Blanket Warming Unit

Instruction Manual

REF WB1000

General Description

The Blanket Warming Unit model WB1000 is a revolutionary electrical medical device used to keep patients warm during anaesthesia and surgery. The device comprises a reusable controller and disposable, single-use blankets.

The Blanket Warming Unit Model WB1000 is used to maintain normal body temperature during surgical procedures. The clinical staff who use the device is anaesthetists, anaesthetic assistants, operating department practitioners and nurses in theatre, the recovery room and the critical care unit.

The Blanket Warming Unit Model WB1000 is the world's first closed warming system, using conduction and radiation warming to prevent and treat preoperative hypothermia. It includes two primary components: a warming unit and a disposable blanket. The Warming Blanket Unit is connected to a single-use blanket by an innovative coaxial flexible hose. The coaxial flexible hose contains an inner and outer hose; warm air from the warming unit passes through the inner hose and into the blanket. Once the warmed air reaches the blanket, it will move with the flow path of the blanket, and is then recycled to the warming unit via the outer hose. The closed warming blanket is disposable and airtight.

Carefully read the operating instructions before use.
Failure to follow may cause severe injuries.

Indications

Prevention and treatment of hypothermia

Contraindications

DO NOT apply heat directly to open wounds or ischemic limbs.
DO NOT apply to extremities during surgeries when an artery to the extremity is clamped.

⚠ Warnings

Failure to follow may cause injuries to person.

- To avoid the risk of electric shock, this device must only be connected to a mains supply with protective earth.
- To prevent electromagnetic interference to the unit from other devices, the other devices must meet EMC requirements.
- The Blanket Warming Unit meets medical electronic interference requirements. If radio frequency interference with other equipment should occur, connect the unit to a different power source.
- Continuously monitor temperature and skin temperature during use on unconscious patients, elder patients, or pediatric patients.
- Risk of electric shock, always unplug power cord before cleaning.
- Do NOT use on individuals with circulatory problems unless managed and monitored by a healthcare professional.
- DO NOT place the hose directly on a patient without a blanket.
- DO NOT insert the hose underneath the patient, or apply any pressure to the hose.
- DO NOT obstruct vents of the device.
  Temperatures will vary according to the room temperature and blanket sizes.
- DO NOT operate if the device is damaged or malfunctioning.
- DO NOT position the device in areas in which the appliance plug and socket are difficult to operate.
- Device must only be opened or serviced by qualified personnel such as certified electricians or certified clinical engineers familiar with repair practices for servicing medical devices, and in accordance with the Service Manual.

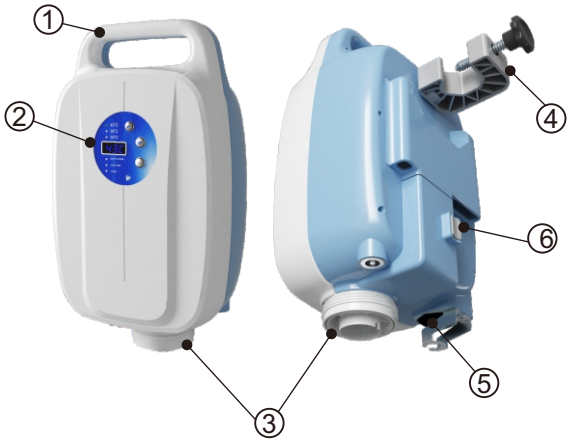
⚠ Caution

Failure to follow may cause damage to the product.

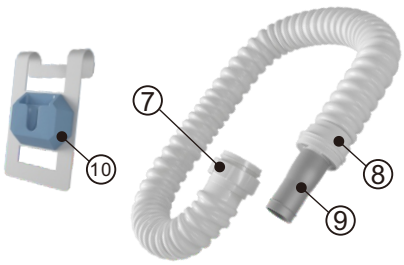
- DO NOT use this unit in any manner other than the purpose or the operation method described in this instruction manual.
- Use only the power cord specified for this product.
- DO NOT submerge, spray, pour, or spill any liquid on the unit.
- DO NOT operate in wet or moist conditions.
- DO NOT drop or hit the product.
- Store in a cool dry place.
- DO NOT open or disassemble the unit.
- No modification of this unit is allowed.
- Some national laws restricts this device to sale by or on the order of a physician.

CE 0197

Overview



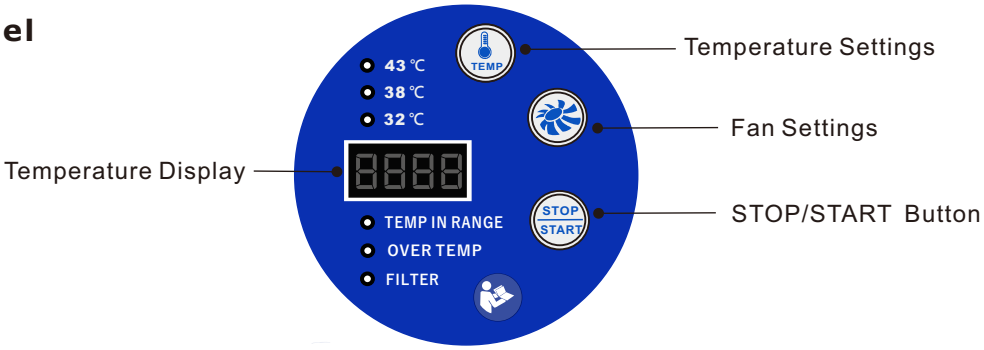
Control Unit



Flexible Hose

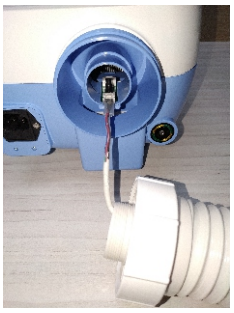
① Handle
② Control Panel
③ Hose Port
④ Trolley / I.V. Pole Clamp
⑤ Power Connection
⑥ Trolley / I.V. Pole Bumper
⑦ Proximal Extremity
⑧ Distal Extremity
⑨ Hose Connector
⑩ Bedrail Bracket

Control Panel



Application Steps

Attachment of Flexible Hose



1. Place the unit on a stable surface and make sure the power is off.
2. After connecting the 3-pin connector, take the proximal extremity ⑦ of the flexible hose and attach it to the hose port ③.

3. Turn the outer ring clockwise until it is well secured.

Mounting on the Trolley / I.V. Pole

1. Tighten the screw lock and make sure it is securely clamped to the trolley / I.V. pole.

2. Place the WB1000 on the trolley / I.V. pole clamp ④ and align the trolley / I.V. pole bumper ⑥.

Application Steps

Mounting on the Trolley / I.V. Pole

3. Connect the distal extremity ⑧ to the hose connector ⑨.

Mounting on the Bedrail Bracket

1. Mount the bedrail bracket ⑩ on the guardrail of the bed.

2. Place the WB1000 on the bedrail bracket.

3. Connect the distal extremity ⑧ to the hose connector ⑨.

4. Hook the flexible hose around the WB1000.

Attaching the Blanket

1. Place
Once field positioning is complete, place the blanket on the patient.

2. Wrap
Wrap and adjust the blanket on or around the patient to cover the greatest amount of skin surface area possible.

3. Rip
Rip the tear line on both sides of the air inlet.

4. Connect#1
Connect the flexible hose to the blanket by firstly pulling apart the top and bottom layers of the blanket to create an opening.

Application Steps

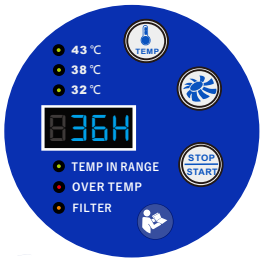
Attaching the Blanket

5. Connect #2
   The flexible hose connector ⑨ should be connected to the air intake inside the blanket.

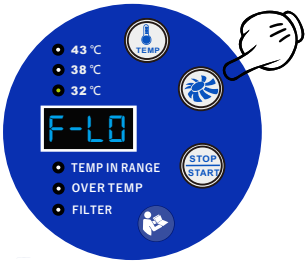
6. Tie
   Use both the velcro strap and strings to tighten the air intake around the outer hose of the coaxial flexible hose. This prevents air from flowing out.

7. Clamp
   Clamp the blanket to the secure hose using the cord tether.

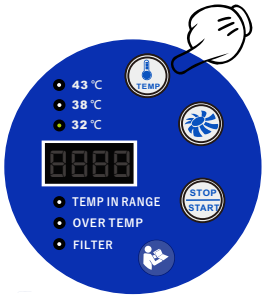
Instructions for Use



1. Connect the unit to the power source.
   It will run a 1 second power-on self light testing, and finish with the OVER TEMP light(red), FILTER light ON (orange) and TEMP IN RANGE / 32°C / 38°C / 43°C light ON(green).



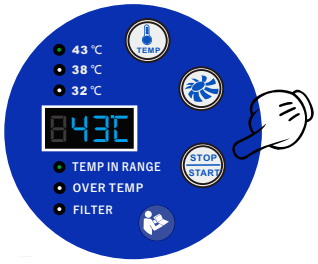
2. Select the desired fan setting.
   The WB1000 will reset/default to the low fan setting each time the unit is powered up.
   The high fan setting may be pre-selected whilst in Standby mode prior to selecting the desired temperature.



3. Select the desired temperature.
   To select 32°C, 38°C, or 43°C, press the "TEMP" button and confirm the selected mode from the seven-segment display.
   The WB1000 will reset/default to the 32°C setting each time the unit is powered up.

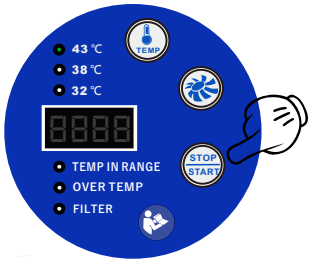
Application Steps

Instructions for Use



4. Press the "START/STOP" button to begin operation.
   Press the "START/STOP" button when the device is “Off” to power on the device.
   Press the "START/STOP" button when the device is “On” to power off the device and terminate operation.

5. Ensure the blanket is well inflated, and that no obstructions are present.



6. Press the "START/STOP" button to end operation.
   Disconnect the unit from the power source and discard all disposable components.

Over Temperature Condition

If the temperature reaches ≥ 48°C, it will automatically shut down the heater and the fan.
The OVER TEMP light will illuminate and the alarm will sound. Press any button (except FAN settings button) to turn OFF the sound.

In case of OVER TEMP:
1.DO NOT touch heat outlets or any overheated areas of the device.
2.Disconnect the power cord.
3.Contact Technical Support.

FILTER Indicator Light On

The FILTER light on after 500 hours of use, indicating that the filter should be replaced.
In addition, it is recommended to replace the filter after every 12 months.

TEMP IN RANGE Indicator Light On

The TEMP IN RANGE indicator light on when the temperature at the blanket end of the hose is within ±1°C of the selected setting.

User Training

In-service training is available from trained professionals or a nominated distributor.

System Fault Troubleshooting:

If the system fails, it will automatically turn off the heater and fan. The screen will display the fault code, “OVER TEMP” and “TEMP IN RANGE” will illuminate simultaneously. Press any button (except the FAN settings button) to turn the sound off.

The warming unit can be reset by disconnecting the warming unit from the main power source, allowing 5 minutes for the system to reset. If the fault condition reoccurs upon connection to the main power source, the unit may have a hard-fault or permanent error.

Please contact your local distributor regarding technical support and/or repair of the equipment.

Routine Maintenance

Repairs to the device should be performed by qualified personnel such as certified electronics technicians or certified clinical engineers familiar with repair practices for servicing medical devices.

Filter Change

The FILTER light will illuminate after 500 hours of use, indicating that the filter should be changed.

In addition, it is recommended to replace the filter after every 12 months.

ONLY qualified service personnel should conduct filter replacement.

Diagnostics

A qualified service technician can perform over-temperature detection system testing, temperature output testing, operating temperature calibration, and fault code troubleshooting.

Cleaning

⚠ **ALWAYS** power off the device and unplug the power cord from the outlet before cleaning.

- Device can be cleaned with water or neutral disinfectant wipe.
- **DO NOT** wash the device or hold under running water.

Operating Environment

- Operating temperature: +15 to ~+25°C
- Relative Humidity: 80%RH maximum
- Altitude: Max 2,000m

Transportation and Storage

- Temperature: +5 to ~+45°C
- Relative Humidity: 80%RH maximum

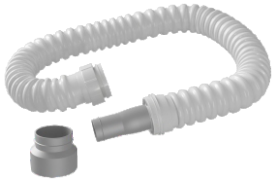
Disposal

Please dispose of the device in accordance with EC Directive – WEEE (Waste Electrical and Electronic Equipment).
If you have any questions, please contact the local authorities responsible for waste disposal.

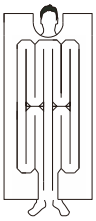
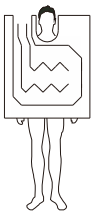
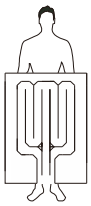
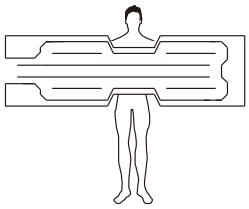
Specification

Term	Blanket Warming Unit Model WB1000
Temperature settings (℃)	Low 32 / Medium 38 / High 43
Air temperature at nozzle (℃)	High 43 ± 2 / Med 38 ± 2 / Low 32 ± 2
Temperature sensors	2
Fan Setting:	HIGH / LOW
Number of thermostats	1
Over temperature alarm	Audio and visual
Over temperature shutdown	Yes
Input	220~240 V~, 50/60 Hz, Max. 4.5A
Fuses	Fast acting ceramic fuses, 250 VAC / 5A
Hose storage	Hook onto controller and adjustable hose cord
Power consumption (W)	Peak 1000, average 500
Heating element (W)	500
Device Classification	Class IIa
Device Mounting	Trolley / Bedrail / I.V. pole
Filter change frequency	12 months /500 hours
Filtration level (μm)	0.3μm, high efficiency
Hose length (m)	1.8m
Standards	EN 60601-1-2, EN 60601-1
Power cord length (m)	4.6
Dimensions (cm)	H 37 x W 22 x D16
Weight (kg)	3.5 (with the flexible hose)
Warranty (years)	1

Product specifications

	Picture	Code	Description
Blanket Warming Unit		**WB1000**	• See General Description.
Hose		**WB1060**	• Material: environmental polymer. • Properties: high temperature resistance, flexible, axially compressible. • Length: 1.8m. • Diameter: 60 mm.
HEPA Filter		**WB1050**	• HEPA 0.3µm. • Dimensions: 153 x 123 x 26 mm.
Blanket		**WB-XX**	• See Blanket Specifications.
Trolley		**WB1030**	• Five leg design with low centre of gravity to assist stability. • Defined edges & contours to ensure that all key surfaces are accessible, allowing for easy & effective cleaning. • Assists segregation, reducing the risk of cross contamination. • Height adjustable pole.

Blanket Specifications

Reorder Code	Description	Dimensions	Appearance
WB-10	**Full Body Blanket**: **Full Body Blanket** provides coverage to the entire patient and is ideally suited for procedures on the neck and head, but can also be used throughout the process.	100cm W x 210cm L	
WB-11	**Upper Body Arm In Blanket:** **Upper Body Arm In** Blanket provides coverage to the torso, arms, neck and head and is ideally suited for surgeries on the lower body.	100m W x 120cm L	
WB-12	**Lower Body Blanket**: **Lower Body Blanket** provides coverage to the lower half of the body and is ideally suited for upper body procedures - upper abdomen, thorax, neck and arms.	100cm W x 135cm L	
WB-13	**Upper Body Arm Out Blanket**: **Upper Body Arm Out** Blanket provides coverage to the torso, arms, neck and head and is ideally suited for surgeries on the abdomen and lower body.	60cm W x 205cm L	

Labeling Symbols

- Consult operators manual
- Warning / Caution
- European Union WEEE Directive Logo
- Device type BF (Protection against electric shock)
- REF Catalog Number
- LOT Batch Code
- S/N. Serial number
- CE xxxx Complies with EU directives
- Manufacturer
- EC REP Authorized Representative in the European Community

Dongguan Kaiser Technology Co., Ltd.
No.81 Sanjiang Industrial District, 523462 Hengli Town,
Dongguan, Guangdong, CHINA

EC REP **MedNet GmbH**
Borkstrasse 10, 48163 Muenster,
Germany.