

Bottoms Up

Weight Shift Reminder Timer

Tilt Model User Guide



Introduction:

Congratulations on your decision to purchase the Bottoms Up Weight Shift Reminder Timer. By making this purchase, you are well on your way to ensuring better health and a better quality of life for you or your patient by assisting in the management of your pressure relief schedule. This User's Manual will guide you through the setup and installation procedures as well as address any problems that may occur.

Revision History:

Revision	Description	Date
1.0	Initial Release	3/24/2006

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Warnings and Safety Guidelines

This manual is intended to aid in the setup and installation of this equipment. Be aware that this will entail, in part, mounting the device in a suitable location that is free of mechanical interference.

Symbols are used to highlight information relating to the installer's personal safety and protection of the device throughout this manual.

When any of the following symbols appear, the associated information must be read carefully and understood fully.

Symbol	Meaning	Description
	Danger – Hand Hazard	The identified danger may cause physical injury and property damage from a crushing force.
	Danger	The identified danger could cause physical injury and property damage.
Caution	Caution	Use caution.

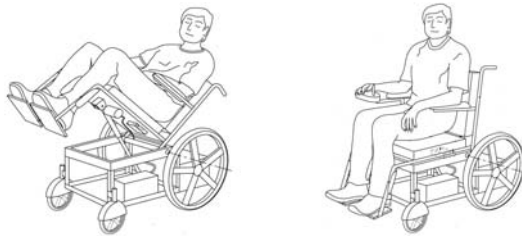
Warnings

- Under no circumstances will Cambridge Medical Systems be liable or responsible for any consequential damages that may arise as a result of installation or use of this equipment.
- All examples, illustrations, and diagrams shown in this manual are intended to aid understanding. They do not guarantee operation.
- Cambridge Medical Systems accepts no responsibility for actual use of this product based on these examples.
- Due to the great variety of equipment this device is intended to work with, the user must ensure that mechanical interference is not present.
- Do not replace parts or try to repair this product in any way.
- The manufacturer is not responsible for problems resulting from the improper use of this device.
- These devices may contain small amounts of mercury and/or lead and other materials common to the electronics industry. Do not discard units in ordinary garbage. Please return all units to the factory for recycling at the end of their service life.

Overview

People with spinal cord injuries are enjoying more active lifestyles now that are busier than ever. Advancements in both medicine and technology make it possible for many to return to the workplace. In addition, the realities of everyday life place greater demands on persons with disabilities, further distracting them from their medical needs. For those individuals, there is truly nothing more devastating than the onset of a pressure sore. A serious skin breakdown can debilitate someone for six weeks to six months, and, if left untreated, it can result in amputation, or even death. But there is good news! Most pressure sores are entirely preventable. With proper seating adjustments and regular pressure relief, someone with a spinal cord injury will likely avert a skin ulcer. The key to proper skin management is paying attention to your body! In today's environment, devoting the appropriate attention to your skin is difficult, as there are so many demands on our time. The "Bottoms-Up" device is here to resolve that dilemma! A periodic, non-intrusive, discreet timer will now effectively manage your pressure relief schedule so that you can concentrate on your life. Don't you have better things to do with your time?

The Bottoms Up device is designed to provide an audible indication to the patient after a physician-prescribed time interval has elapsed. The device contains a microprocessor and other circuitry to detect the inclination angle of the wheelchair's tilting space. It begins its timing cycle once the chair returns to the normal seating position as shown below in Figure 1.



The unit is housed in an ABS plastic housing and is designed to mount to the wheelchair using hook and loop (Velcro™) fasteners. A single 9V battery with an expected battery life of approximately two months powers the device.

Setup

The setup procedure is quite simple:

1. Program the time interval
2. Install the battery
3. Select a suitable mounting location
4. Attach the device with the Velcro™ fasteners

Program time interval –

First, the medical professional responsible for the patient's well being should be consulted to determine the correct time interval. The Bottoms Up timer is capable of time intervals of 10, 15, 20, 30, 45, and 60 minutes as standard. Other time intervals can be programmed by special order. Once the correct time is confirmed, setting the Bottoms Up timer is simply a matter of removing the plastic plug located on the bottom side of the device near the battery compartment door. A small flat blade screwdriver may be used to remove the plug but a fingernail is usually sufficient. (See Figure 1) A block of small switches will be visible once the plug is removed.

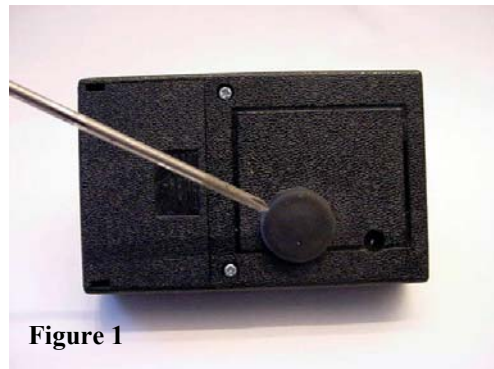


Figure 1

Next, orient the device as shown in Figure 2. Using Table 1 as a guide set the switches accordingly. The default setting is 30 minutes. Note that any other switch positions are for testing purposes only.



Figure 2

Time Interval	Switch Position
10 minutes	↓↑↑↑
15 minutes	↑↓↑↑
20 minutes	↓↓↑↑
30 minutes	↑↑↓↑
45 minutes	↓↑↓↑
60 minutes	↑↓↓↑

Table 1

Finally, replace the plastic plug. The device is now programmed and ready for battery installation.

Install the battery –



Remove the battery compartment door by pressing down on the arrow and sliding the door while pressure is applied. **Be sure the polarity is correct before attempting any metal-to-metal contact. Failure to observe correct battery polarity will result in immediate damage to the circuitry.** Note that this damage is not covered by warranty. Install a fresh 9V battery by snapping the battery onto the snap terminals.

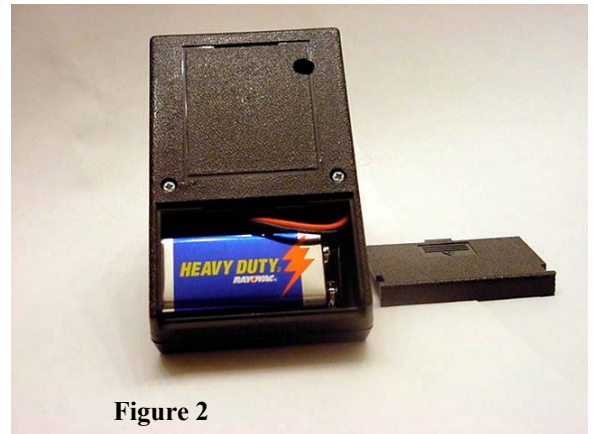
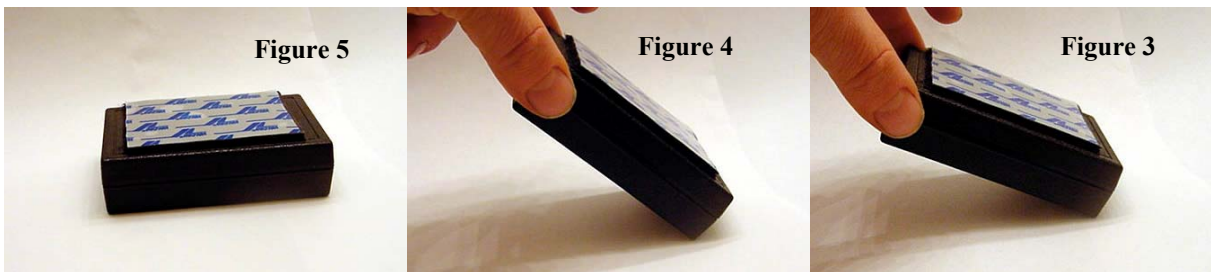


Figure 2

With the battery properly installed onto the snap terminals, place the battery within the battery compartment. Orient the battery such that the wires are not pinched or kinked. Slide the battery compartment door back into position and fully engage the locking mechanism.

A quick test is in order here to verify the device is operational. Place the device on a flat level surface such as a tabletop with the battery compartment facing down. During handling, the Bottoms Up device may beep intermittently. This is normal at this point.



Tilt the device backward to an angle of about 45 degrees as shown in Figures 3-5 above. Now bring the device back toward the table. At around 20 degrees of inclination, the device should emit two rapid beeps. This demonstrates that the microprocessor is executing its program. If the device fails this test, contact customer service for further assistance.

Installation

Select a suitable mounting location –

This step is the most crucial as it will determine the effectiveness of the device. The device is designed to mount on the bottom side of the seating surface. The correct orientation must be observed for proper operation. The battery compartment must be towards the rear of the chair and the device placed length-wise front to back. Figure 6 shows a correctly installed unit. The chosen location must be free of mechanical interferences that will damage either the wheelchair or the Bottoms Up device.



Once a potential location is determined, temporarily place the device in that location and carefully lower the tilting feature of the chair. Do this in small increments while watching for anything that might impact the device. ***Use extreme caution as this can potentially cause personal injury as well.***

Attach the device -

When the location has been confirmed, raise the chair back up to the tilted position. Clean the area with an alcohol wipe to remove any contaminants that would prevent the adhesive backing of the Velcro™ from adhering properly. Allow alcohol to dry thoroughly before proceeding.

Remove the protective backing from the Velcro™ and firmly press the device into place. Lower the wheelchair back to the normal seating position. As before, the device should emit two rapid beeps to signal that it is functioning properly. If the device fails this test, check for proper orientation. The battery compartment must be towards the back of the chair.

As a final check, tilt the chair once again to the tilted position, then back to the normal seating position. Observe that the device emits its two beeps about halfway between the two extremes of travel.

The seating surface of many wheelchairs has an inherent incline with the front of the seating surface being higher than the rear. The standard Bottoms Up device is designed to function with an incline of up to 10 degrees. When attempting to install the device on an incline of greater than 10 degrees, it is recommended that the chair be measured prior to ordering the device. In so doing, an adjustment to the tilt sensor can be made at the factory to accommodate the greater angle.

Battery Replacement

The typical lifespan of a fresh battery is about two months with normal use. To ensure continuous protection, be sure to have a spare battery on hand.

To replace the battery in the Bottoms Up weight shift reminder timer, simply tilt the chair back to the tilted position. Firmly grasp a corner or end of the device and pull it straight away from the seating surface until the Velcro™ releases.



Place the device on a table or countertop and remove the battery compartment cover by simultaneously pressing down on the arrow and sliding the compartment cover off from the device. Unsnap the old battery and install a fresh 9V battery. Be sure the polarity is correct before attempting any metal-to-metal contact. Failure to observe correct battery polarity will result in immediate damage to the circuitry. Note that this damage is not covered by warranty.

With the battery properly installed onto the snap terminals, place the battery within the battery compartment. Orient the battery such that the wires are not pinched or kinked. Slide the battery compartment door back into position and fully engage the locking mechanism.

While observing correct orientation (battery compartment towards rear of wheelchair), firmly press the Velcro™ halves back together. Gently tug on the device to ensure a good bond has been made.

Tilt the chair back to the normal seating position and listen for the characteristic two beeps to signal the device is functioning properly.

Operation

The tilt model of the Bottoms Up weight shift reminder timer is designed to be completely hands-free. No user intervention is required except to periodically change the battery.

What to expect –

Once the wheelchair has returned to the normal seating position from the tilted position, the device will emit two rapid beeps. This signals that it is operational and is now counting down the physician prescribed time. Once that time has elapsed, the device will signal the patient that it is time to perform a weight shift by emitting a series of five rapid beeps. If the patient does not respond to this alert, the device will signal another five reminders at one minute intervals.

At any point in this cycle, the patient may reset the timer by performing a weight shift. The physician prescribed time interval will then begin from the moment the wheelchair returns to the normal seating position.

Should the patient not respond to any of the alerts (such as when the patient has transferred out of the wheelchair – at bedtime, for instance), on the last alert, the device will emit a signal indicating that it has shut down. No further alerts will be issued until the patient returns to the wheelchair and resets the device by performing an initial weight shift, returning the chair to the normal seating position.

This feature is particularly useful in situations where it is undesirable to perform the weight shift on schedule. This may be while eating, while seated at a table, or any other circumstances performing a weight shift is impossible. ***However, it must be stressed that to consistently ignore the alerts provided by the Bottoms Up device could seriously jeopardize the patient's health and lead to a pressure ulcer forming.***

The Limitations –

The Bottoms Up timer cannot force a patient to perform a weight shift - it can only serve to remind them. Ultimately, the decision to properly care for one's body rests with the individual.

Technical Specifications

Dimensions:	3.8" X 2.4" X 1" (96.52mm X 60.96mm X 25.4mm)
Weight: (w/o battery):	TBD
Power Supply:	9V DC
Typical Battery Lifespan:	2 months
Mounting:	Hook and Loop fasteners (Velcro™)
Processor:	8 bit RISC processor
Timer:	Software-based
Timing Intervals:	10, 15, 20, 30, 45, 60 minutes

Warranty

For a period of twelve (12) months from date of purchase, products are warranted against defects in material and workmanship. The warranty does not cover abuse, alterations, improper application or installation, accident or negligence in use, storage, or handling, or exceeding ratings.

To initiate a warranty claim, buyer must notify the Seller. Seller must grant return authorization. Unauthorized returns will be refused. Product shall be returned to the seller with transportation and insurance prepaid by the buyer. If the seller determines that the product is not defective, or that the seller is not liable for the defect, the buyer will be notified; thereafter, the seller will repair or replace the product upon written consent and at prevailing prices.

This warranty applies only to the original buyer and is not transferable except at the discretion of the Seller. Repairs and replacements made under this warranty are not warranted beyond the remainder of the warranty period.

Buyer's sole and exclusive remedy with respect to the warranty given by the seller shall be strictly limited, at seller's sole discretion, to the remedy or remedies provided for in the product warranty.

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