

TERUMO PENPOL®

TRANSFUSION SYSTEMS

DEEP FREEZER DF80U

ISO 13485     Management System EN ISO 13485:2012 www.tuv.com ID: 000047381

Optimize blood care with advanced technology

Vital protection for
your valuable
plasma products



FEATURES | DEEP FREEZER DF80U

Unique Expansion Valve Technology

Each Terumo Penpol Deep Freezer is developed after rigorous research by a group of experts, using high quality components and international standard compressor and unique expansion valve technology.

- The compressor is automatically regulated according to the freezer load and enjoys a long-life of usage
- The pressure-sensitive mechanism used protects the compressor in the long run
- The shell temperature of the compressor is always low, which ensures high reliability
- The imported oil separator ensures proper oil returns to the compressor, which improves reliability

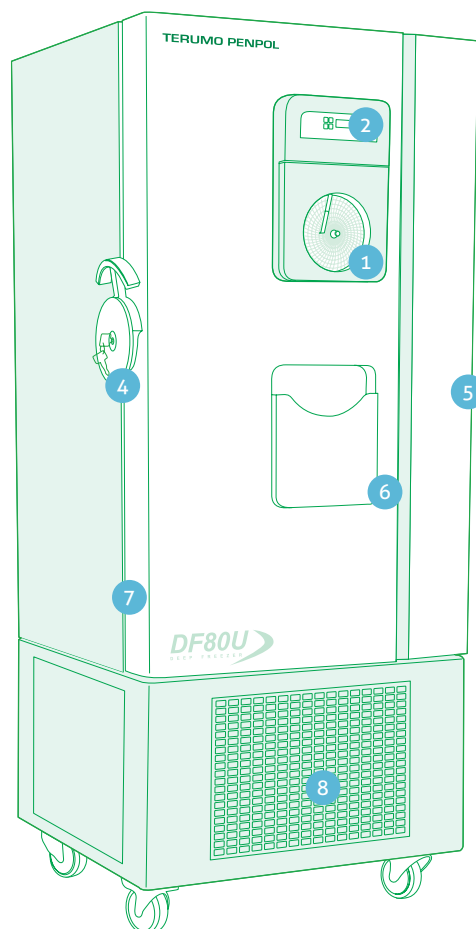
Robust Construction and Endearing Look

- Comes with a fully stainless steel interior
- The heavy gauge, CRCA/HDGI exterior with powder coating keeps the equipment free from rusting and chipping.
- The 3 Interior trays are made of SS304 grade stainless steel. They are height adjustable for multiple usage and maximum storage.
- The 12.5 cm foamed in PUF insulation in exterior walls and door ensures ultimate protection and safety for your plasma products. Proper insulation results in more temperature-holding time and reduced power consumption.
- The triple rubber gasket sealing and handle with self pushing mechanism keeps the plasma products completely protected in the freezer. The seal reduces humidity migration into the interior and preserves the cold air inside the cabinet.
- The hot line around the mouth of the cabinet prevents condensate formation.
- The 4 stainless steel interior compartments doors with magnetic latches ensures secure storage and less cold air loss during the opening and closing of the doors.
- The imported castor wheels makes moving the deep freezer around in blood banks easy.

Never leaves you in the dark

- The eye-level positioning of the chart recorder and temperature display makes the user information more accessible and convenient.
- The 24 hours battery back-up for temperature recording unit keeps the temperature monitoring uninterrupted and protects your valuable samples around the clock
- User friendly alarms and indications in Terumo Penpol Deep Freezer displays possible abnormalities

Each Terumo Penpol Deep Freezer reaches the customer only after five stringent levels of quality tests.



Line Voltage Corrector for increased compressor life

The 5KVA external stabilizers stabilizes the input voltage up to 170-270 VAC and give a constant output voltage of 190-240 VAC to the compressor.

- Prevents the entry of excess or low voltage to the freezer
- Gives protection from short circuits and high temperature
- The compressor life is secured by reliable operation irrespective of input voltage

Eco-friendly Refrigerants and Insulation

- All refrigerants used in Terumo Penpol Deep Freezers are CFC free and are commercially widely available
- CFC free PUF insulation



- 1 The eye-level display of temperature and the seven day chart recorder ensures continuous monitoring
- 2 The temperature controller with 0.1 °C resolution comes with battery back-up
- 3 The fully stainless steel interior ensures high durability



- 4 The ergonomically-designed door handle with a self-pushing mechanism minimizes the effort required while opening the door
- 5 The rust-free stainless steel door hinge makes the door open up to an angle of 135 degrees



- 6 The storage rack is easily removable by tilting and it's designed as a centralized storage location for IQ/OQ procedures, inventory control records, chart paper, pen, operating and the maintenance manual



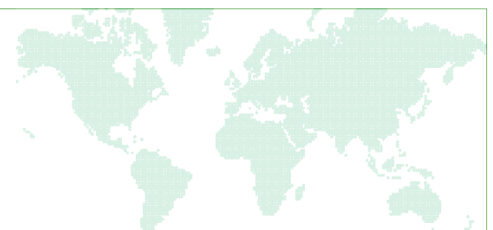
- 7 Triple-layer rubber gasket sealing and handle creates a seal which reduces the impact of ambient temperature and humidity in the inner chamber



- 8 The well-located condenser helps in better condensation process

- 9 The three-height adjustable stainless steel trays with upper folding
- 10 The superior cooling coil routing technology ensures maximum cooling of the cabinet
- 11 PUF thickness of 125mm
- 12 The rear clamps ensure the correct distance from walls, thereby ensuring good air circulation

Terumo Penpol sales and service engineers are located close to you for the entire life-cycle of the equipment. With over 16640 pieces of equipment installed in India and a customer base of more than 2426 clients, Terumo Penpol's reputation for friendly and round-the-clock service is widely recognized and respected.



SPECIFICATIONS | DEEP FREEZER DF80U

Type	Vertical
Input voltage of Deep Freezer	230+/-10% V, 50Hz, Single phase AC (without stabilizer)
Voltage stabilizer	5KVA External stabilizer (Input: 170-270V, 50Hz, Single phase AC)
Chamber temperature range	-50°C to -80°C (at 22 - 30°C ambient temperature)
Weight(Approx.)	360 Kg
MDD classification	Class II a
Power consumption	3000W(Max)
Dimensions(external)(W x D x H)in mm*	805 x 825 x 1940 (with castor wheel)
Dimensions(internal)(W x D x H)in mm*	550 x 500 x 1100
Inner chamber volume	300 Litre
Total storage capacity	320 bags of 250 ml plasma bags
Storage capacity per compartment	80 bags per compartment
Number of trays	3 adjustable stainless steel trays
Number of compartments	4 compartments
Inner doors	4 Nos. made of stainless steel 304 Grade
Door insulation	125 mm thick PUF insulated door with rubber gasket sealing
Cabinet insulation	125 mm thick PUF insulation
Door lock	Handle with self door opening facility
Heating near the door opening	Using the discharge line of compressor
Outer cabinet material	1.5mm thick CRCA/HDGI sheet-powder coated
Inner chamber material	1.2mm thick stainless steel sheet of 304 Grade
Wheels	Castor wheel - lockable type on front (2nos) Castor wheel - non- lockable type on rear (2nos)
Refrigerant	Primary R404a (CFC FREE) Secondary R 508 b (CFC FREE)
Compressor	Two hermetically sealed imported compressors
Insulation of the suction line	Polyurethane tubing
Temperature sensing method	RTD sensor placed in a stainless steel bracket fitted at the left side of the second compartment from the bottom side.
Temperature sensor	RTD sensor - PT100
Chart range	-100°C to +50°C
Alarms and indications	
Secondary compressor ON	Visual
Primary compressor ON	Visual
High/Low temperature	Audio-Visual
Door open	Audio-Visual
Battery low	Visual
Power ON	Visual
Power fail	Visual
Duration of the chart	7 days
Display resolution of controller	0.1°C
Chart resolution	3°C
Method of recording	Ink pen on paper/pressure sensitive chart paper(optional)
High temperature alarm	Set value +10°C
Low temperature alarm	Set value -10°C
Manufacturing standards	ISO 9001: 2008, EN ISO 13485 : 2012
Standards & Approval	CE, EUroHS

Started as the first Indian manufacturer of blood bags, Terumo Penpol Private Limited continues to be the market leader in India in the field of equipment and disposables for the Blood Transfusion industry. With a comprehensive range of products covering collection, processing, storage and issue of blood, Terumo Penpol continues to serve the leading blood banks in India and around the world. Terumo Penpol is now a subsidiary of the \$4.5 billion Terumo Corporation, Japan and is a group company of Terumo BCT, USA which leads the Blood Management business of Terumo.



STORAGE EQUIPMENT

Terumo Penpol guarantees quality equipment which provides the uniform temperature requirement for blood components, and enables the contamination-free storage and transportation of blood from collection to transfusion processes.

Our Deep Freezers are specially designed for Blood Banks, Research Institutes, and Biotechnology Firms. The storage of the multiple components of the plasma family within the prescribed temperatures (-80/-40) is ensured in Terumo Penpol Deep Freezers using its Rapid Freezing power.



“ Plasma frozen within 6 hours after blood collection and stored at a temperature not warmer than -30°C , shall be preserved for a period of time not more than one year”.

Indian Drugs and Cosmetic Act

“ Label the plasma bag and freeze rapidly. This should be done as soon as possible after collection, within 6 to 8 hours. The complete freezing process should be as short as possible and preferably should not take more than 1 hour.”

Transfusion Medicine- Technical Manual

“ FFP frozen and maintained at -65°C or lower may be stored up to 7 years.”

AABB Manual

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OUR PRODUCT RANGE

BLOOD BAGS

DONOR STATION

BLOOD COLLECTION MONITOR

TUBE SEALER

PORTABLE TUBE SEALER

DUAL HEAD TUBE SEALER

COMPOSCALE + INTELLIGENT EXPRESSOR

CRYO BATH

BLOOD BANK REFRIGERATOR

PLATELET AGITATOR AND INCUBATOR

DEEP FREEZERS

PLASMA BATH

FILTERS*

BLOOD TRANSFUSION SET*

AUTOMATIC COMPONENT EXTRACTOR*

STERILE CONNECTING DEVICE*

APHERESIS SYSTEM AND KITS*

* Additional Products for Indian market only.
Products from Terumo Corporation / Terumo BCT

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