



**BIOBASE®**



## Refrigeration Storage Solutions



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# BRIEF INTRODUCTION

BIOBASE, is a leading specialist in the design and construction of Clean Operating Room, ICU , P2/PCR/HIV Laboratories, PIVAS and purification engineering as well as a specialized integrated business entity engaged in Purification Equipment, Purification Engineering, Purifying Air-Conditioning System and Special Products for clean rooms, providing one-stop service from design, production, installation & commissioning, and inspection&acceptance. With well-qualified management team, high level R&D technicians, excellent construction team, BIOBASE has developed business across the world.

Following the business philosophies of “To survive on quality, to develop on technology and of “Market-guided, and service-oriented”, BIOBASE is committed to provide the users with full-scale, diverse and wide-ranging services.

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## Features of Composite Refrigeration Storage



### 1. New Materials:

Stainless Steel Plates, color steel plates and embossed aluminum plates are used to make the wall panels of the refrigerated warehouse and rigid polyurethane foam is used for insulation. The composite wall panel features light weight, high intensity, good thermal insulation performance, corrosion resistance, and mothproof and it is also toxin-free and mildew-free. This kind of wall panel performs more efficiently at lower temperature.

### 2. Energy-Saving Insulation:

The warehouse has good thermal insulation performance. The temperature drops quickly and maintains for a long time. It can save 30%-40% of energy compared with other refrigerated warehouse.

### 3. Series Sets:

Facilities Available: The wall panels are professionally manufactured. Various options are available and interchangeable. Different combinations of panels bring more choices of cold storage of different sizes and types, which allows customers to make full use of the space of their rooms. Now, there are two major types: indoor and outdoor cold storage warehouse.

Customers can choose suitable room arrangement, such as single-room, dual-room, suite-type and multi-room. Two kinds of cold air distribution are served: air cooler and team exhaust pipes cooler. For the place where lack of water, air-cooling compressor is provided if needed.

### 4. Easy Dismantlement:

The wall panels are connected by inner embedded parts and can be easily dismantled and transported. It takes less time to assemble the components and complete the composite refrigerated warehouse. The total assembling time is only 1/20 or 1/30 of that of a traditional cold storage. A small -medium sized one can be delivered in 3-5 days. It is an ideal solution for moving purposes or remote area with backward transportation.

### 5. Application:

1. Quick frozen food processing and cold storage.
2. Animal slaughter and processing factory.
3. Food processing plants.
4. Indoor assembled refrigeration storage.
5. Seed storage warehouse.
6. Biological and pharmaceutical products.
7. Dairy products storage.
8. Cold container of refrigerated trailers.



## Production Equipment

### 1. Fully-Automatic Laminating Machine



### 3. Numerical-Control Cutting Machine



### 2. High-Pressure Foaming Machine

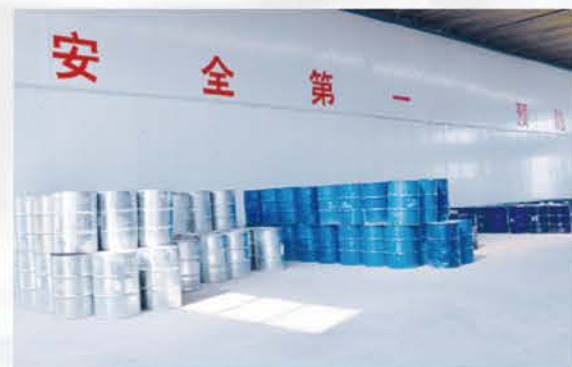


### 4. Numerical-Control Bending Machine



## Material Storage

### 1. Raw Material Storage



### 2. Raw Material Workshop



## Wall Panel



### 1. Polyurethane Sandwich Insulation Panel:

Polyurethane is used as the sandwich core of the panel. Stainless steel plates, color steel plates and aluminum plates are used as the castings of the panel. Polyurethane mixed with thermal insulation material is injected into molds and foamed and sticks to a metal surface.

### 2. Features:

1. High intensity and good thermal insulation performance.
2. Scientific design and easy to be assembled or disassembled. Tongue and groove connection and eccentric hooks make the panel flat and the gaps are sealed by sealing materials to reach the great efficiency of the freezing system.
3. Thickness Specifications: 75mm, 100mm, 120mm, 150mm, 180mm and 200mm, etc. Thickness and sizes can be defined by your specific requirements.

### 3. Products:

Thicknesses of stainless steel plate, embossed aluminum plates, color steel plates can be defined by user.

### 4. Specifications:

75mm, 100mm, 120mm, 150mm, 180mm and 200mm. Standardized steel plate width is 960mm, and the length is 1000mm to 12000mm. (Besides: sizes can be defined by your specific requirements.)

| Items      | Density           | Heat Conductivity Coefficient | Compressive Strength | Bending Resistance Strength | Tensile Strength  | Water-Absorbing Property | Self-Extinguishment Property |
|------------|-------------------|-------------------------------|----------------------|-----------------------------|-------------------|--------------------------|------------------------------|
| Unit       | kg/m <sup>3</sup> | W/m·k                         | kpa                  | N/cm <sup>2</sup>           | N/cm <sup>2</sup> | cm <sup>2</sup>          | sec                          |
| Test Value | 38-50             | ≤0.024                        | ≥160                 | ≥24.5                       | ≥24.5             | ≤3                       | ≤6                           |



# Storage Doors

## 1. Half-Embedded Door



The door of a freezer is half embedded into the doorframe, easily assembled and with low cost. A small door can be opened in main door for convenient delivery.

**Applicable Temperature:**  $-45^{\circ}\text{C}$ — $+50^{\circ}\text{C}$ .

**Size of Door Hole:** 700mm(width)\* 1700mm(heigth) — 1200mm(width) \* 2000mm(heigth).

### Door Panel:

1. With simple and firm manufactured structure and produced by special molding process.
2. Use hard polyurethane as inner insulation materials.
3. Generally with three thickness: 100mm, 120mm and 150mm. The volume weight is approximately 40—50 kg/m<sup>3</sup>.
4. Sealing strips are oil, acid and aging resistant. Don't need special process to assemble or replace.

### Door Frame:

1. Plastic material and plate shaped the casting, with foamed polyurethane inside, cold bridge free and with very good thermal insulation performance.
2. The freezer door frame is equipped with electric heating wire, anti-freezing effect is remarkable.

## 2. Entrance Door



The door body fits with the doorframe and the door can shut and compress tightly automatically. Being exquisite, it also has good sealing and insulation performance.

**Applicable Temperature:**  $-45^{\circ}\text{C}$ — $+50^{\circ}\text{C}$

**Sealing Strip:** Magnetic strips are fixed in flexible plastic, which can greatly make up the tiny errors caused by production and make great sealing performance.

Application industries: Food, modern industry, supermarket, warehouse, pharmacy and retail business.

**Door Panel:** Use plastic material and panel as castings and foamed polyurethane as inner insulation material, with no thermal bridge and great insulation performance. The door frame is made with self-limiting temperature electric belt, so it doesn't need a temperature controller or manual work to switch the power.

**Specifications:** 75mm, 100mm, 120mm, 150mm, 180mm and 200mm. Standardized steel plate width is 960mm, and length is 1000mm to 12000mm. (Besides: sizes can be defined by your specific requirements.)

## 3. Double Door



The casting is made out of plastic material and panel is well insulated with polyurethane foam core which has no cold bridge. The door opening can be made into door body of different sizes according to various requirements. Two locks are embedded in both doors, which can enhance the pressing force and increase the fulcrums between both doors so as to ensure the tightness.

## 4. Lightweight Sliding Door



1. Well-selected materials, simple structure, and beautiful appearance.
2. Emergency escape device in it ensures safety.
3. Lightweight, economic, easily-operational, flexible.

## 5. Medium Weight and Heavyweight Sliding Door





Adopted international advance technique and made exquisitely, these door are of good sealing, good insulation and long-lasting usage. Emergency escape device in it ensures safety. The system bears panels of heavy weight.

**Panel:** Expanded polyurethane foam core, smooth exterior, good insulation performance. Negative effects caused by pulling rivet are overcome. Particularly, circular bead makes it good-looking.

**Door Frame:** Made from aluminum alloy, clean and tidy exterior, long-lasting usage and hard to rust. It's equipped with self-temperature-limiting heating strip, thus neither temperature control nor manual switch is not needed.

**Slide Way Device:** The aluminum alloy slide way, the guide pulley in it works the pinch roller to make the door separate from the doorframe when the doors are open, and make the doorframe pinch the terrace when the doors are closed.

## 6. Luxury Power-Driven Sliding Door



Adopted international advanced technique, aluminum alloy for the door leaf and doorframe, exquisite, the Luxury Power-driven Sliding Doors have good sealing and insulation performance. The panels operate smoothly and are durable, Large-size panels can be fitted.

**Applicable Temperature:** -45°C—+50°C

**Application Industries:** Food, manufacture, supermarket, storage, pharmacy, retail, etc.

### Optional Fittings:

1. Wireless remote control.
2. Bumping post, installed on the inside and outside of the door opening, in case of hitting by carrier vehicles accidentally.
3. Waterproof switch in and out of the storage.

**Sealing Strip:** Made from EPDM, good chemical stability and ageing resistant performance, wide temperature range of -45°C—+130°C.

**Door Panel:** Polyurethane foam core, smooth exterior, good insulation performance. Circular bead design.

**Door Frame:** Aluminum alloy frame for long service life and durability.

Equipped with self-temperature-limiting heating strip. Either temperature controller nor manual switch is needed.

**Slide Device:** Aluminum alloy slideway.

The guide pulley works with the pressing wheel system to make the door separate from the frame when the doors are open, and pinch the frame and the terrace when the doors are closed.

**Drive System:** Adopting the combination of synchronous motor and encoder, the system operates accurately and precisely. Moreover, the electromagnetic clutch allows the shift between power-driven and manual operation, ensuring the safety and practicality of the sliding doors.

## 7. Power-Driven Bipart Sliding Door



Adopted international advanced technique, aluminum alloy for the door leaf and doorframe, exquisite, the Luxury Power-driven Sliding Doors have good sealing and insulation performance. The panels operate smoothly and are durable. Emergency escape device in it ensures safety. The system bears panels of heavy weight. Large-size panels can be fitted. Fitted with double rack single motor synchronous drive biparting sliding and safety margin it is the most advanced biparting electric sliding door.

Adopting international advanced techniques, good sealing and insulation performance, long service life and smooth operation.

Emergency escape device ensures safety. The system can bear panels of heavy weight and big size.

A dual-gear motor drives synchronous movement of doors.

Safety devices of side frame is available.

## 8. High-Speed Door



It is developed on the base of the advantages of the similar products both home and abroad. It is featured with heat preservation, cold insulation, insect prevention, wind resistance, dustproof, sound insulation, smell prevention, lighting, etc., which can be widely used in areas like food, chemical, spinning, refrigeration, electronic, printing, assembling, precision machinery, logistics, storage and so on.



The high-speed door saves energy, improves air conditioning, improves working efficiency and makes a better working environment. Without any hard parts, the door curtain guarantees the safety of the equipment and staff. The side frame and pathway are made of galvanized steel. Stainless steel and RAL painting are optional. Standardized structure makes it convenient for the renewal of components.

### 9. Industrial Vertical Sliding Door



The panel is color plate filled with expanding polyurethane foam. It can be fitted with different devices according to consumer requirements. The industrial vertical sliding door can be applied to environment-controlled workshops and industries of strict requirement of cleanness, such as pharmacy, food, electronics, printing, supermarket and so on. Distinguished features are good appearance design, high-strength, safety and reliability, smooth and steady movement, low noise, space-efficiency and good performance in sealing and insulation.

It is widely used due to its proper installation condition and good practicability. Its lintel is equipped with torsion spring safety device. When the torsion spring breaks, the door falls less than 50mm. The panel has a wire rope break prevention device. When the ope breaks, the blade in the device clips the guide rail automatically to stop the door from falling. There is an activation safety device at the bottom of the door ensuring that the door stops sliding when there is slight hit and moving at opposite direction. Stainless steel surface plate is optional.

- Door Opening Height:** 2m to 8m
- Door Opening Width:** 2m to 6m
- Lintel High:** ≥150mm
- Inside Extension:** 500mm longer than the height of the panel ( varies according to different ways of lifting )
- Distance between the edge of door opening to the wall:** ≥ 130mm

## Refrigeration and Compressor Components

### 1. Compressor Units



Sanyo Units



Bitzer High-temperature  
Screw four-parallel Units



Bitzer Piston four-parallel Units



Bitzer Low-temperature  
Screw parallel Units



Fu Sheng Double-electrodes  
Screw Parallel Units



Two-parallel Chiller Units



Copeland Piston Parallel Units



Copeland Whirling Parallel Units

Absorbing advanced technology, we choose world-famous brand accessories and strictly examining the performance to make sure that the all are properly matched. The Installation is simple and the units can directly integrate with air cooler, calandria and evaporator to make up a complete refrigeration system, safe and reliable. The compressor units have a complete safety system including prevention against high pressure, low pressure, oil pressure difference, overloading and overheating. What’s more, the units has a good environmental adaptation. Two options are available: indoor and outdoor types. The reliable quality of the units guarantees stable working under harsh conditions.

### 2. Fan



Air Cooler



The Chimey Fan of  
Air Cooler

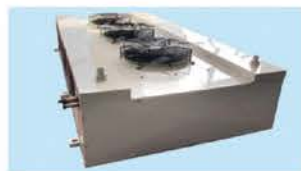


Air Cooler Defrosting  
by Water



Ceiling Type Air Cooler  
With Air-out by One Side





Ceiling Type Air Cooler With  
Air-out by Double Sides



Solenoid Valve



Expensive Valve



Hand Valve

Fan is a kind of cooling equipment in different types of cold storage ( e.g.: civil construction refrigerated warehouse or composite cold store ). There are three options of D series: DL, DD and DJ, which are for different temperature requirement of the stores. The D series fans features compact structure, light weight, space-saving, good control of the temperature, high efficiency, etc. It cools the food preserved quickly, enhancing the freshness of the food.

### 3. Digital Temperature and Humidity Monitor



**Dimension:** 135\*124.35mm

**Temperatue Precision:**  $\pm 0.5^{\circ}\text{C}$

**Humidity Precision:**  $\pm 5\%\text{RH}$

**Sensor:** External sensor with 3-meterwire

**Temperatuer Range:**  $-40^{\circ}\text{C}—85^{\circ}\text{C}$

**Humidity Range:** 0-100%RH

**Application:** Cold Storage

#### Features:

1. High precision.
2. Large LED display indicating temperature and humidity at one time.
3. Long-distance data transmission available.
4. Data is transimitted to the designated server by SIM card.
5. Online data downloading and full resume capability to ensure the safety of records.
6. Well-designed appearence, easy operation, reliable performance, table-mounted or wall-mounted installation.

S500 Series GPRS Temperature and Humidity Monitor is widely used in cold storage, food industry and vaccine transportation, etc. The data is uploaded to the designated server by SIM card inside. Adopting Swiss-made temperature and humidity sensor, S500 GPRS monitor is a industrial degree temperature and humidity monitor of high precision and reliable performance.

## Shelves

### 1. Shelf 1



**Dimension:** 600mm\*1800mm\*1760mm

**Material:** Stainless Steel 304

**Cross-Section of the Column:** 50mm\*50mm\*1.5mm

Stainless Steel 304 square hollow section

**Cross-Section of the Beam:** 50mm\*50mm\*1.5mm

Stainless Steel 304 square hollow section

**Cross-Section of the Supporting Bar:** 25mm\*25mm\*1.0mm

Stainless Steel 304 square hollow section

**Bear-Loading of Each Shelf:** 200kg

### 2. Shelf 2



**Cross-Section of the Column:** 60mm\*80mm\*2.0mm

Cold-bending Stainless Steel 304

**Cross-Section of the Beam:** 50mm\*50mm\*1.5mm

Stainless Steel 304 square hollow section

**Shelves:** 1.0mm Stainless Steel 304

**Bear-Loading of Each Shelf:** 270kg

### 3. Shelf 3



**Cross-Section of the Column:**

55mm\*70mm\*1.5mm Cold-bending steel painted blue or white

**Cross-Section of the Beam:**

60mm\*40mm\*1.5mm

**Shelves:** 0.8mm Cold-bending steel

**Bear-Loading of Each Shelf:** 200kg