

KANMED[®] WARMINGCABINET

USER MANUAL AND TECHNICAL MANUAL



NOTE: This manual contains important information concerning safety and daily use as well as maintenance instructions and should be stored for future use.

This manual is valid for all cabinets that are delivered after 2004

Manufactured by:
KANMED AB

PART NO: GE-1002-070/5
November 2009



Note:

The preset maximum temperature is normally 42°C.
However the Cabinet can be ordered with 50°C as the maximum temperature.
These cabinets are marked on the front panel with a 50°C label.
Make sure that the contents in the Cabinet can withstand this temperature.

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1. SAFETY INSTRUCTIONS








INTENDED USE

Kanmed Warming Cabinet GE-1380-XX is primarily intended for warming of Gel Pads, blankets, fluids, up to a temperature of 42°C (or 50°C if your cabinet is configured to 50°C)
 Kanmed Warming Cabinet shall be used by trained hospital staff according to this user manual and in accordance with normal hospital routines.
 It is **NOT** intended for warming of Blood Products and Nutritional Products.

IMPORTANT SAFETY ADVICE

- Adjust the cabinet so that it is correctly positioned, vertically and horizontally.
- **Secure the cabinet to the wall using the built in brackets at the top.**
- **Note!** If the cabinet is not secured to a wall, don't pull out more than **one** shelf/basket at a time.
- The intention of the wheels is to facilitate moving the Cabinet for easy cleaning under and behind the Cabinet
- Cabinet on wheel are not intended for transport of hospital products
- Cabinets on wheels must be rolled slowly and with great care.
- Never pull out all shelves/baskets at the same time. The cabinet can tilt forward if it is not secured to the wall.
- Do not overload the shelves/baskets. Maximum load on a shelf is 8 kilos. (Max 2 pcs. of Kanmed Gel Pads (45x50x1.5))
- Maximum load in a basket is 20kg.
- Do not overfill the **top shelf** - there must be at least 5 cm's free space to ensure air circulation.
- Don't block the ventilation holes at the inside rear of the cabinet.
- Be extra careful with contents if your cabinet is a model that can be set up to 50°C. Risk of burning patients.
- Do not warm Blood Products and Nutritional Products in the Cabinet
- **Risk of burning.** If your Cabinet is set to 50°C you must check that the contents are not too warm when they reach the patient.

EXPLANATION OF SYMBOLS

	Consult Users Manual		OFF
	ON		AC current
	UP button, rises temperature		DOWN button, decreases temperature
	SET button, for displaying desired temperature		

2. GENERAL DESCRIPTION

THE CABINET

The cabinet is made of stainless steel and insulated in order to reduce heat loss to ambience and to reduce noise. For the same reason the door is double glassed.

THE HEATING COMPARTMENT

Heating element, fan, thermostat, temperature regulator/indicator and electrical connections are all placed on a "shelf" at the top of the cabinet. A spare fan is also included and mounted in the heating compartment. The heating compartment is kept in place by a small screw that, when loosened, allows the whole heating compartment to be pulled completely out to make service quick and easy.

THE SHELVES-BASKETS

The shelves/baskets run on wheels and can be pulled fully out until they are automatically stopped. To completely remove the shelves/basket for cleaning or repositioning, lift the front of about 5 cm upwards and remove it.

EXTRA SHELVES- EXTRA BASKETS

Extra shelves/baskets and rails are available.

Mount the rails with the screws supplied using the prepared mounting holes and then push the shelf/basket in place by holding the front higher than the rear.

3. Description of function

The warming cabinet and its contents are warmed by warm air heated by a 800 Watt warming element. The hot air is circulated by a fan and distributed evenly through the outlets at the rear of the cabinet. The temperature is regulated, by the temperature regulator T1 to the set temperature.

Thermostat T2 functions as an over temperature protection and will take over the temperature control in case the air temperature exceeds 45°C. At the same time the red lamp on the front panel will be lit to indicate that there is a malfunction. Inside the heating element there is an additional over temperature protection that is self-resetting. It will be activated in case the fan stops or goes too slow.

NOTE: If the red over temperature lamp is lit there is an error that requires a technician.

4. Technical

ELECTRICAL DATA:

Voltage	220-240 Volt AC
Power max.	800 Watt *)
Frequency	50 / 60 Hz
Fuses	T 6,3A L250V

PHYSICAL DATA Cabinet	GE-1380	GE-1380/90
Height	175 cm	90 cm
Width	66 cm	66 cm
Dept	60 cm	60 cm
Weight	About 180 Kg	About 110 Kg
Inner volume	About 410 L	About 180 L

GE-41500 Shelves inner measure

Height	2 cm (edge)
Width	52 cm
Dept	50 cm

GE-41600 Basket inner measure

Height	13cm
Width	52cm
Dept	50cm

TEMPERATURES

Accuracy	± 1°C
Hysteresis (T2 over temp.)	4°C max

42°C STANDARD CABINET

Working temperature of circulating air	35°C – 42°C, selectable in steps of 1°C
Over temperature protection. Visual alarm	45°C

50°C STANDARD CABINET

Working temperature of circulating air	35°C – 50°C, selectable in steps of 1°C
Over temperature protection. Visual alarm	At about 52°C

WARMING CAPACITY

Warming of 10 gel pads GE-455015 45 x 50 x 1.5 cm from 22°C to 40°.	3 hours
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MODE OF OPERATION

Designed for continuous use

CE - MARKING

According to 89/366/EEC and 93/68/EEC
(EN 60601-1-2, EN55011 (1991))

*) The nominal effect of the heating element 800 W. Due to the thermostat regulation the average power consumption is about 150- 300 W

Expected Lifetime

Kanmed warrants a safe lifetime of 10 years from first day of use. This is under the condition that the unit has been serviced according to the user and or service manual and that the unit has not been modified or changed in any way or for any reason.

5. UNPACKING AND PACKING LIST

The cabinet is when shipped from Kanmed carefully packed. Check for damages and report them **immediately** to your supplier. Damages reported after the cabinet has been brought into use are not accepted.

6. INSTALLATION

Adjust the feet so that the cabinet is levelled. Connect the cabinet to a grounded power outlet.

NOTE: Always secure the cabinets to a wall by using the built in top brackets to avoid the risk of tipping forward at unfortunate circumstances.

7. USING THE CABINET

7.1 GENERAL ADVICE

Open the door and switch on the Cabinet with the green power switch at the upper right side. Check the set temperature and adjust if necessary according to 7.2

7.2 TEMPERATURE ADJUSTMENT AND INDICATION

The display shows the actual working temperature in the cabinet in °C as long as the ON/OFF switch is on and the door is closed.

The set temperature is indicated when the set button is pressed.

Every time the warming is switched on (ON/OFF or closing door), the set value is automatically set to the set value that was valid at the previous switch off of the warming.

The working temperature can be selected in steps of 1°C within the range of 35 to 42°C (or 50 °C)

Old version of regulator (700-0659)



Newer version of Regulator (Part No: 700-0821)



- | | |
|------|--|
| SET | Press set button to show the set (selected) temperature. The set value is shown and the OUT lamp blinks for 2 sec. |
| UP | Press UP arrow within 2 sec. for temperature rise until desired value is shown in the display. |
| Down | Press DOWN arrow within 2sec. for temperature decrease until desired value is shown in the display. |

8. MAINTENANCE AND TROUBLE SHOOTING

8.1 CLEANING

Clean and disinfect with normal detergents. If hepatitis or HIV is suspected then use stronger disinfectants.

8.2 TEMPERATURE CONTROL/CALIBRATION

To be performed yearly by a qualified technician only.

GENERAL INFORMATION

Power Cable: Check the integrity of the power cable and verify proper earth connection.

The working temperature is regulated by the temperature regulator T1 and the over temperature protection by capillary thermostat T2. When checking calibration of T1 and T2, their value is compared to the value of precision thermometer with an air sensor. The sensor T2 can be adjusted through a hole in the bottom of the heating compartment.

Place the sensor of the precision thermometer in the middle of the cabinet. Allow at least 3 hours for proper warming up.

8.2.1 TEMPERATURE REGULATION

INFORMATION ABOUT TEMPERATURE MEASUREMENT AND CALIBRATION

T1 is a powered microprocessor temperature regulator/indicator that has resolution of 1°C. Corrections can be done through a series of pushing's on the regulator buttons according to the description below.

PROCEDURE








Place the external control sensor as described under GENERAL INFORMATION above.

Start the warming and wait until the temperature is stable (at least 12 hours). Compare the external control thermometer with the set temperature and if the deviation is bigger than +/-1°C adjust as follows.

Old regulator type (700-0659)

1. Press UP and DOWN exactly simultaneously (only one beep may be heard, if you don't succeed then repeat) and keep buttons pressed for 5 sec until the indicator display shows "PA"
2. Press one time on UP, then the display shows μ 1, (parameter for calibration of sensors)
3. Press SET once and within 2 sec on UP or DOWN to compensate for the noted temperature difference, one press gives the change of 1°C.
For example: The display shows 42°C but the external control temperature shows 39°C. The difference is -3°C, to compensate this difference press three times on DOWN button (the earlier value will drop with 3 degrees)
4. Store the new calibrated value by pressing UP and DOWN simultaneously (only one beep may be heard, if you don't succeed- .repeat) and keep pressed for 5 sec until the indicator display shows the actual temperature.
5. Make a new measurement of the temperature and control that T1:s shown value compares to that of the external thermometer

Regulator type No 700-0821

1. Press UP and DOWN exactly simultaneously (↑ and ↓) (only one beep may be heard, if you don't succeed- .repeat) and keep buttons pressed for 5 sec until the indicator display shows "PA".
2. Press  one time.
3. Press  within 15s until -19 is displayed.
4. Press  one time.
5. Press UP and DOWN exactly simultaneously (↑ and ↓) until "SP1" is displayed
6. To change a parameter press  or  button till parameter "CA1" is received.
7. Press SET once and within 2 sec on  or  button to enter the noted temperature difference. press SET again
For example: The display shows 50°C but the external control temperature shows 47°C. The difference is -3°C, to compensate this difference press on DOWN button (Store the new calibrated value by pressing UP and DOWN simultaneously (only one beep may be heard, if you don't succeed- .repeat) and keep pressed for 5 sec until the indicator display shows the actual temperature.
8. Cycle the power to Off and On to set the new values.
9. Make a new measurement of the temperature and control that T1:s shown value compares to that of the external thermometer.

8.2.2 OVER TEMPERATURE

INFORMATION ABOUT TEMPERATURE MEASUREMENT AND CALIBRATION

The temperature sensor T2 is a capillary thermostat. In the Kanmed cabinet its hysteresis is 4°C max. When delivered T2 is set to 2°C above the maximum value of T1 (42°C or 50°C). The activation of T2 is identified by a clear click sound as well as by the red over temperature lamp is lit The procedure described below is a simplified method to check and if necessary adjust T2

PROCEDURE

1. First check the temperature regulation as described under 8.2.1 above. Set the regulator T1 on max .setting (42°C)
If the cabinet is cold, let it first get proper warm for at least 12 hours, before the measure/calibration is done. Check that the cabinet warms to the max temperature setting.
2. Adjust the set temperature by turning T2: s adjustment screw (you find it through the hole on the underneath of the shelve) with a screwdriver. Turn the adjustment screw fully clockwise (+). Now Turn counter clockwise back to activation (one click sounds), turn again clockwise past the activation point in tiny steps (a new click sounds)
3. Check that you don't activate the over temperature indication when run the cabinet in normal operation (with T1 prepared on 42°C) If this should happen you have to repeat the procedure and set T2:s activation point a bit higher

8.3 TROUBLE SHOOTING

If the warming is not starting, check as follows:

- Power cable connected (UK only - and plug fuse OK)?
- Power in the wall socket?
- Cabinet fuses OK?
- Power Switch on (If power is OK it will show a green light)
- Is the fan rotating? It shall start as soon as the power switch is On. If it is not rotating, making a strange noise or rotates slowly it must be changed.
- Is the heating element getting too warm? The heating element has a self resetting over temperature protection (85°C) and two 1000W heating wire loops. Only one of the 1000W heating wires is being used. If it breaks, the second can be used instead. If the temperature protection cuts out the element frequently, there is not enough airflow through the element.
- Check the fan and that the air intake under the heating compartment is not blocked.

NOTE: All checking that involves opening the heating compartment must be done by a qualified technician.

9. ACCESSORIES AND SPARE PARTS

ACCESSORIES

Part no	Description	Quantity
GE-41500	Shelf	1
GE-41600	Basket	1

SPARE PARTS

Part no	Description	Quantity
700-0180	Mains power switch	1
700-0181	Safety switch at door	1(old cabinets)
700-0183	Fan	1
700-0184	Heating Element	1
700-0457	Temperature sensor	1
700-0456	Transformer	1
700-0659	Temperature regulator	1(old model)
700-0821	New Temperature regulator	
700-0660	Diode 1N4005	1(old model)
700-0661	Capacitor 100 µF 63V	1(old model)
700-0185	Thermostat	1
700-0187	Red lamp	1
700-0201	Glass for door to cabinet 175 cm high	1
700-0211	Glass for door to cabinet 90 cm high	1
700-0202	Handle for door	1
700-0203	Wall mounting bracket	2
700-0669	Door gasket	2 m
700-0205	Set of screws	1
700-0206	Foot for cabinet	1
700-0453	Front panel label WC 1002, adhesive	1
700-0208	Fuse holder	1
700-0209	Fuse T6,3A	10
700-0460	Fuse T50mA	10
700-0462	Relais	1

10. WARRANTY

Kanmed warrants the purchaser that the Warming Cabinet is free from defects in material and workmanship for a period of 12 month from the date of delivery.

The sole obligation of Kanmed with respect to any such defect is limited to the repair with new or re-manufactured parts or, at the discretion of Kanmed, replacement of the equipment or refunding of the purchase price.

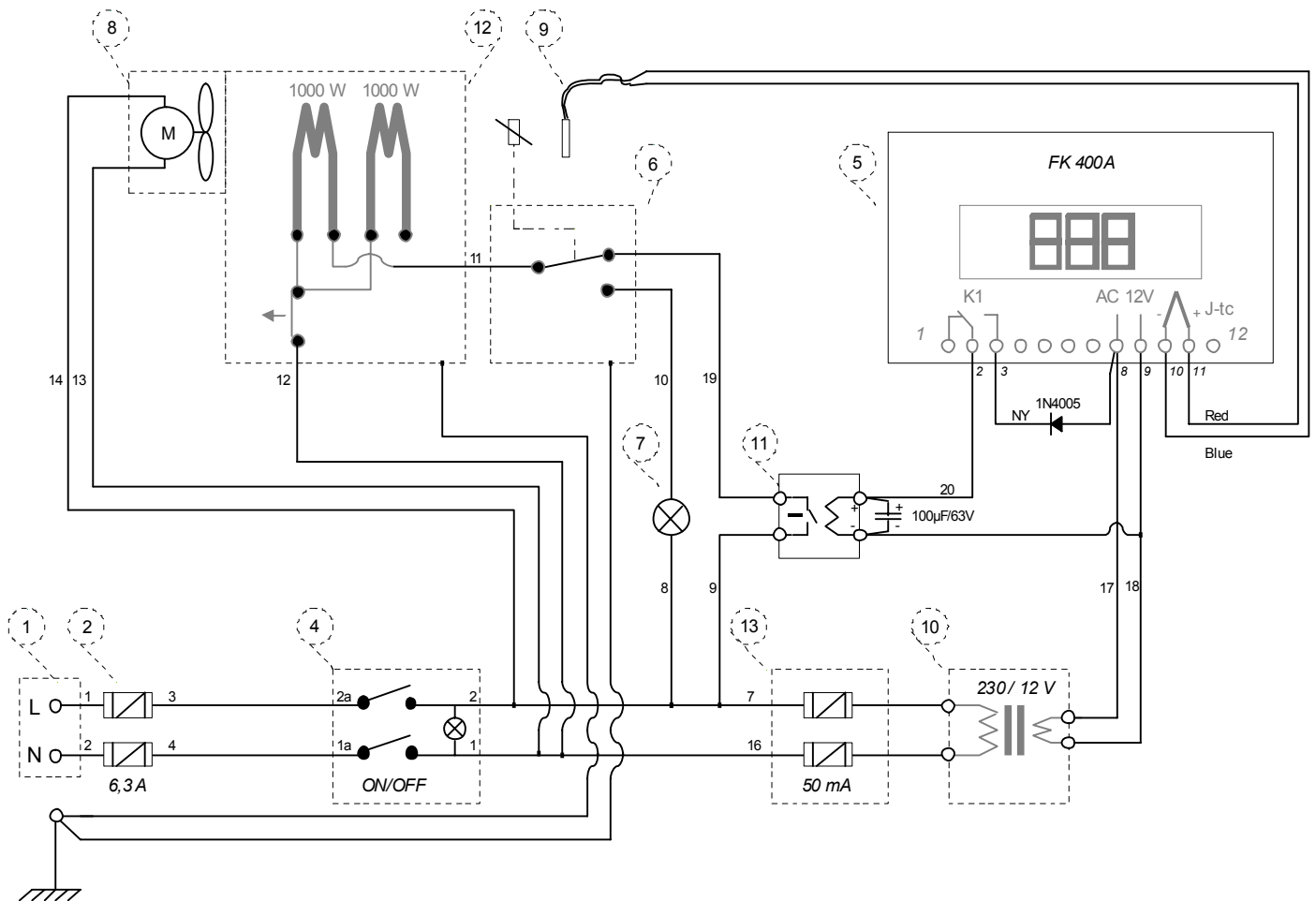
This warranty shall not apply if the product has been modified, adjusted or repaired other than by Kanmed or by organisations authorised by Kanmed or modified, adjusted or repaired not in accordance with written instructions provided by Kanmed or if the equipment has been subject to misuse, negligence or accident.

These warranties are made on the condition that prompt notification of a defect is given to Kanmed or its authorised dealers within the warranty period.

Kanmed shall have the sole right to determine whether a defect exists.

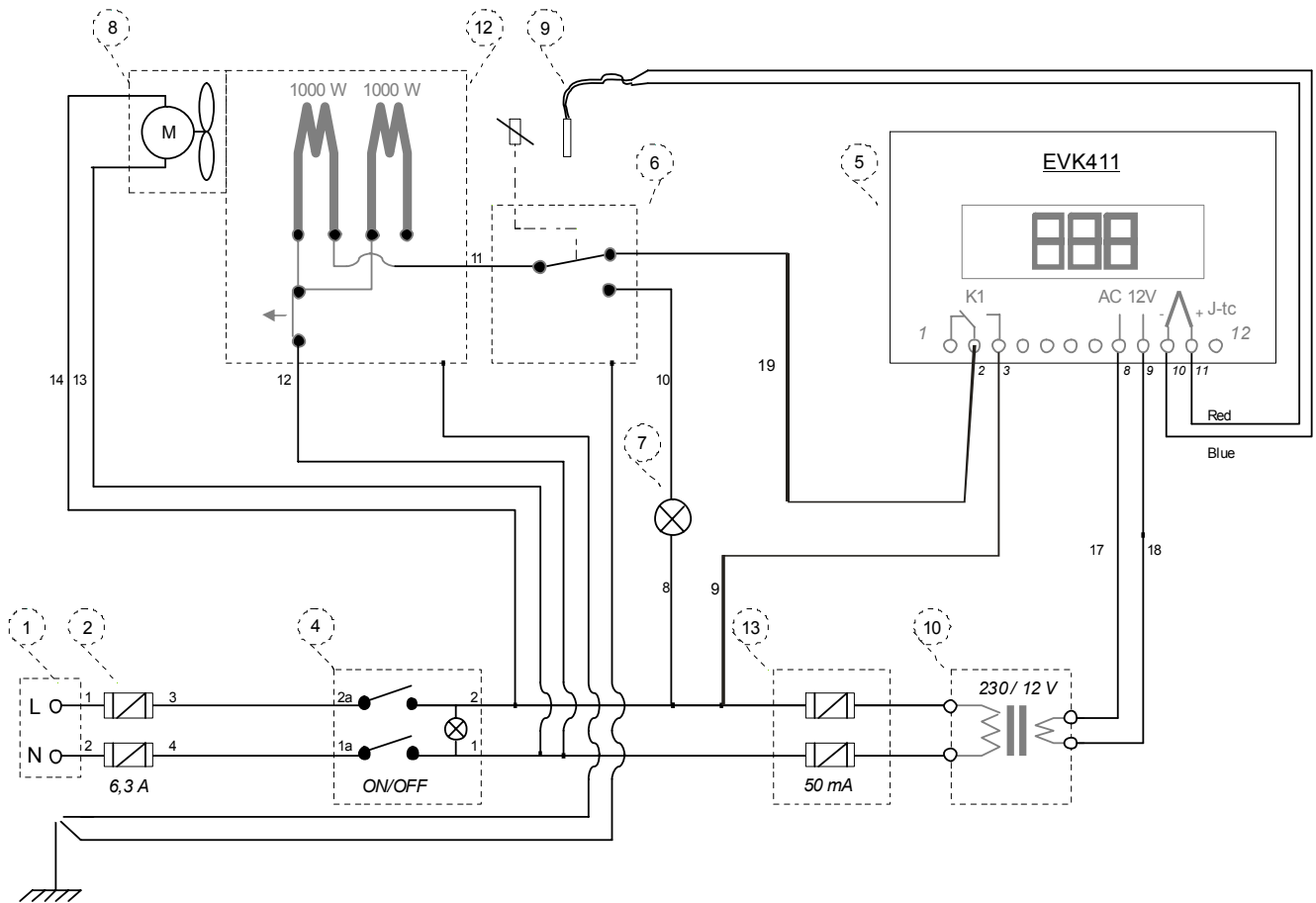
Kanmed shall not in any case be liable for special or consequential damages arising from the breach of warranty, breach of contract, negligence or any other legal theory.

11. CIRCUIT DIAGRAM for cabinets delivered from 2004 -2009



- 1. Connection socket
- 2. F1 Fuse 6,3A
- 4. S2 Main switch
- 5. T1 Temperature regulator
- 6. T2 Over temperature protection
- 7. L1 Warning lamp red – over temperature warning
- 8. M1 Fan
- 9. G1 Temperature sensor
- 10. TR Transformer
- 11. RE Relays
- 12. HE Heating element
- 13. F2 Fuses 50mA

12. CIRCUIT DIAGRAM for cabinets delivered from 2009



- 1. Connection socket
- 2. F1 Fuse 6,3A
- 4. S2 Main switch
- 5. T1 Temperature regulator
- 6. T2 Over temperature protection
- 7. L1 Warning lamp red – over temperature warning
- 8. M1 Fan
- 9. G1 Temperature sensor
- 10. TR Transformer
- 12. HE Heating element
- 13. F2 Fuses 50mA

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