



MOBILE - HEAT RADIATOR
CERATHERM 600-2.

OPERATOR MANUAL.



CE0123



INDEX.

1. Precautions.

2.

2. Definitions & Symbols.

3.

3. General.

4.

Introduction.

4.

Technical Data.

4.

4. Operating Instructions.

5.

Structure & Use.

5.

General description.

5.

Assembling the Mobile Warmer

5-6.

Start up.

7.

Setting the heating power.

7.

LED Heating Indicator.

7.

Alarm monitoring.

8.

Controllers, Displays & Connections.

9.

5. Company Details.

9.



1. Precautions.

The heat radiator must not be used in rooms where there is a risk of explosion, i.e. in the immediate vicinity of explosive anaesthetic gases or mixtures.

The distance between the surface on which the patient lies, and the lower edge of the radiator, must not be less than 80cm. If this instruction is not followed, prolonged exposure to the heat radiation may cause burns.

“Danger of burns”: Contact with the protective grating and the reflector should be avoided.

“Danger of fire”: The protective grating on the upper side of the radiator must remain unobstructed at all times.
Do not place anything on the protective grating.

If the type of cover on the surface is changed for example, the use of a dark sheet or heating cushions, etc., the support surface may reach excessively high temperatures and thus influence the body temperature of the infant or patient.

After the radiator has been switched on, an acoustic and visual alarm is given after 15 minutes. This can be reset for a further 15 minutes by pressing the illuminated alarm Indicator / Cancel button.

The infant, or patient, must never be left unattended under the operating heat radiator.

When using the heat radiator over incubators, care must be taken to ensure that there is sufficient space between the lower edge of the radiator and heat sensitive material, such as Perspex or Acrylic. The distance must not be less than 50cm. Set the heating power to a maximum of Level ③.

Position the radiator in such a way that there is a distance of at least **80cm, and up to the Full Adjustment height**, between the surface on which the patient lies and the lower edge of the radiator.

Care should be taken when adjusting the mobile stand height to ensure that (i) the heater is switched off and allowed to cool and (ii) the upper section of the stand is supported before the height adjustment-locking knob is released.

If the radiator housing is removed, there is a danger of electric shock. Only suitably qualified personnel should carry out maintenance and servicing.

It is recommended that the use of the radiant warmer is restricted to **trained medical personnel** who are aware of the general risks when using radiant warmers.

It is vital that an independent temperature check, of the infant, or patient, is carried out at regular intervals by supervising personnel.

Use of the radiant warmer can notably increase fluid loss by the infant or patient.



2. Definitions & Symbols.

Note, Important, Caution and Warning.

Note: The remark “Note” is used in the text to indicate procedures or conditions, which might otherwise be overlooked or incorrectly understood. A note may also be used to clarify apparently contradictory or confusing situations.

Important: Similar to note, but used when greater emphasis is necessary.

Caution: The remark “Caution” is used to draw attention to a procedure, which must be followed exactly in order to avoid damaging or destroying the equipment.



Warning: The remark “Warning” is used in the text to draw attention to dangerous situations in connection with the operation, cleaning or maintenance of the equipment if there is a possibility of injury or danger of death to the operator or patient.



Attention: Consult accompanying documents



AC power



Danger! High voltage!



Type B equipment



Attention: Hot surface



Power ON

Power OFF



3. General.

3.1 Introduction.

This manual contains operator instructions for the erection, use and maintenance of the Mobile Ceratherm 600-2 Radiant Warmer. Viamed Ltd are not liable for the proper functioning of the heat radiator if it is not operated according to the instructions, if the maintenance recommendations in this manual are not followed or if repairs are carried out using non-approved components.

Only suitably qualified personnel should perform calibration and repairs. Maintenance documents are obtainable from Viamed Ltd.

The personnel who work with this heater should read this manual carefully and should fully understand all instructions contained therein. The manual should be kept so that it can be easily inspected; it is advisable to store it in an easily accessible place. Contact Viamed Ltd should you require any further information.

3.2 Technical Data.

The technical data for the Ceratherm heat radiator are shown in “**Table A**”. All technical data may be changed without prior notice.

Table A.

Current requirement.	220-240V _{AC} , 50/60Hz, 630W.
Protection class.	1.
Degree of protection.	B IP20.
Test provision.	IEC 601-2 TUV / CE.
Size.	Width 21cm, Length 55cm, Height 9cm.
Weight.	4.9 Kg (heat radiator only). 41 Kg (mobile unit)
Mobile Base.	Width 61cm, Length 82cm, Height 10cm.
Upright tube.	170 / 195cm maximum height.
Height adjustment.	25cm.
Swivel range of the arm.	180°. (For mobile units)



4. Operating Instructions.

4.1 Structure and use.

The mobile heater is used for warming baby changing tables and resuscitation stations, for additional heat supply in incubators and for adults in operating theatre and during anaesthesia. The built-in ceramic radiator has very good radiation properties and generates invisible infrared radiation in the region of 3 micro/M. The skin very readily absorbs this radiation spectrum and the patients' skin colour is not affected.

4.2 General description.

Refer to the front & rear diagrams on page 9.

The Ceratherm 600-2 heat radiator has 4 heat output settings, which can be individually set in the range 20% - 99%.

These output settings are indicated by the yellow indicators (① - ④). Only one heat output settings can be active during operation. The choice of output setting is made by pressing the reverse button (<) or the forward button (>). The heating indicator lights when the element is being heated.

When the radiant warmer unit is switched on, a time interval begins. After 15 minutes a 5 second audible alarm and a continuous flashing red alarm indicator / cancel are triggered. 8 seconds later, the heat output of the radiator reduces to a pre-set value (the safety setting), with a corresponding change in the duty cycle* of heating monitor indicator. If the alarm is cancelled by pressing the alarm indicator / cancel button, the time interval starts again and the heat radiator returns to the original heat output setting. Alarm cancellation also deactivates the flashing red alarm.

(*) Duty Cycle: the relative length of time when the heating monitor indicator is lit compared to the length of time when it is unlit.

4.3 Assembling the Mobile Warmer

After removing the packaging, check the individual parts for any damage occurring during transport, and compare with the packing list.

1. Mount the lower tubular stand (item C) with the flange and four bolts facing downward on the mobile unit (item A). The tube reinforcement should be at the back.
2. Screw the four nuts and sprung washers, on the lower side of the mobile unit (item A), onto the four bolts, and tighten with an appropriate spanner.
3. Turn the securing screw (item 4) with the star grip, for locking, fully outward by turning to



the left.

4. Insert the already mounted upper tubular stand (items 9 & 1) into the lower tubular stand. Ensure that the milled nut is fitted on the side of the securing screw.

5. The securing screw (item 4) can now be tightened. The tubular stand (item 9) must now only be moved within the groove length. It is essential to check whether the tubular stand is limited at its highest position (item 5) and cannot be pulled out any further. Tighten the tubular stand in its lowest position with the star grip (item 4).

6. Fasten the radiator on the flange of the stand arm with the four hexagonal socket screws, then fasten the arm to the mounting bracket.

7. Insert the instrument plug on the 220V AC mains cable into the socket on the back of the radiator.

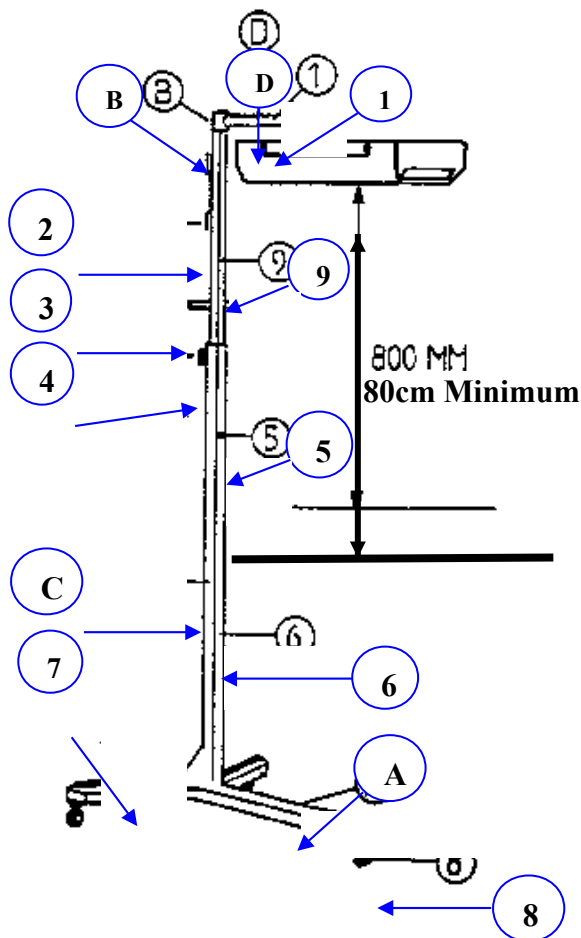
8. After assembly, the mechanical and electrical functioning of the instrument should be checked.

9. The radiator is started up according to **Section 4.4** below.



WARNING!

Care should be taken to ensure that the mains cable does not become trapped between the articulated arm and the lateral movement limit pin.



- 1 Arm
- 2 Cable Tidy
- 3 Lifting Handle
- 4 Stargrip Securing Screw
- 5 Limiting Pin
- 6 Outer Case
- 7 Mobile unit Base
- 8 Castors
- 9 Inner Sleeve
- A Mobile unit Base
- B Inner Unit
- C Mobile unit Casing
- D Swivel Arm



WARNING

A risk of injury is present to the operator if care is not taken when adjusting the mobile stand height, ensuring that (i). the heater is switched off and allowed to cool and (ii). the upper section of the stand is supported before the height adjuster locking knob is released.

4.4 Start up.

1. Switch radiant warmer on / off switch to ON. The heater is now switched on.
2. Using the forward and reverse buttons {(<) & (>)}, set the desired heat output to level ① to ④. The current heat output setting is shown by a lit yellow indicator ①, ②, ③ or ④. After about 5 - 10 minutes, the treatment surface will have been preheated.

Note: The heat output of the radiator is set to zero when the reverse button (<) is repeatedly pressed until all yellow indicators (① - ④) are extinguished.

3. Set the light on / off switch to ON.
The non-dazzling halogen light is used for illuminating the treatment area.

4.5 Setting the heating power.



The heat output can be set in accordance with actual requirements using the four heat output settings (① - ④). The factory set levels corresponds to the following settings:

Level ① = 25%	Level ② = 50%	Level ③ = 75%	Level ④ = 99%
---------------	---------------	---------------	---------------

The heating output of the individual steps ① - ④ can be set for special applications, e.g.:

Level ① = 20%	Level ② = 40%	Level ③ = 60%	Level ④ = 80%
---------------	---------------	---------------	---------------

Level 1	= 25%	①	②	③	④
Level 2	= 50%	①	②	③	④
Level 3	= 75%	①	②	③	④
Level 4	= 99%	①	②	③	④

The various power levels can be used as follows:

Level ①: To keep the support surface warm for continuous operation.

Level ②: For normal operation, on changing and examination areas.

Level ③: Additional warmth for resuscitation, the labour room or for the operating theatre.

Level ④: For increased heat, in the operating theatre, during anaesthesia, or for adults.

4.6 LED heating indicator.

When the heating indicator is lit, the radiator element is being heated. When high heat levels are selected, the heating indicator is lit for a longer period of time than when lower heat levels are selected. The relative amount of time that the heating indicator is on compared to when it is off reflects the level of heat being generated by the radiator.

4.7 Alarm monitoring.

When the radiant warmer unit is switched on, a time interval begins. After 15 minutes triggers an audible alarm for 5 seconds and a continuous visual alarm in the form of a flashing alarm indicator / cancel button.

The alarm can be cancelled by pressing the alarm indicator / cancel button, which causes the alarm indicator to extinguish and the audible alarm signal to stop (if cancellation is carried out within the 5 second audible alarm period). If the alarm is not cancelled within 8 seconds, the heat output of the radiator is reduced to a pre-set value (the safety setting - factory set to 20%). The red alarm indicator flashes continuously.



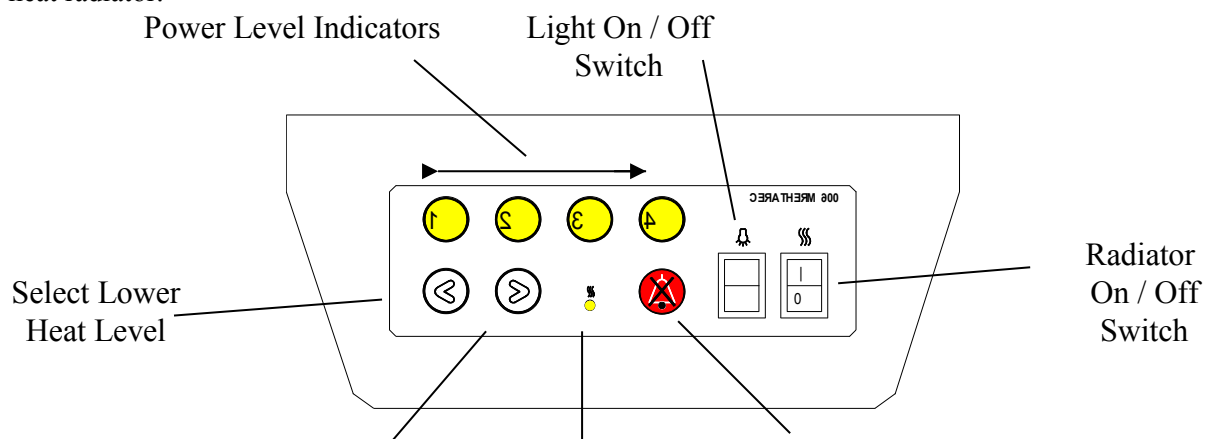
WARNING!

No patient must be left unattended on a bed with radiator switched on.



4.8 Controllers, displays and connections.

This section of the manual describes the controllers, displays and connections of the Ceratherm 600-2 heat radiator.



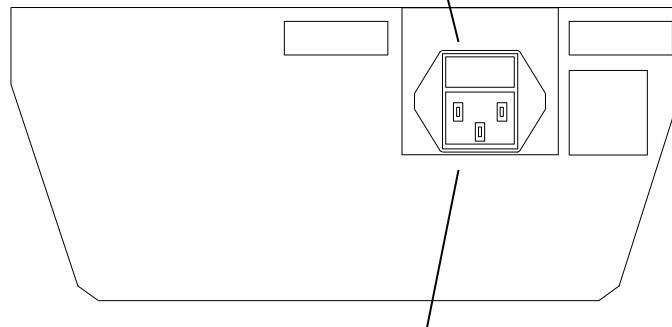


Select Higher
Heat Level

Heating
Indicator

Alarm Indicator &
Cancel

Fuse Holder (2 x 3.15 AT)



Input Socket for Mains Cable
(220-240V AC, 50Hz)

5. Company Details.

Main office.

Viamed Ltd,
15 Station Road,
Crosshills,
Keighley,
West Yorkshire,
BD20 7DT.

Tel: +44 (0) 1535 634542.
Fax: +44 (0) 1535 635582.
Email: info@viamed.co.uk.
Web: www.viamed.co.uk.