

TRUFROST & BUTLER

USER MANUAL

Ice Machines: IC-100 Premia

IC-220 Premia

IC-350 Premia

IC-460 Premia

IC-1000 Premia

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Ice Machine Introduction

1. Adopted advanced technology and accompanied with strict and comprehensive quality inspection to ensure excellent product performance.
2. Compressor, the core part of the ice machine is made of world famous products, and our reasonable refrigeration system will make the ice machine more reliable and lower energy consumption.
3. Stainless steel shell is beautiful, better anti-corrosion, easy to clean and durable.
4. Water cooled ice machine has stable cooling capacity and is hard to be affected by ambient temperature.
5. The advanced industrial microcomputer control system has achieved automatic ice making and ice collecting, and also has a variety of protection functions, which is more convenient and safe.

Receiving And Inspection

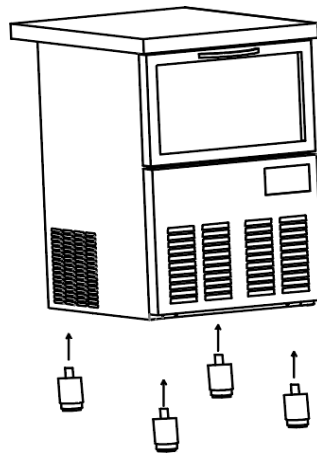
Thank you for choosing our automatic Ice machine. In order to safeguard your rights and interests, please pay attention to the following items when receiving the goods:

1. The packing of the machine is in good condition.
2. Is the machine model consistent with your purchase order.
3. In apparent good condition.
4. Whether all assembly parts are complete.
5. Whether Machine internal components are intact.

! In the process of logistics and transportation, if any improper stacking or handling might have caused the lubricant of the compressor to flow into the refrigeration pipeline, resulting in severe oil shortage of the compressor. Therefore, it is strongly recommended that after receiving the goods, the Ice machine should be properly placed for 24 hours, make sure that the lubricant return to the compressor, before it is installed and operated.

Foot Mounting

1. Screw the foot to the bottom of the ice machine.
2. Each leg must be screwed to the bottom and fastened to avoid bending.
3. Place the ice maker in a firm and level position.
4. Adjust the height of the foot to level the ice machine.



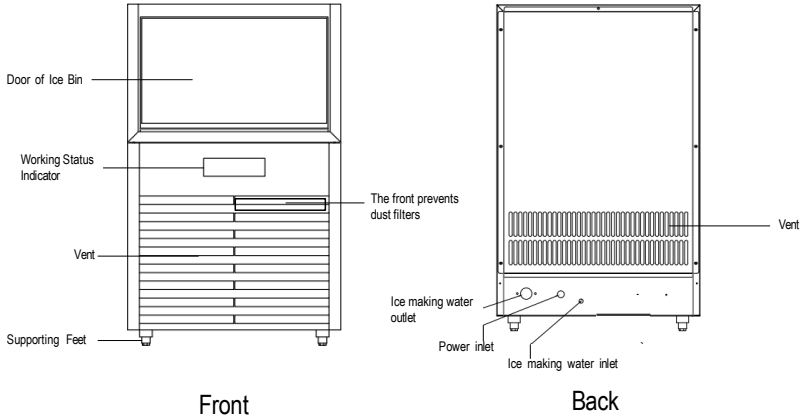
5. The ice machine is not suitable for outdoor, the normal operating ambient temperature is $1^{\circ}\text{C}\sim 40^{\circ}\text{C}$, water temperature is between $5^{\circ}\text{C}\sim 35^{\circ}\text{C}$, high humidity will seriously reduce the production of ice.
6. Ice machine should not be installed in where is no sewer. and it is forbidden to put together with high temperature equipment (such as refrigerator, oven).
7. For the Air-cooled ice machine, above 15cm of space should be reserved in each direction of front, back, left and right.

Installation Of Water Supply

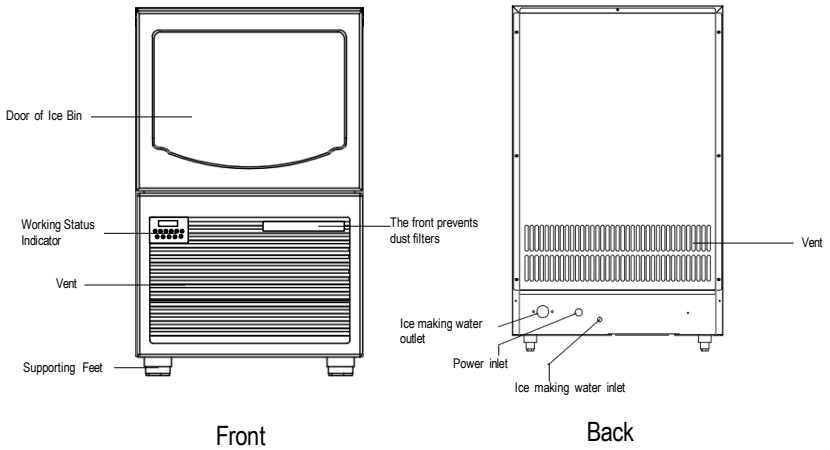
1. Ice machine must use room-temperature drinkable water.
2. Water pressure must be controlled between 0.15 MPa and 0.55 MPa.
3. Inlet hose with 3/4" internal thread (20mm) and 1/2" internal thread (15mm) joints at both ends, which has a stone guire seal washer so that there is no need to wrap raw tape.
4. Filter is equipped with filter element, use a wrench to unscrew the filter element before using, take out the filter element, tear off the packaging film of the filter element, install back as it is and tighten it. A new filter element should be replaced every six months.
5. The direction of inlet and outlet is marked on the filter cover. Please pay attention to the installation.
6. Connect the 3/4' joint to the machine inlet (white 3/4' male thread) 1/2 joint to the water supply pipe.
7. For water cooling ice machine, the machine added two 3/4' pipe joint at the place of in and out, which color is black to distinguish the ice making inlet.
8. The ice machine drains water by gravity, so it is necessary to ensure adequate slope and drop.

Installation Drawing

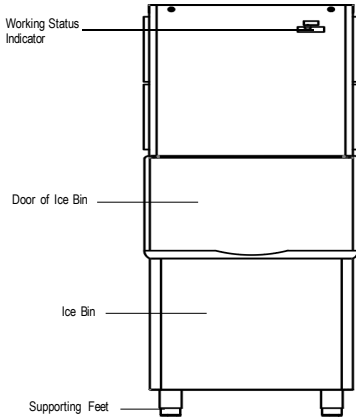
KD Series:



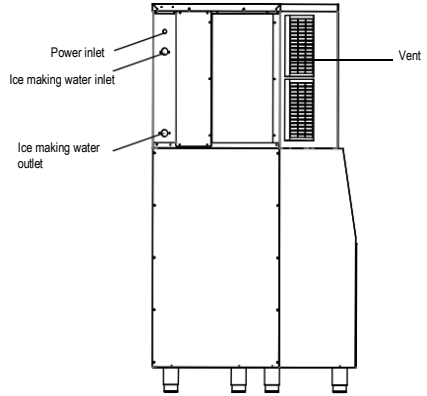
XD Series:



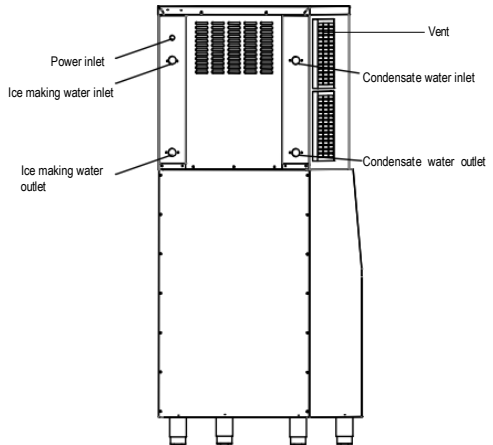
SD Series:



Front

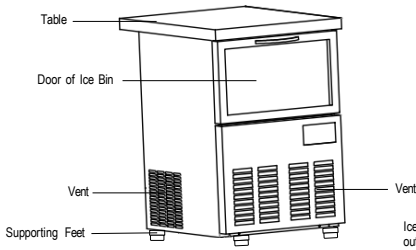


Back (air-cooled)

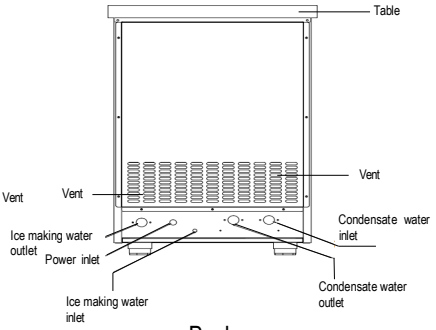


Back (water-cooled)

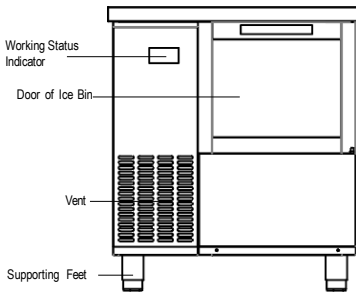
BT Series:



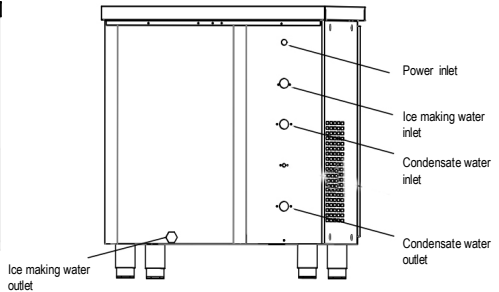
Front



Back



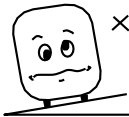
Front



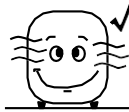
Back

Daily Cautions

1. When transporting and moving, the ice machine must not tilt more than 45 degrees.
2. Using independent source of water and checking regularly to prevent low water pressure, fluctuations or filter clogging.
3. Do not store any sundries in the ice bin. do not freeze any food in the ice bin,and keep the ice shovel clean.
4. Please gently open or close the ice bin door, do not hit the door, And please close the ice bin door immediately after taking out the ice.
5. Ice machine should be away from heat source, prohibited exposure in high or lowtemperature environment, should try to avoid direct sunlight, so as not to affect the heat dissipation of the machine.
6. It is forbidden to splash water directly on the surface of ice machine otherwise it may cause short circuit, electric leakage and other faults.
7. If it needs be stopped working for a long time,it should be switched on and run 4 to 6 hours every two months.



Place smoothly



Be well ventilated

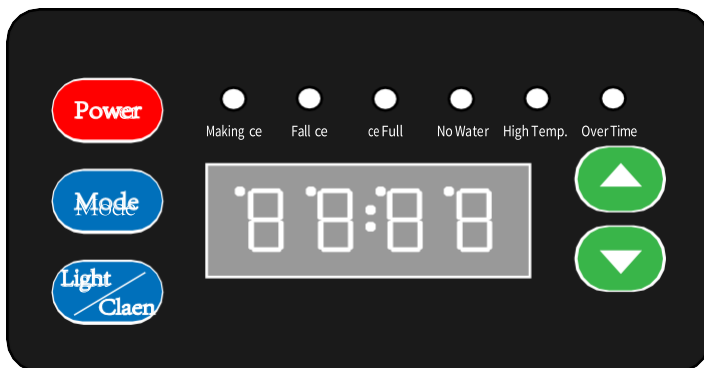


Avoid sunshine

Electrical Safety Precautions

1. Do not unplug when your hands are wet. Unplug before any maintenance or cleaning works.
2. The socket must be securely grounded.
3. The electric control system has a voltage of more than 36V, do not open or touch it when working. If you need to repair, please contact the manufacturer, or please handle it by qualified professional and technical personnel.
4. The power connection shall be according to instruction of the nameplate, and the specified power supply shall be required. Ensure the specification of the wire which used for connecting shall be determined to meet the requirements. If possible, please use specific power socket and fuse.
5. The power plug should be unplugged or cut off when the ice machine stops working.

Button Instruction (The first type)



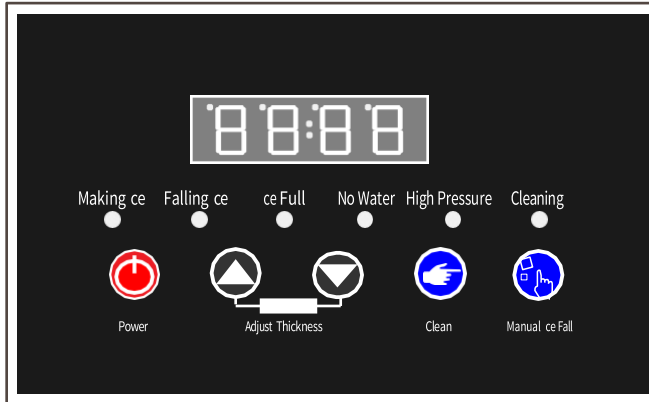
Ice thickness setting:

1. Press and hold the \triangle or ∇ key for 3 seconds, the first two digits of the panel will display C1, and the last two digits will start to flash to enter the state of ice thickness adjustment;
2. Press and hold \triangle , the number displayed on the panel increases by 1 digit, which means that the ice making time increases by 1 minute (the ice thickness increases accordingly). Press and hold ∇ , the number displayed on the panel will decrease by 1 digit, which means that the ice making time will decrease by 1 minute (the ice thickness will be reduced accordingly). The adjustment range is 0 ~ 35 minutes.
3. After the setting is completed, if there is no operation for 10 seconds, the display will stop flashing and enter the normal working state, and the set ice thickness will be saved. If you press the cleaning button, the set ice thickness will be saved directly.

Fault Code Of The First Type Button Instruction

| Code | Fault phenomenon | Cause | Treatment |
|------|---------------------------------------|---|---|
| E01 | Condensing temperature sensor failure | <ol style="list-style-type: none"> 1. Sensor damage; 2. Connector problem; | Check related parts |
| E02 | Water temperature Sensor fault | Water temperature Sensor damage; | Check related parts |
| E03 | Ice falling timeout | <ol style="list-style-type: none"> 1. Heating valve fault; 2. Condensation temperature is too low; 3. Ice set too thin; 4. Too little water in the tank; | <ol style="list-style-type: none"> 1. Check the heating valve circuit; 2. Check ice thickness detector; 3. Check inlet system; |
| E04 | Water shortage fault | <ol style="list-style-type: none"> 1. There is on water in the inlet pipe; 2. Low water pressure in the inlet pipe; 3. The inlet valve damaged; 4. The tank is leaking; | Check related parts |
| E05 | High temperature failure | <ol style="list-style-type: none"> 1. Excessive ambient temperature; 2. Cooling fan damaged; 3. Condenser not clean; | Check related parts |
| E06 | Pressure overruns | <ol style="list-style-type: none"> 1. Excessive condenser temperature; 2. Refrigeration system clogging; 3. Pressure switch failure; | <ol style="list-style-type: none"> 1. Check refrigeration system pressure; 2. Check the condensing and cooling system; |
| E07 | Ice plate or Ice full switch fault | <ol style="list-style-type: none"> 1. Ice plate is not reset or false position; 2. Ice full switch is abnormal; | Check related parts |

Button Instruction (The Second Type)



Ice thickness setting:

1. Press and hold the \triangle or ∇ key for 3 seconds, the first two digits of the panel will display C1, and the last two digits will start to flash to enter the state of ice thickness adjustment;
2. Press and hold \triangle , the number displayed on the panel increases by 1 digit, which means that the ice making time increases by 1 minute (the ice thickness increases accordingly). Press and hold ∇ , the number displayed on the panel will decrease by 1 digit, which means that the ice making time will decrease by 1 minute (the ice thickness will be reduced accordingly). The adjustment range is 0 ~ 35 minutes.
3. After the setting is completed, if there is no operation for 10 seconds, the display will stop flashing and enter the normal working state, and the set ice thickness will be saved. If you press the cleaning button, the set ice thickness will be saved directly.

Fault Code Of The Second Type Button Instruction

| Code | Fault phenomenon | Cause | Treatment |
|--------|--|--|--|
| E01 | Ice plate or Ice full switch fault | 1. Ice plate is not reset or false position; 2. Ice full switch is abnormal; | Check related parts |
| E02 | Ice making timeout | 1. High ambient temperature; 2. The cooling effect of the condensing is poor; 3. Compressor refrigerant leakage; 4. Water shortage; | 1. Check the condensation cooling system; 2. Whether there is leakage in the refrigeration system; 3. Whether the sink leaks; 4. Whether the outlet hole of water sprayer is blocked; |
| E03 | Ice falling timeout | 1. Heating valve fault; 2. Condensation temperature is too low; 3. Ice set too thin; 4. Too little water in the tank; | 1. Check the heating valve circuit; 2. Check ice thickness detector; 3. Check inlet system; |
| E04 | High temperature failure | 1. Excessive ambient temperature; 2. Cooling fan damaged; 3. Condenser not clean; | Check related parts |
| E05 | Water shortage fault | 1. There is on water in the inlet pipe; 2. Low water pressure in the inlet pipe; 3. The inlet valve damaged; 4. The tank is leaking; | Check related parts |
| E06 | Pressure overruns | 1. Excessive condenser temperature; 2. Refrigeration system clogging; 3. Pressure switch failure; | 1. Check refrigeration system pressure; 2. Check the condensing and cooling system; |
| E07/08 | Condensing temperature sensor failure | 1. Sensor damage; 2. Connector problem; | Check related parts |
| E09/10 | Evaporation temperature sensor failure | 1. Sensor damage; 2. Connector problem | Check related parts |
| E11 | Poor refrigeration effect | 1. Water temperature Sensor damage; 2. The circulating pump is not working; 3. Compressor is not working; 4. The refrigeration system is inefficient; | Check related parts |

Working Procedure

The steps of an ice machine are divided into three parts:

1. Automatic cleaning

Automatic cleaning after power on (Once, 2 minutes).

Each time when the ice machine is switched on, it performs a 2-minute automatic cleaning procedure, to rinse the floaters out of the ice trays and tank. In 2 minutes, the water tank is continuously filled and the pump is running. Operator can hear the sound of pumps working, and water flows down to the tank from the top of the ice grid. Then the water spills out of the tank and flows away from the outlet of the ice bin.

2. Ice making (Cycle, up to 40 minutes)

After automatic cleaning, the pump will start up in 45 seconds, then the ice making begins. While making ice, the pump continues to work. Water flows from the top of the ice grid down into the tank, and the water slowly cools until it freezes. In the process of ice making, the thickness of the ice is measured by an ice thickness detector. When the setting ice thickness is reached, the program moves to the ice-shedding step. If the gap of ice thickness detector is too large, once the ice making time exceeds 40 minutes, it will also be forced into the ice-shedding process.

3. Deicing (Cycle, up to 40 minutes)

During the deicing process, the ice grid is heated and the surface of ice at where sticking to the ice grid becomes melting. Because of the gravity of the ice itself, it will fall off and complete a shedding process. The falling ice blocks will push the baffle to turn over, and the baffle will be reset due to its own weight, then the machine starts making ice again. However, when there are too many ice blocks

cks in the ice bin, the ice blocks against the baffle and so that the baffle cannot be reset, the control chip indicates that the ice is full and the ice machine will stop temporarily until the baffle is reset.

Fault Self-diagnosis

1. Water pump

Directly observe whether there is water flowing from the ice grid. If there is no water, the pump will be failure.

2. Refrigeration

After 10 minutes of ice making, the water in the sink becomes noticeably colder, that you can easily feel the low temperature.

3. Water feeding

In the process of automatic cleaning, water can be observed to flow continuously from the overflow pipe of the water tank into the ice bin. However, water will normally account for more than half of the water tank.

Maintenance

Please carry out the maintenance according to the requirements of this manual, so as to improve the reliability and service life of the ice machine. And avoid increasing the energy consumption coefficient of ice production while maintaining sanitation.

1. Clean the area around the ice machine regularly, to keep the blinds of the ice machine which are used for ventilation from clogging.
2. Clean the shell with a neutral cleanser, then wipe it clean with a soft cloth. If necessary, commercial stainless steel cleaner and polishing agent can be used.
3. Filter element should be checked regularly. Most of the filter element within 6 months should be replaced, or according to the instructions on time replacement.
4. The water tank and ice bin can be cleaned with water pipes, but do not have excessive water pressure. Do not directly flush the water pump and upper part of ice grid, to prevent the circuit flooding.
5. Condenser of air cooled Ice machine: Clean the condenser every three months. Use a soft brush or a vacuum cleaner with a brush to scrub the condenser's fins from up to down along the fin direction to avoid damaging the fin and affecting the cooling effect.



Any maintenance of the ice machine is not covered by the manufacturer's warranty.



The filter element should be replaced regularly.



The edge of wind condenser fin is sharp, please be careful when cleaning.



Please pay attention to cleaning the scale inside the ice maker to ensure that the waterway is not blocked.



Before cleaning and maintenance, make sure to turn off the water and power sources and pull the plug.



Please pay attention to cleaning the scale inside the ice maker to ensure that the waterway is not blocked.

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