

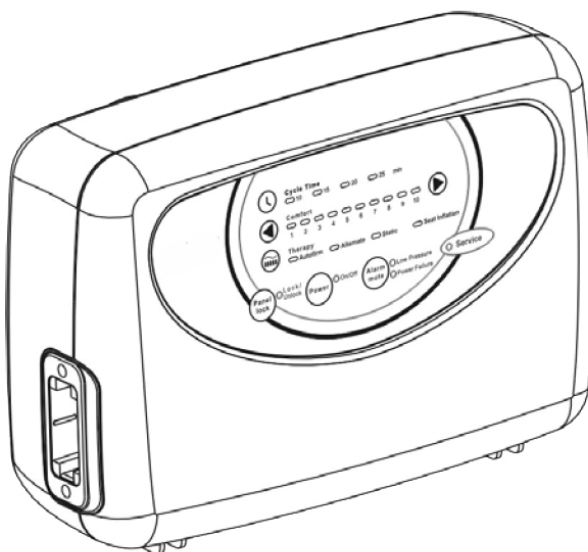
# User manual

2010-12-21

# CuroCell Cirrus®

## Alternating pressure system

User manual item number: 95-001054



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# IMPORTANT SAFETY PRECAUTIONS

## Read all instructions prior to use

**WARNING!** To minimise the risk of fire, electric shocks or bodily injury:

- 1 The product must only be used for its intended purpose as described in this manual. The product may not be combined, assembled or repaired with other parts (e.g. pump and mattress), accessories or spare parts other than those described in this manual or other documentation from Care of Sweden.
- 2 Do not use the pump in wet rooms or where there is a risk of the pump coming into contact with water or another liquid. Never handle a pump that has come into contact with water/liquid. Pull the plug out of the electrical socket immediately and send the product to an authorised service technician for servicing.
- 3 DO NOT USE in the vicinity of or in contact with fire sources/hot surfaces, such as fire, burning cigarettes or hot lamps. Although the product has undergone fire testing, it could become damaged if it comes into contact with fire sources.
- 4 Position and use the product in a manner that prevents it from becoming trapped or damaged. NOTE: Be particularly aware of trapping damage when using bed rails.
- 5 Never use the product if the pump power cord or plug is defective, the pump casing is damaged or it is not functioning properly. Contact a service technician for examination and repair.
- 6 Regularly check product functionality through a hand check (see section 4.4). Also check that the comfort setting is correct as indicated in the table on the pump.
- 7 Continual monitoring is required when the product is used for individuals needing special supervision, such as children.
- 8 The hygiene cover does not allow liquid or air to penetrate, but is vapour permeable. Make sure that the patient is positioned correctly to avoid the risk of suffocation.
- 9 Prevent damage to the hygiene cover from sharp objects.

# 1. Introduction

CuroCell® air mattresses work according to the alternating pressure principle and are available in several different versions.

Always read the user manual prior to use.

## 1.1 General information

This system is a medical device with CE-marking in accordance with MDD 93/42/EEC.

The system has been tested and approved according to the following standards:

IEC 600601-1	SS-EN ISO 10993
IEC 60601-1-2	EN 597-1
SS-EN ISO 12182	EN 597-2
SS-EN ISO 14971	EN 14126

## 1.2 Intended use

CuroCell Cirrus® is a combination of foam and alternating pressure relief mattress replacement system and is intended to assist in the prevention and treatment of pressure ulcers. It can be used in all types of medical environments and for prevention and in the treatment of pressure ulcers, up to category 4<sup>(1)</sup>(\*). The recommended user's weight is up to 230 kg.

**Important! (\*)** For users between 180-230 kg the recommended use is changed to treatment of pressure ulcers up to category 2.

The mattress must always be cleaned between patients.

### NOTE!

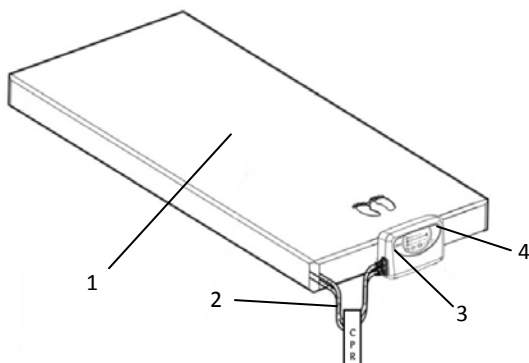
- When used together with positioning pillows, read the pillow user manual carefully for correct positioning of the patient.
- If you are using this product with an evacuation sheet, it is the user's responsibility to ensure that it is safe to use for evacuation.
- Be careful when using bed rails or other protection on the bed so that the mattress does not become trapped or damaged.
- The mattress must not be lifted with a person lying on it or used for any other type of transport other than a possible evacuation using an evacuation sheet.

*(1) European Pressure Ulcer Advisory Panel, Quick reference guide 2009.*

## 2. Product description

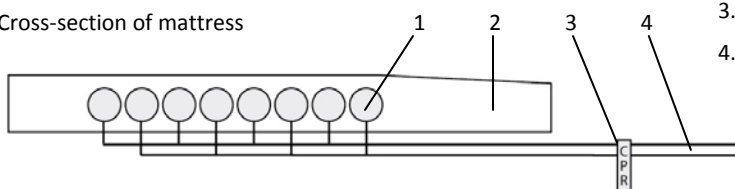
### 2.1 Pump and mattress

CuroCell Cirrus® has eight alternating air cells and these cells are encased in HR-foam (high resilient foam). On top of the HR-foam, closest to the user, is a thin layer of visco-elastic foam.



- 1. Mattress
- 2. CPR (rapid deflation)
- 3. Pump connector
- 4. Pump

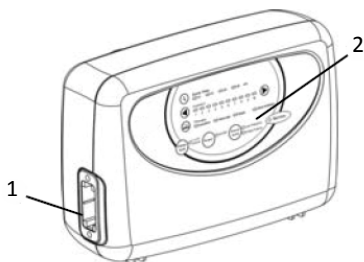
Cross-section of mattress



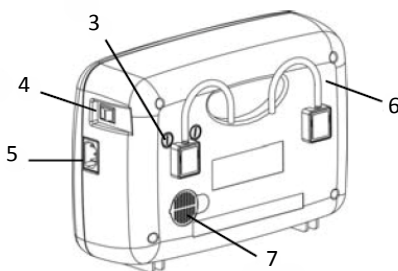
- 1. Air cells
- 2. Foam core
- 3. CPR (rapid deflation)
- 4. Tubes

### 2.2 Pump

The CuroCell Cirrus® pump applies alternating pressure that is adapted to the weight of the user. The air cells inflate and deflate with different cycle times.

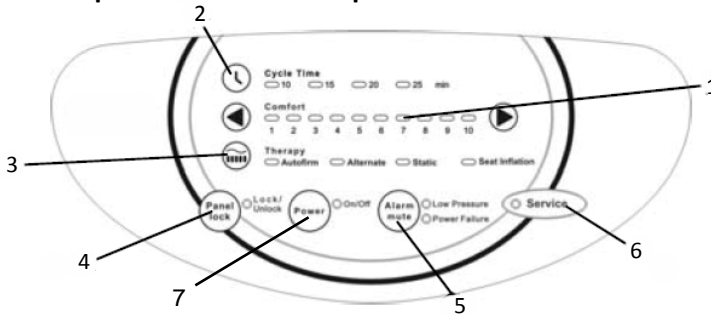


- 1. Quick connector unit, air
- 2. Front panel
- 3. Fuses (2 pcs)



- 4. Off/On (0/1)
- 5. Power cord
- 6. Bed hooks
- 7. Air filter

## 2.3 Pump functions – control panel



### 1 COMFORT SETTING

The correct air pressure is set by using the arrows (1-10). Guidelines according to user weight are given in the table on the pump.

### 2 CYCLE TIME

There are four selectable cycle times. Press the button to select cycle time.

### 3 PROGRAM (THERAPY)

Change the mode by pressing the button, the chosen mode is indicated by the green light. The modes' order is: Autofirm, Alternate, Static, Alternate - seat inflation, Static - seat inflation.

**A. Autofirm** Autofirm is used to fill the mattress with air completely for firm support. The pump always starts in this mode. When the correct pressure is reached, it changes automatically to the previous setting or to the presetting outlined below.

#### Presetting features for Autofirm process

1. Program (Therapy): Select the required program.
2. Comfort setting: Set the required air pressure (1-10).
3. Cycle time: Select from 10, 15, 20 or 25 minutes.

**Note:** The preset Cycle Time, Comfort Level and Therapy mode will be illuminated to indicate the settings during the Autofirm process. (Autofirm LED is also illuminated.) After mattress is inflated, Autofirm LED will be turned off automatically.

**B. Alternate** In this mode, the pressure alternates between the cells and there are four different cycle times to choose from.

**C. Static** When 'Static' is chosen, the alternating cycle is discontinued and the pressure is equalized over the cells. This function makes all patient movements, as well as nursing and care of the patient, easier. The function is turned off by pressing the button again, or it will automatically go back to alternating mode after 20 minutes.

**D. Seat inflation** This mode gives extra support when sitting up and can be set for both alternating and static mode.

### 4 PANEL LOCK

Press down the Panel lock button for about 2 seconds to lock or unlock the panel.

## **5 ALARM MUTE**

Press the ALARM MUTE button to temporary turn off the alarm. Should the situation not be resolved within 5 minutes, the alarm will be activated again. Please refer to section 8 to troubleshoot any problems with the alarm.

### **A. Power failure alarm**

During a power failure, both the sound and light alarm will go on. Turn it off by pressing the ALARM MUTE button.

### **B. Low pressure alarm**

When the low pressure light is on, the pressure in the mattress is below normal. Both the light and sound alarm will activate. The alarm will sound until the ALARM MUTE button is pressed. If the problem remains, see chapter 8 for trouble shooting.

## **6 SERVICE**

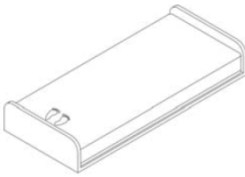
This light indicates a technical failure in the pump. First check that the air filter is clean and that the pump is not covered by anything (such as a pillow or a blanket). If the problem remains, please contact the manufacturer or your local dealer for further information.

## **7 POWER**

Power on/off.

### 3. Assembly/Installation

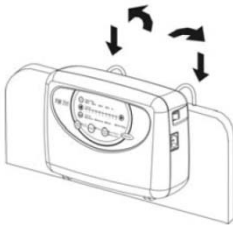
When unpacking the mattress, check that none of the parts are damaged. In the event of damage, contact the manufacturer or your local dealer before using the product.



1. Place the mattress on the bed base.

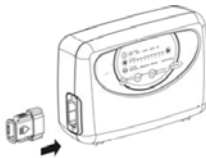
**Note!**

- Make the bed with sheets for added comfort.
- Check that the CPR valve is closed.



2. Hang the pump at the foot end of the bed or place it on a flat, sturdy surface.

Route the power cord so that there is no risk of it causing someone to trip, being run over by the bed wheels or getting pinched when the bed is raised or lowered.



3. Connect the air tubes from the mattress to the side of the pump. There is an audible “click” sound when the quick connectors are properly attached.



4. Check that the switch on the pump is in the “0” position (Off). Connect the plug to an approved electrical socket (220 V).



## 4. Operation

**Note!** Always read the user manual prior to use.

### 4.1 Start-up

1. Set the power switch on the side of the pump to 1 (On) and start the pump by pressing the power button on the front panel.

2. Air starts to fill up the mattress. It takes about 20 minutes until the mattress is ready for use.

**Note!** The pump always starts in Autofirm mode.

3. The light for 'Low pressure' is lit until the mattress has reached the set pressure. When the light goes out, the system changes mode (to previous settings) and the mattress are ready to be used.



### 4.2 Program selection

There are four different programs. Please refer to section 2.3 for more details. As a standard setting, we recommend an alternating mode and a 10 minute cycle time.

### 4.3 Comfort settings

The air pressure in the mattress can be adjusted as required. ALWAYS consult the prescriber or other authorised personnel for the correct setting.

The mattress is now ready for use. Use the comfort buttons (1-10) to set a suitable air pressure based on the table on the pump.

**Note!** The pump always starts in the Autofirm mode. When the mattress has reached the required pressure, the pump is set automatically to the previously used setting or to the settings made in the Autofirm program. Please refer to section 2.3 for more details.

kg	
0-40	1
50	2
60	3
70	4
80-90	5
100-110	6
120-140	7
150-160	8
170-180	9
190-230	10

#### NOTE!

- We recommend the Seat inflation mode for all situations where the head of the bed is raised.
- When only parts of the mattress are under load, e.g. if the patient is an amputee, the pressure should be increased (1-2 levels).
- Always check the set pressure with a "hand check", see 4.4 for more information.

## 4.4 Hand check

Hand check is used to ensure that the mattress is properly inflated. This should be done regularly, once per shift and after changing the position in the bed or changing the comfort settings.

Insert your hand between the air cells directly underneath the user's pelvic region, use a vertical hand. There should be a clearance of 2-3 fingers between mattress base and the patient. If not, you need to adjust the pressure setting.



## 4.5 CPR – Rapid deflation of the air cells

To empty the air cells, pull the CPR band placed between mattress and pump. In case of an emergency where CPR is necessary, follow the local instructions.

**Note!** Make sure that the CPR connector is properly connected after use.



## 4.6 Alarms

When the pressure drops to an abnormally low level, the Low Pressure diode lights up together with an audio alarm. Please refer to section 8 for troubleshooting. The alarm is deactivated by pressing the ALARM MUTE button on the pump's control panel. If the problem is not resolved within 5 minutes, the alarm will start again. The diode remains on until the pressure level is remedied and reset.

The pump is also fitted with a Power Failure alarm. An alarm sounds and flashes when the pump is disconnected from the electric power. Turn off the alarm by pressing the 'ALARM MUTE' button.

### **WARNING!**

If the air pressure remains low, check the mattress and tubes for damage. Repair if necessary or contact the manufacturer or your local dealer for help.

## 4.7 Transport function

If the patient must be moved in the bed, the tubes can be connected together (detached from the pump) and the mattress put in "transport mode". We recommend that this function is only used for short periods of time.



## 5. Cleaning and reconditioning

It is important to follow the instructions below before using the product for another user. Consult the hygiene responsible or the supplier for help and instructions when unsure.

### 5.1 Normal cleaning

#### PUMP

##### **WARNING!**

Do not open the pump housing – risk of electric shock. Service and maintenance must be performed by authorised technicians.

Do not get the pump wet or submerge it in any liquid.

Wipe off the pump with a damp cloth and mild cleaner, such as washing up liquid. If necessary, use an alcohol-based disinfectant/cleaner intended for this purpose. Perform, Virkon or Desisoft can also be used.

If using a different agent, choose one that does not affect the plastic of the pump housing.

#### MATTRESS COVER



Covers can be wiped off with a mild cleaner (e.g. washing up liquid) and water or with an alcohol-based disinfectant/cleaner intended for this purpose. Perform, Virkon or Desisoft can also be used. Excrement and blood spots must be removed immediately with cold water. Carefully follow local instructions and usage instructions for the cleaner.



Multi-layer covers should be divided before washing. Wash with like colors.



Chlorine and phenol-based cleaners could have a negative impact on the PU surface and should be avoided. If chlorine is used, we recommend a mixture of max. 1%.

#### INNER COVER SOFT



Clean the affected area using a mild cleaner (e.g. washing up liquid) and water or with an alcohol-based disinfectant/cleaner intended for this purpose. Perform, Virkon or Desisoft can also be used.

## 5.2 Reconditioning

### PUMP

See section 5.1 for instructions.

### MATTRESS

1. Remove the covers. See instructions in chapter 5.1 for cleaning covers.
2. Disconnect the tubes from the pump.
3. Carefully pull the air cells out from the foam core.
4. Place the air cells and the tubes on a clean area which is suitable for washing.
5. Wipe off the cells, the tubes and the CPR-valve with alcohol-based disinfectant/cleaner intended for this purpose. Perform, Virkon or Desisoft can also be used. Allow to dry.
6. Place the air cells back into the foam core. Check that all the tubes and connectors are secure and tight, before closing the cover.
7. Wipe off work surfaces with alcohol-based disinfectant/cleaner intended for this purpose. Perform, Virkon or Desisoft can also be used. If cells for any reason have loosened from the tubes, these must be replaced according to drawing in chapter 2.1

### FOAM CORE



Clean the affected area with a mild cleaner (e.g. washing up liquid) and water or with an alcohol-based disinfectant/cleaner intended for this purpose. Perform, Virkon or Desisoft can also be used.

Press out the water carefully. Let the foam core dry in a warm, ventilated area, without direct exposure of sunlight. The foam core needs to be completely dry before it is used again.

#### **NOTE!**

Check the hygiene cover each time the product is cleaned. If damaged, it must be replaced or repaired. Also check the pump, tube connectors and power cord during cleaning. Damaged parts must be replaced or repaired.

## **6. Storage**

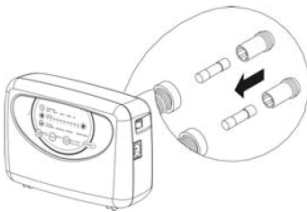
Store the mattress on a flat surface or carefully rolled/folded with the zipper closed. Always store at room temperature in a dry area. Make sure the mattress is stored where it will not be exposed to thrusts, hits or other things that can damage it. Avoid direct exposure of sunlight. If the mattress is to be stored more than 3 months, we recommend it is stored on a flat surface (not folded or rolled up).

## 7. Maintenance

### 7.1 General

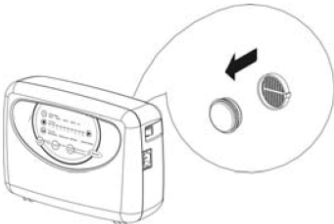
1. Check the power cord and plug for damage and scratches.
2. Check that the mattress cover is intact and that the cover and air cells are correctly assembled.
3. Check that the air flow alternates between each outlet on the side of the pump.
4. Check for damaged or pinched tubes and connectors. Contact the manufacturer or your local dealer for spare parts.

### 7.2 Changing fuses



1. Pull the plug out of the electrical socket before replacing fuses.
2. Remove the cover from the fuses with a screwdriver. Pull out the fuse holder.
3. Fit a new fuse of the same type (T1A/250 V) and screw the protective cover back in place. There are two fuses.

### 7.3 Changing the air filter



1. Unscrew the round safety plate on the back of the pump.
2. Lean the pump backwards in order for the filter to fall out from the holder.
3. Place the new filter in the filter holder and replace the safety plate.

If the pump is used in a dirty environment, the filter should be checked regularly.

## 8. Troubleshooting

Problem	Solution
Pump does not start	<p>Check that the power cord is connected to an approved electrical socket.</p> <p>Check the fuses.</p>
Alarm is on and mattress is losing air	<p>Check that the quick connectors on the air tubes, are properly connected to the side of the pump.</p> <p>Check that the CPR valve is closed.</p> <p>Check that all tube connectors are properly seated and connected.</p> <p>Open the mattress and check for leaks from air cells or tubes.</p>
The patient is bottoming out	<p>The pressure might be incorrectly set. Adjust according to the weight table and wait a few minutes. Check again using a Hand Check (see section 4.4).</p> <p>Check that the CPR valve is closed.</p>
Some cells have less air	<p>This is normal since the cells are alternately inflated and deflated when the system is set to alternating mode.</p>
Pump is noisy, vibrations are felt	<p>Check that the pump hangs correctly on the bed. Resonance can occur in parts of the bed. Remove the pump and listen whether this makes a difference. Can be resolved by putting the pump on the floor or by placing a towel between the pump and bed.</p>
If your questions are not answered by the above information, please contact Care of Sweden or your local dealer.	

## 9. Technical description

### 9.1 Technical specification

PUMP		SPECIFICATION
Model		CuroCell Cirrus®
Voltage		220V-240 V / 50 Hz
Current consumption		0.07 A
Fuse type		1A, 250 V
Cycle time		10, 15, 20 or 25 min
Dimensions (BxLxH)		29.1 x 11.7 x 20 cm
Weight		2.2 kg
Surroundings	Temperature	Operations: 10°C - 40°C
		Storage: -15°C - 50°C
		Shipping: -15°C - 70°C
	Humidity	Operations: 10% - 90% non-condensing
		Storage: 10% - 90% non-condensing
Classification		Class I, Typ BF, IPX0
MATTRESS		SPECIFICATION
Model		CuroCell Cirrus®
Dimensions (BxLxH)		80/85/90/105/120x200x20 cm
Weight		14 kg (width 85 cm)

NOTE: The manufacturer retains the right to modify the product specification at any time.

#### **WARNING!**

Follow the operations and maintenance instructions carefully in order to prevent bodily injuries, as well as damages to the product or other equipment.

### 9.2 Labeling

The mattress is labeled with product name, article number, production date, size, bar code, as well as care and wash instructions.

The product also displays what side is up/down and head/foot.



### 9.3 Symbol Definitions

XXXX-XX-XX

Year-Month-Day



Read the user manual



Grounded contact



CE marked acc. to  
MDD 93/42/ECC



Class II equipment  
(Double Insulated)



Type BF equipment



Fire classification



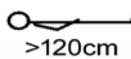
**CATEGORY**  
1 2 3 4  
Patient information –  
category



Foot placement



Recommended user weight



Recommended  
minimum length



The mattress should only be  
used lying in the lengthwise  
direction on the mattress



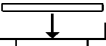
Not in domestic refuse,  
follow recycling instructions



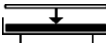
Recycling



Length of warranty



Directly on bed base



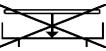
Place on top of existing  
mattress



Can be rotated



Can be turned



Not directly on bed base



Not on top of existing mattress



Do not rotate



Do not turn



Place on top



Place underneath



Wipe off



Do not iron



Machine wash at 70° C



Machine wash at 95° C



Tumble dry



Drip dry



Do not tumble dry



Do not dry clean



<1%  
Chlorine



Do not use chlorine

## 10. Spare parts

Art. no.	Description	Size
CC-901001	Air cell, PU	80 cm
CC-901002	Air cell, PU	85 cm
CC-901003	Air cell, PU	90 cm
CC-901004	Air cell, PU	105 cm
CC-901005	Air cell, PU	120 cm
CC-8219	Fuse (set of 2)	-
CC-8202	Air filter	-

If other spare parts are needed, please contact Care of Sweden or your local dealer for further assistance.

## 11. Options and accessories

### 11.1 Options

#### **Sturdy transport bag**

Transport and storage bag.

### 11.2 Accessories

<b>Art. no.</b>	<b>Description</b>	<b>Size</b>
CC-925511	Cover top part, Steel	80x200 cm
CC-925513	Cover top part, Steel	85x200 cm
CC-925515	Cover top part, Steel	90x200 cm
CC-925517	Cover top part, Steel	105x200 cm
CC-925519	Cover top part, Steel	120x200 cm
CC-928011	Inner cover Soft	80x200x18 cm
CC-928013	Inner cover Soft	85x200x18 cm
CC-928015	Inner cover Soft	90x200x18 cm
CC-928018	Inner cover Soft	105x200x18 cm
CC-928019	Inner cover Soft	120x200x18 cm
58-900905	Transport bag	105-120 cm
58-900906	Transport bag	80-90 cm

### 11.3 Other accessories

To ensure the best level of comfort, we recommend use of accessories from Care of Sweden since our products are designed to work well together. Please contact Care of Sweden or your local dealer for accessories or more information on our products.

## **12. Warranty**

### **12.1 Scope**

This CuroCell® system is covered by a 2-year warranty for manufacturing defects. The warranty does not apply to normal wear and tear or product impairment or damage stemming from negligence or improper handling/care.

### **12.2 Service and repairs**

This CuroCell® mattress is a medical device, in accordance with MDD 93/42/EEC, that is used as an aid in preventing and treating pressure ulcers. For this reason, we recommend that the pump be regularly serviced and inspected to maintain functionality and performance. Like other technical devices, a pump that is properly cared for works better and lasts longer.

Service and maintenance must always be performed by Care of Sweden or one of its authorised technicians. Only use spare parts that have been approved by Care of Sweden. Use of non-approved spare parts invalidates the warranty.

A warranty claim must be submitted to Care of Sweden before the product is returned.

Please contact Care of Sweden or your local dealer if you have questions regarding warranty and service.

## **13. Other information**

### **13.1 Disassembly and recycling**

Except for certain parts of the pumps, energy recovery is possible for almost all material in CuroCell® products through incineration in waste incineration facilities.

**Pump:**

A used CuroCell® pump must not be disassembled. It must instead be taken to a recycling centre and sorted as electronic waste.

**Mattress:**

A used CuroCell® mattress must be taken to a recycling centre and sorted as combustible waste.

For more information contact Care of Sweden or your local dealer.

### **13.2 Returns and complaints**

Complaints are to be reported to the supplier. Return of a product shall follow the supplier's instructions and can only be done after the complaint has been reported. Damages due to the transportation should be reported to the transportation agent.

## 14. Instructions for grounding

This product must be connected to a 220-240 V electrical socket that is grounded. In the event of an electrical short circuit, a grounded product reduces the risk of hazardous electric shocks because the earth cable can conduct away the electric current. The power cord of this equipment contains a grounded cable and a grounded plug. The product must be connected to a socket that is properly installed and grounded.

**DANGER! Improper use of the grounded plug could result in an electric shock.** Repair or replacement of the power cord or plug must be performed by a certified electrician or service technician. To minimise the risk of electric shock, do not modify the cord or plug in any way.

If using an extension cable, this must also be grounded and have a socket suitable for the product's plug.

If you find the grounding instructions difficult to understand or are unsure as to whether the product is correctly grounded, contact an electrician or service technician.

[illegible]



Manufactured by



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**Supplied by**

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