GREE
Change for Life

Service Manual

GREE ELECTRIC APPLIANCES,INC.OF ZHUHAI

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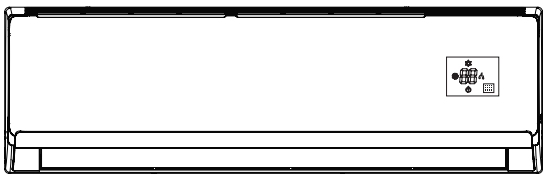
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Part Ⅰ : Technical Information

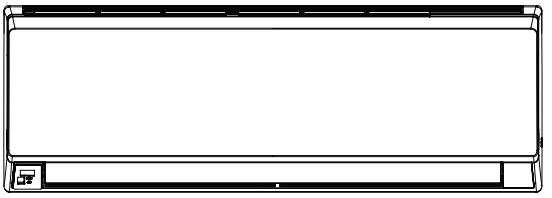
1. Summary

Indoor Unit

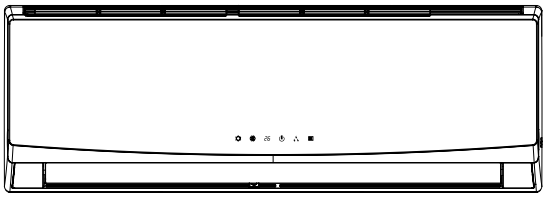
A5 Panel



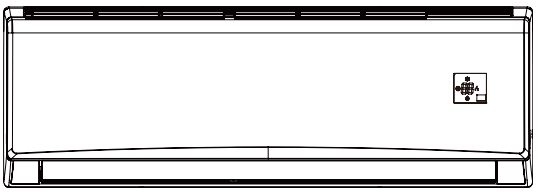
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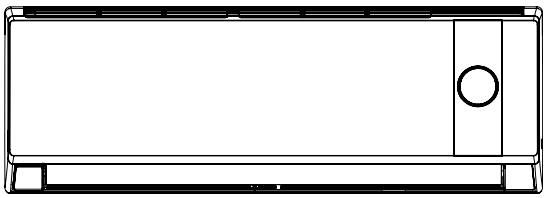
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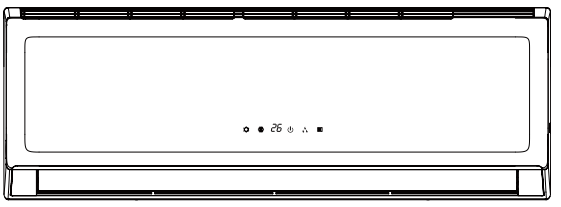
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E2 Panel

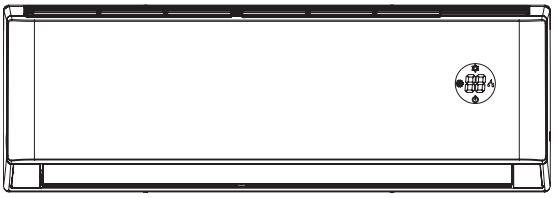


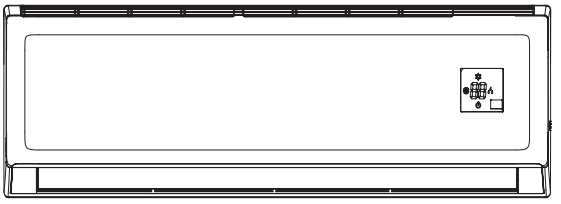
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B2 Panel

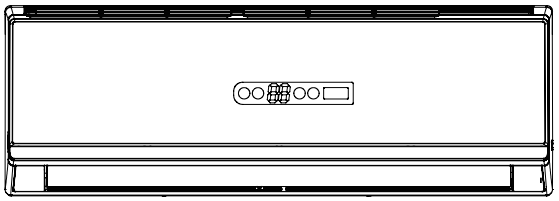
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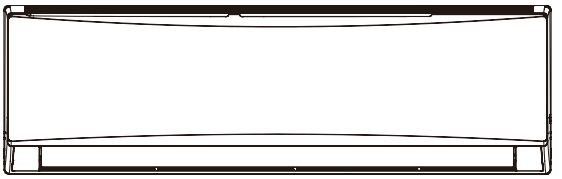




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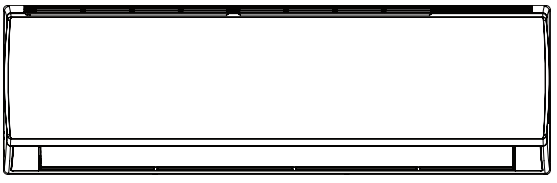
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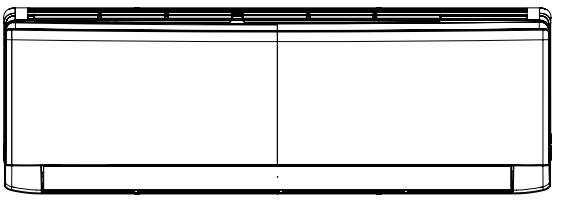




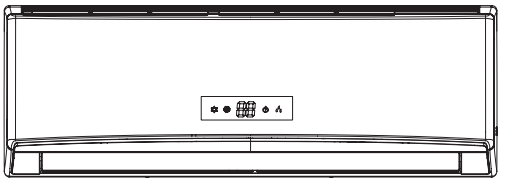
E4 Panel

A4 Panel

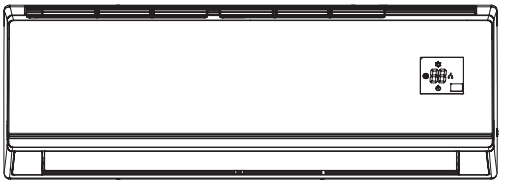




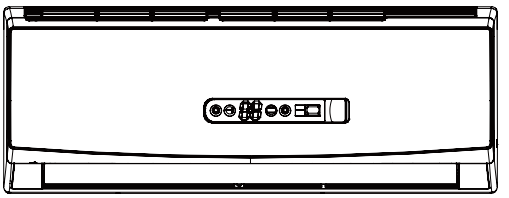
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B8 Panel

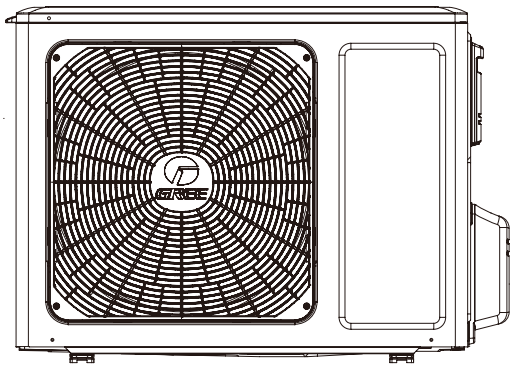


D2 Panel



Outdoor Unit

GWH12QB-K3DNA6D/O
GWH18QD-K3DNA6E/O



Remote Controller

YAN1F1



Models List:

No.	Model	Product Code	Model	Product Code	Model	Product Code	Remote Controller
1	GWH12QB-K3DNA6D	CB427004702	GWH12QB-K3DNA6D/I	CB427N04702	GWH12QB-K3DNA6D/O	CB427W04701	YAN1F1
2	GWH12QB-K3DNA6D	CB427004703	GWH12QB-K3DNA6D/I	CB427N04703			
3	GWH12QB-K3DNC4D	CB444001502	GWH12QB-K3DNC4D/I	CB444N01502			
4	GWH12QB-K3DNE2D	CB462000201	GWH12QB-K3DNE2D/I	CB462N00200			
5	GWH12QB-K3DNA5D	CB425007001	GWH12QB-K3DNA5D/I	CB425N07001			
6	GWH12QB-K3DNC4D	CB444001503	GWH12QB-K3DNC4D/I	CB444N01503			
7	GWH12QB-K3DNC2D	CB439005001	GWH12QB-K3DNC2D/I	CB439N05001			
8	GWH12QB-K3DNC2D	CB439005003	GWH12QB-K3DNC2D/I	CB439N05003			
9	GWH12QB-K3DNC8D	CB456001101	GWH12QB-K3DNC8D/I	CB456N01100			
10	GWH12QB-K3DNB2D	CB432005202	GWH12QB-K3DNB2D/I	CB432N05202			
11	GWH12QB-K3DNB4D	CB434004402	GWH12QB-K3DNB4D/I	CB434N04402			
12	GWH12QB-K3DND6D	CB460002901	GWH12QB-K3DND6D/I	CB460N02900			
13	GWH12QB-K3DND8D	CB459001001	GWH12QB-K3DND8D/I	CB459N01001			
14	GWH12QB-K3DNE4D	CB470001101	GWH12QB-K3DNE4D/I	CB470N01100			
15	GWH12QB-K3DNB8D	CB438003202	GWH12QB-K3DNB8D/I	CB438N03202			
16	GWH12QB-K3DND2D	CB461003001	GWH12QB-K3DND2D/I	CB461N03000			
17	GWH18QD-K3DNA6E	CB427006400	GWH18QD-K3DNA6E/I	CB427N06400	GWH18QD-K3DNA6E/O	CB427W06400	
18	GWH18QD-K3DNA6E	CB427006401	GWH18QD-K3DNA6E/I	CB427N06401			
19	GWH18QD-K3DNA5E	CB425007100	GWH18QD-K3DNA5E/I	CB425N07100			
20	GWH18QD-K3DNC4E	CB444002900	GWH18QD-K3DNC4E/I	CB444N02900			
21	GWH18QD-K3DNE2E	CB462000300	GWH18QD-K3DNE2E/I	CB462N00300			
22	GWH18QD-K3DNC4E	CB444002901	GWH18QD-K3DNC4E/I	CB444N02901			
23	GWH18QD-K3DNC2E	CB439008501	GWH18QD-K3DNC2E/I	CB439N08501			
24	GWH18QD-K3DNC2E	CB439008500	GWH18QD-K3DNC2E/I	CB439N08500			
25	GWH18QD-K3DNC8E	CB456001300	GWH18QD-K3DNC8E/I	CB456N01300			
26	GWH18QD-K3DNB2E	CB43200860	GWH18QD-K3DNB2E/I	CB432N08600			
27	GWH18QD-K3DNB4E	CB434008200	GWH18QD-K3DNB4E/I	CB434N08200			
28	GWH18QD-K3DNE4E	CB470000800	GWH18QD-K3DNE4E/I	CB470N00800			
29	GWH18QD-K3DND6E	CB460003800	GWH18QD-K3DND6E/I	CB460N03800			
30	GWH18QD-K3DNB6E	CB435007101	GWH18QD-K3DNB6E/I	CB435N07101			
31	GWH18QD-K3DNB8E	CB438007200	GWH18QD-K3DNB8E/I	CB438N07200			

2. Specifications

2.1 Specification Sheet

Model			1.GWH12QB-K3DNA6D 2.GWH12QB-K3DNC4D 3.GWH12QB-K3DNE2D 4.GWH12QB-K3DNA5D 5.GWH12QB-K3DNC4D 6.GWH12QB-K3DNC2D 7.GWH12QB-K3DNC8D 8.GWH12QB-K3DNB2D
Product Code			1.(CB427004702/CB427004703) 2.CB444001502 3.CB462000201 4.CB425007001 5.CB444001503 6.(CB439005001/CB439005003) 7.CB456001101 8.CB432005202
Power Supply	Rated Voltage	V~	220-240
	Rated Frequency	Hz	50
	Phases		1
Power Supply Mode			Outdoor
Cooling Capacity(Min~Max)		W	3200
Heating Capacity(Min~Max)		W	3400
Cooling Power Input(Min~Max)		W	997
Heating Power Input(Min~Max)		W	942
Cooling Current Input		A	4.50
Heating Current Input		A	4.4
Rated Input		W	1500
Rated Cooling Current		A	7.2
Rated Heating Current		A	7.7
Air Flow Volume(SH/H/M/L/SL)		m^3/h	560/480/410/290/-
Dehumidifying Volume		L/h	1.4
EER		W/W	3.21
COP		W/W	3.61
SEER			6.1
SCOP(Average)			4
SCOP(Warmer)			5.1
SCOP(Colder)			3.3
Application Area		m^2	15-22
Indoor Unit	Indoor Unit Model		1.GWH12QB-K3DNA6D/I 2.GWH12QB-K3DNC4D/I 3.GWH12QB-K3DNE2D/I 4.GWH12QB-K3DNA5D/I 5.GWH12QB-K3DNC4D/I 6.GWH12QB-K3DNC2D/I 7.GWH12QB-K3DNC8D/I 8.GWH12QB-K3DNB2D/I
	Indoor Unit Product Code		1.(CB427N04702/CB427N04703) 2.CB444N01502 3.CB462N00200 4.CB425N07001 5.CB444N01503 6.(CB439N05001/CB439N05003) 7.CB456N01100 8.CB432N05202
	Fan Type		Cross-flow
	Fan Diameter Length(DXL)	mm	Φ98X580
	Cooling Speed(SH/H/M/L/SL)	r/min	1350/1200/1050/750/-
	Heating Speed(SH/H/M/L/SL)	r/min	1350/1200/1050/850/-
	Fan Motor Power Output	W	20
	Fan Motor RLA	A	0.215
	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(LXDXW)	mm	584X22.8X266.7
	Swing Motor Model		MP24AA
	Swing Motor Power Output	W	1.5
	Fuse Current	A	3.15
	Sound Pressure Level(SH/H/M/L/SL)	dB (A)	42/37/34/28/-
	Sound Power Level(SH/H/M/L/SL)	dB (A)	55/47/44/38/-
	Dimension(WXHXD)	mm	790X275X200
	Dimension of Carton Box(LXWXH)	mm	850X339X262
	Dimension of Package(LXWXH)	mm	852X355X273
	Net Weight	kg	9
	Gross Weight	kg	11

Outdoor Unit	Model of Outdoor Unit		GWH12QB-K3DNA6D/O
	Product Code of Outdoor Unit		CB427W04701
	Compressor Manufacturer/Trademark		Zhuhai Landa Compressor Co.; Ltd.
	Compressor Model		QXA-B102zE190
	Compressor Oil		RB68EP
	Compressor Type		Rotary
	L.R.A.	A	35.00
	Compressor RLA	A	4.80
	Compressor Power Input	W	1020
	Overload Protector		/
	Throttling Method		Capillary
	Operation temp	°C	16~30
	Ambient temp (cooling)	°C	-15~48
	Ambient temp (heating)	°C	-22~24
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7.94
	Rows-fin Gap	mm	1-1.4
	Coil Length (LXDXW)	mm	731X19.05X550
	Fan Motor Speed	rpm	900
	Output of Fan Motor	W	30
	Fan Motor RLA	A	0.4
	Fan Motor Capacitor	μF	/
	Air Flow Volume of Outdoor Unit	m^3/h	2200
	Fan Type		Axial-flow
	Fan Diameter	mm	Φ438
	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	848X596X320
	Dimension of Carton Box (LXWXH)	mm	878X360X630
	Dimension of Package (LXWXH)	mm	881X363X645
	Net Weight	kg	29.5
	Gross Weight	kg	32.5
	Refrigerant		R410A
	Refrigerant Charge	kg	0.90
Connection Pipe	Length	m	5
	Gas Additional Charge	g/m	20
	Outer Diameter Liquid Pipe	mm	Φ6
	Outer Diameter Gas Pipe	mm	Φ9.52
	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.

Model			1.GWH12QB-K3DNB4D 2.GWH12QB-K3DND6D 3.GWH12QB-K3DND8D 4.GWH12QB-K3DNE4D 5. GWH12QB-K3DNB8D 6.GWH12QB-K3DND2D
Product Code			1.CB434004402 2.CB460002901 3.CB459001001 4.CB470001101 5.CB438003202 6.CB461003001
Power Supply	Rated Voltage	V~	220-240
	Rated Frequency	Hz	50
	Phases		1
Power Supply Mode			Outdoor
Cooling Capacity(Min~Max)		W	3200
Heating Capacity(Min~Max)		W	3400
Cooling Power Input(Min~Max)		W	997
Heating Power Input(Min~Max)		W	942
Cooling Current Input		A	4.50
Heating Current Input		A	4.4
Rated Input		W	1500
Rated Cooling Current		A	7.2
Rated Heating Current		A	7.7
Air Flow Volume(SH/H/M/L/SL)		m^3/h	560/480/410/290/-
Dehumidifying Volume		L/h	1.4
EER		W/W	3.21
COP		W/W	3.61
SEER			6.1
SCOP(Average)			4
SCOP(Warmer)			5.1
SCOP(Colder)			3.3
Application Area		m^2	15-22
Indoor Unit	Indoor Unit Model		1.GWH12QB-K3DNB4D/I 2.GWH12QB-K3DND6D/I 3.GWH12QB-K3DND8D/I 4.GWH12QB-K3DNE4D/I 5. GWH12QB-K3DNB8D/I 6.GWH12QB-K3DND2D/I
	Indoor Unit Product Code		1.CB434N04402 2.CB460N02900 3.CB459N01001 4.CB470N01100 5.CB438N03202 6.CB461N03000
	Fan Type		Cross-flow
	Fan Diameter Length(DXL)	mm	Φ98X580
	Cooling Speed(SH/H/M/L/SL)	r/min	1350/1200/1050/750/-
	Heating Speed(SH/H/M/L/SL)	r/min	1350/1200/1050/850/-
	Fan Motor Power Output	W	20
	Fan Motor RLA	A	0.215
	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(LXDXW)	mm	584X22.8X266.7
	Swing Motor Model		MP24AA
	Swing Motor Power Output	W	1.5
	Fuse Current	A	3.15
	Sound Pressure Level(SH/H/M/L/SL)	dB (A)	42/37/34/28/-
	Sound Power Level(SH/H/M/L/SL)	dB (A)	55/47/44/38/-
	Dimension(WXHXD)	mm	790X275X200
	Dimension of Carton Box(LXWXH)	mm	850X339X262
	Dimension of Package(LXWXH)	mm	852X355X273
	Net Weight	kg	9
	Gross Weight	kg	11

Outdoor Unit	Model of Outdoor Unit		GWH12QB-K3DNA6D/O
	Product Code of Outdoor Unit		CB427W04701
	Compressor Manufacturer/Trademark		Zhuhai Landa Compressor Co.; Ltd.
	Compressor Model		QXA-B102zE190
	Compressor Oil		RB68EP
	Compressor Type		Rotary
	L.R.A.	A	35.00
	Compressor RLA	A	4.80
	Compressor Power Input	W	1020
	Overload Protector		/
	Throttling Method		Capillary
	Operation temp	°C	16~30
	Ambient temp (cooling)	°C	-15~48
	Ambient temp (heating)	°C	-22~24
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7.94
	Rows-fin Gap	mm	1-1.4
	Coil Length (LXDXW)	mm	731X19.05X550
	Fan Motor Speed	rpm	900
	Output of Fan Motor	W	30
	Fan Motor RLA	A	0.4
	Fan Motor Capacitor	μF	/
	Air Flow Volume of Outdoor Unit	m^3/h	2200
	Fan Type		Axial-flow
	Fan Diameter	mm	Φ438
	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	848X596X320
	Dimension of Carton Box (LXWXH)	mm	878X360X630
	Dimension of Package (LXWXH)	mm	881X363X645
	Net Weight	kg	29.5
	Gross Weight	kg	32.5
	Refrigerant		R410A
	Refrigerant Charge	kg	0.90
Connection Pipe	Length	m	5
	Gas Additional Charge	g/m	20
	Outer Diameter Liquid Pipe	mm	Φ6
	Outer Diameter Gas Pipe	mm	Φ9.52
	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.

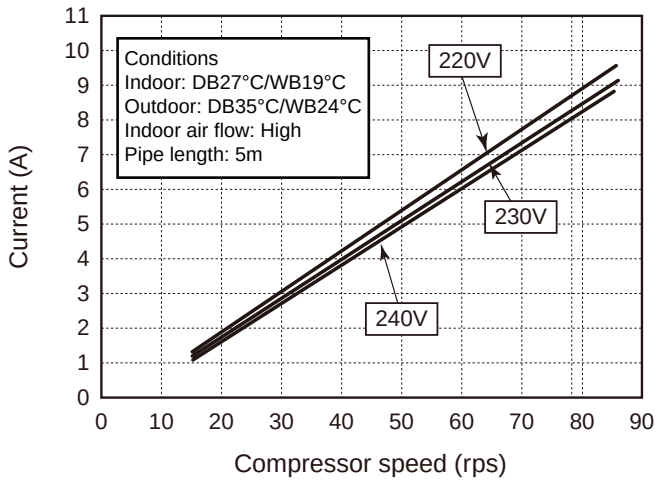
Model			1.GWH18QD-K3DNA6E 2.GWH18QD-K3DNA5E 3.GWH18QD-K3DNC4E 4.GWH18QD-K3DNE2E 5.GWH18QD-K3DNC4E 6.GWH18QD-K3DNC2E 7.GWH18QD-K3DNC8E 8.GWH18QD-K3DNB2E 9.GWH18QD-K3DNE4E 10.GWH18QD-K3DNB4E 11.GWH18QD-K3DND6E 12.GWH18QD-K3DNB6E 13.GWH18QD-K3DNB8E
Product Code			1.(CB427006400/CB427006401)2.CB425007100 3.CB444002900 4.CB462000300 5.CB444002901 6.(CB439008501/CB439008500)7.CB456001300 8.CB432008600 9.CB470000800 10.CB434008200 11.CB460003800 12.CB435007101 13.CB438007200
Power Supply	Rated Voltage	V~	220-240
	Rated Frequency	Hz	50
	Phases		1
Power Supply Mode			Outdoor
Cooling Capacity(Min~Max)		W	4600
Heating Capacity(Min~Max)		W	5000
Cooling Power Input(Min~Max)		W	1430
Heating Power Input(Min~Max)		W	1380
Cooling Current Input		A	6.34
Heating Current Input		A	6.12
Rated Input		W	1860
Rated Cooling Current		A	8.25
Rated Heating Current		A	7.45
Air Flow Volume(SH/H/M/L/SL)		m^3/h	850/720/610/520/-
Dehumidifying Volume		L/h	1.8
EER		W/W	3.22
COP		W/W	3.62
SEER			6.1
SCOP(Average)			4
SCOP(Warmer)			5.1
SCOP(Colder)			3.3
Application Area		m^2	21-31
Indoor Unit	Indoor Unit Model		1.GWH18QD-K3DNA6E/I 2.GWH18QD-K3DNA5E/I 3. GWH18QD-K3DNC4E/I 4.GWH18QD-K3DNE2E/I 5.GWH18QD-K3DNC4E/I 6.GWH18QD-K3DNC2E/I 7.GWH18QD-K3DNC8E/I 8.GWH18QD-K3DNB2E/I 9.GWH18QD-K3DNE4E/I 10.GWH18QD-K3DNB4E/I 11.GWH18QD-K3DND6E/I 12.GWH18QD-K3DNB6E/I 13.GWH18QD-K3DNB8E/I
	Indoor Unit Product Code		1.(CB427N06400/CB427N06401) 2.CB425N07100 3.CB444N02900 4.CB462N00300 5.CB444N02901 6.(CB439N08501/CB439N08500) 7.CB456N01300 8.CB432N08600 9. CB470N00800 10.CB434N08200 11.CB460N03800 12.CB435N07101 13.CB438N07200
	Fan Type		Cross-flow
	Fan Diameter Length(DXL)	mm	Φ106X706
	Cooling Speed(SH/H/M/L/SL)	r/min	1230/1130/1030/800/-
	Heating Speed(SH/H/M/L/SL)	r/min	1350/1200/1050/900/-
	Fan Motor Power Output	W	/
	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	715X25.4X304.8
	Swing Motor Model		MP35CJ
	Swing Motor Power Output	W	2.5
	Fuse Current	A	3.15
	Sound Pressure Level(SH/H/M/L/SL)	dB (A)	45/41/37/33/-
	Sound Power Level(SH/H/M/L/SL)	dB (A)	58/53/50/45/-
	Dimension(WXHXD)	mm	970X300X224
	Dimension of Carton Box(LXWXH)	mm	1038X380X305
	Dimension of Package(LXWXH)	mm	1041X383X320
	Net Weight	kg	13.5
	Gross Weight	kg	16.5

Outdoor Unit	Model of Outdoor Unit		GWH18QD-K3DNA6E/O
	Product Code of Outdoor Unit		CB427W06400
	Compressor Manufacturer/Trademark		Zhuhai Landa Compressor Co.; Ltd.
	Compressor Model		QXA-B102zE190A
	Compressor Oil		FVC68D or RB68EP
	Compressor Type		Rotary
	L.R.A.	A	35.00
	Compressor RLA	A	4.80
	Compressor Power Input	W	1020
	Overload Protector		/
	Throttling Method		Capillary
	Operation temp	°C	16~30
	Ambient temp (cooling)	°C	-15~48
	Ambient temp (heating)	°C	-15~24
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7
	Rows-fin Gap	mm	1-1.4
	Coil Length (LXDXW)	mm	742X38.1X550
	Fan Motor Speed	rpm	900
	Output of Fan Motor	W	30
	Fan Motor RLA	A	0.4
	Fan Motor Capacitor	μF	/
	Air Flow Volume of Outdoor Unit	m^3/h	2200
	Fan Type		Axial-flow
	Fan Diameter	mm	Φ438
	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)	54/-/-
	Sound Power Level (H/M/L)	dB (A)	63/-/-
	Dimension (WXHXD)	mm	848X596X320
	Dimension of Carton Box (LXWXH)	mm	878X360X630
	Dimension of Package (LXWXH)	mm	881X363X645
	Net Weight	kg	33
	Gross Weight	kg	36
	Refrigerant		R410A
	Refrigerant Charge	kg	1.1
Connection Pipe	Length	m	5
	Gas Additional Charge	g/m	20
	Outer Diameter Liquid Pipe	mm	Φ6
	Outer Diameter Gas Pipe	mm	Φ9.52
	Max Distance Height	m	10
	Max Distance Length	m	20
	Note: The connection pipe applies metric diameter.		

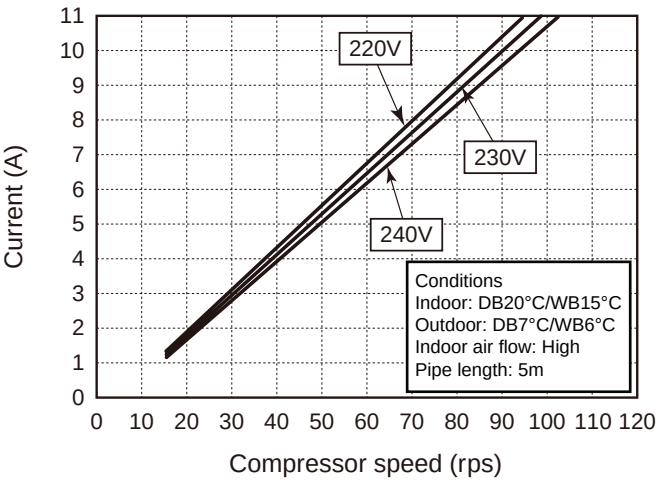
The above data is subject to change without notice; please refer to the nameplate of the unit.

2.2 Operation Characteristic Curve

Cooling



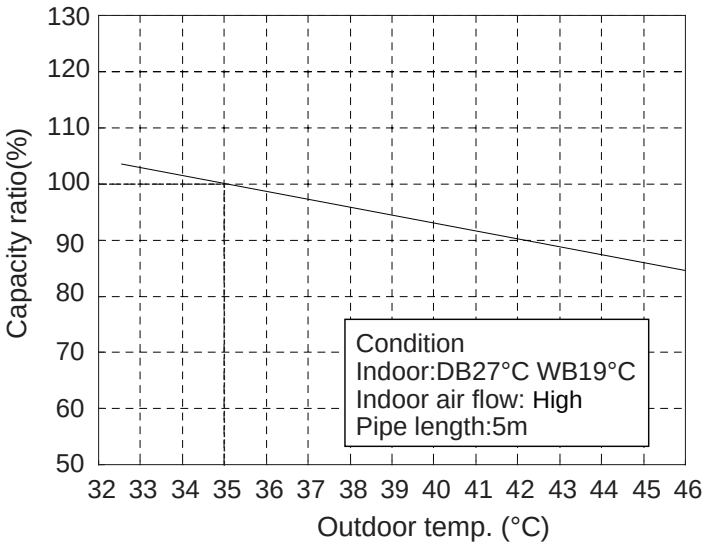
Heating



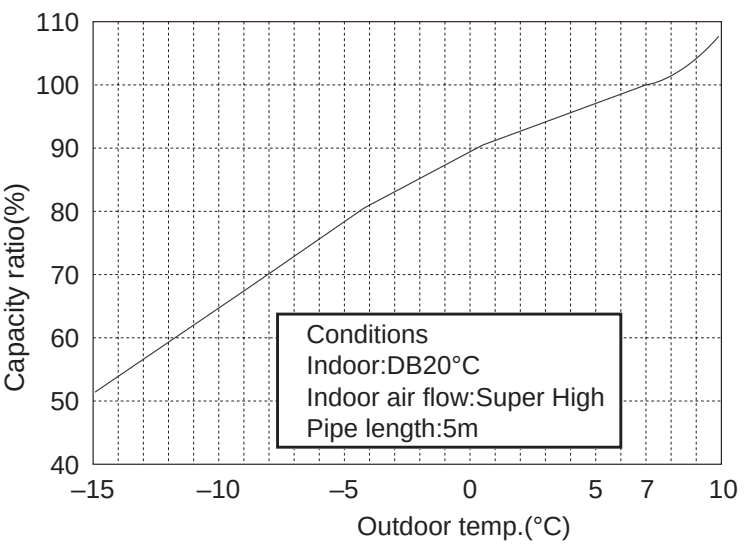
2.3 Capacity Variation Ratio According to Temperature

Heating operation ambient temperature range is -15ºC~24ºC

Cooling

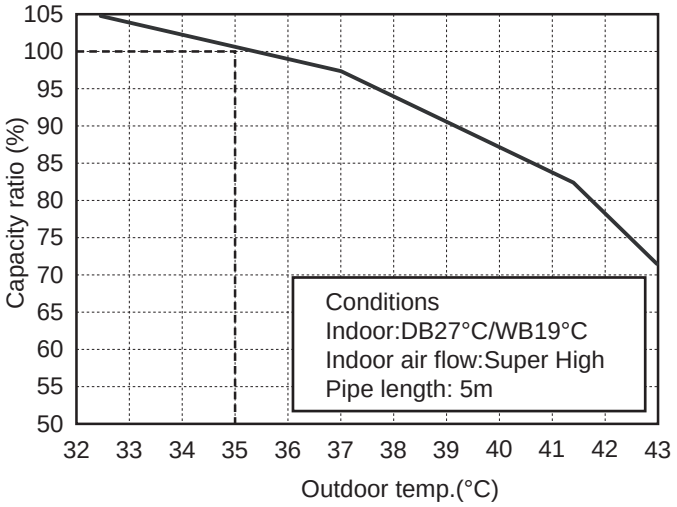


Heating

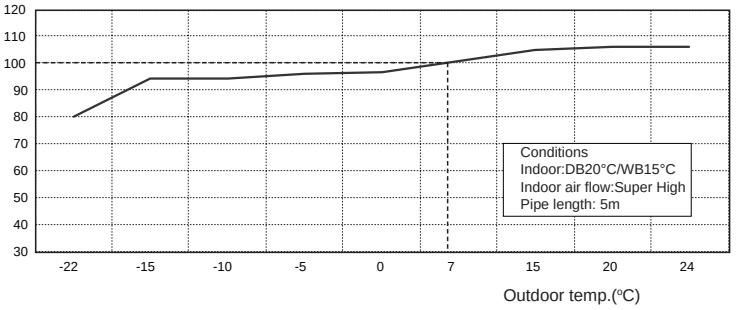


Heating operation ambient temperature range is -22ºC~24ºC

Cooling



Heating



2.4 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	Compressor frequency (Hz)
Indoor	Outdoor		P (MPa)	T1 (°C)	T2 (°C)			
27/19	35/24	12K	0.8 ~ 1.1	11 to 14	38 to 41	Super High	High	72
		18K	0.8 ~ 1.0	12 to 14	80 to 40			52

Heating:

Rated heating 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	Compressor frequency (Hz)
Indoor	Outdoor		P (MPa)	T1 (°C)	T2 (°C)			
20/15	7/6	12K	2.8 ~ 3.2	38 to 41	2 to 5	Super High	High	77
		18K	2.2 ~ 2.4	70 to 40	1 to 5			65

Instruction:

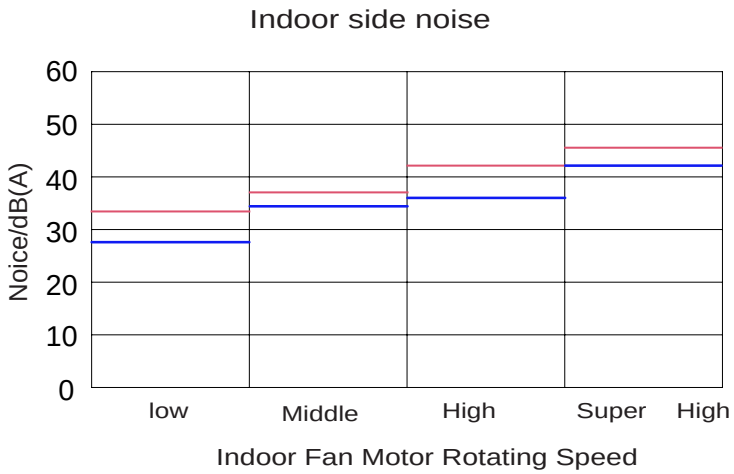
T1: Inlet and outlet pipe temperature of evaporator

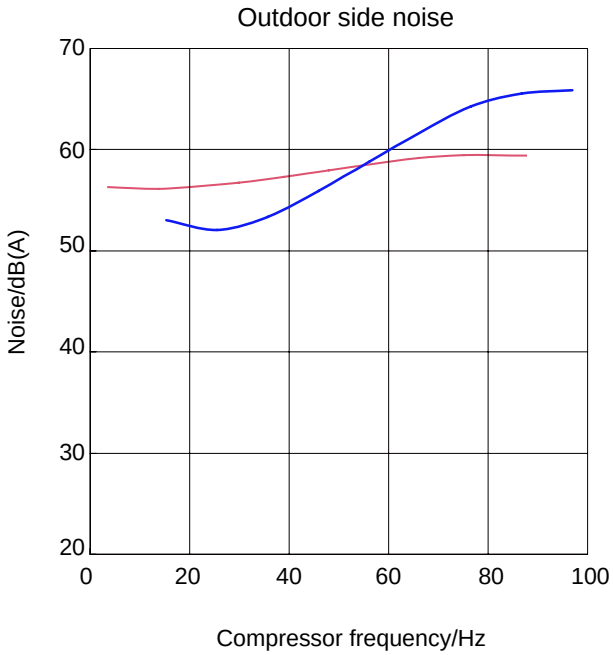
T2: Inlet and outlet pipe temperature of condenser

P: Pressure at the side of big valve

Connection pipe length: 5 m.

2.5 Noise Curve

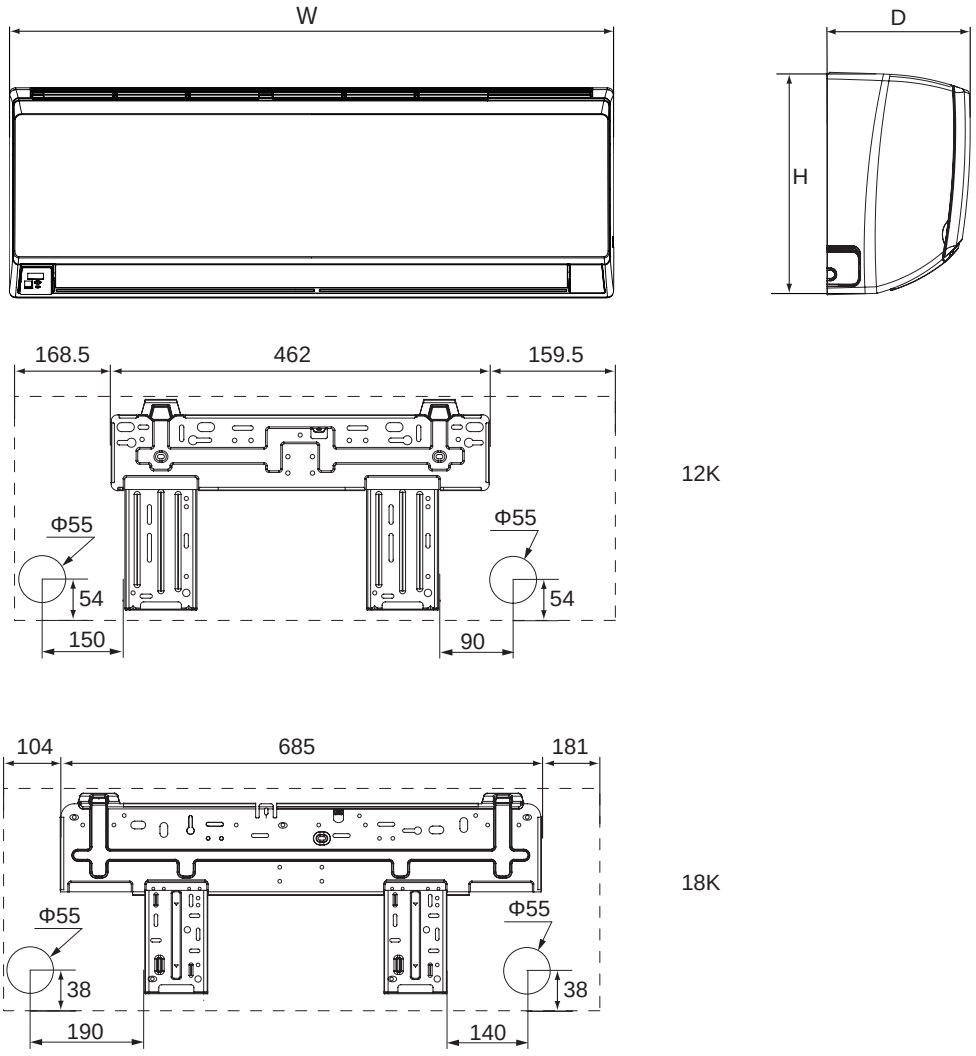




12K 18K

3. Outline Dimension Diagram

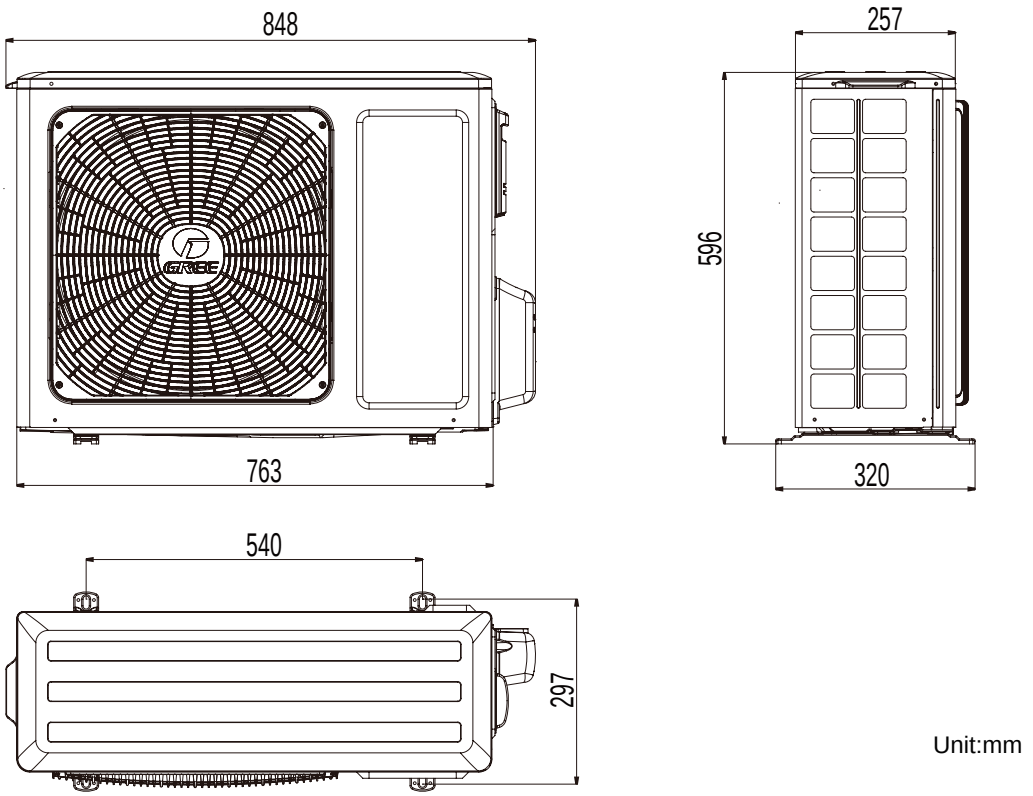
3.1 Indoor Unit



Unit:mm

Models	W	H	D
12K	790	275	200
18K	970	300	224

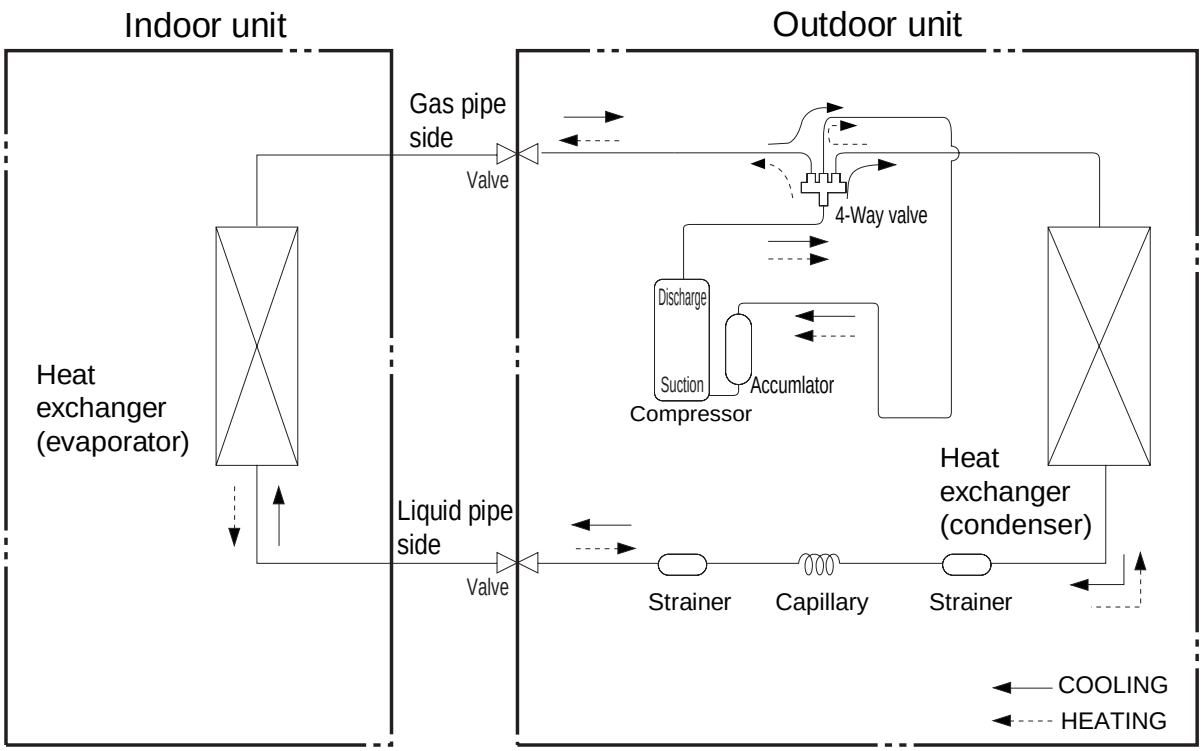
3.2 Outdoor Unit



Unit:mm

4. Refrigerant System Diagram

Cooling and heating model



Connection pipe specification:
Liquid pipe:1/4" (6mm)
Gas pipe:3/8" (9.52mm)

5. Electrical Part

5.1 Wiring Diagram

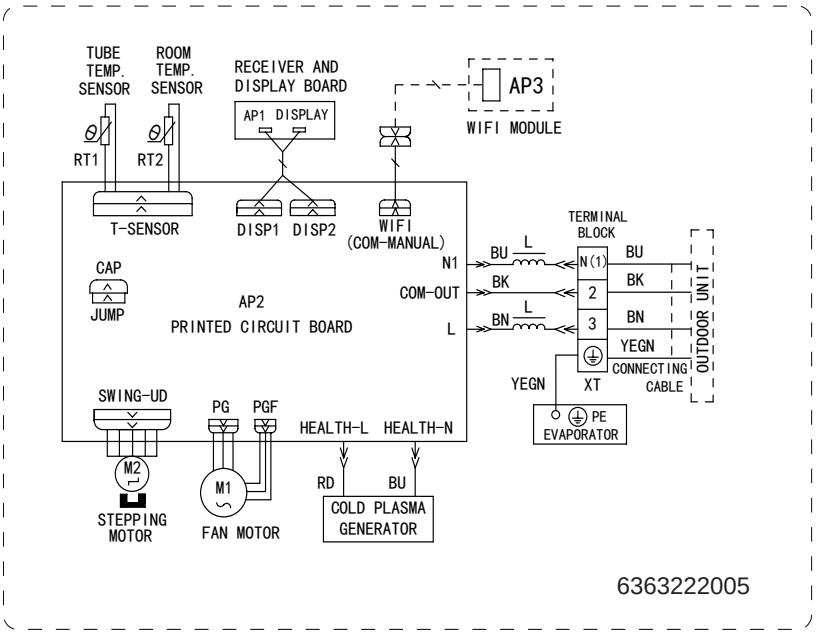
●Instruction

Symbol	Symbol Color	Symbol	Symbol Color	Symbol	Name
WH	White	GN	Green	CAP	Jumper cap
YE	Yellow	BN	Brown	COMP	Compressor
RD	Red	BU	Blue	⏚	Grounding wire
YEGN	Yellow/Green	BK	Black	/	/
VT	Violet	OG	Orange	/	/

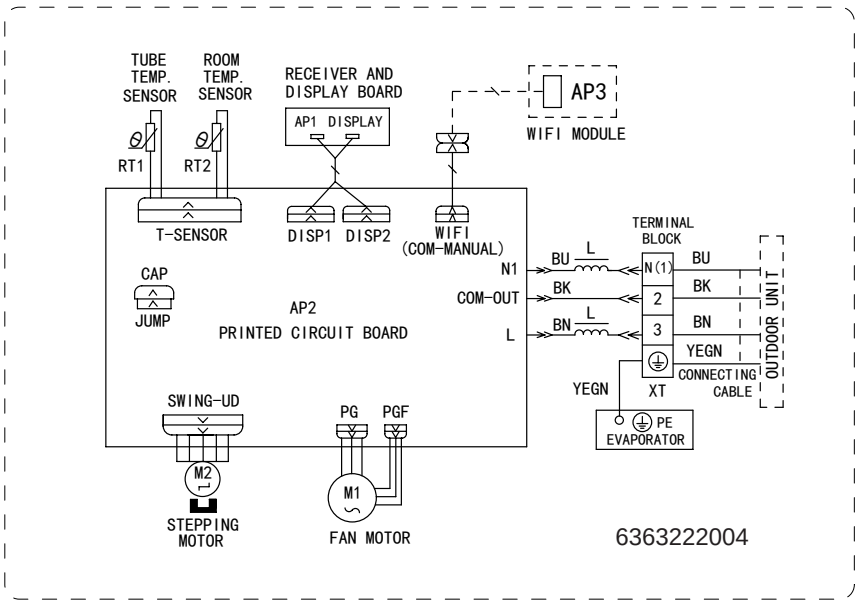
Note: Jumper cap is used to determine fan speed and the swing angle of horizontal lover for this model.

● Indoor Unit

GWH12QB-K3DNA6D/I(CB427N04702) GWH12QB-K3DNA5D/I GWH12QB-K3DNC4D/I(CB444N01503)
GWH18QD-K3DNA6E/I(CB427N06400) GWH18QD-K3DNA5E/I GWH18QD-K3DNC4E/I(CB444N02901)
GWH12QB-K3DNC2D/I(CB439N05001) GWH18QD-K3DNC2E/I(CB439N08500) GWH12QB-K3DNC8D/I
GWH18QD-K3DNC8E/I GWH18QD-K3DNE4E/I GWH18QD-K3DNB4E/I GWH18QD-K3DND6E/I
GWH12QB-K3DND2D/I (CB461N03000)

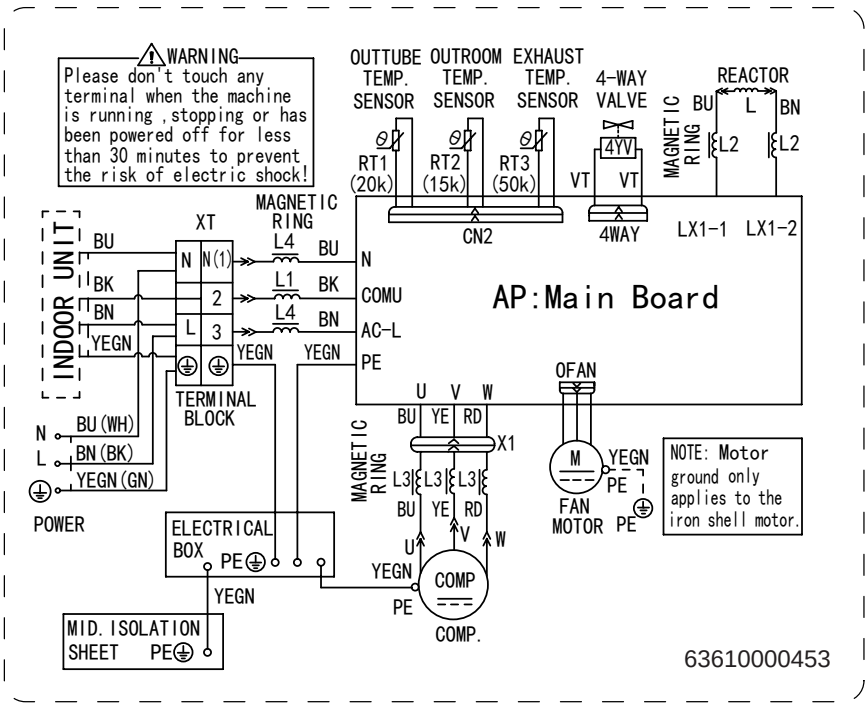


GWH12QB-K3DNC4D/I(CB444N01502) GWH12QB-K3DNE2D/I GWH18QD-K3DNC4E/I(CB444N02900) GWH18QD-K3DNE2E/I
GWH12QB-K3DNA6D/I(CB427N04703) GWH18QD-K3DNA6E/I(CB427N06401) GWH12QB-K3DNC2D/I(CB439N05003)
GWH18QD-K3DNC2E/I(CB439N08501) GWH12QB-K3DNB2D/I GWH18QD-K3DNB2E/I GWH18QD-K3DNB6E/I
GWH12QB-K3DNB8D/I(CB438N03202) GWH18QD-K3DNB8E/I(CB438N07200)

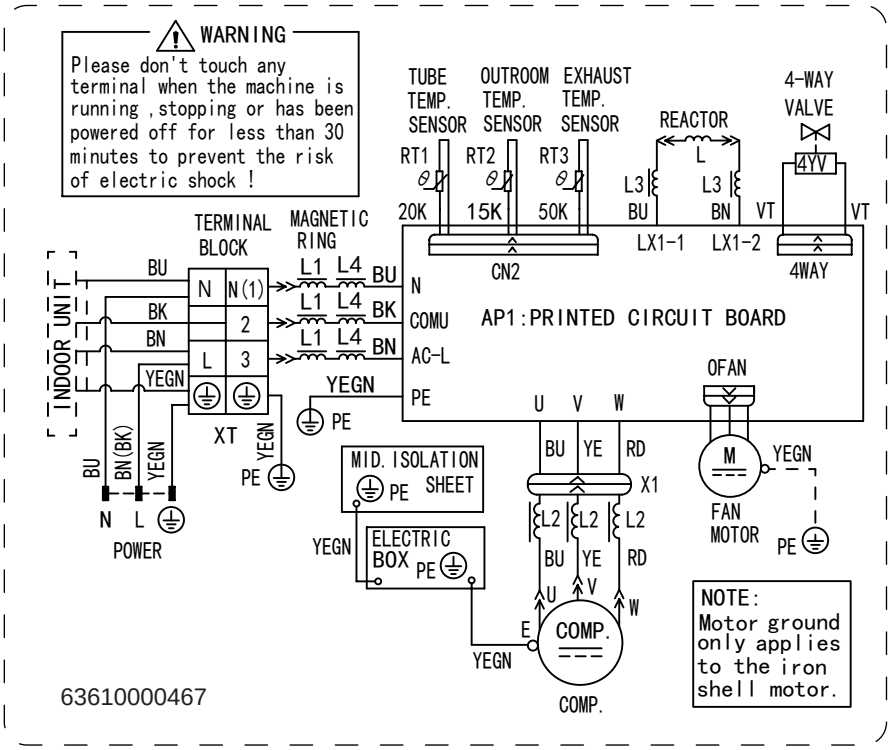


● Outdoor Unit

GWH12QB-K3DNA6D/O



GWH18QD-K3DNA6E/O

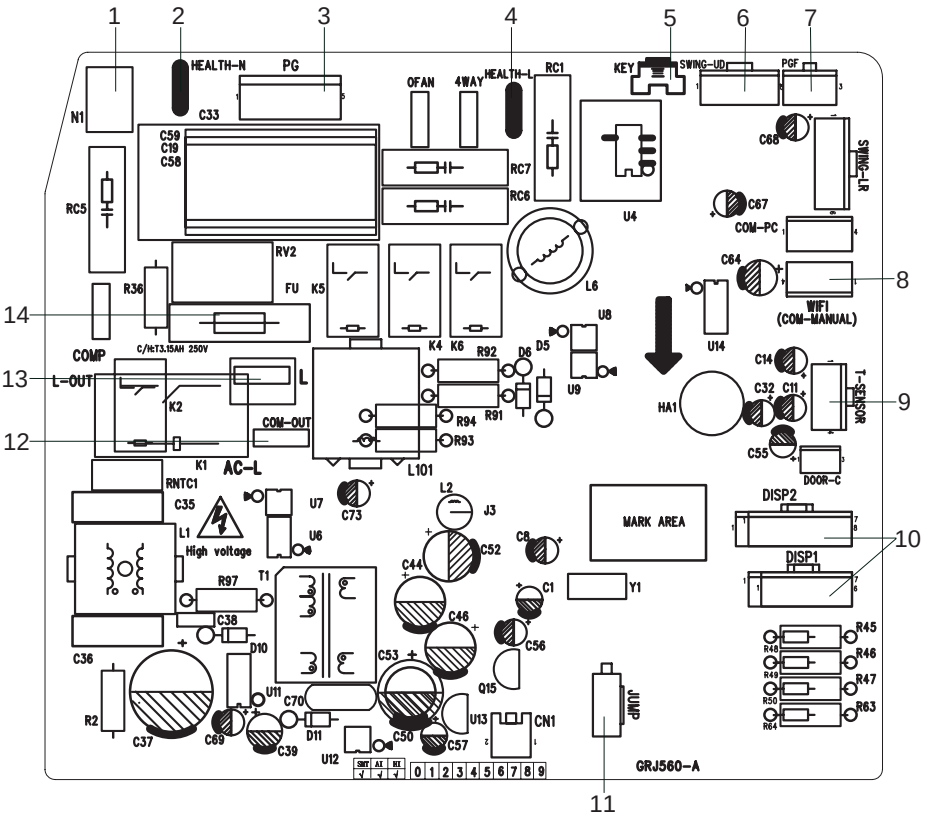


These circuit diagrams are subject to change without notice, please refer to the one supplied with the unit.

5.2 PCB Printed Diagram

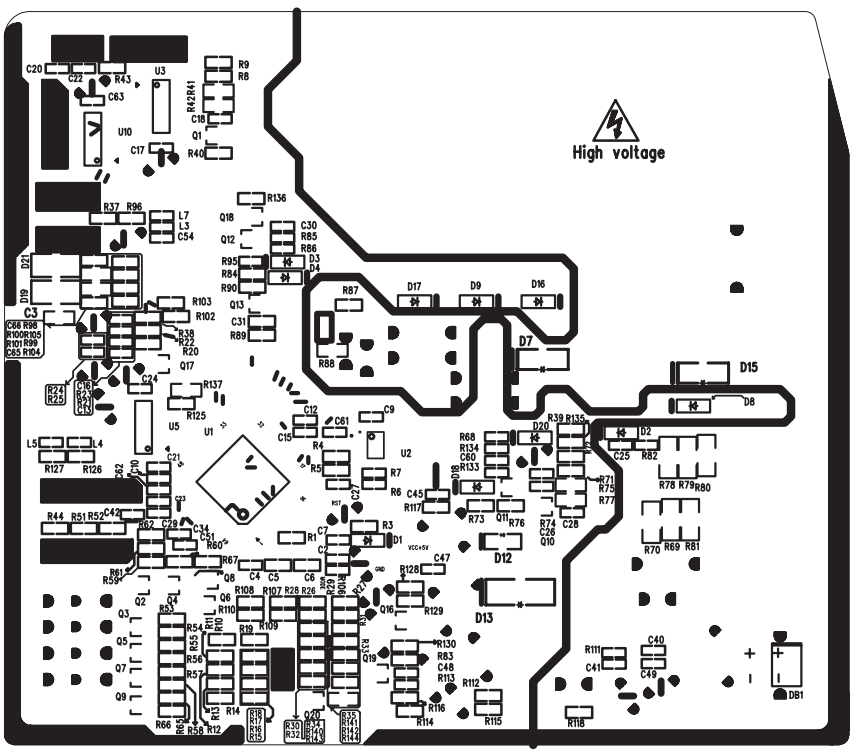
Indoor Unit

● Top view



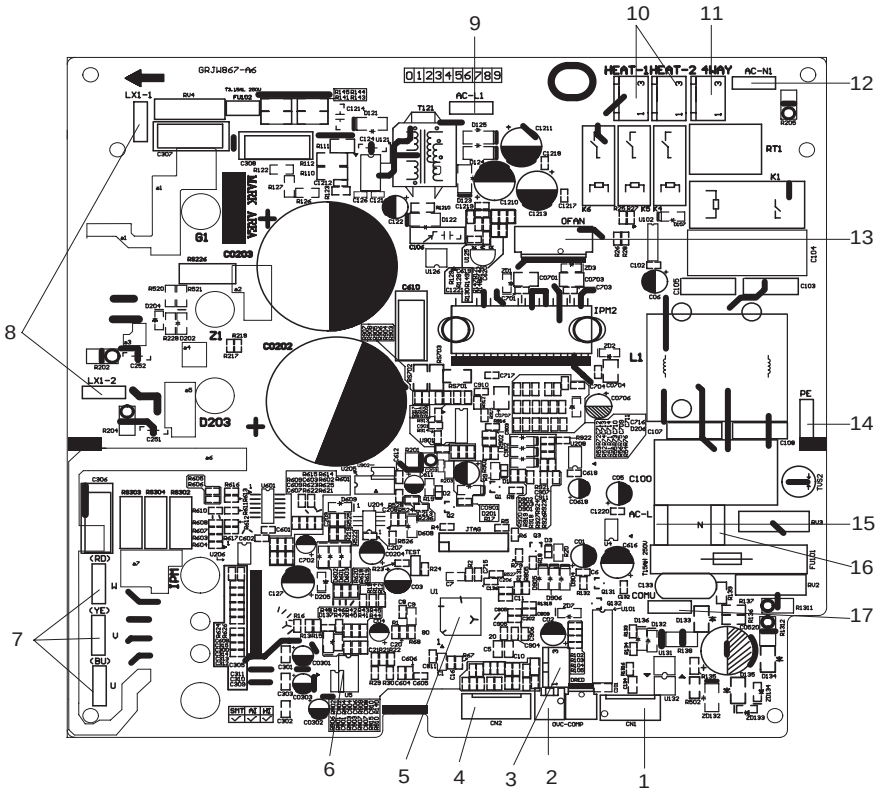
1	Neutral wire terminal
2	Interface of health function neutral wire
3	Motor needle stand
4	Interface of health function live wire
5	Auto button
6	Up&down swing motor
7	Interface of up & down swing motor
8	WIFI
9	Temperature sensor
10	Terminal for display board connection
11	Jump
12	Terminal with outdoor unit communication wire
13	Live wire terminal
14	Fuse

● Bottom view



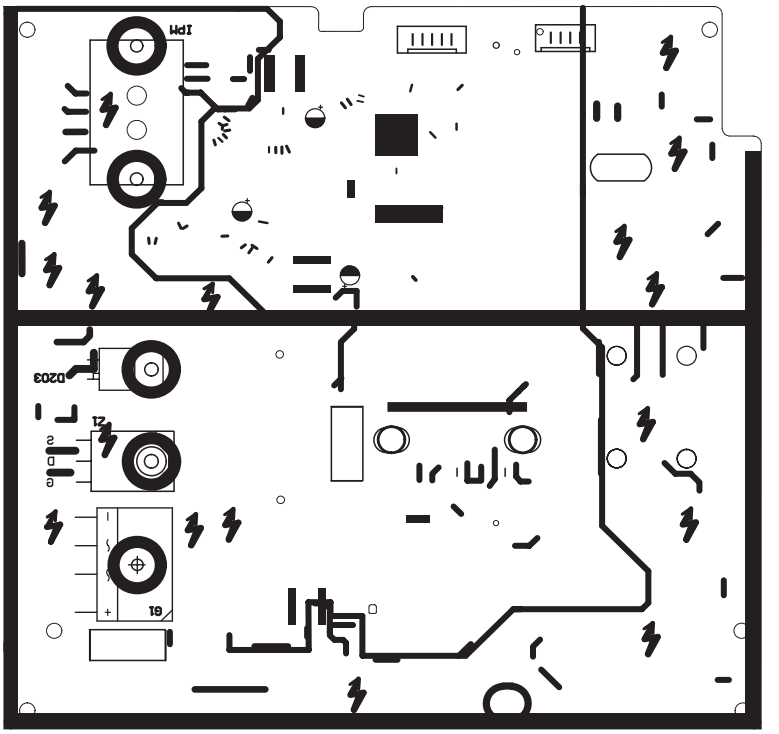
Outdoor Unit

• Top view



NO	NAME
1	Interface of electronic expansion valve
2	Overload interface of compressor
3	Terminal of DRED
4	Interface of temperature sensor
5	Main board of IC
6	Eeprom
7	Interface of compressor wire WVU
8	Reactor wiring terminal
9	DRED Live wire interface
10	Interface of electric heating
11	4-way valve terminal
12	DRED Interface of netural wire
13	Terminal of outdoor fan
14	Interface of earthing wire
15	Live wire interface
16	Neutral wire terminal
17	Communication wire

• Bottom view



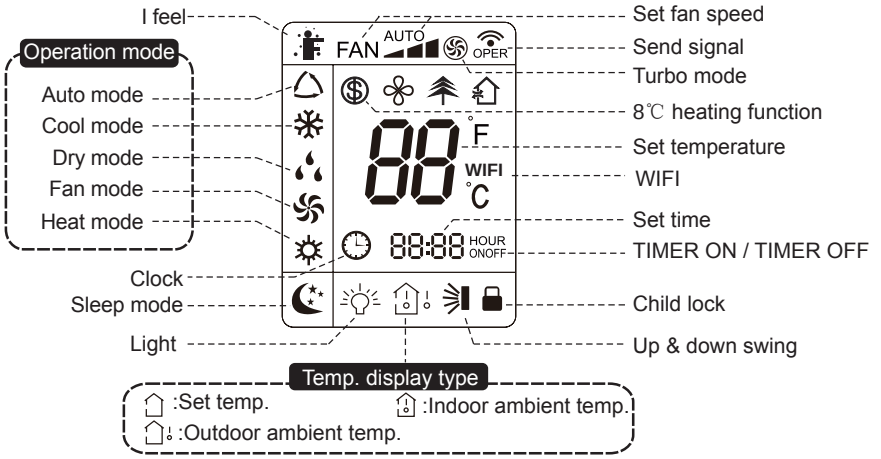
6. Function and Control

6.1 Remote Controller Introduction of YAN1F1



1. ON/OFF button
2. MODE button
3. FAN button
4. SWING button
5. TURBO button
6. ▲/ ▼button
7. SLEEP button
8. TEMP button
9. I FEEL button
10. LIGHT button
11. CLOCK button
12. TIMER ON / TIMER OFF button

Introduction for icons on display screen



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 doesnt 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. Operation indictor " ⏻ " is ON (red indicator). 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 “de” 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 corre- sponding 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.

1. ON/OFF button

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

2. ▲ button

Press this button to increase set temperature. Holding it down above 2 seconds rapidly increases set temperature.

In AUTO mode, set temperature is not adjustable.

3. MODE 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:

AUTO ▶ COOL ▶ DRY ▶ FAN ▶HEAT*

* Note: Only for models with heating function.

After energization, AUTO mode is defaulted. In AUTO mode, the set temperature will not be displayed on the LCD, and the unit will automatically select the suitable operation mode in accordance with the room temperature to make indoor room comfortable.

4. SWING button

Press this button to set up & down swing angle, which circularly changes as below:



This remote controller is universal . If any command , or is sent out,the unit will carry out the command as indicates the guide louver swings as:

5. ▼button

Press this button to decrease set temperature. Holding it down above 2 seconds rapidly decreases set temperature. In AUTO mode, set temperature is not adjustable.

6. FAN button

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



Low speed Medium speed High speed

7. TIMER OFF button

Press this button to initiate the auto-off timer. To cancel the auto-timer program, simply press the button again.TIMER OFF setting is the same as TIMER ON.

8. CLOCK button

Press CLOCK button, blinking. Within 5 seconds, pressing ▲ or ▼ button adjusts the present time. Holding down either button above 2 seconds increases or decreases the time by 1 minute every 0.5 second and then by 10 minutes every 0.5 second. During blinking after setting, press CLOCK button again to confirm the setting, and then will be constantly displayed.

9. TIMER ON button

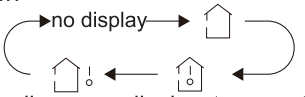
Press this button to initiate the auto-ON timer. To cancel the auto-timer program, simply press this button again.After press of this button, disappears and "ON "blinks. 0 0:00 is displayed for ON timesetting. Within 5 seconds, press ▲ or ▼ button to adjust the time value. Every press of either button changes the time setting by 1 minute. Holding down either button rapidly changes the time setting by 1 minute and then 10 minutes. Within 5 Seconds after setting, press TIMER ON button to confirm.

10. SLEEP button

Press this button to go into the SLEEP operation mode. Press it again to cancel this function. This function is available in COOL, HEAT (Only for models with heating function) to maintain the most comfortable temperature for you.

11. 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:



When selecting " " with remote controller or no display, temperature indicator on indoor unit displays set temperature; When selecting " " with remote controller, temperatureindicator on indoor unit displays indoor ambient temperature; 3s later or within 3s itreceives other remote controller signal that will return to display the setting temperature.

Caution:

• This model hasn't outdoor ambient temperature display function. While remote controllercan operate " " and indoor unit displays set temperature.

• It's defaulted to display set temperature when turning on the unit.

• Only for the models with temperature indicator on indoor unit.

12.TURBO button

Press this button to activate / deactivate the Turbo function which enables the unit to reach the preset temperature in the shortest time. In COOL mode, the unit will blow strong cooling air at super high fan speed. In HEAT mode, the unit will blow strong heating air at super high fan speed.

13. X-FAN | button

X-FAN function: In COOL or DRY mode, the icon is displayed and the indoor fan willcontinue operation for 2 minutes in order to dry the indoor unit even though you haveturned off the unit. After energization, X-FAN OFF is defaulted. X-FAN is not available in AUTO, FAN or HEAT mode.

function: turn on the display's light and press this button again to turn off the display's light. If the light is turned on, is displayed. If the light is turned off, disappears.

14. I FEEL button

Press this button to turn on I FEEL function. The unit automatically adjust temperature according to the sensed temperature. Press this button again to cancel I FEEL function.

15. / button

Press this button to achieve the on and off of healthy and scavenging functions inoperation status. Press this button for the first time to start scavenging function; LCD displays " ". Press the button for the second time to start healthy and scavengingfunctions simultaneously; LCD displays " " and " ". Press this button for the third time to quit healthy and scavenging functions simultaneously. Press the button for the fourth time to start healthy function; LCD display " ". Press this button again to repeat the operation above. (This function is applicable to partial of models)

Function introduction for combination buttons

Combination of "▲" and "▼" buttons: About lock

Press "▲" and "▼" buttons simultaneously 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 ℃ and ℉ .

Combination of "TEMP" and "CLOCK" buttons:
About Energy-saving Function

Press "TEMP" and "CLOCK" 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 "CLOCK" buttons:
About 8℃ Heating Function

Press "TEMP" and "CLOCK" simultaneously in HEAT mode to start 8℃ Heating Function Nixie tube on the remote controller displays " " and a selected temperature of "8℃ ".(46 ℉ if Fahrenheit is adopted). Repeat the operation to quit the function.

About Back-lighting Function

The unit lights for 4s when energizing for the first time, and 3s for later press.

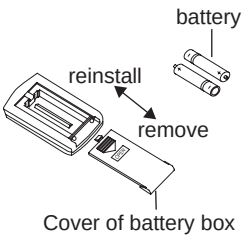
Combination “MODE” and “TURBO” buttons: About WIFI fuction

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.

Operation guide

1. After putting through the power, press "ON/OFF" button on remote controller to turn on the air conditioner.
2. Press "MODE" button to select your required mode: AUTO, COOL, DRY, FAN,HEAT.
3. Press "▲" or "▼" button to set your required temperature. (Temperature can’t be adjusted under auto mode).
4. Press "FAN" button to set your required fan speed: auto, low, medium and high speed.
5. Press "SWING" button to select fan blowing angle.

Replacement of batteries in remote controller



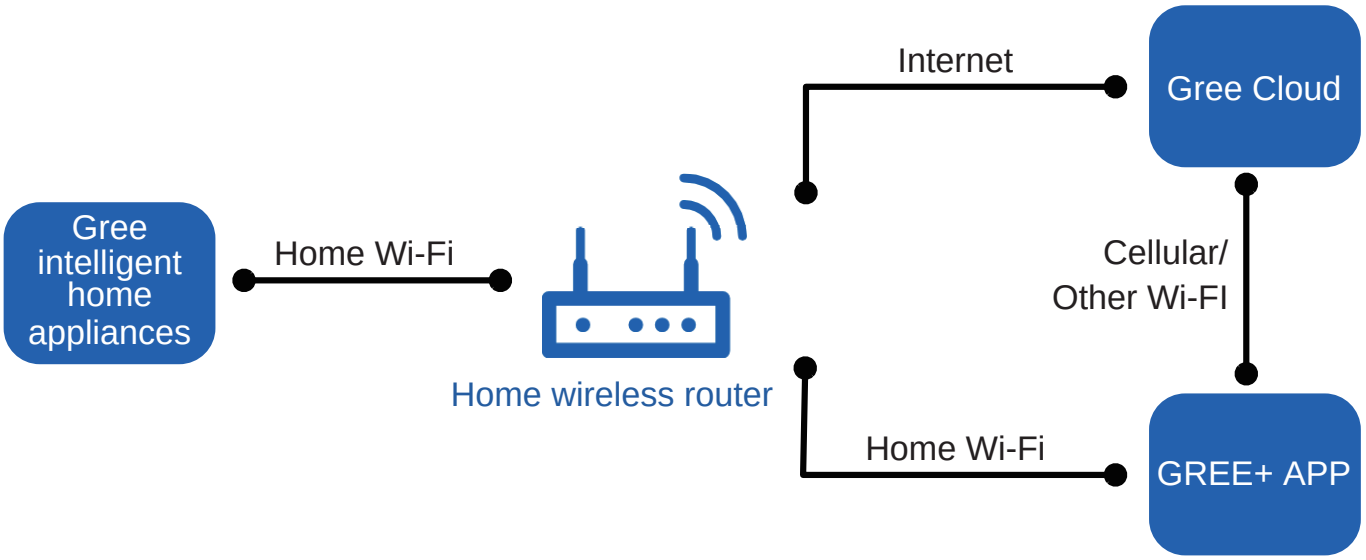
1. Press the back side of remote controller marked with"OPEN", as show in the fig, and then push out the cover of battery box along the arrow direction.
2. Replace two 7# (AAA 1.5V) dry batteries, and make sure the position of "▲" polar and "▼" polar are correct.
3. Reinstall the cover of battery box.

Note:

- 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.

6.2 GREE+ App Operation Manual

Control Flow Chart



Operating Systems

Requirement for User's smart phone:

iOS system
Support iOS7.0 and above version

Android system
Support Android 4.0 and above version

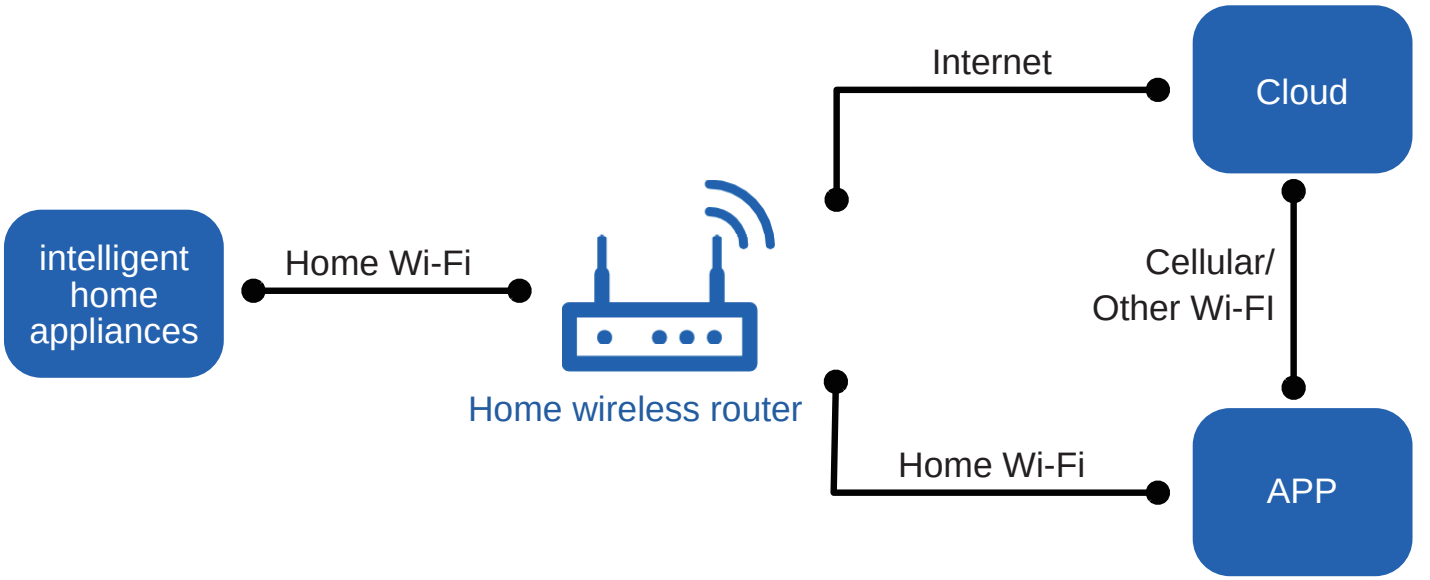
Download and installation

GREE+ App Download Linkage

Scan the QR code or search "GREE+" in the application market to download and install it. When "GREE+" App is installed, register the account and add the device to achieve long-distance control and LAN control of Gree smart home appliances.
For more information, please refer to "Help" in App.

6.3 Ewpe Smart App Operation Manual

Control Flow Chart



Operating Systems

Requirement for User's smart phone:

iOS system
Support iOS7.0 and above version

Android system
Support Android 4.0 and above version

Download and installation

App Download Linkage

Scan the QR code or search "Ewpe Smart" in the application market to download and install it. When "Ewpe Smart" App is installed, register the account and add the device to achieve long-distance control and LAN control of smart home appliances.
For more information, please refer to "Help" in App.

6.4 Brief Description of Modes and Functions

1.Basic function of system

(1)Cooling mode

(1) Under this mode, fan and swing operates at setting status. Temperature setting range is 16~30^{O}C.

(2) During malfunction of outdoor unit or the unit is stopped because of protection, indoor unit keeps original operation status.

(2)Drying mode

(1) Under this mode, fan operates at low speed and swing operates at setting status. Temperature setting range is 16~30^{O}C.

(2) During malfunction of outdoor unit or the unit is stopped because of protection, indoor unit keeps original operation status.

(3) Protection status is same as that under cooling mode.

(4) Sleep function is not available for drying mode.

(3)Heating mode

(1) Under this mode, Temperature setting range is 16~30^{O}C.

(2) Working condition and process for heating mode:

When turn on the unit under heating mode, indoor unit enters into cold air prevention status. When the unit is stopped or at OFF status, and indoor unit has been started up just now, the unit enters into residual heat-blowing status.

(4)Working method for AUTO mode:

1.Working condition and process for AUTO mode:

a.Under AUTO mode, standard heating Tpreset=20^{O}C and standard cooling Tpreset=25^{O}C. The unit will switch mode automatically according to ambient temperature.

2.Protection function

a. During cooling operation, protection function is same as that under cooling mode.

b. During heating operation, protection function is same as that under heating mode.

3. Display: Set temperature is the set value under each condition. Ambient temperature is (Tamb.-Tcompensation) for heat pump unit and Tamb. for cooling only unit.

4. If theres I feel function, Tcompensation is 0. Others are same as above.

(5)Fan mode

Under this mode, indoor fan operates at set fan speed. Compressor, outdoor fan, 4-way valve and electric heating tube stop operation. Indoor fan can select to operate at high, medium, low or auto fan speed. Temperature setting range is 16~30^{O}C.

2. Other control

(1) Buzzer

Upon energization or availably operating the unit or remote controller, the buzzer will give out a beep.

(2) Auto button

If press this auto button when turning off the unit, the complete unit will operate at auto mode. Indoor fan operates at auto fan speed and swing function is turned on. Press this auto button at ON status to turn off the unit.

(3) Auto fan

Heating mode: During auto heating mode or normal heating ode, auto fan speed will adjust the fan speed automatically according to ambient temperature and set temperature.

(4) Sleep

After setting sleep function for a period of time, system will adjust set temperature automatically.

(5) Timer function:

General timer and clock timer functions are compatible by equipping remote controller with different functions.

(6) Memory function

memorize compensation temperature, off-peak energization value.

Memory content: mode, up&down swing, light, set temperature, set fan speed, general timer (clock timer cant be memorized).

After power recovery, the unit will be turned on automatically according to memory content.

(7) Health function

During operation of indoor fan, set health function by remote controller. Turn off the unit will also turn off health function.

Turn on the unit by pressing auto button, and the health is defaulted ON.

(8)I feel control mode

After controller received I feel control signal and ambient temperature sent by remote controller, controller will work according to the ambient temperature sent by remote controller.

(9)Compulsory defrosting function

(1) Start up compulsory defrosting function

Under ON status, set heating mode with remote controller and adjust the temperature to 16^{O}C. Press "+, -, +, -, +,-" button successively within 5s and the complete unit will enter into compulsory defrosting status. Meanwhile, heating indicator on indoor unit will ON 10s and OFF 0.5s successively. (Note: If complete unit has malfunction or stops operation due to protection, compulsory defrosting function can be started up after malfunction or protection is resumed.

(2) Exit compulsory defrosting mode

After compulsory defrosting is started up, the complete unit will exit defrosting operation according to the actual defrosting result, and the complete unit will resume normal heating operation.

(10)Refrigerant recovery function:

(1) Enter refrigerant recycling function

Within 5min after energizing (unit ON or OFF status is ok), continuously press LIGHT button for 3 times within 3s to enter refrigerant recycling mode; Fo is displayed and refrigerant recycling function is started. At this moment, the maintenance people closes liquid valve. After 5min, stick the thimble of maintenance valve with a tool. If there is no refrigerant spraying out, close the gas valve immediately and then turn off the unit to remove the connection pipe.

(2) Exit refrigerant recycling function

After entering refrigerant recycling mode, when receive any remote control signal or enter refrigerant recycling mode for 25min, the unit will exit refrigerant recycling mode automatically If the unit is in standby mode before refrigerant recycling, it will be still in standby mode after finishing refrigerant recycling; if the unit is in ON status before refrigerant recycling, it will still run in original operation mode.

(11)Ambient temperature display control mode

1. When user set the remote controller to display set temperature (corresponding remote control code: 01), current set temperature will be displayed.

2. Only when remote control signal is switched to indoor ambient temperature display status (corresponding remote control code: 10) from other display status (corresponding remote control code: 00, 01,11),controller will display indoor ambient temperature for 3s and then turn back to display set temperature.

Under this mode, indoor fan operates at set fan speed. Compressor, outdoor fan, 4-way valve and electric heating tube stop operation. Indoor fan can select to operate at high, medium, low or auto fan speed. Temperature setting range is 16~30^{O}C.

(12)Off-peak energization function:

Adjust compressors minimum stop time. The original minimum stop time is 180s and then we change to:

The time interval between two start-ups of compressor cant be less than 180+T s(0≤T≤15). T is the variable of controller. Thats to say the minimum stop time of compressor is 180s~195s. Read-in T into memory chip when refurbish the memory chip each time. After power recovery, compressor can only be started up after 180+T s at least.

(13) SE control mode

The unit operates at SE status.

(14) X-fan mode

When X-fan function is turned on, after turn off the unit, indoor fan will still operate at low speed for 2min and then the complete unit will be turned off. When x-fan function is turned off, after turn off the unit, the complete unit will be turned off directly.

(15) 8ºC heating function

Under heating mode, you can set 8ºC heating function by remote controller. The system will operate at 8ºC set temperature.

(16) Turbo fan control function

Set turbo function under cooling or heating mode to enter into turbo fan speed. Press fan speed button to cancel turbo wind.

No turbo function under auto, dry or fan mode.

Outdoor Units

1. Input Parameter Compensation and Calibration

(1) Check the ambient temperature compensation function Indoor ambient temperature compensation function.

a. In cooling mode, the indoor ambient temperature participating in computing control = ($T_{\text{indoor ambient temperature}} - \Delta T_{\text{cooling indoor ambient temperature compensation}}$)

b. In heating mode, the indoor ambient temperature participating in computing control= ($T_{\text{indoor ambient temperature}} - \Delta T_{\text{heating indoor ambient temperature compensation}}$)

(2) Check effective judgment controls of parameters

Effective judgment function of the outdoor exhaust temperature thermo-bulb When conditions a and b are satisfied, the outdoor exhaust temperature thermo-bulb is judged not to be connected into place, the mainboard of outer units will display failure of the outdoor exhaust temperature thermo-bulb (not connected into place), stop the machine for repairing, and resume the machine by remote controls of ON/OFF.

a. Judgment of exhaust detection temperature change:

After the compressor starts up and runs for 10 minutes, if the compressor frequency f ≥ 40Hz, and the rising value Texhaust ($T_{\text{exhaust (after start-up for 10 minutes)}} - T_{\text{exhaust (before start-up)}}$) < 2ºC , the outdoor exhaust temperature thermo-bulb can be judged not to be connected into place (judging once when the power is on the first time).

b. Comparative judgment of exhaust detection temperature and condenser detection temperature ($T_{\text{pipe temperature}} = T_{\text{outdoor pipe temperature in cooling mode}}$, $T_{\text{pipe temperature}} = T_{\text{indoor pipe temperature in heating mode}}$): After the compressor starts up and runs for 10 minutes, if the compressor frequency f ≥ 40Hz, and $T_{\text{pipe temperature}} \geq (T_{\text{exhaust}+3})$, the outdoor exhaust temperature thermobulb can be judged not to be connected into place (judging once when power is on the first time).

2. Basic Functions

(1) Cooling Mode

1. Conditions and processes of cooling operation:

(1) If the compressor is shut down, and [$T_{\text{set up}}$ – ($T_{\text{indoor ambient temperature}} - \Delta T_{\text{cooling indoor ambient temperature compensation}}$)] ≤ 0.5ºC, start up the machine for cooling, the cooling operation will start;

(2) During operations of cooling, if 0ºC ≤ [$T_{\text{set up}}$ – ($T_{\text{indoor ambient temperature}} - \Delta T_{\text{cooling indoor ambient temperature compensation}}$)] < 2ºC, the cooling operation will be still running;

(3) During operations of cooling, if 2ºC ≤ [$T_{\text{set up}}$ – ($T_{\text{indoor ambient temperature}} - \Delta T_{\text{cooling indoor ambient temperature compensation}}$)], the cooling operation will stop after reaching the temperature point.

2. Temperature setting range

(1) If $T_{\text{outdoor ambient temperature}} \geq [T_{\text{low-temperature cooling temperature}}]$, the temperature can be set at: 16~30ºC (Cooling at room temperature);

(2) If $T_{\text{outdoor ambient temperature}} < [T_{\text{low-temperature cooling temperature}}]$, the temperature can be set at: 25~30ºC (Cooling at low temperature), that is, the minimum setting temperature for outer units judgment is 25ºC .

(2) Dehumidifying Mode

1. Conditions and processes of dehumidifying operations: Same as the cooling mode;
2. The temperature setting range is: 16~30ºC ;

(3) Air-supplying Mode

1. The compressor, outdoor fans and four-way valves are switched off;
2. The temperature setting range is: 16~30ºC.

(4) Heating Mode

1. Conditions and processes of heating operations: (Tindoor ambient temperature is the actual detection temperature of indoor environment thermo-bulb, Theating indoor ambient temperature compensation is the indoor ambient temperature compensation during heating operations)

(1) If the compressor is shut down, and [($T_{\text{indoor ambient temperature}} - \Delta T_{\text{heating indoor ambient temperature compensation}}$) –$T_{\text{set up}}$] ≤ 0.5ºC, start the machine to enter into heating operations for heating;

(2) During operations of heating, if 0ºC ≤ [($T_{\text{indoor ambient temperature}} - \Delta T_{\text{heating indoor ambient temperature compensation}}$) –$T_{\text{set up}}$] < 2ºC, the heating operation will be still running;

(3) During operations of heating, if 2ºC ≤ [($T_{\text{indoor ambient temperature}} - \Delta T_{\text{heating indoor ambient temperature compensation}}$) –$T_{\text{set up}}$], the heating operation will stop after reaching the temperature point.

2. The temperature setting range in this mode is: 16~30ºC .

3. Special Functions

Defrosting Control

① Conditions for starting defrosting

After the time for defrosting is judged to be satisfied, if the temperature for defrosting is satisfied after detections for continuous 3minutes, the defrosting operation will start.

② Conditions of finishing defrosting

The defrosting operation can exit when any of the conditions below is satisfied:

③ $T_{outdoor\ pipe\ temperature} \geq (T_{outdoor\ ambient\ temperature} - [T_{temperature\ 1\ of\ finishing\ defrosting}]$;

④ The continuous running time of defrosting reaches [tmax. defrosting time].

4. Control Logic

(1) Compressor Control

Start the compressor after starting cooling, heating, dehumidifying operations, and the outer fans start for 5s; When the machine is shutdown, in safety stops and when switching to air-supplying mode, the compressor will stop immediately. In all modes: once the compressor starts up, it will not be allowed to stop until having run for the [tmin. compressor running time] (Note: including cases of shutdown when the temperature point is reached; except the cases requiring stopping the compressor such as fault protection, remote shutdown, mode switching etc.); In all modes: once the compressor stops, it will be allowed be restart after 3-minute delay (Note: The indoor units have a function of power memory, the machine can be restarted after remote shutdown and powering up again without delay).

1. Cooling mode

Start the machine to enter into cooling operation for cooling, the compressor is switched on.

2. Dehumidifying mode

Same as the cooling mode.

3. Air-supplying mode

The compressor is switched off.

4. Heating mode

(1) Start the machine to enter into heating operation for heating, the compressor is switched on.

(2) Defrosting:

a. Defrosting starts: the compressor is shut down, and restarts it after 55-second delay.

b. Defrosting ends: the compressor stops, then starts it after 55-second delay.

(2) Outer Fans Control

Notes:

Only the outer fans run for at least 80s in each air flow speed can the air flow be switched;

After the outer fans run compulsively in high speed for 80s when the machine starts up, control the air flow according to the logic.

After remote shutdown, safety stops, and when the machine stops after reaching the temperature point, as well as after the compressor stops, extend 1 minute, the outer fans will stop (During the period in the 1 minute, the air flow of outer fans can be changed according to the outdoor ambient temperature changes); When running with force, the outdoor fans shall run in the highest air flow.

(3) 4-way valve control

1. The 4-way valve control under the modes of Cooling, dehumidification and supplying air: closing;

2. The status of 4-way valve control under the heating mode: getting power;

(1) 4-way valve power control under heating mode

Starts the machine under heating mode, the 4-way valve will get power immediately.

(2) 4-way valve power turn-off control under heating mode

a. When you should turn off the power or switch to other mode under heating mode, the power of 4-way valve will be cut after 2 minutes of the compressor stopped.

b. When all kinds of protection stops, the power of 4-way valve will be cut after delaying 4 minutes.

(3) Defrosting control under heating mode:

a. Defrosting begins: The power of 4-way valve will be cut after 50s of entering into the defrosting compressor.

b. Defrosting stops: The 4-way valve will get power after 50s of exiting the defrosting compressor.

(4) Evaporator frozen-preventing protection function

At the mode of Cooling, dehumidifying:

Evaporator frozen-preventing protection function is allowed to begin after 6 min of starting the compressor.

1. Starting estimation:

After the compressor stopped working for 180s, if $T_{inner\ pipe} > [T_{frozen\text{-}preventing\ frequency\text{-}limited\ temperature}$ (the temperature of hysteresis is 2)], the machine is only allowed to start for operating, otherwise it should not be started, and should be stopped to treat according to the frozen-preventing protection: Clear the trouble under the mode of power turn-off / heating, and the protection times are not counted.

2. Frequency limited

$[T_{frozen\text{-}preventing\ normal\ speed\ frequency\text{-}reducing\ temperature}] \leq [T_{inner\ pipe\ T\ frozen\text{-}preventing\ frequency\text{-}limited\ temperature}]$, you should limit the frequency raising of compressor.

3. Reducing frequency at normal speed:

If $[T_{frozen\text{-}preventing\ high\ speed\ frequency\text{-}reducing\ temperature}] \leq [T_{inner\ pipe\ T\ frozen\text{-}preventing\ normal\ speed\ frequency\text{-}reducing\ temperature}]$, you should adjust the compressor frequency by reducing 8Hz/90s till the lower limit;

4. Reducing frequency at high speed:

If $[T_{frozen\text{-}preventing\ power\ turn\text{-}off\ temperature}] \leq T_{inner\ pipe}$ $[T_{frozen\text{-}preventing\ high\ speed\ frequency\text{-}reducing\ temperature}]$ you should adjust the compressor frequency by reducing 30Hz/90s till the lower limit;

5. Power turn-off:

If the $T_{inner\ pipe} < [T_{frozen\text{-}preventing\ power\ turn\text{-}off\ temperature}]$, then frozen-preventing protect to stop the machine; If $T[_{frozen\text{-}preventing\ frequency\text{-}limited\ temperature}] < T_{inner\ pipe}$, and the compressor has stopped working for 3 minutes, the whole machine should be allowed to operate.

6. If the frozen-preventing protection power turn-off continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume if the fault keeps on. During the process of running, if the running time of compressor exceeds the t evaporator frozen-preventing protection times zero clearing time , the times of frozen-preventing power turn-off should be cleared to recount. The mode of stopping the machine or transferring to supply air will clear the trouble times immediately (if the trouble can not be resumed, mode transferring will not clear it).

(5) Overload protection function

Overload protection function at the mode of cooling and dehumidifying

1. Starting estimation:

After the compressor stopped working for 180s, if $T_{outer\ pipe} < [T_{Cooling\ overload\ frequency\text{-}limited\ temperature}]$ (the temperature of hysteresis is 2ºC), the machine is allowed to start, otherwise it should not be started, and should be stopped to treat according to the overload protection: Clear the trouble at the mode of power turn-off / heating, and the protection times are not counted.

2. Frequency limited

If $[T_{Cooling\ overload\ frequency\text{-}limited\ temperature}] \leq T_{outer\ pipe}$ $[T_{Cooling\ overload\ frequency\ reducing\ temperature\ at\ normal\ speed}]$, you should limit the frequency raising of compressor.

3. Reducing frequency at normal speed and power turn-off:

If $[T_{Cooling\ overload\ frequency\ reducing\ temperature\ at\ high\ speed}] \leq T_{outer\ pipe} < [T_{Cooling\ overload\ power\ turn\text{-}off\ temperature}]$, you should adjust the compressor frequency by reducing 8Hz/90s till the lower limit; After it was running 90s at the lower limit, if $[T_{Cooling\ overload\ frequency\ reducing\ temperature\ at\ normal\ speed}] \leq T_{outer\ pipe}$, then Cooling overload protects machine stopping;

4. Reducing frequency at high speed and stop machine:

If $[T_{Cooling\ overload\ frequency\ reducing\ temperature\ at\ high\ speed}] \leq T_{outer\ pipe}$ $[T_{Cooling\ overload\ power\ turn\text{-}off\ temperature}]$, you should adjust the compressor frequency by reducing 30Hz/90s till the lower limit; After it was running 90s at the lower limit, if $[T_{Cooling\ overload\ frequency\ reducing\ temperature\ at\ normal\ speed}] \leq [T_{outer\ pipe}]$, then Cooling overload protects machine stopping;

5. Power turn-off:

If the $[T_{Cooling\ overload\ power\ turn\text{-}off\ temperature}] \leq T_{outer\ pipe}$, then Cooling overload protects machine stopping; If $[T_{outer\ pipe}] < [T_{Cooling\ overload\ frequency\text{-}limited\ temperature}]$and the compressor has been stopped working for 3 minutes, the machine should be allowed to operate.

6. If the Cooling overload protection power turn-off continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume if the fault keeps on. During the process of running, if the running time of compressor exceeds the t overload protection times zero clearing time , the times of overload protection power turn-off should be cleared to recount. The mode of stopping the machine or transferring to supply air will clear the trouble times immediately (if the trouble can not be resumed, transferring mode will not clear it).

Overload protection function at the mode of heating

Starting estimation :

After the compressor stopped working for 180s, if T inner pipe T heating overload frequency-limited temperature (the temperature of hysteresis is 2), the machine is allowed to start, otherwise it should not be started, and should be stopped to treat according to the overload protection:

Clear the trouble at the mode of power turn-off / heating, and the protection times are not counted.

1. Frequency limited

If [$T_{heating\ overload\ frequency\text{-}limited\ temperature}$]≤$T_{inner\ pipe}$ <[$T_{heating\ overload\ frequency\ reducing\ temperature\ at\ normal\ speed}$] , you should limit the frequency raising of compressor.

2. Reducing frequency at normal speed and stopping machine:

If T[heating overload frequency reducing temperature at normal speed]≤$T_{inner\ pipe}$<[$T_{heating\ overload\ frequency\ reducing\ temperature\ at\ high\ speed}$], you should adjust the compressor frequency by reducing 8Hz/90s till the lower limit; After it was running 90s at the lower limit, if $T_{heating\ overload\ frequency\ reducing\ temperature\ at\ normal\ speed}$ ≤$T_{inner\ pipe}$, then overload protects machine stopping;

3. Reducing frequency at high speed and power turn-off:

If [$T_{heating\ overload\ frequency\ reducing\ temperature\ at\ high\ speed}$]≤$T_{inner\ pipe}$<[$T_{heating\ overload\ power\ turn\text{-}off\ temperature}$], you should adjust the compressor frequency by reducing 30Hz/90s till the lower limit; After it was running 90s at the lower limit, if T heating overload frequency reducing temperature at normal speed ≤T outer pipe, then Cooling overload protects machine stopping;

4. Power turn-off:

If the [$T_{heating\ overload\ power\ turn\text{-}off\ temperature}$] ≤$T_{inner\ pipe}$, then overload protects machine stopping; If T inner pipe T heating overload frequency-limited temperature and the compressor has been stopped working for 3 minutes, the machine should be allowed to operate.

5. If the overload protection power turn-off continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume if the fault keeps on. During the process of running, if the running time of compressor exceeds the t overload protection times zero clearing time , the times of overload protection power turn-off should be cleared to recount. The mode of stopping the machine or transferring to supply air will clear the trouble times immediately (if the trouble can not be resumed, transferring mode will not clear it). Protective function for discharge temperature of compressor

1. Starting estimation:

After the compressor stopped working for 180s, if $T_{Discharge}$ <$T_{Discharge\ limited\ temperature}$ (the temperature of hysteresis is 2ºC), the machine is allowed to start, otherwise it should not be started, and should be stopped to treat according to the discharge temperature:

The machine should be stopped or transferred to supply air, the trouble should be cleared immediately, and the protection times are not counted.

2. Frequency limited

If [$T_{Limited\ frequency\ temperature\ during\ discharging}$] ≤$T_{Discharge}$<[$T_{frequency\ reducing\ temperature\ at\ normal\ speed\ during\ discharging}$] , you should limit the frequency raising of compressor.

3. Reducing frequency at normal speed and stopping machine:

If [$T_{frequency\ reducing\ temperature\ at\ normal\ speed\ during\ discharging}$] ≤$T_{Discharge}$<[$T_{frequency\ reducing\ temperature\ at\ high\ speed\ during\ discharging}$], you should adjust the compressor frequency by reducing 8Hz/90s till the lower limit; After it was running 90s at the lower limit, if [$T_{frequency\ reducing\ temperature\ at\ normal\ speed\ during\ discharging}$] ≤$T_{Discharge}$, you should discharge to protect machine stopping;

4. Reducing frequency at high speed and power turn-off:

If [$T_{frequency\ reducing\ temperature\ at\ high\ speed\ during\ discharging}$] ≤$T_{Discharge}$ <[$T_{Stop\ temperature\ during\ discharging}$], you should adjust

the compressor frequency by reducing 30Hz/90s till the lower limit; After it was running 90s at the lower limit, if [$T_{frequency\ reducing\ temperature\ at\ normal\ speed\ during\ discharging}$] ≤$T_{Discharge}$, you should discharge to protect machine stopping;

5. Power turn-off:

If the [$T_{Power\ turn\text{-}off\ temperature\ during\ discharging}$] ≤$T_{Discharge}$, you should discharge to protect machine stopping; If [$T_{Discharge}$]<[$T_{Limited\ frequency\ temperature\ during\ discharging}$] and the compressor has been stopped for 3 minutes, the machine should be allowed to operate.

6. If the discharging temperature protection of compressor continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume. During the process of running, if the running time of compressor exceeds the t Protection times clearing of discharge , the discharge protection is cleared to recount. Stopped or transferred to supply air mode will clear the trouble times immediately (if the trouble can not be resumed, mode transferring also will not clear it).

7. Frequency limited

If [$I_{Limited\ frequency\ when\ overcurrent}$] ≤$I_{AC\ Electric\ current}$ <[$I_{frequency\ reducing\ when\ overcurrent}$], you should limit the frequency raising of compressor.

8. Reducing frequency:

If [$I_{Frequency\ reducing\ when\ overcurrent}$] ≤[$I_{AC\ Electric\ current}$ I Power turn-off when overcurrent] , you should reduce the compressor frequency till the lower limit or exit the frequency reducing condition;

9. Power turn-off:

If [$I_{Power\ turn\text{-}off\ machine\ when\ overcurrent}$] ≤[$I_{AC\ Electric\ current}$] , you should carry out the overcurrent stopping protection; If I AC Electric current<[T Limited frequency when overcurrent] and the compressor has been stopped for 3 minutes, the machine should be allowed to operate.

10. If the overcurrent protection continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume. During the process of running, if the running time of compressor exceeds the [$t_{Protection\ times\ clearing\ of\ over\ current}$] , the discharge protection is cleared to recount.

(6)Voltage sag protection

After start the compressor, if the time of DC link Voltage sag [$U_{Sagging\ protection\ voltage}$] is measured to be less than t Voltage sag protection time , the machine should be stop at once, hand on the voltage sag trouble, reboot automatically after 30 minutes.

(7)Communication fault

When you have not received any correct signal from the inner machine in three minutes, the machine will stop for communication fault. When you have not received any correct signal from driver IC (aim to the controller for the separating of main control IC and driver IC), and the machine will stop for communication fault. If the communication is resumed, the machine will be allowed to operate.

(8)Module protection

Testing the module protective signal immediately after started, once the module protective signal is measured, stop the machine with module protection immediately. If the module protection is resumed, the machine will be allowed to operate. If the module protection continuously occurs for three times, it should not be resumed automatically, and you should press the ON/OFF button to resume. If the running time of compressor exceeds the [$t_{Protection\ times\ clearing\ of\ module}$] , the module protection is cleared to recount.

(9)Module overheating protection

1. Starting estimation:

After the compressor stopped working for 180s, if T_{Module}<[$T_{Module\ frequency\ limited\ temperature}$](the temperature of hysteresis is 2), the machine is allowed to start, otherwise it should not be started, and should be stopped to treat according to the module overheating protection: The machine should be stopped or transferred to supply air, the trouble should be cleared immediately, and the protection times are not counted.

2. Frequency limited

If [$T_{Limited\ frequency\ temperature\ of\ module}$] ≤$T_{Module}$ <[$T_{frequency\ reducing\ temperature\ at\ normal\ speed\ of\ module}$] , you should limit the frequency raising of compressor.

3. Reducing frequency at normal speed and power turn-off:

If [$T_{frequency\ reducing\ temperature\ at\ normal\ speed\ of\ module}$] ≤$T_{Module}$<[$T_{frequency\ reducing\ temperature\ at\ high\ speed\ of\ module}$], you should adjust the compressor frequency by reducing 8Hz/90s till the lower limit; After it was running 90s at the lower limit, if [$T_{frequency\ reducing\ temperature\ at\ normal\ speed\ of\ module}$] ≤$T_{Module}$, you should stop the machine for module overheating protection;

4. Reducing frequency at high speed and power turn-off:

If [$T_{frequency\ reducing\ temperature\ at\ high\ speed\ of\ module}$]≤$T_{Module}$ <[$T_{Power\ turn\text{-}off\ temperature\ of\ module}$] you should adjust the compressor frequency by reducing 30Hz/90s till the lower limit; After it was running 90s at the lower limit, if [$T_{frequency\ reducing\ temperature\ at\ normal\ speed\ of\ module}$] ≤$T_{Module}$, you should stop the machine for module overheating protection;

5. Power turn-off:

If the [$T_{Power\ turn\text{-}off\ temperature\ of\ module}$] ≤$T_{Module}$, you should stop the machine for module overheating protection; If T_{Module} <[$T_{Limited\ frequency\ temperature\ of\ module}$] and the compressor has been stopped for 3 minutes, the machine should be allowed to operate.

6. If protection continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume. During the process of running, if the running time of compressor exceeds the [$t_{Protection\ times\ clearing\ of\ module}$] , the discharge protection is cleared to recount. Stopped or transferred to supply air mode will clear the trouble times immediately (if the trouble can not be resumed, mode transferring also will not clear it).

(10)Compressor overloads protection

If you measure the compressor overload switch action in 3s, the compressor should be stopped for overloading. The machine should be allowed to operate after overload protection was measured to resume. If the overloading protection continuously occurs for three times, it should not be resumed automatically, and you should press the ON/OFF button to resume. The protection times of compressor is allowed to clear after the compressor run [$t_{Protection\ times\ clearing\ of\ compressor\ overloading}$] 30 minutes.

(11)Phase current overcurrent protection of compressor

During the running process of compressor, you could measure the phase current of the compressor, and control it according to the following steps:

1. Frequency limited

If [$I_{Limited\ frequency\ phase\ current}$] ≤[$I_{Phase\ current\ T\ frequency\ reducing\ phase\ current}$] , you should limit the frequency raising of compressor.

2. Reducing Frequency

If [$I_{Frequency\ Reducing\ Phase\ Current}$]≤I Phase Current<[$I_{Power\ Turn\text{-}Off\ Phase\ Current}$], the compressor shall continue to reduce frequency till the lowest frequency limit or out of the condition of reducing frequency;

3. Power turn-off

If [$I_{Phase\ Current}$]≥[$I_{Power\ Turn\text{-}Off\ Phase\ Current}$], the compressor phase current shall stop working for overcurrent protection; if [$I_{Phase\ Current}$]≤[$I_{Frequency\ Reducing\ Phase\ Current}$], and the compressor have stopped working for 3 min, the machine shall be allowed to operate;

4. If the overcurrent protection of compressor phase current continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume. During the process of running, if the running time of compressor exceeds the [$t_{Clearing\ Time\ of\ Compressor\ Phase\ Current\ Times}$] , the overcurrent protection is cleared to recount.

(12) Starting-up Failure Protection for Compressor

Stop the compressor after its starting-up fails, restart it after 20s if the fault doesnt shows, and if they are all failing for the successive start 3 times, it shall be reported as Starting-up Failure, and then restart up it after 3 min. When it still not be able to operate through carry out the above process for 5 times, it is available if press ON/OFF. And the compressor should be cleared the times after it run 2 min.

(13) Out-of-Step Protection for Compressor

The out-of-step protection signal should be detected immediately after starting-up compressor, and once find the out-of-step protection signal, the out-of-step protection shall be stopped; if it can run for lasting power turn-off 3 min, the machine shall be allowed to operate. If it still cant run automatically when the out-of-step protection for compressor happens to stop working for 6 times in succession, it needs to press ON/OFF to operate. And if the running time is more than 10 min, the power turn-off times for out-of-step protection shall be cleared and recounted.

(14) Voltage Abnormity Protection for DC Bus

To detect voltage abnormity protection for dc bus after completing the pre-charge:

1.Over-High Voltage Protection for DC Bus:

If it found the DCbus voltage U_{DC} >[$U_{DC\ Jiekuangchun\ Protection}$], turn off PFC and stop the compressor at once, and it shall show the DC over-high voltage failure; it should clear out the failure when the voltage dropped to U_{DC} <[$U_{DC\ Jiekuangchun\ Recovery}$] and the compressor stopped for 3 min.

2.Over-Low Voltage Protection for DC Bus:

If it found the DC bus voltage U_{DC} <[$U_{DC\ Wantuochun\ Protection}$], turn off PFC and stop the compressor at once, and it shall show the DC over-low voltage; and it should clear out the failure when the voltage raised to U_{DC} >[$U_{DC\ Wantuochun\ Recovery}$] and the compressor stopped for 3 min.

3.To detect voltage abnormity protect for DC bus when getting electricity:

If it found the DC bus voltage U_{DC} >[$U_{DC——Over\text{-}High\ Voltage}$], turn off the relay at once, and shows voltage abnormity failure for DC Bus. And the failure cant recover except to break off and get the electricity.

(15)Abnormity Protection for Four-way Valve

Under the model of heating operation in good condition: the compressor is detected [$T_{Inner\ Tube}$ <($T_{Inner\ Ring}$-$T_{Abnormity\ Temperature\ Difference\ For\ Four\text{-}Way\ Valve\ Reversion}$)], during the running, it should be regarded as four-way valve reversion abnormity. And then it can run if stop the reversion abnormity protection for four-way valve 3 min; and if it still cant run when the reversion abnormity protection for four-way valve happens to stop working for 3 times in succession, it is available if presses ON/OFF.

Attention: the protection shall be shielded during the testing mode and defrosting process, and it shall be cleared out the failure and its times immediately when turning off or delivering wind / cooling / dehumidifying mode conversed (the inverted mode dont clear out the failure when it cant recover to operate).

(16) PFC Protection

1. After start up the PFC, it should detect the protection signal of PFC immediately; under the condition of PFC protection, it should turn off the PFC and compressor at one time;
2. It shows the failure is cleared out if PFC Protection stopped working 3 min and recovers to run automatically;
3. If it still cant run when it occurs PFC protection for 3 times in succession, it is available if presses ON/OFF; and clear the PFC Protection times when start up PFC for 10min.

(17) Failure Detection for Sensor

1. Outdoor Ambient Sensor: detect the failure of sensor at all times.
2. Outdoor Tube Sensor: You should not detect the failure of outdoor tube sensor within 10 minutes heating operation compressor except the defrosting, and you could detect it at other time.
3. Outdoor Exhaust Sensor:

(a) The compressor only detect the sensor failure after it start up 3 min in normal mode;

(b) It should detect the exhaust sensor failure immediately in the testing mode.

4. Module Temperature Sensor:

(a) Short-Circuit Detection: the compressor should be detected immediately when the module temperature sensor occurs short-circuits;

(b) Open-Circuit Detection: the compressor should be detected on open-circuit when it runs 3min (it neednt 30s avoiding the module over-heated).

(c) Detect the sensor failure at all times in the testing mode.

5. Disposal for Sensor Protection

(1) When the short-circuit of sensor is detected within 30s, It is regarded as the temperature of sensor over-high (or infinitely high), and now according to the over-high sensor, the machine should carry out the corresponding protection to stop working, and show the corresponding temperature shutdown protection and sensor failure at the same time (for example: the compressor stops immediately when the outdoor tube sensor short-circuit, and the machine shall show the overload protection and outdoor tube sensor failure).

(2) When the open-circuit of sensor is detected within 30s, The protection shall be stopped and it shall show the corresponding sensor failure.

6. Electric Heating Function of Chassis

(1) When $T_{outdoor\ amb.} \leq 0^{o}C$, the electric heating of chassis will operate;

(2) When $T_{outdoor\ amb.} > 2^{o}C$, the electric heating of chassis will stop operation;

(3)When $0^{o}C < T_{outdoor\ amb.} \leq 2^{o}C$, the electric heating of chassis will keep original status.

7. Electric Heating Function of Compressor

(1) When $T_{outdoor\ amb.} \leq -5^{o}C$, compressor stops operation, while the electric heating of compressor starts operation;

(2) When $T_{outdoor\ amb.} > -2^{o}C$, the electric heating of compressor stops operation;

(3) When $-5^{o}C < T_{outdoor\ amb.} \leq -2^{o}C$, the electric heating of compressor will keep original status.

Part Ⅱ : Installation and Maintenance

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 cant 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 cant 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; dont 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. Avoid contact between refrigerant and fire as it generates poisonous gas; Prohibit prolong the connection pipe by welding.
2. 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.
3. Make sure no refrigerant gas is leaking out when installation is completed.
4. If there is refrigerant leakage, please take sufficient measure to minimize the density of refrigerant.
5. 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

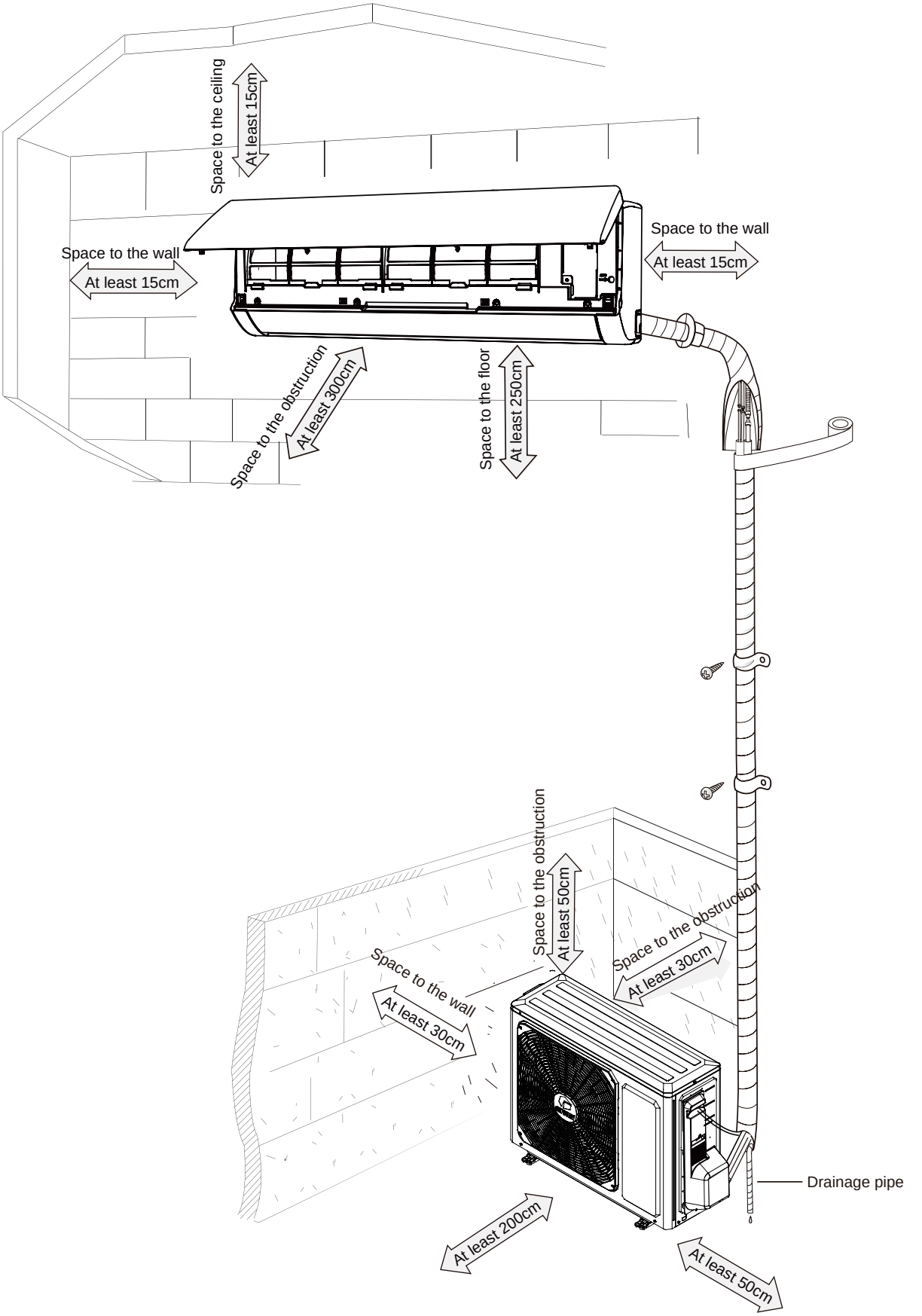
1. When installing or relocating the unit, be sure to keep the refrigerant circuit free from air or substances other than the specified refrigerant.
Any presence of air or other foreign substance in the refrigerant circuit will cause system pressure rise or compressor rupture,resulting in injury.
2.When 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

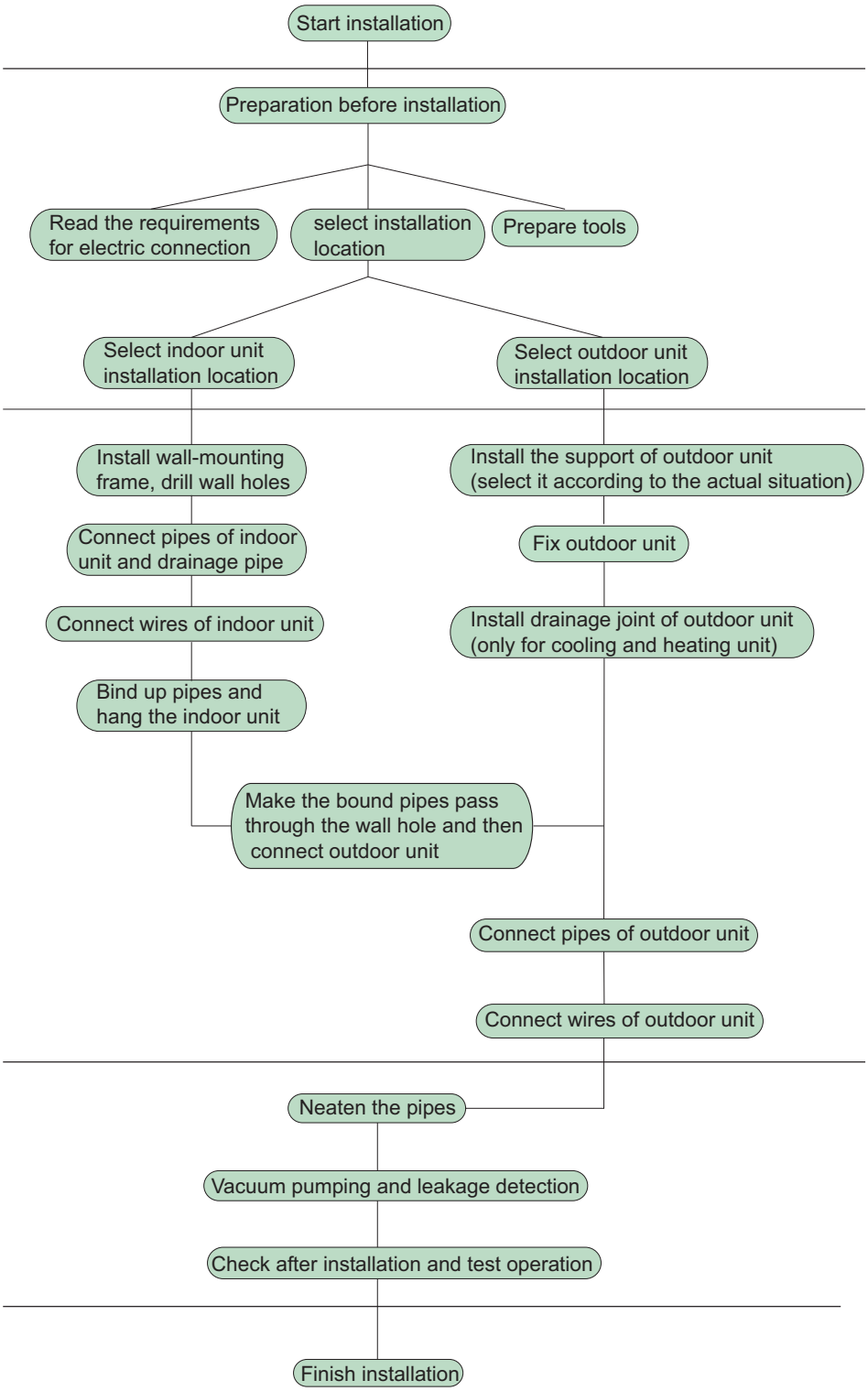
1. Level meter, measuring tape 	2. Screw driver 	3. Impact drill, drill head, electric drill 
4. Electroprobe 	5. Universal meter 	6. Torque wrench, open-end wrench, inner hexagon spanner 
7. Electronic leakage detector 	8. Vacuum pump 	9. Pressure meter 
10. Pipe pliers, pipe cutter   	11. Pipe expander, pipe bender  	12. Soldering appliance, refrigerant container  

8. Installation

8.1 Installation Dimension Diagram



Installation procedures



Note: this flow is only for reference; please find the more detailed installation steps in this section.

8.2 Installation Parts-checking

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

⚠ **Note:**
1.Please contact the local agent for installation.
2.Dont 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) Do not use the unit in the immediate surroundings of a laundry a bath a shower or a swimming pool.

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 wont 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 wont increase noise and vibration.
(6) The appliance must be installed 2.5m above floor.
(7) Dont 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 wont 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 Requirements for electric connection

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) If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
(8) The temperature of refrigerant circuit will be high, please keep the interconnection cable away from the copper tube.
(9) The appliance shall be installed in accordance with national wiring regulations.

2. Grounding Requirement:
(1) The air conditioner is first 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 cant 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)

Air-conditioner	Air switch capacity
09/18K	10A

8.5 Installation of Indoor Unit

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

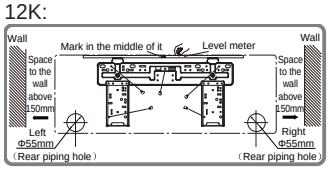
2. Install Wall-mounting Frame
(1) Hang the wall-mounting frame on the wall; adjust it in horizontal position with the level meter and then point out the screw fixing holes on the wall.
(2) Drill the screw fixing holes on the wall with impact drill (the specification of drill head should be the same 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 (ST4.2X25TA) 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)

12K:



18K:

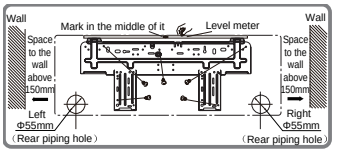


Fig.1

(2) Open a piping hole with the diameter of Φ55mm 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 5-10°.(As show in Fig.2)

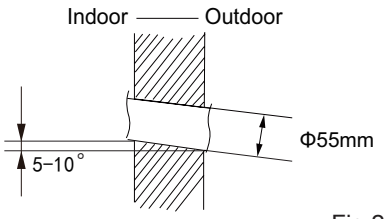


Fig.2

⚠ **Note:**

(1) Pay attention to dust prevention and take relevant safety measures when opening the hole.
(2) The plastic expansion particles are not provided and should be bought locally.

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)

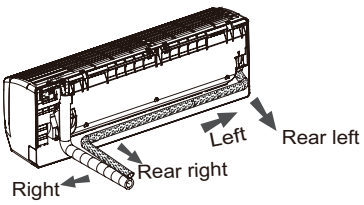


Fig.3

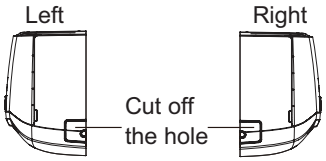


Fig.4

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)

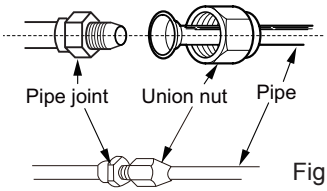


Fig.5

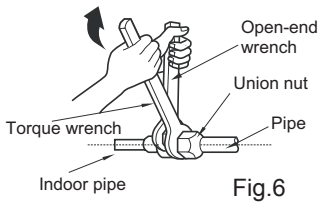


Fig.6

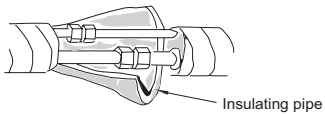


Fig.7

Refer to the following table for wrench moment of force:

Hex nut diameter(mm)	Tightening torque(N·m)
Φ6	15~20
Φ9.52	30~40
Φ12	45~55
Φ16	60~65
Φ19	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)

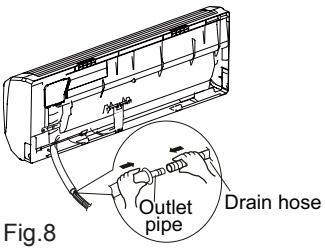


Fig.8

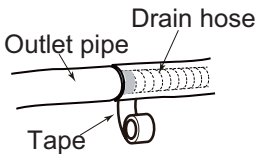


Fig.9

⚠ **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)

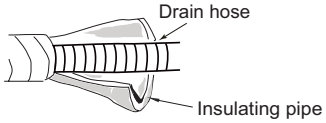


Fig.10

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)

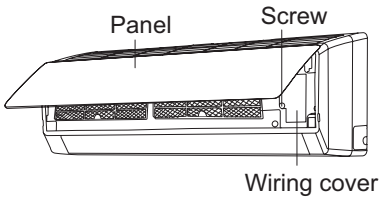


Fig.11

(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)

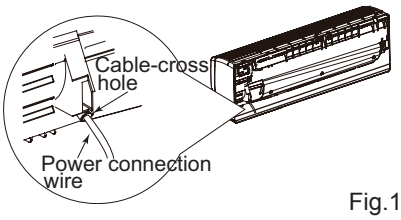
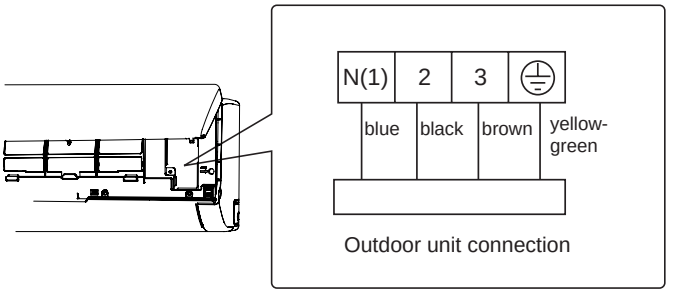


Fig.12

(3) Remove the wire clip; connect the power connection wire 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.

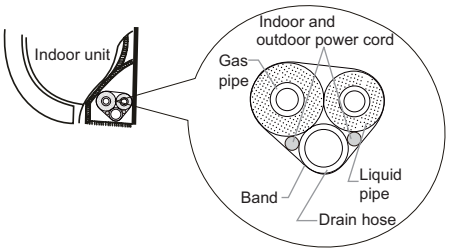


Fig.14

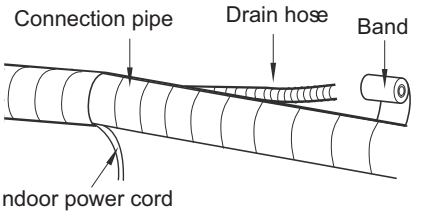


Fig.15

⚠ **Note:**

(1) The power cord and control wire cant 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)

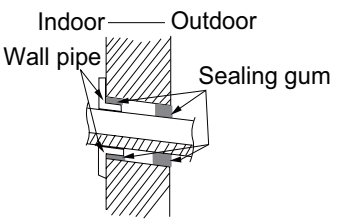
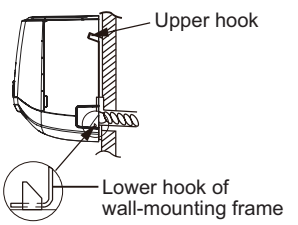


Fig.16

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)

(1) Select installation location according to the house structure.
(2) Fix the support of outdoor unit on the selected location with expansion screws.

⚠ **Note:**

(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.

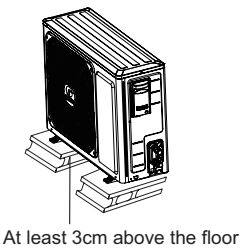


Fig.18

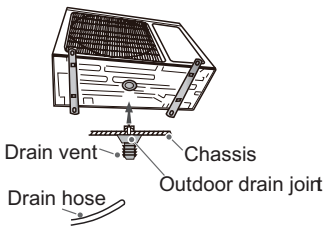


Fig.19

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)

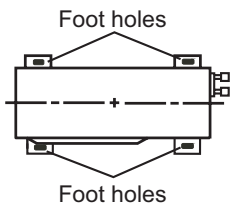


Fig.20

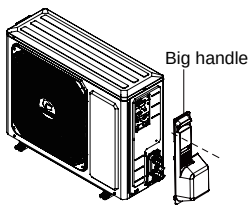


Fig.21

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)

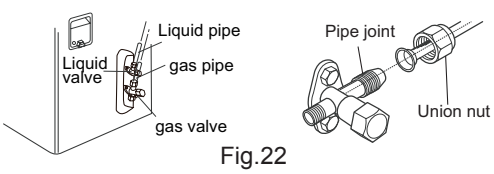


Fig.22

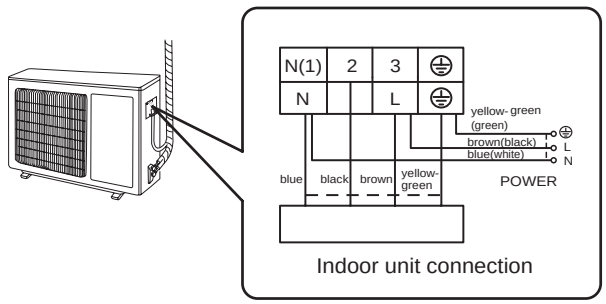
(3) Pretightening the union nut with hand.
(4) Tighten the union nut with torque wrench .

Refer to the following table for wrench moment of force:

Hex nut diameter(mm)	Tightening torque(N·m)
Φ6	15~20
Φ9.52	30~40
Φ12	45~55
Φ16	60~65
Φ19	70~75

5. Connect Outdoor Electric Wire

(1) Remove the wire clip; connect the power connection wire and power cord to the wiring terminal according to the color; fix them with screws.(As show in Fig.23)



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

Fig.23

(2) Fix the power connection wire with wire clip.

⚠ **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)

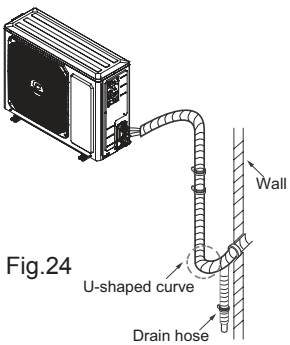


Fig.24

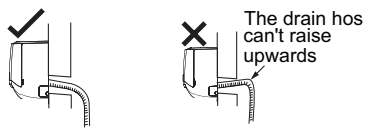


Fig.25

⚠ **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)

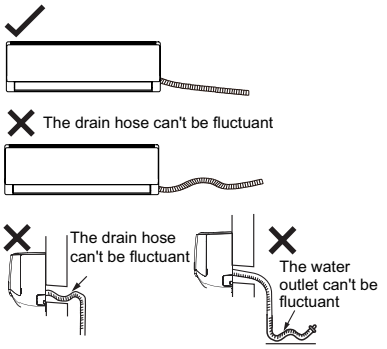


Fig.26

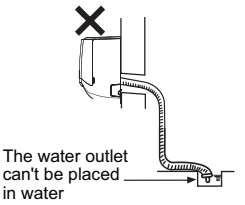


Fig.27

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)

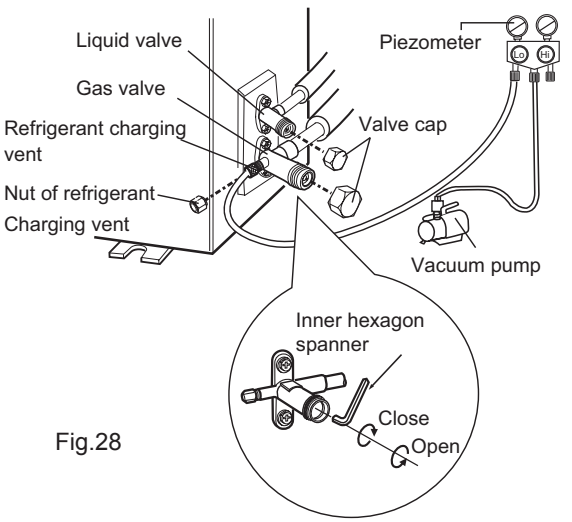


Fig.28

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, theres 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℃ , the air conditioner cant 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	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)				
			Operation Indicator	Cool Indicator	Heating Indicator		
1	High pressure protection of system	E1				During cooling and drying operation, except indoor fan operates, all loads stop operation. During heating operation, the complete unit stops.	Possible reasons: 1. Refrigerant was superabundant; 2. Poor heat exchange (including filth blockage of heat exchanger and bad radiating environment); Ambient temperature is too high.
2	Antifreezing protection	E2				During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates.	1. Poor air-return in indoor unit; 2. Fan speed is abnormal; 3. Evaporator is dirty.
3	System block or refrigerant leakage	E3				The Dual-8 Code Display will show E3 until the low pressure switch stop operation.	1.Low-pressure protection 2.Low-pressure protection of system 3.Low-pressure protection of compressor
4	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.	Please refer to the malfunction analysis (discharge protection, overload).
5	Overcurrent protection	E5				During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates. During heating operation, all loads stop.	1. Supply voltage is unstable; 2. Supply voltage is too low and load is too high; 3. Evaporator is dirty.
6	Communi-cation Malfunction	E6				During cooling operation, compressor stops while indoor fan motor operates. During heating operation, the complete unit stops.	Refer to the corresponding malfunction analysis.
7	High temperature resistant protection	E8				During cooling operation: compressor will stop while indoor fan will operate. During heating operation, the complete unit stops.	Refer to the malfunction analysis (overload, high temperature resistant).
8	EEPROM malfunction	EE				During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Replace outdoor control panel AP1
9	Limit/ decrease frequency due to high temperature of module	EU				All loads operate normally, while operation frequency for compressor is decreased	Discharging after the complete unit is de-energized for 20mins, check whether the thermal grease on IPM Module of outdoor control panel AP1 is sufficient and whether the radiator is inserted tightly. If its no use, please replace control panel AP1.
10	Malfunction protection of jumper cap	C5				Wireless remote receiver and button are effective, but can not dispose the related command	1. No jumper cap insert on mainboard. 2. Incorrect insert of jumper cap. 3. Jumper cap damaged. 4. Abnormal detecting circuit of mainboard.

NO.	Malfunction Name	Display Method of Indoor Unit				A/C status	Possible Causes
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)				
			Operation Indicator	Cool Indicator	Heating Indicator		
11	Gathering refrigerant	F0				When the outdoor unit receive signal of Gathering refrigerant ,the system will be forced to run under cooling mode for gathering refrigerant	Nominal cooling mode
12	Indoor ambient temperature sensor is open/short circuited	F1				During cooling and drying operation, indoor unit operates while other loads will stop; during heating operation, the complete unit will stop operation.	1. Loosening or bad contact of indoor ambient temp. sensor and mainboard terminal. 2. Components in mainboard fell down leads short circuit. 3. Indoor ambient temp. sensor damaged.(check with sensor resistance value chart) 4. Mainboard damaged.
13	Indoor evaporator temperature sensor is open/short circuited	F2				AC stops operation once reaches the setting temperature. Cooling, drying: internal fan motor stops operation while other loads stop operation; heating: AC stop operation	1. Loosening or bad contact of Indoor evaporator temp. sensor and mainboard terminal. 2. Components on the mainboard fall down leads short circuit. 3. Indoor evaporator temp. sensor damaged.(check temp. sensor value chart for testing) 4. Mainboard damaged.
14	Outdoor ambient temperature sensor is open/short circuited	F3				During cooling and drying operating, compressor stops while indoor fan operates; During heating operation, the complete unit will stop operation	Outdoor temperature sensor hasnt been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor)
15	Outdoor condenser temperature sensor is open/short circuited	F4				During cooling and drying operation, compressor stops while indoor fan will operate; During heating operation, the complete unit will stop operation.	Outdoor temperature sensor hasnt been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor)
16	Outdoor discharge temperature sensor is open/short circuited	F5				During cooling and drying operation, compressor will sop after operating for about 3 mins, while indoor fan will operate; During heating operation, the complete unit will stop after operating for about 3 mins.	1.Outdoor temperature sensor hasnt been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor) 2.The head of temperature sensor hasnt been inserted into the copper tube
17	Limit/ decrease frequency due to overload	F6				All loads operate normally, while operation frequency for compressor is decreased	Refer to the malfunction analysis (overload, high temperature resistant)
18	Decrease frequency due to overcurrent	F8				All loads operate normally, while operation frequency for compressor is decreased	The input supply voltage is too low; System pressure is too high and overload

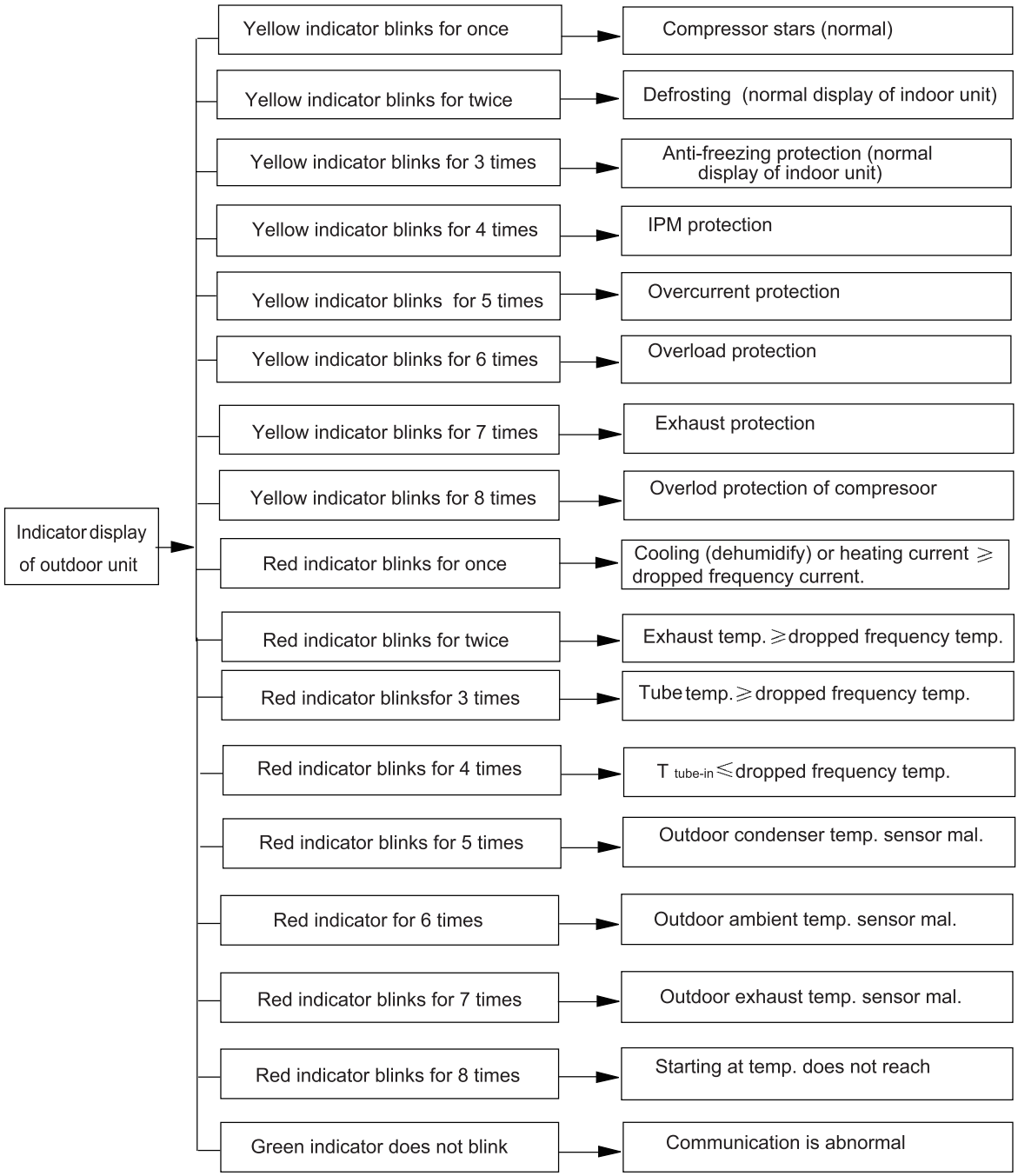
NO.	Malfunction Name	Display Method of Indoor Unit				A/C status	Possible Causes
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)				
			Operation Indicator	Cool Indicator	Heating Indicator		
19	Decrease frequency due to high air discharge	F9				All loads operate normally, while operation frequency for compressor is decreased	Overload or temperature is too high; Refrigerant is insufficient; Malfunction of electric expansion valve (EKV)
20	Limit/ decrease frequency due to antifreezing	FH				All loads operate normally, while operation frequency for compressor is decreased	Poor air-return in indoor unit or fan speed is too low
21	Voltage for DC bus-bar is too high	PH				During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	1. Measure the voltage of position L and N on wiring board (XT), if the voltage is higher than 265VAC, turn on the unit after the supply voltage is increased to the normal range. 2.If the AC input is normal, measure the voltage of electrolytic capacitor C on control panel (AP1), if its normal, theres malfunction for the circuit, please replace the control panel (AP1)
22	Voltage of DC bus-bar is too low	PL				During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	1. Measure the voltage of position L and N on wiring board (XT), if the voltage is higher than 150VAC, turn on the unit after the supply voltage is increased to the normal range. 2.If the AC input is normal, measure the voltage of electrolytic capacitor C on control panel (AP1), if its normal, theres malfunction for the circuit, please replace the control panel (AP1)
23	Compressor Min frequence in test state	P0					Showing during min. cooling or min. heating test
24	Compressor rated frequence in test state	P1					Showing during nominal cooling or nominal heating test
25	Compressor maximum frequence in test state	P2					Showing during max. cooling or max. heating test

NO.	Malfunction Name	Display Method of Indoor Unit				A/C status	Possible Causes
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)				
			Operation Indicator	Cool Indicator	Heating Indicator		
26	Compressor intermediate frequence in test state	P3					Showing during middle cooling or middle heating test
27	Overcurrent protection of phase current for compressor	P5				During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor.
28	Charging malfunction of capacitor	PU				During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Refer to the part three—charging malfunction analysis of capacitor
29	Malfunction of module temperature sensor circuit	P7				During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Replace outdoor control panel AP1
30	Module high temperature protection	P8				During cooling operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	After the complete unit is de-energized for 20mins, check whether the thermal grease on IPM Module of outdoor control panel AP1 is sufficient and whether the radiator is inserted tightly. If its no use, please replace control panel AP1.
31	Overload protection for compressor	H3				During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	1. Wiring terminal OVC-COMP is loosened. In normal state, the resistance for this terminal should be less than 1ohm. 2.Refer to the malfunction analysis (discharge protection, overload)
32	IPM protection	H5				During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor.

NO.	Malfunction Name	Display Method of Indoor Unit				A/C status	Possible Causes
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)				
			Operation Indicator	Cool Indicator	Heating Indicator		
33	Internal motor (fan motor) do not operate	H6				Internal fan motor, external fan motor, compressor and electric heater stop operation,guide louver stops at present location.	1. Bad contact of DC motor feedback terminal. 2. Bad contact of DC motor control end. 3. Fan motor is stalling. 4. Motor malfunction. 5. Malfunction of mainboard rev detecting circuit.
34	Desynchro-nizing of compressor	H7				During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor.
35	PFC protection	HC				During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis
36	Outdoor DC fan motor malfunction	L3				Outdoor DC fan motor malfunction lead to compressor stop operation,	DC fan motor malfunction or system blocked or the connector loosed
37	power protection	L9				compressor stop operation and Outdoor fan motor will stop 30s latter , 3 minutes latter fan motor and compressor will restart	To protect the electronical components when detect high power
38	Indoor unit and outdoor unit doesnt match	LP				compressor and Outdoor fan motor cant work	Indoor unit and outdoor unit doesnt match
39	Failure start-up	LC				During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation.	Refer to the malfunction analysis
40	Normal communica-tion						
41	Defrosting				OFF 3S and blink once (during blinking, ON 10s and OFF 0.5s)	Defrosting will occur in heating mode. Compressor will operate while indoor fan will stop operation.	Its the normal state

NO.	Malfunction Name	Display Method of Indoor Unit				Display Method of Outdoor Unit			A/C status	Possible Causes
		Dual-8 Code Display	Indicator Display (during blinking, ON 0.5s and OFF 0.5s)			Indicator has 3 kinds of display status and during blinking, ON 0.5s and OFF 0.5s				
			Operation Indicator	Cool Indicator	Heating Indicator	Yellow Indicator	Red Indicator	Green Indicator		
42	Malfunction of phase current detection circuit for compressor	U1							During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Replace outdoor control panel AP1
43	Malfunction of voltage dropping for DC bus-bar	U3							During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop	Supply voltage is unstable
44	Malfunction of complete units current detection	U5							During cooling and drying operation, the compressor will stop while indoor fan will operate; During heating operating, the complete unit will stop operation.	Theres circuit malfunction on outdoor units control panel AP1, please replace the outdoor units control panel AP1.
45	The four-way valve is abnormal	U7							If this malfunction occurs during heating operation, the complete unit will stop operation.	1.Supply voltage is lower than AC175V; 2.Wiring terminal 4V is loosened or broken; 3.4V is damaged, please replace 4V.
46	Frequency limiting (power)						OFF 3S and blink 13 times			
47	Compressor is open-circuited					OFF 3S and blink once				
48	The temperature for turning on the unit is reached						OFF 3S and blink 8 times			
49	Frequency limiting (module temperature)						OFF 3S and blink 11 times			
50	Malfunction of zero-cross detection circuit	U8							The complete unit stops	1.Power supply is abnormal; 2.Detection circuit of indoor control mainboard is abnormal.
51	Malfunction of detecting plate(WIFI)	JF								

If malfunction occurs,corresponding code will display and the unit will resume normal until protection or malfunction disappears.



Analysis or processing of some of the malfunction display:

1. Compressor discharge protection

Possible causes: shortage of refrigerant; blockage of air filter; poor ventilation or air flow short pass for condenser; the system has noncondensing gas (such as air, water etc.); blockage of capillary assy (including filter); leakage inside four-way valve causes incorrect operation; malfunction of compressor; malfunction of protection relay; malfunction of discharge sensor; outdoor temperature too high.

Processing method: refer to the malfunction analysis in the above section.

2. Low voltage overcurrent protection

Possible cause: Sudden drop of supply voltage.

3. Communication malfunction

Processing method: Check if communication signal cable is connected reliably.

4. Sensor open or short circuit

Processing method: Check whether sensor is normal, connected with the corre sponding position on the controller and if damage of lead wire is found.

5. Compressor over load protection

Possible causes: insufficient or too much refrigrant; blockage of capillary and increase of suction temp.; improper running of compressor, burning in or stuck of bearing, damage of discharge valve; malfunction of protector.

Processing method: adjust refrigerant amount; replace the capillary; replace the compressor; use universal meter to check if the contactor of compress or is fine when it is not overheated, if not replace the protector.

6. System malfunction

i.e.overload protection.When tube temperature(Check the temperature of outdoor heat exchanger when cooling and check the temperatur e of indoor heat exchanger when heating) is too high, protection will be activated.

Possible causes: Outdoor temperature is too high when cooling; insufficient outdoor air circulation; refrigerant flow malfunction.

please refer to the malfunction analysis in the previous section for handling method .

7. IPM module protection

Processing method:Once the module malfunction happens,if it persists for a long time and can not be selfcanceled, cut off the power and turn off the unit,and then re-energize the unit again after about 10 min.After repeating the procedure for sever times, if the malfunction still exists,replace the module.

9.2 Troubleshooting for Main Malfunction

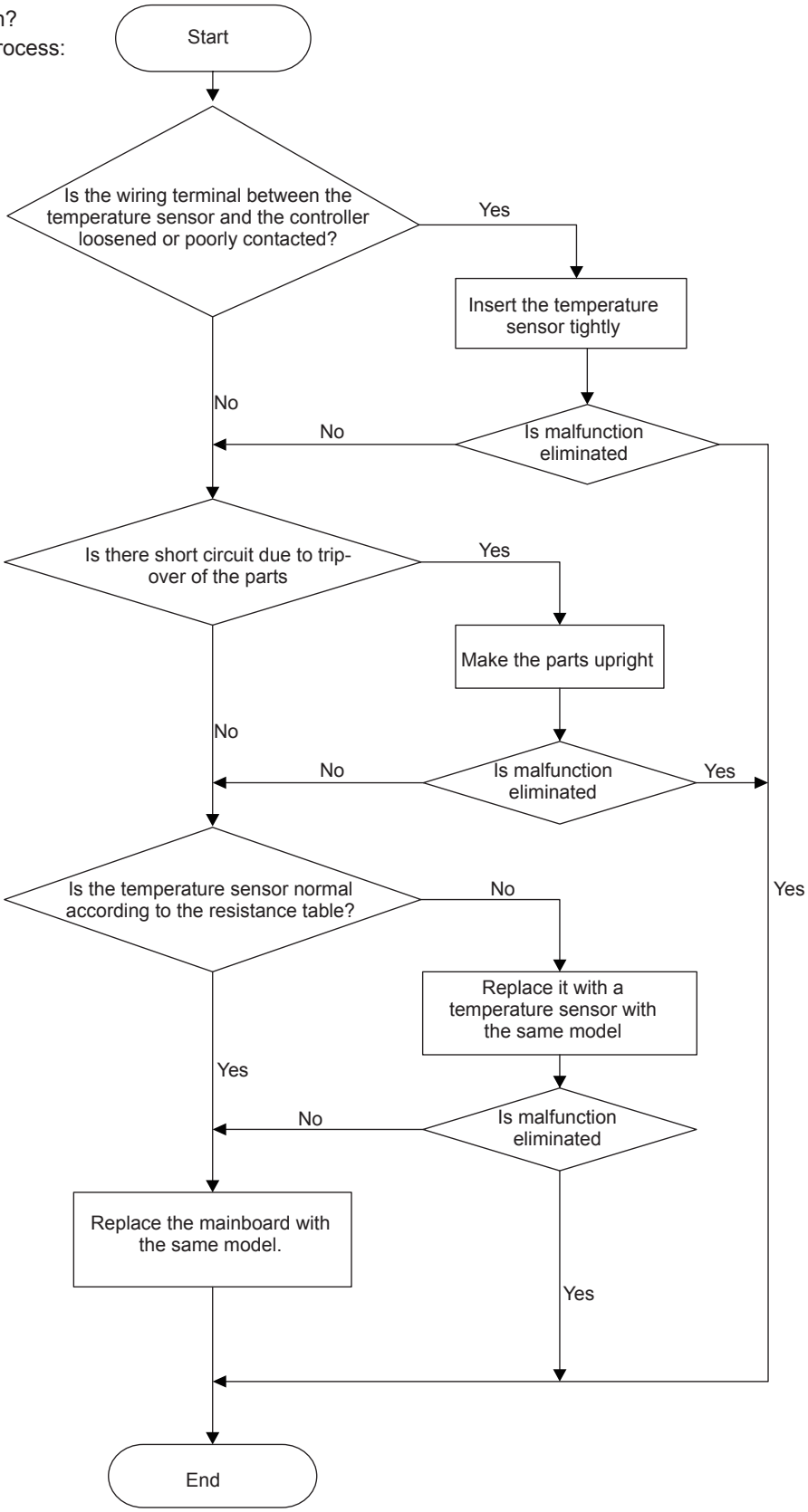
Indoor unit:

1. Malfunction of Temperature Sensor F1, F2

Main detection points:

- Is the wiring terminal between the temperature sensor and the controller loosened or poorly contacted?
- Is there short circuit due to trip-over of the parts?
- Is the temperature sensor broken?
- Is mainboard broken?

Malfunction diagnosis process:

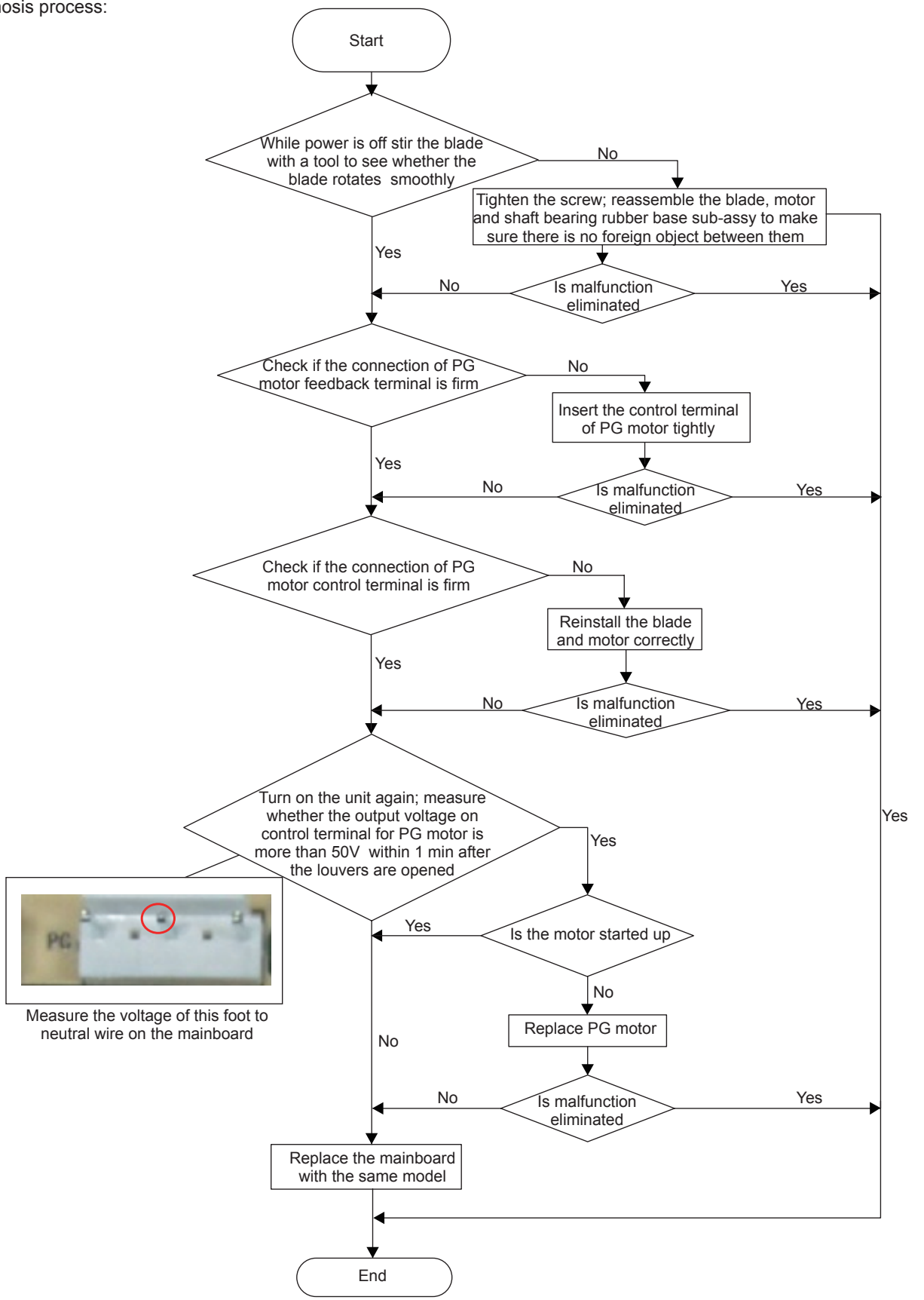


2. Malfunction of Blocked Protection of IDU Fan Motor H6

Main detection points:

- Is the control terminal of PG motor connected tightly?
- Is the feedback interface of PG motor connected tightly?
- The fan motor cant operate ?
- The motor is broken?
- Detectioncircuit of the mainboard is defined abnormal?

Malfunction diagnosis process:

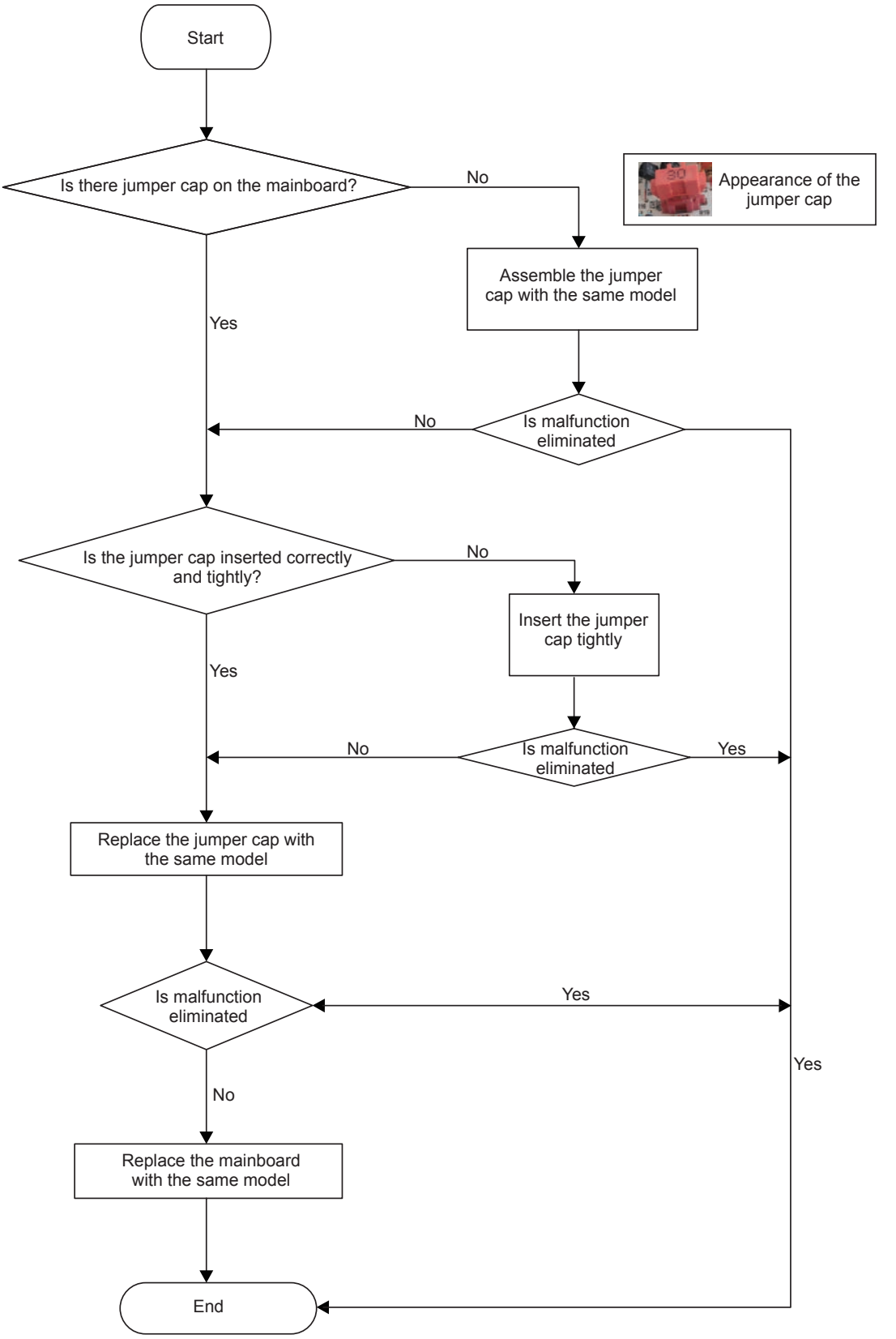


3. Malfunction of Protection of Jumper Cap C5

Main detection points:

- Is there jumper cap on the mainboard?
- Is the jumper cap inserted correctly and tightly?
- The jumper is broken?
- Detectioncircuit of the mainboard isdefined abnormal?

Malfunction diagnosis process:

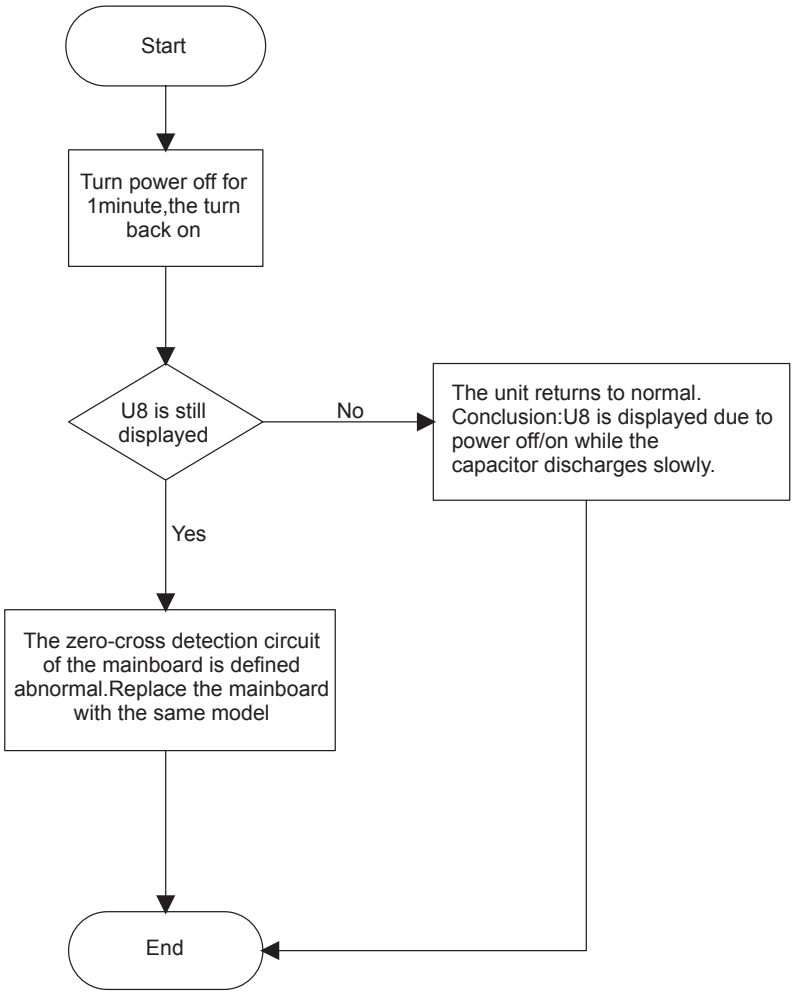


4. Malfunction of Zero-crossing Inspection Circuit Malfunction of the IDU Fan Motor U8

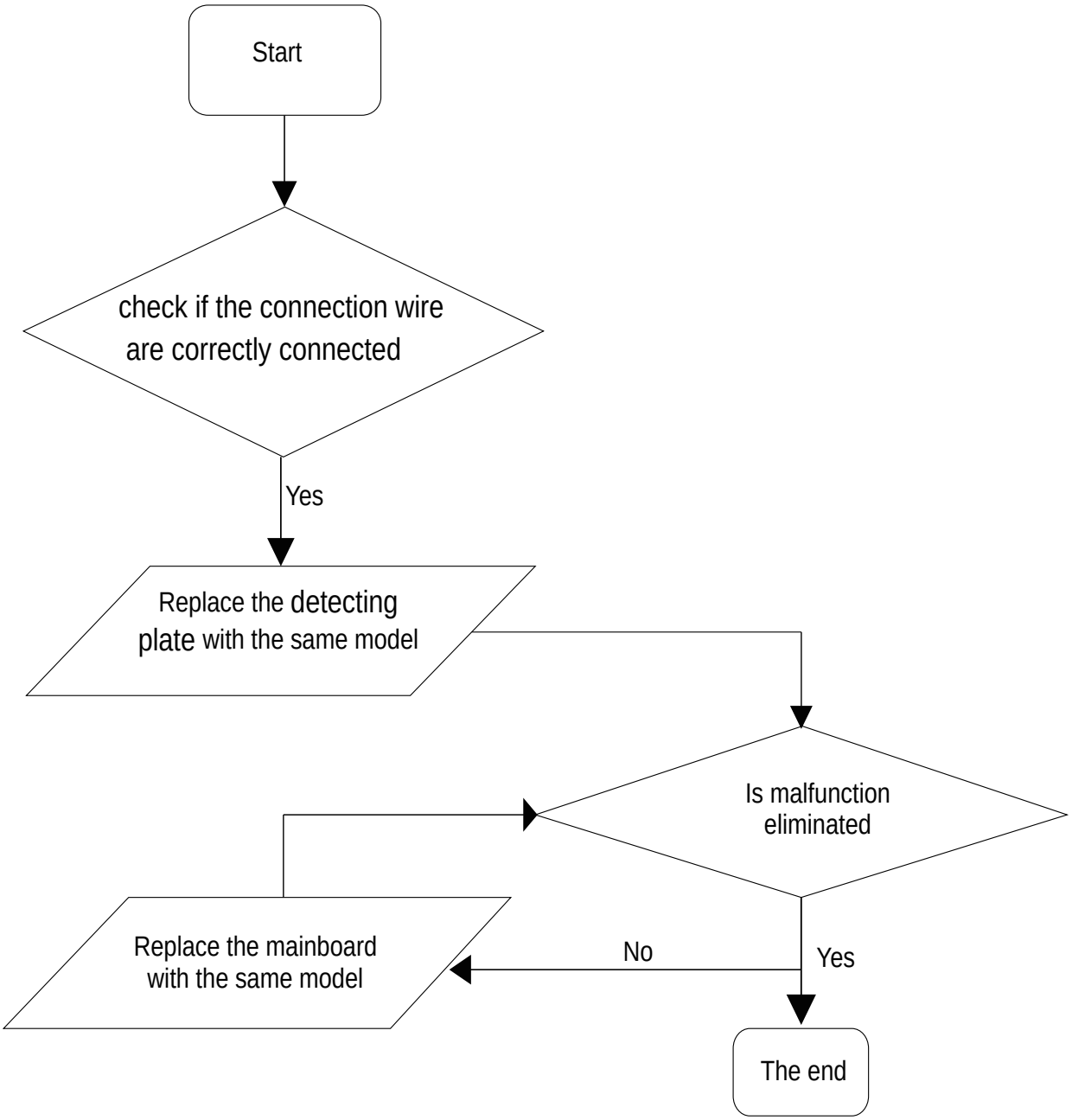
Main detection points:

- Instant energization afte de-energization while the capacitordischarges slowly?
- The zero-cross detectioncircuit of the mainboard isdefined abnormal?

Malfunction diagnosis process:



5.Malfunction of detecting plate(WIFI) JF



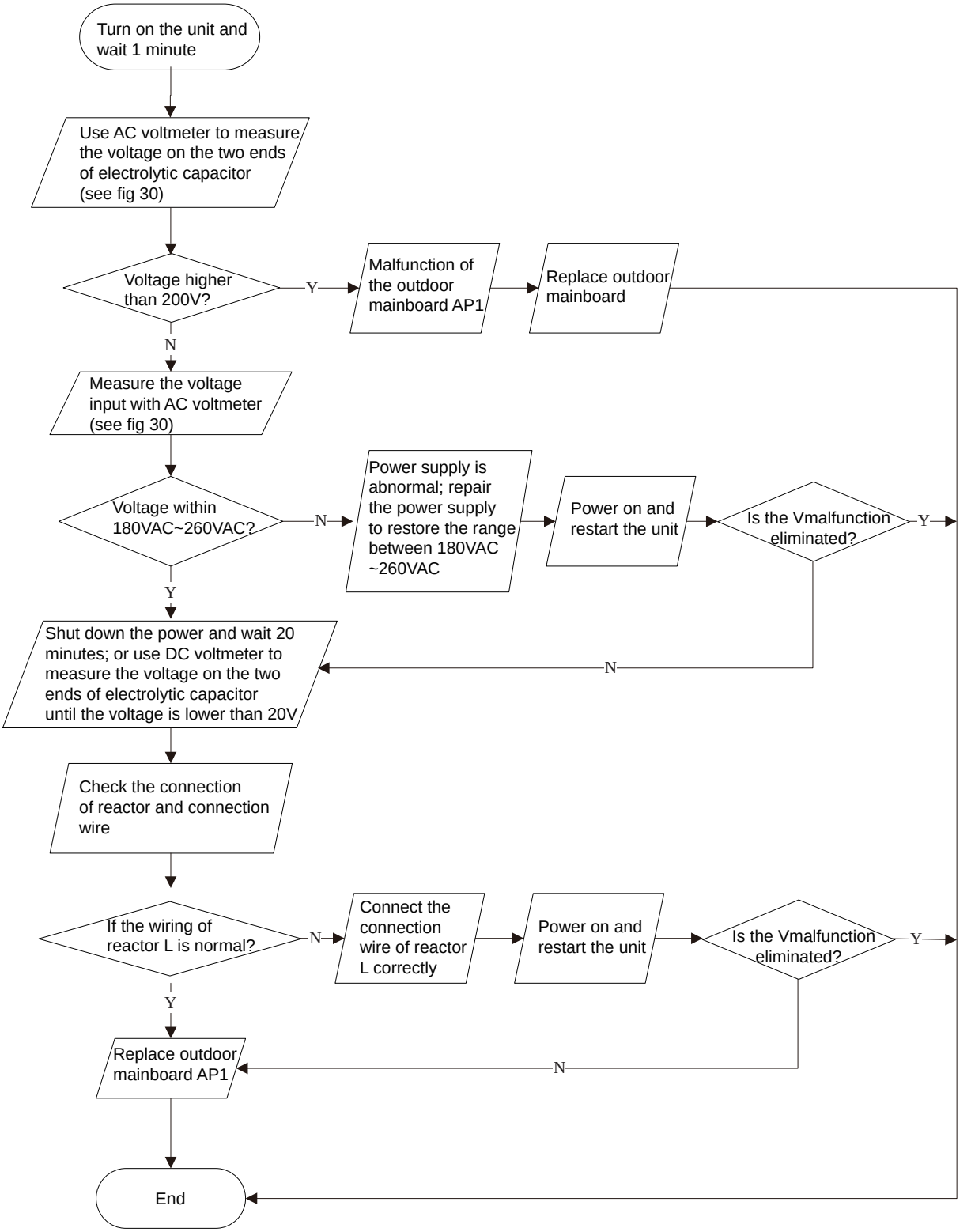
Outdoor unit:

1. Capacity charging malfunction (outdoor unit malfunction) (AP1 below means control board of outdoor unit)

Main detection points:

- Detect if the voltage of L and N terminal of XT wiring board is between 210VAC-240VAC by alternating voltage meter;
- Is reactor (L) well connected? Is connection wire loosened or pulled out? Is reactor (L) damaged?

Malfunction diagnosis process:

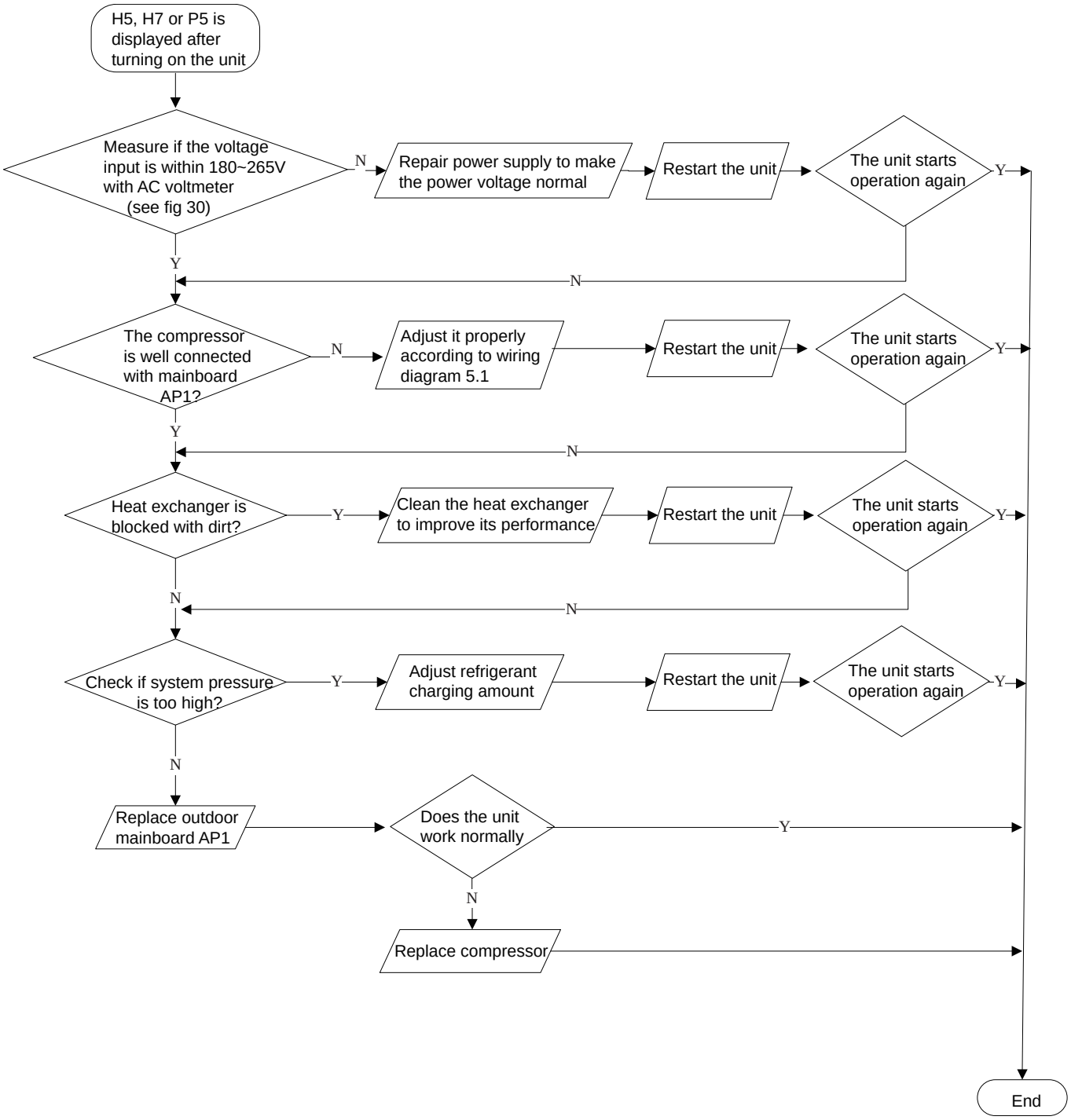


2. IPM protection(H5), desynchronizing malfunction(H7), overcurrent of compressor phase current (P5) (AP1 below means control board of outdoor unit)

Main detection points:

- Is voltage input within the normal range
- If the control board AP1 is well connected with compressor COMP? If they are loosened? If the connection sequence is correct?
- Heat exchange of unit is not good (heat exchanger is dirty and unit radiating environment is bad);
- If the system pressure is too high?
- If the refrigerant charging amount is appropriate?
- If coil resistance of compressor is normal? Is compressor coil insulating to copper pipe well?
- If the work load of unit is heavy? If radiating of unit is good?

Malfunction diagnosis process:

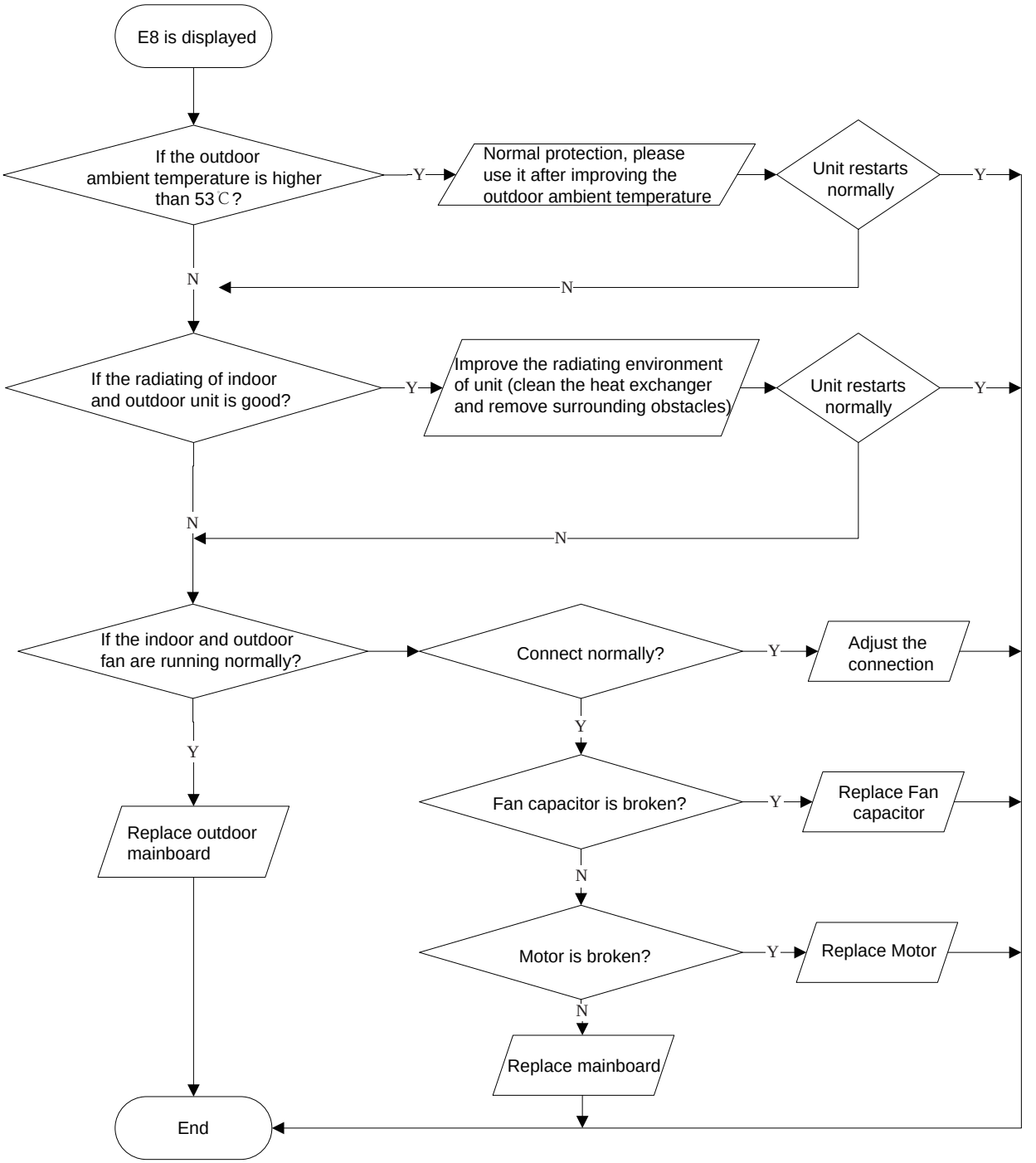


3. High temperature and overload protection (E8)(AP1 below means control board of outdoor unit)

Main detection points:

- If the outdoor ambient temperature is in normal range;
- If the indoor and outdoor fan are running normally;
- If the radiating environment of indoor and outdoor unit is good.

Malfunction diagnosis process:

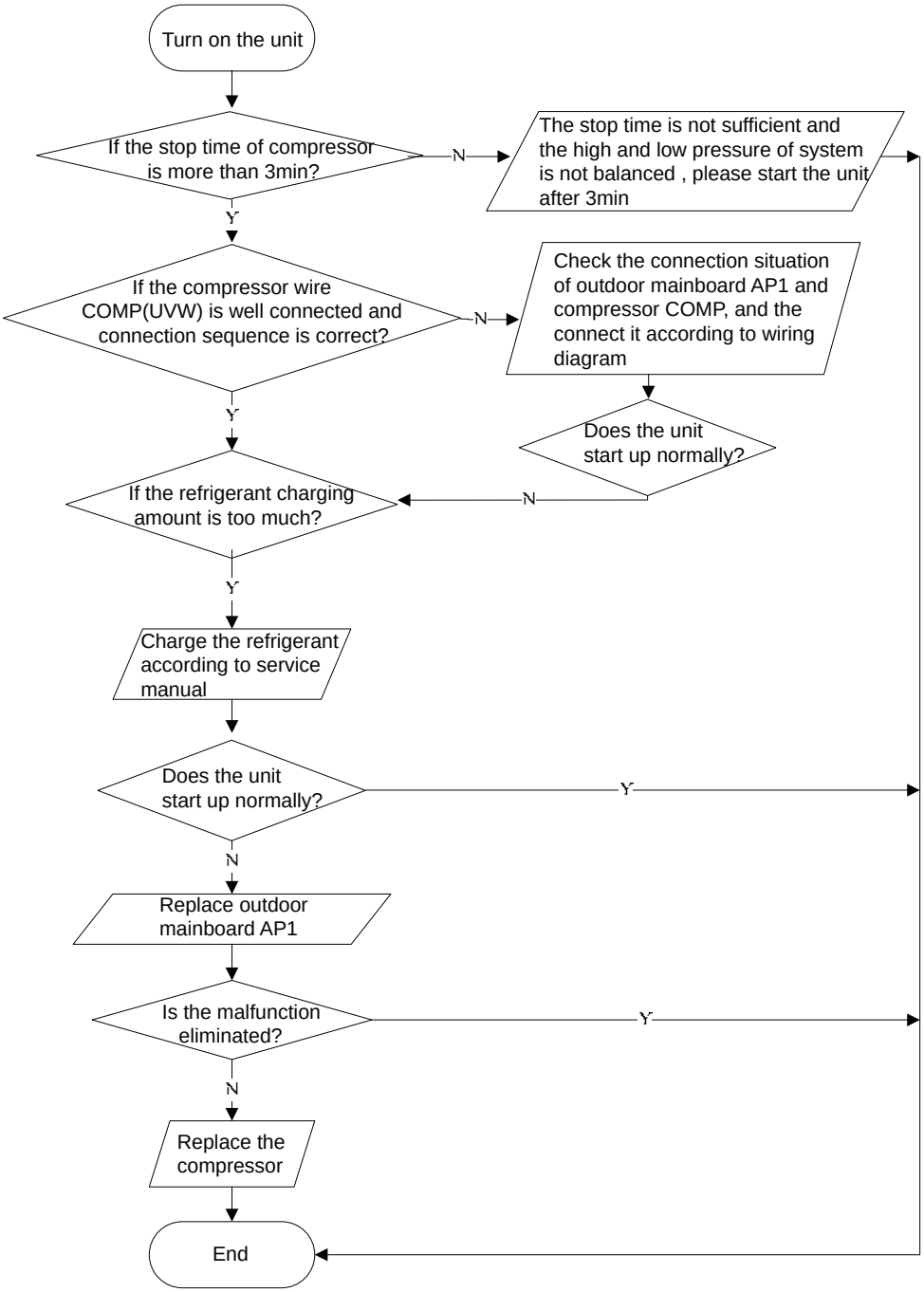


4. Start-up failure (LC) (AP1 below means control board of outdoor unit)

Main detection points:

- If the compressor wiring is correct?
- If the stop time of compressor is sufficient?
- If the compressor is damaged?
- If the refrigerant charging amount is too much?

Malfunction diagnosis process:

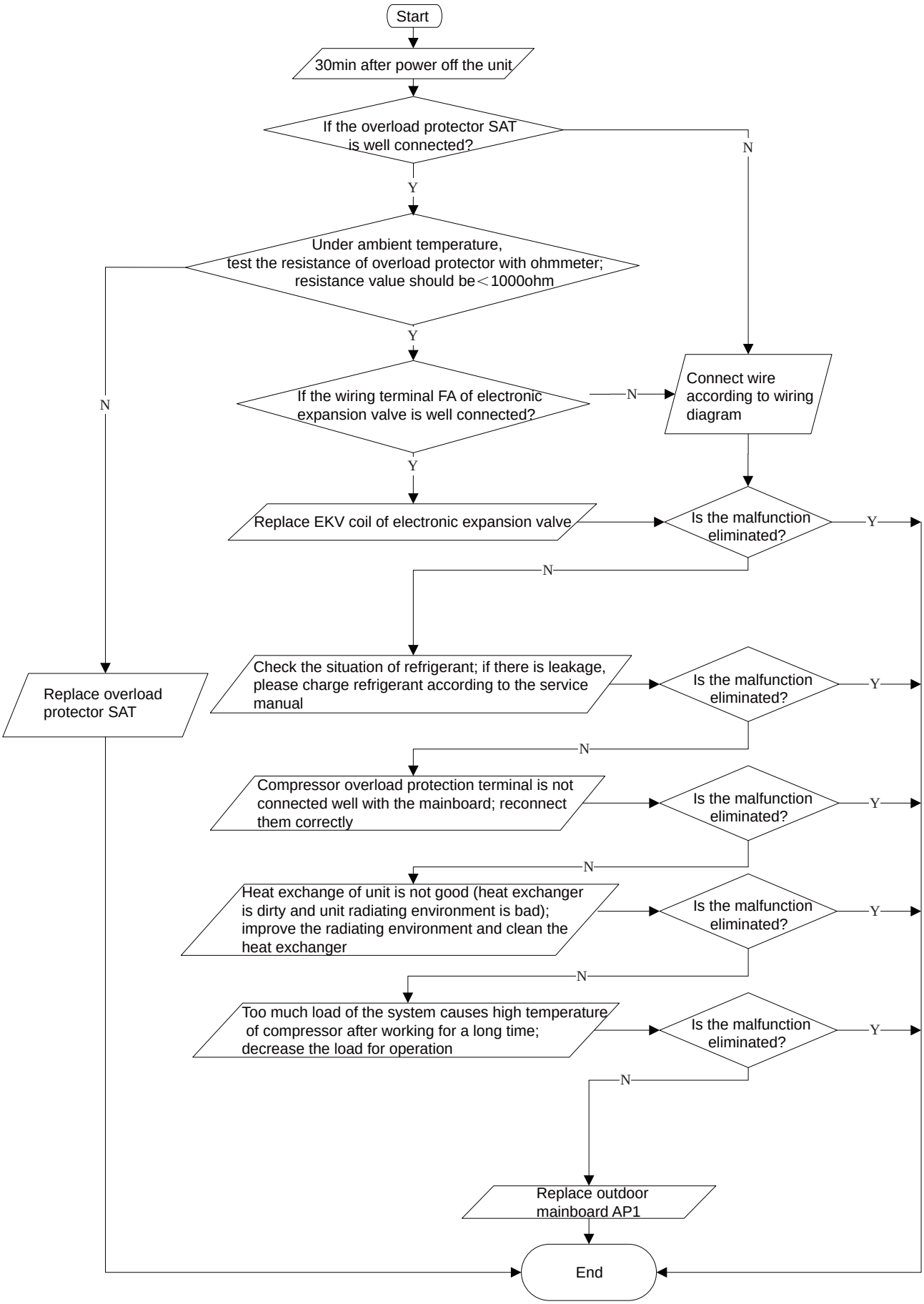


5. Overload and high discharge temperature malfunction

Main detection points:

- If the electronic expansion valve is connected well? Is the electronic expansion valve damaged?
- If the refrigerant is leaked?
- The compressor overload protection terminal is not connected well with the mainboard?
- If the overload protector is damaged?
- Heat exchange of unit is not good? (heat exchanger is dirty and unit radiating environment is bad)
- Too much load of the system causes high temperature of compressor after working for a long time?
- Malfunction of discharge temperature sensor?

Malfunction diagnosis process:

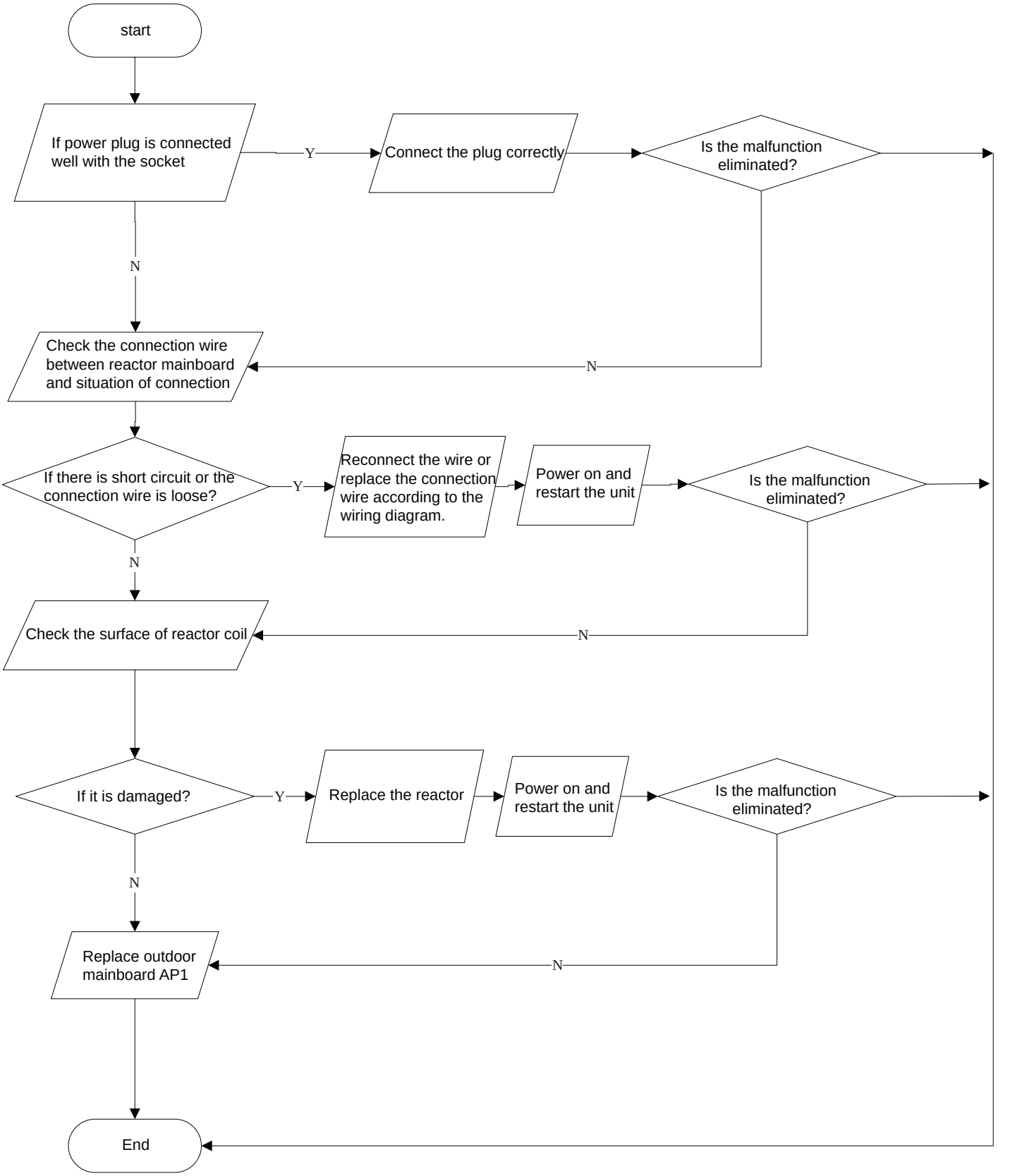

Start
30min after power off the unit
If the overload protector SAT is well connected?
N
Y
Under ambient temperature, test the resistance of overload protector with ohmmeter; resistance value should be＜1000ohm
Y
N
If the wiring terminal FA of electronic expansion valve is well connected?
N
Connect wire according to wiring diagram
Y
Replace EKV coil of electronic expansion valve
Is the malfunction eliminated?
Y
N
Replace overload protector SAT
Check the situation of refrigerant; if there is leakage, please charge refrigerant according to the service manual
Is the malfunction eliminated?
Y
N
Compressor overload protection terminal is not connected well with the mainboard; reconnect them correctly
Is the malfunction eliminated?
Y
N
Heat exchange of unit is not good (heat exchanger is dirty and unit radiating environment is bad); improve the radiating environment and clean the heat exchanger
Is the malfunction eliminated?
Y
N
Too much load of the system causes high temperature of compressor after working for a long time; decrease the load for operation
Is the malfunction eliminated?
Y
N
Replace outdoor mainboard AP1
End

6. PFC (correction for power factor) malfunction (outdoor unit malfunction

Main detection points:

- Check if power plug is connected well with the socket?
- Check if the reactor of outdoor unit is damaged?

Malfunction diagnosis process:

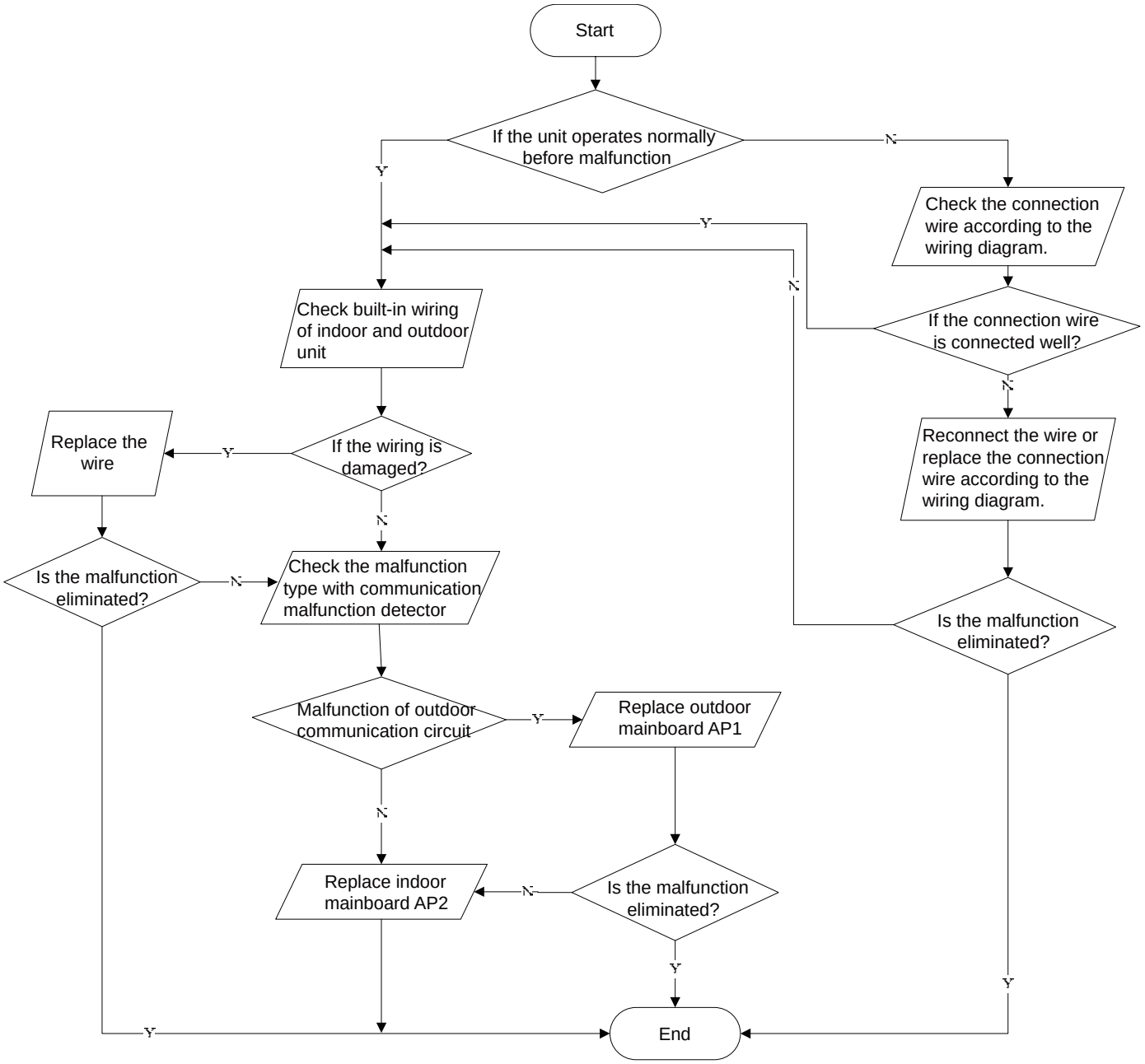


7. Communication malfunction

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:

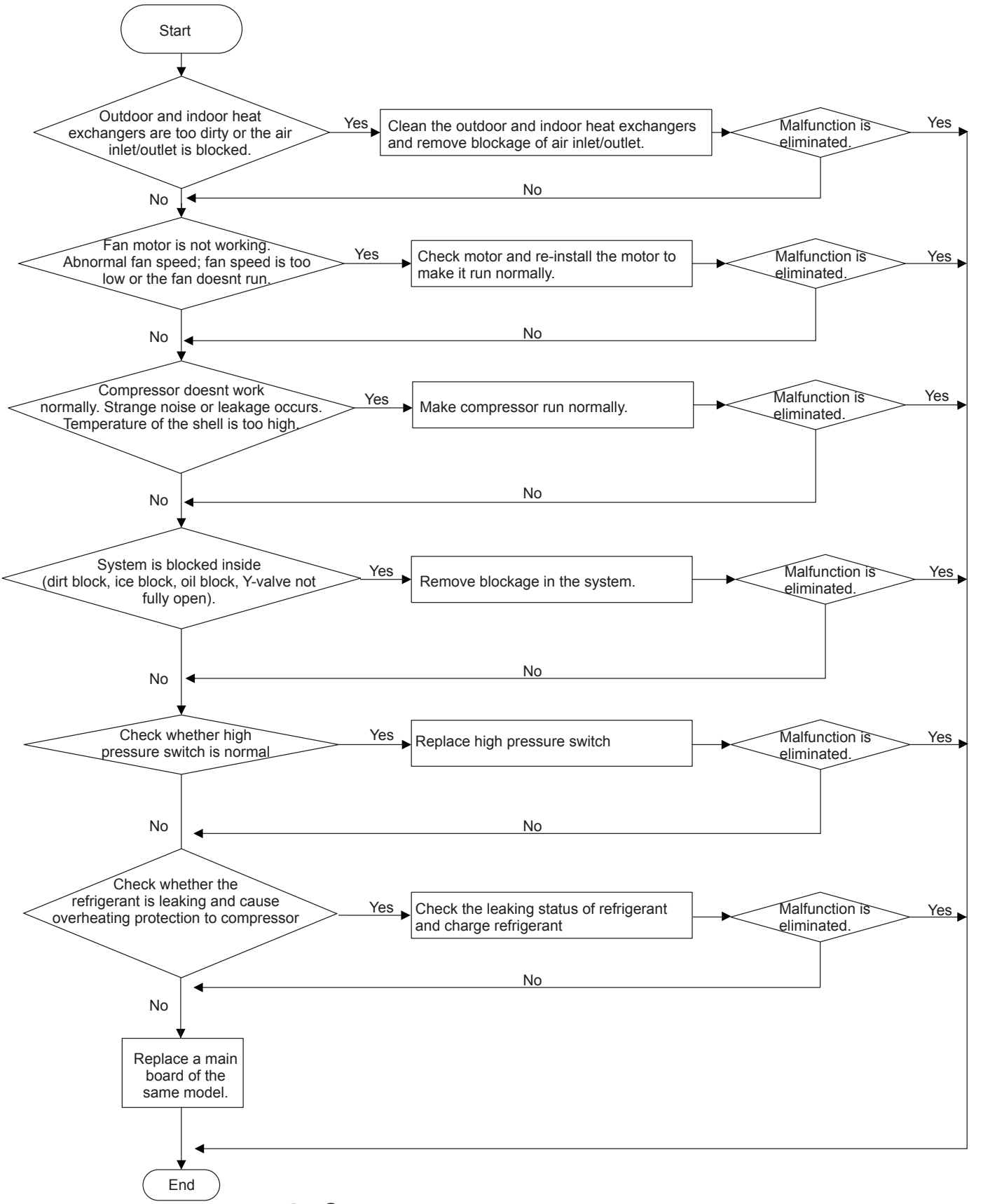


8. Overload Protection Compressor H3

Main detection points:

- Heat exchange of unit is not good? (heat exchanger is dirty and unit radiating environment is bad)
- Fan motor is not working?
- Too much load of the system causes high temperature of compressor after working for a long time?
- Whether high pressure switch is normal?
- If the refrigerant is leaked?

Malfunction diagnosis process:

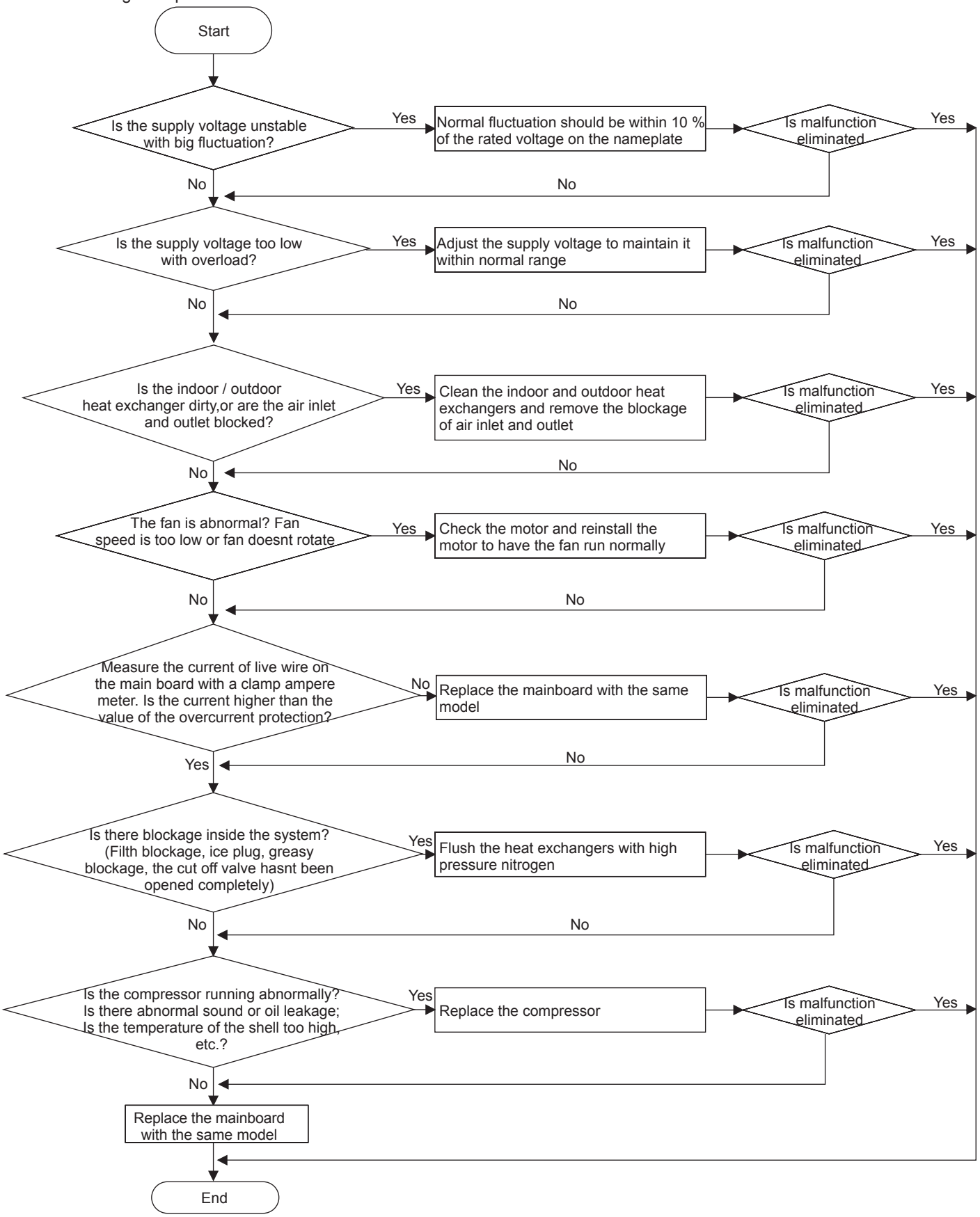


9. Malfunction of Overcurrent Protection E5

Main detection points:

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

Malfunction diagnosis process:



9.3 Troubleshooting for Normal Malfunction

1. Air Conditioner Cant be Started Up

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
No power supply, or poor connection for power plug	After energization, operation indicator isnt bright and the buzzer cant give out sound	Confirm whether its 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 isnt 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 its blocked	Clean the filter
Installation position for indoor unit and outdoor unit is improper	Check whether the installation postion 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; Unitt pressure is much lower than regulated range. If refrigerant isnt 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 cant swing	Refer to point 3 of maintenance method for details
Malfunction of the IDU fan motor	The IDU fan motor cant operate	Refer to troubleshooting for H6 for maintenance method in details
Malfunction of the ODU fan motor	The ODU fan motor cant operate	Refer to point 4 of maintenance method for details
Malfunction of compressor	Compressor cant operate	Refer to point 5 of maintenance method for details

3. Horizontal Louver Cant 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 cant operate	Repair or replace stepping motor
Main board is damaged	Others are all normal, while horizontal louver cant operate	Replace the main board with the same model

4. 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

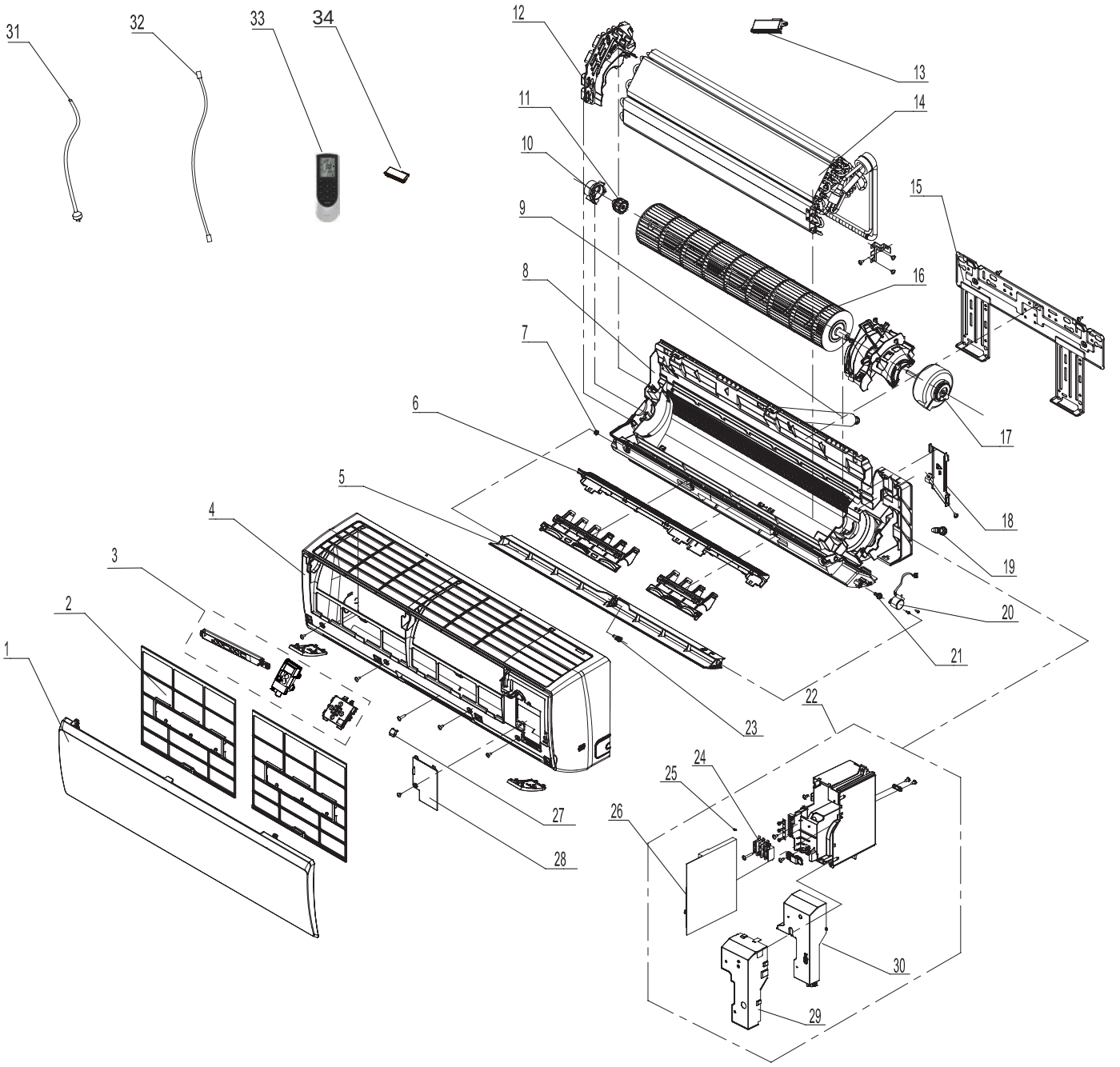
5. Abnormal Sound and Vibration

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
When turn on or turn off the unit, the panel and other parts will expand and theres abnormal sound	Theres the sound of "PAPA"	Normal phenomenon. Abnormal sound will disappear after a few minutes.
When turn on or turn off the unit, theres 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 therere parts touching together inside the indoor unit	Theres 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 therere parts touching together inside the outdoor unit	Theres 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

12K



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

No.	Description	Part Code		Qty
		GWH12QB-K3DNA6D/I (Cold Plasma)	GWH12QB-K3DNA6D/I	
	Product Code	CB427N04702	CB427N04703	
1	Front Panel	2002269601S	2002269601S	1
2	Filter Sub-Assy	11122219	11122219	2
3	Display Board	30565265	30565265	1
4	Front Case Assy	2002273001	2002273001	1
5	Guide Louver	1051276301	1051276301	1
6	Helicoid Tongue	26112508	26112508	1
7	Left Axile Bush	10512037	10512037	1
8	Rear Case assy	20162010	20162010	1
9	Drainage Hose	0523001408	0523001408	1
10	Ring of Bearing	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
12	Evaporator Supper 2	24212180	24212180	1
13	Cold Plasma Generator	1114001603	/	1
14	Evaporator Assy	0100200004406	0100200004407	1
15	Wall Mounting Frame	01252043	01252043	1
16	Cross Flow Fan	10352059	10352059	1
17	Fan Motor	150120874	150120874	1
18	Connecting pipe clamp	2611216401	2611216401	1
19	Rubber Plug (Water Tray)	76712012	76712012	1
20	Stepping Motor	1521212901	1521212901	1
21	Crank	73012005	73012005	1
22	Electric Box Assy	100002000251	100002000797	1
23	Axile Bush	10542036	10542036	1
24	Terminal Board	42011233	42011233	1
25	Jumper	4202021911	4202021911	1
26	Main Board	30145096	30145095	1
27	Screw Cover	2425203001	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	01592150	1
30	Electric Box Cover	20112207	20112207	1
31	Connecting Cable	/	/	/
32	Connecting Cable	4002052317	4002052317	0
33	Remote Controller	30510474	30510474	1
34	Detecting plate(WIFI)	30110154	30110154	1

Above data is subject to change without notice.

No.	Description	Part Code		Qty
		GWH12QB-K3DNE2D/I	GWH12QB-K3DNA5D/I (Cold Plasma)	
	Product Code	CB462N00200	CB425N07001	
1	Front Panel	200003000011S	2002267001	1
2	Filter Sub-Assy	11122219	11122219	2
3	Display Board	3056504301	30565260	1
4	Front Case Assy	00000200040	2002249501	1
5	Guide Louver	1051276301	1051272202	1
6	Helicoid Tongue	26112508	26112508	1
7	Left Axile Bush	10512037	10512037	1
8	Rear Case assy	20162010	20162010	1
9	Drainage Hose	0523001408	0523001408	1
10	Ring of Bearing	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
12	Evaporator Supper 2	24212180	24212180	1
13	Cold Plasma Generator	/	1114001603	1
14	Evaporator Assy	0100200004407	0100200004406	1
15	Wall Mounting Frame	01252043	01252043	1
16	Cross Flow Fan	10352059	10352059	1
17	Fan Motor	150120874	150120874	1
18	Connecting pipe clamp	2611216401	2611216401	1
19	Rubber Plug (Water Tray)	76712012	76712012	1
20	Stepping Motor	1521212901	1521212901	1
21	Crank	73012005	73012005	1
22	Electric Box Assy	10000205031	10000205063	1
23	Axile Bush	10542036	10542036	1
24	Terminal Board	42011233	42011233	1
25	Jumper	4202021911	4202021903	1
26	Main Board	30145095	30145096	1
27	Screw Cover	2425203001	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	01592150	1
30	Electric Box Cover	20112207	20112207	1
31	Connecting Cable	/	/	/
32	Connecting Cable	4002052317	4002052317	0
33	Remote Controller	30510474	30510474	1
34	Detecting plate(WIFI)	30110154	30110154	1

Above data is subject to change without notice.

No.	Description	Part Code		Qty
		GWH12QB-K3DNC4D/I	GWH12QB-K3DNC4D/I (Cold Plasma)	
	Product Code	CB444N01502	CB444N01503	
1	Front Panel	20000300105S	20000300105S	1
2	Filter Sub-Assy	11122219	11122219	2
3	Display Board	30565260	30565260	1
4	Front Case Assy	00000200040	00000200040	1
5	Guide Louver	1051276301	1051276301	1
6	Helicoid Tongue	26112508	26112508	1
7	Left Axile Bush	10512037	10512037	1
8	Rear Case assy	20162010	20162010	1
9	Drainage Hose	0523001408	0523001408	1
10	Ring of Bearing	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
12	Evaporator Supper 2	24212180	24212180	1
13	Cold Plasma Generator	/	1114001603	1
14	Evaporator Assy	0100200004407	0100200004406	1
15	Wall Mounting Frame	01252043	01252043	1
16	Cross Flow Fan	10352059	10352059	1
17	Fan Motor	150120874	150120874	1
18	Connecting pipe clamp	2611216401	2611216401	1
19	Rubber Plug (Water Tray)	76712012	76712012	1
20	Stepping Motor	1521212901	1521212901	1
21	Crank	73012005	73012005	1
22	Electric Box Assy	10000204999	100002001269	1
23	Axile Bush	10542036	10542036	1
24	Terminal Board	42011233	42011233	1
25	Jumper	4202021911	4202021911	1
26	Main Board	30145095	30145096	1
27	Screw Cover	2425203001	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	01592150	1
30	Electric Box Cover	20112207	20112207	1
31	Connecting Cable	/	/	/
32	Connecting Cable	4002052317	4002052317	0
33	Remote Controller	30510474	30510474	1
34	Detecting plate(WIFI)	30110154	30110154	1

Above data is subject to change without notice.

No.	Description	Part Code		Qty
		GWH12QB-K3DNC2D/I (Cold Plasma)	GWH12QB-K3DNC2D/I	
	Product Code	CB439N05001	CB439N05003	
1	Front Panel	20000300068S	20000300068S	1
2	Filter Sub-Assy	11122219	11122219	2
3	Display Board	30565281	30565281	1
4	Front Case Assy	00000200040	00000200040	1
5	Guide Louver	1051276301	1051276301	1
6	Helicoid Tongue	26112508	26112508	1
7	Left Axile Bush	10512037	10512037	1
8	Rear Case assy	20162010	20162010	1
9	Drainage Hose	0523001408	0523001408	1
10	Ring of Bearing	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
12	Evaporator Supper 2	24212180	24212180	1
13	Cold Plasma Generator	1114001603	/	1
14	Evaporator Assy	0100200004406	0100200004407	1
15	Wall Mounting Frame	01252043	01252043	1
16	Cross Flow Fan	10352059	10352059	1
17	Fan Motor	150120874	150120874	1
18	Connecting pipe clamp	2611216401	2611216401	1
19	Rubber Plug (Water Tray)	76712012	76712012	1
20	Stepping Motor	1521212901	1521212901	1
21	Crank	73012005	73012005	1
22	Electric Box Assy	100002001536	100002001551	1
23	Axile Bush	10542036	10542036	1
24	Terminal Board	42011233	42011233	1
25	Jumper	4202021911	4202021911	1
26	Main Board	30145096	30145095	1
27	Screw Cover	2425203001	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	01592150	1
30	Electric Box Cover	20112207	20112207	1
31	Connecting Cable	/	/	/
32	Connecting Cable	4002052317	4002052317	0
33	Remote Controller	30510474	30510474	1
34	Detecting plate(WIFI)	30110154	30110154	1

Above data is subject to change without notice.

No.	Description	Part Code		Qty
		GWH12QB-K3DNB2D/I	GWH12QB-K3DNC8D/I	
	Product Code	CB432N05202	CB456N01100	
1	Front Panel	20000300019S	20000300155T	1
2	Filter Sub-Assy	11122219	11122219	2
3	Display Board	30565260	30565281	1
4	Front Case Assy	00000200040	00000200040	1
5	Guide Louver	1051276301	1051276301	1
6	Helicoid Tongue	26112508	26112508	1
7	Left Axile Bush	10512037	10512037	1
8	Rear Case assy	20162010	20162010	1
9	Drainage Hose	0523001408	0523001408	1
10	Ring of Bearing	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
12	Evaporator Supper 2	24212180	24212180	1
13	Cold Plasma Generator	/	1114001603	1
14	Evaporator Assy	0100200004407	0100200004406	1
15	Wall Mounting Frame	01252043	01252043	1
16	Cross Flow Fan	10352059	10352059	1
17	Fan Motor	150120874	150120874	1
18	Connecting pipe clamp	2611216401	2611216401	1
19	Rubber Plug (Water Tray)	76712012	76712012	1
20	Stepping Motor	1521212901	1521212901	1
21	Crank	73012005	73012005	1
22	Electric Box Assy	10000204999	100002001536	1
23	Axile Bush	10542036	10542036	1
24	Terminal Board	42011233	42011233	1
25	Jumper	4202021911	4202021911	1
26	Main Board	30145095	30145096	1
27	Screw Cover	2425203001	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	01592150	1
30	Electric Box Cover	20112207	20112207	1
31	Connecting Cable	/	/	/
32	Connecting Cable	4002052317	4002052317	0
33	Remote Controller	30510474	30510474	1
34	Detecting plate(WIFI)	30110154	30110154	1

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No.	Description	Part Code		Qty
		GWH12QB-K3DNB4D/I (Cold Plasma)	GWH12QB-K3DND6D/I	
	Product Code	CB434N04402	CB460N02900	
1	Front Panel	20000300026T	200003000028S	1
2	Filter Sub-Assy	11122219	11122219	2
3	Display Board	30565260	300001000041	1
4	Front Case Assy	00000200040	00000200040	1
5	Guide Louver	1051276301	1051276301	1
6	Helicoid Tongue	26112508	26112508	1
7	Left Axile Bush	10512037	10512037	1
8	Rear Case assy	20162010	20162010	1
9	Drainage Hose	0523001408	0523001408	1
10	Ring of Bearing	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
12	Evaporator Supper 2	24212180	24212180	1
13	Cold Plasma Generator	1114001603	/	1
14	Evaporator Assy	0100200004406	0100200004407	1
15	Wall Mounting Frame	01252043	01252043	1
16	Cross Flow Fan	10352059	10352059	1
17	Fan Motor	150120874	150120874	1
18	Connecting pipe clamp	2611216401	2611216401	1
19	Rubber Plug (Water Tray)	76712012	76712012	1
20	Stepping Motor	1521212901	1521212901	1
21	Crank	73012005	73012005	1
22	Electric Box Assy	100002001269	100002002787	1
23	Axile Bush	10542036	10542036	1
24	Terminal Board	42011233	42011233	1
25	Jumper	4202021911	4202021911	1
26	Main Board	30145096	30145095	1
27	Screw Cover	2425203001	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	01592150	1
30	Electric Box Cover	20112207	20112207	1
31	Connecting Cable	/	/	/
32	Connecting Cable	4002052317	4002052317	0
33	Remote Controller	30510474	30510474	1
34	Detecting plate(WIFI)	30110154	30110154	1

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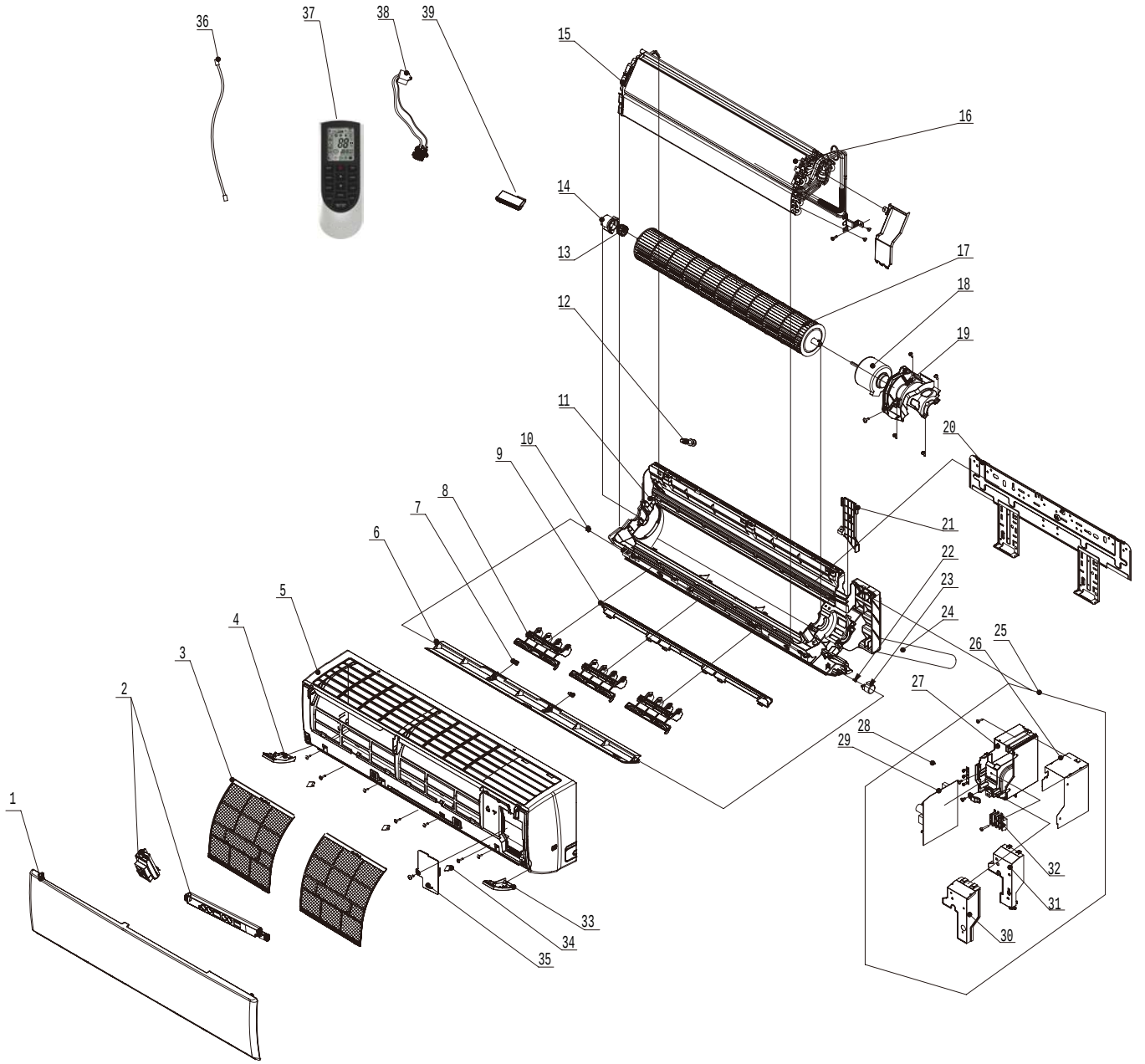
No.	Description	Part Code		Qty
		GWH12QB-K3DND8D/I	GWH12QB-K3DNE4D/I (Cold Plasma)	
	Product Code	CB459N01001	CB470N01100	
1	Front Panel	200003000010S	200003000065T	1
2	Filter Sub-Assy	11122219	11122219	2
3	Display Board	300001000035	300001000081	1
4	Front Case Assy	00000200040	00000200040	1
5	Guide Louver	1051276301	1051276301	1
6	Helicoid Tongue	26112508	26112508	1
7	Left Axile Bush	10512037	10512037	1
8	Rear Case assy	20162010	20162010	1
9	Drainage Hose	0523001408	0523001408	1
10	Ring of Bearing	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
12	Evaporator Supper 2	24212180	24212180	1
13	Cold Plasma Generator	/	1114001603	1
14	Evaporator Assy	0100200004407	0100200004406	1
15	Wall Mounting Frame	01252043	01252043	1
16	Cross Flow Fan	10352059	10352059	1
17	Fan Motor	150120874	150120874	1
18	Connecting pipe clamp	2611216401	2611216401	1
19	Rubber Plug (Water Tray)	76712012	76712012	1
20	Stepping Motor	1521212901	1521212901	1
21	Crank	73012005	73012005	1
22	Electric Box Assy	100002002536	100002002712	1
23	Axile Bush	10542036	10542036	1
24	Terminal Board	42011233	42011233	1
25	Jumper	4202021911	4202021911	1
26	Main Board	30145095	30145096	1
27	Screw Cover	2425203001	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	01592150	1
30	Electric Box Cover	20112207	20112207	1
31	Connecting Cable	/	/	/
32	Connecting Cable	4002052317	4002052317	0
33	Remote Controller	30510474	30510474	1
34	Detecting plate(WIFI)	30110154	30110154	1

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No.	Description	Part Code		Qty
		GWH12QB-K3DNB8D/I	GWH12QB-K3DND2D/I	
	Product Code	CB438N03202	CB461N03000	
1	Front Panel	20000300073T	200003000006	1
2	Filter Sub-Assy	11122219	11122219	2
3	Display Board	30565260	30565281	1
4	Front Case Assy	00000200040	00000200040	1
5	Guide Louver	1051276301	1051276301	1
6	Helicoid Tongue	26112508	26112508	1
7	Left Axile Bush	10512037	10512037	1
8	Rear Case assy	20162010	20162010	1
9	Drainage Hose	0523001408	0523001408	1
10	Ring of Bearing	26152022	26152022	1
11	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
12	Evaporator Supper 2	24212180	24212180	1
13	Cold Plasma Generator	/	1114001603	1
14	Evaporator Assy	0100200004407	0100200004406	1
15	Wall Mounting Frame	01252043	01252043	1
16	Cross Flow Fan	10352059	10352059	1
17	Fan Motor	150120874	150120874	1
18	Connecting pipe clamp	2611216401	2611216401	1
19	Rubber Plug (Water Tray)	76712012	76712012	1
20	Stepping Motor	1521212901	1521212901	1
21	Crank	73012005	73012005	1
22	Electric Box Assy	10000204999	100002001536	1
23	Axile Bush	10542036	10542036	1
24	Terminal Board	42011233	42011233	1
25	Jumper	4202021911	4202021911	1
26	Main Board	30145095	30145096	1
27	Screw Cover	2425203001	2425203001	1
28	Electric Box Cover Sub-Assy	0140206501	0140206501	1
29	Shield Cover of Electric Box Cover	01592150	01592150	1
30	Electric Box Cover	20112207	20112207	1
31	Connecting Cable	/		/
32	Connecting Cable	4002052317	4002052317	0
33	Remote Controller	30510474	30510474	1
34	Detecting plate(WIFI)	30110154	30110154	1

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

No.	Description	Part Code			Qty
		GWH18QD-K3DNA6E/I (Cold Plasma)	GWH18QD-K3DNA6E/I	GWH18QD-K3DND6E/I	
	Product Code	CB427N06400	CB427N06401	CB460N03800	
1	Front Panel	2002269501S	2002269501S	200003000027S	1
2	Display Board	30565264	30565264	300001000042	1
3	Filter Sub-Assy	11122089	11122089	11122089	2
4	Decorative Board	2019267001	2019267001	20192662	1
5	Front Case	2002248401	2002248401	2002248401	1
6	Guide Louver	1051276501	1051276501	1051276501	1
7	Axile Bush	10542036	10542036	10542036	2
8	Air Louver(Manual)	10512732	10512732	10512732	3
9	Helicoid tongue	26112512	26112512	26112512	1
10	Left Axile Bush	10512037	10512037	10512037	1
11	Rear Case assy	22202571	22202571	22202571	1
12	Rubber Plug (Water Tray)	76712012	76712012	76712012	1
13	O-Gasket sub-assy of Bearing	7651205102	7651205102	7651205102	1
14	Ring of Bearing	26152025	26152025	26152025	1
15	Evaporator Support	24212177	24212177	24212177	1
16	Evaporator Assy	01100100020	01100100020	01100100020	1
17	Cross Flow Fan	10352060	10352060	10352060	1
18	Fan Motor	1501214502	1501214502	1501214502	1
19	Motor Press Plate	26112511	26112511	26112511	1
20	Wall Mounting Frame	01362026	01362026	01362026	1
21	Connecting pipe clamp	2611218801	2611218801	2611218801	1
22	Crank	73012005	73012005	73012005	1
23	Stepping Motor	1521240212	1521240212	1521240212	1
24	Drainage hose	05230014	05230014	05230014	1
25	Electric Box Assy	10000204674	100002000802	100002003170	1
26	Lower Shield of Electric Box	01592139	01592139	01592139	1
27	Electric Box	20112211	20112211	20112211	1
28	Jumper	4202021921	4202021921	4202021921	1
29	Main Board	30145099	30145098	30145099	1
30	Shield Cover of Electric Box	01592139	01592139	01592139	1
31	Electric Box Cover	20112209	20112209	20112209	1
32	Terminal Board	42011233	42011233	42011233	1
33	Decorative Board	2019267001	2019267001	20192662	1
34	Screw Cover	2425201726	2425201726	2425201726	3
35	Electric Box Cover2	20112210	20112210	20112210	1
36	Connecting Cable	4002052317	4002052317	4002052317	0
37	Remote Controller	30510474	30510474	30510474	1
38	Cold Plasma Generator	1114001602	/	1114001602	1
39	Detecting plate(WIFI)	30110144	30110144	30110144	1

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No.	Description	Part Code			Qty
		GWH18QD-K3DNA5E/I (Cold Plasma)	GWH18QD-K3DNE2E/I	GWH18QD-K3DNB6E/I	
	Product Code	CB425N07100	CB462N00300	CB435N07101	
1	Front Panel	2002266901S01	200003000021S	20000300040	1
2	Display Board	30565260	3056504301	30565278	1
3	Filter Sub-Assy	11122089	11122089	11122089	2
4	Decorative Board	00000200023	00000200042	20192662	1
5	Front Case	2002248401	2002248401	2002248401	1
6	Guide Louver	1051273402	1051276501	1051276501	1
7	Axile Bush	10542036	10542036	10542036	2
8	Air Louver(Manual)	10512732	10512732	10512732	3
9	Helicoid tongue	26112512	26112512	26112512	1
10	Left Axile Bush	10512037	10512037	10512037	1
11	Rear Case assy	22202571	22202571	22202571	1
12	Rubber Plug (Water Tray)	76712012	76712012	76712012	1
13	O-Gasket sub-assy of Bearing	7651205102	7651205102	7651205102	1
14	Ring of Bearing	26152025	26152025	26152025	1
15	Evaporator Support	24212177	24212177	24212177	1
16	Evaporator Assy	01100100020	01100100020	01100100020	1
17	Cross Flow Fan	10352060	10352060	10352060	1
18	Fan Motor	1501214502	1501214502	1501214502	1
19	Motor Press Plate	26112511	26112511	26112511	1
20	Wall Mounting Frame	01362026	01362026	01362026	1
21	Connecting pipe clamp	2611218801	2611218801	2611218801	1
22	Crank	73012005	73012005	73012005	1
23	Stepping Motor	1521240212	1521240212	1521240212	1
24	Drainage hose	05230014	05230014	05230014	1
25	Electric Box Assy	10000204564	10000205056	100002000826	1
26	Lower Shield of Electric Box	01592139	01592139	01592139	1
27	Electric Box	20112211	20112211	20112211	1
28	Jumper	4202021912	4202021921	4202021921	1
29	Main Board	30145099	30145098	30145098	1
30	Shield Cover of Electric Box	01592139	01592176	01592139	1
31	Electric Box Cover	20112209	20112209	20112209	1
32	Terminal Board	42011233	42011233	42011233	1
33	Decorative Board	2425201726	2425201726	20192662	1
34	Screw Cover	2425201726	2425201726	2425201726	3
35	Electric Box Cover2	20112210	20112210	20112210	1
36	Connecting Cable	4002052317	4002052317	4002052317	0
37	Remote Controller	30510474	30510474	30510474	1
38	Cold Plasma Generator	1114001602	/	/	/
39	Detecting plate(WIFI)	30110144	30110144	30110144	1

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No.	Description	Part Code		Qty
		GWH18QD-K3DNC2E/I		
	Product Code	CB439N08501	CB439N08500	
1	Front Panel	20000300070S	20000300070S	1
2	Display Board	30565278	30565278	1
3	Filter Sub-Assy	11122089	11122089	2
4	Decorative Board	20192662	20192662	1
5	Front Case	2002248401	2002248401	1
6	Guide Louver	1051276501	1051276501	1
7	Axile Bush	10542036	10542036	2
8	Air Louver(Manual)	10512732	10512732	3
9	Helicoid tongue	26112512	26112512	1
10	Left Axile Bush	10512037	10512037	1
11	Rear Case assy	22202571	22202571	1
12	Rubber Plug (Water Tray)	76712012	76712012	1
13	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
14	Ring of Bearing	26152025	26152025	1
15	Evaporator Support	24212177	24212177	1
16	Evaporator Assy	01100100020	01100100020	1
17	Cross Flow Fan	10352060	10352060	1
18	Fan Motor	1501214502	1501214502	1
19	Motor Press Plate	26112511	26112511	1
20	Wall Mounting Frame	01362026	01362026	1
21	Connecting pipe clamp	2611218801	2611218801	1
22	Crank	73012005	73012005	1
23	Stepping Motor	1521240212	1521240212	1
24	Drainage hose	05230014	05230014	1
25	Electric Box Assy	100002000826	10000204232	1
26	Lower Shield of Electric Box	01592139	01592139	1
27	Electric Box	20112211	20112211	1
28	Jumper	4202021921	4202021921	1
29	Main Board	30145098	30145099	1
30	Shield Cover of Electric Box	01592176	01592176	1
31	Electric Box Cover	20112209	20112209	1
32	Terminal Board	42011233	42011233	1
33	Decorative Board	20192662	20192662	1
34	Screw Cover	2425201726	2425201726	3
35	Electric Box Cover2	20112210	20112210	1
36	Connecting Cable	4002052317	4002052317	0
37	Remote Controller	30510474	30510474	1
38	Cold Plasma Generator	/	1114001602	1
39	Detecting plate(WIFI)	30110144	30110144	1

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No.	Description	Part Code		Qty
		GWH18QD-K3DNC4E/I	GWH18QD-K3DNC4E/I (Cold Plasma)	
	Product Code	CB444N02900	CB444N02901	
1	Front Panel	20000300106S	20000300106S	1
2	Display Board	30565260	30565260	1
3	Filter Sub-Assy	11122089	11122089	2
4	Decorative Board	20192662	20192662	1
5	Front Case	2002248401	2002248401	1
6	Guide Louver	1051276501	1051276501	1
7	Axile Bush	10542036	10542036	2
8	Air Louver(Manual)	10512732	10512732	3
9	Helicoid tongue	26112512	26112512	1
10	Left Axile Bush	10512037	10512037	1
11	Rear Case assy	22202571	22202571	1
12	Rubber Plug (Water Tray)	76712012	76712012	1
13	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
14	Ring of Bearing	26152025	26152025	1
15	Evaporator Support	24212177	24212177	1
16	Evaporator Assy	01100100020	01100100020	1
17	Cross Flow Fan	10352060	10352060	1
18	Fan Motor	1501214502	1501214502	1
19	Motor Press Plate	26112511	26112511	1
20	Wall Mounting Frame	01362026	01362026	1
21	Connecting pipe clamp	2611218801	2611218801	1
22	Crank	73012005	73012005	1
23	Stepping Motor	1521240212	1521240212	1
24	Drainage hose	05230014	05230014	1
25	Electric Box Assy	10000205013	10000203074	1
26	Lower Shield of Electric Box	01592139	01592139	1
27	Electric Box	20112211	20112211	1
28	Jumper	4202021921	4202021921	1
29	Main Board	30145098	30145099	1
30	Shield Cover of Electric Box	01592176	01592176	1
31	Electric Box Cover	20112209	20112209	1
32	Terminal Board	42011233	42011233	1
33	Decorative Board	20192662	20192662	1
34	Screw Cover	2425201726	2425201726	3
35	Electric Box Cover2	20112210	20112210	1
36	Connecting Cable	4002052317	4002052317	0
37	Remote Controller	30510474	30510474	1
38	Cold Plasma Generator	/	1114001602	1
39	Detecting plate(WIFI)	30110144	30110144	1

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No.	Description	Part Code		Qty
		GWH18QD-K3DNB2E/I	GWH18QD-K3DNC8E/I	
	Product Code	CB432N08600	CB456N01300	
1	Front Panel	20000300023S	20000300153T	1
2	Display Board	30565260	30565278	1
3	Filter Sub-Assy	11122089	11122089	2
4	Decorative Board	20192662	20192662	1
5	Front Case	2002248401	2002248401	1
6	Guide Louver	1051276501	1051276501	1
7	Axile Bush	10542036	10542036	2
8	Air Louver(Manual)	10512732	10512732	3
9	Helicoid tongue	26112512	26112512	1
10	Left Axile Bush	10512037	10512037	1
11	Rear Case assy	22202571	22202571	1
12	Rubber Plug (Water Tray)	76712012	76712012	1
13	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
14	Ring of Bearing	26152025	26152025	1
15	Evaporator Support	24212177	24212177	1
16	Evaporator Assy	01100100020	01100100020	1
17	Cross Flow Fan	10352060	10352060	1
18	Fan Motor	1501214502	1501214502	1
19	Motor Press Plate	26112511	26112511	1
20	Wall Mounting Frame	01362026	01362026	1
21	Connecting pipe clamp	2611218801	2611218801	1
22	Crank	73012005	73012005	1
23	Stepping Motor	1521240212	1521240212	1
24	Drainage hose	05230014	05230014	1
25	Electric Box Assy	10000205013	10000204232	1
26	Lower Shield of Electric Box	01592139	01592139	1
27	Electric Box	20112211	20112211	1
28	Jumper	4202021921	4202021921	1
29	Main Board	30145098	30145099	1
30	Shield Cover of Electric Box	01592139	01592139	1
31	Electric Box Cover	20112209	20112209	1
32	Terminal Board	42011233	42011233	1
33	Decorative Board	20192662	20192662	1
34	Screw Cover	2425201726	2425201726	3
35	Electric Box Cover2	20112210	20112210	1
36	Connecting Cable	4002052317	4002052317	0
37	Remote Controller	30510474	30510474	1
38	Cold Plasma Generator	/	1114001602	1
39	Detecting plate(WIFI)	30110144	30110144	1

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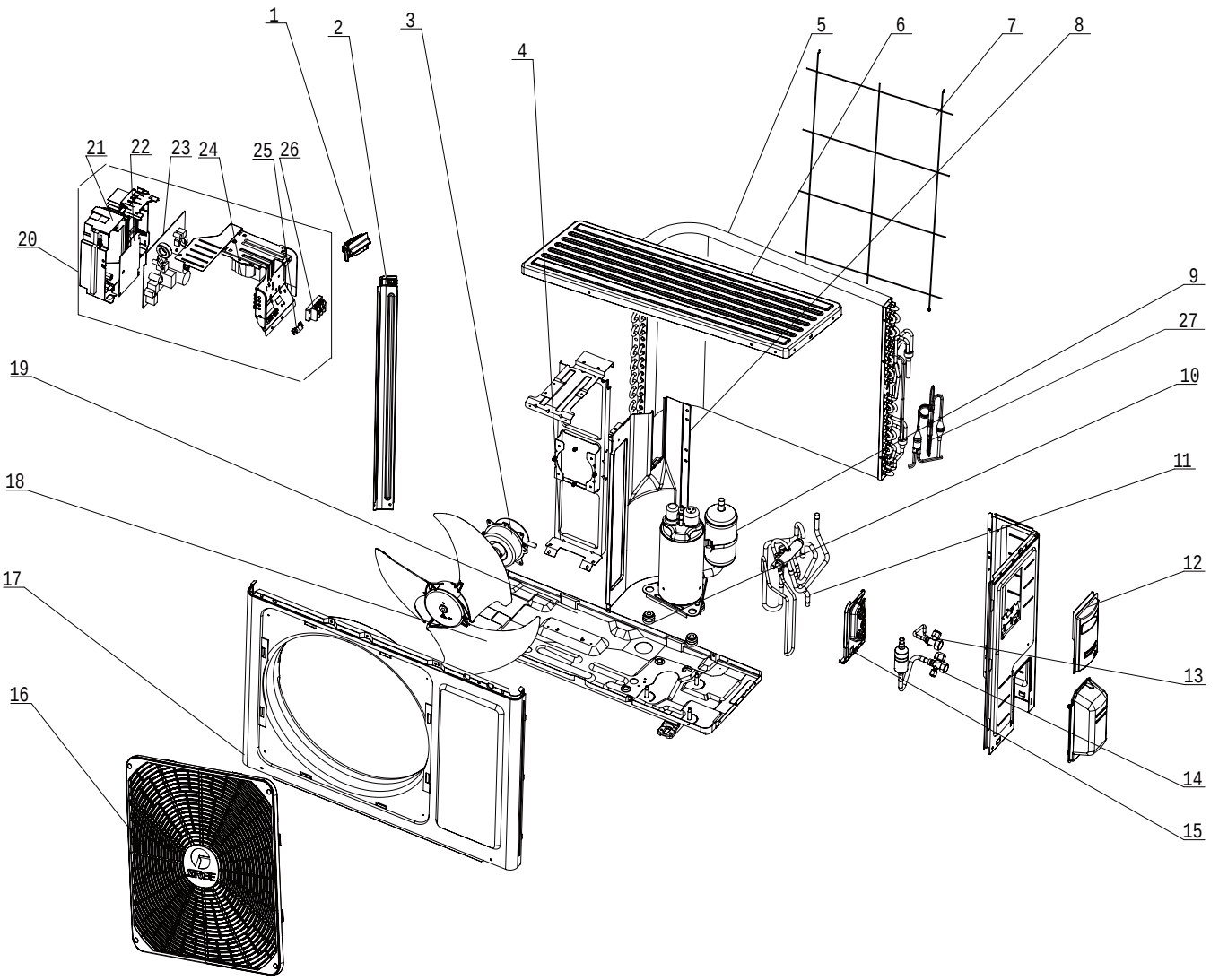
No.	Description	Part Code		Qty
		GWH18QD-K3DNB4E/I (Cold Plasma)	GWH18QD-K3DNE4E/I (Cold Plasma)	
	Product Code	CB434N08200	CB470N00800	
1	Front Panel	20000300028T	200003000064T	1
2	Display Board	30565260	300001000081	1
3	Filter Sub-Assy	11122089	11122089	2
4	Decorative Board	20192662	20192662	1
5	Front Case	2002248401	2002248401	1
6	Guide Louver	1051276501	1051276501	1
7	Axile Bush	10542036	10542036	2
8	Air Louver(Manual)	10512732	10512732	3
9	Helicoid tongue	26112512	26112512	1
10	Left Axile Bush	10512037	10512037	1
11	Rear Case assy	22202571	22202571	1
12	Rubber Plug (Water Tray)	76712012	76712012	1
13	O-Gasket sub-assy of Bearing	7651205102	7651205102	1
14	Ring of Bearing	26152025	26152025	1
15	Evaporator Support	24212177	24212177	1
16	Evaporator Assy	01100100020	01100100020	1
17	Cross Flow Fan	10352060	10352060	1
18	Fan Motor	1501214502	1501214502	1
19	Motor Press Plate	26112511	26112511	1
20	Wall Mounting Frame	01362026	01362026	1
21	Connecting pipe clamp	2611218801	2611218801	1
22	Crank	73012005	73012005	1
23	Stepping Motor	1521240212	1521240212	1
24	Drainage hose	05230014	05230014	1
25	Electric Box Assy	10000203074	100002002703	1
26	Lower Shield of Electric Box	01592139	01592139	1
27	Electric Box	20112211	20112211	1
28	Jumper	4202021921	4202021921	1
29	Main Board	30145099	30145099	1
30	Shield Cover of Electric Box	01592176	01592139	1
31	Electric Box Cover	20112209	20112209	1
32	Terminal Board	42011233	42011233	1
33	Decorative Board	20192662	20192662	1
34	Screw Cover	2425201726	2425201726	3
35	Electric Box Cover2	20112210	20112210	1
36	Connecting Cable	4002052317	4002052317	0
37	Remote Controller	30510474	30510474	1
38	Cold Plasma Generator	1114001602	1114001602	1
39	Detecting plate(WIFI)	30110144	30110144	1

Above data is subject to change without notice.

No.	Description	Part Code	Qty
		GWH18QD-K3DNB8E/I	
	Product Code	CB438N07200	
1	Front Panel	20000300075T	1
2	Display Board	30565260	1
3	Filter Sub-Assy	11122089	2
4	Decorative Board	20192662	1
5	Front Case	2002248401	1
6	Guide Louver	1051276501	1
7	Axile Bush	10542036	2
8	Air Louver(Manual)	10512732	3
9	Helicoid tongue	26112512	1
10	Left Axile Bush	10512037	1
11	Rear Case assy	22202571	1
12	Rubber Plug (Water Tray)	76712012	1
13	O-Gasket sub-assy of Bearing	7651205102	1
14	Ring of Bearing	26152025	1
15	Evaporator Support	24212177	1
16	Evaporator Assy	01100100020	1
17	Cross Flow Fan	10352060	1
18	Fan Motor	1501214502	1
19	Motor Press Plate	26112511	1
20	Wall Mounting Frame	01362026	1
21	Connecting pipe clamp	2611218801	1
22	Crank	73012005	1
23	Stepping Motor	1521240212	1
24	Drainage hose	05230014	1
25	Electric Box Assy	10000205013	1
26	Lower Shield of Electric Box	01592139	1
27	Electric Box	20112211	1
28	Jumper	4202021921	1
29	Main Board	30145098	1
30	Shield Cover of Electric Box	01592139	1
31	Electric Box Cover	20112209	1
32	Terminal Board	42011233	1
33	Decorative Board	20192662	1
34	Screw Cover	2425201726	3
35	Electric Box Cover2	20112210	1
36	Connecting Cable	4002052317	0
37	Remote Controller	30510474	1
38	Cold Plasma Generator	/	1
39	Detecting plate(WIFI)	30110144	1

Above data is subject to change without notice.

10.2 Outdoor Unit



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

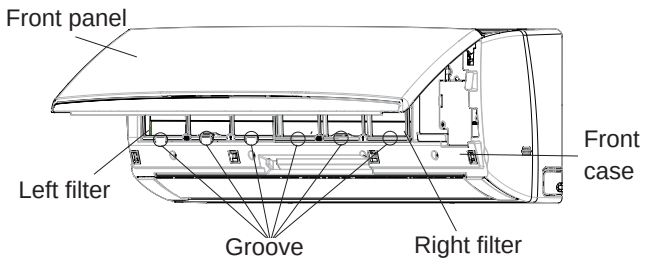
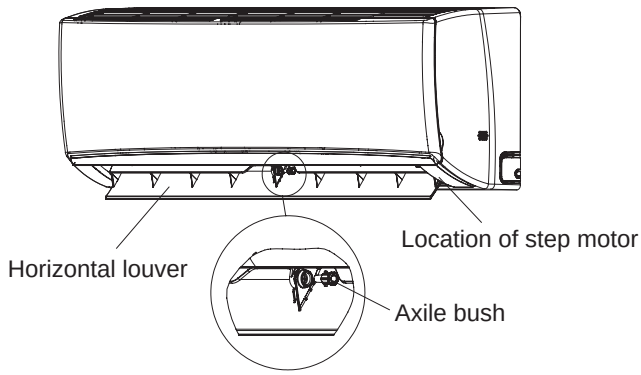
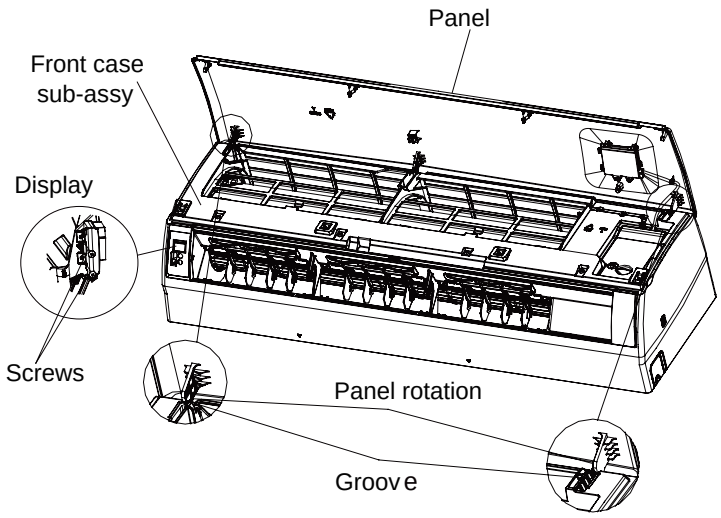
No.	Description	Part Code		Qty
		GWH12QB-K3DNA6D/O	GWH18QD-K3DNA6E/O	
	Product Code	CB427W04701	CB427W06400	
1	Handle	/	/	/
2	Supporting Board	01793043	01173194	1
3	Fan Motor	01100200658	011002000015	1
4	Motor Support	15013085	15013085	1
5	Condenser Assy	01703136	01703136	1
6	Coping	01253081	01253081	1
7	Rear Grill	01475014	01475014	1
8	Clapboard Sub-Assy	01233180	01233180	1
9	Compressor and Fittings	00103364	00103388	1
10	Compressor Gasket	00901200014	00901200014	3
11	4-Way Valve Assy	030152000016	030152000120	1
12	Big Handle	2623343106	2623343106	1
13	Cut off Valve Sub-Assy	03005700067	03005700067	1
14	Cut off Valve Assy	07133474	07133691	1
15	Valve Support	26113017	26113017	2
16	Front Grill	22413047	22413047	1
17	Cabinet	01433033	01433033	1
18	Axial Flow Fan	10333011	10333011	1
19	Chassis Sub-assy	017000000091	017000000086	1
20	Electric Box Assy	10000500512	10000500512	1
21	Electric Box	100002000019	100002000019	1
22	Filter Board	/	/	/
23	Main Board	30138001137	30138001137	1
24	Reactor	49013070	49013070	1
25	Wire Clamp	71010103	71010103	1
26	Terminal Board	42010313	42010313	1
27	Capillary Sub-assy	030006000014	030006000018	1

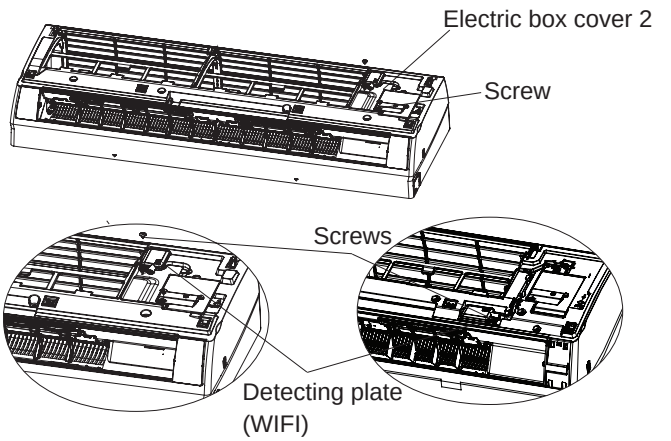
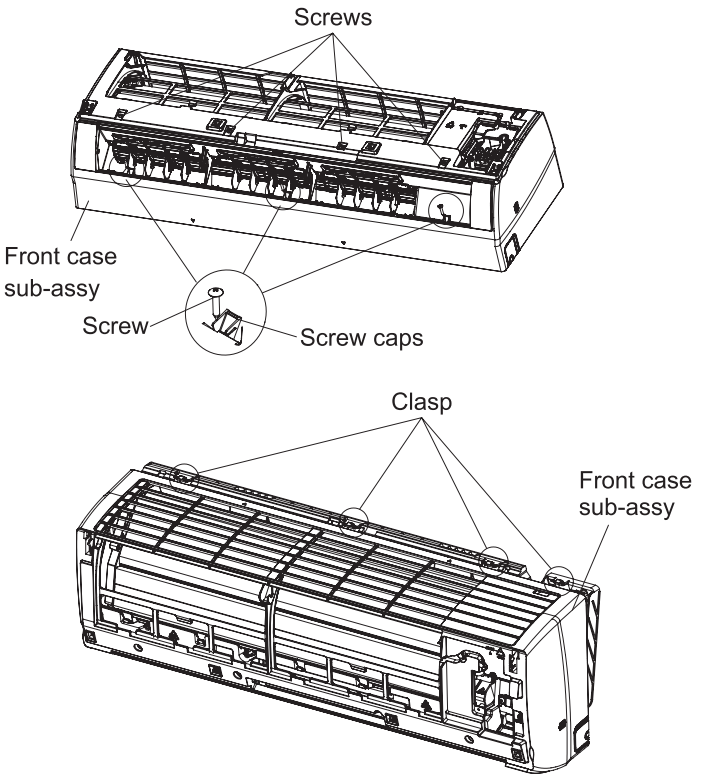
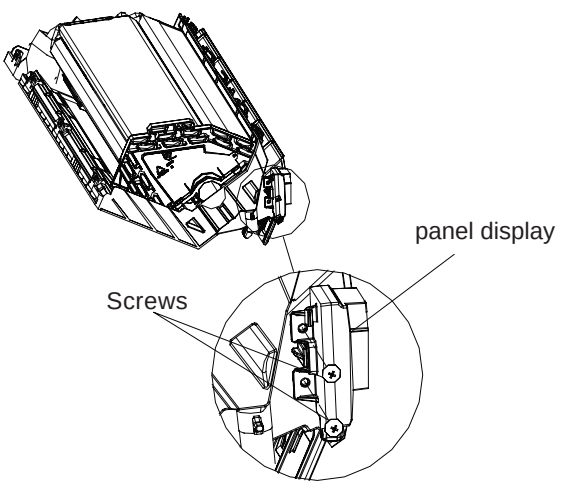
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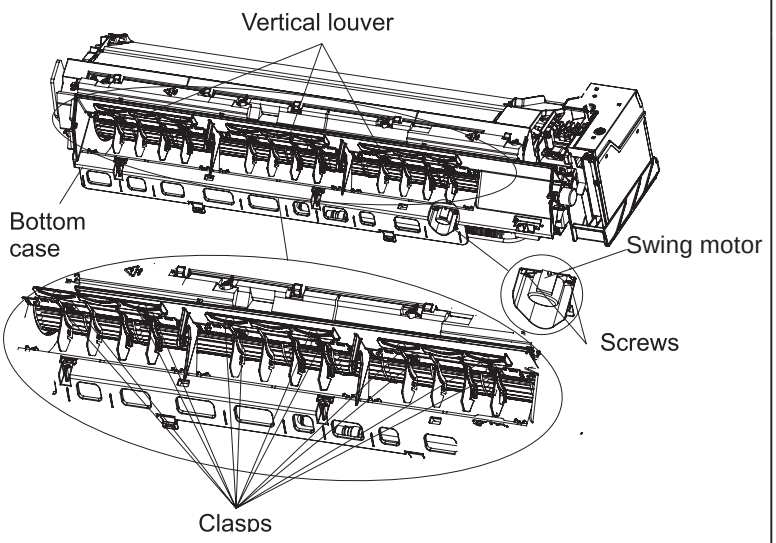
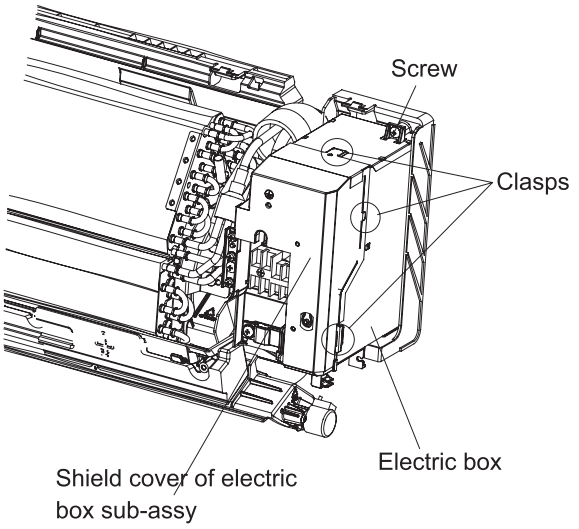
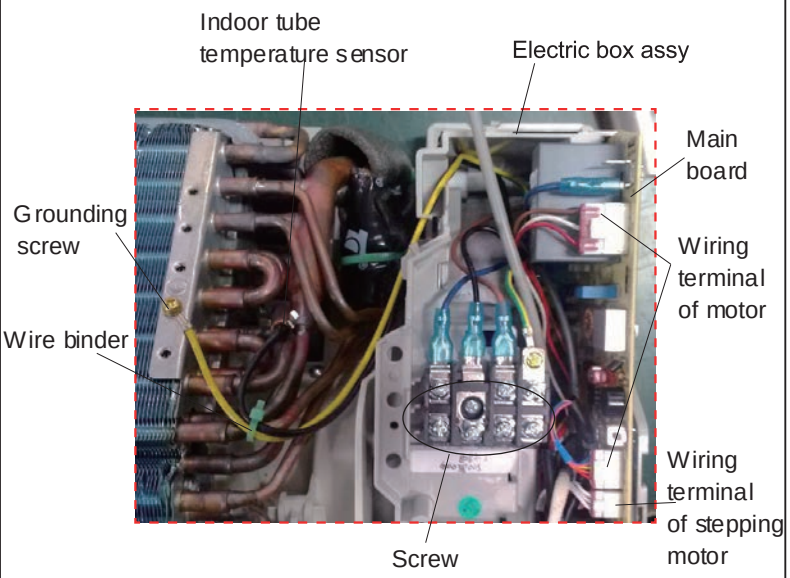
11. Removal Procedure

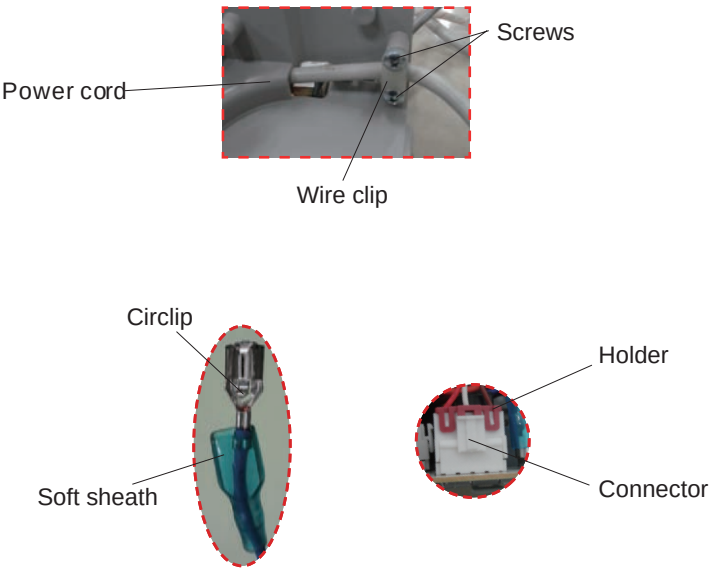
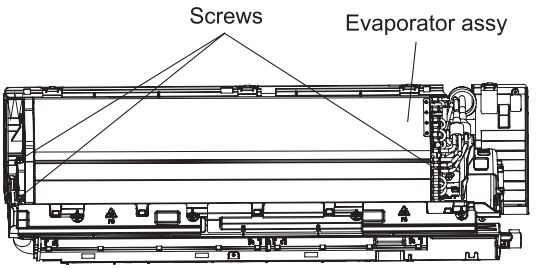
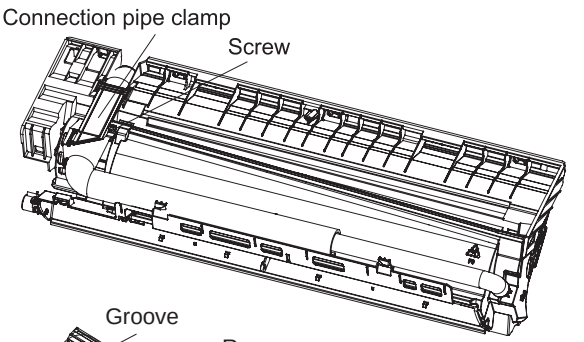
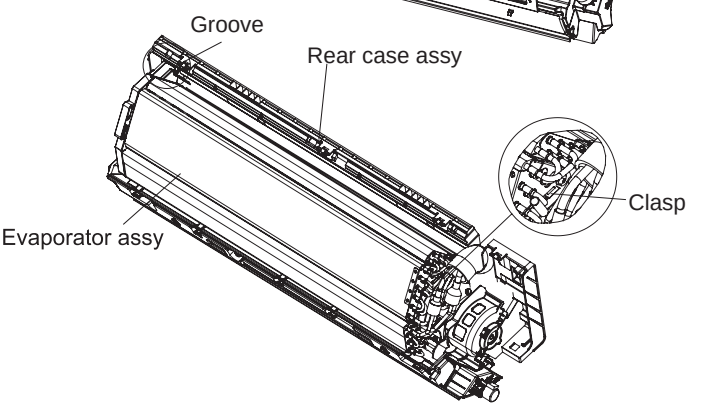
Caution: discharge the refrigerant completely before removal.

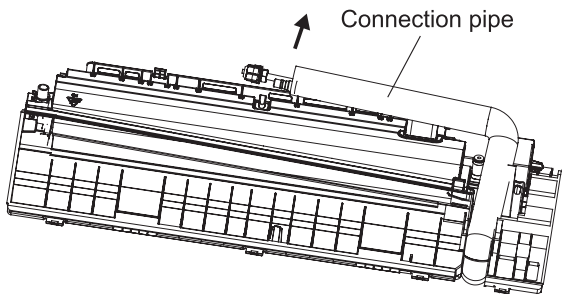
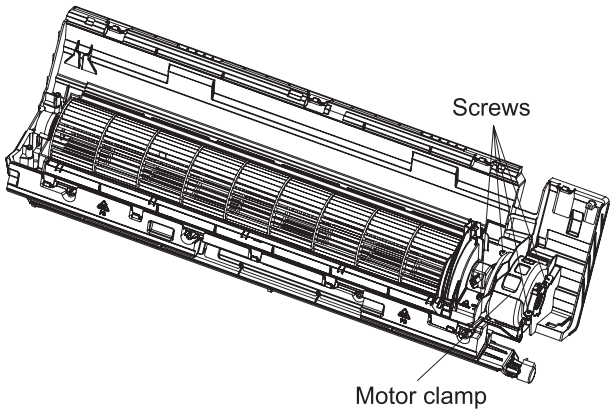
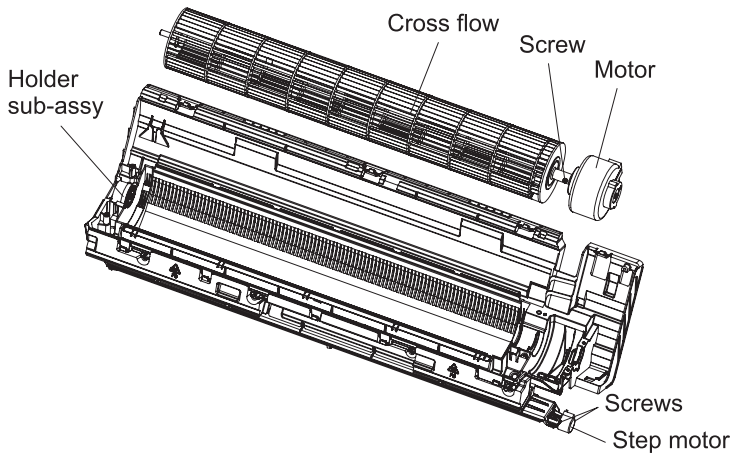
11.1 Removal Procedure of Indoor Unit

Step	Procedure	
1. Remove filter assembly		
	Open the front panel. Push the left filter and right filter until they are separate from the groove on the front panel. Remove the left filter and right filter respectively.	
2. Remove horizontal louver		
	Push out the axile 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.	
3. Remove panel		
	Open the front panel; separate the panel rotation shaft from the groove fixing the front panel and then removes the front panel.	

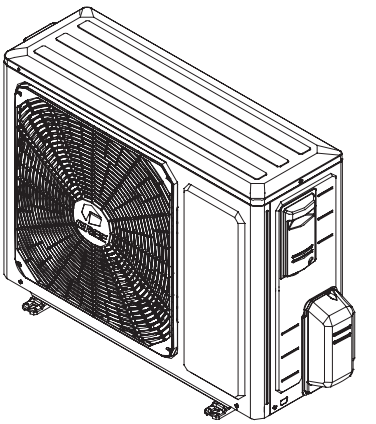
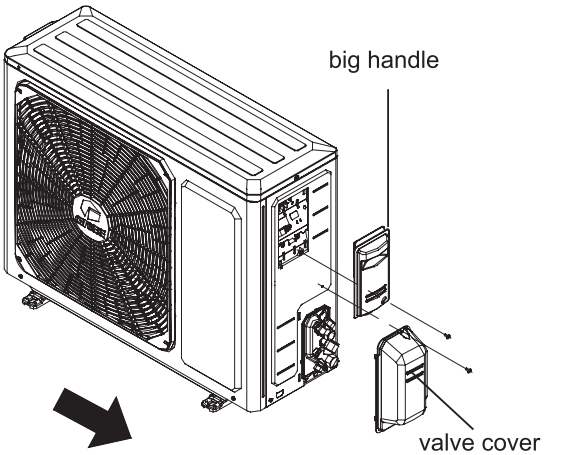
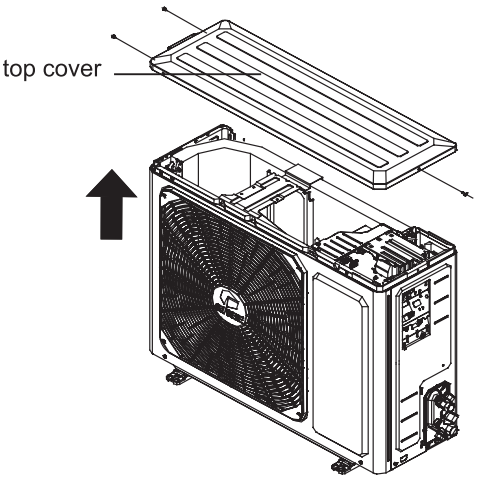
Step	Procedure
4. Remove electric box cover 2 and detecting plate(WIFI)	
Remove the screws on the electric box cover 2 and detecting plate(WIFI), then remove the electric box cover 2 and detecting plate(WIFI).	
5.Remove front case sub-assy	
a Remove the screws fixing front case. Note: ① Open the screw caps before removing the screws arround the air outlet. ② The quantity of screws fixing the front case sub-assy is different for different models.	
b Loosen the connection clasps between front case sub-assy and bottom case. Lift up the front case sub-assy and take it out.	
6.Remove display	
Screw off the 2 screws that are locking the display board.	

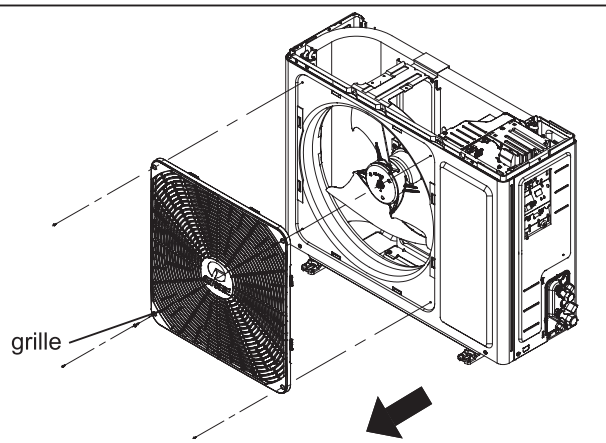
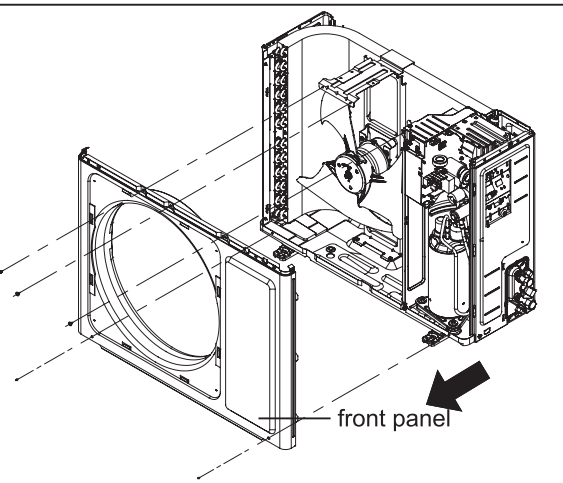
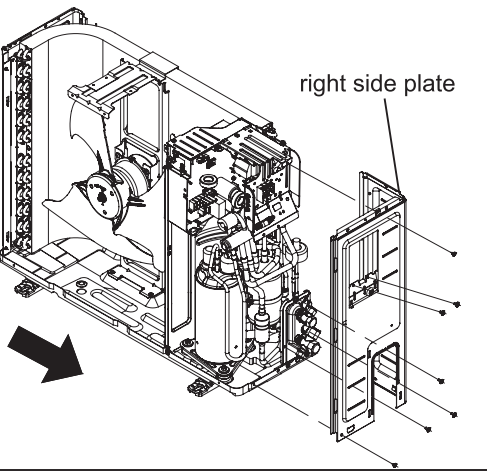
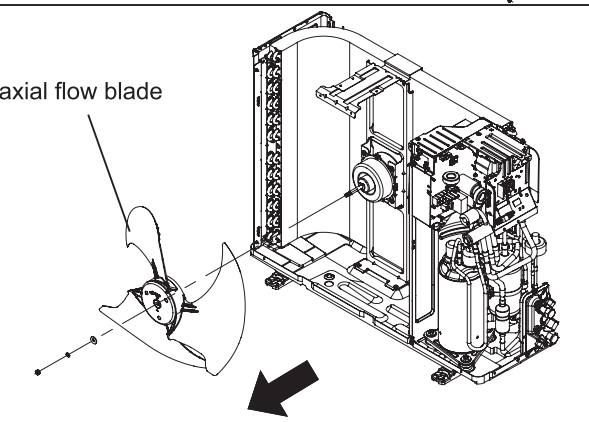
Step	Procedure	
7.Remove vertical louver		
a	Loosen the connection clasps between vertical louver and bottom case to remove vertion louver.	
b	Screw off the screws that are locking the swing motor and take the motor off.	
8.Remove electric box assy		
a	Loosen the connection clasps between shield cover of electric box sub-assy and electric box,and then remove the shield cover of electric box sub-assy. Remove the screw fixing electric box assy.	
b	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 thar are locking each lead wire.	

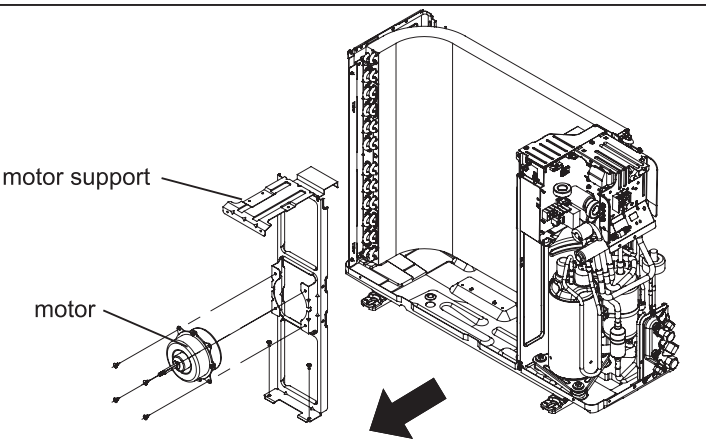
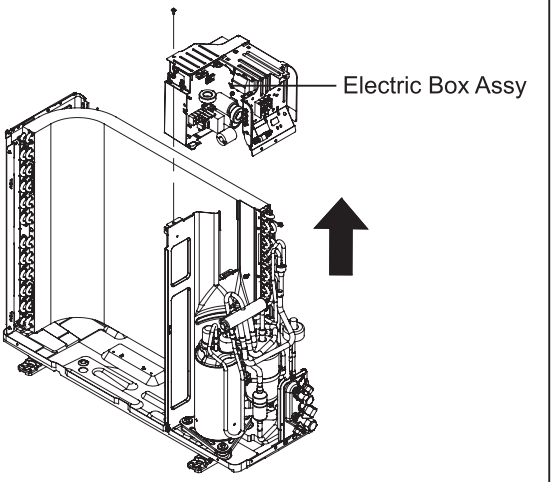
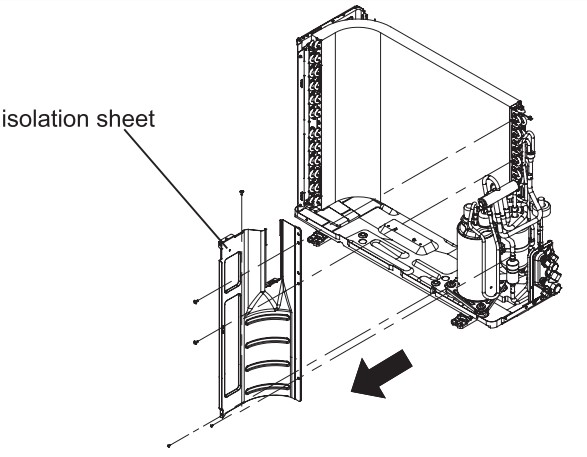
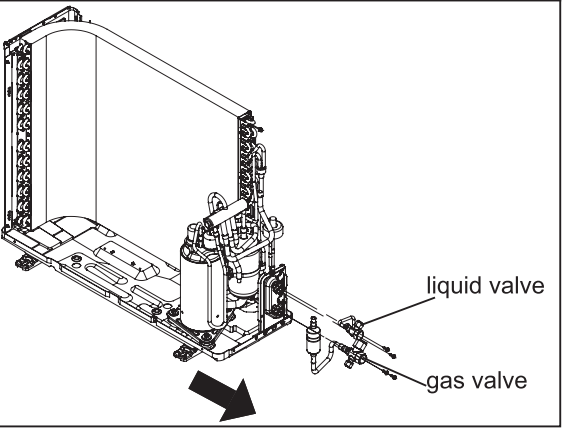
Step	Procedure	
c	Rotate the electric box assy. Twist offthe screwsthat are locking the wire clip and loosen the power cord. Remove the wiring terminal of power cord. Lift up the main board and take it off. Instruction:Some wiring terminal of this products is with lock catch and other devices.The pulling 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.	
9.Remove evaporator assy		
a	Remove 3 screws fixing evaporator assy.	
b	At the back of the unit, remove the screw fixing connection pipe clamp and then remove the connection pipe clamp.	
c	First remove the left side of evaporator from the groove on the rear case assy. Then remove the right side from the clasp on the rear case assy.	

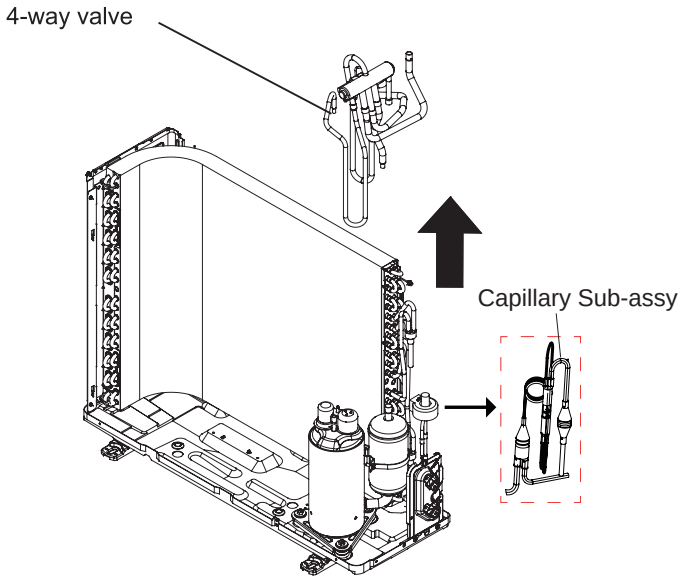
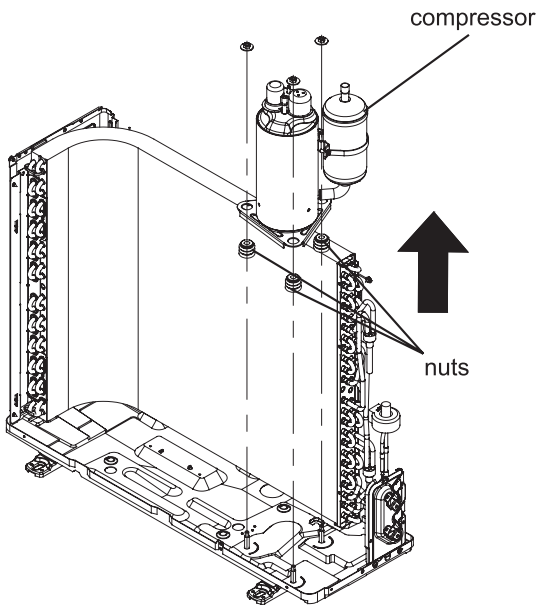
Step	Procedure	
d	Adjust the position of conncetion pipe on evaporator up wards to remove it.	
10.Remove motor and cross flow blade		
a	Remove the screws fixing motor clamp and then remove the motor clamp.	
b	① Remove the screws at the connection place of cross flow blade and motor; lift the motor and cross flow blade upwards to remove them. ② Remove the bearing holder sub-assy. ③ Remove the screw fixing step motor and then remove the step motor.	

11.2 Removal Procedure of Outdoor Unit

Steps	Procedure
1. Before disassembly	
2.Remove big handle and valve cover Remove the connection screw fixing the big handle and then remove the valve cover.	
3. Remove top cover Remove connection screws connecting the top panel with the front panel and the right side plate, and then remove the top panel.	

Steps	Procedure
4.Remove grille	
Remove connection screws between the front grille and the front panel. Then remove the grille.	
5. Remove front panel	
Remove connection screws connecting the front panel with the chassis and the motor support and then remove the front panel.	
6. Remove right side plate	
Remove connection screws connecting the right side plate with the valve support and the electric box. Then remove the right side plate.	
7. Remove axial flow blade	
Remove the nut on the blade and then remove the axial flow blade.	

Steps	Procedure
8. Remove motor and motor support	
	Remove the tapping screws fixing the motor and disconnect the leading wire insert of the motor. Then remove the motor. Remove the tapping screws fixing the motor support and lift the motor support to remove it.
9.Remove Electric Box Assy	
	Remove screws fixing the electric box subassembly; loosen the wire bundle and unplug the wiring terminals. Then lift the electric box to remove it.
10.Remove isolation sheet	
	Remove the screws fixing the isolation sheet and then remove the isolation sheet.
11. Remove compressor	
a	Unsolder the welding joint connecting the capillary, valves and the outlet pipe of condenser to remove the capillary. Do not block the capillary with welding slag during unsoldering.

Steps	Procedure	
b	Remove the 2 screws fixing the gas valve and unsolder the welding joint between the gas valve and the air-return pipe to remove the gas valve. (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). Remove the 2 screws fixing the liquid valve and unsolder the welding joint connecting the liquid valve to the Y-type pipe to remove the liquid valve.	
c	Unsolder pipes connecting with compressor.	
d	Remove the 3 foot nuts on the compressor and then remove the compressor.	

Appendix:

Appendix 1: Reference Sheet of Celsius and Fahrenheit

Conversion formula for Fahrenheit degree and Celsius degree: Tf=Tcx1.8+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

1.Standard length of connection pipe

● 5m, 7.5m, 8m.

2.Min. length of connection pipe is 3m.

3.Max. length of connection pipe and max. high difference.(More details please refer to the specifications.)

4.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.

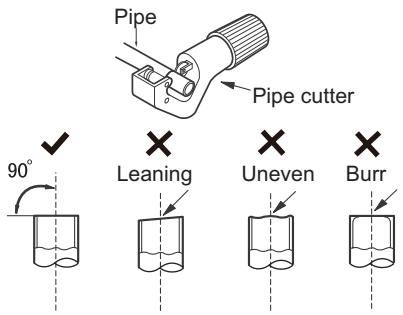
● Additional refrigerant charging amount = prolonged length of liquid pipe X additional refrigerant charging amount per meter

Additional refrigerant charging amount for R22, R407C, R410A and R134a			
Diameter of connection pipe		Outdoor unit throttle	
Liquid pipe(mm)	Gas pipe(mm)	Cooling only(g/m)	Cooling and heating(g/m)
Φ6	Φ9.5 or Φ12	15	20
Φ6 or Φ9.5	Φ16 or Φ19	15	50
Φ12	Φ19 or Φ22.2	30	120
Φ16	Φ25.4 or Φ31.8	60	120
Φ19	/	250	250
Φ22.2	/	350	350

Appendix 3: Pipe Expanding Method

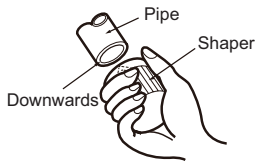
⚠ **Note:**

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



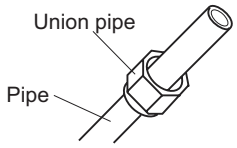
A:Cut the pip
- Confirm the pipe length according to the distance of indoor unit and outdoor unit.
- Cut the required pipe with pipe cutter.

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



C:Put on suitable insulating pipe

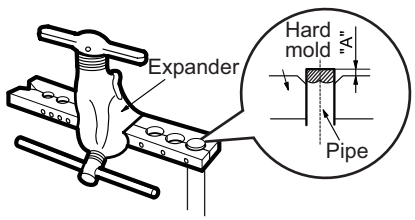
D:Put on the union nut
- Remove the union nut on the indoor connection pipe and outdoor valve; install the union nut on the pipe.



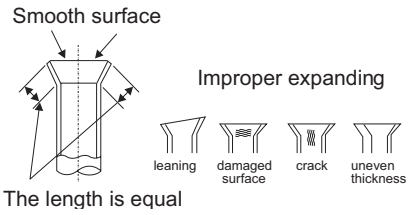
E:Expand the port
- Expand the port with expander.

⚠ **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 - 12.7 (1/2”)	1.8	1.0
Φ15.8 - 16 (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 (15K)

Temp(°C)	Resistance(kΩ)		Temp(°C)	Resistance(kΩ)		Temp(°C)	Resistance(kΩ)		Temp(°C)	Resistance(kΩ)
-19	138.1		20	18.75		59	3.848		98	1.071
-18	128.6		21	17.93		60	3.711		99	1.039
-17	121.6		22	17.14		61	3.579		100	1.009
-16	115		23	16.39		62	3.454		101	0.98
-15	108.7		24	15.68		63	3.333		102	0.952
-14	102.9		25	15		64	3.217		103	0.925
-13	97.4		26	14.36		65	3.105		104	0.898
-12	92.22		27	13.74		66	2.998		105	0.873
-11	87.35		28	13.16		67	2.896		106	0.848
-10	82.75		29	12.6		68	2.797		107	0.825
-9	78.43		30	12.07		69	2.702		108	0.802
-8	74.35		31	11.57		70	2.611		109	0.779
-7	70.5		32	11.09		71	2.523		110	0.758
-6	66.88		33	10.63		72	2.439		111	0.737
-5	63.46		34	10.2		73	2.358		112	0.717
-4	60.23		35	9.779		74	2.28		113	0.697
-3	57.18		36	9.382		75	2.206		114	0.678
-2	54.31		37	9.003		76	2.133		115	0.66
-1	51.59		38	8.642		77	2.064		116	0.642
0	49.02		39	8.297		78	1.997		117	0.625
1	46.6		40	7.967		79	1.933		118	0.608
2	44.31		41	7.653		80	1.871		119	0.592
3	42.14		42	7.352		81	1.811		120	0.577
4	40.09		43	7.065		82	1.754		121	0.561
5	38.15		44	6.791		83	1.699		122	0.547
6	36.32		45	6.529		84	1.645		123	0.532
7	34.58		46	6.278		85	1.594		124	0.519
8	32.94		47	6.038		86	1.544		125	0.505
9	31.38		48	5.809		87	1.497		126	0.492
10	29.9		49	5.589		88	1.451		127	0.48
11	28.51		50	5.379		89	1.408		128	0.467
12	27.18		51	5.197		90	1.363		129	0.456
13	25.92		52	4.986		91	1.322		130	0.444
14	24.73		53	4.802		92	1.282		131	0.433
15	23.6		54	4.625		93	1.244		132	0.422
16	22.53		55	4.456		94	1.207		133	0.412
17	21.51		56	4.294		95	1.171		134	0.401
18	20.54		57	4.139		96	1.136		135	0.391
19	19.63		58	3.99		97	1.103		136	0.382

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

Temp(°C)	Resistance(kΩ)		Temp(°C)	Resistance(kΩ)		Temp(°C)	Resistance(kΩ)		Temp(°C)	Resistance(kΩ)
-19	181.4		20	25.01		59	5.13		98	1.427
-18	171.4		21	23.9		60	4.948		99	1.386
-17	162.1		22	22.85		61	4.773		100	1.346
-16	153.3		23	21.85		62	4.605		101	1.307
-15	145		24	20.9		63	4.443		102	1.269
-14	137.2		25	20		64	4.289		103	1.233
-13	129.9		26	19.14		65	4.14		104	1.198
-12	123		27	18.13		66	3.998		105	1.164
-11	116.5		28	17.55		67	3.861		106	1.131
-10	110.3		29	16.8		68	3.729		107	1.099
-9	104.6		30	16.1		69	3.603		108	1.069
-8	99.13		31	15.43		70	3.481		109	1.039
-7	94		32	14.79		71	3.364		110	1.01
-6	89.17		33	14.18		72	3.252		111	0.983
-5	84.61		34	13.59		73	3.144		112	0.956
-4	80.31		35	13.04		74	3.04		113	0.93
-3	76.24		36	12.51		75	2.94		114	0.904
-2	72.41		37	12		76	2.844		115	0.88
-1	68.79		38	11.52		77	2.752		116	0.856
0	65.37		39	11.06		78	2.663		117	0.833
1	62.13		40	10.62		79	2.577		118	0.811
2	59.08		41	10.2		80	2.495		119	0.77
3	56.19		42	9.803		81	2.415		120	0.769
4	53.46		43	9.42		82	2.339		121	0.746
5	50.87		44	9.054		83	2.265		122	0.729
6	48.42		45	8.705		84	2.194		123	0.71
7	46.11		46	8.37		85	2.125		124	0.692
8	43.92		47	8.051		86	2.059		125	0.674
9	41.84		48	7.745		87	1.996		126	0.658
10	39.87		49	7.453		88	1.934		127	0.64
11	38.01		50	7.173		89	1.875		128	0.623
12	36.24		51	6.905		90	1.818		129	0.607
13	34.57		52	6.648		91	1.736		130	0.592
14	32.98		53	6.403		92	1.71		131	0.577
15	31.47		54	6.167		93	1.658		132	0.563
16	30.04		55	5.942		94	1.609		133	0.549
17	28.68		56	5.726		95	1.561		134	0.535
18	27.39		57	5.519		96	1.515		135	0.521
19	26.17		58	5.32		97	1.47		136	0.509

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

Temp(°C)	Resistance(kΩ)		Temp(°C)	Resistance(kΩ)		Temp(°C)	Resistance(kΩ)		Temp(°C)	Resistance(kΩ)
-29	853.5		10	98		49	18.34		88	4.75
-28	799.8		11	93.42		50	17.65		89	4.61
-27	750		12	89.07		51	16.99		90	4.47
-26	703.8		13	84.95		52	16.36		91	4.33
-25	660.8		14	81.05		53	15.75		92	4.20
-24	620.8		15	77.35		54	15.17		93	4.08
-23	580.6		16	73.83		55	14.62		94	3.96
-22	548.9		17	70.5		56	14.09		95	3.84
-21	516.6		18	67.34		57	13.58		96	3.73
-20	486.5		19	64.33		58	13.09		97	3.62
-19	458.3		20	61.48		59	12.62		98	3.51
-18	432		21	58.77		60	12.17		99	3.41
-17	407.4		22	56.19		61	11.74		100	3.32
-16	384.5		23	53.74		62	11.32		101	3.22
-15	362.9		24	51.41		63	10.93		102	3.13
-14	342.8		25	49.19		64	10.54		103	3.04
-13	323.9		26	47.08		65	10.18		104	2.96
-12	306.2		27	45.07		66	9.83		105	2.87
-11	289.6		28	43.16		67	9.49		106	2.79
-10	274		29	41.34		68	9.17		107	2.72
-9	259.3		30	39.61		69	8.85		108	2.64
-8	245.6		31	37.96		70	8.56		109	2.57
-7	232.6		32	36.38		71	8.27		110	2.50
-6	220.5		33	34.88		72	7.99		111	2.43
-5	209		34	33.45		73	7.73		112	2.37
-4	198.3		35	32.09		74	7.47		113	2.30
-3	199.1		36	30.79		75	7.22		114	2.24
-2	178.5		37	29.54		76	7.00		115	2.18
-1	169.5		38	28.36		77	6.76		116	2.12
0	161		39	27.23		78	6.54		117	2.07
1	153		40	26.15		79	6.33		118	2.02
2	145.4		41	25.11		80	6.13		119	1.96
3	138.3		42	24.13		81	5.93		120	1.91
4	131.5		43	23.19		82	5.75		121	1.86
5	125.1		44	22.29		83	5.57		122	1.82
6	119.1		45	21.43		84	5.39		123	1.77
7	113.4		46	20.6		85	5.22		124	1.73
8	108		47	19.81		86	5.06		125	1.68
9	102.8		48	19.06		87	4.90		126	1.64

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