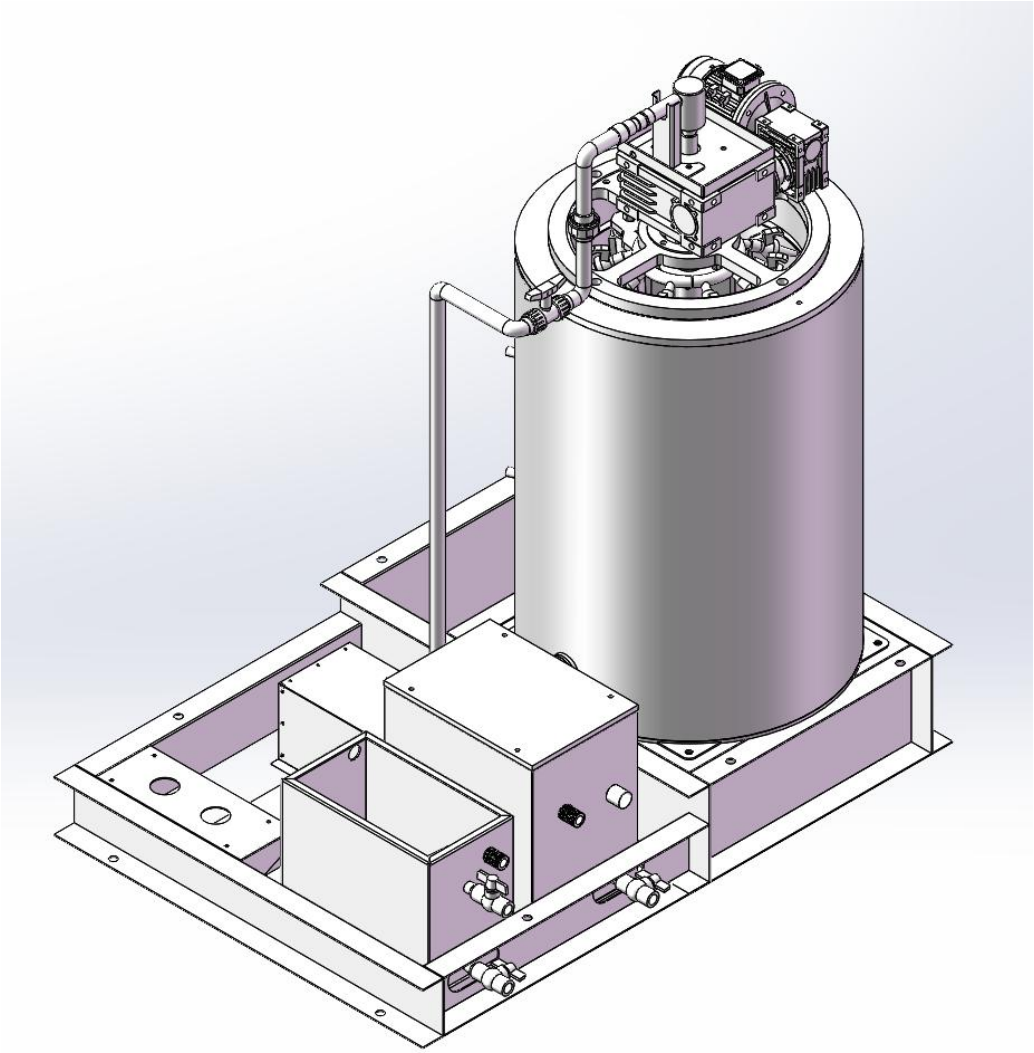
FF SERIES OF SCALE ICE MACHINES

Key user manual



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preface

This manual will guide you on how to properly install and use the ice making machine to avoid operational faults and achieve optimal ice making performance. Before using this product, please read this manual carefully and pay special attention to the hazards, warnings and attention. We have checked the consistency of the content in the print with hardware and software. However, the possibility of bias is not ruled out, and therefore we do not guarantee that the contents described in the printed matter are completely consistent with the machine. The data in the printed matter are tested as specified, and the necessary corrections are included in the next version.

safety instruction

In order to make the equipment work properly, please read this manual carefully and follow its requirements. The manufacturer shall not be responsible for any damage or personal injury caused by the disregard of the safety instructions.

Danger
1、The power supply line connection of the equipment must comply with the relevant national and local laws and regulations. 2、 The equipment must be effectively grounded in accordance with the electrical installation regulations. 3、 The ground wire shall not be connected with the gas pipe, sewer pipe, lightning rod and telephone.

Warning
1、 During the operation of the machine, it is absolutely forbidden to reach objects into the observation mouth of the ice machine. Otherwise, the risk of being involved or being injured will occur. 2. The power supply must be cut off during the power failure. Otherwise, when the power recovers, it will cause electric shock, injury, machine damage and other hazards. 3. Do not operate when the junction box and electric box are opened. After the operation, the junction box and electric box should be covered to avoid electric shock risk.

emergency stop
Press the emergency stop button, and all the parts of the system will stop immediately. Note: The system is operating normally. Do not use the emergency stop button without special emergencies, otherwise the refrigeration system of the ice making machine may be damaged. Use the emergency stop button only in an emergency.

pay attention to
1. In operation, the surface temperature of the evaporator and return circuit of the ice machine is low, so the body should not be approached or touched. In order to avoid causing frostbite. 2. In operation, do not approach or touch the rotating body, so as to avoid electric shock, injury, device damage, etc. 3, if there is abnormal, should immediately stop, in order to avoid electric shock, injury, fire, etc. 4. When starting, check whether the rotation direction of the knife is consistent with the arrow shown on the outer surface of the ice machine. 5. During the shutdown, the temperature around the equipment should not exceed 40 degrees Celsius, and it is best to take additional measures such as installing a sunshade roof to prevent direct sunlight.

pay attention to
Ice machine in operation, the sacrificial anode water tank and ice water tank water quality concentration will build up higher, ice water tank seawater concentration build up more than 3% salinity, the ice machine will be ice blockage, ice scraping down the phenomenon. In order to prevent ice blockage failure, both tanks overflow port need to overflow, uninterrupted small amount of drainage.

目录

一、 Overview

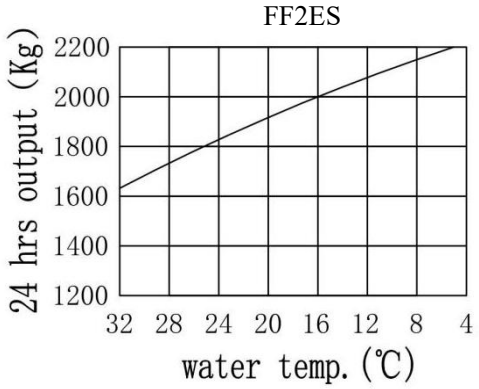
Read this service manual carefully before installation, debugging and operation of this ice machine.

二、 Operation Conditions & Performance Parameters

1. Conditions for Operation

	Minimum Allowable Value	Maximum Allowable Value
Ambient Temperature	5℃	40℃
Water Temperature	5℃	35℃
Water Pressure	0.15MPa	0.5MPa
Deviation from Voltage Rating	-10%	+10%
Ice-making water quality	Freshwater, seawater	salinity≤3%

2. Diagram for Ice Output of Ice Machine（Ambient Temperature 25℃）



The parameters may change without prompt notice

3. Dimensions (see figure 1)

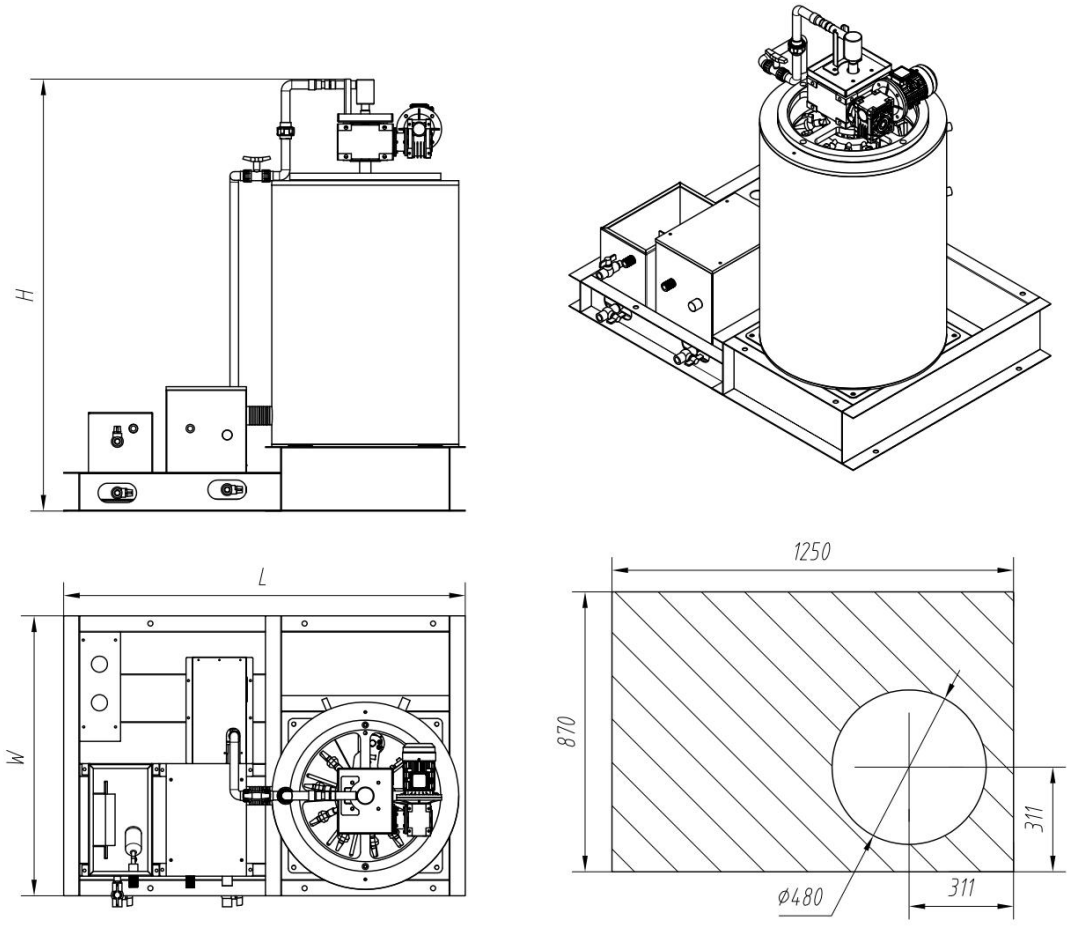


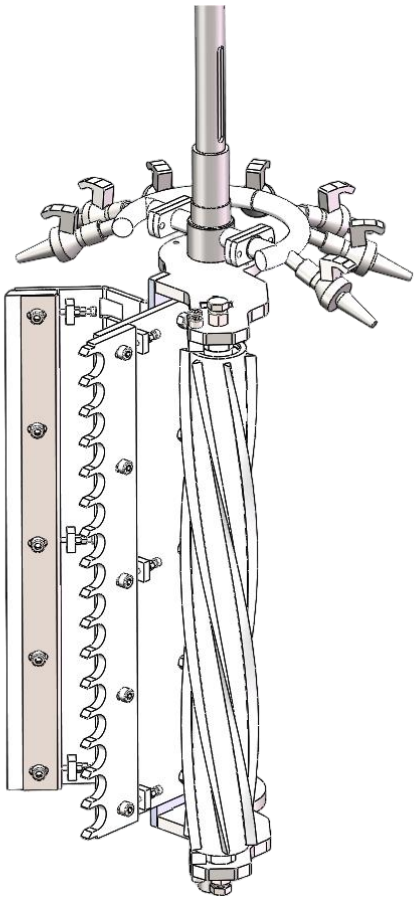
Figure 1

4. Parameters

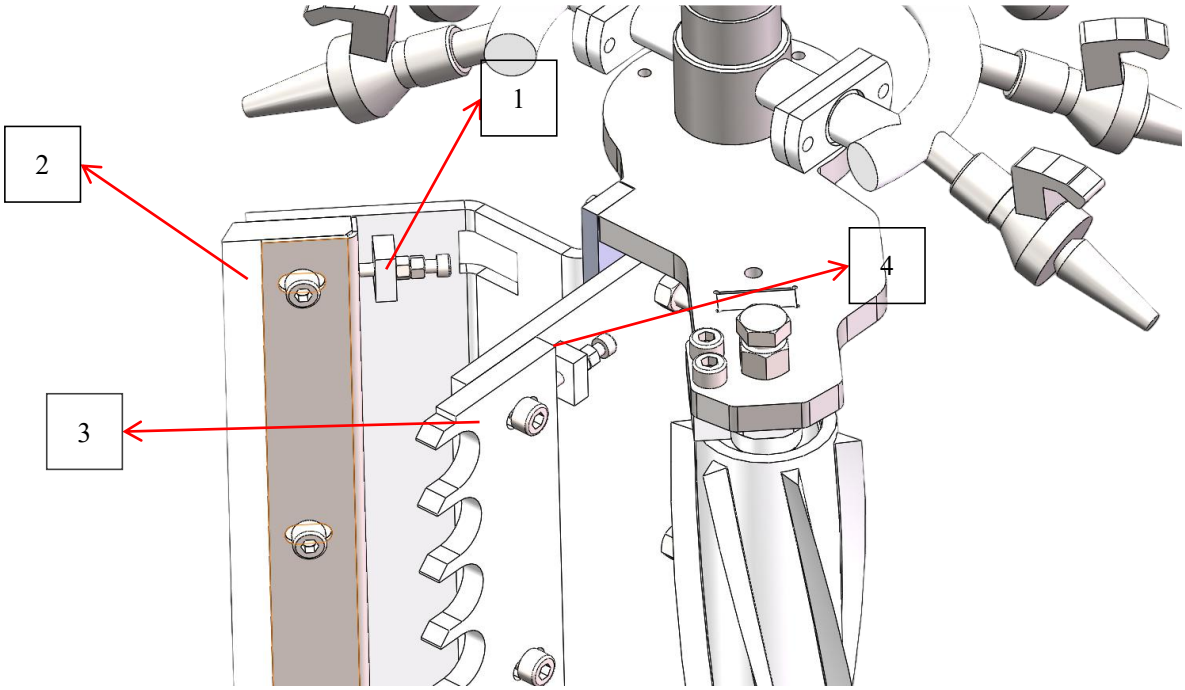
Type	Standard Ice Output t/24h	Dimension mm (L×W×H)	Gear Box Motor Power (W)	Water Pump Motor Power (W)	Water Consumption l/h	Refrigeration Power (kW)	Inflow Tube OD Φ (mm)	Air Suction Tube OD Φ(mm)	Weight (t) kg	Water Inlet Pipe (female threaded)	Water Spill over Pipe (OD)
FF2ES	2	1250*870*1350	180	65	83	11.0	12.7	22	146	3/4″	Φ21

Notes: 1. Standard working condition: Ambient temperature: 25℃ and inelt water temperature: 16℃. Evaporation temperature shall be -32℃ and condensation temperature shall be 45℃ (air-cooled) or 40℃(water-cooled).
2. Power supply: 380V/50HZ/3N
3. Refrigerant :In nameplate（Feed-in through direct expansion）
4. Inlet water pressure: 0.15-0.5MPa

三、Graphical illustration of ice blade gap adjustment for a flake ice machine



Using an industrial gap gauge, check the top and bottom of the ice skate in at least 4 directions (4 equal points) around the evaporator as shown in the diagram. The gap should be 0.1-0.15mm in each direction, otherwise the manufacturer should be contacted.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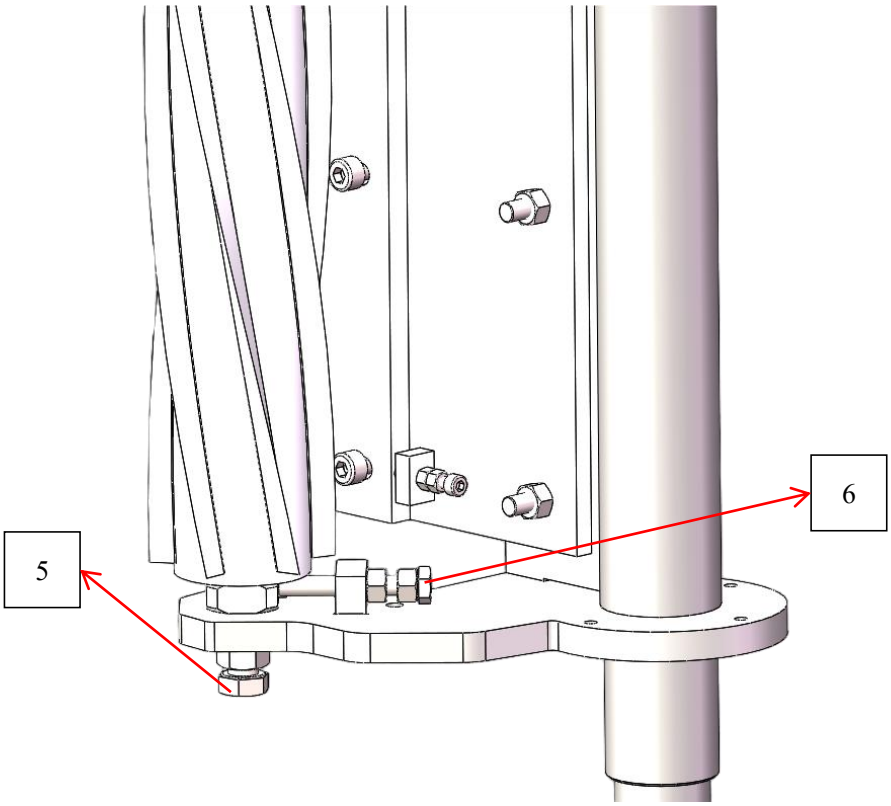
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1.Plastic scraper top wire bolt
2. Plastic scraper fixing bolt
3.Toothed scraper top wire bolt
4. Toothed scraper fixing bolt
5, spiral ice cutter fixing bolt
6. spiral ice cutter top wire bolt

四、Sacrificial anode instructions

For 304 and 316 stainless steel, the stainless steel passivation film is easily damaged in marine environments containing aggressive ions such as Cl-, microorganisms, dissolved oxygen or oxidising agents, resulting in stainless steel being susceptible to corrosion. Numerous studies have shown that the service life of stainless steel can be significantly increased by using the cathodic protection method of sacrificial anode (Zn-Al-Cd) for cathodic protection of stainless steel manufactured ice machines.

In order to better prevent the corrosion of seawater on the ice machine, we use the cathodic protection method of sacrificial anode, sacrificial anode method of cathodic protection is through the corrosion of the sacrificial anode dissolution (consumption) for the protection of metal structures to provide cathodic protection current, sacrificial anode method of cathodic protection effect and the performance of the sacrificial anode material has a direct relationship with the performance of the sacrificial anode material itself, we choose the sacrificial anode material is a zinc-aluminium-cadmium alloy, this alloy can make the ice machine sacrificial protection, the service life of stainless steel can be increased significantly. This alloy can make the ice machine sacrificial anode cathodic protection potential domain is -1V (relative to saturated copper sulfate reference electrode).

The following measures and precautions are taken:
In order to ensure that the water for ice making is not contaminated, we fix the zinc alloy individually inside a special sacrificial anode tank, the screws for fixing the zinc alloy block should be kept tight and reliably connected to keep the conduction state.

The zinc alloy used in the sacrificial anode should be completely submerged in seawater.

The seawater in the sacrificial anode water tank should maintain a certain degree of fluidity, and the water tank should slowly enter and discharge seawater to ensure the solubility of the zinc alloy and better play the role of sacrificial anode. The seawater discharged from

the tank should be treated as wastewater and should not be used for other purposes. It is necessary to frequently check the anode protection water tank to clean the water tank, keep the inside of the water tank clean, clean up and remove the sediments produced inside the water tank due to the dissolution of zinc block.

After strict calculation, the material of sacrificial anode zinc alloy needs the weight of 2Kg, and should replace the zinc alloy block every half a year, otherwise the protection effect will become weak.
Sacrificial anode material should not be replaced arbitrarily.

The location of the sacrificial anode tank parts and the interface location are shown in the following diagram.