

## Surface Support System

# Mai-stressless™

## User Manual



## Table of contents

Preface	2
Product Specification	3
Installation	5
Function Introduction	10
Pump - Operation Instruction	16
Cleaning & Disinfecting	18
Handling, Storage and Disposal	19
Consumption of Parts	20
Troubleshooting and Repair	21
Important Safeguards	23
Return Policy & Limited Warranty	25

Singa Technology Corporation has a policy of continual product improvement and reserves the right to amend this document.

### **Preface**

#### Dear User:

Thank you for purchasing Singa's product. Please keep the following data for the after sales service and the maintenance in the future. Thank you for your attention.

- 1. Product series label (with the product series no.)
- 2. Purchase record, invoice and receipt (with date of purchase and shop stamp)
- 3. Product warranty (with date of purchase and shop stamp, model no. & series no. is required)
- 4. Product carton (with product series no.)

If there is any question for the product, you can provide us any one of the above purchase record. We will offer the fast after sales service.

The Mai-stressless<sup>TM</sup> surface support system includes Mai-stressless<sup>TM</sup> air mattress and Mai-stressless<sup>TM</sup> pump. Mai-stressless<sup>TM</sup> air mattress can ensure the patient decumbency stability and avoid suffering from skin tissue damage and the risk of bedsores. The Mai-stressless<sup>TM</sup> surface support system enables the patient weight to be redistributed all over on the mattress. Any movement or posture on the bed, the pressure can be released. Mai-stressless<sup>TM</sup> surface support system is intended to conform to an individual's shape to provide skin/ soft tissue and deep tissue injury protection and an environment to facilitate wound healing.

Whom is the Mai-stressless  $^{\text{TM}}$  surface support system designed for?

- ► Patients who are short-term lying in bed to prevent bedsores (such as accidental injury or heavy patients)
- ► bedridden patients (such as the elderly, severe bedridden patients, vegetative, etc.)

What the purposes of Mai-stressless $^{\text{TM}}$  surface support system?

- ► To relief and redistribute the pressure of body / skin.
- ► To prevent and decrease the skin bedsores.

#### SINGA TECHNOLOGY CORPORATION

We recommend changing the patient's position of the pressure points frequently (such as: to let the patients stand up or turn over or lift the patient's body). That's the best way to prevent the skin tissue damaged and the bedsores occurred.

## **Product Specification**

## Mai-stressless™ air mattress

Singa® Mai-stressless<sup>™</sup> air mattress air cells featured in this manual are made of neoprene rubber. The reusable cover is made of 4-way stretch, breathable, moisture-resistant fabric with zipper, nylon straps and buckles.

Model	MA-185A	MA-200A
Mattress Dimension	W90 x D185 x H15 cm	W90 x D200 x H15 cm
Cell no.	6 x 18	6 x 19
Model Type	Replacement	Replacement
Net Weight	13 kgs	13.5 kgs
Working Surrounding	20-40°C / 68-104°F	
Patient's Weight	20 ~ 250 kgs	
Alternating	1 in 3 : A - B - C rating	
Pillow Function	V	V
Transport	V	V
Static Base	Flame-resistant Foam	
CPR	Easy CPR	
Cover	Top: Polyester 75D, 4-way stretch PK knit/ quilted Base: 420D Ny/ 0.05TPU lamination, non-slip, zippers, straps with buckles	

## Mai-stressless™ Pump

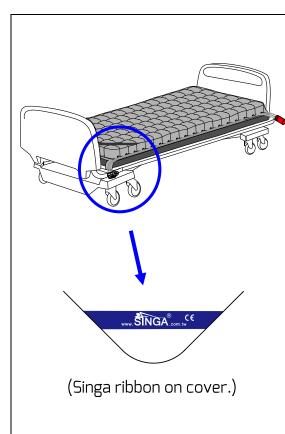
Singa® Mai-stressless<sup>™</sup> pump is intended to inflate the air mattress and provide the most comfortable using experience to individuals. The alternating function enables the pressure from body weight to be relief and redistributed and decreases the potential bedsores/ ulcers happening.

Model	Mai-stressless™
Air output (LPM)	≥8
Electrical : AC 100 ~ 120V / 60Hz AC 220 ~ 240V / 50Hz	V
Working Surrounding	20-40°C / 68-104°F
Multiple Sections for Patient's Weight	20~250 kgs
3 Sections - A:B:C rating	V
Cycle Time	10/15/20 mins. Selectable
Operation Mode (Alternating / Static / Auto Firm)	V
Transport	V
Power Failure Alarm	V
Selector Failure Alarm	V
Low Pressure Alarm	V
Auto-Pressure Detector	V
LED Display	V
Length of Power Cord	300 cm
Weight	3.4 kgs
Dimension	W260xD125xH170 mm
Regulation	IEC60601-1-1 / IEC60601-1-2 / CE (Europe) ISO13485 / ISO9001/2008

## Installation

 $Mai-stressless^{TM}$  surface support system includes:

- Mai-stressless™air mattress
- Mai-stressless<sup>™</sup> pump
- User manual



#### Step 1:

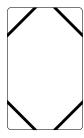
Place remove the soft mattress and place Mai-stressless™ flatly on bed. The cells should be faced up. The easy CPR will be on the head end and the air tubes with quick connector should be toward to the foot end.

The Singa® blue ribbon shall be on the foot end of bed.



#### CAUTION:

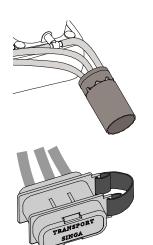
- 1. Stacking up the mattress will make the mattress over high and cause danger to individuals.
- 2. If you are using bed rails for the safety purpose, please mind the gap between the bed rails and the mattress.



#### Step 2:

Four (4) straps are included to aid in securing the mattress to the bed.

Attach strap to each bed corner, fasten the buckles and tie up the straps. Make sure the  $Mai-stressless^{TM}$  air mattress is fixed in bed.



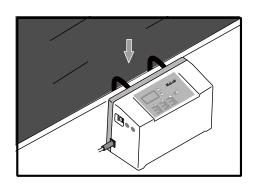
#### Step 3:

Remove the plastic bags from easy CPR and quick connector.



#### A CAUTION:

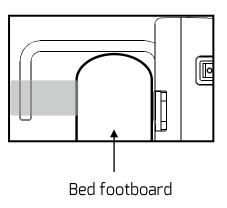
1. DO NOT fold the easy CPR under, next, or to the head end of mattress. Any impose force to fold the CPR may cause the air leakage of the equipment.



#### Step 4:

Hang the Mai-stressless  $^{\text{\tiny TM}}$  pump on the foot end bed frame or the bed footboard.

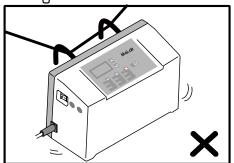
We suggest keeping the hanging hook vertical (90 degree) to the pump and using the damper to keep the pump parallel to the footboard. That will allow the pump to operate in the most efficient and vibration-less status.



#### CAUTION :

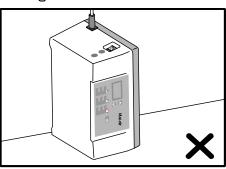
1. DO NOT hang Mai-stressless™ pump on wire or unstable place.





2. DO NOT put Mai-stressless™ pump upside down or sideways.

### Wrong:



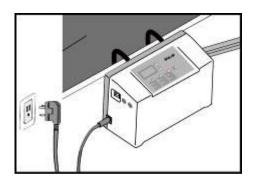
### Step 5:

Connect the quick connector to pump till the "click" sound heard. A CAUTION :

1. Way to pull out the quick connector:

Use the thumb and index finger from the right hand to gently press both ends' grooves and hold the Mai-stressless™ pump with left hand at the same time.

2. Without properly removing the quick connector by pressing both ends' groovesmight break the quick connector up and cause the pump work improperly.



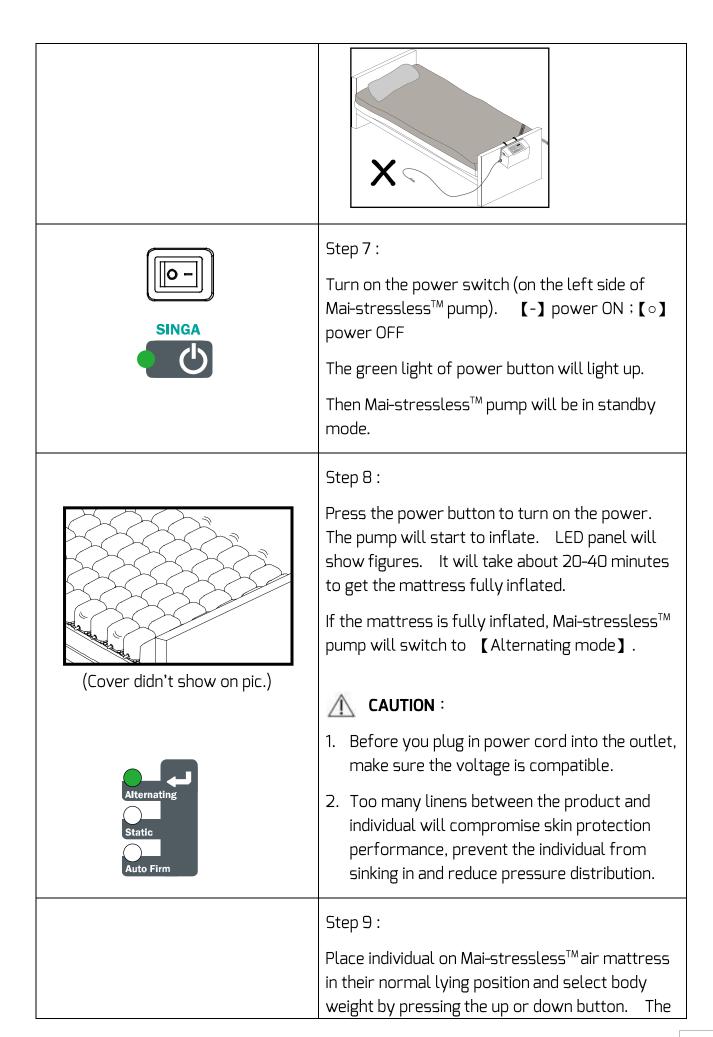
#### Step 6:

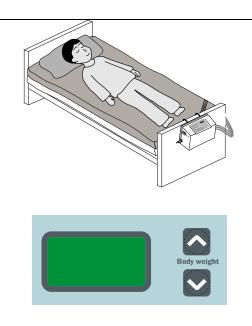
Plug in the power cord to the household main power supply.



### CAUTION:

- 1. Before you plug in power cord into the outlet, make sure the voltage is compatible.
- 2. Please collect the power cord with care. DO NOT leave the power cord loose on ground in case any stumble caused.



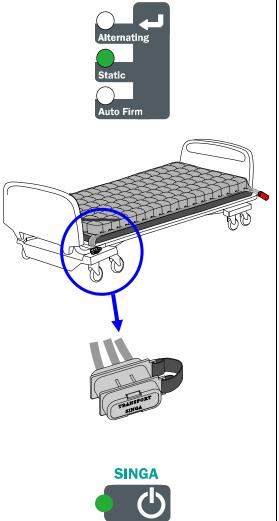


figures shall be corresponding to individual's body weight.

## $\triangle$

#### CAUTION:

- Individual shall lie on or be placed on Mai-stressless™air mattress only after the mattress is fully inflated.
- 2. Fail to choose proper body weight in pump operation will compromise skin protection performance, prevent the individual from sinking in and reduce pressure distribution.



### Step 10: To be Pumpless (optional)

After the mattress being fully inflated, select the operation [Static mode]. Wait for 5~10 mins, while the pump automatically adjusts the suitable mattress hardness for individual, release the extension tube quick connector near the mattress side and cap it.

Cap the quick connector for extension tube, turn off the pump by pressing the power button on panel, and then switch off the power switch on left side of pump.



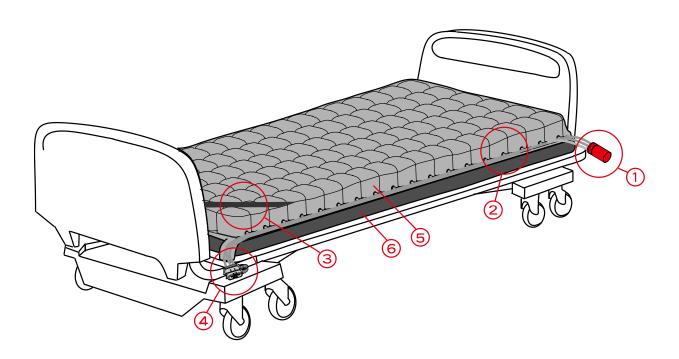
#### **CAUTION:**

1. If you choose to be pumpless, regular mattress air checking is highly recommended. Please check the mattress air status at least once a week/ seven (7) days.

✓ We highly recommend the users should be turned over or get off the bed daily, then alleviate or ease the pressure of the skin by using mattress.

## **Function Introduction**

## Mai-stressless™ air mattress



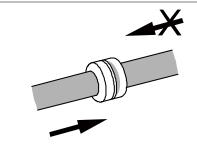
## Description of Device



### 1. Easy CPR

Quick releasing the air from mattress by turning the easy CPR to **ON** position.

The CPR shall point to **OFF** position in normal operation status.

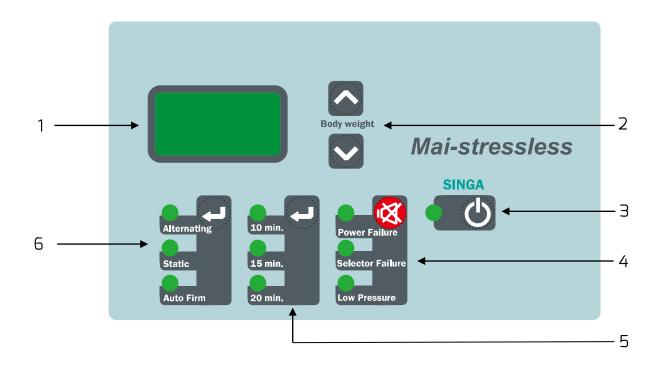


#### 2. Check valve

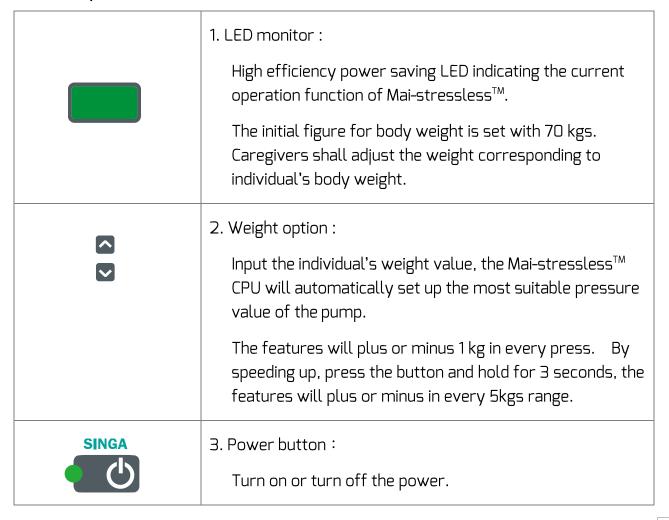
The valve designed for air flowing in one way only. Those are used in pillow area. The cells under pillow area will not alternating (pillow function) to keep individual's head still.

www.SINGA.com.tw	<ul> <li>3. Reusable cover</li> <li>Singa's water-resistant and breathable cover is structured with top washable layer, 2-way zipper and non-slip base.</li> <li>Singa blue ribbon is design on the foot end of reusable cover for distinguishing the correct direction of mattress setting.</li> </ul>
TRANSPORT	<ul> <li>4. Quick connector:         The device collects three air tubes in one set and can ensure the well connected between mattress air tubes with pump. Easy to connect; easy to release.     </li> <li>When choosing pumpless or for transport purpose, releasing the quick connector and using the attached cap to hold the air in mattress.</li> </ul>
	5. Cells  To provide the body weight support and pressure relief.
	<ol> <li>Static base</li> <li>To prevent the bottom-out happening and provide stableness for mattress.</li> </ol>

## Mai-stressless<sup>™</sup> pump



## Description of Device



After the Mai-stressless TM surface support system is set up and the power switch (on the left side of Mai-stressless TM pump) is switched on, this power button light will be lighting up and the Mai-stressless TM pump will be in standby status.

Caregivers can turn on or turn off the power by pushing this power button.

#### 4. Alarm functions of the device:

#### a. Power Failure:

If the power failure yellow light is on, it means the power does not work. The power might shut down or the power cord is pulled out. Please check if the power supply is working and if the electric plug is properly plugged in.

## b. Selector failure :

If the selector failure light is on, it means the air pump can not work in good condition to alternate. Please kindly contact our agents for the repair; never try to fix it by yourself.

#### c. Low Pressure:

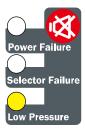
If the low pressure light is on, it means there is air leakage of the mattress or failure with pump. Please follow the procedure of "troubleshooting" to check the mattress.

### 5. Alternating period:

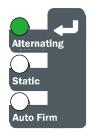
Mai-stressless<sup>™</sup> M1 model provides three cycle time options (10/15/20 min.). Caregivers should follow doctors' instructions to select the proper alternating period for individuals.

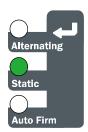


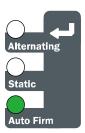












#### 6. Operation mode:

#### a. Alternating:

To select the Alternating Mode, it enables the mattress to alternate by every three cells.

#### b. Static:

To select the Static Mode, the device will stop alternating. All the cells are equally inflated. It will support a static surface and keep the specific low pressure which allows patient to have a good sleep.

#### c. Auto Firm:

Auto Firm "ON" represents "Auto Firm" mode, the device will support a firm surface and keep the specific high pressure which provides patient a safety support.

### Automatic Stop Inflation

Mai-stressless<sup>TM</sup> pump's "Power Saving Mode" is controlled by microcomputer which limits further inflation while the air inflation reaches the default High air pressure of the cells. Also, while the air pressure drops below the default Low air pressure limit, Mai  $air^{TM}$  pump automatically detects of insufficient air pressure from the cells and then starts inflation.

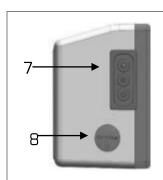
### Memory Function

Mai-stressless<sup>TM</sup> pump is featured with memory function to keep the previous inputs in memory. Whenever the caregivers turn on the power of Mai-stressless<sup>TM</sup>, it will automatically recall the last using parameter for individuals.

### A CAUTION :

- 1. Make sure the caregivers assist individuals to get off the bed, and use the qualified safety device to ensure individuals against accidents.
- 2. Suggest the individuals getting back to the mattress and selecting the [Alternating] mode, when they get off the mattress in the [Auto Firm] mode. That can prevent the individuals from ulcers happening.

## Mai-stressless™ (right view)



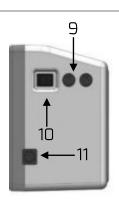
#### 7.Quick Connection:

Air Flow out-put and Quick Connector.

#### 8. Filter:

Air Flow in-put with an Air Flow Filter inside.

## Mai-stressless<sup>™</sup> (left view)



#### 9. Fuse:

Two power fuses which comply with the CE and FDA regulation.

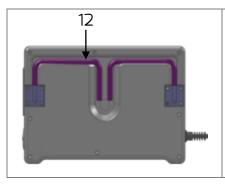
#### 10. Power Switch:

【─】POWER ON; 【○】POWER OFF

#### 11. Power Connector:

Power cord plug to provide the electricity for pump.

## Mai-stressless™ (rear view)



#### 12. Hanging hooks:

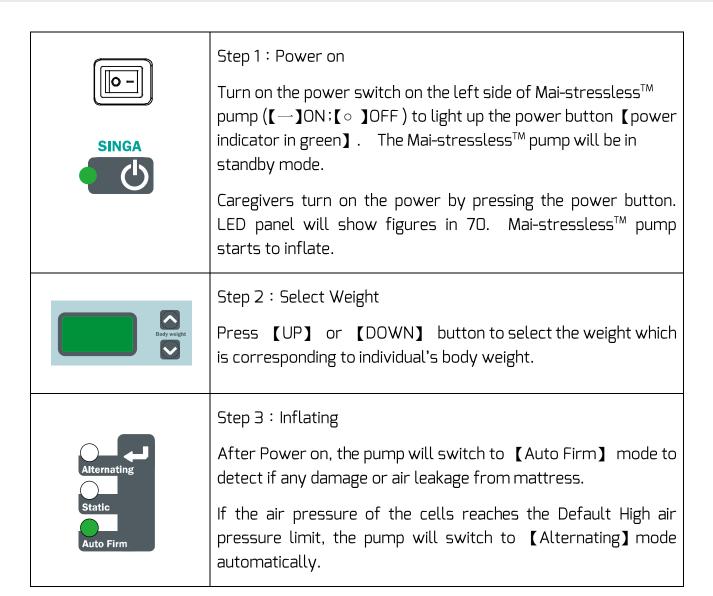
Using the hanging hooks to hand the Mai-stressless $^{\text{TM}}$  pump on the bed footboard.

### ⚠

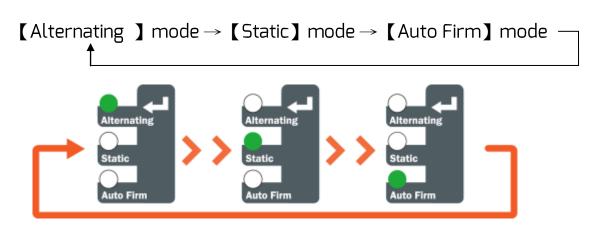
#### **CAUTION:**

Make sure the knots of hanging hook covers are screwed tightly before hanging up the Mai-stresslessTM pump.

## Pump - Operation Instruction



## 



### [Alternating] mode

Mai-stressless<sup>TM</sup> pump will automatically switch the operation mode to 【Alternating】 after the inflation reach the Default High air pressure limit. Caregivers can select the alternating cycle time in 10, 15 or 20 mins with the Mai-stressless<sup>TM</sup> M1 model to have the best decompression using experience.

The alternating is performed by 1 in 3 : A-B-C rating cycle. The Mai-stressless<sup>TM</sup> air mattress is featured with pillow function. There will be no alternating function in pillow area.

#### [Static] mode

In 【Static】 mode, Mai-stressless<sup>™</sup> pump distributes the airflow to the cells up to 65% of air pressure. Each cell is equally inflated in moderate hardness to provide individuals comfort, immersion and appropriate decompression.

It's the nice option for the users who prefer peaceful deeply sleeping experience and the pumpless condition.

For the high risk individuals, please set this mode on operation with care.

### [Auto Firm] mode

During the [Auto Firm], we highly recommend the individuals should be accompanied by caregivers to avoid unexpected injury from loosing balance.

## Cleaning & Disinfecting

Please refer to the following recommendation regarding regular cleaning and disinfecting for Mai-Stressless<sup>TM</sup> air mattress and Mai-stressless<sup>TM</sup> pump.

## Mai-stressless™ air mattress

### To clean the reusable (top) cover:

Remove top cover from Mai-stressless™ mattress by unzip the zipper.

- ▶ Hand wash or machine wash, gentle cycle, in water ±25° and mild detergent.
- ► You may also wipe clean with mild detergent and water.
- ► Tumble dry low.
- ► To maintain hygiene, pressure relief and comfortable using experience, it is recommended to renew the cover when it is broken or washed more than 20 times.

[Note] DO NOT dry clean the reusable cover or expose to direct sunlight.

#### To clean the mattress:

Remove cover from Mai-stressless™ mattress by unzip the zipper.

▶ Wipe clean with mild detergent and water for inside and outside of mattress.

[Note] DO NOT wash the mattress or cells of the Mai-stressless  $^{\text{TM}}$  air mattress.

#### To disinfect the reusable cover or mattress:

► Wipe clean by using a dilution of one part household bleach to ten parts water. Then wipe again with clean water.

### Mai-stressless<sup>™</sup> pump

► Place the pump on a stable work station or table and wipe clean with mild detergent and water.

- ▶ DO NOT immerse or soak the pump which will cause Mai-stressless<sup>™</sup> badly damaged.
- ➤ You can also spray or wipe the outside of the case by using a dilution of one part household bleach to ten parts water. (If cleaning solution gets inside the pump case that may damage the pump.)
- ▶ It is recommended to replace the air filter of the pump in every 3 months in order to safeguard the normal air flow and air pressure of Mai-stressless<sup>™</sup> pump.

## Handling, Storage and Disposal

### Mai-stressless™ air mattress

▶ DO NOT fold or roll the mattress after deflating the air mattress. Lay the mattress flatly for storage, avoiding in the conditions of high temperature, humidity, direct sunlight, and heavy crush.

## Mai-stressless<sup>™</sup> pump

▶ Unplug the pump and store with proper identification tag. Wind the power cord and place it in a suitable plastic bag.

Please follow the national requirement to dispose the mattress and pump.

## Consumption of Parts

Parts	Function	Recommended renew cycle
Reusable cover for mattress	Provide waterproof & breathable using circumstance to individuals and keep tubes and cells clean.	Renew the cover once broken or washed over 20 times
Tubes by side of the mattress	Air supply to mattress	Replace in every 2 years, or once the tube is broken.
Extension tube with quick connector set	To provide the air flow from Mai-stressless™ pump to Mai-stressless™ air mattress.	Once missing or broken of tubes or quick connector.
Air filters of pump	Provide clean air to pump	Renew in every 3 months
Seal on quick connector	Keep airtight for quick connector with pump or to air mattress tubing	Replace in every 5 years

The above conditions vary with each application environment. We reserve the right to modify to insert, and/or to withdraw any part of the lists herein.

## Troubleshooting and Repair

When Mai-stressless  $^{\text{TM}}$  pump functions properly, no-failure indicator on the panel will light up. If any of failure LED lights up, please refer to the troubleshooting list as below.

Problem	Possible Cause	Solutions
【power indicator】 Fail to light up.	Fuse burned.	Replace the earth or hot wire fuse in left of the pump.
	Motherboard failure	Please contact with the distributors.
(Power Failure) Yellow lights up Power Failure Selector Failure Low Pressure	Unable to power on	<ol> <li>Press to turn off the buzzer.</li> <li>Check if outlet supply is normal and/or if there is the mains power outage.</li> <li>Check if the host power cord plug is loose.</li> </ol>
Yellow lights up  Power Failure  Selector Failure  Low Pressure	Internal air allocation module of the pump is out of work	<ol> <li>Press to turn off the buzzer.</li> <li>Please contact with the distributors.</li> </ol>
Yellow lights up  Power Failure  Selector Failure  Low Pressure	Air leak of the quick connector	<ol> <li>Press to turn off the buzzer.</li> <li>Check if the black seal on the quick connector is broken or loose or missing.</li> <li>Check if the quick connector is</li> </ol>

		well connected to the main device properly.
(Low Pressure) Yellow lights up.  Power Failure Selector Failure Low Pressure	Low air input from pump side:  1. Air filter is contaminated and blocked.  2. Compression failure.	<ol> <li>Renew the air filter.</li> <li>Please contact with the distributors.</li> </ol>
	Air leak of the easy CPR	1. Press to turn off the buzzer.
		2. Check if easy CPR is closed. (OFF position)
		3. Check if easy CPR is well connected with the tubes of the mattress.
	Air leak of the check	1. Press to turn off the buzzer.
	valve	<ul><li>2. Check if the check valve is broken.</li><li>3. Check if the check valve is well connected with tube by the side of mattress.</li></ul>
	Air leak of the cells	1. Press to turn off the buzzer.
		2. Check if leakage is from cells.
		3. Please contact the distributor for cell replacement.

## Stop the buzzer

The buzzer can be turned off by pressing and hold for 5 seconds. This action is not recommended if you are not a professional engineer who is working with the troubleshooting or the individuals are not taking well care in advance.

## Important Safeguards

### **⚠** DANGER

### To reduce the risk of operation

- ▶ Before using Mai-stressless<sup>™</sup> surface support system, please read this user manual and follow the steps of the proposed operation to avoid the risk from improper operations.
- ► This equipment is strictly prohibited combination with other devices, in order to avoid the risk of improper operation.
- ▶ Once the fault occurred, please follow the Troubleshooting and Repair or contact the regional distributors at the first moment. Please stop using this equipment.

#### To reduce the risk of electrocution

- ▶ Use a grounding wire with a grounding pin, and then this three-wire plug must be plugged properly into an outlet and grounded as shown in national requirement.
- ▶ The users take a sponge bath or shower on the mattress, please set Mai-stressless<sup>TM</sup> pump power off.
- ▶ DO NOT place and use this equipment in the bathroom or high humidity environment.

### To reduce the risk of mechanical injury

- ▶ Please mount this equipment in accordance with the user manual. It may cause the individuals or the pump fall down without following installation of user manual
- ▶ DO NOT disassemble the device by the non-authorized repair professionals.

## **A**WARNING

- ▶ This equipment is strictly prohibited combination with other devices, in order to avoid the risk of improper operation.
- ▶ DO NOT use with non standardized parts.

- ▶ DO NOT smoke around this equipment to avoid the risk of fire.
- ▶ Place this device away from the source of heat and fire to avoid the risk of endangering this equipment.
- ▶ DO NOT install this equipment in place away from the professional medical beds, to prevent users from mechanical injury risk.
- ► The device is limited to indoor use. It is strictly prohibited to install the device in outdoor.
- ► This equipment is strictly prohibited the sharp objects or nearby hairpins metal jewelry or needles, to avoid the risk of the mattress broken.

# Mai-stressless™ Surface Support System 2-Year Limited Warranty

SINGA TECHNOLOGY CORPORATION covers any defects in materials or workmanship of the Mai-stressless<sup>TM</sup> Surface Support System, under normal use and specified conditions, for a period of two years from the date Mai-stressless<sup>TM</sup> Surface Support System was originally purchased as a new one, no matter who is the present owner.

Within a reasonable amount of time after you return the pump/mattress to us, we will repair any defect in material and workmanship and ship it back to you. We will not repair a pump or mattress free of charge if it has been misused or damaged by an accident.

You must send the pump or mattress to us with the original sales ticket and you must pay all delivery costs. It must be sent to SINGA TECHNOLOGY CORPORATION. You must return the warranty registration card, attached to this manual within thirty days from the date of purchasing. Failure to submit the original sales receipt or warranty registration card will void this warranty.

SINGA shall not be responsible for incidental or consequential damages with respect to economic loss or injury to person or property, whether as a result of breach of warranty, negligence or otherwise. SINGA will not be responsible for the results of careless handling or unreasonable use.

Any impelled warranties arising by operation of law shall be limited in duration to the terms of this warranty. This warranty gives you specific legal rights, and you may have other rights that vary from state to state.

For any further information, please contact our Customer Services Department.



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EGERTON sp. z o.o. located in Zabrze, Legnicka 21 Street
Entered into the National Court Register KRS 0000552481
Tax number: 648-277-38-37 CRO certificate: 361216648

## ====== MEMO ======



ISO9001:2015 ISO13485:2016

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