



Rhythm Multi

Alternating And Low Air Loss Pressure Relief System



User Manual

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Warning

- ❖ Connect the Master Control unit to a proper power source.
- ❖ Don't use the system in the presence of any flammable gases, such as anesthetic agents.
- ❖ Keep the blower and mattress away from sources of liquid or open flames.
- ❖ Keep the mattress away from sharp objects.
- ❖ The device is not AP/APG protected.
- ❖ Do not place any heating device near the mattress system.

⚠ Caution

- ❖ Use the mattress under the physician's instruction.
- ❖ Periodic re-positioning of the patient is still necessary when using the Rhythm Multi low air loss system.
The Control unit should only be repaired by an authorized distributor.
(The circuit diagram, repairable component parts list, and service manual are released only to authorized distributor).
- ❖ Do not drop the control unit.
- ❖ Do not store the system in direct sunlight or in extreme cold conditions.

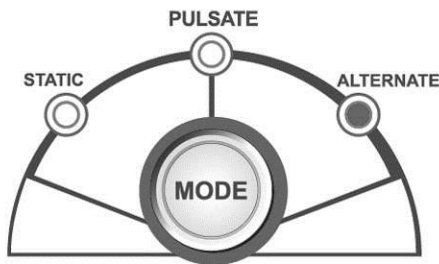
1. The Purpose of this Manual

This operation manual is focused on the setup, cleaning and routine maintenance of the Rhythm Multi-Function Air Therapy Support System. We recommend keeping this manual available to answer questions related to the system.

2. Product Description

The Rhythm Multi system is a unique and innovative specialized mattress replacement system. The system utilizes low air loss technology with a high flow rate that provides pressure management for the treatment of pressure ulcers. The advanced 3:1 alternating function also provides active prevention for pressure relief, especially for those in acute care and long term care facilities. The cells inflate and deflate in a 3:1 cycle, meaning 2/3rds of the body is always supported by air at any one time. The Rhythm Multi system offers “deep-cell therapy”; whereby, the cells completely collapse providing “0” pressure at the point of deflation. The “Soft/Firm” digital control feature allows the caregiver to adjust the firmness or softness of the surface for optimal patient comfort through 10 different pressure settings. The Rhythm Multi also has a 2 inch enclosed convoluted foam base to provide extra protection and comfort for the patient in the event of a power failure and the mattress deflates.

3-1 Alternation Cycle Illustration



18 cells, 1/3 of cushions are deflated



18 cells, fully inflated



18 cells, 1/3 of cushions are deflated



18 cells, fully inflated



18 cells, 1/3 of cushions are deflated



18 cells, fully inflated

Master Control Unit Features


- ALTERNATE setting – provides 3 in 1 alternating pressure therapy that can be adjusted from 3 to 20 minutes in 1 minute increments or 20 to 95 minutes in 5 minute increments.
- STATIC setting - provides low air loss therapy without alternation therapy.
- PULSATE setting - gently raises and lowers the pressure of the entire air mattress every 90 seconds for an alternative to traditional alternating pressure.
- AUTO FIRM setting - when activated it provides a uniform firmness for nursing procedures, egress and ingress of the mattress.
- Power failure audible alarm - in the event of a power failure, an audible alarm will sound. Once activated the alarm can be disabled by pushing the ALARM RESET button on the front panel.
- LOCK-OUT feature - allows the caregiver to lock all settings from intentional or unintentional tampering.
- Double insulated case provides near silent operation.
- The foot board mounting rack provides convenient placement on the bed.

Mattress Features

- Individual air cushion is designed for maximum pressure distribution.
- Each air cell is strategically vented to provide true low air loss therapy.
- The “Happy Heel” feature allows for independent pressure control for heel cells.
- Integrated glide sheet on bottom cover for easy transfer and noise mitigation.
- Convenient cable and management system designed in the mattress cover.

3. Technical Data






Master Control Unit

| | |
|------------------------|--|
| Model Name | Rhythm Multi |
| Model No. | FC-PHR0009 |
| Size (L x W x H) | 17.7” x 6.8”x 10.8” |
| Weight | 13.2 lbs |
| Phase Time | 3 ~ 95 |
| Max Operating Pressure | 61mmHg |
| Rated Voltage | AC 110-120V |
| Rated Frequency | 60 Hz |
| Fuse Rating | 5A 250V |
| Max Current | 5A |
| Classification | Class I, Type BF  Not AP or AGP type |
| Operation Temperature | 15°C ~ 35°C |
| Operation Humidity | 30% ~ 75% |
| Mode of Operation | Continuous |
| Standard | IEC 60601-1, CAN/CSA C22.2 No. 601.1, IEC 60601-1-2 |

Rhythm Multi Mattress Replacement

| | |
|------------------|---|
| Model No | FM-PHR0009 |
| Size (L x W x H) | 80" x 36" x 10" |
| Weight | 28.67 lbs |
| Cells Material | Nylon w/ PU backing |
| Cover Type | Zipper cover with removable foam base |
| Cover Material | Nylon woven fabric w/ PU coating finish |
| Base Material | Woven Polyester fabric w/ PVC backing |

Symbol Definition

| | |
|---|---------------------------------|
|  | Refer to Accompanying Documents |
|  | Waste Disposal |
|  | Type BF Applied Part |
|  | Alternating Current |
|  | Warning |

4. Instructions for Proper Use

1. Remove the existing mattress from the bed frame.
2. Replace the standard mattress with the Rhythm Multi mattress replacement system.
3. Position the mattress so the air tube is at the foot of the bed.
4. Secure the straps on the bottom cover of the mattress to the bed frame.
5. Hang the control unit on the foot board of the bed frame.
6. Attach the air tube connector to the sockets on the left panel of the control unit. (connectors and sockets are color coded)
7. Check air hoses to ensure they are not kinked under the mattress.
8. Plug in the control unit and turn on the master power switch on the right side panel and the STANDBY LED will illuminate.



9. Push the STANDBY/OPERATE button on the front panel. The OPERATE LED should illuminate and the control unit will be operational.

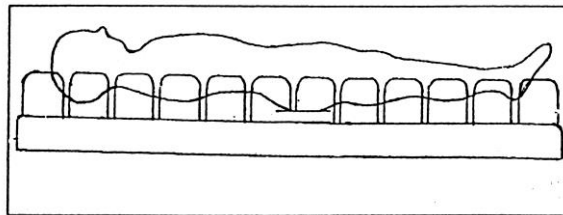
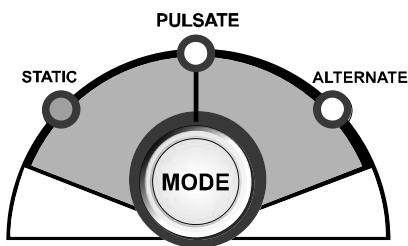


10. Push the AUTO FIRM button for fast inflation. Allow 4-7 minutes for full inflation. After the mattress is fully inflated the caregiver can transfer the patient to the mattress. Note: The mattress can be inflated while a patient is laying on it.

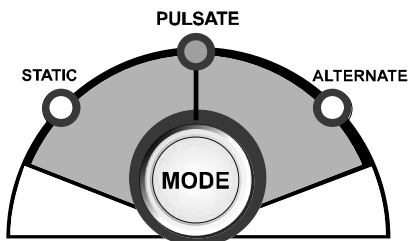


11. Push AUTO FIRM again to release the fast inflation mode.

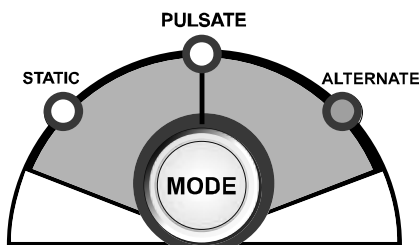
12. **Static Function:** Press the MODE button until the “STATIC” LED is illuminated. The STATIC mode provides True Low Air Loss Therapy. Once the patient is positioned on the mattress perform a hand check by placing hand under the patient buttocks between cells and foam. The patient should have at least 2 inches of clearance between the buttocks and the bottom of the mattress. To adjust the pressure press the SOFT or FIRM button to achieve the maximum patient comfort.



13. **Pulsate Function:** Press the MODE button until the “PULSATE” LED is ILLUMINATED. Once activated the mattress will be automatically “pulsate” by slightly deflating the pressure in the mattress for 90 seconds and then re-inflating to the original pressure setting for 90 seconds. The mattress will continue to cycle in this fashion in the pulsate mode.



14. **Alternate Function:** Press the MODE button until the “ALTERNATE” LED is illuminated. This will enable the 3 in 1 alternating pressure function illustrated on page 1.



15. Alternation time can be adjusted by the CYCLE button. The cycle time can be set from 3 minutes to 20 minutes in 1 minute increments and 25-95 minutes in 5 minute increments. (NOTE: If the STATIC function or PULSATE function is selected the display window will not display a time.)



16. The Master Control Unit is equipped with power failure alarm. During a power failure, where the unit is not connected to a backup power source, an audible alarm will sound. The alarm can be disabled by pushing the Alarm Reset button on the front panel.



⚠ Caution: Immediate response by the operator is required when the power failure alarm is activated..

17. **LOCK-OUT:** The Master Control Unit is also equipped with a manual LOCK OUT function. To engage press the LOCK OUT button. When engaged the LOCK OUT LED will be illuminated and all function keys will be automatically disabled.

UNLOCKING: To disengage the LOCK OUT function press and hold the “LOCK OUT” button for 3-5 seconds. The LOCK OUT function will also disengage when the unit is shut down.




18. **CPR Deflation:** For quick mattress deflation disconnect the hose connector from the Control Unit and Open the CPR quick deflation valve at the head of the mattress.

Recommendations

Make sure the hoses are not kinked and the connectors are properly locked. The parts and accessories supplied are specifically designed for use with this control unit. Use of other parts or accessories in conjunction with the system is not recommended.

Caution

The air outlet label  signifies the blower exhaust. Do not touch the exhaust valve during operation as the temperature can be very hot.

5. Cleaning

The Mattress

The mattress should be cleaned weekly using a damp soft cloth and mild detergent. If the top or bottom cover becomes severely soiled remove and replace with a clean cover. The soiled cover can be cleaned as follows.

Covers can be washed and thermally disinfected in a washing machine. When washing bottom cover remove all air bladders, hoses, valves and foam padding. (NOTE: **Never use phenol based cleaning solutions.**)

Industrial cleaning

| | | |
|------------|------|--------|
| Pre-Wash | cold | 10 min |
| Main Wash | 60°C | 6 min |
| Main Wash | 72°C | 10 min |
| Spin Cycle | | 2 min |
| Cold Rinse | | 3 min |
| Spin Cycle | | 5 min |

Domestic cleaning

| | | |
|------------|------|--------|
| Pre-Wash | cold | |
| Main Wash | 72°C | 10 min |
| Cold Rinse | | 2 min |
| Spin Cycle | | 5 min |

Tumble Drying or Tunnel Drying is not recommended.

Mattress Cells can be wiped over with a solution of sodium hypochlorite 1000ppm or any other non-phenolic germicidal solution.

The Master Control Unit

CAUTION

SWITCH OFF THE ELECTRICAL SUPPLY TO THE PUMP AND DISCONNECT THE POWER CORD FROM THE MAIN SUPPLY BEFORE CLEANING AND INSPECTION

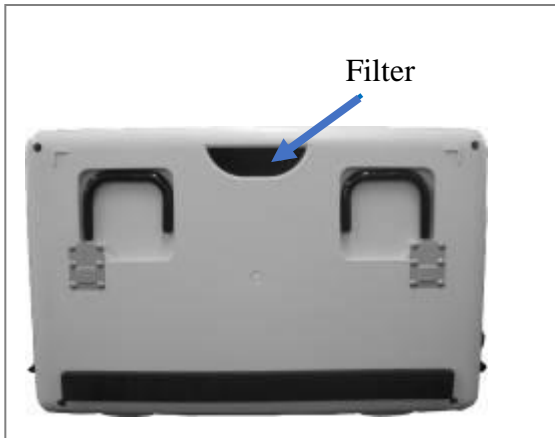
The master control unit should also be cleaned weekly using a damp soft cloth and mild detergent.

The blower casing is manufactured from ABS plastic and if the case is soiled the blower can be wiped down with a sodium hypochlorite solution to dilution of 1000ppm or any EPA approved hospital grade disinfectant. (NOTE: **Do not use phenol base cleaning solution.**)

The air filter should also be cleaned and checked as often as possible at a minimum of every six months. The Air Filter can be easily removed by pinching center of the filter and pulling outward from the back of the control unit.

Replace Air Filter

1. Remove air filter by pinching center and pulling outward and replace with a new Filter.
2. If necessary use a soft bristle brush to remove dust and difficult dried-on soil around the air filter inlet on the control unit.



Waste Disposal

This Product has been supplied from an environmentally aware manufacturer that complies with the WEEE.

This product may contain substances that can be harmful to the environment if disposed of in places that are not approved by your state, local or federal laws. Please be environmentally responsible and recycle this product through your recycling facility at its end of life.



6. Storage and Care

Master Control Unit

- Check the power cord and plug for abrasions and excessive wear.
- Plug in the unit and verify air flow from the hose connection ports.
- Place in plastic bag for storage.

Mattress Replacement System

- Check the air manifold for kinks or breaks and replace if necessary.
- Twist open the CPR plug at the head of the mattress and disconnect the air feed tubes. All of the air will be expelled. Starting at the head of the mattress roll towards the foot of the bed. Use the base mounted straps to secure.
- Place the system in a plastic bag for storage.

It is recommended that the following guidelines are used whenever the system is being stored or transported to another location:

Temperature limitations 5°C ~ 60°C
Relative humidity 30% ~ 75%

7. Maintenance & Troubleshooting

No daily maintenance is required. This equipment should only be serviced by a properly qualified and authorized technician. For common troubleshooting tips please refer to the chart below.

| Symptom | Inspection Procedure | Possible Solution |
|---|---|--|
| Air is blowing from the control unit but mattress is not inflating. | <ol style="list-style-type: none"> 1. Check power source. Improper voltage may cause the blower to function abnormally and damage the control unit. 2. Check air tubes for kinks. 3. Check air cells for leakage other than where designed. 4. Check air tube connection between control unit and mattress. | <ol style="list-style-type: none"> 1. Verify voltage using voltage regulator. 2. Adjust the air tubes to allow smooth air flow. Replace if necessary. 3. Replace with new air cells. 4. Check air tube and connector for damage. Replace if necessary. Reconnect hose with control unit. Replace if necessary. |
| The Control Unit is not functioning. | <ol style="list-style-type: none"> 1. Check the power cord and the power voltage. 2. Check the fuse. | <ol style="list-style-type: none"> 1. Use a power regulator. 2. Replace fuse if necessary. |
| Some of the air cells are not properly inflated. | <ol style="list-style-type: none"> 1. Check connection between air cells and the manifold for kinking. 2. Check air cells for leakage other than where designed. | <ol style="list-style-type: none"> 1. Adjust air tubes for proper air flow. Replace if necessary. 2. Replace air cell if damaged. |


8. EMC Related Notification

| Guidance and manufacturer's declaration – electromagnetic emissions | | |
|--|-------------------|---|
| The blower is intended for use in the electromagnetic environment specified below. The customer or the user of the blower is responsible for making sure that it is used in such an environment. | | |
| Emissions test | Compliance | Electromagnetic environment – guidance |
| RF emissions CISPR 11 | Group 1 | The blower uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment. |
| RF emissions CISPR 11 | Class B | The blower is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes. |
| Harmonic emissions IEC 61000-3-2 | Class A | |
| Voltage fluctuations/ flicker emissions IEC 61000-3-3 | Complies | |

| Recommended distances between portable and mobile RF communications equipment and the blower | | | |
|--|---|--|---|
| The blower is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the blower can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the blower as recommended below, according to the maximum output power of the communications equipment. | | | |
| Rated maximum output power of transmitter W | Separation distance according to frequency of transmitter M | | |
| | 150 kHz to 80 MHz $d = 1,2 \sqrt{P}$ | 80 MHz to 800 MHz $d = 1,2 \sqrt{P}$ | 800 MHz to 2,5 GHz $d = 2,3 \sqrt{P}$ |
| 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) according 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. | | | |

Guidance and manufacturer's declaration – electromagnetic immunity

The blower is intended for use in the electromagnetic environment specified below. The customer or the user of the blower is responsible for making sure that it is used in such an environment.

| Immunity test | IEC 60601 test level | Compliance level | Electromagnetic environment – guidance |
|--|--|----------------------------|---|
| <p>Conducted RF IEC 61000-4-6</p> <p>Radiated RF IEC 61000-4-3</p> | <p>3 Vrms 150 kHz to 80 MHz</p> <p>3 V/m 80 MHz to 2,5 GHz</p> | <p>3 Vrms</p> <p>3 V/m</p> | <p>Portable and mobile RF communications equipment should be used no closer to any part of the blower, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance</p> <p>$d = 1,2 \sqrt{P}$</p> <p>$d = 1,2 \sqrt{P}$ 80 MHz to 800 MHz</p> <p>$d = 2,3 \sqrt{P}$ 800 MHz to 2,5 GHz</p> <p>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).</p> <p>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</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> <div style="text-align: center;">  </div> |

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 blower is used exceeds the applicable RF compliance level above, the blower should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the blower .

b. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Guidance and manufacturer's declaration - electromagnetic immunity

The blower is intended for use in the electromagnetic environment specified below. The customer or the user of the blower is responsible for making sure that it is used in such an environment.

| Immunity test | IEC 60601 test level | Compliance level | Electromagnetic environment - guidance |
|--|---|---|---|
| Electrostatic discharge (ESD) IEC 61000-4-2 | ⊖6 kV contact ⊖8 kV air | ⊖6 kV contact ⊖8 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 | ⊖2 kV for power supply lines ⊖1 kV for input/output lines | ⊖2 kV for power supply lines ⊖1 kV for input/output lines | Main power quality should be that of a typical commercial or hospital environment. |
| Surge IEC 61000-4-5 | ⊖1 kV line(s) to line(s) ⊖2 kV line(s) to earth | ⊖1 kV line(s) to line(s) ⊖2 kV line(s) to earth | Main power quality should be that of a typical commercial or hospital environment. |
| interruptions and voltage variations on power supply input lines IEC 61000-4-11 | <5 % <i>UT</i> (>95 % dip in <i>UT</i>) for 0,5 cycle 40 % <i>UT</i> (60 % dip in <i>UT</i>) for 5 cycles 70 % <i>UT</i> (30 % dip in <i>UT</i>) for 25 cycles <5 % <i>UT</i> (>95 % dip in <i>UT</i>) for 5 sec | <5 % <i>UT</i> (>95 % dip in <i>UT</i>) for 0,5 cycle 40 % <i>UT</i> (60 % dip in <i>UT</i>) for 5 cycles 70 % <i>UT</i> (30 % dip in <i>UT</i>) for 25 cycles <5 % <i>UT</i> (>95 % dip in <i>UT</i>) for 5 sec | Main power quality should be that of a typical commercial or hospital environment. If the user of the blower requires continued operation during power main interruptions it is recommended that the blower be powered from an uninterruptible power supply or a battery. |
| Power frequency (50/60 Hz) magnetic field IEC 61000-4-8 | 3 A/m | 3 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.

9. Warranty

- Prius Healthcare USA guarantees this equipment to be free from defects in material and workmanship for up to 12 months from the date of delivery.
- All warranty work will be performed at the service address below.
- At Manufacturers discretion we agree to service, repair or replace any equipment or part found to be defective at no charge.
- This warranty excludes equipment damaged through shipping, tampering, improper maintenance, carelessness, accident, negligence, misuse, or which has been altered, repaired or dismantled other than with the manufacture's written authorization and by its approved procedures and by properly qualified technicians.
- In no event shall Prius Healthcare be liable for any direct, indirect or consequential damage or loss resulting from the use of equipment.
- Warranty is non-transferrable.

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