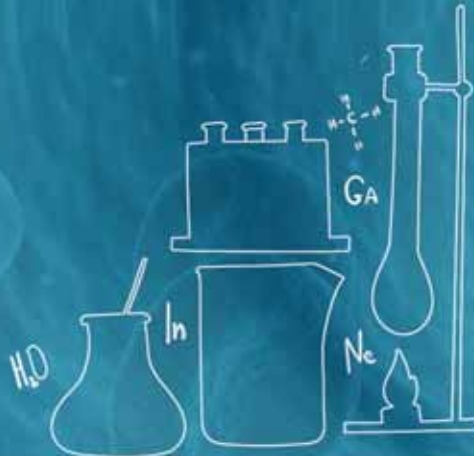


# Medical Equipment & Automation

India's premium magazine on the diagnostic, medical equipment industry and technology



INNOVATIONS IN  
BLOOD BANK EQUIPMENT



TIPS FOR  
SAFE USE OF  
LAB EQUIPMENT





## Innovations in blood bank equipment

The medical device industry is rapidly growing in terms of trends and innovations. This story takes our readers through different innovations happening in the blood bank equipment.

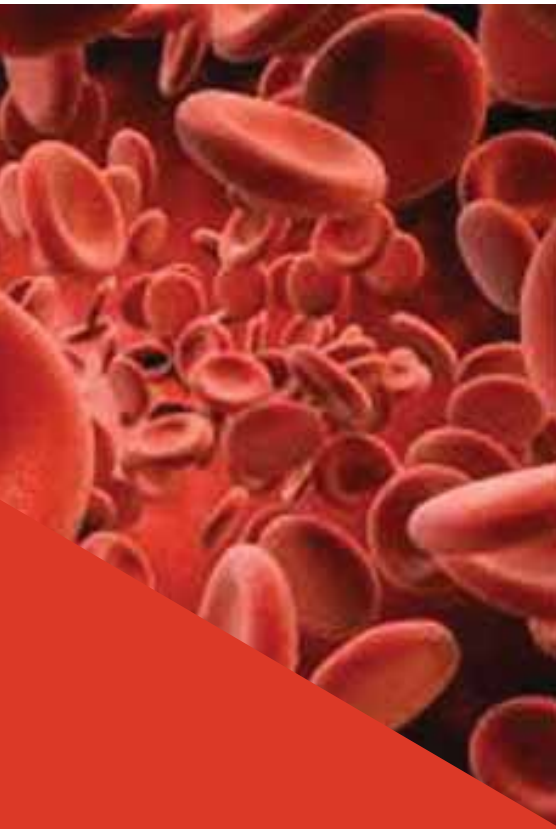
**B**lood banks, plasma freezers and platelet agitators are the blood cold chain equipment used for the storage of blood components. Blood banks and plasma freezers rely on refrigeration systems. Refrigeration is the process of removing heat from a confined environment until the desired temperature is attained, and then maintaining the air at this temperature range.

### Industry Analysis

The blood bank refrigerators market in US is moderately concentrated with large and small-sized players and the competition among these players is intense. With international players increasing their

footprint in the market with their huge infrastructure and R&D support, regional vendors find it increasingly difficult to compete in terms of quality, technology, and pricing. This increasing influence of the international payers has compelled the regional vendors to develop new technologies and stay abreast with the emerging technologies to remain competitive in the market.

Blood banking refers to the process of gathering, separating, and storing blood. Today, blood banks collect blood and isolate it into its various components so they can be used most effectively according to the needs of any patient. Recently, researchers have developed



few drugs that help people's bone marrow produce new blood cells more rapidly, the body's response time can still take weeks, thus donated blood remains one of the important and more immediate life-saving sources. In this article we talk about different blood bank equipment from companies and their features.

Each blood component is used for a different sign; thus, the component separation has maximised the utility of one whole blood unit. A variety of equipment to maintain suitable ambient conditions during storage and transportation are in vogue.

The products by Win-Hycare are specially designed and manufactured for long term storage of various biological product, such as blood, including viruses, germs, erythrocytes, Leucocytes and cutis. The applications can be found in hospitals, blood banks, epidemic prevention services and research institute, biological institutes, laboratories in electronic and chemical plants. Talking about the products, Nisar Mohammed, Director (India-Business), Win-Hycare says, "We have many products like freezers, biomedical freezers, blood bank refrigerators, mobile coolers. Our blood bank refrigerators are designed to meet strict requirements for st orage of blood and blood components. The model features microprocessor



control and temperature control system, ideal for the medical and health institutions, blood centres and scientific research labs as well."

Yorco Sales has a manufacturing plant equipped with latest machinery with known brands. "We have a vast range of products such as Blood Bank Refrigerator, Aerosol Disinfectant, Vaccine Storage Cabinet, Cryostat Microtome, Tissue Processor, Incubators and Metabolic Shakers to name a few," said Rakesh Arora, Director-Marketing, Yorco Sales Pvt Ltd. Yorco Sales is based in Delhi and has branches all over India. "We mainly supply in Histopathology equipment, Steam Sterilisation, Blood Bank Equipment, Clean Air Equipment to name a few. Basically, all these equipment are used for CSSD. On a turnkey basis,

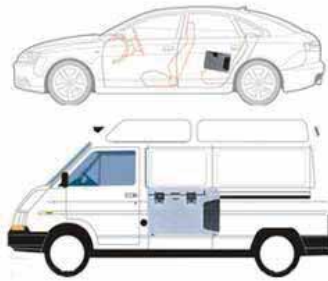


**WinHycare is specialised in high quality pharmaceutical products, blood bank refrigerators production and sales. Our strength lies in collaborating with team of surgeons to develop our product to meet the specific needs**

**Nisar Mohammed,**  
DIRECTOR (INDIA-BUSINESS),  
WIN-HYCARE



Mobile Cooler



we supply all these products to the major hospitals." Yorco also covers all different types of sterilisation marks by different hospitals. He further adds, "Most of our products are ISI mark as well as CE mark and these are the sterilisers used in all hospitals." He further added, "Yorco Sales keeps in mind about all the FDI marks and so our products are safe to use."

Speaking about Win-Hycare, Nisar adds, "Different components need different storage conditions and temperature requirements for therapeutic efficacy. Win-Hycare Company is specialised in development, production, and sales of high-quality freezers. We collaborate with a team of surgeons of various specialities to seek their expert help and advice to develop the products as per their needs to meet the modalities. Our products are perfectly designed by experts after years of experience."

## Advancements of Blood Bank Equipment

During past few years, blood banks have undergone many medical, technical changes. In addition to advances in technical and clinical changes, blood bank management has had to adapt to new quality improvement activities and information systems demand.

There are many advancements taking place in the medical sector, talking about advancements in blood banking, there is a new term called as Blood Bank Information Systems (BBIS). BBIS are computer systems that have been developed specifically to assist the blood bank professionals in management of the patients, the donor and also blood

component information. BBIS helps to assess trends and decide future policies by accessing the statistical information. Helps to correlate the laboratory data with donor records. There are many more advancements in the blood banking system which are mentioned further in this story, to help our readers get a gist of the advancements in the sector.

Nisar further added, "The model features microprocessor control and temperature control system, ideal for the medical and health institutions, blood centres and scientific research labs as well." The key features of the bio-medical freezers by Win-Hycare are as follows:

1. Two-Door freezers are equipped with various specifications that enable flexibility and maintain the quality of the samples during preservation such as height-adjustable shelf trays.
2. The separate top and bottom doors suppress cold air leakage and two completely independent chambers each has its own temperature control.

Some of the technical highlights of Blood bank refrigerators are:

1. Structure: External structure in hot-dip galvanised steel with seven chemical processes, anti-corrosion treated with PVC coated. Stainless steel internal structure
2. Door: Self-closing door with a removable magnetic gasket on four sides for perfect closing. Right-hand opening
3. Lock with key: To use the appliance under supervision
4. Shelves: In scotch bright stainless steel
5. Drawers: Sliding drawers in scotch bright steel, see-through frontal side
6. Kit wheels with two frontal brakes: All four wheels are double ball bearing with bearing capacity of 70kgs each wheel
7. Alarm: Equipped with audio and visual alarm for high and low temperature, door open and system failure
8. Room Temperature: It can work at room temperature ranging from 0C to 32C.

Talking about the innovations in the medical lab equipment and blood bank equipment, Nisar added, "The recent innovation added to our products is the Mobile Cooler. It is used to transport and transfer blood, plasma, vaccine, reagents and special medicines in medical and



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**Rakesh Arora**  
DIRECTOR - MARKETING,  
YORCO SALES PVT. LTD.

logistics industry.”

The purpose is to store and transport blood, serum, plasma, vaccine, reagents and special medicines in medical industry. “Also used as medicines pass box for epidemic prevention station, blood bank, health center, CDC, animal husbandry bureau, army and logistics service, express company, pharmaceutical factory, genetic engineering,” Nisar shared.

The features of Mobile Cooler are as follows:

1. Multiple voltage used as AC220V or DC12V/24V, (Only for blood transportation) power supply of cigarette lighter
2. Whole roll PE structure
3. Combined with forced air-cooling system and direct cooling system
4. Multi-function: 3 ranges of inner temperature and they are as follows:
  - 2C-8C used as pharmacy refrigerator
  - -10C~-25C used as deep freezer
  - 22 + 2C used as incubator
5. The whole roll structure prevents collision damage.
6. Multilayer stacking.
7. Functional alarm system with audible and visible
8. Remote control

9. Constantly alarm after power off
10. Keyboard lockable.

Yorco blood bank refrigerators are most versatile unit for blood bank, specially designed for purpose. Rakesh adds, “It is available various capacities for storing the blood bags/ bottles of capacity upto 450 ml., in an automatically controlled temperature of 4C. to 6C. Forced air circulation ensures uniform temperature.”

The features of the blood bank by Yorco Sales are as follows:

1. Construction: – External body is made M.S. sheet, duly pre-treated and is finished with powder coated paint for lasting finish. Caster wheels provided for easily mobility. Inner chamber is made of high-quality stainless steel, highly polished S.S. trays are provided, for accommodating blood bottles or blood bags.
2. Cooling System: – Cooling is achieved by highly efficient refrigeration system using hermetically sealed compressor and other parts.
3. Two doors: - Inner door is of clean acrylic sheet glass for easy viewing inside the chamber. Outer door is duly insulated for proper sealing from external environment and is lockable.
4. Temperature Control: – Temperature

inside the chamber is maintained automatically by electronic digital temperature controller-cum-indicator.

5. An audio-visual alarm system is incorporated with battery back up in case of mains failure or temperature variation beyond permitted tolerance or door opening to prevent the spoilage of stored blood bags.
6. Control Panel: – All controls such as digital temperature controller-cum indicator, mains switches, indicating lights, battery check switch, Audio visual alarm, and voltmeter are easily accessible.
7. Capacity: – The capacity of the blood bags are:
  - 85 litre – 50 blood bags
  - 165 litre – 110 blood bags
  - 200 litre – 200 blood bags
  - 280 litre – 250 blood bags
  - 400 litre – 360 blood bags
8. Power supply: – Suitable to work on 220 V, 50Hz, AC supply.

### Conclusion:

It is expected that the technological advances in blood bank refrigerators, shall led to the introduction of newer products that shall enhance the monitoring and tracking of blood products, thereby reducing medical errors. +

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