



APH166 Morpheus Air™



USER MANUAL

AHSM-038 V5.0 - 16/06/2023

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IMPORTANT SAFEGUARDS

When using electrical products, especially when children are present, basic safety precautions should always be followed, including the following:

READ ALL INSTRUCTIONS BEFORE USING

DANGER

To reduce the risk of electrocution:

- ▶ Always unplug this product immediately after use.
- ▶ Do not use while bathing.
- ▶ Do not place or store product where it can fall or be pulled into a tub or sink.
- ▶ Do not place in or drop into water or other liquids.
- ▶ Do not reach for a product that has fallen into water. Unplug immediately.

WARNING

To reduce the risk of burns, electrocution, fire, or injury to persons:

- ▶ A product should never be left unattended when plugged in.
- ▶ Close supervision is necessary when this product is used by, on, or near children or invalids.
- ▶ Use this product only for its intended use as described in this manual.
Do not use attachments not recommended by the manufacturer.
- ▶ Never operate this product if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or dropped into water. Return the product to a service center for examination and repair.
- ▶ Keep the cord away from heated surfaces.
- ▶ Never block the air openings of the product or place it on a soft surface, such as a bed or couch, where the air openings may be blocked. Keep the air openings free of lint, hair, and the like.
- ▶ Never drop or insert any object into any opening or hose.
- ▶ Do not use outdoors or operate where aerosol (spray) products are being used or where oxygen is being administered.
- ▶ Connect this product to a properly grounded outlet only. See Grounding Instructions.

EMC WARNING

- ▶ During operation, cell phone with a maximum output power of 2W shall be kept at least of 3.3 m.

SAVE THESE INSTRUCTIONS

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STATEMENTS & SYMBOLS

Note, caution, warning & danger statements

NOTE

Indicates some tips or some information users should be aware of.

CAUTION

Indicates correct operating or maintenance procedure in order to prevent damage to or destruction of the equipment or other property.

WARNING/DANGER

Calls attention to a potential danger that requires correct procedures or practices in order to prevent personal injury.

No modification of this equipment is allowed.

Others

Symbols on the printed label on the outside package box are as below:



Type BF equipment



Double Insulation (Class II)



Must be segregated from other waste when reached end of life.



Follow operating Instructions

INTRODUCTION

This manual should be used for the initial set up of the system and for reference purposes.

General

The **Morpheus Air** replacement mattress consists of a single set of support cells encased in a foam mattress. The **High to Very High Risk** mattress also boasts a static and dynamic use and an easy to use pump that is both quiet and efficient, reducing the need for complex training.

The Morpheus Air replacement mattress has been tested to the following standards:

BS EN 60601-1 BS5724-1 (CE , FDA , TUV)

Essential nursing care is pivotal in pressure ulcer prevention. This mattress will positively contribute to the outcome of a pressure ulcer prevention care plan. Education, clinical judgement and action planning based on patient vulnerability are fundamental factors in prevention of pressure ulcers. A range of assessment scales can be used as a formal method of assessing risk from pressure ulcer development. They should be used in conjunction with an informal assessment (informed nursing judgement), which together with clinical value are considered to be of greater importance. This user manual contains important information about the handling of the product. In order to ensure safety when using the product, read the user manual carefully and follow the safety instructions.

Intended Use

The Morpheus Air is a full replacement mattress system designed for users at high to very high risk or have existing tissue damage (pressure ulcer grade 1 to 4). It has adjustable weight settings for users up to a maximum of 39 stones. It also manual adjusts to the user's body shape and position for optimum pressure care. The dynamic therapy alternating action lowers the interface pressure and gently stimulates the capillaries.

- Individual home care setting and long-term care
- Pain management as prescribed by a physician.

Contraindication

Patient conditions for which the application of pressure relieving therapy on an alternation system is contraindicated are as follows:

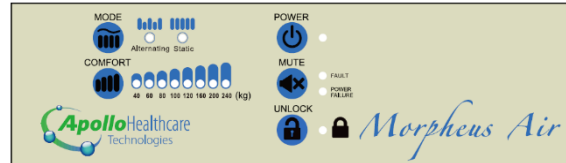
- Cervical or skeletal traction
- Unstable spinal cord injuries

PACKAGE CONTENT

Check inside the package. If any of the following items should be missing or damaged, please contact your local dealer or service center for replacement immediately.

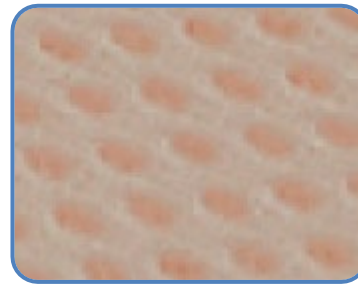
Pump Unit

Make sure the type of pump is identical to which you purchased. Functionalities vary depending on model.



Mattress

- The mattress consists of a blue foam base and side walls. The base has recesses cut out to house the 10 alternating air cells. The air cells then have a white Visco foam topper with a spacer fabric layer on top providing humidity management to help prevent tissue breakdown and skin maceration.



Cover

The PU cover prevents fluid ingress and internal mattress contamination. The cover is easy to remove for easier cleaning. It is clinically effective against bacteria/viruses, with proven resistance to MRSA. It is waterproof with high vapour permeability for improved infection control and is fire retardant to BS7175 Crib 5.

The '**Extreme Strikethrough Resistant Cover**' is made from a highly chemically resistant polyurethane polymer making it much more resistant to abrasion and damage. When cleaning, the material changes less and thus reverts to its natural state very quickly, thus the time in which the cover is more prone to physical damage is significantly reduced. The cover material still incorporates the key features required in a mattress cover: It is multi stretch, vapour permeable, waterproof and high frequency welded, reducing the opportunity for accumulation of dust and liquid residues.



PRODUCT FUNCTIONS

The functions of the pump unit for the Morpheus Air are described below.

Pump Unit

1. Power Button:

Press this button to turn ON/OFF the power, the unit will start/stop operation.

2. Comfort adjust Button:

Press this button to adjust the comfort/weight setting. Each press will increase the setting by one. If the setting is on the maximum, pressing the button will revert the setting back to the minimum. Please consult your physician for a suitable setting. (Weight indication in KG is for reference only)

3. Fault LED:

When the LED is on it indicates that there is a fault with the pump, it will be accompanied by an audible alarm. Pressing the Mute button will stop the LED flashing and silence the audible alarm. If the fault is not attended to then it will trigger the LED and audible alarm again.

4. Power Failure LED:

When the Red LED light is on it indicates that there is a power failure for some reason. Pressing the Mute button will turn off the LED and silence the alarm. Once power has been restored the pump will automatically turn on and revert back to the setting it was previously on.

5. Fuse:

If a blown fuse is suspected, making sure the power is turned off, the fuse can be easily removed and replaced with a correctly rated fuse (T1A/250V type and CE approved).

6. Mattress Connector:

The mattress connector is to connect the air hose from the mattress to the pump.

7. Hanging Hooks:

You can use the hooks on the back of the unit to hang it over either the bed side rail or footboard.

8. Filter:

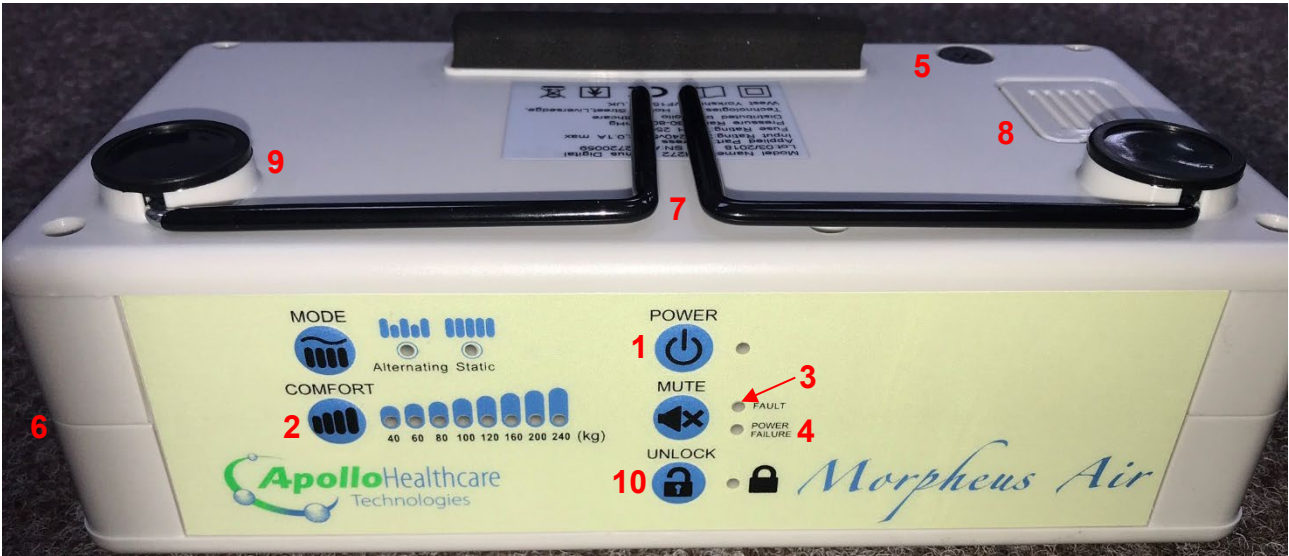
The external filter can be removed and replaced by removing this small cover. Regular replacement is recommended if environment is dirty.

9. Mode Button:

Press this button to switch between Alternating and Static modes.

10. Unlock button:

The unit will automatically lock-out all functions after a period of 2 minutes if no buttons are pressed. To unlock the panel, pressed and hold this button for 2-3 seconds until the LED extinguishes.

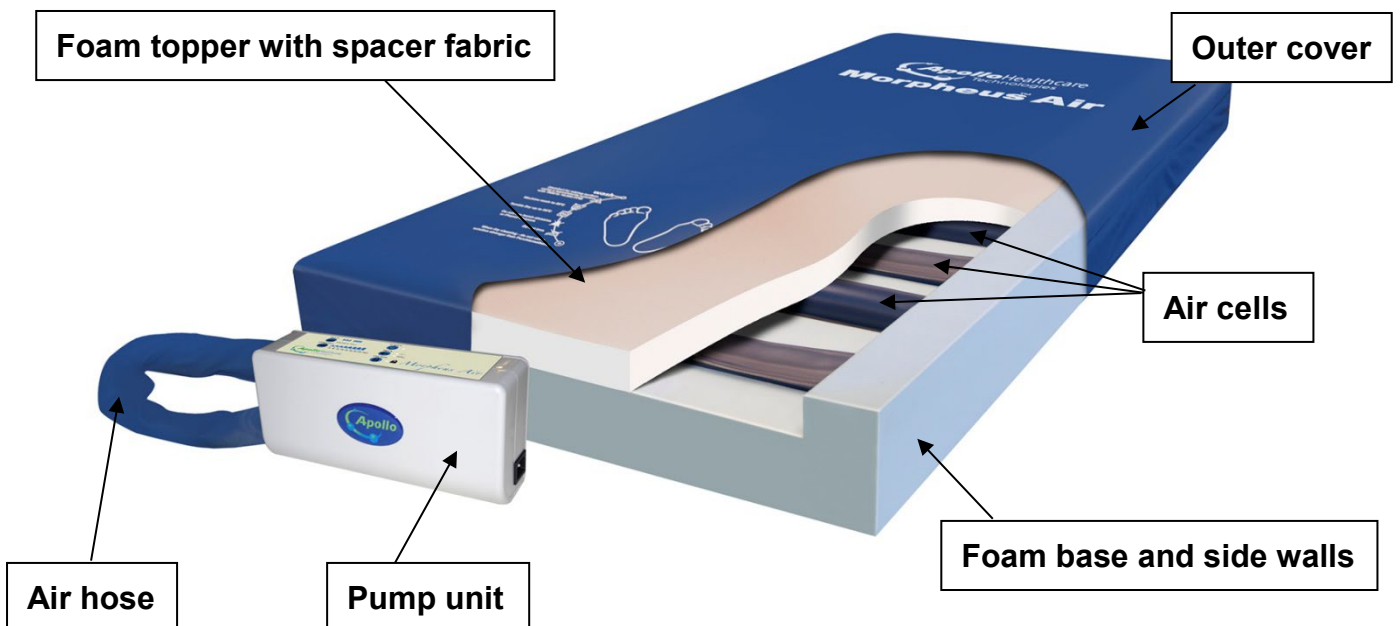


Mattress

The Morpheus Air comes with a foam and air cell hybrid mattress consisting of a blue foam base and side walls. The base has recesses cut out to house the 10 alternating air cells. The air cells then have a foam topper with a spacer fabric layer on top providing humidity management to help prevent tissue breakdown and skin maceration.

The foam used for the topper is Revo Vasco by Vitafoam. The Revo foam offers an airflow 30 times greater than a premium, leading, visco elastic mattress. It also is proven to wick moisture and dissipate heat away from the body, contributing to a cooler, sounder sleep.

The air cells in the mattress inflate/alternate by being attached to the pump unit via the blue air hose. The air hose consists of two tubes that have a connector on the end which fits into the back of the pump unit. There is a Transport cover on the connector which can be used to keep the air in the cells for transportation purposes.



INSTALLATION

Damages may occur during shipment. You should inspect the product upon opening the box for any damages before first use and report any damages to your dealer immediately.

Step 1 ► Place the mattress flat on the bed frame (mattress platform). The air hose should be towards the foot end.

Step 2 ► Cover with a cotton sheet for the user's comfort.

Step 3 ► Hang the pump unit on the foot end of the bed frame and make sure it is stable.

Step 4 ► Connect the air hose from the mattress to the pump's connector. Make sure the connection is completed and secure.

NOTE !

Make sure the air hoses are not kinked or tucked under the mattress.

Step 5 ► Plug the power into an electrical outlet with AC230V/50Hz output. The plug is used as the disconnection device from the mains supply. The plug shall be positioned for easy access.

The power cord shall be kept away from the patient to prevent injuries such as strangulation.



The pump can only be applied to the mattress supplied. Do not use for any other purpose



NOTE: BEFORE INSERTING THE PLUG INTO THE OUTLET, MAKE SURE THE VOLTAGE IS COMPATIBLE.

Step 6 ► Turn on the power by pressing the power button on the front of the unit.

Proceed to the Operation section.

Step 7 ► Make sure to disconnect it by unplugging the power cord when it is not in use. Be sure to turn the power off by pressing the button on the front of the unit before unplugging from the power outlet or the Power Failure alarm will activate.

OPERATION



Always read the operating instructions before use.

General

This product is designed to provide maximum comfort to home care patients. Make sure that you operate this product in a proper way to optimizing its value. Here we provide some general information you should be aware of.

For products: DO NOT use another pump with different specifications or from any other manufacturer. It is dangerous to use a pump with pressure capacity greater than 120 mmHg. This may result in cell-puncture.

DO NOT change any component by yourself. If there is need for replacement or repair, always contact your local dealer or service center.

For patients: When the Alternating or Static LED (green) comes on to indicate the pressure has been achieved to the desired level of comfort, the patient can then lie on the mattress.

Please cover the mattress with a cotton sheet to avoid direct skin contact and for the patient's comfort.

Please follow instructions below for detailed operating procedure.

Step 1 ► Turn on the power. The pump unit starts to pump air into the mattress. The Alternating or Static (depending on which mode has been chosen) LED will flash.

Step 2 ► Press the Comfort button to adjust the setting to the desired weight/pressure. The pressure reaches the desired level within approx. 10~30 minutes.

Step 3 ► When the mattress has reached the selected comfort setting the Alternating or Static LED will stop flashing remain illuminated constantly.

NOTE !

If the Alternating or Static LED doesn't stop flashing once all checks have been made for leakages, please contact local dealer or service center for examination.

CPR function

When there is an emergency to perform CPR on the patient, remove the air hose immediately from the side of the pump unit to release the air quickly from the mattress.

Pressure set up

Users can adjust the pressure value of the air mattress to a desired firmness by themselves or according to the suggestion from a health care professional.

Low pressure / Air Leakage Alarm

When abnormal pressure occurs, the Fault LED will come on and an audible alarm will sound. Also, the first 2 weight settings on the Comfort scale (40 and 60) will both illuminate. Check if the connections are secure and correctly installed according to the relevant instructions. Once the fault has been rectified, press the Mute button and the pump will revert back to the previously selected comfort setting.

NOTE ! If the pressure is consistently low, check for any leakage (tubes or connecting hoses). If necessary, contact your local dealer to replace any damaged tubes or hoses.

Power Failure warning

If the pump loses power for any reason (power cut or unplugged by mistake) the Power Failure LED will light up and the audible alarm will sound constantly. By pressing the Mute button the pump will stop alarming whilst you try to regain power back to the pump.

Once power is restored (either whilst the alarm is sounding or if the Mute button has been pressed) the pump will automatically turn back on and revert back to the previously selected comfort setting.

CLEANING

In this section, we describe the procedures to clean and decontaminate the unit. It is important to follow these procedures before using the system on patients.

Pump Unit

- ▶ DO NOT immerse or soak the pump unit.
- ▶ Check for external damage and move the pump to the cleaning area.
- ▶ Place the pump on a work surface and spray or wipe the outside of the case with quaternary ammonium solution.
- ▶ DO NOT spray any cleaning solution directly on the surface of the pump.
- ▶ DO NOT use a Hypocarbonate or Phenolic based cleaning solution as this may cause damage to the case. Allow the solution to incubate for 10 minutes or accordingly as stated by the cleaning product used.
- ▶ Wipe case with a clean cloth. Make sure all areas are clean (top and bottom, both sides).
- ▶ Spray cloth with cleaning solution and clean faceplate. DO NOT allow excess cleaning solution on faceplate or control panel. (If solution gets inside, damage will occur.)
Allow surface to thoroughly dry after cleaning.
- ▶ After the pump is thoroughly cleaned and dried, proceed to plug in the pump and test to see if it runs normally.
- ▶ Unplug the pump and store with proper identification tag.

Mattress System

- ▶ Brush off or wipe down all surfaces of the cover sheet with soap and water before wetting with any liquid disinfectant.
- ▶ Use a single use wipe to clean the cover with a solution of neutral detergent and hot water. Rinse thoroughly with clean water and a damp single use wipe.
- ▶ You can unzip the top cover to completely remove it from the mattress.

NOTE ! The foams parts of the mattress should not be cleaned.

- ▶ If the cover is heavily soiled or has been exposed to bodily fluids such as blood or urine, it will require a more thorough cleaning procedure.
- ▶ Wipe the cover with a single use wipe and a 0.1% Chlorine Solution (1,000ppm). If required a 1% Chlorine Solution (10,000ppm) can be used. Rinse thoroughly with clean water and a damp single use wipe.
- ▶ When required the mattress cover can be removed and laundered; Pre-wash temperature 95°C for 15 minutes; Main wash temperature 95°C for 15 minutes. Followed by a cold rinse and extraction.
- ▶ Cover should be hung from line or bar and drip dried in a clean indoor environment. Cover can be tumble dried on a low heat setting not exceeding 40°C. Exceeding this temperature can cause significant damage to the mattress cover.
- ▶ The air cells can be unplugged from the internal pipework and are sprayed on all sides with a disinfectant. Let it sit for the required incubation time and wipe down with a clean cloth. (Make sure to disconnect all the air cells, one by one, and spray the disinfectant on all sides, including all the connecting tubes and hoses. Let it sit for least 10 minutes.)
- ▶ Repeat the process with the tubing set: spray, incubate, and then wipe clean.
- ▶ Dry the mattress on a SUNLESS area after cleaning.



If the any of the foam parts are stained with any bodily fluid (e.g. blood, urine, etc.) check for stains on the inside of the cover for evidence that the cover has been compromised. If this is the case, then both the cover and the affected foam parts must be replaced immediately.

HANDLING AND STORAGE

- ▶ Lay the mattress out flat.
- ▶ Do not fold, crease or stack the mattress.
- ▶ Follow the national requirement to dispose of the pump unit.

MAINTENANCE

General

- ▶ Check the power cord and plug to see if there are abrasions or excessive wear.
- ▶ Check the mattress cover for signs of wear or damage. Ensure the mattress cover and tubes are connected together correctly.
- ▶ Plug in the pump unit and check the airflow from the hose connection port. The airflow should alternate between ports every half-cycle time.
- ▶ Check the air hoses to see if there are kinks or breaks. For replacement, please contact your local agent or dealer.
- ▶ Make sure the mattress tube is well connected.
- ▶ Check the pump unit and make sure both power and power indicator are off when the switch is turned off.

Low pressure





Examine if there is air leakage between the pump and the mattress connections or from the air mattress tubes :

- ▶ Check connectors between the air mattress and pump. If there is any disconnection, please reconnect.
- ▶ Check the air-connecting tubes. Ensure each single cell is not broken.
- ▶ Set the Comfort setting to maximum position. Keep the tubes fully inflated and inspect for air leakage.
- ▶ Check if there is any air leakage from cells. Ensure no leakage occurs. If any leakage occurs, please contact your local agent or dealer.

TROUBLESHOOTING


Problems	Solutions
The pump doesn't work	<ol style="list-style-type: none"> 1. Check if the plug is inserted firmly into the outlet and the fuse has not blown. Both in the pump unit itself and in the plug. 2. Turn on the power switch again. <ul style="list-style-type: none"> ▶ If the pump still doesn't work, contact your local dealer immediately. ▶ There may be a faulty outlet. Try to connect the power cord to another outlet. If the pump still doesn't work contact a qualified electrician for main power check.
Incomplete inflation (Low Pressure)	<ol style="list-style-type: none"> 1. For a quick check, adjust the pressure to maximum position. 2. Check to see if the tubes connected to the pump are twisted or there is any leakage occurring. <ul style="list-style-type: none"> ▶ Always keep the tubes straight. ▶ Change tubes if there is any leakage. ▶ Ensure every single cell is not broken.
Slow air flow	<p>A dirty filter may decrease the air flow. Wash the filter with mild detergent to keep it clean.</p> <ul style="list-style-type: none"> ▶ Check the air filter at the back of the pump unit at least once a month.

ALARM FAULT FINDING

Lights showing	Alarm name	Description
	Power off alarm	Power off alarming. Just the alarm light on, all other lights are off.
	Initial failure alarm	<p>Within 40 mins if the pressure does not reach the lowest pressure of 18mmHg then alarm will activate. Alarm light and indication lights on, all other lights are off.</p> <p>Once the pressure reach 18 mmHg or above for 8 secs then alarm will reset itself.</p> <p>Within 5 mins after alarm reset if the pressure still not reached normal then alarm will activate again.</p>
	Low pressure / air leakage alarm	<p>After initialisation, if pressure is lower than 15 mmHg for 2 mins then alarm will activate. Compressor continues to output air during alarming.</p> <ul style="list-style-type: none"> - If pressure rises to more than 15 mmHg and last for more than 8 secs then alarm will reset itself. - If alarm is muted manually and the pressure remains lower than 15 mmHg in 5 mins then alarm will activate again.
	Motor malfunction / air valve malfunction	<p>If PCB software does not receive within 30 secs checkout step signal from photoelectric switch, timer motor will keep rotating as it has not detected bay one of rotor disc and will activate alarm.</p> <p>Software testing method: Software will drive motor rotation and inspect the Photoelectric switch signal, if it cannot detect the signal or loses signal, then alarm will activate.</p> <p>As long as there is a motor and driver then software needs to detect signal. If it detects normal signal then alarm will reset.</p>

SPECIFICATIONS

System

Item	Specifications
Medical Equipment	Class II; IP21; AP/APG NO; Type BF 
Applied Part	Mattress
Power Supply	AC 220-240V 50Hz; 0.1A max
Dimensions	Mattress: 198 x 88 x 16 cm Pump: 28 x 13 x 9cm
Weight	Mattress: 14.0 kg Pump: 2.25 kg
Environment Requirements	Temperature: Operation: 50°F ~ 104°F (10°C to 40°C) Storage: 5°F ~ 122°F (-15°C to 50°C) Shipping: 5°F ~ 128°F (-15°C to 70°C) Humidity: Operation: 10% to 90% non-condensing Storage: 10% to 90% non-condensing Shipping: 10% to 90% non-condensing
Safety Standards	UL, c-UL, CE

Pump Unit

Series	Function	Specifications
APH272 Cronus Digital	ON/OFF Button Comfort-selector Button Mode Button Alarm Mute Button Unlock Button	Power: 220-240V AC/50Hz Pressure: 12~26 mmHg Cycle time: 9.6 min/50Hz

AP/APG NO - indicates the device is NOT suitable for use in the presence of flammable anesthetic mixture with air or with oxygen or nitrous oxide.

IP21 – The pump is in compliance with IP21 requirement according to IEC 60529, degrees of protection against solid foreign objects and water.

Type BF symbol indicates the degree of protection against electric shock.

Instructions or reference information for repair of equipment parts are provided by the manufacturer, please contact local dealer for further information.

GROUNDING INSTRUCTIONS

The pump is a Class II electrical product and is double insulated and does not require a grounding earth wire.

DANGER – Do not open up the pump unit as this can cause risk of electric shock.

NOTE - It is not recommended to repair or replace any parts of the pump unit by the user, please contact a qualified electrician or service party. To reduce the risk of electric shock, do not change or modify the cord or plug in any way.

NOTE ! The above specifications are also applicable to those areas operating with the same power supply range.

Due to the continual development of the above products, specifications are subject to change without prior notice..

DECLARATION OF CONFORMITY

The company;

Apollo Healthcare Technologies Ltd.
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Declares that

The articles which it sells, called APH166 Morpheus Air and related accessories, are classified as Class IIa Medical Devices according to Medical Directive 93/42/EEC and to national law no. 46/97 and comply with the European Directive on CE marking; in addition

- they are not measuring instruments;
- they are not intended for clinical investigations;
- they are sold in non-sterile packaging;

The above mentioned devices meet with the essential requirements and provisions of Directive 93/42/EEC.



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