SERVICE MANUAL

BR1000SS

EdgeStar Refrigerator for Kegerator Conversion

*Beer refrigerator for KC1000SS Kegerator Kit

BWC120SLD

EdgeStar 113 Can Beverage Center Stainless Door

CAUTION: READ ALL SAFETY PRECAUTIONS IN THIS MANUAL BEFORE SERVICING THE UNIT

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**Warranty service should be performed by an authorized service representative only.*

CONTENTS

SAFETY PRECAUTIONS

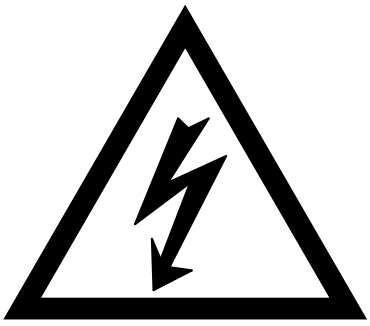
WARNING: This manual and the information contained herein is intended for use by certified technicians. The manufacturer or seller is not responsible for the interpretation or misuse of the information provided, nor does it assume any liability in connection with its use.

The safeguards and warnings indicated in this manual do not cover all possible conditions which may occur. Common sense, caution, and care must be exercised.

- To prevent electric shock, always unplug an appliance from the power supply before attempting any service.
- Disconnect the power cord by grasping the plug, not the cord.
- Do not bypass, cut, or remove the grounding plug.
- Prevent water from spilling onto electric elements or the machine parts.
- Always refer to the rating label on the appliance for rated current and voltage.
- Always check line voltage and amperage.
- Always use exact replacement parts.
- Any attempt to repair a major appliance may result in personal injury and property damage.

Electrical Safety

- Do not exceed the power outlet ratings.
- It is recommended that the unit be connected to its own circuit.
- A standard electrical supply that is properly grounded in accordance with the National Electrical Code and all state and local codes and ordinances is required.
- Do not use outlets that can be turned off by a switch or pull chain.
- Always turn the unit off and unplug it from the outlet when cleaning.
- Unplug the unit if it is not going to be used for an extended period of time.
- Do not operate the unit with a power plug missing the ground plug, a damaged cord, or a loose socket.
- Be sure the appliance is properly grounded.
- Do not bypass, cut, or remove the grounding plug.
- If the power cord is damaged, it must be replaced by the manufacturer or a qualified technician.
- Do not use extension cords or power strips with this unit. You may need to contact an electrician if it is necessary to use a longer cord or if you do not have a properly grounded outlet. Do not modify the power cord's length or share the outlet with other appliances.
- Do not start or stop the unit by switching the electrical circuit's power on and off.
- Immediately unplug the unit if it makes strange sounds, emits an odor or smoke and contact customer service.
- Do not remove any part of the casing unless instructed by an authorized technician.
- Before the appliance is removed from service or discarded, remove any doors and cut off the power cord.



General Safety

- Always unplug an appliance from the power supply before attempting any service. Disconnect the power cord by grasping the plug, not the cord.
- Do not allow children or pets to play on or in the appliance.
- This machine is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the machine by a person responsible for their safety.
- Do not install or store this appliance where it will be exposed to the weather.
- Disconnect from the power socket before cleaning or maintenance.
- If the plug (power cord) is damaged, it must be replaced by the manufacturer or an authorized service representative.
- This machine shall be repaired only by an authorized service representative. Only genuine replacement parts should be used.
- If connected to a circuit protected by fuses, use time-delay fuses with this appliance.
- Do not lean items against the glass door.
- Please do not close the door with excessive force. If it is found difficult to close the door, please check for obstruction.
- When you plan to dispose of this unit in the future, please comply with the local waste disposal regulations. Remove any doors so that children and pets will not be trapped in the unit.

Grounding requirement

This freezer must be grounded. This freezer is equipped with a cord having a grounding wire with a grounding plug. The plug must be inserted into an outlet that is properly installed and grounded.

Improper use of the grounding plug can result in a risk of electric shock. Consult a qualified electrician or service person if the grounding instructions are not completely understood, or if doubt exists as to whether the freezer is properly grounded.

1.2 Safety instructions for refrigerant

WARNING **Explosion Hazard.**

Keep flammable materials and vapors, such as gasoline, away from freezer. Failure to do so can result in fire, explosion, or death.

DANGER—Risk of Fire or Explosion. Flammable Refrigerant Used. To Be Repaired Only By Trained Service Personnel. Do Not Use Mechanical Devices. Do Not Puncture Refrigerant Tubing.
CAUTION—Risk of Fire or Explosion. Flammable Refrigerant Used. Consult Repair Manual/Owner's Guide Before Attempting To Service This Product. All Safety Precautions Must be Followed.
CAUTION—Risk of Fire or Explosion. Dispose of Properly In Accordance With Federal Or Local Regulations. Flammable Refrigerant Used.
CAUTION—Risk of Fire or Explosion Due To Puncture Of Refrigerant Tubing; Follow Handling Instructions Carefully. Flammable Refrigerant Used.

2. Description of product features

This product has the following features:

1) Integrated refrigeration chamber
2) Electronic controls
3) Polished stainless steel tower and door
4) Holds most 1/2 and 1/4 size kegs

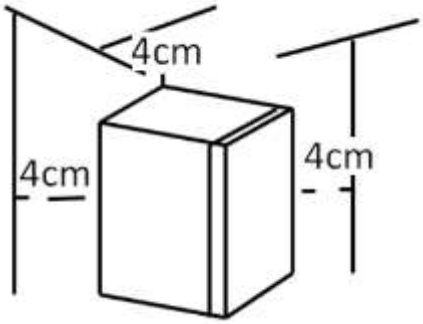
1) Integrated refrigeration chamber
2) Electronic controls
3) Polished stainless steel door
4) 113 beverage can capacity

3. Installation

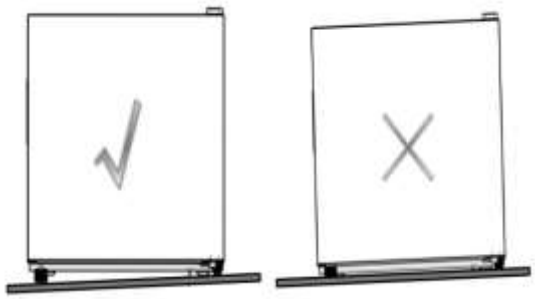
3.1 Handling

1) Protect the refrigerator when moving it please move it by handcart with cushion 2) Remove all packing materials then move into house for placement 2) Move unit to appropriate installation location and wait 2 hours before turning on. This allows the refrigerant oil to settle after shipping.	

3.2 Installation location

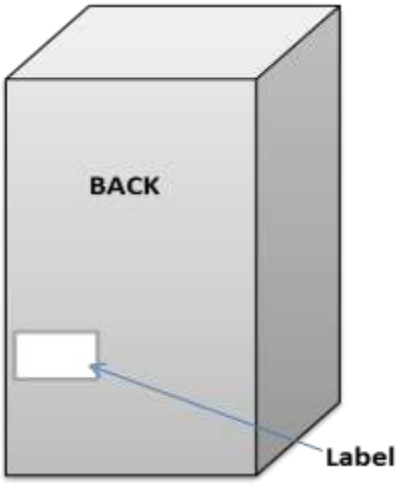
A location that has good ventilation must be chosen to facilitate heat dissipation, enhance the unit's performance and reduce energy consumption. The unit should have a minimum clearance of 4cm (1.6 inches) from walls at the rear and both sides.	

3.3 Leveling the refrigerator

Place the unit on a solid, level surface strong enough to support it when fully loaded. Adjust the leveling legs on the bottom of the unit to ensure stability.	

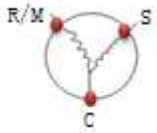
4. Labeling

4.1 Location of data plate



5. Product specifications

5.1 Electrical specifications

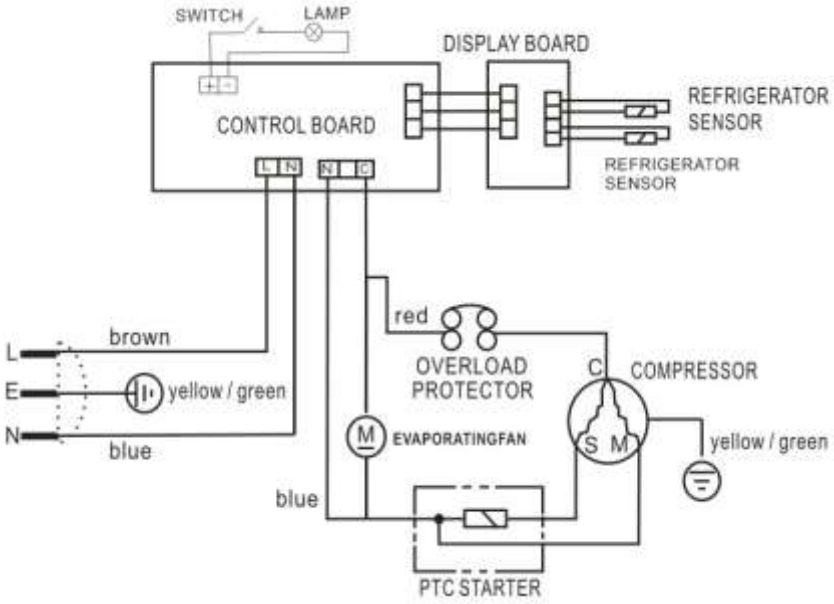
Product			BR1000SS
Name	Item	Type	Specification
Compressor	Compressor	/	D25DZ1
	Starter	Integral type two device	ZHB45-120P15/AG
	Overload protector		
	Winding resistance of compressor coils		Rmc:15±20%Ω Rsc: 15±20%Ω Rms=Rmc+Rsc (20℃)
Motor	Fan motor	/	115V/6.5W

5.2 Inside temperature

Temperature tolerance ≤ 2°C

Compartment	The highest (F° / C°)	Lowest (F° / C°)
Refrigerating	46° / 8°	36° / 2°

5.3 Circuit diagram

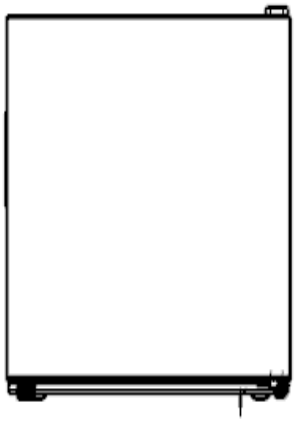
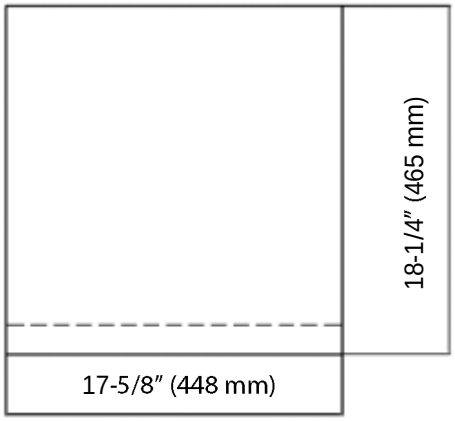
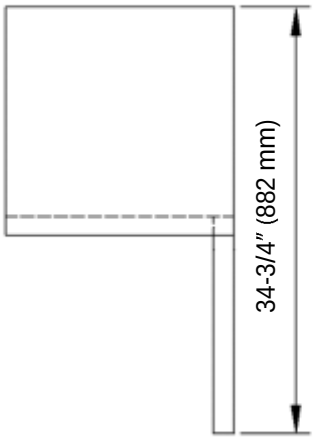
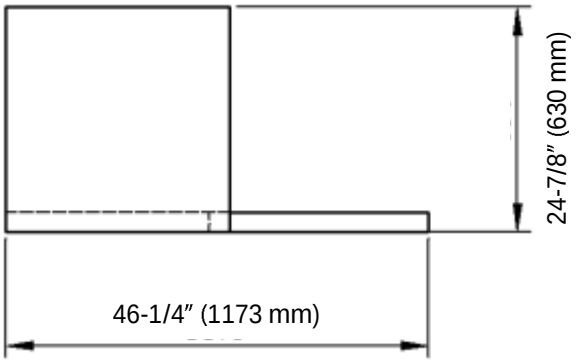


6. Internal view and dimensions

6.1 Main parts

1.Beer tower (BR1000SS only) 2.Fan	3.Bottom tray 4. Lock

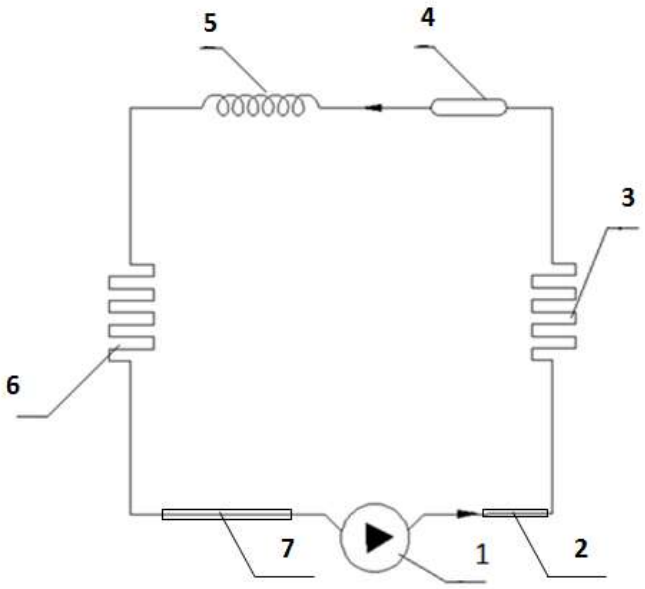
6.2 External dimensions

Front view	Side view
	
Top view	**Open Door**
	
Maximum open angle of door(180°)	
	

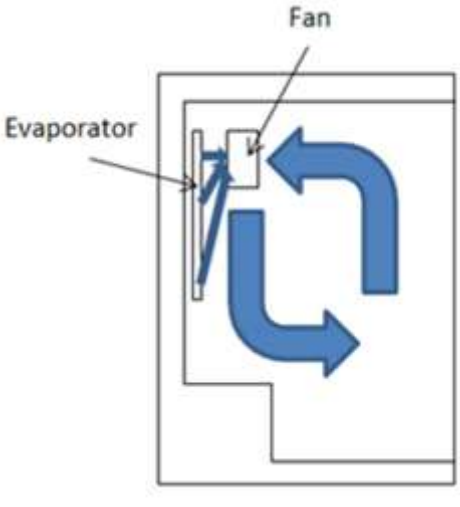
Refrigeration system and air circulation

7.1 Refrigeration system

1. Compressor 2. Discharge pipe 3. Condenser 4. Filter Dryer 5. Capillary tube
6. Evaporator 7. Suction pipe



7.2 Circulation route of cold air



8. Disassembly of parts

8.1 Parts on the door

Door seal is installed into door liner groove. Open the cabinet door Remove the door seal from its groove inside the door. Heat seal with hair dryer to reform. Replace seal if necessary.

8.2 Parts inside the cabinet

Beer keg bottom pad
Push up the beer keg bottom pad from the gap between the shell and the liner to take it out. Clean and replace.

8.3 Air duct components in refrigeration chamber and fan motor

Air duct components in refrigeration chamber	
Fan motor	
Use a Phillips screwdriver to remove the 2 screws holding the fan assembly to the rear of the cabinet. Remove the connecting harness terminals linking the fan and cabinet and take out the fan. Remove the fan cover. Take out the old fan from the mounting box and replace with a new fan.	

8.4 Evaporator and temperature sensing system

Evaporator in refrigeration chamber	
Take out 5 screws and gaskets on the evaporator. Debraze (oxygen-acetylene) inlet and outlet tubes. Braze in new evaporator.	

Sensor in refrigeration chamber	
To remove the sensor cover wiggle it up and down. Take the sensor out from slot to examine, test or replace.	

8.5 Compressor

Rear cover and compressor compartment	
1) Using a Phillips screwdriver remove the screws holding the back cover plate of compressor chamber. 2) Move the back cover plate of compressor chamber upward.	

Compressor terminal box	
Remove the screws: Two screws outside, one screw inside.	 
Remove the clip: Slowly pull it out	
Remove the protective cover: 1）Pry the protective cover slowly from the upper part with a screwdriver. 2）Pull it out and remove it.	 

Remove the starter relay and overload protector: Unplug the old starter and overload protector (you can use a screwdriver to slowly pry them away from the compressor) and replace.	
Reassemble by following steps in reverse order.	

Compressor compartment

1	Condenser (out)	6	Compressor terminal box
2	Filter Dryer	7	Compressor
3	Main control board box	8	Water Pan
4	Capillary Tube	9	Suction Pipe
5	Transition pipe	10	Condenser (in)

8.6 Temperature control panel

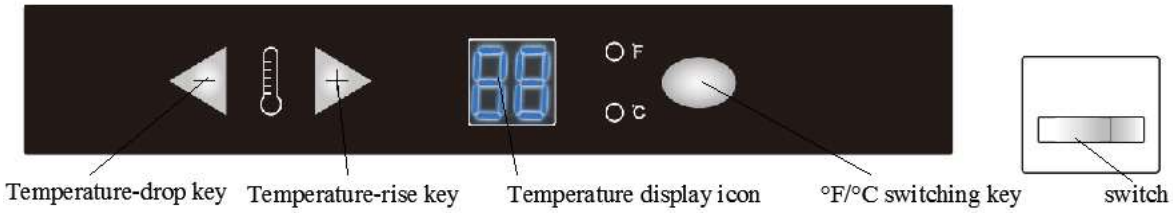
1. Remove the two screws holding the temperature control board mounting box to the cabinet.	
2. Disconnect the connector	
Remove the temperature control panel	

8.7 main panel

1. Remove screws	
Remove main control panel cover.	
Disconnect the wiring connector.	

9. Functions and features

9.1 Control panel



When powered on the display screen gives a full display for 3s then the panel displays normally. The normal display area is lighted all the time and the temperature is displayed. If the system has an error, the error code will be displayed. The first time the unit is powered on the temperature is shown in Celsius.

9.2 Temperature control

Temperature setting

● Press the Temperature-rise key, the temperature will increase 1℃ (or 1℉). After5s, the cooler will operate according to the set temperature;

● Press the Temperature-drop key, the temperature will decrease 1℃ (or ℉). After 5s, the cooler will operate according to the set temperature

● The beverage cooler‘s temperature can be set between -3~10℃（27~50℉）

Switching between Fahrenheit and Celsius

● Fahrenheit to Celsius: When the Fahrenheit temperature is displayed, press the key and it now displays the Celsius temperature

● Celsius to Fahrenheit: When the Celsius temperature is displayed, press the key and it now displays the Fahrenheit temperature

9.3 Error codes and solutions

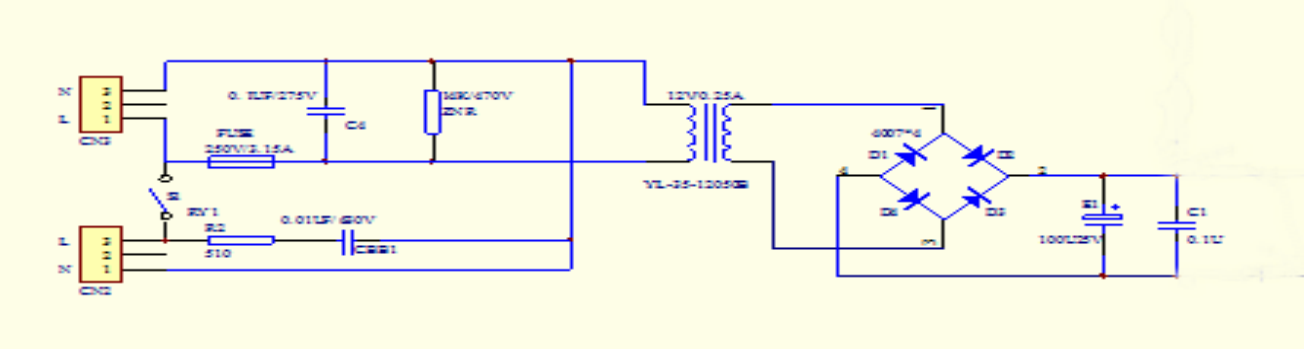
Error Code	Failure Type	Solution
E1	Temperature sensor fault	1. Check whether the terminals CN3 and CN5 are secure, pull out the terminal and replace it if necessary. 2. Check to see if there is foreign matter on the terminal. 3. Inspect the temperature sensor and test its resistance. (See 10.3 & 10.8) 4. Replace main control board.
E4	Frost sensor fault	1. Check whether the terminal CN3 and CN5 are secure, pull out the terminal and replace it if necessary. 2. Check to see if there is foreign matter on the terminal. 3. Inspect the frost sensor check whether contact is bad. 4. Replace main control board

9.4 Defrost function

The defrosting of the evaporator is activated when the temperature monitored by defrost sensor is below set point. The compressor switches off, and following a temperature rise, the frost on evaporator becomes water. The water flows into the water pan via the drain system and will eventually evaporate.

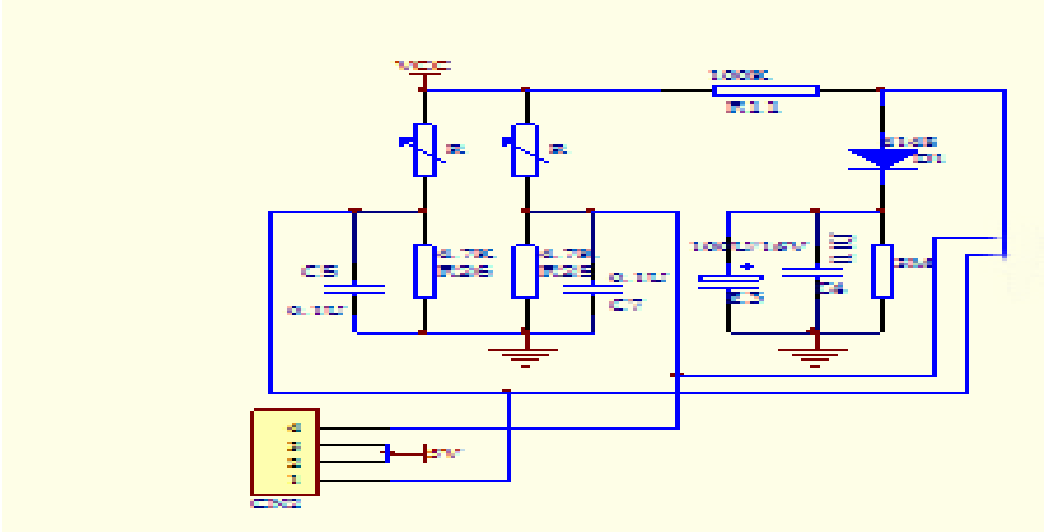
10. Circuit description

10.1 Power PCB



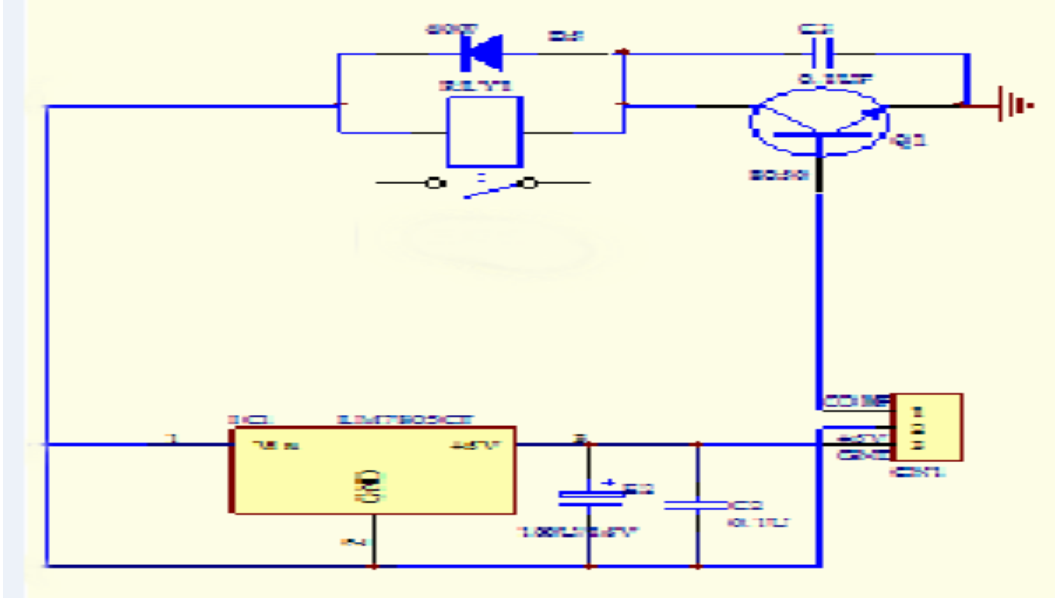
- AC input voltage is lowered by the transformer, then filtered by rectifier diode & LC into DC 12V.
- The DC 12V controls the switches of compressor and defroster.
- DC12V is changed through adjuster 7805 in to stable DC5V.
- DC5V provides the power to the control chip.
- The control chip monitors the temperature changes in the refrigerator.
- If no power is detected in test, first check whether there is input voltage between the L& N line of main PCB, if no input voltage(115V), check whether there is power supplied from the socket.
- If there is input voltage, put the black probe of multi meter on the bottom of “GND” pin, and put the red probe on the bottom of “+5v” or “+12v” pins. If “12v” or “5v” is detected, check whether there is a loose wiring connection.
- If there is no “12v” or “5v” it means the main PCB is defective. Replace it with a new one.

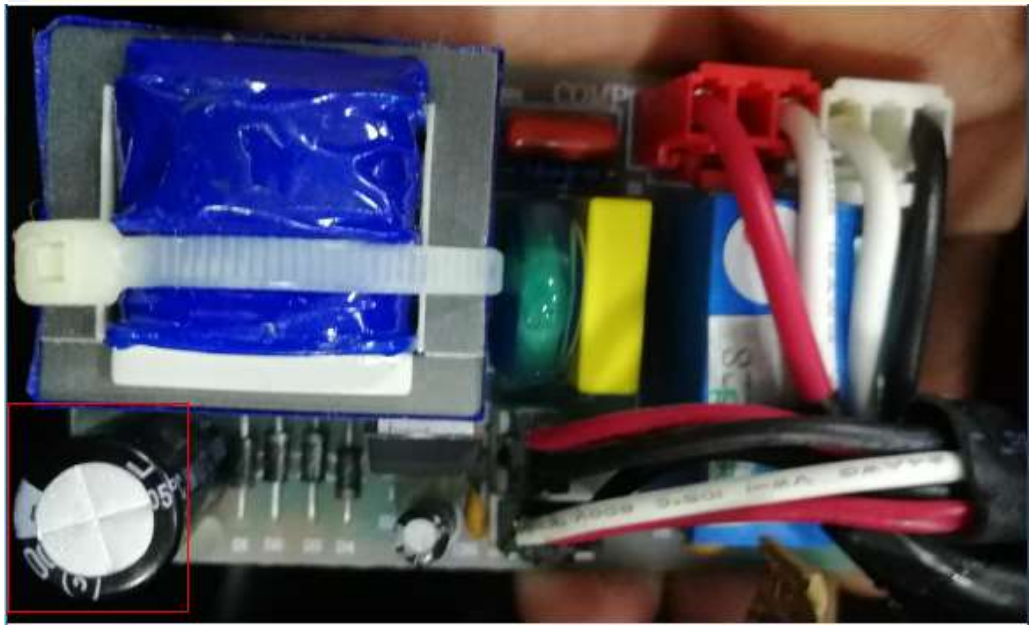
10.2 Temperature circuit



- During inspection unplug the wire connectors of the sensor (pictured above.)
- Adjust the multi meter to detect the resistance, put the red probe and black probe on the corresponding pins to detect the resistance value of sensor, then check with resistance table (10.8) to identify whether the sensor is damaged.

10.3 Refrigerator fan motor circuit





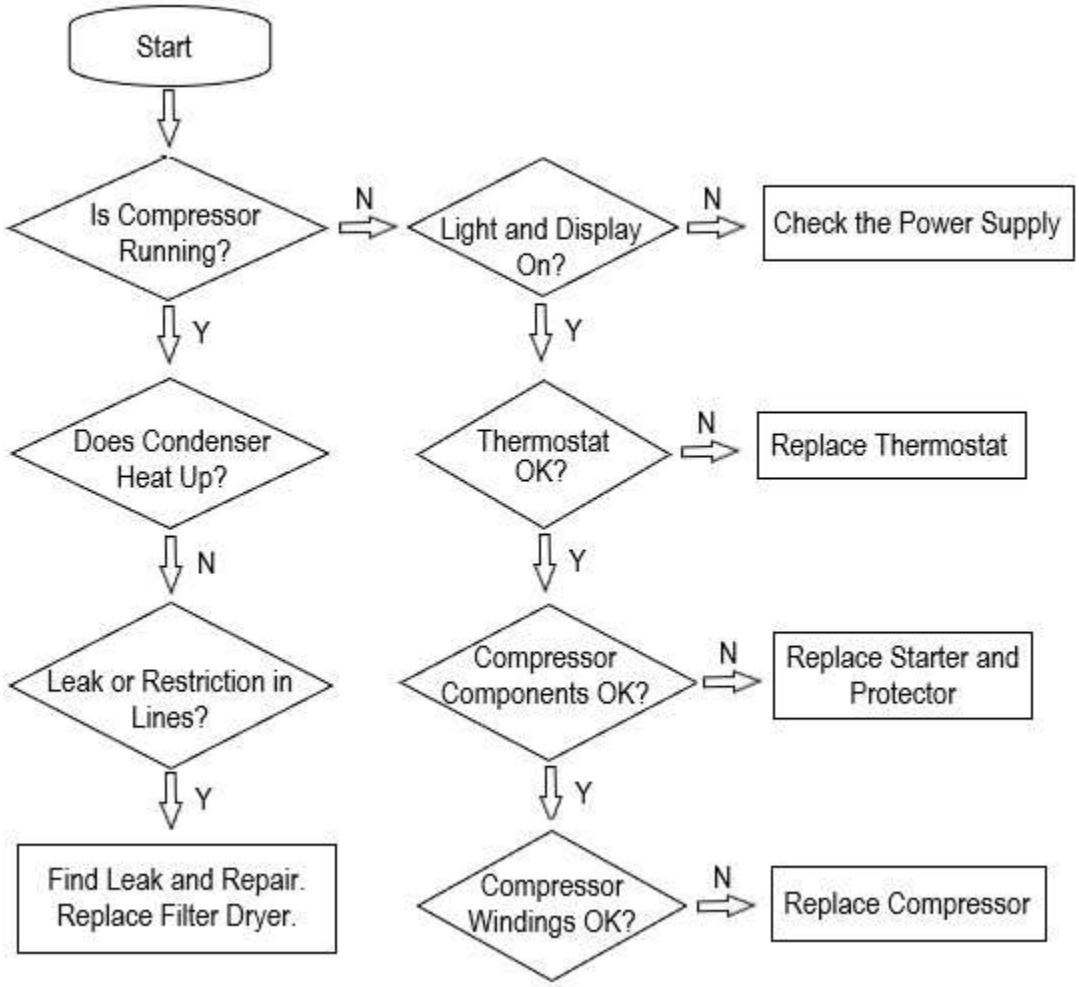
- The fan motor runs with the compressor.
- Check if there is 12V voltage between FAN pin and GND during normal operation.
- There should be 6V or more between FAN pins.
- If there is no voltage detected when the compressor is running, replace the fan motor or main PCB with a new one.
- Also adjust the multi meter to test for DC voltage.
- Put the black probe on the GND pin and put the red probe on the FAN pin when the motor is running.
- There should be 6V or more detected.
- When the fan motor is shutdown the detected voltage should be 0V.

10.4 Resistance value table for the sensor (R/T)

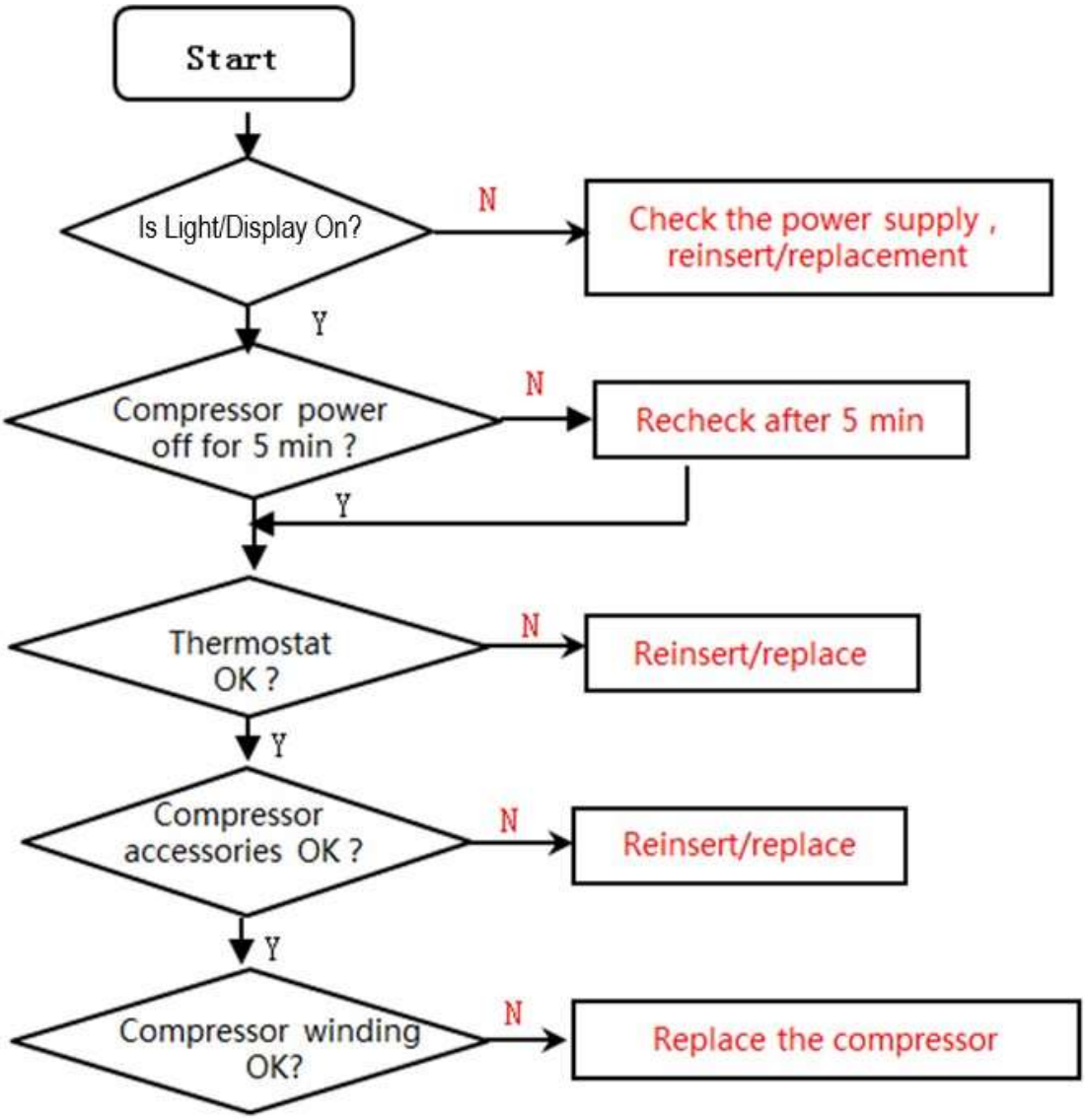
Tx(℃)	R (KΩ)	Tx (℃)	R (KΩ)	Tx (℃)	R (KΩ)	Tx (℃)	R (KΩ)	Tx (℃)	R (KΩ)
-30	33.81	-9	10.35	12	3.613	33	1.426	54	0.6241
-29	31.85	-8	9.82	13	3.447	34	1.368	55	0.6015
-28	30.01	-7	9.316	14	3.29	35	1.312	56	0.5798
-27	28.29	-6	8.841	15	3.141	36	1.259	57	0.5590
-26	26.68	-5	8.392	16	2.999	37	1.209	58	0.5390
-25	25.17	-4	7.968	17	2.865	38	1.161	59	0.5199
-24	23.76	-3	7.568	18	2.737	39	1.115	60	0.5016
-23	22.43	-2	7.19	19	2.616	40	1.071	61	0.4840
-22	21.18	-1	6.833	20	2.501	41	1.029	62	0.4672
-21	20.01	0	6.495	21	2.391	42	0.9885	63	0.4510
-20	18.9	1	6.176	22	2.287	43	0.9506	64	0.4354
-19	17.87	2	5.873	23	2.188	44	0.914	65	0.4205
-18	16.9	3	5.587	24	2.049	45	0.8789	66	0.4062
-17	15.98	4	5.316	25	2.005	46	0.8454	67	0.3924
-16	15.12	5	5.06	26	1.919	47	0.8133	68	0.3792
-15	14.31	6	4.818	27	1.838	48	0.7826	69	0.3665
-14	13.55	7	4.589	28	1.761	49	0.7532	70	0.3543
-13	12.83	8	4.372	29	1.687	50	0.7251	71	0.3425
-12	12.16	9	4.167	30	1.617	51	0.6982	72	0.3312
-11	11.52	10	3.972	31	1.55	52	0.6724	73	0.3204
-10	10.92	11	3.788	32	1.486	53	0.6477	74	0.3099

11. Troubleshooting

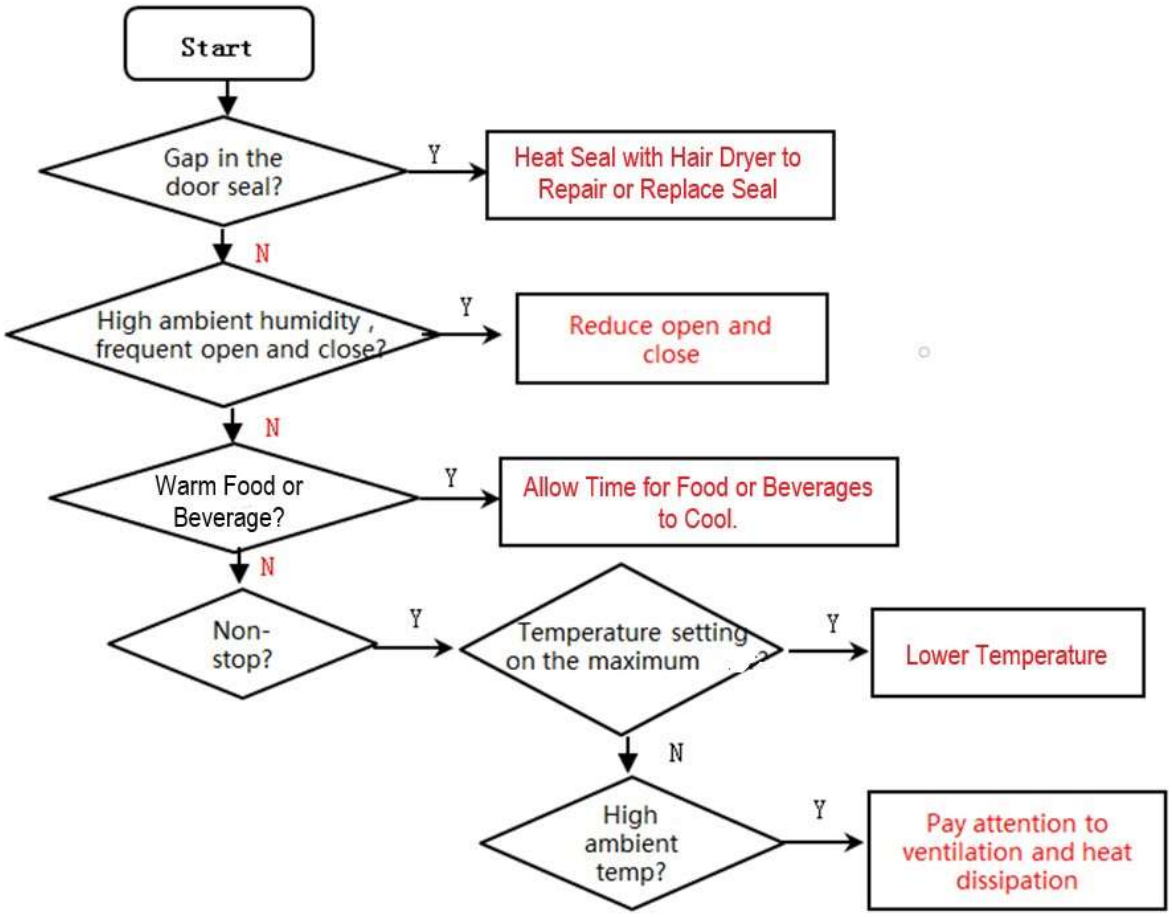
11.1 Not cooling



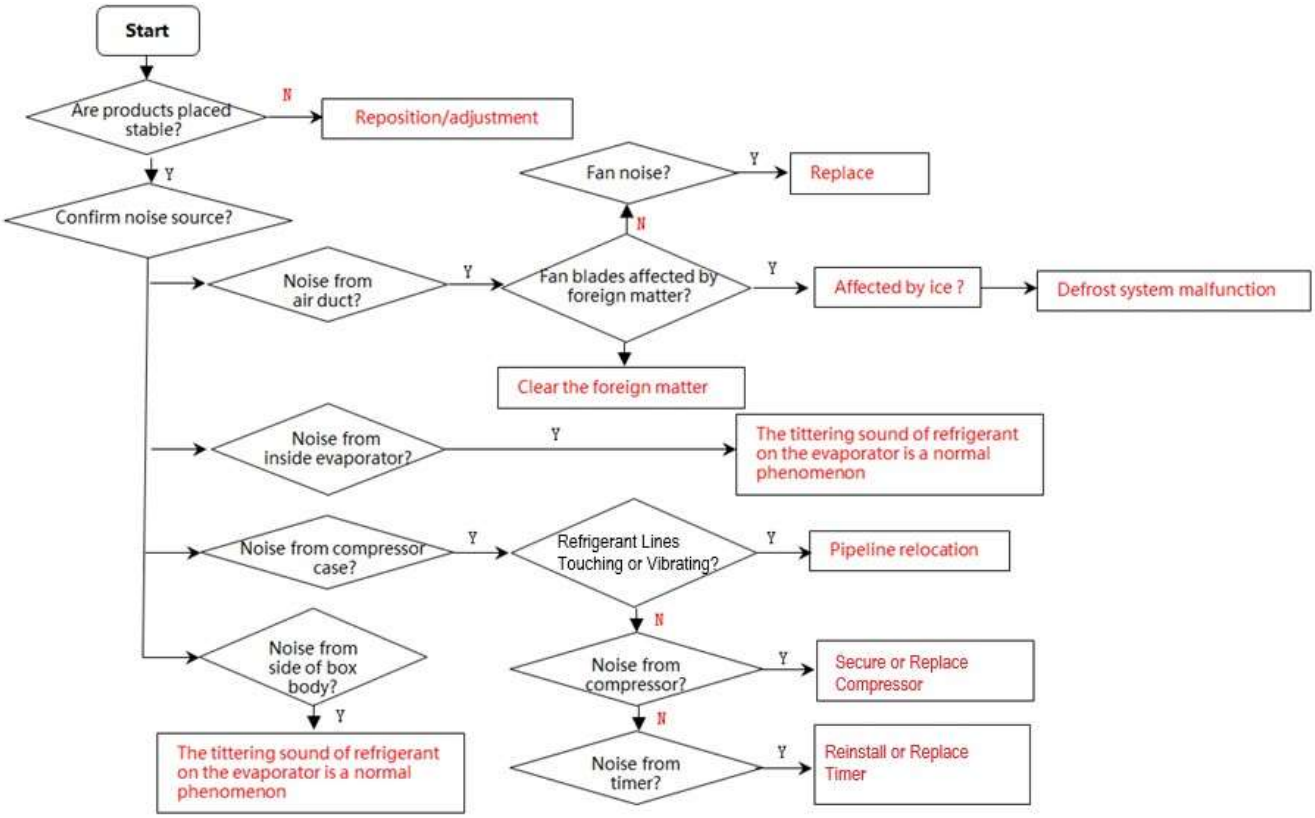
11.2 Compressor not Working



11.3 Inside frosting

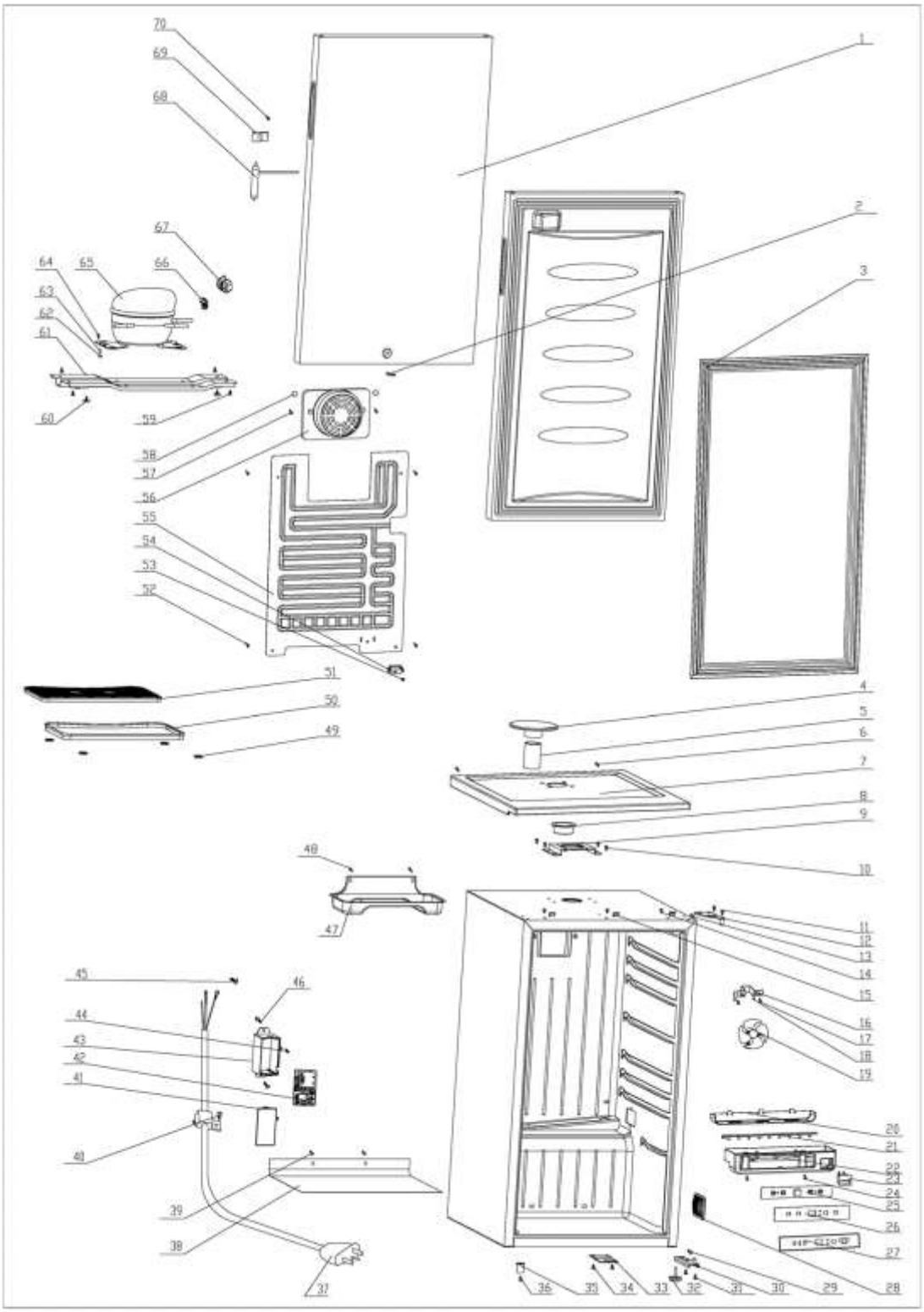


11.4 Noise


Start
Are products placed stable?
N
Reposition/adjustment
Y
Confirm noise source?
Fan noise?
Y
Replace
N
Noise from air duct?
Y
Fan blades affected by foreign matter?
Y
Affected by ice ?
Defrost system malfunction
Clear the foreign matter
Noise from inside evaporator?
Y
The tittering sound of refrigerant on the evaporator is a normal phenomenon
Noise from compressor case?
Y
Refrigerant Lines Touching or Vibrating?
Y
Pipeline relocation
N
Noise from side of box body?
Y
Noise from compressor?
Y
Secure or Replace Compressor
N
The tittering sound of refrigerant on the evaporator is a normal phenomenon
Noise from timer?
Y
Reinstall or Replace Timer

12. Diagrams and part lists

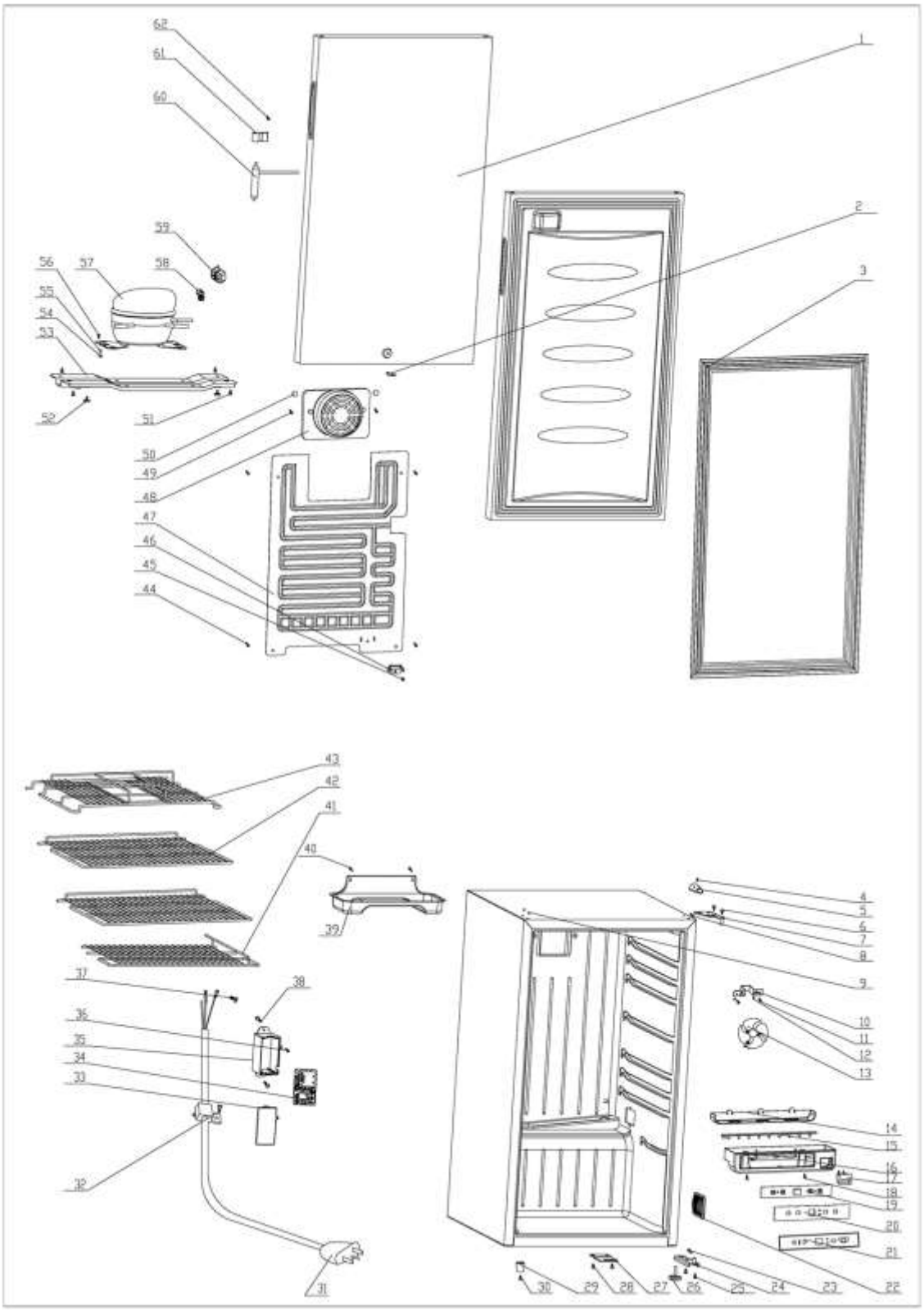
12.1 Exploded Diagram BR1000SS



12.2 Parts List BR1000SS

No.	Part Description	Qty.	No.	Part Description	Qty.
1	Door (304 stainless steel)	1	36	Foot Screw	1
2	Key	1	37	Power Supply Cord	1
3	Door Gasket	1	38	Beer Keg Under board	1
4	Top Cover	1	39	Beer Keg Under board Screw	2
5	Beer Set Plug	1	40	Wire Clamp Screw	1
6	Worktop ST Screw	2	41	Control Cover	1
7	Worktop	1	42	Power Panel	1
8	Top Sleeve for Beer	1	43	Control Box	1
9	Fix Plate	1	44	Control Cover Screw	1
10	Fix Plate Screw	4	45	Ground Screw	1
11	Hinge Screw	2	46	Control Box Screw	2
12	Upper Hinge	1	47	Drip Tray	1
13	Upper Hinge Rubber Washer	1	48	Drip Tray Screw	2
14	Worktop Hook Screw	3	49	Skid Resistance Mat	4
15	Worktop Hook	3	50	Beer Drip Tray	1
16	Fan Motor Bracket	1	51	Beer Drip Tray Shelf	1
17	Fan Motor Bracket Screw	2	52	Evaporator Screw	4
18	Fan Motor Bracket Nut	2	53	Tempered Head Screw	1
19	Fan Motor	1	54	Tempered Head	1
20	Light Cover	1	55	Evaporator	1
21	LED Light Panel	1	56	Fan Motor Cover	1
22	LED Light Control Box	1	57	Fan Motor Cover Screw	2
23	Light Switch	1	58	Cap	2
24	LED Light Control Box Screw	2	59	Compressor Support Screw	4
25	Display Panel	1	60	Compressor Support Foot-Pad	2
26	Digital Display Cover Panel	1	61	Compressor Support	1
27	Touch Pad	1	62	Compressor Sleeve	4
28	Temperature Control Box Cover	1	63	Compressor Rubber Washer	4
29	Bottom Hinge Rubber Washer	1	64	Compressor Screw	4
30	Bottom Hinge	1	65	Compressor	1
31	Bottom Hinge Screw	2	66	PTC & Overload Protector	1
32	Adjustable Foot	1	67	PTC Cover	1
33	Lock base	1	68	Filter	1
34	Bottom Hinge Screw	2	69	Filter Bracket	1
35	Foot	1	70	Filter Bracket Screw	1

12.3 Exploded Diagram BWC120SLD



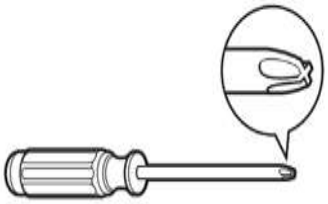
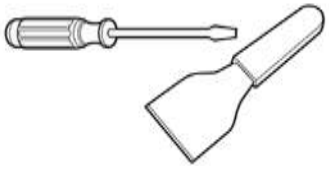
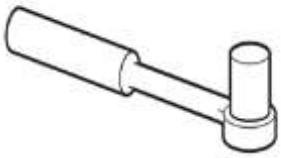
12.4 Parts List BWC120SLD

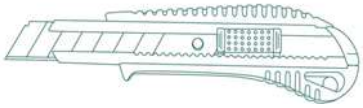
No.	Part Description	Qty.	No.	Part Description	Qty.
1	Door (304 stainless steel)	1	32	Wire Clamp Screw	1
2	Key	1	33	Control Cover	1
3	Door Gasket	1	34	Power Panel	1
4	Hinge Cover	1	35	Control Box	1
5	Hinge Cover Screw	1	36	Control Cover Screw	1
6	Hinge Screw	2	37	Ground Screw	1
7	Upper Hinge	1	38	Control Box Screw	2
8	Upper Hinge Rubber Washer	1	39	Drip Tray	1
9	Hinge Plug	2	40	Drip Tray Screw	2
10	Fan Motor Bracket	1	41	Bottom Shelf	1
11	Fan Motor Bracket Screw	2	42	Shelf II	2
12	Fan Motor Bracket Nut	2	43	Shelf I	1
13	Fan Motor	1	44	Evaporator Screw	4
14	Light Cover	1	45	Tempered Head Screw	1
15	LED Light Panel	1	46	Tempered Head	1
16	LED Light Control Box	1	47	Evaporator	1
17	Light Switch	1	48	Fan Motor Cover	1
18	LED Light Control Box Screw	2	49	Fan Motor Cover Screw	2
19	Display Panel	1	50	Cap	2
20	Digital Display Cover Panel	1	51	Compressor Support Screw	4
21	Touch Pad	1	52	Compressor Support Foot-Pad	2
22	Temperature Control Box Cover	1	53	Compressor Support	1
23	Bottom Hinge Rubber Washer	1	54	Compressor Sleeve	4
24	Bottom Hinge	1	55	Compressor Rubber Washer	4
25	Bottom Hinge Screw	2	56	Compressor Screw	4
26	Adjustable Foot	1	57	Compressor	1
27	Lock base	1	58	PTC & Overload Protector	1
28	Bottom Hinge Screw	2	59	PTC Cover	1
29	Foot	1	60	Filter	1
30	Foot Screw	1	61	Filter Bracket	1
31	Power Supply Cord	1	62	Filter Bracket Screw	1

13. Appendix

13.1 Refrigerator maintenance tools, equipment and materials.

Suggested Tools

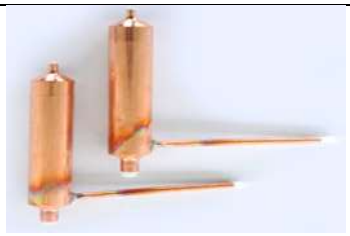
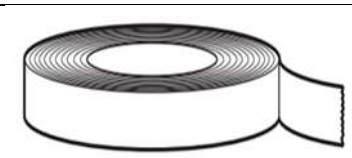
	Name	Photo	Main Usage
	Phillips screwdriver		Remove and replace screws.
	slotted screwdriver/scraper		Remove and replace screws.
	Socket spanner 5/16″		Remove and replace hinges and compressor screws.
	Sucker		Display panel and air duct cover disassembly.
	Allen wrench(2.8~4mm）		Door handle assembly and disassembly.

	Name	Photo	Main Usage
6	Vise grip pliers		Sealing process tube.
7	Pipe cutter		Pipe cutting.
8	Knife		Assistive tool.
9	Needle nose pliers		Assistive tool.
10	Capillary tube scissors		Shear capillary tube.

Suggested Equipment

No.	Name	Photo	Main Usage
1	Vacuum pump		Pull vacuum on sealed system.
2	Electronic scale		Weighing refrigerant/gas.
3	High pressure nitrogen with piezometer		Cooling system (condenser, evaporator, etc.) impurities cleaning.
4	Brazing torch (oxygen-acetylene)		Heating and welding.
5	Quick coupling		Connection to process pipeline, vacuum, or charging refrigerant.
6	hand leak detector		Welding point leakage detection or use soap-suds.

Suggested Materials

No.	Name	Photo	Main Usage
1	Process pipeline		Charging refrigerant.
2	Filter Dryer		Remove impurities and moisture from sealed system.
3	Copper welding rod		Line welding.
4	Refrigerant/gas		Charge the system.
5	Sealing tape		Door repair for reversible door option.

DATE	REVISION NOTES
04/13/2018	INITIAL DOCUMENT

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**Warranty service should be performed by an authorized service representative only.*