

Technical Specifications

Deep freezer (small)

1. Description of Function:

- 1.1 Deep freezers maintain temperatures (-) 25°C to (-) 15°C, to store vaccines and freeze ice packs.
- 1.2 Deep Freezers are required at district, regional and PHC levels, to store vaccine and prepare ice packs required for passive cooling in vaccines carriers and cold boxes.

2 Operational Requirements:

- 2.1 Designed for tropical climates.
- 2.2 Target holdover time should be not less than 2hrs and 30 minutes.
- 2.3 Hot and cold compressor starting at 172 volts (22% below rated voltage).
- 2.4 Manufacturing process of the product should not use or produce hazardous chemicals-gases.
- 2.5 Provision for drainage for the waste water.
- 2.6 Should have legs in the base with rotating screw type height adjustments to balance the weight on uneven floor.
- 2.7 The unit should have ground clearance minimum 100 mm.

3 Technical Specifications:

- 3.1 Gross Volume: 105 to 125 liters.
- 3.2 Construction:
 - Internal: Stainless 304 grade steel
- 3.3 External: Corrosion Resistance
- 3.4 Chest type with CFC – free insulation
- 3.5 Should have foam pad cover on top of the basket.
- 3.6 Solid door with lock and handle
- 3.7 Type: Compression Cycled, CFC-Free (both for refrigeration and insulation) All system tubing (suction tube, freezer tube and condensing tube) should be of minimum 99.97% of pure copper coil.
- 3.8 Temperature of compartment to be maintained between (-) 25deg C to (-) 15deg C continuous availability of energy at ambient temperature 5 to 45 deg. C .
- 3.9 Inlet of Capillary should be outside the PUF body.
- 3.10 ON/OFF Switch and power indicator should be available
- 3.11 A Micro-processor based control unit should be provided for setting of temperature and display following features:
 - 3.11.1 3 digit digital display (to one decimal point) of cabinet temperature. The sensor should be placed 25 to 50 mm above base of chamber.
 - 3.11.2 Power indicator
 - 3.11.3 Audio (minimum 65 dBA) and visual alarm against the violation of set temperature range.
 - 3.11.4 Min. & Max. cabinet temperature digital display of last 24 hrs. and breaches during last 24 hrs.
 - 3.11.5 Temperature manual control with one decimal deg. scale.

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3.11.6 The unit should be sealed protected from dust, moisture or condensed water falling over it.

3.12 Accuracy for digital controller ± 0.5 degree centigrade.

4 System Configuration

- 4.1 Programmable Micro-processor control unit with child lock facility.
- 4.2 Should have provision to set minimum and maximum temperature at 0.1 degree Centigrade to programme the unit for continuous operation.
- 4.3 Should have provision for defrosting program.

5 Accessories, spares and warrantee:

- 5.1 The equipment should have minimum warrantee including comprehensive maintenance of sixty months after installation or sixty six months after the supply whichever is later.
- 5.2 Vaccine Storage Basket allowing free circulation of air, having the size to be able to accommodate 4 to 6 of them in the unit and suitable to match the net volume requirement. It should be minimum 5 wire basket.
- 5.3 Stem Alcohol thermometer (specifications and standard as per MOHFW approved **Annexure-1**) - one piece per unit range of -30 to $+50$ degree centigrade.
- 5.4 The supplier is required to maintain all the spare parts throughout the warrantee period and not less than ten years.

6 Environmental factors:

- 6.1 The unit shall be capable of being stored continuously in ambient temperature of 0 to 50deg C and relative humidity of 95%
- 6.2 The unit shall be capable of operating continuously in ambient temperature of 5 to 45 deg C and relative humidity of 90%
- 6.3 The plug should be flexible and unbreakable sealed rubber type.

7 Power Supply:

- 7.1 Power input to be 220-240VAC, 50Hz as appropriate fitted with Indian plug
- 7.2 Voltage stabilizer as per the MOHFW approved specifications and standard enclosed as **Annexure-2**

8 Standards and Safety

- 8.1 Product should be FDA or CE approved.
- 8.2 Should meet WHO/UNICEF Standard WHO/PQS/E03/FZ03.1.for Deep Freezers.
- 8.3 Test and inspection as per WHO procedure reference WHO/PQS/E03/FZ03-VP.1 Testing should be carried out from WHO certified lab/NABL/ILAC/STQC Labs.
- 8.4 Colour code : Blue

9 Documentation:

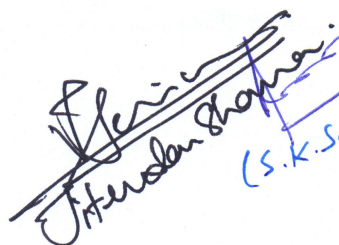
- 9.1 A paper copy of user/operator manuals to be supplied in English.
- 9.2 A paper copy of technical/wiring diagram/maintenance manuals to be supplied in English.
- 9.3 Certificate of inspection for technical compliance from an independent laboratory approved /recognized by WHO certified /National Accreditation Board for laboratories/ILAC/STQC Labs is essential. Certificate of testing should be currently valid till the supply and same must be verified by inspecting authority.

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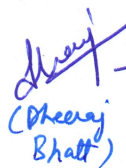
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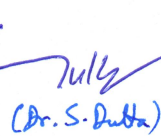
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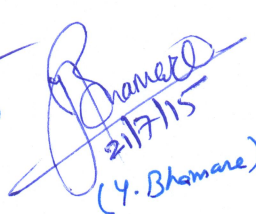
- 9.4 List of important spare parts and accessories with their part number and costing.
- 10 Packing of the equipment during shipment:
- 10.1 The supplier should provide strong and sufficient packing to ensure safe arrival of goods at the destination free from loss or damage.
- 10.2 A vertical arrow should be marked at the all sides of packages to ensure transportation of equipment in vertical position. TOP and BOTTOM should also be written.
- 10.3 To put label and signage's for HANDLE WITH CARE ON ALL SIDES OF THE CRATES as per packing & shipment norms.
- 11 Following messages should be written at the Top of the DEEP FREEZER
- 11.1.1 Place Freezer at least 10 cms away from the wall and 20 cms away from other equipment for free air circulation.
- 11.1.2 Use voltage stabilizer provided for the DEEP FREEZER
- 11.1.3 Safe temperature range $(-15$ to -25°C
- 11.1.4 At CHC/PHC use deep freezer for freezing of ice packs only
- 11.1.5 Open the lid, only when needed
- 11.1.6 Store only Polio vaccines at Regional/District store.
- 11.1.7 Keep all vaccine in wire baskets provided.
- 11.1.8 Leave space between the vaccine boxes and ice packs for air circulation.
- 11.1.9 Place a thermometer at the place provided for.
- 11.1.10 Avoid removing thermometer from the unit while reading temperature.
- 11.1.11 Net vaccine storage capacity in Litres
- 11.1.12 Hold over time in hrs.

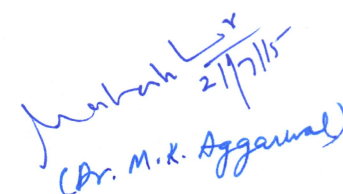

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Dated 21.07.2015