



Guangzhou Icesource CO., Ltd.

## Industrial Block Ice Machine

Be engaged in general equipment applications in low temperature technology and developing of exhaust heat utilization technology in refrigeration system.



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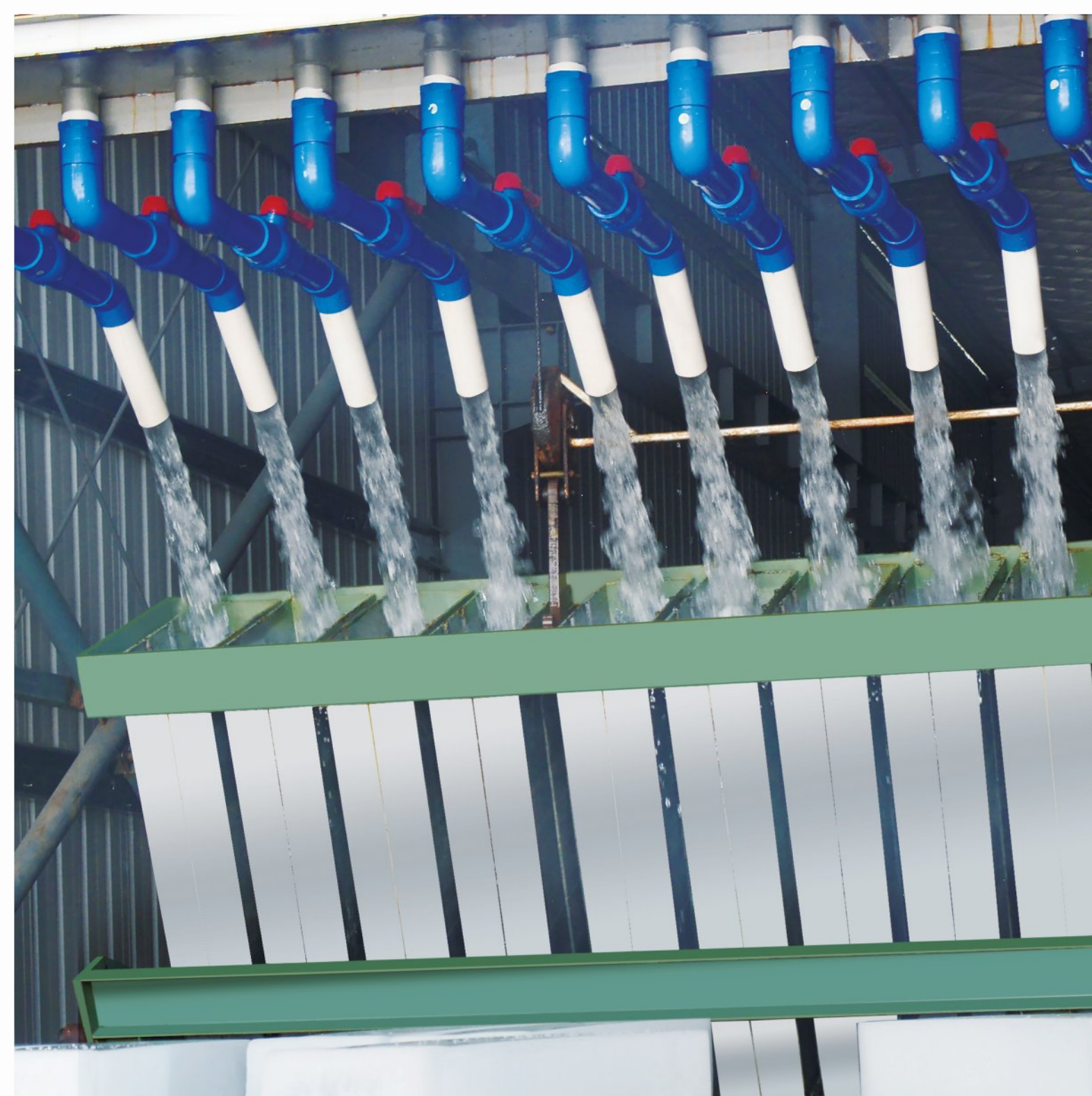
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CBFI 80 tons civil construction block ice machine



### Block Ice

The biggest ice size, the smallest contact area with the outside world, and difficult to melt.

### Block Ice Size

Block ice size can be customized depend on bucket size. It can also crush according to different requirements then applied in different industrial area.

### Ice Feature

Block ice with the feature of large ice size, large refrigeration storage, melting resistance, low cost and easy operation. After crushing, block ice contact area with goods will enlarge, which can quickly cool down the food, slow down food deterioration, and prolong the preservation time.

### Block Ice Application

Ports, ice factories in docks, food processing, aquatic products preservation, cooling, long-distance transportation, aquatic products, food preservation, cooling in special fields, ice sculpture, ornamental use, etc. It is especially suitable for the environment with high temperature and unstable voltage.



# History Background of Block Ice Machine

Trace Back To

## History of Block Ice Machine

The origin of block ice can be traced back to the Zhou Dynasty.

### Principle of Artificial Refrigeration

In 1748, Professor William Coulomb demonstrated the principle of artificial refrigeration at the University of Glasgow laboratory in Scotland.

1748

### The First Shell Tube Type Block Ice Machine

In 2004 years , Mr. Hongbo Yang firstly made the research and development the first External Circulating Freon Shell Tube Type ice block machine in China.

2004

### Guangzhou Icesource second generation block ice machine

In 2013, Guangzhou Icesource developed the second generation block ice machine - Coil type evaporator block ice machine after technological innovation and sedimentation. CBFi second generation block ice machine energy consumption is as low as 62~68 degrees for making 1 ton ice. Our company improves market competitiveness by saving operating costs for customers with more excellent equipment quality and performance.

2013

### The First Ice Maker

In 1850, John, a physicist from Florida, USA, showed the first ice maker at his private party. It marked the industrialization of artificial ice making.

1850

### Guangzhou Icesource Overseas Market

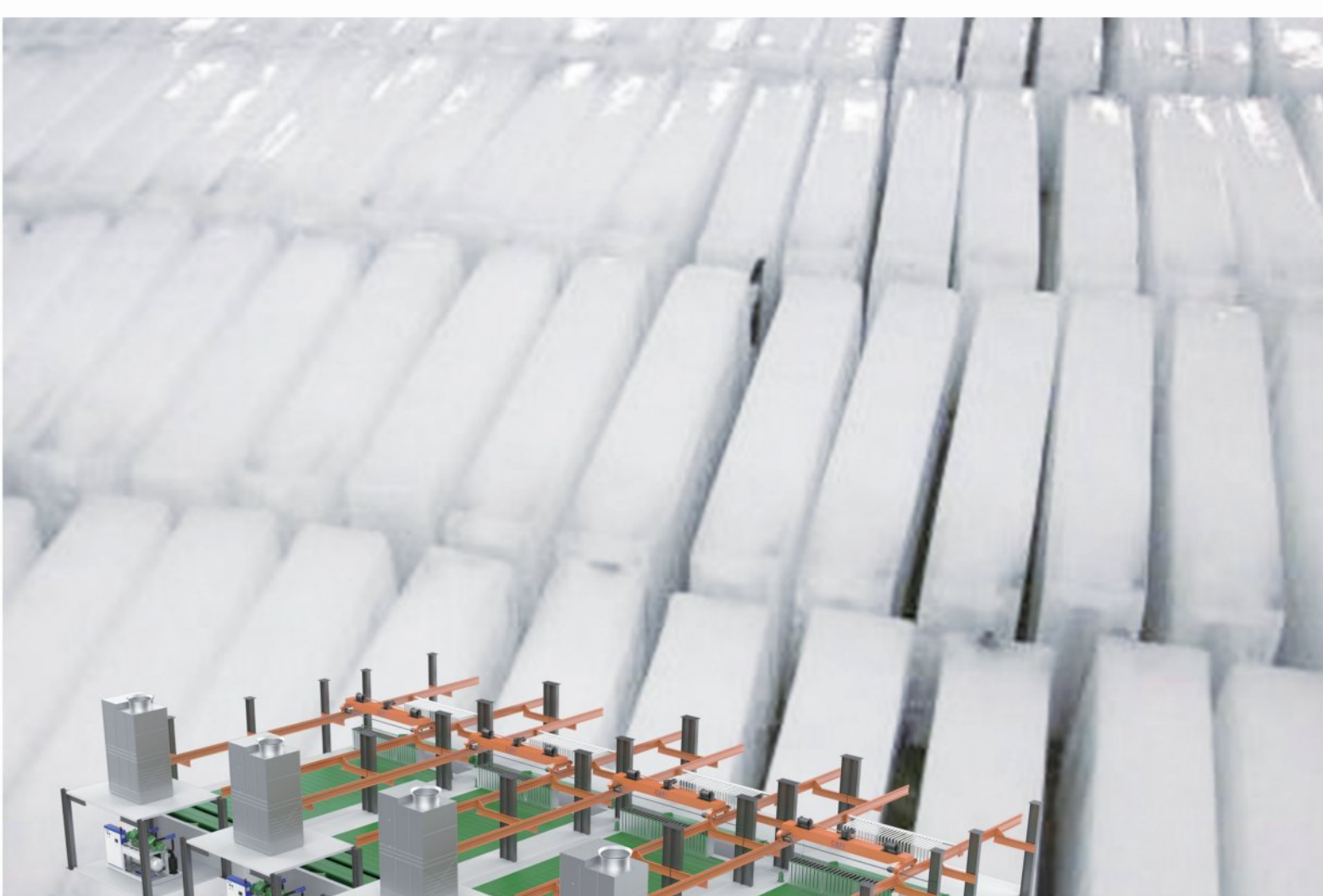
Guangzhou Icesource catch the development of the market in 2004, and expanded the overseas market. The shell tube type block ice machine is popular in Africa, the Middle East, Southeast Asia, Oceania and South America. the domestic counterparts feel this type of equipment in the heat of overseas markets, competing to imitate this equipment.

2007

### Large Freon Block Ice Machine Production System

Guangzhou Icesource Co.,Ltd. has been responsible for the construction of several large Freon ice block machine production system , accumulated valuable experience in engineering project design and processing , and successfully applied this experience to the technological transformation of small ice block machine production .

Milepost



Guangzhou Icesource block ice machine  
10 tons -200 tons block ice machine adopts civil design.  
We are the first manufacturer of 100 tons Freon large block ice machine-Malaysia  
100 block ice machine project. Guangzhou Icesource invented the first external circulating Freon shell tube type block ice machine, and got the National productive practical patent. The block ice machine easy to install, and the integrated unit makes the ice machine install as easy as air conditioning. The ice block machine adopts intelligent control system, so the ice making process is unmanned.  
It has high ice making speed, high hardness, difficult to melt and the output capacity is not affected by the environmental temperature. The average life of Guangzhou icesource block ice machine is as long as 20 years.

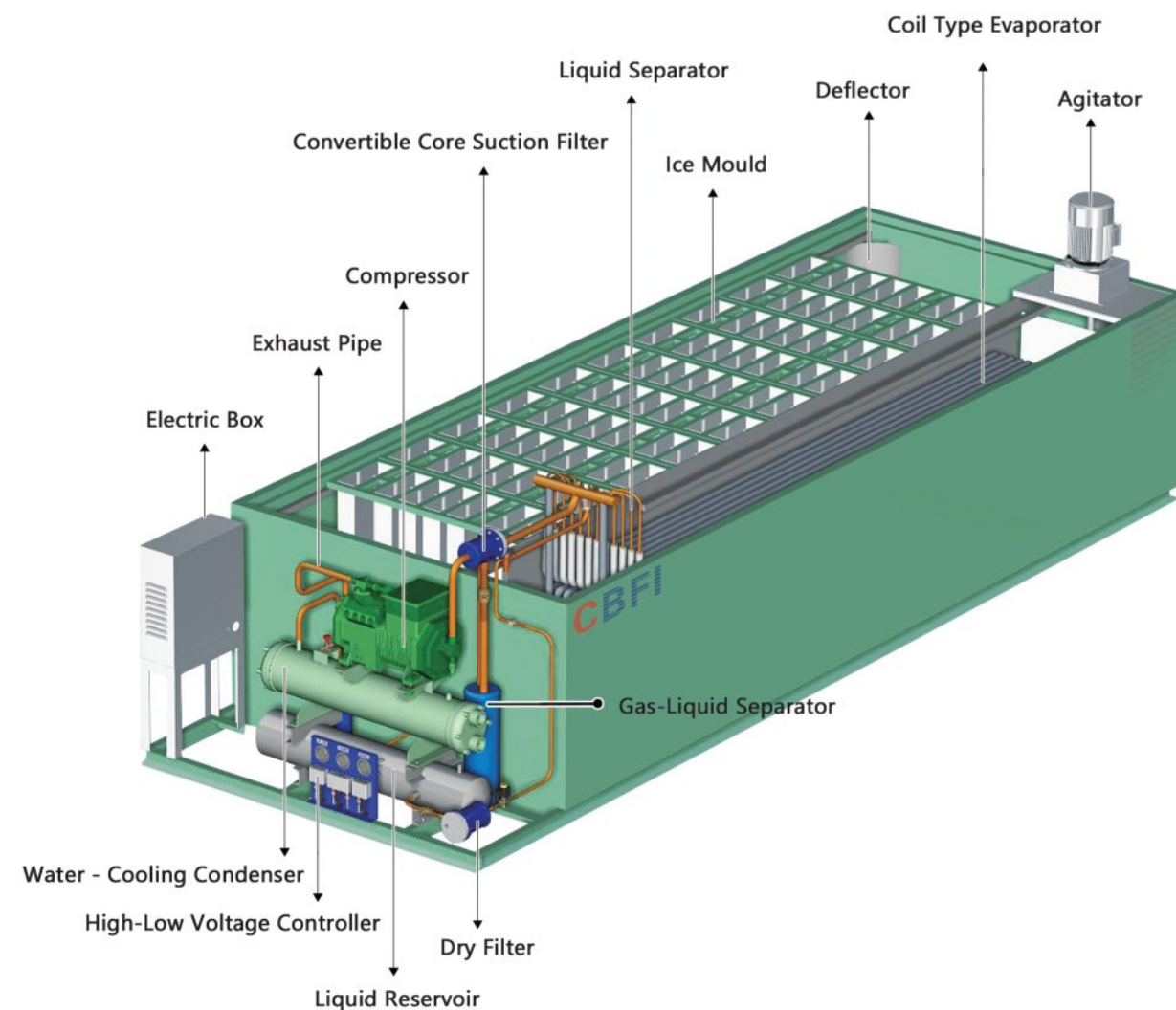


## Design structure diagram of integrated block ice machine

Integrated block ice machine within 10 tons adopt Integral design.

Advantage:

- Water temperature is as low as -18 degrees centigrade.
- Small size, easy to move.
- The design of coil type evaporator can make the system return oil smoothly, which will avoid compressor piston clamping phenomenon.
- Integrated design, convenient for the whole machine testing in the factory with stable performance, simple installation.

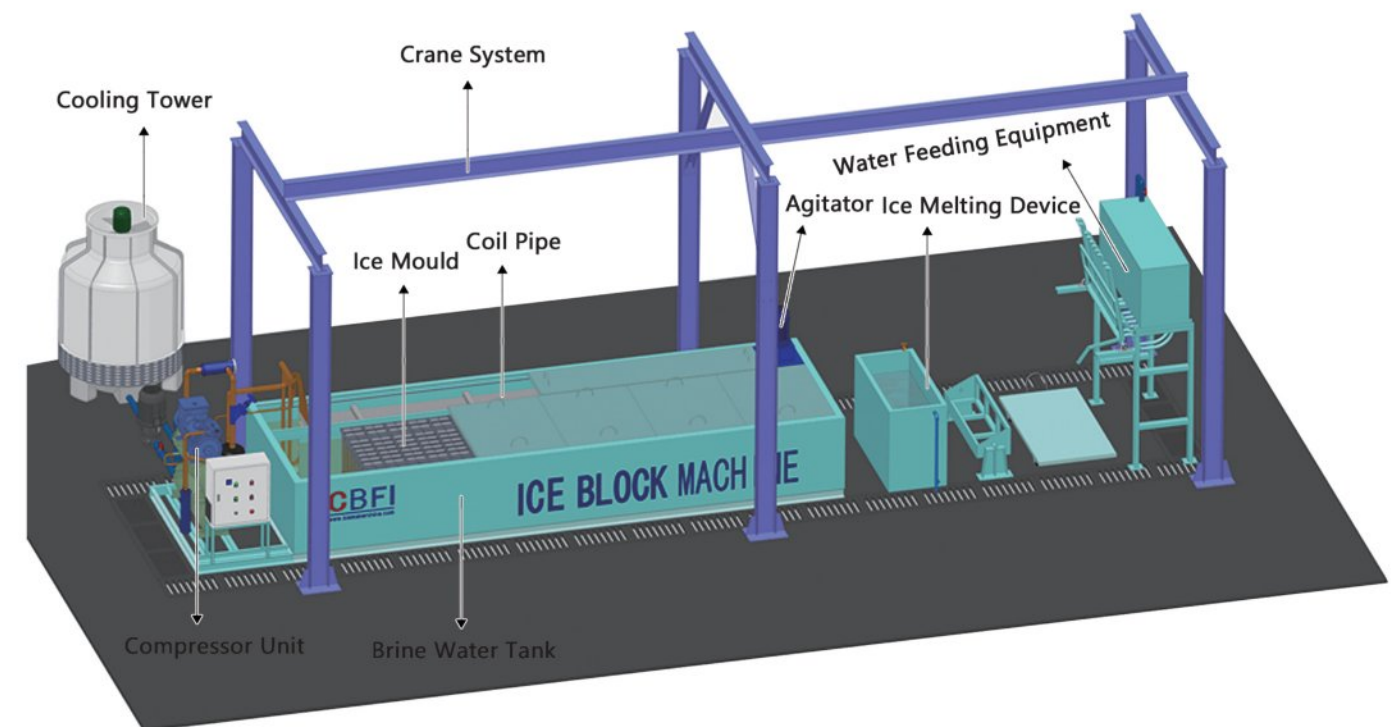


## 3D Block ice machine ice making diagram

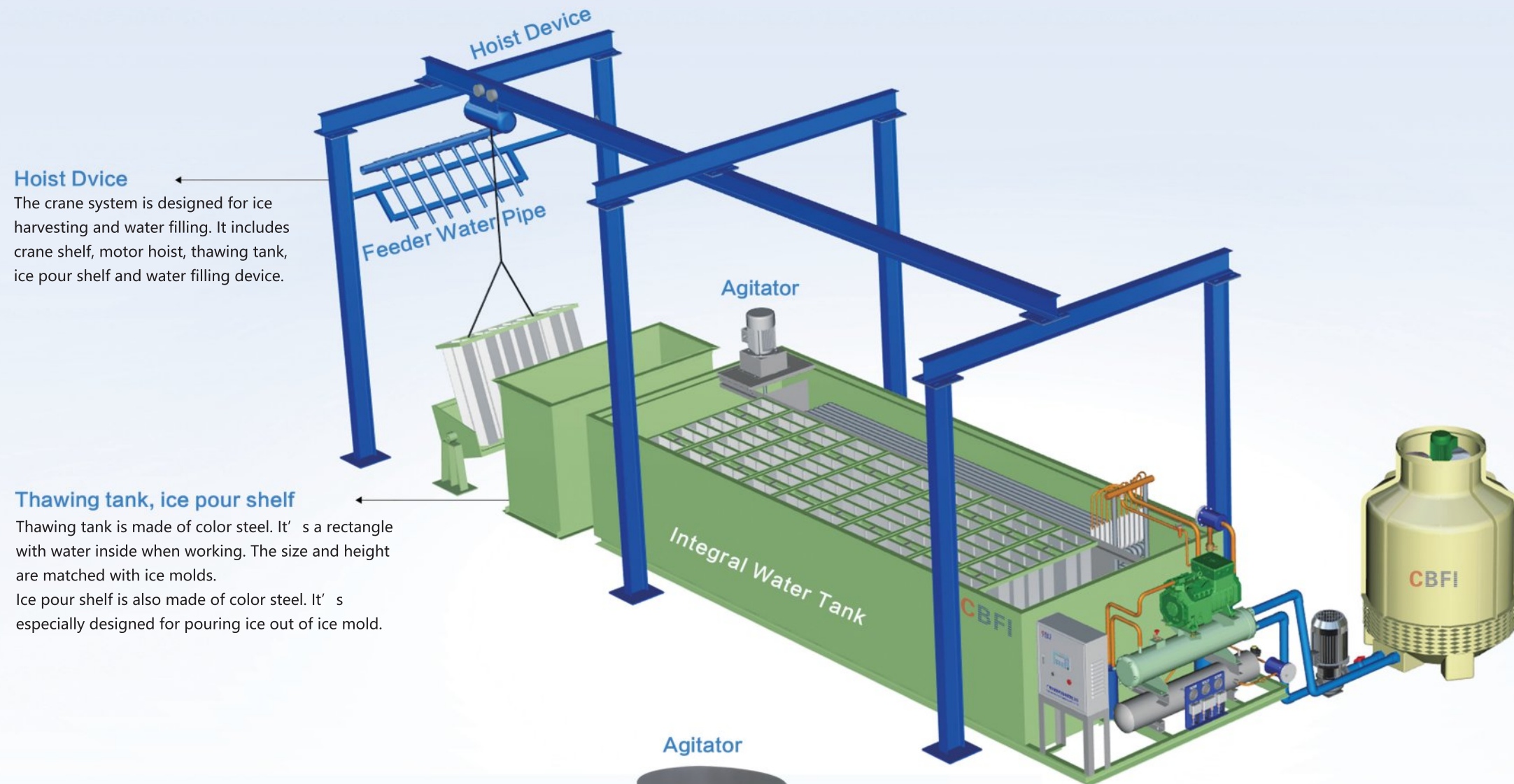
It has been 10 years since the invention of the first generation of shell tube type block ice machine. After 10 years technical precipitation, Guangzhou Icesource developed the second generation coil type block ice machine.

It achieved Guangzhou Icesource original dream: to make more ice with less electricity.

1. After adopting coil type evaporator, it is no need to worry about the damage of evaporator due to not adding salt in time and the density of the brine water become low during ice making.
2. The power consumption of ice making reduce from 110 k.w per ton ice to 75 k.w per ton ice, which means the equipment is more energy saving.







### Hoist Dvice

The crane system is designed for ice harvesting and water filling. It includes crane shelf, motor hoist, thawing tank, ice pour shelf and water filling device.

### Thawing tank, ice pour shelf

Thawing tank is made of color steel. It's a rectangle with water inside when working. The size and height are matched with ice molds.

Ice pour shelf is also made of color steel. It's especially designed for pouring ice out of ice mold.

### Agitator

### Agitator

Agitator can make the brine water heat exchange more efficient inside the ice tank. It's installed at the corner of ice tank. Agitator makes the brine water mix faster. It's more efficient and stable than water pump. Do not worry about the high cost of maintenance caused by damage to the water pump.



### Integral water tank

Water tank surface has anti-corrosion process, using three layers' paint. Paint is imported from US marine anti-corrosion paint, effectively enhance the anti-corrosion performance. Paint can stand low temperature. So water tank print can stay for long term. CBFI water tank life time is 35% longer than other factory's.



When adding anti-corrosion inhibitor into water tank, brine water will become yellow.

### Brine water system

Brine water indirect ice block machine uses brine water as the agent of heat exchange, by cooling down brine water to absorb heat from water inside the ice molds, then water in molds freeze into ice. Brine water type machine is stable and easy to operate, it's very convenient to store and transport ice. Brine water system is the most widely used design to produce non-edible ice, its advantages are not only occupies a small area to install refrigeration system but also gains a larger heat exchange area.



### Large capacity refrigerant reservoir

Our second generation of product line adopts large capacity refrigerant reservoir with intelligent controlling system we improved during the last 10 years, we can make sure that our ice machine won't have liquid strike inside the compressor while it's working under a large temperature difference situation, that makes our ice machine the best product to protect compressor which is the most vital component comparing like products.



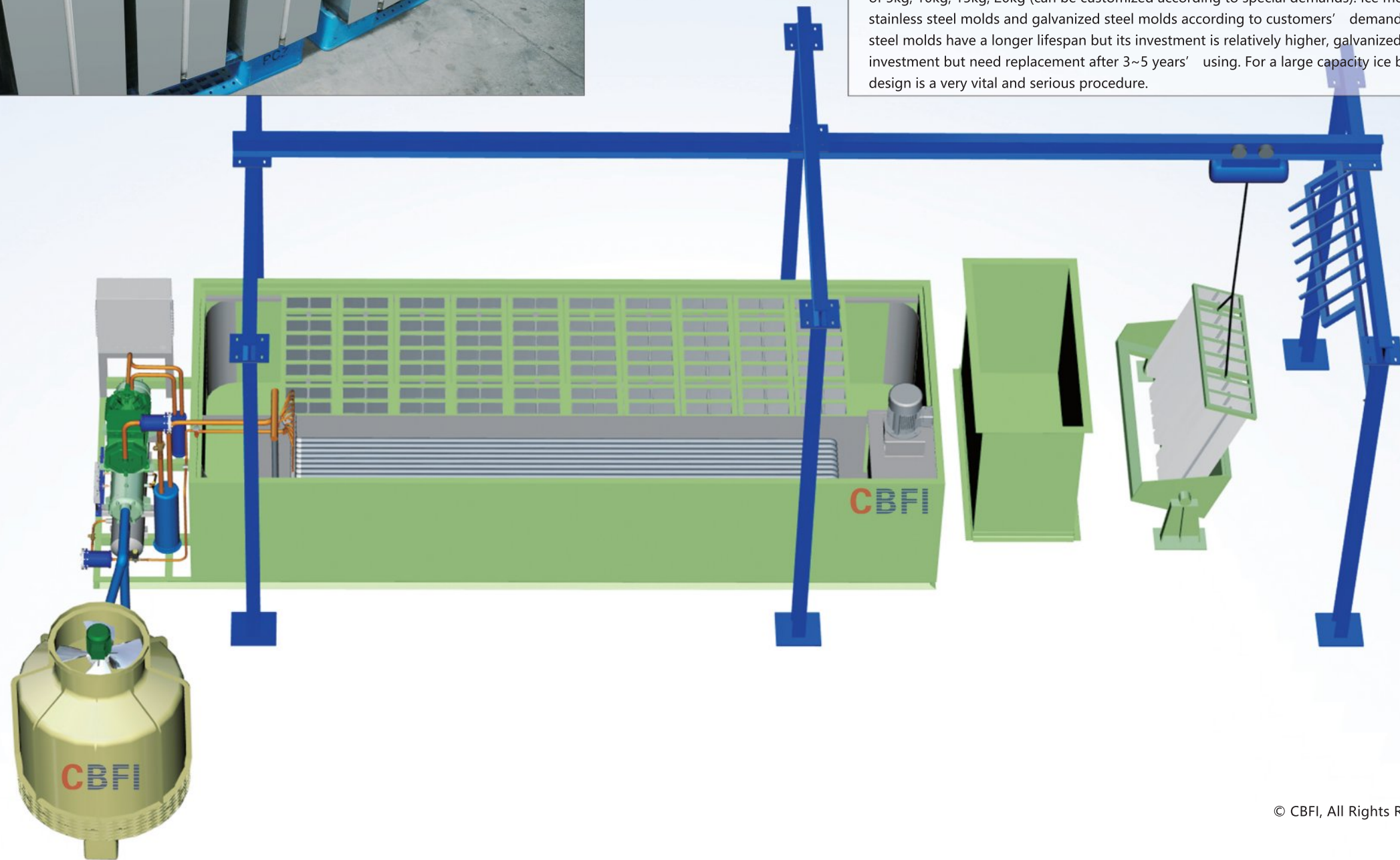


Ice molds are laser cut and welded automatically to finish for just one molding.

Ice block machine molds



Ice molds divided into two kinds: hand-held and machine-operated.  
Hand-held: there are 2 lifting yokes at the top, people use them to lift the ice altogether with ice molds out from the ice shelf. Machine-operated: A row of ice molds are welded together with a ice shelf, ice harvesting and adding water is operated by rows, more efficient. Integrated ice block machine has ice molds of 5kg, 10kg, 15kg, 20kg (can be customized according to special demands). Ice molds can be differed by materials to stainless steel molds and galvanized steel molds according to customers' demand and investment. SUS304 stainless steel molds have a longer lifespan but its investment is relatively higher, galvanized steel molds have smaller initial investment but need replacement after 3~5 years' using. For a large capacity ice block machine, confirming ice molds design is a very vital and serious procedure.



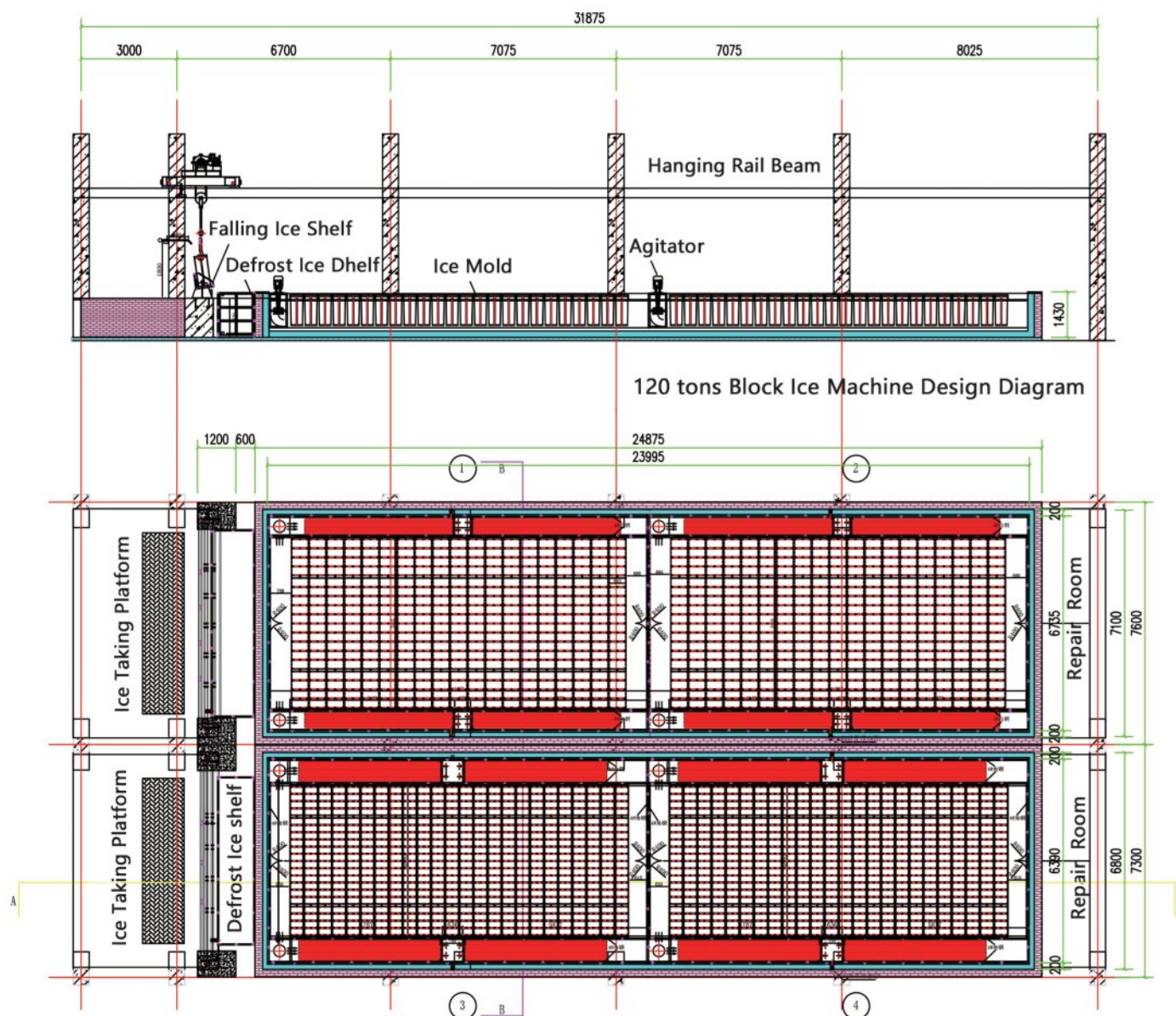


## Civil construction block ice machine

Big block ice machine above 20 tons adopt civil construction design.

Civil construction block ice machine:

Bigger than 20 tons block ice per 24hrs to 100 tons per 24hrs ( bigger than 100 tons per day ) is usually defined as large block ice machine. It' s necessary to construct in customer factory, The refrigeration unit, ice mold is completed in the factory brine water tank production, installation, commissioning will be done in customer factory.



## Large civil construction block ice machine



60 tons Civil Construction Block Ice Machine



100 tons Civil Construction Block Ice Machine



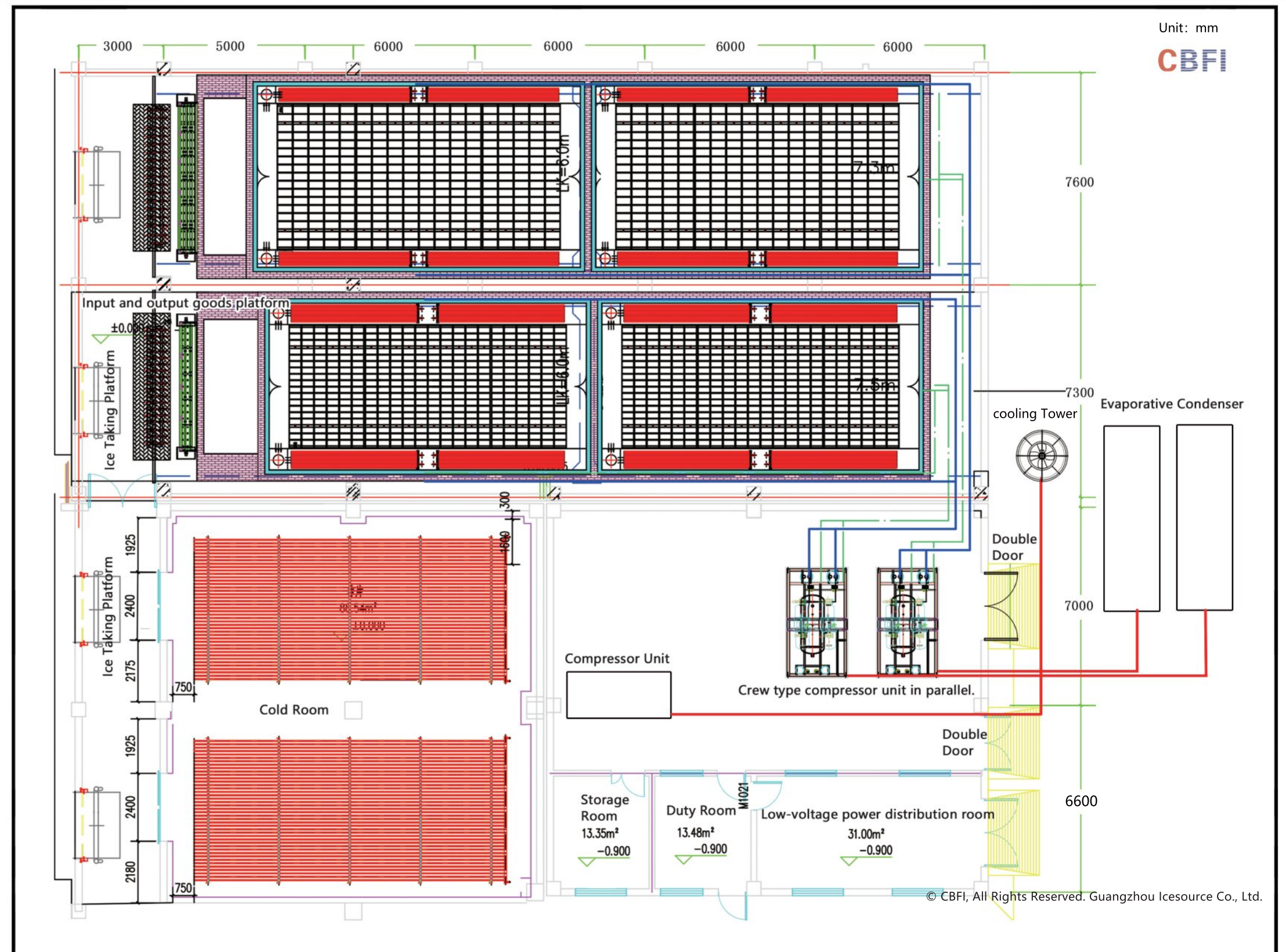
150 tons Civil Construction Block Ice Machine



## The Solutions of Civil Construction Block Ice Machine Ice Factory in Philippines

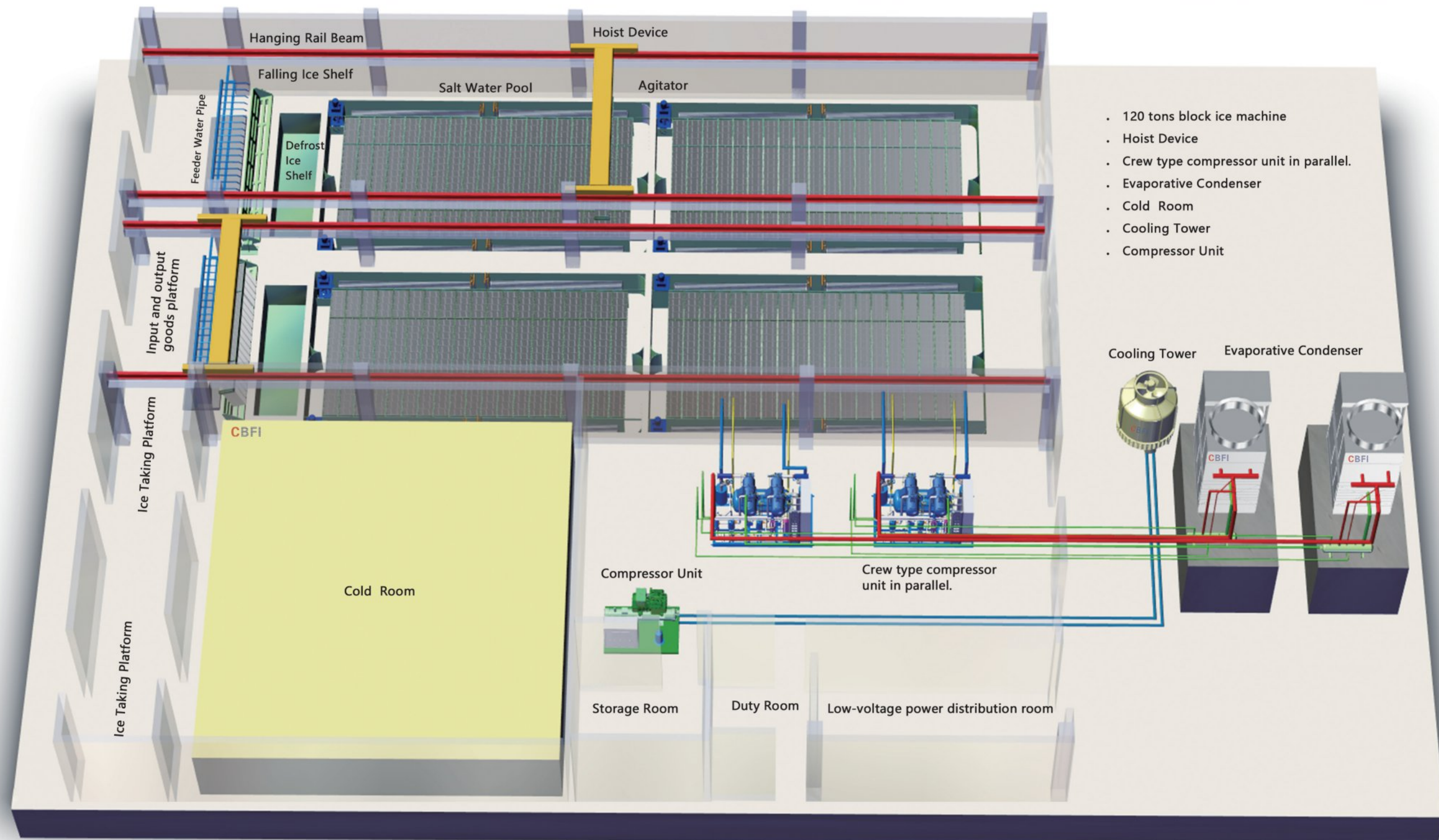
Standard facilities:

In order to improve production efficiency, block ice machine adopt screw type compressor unit in parallel.





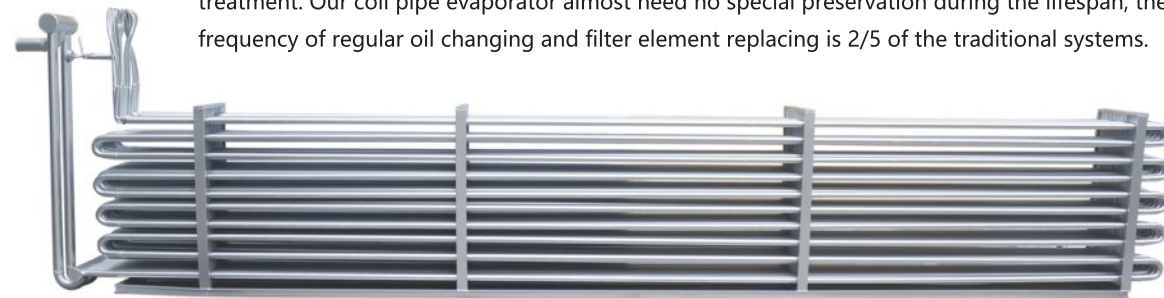
## 120 tons industrial ice block machine simulated diagram.





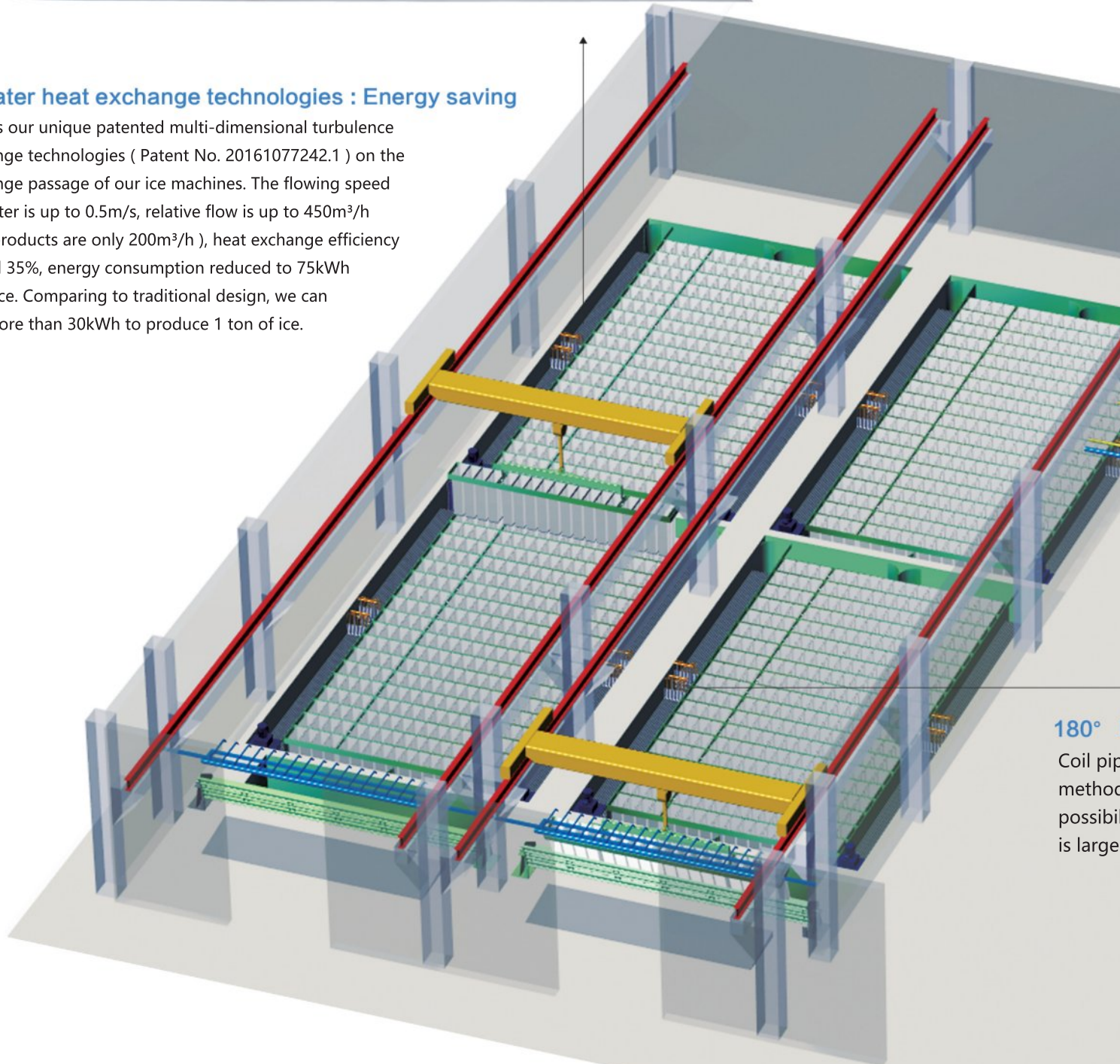
### Coil pipe evaporator

CBFI's patented coil pipe evaporator adopts special seamless steel tubes whose thickness is 3mm. Each tube will be detected with X-rays to make sure there is no flaw, inside tubes we adopts abrasive blasting treatment to remove rust. The evaporator we produces are clean, sustainable and effective, each tube can work 20 years after acid pickling and anti-corrosion treatment. Our coil pipe evaporator almost need no special preservation during the lifespan, the frequency of regular oil changing and filter element replacing is 2/5 of the traditional systems.



### Brine water heat exchange technologies : Energy saving

CBFI adopts our unique patented multi-dimensional turbulence heat exchange technologies ( Patent No. 20161077242.1 ) on the heat exchange passage of our ice machines. The flowing speed of brine water is up to 0.5m/s, relative flow is up to 450m³/h ( ordinary products are only 200m³/h ), heat exchange efficiency is improved 35%, energy consumption reduced to 75kWh per ton of ice. Comparing to traditional design, we can save you more than 30kWh to produce 1 ton of ice.

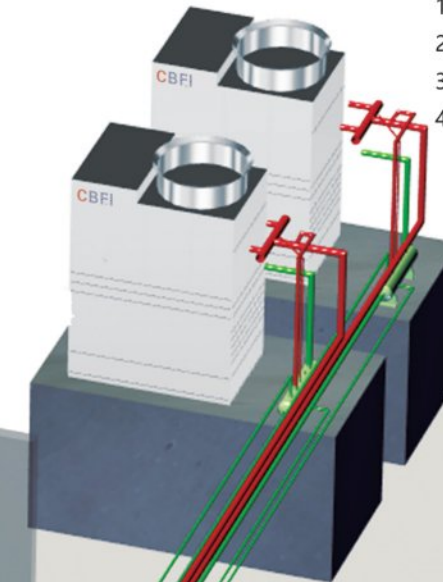


### Evaporative Condenser

Features : Compact structure, small occupying area, water saving, energy saving, modular design, long lifespan, independent operation unit, stable and reliable.

1. Good energy saving effect
2. Good water saving effect
3. Integrated design with lower investment
4. Long lifespan

Evaporative Condensing



Coil pipe solved the problem of damaging coil pipe by evaporator freezing. Cause by the lower salt concentration.

Coil Pipe Evaporator

### 180° Hydraulic Bending to Shape in One Molding

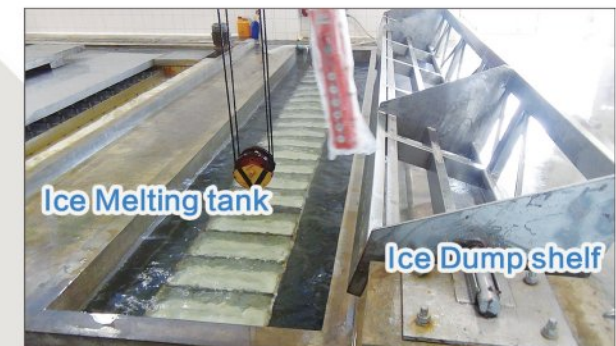
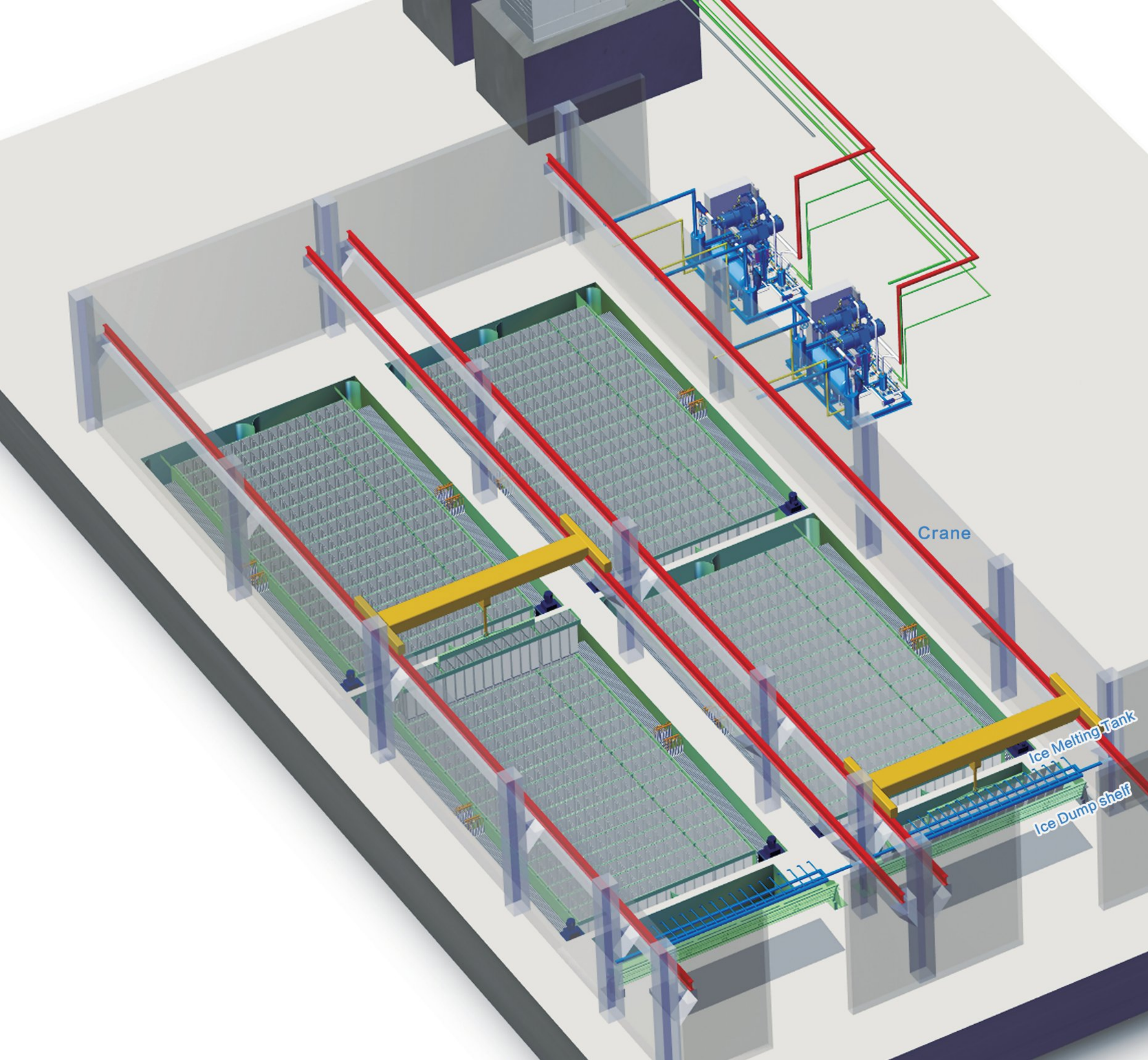
Coil pipes evaporator use 180°hydraulic elbow molding method, reduced the welding point. Also reduce the possibility of evaporator leakage. Coil pipes thickness is larger than copper pipes.

### Refrigerant Distributor

Distribute the refrigerant evenly into the pipes.







#### Ice Melting Tank

Melting ice tank put normal water for melting the ice which stick with the ice mold, then ice can come out smoothly from the ice molds.

#### Ice Dump Shelf

Supporting a row of ice, make the ice come out by tilting.



#### Ice Taking Platform

Moving block ice easily to cold room or truck.



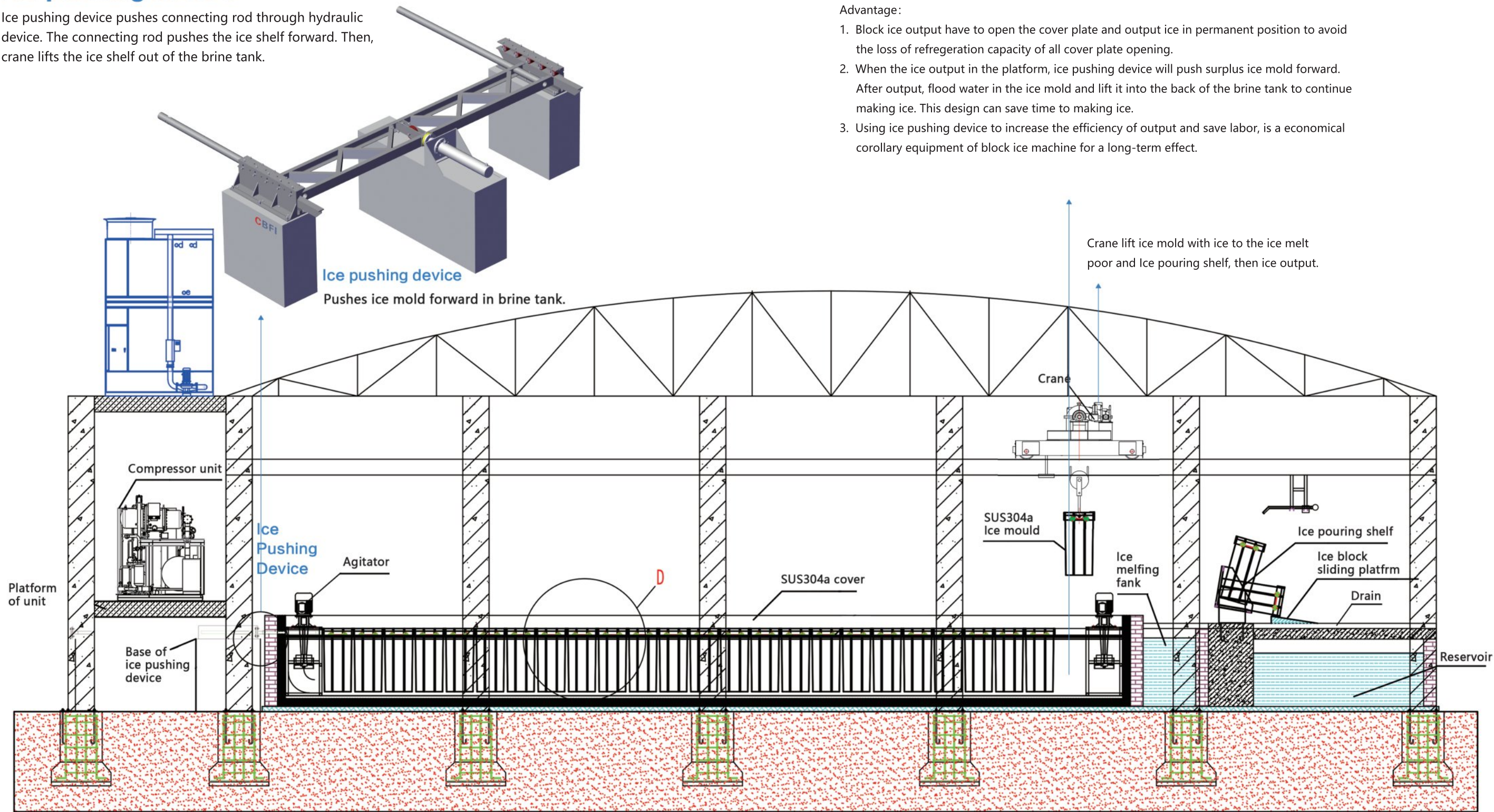
#### Water Feeding Equipment

Reduce the high cost and low efficiency for filling water by manpower, shorter the time for filling water, and improve the working efficiency. Making ice faster and save manpower.



# Ice pushing device

Ice pushing device pushes connecting rod through hydraulic device. The connecting rod pushes the ice shelf forward. Then, crane lifts the ice shelf out of the brine tank.



Use ice pushing device to push surplus ice mold forward in the brine tank to replenish the blank.

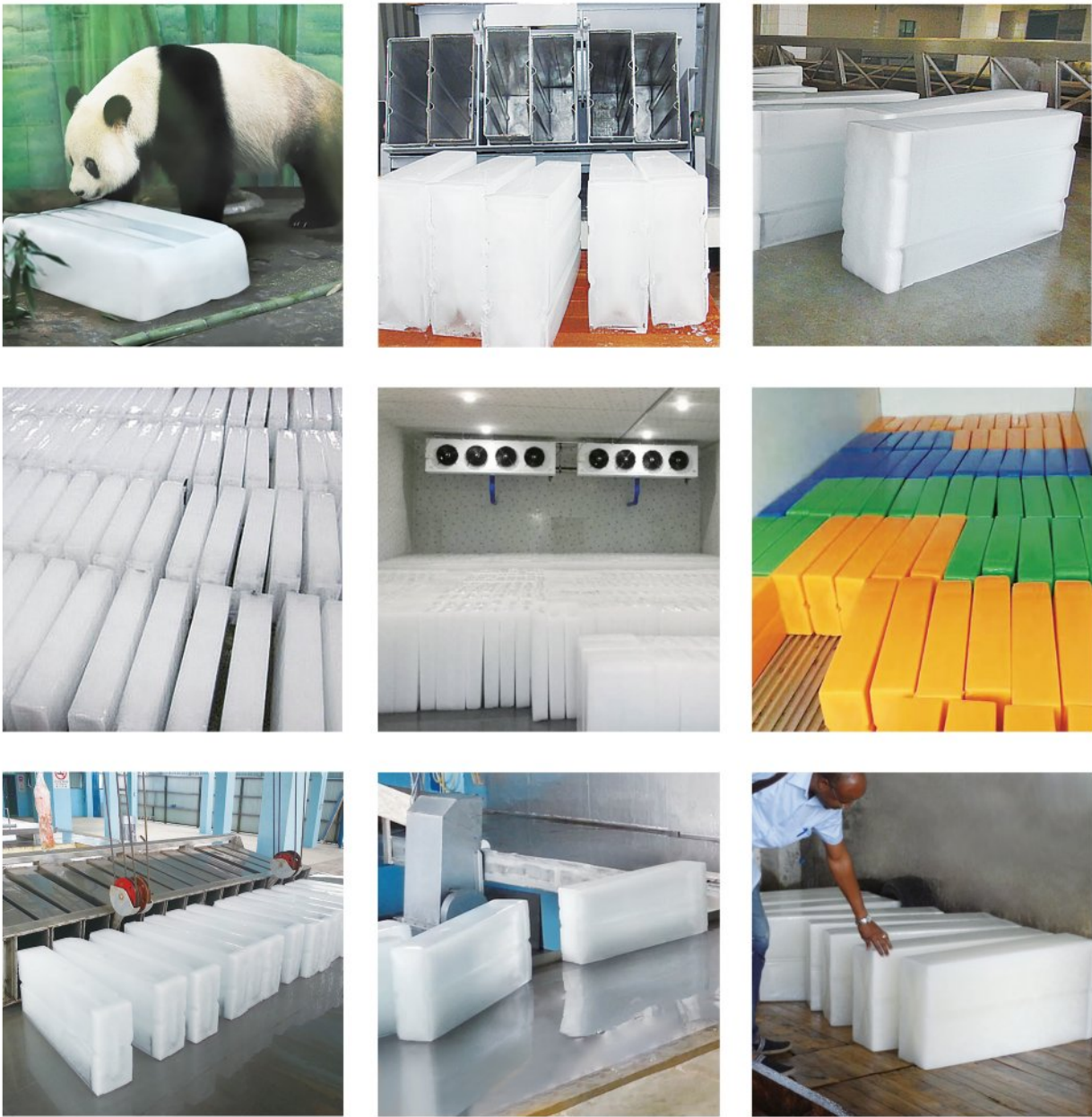
Advantage:

- 1. Block ice output have to open the cover plate and output ice in permanent position to avoid the loss of refrigeration capacity of all cover plate opening.
- 2. When the ice output in the platform, ice pushing device will push surplus ice mold forward. After output, flood water in the ice mold and lift it into the back of the brine tank to continue making ice. This design can save time to making ice.
- 3. Using ice pushing device to increase the efficiency of output and save labor, is a economical corollary equipment of block ice machine for a long-term effect.



# Block Ice

The contact surface of block ice is small, not easy to melt.  
The contact surface of crushed block ice is large, good for cooling goods, keeping fresh .



# Application

Block ice has big surface, big cold storage, melting slowly, cost low. The size of block ice can be customized by different size of ice molds. Also can be crushed based on different requirement, crushed ice can be used for all industrial fields.





## Block ice machine domestic customer case

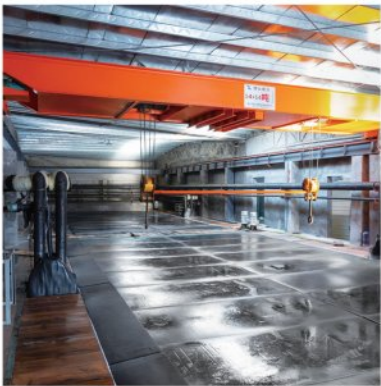
CBFI Block Ice Machine has been exported to many countries and area. Its excellent quality get great reputation from customers at home and abroad !



120 tons Block Ice Machine



100 tons Block Ice Machine



84 tons Block Ice Machine



60 tons Block Ice Machine



50 tons Block Ice Machine



50 tons Block Ice Machine



30 tons Block Ice Machine



20 tons Block Ice Machine



Fujian 95 tons Block Ice Machine

## Block ice machine international customer case



150 tons Block Ice Machine



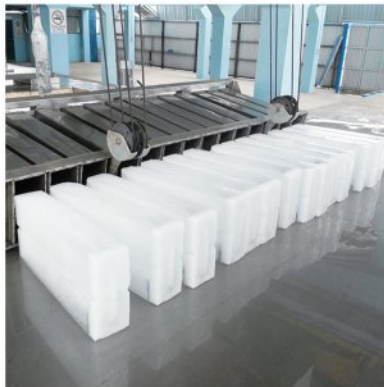
113 tons Block Ice Machine



100 tons Block Ice Machine



100 tons Block Ice Machine



60 tons Block Ice Machine



55 tons Block Ice Machine



30 tons Block Ice Machine



10 tons Block Ice Machine



Malaysia 100 tons Block Ice Machine