GREE
Change for life

Service Manual

Models: GDN30BH-K5EBA1A
GDN30BH-K5EBA1B
(Refrigerant R290)

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

Table of Contents

Abbreviations Used Within this Manual:

Abbreviation	Clear Words
OFDN	Oxygen free and dry nitrogen
PPE	Personnel protective equipment
LFL	Lower flammability level
UFL	Upper flammability level
HC	Hydrocarbon

INTRODUCTION

ATTENTION

Please read this manual carefully before installing and operating the GREE Hydrocarbon Air– Conditioner unit.

Careless installation and operation could cause severe injuries to operators, workers and damage to the air-conditioner unit itself.

Keep this manual in a location for easy access as it is needed for reference during installation, maintenance, service and operation of the unit.

This manual does not cover all aspects of installation, maintenance and service of the chiller units; if additional information is needed, contact the GREE Costumer Service or Sales Office.

General Information

Warning and cautions appear at appropriate locations throughout this manual book.

Notices

General Safety Instructions

Please pay careful attention to these safety instructions, to avoid risks to people and property. Before starting work on maintenance read this manual thoroughly and pay particular attention to the relevant chapters.

Regardless of further requirements of the country, in which the equipment will be installed: assembly, first start up, technical service, maintenance and repair and as well as dismantling and disposal have to be carried out by authorised personnel only.

During every operation strictly follow the instructions within this manual. Pay attention to the specific rules of air conditioning, electrics and refrigerant handling of the country within which the equipment is installed.

Key sections and/or sentences are highlighted with specific icons and symbols to the right side of the page. Please pay particular attention to this information.

The Symbols Used in this Manual are as Follows

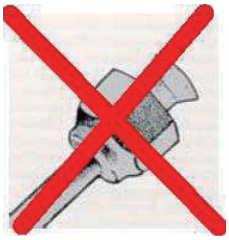
This is a specific remark and points out the importance of a specific section

Information window highlighting important content of the specific section or additional information to consider.

This sign will indicate that you are handling a flammable substance and the surrounding environment can possibly contain it.

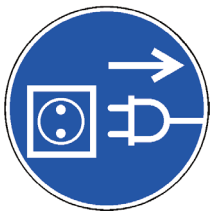
This is a general warning sign.

The Label is used to indicate that the flammable refrigerant is present within the application and service equipment.



Images that indicate something what you should strictly avoid.

Specific bans!



Specific commandments!

Instructions for first aid!

Fire protection!

Carefully read the instructions!

Working on components with safety-relevant functions jeopardise the safe operation of the installation. In case it is necessary to replace components, only use approved parts from GREE Electric, the Original Equipment Manufacturer(OEM) or Gree released or authorised components. The system contains the refrigerant R-290 (propane). This condition requires special safety precautions to be observed. Maintenance for the system is strictly prohibited. At the installation site, no matter what kind of activities are executed, smoking is strictly prohibited!
Likewise, ensure the installation site is well ventilated. For further details as far as it concerns the handling of the refrigerant R-290 (propane) .

ONLY original GREE (OEM) spare-parts are permitted for Service and Repair!

The Symbols Used in this Manual are as Follows

Electric operations (installation, repair, modification, maintenance, adjustment) have to be fulfilled by trained and authorised personnel only. When dealing with electrical issues, the specific rules of the country within which the equipment is installed must be followed, in addition to the instructions within this manual.

When working on the equipment or parts of it, the system has to be deenergised (by master switch, circuit breaker or separate cut-out) and made safe against restart of the system. Do not reconnect the system to the electric circuit until all work is done and all connections are tested. If handled unsafely or unprofessionally, severe electric shocks can occur. Consider the wiring diagram and follow the instructions of this manual very carefully whilst working on electrical parts. Wrong connections or incorrect grounding may lead to severe injuries and mortal danger.

Proceed according the manuals Instructions!

Ground the system according to the particular requirements of the country within which the equipment is installed.
Connect all the wires properly and durably. Loose cables may lead to overheating or fire

Minimum Room Size

HC R290 is a flammable refrigerant and can form explosive mixtures in low concentrations. To minimise the risk of fire or explosion, the system must be installed in a room with a minimum floor area.

Pay attention to the room size for indoor unit installation!

For specific information refer page XXX of this manual.

Unless there are further requirements, standards and legislation of the country within which the equipment is installed may apply. Any technicians that works on GREE hydrocarbon air– conditioners must be competent in the safe handling of flammable refrigerants, in addition to being in possession of knowledge and skills to maintain best refrigeration installation and servicing practices.

There are already training activities in place for engineers, technicians and sales staff to provide professional knowledge and skills for the handling of HC refrigerants and refrigeration systems operating with HCs.

Get your Best Practices knowledge and skills update for HC refrigerants and be certificated for these jobs!

Get trained and have your "HC Refrigeration Professional" certification!

Basics in RAC

Knowledge of the basic SI standard units for temperature, pressure, mass, density, energy.

Understanding of the basic theory of refrigeration systems including the functions of the main components in the system (compressor, evaporator, condenser, thermostatic expansion valves).
Understanding how to read a refrigerant flow chart and an electrical circuit diagram.

The determination of non condensable gases in the refrigeration system and how to eliminate them.
The importance of the use of oxygen free dry nitrogen (OFDN) for system flushing, leak test and strength test.
The elimination of humidity from the refrigeration system and how to recover or vent HC refrigerant from a system.

Usage of tables and diagrams (log p/h diagram, saturation tables of a refrigerant, diagram of a single compression refrigeration cycle) and interpretation of these tables and diagrams.

Knowledge of the basic operation of the following components in a refrigeration system and their role and importance for refrigerant leakage prevention and identification:

- Temperature and pressure controls
- Sight class and moisture indicators
- Defrost controls, reverse cycle operation
- System protectors
- Measuring devices such as the pressure gauge manifold
- Thermometer
- Leak detector
- Refrigerant charging devices
- Vacuum pump
- Oxygen free dry nitrogen cylinder and pressure regulator

Fault finding – analysis and repair.
- Knowledge of flammable refrigerants
- Risk analysis for the application of flammable refrigerant and properties of flammable refrigerants
- Electrical circuit assessment and repair

Read More!
SAFETY CODE OF PRACTICE FOR REFRIGERATING SYSTEMS *UTILISING A2 & A3 REFRIGERANTS*

ISBN
1 872719 15 5

Checks before putting in operation, after a long period of nonuse, after maintenance or repair intervention or during operation.

Carry out a pressure and leak test to check the strength and the tightness of the system.
Usage of a vacuum pump.
Evacuation of the system to remove air and moisture according to standard practice.

Checks for Leakage

Knowledge of potential leakage points of refrigeration, air-conditioning and heat pump equipment. Making a visual and manual inspection of the whole system.
Carry out a check for leakage of the system using an indirect method and/or one of the direct methods.

Direct leak detection methods:
1. Fixed leakage detection systems
2. Portable electronic gas detectors
3. Ultraviolet (UV) indication fluids
4. Weak soapy water solution (bubble test) also in combination with OFDN
5. New installation tightness test for leakage detection procedure e.g. H2/N2
6. Operational system tightness test for leakage detection procedure

Indirect refrigerant detection methods:
1. Visual
2. Manual checks

HC R290 Refrigerant Lssues

Please notice that the unit is filled with propane. Details to this refrigerant are found in chapter “refrigerant”. Propane is highly flammable and leads to explosion under certain conditions. Inappropriate treatment of the unit involves the risk of severe damages of people and material.

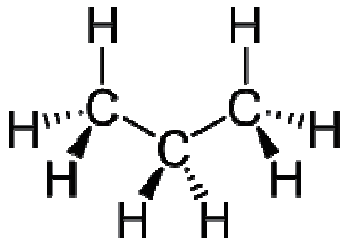
Basics

HC R-290 (propane) is an odourless and colourless gas of the group of hydrocarbons.
HC R-290 is heavier than air and at high concentrations can cause narcotic effects and eventually asphyxiation.
R-290 is highly flammable within the range of 2,1% and 9,5% by volume, or 38 g/m3 to 170 g/m3 in air. The auto-ignition temperature is about 470°C.
Since R-290 is an odourless and colourless gas, it is difficult to perceive that it is present (as with most other refrigerants).
Propane is often used as a fuel such as for heating or barbecues. However, for use on refrigeration systems, fuel-grade propane is not suitable since it contains high levels of impurities, which would damage the refrigeration system and may not provide the desired refrigerating capacity or efficiency.

HC R-290 refrigerant has a high grade of purity.

Propane as a cooking gas is not useful for refrigeration purpose!

The structural formula of HC R-290 (propane)



Important Refrigerant Properties and Parameters:

Molecular formula	C_3H_8
Melting point [°C]	-188
Boiling point under atmospheric pressure [°C]	-42
Molar mass [g mol -1]	44,10
Critical temperature [°C]	96,8
Critical pressure [bar]	42
Practical limit [g/m3]	8
Lower flammability level LFL [g/m3]	38
Lower flammability level LFL [%]	2,1
Upper flammability level UFL [g/m3]	171
Upper flammability level UFL [%]	9,5
Ignition temperature [°C]	470

Read More!

Guidlines for the safe use of hydro-carbon refrige-rants

GIZ—PROKLIMA

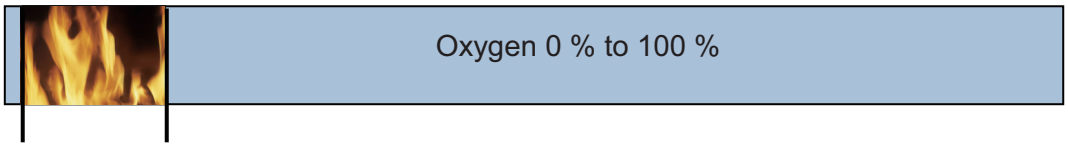
http://www.gtz.de/proklima

Flammability

Three components are needed simultaneously for causing fire:

1. Oxygen
2. Ignition source
3. The flammable concentration of HC

For ignition, the concentration of HC in air has to be between the lower and upper flammable limits. If the concentration is below the lower flammability limit (LFL) of about 2% by volume in air, there is not enough HC for combustion. If the concentration is above the upper flammability limit (UFL) of about 10% there is insufficient oxygen for combustion.



By way of illustration please compare to the schematic view:

To ignite HC R-290, three (3) components must exist at the same time at work area to cause the refrigerant burning!

Possible ignition sources are:

1. A flame, for example from brazing torch, halide torch leak lamp, match or lighter, cigarette
2. A spark from an electrical component
3. Static electricity
4. Hot surfaces

Safety Data

Hazard Identification

1 kg of liquid HC R-290 refrigerant creates about 250 litres of gas

- Extremely flammable (F+).
- Readily forms an explosive air-vapour mixture at ambient temperatures.
- Vapour is heavier than air and may travel to remote sources of ignition (e.g. along drainage systems, into basements etc).
- Liquid releases generate large volumes of flammable vapour (approx 250:1)
- Cold burns (frostbite) will result from skin / eye contact with liquid.
- Liquid release or vapour pressure jets present a risk of serious damage to the eyes.
- Abuse involving inhalation of high concentrations of vapour, even for short periods, which can produce unconsciousness or may prove fatal. Inhalation may cause irritation to the nose and throat, headache, nausea, vomiting, dizziness and drowsiness. In poorly ventilated areas unconsciousness or asphyxiation may result.

Beside the flammability, most other safety properties are similar to other refrigerants!

Rely always on best service practices in refrigeration!

First Aid Measures

Inhalation:
Remove the affected person to fresh air. If breathing has stopped, administer artificial respiration. Give external cardiac massage if necessary. If the person is breathing but unconscious, place them in the recovery position. Obtain medical assistance immediately.

Skin:
In case of cold burns: flush with water to normalize temperature. Cover the burns with sterile dressings Do not use ointments or powders. Obtain medical assistance immediately.

Eyes:
Cold burns should be flushed with water to normalise temperature, cover the eye with a sterile dressing and obtain medical assistance immediately.

Fire Fighting Measures

HC R-290 is delivered, stored, and used at temperatures above their flash point. Avoid all naked flames, sparks, cigarettes etc.

- In case of fire, immediately alert fire brigade
- Ensure an escape path is always available from any fire
- If gas has ignited do not attempt to extinguish but stop gas flow and allowto burn out.
- Use water spray to cool heat-exposed containers, and to protect surroundingareas and personnel effecting the shut off
- Every precaution must be taken to keep containers cool to avoid the possibilityof a boiling liquid expanding vapour explosion (BLEVE)

Extinguishing Media:

In case of a large fire:
Release must be stopped and container cooled by water spray.
Water mist should be used to assist approach to the source of the fire.
Large fires should only be handled by Fire Brigade.

DO NOT USE WATER JET

Small fire:
Use dry powder extinguisher

DO NOT USE WATER JET

Special protective equipment for fire fighters:
In confined spaces use self-contained breathing apparatus

Hazardous combustion products:
Incomplete combustion may form carbon monoxide.

Accidental Release Measures

Immediate emergency action:
- Clear people away from the area to a safe place
- Do not operate electrical equipment unless “Ex”-rated
- Summon the emergency services
- Treat or refer casualties if necessary

Further action (when release is made safe):
- Extinguish all naked lights – avoid creating sparks
- Position fire fighting equipment
- Cover drains and disperse vapour with water spray.

Note: vapour may collectin confined spaces.

Further actions:
- Stop release
- Use dry powder or carbon dioxide extinguishers
- Cool containers exposed to fire by using water / mist spray.

Accidental Release Measures

Due to the flammability of R-290 and the risk of fire or explosion during servicing, special safety rules must be followed during operation. In order to avoid damage for people and property, particular requirements are listed hereafter.

Before servicing the unit, the surrounding area were the work will be done must be clear of safety hazards to ensure safe working. Nevertheless it is required to carry out a risk assessment in order to minimise the risk of ignition of R-290.

The following safety measures must be followed:

1. Any employees and other present persons must be informed about the service and the way the service is done, first.
2. It is recommended to isolate the working environment in order to keep out any unauthorised personnel.
3. It is useful to set up signs such as „no smoking“ or „access denied“.
4. It is prohibited to store any combustible goods within the working environment.
5. Within two (2) metres radius, ignition sources are not allowed in the working area.
6. Fire extinguisher (dry powder) must be easily accessible at any time.
7. During service work, proper ventilation of the environment must be ensured.

The HC leak detector is indeed a Personal Protective Equipment (PPE) device!

Sign plate to protect and mark the working area.

Appropriate detectors, suitable for hydrocarbons, must be available and operational all the time. Appropriate tools and appliances must be available and ready for operation.

Any employees need to be instructed extensively about the safety measures and the possible safety hazard.

Gas Detection

While servicing the unit it is recommended for the whole period of work — before,during and after — to monitor the gas concentration in the air within the work environment. By monitoring the air within the work environment the danger of a possible formation of flammable atmosphere can be detected early.

The HC leak detector is indeed a PPE device!

Doing the monitoring, ensure that the gas detectors are suitable for hydrocarbon detection. Never use open fire or a device with an ignition source for the detection of gas or for leak detection.

Before operation of the gas detector the instruction manual must be read carefully. In case of any questions refer to the detector manufacturer. Furthermore ensure the detector is correctly calibrated. Instructions for calibration can be found in the instruction manual of the detector or upon request from the manufacturer.

A possible re-calibration must be done within an area which is free of refrigerants.

In case of a positive detection by the detector any work must be stopped immediately. Any open flames or ignition sources must be extinguished or removed. In addition to a suitable and approved HC gas detectors, portable gas detectors can be used.

Such a detector can be clipped to clothing or placed on the floor within the working area. It should be switched on for the duration of the work, and set to alarm at 15% of the lower flammability level (LFL), to warn that flammable concentration may be nearby. In this way, technicians can be alerted whenever an inadvertent release of flammable refrigerant occurs, and can immediately act upon the relevant emergency procedures.

Portable HC Gas Detector

Pressure—Temperature Chart

HC Refrigerant R-290							
Temperature		Absolute pressure			Gauge pressure		
°C	°F	kPa	bar	PSI	kPa(g)	bar(g)	PSI(g)
-40	-40	111,12	1,11	16,12	11,12	0,11	1,61
-39	-38,2	116,00	1,16	16,83	16,00	0,16	2,32
-38	-36,4	121,05	1,21	17,56	21,05	0,21	3,05
-37	-34,6	126,27	1,26	18,31	26,27	0,26	3,81
-36	-32,8	131,66	1,32	19,10	31,66	0,32	4,59
-35	-31	137,23	1,37	19,90	37,23	0,37	5,40
-34	-29,2	142,97	1,43	20,74	42,97	0,43	6,23
-33	-27,4	148,90	1,49	21,60	48,90	0,49	7,09
-32	-25,6	155,02	1,55	22,48	55,02	0,55	7,98
-31	-23,8	161,33	1,61	23,40	61,33	0,61	8,89
-30	-22	167,83	1,68	24,34	67,83	0,68	9,84
-29	-20,2	174,54	1,75	25,31	74,54	0,75	10,81
-28	-18,4	181,44	1,81	26,32	81,44	0,81	11,81
-27	-16,6	188,56	1,89	27,35	88,56	0,89	12,84
-26	-14,8	195,89	1,96	28,41	95,89	0,96	13,91
-25	-13	203,43	2,03	29,51	103,43	1,03	15,00
-24	-11,2	211,19	2,11	30,63	111,19	1,11	16,13
-23	-9,4	219,18	2,19	31,79	119,18	1,19	17,29
-22	-7,6	227,39	2,27	32,98	127,39	1,27	18,48
-21	-5,8	235,84	2,36	34,21	135,84	1,36	19,70
-20	-4	244,52	2,45	35,46	144,52	1,45	20,96
-19	-2,2	253,44	2,53	36,76	153,44	1,53	22,26
-18	-0,4	262,61	2,63	38,09	162,61	1,63	23,58
-17	1,4	272,03	2,72	39,45	172,03	1,72	24,95
-16	3,2	281,70	2,82	40,86	181,70	1,82	26,35
-15	5	291,62	2,92	42,30	191,62	1,92	27,79
-14	6,8	301,81	3,02	43,78	201,81	2,02	29,27
-13	8,6	312,27	3,12	45,29	212,27	2,12	30,79
-12	10,4	323,00	3,23	46,85	223,00	2,23	32,34
-11	12,2	334,00	3,34	48,44	234,00	2,34	33,94
-10	14	345,28	3,45	50,08	245,28	2,45	35,58
-9	15,8	356,85	3,57	51,76	256,85	2,57	37,25
-8	17,6	368,70	3,69	53,48	268,70	2,69	38,97
-7	19,4	380,85	3,81	55,24	280,85	2,81	40,73
-6	21,2	393,29	3,93	57,04	293,29	2,93	42,54
-5	23	406,04	4,06	58,89	306,04	3,06	44,39
-4	24,8	419,09	4,19	60,78	319,09	3,19	46,28
-3	26,6	432,45	4,32	62,72	332,45	3,32	48,22
-2	28,4	446,13	4,46	64,71	346,13	3,46	50,20
-1	30,2	460,13	4,60	66,74	360,13	3,60	52,23
0	32	474,46	4,74	68,82	374,46	3,74	54,31
1	33,8	489,11	4,89	70,94	389,11	3,89	56,44
2	35,6	504,10	5,04	73,11	404,10	4,04	58,61
3	37,4	519,43	5,19	75,34	419,43	4,19	60,83
4	39,2	535,10	5,35	77,61	435,10	4,35	63,11
5	41	551,12	5,51	79,93	451,12	4,51	65,43
6	42,8	567,49	5,67	82,31	467,49	4,67	67,80
7	44,6	584,22	5,84	84,74	484,22	4,84	70,23
8	46,4	601,31	6,01	87,21	501,31	5,01	72,71
9	48,2	618,77	6,19	89,75	518,77	5,19	75,24
10	50	636,60	6,37	92,33	536,60	5,37	77,83

HC Refrigerant R-290							
Temperature		Absolute pressure			Gauge pressure		
11	51,8	654,81	6,55	94,97	554,81	5,55	80,47
12	53,6	673,40	6,73	97,67	573,40	5,73	83,17
13	55,4	692,38	6,92	100,42	592,38	5,92	85,92
14	57,2	711,75	7,12	103,23	611,75	6,12	88,73
15	59	731,51	7,32	106,10	631,51	6,32	91,59
16	60,8	751,68	7,52	109,02	651,68	6,52	94,52
17	62,6	772,25	7,72	112,01	672,25	6,72	97,50
18	64,4	793,24	7,93	115,05	693,24	6,93	100,55
19	66,2	814,64	8,15	118,16	714,64	7,15	103,65
20	68	836,46	8,36	121,32	736,46	7,36	106,82
21	69,8	858,71	8,59	124,55	758,71	7,59	110,04
22	71,6	881,39	8,81	127,84	781,39	7,81	113,33
23	73,4	904,51	9,05	131,19	804,51	8,05	116,69
24	75,2	928,07	9,28	134,61	828,07	8,28	120,10
25	77	952,07	9,52	138,09	852,07	8,52	123,58
26	78,8	976,53	9,77	141,64	876,53	8,77	127,13
27	80,6	1001,45	10,01	145,25	901,45	9,01	130,75
28	82,4	1026,83	10,27	148,93	926,83	9,27	134,43
29	84,2	1052,68	10,53	152,68	952,68	9,53	138,18
30	86	1079,00	10,79	156,50	979,00	9,79	141,99
31	87,8	1105,79	11,06	160,38	1005,79	10,06	145,88
32	89,6	1133,08	11,33	164,34	1033,08	10,33	149,84
33	91,4	1160,85	11,61	168,37	1060,85	10,61	153,87
34	93,2	1189,12	11,89	172,47	1089,12	10,89	157,97
35	95	1217,88	12,18	176,64	1117,88	11,18	162,14
36	96,8	1247,16	12,47	180,89	1147,16	11,47	166,38
37	98,6	1276,94	12,77	185,21	1176,94	11,77	170,70
38	100,4	1307,24	13,07	189,60	1207,24	12,07	175,10
39	102,2	1338,07	13,38	194,07	1238,07	12,38	179,57
40	104	1369,42	13,69	198,62	1269,42	12,69	184,12
41	105,8	1401,31	14,01	203,25	1301,31	13,01	188,74
42	107,6	1433,73	14,34	207,95	1333,73	13,34	193,44
43	109,4	1466,71	14,67	212,73	1366,71	13,67	198,23
44	111,2	1500,23	15,00	217,59	1400,23	14,00	203,09
45	113	1534,31	15,34	222,54	1434,31	14,34	208,03
46	114,8	1568,96	15,69	227,56	1468,96	14,69	213,06
47	116,6	1604,18	16,04	232,67	1504,18	15,04	218,17
48	118,4	1639,97	16,40	237,86	1539,97	15,40	223,36
49	120,2	1676,34	16,76	243,14	1576,34	15,76	228,63
50	122	1713,30	17,13	248,50	1613,30	16,13	233,99
51	123,8	1750,86	17,51	253,94	1650,86	16,51	239,44
52	125,6	1789,02	17,89	259,48	1689,02	16,89	244,98
53	127,4	1827,79	18,28	265,10	1727,79	17,28	250,60
54	129,2	1867,17	18,67	270,81	1767,17	17,67	256,31
55	131	1907,17	19,07	276,62	1807,17	18,07	262,11
56	132,8	1947,80	19,48	282,51	1847,80	18,48	268,01
57	134,6	1989,07	19,89	288,49	1889,07	18,89	273,99
58	136,4	2030,98	20,31	294,57	1930,98	19,31	280,07
59	138,2	2073,54	20,74	300,75	1973,54	19,74	286,24
60	140	2116,75	21,17	307,01	2016,75	20,17	292,51

1.Summary

GDN30BH-K5EBA1A

GDN30BH-K5EBA1B(CK051049500)

GDN30BH-K5EBA1B(CK051049501)

Model List:

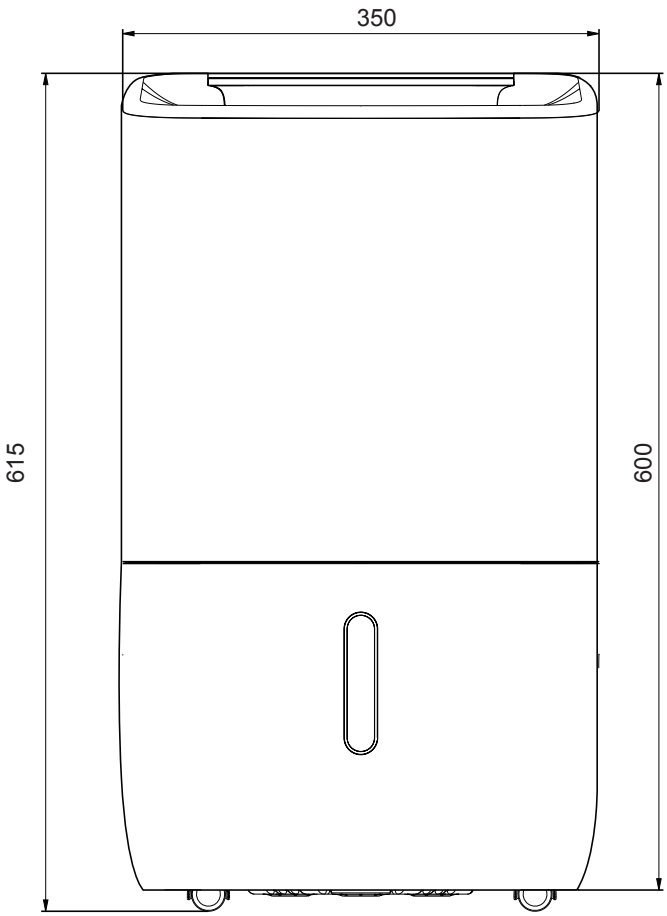
Model	Product code
GDN30BH-K5EBA1A	CK051046000/CK051046001
GDN30BH-K5EBA1B	CK051049500/CK051049501

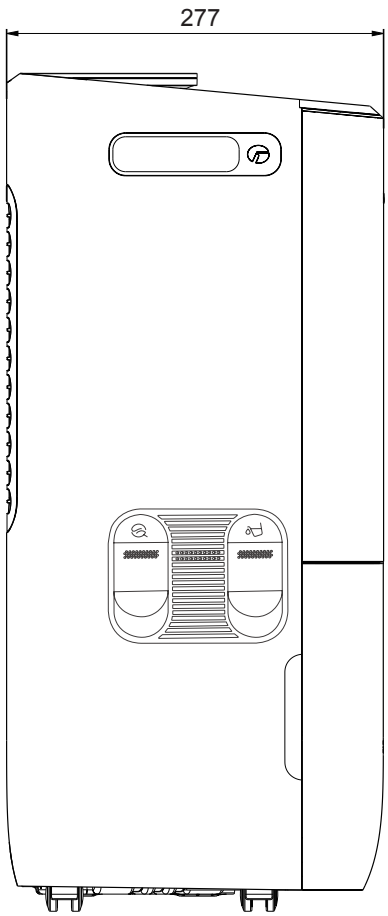
2.Specifications

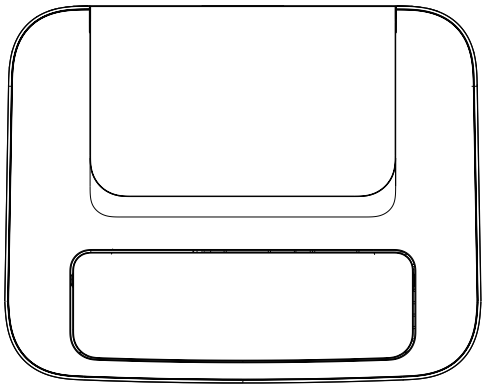
Model			GDN30BH-K5EBA1A GDN30BH-K5EBA1B	GDN30BH-K5EBA1A
Product Code			CK051046000 CK051049500/CK051049501	CK051046001
Power Supply	Rated Voltage	V~	220-240	
	Rated Frequency	Hz	50	
	Phases		1	
Rated Dehumidification Capacity		L/h	0.67	
Power Input		W	345	
Current Input		A	1.7	
Set Humidity Range		%	30-80	
Air Flow Volume		m^3/h	190/150/125	
Fan Motor Speed		r/min	950/800/700	
Fan Motor Power Output		W	10	
Fan Motor RLA		A	0.18	
Fan Motor Capacitor		μF	1.5	
Fan Type			Centrifugal	
Fan Diameter Length(DXL)		mm	Φ205.5×84	
Throttling Method			Capillary	
Fuse Current		A	3.15	
Sound Pressure Level		dB (A)	41/37/35(dehumidification) 41/37/33(purify)	
Sound Power Level		dB (A)	/	
Climate Type			T1	
Isolation			I	
Moisture Protection			IPX0	
Permissible Excessive Operating Pressure for the Discharge Side		MPa	3	
Permissible Excessive Operating Pressure for the Suction Side		MPa	1.5	
Dimension (WXHXD)		mm	350X615X277	
Dimension of Carton Box(LXWXH)		mm	391X322X642	
Dimension of Package(LXWXH)		mm	394X325X657	
Application Area		m^2	42~54	
Net Weight		kg	16.5	
Gross Weight		kg	17.5	
Refrigerant			R290	
Refrigerant Charge		kg	0.145	
Bucket Capacity		L	5.5/6.2	
Control Type			Electronic	
Evaporator	Evaporator Form		Aluminum Fin-copper Tube	
	Evaporator Pipe Diameter	mm	Φ7	
	Evaporator Row-fin Gap	mm	2-1.3	
	Evaporator Coil Length (LXDXW)	mm	245X25.4X228.6	
Condenser	Condenser Form		Aluminum Fin-copper Tube	
	Condenser Pipe Diameter	mm	Φ7	
	Condenser Rows-fin Gap	mm	3-1.3	
	Condenser Coil Length (LXDXW)	mm	245X38.1X228.6	
Compressor	Compressor Manufacturer		Shanghi Highly Electrical Appliances Co., Ltd.	ZHUHAI LANDA COMPRESSOR CO., LTD.
	Compressor Model		PSA586SV-R1DUN	QXD-G058P230A
	Compressor Type		Rotary	
	Compressor Power Input	W	327	315
	Compressor Overload Protector		USP-319-78 or equivalent	HPA-307
	Compressor LRA.	A	7	
	Compressor RLA	A	1.65	1.6

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

3.Outline Dimension Diagram

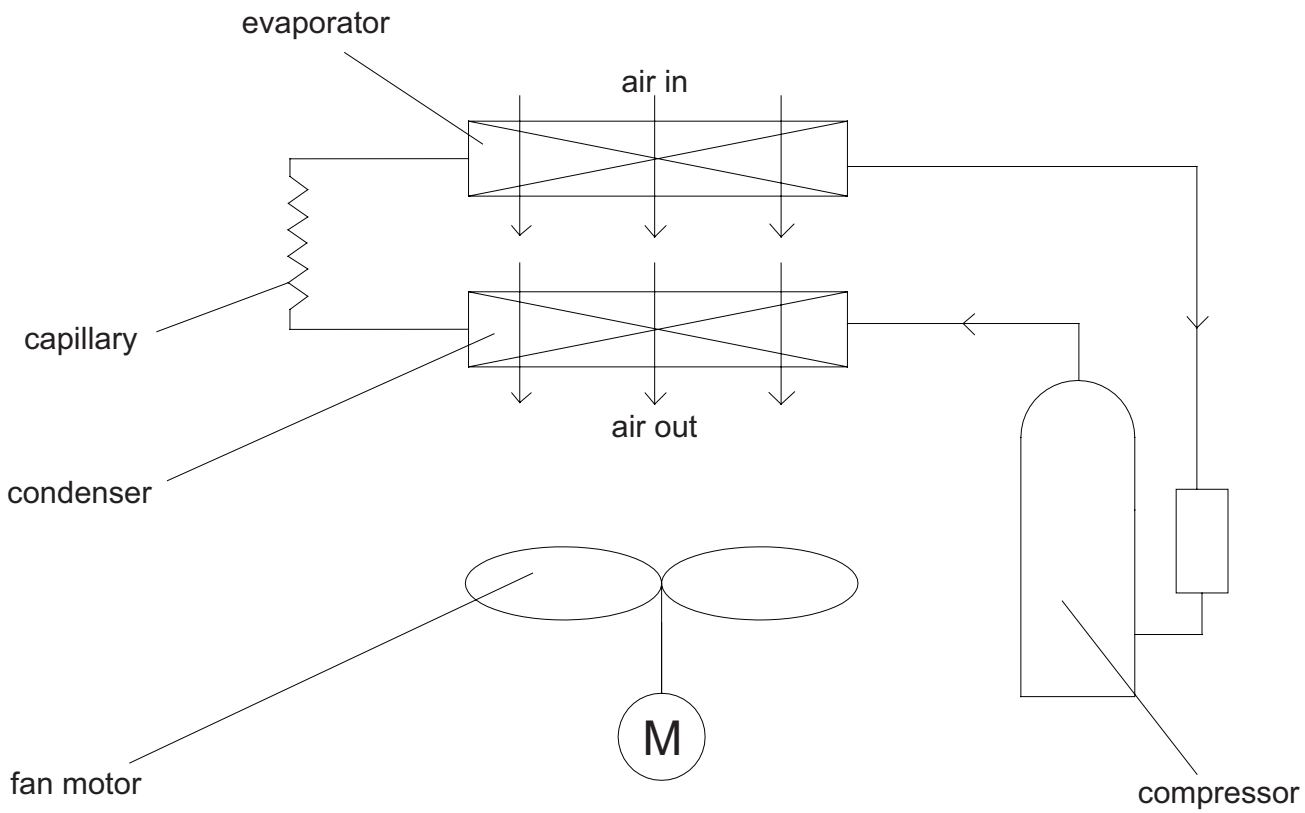






unit:mm

4.Refrigerant System Diagram



Dehumidifying principle of dehumidifier:

When temperature is decreased to the temperature point of dew, water vapor in humid air will condensate. Dehumidifier is dehumidifying the air by using this principle.

During operation of the system, air will pass through evaporator and condenser in turn and then be discharged due to centrifugal blade. When the air is passing through evaporator, refrigerant will absorb the heat in air to let its temperature decrease to the temperature point of dew, water vapor in air will condensate. Condensate water comes into water tank through water tray, or is discharged directly through drainage hose. The saturated low-temperature air passed through the evaporator will absorb the heat when flowing along the condenser, and then become the dry air. Under normal condition, the nearby air will become warm during operation of dehumidifier.

5.Electrical Part

5.1 Wiring Diagram

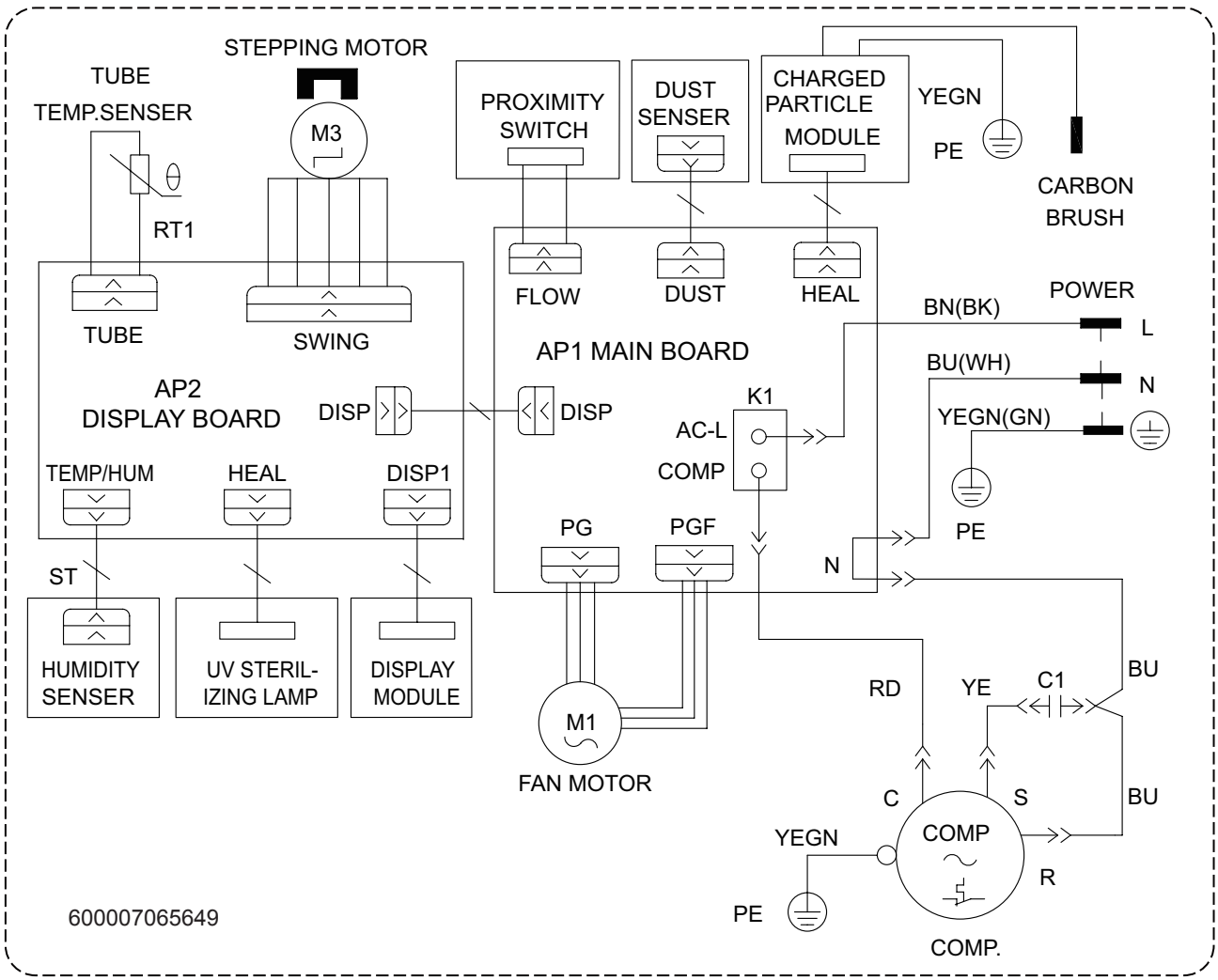
●Instruction

Symbol	Symbol Color
WH	White
YE	Yellow
RD	Red
YEGN	Yellow/Green
VT	Violet

Symbol	Symbol Color
GN	Green
BN	Brown
BU	Blue
BK	Black
OG	Orange

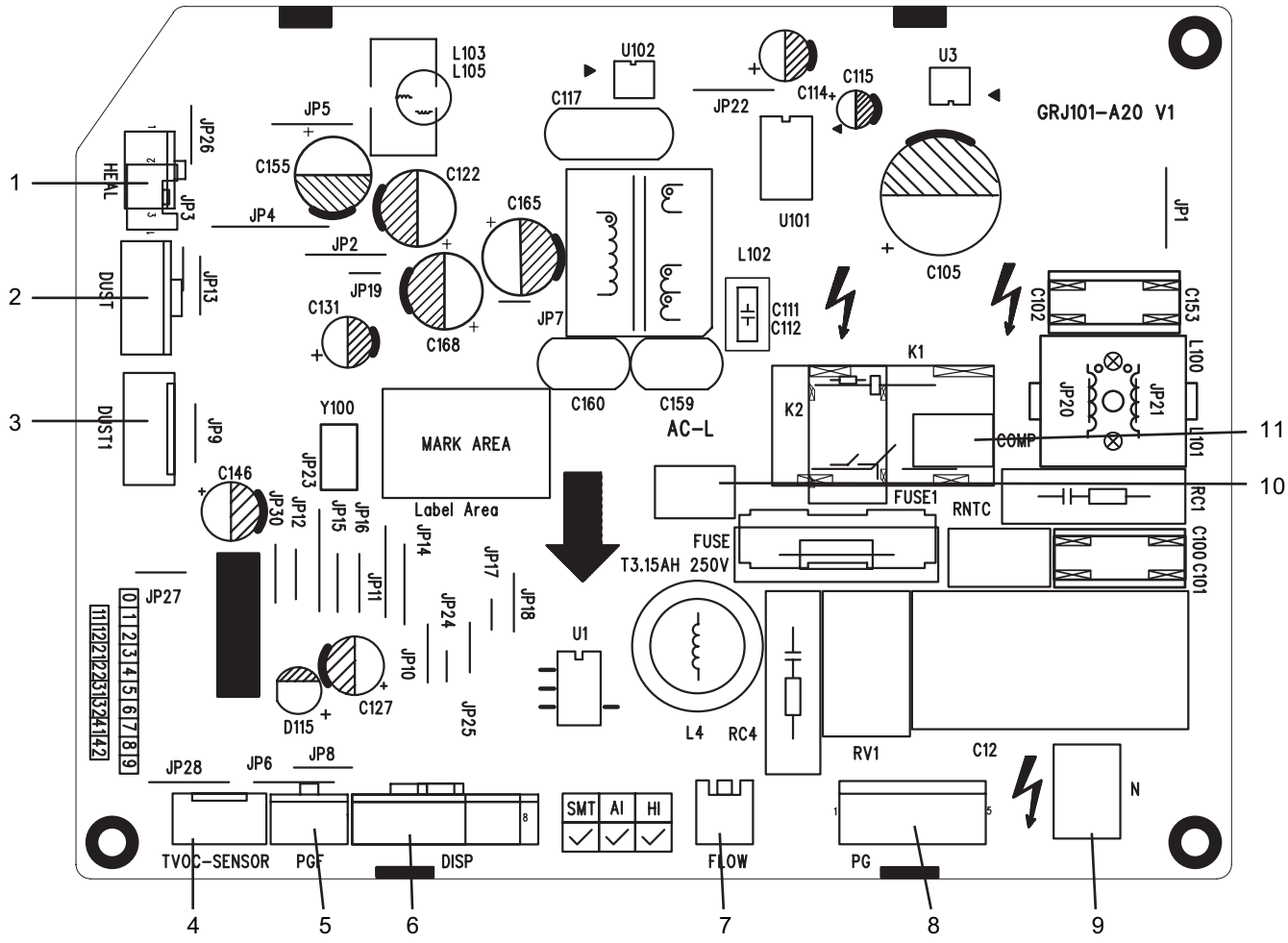
Symbol	Name
CAP	Jumper cap
COMP	Compressor
⏚	Grounding wire
/	/
/	/

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



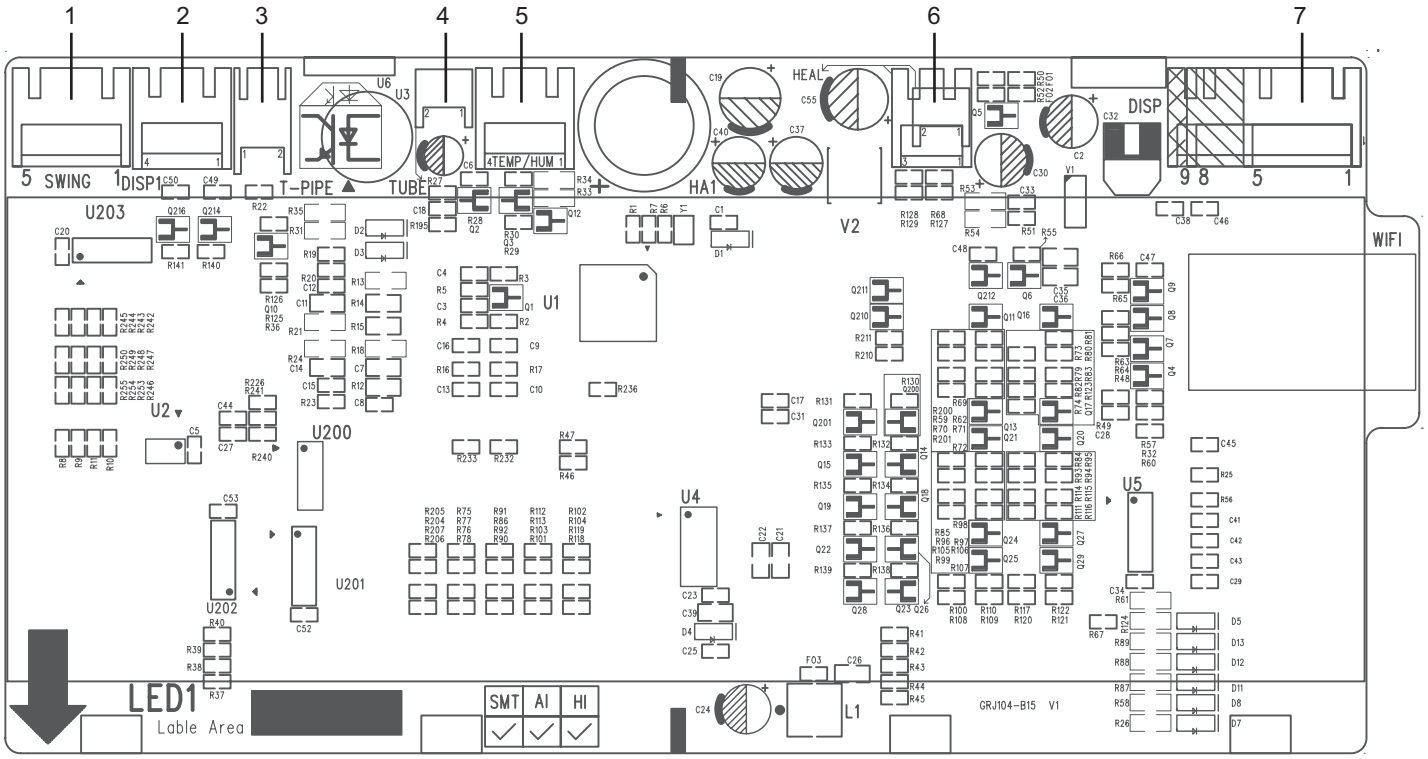
These circuit diagrames are subject to change without notice ,please refer to the one supplied with the unit.

5.2 PCB Printed Diagram



No.	Name	No.	Name
1	Health interface	7	Proximity switch interface(Water level switch)
2	PM2.5 sensor interface	8	Fan interface
3	Reserve PM2.5 sensor interface	9	Neutral wire terminal
4	Reserve odor sensor interface	10	Live wire terminal
5	Fan feedback interface	11	Compressor terminal
6	Display board interface		

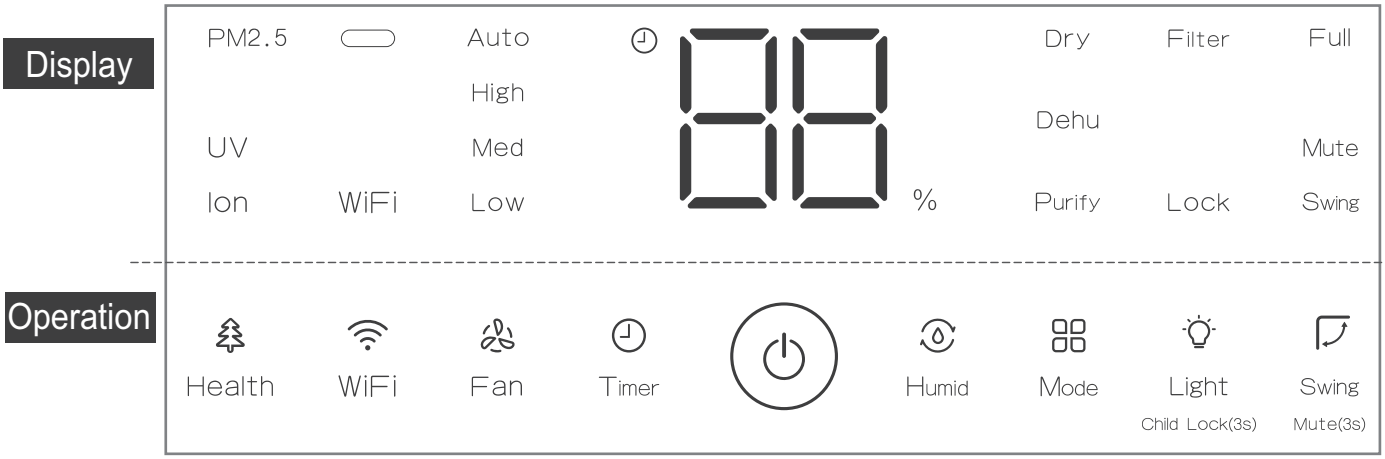
Silk Screen on Display Board



No.	Name
1	Interface of swing motor
2	Interface of display module
3	Reserve the interface of discharge temperature sensor
4	Interface of tube temperature sensor
5	Interface of humidity sensor
6	Interface of UV sterilizing lamp
7	Interface of main board

6.Function and Control

6.1 Control Panel Instruction



Basic Functions of the Buttons

Standby button

Press this button, the dehumidifier starts or stops running. (When the operation stops or the power plug is plugged in again, press the standby button again immediately, and it will take about 3 minutes to start dehumidification)

Humidity display

After the unit starts running, it will automatically detect the indoor humidity, and the nixie tube always displays current ambient humidity.

Humidity button

Humid

Press this button, set the required humidity for dehumidifi-cation operation. When the setting is completed, the panel returns to the current humidity state.

(Setting method: circularly increase by 5% from 30%~80%, and adjust quickly by holding on pressing humidity button.)

***Note:** In the clothes drying and purification modes, the set humidity cannot be adjusted.

Mode button

Mode

Press this button, set current operation mode for the unit. There are three modes for switching under the mode function:

Dry → Dehu → Purify

Dry mode: When the icon "Dry" is on, it means the unit enters the Dry mode. When the clothes drying is completed, the humidity in the room will be maintained within a certain range to prevent the clothes from becoming moldy.

***Note:** Fan speed and humidity cannot be adjusted in Dry mode.

Dehu mode: When the icon "Dehu" is on, it means the unit enters the dehumidification mode. The unit will select a more comfortable humidity to operate. When the user has set the humidity, the unit will operate at the set humidity. When the set humidity is reached, the compressor will stop running.

Purify mode: When the icon "Purify" is on, it means the unit enters the purification mode. The Health is forcibly turned on.

***Note:** If you use the purification mode for a long time, it is recommended to pour out all the remaining water in the water bucket.

Light button

Light

Child Lock(3s)

Press this button to adjust the light state of the unit. The three states under light function are as follows:

Only turn off U-shaped light ring → Turn off display light → Turn on display light

When all lights are turned off, the unit is in the screen-off state. By touching the operation area (except standby button), you can wake up the display area and the light in the display area for operation.

Swing button

Swing

Mute(3s)

Press this button to adjust the swing of air deflector of the unit. When the icon "Swing" is on, the air deflector swings. When the icon "Swing" is off, the air deflector fixes at the current position and stops swing.

Timer button

Timer

Under the unit on status, press this button to set the required shutdown time. After the setting is completed, the nixie tube will display it for 3s and then display the current humidity. (Setting

method: increase 1h from 0~24h circularly. Hold on pressing the timer button to adjust quickly.)

Under the standby status, touch the operation area (except the standby button) to wake up the timer button. Press the timer button to set the required power-on time. After the setting is completed, the nixie tube will display it for 3s and then return to the standby status.

***Note:** Set the timer time to 0 or directly press the standby button to cancel the timer setting.

Fan speed button Fan

Press this button to adjust the fan speed of the unit. (Setting method:

Auto → High → Med → Low

***Note:** When the unit enters the drying function, the fan speed will be forced to be high and cannot be adjusted.

When auto fan speed has been set, the unit will automatically adjust the fan speed according to the detected humidity under the dehumidification mode. Under the purification mode, the unit will automatically adjust the fan speed according to the detected air quality.

WiFi button WiFi

Press this button to turn on or turn off the WiFi function. When the WiFi function is turned on, the icon "WiFi" is on. You can connect to WiFi to control the unit. Hold on pressing the WiFi button for 5s to reset WiFi function.

Health button Health

Press this button to adjust the health function. The health function will switch as below:

Ion and UV are off → Only UV is on → Only Ion is on → Ion and UV are on

***Note:** In the purification mode, the Health function is forced to be turned on and cannot be turned off.

Child lock control

Under the unit on status, hold on pressing the light button Light Child Lock(3s) for 3s to turn on or turn off the lock function. The icon "Lock" on the display panel will be on or off.

Sound control

Under the unit on status, hold on pressing the swing button Swing Mute(3s) for 3s to turn on or off the sound of buzzer. The icon "Mute" on the display panel will be on or off.

Filter reset control

When the icon "Filter" is on, it means the filter shall be cleaned. After cleaning, under the unit on status, please hold on pressing the combination buttons (Mode + Light Child Lock(3s)) for 3s at the same time.

In this case, the filter cleaning icon will be off.

Standby operation

Under the standby status, touch the operation area (except the standby button) to wake up the WiFi button and the timer button, and then turn on or turn off the WiFi function and set the timer on function.

Detection reminder

The unit is equipped with the PM2.5 sensor. "PM2.5 ▬" is always on. The air quality status corresponding to the light display color: green (good), yellow (normal), red (bad).

Collapse protection

The unit is equipped with the collapse sensor. When all the lights of the unit flash and the buttons cannot be operated, please confirm the following:

● When the unit is collapsed:

1. Unplug the power plug, raise the unit, and wipe the overflowing water from the unit.
2. To ensure that the water seeping into the unit is completely dry, please do not use the unit for at least half a day.
3. Reinsert the power plug for operation.

● Whether the inclined angle of the unit is too big:

First put the unit upright without tilt, and disconnect the plug and then reconnect it.

Water full protection

If the water in the water tank is full or the water tank is taken out for over 3 minutes, the unit will enter water-full protection, the “Water-full” icon flickers (color of water-full icon: red), meanwhile it will give out an alarm (not silent status), and the unit stops operation. At this time, the water tank should be taken out to pour the water away, and reinstall the water tank, then the water-full protection is eliminated, the unit resumes normal operation.

*Under standby status, if the water tank is not installed well or drawn out, the unit will immediately enter water-full protection.

6.2 Introduction of Basic Mode Function

1. System Basic Function

1.1 Clothes drying mode

(1)After entering clothes drying mode, the compressor turns on and the fan operates at high fan speed, the humidity and fan speed buttons are invalid. When the whole unit operates under clothes drying mode and exceeds a certain period of time, it will operate according to the following logic:

a. When 50%≤ HUMIDITYamb. -5%, the compressor starts operation, and the fan operates at high fan speed;

b. When 50%≤ HUMIDITYamb. -5%, the compressor starts operation, and the fan operates at high fan speed;

c. When the HUMIDITYamb. is within 45%-55%, and when the compressor is in operating status, it operates at a condition; when the compressor stops, it operates at b condition;

(2)When the unit is turned off and restarted, or it switches mode and then enters clothes drying mode, it will start the clothes drying mode again.

1.2 Clothes drying mode

(1)After entering smart dry mode, the fan operates at high fan speed by default, and the whole unit operates by default at different humidity according to different ambient temperature;

(2)If the user has set the fan speed and humidity, it will operate according to the setting;

(3)When it reaches the humidity, it will conduct according to the following conditions:

a When HUMIDITYset ≤ HUMIDITYamb -5%, the compressor and fan operate normally;

b When HUMIDITYset ≥ HUMIDITYamb +5%, the compressor stops operation and the fan operates normally;

c When HUMIDITYamb -5% < HUMIDITYset < HUMIDITYamb +5%, and when the compressor is operating, it operates according to a condition; when the compressor stops operation, it operates according to b condition; if the unit is at this condition when started, the compressor stops operation and the fan operates normally.

1.3 Purification mode

When it enters purification mode, the compressor stops operation, and the set humidity cannot be adjusted, the Health is forcibly turned on.

2. Protection Function

2.1 Compressor protection

(1)After energization, if the compressor stops operation, it can only be restarted with an interval of 3 minutes under any cases.

(2)After energization, if the compressor stops operation, it can only be restarted with an interval of 3 minutes under any cases.

2.2 Working temperature protection

The compressor can only be allowed to start when $1^{o}C \leq T_{ambient} \leq 45^{o}C$; when $T_{ambient} < 1^{o}C$ or $T_{ambient} > 45^{o}C$, the compressor does not start.

2.3 Continue operating time protection

After the unit operates for a long time, it will automatically stops for several minutes and then resumes operation, so as to keep a good operating status.

2.4 Antifreeze protection

During operation, when it detects there is freezing, the compressor stops operation and the fan operates at high fan speed compulsorily; when the defrosting is completed, the compressor and fan resume normal operation.

2.5 Motor stuck protection

When the motor gets stuck, all the loading stops, the air louver will stop at the current status, it will solve after turning off and turning on the unit. If the current status is power on, the dual 8 nixie tube will display the locked-rotor operation error code H6. If the current status is power off, it will not display the error code.

2.6 Self-diagnosis

When it detects that the humidity sensor is faulted, the display board will display the error code “L1”; when it detects that the temperature sensor is faulted, the display board will display the error code “F1/F2”; when it detects the communication error, the display board will display the error code “E6”.

3. Other Functions

3.1 Memory function

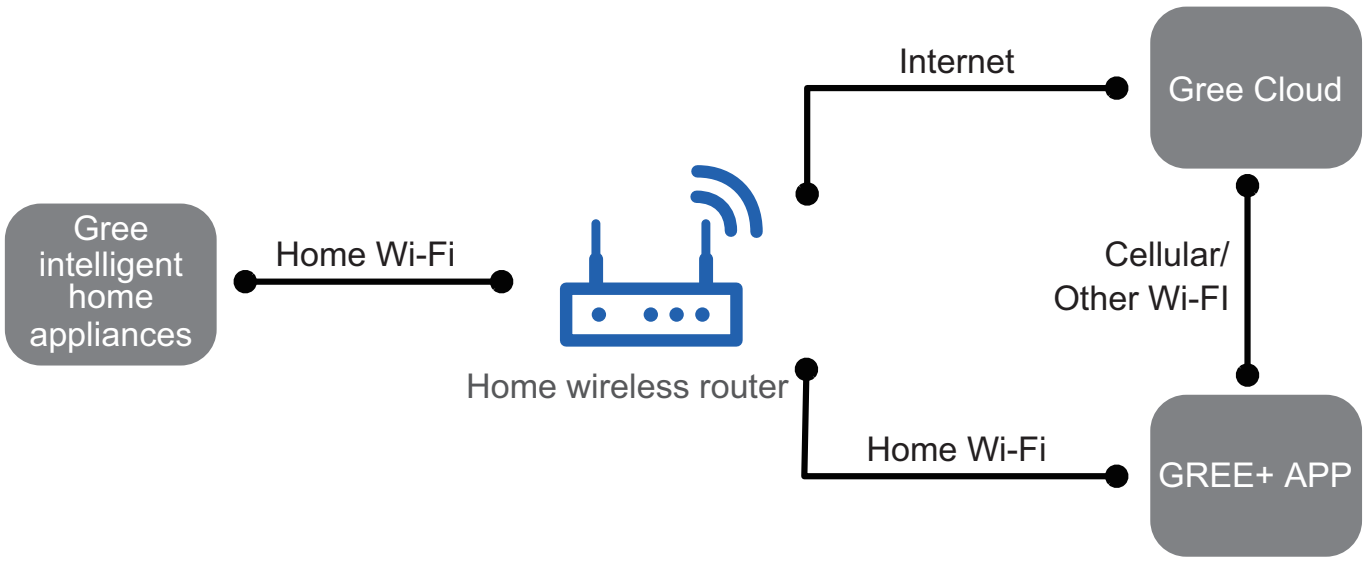
The unit is with memory function, when it is turned off and restarted, the unit will operate according to the command before the unit is turned off.

3.2 Filter cleaning reminding

When the fan operates for accumulative 250 hours, “Filter” indicator turns on to remind user to wash the filter. After the filter indicator is on, press (Mode + Light Child Lock(3s))buttons at the same time for 3 seconds to clear out the operating time of fan, then the “Filter” indicator turns off.

6.3 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 4.4 and above version

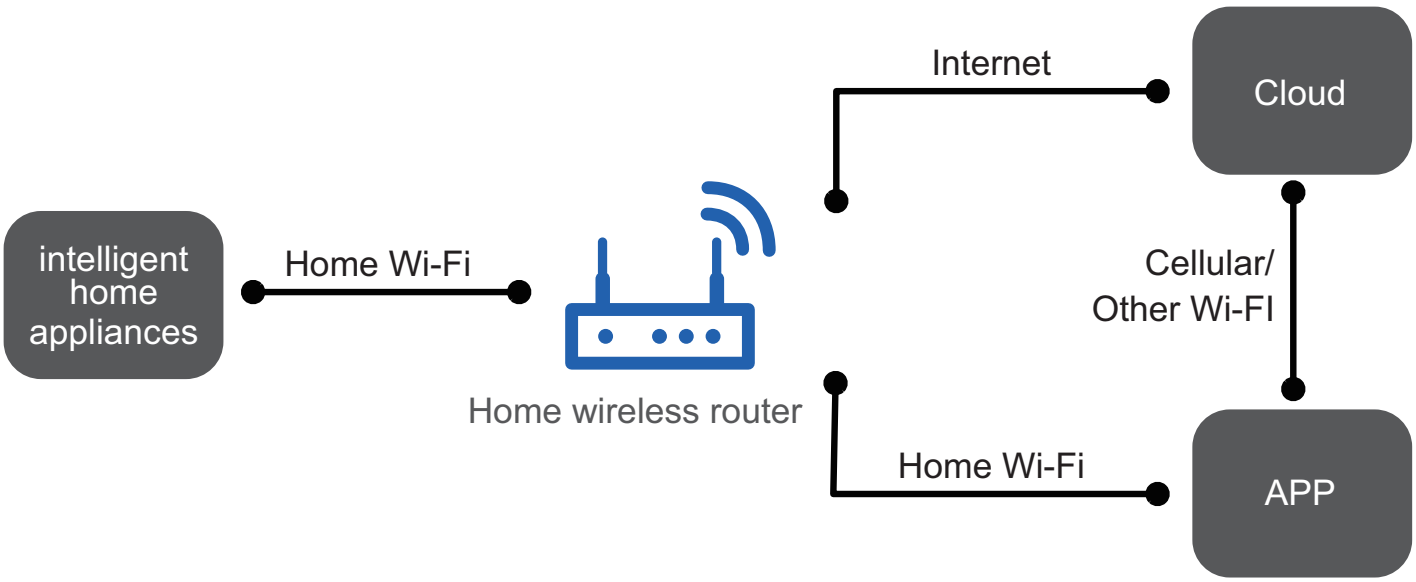
Download and installation

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.

6.4 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 4.4 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.

7.Notes Maintenance

Safety Precautions: Important!

Please read the safety precautions carefully before maintenance：

The following contents are very important for installation and maintenance.

Please follow the instructions below.

- **The 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.**
- **Be caution during maintenance. Prohibit incorrect operation to prevent electric shock and other accidents.**

Warnings

Electrical Safety Precautions:

1. Cut off the power supply before maintenance.
2. Specialized circuit must be applied; prohibit sharing the same circuit with other electric appliances; protection switch must be installed.
3.Have the unit adequately grounded. The grounding wire cant be used for other purposes.
4. 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 dehumidifier.
5. The power cord cant be pressed by hard objects.
6. 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.
7. 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.
8. Use the power supply with same voltage and frequency as shown in rating label.
9. Do not pull out the power plug when the unit is operating to avoid damaging the circuit.
10. Do not place anything at the top of dehumidifier; ensure the air outlet or air inlet is not blocked; do not use the unit near wall and curtain.
11. Do not use heating equipment around the unit.

Refrigerant Safety Precautions:

When refrigerant leaks or requires discharge during installation, maintenance, or disassembly, it should be handled by certified professionals or otherwise in compliance with local laws and regulations.

1. This unit adopts R290 refrigerant. System maintenance is strictly prohibited.
2. If the refrigerant leaks or the pipeline is damaged, it is forbidden to conduct the maintenance. The unit should be recycled and disposed according to local regulations.
3. It is strictly forbidden to cut or weld the refrigerant. Otherwise, it may lead to explosion.

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

Appliance filled with flammable gas R290.

Before install and use the appliance, read the owner's manual first.

Before install the appliance, read the installation manual first.

Before repair the appliance, read the service manual first.

The Refrigerant

●To realize the function of the unit, a special refrigerant circulates in the system.
The used refrigerant is the fluoride R290, which is specially cleaned. The refrigerant is flammable and inodorous. Furthermore, it can lead to explosion under certain conditions.
●Compared to common refrigerants, R290 is a nonpolluting refrigerant with no harm to the ozonosphere. The influence upon the greenhouse effect is also lower. R290 has got very good thermodynamic features which lead to a really high energy efficiency. The units therefore need a less filling.

Warnings

●Appliance filled with flammable gas R290.
●Appliance shall be installed, operated and stored in a room with a floor area larger than 4 m^2.
●The appliance shall be stored in a room without continuously operating ignition sources.
(for example: open flames, an operating gas appliance or an operating electric heater.)
●The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
●The appliance shall be stored so as to prevent mechanical damage from occurring.
●Ducts connected to an appliance shall not contain an ignition source.
●Keep any required ventilation openings clear of obstruction.
●Do not pierce or burn.
●Be aware that refrigerants may not contain an odour.
●Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
●Servicing shall be performed only as recommended by the manufacturer.
●Should repair be necessary, contact your nearest authorized Service Centre.
●Any repairs carried out by unqualified personnel may be dangerous.
●Compliance with national gas regulations shall be observed.
●Read specialist's manual.

8.Operation and maintenance

8.1 Drainage

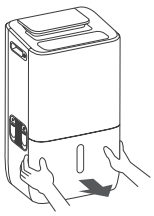
The water bucket is full: when the water bucket is full, the icon "Full" lights up, the unit auto stops running.

8.1.1 Water bucket drainage

Note:

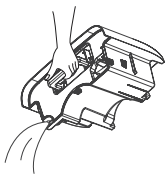
Do not remove the bucket when unit is in operation or has just stopped. Otherwise it may cause some water to drip on the floor.

1. Grasp the clasps at both sides of the water bucket to pull out the water bucket gently.

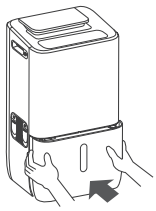


2. Drain the water from the drainage port by tilting the unit.

If taking out the water tank when the unit is operating or taking it out immediately after the unit stops opeation, the condesate water may drip on the chassis. Therefore, please take out the water tank to pour out water when the unit has stopped operation for 3min.



3. Put the water bucket back into the unit gently.



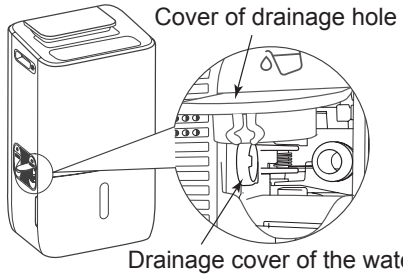
Note:

When reinstalling the water bucket, please gently push the water bucket back to its original position. If the water bucket is not installed in place, the icon "Full" will keep flashing and the dehumidifier will not work properly.

8.1.2 Continuous Drainage

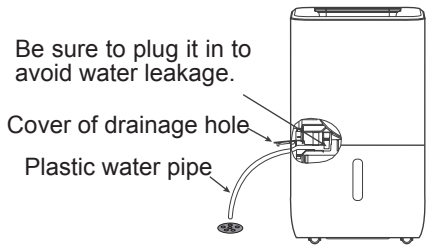
This unit has a continuous drainage port. The user can purchase a drainage pipe with an inner diameter of 13 ~13.5mm (pipe length is about 1.3-1.5 meters) and install it on the drainage equipment to achieve continuous drainage of condensate. When installing continuous drainage equipment, be sure to stop the unit and pull out the power plug.

1.Open the continuous drainage hole cover from the side of the unit, then check and make sure that the drainage cover of the internal water tray is open.



2.Insert the plastic water pipe into the drainage pipe of the unit through the hole at the back of the continuous drainage hole.

Note: When you want to take off the drain hose, prepare a receptacle to collect water from the nozzle.



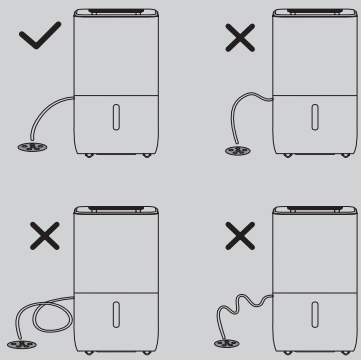
Note:

●If the temperature of water inside the drainage pipe is quite different from the ambient temperature, condensation water will be generated on the surface of pipe. In this case, please conduct insulation for the drainage pipe before operation.

●The water bucket cover must be installed correctly on the water bucket to prevent the dehumidifying water from flowing into the room and soaking the furniture.

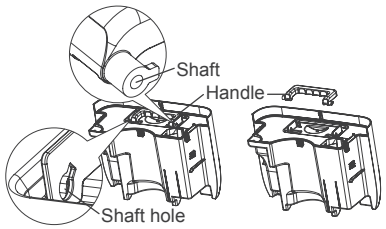
●Slant the drain hose slightly downwards. The drain hose cant be curved, raised and fluctuant, etc.

●The water outlet can't be placed in water and easy to produce corrosive gas pipes.

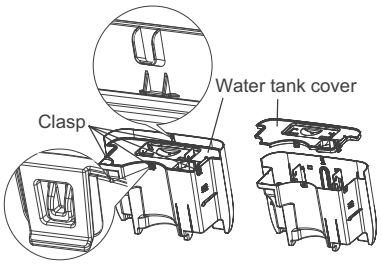


8.2 Clean the water bucket

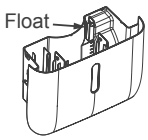
1. Take out the water tank and pour out the residual water inside the water tank. As shown in the figure, aim the locating shaft of the handle at the hole on the water tank, and pull out the handle to remove it.



2. As shown in the figure, disassemble all clasps on the water tank cover and then the water tank cover can be removed.



3. Please wash it with cool or warm water. Do not clean it with detergent, the chemically-treated cloth, gasoline, benzene, thinner or other solvents to avoid scratches or damage to the water bucket, which may cause water leakage. After cleaning, make sure that the float is placed properly and it can move.



Note:

●When reinstalling the water bucket, please gently push the water bucket back to its original position. If the water bucket is not installed in place, the water full indicator will keep flashing and the dehumidifier will not work properly.

●Please do not move the water bucket when the dehumidifier is running or just shuts down, otherwise it may cause part of the dehumidifying water to flow onto the ground.

●Do not remove the float (magnet) assembly in the water bucket, because the float (magnet) assembly is used to monitor whether the water level is full. Damage to it may cause the water in the tank to flow out and soak the furniture, and also cause electric shock or short circuit.

9.Maintenance

9.1 Safety Principle of Maintenance

1. The maintenance spot must have good ventilation. Do not close the door or the window.
2. Do not use naked flame, including welding, smoking. Do not use power tools.Do not use mobile phone. Tell the user not to cook with naked flame.
3. Take antistatic measures, including wearing pure cotton clothes and gloves etc.
4. If flammable refrigerant leakage is found during maintenance,it is a must to reinforce ventilation and take effective protective measures.
5. During maintenance, it is necessary to keep the spot safe when fetching the lacked spare parts.
6. It is necessary to keep the case of the air conditioner grounded during maintenance.
7.The maintenance irrelated to refrigerant vessel, inner refrigerant pipe and cooling component can be performed in the user's place, including cleaning the cooling system and sludging.
8. Ensure that the density tester is working during maintenance.
9. Ensure there is necessary safety precaution and emergency measures on the spot. Put suitable fire extinguishers(CO2 or dry powder) in the nearest area.
10. There must be natural ventilation in the maintenance spot.
11. The maintenance staff shall take safety actions.
12. Paste suitable signs such as "No Smoking" and "No Entry".

9.2 Preparation before Maintenance

1. Inspection of Environment
(1) Ensure that electric product with radiation is power off in the maintenance area. All the persons in the room shall turn off the mobile phone.
(2) Check if there is refrigerant leakage in the maintenance area. Ensure that all the leak testers are suitable for this air conditioner.
(3) Ensure that the room area reaches the requirement.
(4) Check if the maintenance area is ventilated. Keep the room ventilated.
2. Inspection of Air Conditioner
(1) Ensure that the air conditioner is reliably grounded.
(2) Ensure that the power supply of the air conditioner is cut off. Discharge the electricity of the capacitor. If power supply is necessary, perform leak test to prevent the potential danger.
3. Inspection of Maintenance Equipment
(1) Check if the maintenance equipment is suitable for the refrigerant. Only the special equipment recommended by the air conditioner supplier can be used.
(2) The set alarm density of the leak tester shall not be higher than 25% of the LEL. The tester must keep operating during maintenance.
4. Leak Test before Maintenance
(1) After cutting off the power supply, perform leak test with the recommended leak detector or density tester (pump suction type) (ensure the equipment is calibrated; leakage ratio of leak detector is 2g/year.)
Note: do not use resolvent with chlorine in case causing corrosion of the steel pipe.
(2) If leakage is found, remove all fire source ensure good ventilation of the area.
5. Check List

No.	Check information	Result	Yes/No
1	Maintenance equipment is complete		
2	Persons in the maintenance area turn off the mobile phone.		
3	Power supply of tools is 2m away.		
4	Density tester can be used.		
5	Other tools are normal.		
6	Maintenance staffs are qualified.		
7	The spare parts are provided by the manufacturer and qualified.		
8	The air conditioner needed to be serviced is under safe state.		
9	The wire of power socket is reliably connected.		
10	There is natural ventilation in maintenance area.		
11	There is no operating electric appliance or naked flame within 2m of Maintenance area.		

9.3 Maintenance Cautions

If it is necessary to replace components, all the components used shall be made by manufacturer. Otherwise, the supplier shall not bear the responsibility.

1.Maintenance of Electrical Parts

(1)Replace the power cord and connecting wire with that of the same specification.

(2)When inspecting the circuit with power on, check if there is electric leakage for the metal component such as evaporator or condenser. During inspection, do not touch the circuit so as to prevent electric shock.

(3)When inspecting the capacitor, ensure that the maintenance area is well ventilated. After conforming there is no refrigeration leakage, discharge electricity of capacitor.

(4)Before replacing the component, cut of the power supply of the air conditioner.

(5)Cut off the power before disconnecting and connecting the wire. Disconnect the live wire first and then ground wire.

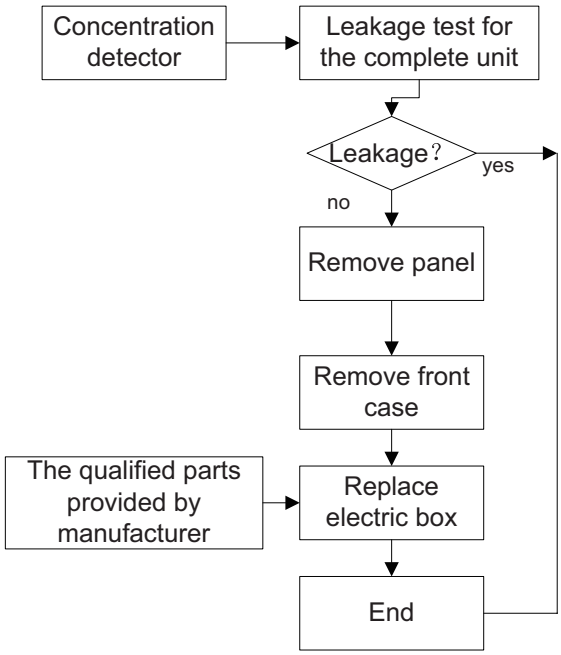
(6)During maintenance, do not remove the protective component. Use the component of same supplier and specification.

(7)When servicing the hermetic parts, cut of the power of the air conditioner before opening the sealing cover. If it is necessary to use power supply, perform leak test to prevent potential danger.

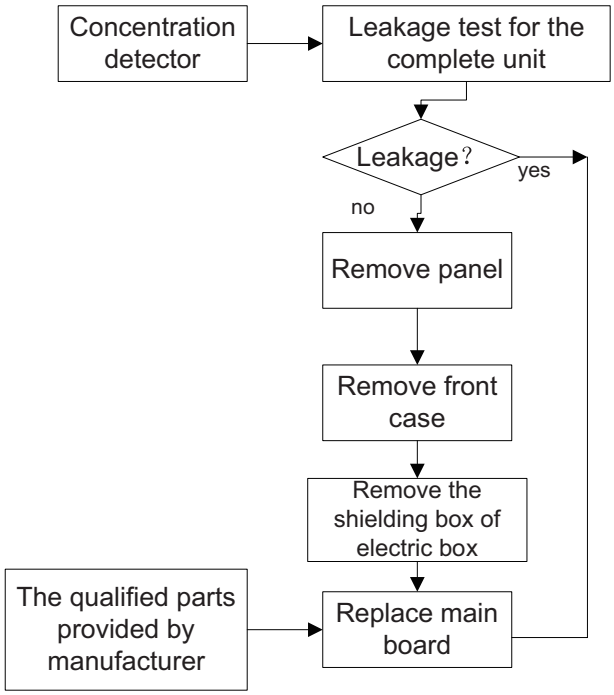
(8)Do not replace the case which may affect the protective grade.

(9)Ensure that the sealing material is not degraded and that it can prevent entry of flammable gas. The parts used for replacement must reach the requirement of the suppler.

(1).Replace electric box



(2).Replace main board



2.Maintenance of Refrigeration System

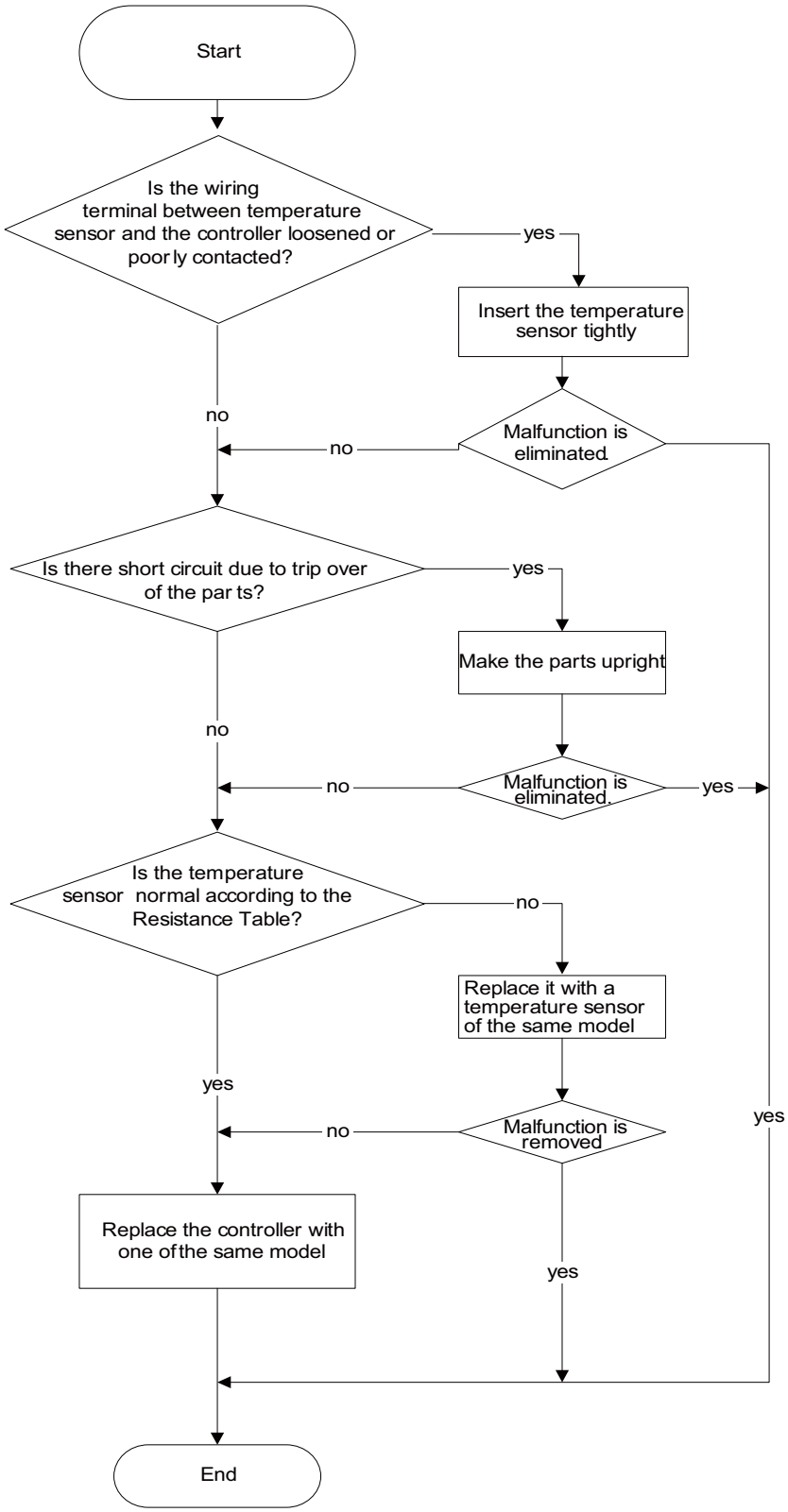
Before the maintenance, check whether there is any leakage or blockage in the refrigeration system. If yes, it is forbidden to conduct the maintenance. The unit should be recycled and disposed according to local regulations.

9.4 Error Code

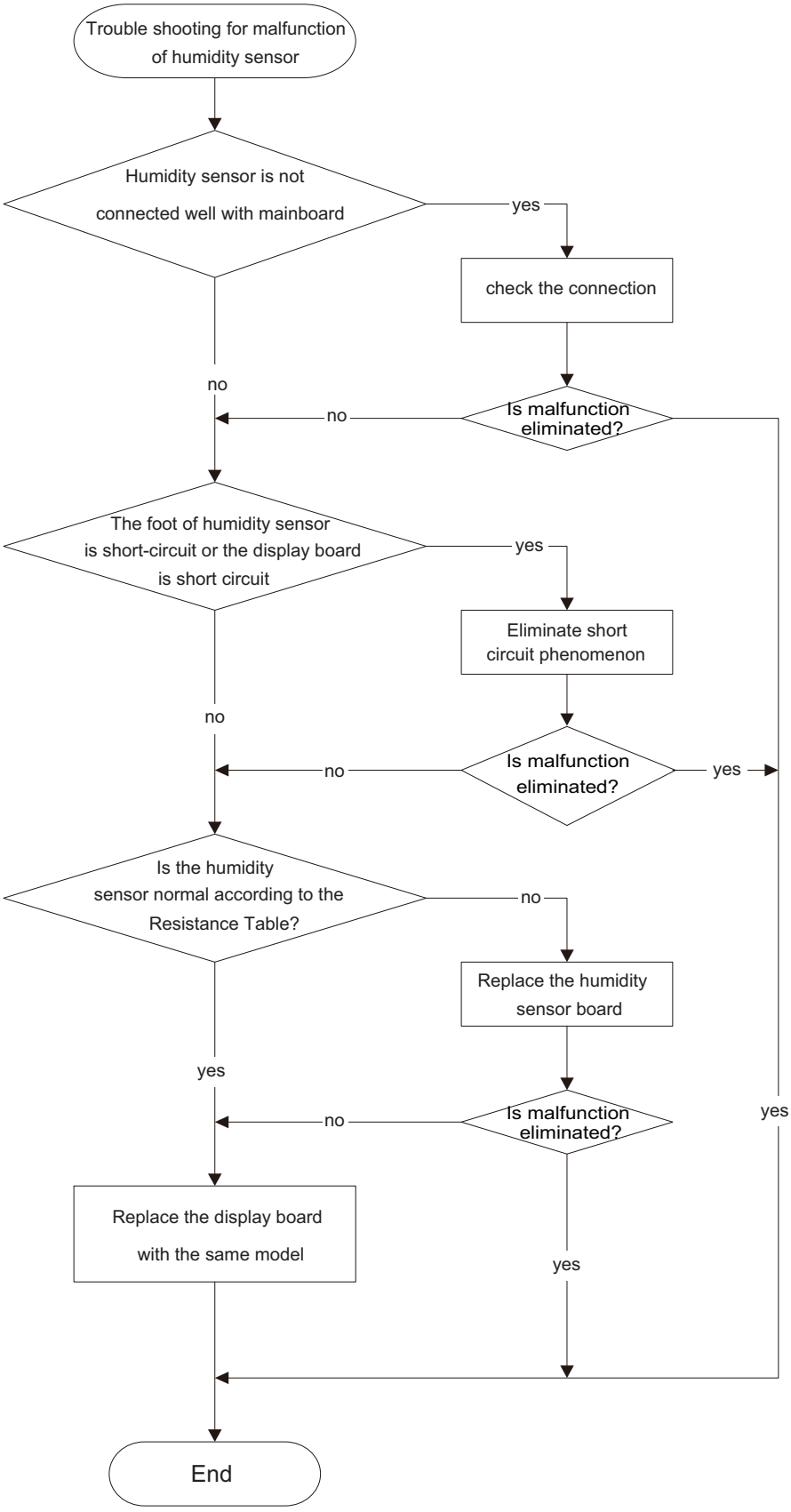
Malfunction Name	Display Method of Indoor Unit (Error Code)	A/C Status	Possible Causes(For specific maintenance method, please refer to the following procedure of troubleshooting)
Ambient Temperature Sensor Malfunction	F1	Compressorand fanmotor stop. Buttons are invalid.	● Ambient temperature sensor is loosen or is poorly connected with the terminal of display board. ● Some element of display board may have been put upside down and cause short circuit. ● Ambient temperature sensor is damaged(Please refer to Checking Table for Temperature Sensor Resistance). ● Display board is damaged.
TubeTemperature Sensor Malfunction	F2		● Temperature sensor on the evaporator is loosen or is poorly connected with the terminal of display board. ● Some element of display board may have been put upside down and cause short circuit. ● Temperature sensor on the evaporator is damaged (Please refer to Checking Table for Temperature Sensor Resistance). ● Display board is damaged.
Humidity Sensor Malfunction	L1		● Humidity sensor is short-circuited. ● Humidity sensor is damaged. ● Display board is damaged.
motor (fan motor) do not operate	H6		● Is the fan blocked? ● Is the motor terminal loose? ● Is the connection wire of motor damaged? ● Is the motor damaged? ● Is the main board damaged?
Communication Malfunction	E6		The communication terminal is loose
Malfunction of zero-crossing signal	U8		● The power is abnormal; ● Main board of indoor unit is damaged.
Refrigerant insufficient protection	Press +Timer to display F0	Compressor stops operation, and the fan stops operation after 30S	●Heat exchanger is too dirty/blocks the air inlet/outlet ●Compressor operation is abnormal, strange noise or leakage occurs. Temperature of outer casing is too high; ●The internal system is blocked (dirt blockage and ice blockage); ●The pipeline is fractured or rusted, and the refrigerant is leaked
Overload protection	Press +Timer to display H3		● The working environment is bad. ● The evaporator and condenser are blocked by the dirt. ● The system is abnormal.
Dust sensor	Press +Timer 3s to display FU	Normal operation	● Dust sensor is loosen ● Dust sensor is damaged ● Display board is damaged.

9.5 Malfunction Detection Flowchart

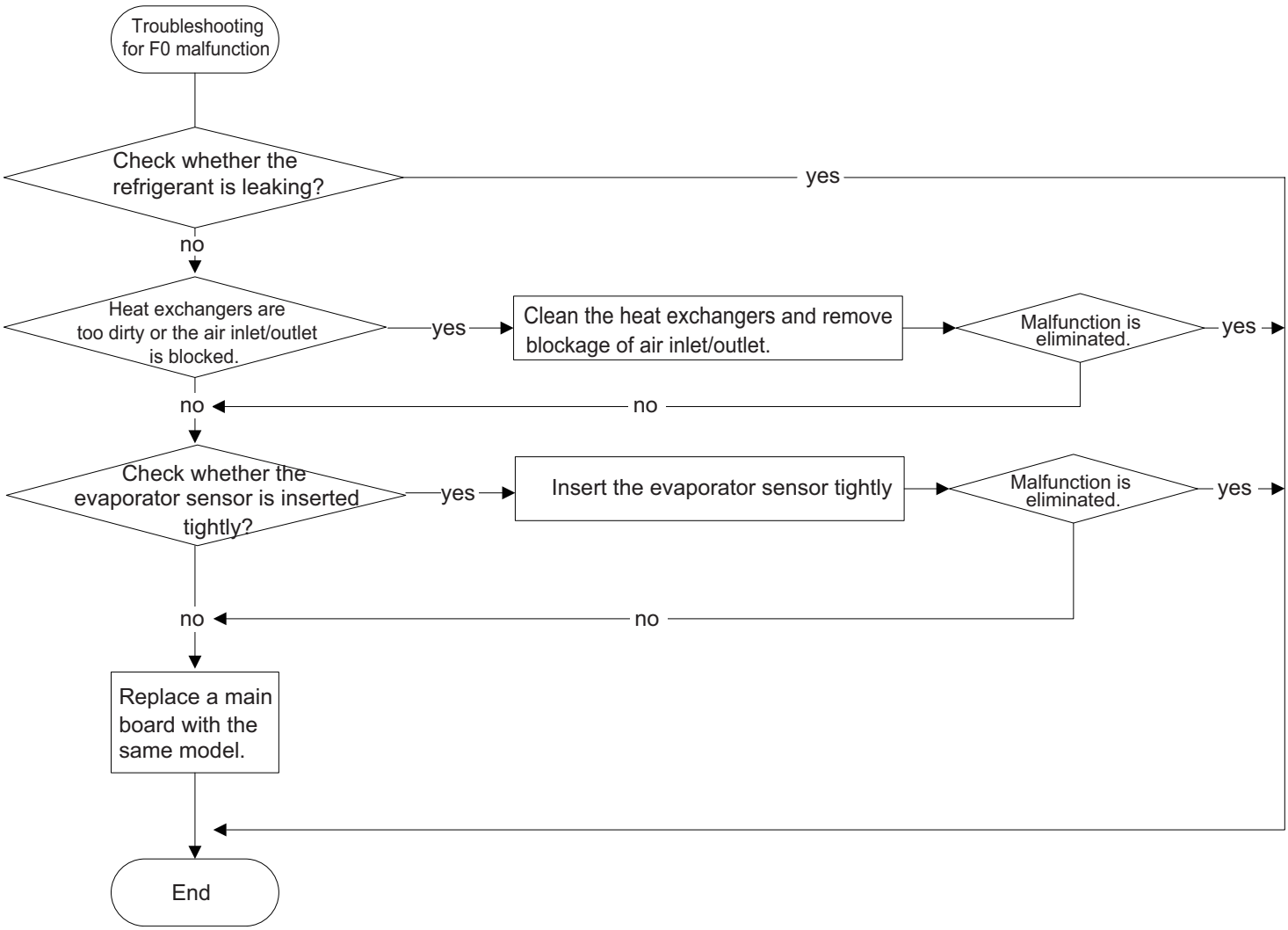
1. Malfunction of temperature sensor F1, F2



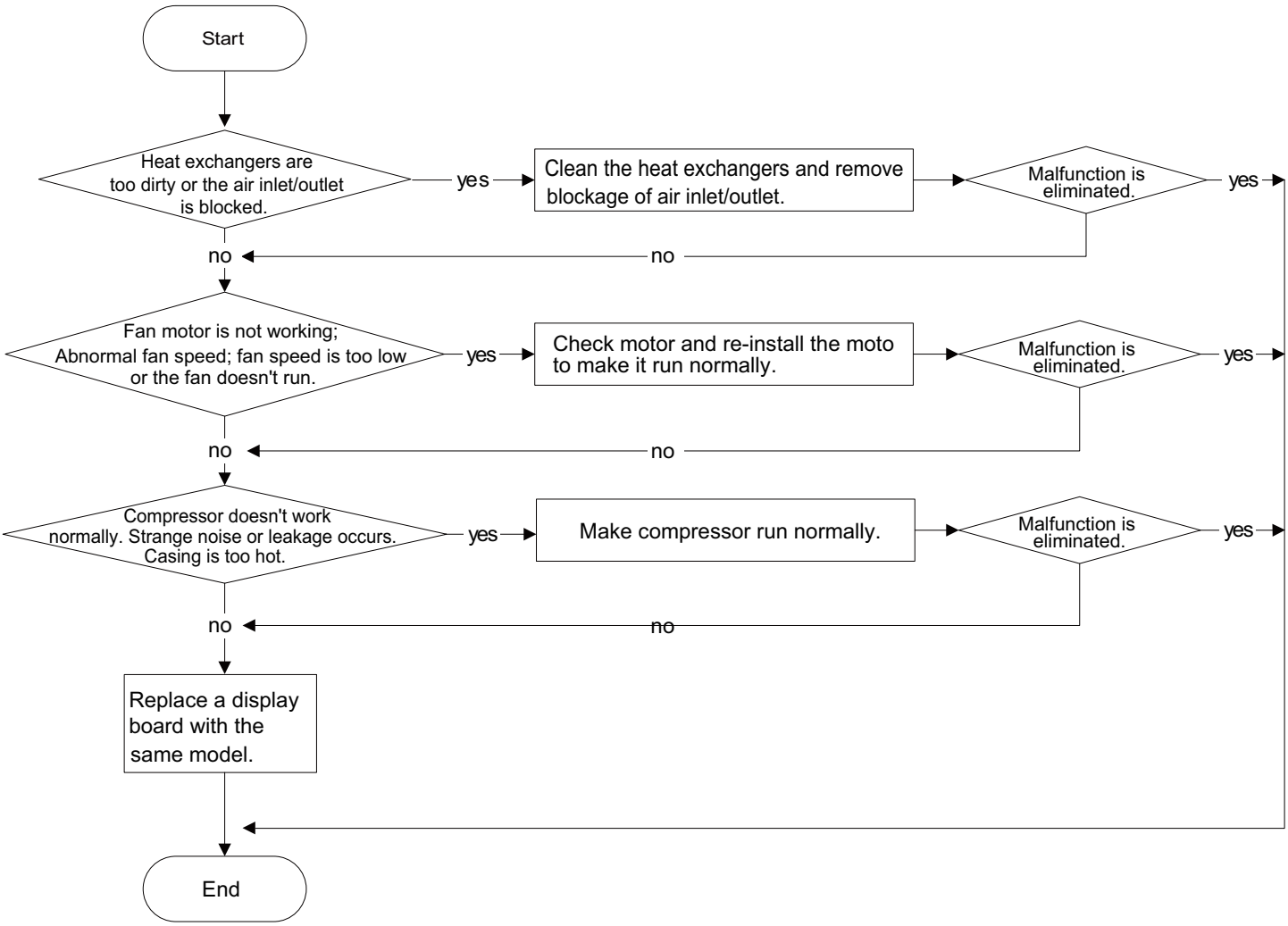
2.Malfunction of humidity sensor L1



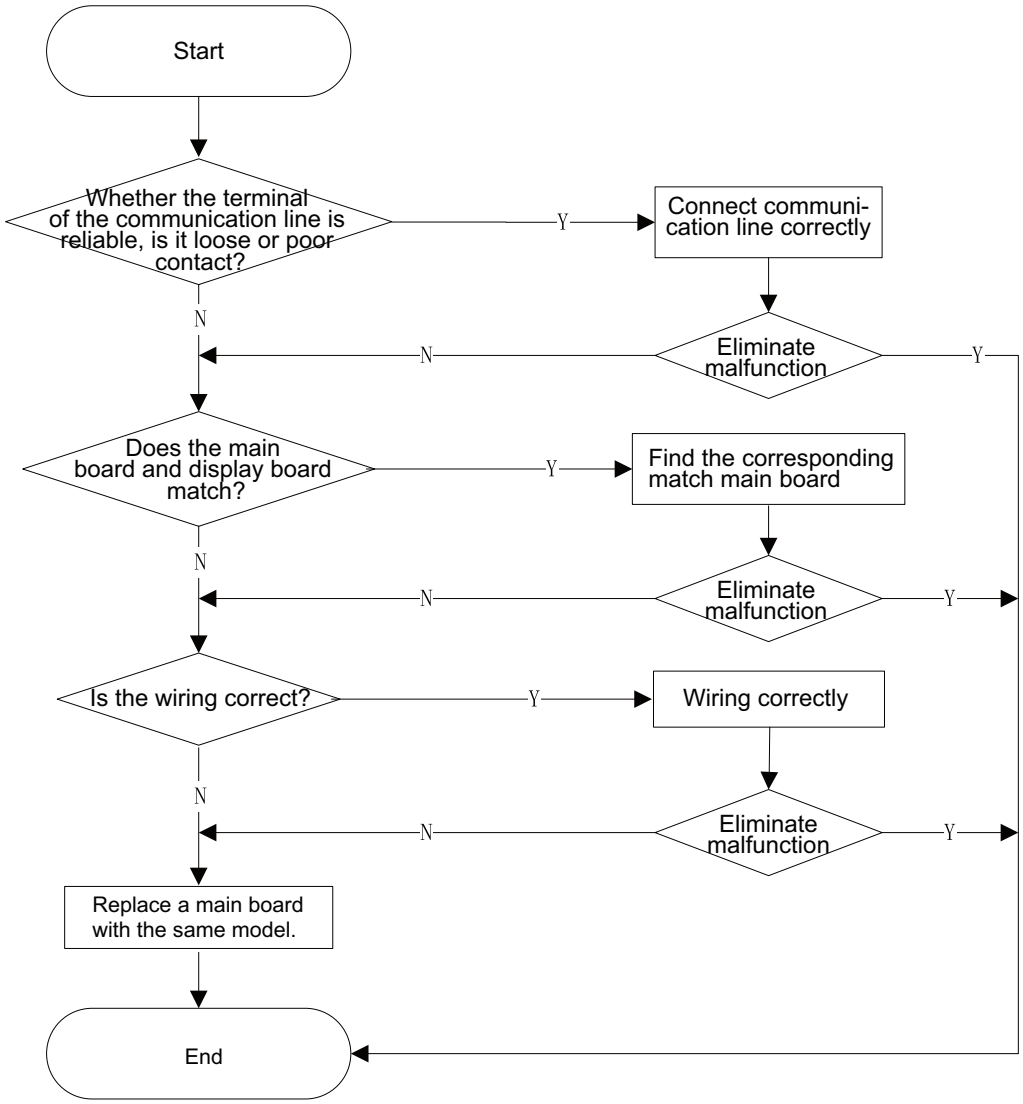
3. Malfunction of Insufficient Refrigerant protection F0



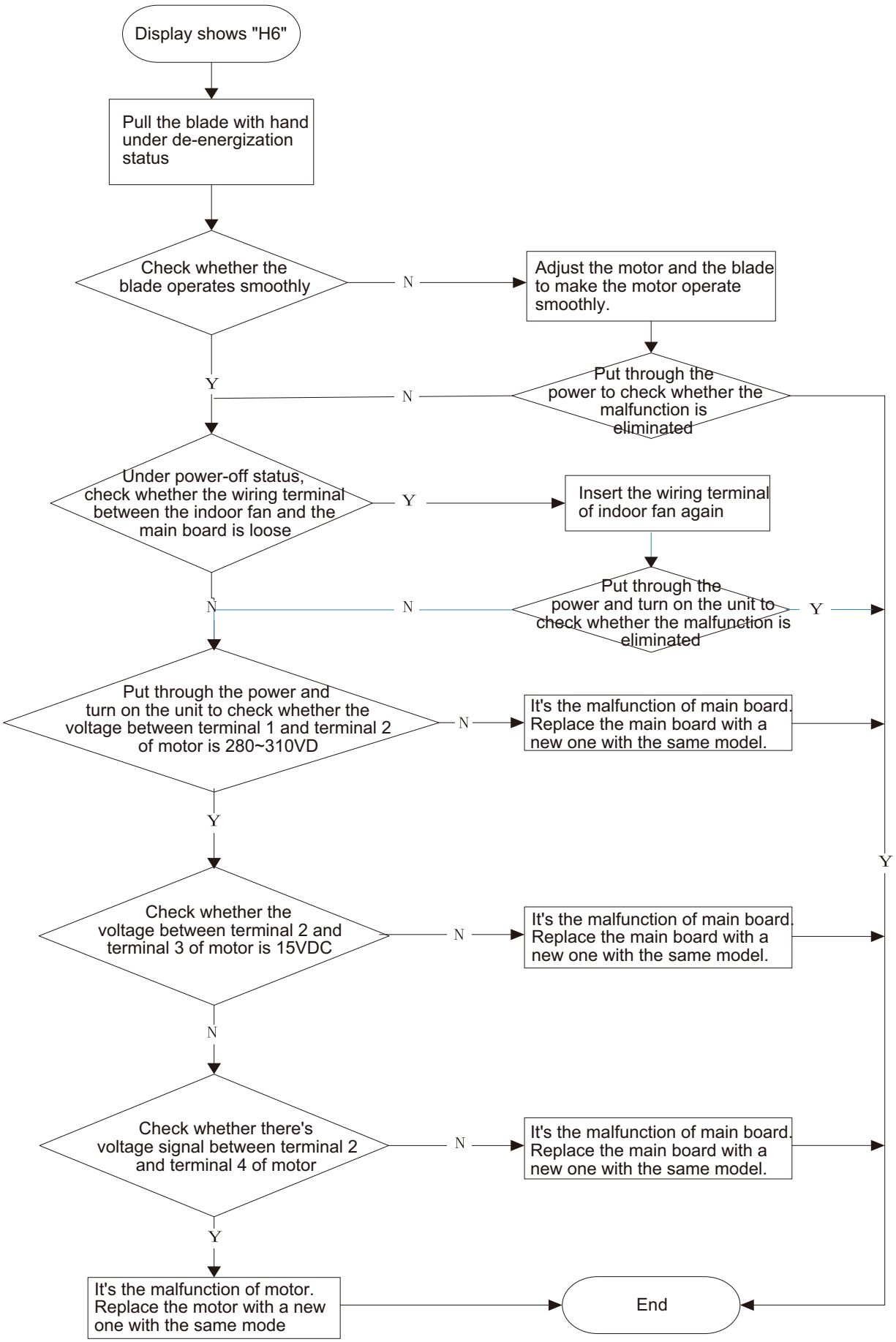
4. High-temperature overload protection H3



5. Communication Malfunction E6



6. Motor (fan motor) do not operate H6



9.6 Maintenance Method for Common Malfunction

1.The Unit Can't Start Up

Possible causes	Discriminating method (dehumidifier status)	Troubleshooting
No power supply, or poor connection for power plug	After energization, operation indicator isnt bright and the buzzer can't 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.
Poor connection between wiring terminals	Power indicator is not on after the unit is energized	Check the circuit according to wiring diagram and connect wire properly; ensure each wiring terminal contact firmly
There is electric leakage in the unit	Circuit breaker jump off immediately after the unit is energized	Make sure the unit is properly grounded; Make sure the wiring is correct; Check if the insulating layer of wires inside the unit and power cord is in good condition; if the layer is broken, please replace it.
Placing position of water tank is not correct. Water is removed or the water is full.	Wall-full indicator flashes.	Make sure the water tank is placed correctly.

2. Poor Dehumidifying Effect

Possible causes	Discriminating method (dehumidifier status)	Troubleshooting
Set humidity is irrational	Observe the displayed set humidity	Adjust set humidity
Filter is blocked	Check the filter to see it's blocked	Clean the filter
Placing position of water tank is improper.	Check whether there’re obstacles around the dehumidifier blocked the air outlet.	Make sure there’re no obstacles around the dehumidifiers.
Malfunction of fan	Fan can’t operate.	Refer to point 3 of maintenance method for details
Malfunction of compressor	Compressor can't operate	Refer to point 4 of maintenance method for details
Whether it only operates air purifying function	Whether partial purification icon is on	Set the dry mode

3.Fan Can't Operate

Possible causes	Discriminating method (dehumidifier 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
Needle stand of connection wire between mainboard and display board is loosened	Check if the needle stand is loosened	Reinsert the needle stand firmly
Fan capacitor is broken	Test the voltage between two ends of fan capacitor with universal meter and the value is 0	Replace fan capacitor
Power supply voltage is too low or too high	Test the power supply voltage with universal meter and the value is too high or too low	Apply voltage regulator
Fan is broken	The above situation is normal but the fan does not operate	Repair or replace the fan

4. Compressor Can't Operate

Possible causes	Discriminating method (dehumidifier 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
Compressor relay on the mainboard is broken or the compressor needle stand is loosened	Check if the relay is sucked in cooling mode	Replace the mainboard with the same model
Power voltage is a little low or high	After turning on the unit, dehumidifying effect is poor or compressor is turned on or off frequently. Use universal meter to measure the power supply voltage directly	The fluctuation of voltage is 10% rated power. If the power is too low or too high, you are suggested to equip wit voltage regulator.
Capacity of compressor is damaged	After tuning on the unit, the unit can’t dehumidify. Use universal meter to measure the resistance value of two contact points of capacitor. If the resistance value is too big or o, the capacitor is damaged.	Replace the compressor

5. Water Leakage

Possible causes	Discriminating method (dehumidifier status)	Troubleshooting
Drainage pipe hasnt been installed correctly.	Water is coming out from indoors.	Eliminate the blocking objects inside the drainage channel.

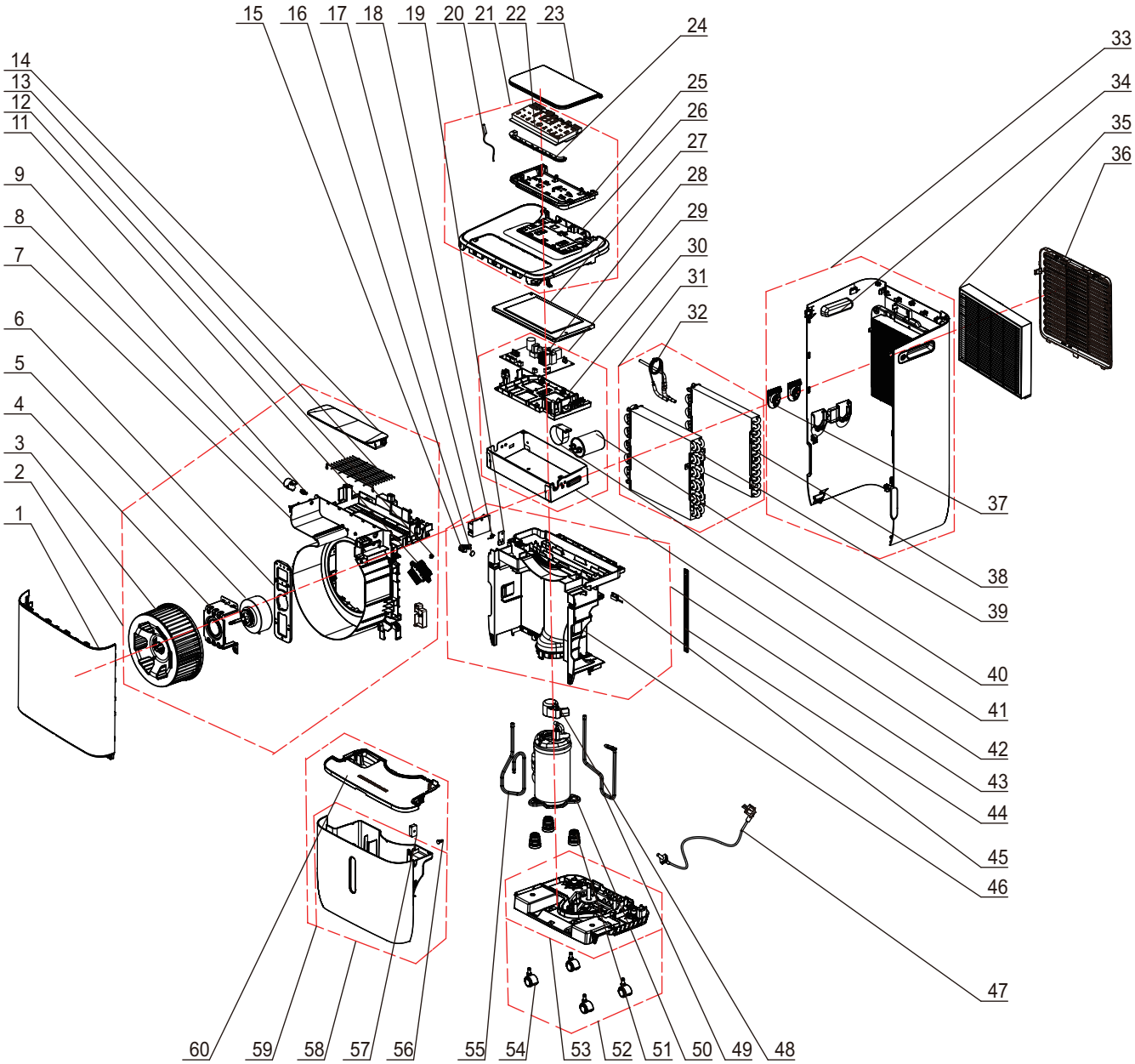
6. Abnormal Sounds and Vibration

Possible causes	Discriminating method (dehumidifier status)	Troubleshooting
There is abnormal sound in some parts when just turning on or turning off the unit	Theres the sound of "PAPA"	Normal phenomenon. Abnormal sound will disappear after a few minutes.
There is abnormal sound of refrigerant flowing when just turning on or turning off the unit	Water-running sound can be heard	Normal phenomenon. Abnormal sound will disappear after a few minutes.
There is touching sound of foreign objects or parts inside the unit	The unit gives out abnormal sound	Take out the foreign objects; adjust the position of each part inside the unit; tighten the connection screws; apply some damping gum on the touching parts
Abnormal shake of compressor	Outdoor unit gives out abnormal sound	Adjust the support foot mat of compressor, tighten the bolts

7. Air purification is abnormal

Possible causes	Discriminating method (dehumidifier status)	Troubleshooting
Whether the filter is correctly installed? If the plastic bag is removed when it is used for the first time?	Air volume becomes less	Correctly install the filter, remove the plastic bag of filter.
If the HEPA dust accumulating filter is dirty?		Clean the HEPA dust accumulating filter, if the problem still exist, please replace with a new filter.
If the unit is not placed in a proper position, the polluted air cannot reach.	The air is polluted, but the PM2.5 indicator displays “green”.	Move the unit to a proper position.
The unit is just turned on, it is detecting the air quality.		It is a normal phenomenon.

10.Exploded View and Parts List



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

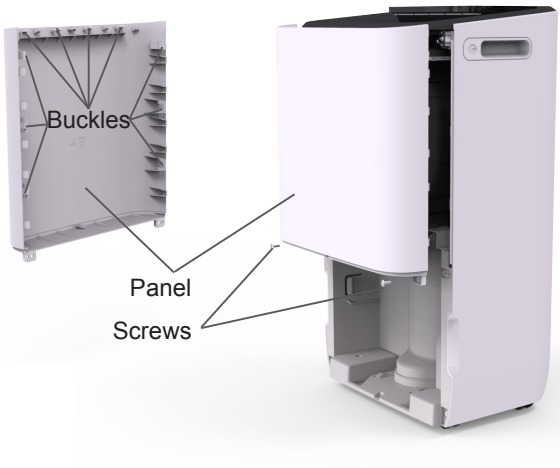
NO.	Description
1	Front Panel
2	Air Flue Assy
3	Centrifugal Fan
4	Motor Support
5	Fan Motor
6	Motor Support
7	Diversion Circle
8	SteppingMotor
9	Crank
10	Charged Particle Module
11	UV sterilizing lamp
12	Left Axile Bush
13	Rear Grill
14	Guide Louver
15	Cover of drainage hole
16	Rubber Plug
17	Dust Sensor
18	Hinge spring
19	Detecting Plate
20	Temperature Sensor
21	Top Cover Assy
22	Display Board
23	Display Box Cover
24	Display Module
25	Display Box
26	Top cover
27	Electric Box Cover
28	Main Board
29	Electric Box Assy
30	fixed support (mainboard)

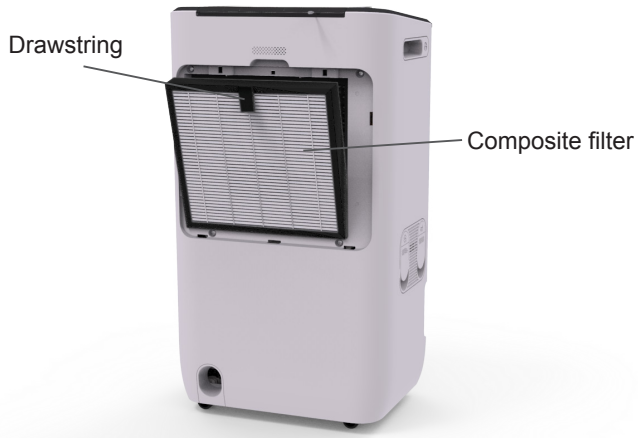
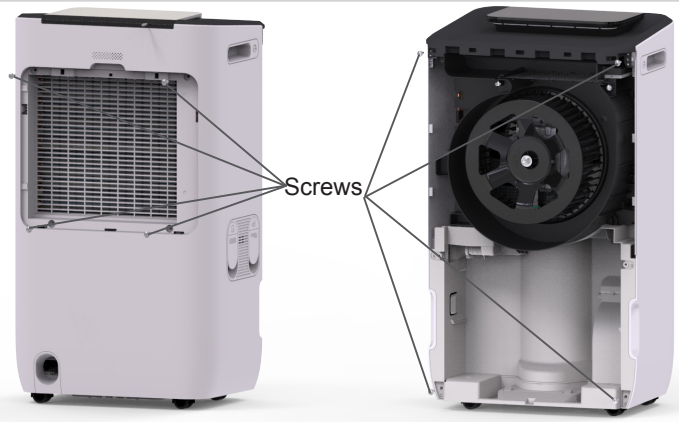
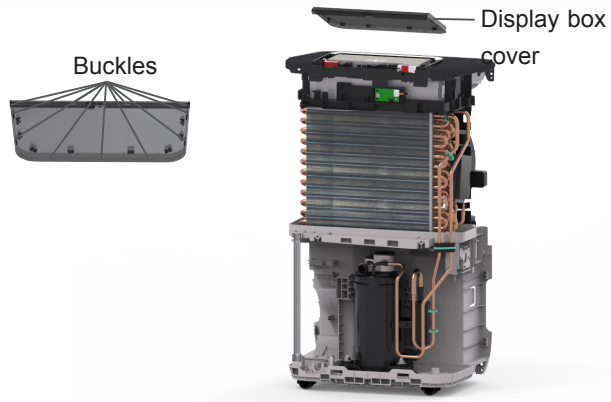
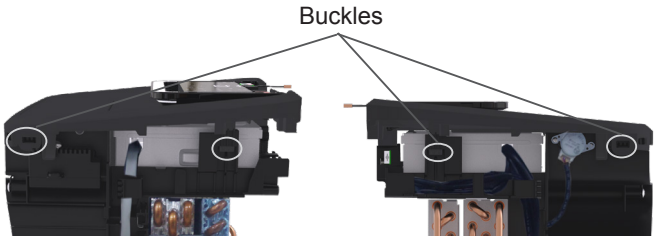
NO.	Description
31	Heat-exchange Equipment
32	Capillary Sub-assy
33	Rear Plate Sub-Assy
34	Rear Plate
35	High Efficiency Filter
36	Filter Sub-Assy
37	Cover of drainage hole
38	Evaporator Sub-Assy
39	Condenser Sub-Assy
40	Capacitor CBB65
41	Capacitor Clamp
42	Electric Box
43	Water Tray Sub-Assy
44	Stand Bar
45	Proximity Switch
46	Water Tray
47	Power Cord
48	Covering Plate
49	Discharge Tube Sub-assy
50	Compressor and Fittings
51	Compressor Gasket
52	Chassis Assy
53	Chassis Sub-assy
54	Castor
55	Inhalation Tube Sub-assy
56	Partition Pole (PC board)
57	Buoy (magnet)
58	Water Tank Assy
59	Water Tank Sub-Assy
60	Water Tank Cover

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

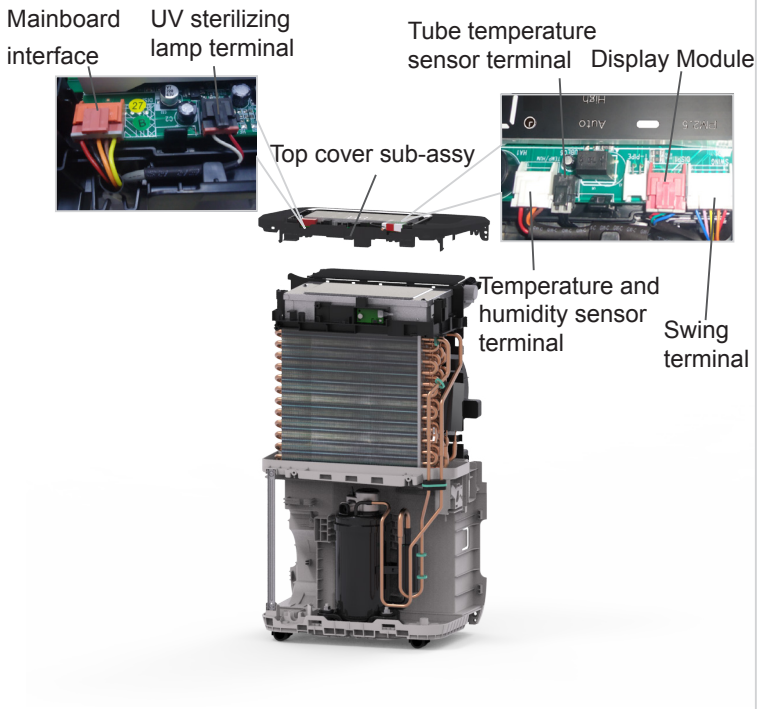
11.Removal Procedure

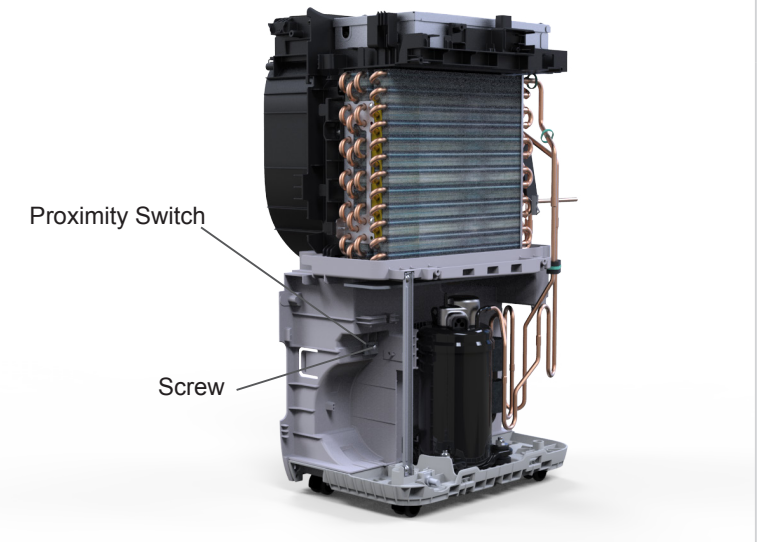
Warning: disconnect power supply before removal; Prohibit disassembling and maintaining the refrigeration system pipeline and parts (include evaporator, condenser, compressor,capillary, etc.)

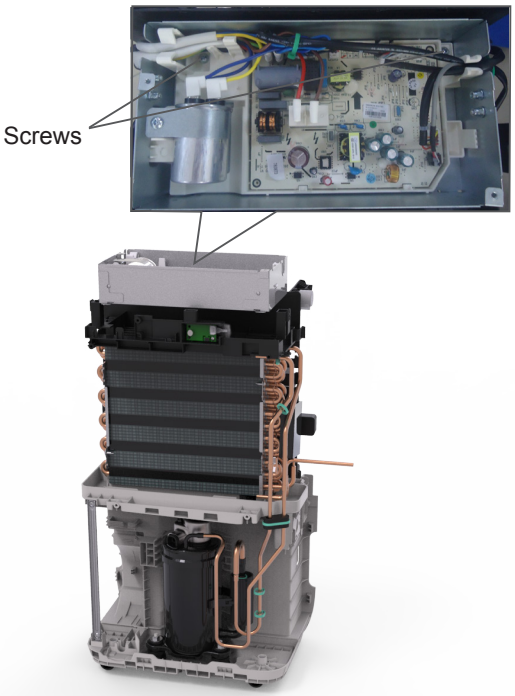
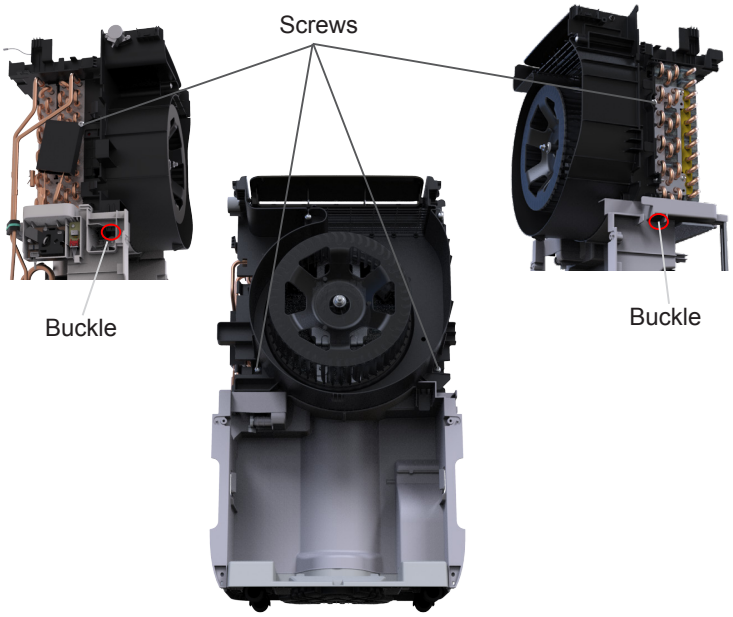
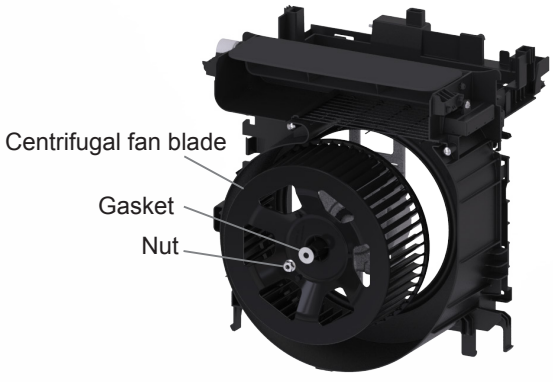
Step	Procedure
1. Remove water tank sub-assy	
Hold the hand-holding position at the bottom of the water tank, pull the water tank (along the arrow position) and then remove the water tank sub-assy.	
2. Remove panel	
Remove the 2 screws under the panel, and draw it out to separate it from all the buckles, then the panel is removed.	
3. Remove filter sub-assyRemove rear plate sub-assy	
Press the boss handle on the filter sub-assy and draw it outward to separate it from the left and right buckles, and then lift it upward to remove the filter sub-assy.	

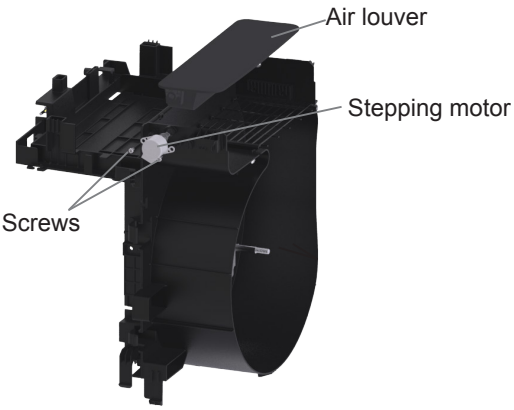
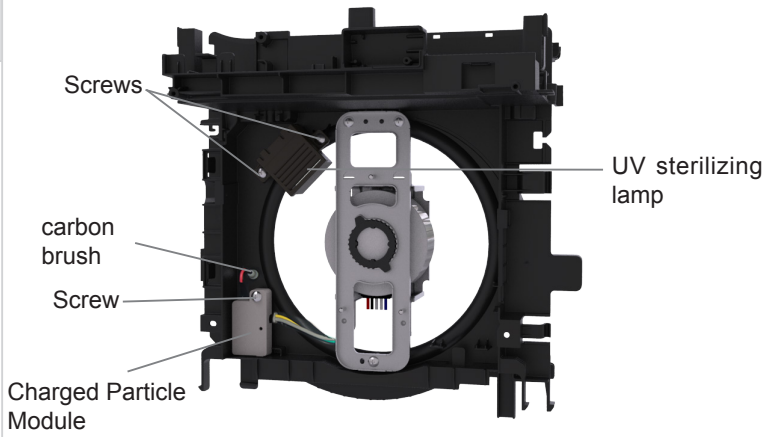
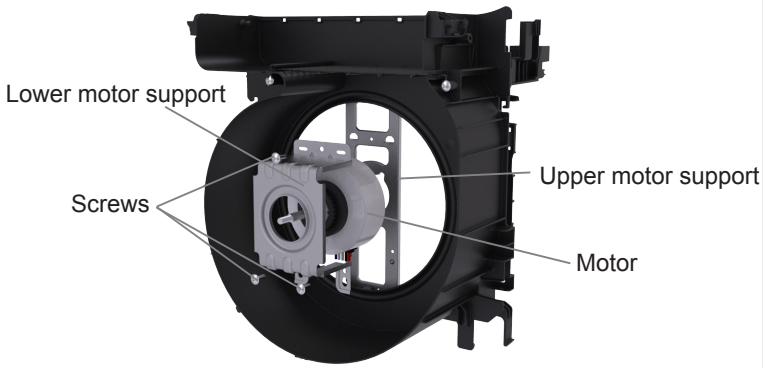
Step	Procedure
4. Remove composite filter	
Hold the drawstring on the filter and then draw it out to take away the filter.	
5.Remove rear-plate sub-assy	
Remove the screws for fixing the rear plate sub-assy (4 screws in the front and 4 screws in the back), draw it slightly outward to separate it from the buckles in two sides, and then draw it back to remove the rear plate sub-assy.	
6.Remove display box cover	
Lift the rear side of display box cover upward to separate it from all the buckles, then the display box cover can be removed.	
7.Remove top cover sub-assy	
Unbuckle the 4 buckles in two sides of top cover sub-assy.	

Step	Procedure
	Remove the swing motor, tube temperature sensor, temperature and humidity sensor, UV sterilizing lamp wiring terminal. Lift the top cover sub-assy upward to remove it.
8. Remove proximity switch	
	Remove the screw of proximity switch and then remove the proximity switch.
9. Remove electric box cover	
	Remove the two screws of electric box cover, then the electric box cover is removed.





Step	Procedure
10. Remove electric box	
Remove the wiring terminals, and unscrew the two screws of electric box, lift the electric box upward to remove it.	
11. Remove air flue sub-assy	
Remove the 4 screws for fixing the air flue sub-assy, and unbuckle the two buckles of water tray to remove the air flue sub-assy.	
12. Remove centrifugal fan blade	
Remove the fixing nut for the fan blade in the motor shaft end, remove the fan blade along the shaft direction.	

Step	Procedure
13.Remove stepping motor and air louver	
Remove the 2 screws of stepping motor, remove the stepping motor and shaft sleeve, and then remove the air louver.	
14.Remove charged particle module and UV sterilizing lamp	
Remove the 2 screws of UV sterilizing lamp and remove the UV sterilizing lamp. Remove 1 screws of charged particle, remove the carbon, then remove the charged particle.	
15.Remove motor	
Unscrew the 3 screws of the lower motor support, and take turns to remove the lower motor support and motor.	

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 （℃）	Fahrenheit display temperature（˚F）	Fahrenheit （˚F）	Celsius （℃）	Fahrenheit display temperature（˚F）	Fahrenheit （˚F）	Celsius （℃）
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 （℃）	Fahrenheit display temperature（˚F）	Fahrenheit （˚F）	Celsius （℃）	Fahrenheit display temperature（˚F）	Fahrenheit （˚F）	Celsius （℃）
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: List of Resistance for Temperature Sensor

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

Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)
-19	138.10	0	49.02	20	18.75	40	7.97
-18	128.60	2	44.31	22	17.14	42	7.35
-16	115.00	4	40.09	24	15.68	44	6.79
-14	102.90	6	36.32	26	14.36	46	6.28
-12	92.22	8	32.94	28	13.16	48	5.81
-10	82.75	10	29.90	30	12.07	50	5.38
-8	74.35	12	27.18	32	11.09	52	4.99
-6	66.88	14	24.73	34	10.20	54	4.63
-4	60.23	16	22.53	36	9.38	56	4.29
-2	54.31	18	20.54	38	8.64	58	3.99

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	181.40	20	25.01	60	4.95	100	1.35
-15	145.00	25	20.00	65	4.14	105	1.16
-10	110.30	30	16.10	70	3.48	110	1.01
-5	84.61	35	13.04	75	2.94	115	0.88
0	65.37	40	10.62	80	2.50	120	0.77
5	50.87	45	8.71	85	2.13	125	0.67
10	39.87	50	7.17	90	1.82	130	0.59
15	31.47	55	5.94	95	1.56	135	0.52

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)
-30	911.400	10	98	50	17.65	90	4.469
-25	660.8	15	77.35	55	14.62	95	3.841
-20	486.5	20	61.48	60	12.17	100	3.315
-15	362.9	25	49.19	65	10.18	105	2.872
-10	274	30	39.61	70	8.555	110	2.498
-5	209	35	32.09	75	7.224	115	2.182
0	161	40	26.15	80	6.129	120	1.912
5	125.1	45	21.43	85	5.222	125	1.682

Appendix 3: Resistance Value Table of Humidity Sensor

HIS-06 temperature and humidity characteristic

Unit:KΩ

Relative humidity	Temperature								
%RH	5°C	10°C	15°C	20°C	25°C	30°C	35□	40°C	45°C
90	5.35	3.70	2.7	2.08	1.68	1.42	1.2	1.05	0.93
85	8.03	5.45	3.9	2.95	2.3	1.89	1.58	1.33	1.16
80	12.09	8.21	5.7	4.33	3.28	2.6	2.08	1.71	1.46
75	18.31	12.50	8.6	6.3	4.7	3.64	2.78	2.24	1.87
70	28.15	19.30	13.36	9.6	7	5.2	3.83	3	2.43
65	44.38	30.70	21	14.7	10.4	7.52	5.45	4.2	3.3
60	72.27	49.94	33.47	22.7	16	11.3	8.05	6.11	4.76
55	122.69	84.00	56	37.8	26.6	18.3	12.8	9.35	7.1
50	218.48	151.44	99.1	68	45.8	31	21.18	14.97	11.01
45	406.44	282.03	185	124.8	80	52.7	35.4	24.8	17.8
40	823.98	566.37	375.3	240	149.9	94.6	60.6	41.8	30.17
35	1855.67	1248.00	790	486	302	185	119	78	55
30	4915.40	3076.30	1906	1130	693.69	420	268	172	114.95
25	17366.01	9400.00	5348	3097	1750	1040	640	404	270
20	68057.37	35992.53	19368	10780	5915.63	3450	2053	1235	740.18

JF00304738

GREE