Service Manual

FILE No: HMRSM-002-04

Deep Temperature Freezer

DW-40W100•DW-40W255•DW-40W380

Haier Medical & Laboratory Products Co., Ltd.

Effective models

This service manual is effective for following models

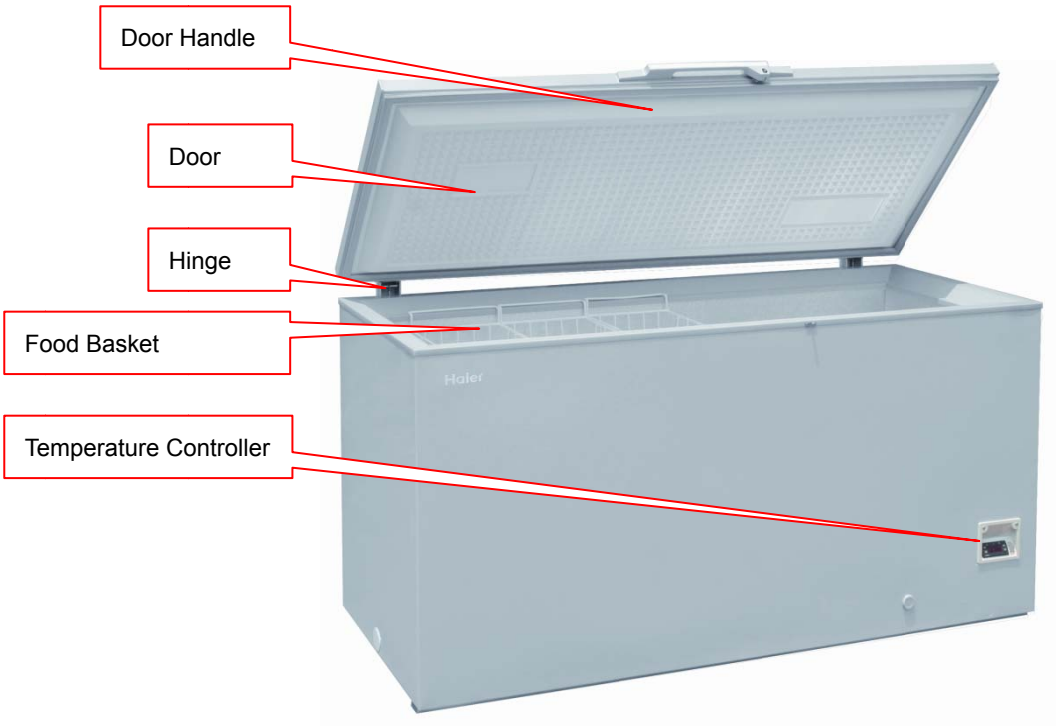
Model name	Product code	Voltage(V)	Frequency(Hz)	Plug-type
DW-40W100		220	50	All
DW-40W255		220	50	All
DW-40W380		220	50	All
		220	50	All

Content

Product Features

1. Temperature range inside the freezer is -20~-40℃ (adjustable) (with the environmental temperature of 10~25℃);
2. Microprocessor control with digital display of the temperature;
3. High-density insulation layer & low power consumption;
4. High/low temperature alarm controller, with certain temperature alarm point to be set as needed;
5. With famous-brand Compressor, florid-free & environmentally friendly refrigerating medium and two alarm modes (buzzer alarm & blinking indicator alarm);
6. Security door lock design to prevent arbitrary opening of the door;
7. Stepped anti-corrosion liner design for location of food baskets in different types
8. Wide voltage band, suitable to the 187~242V voltage.

Structure Drawing of Product Appearance

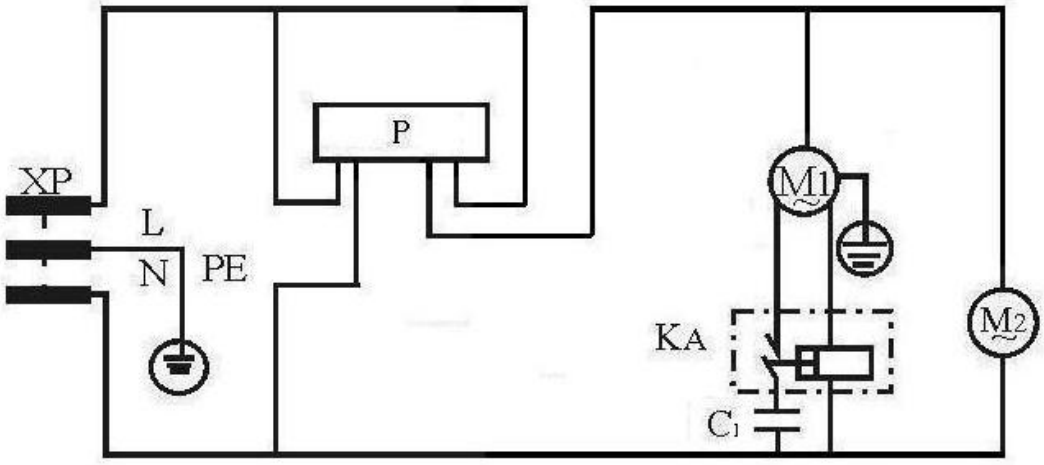


Technical Data

Model	DW-40W100	DW-40W255	DW-40W380
Climate Type	N	N	N
Protection type to prevent electric shock	I	I	I
Usable Capacity (L)	100	255	380
Rated Power Supply	AC220V/50Hz	AC220V/50Hz	AC220V/50Hz
Rated Power (W)	260	410	550
Power Consumption (kW·h/24h)			
Refrigerating medium R600a (g)			
Boxed Dimension (WxDxH) (mm)	680*600*805	633*1243*838	633*1550*838
Net Weight/Gross Weight (kg)	43/46	69/81	82/89
Compressor	SC12CL	SC18CL	SC21CL

Circuit Diagram

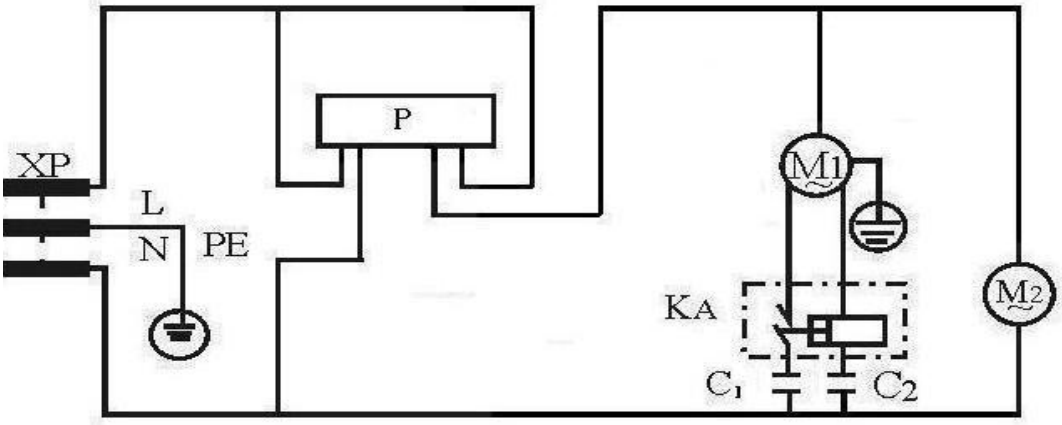
1) Applied model: DW-40W100



M1· Compressor M2-Cooling blower P -Electronic temperature controller

KA-Starter relay C1 -Starter capacitor XP-Power plug

2) Applied model: DW-40W255/380



M1- Compressor M2-Cooling blower P - Electronic temperature controller

KA-Starter relay C1 Starter capacitor XP-Power plug

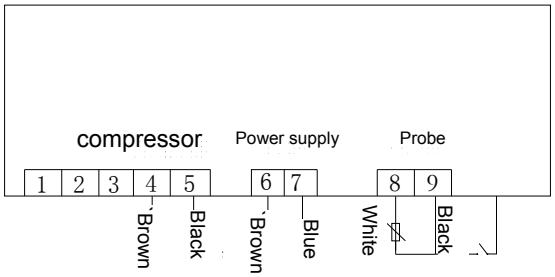
C2-Running capacitor

Task Control Principle & Parameters

1. Control Principle & Functions:

This freezer adopts an electronically temperature control system controlled by the Carel temperature controller.

Temperature controller panel & wiring diagram



Temperature Controller Panel

Temperature Controller Wiring Diagram

Debug Methods of the temperature controller:

Serial No.	Button Operation	Display
1	Press the button “Set” for about 2 seconds	To display the initially set temperature of -30
2	If “-30” is not displayed, press “Up▲” / “Down▼”for resetting.	To display: -30
3	Press the button “Set”	To display the current internal temperature
4	After check of the set temperature, it is still necessary to check the setting of other parameters.	
5		To display the current internal temperature
6	Press the button “Set” for at least 5 seconds	To display: a flashing “PS”
7	Press the button “Set”	To display: 0
8	▲By pressing the button “Up▲”	To display: 22
9	Press the button “Set”	To display: PS
10	By pressing the button “Up▲”	To display: /C1
11	Press the button “Set”	To display: 0
12	If “0” is not displayed, press “Up▲” / “Down▼”for resetting.	To display: 0
13	Press the button “Set”	To display: /C1
14	By pressing the button “Up▲”	To display: /4
15	Press the button “Set”	To display: 1
16	If“1”it is not displayed, press “Up▲” / “Down▼”for resetting.	To display: 1

17	Press the button “Set”	To display: /4

18	By pressing the button “Up▲”	To display: /5
19	Press the button “Set”	To display: 0
20	If “0” is not displayed, press “Up▲” / “Down▼”for resetting.	To display: 0
21	Press the button “Set”	To display: /5
22	By pressing the button “Up▲”	To display: /6
23	Press the button “Set”	To display: 1
24	If “1” is not displayed, press “Up▲” / “Down▼”for resetting.	To display: 1
25	Press the button “Set”	To display: /6
26	By pressing the button “Up▲”	To display: rd
27	Press the button “Set”	To display: 2
28	If “2” is not displayed, press “Up▲” / “Down▼”for resetting.	To display: 2
29	Press the button “Set”	To display: rd
30	By pressing the button “Up▲”	To display: r1
31	Set Press the button “Set”	To display: -40
32	If “-30” is not displayed, press “Up▲” / “Down▼”for resetting.	To display: -40
33	Press the button “Set”	To display: r1
34	By pressing the button “Up▲”	To display: r2
35	Press the button “Set”	To display: -20
36	If “-10” is not displayed, press “Up▲” / “Down▼”for resetting.	To display: -20
37	Press the button “Set”	To display: r2
38	By pressing the button “Up▲”	To display: c4
39	Press the button “Set”	To display: 100
40	If “100” is not displayed, press “Up▲” / “Down▼”for resetting.	To display: 100
41	Press the button “Set”	To display: c4
42	By pressing the button “Up▲”	To display: cc
43	按 Set Press the button “Set”	To display: 0
44	If “0” is not displayed, press “Up▲” / “Down▼”for resetting.	To display: 0
45	Press the button “Set”	To display: cc
46	By pressing the button “Up▲”	To display: D1
47	Press the button “Set”	To display: 8
48	By pressing the button “Down▼”	To display: 0
49	Press the button “Set”	To display: D1
50	By pressing the button “Up▲”	To display: AL
51	Press the button “Set”	To display: 5
52	If “5” is not displayed, press “Up▲” / “Down▼”for resetting.	To display: 5
53	Press the button “Set”	To display: AL
54	By pressing the button “Up▲”	To display: AH

55	SET Press the button “Set”	To display: 5
56	If “5” is not displayed, press “Up▲” / “Down▼”for resetting.	To display: 5
57	Press the button “Set”	To display: AH
58	By pressing the button “Up▲”	To display: Ad
59	Press the button “Set”	To display: 0
60	If “0” is not displayed, press “Up▲” / “Down▼”for resetting.	To display: 0
61	Press the button “Set”	To display: Ad
62	By pressing the button “Up▲”	To display: H1
63	Press the button “Set”	To display: 0
64	If “0” is not displayed, press “Up▲” / “Down▼”for resetting.	To display: 0
65	Press the button “Set”	To display: H1
66	By pressing the button “Up▲”	To display: H2
67	Press the button “Set”	To display: 1
68	If “1” is not displayed, press “Up▲” / “Down▼”for resetting.	To display: 1
69	Press the button “Set”	To display: H2
70	Press the button “Set” for over 5 seconds to save the set value	To display the current internal temperature value

Note: Error signals of this temperature controller are “E0” and “E1”. When there comes a short circuit, breakage, fault or incorrect connection for the temperature sensor, the display screen shall show “E0”. When there are wrong settings for the parameter /4 (default 1) or the parameter D0 (default 2), the display screen shall show “E1” with the buzzer alarming and the alarm indicator blinking. If it is the case, it is necessary to check the wiring and parameters’ setup.

Temperature Controller Parameters

Symbol	Symbol Name	Unit	Set Value	
			DW-40W100/255/380	DW-25W198/300/388/518
	Set Temperature	℃/℉	-30	-20
PS	**Password**	——	22	22
/	**Sensor Parameters**			
/C	Temperature Calibration for the Environmental Sensor	℃/℉	0	0
/2	Stability Measurement	**----**	4	4
/4	Sensor Probe Setup	——	0	0
/5	Choose ℃/℉ (0=℃ 1=℉)	——	0	0
/6	Decimal Point Forbidden	——	1	1
r	**Control Parameters**			
r1	Permitted Minimum Temperature Set Value	℃/℉	-40	-30
r2	Permitted Maximum Temperature Set Value	℃/℉	-20	-10
rd	Control Thermal Difference	℃/℉	2	2
A	**Alarm Parameters**			
A0	Alarm & Blower Control Difference	℃/℉	0	0
Ad	Lag Time of Temperature Alarm	Min.	0	0
AL	Offset of Low Temperature Alarm Limit Value to the Set Value	℃/℉	5	5
AH	Offset of High Temperature Alarm Limit Value to the Set Value	℃/℉	5	5
c	**Compressor Parameters**			
c0	Compressor Lag Time at Startup	Min.	0	0

	While the Controller is Working			
C1	The Minimum Interval between the Adjacent Two Operations of the Compressor	Min.	0	0
c2	Shortest Down Time of the Compressor	Min.	0	0
c3	Shortest Up Time of the Compressor	Min.	0	0
c4	“Duty setting” Function Valid or Not (0=off 100=constantly on)	Min.	100	100
cc	Duration of Continuous Operation	Hour	0	0
c6	Alarm Lag Time after Continuous Operation	Hour	2	2
H	**Other Parameters**			
H1	Special Allocation (for Definition of Defrosting or Not) 0=no 1=yes	——	0	0
H2	Button Lock Function (Locked or Not) 0=yes 1=no	——	1	1
H4	Buzzer Valid or Not 0=yes 1=no	——	0	0

Compressor Parameters

Product Model	DW-40W100		
Compressor Model	SC12CL	Rated Frequency (Hz)	50
Refrigerating Ouput (W)	253	Motor Type	CSIR
Input Power (W)	260	Refrigerating Mode	Wind Cooling
Rated Voltage (V)	198~254	Oil Filling (cc)	550

Product Model	DW-40W255		
Compressor Model	SC18CL	Rated Frequency (Hz)	50
Refrigerating Ouput (W)	313	Motor Type	CSR
Input Power (W)	410	Refrigerating Mode	Wind Cooling
Rated Voltage (V)	198~254	Oil Filling (cc)	550

Product Model	DW-40W380		
Compressor Model	SC21CL	Rated Frequency (Hz)	50
Refrigerating Ouput (W)	378	Motor Type	CSR
Input Power (W)	550	Refrigerating Mode	Wind Cooling

Rated Voltage (V)	198~254	Oil Filling (cc)	600

Trouble shootings

Product Model	Serial No.	Parts Details	Specification or Model	Private Part No.
DW-40W100	1	Compressor	Zanuxi HVT86AA	0074090643
	2	Temperature Controller	Carel Electronic Temperature Controller	0074091216
	3	Power Cord	Power Cord	0075180003
	4	Bonding Wires	Bonding Wires for Electric Connection	0074090759A
	5	Evaporator	Evaporator Φ7.8*0.6	0070700258
	6	Condenser	Internal-Mounted CondenserΦ4.56*0.6	0070700256
	7	Compartment Shield	Compartment Shield	0070103022
	8	Filter	Drier Filter of Single-Chamber Vacuum Pumping	0060702792

Product Model	Serial No.	Parts Details	Specification or Model	Private Part No.
DW-40W255	1	Compressor	Jiaxipera ZBU1122CY	0060702534
	2	Temperature Controller	Carrel Electronic Temperature Controller	0074091216
	3	Blower	BD-219H (Nigerian) Blower 220V/50HZ	0074091180
	4	Condenser	BD-319H Domestic/European Internal-Mounted Condenser with 7 Loops	0070701804
	5	Return Pipe	BD-319H Return Pipe Group	0070701809
	6	Evaporator	HBC-268 Evaporator	0270700031
	7	Connecting Wires	Temperature Controller wire 1	0075180057
	8	Power Cord	Power Cord	0075180003
	9	Connecting Wires	Compressor & Junction Box Connection	0075180002
	10	Connecting Wires	Temperature Controller wires 3RV1*0.75MM2	0075160026
	11	Connecting Wires	Temperature Controller wires 3RV1*0.75MM2	0075160025
	12	Connecting Wires	ROHS-BD-60GPB Compressor Earth Lead	0070401132
	13	Condenser	BD-379H (Nigerian) Fiber Tube Condenser	0070803664B
	14	Filter	(20G Molecular Sieve) Common Double-Chamber Vacuum Pumping Filter	0074180002A
	15	Junction Box	Junction Box	0072040045

Product Model	Serial No.	Parts Details	Specification or Model	Private Part No.
DW-40W380	1	Compressor	Jiaxipera ZBU1122CY	0060702534
	2	Temperature Controller	Carrel Electronic Temperature Controller	0074091216
	3	Condensate Fan	220V/50HZ	0074091180
	4			
	6	Power Cord	SC-180 Power Cord Assembly	0070401234A
	7	Bonding Wires	SC-280 Temperature Controller Wires (A)	0070401561C
	8	Lighting	SC-137SCP Lighting Tube (11W Osram U-Type Lighting Tube)	0071400593
	9	Lamp Shade	BC-110 Lamp Shade with transparent PS	0070200919
	10	Evaporator	Clad Plate Evaporator	0074010035
	11	Condenser	SC-280 Compartment Condenser	0070701642
	12	Compartment Shield	SC-280 Compartment Shield	0070203048A
	13	filter	Common Double-Chamber Vacuum Pumping Filter (20G Molecular Sieve)	0074180002A
	14	Shelf	SC-280 Food Shelf	0070101179A
	15	Shelf (bottom)	SC-280 Food Shelf (bottom)	0070101179B
	18	Door	SC-280 Glass Door Assembly	0070810664
	19	Lock	BC-50G Lock Assembly	0070804947

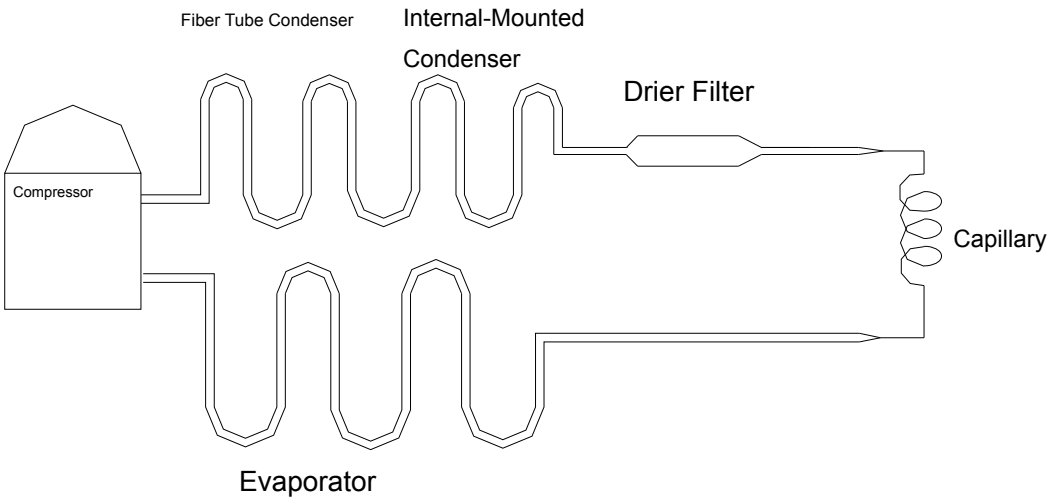
FAQ

Main Problem	Cause Analysis	Maintenance Measures
The compressor cannot be started.	1. Fuse burn-out	Replace the fuse.
	2.Connection Damage of the socket connector(s) for the compartment wires	Replace the socket connector(s).
	3. Incorrect connection of wires	Check and make correct installation.
	4. Fault in the controller	Replace the temperature controller.
	5. Damaged starter or thermal protector	Replace the starter or the thermal protector.
	6. Fault in the compressor	Replace the compressor.
The temperature controller displays “E0”.	Fault in the sensor. Replace the temperature controller or the temperature sensor.	
Big noise from the refrigerator	1. Uneven position.	Change the refrigerator’s position.
	2. Resonance caused among the tubes or among the refrigerator cabinets during the compressor’s operation.	Sort out the tubes to avoid resonance.
	3. Loosening of the compressor’s connecting bolts	Tighten the connecting bolts
Refrigerating difference of the refrigerator	1. Serious leakage of refrigerating medium	Check the leakage and refill the refrigerating medium.
	2.Dirty block and oil block of capillary tubes or of the system	Clean the capillary tubes or replace the filter.
No alarm	1. Wrong setup of the parameters	Check parameter setup of the temperature controller.
	2. Fault in the temperature controller	Replace the temperature controller.

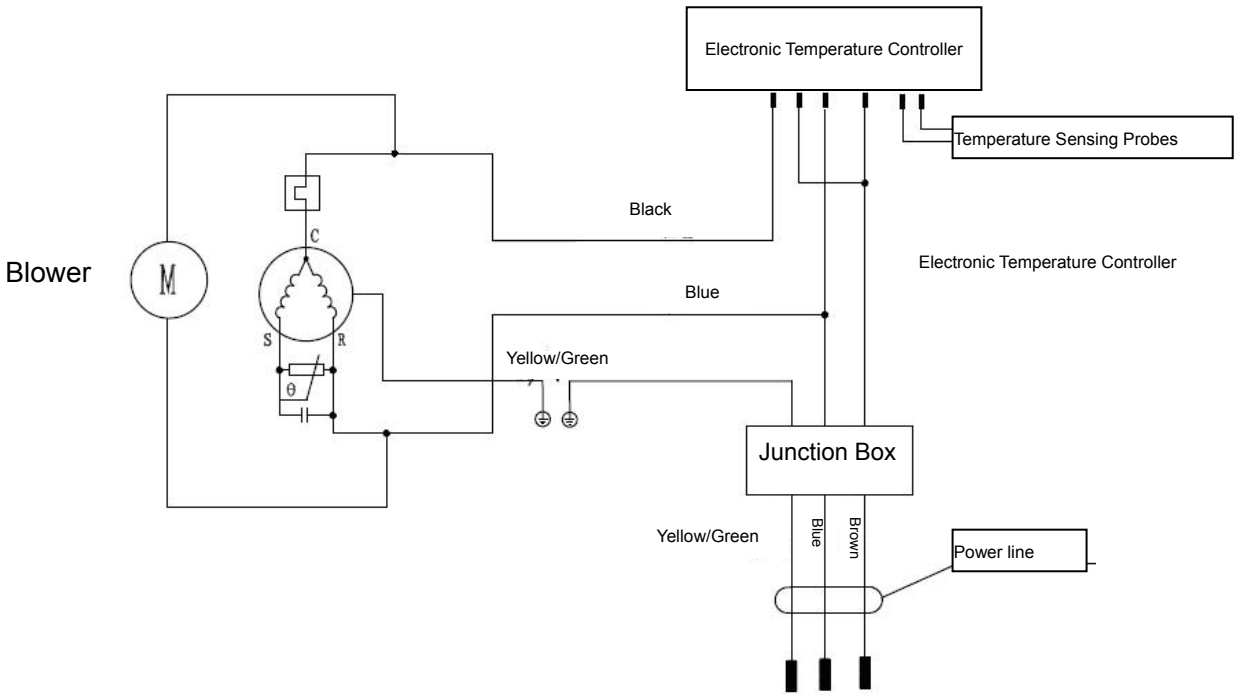
Question & Answer

Main Problem	Answer to the problem
The internal temperature is too high or too low.	It is a bit relevant to the surrounding environmental temperature. When the internal temperature is too high or too low, we can solve this problem by adjusting the controlling temperature.
There is a sweeper phenomenon within the refrigerator after a certain duration of the its operation.	A little sweeper can be drained off periodically and be wiped off by a towel. If there is a lot more sweeper, we can check whether the drainpipe or other drainage are blocked and may get it though with a piece of fine wire.

Structure Schematic Diagram



Wiring Diagram



Haier

Inspired living

Haier Medical & Laboratory Products Co., Ltd.

Room 403D, Brand Building, Haier Industrial Park, No.1 Haier Road

Qingdao China

Website: www.haiermedical.com