MILLENNIUM MEDICAL PRODUCTS, INC.

PATIENT LIFT AND TRANSFER SYSTEM

LIFTEM® OPERATIONS MANUAL

MODEL MARK IV

March 2006

LIFTEM® OPERATIONS MANUAL

Table of Contents

CHAPTER 1 1
A. WHAT IS LIFTEM 1
1. Description 1
2. Why use LIFTEM 1
B. CAPABILITIES OF LIFTEM 2
1. Maximum Lift and Transfer Capacity 2
2. Lift and Transfer Capabilities 2
C. SAFETY PRECAUTIONS 3
1. When LIFTEM Can be Used 3
2. When LIFTEM Can Not be Used 3
3. Things to Remember when Operating LIFTEM 4

CHAPTER 2 5
STEP BY STEP OPERATION 5
1. General 5
2. Lift and Transfer Patient From Bed 6
3. Lift and Transfer Back to Bed 10

CHAPTER 3 14
USEFUL TIPS 14
1. Battery Operation 14
2. Operation by 115 Volt AC Power using Wall Socket 14
3. Operation in Case of a Dead Battery or Loss of AC Electric Power 14
4. Charging a Dead Battery 15
5. Moving LIFTEM 15
6. Assembly & Disassembly of LIFTEM 15
7. Limited Warranty 16

CHAPTER 4 17
TROUBLESHOOTING GUIDE 17
1. General 17
2. Methods of Determining "Possible Cause" of LIFTEM Malfunction. 19

CHAPTER 5 21
SLING MANUAL 21
Sling Model 3624 22
Laundering Procedures for Sling Model 3624 22
Warranty for Sling Model 3624 24
Application Instructions for Sling Model 3624 24
Attaching Sling Model 3624 to the LIFTING BAR 26
Stretcher Sling Model 700 27

Laundering Procedures For Stretcher Sling Model 700 27
Warranty for Sling Model 700 28
Application Instructions for Stretcher Sling Model 700 28
General 28
Sling Inspection Data Sheet 32

CHAPTER 6 33
SCALE INSTALLATION AND OPERATION 33
A - Introduction 33
B - Installation of the Scale 33
C - Operate the Scale and Weigh the Patient 34
D - Important Points 34
E - Maintenance and Recalibration 35
F - Warranty 35

CHAPTER 7 36
MAINTENANCE PROCEDURES 36
Weekly Service and Maintenance 36
Monthly Service and Maintenance 36
Periodic Retest Data Sheet 40
Triennial Service and Maintenance 41
Quadrennial Service and Maintenance 41

LIFTEM FIGURES 42
FIGURE 1 43
FIGURE 2 44
FIGURE 3 44
FIGURE 4 44
FIGURE 5 45
FIGURE 6 46
FIGURE 7 47
FIGURE 8 49

CHAPTER 1

A. WHAT IS LIFTEM

1. Description

LIFTEM is an automated patient lift and transfer system. It has been designed to lift and transfer patients weighing up to 700 lbs. from a bed to a chair, wheelchair and bedside commode, gurney, and back **WITHOUT MOVING THE LIFT**. One person safely and efficiently completes the lift and transfer. This is accomplished as the lift mechanism rotates the patient from the bed to the desired receptacle with the touch of a remote control button.

2. Why use LIFTEM

LIFTEM allows a single caregiver to safely and mechanically lift and transfer a patient that might ordinarily require two or more caregivers. The only contact required between patient and caregiver is the application and removal of the lifting sling. As a result, LIFTEM reduces the instances of patient and caregiver injury and, because it is unnecessary to move LIFTEM during the transfer procedure, the potential to tip over is eliminated. Basic reasons for using LIFTEM include:

- Safely lifts and transfers a patient using just one caregiver
- Lifts and transfers a patient too heavy for manual transfer by caregivers
- Prevents injury to patients that could result during manual patient transfers caused by unintended rough handling or accidents
- Prevents caregiver injuries, such as back strain, that can occur during the lift/transfer
- Increases the efficient use of caregiver resources

B. CAPABILITIES OF LIFTEM

1. Maximum Lift and Transfer Capacity

The maximum lift and transfer capacity of LIFTEM is 700 lbs. This capacity is based on the provision that the LIFTEM legs are fully OPEN AND EXTENDED. In addition, LIFTEM must be setup properly with respect to its position around the bed, the patient, and the patient receptacle. This aspect will be covered in detail in the later sections of this manual. (See chapter 2)

2. Lift and Transfer Capabilities

LIFTEM can be setup to transfer a patient from a bed to a receptacle, such as a wheelchair, and then back again without moving LIFTEM. LIFTEM is designed so the lift mechanism is rotated electrically while the patient is suspended from the MAST/BOOM. This requires that the receptacle which the patient is being transferred to, be positioned properly with respect to LIFTEM. This procedure is described in detail later in this manual. (See chapter 2)

LIFTEM can be used for the following, with the provision that the system is positioned appropriately and that the legs of LIFTEM ARE COMPLETELY OPENED AND EXTENDED.

- To lift and transfer a patient from a bed to a gurney and back
- To lift and transfer a patient from a bed to a wheelchair and back
- To lift and transfer a patient from a bed to a bedside commode and back
- To lift and transfer a patient from a wheelchair to a commode and back
- To lift a patient from any device to perform other caregiver functions such as changing bed linen and weighing the patient using a scale attachment.

C. SAFETY PRECAUTIONS

READ OPERATING MANUAL AND VIEW THE TRAINING AND APPLICATION VIDEO BEFORE ATTEMPTING TO USE LIFTEM TO LIFT AND TRANSFER A PATIENT! ONLY TRAINED CAREGIVERS SHOULD USE LIFTEM. ALL CAREGIVERS MUST BE TRAINED ON THE USE OF THE SYSTEM BY A KNOWLEDGEABLE PERSON. THIS IS **MANDATORY**.

! WARNING !

FAILURE TO OBSERVE THE SETUP AND OPERATING INSTRUCTIONS CAN RESULT IN SERIOUS INJURY TO THE PATIENT AND / OR THE CAREGIVER

1. When LIFTEM Can be Used

- ✓ Use LIFTEM only after proper training has been administered to the caregiver.
- ✓ Use LIFTEM to lift and transfer a person weighing less than 700 pounds.
- ✓ Use LIFTEM only after it is properly positioned and the **REAR WHEEL CASTERS ARE LOCKED** and the **LEGS FULLY OPEN AND EXTENDED.**
- ✓ Use LIFTEM only to lift and transfer a person, **NOT AS A TRANSPORTATION DEVICE OR TREATMENT PLATFORM/STATION**. (Never move LIFTEM, attempt to apply CPR, or use an electronic defibrillator while a patient is suspended from the MAST/BOOM in a lifting sling or on a stretcher.)
- ✓ Use LIFTEM only after the lifting sling has been properly fitted to the patient and secured to the LIFTING BAR.
- ✓ Use LIFTEM only after explaining to the patient, the sequence of operations to be performed and insuring his/her cooperation.
- ✓ Use LIFTEM always with the caregiver facing the patient, HOLDING AND STEADYING THE SLING and holding the HANDSET.
- ✓ When moving the patient from left to right or reverse with a patient suspended from the lift point always jog (rapidly press and release) the HANDSET.

2. When LIFTEM CANNOT be Used

LIFTEM should Never be used under the following situations:

- ∅ Never use LIFTEM without a trained caregiver.
- ∅ Never use LIFTEM to lift and transfer a patient weighing over 700 pounds.
- ∅ Never use LIFTEM while the legs are CLOSED AND RETRACTED AND/OR THE REAR WHEEL CASTERS ARE UNLOCKED.

- ∅ Never attempt to use LIFTEM with a patient who is agitated and/or uncooperative.
- ∅ Never move LIFTEM with a patient suspended from the MAST/BOOM.
- ∅ Never push or pull on the sling with a patient suspended from the MAST/BOOM.
- ∅ Never move LIFTEM with the legs OPEN or EXTENDED.
- ∅ Never lift a patient without a caregiver positioned near him/her and having one hand on the sling to steady the patient.

3. Things to Remember when Operating LIFTEM

Keep the following things in mind when you operate LIFTEM:

- ! Do not rush. - Used properly, LIFTEM will save time and help reduce injury.
- ! Always follow operating instructions.
- ! Always make sure caregiver using LIFTEM is trained.
- ! Always stay within the operating limits of LIFTEM.
- ! Always use the system as a lift and transfer device and **NEVER AS A TRANSPORTATION DEVICE OR TREATMENT STATION**.
- ! When moving LIFTEM, remember to CENTER the MAST/BOOM, always RETRACT the legs, LOWER the BOOM, and SECURE the LIFTING BAR.
- ! Always recharge the BATTERY after each use.
- ! **Only operate on level surfaces**.
- ! Always make sure the LIFTING BAR is attached to the proper LIFT POINT for the weight of the patient being lifted (Figure 7).
- ! When rotating the BOOM from left to right, or reverse, with a patient suspended from the LIFT POINT always JOG (rapidly press and release) the HANDSET.
- ! The LIFTEM CONTROLLER has a 10% Duty Cycle. It should be allowed to cool for at least 2 minutes after 18 minutes of continuous ACTUATOR operation.

CHAPTER 2

STEP BY STEP OPERATION

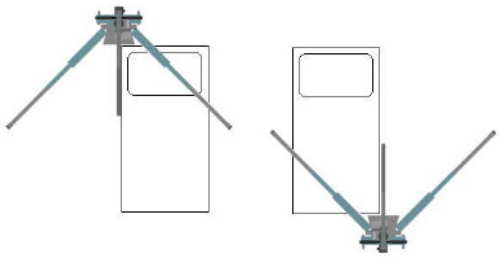
1. General

This chapter will provide operating instructions for the use of LIFTEM MARK IV to safely and efficiently lift and transfer a patient from one location to another. LIFTEM is illustrated in Figures 1, 2 and 3 which identify the main parts of the system (Figure 1), and the positions of the LEGS for a safe lift and transfer (Figures 2 and 3).

Figure 2 shows LIFTEM with the LEGS closed and retracted. This configuration can be used to move the system from location to location but must not be used to lift and transfer a patient because it can be unstable.

Figure 3 shows the LEG deployment that MUST be used for a safe lift and transfer of a patient. Note: Unless the LEGS are **FULLY OPEN AND EXTENDED, YOU WILL NOT BE ABLE TO POSITION THE LIFTING ARM OVER THE PATIENT**. In this configuration the appropriate SLING is fitted to the patient. The BOOM and LIFTING BAR are positioned over the patient to allow the SLING to be attached to the ends of the LIFTING BAR. There is sufficient latitude in the motion of the BOOM (up & down) and the MAST (rotate left and right) to allow a lift from a bed or from the floor. LIFTEM must be located appropriately with respect to the position of the patient to be lifted and the receptacle to which the patient is transferred. (See Figure 5).

Optimal Liftem Positions



Prior to using LIFTEM remember that LIFTEM is normally operated from a BATTERY source. It is important to make sure the BATTERY is fully charged. In an emergency, LIFTEM can be operated from a 115 Volt AC wall outlet by plugging the POWER CORD into a standard power receptacle. If the CONTROLLER emits a Beep sound, it is an indication that the BATTERY is low on charge. Use should be discontinued, the POWER CORD should be connected and the BATTERY should be charged. **115 Volt AC power is not to be used for normal operation. AC power should ONLY be used in emergencies.**

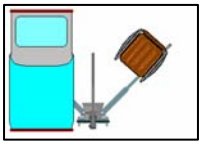
Some LIFTEM unit CONTROLLERS are equipped with an EMERGENCY STOP switch, found on the upward facing end of the CONTROLLER (see photograph below). This switch is to be pushed in the event of an unexpected occurrence during lift operation. When pushed, the switch interrupts all power to the LIFTEM actuators and causes the system to come to a complete stop. The CONTROLLER can be reset by turning the switch knob in the clockwise direction.

Safety Precautions:

1) Prior to resetting the CONTROLLER verify that the patient is calm and is not caught in any part of the Wheelchair/Bed, etc.
2) Verify that the LEGS are fully spread and extended.
3) Verify that the patient and any personnel assisting in the procedure being performed with LIFTEM are clear of any moving parts around the BASE.

2. Lift and Transfer Patient From Bed

a) Preparing the Patient



- Explain the lift and transfer procedure to the patient prior to starting.
- Select the proper sling and place it along the patient's side.
- Roll the patient toward you and then position the sling flat next to the patient. (See Chapter 5, Sling Manual.)
- Then allow the patient to roll back onto the sling.

b) Positioning LIFTEM

- Move the receiving device (chair, commode, and wheelchair) into place at the side of the bed.
- Move LIFTEM, in the fully retracted position, into the room. Position LIFTEM in the appropriate location around the bed. The MAST/BOOM should be in the center position and with the LIFTING BAR attached to the BOOM.

- Raise the BOOM to the horizontal position by pressing the BOOM - UP button.
- Move LIFTEM so that one of the legs is inside the wheel or leg of the bed. (Figure 5)
- Ensure the LIFTING BAR is secured to the proper LIFTING POINT on the BOOM and ELEVATED, so that it does not interfere with the patient.

- LOCK THE REAR WHEELS by pressing down on the caster lock tabs.
- Locate the receiving device next to the bed and position it so that the LIFTEM LEGS can be OPEN AND EXTENDED.
- SPREAD the LEGS to the maximum angle as shown in Figure 3. This is accomplished by pressing the LEG SPREAD - OPEN button (Figure 4). Both LEGS will rotate to the open position.

- After the LEGS are fully spread, EXTEND them by pressing the LEG EXTEND - OUT button (Figure 4). Both LEGS will extend at the same time. Continue to keep the button pressed until the LEGS are fully extended (Figure 3).

- Activate the BOOM ROTATE SWITCHES (Right/Left) and determine that the available swing will provide easy movement from one position to another (Figure 5). **Note:** The BOOM will only rotate within the distance between each EXTENDED LEG.
- Make the final adjustment of the receiver so that the lift and transfer is within the range of motion of the MAST/BOOM assembly.

Safety Precautions:

1) LEGS must be fully spread and extended to prevent LIFTEM from tipping to front or back or to either side.
2) BOOM will not rotate unless LEGS are fully spread and extended.
3) Keep hands free of BASE while extending and expanding LEGS.

c) Lifting the Patient

- Adjust the BOOM height using the BOOM LIFT - UP/DOWN buttons on the HANDSET to position the LIFTING BAR and attach the sling straps onto the hooks of the LIFTING BAR
- Position yourself to guide the patient during the lift and transfer. This is done best by assuming a position inside the open and extended legs of the lift and adjacent to the bed and receiver.

- Raise the patient from the departure surface by pressing the BOOM LIFT - UP button. Lift the patient high enough so the transfer to the receiver can be made with no restrictions.
- The patient will feel more secure if the caregiver is holding onto the sling straps as the individual is lifted.

Safety Precautions:

1) Insure that LIFTING BAR remains clear of patient while lowering and attaching sling.
2) Insure that patient is free of bed linens and limbs are free of bed frame prior to lifting.
3) Insure that all sling straps are evenly (same color loop on right and left side) and fully engaged on LIFTING BAR.
4) Insure that LIFTEM is clear and remains clear of any catheters or cables connected to the patient.
5) Do not attempt to lift patient unless LIFTEM LEGS are fully spread and extended.
6) Do not attempt to close or retract LIFTEM LEGS with patient suspended.
7) Never move the LIFTEM with patient suspended from BOOM.
8) Insure that the LIFTING BAR is secured to the proper LIFTING POINT on the BOOM.

d) Transferring the Patient

- With one hand on the patient or sling as a guide, rotate the patient to the receiver by rapidly pressing and releasing the BOOM ROTATE – RIGHT or LEFT button (Figure 4).
- The LEFT button will rotate the patient to the left and the RIGHT button to the right as viewing the BOOM from in front of LIFTEM away from the legs.
- Once positioned over the receiver, lower the patient onto the receiving surface by pressing the BOOM LIFT - DOWN button.

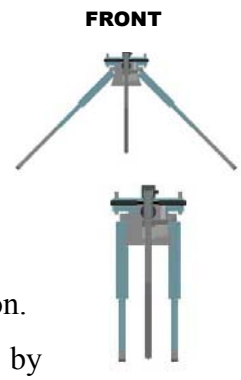
Safety Precautions:

1) Steady patient while rotating BOOM to minimize patient discomfort and to prevent LIFTEM unbalance due to swaying as boom rotates.
2) Insure that patient is clear and remains clear of receiving surface frame while lowering.
3) Insure that any catheters or cables attached to patient do not become entangled in the LIFTEM or the receiving device.
4) Do not attempt to move LIFTEM with patient suspended from BOOM.
5) Insure that LIFTING BAR remains clear of patient while lowering.
6) When rotating the BOOM from left to right, or reverse, with a patient suspended from the LIFT POINT always jog (rapidly press and release) the HANDSET to reduce tendency for patient to sway during rotation.

e) Completed Patient Transfer

- After the Patient has been successfully transferred, the SLING can remain in place if the patient is to be transferred back to the bed or to another receiver in a short time period. If this is the case, remove the sling straps from the LIFTING BAR and leave the sling in place.

- To remove the SLING:
  When the patient is in a wheelchair or on a commode, uncross the lower sling straps, and remove the straps from under the patients' legs. Lean the patient forward and gently pull the sling from under the patient.
- Be sure you are clear of the patient and then raise the BOOM by pressing the BOOM LIFT - UP button high enough so the BOOM can be rotated out of the way of the patient.



- Rotate the MAST/BOOM to the center position by pressing the BOOM ROTATE button. As viewed from the front of the lift, if the BOOM is to the left side press the RIGHT button and if it is to the right side press the LEFT button. The BOOM will automatically stop at the center position.
- Retract both LEGS by pressing the LEG EXTEND - IN button.
- Close both LEGS by pressing the LEG SPREAD - CLOSE button.
- If the RECEIVER is in the way, unlock the rear wheel casters by releasing the lock tabs on both casters and move the lift away from the RECEIVER. Do so by pressing on the unlocking tab on the wheel brake using your foot.
- Move LIFTEM out of the way of the gurney or wheelchair.
- With LIFTEM away from the patient, return the BOOM to its lowest position by pressing the BOOM LIFT - DOWN button and return LIFTEM to its designated storage area.
- Charge the BATTERY by plugging the 115 Volt AC Power cord into a wall socket.

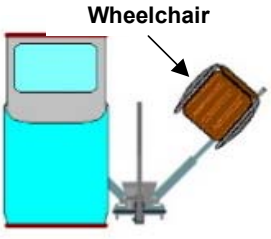
Safety Precautions:

1) Insure that LIFTING BAR remains clear of patient while lowering.
2) Keep hands free of BASE while closing and retracting LEGS.

3. Lift and Transfer Back to Bed

a) Positioning Patient and LIFTEM

The procedure to return the patient to the bed from the device in which the patient resides is the opposite from section 2 (**Lift and Transfer from Bed**). The first step is to position the patient by the bed such as follows:



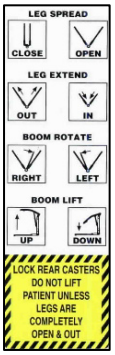
- Place the wheelchair or commode by the bed.
- Retrieve LIFTEM from the storage area and position by the bed and patient. Prior to properly setting up LIFTEM, position the appropriate sling under the patient.

- For a wheelchair or commode sling, lean the patient forward and place sling along the rear of the patient. Gently pull lower part of sling under the patient's legs. Cross the sling straps in the center and attach to the LIFTING BAR. In certain cases it may be practical to keep the sling on the patient while in the wheelchair or on the commode.
- Using the LIFTEM HANDSET under battery power, setup LIFTEM as follows. Position yourself by the patient when performing this function and hold the HANDSET in one hand leaving the other hand free to maneuver.
- With the BOOM in the center position, elevate the BOOM above the height of the patient with the LIFTING BAR attached to the proper LIFTING POINT on the BOOM by pressing the BOOM LIFT - UP button.
- SPREAD the LEGS fully by pressing the LEG SPREAD - OPEN button.
- EXTEND the LEGS fully by pressing the LEG EXTEND - OUT button. The BOOM can now be moved left or right, away from the patient, if necessary.
- Position LIFTEM so one of the LEGS is between the wheels of the receiver and the other LEG under the bed. Figure 5 shows possible positions for LIFTEM before the RECEIVER is in place.
- LOCK the REAR WHEEL CASTERS by pressing down on the caster lock tabs.
- Rotate the MAST/BOOM from over the bed to above the patient. Depending on which side of the caregiver the bed is, use the appropriate BOOM ROTATE - RIGHT or LEFT button.
- Make this movement with the BOOM at its highest position to assure it will not interfere with the patient and the caregiver.
- When the BOOM is positioned above the patient, position the LIFTING BAR on the BOOM and allow it to hang down making sure it does not interfere with the patient and the caregiver.
- Lower the BOOM toward the patient by pressing the BOOM LIFT - DOWN button.
- Attach the sling straps to the LIFTING BAR attachment.
- Now the patient is ready to be lifted and transferred to the bed.

Safety Precautions:

1) Insure that all sling straps are evenly (same color loop on right and left side) and fully engaged on LIFTING BAR.
2) Insure that LIFTING BAR remains clear of patient while raising and lowering boom and attaching sling.
3) Insure patient's limbs remain clear of gurney or commode during lifting.
4) Insure that any catheters or cables attached to patient do not become entangled in the LIFTEM or the receiving device.
5) Keep hands free of BASE while extending and expanding LEGS.
6) Do not attempt to lift patient unless LIFTEM LEGS are fully SPREAD and EXTENDED.
7) Do not attempt to close or retract LIFTEM LEGS with patient suspended.
8) Do not attempt to move LIFTEM with patient suspended from BOOM.
9) Insure that the LIFTING BAR is secured to the proper LIFTING POINT on the BOOM.
10) When rotating the BOOM from left to right, or reverse, with a patient suspended from the lift point always jog (rapidly press and release) the HANDSET to reduce tendency for patient to sway during rotation.

b) Patient Lift from Wheelchair or Commode



- Lift the patient from the gurney, wheelchair or commode by pressing the BOOM LIFT - UP button.
- The caregiver should maintain the free hand on the patient to provide added security and maneuverability.
- Lift the patient high enough so they will clear the bed.
- Rotate the patient over the bed by pressing the appropriate BOOM ROTATE - RIGHT or LEFT button. If the patient is positioned to the left of the bed the RIGHT button must be pressed.
- Steady patient while rotating boom to minimize discomfort and prevent lift unbalance due to swaying as boom rotates.
- Now that the patient is positioned over the bed the transfer can be completed.

c) Transferring to Bed

- Lower the patient to the bed by pressing the BOOM LIFT - DOWN button on the HANDSET.
- Once positioned on the bed remove the SLING from the LIFTING BAR ATTACHMENT POINTS.
- Lift the BOOM to its highest position, by pressing the BOOM/MAST - UP button.
- Remove the SLING.
- For a regular SLING roll the patient to one side and remove the SLING from underneath the patient.

Safety Precautions:

1) While lowering insure that patient's limbs remain clear of bed frame.
2) Insure that LIFTING BAR remains clear of patient while removing SLING.
3) Insure that any catheters or cables attached to patient do not become entangled in the LIFTEM or the receiving device.
4) When rotating the BOOM from left to right, or reverse, with a patient suspended from the LIFT POINT always jog (rapidly press and release) the HANDSET to reduce tendency for patient to sway during rotation.

d) After Patient Transfer Completed

- Move the MAST/BOOM to the center position by pressing the appropriate BOOM ROTATE - RIGHT or LEFT button.
- Retract the LEGS of LIFTEM by pressing the LEG EXTEND - IN button. Close the LEGS by pressing the LEG SPREAD - CLOSE button.

Note: Unless the BOOM is in the center position, it is not possible to retract or close the LEGS.

- Unlock REAR WHEEL CASTERS by depressing the rear wheel caster lock tabs.
- Move LIFTEM away from the bed.
- Move the MAST/BOOM to its lowest position by pressing the BOOM DOWN button.
- Remove LIFTEM to its storage area and charge the BATTERY.

Safety Precautions:

1) Insure that LIFTING BAR remains clear of patient while rotating BOOM.
2) Keep hands free of BASE while closing and retracting LEGS.

CHAPTER 3

USEFUL TIPS

1. Battery Operation

A BATTERY located on the BASE, powers LIFTEM. Through testing it has been established that a fully charged BATTERY will allow the following is the approximate number of patient lift and transfers to be completed before recharging:

- Patient weight - 150 pounds 70 lift and transfers
- Patient weight - 300 pounds 40 lift and transfers
- Patient weight - 700 pounds 30 lift and transfers

NOTE: A lift and transfer cycle is described as lifting a patient from the initial position to the new position to which they will be transferred.

If CONTROLLER emits a Beep sound, it is an indication that BATTERY is low on charge. Use should be discontinued, the POWER CORD should be connected to AC Power and the BATTERY should be charged.

2. Operation by 115 Volt AC Power using Wall Socket

LIFTEM can also be operated using 115 Volt AC Power. Plug the POWER CORD into a 115 Volt AC wall socket and the system will operate as though it is on BATTERY power. **THIS METHOD OF POWERING LIFTEM SHOULD ONLY BE USED IN EMERGENCIES**.

3. Operation in Case of a Dead Battery or Loss of AC Electric Power

a) Dead Battery

In the event a patient is in the middle of a lift and transfer and the BATTERY looses power, plug the POWER CORD into an 115 Volt AC outlet and LIFTEM can then be operated.. **AC POWER IS NOT TO BE USED FOR DURING NORMAL OPERATION.**

b) Loss of AC Power and a Dead Battery

LIFTEM cannot be operated if the BATTERY is dead and the AC Power is not available. However, if loss of power occurs during a lift and transfer and a patient is suspended, the patient can be lowered using a RED RELEASE BUTTON located on the body of the LIFT ACTUATOR. Simply pull the RED RELEASE BUTTON upward. It will move about one inch. Hold it in that position as the patient is slowly lowered to a receiver. Once the patient is safely secured release the button. LIFTEM cannot be used again until the BATTERY is recharged or until the 115 Volt AC Power is restored.

4. Charging a Dead Battery

A 115 Volt AC Power source is required to recharge a dead or partially discharged BATTERY. To recharge a dead BATTERY the AC POWER CORD must be plugged into a 115 Volt AC wall socket. It will take about 8 hours to fully recharge a dead BATTERY. It is recommended that the power cord be plugged in to recharge the BATTERY while LIFTEM is in storage. This will assure the user of a fully charged system ready at all times.

5. Moving LIFTEM

LIFTEM is easily transportable. However it is highly recommended that the following configuration be used when moving LIFTEM from one location to another:

- The LEGS must be completely CLOSED
- The LEGS must be completely RETRACTED
- The BOOM must be in its lowest position
- The MAST/BOOM must be centered between the closed legs

In this configuration, LIFTEM can be pushed or pulled easily using the handles located on the MAST. **IN NO CASE SHOULD A PATIENT BE ON THE LIFT IN THIS CONFIGURATION.**

6. Assembly & Disassembly of LIFTEM

LIFTEM has been designed for ease of shipping and mobility where elevators are not available and space is restricted. To accomplish this, LIFTEM can be easily disassembled into subassemblies. Refer to the Assembly Instruction manual that has been provided with this device.






7. Limited Warranty

Millennium Medical Products, Inc. (MMP) guarantees LIFTEM® to be free from defects in materials and workmanship under normal use and service, for a period of one (1) year from the date of purchase by the original purchaser, excluding the batteries, which are warranted for six (6) months. This warranty is voided upon transfer of ownership of this product. MMP agrees to repair or replace this product, at our discretion and at no charge, within the warranty period provided the product is delivered to MMP in its original packaging or the equivalent thereof; is fully insured with all shipping charges prepaid; and that MMP consents the unit is defective. The repaired or replaced unit shall be warranted for a period equal to the balance of the defective unit's warranty period. A handling charge of $35.00 will be applied to any returned product proven not to be defective. For warranty service, please contact the dealer from whom you leased or purchased your MMP LIFTEM®. NOTE: You must never return the product to your dealer or to MMP at any time without the written consent of either party. To ensure the best service to our customers, MMP requires the following information to be included with a returned unit:

1. Serial Number and Model Number on the packaging.
2. An RGA form, obtained either from your dealer or directly from MMP.
3. A detailed description of the problem and its symptoms.

This warranty shall not apply to any product which has been repaired or altered in any way so as, in our judgment, to affect its functionality and durability, nor to any products subject to abuse, misuse, negligence or accident, improper maintenance, improper installation, nor to any product used with other parts, components and/or accessories with quality and/or specifications not compatible with this product. This warranty does not cover products that have been impaired by occurrences considered Acts of God over which MMP has no control. This warranty shall also be voided if any required periodic maintenance, if applicable, has not been properly performed on this product.

This warranty and the aforementioned remedies offered are exclusive and in lieu of all other express or implied warranties. No other representations or claims shall be binding or obligate MMP in any way. Any warranty applicable to this product is limited to the aforementioned period indicated. In no event shall MMP be liable for any special, incidental, or consequential damages; loss of revenue; or cost of replacement goods; resulting from the use or malfunction of this product to the associated equipment on or with which it is used. This limited warranty statement gives the customer specific legal rights. The customer/user may also have other rights, which may vary from state to state in the United States, from province to province in Canada, and from country to country elsewhere in the world.

CHAPTER 4

TROUBLESHOOTING GUIDE

1. General

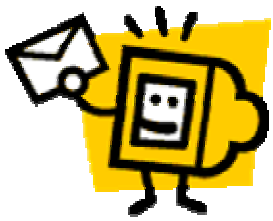
This guide covers most of the normal electrical and control functional problems that may occur during the operation of LIFTEM. The location of the devices mentioned in this guide is shown on Figures No. 1 through 6 that are included in the "Operations Manual".

When the system is delivered all of the cables, with the exception of the LIFT ACTUATOR CABLE and the BATTERY CABLE, have been connected to the CONTROLLER. As part of the "Assembly Instructions" that are provided with LIFTEM, the LIFT ACTUATOR and the BATTERY connections to the CONTROLLER are explained. If there is a problem with the LIFT ACTUATOR not working, then repeat this procedure.

NOTE: In order to protect the CONTROLLER circuitry, insure that the POWER CORD is disconnected from the 115 Volt AC MAINS and that the BATTERY is unplugged from the CONTROLLER prior to plugging in or unplugging and ACTUATOR cable.

It is very important that all of the input connections to the CONTROLLER be made properly and that they are fully seated into their terminals. These connectors are very tight, as they have an "O-Ring" seal to prevent moisture from entering the connector. To ease the installation of these connectors, if they have been removed, it is suggested that a small amount of lubricant, such as mineral oil/liquid soap, etc., be applied around the "O-Ring".

For any technical questions or support e-mail: Support@mmpliftem.com



SYMPTOMS	POSSIBLE CAUSE	CORRECTIVE ACTION
1) No motor sound or movement of piston rod	• Actuator cable not connected to Controller • Blown fuse in Controller • Cable damaged	• Connect Actuator cable to the Controller • Fuse must be changed • Send Actuator for repair
2) Actuator motor runs, piston rod does not move	• Internal parts worn or damaged	• Send Actuator for repair
3) Actuator cannot lift load	• Motor worn or damaged • Dead Battery or Low Battery Charge	• Replace Actuator • Recharge Battery
4) Actuator piston rod only moves inwards not outwards	• Internal parts worn or damaged	• Send actuator for repair
5) Pressing Handset button, Actuator does not operate and/or no relay noise is heard from Controller	• Controller is defective • Handset is defective • Handset not properly plugged into Controller • Emergency Stop Switch activated	• Replace Controller • Replace Handset • Replug Handset (use lubrication on Handset connector) • Release Emergency Stop knob
6) Battery will not recharge	• Defective Battery	• Replace Battery
7) Power indicator (green light) on Controller does not light up.	• Power cord not connected • Fuse is blown • Defective Power Cable • Defective Controller	• Connect to mains • Fuse must be changed • Replace Cable • Replace Controller
8) Actuators run slowly or does not provide full force when using Battery Power	• Battery voltage low • Defective Actuator	• Charge or replace Battery • Replace Actuator
9) Controller – one channel functioning properly, one channel not operating.	• Controller is defective • Handset is defective	• Replace Controller • Replace Handset
10) Controller does not function on Battery, but relay clicking is heard.	• Battery completely dead • Battery defective	• Charge Battery • Replace Battery
11) Legs will not operate with Boom centered	• Controller requires re-initialization	• Re-initialize Controller
12) Boom will not rotate with Legs extended and spread	• Controller requires re-initialization	• Re-initialize Controller
13) Lift Actuator is only actuator operating	• Controller requires re-initialization	• Re-initialize Controller
14) Controller beeping while operating and plugged in to Mains	• Controller requires re-initialization	• Re-initialize Controller

2. Methods of Determining "Possible Cause" of LIFTEM Malfunction.

a) Detecting an Actuator Malfunction

- Disconnect POWER CORD from the 115 Volt AC MAINS and unplug BATTERY CABLE from the CONTROLLER.
- Disconnect cable of the malfunctioning Actuator from the CONTROLLER.
- Disconnect cable of a properly operating Actuator from the CONTROLLER.
- Connect the malfunctioning Actuator Cable into the CONTROLLER channel of the properly operating Actuator.
- Reconnect POWER CORD or BATTERY CABLE.
- Using the HANDSET BUTTON for the properly operating Actuator, operate the malfunctioning Actuator.
- If the malfunctioning Actuator does not work, it is defective. Contact MMP. If the suspected malfunctioning Actuator works, it is good.
- The next area to check is the CONTROLLER channel or HANDSET button of the suspect Actuator.

In the case where the Actuator or the Actuator cable is bad, an Audible clicking sound will be heard from the CONTROLLER when depressing the HANDSET button for the suspect Actuator.

b) Detecting a malfunctioning CONTROLLER channel or HANDSET button

- After using procedure 2a above and establishing the problem is not a bad Actuator, the CONTROLLER channel or HANDSET button must be suspect.
- Disconnect POWER CORD from the 115 Volt AC MAINS and unplug BATTERY CABLE from the CONTROLLER.
- Replace the HANDSET.
- Reconnect POWER CORD or BATTERY CABLE.
- Operate the suspect channel Actuator using the new HANDSET
- If the Actuator operates the HANDSET is bad, then simply replace the HANDSET.
- If the Actuator does not work the CONTROLLER has a bad channel. Replace the CONTROLLER

In either case, when the HANDSET button is pressed to operate the Actuator, there will be NO audible clicking sound from the CONTROLLER channel being exercised.

c) LIFT ACTUATOR does not operate

If the LIFT ACTUATOR does not move the BOOM up or down, when depressing the HANDSET buttons, the cause is usually improper installation of the LIFT ACTUATOR CABLE.

If the connector is not fully engaged, LIFT ACTUATOR will not function and a clicking sound will be audible in the CONTROLLER.

This cable has a jack with a rubber O-Ring that produces substantial drag when attempting to plug it into the receptacle of the CONTROLLER. This drag often prevents full engagement of the jack. In addition, the black or LIGHT GRAY SECURITY LOCK STRIP that "locks" in all the cable connectors to the CONTROLLER must be completely removed when installing the jack so it does not interfere with the installation.

Before installing the LIFT ACTUATOR CABLE, apply a small amount of lubricant on the O-Ring of the jack. Next, assure that the SECURITY LOCK STRIP is out of the way. Then push the jack all the way home into the appropriate CONTROLLER receptacle (Refer to Figure 6, Position 5). If the O-Ring of the LIFT ACTUATOR jack is not visible when viewing the CONTROLLER connector, the jack is properly installed.

d) Controller requires re-initialization

Safe Mode operating anomalies indicating the need for CONTROLLER re-initialization include:

- LEGS will not extend and/or spread, with the BOOM centered.
- BOOM will not rotate from center to left and/or right, with the LEGS extended and spread.
- CONTROLLER beeping in the **Safe Mode**, while operating an actuator, and the **Battery** voltage is not low or when the 115 Volt AC POWER CORD is plugged in.
- The LIFT ACTUATOR is the only operating actuator. This actuator operates independently of the **Safe Mode** software.

In the event that re-initialization is required, contact MILLENNIUM MEDICAL PRODUCTS Technical Support and specific guidance and directions will be provided.

CHAPTER 5

SLING MANUAL

Model 3624

Model 700

Sling Model 3624

IMPORTANT

Sling ***MUST*** be dated prior to being put into service. Follow instructions on sling label.

Prior to each sling use, conduct a thorough visual inspection by laying the sling out on a flat surface, to allow for complete visibility. Check for the following during inspection of the sling material:

- Thoroughly inspect for any wear, discoloration, abrasions, holes, cuts or frays.
- Thoroughly inspect stitched areas for broken, worn, pulled, or unraveled stitches.
- Thoroughly inspect for heat or bleach damage by noticing any color changes, brittle or puckered spots on the material.

Check for any sign of wear or defects on the sling straps, for example:

- Thoroughly inspect the sling straps for loose or frayed threads in any stitched area.
- While twisting loops and straps, thoroughly inspect the sling straps for noticeable discoloration or fatigue.
- Thoroughly inspect the sling straps for wear on all sides.

For safety reasons, if any of the above deviations are identified during inspection, use of the Model 3624 Sling must be discontinued and the sling discarded.

We strongly recommend that each sling be patient-specific and should be discarded after use with each patient. Should you choose to disregard this recommendation, it is imperative that sling integrity be verified prior to each use.

Model 3624 Sling ***must*** be discarded no later than two (2) years after it is put into service, regardless of inspection results.

Laundering Procedures for Sling Model 3624

Please distribute one copy of this procedure to:

1. File
2. Nurse Manager in each department using slings
3. Laundry Department

While staining may occur through normal patient usage, some stains indicate improper laundering, and may require user to discard the sling. Therefore, laundry staff and services must pay close attention to the laundering specifications to avoid directly impacting sling life.

CAUTION: DO NOT USE BLEACH!!

(OR PRODUCTS WITH BLEACH ADDITIVES!)

Hand or machine wash (gentle cycle) in mild soap solution at a maximum temperature of 80 degrees Celcius/176 degrees Fahrenheit. Rinse thoroughly and air dry. Do not dry clean. Wash slings separately from other items.

IMPORTANT

Sling must be visually inspected on a regular basis. Check for rips, tears, puckering, fraying and unraveling of any stitching. Should any of these conditions be observed, immediately remove sling from service and have it inspected by the manufacturer. **ALL REPAIRS MUST BE PERFORMED BY THE MANUFACTURER. MILLENNIUM MEDICAL PRODUCTS, INC. HEREBY WAIVES ALL LIABILITY SHOULD UNAUTHORIZED MODIFICAITONS OR REPAIRS BE PERFORMED.**

WARNING!!!

PROBLEMS CAUSED BY *INCORRECT LAUNDERING* OF MODEL 3624 SLING

1. Foam padding shrinks - *Washing or drying temperature too high.*
2. Fabric shrinks - *Washing or drying temperature too high.*
3. Webbing breaking down
   - *Incorrect washing agent used.*
   - *Bleach used.*
   - *Drying temperature too high.*

Please note: Incorrect laundering procedures void sling warranty. Please ensure the washing instructions are followed correctly. If above noted problems occur, contact your laundry department and nursing supervisor to establish immediate corrective action. Immediately remove any damaged slings from service. Improperly laundered slings can cause serious injury or death.

Warranty for Sling Model 3624

Millennium Medical Products, Inc. warrants that all slings are free from defects in materials and workmanship for a period of six months from the date of purchase.

This sling is manufactured to a very high tolerance and has been inspected prior to shipment. Due to the large variation in sling use and laundering techniques from facility to facility, Millennium Medical Products, Inc. is unable to guarantee the integrity of the sling under all operating conditions. Purchaser hereby accepts full responsibility for verifying the integrity of the sling prior to each and every use.

Construction: 100% polyester/nylon

Application Instructions for Sling Model 3624

General

Although LIFTEM is designed to be operated by a single caregiver, Millennium Medical Products, Inc. recommends that at least two caregivers be present in order to facilitate a safe patient lift and transfer.

When choosing a patient sling, factors including patient height, weight, body dimension (torso width, leg width) and medical condition must be considered. Whenever there is any question about appropriate sling size and style, consult a physician or medical professional.

The following procedure explains the application of the LIFTEM Model 3624 Sling when lifting and transferring a patient between the supine (on the back or face up) position and a wheelchair or commode, or transferring a patient between a wheelchair and a commode. The person performing the lift ***MUST*** be familiar with the safe operation and use of LIFTEM prior to lifting a patient.

Patient is Lying Down

1. Raise the bed rail on opposite side of bed (if applicable).
2. Log-roll the patient away from you onto his/her side.
3. Lay the sling, handles down, behind the patient and roll the sling in half (Figure 1).
4. Align the bottom of the sling even with the patient's tailbone.
5. Lay the patient flat again, then roll them toward you and proceed to pull the sling material that you had previously rolled up, through to the other side.
6. Lift the patient's legs, one at a time and pull the leg straps through and over the legs.

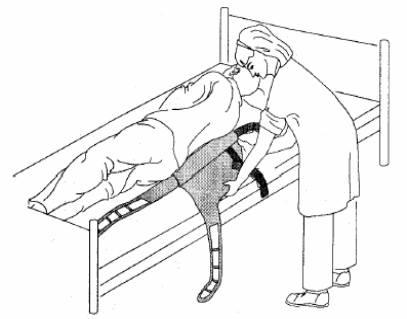


Figure 1 - Positioning the Sling for Patient in Bed

Patient in Sitting Position

1. If lifting from a wheelchair, apply brakes on chair. Lean the patient forward, enough to slide the sling, with handles on the outside, down behind the patient's back, to seat level (Figure 2).
2. Ensure the sling is centered both bottom and top (use middle stabilizing handle as a reference point) and rest patient back in seat.
3. From the front of the patient, tug both leg straps forward to ensure tautness and centering (both leg straps should extend out the same length).
4. Lift one leg and pull that strap under, then between legs and over the same leg. Repeat with other side.
5. If legs are in scissored position cross each strap underneath both legs to form a "cradle" effect.

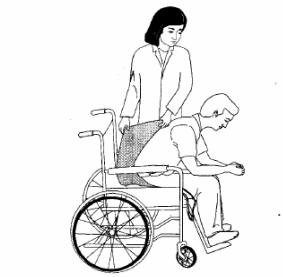


Figure 2 - Positioning the Sling Behind a Seated Patient

CAUTION: NEVER PUSH OR PULL SLING WHEN POSITIONING THE PATIENT!!!

Attaching Sling Model 3624 to the LIFTING BAR

General Information

Decide in what position the patient should be in when lifted.

To lift the patient in a seated position, use a shorter set of loops at the shoulders and a longer set of loops at the legs. This places the patient's head higher than his/her legs.

To lift in a reclined position use a longer set of loops at the shoulders and a shorter set of loops at the legs.

This will allow the patient's head to be level with his/her legs.

Attach the back loops to the hanger by slipping the right back loop over the right back hook and the left back loop over the left back hook.

NOTE: Left and right refer to the patient's left and right.

Configuring the Sling for Normal Use

1. Run the right leg strap under the patient's right leg and attach to the left front hook. (Figure 3) **Note: For commode use attach the right leg strap to the right front hook.**

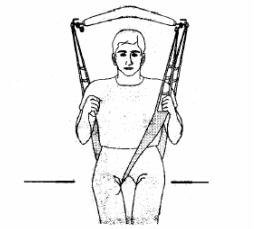


Figure 3 - Configuring the Sling - Step 1

2. Run the left leg strap under the patient's left leg and attach to the right front hook (Figure 4).

NOTE: **For commode use attach the left leg strap to the left front hook.**

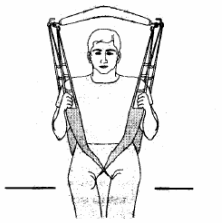


Figure 4 - Configuring the Sling - Step 2

Configuring the Sling for Hammock Style

1. Run the right leg strap under both of the patient's legs and attach to the left front hook.
2. Run the left leg strap under both of the patient's legs and attach to the right front hook. (Figure 5)

Figure 5 - Configuring the Sling for the Hammock Position

SLING SIZE CHART

Patient Weight (lbs.)	Under 350	440 lbs.	600 lbs.	1000 lbs.	1000 lbs.
Sling Size	MEDIUM	LARGE	XL	XXL	XXXL

Stretcher Sling Model 700

IMPORTANT

Sling ***MUST*** be dated prior to being put into service.

Prior to each sling use, conduct a thorough visual inspection by laying the sling out on a flat surface, to allow for complete visibility. Check for the following during inspection of the sling material:

- Thoroughly inspect for any wear, discoloration, abrasions, holes, cuts or frays.
- Thoroughly inspect stitched areas for broken, worn, pulled, or unraveled stitches.
- Thoroughly inspect for heat or bleach damage by noticing any color changes, brittle or puckered spots on the material.

Check for any sign of wear or defects on the sling straps, for example:

- Thoroughly inspect the sling straps for loose or frayed threads in any stitched area.
- While twisting loops and straps, thoroughly inspect the sling straps and buckles for noticeable discoloration or fatigue.
- Thoroughly inspect the sling straps and buckles for damage or wear on all sides.

For safety reasons, if any of the above deviations are identified during inspection, the Model 700 Sling must be discontinued and the sling discarded.

We strongly recommend that each sling be patient-specific and should be discarded after use with each patient. Should you choose to disregard this recommendation, it is imperative that sling integrity be verified prior to each use.

Model 700 Sling ***must*** be discarded no later than two (2) years after it is put into service, regardless of inspection results.

Laundering Procedures For Stretcher Sling Model 700

Please distribute one copy of this procedure to:

1. File
2. Nurse Manager in each department using slings
3. Laundry Department

CAUTION: DO NOT USE BLEACH, BLEACH ADDITIVES, MINERAL SPIRITS OR THINNERS!!!

DO NOT MACHINE WASH!!!

Wipe down with mild soap solution at a maximum temperature of 80 degrees Celcius/176 degrees Fahrenheit or with Windex or an Antimicrobial or Spray Type Surface Cleaner. Rinse thoroughly and air dry. Do not dry clean.

IMPORTANT

Sling must be visually inspected on a regular basis. Check for rips, tears, fraying and unraveling of any stitching. Check integrity of plastic buckles. Should any of these conditions be observed, immediately remove sling from service and have it inspected by the manufacturer. **ALL REPAIRS MUST BE PERFORMED BY THE MANUFACTURER. MILLENNIUM MEDICAL PRODUCTS, INC. HEREBY WAIVES ALL LIABILITY SHOULD UNAUTHORIZED MODIFICAITONS OR REPAIRS BE PERFORMED.**

Warranty for Sling Model 700

Millennium Medical Products, Inc. warrants that all slings are free from defects in materials and workmanship for a period of six months from the date of purchase.

This sling is manufactured to a very high tolerance and has been inspected prior to shipment. Due to the large variation in sling use and laundering techniques from facility to facility, Millennium Medical Products, Inc. is unable to guarantee the integrity of the sling under all operating conditions. Purchaser hereby accepts full responsibility for verifying the integrity of the sling prior to each and every use.

Construction: Vinyl Laminated Nylon

Application Instructions for Stretcher Sling Model 700

General

This procedure explains the application of the LIFTEM STRETCHER SLING SYSTEM when lifting or transferring a patient in the supine (on the back or face up) position. The person performing the lift ***MUST*** be familiar with the safe operation and use of LIFTEM, prior to lifting a patient using the STRETCHER SLING SYSTEM.

1. The STRETCHER SLING SYSTEM consists of the following Sub-assemblies and parts:

a) Two (2) ARCHES with END CAP/PLATES, QUICK RELEASE PINS and END HOOKS.

b) One (1) CENTER RAIL - 2 inch x 32-inch square tube.

c) One (1) MOVEABLE CENTER OF GRAVITY LOCATOR (MCGL) mounted to CENTER RAIL.

d) Two (2) 72 inch long ALUMINUM POLES.

e) One (1) 36 inch wide x 72 inches long FABRIC STRETCHER SLING.

2. STRETCHER SLING SYSTEM Assembly Procedure (See attached photographs)

a) Using the QUICK RELEASE PIN attached to the BOOM or the 5/16 inch diameter x 1½ long shoulder bolt w/lock nut; attach the U bracket on the top of the CENTER RAIL, to the end of the LIFT BOOM, either the 600 or 700 pound LIFT POINT.

b) Mount the two (2) ARCHES - one on each end of the CENTER RAIL. Using the QUICK RELEASE PINS, insert the pin through the hole in the END CAP/PLATE of the ARCHES and through the mating holes in the CENTER RAIL, locking the ARCHES to CENTER RAIL. Make sure that the quick release pin end extends through the bottom hole of the CENTER RAIL and is locked in place.

c) If not already in place, insert the two (2) 70” long TUBES into each of the openings provided on the side of the FABRIC STRETCHER SLING. Two straps on each side of the FABRIC STRETCHER SLING are used to assemble the FABRIC STRETCHER SLING to the ARCH END HOOKS. These straps are attached to the FABRIC STRETCHER SLING and go around the 70” long TUBE. After the FABRIC STRETCHER SLING is positioned under the patient, assemble the ends of these straps through the ARCH END HOOKS so the hooks capture them.

d) Feed the STRAP CLIPS at each end of the FABRIC STRETCHER SLING through the loop attached to the ends of the TUBE and close to prevent the poles from inadvertently slipping out.

3. STRETCHER SLING SYSTEM Operation

a) Position LIFTEM for a normal patient lift and transfer.

b) Position the BOOM away from the patient and assemble the STRETCHER SLING SYSTEM as described above. Do not attach the FABRIC STRETCHER SLING at this time.

c) The FABRIC STRETCHER SLING is placed under the patient and the patient log rolled on the FABRIC STRETCHER SLING. If desired, to provide more comfort for the patient, the 70” long TUBES may be removed from each side of the FABRIC STRETCHER SLING and reinstalled after the FABRIC STRETCHER SLING is positioned under the patient.

d) Rotate the BOOM so that the STRETCHER LIFTING SYSTEM is positioned directly over the patient, making sure the BOOM is high enough not to interfere with the patient.

e) Lower the BOOM and connect the straps of the FABRIC STRETCHER SLING to the four (4) END HOOKS on the SPREADER BAR. Make sure the 70" long TUBES are properly installed in each side of the FABRIC STRETCHER SLING.

f) Conduct a "**Tilt Check**" by lifting the patient slightly off the bed so all weight has been transferred to the STRETCHER LIFTING SYSTEM. If the weight of the patient is not centered or evenly distributed, the sling/patient combination will tilt slightly to the right or left. If a tilt is observed, lower the patient to the bed and move the location of the 2" square tube by moving it, on the MCGL, in the opposite direction of the tilt. Then repeat the above procedure until the patient/sling combination is approximately level.

   A spring-loaded locking plunger, on one side of the MCGL, is used with a series of eleven holes in the 2" square tube that secures it in fixed positions on the tube. The MCGL, which is normally positioned in the center hole of the 2" square tube, can therefore be moved 5" left or right of center in one-inch increments.

   To reposition the 2" square tube, pull the knob of the locking plunger outward. It can be locked in the extracted position by rotating the knob left or right. Move the 2" square tube one inch to the next hole opposite the tilt direction. At this point, unlock the plunger to engage this hole in the 2" square tube. In this new position, conduct another tilt check.

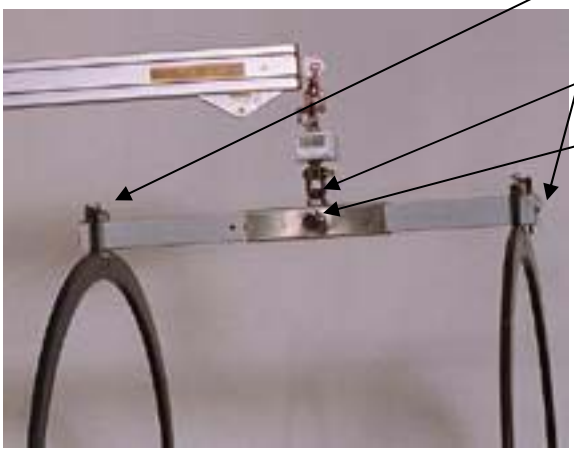
   Several tilt checks may be necessary until a very minimal tilt of the STRETCHER LIFTING SYSTEM is observed. In this condition, the sling/patient is easily maneuvered to position the patient for transfer.

STRETCHER SLING SYSTEM

Arch Mounting to Moveable Center of Gravity Locator

U - Bracket

Locking Plunger



CENTER RAIL AND MOVEABLE CENTER OF GRAVITY LOCATOR

End Hooks

ARCH

Sling Inspection Data Sheet

Use this Data Sheet each time a visual inspection is made. Prior to first visual inspection, you may want make extra copies to have on hand. Retain the Data Sheet(s) on file to make sure visual inspections are continuous and up to date.

Sling Model No._____ Sling Serial No._____ Date Put in Service ____/____/____

MM/DD/YY	INSPECTED BY	COMMENTS ON CONDITION

CHAPTER 6

SCALE INSTALLATION AND OPERATION

1. INTRODUCTION

LIFTEM can be supplied with an optional integral SCALE to measure the weight of patients, while performing a lift and transfer. The SCALE is shown in Figure 7 and is easily installed and operated.

The SCALE will display the weight of the patient in kilograms or pounds, as desired. It is powered from a 9 volt Lithium battery and measures weight to an accuracy of 0.1 % of the reading.

The maximum range is 700 pounds (317.3 kilograms)

Three buttons, located under the front panel, must be pressed to setup the SCALE and to take a weight measurement.

While viewing the SCALE from the front, left to right, the following applies to these buttons:

- ***LEFT Button - kg/lbs*** Select the weight measurement display in kilograms (kg), or pounds (lbs).
- ***CENTER Button - Operate*** Take the weight measurement
- ***RIGHT Button - Zero*** Used to zero out the sling/ hanger weight, not to be included with the patient's weight

The readout is digital and provides weight in increments of 0.1 kilograms and 0.1 pounds.

The patient's weight will be displayed for a period of approximately 60 seconds.

The SCALE will provide up to 3000 weight readings from a single 9-Volt battery.

2. INSTALLATION OF THE SCALE

LIFTEM is setup to lift patients weighing up to 700 pounds. To accomplish this, two LIFTING POINTS are provided on the BOOM of LIFTEM to which the LIFTING BAR can be attached. The outer most LIFT POINT capacity is 600 pounds. The capacity of the LIFT POINT positioned inward on the BOOM underside, is 700 pounds.

When using the scale, it is assembled to the appropriate LIFT POINT of the BOOM, between that LIFT POINT and the LIFTING BAR. See figure # 2, which shows the scale positioned at the 600 pound LIFT POINT. Installation of the SCALE follows:

a) Remove the LIFTING BAR or STRETCHER SLING SYSTEM from the LIFT POINT by unbolting the shoulder bolt/self locking nut assembly or removing the PUSH TO RELEASE PIN.

b) Install the SCALE to the LIFT POINT so that the readout is facing outward, away from the MAST of LIFTEM.

- An ANCHOR SHACKLE/SCREW PIN or a PUSH TO RELEASE PIN is used to mount/connect the SCALE to the BOOM.

For an ANCHOR SHACKLE and SCREW PIN

- Install the SCREW PIN through the SHACKLE and the LIFT POINT hole on the BOOM.
- Screw the PIN fully into the threaded part of the SHACKLE to secure the SCALE to the BOOM LIFT POINT. Make sure the threads of the PIN are fully engaged in the SHACKLE. Assemble the LIFTING BAR or STRETCHER SLING SYSTEM to the bottom of the SCALE. Use the same shoulder bolt/self locking nut assembly that secured the LIFTING BAR to the BOOM LIFT POINT. Tighten the self-locking nut fully.
- The LIFTING BAR or STRETCHER SLING SYSTEM should be free to rotate about its connection to the bottom of the SCALE.

For a PUSH TO RELEASE PIN

- Insert the PUSH TO RELEASE PIN fully through the bar on the top of the SCALE and the LIFT POINT on the BOOM.
- Assemble the LIFTING BAR or STRETCHER SLING SYSTEM to the bottom of the SCALE. Use the same PUSH TO RELEASE PIN that secured the LIFTING BAR to the BOOM LIFT POINT.
- The LIFTING BAR should be free to rotate about its connection to the bottom of the SCALE.

3. OPERATE THE SCALE AND WEIGH THE PATIENT

Three steps are necessary to weigh a patient:

a) Viewing the SCALE's digital readout panel, select the appropriate readout in **kg** or **lbs** by pressing the Left Button under the front panel of the scale. The units of **kg** or **lbs** will be displayed on the left side of the digital SCALE panel.

b) Assemble the SLING to the LIFTING BAR or STRETCHER SLING SYSTEM (including FABRIC STRETCHER SLING) and zero out the weight of these parts. Depress the "Zero" button (right button) momentarily. "0" will pan across the digital display for a few seconds then the display will read "0.0".

c) Remove the SLING or FABRIC STRETCHER SLING and then position the patient into the sling on the bed and attach the SLING to the LIFTING BAR or the FABRIC STRETCHER SLING to the STRETCHER SLING ARCH. Carefully lift the patient free of any support such as the bed or wheel chair. Once the motion is stabilized press the "Operate" button (center button) to weigh the patient. The digital readout will show an increasing number and the weight will be displayed in a short period of time. The "Operate" button can be depressed several times while stabilized to repeat the weight measurement. The weight will be displayed for about 60 seconds.

4. IMPORTANT POINTS

a) MAKE SURE ALL ASSEMBLY HARDWARE IS TIGHT AND SECURE.

b) Make sure the SCALE readout faces away from the MAST when installed.

c) Zero out the weight of the SLING and LIFTING BAR or STRETCHER SLING SYSTEM before weighing the patient. Make sure it is not included in the patient weight measure.

d) Never zero out the SCALE with the patient in the lift. It will provide a false reading of patient weight.

e) Make sure ONLY the SLING supports the patient and that motion is stabilized before making the weight measurement.

f) If the weight display turns off before you are able to view it, simply press the "Operate" button again.

5. MAINTENANCE AND RECALIBRATION

a) Discharged Battery

The single 9-volt battery will provide approximately 3000 readings before replacement. An indication will appear on the SCALE display, when battery replacement is required. Access to the battery is through the bottom plate of the SCALE. Remove the two screws and the plate to replace the battery.

b) Recalibration

It will be necessary, from time to time, to determine that the SCALE weight readings are within the calibrated accuracy requirements. This accuracy is stated as +/- 0.1 % of the reading. For example, a reading of **200 pounds** indicates the true weight is between **199.8 pounds** (200 - 0.2) to **200.2 pounds** (200 + 0.2). Occasionally this calibration should be verified and or the scale re calibrated. Millennium Medical recommends a recalibration cycle of once a year.

A check of the SCALE accuracy can be accomplished anytime by measuring objects whose weights have been verified by other means. If discrepancies are observed in the range of +/- 2.0%, it is possible the SCALE needs to be re calibrated. Citing the same example as above, readings lower than 196 or higher than 204 pounds on a 200 pound weight should trigger a concern for re calibration of the SCALE. The SCALE should be returned to Millennium Medical Products to be re calibrated.

c) Repair

The only repair recommended by the user is a replacement of the battery. For any other repair in the event of a problem, return the SCALE to Millennium Medical Products.

6. WARRANTY

The SCALE is warranted for a period of one year for all manufacturing defects and for accuracy of readings. Attempts to adjust electronics or damage of the SCALE due to improper handling or use will void the warranty.

CHAPTER 7

MAINTENANCE PROCEDURES

Perform the following service and maintenance procedures on a regularly scheduled basis to keep LIFTEM functioning at optimum performance for as long as possible.

Remove power from unit before performing any maintenance operations except charging the BATTERY.

Weekly Service and Maintenance

On a weekly basis, or at more appropriate intervals considering usage and storage environments, clean any dust and dirt off the LIFTEM by wiping surfaces with a damp cloth moistened with lukewarm water.

Monthly Service and Maintenance

On a monthly basis, or at more appropriate intervals considering usage, perform the following LIFTEM Monthly Operation Verification Procedure.

a) Objective:

The objective of this procedure is to verify the integrity of LIFTEM on a monthly basis.

b) General:

The Verification Procedure consists of:

- RECORDS REVIEW
- PHYSICAL CHECKS AND MEASUREMENTS
- OPERATIONAL TEST
- SAFETY SOFTWARE VERIFICATION

Data Sheets are provided on pages 39 and 40 to record the results of this procedure. These sheets should be completed and filed for reference during subsequent checks.

c) Records Review:

Review the Lift Maintenance Records and verify that the periodic maintenance procedures specified in Chapter 7 of the Operations Manual have been satisfactorily performed. Perform and/or complete any overdue procedures.

d) Physical Checks And Measurements:

The purpose of these Checks and Measurements is to insure that LIFTEM has not been damaged or that the position or location of any key parts has not shifted or been damaged. Record all results on the Data Sheet.

1) Wipe down LIFTEM using a damp cloth and lukewarm water and insure that all hardware (nuts, bolts, etc.) is complete and tight. Inspect for damage.
2) Measure distance from FLOOR to TOP of CHEEK PLATES.
3) Measure distance from FRONT of LEGS to the LIP on the back of the BASE, with LEGS

retracted.

4) Measure distance from TOP of the MAST to CHEEK PLATE upper mounting BOLT CENTER LINE.
5) Measure distance from CENTER to CENTER WIDTH between REAR CASTER mounting BOLTS.
6) Verify presence of required decals and tags.

e) Operational Test:

The purpose of the Operational Test is to verify that LIFTEM continues to meet its basic functional requirements. Record all results on the Data Sheet.

1) Setup LIFTEM to operate.
2) Lock REAR CASTERS. Using HANDSET; Extend LEGS fully.
3) Measure distance from FRONT END of LEGS to BACK of BASE Lip with LEGS fully extended and not spread.
4) Using HANDSET; Spread LEGS fully.
5) Measure CENTER to CENTER WIDTH between FRONT CASTER Mounting BOLTS.
6) Position the BOOM in the CENTER and Lower the BOOM until it stops.
7) Measure distance between FLOOR and 600-Pound LIFT POINT HOLE CENTER.
8) Raise the BOOM until it STOPS. LIFT ACTUATOR should have traveled to its full extension.
9) Measure distance between FLOOR and 600-Pound LIFT POINT HOLE CENTER.
10) Measure extension of the LIFT ACTUATOR from the GROOVE near END of the PISTON SHAFT to FRONT of CAP on LIFT ACTUATOR HOUSING.
11) Inspect the LIFT ACTUATOR Piston Rod Eye, Bushing and Case Back Fixture for wear. (See LIFTEM Figure 8, Page 49.)
12) Inspect the inner and outer tubes of the LIFT ACTUATOR for deep scratches or dents. (See LIFTEM Figure 8, Page 49.)
13) Rotate the BOOM FULLY LEFT & FULLY RIGHT, 30° each way.
14) Return the BOOM to the CENTER POSITION and LOWER.
15) RETRACT and CLOSE LEGS.

f) Safety Software Verification:

The purpose of the Safety Software Verification Test is to verify that the Safety Software features built into the Controller are fully functional. Record all results on the Data Sheet.

1) Insure that LEGS are RETRACTED and CLOSED.
2) Using HANDSET; ROTATE BOOM to left and right. BOOM should move slightly and stop.
3) Spread LEGS fully.
4) ROTATE BOOM to left and right. Should move slightly and stop.
5) Close LEGS completely.
6) Extend LEGS fully.
7) ROTATE BOOM to left and right. Should move slightly and stop.
8) SPREAD LEGS fully.
9) ROTATE BOOM fully to right (30°).
10) ROTATE BOOM fully to left (30°).
11) RETRACT LEGS. Should move slightly and stop.
12) CLOSE LEGS. Should move slightly and stop.
13) Return BOOM to center position.
14) Retract and close LEGS.

NOTES: A. If deep inner or outer tube scratches, dents or elongated/worn bushings/holes are observed, the parts are to be removed and replaced.

B. If any unusual or abnormal sounds such as ticking, grinding or screeching occur when operating in the loaded or unloaded mode the LIFT ACTUATOR is to be removed and replaced.

C. Failure of any item in Section F indicates that CONTROLLER SAFETY SOFTWARE must be RE-INITIALIZED. Record any noises or abnormalities observed during the performance of this procedure.

LIFTEM® MKIV PERIODIC RETEST DATA SHEET

Serial Number: _____ Test Date: _____ Test Performed By: _____

	(Indicates expected response)
A. RECORDS REVIEW	
1. Periodic recommended Maintenance Records reviewed and any missed items completed.	(Yes)
B. PHYSICAL CHECKS AND MEASUREMENTS	
1. Wipe down LIFTEM, insure that all hardware (nuts, bolts, etc.) is complete and tight. Inspect for damage.	(Yes)
2. Measure distance from FLOOR to TOP of CHEEK PLATES.	(64"+/-1")
3. Measure distance from FRONT of LEGS to the LIP on the back of the BASE, LEGS retracted.	(49"+/-1/2")
4. Measure distance from TOP of the MAST to CHEEK PLATE upper mounting BOLT CENTER LINE	(11/16"+/-1/8")
5. Measure distance from CENTER to CENTER WIDTH between REAR CASTER mounting BOLTS.	(21"+/-1/2")
6. Required DECALS and TAGS are in place and LEGIBLE.	(Yes)
• Laminated "LIFTEM®" Key Operation Points" TAG on HANDLE BAR	(Yes)
• Hanging STOP SIGN on CHEEK PLATE	(Yes)
• DECAL / LABEL Installation:	(Yes)
• Product/Company Name & Serial No.	(Yes)
• HAND CONTROLLER – Push Button Functions	(Yes)
• CHEEK PLATE & LEGS – Yes and No Operating Points	(Yes)
• LIFT POINTS - □ 600 Pound / □ 700 Pound	(Yes)
• Maximum Capacity - □ 700 Pound	(Yes)
• Product Name - LIFTEM®	(Yes)
• DO NOT Push or Pull Lift with Patient Suspended (4 PLACES)	(Yes)
• POWER CORD – Use only to:	(Yes)
• When Relocating Lifting Bar	(Yes)
• PINCH POINT Warning	(Yes)
• Operate on LEVEL SURFACE	(Yes)
• "Manufactured" (Date followed by E or M)	(Yes)
C. OPERATIONAL TEST	
1. Setup LIFTEM to operate	(Yes)
2. Lock REAR CASTERS. Using HANDSET; Extend LEGS fully	(Yes)
3. Measure distance from FRONT END of LEGS to BACK of BASE Lip with LEGS fully extended and not spread.	(69 ½"+/-1/2")
4. Using HANDSET; Spread LEGS fully.	(Yes)
5. Measure CENTER to CENTER WIDTH between FRONT CASTER Mounting BOLTS.	(80"+/-1")
6. Position the BOOM in the CENTER and Lower the BOOM until it stops.	(Yes)

7. Measure distance between FLOOR and 600 Pound LIFT POINT HOLE CENTER.	(36" Maximum) [or 38.5" Maximum if Boom Height Adjustment has been made]
8. Raise the BOOM until it STOPS. LIFT ACTUATOR should have traveled to its full extension.	(Yes)
9. Measure distance between FLOOR and 600 Pound LIFT POINT HOLE CENTER.	(80" Minimum) [88.5" Minimum if Boom Height Adjustment has been made]
10. Measure extension of the LIFT ACTUATOR from the GROOVE near END of the PISTON SHAFT to FRONT of CAP on LIFT ACTUATOR HOUSING.	(15.69"+/-1/16")
11. Inspect the LIFT ACTUATOR Piston Rod Eye, Bushing and Case Back Fixture for wear. (See Notes A & B below and LIFTEM Figure 8, Page 49.)	(None observed)
12. Inspect the inner and outer tubes of the LIFT ACTUATOR for deep scratches or dents. (See Notes A & B below and LIFTEM Figure 8, Page 49.)	(None observed)
13. Rotate the BOOM FULLY LEFT 30°.	(30° ± 1° left)
14. Rotate the BOOM FULLY RIGHT 30°.	(30 ± 1° right)
15. Return the BOOM to the CENTER POSITION and LOWER.	(Yes)
16. RETRACT and CLOSE LEGS.	(Yes)
D. SAFETY SOFTWARE VERIFICATION (See Note C below.)	
1. Insure that LEGS are RETRACTED and CLOSED.	(Yes)
2. Using HANDSET; ROTATE BOOM to left and right. Should move slightly and stop.	(Yes)
3. Spread LEGS fully.	(Yes)
4. ROTATE BOOM to left and right. Should move slightly and stop.	(Yes)
5. Close LEGS completely.	(Yes)
6. Extend LEGS fully.	(Yes)
7. ROTATE BOOM to left and right. Should move slightly and stop.	(Yes)
8. SPREAD LEGS fully.	(Yes)
9. ROTATE BOOM fully to right (30°).	(Yes)
10. ROTATE BOOM fully to left (30°).	(Yes)
11. RETRACT LEGS. Should move slightly and stop.	(Yes)
12. CLOSE LEGS. Should move slightly and stop.	(Yes)
13. Return BOOM to center position.	(Yes)
14. Retract and close LEGS.	(Yes)

NOTES:

A. If deep inner or outer tube scratches, dents or elongated/worn bushings/holes are observed, the parts are to be removed and replaced.

B. If any unusual or abnormal sounds such as ticking, grinding or screeching occur when operating in the loaded or unloaded mode the LIFT ACTUATOR is to be removed and replaced.

C. Failure of any item in Section D indicates that CONTROLLER SAFETY SOFTWARE must be RE-INITIALIZED. Record any noises or abnormalities observed during the performance of this procedure.

15. Record Comments:

_____

_____

_____

_____

When LIFTEM is Disassembled for Transport or ACTUATOR Change

Apply Food-Grade Teflon Anti-Seize Lubricant (McMaster-Carr Part Number 1404 K11) to the Teflon thrust bearing using the following procedure (see photo):

- Remove the two acorn nuts that hold down the "L" SHAPED BRACKETS to the MAST RETAINER.
- Loosen the two screws that hold the "L" SHAPED BRACKETS to the MAST using a 3/16 Allen Hex Key and slide them out of the way. Temporarily tighten.
- Remove the four hex head screws that hold down the MAST BUSHING CLAMP PLATE and remove the two CLAMP PLATES.
- Push back on the MAST in the direction away from the legs and pull out the FRONT MAST BUSHING.
- Lubricate the vertical bearing surface of the FRONT MAST BUSHING using the lubricant specified above.
- Push the MAST in the direction away from the legs and replace the FRONT MAST BUSHING.
- Replace the two MAST BUSHING CLAMP PLATES and screws.
- Loosen the screws and slide down the "L" SHAPED BRACKET down the MAST over the screws left protruding out of the REAR MAST BUSHING. Retighten the screws holding them to the MAST.
- Replace and tighten the two acorn nuts.

Quarterly Service and Maintenance

On a quarterly basis, connect LIFTEM to 115 Volt AC MAINS for complete BATTERY charging.

Triennial Service and Maintenance

Every three years replace "O" Rings on all connections to the CB14 CONTROLLER using LINAK "O" Rings. Lubricate "O" Rings with white Vaseline to facilitate installation. Insure that the socket is clean and undamaged.

Quadrennial Service and Maintenance

Every four years replace the BATTERY with a new unit. Return the BATTERY to MILLENNIUM MEDICAL PRODUCTS for proper disposal.

LIFTEM Figures

MILLENNIUM MEDICAL PRODUCTS, INC.

790A PARKWAY BLVD.
BROOMALL, PA 19008
PH: 610 – 541 – 0170
FX: 610 – 561 – 0166
www.mmpliftem.com

Top View

Side View

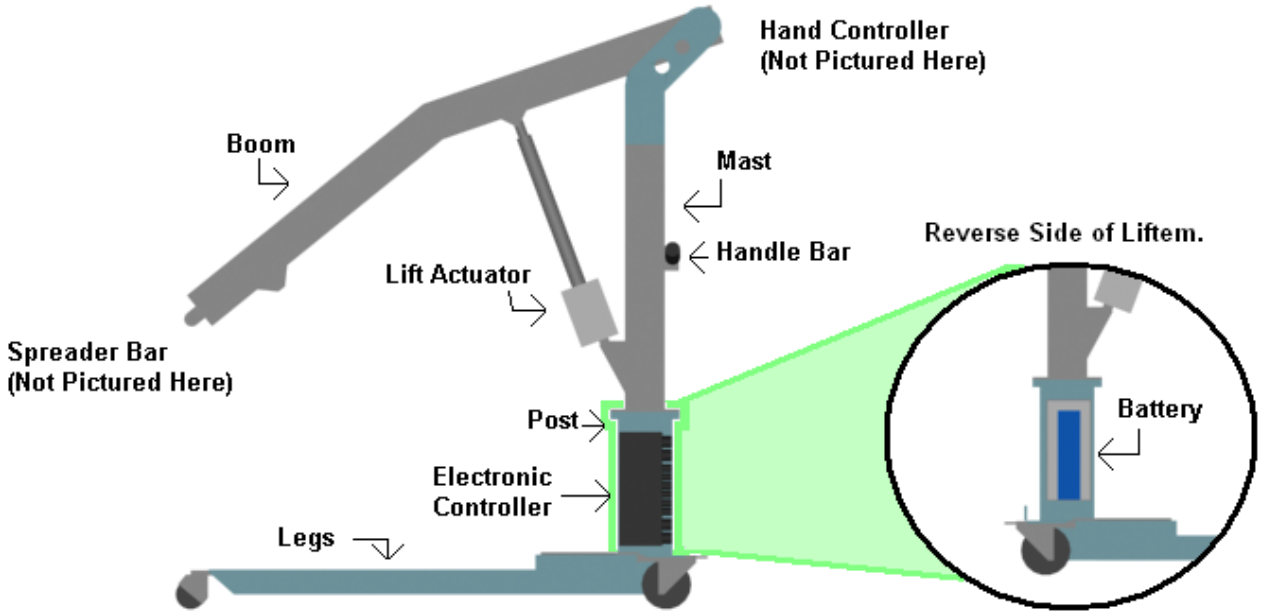


FIGURE 1

Liftem in Stored Configuration
with Legs Closed and Retracted
DO NOT ATTEMPT LIFT OR TRANSFER IN THIS CONFIGURATION

FIGURE 2

Liftem with Legs Deployed
READY TO LIFT AND TRANSFER PATIENT

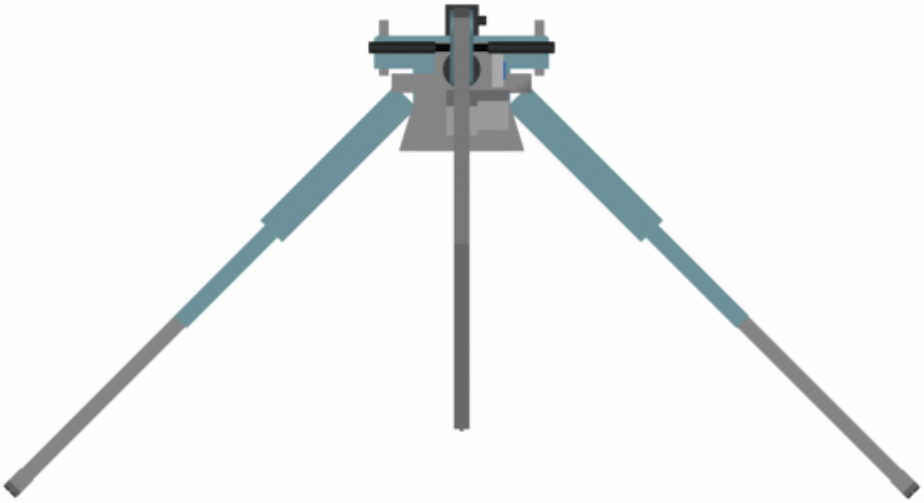


FIGURE 3

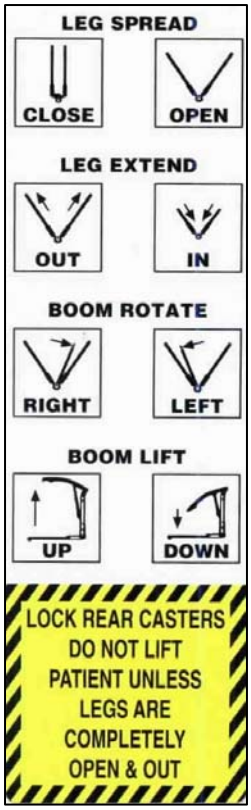
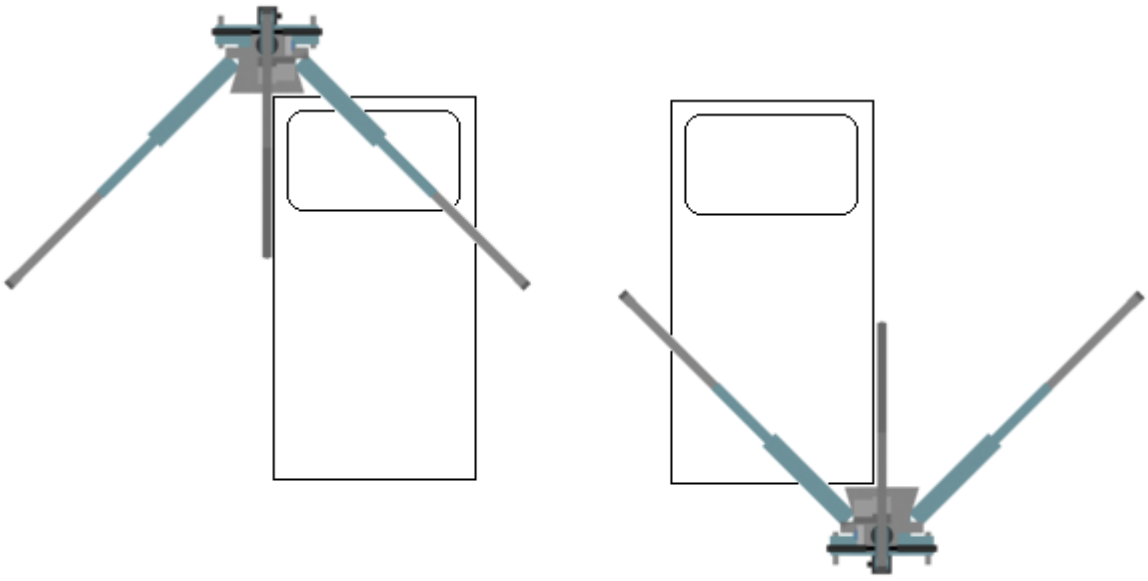


FIGURE 4

Handset

Optimal Liftem Positions



Alternative Liftem Positions

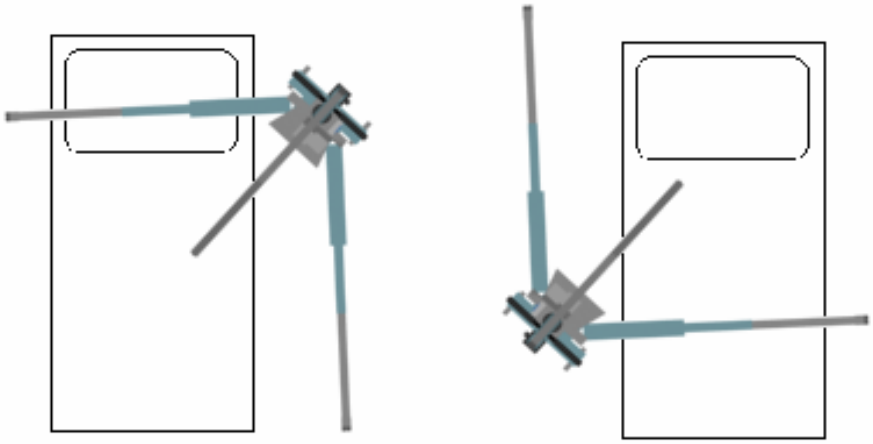


FIGURE 5

CONTROLLER Cable Connection Diagram

The Following is the interconnection diagram for the CONTROLLER. The five (5) cables for each Actuator, Battery, Handset, and Power Cord.

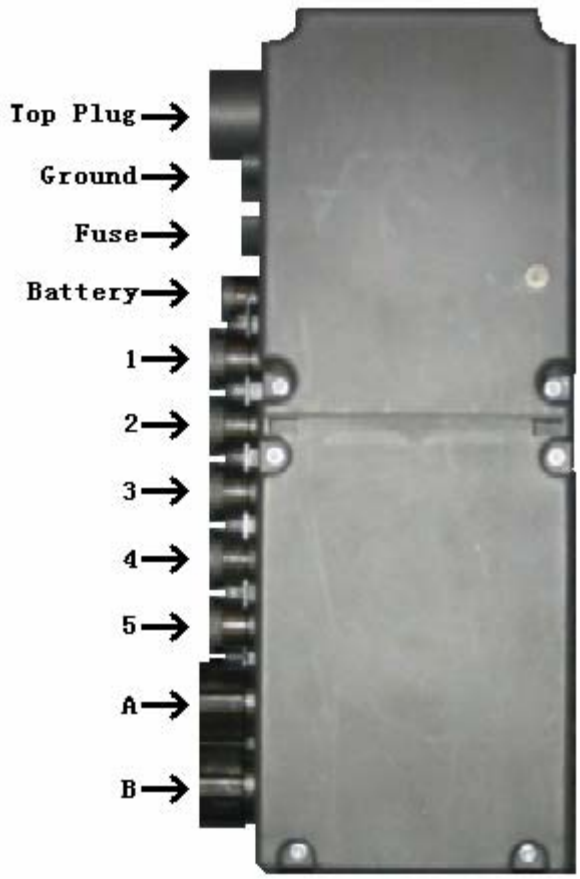
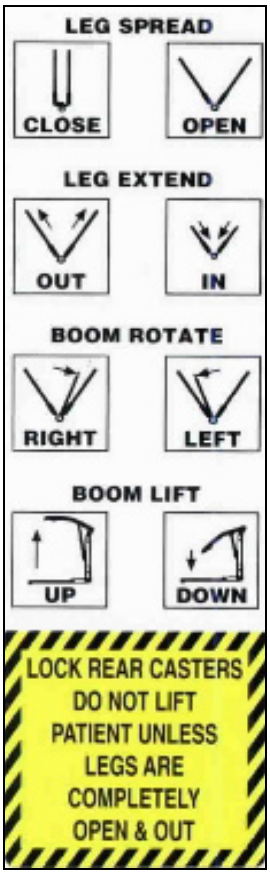
Function	CONTROLLER	Hand Set
Top Plug – 115V Power Battery – Battery Power Cord 1 - Leg Extend Actuator 2 - Leg Extend Actuator 3 - Leg Spread Actuator 4 - BOOM ROTATE Actuator 5 - Boom Lift Actuator A - Handset B - Not used.		

FIGURE 6

LIFTEM SCALE

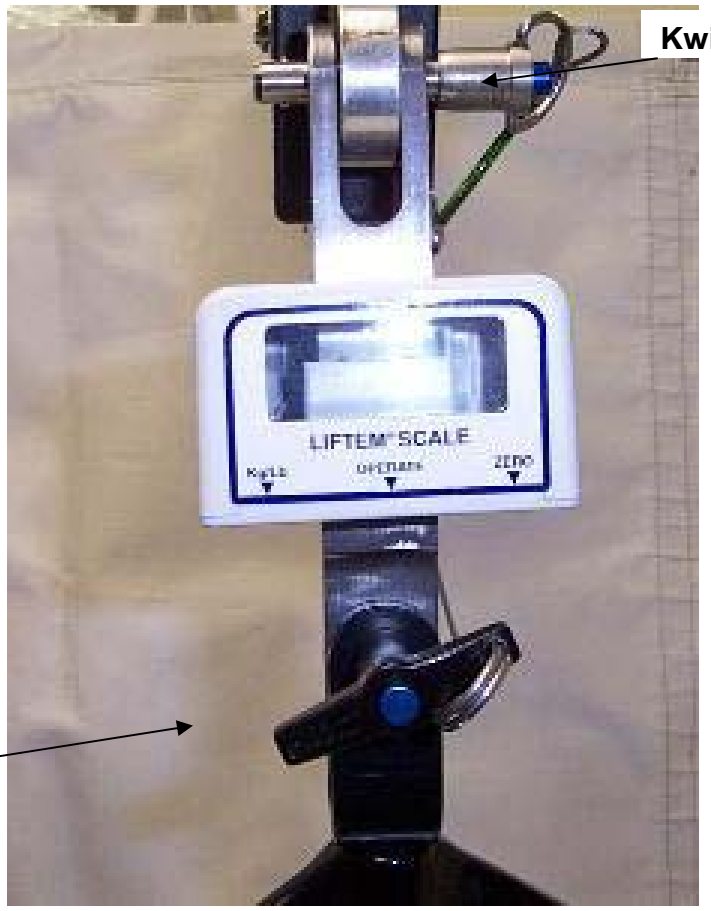


FIGURE 7

Lift Actuator Inspection Illustrations

1. Piston rod eye, back fixture and bushings:

Check for damaged or deformed material on the hoist, the bolts and actuator fixing points. This could include worn bolts, rear clevis, or piston rod eye.

Check to make sure the bushings are placed correctly and that they are not worn or damaged. The picture to the right shows a bushing that is starting to come out of the piston rod eye. This should be corrected.

If worn out, damaged or deformed parts are found on the hoist or actuator, then replace those parts before operating the lift again.

Worn Bushing

Worn Piston rod eye

2. Scratches and damaged tubes:

Check the inner and outer tube for deep scratches and dents. These deep scratches or dents can cause a stress concentration, which can weaken the tubes under load.

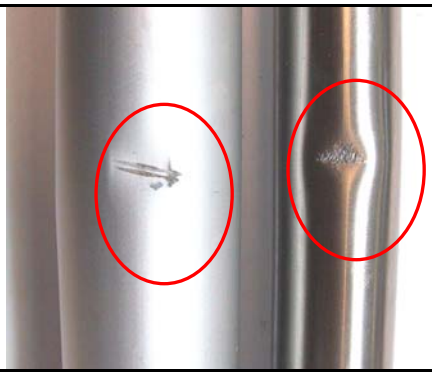


FIGURE 8

* If deep inner or outer tube scratches, dents or elongated/worn bushings/holes are observed, the parts are to be removed and replaced.

** If any unusual or abnormal sounds such as ticking, grinding or screeching occur when operating in the loaded or unloaded mode the LIFT ACTUATOR is to be removed and replaced.

Contact Information:

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