



Warm Line

Thermostatic cells for medical fluids in bottles and bags

Warm-MB

Thermostatic cells for medical fluids



Applications

The thermostatic cell is used to heat and maintain medical fluids for diagnostic and therapeutic use to body temperature. The Warm-MB can be used for fluids contained in glass or plastic bottles, or in soft plastic bags.

Features

The thermostatic cell is heated using electrical resistance combined with forced air ventilation. It is entirely made of stainless steel both internally and externally, so it can be cleaned completely with normal cloths using ordinary detergents and disinfectants.

The device is equipped with a temperature control system that maintains a temperature of 36°C / 96,8°F with a tolerance of ± 1 °C / $\pm 1,8$ °F.

Constant temperature is assured, regardless of the ambient temperature and the temperature of incoming fluids, provided the ambient temperature is not above 35°C / 95°F or below 15°C / 59°F. This precise temperature is controlled and maintained thanks to a dual safety system and closed-loop regulating system. In order to prepare the fluid for ready use at the required time, the device is provided with a special user-

programmable timer that automatically switches on the device at a pre-set time.

This programming must take place six hours and thirty minutes before the fluids are needed.

The temperature cannot be set by the users as it is fixed beforehand.

The front panel display is used to present device status or anomaly conditions to the operator:

- Forced air ventilation failure
- No heating, failure of electrical resistance heater
- Over temperature or under temperature

General specifications:

Power supply: 230 VAC 50 Hz.

Measurements:

540 x 380 x 515mm

Weight:

18 Kg

Capacity: 27 l

- 500 ml : 16 vials or 16 bags

- 250 ml : 24 vials

- 100 ml : 34 vials



Warm-SB

Thermostatic device for glass bottles

Applications

The Warm-SB is designed to maintain a bottle containing fluid, in particular CT/Angiography/Haemodynamics/scanning contrast media, at body temperature for diagnostic imaging purposes. The device is particularly suitable for 500/250ml glass and plastic bottles.

Purpose

For correct diagnostic imaging technique, contrast media should be administered at body temperature. Normally warming in a special thermostatic cell, e.g. Warm-MB, occurs before use. The contrast media is then transferred to the injector syringe, which has a maximum capacity of 250 ml and is equipped with a heating sleeve that serves to maintain the temperature. In the case of 500 ml bottles the residual fluid (250 ml) remains at room temperature for a prolonged period, corresponding to the time between procedure and the infusion time of the contrast agent in the loaded syringe. In these conditions the contrast media cools, and as a result it is no longer at body temperature when it is transferred to the injector, resulting in infusion of a fluid that is at a lower temperature than intended. The Warm-SB device serves to maintain the bottle at a constant temperature (body temperature) for the time necessary to complete the infusion of the contrast media present in the injector. This ensures the residual fluid is infused at body temperature.

Main features

Warm-SB is provided with a heating system which keeps the fluid contained in a bottle at body temperature for an unlimited time. If the bottle has been pre-heated in the Warm-MB, the Warm-SB should be used immediately afterwards to maintain the temperature.

Technical specifications

The device consists of a heating system provided with heating bands, wrapping an envelope of conductive material where the bottle is housed. The conductive envelope is wrapped by insulating material. The unique design of the device avoids the contact of liquids with the electrical parts in the event of accidental break of the bottle. The device is powered by 220-110 Vac, according to the country where it is used. Working temperature: $36^{\circ}\text{C} \pm 1^{\circ}\text{C}$.



Operating instructions

The supply unit available on the cable connecting the device to the mains supply is provided with main switch with warning light. Also the device is provided with specially designed switch on the panel. The housing seat of the bag is provided with 2 leds:

- white for visualization of the bag
- two/colored yellow/green:
 - continuous yellow: heating stage
 - flashing yellow: fault/error reporting
 - continuous green: achieved temperature.

In case of failure or of any anomaly, the event is reported by the flashing yellow led. For safety reasons the device interrupts heating in this situation.

Final note

If the size of the bottles is compatible with the geometric characteristics of the Warm-SB, it can be used for any fluid type that's preferred to be administered at body temperature.

Warm-SP

Thermostatic cell for medical fluids in bag (single bag)

Applications

The device is designed for the maintenance at body temperature of fluids contained in flexible bags, in particular, CT/Angiography/Haemodynamics/scanning contrast media, at the transfer stage of the contrast from the bag to the injector.

Purpose

Such a requirement is due by the utilization conditions with devices for CT scanning of the last generations. These devices allow high performing examinations but require high viscosity contrast media, which are to be administered at high capacities. These two elements: capacity and viscosity generate high pressures, which lead the injectors to adjust automatically. As a result, the set capacities are not maintained.

The only solution to the problem is to reduce the contrast viscosity. Such an objective is achieved by increasing the contrast temperature from the ambient temperature to the body one.

The aim is to guarantee the maintenance of body temperature of the contrast, contained in 100/200/500 ml bags for the whole quantity of the contrast contained thanks to the bag pressing device provided on the door. The immediate maintenance of the body temperature is guaranteed if the bag is preheated by means of the device Warm-MP and immediately put inside the device Warm-SP, before being transferred to the injector.

Main Features

The device is provided with a 24 volt powered electrical resistance heating system, which guarantees the maintenance of the body temperature for the whole quantity of the contrast contained in the bag, independently of the utilization time of the whole quantity.



Technical specifications

The device consists of a heating system provided with heating bands, wrapping an envelope of conductive material where the bag is housed. The conductive envelope is wrapped by insulating material.

The unique design of the device avoids the contact of liquids with the electrical parts in the event of accidental break of the bag. The device is powered by 220-110 Vac, according to the country where it is used. Working temperature: $36^{\circ}\text{C} \pm 1^{\circ}\text{C}$.

Operating instructions:

The supply unit available on the cable connecting the device to the mains supply is provided with main switch with warning light. Also the device is provided with specially designed switch on the panel.

The housing seat of the bag is provided with 2 leds:

- white for visualization of the bag
- two/colored yellow/green:
 - continuous yellow: heating stage
 - flashing yellow: fault/error reporting
 - continuous green: achieved temperature.

In case of failure or of any anomaly, the event is reported by the flashing yellow led. For safety reasons the device interrupts heating in this situation.

General Specifications **Warm Line**



General Specifications for **Warm-MB:**

Power supply: 230 Vac 50 Hz.
 Measurements: 540 x 380 x 515 mm (W,H,D)
 Weight: 18 Kg
 Capacity: 500 ml: 16 vials or 16 bags
 250 ml : 24 vials
 100 ml : 34 vials

ORDERING GUIDE

CODE	DESCRIPTION	Package Q.ty
Warm-MB	Thermostatic cell for medical fluids	1 Unit



General Specifications for **Warm-SB:**

Power supply 100-240 Vac 50-60 Hz - External dimensions Heating part: 198x190x143 mm - Power supply unit: 160 x 120 x 90 mm - Net weight 2.5 kg - Diameter of usable bottles: Without adapter: from 78 mm to 86 mm - With adapter: 66 mm

ORDERING GUIDE

CODE	DESCRIPTION	Package Q.ty
20029001	Warm SB - Heater for 500ml glass bottles	1 Pcs
20029003	Warm SB - Adapter for 200-250ml bottles	1 Pcs



General Specifications for **Warm-SP:**

Power supply 100-240 Vac 50-60 Hz - External dimensions Heating part: 198x240x155 mm - Power supply unit: 160 x 120 x 90 mm - Net weight 2.5 kg
 Capacity One 500/200/100ml bag

ORDERING GUIDE

CODE	DESCRIPTION	Package Q.ty
20029004	Warm-SP - Heater for 100/200/500ml bags	1 Pcs

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