Apollo Healthcare Technologies

APH183 Apollo 5 Premium™

USER MANUAL

AHSM-005_Version_3_21.10.2021

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INSTRUCTIONS

DANGER - To reduce the risk of electrocution:

1. Do not place or drop into water or liquid.
2. Do not reach for a product that has fallen into water.
3. Do not place or store the product where it may fall into water.
4. Always unplug this product when not in use.

WARNING - To reduce the risk of burns, electrocution, fire or injury to Persons:

1. Do not block air openings of this unit or place it on a soft surface.
2. Do not operate the unit if it has a damaged cord or plug, return the unit or contact a service centre for examination or repair.
3. Do not drop or insert any object into any opening or hose.
4. Connect the unit to a properly grounded outlet only. See grounding instruction.
5. When plugged in, the unit should not be left unattended.
6. The unit is only for it's intended use, do not use attachments not recommended by the Manufacturer.
7. Close supervision is necessary when this product is used near Children.
8. Keep the cord away from heated surfaces.

NOTE, CAUTION AND WARNING STATEMENTS:

CAUTION – Indicate correct operating or maintenance procedures in order to prevent damage to or destruction of the equipment or other property.
WARNING – Calls attention to a potential danger that requires correct procedures or practices in order to prevent personal injury.

SYMBOLS

CE 0197	CE Mark
	Manufacturer
	Complies with standards protecting against electric shock for type BF equipment.
	Consult operating instructions for use
IP21	Protected against solid foreign objects of 12.5 mm and greater; Protection against vertically falling water drops
	Class II
	Temperature limitation/temperature range
	Dry clean, Any Solvent Except Trichloroethylene
	Do Not Iron
	Tumble Dry, Normal, Low Heat
	Do Not Tumble Dry
	Do Not Bleach
	Do Not Dry Clean
	Machine wash, regular / normal, max 95 degrees C (203 degrees F)
	Attention – Observe proper Disposal of Electrical & Electronic Equipment (WEEE): This product should be handed over to an appropriate collection point for the recycling of electrical and electronic equipment. For more detailed information about the recycling of this product, please contact your local city office, household waste disposal service or the retail store where you purchased this product.
EC REP	Authorised Representative

A. INTRODUCTION

For initial set up and for reference purpose, this manual should be read carefully.

A.1 GENERAL INFORMATION

The unit is for prevention or treatment of pressure ulcers.

The unit has been tested and successfully approved by the following regulation:
IEC/EN 60601-1
IEC/EN 60601-1-2
IEC/EN 60601-1-11
IEC/EN 61000-3-2 Class A
IEC/EN 61000-3-3
CISPR 11 Group 1, Class B

CE
0197

A.2 INTENDED USE

The unit should help prevent and reduce the incidence of pressure ulcers while optimising Patient comfort. It is used for the following purposes:

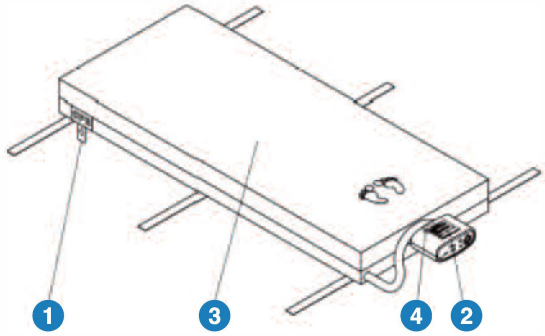
1. For home care and long term care of Patients who may be suffering Pressure Area Care Damage.

2. Pressure relief – to assist in the prevention of pressure area damage.

⚠ **NOTE:** The unit is not suitable for use around flammable anaesthetic mixture, with air or with nitrous oxide.

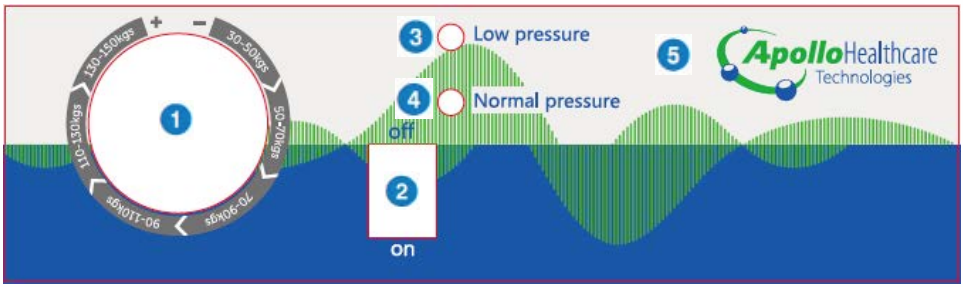
B. PRODUCT DESCRIPTION

B.1 AIR PUMP AND MATERIALS

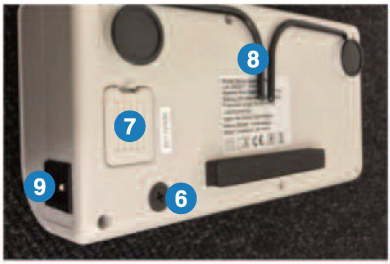


1. CPR
2. Pump unit
3. Mattress System
4. Quick Connectors

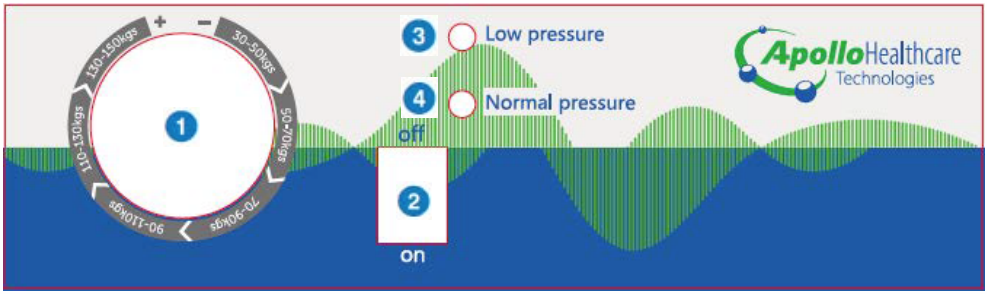
B.2 PUMP AND MATERIALS



1. Comfort Adjust button (30 – 150kg)
2. Power On/Off button
3. Low Pressure Indicator
4. Normal Pressure Indicator
5. Panel Tactile
6. Fuse
7. Air Filter
8. Mounting Brackets
9. Power Cable Plug



B. 3 FRONT PANEL



1. Comfort (weight) setting adjust dial. Adjust the comfort dial through the weight settings from 30KG to 150KG, according to the patient's weight.
The weight settings should only be used as a comfort setting and as a guide in conjunction with a qualified Clinicians advice for each individual user.

2. Power On/Off Switch. The pump is turned on by pressing the I at the bottom of the switch. The switch will now be in the On position. The pump is turned off by pressing the O at the top of the switch. The switch will now be in the Off position.

3. When the pump is first turned on the low pressure light illuminates whilst the mattress is inflating. Once the mattress has reached the desired pressure the light will extinguish. During operation, if the pump detects low pressure, this light will illuminate Orange. Once the issue has been rectified the light will extinguish.

4. Once the mattress reaches the desired pressure the Normal Pressure light will illuminate Green. If the pressure in the mattress drops for any reason or the comfort control dial is increased this light will extinguish and illuminate again once the pressure has reached the desired level again.

C. INSTALLATION

After delivery check the system for any damage which may have occurred during transit. If damaged in any way contact your supplier immediately.

C1 PUMP AND MATTRESS INSTALLATION

1. Place air mattress on top of the bed frame/platform. Please ensure foot sign is at the bottom of the bed.

2. Hang the pump onto the foot end bed rail and adjust the hangers to a suitable position for the pump. Alternatively, the pump may be placed on a flat surface.

3. If the pump wire mains wire could be a risk on the floor under the bed with the use of other equipment, clip the mains cable into the cable management system on the side of the mattress

4. Connect the air hose connectors from the mattress to the pump unit. Make sure the connection is completely secured.

⚠ **NOTE:** Ensure the air hoses are not kinked or tucked under the mattress.

5. Plug power cord into electrical socket.

⚠ **NOTE:** 1. Make sure the pump is suitable for the power voltage
2. Removing the plug will disconnect the system

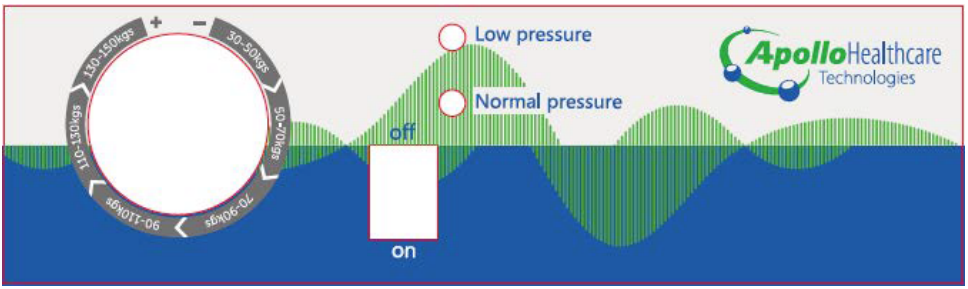
⚠ **CAUTION:** The pump can only be used for the mattress recommended by the Manufacturer. Do not use for any other purpose.

5. Press the power switch to turn the pump on.

D. OPERATION

NOTE: Always read the manual before use.

D.1 GENERAL OPERATION



1. Insert the supplied power cable into the side of the pump and the plug into a suitable power supply and press the power on button.

2. Turn the comfort setting to desired level and wait for 20-30 minutes (depending on the mattress) for the mattress to be fully inflated by the pump. Once the Low Pressure light goes out the Normal Pressure light is on the mattress is ready to be used.

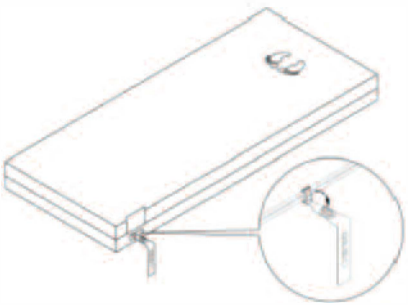
3. The pump is automatically set and constantly in alternating mode. There is no static mode on this product.

4. Adjust the comfort setting to the most comfortable level for the Patient, without the mattress bottoming out. The pressure in the mattress will slowly increase or decrease to the required level and the Normal Pressure light will be on Green.

NOTE: It is recommended that the comfort setting be set to maximum (150KG) for the quickest inflation of the mattress for every first inflation or new use, the user can then adjust the comfort setting to the desired level after the mattress has fully inflated.

D.2 CPR

This is for emergency use to deflate air from the mattress. Disconnect the air tubes from the mattress for even faster deflation.



D.3 PRESSURE SET UP

Turn the comfort dial to select different weight settings. Turning clockwise will increase the pressure in the mattress and turning anti-clockwise will decrease the pressure in the mattress.
The Low Pressure LED will light until the pressure in the mattress reaches the desired setting and then the Normal Pressure LED will light.

D.4 LOW PRESSURE INDICATION FUNCTION

Once the mattress has reached the desired comfort setting, should the pump detect low pressure in the mattress the Low Pressure LED will light up Orange.
N.B. There is no audible alarm on this pump. Check that the connector is fully inserted and that the CPR valve on the mattress is fully closed.

⚠ **NOTE:** If the pressure remains at LOW PRESSURE, check for any air leakage (cells, air tubes and connectors) If necessary, replace any damaged parts. Or contact the supplier for further assistance.

E. CLEANING

Ensure the system is thoroughly cleaned between Patient use. Wipe the air pump with a damp cloth pre-soaked with a mild detergent and keep it dust free.

⚠ **CAUTION**, do **NOT** soak the pump.

Wipe the mattress with a damp cloth pre-soaked with warm water (not to exceed 60^{O} C) containing a mild detergent. Keep the Mattress dust free. The cover may also be cleaned using Sodium Hypochlorite diluted in water. All parts should be air dried thoroughly before use. The mattress cover may also be washed in the washing machine at a temperature not exceeding 95^{O} C. See printed washing instructions on the cover.

⚠ **DO NOT USE PHENOLS**

⚠ Always dry the Mattress without direct exposure to sunlight.

F. STORAGE

1. For storage fully deflate the mattress.
2. Roll the Mattress from head end downwards.
3. Store in a cool dry place.

⚠ **NOTE:** DO NOT FOLD OR STACK THE MATTRESS.

G. MAINTENANCE

G.1 GENERAL

1. Check the main power cord and plug are not excessively worn or cut.
2. Make sure mattress cover, inner cells and air tubes are assembled correctly.
3. Make sure all the cells are alternating correctly.
4. Check all tubing is not kinked or broken. If replacements are required, contact your supplier.

G.2 FUSE REPLACEMENT

1. Firstly unplug the pump from the mains.

2. Remove the cover of the fuse with a cross head screwdriver.

3. Insert a new fuse of the correct rating and replace the cover.
   The fuse should be rated as T1A/250V and CE approved.

G.3 AIR FILTER REPLACEMENT

1. Remove the air filter cover, located at the back of the pump.

2. Replace the filter and replace the cover.

3. Replacing the air filter regularly is recommended.

H. SPECIFICATIONS

Air pump		Specification
Power Supply		AC 120V 50/60 Hz, 0.1A 8W AC 230V 50/60 Hz, 0.06A 11W
Fuse Rating		T1A, 250V
Cycle time		12 minutes
Pump Dimension (L x W x H)		**27 x 13.3 x 9cm**
Pump Weight		2.38kgs
Environment	Temperature	Operation:10° C to 40° C (50° F to 104° F) Storage: -15° C to 50° C (5° F to 122° F) Shipping: -15° C to 70° C (5° F to 158° F)
	Humidity	Operation: 10% to 90% non-condensing Storage: 10% to 90% non-condensing Shipping:10 % to 90% non-condensing
Classification		Class II, Type BF, **IPX1** Applied Part: Air Mattress **DO NOT USE IN THE PRESENCE OF A FLAMMABLE ANESTHETIC MIXTURE (NO AP OR APG PROTECTION)**

Air mattress	Specification
Mattress Height	APH183 - 5" or 12.5cm
Dimension (L x W x H)	**198 x 88 x 12.5cm**
Mattress Weight	4.1kgs
System Pressure Range	30 - 80 mmHg
Maximum load	150kg

⚠ **NOTE: If necessary, please ask your supplier for further technical documents**

10. Technical Specification:

Item		Specification
Power Supply (Note: Seerating label on the product)		AC 220-240V 50 Hz, 0.09A (for 230V system)
Fuse Rating		T500mAH, 250V
Cycle time		12mins
Dimension (L x W x H)		27.5x13.5x9cm
Weight		1.3Kg
Environment	AtmosphericPressure	80KPa to 106KPa
	Temperature	Operation: 5°C to 35°C (41°F to 95°F) Storage: -15°C to 50°C (5°F to 122°F) Shipping: -15°C to 70°C (5°F to 158°F)
	Humidity	Operation: 10% to 90% non-condensing Storage: 10% to 90% non-condensing Shipping: 10 % to 90% non-condensing
Classification		Class II, Type BF, IP21 Applied Part: Air Mattress Not suitable for use in the presence of a flammable anesthetic mixture (No AP or APG protection)

Mattress	Specification			
Model	B01	B02	T01	T05
Dimension (L x W x H)	190x90x7cm	180x76x7cm	200x90x10cm	200x90x10cm
Weight	1.95Kg	1.5Kg	5.31Kg	4.58Kg
Max. Support Weight	135Kg	135Kg	180Kg	180Kg

⚠**NOTE-**

1. Consult the distributor or EU representative for further technical documents.
2. The specification is also suitable for other areas operating with same power supply.
3. Mattress dimension and weight is measured without foam cushion.
4. The manufacturer reserves the right to modify the specification without notice.

Appendix A: Emc Information

Guidance and manufacturer's declaration-electromagnetic emissions		
The device is intended for use in the electromagnetic environment specified below. The customer or the user of the device should assure that they are used in such an environment.		
Emissions test	**Compliance**	**Electromagnetic environment - guidance**
RF emissions CISPR 11	Group 1	The models device use RF energy only for their internal function. Therefore, their RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR11	Class B	The model P08 Series are suitable for used in domestic establishment and in establishment directly connected to a low voltage power supply network which supplies buildings used for domestic purposes.
Harmonic emissions lEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions lEC 61000-3-3	Complies	
Warning: 1. The device should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, the device should be observed to verify normal operation in the configuration in which it will be used**.** 2. Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation. 3. Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the Pump, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.		

Guidance and Declaration-electromagnetic immunity			
The models device intended for use in the electromagnetic environment specified below. The customer or the user of the device should assure that they are used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment -guidance**
Electrostatic discharge (ESD) lEC 61000-4-2	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air	±8 kV contact ±2 kV, ±4 kV, ±8kV, ±15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient/burst IEC 61000-4-4	±2kV for power supplylines ±1 kV for Input/outputlines	±2kV for powersupply lines	Mains power quality should be thatof a typical commercial or hospitalenvironment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11.	<5 % UT (>95% dip in UT.) for 0.5 cycle <5 % UT (>95% dip in UT) for 1 cycle 70% UT (30% dip in UT) for 25/30 cycles <5% UT (>95 % dip in UT) for 5/6 sec	<5 % UT (>95% dip in UT.) for 0.5 cycle <5 % UT (>95% dip in UT) for 1 cycle 70% UT (30% dip in UT) for 25/30 cycles <5% UT (>95 % dip in UT) for 5/6 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the model P08 require continued operation during power mains interruptions, it is recommended that the model P08 Series powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field lEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE UT is the a.c. mains voltage prior to application of the test level.			
Conducted RFlEC 61000-4-6 Radiated RFlEC 61000-4-3	3 Vrms 150 kHz to 80 MHz 6 Vrms in ISM and amateur radio bands 10 V/m 80 MHz to 2.7 GHz. **385MHz-5785MHz Test specifications for ENCLOSURE PORTIMMUNITY to RF wireless communication equipment(Refer to table9 of IEC 60601-1-2:2014)**	3 Vrms 150 kHz to 80 MHz 6 Vrms in ISM and amateur radio bands 10 V/m 80 MHz to 2.7 GHz **385MHz-5785MHz Test specifications for ENCLOSURE PORTIMMUNITY to RF wireless communication equipment(Refer to table9 of IEC 60601-1-2:2014)**	Portable and mobile RF communications equipment should be used no closer to any part of the models P08 including cables, than there commended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** $d=[3,5/V1]x\ P^{1/2}$ $d=1,2xP^{1/2}$ 80 MHz to 800 MHz $d=2,3xP^{1/2}$ 800 MHz to 2.7 GHz where P is the maximum output power rating of the transmitter In watts (W) according to the transmitter manufacturer and d Is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, [a]should be less than the compliance level in each frequency range. [b]Interference may occur In the vicinity of equipment marked with the following symbol: 
NOTE 1 At 80 MHz and 800 MHz. the higher frequency range applies. NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			
a) Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the models P06Ais used exceeds the applicable RF compliance level above, the model P08 Series should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the model P08 Series. b) Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3V/m.			

Recommended separation distances betweenportable and mobile RF communications equipment and the model P08

The model P08 Series is intended for use in electromagnetic environment in which radiated RF disturbances is controlled. The customer or the user of the model P08 Series can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the model P08 Series are recommended below, according to the maximum output power of the communications equipment.

Rated maximum outputPowerof transmitter W	**Separation distance according to frequency of transmitter m**		
	150kHz to 80MHz $d=1.2xP^{1/2}$	**80MHz to 800MHz** $d=1.2xP^{1/2}$	**800MHz to 2,5GHz** $d=2.3xP^{1/2}$
0.01	**0.12**	**0.12**	**0.23**
0.1	**0.38**	**0.38**	**0.73**
1	**1.2**	**1.2**	**2.3**
10	**3.8**	**3.8**	**7.3**
100	**12**	**12**	**23**

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) accord able to the transmitter manufacturer. NOTE 1 At 80 MHz and 800 MHz. the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

SAVE THESE INSTRUCTIONS

It is **NOT** recommended to repair or replace the unit, unless this is by qualified personal. To reduce the risk of shock or electrocution do not change or modify the cord or plug in any way.

For further technical support please visit
www.apollo-ht.co.uk

Apollo Healthcare Technologies Limited
Holme Street, Liversedge, West Yorkshire WF15 6JF
Tel: +44 (0) 1924 614567 Fax: +44 (0) 1924 607480
Email: sales@apollo-ht.co.uk www.apollo-ht.co.uk

EC REP

PaMed Consulting SC.
Tywonia 2, 37-500
Jaroslaw, Poland
Tel:Fax: +48 509 778 660
Email: info@pamed-consulting.eu

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