of the IDU fan motor, press health button on the remote controller to start health function (If there is not health button on the remote controller, the unit defaults health function ON).

(2) I Feel function (for all models, but it needs the remote controller which can set this function)

When I FEEL command is received, the controller will operate according to the ambient temperature sent by the remote controller (For defrosting and cold air prevention, the unit operates according to the ambient temperature sensed by the air conditioner). The remote controller will regularly send ambient temperature data to the controller. When the data has not been received for a long time, the unit will operate according to the temperature sensed by the air conditioner. If I FEEL function is not set, the ambient temperature will be that sensed by the air conditioner.

7. Notes for Installation and Maintenance

Safety Precautions: Important!

Please read the safety precautions carefully before installation and maintenance.

The following contents are very important for installation and maintenance.

Please follow the instructions below.

- The installation or maintenance must accord with the instructions.
- Comply with all national electrical codes and local electrical codes.
- Pay attention to the warnings and cautions in this manual.
- All installation and maintenance shall be performed by distributor or qualified person.
- All electric work must be performed by a licensed technician according to local regulations and the instructions given in this manual.
- Be caution during installation and maintenance. Prohibit incorrect operation to prevent electric shock, casualty and other accidents.

WARNINGS

Electrical Safety Precautions:

1. Cut off the power supply of air conditioner before checking and maintenance.
2. The air condition must apply specialized circuit and prohibit share the same circuit with other appliances.
3. The air conditioner should be installed in suitable location and ensure the power plug is touchable.
4. Make sure each wiring terminal is connected firmly during installation and maintenance.
5. Have the unit adequately grounded. The grounding wire can't be used for other purposes.
6. Must apply protective accessories such as protective boards, cable-cross loop and wire clip.
7. The live wire, neutral wire and grounding wire of power supply must be corresponding to the live wire, neutral wire and grounding wire of the air conditioner.
8. The power cord and power connection wires can't be pressed by hard objects.
9. If power cord or connection wire is broken, it must be replaced by a qualified person.
10. If the power cord or connection wire is not long enough, please get the specialized power cord or connection wire from the manufacture or distributor. Prohibit prolong the wire by yourself.
11. For the air conditioner without plug, an air switch must

be installed in the circuit. The air switch should be all-pole parting and the contact parting distance should be more than 3mm.

12. Make sure all wires and pipes are connected properly and the valves are opened before energizing.
13. Check if there is electric leakage on the unit body. If yes, please eliminate the electric leakage.
14. Replace the fuse with a new one of the same specification if it is burnt down; Don't replace it with a cooper wire or conducting wire.
15. If the unit is to be installed in a humid place, the circuit breaker must be installed.

Installation Safety Precautions:

1. Select the installation location according to the requirement of this manual.(See the requirements in installation part)
2. Handle unit transportation with care; the unit should not be carried by only one person if it is more than 20kg.
3. When installing the indoor unit and outdoor unit, a sufficient fixing bolt must be installed; make sure the installation support is firm.
4. Ware safety belt if the height of working is above 2m.
5. Use equipped components or appointed components during installation.
6. Make sure no foreign objects are left in the unit after finishing installation.

Refrigerant Safety Precautions:

1. When refrigerant leaks or requires discharge during installation, maintenance, or disassembly, it should be handled by certified professionals or otherwise in compliance with local laws and regulations.
2. Avoid contact between refrigerant and fire as it generates poisonous gas; Prohibit prolong the connection pipe by welding.
3. Apply specified refrigerant only. Never have it mixed with any other refrigerant. Never have air remain in the refrigerant line as it may lead to rupture or other hazards.
4. Make sure no refrigerant gas is leaking out when installation is completed.
5. If there is refrigerant leakage, please take sufficient measure to minimize the density of refrigerant.
6. Never touch the refrigerant piping or compressor without wearing glove to avoid scald or frostbite.

Improper installation may lead to fire hazard, explosion, electric shock or injury.

Safety Precautions for Installing and Relocating the Unit:

To ensure safety, please be mindful of the following precautions.

WARNINGS

1. When installing or relocating the unit, be sure to keep the refrigerant circuit free from air or substances other than the specified refrigerant.

Any presence of air or other foreign substance in the refrigerant circuit will cause system pressure rise or compressor rupture, resulting in injury.

2. When installing or moving this unit, do not charge the refrigerant which is not comply with that on the nameplate or unqualified refrigerant.

Otherwise, it may cause abnormal operation, wrong action, mechanical malfunction or even series safety accident.

3. When refrigerant needs to be recovered during relocating or repairing the unit, be sure that the unit is running in cooling mode. Then, fully close the valve at high pressure side (liquid valve). About 30-40 seconds later, fully close the valve at low pressure side (gas valve), immediately stop the unit and disconnect power. Please note that the time for refrigerant recovery should not exceed 1 minute.

If refrigerant recovery takes too much time, air may be sucked in and cause pressure rise or compressor rupture, resulting in injury.

4. During refrigerant recovery, make sure that liquid valve and gas valve are fully closed and power is disconnected before detaching the connection pipe.

If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.

5. When installing the unit, make sure that connection pipe is securely connected before the compressor starts running.

If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.

6. Prohibit installing the unit at the place where there may be leaked corrosive gas or flammable gas.

If there leaked gas around the unit, it may cause explosion and other accidents.

7. Do not use extension cords for electrical connections. If the electric wire is not long enough, please contact a local service center authorized and ask for a proper electric wire.

Poor connections may lead to electric shock or fire.

8. Use the specified types of wires for electrical connections between the indoor and outdoor units. Firmly clamp the wires so that their terminals receive no external stresses.

Electric wires with insufficient capacity, wrong wire connections and insecure wire terminals may cause electric shock or fire.

Main Tools for Installation and Maintenance



Level meter



Measuring tape



Screw driver



Impact drill



Drill head



Electric drill



Electroprobe



Universal meter



Torque wrench



Open-end wrench



Inner hexagon spanner



Electronic leakage detector



Vacuum pump



Pressure meter



Pipe pliers



Pipe pliers



Pipe cutter



Pipe expander



Pipe bender



Soldering appliance



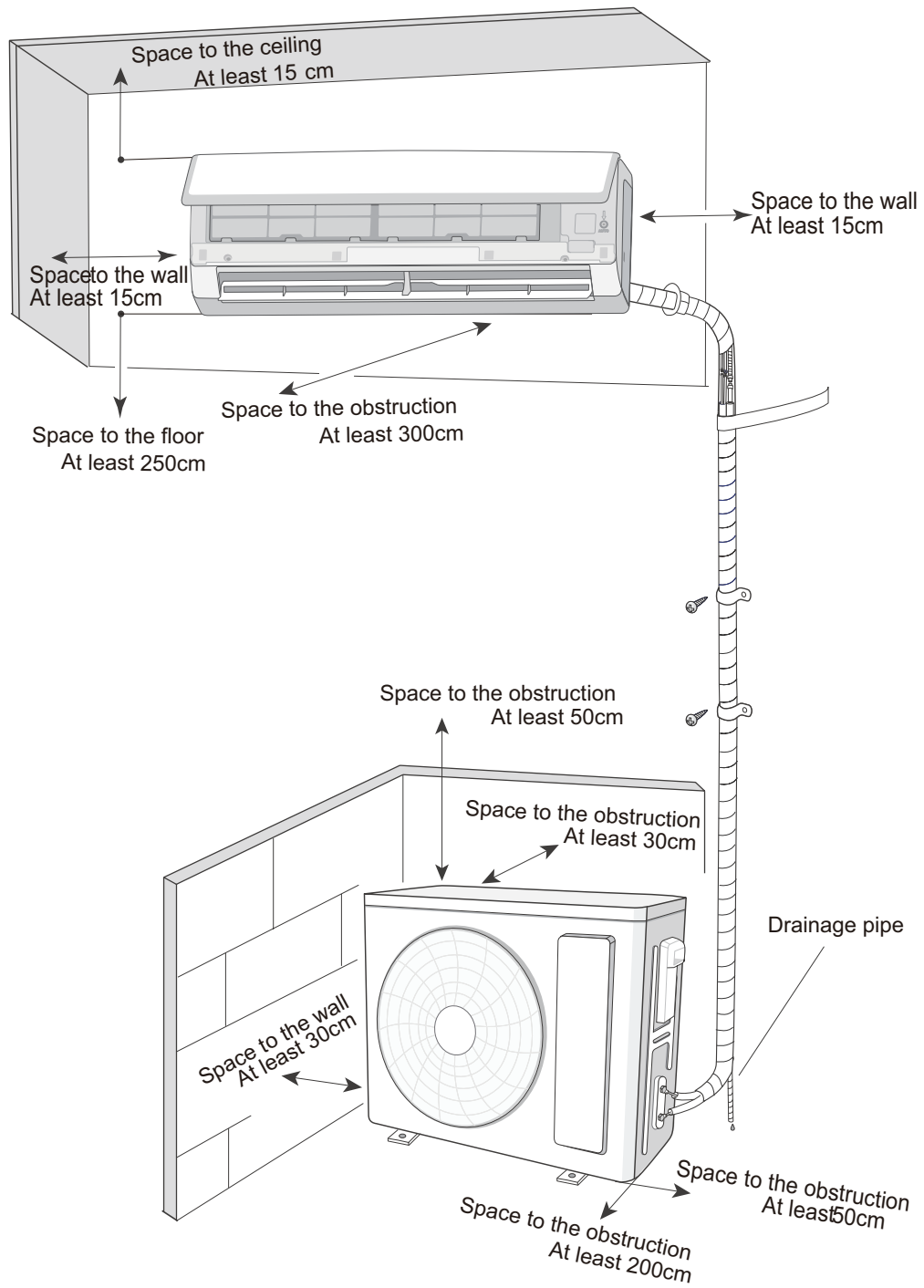
Refrigerant container



Electronic scale

8. Installation

8.1 Installation Dimension Diagram



8.2 Installation Parts-checking

No.	Name
1	Indoor unit
2	Outdoor unit
3	Connection pipe
4	Drainage pipe
5	Wall-mounting frame
6	Connecting cable(power cord)
7	Wall pipe
8	Sealing gum
9	Wrapping tape
10	Support of outdoor unit
11	Fixing screw
12	Drainage plug(cooling and heating unit)
13	Owners manual, remote controller

⚠ Note:

1. Please contact the local agent for installation.
2. Don't use unqualified power cord.

8.3 Selection of Installation Location

1. Basic Requirement:

Installing the unit in the following places may cause malfunction. If it is unavoidable, please consult the local dealer:

- (1) The place with strong heat sources, vapors, flammable or explosive gas, or volatile objects spread in the air.
- (2) The place with high-frequency devices (such as welding machine, medical equipment).
- (3) The place near coast area.
- (4) The place with oil or fumes in the air.
- (5) The place with sulfureted gas.
- (6) Other places with special circumstances.
- (7) The appliance shall not be installed in the laundry.
- (8) It's not allowed to be installed on the unstable or motive base structure (such as truck) or in the corrosive environment (such as chemical factory).

2. Indoor Unit:

- (1) There should be no obstruction near air inlet and air outlet.
- (2) Select a location where the condensation water can be dispersed easily and won't affect other people.
- (3) Select a location which is convenient to connect the outdoor unit and near the power socket.
- (4) Select a location which is out of reach for children.
- (5) The location should be able to withstand the weight of indoor unit and won't increase noise and vibration.
- (6) The appliance must be installed 2.5m above floor.
- (7) Don't install the indoor unit right above the electric appliance.
- (8) Please try your best to keep way from fluorescent lamp.

3. Outdoor Unit:

- (1) Select a location where the noise and outflow air emitted by the outdoor unit will not affect neighborhood.
- (2) The location should be well ventilated and dry, in which the outdoor unit won't be exposed directly to sunlight or strong wind.
- (3) The location should be able to withstand the weight of outdoor

unit.

(4) Make sure that the installation follows the requirement of installation dimension diagram.

(5) Select a location which is out of reach for children and far away from animals or plants. If it is unavoidable, please add fence for safety purpose.

8.4 Electric Connection Requirement

1. Safety Precaution

- (1) Must follow the electric safety regulations when installing the unit.
- (2) According to the local safety regulations, use qualified power supply circuit and air switch.
- (3) Make sure the power supply matches with the requirement of air conditioner. Unstable power supply or incorrect wiring may result in electric shock, fire hazard or malfunction. Please install proper power supply cables before using the air conditioner.
- (4) Properly connect the live wire, neutral wire and grounding wire of power socket.
- (5) Be sure to cut off the power supply before proceeding any work related to electricity and safety.
- (6) Do not put through the power before finishing installation.
- (7) The temperature of refrigerant circuit will be high, please keep the interconnection cable away from the copper tube.
- (8) The appliance shall be installed in accordance with national wiring regulations.

2. Grounding Requirement:

- (1) The air conditioner is I class electric appliance. It must be properly grounding with specialized grounding device by a professional. Please make sure it is always grounded effectively, otherwise it may cause electric shock.
- (2) The yellow-green wire in air conditioner is grounding wire, which can't be used for other purposes.
- (3) The grounding resistance should comply with national electric safety regulations.
- (4) The appliance must be positioned so that the plug is accessible.
- (5) An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.
- (6) Including an air switch with suitable capacity, please note the following table. Air switch should be included magnet buckle and heating buckle function, it can protect the circuit-short and overload. (Caution: please do not use the fuse only for protect the circuit)

Model	Air switch capacity	Power cord
07K/09K/12K	10A	3G1.0
18K	16A	3G1.5
24K	25A	3G2.5
28K	32A	3G2.5

8.5 Installation of Indoor Unit

1. Choosing Installation location

Recommend the installation location to the client and then confirm it with the client.

2. Install Wall-mounting Frame

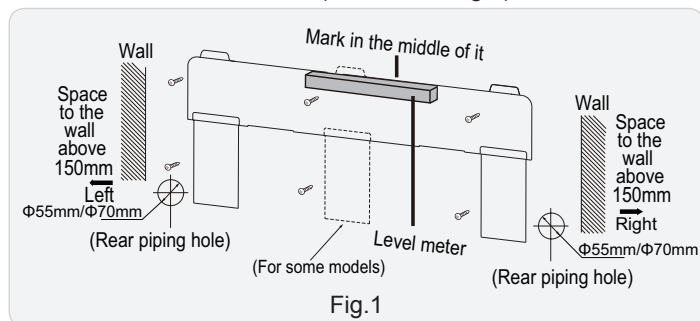
(1) Hang the wall-mounting frame on the wall; adjust it in horizontal position with the level meter and then point out the screw fixing holes on the wall.

(2) Drill the screw fixing holes on the wall with impact drill (the specification of drill head should be the same as the plastic expansion particle) and then fill the plastic expansion particles in the holes.

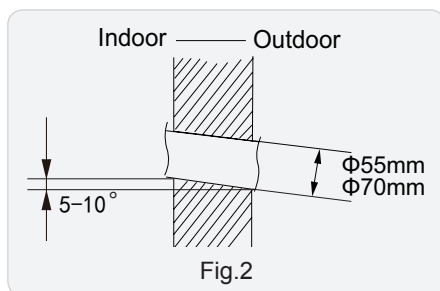
(3) Fix the wall-mounting frame on the wall with tapping screws and then check if the frame is firmly installed by pulling the frame. If the plastic expansion particle is loose, please drill another fixing hole nearby.

3. Install Wall-mounting Frame

(1) Choose the position of piping hole according to the direction of outlet pipe. The position of piping hole should be a little lower than the wall-mounted frame. (As show in Fig.1)



(2) Open a piping hole with the diameter of $\Phi 55\text{mm}$ or $\Phi 70\text{mm}$ on the selected outlet pipe position. In order to drain smoothly, slant the piping hole on the wall slightly downward to the outdoor side with the gradient of $5\text{-}10^\circ$. (As show in Fig.2)



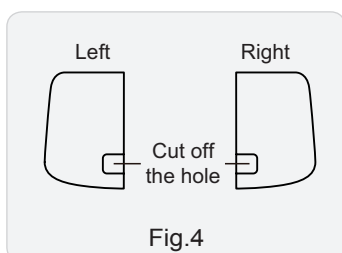
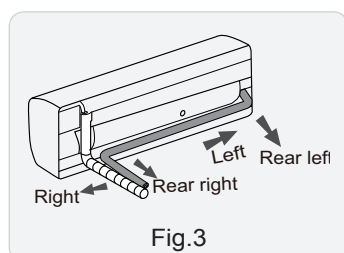
Note:

Pay attention to dust prevention and take relevant safety measures when opening the hole.

4. Outlet Pipe

(1) The pipe can be led out in the direction of right, rear right, left or rear left. (As show in Fig.3)

(2) When selecting leading out the pipe from left or right, please cut off the corresponding hole on the bottom case. (As show in Fig.4)



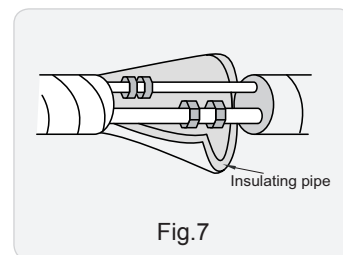
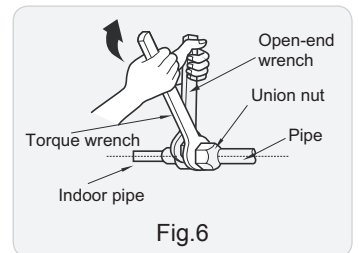
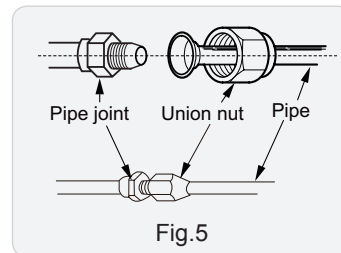
5. Connect the Pipe of Indoor Unit

(1) Aim the pipe joint at the corresponding bellmouth. (As show in Fig.5)

(2) Pretightening the union nut with hand.

(3) Adjust the torque force by referring to the following sheet. Place the open-end wrench on the pipe joint and place the torque wrench on the union nut. Tighten the union nut with torque wrench. (As show in Fig.6)

(4) Wrap the indoor pipe and joint of connection pipe with insulating pipe, and then wrap it with tape. (As show in Fig.7)



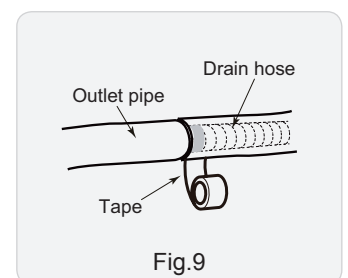
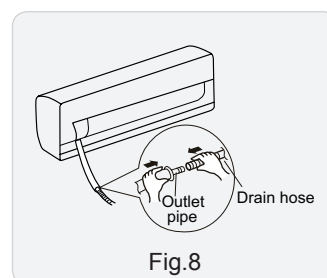
Refer to the following table for wrench moment of force:

Piping size (inch)	Tightening torque (N·m)
1/4	15~20
3/8	30~40
1/2	45~55
5/8	60~65
3/4	70~75

6. Install Drain Hose

(1) Connect the drain hose to the outlet pipe of indoor unit. (As show in Fig.8)

(2) Bind the joint with tape. (As show in Fig.9)



Note:

(1) Add insulating pipe in the indoor drain hose in order to prevent condensation.

(2) The plastic expansion particles are not provided. (As show in Fig.10)

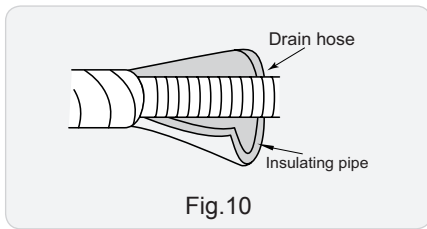


Fig.10

7. Connect Wire of Indoor Unit

(1) Open the panel, remove the screw on the wiring cover and then take down the cover. (As show in Fig.11)

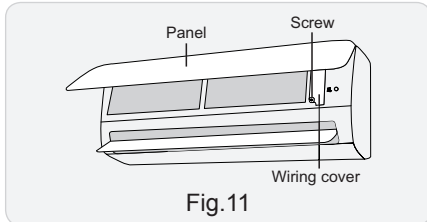


Fig.11

(2) Make the power connection wire go through the cable-cross hole at the back of indoor unit and then pull it out from the front side. (As show in Fig.12)

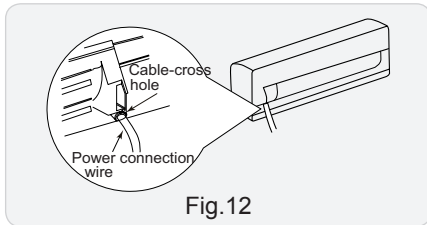
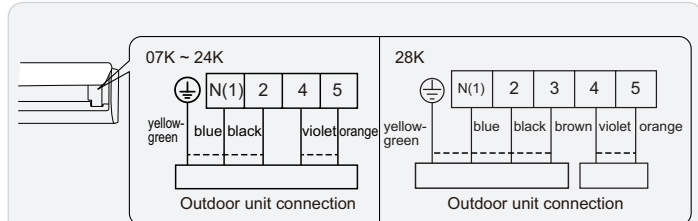


Fig.12

(3) Remove the wire clip; connect the power connection wiresignal control wire (only for cooling and heating unit) to the wiring terminal according to the color; tighten the screw and then fix the power connection wire with wire clip. (As show in Fig.13)



Note: The wiring connect is for reference only, please refer to the actual one.

Fig.13

(4) Put wiring cover back and then tighten the screw.
(5) Close the panel.

Note:

- (1) All wires of indoor unit and outdoor unit should be connected by a professional.
- (2) If the length of power connection wire is insufficient, please contact the supplier for a new one. Avoid extending the wire by yourself.
- (3) For the air conditioner with plug, the plug should be reachable after finishing installation.
- (4) For the air conditioner without plug, an air switch must be installed in the line. The air switch should be all-pole parting and the contact parting distance should be more than 3mm.

8. Bind up Pipe

(1) Bind up the connection pipe, power cord and drain hose with

the band. (As show in Fig.14)

(2) Reserve a certain length of drain hose and power cord for installation when binding them. When binding to a certain degree, separate the indoor power and then separate the drain hose. (As show in Fig.15)

(3) Bind them evenly.

(4) The liquid pipe and gas pipe should be bound separately at the end.

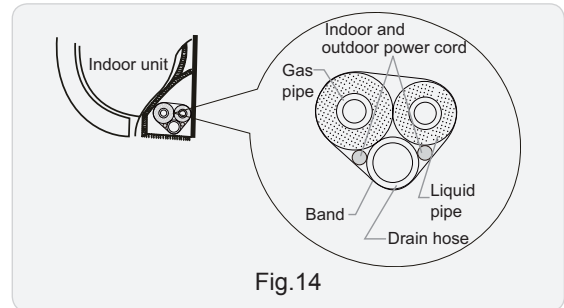


Fig.14

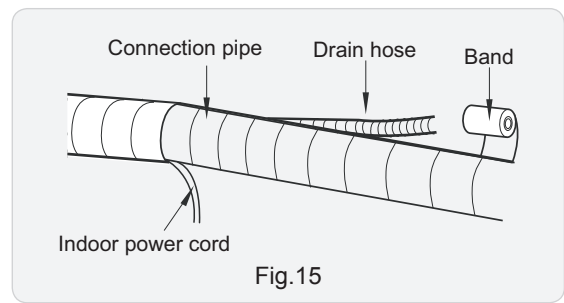


Fig.15

Note:

- (1) The power cord and control wire can't be crossed or winding.
- (2) The drain hose should be bound at the bottom.

9. Hang the Indoor Unit

- (1) Put the bound pipes in the wall pipe and then make them pass through the wall hole.
- (2) Hang the indoor unit on the wall-mounting frame.
- (3) Stuff the gap between pipes and wall hole with sealing gum.
- (4) Fix the wall pipe. (As show in Fig.16)
- (5) Check if the indoor unit is installed firmly and closed to the wall. (As show in Fig.17)

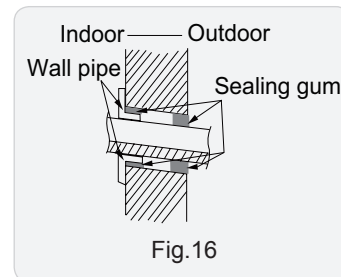


Fig.16

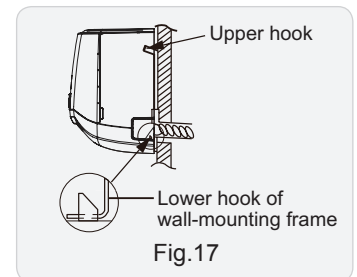


Fig.17

Note:

Do not bend the drain hose too excessively in order to prevent blocking.

8.6 Installation of Outdoor unit

1. Fix the Support of Outdoor Unit(Select it according to the actual installation situation)

Note:

- (1) Select installation location according to the house structure.

(2) Fix the support of outdoor unit on the selected location with expansion screws.

(1) Take sufficient protective measures when installing the outdoor unit.

(2) Make sure the support can withstand at least four times the unit weight.

(3) The outdoor unit should be installed at least 3cm above the floor in order to install drain joint.(As show in Fig.18)

(4) For the unit with cooling capacity of 2300W~5000W, 6 expansion screws are needed; for the unit with cooling capacity of 6000W~8000W, 8 expansion screws are needed; for the unit with cooling capacity of 10000W~16000W, 10 expansion screws are needed.

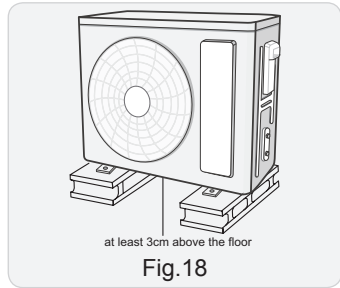


Fig.18

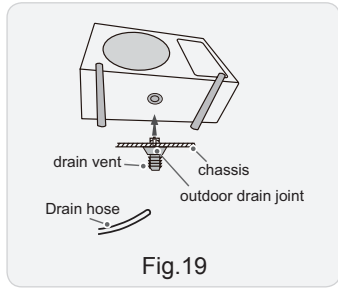


Fig.19

2. Install Drain Joint(Only for cooling and heating unit)

(1) Connect the outdoor drain joint into the hole on the chassis.

(2) Connect the drain hose into the drain vent.(As show in Fig.19)

3. Fix Outdoor Unit

(1) Place the outdoor unit on the support.

(2) Fix the foot holes of outdoor unit with bolts.(As show in Fig.20)

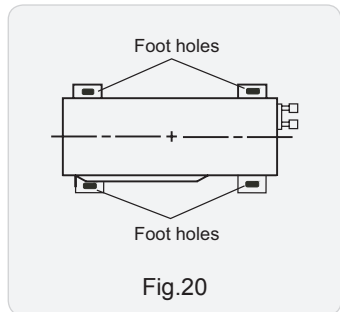


Fig.20

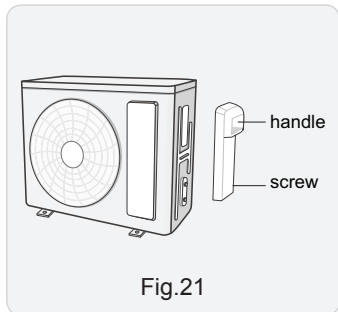
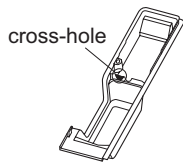


Fig.21

NOTE: When there're multiple cables passing through it, the cross-hole of handle should be knocked off and eliminate the sharp burrs for avoid damaging the cables. Only applicable for some models.



4. Connect Indoor and Outdoor Pipes

(1) Remove the screw on the right handle of outdoor unit and then remove the handle. (As show in Fig.21)

(2) Remove the screw cap of valve and aim the pipe joint at the bellmouth of pipe. (As show in Fig.22)

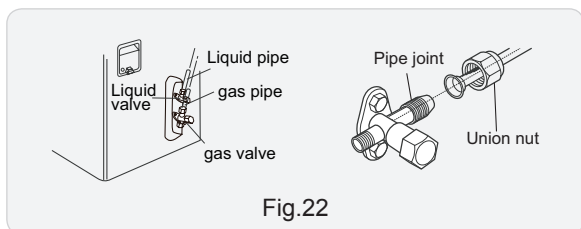


Fig.22

(3) Pretightening the union nut with hand.

(4) Tighten the union nut with torque wrench .

Refer to the following table for wrench moment of force :

Piping size (inch)	Tightening torque (N·m)
1/4	15~20
3/8	30~40
1/2	45~55
5/8	60~65
3/4	70~75

5. Connect Outdoor Electric Wire

(1) Remove the wire clip; connect the power connection wire and signal control wire (only for cooling and heating unit) to the wiring terminal according to the color; fix them with screws. (As show in Fig.23)

(2) Fix the power connection wire and signal control wire with wire clip (only for cooling and heating unit).

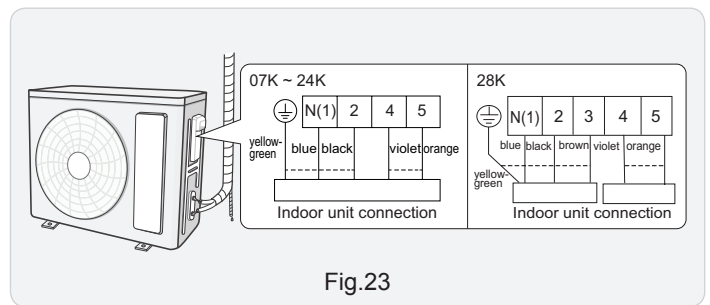


Fig.23

Note: the wiring connect is for reference only, please refer to the actual one.

Note:

(1) After tightening the screw, pull the power cord slightly to check if it is firm.

(2) Never cut the power connection wire to prolong or shorten the distance.

6. Neaten the Pipes

(1) The pipes should be placed along the wall, bent reasonably and hidden possibly. Min. semidiameter of bending the pipe is 10cm.

(2) If the outdoor unit is higher than the wall hole, you must set a U-shaped curve in the pipe before pipe goes into the room, in order to prevent rain from getting into the room. (As show in Fig.24)

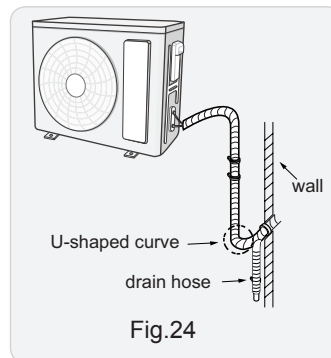


Fig.24

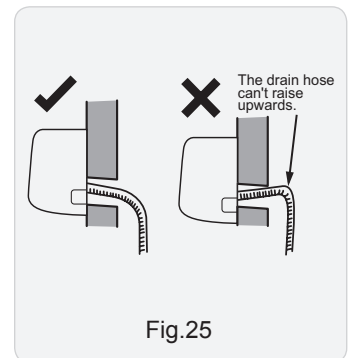


Fig.25

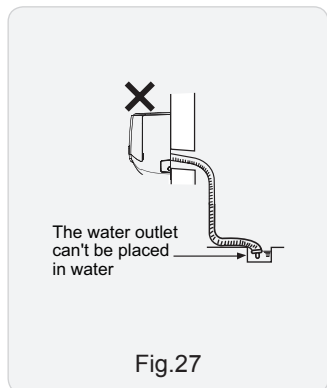
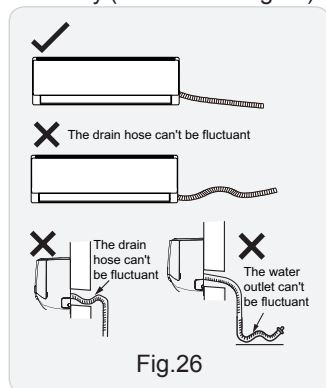
Note:

(1) The through-wall height of drain hose shouldnt be higher than the outlet pipe hole of indoor unit.(As show in Fig.25)

(2) Slant the drain hose slightly downwards. The drain hose cant

be curved, raised and fluctuant, etc.(As show in Fig.26)

(3) The water outlet cant be placed in water in order to drain smoothly.(As show in Fig.27)



8.7 Vacuum Pumping and Leak Detection

1. Use Vacuum Pump

(1) Remove the valve caps on the liquid valve and gas valve and the nut of refrigerant charging vent.

(2) Connect the charging hose of piezometer to the refrigerant charging vent of gas valve and then connect the other charging hose to the vacuum pump.

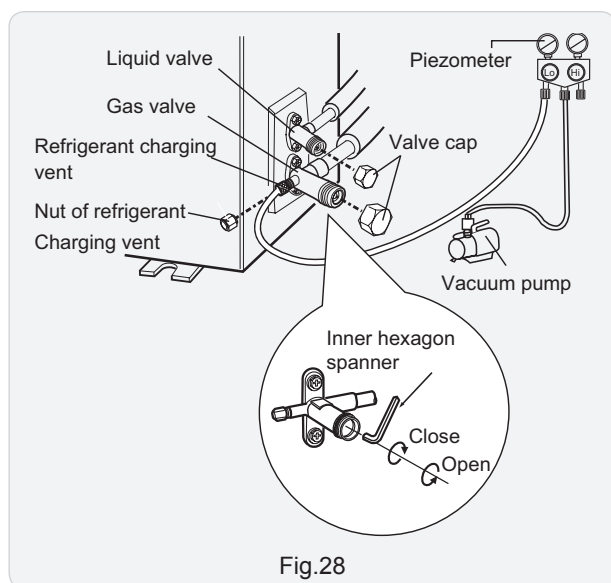
(3) Open the piezometer completely and operate for 10-15min to check if the pressure of piezometer remains in -0.1MPa.

(4) Close the vacuum pump and maintain this status for 1-2min to check if the pressure of piezometer remains in -0.1MPa. If the pressure decreases, there may be leakage.

(5) Remove the piezometer, open the valve core of liquid valve and gas valve completely with inner hexagon spanner.

(6) Tighten the screw caps of valves and refrigerant charging vent.(As show in Fig.28)

(7) Reinstall the handle.



2. Leakage Detection

(1) With leakage detector:

Check if there is leakage with leakage detector.

(2) With soap water:

If leakage detector is not available, please use soap water for leakage detection. Apply soap water at the suspected position and keep the soap water for more than 3min. If there are air bubbles coming out of this position, There's a leakage.

8.8 Check after Installation and Test operation

1. Check after Installation

Check according to the following requirement after finishing installation.

NO.	Items to be checked	Possible malfunction
1	Has the unit been installed firmly?	The unit may drop, shake or emit noise.
2	Have you done the refrigerant leakage test?	It may cause insufficient cooling (heating) capacity.
3	Is heat insulation of pipeline sufficient?	It may cause condensation and water dripping.
4	Is water drained well?	It may cause condensation and water dripping.
5	Is the voltage of power supply according to the voltage marked on the nameplate?	It may cause malfunction or damage the parts.
6	Is electric wiring and pipeline installed correctly?	It may cause malfunction or damage the parts.
7	Is the unit grounded securely?	It may cause electric leakage.
8	Does the power cord follow the specification?	It may cause malfunction or damage the parts.
9	Is there any obstruction in air inlet and air outlet?	It may cause insufficient cooling (heating) capacity.
10	The dust and sundries caused during installation are removed?	It may cause malfunction or damaging the parts.
11	The gas valve and liquid valve of connection pipe are open completely?	It may cause insufficient cooling (heating) capacity.
12	Is the inlet and outlet of piping hole been covered?	It may cause insufficient cooling(heating) capacity or waster eletricity.

2. Test Operation

(1) Preparation of test operation

- The client approves the air conditioner installation.
- Specify the important notes for air conditioner to the client.

(2) Method of test operation

- Put through the power, press ON/OFF button on the remote controller to start operation.
- Press MODE button to select AUTO, COOL, DRY, FAN and HEAT to check whether the operation is normal or not.
- If the ambient temperature is lower than 16°C , the air conditioner can't start cooling.

9. Maintenance

9.1 Error Code List

No.	Malfunction Name	Display Method of Indoor Unit	A/C status	Possible Causes
		Dual-8 Code Display		
1	Indoor ambient temperature sensor is open/short-circuited	F1	The unit will stop operation as it reaches the temperature point. During cooling and drying operation, except indoor fan operates, other loads (such as compressor, outdoor fan, 4-way valve) stop operation; During heating operation, the complete unit stops operation.	<ol style="list-style-type: none"> 1. The wiring terminal between indoor ambient temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to trip-over of the parts on controller; 3. Indoor ambient temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
2	Indoor evaporator temperature sensor is open/short-circuited	F2	The unit will stop operation as it reaches the temperature point. During cooling and drying operation, except indoor fan operates, other loads stop operation; During heating operation, the complete unit stops operation.	<ol style="list-style-type: none"> 1. The wiring terminal between indoor evaporator temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to the trip-over of the parts on controller; 3. Indoor evaporator temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
3	Blocked protection of IDU fan motor	H6	IDU fan, ODU fan, compressor and electric heat tube stop operation. Horizontal louver stops at the current position.	<ol style="list-style-type: none"> 1. The feedback terminal of PG motor is not connected tightly. 2. The control terminal of PG motor is not connected tightly. 3. Fan blade rotates unsmoothly. 4. Malfunction of motor 5. Main board is broken.
4	Malfunction protection of jumper cap	C5	Operation of remote controller or control panel is available, but the unit won't act.	<ol style="list-style-type: none"> 1. There's not jumper cap on the main board. 2. Jumper cap is not inserted properly and tightly. 3. Jumper cap is damaged. 4. Controller is damaged.
5	Zero-crossing inspection circuit malfunction of the IDU fan motor	U8	Operation of remote controller or control panel is available, but the unit won't act.	<ol style="list-style-type: none"> 1. Quick de-energization and energization. Wrong judgement by the controller because the electric-discharging of capacitor is slow. 2. Zero-crossing inspection circuit of main board for controller is abnormal.
6	Outdoor ambient temperature sensor is open/short-circuited	F3	The unit will stop operation as it reaches the temperature point. During cooling and drying operation, compressor stops and indoor fan operates; During heating operation, the complete unit stops operation.	<ol style="list-style-type: none"> 1. The wiring terminal between outdoor ambient temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to the trip-over of the parts on controller; 3. Outdoor ambient temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
7	Outdoor condenser temperature sensor is open/short-circuited	F4	The unit will stop operation as it reaches the temperature point. During cooling and drying operation, compressor stops and indoor fan operates; During heating operation, the complete unit stops operation.	<ol style="list-style-type: none"> 1. The wiring terminal between outdoor condenser temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to the trip-over of the parts on controller; 3. Outdoor condenser temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.

No.	Malfunction Name	Display Method of Indoor Unit	A/C status	Possible Causes
		Dual-8 Code Display		
8	Outdoor discharge temperature sensor is open/ short-circuited	F5	The unit will stop operation as it reaches the temperature point. During cooling and drying operation, the compressor stops operation while IDU fan motor operates; During heating operation, the heating fan motor operates according to the conditions of blowing residual heat.	<ol style="list-style-type: none"> 1. The wiring terminal between outdoor condenser temperature sensor and maiboard is loosened or poorly contacted. 2. There's short circuit due to trip-over of the parts on maiboard. 3. Outdoor condenser temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor). 4. Mainboard is broken.
9	High pressure protection	E1	During cooling and drying operation, except indoor fan operates, all loads stop operation. During heating operation, if it is inverter unit, the complete unit stops; if it is floor standing unit, the complete unit stops and operation of remote controller or controller is unavailable.	<ol style="list-style-type: none"> 1. The main board and the display panel are not connected well. 2. The OVC terminal on main board is not connected well with the high pressure switch on the complete unit. 3. The wiring of high pressure switch is loosened. 4. Refrigerant is superabundant; 5. Poor heat exchange (including blocked heat exchanger and bad radiating environment); 6. Ambient temperature is too high; (if it is 3-phase unit, the high pressure protection may be caused by overcurrent protection due to this reason) 7. The supply voltage is abnormal (if it is 3-phase unit, the high pressure protection may be caused by overcurrent protection due to this reason) 8. The air intake and air discharge at indoor / outdoor heat exchanger are not smooth. The air cycle is short circuited. 9. Filter and heat exchange fins of indoor/ outdoor units are blocked. 10. The system pipeline is blocked. 11. The gas valve and liquid valve for outdoor unit are not completely opened. 12. The OVC input is at high level.
10	Low pressure protection of compressor	E3	The complete unit stops	<ol style="list-style-type: none"> 1. The main board and display panel are not connected well. 2. The LPP terminal on the main board is not connected well with the high pressure switch on the complete unit. 3. The wiring of the high pressure switch is loosened. High pressure switch is damaged or poorly contacted. 4. Insufficient or leaking out refrigerant. 5. The LPP input is at high level.
11	High discharge temperature protection of compressor	E4	During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates. During heating operation, all loads stop.	<ol style="list-style-type: none"> 1. Abnormal system (e.g.: blockage, etc) 2. Abnormal rotation speed of outdoor motor (cooling) 3. Abnormal air intake (cooling) 4. System is normal, but the compressor discharge temperature sensor is abnormal or poorly contacted.

No.	Malfunction Name	Display Method of Indoor Unit	A/C status	Possible Causes
		Dual-8 Code Display		
13	Communication malfunction	E6	During cooling operation, compressor stops while indoor fan motor operates. During heating operation, the complete unit stops.	<ol style="list-style-type: none"> 1. The communication line is not connected tightly or poorly contacted. Poor contact of any line may cause communication malfunction. 2. The match between main board and display panel is incorrect. Indoor and outdoor unit boards are matched incorrectly. 3. Incorrect wire connection. 4. Controller is damaged.
14	Overload malfunction	E8	The entire unit stops.	<ol style="list-style-type: none"> 1. Indoor and outdoor heat exchanger is too dirty? Or air inlet/outlet is blocked? 2. Fan motor doesn't work at a normal fan speed; fan speed is too low or the fan doesn't run. 3. Compressor operates normally or not? Is there any abnormal noise or oil leak? Casing is too hot? 4. System is blocked inside? (Dirt blockage? Ice blockage? Oil blockage? Y-valve is not fully open?) 5. Main board temperature sensor detects wrongly.
15	Overload protection for compressor	H3	The entire unit stops.	<ol style="list-style-type: none"> 1. Outdoor and indoor heat exchangers are too dirty or the air inlet/outlet is blocked. 2. Fan motor doesn't work at a normal fan speed; fan speed is too low or the fan doesn't run. 3. Compressor doesn't work normally. Strange noise or leakage occurs. Temperature of the shell is too high. 4. System is blocked inside(dirt block, ice block, oil block, Y-valve not fully open). 5. High pressure switch is abnormal 6. The refrigerant is leaking and cause overheating protection to compressor
16	Defrosting	Heating indicator off for 0.5s and then blinks for 10s	Not the error code. It's the status code for the operation.	

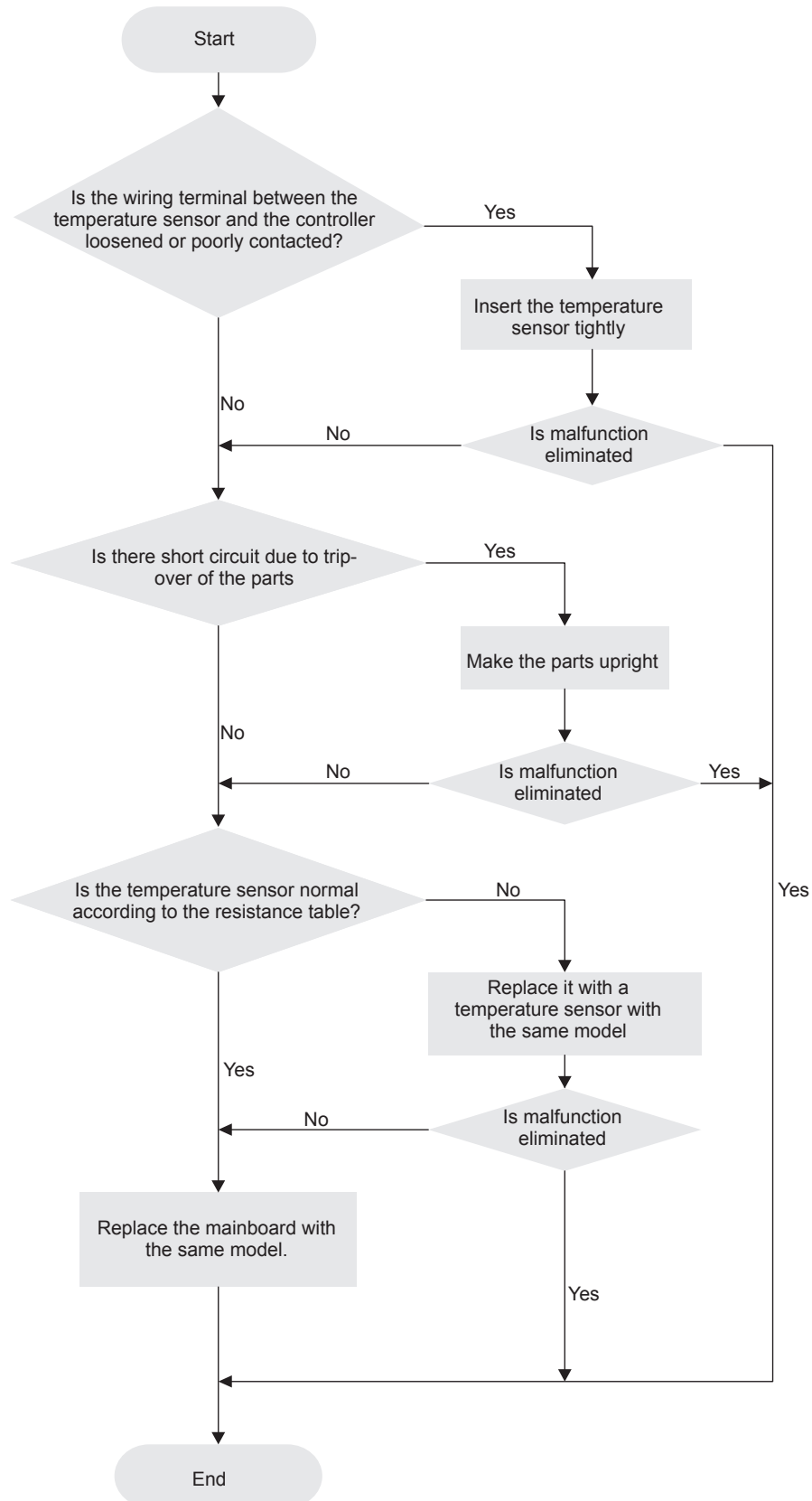
9.2 Procedure of Troubleshooting

1. Malfunction of Temperature Sensor F1, F2

Main detection points:

(1) connection terminal (2) temperature sensor (3) main board

Malfunction diagnosis process:

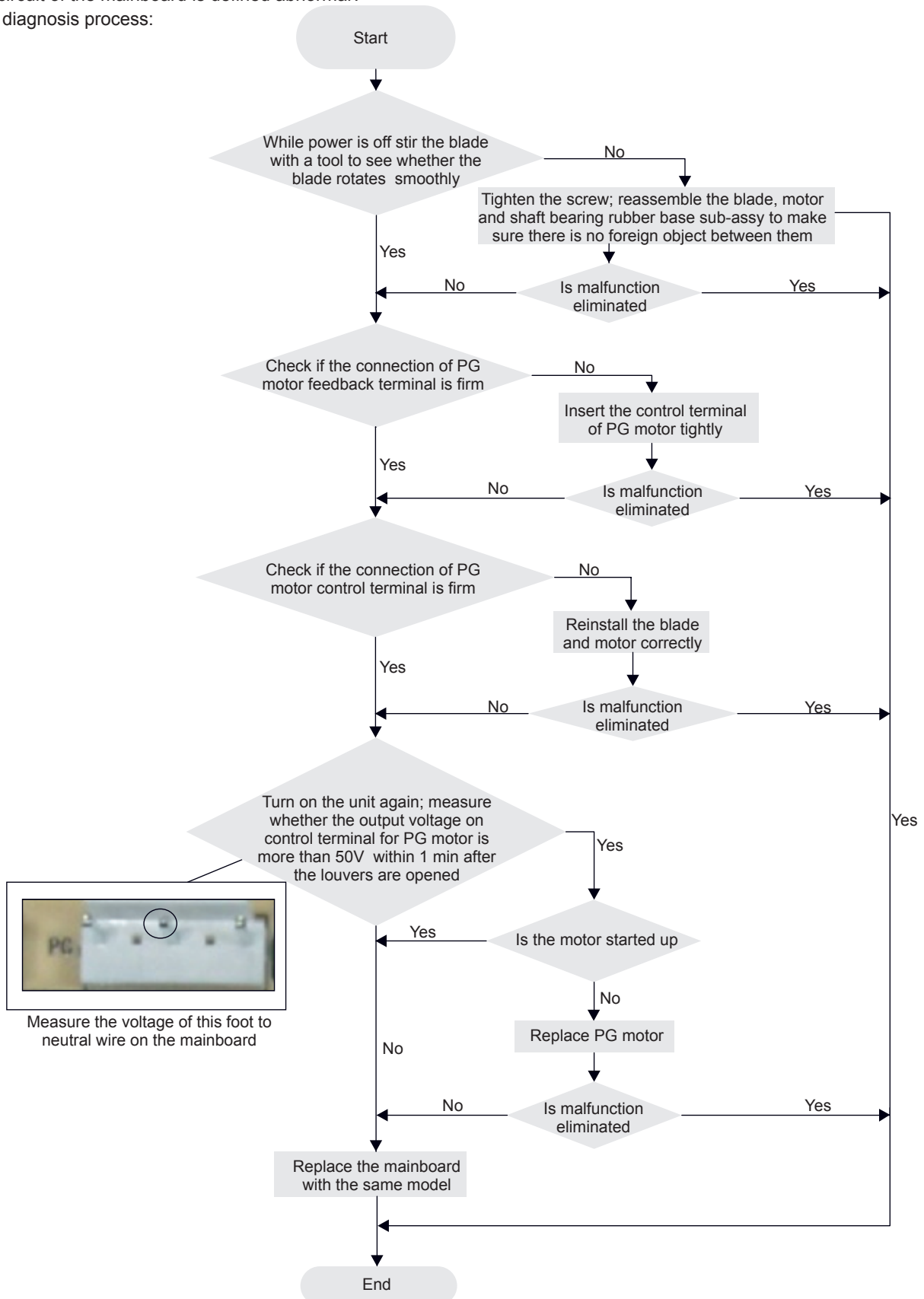


2. Malfunction of Blocked Protection of IDU Fan Motor H6

Main detection points:

- Smoothly is the control terminal of PG motor connected tightly?
- Smoothly is the feedback interface of PG motor connected tightly?
- The fan motor can't operate?
- The motor is broken?
- Detection circuit of the mainboard is defined abnormal?

Malfunction diagnosis process:

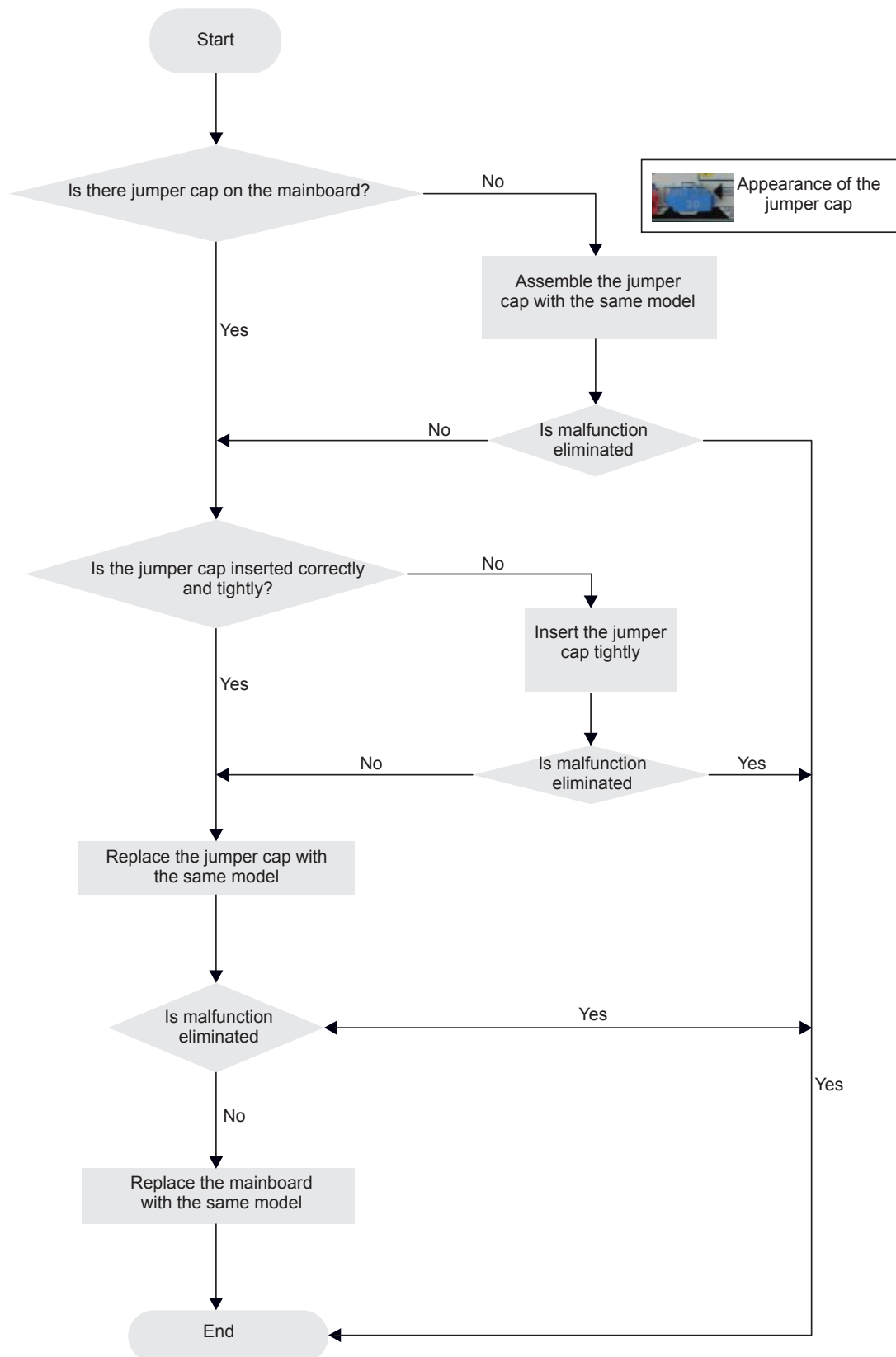


3. Malfunction of Protection of Jumper Cap C5

Main detection points:

- Is there jumper cap on the mainboard?
- Is the jumper cap inserted correctly and tightly?
- The jumper is broken?
- The motor is broken?
- Detection circuit of the mainboard is defined abnormal?

Malfunction diagnosis process:

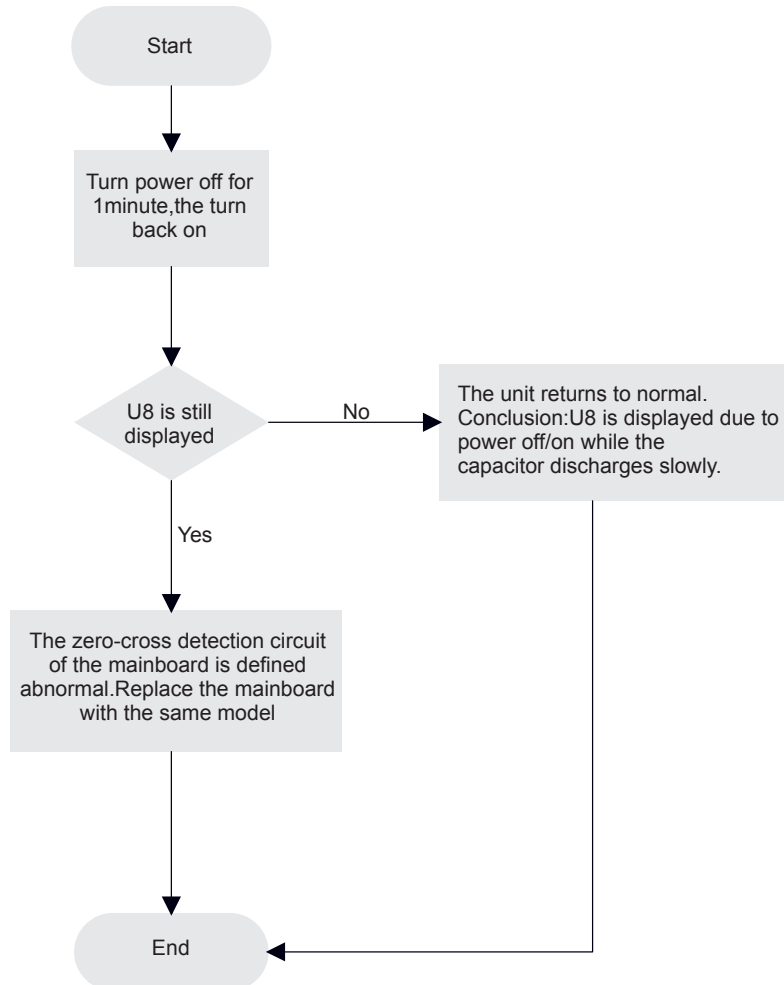


4. Malfunction of Zero-crossing Inspection Circuit Malfunction of the IDU Fan Motor U8

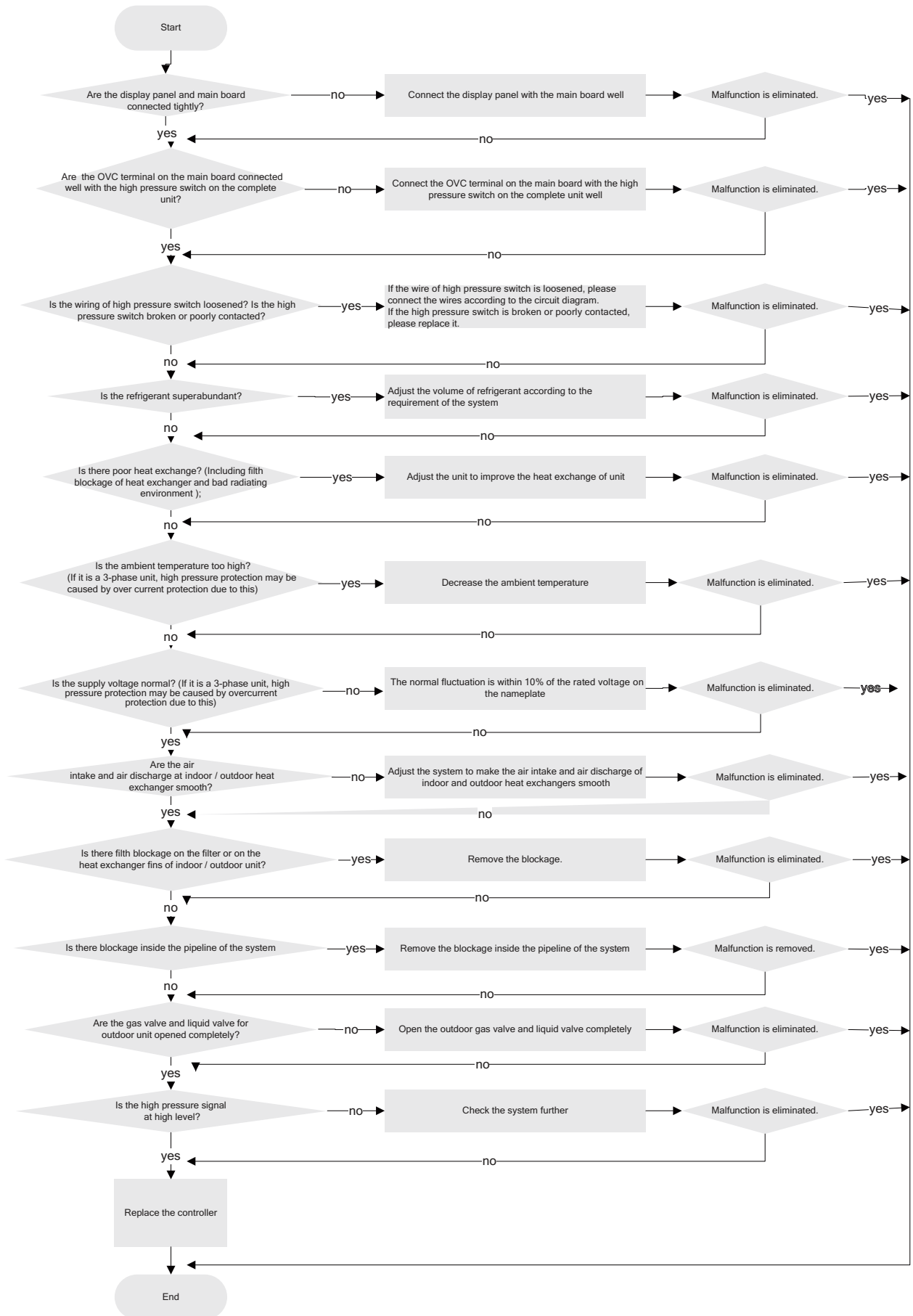
Main detection points:

- Instant energization after de-energization while the capacitor discharges slowly?
- The zero-cross detection circuit of the mainboard is defined abnormal?

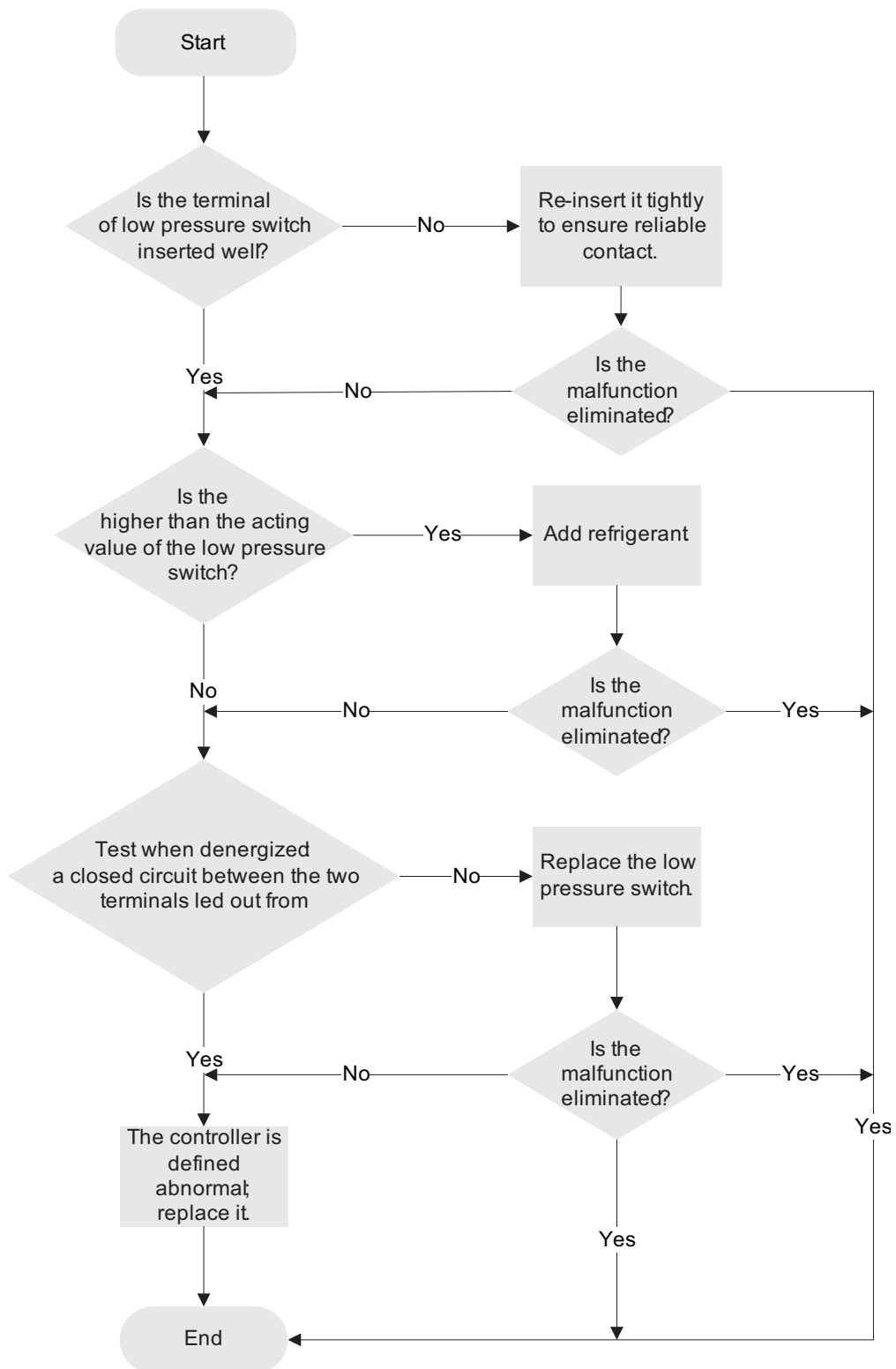
Malfunction diagnosis process:



5. High pressure protection (E1)



6. Low pressure protection of compressor (E3)

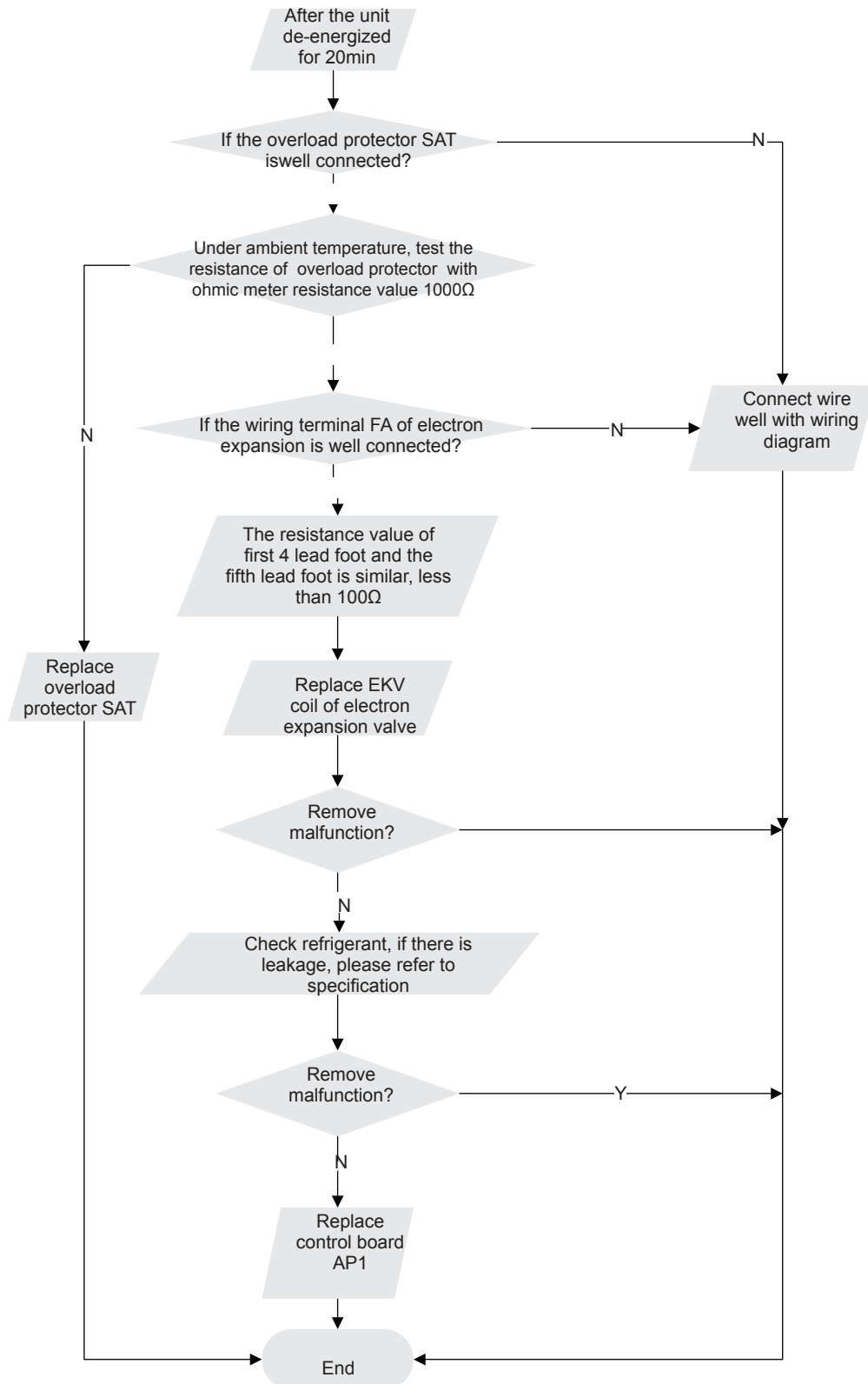


7. Overload protection of compressor H3, high discharge temperature protection of compressor E4 (AP1 hereinafter refers to the control board of the outdoor unit)

Main detection points:

(1) electronic expansion valve (2) expansion valve terminal (3) charging amount of refrigerant (4) overload protector

Malfunction diagnosis process:

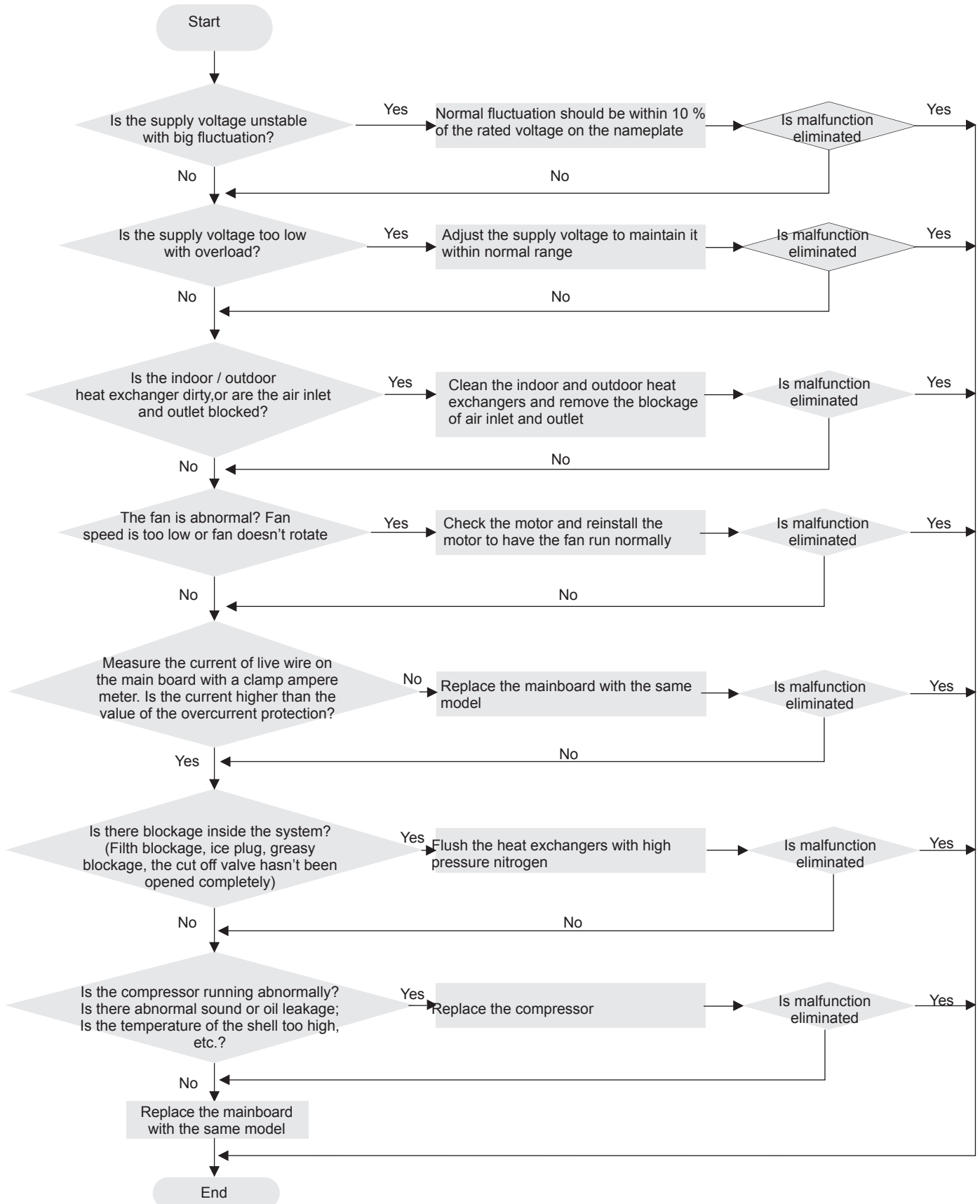


8. Malfunction of Overcurrent Protection E5

Main detection points:

- Is the supply voltage unstable with big fluctuation?
- Is the supply voltage too low with overload?
- Hardware trouble?

Malfunction diagnosis process:

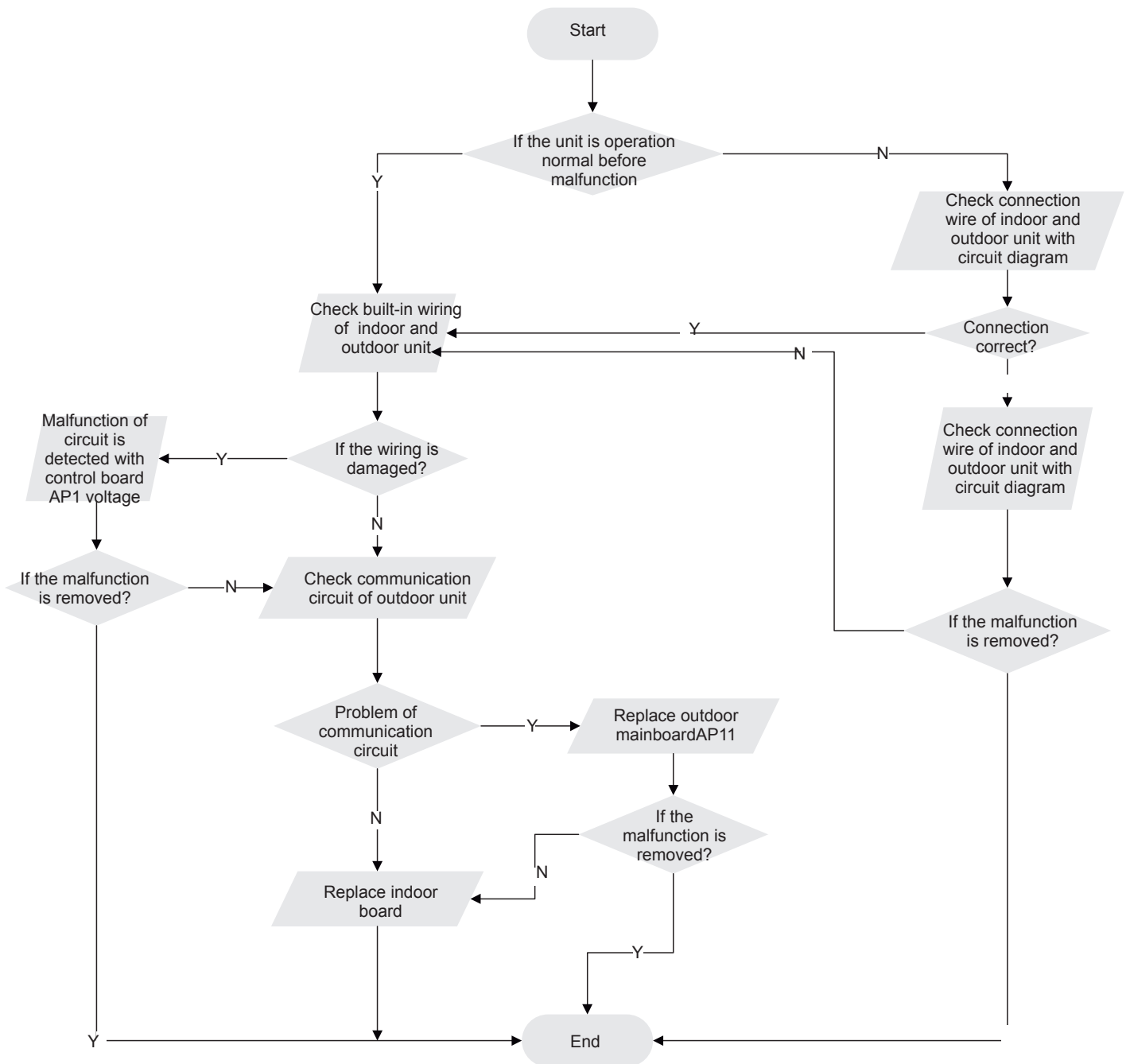


9. Communication malfunction E6

Main detection points:

- Check if the connection wire and the built-in wiring of indoor and outdoor unit are connected well and without damage;
- If the communication circuit of indoor mainboard is damaged? If the communication circuit of outdoor mainboard (AP1) is damaged?

Malfunction diagnosis process:



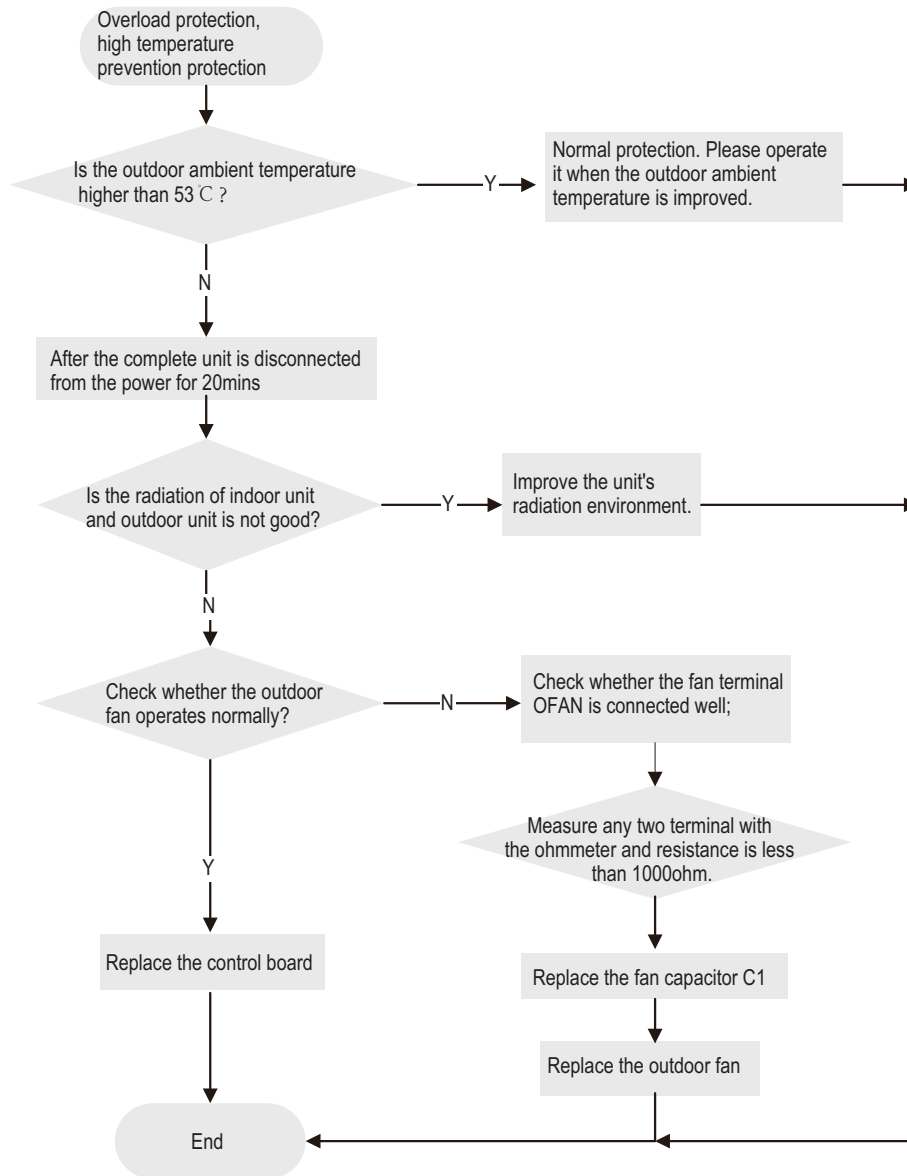
Note: method for checking the communication circuit of outdoor unit: cut off the communication wires of indoor/outdoor unit, and then measure the voltage between COM and N of the control board of outdoor unit (DC notch, about 56V)

10. High temperature and overload protection (E8)(AP1 below means control board of outdoor unit)

Main detection points:

(1) outdoor temperature (2) fan (3)air inlet and air outlet of indoor/outdoor unit

Malfunction diagnosis process:



9.3 Troubleshooting for Normal Malfunction

1. Air Conditioner can't be Started Up

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
No power supply, or poor connection for power plug	After energization, operation indicator isn't bright and the buzzer can't give out sound	Confirm whether it's due to power failure. If yes, wait for power recovery. If not, check power supply circuit and make sure the power plug is connected well.
Wrong wire connection between indoor unit and outdoor unit, or poor connection for wiring terminals	Under normal power supply circumstances, operation indicator isn't bright after energization	Check the circuit according to circuit diagram and connect wires correctly. Make sure all wiring terminals are connected firmly
Electric leakage for air conditioner	After energization, room circuit breaker trips off at once	Make sure the air conditioner is grounded reliably Make sure wires of air conditioner is connected correctly Check the wiring inside air conditioner. Check whether the insulation layer of power cord is damaged; if yes, place the power cord.
Model selection for air switch is improper	After energization, air switch trips off	Select proper air switch
Malfunction of remote controller	After energization, operation indicator is bright, while no display on remote controller or buttons have no action.	Replace batteries for remote controller Repair or replace remote controller

2. Poor Cooling (Heating) for Air Conditioner

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Set temperature is improper	Observe the set temperature on remote controller	Adjust the set temperature
Rotation speed of the IDU fan motor is set too low	Small wind blow	Set the fan speed at high or medium
Filter of indoor unit is blocked	Check the filter to see it's blocked	Clean the filter
Installation position for indoor unit and outdoor unit is improper	Check whether the installation position is proper according to installation requirement for air conditioner	Adjust the installation position, and install the rainproof and sunproof for outdoor unit
Refrigerant is leaking	Discharged air temperature during cooling is higher than normal discharged wind temperature; Discharged air temperature during heating is lower than normal discharged wind temperature; Units pressure is much lower than regulated range	Find out the leakage causes and deal with it. Add refrigerant.
Malfunction of 4-way valve	Blow cold wind during heating	Replace the 4-way valve
Malfunction of capillary	Discharged air temperature during cooling is higher than normal discharged wind temperature; Discharged air temperature during heating is lower than normal discharged wind temperature; Unit pressure is much lower than regulated range. If refrigerant isn't leaking, part of capillary is blocked	Replace the capillary
Flow volume of valve is insufficient	The pressure of valves is much lower than that stated in the specification	Open the valve completely
Malfunction of horizontal louver	Horizontal louver can't swing	Refer to point 3 of maintenance method for details
Malfunction of the IDU fan motor	The IDU fan motor can't operate	Refer to troubleshooting for H6 for maintenance method in details
Malfunction of the ODU fan motor	The ODU fan motor can't operate	Refer to point 4 of maintenance method for details
Malfunction of compressor	Compressor can't operate	Refer to point 5 of maintenance method for details

3. Horizontal Louver can't Swing

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Stepping motor is damaged	Stepping motor can't operate	Repair or replace stepping motor
Main board is damaged	Others are all normal, while horizontal louver can't operate	Replace the main board with the same model

4. ODU Fan Motor can't Operate

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Capacity of the ODU fan motor is damaged	Measure the capacity of fan capacitor with an universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor.	Replace the capacity of fan
Power voltage is a little low or high	Use universal meter to measure the power supply voltage. The voltage is a little high or low	Suggest to equip with voltage regulator
Motor of outdoor unit is damaged	When unit is on, cooling/heating performance is bad and ODU compressor generates a lot of noise and heat.	Change compressor oil and refrigerant. If no better, replace the compressor with a new one

5. Compressor can't Operate

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Capacity of compressor is damaged	Measure the capacity of fan capacitor with an universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor.	Replace the compressor capacitor
Power voltage is a little low or high	Use universal meter to measure the power supply voltage. The voltage is a little high or low	Suggest to equip with voltage regulator
Coil of compressor is burnt out	Use universal meter to measure the resistance between compressor terminals and it's 0	Repair or replace compressor
Cylinder of compressor is blocked	Compressor can't operate	Repair or replace compressor

6. Air Conditioner is Leaking

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Drain pipe is blocked	Water leaking from indoor unit	Eliminate the foreign objects inside the drain pipe
Drain pipe is broken	Water leaking from drain pipe	Replace drain pipe
Wrapping is not tight	Water leaking from the pipe connection place of indoor unit	Wrap it again and bundle it tightly

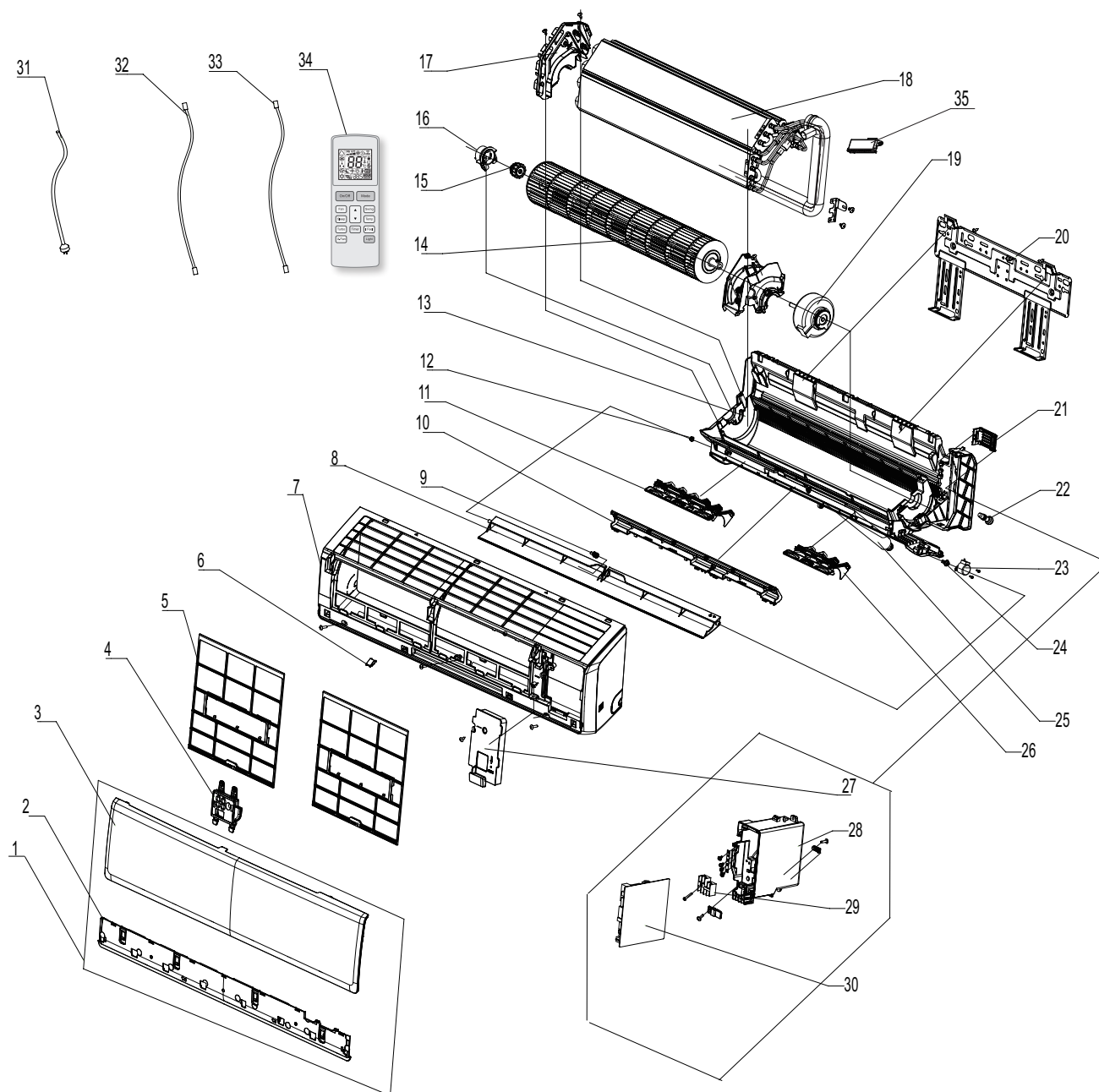
7. Abnormal Sound and Vibration

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
When turn on or turn off the unit, the panel and other parts will expand and There's abnormal sound	There's the sound of "PAPA"	Normal phenomenon. Abnormal sound will disappear after a few minutes.
When turn on or turn off the unit, There's abnormal sound due to flow of refrigerant inside air conditioner	Water-running sound can be heard	Normal phenomenon. Abnormal sound will disappear after a few minutes.
Foreign objects inside the indoor unit or there're parts touching together inside the indoor unit	There's abnormal sound fro indoor unit	Remove foreign objects. Adjust all parts position of indoor unit, tighten screws and stick damping plaster between connected parts
Foreign objects inside the outdoor unit or there're parts touching together inside the outdoor unit	There's abnormal sound fro outdoor unit	Remove foreign objects. Adjust all parts position of outdoor unit, tighten screws and stick damping plaster between connected parts
Short circuit inside the magnetic coil	During heating, the way valve has abnormal electromagnetic sound	Replace magnetic coil
Abnormal shake of compressor	Outdoor unit gives out abnormal sound	Adjust the support foot mat of compressor, tighten the bolts
Abnormal sound inside the compressor	Abnormal sound inside the compressor	If add too much refrigerant during maintenance, please reduce refrigerant properly. Replace compressor for other circumstances.

10. Exploded View and Parts List

10.1 Indoor Unit

ALA/ALB

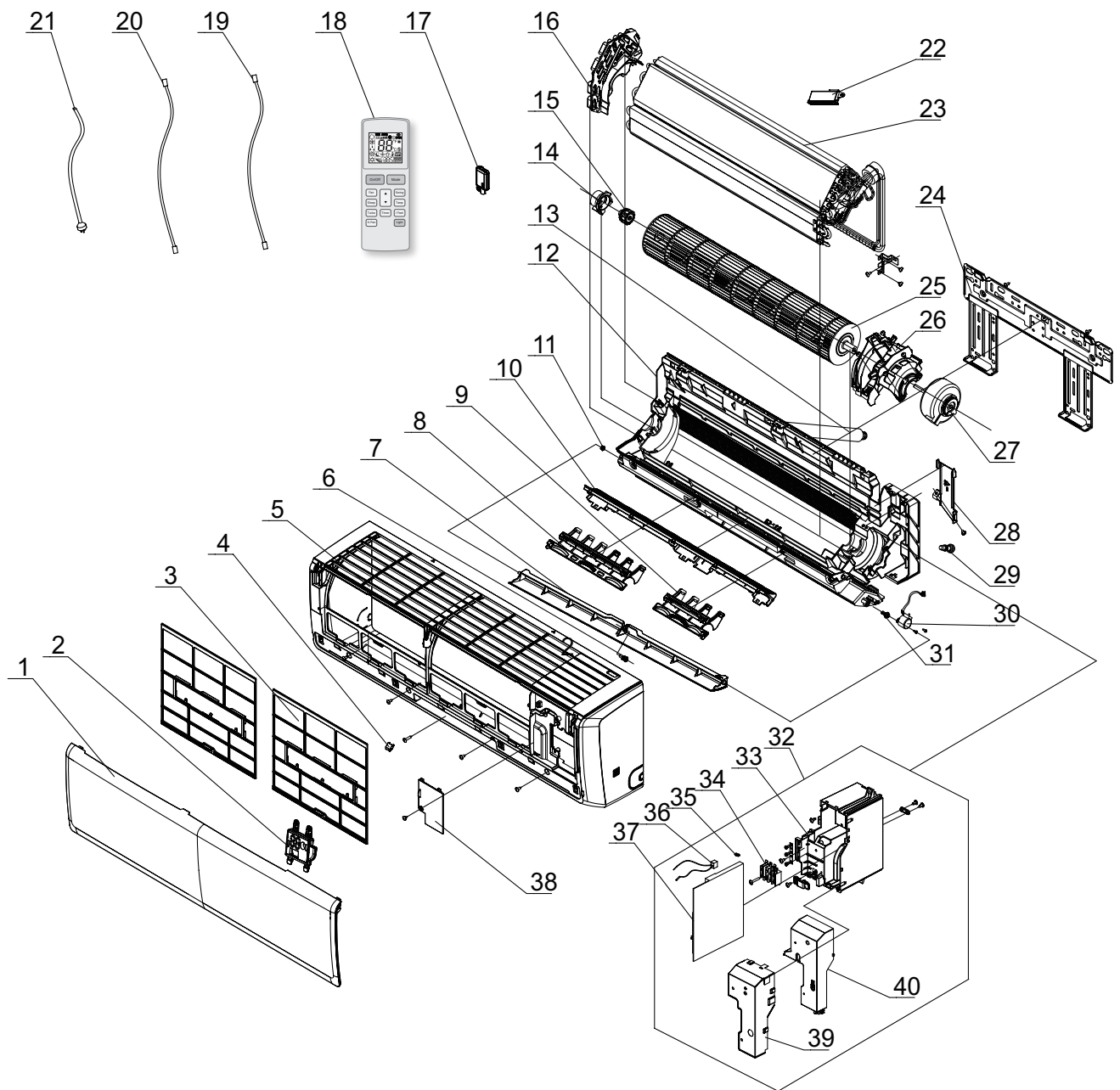


The component picture is only for reference; please refer to the actual product.

NO.	Description
1	Front Panel Assy
2	Decorative Strip
3	Front Panel
4	Display Board
5	Filter Sub-Assy
6	Screw Cover
7	Front Case
8	Guide Louver
9	Axile Bush
10	Helicoid Tongue
11	Air Louver
12	Left Axile Bush
13	Rear Case assy
14	Cross Flow Fan
15	O-Gasket sub-assy of Bearing
16	Ring of Bearing
17	Evaporator Support
18	Evaporator Assy

NO.	Description
19	Fan Motor
20	Wall Mounting Frame Sub-assy
21	Connecting pipe clamp
22	Rubber Plug (Water Tray)
23	Stepping Motor
24	Crank
25	Drainage Hose
26	Air Louver
27	Electric Box Cover2
28	Electric Box Assy
29	Terminal Board
30	Main Board
31	Power Cord
32	Connecting Cable
33	Connecting Cable
34	Remote Controller
35	Cold Plasma Generator

Some models may not contain some parts, please refer to the actual product.

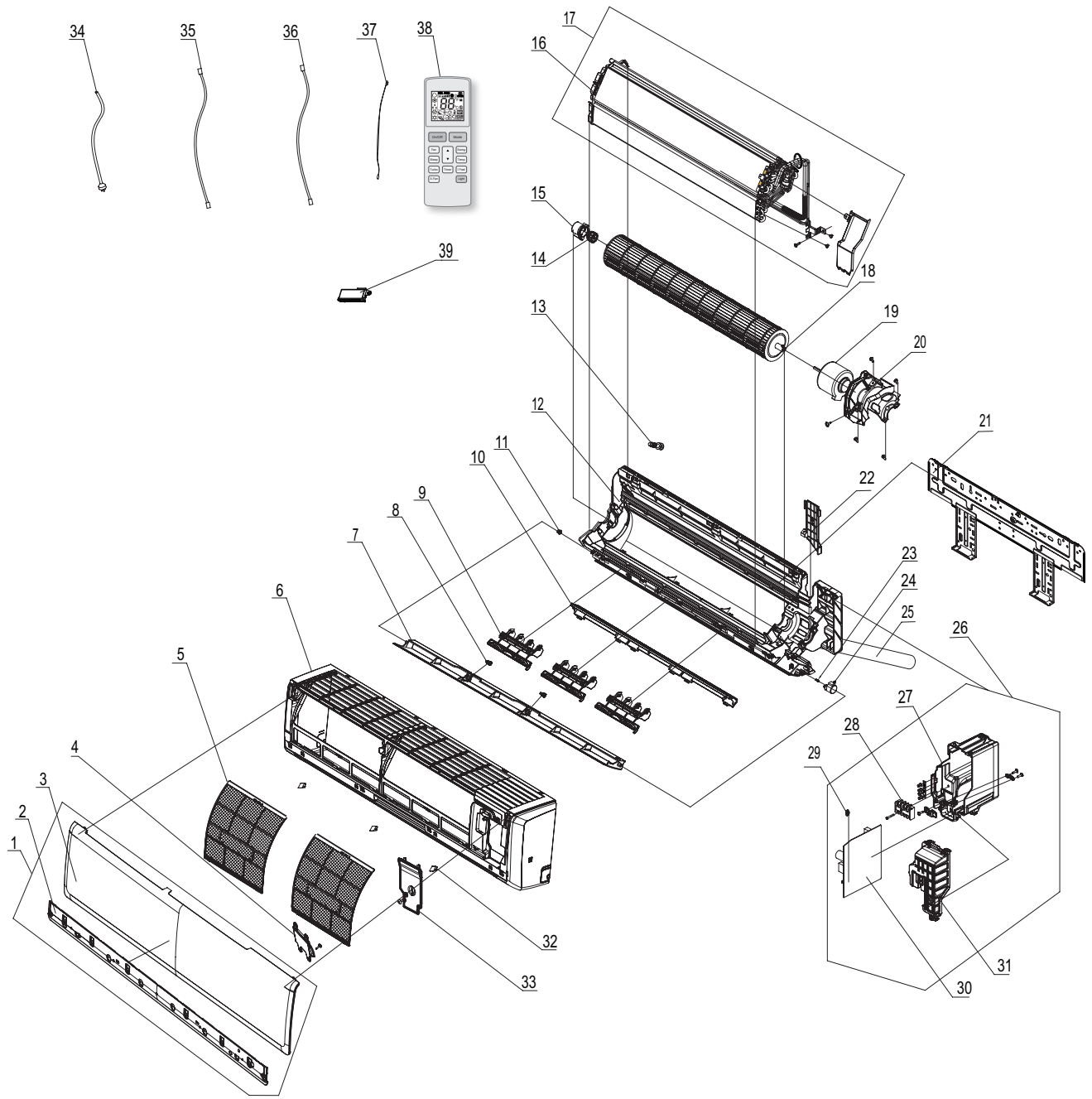


The component picture is only for reference; please refer to the actual product.

NO.	Description
1	Front Panel sub-assy
2	Display Board
3	Filter sub-assy
4	Screw cover
5	Front Case
6	Axile Bush
7	Guide Louver
8	Air Louver 1
9	Air Louver 2
10	Helicoid Tongue
11	Left Axile Bush
12	Rear Case
13	Drainage Hose
14	Ring of Bearing
15	O-Gasket sub-assy of Bearing
16	Evaporator Support
17	Test Board Assy
18	Remote Controller
19	Connecting Cable
20	Connecting Cable

NO.	Description
21	Power Cord
22	Cold Plasma Generator
23	Evaporator Assy
24	Wall Mounting Frame
25	Cross Flow Fan
26	Motor Press plate
27	Fan Motor
28	Connecting pipe clamp
29	Rubber Plug (Water Tray)
30	Stepping Motor
31	Crank
32	Electric Box Assy
33	Electric Box
34	Terminal Board
35	Jumper
36	Temperatue Sensor
37	Main Board
38	Electric Box Cover Sub-Assy
39	Shield Cover of Electric Box Cover
40	Electric Box Cover

Some models may not contain some parts, please refer to the actual product.

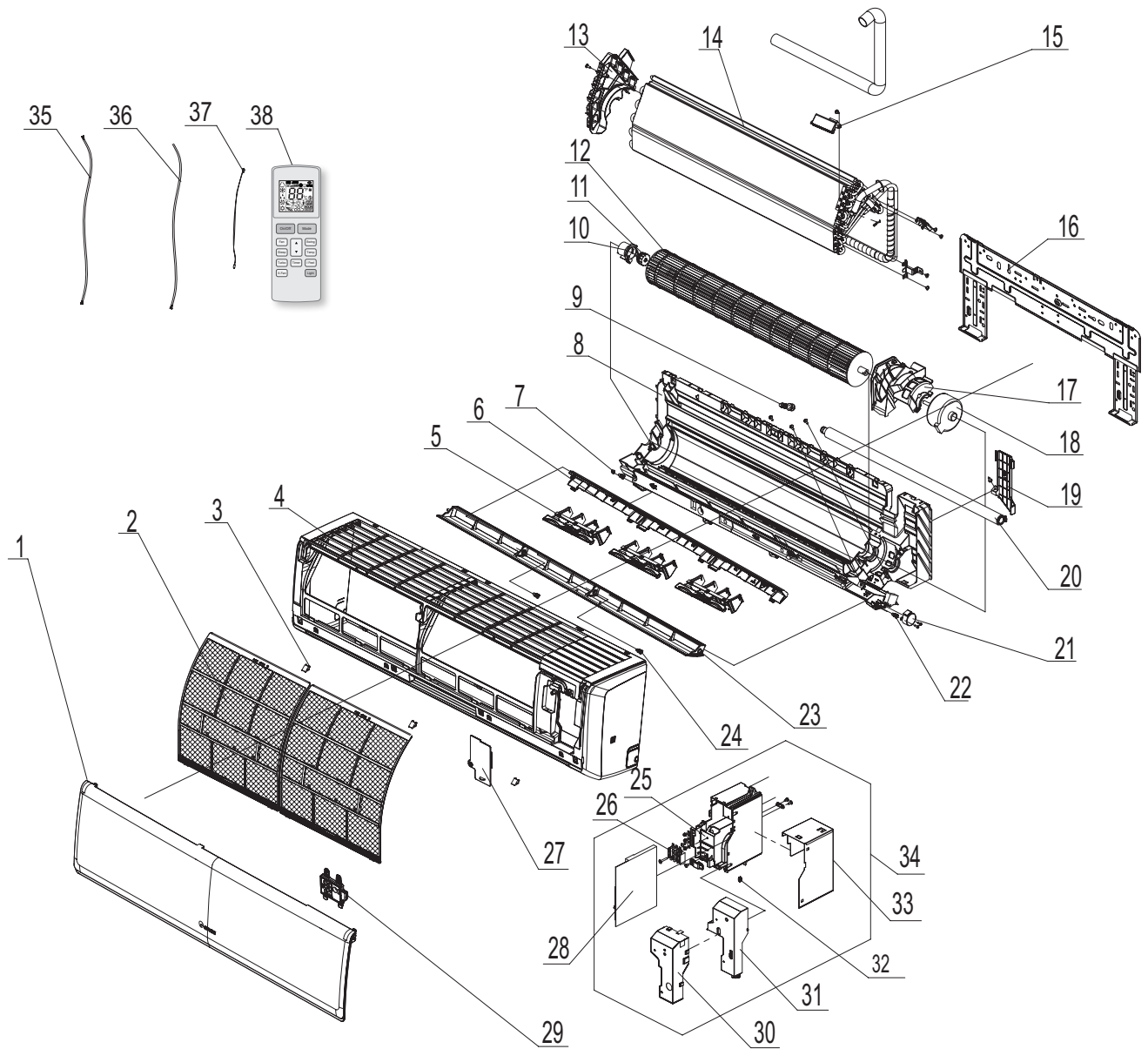


The component picture is only for reference; please refer to the actual product.

NO.	Description
1	Front Panel Assy
2	Decorative Strip
3	Front Panel
4	Display Board
5	Filter Sub-Assy
6	Front Case
7	Guide Louver
8	Axile Bush
9	Air Louver(Manual)
10	Helicoid Tongue
11	Left Axile Bush
12	Rear Case assy
13	Rubber Plug (Water Tray)
14	O-Gasket sub-assy of Bearing
15	Ring of Bearing
16	Evaporator Support
17	Evaporator Assy
18	Cross Flow Fan
19	Fan Motor
20	Motor Press Plate

NO.	Description
21	Wall Mounting Frame
22	Connecting pipe clamp
23	Crank
24	Stepping Motor
25	Drainage Hose
26	Electric Box Assy
27	Electric Box
28	Terminal Board
29	Jumper
30	Main Board
31	Electric Box Cover
32	Screw Cover
33	Electric Box Cover2
34	Power Cord
35	Connecting Cable
36	Connecting Cable
37	Temperature Sensor
38	Remote Controller
39	Cold Plasma Generator

Some models may not contain some parts, please refer to the actual product.



The component picture is only for reference; please refer to the actual product.

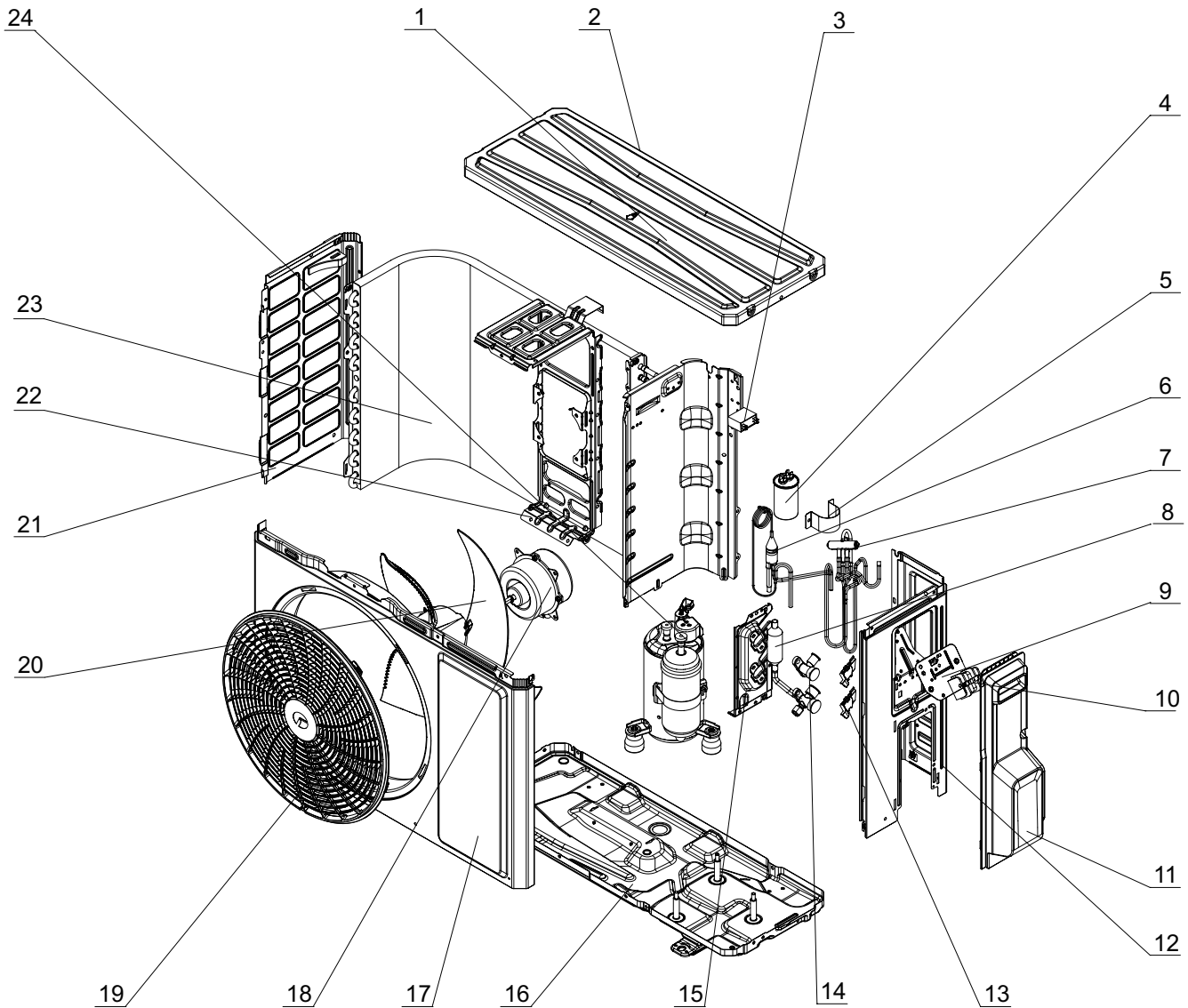
NO.	Description
1	Front Panel
2	Filter Sub-Assy
3	Screw Cover
4	Front Case
5	Air Louver(Manual)
6	Helicoid Tongue
7	Left Axile Bush
8	Rear Case assy
9	Rubber Plug (Water Tray)
10	Ring of Bearing
11	O-Gasket sub-assy of Bearing
12	Cross Flow Fan
13	Evaporator Support
14	Evaporator Assy
15	Cold Plasma Generator
16	Wall Mounting Frame
17	Motor Press Plate
18	Fan Motor
19	Connecting pipe clamp

NO.	Description
20	Drainage Hose
21	Stepping Motor
22	Crank
23	Guide Louver
24	Axile Bush
25	Electric Box
26	Terminal Board
27	Electric Box Cover2
28	Main Board
29	Display Board
30	Shield Cover of Electric Box Cover
31	Electric Box Cover
32	Jumper
33	Lower Shield of Electric Box
34	Electric Box Assy
35	Connecting Cable
36	Connecting Cable
37	Temperature Sensor
38	Remote Controller

Some models may not contain some parts, please refer to the actual product.

10.2 Outdoor Unit

GWH07AGAXA-K3NNA1A/O GWH09AGAXA-K3NNA1A/O



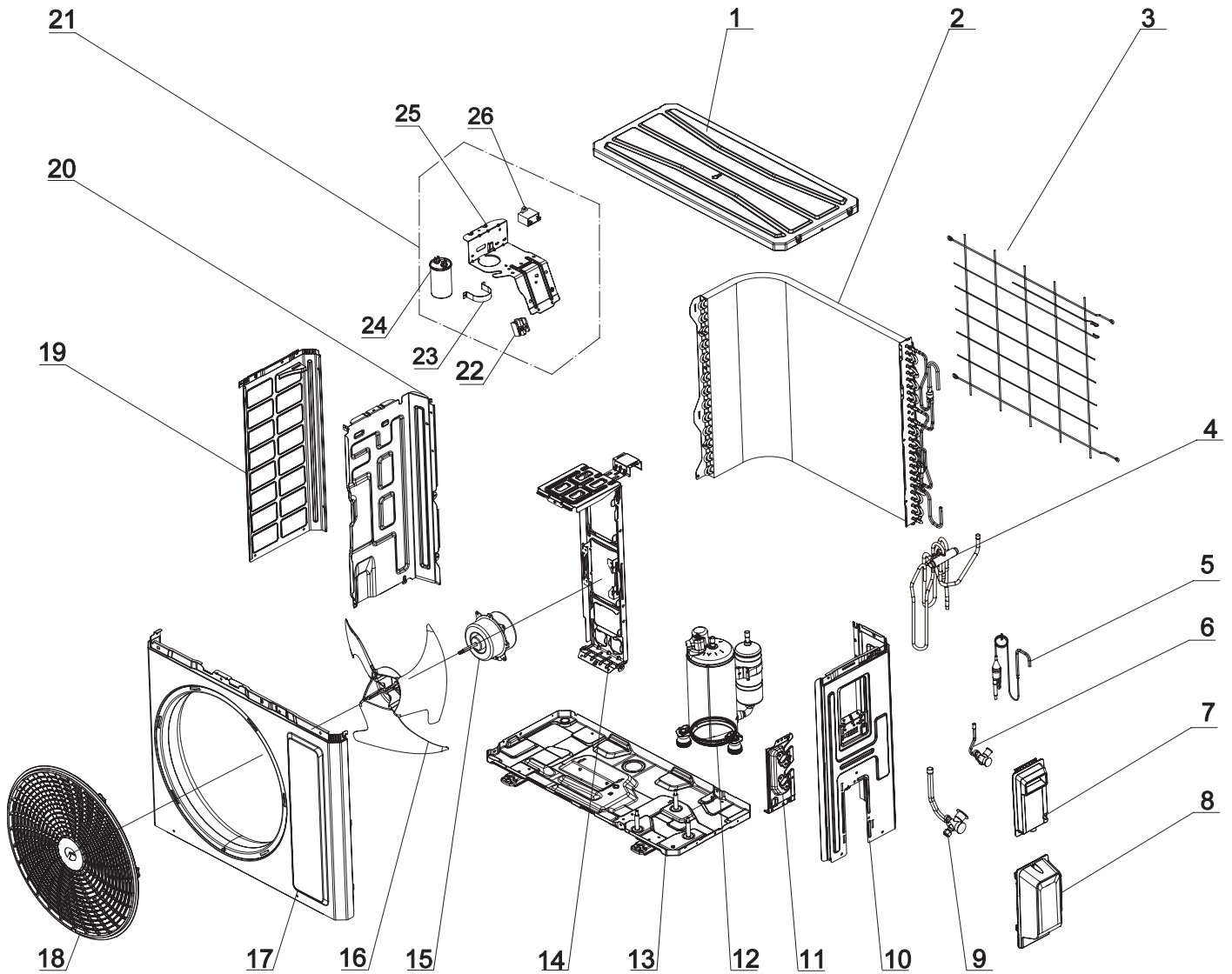
The component picture is only for reference; please refer to the actual product.

NO.	Description
1	Top Cover Sub-Assy
2	Top cover
3	Capacitor CBB61S
4	Capacitor CBB65
5	Capacitor Clamp
6	Strainer (fork shape)
7	4-Way Valve Assy
8	Silencer

NO.	Description
9	Earthing Plate Sub-assy
10	Terminal Board
11	Handle
12	Right Side Plate
13	Valve Support Block
14	Cut-off valve 1/4(N)
15	Valve Support
16	Chassis Sub-assy

NO.	Description
17	Cabinet
18	Fan Motor
19	Front Grill
20	Axial Flow Fan
21	Left Side Plate
22	Motor Support
23	Condenser Assy
24	Compressor and Fittings

Some models may not contain some parts, please refer to the actual product.



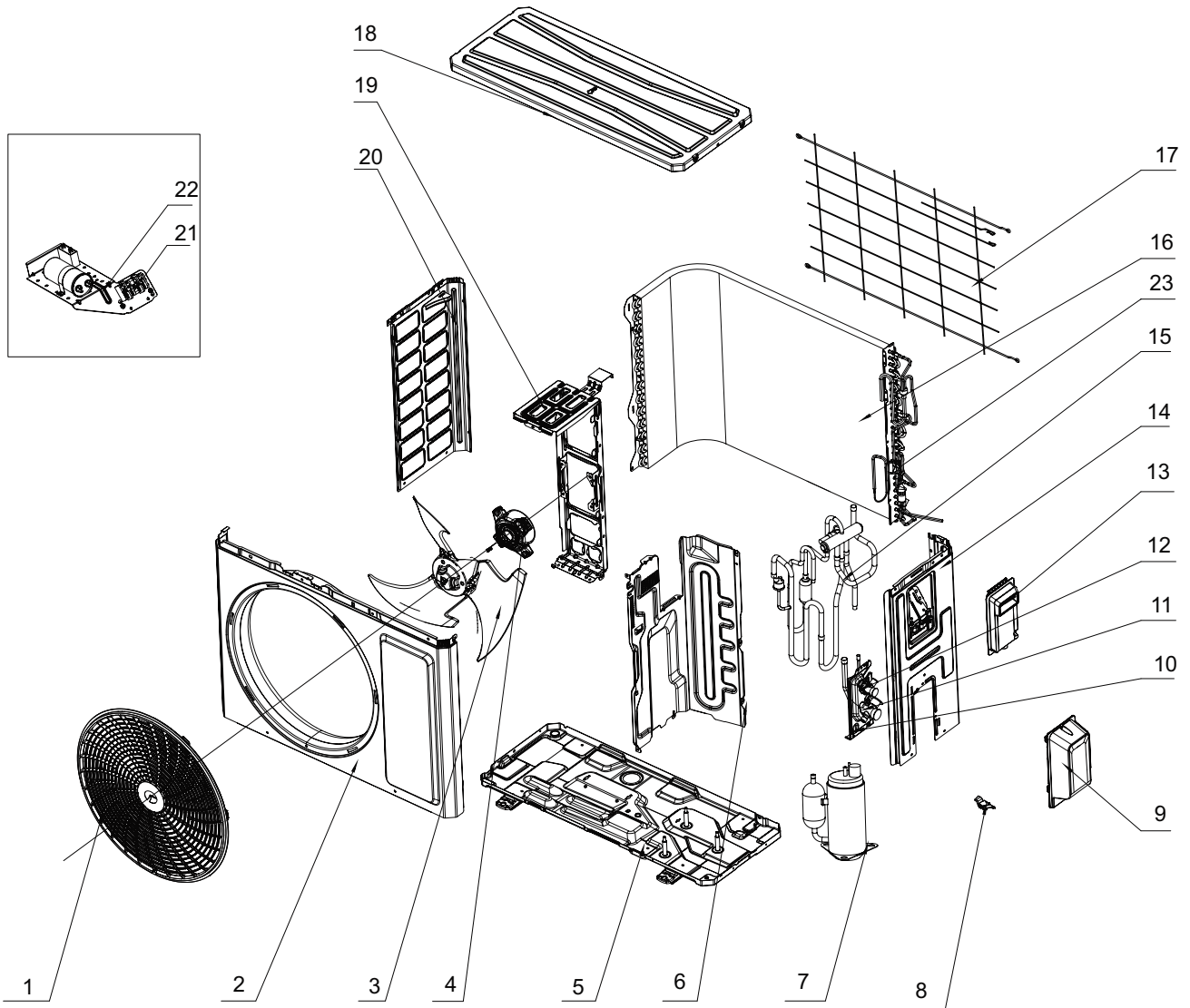
The component picture is only for reference; please refer to the actual product.

NO.	Description
1	Top Cover Assy
2	Condenser Assy
3	Rear Grill
4	4-way Valve Assy
5	Capillary Sub-Assy
6	Cut-off Valve
7	small Handle
8	Valve cover
9	Cut-off Valve

NO.	Description
10	Right Side Plate
11	Valve Support
12	Compressor and Fittings
13	Chassis Sub-assy
14	Motor Support
15	Fan Motor
16	Axial Flow Fan
17	Cabinet
18	Front Grill

NO.	Description
19	Left Side Plate
20	Clapboard
21	Electric Box Assy
22	Terminal Board
23	Capacitor Clamp
24	Capacitor CBB65
25	Electric Box
26	Capacitor CBB61

Some models may not contain some parts, please refer to the actual product.

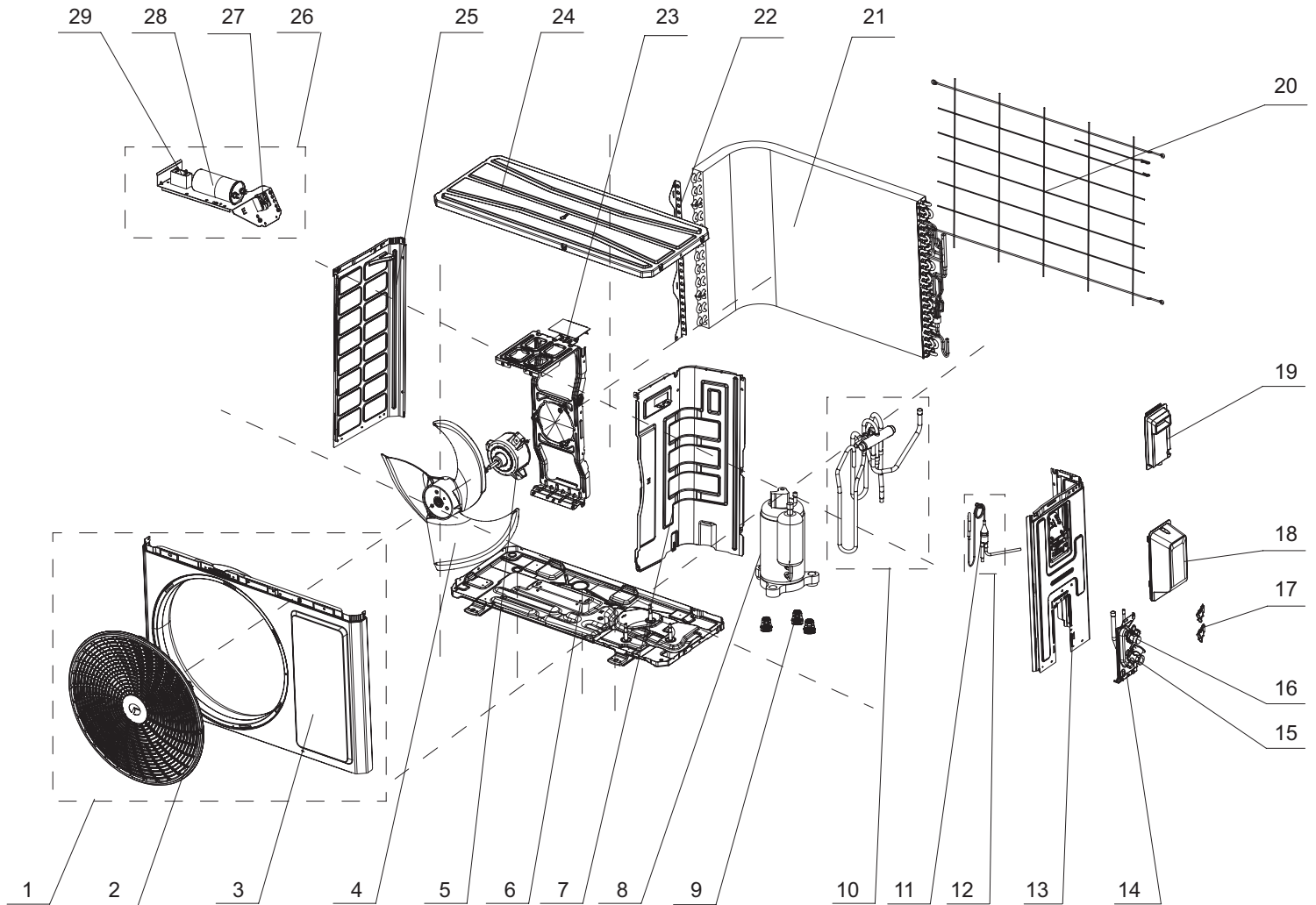


The component is only for reference; please refer to the actual product

NO.	Description
1	Front Grill
2	Cabinet
3	Axial Flow Fan
4	Fan Motor
5	Chassis Sub-assy
6	Clapboard Assy
7	Compressor and Fittings
8	Valve Support Block
9	Valve Cover
10	Valve Support
11	Cut-off valve 1/2(N)

NO.	Description
12	Cut-off valve 1/4(N)
13	Handle (Right)
14	Right Side Assy
15	4-Way Valve Assy
16	Condenser Assy
17	Rear Grill
18	Top Cover Assy
19	Motor Support Sub-Assy
20	Left Side Plate
21	Terminal Board
22	Electric Box Assy

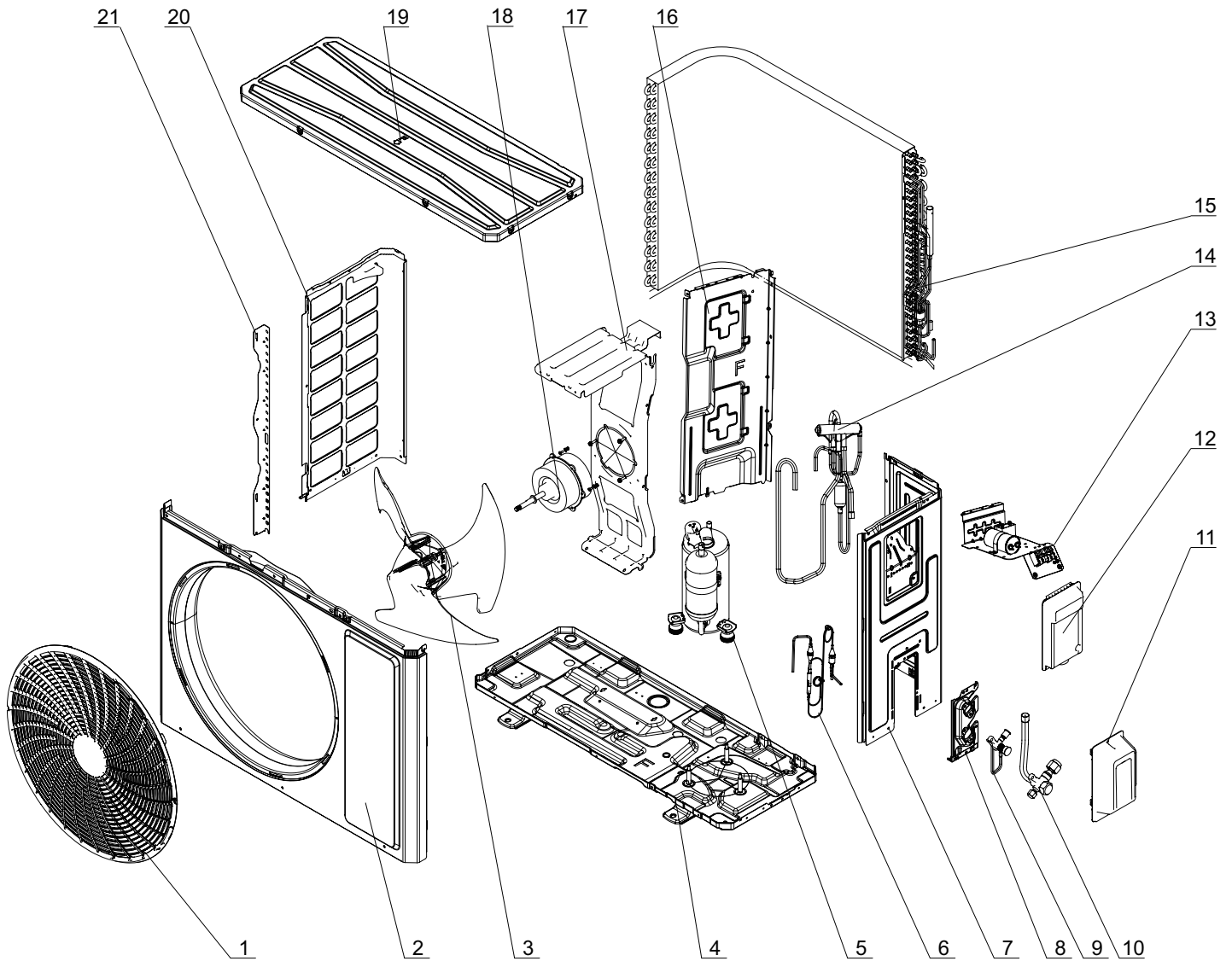
Some models may not contain some parts, please refer to the actual product.



The component picture is only for reference; please refer to the actual product.

NO.	Description	NO.	Description	NO.	Description
1	Front Panel Assy	11	Strainer (fork shape)	21	Condenser Assy
2	Front grill	12	Capillary assembly	22	Condenser right side panel
3	Front Panel	13	Right Side Plate Assy	23	Motor Support
4	Axial Flow Fan	14	Valve Support	24	Coping
5	Fan Motor	15	Cut-off valve 1/2(N)	25	Left Side Plate
6	Chassis Sub-assy	16	Cut-off valve 1/4(N)	26	Electric Box Assy
7	Clapboard Sub-Assy	17	Valve Support Block	27	Terminal Board
8	Compressor and Fittings	18	Valve Cover	28	Capacitor CBB65
9	Compressor Gasket	19	Handle	29	Capacitor CBB61S
10	4-Way Valve Assy	20	Rear Grill		

Some models may not contain some parts, please refer to the actual product.



The component picture is only for reference; please refer to the actual product.

NO.	Description	NO.	Description	NO.	Description
1	Front Grill	8	Valve Support	15	Condenser Assy
2	Front Panel	9	Cut-off valve 1/4(N)	16	Clapboard Assy
3	Axial Flow Fan	10	Cut-off valve 1/2(N)	17	Motor Support
4	Chassis Sub-assy	11	Valve Cover	18	Motor
5	Compressor and Fittings	12	Handle	19	Top Cover Assy
6	Capillary Sub-assy	13	Electric Box Assy	20	Left Side Plate
7	Right Side Plate	14	4-Way Valve Assy	21	Condenser Left Border Plate

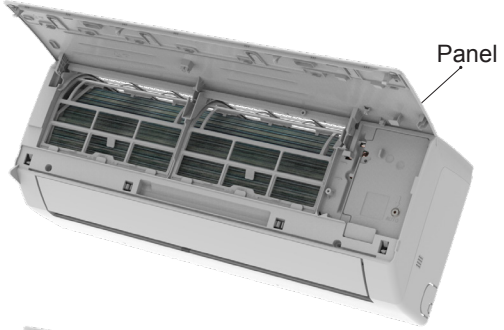
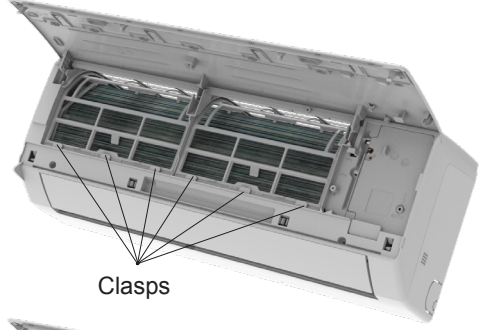
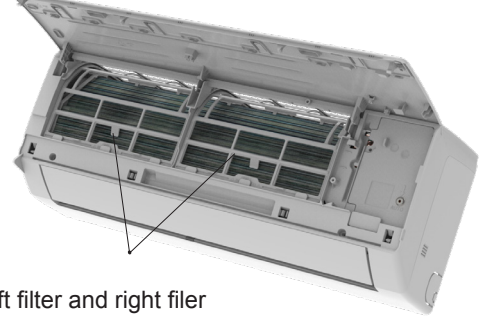
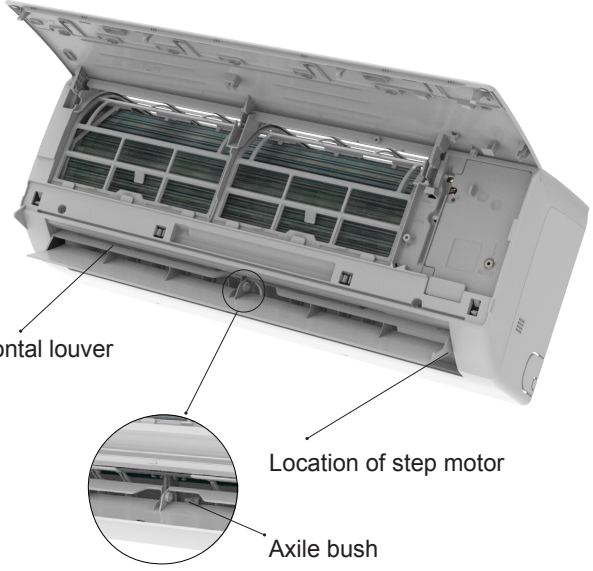
Some models may not contain some parts, please refer to the actual product.

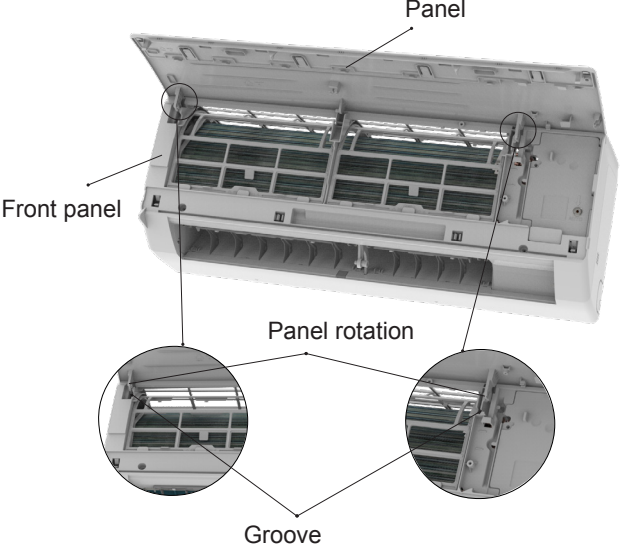
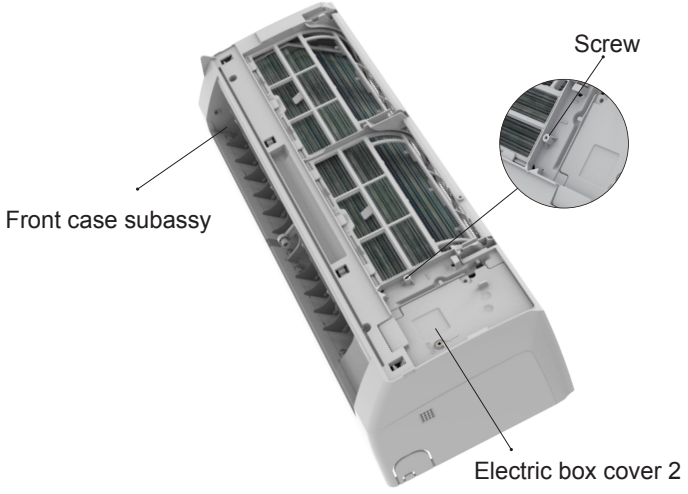
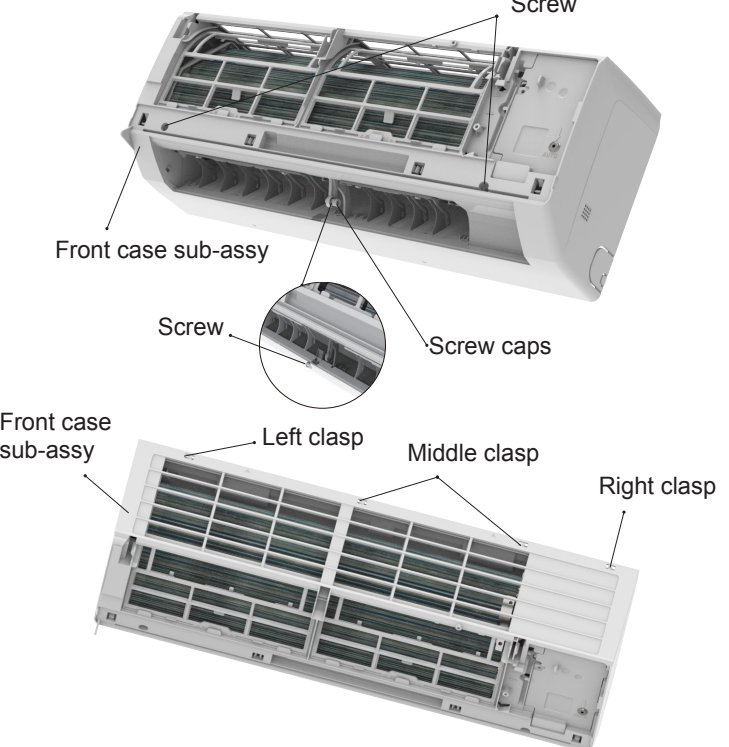
11. Removal Procedure

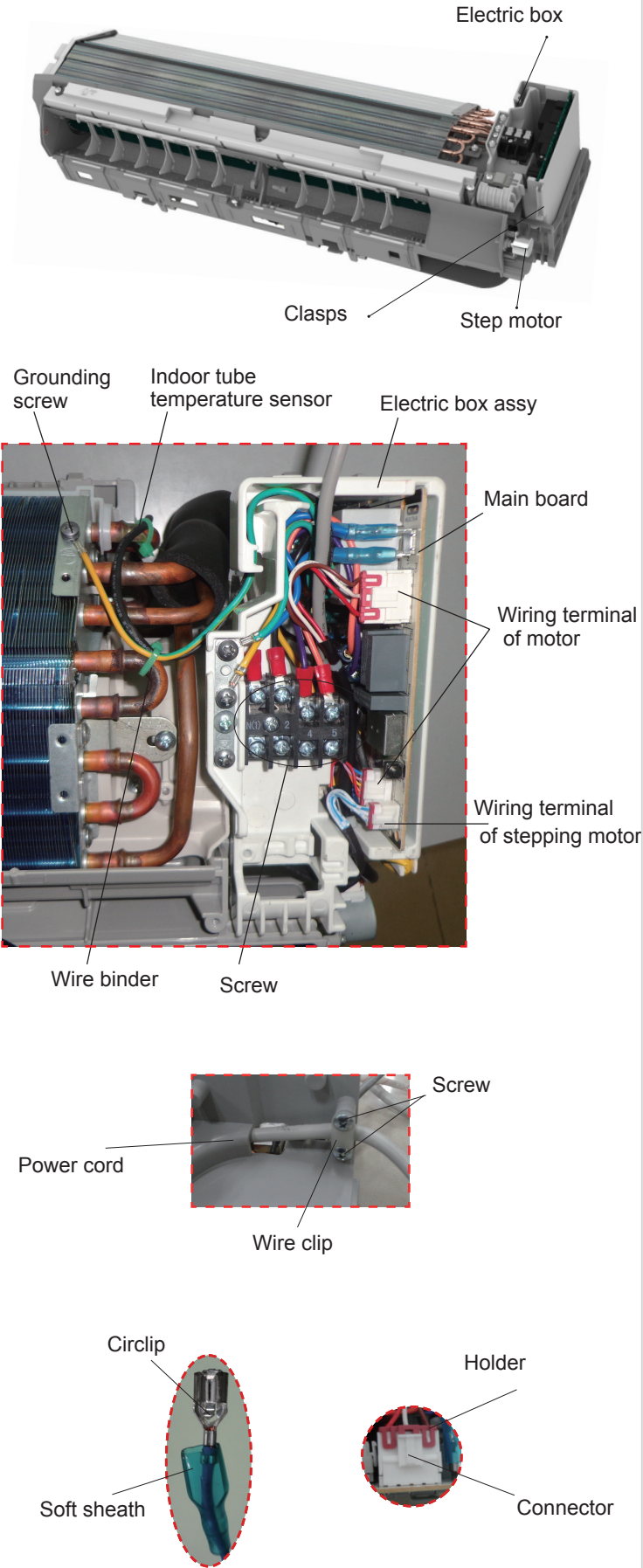
11.1 Removal Procedure of Indoor Unit

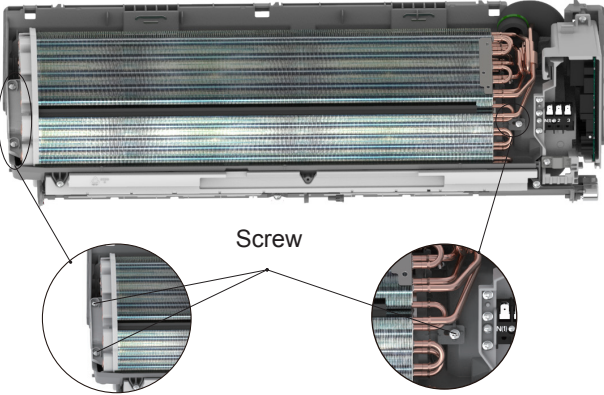
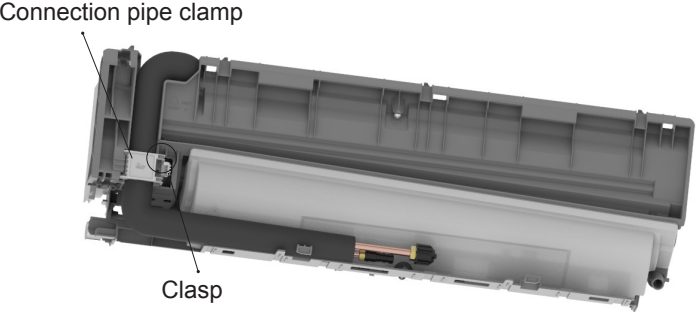
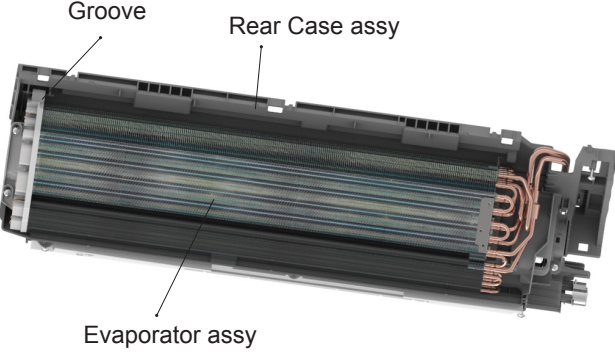
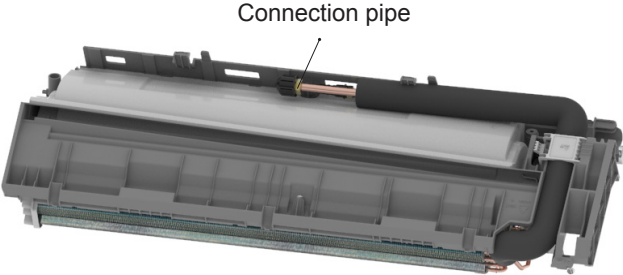


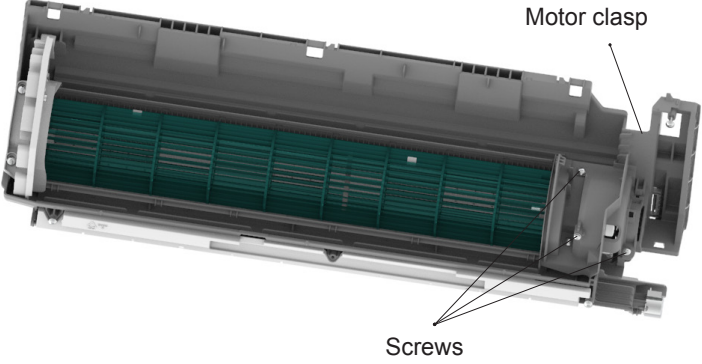
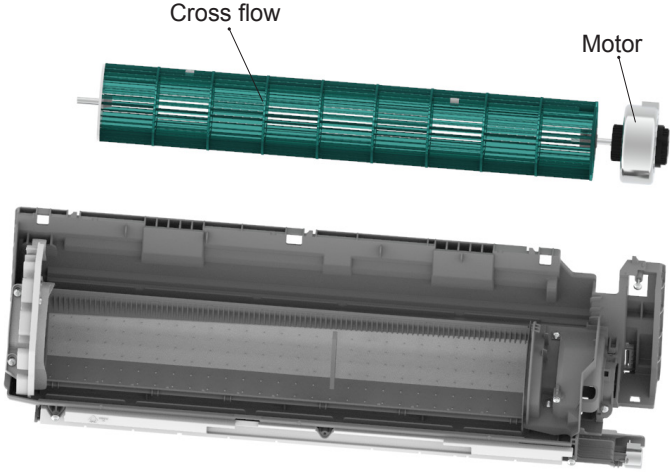
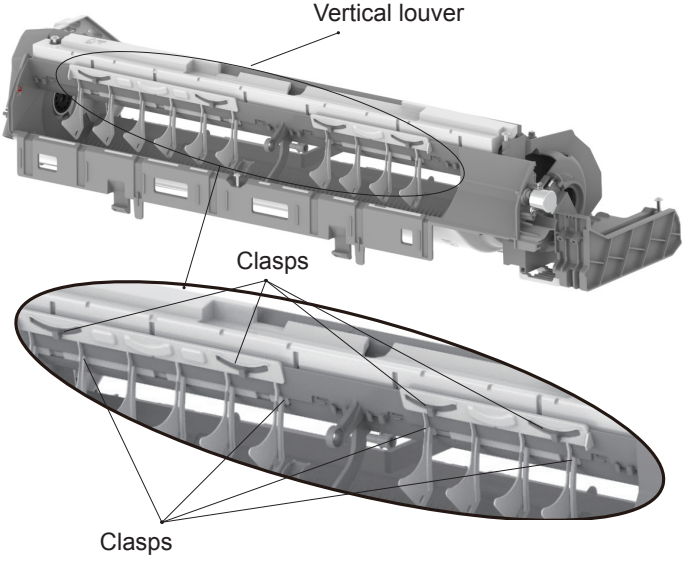
Caution: discharge the refrigerant completely before removal.

Step	Procedure	
1.Remove filter		
a	Open the panel.	
b	Loosen the clasp shown in the fig and then pull the left filter and right filter outwards to remove them.	 
2.Remove horizontal louver		
	Push out the axle bush on horizontal louver. Bend the horizontal louver with hand and then separate the horizontal louver from the crankshaft of step motor to remove it.	

Step	Procedure	
<p>3.Remove panel</p>	<p>Open the front panel; separate the panel rotation shaft from the groove fixing the front panel and then removes the front panel.</p> <p>Note: The display of some models is fixed on the panel; unscrew the screws fixing the display on the panel before removing the panel.</p>	
<p>4.Remove electric box cover 2</p>	<p>Remove the screws on the electric box cover 2 to remove the electric box cover 2.</p>	
<p>5.Remove front case sub-assy</p>	<p>Remove the screws fixing front case.</p> <p>Note:</p> <p>a (1) Open the screw caps before removing the screws around the air outlet. (2) The quantity of screws fixing the front case sub-assy is different for different models.</p> <p>b Loosen the clasps at left, middle and right sides of front case. Lift the front case sub-assy upwards to remove it.</p>	

Step	Procedure
6.Remove electric box assy	
<p>a</p> <p>b</p> <p>c</p>	<p>Loosen the connection clasps between Cold plasma generator and electric box, and then remove the cold plasma generator.</p> <ol style="list-style-type: none"> ① Cut off the wire binder and pull out the indoor tube temperature sensor. ② Screw off one grounding screw. ③ Remove the wiring terminals of motor and stepping motor. ④ Remove the electric box assy. ⑤ Screw off the screws that are locking each. <p>Rotate the electric box assy. Twist off the screws that are locking the wire clip and loosen the power cord. Remove the wiring terminal of power cord. Lift up the main board and take it off.</p> <p>Instruction: Some wiring terminal of this product is with lock catch and other devices. The pulling method is as below: 1.Remove the soft sheath for some terminals at first, hold the circlip and then pull out the terminals. 2.Pull out the holder for some terminals at first (holder is not available for some wiring terminal), hold the connector and then pull the terminal.</p> 

Step	Procedure
7.Remove evaporator assy	
a	<p>Remove 3 screws fixing evaporator assy.</p> 
b	<p>At the back of the unit, Loosen the clasp,connection pipe clamp and then remove the connection pipe clamp.</p> 
c	<p>First remove the left side of evaporator from the groove of bottom shell and then remove the right side from the clasp on the bottom shell.</p> 
d	<p>Adjust the position of connection pipe on evaporator slightly and then lift the evaporator upwards to remove it.</p> 




Step	Procedure
8.Remove motor and cross flow blade	
a	<p>Remove 3 screws fixing motor clamp and then remove the motor clamp.</p> 
b	<p>Remove the at the connection place of cross flow blade and motor; lift the motor and cross flow blade upwards to remove them.</p> 
9.Remove vertical louver	
	<p>Loosen the connection clasps between vertical louver and bottom case to remove vertical louver.</p> 

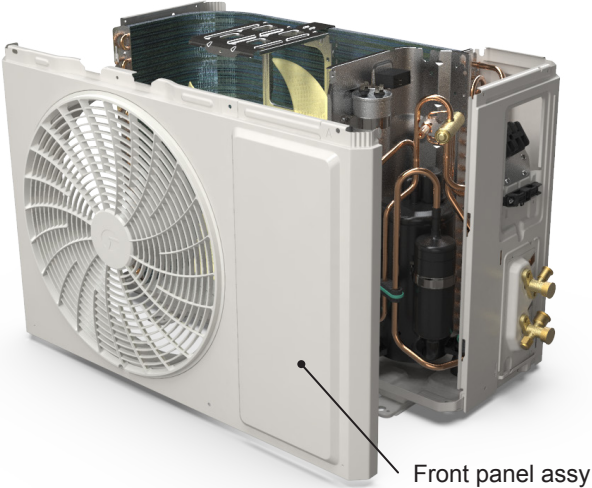
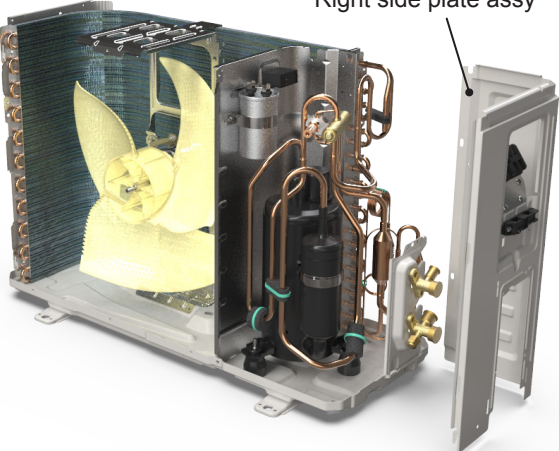
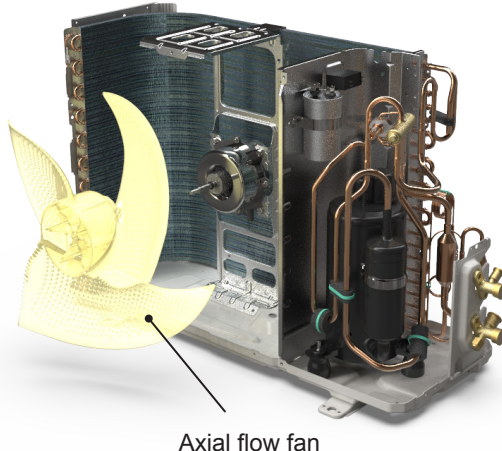
11.2 Removal Procedure of Outdoor Unit

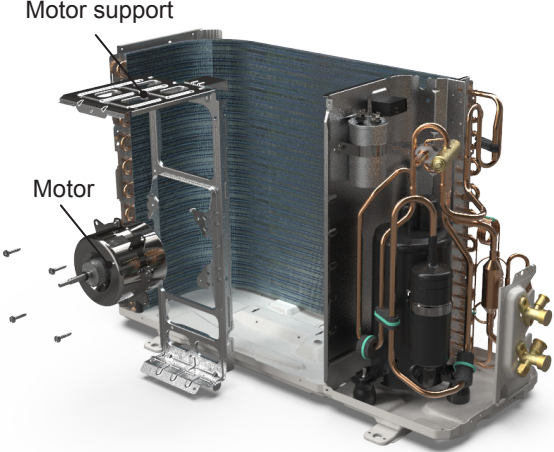
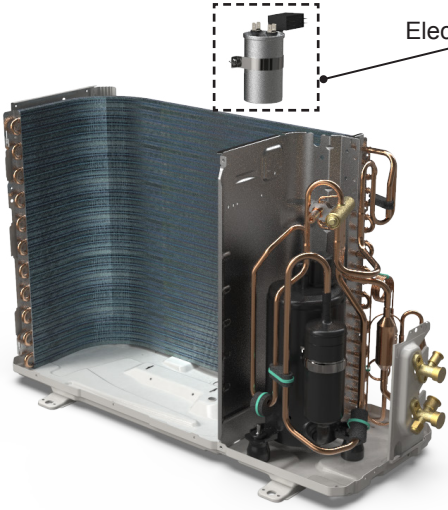
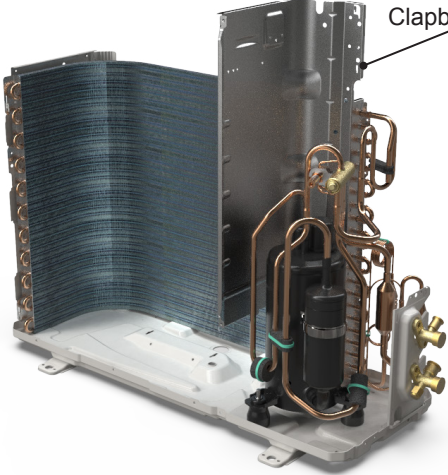
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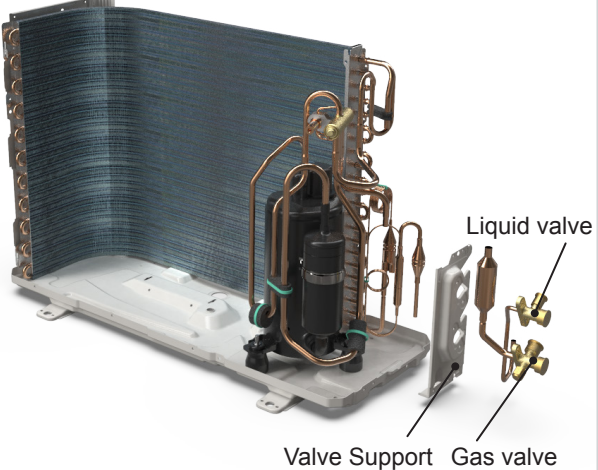
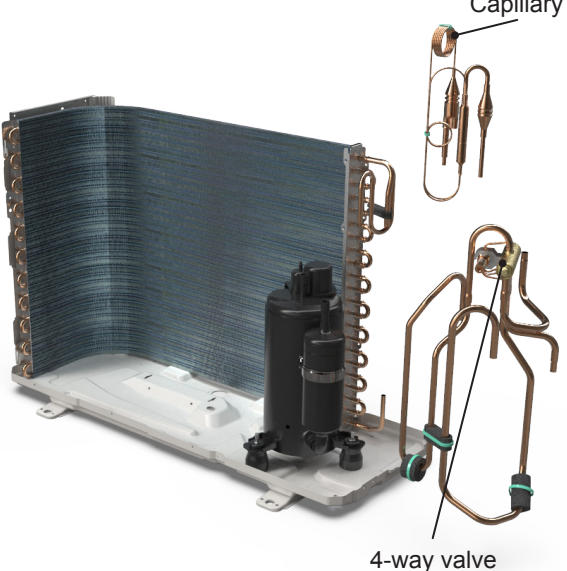
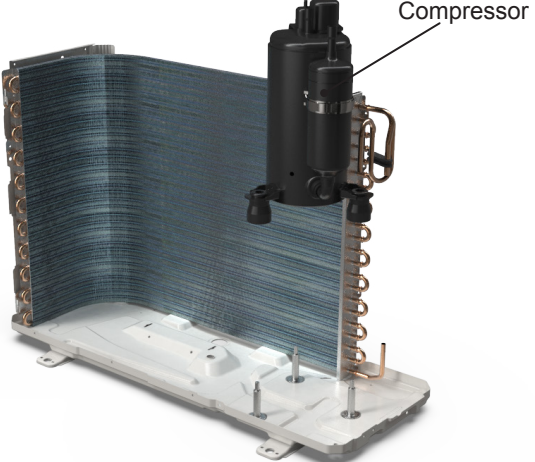


Caution: discharge the refrigerant completely before removal.

Step	Procedure
1. Before disassembly	
2. Remove handle	<p data-bbox="191 1148 787 1214">Remove the screws fixing handle and then remove them.</p> 
3. Remove top cover	<p data-bbox="191 1749 787 1814">Remove the screws fixing top panel and then remove the top panel.</p> 


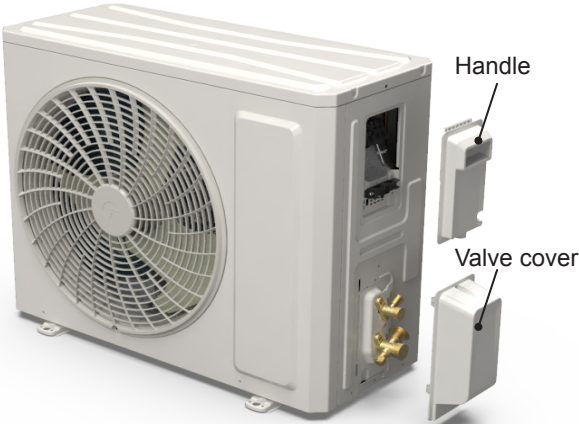

Step	Procedure
<p>4. Remove front panel assy</p>	<p>Remove connection screws connecting the front panel assy with the chassis and the motor support, and then remove the front panel assy.</p> 
<p>5. Remove right side plate assy</p>	<p>Rescrew the ground screws, remove the ground wires, loosen the screws fixing terminal board, remove the terminal board, rescrew the screws fixing the right plate, and remove the right side plate assy.</p> 
<p>6. Remove axial flow fan</p>	<p>Remove the nut on the fan and then remove the axial flow fan.</p> 


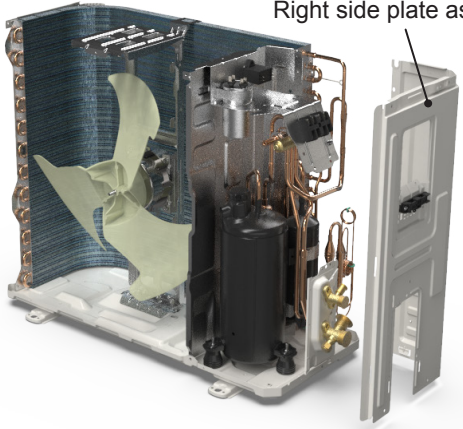
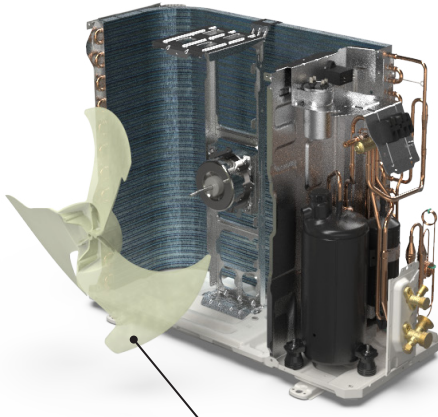
Step	Procedure
<p data-bbox="110 214 574 244">7. Remove motor support and motor</p> <p data-bbox="191 432 789 572">Remove the screws fixing the motor support and lift the motor support to remove it. Remove the screws fixing the motor and then remove the motor.</p>	 <p data-bbox="863 266 1016 292">Motor support</p> <p data-bbox="873 441 938 467">Motor</p>
<p data-bbox="100 803 461 834">8. Remove electric box assy</p> <p data-bbox="191 1035 789 1140">Remove the terminals, lift up and rotate the electrical box assy to the right so that the snaps on the clapboard are removed and the electrical box assy are removed.</p>	 <p data-bbox="1351 812 1536 838">Electric box assy</p>
<p data-bbox="100 1393 441 1423">9. Remove clapboard assy</p> <p data-bbox="191 1712 789 1777">Remove the screws fixing the clapboard assy and then remove the clapboard assy.</p>	 <p data-bbox="1334 1472 1503 1498">Clapboard assy</p>

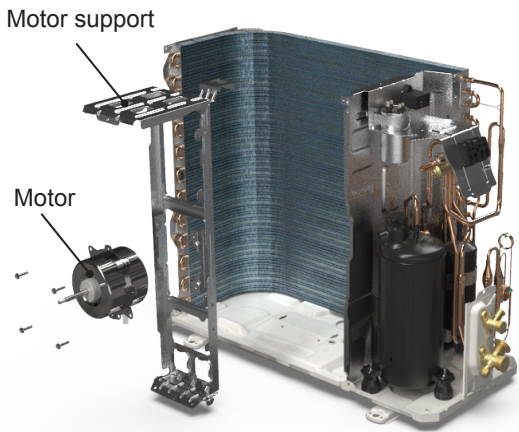
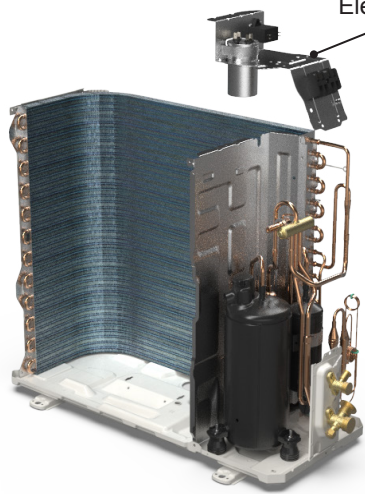
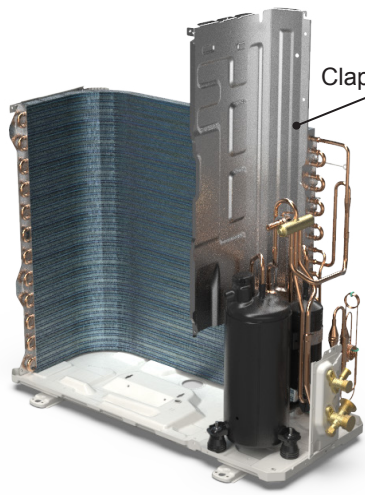
Step	Procedure
<p>10. Remove gas valve and liquid valve</p> <p>Remove the valve support block, remove the screws fixing the gas valve and the liquid valve, unsolder the welding joint connecting the gas valve and the liquid valve, remove them.</p> <p>Note: Discharge the refrigerant completely before unsoldering; when unsoldering, wrap the gas valve with a wet cloth completely to avoid damage to the valve caused by high temperature.</p>	
<p>11. Remove 4-way valve and capillary</p> <p>Unsolder the welding joints connecting capillary, and then remove it.</p> <p>Unsolder the welding joints connecting the 4-way valve assembly with capillary sub-assembly, compressor and condenser; remove the 4-way valve. Cooling only unit removes Discharge Tube and Inhalation Tube.</p> <p>Note: Before unsoldering the welding joint, wrap the 4-way valve with a wet cloth completely to avoid damage to the valve caused by high temperature.</p>	
<p>12. Remove compressor</p> <p>Remove the 3 foot nuts on the compressor and then remove the compressor.</p>	



Caution: discharge the refrigerant completely before removal.

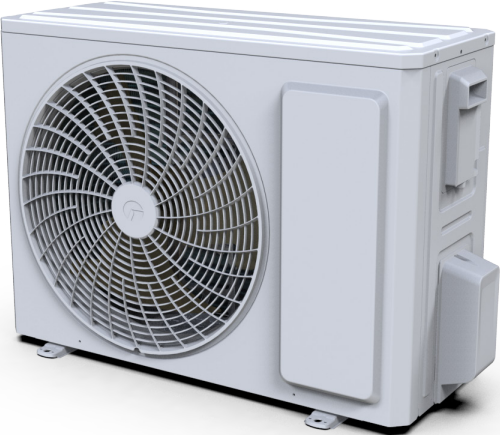


Step	Procedure
<p>1. Before disassembly</p>	
<p>2. Remove handle and valve cover</p>	<p>Remove the screws fixing handle, valve cover and then remove them.</p> 
<p>3. Remove top cover</p>	<p>Remove the screws fixing top panel and then remove the top panel.</p> 

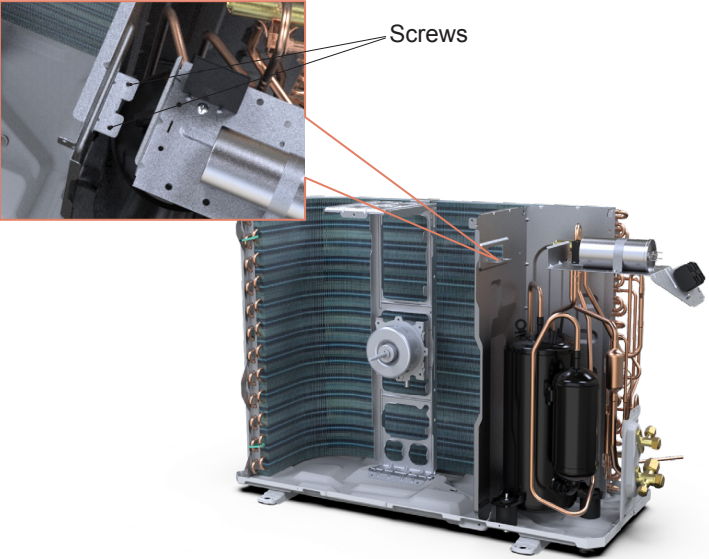


Step	Procedure
<p>4. Remove front panel assy</p>	<p>Remove connection screws connecting the front panel assy with the chassis and the motor support, and then remove the front panel assy.</p>  <p style="text-align: right;">Front panel assy</p>
<p>5. Remove right side plate assy</p>	<p>Rescrew the ground screws, remove the ground wires, loosen the screws fixing terminal board, remove the terminal board, rescrew the screws fixing the right plate, and remove the right side plate assy.</p>  <p style="text-align: right;">Right side plate assy</p>
<p>6. Remove axial flow fan</p>	<p>Remove the nut on the fan and then remove the axial flow fan.</p>  <p style="text-align: right;">Axial flow fan</p>



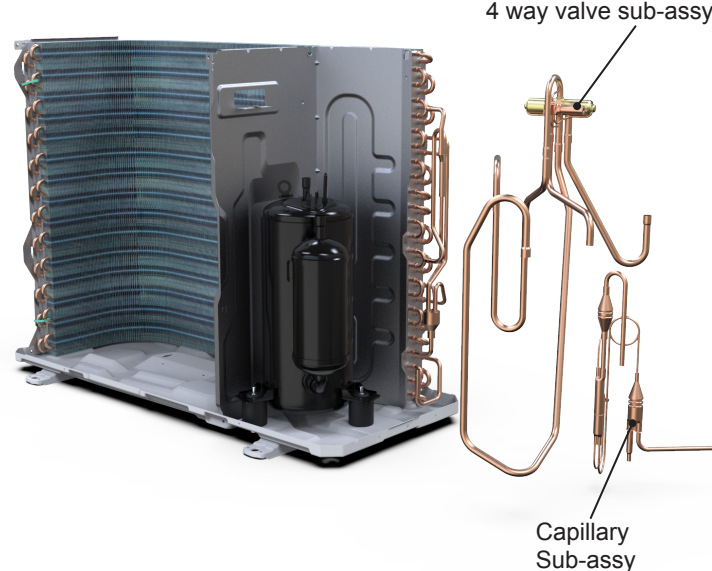
Step	Procedure
<p>7. Remove motor support and motor</p>	<p>Remove the screws fixing the motor support and lift the motor support to remove it. Remove the screws fixing the motor and then remove the motor.</p> 
<p>8. Remove electric box assy</p>	<p>Remove the terminals, lift up and rotate the electrical box assy to the right so that the snaps on the clapboard are removed and the electrical box assy are removed.</p> 
<p>9. Remove clapboard assy</p>	<p>Remove the screws fixing the clapboard assy and then remove the clapboard assy.</p> 

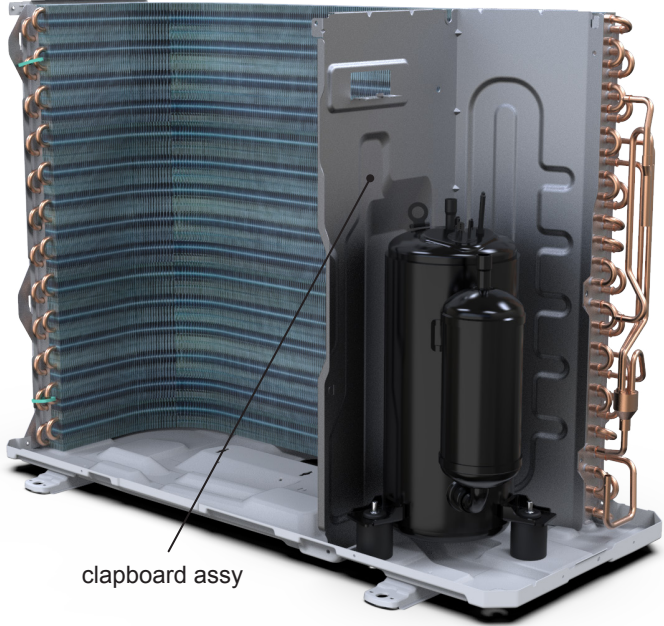
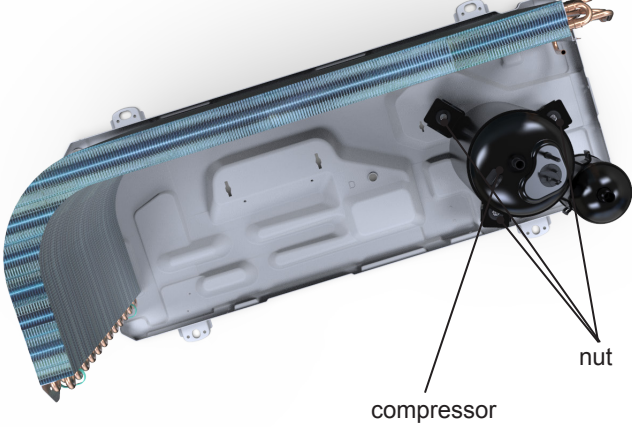


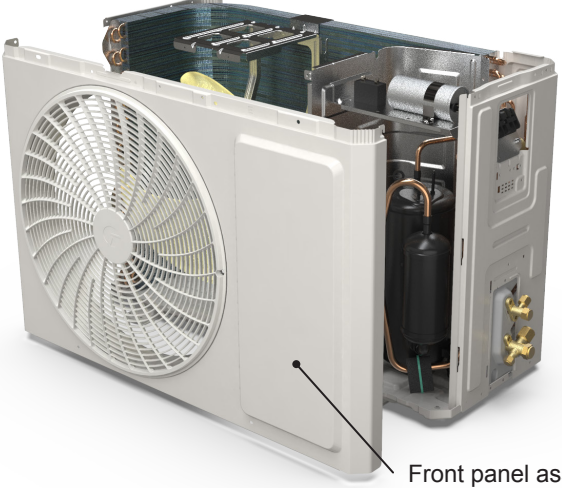
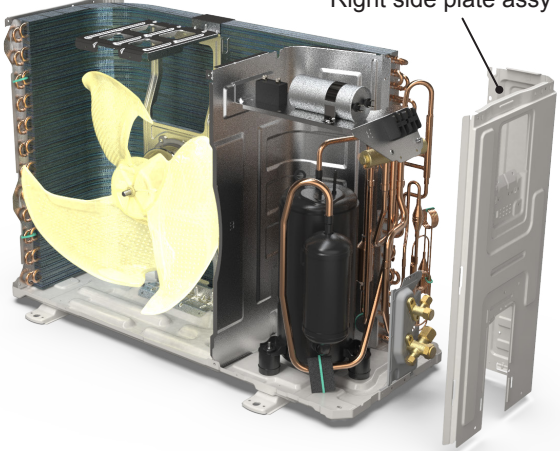
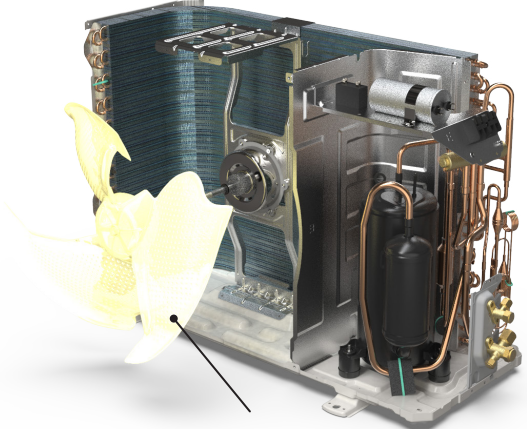
Caution: discharge the refrigerant completely before removal.

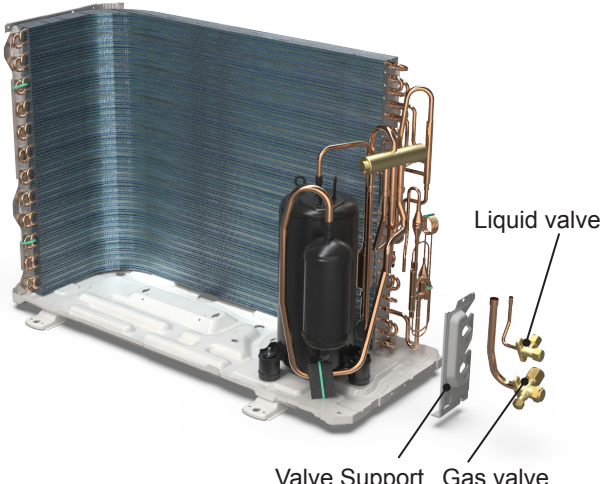
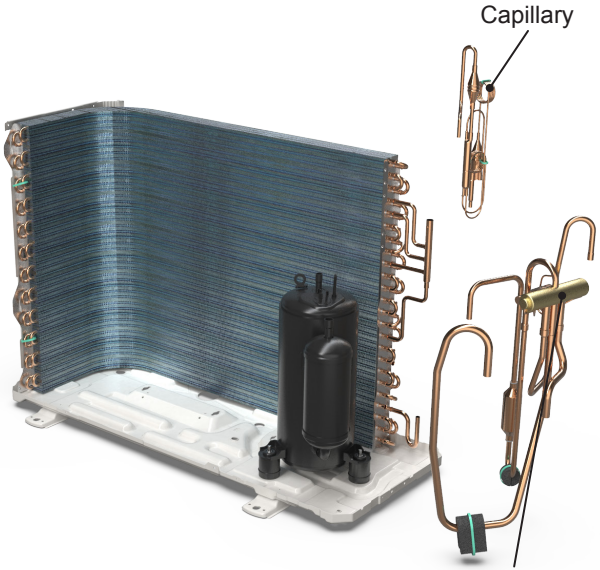
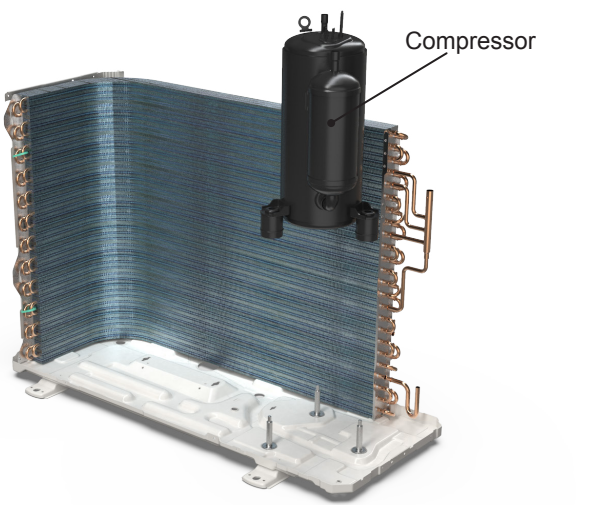
Step	Procedure
<p>1. Before disassembly</p>	
<p>2. Remove big handle and valve cover</p>	<p>Remove the screws fixing big handle, valve cover and then remove them.</p>  <p>big handle</p> <p>valve cover</p>
<p>3. Remove top cover</p>	<p>Remove the screws fixing top panel and then remove the top panel.</p>  <p>top cover</p>

Step	Procedure
<p>7. Remove electric box assy</p>	<p>Remove two screws fixing the electric box assy and then remove the electric box assy.</p> 
<p>8. Remove motor</p>	<p>Remove the screws fixing the motor and then remove the motor.</p> 
<p>9. Remove motor support</p>	<p>Remove the screws fixing the motor support and lift the motor support to remove it.</p> 


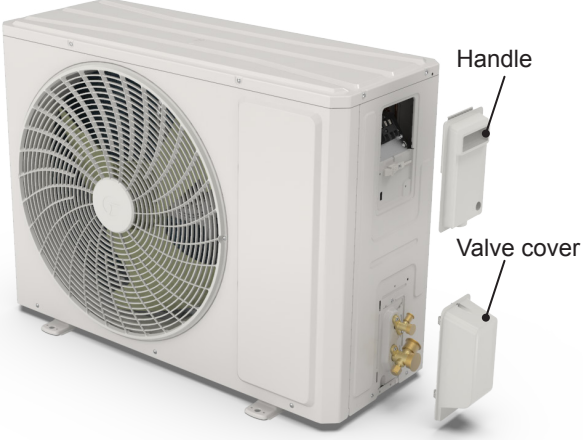

Step	Procedure
<p>10. Remove gas valve and liquid valve</p>	<p>Remove the valve support block, remove the screws fixing the gas valve and the liquid valve, unsolder the welding joint connecting the gas valve and the liquid valve, remove them.</p> <p>Note: Discharge the refrigerant completely before unsoldering; when unsoldering, wrap the gas valve with a wet cloth completely to avoid damage to the valve caused by high temperature.</p> 
<p>11. Remove valve support</p>	<p>Remove the screws fixing valve support, then remove the valve support.</p> 
<p>12. Remove 4 way valve sub-assy, and Capillary Sub-assy</p>	<p>Unsolder the welding joints connecting the 4 way valve sub-assy and Capillary Sub-assy, and then remove them.</p> <p>Note: Before unsoldering the welding joint, wrap the 4 way valve sub-assy and Capillary Sub-assy with a wet cloth completely to avoid damage to the valve caused by high temperature.</p> 

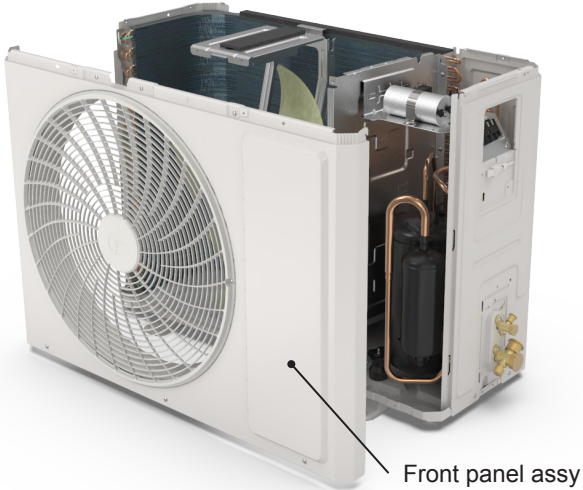
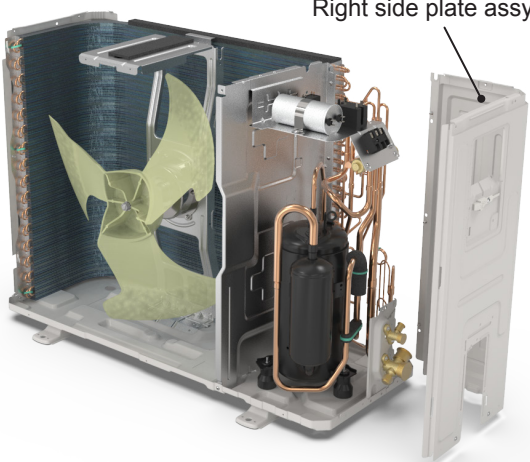
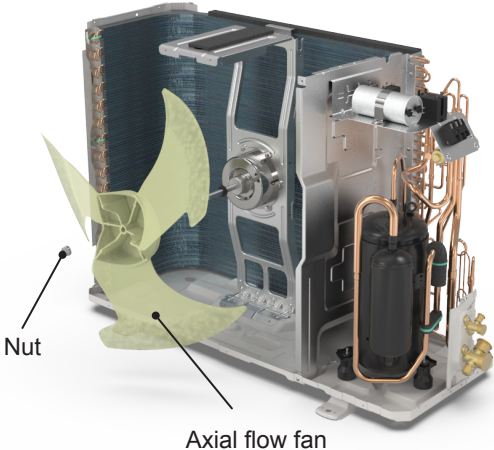
Step	Procedure
<p>14. Remove clapboard assy</p> <p>Remove the screws fixing the clapboard assy and then remove the clapboard assy.</p>	 <p>The diagram shows a refrigeration unit with a large, curved, blue-colored coil assembly on the left side. A red arrow points to a grey metal panel, labeled 'clapboard assy', which is positioned in front of the coil and the compressor. The compressor is a black cylindrical unit located on the right side of the unit.</p>
<p>15. Remove compressor</p> <p>Remove the 3 foot nuts on the compressor and then remove the compressor.</p>	 <p>The diagram shows a close-up of the compressor assembly. The compressor is a black cylindrical unit mounted on a grey metal base. Three red arrows point to the foot nuts on the compressor, which are labeled 'nut'. The compressor itself is labeled 'compressor'.</p>

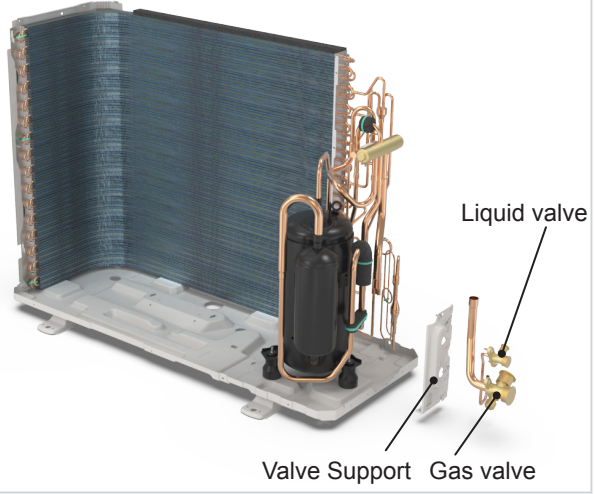
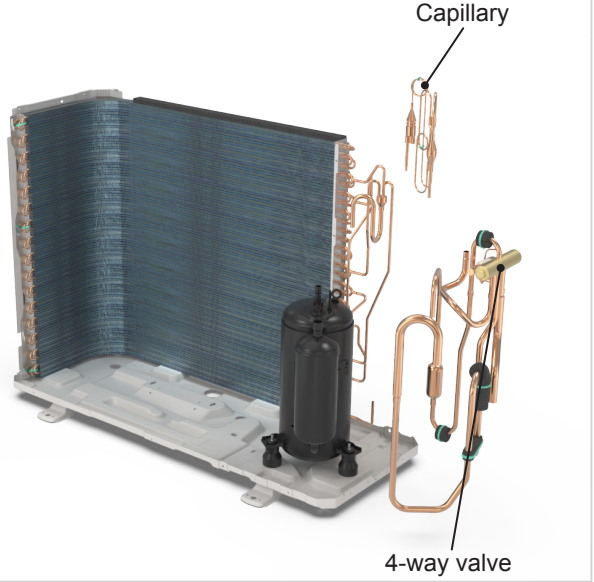
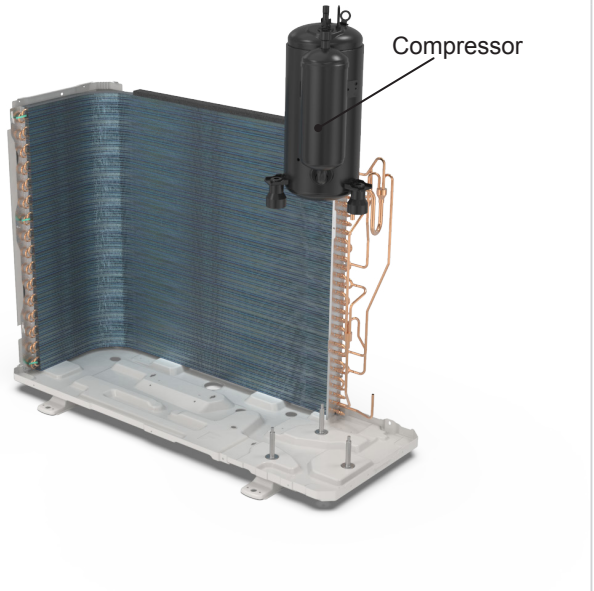
Step	Procedure
<p>4. Remove front panel assy</p>	<p>Remove connection screws connecting the front panel assy with the chassis and the motor support, and then remove the front panel assy.</p>  <p>Front panel assy</p>
<p>5. Remove right side plate assy</p>	<p>Rescrew the ground screws, remove the ground wires, loosen the screws fixing terminal board, remove the terminal board, rescrew the screws fixing the right plate, and remove the right side plate assy.</p>  <p>Right side plate assy</p>
<p>6. Remove axial flow fan</p>	<p>Remove the nut on the fan and then remove the axial flow fan.</p>  <p>Axial flow fan</p>

Step	Procedure
<p>10. Remove gas valve and liquid valve</p> <p>Remove the valve support block, remove the screws fixing the gas valve and the liquid valve, unsolder the welding joint connecting the gas valve and the liquid valve, remove them.</p> <p>Note: Discharge the refrigerant completely before unsoldering; when unsoldering, wrap the gas valve with a wet cloth completely to avoid damage to the valve caused by high temperature.</p>	 <p>The diagram illustrates the removal of the gas and liquid valves. A valve support block is shown being detached from the evaporator coil. The gas valve and liquid valve are shown being removed from the coil assembly. Labels indicate the Valve Support, Gas valve, and Liquid valve.</p>
<p>11. Remove 4-way valve and capillary</p> <p>Unsolder the welding joints connecting capillary, and then remove it.</p> <p>Unsolder the welding joints connecting the 4-way valve assembly with capillary sub-assembly, compressor and condenser; remove the 4-way valve. Cooling only unit removes Discharge Tube and Inhalation Tube.</p> <p>Note: Before unsoldering the welding joint, wrap the 4-way valve with a wet cloth completely to avoid damage to the valve caused by high temperature.</p>	 <p>The diagram illustrates the removal of the 4-way valve and capillary. The capillary tube is shown being removed from the evaporator coil. The 4-way valve is shown being removed from the coil assembly. Labels indicate the Capillary and 4-way valve.</p>
<p>12. Remove compressor</p> <p>Remove the 3 foot nuts on the compressor and then remove the compressor.</p>	 <p>The diagram illustrates the removal of the compressor. The compressor is shown being removed from the evaporator coil assembly. A label indicates the Compressor.</p>

**Caution: discharge the refrigerant completely before removal.**

Step	Procedure
1. Before disassembly	
2. Remove handle and valve cover	<p>Remove the screws fixing handle, valve cover and then remove them.</p> 
3. Remove top cover	<p>Remove the screws fixing top panel and then remove the top panel.</p> 

Step	Procedure
<p>4. Remove front panel assy</p>	<p>Remove connection screws connecting the front panel assy with the chassis and the motor support, and then remove the front panel assy.</p> 
<p>5. Remove right side plate assy</p>	<p>Rescrew the ground screws, remove the ground wires, loosen the screws fixing terminal board, remove the terminal board, rescrew the screws fixing the right plate, and remove the right side plate assy.</p> 
<p>6. Remove axial flow fan</p>	<p>Remove the nut on the fan and then remove the axial flow fan.</p> 

Step	Procedure
<p>10. Remove gas valve and liquid valve</p> <p>Remove the valve support block, remove the screws fixing the gas valve and the liquid valve, unsolder the welding joint connecting the gas valve and the liquid valve, remove them.</p> <p>Note: Discharge the refrigerant completely before unsoldering; when unsoldering, wrap the gas valve with a wet cloth completely to avoid damage to the valve caused by high temperature.</p>	
<p>11. Remove 4-way valve and capillary</p> <p>Unsolder the welding joints connecting capillary, and then remove it.</p> <p>Unsolder the welding joints connecting the 4-way valve assembly with capillary sub-assembly, compressor and condenser; remove the 4-way valve. Cooling only unit removes Discharge Tube and Inhalation Tube.</p> <p>Note: Before unsoldering the welding joint, wrap the 4-way valve with a wet cloth completely to avoid damage to the valve caused by high temperature.</p>	
<p>12. Remove compressor</p> <p>Remove the 3 foot nuts on the compressor and then remove the compressor.</p>	

Appendix:

Appendix 1: Reference Sheet of Celsius and Fahrenheit

Conversion formula for Fahrenheit degree and Celsius degree: $T_f = T_c \times 1.8 + 32$

Set temperature

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
61	60.8	16	69/70	69.8	21	78/79	78.8	26
62/63	62.6	17	71/72	71.6	22	80/81	80.6	27
64/65	64.4	18	73/74	73.4	23	82/83	82.4	28
66/67	66.2	19	75/76	75.2	24	84/85	84.2	29
68	68	20	77	77	25	86	86	30

Ambient temperature

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
32/33	32	0	55/56	55.4	13	79/80	78.8	26
34/35	33.8	1	57/58	57.2	14	81	80.6	27
36	35.6	2	59/60	59	15	82/83	82.4	28
37/38	37.4	3	61/62	60.8	16	84/85	84.2	29
39/40	39.2	4	63	62.6	17	86/87	86	30
41/42	41	5	64/65	64.4	18	88/89	87.8	31
43/44	42.8	6	66/67	66.2	19	90	89.6	32
45	44.6	7	68/69	68	20	91/92	91.4	33
46/47	46.4	8	70/71	69.8	21	93/94	93.2	34
48/49	48.2	9	72	71.6	22	95/96	95	35
50/51	50	10	73/74	73.4	23	97/98	96.8	36
52/53	51.8	11	75/76	75.2	24	99	98.6	37
54	53.6	12	77/78	77	25			

Appendix 2: Configuration of Connection Pipe

- Standard length of connection pipe (More details please refer to the specifications.)
- Min length of connection pipe for the unit with standard connection pipe of 5m, there is no limitation for the min length of connection pipe. For the unit with standard connection pipe of 7.5m and 8m, the min length of connection pipe is 3m.
- Max. length of connection pipe and max. high difference. (More details please refer to the specifications.)
- The additional refrigerant oil and refrigerant charging required after prolonging connection pipe
 - After the length of connection pipe is prolonged for 10m at the basis of standard length, you should add 5ml of refrigerant oil for each additional 5m of connection pipe.
 - The calculation method of additional refrigerant charging amount (on the basis of liquid pipe):
 - Basing on the length of standard pipe, add refrigerant according to the requirement as shown in the table. The additional refrigerant charging amount per meter is different according to the diameter of liquid pipe. See the following sheet.
 - Additional refrigerant charging amount = prolonged length of liquid pipe X additional refrigerant charging amount per meter.

Additional refrigerant charging amount for R22, R407C, R410A and R134a			
Diameter of connection pipe		Outdoor unit throttle	
Liquid pipe	Gas pipe	Cooling only(g/m)	Cooling and heating(g/m)
1/4"	3/8" or 1/2"	15	20
1/4" or 3/8"	5/8" or 3/4"	15	50
1/2"	3/4" or 7/8"	30	120
5/8"	1" or 1 1/4"	60	120

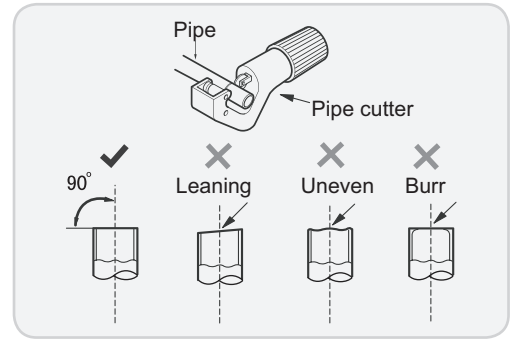
Appendix 3: Pipe Expanding Method

⚠ Note:

Improper pipe expanding is the main cause of refrigerant leakage. Please expand the pipe according to the following steps:

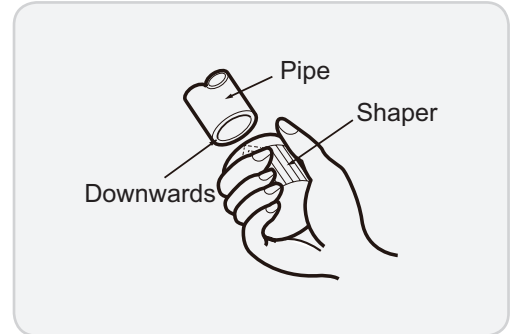
A: Cut the pipe

- Confirm the pipe length according to the distance of indoor unit and outdoor unit.
- Cut the required pipe with pipe cutter.



B: Remove the burrs

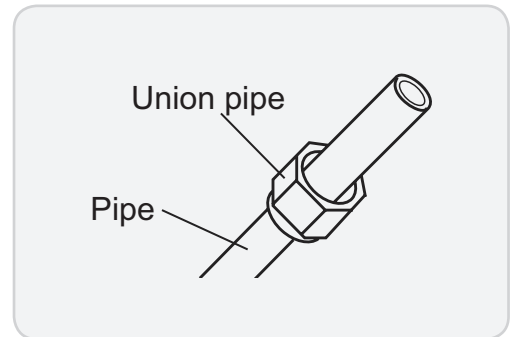
- Remove the burrs with shaper and prevent the burrs from getting into the pipe.



C: Put on suitable insulating pipe.

D: Put on the union nut

- Remove the union nut on the indoor connection pipe and outdoor valve; install the union nut on the pipe.



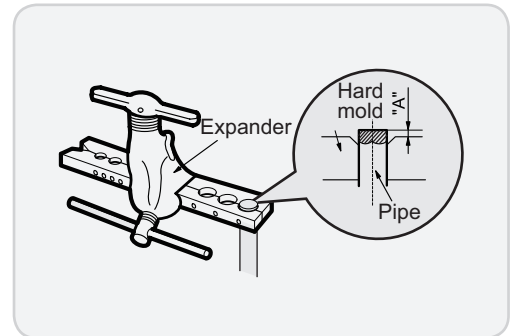
E: Expand the port

- Expand the port with expander.

⚠ Note:

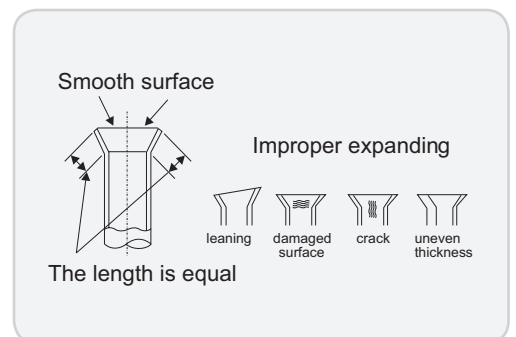
- "A" is different according to the diameter, please refer to the sheet below:

Outer diameter(mm)	A(mm)	
	Max	Min
Φ6 - 6.35 (1/4")	1.3	0.7
Φ9.52 (3/8")	1.6	1.0
Φ12 - 12.70 (1/2")	1.8	1.0
Φ16 - 15.88 (5/8")	2.4	2.2



F: Inspection

- Check the quality of expanding port. If there is any blemish, expand the port again according to the steps above.



Appendix 4: List of Resistance for Temperature Sensor

Resistance Table of Ambient Temperature Sensor for Indoor and Outdoor Units(15K)

Temp(°C)	Resistance(kΩ)
-19	138.10
-18	128.60
-16	115.00
-14	102.90
-12	92.22
-10	82.75
-8	74.35
-6	66.88
-4	60.23
-2	54.31

Temp(°C)	Resistance(kΩ)
0	49.02
2	44.31
4	40.09
6	36.32
8	32.94
10	29.90
12	27.18
14	24.73
16	22.53
18	20.54

Temp(°C)	Resistance(kΩ)
20	18.75
22	17.14
24	15.68
26	14.36
28	13.16
30	12.07
32	11.09
34	10.20
36	9.38
38	8.64

Temp(°C)	Resistance(kΩ)
40	7.97
42	7.35
44	6.79
46	6.28
48	5.81
50	5.38
52	4.99
54	4.63
56	4.29
58	3.99

Resistance Table of Tube Temperature Sensors for Indoor and Outdoor (20K)

Temp(°C)	Resistance(kΩ)
-19	181.40
-15	145.00
-10	110.30
-5	84.61
0	65.37
5	50.87
10	39.87
15	31.47

Temp(°C)	Resistance(kΩ)
20	25.01
25	20.00
30	16.10
35	13.04
40	10.62
45	8.71
50	7.17
55	5.94

Temp(°C)	Resistance(kΩ)
60	4.95
65	4.14
70	3.48
75	2.94
80	2.50
85	2.13
90	1.82
95	1.56

Temp(°C)	Resistance(kΩ)
100	1.35
105	1.16
110	1.01
115	0.88
120	0.77
125	0.67
130	0.59
135	0.52

Resistance Table of Discharge Temperature Sensor for Outdoor(50K)

Temp(°C)	Resistance(kΩ)
-30	911.400
-25	660.8
-20	486.5
-15	362.9
-10	274
-5	209
0	161
5	125.1

Temp(°C)	Resistance(kΩ)
10	98
15	77.35
20	61.48
25	49.19
30	39.61
35	32.09
40	26.15
45	21.43

Temp(°C)	Resistance(kΩ)
50	17.65
55	14.62
60	12.17
65	10.18
70	8.555
75	7.224
80	6.129
85	5.222

Temp(°C)	Resistance(kΩ)
90	4.469
95	3.841
100	3.315
105	2.872
110	2.498
115	2.182
120	1.912
125	1.682



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For product improvement, specifications and appearance in this manual are subject to change without prior notice.