

**MODEL M690 / M690-ES**  
**PORTABLE CADAVER SCISSOR LIFT**  
**with ROLLERS**

**CAUTION**

Inspect unit and all components  
for any loosening that may have  
occurred during shipping

**CAUTION**

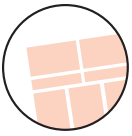
**DO NOT USE CLEANERS  
CONTAINING CHLORINE WHEN  
CLEANING STAINLESS STEEL**

**ATTENTION**

Review entire manual before  
starting assembly

**ATTENTION**

All images and Drawing in this manual  
may not represent your model.  
Refer to your particular project for  
exact specifications



## Safety information

**It is important that the information provided in this manual is observed. These instructions should be read carefully and observed fully before installation and initial operation.**

### WARNING

It is crucial that any work performed on Mortech Manufacturing Inc. manufactured items are carried out exclusively by skilled professionals who have the respective training. Improper use, maintenance, parts and service, or modification to the equipment may cause injury and/or damage. Use and maintain the equipment only for the purpose described in this manual. Use only Mortech Manufacturing Inc. prescribed approved parts and service. Use the equipment only as designed by Mortech Manufacturing Inc.

### BLOODBORNE DISEASE NOTICE

To reduce the risk of exposure to bloodborne diseases such as HIV-1 and hepatitis when using the equipment, follow the disinfecting and cleaning instructions in this manual.

### RECOMMENDED OPERATING SKILLS AND TRAINING

#### - SKILLS

Operators using the equipment need:

- ☐ A working knowledge of necessary procedures.
- ☐ The ability to carry out necessary service procedures.
- ☐ A complete understanding of the procedures described in this manual.

#### - TRAINING

- ☐ Read the this manual as prescribed
- ☐ Be trained on the use of the equipment.
- ☐ Practice with the equipment before using it in regular service.
- ☐ Be tested on their understanding of the equipment operation.
- ☐ Record their training.

### BEFORE USING THE EQUIPMENT

Personnel working with this equipment needs to read this manual. Assemble of the unit following set instructions, and perform any pre-service checks to confirm the units operates properly.

#### INSPECTING THE UNIT BEFORE USE

Please take time to inspect all shipment prior to signing delivery ticket. If concealed damage is discovered, save the carton and immediately contact carrier agent to initiate claim of damage.

### BE SURE TO CHECK!

- Are all components present?
  - Do the moving parts operate smoothly?
  - Is unit draining properly?
  - Are all nuts, bolts, and pins secured in place?
- If unit has an issue contact Mortech Manufacturing Inc.

### INSTRUCTION FOR HANDLING

Adhere to state and/or local certification and regulations for operation of forklift and/or pallet jack. Cargo is extremely heavy, be sure to have the necessary manpower as well as equipment to successfully unload shipment from transport. We recommend a forklift and/or pallet jack with the capacity to lift up to 2000 lbs. to remove cargo from transport.

The forklift can be used to unload receiving products safely by placing the load on the floor, maneuvering the forklift into position, tilting the mast forward to vertical position so the load will be level, lowering the load, and smoothly backing away without dragging. Once cargo is unloaded, positioning equipment for installation will once again require a forklift. Read all manual and note on installation of the unit before attempting installing.

The pallet jack can be used (with a loading dock and maneuverability on and off the transport vehicle) to unload receiving products safely. Maneuvering the pallet jack into position (in the appropriate position within the pallet), lifting the pallet then driving the pallet jack off the transport and safely into the place of installation.

### Range of Environmental Condition

Mortech Manufacturing, Inc. equipment shall be placed in a controlled environment (housing or housed unit) hindering the weathering effects on the installed units. The equipment will have minimal corrosive and eroding factors that can break down the stability and operation of Mortech Manufacturing Inc. equipment. The impact on the equipment by the operator utilizing water or corrosives in the medical procedures can be controlled and responsibility for the cleaning and maintenance placed upon that person. The effects of anthropogenic (man-made) gasses on the environment, such as carbon dioxide (CO2) that will be omitted from the unit should be minimal.

***Due to continuous innovation and product development this installation guide is subject to change without notice.***

**Please save these instructions for later use.**

**M690-SC****M690-SL****Allows Safe Loading And Unloading**

Easy-to-operate, highly maneuverable system eliminates need for manual lifting. Accommodates both standard and bariatric body trays.

**M690 Standard End Load****M690SC Standard End Load w/Scale****M690SE Standard Side/End Load****M690SE-SC Standard Side/End Load w/Scale****Capability**

- Lift control system incorporates a scissor action, hydraulic power lifting system and integral battery charger
- Battery-operated hydraulic lifting system is activated by two control switches to raise and lower body laden trays
- Lift is supplied with an integral dual-voltage battery charger which can be connected to a standard mains socket, eliminating the need for charging stations
- Lift is manufactured using heavy-duty stainless-steel tubular sections
- Locking device secures loads and helps prevent shifting
- Tables can carry up to 500 lbs./226 kg.
- The conveyor platform has five rollers for smooth loading action
- The narrow frame and four 6 in./15 cm. full-swivel solid casters provide smooth maneuverability into and out of tight spaces

**CAUTION**

When operating lift keep hand and feet clear of moving parts. Severe injury can occur

**ATTENTION**

When lift is not in operation, the unit's battery must be recharging

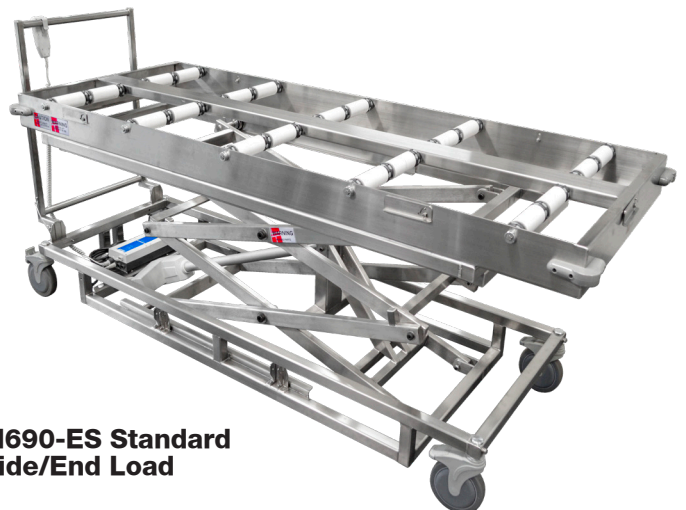
**Specifications**

Maximum Elevation - 93 in./236 cm.  
Minimum Elevation - 16-1/8 in./40 cm.

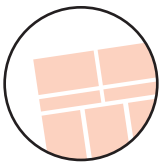
- Accommodates body trays that are 23 to 30 in. (58 to 76 cm) wide with flat bottoms
- Designed to extend from a minimum height of 15 in. (38 cm) and provide access to the fifth tier of storage racks at 79 in. (200cm)
- To aid in steering, (1) wheel has the ability to lock by using a manual pin swivel lock

**Optional items**

- Scale with Indicator
- Wall Mount Charging Station

**M690-ES Standard Side/End Load**





## Installation

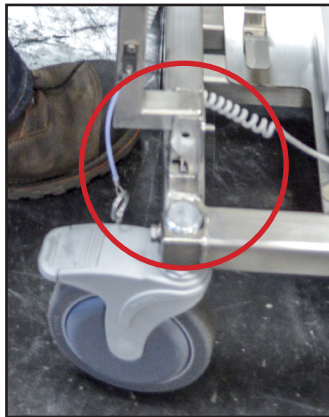
## ***M690 Portable Cadaver Scissor Lift w/Rollers***

### **SIDE-HANDLE OPERATION**



Remove quick-release pins securing handle from handle bracket

### **HANDLE REMOVAL**



After removing quick-release pins, pull handle gently up and away from bracket and frame



Gently lift up and away



Side handle brackets



### **HANDLE REPLACEMENT**



Gently place handle into bracket guides



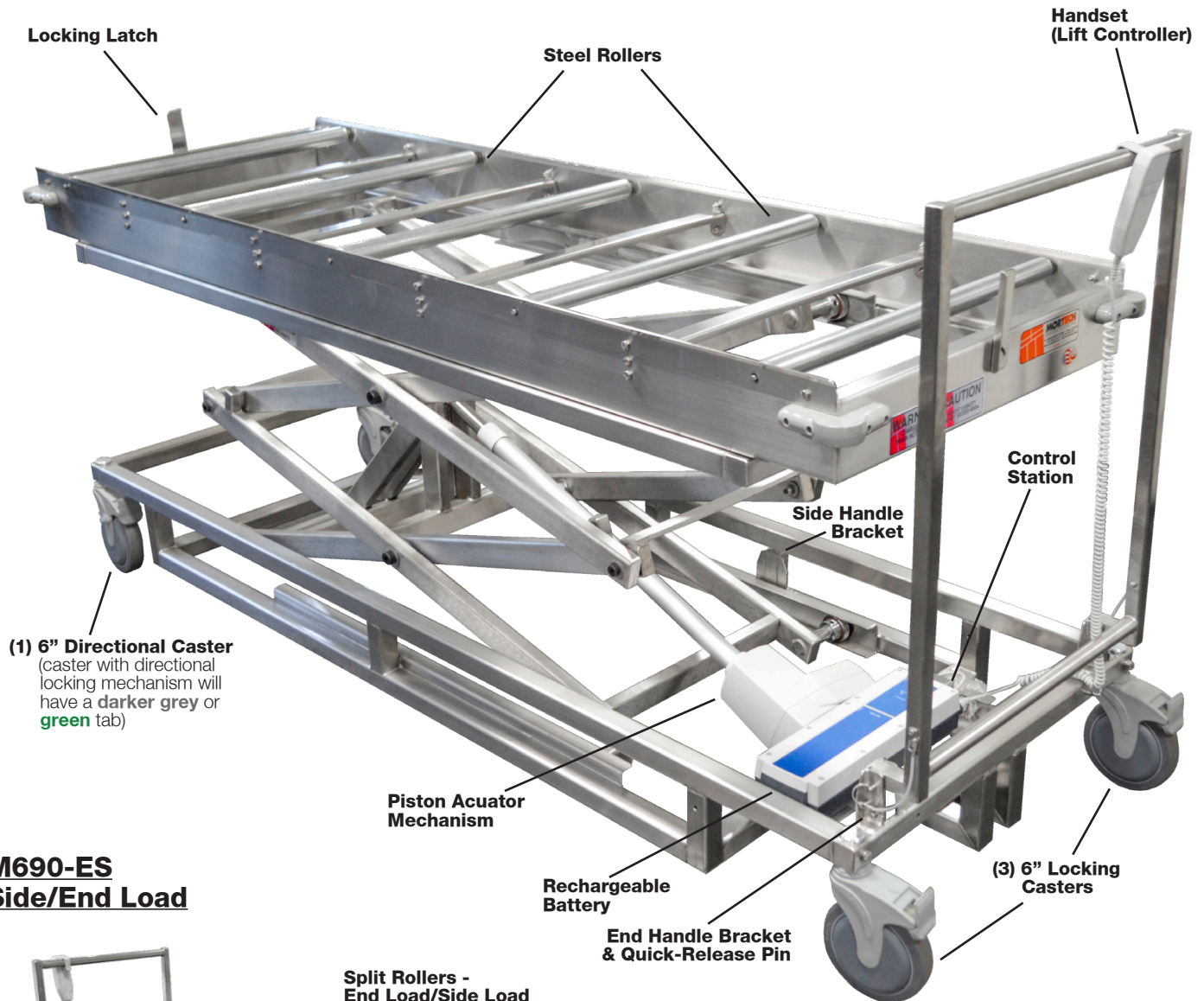
Insert quick-release pins to secure handle



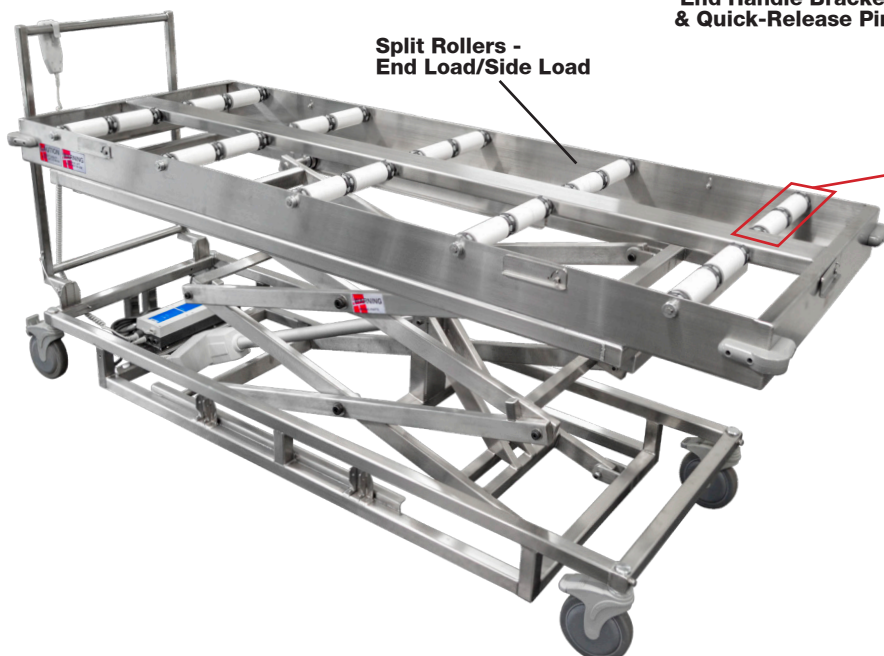
## ***M690 Portable Cadaver Scissor Lift w/Rollers***

## Parts listing

### **M690**



### **M690-ES Side/End Load**

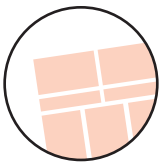


#### **CAUTION**

When operating lift keep hand and feet clear of moving parts. Severe injury can occur

#### **ATTENTION**

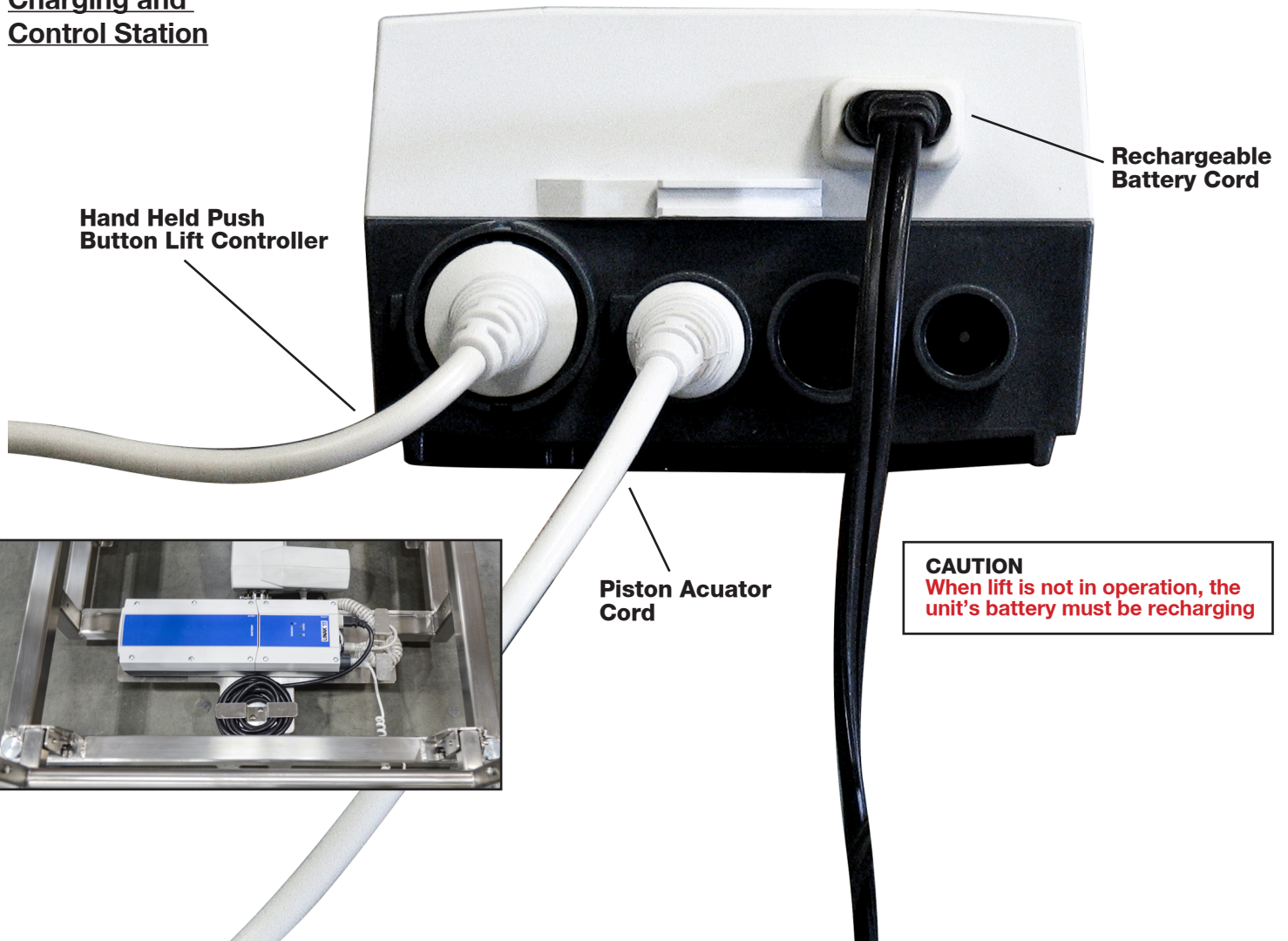
When lift is not in operation, the unit's battery must be recharging



## Operation

## ***M690 Portable Cadaver Scissor Lift w/Rollers***

### Charging and Control Station



**CAUTION**  
When lift is not in operation, the unit's battery must be recharging

### Rechargeable Battery Cord

To charge battery, plug cord into any wall receptacle.



Red light is illuminated when unit is charging



### Hand Held Push Button Lift Controller

To operate lift, press arrow **UP** button to elevate.

Press arrow **DOWN** button to lower lift.



**M690**

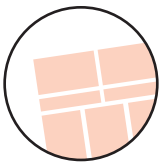


**M690-ES  
Side/End Load**



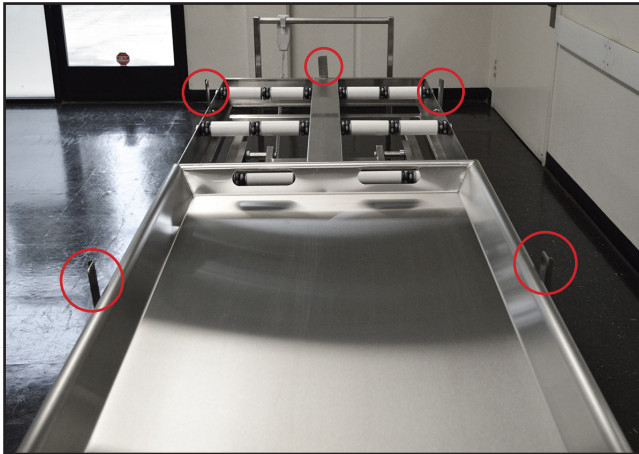
### **CAUTION**

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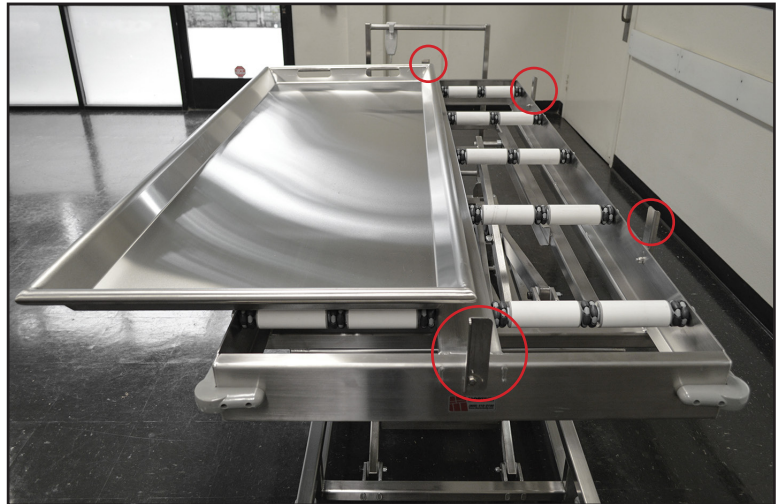


### **M690-ES TRAY LATCHES**

Tray latches are simple to operate. To load and unload the trays, release tray latches.



End Loading



Side Loading



Flip tray latches up to restrict free movement of tray



Flip tray latches downward to allow free movement of tray



## **LIFTING COMPONENTS**

### **SYSTEM DESCRIPTION:**

#### **Usage/type of applications:**

Actuators, lifting columns and electronics have been developed for use in all places where a linear movement is required.

#### **Attention should be paid to the following:**

- Control boxes must only be connected to the mains voltage specified on the label. All DIN, jack, or minifit plugs from the unit should be locked by using a locking mechanism.
- The control box must be connected in such a way that the cables are not trapped, exposed to tension or sharp objects when the application is moved in different directions.

**Prior to first use of batteries, please make sure that they are being charged 24 hours in order to reach proper function and prolong the lifetime of the batteries.**

If the customer uses another manufacturer's battery, it is important to check that the current is not reversed (plus and minus swapped over). This applies to both control boxes, which always run off battery and control boxes with battery backup. Contact your Morteck for specification of type, size etc.

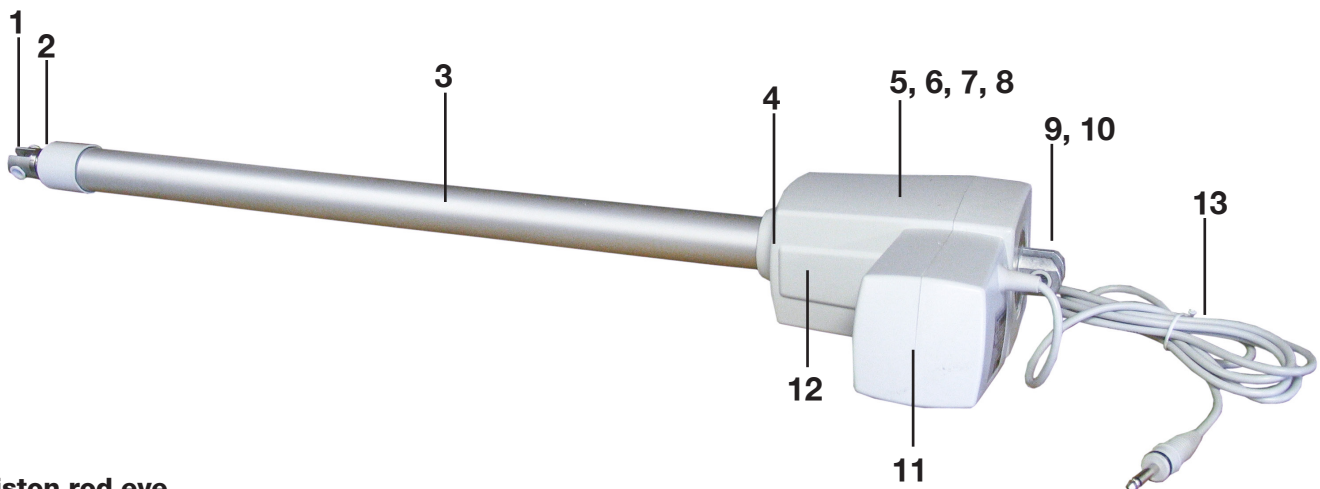
**The control current in the handset cable must not exceed 100 mA.**

**The control station** is the heart of the system and connects the various outlying units (actuators, handsets). Control stations are only able to convert control signals from the handset into operating voltage for the actuator. Most control boxes provide an Electronic Overload Protection (EOP), designed to protect the actuator against overload by disconnecting the current when the actuator is fully extended or retracted. If an actuator is used, the built-in limit switches stop the actuator when fully extended or retracted, and the control box only disconnects when the maximum current is exceeded. When using a control box it is important to note that not all types have electronic overload protection.

**The actuator** is the unit, which converts the operating voltage from the control box into a linear movement. The principle of the actuator's mode of operation is that a low voltage DC motor (5), via a gear system (12), rotates a threaded spindle, onto which a nut is fitted. As this nut cannot rotate, since the piston rod (2) is restrained, the piston rod will move forwards or backwards, when the threaded spindle rotates.

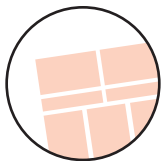
On the basis of motor type, gearing, and the threaded spindle's pitch, the actuator's thrust and speed are determined.

**The handset** is the unit to be used when you want the to perform a movement. It determines whether the control box will make the actuator move in or out.



1. Piston rod eye
2. Piston rod
3. Location of mechanical splines
4. Location of brake
5. Motor
6. Motor with optical switch
7. Motor with potentiometer
8. Motor with reed-switch
9. Back fixture

10. Back fixture with electrical splines
11. Quick release mechanism
12. Transmission between motor and spindle
13. Cable for connection to 12/24/36V DC by means of plug via control box



- The products must be cleaned at regular intervals to remove dust and dirt and inspected for mechanical damage, wear and breaks.
- The products are closed units and require no internal maintenance.
- Actuators/lifting columns must be inspected at attachment points, wires, piston rod, cabinet, and plugs, as well as checking that the actuator/lifting columns function correctly.
- To ensure that the pregreased inner tube remain lubricated the actuator must only be washed down when the piston rod is fully retracted.

### **Valid for control box and handset**

- Electronics must be inspected at attachment points, wires, cabinet, and plugs.
- Inspect the connections, cables, cabinet, and plugs, and check for correct functioning (does not apply to battery versions).
- The control box is sealed and maintenance free.
- Inspect at regular intervals that the ventilation aperture on the external battery is positioned correctly and is intact throughout its length, approx. 20 mm., see figure 1.

### **Environmental conditions:**

<b>Storage and transport</b>	
Operating:	
Temperature	5°C to 40°C
Relative humidity	20% to 90% @ 30°C – not condensing
Atmospheric pressure	700 to 1060 hPa
Storage:	
Temperature	10°C to +50°C
Relative humidity	20% to 90% @ 30°C – not condensing
Atmospheric pressure	700 to 1060 hPa

-Valid where nothing otherwise is stated under the specific products in a later section.

### **IP Protection degree:**

The products can be cleaned as follows according to their IP protection, which is stated on the product label. The IP code specifies the degrees of protection provided by the enclosures. For most products only the protection against ingress of water (second characteristic numeral) is specified, ingress of solid foreign objects or dust (first characteristic numeral) is not specified and therefore replaced by the letter X in the code. For some special industrial products both the first and second characteristic numerals are specified. This is a demand from the marked and will only be specified if tested and approved.

<b>IP protection</b>	<b>Cleaning instructions</b>
IPX4	Clean with a damp cloth

### **Warning!**

The systems must not be sprayed directly with a highpressure cleaner.

### **Warning!**

Interconnecting cables must remain plugged in during cleaning to prevent the ingress of water.

### **Warning!**

Cleaning with a steam cleaner is not permitted.

### **Warranty and service life**

Warranty covers manufacturing defects in the products, starting from the date of manufacture. There is 36 months' warranty on the HOMELINE products, 18 months' for MEDLINE and CARELINE products, and 12 months' for the TECHLINE products. The warranty is limited to the value of the product. Guarantee is only valid so far as the products have been used and maintained correctly and has not been tampered with. Furthermore, the products must not be exposed to violent treatment. In the event of this, the warranty will be ineffective / invalid. Warranty is only valid if the system is unopened and has been used correctly.

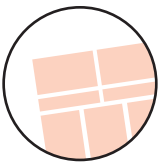
All products are designed to have an optimum service life as a matter of course, but the expected service life in a specific application is very dependent on how the products are used.



**USE AND CARE FOR CASTERS**

1. To engage brake mechanism, depress brake mechanism down, until you feel it lock. To release brake mechanism press forward to return for range of motion. Mechanisms are located on all (4) wheels.
2. When unit is in use, all necessary wheels should be locked when transferring to avoid injury.
3. To maintain life of caster, all wheels should be checked periodically to insure each wheel is secure to all leg up rights. Loose wheels can be tightened with a 13mm wrench. A bolt is located leg up rights above the wheel (show right).
4. Wheels should be cleaned if any hair or string like material is attached to top swivel mount or center axis. **Debris in this area will cause the wheel to not function properly.**

**TIGHTEN AND SECURE**



### **DIRECTIONAL CASTERS**

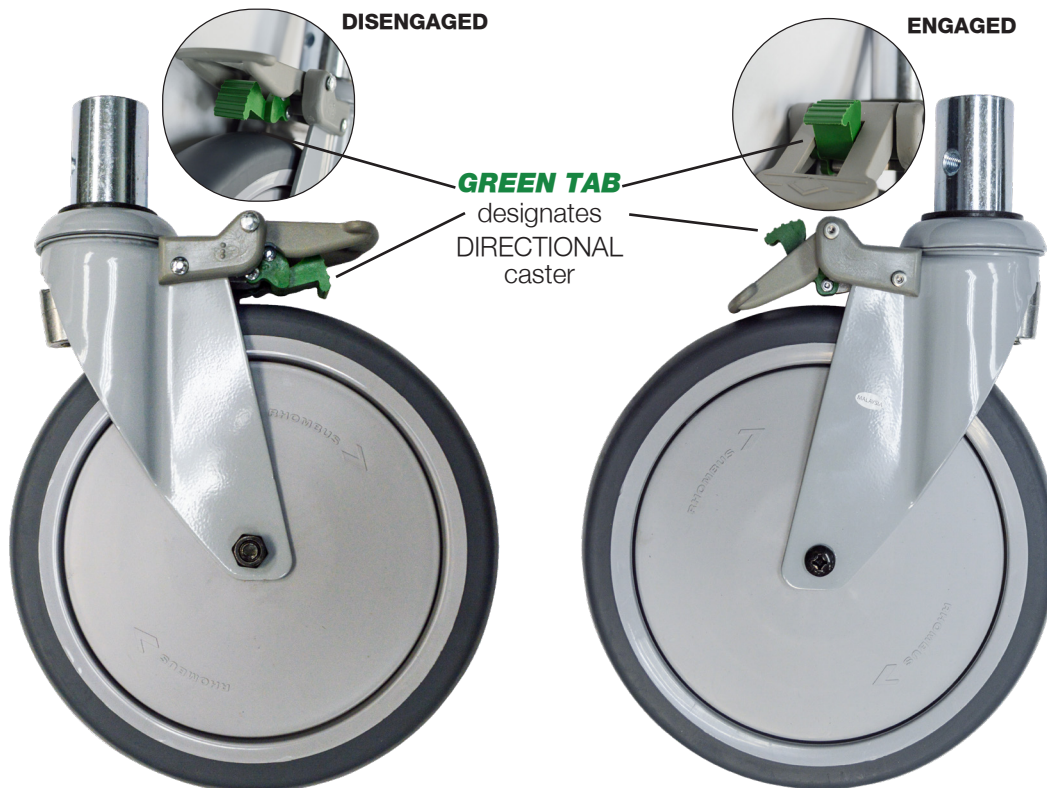
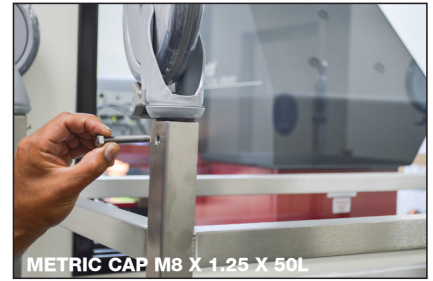
#### **USE & CARE:**

1. To engage directional locking mechanism, press **GREY** tab down and straighten/adjust wheel to lock in direction. To disengage multi-directional movement, PUSH down **GREEN** tab located on wheel.

2. When unit is in use, all necessary wheels should be locked when transferring to avoid injury.

3. To maintain life of caster, all wheels should be checked periodically to insure each wheel is secure to all leg uprights. Loose wheels can be tightened with a 13 mm wrench. Bolt is located on leg uprights above the wheel (shown right).

4. Wheels should be cleaned if any hair or string like material is attached to top swivel mount or center axis. **Debris in this area will cause the wheel to not function properly.**



Directional locking mechanism. Disengage **GREEN** tab by pushing down for multi-directional movement.



## MAINTENANCE INSTRUCTIONS

The unit requires regular maintenance and follow the manufactures directions.

### DISINFECTING AND CLEANING

Clean all surfaces of the stainless steel with a hard surface disinfectant/cleaner such as Sheila Shine® or SaniZene®. Follow instructions on container.

### DISINFECTING, CLEANING COMPONENTS & ACCESSORIES

Hand wash with disinfecting soap and warm water. Rinse well with clear water and dry with a towel. (Clean on a regular basis to prolong work life).

**WARNING** Improper maintenance can cause injury. Maintain only as prescribed in this manual. Overall, it is very simple to maintain. If you use for its intended purpose, it will provide many years of reliable service.

### CARE OF STAINLESS STEEL

Stainless steel products have a directional #4 brushed finish. This finish is produced using a very fine abrasive cloth. Dragging heavy equipment across the stainless steel surfaces will cause noticeable scratching. Pitting/corrosion can occur when carbon steel products are allowed to remain in contact with the stainless steel in the presence of moisture. (Examples- Steel Wool pads left in the bottom of the sink). Stainless steel can be damaged by exposure to acids.

### TYPES OF SURFACE CONTAMINANTS

**Dirt** - Consist of accumulated dust and a variety of contaminants. Warm water with or without a gentle detergent is sufficient. Next in order are mild non-abrasive powders such as typical household cleaners. These can be used with warm water, bristle brushes, sponges, or cleaning cloths. (Do not use carbon steel brushes or steel wool they may leave particles embedded on the surface which can lead to RUSTING.) For more aggressive cleaning, a small amount of vinegar can be added to the scouring powder. When water contains mineral solids, which leave water spots, it is advisable to wipe the surface completely with dry towels.

**Fingerprints and Stains** - Fingerprints and mild stains resulting from normal use are the most common surface contaminates. This affect the appearance and seldom have an effect on corrosion resistance. They can be removed with a glass cleaner or by gentle rubbing with a paste of soda ash (sodium carbonate) and water applied with a soft rag. Followed by a thorough warm water rinse and towel dry.

**Shop Oil and Grease** - These soils may be corrosive and may not allow the surface to maintain passivity, and so removal is a necessity. Soap or detergent and water may be used or a combination of detergent and water plus a solvent.

### TYPES OF CLEANERS AND METHODS

**General Precautions** Avoid using abrasive cleaners unless absolutely necessary. A "soft abrasive," such as pumice, should be used. Many cleaners contain corrosive ingredients, rinse with clean water.

**Clean Water and Wipe** - A soft cloth and clean warm water should always be the first choice for mild stains, loose dirt and soils. A final rinse with clean water and a dry wipe will eliminate the possibility of water stains.

**Solvent Cleaning** - Organic solvents can be used to remove fresh fingerprints, oils and greases that have not

had time to oxidize or decompose. The preferred solvent is one that does not contain chlorine, such as acetone, methyl alcohol, and mineral spirits.

### EFFECTIVE CLEANING METHODS

**Commercial Cleaners** - Many commercial cleaners compounded from phosphates, synthetic detergents, and alkalis are available for the cleaning of severely soiled or stained stainless surfaces. When used with a variety of cleaning methods, these cleaners can safely provide effective cleaning.

### SCRATCH REPAIR

Surface scratches can be repaired using the following technique. Depending on the severity of the scratch, it may be possible to completely remove it. Sand the scratch using 120 grit emery cloth or paper and firm pressure. Always sand in the direction of the grain. Avoid the natural tendency to sand in an arc, instead sand in a perfectly straight line. Sand until the scratch is gone. Polish using 3M Scotch Brite pads - Very Fine Grade. Use the same motions as with sanding. Polish until the original finish is restored. Wash and wipe the surface completely with dry towels.

### RUST REMOVAL

Rust can be repaired using the following technique. Sand the scratch using 120 grit emery cloth or paper and firm pressure. Always sand in the direction of the grain. Avoid the natural tendency to sand in an arc, instead sand in a perfectly straight line. Sand until the rust is gone. Polish using 3M Scotch Brite pads - Very Fine Grade. Use the same motions as with sanding. Polish until the original finish is restored. Wash and wipe the surface completely with dry towels.

### 5 Stainless Steel Mistakes NOT to Make When Cleaning

**1. Do not use abrasive cleaners that will scratch the surface.** Depending on the surface finish of your stainless steel, abrasive cleaners can cause scratching. A dull finish, probably will not show scratching as much as mirror or highly polished finishes. Test the cleaner in a hidden spot. It's also a good idea to work from the least risky type (water) of cleaning to the heavy duty stuff.

**2. Do not forget to rinse.** Gritty or dirty water can leave a residue on your finish. It can also stain or pit the surface of your stainless steel. Rinse completely. Residue from cleaning solutions left on a stainless steel surface can stain or damage finish.

### **3. DO NOT USE CLEANERS CONTAINING CHLORINE.**

While it may be second nature to bleach everything, stainless steel and chlorine do not mix. Stay away from the bleach when you clean stainless steel. Be aware that bleach can be included in different types of cleaners. If you accidentally get a cleaner on your stainless steel you'll need to rinse it off and quickly.

### **4. DO NOT USE STEEL WOOL OR STAINLESS BRUSH**

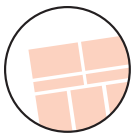
These products leave little particles in the surface of the steel and inevitably these particles begin rusting and staining the surface of the steel. They also can excessively scratch the surface of your stainless steel. *Stay completely away from steel wool and steel brushes.*

**5. Do not assume it's the cleaner.** If you do have some spotting or staining, and you've followed all of the rules, it may not be the stainless steel cleaner. Water, especially hard water, can leave spotting and staining on stainless steel surfaces. Towel dry after rinsing can end the problem. Sometimes, even water is an enemy to stainless steel.

[illegible]



[illegible]



## Warranty

### WARRANTY

Mortech Manufacturing, Inc. warrants all fabrications to be free of defects due to its own workmanship and materials.

#### CONTINENTAL UNITED STATES:

Repair and/or replacement of materials furnished that may develop such defects, will be warranted for a period of one year from the date of shipment. Items not manufactured by Mortech Manufacturing, Inc. will receive the manufacturer's warranty.

#### INTERNATIONAL:

(For validation of warranty, installation location (physical address) required) Replacement of parts furnished that may develop such defects, will be warranted for a period of (18) months from the date of shipment. Shipping and Labor is not warranted. Items not manufactured by Mortech Manufacturing, Inc. will receive the manufacturer's warranty.

#### PARTS AND SERVICE

Customer relations and product support are important aspects of Mortech Manufacturing, Inc.

For assistance with this or any of our fine products please contact us below:

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Azusa, CA 91702

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FAX (626) 334-1704

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info@mortechmfg.com

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### CAUTION

**Inspect unit and all components  
for any loosening that may have  
occurred during shipping**

### ATTENTION

All images and Drawing in this manual  
may not represent your model.  
Refer to your particular project for  
exact specifications

### DISCLAIMER

This manual contains general instructions for the use, operation, and care of this product. The instructions are not all inclusive. Safe and proper use of this product is solely at the discretion of the user. Safety information is included as a service to the user. All other safety measures taken by the user should be within and under consideration of applicable regulations. It is recommended that training on the proper use of this product be provided before using this product in and actual situation.

Retain this manual for future reference. Include it with the product in the event of transfer to new users. Additional free copies are available upon request from Customer Relations.

Mortech Manufacturing, Inc. has made every effort to ensure that this Manual is accurate; Mortech Manufacturing, Inc. abdicate liability for any inaccuracies or omissions that may have occurred.

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