



User Manual

Alternating Air Mattress & Pump System

Model : TS-105



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1. Safety Criteria

CE EN60601,EN60601-1,EN 60601-1-2 , FCC Part 18-Class B



Type BF Applied part



Attention: consult Accompanying documents



Operating instructions



No AP/APG IPX0

Medical Device Classification: Class I

2. Warnings

The product is only intended to be used as an auxiliary device. The manufacturer does not have the absolute responsibility and obligation to guarantee its full effects.

* **Power Unit:**

- * Do not open the power unit without guidance to prevent danger.
- * Do not insert items into any opening of the power unit.
- * Do not drop the power unit.
- * Do not use the power unit in places exposed to water, liquids, oil, smoke, and flammable chemicals.
- * Use fuses as marked: **T1A / 250V**.
- * The product is contraindicated to anesthesia procedures and is only indicated for use by the user in normal conditions.
- * This the power unit is not AP/APG protected.

★ Air Mattress:

- * Do not shift to CPR mode during normal use.
- * Prevent the patient from placing his/her head or neck between the mattress and the side rail.
- * Do not use sharp or pointed objects since this will damage the mattress or use high temperature objects since this may accidentally destroy the mattress.
- * Do not use the mattress in places exposed to water, liquids, oil, smoke, and flammable chemicals.
- * The product is contraindicated to anesthesia procedures and is only indicated for use by users in normal conditions.
- * This the air mattress is not AP/APG protected.

3. Product Functions

Purpose: The product is for the purpose of aiding the prevention of pressure ulcers and effective treatment of patients.

Pressure ulcers are commonly known as bedsores. They occur when there is damage caused by pressure (or shear) or friction to the skin, or even the underlying tissues, muscles and bones. Pressure ulcers are a common problem of patients suffering from long-term physical immobility including those who are inflicted with spinal cord injury, bedridden for a long-term, not clearly conscious, inflicted with bladder or bowel incontinence, diabetes, skin fragility, physical weakness or malnutrition. It is an extremely complex task to treat pressure ulcers once they occur. In a minor case, the wounds take weeks to heal. In a severe case, sepsis, amputation or death may occur. This not only damages health, but also is a burden to and waste of medical resources. Using the mattress replacement system can aid the prevention of pressure ulcers and effective treatment of patients.

The air mattress can be placed on the overlay of a standard medical bed. The support surface can be alternately inflated and deflated with two (or three) rows of coupled air hoses that are connected to the power unit and activated in the **Alternating Pressure Mode**.

- ◆ **Theory of Alternating Pressure Mode:** This process allows effective arrangement in a way that a single area of the body remains in a completely pressure free and lifted state for a fixed period. This allows body tissues to be temporarily relieved of pressure and blood to circulate smoothly around the tissues. This in turn heals, improves and prevents the occurrence of pressure ulcers.

4. Product Setup Contents

1. One the power unit
2. One the air mattress (Include coverlet)
3. One power cord
4. One users manual



5. Product Features

Enhanced Design Features of the Power Unit

1. For hanging, the safest iron material is used for hanging hooks and its withstanding ability is far higher than plastic material.
2. For shock absorption, the deflation pump inside is equipped with a specially designed suspension shock absorption system and a foot mat is provided outside the unit in order to reduce the shock when the unit is in contact with the patient's bed.
3. The compact size feature: The system is of a compact size, making it easy for placement and storage and taking into account the streamlined system appearance and practicality.
4. The cotton air filter is to be replaced outside. Therefore, the replacement can be done without opening the unit.
5. The use of the double external fuse holders allows the unit to provide better safety protection.
6. The specialized power management with an independent power cord and a master power switch on the side can better ensure safety.

Design Features of the 5" air mattress (standard state)

- * 5" Air cells – 21pcs totally: It narrow distance for air cell to next to increase the user's comfort and security.
- * Patent Design of CPR Quick Valve:
When it is necessary to perform CPR, the chest part needs to be deflated extremely quickly. Simply follow the standard simple operation by "pulling down".
- * Head End 3 Hoses No Alternating Design:
Front 3 Hoses No Alternating Design ensures no alternation at the head end to increase the user's comfort and security.

* Base Design:

The four-sided standing base uses securing cells. The positions of suitably provided binding cells make it easier to secure the mattress in the bed. The wide elastic bands on the foam mattress are used to secure the existing overlay.

* Coverlet Design:

The light moisture permeable, elastic fabric with a costly PU lamination is the main surface in contact with the patient. The purpose is to prevent shear and friction from damaging the patient's skin and inflicted areas because the fabric has the advantage of a proprietary medical fabric that is not easily crinkled. It is not widely used mostly due to consideration of costs. We use the fabric because functionality is taken into prior account.

6. Installation

Step 1: Place the air mattress evenly on the overlay. The end with a connector to the power unit is the feet end.

Step 2: Check if the securing position of the air cells is centered. Secure the overlay of the bed with the elastic bands on the four sides at the back of the base.

Step 3: Hang the power unit on the panel at the feet end.

Step 4: Connect the hose at the feet end of the mattress to the air outlet of the unit.

Step 5: Connector the power cord to the AC Inlet of the power unit.

Step 6: Plug the power cord of the power unit to a socket with power supply.

Step 7: Turn "ON" the power switch on the side of the power unit, and the green indicator turns on. Air starts to enter the hose in a few seconds.

Step 8: Comfort Range "Knob" select 1 to 10, See" Power Unit Settings Contents"

Step 9: Please wait until all the air cells are inflated by at least 2/3 of their volume

(approx. 10mmHg) or for 30 minutes before the user is allowed to lie on the mattress.

7. Initial Inflate Method

1. Wait until the power unit slowly inflates the mattress. However, initial inflation takes at least 30 minutes before the user is allowed to lie on the mattress.
2. When air cells are completely deflated, it is recommended to inflate the mattress by connecting an external pump with the hose for quick inflation. When the air cells are inflated over 2/3, reconnect the hose to the power unit before the user is allowed to lie on the mattress.

(The inflation tool maybe can be purchased from the dealer.)

8. Emergency CPR Deflate



A. Emergency CPR Deflate: **Pull open the CPR lid.** (When the patient lies down, pull down hard on the plastic piece marked with CPR that drops from the chest position on the right side. Then, pull down the CPR lid for instant quick deflation.)

B. Remember to resume the CPR lid for the Resume Function, otherwise it may lead to the danger of incomplete inflation.

C. Pull open the CPR lid to deflate non-alternating air cells for storage .

*Patent design No.# M347104 & ZL 200820136935.2

9. Power Unit Settings Contents



Adjustment of the **comfort range**:

The adjustment range is based on the user's the bottom that can't contact with the overlay.

The softness and hardness of the air mattress can be selected from the number 1 to 10, to provide users comfortable.

★Suggestion: Normal setting in number 5 .
Users weight limit: 30kg to 120kg.

10. Routine Maintenance and Cleaning

The Power Unit:

1. Avoid using the unit when the air is poor. Do not smoke especially to prevent nicotine and greasy tar-like substance from entering the unit and resulting in the deterioration of internal pipes and the need for frequent replacement of the air cotton filter.
2. Thoroughly wipe down the dust or smear stuck on the exterior of the unit with a dry cloth and neutral detergent. it is recommended to clean the pump once a week.. (Caregivers must wear gloves and masks and protected with disinfection.)
3. An air purifier can also be used to maintain the air quality.
4. Replacement of the air cotton filter: it is recommended to replace the filter once a month. (Please purchase the filters from the dealer.)

The Air Mattress:

1. Thoroughly wipe down the coverlet, air cells and base with a dry cloth and neutral detergent or the 70% medical alcohol. (Caregivers must wear gloves and masks and protected with disinfection.)
2. Keep the coverlet even to prevent the formation of horizontal shear resulted from crinkles and the tightened skin.

3. Do not wash the air cell, please wipe down it only. Improper handle for cleaning and hygienic control for the system will cause cross-infection.

11. Storage

★ **How to store the Power Unit**

1. **It is necessary to turn off the power switch in side panel , unplug the power cord.**
2. Disconnect the power unit and the power cord; disconnect the power unit and the hose at the feet end of the mattress.
3. Put the power unit and the power cord in the box and place in a dry place.
4. When the power unit is put away and not in constant use, it is necessary to switch it on for 3 hours at regular intervals to lengthen its life.

5. Follow the national requirement to dispose the power unit

★ **How to store the Air Mattress**

1. Pull down the CPR lid for instant quick deflation.
2. Clean the mattress.(Caregivers must wear gloves and masks and protected with disinfection.)
3. Roll up the mattress and the connectors.
- 4..Place in a dry place.

12. Troubleshooting

Problem	Inspection Procedure	Possible Solution
1.Power unit does not operate.	1.1) Check if the two ends of the power cable are safely connected to the power unit and the socket.	1.1) Confirm if the wall socket has power supply.
	1.2) Check if the power switch on the side of the power unit is switched to "ON".	1.2) If not, switch to "ON".
	1.3) Check if the fuse has burnt out or not properly installed.	1.3) Turn off the power and check the fuse.
2.Power unit is working, but mattress is not inflating.	2.1) Check if air comes out of the power unit and if the connector is properly connected.	2.1) If the unit operates normally but no air comes out, it is possible that the power unit has something wrong inside and needs repair.
	2.2) Check if the CPR lid falls off.	2.2) Repair or replacement is needed if the lid is damaged.
	2.3) Check if the mattress connector is bent or falls off.	2.3) Repair or replacement is needed if the connector is deformed and cannot be restored or the material is not in its normal state.
	2.4) Check if the air hose is damaged.	2.4) Repair or replacement is needed if the air hose is damaged.
	2.5) Check if the air cotton filter is heavily soiled and the air is blocked.	2.5) Replace the filter if it is heavily soiled.
3.Bottom in contact with the overlay	3.1) Check weight setting.	3.1) Increase weight setting.
	3.2) Check if air leaks from the mattress.	3.2) Replace the air cells if damaged.
	3.3) Check if the air cotton filter is heavily soiled and the air is blocked.	3.3) Replace the filter if it is heavily soiled.
4.Others	Problems other than the above.	Contact the local distributor for handling.

13. Technical Specifications

The Power Unit Specification:

- ◆ Input : AC220-240V,50/60Hz (OR AC100-120V,50/60Hz)
- ◆ Power Consumption: 10W max
- ◆ Fuse Rating: T1AL/250V
- ◆ Weight: 1.3Kg (approx.)
- ◆ Dimension: L26cm*W8cm*H13cm
- ◆ Air flow rate: 3~8 liter/min
- ◆ Alternating cycle time 5-6 min/pre
- ◆ Class I , Type BF

The Air Mattress Specification: (Allow different setup for marketing)

Standard State:

- ◇ 5" Air cells: 21pcs totally
- ◇ Material: Coverlet : PU membrane / Elastic Fabric
Air Cells: Nylon/PU
Base: Nylon/PVC
- ◇ Dimension: L195cm*W85cm*H13cm
- ◇ Weight: 3.8Kg (approx.)

Temperature & Humidity Limited:

- △ Operating Temperature: 5°C to 45°C (41°F to 113°F)
- △ Transportation Temperature: -10°C to 45°C (14°F to 113°F)
- △ Transportation Humidity: 5% to 95%

Storage Environment

Storage Temperature: 5°C ~ 45°C

Storage Humidity: 10% to 80%

14. Warranty

- ◆ The warranty period for the power unit is **12 months** and the air mattress is **12 months** as of the purchase date of the product provided that the product is used in normal conditions. Repair outside the warranty period is subject to charge. The maintenance service for the product is warranted for 5 years. Upon the completion of maintenance outside the warranty period, an additional 6-month warranty period is provided. During this period, the same general terms and conditions of warranty apply.

- ◆ Only function failure repair is covered during the warranty period.

The warranty does not include general maintenance (e.g. replacement of the cotton filter, cleaning), setting adjustment or component renewal.

The warranty does not cover maintenance conducted by opening the power unit without authorization; careless dropping or use of the product other than for its intended purpose and repair of such is subject to charge.

Warranty Card (TS-105)

Purchase date: _____ - _____ - _____

Serial No. _____

(Signatures)

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