

ASSEMBLY INSTRUCTIONS

LIFTEM[®]

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LIFTEM[®] MK IV ASSEMBLY PROCEDURE

INTRODUCTION

1. LIFTEM[®] is normally shipped partially disassembled, and consists of the following six (6) sub-assemblies:
 - a. BASE ASSEMBLY
 - b. Aluminum MAST ASSEMBLY
 - c. Aluminum BOOM ASSEMBLY
 - d. LIFT ACTUATOR
 - e. LIFTING BAR w/Mounting Hardware
 - f. HANDLE BAR ASSEMBLY
2. No special skills are required for the assembly process, which can normally be completed by one person. It may be beneficial to have another individual available during the installation of the LIFT ACTUATOR and BOOM ASSEMBLY. A TOOL KIT is included to assist in the assembly.
3. Prior to starting the assembly procedure, it is suggested that the OPERATIONS MANUAL and TRAINING VIDEO be reviewed for familiarization with LIFTEM[®] operation. This will simplify the assembly procedure. The ASSEMBLY MANUAL and a CD-ROM containing the TRAINING VIDEO and all other LIFTEM[®] MANUALS, including the OPERATIONS MANUAL, is located inside the SHIPPING CRATE.
4. To remove the BASE ASSEMBLY from the SHIPPING SKID, unbolt the LIFT RETAINER BAR that is held in place with four (4) – 7/16” hex head screws.
5. Refer to Figure No. 5, which identifies the various assemblies and shows LIFTEM[®] in the final assembled configuration.
6. The BASE ASSEMBLY, Figure No. 1, is shipped with the CONTROLLER mounted on the side with all of the ACTUATOR cables, except the LIFT ACTUATOR cable and the BATTERY connected to the CONTROLLER. Upon completion of assembly, it will be necessary to connect the LIFT ACTUATOR cable and the BATTERY cable to the CONTROLLER prior to activating any of the HANDSET functions.
7. All of the cable plugs are secured to the CONTROLLER with a plastic SECURITY LOCK STRIP, which has been partially removed for shipping. Remove the SECURITY LOCK STRIP completely, then plug the LIFT ACTUATOR Cable #5 into CONTROLLER port marked #5. Then the BATTERY plugs into the unmarked port adjacent to Port #1. After the LIFT ACTUATOR and BATTERY plugs have been lubricated and securely inserted into the CONTROLLER and the connections verified, the plastic SECURITY LOCK STRIP should be pushed into place to secure all of the cable connections to the CONTROLLER.

CAUTION NOTE:

In order to protect the CONTROLLER circuitry, insure that the POWER CORD is disconnected from the 120 Volt AC MAINS, and that the BATTERY CABLE is unplugged from the CONTROLLER, prior to plugging or unplugging any ACTUATOR or HANDSET CABLE.



ASSEMBLY PROCEDURE

This procedure details the step-by-step assembly of the lift and these instructions are a guide to complete that process. Since the procedure is simple, a person skilled in the use of simple tools and mechanical devices may elect to deviate from this procedure, however it is strongly recommended that this procedure be followed as closely as possible.

Ample space, approximately eight feet (8') by eight feet (8') is needed to complete the assembly process. Access to 115/120 VAC, single phase, power is also required to check the CONTROLLER battery charging function.

The TOOL KIT provided consists of the following:

- 1) 1 ea. – 3/8" Square Socket Driver Handle, 5 1/2" long
- 2) 1 ea. – 3/8" Square Drive Socket
- 3) 1 ea. – 3/4" Square Drive Socket
- 4) 1 ea. – 3/16" Allen Hex Key (small)
- 5) 1 ea. – 5/16" Allen Hex Key (large)
- 6) 1 ea. – 6 mm Allen Hex Key

Normally no additional tools are required for the assembly process.

Step 1. UNPACKING

The system is shipped on one (1) skid. Copies of the ASSEMBLY MANUAL, TOOLKIT and a CD-ROM containing a TRAINING VIDEO and the LIFTEM® OPERATIONS MANUAL, SLING MANUAL AND MAINTENACNE MANUAL are located in a corrugated box, along with the BATTERY, LIFT ACTUATOR and HANDLEBARS, inside the REUSABLE SHIPPING CONTAINER.

The REUSABLE SHIPPING CONTAINER consists of one skid-mounted box that includes:

- Wooden skid with cardboard base containing LIFTEM®.
- Corrugated top cover
- Corrugated sides (one piece)
- One (1) corrugated box
Containing LIFT ACTUATOR, HANDLE BAR, TOOL KIT (see **NOTE**, below)
- LIFTING BAR

NOTE: Depending on the accessories purchased with the lift, the REUSABLE SHIPPING CONTAINER **MAY** contain the following additional items.

1. SLING
2. SCALE
3. SPARE BATTERY
4. BATTERY CHARGER

Before disposing of or storing the REUSABLE SHIPPING CONTAINER check to determine that you have removed all items.

Remove the strapping tape that secures the corrugated top and sides of the container to the wooden skid. Remove the top cover and the sides to provide access to the inside of the container.



Remove the strapping ties that secure the items that are held in place on the BASE ASSEMBLY. Unpack the items from the corrugated box and place them aside, but clear of the skid so the BASE ASSEMBLY can be removed from the skid.

The BASE ASSEMBLY is secured in the middle with a wooden strut/frame that is bolted to the skid with four (4) 7/16" hex head bolts. Remove all four (4) bolts, two (2) on each side, and lift or slide the BASE ASSEMBLY off the skid. The lift is now ready to be assembled.

Unwrap the assemblies, placing the parts on the floor near the BASE ASSEMBLY. Lock the rear casters on the BASE ASSEMBLY and make sure the parts are not damaged.

As part of the BASE ASSEMBLY (see Figure No.1), the HAND CONTROLLER is connected to the CONTROLLER by a coiled cord assembly. This cord is wrapped around the BASE ASSEMBLY Post during shipping. Carefully unwrap the HAND CONTROLLER during the unpacking procedure and place it in a location where it will not be damaged during assembly.

The BATTERY should be removed from the corrugated box and mounted on the BASE ASSEMBLY opposite the CONTROLLER. The "O-Ring" on the cable plug should be lubricated with saliva or Vaseline and plugged into the unmarked port below Port #1 on the CONTROLLER. Make sure the plug is securely seated.

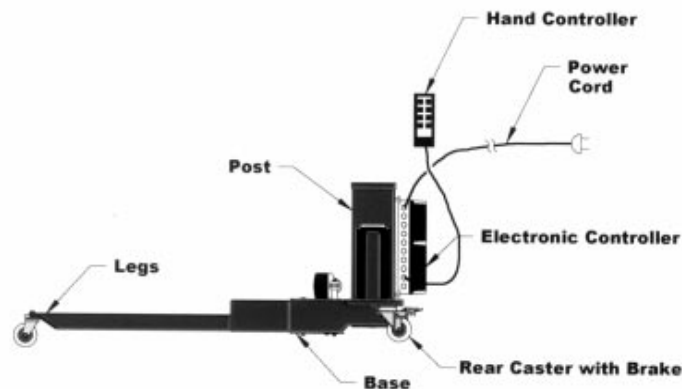


Figure No. 1 (Base Only)

Please note the CONTROLLER has been relocated to the left side of the base and the BATTERY is on the right with the POWER CORD mounted on the rear.



Step 2. MAST ASSEMBLY to BASE ASSEMBLY (Figure No. 2)

Millennium Medical Products has designed a MAST RETAINER to prevent inadvertent MAST disengagement. This MAST RETAINER is installed on the upper base of the MAST.

The HANDLE BAR is shipped with the HANDLE BAR CLAMP, BOLTS and T-NUTS as a sub-assembly. Place the MAST ASSEMBLY on the floor or table with the CHEEK PLATES (Figure No. 2) facing up. Using the 6-mm Allen Hex Key to loosen, **but not remove**, the HANDLE BAR CLAMPING BOLTS attached to the T-NUTS. Slide the HANDLE BAR ASSEMBLY T-NUTS into the slot on the MAST ASSEMBLY to approximately chest height. Tighten the bolts using the 6-mm hex key to lock the HANDLE BAR Assembly in place.

Prior to installing the MAST ASSEMBLY into the BASE ASSEMBLY, make sure that the ACORN NUTS have been removed from the MAST RETAINER BOLTS on the rear bushing, located on the top of the base. Verify the alignment of the MAST/POST TOP BEARING and the MAST ROTATE PIVOT CLEVIS. This positioning is shown at the top left corner of Figure No. 2. Note that the slot in the top of the PIVOT CLEVIS is parallel with the short side of the cutout in the MAST/POST TOP BEARING. This cutout is patterned after the cross section of the MAST ASSEMBLY.

No tools are required to complete this operation. Holding the MAST ASSEMBLY at the HANDLE BAR and positioning yourself between the LEGS of the BASE ASSEMBLY, lift the pipe end of the MAST ASSEMBLY and insert it through the rectangular cutout of the MAST/POST TOP BEARING. Make sure the MAST cross section is positioned to slide through the Bearing cutout and slowly lower it into the BASE ASSEMBLY POST until the two “L” SHAPED BRACKETS SLIDE over the MAST RETAINER BOLTS and the pipe slides over and engages the PIVOT CLEVIS in the bottom of the POST. You will not be able to see this engagement, however you will feel the seating as they mate. To aid this seating, wiggle the MAST ASSEMBLY slightly using the handlebars as the pipe meets the PIVOT CLEVIS. (See pictures below.)



To be sure the parts are properly seated, attempt to manually rotate the MAST ASSEMBLY clockwise/counterclockwise using the HANDLE BAR. The MAST ASSEMBLY will rotate only a few degrees and then stop.

As a further check, plug the POWER CORD from the CONTROLLER into a 120 VAC, 60 Hertz power source, spread and extend the legs using the “LEG SPREAD” AND “LEG EXTEND” buttons on the HAND CONTROLLER: then rotate the MAST ASSEMBLY electrically using the “BOOM ROTATE” button on the HAND CONTROLLER. The MAST ASSEMBLY should rotate freely, left or right, in response to your command.



If the MAST ASSEMBLY is improperly assembled, extract the MAST ASSEMBLY about 5 to 6 inches out of the BASE ASSEMBLY POST and attempt the procedure again. If this fails, you need to remove the MAST ASSEMBLY from the BASE ASSEMBLY POST and repeat the procedure.

Failure to properly assemble the MAST ASSEMBLY into the BASE ASSEMBLY POST is normally a result of improper alignment of the cutout in the MAST/POST TOP BEARING and the MAST ROTATE PIVOT CLEVIS (Figure No. 2, top left). This alignment can be obtained by manually rotating the MAST/POST TOP BEARING until the proper alignment is achieved.

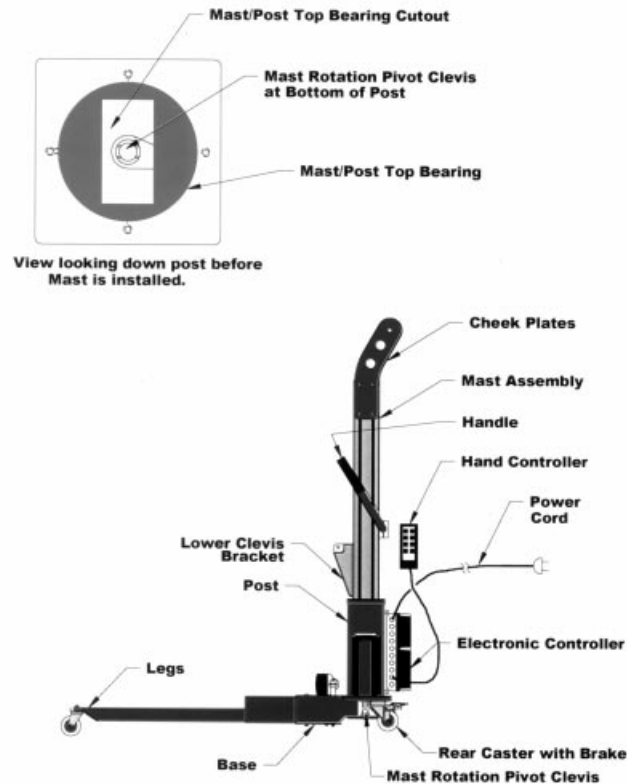


Figure No. 2 (Base & Mast Assembly)

Tips for seating the MAST ASSEMBLY:

- 1) Get a firm grip around the MAST ASSEMBLY as you lower it into the base. Work slowly and you'll feel the MAST ASSEMBLY slip into place.
- 2) Remember that the MAST ASSEMBLY will be facing forward, so there is little reason to rotate the MAST ASSEMBLY far from that point.

Unplug the CONTROLLER POWER CORD from the power source and unplug the BATTERY CABLE from the CONTROLLER.



Now that the MAST ASSEMBLY is in place, tighten the ACORN NUTS on the MAST RETAINER BOLTS so that the MAST ASSEMBLY is securely fastened to the BASE ASSEMBLY.

Step 3. BOOM LIFT ACTUATOR to MAST ASSEMBLY (Figure No. 3)

Make sure that the MAST ASSEMBLY is located approximately in the center position. The LIFT ACTUATOR is shipped with 3/8" diameter shoulder bolts installed on each end. Remove the bolt on the motor end of the LIFT ACTUATOR, as it will be used for the first part of the assembly.

Slide the motor end clevis of the LIFT ACTUATOR over the LOWER CLEVIS BRACKET that is part of the lower section of the MAST ASSEMBLY and insert the shoulder bolt to secure the lower half of the LIFT ACTUATOR to the MAST ASSEMBLY. The cable (motor side) end of the actuator should be on the left side of the MAST ASSEMBLY, as viewing it from the CONTROLLER side of the lift, to facilitate connecting the LIFT ACTUATOR to the CONTROLLER. Install the locking nut onto the bolt using the 1/2" Socket and the small Allen Wrench. Allow the LIFT ACTUATOR to rest in the forward position as shown in Figure No. 3.

Lubricate the "O-Ring" on the LIFT ACTUATOR cable with saliva or Vaseline and plug it into the CONTROLLER port marked #5. Make sure that the plug is completely inserted into the port and push the cable SECURITY LOCK STRIP into place. This completes the assembly of the LIFT ACTUATOR to the MAST ASSEMBLY.

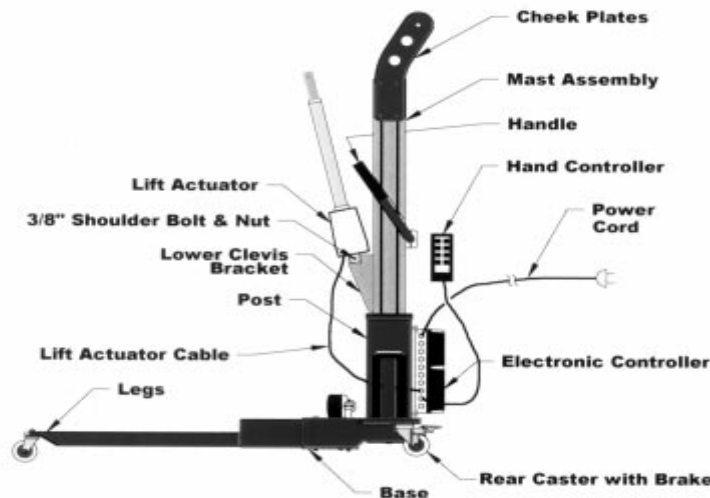


Figure No. 3 (Base, Mast and Lift Actuator Assembly)



Step 4. BOOM ASSEMBLY to BOOM LIFT ACTUATOR (Figure No. 4)

Remove the 3/8" shoulder bolt at the upper end of the LIFT ACTUATOR. Lift the BOOM ASSEMBLY, with the large hole end facing the MAST, and insert the BOOM Mounting bracket into the end of the BOOM LIFT ACTUATOR. Insert the Shoulder Bolt and tighten the nut on the bolt using the 1/2" Socket and the small Allen Wrench. This completes the assembly of the BOOM ASSEMBLY to the LIFT ACTUATOR.

Step 5. BOOM ASSEMBLY to MAST ASSEMBLY (Figure No. 4)

Remove the large shoulder bolt from the CHEEK PLATES at the top of the MAST Assembly, using the 3/4" Socket and the large Allen Wrench. Note: The shoulder bolt is provided with two 2 different size washers. These are used in the assembly of the BOOM ASSEMBLY to the MAST ASSEMBLY. Pivot the BOOM ASSEMBLY back toward and in between the CHEEK PLATES in the MAST ASSEMBLY. Insert the large Shoulder Bolt, with the large washer on the outside of the CHEEK PLATE, through the hole in the BOOM and the hole in the opposite CHEEK PLATE. Insert the small washer and nut on the threads of the shoulder bolt. Tighten the nut to the bolt using the 3/4" Socket and the large Allen Wrench. This completes the assembly of the BOOM ASSEMBLY to the MAST ASSEMBLY.

Manually move the BOOM ASSEMBLY up and down. If properly installed the BOOM ASSEMBLY will move up easily and return to the lower position under gravitational pull.

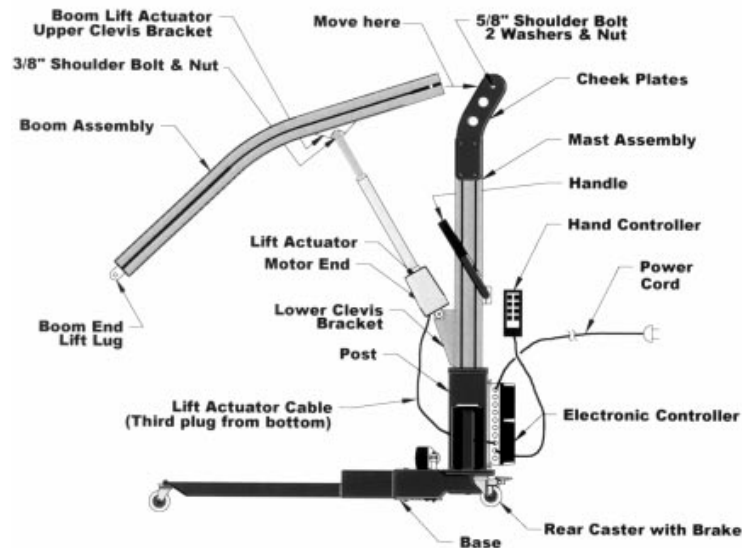


Figure No. 4 (Base, Mast, Lift Actuator & Boom Assembly)

Step 6. LIFTING BAR to BOOM ASSEMBLY (Figure No. 5)

Attached to the LIFTING BAR is a “U” bracket that mounts the LIFTING BAR to the lifting end of the BOOM ASSEMBLY. Remove the “push-to-release” pin from the open end of the swivel and attach it through the BOOM LIFTING LUG on the end of the BOOM ASSEMBLY. This completes the assembly of the LIFTING BAR to the BOOM ASSEMBLY.

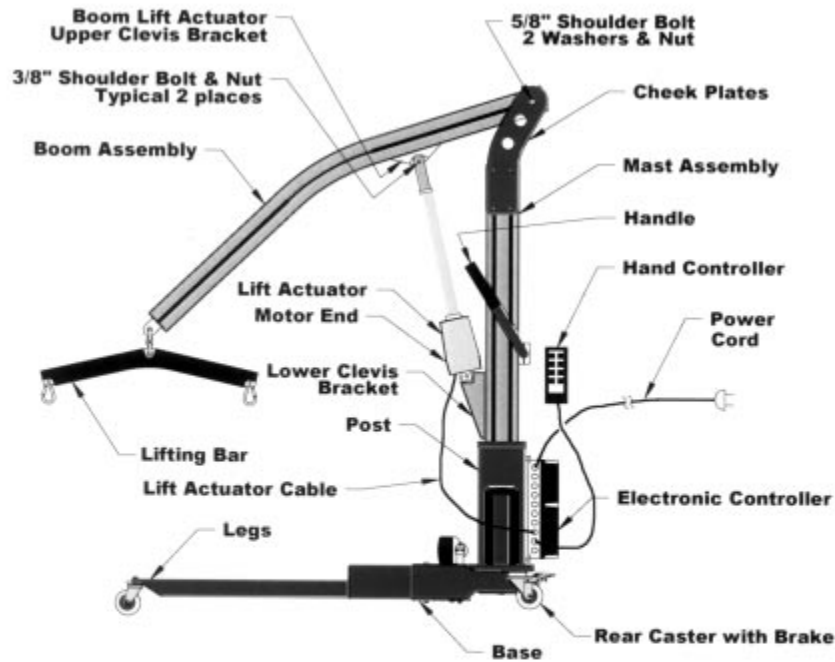


Figure No. 5

Step 7. OPERATIONAL CHECK

Plug the BATTERY CABLE into the CONTROLLER and the POWER CORD from the CONTROLLER into a 120VAC, 60-Hertz power source. Using the HANDSET:

- 1 – The BOOM ASSEMBLY can be rotated only a slight amount (+/- 5 degrees) from the center if the LEGS of LIFTEM[®] are not fully deployed. When the LEGS are fully deployed, a safe platform is provided to eliminate the possible tipping of the lift when transferring a patient. Full deployment includes the LEGS being fully spread open (70 degrees) and fully extended (+20.67"). In this condition, the BOOM ASSEMBLY can be rotated a full +/- 30 degrees about the center, which allows the user to safely transfer a patient.
- 2 – Operation of the LEGS, BOOM and MAST is done electrically by depressing the appropriate HANDSET Push Button.
- 3 – Retracting the LEGS from the safe platform deployment is prevented, when the BOOM ASSEMBLY is beyond the +/- 5-degree center position. Accidental retraction of the LEGS is eliminated. It is necessary to return the BOOM ASSEMBLY to the center position to retract the LEGS.



4 – The BOOM ASSEMBLY can be moved up and down without restriction. This allows the user to position and set up the lift for a patient lift and transfer.

- Operate the “Leg Spread” OPEN Push Button until the LEGS are fully OPEN.
- Operate the “LEG EXTEND” Push Button until the LEGS are FULLY EXTENDED.
- Operate the “BOOM ROTATE” Push Button both to the full RIGHT and full LEFT positions, returning to center.
- Operate the “BOOM LIFT” Push Buttons to first the full UP position and then to the full DOWN position.

This completes the Operational Check of the system. Retract and close the LEGS. LIFTEM[®] is now ready to perform Patient Lifts and Transfers.

MILLENNIUM MEDICAL PRODUCTS, INC. LIMITED WARRANTY

Millennium Medical Products, Inc. (MMP) warrants, to the end-user, failures due to defects in materials and workmanship, for a period of one (1) year from the date of manufacture.

Additional conditions and limitations include:

- Manufacturer does not warrant the operation of the Equipment to be uninterrupted or error-free.
- Manufacturer’s limited warranty covers only those defects which arise as a result of normal use of the product, and does not apply to any:
 - Improper or inadequate maintenance;
 - Unauthorized modification or misuse;
 - Improper site preparation or maintenance;
 - Damage to the Equipment caused by improper use and negligence on the part of customer/user.
- If MMP receives, during the applicable warranty period, notice of a defect that is covered by MMP’s warranty, MMP shall either repair or replace the product, at its option. Any replacement product may be either new or like new, provided that it has functionality at least equal to that of any product being replaced.
- 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.