# **OPERATOR'S MANUAL**



# **EQUATOR™ Convective Warmer**

**REF EQ-5000** 

Part Number: 4533900GB (Rev D) July 2003

This revision supercedes all previous revisions. Previous revisions should be destroyed.

THE DETAILS GIVEN IN THIS MANUAL ARE CORRECT AT THE TIME OF GOING TO PRINT. THE COMPANY, HOWEVER, RESERVES THE RIGHT TO IMPROVE THE EQUIPMENT SHOWN.

For further information, please call your local Level 1 representative or Level 1 direct at 1-800-5-LEVEL-1 or +1 781-878-8011.

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The products described are covered by one or more of the following U.S. Patent Nos. 5,785,723; 6,143,020; 6,277,144; 6,440,157; other patent(s) pending; foreign patent(s) pending.

Level 1 is a registered trademark of Level 1, Inc.

Manufactured in the U.S.A.

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Read and follow instructions and all accompanying documents. Failure to follow instructions could lead to misuse of the device or device malfunction.

#### 1 INDICATIONS FOR USE

The EQUATOR™ Convective Warmer is intended for thermal regulating of a patient's temperature by a warm air heated blanket system. It is designed to prevent hypothermia and/or reduce cold discomfort before, during and after surgical procedures. It is intended for use by appropriately trained healthcare professionals in clinical environments.

#### 2 IMPORTANT SAFETY INFORMATION

#### 2.1 CONTRAINDICATIONS

- 1. Thermal injury may occur if convective warming therapy is applied to lower extremities during aortic cross-clamping procedures.
- 2. Thermal injury may occur if convective warming therapy is applied to ischemic limbs.

#### 2.2 WARNINGS

Death or serious injury may occur if these warnings are not followed:

- To reduce the risk of cross contamination, do not reuse blanket.
- Cover all open wounds under the warming blanket to prevent airborne contamination.
- Electrocution hazard. There are no user serviceable parts inside the enclosure. Only competent
  personnel knowledgeable in the safety procedures required for servicing live MAINS parts shall be
  allowed to open the enclosure.
- Grounding reliability can only be achieved when the MAINS power cord is connected to a properly
  grounded receptacle. Risk of electrical shock exists if the equipment is not connected to a properly
  grounded receptacle.
- Do not use the convective warmer in high-energy fields such as: Cauterizers, MRI, X-RAY, etc. The Level 1 convective warming unit may act as a projectile in a strong magnetic field, cause image artifacts or not function as intended.
- To prevent fire hazard and possible damage to the convective warmer, use only fuses specified.
   Only competent personnel knowledgeable in the safety procedures required for servicing live MAINS parts shall be allowed to open the enclosure.

#### 2.3 CAUTIONS

Thermal injury may occur if these cautions are not followed:

- Read and follow instructions and all accompanying documents. Failure to follow instructions could lead to misuse of the device or device malfunction.
- If Over Temperature audible alarm sounds and/or red Over Temperature alarm indicator illuminates, discontinue use of the convective warmer and remove from service. Contact Level 1, Inc. or an authorized representative for service.

#### **CAUTIONS** continued on next page

#### **CAUTIONS (Continued)**

- If the EQ-5000 does not perform its self-test properly, fails to operate or stops while running, discontinue use of the convective warmer and remove it from service. Contact Level 1 or an authorized representative for service.
- Hose Nozzle MUST be connected to a compatible Forced Air Blanket.
- Monitor the temperature of the patient at regular intervals.
- Periodically observe cutaneous response under blanket. If erythema is evident, decrease the temperature setting or discontinue use of convective warming therapy.
- Do not place objects onto the blanket that will obstruct airflow.
- If equipment malfunction is evident, discontinue use of the convective warmer and remove it from service. Contact Level 1 or an authorized representative for service.
- Use only blankets manufactured and/or approved by Level 1.
- Warming unit must be calibrated by competent personnel authorized by Level 1.
- Federal law (USA) restricts this device to sale by or on the order of a physician.

Physical injury to the user and/or patient may occur if these cautions are not followed:

- Ensure that the EQ-5000 IV Pole mounting clamp is properly tightened before each use.
- Do not mount the EQ-5000 higher than 46" (1.17m) on the IV Pole. For convenience 46" (1.17m) is indicated by a black mark on the EQ-5000 power cord. Mounting the EQ-5000 above 46" (1.17m) may result in instability of the pole and tipping.
- Do not change filter while unit is operating.

#### 3 SET UP

Check the contents of all packages and verify the all components are present. If any parts are missing or damaged, do not use the EQ-5000 Convective Warmer. Contact Level 1 for replacement parts. Table 1 provides a listing of the components that are a part of the EQ-5000 Convective Warmer.

**Table 1 EQ-5000 Package Contents** 

Qty	Component
1	EQ-5000 Convective Warming Unit
1	SW5-HOSE7 Warming Hose
1	Power Cord
1	EQ-5000 Hose Holder
1	EQ-5000 Sheet Clip Assembly
1	EQ-5000 Cord Wrap
1	EQ-5000 Operator's Manual

To ensure proper set up, follow these instructions:

- 1. Attach the Hose Holder to the warming unit. The larger opening of the hose holder fits over the air outlet on the back of the warming unit as shown in Figure 1.
- 2. Attach the warming hose to the back of the warming unit as shown in Figure 2.

- 3. Connect the thermistor cable from the warming hose to the thermistor receptacle located on the back of the warming unit.
- 4. The warming unit is floor and/or pole mountable. If pole mounted, do not place the warming unit higher than 46" (1.17m) from floor. To clamp the EQ-5000 warming unit to an IV pole, simply turn the clamp to the right to tighten.

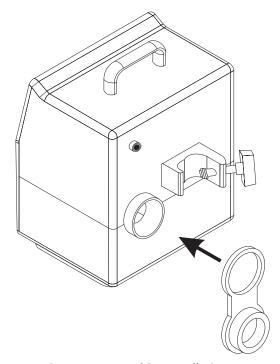


Figure 1 Hose Holder Installation

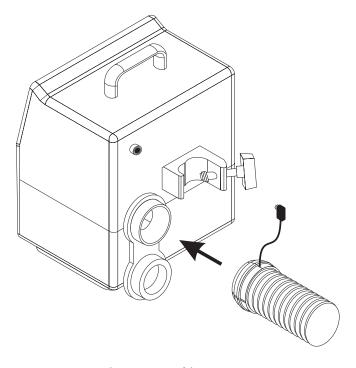


Figure 2 Attaching Hose

#### 4 OPERATING INSTRUCTIONS

## 4.1 Set Up for Use

#### CAUTION

Use only blankets manufactured and/or approved by Level 1. Use with products not manufactured or approved by Level 1 may result in thermal injury to the patient.

 Verify the correct hose is attached to the warming unit for the intended blanket application. Refer to Table 2 for a for a list of Level 1 Warming Blankets and the appropriate hose.
 Note: When using the Blue Neonatal Hose (SW5-HOSE-N) orient the white shield to the left as shown in Figure 4.

**Table 2 Hose Selection** 

REF #	Description	Hose	<b>Hose Color</b>
SW-2001	Adult Full Body Blanket	SW5-HOSE7	White
SW-2002	Pediatric Full Body Blanket	SW5-HOSE7	White
SW-2003	Upper Body Blanket	SW5-HOSE7	White
SW-2004	Lower Body Blanket	SW5-HOSE7	White
SW-2005	Neonate to Small Child Blanket	SW5-HOSE-N	Blue
SW-2006	Preemie to Neonate Blanket	SW5-HOSE-N	Blue

2. Verify that the hose thermistor cable is connected to the thermistor receptacle on the warming unit.

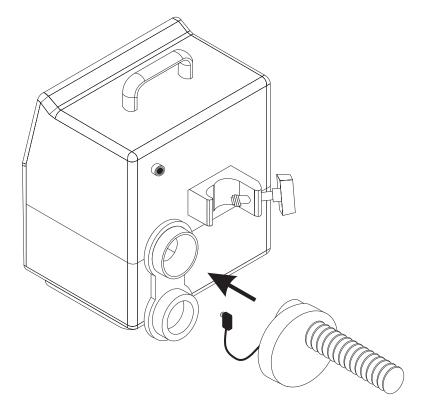


Figure 4 Attaching Blue Neonatal Hose (SW5-HOSE-N)

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- Ensure that the EQ-5000 IV Pole mounting clamp is properly tightened before each use.
   Failure to properly tighten the IV Pole mounting clamp may result in physical injury to the operator or patient.
- Do not mount the EQ-5000 higher than 46" (1.17m) on the IV Pole. For convenience, 46" (1.17m) is indicated by a black mark on the EQ-5000 power cord. Mounting the EQ-5000 above 46" (1.17m) may result in instability of the pole and tipping, which may result in physical injury to the operator or patient.
- 3. The warming unit is floor and/or pole mountable. If pole mounted, do not place the warming unit higher than 46" (1.17m) from floor. To clamp the EQ-5000 warming unit to an IV pole, simply turn the clamp to the right to tighten.

 WARNING!
s contamination, do not reuse blanket. Reuse of the blanket rious injury to the patient.
CAUTION

- Hose Nozzle MUST be connected to a compatible Forced Air Blanket or thermal injury may occur.
- Use only blankets manufactured and/or approved by Level 1. Use with products not manufactured or approved by Level 1 may result in thermal injury to the patient.
- 4. Place a Level 1<sup>®</sup> Convective Warming Blanket on the desired area of patient. Refer to Figure 5 for positioning and Table 3 for blanket sizes.

#### **Table 3 Blanket Size Chart**

REF #	Description	Dimensions
SW-2001	Adult Full Body Blanket	101.6cm W x 203.2cm L (40" W x 80" L)
		includes non-inflating foot drape
SW-2002	Pediatric Full Body Blanket	101.6cm W x 146.1cm L (40" W x 57.5" L)
SW-2003	Upper Body Blanket	203.2cm W x 101.6cm L (80" W x 40" L)
SW-2004	Lower Body Blanket	101.6cm W x 162.6cm L (40" W x 64" L)
SW-2005	Neonate to Small Child Blanket	129.5cm W x 71.1cm L (51" W x 28" L)
SW-2006	Preemie to Neonate Blanket	101.6cm W x 55.9cm L (40" W x 22" L)

- · When comparing blanket sizes, fold in all drapes and measure the area available for heat transfer
- The SW-2004 Lower Body Blanket is 101.6 cm (40") long at the chest location. When inflated, this can be manipulated up the chest and taped to achieve the desired coverage. This allows ample coverage of both large and small patients.
- 5. Connect the hose to blanket. Insert the EQ-5000 warming unit hose into the hose retainer on the blanket as shown in Figure 6. An exclusive, easy to use locking mechanism prevents inadvertent disconnection of the hose.

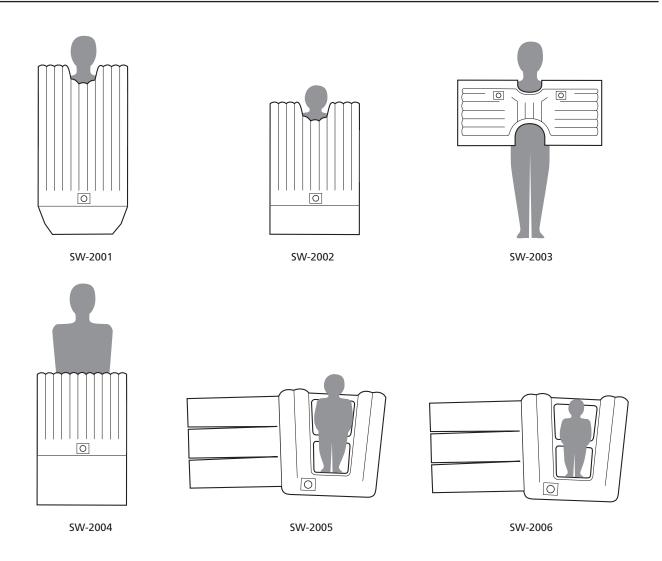


Figure 5 Warming Blankets

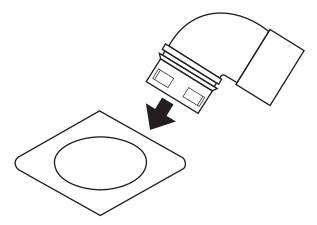


Figure 6 Connecting Hose to Blanket

- 6. Attach Sheet Clip to sheet under the patient.
  - a. Slide the Sheet Clip lock away from the jaw opening. Refer to Figure 7.
  - b. Insert the sheet into the open jaws and slide the Sheet Clip lock towards the jaw opening until it clicks and locks into place.

Note: Proper attachment of the Sheet Clip to the sheet under the patient, as shown in Figure 8, is essential to the proper function of the Sheet Clip Assembly. The weight of the patient on the sheet helps hold the hose in place when the Sheet Clip is used.

Do not attach the Sheet Clip to the warming blanket as shown in Figure 9.

#### \_WARNING!\_

Grounding reliability can only be achieved when the MAINS power cord is connected to a properly grounded receptacle. Risk of electrical shock exists if the equipment is not connected to a properly grounded receptacle.

7. Plug the power cord into a properly grounded MAINS receptacle.





Figure 7 Open and Locked Sheet Clip



Figure 8 Correct Placement of Sheet Clip



Figure 9 Incorrect Placement of Sheet Clip

## 4.2 Operation

#### CAUTION

If the EQ-5000 does not perform its self-test properly, discontinue use of the convective warmer and remove it from service. Failure to do so may result in thermal injury to the patient. Contact Level 1 or an authorized representative for service.

1. Press and release the green Power ON button to turn the warming unit ON. The warming unit performs its self-test.

Verify that the self-test completes in the following order:

- a. The indicators for Ambient Airflow, 36°C, 40°C, 44°C, and Under Temperature light up at the same time.
- b. The Disconnect indicator flashes three times.
- c. The Over Temperature indicator flashes and an audible beep sounds indicating the ending of the self-test.
- 2. Press the appropriate Temperature Setting button to select the desired temperature during or after the self-test. NOTE: If no temperature setting is selected, the unit will blow ambient air until a temperature is selected.
- 3. Monitor the temperature of the patient at regular intervals and adjust temperature setting of the convective warmer as required. The temperature setting may be adjusted as necessary.

#### 4.3 After Use

- Perform routine cleaning after each use, refer to Section 7.1 Cleaning the EQUATOR™ Convective Warmer.
- 2. Place the blanket end of the warming hose on the Hose Holder.
- 3. Coil the power cord, wrap the cord wrap around the coiled power cord and snap closed.
- 4. Store equipment in a cool, dry place away from temperature extremes.

## 5 THE EQUATOR™ CONVECTIVE WARMER (EQ-5000)

#### 5.1 EQUATOR™ Blankets

The blanket consists of two layers of non-woven polypropylene fabric bonded to a layer of polyethylene. The layers are bonded together to form a distribution network of air delivery channels. The warm air is distributed around the blanket through the delivery channels and exits the blanket through a specially designed series of perforations in the patient side of the blanket. The distribution of air is designed to minimize temperature differences throughout the blanket.

Level 1° Convective Warming Blankets (SW-2001, SW-2002, SW-2003 and SW-2004) are compatible with the Bair Hugger 505.

#### **5.1.1 Warming Blanket External Features**

The Level 1 convective warming blanket dimensions and configurations will vary, depending on the specific application. Refer to Table 3 and Figure 5 for blanket information.

#### 5.1.2 Blanket Retainer

The Level 1 convective warming blanket retainer ring is built into the hose end to secure blanket connection. Effective transfer of warm air from the hose to the blanket is assured through blanket retention.

#### 5.1.3 Air Delivery Channels

Warmed air enters the blanket through the hose and travels to an air supply manifold. The air manifold distributes the warmed air to delivery channels in a pattern designed to promote heat transfer to the patient. Perforations on the patient side of the air delivery channel gently disperse warm air over the patient thereby maintaining patient temperature.

#### 5.2 Convective Warmer

The EQ-5000 is used to reduce hypothermia and patient discomfort before, during and after surgical procedures. The system consists of a high flow warming unit with hose end temperature control and a single use blanket.

The EQ-5000 draws ambient temperature air through a particulate air filter. The filtered air is warmed to a selected temperature and delivered through a hose to a blanket.

The EQ-5000 has three outlet temperature settings, which provide flexibility in patient treatment. A fourth temperature setting delivers ambient temperature air to facilitate patient cooling. These set temperatures are servo-controlled by thermistors placed at the hose end.

An over temperature system monitors the air temperature at the end of the hose where it connects to the blanket. A control thermistor adjusts the power applied to the heater in the warming unit to maintain the selected temperature. This enables the system to maintain the selected temperature under variations in ambient temperature. A safety thermistor provides a signal to a separate high temperature comparison circuit. The safety thermistor activates and alarms if the temperature reaches 3°C above set point. The safety circuit provides an independent means of shutoff, which discontinues power to the heater and blower. This prevents patient exposure to excessive temperatures in a single fault failure of the temperature controller.

## 5.3 EQ-5000 Average and Maximum Contact Surface Temperature

Table 4 provides the EQ-5000 Average and Maximum Contact Surface Temperature for each blanket. The EQ-5000 is tested in accordance with forced air patient temperature management devices as specified in ASTM F2196.02.

**Table 4 Average and Maximum Contact Surface Temperature** 

Blanket REF	Description	Average Contact Surface Temperature	Maximum Contact Surface Temperature
SW-2001	Adult Blanket	39°C	44°C
SW-2002	Pediatric Blanket	41°C	44°C
SW-2003	Upper Body Blanket	41°C	44°C
SW-2004	Lower Body Blanket	41°C	44°C
SW-2005	Neonate to Small Child Blanket	41°C	44°C
SW-2006	Preemie to Neonate Blanket	41°C	43°C

## **6 CONTROL PANEL FOR THE EQ-5000**

Figure 10 shows the Control Panel for the EQ-5000 and Table 5 provides a description of the controls and indicators.

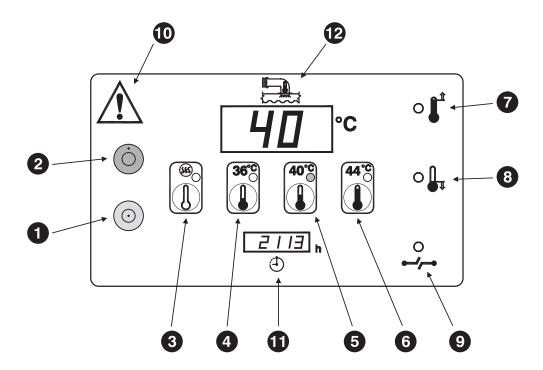


Figure 10 EQ-5000 Convective Warmer Control Panel

## **Table 5 EQ-5000 Convective Warmer Controls and Indicators**

$\odot$	1	Power ON This green button powers ON the warming unit.
		Note: To remove all power from the warming unit the MAINS power cord must be removed from the electrical receptacle.
$\odot$	2	Power OFF This orange button powers OFF the warming unit.
	3	Ambient Air Button (Start up setting) When selected, the convective warmer's heater is turned off and the blower operates.
36°C	4	<b>36°C Temperature Setting Button</b> When selected, the air temperature is set to 36°C at the hose end.
40°C	5	<b>40°C Temperature Setting Button</b> When selected, the air temperature is set to 40°C at the hose end.
44°C	6	<b>44°C Temperature Setting Button</b> When selected, the air temperature is set to 44°C at the hose end.
<b>I</b>	7	Over Temperature Alarm Indicator If the hose end temperature is more than 3°C above the selected temperature, this indicator illuminates, an audible alarm will sound and the heater and blower shut off.
<b>₽</b> ₽	8	Under Temperature Indicator If the hose end temperature is more than 3°C below the selected temperature, this indicator flashes.
~/~	9	Disconnect Indicator  If the temperature sensor wire or the hose is not attached properly or the heater has an open wire circuit, this indicator illuminates and the heater and blower shut off.
A	10	Attention Caution, consult accompanying documents.
h	11	Elapsed Time Display (h=hour) Displays in hours the cumulative time use of the warming unit.
	12	Hose End Temperature Temperature in degrees C at the hose end.

#### 7 GENERAL MAINTENANCE

Only authorized personnel should perform any routine maintenance and repairs.

## 7.1 Cleaning the EQUATOR™ Convective Warmer

- 1. Unplug the MAINS power cord from the electrical receptacle.
- 2. Clean the entire EQ-5000 after every use.
  - Routine Cleaning Use a mild detergent or 70% isopropyl alcohol and a soft cloth
  - Disinfecting A 10% bleach solution may be used
- 3. Allow the warming unit to dry completely before returning to service.

## 7.2 Required Maintenance

#### 7.2.1 Air Filter

Replace inlet air filter every 12 months.

#### 7.2.2 Electrical Safety Testing

Routine electrical safety testing that involves ground bond, hypot and leakage current should be performed by authorized personnel.

#### 7.2.3 Thermostat Safety Testing

- 1. The warming unit must be at a cold start, ambient temperature.
- 2. Cover the hose nozzle so that there is no airflow.
- 3. Press the ON button (①)
- 4. After the warming unit completes its self-test, press the 44°C Temperature setting button 4.
- 5. If the thermostat does not open within 130 seconds or if there is smoke or a burning smell, press the OFF button and disconnect the MAINS power immediately. Contact Level 1 or an authorized representative for service.
- 6. When the thermostat opens, the motor and heater will stop and the disconnect indicator will illuminate.
- 7. Press the OFF button (i)
- 8. Uncover the hose nozzle and wait approximately 5 minutes for the thermostat to reset.
- 9. Press the ON button ①. The warming unit should complete its self-test and start to run. If the warming unit does not run properly, then discontinue use of the convective warmer and remove it from service. Contact Level 1 or an authorized representative for service.

## **8 TROUBLESHOOTING GUIDE**

GENERAL FAILURES	
Symptom	Possible Cause
Warming unit will not activate when ON button is pressed.	<ol> <li>No AC power to Mains PCB J1.         <ul> <li>a. Line Cord malfunction.</li> <li>b. Poor power connector insertion or connections.</li> <li>c. Damaged line filter.</li> </ul> </li> <li>AC Power to Mains board.         <ul> <li>a. Fuse F1, F2 and/or F3 blown.</li> <li>b. Connections bad or intermittent.</li> <li>c. 5V Power Supply not functioning.</li> <li>d. Control PCB malfunctions.</li> </ul> </li> </ol>
Warming unit does not complete self-test  Warming unit bypasses self-test and goes directly to ambient	<ol> <li>Self-test stops with display above 34°C.</li> <li>Self-test started at too high of a nozzle temperature. The self-test will automatically continue when temperature drops below 34°C.</li> <li>Disconnect indicator LED lit – display jumps.         <ul> <li>Air hose electrical connector disconnected or not fully inserted.</li> <li>Air hose not fully inserted into its port on the back of the warming unit.</li> <li>Connector J7 or J8 on control PCB disconnected.</li> </ul> </li> <li>Disconnect indicator flashes twice and self-test does not complete.         <ul> <li>The warming unit display is steady at ambient temperature.</li> <li>Control board safety alarm circuit malfunction.</li> <li>Hose has a malfunction.</li> </ul> </li> <li>Control board test switch SW1-1 in test position. All sections should be in "NORM" position.</li> </ol>
AIR FLOW FAILURES	
Symptom	Possible Cause
No air flow	<ol> <li>Hose or hose electrical connector disconnected.</li> <li>Connector J7 or J8 on control PCB disconnected.</li> <li>Motor fuse F5 on Mains PCB blown.</li> <li>Motor connections loose or disconnected.</li> <li>Motor driver PCB (if installed) malfunctions.</li> <li>Thermostat open (under Mains PCB).</li> </ol>
Weak air flow	1. Clogged air filter or obstructed air intake.
	2. Improperly installed air filter.
Too strong air flow (Noisy)	
	Improperly installed air filter.     Motor driver PCB malfunction or speed misadjusted.     No air filter or air filter not properly installed.
Too strong air flow (Noisy)	Improperly installed air filter.     Motor driver PCB malfunction or speed misadjusted.     No air filter or air filter not properly installed.
Too strong air flow (Noisy)  HEAT RELATED FAILURES	<ol> <li>Improperly installed air filter.</li> <li>Motor driver PCB malfunction or speed misadjusted.</li> <li>No air filter or air filter not properly installed.</li> <li>Motor driver PCB malfunction or speed misadjusted.</li> </ol> Possible Cause <ol> <li>Ambient air button is selected.</li> <li>Heater element failure.         <ol> <li>Disconnect indicator flashes.)</li> <li>Heater control solid-state relay failure.             <ol> <li>Disconnect indicator flashes.)</li> </ol> </li> </ol></li></ol>
Too strong air flow (Noisy)  HEAT RELATED FAILURES  Symptom  No heat – Blower running  Temperature display more than 1°C below or above	<ol> <li>Improperly installed air filter.</li> <li>Motor driver PCB malfunction or speed misadjusted.</li> <li>No air filter or air filter not properly installed.</li> <li>Motor driver PCB malfunction or speed misadjusted.</li> </ol> Possible Cause <ol> <li>Ambient air button is selected.</li> <li>Heater element failure.         <ol> <li>Disconnect indicator flashes.)</li> </ol> </li> <li>Heater control solid-state relay failure.         <ol> <li>Disconnect indicator flashes.)</li> </ol> </li> <li>Control PCB failure (Disconnect indicator flashes.)</li> <li>Out of calibration.</li> </ol>
Too strong air flow (Noisy)  HEAT RELATED FAILURES  Symptom  No heat – Blower running	<ol> <li>Improperly installed air filter.</li> <li>Motor driver PCB malfunction or speed misadjusted.</li> <li>No air filter or air filter not properly installed.</li> <li>Motor driver PCB malfunction or speed misadjusted.</li> </ol> Possible Cause <ol> <li>Ambient air button is selected.</li> <li>Heater element failure.         <ol> <li>Disconnect indicator flashes.)</li> </ol> </li> <li>Heater control solid-state relay failure.         <ol> <li>Disconnect indicator flashes.)</li> </ol> </li> <li>Control PCB failure (Disconnect indicator flashes.)</li> </ol>

#### 9 LIMITED WARRANTY

#### **Level 1º EQ-5000 Convective Warmer**

This EQ-5000 Convective Warmer is warranted by Level 1 to be free from defects in material or workmanship for a period of 1 year (12 months) from the date of shipment to the customer. If the customer finds any EQ-5000 Convective Warmer to have such defects during this period, it should be returned to the address provided in the Service section of this manual. At Level 1's option, the product will either be repaired or replaced by a new machine and returned to the customer. Provided Level 1 confirms that there were defects in the EQ-5000 Convective Warmer, Level 1 will also refund the customer's reasonable cost of returning the machine for repair.

This warranty will not apply in respect to any EQ-5000 product which does not have its original Serial Number label intact. Nor will this warranty apply to any damage or defect caused by misuse of the product; by careless or deliberate mistreatment of the product; or by any impact to the product.

In no event will Level 1 or its distributors be liable for consequential or economic loss incurred by the customer.

The liability of Level 1 and its distributors for any defect in the EQ-5000 product will be limited to the invoice value of the product.

This warranty does not affect any warranty or guarantee to which the customer is irrevocably entitled by virtue of any applicable law. With that proviso, this warranty replaces all other express or implied warranties, representations or indemnities to which the customer may otherwise be entitled by virtue of any law, trade practice or otherwise.

#### 10 SERVICE

All service must be performed by Level 1 or a Level 1 authorized representative. Service by any other person or organization voids the warranty and transfers liability for malfunctions of the device to the servicing organization.

## **Warranty Service**

Units received for repair, which have not been obviously abused or impact damaged and are still under warranty will be promptly repaired and returned at no charge. See the Limited Warranty section of this manual. A no-charge purchase order is requested for tracking.

## **Non-Warranty Work**

Units received which have suffered obvious abuse or impact damage and units no longer under warranty will be promptly inspected and a verbal estimate of repair cost will be given to you. A purchase order will be required from the hospital consistent with the verbal estimate. A written estimate will be provided upon request.

Before returning your EQ-5000 for service, contact Level 1 for Returned Goods Authorization.

NOTE: The EQ-5000 must be cleaned and disinfected for repair shipment or it will be immediately returned as received.

For service, contact your Level 1 distributor or the Level 1 Technical Service Department at:

Level 1, Inc. 160 Weymouth Street Rockland, MA 02370 USA

USA/Canada 1-800-553-8351 International +1-781-878-8011



Graseby Medical, Ltd WD24 4LG UK

Australian Representative:

Smiths Medical Australasia Evandale Place 142 Bundall Road Bundall, QLD 4217, Australia

#### 11 PRODUCT SPECIFICATIONS

Warming Unit Dimensions 11.75" H x 7.5" D x 9.5" W (30cm H x 19cm D x 24cm W)

15 Pounds (6.8 kg)

Electrical 115 VAC, 8.05 Amps, 60 Hz

Electrical Safety Rating Type BF

Environmental

Operating Temperature 15.6°C to 26.7°C (60°F to 80°F)
Operating Humidity 0 to 100% (non-condensing)
Transport and Storage 0 to 100% (non-condensing)

Hose End Temperature Low: 36°C ±1°C (97°F ±2°F)

Medium:  $40^{\circ}\text{C} \pm 1^{\circ}\text{C} (104^{\circ}\text{F} \pm 2^{\circ}\text{F})$ High:  $44^{\circ}\text{C} \pm 1^{\circ}\text{C} (111^{\circ}\text{F} \pm 2^{\circ}\text{F})$ 

Approximate time to change the average contact surface temperature from 20°C to 36°C 7 minutes

Low:

Over Temperature Alarm -

Forced Air Over Temperature Protection

Medium:  $43^{\circ}\text{C} \pm 1^{\circ}\text{C} (109 \pm 2^{\circ}\text{F})$ High:  $47^{\circ}\text{C} \pm 1^{\circ}\text{C} (117 \pm 2^{\circ}\text{F})$ 

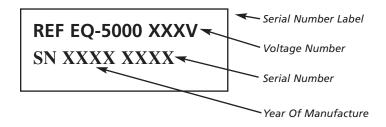
 $39^{\circ}C \pm 1^{\circ}C (102 \pm 2^{\circ}F)$ 

Air Flow 7.7 – 9.0 m/sec (1520 – 1780 feet/min)

1.02 - 1.19 cmm (36.6 - 42.9 cfm)

Filtration System 0.2 micron filter

Serial Number



## 12 ORDERING INFORMATION

## **Accessories**

Level 1 Part Number	Product Description
SW-2001	Adult Full Body Blanket 10/case
SW-2002	Pediatric Full Body Blanket 10/case
SW-2003	Upper Body Blanket 10/case
SW-2004	Lower Body Blanket 10/case
SW-2005	Neonate to Small Child Intraoperative Blanket 10/case
SW-2006	Preemie to Neonate Intraoperative Blanket 10/case

## **Replacement Components**

Level 1 Part Number	Product Description
SW5-HOSE7	Hose Assembly, 2.1m (7ft)
SW5-HOSE-N	Neonatal Hose, 1.5m (5ft)
CW-5000	Cord Wrap
HH-5000	Hose Holder
SC-5000	Sheet Clip
F3-5000	Filter
RC-5000	Rolling Cart

Order by Phone: +1 781-878-8011 or within the USA & Canada, call 1-800-553-8351

Order by Fax: +1 781-878-8201

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## 13 SYMBOLS

<u>^</u>	Caution, consult accompanying documents
°C	Degrees Celsius
	Over Temperature
	Under Temperature
<b>-</b> /-	Disconnect Indicator
	Ambient Air Button (Heater OFF)
36°C	36°C Temperature Setting Button
40°C	40°C Temperature Setting Button
44°	44°C Temperature Setting Button
•0	OFF - Only for part of the equipment. The MAINS are still connected.
<u></u>	ON - Only for part of the equipment. The MAINS are still connected.
	Hose End Temperature
<b>(</b>	Elapsed Time

h	Hours
$\sim$	Alternating Current
IPX1	Protected Against Dripping Water with enclosure tilted up to 15 degrees
	Electrical Shock Hazard
M	Date of Manufacture
2	Single Use Only
LATEX FREE	Latex Free
REF	Catalog Number
<b>†</b>	Type BF
	Contact for Information
EC REP	Authorized Representative in the European Community
SN	Serial Number
	No Free Hosing