

Technical Users' Manual

Installation and Operating Instructions

MODEL M691 CADAVER SCISSOR CARRIER w/ROLLERS

CAUTION

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

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 CAUTION • DO NOT USE CLEANERS CONTAINING CHLORINE WHEN CLEANING STAINLESS STEEL•

Mortech™ Manufacturing Inc. 411 North Aerojet Avenue, Azusa, CA 91702

(626) 334-1471 www.mortechmfg.com



Scissor Carrier w/Rollers

M691 Cadaver

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

- 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

<u>Please take time to inspect all shipment prior to signing</u> <u>delivery ticket.</u> 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 (manmade) 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.



MODEL M691

Size: 81/205 x 27/67 56.7 / 144 MAX Design Load: 500 lbs./226.8 kg.

The Model M691 Cadaver Scissor Carrier with full rollers allows for removal and transport of a decedent. The top roller frame allows for easy transfer of the body tray from the carrier to the lift or to the refrigerator. The carrier features full stainless steel construction with adjustable elevation via handheld control.

STANDARD DESIGN FEATURES

- Heavy gauge stainless steel roller frame
- Scissor lift with height adjustments
- (4) 6 in./15 cm. Swivel casters w/ brake
- Scissor lift mechanism elevates cadaver tray to 56.7 in. /144 cm.



Parts listing

M691 Cadaver Scissor Carrier w/Rollers

600040DS COVERED CADAVER SCISSOR CARRIER w/ROLLER



The M691 in the raised position



The M691 In the lowered position.





Model M691 Direct interaction w/ 1036-R114 Mortuary Refrigeration

TRANSFER FROM LIFT TO REFRIGERATOR

Once the body tray has been transferred to the lifting device, you have the ability to transfer the decedent to your morgue refrigerator and/or storage system.

Always be sure to flip latch down when transporting. Flip the latch up to transition occupied tray into storage system.

We offer a wide range of mortuary refrigerators and storage systems which incorporate the same roller system and allows all equipment to be completely compatible.

If all equipment is compatible, one person can make all body transfers without any manual lifting.



Critical components

BATTERY PACK

Features:

- Functional and elegant design
- High battery capacity: 24 V DC, 1 x 2.9 Ah (Normal speed (LA32JKSM and CBJ1), Thrust up to: 6000 N, The actuator does not reach the end position at any time, Stroke: S = 200 mm)
- By means of a snap system the battery pack can easily be mounted on the charger and/or the control box using LINAK mounting brackets
- Protection class: IPX5 (only when mounted vertically) only for BAJ1. Protection class (Not defined)
- Colour: Bottom charcoal grey (RAL 7016) and top grey (RAL 7035)
- DC socket for charging of the battery by means of the CH08 wall chaarger (not medically approved) only for BAJ2 **Usage:**
- Duty cycle: 10 % or 2 min. continuous use then 18 min. not in use
- Ambient temperature: +5° to +40° C
- This battery pack is a part of the JUMBO system. It is compatible with CBJ1/CBJ2 and CHJ2
- Approved according to EN 60601-1, CAN/CSAC22.2 No. 601.1-M90 and UL 2601 (Medically approved)



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CONTROL BOX

- Amongst other benefits the control box has:
- Efficient and user friendly max. weight adjustment (according to EN10535)
- Data collection in the control box
- Possibility to read out service data on laptop
- Work counter
- Intelligent cycle counter
- Service indicator
- Possibility to reprogram service interval

Features:

- Possible to take out service information from the control box
- Output voltage: 24 V DC
- Soft start/stop on channel 1
- Emergency operation for lifting/lowering. Acoustic battery alarm when approx. 25% battery capacity remaining.
- Bayonet lock for locking the handset plug (The DIN-plug)
- Protection class: IPx4
- Learn mode for current cut-off easy adjustment of max weight according to EN 10535
- Matching handset: HB70, HB80 and HD80
- Emergency stop button
- Colours: Charcoal grey bottom and light grey top
- CBJ-Care contains an intelligent cycle- and work counter
- Including audio sound when hand control is activated and battery level is low

Options:

- External charger possible CH01/wall charger CHJ2
- Internal charger possible
- Customized front covers
- Diode display (LED indicators)
- Graphical display with information about overload, battery status, service need and service data available from display
- Battery indicator in 3 steps by LED's
- Service indicator (12 months/8000 cycles whichever comes first)
- Reprogrammable service interval via special hand control
- Bottom part in light grey

Usage:

- Duty cycle: max. 10% or 2 min.continuous use then 18 min. without use
- Ambient temperature: +5° to +40°
- For one or two actuators (lift and leg spreader actuator)
- Approvals: ETL (UL) UL60601, EN60601, Australia deviation, Canadian deviation



Critical components



Charging and Control Station



ACUATOR

Features:

- Max. thrust 10,000 N (in push only)
- Max. thrust 6,000 N (in pull) with reinforced actuator
- 12 or 24 V DC permanent magnet motor (3 standard 24 V DC types)
- Safety factor 2 (10,000 N up to 150 mm stroke)
- Safety nut in push direction
- Built-in limit switches (not adjustable)
- Noise level below 50 dB (A), measured according to DS/EN ISO 3746 (Standard LA34)
- Adjustment of installation dimension +4/-0 mm (not possible with mechanical splines)
- Standard protection class: IPX4
- Stroke length: 100 400 mm
- Installation dim. S + 210 mm or long L" S + 267 mm
- 2.25 m straight cable with 6.3 mm jack plug (DIN-plug for CB9)
- All critical parts are designed in metal to obtain max. load
- The collar on the outer tube is not mounted on the LA34 with small motor

Usages:

- Duty cycle 2/18 2 minutes continuous use followed by 18 minutes not in use
- Ambient temperature: +50 to 400C

Dimensions standard housing:

Critical components

- Compatible with CB9 with EAS, CB12 with EAS, CB14*, CB18, CB20 and CBJ, CB6 OBL/ F, CB16 OBL/ F,
- (* = only possible with customized software)

Precautions:

• Power supply without current cut-off can cause serious damage to the actuator if mechanical stop is encountered or the actuator movement is blocked in another way.

• LINAK control boxes are designed so that they will shortcircuit the motor terminals (poles) of the actuator(s) when the actuator(s) are not running. This solution gives the actuator(s) a higher selflocking ability. If the actuator(s) are not connected to a LINAK control box the terminals of the motor must be short-circuited to achieve the self-locking ability of the actuator.

- The choice of the compact housing will increase the cable length by approx. 75 mm.
- It is not possible to combine electrical splines with quick release in pull.







Scissor Carrier w/Rollers The control current in the handset cable must not exceed 100 mA.

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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.

• The duty cycle noted on the product label must always be noted. Otherwise there is a risk of damaging the products. Exceeding the duty cycle will result in a dramatic reduction of the life time of the system. Unless specified otherwise on the product label the duty cycle is max. 10% : Max. 2 minutes in use followed by 18 minutes not in use.

If the customer uses another manufacturers 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 Mortech for specification of type, size etc.

The control station is the heart of the system and connects the various outlying units (actuators, handsets). Control station 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.



- 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

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- 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:

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

IP protection	Cleaning instructions
IPX4	Clean with a damp cloth

Warning!

The systems must not be sprayed directly with a high pressure 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 uprights. Loose wheels can be tightened with a 13mm wrench. A bolt is located leg uprights 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

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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 contaminates. 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

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.



MAINTENANCE RECORD			
Date		Ву	

M691 Cadaver

Training record

Scissor Carrier w/Rollers

TRAINING RECORD		
Date		By



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: Mortech Manufacturing. Inc. 411 North Aerojet Avenue Azusa, CA 91702 TEL (626) 334-1471 FAX (626) 334-1704 www.mortechmfg.com 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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If you find information in this manual that is incorrect, misleading, or incomplete, we would appreciate your comments and suggestions.

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