

Warmette[®] Blanket Cabinet Warmette[®] Dual Cabinet

User Manual



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1 Safety Information


1.1 Intended Use

The Natus Warmette Blanket Cabinet is designed to store and warm blankets and hospital linens; while the Natus Warmette Dual Cabinet is designed to store and warm blankets and hospital linens in one compartment, and fluids (irrigation and/or injection) in the other compartment within the storage times and warming temperatures recommended by the manufacturers of those items.

Important! Before installing or using either of the cabinets read all sections of this manual carefully. There are safety considerations that should be read and understood before use.

1.2 Explanation of Terminology

This manual presents three types of precautionary information. The three types of statements carry equal weight; that is, they are of equal importance to the safe and effective use of the equipment. Each statement is categorized by using an introductory word in boldface as follows:


 **Warning!** Warnings indicate situations that, if not avoided, could result in serious injury or death to the patient or operator.

Caution: Cautions indicate situations that, if not avoided, could result in minor to moderate injury to the patient or operator, or damage to the equipment.


Note: Notes provide additional information to clarify a point in the text.

1.3 General Safety Information


Before installing and operating the cabinet, read all sections of this manual carefully. Observe all precautions to ensure the safety of the patients and those using the equipment. In addition, please refer to your hospital policy and procedure for warming blankets and fluids.


 **Warning! When using cabinet with Adjustable Feet:** you must secure the cabinet to the wall using the built in brackets at the top of the Cabinet.


Note: If the cabinet, at your own risk, is not secured to a wall, do not pull out more than one shelf/basket at a time.


 **Warning!** Cabinets on wheels are not intended for transport of hospital products. The intention of the wheels is to facilitate moving the cabinet for easy cleaning under and behind the cabinet.

Note: When moving the cabinet make sure the wheels do not hit any obstacles. Roll the cabinet with its front in the direction of where you want to go.


 **Warning!** Never pull out all shelves/baskets at the same time. The cabinet can tilt forward if it is not properly secured to the wall.


 **Warning!** Cabinets on wheels must be rolled slowly and with great care.


 **Warning!** Risk of burning patient. If your cabinet temperature is set higher than 110°F (43°C) you must check that the contents are not too warm when they reach the patient.

 **Warning!** Risk of burning yourself. If your cabinet is set higher than 110°F (43°C) you must be careful when you touch contents and the inner surfaces of the cabinet.

 **Warning!** Do not warm Blood Products and Nutritional Products in the Cabinet.

 **Warning!** To avoid the risk of electric shock, this equipment must only be connected to a grounded outlet.

 **Warning!** Electrical shock hazard when the enclosure is open. Always unplug the power cord from the electrical outlet before cleaning or maintaining the equipment.

 **Warning!** Not suitable for use in the presence of flammable anesthetic mixtures with air, oxygen, or nitrous oxide.

Caution: Do not overload the shelves/baskets.

- Maximum load on a shelf is 44 lbs (20 kg).
- Maximum load in a basket is 44 lbs (20kg).








Caution: Do not overfill the top shelf - there must be at least 2 inches (5 cm) free space to ensure air circulation.

Caution: Avoid blocking the ventilation holes inside of the cabinet.

Caution: Ensure that the contents can withstand the temperature you have selected otherwise you may risk destroying the contents. Follow manufacturer recommended storage times and warming temperatures.

Safety Symbols

 **Warning!** Be aware of the following symbols, which appear on the equipment.

Symbol	Meaning
I	On
O	Off
~	AC Current
	Manufacture Date
	Manufacturer
	Attention, consult product documentation
	WEEE Directive (Waste from Electrical and Electronic Equipment Directive) Symbol – Product should not be disposed of in normal waste
	UP button, rises temperature
	DOWN button, decreases temperature
	SET button, for displaying and changing desired temperature

2 Product Description

There are two kinds of large warming cabinets associated with this user manual: the Warmette® Blanket Cabinet and the Warmette® Dual Cabinet. The descriptions and instructions apply to both cabinets; unless noted otherwise.

The Warmette Blanket Cabinet has a single compartment with four shelves for warming blankets or hospital linens; and includes four adjustable feet. This cabinet is factory-set to 130°F (54°C) maximum, with a temperature range of 95-176°F (35-80°C).

The Warmette Dual Cabinet has one compartment on top for warming blankets or hospital linens with two blanket shelves, and one compartment on the bottom for warming fluids (irrigation and/or injection) with two fluid shelves and one fluid basket; and includes four adjustable feet. The blanket compartment is factory-set to 130°F (54°C) maximum with a temperature range of 97-176°F (36-80°C); and the fluid compartment is factory-set to 110°F (43°C) maximum, with a temperature range of 97-122°F (36-50°C).

Note: *The maximum temperature can be changed within the temperature range by reprogramming the regulator.*

2.1 General Description

CABINET

The cabinet is made of stainless steel and is very well insulated in order to reduce heat loss to the environment and to reduce noise. For the same reason the doors are double glazed with safety glass.

HEATING COMPARTMENT

The heating element, fan, thermostat T2 and temperature sensor are all mounted on a "pull out shelf" inside the top of the cabinet. The heating compartment is kept in place by a small screw that, when loosened, allows the whole heating compartment to be pulled completely out. This makes service quick and easy.

ELECTRONICS COMPARTMENT

The electronics compartment is located on the top of the cabinet. The power cable is connected at the back of the electronic compartment.

SHELVES/BASKETS

The blanket shelves are mounted with screws. The fluid shelves/baskets run on wheels and can be pulled fully out until they automatically stop. To completely remove the fluid shelves/basket for cleaning or repositioning, lift the front upwards and remove.

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. Shelves in the Blanket Warming Cabinet are hung using the holes in the side walls.

WHEEL KIT (OPTIONAL)

A Wheel Kit is available to replace the adjustable feet and facilitate moving the cabinet for easy cleaning under and behind the cabinet

2.2 Description of Function

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

An over set temperature alarm has been programmed to produce an audible and visual alarm if the actual cabinet temperature goes higher than the set temperature by 10°F (6°C). The audible alarm will sound and the display will flash “AL2” until the temperature has reduced to the approximate set temperature. The audible alarm can be stopped by pushing any button on the regulator.

Thermostat T2 functions as over temperature protection and will take over the temperature control in case the air temperature exceeds the maximum range temperature by approximately 9°F (5°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 itself, there is an additional over temperature protection that is self-resetting. It will be activated in case the fan stops or goes too slow.

The ON/OFF switch isolates the cabinet electronics from mains power.


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


2.3 Environmental Conditions

Normal Use:	Temperature Humidity	+50 to 93°F / +10 to 34°C 10-90% non-condensing
Storage, Transport	Temperature Humidity	-13 to 122°F / -25 to 50°C 10 – 90% non-condensing


3 Installation


1. Adjust the feet so that the cabinet is leveled (unless using with Wheel Kit accessory).
2. Secure the cabinet to the wall using the built in brackets at the top of the cabinet (unless using with Wheel Kit accessory).
3. Connect the cabinet to a grounded power outlet.

 **Warning!** *When using cabinet with Adjustable Feet: you must secure the cabinet to the wall using the built in brackets at the top of the Cabinet.*

 **Warning!** Cabinets on wheels are not intended for transport of hospital products. The intention of the wheels is to facilitate moving the cabinet for easy cleaning under and behind the cabinet.

Note: When moving the cabinet make sure the wheels do not hit any obstacles. Roll the cabinet with its front in the direction of where you want to go.

 **Warning!** *Cabinets on wheels must be rolled slowly and with great care.*

 **Warning!** *To avoid the risk of electric shock, this equipment must only be connected to a grounded outlet.*

4. Do not position the cabinet so it will be difficult to disconnect the mains power cable.

4 Operation

4.1 Operating the Warmette Cabinet

1. Switch on the Cabinet with the green power switch(es) at the upper front panel.
2. Check the set temperature and adjust if necessary according to 4.2

4.2 Temperature Adjustment and Indication

The display shows the actual working temperature in the cabinet in °F or °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. The last set temperature is stored in the controller. The working temperature can be selected in steps of 1 degree within the range pre-set at the factory or by your technician.

Note: The Warmette Blanket Cabinet is factory-set to 130°F (54°C) maximum. The Warmette Dual Cabinet is factory-set to 130°F (54°C) maximum for the blanket compartment and 110°F (43°C) maximum for the fluid compartment.

Note: To change the maximum temperature, see section 7.3

Regulator



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 SET. Press UP arrow within 2 sec. to increase the temperature until the desired value is shown in the display.
Down	Press SET. Press DOWN arrow within 2sec. for a temperature decrease until desired value is shown in the display.

Note: To lock the temperature setting see, section 7.4

5 Troubleshooting Guide

Note: In the USA, contact Natus Technical Service at +1 (800)-303-0306 or E-mail: technical_service@natus.com.

International Support - Please contact your local Distributor. Distributor locations can be found at www.natus.com.



Warning! Electrical shock hazard when the enclosure is open. Always unplug the power cord from the electrical outlet before cleaning or maintaining the equipment.

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

Ensure that the cables to the heating compartment do not get stuck when you close the heating compartment after service actions.

If the warming is not starting, check as follows:

- Power in the wall socket?
- Power Switch on (If power is OK it will show a green light)
- Power cable connected?
- Cabinet fuses OK?
- 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.
- Check the fan and that the air intake under the heating compartment is not blocked.
- Red lamp lights up now and then. Check the capillary thermostat and the temperature regulating unit.


6 Cleaning

Clean and disinfect with normal surface detergents as per your hospital protocol.

Clean the exterior of the cabinet with a cleaner recommended for stainless steel surfaces.

Note: *Avoid use of abrasive cleaners, chloride based cleaners, cleaners containing quaternary salts, or hydrochloric acid on stainless steel.*

Clean the window glass with a standard commercial glass cleaner.

 **Warning!** *Electrical shock hazard when the enclosure is open. Always unplug the power cord from the electrical outlet before cleaning or maintaining the equipment.*

7 Technical Section

7.1 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 grounded connection.

The working temperature is regulated by the temperature regulator T1 and the over temperature protection by capillary thermostat T2. When checking the calibration of T1 and T2, their value shall be compared to the value of a precision thermometer with an air sensor. Place the sensor of the precision thermometer in the middle of the cabinet. Allow at least 1 hour for proper warming up.

7.2 Temperature regulation










INFORMATION ABOUT TEMPERATURE MEASUREMENT AND CALIBRATION




T1 is a powered microprocessor temperature regulator/indicator that has resolution of 1°F or C. Corrections can be done through a series of button pushes on the regulator 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 1 hour). Compare the external control thermometer with the set temperature and if the deviation is bigger than +/-1°F or C adjust as follows.

On the regulator:





1. Press  and  exactly simultaneously (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 SET one time.
3. Press  within 15 sec until -19 is displayed.
4. Press SET one time.
5. Press  and  exactly simultaneously until "SP" (Select Parameter) 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 130°F but the external control temperature shows 127°F. The difference is -3°F. To compensate this difference press  button 3 times. Store the new calibrated value by pressing  and  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. Make a new measurement of the temperature and control that T1 shown value compares to that of the external thermometer.

7.3 To Change the Maximum Temperature (optional)

PROCEDURE










1. Follow the procedure above, step 1-5.
2. Use the  or  button and step to "r2". Press the SET button and change the maximum temperature set point using the arrow buttons.
3. Press SET again and then press and hold  and  buttons until the temperature is displayed and you are done or cycle the power Off/On to set the new values.
4. Press SET again and set the temperature to the desired set point and let the cabinet temperature stabilise.

Note: Think carefully about the risks and consequences of setting the max temp limit **higher** than the factory set temperature and about how to make the staff aware of higher settings.

7.4 To Lock Temperature Setting (optional)

To lock the display from changing the temperature you will need to perform the following steps and enter the programming mode:








PROCEDURE







1. Before you lock the display, enter the temperature you want it to be set to (i.e. 105°F).
2. Press and hold  and  simultaneously (only one beep will be heard) on the display until "PA" is displayed.
3. Press the SET button
4. Press the down button () until "-19" is displayed.
5. Press the SET button again and then press and hold  and  until "SP" is displayed.
6. Use the  or  button and step to "r3". This is where you set the flag for locking the set temperature. Press the SET button and change the value by using the arrow button from "0" to "1".
7. Press SET again and then press and hold  and  buttons until the temperature is displayed and you are done or cycle the power Off/On to set the new value.

7.5 To Change Unit of Measurement °F or °C Setting (optional)

To change the unit of measurement displayed (Fahrenheit or Celsius) you will need to perform the following steps and enter the programming mode:

PROCEDURE

1. Press and hold  and  simultaneously (only one beep will be heard) on the display until "PA" is displayed.
2. Press the SET button
3. Press the down button () until "-19" is displayed.
4. Press the SET button again and then press and hold  and  until "SP" is displayed.
5. Use the  or  button and step to "P2". Press the SET button and change the value using the arrow button ("0" = °C; "1" = °F).
6. Press the SET button

7. Use the  or  button and step to “r1”. Press the SET button and change the minimum temperature set point using the arrow buttons (i.e. 95°F or 35°C)
8. Press the SET button
9. Use the  or  button and step to “r2”. Press the SET button and change the maximum temperature set point using the arrow buttons
10. Press SET again and then press and hold  and  buttons until the temperature is displayed and you are done or cycle the power Off/On to set the new values.

Note: *After changing the unit of measurement, it is necessary to change the set temperature value. Press the SET button and arrow buttons to increase or decrease the temperature until the desired value is shown in the display.*

8 Specifications

Outside Dimensions (Blanket & Dual Cabinets)

With Adjustable Feet (standard)

Height	71.25-73.25 in (181-186 cm)
Width	26 in (66 cm)
Depth	25 in (64 cm)

With Wheel Kit (optional)

Height	72.5 in (184 cm)
Width	26 in (66 cm)
Depth	25 in (64 cm)

Inside Dimensions (H x W x D)

Blanket Cabinet	55 x 22 x 21 in (140 x 56 x 53 cm)
Dual Cabinet	23 x 22 x 21 in (59 x 56 x 53 cm) x 2

Inside Volume

Blanket Cabinet	14.66 ft ³ (415 liters)
Dual Cabinet (blanket + fluid)	5.65 ft ³ (160 liters) + 5.65 ft ³ (160 liters)

Maximum load per shelf/basket 44 lbs (20 kg)

Weight

Blanket Cabinet	309 lbs (140 kg)
Dual Cabinet	353 lbs (160 kg)

Electrical

120V~, 60Hz
230V~, 50Hz

Power Rating

Blanket Cabinet	550 W
Dual Cabinet	1100 W

Average Power Consumption

Blanket Cabinet	100-250 W
Dual Cabinet	150-250 W

Temperature Range

Blanket Cabinet	95-176°F (35-80°C); factory set to 130°F (54°C) maximum
Dual Cabinet (blankets)	97-176°F (36-80°C); factory set to 130°F (54°C) maximum
Dual Cabinet (fluids)	97-122°F (36-50°C); factory set to 110°F (43°C) maximum

Accuracy

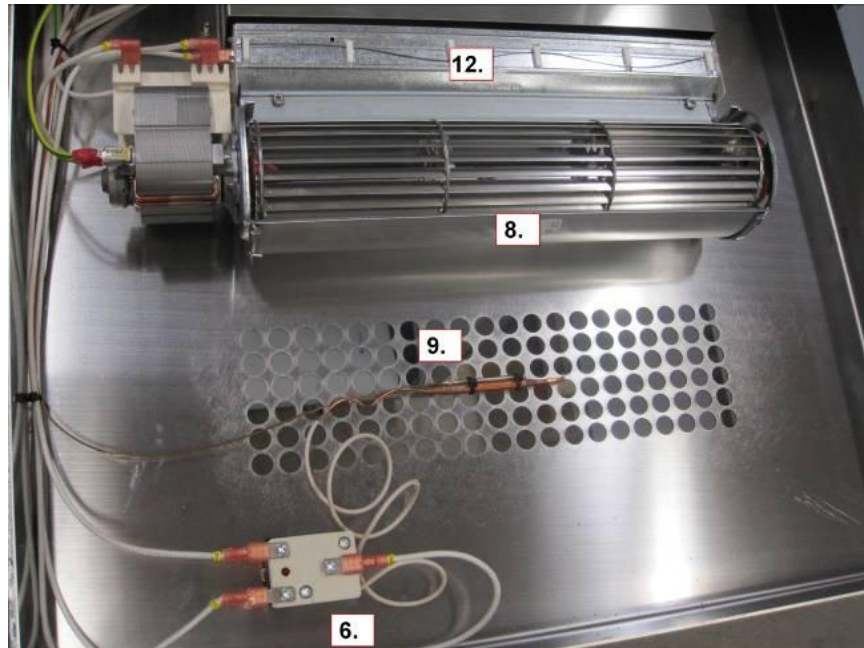
Blanket Cabinet	±7.2°F (± 4°C)
Dual Cabinet (blankets)	±7.2°F (± 4°C)
Dual Cabinet (fluids)	±3.6°F (± 2°C)

Regulatory Standards

IEC/EN 61010-1, 2nd Ed.
IEC 61010-2-01:2003
UL 61010-1/CSA-C22.2 No. 61010-1,
2nd Ed, 2004, rev. Oct 2008
EN 61326-1:2013 (230V only)
FCC Part 15 Subpart B class A (120V only)

9 Spare Parts

Part no	Picture Position	Description	Quantity
012412		Casters (set of 4), Warmette Cabinet	1
012927	4	Mains Power Switch, Warmette Cabinet	1
012928	8	Fan (36/23W 120V) Warmette Cabinet	1
012929	12	Heater (2 x 500W, 115V) Warmette Cabinet	1
012930	9	Temperature Sensor, Warmette Cabinet	1
012931	5	Temperature Regulator, Warmette Cabinet	1
012932	6	Thermostat 16A 115V, Warmette Cabinet	1
012933	7	Red Lamp, Warmette Cabinet	1
012934		Magnetic Handle for Door, Warmette Cabinet	1
012935		Wall Mounting Bracket (set of 2), Warmette Cabinet	1
012936		Door Gasket, Warmette Cabinet	5m
012937		Foot for cabinet, Warmette Cabinet	1
012938	13	Fuse(6.3A 125V) Warmette Large Blanket Cabinet	2
012939		Glass for door, Warmette Large Blanket Cabinet	1
012941	13	Fuse(10A 125V) Warmette Large Combination Cabinet	2
013256		Glass for door, Warmette Dual Cabinet (700-0212)	1
013350	13	Fuse (6,3AL 250V) Warmette Blanket Cabinet 230Vac version	2
013351	13	Fuse (10AL 250V) Warmette Large Combination Cabinet 230Vac version	2



10 Circuit Diagrams

